

# BSDU-1X8A

Wideband 8-Way Signal Conditioning Splitter/Combiner 500...9000 MHz

## Features

- extremely wideband
- bidirectional signal distribution
- health monitoring with SNMP function
- slot-in module for SR6-11C system platform

## Applications

- Air interface emulation
- R&D (Research & Development)
- Product validation



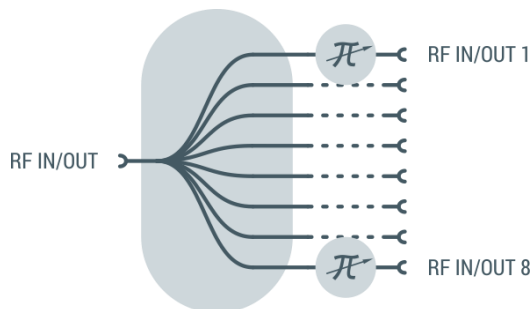
## Scope

BSDU-1X8A is a wideband bi-directional splitter/combiner slot-in module, that distributes and combines signals from one common port to 8 equivalent ports. Each channel is equipped with a signal conditioning unit to individually adjust the signal level.

The frequency range extends a frequency range from 500 MHz to more than 9 GHz and is therefore suitable for the latest Wi-Fi and cellular communication channels such as 802.11ax, and 5G NR mmWave.

The module is suitable for use in air interface emulation applications and can be used in a flexible manner due to its excellent characteristics.

## Principal Block Diagram



## Module Monitoring

In combination with the SR6-CU controller module, the BSDU-1X8A 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 BSDU-1X8A is able to identify failures and to inform the supervising system automatically.

