

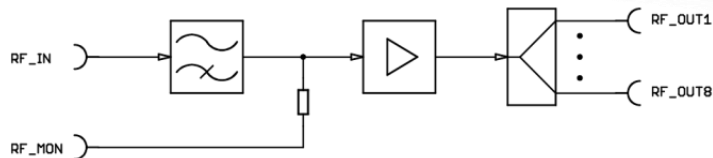
High Dynamic 8 Way Multicoupler 100 kHz ... 4000 MHz, 50 Ω

Features

- wideband
- high dynamic
- lossless signal distribution
- auxiliary input / output
- optional input high pass
- compact 19", 1 U design

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

WSDU-1X8R 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 N female connectors.

Wideband Distribution Systems

The wide frequency range makes WSDU-1X8R ideal for production, research and development and all applications, where several signals in a wide frequency range have to be distributed. It is particularly useful for signal distributions for several broadcast standards in R&D or production for infotainment devices.

The compact 1 U design makes WSDU-1X8R ideally suited for use as a tabletop unit or in racks. In applications where higher output counts are needed, the compact and cost-efficient slot-in modules WSDU1X8 are available.

V/UHF Receiving Systems

In VHF/UHF receiving systems for applications like radio monitoring or direction finding, WSDU-1X8R is available with an optional input high pass for VLF and HF signal suppression. For such applications, WSDU-1X8R also offers excellent amplitude and phase balance performance. The broadband amplifiers in the multicoupler modules 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

WSDU-1X8R 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 WSDU-1X8R 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
phase balance			± 3.0	± 6.0	deg	$f \leq 2000$ MHz
input return loss	S_{11}		-17	-10	dB	$150 \text{ kHz} \leq f \leq 3000$ MHz
			-8	-4	dB	$f > 3000$ MHz
output return loss	S_{22}		-17	-10	dB	
reverse isolation	S_{12}		-75	-90	dB	
output isolation	S_{23}		-23	-28	dB	neighbored outputs ($d=1$)
			-60	-47	dB	distance > 1
1 dB compression	P_{1dB}	+6	+8		dBm	$f < 1000$ 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	OPIP3 ¹	19	22		dBm	$f = 1000$ MHz
		14	16		dBm	$f = 2000$ MHz
		11	13		dBm	$f = 3000$ MHz
2 nd order intercept	OPIP2 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	$P_{in \max}$			+15	dBm	CW, no damage
RF connectors						N female
monitor coupling	a		-30		dB	bidirectional

