ROHDE & SCHWARZ
MÜNCHEN

Manual

POWER SIGNAL GENERATOR SMLU

200.1009.02
200.1009.03

R 29706 – 1

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1. Characteristics

1.1 Uses

Thanks to its high output power the Power Signal Generator SMLU can be used where the output level of the conventional signal generators is no longer sufficient. Its main applications are: measurement of the overdrive susceptibility of receivers, measurements on varactor-type multipliers, power transistors and amplifiers; plotting of antenna radiation patterns, and measurements on attenuators and filters with high stopband attenuation. In all these applications, the automatically controlled output power of the SMLU is of particular advantage.

Another advantage for an economical test assembly is the possibility of external and internal frequency sweeping within a frequency subrange. The sawtooth voltage of any oscilloscope can be used as sweep voltage. Internal frequency sweeping is designed for recording purposes (sweep time 20 sec), the X-axis deflection of the XY recorder being controlled by the sawtooth voltage.

The very wide frequency range of 25 to 1000 MHz is divided into seven subranges with an exact linear scale. Pushbuttons provided beside the frequency scales or remote control permits rapid range switching. Each frequency subrange can be continuously tuned by means of an internally produced or externally applied voltage of between 0 and +10 V. This enables remote frequency selection over the whole frequency range. When measuring the behaviour of narrowband filters with sharp cutoff characteristics, the frequency of the SMLU can be synchronized with crystal-accuracy and stability by means of an external synchronizer, such as Frequenzkontroller - SMDA/SMDF HN 100.4542.

The output power is controlled by means of an ALC amplifier which serves also for amplitude modulation. This ensures an extremely linear modulation even in the case of high modulation depths. In switch position SWEEP EXT. Af the input for external sweeping can also be used for frequency modulation.

1.2 Operating Principle

For each frequency subrange of the SMIJ a voltage-tuned oscillator is provided which operates at the output frequency. The linearization of the tuning characteristic is achieved by means of a variable diode network.

Three broadband power amplifiers (one for the subranges 1 to 4, one for the subranges 5 and 6 and one for subrange 7) bring the power level up to 2 W (1 W).

At the same time, these amplifiers provide satisfactory isolation, preventing the oscillator frequency from being affected by load changes. Each oscillator is associated with a lowpass filter which is connected in series with the power amplifiers. Thus, harmonic suppression better than 30 dB is ensured over the entire frequency range.

The output power is regulated by means of a broadband directional coupler system for indication of the output power and an ALC amplifier which controls the gain of the power amplifier stages. This ALC amplifier can also be used for external levelling if external networks are involved in the control process. It is furthermore possible to use it for amplitude modulation, the modulation voltage being superimposed upon the reference level of the ALC circuit. The directional couplers provide a resistive output impedance of 50 Ω at a constant EMF. The output power can be reduced in steps of 5 dB down to 35 dB by means of a variable step attenuator connected in series.

Range switching, frequency selection within the subranges and output attenuation can be remote controlled and programmed. A BCD code programming unit is available as an option.

1.3 Specifications

Frequency

Range ..... 25 to 1000 MHz

in seven linear subranges .....

Range	Frequency	Scale discrimination
1	25 to 44 MHz	0.2 MHz
2	42.5 to 75 MHz	0.5 MHz
3	70.5 to 125 MHz	0.5 MHz
4	119 to 210 MHz	1 MHz
5	200 to 352 MHz	2 MHz
6	337 to 595 MHz	2 MHz
7	570 to 1000 MHz	5 MHz

Frequency indication error ..... $\leq \pm 2\%$

Fine tuning ..... 100×10^{-6}

Frequency Stability

Unwanted frequency deviation
(10 Hz to 100 kHz test bandwidth)

in modes UNMOD., AM INT. 1 kHz,
AM EXT. and SWEEP INT. 20 sec .. range 1: $\leq$ 0.7 kHz
range 2: $\leq$ 1.0 kHz
range 3: $\leq$ 1.8 kHz
range 4: $\leq$ 3.0 kHz
range 5: $\leq$ 4.5 kHz
range 6: $\leq$ 8.0 kHz
range 7: $\leq$ 15.0 kHz

in modes SWEEP EXT. and
SWEEP EXT. Δf ..... $\leq 100 \times 10^{-6}$

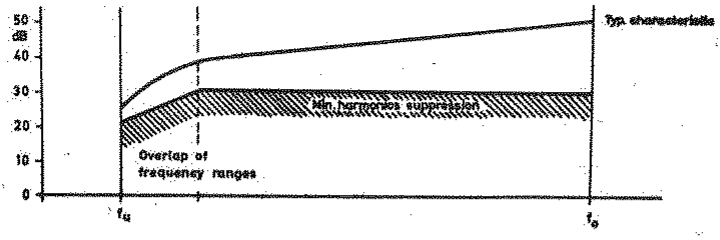
Effect of temperature variations .. $200 \times 10^{-6}/^{\circ}C$

Effect of AC-supply voltage
variations ..... $\leq 10 \times 10^{-6}/\pm 10\%$

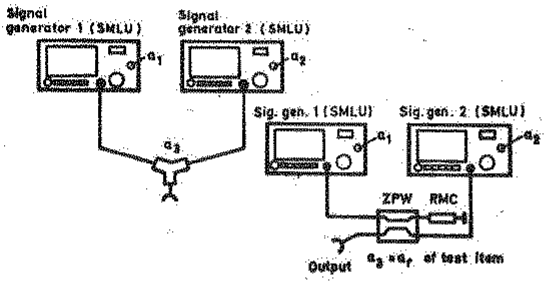
Drift (after 70 min of operation) . 100×10^{-6}/10 min

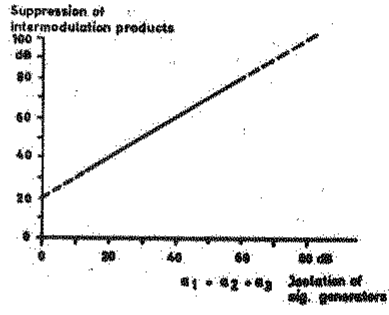
Effect of load ..... 250×10^{-6} (between short and open circuit)

Suppression of harmonics
(RF output 1) ..... range 1: $\geq$ 30 dB;
for all other ranges, see diagram



Suppression of intermodulation products with two parallel-connected SMLU signal generators





Frequency synchronization	via 2nd RF output and frequency control input
Input (rear)	BNC socket
Control ratio Δf/f	1×10^{-3}/V DC
Input impedance	100 kΩ
Regulating time constant	11 msec (in modes UNMOD., AM INT. 1 kHz, AM EXT.)

Output power with ALC

Frequency ranges 1 to 6	+33 dBm (2 W); 10 V into 50 Ω	
Frequency range 7	+30 dBm (1 W); 7.07 V into 50 Ω	
With AM: ranges 1 to 6	+33 dBm	peak power
range 7	+30 dBm	peak power

Source impedance ..... 50 Ω

Reflection coefficient with regulation of incident wave ..... $\leq$ 15% (VSWR $\leq$ 1.35)

with load variations faster than regulation

at 0-dB attenuation of output attenuator ..... $\leq$ 30% (VSWR $\leq$ 1.86)

at > 5-dB attenuation of output attenuator ..... $\leq$ 15% (VSWR $\leq$ 1.35)

Connector ..... Dezifix B, adaptable

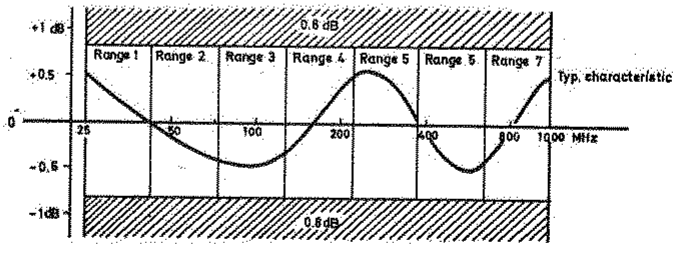
Without loss of output voltage, the source impedance can be matched to 60 Ω or 75 Ω by means of matching pads.

Meter for indication of the incident output power and voltage $\frac{V_o}{2}$ (output voltage with match-termination).

Scale ..... +22 to +33 dBm; 3 to 10 V

Error of indication ..... $\leq \pm 0.8$ dB; $\pm 9.5\%$ with f.s.d.

Frequency response of output power with ALC ..... $\leq \pm 0.8$ dB
(typical characteristic shown below)



Input for external level control	rear BNC socket
Input requirement	+0.5 to +6.5 V (depending on setting of fine OUTPUT POWER control)
Input impedance	6.5 kΩ
Regulation range	$\geq$ 20 dB
Attenuation of output power	
fine	10 dB
coarse	35 dB in 5-dB steps
Attenuator error	$\leq \pm$0.12 dB per 5-dB step
RF output II (rear)	BNC socket
Output power	30 dB below meter indication (-8 to +3 dBm)
Source impedance	50 Ω

Modulation

Internal AM, 1 kHz

Modulation frequency	1 kHz $\pm$15 Hz
Modulation depth	50 to 80%
Envelope distortion	5%

External AM

Modulation frequency range	10 Hz to 10 kHz
Modulation depth	90%, max.
Input requirement	2.5 to 10 V_{rms} for 80% modulation
Input impedance	1.5 kΩ (BNC socket)
Envelope distortion	5% at 1 kHz and 70% modulation

Sweeping

Internal sweep	single sweep of one frequency subrange within 20 sec

Output for frequency-proportional voltages in the modes SWEEP INT. 20 sec, SWEEP EXT., PROGR. and UNMOD.

Output voltage	0 to +40 V

External sweep

Frequency range	0 to 50 Hz (sawtooth)
Sweep width	1 subrange, maximum
Input requirement	0 to +10 V
Input impedance	100 kΩ (BNC socket)
External sweep Δf	frequency modulation with centre frequency set by manual or programmed adjustment
Frequency range	0 to 8 kHz
Modulator sensitivity $(\frac{\Delta f}{f})$	1×10^{-3} /V
Input impedance	100 kΩ (BNC socket)
Envelope distortion at f_{mod} = 1 kHz and f_{sweep} = 75 kHz	1%

Programming

SMLU without programming unit (200.1009.02)

7 inputs for setting the frequency ranges

1 input for analog control of the frequency within a range (input requirement: 0 to +10 V for f_{min} to f_{max})

7 inputs for setting the output power in 5-dB steps

SMLU with programming unit (200.1009.03)

Programming of frequency range (3 bits), frequency (100 steps per range, 9 bits) and output power (5-dB steps, 3 bits) in BCD code

Logic function of programming inputs	negative logic
without programming unit	max. of 28 V/50 mA to chassis
with programming unit	DTL/TTL-compatible inputs
Frequency error with programming	$\leq$ 2%
Resetting error	$\leq 1 \times 10^{-3}$

Programming speed

In mode SWEEP EXT. Δf

	residual frequency drift	residual amplitude variation
10 msec after frequency selection ..	≤ 1%	≤ 5%
10 msec after range selection	≤ 2%	≤ 5%

In modes UNMOD., AM INT. 1 kHz, AM EXT.

	residual frequency drift	residual amplitude variation
100 msec after frequency selection	≤ 1%	≤ 1%
100 msec after range selection	≤ 2%	≤ 1%

Output attenuator

Switching time ..... ≤ 40 msec

Life ..... 10×10^6 operations

General Data

AC supply ..... 115/125/220/235 V ±10%, 47 to 440 Hz (100 VA)

Nominal temperature ..... +10 to +40°C

Shelf temperature ..... -20 to +70°C

Overall dimensions (W x H x D) ..... 484 mm x 194 mm x 436 mm

Weight ..... 18.6 kg

1.4 Accessories Supplied

Power Cord 025.2365.00 (2 m long)

1.5 Recommended Extras

For matching to other characteristic impedances:

Matching Pad DAZ 50/60 Ω	242.1013.02	connectors: Dezifix B at both ends
Matching Pad DAZ 50/75 Ω	242.1513.02	

The matching pads contain a 10-Ω series resistor. The reflection coefficient of the source impedance and the output voltage are the same as for the 50-Ω set. The output power is reduced:

by 0.79 dB with the Matching Pad 50/60 Ω
by 1.76 dB with the Matching Pad 50/75 Ω

▶ For interconnection of two or three units for measuring the inter-modulation or cross modulation products:

For characteristic impedance	50 Ω	60 Ω	75 Ω
Three-Port Junction Box	100.5203.50	100.5203.60	100.5203.70
Four-Port Junction Box DVU	201.4018.02	-	-
3-dB Directional Coupler ZPW			
87 to 230 MHz	110.1730.50	110.1730.60	110.1730.70
167 to 430 MHz	110.1746.50	110.1746.60	110.1746.70
380 to 1000 MHz	110.1752.50	110.1752.60	110.1752.70

▶ For frequency synchronization of the SMLU with the Frequency Controller of SMDF/SMDA (100.4542) up to 500 MHz:

Sync Adapter for the SMLU 233.9015.50

Connector for remote control 018.5862.00

▶ For programming:

Code Converter PCW 244.8015.03 for converting the serial data input in the ASCII code into parallel data output in the BCD code.

▶ For sweeping:

Sweep Unit SMLU-Z 243.3010 for the frequency range 25 to 1000 MHz or for any desired subrange. Selectable sweep time 10 to 1000 msec or single internal sweep for recording (2 to 200 sec).

The start/stop frequencies can be set independent of each other and read on the SMLU with an accuracy of ±2% or they can be determined with crystal accuracy via an external counter.

There are two adjustable frequency markers displayed on a connected oscilloscope or recorder for spotting the frequency on the test curve.

2. Preparation for Use and Operating Instructions

2.1 Legend to Front- and Rear-panel Controls

(see Figs. 2-1, 2-2)

Ref.No.	Labelling	Function
1	25 - 1000	Linear frequency scale
2	1 - 7	Pushbuttons for the selection of the frequency ranges 1 to 7. Lamp 17 associated with the frequency range selected lights.
3	+25/+30/+33 dBm 0/5/10 V	Meter for the indication of the open-circuit voltage ($\frac{E_0}{2}$) and of the power of the incident wave. With 50 Ω resistive termination, the indicated power is the power into the load. In the case of mismatch, the power into the load is given by $P = P_{meter} \frac{1 - r^2}{1 + r^2}$ where P_{meter} = power indicated on the meter and r = reflection coefficient of the load. The setting of the output attenuator 5 by which the output power is reduced must also be taken into account. With external leveling, the reading on meter 3 remains constant. The meter can, therefore, not be used for indication of the output power.
4	OUTPUT POWER	Rotary knob for fine adjustment of the output power.
5	OUTPUT POWER 0/-5/-10 to -35 dB	Rotary switch for coarse adjustment of the output power in steps of 5 dB.

Ref.No.	Labelling	Function
6	POWER	Pushbutton for switching on the AC supply voltage. Lights when the instrument is switched on and goes off when fuse 23 has blown.
7	FREQ. [MHz]	Rotary knob for adjusting the frequency.
8	PROGR.	Pushbutton for the selection of programmed operation. In this mode of operation, frequency range, frequency and output power can be remote controlled via socket 25 PROGR. INPUT (see section 2.5).
9	RF OUTPUT R_i = 50 Ω	Output socket (adaptable)
10	UNMOD.	Pushbutton for the selection of the CW mode. The frequency range is selected with the pushbuttons 2. The frequency which is adjusted with knob 7 is indicated on scale 1. A frequency-proportional voltage can be drawn at socket 28.
11	SWEEP INT. 20 sec	Upon depression of this pushbutton, a sawtooth voltage is produced internally which sweeps the frequency range selected with the pushbuttons 2 in 20 sec. The sawtooth voltage is available at socket 28 (E = 0 to 40 V, Z_{out} = 100 kΩ). A new sawtooth voltage sweep is initiated by releasing and again depressing pushbutton 11.

Ref.No.	Labelling	Function
12	SWEEP EXT.	In this mode of operation, a frequency range selected with the pushbuttons 2 can be linearly swept with a sweep voltage applied to socket 16 . Voltage requirement: 0 to 10 V (for one complete range). Frequency range of the sweep voltage: 0 - 8 kHz sinewave or 0 - 50 Hz sawtooth. Furthermore, it is possible to sweep the frequency about an adjusted centre frequency with adjustable sweep width. For this purpose, a DC voltage with a superimposed AC voltage is applied to socket 16 . The magnitude of the DC voltage of between 0 and 10 V determines the centre frequency. The sweep width is determined by the amplitude of the AC voltage. It should be borne in mind: $0 \leq$ DC voltage $\pm$ AC voltage $\leq +10$ V. In this mode of operation, the residual FM $\frac{\Delta f}{f} = 100 \times 10^{-6}$.
13	SWEEP EXT. Δf	In this mode of operation, the centre frequency adjusted with the pushbuttons 2 and knob 7 or programmed can be swept symmetrically with the voltage applied to socket 16 . Sensitivity $\approx 1 \times 10^{-3}$/V. Frequency range of the sweep voltage: 0 - 8 kHz sinewave or 0 - 50 Hz sawtooth. In this mode of operation, the residual FM $\frac{\Delta f}{f} = 100 \times 10^{-6}$.

Ref.No.	Labelling	Function
14	AM INT. 1 kHz	In this mode of operation, the frequency adjusted with the pushbuttons 2 and knob 7 is amplitude modulated. Modulation frequency: 1 kHz. Modulation depth: 30%. Using the rotary knob 4 , set the level such that it is at least 6 dB below the maximum output power. Indication on meter 3 .
15	AM EXT.	In this mode of operation, the frequency adjusted with the pushbuttons 2 and knob 7 can be amplitude modulated with a voltage applied to socket 16 . Modulation frequency range: 10 Hz - 10 kHz. Modulation depth: 90% max. Input requirement: 6.5 V_{pp} for m = 90%. Using the rotary knob 4, set the level such that it is at least 6 dB below the maximum output power. Indication on meter 3 .
16		Socket to which the voltages for the modes of operation AM EXT., SWEEP EXT. Δf, SWEEP EXT. are applied.
17		Lamp which lights when the associated frequency range has been selected with the pushbuttons 2 .

Ref.No.	Labelling	Function
20	RF OUTPUT 2	RF output socket. Output impedance: 50 Ω The output power is approximately 30 dB below the indication on meter 3 . The position of switch 5 is irrelevant.
21	EXT. ALC	Input for external leveling of the output power (see section 2.3).
22	SYNC INPUT	Input for external frequency synchronization via RF output 2 20 with a synchronizer (see section 2.6).
23		Screw cap containing the fuse for the selected AC supply voltage.
24	220 V T 1.6 D 235 V 115 V T 2.5 D 125 V	Fuse panel containing the power fuse 23 and the spare fuses.
25	PROGR. INPUT	Input for remote control of frequency range, frequency and output power with pushbutton 8 PROGR. depressed (see section 2.5).
26	AC SUPPLY	AC supply voltage receptacle
27 28	⊥ } SAWTOOTH OUTPUT	Output sockets for the sweep voltage internally produced in the modes of operation SWEEP INT. 20 sec, SWEEP EXT., PROGR. and UNMOD. Output voltage: 0 to +40 V. Z_{out} = 100 Ω.

2.2 Preparation for Use

2.2.1 Adjusting to the Local AC Supply Voltage

The SMLU complies with the safety regulations according to VDE 0411 for class of protection I which requires insulation of the AC supply voltage circuits and perfect permanent interconnection and connection to the non-fused earth conductor of all accessible parts of the instrument which would immediately carry voltage in the case of a fault. IMPORTANT: Only earth-contact type outlets for power plug!

The instrument is factory-adjusted for operation from 220 V. Prior to switching on, check that the fuse panel 24 (Fig. 2-2) is adjusted to the local AC supply voltage. The four adjustable AC supply voltages are engraved in the four corners of the fuse panel. The line beside the screw cap in the upper left-hand corner must always point to the value of the available AC supply voltage (turn panel accordingly!). To adjust the instrument for another AC supply voltage and for fuse replacement proceed as follows:

a) Unscrew screw cap 23 with the power fuse (upper left-hand corner of fuse panel 24).

b) Remove cover of fuse panel 24 .

c) Take the required fuse from the fuse container provided on the inside of the cover and insert into screw cap.

d) Place pin of the cover 24 in the guide hole and turn the cover until the marker line points to the available AC supply voltage.

e) Screw down screw cap.

Two fuses are provided each for the AC supply voltages 220/235 V and 115/125 V. If the same AC supply voltage is always used, only one type of spare fuses may, of course, be stored in the three containers. Fine-wire fuse T 1.6 D DIN 41571 (1 A) is required for 220 V and 235 V and fine-wire fuse T 2.5 D DIN 41571 (2 A) for 115 and 125 V. AC supply voltage fluctuations of up to $\pm$10% do not affect the performance specifications according to section 1.3 "Specifications". Greater fluctuations of the AC supply voltage must, however, be avoided. In this case, a transformer or stabilizer is to be connected to the input of the instrument.

2.2.2 Switching on

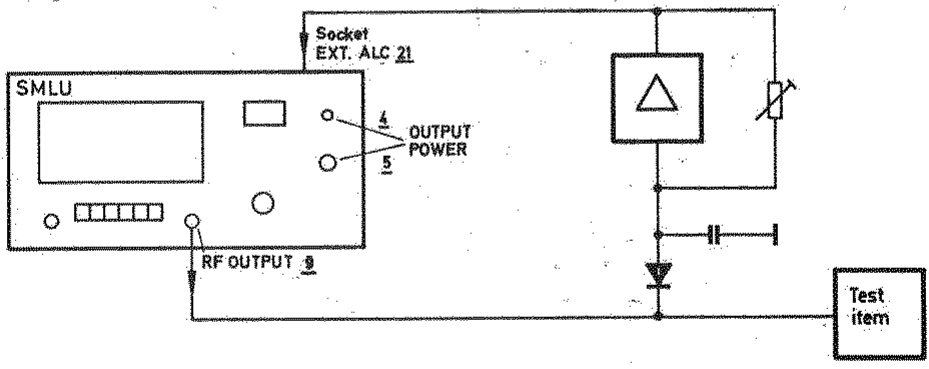
The AC supply voltage for the instrument is switched on with the POWER switch 6 . The lamp provided in the power switch lights when the instrument is switched on. It goes off when the power fuse 23 has blown.

If overloading during operation actuates the overcurrent protection of the regulating circuits causing the failure of one or the other function of the instrument, this failure can be eliminated by switching off the power switch and switching it on again after several seconds. The regulating circuits operate again normally when the instrument is switched back on.

2.3 External Leveling of the Signal Generator

Internal leveling keeps the voltage amplitude of the incident wave, i.e. the open-circuit voltage constant. For keeping other parameters, such as the voltage at a mismatched test item constant the possibility of external leveling is provided.

Setup:



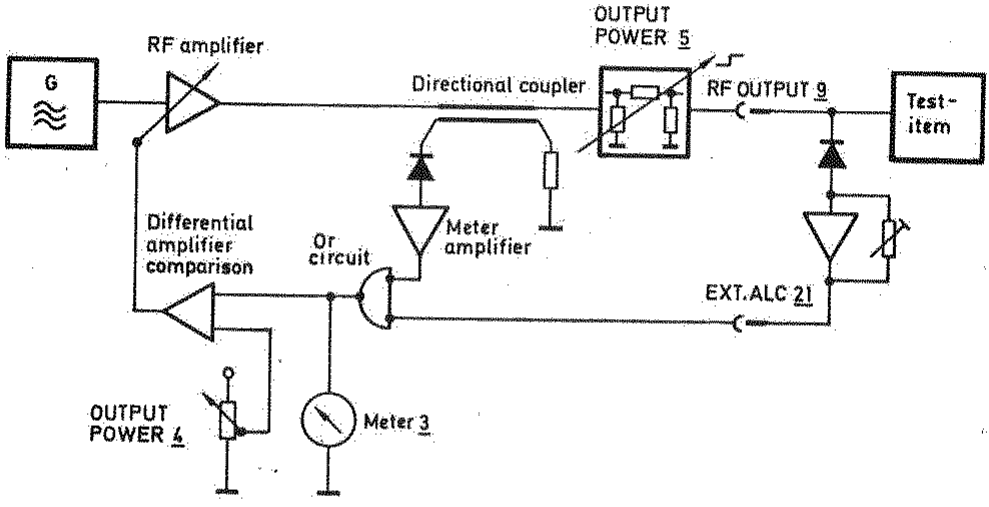
For the external portion of the control loop the following conditions apply:

a) The gain between the sockets of the SMLU RF OUTPUT 9 and EXT. ALC 21 must be ≤ 1, taking into account the output attenuator setting.

b) The cut-off frequency of the external portion of the control loop must be $\geq$ 200 kHz.

c) The input voltage at the socket EXT. ALC 21 must be positive. It must not be greater than +7 V.

Basic control loop design



Operating principle of the ALC circuit: The set value adjusted with the potentiometer OUTPUT POWER 4 is compared in a differential amplifier against the measured value of the controlled quantity. From the resulting difference the ALC amplifier derives the correcting variable which controls the gain of the RF amplifier such that the controlled quantity corresponds to the set value.

For external leveling the internal meter amplifier is separated from the input of the differential amplifier. In this case the measured value of the controlled quantity is the voltage applied to the input EXT. ALC 21 . Changeover from internal to external leveling is effected by means of the OR circuit at the input of the differential amplifier when the voltage applied to the input EXT. ALC 21 is greater than the voltage supplied by the internal meter amplifier which is +6.5 V at full-scale deflection.

Adjusting the external ALC: The gain in the external portion of the control loop (between RF OUTPUT 9 and input socket EXT. ALC 21) must be increased until the output power of the SMLU (or ALC voltage to be measured at the feed-through capacitor C87 of the RF amplifier III) begins to decrease. This indicates that the internal meter amplifier has been switched off by means of the OR circuit and that now the ALC keeps the controlled quantity applied to socket EXT. ALC 21 constant, i.e. it is proportional to the set value adjusted with potentiometer OUTPUT POWER 4 . The decrease of the output power cannot be observed on meter 3 of the SMLU. The meter reading remains constant. The indication is, therefore, not valid with external levelling.

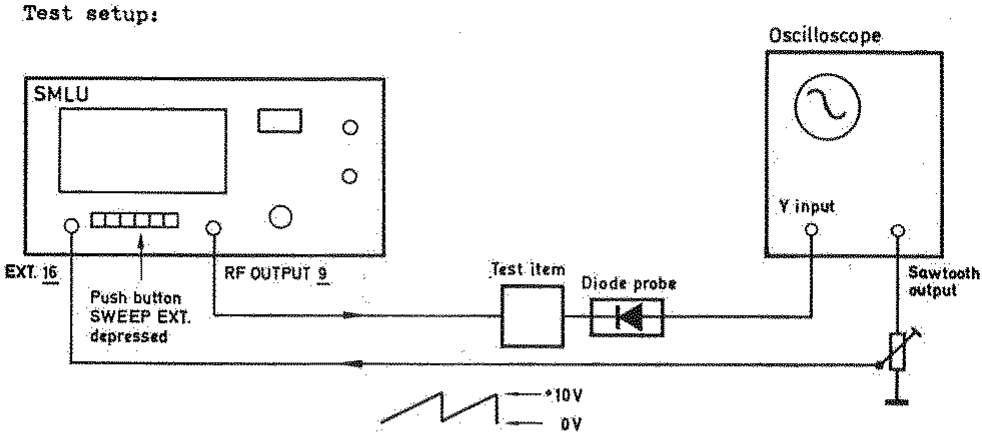
2.4 Examples of Swept-frequency Measurements

The capability of external frequency sweeping permits a swept-frequency test assembly to be set up in conjunction with an oscilloscope supplying a sawtooth voltage.

The sawtooth voltage applied to the input socket EXT. 16 must be exactly 10 V_{pp} for sweeping one frequency range, 0 corresponding to the scale beginning and +10 V to the scale end. The shortest permissible sweep time for a linear frequency sweep is 20 msec.

2.4.1 Attenuation Measurement in Conjunction with Oscilloscope

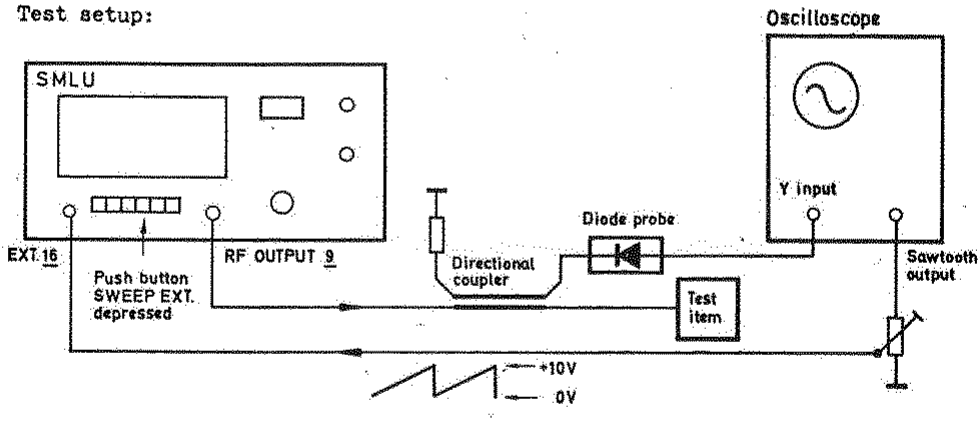
Test setup:



Display of attenuation characteristic on the screen of an oscilloscope via a diode probe.

2.4.2 Reflection-coefficient Measurement in Conjunction with Oscilloscope

Test setup:

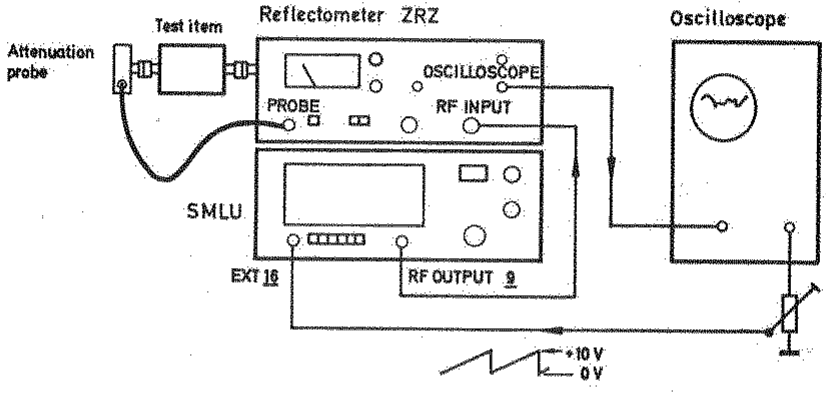


Display of reflection characteristic on the screen of an oscilloscope via a diode probe.

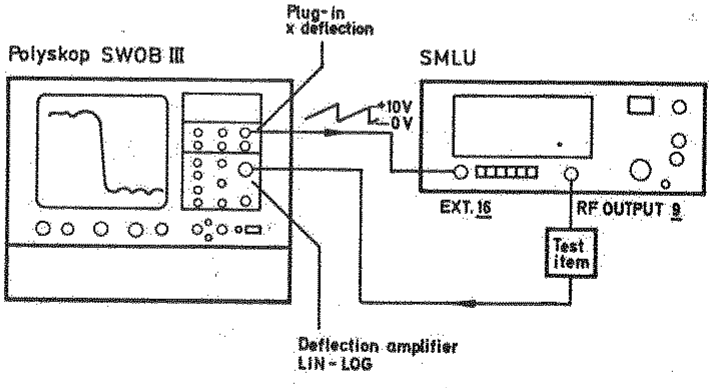
2.4.3 Reflection-coefficient and Attenuation Measurements in Conjunction with ZRZ

In conjunction with the Reflectometer Type ZRZ rapid and extremely accurate reflection and attenuation measurements are possible in the frequency range 25 to 1000 Hz. The measurement result is displayed on the screen of an oscilloscope which also supplies the sweep voltage for the signal generator in the form of a sawtooth signal.

Test setup:



2.4.4 Attenuation Measurements in Conjunction with Polyskop SWOB III



The high output power of the SMLU permits the dynamic range of the Deflection Amplifier LIN-LOG for logarithmic display to be fully utilized. Thus, swept-frequency measurements are possible over a dynamic range of 60 dB (typical value 70 dB).

2.5 Programming the SMLU

For programmed operation the pushbutton PROGR. 8 must be depressed. Frequency range, frequency and the attenuation of the output attenuator can be programmed via the socket PROGR. INPUT 25 . It is possible to choose between two transient time constants for frequency programming:

a) For slower frequency changes depress pushbutton UNMOD. 10 in addition to pushbutton PROGR. 8 . The transient time constant is then 13.5 msec. The residual FM $\frac{\Delta f}{f}$ is $\leq 20 \times 10^{-6}$. In the case of frequency jumping over the entire range the programmed nominal value of the frequency with an accuracy of $\pm 1\%$ is reached only after several transient periods, at the most after 80 msec. In the case of smaller frequency jumps, the time required is correspondingly less.

b) For rapid frequency changes depress pushbutton SWEEP EXT. Δf in addition to pushbutton PROGR. 8 . (Socket EXT. 16 remains free.) The time required to reach the programmed nominal value of the frequency with an accuracy of $\pm 1\%$ is thus reduced to $\leq$ 2 msec (frequency change within one range). The residual FM $\frac{\Delta f}{f}$ increases, however, to $\leq 100 \times 10^{-6}$.

For programming the attenuation of the output attenuator, the attenuator setting adjusted with switch 5 is maintained. It is only possible to program attenuation values that are greater than the attenuator setting adjusted with switch 5 . To program the whole attenuation range, switch 5 must be set to 0 dB.

In programmed operation the modes SWEEP EXT. Δf, AM INT. 1 kHz and AM EXT. can be selected by depressing the respective pushbuttons.

The programming input is made up of an Amphenol receptacle 57-20360 with 36 contacts. The mating free plug is Amphenol 57-30360 (R&S Stock No. FM 018.5862).

2.5.1 SMLU without Programming Unit Y9 (Ident. No. 200.1009.02)

(For contact wiring of the programming socket 25 see Fig. 2-3)

The frequency range is selected by connecting the respective contacts of the socket PROGR. INPUT 25 to chassis (max. switching voltage: +28 V; max. switching current: 50 mA).

The frequency can be remote controlled by applying a voltage of 0 to +10 V to the analog input (0 corresponding to the frequency at the lower range end and +10 V corresponding to the frequency at the upper range end).

The attenuation of the output attenuator is adjusted by connecting the respective contacts of the socket PTROGR. INPUT 25 to chassis (max. switching voltage: +28 V; max. switching current: 50 mA).

2.5.2 SMLU with Programming Unit Y9 (Ident. No. 200.1009.03)

(For contact wiring of the programming socket 25 see Fig. 2-4)

Frequency range, frequency and the attenuation of the output attenuator can be programmed. Programming input is in BCD code with negative logic function. If serial data input in the ASCII code is required, then a Code Converter PCW 244.8015.03 is to be connected accordingly. By switching the frequency inputs, a frequency-determining voltage of between 0 and +10 V can be adjusted in 0.1-V steps. The necessary tuning voltage can be found in Fig. 2-5 for every desired frequency: 0 corresponding to the frequency at the lower range end and +10 V corresponding to the frequency at the upper range end. Hence, 100 frequency steps are possible in each range. In the event that this resolution is not sufficient, an external D/A converter with more than 10 bits can be used for programming. For this purpose, remove the wire link between the soldering pins A and B on the programming unit Y9 (200.5240) and solder between the soldering pins C and D. The external D/A converter must be connected to the analog input of the socket PROGR. INPUT 25 .

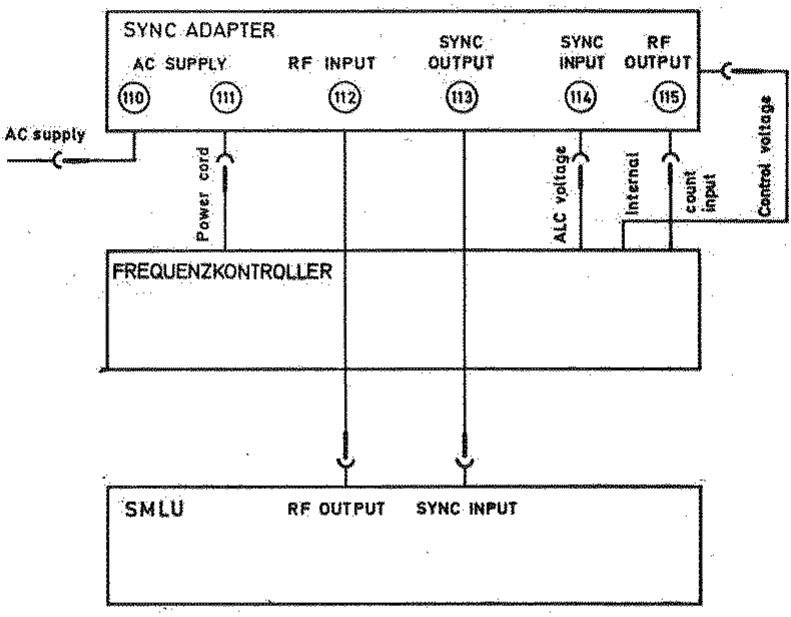
Frequency range and attenuation are programmed by connecting the respective contacts (see Fig. 2-4) to chassis (max. switching voltage: +5 V; max. switching current: 3 mA).

2.6 Synchronization of the SMLU

The SMLU can be synchronized via the SYNC INPUT 22 . The sensitivity is approximately 1 x 10^{-3}/V.

An ideal synchronizer is the Frequenzkontroller 100 4542 with respect to frequency and control range. It permits synchronization of the SMLU in the frequency range from 25 to 490 MHz.

For adaptation of the Frequenzkontroller to the synchronization sensitivity of the SMLU the Sync Adapter 233.9015.50 must be used. The three instruments are hooked up as follows (see also Fig. 2-6):



Preparation for synchronization (see Fig. 2-6 and the section on synchronization in the manual for the Frequenzkontroller):

Adjust the desired frequency range with rotary switch 102 .

Set switch 103 to f_o.

The Frequenzkontroller indicates the frequency of the SMLU.

Adjust the desired frequency (f_o) coarsely with the pushbuttons 2 and knob 7 on the SMLU.

Set switch 103 to f_1.

Vary knob 104 until the meter of the Frequenzkontroller reads a frequency (f_1) that is by 100 kHz higher than f_o ($f_1 = f_o + 100$ kHz). In position f_1 a test voltage is applied to the SMLU and its synchronization sensitivity adapted to the Frequenzkontroller by means of knob 104 . This adjustment must be repeated whenever the frequency is changed.

Set switch 103 to SYNC. In this switch position, the SMLU is synchronized with the Frequenzkontroller.

The signal generator frequency can be finely adjusted to the desired value by means of the fine adjustment knobs FREQ. FINE within the lock-point range of the Frequenzkontroller (20, 40 or 80 kHz). The control voltage reading on the Frequenzkontroller should lie within the black region, which corresponds to the maximum control range. This condition can be fulfilled by varying the frequency tuning knob 7 on the SMLU accordingly, without affecting the frequency as it is controlled by the reference frequency because of synchronization.

3. Maintenance and Repair

3.1 Required Measuring Equipment and Accessories

No.	○ Type of instrument, required specifications ● Recommended R&S instrument	Type	Order No.	See section
1	○ Digital voltmeter 1 mV - 300 V, 0 - 1 kHz, measurement error ≤ 0.4 % ● Digital Multimeter	 UGWD or UGC 51	 100.0218.02 234.0528... 234.0511...	3.4.1. 3.4.2. 3.4.3. 3.4.4. 3.4.5.
2	○ Ammeter I_{max} = 500 mA			3.4.2.
3	○ Frequency counter 1 kHz - 1000 MHz, measurement error < 10^{-5} ● Electronic Counter with Plug-ins: 1 kHz - 100 MHz 10 MHz - 800 MHz 800 MHz - 6 GHz	 FET 2	 100.6039... 100.6045.02 100.6080.02 110.6119.02	3.4.3. 3.4.4. 3.4.8.
4	○ Distortion meter 0.2 - 1 % at 1 kHz ● Direct-Reading Distortion Meter	 FTZ	 100.6100.02	3.4.3.
5	○ Power meter 0.1 - 2 W, 25 - 1000 MHz ● Microwave Power Meter with 50-Ω Probe with High-Power Attenuator 10 dB ±0.2 dB	 NRS RBD	 100.2433.92 100.2440.50 100.2962.50	3.4.4. 3.4.5. 3.4.6.
6	○ Wave analyzer 25 - 1000 MHz, dynamic > 60 dB ● Analyskop with UHF Tuner	 EZF EZFU	 100.8831.52 210.0011...	3.4.7.

No.	○ Type of instrument, required specifications ● Recommended R&S instrument	Type	Order No.	See section
7	○ Oscilloscope 50 mV/cm, 0 - ≈ 1 MHz sawtooth output > 10 V_{pp} ● Tektronix Oscilloscopes of the series 540, 550, 560, 580, 5000, 7000			3.4.7.
8	○ Differential amplifier plug-in for oscilloscope 10 µV/cm - 10 V/cm 0.1 Hz - 1 MHz, adjustable ● Differential Amplifier with Tektronix oscilloscope of the series 540, 550 or 7000	Tektronix 7A22 or 1A7A		3.4.1. 3.4.3. 3.4.8.
9	○ Thermometer with thermometer probe			3.4.4.
10	○ Dummy load, potentiometer 270 Ω, 2W			3.4.2.
11	○ Diode probe 10 - 1000 MHz, frequency response < ±0.5 dB			3.4.7.
12	○ Variable-ratio transformer 0 - 240 V, 100 VA, 50 Hz			3.4.1.

3.2 Circuit Description

(See function diagram 200.1009 FS)

A separate oscillator is provided for each of the seven frequency subranges. These oscillators, which operate at a low output level can be tuned over a relative frequency range of 1:1.75 by means of varactors. The frequency subranges overlap by 5%. The operating and the tuning voltage are well stabilized and the oscillators are temperature-controlled ensuring an extremely stable output frequency.

The tuning voltage for the oscillators is provided by a diode matrix. It converts a frequency-linear tuning voltage into a non-linear one which corresponds to the tuning characteristic of the oscillators. Thus, a linear scale characteristic is obtained. When a particular frequency range pushbutton is depressed only one oscillator and the associated diode network are switched into circuit. The frequency-linear tuning voltage at the input of the diode matrix is either internally produced or externally applied according to the selected mode of operation. In the UNMOD. mode, for example, it is supplied by a helical potentiometer which is ganged with the frequency tuning knob.

The oscillators are followed by three power amplifiers which boost the level to 2 W (or 1 W in range 7), one amplifier (I) being provided, for the oscillators 1 to 4, another one (II) for the oscillators 5 and 6 and the third one (III) for oscillator 7. The broadband amplifiers used for this purpose do not require any frequency tuning.

The succeeding lowpass filters which act as harmonic filters are associated with the different oscillator ranges. Thus, a harmonic suppression of better than 30 dB is ensured over the entire frequency range. The filters are switched over by means of reed relays together with the frequency ranges.

A broadband directional coupler system consisting of two directional couplers for the frequency ranges 25 to 200 MHz and 200 to 1000 MHz is provided for the measurement and indication of the output level. The rectified output voltages of the directional couplers are amplified separately in the meter amplifier. The larger one of the two voltages according to the frequency range is used for the indication of the output power. In addition, it is compared in the ALC amplifier against the set value adjusted with the potentiometer

OUTPUT POWER. From the resulting difference the ALC voltage is obtained which controls the gain of the RF amplifiers I to III. The ALC amplifier, moreover, protects the output transistors of the RF amplifiers against overloading. If the maximum permissible current is reached, the ALC voltage reduces the gain of the RF amplifiers accordingly.

The directional couplers are followed by a variable attenuator on which an attenuation of up to 35 dB can be switch-selected in 5-dB steps. This enables remote control of the output power.

The different modes of operation can be selected by means of pushbuttons:

In the UNMOD. operation, the tuning voltage is tapped on a helical potentiometer which is ganged with the frequency tuning knob.

In the SWEEP EXT. mode, the tuning voltage is externally applied to the socket EXT. If a voltage as a function of time is applied to the socket EXT. one frequency subrange can be swept.

In the SWEEP INT. mode, one frequency subrange can be swept in 20 sec with an internally produced sawtooth signal.

In the SWEEP EXT. Δf mode, the frequency trimming potentiometer remains connected to the input of the diode matrix. An externally applied sweep signal passes via an amplifier directly to the tuning inputs of the oscillators. This permits sweeping of the frequency about an adjusted centre frequency.

In the AM EXT. and AM INT. modes, amplitude modulation is accomplished by electrically varying the reference level of the ALC circuit. The AM signal applied to the socket EXT. (or the internally produced 1-kHz signal) is amplified and superimposed on the reference level of the ALC circuit.

Spurious voltages in the SWEEP INT. 20 sec, AM INT. 1 kHz, AM EXT. and UNMOD. modes are suppressed by connecting a capacitor at the output of the diode matrix to chassis. The capacitor is disconnected in the other modes of operation because of the rapid frequency change.

In the PROGR. mode, frequency range, frequency and the attenuation of the output attenuator can be remote controlled via a socket at the rear of the instrument. The tuning voltage applied to the analog input of the socket PROGR. INPUT is connected directly to the input of the diode matrix.

If the programming unit is incorporated in the SMLU, frequency range, frequency and the attenuation of the output attenuator can be digitally programmed in BCD code. 100 frequency steps are possible in each range.

3.2.1 Oscillator Unit Y1 (200.2511)

3.2.1.1 Oscillators 1 - 4 Y12 (200.3060)
Oscillators 5 - 7 Y13 (200.2640)

(see circuit diagrams 200.2511 S, 200.3060 S, 200.2640 S)

The oscillators used are of the varactor-tuned transistor type. Both the oscillator inductance and capacitance of the oscillators 5, 6 and 7 are adjusted to obtain the bandwidth required. The inductance is varied by tuning the varactors which are connected in series with the inductance (e.g. the diodes G1 1 and G1 2 of oscillator 7 are connected in series with L1).

To isolate the oscillators from the subsequent RF amplifiers, each of the oscillators 5, 6 and 7 is followed by a 50-Ω 10-dB attenuator and each of the oscillators 1 to 4 by a one- or two-stage buffer amplifier. The attenuators are optimally coupled to the oscillators via an inductance. The buffer amplifiers are connected to suitable taps on the oscillator coils for good coupling.

The operating point of the oscillator transistors is adjusted by means of the potentiometers R10 to R70 (circuit diagram 200.2511 S). The output power of the oscillators 1 to 4 available at the output of the buffer amplifiers is $\geq$ +6 dBm and the output power of the oscillators 5, 6 and 7 available at the output of the attenuator pads is $\geq$ +10 dBm.

The oscillators 1 to 4 and 5 to 7 are housed in two RF-tight ovens in which the temperature is kept constant to +65 $\pm$2°C. This ensures a high frequency stability at variations of the ambient temperature and minimizes the warm-up period of the oscillators. The two transistors T103 and T83 are used as heater elements. The temperature is measured via the two thermistors R111 and R91. The two associated control amplifiers are located on the circuit board 200.3230 (circuit diagram 200.2511 S). In addition, a thermistor (R1, R21, R41 and R51) is provided in each of the oscillators 1 to 4 to minimize the temperature effect on the frequency.

3.2.1.2 Diode Matrix Y11 (200.3282)
(see circuit diagrams 200.2511 S and 200.3282 S)

The diode matrix converts the frequency-linear tuning voltage appearing at its input into a non-linear one which is available at its output. This is necessary in order to obtain a frequency-linear tuning characteristic of the signal generator in spite of the non-linear tuning characteristic of the oscillators. A separate matrix is provided for each of the seven oscillators. The eight potentiometers of each matrix permit the initial value of the tuning curve (e.g. R34 for oscillator 1), the initial rate of rise (e.g. R41 for oscillator 1) and six rise variations of the tuning curve (e.g. R48 to R83) to be adjusted. At the break points of the different rise variations, diodes are switched as a function of the input voltage. The current flowing in the matrix is split into two portions after the break-point diodes (e.g. G1 30). One portion is inverted in the operational amplifier B1 and, in the operational amplifier B2, added to the second, not-inverted portion. The output voltage of the matrix is available at

the feedback resistor R137 of the operational amplifier E2. Positive or negative rise variations can be effected according to which of the two current portions adjusted with the potentiometers is larger. The output voltage of the diode matrix is adjustable between 0 and +40 V.

The matrix uses mainly metallized resistors and potentiometers which ensure a high signal-to-noise ratio and low temperature effect. The signal-to-noise ratio is further improved by C8 provided at the output of the matrix. In operation modes with rapid frequency change C8 is disconnected when the respective mode pushbuttons are depressed.

3.2.2 Amplifier I Y21 (200.6081)

(see circuit diagrams 200.1367 S and 200.6081 S)

The five-stage amplifier I covers the frequency range 25 to 200 MHz. The amplifier stages T3, T21 and T22 operate in class C and the first two stages, T1 and T2, in class A.

LC transformation circuits made up of discrete elements are used for matching the stages to each other. The low-valued input impedances of the transistors T21 and T22 are stepped up by means of the 1:4 line transformers Tr21 and Tr22, respectively. The transformers consist of short coaxial line sections of 10 Ω characteristic impedance. Ferrite beads are slid over the outer conductor of these line sections in order to suppress guided waves on the sheathing. The gain is controlled by the ALC voltage from the ALC amplifier 200.5540, which is used as supply voltage for the third and the fourth stage. The minimum output power of the amplifier is 34 dBm and its gain is at least 28 dB.

3.2.3 Amplifier II Y3 (200.3618)

(see circuit diagram 200.3618 S)

The four-stage amplifier II covers the frequency range 200 to 600 MHz.

The first and the second stage (T1, T11 and T21, T31) operate in class A and the third and the fourth stage (T41 and T51, T61) in class C. The operating points of the class A stages are stabilized by means of a collector current stabilization circuit comprising the transistors T2, T12, T22, T32. Two RF transistors are connected in parallel via 3-dB couplers in the first, the second and the fourth stage for isolation of the amplifier stages. This makes for very good matching of the input and output of these stages to the 50-Ω characteristic impedance. Matching of the transistor input and output impedances to the 50-Ω characteristic impedance is achieved by means of transformation circuits in strip-line technique. The oscillators 5 and 6 are isolated from each other by connecting their outputs via the diagonal gates of the 3-dB input coupler to the amplifier.

The gain is controlled by the ALC voltage from the ALC amplifier 200.5540, which is used as supply voltage for the third amplifier stage. The operating point of the second stage is adjusted with potentiometer R25 (see circuit diagram 200.1009 S) in the supply voltage line. The minimum output power of the amplifier is 34 dBm and its gain is at least 24 dB.

3.2.4 Amplifier III Y4 (200.4189)

(see circuit diagram 200.4189 S)

The five-stage amplifier III covers the frequency range 565 to 1000 MHz.

Isolation of the stages from each other, stabilization of the class A stages and matching of the RF transistors are based on the same principle as employed in amplifier II (see section 3.2.3). The gain is controlled by the ALC voltage used as supply voltage for the penultimate stage (T51). The operating point of the second stage (T21) is adjusted with potentiometer R24 (see circuit diagram 200.1009 S) in the supply voltage line. The minimum output power of the amplifier is 31 dBm and its gain is at least 21 dB.

3.2.5 Filter Unit Y2 (200.1367)

3.2.5.1 Filters 1 to 4 Y22 (200.2240)
Filters 5 to 7 Y23 (200.1896)

(see circuit diagrams 200.1367 S, 200.2240 S and 200.1896 S)

The RF amplifiers are followed by seven lowpass filters corresponding to the seven oscillators (the numbers of the filters refer to the respective frequency ranges). The filters exhibit a high stopband attenuation ensuring suppression of the harmonics occurring in the C class stages of the RF amplifiers. The switching of the filters is accomplished via reed contacts by means of the range switch. All seven filters are accommodated in a common casing together with amplifier I and the indicating unit. The 13-section filters 1 to 4 are made up of discrete elements. They are located on the circuit board 200.2240. The filters 5 to 7 are of the coaxial-line type. The filters 5 and 6 are located on the circuit board 200.1909. Filter 7 is located on the circuit board 200.2128.

3.2.5.2 Directional Couplers

(see circuit diagram 200.1367 S)

Because of the limited bandwidth of directional couplers, two directional couplers are required for the indication of the wide frequency range of 25 to 1000 MHz. They differ in the centre frequency and, as a result, in the coupling attenuation. The frequency response of the coupling attenuation of the two directional couplers is compensated by capacitors (C1 and C4). The output voltages rectified in the two diodes G1 1 and G1 3 pass to the meter amplifier Y24 (200.1715). From the meter amplifier the two voltages are applied to the input of the ALC amplifier 200.5540 where they are combined via an OR circuit. In this way, it is ensured that always the directional coupler with the lower coupling attenuation is connected to the meter and the ALC amplifier. The transition from one directional coupler to the other is effected continuously at 200 MHz. The two directional couplers are of the stripline type using teflon as substrate.

3.2.5.3 Meter Amplifier Y24 (200.1715)
(see circuit diagrams 200.1367 S and 200.1715 S)

The meter amplifier boosts the two rectified output voltages of the directional couplers separately to the level required in the ALC amplifier. The gain is adjustable with the potentiometers R7 and R17. The potentiometers R5 and R15 are used for offset compensation.

3.2.5.4 Variable Attenuator Y25 (200.1373)
(see circuit diagrams 200.1367 S and 200.1373 S)

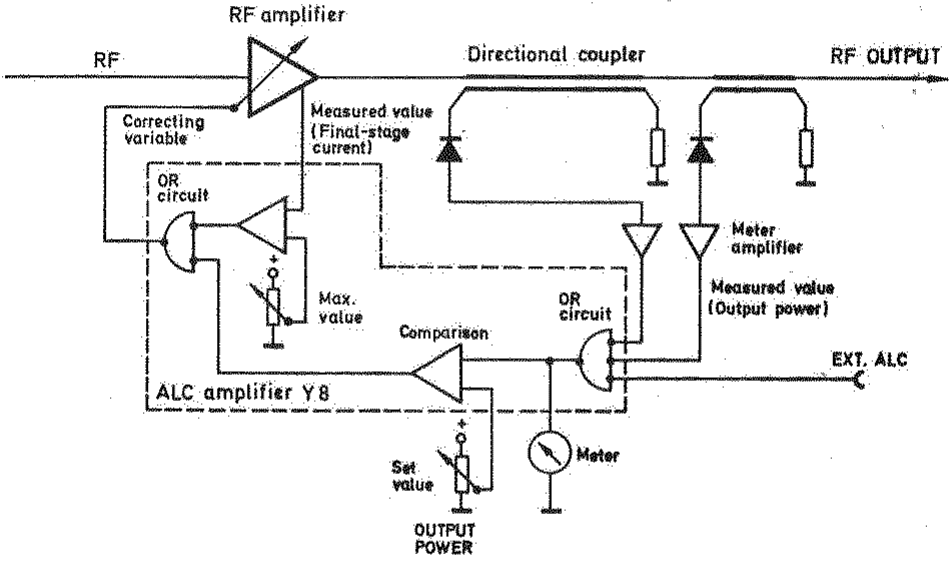
The variable attenuator consists of four π-sections with 5 dB (1x) and 10 dB (3x) attenuation. The π-sections and the through line are switched by eight motor-driven wipers. Apart from through connection, it is possible to adjust attenuations between 5 dB and 35 dB in 5-dB steps by appropriately connecting the π-sections in series. Precise adjustment of the wipers and gold-plated contact planes minimize reflections at the switch contacts.

The DC motors are controlled via the attenuator switch S3 from the circuit board 200.1573. The diodes G1 5 to G1 16 provide logic configurations which control the motors via the control transistors according to the position of the attenuator switch. The motors are series-connected in pairs. If the attenuator switch is set to 0 dB, the transistors T2, T3, T5 to T32, T33 and T35 are conducting and the transistors T1, T4, T6 to T31, T34 and T36 are cut off. The motors adjust the wipers to the through-connection position. In position 5 dB of the attenuator switch, the 5-dB contact is connected to chassis cutting off the transistor T3 and causing T4 to become conductive which in turn cuts off the transistors T2 and T5 and causes T1 and T6 to become conductive. This reverses the polarity of the two motors Mo1 and Mo2 connecting the two wipers to the 5-dB attenuator section. The motors Mo3 to Mo8 are controlled in the same manner.

3.2.6 ALC Amplifier Y8 (200.5540)

(see circuit diagram 200.5540 S)

The controlled quantity (output voltage of the directional couplers or external voltage applied to input EXT. ALC) appearing at the input of the ALC amplifier is compared against the set value (potentiometer OUTPUT POWER). The resulting difference determines the correcting variable (ALC voltage) available at the output of the ALC amplifier, which controls the gain of the RF amplifier accordingly.



A second control circuit which also acts on the gain of the RF amplifier limits the current of the final stage of the RF amplifier if it exceeds the maximum permissible value.

3.2.7 Modulation Unit Y5 (200.5440)

(see circuit diagram 200.5440 S)

1-kHz oscillator

The 1-kHz oscillator supplies the modulation frequency of 1 kHz required for the internal amplitude modulation. It is designed as a Wien-Robinson bridge comprising the operational amplifier B1. The frequency in the feedback arm is adjustable with potentiometer R1. The amplitude of the 1-kHz frequency is adjusted with R18.

AM amplifier

The AM amplifier boosts the AM signal applied to the input EXT. or the internally produced 1-kHz signal to the required level. It consists of two stages comprising the two transistors T20 and T21.

Sweep control circuit

The sweep control circuit produces the sawtooth signal required for internal frequency sweeping (SWEEP INT. 20 sec). At the end of the sawtooth signal, the RF oscillator is switched off.

The capacitor C31 is charged by the constant current source T30. The constant charging current ensures a linear voltage rise at output 4. When C31 has reached +10 V, T33 conducts cutting off T34. The switch-off point is adjustable with R42. As the voltage at the base of T32 drops to zero, T32 is cut off causing T31 to conduct. Thus, capacitor C31 is not charged any longer and the current of the constant current source T30 is drained off via T31, R34. When T31 conducts, T35 becomes conductive cutting off T36. As a result, the RF oscillator, connected to chassis via T36, is switched off.

1:4 Amplifier

The 1:4 amplifier boosts the input voltage for the diode matrix in the modes SWEEP EXT., SWEEP INT. 20 sec and PROGR. It consists of

an operational amplifier and a two-stage transistor amplifier connected in series. The output signal passes via the respective switch contacts to the input of the diode matrix and, in addition, via resistor R60 to the socket SAWTOOTH OUTPUT.

3.2.8 +28-V/+21-V Stabilizer Y6 (200.5479)

(see circuit diagrams 200.1009 S Bl. 2 and 200.5479 S)

The AC voltage arriving from the power transformer is rectified in the bridge-connected rectifier G1 3 and applied to the collectors of the three transistors T3, T6 and T5 which are cascaded. The stabilized +28-V output voltage is available at the emitter of T5 acting as control element. The base voltage for the control transistor T1 is picked off from this voltage via voltage divider R14 to R17 and compared against the Zener voltage of G1 3 (8.2 V). The nominal value of +28 V is adjusted with R16. Deviations from the set value are amplified in T1 and applied to the base of the control transistor T5 via T3 and T6, determining the regulation. The voltage at resistor R23 controls a current limiting circuit. R23 is a resistor wire which is located in the cable harness between emitter T5 and the +28-V solcering lug (retaining screw of T4 on the rear panel).

If the current exceeds 4.6 A, transistor T7 conducts increasing the internal resistance of T5 and decreasing the voltage at the emitter (constant current regulation). To prevent transistor T5 from being overdriven the overcurrent protection is actuated if its collector-emitter voltage becomes inadmissibly high. If the emitter voltage falls below the base voltage of T2 (+12 V), the latter conducts cutting off transistor T5 via T3 and T6. As a result, the stabilizer is disconnected. After the SMLU has been switched off, capacitor C5 discharges via R9 and R32 so that when the overload has been removed and the instrument is switched back on, transistor T2 is cut off and the stabilizer is operating again normally.

The supply voltage for the +21-V stabilizer is provided by the +28-V voltage. The stabilized +21-V voltage is available at the emitter of transistor T4 which serves as control element. A portion of the output voltage is tapped on the voltage divider R21 to R23 and applied to the operational amplifier B1 where it is compared against the reference voltage of the reference diode G1 7 (9 V). The output voltage of B1 depends on the deviation of the +21-V voltage from the set value; it is used for driving transistor T4. The nominal value of +21 V is adjusted with R22. The voltage at R18 causes the transistor T8 to become conductive at an output current of 550 mA. This makes the base of T4 more negative increasing the internal resistance of T4 (constant current regulation).

3.2.9 ±46-V/±40-V Stabilizer Y7 (200.5504)

(see circuit diagrams 200.1009 S Bl. 2 and 200.5504 S)

The ±46-V/±40-V stabilizer Y7 consists of two identical stabilizer circuits, one stabilizing the two positive and the other the two negative voltages. In the following the stabilizer circuit for the two voltages +46 V and +40 V is described.

The AC voltage arriving from the power transformer is rectified in the bridge-connected rectifier G1 1 and applied to the collectors of the two transistors T5 and T6 which are cascaded. The stabilized +46-V voltage is available at the emitter of T5 acting as control element. The base voltage for the control transistor T7 is picked off from this voltage via voltage divider R14 to R17 and compared against the Zener voltage of G1 3 (8.2 V). The nominal value of +46 V is adjusted with R16. Deviations from the set value are amplified in T7 and applied to the base of the control transistor T5 via T6, determining the regulation. An overcurrent limiter protects the stabilizer against short-time overloading. At approx. 250 mA transistor T2 becomes conductive and prevents further current increase by stabilization via loop T6, T5, T2 which, in turn, decreases the stabilizer output voltage.

The supply voltage for the +40-V stabilizer circuit is provided by the +46-V voltage. The stabilized +40-V voltage is available at the emitter of transistor T8 which serves as control element.
A portion of the output voltage is tapped on the voltage divider R23 to R25 and applied to the operational amplifier B1 where it is compared against the reference voltage of the reference diode G1 8. The output voltage of B1 depends on the deviation of the +40-V voltage from the set value. It is used for driving the control transistor T8. The nominal value of +40 V is adjusted with R24.

