



**ROHDE & SCHWARZ**

**SERVICE DOCUMENTS**

Controller

819.2164.02



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## 5 Service Manual "Controller"

### 5.1 Function Description

(See circuit diagram 819.2164 S and Fig. 5-1)

The module comprises the following function units:

- ▶ *CPU with program and data memories*
- ▶ *Interface to module "Display/keyboard" and for data transmission*
- ▶ *Diagnostics circuit*
- ▶ *X output*
- ▶ *IEC interface*

#### 5.1.1 CPU with Program and Data Memories

The CPU is an 80186 operated at 8 MHz. To ensure correct starting of the program, N101 generates a RESET signal for the CPU. A total of 128 kbytes (D135, D140) is provided for the program memories. The RAMs D170, D175 with battery back-up are used as data memories and for storing instrument settings. The EEPROMs D145, D150 contain correction tables determined from instrument-specific parameters (e.g. level and modulation frequency response flatness).

#### 5.1.2 Interface to "Display/Keyboard" subassembly and for Data Transmission

The custom gate array "IFPAS" (D225) contains three independent circuits:

- *Interface for tachogenerator (RMK)*

The tachogenerator signals ("Display/keyboard" subassemblies) 90° out of phase, are applied to the input pins RMK.PLS and RMK.DIR. The pulses are added internally, the direction of rotation detected, and the CPU informed by means of an interrupt (RMK.INT).

- *Interface for the key matrix*

The outputs KC1 to KC8 at low potential are connected via the key matrix (column lines) of the "Display/keyboard" subassembly to the high-impedance CMOS inputs KR1 to KR8 (row lines). With the keys open, C210 to C217 are at high potential. Pressing a key combines one row line with one column line, and the corresponding input KR1 to KR8 is set to Low. The interrupt generated (KEY.INT) requests the CPU to read the key code. To generate it, the pins KC1 to KC8 become inputs and thus go into a high-impedance state. The "open" column lines now rapidly go high.

The appropriate capacitor (C210 to C217) must first be charged via the column line of the pressed key. A 1-out-of-64 code is generated from this signal status shortly before the end of the read access.

- *Interface to serial bus*

This serial bus consists of the three unidirectional lines TFR.CLK (transfer clock), TR.DAT (transmit data) and RC.DAT (receive data). The data (TR.DAT) are loaded into shift registers (of the other subassemblies) by means of TRF.CLK. The transfer to the "Display/keyboard" subassembly is made via the gates D250. The data are either accepted for the LCD controller with the strobe (DIS.STB) generated by D275, or they are accepted for the LEDs with the LED strobe (LED.STB) and applied to the outputs of the shift registers. Group lines and address lines (G0 to G2, BA0 to BA2) are output via D270 in order to generate the strobes on the remaining modules. Each module decodes the required strobes from this binary code.

The input shift register of the IFPAS is linked to TRF.CLK and TR.DAT and accepts all transmitted data.

### 5.1.3 Diagnostics Circuit

#### 5.1.3.1 Analog Diagnostics Circuit

Various sources can be connected to the input of the 12-bit analog/digital converter N320 using the multiplexer D300:

- Voltages of various subassemblies on TST
- Vacant input as voltmeter
- Battery voltage
- Frequency-proportional voltage of X output

Each voltage can be provided with a gain of 1 or 10 by means of N304, N308 prior to conversion. The ADC module has its own reference voltage. Its measuring range is  $\pm 5.12$  V and is set using R323 (gain) and R321 (offset).

#### 5.1.3.2 Digital Diagnostics Circuit

The external hardware status can be sent to the CPU via the 8-bit input port D265 to indicate for example whether interrupt requests are present or whether the overvoltage protection is still active. In addition, the status signal of the EEPROMs is monitored during programming, as is an external trigger signal.

### 5.1.4 X Output

The 12-bit DAC N355 generates a voltage ramp from 0 to 10 V proportional to the start and stop frequencies of the sweep. The converter is programmed via the latches D360, D365.

A signal "PEN LIFT" (Z output) is output by D365 to control the recorder. A MARKER signal whose polarity is software selectable can be selected using the software can be output for observations on an oscilloscope.

### 5.1.5 IEC Interface

The IEC/IEEE bus interface consisting of the modules D370, D375, D380 is based on the remote-control interface to IEC 625/IEEE 488. The interface can write data directly to the data memory or read data from it via the lines DRQ0, DACK and a DMA channel of the microprocessor. The handshake on the IEC/IEEE bus is handled automatically by the interface. Service requests are passed on to the CPU via the interrupt input INT1.

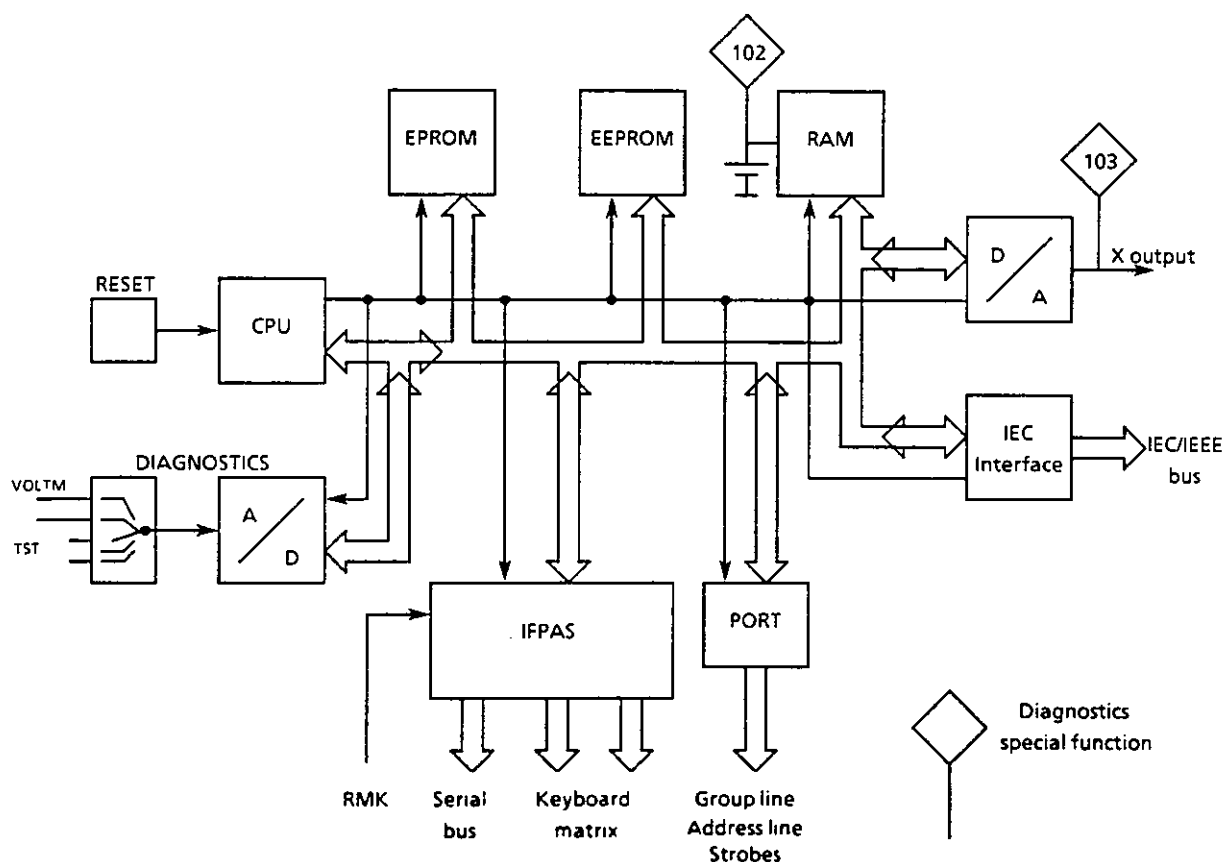


Fig. 5-1 Block diagram "Controller"

## **5.2 Testing and Adjustment**

### **5.2.1 Checking the RAM Back-up Voltage**

The battery voltage must be 3.2 V to 3.5 V at test point P160 without the supply voltage of the module.

### **5.2.2 Checking the Reference Voltage for the X Output**

A reference voltage of 10.0 V to 10.4 V for the DAC should be measured at test point P350.

### **5.2.3 Adjusting the ADC (Diagnostics)**

- Input: SHIFT SPEC 109
- Connect a DC voltage source of 0 to 5 V to plug X5A 12 (TST).

