WSDU-1X8V

High Dynamic 8 Way Multicoupler Module, 20 MHz … 1400 MHz

Features

- wideband
- high dynamic
- very high IP3
- lossless in signal distribution

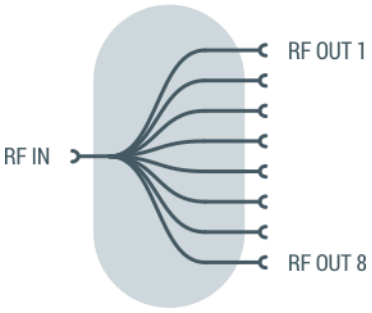
Applications

- AM, FM, IBOC, DAB, DVB-T, SDARS
- R&D (Research & Development)
- Product validation
- Production

Scope

The WSDU-1X8V is a wideband signal distribution unit consisting an active multicoupler. The module operates in the frequency range 20 MHz to more than 1400 MHz. The slot-in module is foreseen for integration into SR6-11C system platform.

Principal Block Diagram



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 signal is made available at the eight outputs of the multicoupler with approx. 2.5 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-1X8V 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-1X8V 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-1X8V 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
impedance	Z_{IN}/Z_{OUT}		50		Ω	
low frequency	f_{MIN}	20			MHz	
high frequency	f_{MAX}			1400	MHz	
gain	S_{21}		2		dB	f ≤ 1000 MHz
input return loss	S_{11}		-13		dB	f ≤ 1400 MHz
output return loss	S_{22}		-20		dB	
reverse isolation	S_{12}		-30		dB	
output isolation	S_{23}		-18		dB	adjacent outputs (d=1)
1 dB compression	P_{1dB}		+20		dBm	f ≤ 1000 MHz
	P_{1dB}		+17		dBm	f > 1000 MHz
3rd order intercept	OIP3[1]		+40		dBm	f = 100 MHz
	OIP3[1]		+38		dBm	f = 500 MHz
	OIP3[1]		+36		dBm	f = 1000 MHz
	OIP3[1]		+30		dBm	f = 1400 MHz
2nd order intercept	OIP2[2]		+67		dBm	f = 200 MHz
	OIP2[2]		+66		dBm	f = 500 MHz
	OIP2[2]		+63		dBm	f = 1000 MHz
noise figure	NF		7		dB	
maximum input power	$P_{in\ max}$			+25	dBm	CW, no damage
DC voltage	U_{DC}			20	V	input and outputs
ESD discharge resistor	R_{ESD}		4.7		kΩ	input and outputs
RF connectors	X_{RF}	SMA female				

