

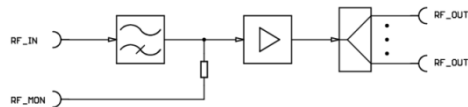
High Dynamic 8 Way Multicoupler Module 100 kHz ... 4000 MHz, 50 Ω

Features

- wideband
- high dynamic
- lossless signal distribution
- auxiliary input / output
- optional input high pass

Applications

- AM / FM / DAB / GPS / SDARS / DVB-T
- ISM 433 / 868 / 2400 MHz
- GSM, UMTS, LTE
- antenna signal distributions
- test signal distributions
- receiving systems
- final testing



Wideband

WSDU1X8 is a wideband multicoupler that distributes one input signal to 8 outputs. The frequency range extends from 100 kHz up to more than 4000 MHz.

1 to 8 Distribution without any Loss in Signal Level

The RF input the signal is amplified by using broadband low-noise amplifiers with a wide dynamic range. As a result, the distributed input signal is made available at the eight outputs of the multicoupler without any loss in level. All inputs and outputs have SMA female connectors.

Wideband Distribution Systems

The wide frequency range makes WSDU1X8 ideally suited for applications such as production, research and development (R&D) where several signals in a wide frequency range must be distributed.

The compact module design allows combining up to 11 modules in a SR6-11C system platform. Thus, up to 88 outputs can be realized in only 6 U. In applications where lower output counts are needed, the 19" 1 U device WSDU1X8R is the right solution.

V/UHF Receiving Systems

In VHF/UHF receiving systems for applications like radio monitoring or direction finding, WSDU1X8 is available with an optional input high pass for VLF and HF signal suppression. For such applications, WSDU1X8 also offers excellent amplitude and phase balance performance.

The broadband amplifiers inside the multicoupler have an extremely wide dynamic range. They can linearly amplify exceptionally weak signals, even if they occur next to signals with very strong levels.

High Port-to-Port Isolation

WSDU1X8 features a high port-to-port isolation. Thus, the connected receivers are prevented from affecting each other, e.g. via local oscillators or synthesizers.

Signal Path Tests

The auxiliary port of WSDU1X8 offers RF monitoring or test signal injection for signal path tests in extensive RX or distribution systems.

RF Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	Z_{in} / Z_{out}		50		Ohm	
low frequency	f_{min}		100	150	kHz	
high frequency	f_{max}	4000	5000		MHz	
gain	S_{21}	0.5	2.5	4.0	dB	
gain flatness	ΔS_{21}		± 1.0	± 1.5	dB	
amplitude balance			± 0.1	± 0.5	dB	$f \leq 2500$ MHz
			± 0.3	± 0.8	dB	$f > 2500$ MHz
input return loss	S_{11}		-17	-10	dB	$150 \text{ kHz} \leq f \leq 3500$ MHz
			-8	-4	dB	$f > 3500$ MHz
output return loss	S_{22}		-20	-12	dB	
reverse isolation	S_{12}		-90	-75	dB	
output isolation	S_{23}		-28	-23	dB	neighbouring outputs ($d=1$)
			-60	-47	dB	distance > 1
1 dB compression	P_{1dB}	+6	+8.5		dBm	$150 \text{ kHz} < f \leq 1000$ MHz
		+4	+6		dBm	$1000 \text{ MHz} < f \leq 2000$ MHz
		+2	+5		dBm	$2000 \text{ MHz} < f \leq 3500$ MHz
3 rd order intercept	$OIP3^1$	19	22		dBm	$f = 1000$ MHz
		14	16		dBm	$f = 2000$ MHz
		11	13		dBm	$f = 3000$ MHz
2 nd order intercept	$OIP2^1$	37	45		dBm	$f = 1000$ MHz
		20	22		dBm	$f = 2000$ MHz
		20	25		dBm	$f = 3000$ MHz
noise figure	NF		9.0		dB	$f < 500$ kHz
			8.0	9.5	dB	$500 \text{ kHz} \leq f \leq 2000$ MHz
			9.0		dB	$f > 2000$ MHz
maximum input power	$P_{in \text{ max}}$			+15	dBm	CW, no damage
RF connectors						SMA female
monitor coupling	a		-30		dB	bidirectional