3.2.10 Programming Unit Y9 (200.5240)

The programming unit Y9 permits the programmed adjustment of the frequency, frequency range and attenuation of the output section. The information fed in at the programming inputs is in the BCD code, negative logic; i.e. the inputs must be connected to chassis in order to obtain the logic level 1.

By wiring the programming inputs 7 to 15 (Fig. 2-4) a frequency-linear tuning voltage between 0.1 V and 10 V can be adjusted in 0.1-V steps at output 1. Thus 100 frequency steps are possible in each range. The input information in BCD code is converted to an analogue tuning voltage at output 1 by means of the integrated circuit modules B1, B7 and the operational amplifier B4. B1 is a 10-bit current source. The individual current sources are switched on via the programming inputs. The current values are determined by the resistance network in B7. The currents are added at the summation point (input 2 of B4). The operational amplifier B4 produces the tuning voltage at output 1 which is proportional to the sum current. For applications in which a resolution of 100 frequency steps is not sufficient, an external D/A converter with more than 10 bits can be used. For this purpose the wire link between points A and B must be connected between points C and D. The external D/A converter is connected to contact 18 of input socket Bu9.

The programming inputs 1, 2, 3 for the frequency ranges and 4, 5, 6 for the attenuation are connected to BCD-decimal converters via inverters. The outputs are connected to the switching lines of the range selector or of the variable attenuator.

The ALC with operational amplifiers B2 and B3 produce the ±6.0 V for the I.C. modules.

3.3 Mechanical Design

The mechanical structure of the SMLU consists of the front panel, the chassis and the rear panel. The two RF amplifiers II and III (Y3 and Y4) are accommodated in two RF-tight casings which can be swung back after loosening two screws (Fig. 3-1). The oscillator casing (Y1) is located on the left-hand side of the instrument. After the top cover is removed the diode matrix (Y11) is accessible (Fig. 3-2) which can be swung towards the front after loosening the two screws provided at the rear end of the board. The oscillator circuit board 200.3230 is arranged underneath the diode matrix. The oscillators 1 to 4 (Y12) and 5 to 7 (Y13) are mounted on the underside of the oscillator casing (Fig. 3-3). The oscillators are accessible after removal of the bottom cover. The filter unit Y2 is located in the centre of the instrument.

Amplifier I (Y21) is accommodated in the top cover which can be withdrawn after removal of four screws. The filters 1 to 4 (Y22) are located underneath amplifier I. These two assemblies are coupled with a printed-circuit type connector. The connection is interrupted when amplifier I is removed. For servicing, amplifier I is placed on the oscillator casing (Fig. 3-1) and the connection is established with the two interconnected cables 1 (200.5962) and 2 (200.5985). If it is only necessary to measure at the amplifier output, connecting cable 1 will be sufficient. Filter 7, meter amplifier Y24 and the directional couplers are accessible after removing the cover on the underside of the filter unit Y2 (Fig. 3-3).

The variable attenuator Y25 is mounted between the filter casing and the front panel. The four attenuator sections R41 to R44 are arranged at the sides. Above the variable attenuator the board with the motor control (200.1573) is located.

The power transformer Tr1 is accommodated in the rear corner on the right-side. The programming unit Y9 is provided between the power transformer Tr1 and the filter unit (only in model 200.1009.03). A cassette containing the modulation unit Y5, the two supply voltage stabilizers Y6 and Y7 and the ALC amplifier Y8 (Fig. 3-4) is located in front of the power transformer. For servicing, these plug-in boards can be operated outside the cassette on the adapter 200.6546.

The three transistors T4, T5 and T6 of the +28-V/+21-V stabilizer Y6 and the transistor T1 of the ALC circuit are mounted on a heat sink at the rear panel in order to provide for efficient cooling.

3.4 Adjustments

3.4.1 Power Supply

The voltage specifications are subject to the operation of the instrument from the rated AC supply voltage. The DC output voltages of the stabilizers (Y6, Y7) are to be adjusted with the aid of a digital voltmeter, such as Type UGWD, so that a setting accuracy of better than $\pm$0.4% is obtained.

Measuring equipment required (see section 3.1): Digital voltmeter (1), oscilloscope with differential amplifier (8), variable-ratio transformer (12).

+46-V/+40-V Stabilizer Y7 (200.5504)

Adjust DC voltage between contacts 17 (+) and 4 - 6 ($\perp$)
with R16 to ..... +46 V.

Adjust DC voltage between contacts 11 (+) and 4 - 6 ($\perp$)
with R24 to ..... +40 V.

Adjust DC voltage between contacts 2 (-) and 4 - 6 (⊥)
with R39 to ..... -40 V.

Adjust DC voltage between contacts 3 (-) and 4 - 6 (⊥)
with R32 to ..... -46 V.

Check the spurious voltages of the stabilizer with the aid of an oscilloscope with differential input over the bandwidth 0.1 Hz - 30 kHz.

Spurious voltages at a deviation of -10% from the AC supply voltage of 220 V:

DC voltage	$E_{spurious}$	Test point to socket Bu14.4/.5/.6 (⊥)
+46 V	< 6 mV_{pp}	Bu14.17
+40 V	< 200 μV_{pp}	Bu14.11
-40 V	< 200 μV_{pp}	Bu14.2
-46 V	< 6 mV_{pp}	Bu14.3

+28-V/+21-V Stabilizer Y6 (200.5479)

Depress one of the range pushbuttons 1 to 7.

Adjust DC voltage between contacts 7 (+) and 15 - 17 (⊥)
with R16 to ..... +28 V.

Adjust DC voltage between contacts 1, 2 (+) and 15 - 17 (⊥)
with R22 to ..... +21 V.

Check the spurious voltages of the stabilizer with the aid of an oscilloscope with differential input over the bandwidth 0.1 Hz - 30 kHz.

DC voltage	$E_{spurious}$	Test point to socket Bu13.15/.16/.17
+28 V	< 15 mV_{pp}	Bu13.7
+21 V	< 1 mV_{pp}	Bu13.1/.2

3.4.2 Adjusting the Current Limiting of the RF Amplifiers

Adjust the response threshold for the current limit control of the final stages in the RF amplifiers. For this purpose, a variable dummy load must be used with which the maximum permissible current of the final stage is adjusted.

Measuring equipment required (see section 3.1): Voltmeter (1), ammeter (2), dummy load (10).

Press pushbutton PROGR. (programming inputs not wired).

Connect voltmeter to the control voltage (e.g. to C87 on Y4).

Current limiting of amplifier III (Y4, 200.4189)

a) Connect dummy load (adjusted for maximum resistance) in series with the ammeter between feed-through capacitor C88 (Y4) and chassis.

b) Adjust the dummy load for a current of 130 mA.

c) Turn potentiometer R8 (on Y8, 200.5540) counterclockwise until the control voltage starts to decrease.

d) Check for accurate adjustment; vary the dummy load to see whether the response threshold for the control voltage decrease is at 130 ±5 mA.

e) Adjust the dummy load for a current exceeding 130 mA. The control voltage must now drop to zero.

f) Connect dummy load (adjusted for maximum resistance) in series with the ammeter between feed-through capacitor C89 (Y4) and chassis.

g) Adjust the dummy load for a current of 130 mA.

h) Turn potentiometer R28 (on Y8, 200.5540) counterclockwise until the control voltage starts to decrease.

i) Check for accurate adjustment; vary the dummy load to see whether the response threshold for the control voltage decrease is at 130 ±5 mA.

k) Adjust the dummy load for a current exceeding 130 mA. The control voltage must now drop to zero.

Current limiting of amplifier II (Y3, 200.3618)

a) Connect dummy load (adjusted for maximum resistance) in series with the ammeter between lead-through filter D51 (Y3) and chassis.

b) Adjust the dummy load for a current of 260 mA.

c) Turn potentiometer R68 (on Y8, 200.5540) counterclockwise until the control voltage starts to decrease.

d) Check for accurate adjustment; vary the dummy load to see whether the response threshold for the control voltage decrease is at 260 ±5 mA.

e) Adjust the dummy load for a current exceeding 260 mA. The control voltage must now drop to zero.

f) Connect dummy load (adjusted for maximum resistance) in series with the ammeter between lead-through filter D61 (Y3) and chassis.

g) Adjust the dummy load for a current of 260 mA.

h) Turn potentiometer R88 (on Y8, 200.5540) counterclockwise until the control voltage starts to decrease.

j) Check for accurate adjustment; vary the dummy load to see whether the response threshold for the control voltage decrease is at 260 ±5 mA.

k) Adjust the dummy load for a current exceeding 260 mA. The control voltage must now drop to zero.

Current limiting of amplifier I (Y21, 200.6081)

a) Connect dummy load (adjusted for maximum resistance) in series with the ammeter between load-through filter D11 (Y21) and chassis.

b) Adjust the dummy load for a current of 800 mA.

c) Turn potentiometer R48 (on Y8, 200.5540) counterclockwise until the control voltage starts to decrease.

d) Check for accurate adjustment; vary the dummy load to see whether the response threshold for the control voltage decrease is at 500 ±20 mA.

e) Adjust the dummy load for a current exceeding 800 mA. The control voltage must now drop to zero.

3.4.3 Adjusting the Modulation Unit Y5 (200.5440)

All voltages must be measured to common chassis earth I (contacts 1 and 2).

Measuring equipment required (see section 3.1): Distortion meter (4), digital voltmeter (1), oscilloscope with differential amplifier (8), frequency counter (3).

1:4 amplifier

a) Select the modes of operation UNMOD. and PROGR. (programming inputs not wired).

b) Adjust the voltage at the input of the diode matrix (Bu11.1) with potentiometer R50 (Y5) to ..... 0 ±0.05 mV.

c) Select mode of operation SWEEP EXT.

d) Select any desired frequency range.

e) Short-circuit input EXT. and check the spurious voltage at the input of the diode matrix (Bu11.1) with the aid of a difference-voltage measurement over the bandwidth 0.1 Hz to 3 kHz.

f) Permissible spurious voltage ..... < 0.5 mV_{pp}

g) In the case of spurious voltage > 0.5 mV_{pp}, the operational amplifier B5 must be replaced.

Sweep control

To obtain coincidence of the frequency ranges and the scale ranges in the mode of operation SWEEP INT. 20 sec, the final value of the sweep control tuning voltage must be equal to the final value of the voltage at the frequency tuning potentiometer.

a) Select the mode of operation UNMOD.

b) Turn the frequency tuning knob FREQ. fully clockwise.

c) Measure the voltage at the input of the diode matrix (Bu11.1) with a digital voltmeter.

d) Select the mode of operation SWEEP INT. 20 sec.

e) Select any desired frequency range.

f) Upon completion of the sweep set the voltage at the input of the diode matrix (Bu11.1) to the previously measured value, using potentiometer R42 (Y5). To adjust a reduced voltage, a new sweep must be started.

g) Permissible deviation ..... ±50 mV.

1-kHz oscillator

a) Select the mode of operation AM INT. 1 kHz.

b) Turn potentiometer R7 clockwise until the oscillator oscillates reliably (measure at output Bu12.16, using oscilloscope).

c) Connect the digital voltmeter and the frequency counter to the output of the AM amplifier (Bu12.13).

d) Adjust the voltage on the digital voltmeter with R18 to .... 700 ±10 mV_{pp}.

e) Adjust the voltage on the frequency counter with R1 to ..... 995 ±1 Hz. (With the instrument closed the frequency rises slightly because of the higher temperature so that the nominal value of 1000 ±15 Hz is obtained.)

f) Check the spurious voltage (with the aid of a difference-voltage measurement) and the distortion at the output of the 1-kHz oscillator (Bu12.16).

Required signal-to-noise ratio (bandwidth 0 - 1 MHz) ..... ≥ 45 dB.

Measurement: Superimpose a DC offset voltage on the signal at the oscilloscope.

Permissible distortion ..... ≤ 0.3%.

If the measured spurious voltage and distortion are inadmissible, turn R7 counterclockwise until the required values are obtained, taking into consideration, however, that the voltages at the drain of T1 must remain within the permissible range of -10 to -80 mV. The two adjustments are interdependent and must be repeated, if necessary.

3.4.4 Adjusting the Oscillator Unit Y1 (200.2511)

Unscrew the RF cables K4, K5, K6 and K7 from the amplifier inputs. Prior to the following adjustments, the instrument should be switched on for approximately 10 minutes.

Adjusting the temperature control

Adjust the two temperature control circuits to the nominal temperature by varying the reference voltage.

Measuring equipment required (see section 3.1): Thermometer (9).

Adjustment procedure:

a) Adjust the oven temperature of the oscillators 5 to 7 (Y13, 200.2640) with R80 (on circuit board 200.3230) to ..... 65 ±2°C.

b) Adjust the oven temperature of the oscillators 1 to 4 (Y12, 200.3060) with R100 (on circuit board 200.3230) to ..... 65 ±2°C.

With the diode matrix Y11 swung back introduce the thermometer probe through the cable passage of the RF cable K4 on the oscillator board 200.3230 into the oven of the oscillators 1 to 4.

The oven of the oscillators 5 to 7 is accessible through one of the cable passages of the RF cables K5, K6 or K7.

NOTE: By turning the potentiometer counterclockwise, the oven temperature is increased.

After the adjustment has been made, wait several minutes before proceeding to the temperature measurement to allow the ovens to warm up to the new temperature.

Adjusting the operating point

For adjusting the operating point of the oscillators proceed as follows:

A) Adjusting the operating point of the oscillator transistors

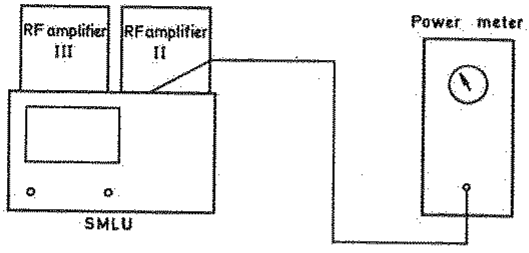
B) Adjusting the frequency range limits

C) Checking the operating point adjustment.

Measuring equipment required (see section 3.1): Power meter (5), frequency counter (3), digital voltmeter (1).

A) Adjusting the operating point of the oscillator transistors

Test setup:



Adjustment procedure:

a) Select the mode of operation UNMOD.

b) Set the potentiometer associated with the oscillator to be adjusted (on diode matrix Y11, 200.3282) to midway position.

c) Connect a power meter to the output of the oscillator to be adjusted (K4, K5, K6 or K7).

d) Switch the oscillator into circuit by depressing the respective range button.

e) Tune the oscillator through its range by means of the frequency tuning knob FREQ.

f) Adjust the potentiometers R10 to R70 (corresponding to the respective oscillators; see circuit diagram 200.2511 S) according to the following criteria (observe oscillator performance on the power meter):

Reliable oscillator start

- No power discontinuities when changing the frequency
- In the ranges 1 to 4, the power must be ..... > 6 dBm;
- in the ranges 5 to 7 ..... > 10 dBm.

The potentiometers to be adjusted are accessible on the circuit board 200.3230 with the diode matrix swung back.

In the case of malfunctioning at the range limits it should be taken into consideration that the oscillator and the scale ranges might be slightly offset. The oscillator and the scale ranges are brought to coincidence in the subsequent adjustment of the frequency range limits. After adjusting the operating point of the oscillators it is necessary to always adjust the corresponding potentiometers on the diode matrix Y11 (see section 3.4.8).

B) Adjusting the frequency range limits

The level of the oscillator frequency range is determined by the oscillator inductance. The extent of the frequency range depends on the range of variation of the varactors. Tuning through the frequency range is possible by varying the tuning voltage from 0 to +30 V (adjustable by means of the diode matrix). If the initial frequency and the final frequency of the scale range are not reached by this variation of the tuning voltage, the oscillator frequency range must be shifted by altering the oscillator inductance:

The frequency range of the oscillators 1 to 4 can be shifted to lower frequencies by turning in the ferrite cores of the coils L1 to L4. By turning them out, the oscillator frequency ranges can be shifted to higher frequencies.

The frequency ranges of the oscillators 5 to 7 can be shifted by bending the coils L1, L11, L21.

The coils are accessible from the underside of the instrument after the lid of the oscillator oven Y1 and the covers of the two oscillators have been removed.

Adjustment procedure:

a) Select the mode of operation UNMOD.

b) Connect digital voltmeter to output A of the diode matrix Y11. Connect frequency counter to the output of the oscillator to be adjusted (K4, K5, K6 or K7).

c) Set the cursor to the left end of the scale.

d)

Range (select with range button)	1	2	3	4	5	6	7
Adjust with: (on diode matrix)	R34	R35	R36	R37	R38	R39	R40
Adjust to: [MHz]	24.6	42	70	118	198	334	565

e) Permissible deviation ..... < ±0.5%.

f) If any one frequency cannot be adjusted, shift the oscillator frequency range concerned by adjusting the respective oscillator inductance accordingly.

g) Set the cursor to the right end of the scale.

h)

Range (select with range button)	1	2	3	4	5	6	7
Adjust with: (on diode matrix)	R41	R42	R43	R44	R45	R46	R47
And with: (if adjustment with R41 to R47 proves insufficient	R48 R55 R62	R49 R56 R63	R50 R57 R64	R51 R58 R65	R52 R59 R66	R53 R60 R67	R54 R61 R68
Adjust to: [MHz]	44.4	75	126	212	356	600	1010

j) Permissible deviation .....< ±0.5%.

The output voltage of the diode matrix may only be increased to a maximum of +30 V. If the nominal value of the frequency is still not reached, the oscillator frequency range concerned must be shifted by adjusting the respective oscillator inductance accordingly. Check the frequency at the end of the frequency ranges which called for coil adjustment and adjust, if necessary. After the adjustment, glyptal the ferrite cores of the oscillator coils.

C) Checking the operating point adjustment

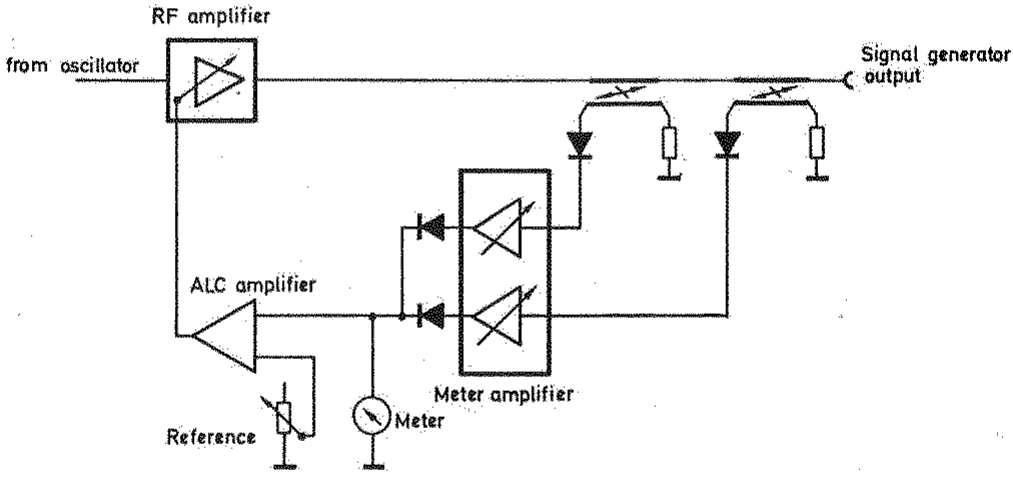
After adjusting the range limits, check the oscillator characteristics

- continuity of tuning,
- output power,
- reliability of start of oscillation.

Adjust the operating points, if necessary.

3.4.5 Adjusting the Meter Amplifier Y24 (200.1715)

Meter amplifier, directional couplers, meter diodes, ALC amplifier and RF amplifiers make up the control circuit used for keeping the incident power of the signal generator constant.



Rectification of the RF signal and amplification of the rectified voltage are effected via two separate indicating systems: in range 25 to 200 MHz, via diode G1 3 and operational amplifier B2; in range 200 to 1000 MHz, via diode G1 1 and operational amplifier B1.

Zero adjustment of the meter amplifier

For zero adjustment, the bias of the two meter diodes and the corresponding reference diodes are adjusted to the same value.

Measuring equipment required (see section 3.1): Voltmeter (1).

Adjustment procedure:

a) Select the mode of operation PROGR. (programming inputs not wired).

b) Connect voltmeter between D12 at the filter casing and chassis.

c) Adjust potentiometer R5 (on Y24) for a residual voltage of $\leq$ 20 mV.

d) Connect voltmeter between D14 at the filter casing and chassis.

e) Adjust potentiometer R15 (on Y24) for a residual voltage of $\leq$ 20 mV.

Adjusting the gain

The interaction of the meter amplifier and the other control circuit elements can be seen from the above diagram. The ALC amplifier controlling the gain of the RF amplifiers keeps the output voltage of the meter amplifier constant according to the set reference voltage. In a closed control circuit, gain variations do not affect the output voltage of the meter amplifier but its input voltage which is a measure of the output power of the instrument.

Measuring equipment required (see section 3.1): Power meter (5).

Adjustment procedure:

a) Turn potentiometers R24 and R25 (+28-V/+21-V stabilizer Y6) fully clockwise (0 Ω).

b) Turn potentiometers R20 and R26 (amplifier I Y21) fully clockwise (250 Ω, seen from the front panel).

c) Turn potentiometers R114 and R127 (ALC amplifier Y8) fully clockwise.

d) Connect power meter to RF output I.

e) Adjust potentiometer OUTPUT POWER for full scale deflection on the meter at 40 MHz.

f) Adjust the gain of the meter amplifier with potentiometer R17 (Y24) for signal generator output power of 2 W.

g) Adjust potentiometer R17 (Y24) for equal positive and negative deviation of the output power of 2 W in the range 25 to 125 MHz.

h) Determine minimum output power (at approximately 80 MHz). Adjust the output power to the same value at 600 MHz in range 6, using potentiometer R7 (Y24).

i) Reduce the output power level to 29 dBm at 40 MHz, using potentiometer OUTPUT POWER, and check the frequency response of the output power in the range 25 to 1000 MHz.

k) Maximum permissible variations ..... $\leq$ 1.5 dB.

3.4.6 Adjusting the ALC Amplifier Y8 (200.5540)

The maximum output power of the SMLU is determined by the reference voltage range of the ALC amplifier.

Measuring equipment required (see section 3.1): Power meter (5).

Adjustment procedure:

a) Turn potentiometers R24 and R25 (+28-V/$\pm$21-V stabilizer Y6) fully clockwise (0 Ω). Only for first-time (factory) adjustment.

b) Turn potentiometers R20 and R26 (amplifier I Y21) fully clockwise (250 Ω, seen from the front panel). Only for first-time (factory) adjustment.

c) Connect power meter to RF output I.

d) Set the OUTPUT POWER switch to 0 dB.

e) Turn the OUTPUT POWER knob fully clockwise.

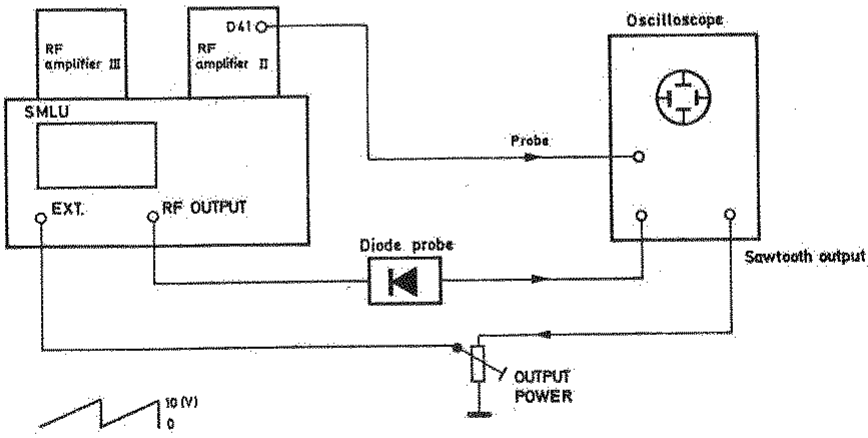
f) At a frequency within the ranges 1 to 6 adjust potentiometer R127 (ALC amplifier Y8) for an output power which is 0.4 dB above the power corresponding to f.s.d. on the meter of the SMLU.

g) In the frequency range 7 adjust potentiometer R114 (ALC amplifier Y8) for an output power of 30.5 dBm. To this end, set output attenuator to -35 dB with the output terminated.

3.4.7 Adjusting the RF Amplifiers

The RF amplifiers act as control elements in the control circuit. The ALC amplifier controls the gain of the RF amplifiers and, consequently the output power of the SMLU. The ALC circuit and the gain of the RF amplifiers is checked by measuring the ALC voltage at the output of the ALC amplifier. A high ALC voltage indicates a low gain and a low ALC voltage indicates a high gain of the RF amplifiers. The measurements on the RF amplifiers are best carried out in swept operation.

Test setup:



Measuring equipment required (see section 3.1): Diode probe (11), oscilloscope (7), analyzer (6).

3.4.7.1 RF Amplifier I Y21 (200.6081)

Lift RF amplifier I by loosening the 4 retaining screws from the filter case and connect the amplifier output with the filter input via the two adapter cables 200.5962 and 200.5985. The cables are attached to the side of the oscillator case (see Fig. 3-1).

Adjust mode UNMOD.

Turn rotary knob OUTPUT POWER to its right stop.
Set rotary switch OUTPUT POWER to 35 dB.
At 212 MHz adjust the control voltage to ..... minimum with the trimmers C26, C35.

Select frequency range 4 and tune the frequency through. If, during this procedure, the collector current of T22 increases above 670 mA (measure at D11), the current must be reduced by slight readjustment of C35. The current of the final stage depends to a great extent on the length of the connecting cable between the amplifier output and the filter input. The current must therefore be checked after connection of the amplifier. The potentiometer R11 at the amplifier input must, at 25 MHz, be adjusted such that the control voltage is between 7 V and 8 V. This adjustment is carried out in order to prevent subharmonics.

Then check the collector current of T22 and the control voltage over the entire frequency range from 25 MHz to 215 MHz. I_c must $\leq$ 670 mA and $V_{ALC} \leq 23$ V.

Checking the RF Amplifier I in the mode SWEEP EXT.

a) Apply a sawtooth voltage with an amplitude of 10 ±0.2 V and minimum sweep time of 20 msec to socket EXT.

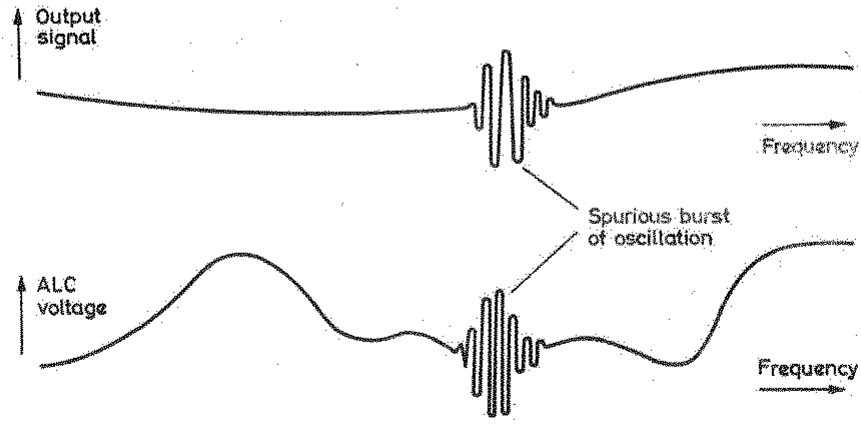
b) Connect the oscilloscope probe to the ALC voltage (e.g. D41 at amplifier II).

c) Connect the diode probe to the RF OUTPUT after setting a suitable attenuation with the switch OUTPUT POWER, which should, however, not be less than 10 dB.

d) Select the mode of operation SWEEP EXT.

e) Observe the ALC voltage and the output signal in the ranges 1, 2, 3 and 4 on the oscilloscope, varying the output power over the total range of adjustment of the potentiometer OUTPUT POWER. The oscillograms represent the characteristic curves of the ALC voltage and the output signal as a function of frequency.

f) If the ALC voltage or the output signal exhibits spurious bursts of oscillation (see illustration below), potentiometers R20 and R26 and/or trimmers C26, C35 in amplifier I (Y21) must be adjusted accordingly.



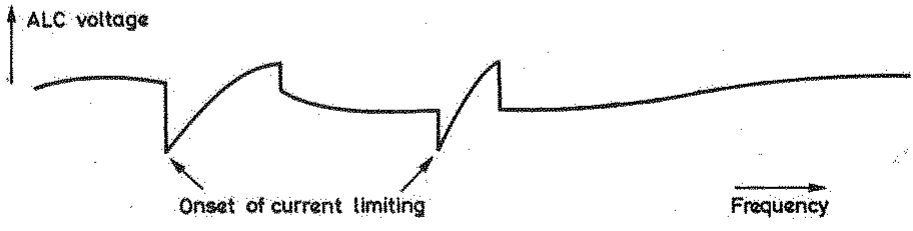
To do so, switch off SMLU and remove amplifier I from the filter container after loosening the four retaining screws. Then connect the amplifier output to the filter input with the two adapter cables 200.5962 and 200.5985. (They are attached to the side of the oscillator case.)

g) Turn potentiometer R26 counterclockwise (seen from the front panel; resistance decreases) until no spurious bursts of oscillation occur in the frequency ranges 1, 2, 3 and 4 over the total range of adjustment of the potentiometer OUTPUT POWER. As the resistance of R26 decreases, the ALC voltage increases. It must not exceed +25 V in any of the ranges 1, 2, 3 or 4 if the potentiometer OUTPUT POWER is advanced all the way and at least 10 dB are set on the OUTPUT POWER switch.

h) If the spurious bursts of oscillation cannot be eliminated by means of potentiometer R26 or if the ALC voltage exceeds +25 V in one of the ranges, 1, 2, 3 or 4, potentiometers R26 and R20 must be adjusted alternately, likewise trimmers C26 and C35, if necessary. The restriction of item g) as to the ALC voltage must be observed.

i) Connect analyzer to RF OUTPUT II at the rear of the instrument. The level at RF OUTPUT II must be < 10 dBm.
The RF OUTPUT on the front panel is not terminated.
Set the OUTPUT POWER switch to 0 dB.

k) In the case of mismatch at the RF OUTPUT the normally continuous characteristic of the ALC voltage may exhibit irregularities at a high output power level. The irregularities do not indicate any malfunctioning but mark the onset of current limiting at excessive output transistor currents.



l) Observe the ALC voltage according to item e).

m) Observe the output signal in the ranges 1, 2, 3 and 4 on the analyzer with slow sawtooth voltage sweep, varying the output power over the total range of adjustment of the potentiometer OUTPUT POWER. The subharmonics should be down more than 50 dB.

n) If the ALC voltage exhibits spurious bursts of oscillation or if subharmonics are observed besides the output signal, it is necessary to adjust potentiometers R20, R26 and trimmers C26, C35 in amplifier I according to items f), g) and h).

3.4.7.2 RF Amplifier II Y3 (200.3618)

a) Apply a sawtooth voltage with an amplitude of 10 ±0.2 V and minimum sweep time of 20 msec to socket EXT.

b) Connect the oscilloscope probe to the ALC voltage (e.g. D41 at amplifier II).

c) Connect the diode probe to the RF OUTPUT after setting a suitable attenuation with the switch OUTPUT POWER, which should, however, not be less than 10 dB.

d) Select the mode of operation SWEEP EXT.

e) Turn the potentiometer OUTPUT POWER fully clockwise.

f) Allow the instrument to warm up for at least 10 minutes.

g) Turn potentiometer R25 (+28-V/+21-V stabilizer Y6) counterclockwise until a maximum ALC voltage of +15 V is obtained in the ranges 5 and 6.

h) Observe the ALC voltage and the output signal in the ranges 5 and 6 on the oscilloscope, varying the output power over the total range of adjustment of the potentiometer OUTPUT POWER. The oscillograms represent the characteristic curves of the ALC voltage and the output signal as a function of frequency. The ALC voltage and the output signal must not exhibit any spurious bursts of oscillation (see section 3.4.7.1 f)).

i) Connect analyzer to RF OUTPUT II at the rear of the instrument.
The level at RF OUTPUT II must be < 10 dBm.
The RF OUTPUT on the front panel is not terminated.
Set the OUTPUT POWER switch to 0 dB.

k) In the case of mismatch at the RF OUTPUT, the normally continuous characteristic of the ALC voltage may exhibit irregularities at a high output power level. The irregularities do not indicate any malfunctioning but mark the onset of current limiting at excessive output transistor currents (see section 3.4.7.1 k)).

l) Observe the ALC voltage according to item h).

m) Observe the output signal in the ranges 5 and 6 on the analyzer with slow sawtooth voltage sweep, varying the output power over the total range of adjustment of the potentiometer OUTPUT POWER. The subharmonics must be down more than 50 dB.

3.4.7.3 RF Amplifier III Y4 (200.4189)

a) Apply a sawtooth voltage with an amplitude of 10 ±0.2 V and minimum sweep time of 20 msec to socket EXT.

b) Connect the oscilloscope probe to the ALC voltage (e.g. D41 at amplifier II).

c) Connect the diode probe to the RF OUTPUT after setting a suitable attenuation with the OUTPUT POWER switch, which should, however, not be less than 10 dB.

d) Select the mode of operation SWEEP EXT.

e) Turn the potentiometer OUTPUT POWER fully clockwise.

f) Allow the instrument to warm up for at least 10 minutes.

g) Turn potentiometer R24 (+28-V/+21-V stabilizer Y6) counterclockwise until a maximum ALC voltage of +15 V is obtained in range 7.

h) Observe the ALC voltage and the output signal in range 7 on the oscilloscope, varying the output power over the total range of adjustment of the potentiometer OUTPUT POWER. The oscillograms

represent the characteristic curves of the ALC voltage and the output signal as a function of frequency. The ALC voltage and the output signal must not exhibit any spurious bursts of oscillation (see section 3.4.7.1 f)).

i) Connect analyzer to RF OUTPUT II at the rear of the instrument.
The level at RF OUTPUT II must be < 10 dBm.
The RF OUTPUT on the front panel is not terminated.
Set the OUTPUT POWER switch to 0 dB.

k) In the case of mismatch at the RF OUTPUT the normally continuous characteristic of the ALC voltage may exhibit irregularities at a high output power level. The irregularities do not indicate any malfunctioning but mark the onset of current limiting at excessive output transistor currents (see section 3.4.7.1 k)).

l) Observe the ALC voltage according to item h).

m) Observe the output signal in range 7 on the analyzer with slow sawtooth voltage sweep, varying the output power over the total range of adjustment of the potentiometer OUTPUT POWER.
The subharmonics must be down more than 50 dB.

3.4.8 Adjusting the Diode Matrix Y11 (200.3282)

The diode matrix converts the frequency-linear tuning voltage at its input into the non-linear tuning voltage of the oscillators. The output voltage characteristic is adjusted with the potentiometers.

Measuring equipment required (see section 3.1): Frequency counter (3), oscilloscope with differential amplifier (5).

Adjustment

a) Select the mode of operation UNMOD.

b) Vary the potentiometer OUTPUT POWER until the meter reads approximately 7 V.

c) Set a suitable attenuation with the OUTPUT POWER switch and connect the frequency counter to the RF OUTPUT.

d) After range switching allow for a warm-up period of 1 min for the frequency ranges 1 to 4 and of 10 min for the frequency ranges 5 to 7. Prior to selecting a frequency within the ranges 5 to 7 allow for a warm-up period of 2 min. Between the different adjustments with the potentiometers replace the cover on the diode matrix to ensure that the normal operating temperature is maintained in the oscillator casing Y1.

e) Adjust the potentiometers in the order of the settings 1 to 8 of the individual ranges.

f) For the adjustment of the matrix according to the following table it is necessary to repeatedly and alternately adjust the first two potentiometers of each range until the required setting accuracy of 500×10^{-6} is obtained. The setting of one potentiometer influences the settings of all following potentiometers, i.e. after adjusting a particular potentiometer , all following potentiometers must be readjusted.

g)

Range	Setting	1	2	3	4	5	6	7	8
	Cursor on	24.8	25.8	27.2	28.8	33.0	38.8	41.6	44.0
1	Adjust potentiometer	R34	R41	R48	R55	R62	R69	R76	R83
	for a frequency of [MHz]	24.8	25.71	27.20	28.80	33.00	38.80	41.60	44.00
2	Adjust potentiometer	R35	R42	R49	R56	R63	R70	R77	R84
	for a frequency of [MHz]	42.30	43.95	46.25	49.00	56.00	65.60	70.30	74.20
3	Adjust potentiometer	R36	R43	R50	R57	R64	R71	R78	R85
	for a frequency of [MHz]	70.50	73.40	77.30	81.90	93.60	110.2	118.0	124.5
4	Adjust potentiometer	R37	R44	R51	R58	R65	R72	R79	R86
	for a frequency of [MHz]	118.9	123.7	130.2	138.0	158.0	185.3	198.7	210.0
5	Adjust potentiometer	R38	R45	R52	R59	R66	R73	R80	R87
	for a frequency of [MHz]	199.7	207.5	218.5	231.5	265.0	311.0	333.7	353.0
6	Adjust potentiometer	R39	R46	R53	R60	R67	R74	R81	R88
	for a frequency of [MHz]	336.2	349.6	368.4	390.0	447.0	525.0	562.5	594.5
7	Adjust potentiometer	R40	R47	R54	R61	R68	R75	R82	R89
	for a frequency of [MHz]	569.0	591.3	623.0	659.0	754.0	886.8	946.6	1001

h) Permissible deviation ..... $\leq 500 \times 10^{-6}$

i) If any one of the first three settings cannot be obtained, the resistance connected in series with the potentiometer concerned must be changed accordingly, viz.

frequency too high ⟶ resistance must be increased;
frequency too low ⟶ resistance must be decreased.

Spurious voltage of the matrix

a) Select the mode of operation UNMOD.

b) Measure the spurious voltage between output A of the diode matrix and the common chassis earth (I) on the circuit board.

c) Check the spurious voltage with the aid of a difference-voltage measurement over the range 0.1 Hz to 300 kHz. Two measurements must be made for each frequency range, one at the lower end of the range and another one at the upper end of the range.

Spurious voltage

at lower end of the range ..... < 300 μV_{pp};

at upper end of the range ..... < 1 mV_{pp}.

3.4.9 Adjusting the Programming Unit Y9 (200.5240)

Measuring equipment required: (see section 3.1)
Digital Multimeter (1) and
Oscilloscope with differential amplifier (7 + 8)
Setting accuracy of voltages $\geq$ 0.4%.

a) Adjusting the operating voltages

Adjust the DC voltage between test point +6 V and solder connection 4 (6) to ..... +6.0 V with R34.
Adjust the DC voltage between test point -6 V and solder connection 4 (6) to ..... -6.0 V with R34.

b) Adjusting the offset voltage of the operational amplifier B4

For this procedure none of the program inputs Bu9.7 to Bu9.16 must be wired. Adjust the offset voltage between solder connections A and 4 (6) with potentiometer R41 to ..... $\leq$ 0.1 mV.

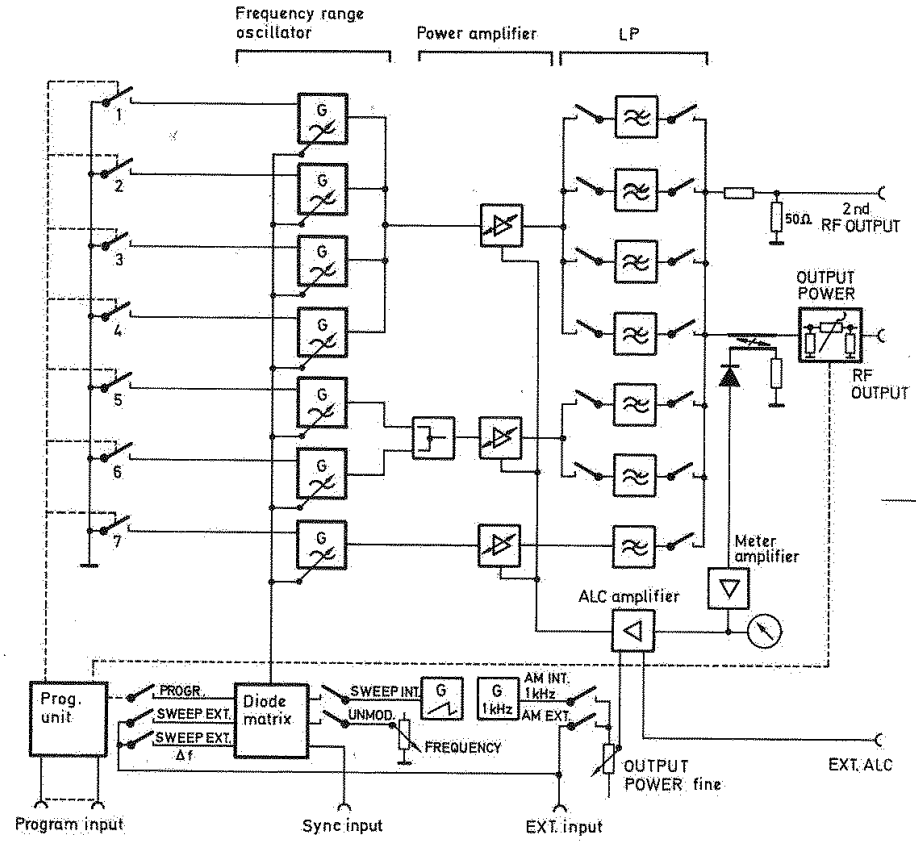
c) Adjusting the maximum tuning voltage

Depress pushbuttons PROGR. and UNMOD.
Short-connect contact 7 of the programming socket Bu9 (input "10") to chassis.

Adjust the DC voltage between contact 1 (+) of Bu11 on the diode matrix and the central chassis point to the same value as for UNMOD. operation with the tuning potentiometer turned fully clockwise, using R42 (on Y9).

d) Checking the spurious voltage of the Programming Unit

Depress buttons PROGR. and UNMOD.
Check the spurious voltage of the programming unit by means of a differential voltage measurement for a test bandwidth of 0.1 Hz to 30 kHz at the following test points: solder connection A and 4 (6) on Y9.
With contact Bu9.13 (input 0.1) short-circuited,
$V_{spur.}$ must be ..... $\leq$ 0.5 mV,
with contact Bu9.7 (input 10.0) short-circuited,
$V_{spur.}$ must be ..... $\leq$ 1 mV.



Block diagram of SMLU

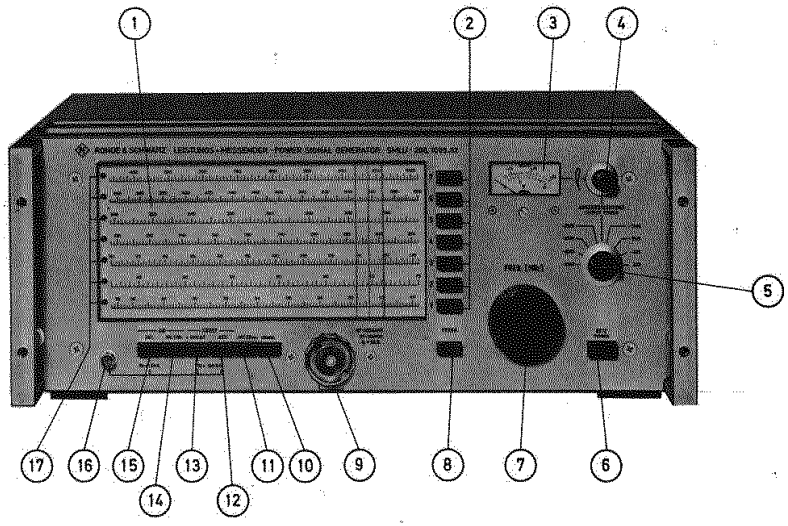


Bild 2-1 Bedienbild 1
Fig. 2-1 Front-panel controls

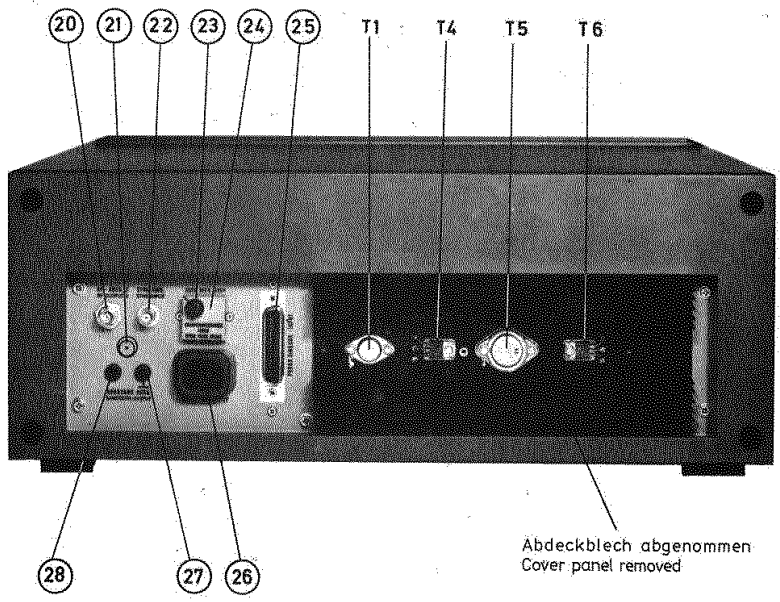
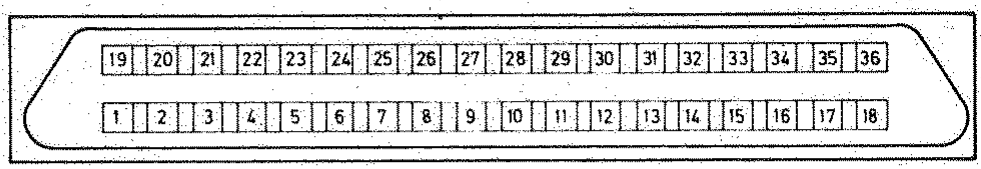


Bild. 2 - 2 **Bedienungsbild 2**

Fig. 2 - 2 **Rear panel controls**



Funktion/Function		Kontakt Nr. Contact No.
Eingänge für Frequenzbereich Inputs for frequency range	1	25
	2	24
	3	23
	4	22
	5	21
	6	20
	7	19
Analog-Eingang zur Einstellung der Frequenz (U = 0...+10 V) Analog input frequency adjustment (E = 0 to +10 V)		36
Eingänge für Dämpfung Inputs for attenuation	5dB	33
	10dB	32
	15dB	31
	20dB	30
	25dB	29
	30dB	28
	35dB	27
Masse Chassis	⊥	35

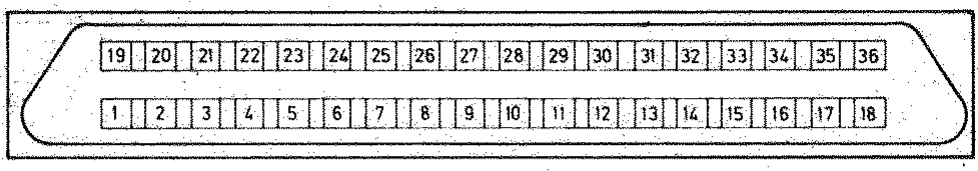
Bild 2-3 Kontaktbelegung der Buchse PROGR. EINGANG (BU 9)

Fig. 2-3 Gerät ohne Programmiereinheit Y9 : Ident-Nr. 200.1009.02)

Wiring of the socket PROGR. INPUT (BU9)
Instrument without programming unit Y9: Ident No. 200.1009.02

Zur Buchse passender Stecker: R&S-Ident-Nr. 018.5862
Amphenol-Bestell-Nr. 57-30360

Mating plug: R&S ident No. 018.5862
Amphenol order No. 57-30360



Funktion/Function		Kontakt Nr. Contact No.
Eingänge für Frequenzbereich Inputs for frequency range	"1"	3
	"2"	1
	"4"	2
Eingänge zur Einstellung der Frequenz Inputs for frequency adjustment	"0,1"	13
	"0,2"	14
	"0,4"	15
	"0,8"	10
	"1,0"	11
	"2,0"	12
	"4,0"	9
	"8,0"	8
	"10"	7
Eingänge für Dämpfung [dB] Inputs for attenuation	"1+4"	6
	"10"	4
	"20"	5
Analog-Eingang zur analogen Einstellung der Frequenz (zum Anschluß eines externen D/A-Konverters.) Die Brücke zwischen A und B auf der Platte Programmiereinheit Y9 muß entfernt und zwischen C und D gelötet werden. Analog input for analog frequency adjustment (connection of an external D/A converter). Remove the link between A and B on the programming unit Y9 an solder between C and D.		18
Masse Chassis	⊥	17

Bild 2-4 Kontaktbelegung der Buchse PROGR. EINGANG (Bu9)
Gerät mit Programmiereinheit Y9: Ident-Nr. 200.1009.03

Fig. 2-4 Wiring of the socket PROGR. INPUT (Bu9)
Instrument with programming unit Y9: Ident No. 200.1009.03

Zur Buchse passender Stecker: R&S-Ident-Nr. 018.5862
Amphenol-Bestell-Nr. 57-30360

Mating plug: R&S ident No. 018.5862
Amphenol order No. 57-30360

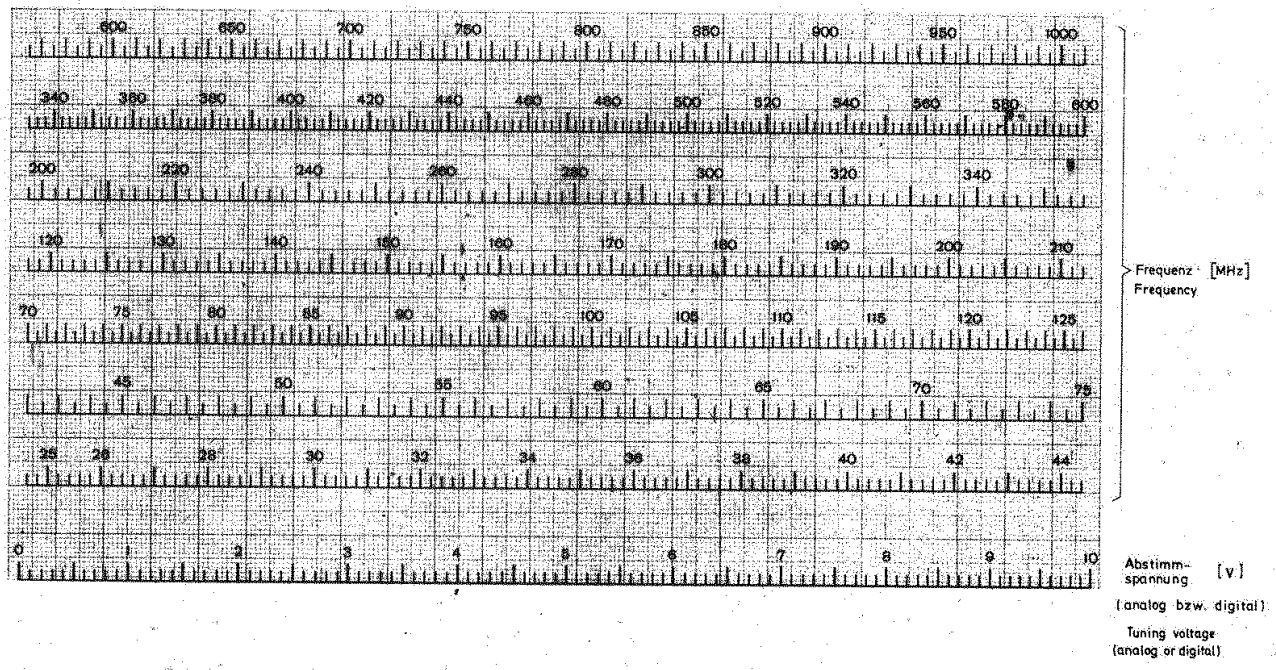
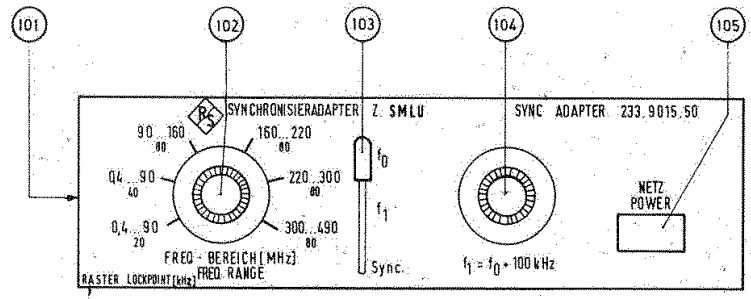
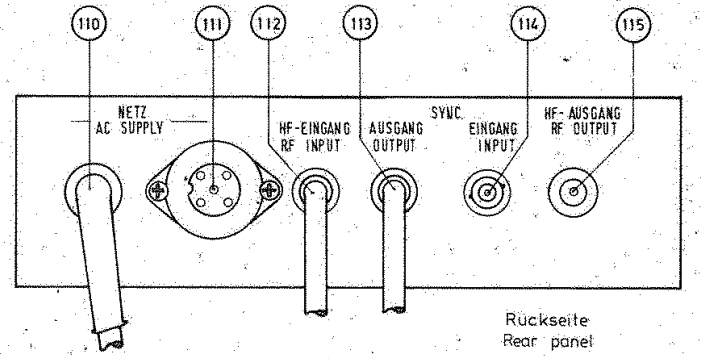


Bild 2 - 5 Diagramm Abstimmspannung / Frequenz
Fig. 2 - 5 Diagram Tuning voltage / frequency



Vorderseite
Front panel



Rückseite
Rear panel

Bild 2-6 Synchronisieradapter zum SMLU

Fig. 2-6 Sync Adapter for SMLU
Idend-Nr. 233.9015.50
Idend No. 233.9015.50

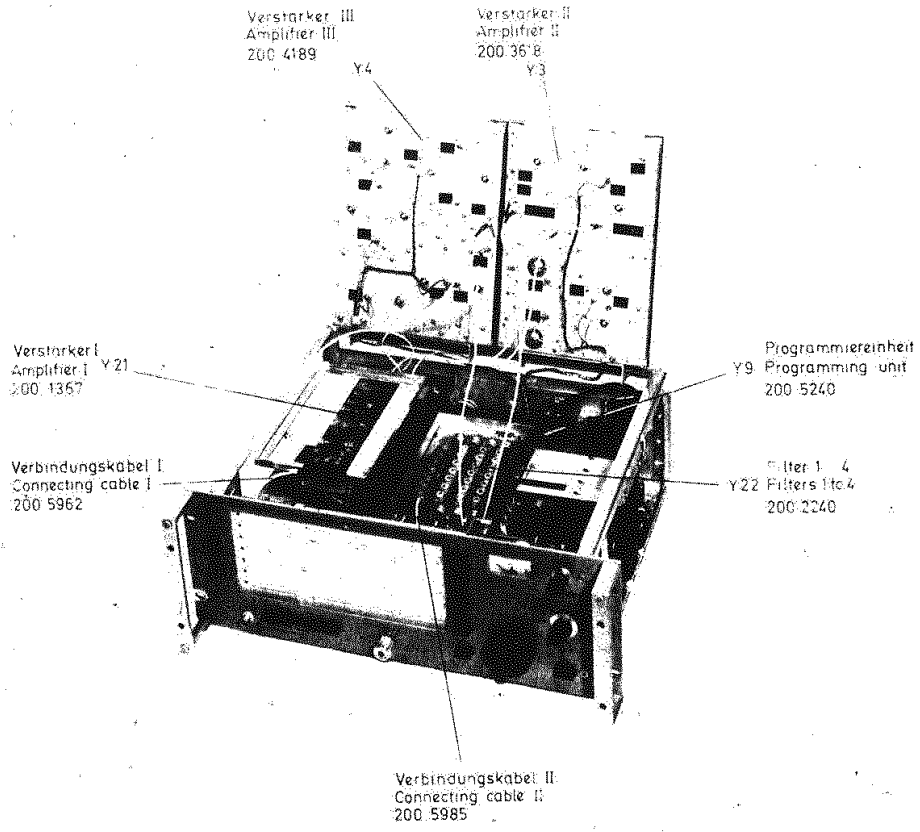


Bild 3-1 Ansicht von vorn, Verstärker II und III (Y3,Y4) aufgeklappt, Verstärker I (Y21) aus der Normallage (auf Y22) entfernt

Fig. 3-1 Front view, amplifiers II and III (Y3,Y4) swung back, amplifier I (Y21) removed, from its normal position (on Y22)

R 26885 Bl.78

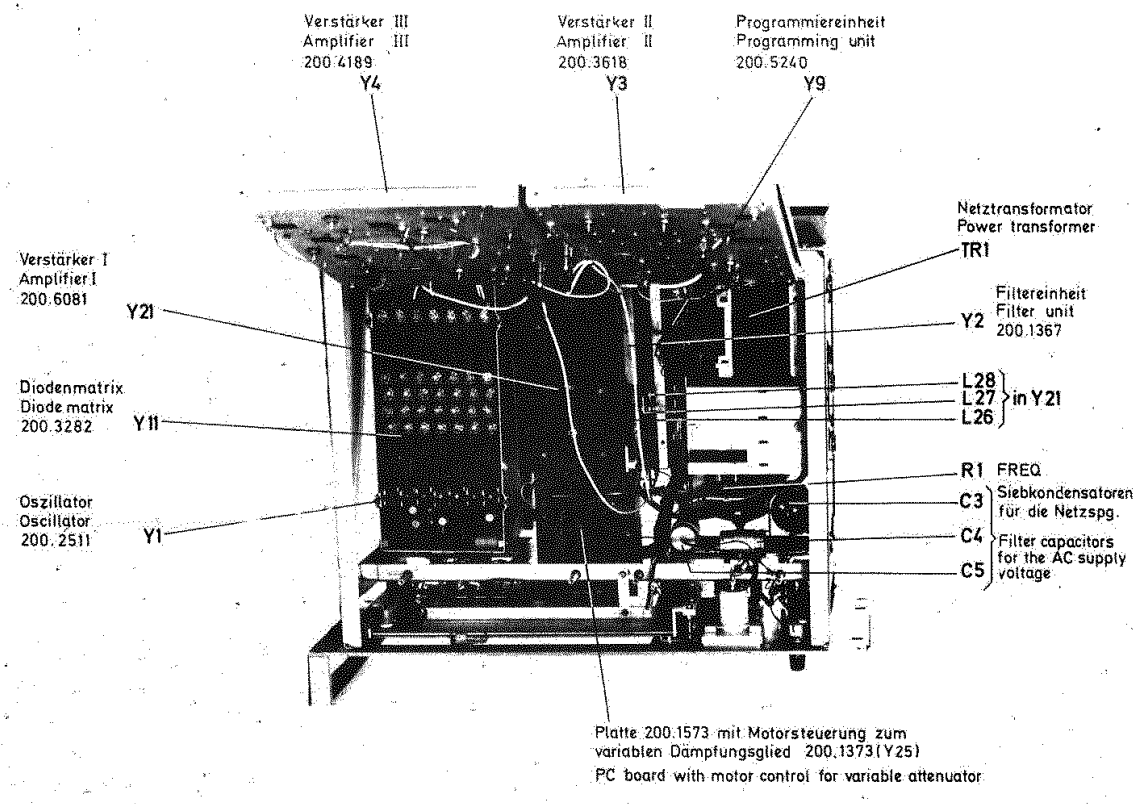


Bild 3-2 Ansicht von oben, Oszillatorgehäuse geöffnet

Fig. 3-2 Top view, with lid of oscillator oven removed

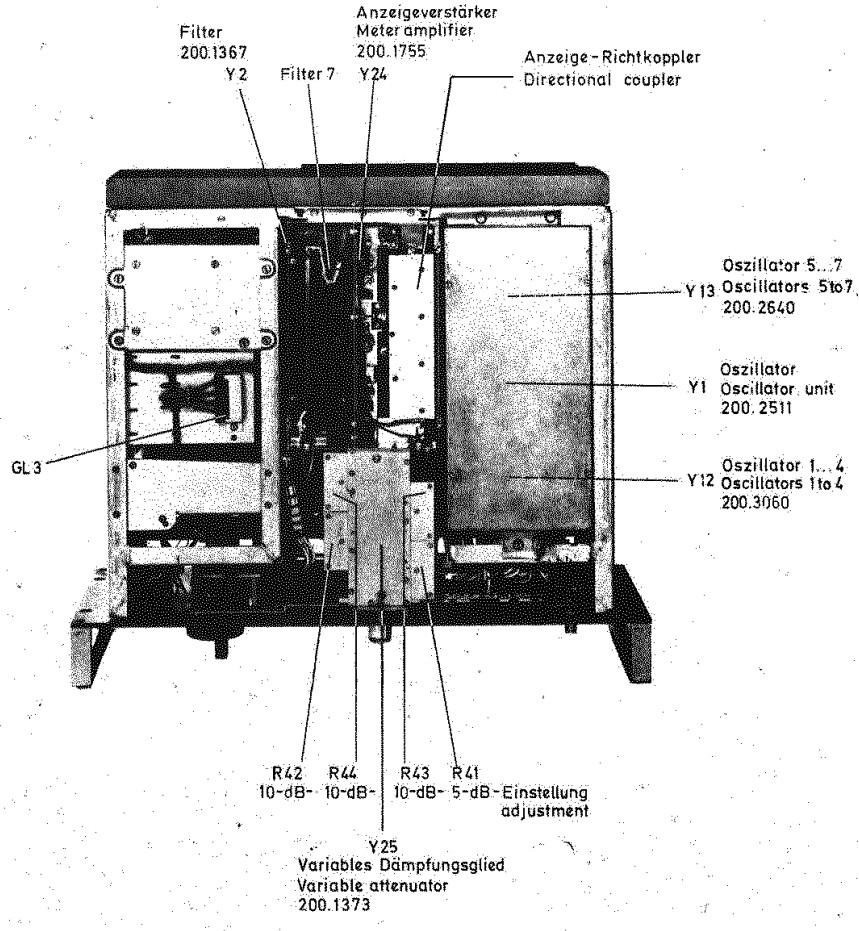


Bild 3-3 Ansicht von unten

Fig. 3-3 View from below

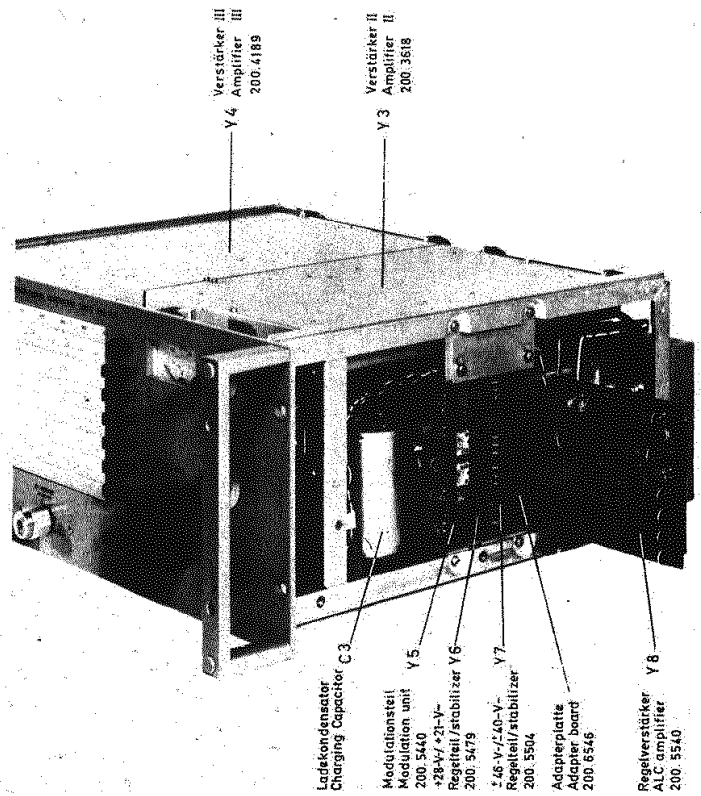
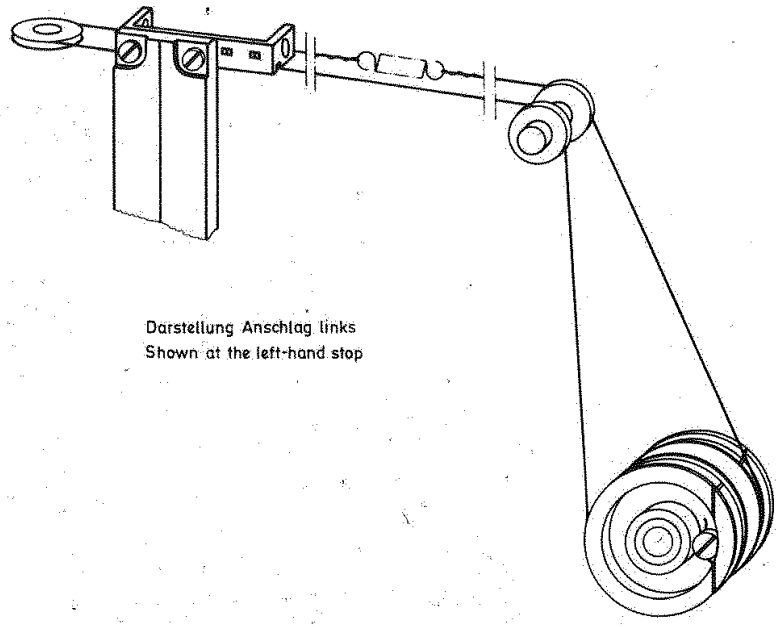


