

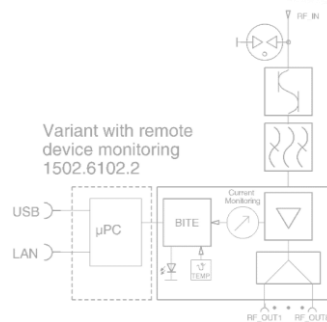
High Dynamic 1X8 Shortwave Signal Distribution Unit 1.7 MHz ... 30 MHz

Features

- wideband
- extremely high dynamic
- lossless
- compact 19", 1U design
- VLF and VHF suppression
- lightning protection
- Built In Test function

Applications

- shortwave signal distributions
- antenna signal distributions
- receiving stations



Scope

The WSDU-1X8SR is a wideband multi-coupler especially designed for the shortwave frequency range. Due to its excellent dynamic properties, the WSDU-1X8SR is suitable for applications with difficult reception conditions. The frequency range extends from 1.7 MHz up to 30 MHz.

Lossless 1 to 8 Signal Distribution

The multicoupler utilizes low-noise high dynamic amplifier stages. 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.

High Reliability

The internal power supply of WSDU-1X8SR is designed with redundancy. This ensures high availability of the multicoupler. A failure of a power supply causes no interruption of the signal path.

Short Wave Distribution Systems

The high dynamic range makes the WSDU-1X8SR multicoupler ideal for receiving applications where very strong and very weak antenna signals have to be evaluated without mutual influence.

RF Input Protection

The WSDU-1X8SR provides protection against lightning, surges and out of band signals. The RF input of the device is equipped with a discharge element, an overlevel protection and a bandpass filter. The bandpass filter suppresses unwanted signals in the VLF and VHF frequency range.

Customized Filter Frequencies

By default, the WSDU-1X8SR is equipped with an input filter for the frequency range 1.7 ... 30 MHz. The filter parameters can be adapted to customer needs.

Device Monitoring

WSDU-1X8SR device is equipped with a built-in device monitoring capability and offers optical signalization of the device health. The device is furthermore available in a variant with LAN and USB connection for remotely controlled health checks. This offers the possibility to query information about operating points of the internal wideband amplifier stages, the temperature and the device identification in form of ASCII strings.

Additionally, the device supports SNMP (simple network management protocol) which enables monitoring without any effort, even in complex environments.

The WSDU-1X8SR is able to identify failures and to inform the supervising system automatically.

Compact Design

The WSDU-1X8SR in both variants is designed in a rugged 19" housing in only 1U.

RF Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	Z_{in} / Z_{out}		50		Ohm	
low frequency ¹	f_{min}		1.6	1.7	MHz	¹ : other low frequencies on demand
high frequency	f_{max}	30	32		MHz	
gain	S_{21}	1.5	2.5	3.5	dB	
gain flatness	ΔS_{21}		± 0.5		dB	
input return loss	S_{11}		-25	-16	dB	
output return loss	S_{22}		-20	-16	dB	
reverse isolation	S_{12}		-30		dB	
output isolation	S_{23}		-27	-23	dB	adjacent channel
filter suppression	S_{21}		-16	-14	dB	@ 500 kHz, rel.S21 @ 16 MHz
	S_{21}		-19	-17	dB	@ 100 MHz, rel.S21 @ 16 MHz
1 dB compression	P_{1dB}	+20	+22		dBm	
3 rd order intercept	OIP3 ¹	+35	+38		dBm	$f < 2.5$ MHz
	OIP3 ¹	+38	+43		dBm	$f \geq 2.5$ MHz
2 nd order intercept	OIP2 ²	+90	+95		dBm	
noise figure	NF		6	8	dB	
maximum input power	P_{IN}			+25	dBm	CW, no damage
RF connectors						N female

Note 1: Test frequencies: (space 100 kHz) 1.8 / 1.9 MHz, 2.8 / 2.9 MHz, 5.1 / 5.2 MHz, 10.2 / 10.3 MHz, 20.2 / 20.3 MHz, 20.8 / 20.9 MHz, Input level 2 x +3 dBm

Note 2: Test frequency pairs: 2.5 / 3.5 MHz, 12 / 15 MHz, 22 / 27 MHz. Input level 2 x +3 dBm.

