

## 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

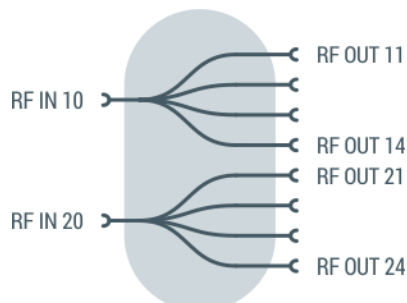


### Scope

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		$\Omega$	
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 <sup>rd</sup> 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 $\Omega$	input and outputs
RF connectors	$X_{RF}$	SMA female				

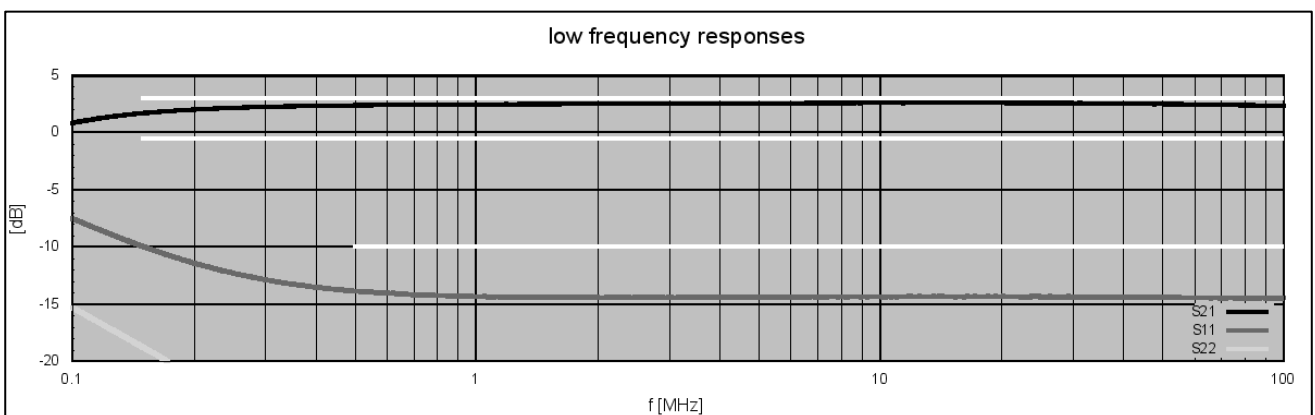
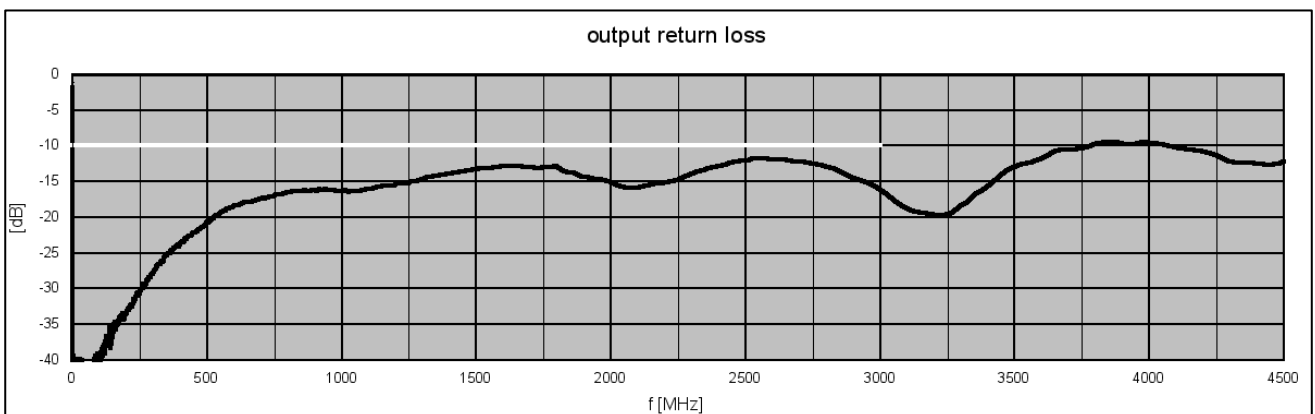
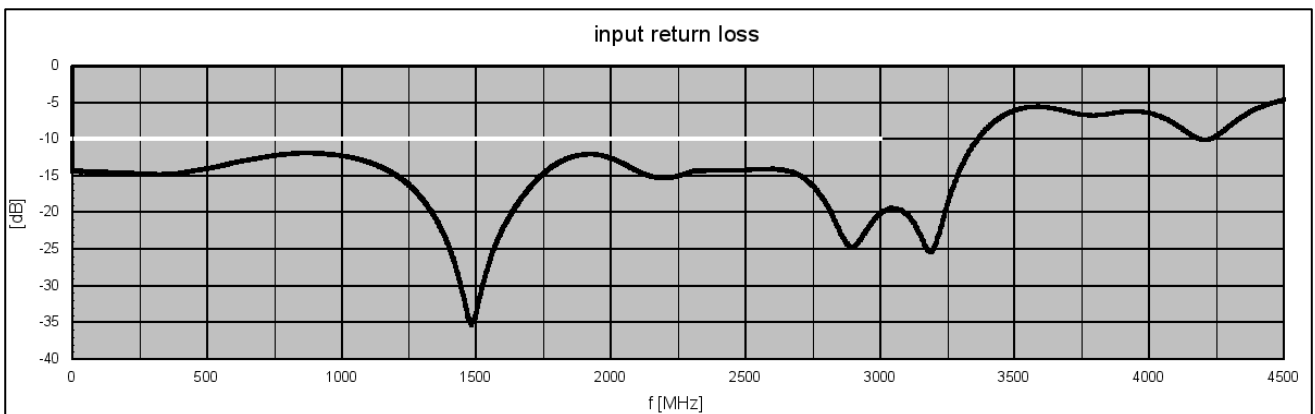
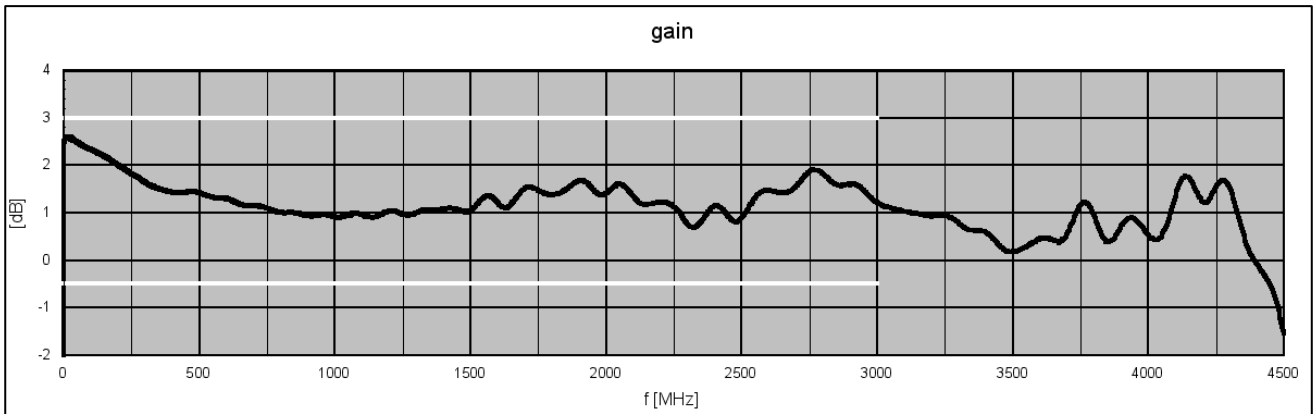
Note 1: frequency space 100 MHz

