

WSDU-1X8VR

High Dynamic 1 to 8 Signal Distribution Unit, 20 ... 1400 MHz

Features

- wideband
- high dynamic
- lossless signal distribution
- variant with device monitoring/
SNMP function
- variants with AC or DC supply

Applications

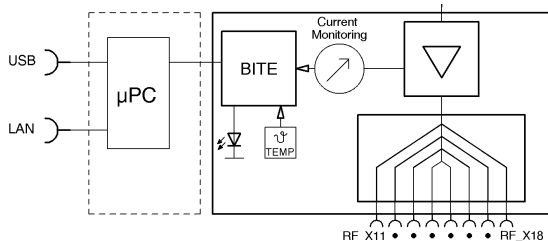
- antenna signal distributions
- radio monitoring
- direction finding
- SIGINT/COMINT
- R&D



Scope

WSDU-1X8VR is a wideband signal distribution unit consisting of an active multicoupler. The module operates in the frequency range 20 MHz to more than 1400 MHz. Due to its excellent IP3 characteristics, the device is suitable for high performance receiving systems in SIGINT and COMINT applications.

Principal Block Diagram



Distribution without Loss in Level

The RF input signals are amplified 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 approx. 2.5 dB gain. RF input and the RF outputs are SMA female connector type, located on the rear side of the module.

High Dynamic and Linearity

Components of modern radio monitoring systems must have high reception sensitivity, while signals from strong transmitters must have as little disturbance influence as possible. Due to its excellent linearity characteristics, the WSDU-1X8VR is suitable for systems with very high demands on intermodulation properties.

High Output-to-Output Isolation

WSDU-1X8VR features a high output-to-output isolation. Thus, changing the load at an output causes nearly no effects to the power level at the other outputs.

Device Monitoring

WSDU-1X8VR device is equipped with a built-in device monitoring capability which offers optical signalization of the device health as standard.

For remote monitoring a variant with LAN and USB remote interfaces is available. Via the remote interfaces information about operating points of the internal wideband amplifier stages, the module temperature and the device identification can be queried in form of ASCII strings.

The variant with remote monitoring supports SNMP (simple network management protocol) which enables monitoring without any effort, even in complex environments. The WSDU-1X8VR is able to identify failures and to inform the supervising system automatically. The LAN remote interface offers SNMPv2 trap function.

