ROHDE&SCHWARZ

Test and Measurement
Division

Service Manual

VECTOR SIGNAL GENERATOR

SMIQ02B/03B/04B/06B

10125.5555.02/03/04/06

Volume 1
Service manual consists of 4 volumes

Printed in the Federal
Republic of Germany

Safety Instructions

This unit has been designed and tested in accordance with the EC Certificate of Conformity and has left the manufacturer's plant in a condition fully complying with safety standards.

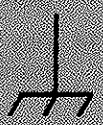
To maintain this condition and to ensure safe operation, the user must observe all instructions and warnings given in this operating manual.

Safety-related symbols used on equipment and documentation from R&S:

Observe operating instructions

Weight indication for units >18 kg

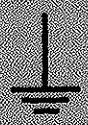
PE terminal



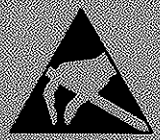
Ground terminal

Danger! Shock hazard

Warning! Hot surfaces



Ground



Attention! Electrostatic sensitive devices require special care

1. The unit may be used only in the operating conditions and positions specified by the manufacturer. Unless otherwise agreed, the following applies to R&S products:

   IP degree of protection 2X, Pollution severity 2, overvoltage category 2, altitude max. 2000 m.

   The unit may be operated only from supply networks fused with max. 16 A.

2. For measurements in circuits with voltages V_{rms} > 30 V, suitable measures should be taken to avoid any hazards.

   (using, for example, appropriate measuring equipment, fusing, current limiting, electrical separation, insulation)

3. If the unit is to be permanently wired, the PE terminal of the unit must first be connected to the PE conductor on site before any other connections are made. Installation and cabling of the unit to be performed only by qualified technical personnel.

4. For permanently installed units without built-in fuses, circuit breakers or similar protective devices, the supply circuit must be fused such as to provide suitable protection for the users and equipment.

5. Prior to switching on the unit, it must be ensured that the nominal voltage set on the unit matches the nominal voltage of the AC supply network.

   If a different voltage is to be set, the power fuse of the unit may have to be changed accordingly.

6. Units of protection class I with disconnectible AC supply cable and appliance connector may be operated only from a power socket with earthing contact and with the PE conductor connected.

7. It is not permissible to interrupt the PE conductor intentionally, neither in the incoming cable nor on the unit itself as this may cause the unit to become electrically hazardous.

   Any extension lines or multiple socket outlets used must be checked for compliance with relevant safety standards at regular intervals.

8. If the unit has no power switch for disconnection from the AC supply, the plug of the connecting cable is regarded as the disconnecting device. In such cases it must be ensured that the power plug is easily reachable and accessible at all times (length of connecting cable approx. 2 m). Functional or electronic switches are not suitable for providing disconnection from the AC supply.

   If units without power switches are integrated in racks or systems, a disconnecting device must be provided at system level.

9. Applicable local or national safety regulations and rules for the prevention of accidents must be observed in all work performed.

   Prior to performing any work on the unit or opening the unit, the latter must be disconnected from the supply network.

   Any adjustments, replacements of parts, maintenance or repair may be carried out only by authorized R&S technical personnel.

   Only original parts may be used for replacing parts relevant to safety (eg power switches, power transformers, fuses). A safety test must be performed after each replacement of parts relevant to safety.

   (visual inspection, PE conductor test, insulation-resistance, leakage-current measurement, functional test).

continued overleaf

10. Ensure that the connections with information technology equipment comply with IEC950 / EN60950.
11. Lithium batteries must not be exposed to high temperatures or fire.

    Keep batteries away from children.

    If the battery is replaced improperly, there is danger of explosion. Only replace the battery by R&S type (see spare part list).

    Lithium batteries are suitable for environmentally-friendly disposal or specialized recycling. Dispose them into appropriate containers, only.

    Do not short-circuit the battery.
12. Equipment returned or sent in for repair must be packed in the original packing or in packing with electrostatic and mechanical protection.
13. Electrostatics via the connectors may damage the equipment. For the safe handling and operation of the equipment, appropriate measures against electrostatics should be implemented.
14. Any additional safety instructions given in this manual are also to be observed.

Contents

Contents

1 Testing and Repair of the Instrument

1.1 Function Description

For the following see function circuit diagram 1125.55555.FS. The models 04 provide an upper frequency limit of 4.4 GHz. Of course, all measurements on these models should be performed in the reduced frequency range, only.

1.1.1 Theory of Synthesis

The synthesis first generates a frequency range from 750 to 1500 MHz.

The fine resolution is implemented by direct digital synthesis in the **SMIQ.** The optional frequency/phase modulation is also converted to this frequency by mixing such that it can be coupled in here.

A **step synthesizer** with a fractional divider produces an auxiliary frequency which is applied to a harmonic mixer. The output oscillators are synchronized with the frequency of the digital synthesis after mixing with a harmonic of the auxiliary frequency. The frequency of the **main octave** then corresponds to the sum of the frequency of the selected harmonic of the auxiliary frequency and the frequency of the digital synthesis.

Further frequency extension is obtained by **division** and **mixing.**

The **vector modulation** is generated in all models at a fixed frequency of 300 MHz and added to the synthesis frequency, if this operating mode has been selected. Tunable filters suppress only spuriae. At frequency above 3.3 GHz the vector modulation is upconverted to 900 MHz before mixing.

1.2 The Modules

1.2.1 Digital Synthesis (A8)

The fine resolution of the output frequency is implemented by direct digital synthesis in this module. A gate array provides instantaneous values of a sinewave oscillation produced by computation to a D/A converter which generates the analog signal. A series-connected lowpass filter suppresses the alias frequencies.

Since the digital synthesis delivers a wide spectrum of spurious frequencies, a buffer loop is series-connected. Its bandwidth can be switched in two steps. For normal operation, the small bandwidth is designed such that spuriae 10kHz beside the carrier are suppressed more than 80dB. The large bandwidth at about 200 kHz is used in fast list mode and for lock-in.

1.2.2 FM-Modulator (Option B5)

The FM modulator provides the analog frequency and phase modulation at the frequency of the digital synthesis. A modulated 100-MHz VCO can be operated in two control loops: a phase-locked loop with a control bandwidth of approx. 200 kHz for the phase modulation and a slow frequency control loop for FM. Since the input frequency must be maintained, a fixed frequency of 100 MHz is used for up-conversion. A combination of highpass and lowpass filters is used to suppress unwanted mixed products. Then the modulated 100-MHz signal is used for down-conversion so that the input frequency is obtained again. The resulting mixed products are eliminated by a lowpass filter.

The phase comparison for both control loops is performed at 10 MHz. With phase modulation, a conventional phase-locked loop with a control bandwidth of 200 kHz is closed, the modulation signal being fed in after the phase detector. With FM, the signal of the phase detector is used to generate a pulse sequence with the differential frequency which is applied to a differential integrator which receives the modulation signal as a reference. If the average values of the two signals deviate from each other, a correction voltage is produced, which maintains the center frequency of the oscillator at the correct value even with FM-DC.

In order for the phase-locked loop to remain in the linear section of the oscillator characteristic, the integrator voltage is automatically kept at its value during switchover by means of a counter and a D/A converter.

1.2.3 Reference/Step Synthesis (A7)

This module generates some reference frequencies of high spectral purity for the synthesis stages as well as the auxiliary frequency for the harmonic mixer which can be set in steps.

1.2.3.1 Reference Frequencies

As internal time base for the complete synthesis, a temperature-compensated 10-MHz crystal oscillator (TCXO) is used, which can be optionally replaced by an oven-controlled oscillator (OCXO, SM-B1). As noise reference, a 100-MHz crystal oscillator is used which is synchronized with the 10-MHz crystal or also with external references of 1 to 16 MHz with small bandwidth of approx. 50 Hz.

The reference frequency lies at 1 MHz. The divider of the 100-MHz crystal oscillator features a 10-MHz output for synchronization of connected devices. A programmable divider from 1 to 16 permits synchronization with external sources of 1 to 16 MHz in 1-MHz steps.

The 100-MHz signal of the crystal oscillator is used for mixing and synchronization in the FM modulator. The signal divided by two is fed through several modules as clock frequency.
By trebling and doubling, a 600-MHz signal is produced which feeds the fractional divider of the step synthesis and is used as

auxiliary frequency for the IQ modulator and broadband FM (option).

1.2.3.2 Step Synthesis

The auxiliary frequency for the harmonic mixer in the summing loop is generated in a phase-locked loop with fractional division ratio. The fractional divider is implemented as ECL gate array in order to obtain a high reference frequency and a large suppression of spuriae. Down-conversion of the synthesis oscillator with the 100-MHz crystal oscillator is also made with regard to spectral purity.

Since a mixer is used as phase detector, a preset into the lock-in range of the control loop is required, which also reduces the settling time. It is implemented by a parallel-operated frequency discriminator with window comparator.

1.2.4 Summing Loop(A9)

In the summing loop, the main octave and the divider frequency ranges of the synthesis are produced. Using a harmonic mixer, the signal of one harmonic of the step synthesis is converted into the frequency of the digital synthesis, where the phase comparison is made. A control bandwidth of 300 kHz is provided for a spectrum optimized with respect to noise.

A mixer is used as phase detector. For this reason and in order to force the synchronization to the correct harmonic, a preset into the lock-in range of the phase-locked loop is necessary, which is performed via a D/A converter according to a table stored in the computer and compensating for the temperature drift. Temperature compensation is accomplished by the internal diagnosis on the controller module. Correct functioning of the diagnosis is a prerequisite for synchronisation! Moreover, the table is set up using this diagnosis (see section Calibration Routines).

The SMIQ uses the first divided octave of the divider frequency ranges, thus ensuring that the output frequency range from 450 to 1500MHz is available for the IQ converter module.

1.2.5 IQ Converter (A220)

The IQ converter is provided for frequency extension by doubling and addition of the vector-modulated 300-MHz signal from the IQ modulator board (modulation mixer). The input signal supplied by the summing loop or the synthesizer (SMIQ-E) is applied to a power amplifier either via a harmonic filter or via a doubler with filter. A level control is provided there which keeps the output level of the board constant with CW mode. With vector-modulation mode, the LO level of the modulation mixer is thus kept constant.

The modulation mixer is followed by sophisticated filters in three frequency ranges, which suppress LO stereo separation and other mixer products. The filters are bypassed in the unmodulated mode, only with frequencies above 3 GHz mixing with 300 MHz and the

filters are active.

The individual filter characteristics are stored in an onboard EEPROM. In the vector mode, the level frequency response is set by a control element according to a table. The associated calibration table is generated internally by comparing the level to the controlled output level with unmodulated operation and stored in the computer RAM (see section Calibration Routines).

The output signal with its frequency range 450 MHz (CW) or 750 MHz (VM) to 3.3 GHz feeds the IQ modulator module.

1.2.6 IQ Modulator (A240)

The IQ modulator contains the vector modulator or IQ modulator on the internal 300-MHz carrier frequency which is obtained by division from the 600-MHz auxiliary frequency of the reference/step synthesis module. The a.m. modulator is followed by an amplitude modulator with a switch for the ramp control and control elements for fast level control with level attenuation in the adjacent time slot or pulse modulation (burst modulator). A high-resolution diagnosis rectifier and precise internal calibration voltages allow for an internal calibration of the vector modulator. The data are stored in the RAM of the computer (see section Calibration Routines). The 300-MHz signal is fed to the IQ-converter module for mixing.

Besides, the frequency range is extended here by mixing with a 2.4-GHz signal which is also generated onboard and synchronized with the 600-MHz auxiliary frequency of the reference/step synthesis board. Similar to the IQ converter, the level frequency response is set internally according to an internally generated calibration table the data of which are stored in the RAM of the computer (see section Calibration Routines).

Subsequently, the signal is amplified to the output level of the instrument. A linearized rectifier provides for an exact level which can be recalibrated using a power meter. The calibration table is written to the EEPROM of the computer and can be updated with module replacement or repair using the required equipment (see section Calibration Routines).

A synthesizer from 0.1 Hz to 1 MHz is provided as internal modulation source for the analog modulations (AM/FM/PhiM). The synthesizer signal is also provided at an output connector.

1.2.7 Frequency Extension 6.4 GHz (A500)

This module contains a frequency doubler, synthesizer mixer, modulation mixer and a filter bank for the frequency extension up to 4.4 or 6.4 GHz, an output amplifier for providing an output level above 3.3 GHz and a bypass switch for loopthrough of the signal up to 3.3 GHz.

The input signal is taken from the IQ modulator via doubler, filter and amplifier to the LO input of the synthesizer mixer, where the level is controlled by the detector and level control element. The unmodulated or vector-modulated signal is available at the IF port of the synthesizer mixer. The mixed signal is picked up at the RF port and via a level control element (Level Preset) applied to the filter bank where the correct sideband is filtered out and spurious are suppressed.

The output stage is driven by a further level control element (ALC). Level control is implemented by the output detector.

The 600-MHz signal REF600 from the reference/step synthesizer module is doubled to obtain a 1200-MHz LO signal for the modulation mixer and kept constant by a control element. The 300-MHz signal IQAUX (CW or vector-modulated signal is converted to 900 MHz with the modulation mixer, bandpass-filtered and applied to the modulation mixer. It is taken via power splitter and amplifier, or with models 02 and 03 directly to the rear-panel output of the instrument.

1.2.8 Modulation Coder (Option SMIQB10)

This module generates the I and Q signals for digital modulation and conforming to the digital standards. Through the use of a signal processor new modulation methods and network standard can be implemented by software.

1.2.9 Data Generator (Option SMIQB11)

The data generator stores and supplies the digital data for the various network standards to the modulation coder.

1.2.10 Fading Simulator (Options SMIQB14/B15)

In this module the I and Q input signals are A/D-converted, digitally faded with selectable parameters and methods and reconverted into analog signals.

1.2.11 Noise/Distortion Simulator (Option SMIQB17)

In the noise/distortion simulator the I and Q input signals are A/D-converted, digitally distorted and/or superimposed by noise with selectable parameters and reconverted into analog signals.

1.3 Test Instruments and Utilities

Item	Requirements	Instrument
1	Controller according to industry standard AT with remote control interface IEC-625/IEEE488 and serial interface RS232, connecting cable for RS232 and IEC bus	PSM17 (1116.5004.70)
2	Board adaptor, software for diagnosis and calibration	Service Kit SM-Z3 (1085.2500.01)
3	RF power meter, 300kHz to 3.3 GHz	R&S NRVS (1020.1809.02) with power sensor NRV-Z51 (857.9004.02)
4	10-MHz frequency counter, calibrated	

1.4 Troubleshooting

1.4.1 Built-in Utilities, Servicekit

For self-monitoring and servicing purposes, internal test points are provided on all modules. The most important ones release an internal alarm via comparators when limit values are exceeded; all of them can be measured via multiplexer and an A/D converter on the controller board.

At least the available control voltages (also provided with alarm comparators) and the output levels can be internally measured on every module. In addition, test points are provided to support adjustments and enable measurements at places where an external measurement would cause problems (e.g. RF level in the module at interfaces to submodules). Mostly, these utilities are sufficient for identification of the damaged module.

The Service Kit SM-Z3 (Test Instruments and Utilities, pos. 2) contains extension boards and cables to put modules into an accessible servicing position. Furthermore a floppy disk is provided containing a diagnostic program, which performs a lot of module tests, diagrams and trimming routines to ease troubleshooting. Another program is provided for recalibration of the output level.

1.4.2 Selftest, Error Messages (ERROR)

If the control voltage exceeds the permissible range in a control loop, an alarm is released on the computer, which is indicated in the status line of the display. It may be caused by missing calibrations, wrong operation, exceeding of the specified parameters (above all in the case of the level) or internal faults.
The faults should be eliminated in the sequence given in the table below, since the faults listed further down may result from faults above.

Message in the display	Fault	Possible causes
172, Reference frequency 100MHz VCXO unlocked	The 100-MHz crystal oscillator on the module Reference/Step Synthesis (A7) is asynchronous.	External reference selected but not connected, wrong frequency of the external reference selected, external reference not in the permitted lock-in range, hardware error.
173, Step synthesis unlocked	The step synthesis on the module Reference/Step Synthesis (A7) is asynchronous.	Hardware error.
221, Digital synthesis buffer VCO unlocked	The buffer loop on the module Digital Synthesis (A8) is asynchronous.	Hardware error.
130, FM modulator VCO unlocked	The modulation oscillator on the module FM Modulator (option) is asynchronous.	Heavy overload with external modulation. Hardware error.
211, Summing loop unlocked	The PLL on the Summing Loop module is asynchronous.	Missing or faulty calibration, e.g., after module replacement or at extreme temperatures (cf. Calibration Routines). Overload with external FM/PhiM. CAUTION ! After elimination of the overload, perform PRESET or a new calibration in order to synchronize the module again if repeated frequency changes lead to the error message again! Hardware error which often results from faults on the Digital Synthesis or Step Synthesis.
110, Output unleveled; ALC Failure	The level control for the output level on the IQ modulator module does not work correctly.	Level outside the specified range. Overload with AM-EXT-DC. Missing or faulty calibration, e.g., after module replacement or at extreme temperatures (cf. Calibration Routines). Hardware error.
111, IQCON: ALC loop failure	The local level control on the IQ-converter module does not work correctly.	Hardware error.

Message in the display	Fault	Possible causes
112, E6GHZ: ALC loop failure	The level control on the frequency extension module does not work correctly.	Level outside the specified range. Overload with AM-EXT-DC. Missing or faulty calibration, e.g., after module replacement or at extreme temperatures (cf. Calibration Routines). Hardware error.
224, 2.4 GHz LO loop unlocked	The VCO for the output mixer on the IQ-modulator board is not synchronized.	Hardware error.

1.4.3 Internal Diagnosis

Since the voltage range of the multiplexers is limited to ± 5 V, voltage dividers are required at many test points. However, the original voltage is to be indicated in the display so that every test point has its associated scaling factor. The full measured value before the voltage divider is displayed.

For further fault location, the following test points can be selected, the specified voltages are approximate values for properly functioning instruments. They are indicated on the display and can also be read out by a controller via the IEC-625 interface.

1.4.4 List of Diagnostic Points

The table contains the voltages which may occur in the case of a functioning instrument. Some of the test points require the corresponding function to be activated on in order to obtain the table values. An X in the column IR means that the test point releases an alarm. Df is the divider factor before the multiplexer.

Module	T-point	Test	*	min/V	max/V	Df
FRO	0	Reference 1kOhm		-0.05	0.05	
	1	Input DIAG-15		-15	15	
	2	Input DIAG-5		-5	5	
	3	X-voltage		0	10	
	4	not used				
	5	Programming voltage EEPROM		0	5.5	
	6	Reference voltage X-D/A converter		4.9	5.1	
	7	Battery voltage		2.2	3.8	

Module	T-point	Test	*	min/V	max/V	Df
ROSC	100	Reference 10kOhm		-0.01	0.01	1
	101	Bridge voltage thermostat (VAR06, only)	x	5.6	6.4	3
	102	Output level		0.6	3	1
REFSS	200	Reference 10kOhm		-0.01	0.01	1
	201	Tuning voltageVCXO 100MHz	x	2	12	4
	202	DAC tuning 10-MHz reference		-10	0	4
	203	Level 1-MHz reference		1.8	2.5	1
	204	Level divider output 1MHz		2	3	1
	205	Level external reference		0.8	3.5	1
	206	Level 300-MHz IF		0.1	0.4	1
	207	Level Output REF50		0.3	1.3	1
	208	Frequency detector		-0.04	0.04	4
	209	Level Output REF100		0.15	1.2	1
	210	Level Output REF600		0.15	0.6	1
	211	+24-V supply		22.5	25.5	8
	212	Tuning voltage STEP-VCO	x	1	21	6
	213	Level Step divider		0.4	2.5	1
	214	Level Step IF (3 to 17 MHz)		0.1	0.25	1
	215	Level Output FSTEP		0.2	0.6	1
DSYN	300	+15-V supply		14	16	4
	303	Clock for DDS-GA		0.5	1.5	1
	304	Output level FDSYN		0.05	0.2	1
	305	Tuning voltage buffer VCO off		-5	24	5
		Tuning voltage buffer VCO on		1.5	21.5	5
	306	-15-V supply		-14	-16	4
	307	7.5-V supply		7	8	2
FMOD	500	Reference 10 kOhm		-0.01	0.01	1
	501	Tuning voltage VCO	x	2.7	12.3	3
	502	Level VCO		0.1	0.4	1
	503	LO level 1st mixer		0.1	0.4	1
	504	Output level FDFM		0.1	0.6	1
	505	Modulation voltage		-4	4	3

Module	T-point	Test	*	min/V	max/V	Df
SUM	600	PLL differential voltage		-0.6	0.6	2
	601	IF level		0.18	0.28	1
	602	RF level at sampler		0.01	0.15	1
	603	Pulse amplitude		1	3	1
	604	Output level FSUM		0.06	0.4	1
	605	VCO level		0.02	0.3	1
	605	VCO tuning voltage	x	0	22	5
	607	VCO preset		0	22	5
ATTC	1100	Overvoltage protection		-5	-3	1
IQCON	2000	Reference 10kOhm		-0.01	0.01	1
	2001	Internal -10V		-10.2	9.8	3
	2002	Level Preset		2.5	6	5
	2003	Tuning voltage owfil		0	22	5
	2004	Tuning voltage vdfil		0	22	5
	2005	Tuning voltage iqfil1		0	22	5
	2006	Tuning voltage iqfil2		0	22	5
	2007	Tuning voltage iqfil3		0	22	5
	2008	Internal ref4		3.9	4.1	1
	2009	Internal ref6		6.4	6.6	2
	2010	Internal ref10		9.8	10.2	3
	2011	Level owfil		0	0.6	1
	2012	Level vdfil		0	0.6	1
	2013	Local ALC	x	0	12	3
	2014	Input level iqfil		0.1	0.6	1
	2015	Output level iqcon		0.1	0.6	3
IQMOD	2100	Reference 10kOhm		-0.01	0.01	1
	2101	Internal ref10		9.8	10.2	3
	2102	Output LF generator		-1	1	3
	2103	Level ref600		0.1	0.5	1
	2104	Tuning voltage 2.4-GHz VCO	x	0	22	5
	2105	Level 2.4 GHz oscillator		0.1	0.3	1
	2106	Level at phi600		0.1	0.3	1
	2107	LO level 2.4 GHz		0.1	0.3	1
	2108	Level Preset		2.4	6	3
	2109	ALC voltage	x	0.1	14	3
	2110	Level command value		-6	0	3
	2111	Level IF		0	0.3	1
	2112	Level AM modulator		0	0.5	1
	2113	Detector voltage		0	6	3
	2114	Level ref300		0.5	1.5	1
	2115	Level iqout		0	0.3	1
	2116	Level inp. I		-0.5	0.5	2
	2117	Level inp. Q		-0.5	0.5	2
	2118	LO level I		0	0.5	1
	2119	LO level Q		0	0.5	1
	2120	Phase control voltage		3.5	13	3
	2121	300-MHz calibration detector		0	10	3
	2122	Power ramp		-3	0	3
	2123	Control voltage lev. att.		-3	0	3

Module	T-point	Test	*	min/V	max/V	Df
MCOD	2200	Reference 10kOhm		-0.01	0.01	1
	2201	Tuning voltage VCO	x	0	20	5
	2202	Signal out_i		0	1.1	1
	2203	Signal out_q		0	1.1	1
	2204	Signal out_burst		0	4.5	3
	2205	VCO level		0	0.5	1
	2206	+5-VA supply		4.8	5.3	2
	2207	-5-VD supply		-5.3	-4.8	2
DGEN	2300	Battery voltage		2.0	3.8	1
E6GHZ	2400	Reference 10kOhm		-0.01	0.01	1
	2401	Detector voltage		0	10	4
	2402	Temperature sensor		0	5	1
	2403					
	2404	Tuning voltage 1st lowpass		0	22	5
	2405	Tuning voltage 2nd lowpass		0	22	5
	2406	Tuning voltage 1st highpass		0	22	5
	2407	Tuning voltage 2nd highpass		0	22	5
	2408	Level preset		0	10	3
	2409	Level before filter bank		0	10	3
	2410	Level before ALC		0	10	3
	2411	Level before output amplifier		0	10	3
	2412	Level of 900 MHz IF		0	10	3
	2413	ALC voltage	x	-15	15	3
	2414	ALC voltage synthesizer mixer		-15	15	3
	2415	ALC voltage modulation mixer		-15	15	3
FSIM1	2500	+3.3V supply		3.1	3.5	1
	2501	I-output		0	1	1
	2502	Q-output		0	1	1
	2503	Clock generator supply		4.7	5.3	2
	2504	Digital module supply		4.9	5.5	2
	2505	Ground		-.01	.01	1
	2506	Ground		-.01	.01	1
	2507	Ground		-.01	.01	1
FSIM2	2600	+3.3V supply		3.1	3.5	1
	2601	I-output		0	1	1
	2602	Q-output		0	1	1
	2603	Clock generator supply		4.7	5.3	2
	2604	Digital module supply		4.9	5.5	2
	2605	Ground		-.01	.01	1
	2606	Ground		-.01	.01	1
	2607	Ground		-.01	.01	1
NDSIM	2700	+3.3V supply		3.1	3.5	1
	2701	I-output		0	1	1
	2702	Q-output		0	1	1
	2703	Clock generator supply		4.7	5.3	2
	2704	Digital module supply		4.9	5.5	2
	2705	Ground		-.01	.01	1
	2706	Ground		-.01	.01	1
	2707	Ground		-.01	.01	1

1.4.5 Testing the Modules with the Built-in Diagnosis

The diagnosis is activated in the menu UTILITIES/DIAG/TPOINT/STATE with ON. TPOINT permits to select the desired test point via rollkey or keyboard.

1.4.5.1 Troubleshooting with Respect to Modules

Before performing the specified settings on the SMIQ, the instrument should be set to a defined initial status by means of PRESET. Diagnostic test points which are not referred to in the following must lie inside the given limits irrespective of the settings. Particularly the internal supply voltages should be the first to be checked.

These simple tests are intended to allow for determination of a faulty module, more detailed tests can be looked up in the service instructions of the modules.

Most of the following tests and many more can be performed automatically using the **diagnostic program of the Service Kit SM-Z3**. This program additionally offers an overall test, wherein all modules are checked in order of signal flow. Defects so are listed in that order, they should get repaired to prevent unneccesary troubleshooting on secondary defects.

1.4.5.1.1 A3 Front Module, Diagnostic Test

If the instrument does not respond to inputs via rollkey or keyboard although the display shows readings, first check whether the instrument is disabled by the remote control (IEC bus) or whether a key got stuck. If this is not the case, see service instructions for the module A3.

Test points 0 to 7 are to be found on the computer.
Test point 0 is applied to digital ground, measuring the voltage drop of this ground with respect to the analog ground. Test point 2 is not used with the SMIQ. Test point 3 indicates the input voltage of the diagnostic A/D converter.

- For testing the diagnosis, select TPOINT 3 and apply a voltage V with $-5\ V < V < +5\ V$ to pin 19 of the motherboard plug of a module.

➢ The voltage applied to pin 19 must be read out on the display. The deviation must be <1 % ±50 mV.

Test point 6 measures the voltage for the output socket X-AXIS at the rear.

- Set any sweep with approx. 100 steps on the SMIQ. Vary from the lower to the upper sweep limit in the operating mode MAN and observe the indicated voltage.

➢ It must vary from 0 to 10 V proportionally to the sweep steps.

Test point 7 measures the voltage of the battery supplying the non-volatile memories (RAM). If the voltage drops below 2.2 V, the data will no longer remain saved after switching off.

1.4.5.1.2 A2 Power Supply

The power supply features an independent self-monitoring facility, switching to standby mode in the case of overload or internal disturbances (LED on the front panel).

• Test points 211, 300, 306 and 307 permit to perform measurements on the modules for checking whether the supply voltage are properly applied.

1.4.5.1.3 Reference/Step Synthesis

Proper functioning of the step synthesis over its frequency range can be checked as follows:

• Vary the frequency from 840 to 942 MHz on the SMIQ. In this frequency range, nearly all steps of the step synthesis are swept through.

➢ The tuning voltage of the step VCO at test point 212 must increase continuously from approx. 2 V to approx. 18 V.

1.4.5.1.4 A7 Digital Synthesis

Functioning of the buffer loop can be checked as follows:

• Vary the frequency (unmodulated) on the SMIQ from 1350.2 to 1351.4 MHz. Thus the setting range of the digital synthesis is fully swept through.

➢ The tuning voltage of the buffer VCO at TPOINT 305 must continuously increase from approx. 14.6 to approx. 18 V.

1.4.5.1.5 A6 FM Modulator (Option)

The built-in modulator allows for tracing the signal path of FM as far as to the modulator.

• To this end, select **MODULATION/FM/FM2 SOURCE INT, DEVIATION** 500kHz at an RF of 1000 MHz and **LFGEN FREQUENCY** 0.2Hz.

➢ Am TPOINT 505 soll die Anzeige von ca+1.5V bis ca. -1.5V variieren.

1.4.5.1.6 A9 Summing Loop

Correct synchronization of the two oscillators can be checked as follows:

• Vary the carrier frequency (unmodulated) on the SMIQ from 750.0000001 to 1100 MHz. Thus, the complete tuning range of the first oscillator is covered.

➢ The voltage at test points 606 and 607 must continuously increase from 2 ±0.5 to 19 ±2 V. It must not exceed ±600 mV at test point 600.

The second oscillator features an inverted tuning characteristic.

• Vary the carrier frequency (unmodulated) on the SMIQ from 1100.0000001 to 1500 MHz. Thus, the complete tuning range of the second oscillator is covered.

➢ The voltage at test points 606 and 607 must continuously decrease from 19 ± 1V to 2 ±1 V. It must not exceed ±600 mV at test point 600.

In the case of faulty functioning, in particular in the upper frequency range of both oscillators, the calibration might be faulty. For recalibration, see Calibration Routines.

1.4.5.1.7 IQ Converter

• Generation of the tuning voltages for the various filters can be checked according to the table below. The tuning voltages must vary continuously between the interpolation points.

Carrier frequency in MHz	Modulation	Diagnostic point	Filter	Rated voltage in V
500	CW	2003	owfil	3
750				6.5
1000				11.5
1200				21
1500				21
1500.1		2004	vdfil	0
1750				3
2000				6
2250				9
2500				15
2700				20
2750 to 3000				21
800	VM	2005	iqfil1	3
1000				4
1200				5.5
1400				7
1600				10
1799.9				11
1800.1				0.5
2000				5
2200				10
2400				16
2499.9				20
2500.1				6
2800				8
3000				10
3200				13
3300				15
800	VM	2006	iqfil2	3
1000				4.5
1200				6

Carrier frequency in MHz	Modulation	Diagnostic point	Filter	Rated voltage in V
1400				7.5
1600				10
1799.9				15
1800.1				6
2000				8
2200				9.5
2400				14
2499.9				18
2500.1				5.5
2800				7
3000				10
3200				14
3300				18
800	VM	2007	iqfil3	0
1000				4
1200				5
1400				6.7
1600				10
1799.9				16
1800.1				1.5
2000				4.5
2200				6.5
2400				10
2499.9				13
2500.1				2
2800				5
3000				8
3200				11
3300				13

Level measurements

- Preferably start tracing the level in CW mode.

Carrier frequency in MHz	Modulation	Diagnostic point	Measurement	Rated voltage in V
450.1 to 1499.9	CW	2011	owfil	>.03
1500.1 to 3000	CW	2012	vdfil	>.03
450.1 to 3000	CW	2013	Local ALC	<12
450.1 to 3000	CW	2015	Output level	0.2 to 0.3

- Subsequently, trace levels in IQ mode.

➢ It is therefore required to apply 0.50V dc to the I or Q input.

Carrier frequency in MHz	Modulation	Diagnostic point	Measurement	Rated voltage in V
750.1 to 3300	VM	2014	Input iqfil	>.03
750.1 to 3300	VM	2013	Local ALC	<12
750.1 to 3300	VM	2015	Output level	0.15 to 0.4

1.4.5.1.8 IQ Modulator

- Level command value

➢ Settings on SMIQ: level 7 dBm, internal AM featuring 0% modulation depth, switch off level correction (CALIB/LEVEL/USAGE OFF).

➢ A voltage from -1.5+-0.1V shall be measured at diagnostic test point 2110.

➢ If the LF generator is set to 0.1 Hz and the modulation depth is increased to 100%, the voltage must change between 0 and -3 V.

RF Level

- The level is traced with 16 dBm, unmodulated.

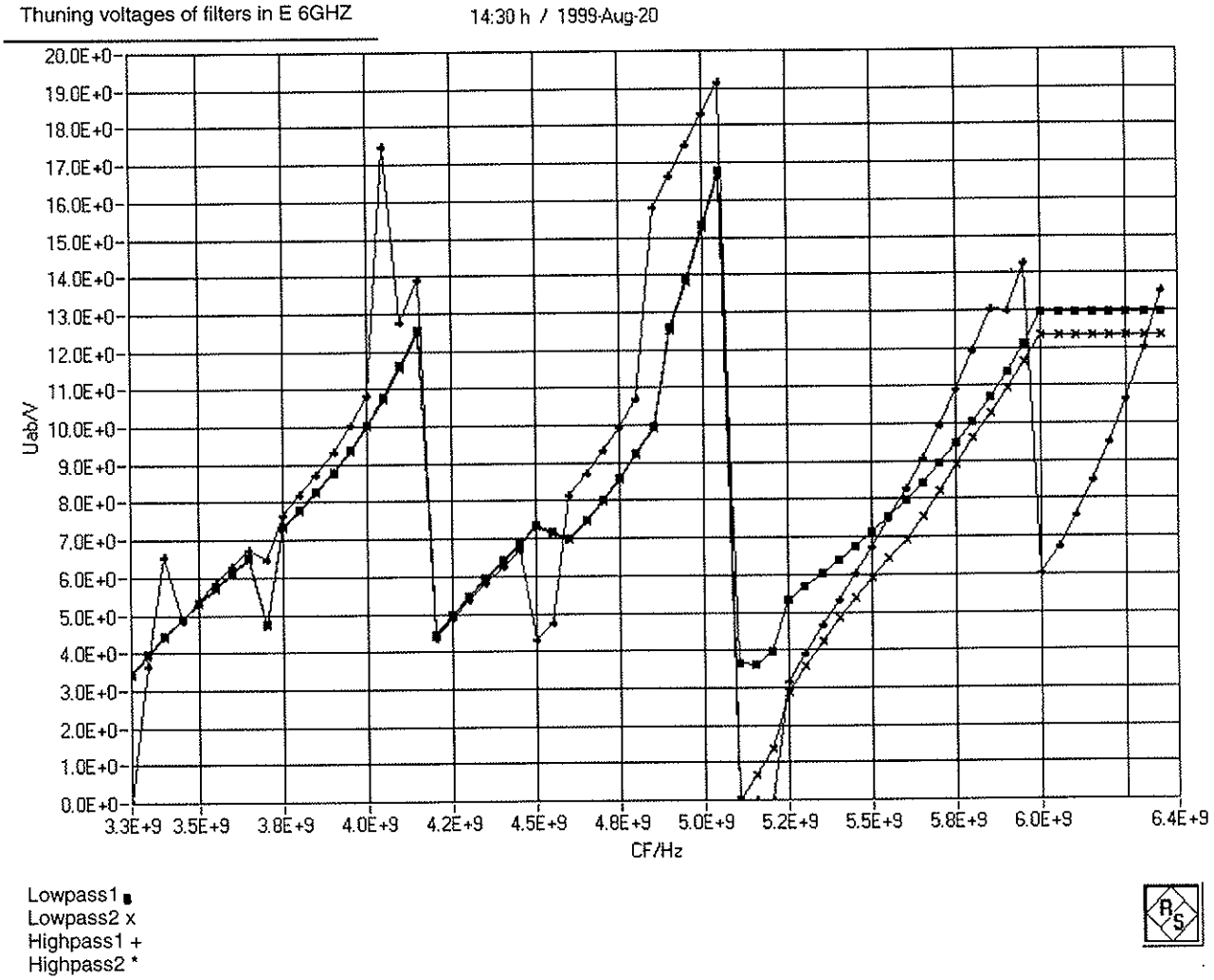
Carrier frequency in MHz	Modulation	Diagnostic point	Measurement	Rated voltage in V
450.1 to 3300	CW	2112	acc. to ALC element	>.03
400	CW	2107	2.4-GHz LO level	>0.1
100 to 450	CW	2111	IF level	>0.03

Testing the modulator

- Internal calibration of the modulator is suitable for testing the modulator (cf. Calibration Routines).

1.4.5.1.9 Frequency Extension

- The tuning voltages for the various filters can be checked with the aid of the following graph. The example gives approximate values only, the tuning voltages are determined for each individual module and stored in an EPROM on the module.



Level measurements

- The level should be measured in CW mode at 13 dBm.

Carrier frequency in MHz	Diagnostic point	Measurement	Rated voltage in V
3000	2414	LO synthesizer mixer off	< -0.2
3300.1...max.RF	2414	LO synthesizer mixer, ALC	0.5 < v < 2
3000	2415	LO modulation mixer off	<-0.2
4000	2415	LO modulation mixer, ALC	0.5 < v < 2
4000	2412	Level of LO modulation mixer	> 0.1
3300.1...max.RF	2410	Level after filter bank	>0.5
3300.1...max.RF	2411	Level before output amplifier	>0.1

1.4.5.1.10 Modulation Coder

Diagnostic point	Measurement	Rated voltage in V
2206	+5V supply	4.9 < v < 5.3
2207	-5V supply	-5.45 < v < -4.85

1.4.5.1.11 Data Generator

Diagnostic point	Measurement	Rated voltage in V
2300	RAM battery	> 2.1

1.4.5.1.12 Fading Simulator 1

Diagnostic point	Measurement	Rated voltage in V
2500	+3.3V supply	3.1 < v < 3.5
2503	Clock generator supply	4.7 < v < 5.3
2504	Digital module supply	4.9 < v < 5.5

1.4.5.1.13 Fading Simulator 2

Diagnostic point	Measurement	Rated voltage in V
2600	+3.3V supply	3.1 < v < 3.5
2603	Clock generator supply	4.7 < v < 5.3
2604	Digital module supply	4.9 < v < 5.5

1.4.5.1.14 Noise/Distortion Simulator

Diagnostic point	Measurement	Rated voltage in V
2700	+3.3V supply	3.1 < u < 3.5
2703	Clock generator supply	4.7 < u < 5.3
2704	Digital module supply	4.9 < u < 5.5

1.4.6 Troubleshooting to Type of Error

Depending on the type of error, the sequence of the modules that may have caused the fault is listed in the following according to the signal flow

Type of Error	Troubleshooting Sequence
Frequency error	Reference oscillator OCXO (option) Reference/Step synthesis Digital Synthesis Summing loop Synthesizer (SMIQ-E) IQ converter IQ modulator
Level error	Summing loop Synthesizer (SMIQ-E) IQ converter IQ modulator Attenuator
AM error	IQ modulator
FM/PhiM error	Reference/Step synthesis (mixed frequency 100MHz) Frequency modulator Summing loop (error with high deviations and modulation frequencies) Synthesizer (SMIQ-E)
Harmonic level too high	IQ converter IQ modulator
Insufficient spectral purity (SSB noise, unwanted deviation)	If this error occurs in the unmodulated state, see Frequency error; only with FM/PhiM see FM/PhiM error.

1.5 Calibration, Password Protection

The diagnosis program in the service SM-Z3 provides a menu item which allows for performing all internal calibration.

For troublefree and safe operation of the instrument, valid calibration values are required for various functions.

Calibration values which can be generated by the instrument itself are kept in the battery-backed RAM of the computer. These values are protected against accicentally overwriting by a password (level 1, 123456).

Unlocking password protection is described in the operating manual.

Values which can only be determined using external measuring equipment are written into the flash EPROM (level correction and tuning voltage of reference oscillator). These data are protected by password level 3 or 2.

Since the flash EPROM does not permit single data to be deleted, new memory space is used for each calibration.
If no more memory area is available, the EPROM must be cleared and newly written to by a R&S service department. Calibrations like this should only be performed if required.

Operational data (operating time, attenuator switch count etc.) are protected by password level 3.

1.5.1 Calibration Routines

1.5.1.1 Calibration of Summing Loop Pretune Voltage

After unlocking the password protection (Level 1, 123456) CALIBRATE ALL can be activated in the UTILITIES/CALIB/ALL menu. All internal calibration routines are automatically called up in the correct sequence.

CAUTION!!
The summing loop cannot synchronize without valid calibration of the pretune voltage! This routine must be called up after an adjustment or module replacement.

- Perform calibration as described in the operating manual.

➢ **The instrument should have warmed up to normal operating temperature. If the cold instrument has to be calibrated to be started up, the calibration must be repeated at normal operating temperature.**

➢ **This calibration must be performed prior to any other calibration!**
Results of the calibration can be checked by selecting VIEW. Typical values for the offset (in the first column after the frequency) are up to +-200mV, preset values in the second column typically raise from about 90 up to about 240 at 1100MHz and fall down again to about 90 at 1500MHz. The third column shows values representing tuning sensitivity in the range from 0 to 7.

The calibration data are stored in the RAM and can be updated as often as desired.

1.5.1.2 Calibration of the Vector Modulator

Optimum modulation data of this modulator are obtained by internal calibration. Depending on the configuration, offsets of other modules can also be calibrated.

- Perform the calibration according to the operating manual.

➢ **The instrument should have warmed up to normal operating temperature. If the cold instrument has to be calibrated to be started up, the calibration must be repeated at normal operating temperature.**

The calibration data are stored in the **RAM** and can be updated **as often as desired.**

1.5.1.3 Calibration of Level Preset

The individual level preset of the instrument permits the level control to be operated in its optimal operating point.

CAUTION!!
If the calibration table is missing or faulty, the AM and vector modulation characteristics become worse, in the extreme case the set level is not reached and failure message "110 Output unleveled; ALC Failure" is displayed.

The calibration must always be performed when the Front Module has been replaced or modules starting from the summing loop have been repaired or replaced. The frequency generation must work properly, the summing loop, in particular, must be calibrated (see above).

- Perform the calibration according to the operating manual.

➢ **The instrument should have warmed up to normal operating temperature. If the cold instrument has to be calibrated to be started up, the calibration must be repeated at normal operating temperature.**

Results of the calibration can be checked by selecting **VIEW**. Typical values range from 16 to 50.

The calibration data are stored in the **RAM** and can be updated **as often as desired.**

1.5.1.4 Output Level Correction

The accuracy of the output level is obtained by means of a level correction according to a table stored in the computer. The table is generated using a test program and a calibrated power meter and transferred into the EPROM of the computer.

This calibration must be repeated after replacement of the computer and after replacement or repair of the IQ-modulator or attenuator modules.

The following instruments and utilities are required:

- controller (Test Instruments and Utilities, item 1).
- program floppy disk (Test Instruments and Utilities, item 2).
- Power meter (Test Instruments and Utilities, item 3).
- To execute the program-controlled calibration please refer to the manual of the service kit (Test Instruments and Utilities, item 2)

1.5.1.5 Reset Attenuator Counter

When fitting a new attenuator, the counter in menue UTILITIES/DIAG/PARAM is to be reset. The counter is protected by password level 3. Unlocking is described in the operating manual. Please contact your local R&S representative to get the password. After unlocking menue UTILITIES/DIAG/SET PARAM appears, which allows switch counts to be reset.

1.5.1.6 Calibration of the Reference Frequency

If the option SM-B1, reference oscillator OCXO is not fitted to the instrument, the reference oscillator on the reference/step-synthesis module must be recalibrated in case of module replacement or advanced ageing.

➢ **The instrument should have warmed up to normal operating temperature.**

• Set UTILITIES/PROTECT LOCK LEVEL 2 to OFF by entering the pass word 250751.

• Connect calibrated frequency counter (Test Instruments and Utilities, item 4) to the REF connector on the rear panel and measure the output frequency.

• Select **UTILITIES/CALIB REF OSC.** Select CALIBRATION DATA and vary the rollkey until reaching the rated frequency 10.000000 MHz. The new setting value is written to the EPROM by selecting **STORE CALIBRATION DATA**.

CAUTION!! This procedure can only be performed as long as the EPROM provides sufficient storage capacity. Otherwise, the flash EPROM has to be reprogrammed by an R&S service department.

If the SM-B1 option, reference oscillator OCXO is fitted, the calibration data have to be transferred to the EEPROM of the computer with replacement of the option or advanced ageing. Refer to the service instructions of the option.

1.5.2 Adjustments of Complete Instrument

If the instrument is composed of modules which are tested and adjusted according to the corresponding service instructions, only the calibrations listed in section Calibration Routines need be performed.

1.5.3 Adjustments on Module Replacement

After replacement of a module it is recommended to carry out all internal calibrations on the instrument after warmup (see above). The internal and external calibrations listed in the table below are required as a minimum.

Replacement of module	Required adjustments
Front unit	all
Option SM-B1, reference oscillator OCXO	Calibration of the reference frequency
Reference/step synthesis	Calibration of the reference frequency
Digital synthesis	none
Summing loop	Calibration of the pretune voltage of the summing loop, calibration of level preset
IQ converter	Calibration of level preset
IQ modulator	Calibration of the vector modulator Calibration of level preset, output level correction
Frequency extension	Calibration of the vector modulator Calibration of level preset, output level correction
Attenuator	Output level correction Reset of attenuator counter

1.6 Removal and Assembly

CAUTION !!! *Switch off the instrument and pull the power plug prior to removal*

1.6.1 Replacing the Panelling

- Loosen four screws in the rear-panel feet and remove the feet.

➢The upper panelling can then be lifted towards the rear and the top.

- Place the instrument upside down in order to remove the lower panelling.

Before fitting the panelling first check whether the modules are locked and lock them, if necessary.

- Place the instrument onto a side edge and insert the lower panelling first. Make sure that the sealing cords are correctly placed in their grooves.

- Place the instrument in the horizontal position and insert the upper panelling.

Make sure with both panellings that the guide lugs on the rear panel engage into the grooves of the panellings

- Fasten the feet with screws.

1.6.2 Replacing a Plug-in Module

- Remove panelling (see above).

- Place the instrument onto a side edge.

Before removing a module, the common lock of the modules must be loosened.

- For this purpose, loosen the two screws in the elongated holes on every locking rail. The rail in question can then be pushed to the front using a screw-driver (slotted-type) at the points marked by the screw-driver symbol.

- Take off or unscrew the RF cables.

➢ The module can then be removed.

For replacement, proceed in the reverse order.

1.6.3 Replacing the Front Module

• Loosen four screws in the feet on the rear panel and take off the feet.

• Carefully take out the front module until the flat cable connectors can be removed from the front module.

• Loosen the lock of the big flat cable plug at the front edge of the motherboard and disconnect the plug.

➢ The front module can then be removed.

When replacing the module in the reverse order make sure that no flat cables get stuck.

1.6.4 Replacing the Power Supply

• Loosen four screws in the feet on the rear panel and take off the feet.

• Unscrew six screws (marked by milling of their contact surface) at the edge of the right-hand sheet of the rear panel and two screws on the joint of the two rear panel sheets.

The power supply is directly plugged to the motherboard and can then be removed.

For replacement, proceed in the reverse order.

1.7 External Interfaces

The external interfaces are described in the operating manual.

ROHDE&SCHWARZ

Liste mechanischer Teile
Bilder und Erklärung zur Liste mechanischer Teile

List of mechanical parts
Figures and explanation pertaining to list of mechanical parts

Liste des pièces mécaniques
Figures et définitions pour la liste des pièces mécaniques

Liste mechanischer Teile

Der SMIQ ist in ***R&S-Kompaktbauweise 90*** aufgebaut.

Gehäusegröße:
4 E, 1 / 1 , T 460

Maße über alles:
450 x 192 x 460 (B × H × T)

Ergänzungen:
19"-Adapter ZZA

Tragegriff, Nachrüstsatz
(falls ein zweiter Tragegriff gewünscht wird)

List of mechanical parts

The SMIQ is designed in accordance with the ***R&S design 90.***

Cabinet size:
4 E, 1 / 1 , T 460

Overall dimensions:
450 x 192 x 460 (width × height × depth)

Accessories:
19"-Adapter ZZA

Carrying handle, retrofit set
(if a second carrying handle is desired)

Lfd. Nr.	Kenn-zeichen	Menge	Benennung/Beschreibung	Sachnummer
No	Unit/ Comp.No	Qty	Designation	Stock No.
1		1	Haube, oben 4 E, 1 / 1 , T 460 Cover, top	~~819.0426~~ 1106.1806.00
2		1	Haube, unten 4 E, 1 / 1 , T 460 Cover, bottom	~~396.7910~~ 1106.1829.00
3		1	Führungsschiene, rechts Guide rail, right	—
4		1	Führungsschiene, links Guide rail, left	—
5		1	Bedienhinweiskarte 1 User guide card 1	—
6		1	Bedienhinweiskarte 2 User guide card 2	—
7		1	Bedienhinweiskarte 3 User guide card 3	—
8		2	Gerätefuß, vorne Instrument foot, front	396.4534
9		2	Aufstellfuß, unten Foot, bottom	396.4540
11		2	Gerätefuß, hinten Instrument foot, rear	396.4586
12		8	Zapfen Pin	396.4634
15		2	Seitenleiste T 460 Side strip	396.3080

Lfd. Nr.	Kenn-zeichen	Menge	Benennung/Beschreibung	Sachnummer
No	Unit/ Comp.No	Qty	Designation	Stock No.
16		4	M3×6 DIN965 A4	081.9378
17		1	Rückwandfuß, links 4 E Rear-panel foot, left	396.4363
18		1	Rückwandfuß, rechts 4 E Rear-panel foot, right	396.4157
19		4	Ansatzschr. M4 K.D 7985 Screw	396.4492
21		1	Tragegriff T 460 Carrying handle	396.3221
22		2	Griffbuchse Washer	396.3367
23		2	M4×10 DIN965 A4	081.9478
24		2	Abdeckung, Griffseite Cover, handle side	396.3350
25		2	Abdeckung, Leerseite Cover, blank side	396.3344
30		1	Frontrahmen 4 E 1 / 1 Front frame	396.2131
31		4	Seitenfuß Side foot	396.4692
32		2	Stapelnutabdeckung Cover for groove	396.4711
33		2	Frontgriff Front grip	—
34		4	M4×8 DIN965	396.1087
35		1	Rückrahmen 4 E 1 / 1 Rear frame	396.2277
36		4	Rahmenschiene T 460 Frame rail	396.2377
37		16	M3×8 DIN965 A4	081.9384
40		1.17 M	HF-Dichtschnur O-Prof. 2,7 SI RF seal	396.0916
41		3.22 M	WG HF-Dicht. O-Prof. 2,0 SI RF seal	396.1035

ROHDE&SCHWARZ

Schlüsselliste
für Bauteile-Sachnummern

Code list
for component stock nos.

Liste des références
des composants

ROHDE&SCHWARZ

R&S-Schlüsselliste
R&S key list
Liste des symboles de référence R&S

Die R&S-Schaltteillisten nennen in der Spalte "Benennung/Beschreibung" die technischen Daten der Bauelemente in Kurzform. Die Art des Bauelements (z.B. Schicht-, Draht-Widerstand usw.) beschreiben die 2 Kennbuchstaben vor der "Benennung" (evtl. auch vor der "Sachnummer"), die nachfolgend erklärt werden. In Ersatzteil-Bestellungen an R&S ist stets die Angabe der vollständigen Sachnummer erforderlich.

The R&S Parts Lists give the technical data of the components in short form in the column "Benennung/Beschreibung" (designation). The type of component (e.g. depos.-carbon resistor, wire-wound resistor etc.) is indicated by 2 identification letters before the designation, possibly also before the "Sachnummer" (order number), which are explained below. When ordering spare parts from R&S, the complete order number must always be specified.

La colonne «Désignation/description» des listes de pièces de R&S indique les caractéristiques des éléments sous forme abrégée. Le type d'élément (p. ex. résistance à couche, résistance bobinée etc. ...) est décrit par les deux lettres précédant la désignation (et éventuellement le numéro de référence), dont voici l'explication. Prière d'indiquer le numéro de référence («Sachnummer») complet dans toute commande de pièces de rechange.

