

# WSDU-1X8AR

## 8 Way High Dynamic Signal Conditioning Multicoupler 100 kHz...4000 MHz

### Features

- wideband
- high dynamic
- variable signal level for each output

### Applications

- Broadcast and GNSS distribution
- AM, FM, IBOC, DAB, DVB-T, SDARS
- GNSS: GPS, Galileo, GLONASS, Beidou
- Emulation of handover scenarios



### Scope

WSDU-1X8AR is a wideband signal distribution unit consisting of an active multicoupler with additional programmable attenuators per output. The level of each of the 8 outputs can be set over a large power range. The device supports frequencies from 100 kHz up to 4000 MHz.

### Distribution without Loss in 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 with up to 9 dB gain. All inputs and outputs have N female connectors on the rear side of the device.

### Wideband Distribution Systems

The wide frequency range makes WSDU-1X8AR ideally suited for applications such as research and development (R&D) or production where broadcast and navigation signals must be distributed to many devices under test (DUTs).

### High Output Level Dynamic

Each output is equipped with a programmable attenuator with a dynamic of 95.25 dB. The attenuation is settable in 0.25 dB steps. The attenuation can be set individual for each channel.

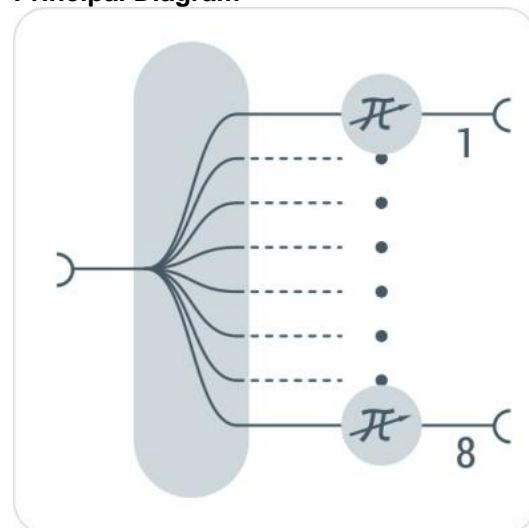
### High Output-to-Output Isolation

WSDU-1X8AR features a high port-to-port isolation. Thus, the connected receivers are prevented from affecting each other, e.g. via local oscillators or synthesizers.

### Multiple Control Modes

WSDU-1X8AR can be controlled manually either via front panel or via standard remote interfaces USB and LAN. The device is controlled through simple ASCII strings.

### Principal Diagram



**RF Specification**

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	4500		MHz	
gain	$S_{21}$	8	10	12	dB	$f \leq 1$ GHz, ATT = 0 dB
	$S_{21}$	7	9	11		$f > 1$ GHz, ATT = 0 dB
gain flatness	$\Delta S_{21}$		$\pm 1.5$		dB	
attenuation range	a	0.00		95.25	dB	
attenuation step size	$\Delta a$		0.25		dB	
input return loss	$S_{11}$		-11	-7	dB	$f < 500$ kHz
	$S_{11}$		-15	-10	dB	$500$ kHz $\leq f \leq 3$ GHz
	$S_{11}$		-11	-8	dB	$f > 3$ GHz
output return loss	$S_{22}$		-13	-10	dB	
reverse isolation	$S_{12}$		-100		dB	
output isolation	$S_{23}$		-40	-35	dB	neighbourded outputs (d=1)
	$S_{23}$		-75		dB	distance $> 1$
1 dB compression	$P_{1dB}$	+13	+15		dBm	$f \leq 1$ GHz, ATT = 0 dB
	$P_{1dB}$	+10	+13			$f > 1$ GHz
3 <sup>rd</sup> order intercept	$OIP3^1$	+24	+27		dBm	$f = 1000$ MHz, @ ATT = 0 dB
	$OIP3^1$	+21	+24		dBm	$f = 2000$ MHz, @ ATT = 0 dB
	$OIP3^1$	+19	+22		dBm	$f = 3000$ MHz, @ ATT = 0 dB
noise figure	NF		13	16	dB	
maximum input power	$P_{in,max}$			+15	dBm	CW, no damage
DC voltage	$U_{DC}$			20	V	input and outputs
ESD discharge resistor	$R_{ESD}$		4.7		k $\Omega$	input and outputs
RF connectors	$X_{RF}$	SMA female				