Bild 3-4 Ansicht von rechts
Fig. 3-4 View from the right



Darstellung Anschlag links
Shown at the left-hand stop

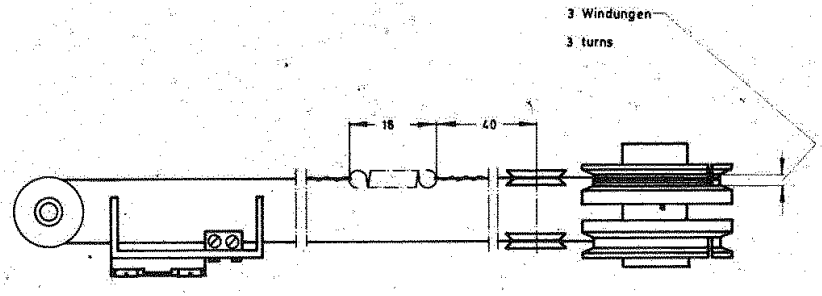


Bild 3 - 5 Schematische Darstellung des Zeigerseilzuges
Fig. 3 - 5 Diagram of cursor pulleys

ROHDE & SCHWARZ
MÜNCHEN

Schaltteillisten
Stromläufe
Bestückungspläne

Parts lists
Circuit diagrams
Components plans

R 29500 Bl. 2

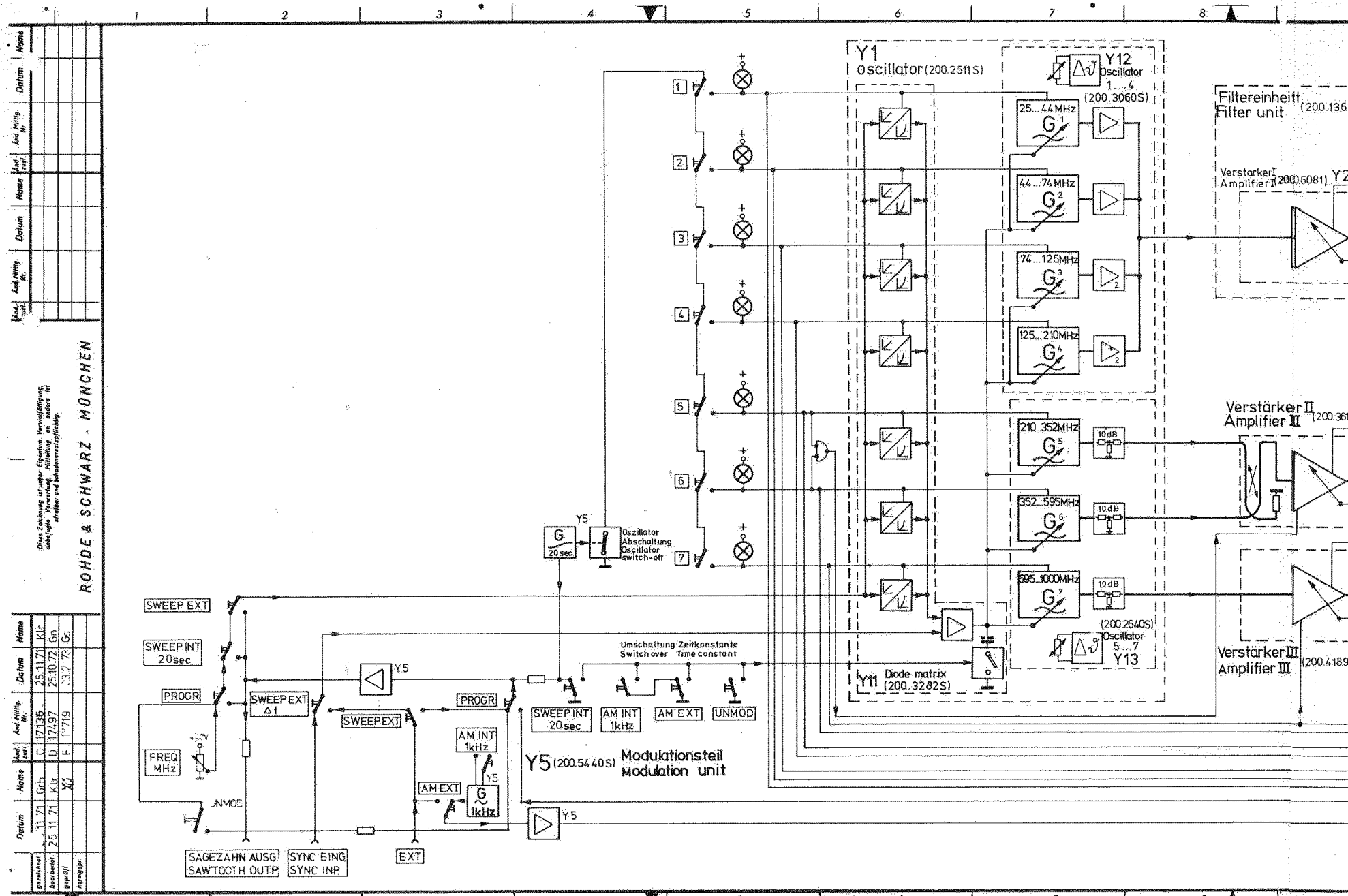
Abkürzungen in Schaltteillisten und Stromläufen

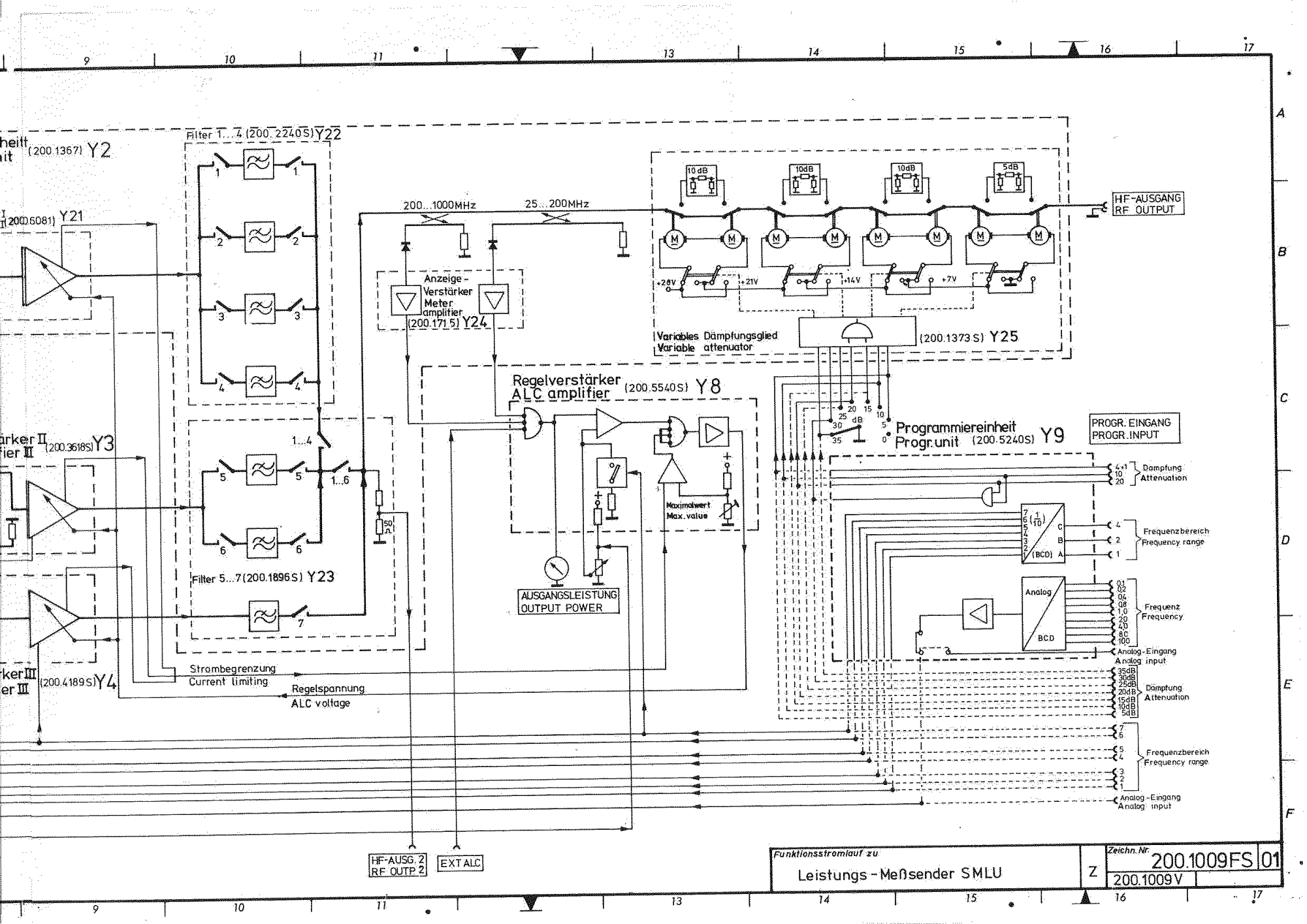
Abbreviations in parts lists and circuit diagrams

Abkürzung Abbreviations	Benennung	Designation
A	Ampere	Ampere
AD	Diode, Gleichrichter	Diode, rectifier
AE	Diode, z. B. Tunnel-, Kapazitäts-, Zener-Diode	Diode, e. g. tunnel diode, varactor or Zener diode
AF	Fotoelement, z. B. Fotodiode, Fotowiderstand	Light-sensitive component, e. g. resistor, diode
AG	Gleichrichter, z. B. Thyristor, Triac, Selengleichrichter	Rectifier, e. g. tyristor, triac, selenium rectifier
AK	Kleinsignal-Transistor	Low-power transistor
AL	Leistungs-Transistor	High-power transistor
AM	Transistor allgemein	Transistor (general)
AR	Röhre für Empfänger, Verstärker, Gleichrichter	Valve for receiver, amplifier, rectifier
AS	Röhre für Sender	Transmitter valve
AT	Elektronenstrahlröhre, Anzeigeröhre	Beam-deflection tube, indicator tube
AW	Widerstand, spannungsabhängig	Voltage-dependent resistor
BK	Kernspeicher	Core memory
BL	Logischer Schaltkreis	Logic circuit
BO	Operationsverstärker	Operational amplifier
BP	Anzeigeeinheit	Display section
BR	RC-Netzwerk	RC network
BS	Ansteuerbaustein	Decoder / driver
BV	Stromversorgungsbaustein	Power supply
C	Kondensator	Capacitor
CB	Bypaßkondensator, Durchführungskondensator	Baypass capacitor Feed-through capacitor
CC	Keramikkondensator	Ceramic capacitor
CD	Drehkondensator	Variable capacitor
CE	Elektrolytkondensator	Eletrolytic capacitor
CG	Glimmerkondensator	Mica capacitor
CK	Kunstfolienkondensator	Synthetic-foil capacitor
CL	Leistungskondensator	HV Capacitor
CM	MP-Kondensator	Metallized-paper capacitor
CP	Papierkondensator	Paper capacitor
CS	Störschutzkondensator	Interferrance-suppression capacitor
CT	Trimmerkondensator	Trimmer
CV	Vakuumkondensator	Vacuum capacitor
DH	HF-Kabel	RF cable

Abkürzung Abbreviations	Benennung	Designation
EB	Batterie	Battery
EF	Glühlampe	Incandescent lamp
EG	Glimmlampe	Neon lamp
EL	Lautsprecher, Kopfhörer, Mikrophon, Hupe, Summer	Loudspeaker, headphones, microphone, horn, buzzer
EM	Motor, Hubmagnet	Motor, lifting magnet
EO	Oszillator	Oscillator
EP	Tief-, Band-, Hochpaß Bandsperre, Diskriminator	Low-, band-, high-pass filter, band-stop filter, discriminator
EQ	Quarz	Crystal
ESL	Eigene Schaltteilliste	Separate parts list
F	Farad	Farad
FA	Dezifix	Dezifix connector
FJ	HF-Stecker, HF-Buchse	RF plug, RF socket
FM	Mehrfachstecker, Buchsenleiste	Multipoint connector
FN	Netzsteckverbindung	AC-supply connector
FO	Rundsteckverbindung, Mehrfachsteckverbindung	Round connector, multipoint connector
FP	Steckverbindung	Multipoint connector for PC-boards
FR	Fassung für Lampen, Sicherungen, Röhren usw.	Socket for lamp, fuse, valve etc.
FT	Buchse, Stecker	Socket, plug
K	Kilo	Kilo
H	Henry	Henry
JD	Drehspulinstrument	Moving-coil meter
JH	Betriebsstundenzähler	Operating-hour counter
JK	Kleinstinstrument	Miniatur panel meter
L	Spule	Coil
LC	Keramische Spule	Ceramic coil
LD	Drossel, Durchführungsfilter	Choke, lead-through filter
LT	Transformator	Transformer
LU	Überträger	Transformer
LV	Variometer	Variometer
m	milli	
µ	mikro	
n	nano	
Ω	Ohm	
p	piko	
RD	Drahtwiderstand	Wire-wound resistor
RF	Kohleschichtwiderstand	Carbon-film resistor
RG	Metallglasurwiderstand	Metal-glaze resistor
RJ	Metalloxydwiderstand	Metal-oxide film resistor

Abkürzung Abbreviations	Benennung	Designation
RL	Metallschichtwiderstand	Metal-film resistor
RR	Drahtdrehwiderstand	Variable wire-wound resistor
RV	Drahtwiderstand mit Anzapfung	Wire-wound resistor, tapped
RW	Wendelpotentiometer	Helical potentiometer
S	Schalter	Switch
SB	Drucktaste	Pushbutton switch
SD	Drehschalter	Rotary switch
SF	Federsatz	Spring contact
SH	HF-Koaxialschalter, HF-Relais, Vakuumrelais	Coaxial RF switch, coaxial relay, vakuum relay
SK	Kipp-, Hebel-, Wipp- und Schiebeschalter	Toggle switch, slide switch
SL	Leistungsschalter, Netz, HF	High-power, AC supply or RF switch
SM	Mikroschalter	Micro switch
SN	Relais, elektromagnetisch	Relay, electromagnetic
SP	Leistungsrelais, Luftschütz	Power relay, air-type contactor
SR	Reedrelais	Reed relay
SS	Sicherung, Schutzschalter	Fuse, automatic cut-out
ST	Thermoschalter	Thermal circuit breaker
SU	Überspannungsableiter	Arrester
SW	Wechselrichter	Inverter
SZ	Zeitschalter	Time switch
TR	Transformator	Transformer
V	Volt	Volt
VK	Klemme	Clamp
W	Watt	Watt
Y	Baugruppe, z. B. Verstärker, Filter, Regelteil	Subassembly, e. g. amplifier, filter, control section


Y1
oscillator (200.2511 S)
Y12
Oscillator
1...4
(200.3060 S)
25...44 MHz
44...74 MHz
74...125 MHz
125...210 MHz
210...352 MHz
352...595 MHz
595...1000 MHz
10 dB
Filtereinheit
Filter unit
Verstärker I
Amplifier I
Verstärker II
Amplifier II
Verstärker III
Amplifier III
(200.2640 S)
Oscillator
5...7
Y13
Y11 Diode matrix
(200.3282 S)
Y5
G
20 sec
Oszillator
Abschaltung
Oscillator
switch-off
SWEEP EXT
SWEEP INT
20 sec
PROGR
SWEEP EXT
Δf
SWEEP EXT
FREQ
MHz
+12V
UNMOD
SAGEZAHN AUSG
SAWTOOTH OUTP
SYNC EING
SYNC INP
EXT
AM INT
1kHz
AM EXT
G
1kHz
Umschaltung Zeitkonstante
Switch over Time constant
SWEEP INT
20 sec
AM INT
1kHz
AM EXT
UNMOD
Y5 (200.5440 S) Modulationsteil
Modulation unit
ROHDE & SCHWARZ · MÜNCHEN


Filter 1...4 (200.2240S) Y22
(200.1367) Y2
(200.6081) Y21
200...1000MHz
25...200MHz
Anzeige-Verstärker Meter amplifier (200.1715) Y24
10 dB
10dB
10dB
5dB
HF-AUSGANG RF OUTPUT
+28V
+21V
+14V
+7V
Variables Dämpfungsglied Variable attenuator
(200.1373S) Y25
Regelverstärker ALC amplifier (200.5540S) Y8
Programmiereinheit Progr.unit (200.5240S) Y9
PROGR. EINGANG PROGR. INPUT
Dämpfung Attenuation
Frequenzbereich Frequency range
Frequenz Frequency
Analog-Eingang Analog input
Maximalwert Max. value
AUSGANGSLEISTUNG OUTPUT POWER
Filter 5...7 (200.1896S) Y23
(200.3618S) Y3
(200.4189S) Y4
Strombegrenzung Current limiting
Regelspannung ALC voltage
HF-AUSG. 2 RF OUTP 2
EXT ALC
Funktionsstromlauf zu
Leistungs-Meßsender SMLU
Z
Zeichn. Nr.
200.1009FS 01
200.1009V

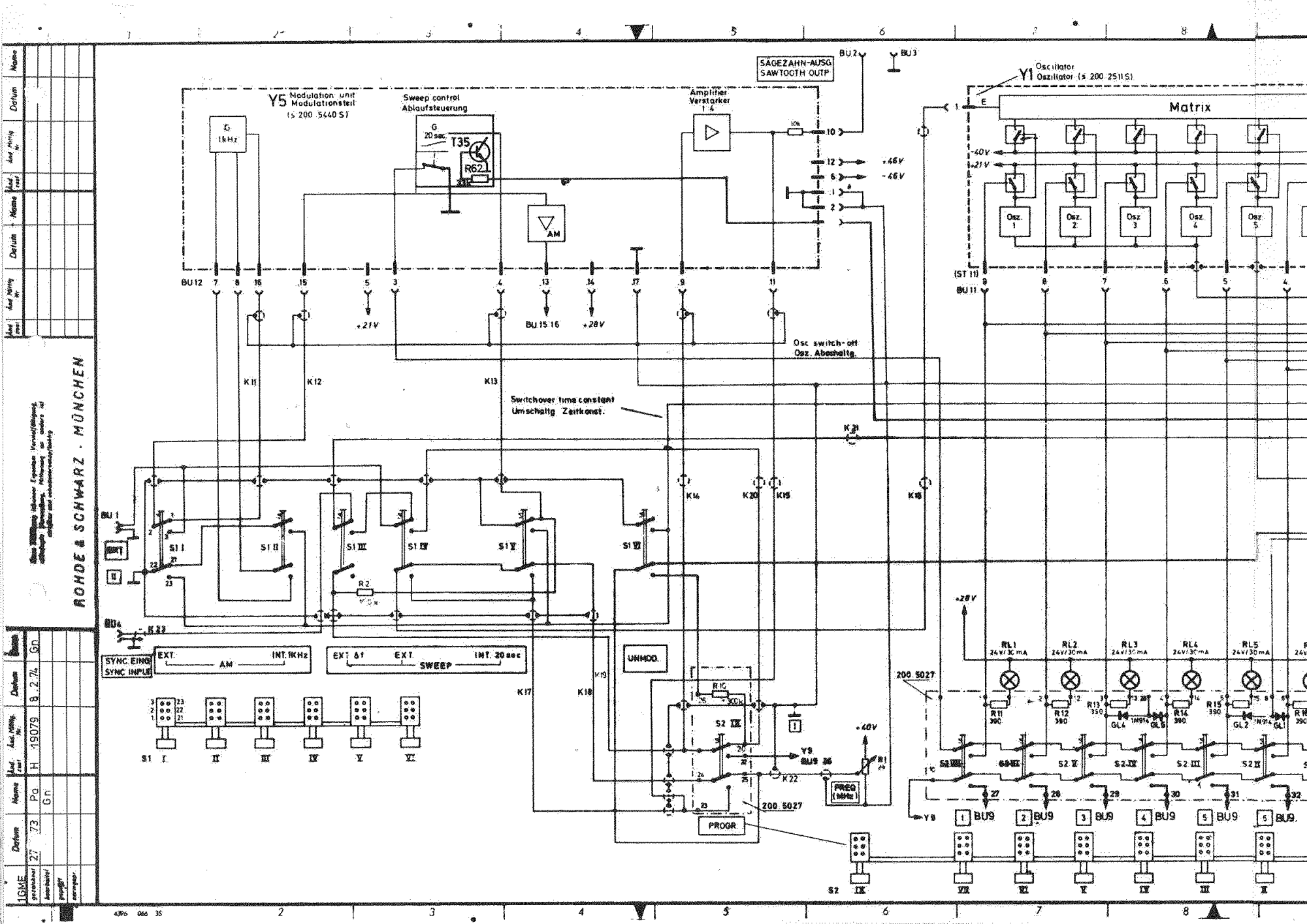
ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	07	0374	LEISTUNGS-MESSENDER	200.1009 SA	01

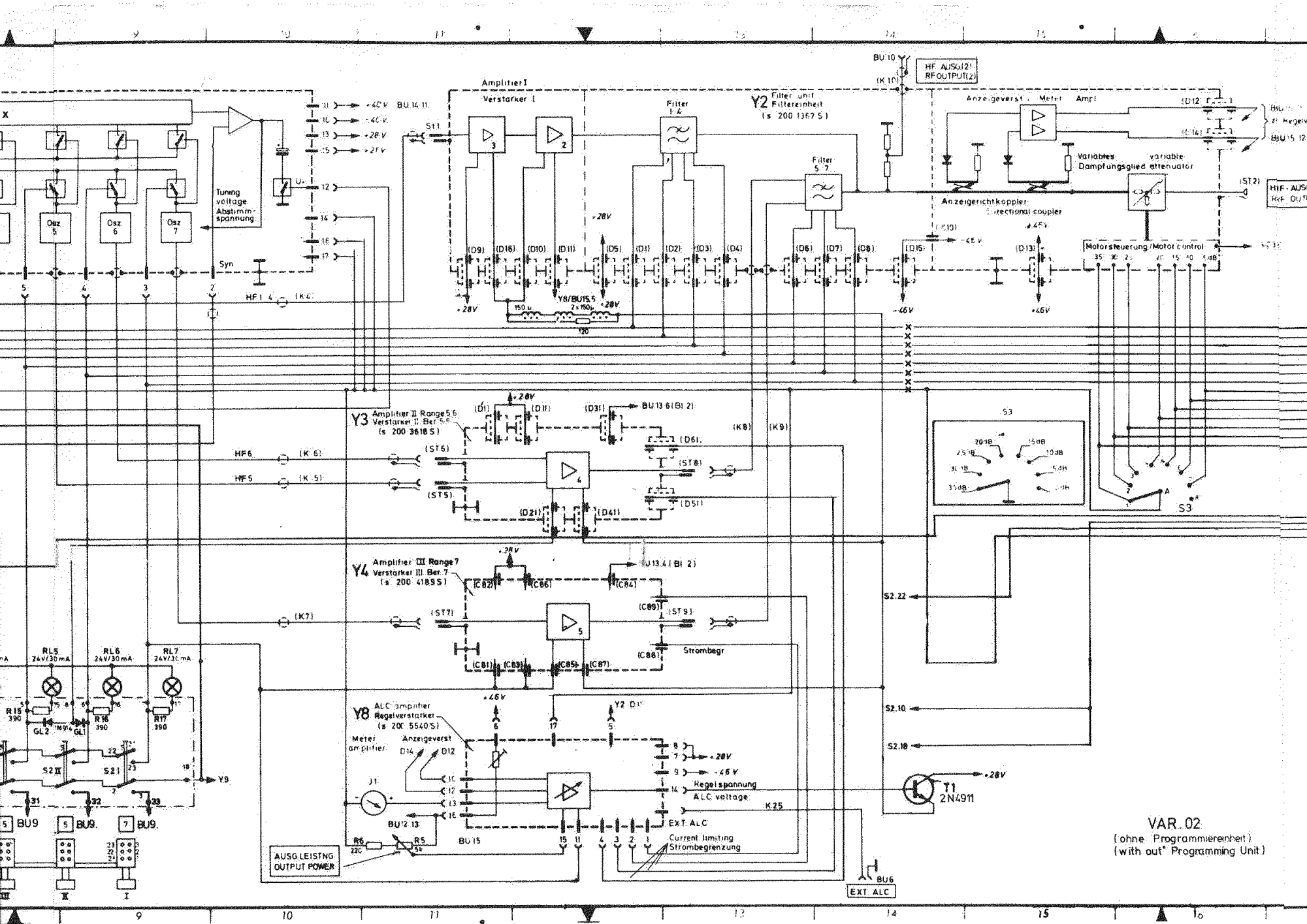
Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
A	LEISTUNGS-MESSENDER Z	200.1009	200.1009
	STROMLAUF 200.1009S		
BU1	FJ EINBAUBUCHSE SYST.BNC	FJ 017.6607	200.5340
BU2	FT TELEFONBU.ISOLIERTGRAUZ	FT 018.3001	200.5156
BU3	FT TELEFONB.GEERDET GRAU Z	FT 018.3147	200.5156
BU4	FJ EINBAUBUCHSE SYST.BNC	FJ 017.6607	200.5156
BU6	FJ EINBAUBUCHSE SYST.BNC	FJ 017.6607	200.5156
BU9	FM BUCHSENL.36 POLIG	018.5885	200.1009
	BEM:FUER VAR 02 U. 04		
	BEM:FUER 03 U. 05		
BU11	FP DIREKTRASTER2,5417KONT	FP 018.9600	200.3376
BU12 BIS BU15	FP DIREKTRASTER2,5417KONT	FP 018.9600	200.1250
C3	CE 4700MF-10+50%70V50X100	006.2463	200.1009
C4	CE 470MF-20850%63V21RDX40	CE 022.7908	200.1009
C5	CE 470MF-20850%63V21RDX40	CE 022.7908	200.1009
C6	CE 10MF 63V RD9X13 TOPF	CE 022.7650	200.1009
GL1	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5027
GL2	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5027
GL3	AG KS326-B40C3200/2200	013.2288	200.1250
GL4	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5027
GL5	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5027
J1	JD 100MA 53X44 U	JD 006.8084	200.1009
K11	KABEL Z	200.5762	200.5756
K12	KABEL Z	200.5779	200.5756
K13	KABEL Z	200.5785	200.5756
K14	KABEL Z	200.5791	200.5756
K15	KABEL Z	200.5804	200.5756
K16	KABEL Z	200.5810	200.5756
K17	KABEL Z	200.5827	200.5756
K18	KABEL Z	200.5833	200.5756
K19	KABEL Z	200.5840	200.5756
K20	KABEL Z	200.5856	200.5756
K21	KABEL Z	200.5862	200.5756
K22	KABEL Z	200.5879	200.5756
K23	KABEL Z	200.5885	200.5756
K25	STECKANSCHLUSS Z	200.5904	200.5756
R1	RW 5W2KOHM+-3%LIN-T.0,25%	RW 066.9035	200.1009
R2	RL 0,25W 100KOHM+-1%TK50	RL 082.1764	200.1009
R5	RS 0,2W 5 KOHM KURVE1SL32	RS 030.4810	200.5340
	ACHSL.=22		
R6	RF 0,5 W 220 OHM +-5%	RF 007.1290	200.1009
R10	RL 0,25W 300KOHM+-1%TK50	RL 082.7840	200.5027
R11 BIS R17	RF 0,25 W 390 OHM +-5%	RF 007.0206	200.5027
R21	RF 0,5 W 220 OHM +-5%	RF 007.1290	200.1009
R22	WIDERSTANDSDRAHT Z	200.5679	200.5662
R23	WIDERSTANDSDRAHT Z	200.5891	200.5756

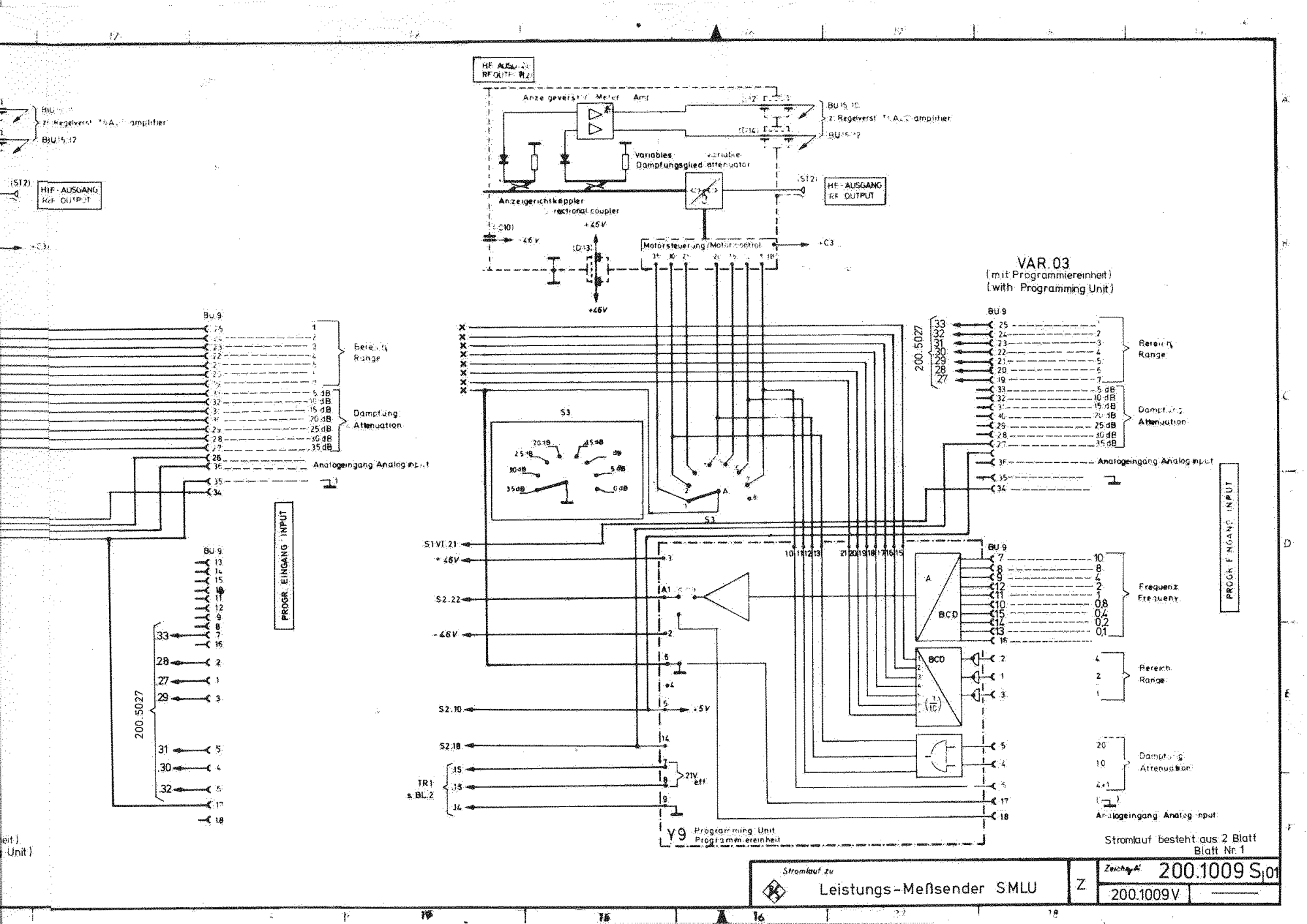
ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	07	0374	LEISTUNGS-MESSENDER	200.1009 SA	02

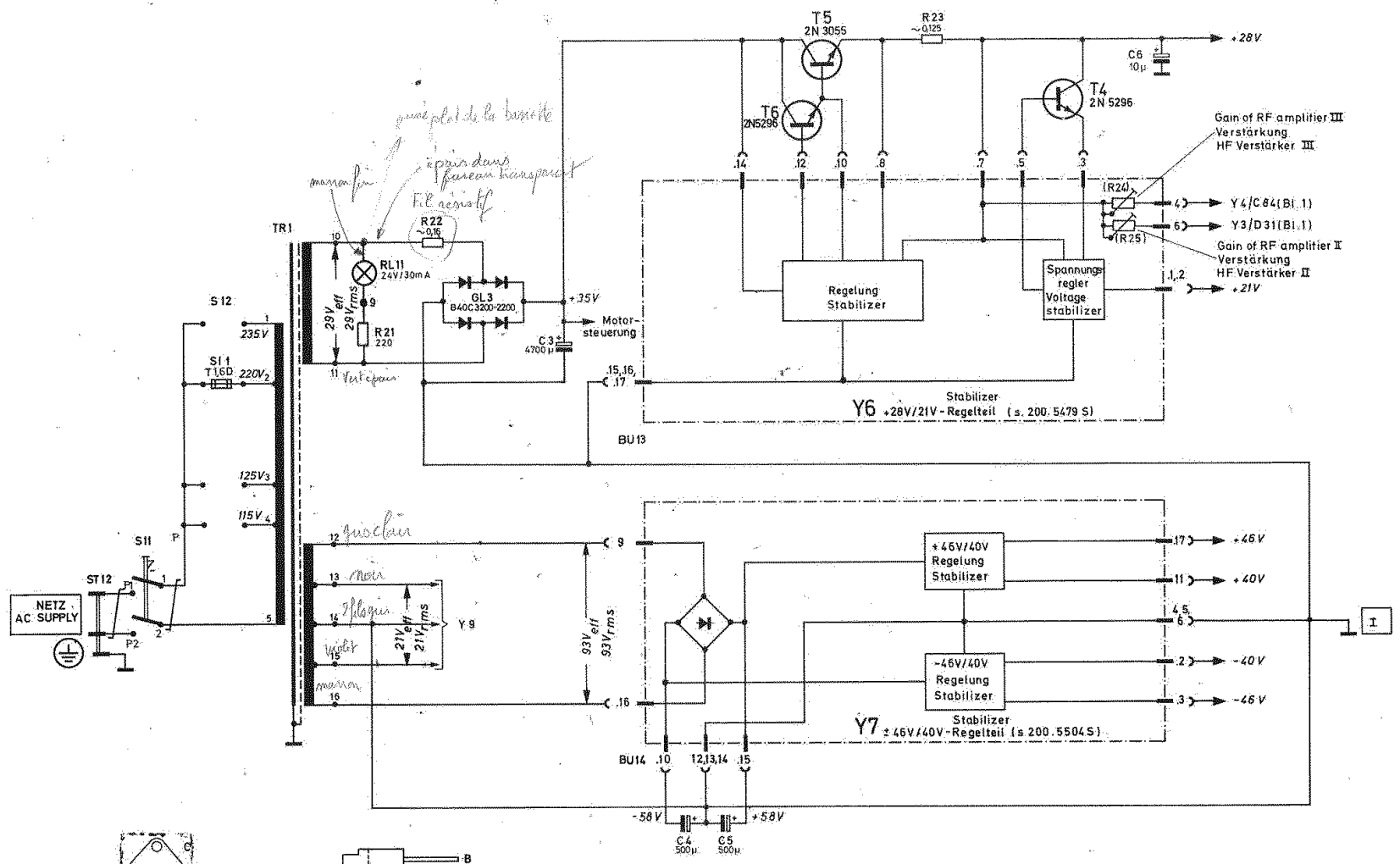
07 0374 LEISTUNGS-MESSENDER 200.1009 02

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
RL1 BIS RL7	EF W2 MAL 4,6D 24V 30MILL	EF 019.2667	200.4637
RL11	EF W2 MAL 4,6D 24V 30MILL	EF 019.2667	200.5340
S1	SB SCHALT.6TAST 2MAL 21 Z	SB 020.5820	200.4637
S3	SD TEILG=14 1EBENE 1KREIS ACHSL.=21	SD 021.7527	200.5340
S11	SB SCHALTER BELEUCHTBAR	SB 020.4147	200.5340
S12	FR SPANNUNGSWAEHLER GRAU Z	FR 017.5069	200.5156
SI1	SS SCHMELZS.T1,6DDIN41571 FUER 220V SCHMELZS.T 2,5D DIN 41571 SS020.7575 FUER 110V	SS 020.7500	200.5156
ST12	FN 3 POLIG GERAETESTECKERZ	FN 017.4691	200.5156
T1	AL 2N4911 SINPN60V4A	AL 080.4395	200.5185
T4	AL 2N5296 SI NPN 50V 4A	010.1116	200.5185
T5	AL 2N3055MOTSINPN100V15A	AL 010.1145	200.5185
T6	AL 2N5296 SI NPN 50V 4A	010.1116	200.5185
TR1	NETZTRAFO Z	200.1321	200.1009
Y1	OSZILLATOR Z HIERZU STROML.200.2511S	200.2511	200.1009
Y2	FILTEREINHEIT Z HIERZU STROML.200.1367S	200.1367	200.1009
Y3	VERSTAERKER II BER.5 U. 6Z HIERZU STROML.200.3618S	200.3618	200.1009
Y4	VERSTAERKER III BER.7 Z HIERZU STROML.200.4189S BEM: FUER VAR.02 U. 03	200.4189	200.1009
Y5	MODULATIONSTEIL Z HIERZU STROML.200.5440 S	200.5440	200.1009
Y6	+28/21V-REGELTEIL Z HIERZU STROML.200.5479S	200.5479	200.1009
Y7	+-46/40V-REGELTEIL Z HIERZU STROML.200.5504S	200.5504	200.1009
Y8	REGELVERSTAERKER Z HIERZU STROML.200.5540S	200.5540	200.1009
Y9	PROGRAMMIEREINHEIT Z HIERZU STROML.200.5240S BEM: FUER VAR.03 U. 05	200.5240	200.1009
	ENDE		


Y5 Modulation unit
Modulationsteil
(s 200 5440 S1)
Sweep control
Ablaufsteuerung
Amplifier
Verstärker
SÄGEZAHN-AUSG.
SAWTOOTH OUTP
Y1 Oscillator
Oszillator (s 200 2511 S)
Matrix
Osc. switch-off
Osz. Abschaltg.
Switchover time constant
Umschaltg. Zeitkonst.
SYNC. EING.
SYNC INPUT
EXT.
AM
INT. 1KHz
EXT. Δf
EXT.
SWEEP
INT. 20 sec
UNMOD.
PROGR
200.5027
PREQ (MHz)
RL1
RL2
RL3
RL4
RL5
+28V
-40V
+21V
+46V
-46V
+40V


Amplifier I
Verstärker I
Y2 Filter unit
Filtereinheit
(s 200 1367 S)
HF AUSG(2)
RF OUTPUT(2)
Tuning voltage
Abstimmspannung
Osz 5
Osz 6
Osz 7
Syn
Anzeigeverst.
Meter Ampl.
Variables Dämpfungsglied
variable attenuator
Anzeigerichtkoppler
Directional coupler
Motorsteuerung/Motor control
Y3 Amplifier II Range 5,6
Verstärker II Ber. 5,6
(s 200 3618 S)
Y4 Amplifier III Range 7
Verstärker III Ber. 7
(s 200 4189 S)
Y8 ALC amplifier
Regelverstärker
(s 200 5540 S)
Meter amplifier
Anzeigeverst
Regelspannung
ALC voltage
EXT. ALC
Current limiting
Strombegrenzung
AUSG.LEISTNG
OUTPUT POWER
RL5 24V/30mA
RL6 24V/30mA
RL7 24V/30mA
T1 2N4911
VAR.02
(ohne Programmiereinheit)
(with out Programming Unit)


HF-AUSGANG
RF OUTPUT
Anzeigerichtkoppler
directional coupler
Variables Dämpfungsglied
variable attenuator
Motorsteuerung/Motor control
+46V
-46V
+C3
VAR.03
(mit Programmiereinheit)
(with Programming Unit)
BU 9
Bereich
Range
Dämpfung
Attenuation
Analogeingang Analog input
PROGR. EINGANG INPUT
200.5027
S3
S1 VI.21
S2.22
S2.10
S2.18
TR1
s.BL.2
21V eff
+5V
A1
BCD
Frequenz
Frequency
Y9 Programming Unit
Programmiereinheit
Stromlauf besteht aus 2 Blatt
Blatt Nr. 1
Stromlauf zu
Leistungs-Meßsender SMLU
Z
Zeichnung
200.1009 S 01
200.1009 V



Bl. 2

Stromlauf zu

Leistungs-Meßsender SMLU

Z

Zeichn. Nr. 200.1009 S 01

200.1009 V —

Änd.-zust.	Änd.-Mitteilg.-Nr.	Datum	Name
F	17581	11.72	Gn
G	17719	26.2.73	Pz
H	19079	1.2.74	Gn

Änd.-zust.	Änd.-Mitteilg.-Nr.	Datum	Name
A	——	17.3.71	lbg
B	——	13.7.71	Gn
C	17136	7.12.71	Klr
D	17217	10.2.72	Gn
E	17497	22.9.72	Gn

	Datum	Name
gezeichnet	2. 0	Lt
bearbeitet		lbg
geprüft	15.4.71	
normgeprüft		

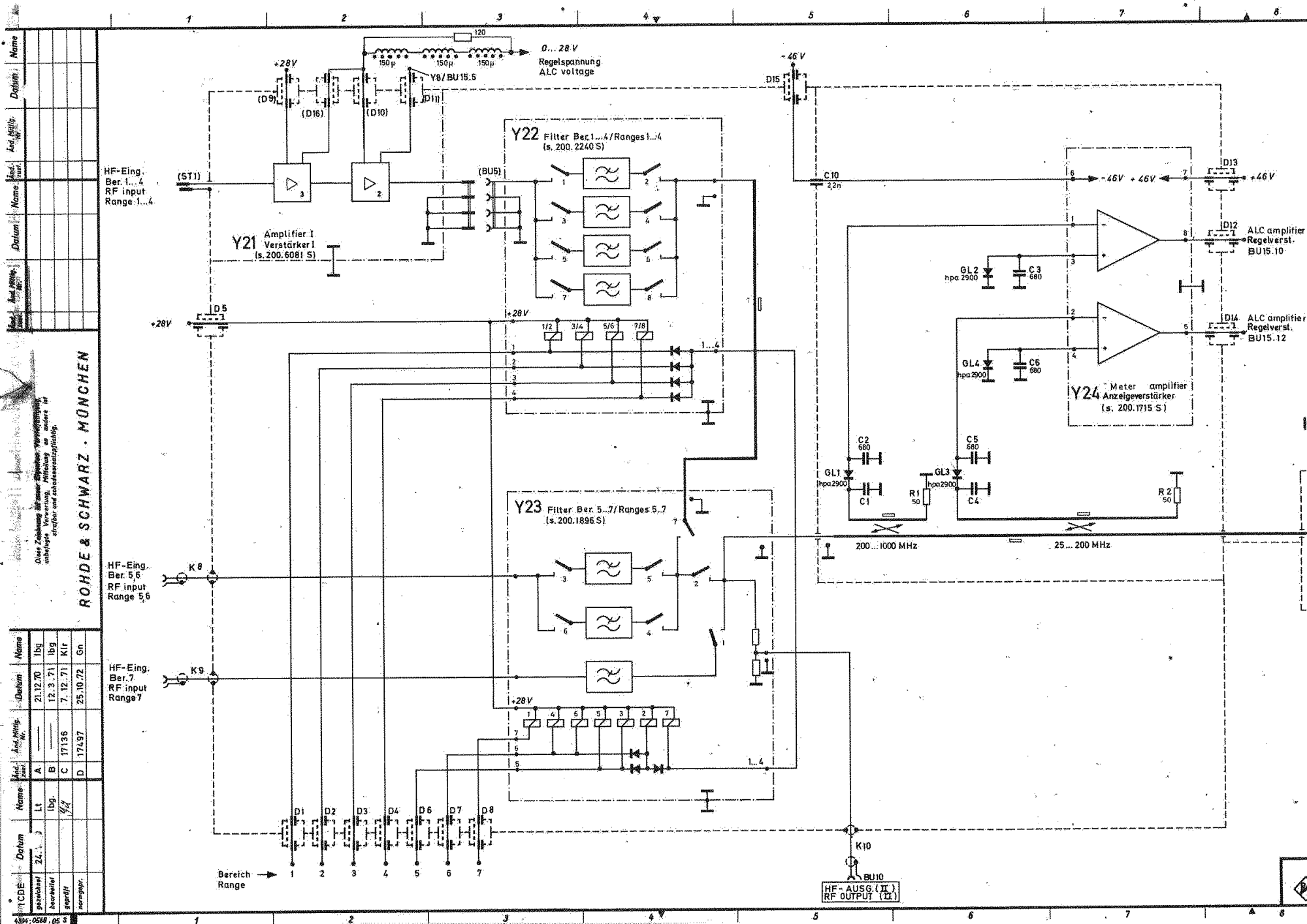
1 CDE

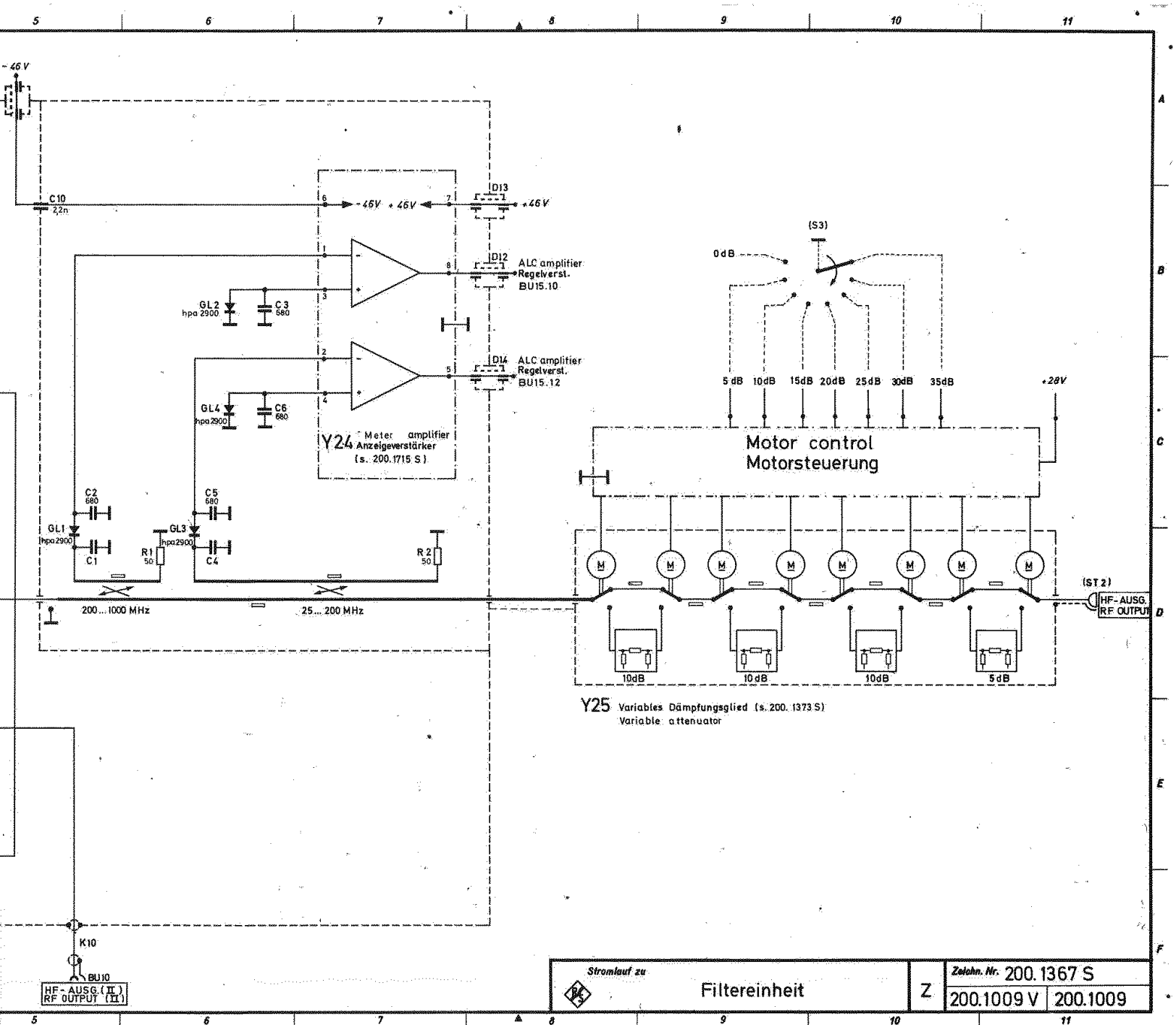
4395; 1267; 10 S

ROHDE & SCHWARZ
MÜNCHEN

AZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
04	0372	FILTEREINHEIT	200.1367 SA	01

Kennzeichen	Benennung/Beschreibung		Sachnummer	enthalten in
A	FILTEREINHEIT STROMLAUF 200.1367 S	Z	200.1367	200.1367
BU10				200.1367
C1	PLATTE	Z	200.1850	200.1844
C2	680 PF R4000 5 CHIP		CC 022.4850	200.1844
C3	680 PF R4000 5 CHIP		CC 022.4850	200.1844
C4	PLATTE	Z	200.1815	200.1809
C5	680 PF R4000 5 CHIP		CC 022.4850	200.1809
C6	680 PF R4000 5 CHIP		CC 022.4850	200.1809
C10	2,2NF-20+50% HDK4000DF-KO		CB 023.0159	200.1367
D1 BIS D8	95 DB (500MHZ)2X2500 PF		LD 006.8032	200.1367
D12 BIS D15	95 DB (500MHZ)2X2500 PF		LD 006.8032	200.1367
GL1	HPA2900 SI10V HOTCARRIER		AE 012.8018	200.1844
GL2	HPA2900 SI10V HOTCARRIER		AE 012.8018	200.1844
GL3	HPA2900 SI10V HOTCARRIER		AE 012.8018	200.1809
GL4	HPA2900 SI10V HOTCARRIER		AE 012.8018	200.1809
K8	HF-KABEL	Z	200.6052	200.1367
K9	HF-KABEL	Z	200.6046	200.1367
K10	HF-KABEL	Z	200.6023	200.1367
R1	0,25W 50 OHM +-1%		RF 026.0050	200.1738
R2	0,25W 50 OHM +-1%		RF 026.0050	200.1738
Y21	VERSTAERKER 1 BER.1-4 HIERZU STROML.200.6081 S	Z	200.6081	200.1367
Y22	FILTER BER.1-4	Z	200.2240	200.1367
Y23	FILTER BER 5-7	Z	200.1896	200.1367
Y24	ANZEIGEVERSTAERKER	Z	200.1715	200.1367
Y25	VARIABLES-DAEMPFUNGSGLIED HIERZU STROML.200.1373 S	Z	200.1373	200.1367
	ENDE			


0...28 V
Regelspannung
ALC voltage
+28V
-46V
Y8/BU15.5
(D9)
(D16)
(D10)
(D11)
D15
Y22 Filter Ber.1...4/Ranges 1...4
(s. 200.2240 S)
HF-Eing.
Ber. 1...4
RF input
Range 1...4
(ST1)
(BU5)
Y21 Amplifier I
Verstärker I
(s.200.6081 S)
C10
2,2n
D13
D12
ALC amplifier
Regelverst.
BU15.10
D14
ALC amplifier
Regelverst.
BU15.12
GL2
hpa 2900
C3
680
GL4
hpa 2900
C6
680
Y24 Meter amplifier
Anzeigeverstärker
(s. 200.1715 S)
D5
1/2
3/4
5/6
7/8
1...4
C2
680
C5
680
GL1
hpa 2900
C1
GL3
hpa 2900
C4
R1
50
R2
50
200...1000 MHz
25... 200 MHz
Y23 Filter Ber. 5...7/Ranges 5...7
(s. 200.1896 S)
HF-Eing.
Ber. 5,6
RF input
Range 5,6
K8
HF-Eing.
Ber.7
RF input
Range7
K9
D1
D2
D3
D4
D6
D7
D8
Bereich
Range
K10
BU10
HF-AUSG.(II)
RF OUTPUT (II)
ROHDE & SCHWARZ · MÜNCHEN
Name
Datum
Änd.Mitteilg. Nr.
Änd. zust.
Lt
lbg.
gezeichnet
bearbeitet
geprüft
normgepr.
A
B
C
D
21.12.70
12.3.71
7.12.71
25.10.72
lbg
lbg
Klr
Gn
17136
17497


+46V
C10
2,2n
+46V
+46V
+46V
D13
D12
ALC amplifier
Regelverst.
BU15.10
D14
ALC amplifier
Regelverst.
BU15.12
GL2
hpa 2900
C3
680
GL4
hpa 2900
C6
680
Y24 Meter amplifier
Anzeigeverstärker
(s. 200.1715 S.)
C2
680
C5
680
GL1
hpa 2900
C1
GL3
hpa 2900
C4
R1
50
R2
50
200...1000 MHz
25...200 MHz
(S3)
0dB
5dB
10dB
15dB
20dB
25dB
30dB
35dB
+28V
Motor control
Motorsteuerung
M
10dB
10dB
10dB
5dB
(ST2)
HF-AUSG.
RF OUTPUT
Y25 Variables Dämpfungsglied (s. 200.1373 S)
Variable attenuator
K10
BU10
HF-AUSG.(II)
RF OUTPUT (II)
Stromlauf zu
Filtereinheit
Z
Zeichn. Nr. 200.1367 S
200.1009 V
200.1009

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	06	0374	VARIABLES-DAEMPFUNGSGLIED	200.1373 SA	01

Kennzeichen	Benennung / Beschreibung		Sachnummer	enthalten in
A	VARIABLES-DAEMPFUNGSGLIEDZ STROMLAUF 200.1373 S		200.1373	200.1373
GL1 BIS GL16	AD 1N914 SI 75V 75MIA		AD 012.0698	200.1573
M01 BIS M08	ANTRIEB	Z	111.5522	200.1373
R1	RF 0,25 W 680 OHM +-5%		RF 007.0235	200.1573
R2	RF 0,25 W 680 OHM +-5%		RF 007.0235	200.1573
R3	RF 0,25 W 18 KOHM +-5%		RF 007.0406	200.1573
R4	RF 0,25 W 33 KOHM +-5%		RF 007.0435	200.1573
R5	RF 0,25 W 68 KOHM +-5%		RF 007.0470	200.1573
R11	RF 0,25 W 680 OHM +-5%		RF 007.0235	200.1573
R12	RF 0,25 W 680 OHM +-5%		RF 007.0235	200.1573
R13	RF 0,25 W 33 KOHM +-5%		RF 007.0435	200.1573
R14	RF 0,25 W 47 KOHM +-5%		RF 007.0458	200.1573
R15	RF 0,25 W 33 KOHM +-5%		RF 007.0435	200.1573
R16	RF 0,25 W 68 KOHM +-5%		RF 007.0470	200.1573
R21	RF 0,25 W 680 OHM +-5%		RF 007.0235	200.1573
R22	RF 0,25 W 680 OHM +-5%		RF 007.0235	200.1573
R23	RF 0,25 W 82 KOHM +-5%		RF 007.0487	200.1573
R24	RF 0,25 W 68 KOHM +-5%		RF 007.0470	200.1573
R25	RF 0,25 W 33 KOHM +-5%		RF 007.0435	200.1573
R26	RF 0,25 W 68 KOHM +-5%		RF 007.0470	200.1573
R31	RF 0,25 W 680 OHM +-5%		RF 007.0235	200.1573
R32	RF 0,25 W 680 OHM +-5%		RF 007.0235	200.1573
R33	RF 0,25 W 120 KOHM +-5%		RF 007.0506	200.1573
R34	RF 0,25 W 100 KOHM +-5%		RF 007.0493	200.1573
R35	RF 0,25W5,6KOHM +-5%		RF 069.5624	200.1573
R36	RF 0,25 W 68 KOHM +-5%		RF 007.0470	200.1573
R37	RF 0,25 W 180 KOHM +-5%		RF 007.0529	200.1573
R41	DAEMPFUNGSGLIED	Z	200.1550	200.1373
R42	DAEMPFUNGSGLIED	Z	200.1480	200.1373
R43	DAEMPFUNGSGLIED	Z	200.1480	200.1373
R44	DAEMPFUNGSGLIED	Z	200.1480	200.1373
S1 BIS S8				200.1373
	ENTHALTEN IN 200.1373			
ST2	FB UMRUESTSTECKER DEZI.B	Z	FB 018.2205	200.1373
T1 BIS T3	AK BCY59CI NPN 45V200MIA		AK 010.5163	200.1573
T4	AK BCY79IX PNP 45V200MIA		AK 010.3777	200.1573
T5	AK BCY79IX PNP 45V200MIA		AK 010.3777	200.1573
T6	AK BCY79IX PNP 45V200MIA		AK 010.3777	200.1573
T11 BIS T13	AK BCY59CI NPN 45V200MIA		AK 010.5163	200.1573

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	06	0374	VARIABLES-DAEMPFUNGSGLIED	200.1373 SA	02

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
T14 BIS T16	AK BCY79IX PNP 45V200MIA	AK 010.3777	200.1573
T21 BIS T23	AK BCY59CI NPN 45V200MIA	AK 010.5163	200.1573
T24 BIS T26	AK BCY79IX PNP 45V200MIA	AK 010.3777	200.1573
T31 BIS T33	AK BCY59CI NPN 45V200MIA	AK 010.5163	200.1573
T34 BIS T36	AK BCY79IX PNP 45V200MIA	AK 010.3777	200.1573
	ENDE		

1 CDE	Datum	Name
gezeichnet	14. 70	Fl.
bearbeitet		Ibg.
geprüft		
normgepr.		

Änd. zust.	Änd. Mitteg. Nr.	Datum	Name
A	———	21.12.70	Ibg
B	17136	1.72	Klr
C	17217	3.72	Gn
D	17497	28.9.72	Gn
E	19079	5.2.74	Gn

ROHDE & SCHWARZ · MÜNCHEN

Änd.-zust.	Änd. Mittlg. Nr.	Datum	Name	Änd.-zust.	Änd. Mittlg. Nr.	Datum	Name

Draht - Farben	Wire colours
sw	bl
rt	r

Stromlauf zu

Variables Dämpfungsglied

Z

Zeichn.-Nr. 200.1009V 200.1373 S 200.1367

+35V

35 dB

30 dB

25 dB

20 dB

15 dB

10 dB

5 dB

GL16 1N914

GL14 1N914

GL15 1N914

GL13 1N914

GL9 1N914

GL10 1N914

GL11 1N914

GL12 1N914

GL8 1N914

GL7 1N914

GL6 1N914

GL5 1N914

R35 5,6k

R36 68k

R34 100k

R33 120k

R37 180k

GL4 1N914

R25 33k

R26 68k

R24 68k

R23 82k

GL3 1N914

R15 33k

R16 68k

R14 47k

R13 39k

GL2 1N914

R4 33k

R5 68k

R3 18k

GL1 1N914

T33 BCY59IX

T34 BCY79IX

T35 BCY79IX

T36 BCY79IX

T31 BCY59IX

T32 BCY59IX

R32 680

R31 680

+26,25V

T23 BCY59IX

T24 BCY79IX

T25 BCY79IX

T26 BCY79IX

T21 BCY59IX

T22 BCY59IX

R22 680

R21 680

+17,5V

T13 BCY59IX

T14 BCY79IX

T15 BCY79IX

T16 BCY79IX

T11 BCY59IX

T12 BCY59IX

R12 680

R11 680

+8,75V

T3 BCY59IX

T4 BCY79IX

T5 BCY79IX

T6 BCY79IX

T1 BCY59IX

T2 BCY59IX

R2 680

R1 680

200.1573

C B E

T1...T36

Input Eing.

