ROHDE&SCHWARZ

SERVICE DOCUMENTS

RF-Oscillators

819.8262.02

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5 Service Manual "RF Oscillators"

5.1 Function Description

(See circuit diagram 819.0010 FS)

The RF oscillator subassembly contains the three oscillators for the frequency band from 1000 to 2160 MHz from which the output signal is derived. The subassembly also contains the associated presetting and synchronization circuits.

A pulse train with a frequency of 40 to 41.6 MHz and a peak voltage of approx. -3 V is applied by subassembly A10 (summing loops) to input X101. The oscillators must be synchronized to the 25th to 53rd harmonics of this pulse train.

A 200-ps pulse is generated using a step recovery diode. The pulse train is fed into a harmonic mixer (sampler) acting as a phase detector for the PLL of the RF oscillators. Since synchronization would be possible at any input signal harmonic, a presetting circuit forces the oscillator to synchronize at the correct harmonic. This is achieved using a programmable divider - whose division ratio corresponds to the order of the desired harmonic - and using two frequency ramp circuits. The fast circuit ignores possible locking points of the PLL, the slow circuit does not.

If the oscillator is to be synchronized to a new harmonic, the fast frequency ramp is activated until just before the new harmonic is reached. The slow frequency ramp then takes over until the PLL has locked-in. This is determined by a circuit which constantly monitors the output voltage of the phase detector and which switches off the presetting circuit following a short protection time.

5.1.1 Oscillators

(Circuit diagram 819.8262, sheet 1)

The three oscillators (negative impedance type, V5, V25, V55) are turned on by the signals ENA.0S1 to ENA.0S3 and are each stabilized at the operating point by a current injection circuit. The oscillator which is on is connected by means of a diode (V8, V28, V58) to the RF driver V72 which distributes the signal to the PLL driver (N125 ff), the RF divider (D71) and the output (N73, X111).

5.1.2 PLL

(Circuit diagram 819.8262, sheet 2)

The RF signal from the oscillators (RF.PLL) is applied to the sampler via the four-stage PLL driver. The RF level ahead of the sampler is measured by the detector V128 (V129 for temperature compensation) and kept constant by means of the control amplifier N128 and the PIN diodes V125.

The pulses from the summing loops (A10) are limited and amplified by the pulse driver V102. V103 generates a bias current which can be adjusted using R106 (SRD BIAS). The step recovery diode V104 can thus be triggered and supplies the sampler with 200-ps pulses via the balancing transformer T102.

The output voltage of the sampler is applied to the integrator via the voltage follower V160. A dual transistor is used for stability. The sampler and amplifier offsets are compared at the second transistor (V160-B) by means of R164 (OFFSET). The asynchronous detector is fed via V161 (IF) and the input capacitance of V160-A is compensated (C163).

The currents (PRE.INT) from the presetting circuit are fed to the integrating capacitor C168 giving a voltage ramp which results in a frequency change.

The pull-in slopes of the oscillators are adjusted using the trimming potentiometers R202 to R204 (FMAX: OS1 OS2 OS3) in the control voltage switch. The emitter follower V183 is followed by a bandwidth selector (V184, V185) for the PLL. The small bandwidth gives better spectral purity, the large bandwidth enables large FM dviations with high modulation frequencies. The capacitor C174 is charged rapidly by means of V450 when changing the harmonic.

5.1.3 Monitoring and Presetting Circuit

(Circuit diagram 819.8262, sheet 3)

The output voltage of the sampler (IF) is applied to the asynchronous detector (D180 to D182) via a lowpass/highpass combination. D180 A-B is a Schmitt trigger circuit, D181 and D182 give a "time threshold" so that only signals with frequencies above 1 MHz trigger the asynchronous detector. This prevents an FM signal from resulting in incorrect triggering. D181-B delivers the signal ENA.DIV for turning on the presetting circuit and delaying turning off the presetting circuit so that the PLL does not unlock again during the switching process. The processor switches the presetting circuit on via D180 C-D if the harmonic is changed. This ensures that a new setting is triggered even when frequency jumps of exactly one locking point occur.

In order to force synchronization to the correct harmonic, an appropriate division factor is set on a programmable divider (M divider, D202 to D204). The output of this divider is compared with the frequency from the 40-MHz divider (D205, D206) - the pulse frequency from input X101 divided by 32 - by means of the difference frequency detector D208 A-B. The output voltage from this detector is evaluated by a window comparator (N201) and leads to application of a large current in the appropriate direction (fast ramp) to the integrator until the difference in frequency is so small that the voltage is within the window again.

There is a digital/analog directional detector (D207, D209-C, N200) in parallel with the analog difference frequency detector.

The output voltage of the directional detector changes the logic level if the frequencies are the same and controls the direction of the slow ramp which brings the frequency into the capture range of the PLL.

The PLL then locks, the signal of the detection circuit drops and the ramp currents and dividers are switched off again after the delay provided by D181-B.

5.1.4 Data Transmission, Power Supply

(Circuit diagram 819.8262, sheet 4)

The data (TF.DAT) and clock (TF.CLK) lines of the serial data bus are buffered by D350 and supply the latches D212 and D213. The data is transferred on the positive slope of the strobe which is decoded in decoder D351 from the subassembly address (BA0 to BA2) and the group line (G0).

Eight test points on the subassembly can be connected to the diagnostics line TST (X11A17) by means of D214 (diagnostics multiplexer). The alarm detector N350 and the asynchronous detector (V190, sheet 3) can set the alarm line ALA (X11A18), and the status LED on the front panel then flashes to signal the faulty function. Fault 47 is displayed during the status poll if the processor finds that the subassembly is faulty by means of its diagnostics routine.

The attenuator control (N202) generates the control voltages for the attenuators and diode switches on sheet 1. V350 powers all integrated RF amplifiers on the subassembly.

5.2 Testing and Adjustment

All results without tolerances must be considered as approximate values. Unless otherwise stated, voltages are DC voltages.

The Service Kit SMGU-Z1 contains an adapter for making connections to the subassembly. The adapter is plugged into the chassis instead of the subassembly and the RF connections made again to the female connectors on the base. The subassembly can then be plugged onto the adapter.

The kit also contains a probe which can be connected to a plug on the top right-hand edge of subassembly A5 (processor) and which enables special function 101, DC voltage measurements in the range -40 to +40 V. The result is output in the level display and can be polled via the IEC bus.

5.2.1 Oscillators, RF Driver, RF Divider (sheet 1)

5.2.1.1 Testing and Adjustment of the Oscillators

The first oscillator is switched on at the frequency setting RF 1200 MHz, the second oscillator at RF 1600 MHz and the third at RF 2 GHz. The other two oscillators are switched off in each case.

Using the 1st oscillator as an example, the data for the oscillator when switched on and off are listed below. These values should be found for the other two oscillators.

Signal at	Measured value "On"	Measured value "Off"
ENA.OS1 D215-A/14	>2,5 V (High)	<0,8 V (Low)
UB.OS1 P1	-14,5 V	0,8 V
Emitter V6	-12 V	
Emitter V5	-5 V	
Emitter V7	-5,7 V	
Output N1	4,5 V	4,5 V

Oscillator adjustments

Pull out jumper X161 and connect a DC voltage source (0 to 25 V) to X160/2. Connect a spectrum analyzer with synthesizer tuning and frequency counting function to output X111.

First set the lower cutoff frequency with a DC voltage of 1.8 V, and then the upper cutoff frequency with a DC voltage of 21 V for each oscillator.

Adjustment table

	f(1,8 V)	at	f(21 V)	at
Oscillator 1	1000 MHz	C1	1400 MHz	R202
Oscillator 2	1400 MHz	C21	1800 MHz	R203
Oscillator 3	1800 MHz	C51	2170 MHz	R204

The screening cover on the component side must be screwed on during the adjustment.

Check each oscillator over the whole tuning range for sidebands and increased noise using the spectrum analyzer (spans same as tuning range). These effects may be caused by faulty oscillator capacitors and the output stage.

5.2.1.2 RF Driver

Independent of the setting:
Emitter V72 560 mV
Collector V72 7 V

5.2.1.3 RF Divider

The divider is switched on at a frequency setting of RF 800 MHz and off at RF 1200 MHz.

Signal at		Measured value "On"	Measured value "Off"
SWI.DIV	P209	13 V	-13 V
SWI.RAN	P210	13 V	-13 V
D71/1		4,8 V	0 V
N71..73/3		4,5 V	4,5 V

5.2.1.4 Testing the RF Path up to the Output

A qualitative test is possible on the spectrum analyzer using an RF probe. It is essential to ensure that the ground connection is short and of low impedance (copper band).

The gain of the integrated amplifier MSA 0404 should be approx. 6 dB, that of MSA 0304 approx. 8 dB.

The level at the collector of the RF driver should be 7 to 10 dBm.

The level at output X111 should be between 3 and 9 dBm.

5.2.2 PLL (sheet 2)

5.2.2.1 PLL Driver

N125 to 127/3	4.5 V
Collector V127	7 V
Emitter V127	560 mV

Special diagnostics function 150 must indicate a constant voltage at all frequency settings (range 0 to 110 mV).

Output N128/6 must remain in the range from 0.8 to 12 V at all frequency settings.

5.2.2.2 Pulse Driver, Adjustment of R106

There must be no current at V102 if an input signal is not applied (voltage at emitter <150 mV).

The voltage at collector V103/1 should vary from approx. 1 to 11 V when potentiometer R106 is rotated through its complete range.

The low-voltage end of R121 should be 1.15 V and -1.15 V at R114.

Adjustment of SRD bias using R106

A correctly set input signal (see subassembly A10, summing loops) must be present at input X101 with a frequency setting of RF 1020 MHz. The test voltage of the diagnostics detector V105 can be displayed using special function 155.

R106 should be set such that this voltage is a maximum; the maximum must be above 3 V.

5.2.2.3 Sampler, Adjustment of R152

Pull out jumper X161 at a frequency setting of RF 1200 MHz and connect a variable DC voltage source to X160/2. Observe the voltage at P159 (emitter of V161) on an oscilloscope and slowly vary the DC voltage from 0 to 22 V.

The IF voltage should reach a maximum of 600 to 800 mV (V_{pp}) approx. every 2 V. The trace should be sinusoidal. Large changes in the slope must not take place, especially at zero crossings.

Repeat the measurement with frequency settings of RF 1600 MHz and RF 2 GHz.

The nominal IF level value is set at R152. The control voltage must be checked after the adjustment (cf. section 5.2.2.1).

Distortions occurring even with low levels indicate a fault in the RF amplifiers whereas level frequency response is the result of a malfunction in the pulse driver or sample bridge circuits, provided that the PLL driver functions correctly (cf. section 5.2.2.1).

5.2.2.4 Voltage Follower, Adjustment of R164

The source voltages of V160/1 and /7 should be between 1 and 3 V without a signal at X101.

Offset checks and adjustments using R164

Requirement: correct signal at input X101, the SRD bias (see above) should already have been adjusted using R106.

Preparation: pull out jumpers X122, X161 and X166, connect X165/2 to ground so that the presetting circuit does not respond.

The voltage at V187 can now be measured using special function 153 and recorded as the reference. Then measure the voltage at V169 using special function 154 and adjust to the same value using R164 (offset) if there are deviations >30 mV. Insert the jumpers again.

5.2.2.5 Integrator

Correct functioning of the integrator can be tested when you adjust the offset using R164 (see above). Connect an oscilloscope or voltmeter to X160/1 and observe how the output voltage jumps between -4 and +23 V when R164 is adjusted.

Voltage at C167: -5 V
The voltages at the emitter of the current sources V168 and V170 must be approx. 1 V above the voltage at C167.

The voltage drop across R180 and R181 should be approx. 100 mV.

5.2.2.6 Control Voltage Switch

One of the three lines UB.OS1 to UB.OS3 is connected to -15 V depending on which oscillator is selected (see 5.1.1), and the associated transistor V178 to V180 goes off so that the gate-source voltage of the corresponding field-effect transistor V175 to V177 is zero, and the transistor is then on. The gate voltage goes to -15 V for the other field-effect transistors so that they go off (test points P161 to P163).

5.2.2.7 Bandwidth Selector

V184 must conduct (gate at 0 V) and V185 must be off (gate at -13 V) in CW mode (FM OFF). The reverse is true in FM mode. V450 is normally off (gate at -13 V) and only conducts for the duration of the fast frequency ramp (max. 200 µs) when the frequency is switched over.

5.2.2.8 Measuring the Transfer Function

The transfer function need only be measured if there are problems with the settling time or if the status LED starts flashing with large FM spans although all other parts of the circuit are operating correctly.

To measure the transfer function, a 10-kΩ resistor must be connected in parallel with the integrating capacitor C168 so that a DC operating point can be set.

Then disconnect the cable from X101, remove jumper X166, connect X165/2 to ground; X161 remains inserted.

Set operating point by adjusting R164 until approx. 1 to 3 VDC are present at P160.

The supply at V160/2 is 100 mVrms free of DC voltage components. The measurement is made at the cathode of V186 using a high-impedance probe with an input capacitance <40 pF.

The voltage measured at 1 kHz must be between 700 and 1100 mVrms and is the reference value for the transfer function.

Table of nominal values for the transfer function

Frequ./Hz	100	1k	1,8k	3,2k	5,6k	10k	18k	32k	56k
dB / FM EXT	0	-3,5	-8	-12	-18	-22	-24	-25	-25
dB / FM OFF	0	-3,5	-8	-12	-18	-25	-30	-35	-40
Frequ./Hz	100k	180k	320k	560k	1M	1,8M	3,2M	5,6M	10M
dB / FM EXT	-27	-30	-34	-37	-37	-37	-36	-35	-34
dB / FM OFF	-44	-46	-47	-48	-50	-52	-54	-55	-55

Remove the resistor when the measurements are complete and reset the offset correctly (see above).

5.2.3 Asynchronous Detector, Presetting Circuit (sheet 3)

5.2.3.1 Selection of Presetting Circuit

All dividers are switched off during synchronization, the ENA.DIV signal is low and P200 is at 0 Volt. The complete presetting circuit is continuous set in operation by repositioning jumper X166 to position 2-3 ("Divider on").

The PLL can now be disconnected by pulling jumper X161 (sheet 2) and the VCO can be tuned with a DC voltage applied to X160/2 (sheet 2). The set frequency is monitored using a frequency counter or spectrum analyzer at output X111.

The tuning range of the oscillators is shifted when the subassembly is open, and therefore at least the resonator chambers must be closed to test all settings.