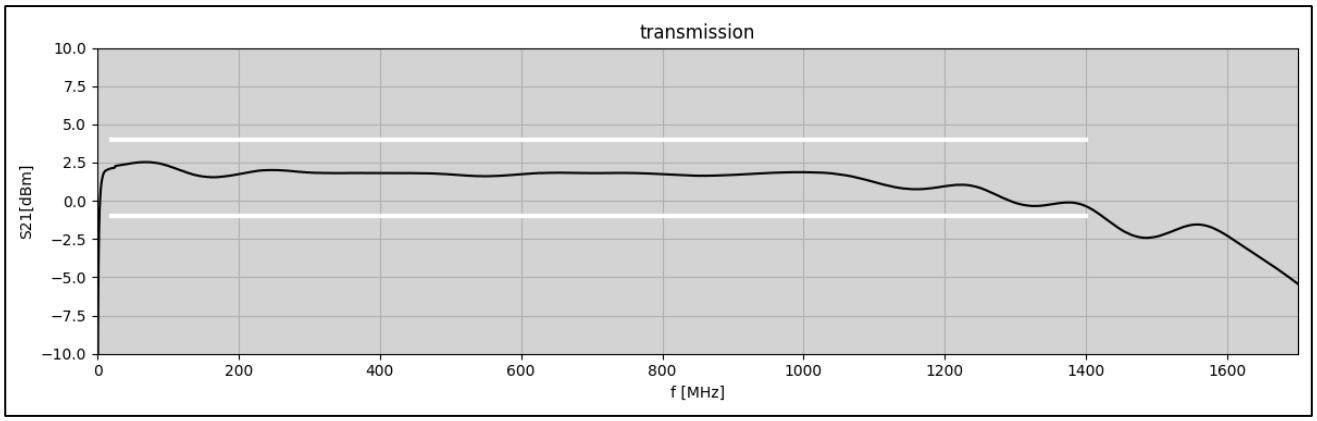
Note 1: frequency space 1 MHz

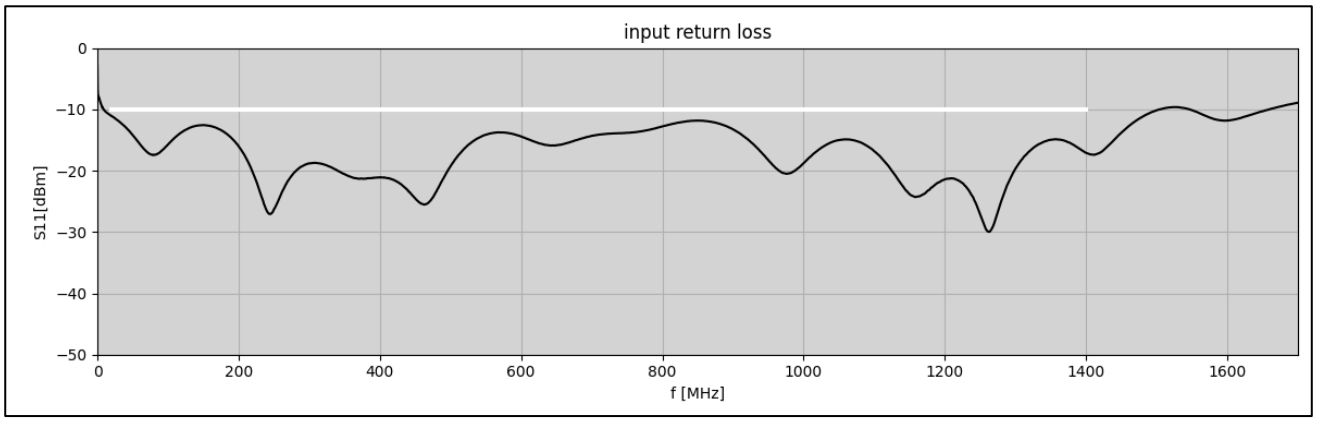
Note 2: frequency space 50 MHz

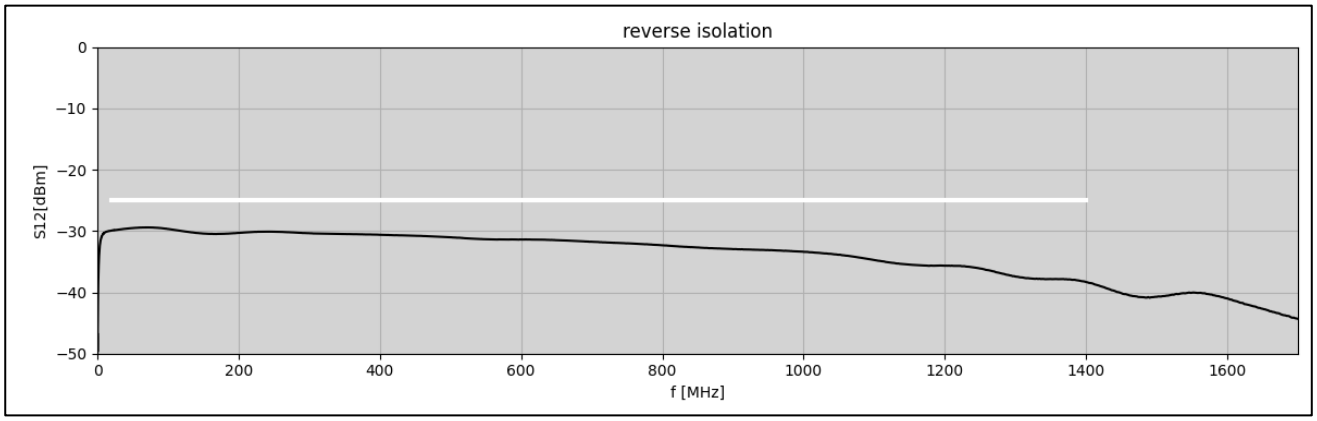
Common Specification

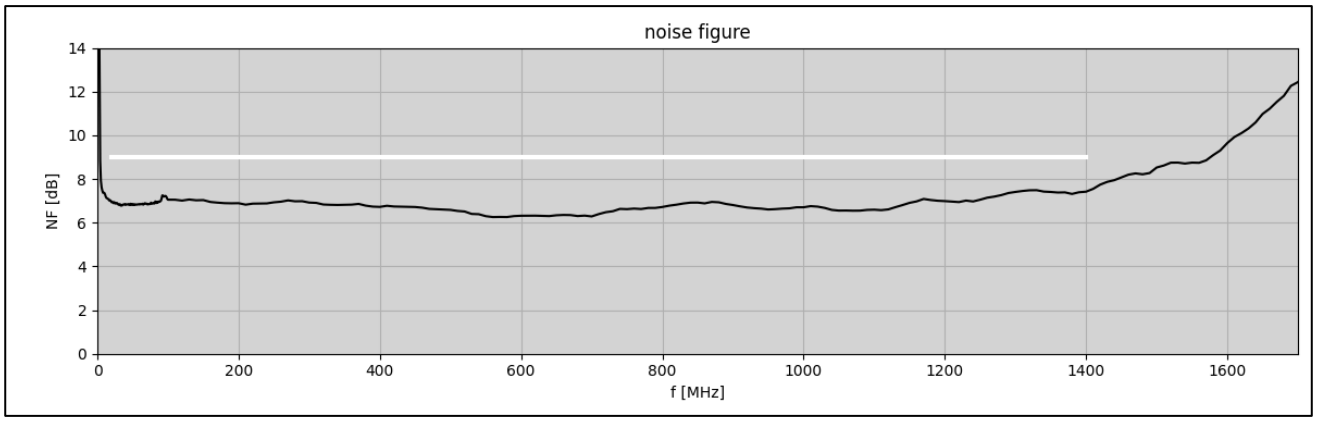
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply	U	23.5		24.5	V	DC
power consumption	P_{DC}		10		W	
dimensions	W x H x D	approx. 30 x 262 x 197			mm	6 U, 6HP
weight	m		1.3		kg	
operating temp. range	T_o	+5		+55	°C	ambiance
storage temp. range	T_s	-40		+70	°C	
ordering information		WSDU-1X8V		2503.6000.1		