S8 S7 S6 S5 S4 S3 S2 S1

R44 10dB

R43 10dB

R42 10dB

R41 5dB

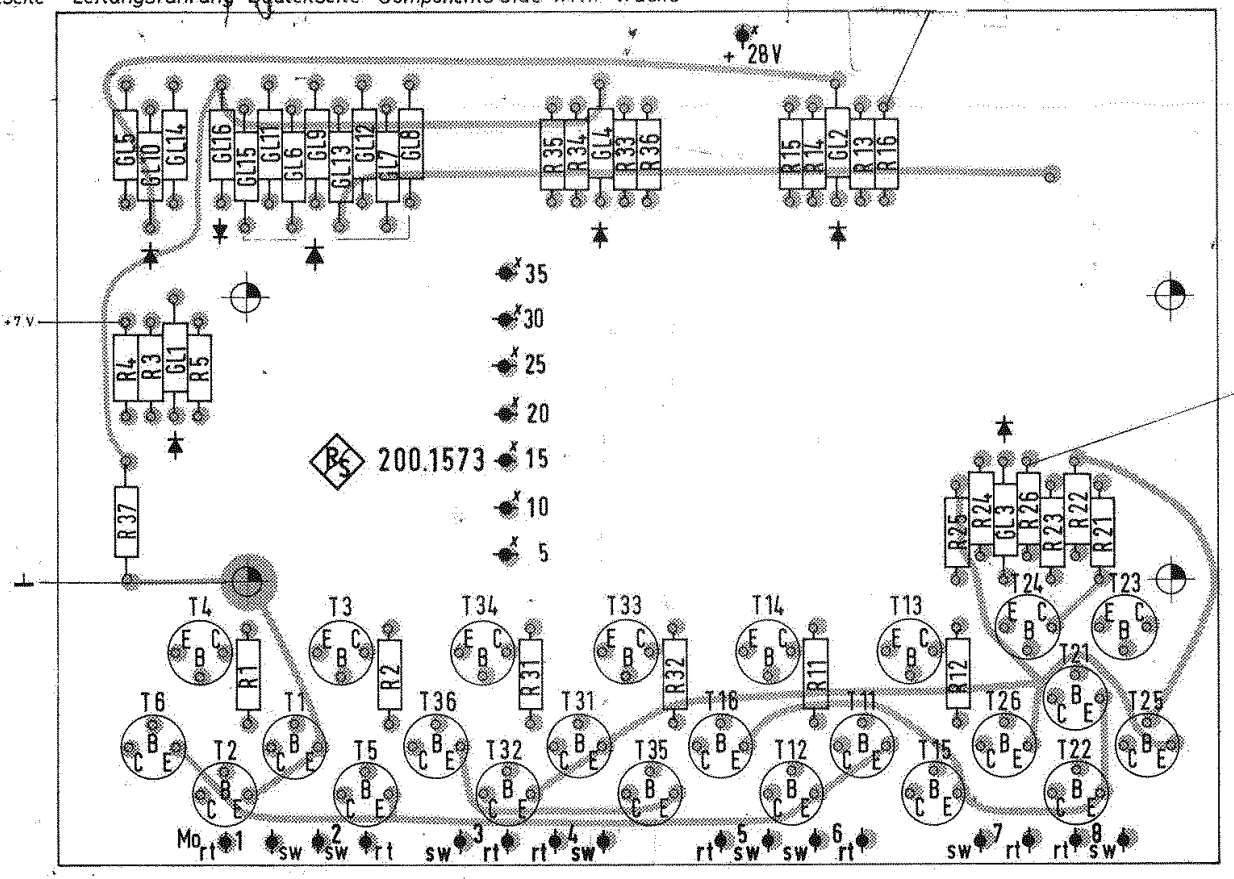
MO8 MO7 MO6 MO5 MO4 MO3 MO2 MO1

Mo4 Mo3 Mo8 Mo7 Mo6 Mo5 Mo2 Mo1

ST2

Ausg. Output

Darstellung Bauteilseite Leitungsführung Bauteilseite Components side with tracks



Blatt Nr. 2

ROHDE & SCHWARZ MÜNCHEN			Halbzeug, Werkstoff				Untolerierte Maße	Zeichn. Nr. 200.1573	
							Maßstab 2:1	200.1009V	200.1373
1CDD	Datum	Name	Änd. zust.	Änd. Mittlg. Nr.	Datum	Name		Ersatz f. Zeichn.	
gezeichnet	23.2.70	Wm	A	———	20.1.71	Grb			
bearbeitet			B	17136	12.71	Klr.			
geprüft			C	17497	10.72	Gn			
normgepr.			D	19079	5.2.74	Gn			
							Platte		Z

ISO-Projektion, Methode E

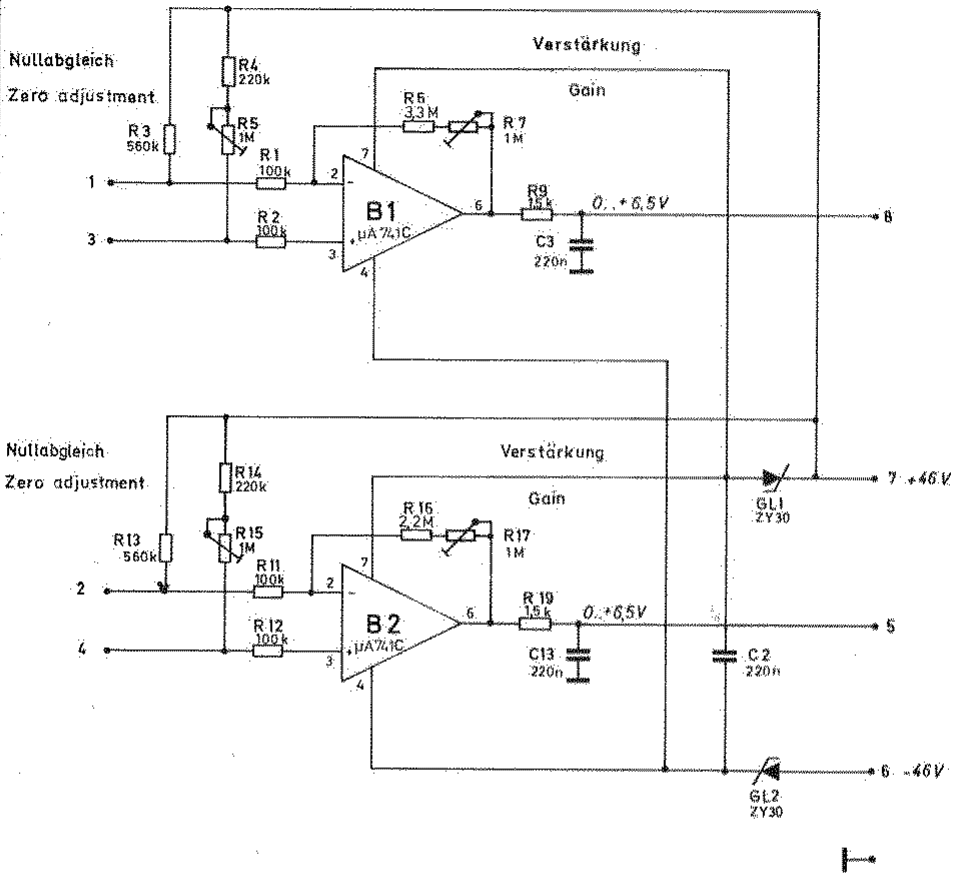
Vervielfält.-Pause Nr.

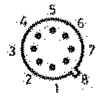
Arbeitspause Nr.

40-11.67.505.67

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	04	0374	ANZEIGEVERSTAERKER	200.1715 SA	01

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
A	ANZEIGEVERSTAERKER Z STROML. 200.1715S	200.1715	200.1715
B1	BO MA741C -0+70 OP-VERST	BO 009.1300	200.1715
B2	BO MA741C -0+70 OP-VERST	BO 009.1300	200.1715
C2	CK 220NF+-20%100V QUADER	CK 006.5056	200.1715
C3	CK 220NF+-20%100V QUADER	CK 006.5056	200.1715
C13	CK 220NF+-20%100V QUADER	CK 006.5056	200.1715
GL1	AE ZY30 30V 5% 1,3W Z-DI	012.5202	200.1715
GL2	AE ZY30 30V 5% 1,3W Z-DI	012.5202	200.1715
R1	RF 0,25 W 100 KOHM +-5%	RF 007.0493	200.1715
R2	RF 0,25 W 100 KOHM +-5%	RF 007.0493	200.1715
R3	RF 0,25 W 550 KOHM +-5%	RF 007.0587	200.1715
R4	RF 0,25 W 220 KOHM +-5%	RF 007.0535	200.1715
R5	RS 0,5W 1MOHM KURVE1 STEH	RS 030.5952	200.1715
R6	RF 0,5 W 3,3 MOHM +-5%	RF 007.1790	200.1715
R7	RS 0,5W 1MOHM KURVE1 STEH	RS 030.5952	200.1715
R9	RF 0,25 W 1,5 KOHM +-5%	RF 007.0270	200.1715
R11	RF 0,25 W 100 KOHM +-5%	RF 007.0493	200.1715
R12	RF 0,25 W 100 KOHM +-5%	RF 007.0493	200.1715
R13	RF 0,25 W 550 KOHM +-5%	RF 007.0587	200.1715
R14	RF 0,25 W 220 KOHM +-5%	RF 007.0535	200.1715
R15	RS 0,5W 1MOHM KURVE1 STEH	RS 030.5952	200.1715
R16	RF 0,5 W 2,2 MOHM +-5%	RF 007.1777	200.1715
R17	RS 0,5W 1MOHM KURVE1 STEH	RS 030.5952	200.1715
R19	RF 0,25 W 1,5 KOHM +-5%	RF 007.0270	200.1715
	ENDE		





B1 ; B2

Vervielfält.-Pause Nr.

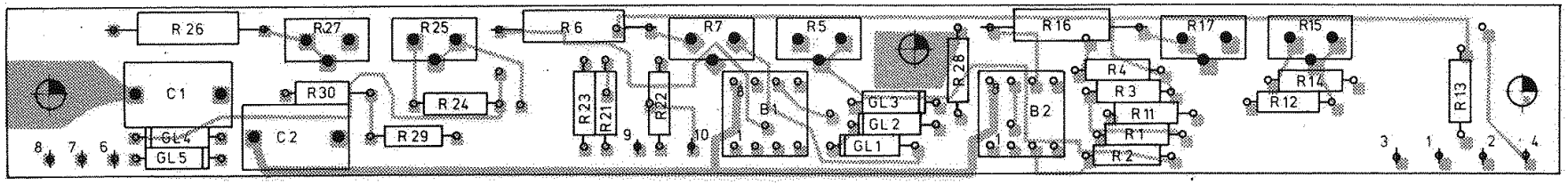
Arbeitspause Nr.

1 CDE	Datum	Name	Änd. zust.	Änd.-Mittlg. Nr.	Datum	Name	Zeichn. Nr. 200.1715 S	best. aus 1 Blatt
gezeichn.	27.7.70	Fl.	A	——	19. 2. 71	Ibg	200.1009 V | 200.1367	Blatt Nr.
bearbeitet		Ibg.	B	17136	11.71	Re	Benennung	
geprüft			C	17217	22. 2. 72	Gn	Anzeigeverstärker	Z
normgepr.			D	19079	4. 2. 74	Gn		

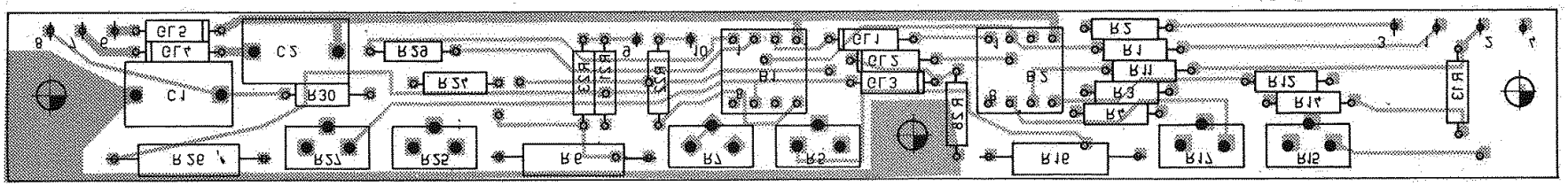
4313

ROHDE & SCHWARZ, MÜNCHEN

Ansicht und Leitungsführung Bauteilseite
View of components side with tracks



Ansicht und Leitungsführung Leiterseite
View of printed side with tracks



Diese Unterlage ist unser Eigentum. Vervielfältigung, unbefugte Verwertung, Mitteilung an andere ist strafbar und schadenersatzpflichtig

ISO-Projektion, Methode E

And. zust.	And.-Mitteilg. Nr.	Datum	Name
G	——	10.2.75	Pt.

Halbzeug, Werkstoff

Maßstab 2:1 | Untol. Maße | SMLU

Benennung Anzeigeverstärker | Z

Zeichnung besteht aus | Blatt | Blatt-Nr. 2

registr. in Verz. 200.1009 V | erste Z. 200.1596 | Zeichn. Nr. 200.1715

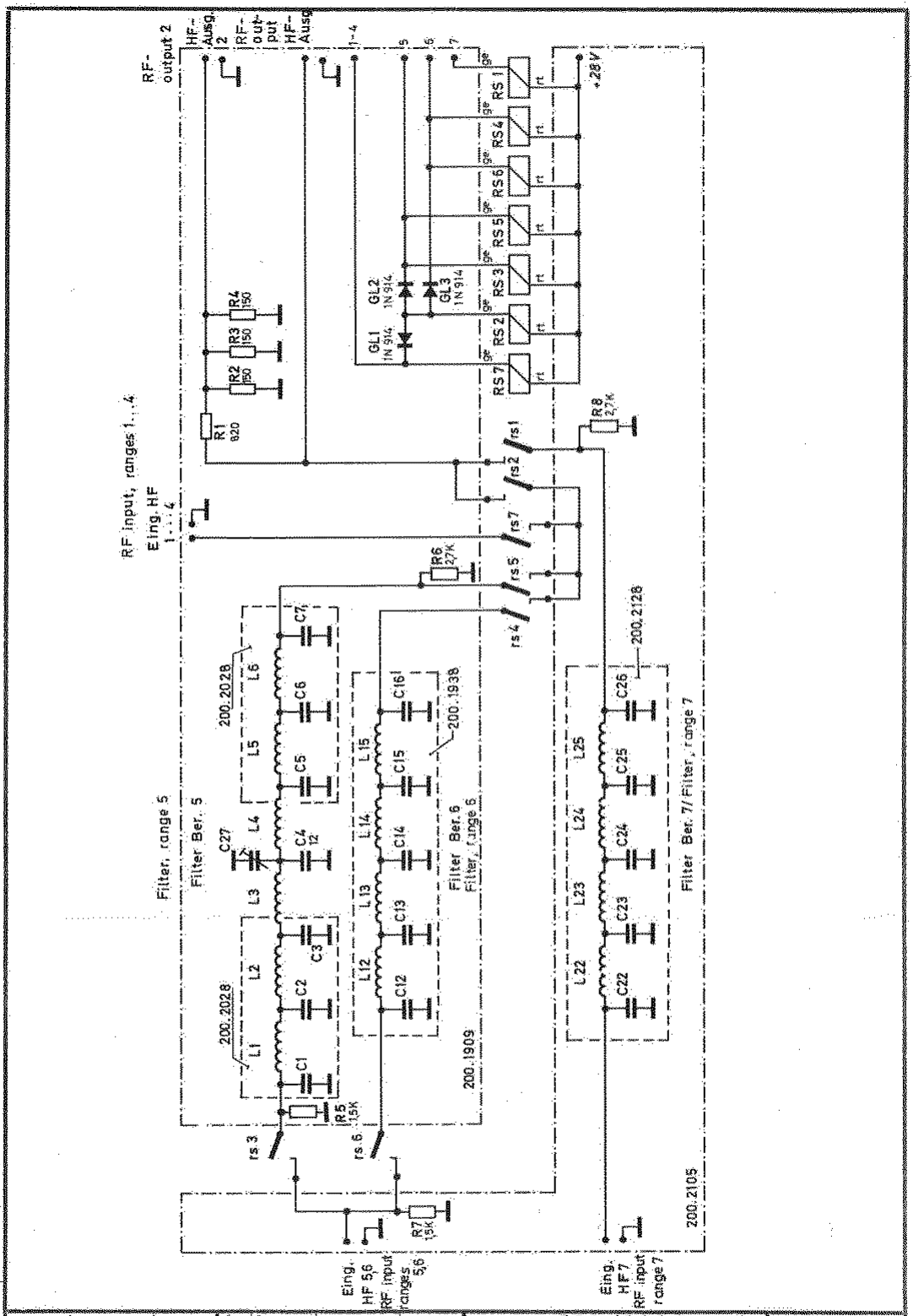
ROHDE & SCHWARZ MÜNCHEN

Stelle	gez. Datum	bearb. Datum	geprüft Datum	Ordn.-Nr. (nur für K-Ordner)
1GME	10.2.75 Pt.			

PF095 0455

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	02	1072	FILTER BER 5=7	200.1896 SA	01

Kennzeichen	Benennung / Beschreibung		Sachnummer	enthalten in
A	FILTER BER 5=7 STROMLAUF 200.1896S	Z	200.1896	200.1896
C1				200.2028
C2				200.2028
C3				200.2028
	ENTHALTEN IN 200.2028			
C4	12PF 2% NP0/1B 8CHIP		CC 022.4580	200.1909
C5				200.2028
C6				200.2028
C7				200.2028
	ENTHALTEN IN 200.2028			
C12 BIS C16				200.1938
	ENTHALTEN IN 200.1938			
C22 BIS C26				200.2128
	ENTHALTEN IN 200.2128			
C27	9,2 PF TAUCHTR.RD7X14		CT 037.7980	200.1909
GL1	1N914 SI 75V 75MIA		AD 012.0698	200.1909
GL2	1N914 SI 75V 75MIA		AD 012.0698	200.1909
GL3	1N914 SI 75V 75MIA		AD 012.0698	200.1909
L1				200.2028
L2				200.2028
	ENTHALTEN IN 200.2028			
L3	SPULE		200.3430	200.1909
L4	SPULE		200.3430	200.1909
L5				200.2028
L6				200.2028
	ENTHALTEN IN 200.2028			
L12 BIS L15				200.1938
	ENTHALTEN IN 200.1938			
L22				200.2128
L23				200.2128
L24				200.2128
L25				200.2128
	ENTHALTEN IN 200.2128			
R1	0,25 W 820 OHM+=5%		RF 007.0841	200.1909
R2	0,25 W 150 OHM +=5%		RF 007.0158	200.1909
R3	0,25 W 150 OHM +=5%		RF 007.0158	200.1909
R4	0,25 W 150 OHM +=5%		RF 007.0158	200.1909
R5	0,25 W 1,5 KOHM +=5%		RF 007.0270	200.1909
R6	0,25 W 2,7 KOHM +=5%		RF 007.0306	200.1909
R7	0,25 W 1,5 KOHM +=5%		RF 007.0270	200.2105
R8	0,25 W 2,7 KOHM +=5%		RF 007.0306	200.2105
RS1 BIS RS7	HAMLIN KONTAKT		SR 019.5243	200.1909
		ENDE		



ICDE	Datum	Name	Änd. zust.	Änd.-Mittlg. Nr.	Datum	Name
gezeichn.	1. 9.70	Lt	A	——	12. 3.71	Ibg.
bearbeitet		Ibg.	B	17136	11.71	Re
geprüft			C	17217	3. 3.72	Gn
normgepr.			D	17497	24.10.72	Gn

Zeichn. Nr. 200.1896 S
200.1009 V | 200.1367

beat. aus 1 Blatt
Blatt Nr.

Stromlauf zu:

Filter Ber. 5-7

Z

Vervielfält.-Pause Nr.

Arbeitspause Nr.

ROHDE & SCHWARZ, MÜNCHEN

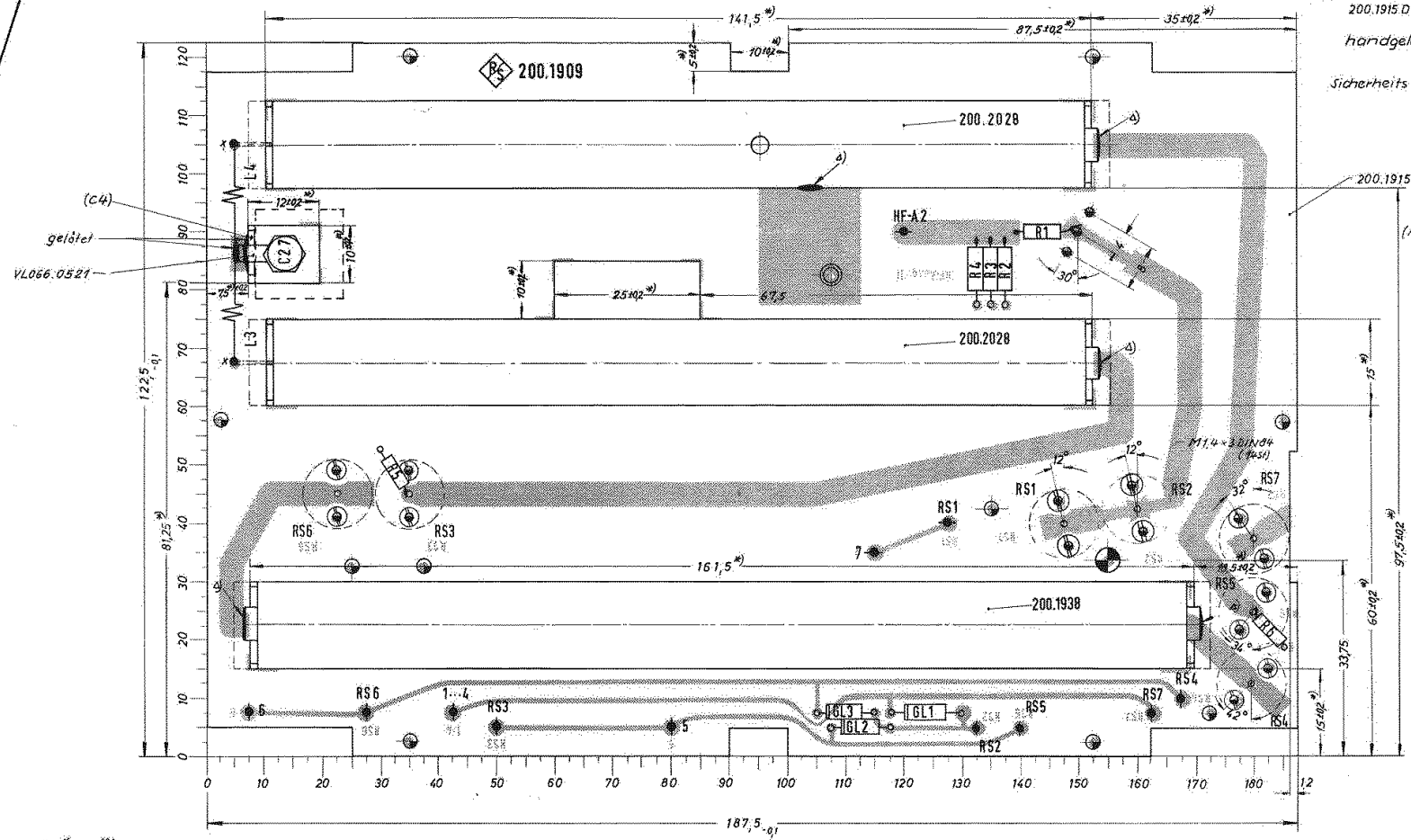
Darstellung: Bauteilseite
Leitungsführung: Bauteilseite

beidseitig vergoldet

hierzu 200.1915.DV1 Leiterseite (A,B
200.1915.DV4 Bauteilseite (A,B

handgelötet

Sicherheitsvorschrift HVQ.001 beachten



Ø 0,85 +0,1
Ø 1 +0,1
Ø 1,3 +0,1
Ø 1,6 +0,1
Ø 4 +0,05 Senkung für VS 016.5642
Ø 2,8 +0,2
Ø 3,2 +0,2
Ø 4 +0,2

Raster 2,5; Toleranz beliebiger Teilungen zueinander ± 0,05

Bohrungen nach Film gebohrt
max. Abweichung bei Ø 0,85 +0,1 u. Ø 1,6 +0,1
vom Bohrmittelpunkt ± 0,1
Übrige Ø ± 0,2

Durchbrüche nach dem Vergolden gestanzt!

4) gelötet
*) Stanzmaße

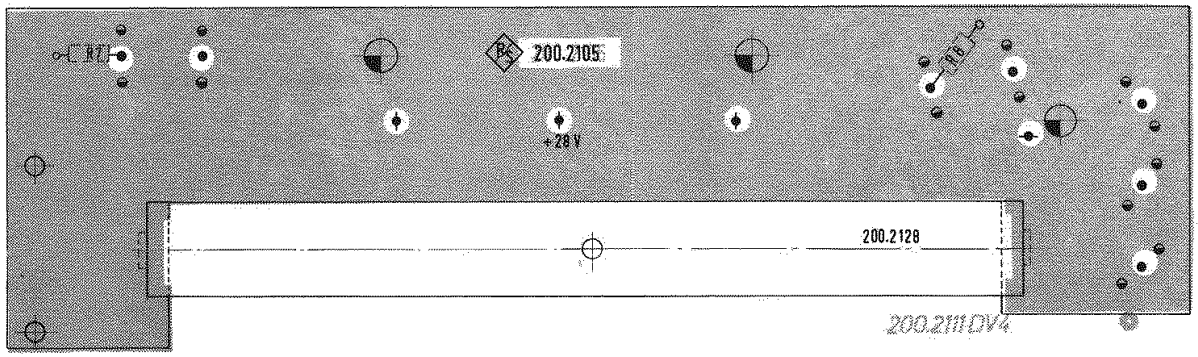
VL 035.3412 (12 Stück)
Schlitzrichtung der Lötfahne

Zeichnung besteht aus 2 Blatt
Blatt Nr. 1

ROHDE & SCHWARZ MÜNCHEN			Halbzeug: Werkstoff: WS 001.6148				Allgemeintoleranz ± 0,1	200.1909	
1CDD	Datum	Name	Änd.	Änd.-Mitt.	Datum	Name	Maßstab 2:1	200.1009 V	200.1896
gezeichnet	2.10.70	Br	A	———	8.4.71	Gn			
bearbeitet			B	17217	1.3.72	Gn	Platte		Z
geprüft									
Norm-Prüf.									

Darstellung Bauteilseite
Leitungsführung Bauteilseite

Sicherheits-Vorschrift HVQ 001 beachten



Einzelheiten nicht dargestellt

Vor dem Einbau des Filterrohres ist durch Widerstandsmessung sicherzustellen, daß zwischen Innen- und Außenleiter kein Kurzschluß besteht.

Beim Einschieben des Filterrohres in die Ausstanzung der Druckplatte dürfen die Innenleiter nicht verschoben werden.

Die Lage des Filterrohres wird ausgemittelt.

Blatt Nr. 2

ROHDE & SCHWARZ MÜNCHEN			Halbzeug, Werkstoff				Unterlagennr. Maßbl.	Zeichn.-Nr. 200.2105
							Maßstab	200.1009 V / 200.1896
1CDD	Datum	Name	Änd. Index	Änd. Mitt. Nr.	Datum	Kürzel		
gezeichnet	28.9.70	Br	B	77217	2.72	Z/S	Platte	Z
bearbeitet								
geprüft								
freigegeben								

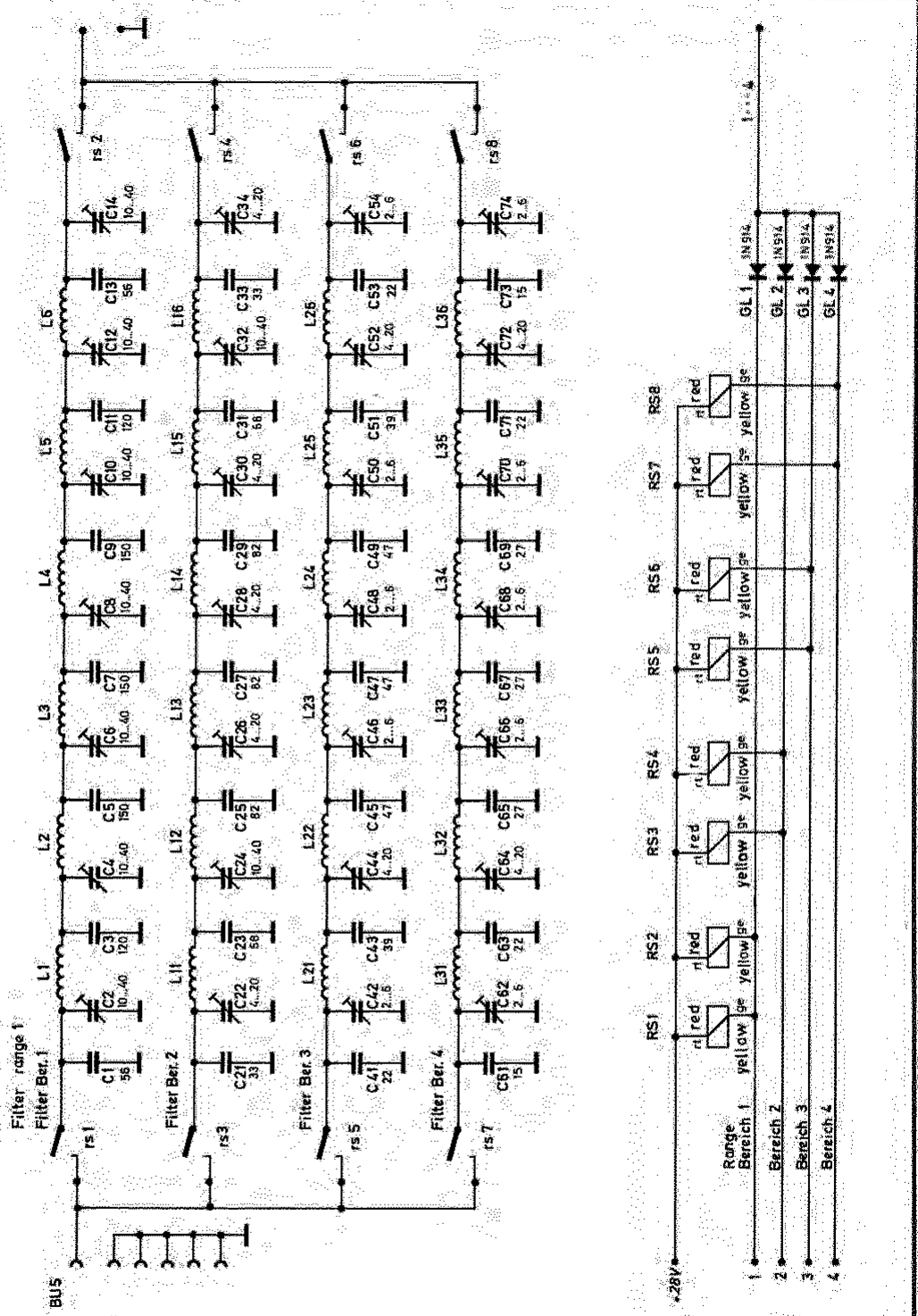
ROHDE & SCHWARZ
MÜNCHEN

ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
02	0279	FILTER BER.1m4	200.2240 SA	01

Kennzeichen	Benennung / Beschreibung		Sachnummer	enthalten in
A	FILTER BER.1m4 STROML.200.2240S	I	200.2240	200.2240
BUS	KONTAKTLEISTE	I	200.2263	200.2240
C1	56 PF 2% NP0/IB 3 ROHR		CC 006.1280	200.2240
C2	30 PF N750 LIEG.ABGL.0		CT 025.6925	200.2240
C3	120PF 2% N750/IB 3ROHR		CC 006.1609	200.2240
C4	30 PF N750 LIEG.ABGL.0		CT 025.6925	200.2240
C5	150PF 2% N750/IB 3ROHR		CC 006.1615	200.2240
C6	30 PF N750 LIEG.ABGL.0		CT 025.6925	200.2240
C7	150PF 2% N750/IB 3ROHR		CC 006.1615	200.2240
C8	30 PF N750 LIEG.ABGL.0		CT 025.6925	200.2240
C9	150PF 2% N750/IB 3ROHR		CC 006.1615	200.2240
C10	30 PF N750 LIEG.ABGL.0		CT 025.6925	200.2240
C11	120PF 2% N750/IB 3ROHR		CC 006.1609	200.2240
C12	30 PF N750 LIEG.ABGL.0		CT 025.6925	200.2240
C13	56 PF 2% NP0/IB 3 ROHR		CC 006.1280	200.2240
C14	30 PF N750 LIEG.ABGL.0		CT 025.6925	200.2240
C21	33PF 2% NP0/IB 3ROHR		CC 006.1250	200.2240
C22	16 PF N470 LIEG.ABGL.0/U		CT 025.6909	200.2240
C23	68 PF 1% NP0/IB 3 ROHR		CC 006.1296	200.2240
C24	30 PF N750 LIEG.ABGL.0		CT 025.6925	200.2240
C25	82PF 2% N750/IB 3ROHR		CC 006.1580	200.2240
C26	16 PF N470 LIEG.ABGL.0/U		CT 025.6909	200.2240
C27	82PF 2% N750/IB 3ROHR		CC 006.1580	200.2240
C28	16 PF N470 LIEG.ABGL.0/U		CT 025.6909	200.2240
C29	82PF 2% N750/IB 3ROHR		CC 006.1580	200.2240
C30	16 PF N470 LIEG.ABGL.0/U		CT 025.6909	200.2240
C31	68 PF 1% NP0/IB 3 ROHR		CC 006.1296	200.2240
C32	30 PF N750 LIEG.ABGL.0		CT 025.6925	200.2240
C33	33PF 2% NP0/IB 3ROHR		CC 006.1250	200.2240
C34	16 PF N470 LIEG.ABGL.0/U		CT 025.6909	200.2240
C41	22PF 2% NP0/IB 3ROHR		CC 006.1238	200.2240
C42	4 PF N033 LIEG.ABGL.0		CT 025.6990	200.2240
C43	39PF 2% NP0/IB 3ROHR		CC 006.1267	200.2240
C44	16 PF N470 LIEG.ABGL.0/U		CT 025.6909	200.2240
C45	47PF 2% NP0/IB 3ROHR		CC 006.1273	200.2240
C46	4 PF N033 LIEG.ABGL.0		CT 025.6990	200.2240
C47	47PF 2% NP0/IB 3ROHR		CC 006.1273	200.2240
C48	4 PF N033 LIEG.ABGL.0		CT 025.6990	200.2240
C49	47PF 2% NP0/IB 3ROHR		CC 006.1273	200.2240
C50	4 PF N033 LIEG.ABGL.0		CT 025.6990	200.2240
C51	39PF 2% NP0/IB 3ROHR		CC 006.1267	200.2240
C52	16 PF N470 LIEG.ABGL.0/U		CT 025.6909	200.2240
C53	22PF 2% NP0/IB 3ROHR		CC 006.1238	200.2240
C54	4 PF N033 LIEG.ABGL.0		CT 025.6990	200.2240
C61	15 PF 2.5% NP0/IB 3ROHR		CC 006.1215	200.2240
C62	4 PF N033 LIEG.ABGL.0		CT 025.6990	200.2240
C63	22PF 2% NP0/IB 3ROHR		CC 006.1238	200.2240
C64	16 PF N470 LIEG.ABGL.0/U		CT 025.6909	200.2240
C65	27PF 2% NP0/IB 3ROHR		CC 006.1244	200.2240
C66	4 PF N033 LIEG.ABGL.0		CT 025.6990	200.2240
C67	27PF 2% NP0/IB 3ROHR		CC 006.1244	200.2240
C68	4 PF N033 LIEG.ABGL.0		CT 025.6990	200.2240
C69	27PF 2% NP0/IB 3ROHR		CC 006.1244	200.2240

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	02	0373	FILTER BER,1=4	200.2240 SA	02

Kennzeichen	Benennung / Beschreibung		Sachnummer	enthalten in
C70	4 PF N033 LIEG,ABGL,D		CT 025.6990	200.2240
C71	22PF 2% NP0/1B 3RDHR		CC 006.1238	200.2240
C72	16 PF N470 LIEG,ABGL,D/U		CT 025.6983	200.2240
C73	15 PF 2,5% NP0/1B 3RDHR		CC 006.1215	200.2240
C74	4 PF N033 LIEG,ABGL,D		CT 025.6990	200.2240
GL1 BIS GL4	1N914 SI 75V 75MIA		AD 012.0698	200.2240
L1	SPULE	I	200.2270	200.2240
L2	SPULE	I	200.2292	200.2240
L3	SPULE	I	200.2311	200.2240
L4	SPULE	I	200.2311	200.2240
L5	SPULE	I	200.2292	200.2240
L6	SPULE	I	200.2270	200.2240
L11	SPULE	I	200.2334	200.2240
L12	SPULE	I	200.2357	200.2240
L13	SPULE	I	200.2370	200.2240
L14	SPULE	I	200.2370	200.2240
L15	SPULE	I	200.2357	200.2240
L16	SPULE	I	200.2334	200.2240
L21	SPULE	I	200.2392	200.2240
L22	SPULE	I	200.2411	200.2240
L23	SPULE	I	200.2434	200.2240
L24	SPULE	I	200.2434	200.2240
L25	SPULE	I	200.2411	200.2240
L26	SPULE	I	200.2392	200.2240
L31	SPULE	I	200.2457	200.2240
L32	SPULE	I	200.2470	200.2240
L33	SPULE	I	200.2492	200.2240
L34	SPULE	I	200.2492	200.2240
L35	SPULE	I	200.2470	200.2240
L36	SPULE	I	200.2457	200.2240
RS1 BIS RS8	RELAIS	I	200.6017	200.2240
		ENDE		



Diese Zeichnung ist unser Eigentum. Vervielfältigung, widerrechtliche Verwertung, Mitteilung an andere ist strafbar und schadenersatzpflichtig.

Vervielfält.-Pause Nr.

Arbeitspause Nr.

1 CDE	Datum	Name	Änd. zust.	Änd.-Mitteilg. Nr.	Datum	Name
gezeichn.	23. 7. 70	Lt	A	17136	26.11.71	Re
bearbeitet		lbg.	B	17217	3.72	RB
geprüft			C	17497	25.10.72	Gn
normgepr.						

Zeichn. Nr. 200.2240 S | 200.1009 V | 200.1367

best. aus 1 Blatt

Blatt Nr.

Stromlauf zu:

Filter Ber. 1-4

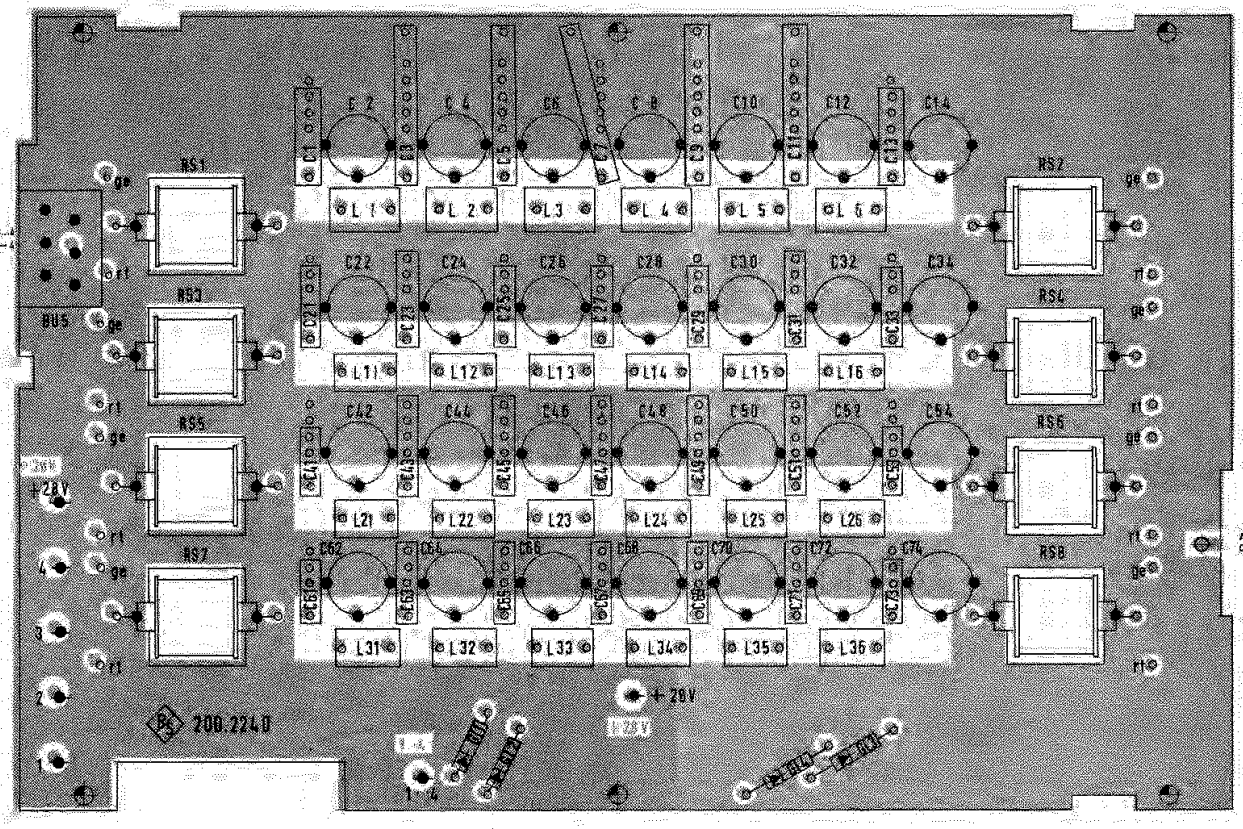
Z

6313.

ROHDE & SCHWARZ, MÜNCHEN

Darstellung Bauteilseite
Leitungsführung Bauteilseite

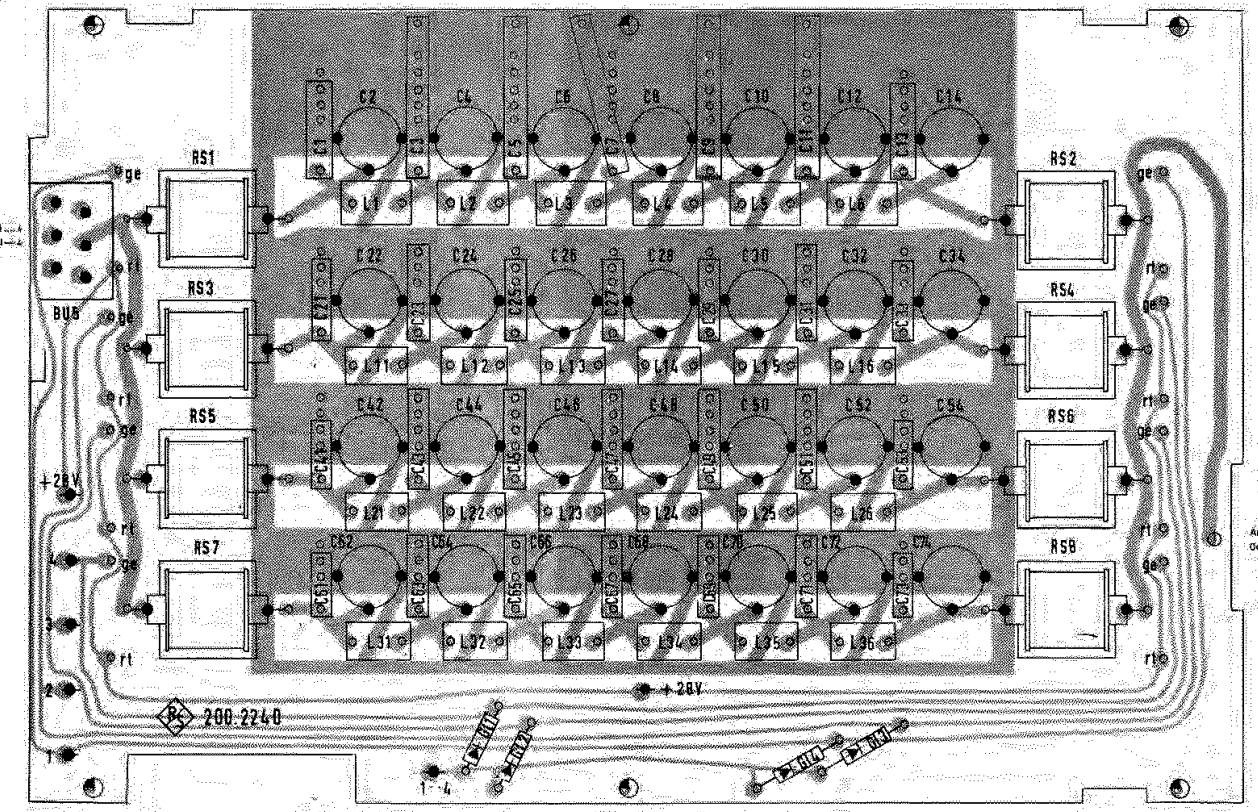
Components side with tracks



Blatt Nr. 2

ROHDE & SCHWARZ MÜNCHEN			Hilfsmittel, Werkstoff				Unterlagen-Nummer	200.2240
TGDD	Datum	Name	Änd. Kzch.	Änd. Genehmig.	Datum	Zeichen	Maßstab	200.1009 V / 200.1367
gezeichnet	1.10.70	Grb	A		25.1.71	Grb		
nachgeprüft			B	17136	12.71	Klr.		
geprüft			C	17217	25.2.72	Gn	Filter Bereich 1-4	Z
genehmigt			D	17497	3.10.72	Gn		

Darstellung Bauteilseite, Leitungsführung Leiterseite
Components side with tracks on rear



Blatt Nr. 3

ROHDE & SCHWARZ MÜNCHEN			Fertigung/Werkstatt				Unterlagennummer	200.2240	
							Muster	200.1009 V	200.1367
TGME	Datum	Name			Datum	Name			
gezeichnet	6.10.71	Ga	C	17217	25.2.72	Gn			
bearbeitet			D	17497	3.10.72	Gn			
geprüft									
normgeprüft							Filter Bereich 1-4		Z

ROHDE & SCHWARZ MÜNCHEN	Äz	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	09	0374	OSZILLATOR	200.2511 SA	01

09 0374 OSZILLATOR 200.2511 01

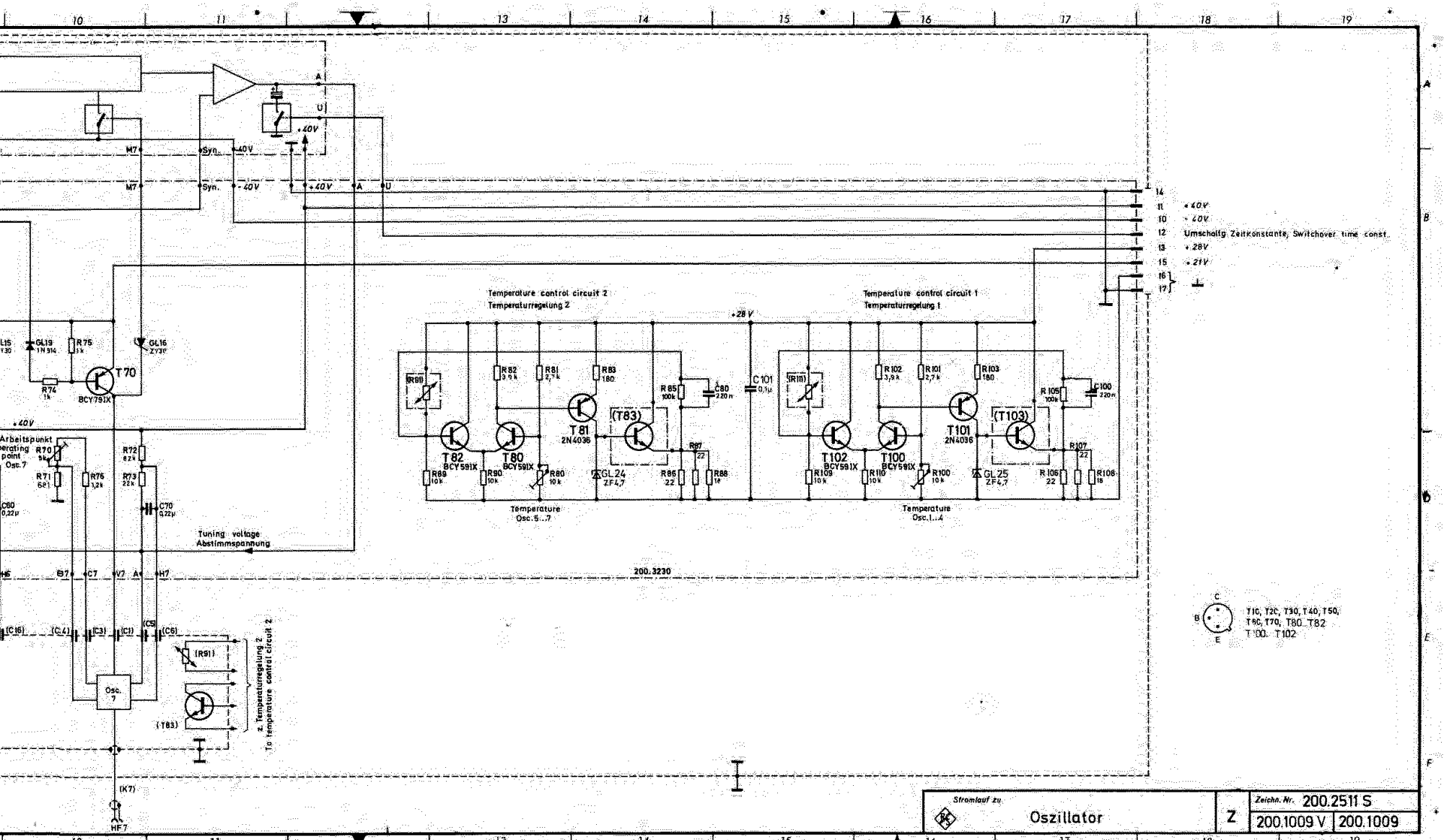
Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
A	OSZILLATOR Z STROMLAUF 200.2511S	200.2511	200.2511
C40	CK 68CNF+-20%100V QUADER	CK 006.5085	200.3230
C50	CK 470NF+-20%100VQUADER	CK 006.5079	200.3230
C60	CK 220NF+-20%100V QUADER	CK 006.5056	200.3230
C70	CK 220NF+-20%100V QUADER	CK 006.5056	200.3230
C80	CK 220NF+-20%100V QUADER	CK 006.5056	200.3230
C100	CK 220NF+-20%100V QUADER	CK 006.5056	200.3230
C101	CK 100NF+-20%100V QUADER	CK 006.5033	200.3230
GL1	AE ZY30 30V 5% 1,3W Z-DI	012.5202	200.3230
GL2	AD 1N914 SI 75V 75MIA	AD 012.0698	200.3230
GL3	AE ZY30 30V 5% 1,3W Z-DI	012.5202	200.3230
GL4	AD 1N914 SI 75V 75MIA	AD 012.0698	200.3230
GL5	AE ZY30 30V 5% 1,3W Z-DI	012.5202	200.3230
GL6	AD 1N914 SI 75V 75MIA	AD 012.0698	200.3230
GL7	AE ZY30 30V 5% 1,3W Z-DI	012.5202	200.3230
GL8	AD 1N914 SI 75V 75MIA	AD 012.0698	200.3230
GL14	AE ZY30 30V 5% 1,3W Z-DI	012.5202	200.3230
GL15	AE ZY30 30V 5% 1,3W Z-DI	012.5202	200.3230
GL16	AE ZY30 30V 5% 1,3W Z-DI	012.5202	200.3230
GL17	AD 1N914 SI 75V 75MIA	AD 012.0698	200.3230
GL18	AD 1N914 SI 75V 75MIA	AD 012.0698	200.3230
GL19	AD 1N914 SI 75V 75MIA	AD 012.0698	200.3230
GL20	AD AAZ15GE75V140MIA	AD 012.0381	200.3230
GL21	AD AAZ15GE75V140MIA	AD 012.0381	200.3230
GL22	AD AAZ15GE75V140MIA	AD 012.0381	200.3230
GL23	AD AAZ15GE75V140MIA	AD 012.0381	200.3230
GL24	AE ZPD4,Z Z-DIODE 5%	AE 012.2432	200.3230
GL25	AE ZPD4,Z Z-DIODE 5%	AE 012.2432	200.3230
R10	RS 0,5W20KOHM+-20%KURVE1	RS 069.8075	200.3230
R11	RL 0,15W 10,0KOHM+-1%TK50	RL 067.4772	200.3230
R12	RF 0,5 W 1 KOHM +-5%	RF 007.1377	200.3230
R13	RF 0,25 W 1 KOHM+-5%	RF 007.0258	200.3230
R20	RS 0,5W20KOHM+-20%KURVE1	RS 069.8075	200.3230
R21	RL 0,15W 10,0KOHM+-1%TK50	RL 067.4772	200.3230
R22	RF 0,5 W 1 KOHM +-5%	RF 007.1377	200.3230
R23	RF 0,25 W 1 KOHM+-5%	RF 007.0258	200.3230
R30	RS 0,5W20KOHM+-20%KURVE1	RS 069.8075	200.3230
R31	RL 0,15W 10,0KOHM+-1%TK50	RL 067.4772	200.3230
R32	RF 0,5 W 1 KOHM +-5%	RF 007.1377	200.3230
R33	RF 0,25 W 1 KOHM+-5%	RF 007.0258	200.3230
R40	RS 0,5W 50KOHM+-20%KURVE1	RS 069.0451	200.3230
R41	RL 0,15W 5,62KOHM+-1%TK50	RL 067.4714	200.3230
R42	RF 0,5 W 1 KOHM +-5%	RF 007.1377	200.3230
R43	RF 0,25 W 1 KOHM+-5%	RF 007.0258	200.3230
R50	RS 0,5W 5KOHM+-20%KURVE1	RS 069.8052	200.3230
R51	RL 0,15W 221 OHM+-1%TK50	RL 067.4372	200.3230
R52	RL 0,15W 82,5KOHM+-1%TK50	RL 067.4995	200.3230
R53	RL 0,15W 8,25KOHM+-1%TK50	RL 067.4750	200.3230
R54	RF 0,5 W 1 KOHM +-5%	RF 007.1377	200.3230
R55	RF 0,25 W 1 KOHM+-5%	RF 007.0258	200.3230
R56	RL 0,15W 221 OHM+-1%TK50	RL 067.4372	200.3230
R60	RS 0,5W 5KOHM+-20%KURVE1	RS 069.8052	200.3230

ROHDE & SCHWARZ
MÜNCHEN

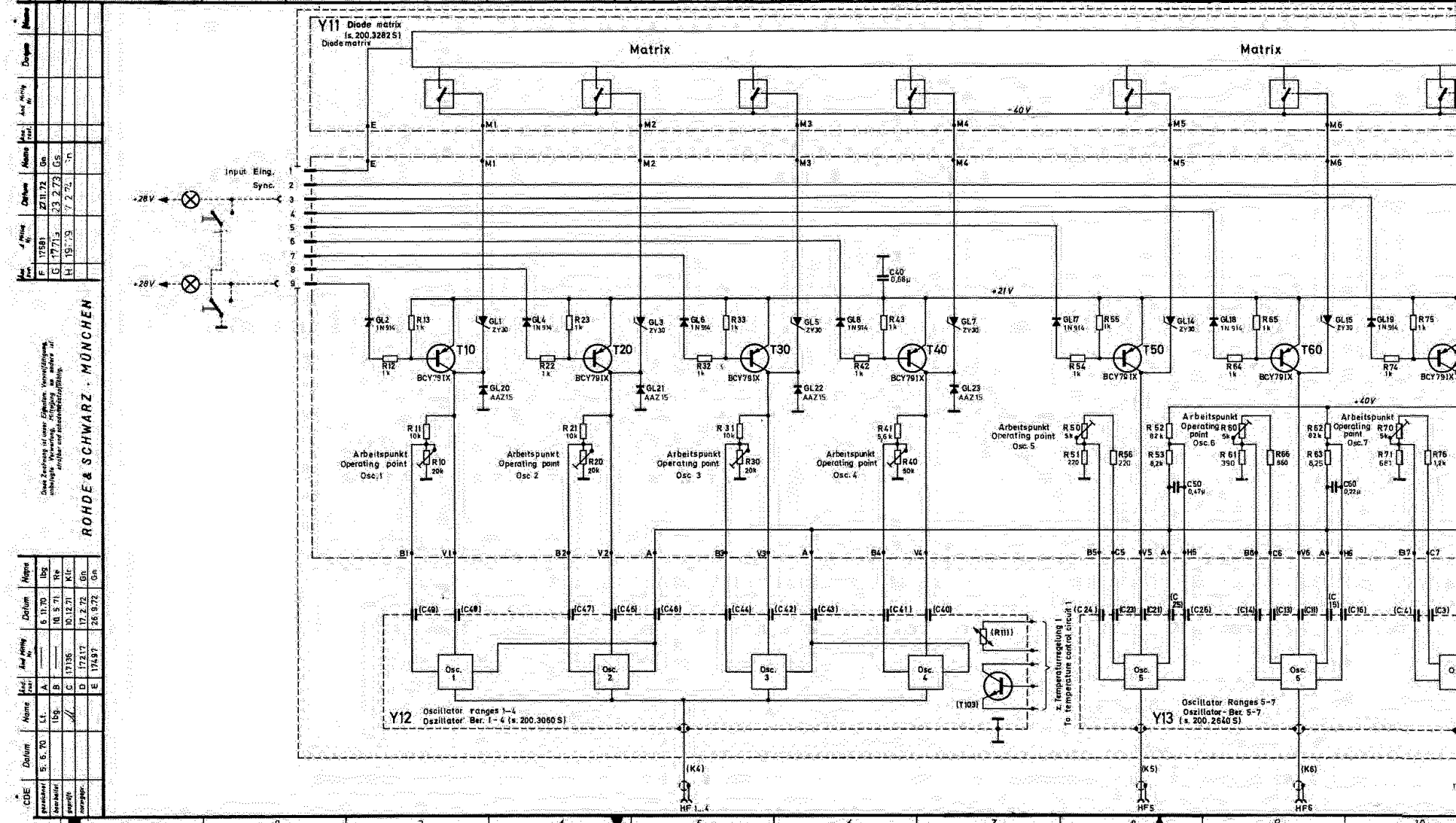
ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
09	0774	OSZILLATOR	200. 2511 SA	02

~~09 0774 OSZILLATOR 200.2511 02~~

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
R61	RL 0,25W 392 OHM+-1%TK50	RL 082.2183	200.3230
R62	RL 0,15W 82,5KOHM+-1%TK50	RL 067.4995	200.3230
R63	RL 0,25W 8,25KOHM+-1%TK50	RL 083.1239	200.3230
R64	RF 0,5 W 1 KOHM +-5%	RF 007.1377	200.3230
R65	RF 0,25 W 1 KOHM+-5%	RF 007.0258	200.3230
R66	RL 0,15W 562 OHM+-1%TK50	RL 067.4472	200.3230
R70	RS 0,5W 5KOHM+-20%KURVE1	RS 069.8052	200.3230
R71	RL 0,25W 681 OHM+-1%TK50	RL 083.0490	200.3230
R72	RL 0,15W 82,5KOHM+-1%TK50	RL 067.4995	200.3230
R73	RL 0,15W 22,1KOHM+-1%TK50	RL 067.4850	200.3230
R74	RF 0,5 W 1 KOHM +-5%	RF 007.1377	200.3230
R75	RF 0,25 W 1 KOHM+-5%	RF 007.0258	200.3230
R76	RL 0,15W 1,21KOHM+-1%TK50	RL 067.4550	200.3230
R80	RS 0,5W 10KOHM KURVE1STEH	RS 030.5852	200.3230
R81	RF 0,25 W 2,7 KOHM +-5%	RF 007.0306	200.3230
R82	RF 0,25W 3,9K OHM+-5%	RF 007.0329	200.3230
R83	RF 0,25W180 OHM +-5%	RF 069.1812	200.3230
R85	RF 0,25 W 100 KOHM +-5%	RF 007.0493	200.3230
R86	RF 0,5 W 22 OHM+-5%	RF 007.1177	200.3230
R87	RF 0,5 W 22 OHM+-5%	RF 007.1177	200.3230
R88	RF 0,5 W 18 OHM+-5%	RF 007.1160	200.3230
R89	RF 0,25 W 10 KOHM +-5%	RF 007.0370	200.3230
R90	RF 0,25 W 10 KOHM +-5%	RF 007.0370	200.3230
R100	RS 0,5W 10KOHM KURVE1STEH	RS 030.5852	200.3230
R101	RF 0,25 W 2,7 KOHM +-5%	RF 007.0306	200.3230
R102	RF 0,25W 3,9K OHM+-5%	RF 007.0329	200.3230
R103	RF 0,25W180 OHM +-5%	RF 069.1812	200.3230
R105	RF 0,25 W 100 KOHM +-5%	RF 007.0493	200.3230
R106	RF 0,5 W 22 OHM+-5%	RF 007.1177	200.3230
R107	RF 0,5 W 22 OHM+-5%	RF 007.1177	200.3230
R108	RF 0,5 W 18 OHM+-5%	RF 007.1160	200.3230
R109	RF 0,25 W 10 KOHM +-5%	RF 007.0370	200.3230
R110	RF 0,25 W 10 KOHM +-5%	RF 007.0370	200.3230
T10	AK BCY79IX PNP 45V200MIA	AK 010.3777	200.3230
T20	AK BCY79IX PNP 45V200MIA	AK 010.3777	200.3230
T30	AK BCY79IX PNP 45V200MIA	AK 010.3777	200.3230
T40	AK BCY79IX PNP 45V200MIA	AK 010.3777	200.3230
T50	AK BCY79IX PNP 45V200MIA	AK 010.3777	200.3230
T60	AK BCY79IX PNP 45V200MIA	AK 010.3777	200.3230
T70	AK BCY79IX PNP 45V200MIA	AK 010.3777	200.3230
T80	AK BCY59CI NPN 45V200MIA	AK 010.5163	200.3230
T81	AK 2N4036SIPNP90V1A	AK 010.2164	200.3230
T82	AK BCY59CI NPN 45V200MIA	AK 010.5163	200.3230
T100	AK BCY59CI NPN 45V200MIA	AK 010.5163	200.3230
T101	AK 2N4036SIPNP90V1A	AK 010.2164	200.3230
T102	AK BCY59CI NPN 45V200MIA	AK 010.5163	200.3230
Y11	DIODENMATRIX Z HIERZU STROML.200.3282S	200.3282	200.2511
Y12	OSZILLATOR BER.1-4 Z HIERZU STROML.200.3060S	200.3060	200.2634
Y13	OSZILLATOR BER. 5-7 Z HIERZU STROML.200.2640S	200.2640	200.2634
	ENDE		



