TELEFUNKEN SYSTEM TECHNIK

Deutsche Aerospace

Technical Manual

Antenna Multicoupler

V 1275 H

V 1275 H - P

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Frequency Range: 1.5 MHz to 30 MHz

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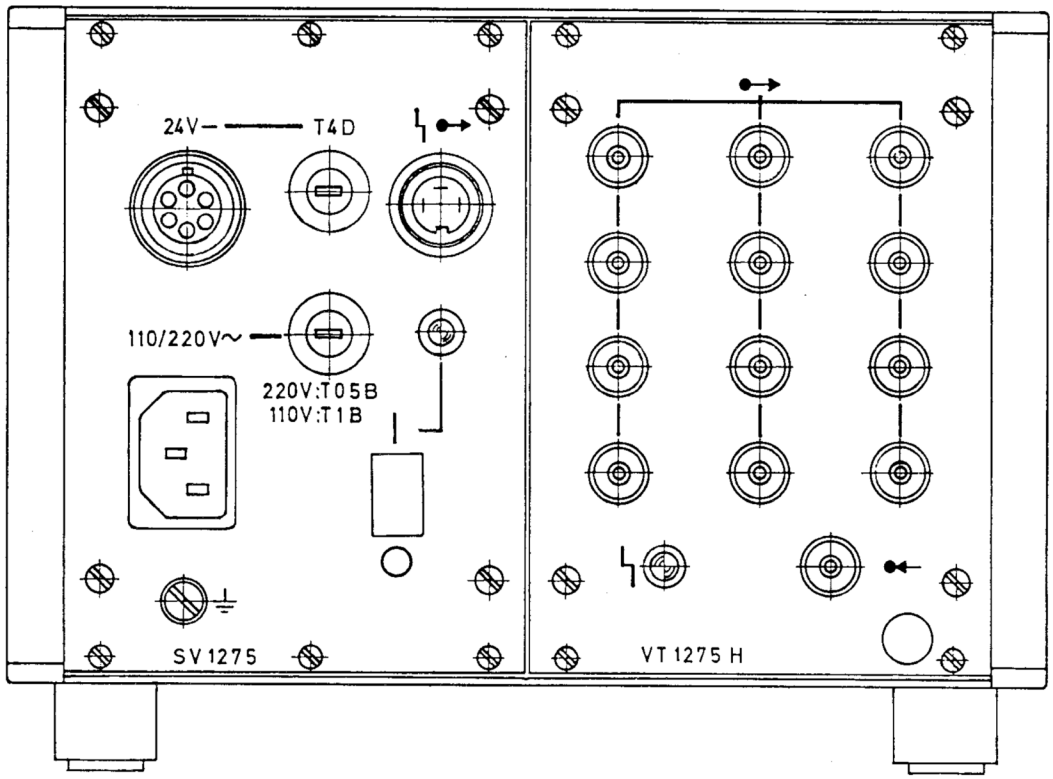

Antenna Multicoupler V 1275 H, V 1275 H–P

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1 DESCRIPTION

1.1 General Information

1.1.1 Designation

The units bear the designations "Antenna Multicoupler V 1275 H" or "Antenna Multicoupler V 1275 H–P".

1.1.1.1 Available Versions

The Antenna Multicouplers V 1275 H and V 1275 H–P are constructed as table unit or as 19" drawer unit.

Single unit V 1275/1 H:	1 input, 12 outputs
19" Combination V 1275/3 H or V 1275/3 H–P:	3 inputs with 12 outputs each, or 1 input, 34 outputs (cascaded connection)

The frequency range can be extended to 1 MHz ÷ 30 MHz.

1.1.2 Possible Utilization

The Antenna Multicoupler V 1275 H is intended for use in commercial radio receiver equipments, for connecting several receivers to a common antenna or antenna system without losses and without wave reflections.

The Antenna Multicoupler V 1275/3 H–P is suitable for connecting direction finders. For this purpose, the multicouplers are matched by the manufacturer against a reference unit, such that the phase/frequency and gain/frequency characteristics mutually differ by only a very small amount.

1.1.3 General Description
(See front view, Annex 1 and Fig. B 01)

The following specifications for the V 1275 H are valid too for the V 1275 H–P.

The Antenna Multicoupler V 1275 H consists of a tabletop cabinet or a 19" drawer unit, in which are inserted the modular assemblies "Power Supply SV 1275" and "Amplifier-Multicoupler VT 1275 H". The 19" drawer unit can accommodate up to three amplifier-multicoupler units, which are then powered jointly by the power supply module. The amplifier-multicoupler units are connected to the power supply module inside the carrier frame, via plug connectors. All external connectors, manual control and indicator elements, as well as the fuses, are located on the front panels of the modular units.

1.2 Scope of Delivery

1.2.1 Standard Version

1.2.1.1 Single Unit

Pos.	Qty.	Description	Part Number
1	1	Antenna Multicoupler V 1275/1 H	52.3105.901.00
2	1	Mains Cable, 2.5 m long	5L.4582.001.17
3	6	RF Plugs, Type TNC (RG 58)	5L.4521.001.72
4	1	Plug for Fault Signalling Connection (Power Supply)	5L.4531.001.26
5	1	Technical Manual V 1275 H, H–P	5X.0172.223.58

1.2.1.2 19" Combination

Pos.	Qty.	Description	Part Number
6	1	Antenna Multicoupler V 1275/3 H or V 1275/3 H–P, comprising:	
6.1	3	Amplifier Multicouplers VT 1275 H or VT 1275 H–P	52.3105.200.00 52.3105.400.00
6.2	1	Power Supply Module SV 1275	52.3105.100.00
7	1	Mains Cable, 2.5 m long	5L.4582.001.17
8	18	RF Plugs, Type TNC (RG 58)	5L.4521.001.72
9	1	Plug for Fault Signalling Connection (Power Supply)	5L.4531.001.26
10	1	Technical Manual V 1275 H, H–P	5X.0172.223.58

1.2.2 Special Accessories
(Only to special order)

Pos.	Qty.	Description	Part Number
11	1	Battery Connecting Cable	52.1131.070.00

1.2.3 Spare Parts

Pos.	Qty.	Description	Part Number
12	5	Fuses, 0.5 A, 250 V (for 220 V AC)	5N.4811.072.01
13	5	Fuses, 1 A, 250 V (for 110 V AC)	5N.4811.075.01
14	5	Fuses, 4 A, 250 V (for 24 V DC)	5N.4811.080.02

1.3 Technical Data

1.3.1 Electrical Data

The electrical data are measured at ambient temperature 25 °C ± 15 °C.

Frequency range:	1.5 MHz to 30 MHz (1 MHz to 30 MHz extendable)
Input	
– Tolerated overvoltage:	up to 30 V EMF
– Impedance:	50 Ohms, coaxial
– Standing wave ratio VSWR, (for 50 Ohms):	typical value 1.5 maximum value 2.5
Back-attenuation from outputs to input:	greater than 40 dB
Outputs	
– Number of outputs:	12 (34 in cascaded connection of 19" combination)
– Impedance:	50 Ohms coaxial
– Standing wave ratio VSWR, (for 50 Ohms):	typical value 1.1 maximum value 1.2
Decoupling attenuation between any two receivers:	greater than 35 dB (typically 40 dB)
Gain:	1.0 dB ± 0.5 dB
Threshold sensitivity:	≦ 5.5 kTo (at f = 30 MHz)
Linear selectivity Attenuation of frequencies under 1.3 MHz and above 40 MHz:	≧ 35 dB
Phase matching:	≦ ±1.5° (only for V 1275 H–P)
Gain matching:	≦ ±0.25 dB (only for V 1275 H–P)
Intermodulation rejection Rejection of second and third order combination frequencies, with respect to the input level of two equal magnitude inputs of 0 dBm:	IM_2 = −80 dB, IM_3 = −68 dB
IPIP, 3rd order:	34 dBm
IPIP, 2nd order:	80 dBm
Linear drive limit:	1 dB limiting of output signal requires more than 10 V input EMF
Cross-modulation rejection:	An unmodulated wanted transmission with 100 μV EMF suffers not more than 10% cross-modulation from an interfering transmission with 50% modulation depth and up to 2 V EMF.

Fault Message, internal:	Red warning lamp in the case of failure of a transistor
Fault Message Outputs, external	
– Transistor Failure:	DC voltage source for visual or acoustic signal 24 V (max. 50 mA)
– Functional Check:	DC voltage source, about 24 V, (Ri = 33 Ohms)
Power Supply	
– Mains Operation:	110/220 V ±10%, 45 Hz to 480 Hz
– Battery Operation:	24 V (21.5 V to 30 V), negative pole grounded
Power Consumption	
– Mains Operation:	not exceeding 33 VA (not exceeding 100 VA for 3 x VT 1275 H)
– Battery Operation:	not exceeding 30 W (not exceeding 90 W for 3 x VT 1275 H)
Fuse Ratings	
– Mains Operation:	T 0.5 B (for 220 V) T 1 B (for 110 V)
– Battery Operation:	T 4 D

1.3.2 Environmental Conditions

Ambient Temperature Range:	+10 °C to +40 °C full guarantee of performance specifications −20 °C to +50 °C may be operated −40 °C to +70 °C may be stored
Humidity Tolerance:	Operation is permissible for 96 hours with 90% relative humidity and +40 °C ambient temperature
Vibration and Mechanical Shock Tolerance:	No damage is incurred when the switched-on unit is subjected to vibration with a stroke of ±0.5 mm at 10 to 30 Hz or with a peak accelleration of 2 g at 30 to 70 Hz. Mechanical shocks with 10 g acceleration and 10 ms duration are tolerated too.

1.3.3 Dimensions and Weight

	Height	Width	Depth	Weight
Table Unit:	133*)	206	400	about 7.6
19" Drawer Unit:	133	450	405	about 12.5

*) plus 15 mm for rubber feet

1.4 Technical Description

1.4.1 Power Supply SV 1275

The Power Supply SV 1275 is operated on 24 V DC input voltage or on 110/220 V AC mains input voltage. The green pilot lamp on the front panel lights when the unit is switched on.

When DC input voltage and AC mains input voltage are connected simultaneously, the unit draws its input power from the mains supply as long as the DC voltage at the output of the rectifier circuit is greater than the actual voltage of the DC supply. If the mains voltage fails, or if its actual value drops below the lower limit of the tolerance range, the unit continues to operate on the DC input voltage, without interruption.

Up to three Amplifier-Multicoupler Units VT 1275 H can be connected to the Power Supply Unit SV 1275.

In the case of failure of a transistor in one of the connected Amplifier-Multicoupler Units VT 1275 H, a 24 V DC voltage source (maximum permissible loading 50 mA) is switched on and is available for an external fault signalling device.

The operating state can be supervised externally. A DC voltage source of about 24 V, with 33 Ohms internal impedance, is available for this purpose.

1.4.2 Amplifier-Multicoupler VT 1275 H
(See block diagram, Annex 2)

The Amplifier-Multicoupler VT 1275 H consists of a wideband push-pull amplifier stage (3 to 6), the multicoupler network (7) with the output jacks (A1 to A12), the fault signalling connection (9) and the high-pass and low-pass filter (1 and 2).

The high-pas and low-pass filter suppresses unwanted signals in the antenna voltage arriving at the input (E), whose frequencies lie outside the working reception frequency range from 1.5 to 30 MHz.

The filtered antenna signal voltage is amplified by the push-pull amplifier, such that about the same power as originally applied to the input (E) appears at each one of the twelve outputs. The push-pull transformer (6) combines the two amplified antiphase signal voltages, whereby square-law distortion components cancel.

In the case of failure of a transistor, the fault indicator circuit switches-on a red lamp on the front panel and also a DC voltage source for an external fault alarm device (A13).

2 OPERATING INSTRUCTIONS

2.1 Special Precautions to Prevent Accidents

When the unit is operated on AC mains voltage, the local safety regulations for mains operated equipment must be observed.

2.2 Setting-Up and Taking-Down, Connections

2.2.1 Mains Connection 220 V or 110 V ±10%, 45 to 480 Hz

The mains input voltage is connected to the unit via a mains cable fitted with a mains plug on one end and an equipment connector on the other end. The unit is grounded via the ground lead of the mains connecting cable. The unit is set at the factory for 220 V AC mains input voltage, unless a different mains voltage setting is expressly ordered by the customer.

To convert the unit for 110 V AC mains input voltage, change over the jumpers accordingly on the terminal strip above the mains transformer in the Power Supply Unit SV 1275 and replace the 0.5 A fuse cartridge by a 1 A fuse cartridge.

These tasks must be carried out by properly trained persons.