#### **a) Offset adjustment**

0 V: adjust display to 0.0 mV using R321.

#### **b) Gain adjustment**

5.000 V: adjust display to 5.000 V using R323.

## 5.4 Interfaces

### 5.4.1 Motherboard Interface

Test point	Type of line	Signal direction	Meaning	
X5, 1, 2, 5, 7, 9, 11, 20, 22, 24, 26, 30	⊥		GND	
3	TTL	I	INT ATT	Interrupt precision attenuator
4	TTL	I	INT AF	Interrupt AF
6	CMOS	O	TF.CLK	Serial data transmission
8	CMOS	O	TR.DAT	
10	TTL	I	RC.DAT	
12	DC	I	TST	Test input (-5V to +5V)
13	TTL	I	ALA	LOOP OK
14	CMOS	O	BA2	Subassembling address
15	CMOS	O	BA1	Subassembling address
16	CMOS	O	BA0	Subassembling address
17	CMOS	O	G2	Group line
18	CMOS	O	G1	Group line
19	CMOS	O	G0	Group line
21	DC		+15 V	Power supply
23	DC		-15 V	Power supply
25	DC		+12 V STB	STANDBY
27, 28, 29	DC		+5 L	Power supply
31	TTL	I	PWR.FAIL	Power fail
32	DC	O	PWR.ON	Power on following standby

### 5.4.2 IEC bus/X Output Interface

Test point	Type of line	Signal direction	Meaning	
X43A 1, 5, 6 B 1, 2, 3, 5 to 12	⊥		GND	
A14...17	TTL	I/O	IEC/IEEE data bus	IEC/IEEE control signals
B14...17	TTL	I/O	IEC/IEEE data bus	
A12	TTL	I/O	DAV	
A11	TTL	I/O	NRFD	
A10	TTL	I/O	NDAC	
A7	TTL	I/O	ATN	
A9	TTL	I/O	IFC	
A8	TTL	I/O	SRQ	
B13	TTL	I/O	REN	
A13	TTL	I/O	EOI	
A4	DC: 0 to +10 V	O	X OUTPUT	Voltage ramp (0 to +10 V)
B4	CMOS	O	MARKER	Programmable Z output
A3	CMOS	O	Polarity	
A2	TTL	I	Ext trigger	



### 5.4.3 Voltmeter Interface

X300, 1 -40 V to +40 V input Voltmeter input  
X300, 2  $\perp$

### 5.4.4 Display/Keyboard Interface

Test point	Type of conductor	Signal direction	Meaning	
X31.A1, 5, 9, 10, 11 B1, 8, 10	$\perp$		GND	
X31.A6	DC	E	PWR.ON	Power on following standby
B19, 9	DC	A	+5 L	
B20	DC	A	+15 V	
A20	DC	A	+12 V STB	
A8	CMOS	A	DIS.RES	Reset
B2	CMOS	A	DIS.CLK	Serial data
A2	CMOS	A	DIS.DAT	transmission
A4	CMOS	A	$\overline{C/D}$	Control of
B3	CMOS	A	$\overline{DIS.STB1}$	LCD controller
A3	CMOS	A	$\overline{DIS.STB2}$	
B4	CMOS	A	$\overline{DIS.STB3}$	
B5	CMOS	A	LED.STB	Strobe for LED
B6	CMOS	E	DIS.BUSY	Handshake signal of LCD controller
A7	CMOS	E	DREHG.PULS	Tachogenerator information
B7	CMOS	E	DREHG.DIR	
B11 to B14		E		
A12 to A15	DC	E	KEYB.COL	Key matrix
B15 to B18		E		
A16 to A19	DC	E	KEYB.ROW	