**RF Specification**

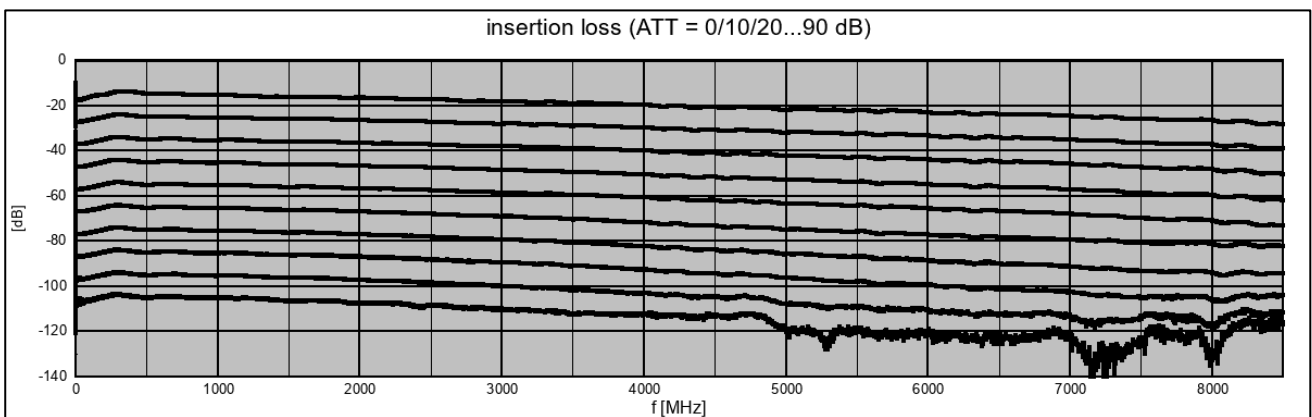
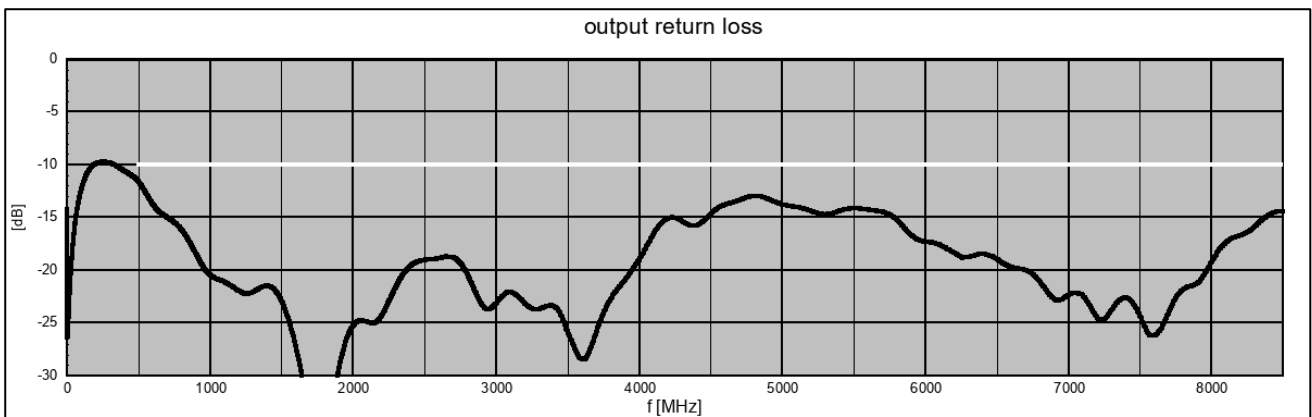
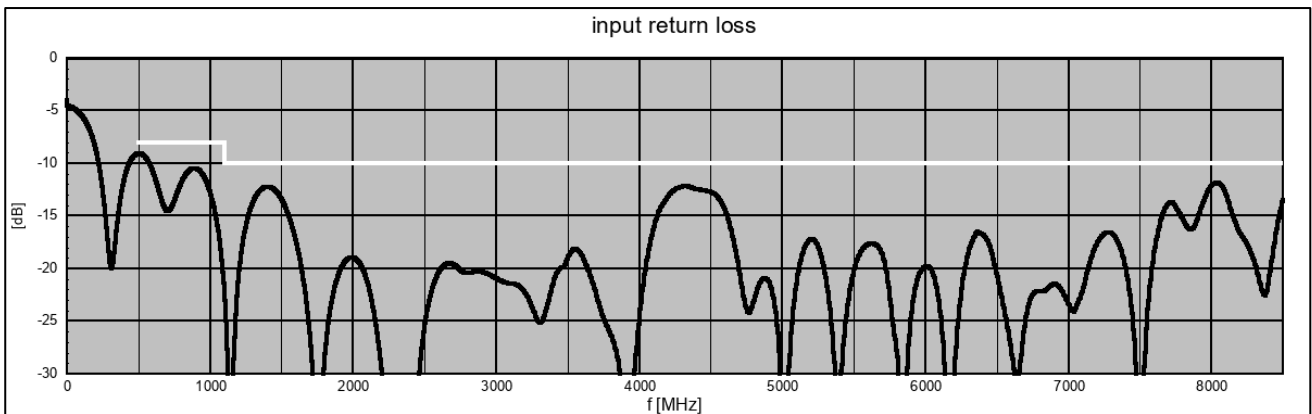
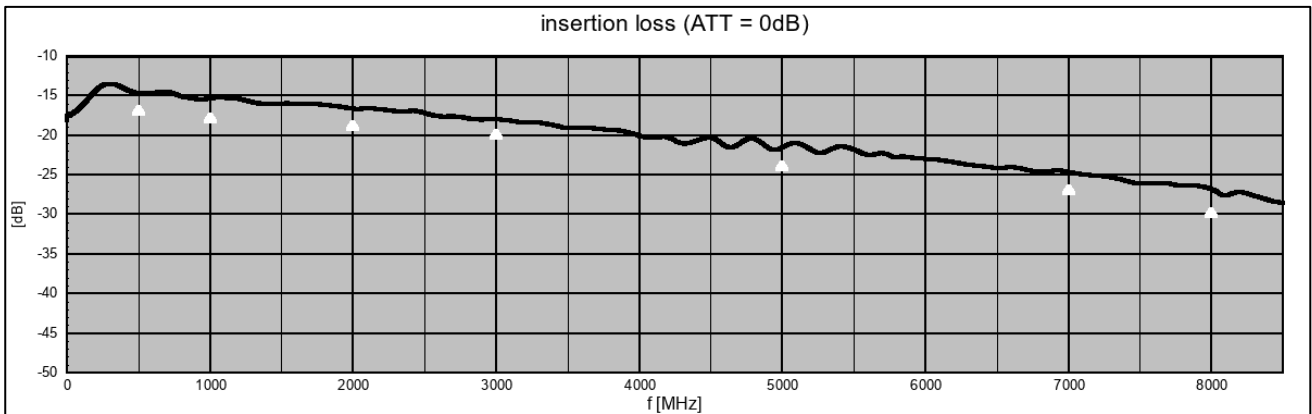
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	$Z_{IN}/Z_{OUT}$		50		$\Omega$	
low frequency	$f_{MIN}$			500	MHz	
high frequency	$f_{MAX}$	8.5	9		GHz	
insertion loss	$S_{21}$	-16	-14		dB	f = 0.5 GHz
	$S_{21}$	-17	-15		dB	f = 1 GHz
	$S_{21}$	-18	-16		dB	f = 2 GHz
	$S_{21}$	-19	-17		dB	f = 3 GHz
	$S_{21}$	-23	-21		dB	f = 5 GHz
	$S_{21}$	-26	-24		dB	f = 7 GHz
	$S_{21}$	-30	-28		dB	f = 8.5 GHz
attenuation range	a	0.00		95.25	dB	
attenuation step size	$\Delta a$		0.25		dB	
input return loss	$S_{11}$		-10	-8	dB	f < 1.1 GHz
	$S_{11}$		-17	-10	dB	f ≥ 1.1 GHz
output return loss	$S_{22}$		-17	-10	dB	
output isolation	$S_{23}$		-18	-12	dB	d = 1, f < 2GHz
	$S_{23}$		-35	-26	dB	d = 1, f ≥ 2 GHz
			-45		dB	d > 1, f ≥ 4 GHz
input power	$P_{in}$			+33	dBm	RF COM port, CW, no damage
	$P_{in}$			+28	dBm	RF DIST ports, CW, no damage
maximum DC voltage	$U_{DC}$			20	V	all RF ports
ESD discharge resistor	$R_{ESD}$		4.7		k $\Omega$	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	$P_{DC}$		170		mW	operation
dimensions	W x H x D	approx. 30 x 262 x 197			mm	6 U, 6 HP
weight	m		1.2		kg	
operating temp. range	$T_o$	+5		+55	°C	ambiance
storage temp. range	$T_s$	-40		+70	°C	
ordering information		BSDU-1X8A		2109.6200.1		



