

WSDU-1X8U

Ultra-Wideband 8-Way Signal Distribution Unit 100 kHz ... 18 GHz

Features

- ultra wideband
- high dynamic
- lossless signal distribution
- health monitoring with SNMP function
- slot-in module for SR6-11C system platform

Applications

- military
- intelligence service
- antenna signal distributions
- radio monitoring
- direction finding
- R&D



Scope

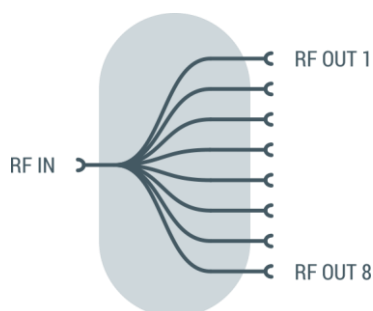
WSDU-1X8U is an ultra-wideband multicoupler as slot-in module that distributes signals from one common input to 8 equivalent outputs. The frequency range extends a frequency range from 100 kHz to more than 18 GHz.

Lossless 1 to 8 Signal Distribution

The RF input the signal is amplified by using innovative broadband low-noise amplifiers with a wide dynamic range. As a result, weak and strong signals are amplified equally linearly and without distortion. The distributed signal is available at every output without any losses in level. The hardware structure of the distribution offers best phase and amplitude balance performance. All RF inputs and outputs have SMA female connectors.

Principal Block Diagram

The WSDU-1X8U offers one input that distributes signals to eight equal outputs.



Module Monitoring

In combination with the SR6-CU controller module, the WSDU-1X8U offers module monitoring function. The health status can be read out via LAN and USB remote interface of the SR6-CU controller module. The health status gives information about operating points of the internal wideband amplifier stages and the temperature of the RF module. Also, identification can be queried in form of ASCII strings.

The LAN remote interface offers SNMPv2 (simple network management protocol) trap function for an operation in complex environments.

In combination with the SR6-11C controller unit the WSDU-1X8U is able to identify failures and to inform the supervising system automatically.

Module for SR6-11C System Platform

The WSDU-1X8U multicoupler slot-in module is foreseen for an integration into the SR6-11C system platform. Up to 10 RF Modules are integrate able in one SR6-11C system chassis.

RF Specification

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	Z_{IN}/Z_{OUT}		50		Ω	
low frequency	f_{MIN}		100		kHz	
high frequency	f_{MAX}		18		GHz	
gain	S_{21}		3		dB	
input return loss	S_{11}		-13		dB	
output return loss	S_{22}		-13		dB	
reverse isolation	S_{12}		-90		dB	
output isolation	S_{23}		-13	-8	dB	$d = 1, f < 4\text{GHz}$
	S_{23}		-23	-17	dB	$d = 1, f \geq 4\text{ GHz}$
			-30		dB	$d > 1, f \geq 4\text{ GHz}$
1 dB compression	P_{1dB}		+6		dBm	
3 rd order intercept	OIP3		+12		dBm	
noise figure	NF		10	21	dB	$10\text{ MHz} \leq f < 0.5\text{ GHz}$
	NF		7	9	dB	$0.5\text{ GHz} \leq f < 3\text{ GHz}$
	NF		5		dB	$3\text{ GHz} \leq f \leq 15\text{ GHz}$
	NF		8		dB	$f > 15\text{ GHz}$
input power	P_{in}			+10	dBm	CW, no damage
maximum DC voltage	U_{DC}			20	V	all RF ports
ESD discharge resistor	R_{ESD}		4.7		k Ω	all RF ports
RF connectors	NF	SMA female				

Common Specification

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply	U_{DC}	23.5		24.5	V	DC
power consumption	P_{DC}		10		W	operation
dimensions	W x H x D	approx. 30 x 262 x 197			mm	6 U, 6 HP
weight	m		1.3		kg	
operating temp. range	T_o	+5		+55	$^{\circ}\text{C}$	ambience
storage temp. range	T_s	-40		+70	$^{\circ}\text{C}$	
ordering information		WSDU-1X8U		2109.6000.1		