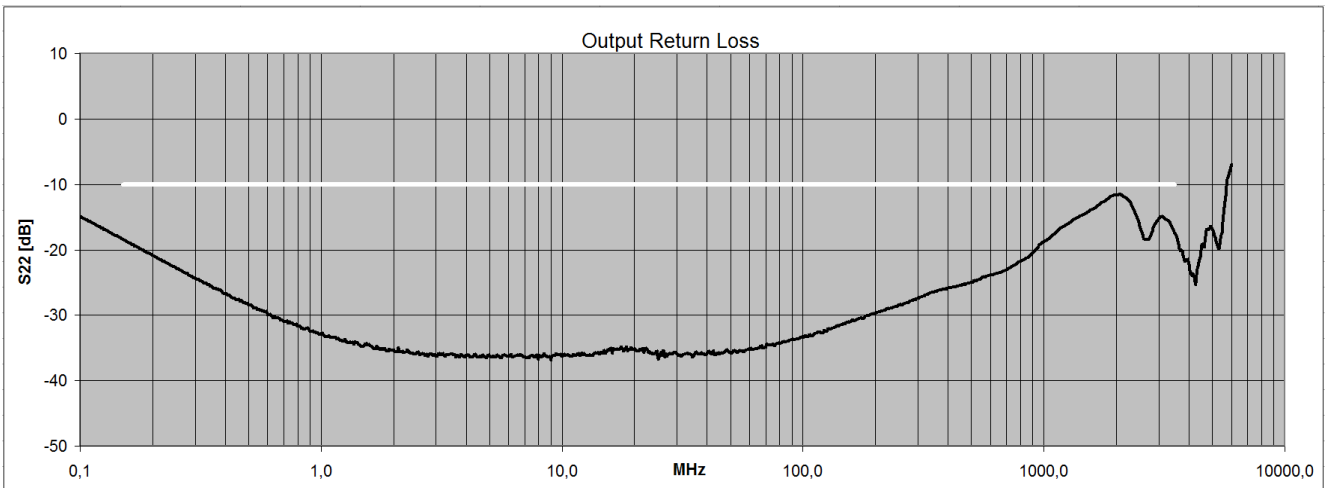
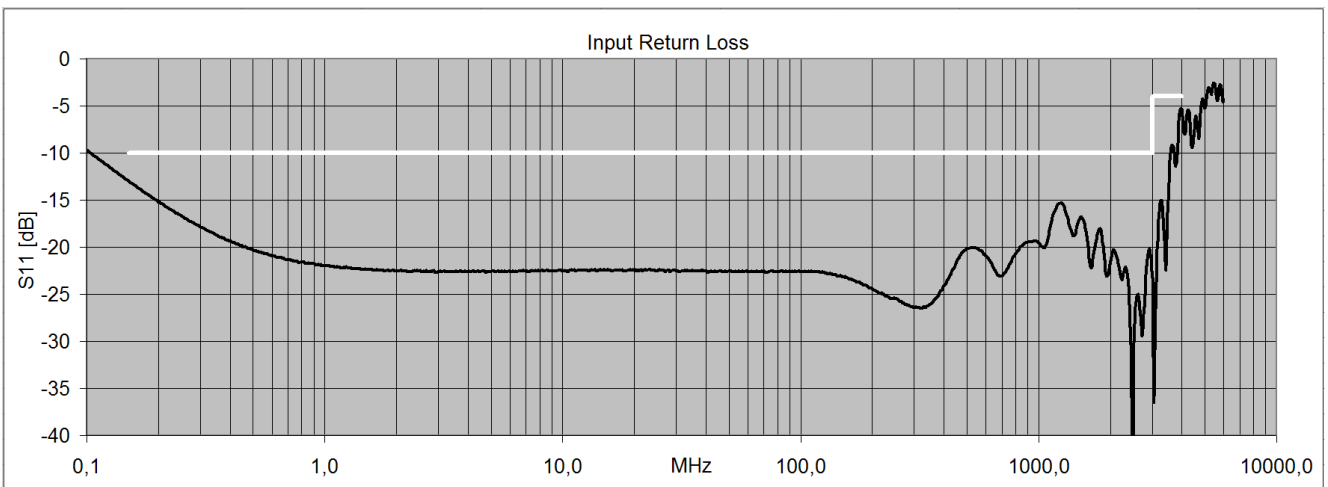
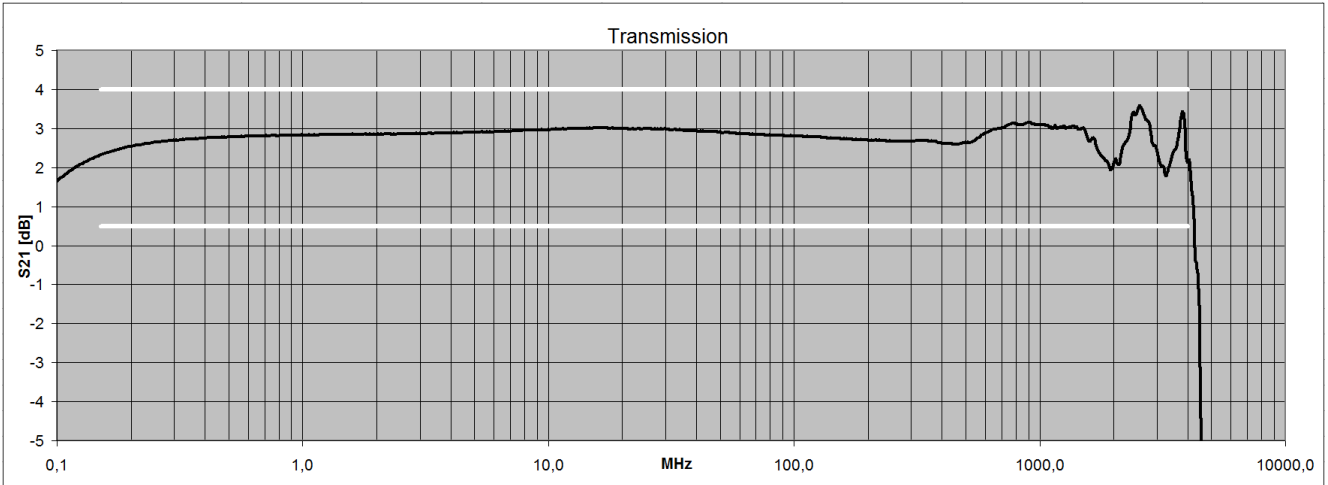
Note 1: frequency space 100 MHz