Teile-familie	Art des Bauelementes	Parts family	Type of component	Famille	Type d'élement
A	**Aktive Bauelemente, Halbleiter**	**A**	**Active components, semiconductors**	**A**	**Composants actifs, semiconducteurs**
AD	Universaldiode, z.B. Gleichrichter, Sperrdiode	AD	General-purpose diode, e.g. rectifier, high-resistance diode	AD	Diode d'usage général, p.ex. redresseur, diode à haute résistance
AE	Spezialdiode, z.B. Tunnel-, Kapazitäts-, Zener-Diode	AE	Diode (special), e.g. tunnel diode, varactor, Zener diode	AE	Diode spéciale, p.ex. diode tunnel, varactor, diode Zener
AF	Fotohalbleiter, z.B. Foto-Diode, -Transistor, -Widerstand, Leuchtdiode	AF	Photo-semiconductor, e.g. resistor, diode, transistor; LED	AF	Semiconducteur photoélectrique, p.ex. diode, transistor, résistance photoél., DEL
AG	Leistungs-Gleichrichter, z.B. Thyristor, Triac, Selengleichrichter	AG	Power rectifier, e.g. thyristor, triac, selenium rectifier	AG	Redresseur de puissance, p.ex. thyristor, triac, redresseur au sélénium
AK	Kleinsignal-Transistor	AK	Small-signal transistor	AK	Transistor faible puissance
AL	Leistungs-Transistor	AL	High-power transistor	AL	Transistor grande puissance
AM	Spezial-Transistor, z.B. FET, MOSFET	AM	Transistor (special), e.g. FET, MOS-FET	AM	Transistor spécial, p.ex. TEC, MOSTEC
AP	Peltier-, Hall-Element	AP	Peltier element, Hall element	AP	Element Peltier, élément Hall
AR	Rohre für Empfänger, Verstärker, Gleichrichter	AR	Valve for receiver, amplifier, rectifier	AR	Tube pour récepteur, amplificateur, redresseur
AS	Spezialrohre, z.B. Senderohre, EW-Widerstand, Stabilisator	AS	Valve (special), e.g. for transmitter, baretter, ballast valve	AS	Tube (spécial), p.ex. pour émetteur, résistance fer-hydrogène, ballast
AT	Katodenstrahlrohre, z.B. Bildrohre, Ziffern-Anzeigerohre	AT	Cathode ray tube, e.g. picture tube, digital indicator tube	AT	Tube à rayon cathodique, p.ex. tube à image, tube à affichage numérique
AZ	Zubehör für Halbleiter u. Rohren	AZ	Accessories for semiconductors and valves	AZ	Accessoires pour semiconducteurs et tubes
B	**Bausteine**	**B**	**PC boards, chips**	**B**	**Cartes imprimées, puces**
BC	Integr. Schaltkreis (Microcomp.)	BC	Integrated circuit (interface, A/D)	BC	Circuit intégré (microprocesseur)
BD	R&S-Dünnschicht- und Dickschichtschaltung	BD	R&S thinfilm or thickfilm circuit	BD	Circuit R&S à couche mince ou épaisse
BG	R&S-spezifische Gate-Arrays	BG	R&S gate arrays	BG	Circuits intégrés prédiffusés R&S
BJ	Integrierter Schaltkreis (Interface, A/D-Wandler)	BJ	Integrated circuit (interface, A/D converter)	BJ	Circuit intégré (interface, convertisseur A/N)
BL	Log. Schaltkreis z.B. DTL, TTL, HTL, ECL, C-MOS	BL	Logic circuit, e.g. DTL, TTL, HTL, ECL, C-MOS	BL	Circuit logique, p.ex. DTL, TTL, HTL, ECL, C-MOS
BM	Hybridbaustein, z.B. Mischer, Tuner, Modulator	BM	Hybrid chip, e.g. mixer, tuner, modulator	BM	Puce hybride, p.ex. mélangeur, tuner, modulateur
BO	Analogschaltkreis, z.B. Operationsverstärker	BO	Analog circuit, e.g. operational amplifier	BO	Circuit analogique, p.ex. amplificateur opérationnel
BP	Optoelektronischer Baustein, z.B. Anzeigeeinheit, Koppler	BP	Optoelectronic component, e.g. display, coupler	BP	Composant optoélectronique, p.ex. afficheur, coupleur
BS	Schalt- und Steuerbaustein, elektronischer Sensor	BS	Switching and control modul, electronic sensor	BS	Modul de commutation et de commande, sonde électronique
BV	Stromversorgung, Übersp.-Schutz	BV	Power pack, protective circuit	BV	Alimentation, protection surcharge
BZ	Zubehör	BZ	Accessories	BZ	Accessoires

Teile-familie	Art des Bauelementes	Parts family	Type of component	Famille	Type d'element
C	**Kondensatoren**	**C**	**Capacitors**	**C**	**Condensateurs**
CB	Bypass-, Durchf.-Kondensator	CB	Bypass capacitor, feed-through capacitor	CB	Condensateur bypass, condensateur de traversée
CC	Keramischer Kondensator	CC	Ceramic capacitor	CC	Condensateur céramique
CD	Drehkondensator	CD	Variable capacitor	CD	Condensateur variable
CE	Elektrolytkondensator	CE	Electrolytic capacitor	CE	Condensateur électrolytique
CG	Glimmerkondensator	CG	Mica capacitor	CG	Condensateur au mica
CH	Sperrschichtkondensator	CH	Semiconductor capacitor	CH	Condensateur semiconducteur
CK	Kunstfolienkondensator	CK	Synthetic-foil capacitor	CK	Condensateur à feuille synthétique
CL	Ker. Hochsp.-Kondensator	CL	HV capacitor (ceramic)	CL	Condensateur HT céramique,
CM	Metallpapier-Kondensator	CM	MP capacitor	CM	Condensateur à papier métallisé
CN	Kondensatornetzwerk	CN	Capacitor network	CN	Réseau capacitif
CP	Papierkondensator	CP	Paper capacitor	CP	Condensateur au papier
CS	Störschutzkondensator	CS	Interference-suppression capacitor	CS	Condensateur anti-parasite
CT	Trimmkondensator	CT	Trimmer capacitor	CT	Condensateur ajustable
CV	Vakuum-Kondensator	CV	Vacuum capacitor	CV	Condensateur à vide
D	**Drähte, Leitungen**	**D**	**Wires, lines**	**D**	**Fils, lignes**
DD	Schalt- und Wickeldraht	DD	Hook-up or winding wire	DD	Fil de câblage, fil de bobinage
DF	Flachleitung, Litze	DF	Flat multiple line, stranded wire	DF	Ligne plate, ligne torsadée
DG	Abgeschirmte Leitung	DG	Shielded line	DG	Ligne blindé
DH	Koaxialkabel	DH	Coaxial line	DH	Ligne coaxiale
DJ	Isolierschläuche, Schrumpfschläuche, Wellrohre, Schutzschläuche	DJ	Insulating sheaths, shrink-on sleeves, corrugated tubes, protective tubes	DJ	Gaines isolantes, gaines thermorétractables tubes ondulés, gaines protectrices
DL	HF-Litzen	DL	RF stranded wires	DL	Lignes torsadées RF
DM	Schaltlitzen (mehrdrahtige Leiter)	DM	Multi-conductor wires	DM	Lignes torsadées (multiconducteurs)
DN	Antenne	DN	Antenna	DN	Antenne
DO	Lichtleiter (optisch)	DO	Optical waveguides	DO	Guides d'onde optiques
DP	Leiterplatten (unbestuckt)	DP	Printed circuit boards (bare)	DP	Cartes imprimées (non équipées)
DQ	Multilayer (unbestuckt)	DQ	Multilayer boards (bare)	DQ	Cartes multicouche (non équipées)
DS	Anschlußkabel (mehradrig)	DS	Connecting cable, multicore	DS	Câble de connexion (multiconducteur)
DU	Substratplatten für Dickschichtschaltungen	DU	Substrate boards for thickfilm circuits	DU	Cartes à substrat pour circuits à couche épaisse
DW	Festmantelkabel	DW	Rigid cables	DW	Câbles rigides
E	**Elektrische Teile**	**E**	**Electric parts**	**E**	**Organes électriques**
EB	Blei-, NC-Akku, Batterie	EB	Lead or alkaline accumulator, battery	EB	Accumulateur Pb/NC, batterie
ED	Gedruckte Schaltung (bestückte Leiterplatte), nicht steckbar	ED	Printed circuits (assembled), non-pluggable	ED	Circuits imprimés (équipés) non enfichables
EE	Gedruckte Schaltung (bestückte Leiterplatte), steckbar	EE	Printed circuits (assembled), pluggable	EE	Circuits imprimés (équipés) enfichables
EF	Glühlampe, Leuchte	EF	Incandescent lamp, pilot lamp	EF	Lampe à incandescence, voyant
EG	Glimmlampe, Entladungslampe	EG	Glow lamp, discharge lamp	EG	Lampe à luminescence lampe à décharge
EK	Kontakt-Streifen, -Feder	EK	Contact clip, contact spring	EK	Lampe de contact, ressort de contact
EL	Lautsprecher, Kopfhörer, Mikrofon	EL	Loudspeaker, headphones, microphone	EL	Haut-parleur, casque, microphone
EM	Motor, Hubmagnet, Drehfeldsystem	EM	Motor, lifting magnet, synchro system	EM	Moteur, électro-aimant de levage, système synchro
EO	Oszillator, z.B. Quarzoszillator	EO	Oscillator, e.g. crystal oscillator	EO	Oscillateur p.ex. oscillateur à quartz
EP	Tief-, Band-, Hochpaß, Bandsperre, Diskriminator	EP	Lowpass, bandpass, highpass filter, band-stop filter, discriminator	EP	Filtre passe-bas, passe-bande, passe-haut, suppression de bande, discriminateur
EQ	Schwing-, Filter-Quarz	EQ	Oscillator or filter crystal	EQ	Quartz oscillateur, quartz de filtre
ER	Resonator, piezoelektr./magnetostriktiv	ER	Resonator, piezoelectric/ magnetostrictive	ER	Résonateur piézo-électrique/ magneto-strictif
ES	Passive SHF-Bauteile	ES	Passive SHF-components	ES	Composant SHF passif
ET	Thermostat	ET	Thermostat	ET	Thermostat
EV	Lüfter, Gebläse	EV	Ventilator, blower	EV	Ventilateur, soufflerie

ROHDE&SCHWARZ

Teile-familie	Art des Bauelementes	Parts family	Type of component	Famille	Type d'element
F	**Fassungen, Steckverbindungen**	**F**	**Sockets, connectors**	**F**	**Douilles, connecteurs**
FG	Koax-Umrüstsatz	FG	Coaxial screw-in assembly	FG	Ensemble vissable coaxial
FH	Koax-Übergang auf Fremdsystem	FH	Coaxial adapter	FH	Adaptateur coaxial
FJ	BNC-Systemteil	FJ	BNC screw-in assembly	FJ	Ensemble vissable BNC
FK	Koaxial-UHF-Systemteil	FK	Coaxial UHF screw-in assembly	FK	Ensemble vissable coaxial UHF
FM	Mehrfachstecker, Buchsenleiste	FM	Multipoint connector	FM	Connecteur multiple
FN	Netz-Steckverbindung	FN	AC-supply connector	FN	Connecteur secteur
FO	Runde Mehrfach-Steckverbindung	FO	Round multipoint connector	FO	Connecteur multipoles rond
FP	Druckschalt-Steckverbindung	FP	Multipoint connector for PC boards	FP	Connecteur multipoles pour cartes imprimées
FR	Fassung für Lampe, Sicherung, usw.	FR	Socket for lamp, fuse, etc.	FR	Douille pour lampe, fusible etc. . . .
FT	Schwachstrom-Steckverbindung	FT	LV plug and socket	FT	Connecteur pour faible courant
FU	Hochspannungs-Steckverbindung	FU	HV plug and socket	FU	Connecteur pour haute tension
FV	Verbinder (z.B. AMP)	FV	Push-on connector	FV	Connecteur à enfichage
FZ	Zubehör für koax. Bauelemente	FZ	Accessories for coax. components	FZ	Accessoires pour composants coax.
H	**Software**	**H**	**Software**	**H**	**Logiciel**
HP	Software-Komponenten und Software-Module	HP	Rights to software components and software modules	HP	Droits d'utilisation de composants et modules logiciel
HS	Auf Informationsträger geladene Software	HS	Software data media	HS	Logiciel sur support d'information
J	**Meßinstrumente**	**J**	**Indicators**	**J**	**Indicateurs**
JD	Drehspul-Anzeigeinstrument	JD	Moving-coil meter	JD	Galvanomètre à cadre mobile
JE	Dreheisen-Anzeigeinstrument	JE	Moving-iron meter	JE	Galvanomètre à fer mobile
JF	Frequenzmesser	JF	Frequency meter	JF	Fréquencemètre
JG	Drehspulinstrument mit Gleichrichter	JG	Moving-coil meter with rectifier	JG	Galvanomètre à cadre mobile avec redresseur
JH	Betriebsstundenzähler	JH	Operating-hours counter	JH	Compteur d'heures de fonctionnement
JJ	Impulszähler	JJ	Pulse counter	JJ	Compteur d'impulsions
JK	Kleinst-Instrument, z.B. Abstimmanzeiger	JK	Mini-instrument, e.g. tuning indicator	JK	Petit indicateur, p.ex. indicateur d'accord
JM	Mechanisches Zählwerk	JM	Mechanical counter	JM	Compteur mécanique
JP	Projektions-Instrument (Leuchtziffer)	JP	Digital display	JP	Afficheur numérique
JQ	Quotientenmesser (Kreuzspulinstrum.)	JQ	Ratiometer (cross coil)	JQ	Quotientmètre (à cadres croisés)
JU	Uhrwerk	JU	Clockwork	JU	Mouvement d'horlogerie
JW	Elektrodyn. Anzeigeinstrument	JW	Electrodynamic meter	JW	Instrument électrodynamique
L	**Induktivitäten, Magnetik**	**L**	**Inductors, magnetic components**	**L**	**Composants inductifs et magnétiques**
LB	Blech- und Schnittbandkern mit Zubehör	LB	Laminated and C-cores with accessories	LB	Noyaux feuilletés et noyaux de type C, avec accessoires
LC	Keramische Spule	LC	Ceramic coil	LC	Bobine céramique
LD	Netz-, HF-Drossel, Df-Filter	LD	Choke, lead-through filter	LD	Self de choc, filtre de traversée
LE	Einzelkreis, Bandfilter	LE	Single tuned circuit, bandpass filter	LE	Circuit accordé, filtre passe-bande
LF	Ferritkern mit Zubehör	LF	Ferrite cores with accessories	LF	Noyaux en ferrite avec accessoires
LK	Karbonyleisenkern und elektrischer Kupferkern mit Zubehör	LK	Iron carbonyl slugs and copper slugs with accessories	LK	Noyaux en fer carbonyle et en cuivre, avec accessoires
LL	Luftspule	LL	Air-core coils	LL	Bobines à air
LM	Magnetband und -platte	LM	Magnetic tapes and disks	LM	Bandes et disques magnétiques
LS	Schirmbecher	LS	Screening cans	LS	Boîtiers de blindage
LT	Netztransformator	LT	Power transformer	LT	Transformateur secteur
LU	NF-Übertrager	LU	AF transformer	LU	Transformateur BF
LV	Variometer	LV	Variometer	LV	Variomètre
LW	Wickelkörper, allgemein	LW	Coil formers, general	LW	Carcasses de bobine, en général

Teile-familie	Art des Bauelementes	Parts family	Type of component	Famille	Type d'element
R	**Widerstände**	**R**	**Resistors**	**R**	**Résistances**
RD	Drahtwiderstand	RD	Wire-wound resistor	RD	Résistance bobinée
RF	Kohleschicht-Widerstand	RF	Carbon-film resistor	RF	Résistance à couche de carbone
RG	Metallglasur-Widerstand	RG	Metal-coated resistor	RG	Résistance à couche métallique
RJ	Metalloxyd-Widerstand	RJ	Metal-oxide resistor	RJ	Résistance à oxyde métallique
RK	Kaltleiter, Heißleiter, Varistor	RK	PTC, NTC resistors, varistors	RK	Résistances CPT, CNT, varistors
RL	Metallfilm-Widerstand	RL	Metal-film resistor	RL	Résistance à film métallique
RN	Widerstandsnetzwerk	RN	Resistor network	RN	Réseau de résistance
RR	Draht-Potentiometer	RR	Wire-wound potentiometer	RR	Potentiomètre bobiné
RS	Schicht-Potentiometer	RS	Carbon-film potentiometer	RS	Potentiomètre à couche
RT	Dämpfungsglied, Abschlußwiderstand	RT	Attenuator, termination	RT	Atténuateur, charge
RV	Drahtwiderstand mit Abgriff	RV	Wire-wound resistor, tapped	RV	Résistance bobinée à prise
RW	Wendelpotentiometer	RW	Helical potentiometer	RW	Potentiomètre hélicoidal
S	**Schalter, Relais, Sicherungen**	**S**	**Switches, relays, fuses**	**S**	**Commutateurs, relais, fusibles**
SB	Drucktastenschalter	SB	Pushbutton switch	SB	Commutateur à touche
SD	Drehschalter	SD	Rotary switch	SD	Commutateur rotatif
SF	Kontaktfedersatz	SF	Spring contact assembly	SF	Jeu de ressorts de contact
SH	HF-Koaxialschalter, -Relais, -Teiler	SH	Coaxial RF switch, RF relay, RF attenuator	SH	Commutateur RF coaxial, relais RF, atténuateur RF
SK	Kipp-, Wipp- und Schiebeschalter	SK	Toggle switch, slide switch	SK	Commutateur à bascule, à glissière
SL	Leistungsschalter Netz/HF	SL	AC supply switch, high-power RF switch	SL	Commutateur secteur, de puissance RF
SM	Mikroschalter	SM	Microswitch	SM	Microrupteur
SN	Elektromagnet, Relais	SN	Electromagnetic relay	SN	Relais électromagnétique
SP	Leistungsrelais, Luftschutz	SP	Power relay, air-type contactor	SP	Relais de puissance, contacteur à air
SR	Reedrelais	SR	Reed relay	SR	Relais reed
SS	Sicherung, Schutzschalter	SS	Fuse, automatic cut-out	SS	Fusible, coupe-circuit automatique
ST	Thermoschalter	ST	Thermal circuit breaker	ST	Disjoncteur thermique
SU	Überspannungs-Ableiter	SU	Arrester	SU	Eclateur
SW	Wechselrichter, Naherungsschalter	SW	Inverter (DC-AC), proximity switch	SW	Inverseur (DC-AC), commutateur de proximité
SZ	Zeitschalter	SZ	Time switch	SZ	Interrupteur horaire
V	**Verbindungselemente**	**V**	**Connecting elements**	**V**	**Eléments de raccordement**
VK	Klemme, Klemmleiste	VK	Clamp, terminal strip	VK	Pince, reglette à bornes
VL	Lötöse, Stützpunkt	VL	Soldering lug	VL	Cosse à souder
VS	Schraube, Mutter, Scheibe	VS	Screw, nut, washer	VS	Vis, écrou, disque

Farbcode für Widerstände und Kondensatoren

Anmerkung:
Die Wertangabe der weitgehend miniaturisierten Bauelemente erfolgt überwiegend durch Farbkennzeichnungen, deren Bedeutung der nachfolgenden Tabelle entnommen werden kann.

Hinweis:
Im Zuge des technischen Fortschrittes setzt R&S zunehmend Metallschichtwiderstände mit 1% Toleranz anstelle von Kohleschichtwiderständen mit 5% Toleranz ein. Metallschichtwiderstände können sich dabei an Stellen befinden, an denen gemäß Schaltteilliste Kohleschichtwiderstände vorgesehen sind. Etwaige geringfügige Differenzen der Nennwerte zwischen Stromlaufplan, Schaltteilliste und Gerät liegen im zulässigen Toleranzbereich.

Colour code for resistors and capacitors

Note:
The electrical values of the largely miniaturized components are mainly identified by a colour code, the meaning of which can be taken from the table below.

N. B.:
Following the state of the art R&S makes increasing use of metal-film resistors (1% tolerance) instead of carbon-film resistors (5% tolerance). Metal-film resistors may have been employed where carbon-film resistors are specified in the parts list. Any slight differences of nominal values between circuit diagram, parts list and equipment are within tolerance.

Code couleur pour résistances et condensateurs

Remarque:
Les valeurs électriques des composants fort miniaturisés sont indiquées dans la plupart des cas par un code couleur dont voici l'explication.

N. B.:
Suivant le progrès technique R&S utilise de plus en plus des résistances à film métallique (tolérance 1%) au lieu des résistances à couche de carbone (tolérance 5%). Des résistances à film métallique peuvent se trouver en des points ou des types à couche de carbone figurent dans la liste des composants. Les différences minimes des valeurs nominales existant éventuellement entre le schéma de circuit, la liste des composants et l'appareil sont dans la marge de tolérance.

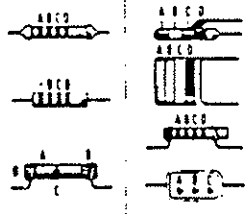
Farbe/Colour/Couleur	A	B	C	D
Schwarz/Black/Noir	—	0		
Braun/Brown/Marron	1	1	0	± 1%
Rot/Red/Rouge	2	2	00	± 2%
Orange/Orange	3	3	000	
Gelb/Yellow/Jaune	4	4	0000	
Grün/Green/Vert	5	5	00000	± 0,5%
Blau/Blue/Bleu	6	6	000000	
Violett/Violet	7	7	—	± 0,1%
Grau/Gray/Gris	8	8	—	
Weiß/White/Blanc	9	9	—	
Gold/Dore	—	—	—	± 5%
Silber/Silver/Argente	—	—	—	± 10%
Ohne Farbe/No colour/Pas de couleur	—	—	—	± 20%

1) Toleranzring, hier nicht spezifiziert
1) Tolerance ring, here not specified.
1) Anneau de tolerance, ne pas specifié ici

Anordnungsbeispiele für / Examples for / Exemple pour

Widerstände (R) / Resistors (R) / Resistance (R)

Kondensat. (C) / Capacitors (C) / Condensateur (C)



Definition* / Définition *

Kennzeichen A (Bauteilfarbe/1. Farbring) = 1. Zahl
Kennzeichen B (Bauteilende/2. Farbring) = 2. Zahl
Kennzeichen C (Punkt/3. Farbring) = 3. Zahl = Zahl der Nullen
Kennzeichen D (Punkt/4. Farbring) = Toleranz des Nennwerts in %
(Fehlendes Kennzeichen für D bedeutet ±20%)

Das Fehlen eines Kennzeichens bedeutet, daß die Farbe des Bauteilkörpers die Wertangabe darstellt.

Marking A (body colour or first coloured ring) = 1st digit
Marking B (body end or second coloured ring) = 2nd digit
Marking C (dot or third coloured ring) = number of zeroes
Marking D (dot or fourth coloured ring) = tolerance on nominal value in %
(with no D marking tolerance ± 20%)

The absence of a marking signifies that the body colour gives the corresponding information.

Repérage A (couleur du corps ou 1er anneau) = 1er chiffre
Repérage B (bout du corps ou 2e anneau) = 2e chiffre
Repérage C (point ou 3e anneau) = nombre de zéros.
Repérage D (point ou 4e anneau) = tolérance en % de la valeur nominale
(L'absence du repérage D signifie ± 20%)

L'absence de tout repérage signifie que la couleur du corps du composant représente la valeur correspondante.

* Siehe auch DIN 41 429 und DIN 40 825
* see also IEC publication 62-1952 and 62-1968
* Voir aussi DIN 41 429 et DIN 40 825

ROHDE&SCHWARZ

Zusammenstellung der lieferbaren Netzkabel
List of power cables available
Liste des câbles d'alimentation disponibles

Sach-Nr. Stock No. Référence	Schutzkontaktsteckker nach Earthed-contact connector Fiche à contact de protection	Vorzugsweise verwendet in Preferably used in Utilisé de préférence en
DS 006.7013	BS1363: 1967' entsprechend IEC 83: 1975 Standard B2	Großbritannien
	BS1363: 1967' complying with IEC 83: 1975 standard B2	Great Britain
	BS1363: 1967' suivant CEI 83: 1975 norme B2	Grande-Bretagne
DS 006.7020	Typ 12 nach SEV-Vorschrift 1011.1059, Normblatt S 24 507	Schweiz
	Type 12 complying with SEV regulation 1011.1059, standard sheet S 24 507	Switzerland
	Type 12 suivant la norme SEV 1011.1059, feuille S 24 507	Suisse
DS 006.7036	Typ 498/13 nach US-Vorschrift UL 498, bzw. IEC 83	USA/Kanada
	Type 498/13 complying with US regulation UL 498 or with IEC 83	USA/Canada
	Type 498/13 suivant la norme E.U.A. UL 498 ou la norme CEI 83	E.U.A./Canada
DS 006.7107	Typ SAA3 10 A, 250 V, nach AS C112-1964 Ap.	Australien
	Type SAA3 10 A, 250 V, complying with AS C112-1964 Ap.	Australia
	Type SAA3 10 A, 250 V, suivant AS C112-1964 Ap.	Australie
DS 0025.2365 DS 0099.1456	DIN 49 441, 10 A, 250 V, abgewinkelt DIN 49 441, 10 A, 250 V, gerade	Europa (ohne Schweiz)
DS 0025.2365 DS 0099.1456	DIN 49 441, 10 A, 250 V, angular DIN 49 441, 10 A, 250 V, straight	Europe (Switzerland not included)
DS 0025.2365 DS 0099.1456	DIN 49 441, 10 A, 250 V, angulaire DIN 49 441, 10 A, 250 V, droit	Europe (Suisse non comprise)

Cross-Reference List of Class Designation Letters

IEC Publication 113-2 (1971) Item Designations, Letter Codes
ANSI Y32.2-1975 (IEEE Std 315-1975), Section 22, Class Designation Letters

Note: The designation letters used in the R&S Manuals correspond to the letter codes of the IEC Standard identified in the first column!

IEC Publication 113-2 Terminology	Letter Code IEC	Y32.2
Acoustical indicator	H	LS
Adjustable resistor	R	R
Aerial	W	E
Amplifier	A	AR
Amplifier (with tubes)	A	AR
Arrester	F	E
Assemblies	A	A,U
Auxiliary switch	S	S
Battery	G	BT
Bistable element	D	U,A
Brake	Y	MP
Busbar	W	W
Cable	W	W
Cable balancing network	Z	Z
Capacitor	C	C
Changer	U	A,B,G,MT
Circuit breaker	Q	CB
Clutch	Y	MP
Coder	U	U,A
Compander	Z	A
Connecting stage	S	S
Contactors	K	K
Control switch	S	S
Converter	U	A,U,MG
Core, storage	D	E
Crystal filter	Z	FL
Crystal transducer	B	Y
Current transformer	T	T
Delay device	D	DL
Delay line	D	DL
Demodulator	U	A
Dial contact	S	S
Diode	V	D
Dipole	W	E
Disconnecting plug	X	P
Disconnecting socket	X	X
Discriminator	U	A
Disk recorder	D	A
Dynamotor	B	MG
Electrically operated mechanical device	Y	MT
Electronic tube	V	V
Equalizer	Z	EQ
Filter	Z	FL
Frequency changer	U	A,B,G
Fuse	F	F
Gas discharge tube	V	V
Generator	G	G
Heating device	E	HR
Hybrid	Z	Z
Indicating device	P	DS
Induction coil	L	L
Inductors	L	L
Integrating measuring device	P	M,MT,Z
Inverter	U	A,U,PS,MG
Isolator	Q	AT
Jumper wire	W	W
Laser	A	MT,A
Lighting device	E	DS
Limit switch	S	S
Limiter	Z	MT,RE
Line trap	L	FL,MP,V
Loudspeaker	B	LS
Magnetic amplifier	A	AR
Magnetic tape recorder	D	A
Maser	A	A
Measuring equipment	P	M
Microphone	B	MK
Miscellaneous	E	E
Modulator	U	A
Monostable element	D	A,U
Motor	M	B
Optical indicator	H	DS
Oscillator	G	Y,G
Overvoltage discharge device	F	F,E
Parabolic aerial	W	E
Photoelectric cell	B	V
Pickup	B	PU
Plug	X	P
Pneumatic valve	Y	MP
Potentiometer	R	R
Power switchgear	Q	CB,S
Protective device	F	F
Pushbutton	S	S
Quartz-oscillator	G	Y
Recording device	P	A,M
Register	D	A,U,M
Relay	K	K
Resistor	R	R
Resolver	B	B
Rheostat	R	R
Rotating frequency generator	G	G,MG
Rotating generator	G	G
Selector	S	S
Selector switch	S	S
Semiconductor	V	D,CR,Q
Shunt (resistor)	R	R
Signal generator	P	A
Signaling device	H	DS
Socket	X	X
Soldering terminal strip	X	E,TB
Static frequency changer	U	A
Storage device	D	A,U
Subassembly	A	A
Supply	G	A,PS
Supply device	G	A,PS
Synchro	B	B
Telegraph translator	U	A
Terminal	X	E
Terminal board	X	TB
Termination	Z	AT
Test jack	X	E,J
Testing equipment	P	A
Thermistor	R	RT
Thermo cell	B	A,TC
Thermoelectric sensor	B	A
Thyristor	V	Q
Transducer (nonelectrical quantity to electrical quantity)	B	A,BT
Transformer	T	T
Transmission path	W	W
Transistor	V	Q
Tube (electron)	V	V
Voltage transformer (potential)	T	T
Waveguide	W	W
Waveguide directional coupler	W	DC

ROHDE&SCHWARZ

XY-Liste

XY List

Erklärung der Spaltenbezeichnungen:

el. Kennz.	Bauelement-Kennzeichen
Seite	Leiterplatten-Seite, auf der sich das Bauelement befindet
X/Y	Koordinaten (in Millimeter) des Bauelementes auf der Leiterplatte bezogen auf den Nullpunkt
Planq., Bl.	Planquadrat und Seite des Schaltbildes für das jeweilige Bauelement

Explanation of column designations:

Part	Identification of instrument part
Side	Side of the PC board on which instrument part is positioned
X/Y	Coordinates (in units of millimeters) of the component on the PC board in reference to zero point
Sqr, Pg	Square and page of the diagram for the respective instrument part

Part	Side	X	Y	Sqr	Pg
C1	B	19	262	10A	2
C2	B	17	255	9A	2
L1	B	23	291	10A	2
L2	B	23	240	8A	2
U1	B	17	263	9A	2
V2	B	29	277	9A	2
W20	B	133	321	9B	2
W28	B	126	102	3E	2
X2	B	68	297	11D	2

Part	Side	X	Y	Sqr	Pg
X4	B	114	29	4D	1
X7	B	114	178	11D	1
X8	B	114	148	10D	1
X9	B	114	117	8D	1
X15	B	130	10	3E	1
X21	A	58	170	1E	2
X22	B	101	310	10D	2
X23	A	82	139	1E	2
X24	B	93	298	5E	2

Part	Side	X	Y	Sqr	Pg
X25	B	105	321	12D	2
X27	B	124	178	10E	1
X50	B	86	10	3D	1
X220	B	114	84	7D	1
X240	B	114	57	6D	1
X320	B	114	206	2D	2
X340	B	114	234	4D	2
X360	B	114	260	6D	2
X380	B	114	285	7D	2

ROHDE & SCHWARZ

Benennung: ED MOTHERBOARD
Designation: MOTHERBOARD

Sprache: *Lang.:* de

Blatt: *Sh.:* 1 –

Aei: *C.I.:* 03.00

Typ: *Type:* SMIQ

Datum: *Date:* 99–04–15

Abteilung: *Dpt:* 1GPK

Name: *Name:* GU

Sachnr.: *Part No.:* **1084.9030.01 XY**

ROHDE&SCHWARZ

SERVICE INSTRUCTIONS

Front Module with Controller MOD 10

1035.5440

Variation Declaration of the entire Module:

1035.5440.02 SMP

1035.5440.03 SME

1035.5440.04 SMT

1035.5440.05 SMIQ

Contents

7. Testing and Repair of the Board

Caution ! ! In the Front Module many data are stored, which are necessary for operation. All data contained in the RAM may be reconstructed by the unit itself. To reconstruct data in the flash EPROM additional tools are necessary. If there is some danger to loose data of the flash EPROM, be shure, you can

1) load a new firmware,

2) perform a level calibration (refer to section 6.4 of service manual),

3) restore calibration data or calibrate the Reference Oscillator (refer to section 2.11.8 of operating manual),

4) reconstruct the operational data in the menue UTILITIES/DIAG/PARAM.

To do 3) and 4) the concerned data have to be noted down before work on the module. To restore data of reference oscillator, you got to unlock password protection level 2 (refer to section 2.11.7 of operating manual). The password is 250751. After this in the menue UTILITIES/CALIB/REF OSC the noted calibration data can be keyed in. To construct operational data (4), password protection level 3 is to be unlocked. Please contact your R&S representative to get the password. The menue UTILITIES/DIAG/SET PARAM will appear and allow to key in the noted data.

7.1 Function Description

The front module contains the following components: controller, shaft encoder, keyboard and LC display.
The controller must provide the following functions and features:

- CPU: 80960
- RAM with battery-backup
- 512K-Byte RAM with battery-backup
- Battery test
- Firmware in flash-EPROMs which can be updated
- IEEE-bus interface
- SERBUS interface
- RS232 / V.24 interface
- Timers
- Interrupt controller
  all interrupts maskable either at the source or at the interrupt controller
- ACFAIL of the power supply triggers maskable interrupt
- Processing of external trigger signals
  (TRIGGER, AUX-TRIG) polarity selectable
- LCD interface
- brightness and contrast control for LCD
- spinwheel interface
- connector for keyboard matrix
- self diagnostics with 12-bit converter and
  two diagnostic inputs (±5V & ±15V)
- X-output (0 to 10 V)
- identification of model/variation

- various control lines for other modules
  (MODCTRL-OUT, MODCTRL-IN)
- digital output and input signals
  (BLANK, MARKER, SWEEP-STOP, KEYBEEP)
- SYS-RESET by the power supply causes system reset
- standby switch and standby LED

7.1.1 CPU: 80960

Due to internal doubling, the processor 80960HD50 (clock rate: 50 MHz) requires a 25-MHz clock signal. This signal is derived from a 50-MHz oscillator by means of a divider. This divider is used like an ASIC (CLKGEN D3) providing several of the clock frequencies used in the system.
As the bus interface of the 80960 is designed for burst access, several CPLDs are used (D300, D402, D950). They serve to control access and access speed of the individual components and to generate the READY signal.

The data-bus drivers D5 and the address drivers D220 to D222 isolate the "periphery bus" from the "memory bus".

7.1.2 512K-Byte RAM with Battery-backup

This memory is composed of four 512kbit SRAM components (D17 to D20). The access to this memory is disabled by the signal RES-P, wobei in den Low-Power-Mode umgeschaltet wird.

7.1.3 Battery Test

The charge of the battery can be tested by connecting a load resistor of 39,2 kOhm to the battery by means of the REED relay, which is controlled by the signal TST-BATT. The voltage at the resistor is applied to the self-diagnostics circuit and thus informs on the discharge degree of the battery.

7.1.4 FLASH-EPROMs (Firmware Update)

The use of FLASH-EPROMs allows for making firmware updates without external access. Four components D1,D2,D11, and D21 of type 28F016 (4M-words), are therefore provided.
The voltage VPP required for programming is generated from +15V by the component D400. This linear controller can be switched on and off by means of the signal VPP-ON.
The firmware update is realized via an RS232 interface at the rear panel of the instrument.
The initial program loader is contained in the BOOT-EPROM (D301). This BOOT-EPROM additionally allows for fitting the FLASH-EPROMs as unprogrammed standard components.

7.1.5 IEEE-Bus Interface

The component TNT4882C (D60) is used as IEEE-bus controller. The complete controller capability of the IEEE-bus can be realized. It is provided with an 40MHz clock frequency via a separate quartz oscillator.

7.1.6 SERBUS-Interface

A serial bus system (SERBUS) developped by R&S is used for control and programming of the individual modules. Two standard ASICs are already available (SERBUS-M and SERBUS-D).
The controller accomodates the bus-master component (SERBUS-M / D87). It is programmed in words and operated at a clock frequency of 20 MHz. 4 MHz are used for serial data transmission to the boards.

7.1.7 RS232- / V.24-Interface

This interface is implemented by controller IC 16C550 (D85). Level conversion from TTL to RS232 is carried out in component LT1181 (D860).

7.1.8 Timer

The component uPD71054 (D61) contains three 16-bit timers. Two of them (timers 1 and 2) are cascaded to achieve a high resolution for long periods of time. The input clock is 1 kHz for timer 0 and 1 MHz for timers 1 and 2.

7.1.9 Interrupt Controller

The interrupt controller used is integrated in the CPU80960. The dynamic interrupt sources are connected directly. The static ones are merged via gate D827 and applied to the Int input XINT7 of the CPU. They can be masked separately and read out via the bus.

7.1.10 ACFAIL,SYSRESET

The signal ACFAIL is generated in the power supply and belongs to those interrupt signals which are not maskable at the source. Masking is carried out as described under 7.1.9. SYSRESET (generated by the power supply, too) is applied to the reset component MAX793 (D15) via D106 and initiates the reset. Simultaneously, the capacitor C55 is discharged via R264 and V4. When the signal SYSRESET assumes HIGH level again, C55 charges via R265 and, subsequent to reaching the threshold voltage of D106, enables the reset input again.

7.1.11 Processing of External Trigger Signals

(TRIGGER, AUX-TRIG) polarity is selectable

The polarity of the trigger signal can be set individually for both trigger signals at port D810 and is generated by an EXOR logic combining the port signal and the trigger signal(D840).

7.1.12 LCD Interface

The LCD controller SED1351F (D90) of SEIKO EPSON is used to address the LC display. The display buffer/video RAM consists of the two SRAMs D960 and D970 and offers memory space for four screen pages (640 x 200).
Linear addressing of the pixels (pixel 0 is LSB of the lowest address) is achieved by mirroring the data bus at D90 byte by byte.
The data and clock signals for the LCD are routed via D980 to increase the driver capability and to isolate the component D90.

7.1.13 Brightness and Contrast Control for LCD

PC board: Shaft Encoder (1035.5592.01)
Brightness is set via the input voltage of the DC/AC converter for the CFL illumination. The input voltage for this converter may vary between +6V and +10V. Increase of voltage means increase of brightness. The voltage is controlled by means of LM317T (N50), and the output voltage is set using R990.
The input voltage of the converter must assume +10V with switch-on of the instrument in order to ensure ignition of the fluorescent tubes. The circuit consisting of N51 and V52. which shortly provides +10V following switch-on, is available for this purpose. The illumination can be switched off by means of V48 to improve the interference radiation of the AC/DC converter and of the fluorescent tubes.
The contrast is set via the negative supply voltage VEE of the LC display. This voltage is derived from +15V by means of a switch-capacitor-voltage-converter with controller (LT1054/N70) and can be set in the range from -15V to -22V using R995.

Two additional pi-type LC filters are contained on the board for filtering of the interferences radiated by the DC/AC converter and the converter LT1054.

7.1.14 Knob Interface

With each change of level of the signal KNOB2 (CLK), a LOW pulse is generated via the runtime chain consisting of D566C/D and D562B/C at the EXNOR-gate D566B. This pulse is used to store the direction information in the flip-flop D565B and to trigger an interrupt using D565A.

7.1.15 Connector for the Keyboard Matrix

The vertical lines are connected to the register D550, the horizontal lines to the port D560.
If no key is pressed the connected horizontal lines are applied to HIGH potential via the pull-up resistors R90 to R96. The vertical lines are kept at LOW potential by the register outputs. As soon as a key is pressed, the associate horizontal line assumes LOW potential. Subsequent to debouncing, an interrupt is generated, which allows for applying the vertical lines individually to LOW potential. The level indicates, which key was pressed.

7.1.16 Diagnostics A/D Converter

including 12-bit converter and two diagnostic inputs (±5V & ±15V)

The two diagnostic inputs and a few test points of the controller are applied to the A/D converter D704 via the multiplexer D700, the impedance converter N701 and the input amplifier.
The following voltages can be set for maximum range of the A/D converter: +-15V, +-5V and +-1V.
The conversion time (max. 9 us) is indicated by the BUSY output, which can be read in via D570 (port1).
The following voltages can be measured using the self-diagnostics converter for self-diagnostic purposes:

- the voltage at the X-output
- the reference voltage of the D/A converter
- the battery voltage

Moreover, test cables can be connected instead of the shorting jumper X700 and thus, any test point can be connected to the A/D converter. Make sure, that the test voltage does not exceed +-15V.

7.1.17 X-Output

With sweeping, the X-output generates an output signal of 0V (sweep start) to 10V (end of sweep), which can be used to control external devices. This signal is generated by the processor by setting the D/A converter D706 correspondingly, depending on the sweep. The resistor R223 and the diodes V10 are provided for overvoltage protection.

7.1.18 Identification of Variant and Revision

The port D4 is provided for identification of the module. The variant of the module is coded by the configuration of the resistors R592 to R594, the revision by R595 through R598.

7.1.19 Control Signals, Key Beep

The signals MODCNTL-OUT and MODCNTL-IN allow for synchronization between the signal processor of the modulation generator module and the processor.
The output signals BLANK and MARKER as well as the input signal SWEEP-STOP are used for control and synchronization of external devices.
The output port D213 supplies the control signal (LAMP-OFF) for switching off the tubular fluorescent lamps.
The piezo-buzzer U1 is provided for generation of a key beep.

7.1.20 Standby Switch and LED

The standby switch fitted to the front panel of the generator is connected directly to the controller and routed to the motherboard via the common ribbon cable.
The standby LED is switched between +15V and VS12-P such that in case of a cut of +15V a current may flow from VS12-P via the LED to the virtual ground of the +15V.

7.2 Test Instruments and Utilities

Oscilloscope	100MHz	e.g., BOL
DC multimeter	0 to +-30V, Ri>1MOhm	e.g., UDL33
DC voltage source	..10V	e.g., NGT20

7.3 Troubleshooting

Standby LED does not light up	Check the standby voltage at X312.5
Subsequent to switch-on, the LC-Display remains dark	Check the voltage of the DC/AC converter acc.to 7.4.1
Setting of contrast not possible	Check the contrast voltage acc. to 7.4.2
Shaft encoder does not work	Check the pulses of the shaft encoder acc. to 7.4.3
No display following switch-on	Check the RESET signal acc. to 7.4.4
	Check the ACFAIL signal acc. to 7.4.4
No voltage at X-AXIS	Check the output X-AXIS using diagnostics acc. to 7.4.6
	Check the reference voltage using the diagnostics acc. to 7.4.6
No storage of data after switching off the instrument	Check the RAM voltage using diagnostics acc. to 7.4.6

7.4 Testing and Adjustment

7.4.1 Checking the Supply Voltage of the DC/AC Converter

Shaft encoder module:
Measure the DC voltage at the connector X6.4 depending on the position of the brightness control at the front panel of the instrument: rated value: 6V to 10V.

7.4.2 Checking the Contrast Voltage

SHAFT ENCODER module:
Measure the DC voltage at the connectors X7.5 and X10.5 depending on the position of the contrast controller at the front panel of the instrument: rated value: -15V to -22V.

7.4.3 Checking the Shaft Encoder

CONTROLLER module:
Connect an oscilloscope to X35.9 and X35.11.
Turn the shaft encoder. There must be 2 signals with different timing.

7.4.4 Testing the RESET and the ACFAIL Signal

CONTROLLER module:
Connect an oscilloscope to X31.35 and D15 PIN15.
Just upon switching on the instrument, the level of the ACFAIL signal must change from L to H. This change of level must be indicated by the RESET signal (RES-N) after approx. 200 to 300 ms. Both signals must remain HIGH-level with all operating states.

7.4.5 Checking the Diagnostic Path

- Settings: **TPOINT 4**
- Apply a DC voltage of 0.5V to X700.
- Check the voltage at P710: 0.5V and P730: 1.5V.

7.4.6 Check and Readout of the Diagnostic Test Points

TPOINT	Voltage	Meaning
0	0mV to 50mV	Reference point
1	-15V to 15V	DIAG -15V
2	-15V to 15V	DIAG -5V
3	0V to 10V	X-AXIS
4	-15V to 15V	Voltmeter
6	4.9V to 5.1V	Reference voltage X-D/A
7	3.2V to 4.0V	Battery voltage

7.4.7 Checking the Position of Jumpers

Jumper	Position	Remark
X105	1 - 2	Clock (periphery)
X106	1 - 2	Clock (CPU)
X111	2 - 3	addr. flash
X112	2 - 3	addr. eprom
X300	1 - 2	Battery
X2	1 - 2	+5V-voltage
X85	1 - 2	Voltmeter
X3	2 - 3	Timer-Int
X700	1 - 2	Clock (RS232)

7.5 Removal and Assembly

Remove the 4 screws at the front panel of the instrument. Carefully swing out the module to the front, in order to be able to disconnect the cable connections W20, W313 and W314. Subsequent to disconnecting W31 (ribbon cable to the motherboard), the front module can be withdrawn. The metal cover on the rear is fixed by 6 screws. The CONTROLLER board can be removed carefully after unlocking the sockets X316, X317 and separating the two foils as well as the socket at X312. Finally, disconnect the ribbon cable W315 to the ENCODER board.

Removal of the p.c.b. SHAFT ENCODER: remove the rotary knob, and disconnect the connection at X6 (to. DC/AC converter) and X7 (ribbon cable to LCD). Disconnect 12-pin connector support of the cable W10 from the LCD. The p.c.b. can be removed after unscrewing of 4 screws.

Removal of the LCD: disconnect the cable W10 as well as the flat foil to the PCB SHAFT ENCODER from X7. Disconnect the 4-pin connector between the DC/AC converter and the CFL illumination. The LCD is fixed to the cast housing by 4 screws and can be taken out completely.

Assembly has to be carried out in the reverse order. Prior to fixing the cover again, make sure that the PROCESSOR board has locked in place correctly and that the seal cord is correctly applied.

7.6 External Interfaces

7.6.1 Controller Interface

Pin	Name	Input/Output	Origin/Destin.	Specified range	Signal description
X31.1 to 6	VD-5P	Input	A2, POWS	5.10V to 5.25V max. 3000mA	Supply voltage, digital
X31.11 to 12	VA15-P	Input	A2, POWS	14.7V to 15.9V max. 660mA	Supply voltage, analog
X31.15	VA15-N	Input	A2, POWS	-15.9V to-14.7V max. 50mA	Supply voltage, analog
X31.27	VS12-P	Input	A2, POWS	11.6V to 12.4V	Standby-voltage
X31.7,8 9,10,13 14,16					Ground, digital
X31.19, 20					Ground, analog
X31.26 X312.2	POWER-SWITCH	Output	A2, POWS		Switch contact
X31.25 X312.1	POWER-SWITCH-GND	Output	A2, POWS		Switch contact
X312.5	STBY-LED1	Output	A2, POWS		Anode of standby-LED
X312.3	STBY-LED2	Input	A2, POWS		Cathode of standby-LED
X312.4	N.C.				Coding
X31.40	SERBUS-CLK	Output		HCMOS level	Serbus Clock
X31.39	SERBUS-DAT	bidir.		HCMOS level	Serbus data
X31.37	SERBUS-SYNC	Output		HCMOS level	Serbus synchronization
X31.38	SERBUS-INT	Input		HCMOS level	Serbus interrupt
X31.28	RES-P	Output		HCMOS level	Reset
X31.44	DIAG-5V	Input		-5V to 5V	Diagnostics
X31.43	DIAG-15V	Input		-15V to 15V	Diagnostics
X31.42	TRIGGER	Input	Rear panel	HCMOS level	Trigger
X31.41	AUX-TRIG	Input	Rear panel	HCMOS level	Trigger
X31.36	SYSRESET	Input	A2, POWS	HCMOS level	System reset
X31.35	ACFAIL	Input	A2, POWS	HCMOS level	Power fail
X31.34	BLANK	Output	Rear panel	HCMOS level	Control signal
X31.33	MARKER	Output	Rear panel	HCMOS level	Control signal
X31.32	SWEEP-STOP	Input	Rear panel	HCMOS level	Control signal
X31.30	MODCTRL-OUT	Output	A5, MGEN X5.2	HCMOS level	Modulation generator control
X31.31	MODCTRL-IN	Input	A5, MGEN X5.1	HCMOS level	Modulation generator control
X31.45	X-AXIS	Output	Rear panel	0 to 10V	Frequ.-prop. voltage
X31.47	DONE	Input		HCMOS level	Interrupt signal
X31.17, 18, 21 to 24	INP00 to INP05	Input		HCMOS level	
X31.46	UBEXT	Input		0 to 5 V	Ext. battery connector
X37.1 to 7	RET0 to RET6	Input	Shaft encoder	HCMOS level	Keyboard

X37.8 to 13	SCAN0 to SCAN5	Output	Shaft encoder	HCMOS level	Keyboard
X36.1 to 13	"GND"			1kOhm Pulldown	Keyboard
X33.6	CTS	Input	Rear panel	RS232 level	Serial interface
X33.3	RXD	Input	Rear panel	RS232 level	Serial interface
X33.5	TXD	Output	Rear panel	RS232 level	Serial interface
X33.4,7	RTs	Output	Rear panel	RS232 level	Serial interface
X33.9					Ground, digital

Pin	Name	Input/Output	Origin/Destin.	Specified range	Signal description
X34.1	DIO-1	bidir.	Rear panel	TTL O.C.	IEEE bus
X34.3	DIO-2	bidir.	Rear panel	TTL O.C.	IEEE bus
X34.5	DIO-3	bidir.	Rear panel	TTL O.C.	IEEE bus
X34.7	DIO-4	bidir.	Rear panel	TTL O.C.	IEEE bus
X34.2	DIO-5	bidir.	Rear panel	TTL O.C.	IEEE bus
X34.4	DIO-6	bidir.	Rear panel	TTL O.C.	IEEE bus
X34.6	DIO-7	bidir.	Rear panel	TTL O.C.	IEEE bus
X34.8	DIO-8	bidir.	Rear panel	TTL O.C.	IEEE bus
X34.9	EOI	bidir.	Rear panel	TTL O.C.	IEEE bus
X34.10	REN	bidir.	Rear panel	TTL O.C.	IEEE bus
X34.11	DAV	bidir.	Rear panel	TTL O.C.	IEEE bus
X34.13	NRFD	bidir.	Rear panel	TTL O.C.	IEEE bus
X34.15	NDAC	bidir.	Rear panel	TTL O.C.	IEEE bus
X34.17	IFC	bidir.	Rear panel	TTL O.C.	IEEE bus
X34.19	SRQ	bidir.	Rear panel	TTL O.C.	IEEE bus
X34.21	ATN	bidir.	Rear panel	TTL O.C.	IEEE bus
X34.12 14,16, 18,20, 22,24					Ground
X35.2, 4,6,8	VA15-P	Input	SHAFT ENCODER	14.7V to 15.9V max. 650mA	Supply voltage, analog
X35.18	+5V	Input	SHAFT ENCODER	5.1V...5.3V max.20mA	Supply voltage, digital
X35.1, 20,21, 23,25					Ground
X35.16	LAMPOFF	Input	SHAFT ENCODER	HCMOS level	Illumination control
X35.3	POT1	bidir.	SHAFT ENCODER		Conn.1 of contrast control
X35.5	POT2	bidir.	SHAFT ENCODER		Conn.2 of contrast control
X35.7	POT3	bidir.	SHAFT ENCODER		Conn.3 of contrast control
X35.10	POT4	bidir.	SHAFT ENCODER		Conn.1 of brightness control
X35.12	POT5	bidir.	SHAFT ENCODER		Conn.2 of brightness control
X35.14	POT6	bidir.	SHAFT ENCODER		Conn.3 of brightness control
X35.9	KNOB1	Input	SHAFT ENCODER	HCMOS level	Conn.1 of the shaft encoder
X35.11	KNOB2	Input	SHAFT ENCODER	HCMOS level	Conn.2 of the shaft encoder
X35.22	LCD-D0	Output	SHAFT ENCODER	HCMOS level	Data LCD
X35.24	LCD-D1	Output	SHAFT ENCODER	HCMOS level	Data LCD
X35.26	LCD-D2	Output	SHAFT ENCODER	HCMOS level	Data LCD
X35.13	LCD-D3	Output	SHAFT ENCODER	HCMOS level	Data LCD
X35.17	LCD-CP1	Output	SHAFT ENCODER	HCMOS level	Clock1 LCD
X35.19	LCD-CP2	Output	SHAFT ENCODER	HCMOS level	Clock2 LCD
X35.15	LCD-CS	Output	SHAFT ENCODER	HCMOS level	Chip-Select LCD

7.6.2 Shaft encoder Interface

Pin	Name	Input/Output	Origin/Destination	Specified range	Signal description
X5.2,6,8	+15V	Input	Controller	14.7V to 15.9V max.600mA	Supply voltage, analog
X5A.18	+5V	Input	CONTROLLER	5.1V..5.3V max.20mA	Supply voltage, digital
X5.1 ,20,21, 23,25					Ground
X6.4	V-DC/AC	Output	DC/AC converter	6V...10V max. 550mA	Supply voltage for illumination
X6.1	GND-DC/AC		DC/AC-converter		
X10.1	VEE-LCD	Output	LCD	-15V to -22V max. 20mA	Contrast voltage
X10.2	VDD-LCD	Output	LCD	5.1V to 5.3V max. 20mA	Supply voltage, digital
X7.6	VSS-LCD				Ground
X5.22 X7.4	LCD-D0	Input Output	CONTROLLER LCD	HCMOS level	Data LCD
X5.24 X7.3	LCD-D1	Input Output	CONTROLLER LCD	HCMOS level	Data LCD
X5.26 X7.2	LCD-D2	Input Output	CONTROLLER LCD	HCMOS level	Data LCD
X5.13 X7.1	LCD-D3	Input Output	CONTROLLER LCD	HCMOS level	Data LCD
X5.15 X7.10	LCD-CS	Input Output	CONTROLLER LCD	HCMOS level	Chip-Select LCD
X5.17 X7.8	LCD-CP1	Input Output	CONTROLLER LCD	HCMOS level	Clock1 LCD
X5.19 X7.9	LCD-CP2	Input Output	CONTROLLER LCD	HCMOS level	Clock2 LCD
X5.16	LAMPOFF	Input	CONTROLLER	HCMOS level	Illumination control of
X5.9	KNOB1	Output	CONTROLLER	O.C. 2,2kOhm	Conn.1 of the shaft encoder
X5.11	KNOB2	Output	CONTROLLER	O.C. 2,2kOhm	Conn.2 of the shaft encoder
X5.3,5,7	POT1,2,3	bidir.	CONTROLLER		Conn.1,2,3 of contrast contr.
X5.10, 12, 14	POT4,5,6	bidir.	CONTROLLER		Conn.1,2,3 of brightnes control

7.6.3 LCD Interface

Pin	Name	Input/Output	Origin/Destin.	Specified range	Signal description
CONN2.5	VEE-LCD	Input	SHAFT ENCODER	-15V to -22V	Contrast voltage
CONN2.7	VDD-LCD	Input	SHAFT ENCODER	5.1V to 5.3V	Supply voltage digital
CONN1.6	VSS-LCD				Ground
CONN1.4	LCD-D0	Input	SHAFT ENCODER	HCMOS level	Data LCD
CONN1.3	LCD-D1	Input	SHAFT ENCODER	HCMOS level	Data LCD
CONN1.2	LCD-D2	Input	SHAFT ENCODER	HCMOS level	Data LCD
CONN1.1	LCD-D3	Input	SHAFT ENCODER	HCMOS level	Data LCD
CONN1.10	LCD-CS	Input	SHAFT ENCODER	HCMOS level	Chip-Select LCD
CONN1.8	LCD-CP1	Input	SHAFT ENCODER	HCMOS level	Clock1 LCD
CONN1.9	LCD-CP2	Input	SHAFT ENCODER	HCMOS level	Clock2 LCD

ROHDE&SCHWARZ

Schaltteillisten
numerisch geordnet

Part lists
in numerical order

Listes des pièces détachées
par numéros de référence

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
A31	ED RECHNER PROCESSOR BOARD NUR VAR/ONLY MOD: 02 04	1035.7250.04			
A31	ED RECHNER PROCESSOR BOARD NUR VAR/ONLY MOD: 03	1035.7766.06			
A31	ED RECHNER ABFS(FC) PROCESSOR BOARD ABFS (FC) NUR VAR/ONLY MOD: 05 13 15 16	1084.8804.10			
A34	BV E1256 DC/AC-WANDLER DC/AC-CONVERTER	0840.5698.00	ERG	0840.5698	
A35	ED DREHGEBER SYNCHRO GENERATOR	1035.5592.02			
A36	SB SCHALTFOLIE F.34TASTEN KEY PAD	1036.4354.00	HOF_KRIPPN	1036.4354	
C100	CE 22UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7533.00	PHILIPS_CO	2222 116 11229	
C101	CE 22UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7533.00	PHILIPS_CO	2222 116 11229	
H2	AF HLMP1719 LED3 GE585N LED	AF 0099.9140.00	QUALITY	HLMP-1719.L31S	1035.5486.00
P1	BP DMF50161NFUFW FSTN S/W DISPLAY WITH ILLUMINATION	0008.9094.00	OPTREX	DMF50161NFU-FW	
W10	DY KABEL W10	1035.5686.00			
W11	DF FLEX-STRIPVERB.10P	1035.5634.00			
W11	DF FLEX-STRIPVERB.10P. FLEX-STRIP	1036.4625.00	SUMITUMO	SMCD-10X170-ADX10-P1	1035.5634.00
X2	SB NETZSCHALTER 2XU O.KN. POWER SWITCH	SB 0007.5143.00	ITT-SEL	NE18 2U E E	1035.5486.00

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
C11	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C12	CE 10UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7427.00	PHILIPS_CO	2222 116 11109	
C13	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C50 ..53	CE 470UF+-20%25V12,5X12,5 ELECTROLYTIC CAPACITOR	0803.0715.00	NAT_PANASO	ECA-1EM471	
C54 ..58	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C59	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C60	CE 22UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7533.00	PHILIPS_CO	2222 116 11229	
C61	CE 47UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7479.00	PANASONIC	ECA-1HFG470I	
C70	CE 100UF+-20%25V RM2.5 ELECTROLYTIC CAPACITOR	CE 0008.7891.00	PANASONIC	ECA-1EFG101I	
C71	CE 10UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7427.00	PHILIPS_CO	2222 116 11109	
C72	CE 10UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7427.00	PHILIPS_CO	2222 116 11109	
C73	CE 47UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7479.00	PANASONIC	ECA-1HFG470I	
C74	CE 47UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7479.00	PANASONIC	ECA-1HFG470I	
C75	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C76	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C77	CC 2,2NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8444.00	AVX	1206 5 C 222 KA 3	
C79	CE 10UF +-10% 25V 7343 TANTALUM SMD-CAPACITOR	CE 0007.7246.00	SPRAGUE	293D 106 X9 025 D2W	
E1	BS UGN3120U HALL-EFF.SW. HALL-EFF.SWITCH	BJ 0336.4750.00	ALLEGRO	UGN3120U	
E2	BS UGN3120U HALL-EFF.SW. HALL-EFF.SWITCH	BJ 0336.4750.00	ALLEGRO	UGN3120U	
L10	LD 4,7UH 10%1,20HM 0,239A CHOKE	LD 0067.2940.00	DALE	IM2	
L50	LD 100UH 20% 1A 0,650OHM CHOKE	LD 0155.9446.00	FASTRON_GE	MESC-101M-00	
L51	LD 100UH 20% 1A 0,650OHM CHOKE	LD 0155.9446.00	FASTRON_GE	MESC-101M-00	
N50	BO LM317T +ADJ1A5 VREGL VOLTAGE REGULATOR	0339.4080.00	NSC	LM-317T	
N51	BO LM2903D 2XLP COMPAR DUAL	0520.7734.00	SIGNETICS	LM2903(D)	
N70	BO LT1054CS INV SCH.REGL IC SWITCHED CAP. REGULAT	1036.4519.00	LINEAR_TEC	LT1054CSW	
R1	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R2	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R48	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R49	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R50	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R53	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R54	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R55	RG 47,5KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5950.00	ROEDERSTEI	D25	
R56	RG 47,5KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5950.00	ROEDERSTEI	D25	
R57	RG O-OHM WIDERSTAND 1206 RESISTOR CHIP O-OHM	RG 0007.5108.00	DRALORIC	CR 1206	
R58	RG O-OHM WIDERSTAND 1206 RESISTOR CHIP O-OHM	RG 0007.5108.00	DRALORIC	CR 1206	
R59	RG 243 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.6010.00	DRALORIC	CR 1206	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
R60	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R61	RG 243 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5620.00	PHILIPS_CO	RC02	
R72	RL 0,60W4,75 OHM+-1%TK50 METALFILMRESISTOR	RL 0099.8021.00	PHILIPS_CO	MRS 25	
R73	RG 0-OHM WIDERSTAND 1206 RESISTOR CHIP 0-OHM	RG 0007.5108.00	DRALORIC	CR 1206	
R74	RL 0,60W4,75 OHM+-1%TK50 METALFILMRESISTOR	RL 0099.8021.00	PHILIPS_CO	MRS 25	
R75	RG 432 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.6062.00	PHILIPS_CO	RC02	
R76	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	PHILIPS_CO	RC02	
R77	RG 39,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5937.00	PHILIPS_CO	RC02	
R78	RG 20,0KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5866.00	DRALORIC	CR 1206	
S1	EM DREHIMPULSGEBER ROTARY MAGNET	EM 0336.3348.00			
V48	AK BC337-40 N 45V 800MA TRANSISTOR	AK 0815.7684.00	PHILIPS	BC337-40 GEGURTET	
V50	AE BZV55/C5V1 0.5W ZDI ZENER DIODE	AE 0006.9839.00	PHILIPS_SE	BZV55B5V1 (GEG)	
V51	AE BZV55/C4V3 0.5W ZDI ZENER DIODE	AE 0709.0168.00	PHILIPS_SE	BZV55B4V3	
V52	AK BC337-40 N 45V 800MA TRANSISTOR	AK 0815.7684.00	PHILIPS	BC337-40 GEGURTET	
V70	AG 1N4007 GL1000V 1AO RECTIFIER	AG 0013.0310.00	ITT-SEMICO	1N4007	
V71	AG 1N4007 GL1000V 1AO RECTIFIER	AG 0013.0310.00	ITT-SEMICO	1N4007	
V75	AK BC337-40 N 45V 800MA TRANSISTOR	AK 0815.7684.00	PHILIPS	BC337-40 GEGURTET	
X5	FP STIFTLEISTE 26P.2REIH. CONNECTOR 26P.	FP 0520.6544.00	BINDER	11-0213-00-26	
X6	FP BUCHSENLEISTE 4POL. ANGLE SOCKET CONNECTOR	FP 2007.5069.00	DUPONT CON	67232-004	
X7	FP LEITERPLATTENVERB.10P. CONNECTOR 10POL.	1051.4397.00	MOLEX	5597-10APB(NAPB)	
X10	FP STIFTL.WIN 3P.R2,54 ANGLE PIN CONNECTOR	FP 0009.7195.00			

Comp. No.	Designation	Stock No.	Manufacturer	Bezeichnung Designation	eintragen in contained in
.	XX VARIANTENERKLAERUNG IDENTIFICATION OF MODELS				
C1	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C2	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C3	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C4 ..10	CC 10P+-0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4567.00	MURATA	GRM39C0G***B50ZPT	
C11	CC 47NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5195.00	AVX	1206 5 C 473 KA 3	
C12	CC 10P+-0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4567.00	MURATA	GRM39C0G***B50ZPT	
C13	CC 10P+-0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4567.00	MURATA	GRM39C0G***B50ZPT	
C14	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C15 ..17	CE 470UF+-20%25V12,5X12,5 ELECTROLYTIC CAPACITOR	0803.0715.00	NAT_PANASO	ECA-1EM471	
C18	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C19	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C20 ..22	CE 10UF+-20%35V RUND SMD SMD ELECTROLYTIC CAPACIT.	CE 0009.5605.00	PANASONIC	EEV HB 1V 100X	
C23	CC 10NF+-10% 50VHDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4844.00	MURATA	GRM39X7R***K50C500	
C24	CE 10UF+-20%35V RUND SMD SMD ELECTROLYTIC CAPACIT.	CE 0009.5605.00	PANASONIC	EEV HB 1V 100X	
C25	CE 10UF+-20%35V RUND SMD SMD ELECTROLYTIC CAPACIT.	CE 0009.5605.00	PANASONIC	EEV HB 1V 100X	
C26 ..29	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C30 ..43	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C44	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C45 ..48	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C49	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C50	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C51	CC 10NF+-10% 50VHDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4844.00	MURATA	GRM39X7R***K50C500	
C52	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C53	CE 100UF+-20%16V RUND SMD SMD-ELECTOLYTIC CAPACIT.	CE 0009.6553.00	SANYO	16CV100F(G)S	
C54	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C55	CE 10UF +-10% 10V 6032 TANTALUM CHIP CAPACITOR	CE 0007.7281.00	SPRAGUE	293D-106X9 016 C2W	
C56 ..62	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C63	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C64	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C65	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C66 ..68	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C69 ..90	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C92	CC 22UF-20+80% 10V 1210 CERAMIC CAPACITOR	1097.6563.00	TAIYO_JUDE	LMK 325 F 226 ZN	
C93	CC 22UF-20+80% 10V 1210 CERAMIC CAPACITOR	1097.6563.00	TAIYO_JUDE	LMK 325 F 226 ZN	
C94 ..97	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C98	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C99 ..112	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	contained in
C113	CE 470UF+-20%25V12,5X12,5 ELECTROLYTIC CAPACITOR	0803.0715.00	NAT_PANASO	ECA-1EM471	
C114 ..117	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C119	CC 220NF+-10%50V X7R 1210 CERAMIC CAPACITOR CHIP	CC 0520.6850.00	AVX	1210 5C 224KA 11A	
C121	CC 10NF+-10% 50VHDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4844.00	MURATA	GRM39X7R***K50C500	
C122 ..125	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C126 ..133	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C134	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C135 ..143	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C144 ..151	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C152	CC 1,0NF+-10%50V HDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4938.00	MURATA	GRM39X7R***K50C500	
C153 ..159	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C160 ..163	CC 47PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4644.00	MURATA	GRM39C0G***F50ZPT	
C164	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C165	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C166	CC 10NF+-10% 50VHDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4844.00	MURATA	GRM39X7R***K50C500	
C167 ..170	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C171	CE 4,7UF+-10% 10V 3528 TANTALUM CHIP CAPACITOR	CE 0007.7275.00	SPRAGUE	293D 475 X9 010 B2T	
C172 ..181	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C182	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C183 ..187	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C188	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C189 ..191	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C192 ..199	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C200	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C201	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C202 ..204	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C205 ..207	CE 100UF+-20%16V RUND SMD SMD-ELECTOLYTIC CAPACIT.	CE 0009.6553.00	SANYO	16CV100F(G)S	
C208	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C209	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C210	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
D1	BC E28F016XS-15 FLASH FILE MEMORY	BC 1085.2080.00	INTEL	E28F016XS15	
D2	BC E28F016XS-15 FLASH FILE MEMORY	BC 1085.2080.00	INTEL	E28F016XS15	
D3	BG TH3131 CLKGEN3 ASIC GATEARRAY	1039.1533.00	THESYS	TH3131	
D4	BL PC74HCT541T 8XBUSDRIV OCTAL BUFFER/LINE DRIVER	BL 1006.4104.00	PHILIPS_SE	(PC)74HCT541(D/T)	
D5	BL 74ABT16245ADL 16X3S TX IC 16BIT BUS TRANSCEIVER	2073.8010.00	TEXAS	SN74ABT16245ADL	
D6	BL 74ACT32SC 4X2-IN OR IC QUAD 2-INPUT OR GATE	BL 1012.9385.00	HARRIS	CD74ACT32M	
D7	BL 74ACT20SC 2X4-IN NAND IC DUAL 4-INPUT NAND GATE	BL 0008.0700.00	HARRIS	CD74ACT20M	
D8	BL 74ACT08SC 4X2-IN AND IC QUAD 2-INP AND GATE	BL 1012.9362.00	HARRIS	CD74ACT08M	