Voltage at P200:

Jumper to X165 2-3 (divider on): 4.8 V
X165/2 to ground (divider off): 0 V

All following measurements are carried out in the position "Divider on".

5.2.3.2 RF Predivider, M Divider

With a frequency setting of RF 1015 MHz, also set this frequency at output X111 using the DC voltage at X160/2.

Using the spectrum analyzer and RF probe, test the divider stages up to D202/1 where the frequency must be 31.719 MHz. The frequency at P202 must be 1.26875 MHz. If the RF setting is now increased in steps of 40.6 MHz up to 2151.8 MHz and the corresponding frequency set each time at the output using the DC voltage, the frequency of 1.26875 MHz must always be present at P202.

5.2.3.3 40-MHz Divider

The signal at input X101 must be correct and the adjustment of the SRD bias using R106 (5.2.2.2) must have been carried out.

<0.8 V and >2.5 V must be achieved for the low and high levels respectively at the divider input D205/3 (40 MHz, use a suitable oscilloscope with appropriate probe). The frequency at P203 must be 1.26875 MHz with the frequency set to RF 1015 MHz.

5.2.3.4 Frequency Detector and Direction Detector

Testing and adjustment of frequency detector (F-DET.NULL) using R295.

The output frequency of the 40-MHz divider is applied to both inputs of the frequency detector by moving jumper X200 to position 2-3.

Approximately equal DC voltages of approx. 2.5 V must then be present at test points P206 and P207. Then set the voltage (P158) to 0 ±20 mV using R295.

There should be a voltage of +0.32 ±0.01 V at pin 2 on comparator N201 and a voltage of -0.32 ±0.01 V at pin 12.

Reinsert jumper X201 at position 1-2. With the frequency set to RF 1218 MHz, set the output frequency to the same value again using the applied DC voltage

Both comparator outputs N201/4 and /9 must be high (>2.5 V), the switches D211C and D block and there should be approx. 1.5 V at P208.

If the oscillator frequency is now offset in both directions using the DC voltage, the voltage at the direction detector P204 must vary between +4.7 and -0.7 V and must change at P205 from +15 to -13 V. The output N201/4 must jump to low at approx. +13 MHz, and output 9 at -13 MHz. The associated switch D211-D or C must be active in each case so that +15 V are present at P208 in the first case and -13 V in the second case.

5.2.3.5 Asynchronous Detector

The asynchronous detector is tested using the same setup.

The same frequency (RF 1218 MHz) is set again at the output using the applied DC voltage, and then detuned.

When detuned by more than 500 kHz, square-waves with an amplitude of 5 Vpeak must be measured at the Schmitt trigger D180 using the oscilloscope at P164. The signal SYN at P165 must only jump to low at frequency differences above 1 MHz, which would cause the output signal of D181-B (at X165/1) to go high. If the frequency is detuned further until at a difference of 39.6 MHz the capture range of the adjacent locking point is reached, the signal at X165/1 must decrease while this is being done especially in the range around 20.3 MHz.

5.2.4 Data Transmission, Power Supply (sheet 4)

5.2.4.1 Data Transmission

The LSB of the lowest byte is the first to be transmitted. D212 therefore contains byte 2 and D213 contains byte 1 of the data record. The LSB of each byte is applied to Q8 (pin 11) of the corresponding latch, the MSB to Q1 (pin 4). See Section 5.4 for the settings and data.

5.2.4.2 Oscillator Decoder

The oscillator decoder selects one of the three oscillators.

RF setting	ENA.OS1	ENA.OS2	ENA.OS3
1200 MHz	1	0	0
1600 MHz	0	1	0
2000 MHz	0	0	1

"1" corresponds to 5 V, "0" corresponds to 0 V

5.2.4.3 Divider Controller

The RF divider is switched on at frequencies above 1 GHz only during the settling period, it is always on below this value.

To check the sweep mode, select RF SPAN and set SPAN 10 MHz, STEP 10 MHz, TIME/STEP 10 ms. The signal at P210 must be -13 V at a centre frequency RF/CF of 1400 MHz, and the voltage at P209 must jump from -13 to + 13 V for approx. 0.4 ms each time the frequency changes. Both signals must remain constant at + 13 V if an RF/CF of 700 MHz is now set.

5.2.4.4 Alarm Detector

The threshold voltages are 0.18 ± 0.005 V at N350/3 and 4.85 ± 0.1 V at N350/6.

To check the comparator, disconnect the cable from input X101, remove jumper X161 and apply a DC voltage to X160/2. The output N350/1/7 must go low (<0.8 V) at voltages below approx. 0.5 and above approx. 22 V.

5.2.4.5 Power Supply

Collector	V350	11.5 V
Base	V350	8.2 V
Emitter	V350	7.5 V

5.2.5 Checking the Closed PLL

All plug-in jumpers must be set to their normal positions (see 5.5); select the sweep mode CF SPAN by entering the following: SPAN 5 MHz, STEP 5 MHz, TIME/STEP 10 ms. Start the sweep with AUTO at RF 1 GHz. The resonator chambers must be closed.

Fig. 5.2-1 shows a typical frequency jump when an oscillator changeover occurs and the largest jump in the tuning voltage. The following events are indicated:

1 Strobe connected to subassembly, trigger point

2 Switch-on of ramp currents and accelerator V450
Switching-over to small control bandwidth

3 Switch-off of fast ramp and accelerator
Switching-over to large control bandwidth

4 PLL locks

5 Switch-off of presetting circuit, switching-over to small control bandwidth when FM OFF.

Typical times:

1-2	25 µs
2-3	0 to 150 µs (proportional to number of locking points covered)
3-4	0 to 200 µs
4-5	100 µs

A storage oscilloscope is ideal for recording the waveforms in Fig. 5.3-1 so that the timing of a single transient can be determined. The oscilloscope is triggered externally by the subassembly strobe which can be tapped at the feed-through filter Z352 (sheet 4). The RF setting should be increased in steps of 40 MHz up to 2120 MHz in order to check all possible locking points. The settling time must not be longer than 500 µs (typically 350 µs), the fast change in the control voltage at X160/1-2 must not take more than 200 µs.

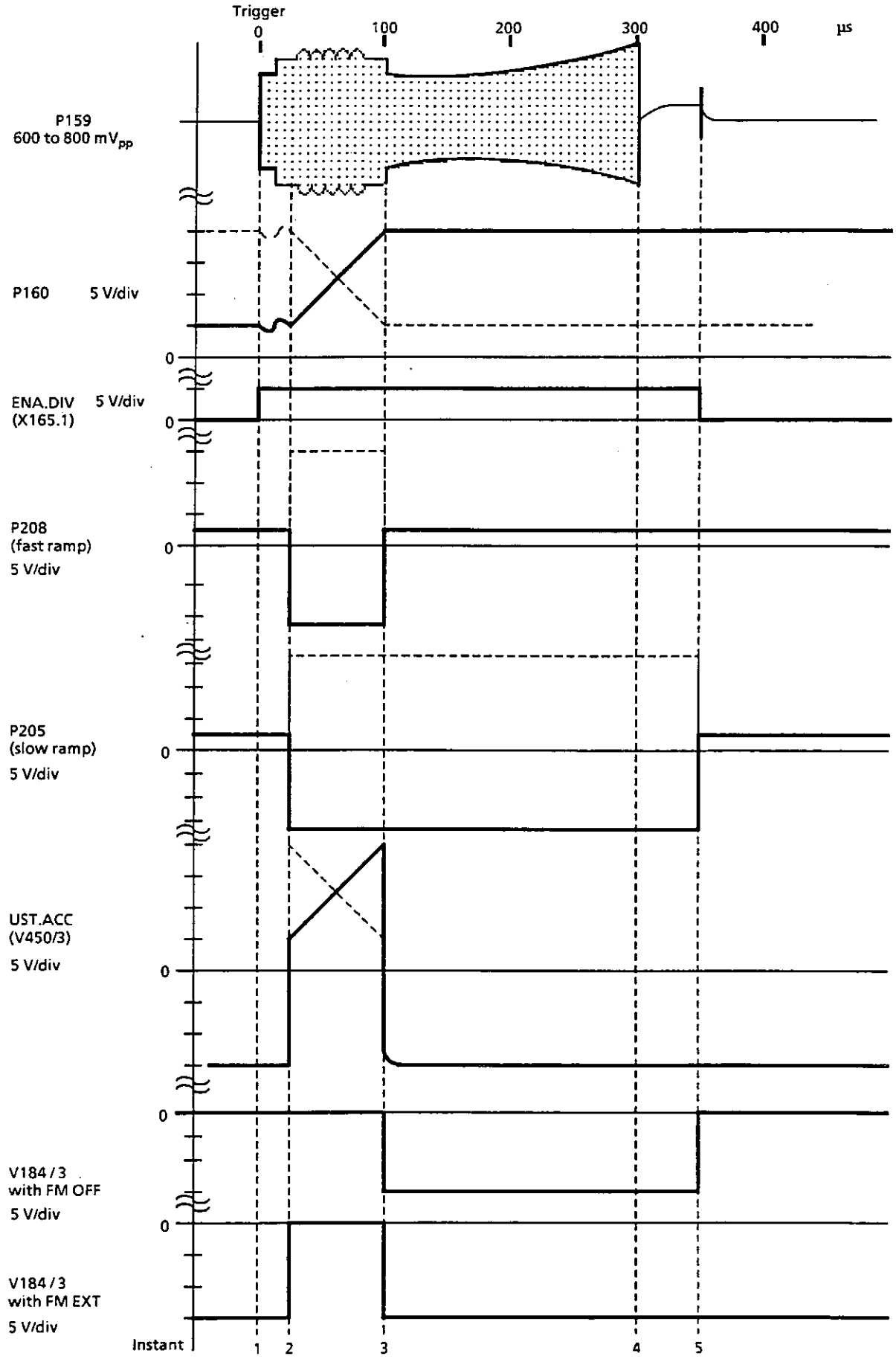


Fig. 5-2 Settling time traces

5.3 General Information, Troubleshooting

5.3.1 Switching Hysteresis

Harmonics and oscillator switchover has a hysteresis of 0.5 MHz. The 25th harmonic is used e.g. from 1000 to 1040.5 MHz, the 26th from 1040 to 1080.5 MHz. The RF divider is turned on at 1000 MHz and off at 1000.25 MHz.

5.3.2 Special Service Functions

All synthesized frequencies used in the device can be output on the RF/CF display using the service functions 78 to 85. The RF display appears when any other key is pressed.

Special function	Display
82	Frequency at input X101
83	Division factor for M divider (harmonic)
84	RF division factor
85	Oscillator frequency

The RF divider (sheet 1) is switched on at all RF division factors ≥2, it is switched off with a division factor 1.

5.3.3 Troubleshooting

To locate a fault, first examine the frequency settings at which faulty signals occur. Use a spectrum analyzer connected to output connector X111.

- **Frequency settings 1001 to 2159 MHz:**

The frequency does not change:

Check data transmission (5.2.4).

There are only 3 different frequencies:

Check sampler, integrator and presetting circuit (5.2.3), divider controller (5.2.4.3) and RF divider (5.2.1.3).

No signal in one or two thirds of the range:

Check oscillator decoder (5.2.4) and oscillators (5.2.1).

Sidebands and flashing status LED at ends of oscillator range:

Readjust oscillators (5.2.1.1).

Sidebands and flashing status LED in smaller ranges, frequency approx. 40 MHz out:

Check data transmission (5.2.4, D213) and M divider (5.2.3.2).

Synchronization errors, large settling time, spurious sidebands and flashing status LED with large FM deviations and high modulation frequency:

Check sampler, integrator, control voltage switch and bandwidth switch, measure transfer function (5.2.2).

Frequency correct, level too low:

Check RF path (5.2.1.4).

- **No signal at frequency settings below 1 GHz, ok otherwise:**

Check N72 and diode switch V79 from RF divider to output.

5.4 Interfaces

5.4.1 Digital Interface

Strobe G0, subassembly address 2 (010)

Byte	Bit	Function	1	0
Byte 2	D 7	ENA.DIA, switch on diagnostics	Off	On
	D 6	MSB, diagnostics, test point address		
	:			
	D 4	LSB, diagnostics, test point address		
	D 3	RBW.FST, control bandwidth of PLL	Wide	Narrow
	D 2	NEW.M, change in M factor	M new	M old
	D 1	MSB, oscillator selection		
	:			
	D 0	LSB, oscillator selection		
Byte 1	D 7	DIV. RF, switch on RF divider	On	Off
	D 6	MSB, M division factor N		
	:	:		
	:	:		
	D 3	LSB, M division factor N		
	D 2	MSB, M division factor A		
	:	:		
	D 0	LSB, M division factor A		

The M factor is expressed in terms of two factors (N and A) and sent to the M divider. The following relationships apply:

$N = INT(M / 5)$ $A = M - N * 5 + 1$ N and A are transmitted in binary form.

Setting table

Frequency / MHz	M	N	A	Osc.		Byte 2	Byte 1	Hex. code
				D1	D0			
1015	25	5	1	0	1	10001101	00101001	8D29H
1055,6	26	5	2	0	1	10001101	00101010	8D2AH
1096,2	27	5	3	0	1	10001101	00101011	8D2BH
1136,8	28	5	4	0	1	10001101	00101100	8D2CH
1177,4	29	5	5	0	1	10001101	00101101	8D2DH
1218	30	6	1	0	1	10001101	00110001	8D31H
1258,6	31	6	2	0	1	10001101	00110011	8D32H
1299,2	32	6	3	0	1	10001101	00110011	8D33H
1339,8	33	6	4	0	1	10001101	00110100	8D34H
1380,4	34	6	5	0	1	10001101	00110101	8D35H
1421	35	7	1	1	0	10001110	00111001	8E39H
1461,6	36	7	2	1	0	10001110	00111010	8E3AH
1502,2	37	7	3	1	0	10001110	00111011	8E3BH
1542,8	38	7	4	1	0	10001110	00111100	8E3CH
1583,4	39	7	5	1	0	10001110	00111101	8E3DH
1624	40	8	1	1	0	10001110	01000001	8E41H
1664,6	41	8	2	1	0	10001110	01000010	8E42H
1705,2	42	8	3	1	0	10001110	01000011	8E43H
1745,8	43	8	4	1	0	10001110	01000100	8E44H
1786,4	44	8	5	1	0	10001110	01000101	8E45H
1827	45	9	1	1	1	10001111	01001001	8F49H
1867,6	46	9	2	1	1	10001111	01001010	8F4AH
1908,2	47	9	3	1	1	10001111	01001011	8F4BH
1948,8	48	9	4	1	1	10001111	01001100	8F4CH
1989,4	49	9	5	1	1	10001111	01001101	8F4DH
2030	50	10	1	1	1	10001111	01010001	8F51H
2070,6	51	10	2	1	1	10001111	01010010	8F52H
2111,2	52	10	3	1	1	10001111	01010011	8F53H
2151,8	53	10	4	1	1	10001111	01010100	8F54H

5.4.2 Diagnostics

Spec. func.	Diag. Addr.	Test point	Measured value	Addr.
149	0	VCO control voltage	1 to 22 V	5
150	1	Level ahead of sampler	0 to 110 mV	1
151	2	Power supply to RF amplifier	7 to 7.5 V	5
152	3	PLL alarm	-50 to 800 mV	2
153	4	Offset of reference	1 to 3 V	4
154	5	Offset of adjustment	1 to 3 V	4
155	6	Pulse amplitude	3 to 10 V	1
156	7	Output level	20 to 200 mV	1

Only voltages below 5 V may be applied to the diagnostics multiplexer. Certain test voltages must therefore be passed through a divider. The division factor is taken into account by the processor. The measured value ahead of the divider is output on the display as shown in the table for the corresponding special function, but a voltage reduced by the division factor is measured on the line TST (X11A17).