Common Specifications

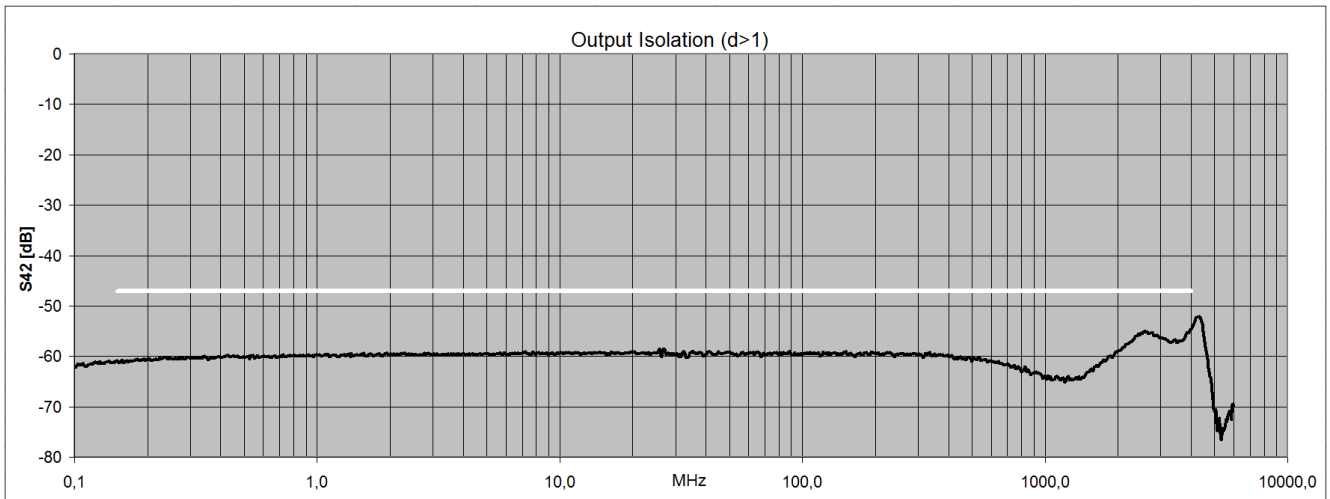
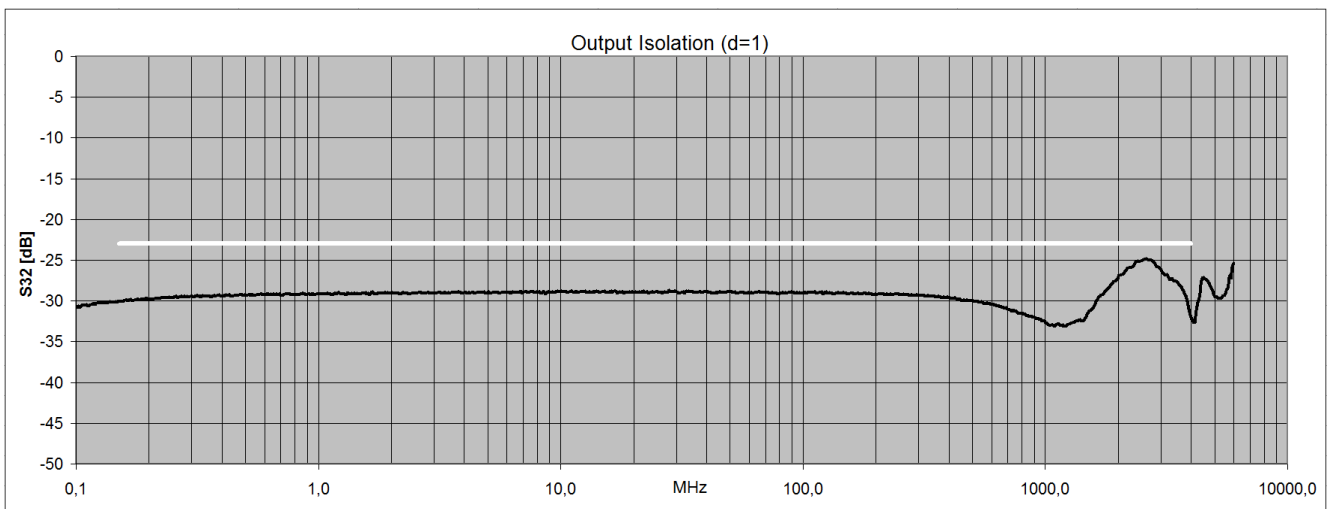
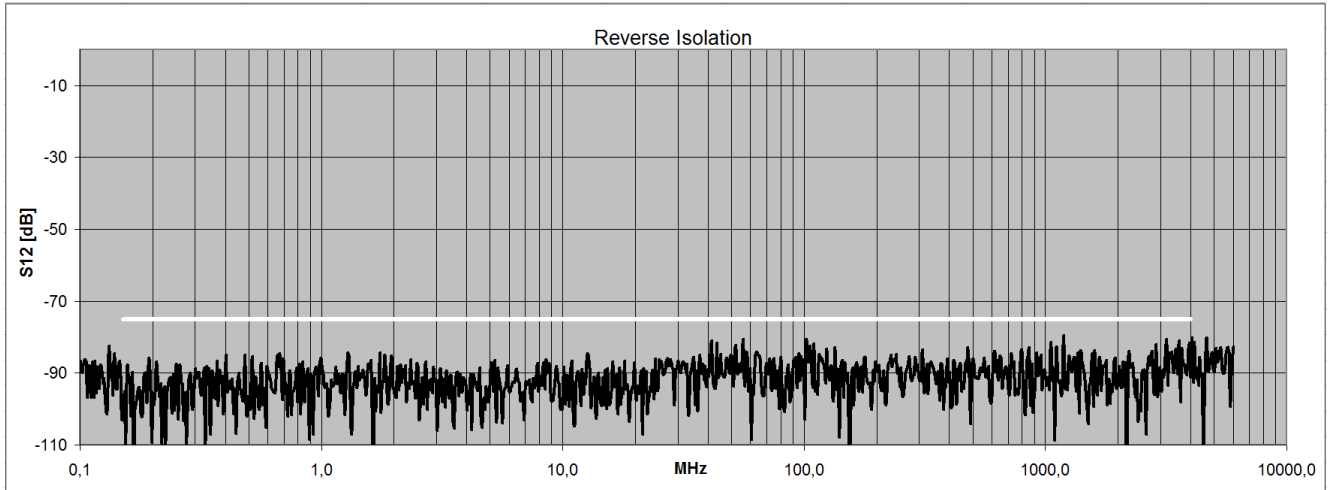
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply	U	90	230	260	V	50/ 60 Hz AC
power consumption	P		18	50	VA	
dimensions	L x W x H	approx. 145 x 482 x 44			mm	19", 1 U (without connectors and handles)
weight	m		3500		g	
operating temp. range	T_o	+5		+45	°C	
storage temp. range	T_s	-40		+85	°C	
ordering information		WSDU-1X8R		1107.6102.1		
filter option		20 MHz HP		1107.6102.O		



