

WSDU-2X4L

2 Section High Dynamic 4 Way Multicoupler Module 100 kHz ... 4000 MHz

Features

- 2 RF sections
- wideband
- high dynamic
- lossless in signal distribution

Applications

- Broadcast and GNSS distribution
- AM, FM, IBOC, DAB, DVB-T, SDARS
- GNSS :GPS, Galileo, GLONASS, Beidou
- R&D (Research & Development)
- Product validation
- Production

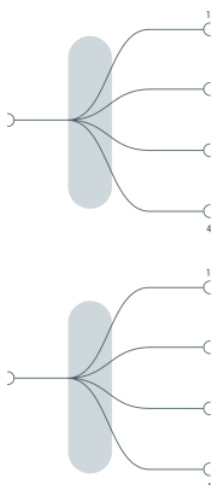


Scope

The WSDU-2X4A is a wideband signal distribution unit consisting two active multicouplers sections. Each section distributes RF signal from one input to 4 outputs. The module operates in the frequency range 100 kHz to more than 4000 MHz. The slot-in module is foreseen for integration into SR6-11C system platform.

Principal Block Diagram

The WSDU-2X4L offers two independent multicoupler sections. Between the sections is high isolation, they can be used separate with different signals without the influence from adjacent channels.



Distribution without Loss in Level

The RF input signals are amplified using broadband low-noise amplifiers with a wide dynamic range. As a result, the distributed input signals are made available at the four outputs in each section with approx. 1 dB gain. RF input and the RF outputs are SMA female connector type, located on the rear side of the module.

Wideband Distribution Systems

The wide frequency range makes WSDU-2X4L ideally suited for applications such as research and development (R&D) or production where broadcast and navigation signals must be distributed to many devices under test (DUTs).

High Output-to-Output Isolation

WSDU-2X4L features a high output-to-output isolation. Thus, changing the load at an output causes nearly no effects to the power level at the other outputs.

Rugged design

WSDU-2X4L is housed in an aluminium shielding cover which avoids influences of radio signals of the environment to the internal RF signals.