5.4.3 Analog Interface

Input/output X11A1-32, 32-contact board connector

Power supply

X11A24 Power supply + 24 V
X11A26 Power supply + 15 V
X11A28 Power supply + 5 V
X11A30 Power supply -15 V

Data transmission (HCMOS logic)

X11A22 Group line G0
X11A21 Subassembly address BA0
X11A20 Subassembly address BA1
X11A19 Subassembly address BA2

X11A11 TF.CLK Clock line for data transmission
X11A13 TR.DAT Data line for data transmission

Monitoring

X11A17 TST Diagnostics line
X11A18 ALA Low-active alarm line, open collector

X11A1-9 Not connected
All other contacts are connected to ground

Input X101, SMB system

Signal: pulse train with an amplitude of -3 to -5 V_{peak}, pulse width 2 ns, repetition frequency 40 to 41.6 MHz, impedance 50 Ω (see subassembly A10, summing loops).

Output X111, SMB system

Signal: sinewave plus harmonics, amplitude 3 to 9 dBm, frequency 500 to 2160 MHz, impedance 50 Ω.

5.5 Positions of Plug-in Jumpers

Caution:

Before securing, ensure that all jumpers are in their normal positions:

X122 at X121/1 - 2
X161 at X160/1 - 2
X201 at X200/1 - 2
X166 at X165/1 - 2

5.6 Required Measuring Equipment

Spectrum analyzer with synthesizer tuning and frequency counting facility to 2.2 GHz
(eg R&S FSB)

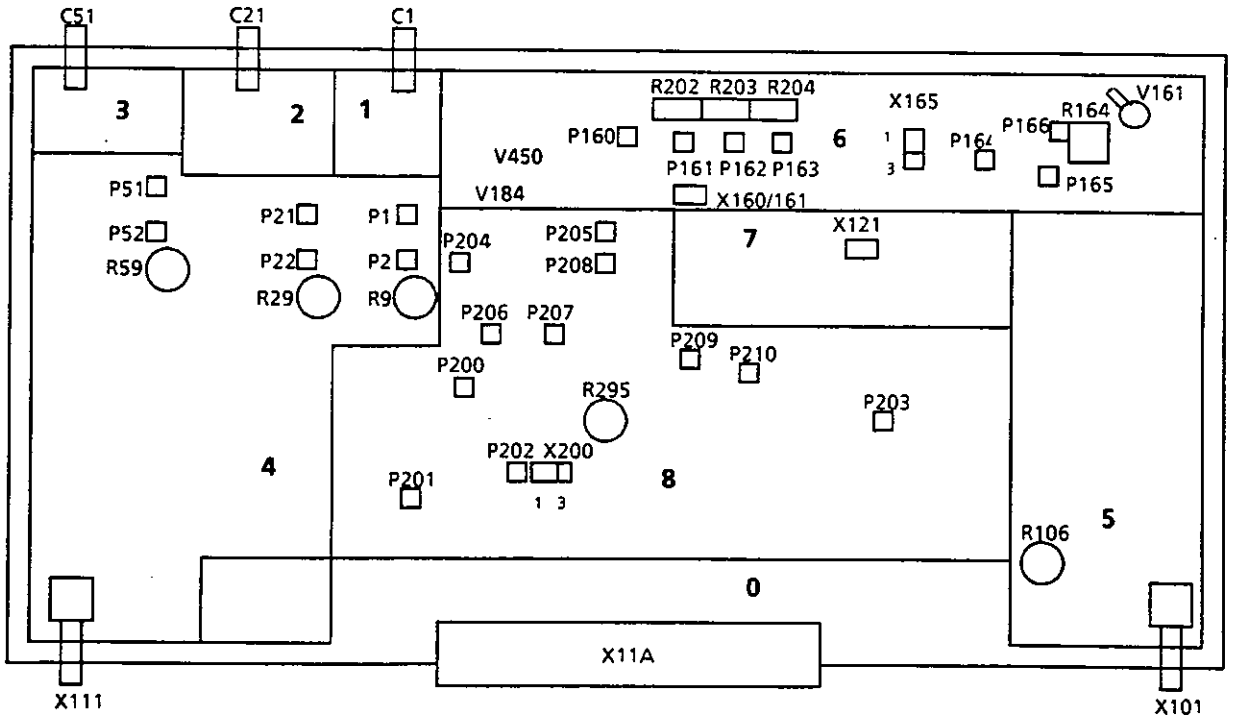
Storage oscilloscope, resolution 50 µs/div

Oscilloscope, frequency range >300 MHz

DC voltage source 0 to 25 V
(eg R&S NGT 35)

Voltmeter
(eg R&S UDL 33, URE)

Layout diagram



ROHDE&SCHWARZ

Schaltteillisten
Stromläufe
Bestückungspläne
Part lists
Circuit diagrams
Components plans
Listes des pièces détachées
Schémas de Circuit
Plans des composants

(R 29500 Bl 2)
095.1000 Bl. 2

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
A111	ED SAMPLERPLATTE SAMPLER BOARD ZUG.STROML. 819.8262 S CIRC.DIAGR. 819.8262 S	0819.8827.02			
C1	CT 9PF TAUCHTR.7RDX13 AIR-TYPE TRIMMER	CT 0249.5095.00	TEKELEC	AT 5202	
C2	CC 15PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8750.00	MURATA	GRM42-6COG 150F 50PT	
C3	CC 2,1PFO,25PF NPO 0805 CAPACITOR	CC 0093.5550.00	MURATA	GRM40 COG2R2C50PT	
C4	CC 220PF+-10% X7R 0805 CERAMIC CHIP CAPACITOR	CC 0099.8367.00	VITRAMON	VJ0805Y221KXAT	
C5	CC 7,8PFO,25PF NPO 0805 CERAMIC CHIP CAPACITOR	CC 0099.8296.00	PHILIPS_CO	2222 861 14788	
C6	CC 100PF+-10% NPO 0805 CAPACITOR	CC 0082.2948.00	MURATA	GRM40 COG 101 K50PT	
C7	CC 3,6PFO,25PF NPO 0805 CAPACITOR	CC 0093.5614.00	MURATA	GRM40C0G3R6C50	
C9	CC 47PF+-1%50V COG 1206 CERAMIC CHIP CAPACITOR	CC 0099.8496.00	MURATA	GRM42-6COG 470F 50PT	
C10	CC 47PF+-1%50V COG 1206 CERAMIC CHIP CAPACITOR	CC 0099.8496.00	MURATA	GRM42-6COG 470F 50PT	
C11	CC 56PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8809.00	MURATA	GRM42-6C0G 560F 50PT	
C12	CC 1NF+80-20%R4000 TRAP CERAMIC CAPACITOR	0086.7515.00	DRALORIC	TEFK 7	
C13	CC 3,3PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8194.00	MURATA	GRM42-6C0G 3R3 C50PT	
C14	CC 2,2PFO,25PF NPO 0805 CAPACITOR	CC 0093.5566.00	MURATA	GRM40 COG 2R2C 50PT	
C15	CC 2,2PFO,25PF NPO 0805 CAPACITOR	CC 0093.5566.00	MURATA	GRM40 COG 2R2C 50PT	
C17	CC 33PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8780.00	MURATA	GRM42-6C0G 330F 50PT	
C18	CC 56PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8809.00	MURATA	GRM42-6C0G 560F 50PT	
C21	CT 9PF TAUCHTR.7RDX13 AIR-TYPE TRIMMER	CT 0249.5095.00	TEKELEC	AT 5202	
C22	CC 10PF+-0,25 50VNPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C23	CC 1PF+-0,25PF NPO 0805 CHIP CAPACITOR	CC 0099.6770.00	PHILIPS_CO	2222 861 15108	
C24	CC 220PF+-10% X7R 0805 CERAMIC CHIP CAPACITOR	CC 0099.8367.00	VITRAMON	VJ0805Y221KXAT	
C25	CC 5,2PFO,25PF NPO 0805 CAPACITOR	CC 0093.5650.00	MURATA	GRM40C0G5R2C50PT	
C26	CC 33PF+-10% NPO 0805 CAPACITOR	CC 0082.7340.00	MURATA	GRM40C0G330K50PT	
C27	CC 2,7PFO,25PF NPO 0805 CAPACITOR	CC 0093.5572.00	PHILIPS_CO	2222 861 15278	
C29	CC 47PF+-1%50V COG 1206 CERAMIC CHIP CAPACITOR	CC 0099.8496.00	MURATA	GRM42-6C0G 470F 50PT	
C30	CC 47PF+-1%50V COG 1206 CERAMIC CHIP CAPACITOR	CC 0099.8496.00	MURATA	GRM42-6C0G 470F 50PT	
C31	CC 56PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8809.00	MURATA	GRM42-6C0G 560F 50PT	
C32	CC 1NF+80-20%R4000 TRAP CERAMIC CAPACITOR	0086.7515.00	DRALORIC	TEFK 7	
C33	CC 2,7PFO,25PF NPO 0805 CAPACITOR	CC 0093.5572.00	PHILIPS_CO	2222 861 15278	
C34	CC 1,8PFO,25PF NPO 0805 CHIP CAPACITOR	CC 0099.6806.00	PHILIPS_CO	2222 861 12188	
C35	CC 1,8PFO,25PF NPO 0805 CHIP CAPACITOR	CC 0099.6806.00	PHILIPS_CO	2222 861 12188	
C37	CC 33PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8780.00	MURATA	GRM42-6C0G 330F 50PT	
C38	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C51	CT 0,35/3,5PF RD3,6XL14,3 AIR-TYPE TRIMMER	CT 0037.9553.00	TEKELEC	TL 231/ VERS. B	
C52	CC 6,2PFO,25PF50V NPO1206 CERAMIC CHIP CAPACITOR	CC 0099.8709.00	MURATA	GRM42-C0G6R2 C 50PT	
C54	CC 220PF+-10% X7R 0805 CERAMIC CHIP CAPACITOR	CC 0099.8367.00	VITRAMON	VJ0805Y221KXAT	
C55	CC 1,5PFO,25PF NPO 0805 CHIP CAPACITOR	CC 0099.6793.00	PHILIPS_CO	2222 861 12158	

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C56	CC 33PF+-10% NPO 0805 CAPACITOR	CC 0082.7340.00	MURATA	GRM40C0G330K50PT	
C57	CC 1,8PF0,25PF NPO 0805 CHIP CAPACITOR	CC 0099.6806.00	PHILIPS_CO	2222 861 12188	
C59	CC 47PF+-1%50V C0G 1206 CERAMIC CHIP CAPACITOR	CC 0099.8496.00	MURATA	GRM42-6C0G 470F 50PT	
C60	CC 47PF+-1%50V C0G 1206 CERAMIC CHIP CAPACITOR	CC 0099.8496.00	MURATA	GRM42-6C0G 470F 50PT	
C61	CC 56PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8809.00	MURATA	GRM42-6C0G 560F 50PT	
C62	CC 1NF+80-20%R4000 TRAP CERAMIC CAPACITOR	0086.7515.00	DRALORIC	TEFK 7	
C63	CC 1PF+-0,25 50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8667.00	PHILIPS_CO	2238 863 15108	
C67	CC 18PF+-1% 50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8767.00	MURATA	GRM42-6C0G 180F 50PT	
C69	CC 100PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F 50PT	
C71	CC 1NF+-1% 50V NP0 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C72	CC 1NF+80-20%R4000 TRAP CERAMIC CAPACITOR	0086.7515.00	DRALORIC	TEFK 7	
C73	CC 22NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8467.00	PHILIPS_CO	2238 581 16632	
C74	CC 56PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8809.00	MURATA	GRM42-6C0G 560F 50PT	
C75	CC 1PF+-0,25PF NP0 0805 CHIP CAPACITOR	CC 0099.6770.00	PHILIPS_CO	2222 861 15108	
C77	CC 100PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F 50PT	
C78	CC 56PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8809.00	MURATA	GRM42-6C0G 560F 50PT	
C79	CC 1NF+-1% 50V NP0 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C80	CE 22UF+-20%10V SAL ELECTR.CAPACITOR	CE 0007.3940.00	VALVO	2222 128 34229	
C81	CC 1NF+80-20%R4000 TRAP CERAMIC CAPACITOR	0086.7515.00	DRALORIC	TEFK 7	
C82	CC 100PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F 50PT	
C83	CC 100PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F 50PT	
C84	CC 1NF+80-20%R4000 TRAP CERAMIC CAPACITOR	0086.7515.00	DRALORIC	TEFK 7	
C86	CC 10PF+-0,25 50VNP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8480.00	MURATA	GRM42-6C0G 100 C50PT	
C87	CC 100PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F 50PT	
C88	CC 3,3PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8194.00	MURATA	GRM42-6C0G 3R3 C50PT	
C89	CC 1NF+80-20%R4000 TRAP CERAMIC CAPACITOR	0086.7515.00	DRALORIC	TEFK 7	
C90	CC 5,6PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8220.00	MURATA	GRM42-6C0G 5R6 C50PT	
C91	CC 100PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F 50PT	
C92	CC 1PF+-0,25 50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8667.00	PHILIPS_CO	2238 863 15108	
C95	CC 1PF+-0,25PF NP0 0805 CHIP CAPACITOR	CC 0099.6770.00	PHILIPS_CO	2222 861 15108	
C97	CC 1NF+-1% 50V NP0 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C98	CC 100PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F 50PT	
C100	CC 4,7PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8213.00	MURATA	GRM42-6C0G 4R7C 50PT	
C101	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C102	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C103	CC 15PF+-1% 50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8750.00	MURATA	GRM42-6C0G 150F 50PT	
C104	CC 330PF+-1%50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8873.00	PHILIPS_CO	2238 863 18331	
C105	CC 1PF+-0,25 50V NP0 1206 CERAMIC CHIP CAPACITOR	CC 0099.8667.00	PHILIPS_CO	2238 863 15108	
C106	CC 100PF+-10%400V N4700 CAPACITOR	0086.7467.00	DRALORIC	TEFK 7	