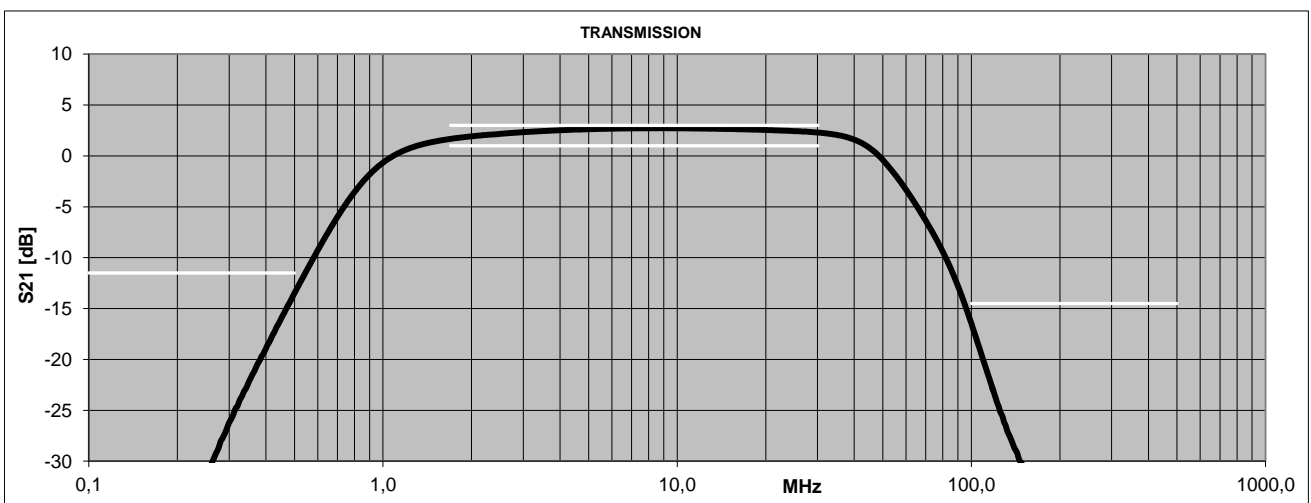
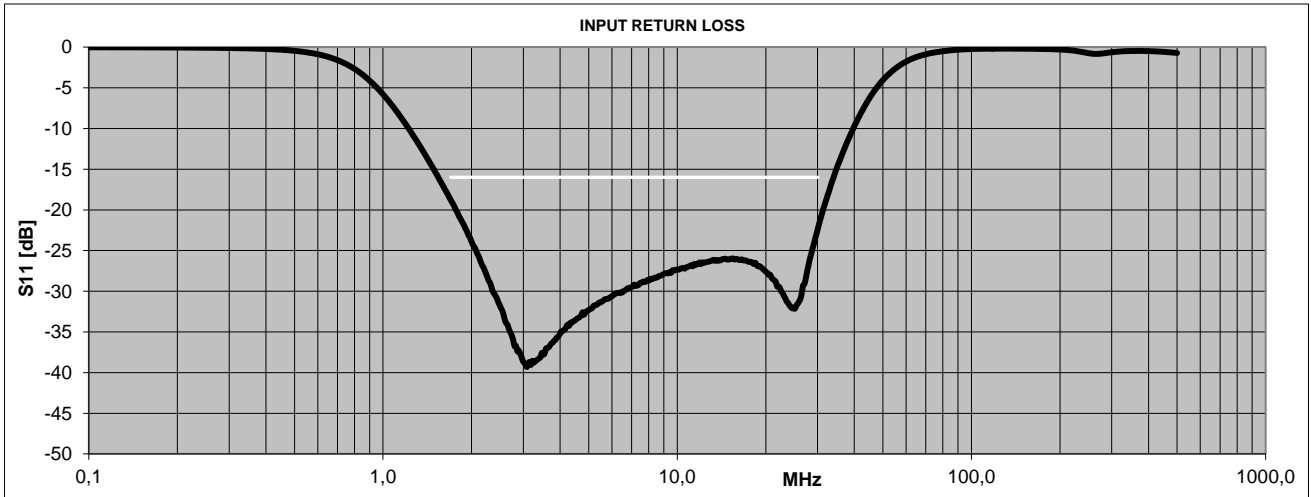
Common Specifications

