

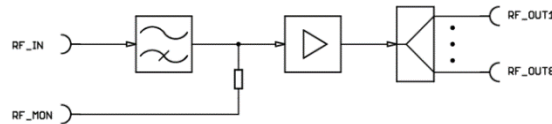
High Dynamic 1X8 Shortwave Signal Distribution Module 1.7 MHz ... 30 MHz

Features

- wideband
- extremely high dynamic
- lossless
- VLF and VHF suppression
- lightning protection
- built-in test function

Applications

- shortwave signal distributions
- antenna signal distributions
- receiving stations



Scope

The module WSDU-1X8S is a wideband multicoupler especially designed for the shortwave frequency range. Due to its excellent dynamic properties, the WSDU-1X8S 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 SMA female connectors.

High Reliability

The internal power supply of WSDU-1X8S 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-1X8S 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-1X8S 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-1X8S 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-1X8S device is equipped with a built-in device monitoring capability and offers optical signalization of the device health. In combination with SR6-11C system platform and the SR6-CU controller unit, remotely controlled health checks can be done via LAN and USB interfaces. 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-1X8S is able to identify failures and to inform the supervising system automatically.

Modular Design

The WSDU-1X8S is designed as a rugged 19" module with 6 U suitable for installation in SR6-11C system platform rack.

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	OPIP3 ¹	+35	+38		dBm	$f < 2.5$ MHz
	OPIP3 ¹	+38	+43		dBm	$f \geq 2.5$ MHz
2 nd order intercept	OPIP2 ²	+90	+95		dBm	
noise figure	NF		6	8	dB	
maximum input power	P_{in}			+25	dBm	CW, no damage
RF connectors						SMA 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

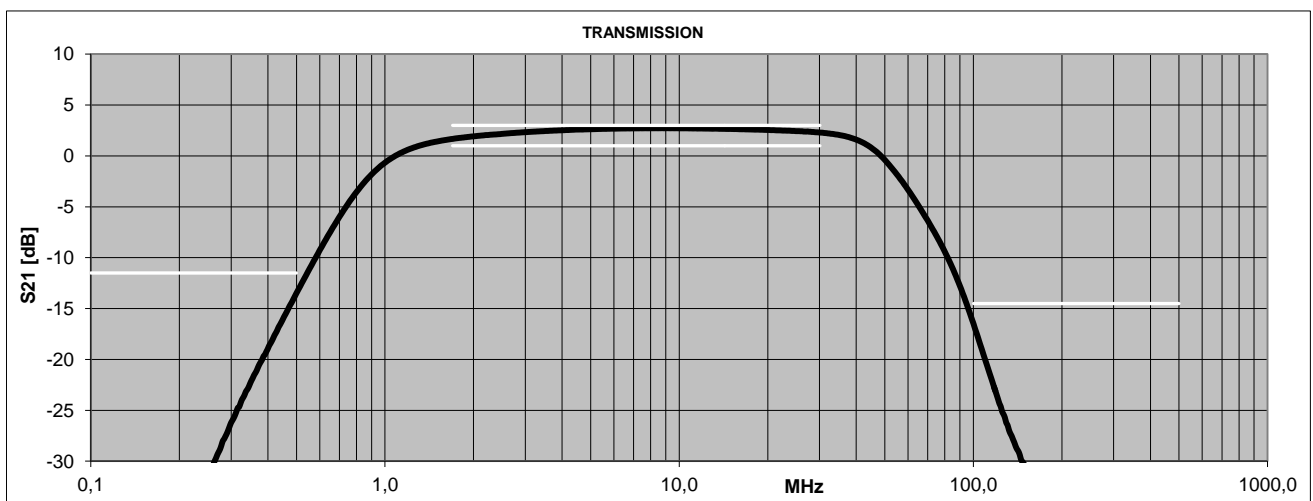
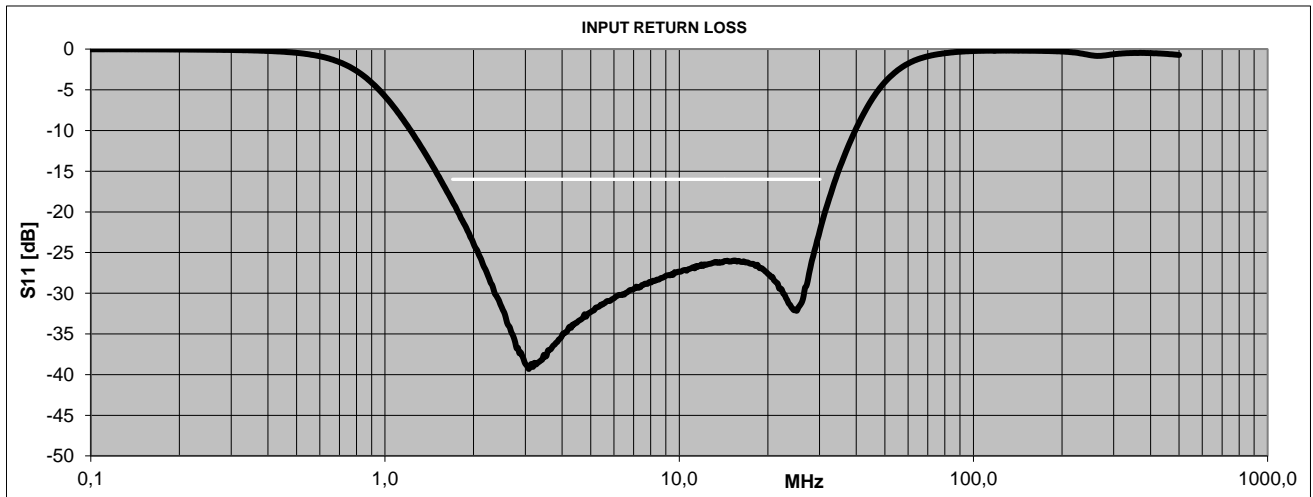
Note 2: test frequency pairs: 2.5 / 3.5 MHz, 12 / 15 MHz, 22 / 27 MHz, input level 2 x +3 dBm.

