RFB 6000
RF SWITCH NETWORK
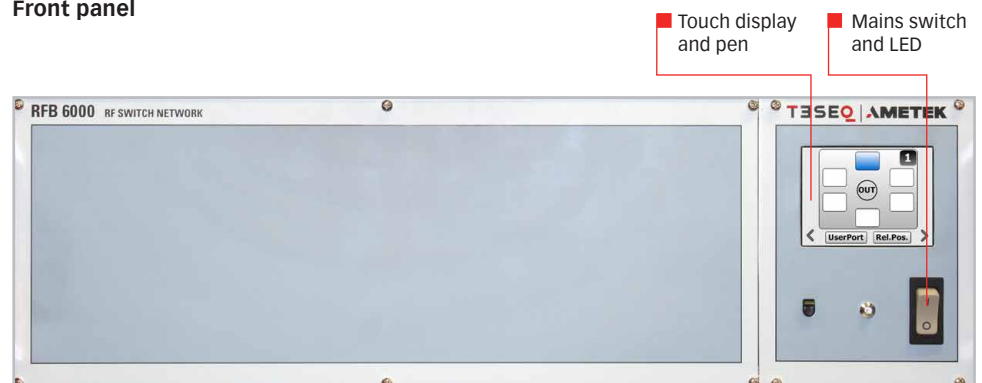
RF Switch network example with switches on the back

- ■ **Freely configurable main frame for up to 10 RF switches**
- ■ **Optical remote control for system integration**
- ■ **Touch panel for manual operation and system integration**
- ■ **Connectors for up to 8 power meters and TTL control port e.g. for power amplifiers**
- ■ **High quality switches**

The RF switch network can be configured to switch RF signals in a wide range of automatic test systems. Various switch configurations are available, connecting one input to either two or six outputs. The 3HU main frame consists of a power supply and remote interface and can accept any combination of plug-in modules up to the maximum dimension of the main frame. In addition up to 8 power meters can be connected to measure the forward power close to the antenna, e.g. in a separate amplifier room. A control signal port (User port) allows switching of amplifiers and other functions. Each switch as well as the additional functions can be individually controlled through the front panel touch screen, e.g. for installation and maintenance purpose. An USB to serial/optical converter with 20 m optical cable allows always a safe and secure remote control of the device, also in a noisy and electromagnetically disturbed environment. All RF switches are high quality with an operating lifetime of at least one million operations. While able to pass high power levels, they are designed to switch only during absence of RF power.
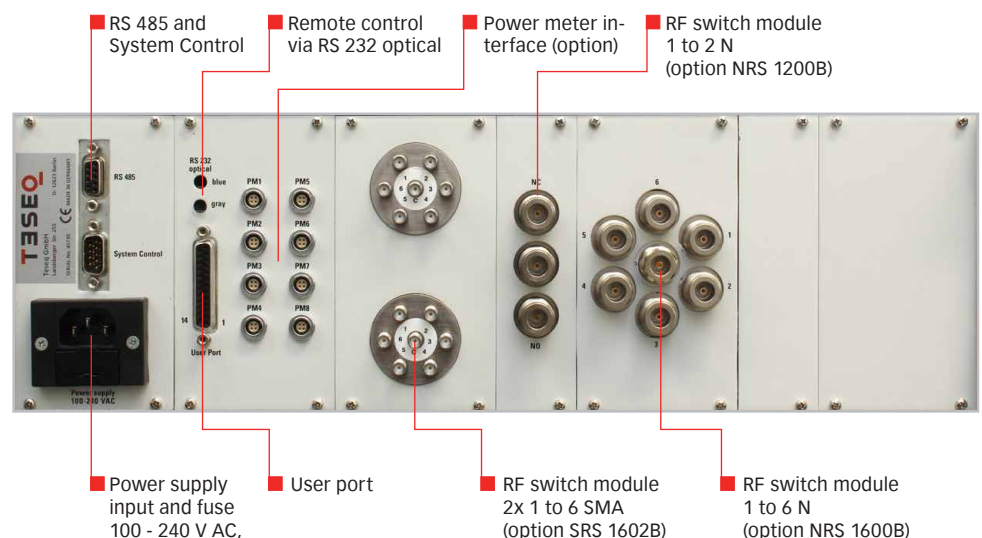
Front panel