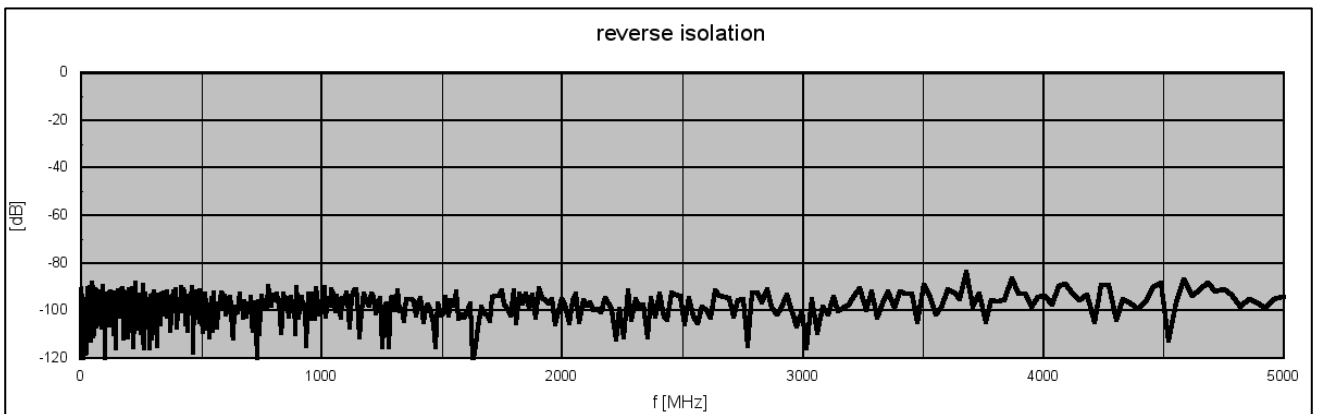
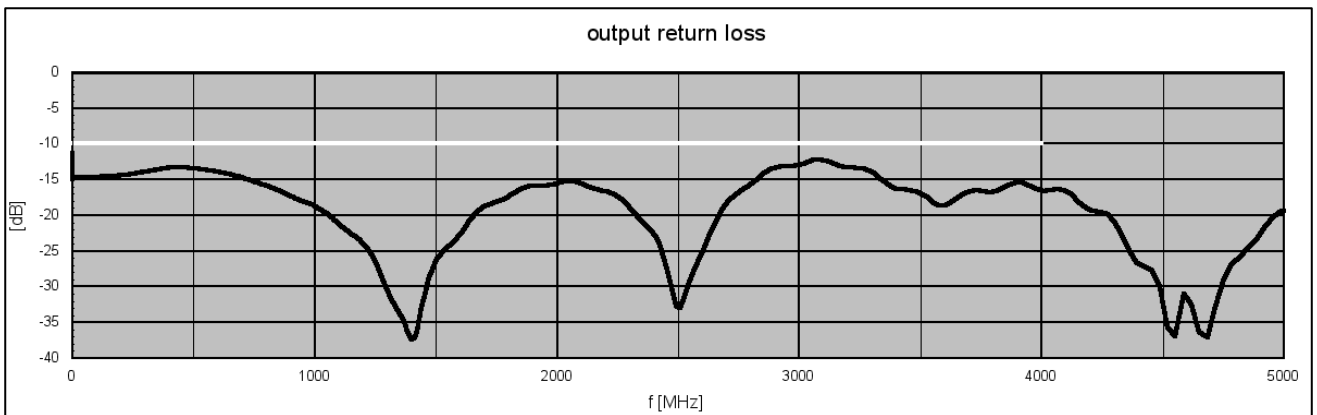