RF Specification

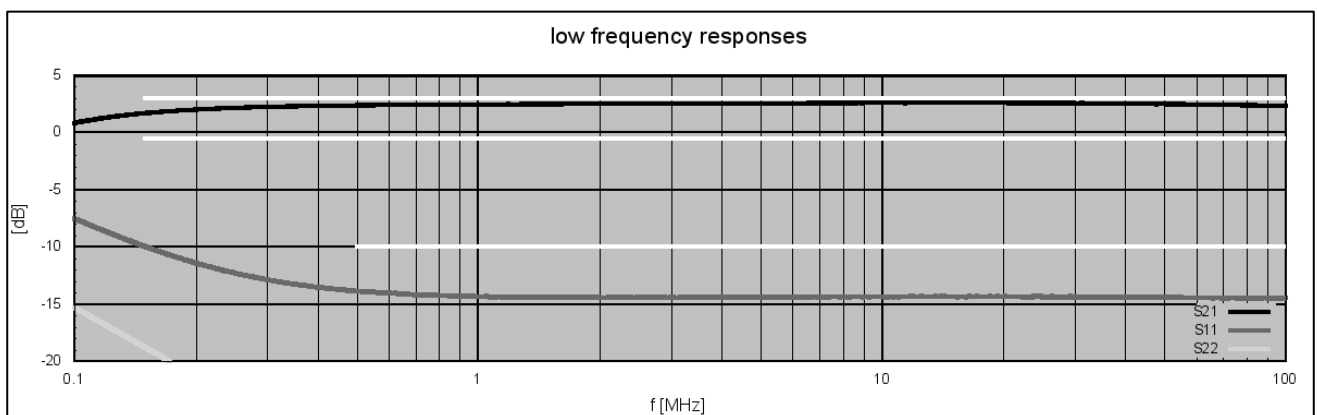
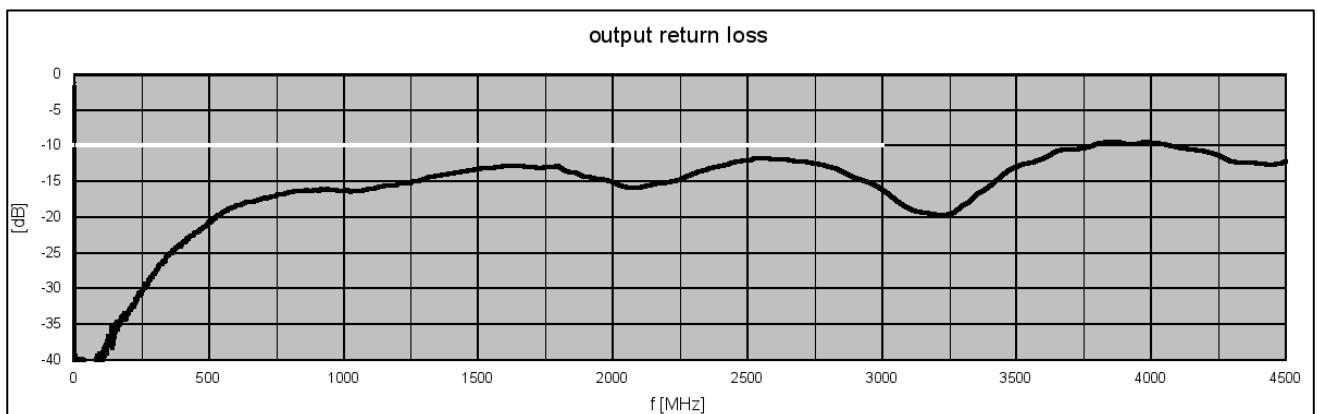
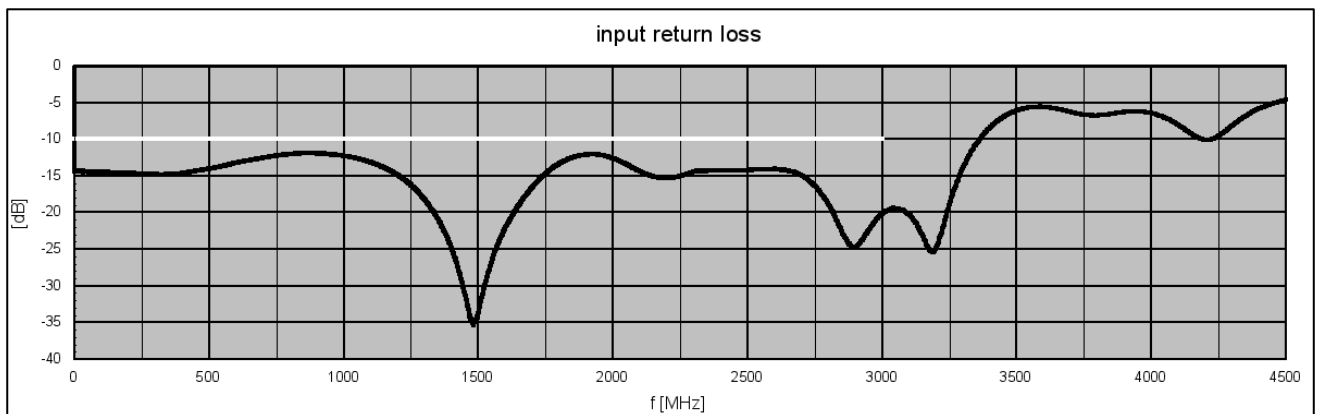
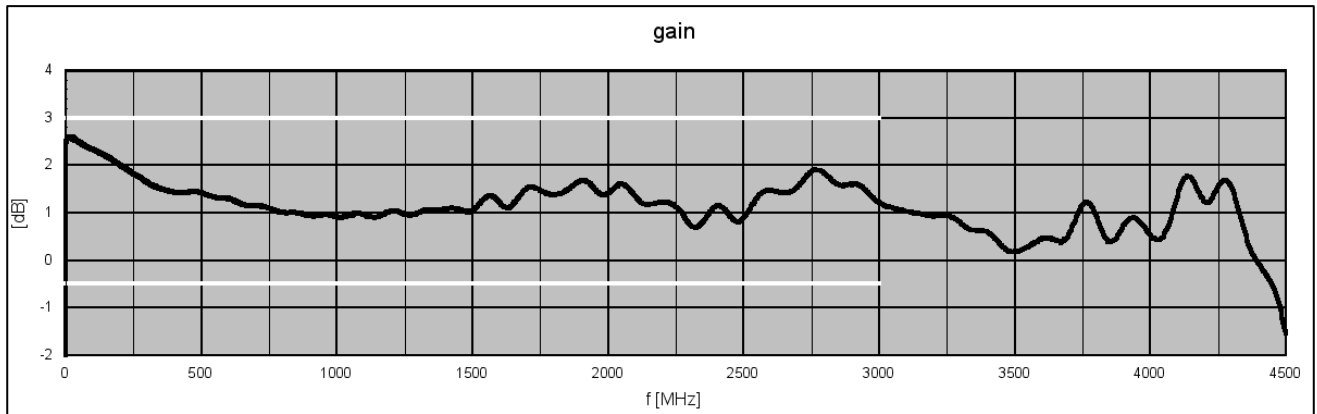
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
number of RF sections	n_{SEC}		2			
impedance	Z_{IN}/Z_{OUT}		50		Ω	
low frequency	f_{MIN}		100	150	kHz	
high frequency	f_{MAX}	4000	4500		MHz	
gain	S_{21}	-0,5	1	3	dB	
input return loss	S_{11}		-15	-10	dB	$500 \text{ kHz} \leq f \leq 3000 \text{ MHz}$
output return loss	S_{22}		-15	-10	dB	$f \leq 3000 \text{ MHz}$
reverse isolation	S_{12}		-64		dB	
output isolation	S_{23}		-25	-23	dB	neighbourded outputs ($d=1$)
	S_{23}		-48		dB	distance > 1
section isolation	S_{21SEC}		-90		dB	
1 dB compression	P_{1dB}	+7	+8		dBm	$f \leq 500 \text{ MHz}$
	P_{1dB}	+5	+7			$500 \text{ MHz} < f \leq 3000 \text{ MHz}$
3 rd order intercept	$OIP3^1$	+16	+20		dBm	$f = 1000 \text{ MHz}$
	$OIP3^1$	+15	+18		dBm	$f = 2000 \text{ MHz}$
	$OIP3^1$	+13	+16		dBm	$f = 3000 \text{ MHz}$
noise figure	NF		10	13	dB	
maximum input power	$P_{in,max}$			+15	dBm	CW, no damage
DC voltage	U_{DC}			20	V	input and outputs
ESD discharge resistor	R_{ESD}		4.7		k Ω	input and outputs
RF connectors	X_{RF}	SMA female				

