BSDU-1X8AR

8 Way Signal Conditioning Splitter/Combiner, 500…9000 MHz

Features

- extremely wideband
- bidirectional signal distribution
- health monitoring with SNMP

Applications

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

Scope

BSDU-1X8AR is a wideband bi-directional splitter/combiner device, 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 device is suitable for use in air interface emulation applications and can be used in a flexible manner due to its excellent characteristics.

Device Monitoring

The BSDU-1X8AR offers a device monitoring function. The health status can be read out via LAN and USB remote interface. The health status gives information about the status and the temperature of the internal 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.

BSDU-1X8AR is able to identify failures and to inform the supervising system automatically.
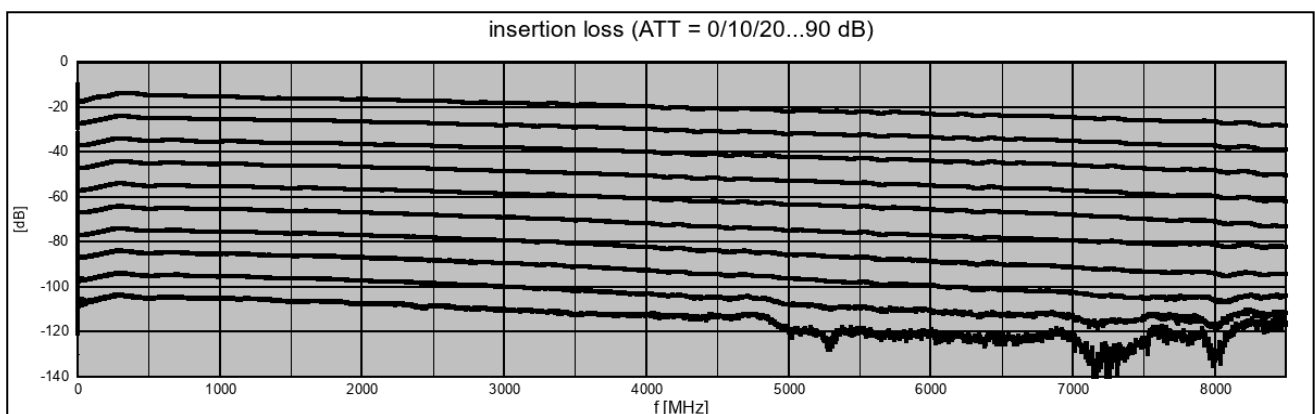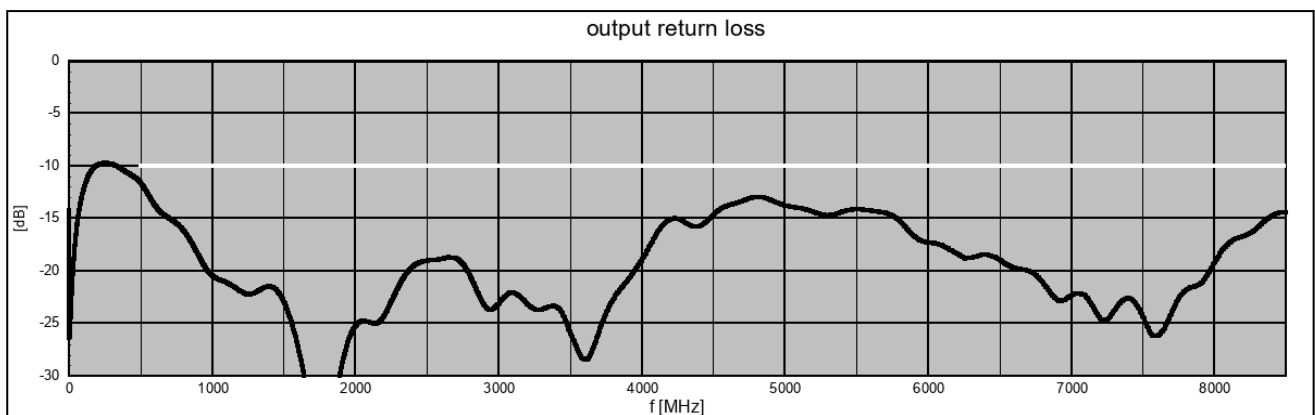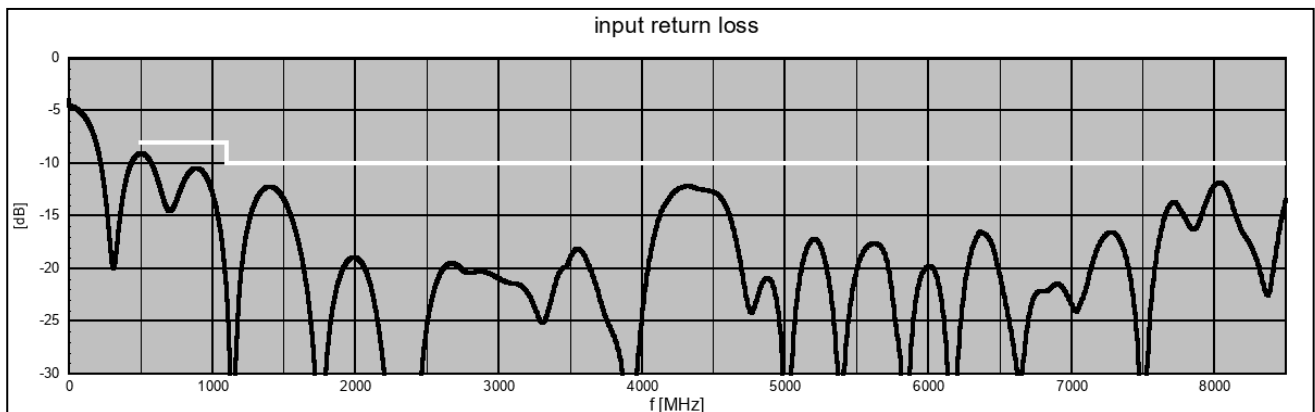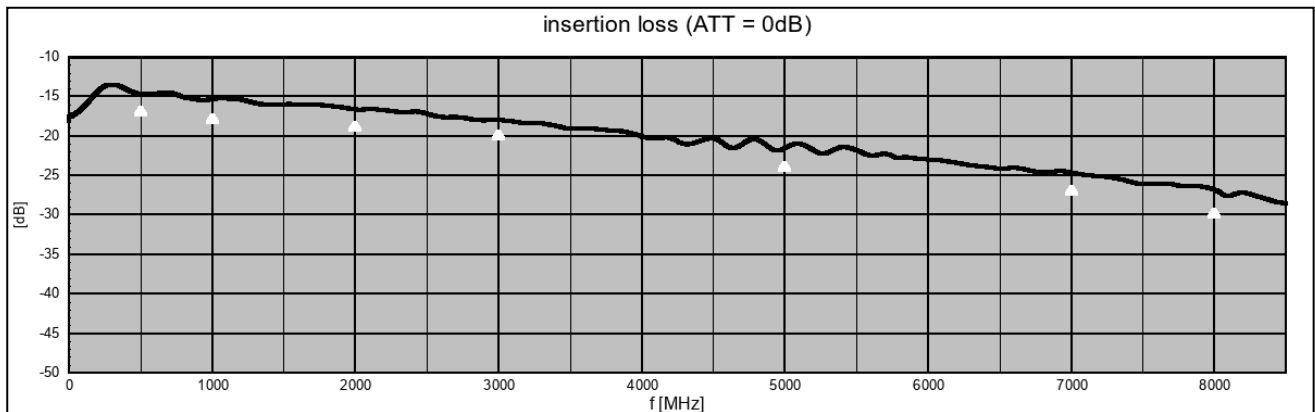
Principal Block Diagram
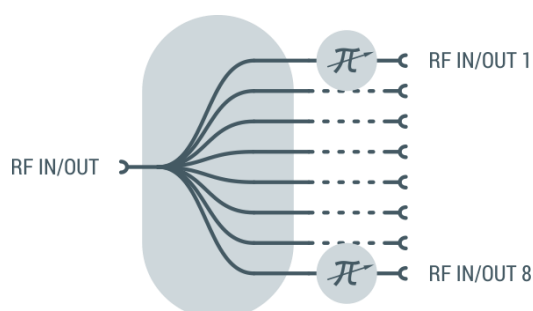
RF Specification