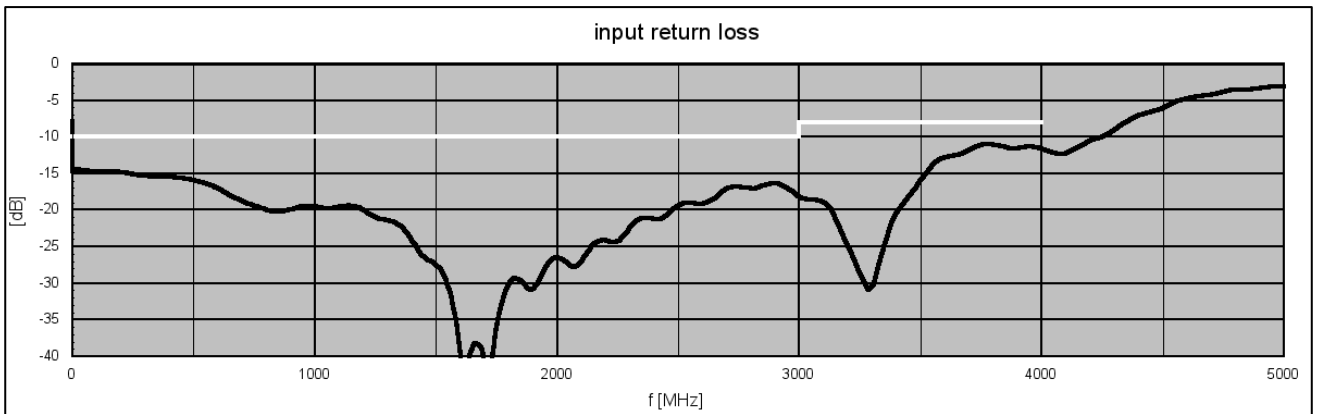
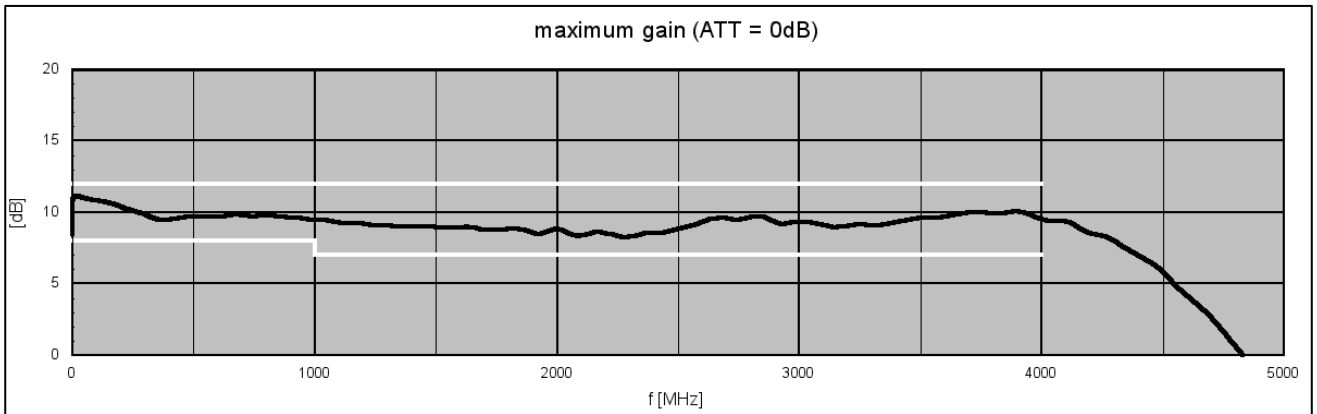
Note 1: frequency space 100 MHz