RF Specification

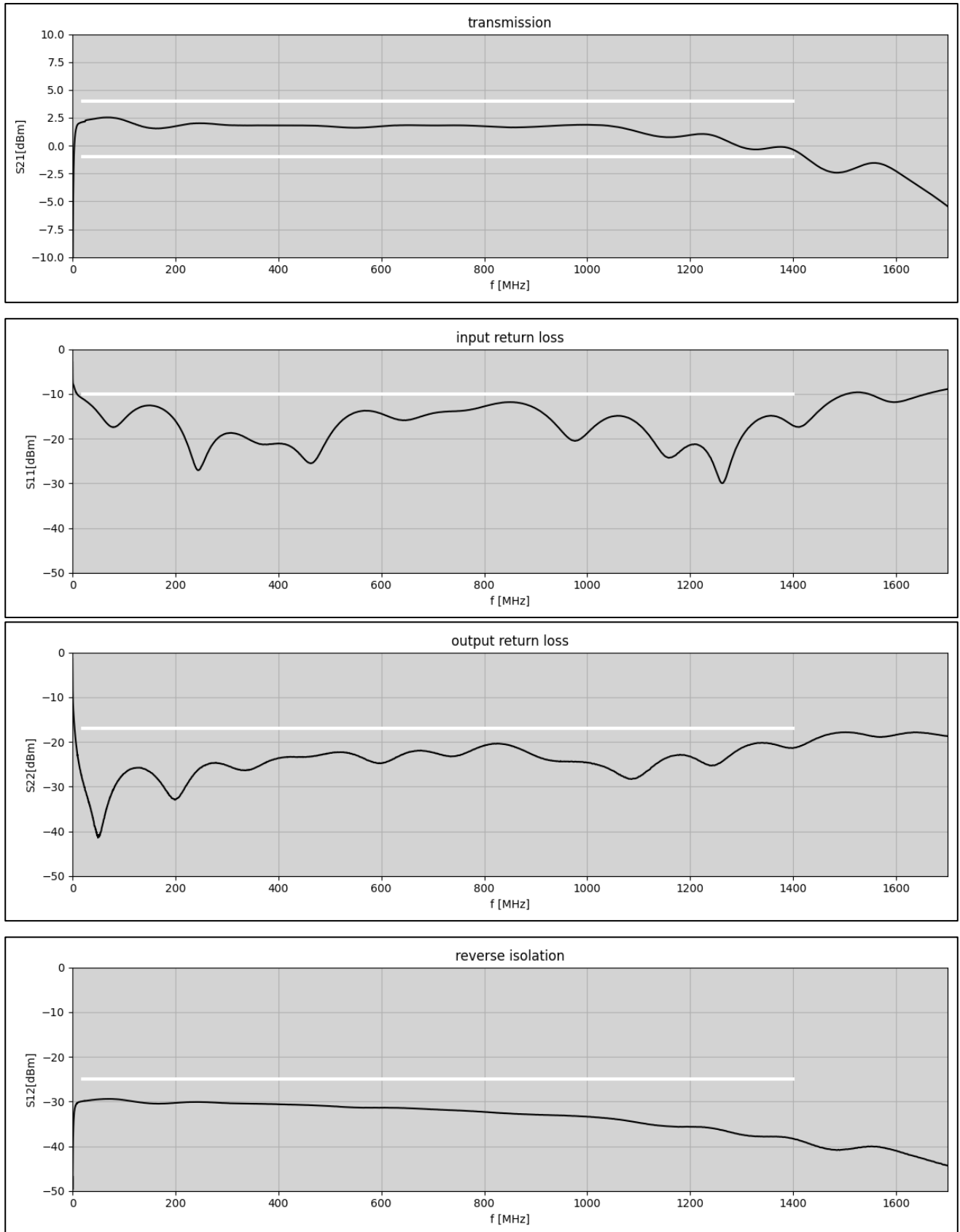
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	Z_{IN}/Z_{OUT}		50		Ω	
low frequency	f_{MIN}	20			MHz	
high frequency	f_{MAX}			1400	MHz	
gain	S_{21}		2		dB	$f \leq 1000$ MHz
input return loss	S_{11}		-13		dB	$f \leq 1400$ MHz
output return loss	S_{22}		-20		dB	
reverse isolation	S_{12}		-30		dB	
output isolation	S_{23}		-18		dB	adjacent outputs (d=1)
1 dB compression	P_{1dB}		+20		dBm	$f \leq 1000$ MHz
	P_{1dB}		+17		dBm	$f > 1000$ MHz
3 rd order intercept	$OIP3^1$		+40		dBm	$f = 100$ MHz
	$OIP3^1$		+38		dBm	$f = 500$ MHz
	$OIP3^1$		+36		dBm	$f = 1000$ MHz
	$OIP3^1$		+30		dBm	$f = 1400$ MHz
2 nd order intercept	$OIP2^2$		+67		dBm	$f = 200$ MHz
	$OIP2^2$		+66		dBm	$f = 500$ MHz
	$OIP2^2$		+63		dBm	$f = 1000$ MHz
noise figure	NF		7		dB	
maximum input power	$P_{in\ max}$			+25	dBm	CW, no damage
DC voltage	U_{DC}			20	V	input and outputs
ESD discharge resistor	R_{ESD}		4.7		k Ω	input and outputs
RF connectors	X_{RF}	N female				