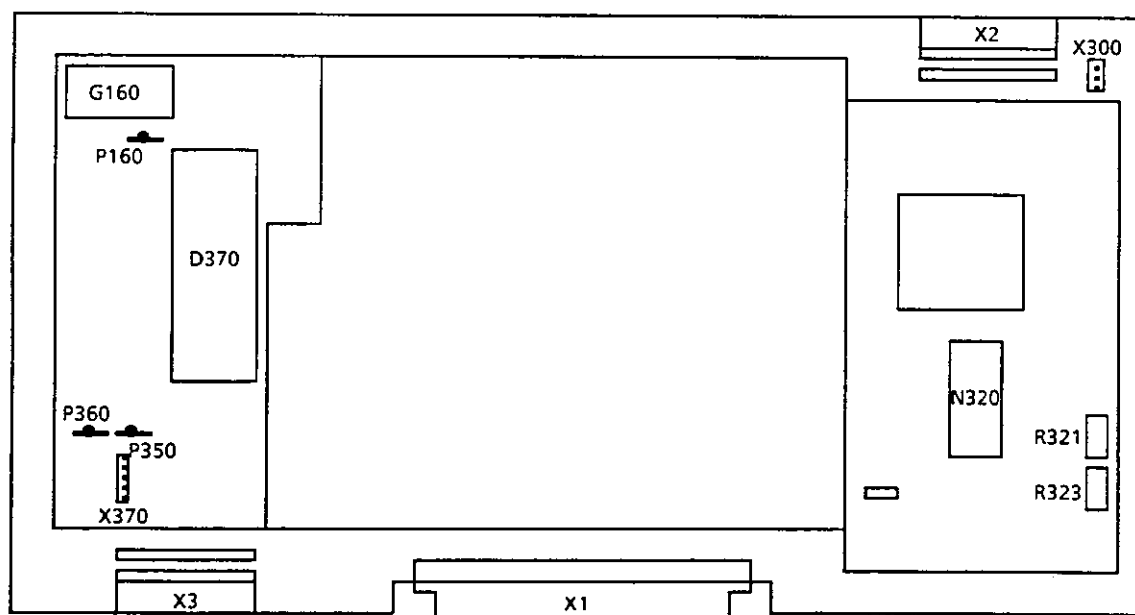


Fig. 5-2 Layout of test points and adjustment points

## 5.5 List of Required Test Equipment

- DC voltmeter	(0 to 20V)	eg R&S URE
- DC power supply	(0 to 6V)	eg R&S NGT 20



**ROHDE & SCHWARZ**

**Schaltteillisten**

**Stromläufe**

**Bestückungspläne**

**Part lists**

**Circuit diagrams**

**Components plans**

**Listes des pièces détachées**

**Schémas de Circuit**

**Plans des composants**


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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
B100	EQ 16,000000MHZ CL30HC43U CRYSTAL 16MHZ	EQ 0091.0321.00	PHILIPS	N. R&S SACHNUMMER	
C100	CE 22UF+-20%10V SAL ELECTR.CAPACITOR	CE 0007.3940.00	VALVO	2222 128 34229	
C101	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C102	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C103	CE 4,7UF+-20%10V 5X 4X 7 ELECTROLYTIC CAPACITOR	CE 0022.8056.00	KEMET	T340 A475MD10 AS	
C110	CC 22PF+-2%4X5NPO CAPACITOR	CC 0087.6464.00	PHILIPS_CO	2222 678 .....	
C111	CC 22PF+-2%4X5NPO CAPACITOR	CC 0087.6464.00	PHILIPS_CO	2222 678 .....	
C117	CC 47PF+-2%5X6NPO CAPACITOR	CC 0087.6506.00	PHILIPS_CO	2222 678 .....	
C120	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C125	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C130	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C135	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C140	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C145	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C150	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C160	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C170	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C175	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C180	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C181	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C190	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C191	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C200	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
..207	CK 10NF+-5%63V RD2,5H7MKT CAPACITOR	CK 0099.2869.00	ROEDERSTEI	MKT 1826-310-014W	
C210	CC 2,2NF+-10%5X6R2000 CAPACITOR	CC 0087.7060.00	PHILIPS_CO	2222 630 51222	
..217	CC 2,2NF+-10%5X6R2000 CAPACITOR	CC 0087.7060.00	PHILIPS_CO	2222 630 51222	
C220	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C221	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C222	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C225	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C235	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C240	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C245	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C250	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C255	CK 68NF+-5%63V RD2,5H7MKT CAPACITOR	CK 0099.2923.00	ROEDERSTEI	MKT 1826-368-06-4	
C260	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C261	CE 22UF+-20%10V SAL ELECTR.CAPACITOR	CE 0007.3940.00	VALVO	2222 128 34229	
C262	CE 22UF+-20%10V SAL ELECTR.CAPACITOR	CE 0007.3940.00	VALVO	2222 128 34229	
C265	CK 1,0NF +-1% 100V RM5 KP POLYPROPYLENE CAPACITOR	CK 0007.7598.00	ROEDERSTEI	KP1830-210 01 1 3 W	
C270	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
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C280 ..287	CC 100PF+-2%63V6,5X9 NPO CAPACITOR	0092.7442.00	STETTNER	EGPZ	
C290	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C291	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C292	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C293	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C294	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C295	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C296	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C297	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C298	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C300	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C301	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C302	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C303	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C304	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C305	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C306 ..309	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C320	CE 47UF+-20%63V RM5 ELECTROLYTIC CAPACITOR	0008.7440.00	PHILIPS_CO	2222 116 90112	
C321	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C322	CE 47UF+-20%63V RM5 ELECTROLYTIC CAPACITOR	0008.7440.00	PHILIPS_CO	2222 116 90112	
C323	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C324	CE 47UF+-20%63V RM5 ELECTROLYTIC CAPACITOR	0008.7440.00	PHILIPS_CO	2222 116 90112	
C325	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C330	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C335	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C350	CE 100UF+-20%25V RD8X9,5 ELECTROLYTIC CAPACITOR	0803.0580.00	MATSUSHITA	ECE-A1ESS-101	
C351	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C352	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C353	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C355	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C356	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C357	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C358	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
C360	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C365	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C370	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C371	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C372	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C375	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
C380	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C390	CC 68PF+-2%6X7NPO CAPACITOR	CC 0087.6529.00	PHILIPS_CO	2222 678 .....	
C392	CC 2,2NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8444.00	PHILIPS_CO	2222 581 16618	
D100	BC N80C186XL10 16B.EBC IC EMBEDDED PROCESSOR	BC 0007.7930.00	INTEL	N80C186XL12	
D107	BL PC74HCT00P 4X2I.NAND QUAD 2-INPUT NAND GATE	0571.3394.00	PHILIPS_SE	(PC)74HCT00(N)	
D108	BL PC74HCT32P 4X2IN.ORG QUAD 2-INPUT OR GATE	BL 0571.3420.00	PHILIPS	(PC)74HCT32N(P)	
D120	BL PC74HCT573P 8XD-LATCH OCTAL D-TYPE LATCH	0620.3146.00	PHILIPS_SE	(PC)74HCT573N(P)	
D125	BL MM74HC75N 4B.BIST.LA 4BIT BISTABLE LATCH	0099.9511.00	PHILIPS_SE	(PC)74HC75N(P)	
D130	BL PC74HCT573P 8XD-LATCH OCTAL D-TYPE LATCH	0620.3146.00	PHILIPS_SE	(PC)74HCT573N(P)	
D135	BC SOFTW.N.BESTUECKUNGSP SOFTW. SEE COMPONENTSPLAN 819.0049 BP	0669.2808.90			
D140	BC SOFTW.N.BESTUECKUNGSP SOFTW. SEE COMPONENTSPLAN 819.0049 BP	0669.2808.90			
D142	BL PC74HCT32P 4X2IN.ORG QUAD 2-INPUT OR GATE	BL 0571.3420.00	PHILIPS	(PC)74HCT32N(P)	
D145	BC D2817A-3 2KX8 EEPROM EEPROM	0394.0248.00	ATMEL	AT28C17-25DC	
D150	BC D2817A-3 2KX8 EEPROM EEPROM	0394.0248.00	ATMEL	AT28C17-25DC	
D170	BC HM6264LP10 8KX8 SRAM SRAM	0813.9738.00	HYUNDAI	HY6264ALP-10	
D175	BC HM6264LP10 8KX8 SRAM SRAM	0813.9738.00	HYUNDAI	HY6264ALP-10	
D225	BG CLA3726 IFPAS ASIC IC GATEARRAY	0801.8348.00	PLESSEY	CLA3726(PLCC)	
D235	BL PC74HCT86P 4X2IN EXOR QUAD 2-INPUT EXOR GATE	0266.7228.00	PHILIPS	(PC)74HCT86N(P)	
D240	BL PC74HCT32P 4X2IN.ORG QUAD 2-INPUT OR GATE	BL 0571.3420.00	PHILIPS	(PC)74HCT32N(P)	
D245	BL PC74HCT74P 2XD-FF DUAL D-FLIP-FLOP	0571.3436.00	PHILIPS_SE	(PC)74HCT74N(P)	
D250	BL PC74HCT08P 4X2IN AND QUAD 2-INPUT AND GATE	0571.3413.00	PHILIPS	(PC)74HCT08N(P)	
D255	BL PC74HCT123P 2MULTIVIB DUAL MONOST.MULTIVIBRATOR	0352.7367.00	PHILIPS	(PC)74HCT123N(P)	
D260	BL PC74HCT138P LINE DEC 1-OF-8 DECODER/DEMUX	0571.3459.00	PHILIPS	(PC)74HCT138N(P)	
D265	BL PC74HCT244P 8XBUFF.3S OCTAL BUFFER	0352.7473.00	PHILIPS_SE	(PC)74HCT244N(P)	
D270	BL PC74HCT273P 8XD-FF CL OCTAL D-FLIPFLOP	0815.8080.00	PHILIPS_SE	(PC)74HCT273N(P)	
D275	BL MM74HC259N 8B.A.LATCH 8 BIT ADDRESSABLE LATCH	0394.9097.00	PHILIPS_SE	(PC)74HC259N(P)	
D280	BL PC74HCT08P 4X2IN AND QUAD 2-INPUT AND GATE	0571.3413.00	PHILIPS	(PC)74HCT08N(P)	
D285	BL PC74HCT04P 6XINVERT. HEX-INVERTER	0379.6726.00	PHILIPS	(PC)74HCT04N(P)	
D300	BL MM74HC4051N 8CH.AN.MUX 8CH.ANALOG MUX/DEMUX	0099.9670.00	PHILIPS	(PC)74HC4051N(P)	
D310	BL MM74HC259N 8B.A.LATCH 8 BIT ADDRESSABLE LATCH	0394.9097.00	PHILIPS_SE	(PC)74HC259N(P)	
D325	BL PC74HCT32P 4X2IN.ORG QUAD 2-INPUT OR GATE	BL 0571.3420.00	PHILIPS	(PC)74HCT32N(P)	
D330	BL PC74HCT244P 8XBUFF.3S OCTAL BUFFER	0352.7473.00	PHILIPS_SE	(PC)74HCT244N(P)	
D335	BL PC74HCT244P 8XBUFF.3S OCTAL BUFFER	0352.7473.00	PHILIPS_SE	(PC)74HCT244N(P)	
D360	BL PC74HCT273P 8XD-FF CL OCTAL D-FLIPFLOP	0815.8080.00	PHILIPS_SE	(PC)74HCT273N(P)	
D365	BL PC74HCT273P 8XD-FF CL OCTAL D-FLIPFLOP	0815.8080.00	PHILIPS_SE	(PC)74HCT273N(P)	
D370	BC UPD7210C GPIB IF CONTR GPIB INTERFACE CONTROLLER	BC 0620.3130.00	NEC	(UP)D7210C	
D375	BJ SN75160AN 8XBUS TRASC BUS TRANSCEIVER	BJ 0345.6517.00	TEXAS	SN75160BN	
MENP5 502 3PUA Äi Datum Date Schalteilleiste für Parts list for Sachnummer Stock No. Blatt-Nr. Page					
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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
D380	BJ SN75161AN 8XBUS TRANSC BUS TRANSCEIVER	BJ 0345.6523.00	TEXAS	SN75161BN	
G160	EB 3,4V LITHIUM-BATTERIE LI BATTERY	0565.1687.00	ACCU_SONNE	SL-750/P/009 1110750	
L260	LD 25UH 3A 0,0460HM CHOKE	LD 0026.4849.00	SIEMENS	B82111-B-C24	
L292	LD 150UH BEI 0,17A 6,20HM CHOKE	LD 0026.4055.00	DALE	IM 6	
L295	LD 10 UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L298	LD 150UH BEI 0,17A 6,20HM CHOKE	LD 0026.4055.00	DALE	IM 6	
N101	BO TL7705ACP UPSUPERVISOR IC RESET/POWER-CONTROLLER	0347.1170.00	TEXAS	TL7705ACP	
N304	BO LF156J FET OPAMP OPERATIONAL AMPLIFIER	BO 0645.7251.00	ANALOG_DEV	PM156Z	
N308	BS TL601CP 1X ANALOGSCH ANALOG SWITCH	BJ 0213.4530.00	TEXAS	TL601CP [MJG]	
N320	BJ AD574AKD 1X12B-ADC A/D-CONVERTER	0006.9774.00	ANALOG_DEV	AD-574AKD	
N350	BO LF412CN 2XFET OPAMP OPERATIONAL AMPLIFIER	0356.0521.00	NSC	LF412CN	
N355	BJ AM6012F 1X12B-DAC D/A-CONVERTER	0805.1425.00	SIGNETICS	AM6012F	
N370	EO 4,000000MHZ-QU.OSZ. 5V CLOCK OSZILLATOR	0377.4232.00	PHILIPS_CO	XO 5860 W(XO 5850 W)	
R100	RL 0,60W 475 OHM+-1%TK50 RESISTOR	RL 0083.0390.00	RESISTA	MK2	
R101	RL 0,60W22,10 OHM+-1%TK50 RESISTOR	RL 0082.9188.00	RESISTA	MK2	
R102	RL 0,60W22,10 OHM+-1%TK50 RESISTOR	RL 0082.9188.00	RESISTA	MK2	
R103	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R104	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R105	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R106	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R107	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R110	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R111	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R112	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R113	RL 0,60W 4,75KOHM+-1%TK50 RESISTOR	RL 0083.1097.00	RESISTA	MK2	
R114	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R115	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R116	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R117	RL 0,60W 100 OHM+-1%TK50 RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R118	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R125 ..129	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R130	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R145	RL 0,60W 3,32KOHM+-1%TK50 RESISTOR	RL 0083.0990.00	RESISTA	MK2	
R160	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R161	RL 0,60W 100KOHM+-1%TK50 RESISTOR	RL 0082.1764.00	RESISTA	MK2	
R162	RL 0,60W 150 OHM+-1%TK50 RESISTOR	RL 0082.9942.00	RESISTA	MK2	
R180	RN 9X 10KOHM+-SIL10 H5 RESISTOR NETWORK	RN 0343.4523.00	BI_TECHNOL	L 10 1 S 103 M*	