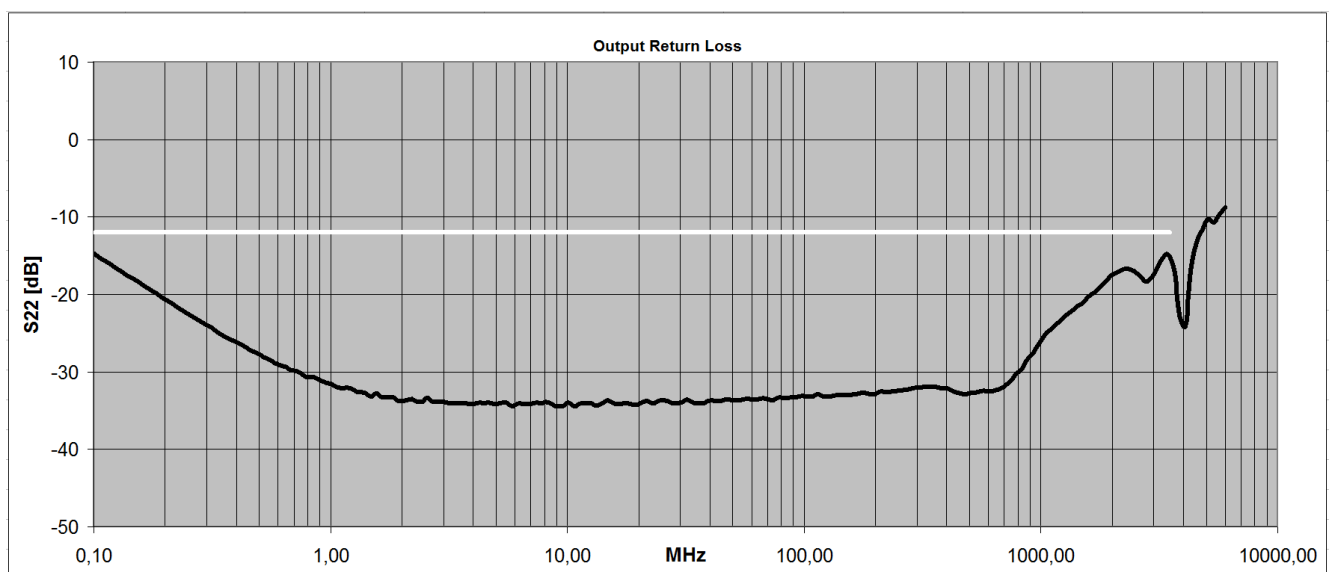
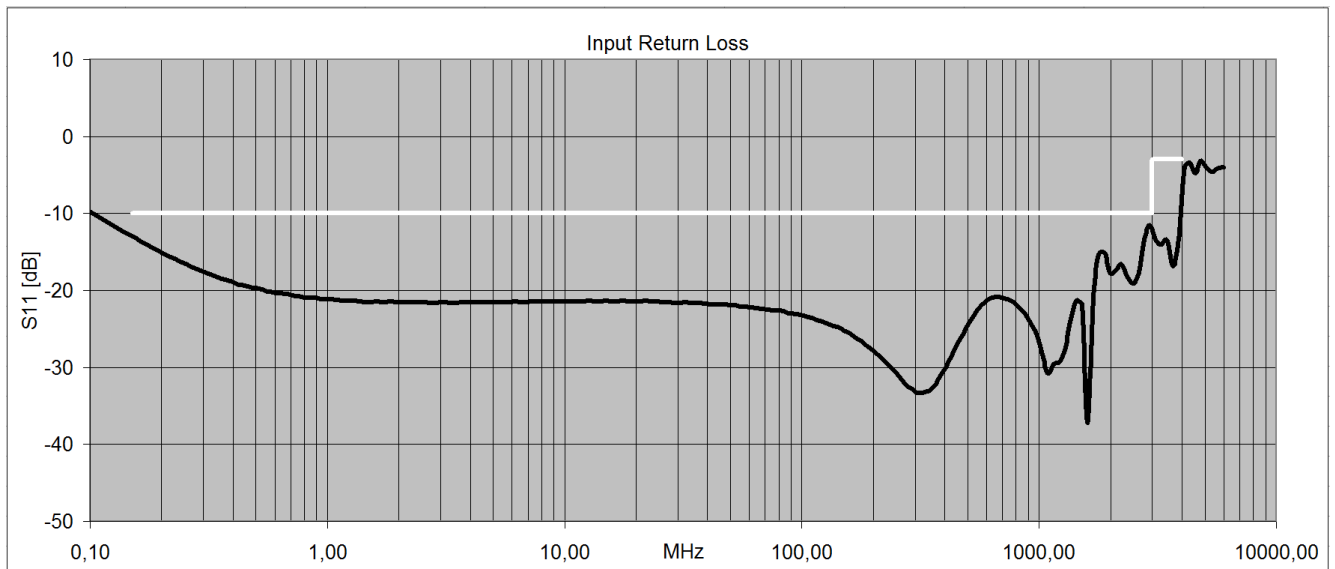