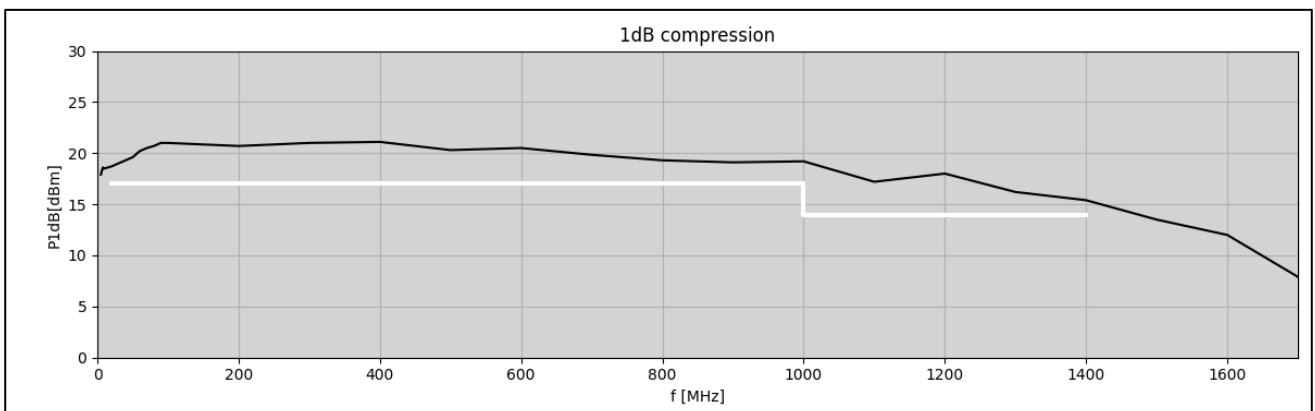
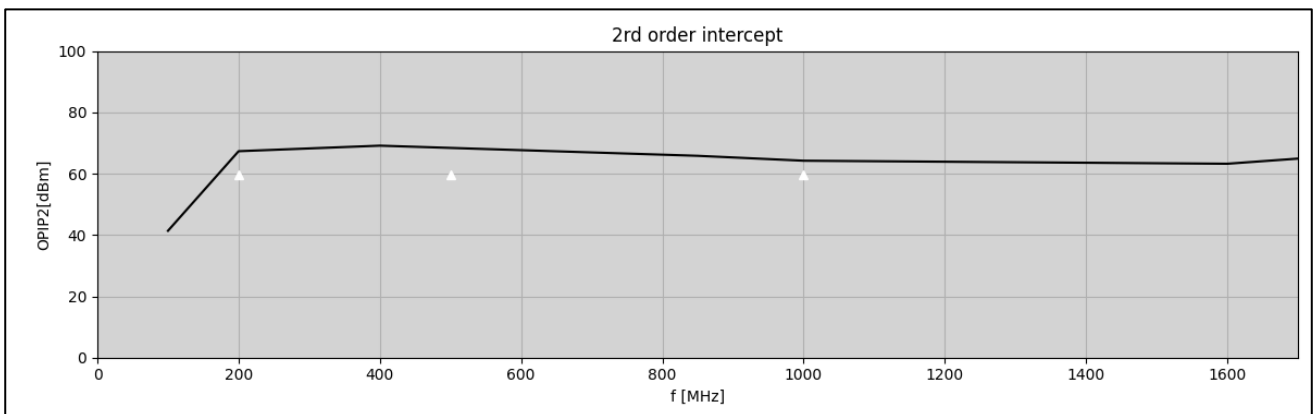
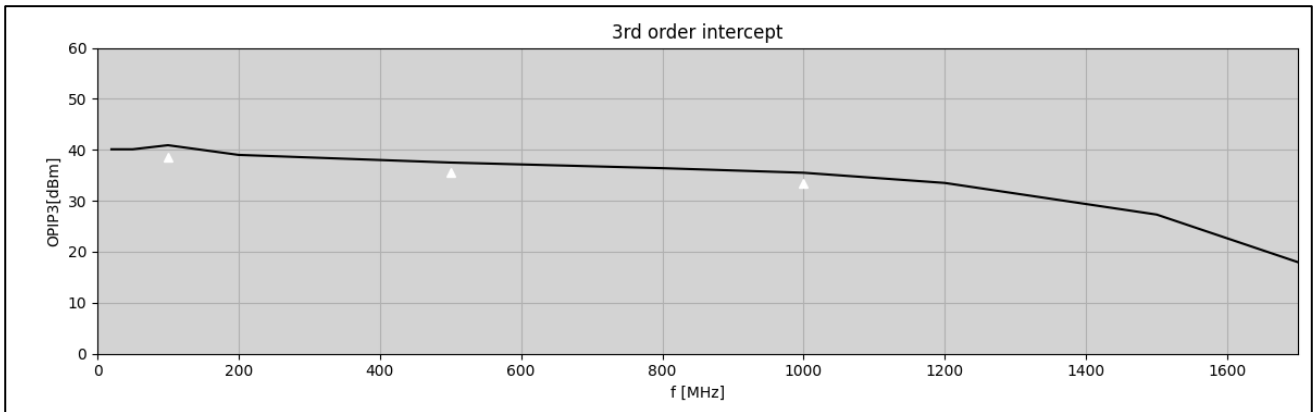
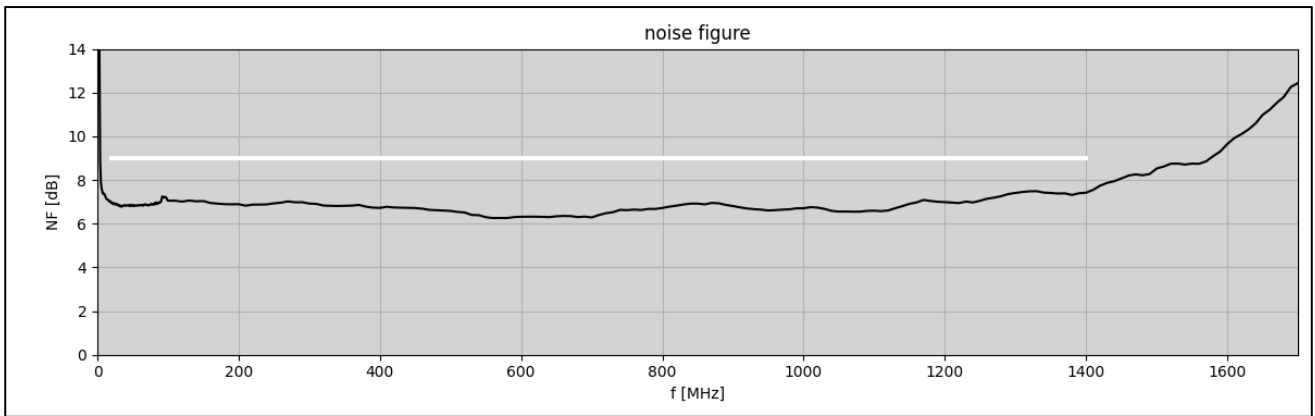
Note 1: frequency space 1 MHz