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	Z_{IN}/Z_{OUT}		50		Ω	
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	Δa		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		kΩ	all RF ports
RF connectors	NF		N female			

Common Specification

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
voltage supply range	U_{AC}	90	230	260	V	50 / 60 Hz AC
power consumption	P_{AC}		200		mW	operation
power socket	X_{AC}	IEC-60320 C14				country specific mains cable
recommended fuse	F	IEC127 T3,15A H/250V				pre-installed
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
	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						
BSDU-1X8AR	2109.6212.1	variant with AC power supply				
BSDU-1X8AR	2109.6212.2	variant with DC power supply				

S-Parameters (typical responses)

insertion loss (ATT = 0dB)

input return loss

output return loss

insertion loss (ATT = 0/10/20...90 dB)

Appearances

Front View

Rear View

Dimensions

465 mm

32 mm

44 mm

265 mm

323 mm

483 mm

all dimensions in mm
± 2 mm
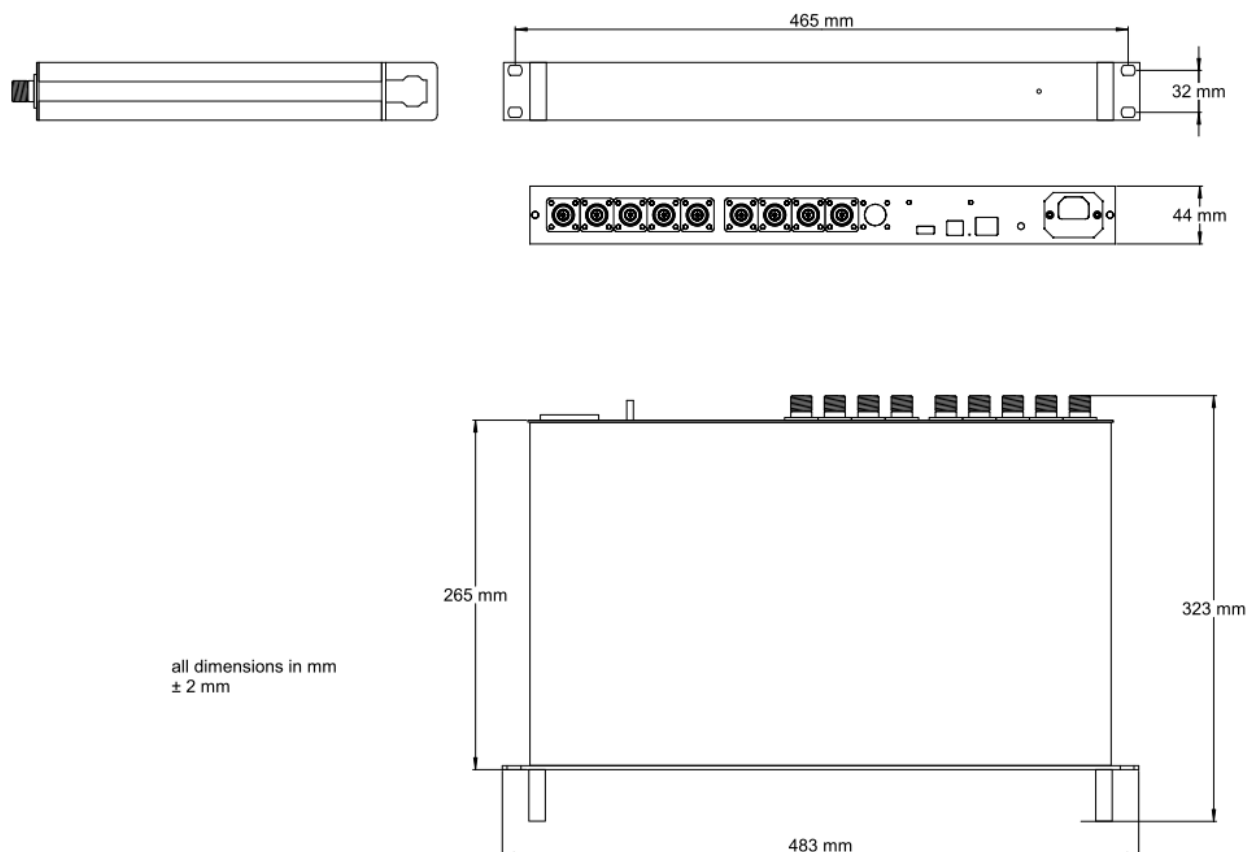
Related Products