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C109	CC 8,2PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8242.00	MURATA	GRM42-6C0G 8R2 C50PT	0819.8827.01
C110	CC 8,2PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8242.00	MURATA	GRM42-6C0G 8R2 C50PT	0819.8827.01
C113	CC 1,8PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8165.00	MURATA	GRM42-6C0G 1R8 C50PT	
C114	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C125	CC 56PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8809.00	MURATA	GRM42-6C0G 560F 50PT	
C126	CC 1NF+80-20%R4000 TRAP CERAMIC CAPACITOR	0086.7515.00	DRALORIC	TEFK 7	
C127	CC 56PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8809.00	MURATA	GRM42-6C0G 560F 50PT	
C128	CC 1,8PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8165.00	MURATA	GRM42-6C0G 1R8 C50PT	
C129	CC 1,8PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8165.00	MURATA	GRM42-6C0G 1R8 C50PT	
C130	CC 56PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8809.00	MURATA	GRM42-6C0G 560F 50PT	
C131	CC 1NF+80-20%R4000 TRAP CERAMIC CAPACITOR	0086.7515.00	DRALORIC	TEFK 7	
C132	CC 56PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8809.00	MURATA	GRM42-6C0G 560F 50PT	
C133	CC 56PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8809.00	MURATA	GRM42-6C0G 560F 50PT	
C134	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C135	CC 56PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8809.00	MURATA	GRM42-6C0G 560F 50PT	
C136	CC 1NF+80-20%R4000 TRAP CERAMIC CAPACITOR	0086.7515.00	DRALORIC	TEFK 7	
C137	CC 22PF+-10%100V NPO 0805 CAPACITOR	CC 0082.2931.00	PHILIPS_CO	2222 861 16229	
C138	CC 22NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8467.00	PHILIPS_CO	2238 581 16632	
C139	CC 22NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8467.00	PHILIPS_CO	2238 581 16632	
C140	CC 1NF+80-20%R4000 TRAP CERAMIC CAPACITOR	0086.7515.00	DRALORIC	TEFK 7	
C141	CC 3,3PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8194.00	MURATA	GRM42-6C0G 3R3 C50PT	
C142	CC 1PF+-0,25PF NPO 0805 CHIP CAPACITOR	CC 0099.6770.00	PHILIPS_CO	2222 861 15108	
C144	CC 2,2NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8444.00	PHILIPS_CO	2222 581 16618	
C145	CC 1PF+-0,25 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8667.00	PHILIPS_CO	2238 863 15108	
C146	CC 47PF+-10% N1500 TRAPEZ CAPACITOR	0263.9694.00	STETTNER	TEFK 7	
C147	CC 330PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8873.00	PHILIPS_CO	2238 863 18331	
C148	CC 1PF+-0,25PF NPO 0805 CHIP CAPACITOR	CC 0099.6770.00	PHILIPS_CO	2222 861 15108	
C156	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C157	CC 39PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8796.00	MURATA	GRM42-6C0G 390F 50PT	
C158	CC 120PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8838.00	MURATA	GRM42-6C0G 121F 50PT	
C160	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C161	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C162	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C163	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C164	CC 3,3NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8909.00	PHILIPS_CO	2238 581 16621	
C165	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C166	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C167	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C168	CK 15NF+-5%63V RD2,5H7MKT CAPACITOR	CK 0099.2875.00	ROEDERSTEI	MKT 1826-315-06-4	