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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R181	RN 9X 10KOHM+-SIL10 H5 RESISTOR NETWORK	RN 0343.4523.00	BI_TECHNOL	L 10 1 S 103 M*	
R190	RN 9X 10KOHM+-SIL10 H5 RESISTOR NETWORK	RN 0343.4523.00	BI_TECHNOL	L 10 1 S 103 M*	
R191	RN 9X 10KOHM+-SIL10 H5 RESISTOR NETWORK	RN 0343.4523.00	BI_TECHNOL	L 10 1 S 103 M*	
R195	RL 0,60W 4,75KOHM+-1%TK50 RESISTOR	RL 0083.1097.00	RESISTA	MK2	
R196	RL 0,60W 4,75KOHM+-1%TK50 RESISTOR	RL 0083.1097.00	RESISTA	MK2	
R200	RN 9X3,3KOHM+-2%SIL10 H5 RESISTOR NETWORK	RN 0340.2765.00	BI_TECHNOL	L 10 1 S 332 M*	
R210 ..217	RL 0,60W 100 OHM+-1%TK50 RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R220	RN 9X47 KOHM+-2% SIL10 H5 RESISTOR NETWORK	RN 0341.9286.00	BOURNS	4610X-TO9-473	
R232	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R233	RL 0,60W 100KOHM+-1%TK50 RESISTOR	RL 0082.1764.00	RESISTA	MK2	
R235	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R236	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R237	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R240	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R241	RL 0,60W 100 OHM+-1%TK50 RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R245	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R246	RL 0,60W 100 OHM+-1%TK50 RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R247	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R248	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R250	RL 0,60W 100 OHM+-1%TK50 RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R251	RL 0,60W 22,1KOHM+-1%TK50 RESISTOR	RL 0083.1545.00	RESISTA	MK2	
R252	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R253	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R254	RG 10,0KOHM+-1%TK100 1206 RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R255	RL 0,60W 100KOHM+-1%TK50 RESISTOR	RL 0082.1764.00	RESISTA	MK2	
R256	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R257	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R260	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R270 ..275	RL 0,60W 100 OHM+-1%TK50 RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R276	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R280 ..290	RL 0,60W 100 OHM+-1%TK50 RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R295	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R299	RL 0,35W42,7KOHM+-0,1%T25 RESISTOR	RL 0084.4277.00	DRALORIC	SMA0207	
R300	RL 0,60W 866 KOHM+-1%TK50 METAL-FILM-RESISTOR	RL 0083.2835.00	RESISTA	MK2	
R301	RL 0,35W100KOHM+-0,1%TK25 RESISTOR	RL 0084.4983.00	DRALORIC	SMA0207	
R302	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R303	RL 0,60W 2,05KOHM+-1%TK50 RESISTOR	RL 0083.0832.00	RESISTA	MK2	
R304	RL 0,60W 1MOHM+-1%TK50 RESISTOR	RL 0082.7862.00	RESISTA	MK2	
R305	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R306	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R308	RL 0,35W13,5KOHM+-0,1%T25 RESISTOR	RL 0084.3312.00	ROEDERSTEI	MK2	
R309	RL 0,35W1,50KOHM+-0,1%T25 RESISTOR	RL 0083.9481.00	DRALORIC	SMA0207	
R310	RL 0,60W 68,1KOHM+-1%TK50 RESISTOR	RL 0082.2602.00	RESISTA	MK2	
R311	RL 0,60W 27,4KOHM+-1%TK50 RESISTOR	RL 0082.2583.00	RESISTA	MK2	
R320	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R321	RS 0,5W100 OHM+-10%10X10X CERMET POTENTIOMETER	RS 0247.7932.00	SPECTROL	63X ... T010	
R322	RL 0,60W 49,9 OHM+-1%TK50 RESISTOR	RL 0082.9520.00	DRALORIC	SMA 0207	
R323	RS 0,5W200 OHM+-10%10X10X CERMET POTENTIOMETER	RS 0247.7949.00	BI_TECHNOL	72X-R	
R335	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R336	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R337	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R339	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R350	RL 0,60W 5,62KOHM+-1%TK50 RESISTOR	RL 0082.2190.00	RESISTA	MK2	
R351	RL 0,60W 12,1KOHM+-1%TK50 RESISTOR	RL 0083.1351.00	RESISTA	MK2	
R355	RL 0,35W10,0KOHM+-0,1%T25 RESISTOR	RL 0084.3064.00	DRALORIC	SMA0207	
R356	RL 0,35W10,0KOHM+-0,1%T25 RESISTOR	RL 0084.3064.00	DRALORIC	SMA0207	
R357	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R358	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R359	RL 0,35W2,49KOHM+-0,1%T25 RESISTOR	RL 0083.9900.00	DRALORIC	SMA0207	
R360	RL 0,60W 100 OHM+-1%TK50 RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R363	RL 0,60W 100 OHM+-1%TK50 RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R365	RL 0,60W 100 OHM+-1%TK50 RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R371	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R372	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R379	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R390	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
V103	AK BCY79IX P 45V 200MA TRANSISTOR	AK 0010.3777.00	VALVO	BCY79IX	
V105	AE BZX79B3V3 2% 0.5W ZDI ZENER	AE 0008.7704.00	PHILIPS_SE	BZX79B3V3	
V160	AK BCY79IX P 45V 200MA TRANSISTOR	AK 0010.3777.00	VALVO	BCY79IX	
V161	AK BCY59IX N 45V 200MA TRANSISTOR	AK 0010.5163.00	VALVO	BCY59IX	
V162	AD 1N4448 75V UDI DIODE	AD 0012.0700.00	PHILIPS_SE	1N4448 "	
V163	AE 5082-2800 SCHOTTKY DIODE	AE 0012.9066.00	HEWLETT_PA	5082-2800	
V260	AE ICT5/1N5907 5V SUPPR SUPPRESSOR DIODE	AE 0012.5502.00	GEN_SEMICO	ICT5 (1N5907)	
V303	AE BZX55/B4V7 0,5W ZDI ZENER DIODE	AE 0080.4014.00	VALVO	BZX79B4V7	
V310	AK BCY59IX N 45V 200MA TRANSISTOR	AK 0010.5163.00	VALVO	BCY59IX	
V390	AD 1N4448 75V UDI DIODE	AD 0012.0700.00	PHILIPS_SE	1N4448 "	
X5	FP STECKERLEISTE 32POL. MULTIPOINT CONNECTOR	FP 0514.4550.00	SIEMENS	V42254-B1200-B641	
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			<b>0819.2164.01 SA</b>		6+

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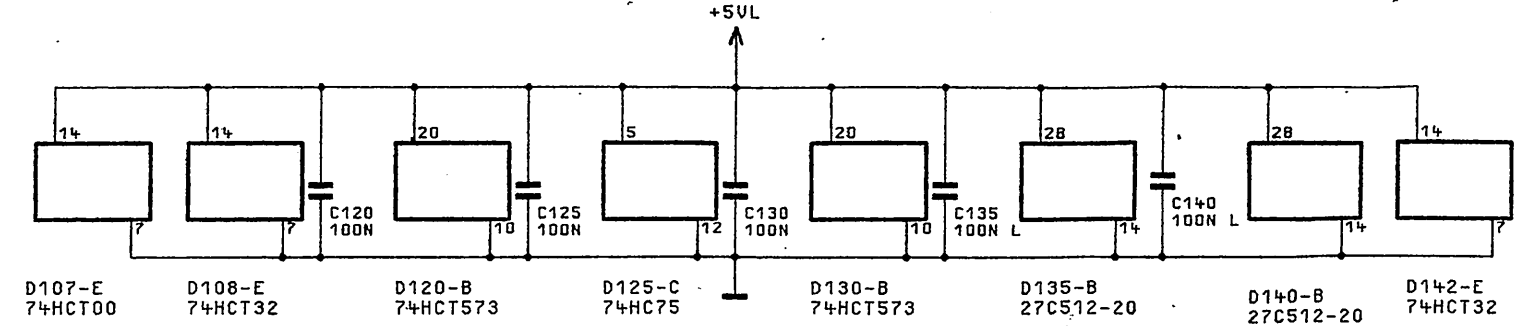


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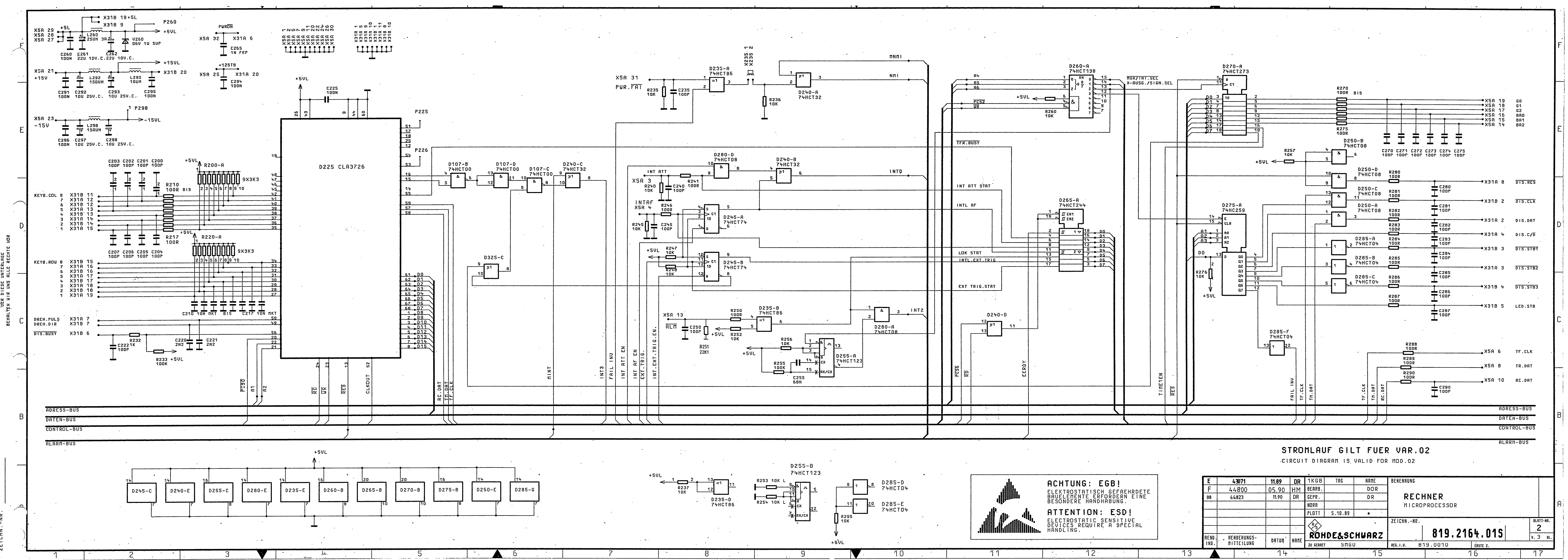
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**ACHTUNG: EGB!**  
ELEKTROSTATISCH GEFÄHRDETE  
BAUELEMENTE ERFORDERN EINE  
BESONDERE HANDHABUNG.