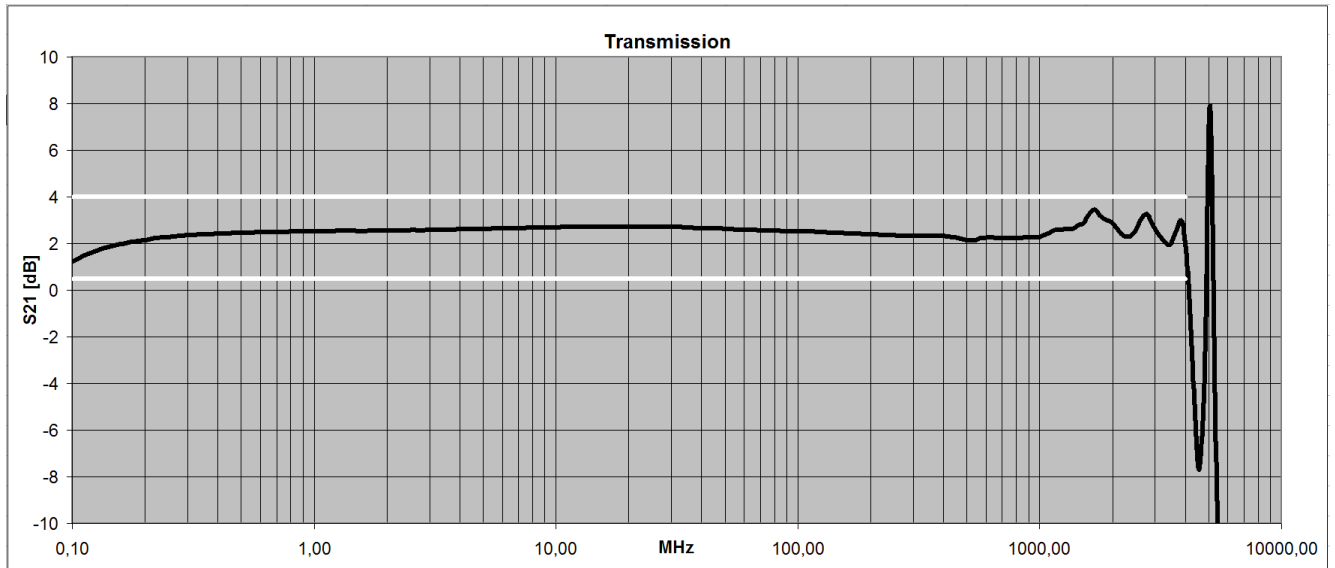
Note 1: frequency space 100 MHz