2.2.2 Battery Connection 24 V DC (21.5 V to 30 V DC)

The battery input voltage is connected via a battery cable (see Section 1.2.2). The pinout on the battery plug is: A = positive, D = negative (the negative pole is connected to chassis potential or ground).

The unit can be operated optionally on a mains supply or on a battery. No external switch-over is necessary for this purpose.

2.2.3 Grounding

The unit should be grounded additionally via the grounding terminal on the front panel of the Power Supply Unit SV 1275. Only in this manner is grounding fulfilling statutory safety regulations ensured. RF grounding is established via the RF cable connections.

2.2.4 Antenna and Receiver Connections

The antenna and the receivers should be connected according to the symbolic signal routing marked on the front panels, using RF cables fitted with RF plugs.

2.2.5 Fault Signalling Connection

In addition to the visual fault indication on the unit, an external lamp for indicating the operating state and an external alarm device can be connected via a three-pole plug connector. A DC voltage source capable of delivering 50 mA maximum current, is switched on in the case of a fault situation.

2.3 Checks before Commissioning

Before switching the unit on for the first time, check that the voltage setting corresponds to the voltage of the actually available power supply input.

Make sure that all cables are connected correctly and that the plug connectors are firmly seated.

2.4 Commissioning and Operation

The unit is switched on by a toggle switch on the front panel of the Power Supply SV 1275. The green pilot lamp is lit when the unit is switched on. No manual controls require actuation during running operation of the unit.

2.5 Operation under Arduous Climatic Conditions

See specifications under "ambient temperature range" and "humidity tolerance" in Section 1.3.2.

Dust and moisture must be kept away from the unit. If forced air cooling is required, the air must be filtered to remove suspended dust particles. The air filters must be cleaned at regular intervals as specified by the manufacturer.

2.6 Care

When necessary, remove dust deposits with a soft dry rag or small brush. After severe exposure to dust, take out the drawer unit and clean it. Dry oil-free compressed air (maximum overpressure 1 bar) or a suction cleaner may be used to remove dust deposits from otherwise inaccessible places.

CAUTION! Disconnect the mains plug before dismantling.

3 MAINTENANCE AND SERVICING BY THE OPERATING STAFF

3.1 Maintenance

Special tools are not required for maintenance.

Maintenance tasks merely consist of cleaning the unit when this is necessary, so that no special maintenance time schedule need be observed. The care tasks as specified in Section 2.6 should be carried out when necessary.

3.2 Repairs by the Operating Staff

Repairs which can be carried out by the operating staff are limited to replacing defective cables and blown fuses. If replaced fuses blow again, or if the fault indicator lamp is lit, then the unit must be forwarded for repair by specially trained persons.

3.3 Conservation of the Unit During Prolonged Idle Periods

No special maintenance tasks are necessary when operation of the unit is to be discontinued for a prolonged period. The unit contains no components whose characteristics change or which are subject to self-consumption during prolonged storage. However, it must be ensured that the unit is stored only in dry and dust protected rooms, otherwise special packing is required (e.g. sealing in plastic film). For this purpose the same conditions are valid as recommended in general for safe storage of electronic equipment.

4 REPAIRS BY SPECIALLY TRAINED PERSONNEL

4.1 Special Tools, Measuring Equipment and Test Units

Pos.	Qty.	Description
(1)	2	Power Signal Generator, 1.5 to 30 MHz
(2)	1	Receiver, 1.5 to 30 MHz
(3)	1	Noise Generator SKTU (Rohde & Schwarz)
(4)	2	Calibrated Attenuator Line, 0 to 100 dB
(5)	1	RF Millivoltmeter with Transit Probe, e.g. URV (Rohde & Schwarz)
(6)	1	Two-Way Power Distributor, e.g. Passive Antenna Multicoupler ATR 103 (AEG)
(7)	1	Network Analyzer, 0.5 to 50 MHz (e.g. HP 8505 A)
(8)	1	Power Divider 6 dB/50 Ohms; 0.5 to 50 MHz

4.2 Functional Principles

4.2.1 Power Supply SV 1275
(See circuit diagram in Annex 3)

The Power Supply SV 1275 gives a DC output voltage of about 24 V when operated with AC mains input voltage. Mains and battery power supply functions are switched on with the toggle switch S 1. The diode GR 2 prevents damage if the battery is connected with wrong polarity. The DC voltage provided by the battery or by the rectifier GR 1 is taken via an interference suppression filter Z 1 to the output ST 3. The light emitting diode GR 4 serves as pilot lamp to indicate the operating state. An external signalling device can be connected via R 4 to BU 1, to which the fault message arriving via ST 3 is taken too.

4.2.2 Amplifier-Multicoupler VT 1275 H
(See circuit diagram in Annex 5)

4.2.2.1 High-Pass Filter and Low-Pass Filter

The bandpass filter connected ahead of the amplifier consists of a cascaded combination of a high-pass filter and a low-pass filter. The passband extends from 1.5 MHz to 30 MHz. Frequencies under 1.2 MHz and above 40 MHz are attenuated by at least 40 dB.

A filter with passband from 1.0 MHz to 30 MHz is also available.

4.2.2.2 Amplifier

The RF signal arriving from the filter via BU 302 (frequency range 1.5 to 30 MHz) is split by T 1 into antiphase drive for two identical circuit branches. The signal goes to the gate of TS 1 (TS 2) and is amplified. T 2 (T 3) gives optimum feedback to the gate on considerations of matching and noise level (negative feedback). The two amplified antiphase signals are recombined in T 4.

The power supply voltage (+24 V) fed-in via ST 1/26 to 28 proceeds after smoothing with C 19 to the voltage divider GR 1, R 14. The constant voltage drop across GR 1 (1.4 V) produces a constant current through R 12 (R 13) via the base/emitter path of TS 3 (TS 4), and thus via L 2 (L 3) through TS 1 (TS 2). Thus, via the collector current of TS 3 (TS 4) flowing through R 10 (R 11), the gate voltage of the field effect transistor holds the latter at constant operating point via R 8, R 6, R 4 (R 9, R 7, R 5).

4.2.2.3 Fault Message

For fault monitoring, the DC voltages across R 10 and R 11 are compared via the diodes GR 2 to GR 7 with the reference voltage from the voltage divider R 18, GR 9. If one of the two voltages is less than 2.5 V or greater than 7 V, then a current flows via the bridge diagonal R 20, base-emitter TS 5, emitter-base TS 6, GR 11 and cuts on the transistors TS 5, TS 6 and allows current to flow through the light emitting diode GR 10. A further fault signalling device can be connected externally between the collector of TS 7 and the +24 V power supply line.

4.2.2.4 Multicoupler Network

The RF signal at the output of T 4 has a level which lies about 13 dB above that of the antenna input signal. It is taken via the matching transformer T 5 to the differential transformer T 6, T 7, T 8 which performs a 3:1 power distribution. Each one of the three branches goes to a bridge circuit T 9, T 10, W 1, W 2 (T 11, T 12, W 3, W 4; T 13, T 14, W 4, W 5, W 6) which performs 2:1 distribution. In each one of the now six circuit branches then follows a hybrid transformer with 2:1 distribution (T 15 to T 20). The signal is now present at each one of the twelve outputs of these transformers with a level of about +1 dB across 50 Ohms (with respect to the antenna input) and can be taken off for external use.

4.3 Fault Tracing Instructions

Attempted input resistance measurements at the connections of the printed circuit boards give no interpretable information regarding proper or improper functioning and may lead to destruction of semi-conductors.

Do not carry out soldering operations on the printed circuit boards except at the position provided for this purpose (soldered jumpers), because otherwise the protective lacquer coating would become damaged, thus impairing the long-term functional dependability of the unit.

Soldering operations at the soldered jumpers and in general may be carried out only with a soldering iron whose bit carries no potential difference with respect to the soldered joint and whose bit temperature does not exceed 250 °C. The maximum permissible duration for one soldering operation is three seconds.

4.3.1 Fault Tracing Table

Fault Symptoms	Possible Cause	Remedy
Pilot lamp not lit	Battery or mains voltage not present	Check the battery or the mains voltage
	Power supply cable not connected	Check the power supply cable and the plug connectors
	Battery connected with wrong polarity	Reverse the battery connection
	Fuse blown	Replace the blown fuse: T 0.5 B for 220 V AC T 1 B for 110 V AC T 4 D for 24 V AC
	If the replaced fuse blows again: Power Supply SV 1275 defective	Replace power supply unit
Warning lamp lit	A transistor in the amplifier is defective	Replace the Amplifier-Multicoupler VT 1275 H
Warning lamp remains dark, but the reception is definitely weak in all receivers	Poor contact in the plugged connections of the antenna inputs	Check the plugged connections for good contact and, if found intact, check the sensitivity according to Section 4.4.4.3
	Fault in the high-pass and low-pass filter	Measure the attenuation according to Section 4.4.4.4 and realign the filters if necessary
	Fault in the amplifiers	Measure the gain according to Section 4.4.4.1
Warning lamp remains dark but disturbing combination frequencies in all receivers	Loose or corroded clamped connections in the antenna system	Check whether fault is absent with a different antenna; if so, check all contact points, plugged connections, etc. in the former antenna system
	Fault in unit	Measure the intermodulation according to Section 4.4.4.2

Note: After every repair, measure the sensitivity according to the instructions given in Section 4.4.4.3.

4.4 Instructions for Making Repairs

4.4.1 Removing and Mounting the Subassemblies

4.4.1.1 Power Supply SV 1275

- Switch off the power sources and disconnect the power supply cable.
- Release the grounding terminal on the front panel and disconnect the grounding lead.
- Release the four cylinderhead screws in the corners of the front panel.

Note: The fixing screws are captive in the front panel. To remove the SV 1275, these fixing screws must be screwed right out of the mating screwthread of the modules carrier frame.

- Pull the subbassembly forwards to take it out of the modules carrier frame.

To reassemble, proceed in reversed order.

4.4.1.2 Amplifier-Multicoupler VT 1275 H

- Switch off the power sources and disconnect the power supply cable.
- Unscrew and pull off the RF plugs of the antenna and receiver connections.
- Release the four cylinderhead screws (captive) in the corners of the front panel.
- Pull the subassembly forwards to take it out of the modules carrier frame.

To reassemble, proceed in reversed order.

4.4.2 Dismantling the Modular Assemblies

4.4.2.1 Power Supply SV 1275

4.4.2.1.1 Removing the Printed Circuit Board

- Unsolder connections 1 to 7. Take off the right sideplate.
  CAUTION! Observe the remark at the beginning of Section 4.3.
- Screw out the five cylinderhead screws on the printed circuit board.
- Lift out the printed circuit board.

4.4.2.2 Amplifier-Multicoupler VT 1275 H

4.4.2.2.1 Removing the High-Pass and Low-Pass Filter

Take off the right sideplate. Pull off the RF jacks from ST 301 and ST 302. Release the high-pass and low-pass filter assembly (four fixing screws on the underside of the unit). Take out the high-pass and low-pass filter assembly upwards.

4.4.2.2.2 Removing the Printed Circuit Boards

Take off the right and left sideplate. Take out the high-pass and low-pass filter assembly (see Section 4.4.2.2.1). Release the cable clamp of the antenna connecting line to ST 301. Take off the front panel (four cylinderhead screws). Release the faceplate from the frame (four cylinderhead screws). Release the multicoupler card (BU 1 to BU 4) from the frame (two cylinderhead screws). Remove two cylinderhead screws each with nuts on the two field effect transistors. Pull off inwards the sleeve ring of the light emitting diode.

Press out the light emitting diode inwards. Release the amplifier-multicoupler circuit card from the frame (four cylinderhead screws). Carefully pull out to the front the faceplate with the printed circuit cards.

CAUTION! The connecting leads for the ligth emitting diode and for the multicoupler circuit card (BU 1 to BU 4) are taken through breakouts in the center ridge of the frame. Take care that these leads do not get caught up when dismantling and reassembling.

4.4.3 Recognition of a Defective Transistor

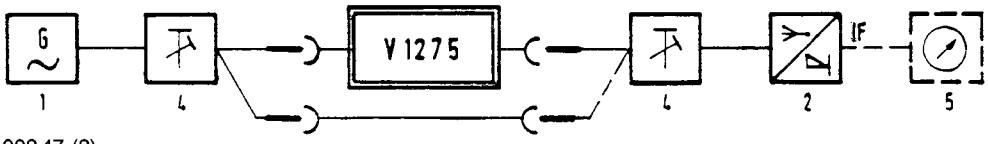
(See circuit diagram Annex 5 and components layout in Annex 7)

The warning lamp lights when the drain voltage is missing on one of the field effect transistors (TS 1, TS 2). Which one of the transistors is defective is determined by DC voltage measurements at the test points 3 and 4. The tolerance range for the actual voltage reading is $\pm$40% with respect to the nominal value of 4.8 V. This large tolerance range is conditioned by the intermodulation alignment.