**ATTENTION: ESD!**  
ELECTROSTATIC SENSITIVE  
DEVICES REQUIRE A SPECIAL  
HANDLING.

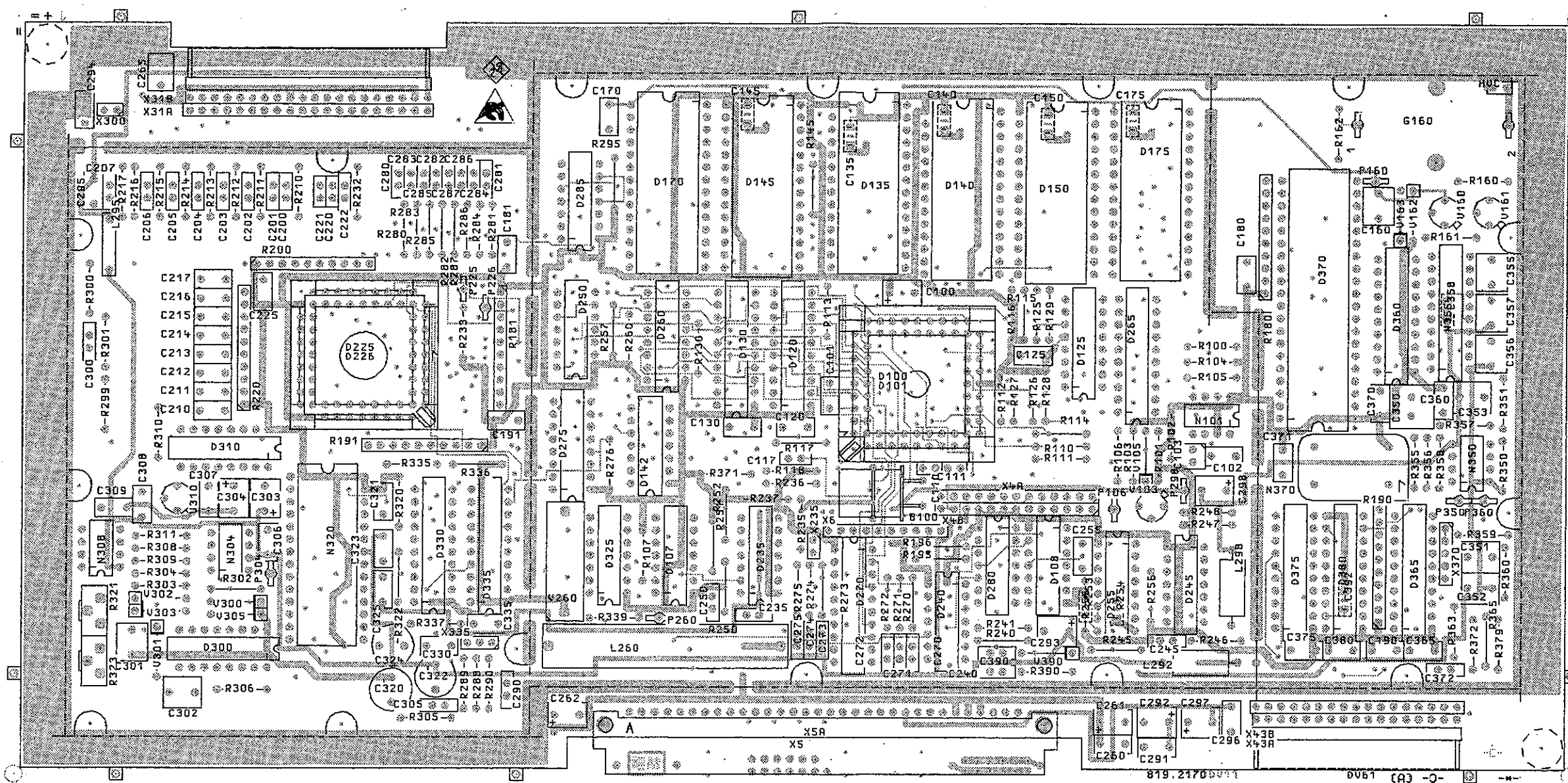
E	43071	11.89	DR	1 KGB	TAG	NAME	BENENNUNG					
F	44800	05.90	HM	BERAB.		DOR	RECHNER					
08	44823	11.90	DR	GEPR.		DR	MICROPROCESSOR					
				NORM								
				PLOTT	5.10.89	*						
							ZEICHN.-NR.				BLATT-NR.	
				<b>RHODE &amp; SCHWARZ</b>					<b>819.2164.015</b>		<b>1</b>	
RECHN.- IND.	RECHNERUNGS- MITTEILUNG	DATUM	NAME	ZU GEHÖRT SMGU			REG.-I.V.		819.0010		ERSTE Z.	
												V. 3 BL












Ansicht und Leitungsfuehrung Loetseite  
View of tracks on solder side

DV11



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

**ATTENTION ESD!**  
Electrostatic sensitive  
devices require a special  
handling.

E	43071	11.89	DR	Maße ohne Toleranzangabe		Maßstab 1 : 1					
						Halbzeug, Werkstoff					
				IKGB	Tag	Name	Benennung  RECHNER				Z
				Bearb.	08.89	DR					
				Gepr.							
				Norm							
						Zeichn.-Nr.				Blatt-Nr.	
				<b>ROHDE &amp; SCHWARZ</b>		819.2164				6	
And. Zust.	Änderungs-Mitteilung	Tag	Name	zu Gerät SMGU		reg. i. V. 819.0010 V		erste Z.		v. B.	

# BESTUECKUNGSPLAN / COMPONENTS PLAN

BENENNUNG SOFTWARE  
SOFTWARE DESIGNATION

BEN. DER ZUEH. INFORMATIONSTRAEGER  
NAMES OF APPERTAINING DATA MEDIA

SACHNUMMER  
STOCK NO

HS EPROM-KIT RECHNER

819.2764.02

EL. KENNZEICHEN  
DER BAUGRUPPE  
EL. DESIGNATION  
OF SUBASSEMBLY

EL. KENNZ. DES  
PROG. INFOTRAEGERS  
EL. DESIGNATION  
OF DATA MEDIA USED

BENENNUNG  
DESIGNATION

SACHNUMMER  
STOCK NO

A5

EE RECHNER OHNE SOFTWARE  
PROCESSOR WITHOUT SOFTWARE

819.2164.02

D135

HS 27C512-20 PROG.(D135)

819.2770

D140

HS 27C512-20 PROG.(D140)

819.2787

PRUEFANWEISUNG / TESTING INSTRUCTIONS :

T

ANMERKUNG: BESTEHT EINE SOFTWARE AUS MEHREREN INFORMATIONSTRAEGERN, MUESSEN BEI AUSTAUSCH  
IMMER ALLE INFORMATIONSTRAEGER DIESER SOFTWARE GEWECHSELT WERDEN !!  
( ADRESSENAENDERUNG MOEGlich ! )

NOTE: IF SOFTWARE IS STORED ON SEVERAL DATA MEDIA, ALL MEDIA MUST BE EXCHANGED IN CASE OF  
A REPLACEMENT OF SOFTWARE (ADDRESS-MODIFICATIONS POSSIBLE ! )

R O H D E & S C H W A R Z

DRUCK

ABT

NAME

BENENNUNG / DESIGNATION :

11.04.89

1KGB

LS

BESTUECKUNGSPLAN

TYP : SMGU

ZEICHN.-NR./DRAWING NO

BLATT

1-

AEI AEND.M. DATUM

NAME


REG.I.V 819.0010.00 V

819.0049.00 BP


v.




Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
B100	EQ 16,000000MHZ CL30HC43U CRYSTAL 16MHZ	EQ 0091.0321.00	PHILIPS	N. R&S SACHNUMMER	
C100	CE 22UF+-20%10V SAL ELECTR.CAPACITOR	CE 0007.3940.00	VALVO	2222 128 34229	
C101	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C102	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C103	CE 4,7UF+-20%10V 5X 4X 7 ELECTROLYTIC CAPACITOR	CE 0022.8056.00	KEMET	T340 A475M010 AS	
C110	CC 22PF+-2%4X5NPO CAPACITOR	CC 0087.6464.00	PHILIPS_CO	2222 678 .....	
C111	CC 22PF+-2%4X5NPO CAPACITOR	CC 0087.6464.00	PHILIPS_CO	2222 678 .....	
C117	CC 47PF+-2%5X6NPO CAPACITOR	CC 0087.6506.00	PHILIPS_CO	2222 678 .....	
C120	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C125	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C130	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C135	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C140	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C145	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C150	CC 100NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0007.5237.00	PHILIPS_CO	2238 581 55649	
C160	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C170	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C175	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	
C181	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C190	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C191	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C200	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
..207	CK 10NF+-5%63V RD2,5H7MKT CAPACITOR	CK 0099.2869.00	ROEDERSTEI	MKT 1826-310-014W	
..217	CC 2,2NF+-10%5X6R2000 CAPACITOR	CC 0087.7060.00	PHILIPS_CO	2222 630 51222	
C220	CC 2,2NF+-10%5X6R2000 CAPACITOR	CC 0087.7060.00	PHILIPS_CO	2222 630 51222	
C221	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C222	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C225	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C235	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C240	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C245	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C250	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C255	CK 68NF+-5%63V RD2,5H7MKT CAPACITOR	CK 0099.2923.00	ROEDERSTEI	MKT 1826-368-06-4	
C260	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C261	CE 22UF+-20%10V SAL ELECTR.CAPACITOR	CE 0007.3940.00	VALVO	2222 128 34229	
C262	CE 22UF+-20%10V SAL ELECTR.CAPACITOR	CE 0007.3940.00	VALVO	2222 128 34229	
C265	CK 1,0NF +-1% 100V RM5 KP POLYPROPYLENE CAPACITOR	CK 0007.7598.00	ROEDERSTEI	KP1830-210 01 1 3 W	
C270	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	