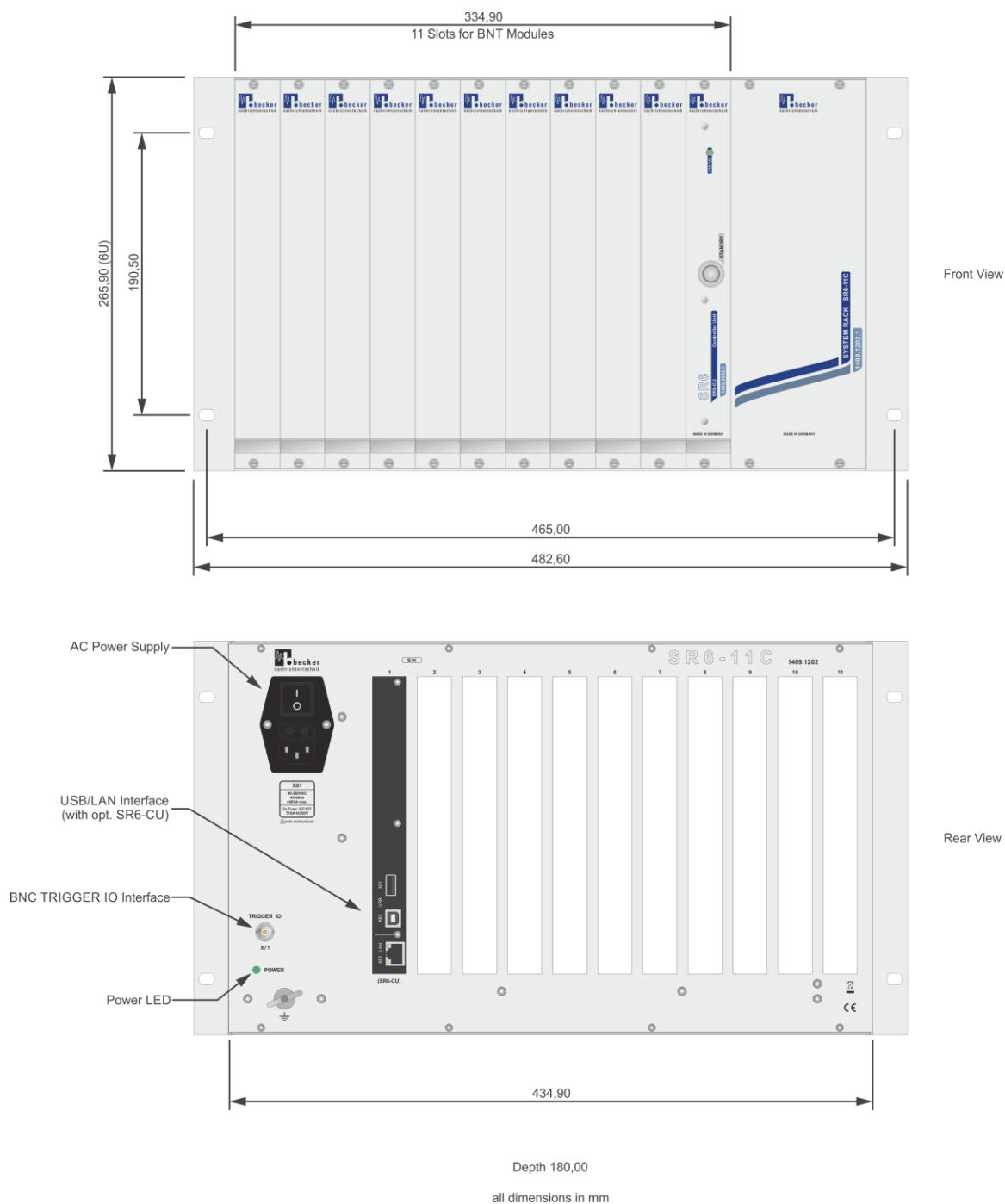
Appearances

SR6-11C System Platform

The WSDU-1X8U module is foreseen for the integration into the SR6-11C system platform. 11 slots in the SR6-11C can be used for modules like RF switches, matrices, multicouplers, attenuators,

BIAS-Ts, level detectors, bi-directional splitters/combiners for signal conditioning and a controller unit. For the module health monitoring the WSDU-1X8U a SR6-CU controller unit is required.