4.4.4 Testing

4.4.4.1 Measuring the Gain

Measuring set-up:



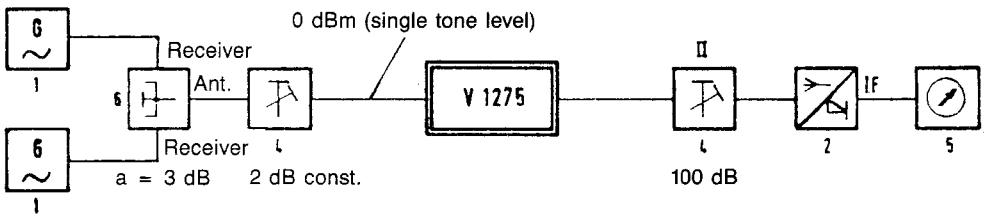
52.1996.003.47 (2)

(Numbers see Section 4.1)

Measure the gain in the frequency range from 1 to 30 MHz either by selective single measurements or with a wobbulator equipment. The amplifier must be repaired or replaced if the actual gain readings deviate greatly from the nominal values specified in the technical data.

4.4.4.2 Measuring the Intermodulation

Measuring set-up:



52.1996.003.47 (1)

Preparations:
Set the signal generator signal levels and the calibration line attenuation values according to the specifications given in the sketch of the measuring set-up above.

Receiver settings:
Service type A2/A3, bandwidth ±1.5 kHz, manual gain control.

Tune the signal generator I and the receiver for combination frequency 5 MHz. Tune the signal generator II to a non-interfering frequency.

With the receiver manual gain control, adjust for IF signal level reading of 0 dB or −5 dB on meter (5) in the measuring ranges 30 or 100 mV as reference level.

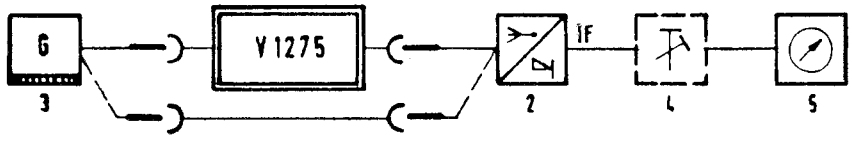
Measuring process for IM 2:
Tune signal generator I to 9 MHz and signal generator II to 14 MHz (giving combination frequency $f_2 - f_1 = 5$ MHz).

Reduce the attenuation setting of the attenuator line II until the meter (5) reads the reference level. The required reduction of the attenuation setting of the attenuator line II to fulfil this condition corresponds to the combination frequency rejection factor, expressed in dB. The value should be −80 dB ≙ IPIP 2 = 80 dBm.

Measuring process for IM 3:
Same as for IM 2. Tune receiver to 4 MHz (giving combination frequency $2f_1 - f_2$ = 4 MHz). IM 3 distance should be −68 dB ≙ IPIP 3 = 34 dBm.

4.4.4.3 Measuring the Sensitivity

Measuring set-up:



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On account of the low gain factor of about 1 dB, the sensitivity of the Antenna Multicoupler V 1275 can not be measured directly in kT_0. Instead, it must be determined by a method which takes the noise figure of the receiver (which should be better than 10 kT_0) into account too.

Important: The rejection factor for the own combination frequencies must be greater than 90 dB for the receiver which is used here (check this using the intermodulation measuring set-up, but without the Antenna Multicoupler V 1275).

After adjusting the signal level of the signal generator I, the signal/noise ratio should be greater than 20 dB and, when the attenuation factor setting of the attenuator line II is changed over the range from 1 dB to 10 dB, the reading of the IF signal level meter (5) should follow in the same steps (linearity test).

The noise figure of the antenna multicoupler is given by the relationship:

$$F_V = F_{V+R} - \frac{F_R}{G^2_V} [kT_0]$$

where:

F_V = Noise figure of the Antenna Multicoupler V 1275, in kT_0

F_{V+R} = Noise figure of the cascaded combination of the Antenna Multicoupler V 1275 **and** the receiver, in kT_0

F_R = Noise figure of the receiver, in kT_0

G_V = Gain of the Antenna Multicoupler V 1275 as voltage ratio, measured according to Section 4.4.4.1

The noise figures F_R and F_V are directly measurable in kT_0.

Without calibrated attenuator line, such measurements are made by increasing the output of the noise generator until the IF noise level reading has increased by a factor of $\sqrt{2}$, or

with calibrated attenuator line,the measurements are made by increasing the attenuation setting of the attenuator line by 3 dB and then restoring the former IF noise level reading by increasing the output level of the noise generator.

At each measuring frequency, make sure that the corresponding $F_{Receiver}$ and $F_{V\ 1275\ +\ Receiver}$ are measured with the same RF gain setting of the receiver, i.e. in the same setting of the manual RF gain control.

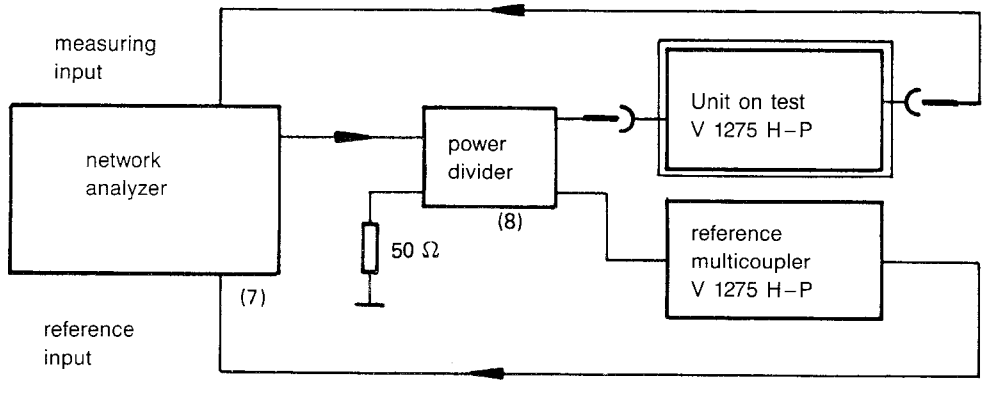
If the manual gain control of the receiver is turned up too far, then limiting of the noise peaks may result, whereupon the obtained kT_0 readings will turn out too large. Such measuring errors should be avoided by making several sensitivity measurements at different manual RF gain control settings with the cascaded combination of antenna multicoupler and receiver, thereby noting those gain control settings between which the smallest kT_0 values are obtained.

4.4.4.4 Aligning the High-Pass and Low-Pass Filter
(Annex 5, Sheet 2)

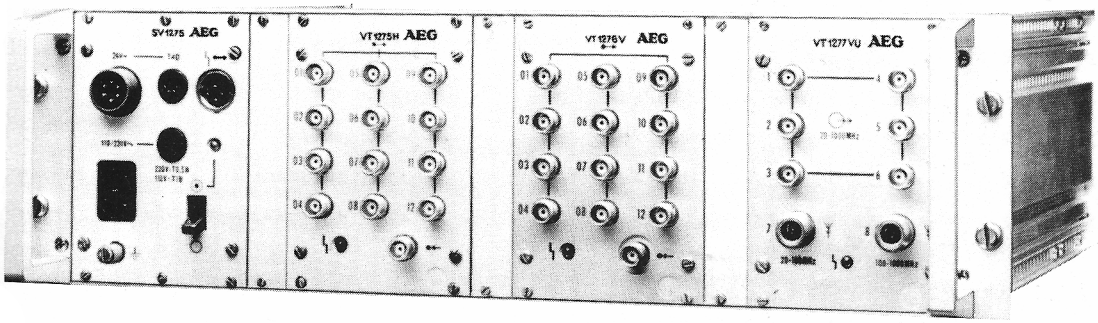
The attenuation factor (insertion loss) of the filter should be less than 1 dB in the passband (1.5 to 30 MHz), and greater than 40 dB in the stop bands (up to 1.2 MHz and above 40 MHz). If these performance figures are not achieved, then L-realignment of the filter pole circuits is necessary in the factory.

4.4.4.5 Measuring the phase response and gain as a function of frequency (for V 1275 H–P)

Measuring set-up:



If the cause of a fault in the direction finder system is suspected to lie in an antenna multicoupler, then the frequency and phase responses of the individual multicouplers must be compared. The RF output power of the network analyzer (7) is divided to two identical branches (8). One antenna multicoupler is selected as reference unit and connected to one branch and the other antenna multicouplers are successively connected to the other branch. One output of the antenna multicouplers each is connected to the reference input and to the measuring input of the network analyzer. Throughout the frequency range from 1.5 MHz to 30 MHz, the amplitude discrepancy must not exceed 0.5 dB and the phase descrepancy must not exceed 3°.



1-8617/33

Fig. 1: Antenna Multicoupler V 1275 H
in Combination with Multicouplers
VT 1276 and VT 1277 VU

ITEM		DESCRIPTION	PART NUMBER	ELECTRICAL VALUES - REMARKS

4.3 LISTS OF COMPONENTS

4.3.1 LOW-PASS+HIGH-PASS FILTER 1,5-30MHZ 52.1278.300.00 SA(03)

C	301	CAPACITOR MICA	5L.5231.055.18	PF 76,8 +- 1 % 500 V TK -100 +100 BF 48.10
C	302	CAPACITOR MICA	5L.5231.024.91	PF 16 +- 0,5 PF 500 V TK 0 + 70 BF 48.10
C	303	CAPACITOR MICA	5L.5231.055.35	PF 115 +- 1 % 500 V TK 0 + 70 BF 48.10
C	304	CAPACITOR MICA	5L.5231.055.21	PF 82,5 +- 1 % 500 V TK -100 +100 BF 48.10
C	305	CAPACITOR MICA	5L.5231.055.29	PF 100 +- 1 % 500 V TK 0 + 70 BF 48.10
C	306	CAPACITOR MICA	5L.5231.055.09	PF 61,9 +- 1 % 500 V TK -100 +100 BF 48.10
C	307	CAPACITOR MICA	5L.5231.002.19	PF 47 +- 2 % 500 V TK -100 +100 BF 48.10
C	308	CAPACITOR MICA	5L.5231.053.67	PF 1960 +- 1 % 500 V TK 0 + 70 BF 48.20
C	309	CAPACITOR MICA	5L.5231.054.18	PF 6490 +- 1 % 500 V TK 0 + 70 BF 48.20
C	310	CAPACITOR MICA	5L.5231.054.18	PF 6490 +- 1 % 500 V TK 0 + 70 BF 48.20
C	311	CAPACITOR MICA	5L.5231.053.48	PF 1240 +- 1 % 500 V TK 0 + 70 BF 48.20
C	312	CAPACITOR MICA	5L.5231.053.79	PF 2610 +- 1 % 500 V TK 0 + 70 BF 48.20
C	313	CAPACITOR MICA	5L.5231.053.53	PF 1400 +- 1 % 500 V TK 0 + 70 BF 48.20
C	314	CAPACITOR MICA	5L.5231.053.92	PF 3570 +- 1 % 500 V TK 0 + 70 BF 48.20
C	315	CAPACITOR MICA	5L.5231.053.81	PF 2740 +- 1 % 500 V TK 0 + 70 BF 48.20
L	301	COIL	52.1278.311.00	
L	302	COIL	52.1278.312.00	
L	303	COIL	52.1278.312.00	
L	304	COIL	52.1278.313.00	(See also SA 05)
L	305	COIL	52.1278.315.00	
L	306	COIL	52.1278.315.00	
ST	301	CONNECTOR PLUG RF	5L.4521.002.12	SMB R.114553/51-045-0000-22 Z- 50 TEFLON GER.ZENTRAL LOET
ST	302	CONNECTOR PLUG RF	5L.4521.002.12	SMB R.114553/51-045-0000-22 Z- 50 TEFLON GER.ZENTRAL LOET