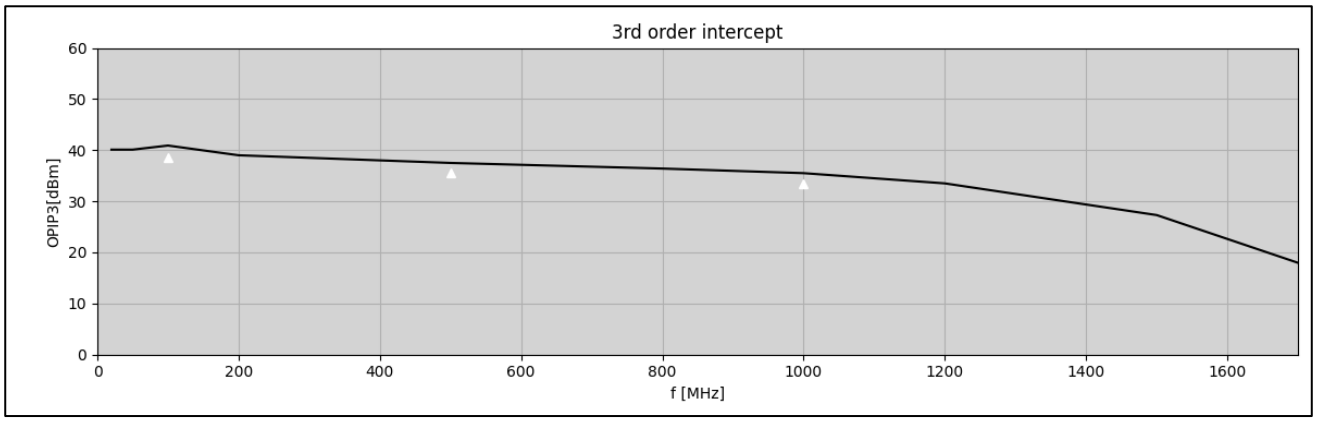
S-Parameters (typical responses)