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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
C271	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C272	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
..275	CC 100PF+-2% 63V NPO CAPACITOR	0092.7442.10	STETTNER	EGPZ	
C280	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
..287	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C291	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C292	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C293	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C294	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
..296	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C297	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C298	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C300	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C301	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C302	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C303	CE 10UF+-20%25V SAL ELECTR.CAPACITOR	CE 0007.3934.00	VALVO	2222 128 36109	
C304	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C305	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C306	CE 47UF+-20%63V RM5 ELECTROLYTIC CAPACITOR	0008.7440.00	PHILIPS_CO	2222 116 90112	
..309	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C320	CE 47UF+-20%63V RM5 ELECTROLYTIC CAPACITOR	0008.7440.00	PHILIPS_CO	2222 116 90112	
C321	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C322	CE 47UF+-20%63V RM5 ELECTROLYTIC CAPACITOR	0008.7440.00	PHILIPS_CO	2222 116 90112	
C323	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C324	CE 47UF+-20%63V RM5 ELECTROLYTIC CAPACITOR	0008.7440.00	PHILIPS_CO	2222 116 90112	
C325	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C330	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C335	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C350	CE 100UF+-20%25V RD8X9,5 ELECTROLYTIC CAPACITOR	0803.0580.00	MATSUSHITA	ECE-A1ESS-101	
C351	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
..353	CK 1UF+-5%50V7,5X5,5X10,5 CAPACITOR	CK 0099.2998.00	ERO	MKT 1826-510/054-R	
C355	CC 10NF+-10%50V X7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8521.00	MURATA	GRM42-6X7R103K 50PT	
..357	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C358	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C360	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C365	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C370	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C371	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C372	CC 100PF+-2%6X9NPO CAPACITOR	CC 0087.6541.00	PHILIPS_CO	2222 678 .....	
C375	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C380	CK 100NF+-5%63VRD2,5H7MKT CAPACITOR	CK 0099.2930.00	ROEDERSTEI	MKT 1826-410-06-4W	
C390	CC 68PF+-2%6X7NPO CAPACITOR	CC 0087.6529.00	PHILIPS_CO	2222 678 .....	
C392	CC 2,2NF+-10%50VX7R 1206 CERAMIC CHIP CAPACITOR	CC 0099.8444.00	PHILIPS_CO	2222 581 16618	
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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
D100	BC N80C186XL10 16B.EBC IC EMBEDDED PROCESSOR	BC 0007.7930.00	INTEL	N80C186XL12	
D107	BL PC74HCT00P 4X2I.NAND QUAD 2-INPUT NAND GATE	0571.3394.00	PHILIPS_SE	(PC)74HCT00(N)	
D108	BL PC74HCT32P 4X2IN.ORG QUAD 2-INPUT OR GATE	BL 0571.3420.00	PHILIPS	(PC)74HCT32N(P)	
D120	BL PC74HCT573P 8XD-LATCH OCTAL D-TYPE LATCH	0620.3146.00	PHILIPS_SE	(PC)74HCT573N(P)	
D125	BL MM74HC75N 4B.BIST.LA 4BIT BISTABLE LATCH	0099.9511.00	PHILIPS_SE	(PC)74HC75N(P)	
D130	BL PC74HCT573P 8XD-LATCH OCTAL D-TYPE LATCH	0620.3146.00	PHILIPS_SE	(PC)74HCT573N(P)	
D135	BC SOFTW.N.BESTUECKUNGSPL SOFTW. SEE COMPONENTSPLAN	0669.2808.90			
D140	BC SOFTW.N.BESTUECKUNGSPL SOFTW. SEE COMPONENTSPLAN	0669.2808.90			
D142	BL PC74HCT32P 4X2IN.ORG QUAD 2-INPUT OR GATE	BL 0571.3420.00	PHILIPS	(PC)74HCT32N(P)	
D145	BC D2817A-3 2KX8 EEPROM EEPROM	0394.0248.00	ATMEL	AT28C17-25DC	
D150	BC D2817A-3 2KX8 EEPROM EEPROM	0394.0248.00	ATMEL	AT28C17-25DC	
D170	BC TC551001FL 128KX8 SRAM STATIC RAM 128KX8	1046.3938.00	HYUNDAI	HY628100ALLG-70	
D175	BC TC551001FL 128KX8 SRAM STATIC RAM 128KX8	1046.3938.00	HYUNDAI	HY628100ALLG-70	
D225	BG CLA3726 IFPAS ASIC IC GATEARRAY	0801.8348.00	PLESSEY	CLA3726(PLCC)	
D235	BL PC74HCT86P 4X2IN EXOR QUAD 2-INPUT EXOR GATE	0266.7228.00	PHILIPS	(PC)74HCT86N(P)	
D240	BL PC74HCT32P 4X2IN.ORG QUAD 2-INPUT OR GATE	BL 0571.3420.00	PHILIPS	(PC)74HCT32N(P)	
D245	BL PC74HCT74P 2XD-FF DUAL D-FLIP-FLOP	0571.3436.00	PHILIPS_SE	(PC)74HCT74N(P)	
D250	BL PC74HCT08P 4X2IN AND QUAD 2-INPUT AND GATE	0571.3413.00	PHILIPS	(PC)74HCT08N(P)	
D255	BL PC74HCT123P 2MULTIVIB DUAL MONOST.MULTIVIBRATOR	0352.7367.00	PHILIPS	(PC)74HCT123N(P)	
D260	BL PC74HCT138P LINE DEC 1-OF-8 DECODER/DEMUX	0571.3459.00	PHILIPS	(PC)74HCT138N(P)	
D265	BL PC74HCT244P 8XBUFF.3S OCTAL BUFFER	0352.7473.00	PHILIPS_SE	(PC)74HCT244N(P)	
D270	BL PC74HCT273P 8XD-FF CL OCTAL D-FLIPFLOP	0815.8080.00	PHILIPS_SE	(PC)74HCT273N(P)	
D275	BL MM74HC259N 8B.A.LATCH 8 BIT ADDRESSABLE LATCH	0394.9097.00	PHILIPS_SE	(PC)74HC259N(P)	
D280	BL PC74HCT08P 4X2IN AND QUAD 2-INPUT AND GATE	0571.3413.00	PHILIPS	(PC)74HCT08N(P)	
D285	BL PC74HCT04P 6XINVERT. HEX-INVERTER	0379.6726.00	PHILIPS	(PC)74HCT04N(P)	
D300	BL MM74HC4051N 8CH.AN.MUX 8CH.ANALOG MUX/DEMUX	0099.9670.00	PHILIPS	(PC)74HC4051N(P)	
D310	BL MM74HC259N 8B.A.LATCH 8 BIT ADDRESSABLE LATCH	0394.9097.00	PHILIPS_SE	(PC)74HC259N(P)	
D325	BL PC74HCT32P 4X2IN.ORG QUAD 2-INPUT OR GATE	BL 0571.3420.00	PHILIPS	(PC)74HCT32N(P)	
D330	BL PC74HCT244P 8XBUFF.3S OCTAL BUFFER	0352.7473.00	PHILIPS_SE	(PC)74HCT244N(P)	
D335	BL PC74HCT244P 8XBUFF.3S OCTAL BUFFER	0352.7473.00	PHILIPS_SE	(PC)74HCT244N(P)	
D360	BL PC74HCT273P 8XD-FF CL OCTAL D-FLIPFLOP	0815.8080.00	PHILIPS_SE	(PC)74HCT273N(P)	
D365	BL PC74HCT273P 8XD-FF CL OCTAL D-FLIPFLOP	0815.8080.00	PHILIPS_SE	(PC)74HCT273N(P)	
D370	BC UPD7210C GPIB IF CONTR GPIB INTERFACE CONTROLLER	BC 0620.3130.00	NEC	(UP)D7210C	
D375	BJ SN75160AN 8XBUS TRANSC BUS TRANSCEIVER	BJ 0345.6517.00	TEXAS	SN75160BN	
D380	BJ SN75161AN 8XBUS TRANSC BUS TRANSCEIVER	BJ 0345.6523.00	TEXAS	SN75161BN	
G160	EB 3,4V LITHIUM-BATTERIE LI BATTERY	0565.1687.00	ACCU_SONNE	SL-750/P/009 1110750	
L260	LD 25UH 3A 0,0460HM CHOKE	LD 0026.4849.00	SIEMENS	B82111-B-C24	
L292	LD 150UH BEI 0,17A 6,20HM CHOKE	LD 0026.4055.00	DALE	IM 6	
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L295	LD 10 UH 10% 3R3 144 MA CHOKE	LD 0026.4184.00	DALE	IM2	
L298	LD 150UH BEI 0,17A 6,2OHM CHOKE	LD 0026.4055.00	DALE	IM 6	
N101	BO TL7705ACP UPSUPERVISOR IC RESET/POWER-CONTROLLER	0347.1170.00	TEXAS	TL7705ACP	
N304	BO LF156J FET OPAMP OPERATIONAL AMPLIFIER	BO 0645.7251.00	ANALOG_DEV	PM156Z	
N308	BS TL601CP 1X ANALOGSCH ANALOG SWITCH	BJ 0213.4530.00	TEXAS	TL601CP [MJG]	
N320	BJ AD574AKD 1X12B-ADC A/D-CONVERTER	0006.9774.00	ANALOG_DEV	AD-574AKD	
N350	BO LF412CN 2XFET OPAMP OPERATIONAL AMPLIFIER	0356.0521.00	NSC	LF412CN	
N355	BJ AM6012F 1X12B-DAC D/A-CONVERTER	0805.1425.00	SIGNETICS	AM6012F	
N370	EO 4,000000MHZ-QU.OSZ. 5V CLOCK OSZILLATOR	0377.4232.00	PHILIPS_CO	XO 5860 W(XO 5850 W)	
R100	RL 0,60W 475 OHM+-1%TK50 RESISTOR	RL 0083.0390.00	RESISTA	MK2	
R101	RL 0,60W22,10 OHM+-1%TK50 RESISTOR	RL 0082.9188.00	RESISTA	MK2	
R102	RL 0,60W22,10 OHM+-1%TK50 RESISTOR	RL 0082.9188.00	RESISTA	MK2	
R103	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R104	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R105	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R106	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R107	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R110	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R111	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R112	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R113	RL 0,60W 4,75KOHM+-1%TK50 RESISTOR	RL 0083.1097.00	RESISTA	MK2	
R114	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R115	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R116	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R117	RL 0,60W 100 OHM+-1%TK50 RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R118	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R125 .. 129	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R130	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R145	RL 0,60W 3,32KOHM+-1%TK50 RESISTOR	RL 0083.0990.00	RESISTA	MK2	
R160	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R161	RL 0,60W 100KOHM+-1%TK50 RESISTOR	RL 0082.1764.00	RESISTA	MK2	
R162	RL 0,60W 150 OHM+-1%TK50 RESISTOR	RL 0082.9942.00	RESISTA	MK2	
R180	RN 9X 10KOHM+-SIL10 H5 RESISTOR NETWORK	RN 0343.4523.00	BI_TECHNOL	L 10 1 S 103 M*	
R181	RN 9X 10KOHM+-SIL10 H5 RESISTOR NETWORK	RN 0343.4523.00	BI_TECHNOL	L 10 1 S 103 M*	
R190	RN 9X 10KOHM+-SIL10 H5 RESISTOR NETWORK	RN 0343.4523.00	BI_TECHNOL	L 10 1 S 103 M*	
R191	RN 9X 10KOHM+-SIL10 H5 RESISTOR NETWORK	RN 0343.4523.00	BI_TECHNOL	L 10 1 S 103 M*	
R195	RL 0,60W 4,75KOHM+-1%TK50 RESISTOR	RL 0083.1097.00	RESISTA	MK2	
R196	RL 0,60W 4,75KOHM+-1%TK50 RESISTOR	RL 0083.1097.00	RESISTA	MK2	