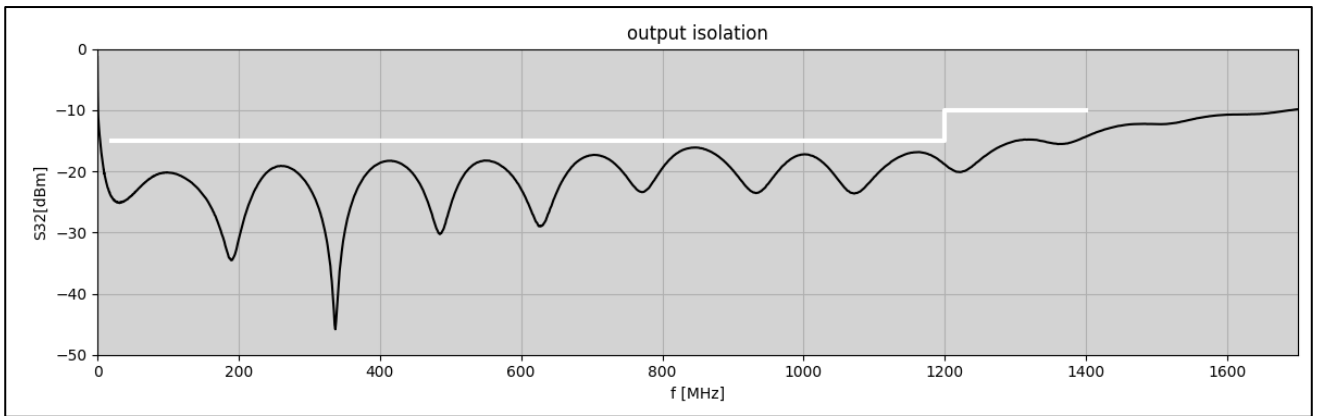
Note 2: frequency space 50 MHz

Common Specification

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
AC supply variant						
voltage supply range	U _{AC}	90	230	260	V	50 / 60 Hz AC
power consumption	P		10	50	W	
power socket	X _{AC}	IEC-60320 C14				country specific mains cable
DC supply variant						
voltage supply range	U _{DC}	18	24	28	V	
current consumption	I _{DC}		400		mA	@ 24 V
power socket	X _{DC}	3 pole XLR male				
Dimensions and weight						
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	
Environment conditions						
operating temp. range	T _o	+5		+45	°C	
storage temp. range	T _s	-40		+70	°C	
Remote interfaces (variant with remote device monitoring)						
remote ports	LAN	10/100BaseT		TCP/IP		RJ45
	LAN	SNMPv2 trap function				
	USB	2.0 (high speed)				USB type B
Product conformity						
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	
Ordering information	WSDU-1X8VR		P/N: 2503.6302.1		variant with AC supply	
	WSDU-1X8VR		P/N: 2503.6302.2		AC supply with Device Monitoring	
	WSDU-1X8VR		P/N: 2503.6302.3		variant with DC supply	
	WSDU-1X8VR		P/N: 2503.6302.4		DC supply with Device Monitoring	