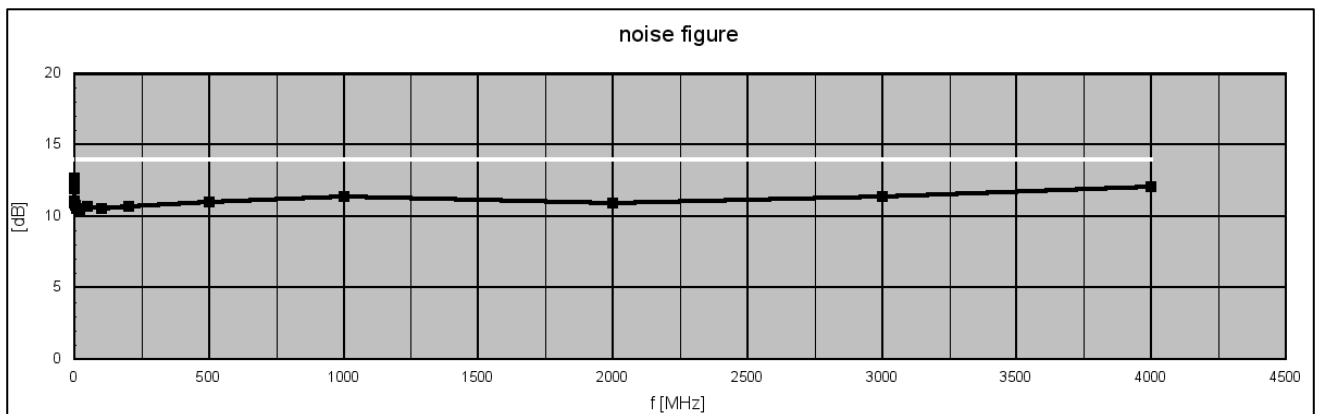
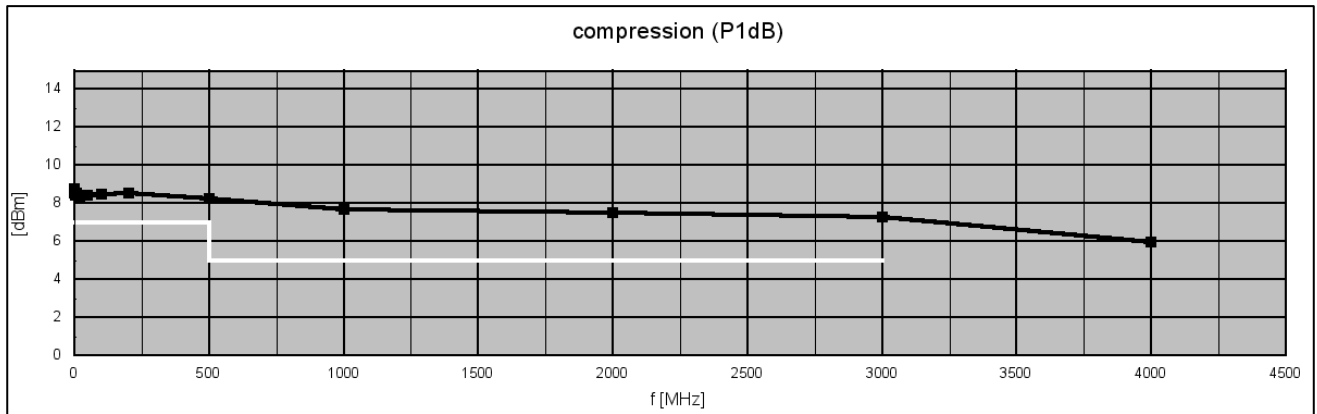
Note 1: frequency space 100 MHz