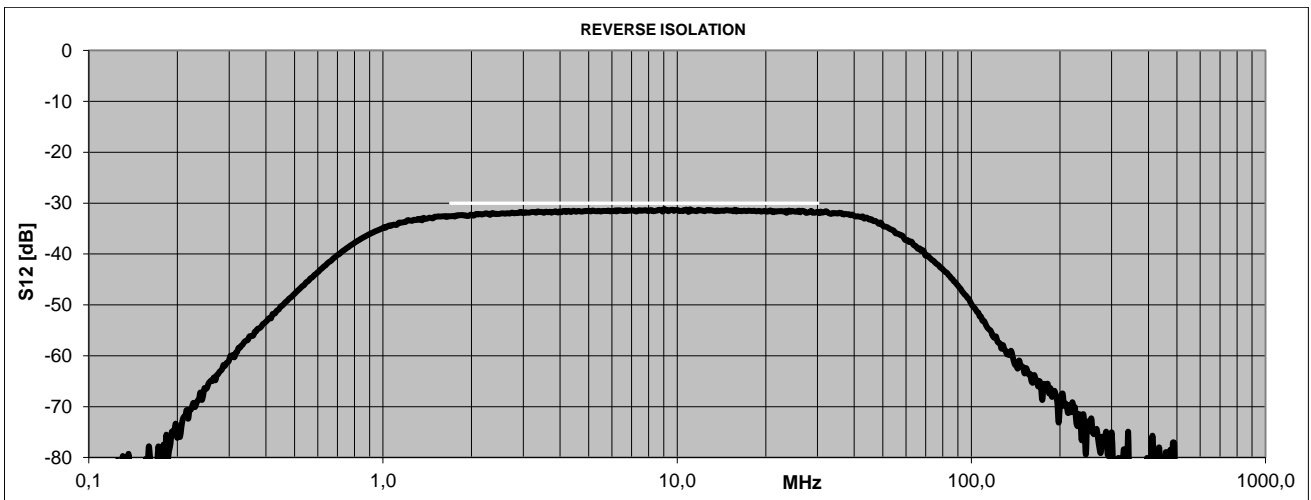
Common Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply	U	23.5		24.5	V	DC
power consumption	P		13	15	W	
dimensions	L x W x H	approx.197 x 30 x 262			mm	6 U, 6HP
weight	m		1.3		kg	
operating temp. range	T_o	+5		+55	°C	
storage temp. range	T_s	-40		+85	°C	
ordering information	WSDU-1X8S		P/N:	1502.6100.1		

