



ROHDE & SCHWARZ

Manual

**ANTENNA SELECTOR
NZ 14 S 2**

439.8512

Republic of Germany

R 36929

R 36931/Oct 79

1. Characteristics

1.1 Uses

The Antenna Selector NZ 14 S2 is a double five-way RF switch for many applications in the frequency range from 0 to 30 MHz.

The crosstalk attenuation of > 40 dB between the five connections of one switch group ensures good isolation between the equipments connected. Optimum reliability is guaranteed due to the use of fast reed contacts with high power-handling capacity. As the insertion loss does not exceed 0.25 dB, the signal is transferred practically without loss and the sensitivity of the equipment connected is not impaired.

The inputs and outputs of the Antenna Selector can be interchanged. For special applications, it is even possible to actuate several contacts simultaneously.

From the many possible applications of the Antenna Selector, one typical example will now be described:

If a receiving station is equipped with several antennas with different directional characteristics or polarization, then the antenna delivering the strongest signal - depending on the time of day, direction of incidence, etc. - can be connected through to the receiver practically without interruption. Individual antenna selection from various operator's positions is possible by remote control. The antenna signals are distributed in such a network via multicouplers (e.g. NV 14 T) to avoid losses in signal strength.

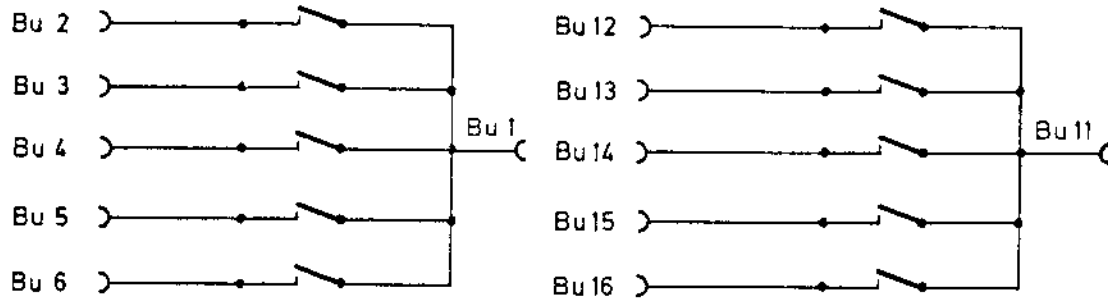
1.2 Description

The reed contacts of the Antenna Selector NZ 14 S2 are operated by concentric coils. If one of the switching lines is connected to chassis (the loop resistance may be up to 2 k Ω), the associated transistor conducts and operates the related contact via the relay coil.


A group of five switches with the corresponding components are fixed on a common PC board. The isolation between the inputs of one group is > 40 dB. The Antenna Selector incorporates two such groups; the crosstalk attenuation between these groups is > 80 dB.

Testing and maintenance is uncomplicated due to the simple and clear design.

The NZ 14 S2 requires an operating voltage of $+24 \pm 0.5$ V (15 mA max. per switch) which can be delivered by the Power Supply NV 142 N. If both the NZ 14 S2 and the NV 142 N are accommodated in the Cabinet NV 142 K, they form a compact table model. The Plug-in Adapter with Power Supply NV 142 E is available if more complex systems are to be set up using the other units of the NV 14 / NZ 14 series (e.g. NV 14 T, NV 14 L, NZ 14 R). This 19"-wide adapter can accommodate up to eight cassettes and supply the required operating DC voltage.

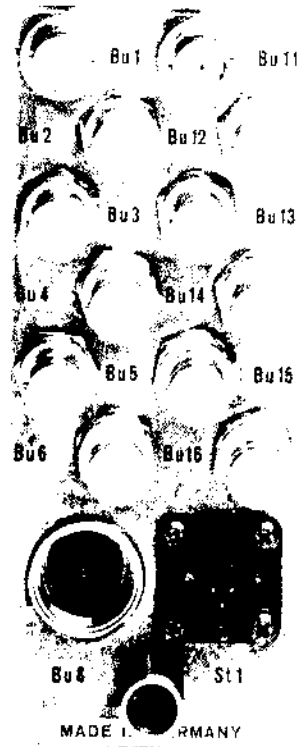


Basic circuit diagram of NZ 14 S2


 ANT.-WAHLSCHALTER
 ANTENNA SELECTOR
 NZ 14 S2
 IN 439.8512. VAR 02



Front view



Rear view

F.Nr. HE 13824/10

1.3 Specifications

Frequency range	0 to 30 MHz
Impedance	50 Ω
VSWR	< 1.5
Inputs and outputs	BNC sockets: 2 x 5 inputs, 2 x 1 output
Selection	twice 1-out-of-5
Insertion loss	< 0.25 dB
Isolation	> 40 dB between the five inputs of one group, > 30 dB between the two five-input groups, > 30 dB from interference on power-supply and control lines
Switching elements	reed contacts;
Power-handling capacity	20 W (1 A, 100 V)
Contact life	> 10 ⁸ operations
Power supply	24 \pm 0.5 V DC, negative pole connected to chassis; power input: FO 063.7977
Power requirement	< 15 mA per switch
Remote control	by connecting the appropriate remote- control input to chassis; permissible loop resistance: ON: < 2 k Ω OFF: < 200 k Ω connector: panel socket FO 018.5079
Operating temperature	-20 to +55 $^{\circ}$ C
Shelf temperature	-40 to +70 $^{\circ}$ C
Overall dimensions (W x H x D)	53 mm (1/2 of 19") x 132.5 mm x 180 mm
Weight	approx. 1.3 kg