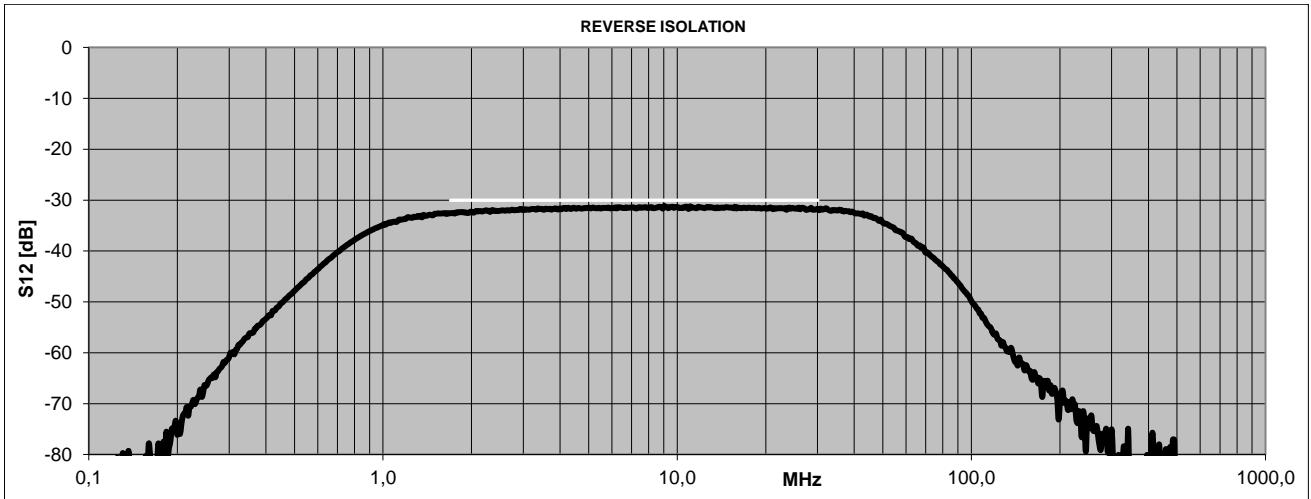
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply		90	230	260	V	50 / 60 Hz AC
power consumption			18	50	VA	
dimensions (L x W x H)		appr.265 x 482 x 44			mm	19" 1U, without connectors and handles
weight			3500		g	
operating temp. range		0		+ 45	°C	
storage temp. range		- 40		+ 85	°C	
remote ports ¹	LAN	10/100BaseT		TCP/IP		RJ45 on rear side
	USB	2.0 (high speed)				USB type B

Note 1: Variant with remote device monitoring extension only. (VAR 2/3)