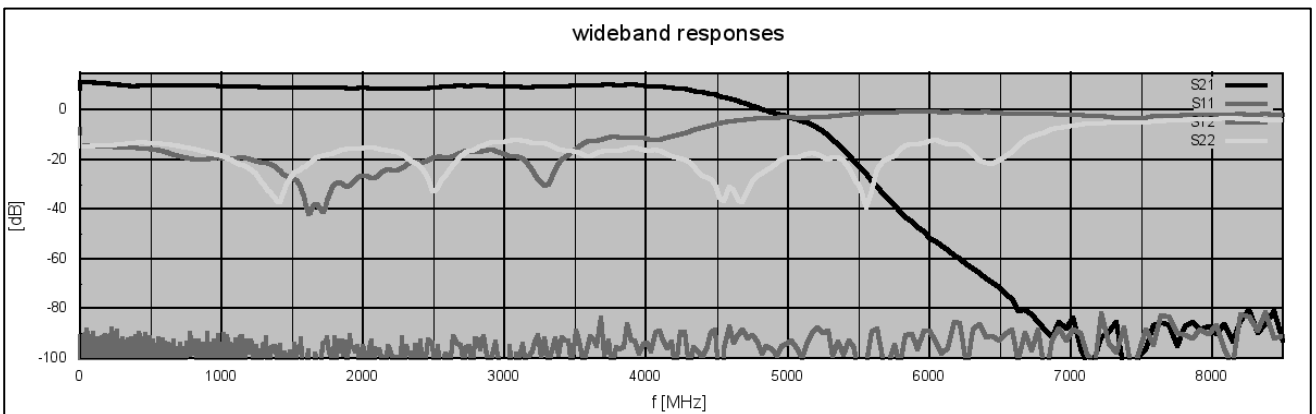
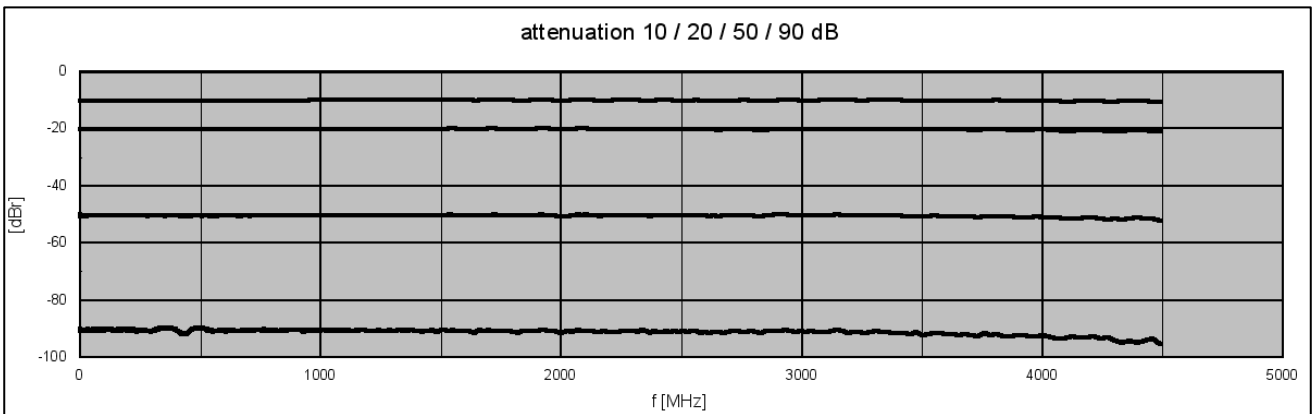
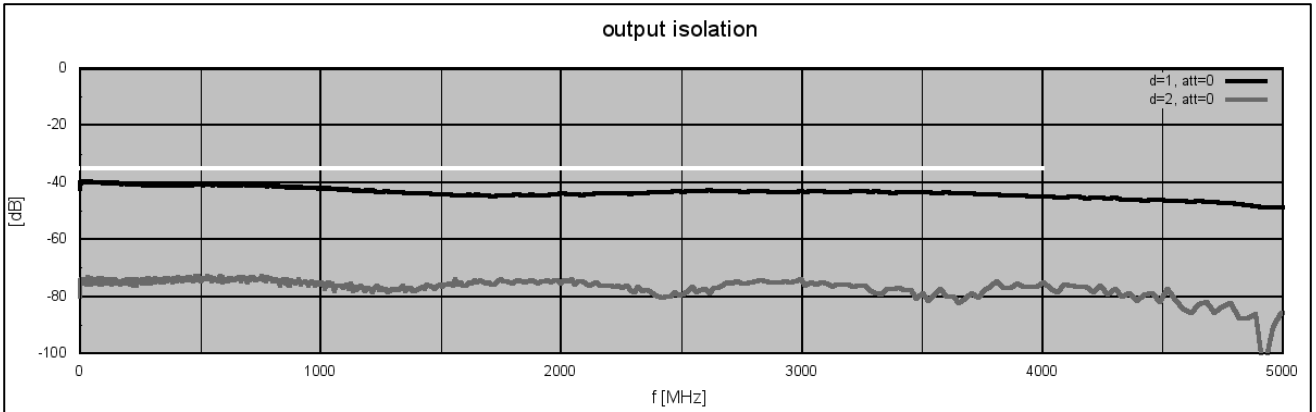
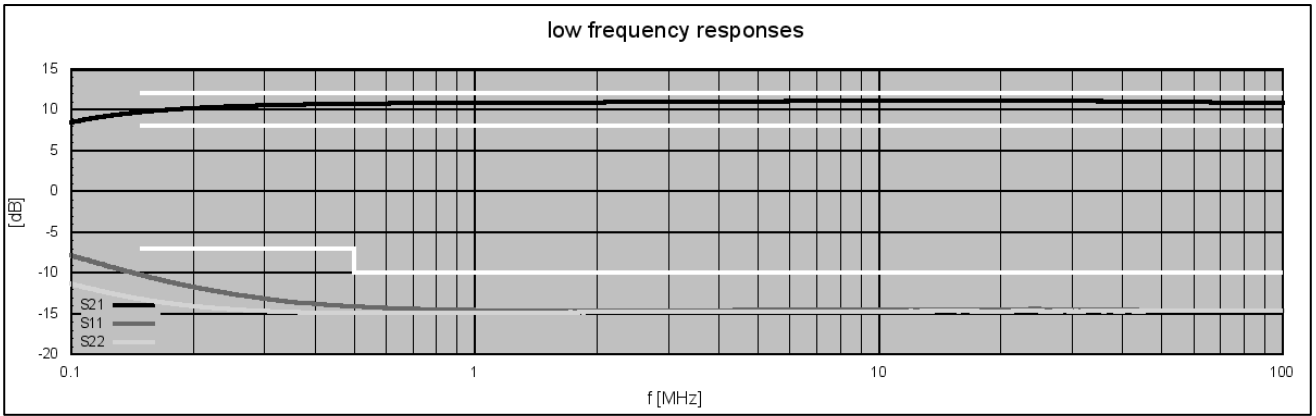
**Common Specification**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
voltage supply range	$U_{AC}$	90	230	260	V	50 / 60 Hz AC
power consumption	$P_{AC}$		20	50	W	
power socket	$X_{AC}$	IEC-60320 C14				country specific mains cable
<b>Dimensions and weight</b>						
dimensions	W x H x D	approx. 482 x 44 x 265			mm	19" 1 U, without connectors and handles
weight	m		3.4		kg	
<b>Environment conditions</b>						
operating temp. range	$T_o$	+5		+45	$^{\circ}$ C	
storage temp. range	$T_s$	-40		+70	$^{\circ}$ C	
<b>Remote interfaces</b> (variant with remote device monitoring)						
remote ports	LAN	10/100BaseT		TCP/IP		RJ45
	USB	2.0 (high speed)				USB type B
<b>Product conformity</b>						
Electromagnetic compatibility	EU: in line with EMC directive (2014/30/EC)					applied harmonized standards: EN 61326-1 (for use in industrial environment), EN 61326-2-1, EN 55011 (class B), EN 61000-3-2, EN 61000-3-3
Electrical safety	EU: in line with low voltage directive (2014/35/EC)					applied harmonized standard: EN 61010-1
<b>Ordering information</b>	WSDU-1X8AR		P/N: 1807.6302.1			