Common Specifications

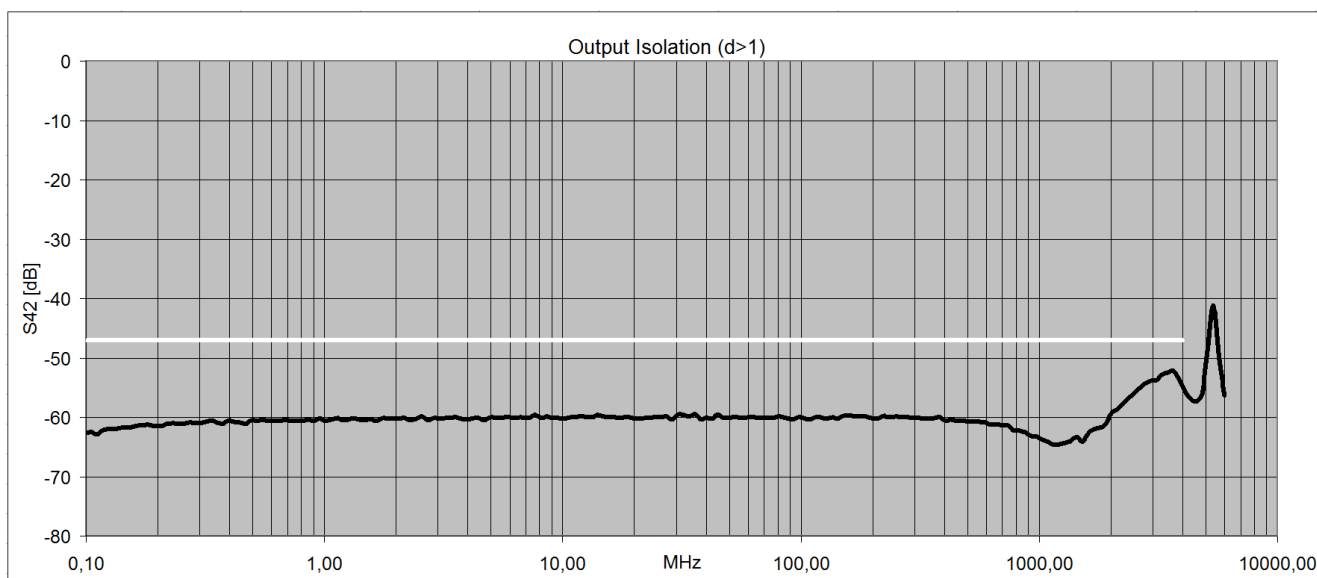
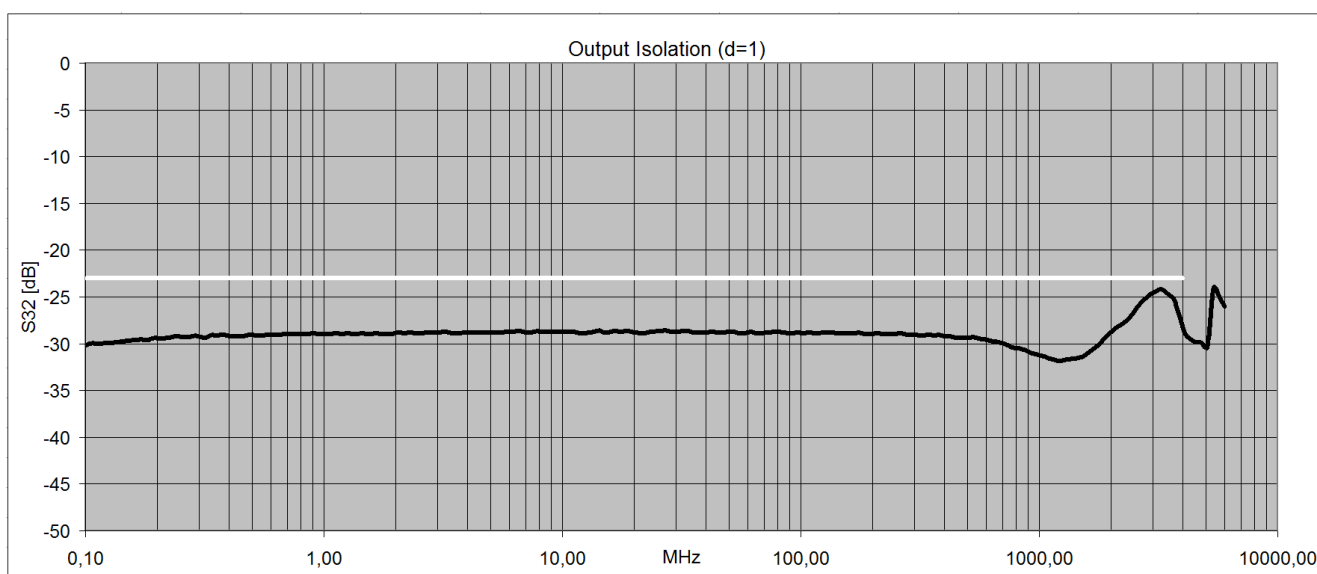
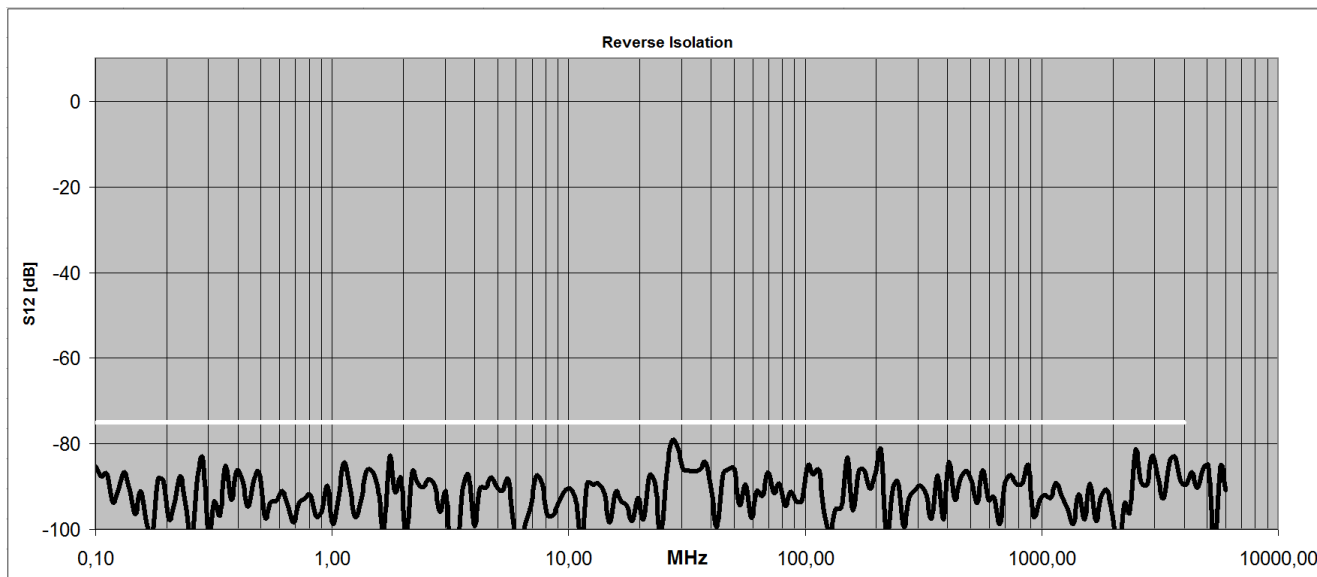
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply	U	23.5		24.5	V	DC
power consumption	P		10	12	W	
dimensions	L x W x H	approx. 197 x 30 x 262			mm	6 U, 6HP
weight	m		1330		g	
operating temp. range	T_o	+5		+55	°C	
storage temp. range	T_s	-40		+70	°C	
ordering information		WSDU1X8		1202.6100.1		
filter option		20 MHz HP		1202.6100.O		
system rack		SR6-11C		1409.1202.1		6 U, 11 slots, 400 W max.