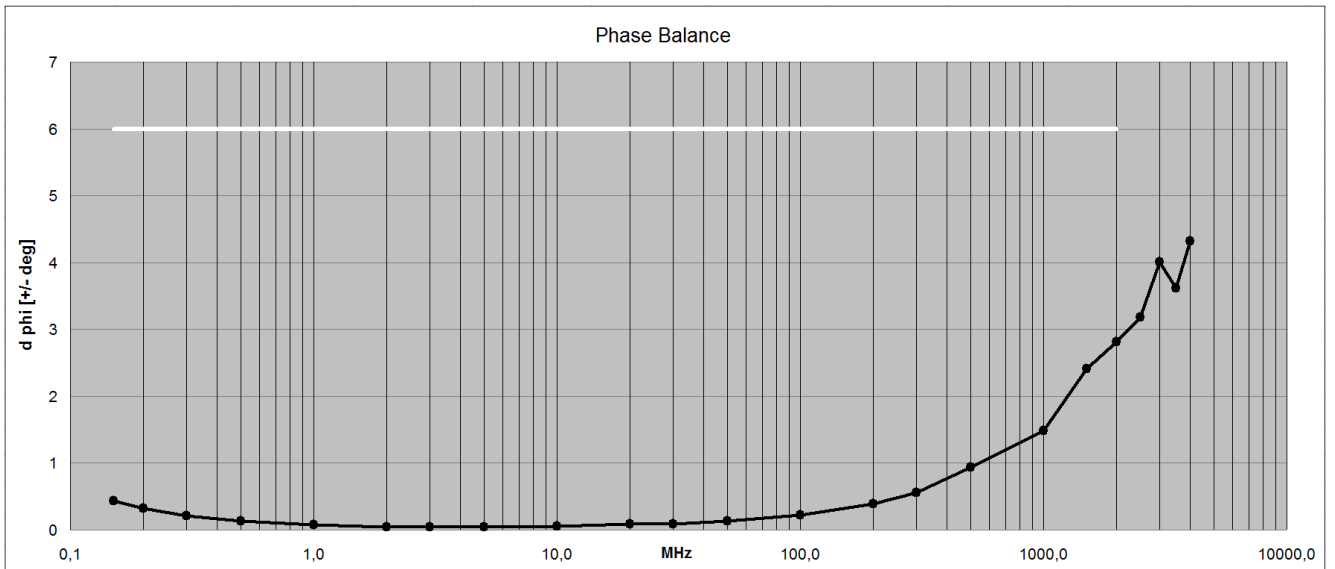
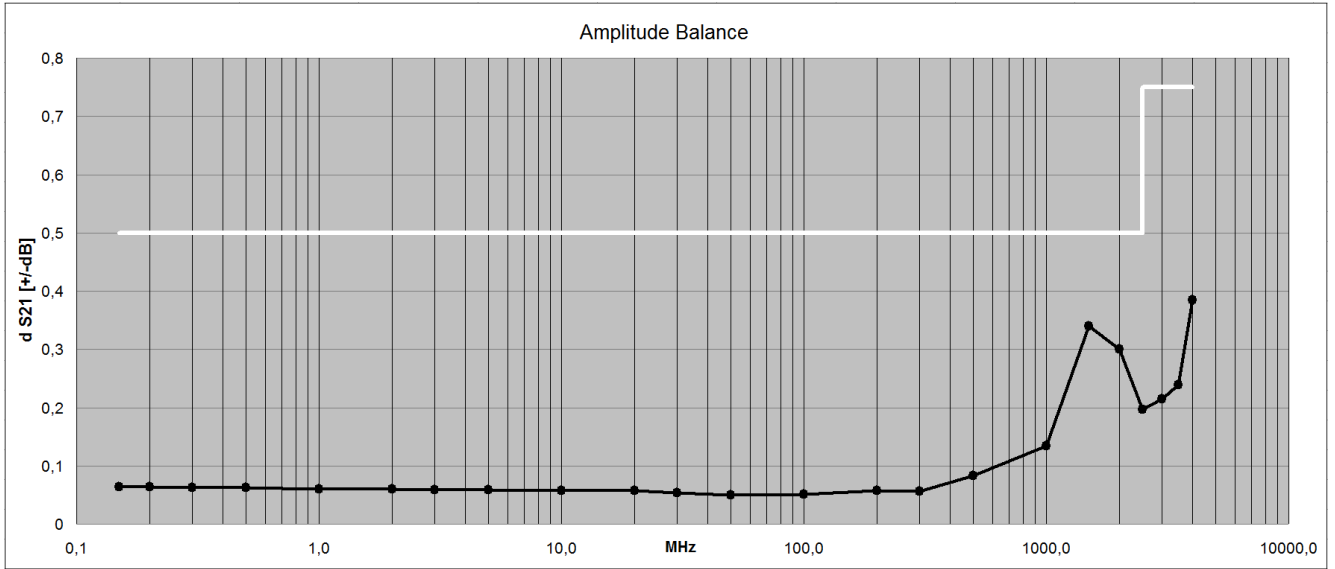
S-Parameters (typical responses)