Comp. No.	Bezeichnung / Designation		Stock No.	Hersteller / Manufacturer	Bezeichnung / Designation	Einheit in enthalten in
D9	BJ LT1181ACS RS232 2TX2RX RS-232 TRANSCEIVER		1008.2915.00	LINEAR_TEC	LT1181ACSW	
D10	BC FC80960HD50 FC8096HD50		1085.2180.00	INTEL	FC80960HD50	
D11	BC E28F016XS-15 FLASH FILE MEMORY	BC	1085.2080.00	INTEL	E28F016XS15	
D12	BJ LT1181ACS RS232 2TX2RX RS-232 TRANSCEIVER NUR VAR/ONLY MOD: 10		1008.2915.00	LINEAR_TEC	LT1181ACSW	
D13	BL 74ACT32SC 4X2-IN OR IC QUAD 2-INPUT OR GATE	BL	1012.9385.00	HARRIS	CD74ACT32M	
D14	BL 74ACT163SC 4B BINCTR IC MODULO-16-BIN COUNTER	BL	2032.2576.00	HARRIS	CD74ACT163M	
D15	BO MAX793TCSE UPSUPERVIS IC UP VOLTAGE SUPERVISOR		1104.2528.00	MAXIM	MAX793TCSE	
D16	BJ LT1181ACS RS232 2TX2RX RS-232 TRANSCEIVER NUR VAR/ONLY MOD: 10		1008.2915.00	LINEAR_TEC	LT1181ACSW	
D17 ..20	BC HM628512L 512KX8 SRAM IC STATIC RAM 512KX8	BC	2068.9193.00	SAMSUNG	KM684000(B/C)LG-7	
D21	BC E28F016XS-15 FLASH FILE MEMORY	BC	1085.2080.00	INTEL	E28F016XS15	
D22	BL 74LVC138DB 3TO8 DEC LINE DECODER	BL	1104.2592.00	PHILIPS_SE	74LVC138ADB	
D23	BL 74ACT157SC 4X 2-IN MUX QUAD 2-INP MULTIPLEXER	BL	1012.9410.00	HARRIS	(CD74)ACT157(M)	
D40	BJ LT1181ACS RS232 2TX2RX RS-232 TRANSCEIVER NUR VAR/ONLY MOD: 10		1008.2915.00	LINEAR_TEC	LT1181ACSW	
D60	BC TNT4882C IEE488-CONTRL NUR F.SERV.ZWECKE STRAFE!		1050.0700.00	NATIONAL/I	TNT4882CAQ	
D61	BC UPD71054L10 TIMER PROGR.INTERVAL-TIMER		1051.5258.00	NEC	(UPD)71054L-10	
D72	BL 74ACT32SC 4X2-IN OR IC QUAD 2-INPUT OR GATE	BL	1012.9385.00	HARRIS	CD74ACT32M	
D85	BC TL16C550AFN UART IC WART		3527.9354.00	TEXAS	TL16C550AFN	
D87	BG SERBUS-MZE ASIC IC GATEARRAY		1066.1976.00	FRAUNH_IFT	SERBUSM2E	
D90	BC SED1351F0A LCD-CTRL LCD CONTROLLER		0008.7727.00	SEIKO_EPSO	SED1351F0A	
D106	BL PC74HC132T 4XSCHMITT T QUAD 2-INP NAND SCHMITT	BL	0520.7811.00	PHILIPS_SE	(PC)74HC132(D/T)	
D199	BL PC74HCT541T 8XBUSDRIV OCTAL BUFFER/LINE DRIVER	BL	1006.4104.00	PHILIPS_SE	(PC)74HCT541(D/T)	
D200	BL PC74HCT541T 8XBUSDRIV OCTAL BUFFER/LINE DRIVER	BL	1006.4104.00	PHILIPS_SE	(PC)74HCT541(D/T)	
D213	BL 74ACT273 8X D-FF M.RES OCTAL D FLIP-FLOP	BL	1058.0745.00	HARRIS	(CD74)ACT273(M)	
D220 ..222	BL 74FCT244ASO 8XBUFF 3S OCTAL BUFFER/LINE DRIVER	BL	0843.7240.00	IDT	IDT74FCT244ASO	
D223	BL 74FCT138CTSO1-8DECODER IC 1-OF-8 DECODER	BL	1051.5164.00	IDT	(IDT74)FCT138C(TSO)	
D224	BL 74FCT138CTSO1-8DECODER IC 1-OF-8 DECODER	BL	1051.5164.00	IDT	(IDT74)FCT138C(TSO)	
D226	BL 74ACT138SC 3TO8 DECOD 3-TO-8 DECODER/DEMUX	BL	2007.5017.00	HARRIS	CD74ACT138(M)	
D227	BL 74ACT138SC 3TO8 DECOD 3-TO-8 DECODER/DEMUX	BL	2007.5017.00	HARRIS	CD74ACT138(M)	
D300	BC ISPLSI1016-60LT GAL IC PROGR LOGIC DEVICE	BC	2073.8127.00	LATTICE	ISPLSI1016-60LT	
D301	HS 1084.8604-SOFTW..D301.		1084.8604.00			
D310	BL 74ACT139SC 2X 1A4DEMUX IC DUAL 1-OF-4 DEMUX	BL	2000.2412.00	HARRIS	CD74ACT139M	
D400	BO LP2951CMLOWDROP +VREGL IC VOLTAGE REGULATOR		1020.0890.00	NSC	LP2951CM	
D402	BC ISPLSI1016E-100LT GAL IC PROGR LOGIC DEVICE	BC	1085.1484.00	LATTICE	ISPLSI1016E-100LT44	
D500	BC TL16C550AFN UART IC WART NUR VAR/ONLY MOD: 10		3527.9354.00	TEXAS	TL16C550AFN	
D501	BC TL16C550AFN UART IC WART NUR VAR/ONLY MOD: 10		3527.9354.00	TEXAS	TL16C550AFN	
D550	BL PC74HCT273T 8XD-FF OCTAL D-TYPE FLIPFLOP	BL	0007.6610.00	PHILIPS_SE	(PC)74HCT273(D/T)	
D560	BL PC74HCT541T 8XBUSDRIV OCTAL BUFFER/LINE DRIVER	BL	1006.4104.00	PHILIPS_SE	(PC)74HCT541(D/T)	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	contained in
D561	BL PC74HCT4075T 3X3IN ORG TRIPLE 3INPUT OR GATE	0007.6879.00	PHILIPS	(PC)74HCT4075(T)	
D562	BL PC74HCT4075T 3X3IN ORG TRIPLE 3INPUT OR GATE	0007.6879.00	PHILIPS	(PC)74HCT4075(T)	
D563	BL PC74HCT74T 2XD-FLIPFL DUAL D-TYPE FLIP FLOP	BL 0007.6262.00	PHILIPS_SE	(PC)74HCT74D(T)	
D565	BL 74ACT74SC 2XRSFLIPFLOP IC DUAL D-FLIPFLOP	BL 0008.0680.00	TOSHIBA	(TC74)ACT74(FN)	
D566	BL PC74HC7266T4X2IN EXNOR QUAD 2INPUT EXNOR GATE	0729.4630.00	PHILIPS	(PC)74HC7266(T())	
D567	BL PC74HC14T 6XINV.SCHM HEXINV.SCHMITT-TRIGGER	BL 0007.4018.00	PHILIPS_SE	(PC)74HC14(D/T)	
D568	BL PC74HC14T 6XINV.SCHM HEXINV.SCHMITT-TRIGGER	BL 0007.4018.00	PHILIPS_SE	(PC)74HC14(D/T)	
D569	BL PC74HCT123T 2XMONOFLOP DUAL MULTIVIBRATOR	BL 0007.6333.00	PHILIPS_SE	(PC)74HCT123(D/T)	
D570	BL PC74HCT541T 8XBUSDRIV OCTAL BUFFER/LINE DRIVER	BL 1006.4104.00	PHILIPS_SE	(PC)74HCT541(D/T)	
D621	BL PC74HCT02T 4X2IN NORG QUAD 2INPUT NORGATE	BL 0007.5366.00	PHILIPS_SE	(PC)74HCT02(D/T)	
D700	BS DG408DY 8CH.ANAL.MUX IC 8 CH ANALOG MULTIPLEX	1036.4460.00	SILICONIX	DG408DY	
D701	BS DG441DY 4XANALOGSCH IC QUAD ANALOG SWITCH	1036.4454.00	SILICONIX	DG441DY	
D702	BL 74ACT20SC 2X4-IN NAND IC DUAL 4-INPUT NAND GATE	BL 0008.0700.00	HARRIS	CD74ACT20M	
D703	BL PC74HCT273T 8XD-FF OCTAL D-TYPE FLIPFLOP	BL 0007.6610.00	PHILIPS_SE	(PC)74HCT273(D/T)	
D704	BJ AD787OKP 1X12B-ADC ANALOG DIGITAL CONVERTER	1036.4402.00	ANALOG_DEV	AD787OKP	
D706	BJ AD7245JP 1X12B-DAC DIGITAL/ANALOG CONVERTER	1036.4419.00	ANALOG_DEV	AD7245JP	
D810	BL PC74HCT273T 8XD-FF OCTAL D-TYPE FLIPFLOP	BL 0007.6610.00	PHILIPS_SE	(PC)74HCT273(D/T)	
D811	BL PC74HCT273T 8XD-FF OCTAL D-TYPE FLIPFLOP	BL 0007.6610.00	PHILIPS_SE	(PC)74HCT273(D/T)	
D812	BL PC74HCT541T 8XBUSDRIV OCTAL BUFFER/LINE DRIVER	BL 1006.4104.00	PHILIPS_SE	(PC)74HCT541(D/T)	
D820	BL PC74HCT32T 4X2IN ORG QUAD 2INPUT OR GATE	BL 0007.5389.00	PHILIPS_SE	(PC)74HCT32(D/T)	
D826	BL PC74HCT32T 4X2IN ORG QUAD 2INPUT OR GATE	BL 0007.5389.00	PHILIPS_SE	(PC)74HCT32(D/T)	
D827	BL PC74HCT30T 8IN NAND NAND GATE	BL 0007.6233.00	PHILIPS_SE	(PC)74HCT30(D/T)	
D840	BL PC74HCT86T 4X2IN.EXOR EXOR GATE	0007.6291.00	PHILIPS_SE	(PC)74HCT86(D/T)	
D950	BC ISPLSI1016-60LT GAL IC PROGR LOGIC DEVICE	BC 2073.8127.00	LATTICE	ISPLSI1016-60LT	
D960	BC 84256-12LP 32KX8 SRAM SRAM	BC 0007.6985.00	NEC	UAPD43256GU-12L	
D970	BC 84256-12LP 32KX8 SRAM SRAM	BC 0007.6985.00	NEC	UAPD43256GU-12L	
D980	BL PC74HCT541T 8XBUSDRIV OCTAL BUFFER/LINE DRIVER	BL 1006.4104.00	PHILIPS_SE	(PC)74HCT541(D/T)	
E2	ZM LUEFTEREINHEIT	1084.8927.00			
G3	EO 3,6864MHZ QUARZOSZ QUARTZ CRYSTAL OSZILLATOR	1097.6540.00	SEIKO	SG-615P	
G40	EO 40,000MHZ QUARZOSZ QUARTZ CRYSTAL OSCILLATOR	1078.3133.00	SEIKO	SG 615 PH	
G50	EO 50,000MHZ QUARZOSZ QUARTZ CRYSTAL OSCILLATOR	1029.2995.00	SEIKO	SG-615PH-C	
G300	EB LITHIUM-ZELLE 3V950MAH BATTERY	4052.5673.00	RENATA_AG	CR2477N	
K1	SN RELAIS 5V 1XU MONOST. RELAY	SN 1078.3256.00	SIEMENS	V23026-D1021-B201	
L1 ..3	LD SMD-DR.Z=625 OHM 50MHZ CHOKE	1078.3240.00	PHILIPS_CO	4330 030 41663	
L4	LD SP-DROSSEL 15UH 2,45A CHOKE	1081.0283.00	SUMIDA	CDR125-150	
L5	LD SP-DROSSEL 15UH 2,45A CHOKE	1081.0283.00	SUMIDA	CDR125-150	
N1	BO 79L05ACM-5V5%OA1VREGL VOLTAGE REGULATOR 5VDC	0851.6703.00	NSC	LM79L05ACM(X)	

Komp. Nr. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
N2	BO LM2596S-ADI SCH.REGL IC SWITCHING REGULATOR	1085.2097.00	NSC	LM2596S-ADJ	
N700	BO OP97FS LP PREC OPAMP LOW POWER OPAMP	1036.4390.00	PMI	OP97F(S)	
N701	BO OP97FS LP PREC OPAMP LOW POWER OPAMP	1036.4390.00	PMI	OP97F(S)	
N702	BO OP07CS8 OPAMP OPERATIONAL AMPLIFIER	0007.7781.00	LINEAR_TEC	LT1001(CS8)	
P1	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P2	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P3	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P4	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P5	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P6	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P7 ..18	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P19	VL EINPRESSSTIFT 5,6 PIN NUR VAR/ONLY MOD: 10	VL 0010.7250.00	AMP	1-928776-5	
P20	VL EINPRESSSTIFT 5,6 PIN NUR VAR/ONLY MOD: 10	VL 0010.7250.00	AMP	1-928776-5	
P21	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P22	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P23	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P24	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P25	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P27	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P31 ..33	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P46	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P49	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P700	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P710	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P720	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P730	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P900	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P901	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P902	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P903	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P904	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P932	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P942	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P943	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P1A	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P1B	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P1C	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	

Kennz. Comp. No.	Benennung Designation		Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
P1D	VL EINPRESSSTIFT 5,6 PIN		VL 0010.7250.00	AMP	1-928776-5	
P1E	VL EINPRESSSTIFT 5,6 PIN		VL 0010.7250.00	AMP	1-928776-5	
P1F	VL EINPRESSSTIFT 5,6 PIN		VL 0010.7250.00	AMP	1-928776-5	
P1G	VL EINPRESSSTIFT 5,6 PIN		VL 0010.7250.00	AMP	1-928776-5	
P1H	VL EINPRESSSTIFT 5,6 PIN		VL 0010.7250.00	AMP	1-928776-5	
P1J	VL EINPRESSSTIFT 5,6 PIN		VL 0010.7250.00	AMP	1-928776-5	
R1 ..7	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R8	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R9	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R10 ..18	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R19	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R20	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R21 ..33	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R34	RG 10,0KOH+-0,1%TK25 SMD-RESISTOR	1206	0009.7666.00	PHILIPS_CO	MPC 01	
R35 ..37	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R38	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R39	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R40 ..42	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R43	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R44	RG 243R +-1% TK100 SMD RESISTOR EIA0603	0603	0010.9800.00	DRALORIC	CR 0603	
R45 ..48	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R49	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R50	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R51	RG 47OR +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6976.00	DRALORIC	CR 0603	
R52	RG 10,2KOH+-0,1%TK25 SMD-RESISTOR	1206	0009.7614.00	PHILIPS_CO	MPC 01	
R53 ..65	RG 100R +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R66	RG 1,0 KO +-0,1%TK25 SMD-RESISTOR	1206	0009.7595.00	PHILIPS_CO	MPC 01	
R67 ..70	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R71 ..73	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R74	RG 100R +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R75	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R76 ..83	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R84 ..86	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R87	RG 150R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6947.00	PHILIPS_CO	RC 22 H	
R88 ..99	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R100	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R101	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R102	RG 10R +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5328.00	PHILIPS_CO	RC 22 H	

Komp. Nr. Comp. No.	Benennung Designation		Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	Einheit in enthalten in contained in
R103	RG 1MO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5370.00	DRALORIC	CR 0603	
R104	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R105	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R106	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R107 ..114	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R115 ..146	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R147 ..151	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R152	RG 200 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5608.00	ROEDERSTEI	D25	
R153	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R154	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R155	RG 243R +-1% TK100 SMD RESISTOR EIA0603	0603	0010.9800.00	DRALORIC	CR 0603	
R156	RG 100R +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R157	RG 100R +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R158	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R159	RG 100R +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R160 ..162	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R163 ..166	RG 47R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6924.00	PHILIPS_CO	RC 22 H	
R167	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R168	RG 2,0KOHM+-0,1%TK25 SMD-RESISTOR	1206	0009.7608.00	PHILIPS_CO	MPC 01	
R169	RG 0-OHM WIDERSTAND RESISTOR CHIP 0-OHM	1206	RG 0007.5108.00	DRALORIC	CR 1206	
R170	RG 10,0 OHM+-1%TK100 CHIP -RESISTOR	1206	RG 0006.8649.00	DRALORIC	CR 1206	
R171	RG 0-OHM WIDERSTAND RESISTOR CHIP 0-OHM	1206	RG 0007.5108.00	DRALORIC	CR 1206	
R172	RG 0-OHM WIDERSTAND RESISTOR CHIP 0-OHM	1206	RG 0007.5108.00	DRALORIC	CR 1206	
R173	RG 88,7KOH+-0,1%TK25 SMD-RESISTOR	1206	0009.7650.00	PHILIPS_CO	MPC 01	
R174	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R175	RG 200 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5608.00	ROEDERSTEI	D25	
R176	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R177	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R178 ..185	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R186 ..199	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R200	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R201	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R202	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R203	RG 220R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6953.00	DRALORIC	CR 0603	
R204	RG 220R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6953.00	DRALORIC	CR 0603	
R205	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R206	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R207	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R208	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	

Kennz. Comp. No.	Benennung Designation		Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R209	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R210	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R211 ..217	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R218	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R219 ..221	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R222	RG 39K2 +-1% TK100 SMD RESISTOR EIA0603	0603	0010.9823.00	PHILIPS_CO	RC 22 H	
R223	RG 182 OHM+-1%TK100 SMD RESISTOR EIA0603	0603	0009.9130.00	DRALORIC	CR 0603	
R224	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R225	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R226	RG 20,0KOH+-0,1%TK25 SMD-RESISTOR	1206	0009.7643.00	PHILIPS_CO	MPC 01	
R227	RG 5K62 +-1% TK100 SMD RESISTOR EIA0603	0603	0010.8433.00	DRALORIC	CR 0603	
R228	RG 680R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6982.00	PHILIPS_CO	RC 22 H	
R229	RG 12,0KOH+-0,1%TK25 SMD-RESISTOR	1206	0009.7620.00	PHILIPS_CO	MPC 01	
R230	RG 100K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5363.00	DRALORIC	CR 0603	
R231	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R232	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R233	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R234	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R235 ..237	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R238	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R239 ..243	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R244	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R245	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R246	RG 100K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5363.00	DRALORIC	CR 0603	
R247	RG 1,0 KO +-0,1%TK25 SMD-RESISTOR	1206	0009.7595.00	PHILIPS_CO	MPC 01	
R248	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R249 ..251	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R252	RG 2,21KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5743.00	ROEDERSTEI	D25	
R253 ..259	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R260	RG 100R +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R261	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R262	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R263	RG 1,69KOH+-0,1%TK25 SMD-RESISTOR EIA1206	1206	0009.9998.00	PHILIPS_CO	MPC 01	
R264	RG 10R +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5328.00	PHILIPS_CO	RC 22 H	
R265	RG 22K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7050.00	DRALORIC	CR 0603	
R266	RG 4K7 +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R267	RG 18K2+-1% TK100 SMD RESISTOR EIA0603	0603	0010.9317.00	DRALORIC	CR 0603	
R268	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R269	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	

Comp. No.	Designation		Stock No.	Manufacturer	Designation	contained in
R270	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R271 ..288	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R289 ..302	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R303 ..305	RG 100R +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R306	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R307	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R308	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R309	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R310	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R311 ..326	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R327	RG 243R +-1% TK100 SMD RESISTOR EIA0603	0603	0010.9800.00	DRALORIC	CR 0603	
R328 ..333	RG 100R +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R334 ..339	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R340	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R341	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R342 ..345	RG 100K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5363.00	DRALORIC	CR 0603	
R346 ..348	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R349	RG 0-OHM WIDERSTAND SMD RESISTOR EIA0603	0603	0009.9369.00	PHILIPS_CO	RC21 0 OHM	
R350	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R351	RG 39R2 +-1% TK100 SMD RESISTOR EIA0603	0603	0010.9400.00	DRALORIC	CR 0603	
R352	RG 0-OHM WIDERSTAND SMD RESISTOR EIA0603	0603	0009.9369.00	PHILIPS_CO	RC21 0 OHM	
R353	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R354	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R355	RG 1OR +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5328.00	PHILIPS_CO	RC 22 H	
R356	RG 15OR +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6947.00	PHILIPS_CO	RC 22 H	
R357 ..362	RG 0-OHM WIDERSTAND SMD RESISTOR EIA0603	0603	0009.9369.00	PHILIPS_CO	RC21 0 OHM	
R363	RG 15OR +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6947.00	PHILIPS_CO	RC 22 H	
R364	RG 4K7 +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R365	RG 4K7 +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R366	RG 68OR +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6982.00	PHILIPS_CO	RC 22 H	
R591	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R593	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R594	RG 1KO +-1% TK100 SMD RESISTOR EIA0603 NUR VAR/ONLY MOD: 08	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R595	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R596	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R597	RG 1KO +-1% TK100 SMD RESISTOR EIA0603 NUR VAR/ONLY MOD: 10	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R991	RS 0,5W 1K+-10% Q10XH5 CERMET TRIMMING POTENTIOM		2027.1446.00	DIPLOMATIC	P67 1K 10%	
R995	RS 0,5W 200K+-10% Q10XH5 POTENTIOMETER		1036.4377.00	DIPLOMATIC	P67 200K 10%	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	contained in
U1	EL TONGEBER 6V 7MIA SMD AUDIO DEVICES	1081.0402.00	C&K	KMI-1240 KINGSTATE	
V2	AK BC860B P 45V 200MA TRANSISTOR	AK 0007.7975.00	MOTOROLA	BC860B	
V4 ..7	AD BAS216 75V UDI HIGHSPEED SWITCHING DIODE	0010.9346.00	PHILIPS_SE	BAS216	
V8	AD BAS216 75V UDI HIGHSPEED SWITCHING DIODE	0010.9346.00	PHILIPS_SE	BAS216	
V9	AE BZV55/C5V1 0.5W ZDI ZENER DIODE	AE 0006.9839.00	PHILIPS_SE	BZV55B5V1 (GEG)	
V10	AD BAV99 75V DUO UDI HIGH-SPEED DOUBLE DIODE	AD 0911.0092.00	VALVO	BAV99	
V11	AK BC850B N 45V 200MA TRANSISTOR	AK 0007.7969.00	VALVO	BC850B	
V12	AK BC850B N 45V 200MA TRANSISTOR	AK 0007.7969.00	VALVO	BC850B	
V13 ..20	AE HSMS2800 SCHOTTKY SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V22	AD BAS216 75V UDI HIGHSPEED SWITCHING DIODE	0010.9346.00	PHILIPS_SE	BAS216	
V23	AG MBRD360 SGL 60V 3A0 SCHOTTKY RECTIFIER	4024.7875.00	MOTOROLA	MBRD360T4	
X3	FP STIFTLEISTE 3P.R=2 CONNECTOR	FP 4039.4360.00	SUYIN	20010S-03G2T	
X31	DY BUCHSENLEISTE W31	1084.8562.00			
X33	FP STECKERLEISTE 10P.GER CONNECTOR 10P	0846.4593.00	SIEMENS	V23535-A2200-A102	
X34	FP STECKERLEISTE 26P.GER CONNECTOR 26P.	FP 0820.8610.00	SIEMENS	V23535-A2200-A262	
X35	DY BUCHSENLEISTE W35	1035.7337.00			
X36	FP LEITERPLATTENVERB.13P CONNECTOR	0840.6436.00	DUPONT CON	68100-013	
X37	FP LEITERPLATTENVERB.13P CONNECTOR	0840.6436.00	DUPONT CON	68100-013	
X38	FP STECKERLEISTE 10P.GER CONNECTOR 10P NUR VAR/ONLY MOD: 10	0846.4593.00	SIEMENS	V23535-A2200-A102	
X39	FP STECKERLEISTE 10P.GER CONNECTOR 10P NUR VAR/ONLY MOD: 10	0846.4593.00	SIEMENS	V23535-A2200-A102	
X85	FP STIFTLEISTE 2P.R=2 CONNECTOR	FP 1065.8931.00	SUYIN	20010S-02G2T	
X105	FP STIFTLEISTE 2P.R=2 CONNECTOR	FP 1065.8931.00	SUYIN	20010S-02G2T	
X106	FP STIFTLEISTE 2P.R=2 CONNECTOR	FP 1065.8931.00	SUYIN	20010S-02G2T	
X111	FP STIFTLEISTE 3P.R=2 CONNECTOR	FP 4039.4360.00	SUYIN	20010S-03G2T	
X112	FP STIFTLEISTE 3P.R=2 CONNECTOR	FP 4039.4360.00	SUYIN	20010S-03G2T	
X300	FP STIFTLEISTE 2P.R=2 CONNECTOR	FP 1065.8931.00	SUYIN	20010S-02G2T	
X312	FP STIFTL.WIN 5P.R2,54 ANGLE PIN CONNECTOR	FP 0009.7214.00			
X313	FP STIFTL.WIN 3P.R2,54 ANGLE PIN CONNECTOR	FP 0009.7195.00			
X314	FP E-PRESS STIFTLEISTE 6P CONNECTOR	0048.4741.00			
X501	FP STECKERLEISTE 50P.R=2 CONNECTOR 50P	FP 1051.4516.00	BERG_ELEKT	87131-550	
X502	FP STECKERLEISTE 50P.R=2 CONNECTOR 50P	FP 1051.4516.00	BERG_ELEKT	87131-550	
X700	FP STIFTLEISTE 2P.R=2 CONNECTOR	FP 1065.8931.00	SUYIN	20010S-02G2T	
X900	FP E-PRESS STIFTLEISTE 2P CONNECTOR	0048.4706.00			
X902	FP STIFTLEISTE 8P.R2,54 PIN CONNECTOR	FP 0009.6182.00			
X999	FP BUCHSENLEISTE 30POL. SOCKET CONNECTOR	FP 0283.1830.00	DUPONT CON	76325-...	

ROHDE&SCHWARZ

XY-Liste

XY List

Erklärung der Spaltenbezeichnungen:

el. Kennz.	Bauelement-Kennzeichen
Seite	Leiterplatten-Seite, auf der sich das Bauelement befindet
X/Y	Koordinaten (in Millimeter) des Bauelementes auf der Leiterplatte bezogen auf den Nullpunkt
Planq., Bl.	Planquadrat und Seite des Schaltbildes für das jeweilige Bauelement

Explanation of column designations:

Part	Identification of instrument part
Side	Side of the PC board on which instrument part is positioned
X/Y	Coordinates (in units of millimeters) of the component on the PC board in reference to zero point
Sqr, Pg	Square and page of the diagram for the respective instrument part

Nicht–Service–Relevante Bauteile / Non–Service–Relevant Components

el. Kennz. *Part*	Seite *Side*	X	Y	Planq. *Sqr*	Bl. *Pg*
C1	B	214	7	3B	2
C2	B	212	7	3B	2
C3	A	221	97	7C	3
C4	A	55	104	3B	11
C5	A	53	104	3B	11
C6	A	63	102	3B	11
C7	A	65	102	3B	11
C8	A	68	102	3B	11
C9	A	60	104	3A	11
C10	A	58	104	3B	11
C11	B	124	45	5D	14
C12	A	12	78	5B	12
C13	A	8	78	5B	12
C14	A	219	82	7C	3
C15	B	190	44	3D	2
C16	B	209	31	3E	2
C17	B	190	31	3D	2
C18	A	219	77	7C	3
C19	B	57	16	3F	15
C20	B	206	47	3E	2
C21	B	177	36	3F	2
C22	B	176	32	3F	2
C23	A	102	43	2B	18
C24	B	275	59	3B	9
C25	B	139	59	4C	14
C26	A	65	78	1E	16
C27	A	68	79	1F	16
C28	A	75	76	2F	16
C29	A	60	72	2E	16
C30	B	183	25	2D	2
C31	A	197	48	4D	2
C32	A	207	28	2E	2
C33	A	212	47	4E	2
C34	B	173	23	3F	2
C35	A	177	43	4F	2
C36	A	234	67	8C	3
C37	B	211	111	2E	4
C38	B	161	75	1F	5
C39	B	164	90	2F	5
C40	B	78	85	3F	5
C41	B	164	106	2F	5
C42	B	123	107	4F	5
C43	A	252	42	6B	9
C44	A	30	76	2F	21
C45	A	205	80	1F	3
C46	B	127	82	1F	6
C47	B	260	32	6D	9
C48	B	144	82	2F	6
C49	A	24	79	2F	21
C50	B	292	126	2F	7
C51	A	167	128	3C	7
C52	B	334	76	8B	8
C53	B	250	23	6D	4
C54	A	21	78	2E	21
C55	A	227	75	2E	4
C56	A	208	67	1E	4
C57	B	334	34	8B	8
C58	B	334	97	8C	8
C59	B	334	55	8C	8
C60	B	266	91	1A	9
C61	B	271	83	3B	9
C62	B	321	121	2F	9
C63	A	237	16	5B	2
C64	B	3	126	7D	19
C65	B	194	66	3D	4
C66	A	15	73	2F	21
C67	A	46	79	2E	21
C68	A	43	78	2E	21
C69	B	55	114	1F	11
C70	B	87	142	2F	11
C71	B	27	112	3F	11
C72	B	41	113	3F	11
C73	B	53	128	4F	11
C74	B	5	104	1F	12
C75	B	27	124	2F	12
C76	A	8	86	2F	12
C77	B	4	89	3F	12
C78	B	41	125	4F	12
C79	A	25	84	4F	12
C80	B	149	38	1F	13
C81	B	137	21	4B	13
C82	B	142	13	4C	13
C83	B	151	13	2E	13
C84	B	151	23	2E	13
C85	B	119	24	3F	13
C86	B	141	46	6B	13
C87	B	146	38	6C	13
C88	B	182	45	2A	13
C89	A	144	30	4E	13
C90	A	140	30	4F	13
C92	B	147	42	7B	13
C93	B	176	47	3B	13
C94	B	135	52	2F	14
C95	B	143	59	4B	14
C96	B	118	40	5B	14
C97	B	128	39	5B	14
C98	A	37	72	2E	21
C99	B	102	117	4F	16
C100	B	229	104	8C	3
C101	B	18	59	3A	16
C102	A	60	65	3F	16
C103	B	53	142	1F	17
C104	B	117	128	7B	17
C105	B	135	145	8B	17
C106	B	136	110	8B	17
C107	A	140	126	8B	17
C108	B	35	142	3F	17
C109	B	73	127	4F	17
C110	B	105	141	2F	17
C111	B	73	118	2F	17
C112	B	28	7	4F	18
C113	B	222	31	7D	4
C114	B	34	28	2F	18
C115	B	12	28	3F	18
C116	B	12	7	3F	18
C117	B	37	54	2F	18
C119	B	32	127	2B	12
C121	B	266	86	3B	9
C122	A	87	75	7C	16
C123	A	90	75	7B	16
C124	A	87	83	7B	16
C125	A	91	83	7C	16
C126	B	238	104	8C	3
C127	A	245	104	7D	3
C128	A	256	96	7D	3
C129	A	256	76	8D	3
C130	A	256	87	7D	3
C131	B	200	95	2E	4
C132	B	277	109	4B	10
C133	B	302	106	4B	10
C134	A	52	75	2E	21
C135	B	85	61	6C	15
C136	B	89	47	6C	15
C137	A	225	68	8D	3
C138	B	66	49	7C	15
C139	B	247	67	8D	3
C140	B	208	107	2F	3
C141	B	111	82	3F	6
C142	B	276	89	4C	10
C143	B	301	87	4C	10
C144	A	234	21	5C	2
C145	A	231	21	5B	2
C146	A	187	26	2B	2
C147	A	187	21	2B	2
C148	A	192	21	2B	2
C149	A	192	26	2C	2
C150	A	197	21	2C	2
C151	A	199	25	2C	2
C152	A	203	20	2C	2
C153	A	204	13	2C	2
C154	A	208	20	2D	2
C155	B	208	7	2D	2
C156	A	207	12	3A	2
C157	B	210	7	3A	2
C158	B	216	7	3B	2
C159	B	218	8	3C	2
C160	A	217	20	3C	2
C161	A	219	20	3C	2
C162	A	221	13	3C	2
C163	A	221	20	3C	2
C164	B	224	7	3D	2
C165	A	224	20	5A	2
C166	A	317	124	2A	7
C167	A	212	20	3A	2
C168	B	226	9	5A	2
C169	B	230	9	5B	2
C170	B	228	9	5B	2
C171	A	245	82	2D	3
C172	B	67	61	4A	16
C173	B	277	43	7B	10
C174	B	303	40	8B	10
C175	B	276	63	8C	10
C176	B	302	59	8C	10
C177	A	248	81	3D	3
C178	B	207	120	2A	4
C179	B	207	111	2C	4
C180	A	220	111	2E	4
C181	B	94	36	2C	18
C182	A	30	51	4F	21
C183	A	309	20	5F	8
C184	B	247	107	8D	3
C185	B	248	122	8D	3
C186	B	73	109	5F	17
C187	B	161	122	3E	7
C188	A	14	53	4F	21
C189	A	15	67	1F	21
C190	B	23	61	4A	21
C191	B	45	61	4C	21
C192	A	79	30	8D	21
C193	A	75	30	8D	21
C194	A	79	22	8E	21
C195	A	81	30	8E	21
C196	A	101	30	8A	21
C197	A	99	30	8A	21
C198	A	104	22	8B	21
C199	A	106	30	8B	21
C200	A	20	58	3E	21
C201	A	23	58	3F	21
C202	B	305	80	5F	5
C203	A	38	67	1E	21
C204	A	15	46	3F	21
C205	B	250	30	6D	4
C206	B	86	68	1F	21
C207	B	10	75	1E	21
C208	A	97	21	7C	21
C209	A	72	20	7C	21
C210	B	105	117	5E	17
D1	B	279	66	6C	10
D2	B	279	46	3C	10
D3	B	195	87	2F	4
D3	B	195	87	7A	4
D4	B	6	115	6C	19
D4	B	6	115	7D	19
D5	B	251	119	6A	3
D5	B	251	119	6B	3
D5	B	251	119	7D	3
D6	B	210	103	2A	3
D6	B	210	103	2F	3
D6	B	210	103	4E	3
D6	B	210	103	4F	3
D6	B	210	103	6D	3
D7	A	208	87	1F	3

ROHDE & SCHWARZ	Benennung: *Designation:* ED RECHNER (FC–II) FAST CPU II	Sprache: *Lang.:* de	Blatt: *Sh.:* 1 +	Aei: *C.I.:* 03.03
Typ: *Type:* SMIQ	Datum: *Date:* 99–05–11	Abteilung: *Dpt:* 1GPK	Name: *Name:* DR	Sachnr.: *Part No.:* **1084.8804.01 XY**

Nicht–Service–Relevante Bauteile / Non–Service–Relevant Components

el. Kennz. *Part*	Seite *Side*	X	Y	Planq. *Sqr*	Bl. *Pg*
D7	A	208	87	2A	3
D7	A	208	87	2B	3
D8	A	208	98	2F	3
D8	A	208	98	3E	3
D8	A	208	98	3E	3
D8	A	208	98	3F	3
D8	A	208	98	5D	3
D9	A	62	76	1E	16
D9	A	62	76	2F	16
D9	A	62	76	6B	16
D9	A	62	76	6B	16
D9	A	62	76	6B	16
D9	A	62	76	6C	16
D10	B	250	101	3A	3
D10	B	250	101	8A	3
D11	B	279	113	3A	10
D12	A	18	76	1F	21
D12	A	18	76	2F	21
D12	A	18	76	6A	21
D12	A	18	76	6A	21
D12	A	18	76	7B	21
D12	A	18	76	7B	21
D13	A	219	120	2F	4
D13	A	219	120	3E	4
D13	A	219	120	3F	4
D13	A	219	120	3F	4
D13	A	219	120	4A	4
D14	B	217	114	1F	4
D14	B	217	114	3A	4
D15	B	194	69	4D	4
D16	A	40	76	1E	21
D16	A	40	76	2E	21
D16	A	40	76	6D	21
D16	A	40	76	6D	21
D16	A	40	76	7E	21
D16	A	40	76	7E	21
D17	B	332	90	4C	8
D17	B	332	90	8B	8
D18	B	332	48	6C	8
D18	B	332	48	8B	8
D19	B	332	111	4A	8
D19	B	332	111	8C	8
D20	B	332	69	6A	8
D20	B	332	69	8C	8
D21	B	279	93	6A	10
D22	B	305	71	4F	5
D22	B	305	71	6C	5
D23	B	110	120	2A	17
D23	B	110	120	4E	17
D40	A	17	55	3F	21
D40	A	17	55	3F	21
D40	A	17	55	6B	21
D40	A	17	55	6C	21
D40	A	17	55	7C	21
D40	A	17	55	7C	21
D60	B	86	38	4B	15
D60	B	86	38	7C	15
D61	B	99	119	3E	16
D61	B	99	119	5D	16
D72	A	312	27	2B	8
D72	A	312	27	2B	8
D72	A	312	27	2C	8
D72	A	312	27	2C	8
D72	A	312	27	4F	8
D85	B	66	64	4B	16
D87	B	146	128	6A	17
D87	B	146	128	7A	17
D90	B	37	32	2F	18
D90	B	37	32	4A	18
D106	A	208	76	1F	4
D106	A	208	76	2D	4
D106	A	208	76	3D	4
D106	A	208	76	4B	4
D106	A	208	76	4F	4

el. Kennz *Part*	Seite *Side*	X	Y	Planq. *Sqr*	Bl. *Pg*
D199	B	121	84	2F	6
D199	B	121	84	4D	6
D200	B	138	85	1F	6
D200	B	138	85	4B	6
D213	B	154	85	2F	6
D213	B	154	85	6B	6
D220	B	174	75	1F	5
D220	B	174	75	2A	5
D220	B	174	75	2B	5
D221	B	174	92	1F	5
D221	B	174	92	2C	5
D221	B	174	92	2D	5
D222	B	174	109	2F	5
D222	B	174	109	4C	5
D222	B	174	109	4D	5
D223	B	88	88	3F	5
D223	B	88	88	4B	5
D224	B	102	88	3F	5
D224	B	102	88	4B	5
D226	B	125	102	3F	5
D226	B	125	102	6B	5
D227	B	141	102	4F	5
D227	B	141	102	6A	5
D300	B	159	125	3C	7
D301	B	287	132	2F	7
D301	B	287	132	6B	7
D310	B	324	116	4A	5
D310	B	324	116	1E	9
D310	B	324	116	3D	9
D400	B	268	86	2A	9
D402	B	256	35	6B	9
D500	B	23	64	4A	21
D501	B	44	64	4C	21
D550	B	7	94	1E	12
D550	B	7	94	2C	12
D560	B	55	118	4F	11
D560	B	55	118	6C	11
D561	B	29	107	2F	11
D561	B	29	107	5D	11
D561	B	29	107	5D	11
D561	B	29	107	6D	11
D562	A	10	92	2E	12
D562	A	10	92	5E	12
D562	A	10	92	6C	12
D562	A	10	92	6C	12
D563	B	43	119	3E	12
D563	B	43	119	4A	12
D563	B	43	119	4B	12
D565	B	7	84	3E	12
D565	B	7	84	7B	12
D565	B	7	84	7B	12
D566	A	25	92	4E	12
D566	A	25	92	6B	12
D566	A	25	92	6B	12
D566	A	25	92	6C	12
D566	A	25	92	6C	12
D567	B	58	108	1F	11
D567	B	58	108	4B	11
D567	B	58	108	4C	11
D567	B	58	108	4C	11
D567	B	58	108	4C	11
D567	B	58	108	4C	11
D567	B	58	108	4C	11
D568	B	43	107	3F	11
D568	B	43	107	4D	11
D568	B	43	107	8B	11
D568	B	43	107	8C	11
D568	B	43	107	3C	16
D568	B	43	107	3C	21
D568	B	43	107	3D	21
D569	B	29	119	1E	12
D569	B	29	119	2A	12
D569	B	29	119	2B	12
D570	B	90	132	2F	11

el. Kennz. *Part*	Seite *Side*	X	Y	Planq. *Sqr*	Bl. *Pg*
D570	B	90	132	6B	11
D621	B	59	10	2B	15
D621	B	59	10	2F	15
D621	B	59	10	3E	15
D621	B	59	10	3F	15
D621	B	59	10	5B	15
D700	B	150	15	2F	13
D700	B	150	15	3B	13
D701	B	138	27	3F	13
D701	B	138	27	5B	13
D701	B	138	27	5C	13
D701	B	138	27	5C	13
D701	B	138	27	5D	13
D702	B	121	18	3D	13
D702	B	121	18	3F	13
D702	B	121	18	3B	14
D703	B	151	28	1F	13
D703	B	151	28	2C	13
D704	B	160	54	6B	13
D706	B	132	56	2E	14
D706	B	132	56	3C	14
D810	B	37	132	2B	17
D810	B	37	132	3F	17
D811	B	55	132	1F	17
D811	B	55	132	2C	17
D812	B	72	132	4B	17
D812	B	72	132	4F	17
D820	B	75	121	2F	17
D820	B	75	121	3C	17
D820	B	75	121	3C	17
D820	B	75	121	3D	17
D820	B	75	121	3D	17
D826	B	75	103	3D	17
D826	B	75	103	3E	17
D826	B	75	103	3E	17
D826	B	75	103	3F	17
D826	B	75	103	4C	17
D827	A	74	119	4C	17
D827	A	74	119	4F	17
D840	B	107	135	1F	17
D840	B	107	135	3A	17
D840	B	107	135	3A	17
D840	B	107	135	3C	17
D840	B	107	135	5C	17
D950	B	107	39	2B	18
D960	B	24	9	3F	18
D960	B	24	9	7A	18
D970	B	40	9	4F	18
D970	B	40	9	7B	18
D980	B	23	30	2F	18
D980	B	23	30	7C	18
E2	B	238	83	4E	2
G3	B	20	49	3A	16
G40	B	196	107	2C	4
G50	B	196	124	2B	4
G300	B	326	133	5B	7
K1	B	333	141	3B	7
K1	B	333	141	5A	7
L1	B	183	31	3D	2
L2	B	203	41	3E	2
L3	B	170	28	3F	2
L4	B	238	43	7D	4
L5	B	243	13	5D	4
N1	B	179	48	2A	13
N2	B	265	18	6D	4
N700	B	140	39	6C	13
N701	B	140	15	4B	13
N702	B	126	38	5B	14
N702	B	126	38	5C	14
P1	B	329	130	3A	7
P1A	B	329	130	2C	3
P1B	B	329	130	2C	3
P1C	B	329	130	2C	3
P1D	B	329	130	2C	3

ROHDE & SCHWARZ	Benennung: *Designation:* ED RECHNER (FC–II) FAST CPU II	Sprache: *Lang.:* de	Blatt: *Sh.:* 2 +	Aei: *C.I.:* 03.03
Typ: *Type:* SMIQ	Datum: *Date:* 99–05–11	Abteilung: *Dpt:* 1GPK	Name: *Name:* DR	Sachnr.: *Part No.:* **1084.8804.01 XY**

Nicht–Service–Relevante Bauteile / Non–Service–Relevant Components

el. Kennz. *Part*	Seite *Side*	X	Y	Planq. *Sqr*	Bl. *Pg*
P1E	B	329	130	2C	3
P1F	B	329	130	2C	3
P1G	B	329	130	2C	3
P1H	B	329	130	2C	3
P1J	B	329	130	2C	3
P2	B	194	78	6A	4
P3	B	197	78	6A	4
P4	B	199	78	6A	4
P5	B	204	78	6A	4
P6	B	202	78	6A	4
P7	B	197	96	7A	4
P8	B	114	115	7C	17
P9	B	117	120	6A	17
P10	B	114	123	6A	17
P11	B	117	125	7A	17
P12	B	117	123	7D	17
P13	B	114	125	6D	17
P14	B	114	117	7C	17
P15	B	222	47	8D	4
P16	B	114	120	7C	17
P17	B	117	117	7C	17
P18	B	88	109	5D	16
P19	B	34	69	5B	21
P20	B	55	69	5D	21
P21	B	199	50	4D	2
P22	B	33	58	7B	21
P23	B	209	47	4E	2
P24	B	179	43	4F	2
P25	B	33	60	7C	21
P27	B	77	69	5B	16
P31	B	270	118	2C	3
P32	B	272	116	2C	3
P33	B	270	116	2C	3
P46	B	251	37	7C	9
P49	B	251	34	7C	9
P700	B	129	44	5C	14
P710	B	146	19	4B	13
P720	B	170	43	3A	13
P730	B	153	43	6C	13
P900	B	264	23	7D	4
P901	B	259	23	7C	4
P902	B	257	23	7D	4
P903	B	267	23	6D	4
P904	B	262	23	6D	4
P932	B	154	125	4D	7
P942	B	219	74	2D	4
P943	B	219	71	2D	4
R1	B	77	81	4C	16
R2	B	275	112	2A	10
R3	B	298	96	2B	10
R4	B	280	48	2C	10
R5	B	298	48	2D	10
R6	B	298	30	2D	10
R7	B	208	75	3B	4
R8	A	132	87	3B	6
R9	A	132	85	3B	6
R10	B	111	116	1A	17
R11	B	297	67	6D	10
R12	A	333	131	2B	7
R13	B	275	94	6A	10
R14	B	298	76	6B	10
R15	A	83	94	4B	5
R16	A	83	91	4B	5
R17	B	275	66	6C	10
R18	B	299	50	6D	10
R19	B	275	111	2A	10
R20	B	298	98	2B	10
R21	B	43	128	3A	12
R22	B	48	128	3A	12
R23	B	47	127	3B	12
R24	B	45	127	3B	12
R25	A	31	83	6C	12
R26	A	21	89	4F	12
R27	B	8	80	7A	12

el. Kennz *Part*	Seite *Side*	X	Y	Planq. *Sqr*	Bl. *Pg*
R28	B	10	80	7A	12
R29	B	29	115	2B	12
R30	B	32	115	2B	12
R31	B	39	126	2A	12
R32	B	121	26	3C	13
R33	B	142	35	5C	13
R34	B	137	37	5B	13
R35	B	123	15	2B	14
R36	B	125	15	2B	14
R37	B	127	15	2B	14
R38	B	297	114	2B	10
R39	B	280	49	2C	10
R40	B	95	109	4C	16
R41	B	90	106	4C	16
R42	B	95	107	4C	16
R43	B	298	31	2C	10
R44	A	233	8	3E	2
R45	A	144	117	6C	17
R46	A	137	124	7B	17
R47	A	131	134	6A	17
R48	B	44	28	4A	18
R49	B	299	51	6C	10
R50	B	275	65	6C	10
R51	A	334	123	2A	7
R52	A	268	88	3B	9
R53	B	68	102	2B	11
R54	B	65	102	2C	11
R55	B	63	102	2C	11
R56	B	60	102	2C	11
R57	B	58	102	2C	11
R58	B	55	102	2C	11
R59	B	53	102	2D	11
R60	A	5	76	5B	12
R61	A	10	76	5B	12
R62	A	85	73	7C	16
R63	A	92	73	7B	16
R64	A	85	85	7B	16
R65	A	89	85	7B	16
R66	B	135	24	5C	13
R67	A	132	96	4B	6
R68	A	132	94	4B	6
R69	A	132	92	4B	6
R70	A	132	89	3B	6
R71	B	275	92	6A	10
R72	B	298	78	6B	10
R73	B	297	94	5B	10
R74	A	242	79	2D	3
R75	A	219	124	4A	4
R76	A	20	122	6C	19
R77	A	18	122	6C	19
R78	A	15	122	6C	19
R79	A	13	122	6C	19
R80	A	11	122	5C	19
R81	A	8	122	5C	19
R82	A	6	122	5C	19
R83	A	4	122	5C	19
R84	B	219	121	3B	4
R85	A	105	122	2A	17
R86	B	103	122	2A	17
R87	B	12	54	7D	18
R88	B	219	119	3B	4
R89	B	267	94	1B	9
R90	A	58	95	2B	11
R91	A	55	95	2B	11
R92	A	53	95	2B	11
R93	A	60	95	2A	11
R94	A	63	93	2B	11
R95	A	65	93	2B	11
R96	A	68	93	2B	11
R97	B	50	114	7B	11
R98	A	245	93	5C	3
R99	A	242	93	5C	3
R100	B	214	9	3B	2
R101	B	212	9	3B	2

el. Kennz. *Part*	Seite *Side*	X	Y	Planq. *Sqr*	Bl. *Pg*
R102	B	135	58	4C	14
R103	B	147	15	3C	13
R104	B	77	75	4C	16
R105	B	57	81	5C	16
R106	B	64	61	5C	16
R107	A	247	93	5C	3
R108	A	249	93	5C	3
R109	B	210	85	2B	3
R110	B	212	85	2B	3
R111	B	215	84	2B	3
R112	B	213	85	2B	3
R113	A	247	75	2E	3
R114	A	249	88	2C	3
R115	A	211	128	2D	19
R116	A	213	139	2D	19
R117	A	213	129	2D	19
R118	A	216	139	2C	19
R119	A	221	128	2C	19
R120	A	226	140	2C	19
R121	A	224	129	2C	19
R122	A	224	140	2C	19
R123	A	231	128	2B	19
R124	A	231	140	2B	19
R125	A	229	128	2B	19
R126	A	241	140	2A	19
R127	A	237	140	2B	19
R128	A	234	140	2B	19
R129	A	239	140	2A	19
R130	A	244	140	2A	19
R131	A	220	66	1D	19
R132	A	224	54	1D	19
R133	A	226	54	1D	19
R134	A	231	54	1C	19
R135	A	229	54	1C	19
R136	A	228	64	1C	19
R137	A	234	54	1C	19
R138	A	239	54	1C	19
R139	A	236	54	1B	19
R140	A	241	64	1B	19
R141	A	241	54	1B	19
R142	A	246	54	1B	19
R143	A	244	54	1B	19
R144	A	249	54	1A	19
R145	A	254	54	1A	19
R146	A	251	54	1A	19
R147	A	247	88	2C	3
R148	A	245	88	2C	3
R149	A	240	93	2C	3
R150	A	243	98	2B	3
R151	A	228	89	3B	3
R152	A	238	89	3C	3
R153	A	212	101	3F	3
R154	A	213	105	4F	3
R155	A	233	10	3E	2
R156	A	77	32	7D	21
R157	A	77	20	7E	21
R158	B	111	143	5C	17
R159	A	94	22	7C	21
R160	A	211	66	2B	19
R161	A	218	66	2A	19
R162	A	213	66	2A	19
R163	A	125	119	7C	17
R164	A	140	120	7C	17
R165	A	129	120	7C	17
R166	A	137	120	7C	17
R167	B	219	117	2B	4
R168	B	140	24	5C	13
R169	B	271	52	4B	9
R170	B	135	47	1E	14
R171	B	119	32	5A	14
R172	B	130	41	5B	14
R173	A	272	84	3B	9
R174	B	219	115	2B	4
R175	A	238	86	3C	3

ROHDE & SCHWARZ

Benennung: ED RECHNER (FC–II)
Designation: FAST CPU II

Sprache: *Lang.:* de

Blatt: *Sh.:* 3 +

Aei: *C.I.:* 03.03

Typ: *Type:* SMIQ

Datum: *Date:* 99–05–11

Abteilung: *Dpt:* 1GPK

Name: *Name:* DR

Sachnr.: *Part No.:* **1084.8804.01 XY**

Nicht–Service–Relevante Bauteile / Non–Service–Relevant Com

el. Kennz. *Part*	Seite *Side*	X	Y	Planq. *Sqr*	Bl. *Pg*
R176	A	225	123	3F	4
R177	A	214	20	3A	2
R178	A	201	54	2B	19
R179	A	198	54	2C	19
R180	A	193	54	2C	19
R181	A	196	54	2C	19
R182	A	191	54	2D	19
R183	A	182	116	3D	19
R184	A	193	116	3D	19
R185	A	182	119	3D	19
R186	B	163	19	2C	13
R187	B	159	24	2C	13
R188	B	161	16	2C	13
R189	B	230	7	5B	2
R190	B	228	7	5A	2
R191	B	226	7	5A	2
R192	B	153	13	3C	13
R193	B	147	17	3C	13
R194	B	157	23	3C	13
R195	B	152	117	6C	17
R196	B	152	115	6C	17
R197	B	152	113	6C	17
R198	B	152	111	6C	17
R199	A	125	125	8B	17
R200	A	208	54	2B	19
R201	A	226	94	2A	3
R202	A	206	54	2B	19
R203	A	334	143	3B	7
R204	A	319	125	2A	7
R205	A	37	86	7A	2
R206	A	193	119	3C	19
R207	A	221	54	2A	19
R208	A	288	133	7C	7
R209	A	271	57	3A	9
R210	A	193	124	3C	19
R211	A	5	73	5B	12
R212	A	10	73	5B	12
R213	B	137	16	4B	13
R214	A	157	50	6B	13
R215	A	170	45	3A	13
R216	B	127	44	5C	14
R217	B	127	36	6C	14
R218	A	182	129	3C	19
R219	A	20	40	7D	18
R220	A	17	31	7D	18
R221	A	20	29	6D	18
R222	A	339	132	4B	7
R223	B	122	36	6C	14
R224	A	162	130	3C	7
R225	A	163	134	3C	7
R226	A	143	41	6B	13
R227	B	269	98	2A	9
R228	A	129	125	7B	17
R229	B	145	24	5C	13
R230	B	28	126	2B	12
R231	B	273	55	3B	9
R232	A	193	126	3C	19
R233	A	182	126	3C	19
R234	A	91	127	5A	11
R235	A	195	140	3B	19
R236	A	193	129	3B	19
R237	A	193	140	3B	19
R238	A	200	83	6B	4
R239	A	206	128	3A	19
R240	A	206	140	3B	19
R241	A	201	129	3B	19
R242	A	208	140	3A	19
R243	A	208	128	3A	19
R244	A	200	121	1B	4
R245	A	200	106	2C	4
R246	B	303	114	3A	10
R247	A	263	27	7C	4
R248	A	239	16	5B	2
R249	A	213	116	3A	4

el. Kennz *Part*	Seite *Side*	X	Y	Planq. *Sqr*	Bl. *Pg*
R250	A	290	129	6B	7
R251	B	89	55	3D	15
R252	A	285	4	7E	2
R253	A	93	127	5A	11
R254	B	221	123	3B	4
R255	B	208	71	1D	4
R256	B	205	74	3D	4
R257	B	209	73	4F	4
R258	A	197	72	3D	4
R259	A	197	70	3D	4
R260	A	70	22	7C	21
R261	A	103	36	1B	18
R262	A	100	44	1B	18
R263	A	256	27	7C	4
R264	B	212	73	2D	4
R265	A	233	75	2E	4
R266	A	199	76	4D	4
R267	B	205	71	3D	4
R268	A	104	138	5A	11
R269	A	104	136	5A	11
R270	A	203	54	2B	19
R271	A	97	93	4C	5
R272	B	155	106	6B	5
R273	B	155	104	6B	5
R274	B	136	105	6B	5
R275	B	106	101	7D	5
R276	B	106	105	7D	5
R277	A	168	93	2D	5
R278	A	168	110	4D	5
R279	A	116	85	3C	6
R280	A	116	88	3C	6
R281	A	116	90	3C	6
R282	A	116	92	3C	6
R283	A	116	95	4C	6
R284	A	123	95	4C	6
R285	A	123	93	4C	6
R286	A	116	83	3C	6
R287	B	63	8	3F	15
R288	A	250	42	6B	9
R289	A	236	21	5B	2
R290	A	229	21	5B	2
R291	A	185	21	2B	2
R292	A	185	26	2B	2
R293	A	190	21	2B	2
R294	A	190	26	2B	2
R295	A	195	21	2C	2
R296	A	199	27	2C	2
R297	A	205	20	2C	2
R298	A	210	20	2D	2
R299	B	208	9	2D	2
R300	A	204	10	3A	2
R301	B	210	9	3A	2
R302	B	216	9	3B	2
R303	B	218	9	3C	2
R304	A	226	20	5A	2
R305	B	224	9	3D	2
R306	B	255	49	6B	9
R307	A	205	64	2C	19
R308	A	199	64	2C	19
R309	B	109	117	1A	17
R310	B	22	46	2A	16
R311	A	255	125	4A	19
R312	A	255	123	4A	19
R313	A	255	115	4B	19
R314	A	255	117	4B	19
R315	A	255	120	4A	19
R316	A	255	107	4B	19
R317	A	255	110	4B	19
R318	A	255	112	4B	19
R319	A	232	115	4C	19
R320	A	232	110	4C	19
R321	A	232	107	4C	19
R322	A	232	112	4C	19
R323	A	232	117	4C	19

el. Kennz. *Part*	Seite *Side*	X		
R324	A	232	120	
R325	A	232	123	
R326	A	230	125	4L
R327	A	233	6	3E
R328	A	83	32	7E 2
R329	A	103	32	7A 21
R330	A	97	32	7A 21
R331	A	102	21	7B 21
R332	A	108	32	7B 21
R333	A	73	32	7D 21
R334	B	17	82	5C 21
R335	B	34	73	4C 21
R336	B	21	82	4C 21
R337	B	35	80	5E 21
R338	A	56	75	4D 21
R339	B	35	82	4E 21
R340	B	17	61	5C 21
R341	B	39	61	5E 21
R342	B	53	61	5D 21
R343	B	50	61	6D 21
R344	A	31	63	5B 21
R345	A	28	61	6B 21
R346	A	47	111	3C 21
R347	A	45	112	3D 21
R348	B	303	78	6C 5
R349	A	94	30	6B 2
R350	B	106	144	2D 17
R351	A	223	123	4A 4
R352	A	71	30	6C 2
R353	A	102	124	2A 17
R354	A	105	126	2B 17
R355	B	148	40	7B 13
R356	B	158	42	4E 13
R357	A	108	21	7B 21
R358	A	99	21	7C 21
R359	A	106	21	7C 21
R360	A	84	20	7C 21
R361	A	75	20	7C 21
R362	A	81	20	7C 21
R363	B	162	40	4F 13
R364	B	158	40	4E 13
R365	B	162	42	4F 13
R366	B	178	45	1A 13
R591	B	3	111	5D 19
R592	B	6	111	5D 19
R593	B	7	111	5D 19
R594	B	9	111	5D 19
R595	B	13	111	6D 19
R596	B	14	111	6D 19
R597	B	16	111	6D 19
R598	B	18	111	6D 19
R991	A	166	5	5E 2
R995	A	182	5	5E 2
U1	B	27	138	8B 6
V2	A	333	126	2A 7
V4	B	214	75	2D 4
V5	A	233	77	2D 4
V6	A	336	136	5A 7
V7	A	329	127	3A 7
V8	A	268	56	3A 9
V9	B	332	127	3A 7
V10	A	122	36	6C 14
V11	A	339	128	2B 7
V12	B	269	94	2B 9
V13	A	323	126	2A 7
V14	A	336	138	3B 7
V15	A	50	96	3C 12
V16	A	46	96	3C 12
V17	A	41	96	3C 12
V18	B	26	95	3C 12
V19	B	26	103	3D 12
V20	B	26	99	3D 12
V22	A	286	9	7E 2
V23	B	229	31	7D 4

ROHDE & SCHWARZ

Benennung: *Designation:* ED RECHNER (FC–II) FAST CPU II

Sprache: *Lang.:* de

Blatt: *Sh.:* 4 +

Aei: *C.I.:* 03.03

Typ: *Type:* SMIQ

Datum: *Date:* 99–05–11

Abteilung: *Dpt:* 1GPK

Name: *Name:* DR

Sachnr.: *Part No.:* **1084.8804.01 XY**

Nicht–Service–Relevante Bauteile / Non–Service–Relevant Components

el. Kennz. *Part*	Seite *Side*	X	Y	Planq. *Sqr*	Bl. *Pg*
X3	B	274	81	2E	3
X31	B	173	15	1A	2
X33	B	84	78	6A	2
X34	B	105	15	8A	2
X35	B	9	36	7B	2
X36	B	68	89	7A	2
X37	B	68	99	5C	2
X38	B	107	27	6B	2

el. Kennz *Part*	Seite *Side*	X	Y	Planq. *Sqr*	Bl. *Pg*
X39	B	84	27	6C	2
X85	B	153	24	4C	13
X105	B	204	96	2C	4
X106	B	204	113	2B	4
X111	B	99	101	6D	5
X112	B	102	101	7E	5
X300	B	329	140	4B	7
X312	B	292	14	7E	2

el. Kennz. *Part*	Seite *Side*	X	Y	Planq. *Sqr*	Bl. *Pg*
X313	B	270	23	3E	2
X314	B	244	35	8C	2
X501	B	340	75	3A	20
X502	B	340	23	5A	20
X700	B	31	54	3A	16
X900	B	179	23	2D	2
X902	B	111	53	1A	18
X999	B	257	133	2A	22

ROHDE&SCHWARZ

SERVICE INSTRUCTIONS SME

Reference/Step-Synthesis

1035.6501.02

Contents

7. Checking and Repair of the Module

7.1 Functional Description

The Reference/Step-Synthesis Module consists of the two function units *Reference Frequencies* and *Step Synthesis*.

The function unit *Reference Frequencies* generates the required reference frequencies for the remaining synthesis and modulation boards in the instrument.

The function unit *Step Synthesis* supplies an output signal in the frequency range from 103 to 117MHz, the harmonics of which supply the coarse resolution of the synthesis.

7.1.1 Reference Frequencies

A low-noise 100-MHz crystal oscillator, which is connected to an internal or external frequency standard via a narrow-band PLL, is the nucleus of signal generation. Frequencies of 10, 50, 100 and 600MHz are generated by dividing, direct decoupling and multiplication.