4.3.2 LOW-PASS+HIGH-PASS FILTER 1-30MHZ 52.1278.350.00 SA(03)

C	351	CAPACITOR MICA	5L.5231.055.18	PF 76,8 +- 1 % 500 V TK -100 +100 BF 48.10
C	352	CAPACITOR MICA	5L.5231.024.91	PF 16 +- 0,5 PF 500 V TK 0 + 70 BF 48.10
C	353	CAPACITOR MICA	5L.5231.055.35	PF 115 +- 1 % 500 V TK 0 + 70 BF 48.10
C	354	CAPACITOR MICA	5L.5231.055.21	PF 82,5 +- 1 % 500 V TK -100 +100 BF 48.10
C	355	CAPACITOR MICA	5L.5231.055.29	PF 100 +- 1 % 500 V TK 0 + 70 BF 48.10
C	356	CAPACITOR MICA	5L.5231.055.09	PF 61,9 +- 1 % 500 V TK -100 +100 BF 48.10
C	357	CAPACITOR MICA	5L.5231.002.19	PF 47 +- 2 % 500 V TK -100 +100 BF 48.10
C	358	CAPACITOR MICA	5L.5231.053.84	PF 2940 +- 1 % 500 V TK 0 + 70 BF 48.20
C	359	CAPACITOR MICA	5L.5231.054.35	PF 9760 +- 1 % 500 V TK 0 + 70 BF 48.20
C	360	CAPACITOR MICA	5L.5231.054.35	PF 9760 +- 1 % 500 V TK 0 + 70 BF 48.20
C	361	CAPACITOR MICA	5L.5231.053.65	PF 1870 +- 1 % 500 V TK 0 + 70 BF 48.20
C	362	CAPACITOR MICA	5L.5231.053.96	PF 3920 +- 1 % 500 V TK 0 + 70 BF 48.20
C	363	CAPACITOR MICA	5L.5231.053.70	PF 2100 +- 1 % 500 V TK 0 + 70 BF 48.20
C	364	CAPACITOR MICA	5L.5231.054.09	PF 5230 +- 1 % 500 V TK 0 + 70 BF 48.20

ITEM		DESCRIPTION	PART NUMBER	ELECTRICAL VALUES - REMARKS
C	365	CAPACITOR MICA	5L.5231.053.98	PF 4120 +- 1 % 500 V TK 0 + 70 BF 48.20
L	351	COIL	52.1278.311.00	
L	352	COIL	52.1278.312.00	
L	353	COIL	52.1278.312.00	
L	354	COIL	52.1278.361.00	
L	355	COIL	52.1278.363.00	
L	356	COIL	52.1278.363.00	
ST	351	CONNECTOR PLUG RF	5L.4521.002.12	SMB R.114553/51-045-0000-22 Z- 50 TEFLON GER.ZENTRAL LOET
ST	352	CONNECTOR PLUG RF	5L.4521.002.12	SMB R.114553/51-045-0000-22 Z- 50 TEFLON GER.ZENTRAL LOET

4.6.3 POWER SUPPLY SV 1275 52.3105.100.00 SA(05)

BU	1	SOCKET	5L.4531.001.23	3POL 5 A 250 V GERADE FLANSCH LOET 3263 000 / 09-0308-00-03
C	1	ELECTROL. CAPACIT.	5L.5271.058.73	UF 2200 + 50-10% 40 V EGCOONG422G EHF/IA2200/40/B41588..
C	2	CAP.PLASTIC FILM	5L.5241.026.64	UF 0,1 +-20 % 100 V MKT B 32234-B 1104-M
F	1	FUSE		110V ODER 220V
F	1/1	FUSE	5N.4811.072.01	0,5 A 250V T 5 X 20
F	1/2	FUSE	5N.4811.075.01	1 A 250V T 5 X 20
F	2	FUSE	5N.4811.080.02	4 A 250V T 5 X 20
GR	1	SI-DIODE	5L.5532.405.05	B 40 C5000/3300 SI
GR	2	SI-DIODE	5L.5532.401.37	D 6/ 400
GR	3	REFERENCE DIODE	5L.5532.205.46	Z- BZX 85/C 18 ZPY 18
GR	4	LIGHT EMITT. DIODE	5L.5586.003.04	GRUEN HLMP3502
R	1	RESISTOR WIREWOUND	5L.5112.007.62	OHM 0,68 +- 5 % 4 W/350GRD G202 / RWM 4X10 / 771E
R	2	RESISTOR WIREWOUND	5L.5112.007.62	OHM 0,68 +- 5 % 4 W/350GRD G202 / RWM 4X10 / 771E
R	3	FILM RESISTOR	5N.5102.002.65	OHM 470 +- 5 % 0,25 W RC 07 GF 471 J
R	4	RESISTOR WIREWOUND	5M.5112.225.60	OHM 33 +- 5 % 10 W/350GRD G206 / RWM 6X34 / 760E
S	1	TOGGLE SWITCH	5L.4612.004.60	3POL AUS 10 A 380VWS AG FS31 FS TYP 0350.0101
S	2	SLIDE SWITCH	5L.4613.001.41	2POL 2X21 UNTERBR. 250VWS 2 A AG TYP 4021.0501
ST	1	PLUG	5L.4541.010.89	3POL 6 A 250 V GERADE FLANSCH LOET TYP 8843.FS.40.60
ST	2	PLUG	5M.4540.940.21	MS 3102 R 14 S 6 P 6POL.
ST	3	PLUG CONNECTOR	5L.4561.010.75	32POL 553 013 2-164718-4/09020326931/242202589481
T	1	TRANSFORMER	52.0500.983.00	T2-0824
Z	1	FILTER INTERFER.	5L.5361.002.33	2X 4 A 250 VWGS NF2X390/2X2,5 MH 4,7 TYP B84102-K50

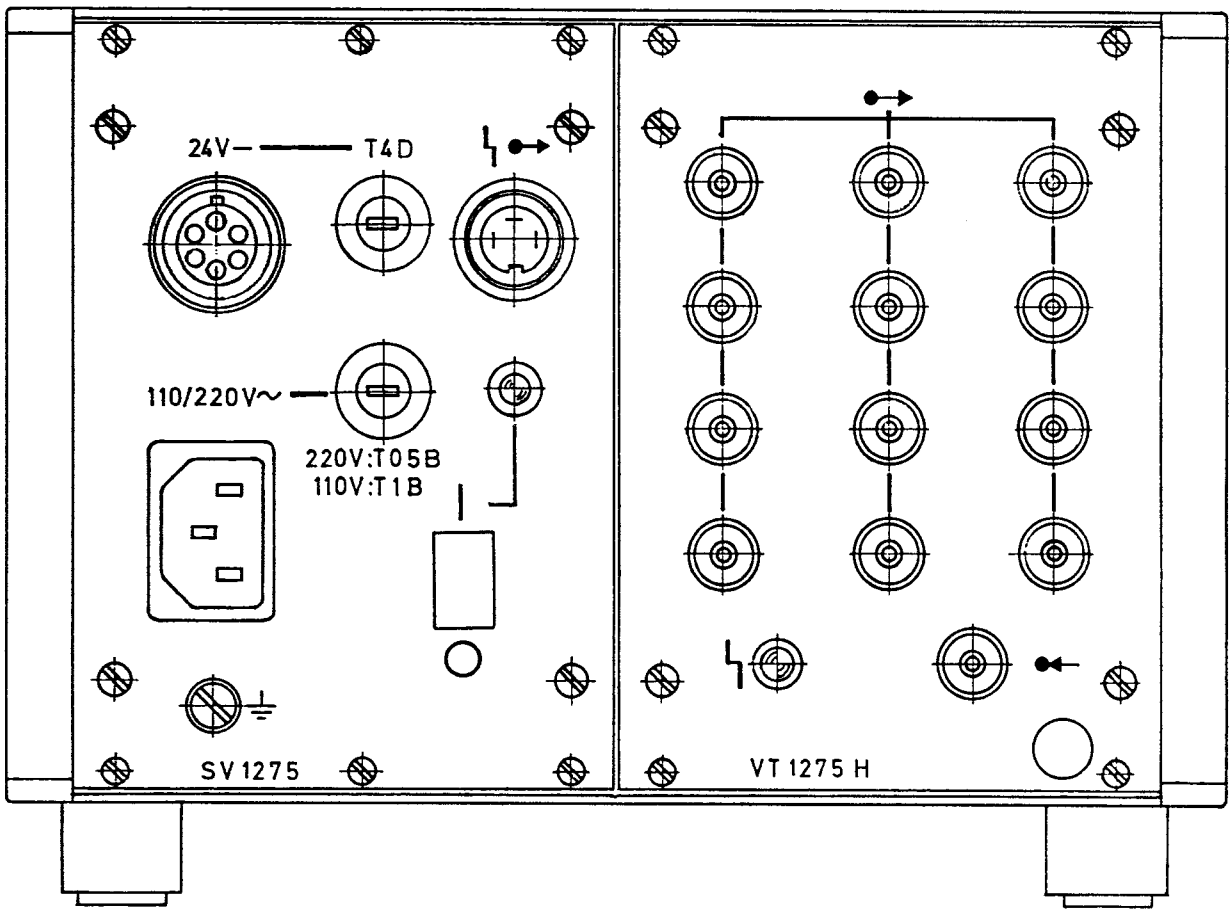
4.6.4 AMPLIFIER MULTICOUPLER VT 1275 H-FI 52.3105.200.00 SA(02)

BU	1	SOCKET		SIEHE 52.3105.250.00ST,LFD.NR 101
BU	2	SOCKET		SIEHE 52.3105.250.00ST,LFD.NR 101
BU	3	SOCKET		SIEHE 52.3105.250.00ST,LFD.NR 101
BU	4	SOCKET		SIEHE 52.3105.250.00ST,LFD.NR 101
BU	5	SOCKET		SIEHE 52.3105.230.00ST,LFD.NR 101
BU	6	SOCKET		SIEHE 52.3105.230.00ST,LFD.NR 101
BU	7	SOCKET		SIEHE 52.3105.230.00ST,LFD.NR 101
BU	8	SOCKET		SIEHE 52.3105.230.00ST,LFD.NR 101
BU	9	SOCKET		SIEHE 52.3105.250.00ST,LFD.NR 101
BU	10	SOCKET		SIEHE 52.3105.250.00ST,LFD.NR 101
BU	11	SOCKET		SIEHE 52.3105.250.00ST,LFD.NR 101
BU	12	SOCKET		SIEHE 52.3105.250.00ST,LFD.NR 101
BU	13	RF SOCKET	5L.4511.004.14	TNC R.143405 /23TNC-50-0-2 Z- 50 TEFLON GER.FLANSCH LOET

