

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



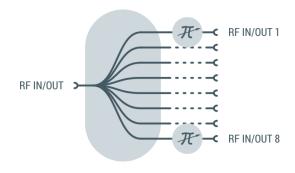
Scope

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.

Principal Block Diagram



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.

RF Specification

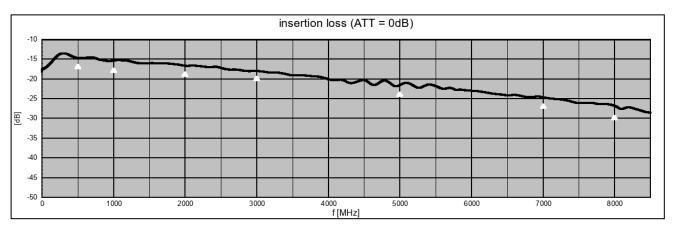
Parameter	Symbol	Min.	Тур.	Max.	Unit	Condition
impedance	ZIN/ZOUT		50		Ω	
low frequency	f _{MIN}			500	MHz	
high frequency	f _{MAX}	8.5	9		GHz	
insertion loss	S ₂₁	-16	-14		dB	f = 0.5 GHz
	S ₂₁	-17	-15		dB	f = 1 GHz
	S ₂₁	-18	-16		dB	f = 2 GHz
	S ₂₁	-19	-17		dB	f = 3 GHz
	S ₂₁	-23	-21		dB	f = 5 GHz
	S ₂₁	-26	-24		dB	f = 7 GHz
	S ₂₁	-30	-28		dB	f = 8.5 GHz
attenuation range	а	0.00		95.25	dB	
attenuation step size	∆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	Pin			+10	dBm	CW, no damage
maximum DC voltage	UDC			20	V	all RF ports
ESD discharge resistor	Resp		4.7		kΩ	all RF ports
RF connectors	NF		N female			