Stromlauf zu	Oszillator	Z	Zeichn. Nr. 200.2511 S
			200.1009 V | 200.1009


Y11 Diode matrix
(s. 200.3282 S)
Diodematrix
Matrix
Matrix
-40V
+40V
+21V
+28V
+28V
Input Eing.
Sync.
E
M1
M2
M3
M4
M5
M6
C40
0,68µ
T10
T20
T30
T40
T50
T60
BCY791X
Arbeitspunkt
Operating point
Osc. 1
Arbeitspunkt
Operating point
Osc 2
Arbeitspunkt
Operating point
Osc 3
Arbeitspunkt
Operating point
Osc. 4
Arbeitspunkt
Operating point
Osc. 5
Arbeitspunkt
Operating point
Osc. 6
Arbeitspunkt
Operating point
Osc. 7
Y12 Oscillator ranges 1–4
Oszillator Ber. 1–4 (s. 200.3060 S)
Y13 Oscillator Ranges 5–7
Oszillator-Ber. 5–7
(s. 200.2640 S)
Osc. 1
Osc. 2
Osc. 3
Osc. 4
Osc. 5
Osc. 6
(R111)
(T103)
z. Temperaturregelung !
To temperature control circuit !
(K4)
(K5)
(K6)
HF 1...4
HF5
HF6
ROHDE & SCHWARZ · MÜNCHEN

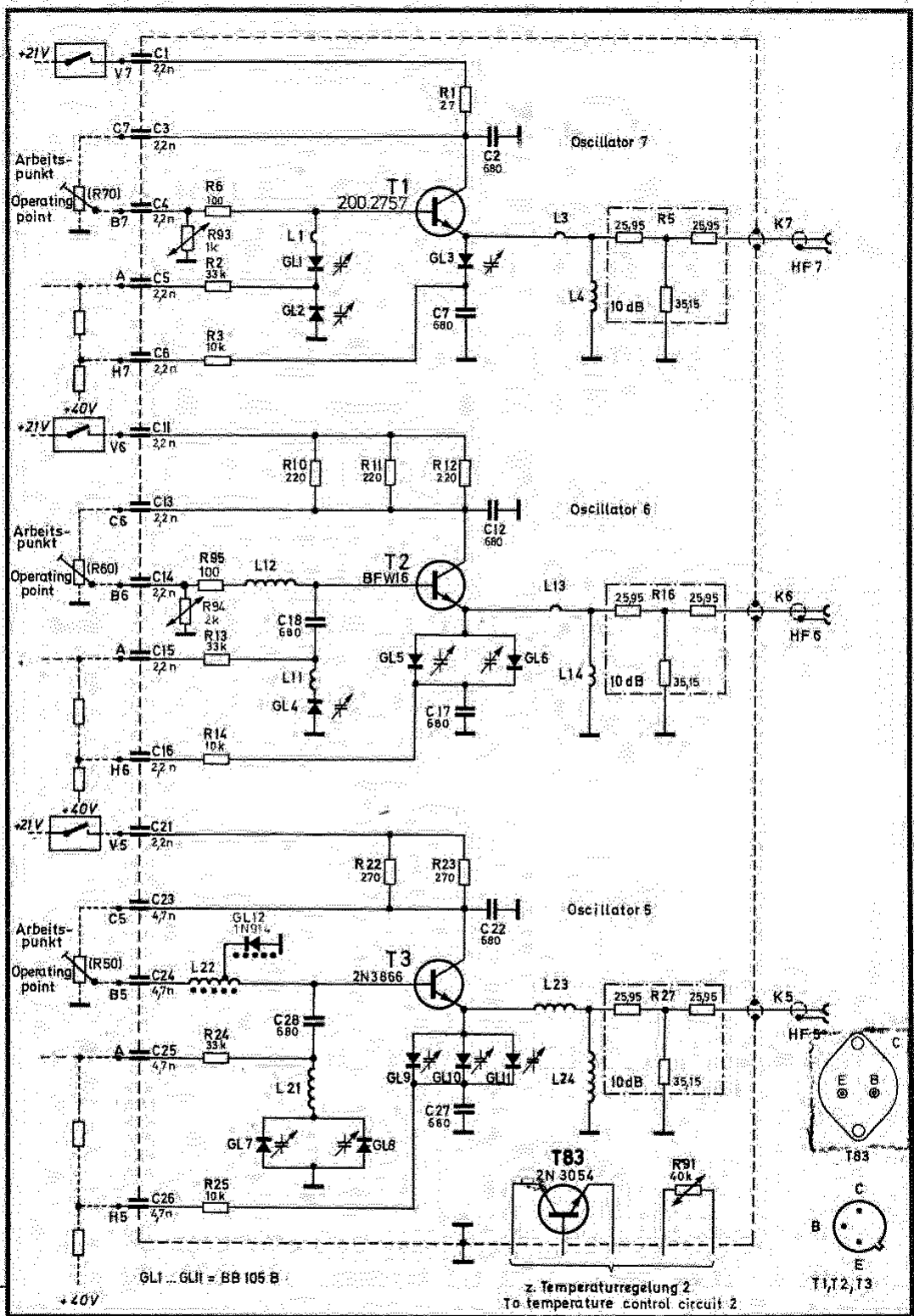
ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	06	1272	OSZILLATOR BER. 5-7	200.2640 SA	01

Kennzeichen	Benennung / Beschreibung		Sachnummer	enthalten in
A	OSZILLATOR BER. 5-7	Z	200.2640	200.2640
	STROMLAUF 200.2640S			
C1	2,2NF-20+50% HDK4000DF-KO		CB 023.0159	200.2640
C2	680 PF R4000 5 CHIP		CC 022.4850	200.2640
C3	2,2NF-20+50% HDK4000DF-KO		CB 023.0159	200.2640
BIS				
C6				
C7	680 PF R4000 5 CHIP		CC 022.4850	200.2640
C11	2,2NF-20+50% HDK4000DF-KO		CB 023.0159	200.2640
C12	680 PF R4000 5 CHIP		CC 022.4850	200.2640
C13	2,2NF-20+50% HDK4000DF-KO		CB 023.0159	200.2640
BIS				
C16				
C17	680 PF R4000 5 CHIP		CC 022.4850	200.2640
C18	680 PF R4000 5 CHIP		CC 022.4850	200.2640
C21	2,2NF-20+50% HDK4000DF-KO		CB 023.0159	200.2640
C22	680 PF R4000 5 CHIP		CC 022.4850	200.2640
C23	4,7NF-20+50% HDK4000DF-KO		CB 023.0165	200.2640
BIS				
C26				
C27	680 PF R4000 5 CHIP		CC 022.4850	200.2640
C28	680 PF R4000 5 CHIP		CC 022.4850	200.2640
GL1	BB105B SI 28V17/2PF KAP		AE 012.6167	200.2640
GL2	DIODE	Z	200.2905	200.2640
GL3	BB105B SI 28V17/2PF KAP		AE 012.6167	200.2640
GL4	DIODE	Z	200.2905	200.2640
GL5	BB105B SI 28V17/2PF KAP		AE 012.6167	200.2640
GL6	BB105B SI 28V17/2PF KAP		AE 012.6167	200.2640
GL7	DIODE	Z	200.2986	200.2640
GL8				200.2640
	ENTHALTEN IN 200.2986			
GL9	BB105B SI 28V17/2PF KAP		AE 012.6167	200.2640
GL10	BB105B SI 28V17/2PF KAP		AE 012.6167	200.2640
GL11	BB105B SI 28V17/2PF KAP		AE 012.6167	200.2640
GL12	1N914 SI 75V 75MIA		AD 012.0698	200.2640
K5	HF-KABEL	Z	200.2828	200.2640
K6	HF-KABEL	Z	200.2840	200.2640
	OZ HIERZU 200.2828			
K7	HF-KABEL	Z	200.2857	200.2640
	OZ HIERZU 200.2828			
L1	SPULE		200.2928	200.2640
L3	SPULE		200.2892	200.2640
L4	SPULE		200.2863	200.2640
L11	SPULE		200.2963	200.2640
L12	SPULE		200.5133	200.2640
L13	SPULE		200.2957	200.2640
L14	SPULE		200.2870	200.2640
L21	SPULE		200.2992	200.2640
L22	SPULE	Z	200.2934	200.2640
L23	SPULE		200.2970	200.2640
L24	SPULE		200.2886	200.2640

ROHDE & SCHWARZ
MÜNCHEN

ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
06	1272	OSZILLATOR BER. 5-7	200.2640 SA	02

Kennzeichen	Benennung / Beschreibung		Sachnummer	enthalten in
R1	1,0W 27 OHM +-5%		RF 007.2380	200.2640
R2	0,25 W 33 KOHM +-5%		RF 007.0435	200.2640
R3	0,25 W 10 KOHM +-5%		RF 007.0370	200.2640
R5	SCHICHTWIDERSTAND	Z	110.0427	200.2640
R6	0,25 W 100 OHM +-5%		RF 007.0135	200.2640
R10	1,0 W 220 OHM+-5%		RF 007.2496	200.2640
R11	1,0 W 220 OHM+-5%		RF 007.2496	200.2640
R12	1,0 W 220 OHM+-5%		RF 007.2496	200.2640
R13	0,25 W 33 KOHM +-5%		RF 007.0435	200.2640
R14	0,25 W 10 KOHM +-5%		RF 007.0370	200.2640
R16	SCHICHTWIDERSTAND	Z	110.0427	200.2640
R22	1,0 W 270 OHM+-5%		RF 007.2509	200.2640
R23	1,0 W 270 OHM+-5%		RF 007.2509	200.2640
R24	0,25 W 33 KOHM +-5%		RF 007.0435	200.2640
R25	0,25 W 10 KOHM +-5%		RF 007.0370	200.2640
R27	SCHICHTWIDERSTAND	Z	110.0427	200.2640
R91	HEISSL 40KOHM+-20% 1,65W		AW 008.0316	200.2640
R93	HEISSL 1KOHM+-10% 0,8W		AW 008.0097	200.2640
R94	HEISSL 2KOHM+-10% 0,8W		AW 008.0100	200.2640
R95	0,25 W 100 OHM +-5%		RF 007.0135	200.2640
T1	TRANSISTOR	Z	200.2757	200.2640
T2	TRANSISTOR	Z	200.2763	200.2640
T3	TRANSISTOR 2N3866 RCA	Z	200.5491	200.2640
T83	2N3054 SINPN 90V 4A		AL 010.1051	200.2640
		ENDE		



Diese Zeichnung ist unser Eigentum. Vervielfältigung, unbefugte Verwertung, Mitteilung an andere ist strafbar und schadenersatzpflichtig.

Vervielfält.-Pause Nr.

Arbeitspause Nr.

ICDE	Datum	Name	Änd. zust.	Änd.-Mitteilg. Nr.	Datum	Name
gezeichn.	2. 6. 70	Lt	E	19079	4. 2. 74	Gn
bearbeitet		Ibg.				
geprüft			C	17217	9. 3. 72	Gn
normgepr.			D	17497	22. 9. 72	Gn

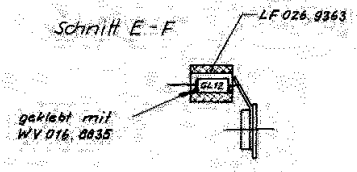
Zeichn. Nr. 200.2640 S | Bestl. aus | Blatt
200.1009 V | 200.2634 | Blatt Nr.

Benennung

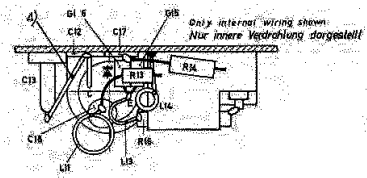
Oszillator Ber. 5~7

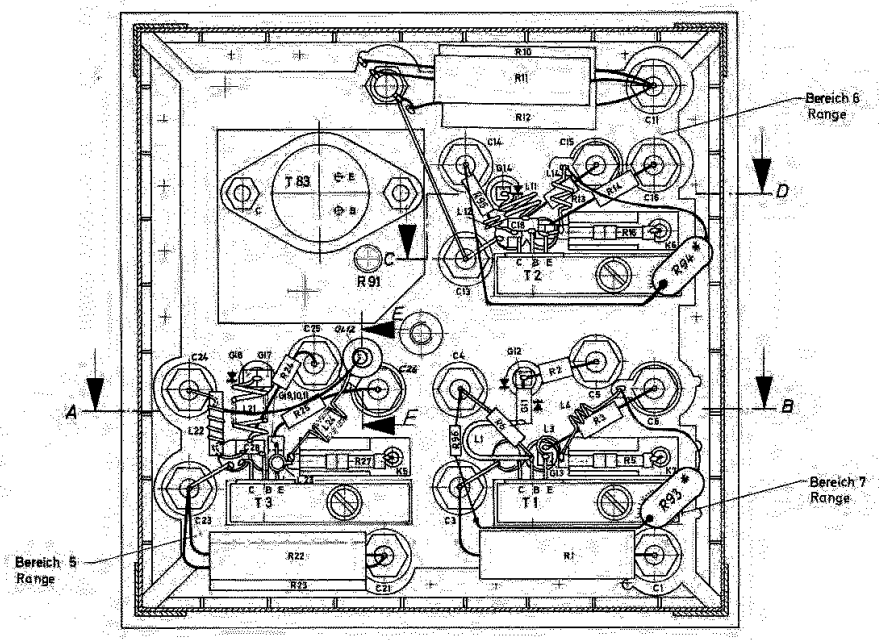
Z

Schnitt E-F

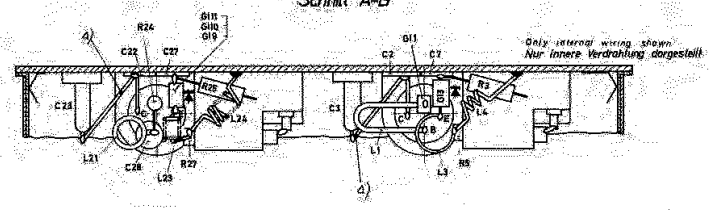


Section
Schnitt C-D





Section
Schnitt A-B



*) geklebt mit WV 002 3207

4) DD 025 0110 = 15 mm lang

Components location plan
Positionierungsplan Bl. 2

ROHDE & SCHWARZ MÜNCHEN						200.2640	
						200.1009 V	200.2634
1 CDE	Datum						
	19.10.70	Pa	F	17719	3.73	Ro	
		Ka	G	19322	5.9.74	Gn	
			E	17497	4.82	KS	

Oszillator
Bereich 5 – 7

Z

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	10	0374	OSZILLATOR BER.1-4	200.3060 SA	01

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
A	OSZILLATOR BER.1-4 Z STROMLAUF 200.3060S	200.3060	200.3060
C1	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C2	CC 1 NF+50-20%5HDK4000	CC 006.0490	200.3160
C3	CC 33PF 2% N750/1B 3RDHR	CC 006.1538	200.3160
C4	CC 27PF 2% NPO/1B 3ROHR	CC 006.1244	200.3160
C5	CC 100PF+-20% HDK700 RD5	CC 006.0431	200.3160
C6	CC 56PF 2% N750/1B 3ROHR	CC 006.1567	200.3160
C7	CC 1 NF+50-20%5HDK400C	CC 006.0490	200.3160
C8	CC 33PF 2% NPO/1B 3ROHR	CC 006.1250	200.3160
C9	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C10	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C11	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C12	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C13	CC 33PF 2% N750/1B 3ROHR	CC 006.1538	200.3160
C14	CC 27PF 2% NPO/1B 3ROHR	CC 006.1244	200.3160
C15	CC 1 NF+50-20%5HDK4000	CC 006.0490	200.3160
C16	CC 100PF+-20% HDK700 RD5	CC 006.0431	200.3160
C17	CC 1 NF+50-20%5HDK4000	CC 006.0490	200.3160
C18	CC 47PF 2% NPO/1B 3ROHR	CC 006.1273	200.3160
C19	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C20	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C21	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C22	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C23	CC 56 PF 2% NPO/1B 3 ROHR	CC 006.1280	200.3160
C24	CC 39PF 2% NPO/1B 3ROHR	CC 006.1267	200.3160
C25	CC 68PF+-2%NPO/1B 3 ROHR	CC 006.1296	200.3160
C26	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C27	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C28	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C31	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C32	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C33	CC 39PF 2% N750/1B 3ROHR	CC 006.1544	200.3160
C34	CC 39PF 2% NPO/1B 3ROHR	CC 006.1267	200.3160
C35	CC 68PF+-2%NPO/1B 3 ROHR	CC 006.1296	200.3160
C36	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C37	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C38	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3160
C40 BIS C49	CB 4,7NF-20+50% HDK4000DF	CB 023.0165	200.3060
GL1 BIS GL14	AE BB105B 28V17/2PF KAP	012.6167	200.3160
K4	HF-KABEL Z	200.3130	200.3060
L1	SPULE Z	200.6569	200.3160
L2	SPULE Z	200.6581	200.3160
L3	LC 10WDG. M. 2ANZAPFUNGEN	069.0300	200.3160
L4	SPULE Z	200.6598	200.3160
R1	AW HEISSL200 OHM+-10%0,8W	AW 008.0074	200.3160
R2	RF 0,25 W 120 OHM +-5%	RF 007.0141	200.3160

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	10	0374	OSZILLATOR BER.1-4	200.3060 SA	02

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
R7	RF 0,25 W 10 KOHM +-5%	RF 007.0370	200.3160
R4	RF 0,25 W 56 KOHM +-5%	RF 007.0464	200.3160
R5	RF 0,25 W 100 KOHM +-5%	RF 007.0493	200.3160
R6	RF 0,25 W 10 OHM+-5%	RF 007.0012	200.3160
R7	RF 0,25 W 2,2 KOHM +-5%	RF 007.0293	200.3160
R8	RF 0,25 W 6,8 KOHM +-5%	RF 007.0358	200.3160
R9	RF 0,25 W 8,2 KOHM +-5%	RF 007.0364	200.3160
R10	RF 0,25 W 1 KOHM+-5%	RF 007.0258	200.3160
R11	RF 0,25 W 560 OHM +-5%	RF 007.0229	200.3160
R12	RF 0,25 W 100 OHM +-5%	RF 007.0135	200.3160
R13	RF 0,25 W 5,6 KOHM +-5%	RF 007.0341	200.3160
R14	RF 0,25 W 1 KOHM+-5%	RF 007.0258	200.3160
R15	RF 0,25 W 470 OHM +-5%	RF 007.0212	200.3160
R16	RF 0,25 W 100 OHM +-5%	RF 007.0135	200.3160
R21	AW HEISSL200 OHM+-10%0,8W	AW 008.0074	200.3160
R22	RF 0,25 W 220 OHM +-5%	RF 007.0170	200.3160
R23	RF 0,25 W 47 KOHM +-5%	RF 007.0458	200.3160
R24	RF 0,25 W 56 KOHM +-5%	RF 007.0464	200.3160
R25	RF 0,25 W 100 KOHM +-5%	RF 007.0493	200.3160
R26	RF 0,25 W 100 OHM +-5%	RF 007.0135	200.3160
R27	RF 0,25 W 1,8 KOHM +-5%	RF 007.0287	200.3160
R28	RF 0,25W 10KOHM +-5%	RF 069.1035	200.3160
R29	RF 0,25 W 8,2 KOHM +-5%	RF 007.0364	200.3160
R30	RF 0,25 W 1 KOHM+-5%	RF 007.0258	200.3160
R31	RF 0,25 W 560 OHM +-5%	RF 007.0229	200.3160
R32	RF 0,25 W 100 OHM +-5%	RF 007.0135	200.3160
R33	RF 0,25 W 8,2 KOHM +-5%	RF 007.0364	200.3160
R34	RF 0,25 W 1 KOHM+-5%	RF 007.0258	200.3160
R35	RF 0,25 W 560 OHM +-5%	RF 007.0229	200.3160
R36	RF 0,25 W 100 OHM +-5%	RF 007.0135	200.3160
R41	AW HEISSL100 OHM+-10%0,8W	AW 008.0068	200.3160
R43	RF 0,25 W 22 KOHM +-5%	RF 007.0412	200.3160
R44	RF 0,25 W 56 KOHM +-5%	RF 007.0464	200.3160
R45	RF 0,25 W 100 KOHM +-5%	RF 007.0493	200.3160
R46	RF 0,25 W 2,2 KOHM +-5%	RF 007.0293	200.3160
R47	RF 0,25 W 33 KOHM +-5%	RF 007.0435	200.3160
R48	RF 0,25 W 22 KOHM +-5%	RF 007.0412	200.3160
R49	RF 0,25 W 680 OHM +-5%	RF 007.0235	200.3160
R51	AW HEISSL100 OHM+-10%0,8W	AW 008.0068	200.3160
R53	RF 0,25 W 12 KOHM +-5%	RF 007.0387	200.3160
R54	RF 0,25 W 56 KOHM +-5%	RF 007.0464	200.3160
R55	RF 0,25 W 100 KOHM +-5%	RF 007.0493	200.3160
R56	RF 0,25 W 2,2 KOHM +-5%	RF 007.0293	200.3160
R57	RF 0,25 W 33 KOHM +-5%	RF 007.0435	200.3160
R58	RF 0,25 W 22 KOHM +-5%	RF 007.0412	200.3160
R59	RF 0,25 W 680 OHM +-5%	RF 007.0235	200.3160
R111	AW HEISSL40KOHM+-20%1,65W	AW 008.0316	200.3060
T1	AK BFY90 NUR VALVO	010.6799	200.3160
T2	AK 2N918 NUR SESCOSEM	200.3260	200.3160
	HERSTELLER SESCOSEM		
T3	AK BFY90 NUR VALVO	010.6799	200.3160
T4	AK BFY90 NUR VALVO	010.6799	200.3160
T5	AK BFY90 NUR VALVO	010.6799	200.3160
T6	AK BFY90 NUR VALVO	010.6799	200.3160
T7	AK 2N918 NUR SESCOSEM	200.3260	200.3160
	HERSTELLER SESCOSEM		

ROHDE & SCHWARZ MÜNCHEN	AZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	10	0374	OSZILLATOR BER.1-4	200.3060 SA	03

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
T8	AK 2N708RTSIPNPN40V200MIA	AK 010.4473	200.3160
T9	AK 2N918 NUR SESCOSEM	200.3260	200.3160
	HERSTELLER SESCOSEM		
T10	AK 2N708RTSIPNPN40V200MIA	AK 010.4473	200.3160
T103	AL 2N3054 SINPN 90V 4A	AL 010.1051	200.3060
	ENDE		

1CDE	Datum	Name	Änd.-zust.	Änd. Mittlg. Nr.	Datum	Name
gezeichnet	16.5.70	Fl.	A	——	6.11.70	Ibg
bearbeitet		Ibg.	B	17 136	1.72	Klr
geprüft			C	17 217	3.72	Gn
norm.gep.			D	17497	10.72	Gn
			E	17581	12.72	Gn

ROHDE & SCHWARZ · MÜNCHEN

Änd.-zust.	Änd. Mittlg. Nr.	Datum	Name	Änd.-zust.	Änd. Mittlg. Nr.	Datum	Name
F	19079	1.2.74	Gn				

Stromlauf zu

Oszillator Ber. 1–4

Z

Zeichn. Nr. 200.1009V

200.3060S

200.2634

Oscillator 4

+21 V — C40 — V4 — 4,7n

C3 33 — R6 10 — L1 — C4 27 — R3 10k — C2 1n — T1 BFY90 — R7 2,2k — R4 56k — R1 200 — R2 120 — C1 4,7n — GL1 — GL2 — R5 100k — R8 6,8k — C5 100

R9 8,2k — R11 560 — T2 2N 918 — C6 56 — R10 1k — R12 100 — C7 1n

R13 5,6k — R15 470 — T3 BFY 90 — C9 4,7n — R14 1k — R16 100 — C8 33

C10 4,7n

(R40) — Arbeitspunkt Operating point — C41 — B4 — 4,7n

Oscillator 3

+21 V — C42 — V3 — 4,7n

R26 100 — C13 33 — L2 — C14 27 — R23 47k — C12 4,7n — T4 BFY90 — R27 1,8k — R24 56k — R21 200 — R22 220 — C11 47n — GL3 — GL4 — R25 100k — R28 10k — C15 1n

R29 8,2k — R31 560 — T5 BFY90 — C16 100 — R30 1k — R32 100 — C17 1n

R33 8,2k — R35 560 — T6 BFY90 — C19 4,7n — R34 1k — R36 100 — C18 47

C20 4,7n

(R 30) — Arbeitspunkt Operating point — C43 — A — 4,7n — C44 — B3 — 4,7n

Oscillator 2

+21 V — C45 — V2 — 4,7n

C23 56 — L3 — C24 33 — C21 4,7n — R43 22k — C22 4,7n — T7 2N 918 — R46 2,2k — R44 56k — R41 100 — GL5 — GL6 — GL7 — GL8 — R45 100k — C25 68 — R47 33k — C26 4,7n

R48 22k — R49 680 — C27 4,7n — T8 2N 708 rt

C28 4,7n

(R 20) — Arbeitspunkt Operating point — C46 — A — 4,7n — C47 — B2 — 4,7n

Oscillator 1

+21 V — C48 — V1 — 4,7n

C33 39 — L4 — C34 39 — C31 4,7n — R53 12k — C32 4,7n — T9 2N 918 — R56 2,2k — R54 56k — R51 100 — GL9 — GL10 — GL11 — GL12 — GL13 — GL14 — R55 100k — C35 68 — R57 33k — C36 4,7n

R58 22k — R59 680 — C37 4,7n — T10 2N 708 rt

C38 4,7n

K4 — HF1...4 — T103

(R 10) — Arbeitspunkt Operating point — C49 — B1 — 4,7n

200.3160

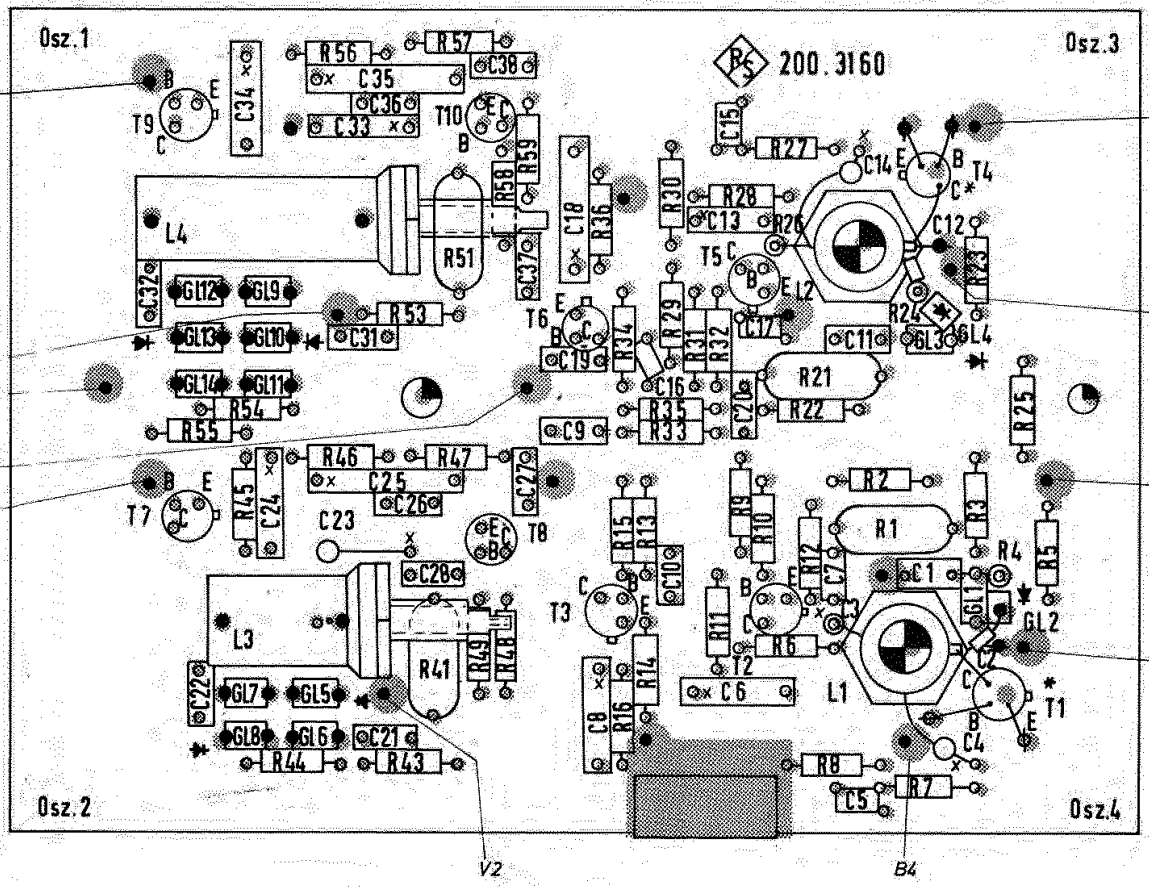
T103 2N 3054 — R111 40k — z. Temperaturregelung I /To temperature control circuit I

GL1...GL14 = BB 105 B

T1...T7,T9

T8, T10

Darstellung Bauteilseite *Components side with tracks*
Leitungsführung Bauteilseite



SO-Projektion, Methode E

Vervielfält.-Pause Nr.

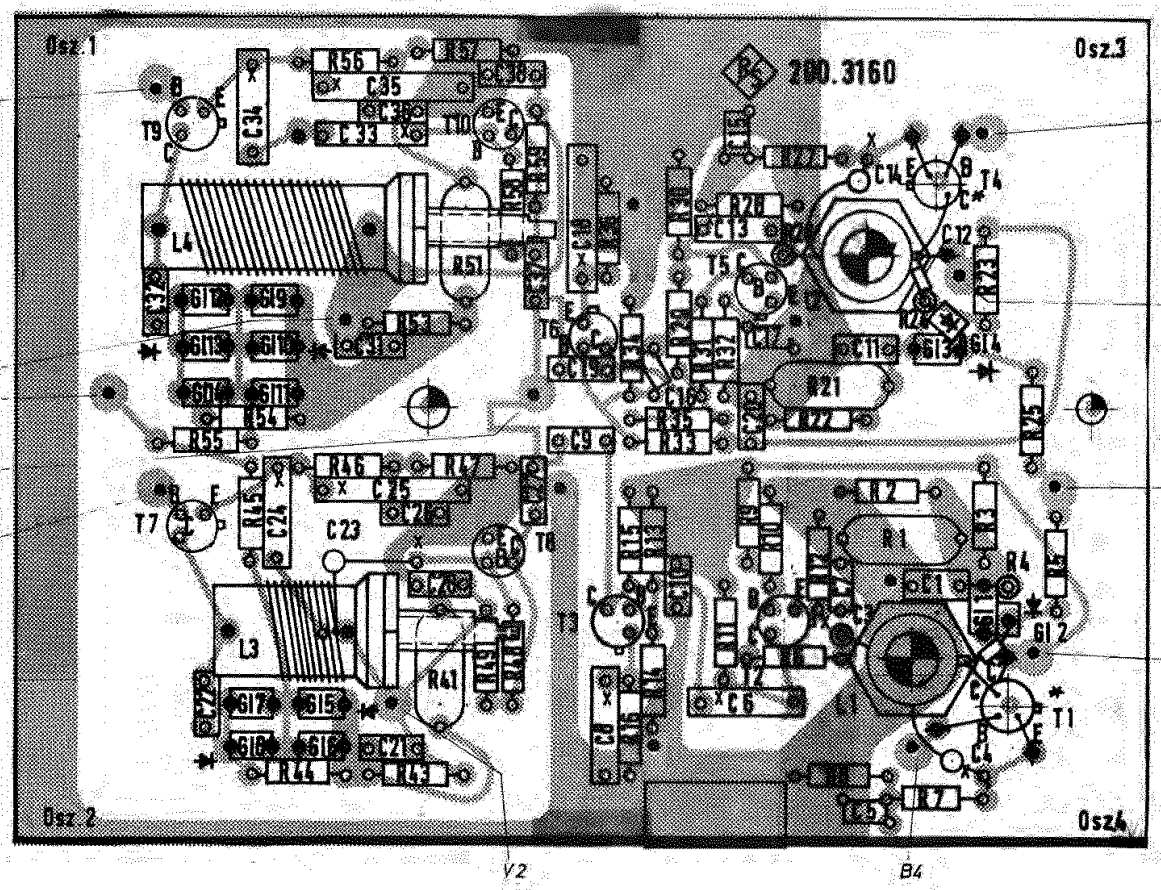
Arbeitspause Nr.

Blatt Nr. 2

ROHDE & SCHWARZ MÜNCHEN			Halbzeug, Werkstoff				Untolerierte Maße	Zeichn.-Nr. 200.3160	
							Maßstab 2:1	200.1009 V	200.3060
1CDD	Datum	Name	Änd. zust.	Änd.-Mitlfg. Nr.	Datum	Name		Ersatz f. Zeichn.	
gezeichnet	8.2.71	Grb	A	17136	1.72	Klr			
bearbeitet			B	17217	25.2.72	Gn			
geprüft			C	17497	1.72	PS		Platte	Z
normgepr.			E	19322	4.9.74	Gn			

Darstellung Bauteilseite, Leitungsführung Leiterseite

Components side with tracks on rear



Blatt Nr. 3

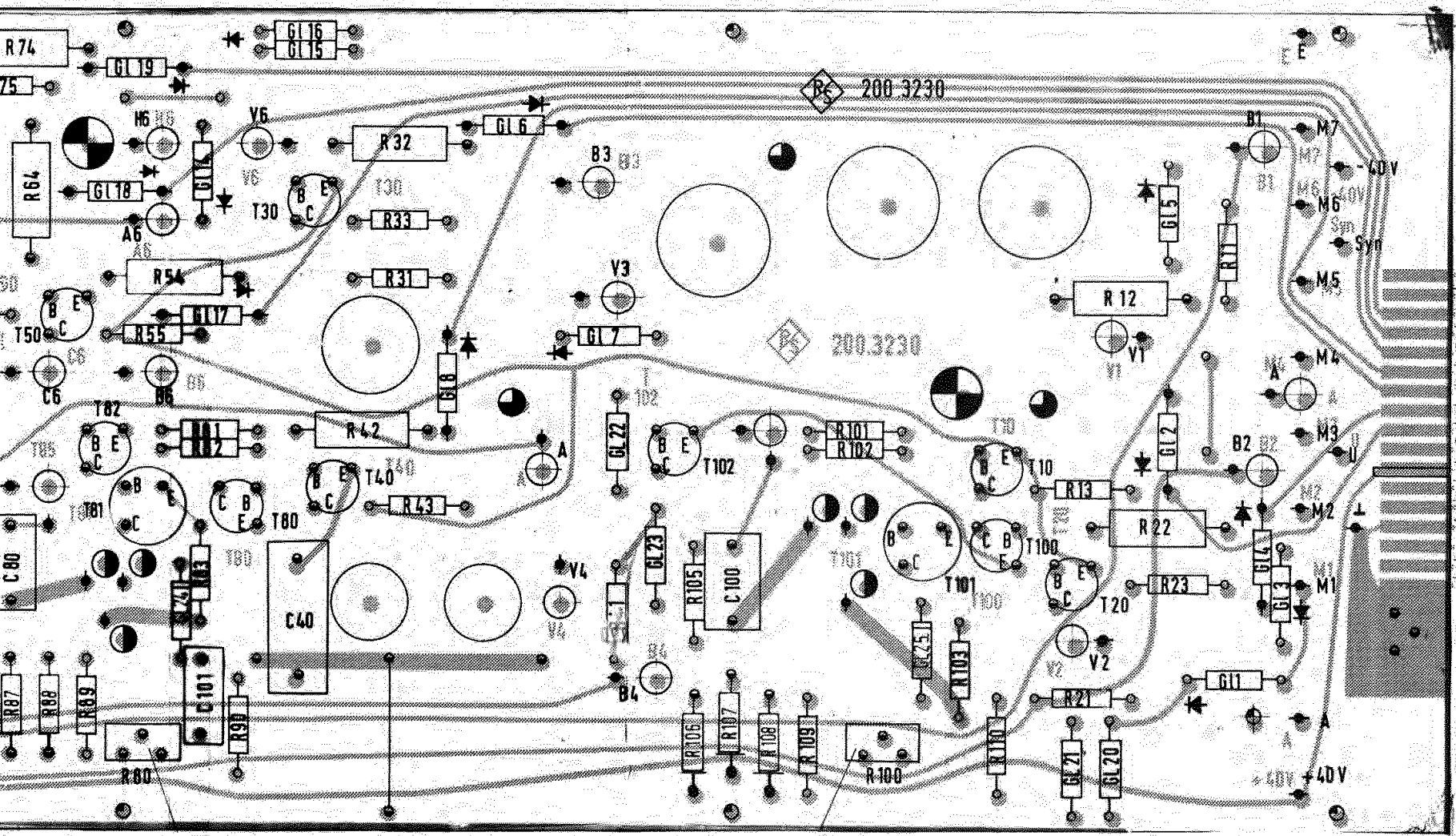
ROHDE & SCHWARZ MÜNCHEN			Halbzeug, Werkstoff				Untolerierte Maße	Zeichn. Nr. 200.3160
1GME	Datum	Name	Änd. zust.	Änd. Mitlg. Nr.	Datum	Name	Maßstab 2:1	200.1009 V / 200.3060
gezeichnet	5.10.71	Ga	B	17217	25.2.72	Gn		Ersatz f. Zeichn.
bearbeitet			C	17497	9.72	Rh	Platte	Z
geprüft			E	19322	4.9.74	Gn		
normgepr.								

ISO-Projektion, Teilheft E

Verteilfält.-Pause Nr.

Arbeitspause Nr.

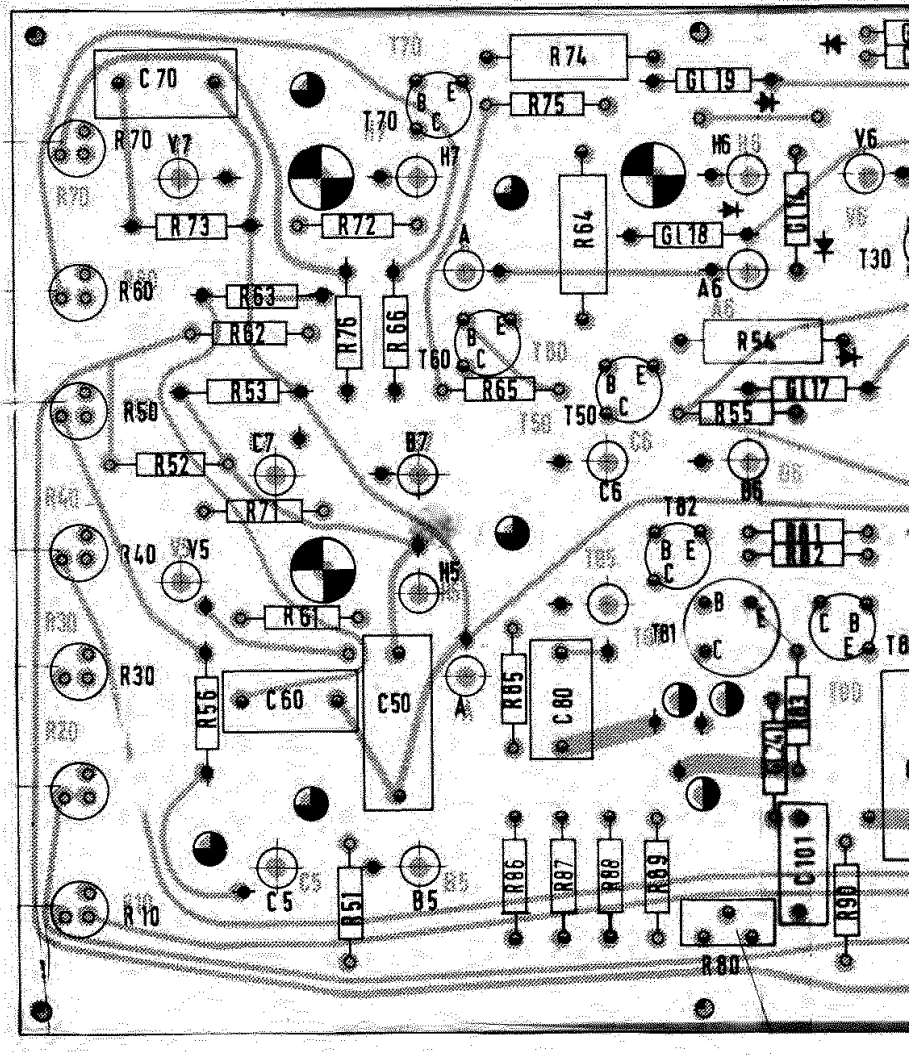
0,11.67.



Blatt Nr. 2

ROHDE & SCHWARZ MÜNCHEN			Halbzeug, Werkstoff				Untolerierte Maße	Zeichn. Nr. 200.3230	
							Maßstab 2:1	200.1009 V	200.2634
1 GME	Datum	Name	And. zust.	And. - Mitlg. Nr.	Datum	Name		Ersatz f. Zeichn.	
gezeichnet	6.10.71	Ga	E	17719	26.2.73	Gs			
bearbeitet			G	19079	7.2.74	Gn			
geprüft			C	17497	26.9.72	Gn		Platte	Z
normgepr.			D	17581	24.11.72	Gn			

Einstellung der Arbeitspunkte
Adjustment of the operating points



Temperature
Osc. 5 ... 7

Darstellung Bauteilseite, Leitungsführung Bauteilseite

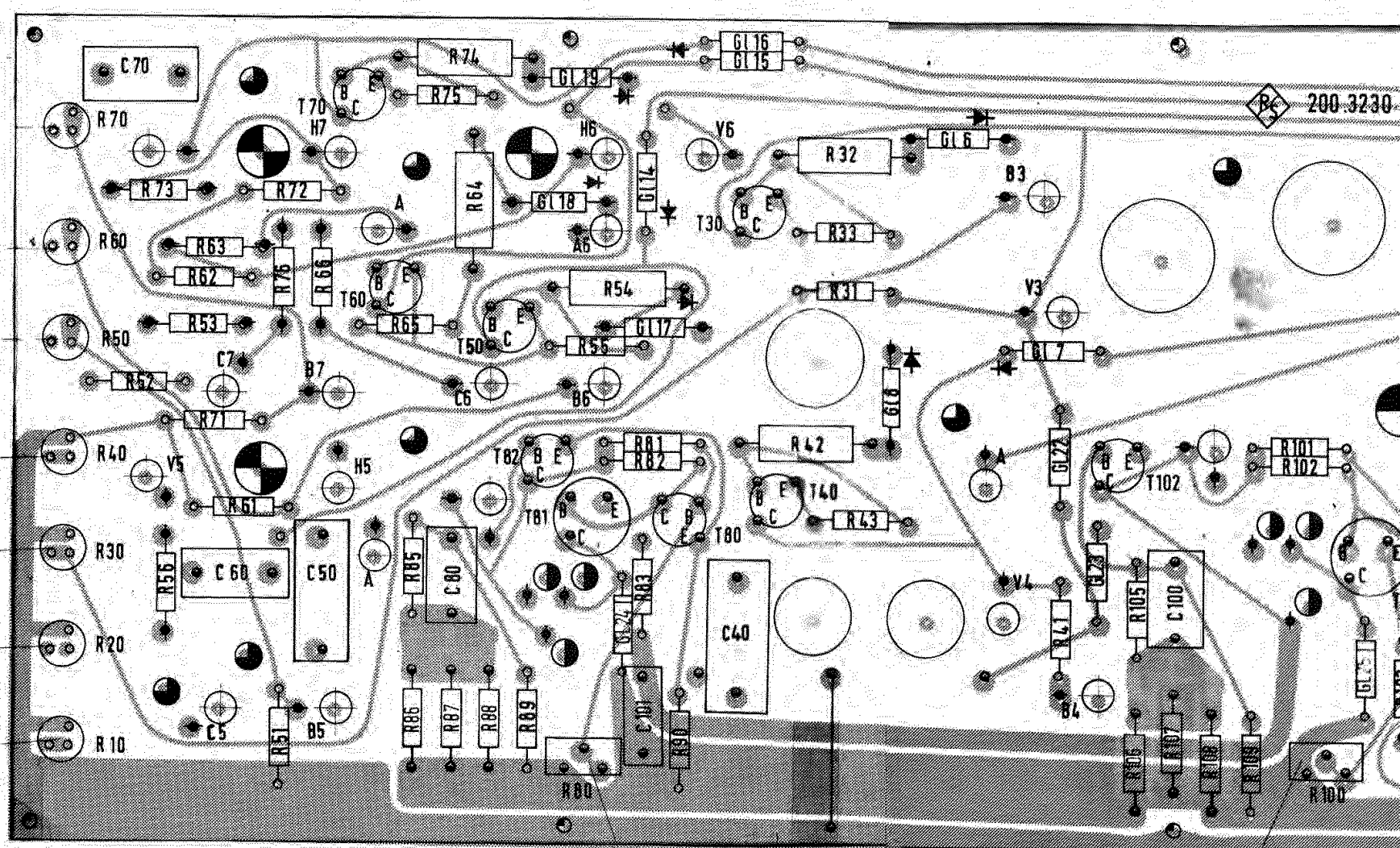
Components side view with tracks

ISO-Projektion, Methode E

Vervielfält. Pause Nr.

Arbeitspause Nr.

210; 0568; 15



Darstellung Bauteilseite, Leitungsführung Leiterseite

Components side view, with tracks on rear

ISO-Projektion, Methode E

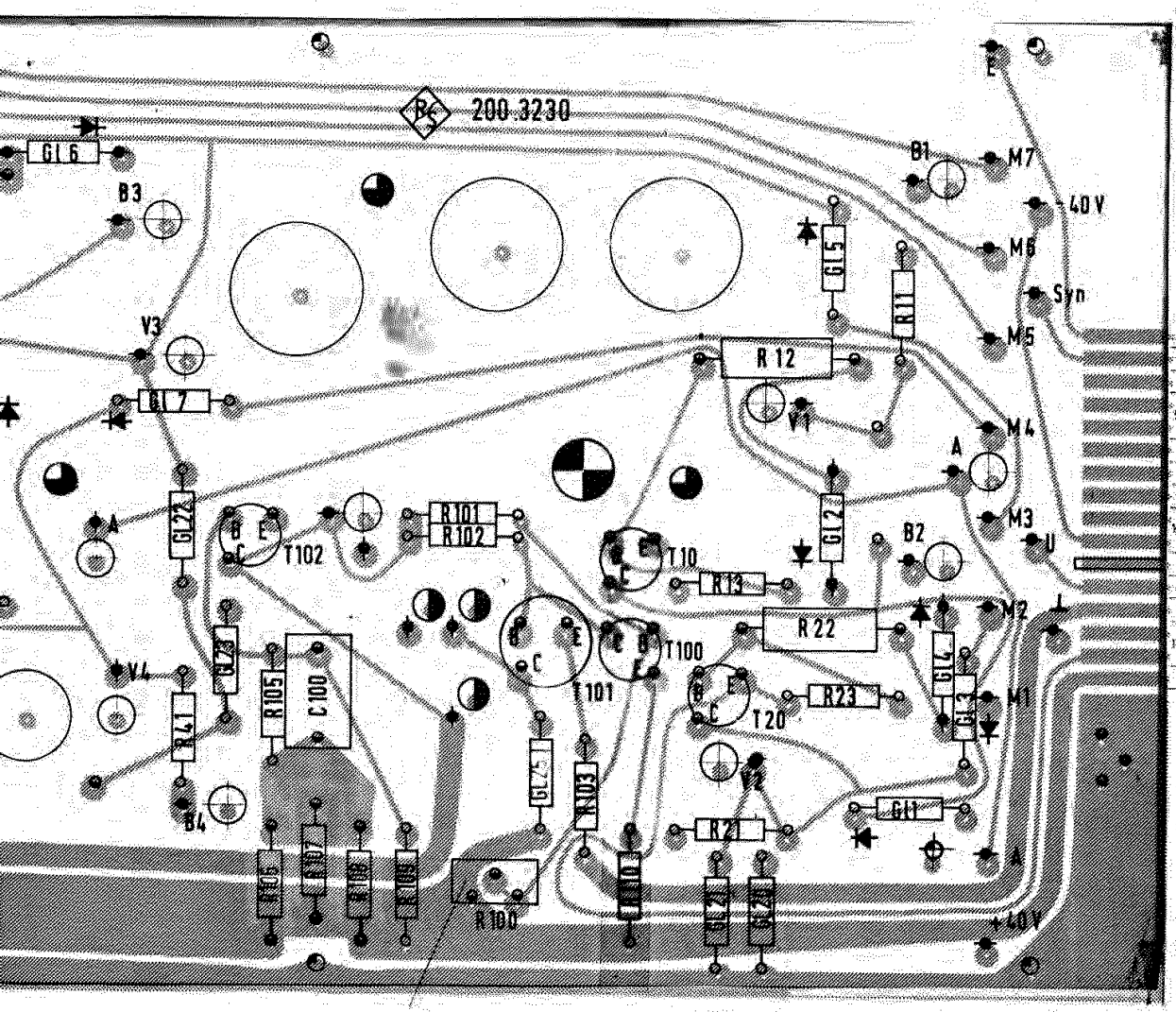
Vervielfält. Pause Nr.

Arbeitspause Nr.

210: 0568: 15

ROHDE &... MÜN...

1GME	Da...
gezeichnet	6.1...
bearbeitet	
geprüft	
normgepr.	



Blatt Nr. 3

ROHDE & SCHWARZ MÜNCHEN			Halbzeug, Werkstoff				
1GME	Datum	Name	And. zust.	And. - Mitteig. Nr.	Datum	Name	
gezeichnet	6.10.71	Ga	F	17942	07.73	Gn	
bearbeitet			G	19079	7. 2.74	Gn	
geprüft			D	17581	24.11.72	Gn	
normgepr.			E	17719	26.2.73	Gs	

Untolerierte Maße	Zeichn. Nr.	
	200.3230	
Maßstab 2:1	200.1009 V	200.2634
	Ersatz f. Zeichn.	
	Platte	Z

ROHDE & SCHWARZ
MÜNCHEN

AZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
11	0373	DIODENMATRIX	200.3282 SA	01

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
A	DIODENMATRIX S STROMLAUF 200.3282 S	200.3282	200.3282
B1	MA741C =0+70 TO5 OP=VERST	BD 009.1300	200.3282
B2	MA741C =0+70 TO5 OP=VERST	BD 009.1300	200.3282
C3	100PF+-20% HDK700 RD5	CC 006.0431	200.3282
C8	30MF 70V RD13X21 TOPF	CE 022.7672	200.3282
C9	680PF+50-20% HDK4000 RD5	CC 006.0483	200.3282
GL1	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL2	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL3	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL4	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL5	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL6	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL7	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL8	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL9	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL10	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL11	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL12	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL13	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL14	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL15	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL16	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL17	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL18	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL19	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL20	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL21	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
GL22	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
BIS			
GL28			
GL30	AD BAV21 SI=DIODE 250V	AD 082.6837	200.3282
BIS			
GL71			
GL81	1N914 SI 75V 75MIA	AD 012.0698	200.3282
BIS			
GL85			
GL86	AE ZY24 24V 5% 1,3W Z=DI	082.3696	200.3282
GL89	AE ZY24 24V 5% 1,3W Z=DI	082.3696	200.3282
GL95	AE ZY30 30V 5% 1,3W Z=DI	012.5202	200.3282
GL96	ZP15 5% 0,4W Z=DI	AE 012.2749	200.3282
GL97	ZP27 5% 0,4W Z=DI	AE 012.2778	200.3282
GL98	ZP18 5% 0,4W Z=DI	AE 012.2755	200.3282
R1	RL 0,15W 100KOHM+-1%TK50	RL 067.5010	200.3282
R2	RL 0,15W 182KOHM+-1%TK50	RL 067.5079	200.3282
R3	RL 0,5W 332 KOHM+-1%TK50	RL 067.6623	200.3282
R4	RL 0,5W 332 KOHM+-1%TK50	RL 067.6623	200.3282
R5	RL 0,15W 221KOHM+-1%TK50	RL 067.5091	200.3282
R6	RL 0,15W 121KOHM+-1%TK50	RL 067.5033	200.3282
R7	RL 0,5W 1,0 MOHM+-1%TK50	RL 067.6746	200.3282
R8	RL 0,5W 1,0 MOHM+-1%TK50	RL 067.6746	200.3282
R9	RL 0,5W 1,0 MOHM+-1%TK50	RL 067.6746	200.3282

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	11	0373	DIODENMATRIX	200.3282 SA	02

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
R10	RL 0,5W 681 KOHM+-1%TK50	RL 067.6700	200.3282
R11	RL 0,15W 150KOHM+-1%TK5/	RL 067.5056	200.3282
R12	RL 0,15W 121KOHM+-1%TK50	RL 067.5033	200.3282
R13	RL 0,15W 121KOHM+-1%TK50	RL 067.5033	200.3282
R14	RL 0,15W 182KOHM+-1%TK50	RL 067.5079	200.3282
R15	RL 0,5W 392 KOHM+-1%TK50	RL 067.6646	200.3282
R16	RL 0,15W 56,2KOHM+-1%TK50	RL 067.4950	200.3282
R17	RL 0,15W 150KOHM+-1%TK5/	RL 067.5056	200.3282
R18	RL 0,15W 18,2KOHM+-1%TK50	RL 067.4837	200.3282
R20 BIS R26	RL 0,5W 332 KOHM+-1%TK50 TRIMMWERT"	RL 067.6623	200.3282
R27	RL 0,15W 221KOHM+-1%TK50 TRIMMWERT	RL 067.5091	200.3282
R28	RL 0,15W 221KOHM+-1%TK50 TRIMMWERT	RL 067.5091	200.3282
R29	RL 0,5W 332 KOHM+-1%TK50 TRIMMWERT"	RL 067.6623	200.3282
R30	RL 0,5W 562 KOHM+-1%TK50 TRIMMWERT	RL 067.6681	200.3282
R31	RL 0,15W 100KOHM+-1%TK50 TRIMMWERT"	RL 067.5010	200.3282
R32	RL 0,15W 182KOHM+-1%TK50 TRIMMWERT"	RL 067.5079	200.3282
R33	RL 0,15W 100KOHM+-1%TK50 TRIMMWERT"	RL 067.5010	200.3282
R34 BIS R40	0,5W 50KOHM+-20%LIN PIN HERST. BECKMANN INSTRUM.	200.3447	200.3282
R41	0,5W 200KOHM+-20%LIN PIN HERST. BECKMANN INSTRUM.	200.4220	200.3282
R42	0,5W 100KOHM+-20%LIN PIN HERST. BECKMANN INSTRUM.	200.3601	200.3282
R43	0,5W 200KOHM+-20%LIN PIN	200.4220	200.3282
R44	0,5W 200KOHM+-20%LIN PIN HERST.BECKMANN INSTRUM.	200.4220	200.3282
R45	0,5W 100KOHM+-20%LIN PIN HERST. BECKMANN INSTRUM.	200.3601	200.3282
R46	0,5W 100KOHM+-20%LIN PIN HERST. BECKMANN INSTRUM.	200.3601	200.3282
R47	0,5W 100KOHM+-20%LIN PIN HERST. BECKMANN INSTRUM.	200.3601	200.3282
R48	0,5W 100KOHM+-20%LIN PIN HERST. BECKMANN INSTRUM.	200.3601	200.3282
R49	0,5W 50KOHM+-20%LIN PIN HERST. BECKMANN INSTRUM.	200.3447	200.3282
R50	0,5W 100KOHM+-20%LIN PIN HERST. BECKMANN INSTRUM.	200.3601	200.3282
R51	0,5W 100KOHM+-20%LIN PIN HERST. BECKMANN INSTRUM.	200.3601	200.3282
R52	0,5W 50KOHM+-20%LIN PIN HERST. BECKMANN INSTRUM.	200.3447	200.3282
R53	0,5W 50KOHM+-20%LIN PIN HERST. BECKMANN INSTRUM.	200.3447	200.3282
R54	0,5W 100KOHM+-20%LIN PIN HERST. BECKMANN INSTRUM.	200.3601	200.3282

ROHDE & SCHWARZ
MÜNCHEN

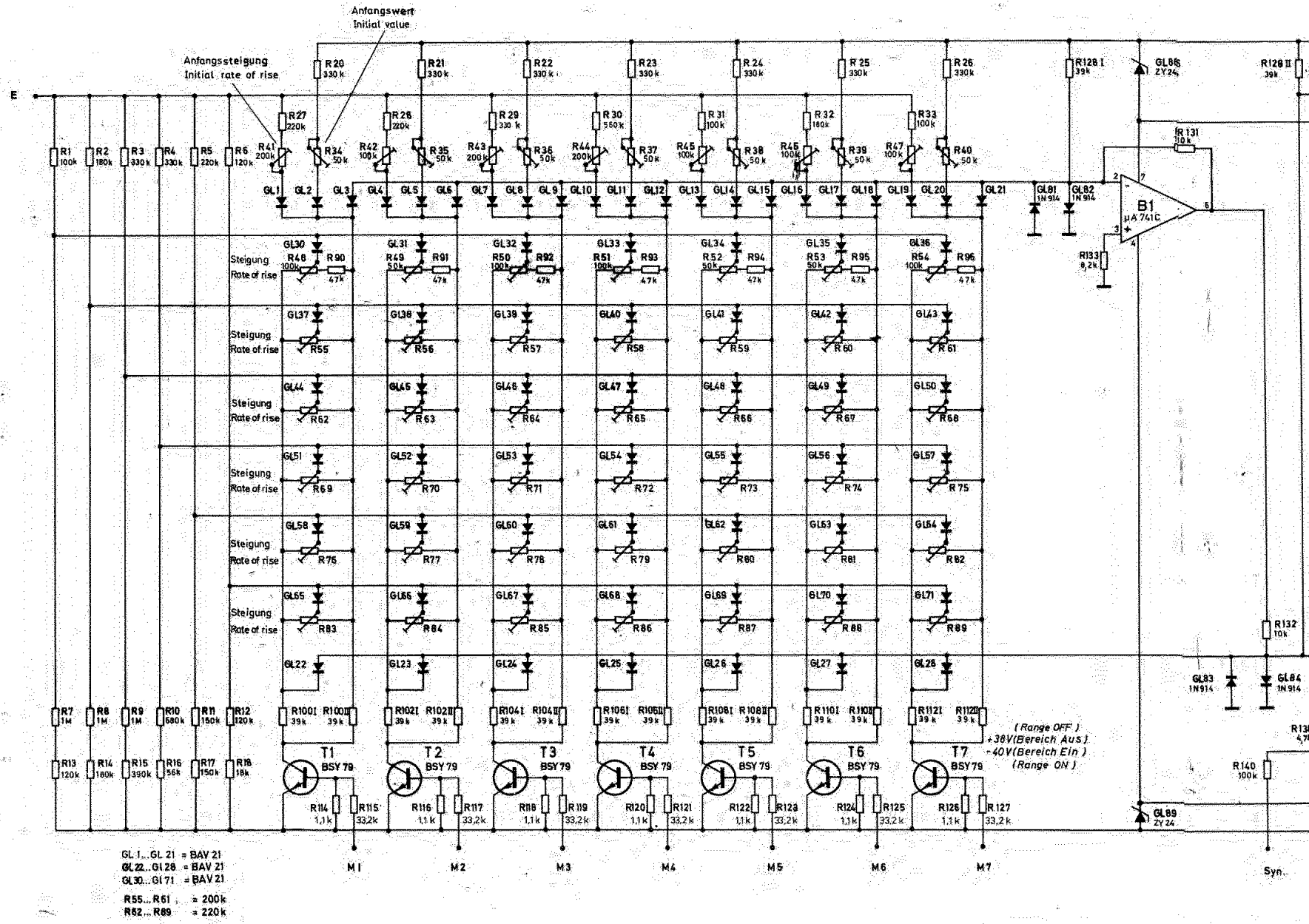
ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
11	0373	DIODENMATRIX	200.3282 SA	03