7.1.1.1 Generation of 100MHz

The 100-MHz signal is generated in a conventional crystal oscillator (V5) with series resonant circuit. A second stage V35 amplifies the decoupled signal to approx. 17dBm.

The 100-MHz signal is distributed on the module via four gate stages as buffer amplifiers (V60, V70, V80, V90).

7.1.1.2 REFERENCE-PLL

The 100 MHz are divided by dividers down to 1MHz - the *reference frequency* at the phase detector (D525).

50 MHz are provided for the reference signal REF50 at X72 and 10 MHz for the output of the frequency standard EXTREF at X73.

The *reference signal* for the phase detector D525 is selected via the multiplexer D520 from IREF (TCXO), EREF (external source) and OREF (ROSC) via the control bits R0 and R1.

The subsequent programmable reference divider D510 divides the input frequencies which may vary between 1 and 16MHz to 1MHz.

The output pulses of the digital phase detector pass to a PI controller (N530 with circuitry), which controls the 100-MHz crystal VCO. The control bandwidth of the reference PLL is approx. 10Hz.

7.1.1.3 Frequency Standards and TUNING TCXO/ROSC

The output signal of the **TCXO** is supplied as TTL signal IREF to the multiplexer D520. The voltage supply to the TCXO is automatically switched off by the gate D535-D via the control bit R1, when the TCXO is not selected as frequency standard.

The frequency of the TCXO is fine-tuned via the D/A converter D555 (resolution: 12 bits) and the subsequent OPs N565 and N562. N562 adds an additional external tuning voltage (input EXTTUNE). OP N550 generates an exact and temperature-stable tuning voltage of 0 to 12 V at the output OPTTUNE for the option ROSC.

The 10-MHz signals of **ROSC** and **external frequency standards** pass via the inputs (OPTREF) and X73 (EXTREF) to the multiplexer D520 as TTL signals OREF and EREF.

Thus, the connector EXTREF (socket X73) adopts a bidirectional function. When the relay K1 is closed, it supplies a 10-MHz signal as frequency standard. When K1 is open, EXTREF functions as input for an external frequency standard (1 to 16 MHz).

7.1.1.4 Generation of 600MHz

600 MHz are generated from 100 MHz by means of connecting two differential amplifiers which work as triple amplifier and doubler in series.

Both multiplying stages are followed by steep bandpasses for selection of the wanted signal.

An inductive power divider (L271) distributes the 600-MHz signal onto the base stage V280 to the step synthesis and the emitter stage V285 to the output REF600.

The output signal REF600 can be decreased by approx. -40dB by means of the pin switch V290/V295 via the control bit SR600 (OP N290).

7.1.2 Step Synthesis

In the Step PLL, a VCO 103 to 117 MHz is down-converted with 100 MHz to 3 to 17 MHz and synchronized to the output signal (3 to 17 MHz) of a programmable divider.

7.1.2.1 600-MHz Divider DIVREF

The programmable ECL divider DIVREF (D310) divides the 600-MHz input signal by division factors of 17 to 100 with fractional dividers of min. 1/8.

The resulting output signal of 6 to 34 MHz is divided down to 3 to 17 MHz using the subsequent D flip-flop (D320). It is passed as *reference signal* SDIV for the Step-PLL via a lowpass to the phase detector N470.

7.1.2.2 Mixer and Buffer Amplifier

The *relational frequency ZFVCO* at the phase detector N470 is generated by down-converting the VCO frequency by 100 MHz. Part of the VCO output signal is routed via the RF stage (N430, N440) to the RF input of the mixer N380.

The LO input of N380 is controlled by the emitter stage V380 by 100 MHz and a level of approx. 16 dBm.

The differential band of 3 to 17 MHz at the IF output of N380 is passed as *relational frequency* ZFVCO via the IF stage N350 to the phase detector N470. The input and output lowpasses at N350 provide for the required suppression of the 100 MHz LO frequency and higher mixture products.

7.1.2.3 STEP-PLL CONTROLLER and RAMP CONTROL

The loop filter following N470 consists of a conventional PI controller (N465 with circuitry) and steep-edge lowpasses at the input and output. The control bandwidth of the loop is 350 kHz. The minimum output voltage VSVCO is limited by V475/V473 to approx. 0.5V.

Sudden frequency changes outside the lock-in range are realized using the analog frequency detector with subsequent ramp control. Analog measurement of the reference frequency (SDIV) and the relational frequency (ZFVCO) is carried out parallel with the phase detector and compared by the OpAmp N460. When a difference of approx. 300 kHz is exceeded, a constant current depending on the sign of the difference is impressed on the integration capacity C473 via the comparator N468-A/B and the analog switch D460-A/B. The voltage ramp thus generated at the output of N465 passes the step VCO to the lock-in range of the PLL and is there switched off again.
Settling must have been terminated after max. 100 µs.

7.1.2.4 STEP-VCO 103 to 117 MHz

The step VCO (V408) is a usual FET oscillator designed as drain circuit. V420 amplifies the signal to a specified level and routes it via a resistive power divider to the RF stage in the PLL and to the output stage V435 for the step frequency.

7.1.3 DATA TRANSMISSION and DIAGNOSTICS

The module is controlled via the serial interface SERBUS (D610). The diagnostic multiplexers are addressed via strobe 1, which also sets the operating mode of the reference PLL and the tuning voltage for TCXO/ROSC. The time-critical settings for the divider factor of the step PLL and control of the output REF600 are effected via strobe 2.

All output signals of the module as well as various internal signals for functional check and troubleshooting can be called via the diagnostics function.

The control voltages of the two VCOs - VQ100 and VSVCO - are monitored by window comparators (N680-A..D) with subsequent hysteresis loop (D680-A..D). An interrupt is triggered via IR0 and IR1 as soon as the loops lock out.

7.2 Measuring Equipment and Accessories

- Spectrum analyzer up to 1.2GHz (e.g., FSA).
- 50-Ω cable with test adaptor for RF test points
- Signal generator 1 to 16MHz, frequency accuracy $<10^{-6}$ (e.g., SMG).
- Oscilloscope with 100-MHz bandwidth (e.g., BOL).
- Digital storage oscilloscope for 7.4.10.2 (e.g., BOS).
- Multimeter (DC voltage accuracy ±4mV with 4V input voltage = ±0.1%, e.g., UDL44).
- Test voltage source 0 to 20V (e.g., NGT20).
- Service kit (1039.3520).

7.3 Troubleshooting

The subsequent error descriptions give only a rough survey.

Localization of errors generally requires signal tracing by means of the circuit diagram. Therefore, the operating points of the transistors and the RF levels have been noted down at the respective test points. The RF test points are DC voltage-free (except for TTL levels) and routed to connectors with ground connection via a 475-Ω resistor..

7.3.1 Reference Frequencies

Reference PLL does not lock in	Check reference PLL acc. to 7.4.3.1 Check input signals at the phase detector D525 via TPOINTs 203 and 204. Check the input OPTREF acc. to 7.4.3.3. Check 100-MHz crystal VCO acc. to 7.4.2.
No output of 10-MHz frequency standard	Check output EXTREF acc. to 7.4.3.2
Fine-tuning of TCXO/ROSC not possible	Make sure that the reference PLL works correctly acc. to 7.4.3.1. Check tuning acc. to 7.4.4.
No signal at REF50	Make sure via TPOINT 209 that the 100-MHz crystal VCO works correctly. Check output REF50 (TPOINT 207) acc. to 7.4.12.
No signal at REF100	Check output REF100 (TPOINT 209) acc. to 7.4.12. Check 100-MHz crystal VCO acc. to 7.4.2.
No signal at REF600	Make sure via TPOINT 209 that the 100-MHz crystal VCO works correctly. Check 300-MHz IF via TPOINT 206 and repeat adjustment acc. to 7.4.5.1, if required. Check output REF600 (TPOINT 210) acc. to 7.4.5.3 repeat adjustment acc. to 7.4.5.2 and 7.4.5.3, if required.
Output signals with extreme phase jitter	All output signals of the module have an extreme phase jitter in the AF range: replace 100-MHz crystal B20.

7.3.2 Step Synthesis

Step PLL does not lock in	Check LO signal at the phase detector N470 via TPOINT 213. Check level of the 600-MHz input clock for divider D310 acc. to 7.4.5.3. Check RF signal at the phase detector N470 via TPOINT 214. Check level at the LO input of N380 acc. to 7.4.6. Check step VCO acc. to 7.4.7.2. Check RF level and IF level acc. to 7.4.8. Continue troubleshooting as described under *Noise burst on step frequency*.
Noise burst on step frequency	The step frequency can be set, however, reveals a broad noise spectrum. Check ramp control acc. to 7.4.9. If no error was found with the above mentioned checks, the comparator N468, the analog switch D460, the phase detector N470 or the OP N465 may be faulty. Repeat fine adjustment acc. to 7.4.10.1.
Settling problems with the step frequency	Lock-in procedure of the step PLL requires more than 100µs. Check settling phase of the step PLL acc. to 7.4.10.3. Readjust ramp control acc. to 7.4.10.1.

7.4 Checking and Adjustment

The individual test and adjustment procedures mentioned in this Section have to be carried out in the given order for complete adjustment of the module. Test and adjustment points are also mentioned with troubleshooting, Section 7.3.

The board covers which have to be mounted are noted down for each individual point.

RF frequency setting generally have to be carried out in CW mode (MODULATION OFF).

7.4.1 Data Transmission and Power Consumption

- Settings A: **UTILITIES/DIAG/TPOINT/STATE ON**
  /TEST POINT 202
  UTILITIES/REF OSC/SOURCE INT
  /ADJUSTMENT STATE ON
  /FREQUENCY ADJUSTMENT 2000

- Settings B: **UTILITIES/DIAG/TPOINT/STATE ON**
  /TEST POINT 213
  UTILITIES/REF OSC/SOURCE EXT
  /EXT FREQUENCY 7 MHz

▶ Check logic states using the table below:

	Subaddress 0			Subaddress 1	
Setting on the SME	D620 (Byte 0) 4 5 6 7 14	D630 (Byte 1) 4 5 6 7 14 12 11	SME setting FREQ	D330 (Byte 0) 4 5 6 7 14 13 12 11	D340 (Byte 1) 4 5 11
A	L H L H L	L H H L H L L	912 MHz	H H H L L L H H	L L H
B	H L H L H	H L L H L H H	877 MHz	L L L H H H L L	H L H
			88 MHz	L L L L L L L L	L H L

The high levels at D620 (Subaddress 0/Byte 0: Addressing of the diagnostic points) are not applied statically.
Bytes 3 and 4 of subaddress 0 (tuning voltage TCXO/ROSC) are not accessible via the hardware and are therefore checked with setting A via the diagnostic value indicated:
▶ TPOINT 202 = -6..-4V

Checking the power consumption:

- The power consumption of the module can be measured by means of soldering out the input inductors L100 to L104 and connecting an ammeter (rated values can be looked up in Section 7.7).

7.4.2 100-MHz CRYSTAL VCO

- Connect test voltage source with a tuning voltage of 7V to X541/X542 (X542=ground).
- Connect voltmeter to P10.
- Connect spectrum analyzer (span 0 to 500 MHz, ref. level 0dBm) to P40/P41 (P41=ground).

▶ Adjust voltage at P10 to minimum using L5.
▶ Set the voltage at P10 to the same value for both limits of the tuning voltages 1V and 13V such that the change of voltage at P10 becomes minimal across the tuning voltage range 1 to 13V.
▶ Absolute voltage at P10
across 1 to 13V tuning range = 10.2 to 11.2V
Voltage change at P10
across 1 to 13V tuning range < 0.2V

▶ Vary the tuning voltage between -1V and +1V:
The 100-MHz oscillation must not stop!

• Set tuning voltage to 7V

▶ Adjust the 100-MHz signal at P40 to -3dBm+/-0.3dBm.
▶ Check, if level at X71 (REF100) is 4 to 6dBm.

• ***Plug jumper onto X540-X541 after removing the test-voltage source.***

7.4.3 REFERENCE-PLL for 100-MHz CRYSTAL VCO

7.4.3.1 Correct Function of the REFERENCE-PLL

• Settings: **UTILITIES/REF OSC/SOURCE INT**
/ADJUSTMENT STATE ON
/FREQUENCY ADJUSTMENT 2000

▶ Check TPOINT 201 = 2 to 12V

• Connect signal generator with 10MHz/-13dBm to REF (rear panel).

• Settings: **UTILITIES/REF OSC/SOURCE EXT**
/EXT FREQUENCY 10 MHz

• Vary the frequency of the signal generator according to the table below and check the control voltage via TPOINT 201:

Frequency in MHz	Rated value TPOINT 201	Error message on SME
10.000000	5 to 10V	-
10.000100 9.999900	<12V >2V	- -
10.000400 9.999600	>12.5V <-12.5V	Reference Frequency 100MHz VCXO unlocked Reference Frequency 100MHz VCXO unlocked

7.4.3.2 Output EXTREF

• Connect a spectrum analyzer (span 0 to 100 MHz, ref. level 10dBm) to REF (rear panel).

• Settings: **UTILITIES/REF OSC/SOURCE INT**

▶ Level of the 10-MHz frequency standard = 6..10dBm
Harmonics < -15dBc

7.4.3.3 Input OPTREF

This test instruction can only be executed, if the oven-controlled reference oscillator ROSC (option SM-B1) is fitted to the instrument.

- Settings: **UTILITIES/REF OSC/SOURCE INT**
  ADJUSTMENT STATE OFF

▶ Check TPOINT 201 = 2 to 12V

7.4.4 TUNING of TCXO/ROSC

7.4.4.1 Reference Adjustment for D/A Converter

- Connect a highly precise voltmeter to the output OPTTUNE. (motherboard connection: X70 A10). Make sure that there is good ground connection between the voltmeter and the module.

- Settings: **UTILITIES/DIAG/TPOINT/STATE ON**
  /TEST POINT 202
  UTILITIES/REF OSC/SOURCE INT
  /ADJUSTMENT STATE ON
  /FREQUENCY ADJUSTMENT 1333

▶ Adjust V_{OPTUNE} to 4.000V+/-4mV.
▶ Check voltages according to the table below:

Test point	Function of the signal	Rated value for FREQUENCY ADJUSTMENT 1333	Rated value for FREQUENCY ADJUSTMENT 2666
TPOINT 202	Output voltage DAC	-3.33V±0.3V	-6.66V±0.6V
X70 A10	Tuning voltage for ROSC	4V±0.004V	8V±0.010V
P580	Tuning voltage for TCXO	1.6V±0.1V	3.3V±0.2V

7.4.4.2 External Tuning Voltage

- Connect test-voltage source to the input TUNE (rear panel).
- Connect voltmeter to P580.

- Settings: **UTILITIES/REF OSC/SOURCE INT**
  /ADJUSTMENT STATE ON
  /FREQUENCY ADJUSTMENT 2000

- Set voltages of -10V, 0V and +10V:
▶ Check voltage at P580 acc. to the table below:

Test point	Function of the signal	External TUNE voltage	Rated value
P580	Tuning voltage for TCXO	-10V 0V +10V	2.18 to 2.30V 2.40 to 2.50V 2.60 to 2.72V

7.4.5 600-MHz Reference Signal REF600

The cover on the solder side must be fitted. Refer to 7.5!

7.4.5.1 Adjustment of 300-MHz Bandpass

- Settings: **UTILITIES/DIAG/TPOINT/STATE ON**
  /TEST POINT 206

▶ Adjust level at TPOINT 206 (ZF300) to maximum via
(1.) L230 (brass core),
(2.) L231 (ferrite core),
(3.) L234 (ferrite core),
(4.) L235 (brass core).
One adjustment per trimmer carried out in the above order is sufficient.

The cores must not be winded out of the coils and get lost (caution with turning counterclockwise!)

▶ Level at TPOINT 206 = 0.1V to 0.4V

7.4.5.2 Adjustment of 600-MHz Bandpass

- Connect spectrum analyzer (span 0 to 1GHz, ref. level 10dBm) at output socket REF600.

- Settings: **FREQ 90 MHz**
  UTILITIES/DIAG/TPOINT/STATE ON
  /TEST POINT 210

▶ Adjust level at TPOINT 210 (REF600) to maximum via
(1.) L265 (brass core),
(2.) L266 (brass core),
(3.) L267 (brass core),
(4.) L268 (brass core).
One adjustment per trimmer carried out in the above order is sufficient.

The cores must not be winded out of the coils and get lost (caution with turning counterclockwise!)

7.4.5.3 Adjustment of Level REF600

- Settings and test instruments as under 7.4.5.2.

▶ Adjust level to 11dBm+/-0.2dBm using R254.
(Module Revision 1 to 3)
▶ Adjust level to 14dBm+/-0.2dBm using R254. (Rev. from 4 up)
▶ Check level according to the table below:

Test point	Function of the signal	Rated value	Remark
X77 REF600	600-MHz reference frequency	11dBm±0.2dB 14dBm±0.2dB	Rev. 1 to 3 Rev. from 4 up Setting: **FREQ < 93.75MHz**
	600 MHz switched off	<-25dBm	Setting: **FREQ >= 93.75MHz**
TPOINT 210	600 MHz via diagnostics	0.2V to 0.6V	Setting: **FREQ < 93.75MHz**
P255	600-MHz clock for step divider	>-21dBm >-24dBm	Rev. 1 to 4 Rev. from 5 up Measure using a 50-Ω cable

7.4.6 LO-STAGE

- Connect a spectrum analyzer (span 90 to 110MHz, ref.level 0dBm) to P390/P391 (P391=ground, submodule K).

▶ Level at P390 = -10 to -6dBm

7.4.7 STEP VCO

7.4.7.1 Coarse Adjustment of the Tuning Range

- Connect a spectrum analyzer (span 90 to 130MHz, ref. level 10dBm) to the output socket X75 FSTEP.
- Connect test-voltage source to X406/X407 (X407=ground).

- Set tuning voltage to 18V.
▶ Adjust step frequency to 116 to 118MHz using L406.
- Set tuning voltage to 2V.
▶ Adjust step frequency to 102 to 103.5MHz using C400.

▶ Repeat adjustment using L406 and C400 until the frequencies mentioned above are adhered to.

7.4.7.2 Adjustment of FSTEP Level

- Set VCO frequency to 110MHz.

▶ Adjust level to 6dBm+/-0.4dBm using R412.

▶ Sweep the frequency from 103 to 117MHz:
Permitted level range at X75 FSTEP: 5.2dBm to 6.8dBm
Level deviation: < 0.8dB
Harmonics: < -20dBc

7.4.8 RF and IF STAGES

- Test-voltage source remains at X406. Set frequency of the step VCO to 110MHz.
- Connect a spectrum analyzer (span 100 to 120MHz, ref. level 0dBm) to P460/P461.

▶ Adjust level to -26dBm+/-0.2dBm using R441.

▶ Check level conditions in the above mentioned frequency range:

Test point	Function of the Signal	Rated value	Tuning voltage at X40
P460	RF signal 110MHz RF signal 103 to 117MHz	-26dBm±0.2dBm -27 to -24.5dBm, Variation <1.2dBm	approx. 10V approx. 2 to 18V
P360 (TPOINT 214)	IF signal 3 to 17MHz	-23dBm to -19dBm, Variation <2dBm	approx. 2 to 18V

7.4.9 Putting the RAMP CONTROL into Operation

- Test voltage source remains at X406. Set voltage to 16V.
- Connect voltmeter to P466/465 (P465=ground).
- Plug jumper onto X461-X462.

▶ Adjust voltage at P466 to 0V+/-5mV using R469.
▶ Sweep voltage at X406 from 2 to 18V:
Voltage at P466 (TPOINT 208) = -25mV to 25mV

- ***Subsequently, plug jumper onto X460-X461 and X405-X406.***

7.4.10 Locked STEP PLL

The cover on the solder side must be fitted. Refer to 7.5!

7.4.10.1 Fine Adjustment of the RAMP CONTROL

- Connect voltmeter to P466/465 (P465=ground).
- Settings: **UTILITIES/DIAG/TPOINT/STATE ON**
  /TEST POINT 208
  FREQ 820 MHz (FSTEP 115MHz)

▶ Adjust voltage at P466 to 0V+/-4mV using R469.

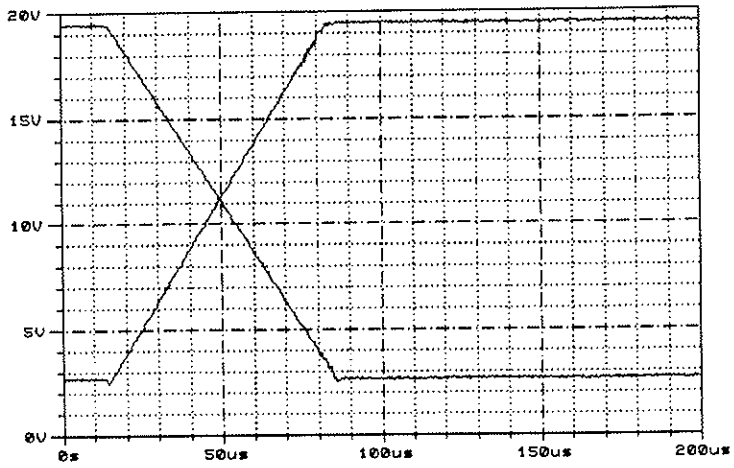
- Settings: **FREQ 943 MHz** (FSTEP 103.06MHz)
  FREQ 895 MHz (FSTEP 110.00MHz)
  FREQ 836 MHz (FSTEP 117.27MHz)

▶ The following applies for all three settings:
Voltage at P466 (TPOINT 208) = -10mV to 10mV

7.4.10.2 Transient behaviour of the STEP PLL

- Connect digital storage oscilloscope to X406/X407 (X407=ground).
- Settings: **SWEEP/FREQ/START FREQ 836MHz** (FSTEP 117.27MHz)
  /STOP FREQ 943MHZ (FSTEP 103.06MHz)
  /STEP LIN 107MHZ
  /DWELL 20ms
  /SPACING LIN
  /MODE AUTO

▶ The quality of the oscillogram should be as follows:



x-Axis: Time
y-Axis: Tuning Voltage Step VCO

The voltage characteristic of both frequency changes (103 to 117MHz, 117 to 103MHz) is simultaneously shown in the oscillogram. Since the board cover is not fitted, the level of the tuning voltage is slightly higher than the level in the adjusted state with cover fitted (103MHz/2V, 117MHz/18V).

▶ Subsequent to switching off the ramp, all settling procedures must have been finished after max. 100µs from start of the ramp.

7.4.10.3 Fine Adjustment of the VCO Tuning Range

Both board covers must be fitted. Refer to 7.5!

- Settings: **UTILITIES/DIAG/TPOINT/STATE ON**
  /TEST POINT 212

- Setting: **FREQ 834 MHz** (FSTEP 117.02MHz)
▶ Set V(TPOINT 212) to 18V±0.2V using L406.
- Setting: **FREQ 1149 MHz** (FSTEP 103.05MHz)
▶ Set V(TPOINT 212) to 2V±0.2V using C400.

▶ Repeat adjustment using L406 and C400 until the voltages required are obtained.

7.4.11 Spurious Signals of Mixer on FSTEP

Both board covers must be fitted. Refer to 7.5!

- Connect a spectrum analyzer to output FSTEP (X75).
- Connect reference output of the analyzer to REF.

- Settings: **UTILITIES/REF OSC/SOURCE EXT**
  /EXT FREQUENCY 10 MHz

- Set the following RF frequencies and measure the suppression of spurious signals at the given carrier offsets.

Settings	Step divider	Step frequency (Carrier frequency)	Carrier offset of mixer spuriae	Absolute frequency of the right mixer spuriae
FREQ 916 MHz	23.875	112.5654 MHz	523.56 kHz	113.0890 MHz
FREQ 928.8 MHz	21.125	114.2012 MHz	591.72 kHz	114.7929 MHz
FREQ 930.4 MHz	20.875	114.3713 MHz	598.80 kHz	114.9701 MHz
FREQ 833 MHz	17.875	116.7832 MHz	699.30 kHz	117.4825 MHz

▶ Suppression of spurious signals with the above mentioned carrier frequencies and frequency offsets: < -99dBc.
The suppression of spurious signals in the range of -100dBc can be measured by calibrating the analyzer to the carrier level, then overloading it by 10 dB and varying it by the frequency offset of the spurious signal. The span should be 10kHz. The noise level must be far below 100dBc (measure in AVERAGE mode, if required).

7.4.12 Signal Quality REF600, REF100, REF50

Both board covers must be fitted. Refer to 7.5!

▶ Check harmonics and secondary lines according to the table below:

Test point	Spectral Data	Rated value	Remark
X77 REF600	1st harmonic with 1.2GHz 100-MHz secondary lines Interference by divider spectrum Carrier offset 3.0457MHz	<-40dBc <-85dBc <-85dBc	 Measuring range: 0 to 1GHz Setting: **FREQ 77.5MHz** (FSTEP 103.0457MHz) Measuring range: 595 to 605MHz
X71 REF100	Signal level 100MHz Harmonics Suppression of spurious signals	4 to 6dBm <-25dBc <-85dBc	 particularly with 1, 10 and 50MHz offset
X72 REF50	Signal level 50MHz Harmonics Suppression of spurious signals	9..11.5dBm <-25dBc <-85dBc	 particularly with 1 and 10 MHz offset

7.4.13 Diagnostic Points

The underlined values listed in the table are corrected automatically by means of the measured value of the diagnostic point 200.

TPOINT	Description	Rated value	Remark
200	10-kOhm reference impedance	-20mV to 20mV	for offset compensation
201	Control voltage of 100-MHz crystal VCO	2 to 12V	
202	Output of D/A converter for tuning-voltage	**-10.1 to 0.01V**	Value = ADJUSTMENT * (-2.5mV) V(OPTTUNE) = value * (-1.2) U(P580) = value * (-0.5)
203	1-MHz reference signal for reference PLL	1.8 to 5.2V	
204	1-MHz relational signal for reference PLL	2.0 to 3.0V	
205	Input/output of Frequency standard (EXTREF)	0.8 to 3.5	
206	300-MHz intermediate freq. in the multiplier	0.1 to 0.4V	
207	50-MHz output REF50	0.3 to 1.3V	Terminate by 50Ω.
208	Output voltage of frequency detector	**-40mV to 40mV**	Step PLL locked in
209	100-MHz output REF100	0.18 to 0.60V	Terminate by 50Ω.
210	600-MHz output REF600	0.2 to 0.6V -20mV to 20mV	RF frequency < 93.75MHz Terminate by 50Ω. RF frequency >= 93.75MHz
211	24V-supply voltage	22.5 to 25.5V	
212	Control voltage of step VCO	1 to 20V	
213	Output signal step divider	0.4 to 2.5V	
214	Down-converted VCO signal 3 to 17MHz	**0.10 to 0.25V**	
215	Output step frequency FSTEP 103 to 117MHz	0.2 to 0.6V	Terminate by 50Ω.

7.5 Removal and Assembly

Subsequent to opening the instrument, unlocking the boards and disconnecting the RF connections, the board can be taken out of its slot. Make sure, when removing the screening cover that the cover on the solder side is unscrewed/removed first. With assembly, the screening cover on the component side is the first to be fixed by screws. If this order is not adhered to, the threaded bolts on the board shrink and thus damage the threads of the screws on the component side.

7.6 Digital Interface

Board address: **20**

Subaddress 0 (Strobe 1): static data

Byte	Bit	Latch/Pin	Name	Function
3	7 to 4	-	-	-
	3 to 0	D555	TV11 to TV8	Tuning voltage for TCXO/ROSC (MSB)
2	7 to 0	D555	TV7 to TV0	Tuning voltage for TCXO/ROSC (LSB)
1	7	D630 11	R1	Selection of **0** **1** **1**
	6	12	R0	frequency standard: **0** TCXO **0** ROSC **1** EXTREF
	5	13	-	-
	4	14	ENR0	Socket EXTREF **0** = input (1 to 16MHz) **1** = output (10MHz)
	3	7	NR3	Divider for frequency standard (MSB)
	2	6	NR2	in two's complement (1 to 16) ...
	1	5	NR1	-"- ...
	0	4	NR0	-"- (LSB)
0	7	D620 11	-	-
	6	12	-	-
	5	13	-	-
	4	14	END1	Selection **0** **1**
	3	7	END0	Diagnostic multiplexer: **1** MUX 1 (D650) **0** MUX 2 (D660)
	2	6	DA2	Addressing of the diagnostic point (MSB)
	1	5	DA1	-"- ...
	0	4	DA0	-"- (LSB)

Subaddress 1 (Strobe 2): dynamic data

Byte	Bit	Latch/Pin	Name	Function
1	7	D340 11	SR600	Control bit for REF600: **0** = REF600 on **1** = REF600 off
	6	12	-	-
	5	13	-	-
	4	14	-	-
	3	7	SP6	Main divider DIVREF (D310) Bit value in divider factor: 2^8
	2	6	SP5	-"- 2^7
	1	5	SP4	-"- 2^6
	0	4	SP3	-"- 2^5
0	7	D330 11	SP2	-"- 2^4
	6	12	SP1	-"- 2^3
	5	13	SP0	-"- 2^2
	4	14	SA1	Auxiliary divider DIVREF (D310) 2^1
	3	7	SA0	-"- 2^0
	2	6	SF2	Fractional divider DIVREF (D310) 2^{-1}
	1	5	SF1	-"- 2^{-2}
	0	4	SF0	-"- 2^{-3}

7.7 External Interfaces

Pin	Name	Input/Output	Origin/Destination	Specified range	Signal description
X70.A1	EXTTUNE	Input	Rear panel TUNE	-10 to 10V	external tuning voltage for TCXO (steepness typ. 0.1ppm/V)
X70.A10	OPTTUNE	Output	A71,ROSC X22.16	0..12V	Tuning voltage for ROSC
X70.A12	SERBUS-CLK	Input	A3,CPU X31.40	HCMOS level	Serbus clock
X70.A14 X70.A15	SERBUS-DAT	bidir.	A3,CPU X31.39	HCMOS level	Serbus data
X70.A16	SERBUS-SYNC	Input	A3,CPU X31.37	HCMOS level	Serbus synchronization
X70.A17	SERBUS-INT	Output	A3,CPU X31.38	HCMOS level	Serbus interrupt
X70.A18	RES-P	Input	A3,CPU X31.28	HCMOS level	Serbus reset
X70.A19	DIAG-5V	Output	A3,CPU X31,44	-5V to 5V	Diagnostics
X70.A22	VA24-P	Input	A2,POWS1	23.0 to 25.0V 4 to 20mA	Supply voltage, analog
X70.A24	VA15-P	Input	A2,POWS1	14.85V to 15.75V 370 to 450mA	Supply voltage, analog
X70.A26	VA7.5-P	Input	A2,POWS1	7.45V to 7.95V 600 to 750mA	Supply voltage, analog
X70.A28	VD5-P	Input	A2,POWS1	5.15V to 5.25V 3 to 14mA	Supply voltage, digital
X70.A30	VA15-N	Input	A2,POWS1	-15.75V to -14.85V 120 to 250mA	Supply voltage, analog
X71	REF100	Output	A6,FMOD X65	5±1dBm	100-MHz reference
X72	REF50	Output	A8,DSYN X81	9±1dBm	50-MHz system reference (connected through)
X73	EXTREF	bidir.	Rear panel REF	7±1dBm 0.1 to 2V_{rms} (-13 to 13dBm)	Output: Frequency standard 10MHz Input: ext. Fstd. 1 to 16MHz (Input impedance 200 Ohms)
X74	OPTREF	Input	A71,ROSC X711	0 to 13dBm	Frequency standard ROSC 10MHz
X75	FSTEP	Output	A9,SUM X97	6±1dBm	Step frequency 103 to 117MHz
X77	REF600	Output	A10,OPU1 X105	10±1dBm 13±1.2dBm	(Rev. 1 to 3) 600-MHz reference (Rev. from 4 up)

ROHDE&SCHWARZ

Schaltteillisten
numerisch geordnet

Part lists
in numerical order

Listes des pièces détachées
par numéros de référence

Comp. No.	Designation	Stock No.	Manufacturer	Bestellbezeichnung / Designation	Simulation in contained in
B20	EQ 100,000MHZ5.0 LF08 CRYSTAL 100,000 MHZ	1036.4225.00	KVG	EQ0803.0680 SELEKT.	
C1	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C3	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C4	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C7	CC 15PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8750.00	MURATA	GRM42-6C0G 150F50ZPT	
C8	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C10	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C15	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C20	CC 22PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8396.00	MURATA	GRM42-6C0G 220F50ZPT	
C21	CC 180PF+-1%50V NPO 1206 CHIP CAPACITOR	CC 0099.8844.00	MURATA	GRM42-6C0G 181F50ZPT	
C22	CC 120PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8838.00	MURATA	GRM42-6C0G 121F50ZPT	
C23	CC 390PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8880.00	AVX	1206 5 A 391 F 3	
C30	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C32	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C33	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C38	CC 180PF+-1%50V NPO 1206 CHIP CAPACITOR	CC 0099.8844.00	MURATA	GRM42-6C0G 181F50ZPT	
C42	CC 12PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8744.00	MURATA	GRM42-6C0G 120F50ZPT	
C51	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C52	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C54	CC 18PF+-1% 50VNP0 0603 SMD-CERAMIC-CAPACITOR	CC 0048.3622.00	MURATA	GRM39C0G***F50ZPT	
C55	CC 68PF+-1% 50VNP0 0603 SMD-CERAMIC-CAPACITOR	CC 0009.9746.00	MURATA	GRM39C0G***F50ZPT	
C56	CC 10NF+-10% 50VHDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4844.00	MURATA	GRM39X7R***K5C500PT*	
C65	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C67	CC 18PF+-1% 50VNP0 0603 SMD-CERAMIC-CAPACITOR	CC 0048.3622.00	MURATA	GRM39C0G***F50ZPT	
C68	CC 68PF+-1% 50VNP0 0603 SMD-CERAMIC-CAPACITOR	CC 0009.9746.00	MURATA	GRM39C0G***F50ZPT	
C69	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C70	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C71	CC 10PF+-0,25 50VNP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C72	CC 10NF+-10% 50VHDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4844.00	MURATA	GRM39X7R***K5C500PT*	
C75	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C77	CC 18PF+-1% 50VNP0 0603 SMD-CERAMIC-CAPACITOR	CC 0048.3622.00	MURATA	GRM39C0G***F50ZPT	
C78	CC 39PF+-1% 50VNP0 0603 SMD-CERAMIC-CAPACITOR	CC 0009.9730.00	MURATA	GRM39C0G***F50ZPT	
C79	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C82	CC 10NF+-10% 50VHDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4844.00	MURATA	GRM39X7R***K5C500PT*	
C85	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C87	CC 18PF+-1% 50VNP0 0603 SMD-CERAMIC-CAPACITOR	CC 0048.3622.00	MURATA	GRM39C0G***F50ZPT	
C88	CC 68PF+-1% 50VNP0 0603 SMD-CERAMIC-CAPACITOR	CC 0009.9746.00	MURATA	GRM39C0G***F50ZPT	
C92	CC 10NF+-10% 50VHDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4844.00	MURATA	GRM39X7R***K5C500PT*	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
C98	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C99	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C100	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C101	CC 470NF+-10%50V X7R 1812 CERAMIC CHIP CAPACITOR	CC 0007.7498.00	AVX	1812 5C 474KA T00F	
C103 ..105	CE 220UF+-20%35V RM5 ELECTROLYTIC CAPACITOR	CE 0008.7904.00	PANASONIC	ECA 1 VFG 221 B	
C106	CE 100UF+-20%63V RM5 ELECTROLYTIC CAPACITOR	CE 0008.7879.00	PANASONIC	ECA 1 JFG 101 B	
C107	CE 100UF+-20%16V RUND SMD SMD-ELECTOLYTIC CAPACIT.	CE 0009.6553.00	SANYO	16CV100F(G)S	
C108	CE 100UF+-20%16V RUND SMD SMD-ELECTOLYTIC CAPACIT.	CE 0009.6553.00	SANYO	16CV100F(G)S	
C158	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C200	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C204	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F50ZPT	
C206	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C207	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C211	CE 100UF+-20%25V RM2.5 ELECTROLYTIC CAPACITOR	CE 0008.7891.00	PANASONIC	ECA-1EFG101I	
C212	CE 100UF+-20%16V RUND SMD SMD-ELECTOLYTIC CAPACIT.	CE 0009.6553.00	SANYO	16CV100F(G)S	
C218	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C219	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C221	CC 8,2PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8242.00	MURATA	GRM42-6C0G 8R2 C50PT	
C222	CC 12PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8744.00	MURATA	GRM42-6C0G 120F50ZPT	
C223	CC 33PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0048.3639.00	MURATA	GRM39C0G***B50ZPT	
C229	CC 4,7PF0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4538.00	MURATA	GRM39C0G***B50ZPT	
C230	CC 18PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0048.3622.00	MURATA	GRM39C0G***F50ZPT	
C231	CC 18PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0048.3622.00	MURATA	GRM39C0G***F50ZPT	
C232	CC 150PF+-1% 50V NPO 0603 MD-CERAMIC-CAPACITOR	CC 1051.4680.00	MURATA	GRM39C0G***F50ZPT	
C233	CC 56PF+-1% 50VNPO 0603 SMD CERAMIK CAPACITOR	CC 1093.6417.00	MURATA	GRM39C0G***F50ZPT	
C234	CC 18PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0048.3622.00	MURATA	GRM39C0G***F50ZPT	
C235	CC 18PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0048.3622.00	MURATA	GRM39C0G***F50ZPT	
C236	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C240	CC 1,0NF+-10%50V HDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4938.00	MURATA	GRM39X7R***K5C50OPT*	
C241	CC 10NF+-10% 50VHDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4844.00	MURATA	GRM39X7R***K5C50OPT*	
C250	CC 3,3PF 0,1PF 50V NPO 06 SMD-CERAMIC-CAPACITOR	CC 0009.8285.00	MURATA	GRM39C0G***B50ZPT	
C251	CC 39PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.9730.00	MURATA	GRM39C0G***F50ZPT	
C252	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C253	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C254	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C255	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C256	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C257	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C258	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	

Comp. No.	Designation	Stock No.	Manufacturer	Bestellbezeichnung Designation	Enthalten in contained in
C260	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C261	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C262	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C263	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C264	CC 1,5PF0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4450.00	MURATA	GRM39C0G***B50ZPT	
C265	CC 2,7PF0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.8291.00	MURATA	GRM39C0G***B50ZPT	
C266	CC 3,9PF0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4509.00	MURATA	GRM39C0G***B50ZPT	
C267	CC 33PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0048.3639.00	MURATA	GRM39C0G***B50ZPT	
C268	CC 5,6PF0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4521.00	MURATA	GRM39C0G***B50ZPT	
C269	CC 10P+-0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4567.00	MURATA	GRM39C0G***B50ZPT	
C270	CC 3,9PF0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4509.00	MURATA	GRM39C0G***B50ZPT	
C271	CC 1,8PF0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4473.00	MURATA	GRM39C0G***B50ZPT	
C272	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C273	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C274	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C276	CC 6,8PF0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.8262.00	MURATA	GRM39C0G***B50ZPT	
C277	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C278	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C279	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C280	CC 2,7PF0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.8291.00	MURATA	GRM39C0G***B50ZPT	
C281	CC 3,3PF 0,1PF 50V NPO 06 SMD-CERAMIC-CAPACITOR	CC 0009.8285.00	MURATA	GRM39C0G***B50ZPT	
C282	CE 1UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7391.00	PHILIPS_CO	2222 116 71108	
C283	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C284	CC 1,5PF0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4450.00	MURATA	GRM39C0G***B50ZPT	
C285	CC 4,7PF0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4538.00	MURATA	GRM39C0G***B50ZPT	
C286	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C287	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C288	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C289	CC 10P+-0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4567.00	MURATA	GRM39C0G***B50ZPT	
C290	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C291	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C292	CC 27PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0010.9323.00	MURATA	GRM39C0G***F50ZPT	
C293	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C294	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C295	CC 1PF+-0,25 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8667.00	MURATA	GRM42-6C0G 1R0 C50PT	
C296	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C297	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C298	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C299	CC 10NF+-10% 50VHDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4844.00	MURATA	GRM39X7R***K5C500PT*	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	Baugruppe contained in
C311	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C312	CC 10PF+-0,25 50VNPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C313	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C315	CC 150PF+-1% 50V NPO 0603 MD-CERAMIC-CAPACITOR	CC 1051.4680.00	MURATA	GRM39C0G***F50ZPT	
C319	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C320	CC 10NF+-10% 50VHDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4844.00	MURATA	GRM39X7R***K5C500PT*	
C321	CC 1,0NF+-10%50V HDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4938.00	MURATA	GRM39X7R***K5C500PT*	
C322	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C323	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C324	CC 10P+-0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4567.00	MURATA	GRM39C0G***B50ZPT	
C325	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C326	CC 82PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 1097.6363.00	MURATA	GRM39C0G***F50ZPT	
C327	CE 22UF+-20%35V RUND SMD SMD ELECTROLYTIC CAPACIT.	CE 0009.6253.00	PANASONIC	EEV HB 1V 220P	
C328 ..331	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C350	CC 56PF+-1% 50VNPO 0603 SMD CERAMIK CAPACITOR	CC 1093.6417.00	MURATA	GRM39C0G***F50ZPT	
C351	CC 8,2PF0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4550.00	MURATA	GRM39C0G***B50ZPT	
C352	CC 68PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.9746.00	MURATA	GRM39C0G***F50ZPT	
C353	CC 68PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.9746.00	MURATA	GRM39C0G***F50ZPT	
C354	CC 3,3NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8909.00	PHILIPS_CO	2238 581 16621	
C355	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C356	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C357	CC 15PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.8227.00	MURATA	GRM39C0G***F50ZPT	
C358	CC 8,2PF0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4550.00	MURATA	GRM39C0G***B50ZPT	
C359	CC 1,0NF+-10%50V HDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4938.00	MURATA	GRM39X7R***K5C500PT*	
C360	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C361	CC 10PF+-0,25 50VNPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C362	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C363	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C366	CC 15PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.8227.00	MURATA	GRM39C0G***F50ZPT	
C367	CC 180PF+-1% 50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 1097.6305.00	MURATA	GRM39C0G***F50ZPT	
C368	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39C0G***F50ZPT	
C380	CC 1,0NF+-10%50V HDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4938.00	MURATA	GRM39X7R***K5C500PT*	
C381	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C382	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C383	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C384	CE 2,2UF +-10% 25V 6032 TANTALUM CHIP CAPACITOR	CE 0007.7223.00	SPRAGUE	293D 225 X9 025 C2W	
C385	CC 22PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4609.00	MURATA	GRM39C0G***F50ZPT	
C386	CC 27PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0010.9323.00	MURATA	GRM39C0G***F50ZPT	
C387	CC 47PF+-1%50V C0G 1206 CERAMIC CHIP CAPACITOR	CC 0099.8496.00	MURATA	GRM42-6C0G 470F50XPT	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
C388	CC 33PF+-1% 50VNP0 0603 SMD-CERAMIC-CAPACITOR	CC 0048.3639.00	MURATA	GRM39C0G***B50ZPT	
C400	CT 9PF 250V LUFTTR.KONZ. AIR TRIMMER	CT 0564.6885.00	TEKELEC	AT 5276	
C401	CC 10PF+-2% 500V PELL CERAMIC CAPACITOR	CC 0580.9510.00	ATC	ATC100B 100 GW500XR	
C402	CC 4,7PF+-0,1PF500V PELL CAPACITOR	CC 0580.9540.00	ATC	ATC100B 4R7 BW500XR	
C404	CC 27PF+-1% 50VNP0 0603 SMD-CERAMIC-CAPACITOR	CC 0010.9323.00	MURATA	GRM39C0G***F50ZPT	
C406	CC 22PF+-1% 50VNP0 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4609.00	MURATA	GRM39C0G***F50ZPT	
C408	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C410	CE 4,7UF+-10% 10V 3528 TANTALUM CHIP CAPACITOR	CE 0007.7275.00	SPRAGUE	293D 475 X9 010 B2T	
C411	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C413	CC 82PF+-1% 50VNP0 0603 SMD-CERAMIC-CAPACITOR	CC 1097.6363.00	MURATA	GRM39C0G***F50ZPT	
C414	CC 33PF+-1% 50VNP0 0603 SMD-CERAMIC-CAPACITOR	CC 0048.3639.00	MURATA	GRM39C0G***B50ZPT	
C417	CC 18PF+-1% 50VNP0 0603 SMD-CERAMIC-CAPACITOR	CC 0048.3622.00	MURATA	GRM39C0G***F50ZPT	
C418	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C420	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C421	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C423	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C424	CC 10P+-0,1PF50V NP0 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4567.00	MURATA	GRM39C0G***B50ZPT	
C431	CC 470PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C432	CC 470PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C434	CC 10P+-0,1PF50V NP0 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4567.00	MURATA	GRM39C0G***B50ZPT	
C435	CC 39PF+-1% 50VNP0 0603 SMD-CERAMIC-CAPACITOR	CC 0009.9730.00	MURATA	GRM39C0G***F50ZPT	
C436	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C437	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C439	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C440	CC 470PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C441	CC 470PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C443	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C445	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C447	CC 1NF+-1% 50V NP0 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C448	CC 3,9PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8207.00	MURATA	GRM42-6C0G 3R9 C50PT	
C449	CC 12PF+-1% 50VNP0 0603 SMD-CERAMIC-CAPACITOR	CC 0009.8256.00	MURATA	GRM39C0G***F50ZPT	
C450	CC 470PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C453	CC 10PF+-0,25 50VNP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C454	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C455	CC 1,0NF+-10%50V HDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4938.00	MURATA	GRM39X7R***K5C500PT*	
C457	CC 220PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8850.00	AVX	1206 A 221 F 3	
C458	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C459	CC 6,8PF+-0,1PF500V PELL CERAMIC CAPACITOR	CC 0007.8565.00	ATC	100B 6R8BW 500XR	
C460	CC 1,0NF+-10%50V HDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4938.00	MURATA	GRM39X7R***K5C500PT*	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	Enthalten in contained in
C461	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C462	CC 1,8NF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0007.7423.00	AVX	1206 5A 182 F 3	
C463	CC 6,8PF+-0,1PF500V PELL CERAMIC CAPACITOR	CC 0007.8565.00	ATC	100B 6R8BW 500XR	
C464	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F50ZPT	
C465	CC 1,0NF+-10%50V HDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4938.00	MURATA	GRM39X7R***K5C500PT*	
C467	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C468	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F50ZPT	
C469	CC 1,0NF+-10%50V HDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4938.00	MURATA	GRM39X7R***K5C500PT*	
C470	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C471	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C472	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F50ZPT	
C473	CK 68NF+-5%63V RD2,5H7MKT POLYESTER CAPACITOR	CK 0099.2923.00	SIEMENS	B 32 529-A683-J	
C474	CC 2,2NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8444.00	AVX	1206 5 C 222 KA 3	
C475	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C476	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C477	CC 2,2NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8444.00	AVX	1206 5 C 222 KA 3	
C478	CE 10UF+-20%35V RUND SMD SMD ELECTROLYTIC CAPACIT.	CE 0009.5605.00	PANASONIC	EEV HB 1V 100X	
C479	CE 10UF+-20%35V RUND SMD SMD ELECTROLYTIC CAPACIT.	CE 0009.5605.00	PANASONIC	EEV HB 1V 100X	
C480	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C481	CC 220PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8850.00	AVX	1206 A 221 F 3	
C482	CC 22PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4609.00	MURATA	GRM39C0G***F50ZPT	
C483 ..485	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C486	CC 4,7PF0,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4538.00	MURATA	GRM39C0G***B50ZPT	
C487	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C488	CC 270PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8867.00	AVX	1206 5A 271 F 3	
C489	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C491	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C492	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C500	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C501	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C510	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C511	CC 10NF+-10% 50VHDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4844.00	MURATA	GRM39X7R***K5C500PT*	
C513	CC 39PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.9730.00	MURATA	GRM39C0G***F50ZPT	
C514	CC 15PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8750.00	MURATA	GRM42-6C0G 150F50ZPT	
C515	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C516	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C517	CC 1,0NF+-10%50V HDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4938.00	MURATA	GRM39X7R***K5C500PT*	
C519	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C524	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
C525	CC 18OPF+-1% 50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 1097.6305.00	MURATA	GRM39COG***F5OZPT	
C526	CC 1OP+-O,1PF5OV NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4567.00	MURATA	GRM39COG***B5OZPT	
C530	CC 68OPF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0007.7375.00	MURATA	GRM42-6C0G 681F 5OPT	
C531	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C532	CC 1ONF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C535	CC 68OPF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0007.7375.00	MURATA	GRM42-6C0G 681F 5OPT	
C536	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C537	CC 1ONF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C538	CE 1UF+-20%100V ALU-CHIP SMD-ELECTROLYTIC CAPACIT.	CE 0008.1787.00	VALVO	2222 139 69108	
C539	CE 1UF+-20%100V ALU-CHIP SMD-ELECTROLYTIC CAPACIT.	CE 0008.1787.00	VALVO	2222 139 69108	
C540	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C541	CE 2,2UF+-20%50V RUND SMD SMD ELECTROLYTIC CAPACIT.	CE 0009.6524.00	PANASONIC	EEV HB 1H 2R2R	
C542	CK 2,2UF+-5% 50V RD7,2H13 POLYESTER CAPACITOR	CK 0350.5944.00	SIEMENS	B32529-C5225-J089	
C543	CK 1UF+-5%50V7,5X5,5X10,5 POLYESTER CAPACITOR	CK 0099.2998.00	SIEMENS	B32529-C5105-J189	
C544 ..548	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C552	CE 1UF+-20%100V ALU-CHIP SMD-ELECTROLYTIC CAPACIT.	CE 0008.1787.00	VALVO	2222 139 69108	
C555 ..557	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C558	CC 15PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8750.00	MURATA	GRM42-6C0G 15OF5OZPT	
C560	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C561	CC 1ONF+-10% 50VHDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4844.00	MURATA	GRM39X7R***K5C500PT*	
C562	CK 2,2UF+-5% 50V RD7,2H13 POLYESTER CAPACITOR	CK 0350.5944.00	SIEMENS	B32529-C5225-J089	
C563	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C564	CE 2,2UF+-20%50V RUND SMD SMD ELECTROLYTIC CAPACIT.	CE 0009.6524.00	PANASONIC	EEV HB 1H 2R2R	
C565	CE 10UF+-20%35V RUND SMD SMD ELECTROLYTIC CAPACIT.	CE 0009.5605.00	PANASONIC	EEV HB 1V 100X	
C566	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C567	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C570	CC 1ONF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C574	CC 68OPF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0007.7375.00	MURATA	GRM42-6C0G 681F 5OPT	
C575	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C576	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C577	CC 1ONF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C578	CC 1ONF+-10% 50VHDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4844.00	MURATA	GRM39X7R***K5C500PT*	
C579	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C580	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C582	CE 1UF +-10% 25V 3528 TANTALUM CHIP CAPACITOR	CE 0007.7217.00	SPRAGUE	293D 105 X9 025 B2T	
C595	CC 1ONF+-10% 50VHDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4844.00	MURATA	GRM39X7R***K5C500PT*	
C609	CC 1ONF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C610	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C620	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	Einheit in contained in
C621	CE 22UF+-20%35V RUND SMD SMD ELECTROLYTIC CAPACIT.	CE 0009.6253.00	PANASONIC	EEV HB 1V 220P	
C650	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C660	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C680	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C685	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39COG***F50ZPT	
C688	CE 22UF+-20%35V RUND SMD SMD ELECTROLYTIC CAPACIT.	CE 0009.6253.00	PANASONIC	EEV HB 1V 220P	
C690	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C691	CC 100NF+-10%16V HDK 0603 CERAMIC CHIP CAPACITOR	CC 1097.6292.00	AVX	CM105 X7R104K16AT	
C695	CC 100PF+-1% 50VNPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4680.00	MURATA	GRM39COG***F50ZPT	
C697	CC 1,0NF+-10%50V HDK 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4938.00	MURATA	GRM39X7R***K5C500PT*	
C698	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C900	CE 22UF+-20%35V RUND SMD SMD ELECTROLYTIC CAPACIT.	CE 0009.6253.00	PANASONIC	EEV HB 1V 220P	
C901	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
D31	BG SH100E3008 DIVREF ASIC IC GATEARRAY	BG 1039.1240.00	SIEMENS	SH100E3008	
D95	BL 74AC74SC 2XD-FLIPFL DUAL D-TYPE FLIPF	BL 0820.3602.00	FAIRCHILD	74AC74SC	
D320	BL 74ACT74SC 2XRSFLIPFLOP IC DUAL D-FLIPFLOP	BL 0008.0680.00	TOSHIBA	(TC74)ACT74(FN)	
D330	BL PC74HC4094T 8ST.BUSREG 8-STAGE SHIFT&STORE REG.	0804.0977.00	PHILIPS_SE	(PC)74HC4094(D/T)	
D340	BL PC74HC4094T 8ST.BUSREG 8-STAGE SHIFT&STORE REG.	0804.0977.00	PHILIPS_SE	(PC)74HC4094(D/T)	
D430	BL 74AC00SC 4X2IN NAND QUAD NAND GATE	BL 0820.3477.00	FAIRCHILD	74AC00SC	
D445	BL 74AC00SC 4X2IN NAND QUAD NAND GATE	BL 0820.3477.00	FAIRCHILD	74AC00SC	
D460	BS DG441DY 4XANALOGSCH IC QUAD ANALOG SWITCH	1036.4454.00	SILICONIX	DG441DY	
D500	BL 74AC161SC 4B.BIN CNT 4BIT SYNC.PRES.BIN COUNT.	BL 0820.3519.00	NSC	74AC161(SC)	
D505	BL 74AC00SC 4X2IN NAND QUAD NAND GATE	BL 0820.3477.00	FAIRCHILD	74AC00SC	
D510	BL PC74HC161T 4B.BIN.CNT BINARY COUNTER	BL 0804.0983.00	PHILIPS_SE	(PC)74HC161(D/T)	
D515	BL PC74HC390T 2XDEC.CNT DUAL DECADE COUNTER	BL 0007.5043.00	PHILIPS_SE	(PC)74HC390(D/T)	
D520	BL PC74HC153T 2X4IN.MUX DUAL MULTIPLEXER	BL 0007.5008.00	PHILIPS_SE	(PC)74HC153(D/T)	
D525	BL PC74HC74T 2XD-FF DUAL D-TYPE FLIPFLOP	0007.3505.00	PHILIPS_SE	(PC)74HC74D(T)	
D535	BL PC74HC00T 4X2IN.NAND QUAD 2INPUT NAND GATE	BL 0007.3463.00	PHILIPS_SE	(PC)74HC00D(T)	
D550	BL PC74HC00T 4X2IN.NAND QUAD 2INPUT NAND GATE	BL 0007.3463.00	PHILIPS_SE	(PC)74HC00D(T)	
D555	BJ DAC8143FS 1X12B-DAC 12B SERIAL D/A-CONVERTER	1012.9510.00	PMI	DAC8143FS	
D600	BL PC74HCT125T 4XBUFF. 3S QUAD LINE DRIVER	BL 0007.5395.00	PHILIPS_SE	(PC)74HCT125(D/T)	
D610	BG TH3032.1C SERBUSD ASIC IC GATE ARRAY	BG 0008.6143.00	THESYS	TH3032.1C	
D620	BL PC74HC4094T 8ST.BUSREG 8-STAGE SHIFT&STORE REG.	0804.0977.00	PHILIPS_SE	(PC)74HC4094(D/T)	
D630	BL PC74HC4094T 8ST.BUSREG 8-STAGE SHIFT&STORE REG.	0804.0977.00	PHILIPS_SE	(PC)74HC4094(D/T)	
D640	BL PC74HC14T 6XINV.SCHM HEXINV.SCHMITT-TRIGGER	BL 0007.4018.00	PHILIPS_SE	(PC)74HC14(D/T)	
D650	BL PC74HC4051T 8CH.AN.MUX 8CHANNEL ANAL.MULTIPLEXER	0007.3592.00	PHILIPS_SE	(PC)74HC4051(D/T)	
D660	BL PC74HC4051T 8CH.AN.MUX 8CHANNEL ANAL.MULTIPLEXER	0007.3592.00	PHILIPS_SE	(PC)74HC4051(D/T)	
D680	BL PC74HC132T 4XSCHMITT T QUAD 2-INP NAND SCHMITT	BL 0520.7811.00	PHILIPS_SE	(PC)74HC132(D/T)	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	Element is contained in
K1	SR 5V 500 OHM 1X1 SIL RELAY 5V SIL	1012.9604.00	HAMLIN	HE3621A0500	
L1	LD 10UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L2	LD 4,7UH 10% 0,15A 1210 RF CHOKE	LD 0008.1687.00	SIEMENS	B82422-A1472-J(K)100	
L3	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L5	LD 142NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9559.00	COMPONEX	E 558 CN-10 0025	
L15	LD 150NH 10% 0,10HM 1,23A CHOKE TRIMMWERT/SELECTED"	LD 0067.2763.00	DALE	IM2	
L20	LD 370NH 9,5W CM14P FE-K COIL	0620.7629.00	TOKO	E521HN-090023	
L30	LD 0,82UH10%0,850HMO,420A CHOKE	LD 0067.2857.00	DALE	IM2	
L33	LD 10UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L35	LD 170NH 5,5W CM15P FE-K COIL+CORE	0801.4859.00	TOKO	E521 HN-050023	
L50	LD 2,7UH 10%0,550HMO,355A CHOKE	LD 0067.2911.00	DALE	IM2	
L55	LD 150NH 10% 0,10HM 1,23A CHOKE	LD 0067.2763.00	DALE	IM2	
L65	LD 150NH 10% 0,10HM 1,23A CHOKE	LD 0067.2763.00	DALE	IM2	
L73	LD 2,7UH 10%0,550HMO,355A CHOKE	LD 0067.2911.00	DALE	IM2	
L75	LD 150NH 10% 0,10HM 1,23A CHOKE	LD 0067.2763.00	DALE	IM2	
L85	LD 150NH 10% 0,10HM 1,23A CHOKE	LD 0067.2763.00	DALE	IM2	
L96	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L97	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L98	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L100	LD 3,3UH BEI 1,63A0,160HM CHOKE	LD 0026.4061.00	DALE	IM 6	
L101	LD 15UH 10% 1R2 0,46A CHOKE	LD 0026.4149.00	DALE	IM 6	
L102	LD 4,7UH 10%1,20HM 0,239A CHOKE	LD 0067.2940.00	DALE	IM2	
L103	LD 4,7UH BEI 1,35A0,240HM CHOKE	LD 0026.4084.00	DALE	IM 6	
L104	LD 4,7UH 10%1,20HM 0,239A CHOKE	LD 0067.2940.00	DALE	IM2	
L107	LD 1,20UH10%0,180HMO,620A CHOKE	LD 0067.2870.00	DALE	IM2	
L108	LD 4,7UH 10%1,20HM 0,239A CHOKE	LD 0067.2940.00	DALE	IM2	
L109	LD 4,7UH BEI 1,35A0,240HM CHOKE	LD 0026.4084.00	DALE	IM 6	
L110	LD 4,7UH 10%1,20HM 0,239A CHOKE	LD 0067.2940.00	DALE	IM2	
L206	LD 38NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9442.00	COMPONEX	E 558 AN-10 0041	
L209	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L210	LD 10UH BEI 0,81A 0,660HM CHOKE	LD 0026.4126.00	DALE	IM 6	
L211	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L215	LD 2,2UH 10%0,40HM 0,415A CHOKE	LD 0067.2905.00	DALE	IM2	
L216	LD 10UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L230	LD 29NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9420.00	COMPONEX	E 558 AN-10 0040	
L231	LD 32NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9436.00	COMPONEX	E 558 CN-10 0020	
L234	LD 32NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9436.00	COMPONEX	E 558 CN-10 0020	
L235	LD 29NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9420.00	COMPONEX	E 558 AN-10 0040	