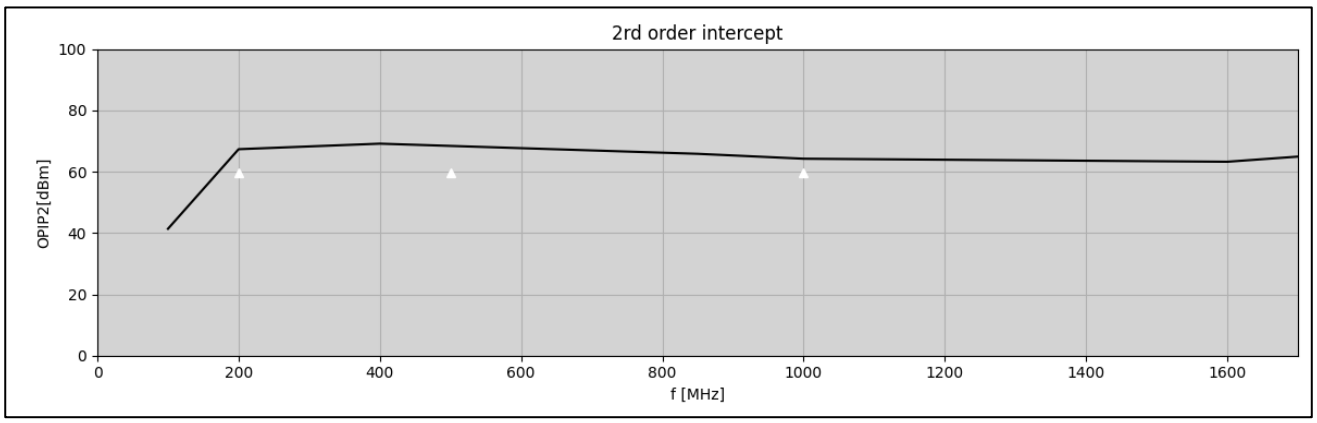


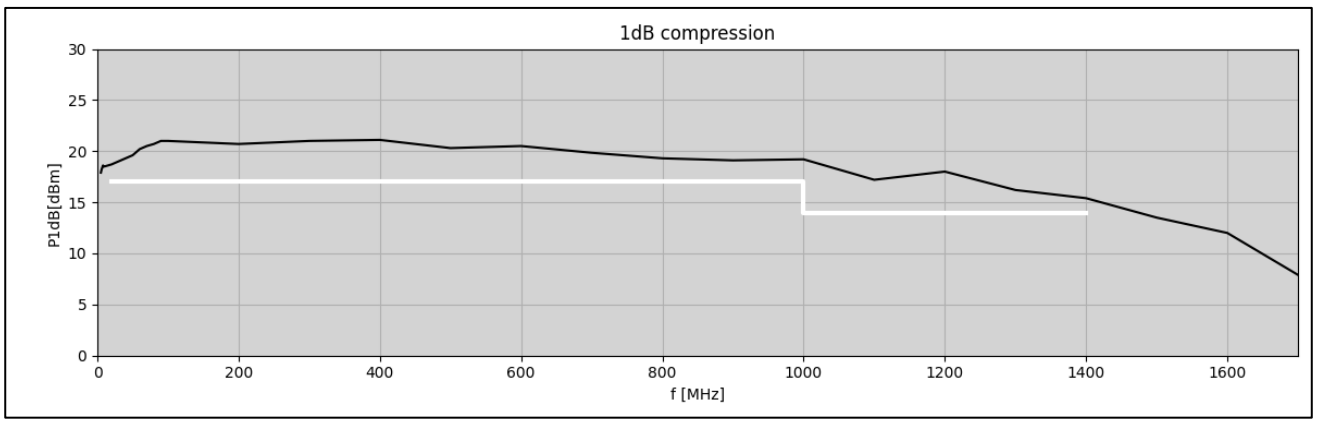


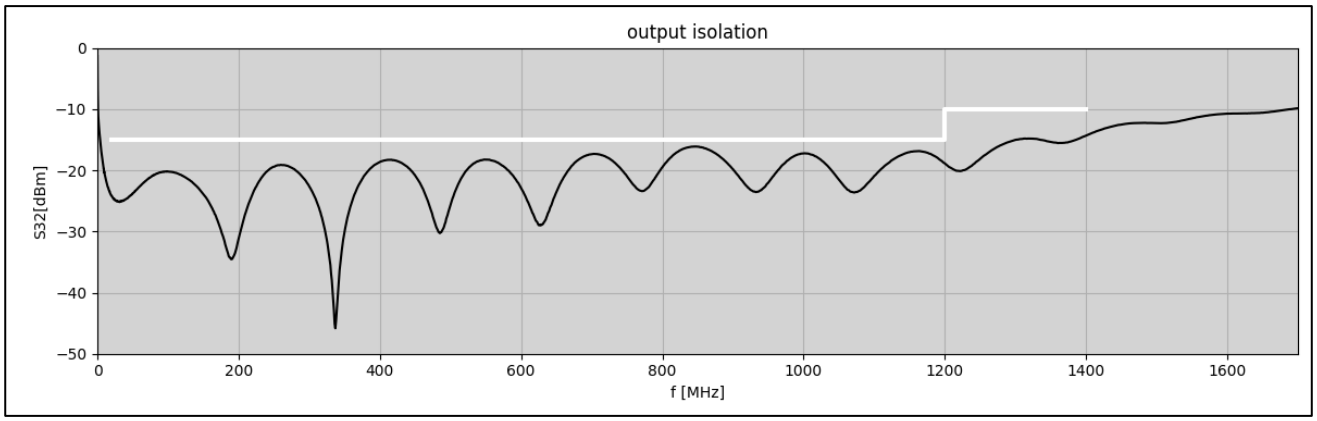



noise figure
NF [dB]
f [MHz]


3rd order intercept
OPIP3[dBm]
f [MHz]


2rd order intercept
OPIP2[dBm]
f [MHz]