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C169	CC 330PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8873.00	PHILIPS_CO	2238 863 18331	
C170	CC 330PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8873.00	PHILIPS_CO	2238 863 18331	
C171	CC 56PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8809.00	MURATA	GRM42-6C0G 560F 50PT	
C172	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C173	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C174	CK 33NF+-1% 63V 10QARD. CAPACITOR	CK 0294.6351.00	SIEMENS	B33531-A5333-F	
C175	CK 5,6NF+-1%63V6,3QUX11KP CAPACITOR	CK 0340.9047.00	SIEMENS	B33531-A5562-F	
C176	CC 2,7NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.3228.00	PHILIPS_CO	2238 581 16619	
C177	CC 22PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8396.00	MURATA	GRM42-6C0G 220F 50PT	
C178	CC 56PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8809.00	MURATA	GRM42-6C0G 560F 50PT	
C179	CC 47PF+-1%50V C0G 1206 CERAMIC CHIP CAPACITOR	CC 0099.8496.00	MURATA	GRM42-6C0G 470F 50PT	
C180	CC 47PF+-1%50V C0G 1206 CERAMIC CHIP CAPACITOR	CC 0099.8496.00	MURATA	GRM42-6C0G 470F 50PT	
C181	CC 120PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8838.00	MURATA	GRM42-6C0G 121F 50PT	
C183	CC 68PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8815.00	MURATA	GRM42-6C0G 680F 50PT	
C184	CC 4,7NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8450.00	PHILIPS_CO	2238 581 16623	
C186	CC 4,7NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8450.00	PHILIPS_CO	2238 581 16623	
C188	CC 120PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8838.00	MURATA	GRM42-6C0G 121F 50PT	
C195	CC 6,8PF+-0,25 50VNP01206 CERAMIC CHIP CAPACITOR	CC 0007.8236.00	MURATA	GRM42-6C0G 6R8 C50PT	
C196	CC 100PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8415.00	MURATA	GRM42-6C0G 101F 50PT	
C197	CC 56PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8809.00	MURATA	GRM42-6C0G 560F 50PT	
C211	CC 1NF+-1% 50V NPO 1206 SMD CERAMIC CAPACITOR	CC 0007.7398.00	PHILIPS_CO	2222 863 *8102	
C212	CC 270PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8867.00	PHILIPS_CO	2222 863 18271	
C213	CC 120PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8838.00	MURATA	GRM42-6C0G 121F 50PT	
C215	CC 180PF+-1%50V NPO 1206 CHIP CAPACITOR	CC 0099.8844.00	PHILIPS_CO	2238 863 18181	
C216	CC 180PF+-1%50V NPO 1206 CHIP CAPACITOR TRIMMWERT / SELECTED	CC 0099.8844.00	PHILIPS_CO	2238 863 18181	
C217	CC 2,2NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8444.00	PHILIPS_CO	2222 581 16618	
C218	CC 2,2NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8444.00	PHILIPS_CO	2222 581 16618	
C219	CC 680PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0007.7375.00	PHILIPS_CO	2222 863 18681	
C220	CC 390PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8880.00	PHILIPS_CO	2238 863 18391	
C221	CC 82PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8821.00	MURATA	GRM42-6C0G 820F 50PT	
C222	CC 680PF+-1% 50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0007.7375.00	PHILIPS_CO	2222 863 18681	
C223	CC 390PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8880.00	PHILIPS_CO	2238 863 18391	
C224	CC 82PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8821.00	MURATA	GRM42-6C0G 820F 50PT	
C225	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C240	CC 220PF+-1%50V NPO 1206 CERAMIC CHIP CAPACITOR	CC 0099.8850.00	PHILIPS_CO	2238 863 18221	
C325	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C348	LD FILT.40DB/10GHZ10A300V LOWPASS-FILTER	0911.0705.00	SPECTRUM	SCI-9920-101HT	
C349	LD FILT.40DB/10GHZ10A300V LOWPASS-FILTER	0911.0705.00	SPECTRUM	SCI-9920-101HT	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
C350	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C351	CE 100UF+-20%35V RM5 ELECTROLYTIC CAPACITOR	0008.7510.00	PHILIPS_CO	2222 116 90042	
C352	CE 22UF+-20%10V SAL ELECTR.CAPACITOR	CE 0007.3940.00	VALVO	2222 128 34229	
C353	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C354	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C355	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C356	CE 22UF+-20%10V SAL ELECTR.CAPACITOR	CE 0007.3940.00	VALVO	2222 128 34229	
C357 ..361	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C362	CE 22UF+-20%10V SAL ELECTR.CAPACITOR	CE 0007.3940.00	VALVO	2222 128 34229	
D71	BL UPB581C 2:1 PRESC IC PRESCALERDIVIDER	0840.6113.00	NEC	(UP)B581C	
D180	BL MM74HC00N 4X2IN.NAND QUAD 2-INPUT NAND GATE	0571.3194.00	PHILIPS_SE	(PC)74HC00N(P)	
D181	BL PC74HC123 2XMULTIVIB DUAL MONOST.MULTIVIBRATOR	0099.9540.00	PHILIPS_SE	(PC)74HC123N(P)	
D182	BL MM74HC74N 2XD-FLIPFL DUAL D FLIP-FLOP	0571.3171.00	PHILIPS_SE	(PC)74HC74N(P)	
D205	BL 74F74PC 2XD-FLIPFLOP DUAL D-FLIPFLOP	BL 0344.6694.00	PHILIPS_SE	N74F74N	
D206	BL PC74HCT393P BIN COUNT BINARY COUNTER	0377.8909.00	PHILIPS	(PC)74HCT393N(P)	
D207	BL PC74HCT74P 2XD-FF DUAL D-FLIP-FLOP	0571.3436.00	PHILIPS_SE	(PC)74HCT74N(P)	
D208	BL MC54HC4538AJ2XMONOFLOP DUAL RETRIG.MULTIVIBR	0820.3554.00	MOTOROLA	MC54HC4538AJ (NEU)	
D209	BL MM74HC00N 4X2IN.NAND QUAD 2-INPUT NAND GATE	0571.3194.00	PHILIPS_SE	(PC)74HC00N(P)	
D210	BL MM74HC00N 4X2IN.NAND QUAD 2-INPUT NAND GATE	0571.3194.00	PHILIPS_SE	(PC)74HC00N(P)	
D211	BS DG211CJ 4X ANALOGSCH ANALOG SWITCH	0801.8260.00	SILICONIX	DG211CJ	
D212	BL PC74HC4094P 8ST.SH.REG 8ST.SHIFT A.STORE REGIST.	0099.9711.00	PHILIPS_SE	(PC)74HC4094N(P)	
D213	BL PC74HC4094P 8ST.SH.REG 8ST.SHIFT A.STORE REGIST.	0099.9711.00	PHILIPS_SE	(PC)74HC4094N(P)	
D214	BL MM74HC4051N 8CH.AN.MUX 8CH.ANALOG MUX/DEMUX	0099.9670.00	PHILIPS	(PC)74HC4051N(P)	
D215	BL PC74HC238P 3TO8 L.DEC DECODER/DEMULTIPLEXER	0620.0847.00	PHILIPS	(PC)74HC238N(P)	
D350	BL MM74HC11N 3X3IN.ANDG TRIPLE 3-INPUT AND GATE	0099.9486.00	PHILIPS_SE	(PC)74HC11N(P)	
D351	BL PC74HC238P 3TO8 L.DEC DECODER/DEMULTIPLEXER	0620.0847.00	PHILIPS	(PC)74HC238N(P)	
D2XX	EE TEILER DIVIDER ERSETZT D200, D201, D202,	0819.4009.02			
L1	LD 100NH 10% 0,080HM 1,4A CHOKE	LD 0067.2740.00	DALE	IM2	
L3 ..6	LD 100NH 10% 0,080HM 1,4A CHOKE	LD 0067.2740.00	DALE	IM2	
L21	LD 100NH 10% 0,080HM 1,4A CHOKE	LD 0067.2740.00	DALE	IM2	
L23 ..26	LD 100NH 10% 0,080HM 1,4A CHOKE	LD 0067.2740.00	DALE	IM2	
L30	LD 2,20UH10%0,400HM0,415A CHOKE	LD 0067.2905.00	DALE	IM2	
L51	LD 100NH 10% 0,080HM 1,4A CHOKE	LD 0067.2740.00	DALE	IM2	
L53 ..56	LD 100NH 10% 0,080HM 1,4A CHOKE	LD 0067.2740.00	DALE	IM2	
L70	LD 1,00UH10%1,000HM0,390A CHOKE	LD 0067.2863.00	DALE	IM2	
L71	LD 1,00UH10%1,000HM0,390A CHOKE	LD 0067.2863.00	DALE	IM2	
L73	LD 1,00UH10%1,000HM0,390A CHOKE	LD 0067.2863.00	DALE	IM2	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
L74	LD 4,70UH10%1,200HMO,239A CHOKE	LD 0067.2940.00	DALE	IM2	
L75	LD 0,47UH10%0,350HMO,660A CHOKE	LD 0067.2828.00	DALE	IM2	
L76	LD 0,47UH10%0,350HMO,660A CHOKE	LD 0067.2828.00	DALE	IM2	
L77	LD 1,00UH10%1,000HMO,390A CHOKE	LD 0067.2863.00	DALE	IM2	
L78	LD 0,47UH10%0,350HMO,660A CHOKE	LD 0067.2828.00	DALE	IM2	
L101	LD 22,0UH10%3,300HMO,114A CHOKE	LD 0067.3024.00	DALE	IM2	
L102	LD 1,20UH10%0,180HMO,620A CHOKE	LD 0067.2870.00	DALE	IM2	
L103	LD HVB SPULE 12NH COIL	0820.3454.00			0819.8879.00
L125	LD 2,20UH10%0,400HMO,415A CHOKE	LD 0067.2905.00	DALE	IM2	
L126	LD 100NH 10% 0,080HM 1,4A CHOKE	LD 0067.2740.00	DALE	IM2	
L127	LD 2,20UH10%0,400HMO,415A CHOKE	LD 0067.2905.00	DALE	IM2	
L129	LD 100NH 10% 0,080HM 1,4A CHOKE	LD 0067.2740.00	DALE	IM2	
L130	LD 2,20UH10%0,400HMO,415A CHOKE	LD 0067.2905.00	DALE	IM2	
L131	LD 100NH 10% 0,080HM 1,4A CHOKE	LD 0067.2740.00	DALE	IM2	
L132	LD 2,20UH10%0,400HMO,415A CHOKE	LD 0067.2905.00	DALE	IM2	
L133	LD 1,00UH10%1,000HMO,390A CHOKE	LD 0067.2863.00	DALE	IM2	
L160	LD 22,0UH10%3,300HMO,114A CHOKE	LD 0067.3024.00	DALE	IM2	
L161	LD 22,0UH10%3,300HMO,114A CHOKE	LD 0067.3024.00	DALE	IM2	
L162	LD 47,0UH10%4,500HMO,110A CHOKE	LD 0067.3060.00	DALE	IM2	
L163	LD 0,39UH10%0,300HMO,710A CHOKE	LD 0067.2811.00	DALE	IM2	
L164	LD 0,47UH10%0,350HMO,660A CHOKE	LD 0067.2828.00	DALE	IM2	
L165	LD 0,56UH10%0,500HMO,550A CHOKE	LD 0067.2834.00	DALE	IM2	
L166	LD 4,70UH10%1,200HMO,239A CHOKE	LD 0067.2940.00	DALE	IM2	
L167	LD 0,47UH10%0,350HMO,660A CHOKE	LD 0067.2828.00	DALE	IM2	
L168	LD 1,20UH10%0,180HMO,620A CHOKE	LD 0067.2870.00	DALE	IM2	
L169	LD 12,0UH10%2,700HMO,160A CHOKE	LD 0067.2992.00	DALE	IM2	
L170	LD 47,0UH10%4,500HMO,110A CHOKE	LD 0067.3060.00	DALE	IM2	
L200	LD 100NH 10% 0,080HM 1,4A CHOKE	LD 0067.2740.00	DALE	IM2	
L201	LD 0,22UH10%0,140HM1,045A CHOKE	LD 0067.2786.00	DALE	IM2	
L202	LD 2,2MIH 10%99MIA33,80HM CHOKE	0073.1759.00	DALE	IMS-5	
L203	LD 1000UH10%72,00HMO,028A CHOKE	LD 0037.8005.00	DALE	IM2	
L204	LD 150 UH10%15,00HMO,061A CHOKE	LD 0067.3124.00	DALE	IM2	
L205	LD 560 UH10%46,00HMO,035A CHOKE	LD 0067.3199.00	DALE	IM2	
L206	LD 2,2MIH 10%99MIA33,80HM CHOKE	0073.1759.00	DALE	IMS-5	
L207	LD 1000UH10%72,00HMO,028A CHOKE	LD 0037.8005.00	DALE	IM2	
L208	LD 150 UH10%15,00HMO,061A CHOKE	LD 0067.3124.00	DALE	IM2	
L209	LD 560 UH10%46,00HMO,035A CHOKE	LD 0067.3199.00	DALE	IM2	
L350	LD 22,0UH10%3,300HMO,114A CHOKE	LD 0067.3024.00	DALE	IM2	
L351	LD 4,7UH BEI 1,35A0,240HM CHOKE	LD 0026.4084.00	DALE	IM 6	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
L352	LD 4,7UH BEI 1,35AO,240HM CHOKE	LD 0026.4084.00	DALE	IM 6	
L353	LD 10UH BEI O,81A O,660HM CHOKE	LD 0026.4126.00	DALE	IM 6	
L354	LD 100 UH10%8,000HMO,084A CHOKE	LD 0067.3101.00	DALE	IM2	
L355	LD 100 UH10%8,000HMO,084A CHOKE	LD 0067.3101.00	DALE	IM2	
L356	LD 2,20UH10%O,400HMO,415A CHOKE	LD 0067.2905.00	DALE	IM2	
L357	LD 2,20UH10%O,400HMO,415A CHOKE	LD 0067.2905.00	DALE	IM2	
L358	LD 4,70UH10%1,200HMO,239A CHOKE	LD 0067.2940.00	DALE	IM2	
L359	LD 2,20UH10%O,400HMO,415A CHOKE	LD 0067.2905.00	DALE	IM2	
L360	LD 4,70UH10%1,200HMO,239A CHOKE	LD 0067.2940.00	DALE	IM2	
L361	LD 4,70UH10%1,200HMO,239A CHOKE	LD 0067.2940.00	DALE	IM2	
N1	BM MSA0404 MMIC BROADBAND AMPLIFIER	0822.0075.00	MINI-CIRCU	MAV-4	
N21	BM MSA0404 MMIC BROADBAND AMPLIFIER	0822.0075.00	MINI-CIRCU	MAV-4	
N51	BM MSA0404 MMIC BROADBAND AMPLIFIER	0822.0075.00	MINI-CIRCU	MAV-4	
N71	BM MSA0304 MMIC BROADBAND AMPLIFIER	0840.6094.00	AVANTEK	MSA0304	
N72	BM MSA0304 MMIC BROADBAND AMPLIFIER	0840.6094.00	AVANTEK	MSA0304	
N73	BM MSA0404 MMIC BROADBAND AMPLIFIER	0822.0075.00	MINI-CIRCU	MAV-4	
N125	BM MSA0404 MMIC BROADBAND AMPLIFIER	0822.0075.00	MINI-CIRCU	MAV-4	
N126	BM MSA0404 MMIC BROADBAND AMPLIFIER	0822.0075.00	MINI-CIRCU	MAV-4	
N127	BM MSA0404 MMIC BROADBAND AMPLIFIER	0822.0075.00	MINI-CIRCU	MAV-4	
N128	BO LF156J FET OPAMP OPERATIONAL AMPLIFIER	BO 0645.7251.00	ANALOG_DEV	PM156Z	
N200	BO LF156J FET OPAMP OPERATIONAL AMPLIFIER	BO 0645.7251.00	ANALOG_DEV	PM156Z	
N201	BO NE521N 2X COMPAR COMPARATOR	0230.5602.00	SIGNETICS	NE521N(SE521F)	
N202	BO TL072ACP 2XFET OPAMP OPERATIONAL AMPLIFIER	0340.6054.00	TEXAS	TL 072 ACP	
N220	BO LF412CN 2XFET OPAMP OPERATIONAL AMPLIFIER	0356.0521.00	NSC	LF412CN	
N350	BO LM393N 2X COMPAR COMPARATOR	BO 0803.0696.00	NSC	LM393N	
P1	FP STIFTLEISTE 36P.R2,54 PIN CONNECTOR	FP 0242.3600.00	BINDER	742-11-0179-00-36	
P2	FP STIFTLEISTE 36P.R2,54 PIN CONNECTOR	FP 0242.3600.00	BINDER	742-11-0179-00-36	
P21	FP STIFTLEISTE 36P.R2,54 PIN CONNECTOR	FP 0242.3600.00	BINDER	742-11-0179-00-36	
P22	FP STIFTLEISTE 36P.R2,54 PIN CONNECTOR	FP 0242.3600.00	BINDER	742-11-0179-00-36	
P51	FP STIFTLEISTE 36P.R2,54 PIN CONNECTOR	FP 0242.3600.00	BINDER	742-11-0179-00-36	
P52	FP STIFTLEISTE 36P.R2,54 PIN CONNECTOR	FP 0242.3600.00	BINDER	742-11-0179-00-36	
P158	FP STIFTLEISTE 36P.R2,54 PIN CONNECTOR	FP 0242.3600.00	BINDER	742-11-0179-00-36	
P159	FP STIFTLEISTE 36P.R2,54 PIN CONNECTOR	FP 0242.3600.00	BINDER	742-11-0179-00-36	
P160 ..165	FP STIFTLEISTE 36P.R2,54 PIN CONNECTOR	FP 0242.3600.00	BINDER	742-11-0179-00-36	
P203 ..210	FP STIFTLEISTE 36P.R2,54 PIN CONNECTOR	FP 0242.3600.00	BINDER	742-11-0179-00-36	
R1	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R2	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R3	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R4	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R5	RG 6,81KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0758.00	ROEDERSTEI	D25	
R6	RG 1,82KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5720.00	ROEDERSTEI	D25	
R7	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	ROEDERSTEI	D25	
R8	RG 2,74KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5766.00	PHILIPS_CO	RC02	
R10	RG 15,0KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5843.00	ROEDERSTEI	D25	
R11	RG 3,92KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5808.00	ROEDERSTEI	D25	
R12	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R13	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R14	RG 182 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5595.00	ROEDERSTEI	D25	
R15	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	PHILIPS_CO	RC02	
R16	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R17	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R18	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R19	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	PHILIPS_CO	RC02	
R20	RG 825 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.7259.00	ROEDERSTEI	D25	
R21	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R22	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R23	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R24	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R25	RG 6,81KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0758.00	ROEDERSTEI	D25	
R26	RG 1,82KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5720.00	ROEDERSTEI	D25	
R27	RG 15,0 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5450.00	ROEDERSTEI	D25	
R28	RG 2,74KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5766.00	PHILIPS_CO	RC02	
R30	RG 15,0KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5843.00	ROEDERSTEI	D25	
R31	RG 3,92KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5808.00	ROEDERSTEI	D25	
R32	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R33	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R34	RG 182 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5595.00	ROEDERSTEI	D25	
R35	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	PHILIPS_CO	RC02	
R36	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R37	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R38	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R39	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	PHILIPS_CO	RC02	
R40	RG 825 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.7259.00	ROEDERSTEI	D25	
R44	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R45	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R46	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R47	RL 0,60W 56,2 OHM+-1%TK50 RESISTOR	RL 0082.9571.00	RESISTA	MK2	
R50	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R51	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R52	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RCO2	
R53	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R54	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RCO2	
R55	RG 6,81KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0758.00	ROEDERSTEI	D25	
R56	RG 1,82KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5720.00	ROEDERSTEI	D25	
R57	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	PHILIPS_CO	RCO2	
R58	RG 2,74KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5766.00	PHILIPS_CO	RCO2	
R60	RG 15,0KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5843.00	ROEDERSTEI	D25	
R61	RG 3,92KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5808.00	ROEDERSTEI	D25	
R62	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RCO2	
R63	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RCO2	
R64	RG 182 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5595.00	ROEDERSTEI	D25	
R65	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	PHILIPS_CO	RCO2	
R66	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R70	RG 825 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.7259.00	ROEDERSTEI	D25	
R71	RG 4,75OHM+-1%TK100 1206 CHIP-RESISTOR	RG 0007.8420.00	PHILIPS	RC 02	
R72	RL 0,40W 180 OHM2% UNGEW. RESISTOR	RL 0092.5985.00	DRALORIC	SMA 0204	
R73	RL 0,40W 180 OHM2% UNGEW. RESISTOR	RL 0092.5985.00	DRALORIC	SMA 0204	
R75	RG 33,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5520.00	ROEDERSTEI	D25	
R76	RG 33,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5520.00	ROEDERSTEI	D25	
R77	RG 22,1 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5489.00	ROEDERSTEI	D25	
R78	RG 22,1 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5489.00	ROEDERSTEI	D25	
R79	RG 22,1 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5489.00	ROEDERSTEI	D25	
R83	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R84	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R85	RG 33,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5520.00	ROEDERSTEI	D25	
R86	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	PHILIPS_CO	RCO2	
R87	RG 15,0 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5450.00	ROEDERSTEI	D25	
R88	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	PHILIPS_CO	RCO2	
R89	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RCO2	
R90	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R91	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R92	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R93	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R94	RG 22,1 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5489.00	ROEDERSTEI	D25	
R95	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R96	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R97	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R98	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R99	RG 22,1 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5489.00	ROEDERSTEI	D25	
R100	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	ROEDERSTEI	D25	
R102	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	ROEDERSTEI	D25	
R103	RG 11,0 OHM+-1%TK100 1206 CHIP RESISTOR TRIMMWERT/SELECTED	RG 0006.8655.00	ROEDERSTEI	D25	
R104	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R105	RG 681 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9080.00	ROEDERSTEI	D25	
R106	RS 0,5W2KOHM+-10%10X10X5 CERMET POTENTIOMETER	RS 0247.7961.00	SPECTROL	63X ... TO10	
R107	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	ROEDERSTEI	D25	
R108	RG 332 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5650.00	PHILIPS_CO	RC02	
R109	RG 47,5KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5950.00	ROEDERSTEI	D25	
R110	RG 100,0KOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1948.00	ROEDERSTEI	D25	
R111	RG 100,0KOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1948.00	ROEDERSTEI	D25	
R114	RL 0,4OW 12,1KOHM+-1%TK50 RESISTOR	RL 0092.1573.00	RESISTA	MK1	
R115	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	0819.8827.01
R116	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	0819.8827.01
R117	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R118	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R119	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	0819.8827.01
R121	RL 0,4OW 12,1KOHM+-1%TK50 RESISTOR	RL 0092.1573.00	RESISTA	MK1	
R125	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R126	RG 33,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5520.00	ROEDERSTEI	D25	
R127	RG 12,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8661.00	ROEDERSTEI	D25	
R128	RG 33,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5520.00	ROEDERSTEI	D25	
R129	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R130	RG 274 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5637.00	ROEDERSTEI	D25	
R131	RG 18,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5466.00	ROEDERSTEI	D25	
R132	RG 274 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5637.00	ROEDERSTEI	D25	
R133	RG 432 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5689.00	ROEDERSTEI	D25	
R134	RG 432 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5689.00	ROEDERSTEI	D25	
R135	RG 47,5KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5950.00	ROEDERSTEI	D25	
R136	RG 12,1KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0841.00	PHILIPS_CO	RC02	
R137	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R138	RG 0,05W 15R +-1% 0805 RESISTOR	RG 0007.8907.00	HONEST_JAP	RN 73 C(E)2X..F (1%)	
R139	RL 0,6OW 56,2 OHM+-1%TK50 RESISTOR	RL 0082.9571.00	RESISTA	MK2	
R140	RL 0,4OW 180 OHM2% UNGEW. RESISTOR	RL 0092.5985.00	DRALORIC	SMA 0204	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R142	RG 33,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5520.00	ROEDERSTEI	D25	
R143	RG 33,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5520.00	ROEDERSTEI	D25	
R144	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R145	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R146	RG 332 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.6033.00	ROEDERSTEI	D25	
R147	RG 681 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.6110.00	ROEDERSTEI	D25	
R148	RG 47,5KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5950.00	ROEDERSTEI	D25	
R149	RG 100,OKOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1948.00	ROEDERSTEI	D25	
R150	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R151	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	ROEDERSTEI	D25	
R152	RS 0,5W 500 OHM+-20%KURV1 DEPOS.-CARBON POTENTIOMET	RS 0069.8023.00	BI_TECHNOL	82P R500	
R153	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	ROEDERSTEI	D25	
R154	RL 0,40W 180 OHM2% UNGEW. RESISTOR	RL 0092.5985.00	DRALORIC	SMA 0204	
R155	RG 68,1KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.1902.00	ROEDERSTEI	D25	
R156	RL 0,60W 3,32KOHM+-1%TK50 RESISTOR	RL 0083.0990.00	RESISTA	MK2	
R157	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R158	RG 1,0MOHM+-1%TK100 1206 CHIP RESISTOR	RG 0815.7532.00	PHILIPS_CO	RC 02	
R159	RL 0,60W 3,32KOHM+-1%TK50 RESISTOR	RL 0083.0990.00	RESISTA	MK2	
R160	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R161	RG 2,74KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5766.00	PHILIPS_CO	RC02	
R162	RG 2,74KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5766.00	PHILIPS_CO	RC02	
R163	RG 150 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5972.00	ROEDERSTEI	D25	
R164	RS 0,5W10KOHM+-10%10X10X5 CERMET POTENTIOMETER T	RS 0247.7903.00	SPECTROL	63 M ... TO 10	
R165	RG 150 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5972.00	ROEDERSTEI	D25	
R166	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	ROEDERSTEI	D25	
R167	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	PHILIPS_CO	RC02	
R168	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R169	RG 681 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9080.00	ROEDERSTEI	D25	
R170	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R171	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R172	RG 100,OKOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1948.00	ROEDERSTEI	D25	
R173	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	ROEDERSTEI	D25	
R174	RG 100,OKOH+-1%TK100 1206 CHIP RESISTOR	RG 0007.1948.00	ROEDERSTEI	D25	
R175	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	ROEDERSTEI	D25	
R179	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R180	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R181	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R184	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R185	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	PHILIPS_CO	RC02	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R186	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	PHILIPS_CO	RC02	
R189	RG 1,82KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5720.00	ROEDERSTEI	D25	
R190	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R191	RG 3,32KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5789.00	ROEDERSTEI	D25	
R192	RG 3,32KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5789.00	ROEDERSTEI	D25	
R193	RG 1,82KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5720.00	ROEDERSTEI	D25	
R194	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	ROEDERSTEI	D25	
R195	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	PHILIPS_CO	RC02	
R196	RG 10,0 OHM+-1%TK100 1206 CHIP -RESISTOR	RG 0006.8649.00	PHILIPS_CO	RC02	
R200	RG 1,5 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5714.00	ROEDERSTEI	D25	
R201	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R202	RS 0,5W2KOHM+-10%10X10X5 CERMET POTENTIOMETER	RS 0247.7961.00	SPECTROL	63X ... TO10	
R203	RS 0,5W2KOHM+-10%10X10X5 CERMET POTENTIOMETER	RS 0247.7961.00	SPECTROL	63X ... TO10	
R204	RS 0,5W2KOHM+-10%10X10X5 CERMET POTENTIOMETER	RS 0247.7961.00	SPECTROL	63X ... TO10	
R205	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R206	RG 681 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.6110.00	ROEDERSTEI	D25	
R207	RG 681 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.6110.00	ROEDERSTEI	D25	
R208	RG 681 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.6110.00	ROEDERSTEI	D25	
R209	RG 100 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8884.00	PHILIPS_CO	RC02	
R210	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R211	RD 0,8W2,7KOHM+-1%TK20 WIRE-WOUND RESISTOR	RD 0463.1650.00	TEPRO	TS 1 A ...	
R212	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	ROEDERSTEI	D25	
R213	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R214	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	ROEDERSTEI	D25	
R215	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R216	RG 27,4 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5508.00	ROEDERSTEI	D25	
R217	RG 2,74KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5766.00	PHILIPS_CO	RC02	
R218	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R219	RG 121 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8903.00	ROEDERSTEI	D25	
R220	RG 56,2KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.1883.00	ROEDERSTEI	D25	
R221	RG 56,2KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.1883.00	ROEDERSTEI	D25	
R222	RG 56,2KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.1883.00	ROEDERSTEI	D25	
R223	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R224	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R225	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R228	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R229	RG 47,5 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5566.00	ROEDERSTEI	D25	
R230	RG 68,1 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8849.00	ROEDERSTEI	D25	
R231	RG 1,5 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5714.00	ROEDERSTEI	D25	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R232	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R233	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R234	RG 6,81KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0758.00	ROEDERSTEI	D25	
R236	RG 12,1KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0841.00	PHILIPS_CO	RC02	
R237	RG 274 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5637.00	ROEDERSTEI	D25	
R238	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	ROEDERSTEI	D25	
R239	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	ROEDERSTEI	D25	
R240	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R241	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R242	RG 15,0KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5843.00	ROEDERSTEI	D25	
R243	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R244	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R245	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R246	RG 22,1KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5872.00	ROEDERSTEI	D25	
R247	RG 47,5KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5950.00	ROEDERSTEI	D25	
R248	RG 11,0KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0806.00	ROEDERSTEI	D25	
R249	RG 22,1KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5872.00	ROEDERSTEI	D25	
R250	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R251	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R252	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	ROEDERSTEI	D25	
R253	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R255	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R260	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R270	RG 56,2 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.8826.00	ROEDERSTEI	D25	
R271	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	ROEDERSTEI	D25	
R272	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R275	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R278	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R279	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R280	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R281	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R285 ..290	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R291	RL 0,35W1,82KOHM+-0,1%T25 RESISTOR	RL 0083.9646.00	DRALORIC	SMA0207	
R292	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R293	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R294	RL 0,60W 1,58KOHM+-1%TK50 RESISTOR	RL 0082.2525.00	RESISTA	MK2	
R295	RS 0,3W 500 OHM+-10%CERM. TRIMMING POTENTIOMETER	RS 0006.6675.00	BOURNS	3296W-001-501	
R296	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R297	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	

