

WSDU-1X8AR

8 Way, High Dynamic, Signal Conditioning Multicoupler 100 kHz...4000 MHz

Features

- wideband
- high dynamic
- high level range



Applications

- Broadcast and GNSS distribution
- AM, FM, IBOC, DAB, DVB-T, SDARS
- GNSS: GPS, Galileo, GLONASS, Beidou

Scope

WSDU-1X8AR is a wideband signal distribution unit consisting of an active multicoupler with additional programmable attenuators per output. The level of each of the 8 outputs can be set over a large power range. The device supports frequencies from 100 kHz up to 4000 MHz.

Distribution without Loss in Level

The RF input the signal is amplified by 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 up to 9 dB gain. All inputs and outputs have N female connectors on the rear side of the device.

Wideband Distribution Systems

The wide frequency range makes WSDU-1X8AR 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 Level Dynamic

Each output is equipped with a programmable attenuator with a dynamic of 95.25 dB. The attenuation is settable in 0.25 dB steps. The attenuation can be set individual for each channel.

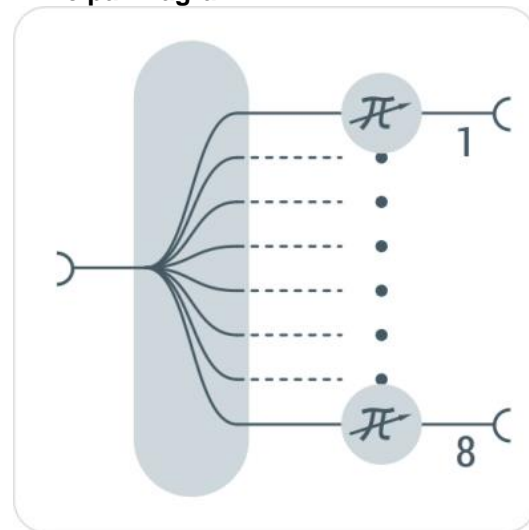
High Output-to-Output Isolation

WSDU-1X8AR features a high port-to-port isolation. Thus, the connected receivers are prevented from affecting each other, e.g. via local oscillators or synthesizers.

Multiple Control Modes

WSDU-1X8AR can be controlled manually either via front panel or via standard remote interfaces USB and LAN. The device is controlled through simple ASCII strings.

Principal Diagram



RF Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	Z_{in} / Z_{out}		50		Ohm	
low frequency	f_{min}		100	150	kHz	
high frequency	f_{max}	4000	4500		MHz	
gain	S_{21}	8	10	12	dB	$f \leq 1$ GHz, ATT = 0 dB
	S_{21}	7	9	11		$f > 1$ GHz, ATT = 0 dB
gain flatness	ΔS_{21}		± 1.5		dB	
attenuation range	a	0.00		95.25	dB	
attenuation step size	Δa		0.25		dB	
input return loss	S_{11}		-11	-7	dB	$f < 500$ kHz
	S_{11}		-15	-10	dB	$500 \text{ kHz} \leq f \leq 3\text{GHz}$
	S_{11}		-11	-8	dB	$f > 3$ GHz
output return loss	S_{22}		-13	-10	dB	
reverse isolation	S_{12}		-100		dB	
output isolation	S_{23}		-40	-35	dB	neighbouring outputs (d=1)
	S_{23}		-75		dB	distance > 1
1 dB compression	P_{1dB}	+13	+15		dBm	$f \leq 1$ GHz, ATT = 0 dB
	P_{1dB}	+10	+13			$f > 1$ GHz
3 rd order intercept	OIP3 ¹	+24	+27		dBm	$f = 1000$ MHz, @ ATT = 0 dB
	OIP3 ¹	+21	+24		dBm	$f = 2000$ MHz, @ ATT = 0 dB
	OIP3 ¹	+19	+22		dBm	$f = 3000$ MHz, @ ATT = 0 dB
noise figure	NF		13	16	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			SMA female			

Note 1: frequency space 100 MHz

Common Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply	U	90	230	260	V	50 / 60 Hz
power consumption	P		16		W	
dimensions	W x H x D	approx. 482 x 44 x 210			mm	19", 1 U
weight	M		3.5		kg	
operating temp. range	T_o	+5		+45	$^{\circ}\text{C}$	ambiance
storage temp. range	T_s	-40		+70	$^{\circ}\text{C}$	
ordering information		WSDU-1X8AR		1807.6302.1		