Dimensions of SR6-11C System Platform



Front View



Rear View



SR6-11C System Platform



Related Products

Product	Description	P/N
SR6-11C	System Platform with 11 Slots for Modules	1409.1202.1
SR6-CU	Controller Unit with LAN and USB Remote Interface	1409.3000.1
Unidirectional Products: Active Multicouplers, Matrices, Level Detectors		
WSDU-1X8L	8 Way Multicoupler Module, 100 kHz ... 4000 MHz	1807.6100.1
WSDU-2X4L	2 Section Hi Dynamic 4 Way Multicoupler Module, 100 kHz ... 4000 MHz	1807.6200.1
WSDU-2X4E+	2 Section 1x4 plus 1x2 Multicoupler Module, 20 ... 8000 MHz	1501.6200.1
WSDU-1X8U	Ultra-Wideband 8-Way Multicoupler Module, 100 kHz ... 18000 MHz	2109.6000.1
WSDU-1X8S	High Dynamic 1x8 Shortwave Multicoupler Module, 300 kHz ... 30 MHz	1502.6100.1
WSDU-1X8A	8 Way High Dynamic Signal Conditioning Multicoupler, 100 kHz ... 4000 MHz	1807.6300.1
WSDU-2X4A	2 Section 4 Way High Dynamic Signal Conditioning Multicoupler, 100 kHz ... 4000 MHz	1807.6400.1
WSDU-1X2PM	2 Channel, 5 W Multicoupler with ALC Capability, 20 MHz...3000 MHz	1606.6000.1
RSWM-4X4	4x4 Switching Matrix -Non-blocking-, 100 kHz ... 4000 MHz or 20 MHz ... 4000 MHz	1205.4100.1
RSWM-4X4E	4x4 Ultra-Wideband Switching Matrix -Non-blocking-, 20 MHz ... 8000 MHz	2001.4100.1
RFLD-8RE	8 Channel True Power RF Level Detector, 1 MHz ... 8000 MHz	1505.8000.1
Bi-Directional Products: Switches, Matrices, Attenuators, Delay Lines, BIAS-Ts, Splitters/Combiners, Filters		
BSDU-1X8A	8 Way Bi-directional Signal Conditioning Splitter Module, 500 ... 9000 MHz	2109.6200.1
BSDU-2X4A	2 Section 4 Way Bi-directional Signal Conditioning Splitter Module, 500 ... 9000 MHz	2109.6250.1
RSWU-2SP4TS+	2 Channel Non-reflective SP4T Switches plus 1 Channel SPDT Switch, 100 kHz ... 8500 MHz	1408.4010.1
RSWU-8SPSTS	8 Channel Non-reflective SPST Switch, 100 kHz ... 8500 MHz	1408.4000.1
RSWU-4SPDTS	4 Channel Non-reflective SPDT Switch, 100 kHz ... 8500 MHz	1408.4020.1
RSWU-8SPST-CS	8 Channel High Isolation SPST with DC Load Simulation, 100 kHz ... 7500 MHz	1811.4100.1
BSWM-4X4E	4x4 High Isolation Bi-Directional Switching Matrix –Blocking-, 100 kHz ... 7500 MHz	1205.4600.1
ATT-8E	8 Channel Digital Step Attenuator 0 ... 31.75 dB, 100 kHz ... 8000 MHz	1503.4000.1
DLL-4	4 Channel Programmable Delay Line 0 ... 1700 ps, 250 MHz ... 4000 MHz	1303.4200.1
PT-4CS	4 Channel Programmable DC Sink 0 ... 400 mA, 100 kHz ... 8500 MHz	1605.2020.1
PT-4CL	4 Channel Wideband DC Load, 100 kHz ... 8500 MHz	1605.2040.1
FBS-1590	L1 Band GNSS Notch Filter	1511.5100.1

