

WSDU-1X2PM

2 Channel, 5 W Multicoupler with ALC Capability, 20 MHz...3000 MHz

Features

- wideband
- high RF power accuracy
- high level range
- high out-to-out isolation

Applications

- high precise RF power sources
- HTOL (High Temperature Operating Lifetime)
- qualification of electronic component
- multichannel transmitters
- research and development (R&D)



Scope

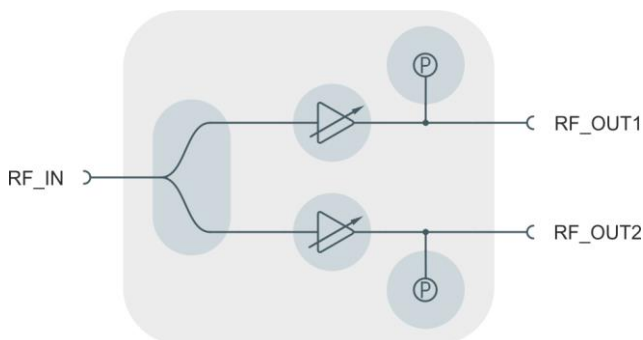
The WSDU-1X2PM is a 2 way multicoupler with up to 5 W RF output power capability per channel. For stable RF output power, the module has ALC (Automatic Level Control) functionality in each channel.

A RF monitoring port offers easy maintenance without interrupting in operation.

The slot-in module is foreseen for the integration into SR6-11C system platform.

Principal Block Diagram

The WSDU-1X2PM has a 2way wideband splitter in the RF input path, followed by two identical RF power amplifier channels with ALC function. RF wideband power meters with RMS and peak detection measure the RMS and peak value of RF output power in each channel.



Precise RF Levels

The ALC mode the module delivers very precise RF levels at the outputs over long time periods. The output power is monitored by internal RMS and peak detectors. A regulating process is already implemented in the firmware of the module.

High Output-to-Output Isolation

The outputs of the WSDU-1X2PM feature a high isolation. Changing the load at one output has no effect to the output power at the other output.

Remote Control

In combination with the SR6-CU controller module, the WSDU-1X2PM is remote controllable via standard interfaces USB and LAN with simple SCPI orientated ASCII strings. The WSDU-1X2PM has a standby function for energy saving.

Built-In Test Function

Total current consumption, operating points of amplifier stages and internal temperature of WSDU-1X2PM are monitored. The module status can be read out via remote interface.