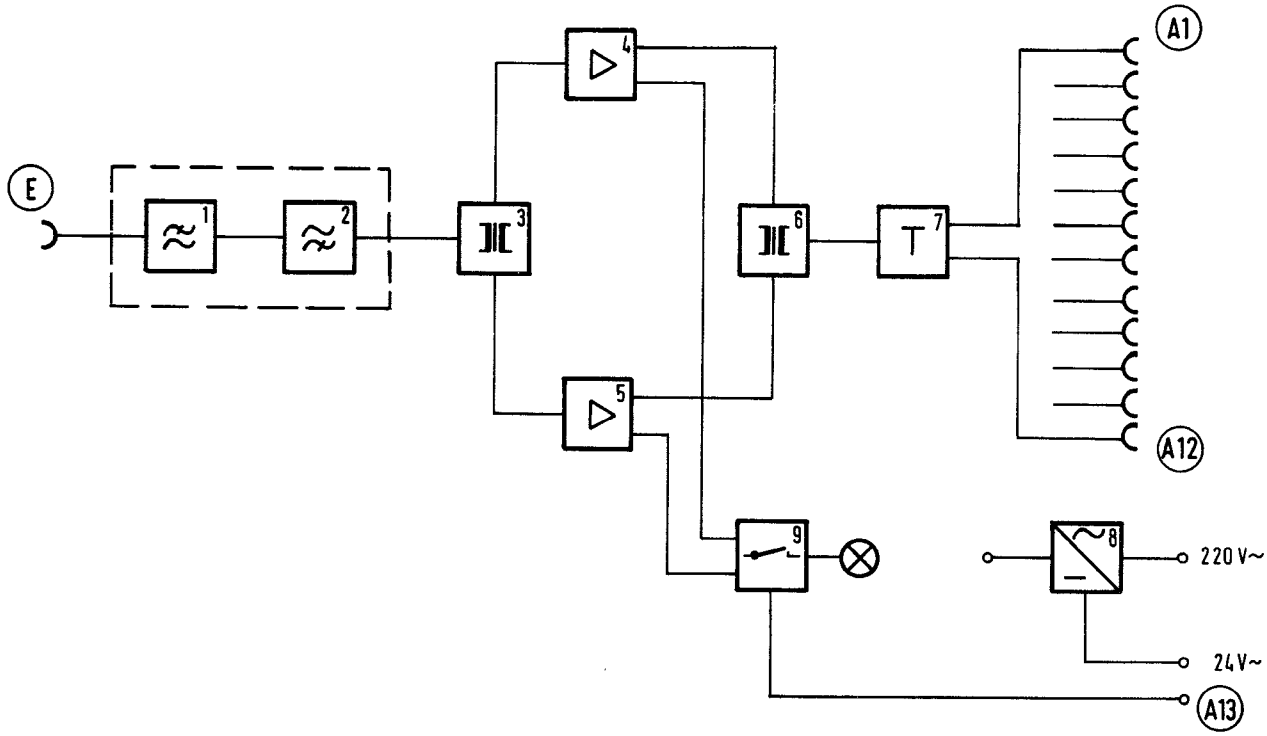
ITEM		DESCRIPTION	PART NUMBER	ELECTRICAL VALUES - REMARKS
BU	301	RF SOCKET	5L.4511.004.34	SMB R.114183 Z- 50 TEFLON WINKELIG QUETSCH
BU	302	RF SOCKET	5L.4511.004.34	SMB R.114183 Z- 50 TEFLON WINKELIG QUETSCH
C	1	CAPACITOR CERAMIC	5L.5224.029.68	PF 100 +- 2 % N 150 EGPU5/EGPT5 63 V
C	2	CAP.PLASTIC FILM	5L.5241.055.54	UF 0,047 +-10 % 63 V MKS 2 /MKT1,68/1,85/MMK05/IRD607/B32529-A
C	3	CAP.PLASTIC FILM	5L.5241.055.54	UF 0,047 +-10 % 63 V MKS 2 /MKT1,68/1,85/MMK05/IRD607/B32529-A
C	4	CAP.PLASTIC FILM	5L.5241.055.54	UF 0,047 +-10 % 63 V MKS 2 /MKT1,68/1,85/MMK05/IRD607/B32529-A
C	5	CAP.PLASTIC FILM	5L.5241.055.54	UF 0,047 +-10 % 63 V MKS 2 /MKT1,68/1,85/MMK05/IRD607/B32529-A
C	6	CAP.PLASTIC FILM	5L.5241.055.54	UF 0,047 +-10 % 63 V MKS 2 /MKT1,68/1,85/MMK05/IRD607/B32529-A
C	7	CAP.PLASTIC FILM	5L.5241.055.54	UF 0,047 +-10 % 63 V MKS 2 /MKT1,68/1,85/MMK05/IRD607/B32529-A
C	8	CAP.PLASTIC FILM	5L.5241.055.54	UF 0,047 +-10 % 63 V MKS 2 /MKT1,68/1,85/MMK05/IRD607/B32529-A
C	9	CAP.PLASTIC FILM	5L.5241.055.54	UF 0,047 +-10 % 63 V MKS 2 /MKT1,68/1,85/MMK05/IRD607/B32529-A
C	10	CAP.PLASTIC FILM	5L.5241.055.75	UF 0,01 +- 5 % 63 V MKS 2 /MKT1,68/1,85/MMK05/IRD607/B32529-A
C	11	CAP.PLASTIC FILM	5L.5241.055.75	UF 0,01 +- 5 % 63 V MKS 2 /MKT1,68/1,85/MMK05/IRD607/B32529-A
C	12	CAPACITOR CERAMIC	5L.5224.029.67	PF 82 +- 2 % N 150 EGPU5/EGPT5 63 V
C	13	CAPACITOR CERAMIC	5L.5224.030.29	PF 15 +- 2 % N 150 EGPU5/EGPT5 63 V
C	14	CAPACITOR CERAMIC	5L.5224.030.29	PF 15 +- 2 % N 150 EGPU5/EGPT5 63 V
C	15	CAPACITOR		SIEHE 52.3105.250.00ST,LFD.NR 106
C	16	CAPACITOR		SIEHE 52.3105.250.00ST,LFD.NR 106
C	17	CAPACITOR		SIEHE 52.3105.250.00ST,LFD.NR 106
C	18	CAPACITOR		SIEHE 52.3105.250.00ST,LFD.NR 106
C	19	ELECTROL. CAPACIT.	5L.5271.058.73	UF 2200 + 50-10% 40 V EGC00NG422G EHF/IA2200/40/B41588..
F	1	OVERVOLTAGE SHUNT	5L.4841.001.22	GAS- 90V +20% 5 A < 1 KV 5 KA TYP Q 69-X 151 B1-C90
GR	1	REFERENCE DIODE	5L.5536.006.92	STABILISIER- BZX 75/C 1 V 4
GR	2	SI-DIODE	5L.5532.101.47	1N 4151 BAY 95
GR	3	SI-DIODE	5L.5532.101.47	1N 4151 BAY 95
GR	4	SI-DIODE	5L.5532.101.47	1N 4151 BAY 95
GR	5	SI-DIODE	5L.5532.101.47	1N 4151 BAY 95
GR	6	SI-DIODE	5L.5532.101.47	1N 4151 BAY 95
GR	7	SI-DIODE	5L.5532.101.47	1N 4151 BAY 95
GR	8	SI-DIODE	5L.5532.101.47	1N 4151 BAY 95
GR	9	REFERENCE DIODE	5L.5532.205.07	Z- BZX 55/C 4 V 7 ZPD 4,7
GR	10	LIGHT EMITT. DIODE	5L.5586.001.41	ROT HLMP3301 (5082-4655)
GR	11	REFERENCE DIODE	5L.5532.205.01	Z- BZX 55/C 2 V 7 ZPD 2,7
GR	12	SI-DIODE	5L.5532.101.47	1N 4151 BAY 95
GR	13	SI-DIODE	5L.5532.101.47	1N 4151 BAY 95
GR	14	SI-DIODE	5L.5532.101.47	1N 4151 BAY 95
GR	15	SI-DIODE	5L.5532.101.47	1N 4151 BAY 95
L	1	CHOKE	5L.5053.003.04	UH 0,27 +-10 % 0,96 A 0,16 OHM TYP MS75083-6
L	2	CHOKE	5L.5053.006.96	UH 12 +-10 % TYP FS08 10S-120K
L	3	CHOKE	5L.5053.006.96	UH 12 +-10 % TYP FS08 10S-120K
L	4	CHOKE	5L.5053.003.11	UH 1 +-10 % 0,385A 1 OHM TYP MS75083-13
L	5	CHOKE	5L.5053.003.11	UH 1 +-10 % 0,385A 1 OHM TYP MS75083-13
L	6	CHOKE	5L.5053.003.49	UH 0,12 +-10 % 1,27 A 0,09 OHM TYP MS75083-2
R	1	FILM RESISTOR	5N.5102.002.53	OHM 150 +- 5 % 0,25 W RC 07 GF 151 J
R	2	FILM RESISTOR	5N.5102.002.70	OHM 750 +- 5 % 0,25 W RC 07 GF 751 J
R	3	FILM RESISTOR	5N.5102.002.70	OHM 750 +- 5 % 0,25 W RC 07 GF 751 J
R	4	FILM RESISTOR	5N.5102.002.33	OHM 22 +- 5 % 0,25 W RC 07 GF 220 J
R	5	FILM RESISTOR	5N.5102.002.33	OHM 22 +- 5 % 0,25 W RC 07 GF 220 J
R	6	FILM RESISTOR	5N.5102.002.93	KOHM 6,8 +- 5 % 0,25 W RC 07 GF 682 J
R	7	FILM RESISTOR	5N.5102.002.93	KOHM 6,8 +- 5 % 0,25 W RC 07 GF 682 J
R	8	FILM RESISTOR	5N.5102.002.17	OHM 4,7 +- 5 % 0,25 W RC 07 GF 4R7 J
R	9	FILM RESISTOR	5N.5102.002.17	OHM 4,7 +- 5 % 0,25 W RC 07 GF 4R7 J
R	10	FILM RESISTOR	5N.5102.002.85	KOHM 3,3 +- 5 % 0,25 W RC 07 GF 332 J

ITEM		DESCRIPTION	PART NUMBER	ELECTRICAL VALUES - REMARKS
R	11	FILM RESISTOR	5N.5102.002.85	KOHM 3,3 +- 5 % 0,25 W RC 07 GF 332 J
R	12	FILM RESISTOR	5L.5101.076.03	OHM 1,5 +- 5 % 0,25 W SK2 LCA 0207/RDS 1/4
R	13	FILM RESISTOR	5L.5101.076.03	OHM 1,5 +- 5 % 0,25 W SK2 LCA 0207/RDS 1/4
R	14	FILM RESISTOR	5N.5102.002.97	KOHM 10 +- 5 % 0,25 W RC 07 GF 103 J
R	15	FILM RESISTOR	5N.5102.002.27	OHM 12 +- 5 % 0,25 W RC 07 GF 120 J
R	16	FILM RESISTOR	5N.5102.002.31	OHM 18 +- 5 % 0,25 W RC 07 GF 180 J
R	17	FILM RESISTOR	5N.5102.002.31	OHM 18 +- 5 % 0,25 W RC 07 GF 180 J
R	18	FILM RESISTOR	5N.5102.003.06	KOHM 22 +- 5 % 0,25 W RC 07 GF 223 J
R	20	FILM RESISTOR	5N.5102.002.89	KOHM 4,7 +- 5 % 0,25 W RC 07 GF 472 J
R	21	FILM RESISTOR	5N.5102.002.99	KOHM 12 +- 5 % 0,25 W RC 07 GF 123 J
R	22	FILM RESISTOR	5N.5102.002.99	KOHM 12 +- 5 % 0,25 W RC 07 GF 123 J
R	24	FILM RESISTOR	5N.5102.002.71	OHM 820 +- 5 % 0,25 W RC 07 GF 821 J
R	25	FILM RESISTOR	5N.5102.002.45	OHM 68 +- 5 % 0,25 W RC 07 GF 680 J
R	26	FILM RESISTOR	5N.5102.002.39	OHM 39 +- 5 % 0,25 W RC 07 GF 390 J
R	27	FILM RESISTOR	5N.5102.002.54	OHM 160 +- 5 % 0,25 W RC 07 GF 161 J
R	28	FILM RESISTOR	5N.5102.002.54	OHM 160 +- 5 % 0,25 W RC 07 GF 161 J
R	29	FILM RESISTOR	5N.5102.002.54	OHM 160 +- 5 % 0,25 W RC 07 GF 161 J
R	30	FILM RESISTOR	5M.5106.226.46	OHM 49,9 +- 1 % 0,1 W RN 55 C 49R9 F
R	31	RESISTOR		SIEHE 52.3105.250.00ST,LFD.NR 111
R	32	RESISTOR		SIEHE 52.3105.250.00ST,LFD.NR 111
R	33	FILM RESISTOR	5M.5106.225.17	OHM 100 +- 1 % 0,1 W RN 55 C 1000 F
R	34	FILM RESISTOR	5M.5106.225.17	OHM 100 +- 1 % 0,1 W RN 55 C 1000 F
R	35	RESISTOR		SIEHE 52.3105.250.00ST,LFD.NR 121
R	36	RESISTOR		SIEHE 52.3105.250.00ST,LFD.NR 121
R	37	RESISTOR		SIEHE 52.3105.250.00ST,LFD.NR 121
R	38	RESISTOR		SIEHE 52.3105.250.00ST,LFD.NR 121
R	39	FILM RESISTOR	5N.5102.002.25	OHM 10 +- 5 % 0,25 W RC 07 GF 100 J
R	40	FILM RESISTOR	5N.5102.002.25	OHM 10 +- 5 % 0,25 W RC 07 GF 100 J
R	41	SCHICHTWIDERST.AUSGESUCHT		SIEHE .230.00PV2 - 4.1
R	41/A	FILM RESISTOR	5N.5102.002.55	OHM 180 +- 5 % 0,25 W RC 07 GF 181 J
R	41/B	FILM RESISTOR	5N.5102.002.47	OHM 82 +- 5 % 0,25 W RC 07 GF 820 J
R	41/C	FILM RESISTOR	5N.5102.002.41	OHM 47 +- 5 % 0,25 W RC 07 GF 470 J
R	41/D	FILM RESISTOR	5N.5102.002.37	OHM 33 +- 5 % 0,25 W RC 07 GF 330 J
R	42	SCHICHTWIDERST.AUSGESUCHT		SIEHE .230.00PV2 - 4.1
R	42/A	FILM RESISTOR	5N.5102.002.55	OHM 180 +- 5 % 0,25 W RC 07 GF 181 J
R	42/B	FILM RESISTOR	5N.5102.002.47	OHM 82 +- 5 % 0,25 W RC 07 GF 820 J
R	42/C	FILM RESISTOR	5N.5102.002.41	OHM 47 +- 5 % 0,25 W RC 07 GF 470 J
R	42/D	FILM RESISTOR	5N.5102.002.37	OHM 33 +- 5 % 0,25 W RC 07 GF 330 J
ST	1	PLUG CONNECTOR	5L.4561.010.75	32POL 553 013 2-164718-4/09020326931/242202589481
T	1	TRANSFORMER	52.0501.028.00	T3-0704
T	2	TRANSFORMER	52.0501.029.00	T3-0705
T	3	TRANSFORMER	52.0501.029.00	T3-0705
T	4	TRANSFORMER	52.0501.059.00	T3-0725
T	5	TRANSFORMER	52.0501.566.00	T3-0706
T	6	TRANSFORMER	52.0501.031.00	T3-0707
T	7	TRANSFORMER	52.0501.031.00	T3-0707
T	8	TRANSFORMER	52.0501.031.00	T3-0707
T	9	TRANSFORMER	52.0501.033.00	T3-0709
T	10	TRANSFORMER	52.0501.033.00	T3-0709
T	11	TRANSFORMER		SIEHE 52.3105.250.00ST,LFD.NR 131
T	12	TRANSFORMER		SIEHE 52.3105.250.00ST,LFD.NR 131
T	13	TRANSFORMER		SIEHE 52.3105.250.00ST,LFD.NR 131
T	14	TRANSFORMER		SIEHE 52.3105.250.00ST,LFD.NR 131
T	15	TRANSFORMER	52.0501.032.00	T3-0708
T	16	TRANSFORMER	52.0501.032.00	T3-0708
T	17	TRANSFORMER		SIEHE 52.3105.250.00ST,LFD.NR 141
T	18	TRANSFORMER		SIEHE 52.3105.250.00ST,LFD.NR 141
T	19	TRANSFORMER		SIEHE 52.3105.250.00ST,LFD.NR 141
T	20	TRANSFORMER		SIEHE 52.3105.250.00ST,LFD.NR 141
TS	1	N CHANNEL FET	5L.5501.002.15	VMP 4 -MOS-
TS	2	N CHANNEL FET	5L.5501.002.15	VMP 4 -MOS-
TS	3	SI-PNP-TRANSISTOR	5L.5512.102.20	2N 2907 A
TS	4	SI-PNP-TRANSISTOR	5L.5512.102.20	2N 2907 A
TS	5	SI-NPN-TRANSISTOR	5L.5512.204.20	2N 2222 A
TS	6	SI-PNP-TRANSISTOR	5L.5512.102.20	2N 2907 A