1.4 Recommended Extras

Mating connectors

for power-supply input (St1)	FO 063.7983	
for remote-control input (Bu8) ...	FO 018.5362	
for RF inputs and outputs	BNC plugs FJ 017.6436	
(Bu1 to Bu6 and Bu11 to Bu16)	or FJ 017.6536	
RF connecting cables	see data sheet 902 100	
ENC T-section	FJ 017.6588	} to enable 1-out- of-10 selection
2 RF cables	BN 9111 505/50	

For use as table model:

Power Supply NV 142 N 101.2437.02
Cabinet NV 142 K 101.4530.02
Connecting cable NV 142 K - 13/20
Power cable DS 025.2365

For use in racks:

Plug-in Adapter with Power
Supply NV 142 E 101.0511.02 (available for DIN
(accommodating eight cassettes) or 19" racks)

2. Preparation for Use and Operating Instructions

2.1 Preparation for Use

2.1.1 Connecting the Power Supply

Connect the DC supply (+24 \pm 0.5 V; max. 15 mA per switch) to connector St1 via a cable fitted with socket FO 063.7983.

2.1.2 Connecting the RF Cables

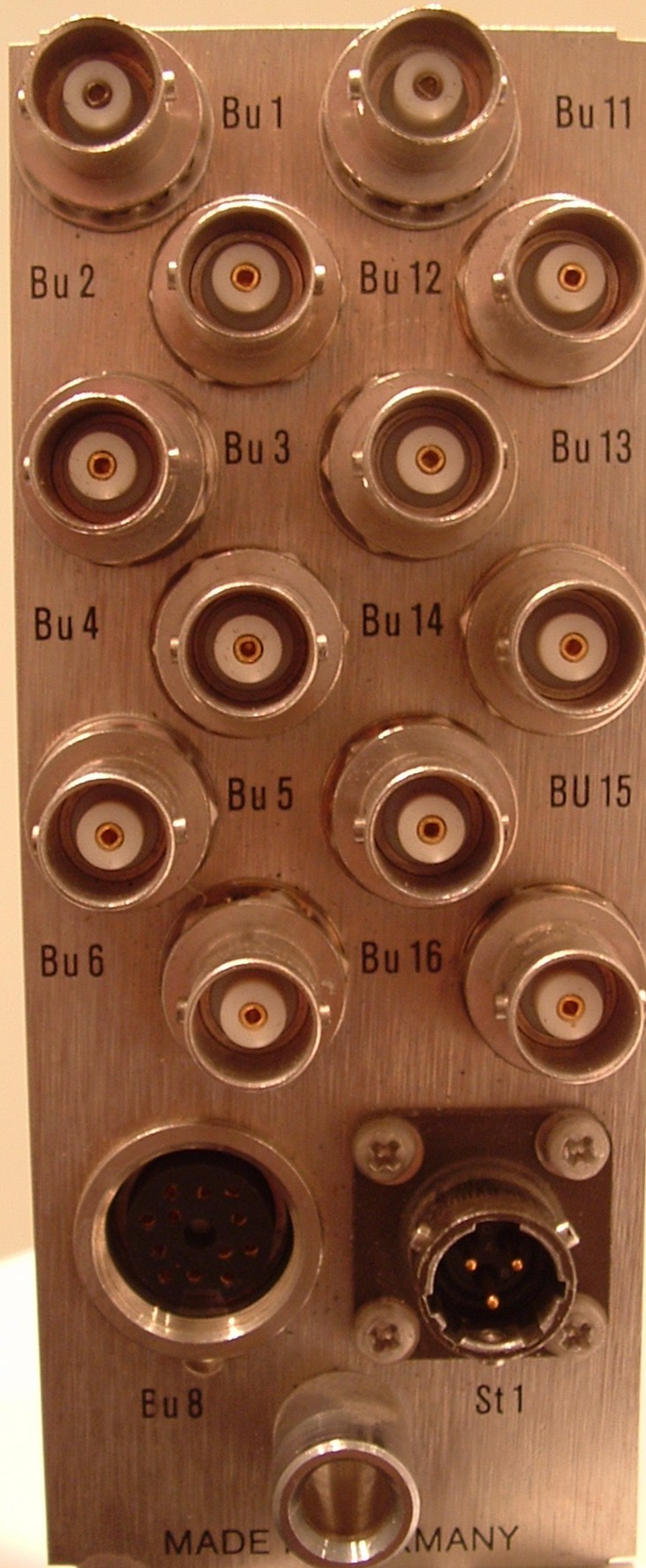
Connect the RF cables (with BNC connectors FJ 017.6436 or FJ 017.6536) to the sockets Bu1 to Bu6 and Bu11 to Bu16, depending on the system to be set up.