Touch display and pen   Mains switch and LED

Back panel

View to the back panel, example with power meter interface RFI 6008, RF switch SRS 16002B: 2x 1 to 6 SMA type, RF switch NRS 1200B: 1 to 2 N type, RF switch SRS 1600B: 1 to 6 N type

RS 485 and System Control   Remote control via RS 232 optical   Power meter interface (option)   RF switch module 1 to 2 N (option NRS 1200B)

Power supply input and fuse 100 - 240 V AC,   User port   RF switch module 2x 1 to 6 SMA (option SRS 1602B)   RF switch module 1 to 6 N (option NRS 1600B)

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RFB 6000
RF SWITCH NETWORK

Switch type	Drawing	Connectors	Front panel		Back panel	
			Switch type	Max. possible switches of this type at the front	Switch type	Max. possible switches of this type at the back
1 to 2		N type	NFS 1200B	10	NRS 1200B	8
1 to 2		SMA type	SFS 1200B	10	SRS 1200B	8
1 to 6		N type	NFS 1600B	5	NRS 1600B	4
1 to 6		SMA type	SFS 1600B	5	SRS 1600B	4
2x 1 to 6		SMA type	SFS 1602B	5	SRS 1602B	4

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RFB 6000
RF SWITCH NETWORK

Example of a setup with 4 power amplifier, 3 directional couplers, 2 power meters and 2 antennas
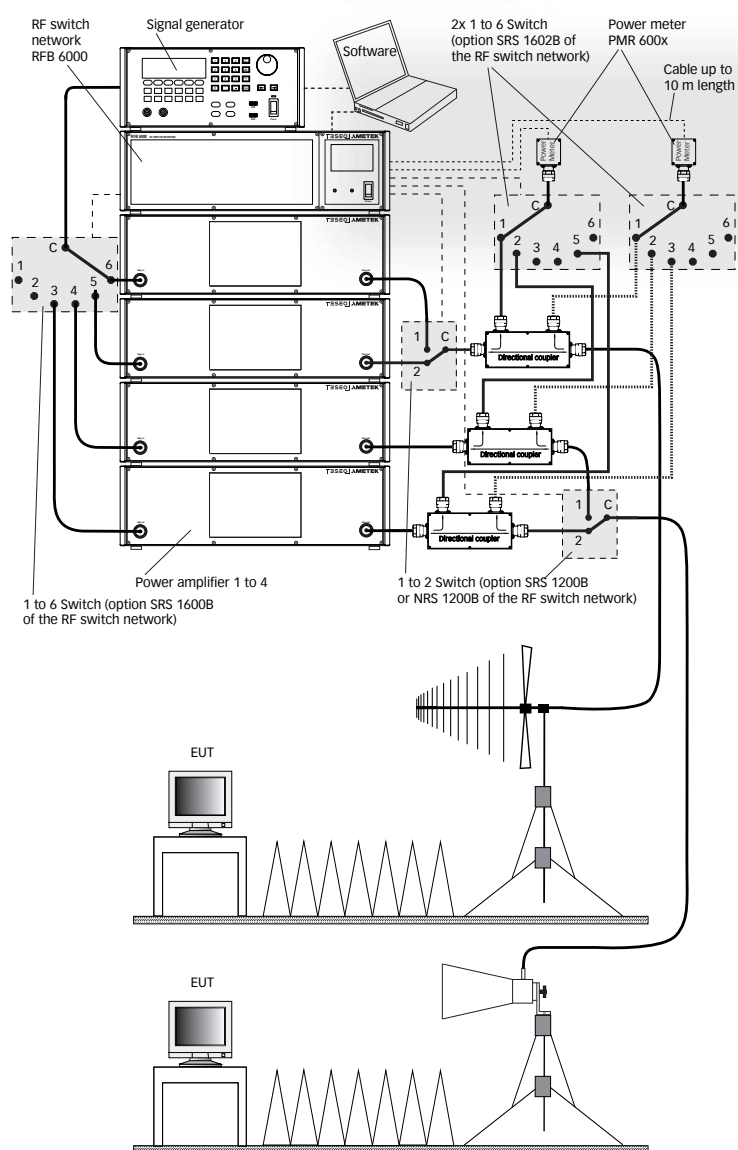
RF switch network RFB 6000 · Signal generator · Software · 2x 1 to 6 Switch (option SRS 1602B of the RF switch network) · Power meter PMR 600x · Cable up to 10 m length · C · 1 · 2 · 3 · 4 · 5 · 6 · 1 · C · 1 · 2 · Directional coupler · C · 1 · 2 · 3 · 4 · 5 · 6 · 1 · 2 · 3 · 4 · 5 · Directional coupler · 1 · C · 2 · Directional coupler · EUT · EUT · Power amplifier 1 to 4 · 1 to 6 Switch (option SRS 1600B of the RF switch network) · 1 to 2 Switch (option SRS 1200B or NRS 1200B of the RF switch network)