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R200	RN 9X3,3KOHM+-2% RESISTOR NETWORK	RN 0340.2765.00	BI_TECHNOL	L 10 1 S 332 M*	
R210 ..217	RL 0,60W 100 OHM+-1% RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R220	RN 9X47 KOHM+-2% RESISTOR NETWORK	RN 0341.9286.00	BOURNS	4610X-T09-473	
R232	RL 0,60W 1KOHM+-1% RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R233	RL 0,60W 100KOHM+-1% RESISTOR	RL 0082.1764.00	RESISTA	MK2	
R235 ..237	RL 0,60W 10,0KOHM+-1% RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R240	RL 0,60W 10,0KOHM+-1% RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R241	RL 0,60W 100 OHM+-1% RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R245	RL 0,60W 10,0KOHM+-1% RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R246	RL 0,60W 100 OHM+-1% RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R247	RL 0,60W 10,0KOHM+-1% RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R248	RL 0,60W 10,0KOHM+-1% RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R250	RL 0,60W 100 OHM+-1% RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R251	RL 0,60W 22,1KOHM+-1% RESISTOR	RL 0083.1545.00	RESISTA	MK2	
R252	RL 0,60W 10,0KOHM+-1% RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R253	RG 10,0KOHM+-1% RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R254	RG 10,0KOHM+-1% RG CHIP RESISTOR	RG 0007.0793.00	PHILIPS_CO	RC02	
R255	RL 0,60W 100KOHM+-1% RESISTOR	RL 0082.1764.00	RESISTA	MK2	
R256	RL 0,60W 10,0KOHM+-1% RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R257	RL 0,60W 10,0KOHM+-1% RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R260	RL 0,60W 10,0KOHM+-1% RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R270 ..275	RL 0,60W 100 OHM+-1% RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R276	RL 0,60W 10,0KOHM+-1% RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R280 ..290	RL 0,60W 100 OHM+-1% RESISTOR	RL 0082.6543.00	RESISTA	MK2	
R295	RL 0,60W 10,0KOHM+-1% RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R299	RL 0,35W42,7KOHM+-0,1% RESISTOR	RL 0084.4277.00	DRALORIC	SMA0207	
R300	RL 0,60W 866 KOHM+-1% METAL-FILM-RESISTOR	RL 0083.2835.00	RESISTA	MK2	
R301	RL 0,35W100KOHM+-0,1% RESISTOR	RL 0084.4983.00	DRALORIC	SMA0207	
R302	RL 0,60W 1KOHM+-1% RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R303	RL 0,60W 2,05KOHM+-1% RESISTOR	RL 0083.0832.00	RESISTA	MK2	
R304	RL 0,60W 1MOHM+-1% RESISTOR	RL 0082.7862.00	RESISTA	MK2	
R305	RL 0,60W 1KOHM+-1% RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R306	RL 0,60W 10,0KOHM+-1% RESISTOR	RL 0083.1297.00	RESISTA	MK2	
R308	RL 0,35W13,5KOHM+-0,1% RESISTOR	RL 0084.3312.00	ROEDERSTEI	MK2	
R309	RL 0,35W1,50KOHM+-0,1% RESISTOR	RL 0083.9481.00	DRALORIC	SMA0207	
R310	RL 0,60W 68,1KOHM+-1% RESISTOR	RL 0082.2602.00	RESISTA	MK2	
R311	RL 0,60W 27,4KOHM+-1% RESISTOR	RL 0082.2583.00	RESISTA	MK2	
R320	RL 0,60W 1KOHM+-1% RESISTOR	RL 0082.2160.00	RESISTA	MK2	
R321	RS 0,5W100 OHM+-10% CERMET POTENTIOMETER	RS 0247.7932.00	SPECTROL	63X ... T010	
MENP5 502 3PUA ÄI Datum Date Schalteilleiste für Parts list for Sachnummer Stock No. Blatt-Nr. Page					
 <b>ROHDE &amp; SCHWARZ</b>		11 04.02.98	EE RECHNER	<b>1002.5258.01 SA</b>	5+

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Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in	
R322	RL 0,60W 49,9 OHM+-1%TK50 RESISTOR	RL 0082.9520.00	DRALORIC	SMA 0207		
R323	RS 0,5W200 OHM+-10%10X10X CERMET POTENTIOMETER	RS 0247.7949.00	BI_TECHNOL	72X-R		
R335 ..337	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2		
R339	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2		
R350	RL 0,60W 5,62KOHM+-1%TK50 RESISTOR	RL 0082.2190.00	RESISTA	MK2		
R351	RL 0,60W 12,1KOHM+-1%TK50 RESISTOR	RL 0083.1351.00	RESISTA	MK2		
R355	RL 0,35W10,0KOHM+-0,1%T25 RESISTOR	RL 0084.3064.00	DRALORIC	SMA0207		
R356	RL 0,35W10,0KOHM+-0,1%T25 RESISTOR	RL 0084.3064.00	DRALORIC	SMA0207		
R357	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2		
R358	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2		
R359	RL 0,35W2,49KOHM+-0,1%T25 RESISTOR	RL 0083.9900.00	DRALORIC	SMA0207		
R360	RL 0,60W 100 OHM+-1%TK50 RESISTOR	RL 0082.6543.00	RESISTA	MK2		
R363	RL 0,60W 100 OHM+-1%TK50 RESISTOR	RL 0082.6543.00	RESISTA	MK2		
R365	RL 0,60W 100 OHM+-1%TK50 RESISTOR	RL 0082.6543.00	RESISTA	MK2		
R371	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2		
R372	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2		
R379	RL 0,60W 10,0KOHM+-1%TK50 RESISTOR	RL 0083.1297.00	RESISTA	MK2		
R390	RL 0,60W 1KOHM+-1%TK50 RESISTOR	RL 0082.2160.00	RESISTA	MK2		
V103	AK BCY79IX P 45V 200MA TRANSISTOR	AK 0010.3777.00	VALVO	BCY79IX		
V105	AE BZX79B3V3 2% 0.5W ZDI ZENER	AE 0008.7704.00	PHILIPS_SE	BZX79B3V3		
V160	AK BCY79IX P 45V 200MA TRANSISTOR	AK 0010.3777.00	VALVO	BCY79IX		
V161	AK BCY59IX N 45V 200MA TRANSISTOR	AK 0010.5163.00	VALVO	BCY59IX		
V162	AD 1N4448 75V UDI DIODE	AD 0012.0700.00	PHILIPS_SE	1N4448 "		
V163	AE 5082-2800 SCHOTTKY DIODE	AE 0012.9066.00	HEWLETT_PA	5082-2800		
V260	AE ICT5/1N5907 5V SUPPR SUPPRESSOR DIODE	AE 0012.5502.00	GEN_SEMICO	ICT5 (1N5907)		
V303	AE BZX55/B4V7 0,5W ZDI ZENER DIODE	AE 0080.4014.00	VALVO	BZX79B4V7		
V310	AK BCY59IX N 45V 200MA TRANSISTOR	AK 0010.5163.00	VALVO	BCY59IX		
V390	AD 1N4448 75V UDI DIODE	AD 0012.0700.00	PHILIPS_SE	1N4448 "		
X5	FP STECKERLEISTE 32POL. MULTIPOINT CONNECTOR	FP 0514.4550.00	SIEMENS	V42254-B1200-B641		
X6	FP STIFTELEISTE 36P.R2,54 PIN CONNECTOR	FP 0242.3600.00	BINDER	742-11-0179-00-36		
X235	10-POLIG FP STIFTELEISTE 36P.R2,54 PIN CONNECTOR	FP 0242.3600.00	BINDER	742-11-0179-00-36		
X300	2-POLIG FP STIFTL.WIN 36P.R2,54 ANGLE PIN CONNECTOR	FP 0243.3578.00	BINDER	742-5-11-0187-00-36		
X335	2-POLIG FP STIFTELEISTE 36P.R2,54 PIN CONNECTOR	FP 0242.3600.00	BINDER	742-11-0179-00-36		
X31A	3-POLIG FP STIFTL.WIN 36P.R2,54 ANGLE PIN CONNECTOR	FP 0087.9105.00	BINDER	742-5-11-0191-00-36		
X31B	20-POLIG FP STIFTL.WIN 36P.R2,54 ANGLE PIN CONNECTOR	FP 0243.3578.00	BINDER	742-5-11-0187-00-36		
MENP5 502 3PUA		Äi	Datum Date	Schaltteilliste für Parts list for	Sachnummer Stock No.	Blatt-Nr Page
 <b>ROHDE &amp; SCHWARZ</b>		11	04.02.98	EE RECHNER	<b>1002.5258.01 SA</b>	6+