2.1.3 Connecting the Remote-control Line

Connect the remote-control line fitted with connector FO 018.5362 to socket Bu8.

2.2 Operating Instructions

The Antenna Selector is ready for operation when the operating voltage is applied and the cables are connected as described in section 2.1. Adjustments or other manipulations are not required.



Bu 1

Bu 11

Bu 2

Bu 12

Bu 3

Bu 13

Bu 4

Bu 14

Bu 5

Bu 15

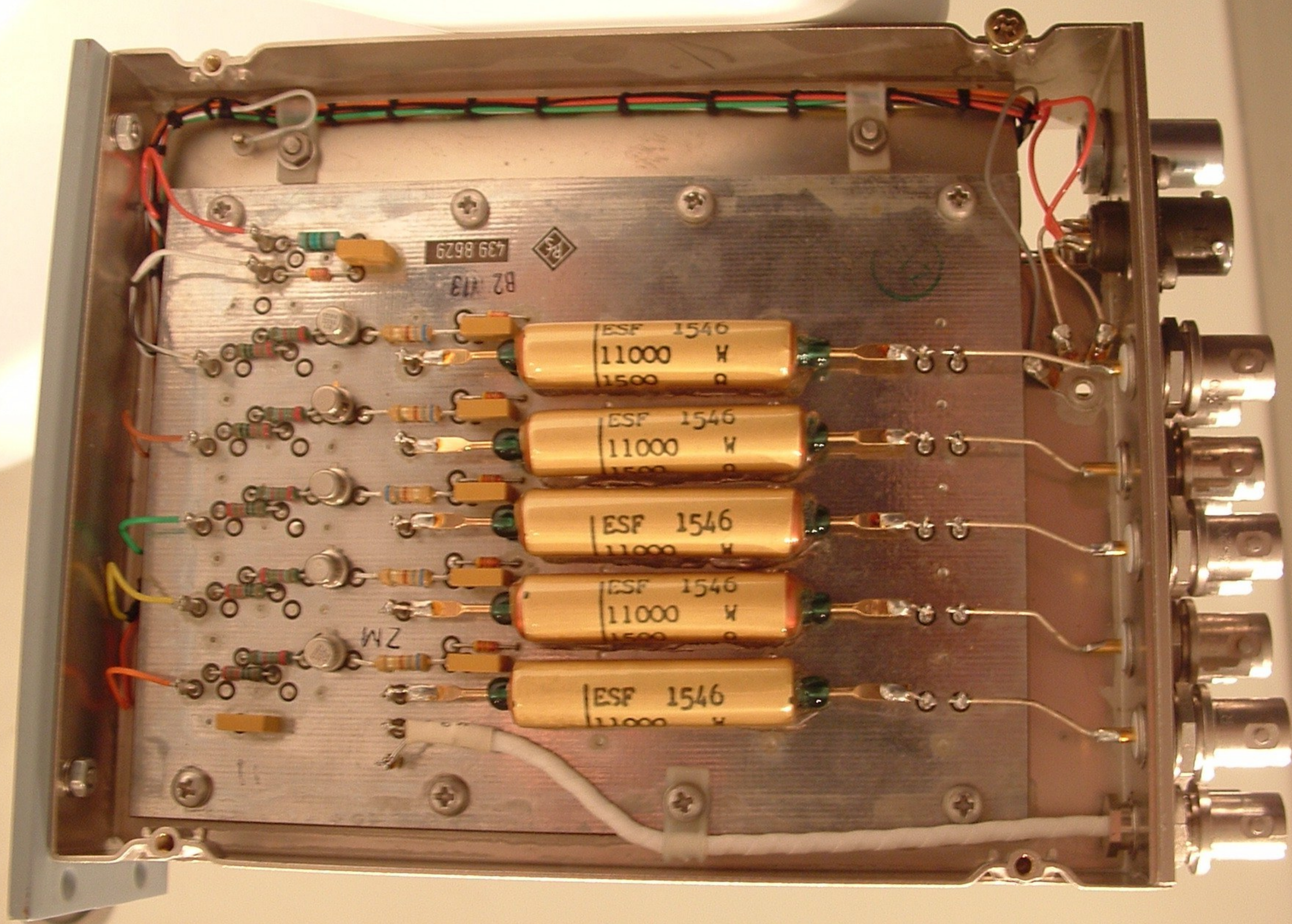
Bu 6

Bu 16

Eu 8

St 1

MADE IN GERMANY



439 8629

B2 113



ESF 1546
11000 W
1500 Q

ESF 1546
11000 W
1500 Q

ESF 1546
11000 W
1500 Q

ESF 1546
11000 W
1500 Q

ESF 1546
11000 W
1500 Q

WZ