Teseq recommends a short distance between directional coupler and power meter for all applications above 1 GHz. The best solution is a direct mounted power meter on the directional coupler port.
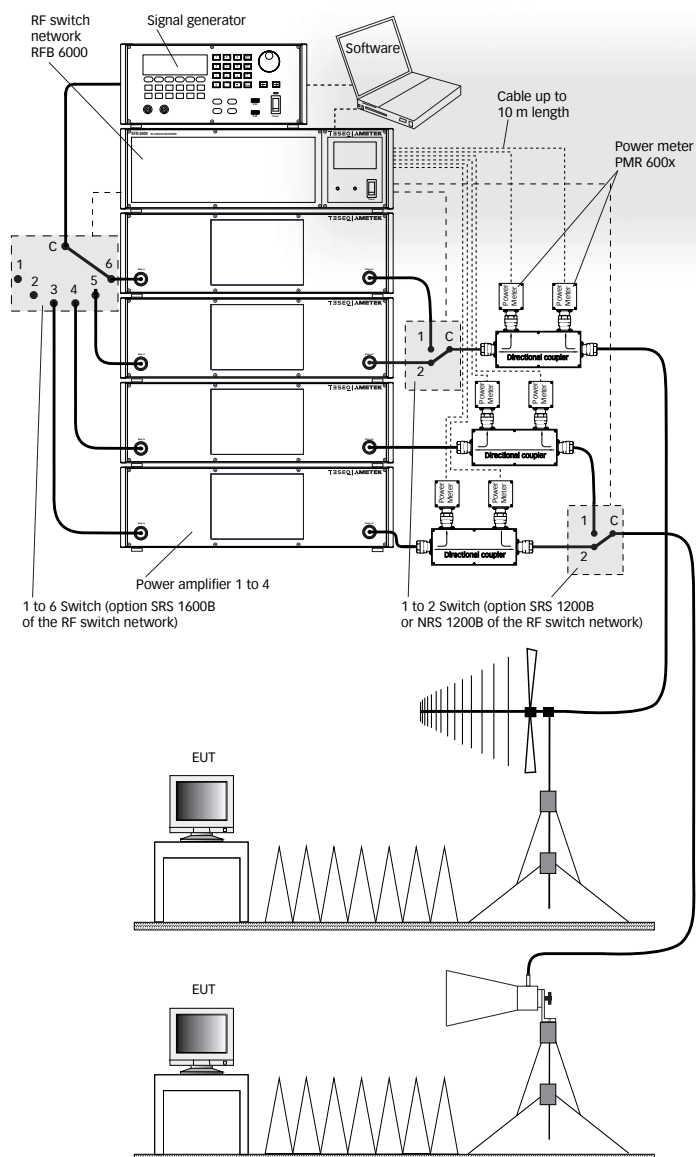
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RFB 6000
RF SWITCH NETWORK

Example of a setup with 4 power amplifier, 3 directional couplers, 6 power meters and 2 antennas