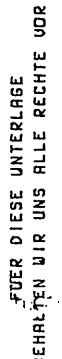
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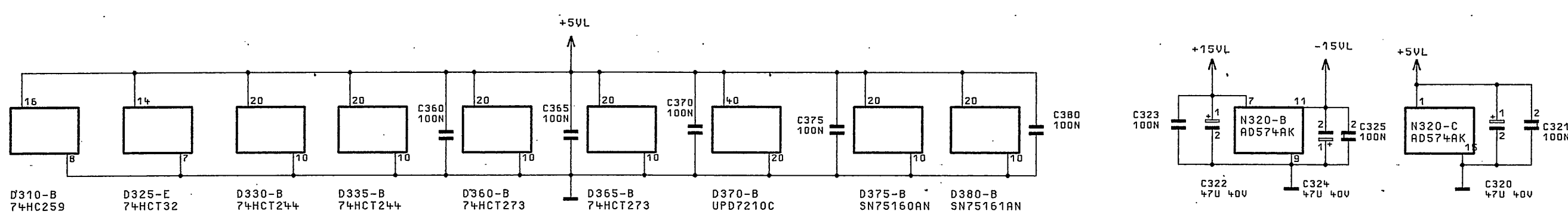
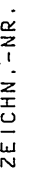
Kennz. Comp. No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
X4A	20-POLIG FP STIFTFLEISTE 36P.R2,54 PIN CONNECTOR	FP 0242.3600.00	BINDER	742-11-0179-00-36	
X4B	13-POLIG FP STIFTFLEISTE 36P.R2,54 PIN CONNECTOR	FP 0242.3600.00	BINDER	742-11-0179-00-36	
X43A	17-POLIG FP STIFTL.WIN 36P.R2,54 ANGLE PIN CONNECTOR	FP 0243.3578.00	BINDER	742-5-11-0187-00-36	
X43B	17-POLIG FP STIFTL.WIN 36P.R2,54 ANGLE PIN CONNECTOR	FP 0087.9105.00	BINDER	742-5-11-0191-00-36	

MENP5	502 3PUA	Äl	Datum Date	Schaltteilliste für Parts list for	Sachnummer Stock No.	Blatt-Nr. Page
 <b>ROHDE &amp; SCHWARZ</b>		11	04.02.98	EE RECHNER	<b>1002.5258.01 SA</b>	7-










**ACHTUNG: EGB!**  
ELEKTROSTATISCH GEFAHRDETE  
BAUELEMENTE ERFORDERN EINE  
BESONDERE HANDHABUNG.

**ATTENTION: ESD!**  
ELECTROSTATIC SENSITIVE  
DEVICES REQUIRE A SPECIAL  
HANDLING.

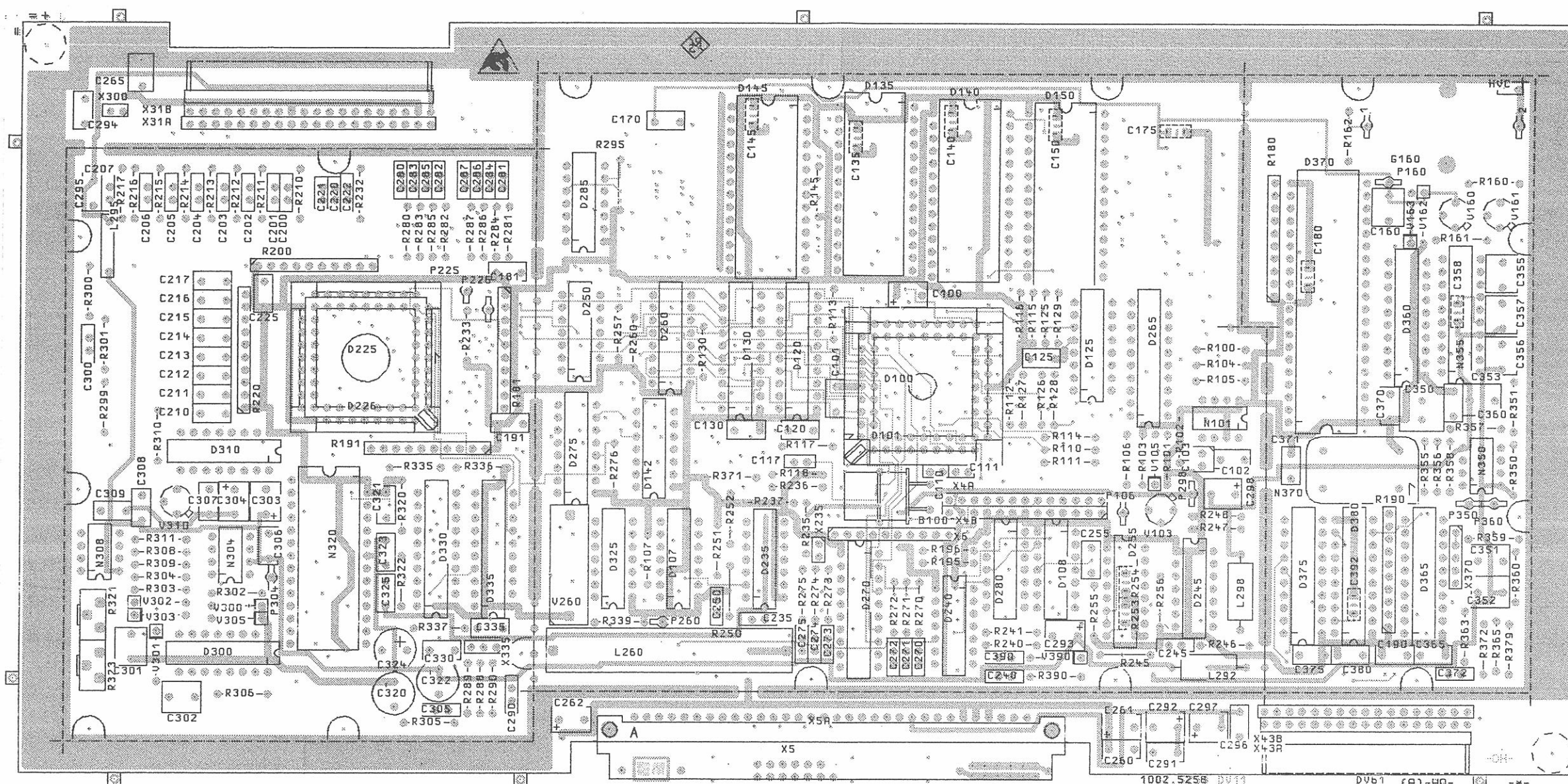
02	46450	01.92	JN	1 KGB	TAG	NAM	BENENNUNG			
				BEARB.		DOR	<b>RECHNER</b> MOD			
				GEPR.		DOR				
				NORM						
				PLOTT	3.10.89	*				
							ZEICHN.-NR.		BLATT	
				<b>ROHDE &amp; SCHWARZ</b>			<b>1002.5258.015</b>		<b>3</b>	
ÄND. IND.	ÄNDERUNGS- MITTEILUNG	DATUM	NAM	ZU GERÄT SMGU			REG.I.V.	819.0010	ERSTE Z.	V. 3







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Ansicht und Leitungsfuehrung Loetseite  
View of tracks on solder side

DV11



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

Maße ohne Toleranzangabe				Maßstab 1 : 1	
				Halbzeug, Werkstoff	
1KGB		Tag	Name	Benennung RECHNER MOD 56	
Bearb.		10.89	DR		
Gepr.					
Norm					
zu Gerät SMGU				Zeichn.-Nr. 1002.5258	Blatt-Nr. 5
Änd. Zust.	Änderungs- Mitteilung	Tag	Name	reg. i. V. 819.0010 V	erste Z.