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
R55 BIS R61	0,5W 200KOHM+-20%LIN PIN	200.4220	200.3282
	HERST. BECKMANN INSTRUM.		
R62 BIS R89	0,5W 220KOHM+-20% KURVE1	RS 066.8716	200.3282
R90 BIS R96	RL 0,15W 47,5KOHM+-1%TK50	RL 067.4937	200.3282
R100	WIDERSTANDSPAERCHEN	200.3482	200.3282
R102	WIDERSTANDSPAERCHEN	200.3482	200.3282
R104	WIDERSTANDSPAERCHEN	200.3482	200.3282
R106	WIDERSTANDSPAERCHEN	200.3482	200.3282
R108	WIDERSTANDSPAERCHEN	200.3482	200.3282
R110	WIDERSTANDSPAERCHEN	200.3482	200.3282
R112	WIDERSTANDSPAERCHEN	200.3482	200.3282
R114	0,25W 1,10 OHM+-1%TK50	RL 082.7940	200.3282
R115	0,25W 33,2 OHM+-1%TK50	RL 082.9359	200.3282
R116	0,25W 1,10 OHM+-1%TK50	RL 082.7940	200.3282
R117	0,25W 33,2 OHM+-1%TK50	RL 082.9359	200.3282
R118	0,25W 1,10 OHM+-1%TK50	RL 082.7940	200.3282
R119	0,25W 33,2 OHM+-1%TK50	RL 082.9359	200.3282
R120	0,25W 1,10 OHM+-1%TK50	RL 082.7940	200.3282
R121	0,25W 33,2 OHM+-1%TK50	RL 082.9359	200.3282
R122	0,25W 1,10 OHM+-1%TK50	RL 082.7940	200.3282
R123	0,25W 33,2 OHM+-1%TK50	RL 082.9359	200.3282
R124	0,25W 1,10 OHM+-1%TK50	RL 082.7940	200.3282
R125	0,25W 33,2 OHM+-1%TK50	RL 082.9359	200.3282
R126	0,25W 1,10 OHM+-1%TK50	RL 082.7940	200.3282
R127	0,25W 33,2 OHM+-1%TK50	RL 082.9359	200.3282
R128	WIDERSTANDSPAERCHEN	200.3482	200.3282
R130	0,25W 390KOHM+-1%TK25	200.3318	200.3282
R131	0,25W 10KOHM+-1%TK25	200.3353	200.3282
R132	0,25W 10KOHM+-1%TK25	200.3353	200.3282
R133	RL 0,15W 8,25KOHM+-1%TK50	RL 067.4750	200.3282
R135	0,25 W 10 OHM+-5%	RF 007.0012	200.3282
R137	0,25W 100KOHM+-1%TK25	200.3360	200.3282
R138	RL 0,15W 4,75KOHM+-1%TK50	RL 067.4695	200.3282
R139	RL 0,15W 681 OHM+-1%TK50	RL 067.4493	200.3282
R140	0,25 W 100 KOHM +-5%	RF 007.0493	200.3282
R141	0,25 W 100 KOHM +-5%	RF 007.0493	200.3282
R143	0,25 W 15 KOHM +-5%	RF 007.0393	200.3282
R144	0,25 W 2,2 KOHM +-5%	RF 007.0293	200.3282
R145	0,25 W 100 KOHM +-5%	RF 007.0493	200.3282
R146	RL 0,5W 1s2 OHM+-1%TK50	RL 067.5636	200.3282
R147	0,25 W 5,6 KOHM +-5%	RF 007.0341	200.3282
R149	0,25 W 220 KOHM +-5%	RF 007.0539	200.3282
R150	0,25 W 470 KOHM +-5%	RF 007.0570	200.3282
R152	0,25 W 3,3 KOHM +-5%	RF 007.0312	200.3282
R153	0,25 W 120 KOHM +-5%	RF 007.0506	200.3282
R154	0,25 W 150 KOHM +-5%	RF 007.0512	200.3282
T1 BIS T8	BSV79 SINPN 120V 30MIA	AK 010.3434	200.3282
T9	2N1893 SINPN 120V 500MIA	AK 010.3470	200.3282

ROHDE & SCHWARZ
MÜNCHEN

ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
11	0373	DIODENMATRIX	200.3282 SA	04

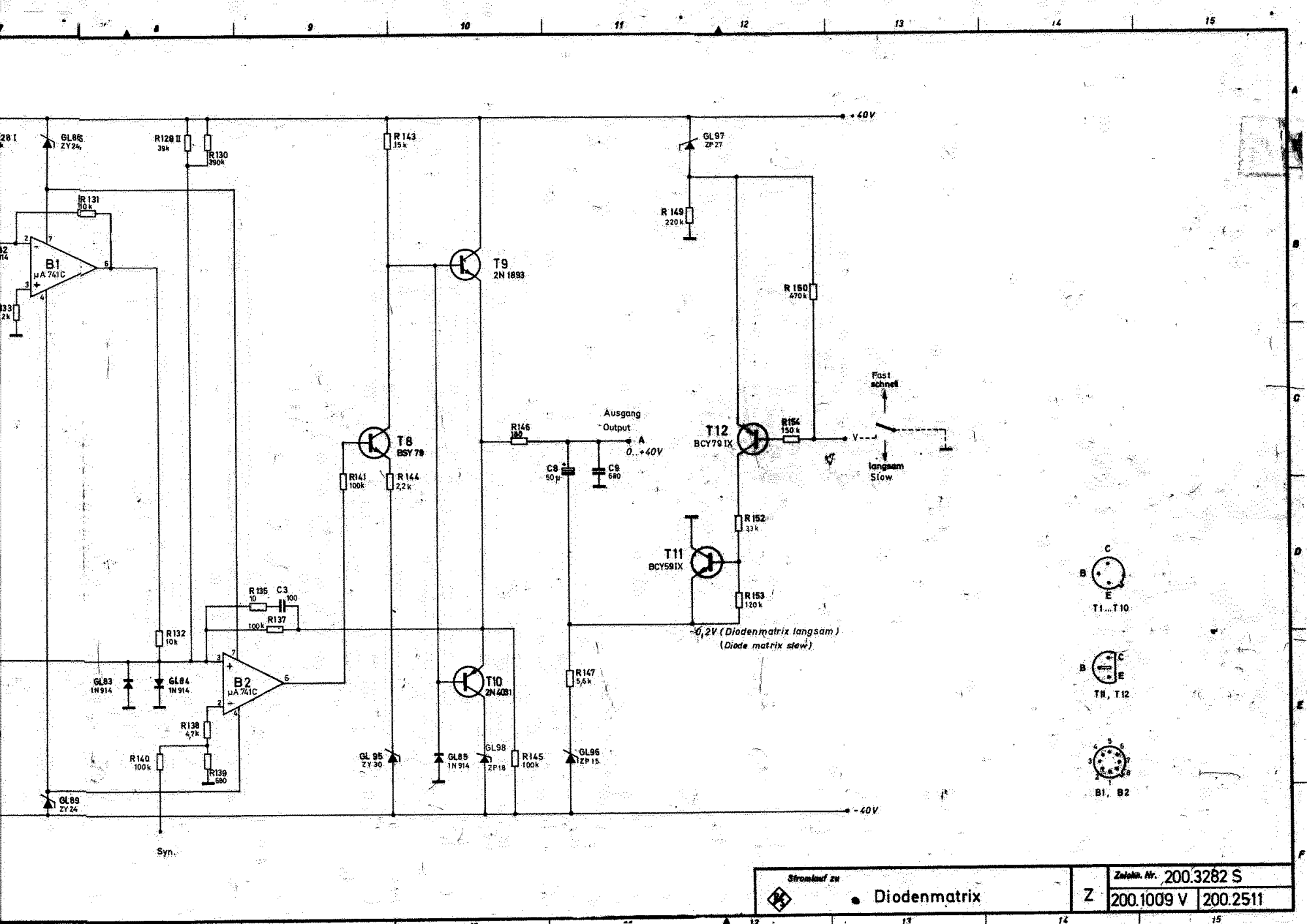
Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
T10	2N 4031 SI PNP 80V 1A	200.3276	200.3282
T11	BCY59CI SINPN 45V 200MIA	AK 010.5163	200.3282
T12	BCY79IX SIPNP 45V200MIA	AK 010.3777	200.3282
	ENDE		

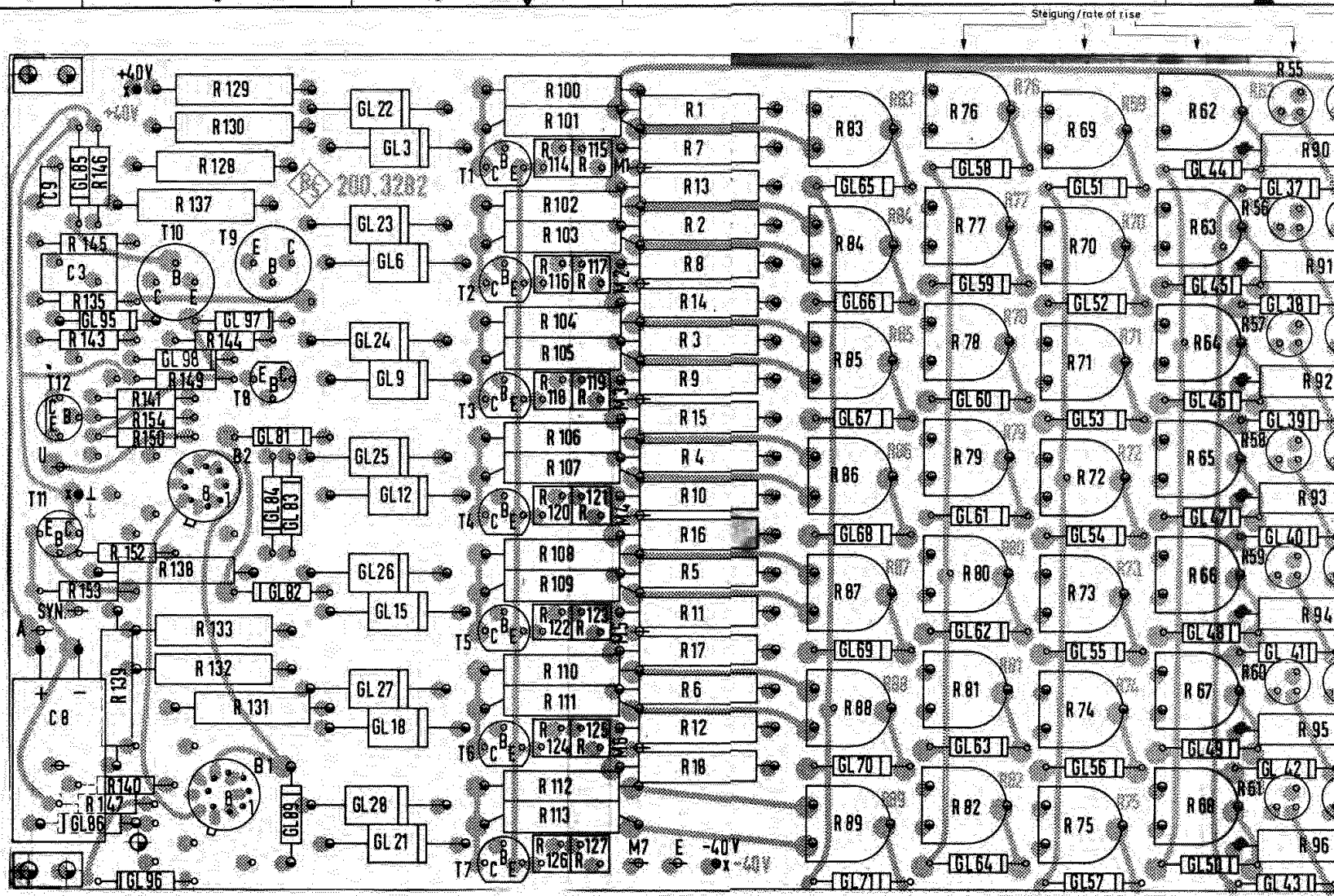


ROHDE & SCHWARZ · MÜNCHEN

Name					
Datum					
Änd. Mitt. Nr.					
Änd. Ind.	1				
Name	Gs				
Datum	23.2.73				
Ers. für					
Ers. durch	F 17719				

A		6.5.71	Gn		
B	17 136	1.72	Kfr		
C	17 217	1.3.72	Gn		
D					
E	174 97	26.9.72	Gn		


+40V
GL86 ZY24
R128 II 39k
R130 390k
R143 15k
GL97 ZP27
R 131 10k
R 149 220k
B1 µA 741C
T9 2N 1893
R 150 470k
Fast schnell
Ausgang Output
A 0..+40V
T8 BSY 79
R146 180
T12 BCY79 IX
R154 150k
V
langsam Slow
R141 100k
R144 2,2k
C8 50µ
C9 680
R152 33k
T11 BCY59IX
R153 120k
R135 10
C3 100
R137 100k
R132 10k
-0,2V (Diodenmatrix langsam)
(Diode matrix slow)
GL83 1N914
GL84 1N914
B2 µA 741C
T10 2N4031
R147 5,6k
R138 4,7k
R140 100k
R139 680
GL 95 ZY 30
GL85 1N914
GL98 ZP18
R145 100k
GL96 ZP 15
GL89 ZY 24
-40V
Syn.
T1...T10
T11, T12
B1, B2
Stromlauf zu
Diodenmatrix
Z
Zeichn. Nr. 200.3282 S
200.1009 V
200.2511



Darstellung Bauteilseite
Leitungsführung Bauteilseite

Components side
with tracks

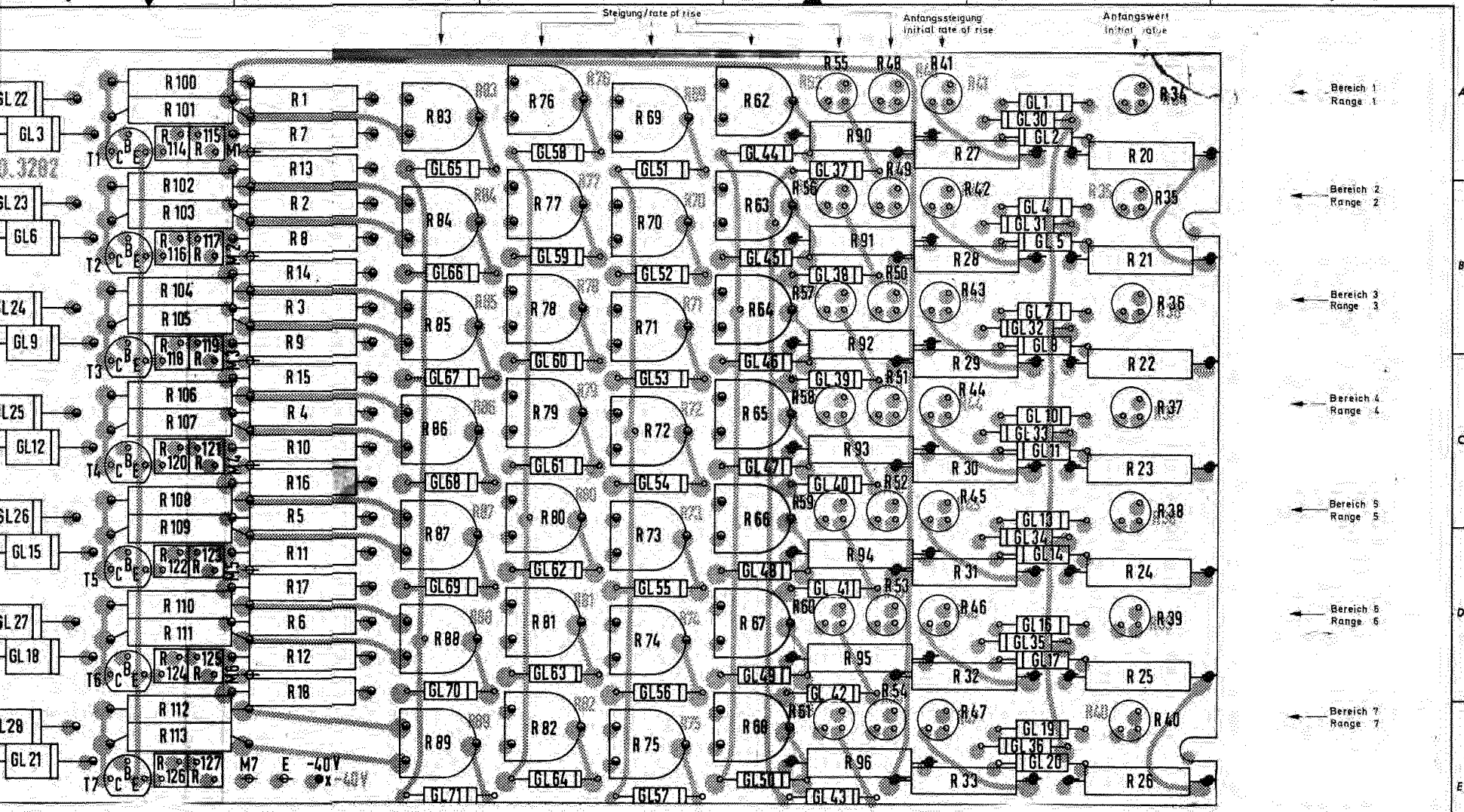
ISO-Projektion, Methode E

Vervielfält. Pause Nr.

Arbeitspause Nr.

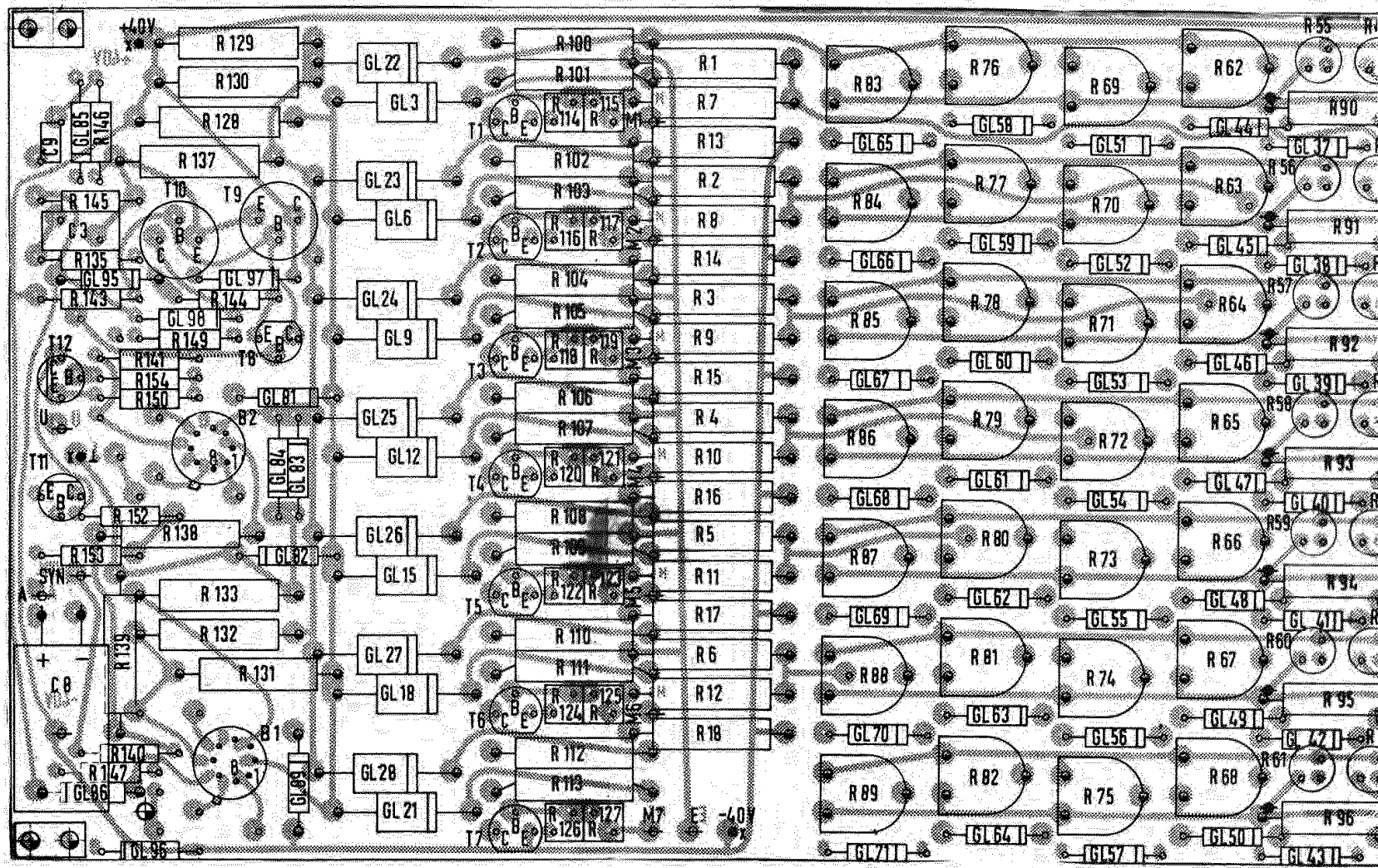
ROHDE &
MÜ

1GME	
gezeichnet	71
bearbeitet	
geprüft	
normgepr	



Blatt Nr. 2

ROHDE & SCHWARZ MÜNCHEN			Halbzeug, Werkstoff			Untolerierte Maße	Zeichn. Nr. 200.3282		
						Maßstab 2:1	200.1009 V	200.2511	
1GME	Datum	Name	And. zust.	And.-Mitteilg. Nr.	Datum	Name	Ersatz f. Zeichn.		
gezeichnet	2.10.71	Ga	B	17136	7.10.71	Klr			
bearbeitet			C	17217	1.3.72	Gn			
geprüft			D	17497	26.9.72	Gn			
normgepr.							Diodenmatrix	Z	



Darstellung Bauteilseite, Leitungsführung Leiterseite

Components side with tracks on rear

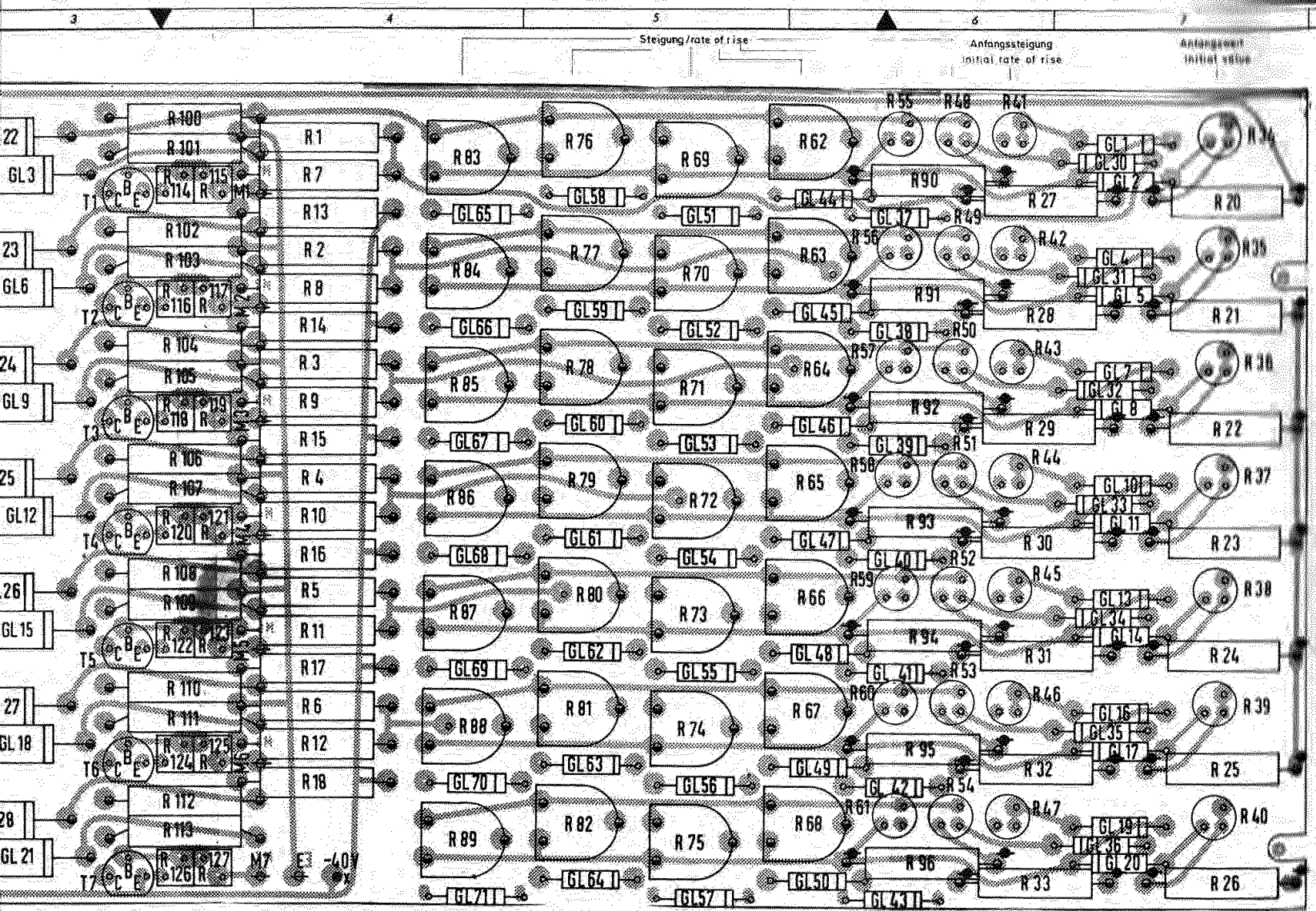
ISO-Projektion, Methode E

Vervielfält. Pause Nr.

Arbeitspause Nr.

ROHDE &
MÜN

TGME	D
gezeichnet	Z.U
bearbeitet	
geprüft	
normgepr	



ROHDE & SCHWARZ MÜNCHEN			Halbzeug, Werkstoff				Untolerierte Maße	
							Maßstab 2:1	
1 GME	Datum	Name	And. zust.	And. Mitlg. Nr.	Datum	Name		
gezeichnet	7.10.71	Ga	C	17217	13.72	Gn		
bearbeitet			D	17497	26.9.72	Gn		
geprüft								
normgepr								

Z

ROHDE & SCHWARZ MÜNCHEN	Äz	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	08	0374	VERSTAERKER II BER. 5 U.6	200.3618 SA	01

08 0374 VERSTAERKER II BER.5 U. 6 200.3618 01

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
A	VERSTAERKER II BER.5 U. 6Z STROMLAUF 200.3618S	200.3618	200.3618
C1	CC 680PF+-10%100V3K1200 C	082.3209	200.3618
BIS			
C4			
C5	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3618
C6	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3618
C7	CE 220NF35V 5X 4X 7TA/QUA	CE 022.8162	200.3618
C8	CE 100NF35V 5X 4X 7TA/QUA	CE 022.8156	200.3618
C9	CE 220NF35V 5X 4X 7TA/QUA	CE 022.8162	200.3618
C11	CC 680PF+-10%100V3K1200 C	082.3209	200.3618
BIS			
C14			
C15	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3618
C16	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3618
C17	CE 220NF35V 5X 4X 7TA/QUA	CE 022.8162	200.3618
C18	CE 100NF35V 5X 4X 7TA/QUA	CE 022.8156	200.3618
C19	CE 220NF35V 5X 4X 7TA/QUA	CE 022.8162	200.3618
C21	CC 680PF+-10%100V3K1200 C	082.3209	200.3618
BIS			
C24			
C25	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3618
C26	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3618
C27	CE 220NF35V 5X 4X 7TA/QUA	CE 022.8162	200.3618
C28	CE 100NF35V 5X 4X 7TA/QUA	CE 022.8156	200.3618
C29	CE 220NF35V 5X 4X 7TA/QUA	CE 022.8162	200.3618
C31	CC 680PF+-10%100V3K1200 C	082.3209	200.3618
BIS			
C34			
C35	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3618
C36	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.3618
C37	CE 220NF35V 5X 4X 7TA/QUA	CE 022.8162	200.3618
C39	CE 220NF35V 5X 4X 7TA/QUA	CE 022.8162	200.3618
C43	CC 680PF+-10%100V3K1200 C	082.3209	200.3618
C44	CC 680PF+-10%100V3K1200 C	082.3209	200.3618
C51	CC 20 PF 2% N150/1B8 CHIP	CC 022.4767	200.3618
C52	CC 680PF+-10%100V3K1200 C	082.3209	200.3618
C53	CC 680PF+-10%100V3K1200 C	082.3209	200.3618
C61	CC 20 PF 2% N150/1B8 CHIP	CC 022.4767	200.3618
C62	CC 680PF+-10%100V3K1200 C	082.3209	200.3618
C63	CC 680PF+-10%100V3K1200 C	082.3209	200.3618
C71	CC 8,7PF NP0/1B 8 CHIP	CC 022.4650	200.3618
C72	CC 8,7PF NP0/1B 8 CHIP	CC 022.4650	200.3618
D1	LD 75 DB (800MHZ)2X800 PF	LD 006.8049	200.3618
D11	LD 75 DB (800MHZ)2X800 PF	LD 006.8049	200.3618
D21	LD 75 DB (800MHZ)2X800 PF	LD 006.8049	200.3618
D31	LD 75 DB (800MHZ)2X800 PF	LD 006.8049	200.3618
D41	LD 75 DB (800MHZ)2X800 PF	LD 006.8049	200.3618
D51	LD 75 DB (800MHZ)2X800 PF	LD 006.8049	200.3618
D61	LD 75 DB (800MHZ)2X800 PF	LD 006.8049	200.3618
L1	DROSSEL Z	200.3660	200.3618
L11	DROSSEL Z	200.3660	200.3618
L21	DROSSEL Z	200.3660	200.3618

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	08	0374	VERSTAERKER II BER.5 U. 6	200.3618 SA	02

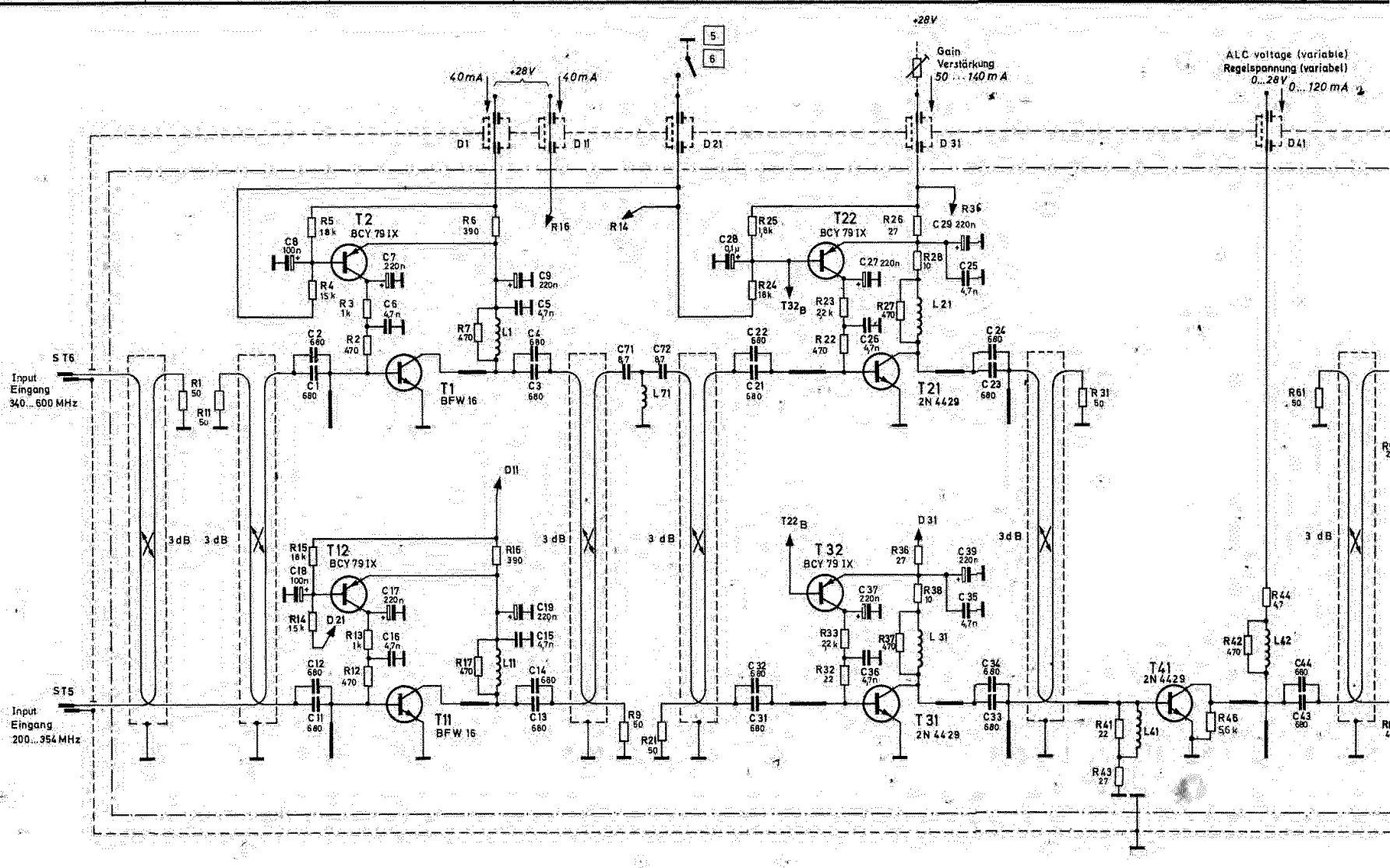
Kennzeichen	Benennung / Beschreibung		Sachnummer	enthalten in
L31	DROSSEL	Z	200.3660	200.3618
L41	DROSSEL	Z	200.4137	200.3618
L42	DROSSEL	Z	200.3660	200.3618
L52	SPULE		200.3253	200.3618
L61	DROSSEL	Z	200.3660	200.3618
L62	SPULE		200.3253	200.3618
L71	SPULE		200.3676	200.3618
L80	DROSSEL	Z	200.4689	200.3618
R1	PLATTE	Z	200.3730	200.3618
	EING.WIDERST.RF 026.0050			
R2	RF 0,5 W 470 OHM +-5%		RF 007.1331	200.3618
R3	RF 0,25 W 1 KOHM+-5%		RF 007.0258	200.3618
R4	RF 0,25 W 15 KOHM +-5%		RF 007.0393	200.3618
R5	RF 0,25 W 18 KOHM +-5%		RF 007.0406	200.3618
R6	RF 0,5 W 390 OHM +-5%		RF 007.1325	200.3618
R7	RF 0,5 W 470 OHM +-5%		RF 007.1331	200.3618
	ENTH. IN 200.3660 L1			
R9	PLATTE	Z	200.3776	200.3618
	EING.WIDERST.RF 026.0050			
R11	PLATTE	Z	200.3799	200.3618
	EING.WIDERST.RF026.0050			
R12	RF 0,5 W 470 OHM +-5%		RF 007.1331	200.3618
R13	RF 0,25 W 1 KOHM+-5%		RF 007.0258	200.3618
R14	RF 0,25 W 15 KOHM +-5%		RF 007.0393	200.3618
R15	RF 0,25 W 18 KOHM +-5%		RF 007.0406	200.3618
R16	RF 0,5 W 390 OHM +-5%		RF 007.1325	200.3618
R17	RF 0,5 W 470 OHM +-5%		RF 007.1331	200.3618
	ENTH. IN 200.3660 L11			
R21	PLATTE	Z	200.3753	200.3618
	EING.WIDERST.RF 026.0050			
R22	RF 0,5 W 470 OHM +-5%		RF 007.1331	200.3618
R23	RF 0,25 W 2,2 KOHM +-5%		RF 007.0293	200.3618
R24	RF 0,25 W 18 KOHM +-5%		RF 007.0406	200.3618
R25	RF 0,25 W 1,8 KOHM +-5%		RF 007.0287	200.3618
R26	RF 0,25 W 27 OHM+-5%		RF 007.0064	200.3618
R27	RF 0,5 W 470 OHM +-5%		RF 007.1331	200.3618
	ENTH. IN 200.3660 L21			
R28	RF 0,3W 100HM +-5%		RF 028.2008	200.3618
R31	PLATTE	Z	200.3818	200.3618
	EING.WIDERST.RF026.0050			
R32	RF 0,5 W 22 OHM+-5%		RF 007.1177	200.3618
R33	RF 0,25 W 2,2 KOHM +-5%		RF 007.0293	200.3618
R36	RF 0,25 W 27 OHM+-5%		RF 007.0064	200.3618
R37	RF 0,5 W 470 OHM +-5%		RF 007.1331	200.3618
	ENTH. IN 200.3660 L31			
R38	RF 0,3W 100HM +-5%		RF 028.2008	200.3618
R41	RF 0,5 W 22 OHM+-5%		RF 007.1177	200.3618
	ENTH. IN 200.4137 L41			
R42	RF 0,5 W 470 OHM +-5%		RF 007.1331	200.3618
	ENTH. IN 200.3660 L42			
R43	RF 0,3W 270HM +-5%		RF 028.2108	200.3618
R44	RF 0,3W 4,70HM +-5%		RF 028.1930	200.3618
	ENTH. IN 200.3660 L62			
R46	RF 0,25 W 5,6 KOHM +-5%		RF 007.0341	200.3618
R51	PLATTE	Z	200.3799	200.3618
	EING.WIDERST. RF026.0050			

ROHDE & SCHWARZ
MÜNCHEN

ÄZ	Datum	Schaltteilliste für	Sachnummer		Blatt Nr.
03	0374	VERSTAERKER II BER. 5 U. 6	200.3618	SA	03

03 0374 VERSTAERKER II BER.5 U. 6 200.3618 03

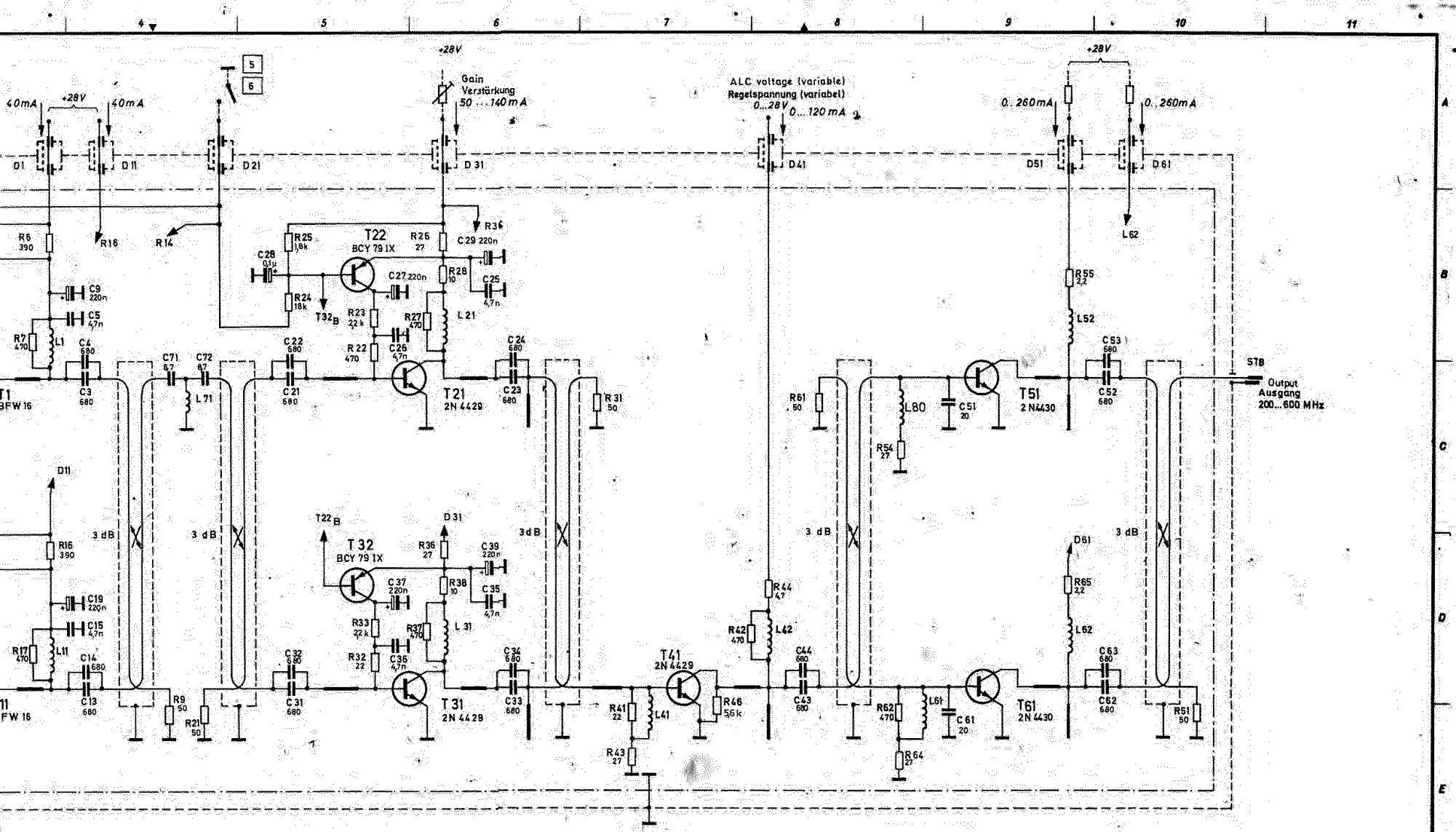
Kennzeichen	Benennung / Beschreibung		Sachnummer	enthalten in
R54	RF 0,3W 270HM +-5%		RF 028.2108	200.3618
R55	RF 0,3 W 2,2 OHM +-5%		RF 028.1860	200.3618
R61	PLATTE	Z	200.3799	200.3618
	EING.WIDERST. RF026.0050			
R62	RF 0,5 W 470 OHM +-5%		RF 007.1331	200.3618
	ENTH. IN 200.3660 L61			
R64	RF 0,3W 270HM +-5%		RF 028.2108	200.3618
R65	RF 0,3 W 2,2 OHM +-5%		RF 028.1860	200.3618
ST5	FJ EINBAUST.SMC IN.FL. LA		FJ 070.0151	200.3618
ST6	FJ EINBAUST.SMC IN.FL. LA		FJ 070.0151	200.3618
ST8	FJ EINBAUST.SMC IN.FL. LA		FJ 070.0151	200.3618
T1	AK BFW16 SI NPN 40V 0,15A		010.4644	200.3618
T2	AK BCY79IX PNP 45V200MIA		AK 010.3777	200.3618
T11	AK BFW16 SI NPN 40V 0,15A		010.4644	200.3618
T12	AK BCY79IX PNP 45V200MIA		AK 010.3777	200.3618
T21	AL 2N4429 SI NPN 55V 0,4A		010.0726	200.3618
T22	AK BCY79IX PNP 45V200MIA		AK 010.3777	200.3618
T31	AL 2N4429 SI NPN 55V 0,4A		010.0726	200.3618
T32	AK BCY79IX PNP 45V200MIA		AK 010.3777	200.3618
T41	AL 2N4429 SI NPN 55V 0,4A		010.0726	200.3618
T51	TRANSISTOR	Z	200.4095	200.3618
T61	TRANSISTOR	Z	200.4095	200.3618
		ENDE		



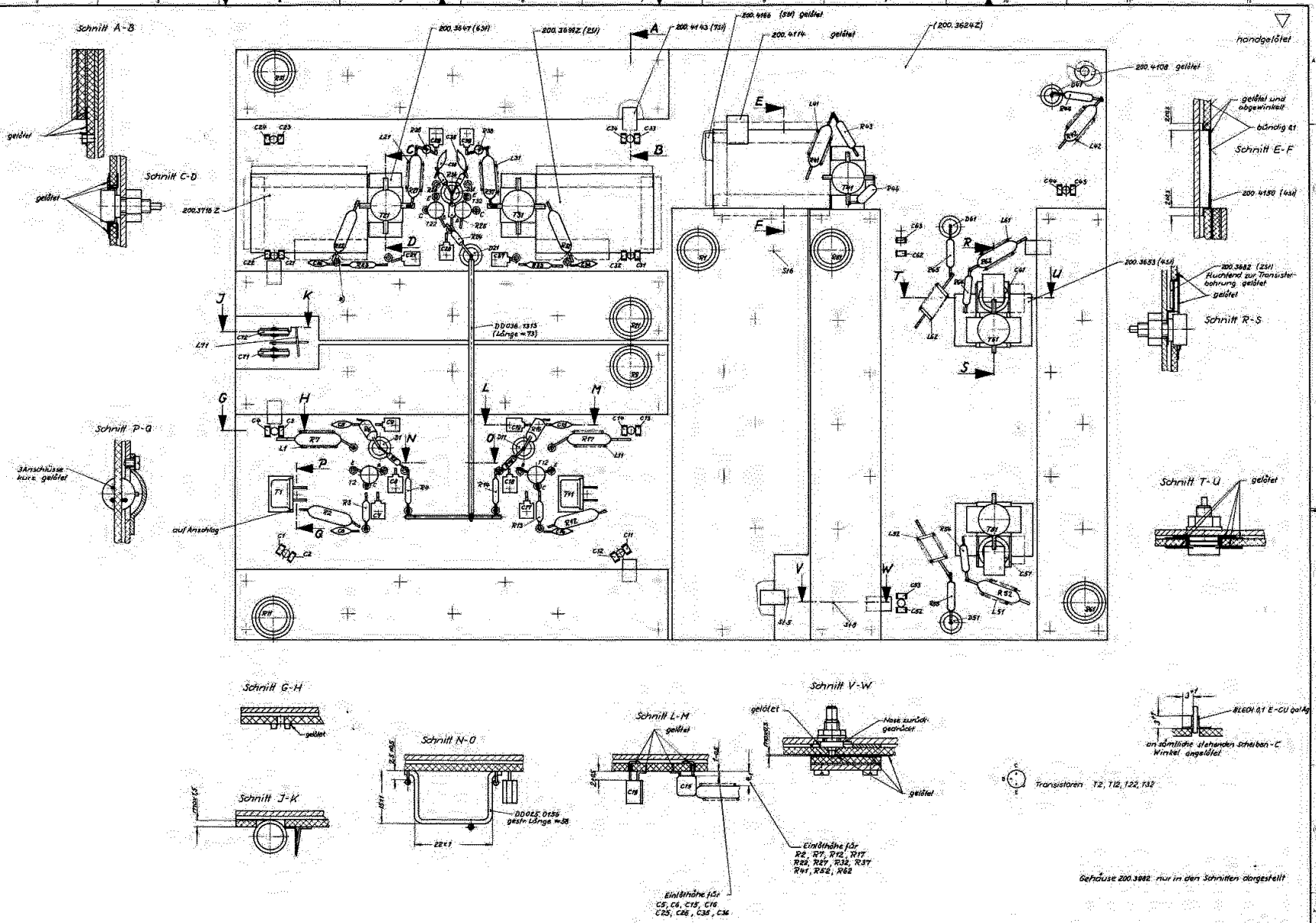
ROHDE & SCHWARZ · MÜNCHEN

Änd. zust.	Änd.-Mitteilg. Nr.	Datum	Name
A	———	24.6.71	Gn
B	17136	1.72	Klr
C	17217	29.2.72	Gn
D	17497	28.9.72	Gn
E	19079	8.2.74	Gn

LDE	Datum	Name
gezeichnet	16.1.	FL
bearbeitet		Ibg.
geprüft		
normgepr.		



Stromlauf zu Verstärker II Ber. 5 u.6	Z	Zeichn. Nr. 200.3618 S	
		200.1009 V	200.1009


Schnitt A-B
geölet
Schnitt C-D
geölet
200.3718 Z
200.3647 (6St)
200.3698Z (2St)
A
200.4143 (7St)
200.4166 (5St) geölet
200.4114 geölet
(200.3624Z)
handgelötet
200.4108 geölet
geölet und abgewinkelt
bündig 0,1
Schnitt E-F
200.4150 (4St)
B
C
D
E
F
J
K
DD036.1315 (Länge = 73)
G
H
L
M
Schnitt P-Q
3Anschlüsse kurz, gelötet
auf Anschlag
N
O
P
Q
R
S
T
U
200.3653 (4St)
200.3682 (2St) flüchtend zur Transistorbohrung gelötet
Schnitt R-S
Schnitt T-U
gelötet
V
W
Schnitt G-H
geölet
Schnitt J-K
max 5,5
Schnitt N-O
DD025.0155 gestr. Länge = 58
22±1
Schnitt L-M
geölet
Schnitt V-W
geölet
Maß zurückgezogen
geölet
BLECH 0,1 E-CU galAg
an sämtliche stehenden Scheiben - C Winkel angelötet
Transistoren T2, T12, T22, T32
Einlöthöhe für R2, R7, R12, R17 R22, R27, R32, R37 R41, R52, R62
Einlöthöhe für C5, C6, C15, C16 C25, C26, C35, C36
Gehäuse 200.3982 nur in den Schnitten dargestellt
Blatt Nr 2
ROHDE & SCHWARZ MÜNCHEN
Maßstab 2:1
200.3618
200.1008 V
200.1009
Verstärker II
Ber. 5 u. 6
Z

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	04	1072	VERSTAERKER III BER.7	200.4189 SA	01

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
A	VERSTAERKER III BER.7 Z STROMLAUF 200.4189S	200.4189	200.4189
C1	8,7PF NP0/1B 8 CHIP	CC 022.4650	200.4189
C2	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C3	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C4	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C5	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C6	2,5NF+100-20%HDK4000TRAP	CC 022.0249	200.4189
C7	220NF35V 5X 4X 7TA/QUADER	CE 022.8162	200.4189
C8	100NF35V 5X 4X 7TA/QUADER	CE 022.8156	200.4189
C9	220NF35V 5X 4X 7TA/QUADER	CE 022.8162	200.4189
C11	8,7PF NP0/1B 8 CHIP	CC 022.4650	200.4189
C12	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C13	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C14	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C15	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C16	2,5NF+100-20%HDK4000TRAP	CC 022.0249	200.4189
C17	220NF35V 5X 4X 7TA/QUADER	CE 022.8162	200.4189
C19	220NF35V 5X 4X 7TA/QUADER	CE 022.8162	200.4189
C21	8,7PF NP0/1B 8 CHIP	CC 022.4650	200.4189
C22	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C23	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C24	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C25	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C26	2,5NF+100-20%HDK4000TRAP	CC 022.0249	200.4189
C27	220NF35V 5X 4X 7TA/QUADER	CE 022.8162	200.4189
C28	100NF35V 5X 4X 7TA/QUADER	CE 022.8156	200.4189
C29	220NF35V 5X 4X 7TA/QUADER	CE 022.8162	200.4189
C31	8,7PF NP0/1B 8 CHIP	CC 022.4650	200.4189
C32	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C33	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C34	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C35	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C36	2,5NF+100-20%HDK4000TRAP	CC 022.0249	200.4189
C37	220NF35V 5X 4X 7TA/QUADER	CE 022.8162	200.4189
C38	100NF35V 5X 4X 7TA/QUADER	CE 022.8156	200.4189
C39	220NF35V 5X 4X 7TA/QUADER	CE 022.8162	200.4189
C41	8,7PF NP0/1B 8 CHIP	CC 022.4650	200.4189
C42	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C43	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C44	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C45	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C46	2,5NF+100-20%HDK4000TRAP	CC 022.0249	200.4189
C47	220NF35V 5X 4X 7TA/QUADER	CE 022.8162	200.4189
C49	220NF35V 5X 4X 7TA/QUADER	CE 022.8162	200.4189
C51	8,7PF NP0/1B 8 CHIP	CC 022.4650	200.4189
C52	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C53	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C54	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C55	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C56	10 PF NP0/1B 8 CHIP	CC 022.4680	200.4189
C61	8,7PF NP0/1B 8 CHIP	CC 022.4650	200.4189
C62	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C63	680 PF R4000 5 CHIP	CC 022.4850	200.4189
C64	680 PF R4000 5 CHIP	CC 022.4850	200.4189

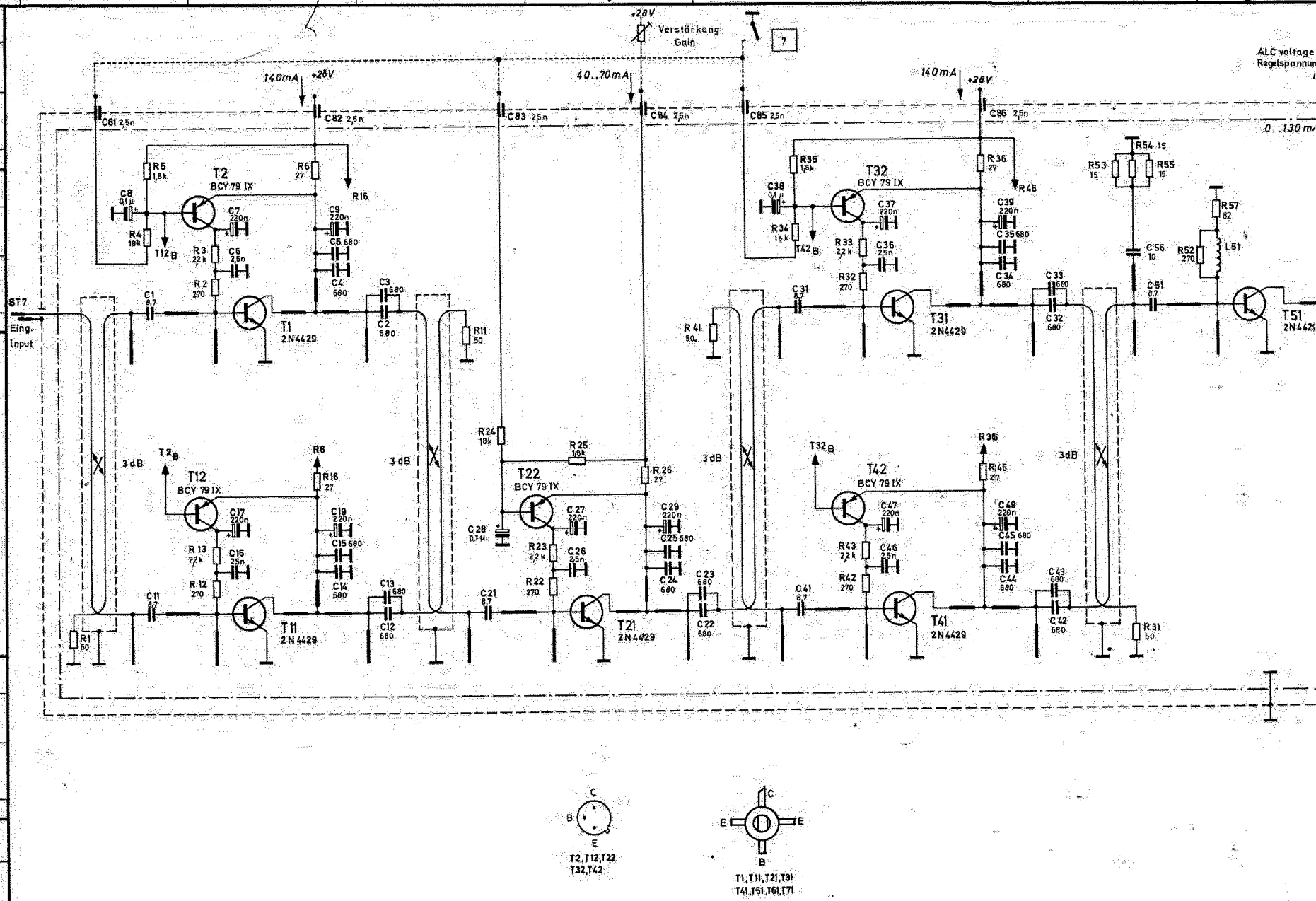
ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	04	1072	VERSTAERKER III BER.7	200.4189 SA	02

Kennzeichen	Benennung / Beschreibung		Sachnummer	enthalten in
C65	680 PF R4000 5 CHIP		CC 022.4850	200.4189
C71	8,7PF NP0/18 8 CHIP		CC 022.4650	200.4189
C72	680 PF R4000 5 CHIP		CC 022.4850	200.4189
C73	680 PF R4000 5 CHIP		CC 022.4850	200.4189
C74	680 PF R4000 5 CHIP		CC 022.4850	200.4189
C75	680 PF R4000 5 CHIP		CC 022.4850	200.4189
C81	2,5NF-20+50%HDK4000 DF-KO		CB 023.0036	200.4189
BIS				
C89				
L51	DROSSEL	Z	200.4550	200.4189
L61	DROSSEL	Z	200.4550	200.4189
L71	DROSSEL	Z	200.4550	200.4189
R1	PLATTE	Z	200.4272	200.4189
R2	0,5 W 270 OHM +-5%		RF 007.1302	200.4189
R3	0,25 W 2,2 KOHM +-5%		RF 007.0293	200.4189
R4	0,25 W 18 KOHM +-5%		RF 007.0406	200.4189
R5	0,25 W 1,8 KOHM +-5%		RF 007.0287	200.4189
R6	0,25 W 27 OHM+-5%		RF 007.0064	200.4189
R11	PLATTE	Z	200.4272	200.4189
	EING.WIDERST. RF026.0050			
R12	0,5 W 270 OHM +-5%		RF 007.1302	200.4189
R13	0,25 W 2,2 KOHM +-5%		RF 007.0293	200.4189
R16	0,25 W 27 OHM+-5%		RF 007.0064	200.4189
R22	0,5 W 270 OHM +-5%		RF 007.1302	200.4189
R23	0,25 W 2,2 KOHM +-5%		RF 007.0293	200.4189
R24	0,25 W 18 KOHM +-5%		RF 007.0406	200.4189
R25	0,25 W 1,8 KOHM +-5%		RF 007.0287	200.4189
R26	0,25 W 27 OHM+-5%		RF 007.0064	200.4189
R31	PLATTE	Z	200.4272	200.4189
	EING.WIDERST. RF026.0050			
R32	0,5 W 270 OHM +-5%		RF 007.1302	200.4189
R33	0,25 W 2,2 KOHM +-5%		RF 007.0293	200.4189
R34	0,25 W 18 KOHM +-5%		RF 007.0406	200.4189
R35	0,25 W 1,8 KOHM +-5%		RF 007.0287	200.4189
R36	0,25 W 27 OHM+-5%		RF 007.0064	200.4189
R41	PLATTE	Z	200.4272	200.4189
	EING.WIDERST. RF026.0050			
R42	0,5 W 270 OHM +-5%		RF 007.1302	200.4189
R43	0,25 W 2,2 KOHM +-5%		RF 007.0293	200.4189
R46	0,25 W 27 OHM+-5%		RF 007.0064	200.4189
R52	0,5 W 270 OHM +-5%		RF 007.1302	200.4189
	ENTH. IN 200.4550 L51			
R53	0,25 W 15 OHM+-5%		RF 007.0035	200.4189
R54	0,25 W 15 OHM+-5%		RF 007.0035	200.4189
R55	0,25 W 15 OHM+-5%		RF 007.0035	200.4189
R57	0,3W 820HM +-5%		RF 028.2214	200.4189
R61	PLATTE	Z	200.4250	200.4189
	EING.WIDERST. RF026.0050			
R62	0,5 W 270 OHM +-5%		RF 007.1302	200.4189
	ENTH. IN 200.4550 L61			
R67	0,3W 820HM +-5%		RF 028.2214	200.4189
R71	PLATTE	Z	200.4250	200.4189
	EING.WIDERST. RF026.0050			
R72	0,5 W 270 OHM +-5%		RF 007.1302	200.4189
	ENTH. IN 200.4550 L71			

ROHDE & SCHWARZ
MÜNCHEN

ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
04	1072	VERSTAERKER III BER.7	200.4189 SA	03

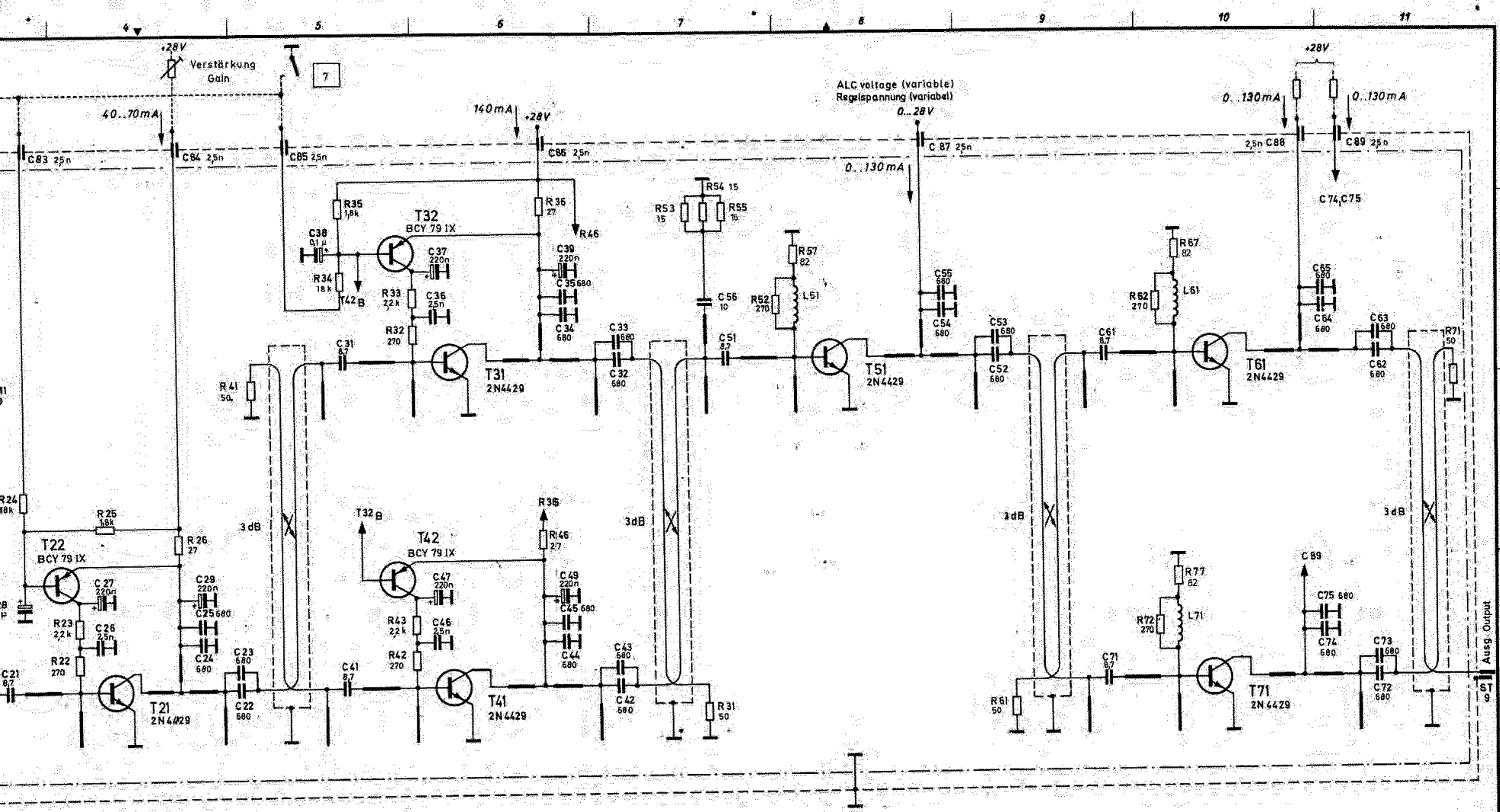
Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
R77	0,3W 820HM +-5%	RF 028,2214	200.4189
ST7	EINBAUSTECKER SUBMIN. 27	FJ 070.0151	200.4189
ST9	EINBAUSTECKER SUBMIN. 27	FJ 070.0151	200.4189
T1	TRANSISTOR Z	200.4243	200.4189
T2	BCY79IX SIPNP 45V200MIA	AK 010.3777	200.4189
T11	TRANSISTOR Z	200.4243	200.4189
T12	BCY79IX SIPNP 45V200MIA	AK 010.3777	200.4189
T21	TRANSISTOR Z	200.4243	200.4189
T22	BCY79IX SIPNP 45V200MIA	AK 010.3777	200.4189
T31	TRANSISTOR Z	200.4243	200.4189
T32	BCY79IX SIPNP 45V200MIA	AK 010.3777	200.4189
T41	TRANSISTOR Z	200.4243	200.4189
T42	BCY79IX SIPNP 45V200MIA	AK 010.3777	200.4189
T51	TRANSISTOR Z	200.4243	200.4189
T61	TRANSISTOR Z	200.4243	200.4189
T71	TRANSISTOR Z	200.4243	200.4189
	ENDE		



Änd. Zust.	Änd. Mitteilg. Nr.	Datum	Name
A	17 136	1.72	Klr
B	17 217	29.2.72	Gn
C	17 497	28.9.72	Gn

	Name	Datum
gezeichnet	Fl.	17.7.
bearbeitet	Ibg.	
geprüft		
normgepr.		