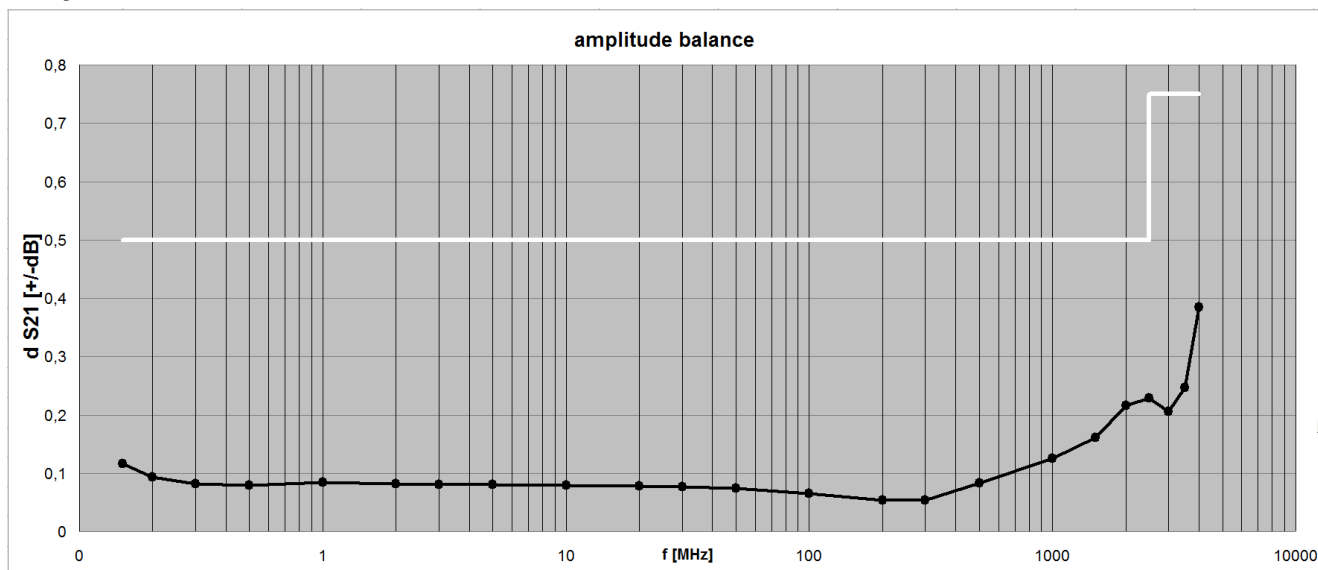
S-Parameters (typical responses)