RF Specification

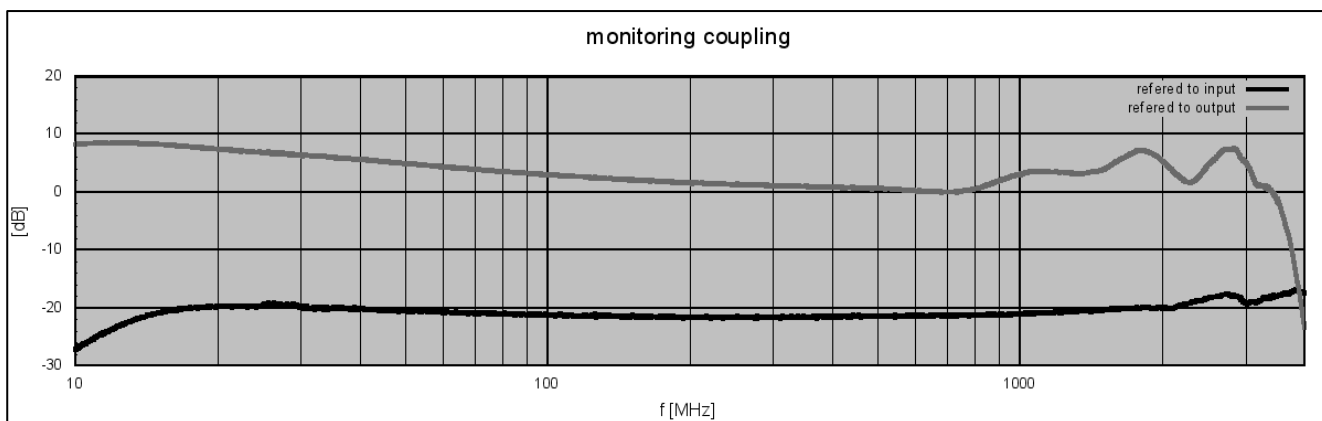
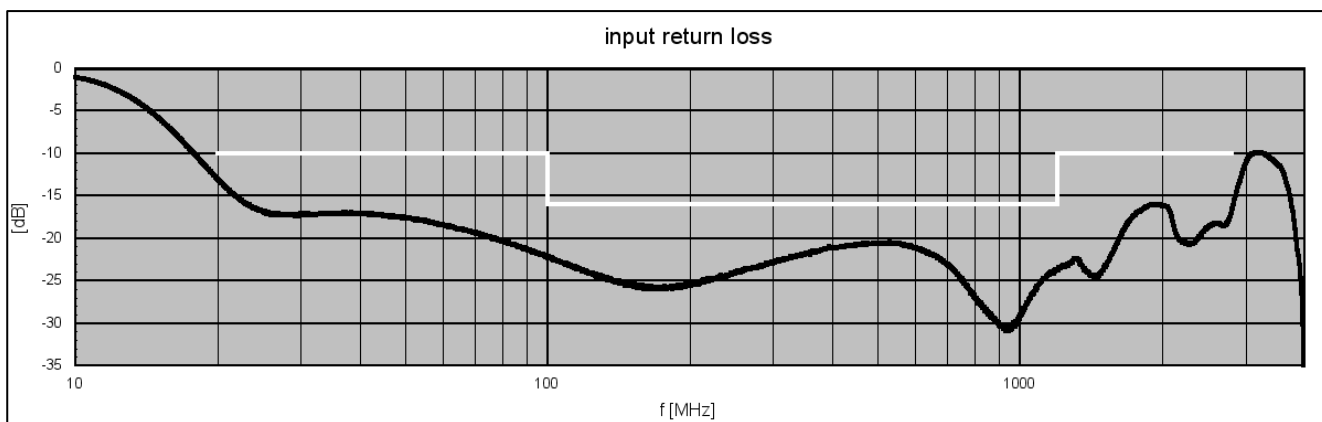
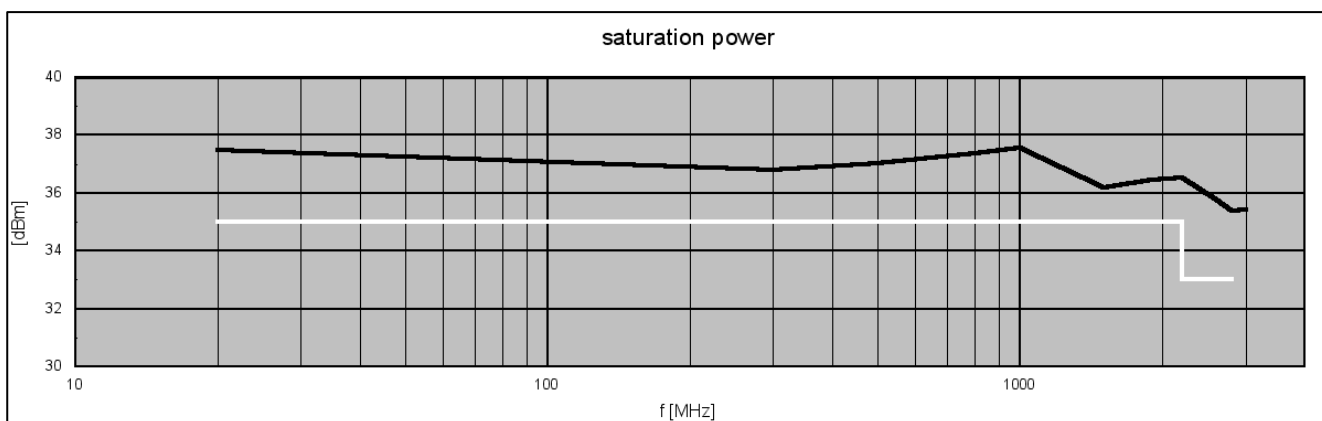
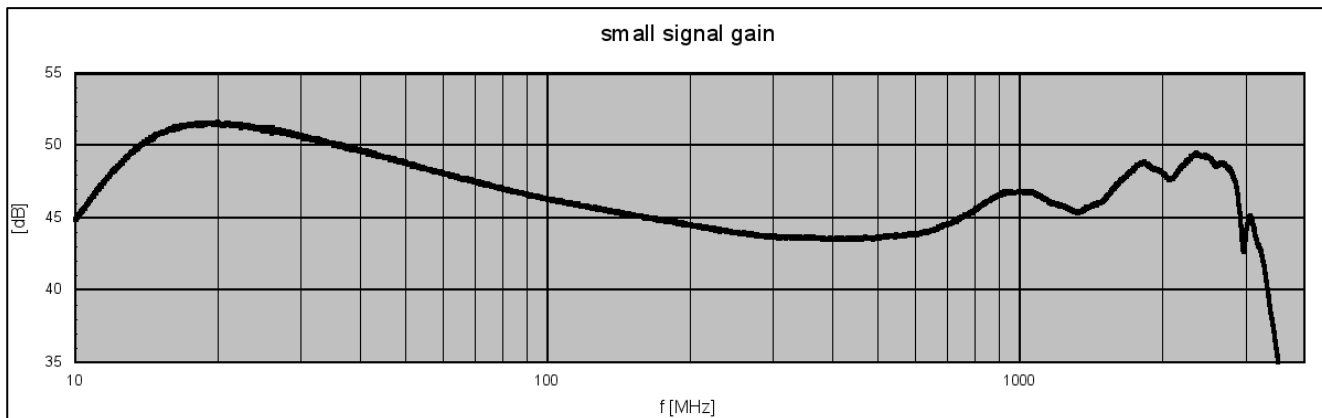
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	Z_{IN}/Z_{OUT}		50		Ω	
low frequency	f_{MIN}			20	MHz	
high frequency	f_{MAX}	2800	3000		MHz	
gain	S_{21}	+47	+49	+53	dB	20 MHz @ +35 dBm
	S_{21}	+42	+43	+46	dB	100 MHz @ +35 dBm
	S_{21}	+42	+44	+46	dB	900 MHz @ +35 dBm
	S_{21}	+41	+44	+46	dB	1800 MHz @ +35 dBm
	S_{21}	+42	+45	+47	dB	2100 MHz @ +35 dBm
	S_{21}	+43	+45	+49	dB	2700 MHz @ +33 dBm
	S_{21}		+42		dB	3000 MHz @ +33 dBm
gain variation	ΔS_{21}	-31.75		0	dB	in each channel
gain variation steps	dS_{21}		0.25		dB	in each channel
input return loss	S_{11}		-13	-10	dB	$f < 100$ MHz
	S_{11}		-20	-16	dB	$100 \text{ MHz} \leq f \leq 1200$ MHz
	S_{11}		-15	-10	dB	$f > 1200$ MHz
reverse isolation	S_{12}		-120		dB	full gain
output isolation	S_{23}		-80		dB	full gain
max output power	P_{OUT}	+35	+37		dBm	$f \leq 2200$ MHz
	P_{OUT}	+33	+36		dBm	$f > 2200$ MHz
level detector type			true power			RMS and PEAK mode
upper level det. range	P_{DETMAX}	+35	+40		dBm	1 dB compression
lower level det. range	P_{DETMIN}		0*	+13	dBm	*disp. value without input signal
detector accuracy	dP_{DET}		$\pm 0,3$	± 1	dB	RMS mode
input power	P_{RF}			+5	dBm	CW, no damage
RF MON coupling	S_{31}		-21		dB	RF IN to RF MON
	S_{23}		+4		dB	RF MON to Output (ATT=0dB)
RF MON input power	P_{RFMON}			+20	dBm	CW, no damage
DC voltage	U_{DC}			20	V	RF ports
ESD discharge resistor	R_{ESD}		4.7		k Ω	RF_IN and RF_MON
RF connectors			SMA female			