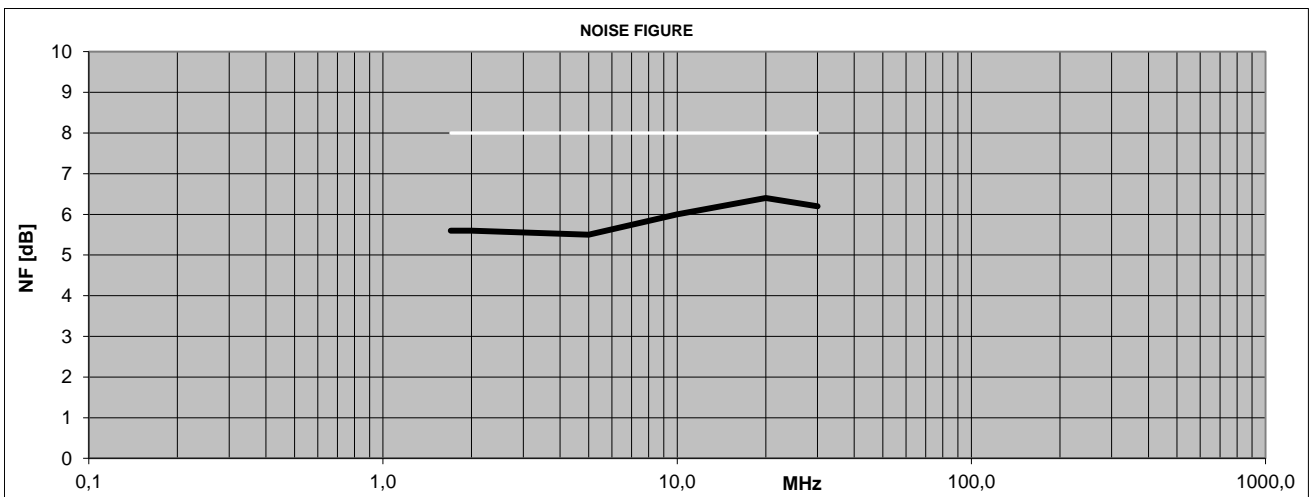


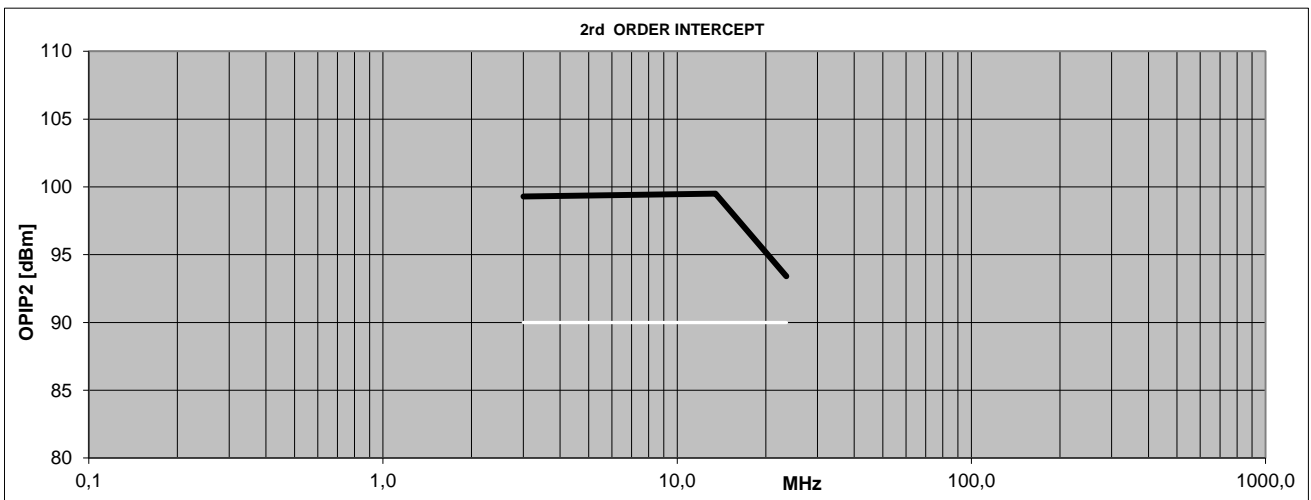
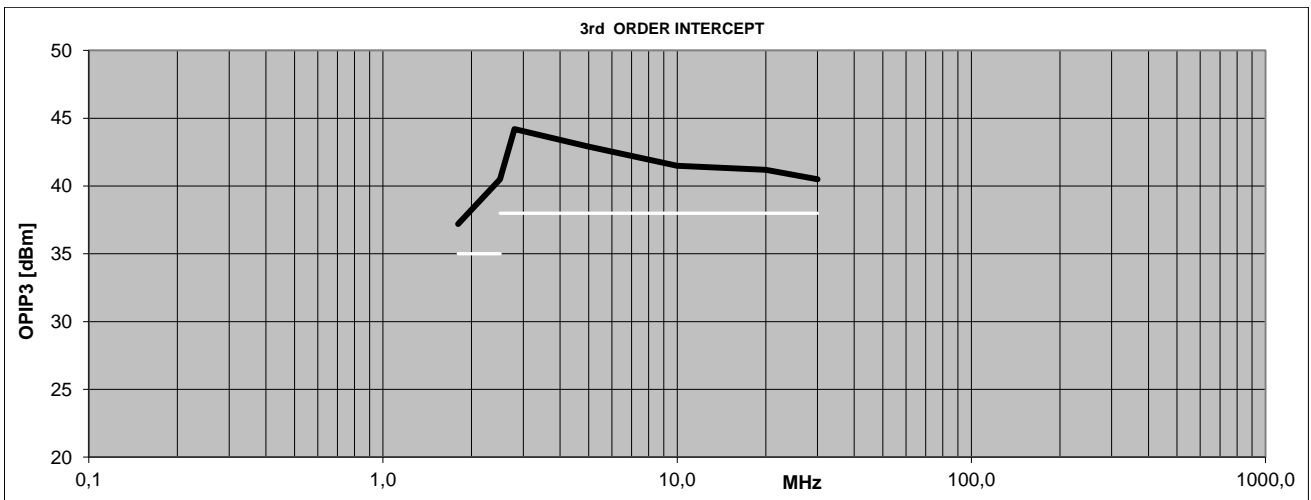
S-Parameter





Dynamic Range





Front View



Rear View