**Common Specification**

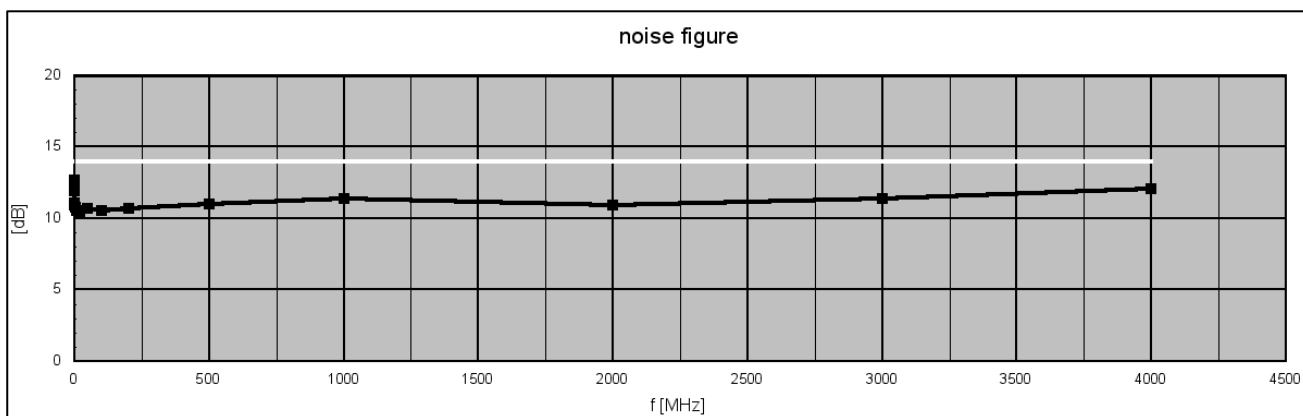
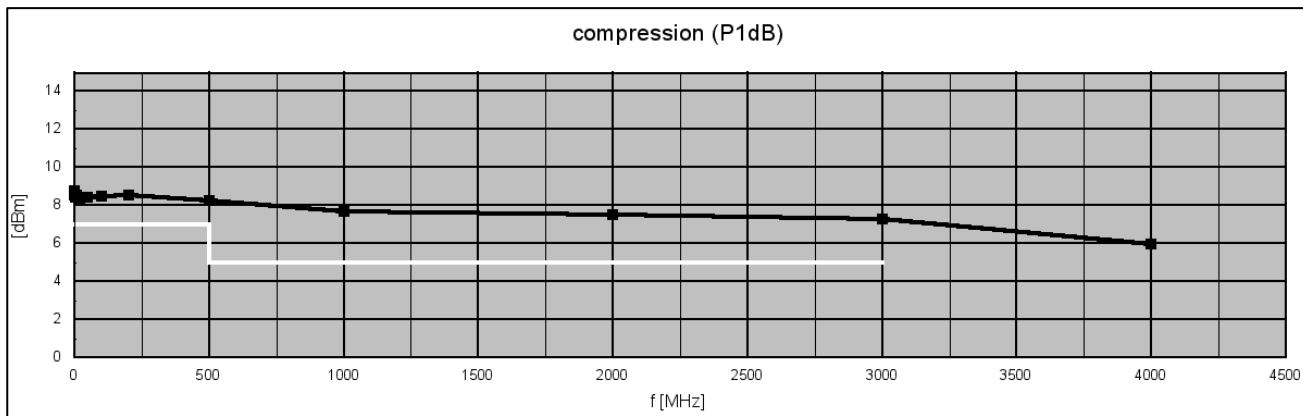
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply	$U_{DC}$	23.5		24.5	V	DC
power consumption	$P_{DC}$		5.5		W	
dimensions	W x H x D	approx. 30 x 262 x 197			mm	6 U, 6HP
weight	m		1.2		kg	
operating temp. range	$T_o$	+5		+55	$^{\circ}\text{C}$	ambiance
storage temp. range	$T_s$	-40		+70	$^{\circ}\text{C}$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