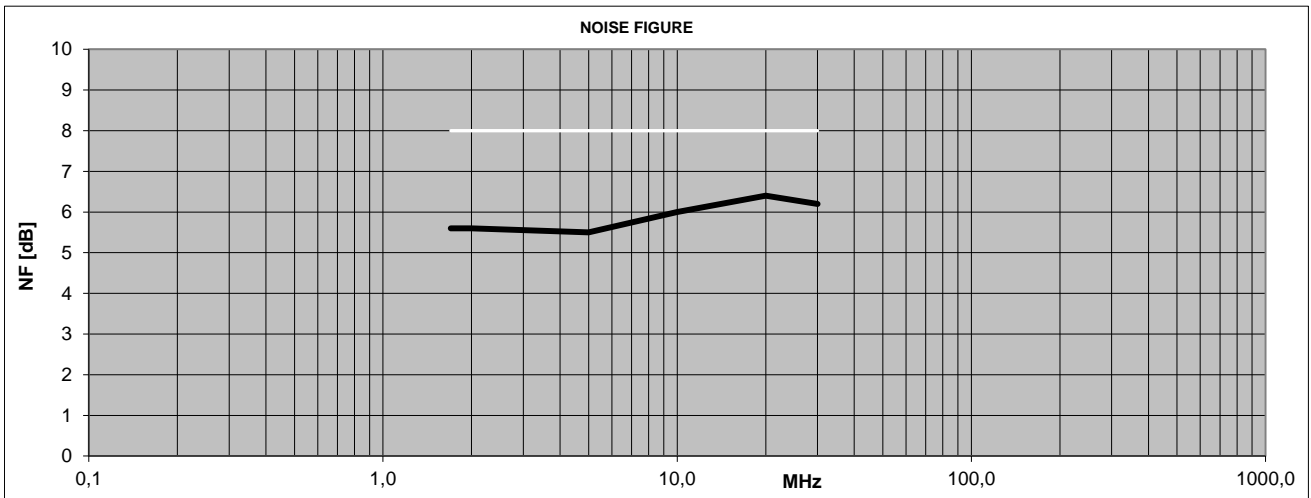


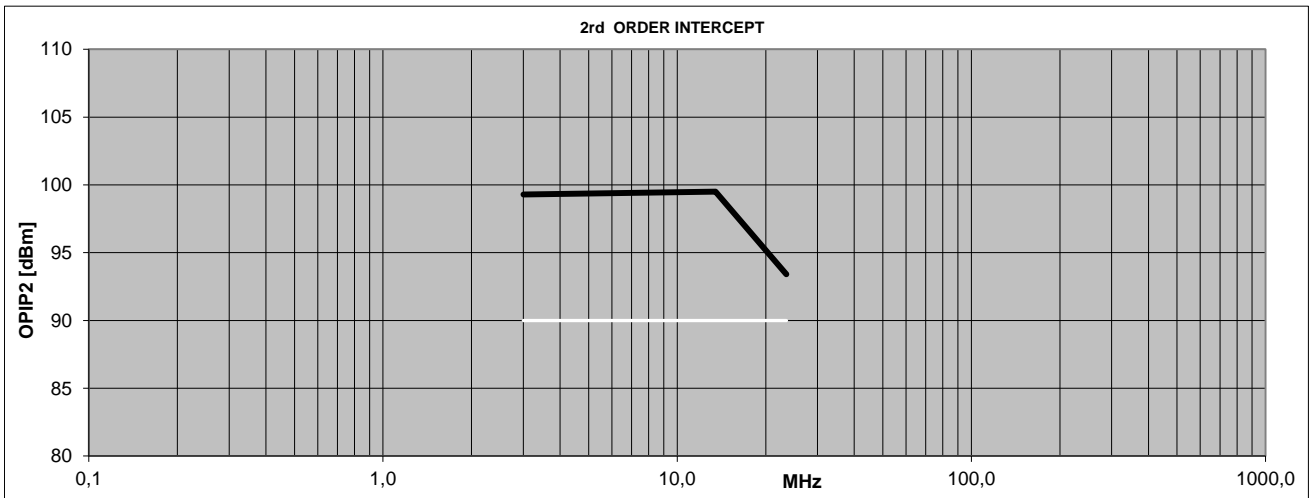
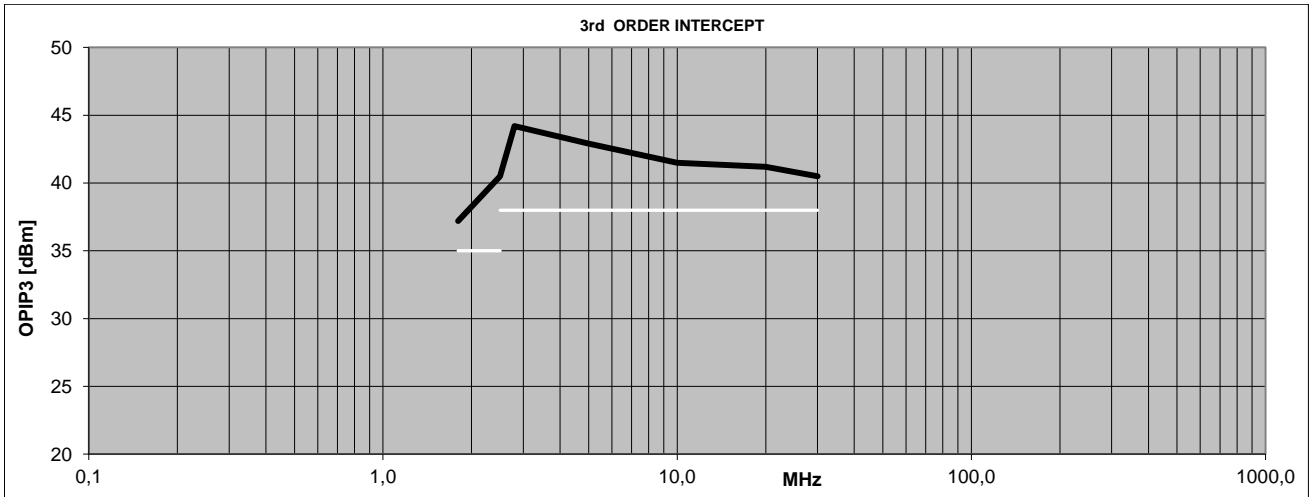
S-Parameter





Dynamic Range





Front View



Rear View (variants with device monitoring)



Ordering Information

Variant	P/N	Remote Device Monitoring	Frequency Extension 500 kHz ... 30 MHz
WSDU-1X8SR VAR1	1502.6102.1		
WSDU-1X8SR VAR2	1502.6102.2	X	
WSDU-1X8SR VAR3	1502.6102.3		X
WSDU-1X8SR VAR4	1502.6102.4	X	X

Related Products

Product	P/N	Description
WSDU1X8R	1107.6102.1	High dynamic 8 way multicoupler 100 kHz...4000 MHz. 19", 1U device.
WSDU-1X8ER	1501.6302.1	1X8 Wideband Signal Distribution Unit 20MHz...8000MHz. 19", 1U device.
WSDU-1X8ER	1501.6302.2	1X8 Wideband Signal Distribution Unit 20MHz...8000MHz. Equipped with remote device monitoring extension. 19", 1U device.
WSDU-1X4ER	1501.6102.1	Extremely Wideband 1x4 Signal Distribution Unit 20MHz...8000MHz. 19", 1U device.
WSDU-1X4ER	1501.6102.2	Extremely Wideband 1x4 Signal Distribution Unit 20MHz...8000MHz. Equipped with remote device monitoring extension. 19", 1U device.
WSDU-2X4ER	1501.6102.2	Extremely Wideband two Channel 1X4 Signal Distribution Unit 20MHz...8000MHz. 19", 1U device.
WSDU-2X4ER	1501.6202.2	Extremely Wideband two Channel 1X4 Signal Distribution Unit 20MHz...8000MHz. Equipped with device monitoring function. 19", 1U device