Appearances



Front view



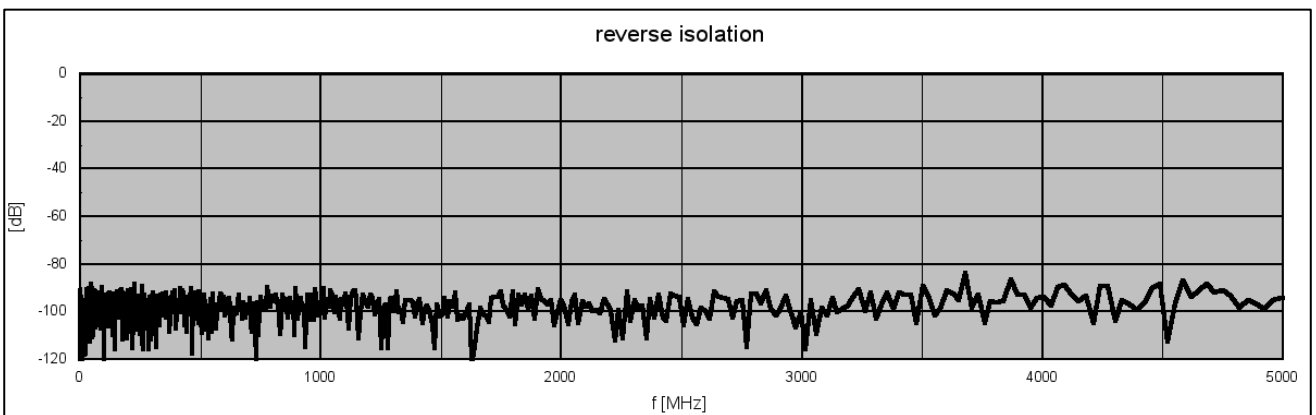
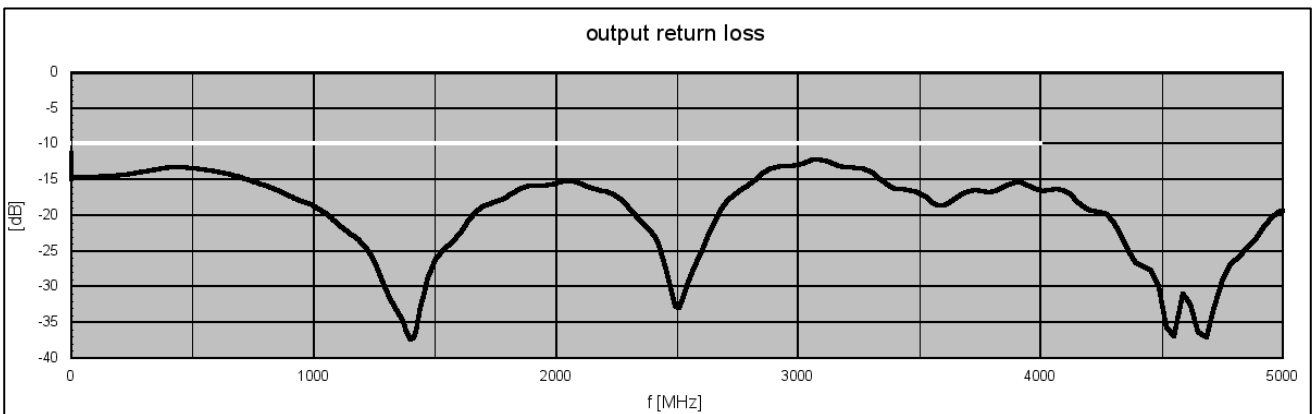
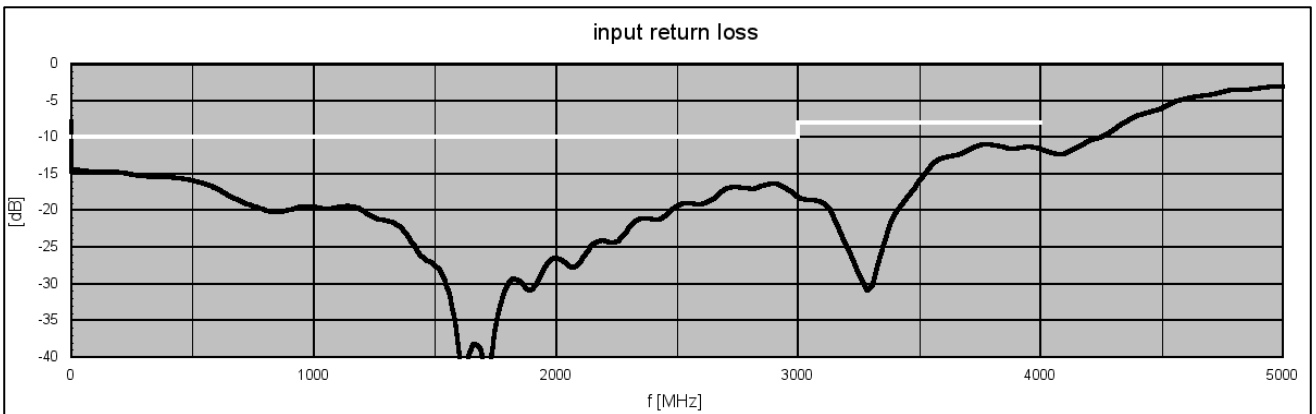
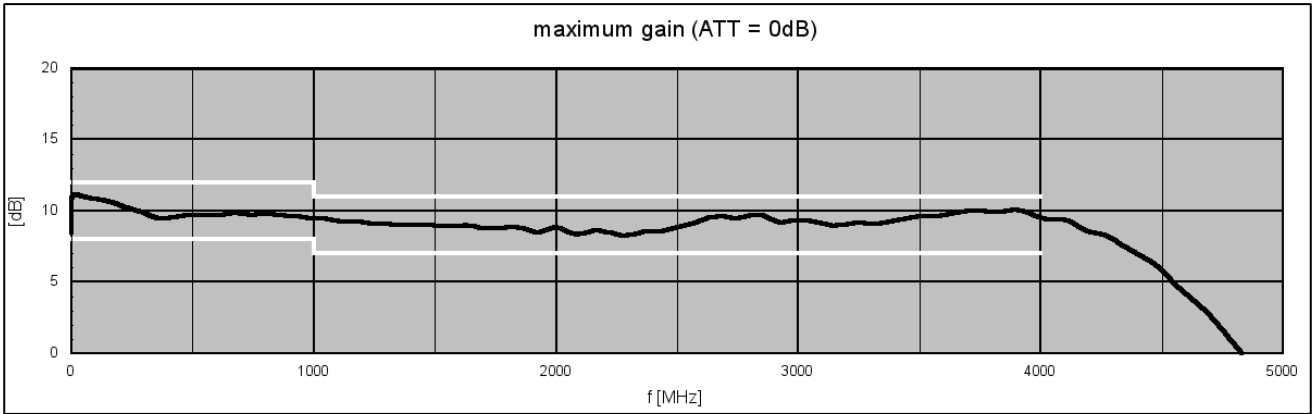
Rear view