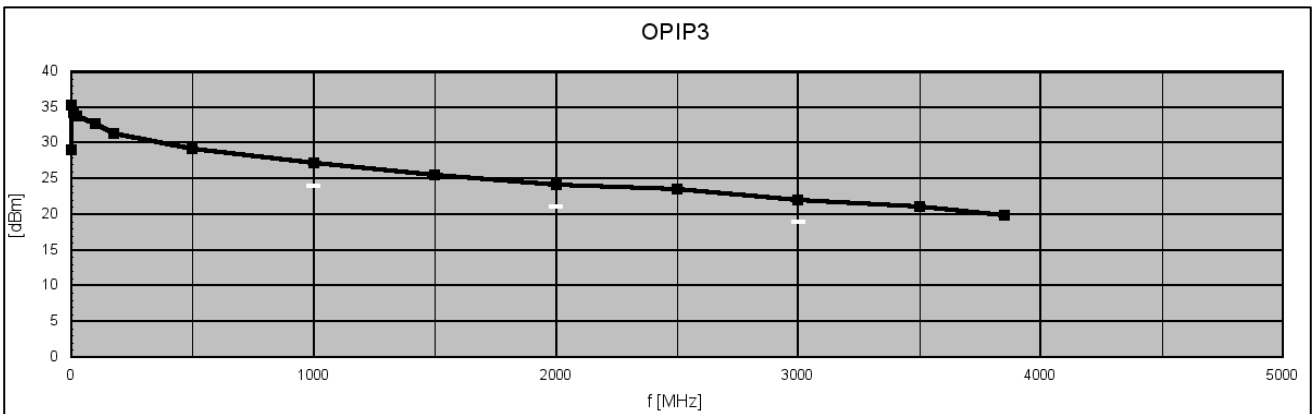
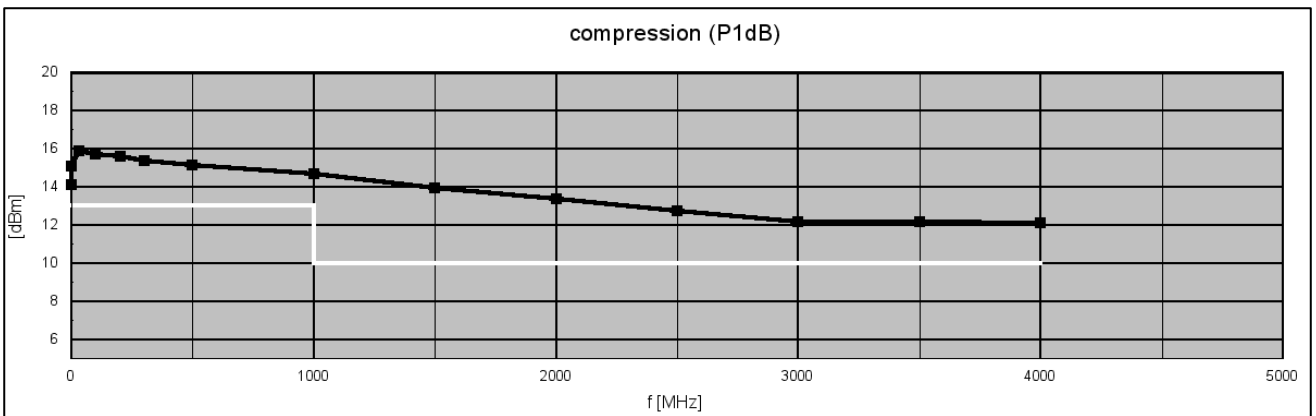
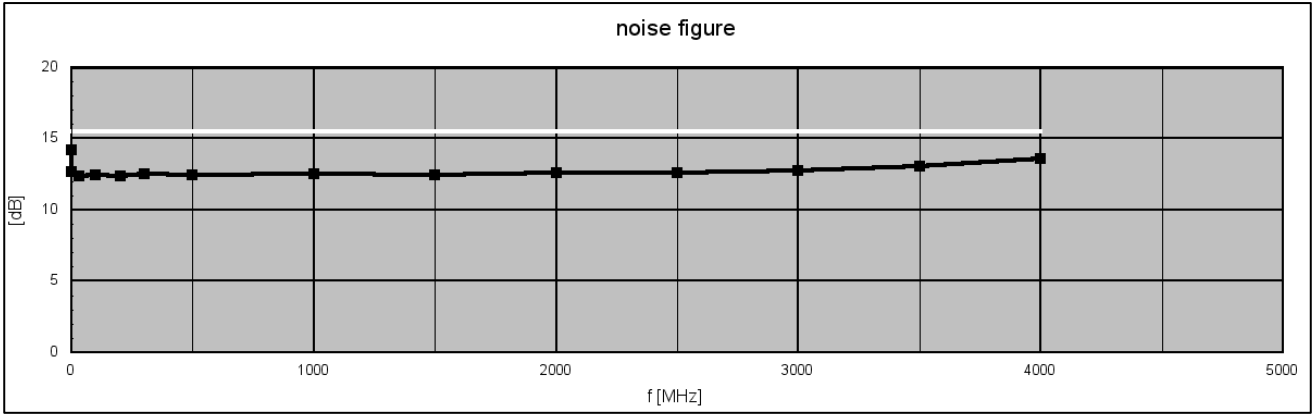