**S-Parameters (typical responses)**



**Dynamic Range**



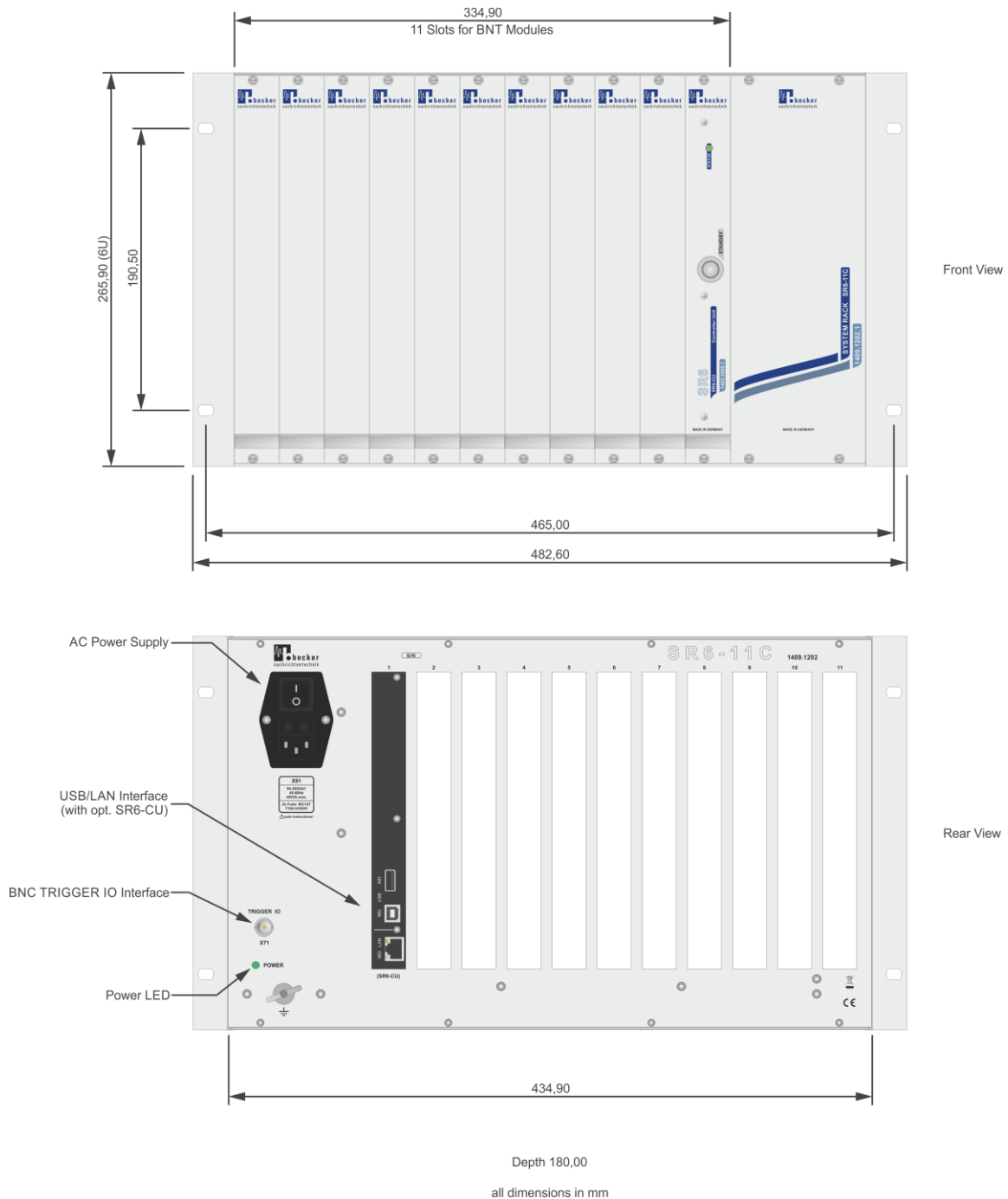
## Appearances

### SR6-11C System Platform

The WSDU-2X4L 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-2X4L 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
<b>Unidirectional Products: Active Multicouplers, Matrices, Level Detectors</b>		
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
<b>Bi-Directional Products: Switches, Matrices, Attenuators, Delay Lines, BIAS-Ts, Splitters/Combiners, Filters</b>		
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