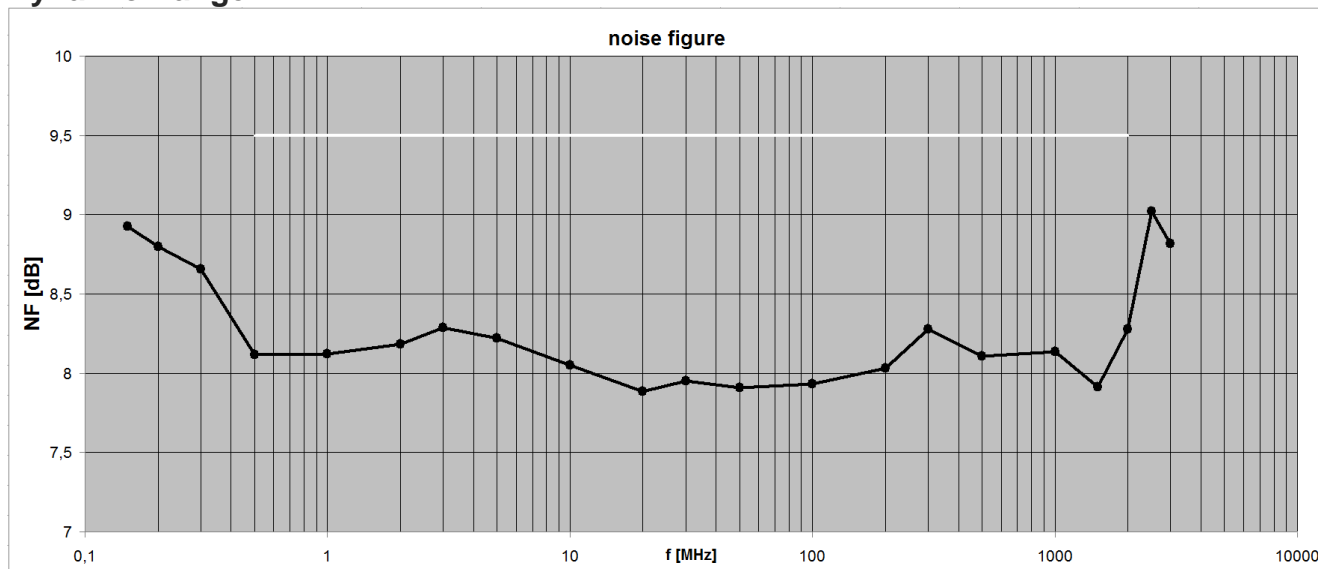
Isolation

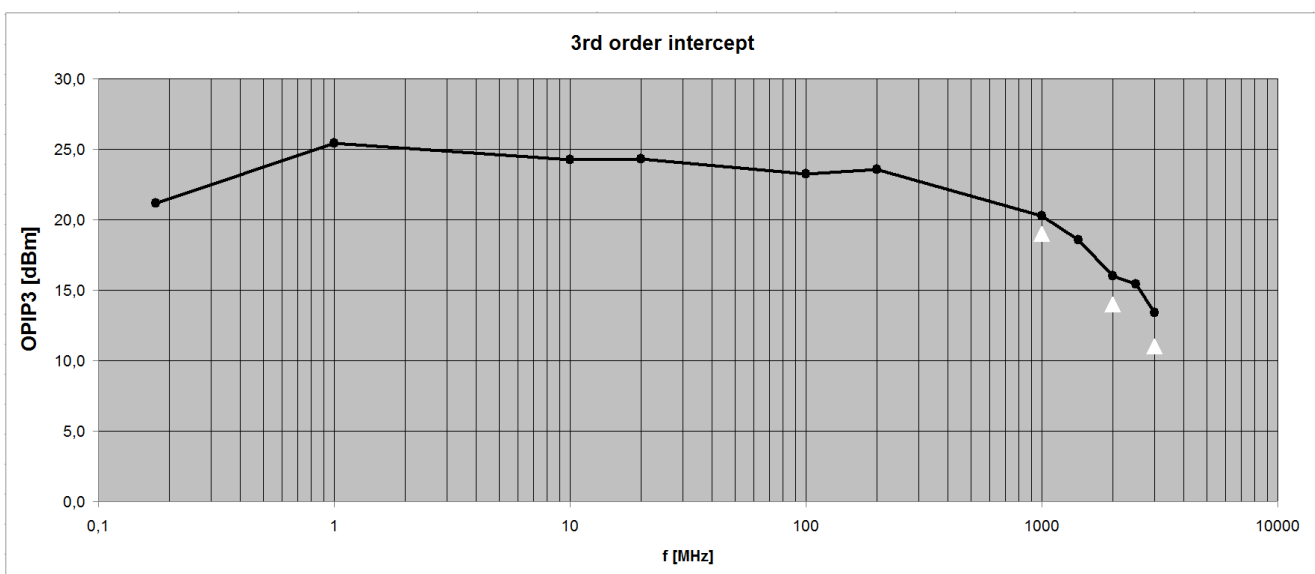
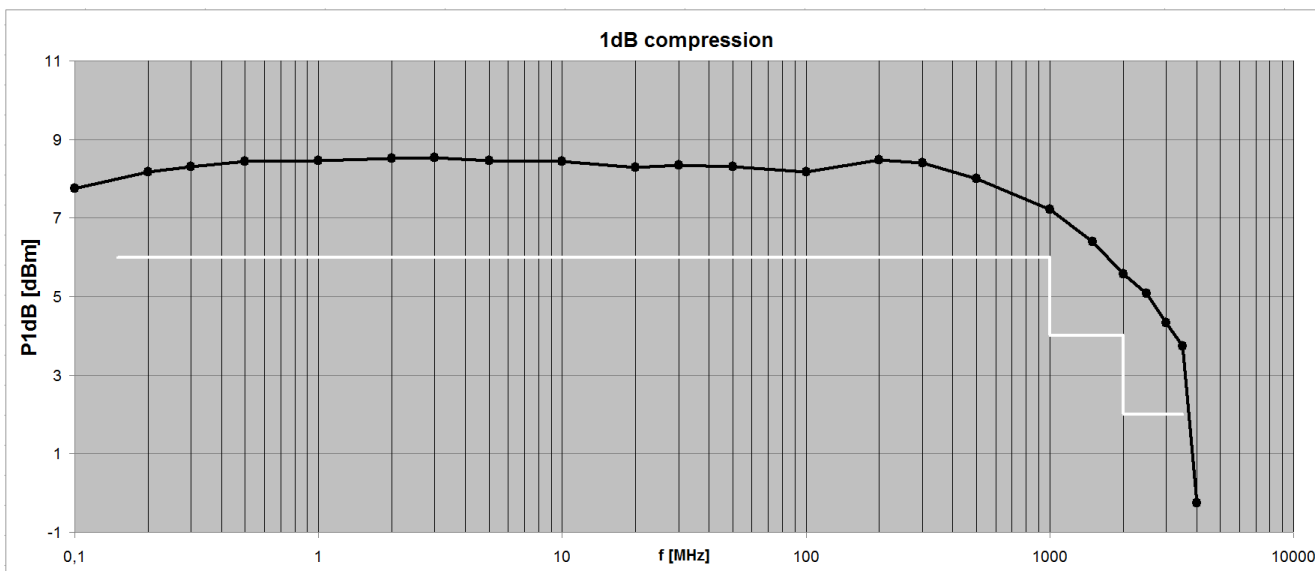