4394.0558.05 S

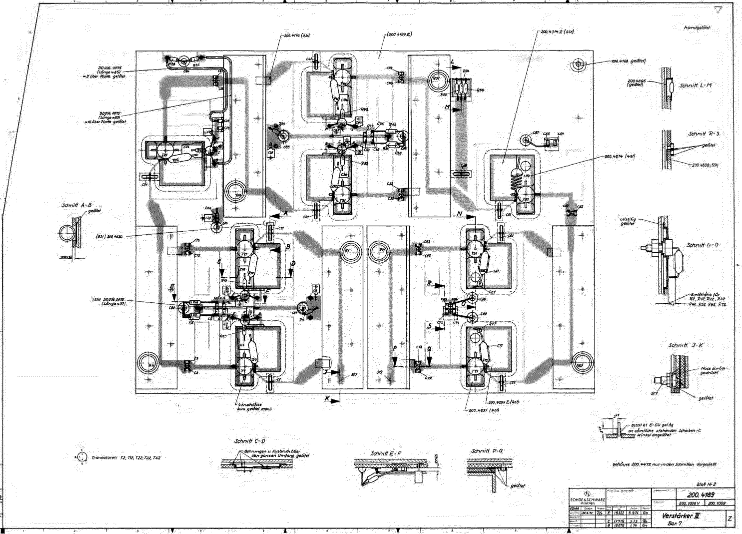


Stromlauf zu
Verstärker III Ber.7

Z

Zeichn. Nr. 200.4189 S

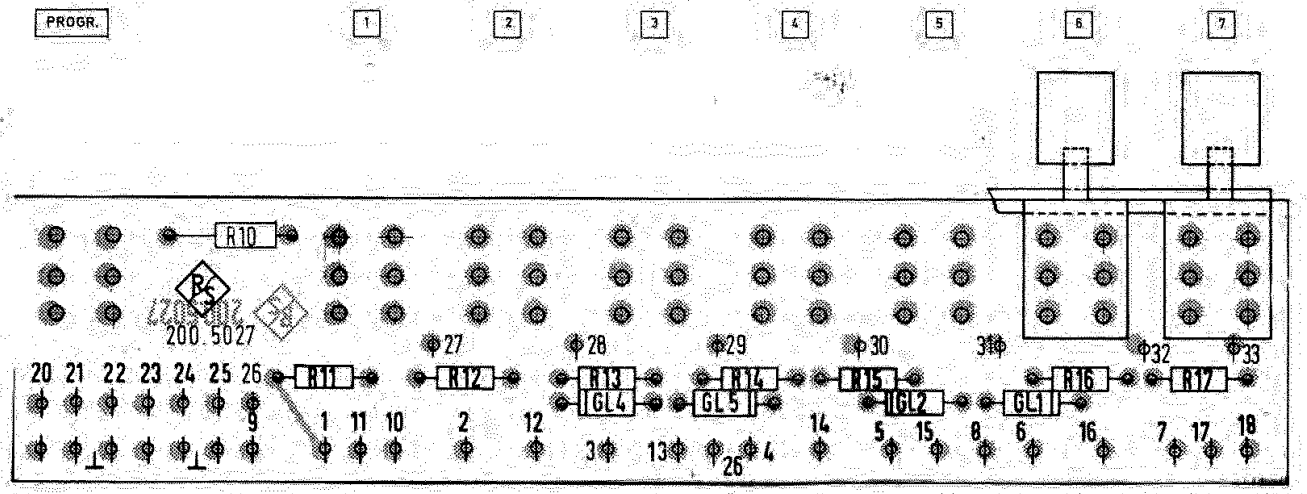
200.1009 V | 200.1009


handgelötet
200.4145 (451)
(200.4196 Z)
200.4314 Z (451)
200.4108 gelötet
DD 036.0075 (Länge ≈ 85) ≈ 5 über Platte gelötet
DD 036.0075 (Länge ≈ 80) ≈ 10 über Platte gelötet
200.4595 (gelötet)
Schnitt L-M
Schnitt R-S
gelötet
200.4608 (531)
200.4214 (451)
Schnitt A-B
gelötet
(831) 200.4620
allseitig gelötet
Schnitt N-O
(231) DD 036.0075 (Länge ≈ 37)
Einlöthöhe für R2, R12, R22, R32, R44, R52, R62, R72
Schnitt J-K
Nase zurück gedrückt
gelötet
4 Anschlüsse kurz gelötet max 3
200.4295 Z (451)
200.4237 (451)
BLECH 61 E-CU gal Ag
an sämtliche stehenden Scheiben -C Winkel angelötet
Schnitt C-D
Bohrungen u. Ausbruch über den ganzen Umfang gelötet
Schnitt E-F
Schnitt P-Q
gelötet
Transistoren T2, T12, T22, T32, T42
Gehäuse 200.4472 nur in den Schnitten dargestellt
Blatt Nr 2
ROHDE & SCHWARZ MÜNCHEN
200.4189
200.1009 V
200.1009
Verstärker III
Ber. 7
Z

Darstellung Bauteilseite

Leitungsführung Bauteilseite

Components side with tracks on rear



Blatt Nr. 2

ROHDE & SCHWARZ MÜNCHEN			Halbzeug, Werkstoff				Untolerierte Maße	Zeichn.-Nr. 200.5027	
IGME	Datum	Name	Änd. zust.	Änd.-Mitlg. Nr.	Datum	Name	Maßstab 2:1	200.1009V	200.4637
gezeichnet	5.10.71	Ga	C	17217	3.3.72	Gn		Ersatz f. Zeichn.	
bearbeitet			D	17497	10.72	Gn			
geprüft			E	17719	26.2.73	Gs	Platte		Z
normgepr.									

ISO-Projektion, Methode E

Vervielfält.-Pause Nr.

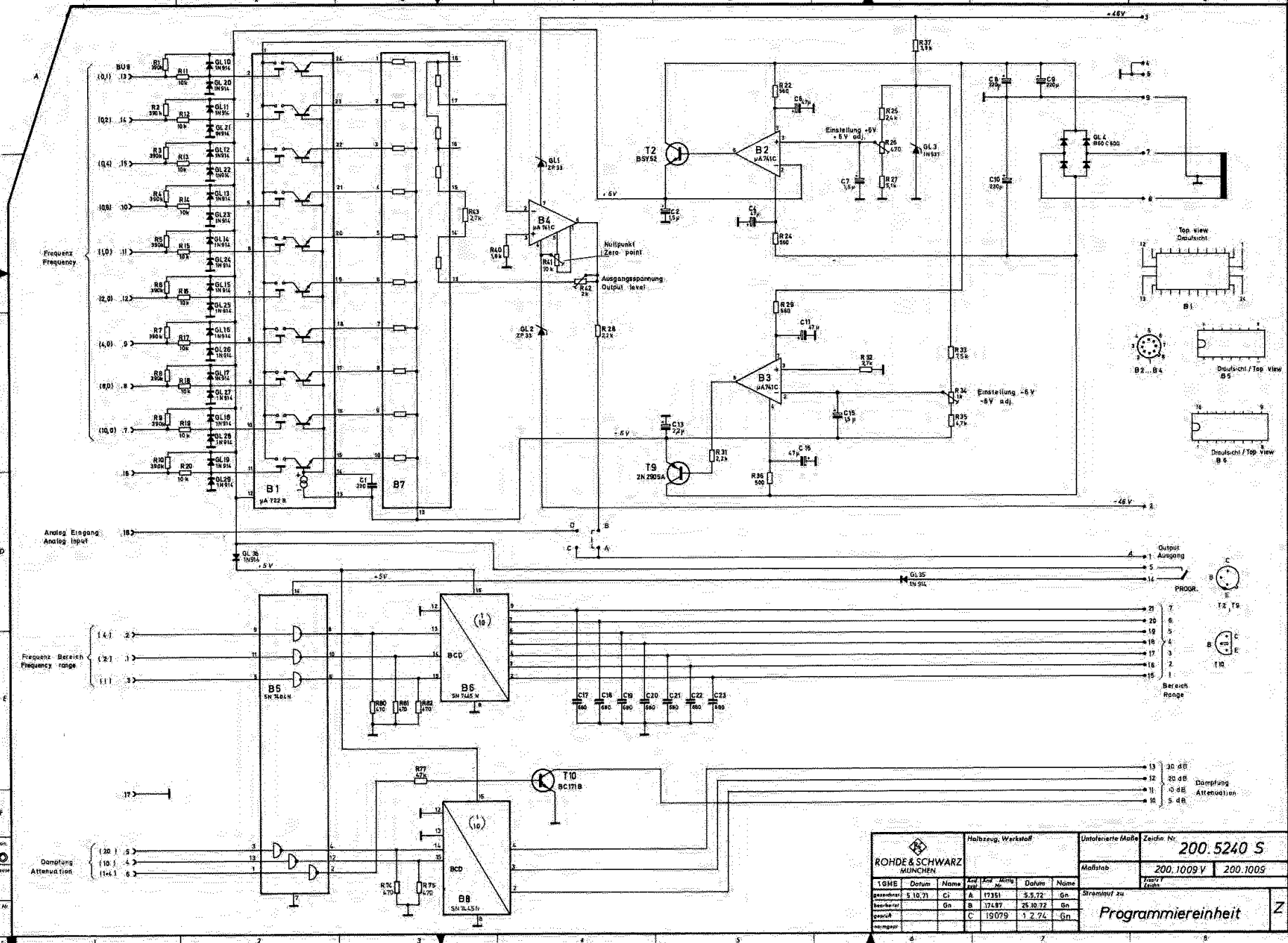
Arbeitspause Nr.

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	04	0374	PROGRAMMIEREINHEIT	200.5240 SA	01

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
A	PROGRAMMIEREINHEIT Z STROMLAUF 200.5240 S	200.5240	200.5240
B1	BL MA722B STROMQUELLE D/A	009.1516	200.5240
B2	BO MA741C -0+70 OP-VERST	BO 009.1300	200.5240
B3	BO MA741C -0+70 OP-VERST	BO 009.1300	200.5240,
B4	BO MA741C -0+70 OP-VERST	BO 009.1300	200.5240
B5	BL SN7404N DBIS+70DIL HEX	BL 009.3483	200.5240
B6	BL SN7445N DECODER	BL 009.4144	200.5240
B7	BR 863 WIDERST.NETZWERK	200.5333	200.5240
B8	BL SN7445N DECODER	BL 009.4144	200.5240
BU9	FM BUCHSENL.36 POLIG	018.5885	200.5240
C1	CC 220PF+-20% HDK2000 RD5	CC 006.0454	200.5240
C2	CE 1,5MF 20V RD 4X 8TA	CE 006.3160	200.5240
C4	CE 47MF20V13X 8X11TA/QUAD	CE 022.8133	200.5240
C6	CE 47MF20V13X 8X11TA/QUAD	CE 022.8133	200.5240
C7	CE 1,5MF 20V RD 4X 8TA	CE 006.3160	200.5240
C8	CE 220MF 16V RD13X17TOPF	CF 022.7566	200.5240
C9	CE 220MF 16V RD13X17TOPF	CE 022.7566	200.5240
C10	CE 220MF 16V RD13X17TOPF	CE 022.7566	200.5240
C11	CE 47MF20V13X 8X11TA/QUAD	CE 022.8133	200.5240
C13	CE 2,2MF20V 5X4X 7TA/QUAD	CE 022.8104	200.5240
C15	CE 1,5MF 20V RD 4X 8TA	CE 006.3160	200.5240
C16	CE 47MF20V13X 8X11TA/QUAD	CE 022.8133	200.5240
C17 BIS C23	CC 680PF+50-20%5HDK4000	CC 006.0483	200.5240
GL1	AE ZP33 5% 0,4W Z-DI	AE 012.2784	200.5240
GL3	AE 1N937 REF.DI.9V+-5%	080.4520	200.5240
GL4	AG B60C600SI 0,6A 60V	AG 013.2036	200.5240
GL10 BIS GL19	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5240
GL20 BIS GL29	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5240
GL35	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5240
GL36	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5240
R1 BIS R10	RF 0,25 W 390 KOHM +-5%	RF 007.0564	200.5240
R11 BIS R20	RF 0,25 W 10 KOHM +-5%	RF 007.0370	200.5240
R22	RF 0,25 W 560 OHM +-5%	RF 007.0229	200.5240
R24	RF 0,25 W 560 OHM +-5%	RF 007.0229	200.5240
R25	RL 0,15W 2,43KOHM+-1%TK50	RL 067.4620	200.5240
R26	RS 0,5W4700HM+-20%LIN PIN	RS 066.8797	200.5240
R27	RL 0,15W 5,11KOHM+-1%TK50	RL 067.4708	200.5240
R28	RF 0,25 W 2,2 KOHM +-5%	RF 007.0293	200.5240
R29	RF 0,25 W 560 OHM +-5%	RF 007.0229	200.5240
R31	RF 0,25 W 2,2 KOHM +-5%	RF 007.0293	200.5240

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	04	0374	PROGRAMMIEREINHEIT	200.5240 SA	02

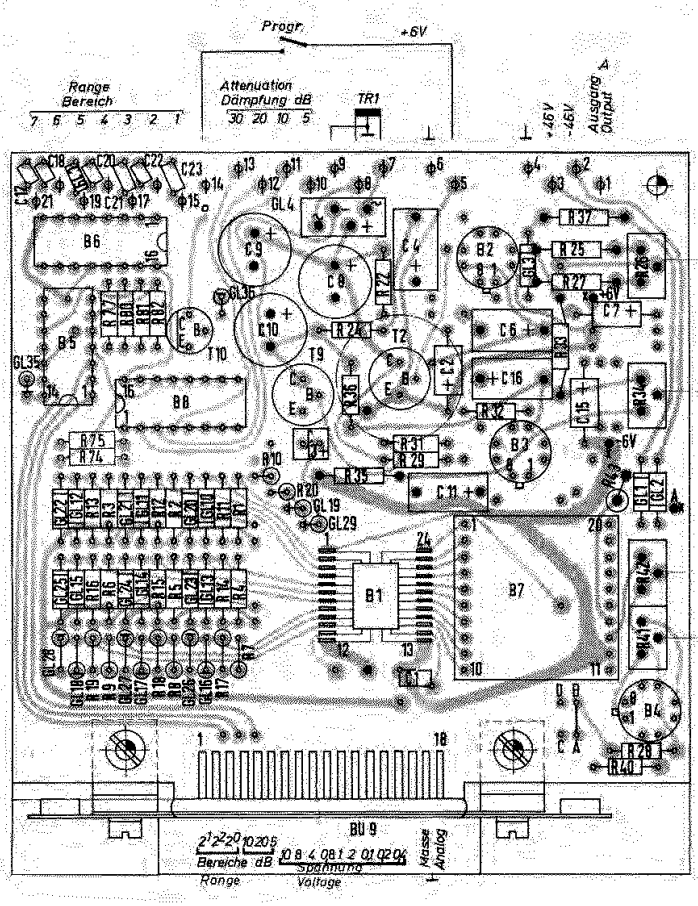
Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
R32	RF 0,25 W 2,7 KOHM +-5%	RF 007.0305	200.5240
R33	RL 0,15W 7,50KOHM+-1%TK50	RL 067.4743	200.5240
R34	RS 0,5W 1KOHM+-20%LIN PIN	RS 066.8800	200.5240
R35	RL 0,15W 4,75KOHM+-1%TK50	RL 067.4695	200.5240
R36	RF 0,25 W 560 OHM +-5%	RF 007.0229	200.5240
R37	RF 0,5 W 3,9 KOHM +-5%	RF 007.1448	200.5240
R40	RF 0,25 W 1,8 KOHM +-5%	RF 007.0287	200.5240
R41	SCHICHTDREHWIDERSTAND 10K	200.5304	200.5240
R42	RS 0,5W 2KOHM+-20%	082.6189	200.5240
R43	RL 0,15W 2,67KOHM+-1%TK50	RL 067.4637	200.5240
R74	RF 0,25W470 OHM +-5%	RF 069.4711	200.5240
R75	RF 0,25W470 OHM +-5%	RF 069.4711	200.5240
R77	RF 0,25 W 47 KOHM +-5%	RF 007.0453	200.5240
R80	RF 0,25 W 470 OHM +-5%	RF 007.0212	200.5240
R81	RF 0,25 W 470 OHM +-5%	RF 007.0212	200.5240
R82	RF 0,25 W 470 OHM +-5%	RF 007.0212	200.5240
T2	AK BSY52 SI NPN 60V 500MIA	AK 010.5005	200.5240
T9	AK 2N2905A PNP 60V600MIA	AK 010.3919	200.5240
T10	AK BC171B SI NPN 45V 0,1A	010.5111	200.5240
	ENDE		

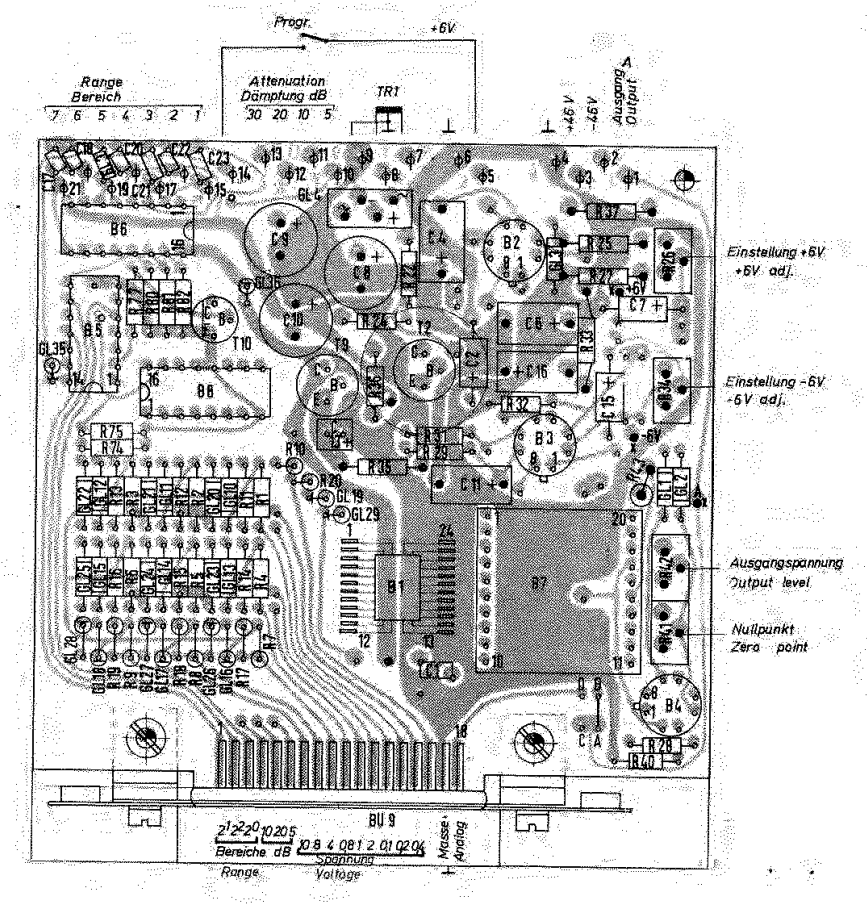

Frequenz
Frequency
Analog Eingang
Analog Input
Frequenz Bereich
Frequency range
Dämpfung
Attenuation
Nullpunkt
Zero point
Ausgangsspannung
Output level
Einstellung +6V
+6V adj.
Einstellung -6V
-6V adj.
Output
Ausgang
PROGR.
Bereich
Range
Top view
Draufsicht
Draufsicht / Top view
B1
B2...B4
B5
B6
T2, T9
T10
+46V
-46V
+6V
-6V
+5V
B1 µA 722 B
B2 µA741C
B3 µA741C
B4 µA741C
B5 SN 7445 N
B6 SN 7445 N
B7
B8 SN 7445 N
T9 2N 2905A
T10 BC 171 B
ROHDE & SCHWARZ
MÜNCHEN
Halbzeug, Werkstoff
Unto lerierte Maße
Zeichn. Nr.
200.5240 S
Maßstab
200.1009 V
200.1009
Änd. zust.
Änd. Mitteilg. Nr.
Datum
Name
gezeichnet 5.10.71 Ci
bearbeitet Gn
geprüft
normgepr.
A 17351 5.5.72 Gn
B 17487 25.10.72 Gn
C 19079 1.2.74 Gn
Stromlauf zu
Programmiereinheit
Z

Leitungsführung Bauteilseite
Components side tracks

Ansicht Bauteilseite
Components side view

Leitungsführung Leiterseite
Copper-print side tracks





Blatt Nr. 3

ROHDE & SCHWARZ MÜNCHEN							200.5240
							200.1009V / 200.1009
1 GME	Datum	Name	Änd. Index	Änd. Mitt. Nr.	Ersatz für	Ersatz durch	Programmiereinheit
	18.5.72	Grb	H	19079	4.2.74	Gn	
		Kfr					

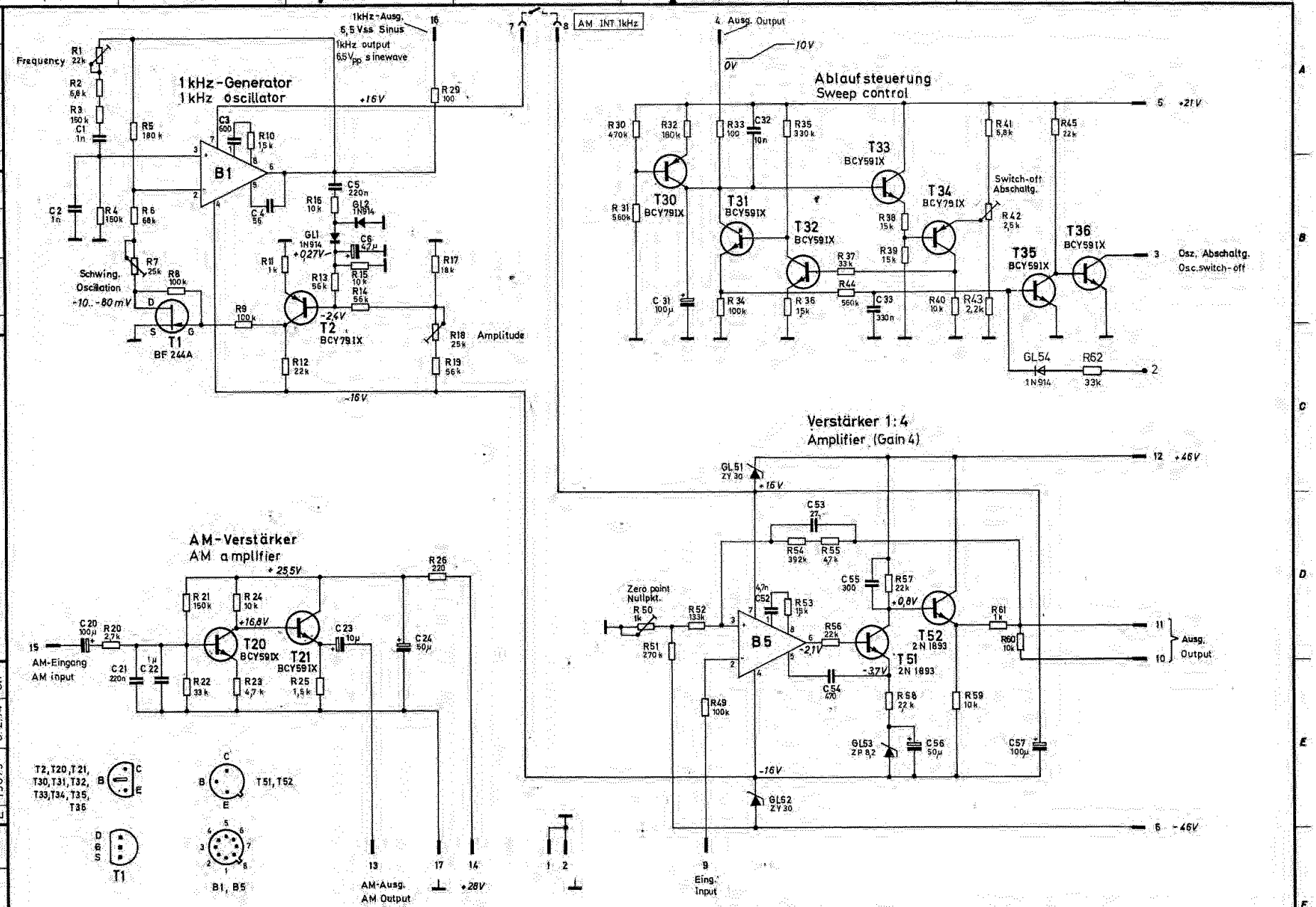
ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	06	0374	MODULATIONSTEIL	200.5440 SA	01

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
A	MODULATIONSTEIL Z STROML.200.5440S	200.5440	200.5440
B1	BD MA709C -0+75 TO5 OP.	BD 009.1068	200.5440
B5	BD MA709C -0+75 TO5 OP.	BD 009.1068	200.5440
C1	CG 1 NF+- 2%TKF12X12X6RM5	CG 023.4454	200.5440
C2	CG 1 NF+- 2%TKF12X12X6RM5	CG 023.4454	200.5440
C3	CK 600PF+-10% 160V 5RDX10	CK 006.4208	200.5440
C4	CC 56PF 2% N750/IB 3ROHR	CC 006.1567	200.5440
C5	CK 220NF+-20%100V QUADER	CK 006.5056	200.5440
C6	CE 4,7MF 10V RD 4X 8 TA	CE 006.3047	200.5440
C20	CE 100MF 40V RD13X17 TOPF	CE 022.7595	200.5440
C21	CK 220NF+-20%100V QUADER	CK 006.5056	200.5440
C22	CK 1MF+-10%100V QUADER	CK 006.5091	200.5440
C23	CE 10MF70V RD 8X18 TA	CE 006.3399	200.5440
C24	CE 47MF 63V RD13X17 TOPF	CE 022.7672	200.5440
C31	CE 100MF 20V RD10X21TA	CE 006.3201	200.5440
C32	CC 10 NF +100%HDK6000	CC 022.0678	200.5440
C33	CK 330NF+-20%100V QUADER	CK 006.5062	200.5440
C52	CK 4,7NF+-10%160V RD14X3X	CK 006.5310	200.5440
C53	CC 27PF 2% NP0/IB 3ROHR	CC 006.1244	200.5440
C54	CK 470PF+-10% 63V 4RDX7KS	CK 023.7182	200.5440
C55	CK 300PF+- 10%630V 6RDX10	CK 006.4437	200.5440
C56	CE 47MF 16V RD9X13 TOPF	CE 022.7543	200.5440
C57	CE 100MF 40V RD13X17 TOPF	CE 022.7595	200.5440
GL1	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5440
GL2	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5440
GL51	AE ZY30 30V 5% 1,3W Z-DI	012.5202	200.5440
GL52	AE ZY30 30V 5% 1,3W Z-DI	012.5202	200.5440
GL53	AE ZP8,2 5% 0,4W Z-DI	AE 012.2710	200.5440
GL54	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5440
R1	RS 0,5W22KOHM+-20%LIN PIN	RS 066.8845	200.5440
R2	RF 0,25 W 6,8 KOHM +-5%	RF 007.0358	200.5440
R3	RF 0,25 W 150 KOHM +-2%	028.1776	200.5440
R4	RF 0,25 W 150 KOHM +-2%	028.1776	200.5440
R5	RF 0,25W 180KOHM+-2%	069.4105	200.5440
R6	RF 0,25 W 68 KOHM +-2%	RF 028.1753	200.5440
R7	RS 0,5W 25KOHM KURVE1STEH	RS 030.5875	200.5440
R8	RF 0,25 W 100 KOHM +-5%	RF 007.0493	200.5440
R9	RF 0,25 W 100 KOHM +-5%	RF 007.0493	200.5440
R10	RF 0,25 W 1,5 KOHM +-5%	RF 007.0270	200.5440
R11	RF 0,25 W 1 KOHM+-5%	RF 007.0258	200.5440
R12	RF 0,25 W 22 KOHM +-5%	RF 007.0412	200.5440
R13	RF 0,25 W 56 KOHM +-5%	RF 007.0464	200.5440
R14	RF 0,25 W 56 KOHM +-5%	RF 007.0464	200.5440
R15	RF 0,25 W 10 KOHM +-5%	RF 007.0370	200.5440
R16	RF 0,25 W 10 KOHM +-5%	RF 007.0370	200.5440
R17	RF 0,25 W 18 KOHM +-5%	RF 007.0406	200.5440
R18	RS 0,5W 25KOHM KURVE1STEH	RS 030.5875	200.5440
R19	RF 0,25 W 56 KOHM +-5%	RF 007.0464	200.5440
R20	RF 0,25 W 2,7 KOHM +-5%	RF 007.0306	200.5440
R21	RF 0,25 W 150 KOHM +-5%	RF 007.0512	200.5440
R22	RF 0,25 W 33 KOHM +-5%	RF 007.0435	200.5440

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	06	0374	MODULATIONSTEIL	200.5440 SA	02

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
R23	RF 0,25 W 4,7 KOHM +-5%	RF 007.0335	200.5440
R24	RF 0,25 W 10 KOHM +-5%	RF 007.0370	200.5440
R25	RF 0,25 W 1,5 KOHM +-5%	RF 007.0270	200.5440
R26	RF 0,25 W 220 OHM +-5%	RF 007.0170	200.5440
R29	RF 0,25 W 100 OHM +-5%	RF 007.0135	200.5440
R30	RF 0,25 W 470 KOHM +-5%	RF 007.0570	200.5440
R31	RF 0,25 W 560 KOHM +-5%	RF 007.0587	200.5440
R32	RF 0,25 W 180 KOHM +-5%	RF 007.0529	200.5440
R33	RF 0,25 W 100 OHM +-5%	RF 007.0135	200.5440
R34	RF 0,25 W 100 KOHM +-5%	RF 007.0493	200.5440
R35	RF 0,25 W 330 KOHM +-5%	RF 007.0558	200.5440
R36	RF 0,25 W 1,5 KOHM +-5%	RF 007.0270	200.5440
R37	RF 0,25 W 33 KOHM +-5%	RF 007.0435	200.5440
R38	RF 0,25 W 15 KOHM +-5%	RF 007.0393	200.5440
R39	RF 0,25 W 15 KOHM +-5%	RF 007.0393	200.5440
R40	RF 0,25 W 10 KOHM +-5%	RF 007.0370	200.5440
R41	RF 0,25 W 6,8 KOHM +-5%	RF 007.0358	200.5440
R42	RS 0,5W2,5KOHM KURVE1STEH	RS 030.5830	200.5440
R43	RF 0,25 W 2,2 KOHM +-5%	RF 007.0293	200.5440
R44	RF 0,25 W 560 KOHM +-5%	RF 007.0587	200.5440
R45	RF 0,5 W 22 KOHM+-5%	RF 007.1531	200.5440
R49	RL 0,25W 100 KOHM+-0,5%	065.0211	200.5440
R50	RS 0,5W 1KOHM KURVE1STEH.	RS 030.5823	200.5440
R51	RF 0,25 W 270 KOHM +-5%	RF 007.0541	200.5440
R52	RL 0,25W 133KOHM+-0,5%	065.0470	200.5440
R53	RF 0,25 W 1,5 KOHM +-5%	RF 007.0270	200.5440
R54	RL 0,25W 392 KOHM+-0,5%	065.1376	200.5440
R55	RF 0,25 W 4,7 KOHM +-5%	RF 007.0335	200.5440
R56	RF 0,25 W 22 KOHM +-5%	RF 007.0412	200.5440
R57	RF 0,25 W 22 KOHM +-5%	RF 007.0412	200.5440
R58	RF 0,25 W 2,2 KOHM +-5%	RF 007.0293	200.5440
R59	RF 0,5 W 10 KOHM +-5%	RF 007.1490	200.5440
R60	RF 0,25 W 10 KOHM +-5%	RF 007.0370	200.5440
R61	RF 0,25 W 1 KOHM+-5%	RF 007.0258	200.5440
R62	RF 0,25W 33KOHM +-5%	RF 069.3338	200.5440
T1	AM BF244A N-KANAL-FET 30V	010.8510	200.5440
T2	AK BCY79IX PNP 45V200MIA	AK 010.3777	200.5440
T20	AK BCY59CI NPN 45V200MIA	AK 010.5163	200.5440
T21	AK BCY59CI NPN 45V200MIA	AK 010.5163	200.5440
T30	AK BCY79IX PNP 45V200MIA	AK 010.3777	200.5440
T31	AK BCY59CI NPN 45V200MIA	AK 010.5163	200.5440
T32	AK BCY59CI NPN 45V200MIA	AK 010.5163	200.5440
T33	AK BCY59CI NPN 45V200MIA	AK 010.5163	200.5440
T34	AK BCY79IX PNP 45V200MIA	AK 010.3777	200.5440
T35	AK BCY59CI NPN 45V200MIA	AK 010.5163	200.5440
T36	AK BCY59CI NPN 45V200MIA	AK 010.5163	200.5440
T51	AK 2N1893 NPN 120V 500MIA	AK 010.5470	200.5440
T52	AK 2N1893 NPN 120V 500MIA	AK 010.5470	200.5440

ENDE



ROHDE & SCHWARZ · MÜNCHEN

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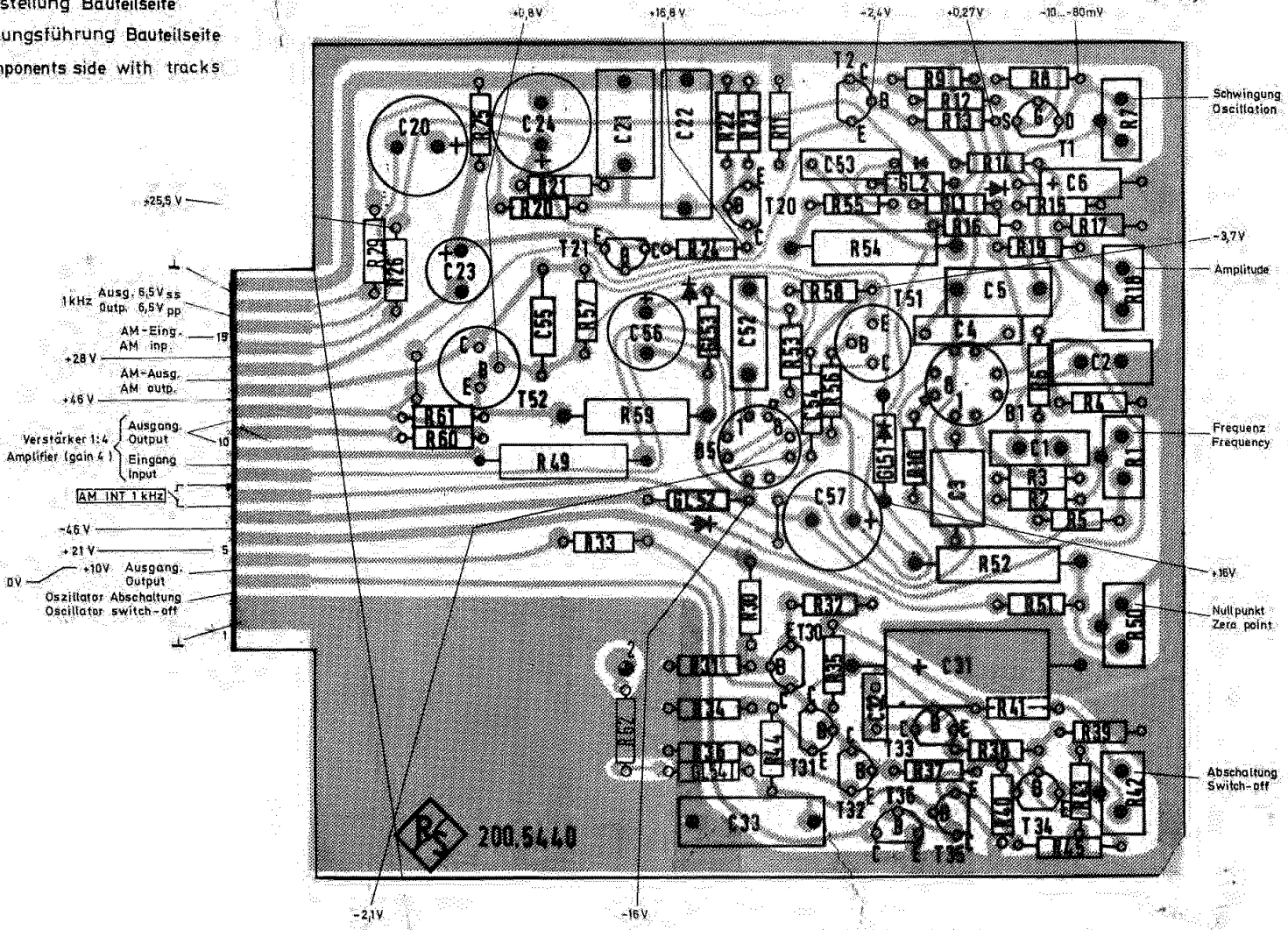
Änd. Mitteilg. Nr.	Änd. zust.	Name	Datum
	A	Fl.	28. .70
—	B	lbg.	1.12.70
17 136	C	lbg.	1.72
17217	D	Kir	15.2.72
174.97	E	Gn	22.9.72
19079	F	Gn	5.2.74

Stromlauf zu	Z	Zeichn. Nr. 200.5440 S
Modulationsteil		200.1009V | 200.1009

1CDE 4393.1267.10 3

Darstellung Bauteilseite
Leitungsführung Bauteilseite
Components side with tracks



Blatt Nr. 2

			Halbzeug, Werkstoff				Unto lerierte Maße	Zeichn.-Nr.	
ROHDE & SCHWARZ MÜNCHEN								200.5440	
1GME	Datum	Name	Änd. zust.	Änd.-Mitlg.-Nr.	Datum	Name	Maßstab 2:1	200.1009V	200.1009
gezeichnet	5.10.71	Ga	B	17497	10.72	Gn		Ersatz f. Zeichn.	
bearbeitet			C	17581	11.72	Gn			
geprüft			E	19079	5.2.74	Gn	Modulationsteil		Z
normgepr.									

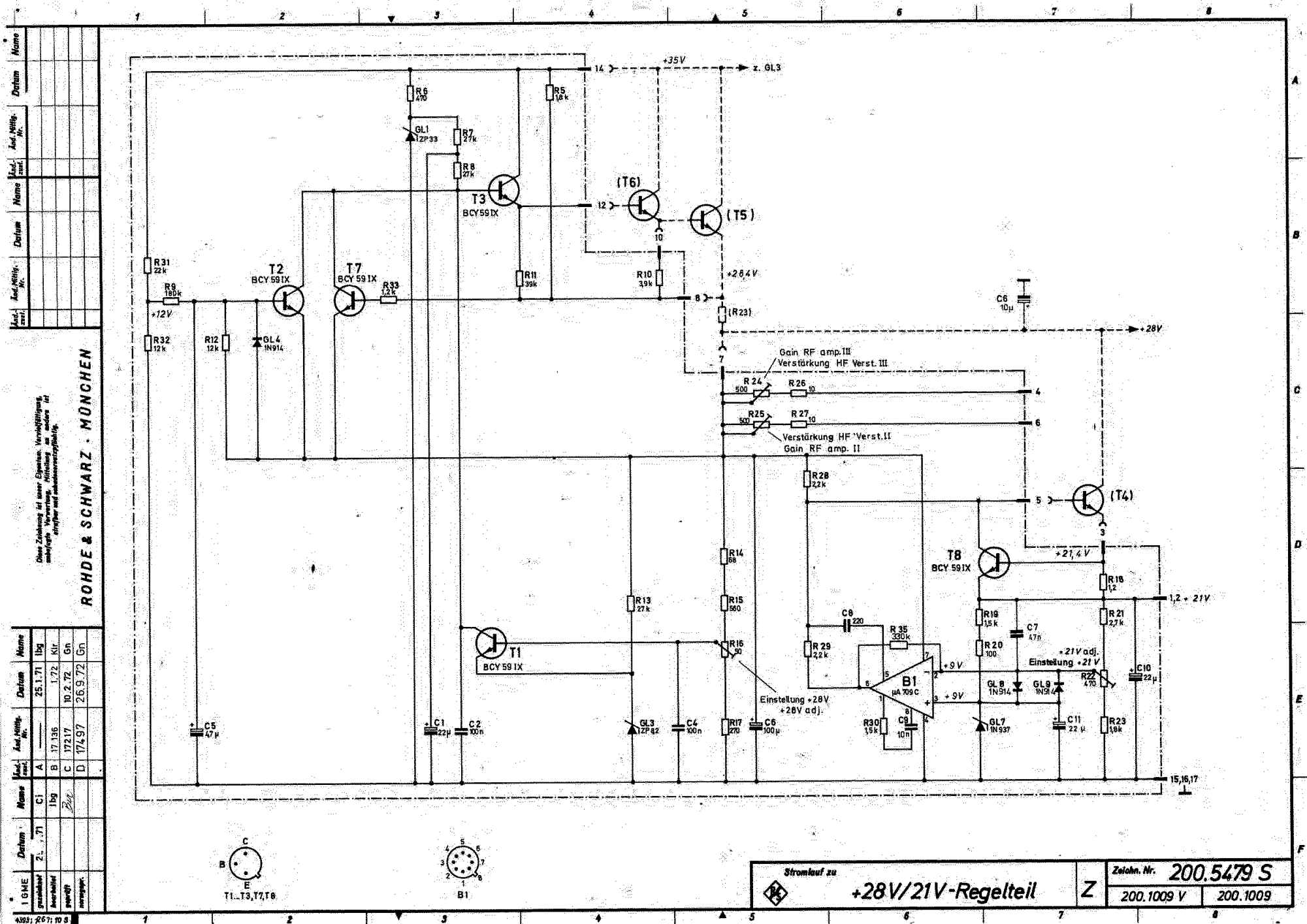
ISO-Projektion, Methode E

Vervielfält.-Pause Nr.

Arbeitspause Nr.

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schalttelliste für	Sachnummer	Blatt Nr.
	06	0974	+28/21V-REGELTEIL	200.5479 SA	01

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
A	+28/21V-REGELTEIL Z STROMLAUF200.5479S	200.5479	200.5479
B1	BO MA709C -0+75 TO5 OP.	BO 009.1068	200.5479
C1	CE 22 MF-10+50%70V 10X26F	CE 006.6146	200.5479
C2	CK 100NF+-20%100V QUADER	CK 006.5033	200.5479
C4	CK 100NF+-20%100V QUADER	CK 006.5033	200.5479
C5	CE 4,7MF35V 8X 5X11TA/QUA	CE 022.8204	200.5479
C6	CE 100MF-10+50% 70V 18X31	CE 006.6169	200.5479
C8	CC 3 PF+-0,5PF5N033	CC 006.0119	200.5479
C9	CC 47PF 2% N750/IB 3ROHR	CC 006.1550	200.5479
C10	CE 22 MF35V13X 8X11TA/QUA	CE 022.8227	200.5479
C11	CE 22 MF35V13X 8X11TA/QUA	CE 022.8227	200.5479
GL1	AE ZP33 5% 0,4W Z-DI	012.2784	200.5479
GL3	AE ZP8,2 5% 0,4W Z-DI	012.2710	200.5479
GL4	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5479
GL7	AE 1N937 REF.DI.9V+-5%	080.4520	200.5479
GL8	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5479
GL9	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5479
R5	RF 1,0 W 1,8 KOHM+-5%	RF 007.2609	200.5479
R6	RF 0,25 W 470 OHM +-5%	RF 007.0212	200.5479
R7	RF 0,25 W 27 KOHM +-5%	RF 007.0429	200.5479
R8	RF 0,25 W 27 KOHM +-5%	RF 007.0429	200.5479
R9	RF 0,25 W 180 KOHM +-5%	RF 007.0529	200.5479
R10	RF 0,25W 3,9K OHM+-5%	RF 007.0329	200.5479
R11	RF 0,25 W 39 KOHM +-5%	RF 007.0441	200.5479
R12	RF 0,25 W 12 KOHM +-5%	RF 007.0387	200.5479
R13	RF 0,25 W 27 KOHM +-5%	RF 007.0429	200.5479
R14	RF 0,5 W 68 OHM+-5%	RF 007.1231	200.5479
R15	RF 0,5W 560 OHM+-5%	RF 007.1348	200.5479
R16	RS 0,5W 500HM KURVE1STEH.	RS 030.5781	200.5479
R17	RF 0,5 W 270 OHM +-5%	RF 007.1302	200.5479
R18	RF 0,5 W 1,2 OHM+- 5%	RF 007.1025	200.5479
R19	RF 0,5W 1,5 KOHM+-5%	RF 007.1390	200.5479
R20	RF 0,5 W100 OHM+-5%	RF 007.1254	200.5479
R21	RL 0,15W 2,67KOHM+-1%TK50	RL 067.4637	200.5479
R22	RS 0,5W4700HM+-20%LIN PIN	RS 066.8797	200.5479
R23	RL 0,15W 1,82KOHM+-1%TK50	RL 067.4595	200.5479
R24	RS 0,8W 5000HM KURVE1STEH	RS 030.6159	200.5479
R25	RS 0,8W 5000HM KURVE1STEH	RS 030.6159	200.5479
R26	RF 0,5 W 10 OHM+-5%	RF 007.1131	200.5479
R27	RF 0,5 W 10 OHM+-5%	RF 007.1131	200.5479
R28	RF 0,5 W 2,2 KOHM +-5%	RF 007.1419	200.5479
R29	RF 0,5 W 2,2 KOHM +-5%	RF 007.1419	200.5479
R30	RF 0,25 W 1,5 KOHM +-5%	RF 007.0270	200.5479
R31	RF 0,25 W 22 KOHM +-5%	RF 007.0412	200.5479
R32	RF 0,25 W 12 KOHM +-5%	RF 007.0387	200.5479
R33	RF 0,25 W 1,2 KOHM +-5%	RF 007.0264	200.5479
R35	RF 0,25 W 330 KOHM +-5%	RF 007.0558	200.5479
T1	AK BCY59C1 NPN 45V200MIA	AK 010.5163	200.5479
T2	AK BCY59C1 NPN 45V200MIA	AK 010.5163	200.5479
T3	AK BCY59C1 NPN 45V200MIA	AK 010.5163	200.5479



ROHDE & SCHWARZ · MÜNCHEN

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Änd.	Änd. Mitteilg. Nr.	Datum	Name
A	——	25.1.71	lbg
B	17136	1.72	Kir
C	17217	10.2.72	Gn
D	17497	26.9.72	Gn

	Name	Datum
gezeichnet	C1	21.71
bearbeitet	lbg	
geprüft		
freigegeben		

1 GME

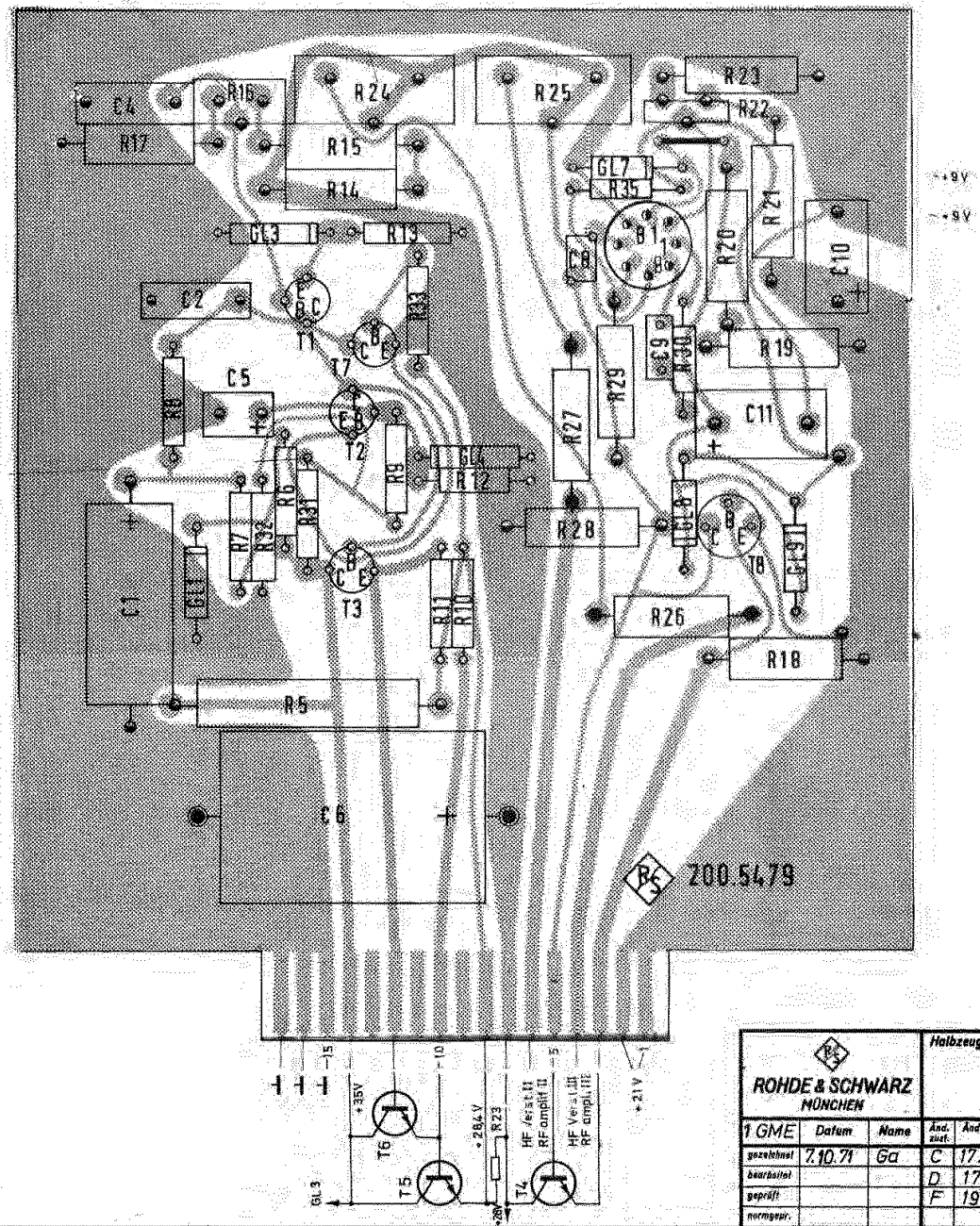
4393; 267; 10 S

Einstellung +28V
+28V adjust

Verstärkung HF-Verst. III
Gain RF amplifier III

Verstärkung HF-Verst II
Gain RF amplifier II

Einstellung +21V
+21V adjust



Darstellung Bauteilseite

Leitungsführung Leiterseite

Components side
with tracks on rear

Blatt Nr. 2

ROHDE & SCHWARZ MÜNCHEN			Halbzeug, Werkstoff				Unfolierte Maße	Zeichn. Nr. 200.5479	
							Maßstab 2:1	200.1009V	200.1009
1 GME	Datum	Name	Änd. zust.	Änd.-Mitteilg. Nr.	Datum	Name		Ersatz f. Zeichn.	
gezeichnet	7.10.71	Ga	C	17217	25.2.72	Gn	+28/21V - Regelteil		Z
bearbeitet			D	17497	26.9.72	Gn			
geprüft			F	19322	4.9.74	Gn			
normgepr.									

ISO-Projektion, Methode E

Vervielfält.-Pause Nr.

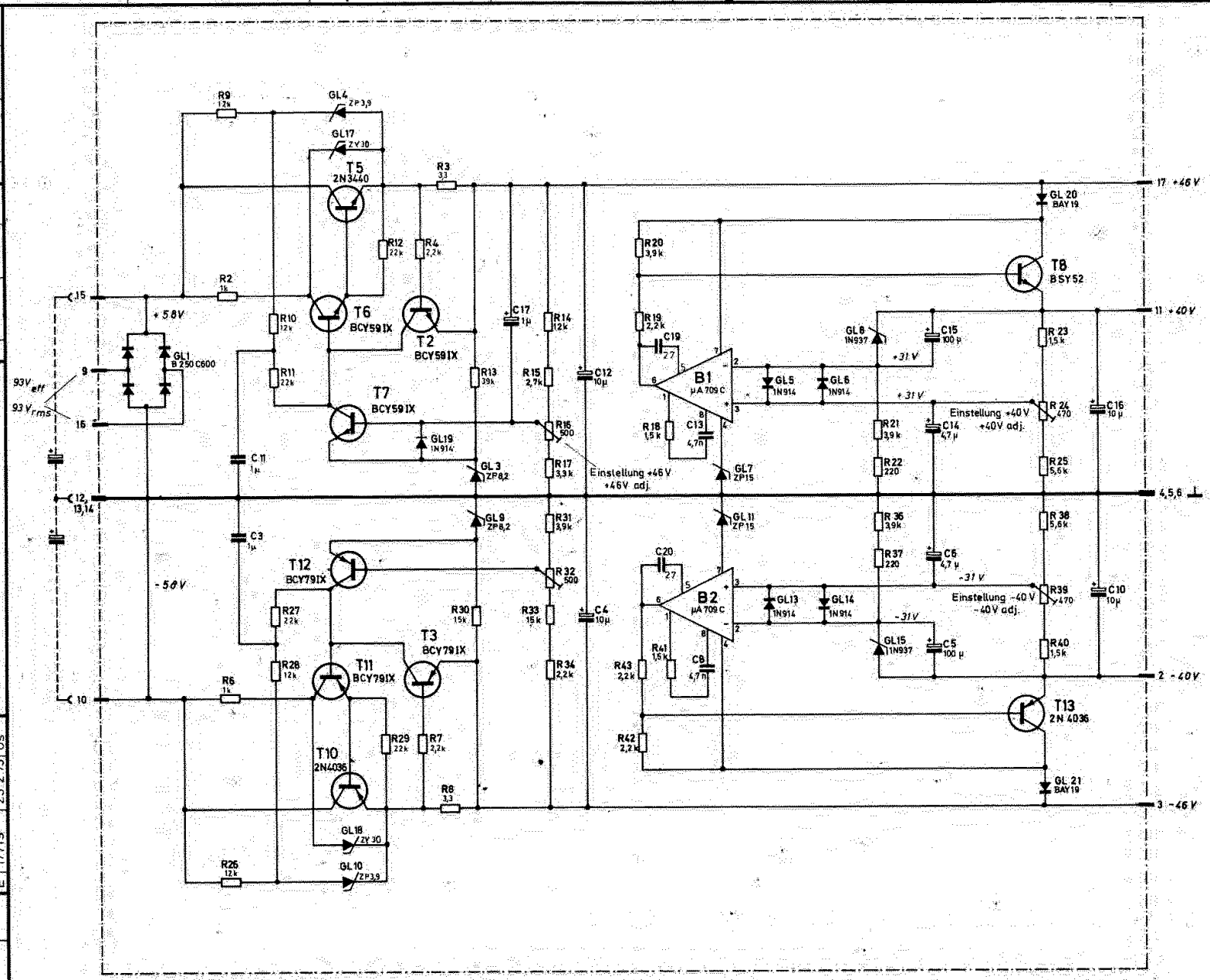
Arbeitspause Nr.