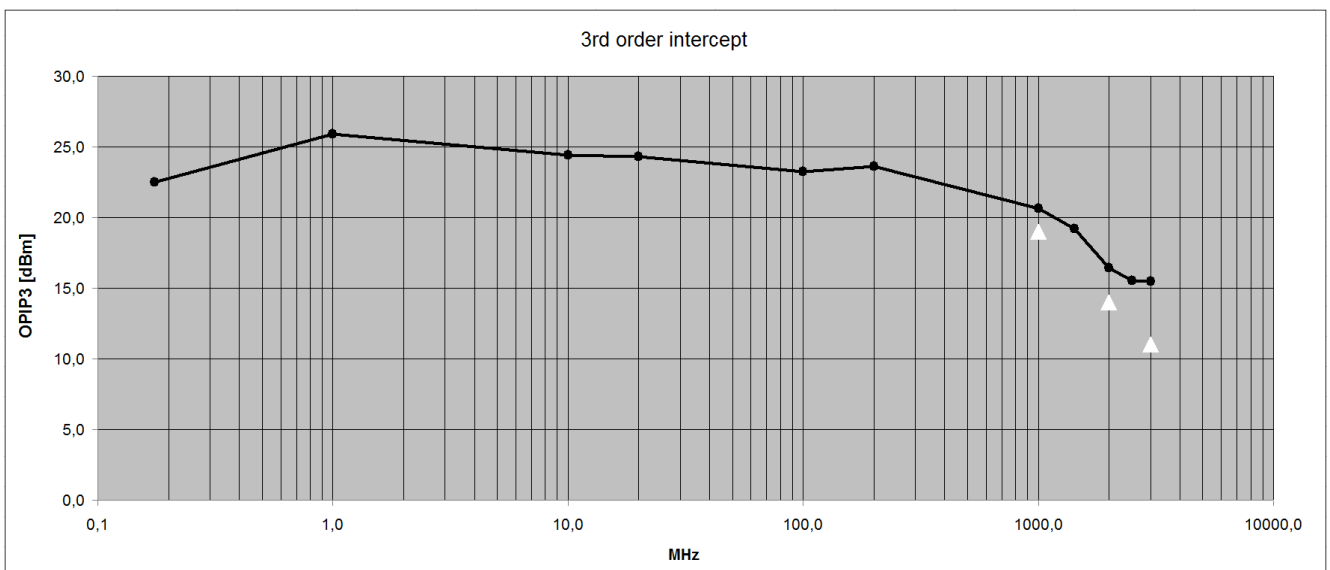
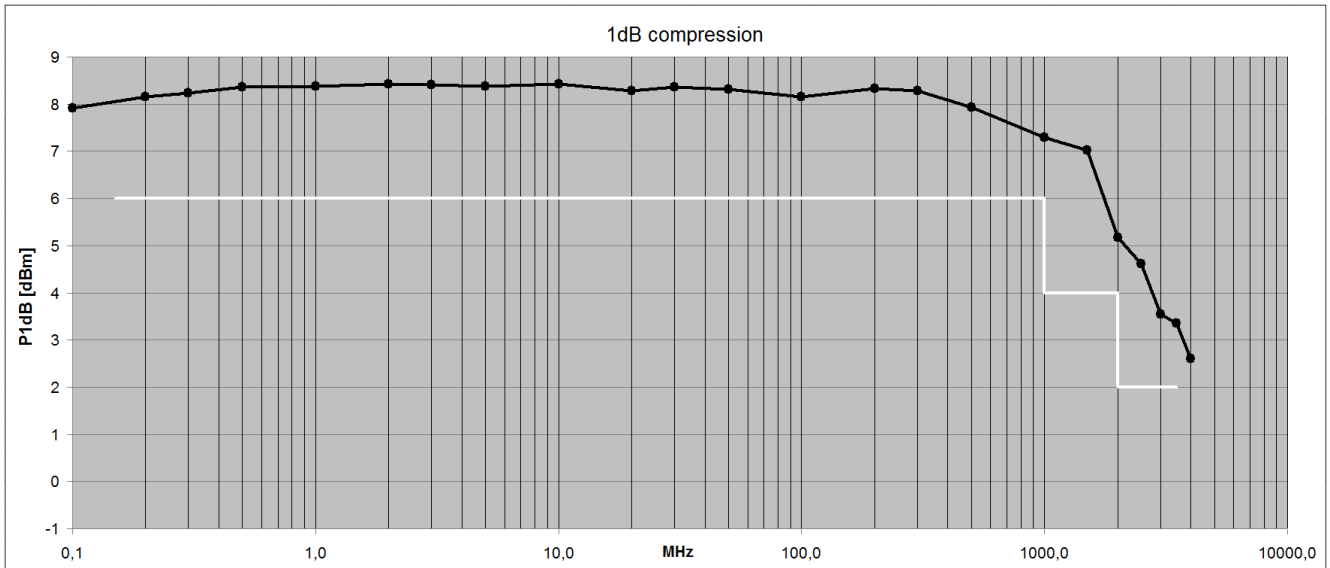