S-Parameters (typical responses)





Appearances

Front View

Similar appearance

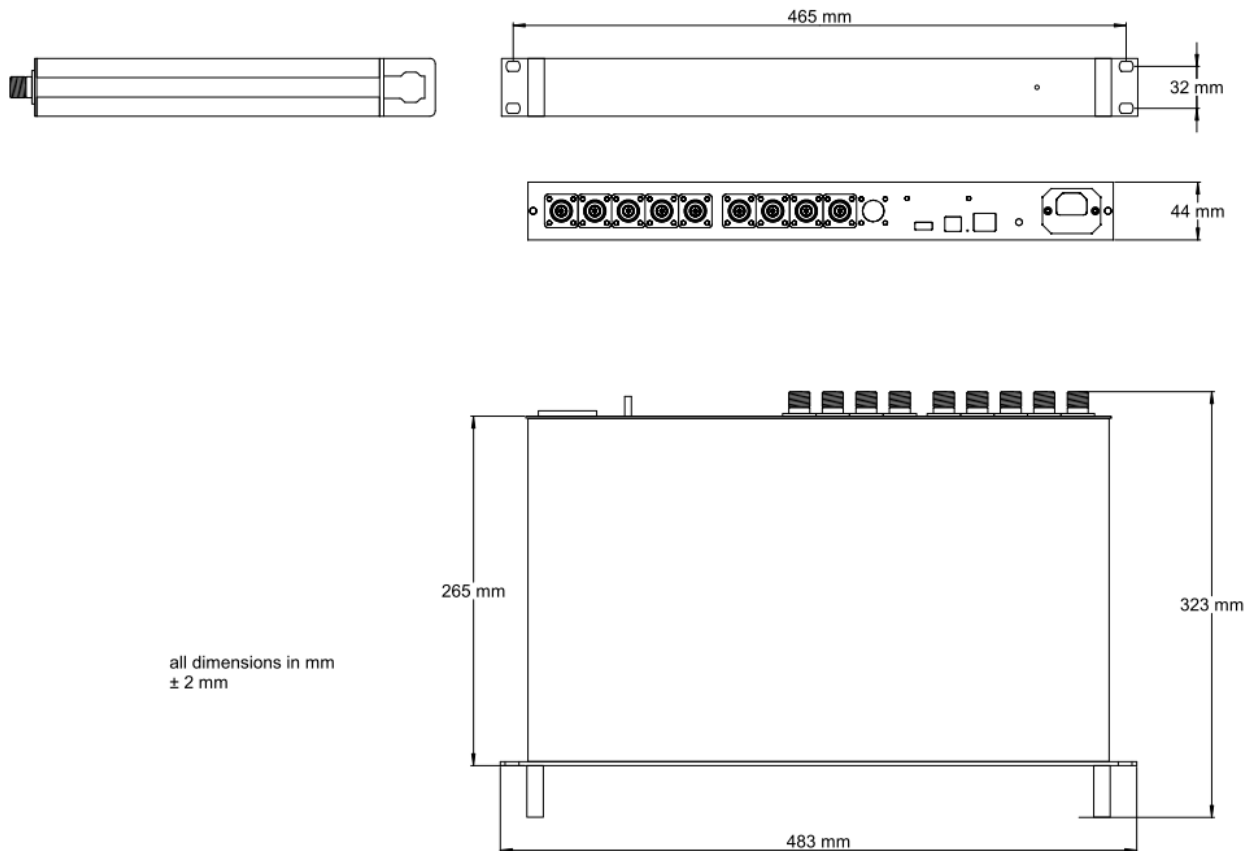


Rear View

Variant with AC Supply and Remote Monitoring (P/N: 2503.6302.2)



Dimensions



Related Products

[Active RF Multicouplers](#)

[Active RF Signal Combiners](#)

[Passive RF Signal Splitters/Combiners](#)

[Modular RF System Platform](#)