Product	P/N	Description
WSDU-1X8LR	1107.6152	High Dynamic 8 Way Multicoupler for Broadcast Signals 100 kHz … 4000 MHz AC or DC power supply
WSDU-2X4LR	1107.6252	High Dynamic 2 Section 4 Way Multicoupler for Broadcast Signals 100 kHz … 4000 MHz AC or DC power supply
WSDU-1X8R	1107.6102	High Dynamic 8 Way Multicoupler 100 kHz … 4000 MHz AC or DC power supply
WSDU-2X4R	1107.6202	High Dynamic 2 Section 4 Way Multicoupler 100 kHz … 4000 MHz AC or DC power supply
WSDU-1X8SR	1502.6102	High Dynamic 1X8 Shortwave Signal Distribution Unit 200 kHz … 30 MHz AC or DC power supply Variant with LAN remote interface with SNMPv2 trap function available
WSDU-2X4SER	2306.6102	2-Section 4-Way Signal Distribution Unit Section A: 200 kHz … 30 MHz Section B: 20… 8000 MHz AC or DC power supply Variant with LAN remote interface with SNMPv2 trap function available
WSDU-1X8ER	1501.6302	Extremely Wideband 1 to 8 Signal Distribution Unit 20…8000 MHz AC or DC power supply Variant with LAN remote interface with SNMPv2 trap function available
WSDU-2X4ER	1501.6202	Extremely Wideband 2 Section 1X4 Signal Distribution Unit 20 MHz… 8000 MHz AC or DC power supply Variant with LAN remote interface with SNMPv2 trap function available
WSDU-1X8UR	2109.6002	Ultra-Wideband 8-Way Signal Distribution Unit 100 kHz … 18 GHz AC or DC power supply LAN remote interface with SNMPv2 trap function
BSDU-1X8ER	2109.6202	Extremely Wideband Bidirectional 1X8 Signal Splitter/Combiner 500…9000 MHz
BSDU-2X4ER	2109.6252	Extremely Wideband Bidirectional 2 Section 1X4 Signal Splitter/Combiner 500…9000 MHz
BSDU-1X8AR	2109.6212	8 Way High Dynamic Signal Conditioning Multicoupler 500…9000 MHz AC or DC power supply LAN remote interface
BSDU-2X4AR	2109.6262	2 Section, 4 Way Bidirectional Signal Conditioning Splitter/Combiner 500…9000 MHz AC or DC power supply LAN remote interface
BSDU-4X32PR	2408.6002	Universal, Non-reflective 4 Channel RF Multi Power Attenuator 600 MHz … 6000 MHz LAN remote interface
BSDU-4X4R	2408.6102	4X4 Signal Splitter/Combiner 600 MHz … 6000 MHz
BSDU-4X8R	2408.6112	4X8 Signal Splitter/Combiner 600 MHz … 6000 MHz