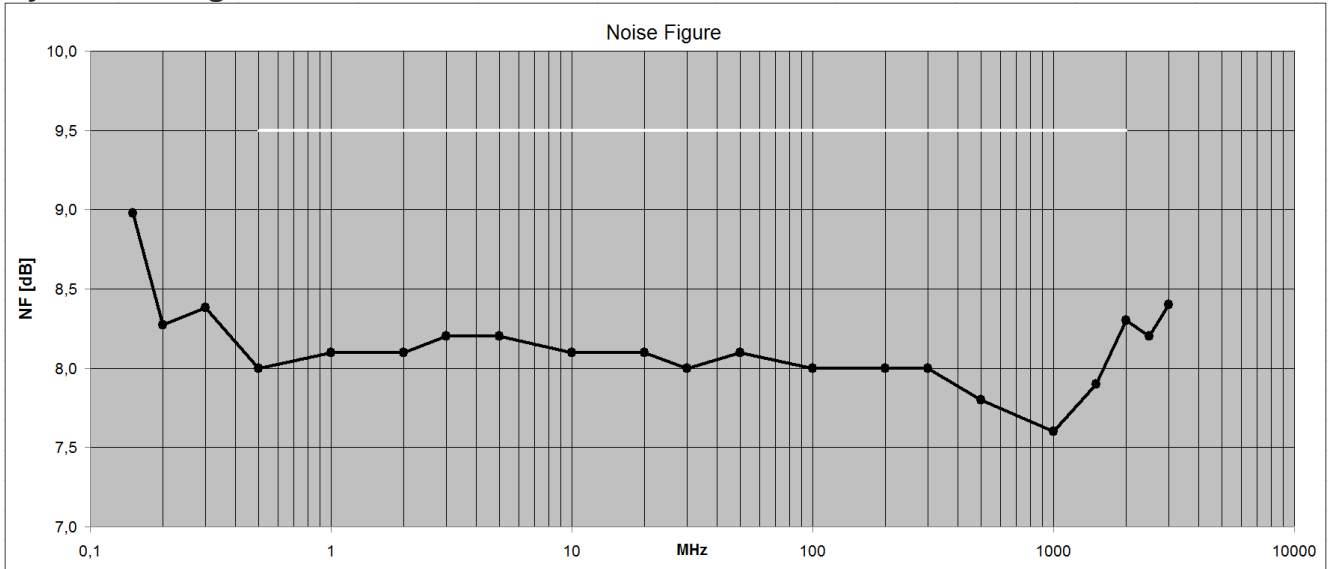
Isolation