Komp. Nr. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	Enthalten in contained in
L251	LD 91NH SMD Q5,1H5 0-K SMD-VHF-COIL	0008.9520.00	COMPONEX	E 558 HN-10 0100	
L253	LD 0,56UH10%0,500HM0,550A CHOKE	LD 0067.2834.00	DALE	IM2	
L256	LD 0,56UH10%0,500HM0,550A CHOKE	LD 0067.2834.00	DALE	IM2	
L260	LD 10UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L261	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L262	LD 220NH 10% 0,28A 1210 RF CHOKE	LD 0520.7911.00	SIEMENS	B82422-A3221-J(K)100	
L265 ..268	LD 29NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9420.00	COMPONEX	E 558 AN-10 0040	
L271	LU HF-UEBERTR. 50-1700MHZ RF TRANSFORMER	1036.4590.00	COMPONEX	616DB-1017	
L275	LD 32NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9436.00	COMPONEX	E 558 CN-10 0020	
L277	LD 56NH SMD Q5,1H5 0-K SMD-VHF-COIL	0008.9471.00	COMPONEX	E 558 GN-10 0028	
L278	LD 270NH 10%0,160HM0,975A CHOKE	LD 0067.2792.00	DALE	IM2	
L280	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L281	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L282	LD 32NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9436.00	COMPONEX	E 558 CN-10 0020	
L285	LD 38NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9442.00	COMPONEX	E 558 AN-10 0041	
L286	LD 56NH SMD Q5,1H5 0-K SMD-VHF-COIL	0008.9471.00	COMPONEX	E 558 GN-10 0028	
L288	LD 0,47UH10%0,350HM0,660A CHOKE	LD 0067.2828.00	DALE	IM2	
L290	LD 32NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9436.00	COMPONEX	E 558 CN-10 0020	
L291	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L292	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L320	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L322	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L324	LD 220NH 10%0,140HM1,045A CHOKE	LD 0067.2786.00	DALE	IM2	
L325	LD 0,82UH10%0,850HM0,420A CHOKE	LD 0067.2857.00	DALE	IM2	
L326	LD 1,50UH10%0,220HM0,560A CHOKE	LD 0067.2886.00	DALE	IM2	
L330	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L350	LD 10UH 10% 0,18A 1210 RF CHOKE	LD 0007.9255.00	SIEMENS	B82422-A1103-J(K)100	
L351	LD 10UH 10% 0,18A 1210 RF CHOKE	LD 0007.9255.00	SIEMENS	B82422-A1103-J(K)100	
L352	LD 0,33UH10%0,220HM0,830A CHOKE	LD 0067.2805.00	DALE	IM2	
L353	LD 270NH 10%0,160HM0,975A CHOKE	LD 0067.2792.00	DALE	IM2	
L359	LD 47UH 10% 0,08A 1210 RF CHOKE	LD 0008.1693.00	SIEMENS	B82422-A1473-J(K)100	
L360	LD 0,39UH10%0,300HM0,710A CHOKE	LD 0067.2811.00	DALE	IM2	
L361	LD 0,33UH10%0,220HM0,830A CHOKE	LD 0067.2805.00	DALE	IM2	
L380	LD 220NH 10%0,140HM1,045A CHOKE	LD 0067.2786.00	DALE	IM2	
L381	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L382	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L383	LD 220NH 10%0,140HM1,045A CHOKE	LD 0067.2786.00	DALE	IM2	
L384	LD 220NH 10%0,140HM1,045A CHOKE	LD 0067.2786.00	DALE	IM2	
L387	LD 120NH 10% 0,090HM 1,3A CHOKE	LD 0067.2757.00	DALE	IM2	

Comp. No.	Designation	Stock No.	Manufacturer	Bezeichnung Designation	enthalten in contained in
L388	LD 120NH 10% 0,090HM 1,3A CHOKE	LD 0067.2757.00	DALE	IM2	
L390	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L391	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L392	LD 2,2UH 10%0,40HM 0,415A CHOKE	LD 0067.2905.00	DALE	IM2	
L393	LD 2,2UH 10%0,40HM 0,415A CHOKE	LD 0067.2905.00	DALE	IM2	
L394	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L395	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L402	LD 3,3UH 10%0,850HM0,285A CHOKE	LD 0067.2928.00	DALE	IM2	
L405	LD 3,3UH 10%0,850HM0,285A CHOKE	LD 0067.2928.00	DALE	IM2	
L406	LD 180NH 4,5W CM14P FE-K CHOKE	0303.9024.00	TOKO	301-SS-0400	
L408	LD 3,3UH 10%0,850HM0,285A CHOKE	LD 0067.2928.00	DALE	IM2	
L410	LD 1,20UH10%0,180HM0,620A CHOKE	LD 0067.2870.00	DALE	IM2	
L415	LD 10UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L418	LD 0,39UH10%0,300HM0,710A CHOKE	LD 0067.2811.00	DALE	IM2	
L420	LD 10UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L421	LD 90NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9513.00	COMPONEX	E 558 CN-10 0023	
L435	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L436	LD 220NH 10%0,140HM1,045A CHOKE	LD 0067.2786.00	DALE	IM2	
L437	LD 0,39UH10%0,300HM0,710A CHOKE	LD 0067.2811.00	DALE	IM2	
L438	LD 0,56UH10%0,500HM0,550A CHOKE	LD 0067.2834.00	DALE	IM2	
L439	LD 0,33UH10%0,220HM0,830A CHOKE	LD 0067.2805.00	DALE	IM2	
L442	LD 38NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9442.00	COMPONEX	E 558 AN-10 0041	
L448	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L450	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L463	LD 680UH 10% 600HM 0,030A CHOKE	LD 0067.3201.00	DALE	IM-2	
L464	LD 680UH 10% 600HM 0,030A CHOKE	LD 0067.3201.00	DALE	IM-2	
L466	LD 4,7UH 10% 0,15A 1210 RF CHOKE	LD 0008.1687.00	SIEMENS	B82422-A1472-J(K)100	
L467	LD 680UH 10% 600HM 0,030A CHOKE	LD 0067.3201.00	DALE	IM-2	
L468	LD 680UH 10% 600HM 0,030A CHOKE	LD 0067.3201.00	DALE	IM-2	
L470	LD 47UH 10% 4,50HM 0,11A CHOKE	LD 0067.3060.00	DALE	IM2	
L475	LD 4,7UH 10%1,20HM 0,239A CHOKE	LD 0067.2940.00	DALE	IM2	
L476	LD 10UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L480	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L500	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L510	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L511	LD 0,39UH10%0,300HM0,710A CHOKE	LD 0067.2811.00	DALE	IM2	
L513	LD 0,33UH10%0,220HM0,830A CHOKE	LD 0067.2805.00	DALE	IM2	
L519	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L525	LD 1,8UH 10% 0,30HM 0,48A CHOKE	LD 0067.2892.00	DALE	IM2	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	Baugruppe contained in
L526	LD 1,50UH10%0,220HM0,560A CHOKE	LD 0067.2886.00	DALE	IM2	
L550	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L551	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L552	LD 4,7UH 10% 0,15A 1210 RF CHOKE	LD 0008.1687.00	SIEMENS	B82422-A1472-J(K)100	
L553	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L558	LD 4,7UH 10% 0,15A 1210 RF CHOKE	LD 0008.1687.00	SIEMENS	B82422-A1472-J(K)100	
L565	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L575	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L576	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L580	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L620	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L621	LD 10UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L630	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L650	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
N100	BO LM2941T LOWDROP +VREGL VOLTAGE REGULATOR	4024.5989.00	NSC	LM2941T	
N290	BO NE5534D OPAMP OPERATIONAL AMPLIFIER	0815.7555.00	SIGNETICS	NE5534(D)	
N350	BM MSA1105 05-1.3G MMIC IC MICROWAVE MONOLITH AMP	1051.4051.00	AVANTEK	MSA-1105-TR1	
N380	BM SRA-1H MIXER 0.5GHZ MIXER	BM 0252.5234.00	MINI-CIRCU	SRA-1H	
N430	BM MSA1105 05-1.3G MMIC IC MICROWAVE MONOLITH AMP	1051.4051.00	AVANTEK	MSA-1105-TR1	
N440	BM MSA1105 05-1.3G MMIC IC MICROWAVE MONOLITH AMP	1051.4051.00	AVANTEK	MSA-1105-TR1	
N460	BO LT1124CS8 2X OPAMP IC OPAMP	1036.4483.00	LINEAR_TEC	(LT)1124(CS8)	
N465	BO AD829JR HISPEED OPAMP LOW-NOISE HIGH-SPEED AMP	BO 1036.4254.00	ANALOG_DEV	AD829JR	
N468	BO LP365M 4X COMP IC COMPARATOR	1036.4248.10	NSC	LP365M	
N470	BM RMS-1 MIXER 500M MIXER MODULE	0846.4393.00	MINI-CIRCU	RMS-1	
N530	BO NE5534D OPAMP OPERATIONAL AMPLIFIER	0815.7555.00	SIGNETICS	NE5534(D)	
N550	BO OP97FS LP PREC OPAMP LOW POWER OPAMP	1036.4390.00	PMI	OP97F(S)	
N562	BO OP97FS LP PREC OPAMP LOW POWER OPAMP	1036.4390.00	PMI	OP97F(S)	
N565	BO OP97FS LP PREC OPAMP LOW POWER OPAMP	1036.4390.00	PMI	OP97F(S)	
N570	EO 10MHZ-QU.OSZ VTCXO 5V OSCILLATOR VTCXO	1039.3113.00	MILLIREN	453-0210	
N585	BO REF01CS 10V 20MA VREF VOLTAGE REFERENCE	1002.5129.00	PMI	REF01C(S)	
N680	BO LP365M 4X COMP IC COMPARATOR	1036.4248.10	NSC	LP365M	
P10	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P40	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P41	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P200	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P201	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P220	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P221	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
P250	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P251	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P255	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P256	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P265	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P266	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P325	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P326	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P360	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P361	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P390	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P391	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P450	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P451	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P460	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P461	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P465	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P466	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P520	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P525	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P575	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P576	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P580	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
R1	RG 2,74KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5766.00	DRALORIC	CR 1206	
R2	RG 4K7 +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R4	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R6	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R7	RG 392 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5672.00	DRALORIC	CR 1206	
R8	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	DRALORIC	CR 1206	
R10	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R11	RG 3,92KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5808.00	ROEDERSTEI	D25	
R15	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R16	RG 3,32KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5789.00	PHILIPS_CO	RC02	
R17	RG 33,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5520.00	ROEDERSTEI	D25	
R21	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R22	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R30	RG 3,32KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5789.00	PHILIPS_CO	RC02	
R31	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	

Kennz. Comp. No.	Benennung Designation		Sachnummer Stock No.	Herstellar Manufacturer	Bezeichnung Designation	contained in
R35	RG 475 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5695.00	ROEDERSTEI	D25	
R36	RG 47,5 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5566.00	ROEDERSTEI	D25	
R38	RG 68,1 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8849.00	ROEDERSTEI	D25	
R40	RG 15,0 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5450.00	PHILIPS_CO	RC02	
R42	RG 475 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5695.00	ROEDERSTEI	D25	
R47 ..49	RG 18,2 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5466.00	PHILIPS_CO	RC02	
R50	RG 332 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5650.00	DRALORIC	CR 1206	
R53	RG 1,5 KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5714.00	PHILIPS_CO	RC02	
R56	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R57	RG 47R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6924.00	PHILIPS_CO	RC 22 H	
R58	RG 121 OHM+-1%TK100 SMD RESISTOR EIA0603	0603	0009.9498.00	DRALORIC	CR 0603	
R59	RG 182 OHM+-1%TK100 SMD RESISTOR EIA0603	0603	0009.9130.00	DRALORIC	CR 0603	
R65	RG 332 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5650.00	DRALORIC	CR 1206	
R67	RG 1,5 KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5714.00	PHILIPS_CO	RC02	
R68	RG 10,0KOHM+-1%TK100 RG CHIP RESISTOR	1206	RG 0007.0793.00	ROEDERSTEI	D25	
R69	RG 10,0KOHM+-1%TK100 RG CHIP RESISTOR	1206	RG 0007.0793.00	ROEDERSTEI	D25	
R71	RG 47R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6924.00	PHILIPS_CO	RC 22 H	
R72	RG 121 OHM+-1%TK100 SMD RESISTOR EIA0603	0603	0009.9498.00	DRALORIC	CR 0603	
R73	RG 182 OHM+-1%TK100 SMD RESISTOR EIA0603	0603	0009.9130.00	DRALORIC	CR 0603	
R75	RG 332 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5650.00	DRALORIC	CR 1206	
R77	RG 1,5 KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5714.00	PHILIPS_CO	RC02	
R80	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R81	RG 100R +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R82	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R83	RG 182 OHM+-1%TK100 SMD RESISTOR EIA0603	0603	0009.9130.00	DRALORIC	CR 0603	
R85	RG 332 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5650.00	DRALORIC	CR 1206	
R87	RG 1,5 KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5714.00	PHILIPS_CO	RC02	
R89	RG 4K7 +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R91	RG 121 OHM+-1%TK100 SMD RESISTOR EIA0603	0603	0009.9498.00	DRALORIC	CR 0603	
R92	RG 220R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6953.00	DRALORIC	CR 0603	
R93	RG 182 OHM+-1%TK100 SMD RESISTOR EIA0603	0603	0009.9130.00	DRALORIC	CR 0603	
R94	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R96	RG 47R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6924.00	PHILIPS_CO	RC 22 H	
R97	RG 6K8 +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7037.00	DRALORIC	CR 0603	
R98	RG 150R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6947.00	PHILIPS_CO	RC 22 H	
R99	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R100	RG 5,11KOHM+-1%TK100 CHIP RESISTOR	1206	RG 0007.0729.00	ROEDERSTEI	D25	
R101	RG 1,5 KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5714.00	PHILIPS_CO	RC02	
R105	RG 27,4 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5508.00	ROEDERSTEI	D25	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
R200	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R201	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	DRALORIC	CR 1206	
R202	RG 1,5 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5714.00	PHILIPS_CO	RC02	
R204	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R206 ..208	RG 27,4 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5508.00	ROEDERSTEI	D25	
R209	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R210	RG 1KO +-1% TK100 0603 SMD RESISTOR EIA0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R212	RL 0,60W 392 OHM+-1%TK50 RESISTOR	RL 0082.2183.00	RESISTA	MK2	
R213	RL 0,60W 392 OHM+-1%TK50 RESISTOR	RL 0082.2183.00	RESISTA	MK2	
R217	RG 3,92KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5808.00	ROEDERSTEI	D25	
R223	RG 47OR +-1% TK100 0603 SMD RESISTOR EIA0603	0009.6976.00	DRALORIC	CR 0603	
R240	RG 10K +-1% TK100 0603 SMD RESISTOR EIA0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R241	RG 10K +-1% TK100 0603 SMD RESISTOR EIA0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R249	RG 18R2 +-1% TK100 0603 SMD RESISTOR EIA0603	0010.8385.00	DRALORIC	CR 0603	
R250	RG 47OR +-1% TK100 0603 SMD RESISTOR EIA0603	0009.6976.00	DRALORIC	CR 0603	
R251	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	DRALORIC	CR 1206	
R252	RG 301R +-1%TK100 0603 SMD RESISTOR EIA0603	0009.9123.00	PHILIPS_CO	RC 22 H	
R253	RG 301R +-1%TK100 0603 SMD RESISTOR EIA0603	0009.9123.00	PHILIPS_CO	RC 22 H	
R254	RS 0,25W500 OHM+-20% SMD POTENTIOMETER	RS 0007.9603.00	BI_TECHNOL	23 B R... TR	
R255	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R256	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R257	RG 27,4 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5508.00	ROEDERSTEI	D25	
R258	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	DRALORIC	CR 1206	
R259	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R260	RG 27,4 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5508.00	ROEDERSTEI	D25	
R261	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R262	RG 82,5 OHM+-1%TK100 0603 SMD RESISTOR EIA0603	0009.9052.00	DRALORIC	CR 0603	
R263	RG 47OR +-1% TK100 0603 SMD RESISTOR EIA0603	0009.6976.00	DRALORIC	CR 0603	
R264	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R265	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R266	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R267	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R269	RG 150 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5589.00	PHILIPS_CO	RC02	
R270	RG 200R +-1% TK100 0603 SMD RESISTOR EIA0603	1097.6386.00	DRALORIC	CR 0603	
R271	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R272	RG 47R +-1% TK100 0603 SMD RESISTOR EIA0603	0009.6924.00	PHILIPS_CO	RC 22 H	
R273	RG 27OR +-1% TK100 0603 SMD RESISTOR EIA0603	0010.9581.00	PHILIPS_CO	RC 22 H	
R274	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R275	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	

Kennz. Comp. No.	Benennung Designation		Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	contained in
R276	RG 18R2 +-1% TK100 SMD RESISTOR EIA0603	0603	0010.8385.00	DRALORIC	CR 0603	
R277	RG 150 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5589.00	PHILIPS_CO	RC02	
R278	RG 4R75 +-1% TK250 SMD RESISTOR EIA0603	0603	0010.8379.00	PHILIPS_CO	RC 22 H	
R279	RG 182 OHM+-1%TK100 SMD RESISTOR EIA0603	0603	0009.9130.00	DRALORIC	CR 0603	
R280	RG 1KO +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R281	RG 8,25OHM+-1%TK100 CHIP-RESISTOR	1206	RG 0007.8488.00	PHILIPS	RC 02	
R282	RG 47OR +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6976.00	DRALORIC	CR 0603	
R283	RG 47,5 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5566.00	ROEDERSTEI	D25	
R284	RG 47,5 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5566.00	ROEDERSTEI	D25	
R285	RG 33R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6918.00	DRALORIC	CR 0603	
R286	RG 825R +-1% TK100 SMD RESISTOR EIA0603	0603	0010.8391.00	PHILIPS_CO	RC 22 H	
R287	RG 56OR +-1% TK100 SMD RESISTOR EIA0603	0603	0009.9630.00	DRALORIC	CR 0603	
R288	RG 33,2KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5914.00	PHILIPS_CO	RC02	
R289	RG 5,62KOHM+-1%TK100 CHIP RESISTOR	1206	RG 0007.0735.00	PHILIPS_CO	RC02	
R290	RG 10,OKOHM+-1%TK100 RG CHIP RESISTOR	1206	RG 0007.0793.00	ROEDERSTEI	D25	
R291	RG 10,OKOHM+-1%TK100 RG CHIP RESISTOR	1206	RG 0007.0793.00	ROEDERSTEI	D25	
R292	RG 6,81KOHM+-1%TK100 CHIP RESISTOR	1206	RG 0007.0758.00	PHILIPS_CO	RC02	
R293	RG 100 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8884.00	ROEDERSTEI	D25	
R294	RG 392R+-1% TK100 SMD RESISTOR EIA0603	0603	0010.9300.00	PHILIPS_CO	RC 22 H	
R295	RG 392 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5672.00	DRALORIC	CR 1206	
R296	RG 68OR +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6982.00	PHILIPS_CO	RC 22 H	
R297	RG 39,2KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5937.00	PHILIPS_CO	RC02	
R298	RG 68OR +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6982.00	PHILIPS_CO	RC 22 H	
R299	RG 68OR +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6982.00	PHILIPS_CO	RC 22 H	
R309	RG 56,2 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8826.00	PHILIPS_CO	RC02	
R310	RG 1KO +-1% TK100 CHIP RESISTOR	1206	RG 0006.7271.00	ROEDERSTEI	D25	
R311	RG 1KO +-1% TK100 CHIP RESISTOR	1206	RG 0006.7271.00	ROEDERSTEI	D25	
R312	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R313	RG 511 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.9051.00	PHILIPS_CO	RC02	
R314	RG 511 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.9051.00	PHILIPS_CO	RC02	
R315	RG 47R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6924.00	PHILIPS_CO	RC 22 H	
R316 ..318	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R319	RG 33,2 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5520.00	ROEDERSTEI	D25	
R320	RG 182 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5595.00	PHILIPS_CO	RC02	
R321	RG 182 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5595.00	PHILIPS_CO	RC02	
R322	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R323	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R324	RG 475 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5695.00	ROEDERSTEI	D25	
R325	RG 100R +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	

Comp. No.	Designation		Stock No.	Manufacturer	Designation	contained in
R326	RG 1KO +-1% TK100 CHIP RESISTOR	1206	RG 0006.7271.00	ROEDERSTEI	D25	
R327	RG 1KO +-1% TK100 CHIP RESISTOR	1206	RG 0006.7271.00	ROEDERSTEI	D25	
R328	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R329	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R330	RG 4K7 +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R331	RG 4K7 +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R333	RG 10,0 OHM+-1%TK100 CHIP -RESISTOR	1206	RG 0006.8649.00	DRALORIC	CR 1206	
R334	RG 3,01KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5772.00	PHILIPS_CO	RC02	
R335	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R336	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R337	RG O-OHM WIDERSTAND RESISTOR CHIP O-OHM	1206	RG 0007.5108.00	DRALORIC	CR 1206	
R338	RG 1KO +-1% TK100 CHIP RESISTOR	1206	RG 0006.7271.00	ROEDERSTEI	D25	
R339	RG O-OHM WIDERSTAND RESISTOR CHIP O-OHM	1206	RG 0007.5108.00	DRALORIC	CR 1206	
R341 ..343	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R350	RG 47,5 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5566.00	ROEDERSTEI	D25	
R351	RG 68,1 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8849.00	ROEDERSTEI	D25	
R352	RG 68,1 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8849.00	ROEDERSTEI	D25	
R355	RG 68,1 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8849.00	ROEDERSTEI	D25	
R357	RG 100R +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R360	RG 475 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5695.00	ROEDERSTEI	D25	
R362	RG 10,0KOHM+-1%TK100 RG CHIP RESISTOR	1206	RG 0007.0793.00	ROEDERSTEI	D25	
R363	RG 10,0KOHM+-1%TK100 RG CHIP RESISTOR	1206	RG 0007.0793.00	ROEDERSTEI	D25	
R380	RG 121 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8903.00	PHILIPS_CO	RC02	
R381	RG 121 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8903.00	PHILIPS_CO	RC02	
R382	RG 330R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6960.00	DRALORIC	CR 0603	
R383	RG 182 OHM+-1%TK100 SMD RESISTOR EIA0603	0603	0009.9130.00	DRALORIC	CR 0603	
R384	RG 825R +-1% TK100 SMD RESISTOR EIA0603	0603	0010.8391.00	PHILIPS_CO	RC 22 H	
R385	RG 10R +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5328.00	PHILIPS_CO	RC 22 H	
R388	RG 475 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5695.00	ROEDERSTEI	D25	
R400	RG O-OHM WIDERSTAND RESISTOR CHIP O-OHM	1206	RG 0007.5108.00	DRALORIC	CR 1206	
R401	RG 100R +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R405	RG 392R+-1% TK100 SMD RESISTOR EIA0603	0603	0010.9300.00	PHILIPS_CO	RC 22 H	
R406	RG 274 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5637.00	ROEDERSTEI	D25	
R407	RG 681 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.9080.00	PHILIPS_CO	RC02	
R411	RG 475 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5695.00	ROEDERSTEI	D25	
R412	RG 68,1 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8849.00	ROEDERSTEI	D25	
R414	RS 0,25W200 OHM+-20% SMD POTENTIOMETER		RS 0007.9590.00	BI_TECHNOL	23 B R... TR	
R415	RG 18,2 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5466.00	PHILIPS_CO	RC02	
R416	RG 475 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5695.00	ROEDERSTEI	D25	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
R417	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	DRALORIC	CR 1206	
R418	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	PHILIPS_CO	RC02	
R419	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	PHILIPS_CO	RC02	
R422	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R424	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R425	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	DRALORIC	CR 1206	
R426	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	DRALORIC	CR 1206	
R427	RG 4K7 +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R428	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R429	RG 39,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5543.00	PHILIPS_CO	RC02	
R430	RG 39,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5543.00	PHILIPS_CO	RC02	
R431	RG 150 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5589.00	PHILIPS_CO	RC02	
R432	RG 100R +-1% TK100 0603 SMD RESISTOR EIA0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R433	RG 150 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5589.00	PHILIPS_CO	RC02	
R434	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	DRALORIC	CR 1206	
R435	RG 100R +-1% TK100 0603 SMD RESISTOR EIA0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R436	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	PHILIPS_CO	RC02	
R437	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	PHILIPS_CO	RC02	
R438	RG 51,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8810.00	PHILIPS_CO	RC02	
R439	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R440	RG 82,5 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8861.00	PHILIPS_CO	RC02	
R441	RS 0,25W200 OHM+-20% SMD POTENTIOMETER	RS 0007.9590.00	BI_TECHNOL	23 B R... TR	
R442	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R443	RG 1,5 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5714.00	PHILIPS_CO	RC02	
R444	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R445	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R446	RG 10R +-1% TK100 0603 SMD RESISTOR EIA0603	RG 0009.5328.00	PHILIPS_CO	RC 22 H	
R447	RG 6,81KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0758.00	PHILIPS_CO	RC02	
R448	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R449	RG 4K7 +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R450	RG 4K7 +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R451	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	PHILIPS_CO	RC02	
R452	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	PHILIPS_CO	RC02	
R453	RG 56,2KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.1883.00	DRALORIC	CR 1206	
R454	RG 82,5 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8861.00	PHILIPS_CO	RC02	
R455	RG 100R +-1% TK100 0603 SMD RESISTOR EIA0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R456	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R457	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R458	RG 82,5 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8861.00	PHILIPS_CO	RC02	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
R459	RG 681 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9080.00	PHILIPS_CO	RC02	
R460	RG 470R +-1% TK100 0603 SMD RESISTOR EIA0603	0009.6976.00	DRALORIC	CR 0603	
R461	RG 47,5KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5950.00	ROEDERSTEI	D25	
R462	RG 33,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5520.00	ROEDERSTEI	D25	
R463	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	DRALORIC	CR 1206	
R464	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R465	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R466	RG 47,5KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5950.00	ROEDERSTEI	D25	
R467	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	PHILIPS_CO	RC02	
R468	RG 301 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5643.00	PHILIPS_CO	RC02	
R469	RS 0,25W 50 OHM+-20% SMD POTENTIOMETER	RS 0007.9578.00	BI_TECHNOL	23 B R... TR	
R470	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R471	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R472	RG 1K5 +-1% TK100 0603 SMD RESISTOR EIA0603	0009.6999.00	DRALORIC	CR 0603	
R473	RG 82,5 OHM+-1%TK100 0603 SMD RESISTOR EIA0603	0009.9052.00	DRALORIC	CR 0603	
R474	RG 7K5 +-1% TK100 0603 SMD RESISTOR EIA0603	0010.8440.00	PHILIPS_CO	RC 22 H	
R475	RG 100R +-1% TK100 0603 SMD RESISTOR EIA0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R476	RG 100R +-1% TK100 0603 SMD RESISTOR EIA0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R477	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R478	RG 330K +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7114.00	PHILIPS_CO	RC 22 H	
R479	RG 681 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9080.00	PHILIPS_CO	RC02	
R480	RG 8K25 +-1% TK100 0603 SMD RESISTOR EIA0603	0010.8456.00	PHILIPS_CO	RC 22 H	
R481	RG 121 OHM+-1%TK100 0603 SMD RESISTOR EIA0603	0009.9498.00	DRALORIC	CR 0603	
R482	RG 121 OHM+-1%TK100 0603 SMD RESISTOR EIA0603	0009.9498.00	DRALORIC	CR 0603	
R483	RG 8K25 +-1% TK100 0603 SMD RESISTOR EIA0603	0010.8456.00	PHILIPS_CO	RC 22 H	
R484	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R485	RG 1,82KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5720.00	PHILIPS_CO	RC02	
R486 ..488	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R489	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R490	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R491	RG O-OHM WIDERSTAND 1206 RESISTOR CHIP O-OHM	RG 0007.5108.00	DRALORIC	CR 1206	
R492	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R493	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R494	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R495	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R496	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	PHILIPS_CO	RC02	
R497	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	PHILIPS_CO	RC02	
R498 ..506	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R507	RG 4K7 +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7020.00	PHILIPS_CO	RC 22 H	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	Unit/set in contained in
R509	RG 4K7 +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R510	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R511	RG 4K7 +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R512	RG 4K7 +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R513	RG 100R +-1% TK100 0603 SMD RESISTOR EIA0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R514	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R515	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R516	RG 100R +-1% TK100 0603 SMD RESISTOR EIA0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R517	RG 825 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.7259.00	ROEDERSTEI	D25	
R518	RG 560R +-1% TK100 0603 SMD RESISTOR EIA0603	0009.9630.00	DRALORIC	CR 0603	
R519	RG 270R +-1% TK100 0603 SMD RESISTOR EIA0603	0010.9581.00	PHILIPS_CO	RC 22 H	
R520 ..523	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R524	RG 100R +-1% TK100 0603 SMD RESISTOR EIA0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R525	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R526	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R527	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R528	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R529	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R530	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R531	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R533	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R535	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R536	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R540	RG 274 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5637.00	ROEDERSTEI	D25	
R541	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R542	RG 274 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5637.00	ROEDERSTEI	D25	
R543	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R544	RG 1,0MOHM+-1%TK100 1206 CHIP RESISTOR	RG 0815.7532.00	DRALORIC	CRC 1206	
R545	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R546	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R547	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R548	RG 3,01KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5772.00	PHILIPS_CO	RC02	
R550	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R551	RG 10,0KOH+-0,1%TK25 1206 SMD-RESISTOR	0009.7666.00	PHILIPS_CO	MPC 01	
R552	RG 12,0KOH+-0,1%TK25 1206 SMD-RESISTOR	0009.7620.00	PHILIPS_CO	MPC 01	
R553	RG 100 OHM+-0,1%TK25 1206 SMD-RESISTOR	0009.8033.00	PHILIPS_CO	MPC 01	
R554	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	DRALORIC	CR 1206	
R555	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R556	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	Unit/set in contained in
R558 ..560	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R561	RG 20,0KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5866.00	DRALORIC	CR 1206	
R562	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R563	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R564	RG 27,4 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5508.00	ROEDERSTEI	D25	
R565	RG 162 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8932.00	PHILIPS_CO	RC02	
R566	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R567	RG 4K7 +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R568	RG 3,01KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5772.00	PHILIPS_CO	RC02	
R569	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R570	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R571	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R572	RL 0,40W 68 OHM2% UNGEW. RESISTOR	RL 0092.5933.00	DRALORIC	SMA 0204	
R573	RG 47OR +-1% TK100 0603 SMD RESISTOR EIA0603	0009.6976.00	DRALORIC	CR 0603	
R574	RG 47OR +-1% TK100 0603 SMD RESISTOR EIA0603	0009.6976.00	DRALORIC	CR 0603	
R575	RG 4K7 +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R576	RG 100 OHM+-0,1%TK25 1206 SMD-RESISTOR	0009.8033.00	PHILIPS_CO	MPC 01	
R577	RG 100R +-1% TK100 0603 SMD RESISTOR EIA0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R578	RG 6K8 +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7037.00	DRALORIC	CR 0603	
R579	RG 27OR +-1% TK100 0603 SMD RESISTOR EIA0603	0010.9581.00	PHILIPS_CO	RC 22 H	
R580	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R581	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R582	RG 6K8 +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7037.00	DRALORIC	CR 0603	
R583	RG 27OR +-1% TK100 0603 SMD RESISTOR EIA0603	0010.9581.00	PHILIPS_CO	RC 22 H	
R584	RG 39,2KOH+-0,1%TK25 1206 SMD-RESISTOR	0009.8027.00	PHILIPS_CO	MPC 01	
R587	RG 0-OHM WIDERSTAND 0603 SMD RESISTOR EIA0603	0009.9369.00	PHILIPS_CO	RC21 0 OHM	
R588	RS 0,25W 5KOHM +-20% SMD POTENTIOMETER	RS 0007.9632.00	BI_TECHNOL	23 B R... TR	
R589	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R590	RG 22,1 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5489.00	ROEDERSTEI	D25	
R591	RG 33K +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7066.00	PHILIPS_CO	RC 22 H	
R592	RG 100R +-1% TK100 0603 SMD RESISTOR EIA0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R593	RG 47OR +-1% TK100 0603 SMD RESISTOR EIA0603	0009.6976.00	DRALORIC	CR 0603	
R597	RG 27K4 +-1% TK100 0603 SMD RESISTOR EIA0603	1097.6392.00	DRALORIC	CR 0603	
R598	RG 27K4 +-1% TK100 0603 SMD RESISTOR EIA0603	1097.6392.00	DRALORIC	CR 0603	
R599	RG 1KO +-1% TK100 0603 SMD RESISTOR EIA0603	RG 0009.5340.00	PHILIPS_CO	RC 22 H	
R600 ..602	RG 47R +-1% TK100 0603 SMD RESISTOR EIA0603	0009.6924.00	PHILIPS_CO	RC 22 H	
R603	RG 100R +-1% TK100 0603 SMD RESISTOR EIA0603	RG 0009.5334.00	PHILIPS_CO	RC 22 H	
R604	RG 47OR +-1% TK100 0603 SMD RESISTOR EIA0603	0009.6976.00	DRALORIC	CR 0603	
R605	RG 4K7 +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7020.00	PHILIPS_CO	RC 22 H	

Kennz. Comp. No.	Benennung Designation		Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	contained in
R607	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R608	RG 4K7 +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R610	RG 470R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6976.00	DRALORIC	CR 0603	
R611	RG 100 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8884.00	ROEDERSTEI	D25	
R612 ..614	RG 47,5 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5566.00	ROEDERSTEI	D25	
R615	RG 470R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6976.00	DRALORIC	CR 0603	
R616	RG 475 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5695.00	ROEDERSTEI	D25	
R619	RG 10,0KOHM+-1%TK100 RG CHIP RESISTOR	1206	RG 0007.0793.00	ROEDERSTEI	D25	
R620	RG 4K7 +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R629	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R630	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R631	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R632	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R633	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R634	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R635	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R636	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R638	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R639	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R640	RG 4K75 +-1% TK100 RESISTOR CHIP NICHT BESTUECKT/NOT FITTED	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R641	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R642	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R643	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R644	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R645	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R649	RG 4K7 +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R650	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R652	RG 470R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6976.00	DRALORIC	CR 0603	
R653	RG 47R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6924.00	PHILIPS_CO	RC 22 H	
R659	RG 15K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7043.00	DRALORIC	CR 0603	
R660	RG 10K +-1% TK100 SMD RESISTOR EIA0603	0603	RG 0009.5357.00	PHILIPS_CO	RC 22 H	
R661	RG 47K +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7072.00	PHILIPS_CO	RC 22 H	
R662	RG 6K8 +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7037.00	DRALORIC	CR 0603	
R680	RG 39K2 +-1% TK100 SMD RESISTOR EIA0603	0603	0010.9823.00	PHILIPS_CO	RC 22 H	
R681	RG 11,0KOHM+-1%TK100 CHIP RESISTOR	1206	RG 0007.0806.00	PHILIPS_CO	RC02	
R682	RG 330R +-1% TK100 SMD RESISTOR EIA0603	0603	0009.6960.00	DRALORIC	CR 0603	
R685	RG 4K7 +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R687	RG 4K7 +-1% TK100 SMD RESISTOR EIA0603	0603	0009.7020.00	PHILIPS_CO	RC 22 H	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	Comp. No. contained in
R688	RG 121K +-1% TK100 0603 SMD RESISTOR EIA0603	1097.6340.00	PHILIPS_CO	RC 22 H	
R690	RG 221 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.6004.00	PHILIPS_CO	RC02	
R691	RG 12K1 +-1% TK100 0603 SMD RESISTOR EIA0603	0010.8462.00	DRALORIC	CR 0603	
R692	RG 470R +-1% TK100 0603 SMD RESISTOR EIA0603	0009.6976.00	DRALORIC	CR 0603	
R693	RG 68K +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7089.00	PHILIPS_CO	RC 22 H	
R694	RG 4K7 +-1% TK100 0603 SMD RESISTOR EIA0603	0009.7020.00	PHILIPS_CO	RC 22 H	
R697	RG 3,3MOHM+-5%TK200 1206 CHIP RESISTOR	0007.9990.00	ROEDERSTEI	D 25	
R698	RG 1,0MOHM+-1%TK100 1206 CHIP RESISTOR	RG 0815.7532.00	DRALORIC	CRC 1206	
V5	AK BFR93A NPN 12V 35MA 6 GHZ WIDEBAND TRANSISTOR	AK 0007.7030.00	VALVO	BFR93A	
V10	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V14	AE BB909B 25/ 3PF CDI TUNING DIODE	AE 0092.9600.00	PHILIPS	BB909B	
V35	AK BFR96S N 15V 100MA TRANSISTOR	0644.0830.00	VALVO	BFR 96S	
V60	AM SST310 N-D 25V JFET JUNCTION FET	1036.4577.00	SILICONIX	SST310-T1	
V69	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V70	AM SST310 N-D 25V JFET JUNCTION FET	1036.4577.00	SILICONIX	SST310-T1	
V80	AM SST310 N-D 25V JFET JUNCTION FET	1036.4577.00	SILICONIX	SST310-T1	
V90	AM SST310 N-D 25V JFET JUNCTION FET	1036.4577.00	SILICONIX	SST310-T1	
V95	AK BSV52 N 12V 100MA TRANSISTOR	AK 0007.3434.00	PHILIPS	BSV52	
V105	AL BD439 NPN 60V 4A0 TRANSISTOR	AL 0010.1645.00	SGS-THOMSO	BD439	
V205	AK BFG97 NPN 15V 100MA 5 GHZ WIDEBAND TRANSISTOR	0008.1741.00	PHILIPS	BFG97	
V206	AK BFG97 NPN 15V 100MA 5 GHZ WIDEBAND TRANSISTOR	0008.1741.00	PHILIPS	BFG97	
V240	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V255	AK BFG97 NPN 15V 100MA 5 GHZ WIDEBAND TRANSISTOR	0008.1741.00	PHILIPS	BFG97	
V260	AK BFG97 NPN 15V 100MA 5 GHZ WIDEBAND TRANSISTOR	0008.1741.00	PHILIPS	BFG97	
V262	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V263	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V265	AK BSR13 N 30V 800MA TRANSISTOR	AK 0007.2209.00	VALVO	BSR 13	
V279	AE 1N4696 9V1 0.3W ZDI ZENER DIODE	AE 0303.9160.00	SEMITRONIC	1N4696	
V280	AK BFG97 NPN 15V 100MA 5 GHZ WIDEBAND TRANSISTOR	0008.1741.00	PHILIPS	BFG97	
V285	AK BFG97 NPN 15V 100MA 5 GHZ WIDEBAND TRANSISTOR	0008.1741.00	PHILIPS	BFG97	
V290	AE BAR14-1 DUAL 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1 (-A772)	
V295	AE BAR14-1 DUAL 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1 (-A772)	
V299	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V320	AK BSR12 P 15V 100MA TRANSISTOR	AK 0007.2067.00	PHILIPS_SE	BSR12	
V321	AK BSR12 P 15V 100MA TRANSISTOR	AK 0007.2067.00	PHILIPS_SE	BSR12	
V322	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V323	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V325	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	contained in
V361	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V380	AK BFR93A NPN 12V 35MA 6 GHZ WIDEBAND TRANSISTOR	AK 0007.7030.00	VALVO	BFR93A	
V383	AE 1N4691 6V2 0.3W ZDI ZENER DIODE	AE 0568.1220.00	AMERICAN_P	1N4691	
V400	AE BBY40 30/05PF VHF-CDI VHF VARIABLE CAPAC. DIODE	AE 0007.2109.00	VALVO	BBY40	
V401	AE BB620 45/03PF CDI TUNING DIODE	0848.5251.00	SIEMENS	BB620	
V402	AE BB620 45/03PF CDI TUNING DIODE	0848.5251.00	SIEMENS	BB620	
V403	AE BBY40 30/05PF VHF-CDI VHF VARIABLE CAPAC. DIODE	AE 0007.2109.00	VALVO	BBY40	
V404	AE BBY40 30/05PF VHF-CDI VHF VARIABLE CAPAC. DIODE	AE 0007.2109.00	VALVO	BBY40	
V405	AE BB620 45/03PF CDI TUNING DIODE	0848.5251.00	SIEMENS	BB620	
V406	AE BB620 45/03PF CDI TUNING DIODE	0848.5251.00	SIEMENS	BB620	
V407	AE BBY40 30/05PF VHF-CDI VHF VARIABLE CAPAC. DIODE	AE 0007.2109.00	VALVO	BBY40	
V408	AM SST310 N-D 25V JFET JUNCTION FET	1036.4577.00	SILICONIX	SST310-T1	
V418	AE BZV55/C5V1 0.5W ZDI ZENER DIODE	AE 0006.9839.00	PHILIPS_SE	BZV55B5V1 (GEG)	
V420	AK BFS17 N 15V 25MA 1 GHZ WIDEBAND TRANSISTOR	AK 0010.6460.00	VALVO	BFS17	
V422	AE BZV55/C5V1 0.5W ZDI ZENER DIODE	AE 0006.9839.00	PHILIPS_SE	BZV55B5V1 (GEG)	
V424	AE BZV55/C5V1 0.5W ZDI ZENER DIODE	AE 0006.9839.00	PHILIPS_SE	BZV55B5V1 (GEG)	
V425	AE HSMS2800 SCHOTTKY SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V426	AE HSMS2800 SCHOTTKY SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V435	AK BFQ81 N 16V 30MA TRANSISTOR	0920.1717.00	SIEMENS	BFQ81 (-F1049)	
V437	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V460	AE BZV55/C5V1 0.5W ZDI ZENER DIODE	AE 0006.9839.00	PHILIPS_SE	BZV55B5V1 (GEG)	
V466	AE HSMS2813 2XSCHOTTKY SCHOTTKY DIODE	AE 0824.3542.00	HEWLETT_PA	HSMS2813 L31	
V473	AE HSMS2800 SCHOTTKY SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V475	AK BSR13 N 30V 800MA TRANSISTOR	AK 0007.2209.00	VALVO	BSR 13	
V514	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V518	AK BSV52 N 12V 100MA TRANSISTOR	AK 0007.3434.00	PHILIPS	BSV52	
V530	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V531	AE BZV55/C4V7 0.5W ZDI ZENER DIODE	AE 0006.9822.00	PHILIPS	BZV55B4V7	
V535	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V536	AE BZV55/C4V7 0.5W ZDI ZENER DIODE	AE 0006.9822.00	PHILIPS	BZV55B4V7	
V540	AE HSMS2800 SCHOTTKY SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V555	AE BZV55/10V 0,5W ZDI ZENER DIODE	AE 0006.9880.00	PHILIPS_SE	BZV55C10	
V566	AD BAS32 75V UDI HIGH-SPEED DIODE	AD 0006.7288.00	PHILIPS	BAS32 (L)	
V570	AE BZV55/C5V6 0.5W ZDI ZENER DIODE	AE 0006.9845.00	PHILIPS	BZV55B5V6	
V571	AE HSMS2800 SCHOTTKY SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V575	AE BZV55/C3V9 0,5W ZDI ZENER DIODE	AE 0006.9816.00	PHILIPS_SE	BZV55B3V9	
V582	AK BSV52 N 12V 100MA TRANSISTOR	AK 0007.3434.00	PHILIPS	BSV52	
V583	AE HSMS2800 SCHOTTKY SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V584	AE HSMS2800 SCHOTTKY SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
V585	AK BSV52 N 12V 100MA TRANSISTOR	AK 0007.3434.00	PHILIPS	BSV52	
V586	AK BSV52 N 12V 100MA TRANSISTOR	AK 0007.3434.00	PHILIPS	BSV52	
V587	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V590	AK BSV52 N 12V 100MA TRANSISTOR	AK 0007.3434.00	PHILIPS	BSV52	
V660	AE BZV55/C5V6 0.5W ZDI ZENER DIODE	AE 0006.9845.00	PHILIPS	BZV55B5V6	
V697	AE HSMS2800 SCHOTTKY SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V698	AE HSMS2800 SCHOTTKY SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
W1	DX KABEL W1	1035.6599.00			
X70	FP STECKERLEISTE 32POL. CONNECTOR 32P.	FP 0008.5718.00	DEUT_ELCO	16 8457 064 002 027	
X71 ..75	FJ EINBAUSTECKER F.GS SMB ANGLE CONNECTOR	FJ 0602.8804.00	IMS	81.1524.201	
X77	FJ EINBAUSTECKER F.GS SMB ANGLE CONNECTOR	FJ 0602.8804.00	IMS	81.1524.201	
X330	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X331	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X405 ..407	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X460 ..462	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X540 ..542	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
Z1	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z95	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z100 ..104	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z210	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z280	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z382	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z384	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z390 ..392	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z550	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z560	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z600 ..604	LD T-FILTER 100PF SMD SMD-FILTER	1039.1356.00	MURATA	NFM61R00T101T1	
Z605	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z650	LD T-FILTER 100PF SMD SMD-FILTER	1039.1356.00	MURATA	NFM61R00T101T1	

ROHDE&SCHWARZ

XY-Liste

XY List

Erklärung der Spaltenbezeichnungen:

el. Kennz.	Bauelement-Kennzeichen
Seite	Leiterplatten-Seite, auf der sich das Bauelement befindet
X/Y	Koordinaten (in Millimeter) des Bauelementes auf der Leiterplatte bezogen auf den Nullpunkt
Planq., Bl.	Planquadrat und Seite des Schaltbildes für das jeweilige Bauelement

Explanation of column designations:

Part	Identification of instrument part
Side	Side of the PC board on which instrument part is positioned
X/Y	Coordinates (in units of millimeters) of the component on the PC board in reference to zero point
Sqr, Pg	Square and page of the diagram for the respective instrument part

Service-Relevante Bauteile / Service-Relevant Components

Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg
B20	B	29	126	3D	2	N100	B	91	63	4B	2	P575	B	88	97	12F	6
C400	B	182	58	7D	5	N380	B	164	99	11E	4	P576	B	88	95	12F	6
D31A	B	231	43	4D	4	N570	B	73	114	10E	6	P580	B	82	141	10E	6
D610	B	130	52	5F	7	P10	B	25	107	2E	2	R254	B	284	114	6C	3
K1-A	B	57	23	8C	6	P40	B	23	77	5D	2	R414	B	184	39	8C	5
K1-B				8C	6	P41	B	25	77	5D	2	R441	B	154	61	10E	5
L5	B	37	107	2E	2	P200	B	199	133	2E	3	R469	B	262	95	2D	5
L20	B	38	120	4D	2	P201	B	199	135	2E	3	R588	B	98	138	6E	6
L35	B	22	87	5E	2	P220	B	226	139	3E	3	X70A	B	189	11	7D	6
L206	B	214	133	3E	3	P221	B	226	142	3E	3	X70B	B	189	11	2C	2
L230	B	240	132	4D	3	P250	B	281	142	5E	3	X71	B	17	15	9C	2
L231	B	250	119	4E	3	P251	B	284	142	5E	3	X72	B	29	15	12E	2
L234	B	253	125	4D	3	P255	B	272	48	11E	3	X73	B	42	15	7C	6
L235	B	258	138	5D	3	P256	B	272	50	11E	3	X74	B	55	15	7B	6
L251	B	280	136	5D	3	P265	B	273	111	7E	3	X75	B	245	15	12C	5
L265	B	291	98	8E	3	P266	B	273	114	7E	3	X77	B	271	15	12C	3
L266	B	275	91	8F	3	P360	B	222	107	10D	4	X330	B	247	62	5E	4
L267	B	280	88	8E	3	P361	B	225	107	10D	4	X331	B	250	62	5E	4
L268	B	291	85	8E	3	P390	B	151	111	11E	4	X405	B	193	73	8E	5
L275	B	281	63	9E	3	P391	B	149	111	11E	4	X406	B	196	73	8E	5
L277	B	281	43	11E	3	P450	B	172	36	7A	5	X407	B	198	73	8E	5
L282	B	278	45	11E	3	P451	B	172	38	7A	5	X460	B	231	78	1B	5
L285	B	298	52	8C	3	P460	B	163	90	11E	5	X461	B	231	81	1B	5
L286	B	290	28	8C	3	P461	B	163	88	12E	5	X462	B	231	83	1B	5
L290	B	290	18	9C	3	P465	B	249	88	4E	5	X540	B	57	134	6C	6
L406	B	203	60	7D	5	P466	B	246	88	4E	5	X541	B	54	134	6C	6
L421	B	181	33	8B	5	P520	B	67	67	3C	6	X542	B	51	134	6C	6
L442	B	215	19	9C	5	P525	B	67	74	4C	6						

Nicht-Service-Relevante Bauteile / Non-Service-Relevant Components

Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg
C1	A	18	118	1D	2	C55	B	188	139	8E	2	C99	B	47	43	10B	2
C3	B	25	116	2E	2	C56	B	176	136	7E	2	C100	A	40	42	9B	2
C4	A	24	100	2E	2	C65	A	184	123	8E	2	C101	A	101	68	4B	2
C7	A	15	118	2D	2	C67	B	188	118	8E	2	C103	B	114	52	3C	2
C8	A	14	106	2D	2	C68	B	185	118	8D	2	C104	B	114	41	2C	2
C10	A	27	107	3E	2	C69	A	21	21	8D	2	C105	B	114	64	2B	2
C15	A	14	101	3C	2	C70	A	59	140	8D	2	C106	B	112	75	2B	2
C20	A	43	115	4D	2	C71	A	12	25	8D	2	C107	B	102	49	2B	2
C21	A	44	121	4D	2	C72	B	176	121	7D	2	C108	B	110	84	2A	2
C22	A	36	124	4D	2	C75	A	20	39	7D	2	C158	B	56	52	11C	2
C23	A	41	119	4D	2	C77	B	17	23	8C	2	C200	A	199	124	2D	3
C30	A	31	81	4E	2	C78	B	16	20	8C	2	C204	A	201	120	2C	3
C32	A	29	86	5D	2	C79	A	18	47	7D	2	C206	A	216	125	3D	3
C33	A	37	79	5E	2	C82	B	17	42	7C	2	C207	A	222	137	2E	3
C38	A	37	89	5D	2	C85	A	18	61	7C	2	C211	B	102	59	5B	2
C42	A	18	94	5E	2	C87	B	23	67	7B	2	C212	B	102	44	5B	2
C51	A	188	129	7F	2	C88	B	25	70	7B	2	C218	A	204	138	3C	3
C52	A	184	137	8F	2	C92	B	17	66	6B	2	C219	A	205	140	3B	3
C54	B	187	137	8E	2	C98	B	17	58	8C	2	C221	A	222	127	3D	3

MENP PFLUGER	Datum Date	XY-Liste fuer XY-list for	Sachnummer Stock-No.	Aei	Blatt Page
ROHDE & SCHWARZ	98-02-11	EE REFERENZ_STEPSYNTHESE REFERENZ_STEPSYNTHESE	1035.6501.01 XY	11.00	1+

V.7

Part	Side	X	Y	Sqr	Pg
C222	A	225	127	3D	3
C223	B	226	129	3D	3
C229	B	236	130	4D	3
C230	B	241	130	4D	3
C231	B	244	127	4D	3
C232	B	240	126	4D	3
C233	B	259	129	4D	3
C234	B	255	128	4D	3
C235	B	256	137	5D	3
C236	A	264	126	4B	3
C240	B	286	125	5C	3
C241	B	296	123	5C	3
C250	B	273	136	5D	3
C251	B	274	137	5D	3
C252	A	276	139	6D	3
C253	B	290	47	10E	3
C254	A	298	59	10D	3
C255	A	279	139	6C	3
C256	B	263	56	9B	3
C257	A	286	130	7D	3
C258	A	296	133	6E	3
C260	A	299	114	7C	3
C261	A	299	126	7B	3
C262	B	286	117	7E	3
C263	B	294	135	6B	3
C264	B	288	102	8E	3
C265	B	286	100	8E	3
C266	B	281	98	8E	3
C267	B	279	100	8E	3
C268	B	283	87	8E	3
C269	B	283	84	8E	3
C270	B	297	80	9E	3
C271	B	281	59	10E	3
C272	B	289	59	10E	3
C273	A	296	48	10E	3
C274	A	292	53	10D	3
C276	B	283	61	10E	3
C277	B	275	43	11E	3
C278	A	277	68	11E	3
C279	A	283	68	11F	3
C280	B	277	41	11E	3
C281	B	290	41	8C	3
C282	B	274	31	8C	3
C283	B	263	67	8B	3
C284	B	296	61	7B	3
C285	B	298	49	8C	3
C286	A	298	26	9C	3
C287	A	296	22	9D	3
C288	B	287	26	9C	3
C289	B	290	25	9C	3
C290	A	283	21	11B	3
C291	A	274	24	11B	3
C292	B	278	23	11C	3
C293	A	288	41	10D	3
C294	A	288	28	10C	3
C295	A	279	15	11C	3
C296	A	277	37	10C	3
C297	A	298	35	11C	3
C298	B	279	26	10B	3
C299	B	281	23	10C	3
C311	A	252	34	3E	4
C312	A	262	43	2E	4
C313	A	248	44	2E	4
C315	B	219	66	5E	4
C319	B	238	73	6E	4
C320	B	235	62	6D	4
C321	B	231	62	6D	4
C322	B	214	47	2A	4
C323	A	234	29	5F	4
C324	B	223	66	5D	4
C325	B	221	64	5E	4
C326	B	232	75	6E	4
C327	B	244	67	2C	4
C328	A	255	31	3F	4
C329	A	251	28	3F	4
C330	A	211	58	4A	4
C331	A	212	43	1A	4
C350	B	172	106	7C	4
C351	B	183	104	8C	4
C352	B	181	104	8C	4
C353	B	188	98	8C	4
C354	B	193	104	9C	4
C355	A	195	98	9D	4
C356	A	203	100	9D	4
C357	B	204	98	9C	4
C358	B	208	104	10C	4
C359	B	204	101	9C	4
C360	B	208	102	9C	4
C361	A	218	101	10C	4
C362	A	213	107	11C	4
C363	A	196	108	11C	4
C366	B	219	103	10C	4
C367	B	219	105	10C	4
C368	B	217	99	10C	4
C380	B	165	118	9E	4
C381	A	161	127	10F	4
C382	A	164	122	10F	4
C383	B	160	125	9E	4
C384	A	155	126	9E	4
C385	B	157	131	10E	4
C386	B	154	134	10E	4
C387	B	157	118	10E	4
C388	B	153	101	11E	4
C401	B	189	66	8D	5
C402	B	189	59	7D	5
C404	B	185	49	7D	5
C406	B	186	45	7D	5
C408	B	178	44	8C	5
C410	A	203	47	7C	5
C411	B	193	43	8C	5
C413	B	181	42	8B	5
C414	B	175	38	7B	5
C417	B	175	34	7B	5
C418	A	171	43	8C	5
C420	A	175	46	8C	5
C421	A	196	31	8A	5
C423	A	203	34	8B	5
C424	B	197	47	7C	5
C431	B	162	42	9E	5
C432	B	158	47	9E	5
C434	B	218	20	9C	5
C435	B	210	31	9C	5
C436	A	153	63	10E	5
C437	A	159	68	10F	5
C439	A	218	29	10D	5
C440	B	154	56	10E	5
C441	B	157	67	10E	5
C443	A	225	16	10D	5
C445	A	235	19	10C	5
C447	A	231	17	10C	5
C448	A	234	14	10C	5
C449	B	240	13	11C	5
C450	B	159	80	11E	5
C453	A	255	15	11C	5
C454	A	155	79	11F	5
C455	B	216	87	2C	5
C457	A	243	77	3E	5
C458	A	161	84	11E	5
C459	A	262	95	2D	5
C460	B	234	80	1E	5
C461	A	257	14	11C	5
C462	B	217	81	2C	5
C463	A	263	82	2E	5
C464	A	233	77	3E	5
C465	B	224	99	1D	5
C467	A	257	19	12C	5
C468	A	227	103	3D	5
C469	B	211	81	3C	5
C470	B	231	87	4A	5
C471	B	192	108	4A	5
C472	A	232	74	4E	5
C473	B	201	84	4D	5
C474	A	178	83	6C	5
C475	A	188	86	6B	5
C476	A	194	90	6B	5
C477	A	170	83	5C	5
C478	B	185	89	6B	5
C479	B	178	88	6B	5
C480	A	255	105	2A	5
C481	A	247	95	3D	5
C482	B	197	91	3C	5
C483	A	254	74	3A	5
C484	A	241	98	4B	5
C485	A	178	90	5D	5
C486	B	190	80	3C	5

MENP PFLUGER	Datum Date	XY-Liste fuer XY-list for	Sachnummer Stock-No.	Aei	Blatt Page
ROHDE & SCHWARZ	98-02-11	EE REFERENZ_STEPSYNTHESE REFERENZ_STEPSYNTHESE	1035.6501.01 XY	11.00	2+

Part	Side	X	Y	Sqr	Pg
C487	A	241	77	4B	5
C488	A	176	80	6C	5
C489	A	203	69	6A	5
C491	A	228	82	5B	5
C492	A	214	84	5B	5
C500	B	52	59	1A	6
C501	A	38	67	2A	6
C510	B	54	85	2A	6
C511	B	34	38	10E	2
C513	B	29	30	11E	2
C514	A	29	21	11E	2
C515	A	29	41	11D	2
C516	A	29	44	11D	2
C517	B	41	55	11C	2
C519	B	40	57	11C	2
C524	B	58	55	4F	6
C525	B	65	38	4E	6
C526	B	63	32	5E	6
C530	A	56	82	5D	6
C531	A	51	78	6D	6
C532	A	56	71	6D	6
C535	A	76	66	3B	6
C536	A	74	72	4B	6
C537	A	81	75	4B	6
C538	B	52	98	4C	6
C539	B	60	105	4C	6
C540	A	91	116	5A	6
C541	B	53	112	4B	6
C542	B	59	123	5C	6
C543	B	57	130	6C	6
C544	A	85	119	5A	6
C545	A	63	115	5C	6
C546	A	57	121	5C	6
C547	A	102	122	6A	6
C548	A	97	122	6A	6
C552	B	104	110	10D	6
C555	A	100	130	8E	6
C556	A	105	130	5A	6
C557	A	96	124	5A	6
C558	A	86	124	8E	6
C560	B	77	110	10F	6
C561	B	80	110	10E	6
C562	B	90	100	9E	6
C563	B	75	105	12F	6
C564	B	84	109	9E	6
C565	B	97	100	10D	6
C566	A	63	51	8B	6
C567	A	60	20	8C	6
C570	A	42	20	8C	6
C574	A	67	20	10C	6
C575	B	78	22	9D	6
C576	A	65	17	10C	6
C577	A	74	18	11C	6
C578	B	60	15	8B	6
C579	A	72	124	10E	6
C580	B	80	14	8C	6
C582	B	85	137	6F	6
C595	B	78	102	11E	6
C609	A	136	36	4F	7
C610	A	74	50	2A	7
C620	A	100	14	1A	7
C621	B	130	76	6E	7
C650	B	121	114	3A	7
C660	B	118	132	3A	7
C680	B	128	98	4A	7
C685	B	130	110	10D	7
C688	B	123	107	11E	7
C690	A	128	116	6A	7
C691	B	140	117	6A	7
C695	B	134	107	10C	7
C697	B	118	126	11D	7
C698	A	132	99	11C	7
C900	B	62	91	3A	6
C901	A	69	34	4A	6
D95-A	B	44	46	9E	2
D95-B				10C	2
D95-C				10B	2
D320-A	B	220	50	6E	4
D320-B				3A	4
D320-C				2A	4
D330-A	A	232	70	5C	4
D330-B				4A	4
D340-A	A	220	60	5B	4
D340-B				5A	4
D430-A	A	250	93	5A	5
D430-B				5A	5
D430-C				2D	5
D430-D				1D	5
D430-E				2A	5
D445-A	A	250	77	5A	5
D445-B				5A	5
D445-C				2E	5
D445-D				1E	5
D445-E				3A	5
D460-A	A	219	88	6E	5
D460-B				6E	5
D460-C				2B	5
D460-D				2B	5
D460-E				5B	5
D500-A	B	39	63	2E	6
D500-B				1A	6
D505-A	A	45	39	10E	2
D505-B				7A	6
D505-C				8A	6
D505-D				10D	2
D505-E				9B	2
D510-A	B	77	50	2D	6
D510-B				3A	6
D515-A	B	54	74	2B	6
D515-B				3E	6
D515-C				2A	6
D520-A	B	77	39	4E	6
D520-B				3A	6
D525-A	B	69	66	3C	6
D525-B				3C	6
D525-C				4A	6
D535-A	B	55	60	3F	6
D535-B				7C	6
D535-C				7D	6
D535-D				9F	6
D535-E				2A	6
D550-A	B	77	83	3D	6
D550-B				2D	6
D550-C				4B	6
D550-D				3D	6
D550-E				4A	6
D555	A	86	127	8E	6
D600-A	A	91	14	2E	7
D600-B				2E	7
D600-C				2D	7
D600-D				2D	7
D600-E				1A	7
D620-A	A	118	100	3C	7
D620-B				5A	7
D630-A	B	69	62	5C	7
D630-B				2A	7
D640-A	A	117	117	8E	7
D640-B				8D	7
D640-C				7B	7
D640-D				11D	7
D640-E				11C	7
D640-F				11E	7
D640-G				4A	7
D650-A	A	118	131	8E	7
D650-B				3A	7
D660-A	A	139	140	8D	7
D660-B				3A	7
D680-A	A	133	102	10E	7
D680-B				11E	7
D680-C				10C	7
D680-D				11C	7
D680-E				4A	7
L1	B	21	100	2E	2
L2	B	51	93	2F	2
L3	B	41	80	2E	2
L15	B	22	113	3D	2
L30	B	43	97	4D	2
L33	B	38	83	5E	2
L50	B	181	132	6F	2
L55	B	181	135	7F	2
L65	B	181	120	7E	2
L73	B	22	47	7D	2
L75	B	20	42	7D	2
L85	B	13	64	7C	2
L96	B	57	40	10F	2