Output Balance



Dynamic Range





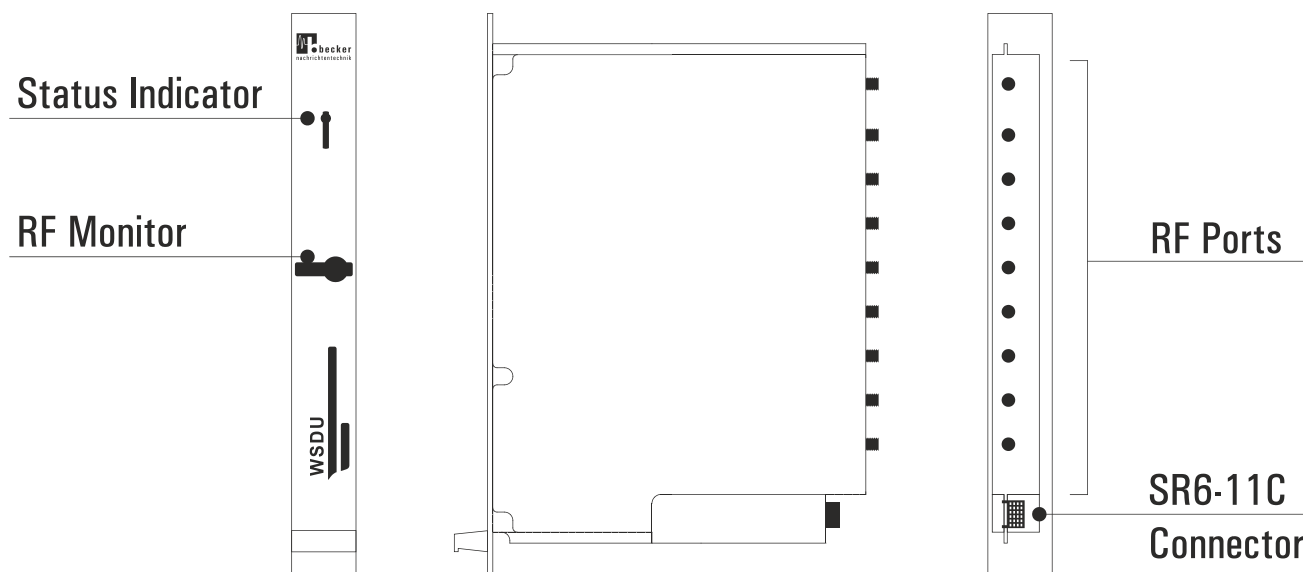
Front View



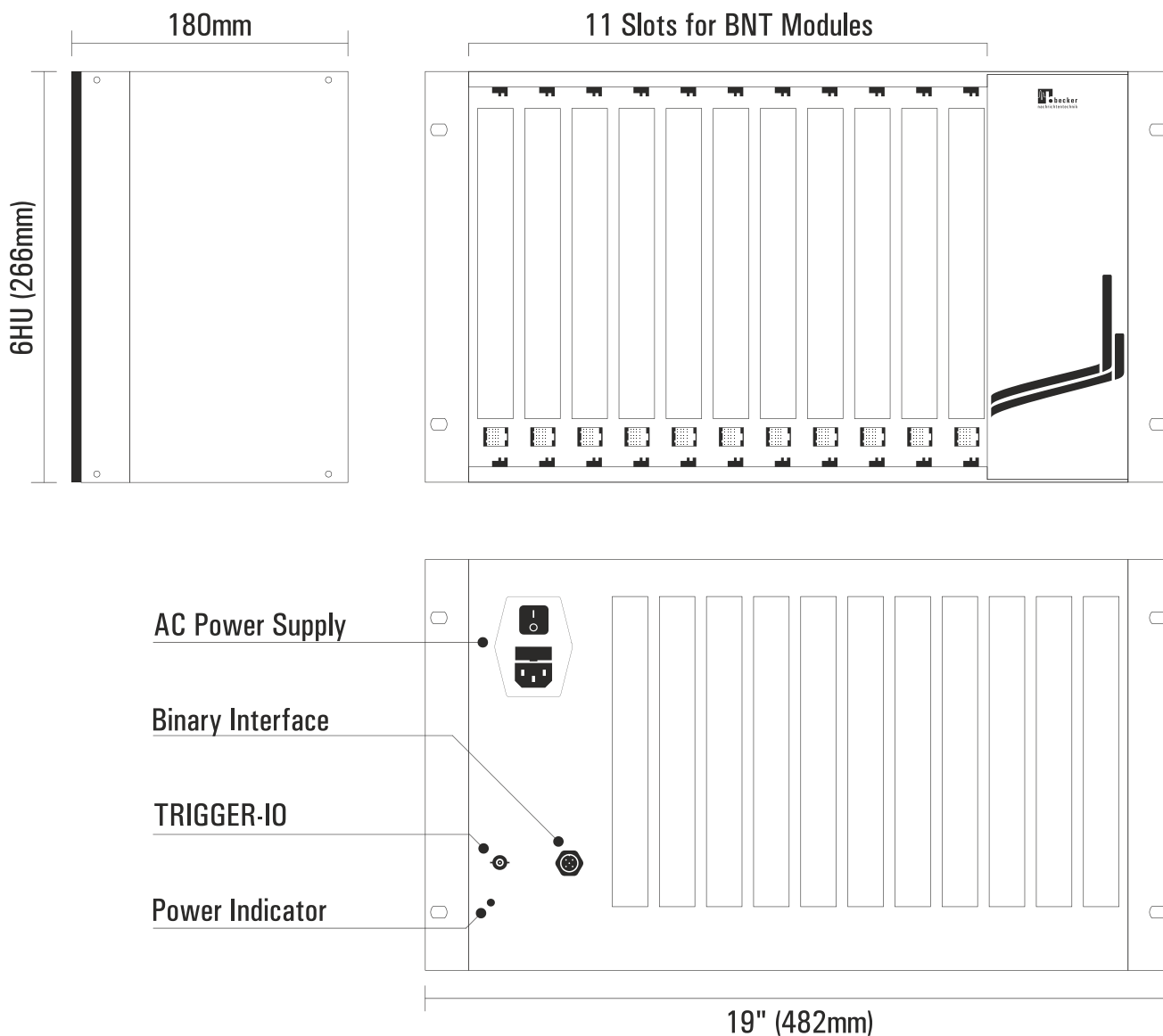
Rear View



Mechanical Drawing



SR6-11C System Platform



Related Products

Product	Description	P/N
SR6-11C	System Platform with 11 Slots	1409.1202.1
SR6-CU	Controller Unit with LAN and USB	1409.3000.1
WSDU1X8R	High Dynamic 1X8 Multicoupler 100 kHz ... 4000 MHz	1202.6102.1
WSDU-1X2PL	5 W Medium Output Power Multicoupler 20 ... 2800 MHz	1202.6300.3
WSDU-1X8P	8 x 400 mW 8 Way Multicoupler 20... 2700 MHz	1209.6001.1
WSDU-2X4E+	Two Channel 1X4 plus One Channel 1X2 Multicoupler Module 20... 8000 MHz	1502.6200.1
WSDU-1X8S	8 Way Multicoupler for the Short Wave Range 1.7 ... 30 MHz	1502.6100.1