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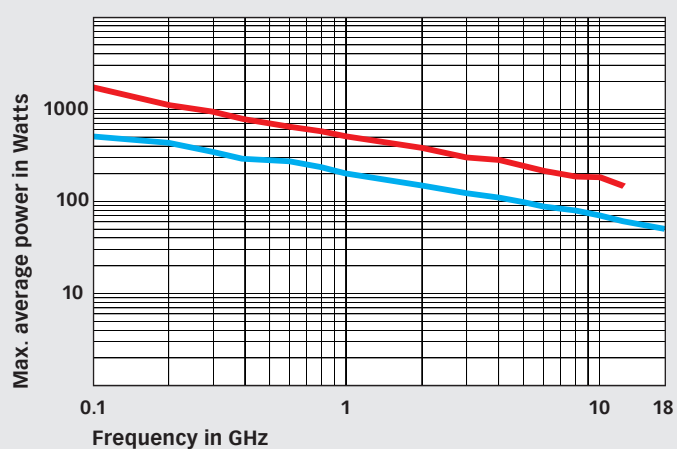
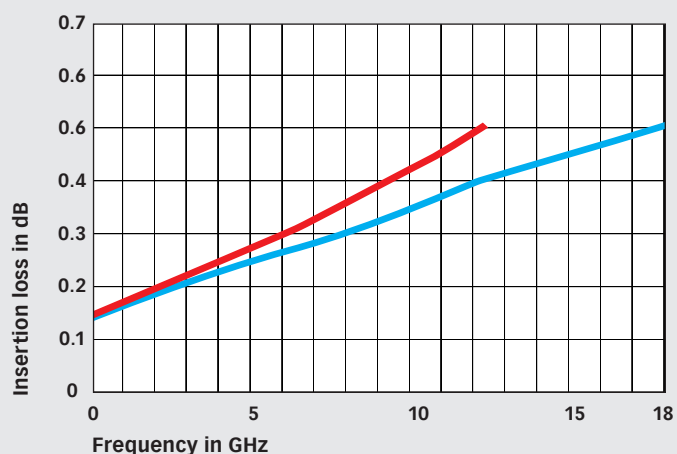TESEQ

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RFB 6000
RF SWITCH NETWORK

RF switch: Max. average power ━ **N type,** ━ **SMA type**

Max. average power in Watts vs Frequency in GHz

RF switch: Insertion loss ━ **N type,** ━ **SMA type**

Insertion loss in dB vs Frequency in GHz

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Advanced Test Solutions for EMC

RFB 6000
RF SWITCH NETWORK

RF switch: VSWR ▬ **N type,** ▬ **SMA type**
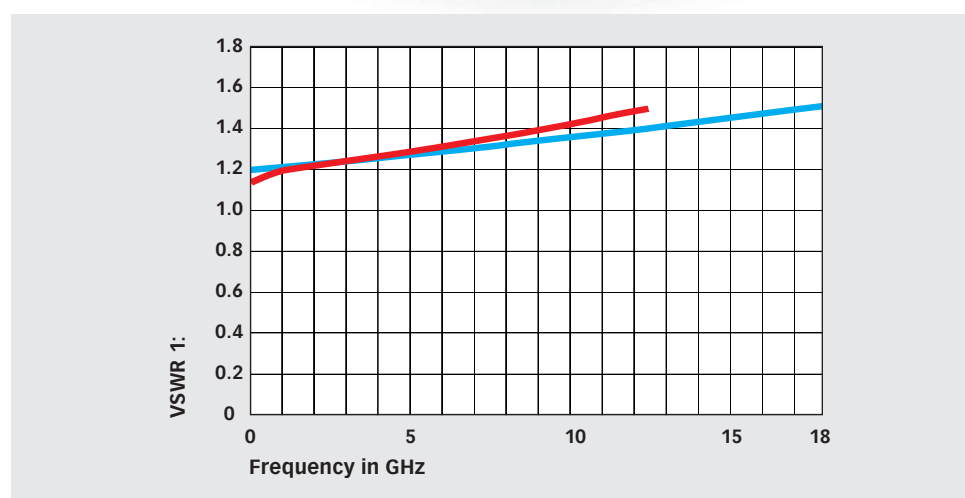
Technical specification

|	
Power supply:	100 - 240 V AC / 47 - 63 Hz
Display:	3" TFT with touch, 320x240 pix.
Remote control	
RS485:	Connector D-Sub 9 pole, up to 9600 Bd (for RF switches only)
RS232 optical:	Connector 2 x HFBRx523 socket for 1 mm fiber optic cable with standard length of 20 m, for other distances on request 115200 Bd, 8, N, 1
User port:	D-Sub 25 pole
	4 TTL inputs
	10 TTL outputs
	4 open drain outputs 40 V, 3 A
	+12 V / 700 mA, +5 V / 700 mA power supply
RF Impedance of the switches:	50 Ω
RF Isolation between the ports:	≥55 dB
Switch life time:	1M switch cycles (absence of RF power during switching required)
Operating temperature:	5 - 40 °C
Humidity:	< 80% (not condensation)
Dimensions (W/H/D in mm):	483 x 150 x 423
Weight:	approx. 10 kg