MENP PFLUGER	Datum Date	XY-Liste fuer XY-list for	Sachnummer Stock-No.	Aei	Blatt Page
ROHDE & SCHWARZ	98-02-11	EE REFERENZ_STEPSYNTHESE REFERENZ_STEPSYNTHESE	1035.6501.01 XY	11.00	3+

Part	Side	X	Y	Sqr	Pg
L97	B	48	37	10E	2
L98	B	15	58	9C	2
L100	B	147	16	2C	2
L101	B	125	16	2B	2
L102	B	126	20	2B	2
L103	B	90	7	2B	2
L104	B	114	20	2A	2
L107	B	118	46	3B	2
L108	B	116	79	3B	2
L109	B	90	38	3B	2
L110	B	113	84	3A	2
L209	B	209	119	2B	3
L210	B	95	55	5B	2
L211	B	199	108	3A	3
L215	B	208	138	3C	3
L216	B	198	140	3C	3
L253	B	275	128	6E	3
L256	B	299	133	7E	3
L260	B	299	110	7C	3
L261	B	296	132	6B	3
L262	B	290	117	7E	3
L271-A	B	295	69	9E	3
L271-B				9E	3
L278	B	274	69	11E	3
L280	A	278	55	9C	3
L281	B	263	63	9B	3
L288	B	298	22	9C	3
L291	A	284	44	9D	3
L292	A	284	27	10C	3
L320	A	228	30	5F	4
L322	A	212	46	1A	4
L324	B	225	30	2C	4
L325	B	225	73	6E	4
L326	B	223	69	6E	4
L330	A	211	68	4A	4
L350	B	175	104	8C	4
L351	B	192	101	8C	4
L352	B	172	108	7C	4
L353	B	186	108	8C	4
L359	B	202	105	9C	4
L360	B	210	107	9C	4
L361	B	215	105	10C	4
L380	B	164	125	10E	4
L381	B	140	127	7F	4
L382	B	148	114	8F	4
L383	B	128	112	7E	4
L384	B	151	109	8E	4
L387	B	153	131	10E	4
L388	B	154	115	10E	4
L390	B	137	104	7E	4
L391	B	148	102	8E	4
L392	B	126	84	7E	4
L393	B	152	86	8E	4
L394	B	139	81	7E	4
L395	B	150	73	8E	4
L402	B	198	70	8E	5
L405	B	188	68	7E	5
L408	B	178	52	8D	5
L410	B	192	51	7D	5
L415	B	171	41	8D	5
L418	B	189	36	8B	5
L420	B	194	31	8A	5
L435	B	158	62	10E	5
L436	B	210	34	9C	5
L437	B	237	17	10C	5
L438	B	227	14	11C	5
L439	B	237	11	11C	5
L448	B	156	80	11E	5
L450	A	253	67	3A	5
L463	B	247	75	2E	5
L464	B	243	83	3E	5
L466	A	184	90	6B	5
L467	B	244	102	3D	5
L468	B	247	91	3D	5
L470	B	220	77	2C	5
L475	B	170	90	5C	5
L476	B	173	80	6C	5
L480	A	262	105	2A	5
L500	B	51	65	1A	6
L510	B	61	85	2A	6
L511	B	31	46	10E	2
L513	B	31	30	11E	2
L519	A	39	58	11C	2
L525	B	63	48	4F	6
L526	B	60	42	5F	6
L550	B	69	87	3A	6
L551	B	151	31	8D	7
L552	B	161	16	7D	6
L553	B	161	31	7D	6
L558	B	156	19	11D	6
L565	B	72	102	11F	6
L575	A	75	23	10D	6
L576	B	156	35	10D	6
L580	A	81	19	9C	6
L620	A	92	11	1B	7
L621	B	126	82	6F	7
L630	A	70	53	2B	7
L650	B	121	120	2B	7
N290	A	290	34	10D	3
N350	B	195	101	9C	4
N430	B	158	50	9E	5
N440	B	158	71	11E	5
N460-A	A	237	91	3E	5
N460-B				4E	5
N460-C				4B	5
N465-A	B	189	83	3C	5
N465-B				6B	5
N468-A	B	243	87	5E	5
N468-B				5E	5
N468-C				2A	5
N468-D				2A	5
N468-E				4A	5
N470	B	219	87	1C	5
N530	A	54	115	5C	6
N550-A	B	95	122	10D	6
N550-B				6A	6
N562-A	B	85	119	9E	6
N562-B				5A	6
N565-A	B	90	130	8E	6
N565-B				5A	6
N585	B	88	138	6E	6
N680-A	A	133	116	10E	7
N680-B				10E	7
N680-C				10C	7
N680-D				10C	7
N680-E				6A	7
P325	B	236	70	6E	4
P326	B	239	70	6E	4
R1	A	21	118	2D	2
R2	B	30	110	2D	2
R4	A	37	100	2E	2
R6	A	28	104	2D	2
R7	A	14	109	2D	2
R8	A	17	124	2C	2
R10	A	32	109	2E	2
R11	A	25	114	2E	2
R15	A	18	104	3D	2
R16	A	17	101	3C	2
R17	A	29	113	3D	2
R21	A	35	116	4D	2
R22	A	43	124	4D	2
R30	A	32	98	4E	2
R31	A	40	96	4D	2
R35	A	26	86	5E	2
R36	A	25	96	5D	2
R38	A	40	89	5D	2
R40	A	35	84	5D	2
R42	A	23	84	5D	2
R47	A	20	84	5D	2
R48	A	15	90	6C	2
R49	A	20	77	6C	2
R50	A	188	132	7F	2
R53	A	184	135	7F	2
R56	B	174	130	6E	2
R57	B	174	132	6E	2
R58	B	175	134	6E	2
R59	B	178	137	7E	2
R65	A	188	126	7E	2
R67	A	184	120	7E	2
R68	A	15	25	8D	2
R69	A	51	140	8D	2
R71	B	173	119	6D	2
R72	B	176	119	6D	2
R73	B	178	123	7D	2
R75	A	13	44	7D	2

MENP / PFLUGER	Datum / Date	XY-Liste fuer / XY-list for	Sachnummer / Stock-No.	Aei	Blatt / Page
ROHDE & SCHWARZ	98-02-11	EE REFERENZ_STEPSYNTHESE REFERENZ_STEPSYNTHESE	1035.6501.01 XY	11.00	4+

Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg
R77	A	18	41	7D	2	R272	B	287	57	10E	3	R337	A	175	108	4D	5
R80	B	13	45	6C	2	R273	B	292	48	10E	3	R338	A	231	105	5D	5
R81	B	15	45	6C	2	R274	A	296	50	10D	3	R339	A	150	138	4D	5
R82	B	15	42	6C	2	R275	A	295	56	10D	3	R341	A	260	45	3D	4
R83	B	21	25	7C	2	R276	B	280	57	10E	3	R342	A	236	34	3D	4
R85	A	15	58	7C	2	R277	A	280	65	11F	3	R343	A	258	49	3D	4
R87	A	17	67	7B	2	R278	B	278	54	11E	3	R350	B	172	98	7C	4
R89	B	34	44	9C	2	R279	B	279	33	8C	3	R351	A	190	100	9D	4
R91	B	15	56	6B	2	R280	B	291	35	8C	3	R352	A	201	98	9D	4
R92	B	21	62	6B	2	R281	B	274	21	11C	3	R355	A	203	103	9D	4
R93	B	17	70	6B	2	R282	B	271	44	11E	3	R357	B	210	98	9C	4
R94	A	43	47	9C	2	R283	A	296	25	9D	3	R360	A	221	105	10D	4
R96	B	27	70	8B	2	R284	A	294	20	9D	3	R362	A	210	101	11C	4
R97	B	29	67	8B	2	R285	B	274	26	10B	3	R363	A	207	107	11C	4
R98	B	30	57	8B	2	R286	B	284	40	8C	3	R380	A	159	123	9F	4
R99	A	36	43	9E	2	R287	B	277	16	11C	3	R381	A	160	130	10F	4
R100	A	93	52	4B	2	R288	A	295	37	9C	3	R382	B	156	128	9E	4
R101	A	90	66	4B	2	R289	A	292	33	10C	3	R383	B	155	125	9E	4
R105	A	112	37	3C	2	R290	A	280	22	11B	3	R384	B	160	123	9E	4
R200	A	199	130	2D	3	R291	A	276	24	11B	3	R385	B	162	128	10E	4
R201	A	207	116	2D	3	R292	A	277	34	9D	3	R388	A	154	107	11E	4
R202	A	203	130	2C	3	R293	A	280	37	10C	3	R400	B	214	91	2C	5
R204	A	204	120	2D	3	R294	B	285	32	9C	3	R401	B	180	50	8D	5
R206	A	210	122	2D	3	R295	A	292	39	10C	3	R405	B	177	47	8D	5
R207	A	220	137	2D	3	R296	B	279	28	10B	3	R406	B	203	47	7C	5
R208	A	211	128	3D	3	R297	A	280	31	10D	3	R407	A	200	44	7C	5
R209	A	211	131	2D	3	R298	B	284	24	10C	3	R411	B	194	38	8C	5
R210	B	221	131	3E	3	R299	B	284	18	11C	3	R412	B	191	41	8C	5
R212	B	208	124	2C	3	R309	A	263	45	2E	4	R415	B	181	30	8A	5
R213	B	210	124	3C	3	R310	A	255	37	2E	4	R416	B	177	30	7A	5
R217	A	202	134	2C	3	R311	A	255	39	3E	4	R417	B	196	35	8B	5
R223	B	226	134	3D	3	R312	A	252	47	3D	4	R418	B	191	30	9B	5
R240	B	281	128	5D	3	R313	A	244	34	4E	4	R419	B	189	33	8B	5
R241	B	289	125	5C	3	R314	A	248	37	5E	4	R422	B	253	85	5F	5
R249	B	264	46	12E	3	R315	B	222	56	5E	4	R424	B	237	104	5D	5
R250	B	273	140	5D	3	R316	A	252	50	3D	4	R425	A	212	98	6F	5
R251	A	278	130	6D	3	R317	A	238	37	4D	4	R426	A	211	90	6E	5
R252	B	264	49	11E	3	R318	A	229	39	4D	4	R427	B	230	100	6E	5
R253	B	263	46	12E	3	R319	A	234	31	5F	4	R428	B	235	19	10C	5
R255	A	281	133	6D	3	R320	A	243	46	5E	4	R429	B	211	16	9C	5
R256	A	281	135	6C	3	R321	A	240	46	4E	4	R430	B	158	44	9E	5
R257	A	286	128	6D	3	R322	B	226	66	6D	4	R431	B	161	48	9D	5
R258	A	293	130	6D	3	R323	B	232	66	6D	4	R432	B	214	85	2C	5
R259	A	289	133	6D	3	R324	B	233	70	6E	4	R433	B	151	50	9D	5
R260	A	289	128	7D	3	R325	B	235	75	6E	4	R434	B	218	26	9C	5
R261	A	281	114	7C	3	R326	A	252	42	2E	4	R435	B	214	15	10C	5
R262	B	295	113	7D	3	R327	A	252	44	2E	4	R436	A	156	58	10E	5
R263	B	286	111	7E	3	R328	A	252	52	4C	4	R437	A	159	63	10F	5
R264	A	281	117	7C	3	R329	A	223	46	5F	4	R438	A	221	19	10D	5
R265	A	285	139	6C	3	R330	B	211	53	2A	4	R439	A	227	19	10D	5
R266	A	276	112	6C	3	R331	B	214	63	2A	4	R440	B	151	58	10E	5
R267	A	289	112	6C	3	R333	A	241	62	5E	4	R442	A	247	78	4A	5
R269	A	285	65	10F	3	R334	A	238	105	5E	5	R443	A	218	19	10C	5
R270	B	286	63	9E	3	R335	A	219	66	5D	4	R444	A	252	91	5A	5
R271	A	276	15	11C	3	R336	A	216	67	5C	4	R445	A	257	11	11C	5

MENP PFLUGER	Datum Date	XY-Liste fuer XY-list for	Sachnummer Stock-No.	Aei	Blatt Page
ROHDE & SCHWARZ	98-02-11	EE REFERENZ_STEPSYNTHESE REFERENZ_STEPSYNTHESE	1035.6501.01 XY	11.00	5+

Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg
R446	B	224	16	10C	5	R502	A	49	70	2E	6	R565	A	88	100	9D	6
R447	B	228	19	10C	5	R503	A	41	61	2E	6	R566	A	93	100	9D	6
R448	A	261	17	11C	5	R504	A	44	59	2E	6	R567	B	53	69	9F	6
R449	B	224	91	5E	5	R505	A	46	59	2E	6	R568	A	90	122	9E	6
R450	B	224	93	5F	5	R506	A	39	70	2E	6	R569	A	80	124	9E	6
R451	A	159	88	11E	5	R507	B	40	35	10D	2	R570	A	57	56	7B	6
R452	A	155	84	11F	5	R509	B	35	32	7B	6	R571	A	72	121	10E	6
R453	A	231	93	4E	5	R510	A	62	81	3E	6	R573	B	72	98	11F	6
R454	B	158	85	11E	5	R511	B	43	35	10E	2	R574	B	82	100	11E	6
R455	B	161	88	11E	5	R512	B	53	71	1C	6	R575	B	65	21	8C	6
R456	A	233	89	4E	5	R513	B	31	34	11E	2	R576	B	97	97	10D	6
R457	B	161	90	11E	5	R514	A	29	31	11D	2	R577	B	49	18	8C	6
R458	B	156	90	11E	5	R515	A	31	39	11D	2	R578	B	75	23	9C	6
R459	A	215	92	6D	5	R516	B	43	56	11C	2	R579	B	77	22	9D	6
R460	B	240	80	1E	5	R517	A	45	55	11C	2	R580	A	65	24	10C	6
R461	A	259	75	1E	5	R518	B	56	49	11C	2	R581	A	67	18	10C	6
R462	A	259	85	2E	5	R519	B	40	60	11C	2	R582	B	66	16	8B	6
R463	B	262	85	2E	5	R520	A	77	43	2D	6	R583	B	75	18	9C	6
R464	A	232	86	3E	5	R521	A	69	43	2C	6	R584	B	102	133	6E	6
R465	B	228	104	1D	5	R522	A	73	46	2C	6	R587	B	91	141	6E	6
R466	A	258	96	1E	5	R523	A	71	39	4E	6	R589	A	85	95	12F	6
R467	A	262	102	2D	5	R524	B	60	50	4F	6	R590	B	86	134	6F	6
R468	B	260	93	2D	5	R525	A	81	78	2D	6	R591	B	80	97	10E	6
R470	A	234	99	3D	5	R526	A	72	84	2D	6	R592	B	66	24	9C	6
R471	A	238	84	3E	5	R527	A	69	36	4D	6	R593	B	63	13	8B	6
R472	B	200	87	4D	5	R528	A	73	62	3D	6	R597	B	84	98	11E	6
R473	B	214	75	2C	5	R529	A	70	62	3D	6	R598	B	75	96	10F	6
R474	B	197	87	4C	5	R530	A	53	82	5D	6	R599	B	78	104	11E	6
R475	B	216	83	2C	5	R531	A	53	75	6D	6	R600	B	141	23	3F	7
R476	B	203	81	3C	5	R533	A	34	43	8B	6	R601	B	125	23	3E	7
R477	A	173	86	5D	5	R535	A	78	66	3B	6	R602	B	136	23	3E	7
R478	B	233	85	4A	5	R536	A	77	72	4B	6	R603	B	131	23	3D	7
R479	A	215	87	6D	5	R540	B	67	78	4C	6	R604	B	117	24	3D	7
R480	B	252	91	5F	5	R541	A	56	96	4C	6	R605	B	95	14	2E	7
R481	B	250	93	5E	5	R542	A	65	85	4C	6	R607	B	99	16	2D	7
R482	B	234	99	5E	5	R543	A	59	97	4C	6	R608	B	94	19	3D	7
R483	B	240	98	5E	5	R544	A	60	112	4C	6	R610	B	136	38	3F	7
R484	A	241	100	4B	5	R545	A	51	116	5C	6	R611	A	124	37	3E	7
R485	A	175	86	5D	5	R546	A	63	131	5D	6	R612	A	135	43	3E	7
R486	A	238	77	4A	5	R547	A	58	108	4B	6	R613	A	132	45	3D	7
R487	A	225	82	5B	5	R548	A	63	121	5D	6	R614	A	121	45	3D	7
R488	A	217	81	5B	5	R550	A	60	128	5C	6	R615	B	120	24	3E	7
R489	A	231	99	1A	5	R551	B	99	126	9D	6	R616	A	122	36	3E	7
R490	B	191	81	3D	5	R552	B	97	116	10D	6	R619	A	124	58	4D	7
R491	B	197	81	3D	5	R553	B	104	105	10D	6	R620	B	124	100	3C	7
R492	A	228	93	1A	5	R554	B	71	109	10F	6	R629	A	81	55	5C	7
R493	B	173	82	4C	5	R555	A	83	132	7E	6	R630	A	135	50	4E	7
R494	A	198	81	6A	5	R556	A	102	134	7E	6	R631	A	141	55	4E	7
R495	A	186	80	6A	5	R558	A	88	140	7E	6	R632	A	130	56	4E	7
R496	A	156	65	9F	5	R559	A	98	139	7D	6	R633	A	141	57	4E	7
R497	A	153	81	11F	5	R560	A	63	64	7E	6	R634	A	141	65	4E	7
R498	A	228	100	1B	5	R561	A	95	122	9E	6	R635	A	141	67	4E	7
R499	A	224	105	1B	5	R562	A	89	113	9E	6	R636	A	141	70	4E	7
R500	A	39	61	2E	6	R563	A	81	121	9E	6	R638	A	133	67	5E	7
R501	A	49	60	2E	6	R564	A	63	53	8C	6	R639	A	130	69	5E	7

MENP PFLUGER	Datum Date	XY-Liste fuer XY-list for	Sachnummer Stock-No.	Aei	Blatt Page
ROHDE & SCHWARZ	98-02-11	EE REFERENZ_STEPSYNTHESE REFERENZ_STEPSYNTHESE	1035.6501.01 XY	11.00	6+

Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg
R640	A	132	62	5E	7	V262	B	292	119	7E	3	V536	A	81	70	3B	6
R641	A	127	69	5E	7	V263	B	276	114	7E	3	V540	A	63	137	6C	6
R642	A	128	64	5D	7	V265	A	285	114	6C	3	V555	A	101	105	10D	6
R643	A	127	59	5D	7	V279	B	284	37	8C	3	V566	A	56	20	8C	6
R644	A	124	69	5D	7	V280	B	288	50	11E	3	V570	A	74	117	10E	6
R645	A	125	62	5D	7	V285	B	298	42	8C	3	V571	A	77	116	10E	6
R649	B	118	120	7B	7	V290	B	282	27	10C	3	V575	B	68	18	9C	6
R650	B	128	134	9E	7	V295	B	282	17	11C	3	V582	B	71	24	9C	6
R652	B	151	16	8B	7	V299	A	284	17	11B	3	V583	B	63	24	9C	6
R653	B	124	88	8D	7	V320	A	244	41	5E	4	V584	B	62	17	9C	6
R659	B	124	131	3A	7	V321	A	240	41	4E	4	V585	B	77	99	11E	6
R660	B	132	136	9D	7	V322	A	238	44	4E	4	V586	B	84	104	11E	6
R661	B	138	134	9C	7	V323	A	247	49	5E	4	V587	A	71	22	10C	6
R662	B	134	136	9C	7	V325	B	229	64	5D	4	V590	B	65	12	8B	6
R680	B	130	116	10E	7	V361	A	213	102	11C	4	V660	B	121	133	4A	7
R681	B	130	119	10E	7	V380	B	160	129	9E	4	V697	B	122	123	11D	7
R682	B	125	120	10D	7	V383	B	150	118	9E	4	V698	B	132	102	11C	7
R685	B	127	114	10E	7	V400	B	183	64	8E	5	W1A	B	171	142	6D	2
R687	B	129	102	10E	7	V401	B	185	67	8E	5	W1B	B	171	142	6D	2
R688	B	127	104	11E	7	V402	B	174	66	8E	5	Z1	B	44	81	2E	2
R690	A	130	119	6B	7	V403	B	179	64	7E	5	Z95	B	49	33	10E	2
R691	B	136	122	10C	7	V404	B	172	71	7F	5	Z100	B	110	27	2C	2
R692	B	136	119	10C	7	V405	B	180	68	7E	5	Z101	B	95	27	2B	2
R693	B	136	126	10D	7	V406	B	182	68	7E	5	Z102	B	105	27	2B	2
R694	B	130	106	10D	7	V407	B	176	71	7E	5	Z103	B	90	27	2B	2
R697	B	127	125	11D	7	V408	B	180	44	7D	5	Z104	B	100	27	2A	2
R698	A	138	98	11C	7	V418	B	196	37	8C	5	Z210	B	202	108	2B	3
V5	A	17	115	2D	2	V420	B	194	48	7C	5	Z280	B	265	56	9B	3
V10	A	35	105	2D	2	V422	B	255	88	5F	5	Z382	B	140	119	7F	4
V14	B	22	103	3D	2	V424	B	234	108	5D	5	Z384	B	140	109	7E	4
V35	A	29	93	4D	2	V425	B	227	97	6E	5	Z390	B	140	99	7E	4
V60	B	183	137	7E	2	V426	B	230	95	6E	5	Z391	B	143	86	7E	4
V69	A	17	21	8D	2	V435	B	222	17	10C	5	Z392	B	143	76	7E	4
V70	B	183	123	7D	2	V437	A	252	13	11C	5	Z550	B	161	22	7D	6
V80	B	19	29	7C	2	V460	A	196	80	6A	5	Z560	B	156	29	11D	6
V90	B	21	67	7B	2	V466	A	262	87	2E	5	Z600	B	141	27	3F	7
V95	B	28	63	8B	2	V473	B	172	90	5C	5	Z601	B	126	27	3E	7
V105	B	118	42	3C	2	V475	A	173	90	5C	5	Z602	B	136	27	3E	7
V205	A	213	116	2D	3	V514	A	31	25	11E	2	Z603	B	131	27	3D	7
V206	A	214	129	3D	3	V518	B	47	55	11C	2	Z604	B	116	27	3D	7
V240	B	280	133	5D	3	V530	A	52	88	5D	6	Z605	B	121	27	3E	7
V255	A	279	127	6D	3	V531	A	58	74	6D	6	Z650	B	151	22	8B	7
V260	A	292	127	6D	3	V535	A	81	62	3B	6						

MENP PFLUGER	Datum Date	XY-Liste fuer XY-list for	Sachnummer Stock-No.	Aei	Blatt Page
ROHDE & SCHWARZ	98-02-11	EE REFERENZ_STEPSYNTHESE REFERENZ_STEPSYNTHESE	1035.6501.01 XY	11.00	7-

ROHDE&SCHWARZ

SERVICE INSTRUCTIONS

Digital Synthesis

1038.7344.01

Contents

7. Checking and Repair of the Module

7.1 Functional Description

Using the DDS component DDS-GA (DDS gate array), the DIGITAL SYNTHESIS module (DSYN for short) digitally generates a sinewave signal in the frequency range 14.1 to 15.6 MHz (SMP: 10.3 to 15.6 MHz) with a resolution of 50 MHz/2^48=0.178 uHz. The generated frequency is as accurate as the clock frequency of the DDS-GA (50 MHz). The clock signal is taken from the REFSS module to the input socket REF50 (X81). The output signal at the output socket FDDS (X89) is routed to the SUMMING LOOP module, where it serves as reference signal for a phase-locked loop.

The module also contains a phase-locked loop, the so-called buffer loop (PS for short (German: PufferSchleife)). The DDS signal can be routed via this loop for suppression of non-harmonic spurious signals.

The DATA CODER option (DCOD) can be fitted in the DSYN module. It provides a digital modulation signal (FM) to the DDS gate array via a parallel port.

Data and clock signals can be applied to the DCOD option and an FSK signal and a serial modulation signal (SYNTHESE-FM) to the DDS gate array via the motherboard.

DSYN contains two SERBUS DECODERs as interfaces to the controller module. SERBUS-D1 is exclusively used for DSYN and SERBUS-D2 for the DATA CODER option.

7.1.1 DIRECT DIGITAL SYNTHESIS

Following the input socket REF50, the sinewave 50-MHz reference signal is divided into three paths by means of a Y-connection: the path for the DDS-GA clock, the path for the DCOD clock and that for the D/A converter (DAC).
The CLOCK AMPLIFIER converts the sinewave signal into a HCMOS signal for the DDS_GA.
The DELAY LINE delays the clock signal for the DAC such that the data from the DDS-GA are read into the DAC at the optimal point in time.
The ALIASING FILTER converts the sample-and-hold signal from the DAC into an sinewave signal.
The parallel modulation data from DCOD are applied via the lines FMDAT(0)...FMDAT(13) to the DDS-GA and are read in with the rising edge of the LOADM signal.
The serial modulation data from the MOTHERBOARD are applied via the DATA line to the DDS-GA and read in with the falling edge of the DATACLK signal. A serial data word is 16 bits long. The MSB, which is transferred first, is marked by a HIGH signal on the BURST line.
The lines BURST, DATA and DATACLK all lead to instrument sockets.

For the FSK modulation without baseband filtering (hard frequency-shift keying), the data signal is also applied via the DATA line to the DDS-GA. This signal can be inverted by the FSK-INVERTER.

7.1.2 BUFFER LOOP

When the buffer loop (PS for short) is activated with PS_ON=1, the PIN diode switches V600 and V603 are closed.

There is no frequency-converting module between the OSCILLATOR (VCO) and the PHASE DETECTOR so that the output frequency (VCO frequency) and the input frequency are identical.

MOS switch N700 permits to switch the loop bandwidth between 1 kHz and 100 kHz. There are three modes of switching:

MODE 1: If BAND=1 is set by the controller, the bandwidth is set to 100 kHz.

MODE 2: If BAND=0 and AUTO=1 are set by the controller, the bandwidth is set to 1 kHz.

MODE 3: If BAND=0 and AUTO=0 are set by the controller, the bandwidth is set to 1 kHz, however, each time the frequency is changed, it is set to 100 kHz for 250 us by the MONOFLOP in order to reduce the settling time.

MODE 3 is used in CW mode if the frequency change is greater than 3 kHz. In the case of a frequency change below 3 kHz, MODE 2 is selected, since the loop remains in the lock-in range.
The narrowband control loop is used to suppress non-harmonic spurious signals in CW mode.

MODE 1 is used to suppress non-harmonic spurious signals, e.g. aliasing products above 100 kHz off the carrier in the case of digital FM modulation.
If the buffer loop is activated (PS_ON=1) but does not synchronize (VCO tuning voltage at X37 or diagnostic voltage 305 at lower or upper stop; <0 V or >21.5 V), the INTERRUPT DETECTOR causes an interrupt at the SERBUS-D1, and an error message is indicated on the instrument display.

7.2 Measuring Instruments and Accessories

- Service kit 1039.3520
- Dual-channel oscilloscope (0 to 250 MHz)
- Spectrum analyzer (1 to 100 MHz)
- Squarewave generator (100 Hz to 1 MHz) (e.g. ADS)
- Test pattern generator (e.g. ADS)
- Frequency counter (10 to 20 MHz) (included in FSA)
- Modulation analyzer (e.g. FMB)

Faulty data transmission (see 7.4.2).	Check SERBUS-D1 (D110), SERBUS BUFFER (D50) and the shift registers D150 and D155.
Clock signal at P32/P33 out of tolerance (see 7.4.4).	Check CLOCK AMPLIFIER (V220, diagnostic point 303).
Clock signal and data signal to DAC (D300) at P4/P14 and P5/P15 out of tolerance (see 7.4.5).	Check the DELAY LINE and the clock amplifier V210 (The setup and hold time can be corrected using R215 or R212 by varying the DELAY LINE delay.)
Output signal out of tolerance in CW mode (DIG. MOD OFF) (see 7.4.8).	Check whether the voltage at P6 corresponds to -9.5+-1 V. Check pin diode V603 and the OSCILLATOR.
Output signal out of tolerance with PS deactivated (FSK-MOD. ON) (see 7.4.8).	Check whether the voltage at P6 corresponds to 11.6+-1 V. Check the DDS gate array D20, pin diode V601, the DAC (D300), the ALIASING FILTER (L405) and the DDS AMPLIFIER (N400).
Phase-locked loop (buffer loop) does not synchronize (see 7.4.7.1).	Check whether jumper X36/X37 is inserted. Check OSCILLATOR (V512), clock amplifier V610 and V612, CONTROL AMPLIFIER (N700, N702, D700, V702, V704). Check whether the voltage at P6 is -9.5 V+-1 V, check pin diodes V603, V600 and V601. Check whether the voltage at P9/P8 is 24 V/0 V+-1 V or 0 V/24 V+-1 V.
The error message "Digital synthesis buffer VCO unlocked" is indicated (see 7.4.10).	Check whether is phase-locked loop synchronizes (voltage at P7 1 V to 21 V, diagnostic point 305). If not, see the above paragraph. Check the INTERRUPT DETECTOR (N120, V150).

7.4 Checking and Adjustment

Preliminary remark:

For service operation, unscrew the upper cover, insert the service adapter into the location instead of the module and plug the module onto the adapter. After the RF connections have been restored, the module is ready for use again.

7.4.1 Testing the Current Consumption

The current consumption of the module can be checked by replacing coils L80, L82, L76, L78 and resistor R48 by an ammeter each. The nominal values for the respective supply voltages are to be obtained from section 7.6.

7.4.2 Testing the Data Transmission

- Unscrew the cover on the solder side and check the voltages according to the following table.

Setting	D150 Pin 4	5	6	7	14	13	12	11	
PRESET	0	0	0	0	x	0	0	1	
DIG.MOD-FSK-SOURCE-PRBS	x	x	x	x	x	0	1	1	
DIG.MOD-GFSK-SOURCE-PRBS	x	x	x	x	x	0	0	0	
DIG.MOD-FSK-SOURCE-PRBS -POLARITY-INV	x	x	x	x	x	1	1	1	

- Fasten the cover on the solder side again.

7.4.3 Testing the Voltage Regulators

- Remove the DM-CODER option, if fitted, so that test points P20 and P21 are accessible.

▶ The voltage at test point P20 must be +5 V ±0.15 V.

▶ The voltage at test point P21 must be -5 V ±0.15 V.

7.4.4 Testing the Clock Signal to the DDS-GA D20

- Connect oscilloscope to P32/P33 (signal/ground) (50 Ω).

▶ A periodic AC voltage with the frequency 50 MHz, the maximum voltage above 0.19 V and the minimum voltage below 0.048 V must be measured (There is a 1-kΩ series resistor between signal and test point).

7.4.5 Testing the Digital Signals at the D/A-Converter (DAC, D300)

- Setting: **FREQUENCY 1350.8MHz**

- Connect the oscilloscope with channel1 to P4/P14 (clock signal) and channel2 to P5/P15 (data signal) and set the trigger threshold for the clock signal to -40 mV (negative-edge triggering, impedance 50 Ω).

▶ The data signal should appear as an eye pattern. The HIGH level should be -40 mV ±7 mV at the trigger point.

▶ The LOW level should be -83 mV± 7 mV at the trigger point.

▶ The upper peak voltage of the clock signal should be >-10 mV and the lower peak voltage <-110 mV.

▶ The SETUP time and the HOLD time of the data signal referred to the trigger point (data acquisition) should be <5 ns.

7.4.6 Adjustment of OSCILLATOR

Fasten a special cover with screws on the component side so that chamber A and F and thus various test points remain freely accessible. For adjustment of L507 and L506, this cover features two holes. It will be referred to as OSCILLATOR cover in the following.

- Setting: **FREQUENCY 1000MHz**
- Remove jumper X36/X37 and apply DC voltage to X37.
- Connect spectrum analyzer to X89 (FDDS).

▶ Alternately adjust the oscillator according to the following table. The intended frequency values are 10.3 and 15.6 MHz. If these values cannot be obtained, the specified tolerance range is to be observed, and, if possible, the same frequency error should be obtained at both trimmers.
In the case of trimmer OSZ3, either L506 or L507 or both coils can be adjusted.

Voltage X37	Trimmer	Nom. frequency at X89
18 V	OSZ3(L506/L507)	15.6 ... 15.9 MHz
1.6 V	OSZ4 (R433)	10 ... 10.3 MHz

- Replace jumper X36/X37.

7.4.7 Testing the BUFFER LOOP

7.4.7.1 Static Response

- The OSCILLATOR cover must be fastened with screws.
- Setting: **FREQUENCY 1350.2/1351.4 MHz**

▶ The voltage at P7 must be 14.6/18.0 +-1 V.

7.4.7.2 Transient Response

- Remove the DATA CODER option so that test point P28 becomes accessible.
- The OSCILLATOR cover must be fastened with screws.
- Connect an oscilloscope to P35 (PD signal), which is triggered with the FRS signal at P28 (negative edge, trigger threshold 3 V).
- Setting: **FREQUENCY acc. to table (narrowband PS)**

▶ When the frequency changes from 1350.2 to 1351.4 MHz and vice versa, the voltage at P35 must be below 0.1 V 3 ms after triggering.

- Testing with a DATA CODER fitted.
- Setting: **FREQUENCY acc. to table**
  DIGITAL MOD - 4FSK - SOURCE EXT
  (broadband PS)

▶ When the frequency changes from 1350.2 to 1351.4 MHz and vice versa, the voltage must be below 0.1 V 70 us after triggering.

7.4.7.3 Transmission Response

- The DATA CODER option must be fitted.
- The OSCILLATOR cover must be fastened with screws.
- Connect a modulation analyzer to X89 (FDDS) (e.g. FMB) and cut in a 23-kHz lowpass.
- Setting: **FREQUENCY 835MHz**
  DIGITAL MOD - 4FSK - SOURCE DATA (broadb. PS)
  -FILL-LIST DATA "1000"

▶ The FM-demodulated signal must feature a peak deviation of 4.6875 kHz +-1% and a modulation frequency of 1.5625 kHz +-1%. There must not be any overshoots.

7.4.8 Testing the Output Signal in CW Mode

- The OSCILLATOR cover must be fastened with screws.

- Connect a spectrum analyzer to output X89 (FDDS).
- Setting: **FREQUENCY acc. to table**
  DIGITAL MOD - FSK - SOURCE EXT/OFF
  - DEVIATION 0Hz

▶ Set various frequencies according to the following table and check the frequency for SOURCE EXT and SOURCE OFF at the output.

FREQUENCY/MHz	1350.2	1351.4
Nom. freq./MHz+-1kHz	14.351	15.551

▶ The level must be 2 +-1.5 dBm and the harmonics suppression <-40 dBc.

▶ Check nonharmonic spuria according to the following table:

FREQU. in MHz	EXT / OFF	Carrier frequency in MHz	Offset frequency in MHz	Nonharm. spuria in dBc
1350.69275	EXT	14.84375+-0.1	+-1.5625	<-66
1350.69275	OFF	14.84375+-0.0001	+-1.5625	<-80
1351.27869	EXT	15.4296875+-0.1	+-1.5625	<-66
1351.27869	OFF	15.4296875+-0.0001	+-1.5625	<-80
835.1	EXT	15.1+-0.1	+-0.2	<-66
835.1	OFF	15.1+-0.0001	+-0.2	<-80

7.4.9 Testing the Interrupt Function

- Setting: **FREQUENCY 1000MHz**

▶ Remove jumper X36/X37. The error message "Digital synthesis buffer VCO unlocked" must be displayed.

7.4.10 Testing the Diagnosis

- Setting: **FREQUENCY 1000MHz**
  UTILITIES - DIAG - TPOINT...

TPOINT	Test point	Factor	Nom. voltage
300	+15V supply	4	14...16 V
301	DCOD, OSC.tun. volt.	5	-100...100 mV
302	DCOD, OSC. level	1	-20...20 mV
303	DDS-GA clock level	1	0.5...1.5 V
304	Level at outp. FDDS	1	50...200 mV
305	OSC. tuning voltage	5	12...20 V
306	-15-V supply	4	-14...16 V
307	+7.5-V supply	2	14...16 V

7.4.11 Testing the CODAM Line

- Connect a signal generator (50 Ω) to X3.19/20 (SIG/GND) and apply 10 MHz/10 dBm.
- Connect a spectrum analyzer to X80.9/11 (SIG/GND) and set CENTER 10 MHz.

▶ The level to be measured at 10 MHz must be 4 dBm +-2 dB.

The module can be removed from its location after opening the instrument, unlocking the modules and loosening the RF connections at X81 and X89. The screening covers of the module are conventionally fastened with screws.

7.5 Removal and Assembly

The module can be removed from its location after opening the instrument, unlocking the module and loosening the RF connections at X81 and X89. The screening covers of the module are conventionally fastened with screws.

7.6 Interface Description

Pin	Name	Inp./Output	Origin/Destination	Value range	Signal description
X80.A12	SERBUS-CLK	Input	A3, FRO X50.40	HCMOS level	Serbus clock
X80.A14 X80.A15	SERBUS-DAT	bidir.	A3, FRO X50.39	HCMOS level	Serbus data
X80.A17	SERBUS-INT	Output	A3, FRO X50.38	HCMOS level	Serbus interrupt
X80.A18	RES-P	Input	A3, FRO X50.28	HCMOS level	Serbus reset
X80.A19	DIAG-5V	Output	A3, FRO X50.44	-5V...5V	Diagnosis
X80.A24	VA15-P	Input	A2, POWS1	14.80V...15.75V 44...66mA	Supply voltage analog
X80.A26	VA7.5-P	Input	A2, POWS1	7.45V...7.95V 328...500mA	Supply voltage analog
X80.A28	VD-5P	Input	A2, POWS1	5.10V...5.25V 0...10mA	Supply voltage digital
X80.A30	VA15-N	Input	A2, POWS1	-15.75V...-14.85V 208...310mA	Supply voltage analog
X80.A1	DATACLK	bidir.	A3, FRO	HCMOS level	Data clock of DATA CODER
X80.A2	DATA	bidir	A3, FRO	HCMOS level	Data signal of DATA CODER
X80.A3	BURST	bidir.	Rear panel	HCMOS level	BURST signal of DATA CODER
X80.A9	CODAM	Output	A10, OPU1	-1V...+1V	AM signal from DATA CODER
X80.A32	LSWI	Output	A10, OPU1	HCMOS level	LEVEL-SWITCH signal to OPU
X81	REF50	Input	A5, MGEN X99	9dBm+-2dB	RF input, reference signal
X89	FDDS	Output	A9, SUM, X51	2dBm+-2dB	RF output, DDS signal

ROHDE&SCHWARZ

Schaltteillisten
numerisch geordnet

Part lists
in numerical order

Listes des pièces détachées
par numéros de référence

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
C50	CE 4,7UF+-10% 10V 3528 TANTALUM CHIP CAPACITOR	CE 0007.7275.00	SPRAGUE	293D 475 X9 010 B2T	
C77	CE 47UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7479.00	PANASONIC	ECA-1HFG470I	
C79	CE 100UF+-20%25V RM2.5 ELECTROLYTIC CAPACITOR	CE 0008.7891.00	PANASONIC	ECA-1EFG101I	
C81	CE 220UF+-20%10V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7927.00	PANASONIC	ECA 1 AFG 221 I	
C83	CE 100UF+-20%25V RM2.5 ELECTROLYTIC CAPACITOR	CE 0008.7891.00	PANASONIC	ECA-1EFG101I	
C100	CE 100UF+-20%6,3V AL-CHIP SMD-ELECTROLYTIC CAPACIT.	CE 0008.1841.00	VALVO	TYP 2222 139 63101	
C102	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C110	CE 100UF+-20%6,3V AL-CHIP SMD-ELECTROLYTIC CAPACIT.	CE 0008.1841.00	VALVO	TYP 2222 139 63101	
C111	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C112	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C114 ..120	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C129	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C130	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C131	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C132	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C133	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C134	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C135	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C150	CE 10UF+-20%50V ALU-CHIP SMD-ELECTROLYTIC CAPACIT.	CE 0008.1812.00	VALVO	TYP 2222 139 61109	
C162	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C168	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C180	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C182	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C186	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C200	CE 220UF+-20%10V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7927.00	PANASONIC	ECA 1 AFG 221 I	
C202	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C203	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C204	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C205	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C210	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C212	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C214	CE 10UF +-10% 25V 7343 TANTALUM SMD-CAPACITOR	CE 0007.7246.00	SPRAGUE	293D 106 X9 025 D2W	
C216	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C218	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C219	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C220	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C222	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C230	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C231	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	

Comp. No.	Bezeichnung Designation	Stock No.	Hersteller Manufacturer	Bezeichnung Designation	contained in
C232	CC 2,2PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8171.00	MURATA	GRM42-6C0G 2R2 C50PT	
C233	CC 1NF+-1% 50V NP0 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C300	CE 10UF +-10% 25V 7343 TANTALUM SMD-CAPACITOR	CE 0007.7246.00	SPRAGUE	293D 106 X9 025 D2W	
C302	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C304	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C306	CE 220UF+-20%10V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7927.00	PANASONIC	ECA 1 AFG 221 I	
C308	CE 220UF+-20%10V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7927.00	PANASONIC	ECA 1 AFG 221 I	
C310	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C312	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C402	CC 180PF+-1%50V NP0 1206 CHIP CAPACITOR	CC 0099.8844.00	MURATA	GRM42-6C0G 181F50ZPT	
C403	CC 27PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8409.00	MURATA	GRM42-6C0G 270F50ZPT	
C404	CC 180PF+-1%50V NP0 1206 CHIP CAPACITOR	CC 0099.8844.00	MURATA	GRM42-6C0G 181F50ZPT	
C405	CC 100PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F50ZPT	
C406	CC 180PF+-1%50V NP0 1206 CHIP CAPACITOR	CC 0099.8844.00	MURATA	GRM42-6C0G 181F50ZPT	
C407	CC 68PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8815.00	MURATA	GRM42-6C0G 680F50ZPT	
C408	CC 330PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8873.00	AVX	1206 5A 331 F 3	
C409	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C410	CC 390PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8880.00	AVX	1206 5 A 391 F 3	
C411	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C412	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C414	CE 10UF +-10% 25V 7343 TANTALUM SMD-CAPACITOR	CE 0007.7246.00	SPRAGUE	293D 106 X9 025 D2W	
C420	CE 10UF +-10% 25V 7343 TANTALUM SMD-CAPACITOR	CE 0007.7246.00	SPRAGUE	293D 106 X9 025 D2W	
C500	CC 270PF+-5% 200V PELL CAPACITOR TRIMMWERT/SELECTED"	CC 0556.8730.00	TEKELEC	201 CHB 271J WL	
C502	CC 56PF+-5% 500V PELL CAPACITOR	CC 0556.8660.00	TEKELEC	501 CHB 560 J(W/V)LE	
C505	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C506	CC 470PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C508	CC 470PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C510	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C512	CC 39PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8796.00	MURATA	GRM42-6C0G 390F50ZPT	
C514	CE 10UF +-10% 25V 7343 TANTALUM SMD-CAPACITOR	CE 0007.7246.00	SPRAGUE	293D 106 X9 025 D2W	
C516	CC 150PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8509.00	MURATA	GRM42-6C0G 151F 50PT	
C518	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C519	CE 10UF +-10% 25V 7343 TANTALUM SMD-CAPACITOR	CE 0007.7246.00	SPRAGUE	293D 106 X9 025 D2W	
C600	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C602	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C604	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C620	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C621	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
C622	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C623	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C624	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C625	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C626	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C627	CC 220PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8850.00	AVX	1206 A 221 F 3	
C628	CC 330PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8873.00	AVX	1206 5A 331 F 3	
C629	CC 220PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8850.00	AVX	1206 A 221 F 3	
C630	CC 2,2PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8171.00	MURATA	GRM42-6C0G 2R2 C50PT	
C631	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C640	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C641	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C642	CC 470PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C646	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C647	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C648	CC 470PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C662	CC 10PF+-0,25 50VNP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C663	CC 10PF+-0,25 50VNP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C700	CE 47UF+-20%50V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7479.00	PANASONIC	ECA-1HFG470I	
C701	CE 220UF+-20%10V RM2,5 ELECTROLYTIC CAPACITOR	CE 0008.7927.00	PANASONIC	ECA 1 AFG 221 I	
C702	CK 22NF +-1% 63V RM5 KP POLYPROPYLENE CAPACITOR	CK 0007.7675.00	ROEDERSTEI	KP1830-322 06 1 3 W	
C703	CK 1UF+-5%50V7,5X5,5X10,5 POLYESTER CAPACITOR	CK 0099.2998.00	SIEMENS	B32529-C5105-J189	
C705	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C706	CC 100PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F50ZPT	
C710	CC 68PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8815.00	MURATA	GRM42-6C0G 680F50ZPT	
D20	BG TH3132 DDS GAZ ASIC IC GATEARRAY	BG 1039.1527.00	THESYS	TH3132	
D50	BL PC74HCT125T 4XBUFF. 3S QUAD LINE DRIVER	BL 0007.5395.00	PHILIPS_SE	(PC)74HCT125(D/T)	
D110	BG TH3032.1C SERBUSD ASIC IC GATE ARRAY	BG 0008.6143.00	THESYS	TH3032.1C	
D112	BG TH3032.1C SERBUSD ASIC IC GATE ARRAY	BG 0008.6143.00	THESYS	TH3032.1C	
D120	BL PC74HCT132T 4X2IN SCHM NAND SCHMITT TRIGGER	BL 0007.6340.00	PHILIPS	(PC)74HCT132(D/T)	
D125	BL PC74HCT132T 4X2IN SCHM NAND SCHMITT TRIGGER	BL 0007.6340.00	PHILIPS	(PC)74HCT132(D/T)	
D130	BL PC74HCT4051T 8CH.A.MUX ANALOG MULTIPLEXER	0007.6827.00	PHILIPS	(PC)74HCT4051(T)	
D135	BL 74ACT86SC 4X 2IN-EXOR QUAD 2-INPUT EXOR GATE	BL 2005.4307.00	HARRIS	(CD74)ACT86(M)	
D150	BL PC74HCT4094T 8ST.SHREG 8-STAGE SHIFT&STORE REG.	0007.6885.00	PHILIPS	(PC)74HCT4094(D)	
D155	BL PC74HCT4094T 8ST.SHREG 8-STAGE SHIFT&STORE REG.	0007.6885.00	PHILIPS	(PC)74HCT4094(D)	
D175	BL PC74HC4538T 2X MULTIV DUAL MULTIVIBRATOR	6014.4382.00	PHILIPS_SE	(PC)74HC4538(T)	
D300	BJ CX20201A-1 MPY 10B-DAC DIGITAL/ANALOG CONVERTER	1039.1340.00	HARRIS	HI20201JCB	
D600	BL 74AC74SC 2XD-FLIPFL DUAL D-TYPE FLIPF	BL 0820.3602.00	FAIRCHILD	74AC74SC	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
D700	BS SD5400CY 4X ANALOGSCH QUAD ANALOG SWITCH	0351.0000.00	SILICONIX	SD5400CY	
L76	LD 150UH BEI 0,17A 6,20HM CHOKE	LD 0026.4055.00	DALE	IM 6	
L78	LD 150UH BEI 0,17A 6,20HM CHOKE	LD 0026.4055.00	DALE	IM 6	
L80	LD 3,3UH BEI 1,63AO,160HM CHOKE	LD 0026.4061.00	DALE	IM 6	
L82	LD 15UH 10% 1R2 0,46A CHOKE	LD 0026.4149.00	DALE	IM 6	
L110	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L135	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L150	LD 100UH 10% 0,06A 1210 RF CHOKE	LD 0007.9261.00	SIEMENS	B82422-A1104-J(K)100	
L200	LD 220NH 10%0,140HM1,045A CHOKE	LD 0067.2786.00	DALE	IM2	
L201	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L202	LD 0,47UH10%0,350HMO,660A CHOKE	LD 0067.2828.00	DALE	IM2	
L204	LD 0,47UH10%0,350HMO,660A CHOKE	LD 0067.2828.00	DALE	IM2	
L206	LD 0,47UH10%0,350HMO,660A CHOKE	LD 0067.2828.00	DALE	IM2	
L208	LD 220NH 10%0,140HM1,045A CHOKE	LD 0067.2786.00	DALE	IM2	
L210	LD 4,7UH 10%1,20HM 0,239A CHOKE	LD 0067.2940.00	DALE	IM2	
L212	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L214	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L216	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L300	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L302	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L304	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L306	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L403	LD 0,39UH10%0,300HMO,710A CHOKE	LD 0067.2811.00	DALE	IM2	
L405	LD 220NH 10%0,140HM1,045A CHOKE	LD 0067.2786.00	DALE	IM2	
L406	LD 220NH 10%0,140HM1,045A CHOKE	LD 0067.2786.00	DALE	IM2	
L408	LD 10UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L500	LD 56UH 10% 5,70HM 0,1A CHOKE	LD 0067.3076.00	DALE	IM2	
L502	LD 56UH 10% 5,70HM 0,1A CHOKE	LD 0067.3076.00	DALE	IM2	
L504	LD 22UH10%3,300HMO,114A CHOKE	LD 0067.3024.00	DALE	IM2	
L506	LD 530NH 9,5W CM19P FE-K COIL	0817.0058.00	TOKO	E526 HN-100109	
L507	LD 530NH 9,5W CM19P FE-K COIL	0817.0058.00	TOKO	E526 HN-100109	
L508	LD 56UH 10% 5,70HM 0,1A CHOKE	LD 0067.3076.00	DALE	IM2	
L514	LD 2,7UH 10%0,550HMO,355A CHOKE	LD 0067.2911.00	DALE	IM2	
L516	LD 1,50UH10%0,220HMO,560A CHOKE	LD 0067.2886.00	DALE	IM2	
L600	LD 10UH 10% 0,18A 1210 RF CHOKE	LD 0007.9255.00	SIEMENS	B82422-A1103-J(K)100	
L602	LD 560NH 5% 0R5 0,495A CHOKE	0300.9752.00	DALE	IM 2	
L603	LD 560NH 5% 0R5 0,495A CHOKE	0300.9752.00	DALE	IM 2	
L700	LD 100UH 10% 0,06A 1210 RF CHOKE	LD 0007.9261.00	SIEMENS	B82422-A1104-J(K)100	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
L701	LD 100UH 10% 0,06A 1210 RF CHOKE	LD 0007.9261.00	SIEMENS	B82422-A1104-J(K)100	
L705	LD 56UH 10% 5,7OHM 0,1A CHOKE	LD 0067.3076.00	DALE	IM2	
N100	BO LM2940CT LOWDROP+VREGL VOLTAGE REGULATOR	BO 0350.5809.00	NSC	LM2940CT-5.0	
N110	BO UA7905UC -5V1AO VREGL VOLTAGE REGULATOR	BO 0282.5449.00	NSC	LM7905 CT	
N120	BO LM2903D 2XLP COMPAR DUAL	0520.7734.00	SIGNETICS	LM2903(D)	
N130	BO LM2903D 2XLP COMPAR DUAL	0520.7734.00	SIGNETICS	LM2903(D)	
N400	BM MAR8 MMIC BROADBAND AMPLIFIER	0656.4720.00	MINI-CIRCU	MAR8	
N600	BO MC1458D 2X OPAMP OPERATION AMPLIFIER	0007.3763.00	SIGNETICS	MC1458(D)	
N700	BO NE5534D OPAMP OPERATIONAL AMPLIFIER	0815.7555.00	SIGNETICS	NE5534(D)	
N702	BO AD829JR HISPEED OPAMP LOW-NOISE HIGH-SPEED AMP	BO 1036.4254.00	ANALOG_DEV	AD829JR	
P1	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P2	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P3	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P4	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P5	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P6	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P7	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P8	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P9	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P10	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P11	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P12	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P13	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P14	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P15	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P16	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P17	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P18	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P20	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P21	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P22	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P23	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P24	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P27	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P28	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P29	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P30	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P32	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	

Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
P33	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P34	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P35	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P39	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P40	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P41	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P42	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P43	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
P44	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 0078.2747.00	-	R&S-ZCHNG.078.2747	
R48	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R49	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R50	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R51	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R52 ..61	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R64	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R65	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R66	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R67	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R68	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R69	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R70	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R71	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R72	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R73	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R74	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R75	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R93	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R94	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R96	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R101	RG 909 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.7265.00	PHILIPS_CO	RC02	
R102	RG 909 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.7265.00	PHILIPS_CO	RC02	
R103	RG 909 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.7265.00	PHILIPS_CO	RC02	
R104	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R106	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R108	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R110	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R112	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R114	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
R117	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R118	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R119	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R121	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R124	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R128	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R129	RG 47,5KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5950.00	ROEDERSTEI	D25	
R130	RG 2,7MOHM+-5%TK200 1206 CHIP RESISTOR	0007.9984.00	ROEDERSTEI	D 25	
R131	RG 27,4KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5895.00	ROEDERSTEI	D25	
R132	RG 27,4KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5895.00	ROEDERSTEI	D25	
R133	RG 27,4KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5895.00	ROEDERSTEI	D25	
R134	RG 27,4KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5895.00	ROEDERSTEI	D25	
R135	RG 27,4KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5895.00	ROEDERSTEI	D25	
R136	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R137	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R140	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R142	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R143	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R144	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R145	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R146	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R148	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R149	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R150	RG 27,4KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5895.00	ROEDERSTEI	D25	
R151	RG 12,1KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0841.00	ROEDERSTEI	D25	
R152	RG 100,0KOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1948.00	ROEDERSTEI	D25	
R153	RG 130,0KOH+-1%TK100 1206 RESISTOR CHIP	RG 0007.5966.00	PHILIPS_CO	RC02	
R154	RG 0-OHM WIDERSTAND 1206 RESISTOR CHIP 0-OHM	RG 0007.5108.00	DRALORIC	CR 1206	
R155	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R156	RG 100,0KOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1948.00	ROEDERSTEI	D25	
R157	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	PHILIPS_CO	RC02	
R158	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R159	RG 90,9KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.1931.00	PHILIPS_CO	RC02	
R160	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R161	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R162	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	PHILIPS_CO	RC02	
R163	RG 100,0KOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1948.00	ROEDERSTEI	D25	
R164	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	PHILIPS_CO	RC02	
R165	RG 562 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.6091.00	PHILIPS_CO	RC02	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
R166	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R167	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R168	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R169	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	PHILIPS_CO	RC02	
R170	RG 562 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.6091.00	PHILIPS_CO	RC02	
R171	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R172	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R174	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R175	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R176	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R177	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R178	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R179	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R180	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R181	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R182	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R183	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R184	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R185	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R186	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R187	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R188	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R189	RG 2,7MOHM+-5%TK200 1206 CHIP RESISTOR	0007.9984.00	ROEDERSTEI	D 25	
R190	RG 2,7MOHM+-5%TK200 1206 CHIP RESISTOR	0007.9984.00	ROEDERSTEI	D 25	
R191	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R192	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R193	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R194	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R195	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R196	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R197	RG 100,0KOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1948.00	ROEDERSTEI	D25	
R198	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	PHILIPS_CO	RC02	
R200	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R201	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R202	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R203	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R204	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R205	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R206	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	Contained in
R207	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R210	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R211	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R212	RG 22,1KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5872.00	PHILIPS_CO	RC02	
R215	RG 15,OKOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5843.00	PHILIPS_CO	RC02	
R216	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R218	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R220	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	PHILIPS_CO	RC02	
R222	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R224	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R226	RG 6,81KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0758.00	PHILIPS_CO	RC02	
R228	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R240	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R241	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R242	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R243	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R244	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R245	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R246	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R247	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R248	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R249	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R250	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R252	RN 9X330 OHM+-2%SIL10 H5 RESISTOR NETWORK	0379.8306.00	BI_TECHNOL	L 10 1 S 331 M*	
R253	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	DRALORIC	CR 1206	
R256	RN 9X330 OHM+-2%SIL10 H5 RESISTOR NETWORK	0379.8306.00	BI_TECHNOL	L 10 1 S 331 M*	
R257	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	DRALORIC	CR 1206	
R260	RG O-OHM WIDERSTAND 1206 RESISTOR CHIP O-OHM	RG 0007.5108.00	DRALORIC	CR 1206	
R261	RG 121 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8903.00	PHILIPS_CO	RC02	
R262	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R263	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R264	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R265	RG 6,81KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0758.00	PHILIPS_CO	RC02	
R266	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R267	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R268	RG 47,5KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5950.00	ROEDERSTEI	D25	
R269	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R270	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R271	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
R272	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R273	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R274	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R277	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R300	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R302	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R304	RG 2,74KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5766.00	DRALORIC	CR 1206	
R306	RG 2,74KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5766.00	DRALORIC	CR 1206	
R310	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	PHILIPS_CO	RC02	
R312	RG 1,21KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9968.00	ROEDERSTEI	D25	
R314	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R400	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R401	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	PHILIPS_CO	RC02	
R402	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	PHILIPS_CO	RC02	
R403	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	PHILIPS_CO	RC02	
R404	RG 1,1KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9951.00	PHILIPS_CO	RC02	
R405	RG 27,4 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5508.00	ROEDERSTEI	D25	
R406	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R407	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R408	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R409	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R420	RG 100,0KOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1948.00	ROEDERSTEI	D25	
R424	RG 27,4KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5895.00	ROEDERSTEI	D25	
R433	RS 0,5W5OKOHM+-10%10X10X5 CERMET POTENTIOMETER T	RS 0087.7677.00	BI_TECHNOL	72X-R	
R502	RG 681 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9080.00	PHILIPS_CO	RC02	
R503	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R504	RG 274 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5637.00	ROEDERSTEI	D25	
R505	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	PHILIPS_CO	RC02	
R506	RG 274 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5637.00	ROEDERSTEI	D25	
R510	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R512	RG 1,5 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5714.00	PHILIPS_CO	RC02	
R514	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R516	RG 3,32KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5789.00	PHILIPS_CO	RC02	
R518	RG 82,5 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8861.00	PHILIPS_CO	RC02	
R519	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R520	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R521	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R600	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R601	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
R602	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R603	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R604	RG 68,1KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.1902.00	PHILIPS_CO	RC02	
R605	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R606	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R607	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R610	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R611	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R612	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R614	RG 47,5KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5950.00	ROEDERSTEI	D25	
R618	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	PHILIPS_CO	RC02	
R619	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	PHILIPS_CO	RC02	
R620	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	PHILIPS_CO	RC02	
R630	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R631	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R632	RG 3,32KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5789.00	PHILIPS_CO	RC02	
R633	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R634	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R635	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R636	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R637	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R640	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R641	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R642	RG 3,32KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5789.00	PHILIPS_CO	RC02	
R643	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R646	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R647	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R650	RG 150 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5589.00	PHILIPS_CO	RC02	
R652	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R653	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R702	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R704	RG 392 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5672.00	DRALORIC	CR 1206	
R705	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	DRALORIC	CR 1206	
R706	RG 24,3KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5889.00	DRALORIC	CR 1206	
R707	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	DRALORIC	CR 1206	
R708	RG O-OHM WIDERSTAND 1206 RESISTOR CHIP O-OHM	RG 0007.5108.00	DRALORIC	CR 1206	
R709	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R710	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	DRALORIC	CR 1206	
R712	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	