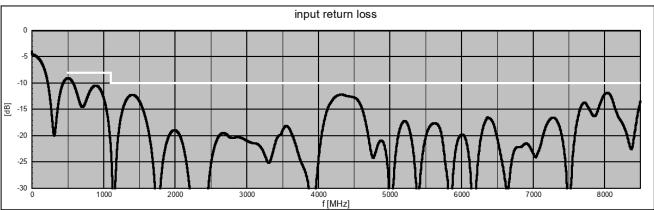
Common Specification

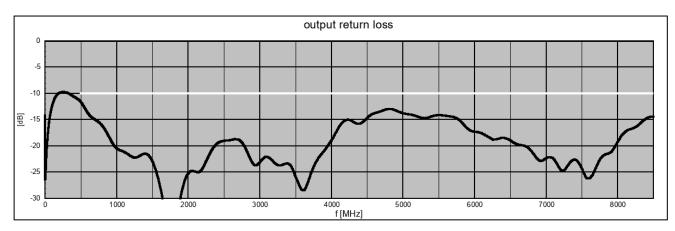
Parameter Symbol Min. Typ. Max. Unit Condition voltage supply range UAc 90 230 260 V 50 / 60 Hz AC power consumption PAC 200 mW operation power socket XAc IEC-60320 C14 country specific mains cable recommended fuse F IEC127 T3,15A H/250V pre-installed Dimensions and weight dimensions W x H x D approx. 482 x 44 x 265 mm 19" 1 U, without connectors and handles weight m 3.4 kg Environment conditions operating temp. range To +5 +5 +45 °C storage temp. range Ts -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) EU: in line with low voltage directive applied harmonized standards: EN 61326-2-1, EN 55011 (class B), EN 61000-3-2, EN 61000-3-2, EN 61000-3-2, EN 61000-3-2, EN 61000-3-2, EN 61000-3-2, 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	Common Specification						
power consumption power socket	Parameter	Symbol	Min.	Тур.	Max.	Unit	Condition
power socket 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 To +5 +5 +45 °C storage temp. range Ts -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 Electromagnetic compatibility EU: in line with EMC directive (2014/30/EC) applied harmonized standards: 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) Ordering information BSDU-1X8AR 2109.6212.1 variant with AC power supply	voltage supply range	U _{AC}	90	230	260	V	50 / 60 Hz AC
recommended fuse 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 storage temp. range Ts -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) EU: in line with low voltage directive (2014/35/EC) Ordering information BSDU-1X8AR 2109.6212.1 variant with AC power supply	power consumption	Pac		200		mW	operation
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 To storage temp. range Ts -40 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) EU: in line with low voltage directive (2014/35/EC) Electrical safety EU: in line with low voltage directive (2014/35/EC) Ordering information BSDU-1X8AR 2109.6212.1 variant with AC power supply	power socket	X _{AC}	IEC-60320 C14				country specific mains cable
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 operating temp. range storage temp. range Ts -40 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) EU: in line with low voltage directive (2014/35/EC) Ordering information BSDU-1X8AR 2109.6212.1 variant with AC power supply	recommended fuse	F	IEC127	′ T3,15A F	l/250V		pre-installed
weight m 3.4 kg Environment conditions operating temp. range To +5 +45 °C storage temp. range Ts -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) EU: in line with EMC directive (2014/30/EC) EU: in line with low voltage directive applied harmonized standards: 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 applied harmonized standard: EN 61010-1 Ordering information BSDU-1X8AR 2109.6212.1 variant with AC power supply	Dimensions and weigh	nt					
Environment conditions operating temp. range To +5 +45 °C storage temp. range Ts -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	dimensions	WxHxD	approx. 482 x 44 x 265		mm		
operating temp. range To +5 +45 °C storage temp. range Ts -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 61000-3-2 Electrical safety EU: in line with low voltage directive applied harmonized standard: (2014/35/EC) Ordering information BSDU-1X8AR 2109.6212.1 variant with AC power supply	weight	m		3.4		kg	
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Remote interfaces (variant with remote device monitoring) remote ports LAN 10/100BaseT TCP/IP RJ45 USB VSB VSB Product conformity Electromagnetic compatibility EU: in line with EMC directive (2014/30/EC) 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	operating temp. range	To	+5		+45	_	
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 61010-1-1 Ordering information BSDU-1X8AR 2109.6212.1 variant with AC power supply	storage temp. range	Ts	-40		+70	°C	
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Electromagnetic compatibility Electromagnetic compatibility EU: in line with EMC directive (2014/30/EC) 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 standards: EN 61010-1 Ordering information BSDU-1X8AR 2109.6212.1 variant with AC power supply	remote ports	LAN	10/100BaseT TCP/IP			RJ45	
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 applied harmonized standard: EN 61010-1 Ordering information BSDU-1X8AR 2109.6212.1 variant with AC power supply		USB	2.0 (high speed)				USB type B
compatibility EN 61326-1 (for use in industrial environment), EN 61326-2-1, EN 61326-2-1, EN 65011 (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	Product conformity						
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BSDU-1X8AR 2109.6212.1 variant with AC power supply	Electrical safety						
	Ordering information						
BSDU-1X8AR 2109.6212.2 variant with DC power supply	BSDU-1X8AR	2109.6212.1 variant with AC power sup					pply
	BSDU-1X8AR	2109.62	212.2	variant w	ith DC p	ower sup	pply

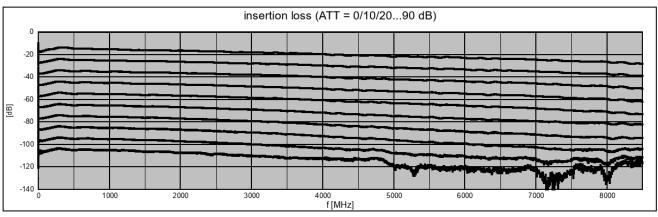


S-Parameters (typical responses)





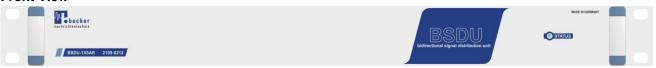




released version 1.00 - July 2024

Appearances

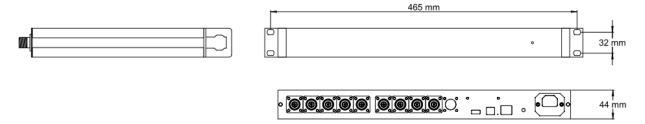
Front View



Rear View



Dimensions





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
BSDU-1X8AR	1807.6302	8 Way High Dynamic Signal Conditioning Multicoupler
		100 kHz4000 MHz
14/0D11 41/00D	4=00.0400	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
WORLLOVACED	0000 0400	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
WSDU-INGER	1301.0302	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
WODO ZXALIK	1301.0202	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
1.000 17.0010	2.00.0002	100 kHz 18 GHz
		AC or DC power supply
		LAN remote interface with SNMPv2 trap function