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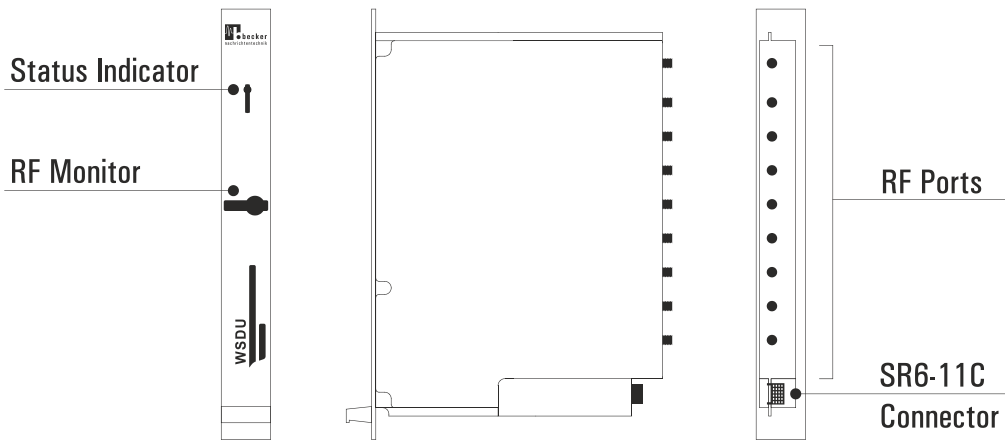
Quality made in Germany

Subject to change in specification and design without notice.
released version 0.80 - July 2015