ITEM		DESCRIPTION	PART NUMBER	ELECTRICAL VALUES - REMARKS
TS	7	SI-NPN-TRANSISTOR	5L.5512.204.20	2N 2222 A
∎	1	RF-CABLE	52.0500.276.20	
∎	2	RF-CABLE	52.0500.276.20	
∎	3	RF-CABLE		SIEHE 52.3105.250.00ST,LFD.NR 151
∎	4	RF-CABLE		SIEHE 52.3105.250.00ST,LFD.NR 151
∎	5	RF-CABLE		SIEHE 52.3105.250.00ST,LFD.NR 151
∎	6	RF-CABLE		SIEHE 52.3105.250.00ST,LFD.NR 151
Z	1	LOW-PASS+HIGH-PASS FILTER	52.1278.300.00	1,5-30MHZ
ZZ	1	ABGLEICHWERTE ZU TS 1 ODER		TS 2, SIEHE .200.00PV2 - 4.8.1
ZZ	1/A	CAPACITOR CERAMIC	5L.5224.030.15	PF 10 +- 2 % COG EGPU5/EGPT5 63 V
ZZ	1/B	CAPACITOR CERAMIC	5L.5224.030.05	PF 18 +- 2 % COG EGPU5/EGPT5 63 V
ZZ	1/C	CAPACITOR CERAMIC	5L.5224.030.07	PF 47 +- 2 % N 150 EGPU5/EGPT5 63 V
ZZ	2	ABGLEICHWERTE ZU R 39 ODER		R 40, SIEHE .200.00PV2 - 4.8.1
ZZ	2/A	FILM RESISTOR	5N.5102.002.15	OHM 3,9 +- 5 % 0,25 W RC 07 GF 3R9 J
ZZ	2/B	FILM RESISTOR	5N.5102.002.16	OHM 4,3 +- 5 % 0,25 W RC 07 GF 4R3 J
ZZ	2/C	FILM RESISTOR	5N.5102.002.17	OHM 4,7 +- 5 % 0,25 W RC 07 GF 4R7 J
ZZ	2/D	FILM RESISTOR	5N.5102.002.18	OHM 5,1 +- 5 % 0,25 W RC 07 GF 5R1 J
ZZ	2/E	FILM RESISTOR	5N.5102.002.19	OHM 5,6 +- 5 % 0,25 W RC 07 GF 5R6 J
ZZ	2/F	FILM RESISTOR	5N.5102.002.20	OHM 6,2 +- 5 % 0,25 W RC 07 GF 6R2 J
ZZ	2/G	FILM RESISTOR	5N.5102.002.21	OHM 6,8 +- 5 % 0,25 W RC 07 GF 6R8 J
ZZ	2/H	FILM RESISTOR	5N.5102.002.22	OHM 7,5 +- 5 % 0,25 W RC 07 GF 7R5 J
ZZ	2/I	FILM RESISTOR	5N.5102.002.23	OHM 8,2 +- 5 % 0,25 W RC 07 GF 8R2 J
ZZ	2/K	FILM RESISTOR	5N.5102.002.24	OHM 9,1 +- 5 % 0,25 W RC 07 GF 9R1 J

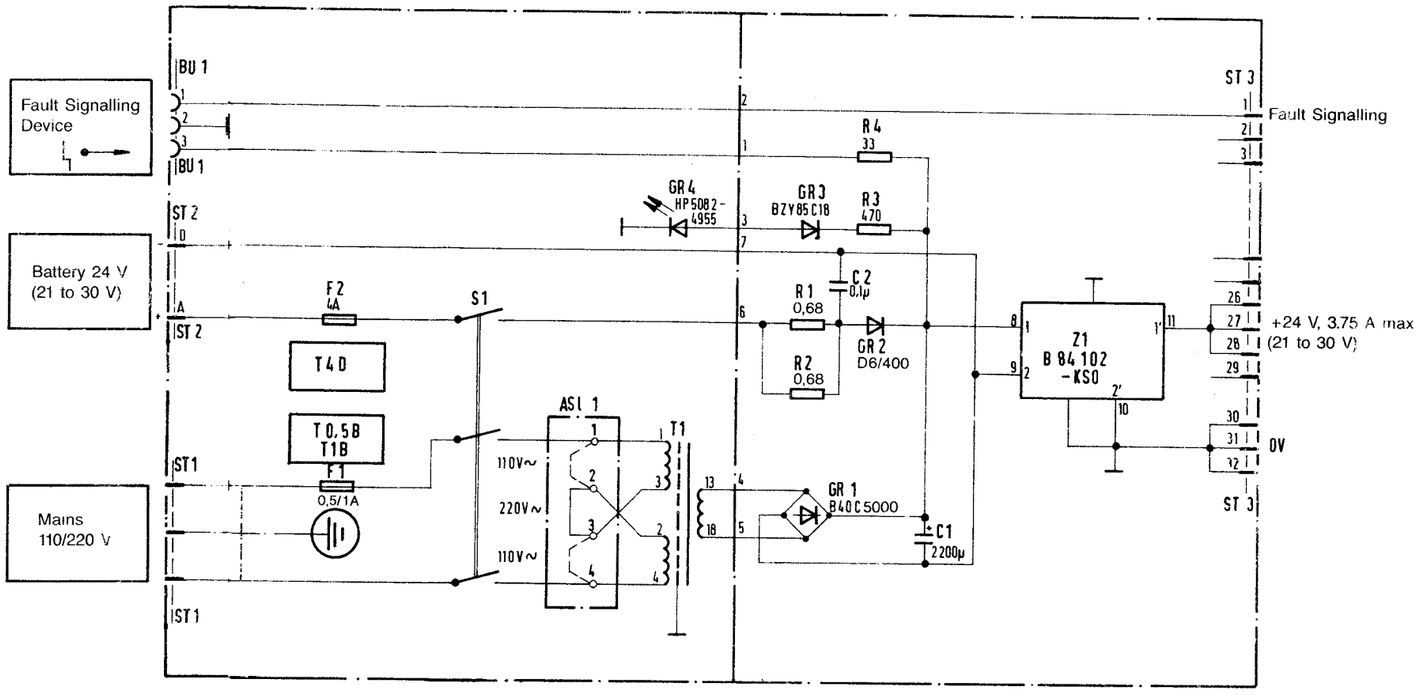


Front view
Antenna Multicoupler V 1275 H, H–P
Annex 1



1	30 MHz low-pass filter	8	Power supply
2	1.5 MHz high-pass filter	9	Fault signalling circuit
3	Push-pull transformer	E	Antenna input
4 + 5	VMOS field effect transistor	A1 to A12	Multicoupler outputs
6	Push-pull transformer	A13	Connection for external fault signalling
7	1 to 12 distribution network		

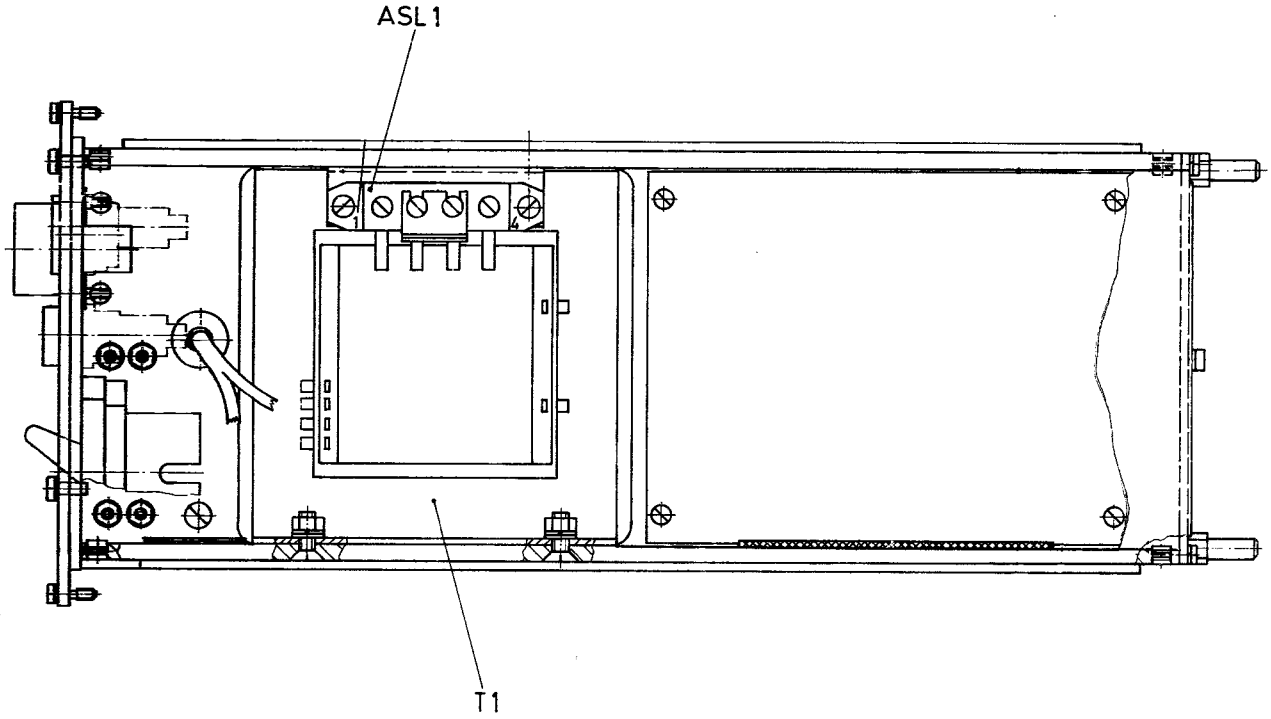
Block Diagram
Antenna Multicoupler V 1275 H, H–P
Annex 2