Common Specification

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply	U_{DC}	23.5		24.5	V	DC
power consumption	P_{DC}		5.5		W	
dimensions	W x H x D	approx. 30 x 262 x 197			mm	6 U, 6HP
weight	m		1.2		kg	
operating temp. range	T_o	+5		+55	$^{\circ}\text{C}$	ambiance
storage temp. range	T_s	-40		+70	$^{\circ}\text{C}$	
ordering information		WSDU-2X4L		1807.6300.1		



S-Parameters (typical responses)

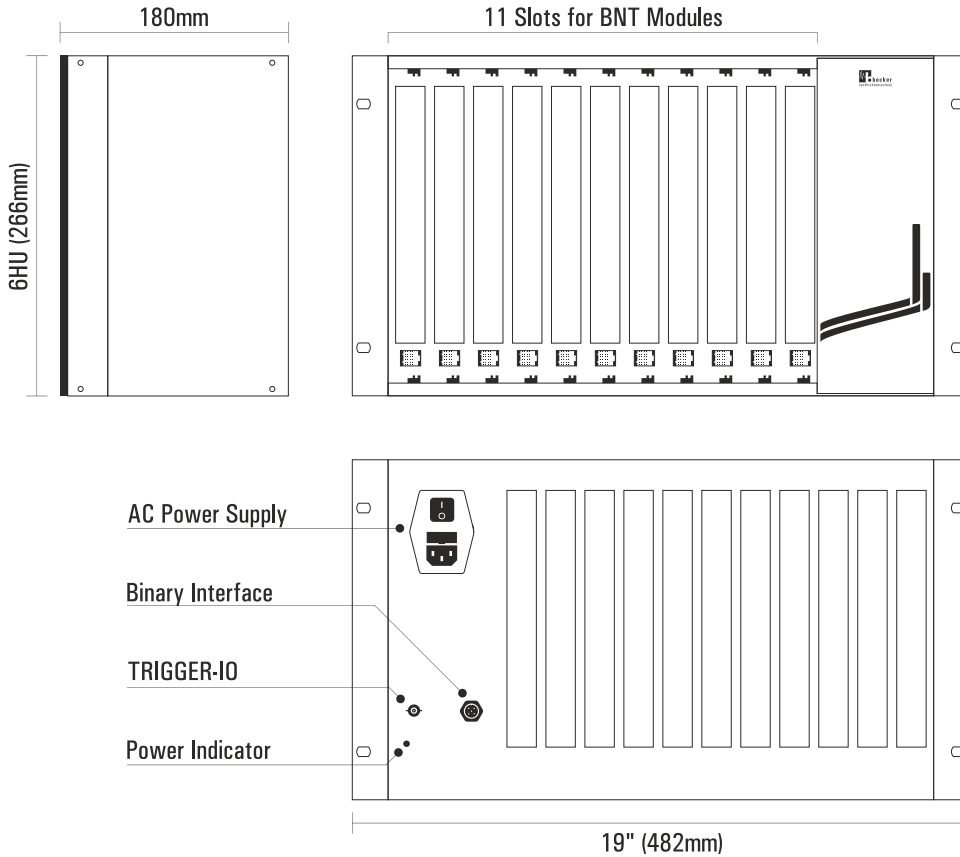
Dynamic Range

SR6-11C System Platform

The WSDU-1X8L 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.

Dimensions of SR6-11C System Platform



Appearances



WSDU-2X4L front view

WSDU-2X4L rear view

SR6-11C front view



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-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-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-1X8S	High Dynamic 1x8 Shortwave Multicoupler Module 300 kHz ... 30 MHz	1502.6100.1
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
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		
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
BSDU-2X4A+	2 Section 4 Way, Bi-Directional Signal Conditioning plus 2 Way Splitter/Combiner, 500 MHz ... 7500 MHz	1903.6100.1
BSDU-2X4+	2 Section 4 Way Wideband Bi-Directional plus 2 Way Splitter/Combiner, 500 MHz ... 7500 MHz	1903.6200.1
FBS-1590	L1 Band GNSS Notch Filter	1511.5100.1