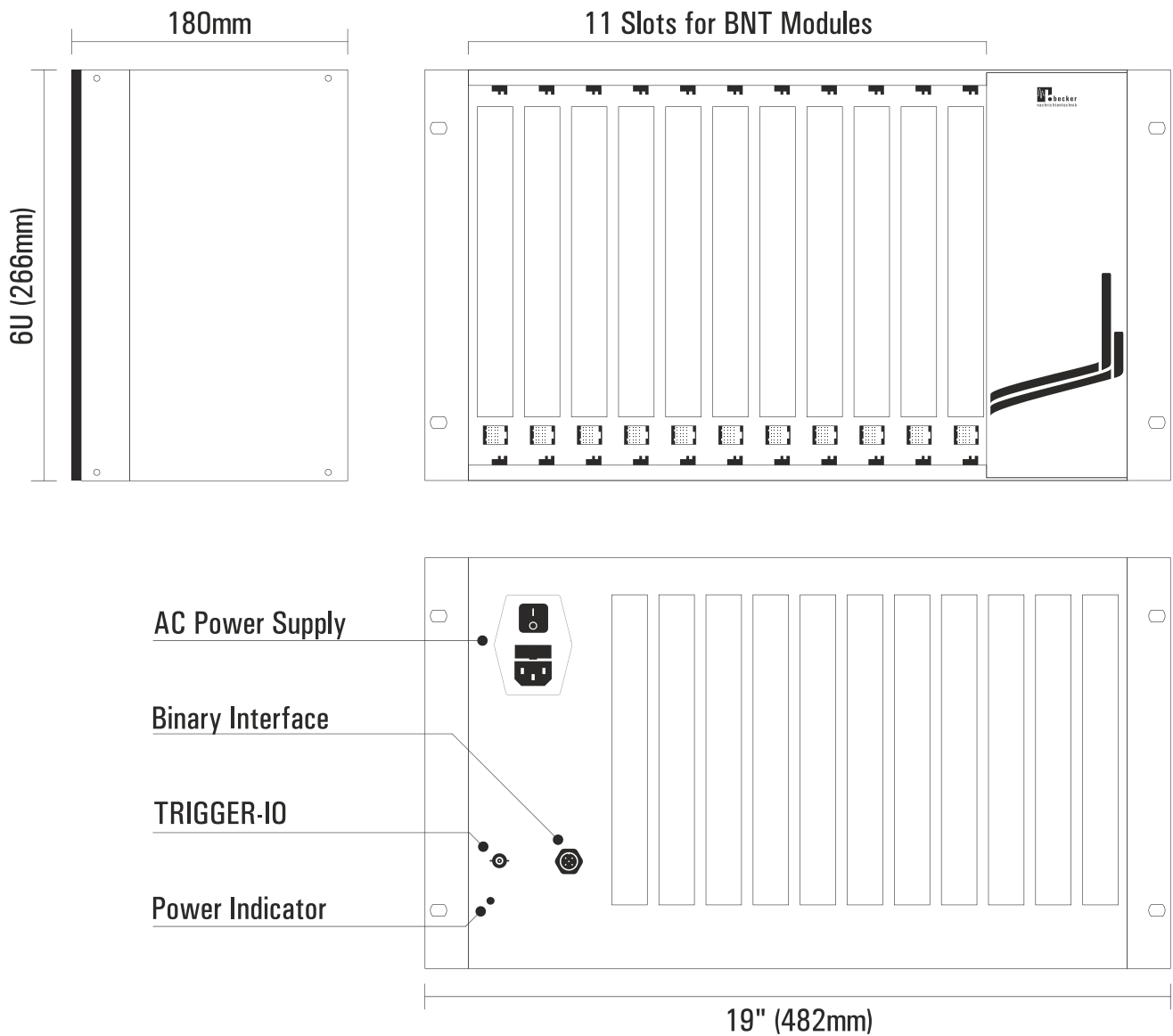


RoHS compliant in accordance
with EU Directive 2011/65/EU

Technical 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
WSDU-1X8SR	High Dynamic 8 Way Shortwave Signal Distribution Unit 1.7 ... 30 MHz	1502.6102.1
WSDU1X8	High Dynamic 8 Way Multicoupler Module 100 kHz ... 4000 MHz	1202.6100.1
WSDU-1X8P	8 x 400 mW 8 Way Multicoupler 20 ... 2700 MHz	1209.6001.1
WSDU-1X2PL	5 W Medium Output Power Multicoupler 20 ... 2800 MHz	1202.6300.3
WSDU-2X4E+	Extremely Wideband Two Channel 1X4 plus One Channel 1X2 Multicoupler Module 20 ... 8000 MHz	1502.6200.1