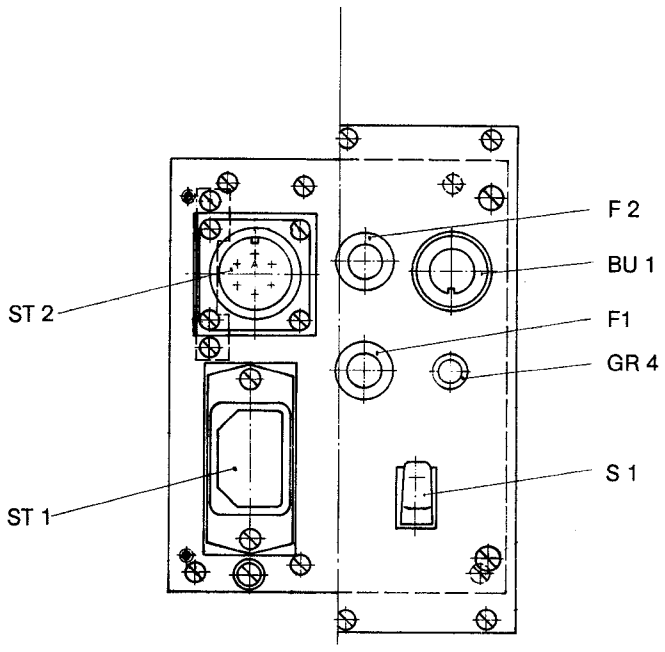


52.3105.100.00 STR (02)

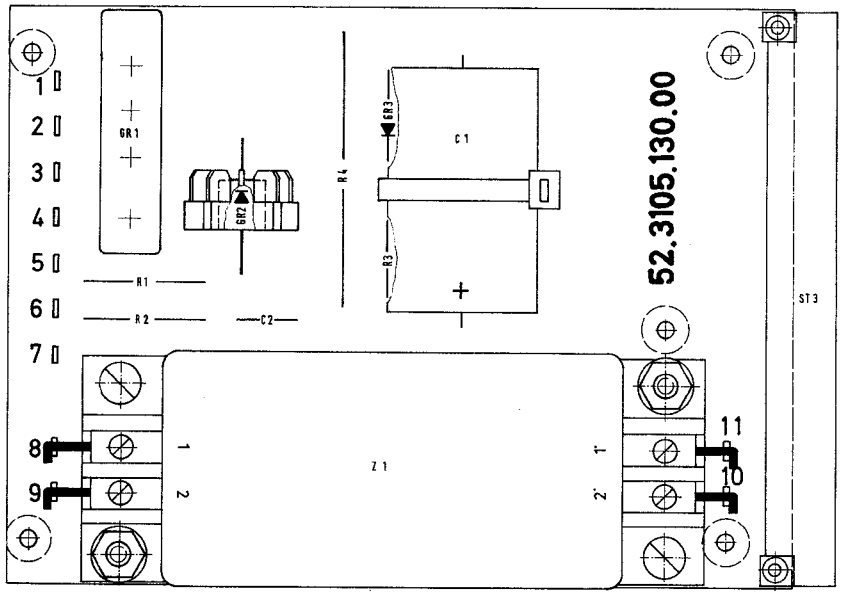
V 1275 H, H–P

Circuit Diagram
Power Supply SV 1275
Antenna Multicoupler V 1275 H, H–P
Annex 3

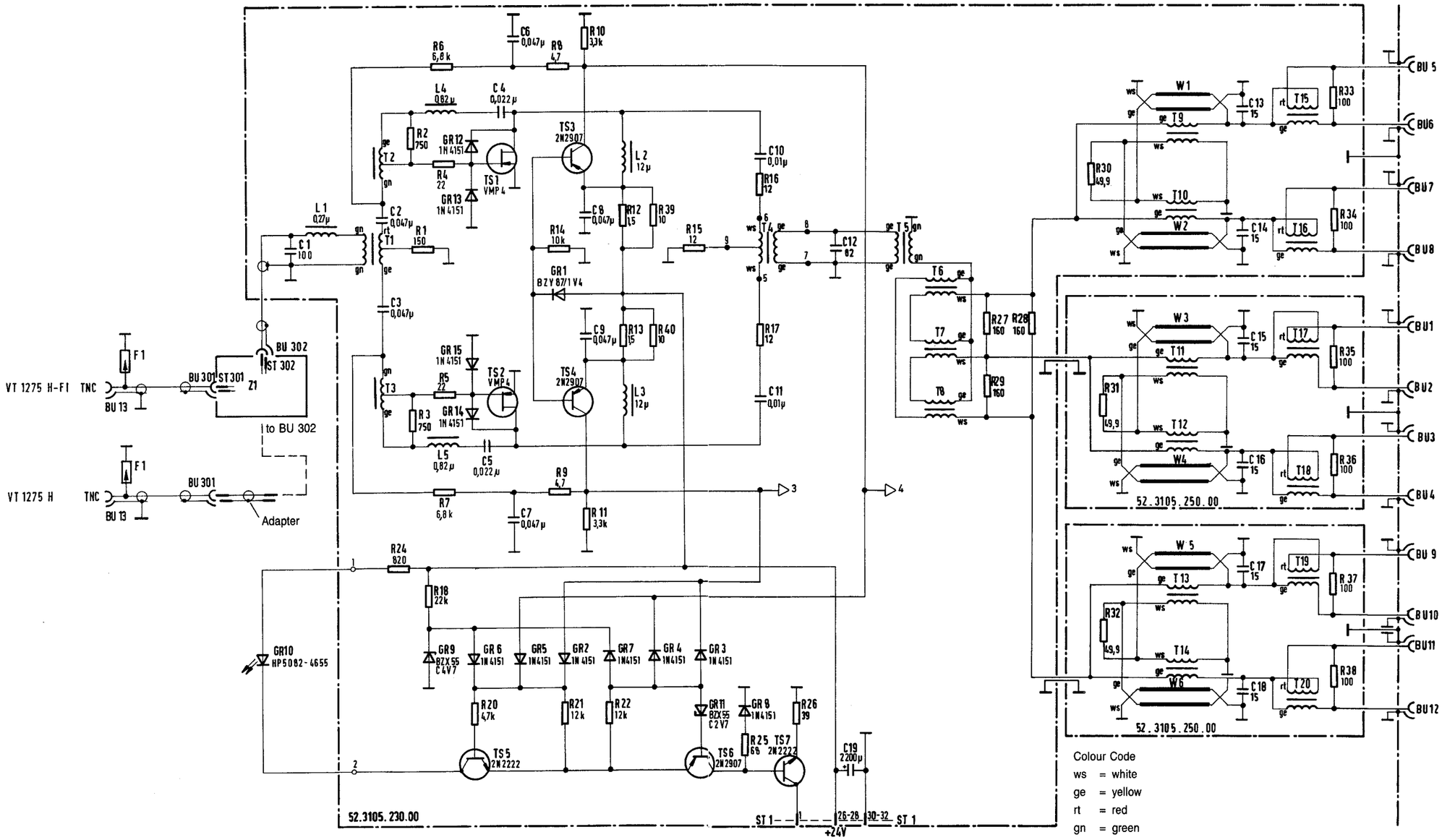




Components Layout
Power Supply SV 1275
Antenna Multicoupler V 1275 H, H–P
Annex 4, Sheet 1



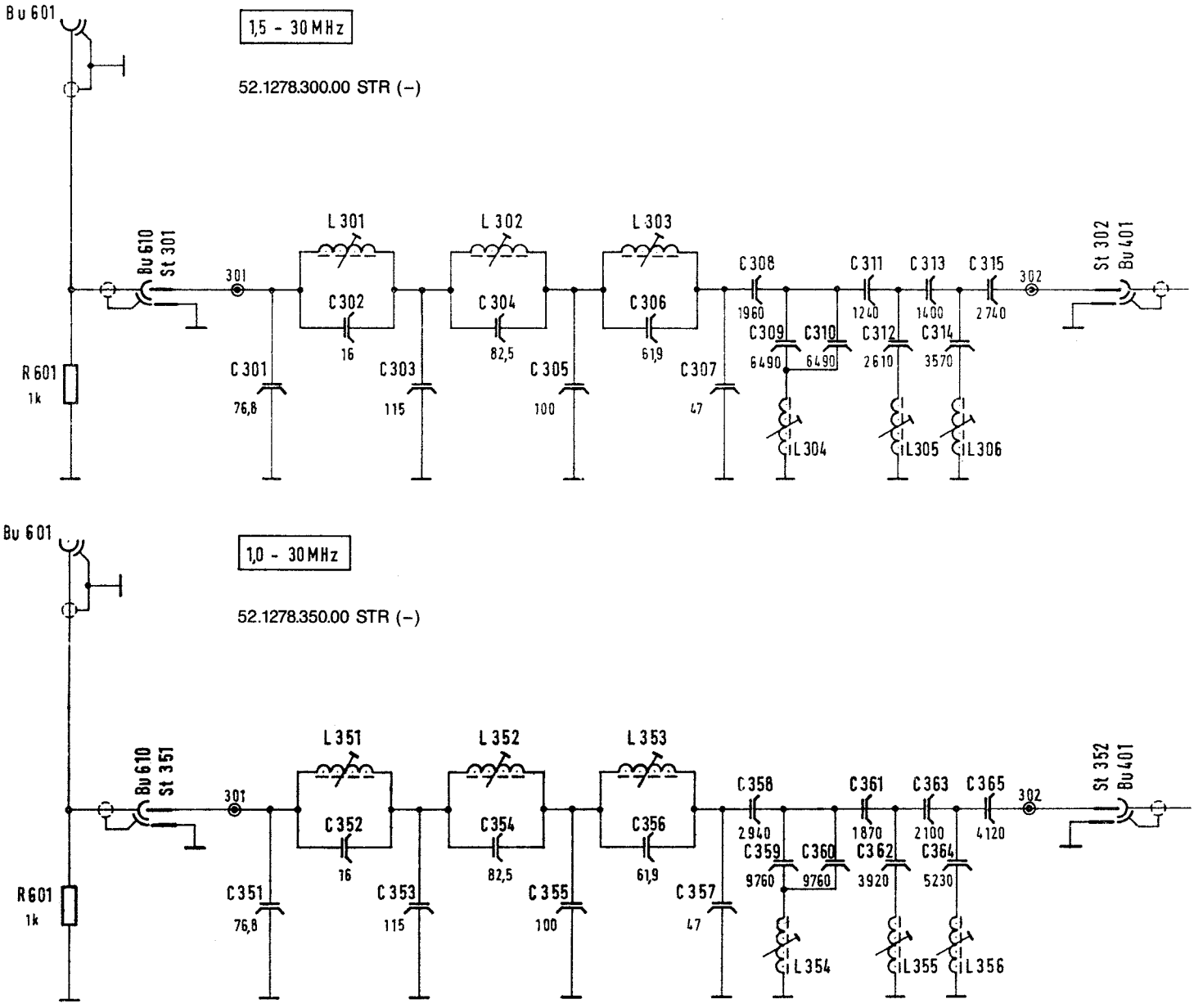
Components Layout
Power Supply SV 1275
Antenna Multicoupler V 1275 H, H–P
Annex 4, Sheet 2



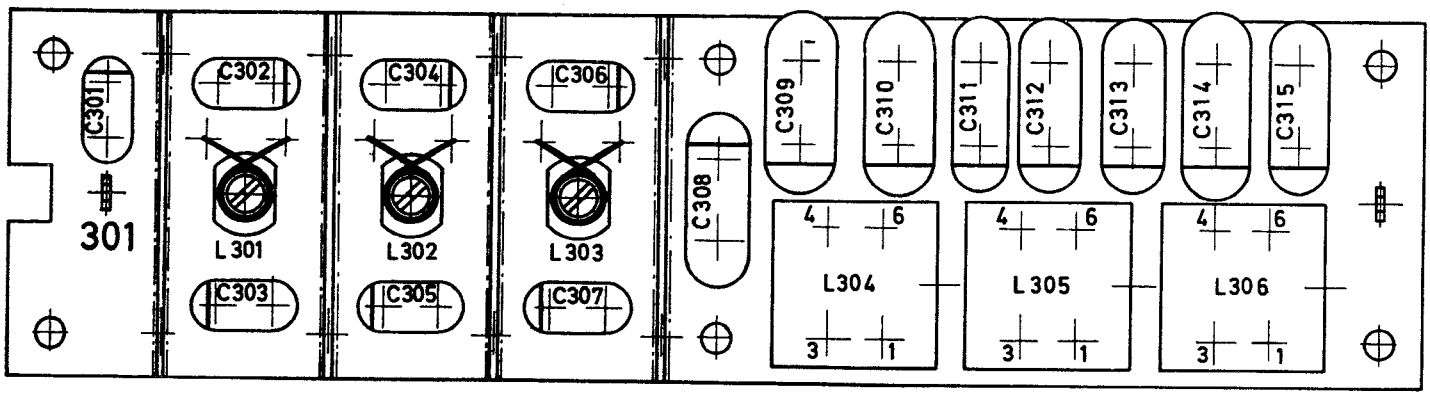
52.3105.200.00 STR (05)