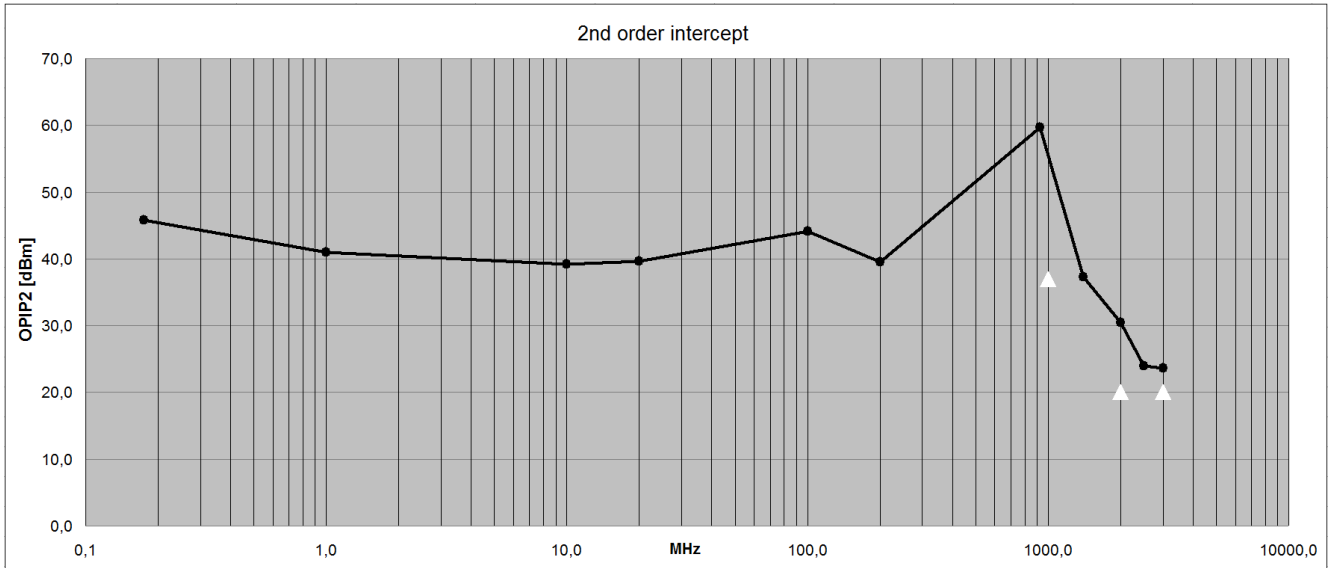


Balance



Dynamic Range





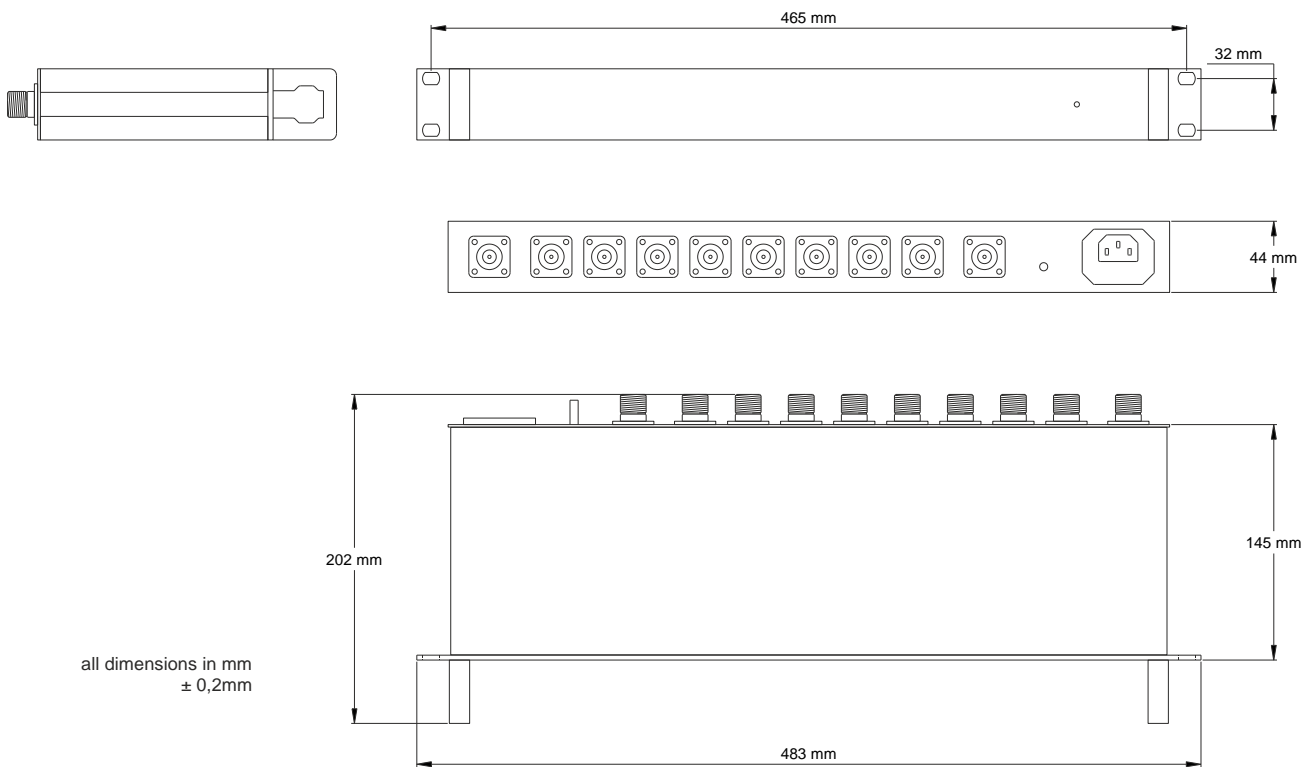
Front View



Rear View



Dimensions



Related Products

Product	Description	P/N
WSDU-1X8	High Dynamic 1X8 Multicoupler 100 kHz ... 4000 MHz	1202.6100.1
WSDU-2X4R	High Dynamic Two Channel 1X4 Signal Distribution Unit 100 kHz ... 4000 MHz	1107.6202.1
WSDU-1X8SR	High Dynamic 1X8 Shortwave Signal Distribution Unit 1.7 ... 30 MHz	1502.6102.1
WSDU-1X4ER	Extremely Wideband 1X4 Signal Distribution Unit 20 ... 8000MHz	1501.6102.1
WSDU-1X8ER	Extremely Wideband 1X8 Signal Distribution Unit 20 ... 8000MHz	1501.6302.1
WSDU-2X4ER	Extremely Wideband Two Channel 1X4 Signal Distribution Unit 20 ... 8000 MHz	1501.6202.1