Komp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	Komp. enthalten in contained in
R713	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R715	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R716	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R717	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
T200	LU HF-UEBERTR. 0,2-350MHZ WIDE-BAND TRANSFORMER	0276.3619.00	MINI-CIRCU	T 4-1 W38	
V100	AD BAV99 75V DUO UDI HIGH-SPEED DOUBLE DIODE	AD 0911.0092.00	VALVO	BAV99	
V102	AD BAV99 75V DUO UDI HIGH-SPEED DOUBLE DIODE	AD 0911.0092.00	VALVO	BAV99	
V104	AD BAV99 75V DUO UDI HIGH-SPEED DOUBLE DIODE	AD 0911.0092.00	VALVO	BAV99	
V150	AM BSS123 N-E 100V MOSF FET	0815.7961.00	SIEMENS	BSS 123 (-S512)	
V152	AD BAV99 75V DUO UDI HIGH-SPEED DOUBLE DIODE	AD 0911.0092.00	VALVO	BAV99	
V153	AD BAV99 75V DUO UDI HIGH-SPEED DOUBLE DIODE	AD 0911.0092.00	VALVO	BAV99	
V154	AD BAV99 75V DUO UDI HIGH-SPEED DOUBLE DIODE	AD 0911.0092.00	VALVO	BAV99	
V200	AE BB620 45/03PF CDI TUNING DIODE	0848.5251.00	SIEMENS	BB620	
V202	AE BB620 45/03PF CDI TUNING DIODE	0848.5251.00	SIEMENS	BB620	
V204	AE BB620 45/03PF CDI TUNING DIODE	0848.5251.00	SIEMENS	BB620	
V206	AE BB620 45/03PF CDI TUNING DIODE	0848.5251.00	SIEMENS	BB620	
V210	AK BFS17 N 15V 25MA 1 GHZ WIDEBAND TRANSISTOR	AK 0010.6460.00	VALVO	BFS17	
V220	AK BFS17 N 15V 25MA 1 GHZ WIDEBAND TRANSISTOR	AK 0010.6460.00	VALVO	BFS17	
V222	AE HSMS2800 SCHOTTKY SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V500	AE BB130PAAR 300/22PF CDI TUNING DIODE (PAIR)	0372.2231.00	PHILIPS	BB130/PAAR	
V501	AE BB130PAAR 300/22PF CDI TUNING DIODE (PAIR)	0372.2231.00	PHILIPS	BB130/PAAR	
V502	AE BB130PAAR 300/22PF CDI TUNING DIODE (PAIR)	0372.2231.00	PHILIPS	BB130/PAAR	
V503	AE BB130PAAR 300/22PF CDI TUNING DIODE (PAIR)	0372.2231.00	PHILIPS	BB130/PAAR	
V504	AE BB130PAAR 300/22PF CDI TUNING DIODE (PAIR)	0372.2231.00	PHILIPS	BB130/PAAR	
V505	AE BB130PAAR 300/22PF CDI TUNING DIODE (PAIR)	0372.2231.00	PHILIPS	BB130/PAAR	
V507	AE BB212 2X500/22PF CDI TUNNING DIODE	0373.6901.00	PHILIPS_SE	BB212	
V510	AK BFQ81 N 16V 30MA TRANSISTOR	0920.1717.00	SIEMENS	BFQ81 (-F1049)	
V512	AK BFQ81 N 16V 30MA TRANSISTOR	0920.1717.00	SIEMENS	BFQ81 (-F1049)	
V514	AK BFQ81 N 16V 30MA TRANSISTOR	0920.1717.00	SIEMENS	BFQ81 (-F1049)	
V516	AK BCX71J P 45V 200MA TRANSISTOR	AK 0007.2096.00	VALVO	BCX71J GEGURTET	
V518	AK BCX71J P 45V 200MA TRANSISTOR	AK 0007.2096.00	VALVO	BCX71J GEGURTET	
V600	AE BAR14-1 DUAL 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1 (-A772)	
V601	AE BAR14-1 DUAL 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1 (-A772)	
V603	AE BAR14-1 DUAL 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1 (-A772)	
V605	AE HSMS2800 SCHOTTKY SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V610	AK BFS17 N 15V 25MA 1 GHZ WIDEBAND TRANSISTOR	AK 0010.6460.00	VALVO	BFS17	
V612	AK BFS17 N 15V 25MA 1 GHZ WIDEBAND TRANSISTOR	AK 0010.6460.00	VALVO	BFS17	
V614	AD BAS16 75V UDI HIGH-SPEED DIODE	AD 0007.4924.00	VALVO	BAS16 (A6P)	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
V615	AD BAS16 75V UDI HIGH-SPEED DIODE	AD 0007.4924.00	VALVO	BAS16 (A6P)	
V702	AK BC850B N 45V 200MA TRANSISTOR	AK 0007.7969.00	VALVO	BC850B	
V704	AK BC860B P 45V 200MA TRANSISTOR	AK 0007.7975.00	MOTOROLA	BC860B	
V708	AE HSMS2800 SCHOTTKY SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
X1	FP STIFTLEISTE 20P.2REIH. CONNECTOR 20P.	FP 0520.6521.00	BINDER	11-0209-00-20	
X2	FP STIFTLEISTE 20P.2REIH. CONNECTOR 20P.	FP 0520.6521.00	BINDER	11-0209-00-20	
X3	FP STIFTLEISTE 20P.2REIH. CONNECTOR 20P.	FP 0520.6521.00	BINDER	11-0209-00-20	
X36	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X37	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X38	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X80	FP STECKERLEISTE 32POL. CONNECTOR 32P.	FP 0008.5718.00	DEUT_ELCO	16 8457 064 002 027	
X81	FJ EINBAUSTECKER F.GS SMB ANGLE CONNECTOR	FJ 0602.8804.00	IMS	81.1524.201	
X89	FJ EINBAUSTECKER F.GS SMB ANGLE CONNECTOR	FJ 0602.8804.00	IMS	81.1524.201	
Z52	LD T-FILTER 100PF SMD SMD-FILTER	1039.1356.00	MURATA	NFM61R00T101T1	
Z54	LD T-FILTER 100PF SMD SMD-FILTER	1039.1356.00	MURATA	NFM61R00T101T1	
Z56	LD T-FILTER 100PF SMD SMD-FILTER	1039.1356.00	MURATA	NFM61R00T101T1	
Z58	LD T-FILTER 100PF SMD SMD-FILTER	1039.1356.00	MURATA	NFM61R00T101T1	
Z60	LD T-FILTER 100PF SMD SMD-FILTER	1039.1356.00	MURATA	NFM61R00T101T1	
Z64	LD T-FILTER 100PF SMD SMD-FILTER	1039.1356.00	MURATA	NFM61R00T101T1	
Z66	LD T-FILTER 100PF SMD SMD-FILTER	1039.1356.00	MURATA	NFM61R00T101T1	
Z68	LD T-FILTER 100PF SMD SMD-FILTER	1039.1356.00	MURATA	NFM61R00T101T1	
Z70	LD T-FILTER 100PF SMD SMD-FILTER	1039.1356.00	MURATA	NFM61R00T101T1	
Z72	LD T-FILTER 100PF SMD SMD-FILTER	1039.1356.00	MURATA	NFM61R00T101T1	
Z74	LD T-FILTER 100PF SMD SMD-FILTER	1039.1356.00	MURATA	NFM61R00T101T1	
Z76	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z78	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z80	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z82	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	

ROHDE&SCHWARZ

XY-Liste

XY List

Erklärung der Spaltenbezeichnungen:

el. Kennz.	Bauelement-Kennzeichen
Seite	Leiterplatten-Seite, auf der sich das Bauelement befindet
X/Y	Koordinaten (in Millimeter) des Bauelementes auf der Leiterplatte bezogen auf den Nullpunkt
Planq., Bl.	Planquadrat und Seite des Schaltbildes für das jeweilige Bauelement

Explanation of column designations:

Part	Identification of instrument part
Side	Side of the PC board on which instrument part is positioned
X/Y	Coordinates (in units of millimeters) of the component on the PC board in reference to zero point
Sqr, Pg	Square and page of the diagram for the respective instrument part

Service-Relevante Bauteile / Service-Relevant Components

Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg
L506	B	240	63	10C	4	P15	B	231	106	4B	3	P35	B	177	67	6E	4
L507	B	226	45	10C	4	P16	B	252	94	5B	3	P39	B	273	48	10E	4
P1	B	134	72	5D	2	P17	B	90	72	7C	2	R214	B	227	139	3B	3
P2	B	121	72	5D	2	P18	B	76	72	7B	2	R433	B	291	139	9E	4
P3	B	196	137	5E	3	P20	B	69	44	4E	5	X1	B	164	136	3F	3
P4	B	258	94	5B	3	P21	B	46	44	4D	5	X2	B	164	104	6F	2
P5	B	231	109	4B	3	P22	B	107	117	6B	2	X3	B	164	71	4F	2
P6	B	278	21	3C	4	P23	B	88	107	6B	2	X36	B	200	70	7D	4
P7	B	205	76	8C	4	P24	B	137	101	6D	2	X37	B	200	73	8D	4
P8	B	112	65	12E	2	P27	B	88	99	7B	2	X38	B	200	76	8D	4
P9	B	94	65	12E	2	P28	B	148	120	9E	2	X80A	B	189	11	1D	2
P10	B	293	58	8D	3	P29	B	116	119	10E	2	X80D	B	189	11		
P11	B	250	60	11C	4	P30	B	109	128	10C	2	X81	B	17	15	4F	3
P12	B	264	63	11C	4	P32	B	215	138	5D	3	X89	B	296	15	5B	4
P13	B	255	94	5B	3	P33	B	217	138	5D	3						
P14	B	261	94	5B	3	P34	B	274	116	6C	3						

Nicht-Service-Relevante Bauteile / Non-Service-Relevant Components

Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg
1	B	283	122	6D	3	C200	B	217	133	3E	3	C408	B	295	89	8C	3
C50	B	139	18	2D	5	C202	A	197	127	3D	3	C409	A	290	81	7D	3
C77	B	177	30	2C	5	C203	A	187	120	3E	3	C410	B	293	86	7D	3
C79	B	182	30	2B	5	C204	A	197	114	2D	3	C411	B	293	70	7D	3
C81	B	106	18	2E	5	C205	A	200	120	3D	3	C412	A	295	53	7E	3
C83	B	106	26	2D	5	C210	B	182	98	3D	3	C414	A	290	48	7E	3
C100	B	69	36	4E	5	C212	A	215	98	2B	3	C420	A	290	125	9E	4
C102	A	113	49	3C	2	C214	A	227	133	2C	3	C500	B	232	68	8B	4
C110	B	57	36	4D	5	C216	B	222	89	2A	3	C502	B	240	68	10C	4
C111	A	81	86	5E	5	C218	B	231	88	3A	3	C505	B	240	74	8C	4
C112	A	124	78	5E	5	C219	B	226	98	4A	3	C506	B	250	68	10C	4
C114	B	102	114	6E	5	C220	A	221	102	3B	3	C508	B	252	63	10C	4
C115	B	102	100	7E	5	C222	A	237	106	4B	3	C510	B	263	70	11D	4
C116	B	146	126	8E	5	C230	B	185	137	4D	3	C512	B	275	70	10D	4
C117	B	142	133	8E	5	C231	A	200	132	5E	3	C514	A	257	74	11D	4
C118	B	145	111	5D	5	C232	A	194	133	5E	3	C516	B	269	51	11E	4
C119	B	124	111	5D	5	C233	A	189	126	6D	3	C518	B	255	57	10C	4
C120	B	150	97	7E	5	C300	A	270	130	6C	3	C519	A	244	48	11B	4
C129	A	96	119	5C	2	C302	A	265	122	6C	3	C600	A	224	24	5B	5
C130	A	95	107	5B	2	C304	A	265	108	6C	3	C602	A	266	24	6B	5
C131	A	156	123	5B	2	C306	B	275	125	6C	3	C604	A	250	28	6B	5
C132	A	151	123	5B	2	C308	B	275	112	6C	3	C620	A	244	32	2C	4
C133	A	151	133	5A	2	C310	A	272	103	6B	3	C621	A	252	36	2B	4
C134	A	140	124	5A	2	C312	A	261	103	5B	3	C622	A	281	22	3B	4
C135	A	140	130	5A	2	C401	B	290	116	7C	3	C623	B	278	30	4C	4
C150	B	110	53	7E	5	C402	B	299	117	7C	3	C624	B	280	37	3B	4
C162	A	114	121	9E	2	C403	B	297	111	7C	3	C625	B	295	33	4B	4
C168	A	103	62	10E	2	C404	B	299	99	7C	3	C626	B	289	30	4B	4
C180	B	103	128	6D	5	C405	B	296	104	8C	3	C627	B	295	30	4B	4
C182	B	105	69	7D	5	C406	B	297	99	8C	3	C628	B	292	25	4B	4
C186	B	124	126	6D	5	C407	B	290	96	8C	3	C629	B	287	15	5B	4

ROHDE & SCHWARZ	-I	Datum Date	XY-Liste für XY-list for	Sach-Nummer Stock-Nr	Blatt Page
	04	22.11.94	EE DIGITALE_SYNTHESE DIGITAL_SYNTHESIS	1038.7344.01 XY	1+

Part	Side	X	Y	Sqr	Pg
C630	B	281	15	5B	4
C631	A	267	17	5B	4
C640	B	250	30	2D	4
C641	B	241	36	3E	4
C642	B	217	34	4D	4
C646	B	250	18	2E	4
C647	B	241	12	3F	4
C648	B	217	11	4E	4
C662	A	296	28	4B	4
C663	A	290	22	4B	4
C700	B	185	49	5C	5
C701	B	191	49	5C	5
C702	B	192	69	7E	4
C703	B	192	62	7E	4
C705	A	192	73	7E	4
C706	B	205	72	7C	4
C708	B	185	60	6E	4
C710	A	188	60	6C	4
C712	B	195	54	6C	4
D20A	B	196	131	3E	3
D50-A	A	137	17	2C	2
D50-B				2C	2
D50-C				2B	2
D50-D				2B	2
D50-E				2D	5
D110-A	B	128	77	5D	2
D110-B				5E	5
D112-A	B	83	77	7C	2
D112-B				6E	5
D120-A	A	98	112	4B	2
D120-B				5B	2
D120-C				5B	2
D120-D				4A	2
D120-E				7E	5
D125-A	A	98	98	4B	2
D125-B				5B	2
D125-C				5B	2
D125-D				3B	2
D125-E				7E	5
D130-A	A	142	124	4B	2
D130-B				8E	5
D135-A	A	147	95	7E	2
D135-B				11D	2
D135-C				11D	2
D135-D				11C	2
D135-E				8E	5
D150-A	A	142	109	7E	2
D150-B				5E	5
D155-A	A	121	109	7D	2
D155-B				6E	5
D175-A	A	121	124	9E	2
D175-B				11C	2
D175-C				6E	5
D300	B	257	125	5C	3
D600-A	B	226	27	4D	4
D600-B				4E	4
D600-C				5B	5
D700-A	A	178	69	6E	4
D700-B				6E	4
D700-C				7E	4
D700-D				7E	4
L76	B	182	18	2C	5
L78	B	182	23	2B	5
L80	B	111	18	2E	5
L82	B	111	23	2D	5
L110	A	109	78	5F	5
L135	A	141	94	7F	5
L150	A	119	55	6E	5
L200	B	182	96	3D	3
L201	A	217	128	3D	3
L202	B	195	91	2C	3
L204	B	200	96	2C	3
L206	B	215	91	2B	3
L208	B	218	96	2B	3
L210	B	215	96	2B	3
L212	A	221	105	3B	3
L214	A	237	103	4B	3
L216	A	203	128	5E	3
L300	A	277	119	6C	3
L302	A	275	103	6B	3
L304	A	268	100	6B	3
L306	A	264	100	5B	3
L403	B	299	104	7C	3
L405	B	289	102	8C	3
L406	B	293	89	8C	3
L408	B	298	72	7D	3
L500	B	217	71	8B	4
L502	B	214	72	8C	4
L504	B	233	77	8C	4
L508	B	247	51	11C	4
L514	B	269	60	11E	4
L516	B	279	57	11E	4
L600	A	230	30	5B	5
L602	B	289	28	4B	4
L603	B	290	15	5B	4
L700	A	189	46	5C	5
L701	A	193	52	5C	5
L705	B	203	76	8C	4
N100	B	74	31	3E	5
N110	B	51	31	3D	5
N120-A	A	98	126	9C	2
N120-B				9C	2
N120-C				7E	5
N130-A	A	100	67	11E	2
N130-B				11E	2
N130-C				7E	5
N400	B	293	78	7D	3
N600-A	A	257	24	2C	4
N600-B				6B	4
N600-C				6B	5
N700-A	A	179	58	5E	4
N700-B				5C	5
N702-A	A	182	51	6D	4
N702-B				6C	5
P40	B	140	29	2F	2
P41	B	135	29	2E	2
P42	B	150	29	2E	2
P43	B	156	29	2D	2
P44	B	145	29	2D	2
R48	A	121	18	2D	5
R49	A	134	21	2C	2
R50	A	146	22	2B	2
R51	A	149	19	2B	2
R52	B	143	29	3F	2
R53	B	141	45	3F	2
R54	A	138	29	3E	2
R55	A	136	45	3E	2
R56	A	153	29	3E	2
R57	A	151	45	3E	2
R58	A	158	29	3D	2
R59	A	156	45	3D	2
R60	A	148	29	3D	2
R61	A	146	45	3D	2
R64	A	112	29	3C	2
R65	A	110	45	3C	2
R66	A	123	29	3C	2
R67	A	121	45	3C	2
R68	A	128	29	3B	2
R69	A	126	45	3B	2
R70	A	133	29	3B	2
R71	A	131	45	3B	2
R72	A	117	29	3B	2
R73	A	116	45	3B	2
R74	A	107	29	3A	2
R75	A	105	45	3A	2
R92	B	100	78	6B	2
R93	B	100	81	6B	2
R94	B	100	83	6B	2
R95	B	100	86	6B	2
R96	B	100	88	6B	2
R97	B	100	91	6B	2
R98	B	100	93	6B	2
R101	A	154	55	4E	2
R102	A	159	55	4E	2
R103	A	149	55	4E	2
R104	A	151	55	5E	2
R106	A	156	55	5E	2
R108	A	146	55	5E	2
R110	B	145	75	5D	2
R111	B	145	77	5D	2
R112	B	145	80	5D	2
R113	B	145	83	5D	2
R114	B	145	90	5D	2
R115	B	145	93	5D	2
R116	B	145	95	5D	2

ROHDE & SCHWARZ	–I	Datum Date	XY-Liste für XY-list for	Sach-Nummer Stock-Nr	Blatt Page
	04	22.11.94	EE DIGITALE_SYNTHESE DIGITAL_SYNTHESIS	1038.7344.01 XY	2+

Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg	Part	Side	X	Y	Sqr	Pg
R117	A	124	76	5D	2	R177	A	142	135	8E	5	R252-D				4C	3
R118	A	112	76	5C	2	R178	A	155	109	5E	5	R252-E				4C	3
R119	A	115	79	5C	2	R179	A	84	77	6B	2	R252-F				4C	3
R120	B	131	101	6D	2	R180	A	72	90	6A	2	R252-G				4C	3
R121	A	135	99	6D	2	R181	A	138	107	6D	2	R252-H				4C	3
R122	A	132	99	6D	2	R182	A	118	107	6C	2	R252-I				4C	3
R123	A	130	99	6D	2	R183	A	75	82	7A	2	R253	A	243	105	4C	3
R124	A	127	99	6D	2	R184	A	132	135	11C	2	R256-A	B	241	111	4C	3
R125	A	124	99	6D	2	R185	A	130	135	11C	2	R256-B				4C	3
R126	A	122	99	6C	2	R186	A	132	120	11C	2	R256-C				4C	3
R127	A	119	99	6C	2	R187	A	130	120	11B	2	R256-D				4C	3
R128	A	104	109	4C	2	R188	A	156	98	10C	2	R256-E				4C	3
R129	A	95	117	5B	2	R189	A	167	74	3B	5	R256-F				4C	3
R130	A	95	104	5B	2	R190	A	49	34	3D	5	R256-G				4C	3
R131	A	159	123	6B	2	R191	A	97	82	7A	2	R256-H				4C	3
R132	A	154	123	6B	2	R192	A	77	89	7A	2	R256-I				4C	3
R133	A	151	131	6A	2	R193	A	80	98	7A	2	R257	A	241	108	4C	3
R134	A	136	121	6A	2	R194	A	97	84	7A	2	R260	B	144	136	4E	3
R135	A	140	133	6A	2	R195	A	97	87	7A	2	R261	B	154	136	4E	3
R136	A	92	97	4C	2	R196	A	100	79	8A	2	R262	B	150	138	4E	3
R137	A	149	93	7E	2	R197	A	49	37	3D	5	R263	B	176	137	4D	3
R140	A	155	111	6E	2	R198	A	55	34	3C	5	R264	B	179	137	4D	3
R142	A	134	111	6D	2	R200	A	187	115	2E	3	R265	B	190	140	4D	3
R143	A	140	99	6C	2	R201	A	189	115	2E	3	R266	B	201	140	5E	3
R144	A	117	99	6C	2	R202	A	192	115	2E	3	R267	B	199	136	5E	3
R145	A	114	99	6C	2	R203	A	199	115	2D	3	R268	A	191	126	6E	3
R146	B	141	85	6C	2	R204	A	202	115	2D	3	R269	A	205	136	5E	3
R148	B	141	88	6C	2	R205	A	204	115	2D	3	R270	A	189	98	2E	3
R149	A	142	103	6C	2	R206	A	178	112	2D	3	R271	A	192	98	2E	3
R150	A	116	133	9C	2	R207	A	178	115	2D	3	R272	A	178	105	2E	3
R151	A	118	136	9C	2	R210	B	154	133	4E	3	R273	A	178	107	2E	3
R152	A	96	126	9C	2	R211	B	147	138	4E	3	R274	A	178	110	2E	3
R153	A	100	132	9C	2	R212	A	235	139	3B	3	R277	A	194	98	2D	3
R154	A	103	135	9C	2	R215	A	228	137	3B	3	R300	A	261	105	5C	3
R155	A	134	109	5E	5	R216	A	224	135	3C	3	R302	A	261	113	5C	3
R156	A	167	76	3B	5	R218	A	224	128	3C	3	R304	A	257	108	5C	3
R157	A	156	74	3B	5	R220	B	222	96	2A	3	R306	A	257	110	5C	3
R158	A	92	122	10D	2	R222	B	225	88	3A	3	R310	A	275	128	6C	3
R159	A	74	34	3E	5	R224	B	228	86	2A	3	R312	A	268	133	6C	3
R160	A	114	126	9E	2	R226	B	228	92	3A	3	R314	A	253	97	5B	3
R161	A	114	129	9E	2	R228	B	220	98	3B	3	R400	B	288	117	6C	3
R162	A	114	124	9E	2	R240	B	234	134	4C	3	R401	B	290	118	7C	3
R163	A	80	34	3E	5	R241	B	234	131	4C	3	R402	B	297	117	7C	3
R164	A	95	71	10E	2	R242	B	234	129	4C	3	R403	B	290	89	7D	3
R165	A	98	71	11E	2	R243	B	234	126	4C	3	R404	A	290	75	7D	3
R166	A	98	61	11E	2	R244	B	234	124	4C	3	R405	B	293	64	7D	3
R167	A	105	59	10E	2	R245	B	234	121	4C	3	R406	B	295	91	8C	3
R168	A	100	62	11E	2	R246	B	234	119	4C	3	R407	A	298	55	7E	3
R169	A	102	65	11E	2	R247	B	234	116	4C	3	R408	A	289	53	7E	3
R170	A	109	71	11E	2	R248	B	234	114	4C	3	R409	A	289	59	7E	3
R171	A	109	61	11E	2	R249	B	234	111	4C	3	R420	A	294	133	9F	4
R172	A	93	67	10D	2	R250	B	237	109	4C	3	R424	A	287	137	8E	4
R174	A	108	106	6F	5	R252-A	B	243	111	4C	3	R502	B	260	73	11D	4
R175	A	108	102	7F	5	R252-B				4C	3	R503	A	261	70	11D	4
R176	B	140	121	8E	5	R252-C				4C	3	R504	B	272	51	11E	4

ROHDE & SCHWARZ	-I	Datum Date	XY-Liste für XY-list for	Sach-Nummer Stock-Nr	Blatt Page
	04	22.11.94	EE DIGITALE_SYNTHESE DIGITAL_SYNTHESIS	1038.7344.01 XY	3+

Part	Side	X	Y	Sqr	Pg
R505	B	269	48	11E	4
R506	B	272	44	11E	4
R510	B	244	55	11C	4
R512	B	250	51	11C	4
R514	B	255	54	10C	4
R516	B	255	59	10C	4
R518	B	261	63	11C	4
R519	A	257	42	11B	4
R520	B	258	48	10B	4
R521	B	247	45	9B	4
R600	A	247	34	2C	4
R601	A	247	27	2C	4
R602	A	252	42	2C	4
R603	A	252	33	2B	4
R604	A	255	22	3C	4
R605	A	266	22	3B	4
R606	A	281	25	3B	4
R607	B	278	24	3B	4
R610	B	286	37	3B	4
R611	B	293	33	3B	4
R612	B	286	30	4B	4
R614	A	274	17	5B	4
R618	B	272	30	4C	4
R619	B	268	33	4C	4
R620	B	265	30	4C	4
R630	B	250	33	2D	4
R631	B	244	30	2D	4
R632	B	237	30	3D	4
R633	B	238	36	3E	4
R634	A	225	34	3F	4
R635	A	222	34	4F	4
R636	B	220	31	4D	4
R637	B	220	37	5D	4
R640	B	250	16	2E	4
R641	B	244	18	2E	4
R642	B	237	18	3E	4
R643	B	238	12	3F	4
R646	B	217	18	4E	4
R647	B	215	14	5E	4
R650	B	212	24	4E	4
R652	A	261	30	6B	4
R653	A	269	28	6B	4
R702	A	177	64	6E	4
R704	A	179	67	6E	4
R705	A	186	67	6E	4
R706	A	179	64	6E	4
R707	A	186	64	6E	4
R708	A	187	69	7E	4
R709	A	179	54	5D	4
R710	A	203	73	8D	4
R712	A	196	75	7E	4
R713	A	190	77	8E	4
R715	A	197	56	7D	4
R716	A	194	60	6D	4
R717	A	199	56	6D	4
T200	B	235	92	4B	3
V100	A	154	51	4E	2
V102	A	159	51	4E	2
V104	A	149	51	4E	2
V150	A	103	122	9C	2
V152	A	103	73	10E	2
V153	A	105	75	10E	2
V154	A	125	120	9E	2
V200	B	185	88	2C	3
V202	B	195	88	2C	3
V204	B	205	88	2B	3
V206	B	215	88	2B	3
V210	B	228	96	3A	3
V220	B	191	136	5D	3
V222	A	189	134	6E	3
V500	B	217	68	8B	4
V501	B	218	55	7B	4
V502	B	222	68	8B	4
V503	B	224	55	7B	4
V504	B	227	68	8B	4
V505	B	229	55	7B	4
V507	B	236	74	8C	4
V510	B	257	65	10D	4
V512	B	252	65	10C	4
V514	B	257	63	10C	4
V516	B	258	52	10B	4
V518	B	250	47	10B	4
V600	B	289	35	3B	4
V601	B	294	35	3B	4
V603	B	283	32	4B	4
V605	A	276	14	5B	4
V610	B	237	16	3E	4
V612	B	237	34	3D	4
V614	B	216	22	4E	4
V615	B	216	28	4E	4
V702	A	196	64	7D	4
V704	A	200	64	7C	4
V708	B	179	56	6D	4
Z52	B	141	35	3F	2
Z54	B	136	35	3E	2
Z56	B	151	35	3E	2
Z58	B	156	35	3D	2
Z60	B	146	35	3D	2
Z64	B	110	35	3C	2
Z66	B	121	35	3C	2
Z68	B	126	35	3B	2
Z70	B	131	35	3B	2
Z72	B	116	35	3B	2
Z74	B	105	35	3A	2
Z76	B	177	35	3C	5
Z78	B	182	35	3B	5
Z80	B	96	23	3E	5
Z82	B	96	28	3D	5

ROHDE&SCHWARZ

SERVICE INSTRUCTIONS

Summing loop

1038.7196.02

Contents

7. Checking and Repair of the Module

7.1 Functional Description

In the summing loop, the octave from 750 to 1520 MHz is generated from the signals of the modules Step Synthesis and Digital Synthesis. Therefore the step signal is used to convert the RF-frequency to an intermediate frequency by a sampling mixer. This IF is synchronized in a phase-locked loop with the output frequency of the Digital Synthesis. Switch-selected dividers permit to extend the frequency range to 93.75 to 1520 MHz.

7.1.1 Oscillators

The two oscillators are controlled using the two switching bits 'OSZ1' and 'OSZ2'. 'OSZ1' switches the VCO from 750 to 1100 MHz, 'OSZ2' the VCO from 1100 to 1520 MHz. A load-independent current feed circuit stabilizes the operating point of the oscillating transistor. The VCO for the upper frequency band provides its smallest frequency with the greatest tuning voltage.

7.1.2 Output Stage

The output frequency range is extended by a divider by 2 and a divider by 4. The division factor 8 results from series connection of the two dividers. The bit 'T2-ENA' switches the divider by 2, 'T4-ENA' the divider by 4. The switching diodes are driven by the bits 'SW1' to 'SW6'.

7.1.3 Sampling Mixer

The output signal of the RF oscillators is applied to the sampler via the 3-stage PLL driver with level controller V440. The output signal of the Step Synthesis is amplified by the pulse driver and taken to the step recovery diode. Via R405, the bias current and thus the operating point of the SRD is determined. It generates 350-ps pulses, which are applied to the sampler via balun T405. The sampler mixes the RF signal of the oscillators with the comb spectrum from the SRD multiplier, using the 7th to the 14th harmonic of the signal from the reference step synthesis. An IF of approx. 15 MHz (14.2 to 15.6 MHz) is produced.

7.1.4 IF Stage

The output voltage of the sampler is applied to the IF driver V455 via the buffer V450 and the level controller V453. A level control ensures a constant IF level at the phase detector and thus a constant Kϕ of the phase-locked loop. A lowpass filter suppresses high-frequency mixture products of the sampler.

7.1.5 Phase Control

The LO driver V1 amplifies the output signal of the Digital Synthesis and applies it to the LO input of phase detector D1.
A lowpass filter at the output of D1 suppresses the reflection band, an additional filter pole the intermediate frequency.
The current feedback operational amplifier N30 is connected up as non-inverting integrator. Using the analog multiplexer D20, its gain can be set in 8 steps, which permits to compensate for the slope of the VCO. A small offset current applied by V95 prevents parasitic synchronization of the PLL during calibration.
FET switches V51 and V50 permit to select between 2 control bandwidths. The small bandwidth (approx. 270 kHz) produces a better spectral purity, the large one (approx. 2 MHz) allows for broadband modulations.

7.1.6 Preset, Sequence Control and Interrupt

Since the control loop does not contain any frequency-sensitive phase detector, the oscillators must be preset inside the lock-in range of the PLL. Therefore a table with D/A converter tuning values is used, and linear interpolation is performed. The calibration frequecies are 10 MHz apart from each other. The D/A converter D10-A sets the preset voltage corresponding to the data word 'TUNE'. This voltage is amplified by a factor of 1.73 by means of N15-A and applied via a charging circuit to the compensation input of loop integrator N30. Since there is only one amplifier stage with the voltage gain 1 between the compensation input and the integrator output, the preset voltage generated by the D/A converter corresponds to the VCO tuning voltage.
When the frequency is changed, the control bandwidth is first switched to narrowband as long as the preset voltage remains applied. During lock-in, the bandwidth is large. Subsequently, the bandwidth is determined by the bit PLL-BW. The switching time constants are determined by monoflops D560 and triggered by the module strobe.
For identification of asynchronous mode, the difference between preset voltage and VCO tuning voltage formed by the operational amplifier N17 is used. Window comparator N550 determines the thresholds and applies the interrupt to the serbus decoder.

7.1.6 Calibration

For generating the calibration table with tuning values, the preset voltage is searched for starting at the lower end of the tuning range, where the VCO tuning voltage is the same as the preset voltage. The modules Digital Synthesis and Step Synthesis must provide the appropriate frequencies to this end.
In order to prevent parasitic synchronization, the bit 'CAL OFF' must be low. A small offset current at the integrator input makes sure that the loop can no longer lock on spurious signals.

7.2 Measuring Equipment and Accessories

- RF spectrum analyzer (FSA)
- DC voltage source
- Signal generator (SMHU, SMGU , SME, SMT)
- DC voltmeter (UDS5)
- Dual-channel storage oscilloscope (>100 MHz)
- Service kit (order number 1039.3520)

7.3 Troubleshooting

The nominal values of the diagnostic points which are checked during troubleshooting are to be found below 7.4.10 'Tables and Interfaces'.

7.3.1 Sync Error

PLL does not lock	Check VCO preset Adjust SRD comb generator Check sampling mixer Adjust IF stage
PLL locks to the wrong frequency	Check sequence control Adjust IF stage Check calibration

7.3.2 Distortions with Broadband Modulation

Useful transmission function faulty	Adjust VCOs Check calibration Adjust Kϕ

7.3.3 Spectral Purity

Spuriae in the vicinity of the carrier	Check SRD comb generator Adjust Kϕ Check operating point of sampler
Spuriae approx. 15MHz from the carrier	Check level at RF and LO port of PD

7.3.4 Calibration

Calibration routine does not converge	Adjust VCOs Check offset supply at integrator

7.4 Testing and Adjustment

All measured values without tolerance specifications are meant to be understood as approximate values. Voltage specifications without further designation are DC voltages.
The service kit includes an adapter which permits to make the module accessible. The adapter is plugged into the chassis instead of the module and the RF connections are restored at the appropriate sockets on the bottom side. The module can then be inserted on the adapter.
If the module is operated with the cover on the component side opened up, the two oscillator chambers must be closed using a test cover.

7.4.1 Testing the Data Transmission and Current Supply

In accordance with the instrument standard, the module is driven via a serial interface using the SERBUS-D component. The settings and the associated data are to be obtained from the section 'Digital Interfaces'.
The current consumption can be checked by replacing coils L580 to L584 by an ammeter each. The nominal values of the respective supply voltages are to be found in the section 'External Interfaces'.
The supply voltages internally generated on the module are to be obtained from the table in the section 'Tables and Interfaces'.

7.4.2 Testing the VCO Preset

7.4.2.1 Testing the D/A Converter

- Remove jumper X15

- Settings: **FREQUENCY 1100 MHz**
  UTILITIES DIAG TPOINT 607

▶ The tuning voltage at the voltmeter must be 19 V with the VCO correctly adjusted. When increasing the output frequency in 10-MHz steps up to 1520 MHz, the preset voltage must continuously decrease in steps of 330 to 660 mV to approx. 2 V. The preset voltage is derived from the currently valid calibration table and is subject to manufacturing tolerances of the oscillators so that only a qualitative statement on the function of the D/A converter is possible.

- Replace jumper X15.

7.4.2.2 Testing the VCO Tuning Voltage

- Remove jumper X50.
- Short-circuit resistor R48 (revision 5 and higher insert jumper X16)

- Settings: **FREQUENCY 1100 MHz**
  UTILITIES DIAG TPOINT 606

▶ The test is performed as in section 7.4.2.1.

- Replace jumper X50
- Remove short-circuit at R48

7.4.2.3 Testing the Sequence Control

Use the storage oscilloscope to record the voltage curves of test points MP57 and MP58. The trigger is released on the module strobe at test point MP40. The time constants are to be obtained from Fig. 1.

- Storage oscilloscope channel 1 at MP40
  channel 2 at MP57 or MP58

- Settings: **Frequency change from 800 to 900 MHz**

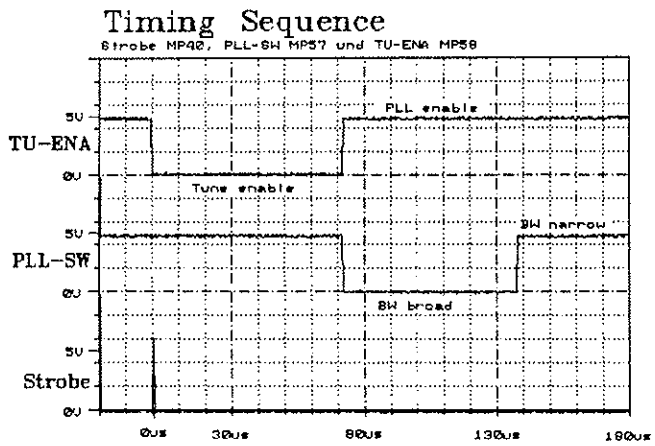


Fig.1

7.4.3 Testing and Adjustment of Oscillators

7.4.3.1 Adjusting the VCOs

- Remove jumper X50 , connect DC voltage source to X50B and set 2V
- Connect spectrum analyzer to X91 (FSUM)

- Settings: **FREQUENCY 800 MHz**
  UTILITIES DIAG TPOINT 605

▶ Adjust the frequency of the output signal FSUM at X91 to 750 ±0.5 MHz using trimmer C100.

- Set the DC voltage source at X50B to 19 V

- Settings: **FREQUENCY 1200 MHz**
  UTILITIES DIAG TPOINT 605

▶ Adjust the frequency of the output signal FSUM at X91 to 1100 ±0.5 MHz using trimmer C120.

▶ The diagnostic voltage 'oscillator level' must be between 30 and 100 mV for both VCOs.

• Insert jumper X50

7.4.3.2 Measuring the Characteristic of the VCOs

• Remove jumper X50, connect DC voltage source to X50B and set 2 V.
• Connect spectrum analyzer to X91 (FSUM)

• Settings: **FREQUENCY 800 MHz**
UTILITIES DIAG TPOINT 604

▶ With a tuning voltage of 2 V, the frequency of FSUM must be 750 MHz. When increasing the tuning voltage, the output frequency must increase continuously until 1100 MHz are achieved at 18 to 20.5 V (nominal value: 19 V). The output level of FSUM must lie between 7 and 11 dBm.

• Set DC voltage source at X50B to 19 V

• Settings: **FREQUENCY 1200 MHz**
UTILITIES DIAG TPOINT 605

▶ With a tuning voltage of 19 V, the frequency of FSUM must be 1100 MHz. When reducing the tuning voltage, the output frequency must decrease continuously until 1520 MHz are reached at 0.5 to 3 V (nominal value: 2 V). The output level of FSUM must lie between 7 and 11 dBm.

▶ The diagnostic voltage 'output signal FSUM' must lie between 150 and 350 mV.

• Insert jumper X50

7.4.4 Adjusting/testing the SRD Comb Generator

• Settings: **FREQUENCY 839 MHz**
UTILITIES DIAG TPOINT 603

▶ Up to revision 4 adjust the diagnostic voltage 'Pulse amplitude' to maximum using potentiometer R405. Revision 5 and higher doesn't need any adjustment.The diagnostic voltage must lie between 1.1 and 3.5 V (typ. 1.8 V) for both cases.

7.4.5 Testing the Sampling Mixer

7.4.5.1 Operating Point of Sampler

• Settings: **FREQUENCY 839 MHz**

▶ The DC voltage at R421 or R429 must be greater than +1 V or smaller than -1 V (measured with 100-kohm series resistor).

7.4.5.2 Frequency Response of Sampler

- Remove jumper X47
- Short-circuit resistor R48 (revision 5 and higher insert jumper X16)
- Connect probe of oscilloscope to test point MP67

- Settings: **UTILITIES DIAG TPOINT 602**
  FREQUENCY 757 MHz
  863 MHz
  969 MHz
  1075 MHz
  1181 MHz
  1287 MHz
  1393 MHz
  1499 MHz

▶ First adjust the diagnostic voltage to 50 mV using potentiometer R440 at the given frequencies. The IF at test point MP67 must be 450 ±100 mVpp. The maximum level frequency response must not be greater than ±50 mVpp.

- Remove short-circuit at R48
- Insert jumper X47

After measuring the frequency response of the sampler, it is absolutely necessary to adjust the IF stage (7.4.6).

7.4.6 Adjusting the IF Stage

7.4.6.1 Kϕ Adjustment

- Connect probe of oscilloscope to test point MP30
- Reconnect jumper X20 to ground
- Short-circuit resistor R48 (revision 5 and higher insert jumper X16)

- Settings: **FREQUENCY 1000 MHz**
  UTILITIES DIAG TPOINT 601

▶ Adjust the voltage at test point MP30 to 540 mVpp using potentiometer R476.

▶ The waveform of the signal approximates a triangle. The diagnostic voltage 'IF level' is 190 ±90 mV after the adjustment.

- Remove short-circuit at R48
- Reconnect jumper X20 to its normal position

7.4.6.2 Adjusting the RF Level at the Sampler

- Connect probe of oscilloscope to test point MP67
- Connect voltmeter to test point MP69
- Remove jumper X47
- Reconnect jumper X20 to ground
- Short-circuit resistor R48 (jumper X43)

- Settings: **FREQUENCY 1298 MHz**
  UTILITIES DIAG TPOINT 602

▶ Adjust the IF signal at the oscilloscop to 350 mVpp using potentiometer R440

▶ The diagnostic voltage must be about 35 mV. The waveform at MP67 must be sinewave without distortions.

- Insert jumper X47.

- Settings: **FREQUENCY 1100 MHz**

▶ The IF control voltage at MP69 must be smaller than 3.5 V

- Remove short-circuit at R48
- Reconnect jumper X20 to normal position

7.4.6.3 Testing the RF and LO Level of the Phase Detector

- Connect probe of oscilloscope to test point MP68 or MP9

- Settings: **FREQUENCY 1000 MHz**

▶ A peak voltage of approx. 0.9 Vpp must be applied to test point MP68 (RF port of phase detector) and a peak voltage of 1.8 Vpp at test point MP9 (LO port of phase detector). The waveform must correspond to a sinewave signal.

7.4.7 Testing the Calibration

Before testing the preset table, it must be newly set up.

- Settings: : **UTILITIES CALIB SUM** (Perform calibration)

- Reconnect jumper X20B to ground
- Short-circuit resistor R48 (revision 5 and higher insert jumper X16)
- Connect spectrum analyzer to X91 (FSUM)

- Settings: **FREQUENCY 750.01 to 1520 MHz in 10-MHz steps**
  UTILITIES DIAG TPOINT 600

▶ Immediately after calibration of the module, the frequency measured using the analyzer may deviate from the set frequency by max. 500 kHz. The voltage applied to diagnostic point 'PLL differential voltage' should have an average value of -80 mV and must not exceed -200 mV.

- Reconnect jumper X15 to normal position
- Remove short-circuit at R48

7.4.8 Testing the Transient Response

- Connect probe of oscilloscope to test point MP30
- Settings: **FREQUENCY** **751 MHz <-> 1101 MHz**
  1100 MHz <-> 1520 MHz

▶ 300 to 400 us after the module strobe the voltage change at the output of the phase detector must not exceed 10 mV. A voltage curve as shown in Fig. 2 is obtained.

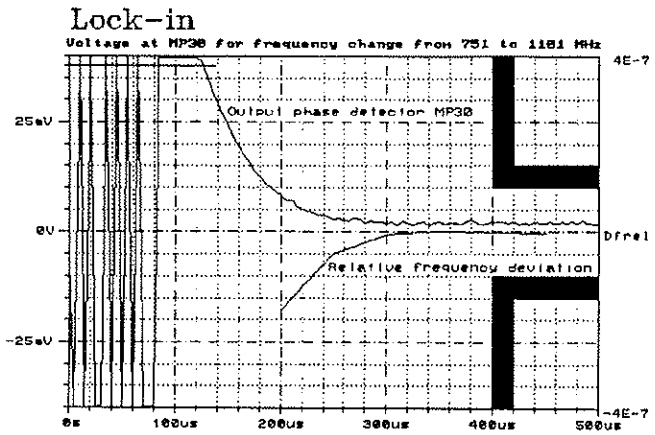


Fig.2

7.4.9 Tables and Interfaces

7.4.9.1 Digital Interface

Subaddress 0 (Serout, CLK1, WR1):

Latch		Designation	Function		
D533	11	KOSET-2	Compensation VCO slope		MSB
	12	KOSET-1			
	13	KOSET-0			LSB
	14	CAL-OFF	Offset for calibration	0=on	1=off
	7	TRIG-ENA	Trigger sequence control	0=off	1=on
	6	free			
	5	TUNE-9	Preset for VCOs		MSB
	4	TUNE-8			
D532	11	TUNE-7			
	12	TUNE-6			
	13	TUNE-5			
	14	TUNE-4			
	7	TUNE-3			
	6	TUNE-2			
	5	TUNE-1			
	4	TUNE-0			LSB

Latch		Designation	Function		
D531	11	SW6	Pin switch 6 switched with :8	0=off	1=on
	12	SW5	Pin switch 5 switched with :4	0=off	1=on
	13	SW4	Pin switch 4 switched with :2	0=off	1=on
	14	SW3	Pin switch 3 switched with :4	0=off	1=on
	7	SW2	Pin switch 2 switched with :2	0=off	1=on
	6	SW1	Pin switch 1 switched with :1	0=off	1=on
	5	ENA-T4	Divider :4 enable	0=off	1=on
	4	ENA-T2	Divider :2 enable	0=off	1=on
D530	11	PLL-ENA	Activate PLL	0=off	1=on
	12	PLL-BW	Select control bandwidth	0=broad	1=narrow
	13	OSZ2	Activate VCO2 (1100 - 1520 MHz)	0=off	1=on
	14	OSZ1	Activate VCO1 (750 - 1100 MHz)	0=off	1=on
	7	DIAG-ENA	Activate diagnosis	0=off	1=on
	6	DMUX-2	Address of diagnostic points		MSB
	5	DMUX-1			
	4	DMUX-0			LSB

7.4.9.2 Operating Points and Levels of RF amplifiers

Amplifier		Operating point	RF level, Frequency	Remark
V1	Pin2	1.2 V	2 dBm 15 MHz	Level of Fdsyn
	Pin3	5.2 V	7 dBm "	LO level for phase detector D1
V400	Pin1,3	8.5 V		
	Pin2	9.3 V	5 dBm 110 MHz	Level of Fstep
	Pin4	13.2 V	20 dBm "	Level for control of step recovery diode
V450	Pin1	9.6 V	.35 Vpp 15 MHz	Nominal value applies to V45 removed
	Pin2	1.4 V	"	
V455	Pin2	.9 V	15 MHz	RF level for phase detector D1
	Pin4	5.1 V	"	

The integrated RF amplifiers of the type MSA0386 and MSA0486 feature a collector voltage of 4.5 and 4.9 V, respectively, in their operating point. All RF levels are to be measured using a probe >500 ohms.

7.4.9.3 Operating Points of Dividers, VCOs and Pin Switches

Component	Test point	Function	Meas. value	Remark
V105	Current across R109	Oscillator 1	30 mA	Operating point
V129	Current across R129	Oscillator 2	30 mA	of VCOs
V259	Pin1	Pin switch	.9 V	with :1,:2,:4,:8
V260	"	"	"	division factor
V270	"	"	"	
V276	"	"	"	
V277	"	"	"	
V278	Pin3	"	"	
V280	Pin2	"	-1.1V	with :1,:2,:4
			+1.5V	with :8
V401	MP 37	SRD bias current	2.9V	Pulse amplitude adjusted
V440	MP 41	Level controller	1.5V	RF level at sampler
V453	MP 69	Level controller	1 - 4V	IF amplitude control

7.4.9.4 Diagnostic Points

Diagnostic point	Nom.value	Value range	Remark
600		-170 - 30 mV	PLL differential voltage /*
		-600 - 600 mV	/**
601	220 mV	180 - 250 mV	IF level
602	35 mV	20 - 50 mV	RF level at sampler
603	1.5 V	1.1 - 2.5 V	Pulse amplitude
604	200 mV	80 - 300 mV	Output level FSUM
605	70 mV	30 - 150 mV	Oscillator level
606		.5 - 20.5 V	VCO tuning voltage
607		.5 - 20.5 V	Preset voltage

/* applies only immediately after calibration of summing loop
/** tolerance window for interrupt

7.4.9.5 Supply Voltages

List of supply voltages generated on the module:

Voltage	Test point	Nom. value	Tolerance window
-5 V	MP 70	-5.0 V	-4.5 ... -5.5 V
21 V	MP 80	21.3 V	20.2 ... 22.4 V
5 V	MP 21	5.5 V	5.2 ... 6.0

7.5 Removal and Assembly

After opening the instrument, unlocking the modules and disconnecting the RF connections at X91, X97 and X99, the module can be removed from its location.
The screening covers are conventionally fastened with screws.
During operation with open screening cover, make sure that the two chambers J and K are closed by an appropriate test cover on the component side.

7.6 Interface Description

Pin	Name	Inp./Output	Origin/Destination	Value range	Signal description
X9.A12	SERBUS-CLK	Input	A3, FRO X50.40	HCMOS level	Serbus clock
X9.A14 X9.A15	SERBUS-DAT	bidir.	A3, FRO X50.39	HCMOS level	Serbus data
X9.A16	SERBUS-SYNC	Input	A3, FRO X50.37	HCMOS level	Serbus synchronization
X9.A17	SERBUS-INT	Output	A3, FRO X50.38	HCMOS level	Serbus interrupt
X9.A18	RES-P	Input	A3, FRO X50.28	HCMOS level	Serbus reset
X9.A19	DIAG-5V	Output	A3, FRO X50.44	-5V...5V	Diagnosis
X9.A26	VA24-P	Input	A2, POWS1	23.400V...24.60 30... 80mA	Supply voltage analog

Pin	Name	Inp./Output	Origin/Destination	Value range	Signal description
X9.A24	VA15-P	Input	A2, POWS1	14.80V...15.75V 150...290mA	Supply voltage analog
X9.A26	VA7.5-P	Input	A2, POWS1	7.45V...7.95V 300...550mA	Supply voltage analog
X9.A28	VD-5P	Input	A2, POWS1	5.10V...5.25V 5... 20mA	Supply voltage digital
X9.A30	VA15-N	Input	A2, POWS1	-15.75V...-14.85V 50...200mA	Supply voltage analog
X91	FSUM	Output	A10, OPU1 X101	6...11dBm 93.75 - 1520MHz	Output frequency
X97	FSTEP	Input	A7, REFSS X75	5 ±1dBm 103...117 MHz	Reference step
X99	FDSYN	Input	A8, DSYN X89	2 ±2dBm 14.3...15.6 MHz	Dig. synthesis

ROHDE&SCHWARZ

Schaltteillisten
numerisch geordnet

Part lists
in numerical order

Listes des pièces détachées
par numéros de référence

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
C1	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C3	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C4	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C5	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C6	CC 180PF+-1%50V NPO 1206 CHIP CAPACITOR	CC 0099.8844.00	MURATA	GRM42-6C0G 181F50ZPT	
C8	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C10	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C11	CE 10UF +-10% 25V 7343 TANTALUM SMD-CAPACITOR	CE 0007.7246.00	SPRAGUE	293D 106 X9 025 D2W	
C12	CC 15PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8750.00	MURATA	GRM42-6C0G 150F50ZPT	
C15	CC 47PF+-1%50V C0G 1206 CERAMIC CHIP CAPACITOR	CC 0099.8496.00	MURATA	GRM42-6C0G 470F50XPT	
C18	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C19	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C20	CC 39PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8796.00	MURATA	GRM42-6C0G 390F50ZPT	
C21	CC 5,6PF+-0,25 50VNPO1206 CERAMIC CHIP CAPACITOR	CC 0007.8220.00	MURATA	GRM42-6C0G 5R6 C50PT	
C22	CC 82PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8821.00	MURATA	GRM42-6C0G 820F50ZPT	
C23	CC 33PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8780.00	MURATA	GRM42-6C0G 330F50ZPT	
C24	CC 12PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8744.00	MURATA	GRM42-6C0G 120F50ZPT	
C25	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F50ZPT	
C26	CC 82PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8821.00	MURATA	GRM42-6C0G 820F50ZPT	
C27	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C28	CC 5,6PF+-0,25 50VNPO1206 CERAMIC CHIP CAPACITOR	CC 0007.8220.00	MURATA	GRM42-6C0G 5R6 C50PT	
C30	CK 150NF+-5%63VRD3,5H9MKT POLYESTER CAPACITOR	CK 0099.2946.00	SIEMENS	B 32 529-A154-J	
C31	CC 18PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8767.00	MURATA	GRM42-6C0G 180F50ZPT	
C34	CC 47PF+-1%50V C0G 1206 CERAMIC CHIP CAPACITOR	CC 0099.8496.00	MURATA	GRM42-6C0G 470F50XPT	
C38	CE 10UF+-20%50V ALU-CHIP SMD-ELECTROLYTIC CAPACIT.	CE 0008.1812.00	VALVO	TYP 2222 139 61109	
C39	CE 10UF +-10% 10V 6032 TANTALUM CHIP CAPACITOR	CE 0007.7281.00	SPRAGUE	293D-106X9 016 C2W	
C50	CK 2,2NF +-1% 100V RM5 KP POLYPROPYLENE CAPACITOR	CK 0007.7617.00	ROEDERSTEI	KP1830-222 01 1 3 W	
C51	CK 33NF +-1% 63V RM5 KP POLYPROPYLENE CAPACITOR	CK 0007.7681.00	ROEDERSTEI	KP1830-333 06 1(3)W	
C52	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C70	CE 10UF +-10% 25V 7343 TANTALUM SMD-CAPACITOR	CE 0007.7246.00	SPRAGUE	293D 106 X9 025 D2W	
C71	CE 47UF +-10% 10V 7343 TANTALUM CHIP CAPACITOR	CE 0007.7300.00	SPRAGUE	293D X9 010 D2W	
C72	CE 10UF +-10% 10V 6032 TANTALUM CHIP CAPACITOR	CE 0007.7281.00	SPRAGUE	293D-106X9 016 C2W	
C73	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C80	CE 10UF +-10% 25V 7343 TANTALUM SMD-CAPACITOR	CE 0007.7246.00	SPRAGUE	293D 106 X9 025 D2W	
C90	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C91	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C100	CT 9PF TAUCHTR.7RDX13 AIR-TYPE TRIMMER	0048.6109.00	TRONSER	60-0722-15010-906	
C101	CC 10PF+-0,25 50VNPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C104	CC 3,6PF0,25PF NPO 0805 CAPACITOR	CC 0093.5614.00	MURATA	GRM40C0G3R6C50	

1GPK 887 3PLU	Äi	Datum Date	Schaltteilliste für Parts list for	Sachnummer Stock No.	Blatt-Nr. Page
ROHDE&SCHWARZ	46	07.10.99	ED SUMMIERSCHLEIFE SUMMING-LOOPS	**1038.7196.01 SA**	1+

Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
C105	CC 3,9PFO,1PF50V NPO 0603 SMD-CERAMIC-CAPACITOR	CC 0009.4509.00	MURATA	GRM39C0G***B50ZPT	
C106	CC 100PF+-10% NPO 0805 CAPACITOR	CC 0082.2948.00	MURATA	GRM40 C0G 101 K50ZPT	
C107	CC 4,3PFO,25PF NPO 0805 CAPACITOR	CC 0093.5643.00	MURATA	GRM40C0G4R3C50PT	
C108	CE 22UF+-20%35V RUND SMD SMD ELECTROLYTIC CAPACIT.	CE 0009.6253.00	PANASONIC	EEV HB 1V 220P	
C119	CC 220PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8850.00	AVX	1206 A 221 F 3	
C120	CT 9PF TAUCHTR.7RDX13 AIR-TYPE TRIMMER	0048.6109.00	TRONSER	60-0722-15010-906	
C121	CC 10PF+-0,25 50VNPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C122	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C123	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C124	CC 2,7PFO,25PF NPO 0805 CAPACITOR	CC 0093.5572.00	PHILIPS_CO	2222 861 15278	
C125	CC 3,3PF+-0,1PF50VC0G0603 SMD-CERAMIC CAPACITOR	CC 0008.2125.00	AVX	0603 5J 3R3 BAW	
C126	CC 100PF+-10% NPO 0805 CAPACITOR	CC 0082.2948.00	MURATA	GRM40 C0G 101 K50ZPT	
C127	CC 2,2PFO,25PF NPO 0805 CAPACITOR	CC 0093.5566.00	MURATA	GRM40 C0G 2R2C 50PT	
C128	CC 220PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8850.00	AVX	1206 A 221 F 3	
C140	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F50ZPT	
C141	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C142	CC 1PF+-0,25 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8667.00	MURATA	GRM42-6C0G 1R0 C50PT	
C143	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F50ZPT	
C144	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C210	CE 47UF +-10% 10V 7343 TANTALUM CHIP CAPACITOR	CE 0007.7300.00	SPRAGUE	293D X9 010 D2W	
C236	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C250	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C251	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F50ZPT	
C255	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F50ZPT	
C257	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C259	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C260	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F50ZPT	
C261	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C263	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C264	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C265	CC 2,2NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8444.00	AVX	1206 5 C 222 KA 3	
C266	CC 2,2NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8444.00	AVX	1206 5 C 222 KA 3	
C268	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C269	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C271	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C272	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F50ZPT	
C273	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C274	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C275	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	Assembly contained in
C276	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C277	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C279	CC 2,2NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8444.00	AVX	1206 5 C 222 KA 3	
C280	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C281	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C282	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C283	CC 1PF+-0,25 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8667.00	MURATA	GRM42-6C0G 1R0 C50PT	
C284	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C285	CC 4,7PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8213.00	MURATA	GRM42-6C0G 4R7C 50PT	
C286	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C287	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C288	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C289	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C290	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C291	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C292	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C294	CC 2,2NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8444.00	AVX	1206 5 C 222 KA 3	
C295	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C400	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C401	CE 10UF +-10% 25V 7343 TANTALUM SMD-CAPACITOR	CE 0007.7246.00	SPRAGUE	293D 106 X9 025 D2W	
C402	CE 22UF+-20%35V RUND SMD SMD ELECTROLYTIC CAPACIT.	CE 0009.6253.00	PANASONIC	EEV HB 1V 220P	
C403	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C404	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C405	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C406	CE 22UF+-20%35V RUND SMD SMD ELECTROLYTIC CAPACIT.	CE 0009.6253.00	PANASONIC	EEV HB 1V 220P	
C407	CC 0,47PF+-0,25PF50V 0805 CERAMIC CHIP CAPACITOR	CC 1002.4951.00	VALVO	2222 8611 5477	
C408	CC 470PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8515.00	AVX	1206 5 A 471 F 3	
C409	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F50ZPT	
C420	CC 33PF+-10% NPO 0805 CAPACITOR	CC 0082.7340.00	MURATA	GRM40C0G330K50ZPT	
C421	CC 33PF+-10% NPO 0805 CAPACITOR	CC 0082.7340.00	MURATA	GRM40C0G330K50ZPT	
C422	CC 4,7PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8213.00	MURATA	GRM42-6C0G 4R7C 50PT	
C429 ..431	CC 220PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8850.00	AVX	1206 A 221 F 3	
C432	CC 1,5PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8159.00	MURATA	GRM42-6C0G 1R5 C50PT	
C433	CC 1,5PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8159.00	MURATA	GRM42-6C0G 1R5 C50PT	
C434 ..437	CC 220PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8850.00	AVX	1206 A 221 F 3	
C438	CC 1PF+-0,25 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8667.00	MURATA	GRM42-6C0G 1R0 C50PT	
C439	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C440 ..443	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C445	CC 47PF+-1%50V C0G 1206 CERAMIC CHIP CAPACITOR	CC 0099.8496.00	MURATA	GRM42-6C0G 470F50XPT	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	Unit set is contained in
C448	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C449	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C450	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C451	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C453	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C454	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C455	CC 82PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8821.00	MURATA	GRM42-6C0G 820F50ZPT	
C456	CC 8,2PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8242.00	MURATA	GRM42-6C0G 8R2 C50PT	
C457	CC 22PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8396.00	MURATA	GRM42-6C0G 220F50ZPT	
C458	CC 120PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8838.00	MURATA	GRM42-6C0G 121F50ZPT	
C459	CC 68PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8815.00	MURATA	GRM42-6C0G 680F50ZPT	
C460	CC 10PF+-0,25 50VNP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C461	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C462	CC 10PF+-0,25 50VNP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C463	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C465	CC 1NF+-1% 50V NP0 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C466	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C468	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C470	CC 1NF+-1% 50V NP0 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C471	CC 220PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8850.00	AVX	1206 A 221 F 3	
C472	CE 10UF +-10% 10V 6032 TANTALUM CHIP CAPACITOR	CE 0007.7281.00	SPRAGUE	293D-106X9 016 C2W	
C478	CE 10UF +-10% 25V 7343 TANTALUM SMD-CAPACITOR	CE 0007.7246.00	SPRAGUE	293D 106 X9 025 D2W	
C479	CE 10UF +-10% 25V 7343 TANTALUM SMD-CAPACITOR	CE 0007.7246.00	SPRAGUE	293D 106 X9 025 D2W	
C485	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C495	CC 2,2PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8171.00	MURATA	GRM42-6C0G 2R2 C50PT	
C498	CC 120PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8838.00	MURATA	GRM42-6C0G 121F50ZPT	
C499	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C545	CC 1NF+-1% 50V NP0 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	AVX	1206 5A 102 FAT00J	
C551	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C554	CC 47NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5195.00	AVX	1206 5 C 473 KA 3	
C561	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C562	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	PHILIPS_CO	2238 581 16627	
C565	CE 10UF +-10% 10V 6032 TANTALUM CHIP CAPACITOR	CE 0007.7281.00	SPRAGUE	293D-106X9 016 C2W	
C567	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C570	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C571	CE 10UF +-10% 10V 6032 TANTALUM CHIP CAPACITOR	CE 0007.7281.00	SPRAGUE	293D-106X9 016 C2W	
C573	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C579	CC 330PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8873.00	AVX	1206 5A 331 F 3	
C580	CE 220UF+-20%35V RM5 ELECTROLYTIC CAPACITOR	CE 0008.7904.00	PANASONIC	ECA 1 VFG 221 B	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
C581	CE 100UF+-20%35V RM5 ELECTROLYTIC CAPACITOR	0008.7510.00	PHILIPS_CO	2222 116 90042	
C582	CE 220UF+-20%35V RM5 ELECTROLYTIC CAPACITOR	CE 0008.7904.00	PANASONIC	ECA 1 VFG 221 B	
C583	CE 220UF+-20%35V RM5 ELECTROLYTIC CAPACITOR	CE 0008.7904.00	PANASONIC	ECA 1 VFG 221 B	
C584	CE 100UF+-20%25V RM2.5 ELECTROLYTIC CAPACITOR	CE 0008.7891.00	PANASONIC	ECA-1EFG101I	
C589	CE 100UF+-20%16V RUND SMD SMD-ELECTOLYTIC CAPACIT.	CE 0009.6553.00	SANYO	16CV100F(G)S	
D1	BM SRA1 MIXER 0.5GHZ MIXER	BM 0207.3465.00	MINI-CIRCU	SRA1	
D10	BJ PM7533GS 1X10B-DAC D/A-CONVERTER	2033.1473.00	ANALOG_DEV	AD7533KR	
D20	BL PC74HC4051T 8CH.AN.MUX 8CHANNEL ANAL.MULTIPLEXER	0007.3592.00	PHILIPS_SE	(PC)74HC4051(D/T)	
D260	BL UPB581C 2:1 PRESC IC PRESCALERDIVIDER	BL 0840.6113.00	NEC	(UP)B581C	
D270	BL UPB582C 4:1 PRESC IC PRESCALER	BL 0820.3390.00	NEC	(UP)B582C	
D500	BG TH3032.1C SERBUSD ASIC IC GATE ARRAY	BG 0008.6143.00	THESYS	TH3032.1C	
D530 ..533	BL PC74HCT4094T 8ST.SHREG 8-STAGE SHIFT&STORE REG.	0007.6885.00	PHILIPS	(PC)74HCT4094(D)	
D540	BL PC74HCT4051T 8CH.A.MUX ANALOG MULTIPLEXER	0007.6827.00	PHILIPS	(PC)74HCT4051(T)	
D545	BL PC74HCT132T 4X2IN SCHM NAND SCHMITT TRIGGER	BL 0007.6340.00	PHILIPS	(PC)74HCT132(D/T)	
D560	BL PC74HCT123T 2XMONOFLOP DUAL MULTIVIBRATOR	BL 0007.6333.00	PHILIPS_SE	(PC)74HCT123(D/T)	
D570	BL PC74HCT132T 4X2IN SCHM NAND SCHMITT TRIGGER	BL 0007.6340.00	PHILIPS	(PC)74HCT132(D/T)	
L6	LD 470NH 10% 0,15A 1210 RF CHOKE	LD 0007.9926.00	SIEMENS	B82422-A3471-J(K)100	
L18	LD 10UH 10% 0,18A 1210 RF CHOKE	LD 0007.9255.00	SIEMENS	B82422-A1103-J(K)100	
L20	LD 820NH 5% QR85 0,42A HIGH FREQUENCY CHOKE	0355.9890.00	DELEVAN	1025-18	
L21	LD 1UH 10% 1,000HMO,390A CHOKE	LD 0067.2863.00	DALE	IM2	
L22	LD 1,5UH 5% QR2 0,56A CHOKE	0067.3247.00	DELEVAN	1025-24	
L26	LD 2,7UH 10%0,550HMO,355A CHOKE	LD 0067.2911.00	DALE	IM2	
L90	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L91	LD 10UH 10% 0,18A 1210 RF CHOKE	LD 0007.9255.00	SIEMENS	B82422-A1103-J(K)100	
L100	LD 100NH 10% 0,080HM 1,4A CHOKE	LD 0067.2740.00	DALE	IM2	
L102	LD 100NH10%QR21 660MA1206 CERAMIC CHIP COIL	0691.0733.00	STETTNER	5503 1012200	
L103	LD 100NH10%QR21 660MA1206 CERAMIC CHIP COIL	0691.0733.00	STETTNER	5503 1012200	
L105	LD 100NH10%QR21 660MA1206 CERAMIC CHIP COIL	0691.0733.00	STETTNER	5503 1012200	
L109	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L120	LD 100NH 10% 0,080HM 1,4A CHOKE	LD 0067.2740.00	DALE	IM2	
L122	LD 100NH10%QR21 660MA1206 CERAMIC CHIP COIL	0691.0733.00	STETTNER	5503 1012200	
L123	LD 100NH10%QR21 660MA1206 CERAMIC CHIP COIL	0691.0733.00	STETTNER	5503 1012200	
L125	LD 100NH10%QR21 660MA1206 CERAMIC CHIP COIL	0691.0733.00	STETTNER	5503 1012200	
L140	LD 100NH 10% 0,44A 1210 RF CHOKE	LD 0007.9249.00	SIEMENS	B82422-A3101-J(K)100	
L160	LL LUFTSPULE	1038.7338.00			
L161	LL LUFTSPULE	1038.7338.00			
L179	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L250	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L251	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
L256	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L260	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L261	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L262	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L263	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L264	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L268	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L269	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L271	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L272	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L277	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L280	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L285	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L286	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L293	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L401	LD 10UH 10% 0,18A 1210 RF CHOKE	LD 0007.9255.00	SIEMENS	B82422-A1103-J(K)100	
L403	LD 32NH SMD-ABGL.Q5,1H5 SMD-VHF-COIL	0008.9436.00	COMPONEX	E 558 CN-10 0020	
L404	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L405	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L430	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L431	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L432	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L433	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L434	LD 1UH 10% 0,38A 1210 RF CHOKE	LD 6006.0130.00	SIEMENS	B82422-A1102-J(K)100	
L435	LD 2,2UH 10% 0,27A 1210 RF CHOKE	LD 0520.7870.00	SIEMENS	B82422-A1222-J(K)100	
L450	LD 22UH 10% 0,14A 1210 RF CHOKE	LD 0520.7886.00	SIEMENS	B82422-A1223-J(K)100	
L451	LD 22UH 10% 0,14A 1210 RF CHOKE	LD 0520.7886.00	SIEMENS	B82422-A1223-J(K)100	
L452	LD 180NH 10%0,120HM 1,12A CHOKE	LD 0067.2770.00	DALE	IM2	
L453	LD 150NH 10% 0,10HM 1,23A CHOKE	LD 0067.2763.00	DALE	IM2	
L454	LD 10UH 10% 0,18A 1210 RF CHOKE	LD 0007.9255.00	SIEMENS	B82422-A1103-J(K)100	
L456	LD 12UH 10% 2,70HM 0,16A CHOKE	LD 0067.2992.00	DALE	IM2	
L570	LD 22UH 10% 0,14A 1210 RF CHOKE	LD 0520.7886.00	SIEMENS	B82422-A1223-J(K)100	
L580	LD 8,2UH BEI 0,94A0,490HM CHOKE	LD 0026.4110.00	DALE	IM 6	
L581	LD 15UH 10% 1R2 0,46A CHOKE	LD 0026.4149.00	DALE	IM 6	
L582	LD 15UH 10% 1R2 0,46A CHOKE	LD 0026.4149.00	DALE	IM 6	
L583	LD 8,2UH BEI 0,94A0,490HM CHOKE	LD 0026.4110.00	DALE	IM 6	
L584	LD 8,2UH BEI 0,94A0,490HM CHOKE	LD 0026.4110.00	DALE	IM 6	
L589	LD 4,7UH 10% 0,15A 1210 RF CHOKE	LD 0008.1687.00	SIEMENS	B82422-A1472-J(K)100	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
MP9	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
MP21	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
MP30	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
MP32 ...37	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
MP40	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
MP41	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
MP55	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
MP56 ...58	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
MP67 ...70	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
MP80	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
N10	BO NE5534D OPAMP OPERATIONAL AMPLIFIER	0815.7555.00	SIGNETICS	NE5534(D)	
N15	BO NE5532D 2XLN OPAMP 2 OPERATIONAL AMPLIFIER	0007.7798.00	SIGNETICS	NE5532D	
N17	BO OP97FS LP PREC OPAMP LOW POWER OPAMP	1036.4390.00	PMI	OP97F(S)	
N30	BO AD846BN CF OPAMP CURRENT-FEEDBACK OPAMP	0007.9855.00	ANALOG_DEV	AD846BN	
N140	BM MSA0386 DC-2.4G MMIC BROADBAND AMPLIFIER	0848.4461.00	AVANTEK	MSA0386	
N250	BM MSA0486 DC-3.2G MMIC BROADBAND AMPLIFIER	0846.4293.00	AVANTEK	MSA-0486	
N260	BM MSA0386 DC-2.4G MMIC BROADBAND AMPLIFIER	0848.4461.00	AVANTEK	MSA0386	
N270	BM MSA0386 DC-2.4G MMIC BROADBAND AMPLIFIER	0848.4461.00	AVANTEK	MSA0386	
N280	BM MSA0486 DC-3.2G MMIC BROADBAND AMPLIFIER	0846.4293.00	AVANTEK	MSA-0486	
N290	BM MSA0486 DC-3.2G MMIC BROADBAND AMPLIFIER	0846.4293.00	AVANTEK	MSA-0486	
N430	BM MSA0486 DC-3.2G MMIC BROADBAND AMPLIFIER	0846.4293.00	AVANTEK	MSA-0486	
N435	BM MSA0386 DC-2.4G MMIC BROADBAND AMPLIFIER	0848.4461.00	AVANTEK	MSA0386	
N438	BM MSA0386 DC-2.4G MMIC BROADBAND AMPLIFIER	0848.4461.00	AVANTEK	MSA0386	
N470	BO NE5534D OPAMP OPERATIONAL AMPLIFIER	0815.7555.00	SIGNETICS	NE5534(D)	
N550	BO LM2903D 2XLP COMPAR DUAL	0520.7734.00	SIGNETICS	LM2903(D)	
P9	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P30	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P32	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P33	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P40	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P55 ..58	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P70	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
P80	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
R1	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R3	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	DRALORIC	CR 1206	
R4	RG 12,1KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0841.00	ROEDERSTEI	D25	
R5	RG 825 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.7259.00	ROEDERSTEI	D25	

Comp. No.	Bezeichnung Designation	Bestellnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	Einheit contained in
R7	RG 22,1 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5489.00	ROEDERSTEI	D25	
R8	RG 22,1 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5489.00	ROEDERSTEI	D25	
R9	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R10	RG 22,1 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5489.00	ROEDERSTEI	D25	
R11	RG 392 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5672.00	DRALORIC	CR 1206	
R12	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	DRALORIC	CR 1206	
R13	RG 2,74KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5766.00	DRALORIC	CR 1206	
R14	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R15	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R16	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R17	RG 20,0KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5866.00	DRALORIC	CR 1206	
R18	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R19	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R20	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	DRALORIC	CR 1206	
R21	RG 392 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5672.00	DRALORIC	CR 1206	
R22	RG 681 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9080.00	PHILIPS_CO	RC02	
R23	RG 22,1 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5489.00	ROEDERSTEI	D25	
R25	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R27	RG 82,5KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.1925.00	ROEDERSTEI	D25	
R28	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R29	RG 750 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9097.00	PHILIPS_CO	RC02	
R30	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R31	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R32	RG 20,0KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5866.00	DRALORIC	CR 1206	
R33	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R34	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R35	RG 1,0 OHM+-1%TK100 1206 CHIP-RESISTOR	RG 0007.8265.00	PHILIPS_CO	RC 02	
R36	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R38	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R39	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R40	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R41	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R42	RG 56,2KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.1883.00	DRALORIC	CR 1206	
R43	RG 100,0KOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1948.00	ROEDERSTEI	D25	
R44	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R45	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R46	RG 56,2KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.1883.00	DRALORIC	CR 1206	
R47	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R48	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	

Comp. No.	Designation	Stock No.	Manufacturer Designation	contained in
R49	RG 150 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5972.00	PHILIPS_CO RC02	
R50	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI D25	
R51	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI D25	
R52	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI D25	
R53	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	PHILIPS_CO RC02	
R54	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI D25	
R55	RG 16,2KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0870.00	DRALORIC CR 1206	
R56	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI D25	
R57	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI D25	
R58	RG 100,0KOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1948.00	ROEDERSTEI D25	
R59	RG 100,0KOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1948.00	ROEDERSTEI D25	
R60	RG 5,62KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0735.00	PHILIPS_CO RC02	
R61	RG 3,32KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5789.00	PHILIPS_CO RC02	
R62	RG 1,82KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5720.00	PHILIPS_CO RC02	
R63	RG 909 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.7265.00	PHILIPS_CO RC02	
R64	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI D25	
R65	RG 432 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5689.00	PHILIPS_CO RC02	
R66	RG 274 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5637.00	ROEDERSTEI D25	
R67	RG 182 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5595.00	PHILIPS_CO RC02	
R68	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI D25	
R70	RG 22,1 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5489.00	ROEDERSTEI D25	
R71	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI D25	
R72	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI D25	
R73	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI D25	
R75	RG 825 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.7259.00	ROEDERSTEI D25	
R76	RG 121 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8903.00	PHILIPS_CO RC02	
R77	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	DRALORIC CR 1206	
R78	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI D25	
R79	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI D25	
R80	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	PHILIPS_CO RC02	
R81	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI D25	
R82	RG 3,32KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5789.00	PHILIPS_CO RC02	
R83	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	PHILIPS_CO RC02	
R84	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI D25	
R86	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI D25	
R89	RG 150 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5589.00	PHILIPS_CO RC02	
R90	RG 18,2KOH+-0,1%TK25 1206 SMD-RESISTOR	0009.7637.00	PHILIPS_CO MPC 01	
R91	RG 10,0KOH+-0,1%TK25 1206 SMD-RESISTOR	0009.7666.00	PHILIPS_CO MPC 01	
R92	RG 10,0KOH+-0,1%TK25 1206 SMD-RESISTOR	0009.7666.00	PHILIPS_CO MPC 01	

Comp. No.	Designation		Stock No.	Manufacturer	Designation	contained in
R93	RG 18,2KOH+-0,1%TK25 SMD-RESISTOR	1206	0009.7637.00	PHILIPS_CO	MPC 01	
R94	RG 100 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8884.00	ROEDERSTEI	D25	
R95	RG 100 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8884.00	ROEDERSTEI	D25	
R96	RG 1KO +-1% TK100 CHIP RESISTOR	1206	RG 0006.7271.00	ROEDERSTEI	D25	
R97	RG 2,21KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5743.00	ROEDERSTEI	D25	
R98	RG 33,2KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5914.00	PHILIPS_CO	RC02	
R99	RG 8,25OHM+-1%TK100 CHIP-RESISTOR	1206	RG 0007.8488.00	PHILIPS	RC 02	
R101	RG 56,2 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8826.00	PHILIPS_CO	RC02	
R103	RG 56,2 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8826.00	PHILIPS_CO	RC02	
R105	RG 0,05W 82R +-1% RESISTOR	0805	RG 0007.8994.00	HONEST_JAP	RN 73 C(E)2X..F (1%)	
R106	RG 1,82KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5720.00	PHILIPS_CO	RC02	
R107	RG 6,81KOHM+-1%TK100 CHIP RESISTOR	1206	RG 0007.0758.00	PHILIPS_CO	RC02	
R108	RG 2,74KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5766.00	DRALORIC	CR 1206	
R109	RG 100 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8884.00	ROEDERSTEI	D25	
R110	RG 3,92KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5808.00	ROEDERSTEI	D25	
R111	RG 12,1KOHM+-1%TK100 CHIP RESISTOR	1206	RG 0007.0841.00	ROEDERSTEI	D25	
R112	RG 10,0KOHM+-1%TK100 RG CHIP RESISTOR	1206	RG 0007.0793.00	ROEDERSTEI	D25	
R113	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R114	RG 1KO +-1% TK100 CHIP RESISTOR	1206	RG 0006.7271.00	ROEDERSTEI	D25	
R115	RG 2,21KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5743.00	ROEDERSTEI	D25	
R116	RG 100,0KOH+-1%TK100 CHIP RESISTOR	1206	RG 0007.1948.00	ROEDERSTEI	D25	
R120	RG 475 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5695.00	ROEDERSTEI	D25	
R121	RG 56,2 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8826.00	PHILIPS_CO	RC02	
R122	RG 56,2 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8826.00	PHILIPS_CO	RC02	
R123	RG 475 OHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5695.00	ROEDERSTEI	D25	
R125	RG 0,05W 82R +-1% RESISTOR	0805	RG 0007.8994.00	HONEST_JAP	RN 73 C(E)2X..F (1%)	
R126	RG 1,82KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5720.00	PHILIPS_CO	RC02	
R127	RG 6,81KOHM+-1%TK100 CHIP RESISTOR	1206	RG 0007.0758.00	PHILIPS_CO	RC02	
R128	RG 2,74KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5766.00	DRALORIC	CR 1206	
R129	RG 100 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8884.00	ROEDERSTEI	D25	
R130	RG 3,92KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5808.00	ROEDERSTEI	D25	
R131	RG 12,1KOHM+-1%TK100 CHIP RESISTOR	1206	RG 0007.0841.00	ROEDERSTEI	D25	
R132	RG 10,0KOHM+-1%TK100 RG CHIP RESISTOR	1206	RG 0007.0793.00	ROEDERSTEI	D25	
R133	RG 4K75 +-1% TK100 RESISTOR CHIP	1206	RG 0007.5820.00	PHILIPS_CO	RC02	
R134	RG 1KO +-1% TK100 CHIP RESISTOR	1206	RG 0006.7271.00	ROEDERSTEI	D25	
R135	RG 2,21KOHM+-1%TK100 RESISTOR CHIP	1206	RG 0007.5743.00	ROEDERSTEI	D25	
R136	RG 100,0KOH+-1%TK100 CHIP RESISTOR	1206	RG 0007.1948.00	ROEDERSTEI	D25	
R141	RG 68,1 OHM+-1%TK100 CHIP RESISTOR	1206	RG 0006.8849.00	ROEDERSTEI	D25	
R142	RG 1KO +-1% TK100 CHIP RESISTOR	1206	RG 0006.7271.00	ROEDERSTEI	D25	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
R143	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R144	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R160	RG 0,05W 51R1 +-1% 0805 RESISTOR	0007.9132.00	HONEST_JAP	RN 73 C(E)2X..F (1%)	
R179	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R210	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R211	RG 4,75OHM+-1%TK100 1206 CHIP-RESISTOR	RG 0007.8420.00	PHILIPS	RC 02	
R212	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R236	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R237	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R238	RG 8,25OHM+-1%TK100 1206 CHIP-RESISTOR	RG 0007.8488.00	PHILIPS	RC 02	
R239	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R245	RG 16,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8690.00	PHILIPS_CO	RC02	
R247	RG 16,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8690.00	PHILIPS_CO	RC02	
R248	RG 16,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8690.00	PHILIPS_CO	RC02	
R250	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R251	RG 33,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5520.00	ROEDERSTEI	D25	
R252	RG 162 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8932.00	PHILIPS_CO	RC02	
R253	RG 162 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8932.00	PHILIPS_CO	RC02	
R256	RG 121 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8903.00	PHILIPS_CO	RC02	
R260	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R268	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R269	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R271	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R275	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R276	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R277	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R278 ..280	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R281	RG 301 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5643.00	PHILIPS_CO	RC02	
R282	RG 15,0 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5450.00	PHILIPS_CO	RC02	
R283	RG 301 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5643.00	PHILIPS_CO	RC02	
R284	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R285	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R286	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R287	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R288	RG 22,1 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5489.00	ROEDERSTEI	D25	
R289	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R290	RG 1,82KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5720.00	PHILIPS_CO	RC02	
R291	RG 150 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5589.00	PHILIPS_CO	RC02	
R292	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
R293	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R294	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R296	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R297	RG 150 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5589.00	PHILIPS_CO	RC02	
R298	RG 33,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5520.00	ROEDERSTEI	D25	
R299	RG 150 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5589.00	PHILIPS_CO	RC02	
R400	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R402	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R403	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R404	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	DRALORIC	CR 1206	
R405	RS 0,25W5OKOHM +-20% SMD POTENTIOMETER NICHT BESTUECKT NOT FITTED	RS 0007.9661.00	BI_TECHNOL	23 B R... TR	
R406	RG 47,5KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5950.00	ROEDERSTEI	D25	
R407	RG 100,OKOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1948.00	ROEDERSTEI	D25	
R408	RG 182 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5989.00	ROEDERSTEI	D25	
R409	RG 150 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5589.00	PHILIPS_CO	RC02	
R410	RG 100,OKOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1948.00	ROEDERSTEI	D25	
R411	RG 5,62KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0735.00	PHILIPS_CO	RC02	
R412	RG 1,21KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9968.00	ROEDERSTEI	D25	
R413	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	PHILIPS_CO	RC02	
R415	RG 243 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5620.00	PHILIPS_CO	RC02	
R419	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R420	RG 0,05W 100R +-1% 0805 RESISTOR	RG 0007.9003.00	HONEST_JAP	RN 73 C(E)2X..F (1%)	
R421	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R422	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R424	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R425	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R426	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R428	RG 0,05W 47R +-1% 0805 RESISTOR	RG 0007.8965.00	HONEST_JAP	RN 73 C(E)2X..F (1%)	
R429	RG 0,05W 47R +-1% 0805 RESISTOR	RG 0007.8965.00	HONEST_JAP	RN 73 C(E)2X..F (1%)	
R430	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R431	RG 39,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5543.00	PHILIPS_CO	RC02	
R432	RG 39,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5543.00	PHILIPS_CO	RC02	
R433	RG 15,0 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5450.00	PHILIPS_CO	RC02	
R434	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R435	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R436	RG 8,25OHM+-1%TK100 1206 CHIP-RESISTOR	RG 0007.8488.00	PHILIPS	RC 02	
R437	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R438	RG 150 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5589.00	PHILIPS_CO	RC02	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
R439	RG 150 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5589.00	PHILIPS_CO	RC02	
R440	RS 0,25W5OKOHM +-20% SMD POTENTIOMETER	RS 0007.9661.00	BI_TECHNOL	23 B R... TR	
R441	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R442	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R443	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R444	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R448	RG 100,OKOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1948.00	ROEDERSTEI	D25	
R451	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R453	RG 392 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5672.00	DRALORIC	CR 1206	
R454	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R455	RG 3,92KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5808.00	ROEDERSTEI	D25	
R456	RG 475 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.6079.00	PHILIPS_CO	RC02	
R457	RG 1,OMOHM+-1%TK100 1206 CHIP RESISTOR	RG 0815.7532.00	DRALORIC	CRC 1206	
R458	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R459	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R460	RG 2,74OHM+-1%TK100 1206 CHIP-RESISTOR	RG 0007.8365.00	PHILIPS	RC 02	
R465	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R467	RG 392 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5672.00	DRALORIC	CR 1206	
R468	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	DRALORIC	CR 1206	
R469	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	DRALORIC	CR 1206	
R471	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R472	RG 274 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5637.00	ROEDERSTEI	D25	
R473	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R474	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	PHILIPS_CO	RC02	
R475	RG 182 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5595.00	PHILIPS_CO	RC02	
R476	RS 0,25W2OKOHM +-20% SMD POTENTIOMETER	RS 0007.9655.00	BI_TECHNOL	23 B R... TR	
R477 ..479	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R480	RG 825 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.7259.00	ROEDERSTEI	D25	
R481	RG 681 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9080.00	PHILIPS_CO	RC02	
R482	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R483	RG 22,1 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5489.00	ROEDERSTEI	D25	
R485	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R486	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	DRALORIC	CR 1206	
R499	RG 2,74KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5766.00	DRALORIC	CR 1206	
R500	RG 10,OKOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R501	RG 10,OKOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R502	RG 10,OKOHM+-1%TK100 1206 RG CHIP RESISTOR NICHT BESTUECKT/NOT FITTED	RG 0007.0793.00	ROEDERSTEI	D25	
R503	RG 10,OKOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
R504	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R505	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR NICHT BESTUECKT/NOT FITTED	RG 0007.0793.00	ROEDERSTEI	D25	
R506	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR NICHT BESTUECKT/NOT FITTED	RG 0007.0793.00	ROEDERSTEI	D25	
R508	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R509	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R510	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R511	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR NICHT BESTUECKT/NOT FITTED	RG 0007.0793.00	ROEDERSTEI	D25	
R512	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R513	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR NICHT BESTUECKT/NOT FITTED	RG 0007.0793.00	ROEDERSTEI	D25	
R514	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R515	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR NICHT BESTUECKT/NOT FITTED	RG 0007.0793.00	ROEDERSTEI	D25	
R516	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR NICHT BESTUECKT/NOT FITTED	RG 0007.0793.00	ROEDERSTEI	D25	
R517	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR NICHT BESTUECKT/NOT FITTED	RG 0007.0793.00	ROEDERSTEI	D25	
R518	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R520 ..524	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R525 ..529	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R530	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R531	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R533	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R534	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	ROEDERSTEI	D25	
R545	RG 15,0KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5843.00	PHILIPS_CO	RC02	
R546	RG 39,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5937.00	PHILIPS_CO	RC02	
R547	RG 4K75 +-1% TK100 1206 RESISTOR CHIP	RG 0007.5820.00	PHILIPS_CO	RC02	
R550	RG 121,0KOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1960.00	ROEDERSTEI	D25	
R551	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	PHILIPS_CO	RC02	
R552	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	PHILIPS_CO	RC02	
R553	RG 2,74KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5766.00	DRALORIC	CR 1206	
R554	RG 56,2KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.1883.00	DRALORIC	CR 1206	
R555	RG 121,0KOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1960.00	ROEDERSTEI	D25	
R556	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	PHILIPS_CO	RC02	
R560	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R561	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	PHILIPS_CO	RC02	
R562	RG 1KO +-1% TK100 1206 CHIP RESISTOR	RG 0006.7271.00	ROEDERSTEI	D25	
R563	RG 18,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5850.00	ROEDERSTEI	D25	
R564	RG 1,5 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5714.00	PHILIPS_CO	RC02	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
R565	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R567	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R568	RG 15,0KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5843.00	PHILIPS_CO	RC02	
R569	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	ROEDERSTEI	D25	
R571	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	DRALORIC	CR 1206	
R572	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	ROEDERSTEI	D25	
R579	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
V1	AK BFS17 N 15V 25MA 1 GHZ WIDEBAND TRANSISTOR	AK 0010.6460.00	VALVO	BFS17	
V40	AK BCX19 N 45V 500MA TRANSISTOR	6014.2567.00	PHILIPS_SE	BCX19	
V41	AM BSR56 N-D 40V JFET N-CHANNEL JUNCTION-FET	AM 0007.3111.00	VALVO	BSR56	
V42	AK BCX19 N 45V 500MA TRANSISTOR	6014.2567.00	PHILIPS_SE	BCX19	
V43	AK BCX17 P 45V 500MA TRANSISTOR	AK 0007.2080.00	PHILIPS	BCX17	
V44	AM BSR56 N-D 40V JFET N-CHANNEL JUNCTION-FET	AM 0007.3111.00	VALVO	BSR56	
V47	AM BSR56 N-D 40V JFET N-CHANNEL JUNCTION-FET	AM 0007.3111.00	VALVO	BSR56	
V50	AM SST108 N-D 25V JFET JUNCTION FET	6007.3949.00	SILICONIX	SST108	
V51	AM SST108 N-D 25V JFET JUNCTION FET	6007.3949.00	SILICONIX	SST108	
V52	AD BAS16 75V UDI HIGH-SPEED DIODE	AD 0007.4924.00	VALVO	BAS16 (A6P)	
V53	AK BCX17 P 45V 500MA TRANSISTOR	AK 0007.2080.00	PHILIPS	BCX17	
V54	AK BCX19 N 45V 500MA TRANSISTOR	6014.2567.00	PHILIPS_SE	BCX19	
V55	AD BAS16 75V UDI HIGH-SPEED DIODE	AD 0007.4924.00	VALVO	BAS16 (A6P)	
V56	AK BCX19 N 45V 500MA TRANSISTOR	6014.2567.00	PHILIPS_SE	BCX19	
V57	AK BCX17 P 45V 500MA TRANSISTOR	AK 0007.2080.00	PHILIPS	BCX17	
V70	AK BCX17 P 45V 500MA TRANSISTOR	AK 0007.2080.00	PHILIPS	BCX17	
V75	AE BZV55/C5V6 0.5W ZDI ZENER DIODE	AE 0006.9845.00	PHILIPS	BZV55B5V6	
V78	AK BCX17 P 45V 500MA TRANSISTOR	AK 0007.2080.00	PHILIPS	BCX17	
V79	AE BZX79/B27 0,5W ZDI ZENER DIODE	AE 0615.9085.00	PHILIPS_SE	BZX79B27	
V85	AE 1N827 6,2V REFDI ZENER REFERENCE DIODE	AE 0418.0029.00	COMPENSATE	1N827(A)	
V95	AK BCX17 P 45V 500MA TRANSISTOR	AK 0007.2080.00	PHILIPS	BCX17	
V100	AE BB405B 11/ 2PF CDI TUNING DIODE	0596.6839.00	PHILIPS	BB405B	
V101	AE BBY31 11/02PF UHF-CDI UHF TUNING DIODE	AE 0007.3128.00	VALVO	BBY31	
V105	AK 2SC4093 N 12V 100MA TRANSISTOR	1027.4161.00	NEC	NE85639E	
V106	AK BC850B N 45V 200MA TRANSISTOR	AK 0007.7969.00	VALVO	BC850B	
V107	AK BCX19 N 45V 500MA TRANSISTOR	6014.2567.00	PHILIPS_SE	BCX19	
V108	AK BCX17 P 45V 500MA TRANSISTOR	AK 0007.2080.00	PHILIPS	BCX17	
V120	AE BB405B 11/ 2PF CDI TUNING DIODE	0596.6839.00	PHILIPS	BB405B	
V122	AE BBY31 11/02PF UHF-CDI UHF TUNING DIODE	AE 0007.3128.00	VALVO	BBY31	
V125	AK 2SC4093 N 12V 100MA TRANSISTOR	1027.4161.00	NEC	NE85639E	
V126	AK BC850B N 45V 200MA TRANSISTOR	AK 0007.7969.00	VALVO	BC850B	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	contained in
V127	AK BCX19 N 45V 500MA TRANSISTOR	6014.2567.00	PHILIPS_SE	BCX19	
V128	AK BCX17 P 45V 500MA TRANSISTOR	AK 0007.2080.00	PHILIPS	BCX17	
V140	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V210	AK BCP68-16 N 20V TRANS MEDIUM POWER TRANSISTOR	0008.2019.00	PHILIPS	BCP68-25	
V211	AE BZV55/C6V2 0,5W ZDI ZENER DIODE	AE 0006.9851.00	PHILIPS	BZV55B6V2	
V259	AE BAR14-1 DUAL 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1 (-A772)	
V260	AE BAR14-1 DUAL 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1 (-A772)	
V270	AE BAR14-1 DUAL 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1 (-A772)	
V275	AK BCX17 P 45V 500MA TRANSISTOR	AK 0007.2080.00	PHILIPS	BCX17	
V276 ..280	AE BAR14-1 DUAL 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1 (-A772)	
V285	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V287	AK BCX17 P 45V 500MA TRANSISTOR	AK 0007.2080.00	PHILIPS	BCX17	
V400	AK BFG97 NPN 15V 100MA 5 GHZ WIDEBAND TRANSISTOR	0008.1741.00	PHILIPS	BFG97	
V401	AE 5082-0833 25V STEPRDI STEP RECOVERY DIODE	0343.0086.10	HEWLETT_PA	HP5082-0833	
V402	AK BCP68-16 N 20V TRANS MEDIUM POWER TRANSISTOR	0008.2019.00	PHILIPS	BCP68-25	
V403	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V405	AD BAS16 75V UDI HIGH-SPEED DIODE	AD 0007.4924.00	VALVO	BAS16 (A6P)	
V406	AD BAS16 75V UDI HIGH-SPEED DIODE	AD 0007.4924.00	VALVO	BAS16 (A6P)	
V407	AK BFG97 NPN 15V 100MA 5 GHZ WIDEBAND TRANSISTOR	0008.1741.00	PHILIPS	BFG97	
V408	AK BFG31 PNP 100MA 5 GHZ WIDEBAND TRANSISTOR	0009.7672.00	PHILIPS	BFG31	
V420	AE HSMS2812 2SER SCHOTTKY SCHOTTKY DIODE	0520.7528.00	HEWLETT_PA	HSMS2812 L31	
V421	AE HSMS2812 2SER SCHOTTKY SCHOTTKY DIODE	0520.7528.00	HEWLETT_PA	HSMS2812 L31	
V440	AE BAR14-1 DUAL 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1 (-A772)	
V445	AE HSMS2810 SCHOTTKY SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS-2810	
V450	AM SST310 N-D 25V JFET JUNCTION FET	1036.4577.00	SILICONIX	SST310-T1	
V453	AE BAR14-1 DUAL 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1 (-A772)	
V455	AK BFG97 NPN 15V 100MA 5 GHZ WIDEBAND TRANSISTOR	0008.1741.00	PHILIPS	BFG97	
V456	AE HSMS2800 SCHOTTKY SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V457	AE HSMS2800 SCHOTTKY SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V554	AD BAS16 75V UDI HIGH-SPEED DIODE	AD 0007.4924.00	VALVO	BAS16 (A6P)	
V565	AE BZV55/C5V6 0.5W ZDI ZENER DIODE	AE 0006.9845.00	PHILIPS	BZV55B5V6	
W1	DW HF-KABEL W1	1038.7309.00			1038.7215.00
W2	DW HF-KABEL W2	1038.7315.00			1038.7215.00
X90	FP STECKERLEISTE 32POL. CONNECTOR 32P.	FP 0008.5718.00	DEUT_ELCO	16 8457 064 002 027	
X91	FJ EINBAUWINKELST. SMC ANGLE CONNECTOR	FJ 0249.9684.00	IMS	82.1524.201	
X97	FJ EINBAUSTECKER F.GS SMB ANGLE CONNECTOR	FJ 0602.8804.00	IMS	81.1524.201	
X99	FJ EINBAUSTECKER F.GS SMB ANGLE CONNECTOR	FJ 0602.8804.00	IMS	81.1524.201	
X15A	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X15B	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	

Comp. No.	Designation	Stock No.	Manufacturer	Designation	contained in
X15C	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X16A	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X16B	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X20A	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X20B	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X20C	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X20D	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X30A	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X30B	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X47A	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X47B	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X47C	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X47D	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X50A	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X50B	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X50C	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
X50D	VL EINPRESSSTIFT 5,6 PIN	VL 0010.7250.00	AMP	1-928776-5	
Z90	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z405	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	
Z520 ..524	LD T-FILTER 100PF SMD SMD-FILTER	1039.1356.00	MURATA	NFM61R00T101T1	
Z580 ..584	LD T-FILTER 3,3NF SMD SMD-FILTER	1039.1362.00	MURATA	NFM61R20T332T1	

ROHDE&SCHWARZ

XY-Liste

XY List

Erklärung der Spaltenbezeichnungen:

el. Kennz.	Bauelement-Kennzeichen
Seite	Leiterplatten-Seite, auf der sich das Bauelement befindet
X/Y	Koordinaten (in Millimeter) des Bauelementes auf der Leiterplatte bezogen auf den Nullpunkt
Planq., Bl.	Planquadrat und Seite des Schaltbildes für das jeweilige Bauelement

Explanation of column designations:

Part	Identification of instrument part
Side	Side of the PC board on which instrument part is positioned
X/Y	Coordinates (in units of millimeters) of the component on the PC board in reference to zero point
Sqr, Pg	Square and page of the diagram for the respective instrument part

Service-Relevante Bauteile / Service-Relevant Components

Part	Side	X	Y	Sqr	Pg
L403	B	218	32	4E	5
MP9	B	297	50	4C	2
MP30	B	240	127	7C	2
MP32	B	146	126	11C	2
MP33	B	157	124	9F	2
MP35	B	15	97	8C	3
MP36	B	86	102	8E	3
MP37	B	232	29	3E	5
MP40	B	150	70	9B	6
MP41	B	166	109	5C	5
MP55	B	138	51	5A	6
MP56	B	150	53	9E	6
MP57	B	138	81	11F	6
MP58	B	143	81	10D	6
MP68	B	266	113	10E	5
MP70	B	192	138	3F	2
MP80	B	178	139	12D	2
P30	B	237	127	7C	2
R405	B	234	32	4E	5
R440	B	179	109	5C	5
R476	B	248	111	10C	5
T405	B	218	49	4E	5
X15A	B	166	135	9E	2
X15B	B	163	135	9E	2
X15C	B	166	137	9E	2
X20A	B	240	122	7B	2
X20B	B	237	122	7B	2
X20C	B	237	124	7B	2
X20D	B	240	124	7B	2
X30A	B	108	138	8B	2
X30B	B	108	141	8B	2
X47A	B	242	94	12C	5
X47B	B	242	91	12C	5
X47C	B	239	91	12C	5
X47D	B	239	94	12C	5
X50A	B	80	125	11C	2
X50B	B	77	125	11C	2
X50C	B	80	128	11C	2
X50D	B	77	128	11C	2
X90A	B	189	11	1C	6
X90C	B	189	11	1D	6
X91	B	17	15	12D	4
X97	B	271	15	1E	5
X99	B	296	15	2B	2
Z90	B	277	46	2C	2
Z405	B	204	25	2D	5
Z520	B	197	37	4D	6
Z521	B	146	37	4D	6
Z522	B	192	37	4C	6
Z523	B	141	37	4C	6
Z524	B	136	37	4B	6
Z580	B	202	37	4F	6
Z581	B	131	37	4F	6
Z582	B	126	37	4E	6
Z583	B	93	33	4E	6
Z584	B	93	28	4A	6

Nicht-Service-Relevante Bauteile / Non-Service-Relevant Components

Part	Side	X	Y	Sqr	Pg
C1	B	291	26	2B	2
C3	B	285	41	3B	2
C4	B	300	48	4C	2
C5	B	292	46	3B	2
C6	B	296	60	4B	2
C8	A	193	129	8E	2
C10	A	204	135	3D	2
C11	B	213	137	7E	2
C12	A	190	136	7E	2
C15	A	166	124	9E	2
C18	A	168	135	10E	2
C19	A	181	127	11E	2
C20	B	243	139	7B	2
C21	B	241	139	7B	2
C22	B	279	126	6B	2
C23	B	273	124	6C	2
C24	B	258	124	6C	2
C25	B	264	126	6B	2
C26	B	248	126	7B	2
C27	A	137	129	2D	2
C28	B	273	127	6C	2
C30	B	108	135	8B	2
C31	B	100	129	9C	2
C34	A	123	123	8B	2
C38	B	108	124	8C	2
C39	B	129	140	7B	2
C50	B	82	131	11B	2
C51	B	90	131	10B	2
C52	B	90	125	10C	2
C70	B	283	136	3E	2
C71	B	247	137	2E	2
C72	B	265	138	3F	2
C73	B	236	133	1E	2
C80	B	175	140	12D	2
C90	A	218	129	11D	2
C91	A	231	129	11C	2
C100	B	57	135	2E	3
C101	B	68	119	3D	3
C104	B	56	111	4E	3
C105	B	56	110	4E	3
C106	B	53	103	4E	3
C107	B	55	102	5D	3
C108	B	73	107	7B	3
C119	B	68	93	7F	3
C120	B	27	130	2B	3
C121	B	16	125	3B	3
C122	B	12	127	2B	3
C123	B	16	110	4B	3
C124	B	26	116	4B	3
C125	B	25	115	4B	3
C126	B	23	108	4B	3
C127	B	25	107	5B	3
C128	B	39	95	7C	3
C140	B	37	113	10D	3
C141	B	48	96	10D	3
C142	B	38	92	10C	3
C143	B	57	82	11D	3
C144	B	27	96	11C	3
C210	B	74	74	2A	4
C236	A	33	14	11D	4
C250	A	61	82	3E	4
C251	B	51	72	3D	4
C255	B	69	72	2D	4
C257	A	28	82	4E	4
C259	B	34	47	7D	4
C260	B	29	64	4D	4
C261	B	23	51	6D	4
C263	B	45	47	8D	4
C264	A	31	30	7D	4
C265	B	23	64	5D	4
C266	A	24	64	6D	4
C268	A	39	48	8D	4
C269	A	15	70	4E	4
C271	A	32	65	4B	4
C272	B	41	69	4C	4
C273	B	54	61	5C	4
C274	B	67	55	6C	4
C275	B	84	52	7C	4
C276	A	77	62	7B	4
C277	A	62	40	8B	4
C279	A	54	51	5B	4
C280	B	63	35	9D	4
C281	A	41	26	10D	4
C282	B	50	13	10D	4
C283	B	20	22	11C	4
C284	B	24	32	11C	4
C285	B	65	30	9D	4
C286	B	67	44	8C	4
C287	B	68	13	9D	4
C288	B	26	51	6D	4
C289	B	67	57	6C	4
C290	B	24	21	11D	4
C291	B	41	22	10D	4
C292	A	43	65	5B	4
C294	A	57	63	6C	4
C295	A	50	60	5A	4
C400	B	271	23	1E	5
C401	B	239	42	2F	5
C402	B	252	48	1F	5
C403	A	236	48	2F	5
C404	B	251	22	2E	5
C405	B	232	22	3E	5
C406	B	252	41	1F	5
C407	B	218	39	4E	5
C408	B	218	45	4E	5
C409	B	214	30	4F	5
C420	B	217	69	5E	5
C421	B	221	69	5E	5
C422	A	220	83	6E	5
C429	B	127	96	3B	5
C430	B	76	82	2B	5
C431	B	106	96	3B	5
C432	B	113	96	3B	5
C433	B	120	96	3B	5
C434	B	146	96	4B	5
C435	B	164	96	5B	5
C436	B	179	96	6B	5
C437	B	197	96	6B	5
C438	B	204	96	7B	5
C439	B	203	109	6A	5
C440	A	187	102	6C	5
C441	A	104	107	2C	5
C442	A	137	107	4C	5
C443	B	170	106	5B	5
C445	A	247	93	11D	5
C448	B	244	70	8E	5
C449	B	238	72	7D	5
C450	A	241	75	7E	5
C451	B	247	67	8E	5
C453	B	241	80	7E	5
C454	B	271	67	9E	5
C455	B	275	74	9E	5
C456	B	269	80	9E	5
C457	B	274	95	10E	5
C458	B	275	89	10E	5
C459	B	267	104	10E	5
C460	B	252	78	10D	5
C461	B	252	81	10D	5
C462	B	265	77	9E	5
C463	B	257	94	10D	5
C465	A	228	85	7E	5
C466	B	238	85	7E	5
C468	B	268	60	9E	5
C470	B	251	92	8B	5
C471	B	242	100	11D	5
C472	B	237	103	10C	5
C478	B	252	100	11C	5
C479	B	263	102	11C	5
C485	B	262	83	9C	5
C495	B	276	95	10E	5
C498	B	224	20	4D	5
C499	B	232	17	3E	5
C545	A	114	72	8D	6
C551	A	168	66	11E	6
C554	A	171	72	8C	6
C561	A	146	57	9E	6
C562	A	152	63	9E	6
C565	B	128	72	11C	6
C567	A	157	66	11D	6

ROHDE & SCHWARZ	-I	Datum Date	XY-Liste für XY-list for	Sach-Nummer Stock-Nr	Blatt Page
	07	07.04.94	EE SUMMIERSCHLEIFE SUMMING-LOOPS	1038.7196.01 XY	2+

Part	Side	X	Y	Sqr	Pg
C570	B	187	61	9D	6
C571	B	134	68	9C	6
C573	B	93	66	11D	6
C579	A	150	76	9B	6
C580	B	191	29	4F	6
C581	B	134	34	4F	6
C582	B	119	32	4E	6
C583	B	119	21	4E	6
C584	B	98	25	4A	6
C589	B	134	19	3E	6
D1	B	289	107	5B	2
D10-A	B	197	137	6E	2
D10-B				3D	2
D20-A	B	131	135	4F	2
D20-B				2D	2
D260	B	28	61	5D	4
D270	B	57	60	5C	4
D500-A	B	160	26	2D	6
D500-B				2C	6
D530-A	B	106	70	6E	6
D530-B				10D	6
D531-A	B	106	57	6D	6
D531-B				11D	6
D532-A	B	187	67	6C	6
D532-B				10D	6
D533-A	B	196	76	6B	6
D533-B				9D	6
D540-A	B	124	70	7E	6
D540-B				11C	6
D545-A	B	126	57	7F	6
D545-B				8C	6
D545-C				11B	6
D545-D				11B	6
D545-E				9C	6
D560-A	B	149	57	9F	6
D560-B				9E	6
D560-C				10C	6
D570-A	B	147	70	9B	6
D570-B				10F	6
D570-C				11F	6
D570-D				10B	6
D570-E				10C	6
L6	B	292	63	4B	2
L18	B	162	128	11F	2
L20	B	281	122	5B	2
L21	B	266	122	6B	2
L22	B	251	122	7B	2
L26	B	243	122	7B	2
L90	B	274	46	2C	2
L91	B	288	51	3C	2
L100	B	59	136	2E	3
L102	B	60	116	3E	3
L103	B	54	109	4E	3
L105	B	63	106	5E	3
L109	A	76	97	7B	3
L120	B	25	131	2B	3
L122	B	24	124	3B	3
L123	B	23	114	4B	3
L125	B	32	111	5B	3
L140	B	45	97	10D	3
L160	B	55	125	2C	3
L161	B	29	130	2D	3
L179	B	57	31	8B	4
L250	B	55	76	3D	4
L251	A	70	79	3E	4
L256	B	19	79	4E	4
L260	B	34	41	7D	4
L261	A	37	30	7E	4
L262	A	45	30	7E	4
L263	B	46	53	8C	4
L264	B	86	41	7B	4
L268	B	41	41	8D	4
L269	B	26	67	4D	4
L271	B	38	65	4B	4
L272	B	48	65	5B	4
L277	B	60	41	8B	4
L280	B	57	16	10D	4
L285	B	27	15	11D	4
L286	A	36	11	10E	4
L293	B	81	58	7B	4
L401	B	226	13	3E	5
L404	B	203	29	2D	5
L405	B	213	18	2D	5
L430	B	102	99	3C	5
L431	A	112	111	3C	5
L432	A	132	107	3C	5
L433	B	142	99	4C	5
L434	B	194	99	6C	5
L435	A	180	102	6C	5
L450	A	247	72	7E	5
L451	A	257	77	7F	5
L452	B	271	86	10E	5
L453	B	271	102	10E	5
L454	B	244	83	8E	5
L456	B	236	78	7E	5
L570	B	181	58	9D	6
L580	B	199	33	4F	6
L581	B	141	32	4F	6
L582	B	110	32	4E	6
L583	B	127	32	4E	6
L584	B	105	32	4A	6
L589	B	132	15	4E	6
MP21	B	75	61	3A	4
MP34	B	93	122	9C	2
MP67	B	247	80	8E	5
MP69	B	237	94	12C	5
N10	B	185	135	7E	2
N15-A	B	181	127	8E	2
N15-B				11D	2
N15-C				11F	2
N17	B	227	129	10C	2
N30	B	121	127	7C	2
N140	B	41	105	10D	3
N250	B	63	72	2D	4
N260	B	26	44	6D	4
N270	B	73	55	6C	4
N280	B	65	13	9D	4
N290	B	38	22	10D	4
N430	B	94	96	2B	5
N435	B	134	96	4B	5
N438	B	186	96	6B	5
N470	B	248	102	11C	5
N550-A	B	157	66	7C	6
N550-B				7C	6
N550-C				11E	6
KP1	B	17	20	11D	4
KP2	B	17	22	11D	4
KP3	B	20	27	11C	4
KP4	B	42	88	10D	3
KP5	B	209	96	7B	5
P9	B	297	47	4C	2
P32	B	144	126	11C	2
P33	B	155	124	9F	2
P40	B	150	73	9B	6
P55	B	138	54	5A	6
P56	B	153	53	9E	6
P57	B	135	81	11F	6
P58	B	140	81	10D	6
P70	B	192	141	3F	2
P80	B	181	139	12D	2
R1	B	292	21	2B	2
R3	B	291	33	2B	2
R4	B	285	38	3B	2
R5	B	292	41	3C	2
R7	B	299	36	3B	2
R8	B	199	126	8F	2
R9	B	292	52	4B	2
R10	B	207	126	3E	2
R11	A	211	140	7F	2
R12	A	201	140	7F	2
R13	A	190	133	8E	2
R14	A	178	123	8E	2
R15	A	162	130	9E	2
R16	A	163	124	9F	2
R17	A	166	132	9E	2
R18	A	166	127	9E	2
R19	A	186	138	11E	2
R20	A	195	140	6F	2
R21	B	127	132	6D	2
R22	B	123	130	7C	2
R23	A	135	125	2D	2
R25	B	246	126	7C	2
R27	A	119	137	7B	2
R28	B	127	121	7B	2
R29	B	295	114	5B	2

ROHDE & SCHWARZ	-I	Datum Date	XY-Liste fnr XY-list for	Sach-Nummer Stock-Nr	Blatt Page
	07	07.04.94	EE SUMMIERSCHLEIFE SUMMING-LOOPS	1038.7196.01 XY	3+

Part	Side	X	Y	Sqr	Pg
R30	B	112	138	8B	2
R31	B	100	131	9C	2
R32	A	116	123	8B	2
R33	A	123	126	9B	2
R34	A	123	121	8B	2
R35	A	113	138	8B	2
R36	A	123	130	8B	2
R38	A	113	122	7C	2
R39	A	129	140	7B	2
R40	A	149	140	9D	2
R41	A	149	137	9D	2
R42	A	149	135	9D	2
R43	A	123	133	9E	2
R44	A	140	134	9C	2
R45	A	141	138	9C	2
R46	A	146	134	9D	2
R47	A	149	130	8D	2
R48	A	152	132	8D	2
R49	B	100	135	9B	2
R50	B	87	125	11C	2
R51	B	93	125	9C	2
R52	B	91	140	10B	2
R53	A	102	140	10B	2
R54	A	104	124	9B	2
R55	A	105	135	10B	2
R56	A	102	138	10B	2
R57	A	106	124	9B	2
R58	A	149	127	11C	2
R59	A	160	124	9F	2
R60	B	140	131	5E	2
R61	B	140	133	5E	2
R62	B	140	136	5E	2
R63	B	140	128	5E	2
R64	B	127	135	5E	2
R65	B	127	124	5E	2
R66	B	133	137	5E	2
R67	B	127	127	5E	2
R68	A	132	123	4E	2
R70	A	269	137	2E	2
R71	A	261	132	3E	2
R72	A	263	137	2E	2
R73	A	255	137	2F	2
R75	B	292	43	3C	2
R76	B	163	137	9E	2
R77	B	162	132	9E	2
R78	B	235	138	1F	2
R79	B	235	135	1E	2
R80	A	175	126	10E	2
R81	A	175	128	11D	2
R82	A	175	136	11E	2
R83	A	178	133	11E	2
R84	A	173	131	11D	2
R86	B	103	130	9B	2
R89	B	288	81	5B	2
R90	B	222	126	11D	2
R91	B	214	133	10C	2
R92	B	115	141	10C	2
R93	B	238	139	10C	2
R94	A	216	125	11D	2
R95	A	234	129	11C	2
R96	B	140	138	7D	2
R97	B	145	141	7D	2
R98	A	132	137	7D	2
R99	B	292	73	4B	2
R101	B	65	115	3D	3
R103	B	48	108	4E	3
R105	B	55	106	4E	3
R106	B	51	102	4F	3
R107	B	47	99	4F	3
R108	B	49	104	4F	3
R109	B	68	95	6E	3
R110	B	65	95	5E	3
R111	B	63	99	5E	3
R112	A	65	90	6E	3
R113	A	64	97	7E	3
R114	A	70	106	7E	3
R115	A	73	102	8E	3
R116	A	83	102	8E	3
R120	A	15	125	2B	3
R121	B	18	121	3B	3
R122	B	18	113	4B	3
R123	A	17	113	4B	3
R125	B	24	111	4B	3
R126	B	20	108	4C	3
R127	B	17	100	4C	3
R128	B	16	105	4C	3
R129	B	36	96	6C	3
R130	B	34	96	5C	3
R131	B	31	100	5B	3
R132	A	25	93	6B	3
R133	A	28	90	7B	3
R134	A	15	91	7C	3
R135	A	17	95	8C	3
R136	A	17	97	8C	3
R141	A	55	97	10D	3
R142	B	27	93	10C	3
R143	B	30	91	10C	3
R144	A	23	99	11C	3
R160	B	52	116	3C	3
R179	B	57	25	8B	4
R210	B	83	64	1B	4
R211	B	86	61	3B	4
R212	B	82	75	1B	4
R236	A	30	11	11E	4
R237	B	44	13	10D	4
R238	B	48	15	10D	4
R239	B	51	22	10D	4
R245	B	64	82	2D	4
R247	B	69	79	2D	4
R248	B	74	82	2D	4
R250	A	55	79	3D	4
R251	B	42	72	3D	4
R252	B	45	73	3D	4
R253	B	36	72	3D	4
R256	A	23	82	4E	4
R260	A	34	33	7E	4
R268	A	41	44	8E	4
R269	A	18	67	4E	4
R271	A	35	65	4B	4
R275	A	25	74	5E	4
R276	A	18	70	5E	4
R277	A	66	37	8B	4
R278	B	31	53	6D	4
R279	B	67	64	6B	4
R280	A	49	26	10E	4
R281	B	72	35	9D	4
R282	B	68	30	9D	4
R283	B	72	22	9D	4
R284	B	20	28	11C	4
R285	B	27	26	11C	4
R286	A	25	35	11C	4
R287	B	34	57	7D	4
R288	B	37	53	7D	4
R289	B	43	57	7D	4
R290	A	43	67	5B	4
R291	A	50	62	5B	4
R292	A	46	70	5B	4
R293	A	69	67	5C	4
R294	A	69	64	5C	4
R296	A	81	66	7B	4
R297	B	78	41	7B	4
R298	B	75	44	7C	4
R299	B	69	41	7B	4
R400	B	243	29	3D	5
R402	B	257	27	2E	5
R403	B	254	27	2E	5
R404	B	226	26	4E	5
R406	B	213	33	4F	5
R407	A	217	24	4F	5
R408	A	217	21	5F	5
R409	B	271	20	1D	5
R410	B	230	29	3E	5
R411	B	264	21	2E	5
R412	B	251	19	2E	5
R413	B	268	25	2E	5
R415	A	245	46	1F	5
R419	B	243	16	3E	5
R420	B	220	66	5E	5
R421	B	227	72	6F	5
R422	B	215	72	6E	5
R424	A	220	85	6E	5
R425	B	220	89	6E	5
R426	B	218	89	6E	5
R428	B	221	74	6E	5
R429	B	217	74	6E	5

ROHDE & SCHWARZ	-I	Datum Date	XY-Liste für XY-list for	Sach-Nummer Stock-Nr	Blatt Page
	07	07.04.94	EE SUMMIERSCHLEIFE SUMMING-LOOPS	1038.7196.01 XY	4+

Part	Side	X	Y	Sqr	Pg
R430	A	102	107	3C	5
R431	B	113	93	3B	5
R432	B	120	93	3B	5
R433	B	118	103	3B	5
R434	A	142	107	4C	5
R435	B	152	92	4B	5
R436	B	154	96	4B	5
R437	B	161	92	5B	5
R438	B	170	100	5B	5
R439	B	177	96	6B	5
R441	A	183	104	6C	5
R442	B	201	109	6B	5
R443	B	203	102	7B	5
R444	A	178	112	7A	5
R448	B	166	106	5C	5
R451	A	241	83	7E	5
R453	B	265	63	9E	5
R454	B	262	67	9E	5
R455	B	250	63	8E	5
R456	B	262	81	9D	5
R457	B	253	87	10D	5
R458	A	251	90	10D	5
R459	A	257	93	10D	5
R460	B	253	72	8E	5
R465	B	262	78	9D	5
R467	B	267	63	9E	5
R468	B	266	110	10E	5
R469	B	245	89	8D	5
R471	B	245	73	8C	5
R472	B	248	91	8B	5
R473	B	242	107	11D	5
R474	B	248	107	10C	5
R475	B	241	110	10C	5
R477	B	238	106	10C	5
R478	A	260	98	11D	5
R479	A	258	106	11C	5
R480	B	238	78	7E	5
R481	A	240	70	7D	5
R482	B	269	110	11E	5
R483	B	271	107	11E	5
R485	B	262	87	9C	5
R486	B	277	110	11E	5
R499	B	229	38	4F	5
R500	B	150	15	2D	6
R501	B	150	17	2D	6
R502	B	150	20	2D	6
R503	B	150	22	2D	6
R504	B	150	25	2D	6
R505	B	150	27	2D	6
R506	B	150	30	2D	6
R508	B	150	32	2C	6
R509	B	150	35	2C	6
R510	A	184	17	3D	6
R511	A	184	19	3D	6
R512	A	184	22	3D	6
R513	A	183	24	3D	6
R514	A	184	27	3D	6
R515	A	182	29	3D	6
R516	A	184	32	3D	6
R517	A	184	34	3D	6
R518	A	176	18	3C	6
R520	A	184	14	4D	6
R521	B	154	37	4D	6
R522	A	184	37	4C	6
R523	B	145	29	4C	6
R524	B	145	21	4B	6
R525	B	197	47	5D	6
R526	B	146	47	5D	6
R527	B	192	47	5C	6
R528	B	141	47	5C	6
R529	B	136	47	5B	6
R530	B	96	66	6F	6
R531	A	178	62	5C	6
R533	A	96	63	6D	6
R534	A	200	69	5B	6
R545	A	114	70	8D	6
R546	A	118	67	8D	6
R547	A	118	75	8E	6
R550	A	161	72	7D	6
R551	A	161	66	7C	6
R552	A	165	60	7B	6
R553	A	166	72	8D	6
R554	A	169	69	8C	6
R555	A	171	60	7B	6
R556	A	164	69	8C	6
R560	A	156	58	9F	6
R561	A	156	56	9E	6
R562	A	145	70	9E	6
R563	A	147	70	9D	6
R564	A	147	79	9D	6
R565	A	129	81	12C	6
R567	B	174	53	11E	6
R568	A	122	77	12B	6
R569	A	139	77	9D	6
R571	A	130	64	12D	6
R572	A	154	66	11E	6
R579	A	152	82	9B	6
V1	B	293	36	3B	2
V40	A	155	141	9D	2
V41	A	116	128	10E	2
V42	A	144	139	9C	2
V43	A	145	128	8D	2
V44	B	98	135	9B	2
V47	A	123	138	10D	2
V50	B	85	139	11B	2
V51	B	93	139	10B	2
V52	B	82	128	11C	2
V53	A	103	130	9B	2
V54	A	96	138	10B	2
V55	B	104	142	9B	2
V56	B	160	137	9E	2
V57	B	159	135	9E	2
V70	A	258	135	3F	2
V75	A	255	140	2E	2
V78	B	229	137	2E	2
V79	B	236	140	2E	2
V85	B	182	124	10D	2
V95	B	138	141	7D	2
V100	B	57	117	2E	3
V101	B	58	114	3E	3
V105	B	57	103	4E	3
V106	B	66	104	6E	3
V107	A	65	94	6E	3
V108	A	70	101	7E	3
V120	B	27	131	2B	3
V122	B	24	121	3B	3
V125	B	27	108	4B	3
V126	B	34	106	6B	3
V127	A	32	94	6C	3
V128	A	17	92	7C	3
V140	B	33	90	10C	3
V210	B	79	72	2B	4
V211	B	77	64	1B	4
V259	B	24	72	4F	4
V260	B	29	71	4D	4
V270	B	34	71	4C	4
V275	A	25	68	5E	4
V276	B	50	36	8C	4
V277	B	45	36	8D	4
V278	B	40	34	8F	4
V279	B	47	50	7D	4
V280	B	51	67	4D	4
V285	B	25	28	11C	4
V287	A	59	65	5C	4
V400	B	261	19	2E	5
V401	B	218	36	4E	5
V402	A	247	43	2F	5
V403	B	211	41	4F	5
V405	B	245	19	3E	5
V406	B	248	26	3D	5
V407	B	240	19	3E	5
V408	B	235	23	3D	5
V420	B	220	79	6E	5
V421	B	220	84	6E	5
V440	B	174	96	5B	5
V445	B	198	101	6B	5
V450	B	238	82	7E	5
V453	B	244	78	8E	5
V455	B	252	69	8E	5
V456	B	265	75	9D	5
V457	B	253	83	10D	5
V554	B	176	71	8C	6
V565	B	119	81	12B	6
X16A	B	149	124	8D	2
X16B	B	151	124	8D	2

ROHDE & SCHWARZ	-I	Datum Date	XY-Liste für XY-list for	Sach-Nummer Stock-Nr	Blatt Page
	07	07.04.94	EE SUMMIERSCHLEIFE SUMMING-LOOPS	1038.7196.01 XY	5-

14m