V 1275 H, H–P

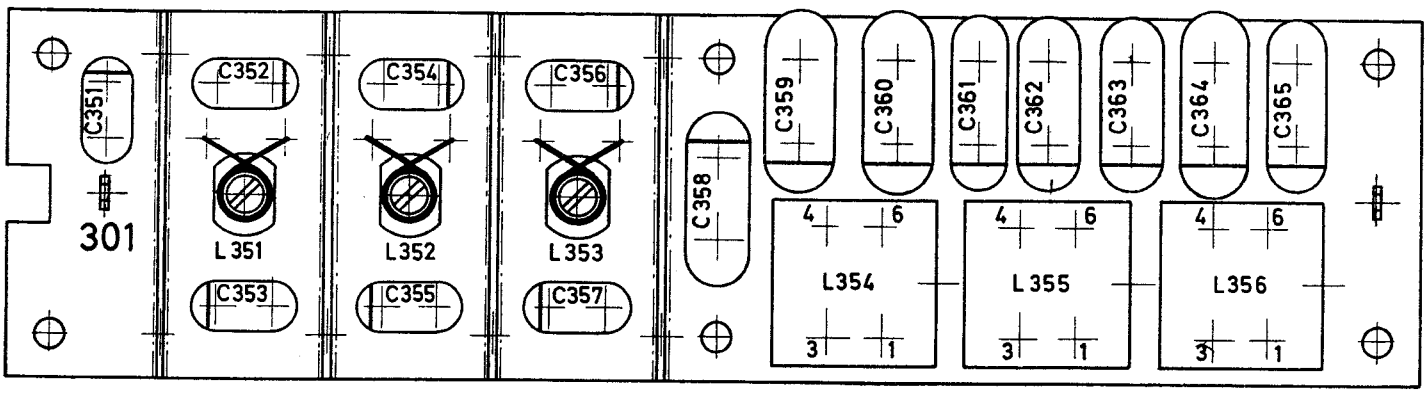
Circuit Diagram
Amplifier-Multicoupler VT 1275 H
Antenna Multicoupler V 1275 H, H–P
Annex 5, Sheet 1



Circuit Diagrams
High-Pass and Low-Pass Filter
1.5–30 MHz (top) and 1.0–30 MHz (bottom)
Antenna Multicoupler V 1275 H, H–P
Annex 5, Sheet 2

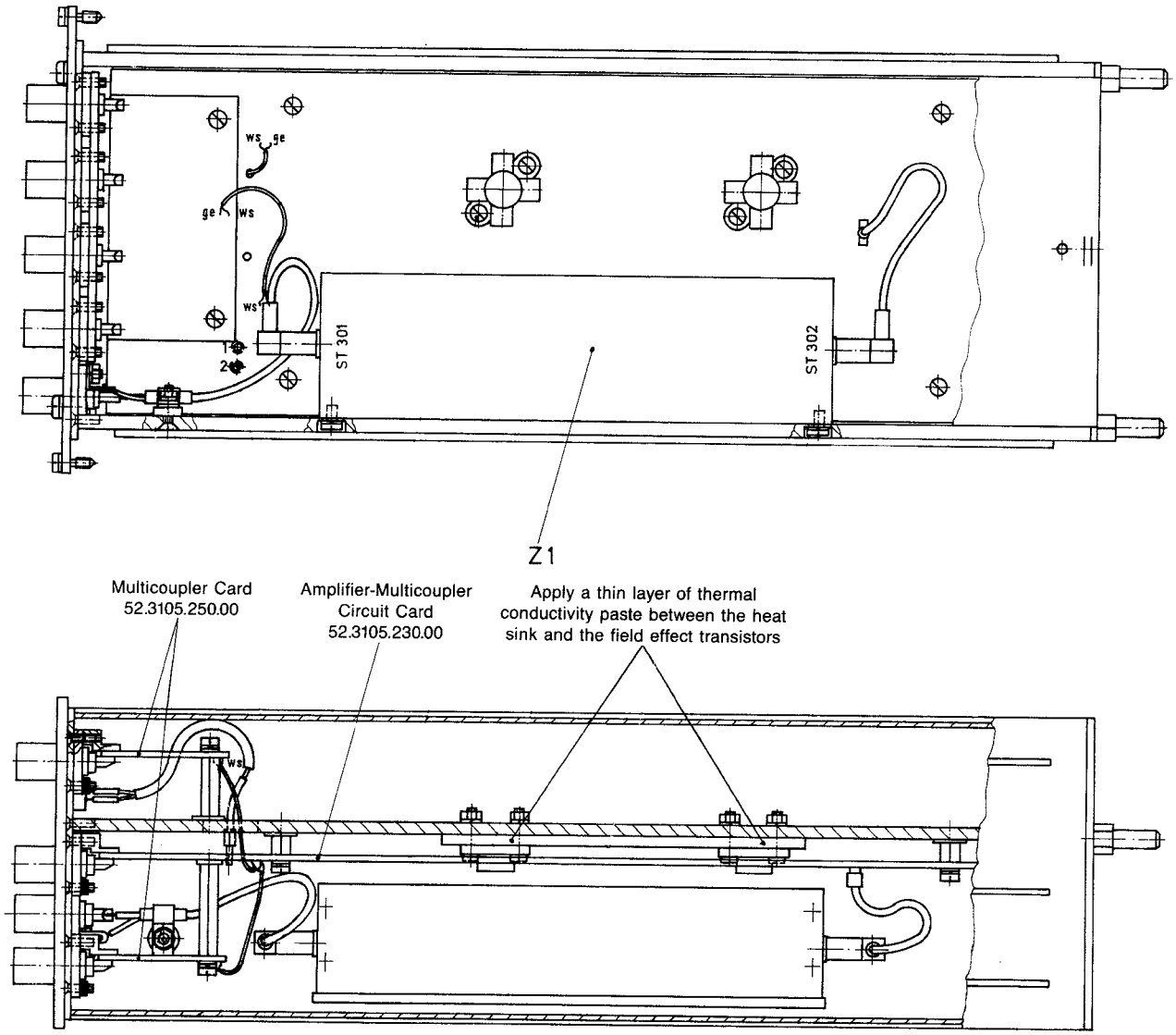


52.1278.310.00 (–)

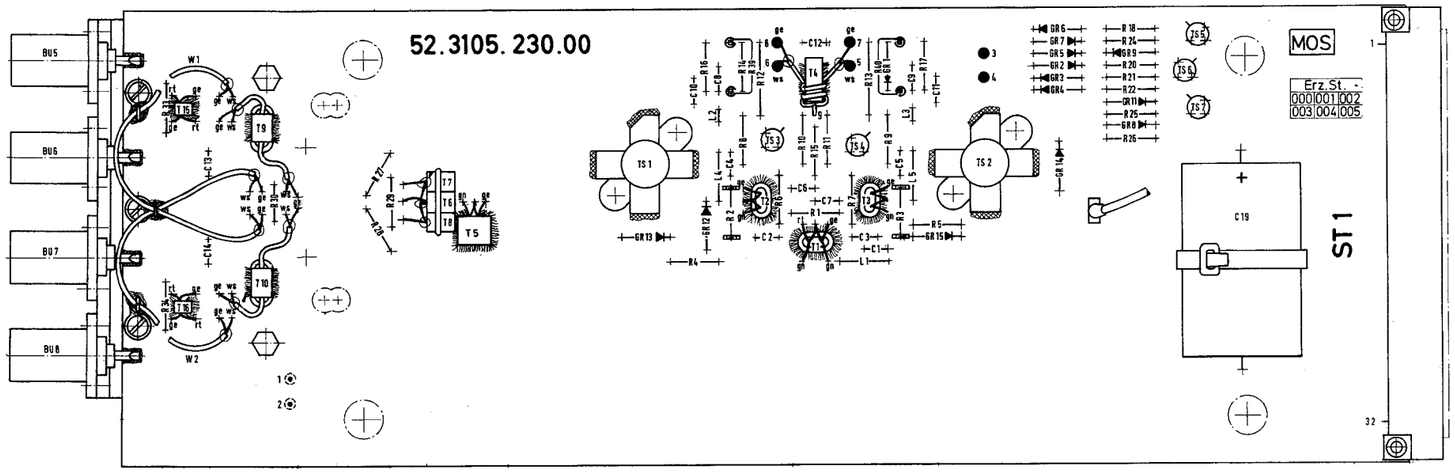


52.1278.360.00 (–)

Components Layouts
High-Pass and Low-Pass Filter
1.5–30 MHz (top) and 1.0–30 MHz (bottom)
Antenna Multicoupler V 1275 H, H–P
Annex 5, Sheet 3



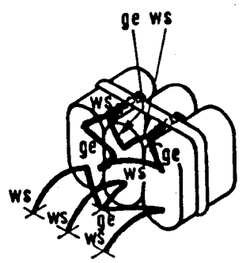
Components Layout
Amplifier-Multicoupler VT 1275 H
Antenna Multicoupler V 1275 H, H–P
Annex 6



Colour Code

ws = white
ge = yellow
rt = red
gn = green

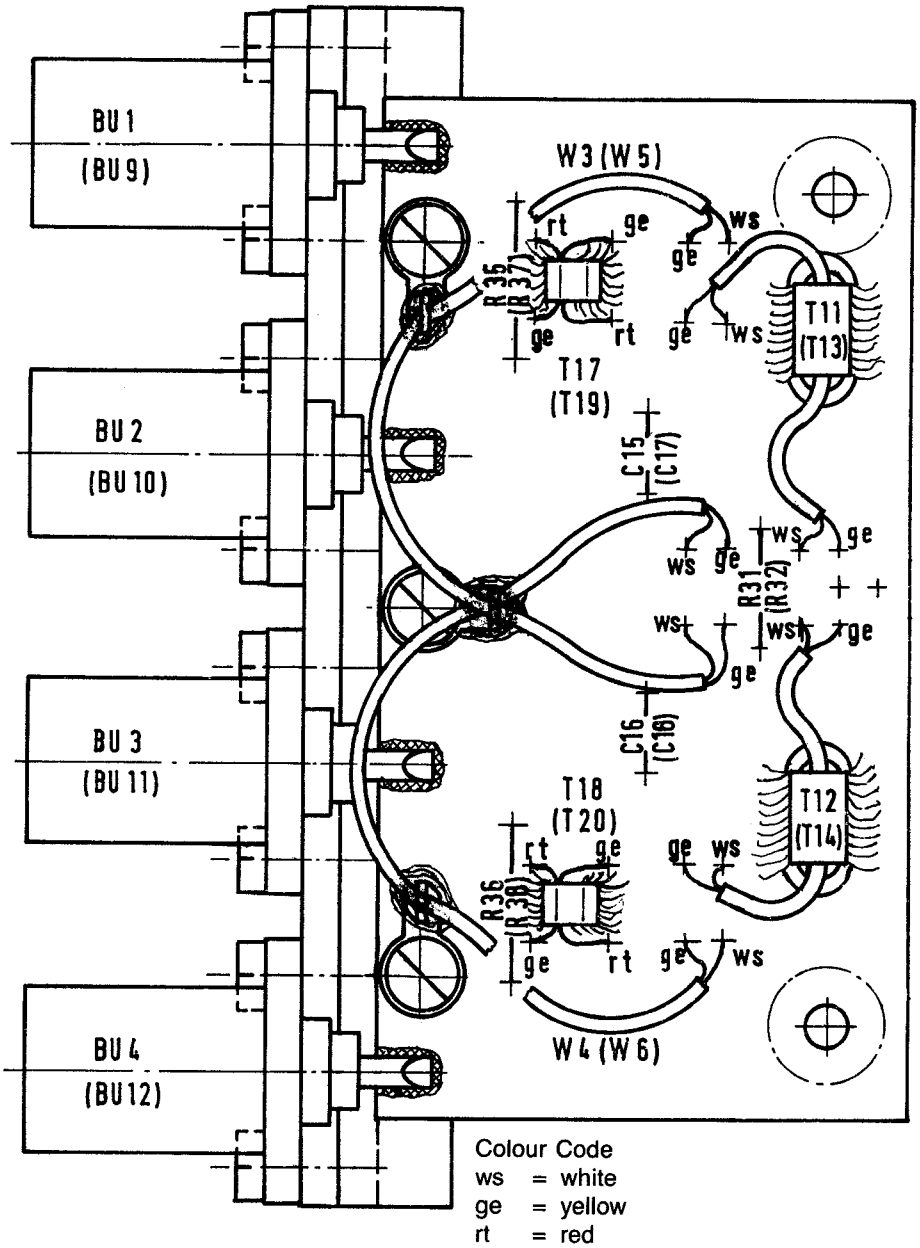
Connections diagram for T6, T7 and T8



52.3105.230.00 (06)

V 1275 H, H–P

Components Layout
Amplifier-Multicoupler Circuit Card
Antenna Multicoupler V 1275 H, H–P
Annex 7



Colour Code
ws = white
ge = yellow
rt = red

The electrical abbreviations in brackets apply for the second multicoupler circuit card used in the unit

Components Layout
Multicoupler Card
Antenna Multicoupler V 1275 H, H–P
Annex 8