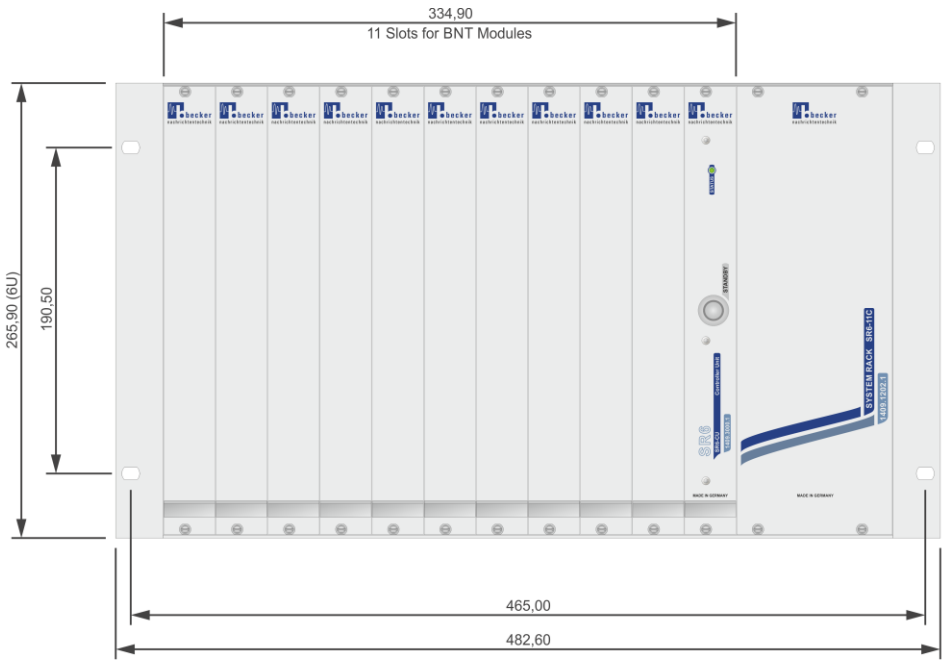

1dB compression
P1dB[dBm]
f [MHz]


output isolation
S32[dBm]
0
−10
−20
−30
−40
−50
0
200
400
600
800
1000
1200
1400
1600
f [MHz]

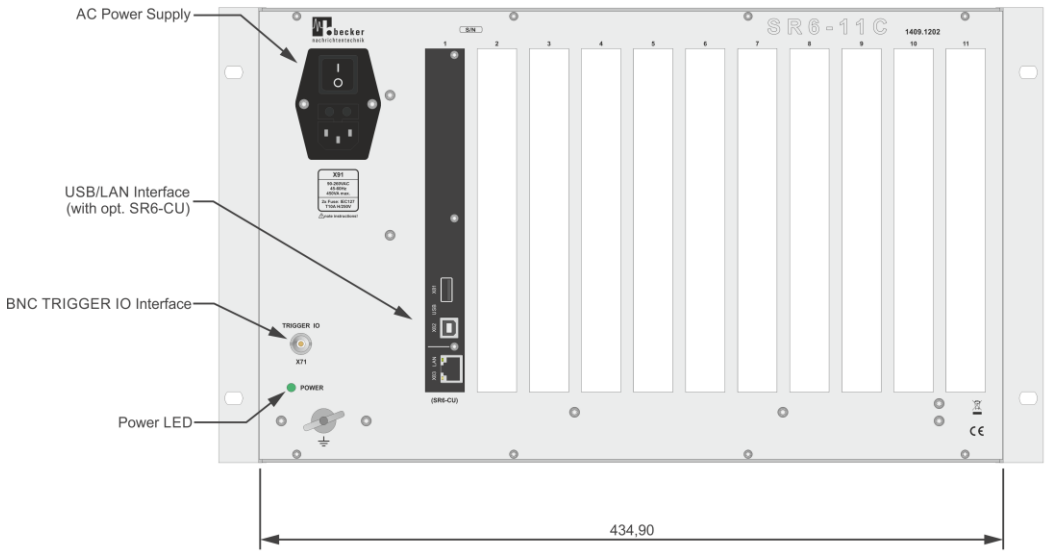
SR6-11C System Platform

The WSDU-1X8V 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 a SR6-CU controller unit is required.

Dimensions of SR6-11C System Platform



Front View



Rear View

Depth 180,00

all dimensions in mm

Related Products

Active RF Multicouplers

Active RF Signal Combiners

Passive RF Signal Splitters/Combiners

Modular RF System Platform