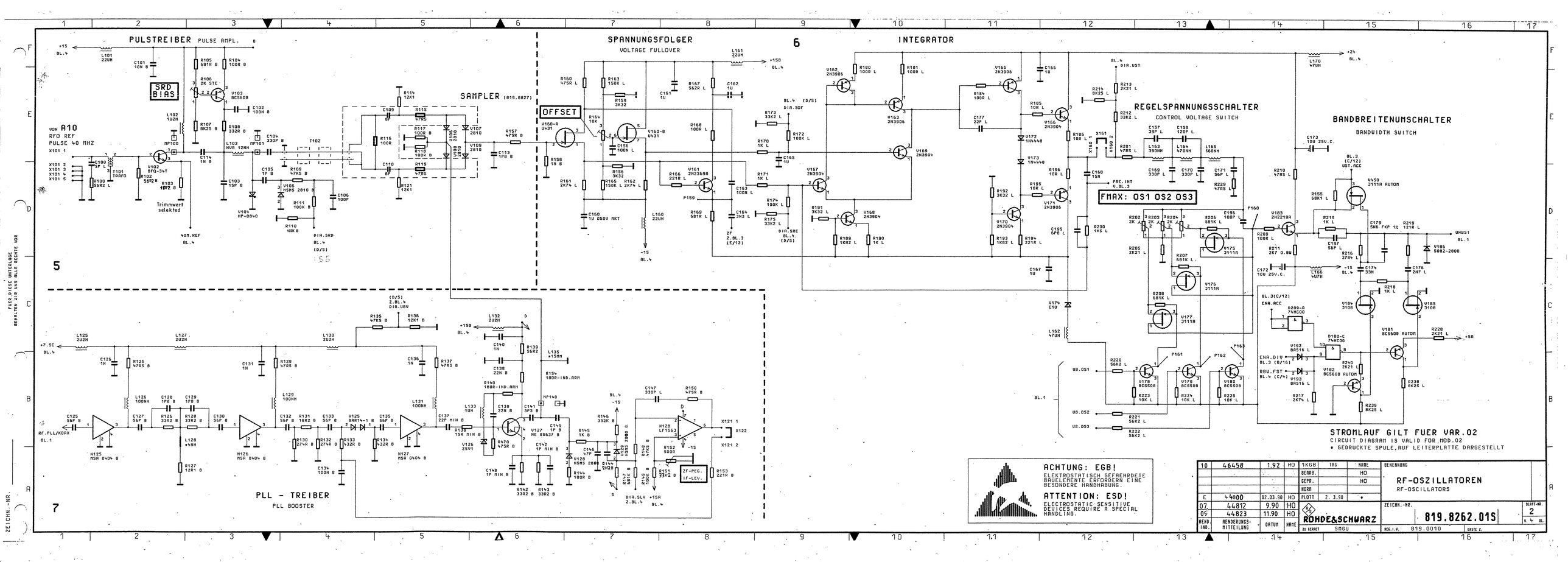
Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R298	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R300 ..303	RL 0,35W10,0KOHM+-0,1%T25 RESISTOR	RL 0084.3064.00	DRALORIC	SMA0207	
R304	RG 150 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5972.00	ROEDERSTEI	D25	
R305	RG 1,0 KO +-1%TK100 1206 CHIP RESISTOR	RG 0006.7271.00	PHILIPS_CO	RC02	
R306	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	ROEDERSTEI	D25	
R307	RG 182 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5595.00	ROEDERSTEI	D25	
R308	RG 182 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5595.00	ROEDERSTEI	D25	
R309	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	ROEDERSTEI	D25	
R310	RG 56,2KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.1883.00	ROEDERSTEI	D25	
R311	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R312	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R313	RG 6,81KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0758.00	ROEDERSTEI	D25	
R315	RG 182 KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5989.00	ROEDERSTEI	D25	
R317	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	ROEDERSTEI	D25	
R318	RG 3,92KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5808.00	ROEDERSTEI	D25	
R319	RG 3,32KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5789.00	ROEDERSTEI	D25	
R320	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R321	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R322 ..325	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R326	RG 2,21KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5743.00	ROEDERSTEI	D25	
R327	RG 3,32KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5789.00	ROEDERSTEI	D25	
R328	RG 8,25KOHM+-1%TK100 1206 CHIP RESISTOR	RG 0007.0770.00	ROEDERSTEI	D25	
R329	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R330	RG 1,82KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5720.00	ROEDERSTEI	D25	
R331	RG 1,82KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5720.00	ROEDERSTEI	D25	
R350	RG 4,75KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5820.00	ROEDERSTEI	D25	
R351	RG 39,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5543.00	ROEDERSTEI	D25	
R352	RG 39,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5543.00	ROEDERSTEI	D25	
R353	RG 33,2KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5914.00	ROEDERSTEI	D25	
R354	RG 7,5KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0764.00	ROEDERSTEI	D25	
R355	RG 221 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5614.00	ROEDERSTEI	D25	
R356	RG 22,1KOHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5872.00	ROEDERSTEI	D25	
R357	RD 2.4W 10 OHM+-1% WIRE-WOUND RESISTOR	RD 0087.5097.00	TEPRO	TS-2B	
R358	RG 681 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9080.00	ROEDERSTEI	D25	
R359	RL 0,60W 332 OHM+-1%TK50 RESISTOR	RL 0083.0255.00	RESISTA	MK2	
R360	RG 33,2 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5520.00	ROEDERSTEI	D25	
R361	RG 562 OHM+-1%TK100 1206 CHIP RESISTOR	RG 0006.9068.00	PHILIPS_CO	RC02	
R470	RG 475 OHM+-1%TK100 1206 RESISTOR CHIP	RG 0007.5695.00	ROEDERSTEI	D25	
R500	RL 0,40W 2,21KOHM+-1%TK50 RESISTOR	RL 0092.1480.00	RESISTA	MK1	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R501	RL 0,40W 2,21KOHM+-1%TK50 RESISTOR NUR WENN ONLY IF. D 200 - SP 4812	RL 0092.1480.00	RESISTA	MK1	
T101	LU UEBERTRAEGER	0819.8891.00			0819.8879.00
V1	AE BB405B 11/ 2PF CDI TUNING DIODE	AE 0596.6839.00	PHILIPS	BB405B	
V2	AE BB405B 11/ 2PF CDI TUNING DIODE	AE 0596.6839.00	PHILIPS	BB405B	
V3	AK BC560B P 45V 100MA TRANSISTOR	AK 0007.2044.00	SIEMENS	BC560B	
V4	AK BC550B N 50V 100MA TRANSISTOR	AK 0007.2050.00	SIEMENS	BC550B	
V5	AK NE85637 N 12V 100MA TRANSISTOR	0801.8231.00	NEC	NE85637(2SC3358)	
V6	AK BC550B N 50V 100MA TRANSISTOR	AK 0007.2050.00	SIEMENS	BC550B	
V7	AK NE85637 N 12V 100MA TRANSISTOR	0801.8231.00	NEC	NE85637(2SC3358)	
V8	AE BAR14-1 2X 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1	
V21	AE BB405B 11/ 2PF CDI TUNING DIODE	AE 0596.6839.00	PHILIPS	BB405B	
V22	AE BB405B 11/ 2PF CDI TUNING DIODE	AE 0596.6839.00	PHILIPS	BB405B	
V23	AK BC560B P 45V 100MA TRANSISTOR	AK 0007.2044.00	SIEMENS	BC560B	
V24	AK BC550B N 50V 100MA TRANSISTOR	AK 0007.2050.00	SIEMENS	BC550B	
V25	AK NE85637 N 12V 100MA TRANSISTOR	0801.8231.00	NEC	NE85637(2SC3358)	
V26	AK BC550B N 50V 100MA TRANSISTOR	AK 0007.2050.00	SIEMENS	BC550B	
V27	AK NE85637 N 12V 100MA TRANSISTOR	0801.8231.00	NEC	NE85637(2SC3358)	
V28	AE BAR14-1 2X 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1	
V51	AE BB405B 11/ 2PF CDI TUNING DIODE	AE 0596.6839.00	PHILIPS	BB405B	
V52	AE BB405B 11/ 2PF CDI TUNING DIODE	AE 0596.6839.00	PHILIPS	BB405B	
V53	AK BC560B P 45V 100MA TRANSISTOR	AK 0007.2044.00	SIEMENS	BC560B	
V54	AK BC550B N 50V 100MA TRANSISTOR	AK 0007.2050.00	SIEMENS	BC550B	
V55	AK NE85637 N 12V 100MA TRANSISTOR	0801.8231.00	NEC	NE85637(2SC3358)	
V56	AK BC550B N 50V 100MA TRANSISTOR	AK 0007.2050.00	SIEMENS	BC550B	
V57	AK NE85637 N 12V 100MA TRANSISTOR	0801.8231.00	NEC	NE85637(2SC3358)	
V58	AE MA4P274-287 200V PIN PIN DIODE	0843.3238.00	MA-COM	MA4P1110	
V71	AE 1N4689 5V1 0.3W ZDI ZENER DIODE	AE 0303.9418.00	SIEMENS	1N4689	
V72	AK NE85637 N 12V 100MA TRANSISTOR	0801.8231.00	NEC	NE85637(2SC3358)	
V74	AK BC550B N 50V 100MA TRANSISTOR	AK 0007.2050.00	SIEMENS	BC550B	
V75	AE BAR14-1 2X 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1	
V76	AE BAR14-1 2X 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1	
V77	AD 1N4448 75V UDI DIODE	AD 0012.0700.00	PHILIPS_SE	1N4448 "	
V78	AE BAR14-1 2X 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1	
V79	AE BAR14-1 2X 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1	
V80	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	
V102	AK BFQ34T N 18V 150MA TRANSISTOR	0801.8283.00	PHILIPS	BFQ34T	
V103	AK BC560B P 45V 100MA TRANSISTOR	AK 0007.2044.00	SIEMENS	BC560B	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
V104	AE 5082-0840 15V STEPRDI DIODE	AE 0300.6830.00	HEWLETT_PA	5082-0840	
V105	AE HSMS2810 SCHOTTKY DIODE	0520.7340.00	HEWLETT_PA	HSMS2810	
V106 ..109	AE 5082-2810 SCHOTTKY DIODE	AE 0012.9389.00	HEWLETT_PA	5082-2810 GEGURTET	
V125	AE BAR14-1 2X 100V PIN PIN DIODE	0820.3283.00	SIEMENS	BAR14-1	
V126	AE 1N4689 5V1 0.3W ZDI ZENER DIODE	AE 0303.9418.00	SIEMENS	1N4689	
V127	AK NE85637 N 12V 100MA TRANSISTOR	0801.8231.00	NEC	NE85637(2SC3358)	
V128	AE HSMS2800 SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V129	AE HSMS2800 SCHOTTKY DIODE	AE 0836.8421.00	HEWLETT_PA	HSMS-2800(#L31)	
V160	AM U431 N-D DUALJFET FET	AM 0511.8677.00	SILICONIX	U431	
V161	AK 2N2369A N 15V 200MA TRANSISTOR	AK 0010.4680.00	VALVO	2N2369A ODER BSX20	
V162	AK 2N3906 P 40V 200MA TRANSISTOR	0010.3225.00	MOTOROLA	2N3906	
V163	AK 2N3906 P 40V 200MA TRANSISTOR	0010.3225.00	MOTOROLA	2N3906	
V165	AK 2N3906 P 40V 200MA TRANSISTOR	0010.3225.00	MOTOROLA	2N3906	
V166 ..170	AK 2N3904 N 40V 200MA TRANSISTOR	0010.4996.00	FAIRCHILD	2N3904	
V171	AK 2N3906 P 40V 200MA TRANSISTOR	0010.3225.00	MOTOROLA	2N3906	
V172	AD 1N4448 75V UDI DIODE	AD 0012.0700.00	PHILIPS_SE	1N4448 "	
V173	AD 1N4448 75V UDI DIODE	AD 0012.0700.00	PHILIPS_SE	1N4448 "	
V174	AE BZX55/B10 0,5W ZDI ZENER DIODE	AE 0289.4302.00	VALVO	BZX79B10	
V175	AM J111A N-D 40V JFET FET	0214.7685.00	SILICONIX	J111A	
V176	AM J111A N-D 40V JFET FET	0214.7685.00	SILICONIX	J111A	
V177	AM J111A N-D 40V JFET FET	0214.7685.00	SILICONIX	J111A	
V178	AK BC550B N 50V 100MA TRANSISTOR	AK 0007.2050.00	SIEMENS	BC550B	
V179	AK BC550B N 50V 100MA TRANSISTOR	AK 0007.2050.00	SIEMENS	BC550B	
V180	AK BC550B N 50V 100MA TRANSISTOR	AK 0007.2050.00	SIEMENS	BC550B	
V181	AK BC560B P 45V 100MA TRANSISTOR	AK 0007.2044.00	SIEMENS	BC560B	
V182	AK BC560B P 45V 100MA TRANSISTOR	AK 0007.2044.00	SIEMENS	BC560B	
V183	AK 2N2219A N 40V 800MA TRANSISTOR	0083.6953.00	VALVO	2N2219A	
V184	AM J108 N-D 25V JFET FET	AM 0332.2660.00	SILICONIX	J108	
V185	AM J108 N-D 25V JFET FET	AM 0332.2660.00	SILICONIX	J108	
V186	AE 5082-2800 SCHOTTKY DIODE	AE 0012.9066.00	HEWLETT_PA	5082-2800	
V187	AK 2N2369A N 15V 200MA TRANSISTOR	AK 0010.4680.00	VALVO	2N2369A ODER BSX20	
V188	AK 2N2369A N 15V 200MA TRANSISTOR	AK 0010.4680.00	VALVO	2N2369A ODER BSX20	
V190	AK BC550B N 50V 100MA TRANSISTOR	AK 0007.2050.00	SIEMENS	BC550B	
V192	AD BAS16 75V UDI DIODE	AD 0007.4924.00	VALVO	BAS16 (A6P)	
V193	AD BAS16 75V UDI DIODE	AD 0007.4924.00	VALVO	BAS16 (A6P)	
V203	AK 2N2369A N 15V 200MA TRANSISTOR	AK 0010.4680.00	VALVO	2N2369A ODER BSX20	
V204	AE BZX55/B4V7 0,5W ZDI ZENER DIODE	AE 0080.4014.00	VALVO	BZX79B4V7	
V205	AE BZX79B2V7 2% 0.5W ZDI ZENER DIODE	AE 0008.7762.00	PHILIPS_SE	BZX79B2V7	
V206	AE BZX79B2V7 2% 0.5W ZDI ZENER DIODE	AE 0008.7762.00	PHILIPS_SE	BZX79B2V7	

Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
V207	AD 1N4448 75V UDI DIODE	AD 0012.0700.00	PHILIPS_SE	1N4448 "	
V208	AD 1N4448 75V UDI DIODE	AD 0012.0700.00	PHILIPS_SE	1N4448 "	
V209	AD BAS16 75V UDI DIODE	AD 0007.4924.00	VALVO	BAS16 (A6P)	
V213	AK BC560B P 45V 100MA TRANSISTOR	AK 0007.2044.00	SIEMENS	BC560B	
V214	AK BC550B N 50V 100MA TRANSISTOR	AK 0007.2050.00	SIEMENS	BC550B	
V255	AD 1N4448 75V UDI DIODE	AD 0012.0700.00	PHILIPS_SE	1N4448 "	
V350	AL BD139 N 80V 1A0 TRANSISTOR	AL 0274.8994.00	VALVO	BD139	
V351	AE BZX55/B8V2 0,5W ZDI ZENER DIODE	AE 0012.2178.00	VALVO	BZX79B8V2	
V352	AE BZX55/B5V1 0,5W ZDI ZENER DIODE	AE 0262.5837.00	TELEFUNKEN	BZX55B5V1	
V450	AM J111A N-D 40V JFET FET	0214.7685.00	SILICONIX	J111A	
X101	FJ EINBAUSTECKER F.GS SMB ANGLE CONNECTOR	FJ 0602.8804.00	IMS	81.1524.201	
X111	FJ EINBAUSTECKER F.GS SMB ANGLE CONNECTOR	FJ 0602.8804.00	IMS	81.1524.201	
X121	FP STIFTLEISTE 36P.R2,54 PIN CONNECTOR 2-POLIG/PINS	FP 0242.3600.00	BINDER	742-11-0179-00-36	
X122	FP KURZSCHLUSSBUCHSE SHORTING PLUG	FP 0491.7042.00	IS	IPC-254-BL01	
X160	FP STIFTLEISTE 36P.R2,54 PIN CONNECTOR 2-POLIG/PINS	FP 0242.3600.00	BINDER	742-11-0179-00-36	
X161	FP KURZSCHLUSSBUCHSE SHORTING PLUG	FP 0491.7042.00	IS	IPC-254-BL01	
X165	FP STIFTLEISTE 36P.R2,54 PIN CONNECTOR 3-POLIG/PINS	FP 0242.3600.00	BINDER	742-11-0179-00-36	
X166	FP KURZSCHLUSSBUCHSE SHORTING PLUG	FP 0491.7042.00	IS	IPC-254-BL01	
X200	FP STIFTLEISTE 36P.R2,54 PIN CONNECTOR 3-POLIG/PINS	FP 0242.3600.00	BINDER	742-11-0179-00-36	
X201	FP KURZSCHLUSSBUCHSE SHORTING PLUG	FP 0491.7042.00	IS	IPC-254-BL01	
X11A	FP STECKERLEISTE 32POL. MULTIPOINT CONNECTOR	FP 0514.4550.00	SIEMENS	V42254-B1200-B641	
Z352	LD 10GHZ 50DB100V10A4RDX9 LEAD-THROUGH FILTER	LD 0451.4636.00	SPECTRUM	51-713-036	
Z353	LD 10GHZ 50DB100V10A4RDX9 LEAD-THROUGH FILTER	LD 0451.4636.00	SPECTRUM	51-713-036	
Z355	LD 10GHZ 50DB100V10A4RDX9 LEAD-THROUGH FILTER	LD 0451.4636.00	SPECTRUM	51-713-036	
Z357	LD 10GHZ 50DB100V10A4RDX9 LEAD-THROUGH FILTER	LD 0451.4636.00	SPECTRUM	51-713-036	
Z361	LD 10GHZ 50DB100V10A4RDX9 LEAD-THROUGH FILTER	LD 0451.4636.00	SPECTRUM	51-713-036	
Z362	LD 10GHZ 50DB100V10A4RDX9 LEAD-THROUGH FILTER	LD 0451.4636.00	SPECTRUM	51-713-036	
Z363	LD 10GHZ 50DB100V10A4RDX9 LEAD-THROUGH FILTER	LD 0451.4636.00	SPECTRUM	51-713-036	
Z365	LD 10GHZ 50DB100V10A4RDX9 LEAD-THROUGH FILTER	LD 0451.4636.00	SPECTRUM	51-713-036	
Z366	LD 10GHZ 50DB100V10A4RDX9 LEAD-THROUGH FILTER	LD 0451.4636.00	SPECTRUM	51-713-036	

FMIN OSZ.1
FMIN OSZ.2
FMIN OSZ.3
OSZILLATOR 1 (1000...1400 MHZ)
OSCILLATOR 1 (1000...1400 MHZ)
OSZILLATOR 2 (1400...1800 MHZ)
OSCILLATOR 2 (1400...1800 MHZ)
OSZILLATOR 3 (1800...2160 MHZ)
OSCILLATOR 3 (1800...2160 MHZ)
ZU/TO A13
RFO OUT
500...2160 MHZ
HF - TREIBER
RF-BOOSTER
STROMLAUF GILT FUER VAR.02
CIRCUIT DIAGRAM IS VALID FOR MOD.02
* GEDRUCKTE SPULE,DARGESTELLT AUF LEITERPLATTE.
ACHTUNG: EGB!
ELEKTROSTATISCH GEFAEHRDETE BAUELEMENTE ERFORDERN EINE BESONDERE HANDHABUNG.
ATTENTION: ESD!
ELECTROSTATIC SENSITIVE DEVICES REQUIRE A SPECIAL HANDLING.
RF-OSZILLATOREN
RF-OSCILLATORS
ROHDE&SCHWARZ
SMGU
819.8262.01S


PULSTREIBER
PULSE AMPL.
SRD BIAS
VON A10
RFD REF
PULSE 40 MHZ
Trimmwert selektiert
40M.REF
DIA.SRD
SAMPLER (819.8827)
SPANNUNGSFOLGER
VOLTAGE FULLOVER
OFFSET
INTEGRATOR
REGELSPANNUNGSSCHALTER
CONTROL VOLTAGE SWITCH
FMAX: OS1 OS2 OS3
BANDBREITENUMSCHALTER
BANDWIDTH SWITCH
PRC.INT
V.BL.3
PLL - TREIBER
PLL BOOSTER
ACHTUNG: EGB!
ELEKTROSTATISCH GEFAEHRDETE BAUELEMENTE ERFORDERN EINE BESONDERE HANDHABUNG.
ATTENTION: ESD!
ELECTROSTATIC SENSITIVE DEVICES REQUIRE A SPECIAL HANDLING.
RF-OSZILLATOREN
RF-OSCILLATORS
ROHDE&SCHWARZ
819.8262.01S
STROMLAUF GILT FUER VAR.02
CIRCUIT DIAGRAM IS VALID FOR MOD.02
• GEDRUCKTE SPULE,AUF LEITERPLATTE DARGESTELLT

ZEICHN.-NR.