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	06	0374	+-46/40V-REGELTEIL	200.5504 SA	01

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
A	+-46/40V-REGELTEIL Z STROML.200.5504S	200.5504	200.5504
B1	RO MA709C -0+75 TO5 OP.	BO 009.1068	200.5504
B2	BO MA709C -0+75 TO5 OP.	BO 009.1068	200.5504
C3	CK 1MF+-10% 100V RUNDB.	CK 024.7105	200.5504
C4	CE 10MF 63V RD9X13 TOPF	CE 022.7650	200.5504
C5	CE 100MF 10V RD 8X18TA	CE 006.3060	200.5504
C6	CE 4,7MF35V RD 5X13 TA	CE 006.3253	200.5504
C8	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.5504
C10	CE 10MF 63V RD9X13 TOPF	CE 022.7650	200.5504
C11	CK 1MF+-10% 100V RUNDB.	CK 024.7105	200.5504
C12	CE 10MF 63V RD9X13 TOPF	CE 022.7650	200.5504
C13	CC 4,7NF+80-20%HDK6000	CC 022.0626	200.5504
C14	CE 4,7MF35V RD 5X13 TA	CE 006.3253	200.5504
C15	CE 100MF 10V RD 8X18TA	CE 006.3060	200.5504
C16	CE 10MF 63V RD9X13 TOPF	CE 022.7650	200.5504
C17	CE 1MF 63V RD9X13 TOPF	CE 022.7620	200.5504
C19	CC 27PF 5% N750/1B RD8	CC 006.0377	200.5504
C20	CC 27PF 5% N750/1B RD8	CC 006.0377	200.5504
GL1	AG B60C800SI0,8A60V	AG 013.2042	200.5504
GL3	AE ZP8,2 5% 0,4W Z-DI	AE 012.2710	200.5504
GL4	AE ZP3,9 5% 0,4W Z-DI	AE 012.2678	200.5504
GL5	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5504
GL6	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5504
GL7	AE ZP15 5% 0,4W Z-DI	AE 012.2749	200.5504
GL8	AE 1N937 REF.DI.9V+-5%	080.4520	200.5504
GL9	AE ZP8,2 5% 0,4W Z-DI	AE 012.2710	200.5504
GL10	AE ZP3,9 5% 0,4W Z-DI	AE 012.2678	200.5504
GL11	AE ZP15 5% 0,4W Z-DI	AE 012.2749	200.5504
GL13	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5504
GL14	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5504
GL15	AE 1N937 REF.DI.9V+-5%	080.4520	200.5504
GL17	AE ZY30 30V 5% 1,3W Z-DI	012.5202	200.5504
GL18	AE ZY30 30V 5% 1,3W Z-DI	012.5202	200.5504
GL19	AD 1N914 SI 75V 75MIA	AD 012.0698	200.5504
GL20	AD BAY19 SI 180V 800MIA	AD 012.0881	200.5504
GL21	AD BAY19 SI 180V 800MIA	AD 012.0881	200.5504
R2	RF 0,5 W 1 KOHM +-5%	RF 007.1377	200.5504
R3	RF 0,5W 3,3 OHM+-5%	RF 007.1077	200.5504
R4	RF 0,25 W 2,2 KOHM +-5%	RF 007.0293	200.5504
R6	RF 0,5 W 1 KOHM +-5%	RF 007.1377	200.5504
R7	RF 0,25 W 2,2 KOHM +-5%	RF 007.0293	200.5504
R8	RF 0,5W 3,3 OHM+-5%	RF 007.1077	200.5504
R9	RF 0,25 W 12 KOHM +-5%	RF 007.0387	200.5504
R10	RF 0,25 W 12 KOHM +-5%	RF 007.0387	200.5504
R11	RF 0,25 W 22 KOHM +-5%	RF 007.0412	200.5504
R12	RF 0,25 W 22 KOHM +-5%	RF 007.0412	200.5504
R13	RF 0,25 W 39 KOHM +-5%	RF 007.0441	200.5504
R14	RF 0,5 W 12 KOHM +-5%	RF 007.1502	200.5504
R15	RF 0,5W 2,7KOHM+-5%	RF 007.1425	200.5504
R16	RS 0,5W5000HM KURVE1STEH.	RS 030.5817	200.5504
R17	RF 0,5 W 3,3 KOHM +-5%	RF 007.1431	200.5504

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	06	0374	+-46/40V-REGELTEIL	200.5504 SA	02

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
R18	RF 0,25 W 1,5 KOHM +-5%	RF 007.0270	200.5504
R19	RF 0,3 W 2,2 KOHM +-5%	RF 028.2508	200.5504
R20	RF 0,3 W 3,9 KOHM +-5%	RF 028.2550	200.5504
R21	RF 0,3 W 3,9 KOHM +-5%	RF 028.2550	200.5504
R22	RF 0,3W 220 OHM+-5%	RF 028.2295	200.5504
R23	RL 0,15W 1,50KOHM+-1%TK50	RL 067.4572	200.5504
R24	RS 0,5W4700HM+-20%LIN PIN	RS 066.8797	200.5504
R25	RL 0,15W 5,62KOHM+-1%TK50	RL 067.4714	200.5504
R26	RF 0,25 W 12 KOHM +-5%	RF 007.0387	200.5504
R27	RF 0,25 W 22 KOHM +-5%	RF 007.0412	200.5504
R28	RF 0,25 W 12 KOHM +-5%	RF 007.0387	200.5504
R29	RF 0,25 W 22 KOHM +-5%	RF 007.0412	200.5504
R30	RF 0,25 W 39 KOHM +-5%	RF 007.0441	200.5504
R31	RF 0,5 W 3,9 KOHM +-5%	RF 007.1448	200.5504
R32	RS 0,5W5000HM KURVE1STEH.	RS 030.5817	200.5504
R33	RF 0,5 W 15 KOHM+-5%	RF 007.1519	200.5504
R34	RF 0,5 W 2,2 KOHM +-5%	RF 007.1419	200.5504
R36	RF 0,3 W 3,9 KOHM +-5%	RF 028.2550	200.5504
R37	RF 0,3W 220 OHM+-5%	RF 028.2295	200.5504
R38	RL 0,15W 5,62KOHM+-1%TK50	RL 067.4714	200.5504
R39	RS 0,5W4700HM+-20%LIN PIN	RS 066.8797	200.5504
R40	RL 0,15W 1,50KOHM+-1%TK50	RL 067.4572	200.5504
R41	RF 0,25 W 1,5 KOHM +-5%	RF 007.0270	200.5504
R42	RF 0,3 W 2,2 KOHM +-5%	RF 028.2508	200.5504
R43	RF 0,3 W 2,2 KOHM +-5%	RF 028.2508	200.5504
T2	AK BCY59CI NPN 45V200MIA	AK 010.5163	200.5504
T3	AK BCY79IX PNP 45V200MIA	AK 010.3777	200.5504
T5	AK 2N3440SINPN 300V 1A	AK 010.5586	200.5504
T6	AK BCY59CI NPN 45V200MIA	AK 010.5163	200.5504
T7	AK BCY59CI NPN 45V200MIA	AK 010.5163	200.5504
T8	AK BSY52 SINPN 60V 500MIA	AK 010.5005	200.5504
T10	AK 2N4036SIPNP90V1A	AK 010.2164	200.5504
T11	AK BCY79IX PNP 45V200MIA	AK 010.3777	200.5504
T12	AK BCY79IX PNP 45V200MIA	AK 010.3777	200.5504
T13	AK 2N4036SIPNP90V1A	AK 010.2164	200.5504
	ENDE		



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ROHDE & SCHWARZ · MÜNCHEN

Ind. zust.	Ind. Mitlg. Nr.	Datum	Name
A	—	21.1.71	lbg
B	17136	1.72	Klr
C	17217	3.72	Gn
D	17497	10.72	Gn
E	17719	23.2.73	Gs

	Datum	Name
gezeichnet	21.71	Ci
kontrolliert		lbg
geprüft		
freigegeben		

1GME

Stromlauf zu

±46V/40V-Regelteil

Z

Zeichn. Nr. 200.5504 S

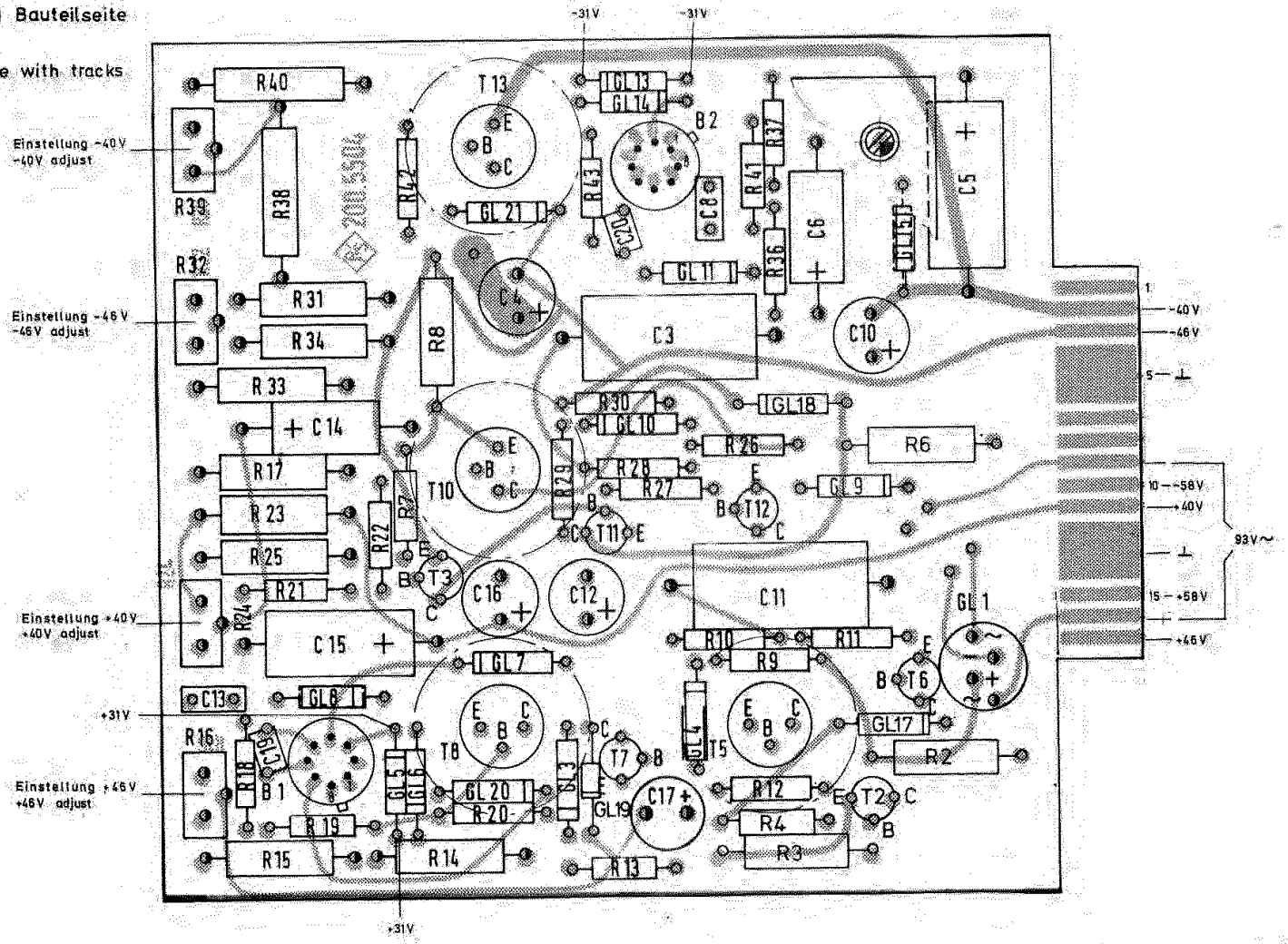
200.1009 V | 200.1009

4393; 12.67; 10 S

Darstellung Bauteilseite

Leitungsführung Bauteilseite

Components side with tracks



Diese Zeichnung ist unser Eigentum. Vervielfältigung, ablichtg., Verwertung, Mitteilung an andere ist ohne unsere ausdrückl. schriftliche Genehmigung strafbar und schadenersatzpflichtig.

Blatt Nr. 2

ROHDE & SCHWARZ MÜNCHEN			Halbzeug, Werkstoff				Untolerierte Maße	Zeichn. Nr. 200.5504	
							Maßstab 2:1	200.1009 V	200.1009
1 GME	Datum	Name	Änd. zust.	Änd.-Mitt.-Nr.	Datum	Name		Ersatz f. Zeichn.	
gezeichnet	6.10.71	Ga	F	19079	7. 2. 74	Gn	±46/40V - Regelteil		Z
bearbeitet			C	17217	25. 2. 72	Gn			
geprüft			D	17497	10. 72	Gn			
normgepr.			E	17719	28. 2. 73	Gn			

ISO-Projektion, Methode E

Vervielfält.-Pause Nr.

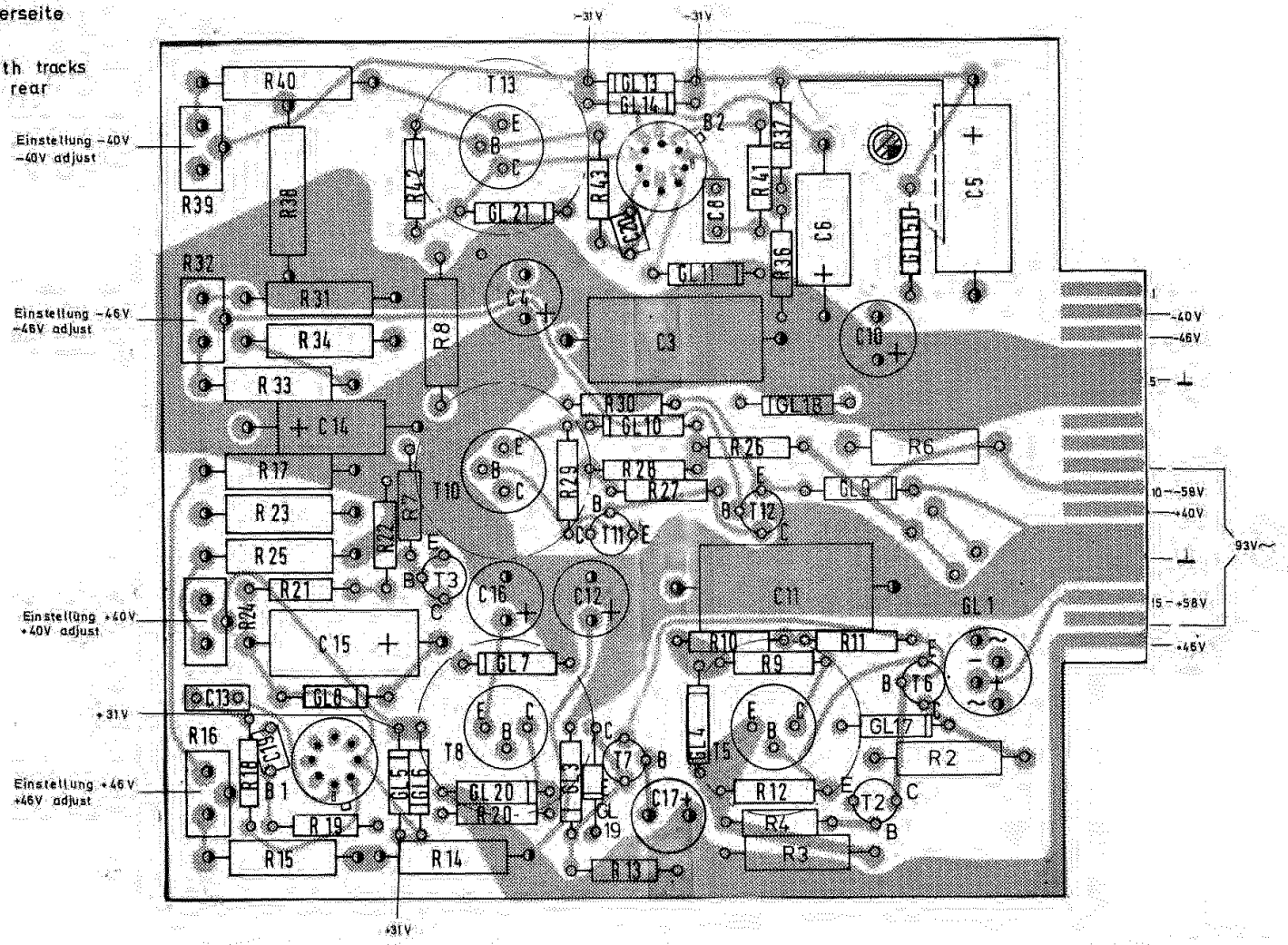
Arbeitspause Nr.

40/11.67

Darstellung Bauteilseite

Leitungsführung Leiterseite

Components side with tracks on rear



Diese Zeichnung ist unser Eigentum. Vervielfältigung, sonstige Verwertung, Mitteilung an andere ist ohne unsere ausdrückliche Genehmigung strafbar und schadenersatzpflichtig.

Blatt Nr.3

ROHDE & SCHWARZ MÜNCHEN			Halbzeug, Werkstoff				Unto lerierte Maße	Zeichn. Nr. 200.5504	
1 GME	Datum	Name	Änd. zust.	Änd.-Mitteilg. Nr.	Datum	Name	Maßstab 2:1	200.1009 V	200.1009
gezeichnet	6.10.71	Ga	C	17217	25.2.72	Gn		Ersatz f. Zeichn.	
bearbeitet			D	17497	10.72	Gn			
geprüft			E	17719	28.2.73	Gn	±46/40V - Regelteil		Z
normgepr.			F	19079	7.2.74	Gn			

ISO-Projektion, Methode E

Vervielfält.-Pause Nr.

Arbeitspause Nr.

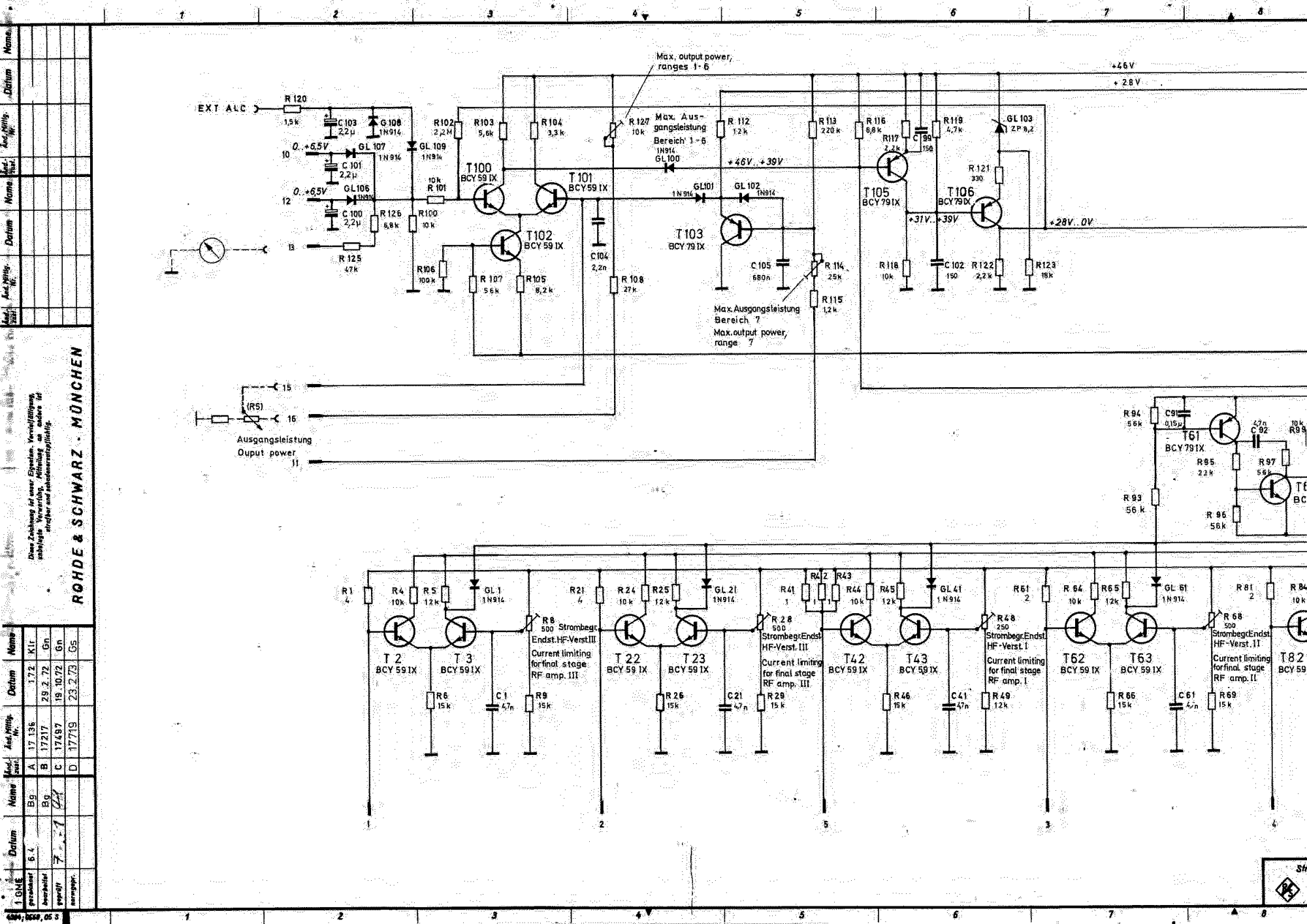
4b 11.69

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	04	0378	REGELVERSTAERKER	200.5540 SA	01

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
A	REGELVERSTAERKER I STROMLAUF 200.5540S	200.5540	200.5540
C1	4,7NF +100% HDK6000 6X6	CC 022.0661	200.5540
C21	4,7NF +100% HDK6000 6X6	CC 022.0661	200.5540
C41	4,7NF +100% HDK6000 6X6	CC 022.0661	200.5540
C61	4,7NF +100% HDK6000 6X6	CC 022.0661	200.5540
C81	4,7NF +100% HDK6000 6X6	CC 022.0661	200.5540
C91	150NF+-20%100V QUADER MKT	CK 006.5040	200.5540
C92	4,7NF +100% HDK6000 6X6	CC 022.0661	200.5540
C99	150PF+-20% HDK700 RD5	CC 006.0448	200.5540
C100	2,2MF35V 7X 4X 8TA/QUADER	CE 022.8191	200.5540
C101	2,2MF35V 7X 4X 8TA/QUADER	CE 022.8191	200.5540
C102	150PF+-20% HDK700 RD5	CC 006.0448	200.5540
C103	2,2MF35V 7X 4X 8TA/QUADER	CE 022.8191	200.5540
C104	2,2NF+50-20% HDK6000 RD9	CC 006.0502	200.5540
C105	680NF+-20%100V QUADER MKT	CK 006.5085	200.5540
GL1	1N914 SI 75V 75MIA	AD 012.0698	200.5540
GL21	1N914 SI 75V 75MIA	AD 012.0698	200.5540
GL41	1N914 SI 75V 75MIA	AD 012.0698	200.5540
GL61	1N914 SI 75V 75MIA	AD 012.0698	200.5540
GL81	1N914 SI 75V 75MIA	AD 012.0698	200.5540
GL91	1N914 SI 75V 75MIA	AD 012.0698	200.5540
GL100	1N914 SI 75V 75MIA	AD 012.0698	200.5540
GL101	1N914 SI 75V 75MIA	AD 012.0698	200.5540
GL102	1N914 SI 75V 75MIA	AD 012.0698	200.5540
GL103	ZF8,2 5% 0,4W Z-DI	AE 012.2710	200.5540
GL106	1N914 SI 75V 75MIA	AD 012.0698	200.5540
GL107	1N914 SI 75V 75MIA	AD 012.0698	200.5540
GL108	1N914 SI 75V 75MIA	AD 012.0698	200.5540
GL109	1N914 SI 75V 75MIA	AD 012.0698	200.5540
R1	0,5W 40HM+-5%	RD 029.6307	200.5540
R4	0,25 W 10 KOHM +-5%	RF 007.0370	200.5540
R5	0,25 W 12 KOHM +-5%	RF 007.0387	200.5540
R6	0,25 W 15 KOHM +-5%	RF 007.0393	200.5540
R8	0,5W 500 OHM KURVE 18TEH,	RS 090.5817	200.5540
R9	0,25 W 15 KOHM +-5%	RF 007.0393	200.5540
R21	0,5W 40HM+-5%	RD 029.6307	200.5540
R24	0,25 W 10 KOHM +-5%	RF 007.0370	200.5540
R25	0,25 W 12 KOHM +-5%	RF 007.0387	200.5540
R26	0,25 W 15 KOHM +-5%	RF 007.0393	200.5540
R28	0,5W 500 OHM KURVE 18TEH,	RS 090.5817	200.5540
R29	0,25 W 15 KOHM +-5%	RF 007.0393	200.5540
R41	0,5W 10HM +-5%	RD 029.6259	200.5540
R42	0,5W 10HM +-5%	RD 029.6259	200.5540
R43	0,5W 10HM +-5%	RD 029.6259	200.5540
R44	0,25 W 10 KOHM +-5%	RF 007.0370	200.5540
R45	0,25 W 12 KOHM +-5%	RF 007.0387	200.5540
R46	0,25 W 15 KOHM +-5%	RF 007.0393	200.5540
R48	0,5W 250 OHM KURVE 15TEH,	RS 090.5800	200.5540
R49	0,25 W 12 KOHM +-5%	RF 007.0387	200.5540
R61	0,5W 20HM+-5%	RD 029.6271	200.5540
R64	0,25 W 10 KOHM +-5%	RF 007.0370	200.5540
R65	0,25 W 12 KOHM +-5%	RF 007.0387	200.5540

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	04	0373	REGELVERSTAERKER	200.5540 SA	02

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
R66	0,25 W 15 KOHM +-5%	RF 007.0393	200.5540
R68	0,5W 500 OHM KURVE 1STEH.	RS 090.5817	200.5540
R69	0,25 W 15 KOHM +-5%	RF 007.0393	200.5540
R81	0,5W 20HM+-5%	RD 029.6271	200.5540
R84	0,25 W 10 KOHM +-5%	RF 007.0370	200.5540
R85	0,25 W 12 KOHM +-5%	RF 007.0387	200.5540
R86	0,25 W 15 KOHM +-5%	RF 007.0393	200.5540
R88	0,5W 500 OHM KURVE 1STEH.	RS 090.5817	200.5540
R89	0,25 W 15 KOHM +-5%	RF 007.0393	200.5540
R93	0,25 W 56 KOHM +-5%	RF 007.0464	200.5540
R94	0,25 W 56 KOHM +-5%	RF 007.0464	200.5540
R95	0,25 W 22 KOHM +-5%	RF 007.0412	200.5540
R96	0,25 W 56 KOHM +-5%	RF 007.0464	200.5540
R97	0,25 W 56 KOHM +-5%	RF 007.0464	200.5540
R98	0,25W 3,9K OHM+-5% S	RF 007.0329	200.5540
R99	0,25 W 10 KOHM +-5%	RF 007.0370	200.5540
R100	0,25 W 10 KOHM +-5%	RF 007.0370	200.5540
R101	0,25 W 10 KOHM +-5%	RF 007.0370	200.5540
R102	0,5 W 2,2 MOHM +-5%	RF 007.1777	200.5540
R103	0,25 W 5,6 KOHM +-5%	RF 007.0341	200.5540
R104	0,25 W 3,3 KOHM +-5%	RF 007.0312	200.5540
R105	0,5 W 8,2 KOHM +-5%	RF 007.1483	200.5540
R106	0,25 W 100 KOHM +-5%	RF 007.0493	200.5540
R107	0,5 W 56 KOHM+-5%	RF 007.1583	200.5540
R108	0,25 W 27 KOHM +-5%	RF 007.0429	200.5540
R112	0,25 W 12 KOHM +-5%	RF 007.0387	200.5540
R113	0,25 W 220 KOHM +-5%	RF 007.0535	200.5540
R114	0,5W 25 KOHM KURVE 1STEH.	RS 090.5875	200.5540
R115	0,25 W 1,2 KOHM +-5%	RF 007.0264	200.5540
R116	0,25 W 6,8 KOHM +-5%	RF 007.0358	200.5540
R117	0,25 W 2,2 KOHM +-5%	RF 007.0293	200.5540
R118	0,25 W 10 KOHM +-5%	RF 007.0370	200.5540
R119	0,25 W 4,7 KOHM +-5%	RF 007.0335	200.5540
R120	0,25 W 1,5 KOHM +-5%	RF 007.0270	200.5540
R121	0,25W 330 OHM+-5%	RF 007.0193	200.5540
R122	0,5 W 2,2 KOHM +-5%	RF 007.1419	200.5540
R123	0,25 W 18 KOHM +-5%	RF 007.0406	200.5540
R125	0,25 W 47 KOHM +-5%	RF 007.0488	200.5540
R126	0,25 W 6,8 KOHM +-5%	RF 007.0358	200.5540
R127	0,5W 10 KOHM KURVE 1STEH.	RS 090.5852	200.5540
T2	BCY59C1 SINPN 45V 200MIA	AK 010.5163	200.5540
T3	BCY59C1 SINPN 45V 200MIA	AK 010.5163	200.5540
T22	BCY59C1 SINPN 45V 200MIA	AK 010.5163	200.5540
T23	BCY59C1 SINPN 45V 200MIA	AK 010.5163	200.5540
T42	BCY59C1 SINPN 45V 200MIA	AK 010.5163	200.5540
T43	BCY59C1 SINPN 45V 200MIA	AK 010.5163	200.5540
T61	BCY79IX SIPNP 45V200MIA	AK 010.3777	200.5540
T62	BCY59C1 SINPN 45V 200MIA	AK 010.5163	200.5540
T63	BCY59C1 SINPN 45V 200MIA	AK 010.5163	200.5540
T64	BCY59C1 SINPN 45V 200MIA	AK 010.5163	200.5540
T82	BCY59C1 SINPN 45V 200MIA	AK 010.5163	200.5540
T83	BCY59C1 SINPN 45V 200MIA	AK 010.5163	200.5540
T100	BCY59C1 SINPN 45V 200MIA	AK 010.5163	200.5540
T101	BCY59C1 SINPN 45V 200MIA	AK 010.5163	200.5540
T102	BCY59C1 SINPN 45V 200MIA	AK 010.5163	200.5540
T103	BCY79IX SIPNP 45V200MIA	AK 010.3777	200.5540



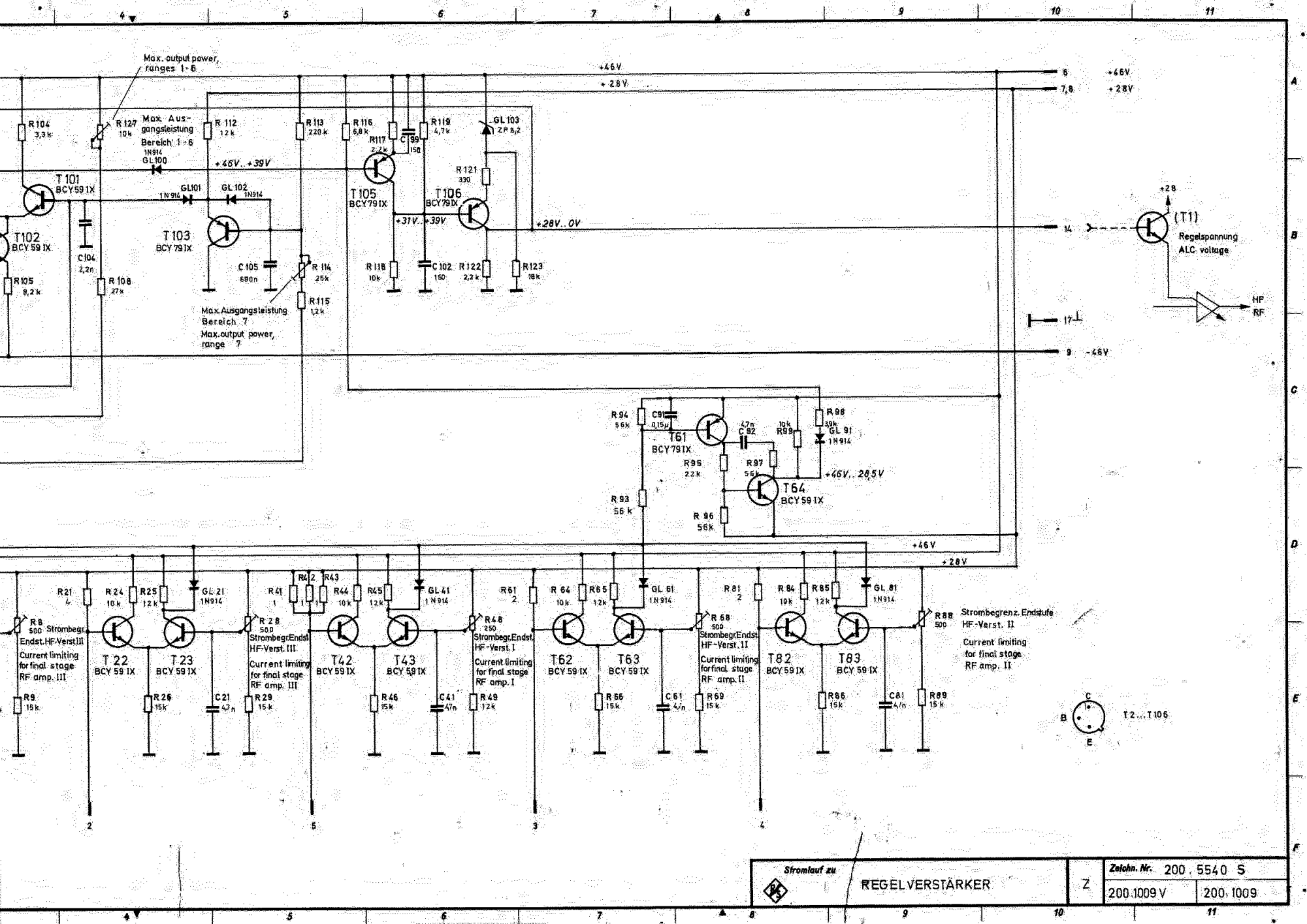
ROHDE & SCHWARZ - MÜNCHEN

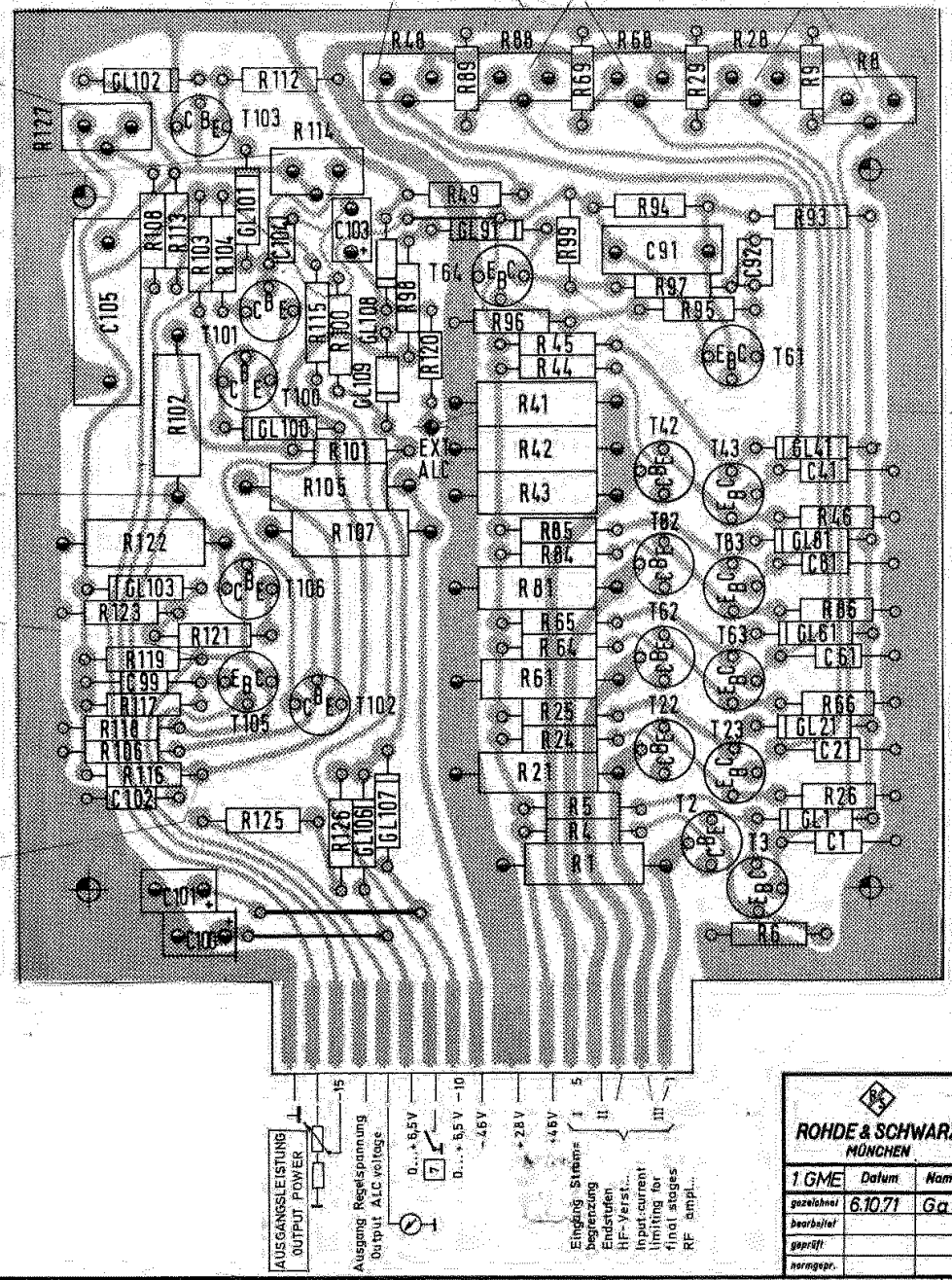
Änd. Mitteilg. Nr.	Änd. zust.	Name	Datum
17 136	A	Klr	1.72
17217	B	Gn	29.2.72
17497	C	Gn	19.10.72
17719	D	Gs	23.2.73

	Name	Datum
gezeichnet	Bg	6.4
bearbeitet	Bg	
geprüft		
normgepr.		

1 ONE

4004.0660.05 S


Max. output power, ranges 1-6
Max. Ausgangsleistung Bereich 1-6
Max. Ausgangsleistung Bereich 7
Max. output power, range 7
+46V
+28V
-46V
+46V..+39V
+31V..+39V
+28V..0V
+46V..28,5V
R104 3,3k
R127 10k
R112 1,2k
R113 220k
R116 6,8k
R117 2,2k
C99 150
R119 4,7k
GL103 ZP 8,2
R121 330
T101 BCY59IX
T102 BCY59IX
T103 BCY79IX
T105 BCY79IX
T106 BCY79IX
GL100 1N914
GL101 1N914
GL102 1N914
C104 2,2n
R105 8,2k
R108 27k
C105 680n
R114 25k
R115 1,2k
R118 10k
C102 150
R122 2,2k
R123 18k
(T1) Regelspannung ALC voltage
HF RF
R94 56k
C91 0,15µ
T61 BCY79IX
C92 47n
R99 10k
R98 39k
GL91 1N914
R95 22k
R97 56k
T64 BCY59IX
R93 56k
R96 56k
R21 4
R24 10k
R25 12k
GL21 1N914
R8 500 Strombegr. Endst. HF-Verst. III
Current limiting for final stage RF amp. III
T22 BCY59IX
T23 BCY59IX
R9 15k
R26 15k
C21 47n
R28 500 Strombegr. Endst. HF-Verst. III
Current limiting for final stage RF amp. III
R29 15k
R41 1
R42 1
R43 1
R44 10k
R45 12k
GL41 1N914
T42 BCY59IX
T43 BCY59IX
R46 15k
C41 47n
R48 250 Strombegr. Endst. HF-Verst. I
Current limiting for final stage RF amp. I
R49 12k
R61 2
R64 10k
R65 12k
GL61 1N914
T62 BCY59IX
T63 BCY59IX
R56 15k
C61 47n
R81 2
R68 500 Strombegr. Endst. HF-Verst. II
Current limiting for final stage RF amp. II
R69 15k
R84 10k
R85 12k
GL81 1N914
T82 BCY59IX
T83 BCY59IX
R86 15k
C81 47n
R88 500 Strombegrenz. Endstufe HF-Verst. II
Current limiting for final stage RF amp. II
R89 15k
T2...T106
Stromlauf zu
REGELVERSTÄRKER
Z
Zeichn. Nr. 200.5540 S
200.1009 V
200.1009



Darstellung Bauteilseite

Leitungsführung Leiterseite

Components side with tracks on rear

Blatt Nr. 2

ROHDE & SCHWARZ MÜNCHEN	Halbzeug, Werkstoff	Unfolierte Maße	Zeichn. Nr. 200.5540
		Maßstab 2:1	200.1009 V / 200.1009
			Ersatz f. Zeichn.

1 GME	Datum	Name	Änd. zust.	Änd.-Mittg. Nr.	Datum	Name
gezeichnet	6.10.71	Ga	C	17217	29.2.72	Gn
bearbeitet			D	17497	10.72	Gn
geprüft						
normgepr.						

Regelverstärker

Z

ISO-Projektion, Methode E

Vervielfält.-Pause Nr.

Arbeitspause Nr.

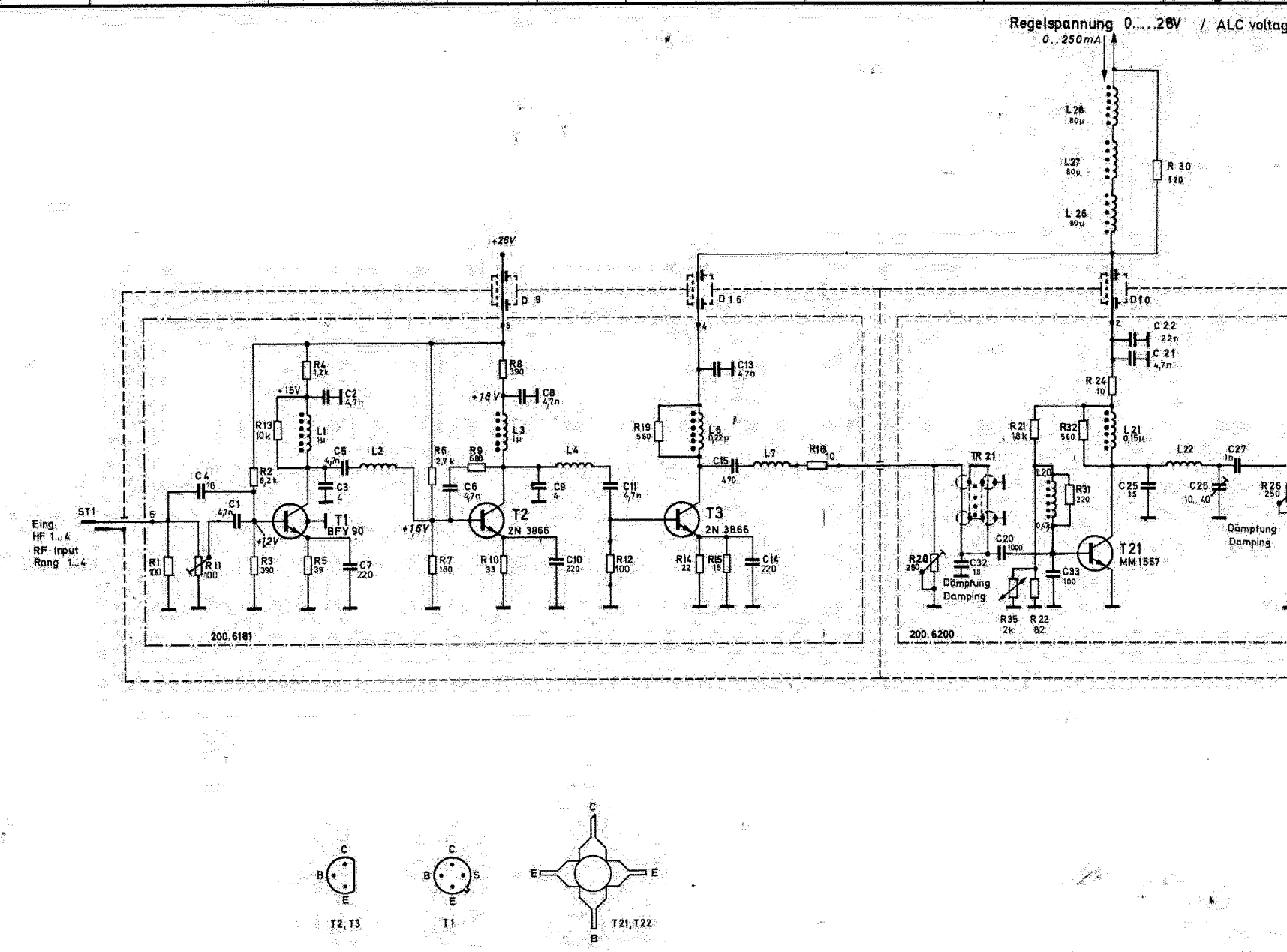
ROHDE & SCHWARZ
MÜNCHEN

ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
07	0373	VERSTAERKER I BER,1=4	200,6081 SA	01

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
A	VERSTAERKER I BER,1=4 Z STROMLAUF 200,6081S	200,6081	200,6081
C1	4,7NF+80-20% HDK6000 8X6	CC 022,0626	200,6181
C2	4,7NF+80-20% HDK6000 8X6	CC 022,0626	200,6181
C3	4 PF+-0,5PF N033/IB RD5	CC 006,0125	200,6181
C4	18PF 5% N750/IB RD5	CC 006,0354	200,6181
C5	4,7NF+80-20% HDK6000 8X6	CC 022,0626	200,6181
C6	4,7NF+80-20% HDK6000 8X6	CC 022,0626	200,6181
C7	220PF+-20% HDK2000 RD5	CC 006,0454	200,6181
C8	4,7NF+80-20% HDK6000 8X6	CC 022,0626	200,6181
C9	4PF+-0,5PF N750/IB RD5	CC 006,0283	200,6181
C10	220PF+-20% HDK2000 RD5	CC 006,0454	200,6181
C11	4,7NF+80-20% HDK6000 8X6	CC 022,0626	200,6181
C13	4,7NF+80-20% HDK6000 8X6	CC 022,0626	200,6181
C14	220PF+-20% HDK2000 RD5	CC 006,0454	200,6181
C15	470PF+-20% HDK2000 RD5	CC 006,0477	200,6181
C20	1 NF+50-20% HDK4000 RD5	CC 006,0490	200,6200
C21	4,7NF+80-20% HDK6000 8X6	CC 022,0603	200,6200
C22	22NF+-20%250V QUADER MKT	CK 006,5156	200,6200
C25	15PF 5% N750/IB RD5	CC 006,0348	200,6200
C26	30 PF N750 LIEG,ABGL,D	CT 025,6925	200,6200
C27	1 NF+50-20% HDK4000 RD5	CC 006,0490	200,6200
C28	100PF+-20% HDK700 RD5	CC 006,0431	200,6200
C29	4,7NF+80-20% HDK6000 8X6	CC 022,0603	200,6200
C30	220NF+-20%100V QUADER MKT	CK 006,5086	200,6200
C31	1 NF+50-20% HDK4000 RD5	CC 006,0490	200,6200
C32	18PF 5% N750/IB RD5	CC 006,0354	200,6200
C33	100PF+-20% HDK700 RD5	CC 006,0431	200,6200
C34	18PF 5% N750/IB RD5	CC 006,0354	200,6200
C35	30 PF N750 LIEG,ABGL,D	CT 025,6925	200,6200
D9	95 DB (500MHZ)2X2500 PF	LD 006,8032	200,6081
D10	95 DB (500MHZ)2X2500 PF	LD 006,8032	200,6081
D11	95 DB (500MHZ)2X2500 PF	LD 006,8032	200,6081
D16	95 DB (500MHZ)2X2500 PF	LD 006,8032	200,6081
L1	1 MH BEI 1,15A 0,96 OHM	LD 026,3765	200,6181
L2	SPULE	200,6281	200,6181
L3	1 MH BEI 1,15A 0,96 OHM	LD 026,3765	200,6181
L4	SPULE	200,6252	200,6181
L6	0,22MH BEI 3,16A 0,04 OHM	LD 026,3720	200,6181
L7	SPULE	200,6269	200,6181
L20	0,47MH BEI 2,23A 0,08 OHM	LD 026,3742	200,6200
L21	0,15MH BEI 3,65A 0,03 OHM	LD 026,3713	200,6200
L22	SPULE	200,6275	200,6200
L23	0,68MH BEI 1,63A 0,19 OHM	LD 026,3759	200,6200
L24	SPULE	200,6246	200,6200
L26	80MH BEI 1 A 0,5 OHM	LD 026,4790	200,6081
L27	80MH BEI 1 A 0,5 OHM	LD 026,4790	200,6081
L28	80MH BEI 1 A 0,5 OHM	LD 026,4790	200,6081
R1	0,25 W 100 OHM +-5%	RF 007,0135	200,6181
R2	0,25 W 8,2 KOHM +-5%	RF 007,0364	200,6181
R3	0,25 W 390 OHM +-5%	RF 007,0206	200,6181
R4	0,5 W 1,2 KOHM +-5%	RF 007,1383	200,6181

ROHDE & SCHWARZ MÜNCHEN	ÄZ	Datum	Schaltteilliste für	Sachnummer	Blatt Nr.
	07	0373	VERSTAERKER I BER,1=4	200.6081 SA	02

Kennzeichen	Benennung / Beschreibung	Sachnummer	enthalten in
R5	0,25 W 39 OHM +=5%	RF 007.0087	200.6181
R6	0,5W 2,7KOHM +-5%	RF 007.1425	200.6181
R7	0,25 W 180 OHM +=5%	RF 007.0164	200.6181
R8	0,5 W 390 OHM +-5%	RF 007.1325	200.6181
R9	0,25 W 680 OHM +-5%	RF 007.0235	200.6181
R10	0,25 W 33 OHM +=5%	RF 007.0070	200.6181
R11	RS 0,5W100 OHM +=20%KURVE1	RS 069.8081	200.6181
R12	0,25 W 100 OHM +=5%	RF 007.0135	200.6181
	TRIMMWERT		
R13	0,5 W 10 KOHM +=5%	RF 007.1490	200.6181
R14	0,25 W 22 OHM +=5%	RF 007.0058	200.6181
R15	0,25 W 15 OHM +=5%	RF 007.0035	200.6181
R16	0,25 W 10 OHM +=5%	RF 007.0012	200.6181
	TRIMMWERT		
R19	0,5W 560 OHM +-5%	RF 007.1348	200.6181
R20	0,5W 250 OHM KURVE 1STEH.	RS 030.5800	200.6200
R21	0,5W 1,8KOHM +-5%	RF 007.1402	200.6200
R22	0,25 W 82 OHM +=5%	RF 007.0129	200.6200
R24	0,5 W 10 OHM +-5%	RF 007.1181	200.6200
R26	0,5W 250 OHM KURVE 1STEH.	RS 030.5800	200.6200
R27	1,0 W 470 OHM +=5%	RF 007.2538	200.6200
R28	RF 1,0W 12 OHM +=5%	RF 007.2344	200.6200
R29	1,0 W 470 OHM +=5%	RF 007.2538	200.6200
R30	0,5 W120 OHM +-5%	RF 007.1260	200.6081
R31	0,5 W 220 OHM +=5%	RF 007.1290	200.6200
R32	0,5W 560 OHM +-5%	RF 007.1348	200.6200
R33	0,5 W 8,2 OHM +=5%	RF 007.1125	200.6200
R34	0,5W 560 OHM +-5%	RF 007.1348	200.6200
R35	MEISSL 2KOHM +-10% 0,8W	AW 008.0100	200.6200
ST1	EINBAUSTECKER SUBMIN, 27	PJ 017.6236	200.6081
T1	AK BFY90 NUR VALVO	010.6799	200.6181
T2	AK 2N3866 NVR RCA Z	200.5291	200.6181
T3	AK 2N3866 NVR RCA Z	200.5291	200.6181
T21	AL MM1557 SI NPN 65V 1A	010.1622	200.6200
T22	AL MM1558 SI NPN 65V 3A	010.1639	200.6200
TR21	UEBERTRAGER Z	200.6298	200.6200
TR22	UEBERTRAGER Z	200.6298	200.6200
	ENDE		



Diese Zeichnung ist unser Eigentum. Vervielfältigung, unbefugte Verwertung, Mitteilung an andere ist strafbar und schadenersatzpflichtig.

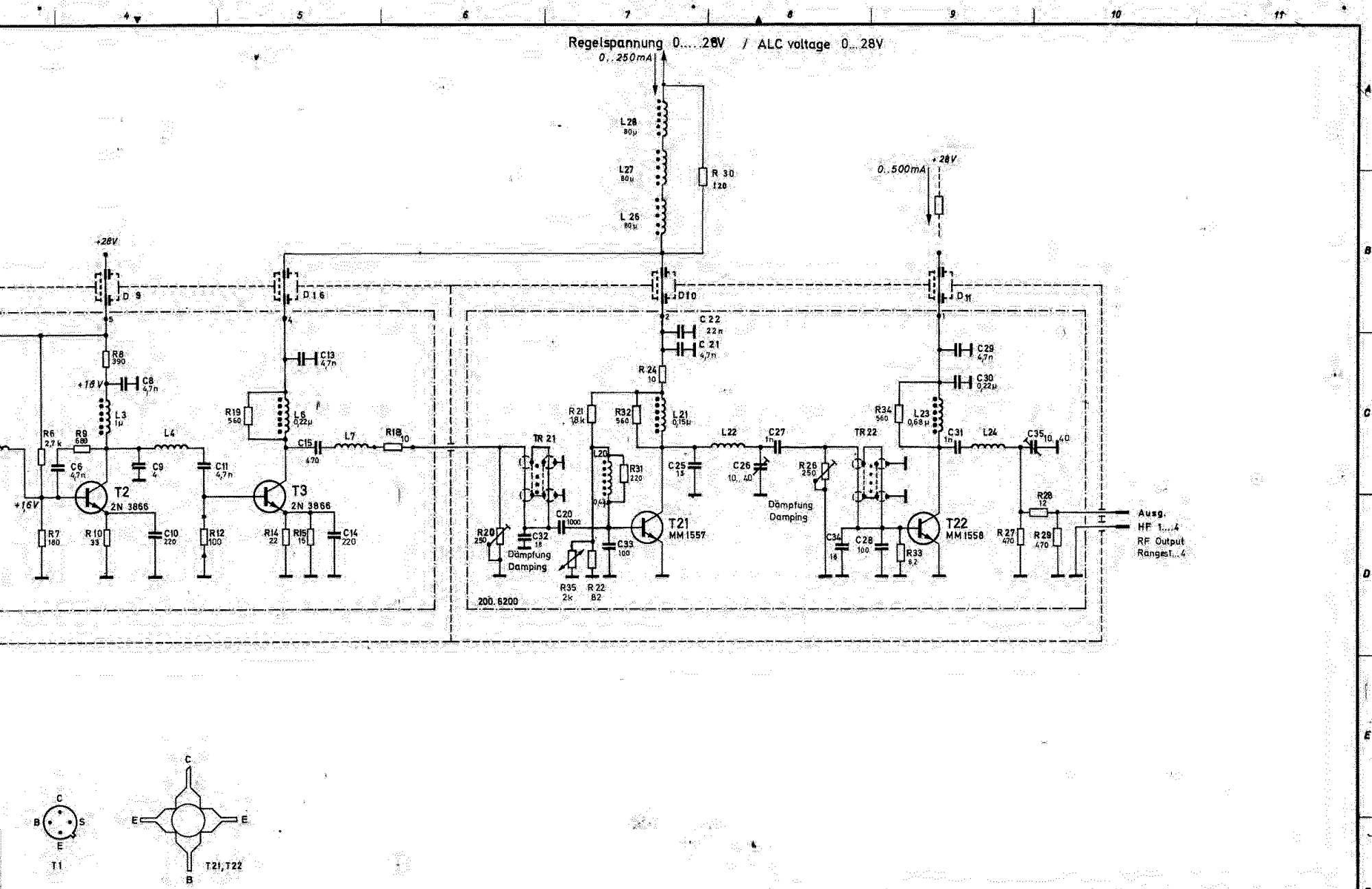
ROHDE & SCHWARZ · MÜNCHEN

Änd. zust.	Änd.-Mitteilg. Nr.	Datum	Name
A	——	23.371	Bg
B	17136	1.72	Klr
C	17217	3.72	Gn
D	17497	9.72	Gn
E	17581	11.72	Gn

	Datum	Name
gezeichnet	1.. 0	Lt
bearbeitet		lbg
geprüft		
genehmigt		

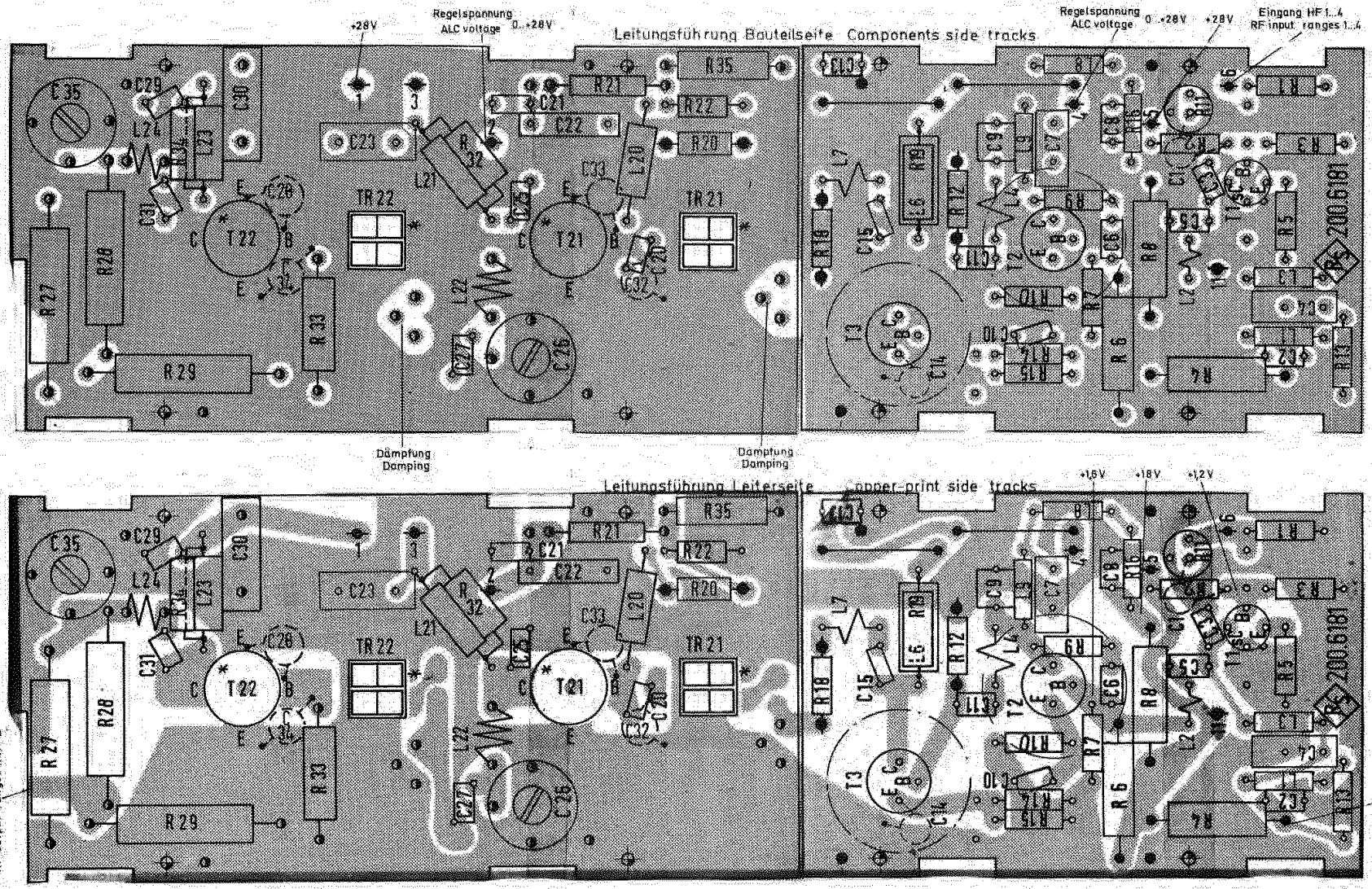
1 CDE

4394.0568.05 S



Stromlauf zu	Verstärker I Ber. 1-4	Z	Zeichn. Nr. 200.6081 S
			200.1009 V | 200.1367

200.6200 Darstellung Bauteilseite Components side view 200.6181



Blatt Nr. 2

ISO-Projektion, Methode E

Vervielfält.-Pause Nr.

Arbeitspause Nr.

ROHDE & SCHWARZ MÜNCHEN			Halbzeug, Werkstoff				Untolerierte Maße	Zeichn.-Nr. 200.6181	
1GME	Datum	Name	Änd. zust.	Änd.-Mitteilg. Nr.	Datum	Name	Maßstab 2:1	200.1009V	200.6081
gezeichnet	12.71	Gs.	E	19322	9.9.74	Gn		Ersatz f. Zeichn.	
bearbeitet							Platte		Z
geprüft			C	17497	9.72	Gn			
normgeprr.			D	17581	11.72	Gn			

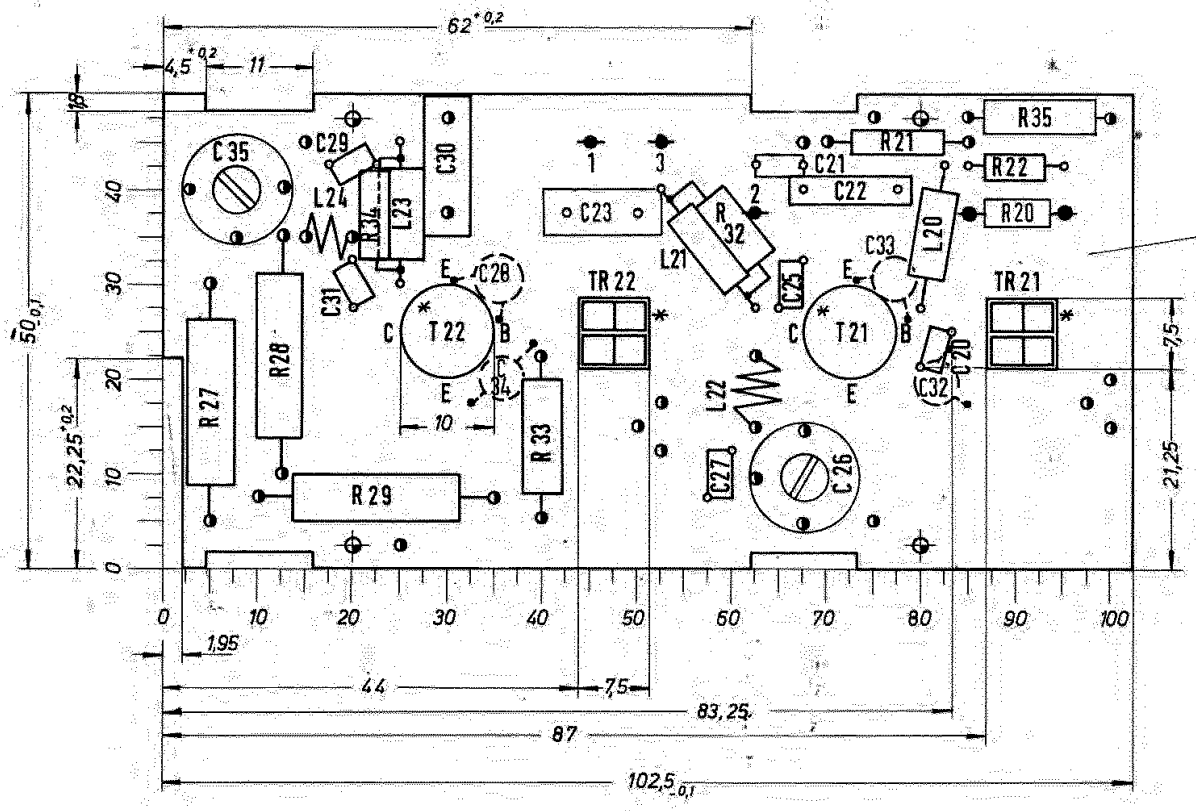
140:11.67

Darstellung Bauteilseite
Leitungsführung Leiterseite

durchplattiert, beidseitig vergoldet

hierzu 200.6217 DV1 Leiterseite A,B,C,D
200.6217 DV3 Beschriftung D
200.6217 DV4 Bauteilseite A,B,C,D

tauchgelötet nach HVN 230



200.6217 ohne eigene Zeichnung

C28, C32, C33, C34, C35
T 21, T22, TR 21 und TR 22 nach dem Tauchlöten gelötet

sämtliche Bauteile auf Platte aufliegend

● VL 035-3412 (5 Stück)
● Schlitzrichtung der Lötfahne

* nach dem Durchplattieren gebohrt und gestanzt

Raster 2,5; Toleranz beliebiger Teilungen zueinander ±0,05

⊕ ∅0,85 +0,1
● ● ∅1,3 ±0,05
⊕ ∅1,8 +0,1

Leitungsführung Leiter- und Bauteilseite siehe 200.6181 Bl.2

ISO-Projektion, Methode E

Vervielfält.-Pause Nr.

Arbeitspause Nr.

ROHDE & SCHWARZ MÜNCHEN			Halbzeug, Werkstoff: WS 001.6025				Unt. Maße: ±0,2	Zeichn. Nr.: 200.6200
1CDD	Datum	Name	Änd. zust.	Änd.-Mitt. Nr.	Datum	Name	Maßstab: 2:1	200.1009 V / 200.6081
gezeichnet	5.4.71	Wm	E	19322	4.9.74	Gn		Ersatz f. Zeichn.
bearbeitet							Platte	Z
geprüft			C	17497	9.72	Gn		
normgepr.			D	17581	11.72	Gn		