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RFB 6000
RF SWITCH NETWORK

User port specification

Pin Nr.	Name	Description
1	DI_0	User Port input 0 (TTL level)
2	DI_1	User Port input 1 (TTL level)
3	DI_2	User Port input 2 (TTL level)
4	DI_3	User Port input 3 (TTL level)
5	GND	Supply voltage
6	DO_7	User Port output 7 (LV logic, 1.5/3.5 V, ±16 mA)
7	DO_6	User Port output 6 (LV logic, 1.5/3.5 V, ±16 mA)
8	DO_5	User Port output 5 (LV logic, 1.5/3.5 V, ±16 mA)
9	DO_4	User Port output 4 (LV logic, 1.5/3.5 V, ±16 mA)
10	DO_3	User Port output 3 (LV logic, 1.5/3.5 V, ±16 mA)
11	DO_2	User Port output 2 (LV logic, 1.5/3.5 V, ±16 mA)
12	DO_1	User Port output 1 (LV logic, 1.5/3.5 V, ±16 mA)
13	DO_0	User Port output 0 (LV logic, 1.5/3.5 V, ±16 mA)
14	GND	Supply voltage
15	DOC_3	User Port output Open Drain 3 (max. 40 V; 3 A)
16	DOC_2	User Port output Open Drain 2 (max. 40 V; 3 A)
17	DOC_1	User Port output Open Drain 1 (max. 40 V; 3 A)
18	DOC_0	User Port output Open Drain 0 (max. 40 V; 3 A)
19	DO_9	User Port output 9 (LV logic, 1.5/3.5 V, ±16 mA)
20	DO_8	User Port output 8 (LV logic, 1.5/3.5 V, ±16 mA)
21	RxD	RS232 receive data (parallel to LWL)
22	TxD	RS232 transmit data (parallel to LWL)
23	+5V	Supply voltage (max. 0.7 A)
24		
25	+12V	Supply voltage (max. 0.7 A)
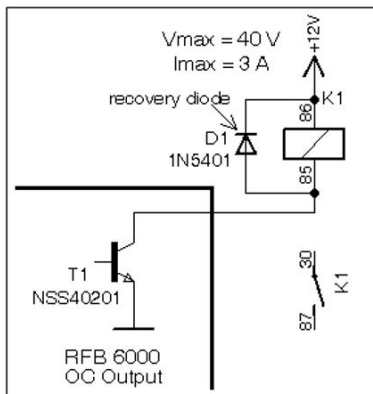
Example circuit for using the open drain output of RFB 6000

RFB 6000
RF SWITCH NETWORK

Model No. and options

Part number	Description
258100	RFB 6000 RF switch network, main unit with power supply, remote ports, 3" touch display and user port, 19" rack version, includes USO 4013, (RF switch plug-in module and power meter interface to be ordered separately)
258106	RFI 6008 Option for RFB 6000: Power meter interface with 8 ports (factory fitted, power meter heads e.g. PMR 6003, PMR 6006 to be ordered separately)
258101	SFS 1200B Option for RFB 6000: Plug-in module for front panel with switch 1 to 2, SMA, (factory fitted)
258102	NFS 1200B Option for RFB 6000: Plug-in module for front panel with switch 1 to 2, N, (factory fitted)
258103	NRS 1600B Option for RFB 6000: Plug-in module for rear panel with switch 1 to 6, N, (factory fitted)
258104	SRS 1600B Option for RFB 6000: Plug-in module for rear panel with switch 1 to 6, SMA, (factory fitted)
258105	SRS 1602B Option for RFB 6000: Plug-in module for rear panel with 2x switch 1 to 6, SMA, control as two separate switches, (factory fitted)

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Accelonix BV
Luchthavenweg 18b • NL-5657 EB •
Eindhoven • The Netherlands •
T: +31 40 750 1650 • E: info@accelonix.nl

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