0819.4002.02

HF - VORTEILER 1/16
RF PRESCALER 1/16

M - TEILER
M DIVIDER

40 - MHZ - TEILER 1/32
40 - MHZ - DIVIDER 1/32

RICHTUNDSDETEKTOR
DIRECTION DETEKTOR

FREQUENZDETEKTOR
FREQUENCY DETECTOR

F - RAMPE LANGSAM
F-RAMP SLOW

F - RAMPE SCHNELL
F-RAMP FAST

TIEF - HOCHPASS
HIGH/LOWPASS

ASYNCHRON - ERKENNUNG
ASYNCHRON DETECTOR

ABSCHALTVERZOEGERUNG
SWITCH OFF DELAY

* N.F.- NOT FITTED
ERSATZ DURCH
REPLACE THROUGH
GS 0819.4009.02

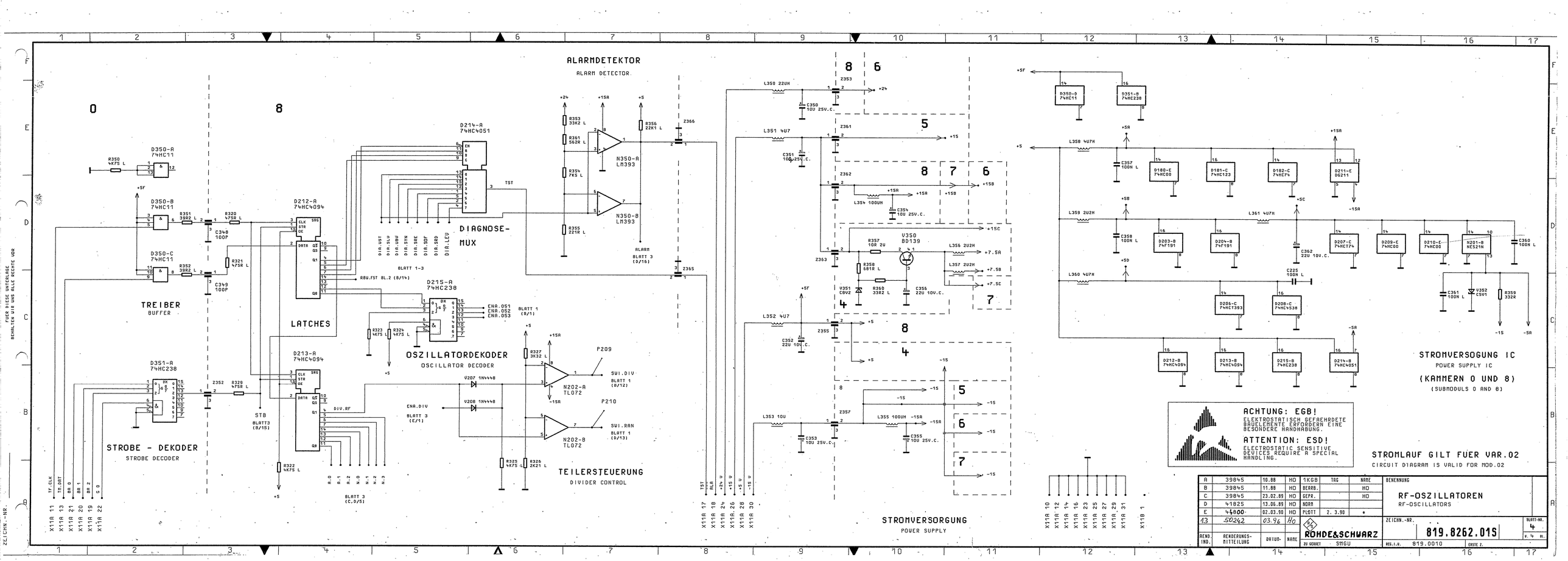
F-DET. NULL

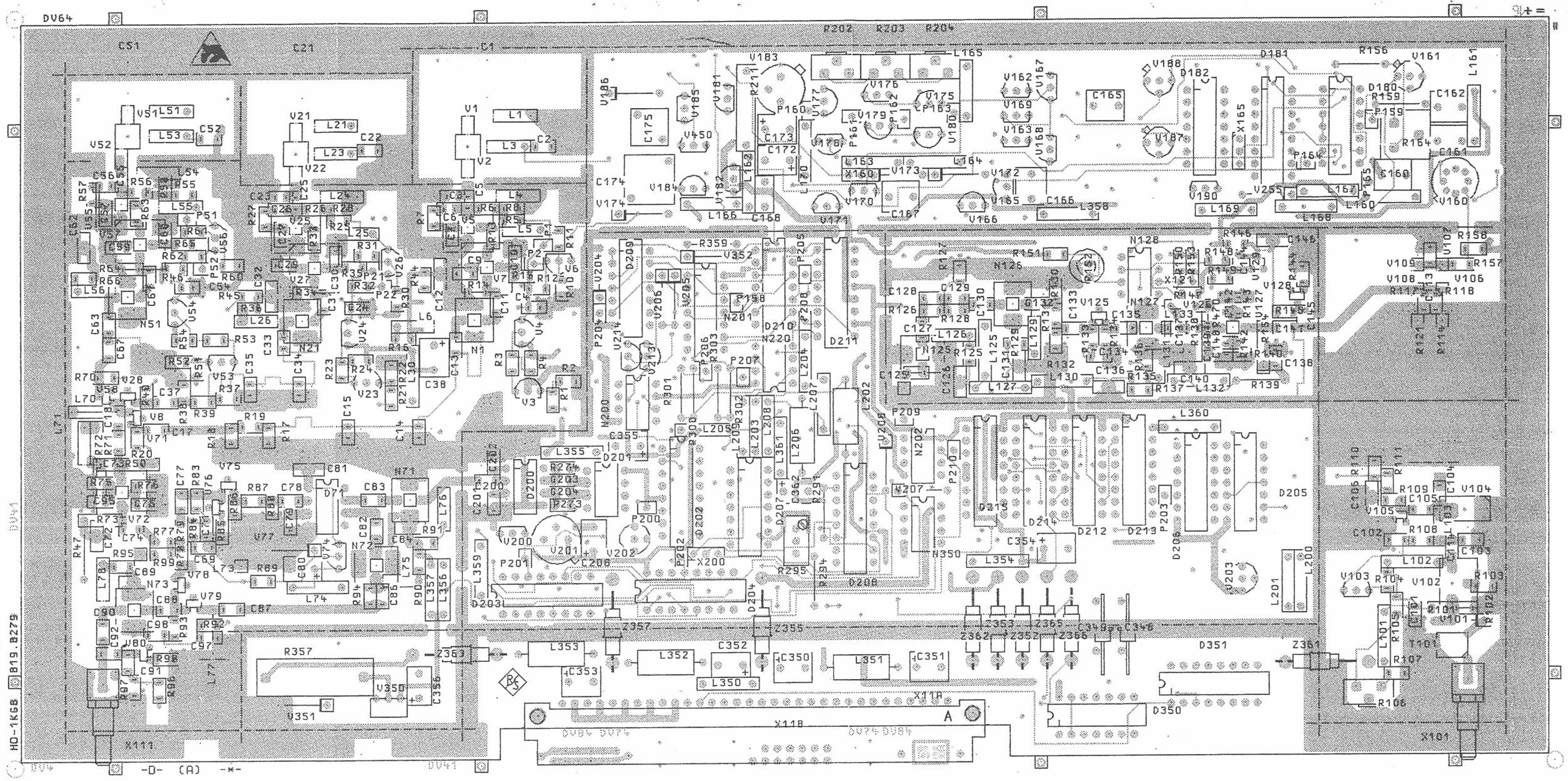
ACHTUNG: EGB!
ELECTROSTATISCH GEFAERDETE BAUELEMENTE ERFORDERN EINE BESONDERE HANDHABUNG.
ATTENTION ESD!
ELECTROSTATIC SENSITIVE DEVICES REQUIRE A SPECIAL HANDLING

BINDENDE ANGABEN UEBER VARIANTEN, TRIMMWERTE, BAUTEILWERTE UND NICHT BESTUECKTE BAUTEILE SIEHE SR.

FOR BINDING INFORMATION ON MODELS, TRIMMING AND COMPONENTS VALUES AND NONFITTED COMPONENTS SEE PARTS LIST.

15/		22.12.97	EI	MENP	TAG	NAME	BENENNUNG
				BEARB.		EI	RF-OSZILLATOREN
				GEPR.			RF-OSCILLATORS
				NORM			
				PLOTT	22.12.97		
13/	50242	07.96	WO	ROHDE&SCHWARZ			ZEICHN.-NR. 819.8262.01S BLATT-NR. 3+
AEND. IND.	AENDERUNGS-MITTEILUNG	DATUM	NAME	ZU GERAET SMGU			REG.I.V. 819.0010 EINSTE Z. 819.0055


ALARMDETEKTOR
ALARM DETECTOR
DIAGNOSE-
MUX
TREIBER
BUFFER
LATCHES
OSZILLATORDEKODER
OSCILLATOR DECODER
STROBE - DEKODER
STROBE DECODER
TEILERSTEUERUNG
DIVIDER CONTROL
STROMVERSORGUNG
POWER SUPPLY
STROMVERSOGUNG IC
POWER SUPPLY IC
(KAMMERN 0 UND 8)
(SUBMODULS 0 AND 8)
ACHTUNG: EGB!
ELEKTROSTATISCH GEFAEHRDETE BAUELEMENTE ERFODERN EINE BESONDERE HANDHABUNG.
ATTENTION: ESD!
ELECTROSTATIC SENSITIVE DEVICES REQUIRE A SPECIAL HANDLING.
STROMLAUF GILT FUER VAR.02
CIRCUIT DIAGRAM IS VALID FOR MOD.02
RF-OSZILLATOREN
RF-OSCILLATORS
ROHDE&SCHWARZ
819.8262.01S
FUER DIESE UNTERLAGE BEHALTEN WIR UNS ALLE RECHTE VOR



Ansicht und Leitungsfuehrung Bauteilseite
View of tracks on component side

DV41

ACHTUNG: EGB!
Elektrostatisch gefährdete Bauelemente erfordern eine besondere Handhabung.
ATTENTION ESD!
Electrostatic sensitive devices require a special handling.
(hierzu HVC 250)

Änd. Zust.	Änderungs-Mitteilung	Tag	Name
09	44800	03.90	HO

Maße ohne Toleranzangabe		
1KGB	Tag	Name
Bearb.	03.90	HO
Gepr.		
Norm		

ROHDE&SCHWARZ

zu Gerät SMGU

Maßstab 1 : 1

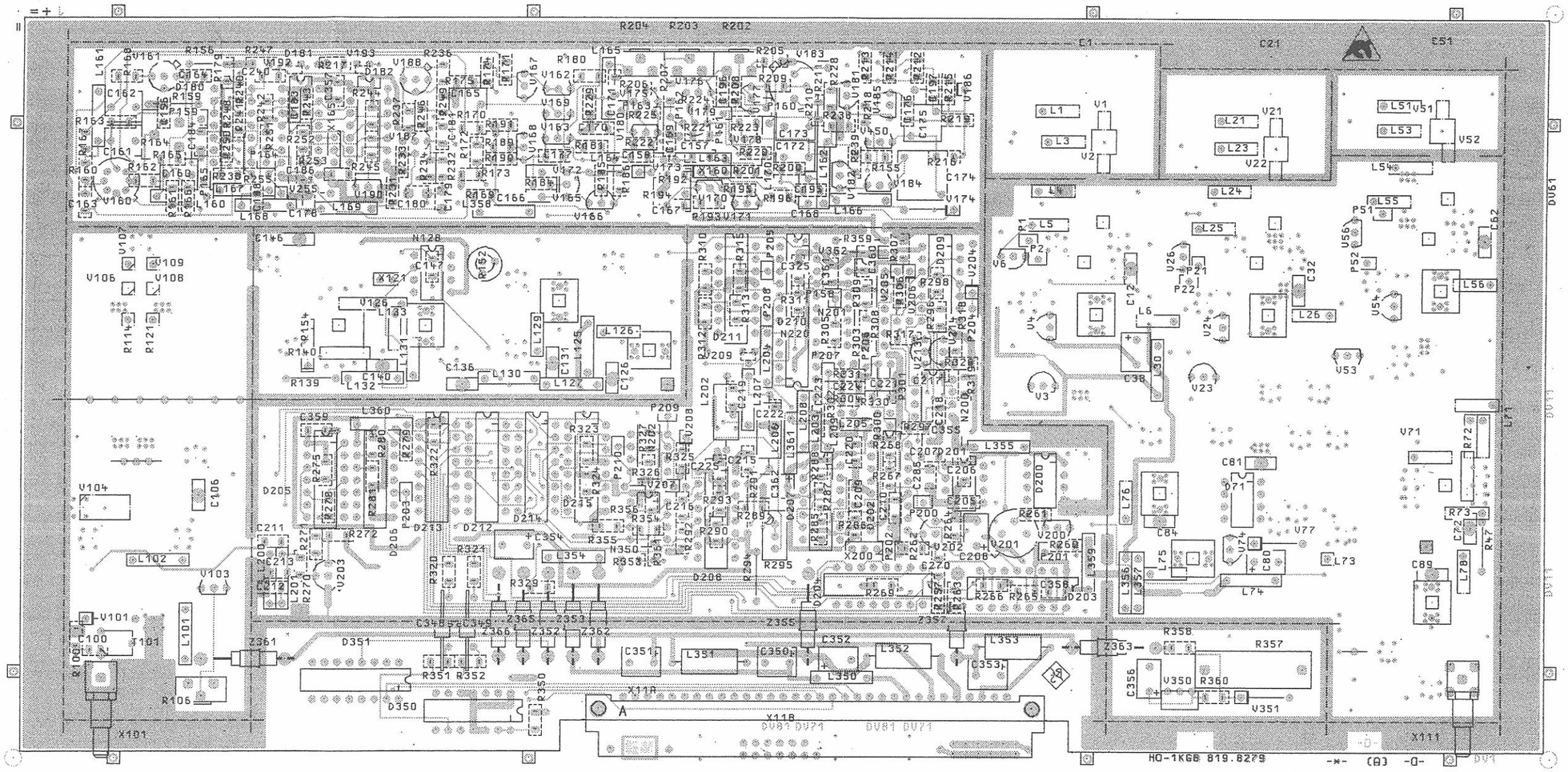
Halbzeug, Werkstoff

Benennung: RF - OSZILLATOR — Z

Zeichn.-Nr. 819.8262

Blatt-Nr. 2 v. Bl.

reg. i. V. 819.0010 V — erste Z.



Ansicht und Leitungsfuehrung Loetseite
View of tracks on solder side

DV11

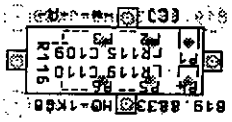
09	44800	03.90	HO	Maße ohne Toleranzangabe		Maßstab 1 : 1	
						Halbzeug, Werkstoff	
				1KGB	Tag	Name	Benennung: RF - OSZILLATOR; Z
				Bearb.	03.90	HO	
				Gepr.			
				Norm			
Änd. Zust.	Änderungs-Mitteilung	Tag	Name	ROHDE&SCHWARZ		Zeichn.-Nr. 819.8262	Blatt-Nr. 5 v. Bl.
				zu Gerät SMGU		reg. i. V. 819.0010 V	erste Z.

(hierzu HVC 250)

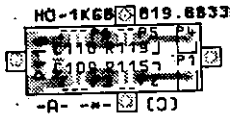
ACHTUNG: EGB!
Elektrostatisch gefährdete Bauelemente erfordern eine besondere Handhabung.

ATTENTION ESD!
Electrostatic sensitive devices require a special handling.

Ansicht und Leitungsführung Bauteilseite
View of tracks on component side



Ansicht und Leitungsführung Lötseite
View of tracks on solder side



	Maße ohne Toleranzangabe	Maßstab 1 : 1	
		Halbzeug, Werkstoff	
	1KGB Tag Name	Benennung	
	Bearb 09.88 HÖ	SAMPLER	Z
	Gepr		
	Norm		
	ROHDE&SCHWARZ	Zeichn.-Nr 819.8827	Blatt-Nr 2 v 2 Bl
Änd Zust Änderungs-Mitteilung Tag Name	zu Gerät SMGU	reg. v 819.0010 V erste Z	