### S-Parameters (typical responses)



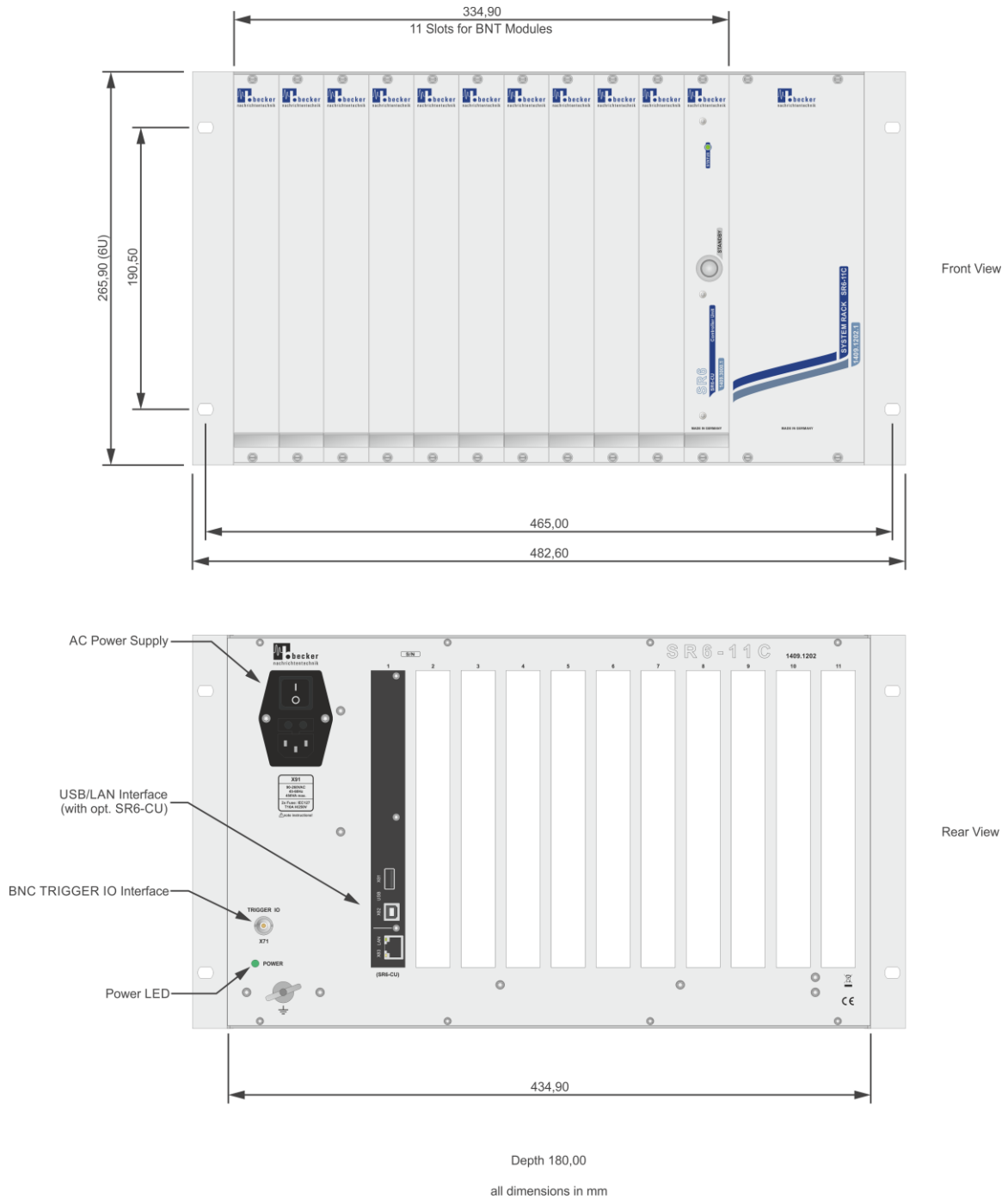
## Appearances

### SR6-11C System Platform

The BSDU-1X8A 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 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: Multicouplers, Matrices, Level Detectors

Product	Description	P/N
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**

Product	Description	P/N
BSDU-1X8	8 Way Bidirectional Splitter/Combiner 500...9000 MHz	2109.6200.5
BSDU-1X8A	8 Way Bi-directional Signal Conditioning Splitter Module 500 ... 9000 MHz	2109.6200.1
BSDU-2X4	2 Section 4 Way Bidirectional Signal Splitter/Combiner 500...9000 MHz	2109.6250.5
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