**S-Parameters (typical responses)**





**Dynamic Range**

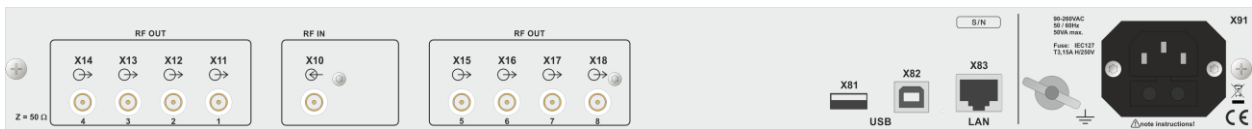


## Appearances

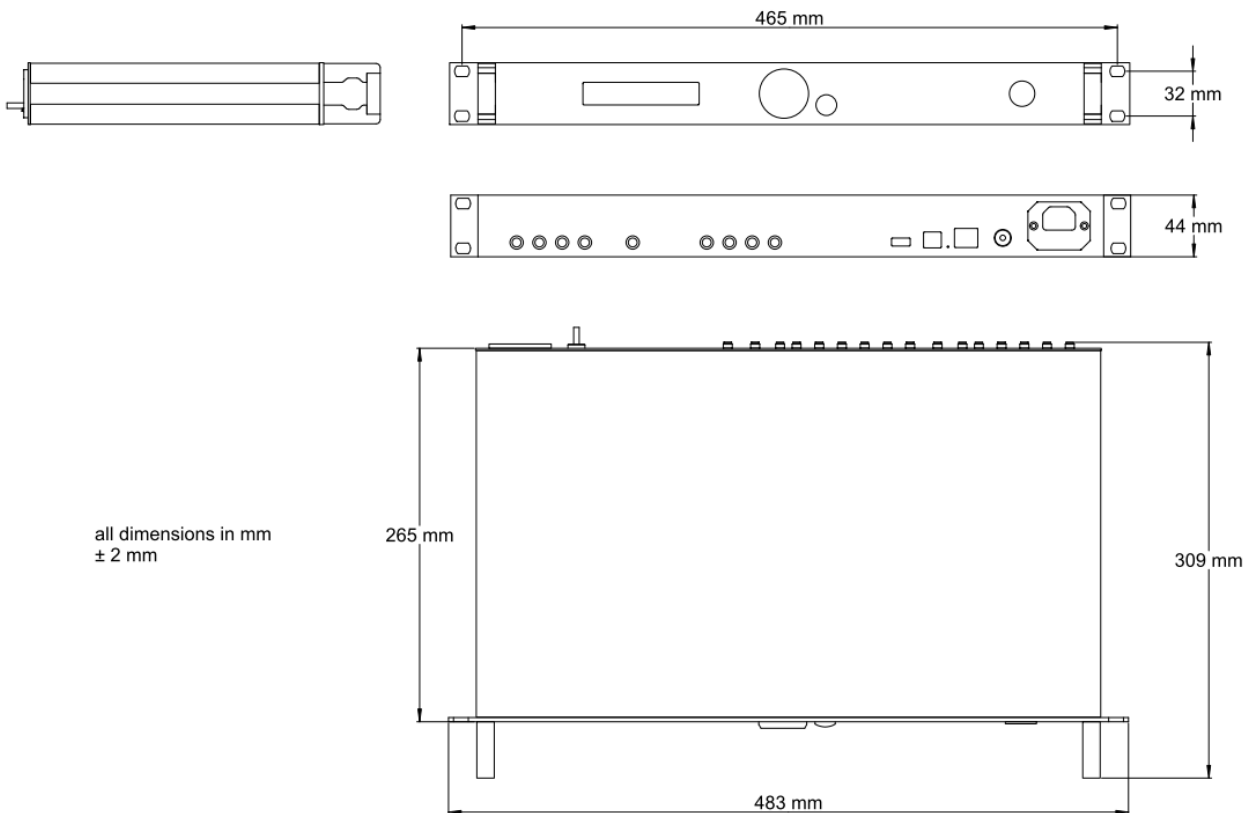
### Front View



### Rear View



## Dimensions



**Related Products**

Product	P/N	Description
WSDU-1X8R	1107.6102.1	High Dynamic 8 Way Multicoupler 100 kHz ... 4000 MHz. 90...260 V AC power supply.
WSDU-1X8R	1107.6102.2	High Dynamic 8 Way Multicoupler 100 kHz ... 4000 MHz. 18...28 V DC power supply.
WSDU-2X4R	1107.6202.1	High Dynamic 2 Section 4 Way Multicoupler 100 kHz ... 4000 MHz. 90...260 V AC power supply.
WSDU-2X4R	1107.6202.2	High Dynamic 2 Section 4 Way Multicoupler 100 kHz ... 4000 MHz. 18...28 V DC power supply.
RSDU-2X4R	1810.6012.1	2 Channel Radio Signal Conditioning and Distribution Unit 100 kHz...2500 MHz