Common Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply	U_{DC}	23.5		24.5	V	DC
power consumption	P_{OPR}		24	35	W	operation
	P_{STB}		1		W	standby
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-1X2PM		1606.6000.1		



S-Parameters (typical responses)



SR6-11C System Platform

The WSDU-1X2PM 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.

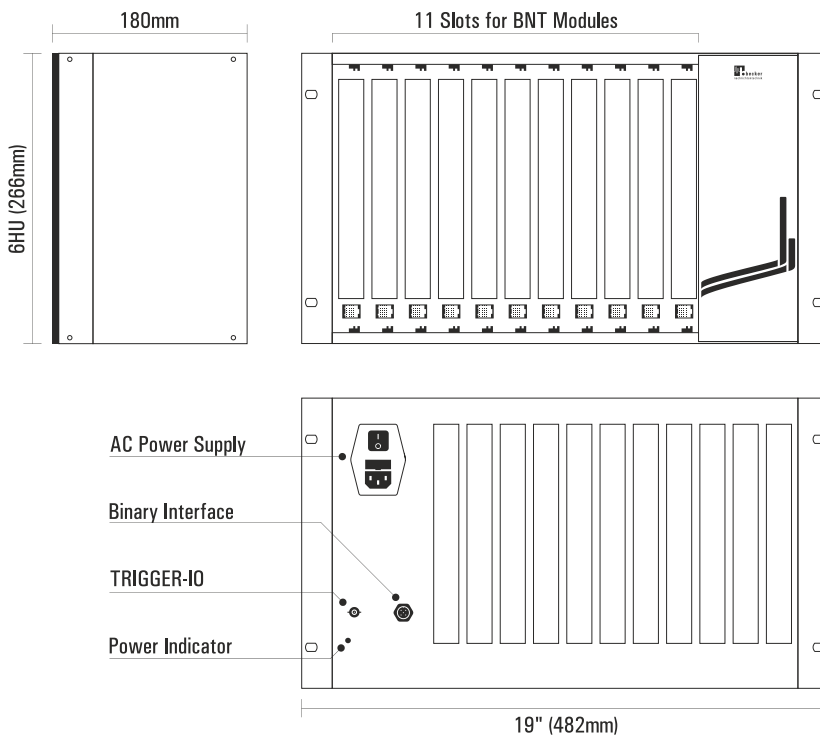
For the control of WSDU-1X2PM module the SR6-CU controller unit is required.

Via the Trigger-IO interface at the rear side of the SR6-11C System Platform a synchronous operation in a device network of SR6-11C can be realized.

After a positive TTL pulse slope at the trigger input, the preloaded configurations are executed only by hardware in micro seconds.

In applications with very fast execution demands the hardware can be directly controlled via the binary interface on the rear side.

Dimensions of SR6-11C System Platform



Appearances



WSDU-1X2PM front view



WSDU-1X2PM 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