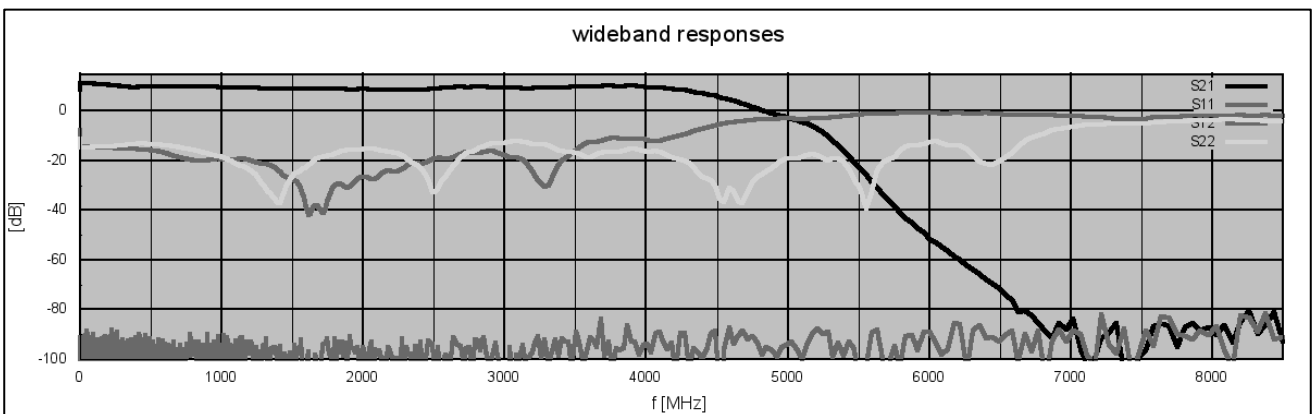
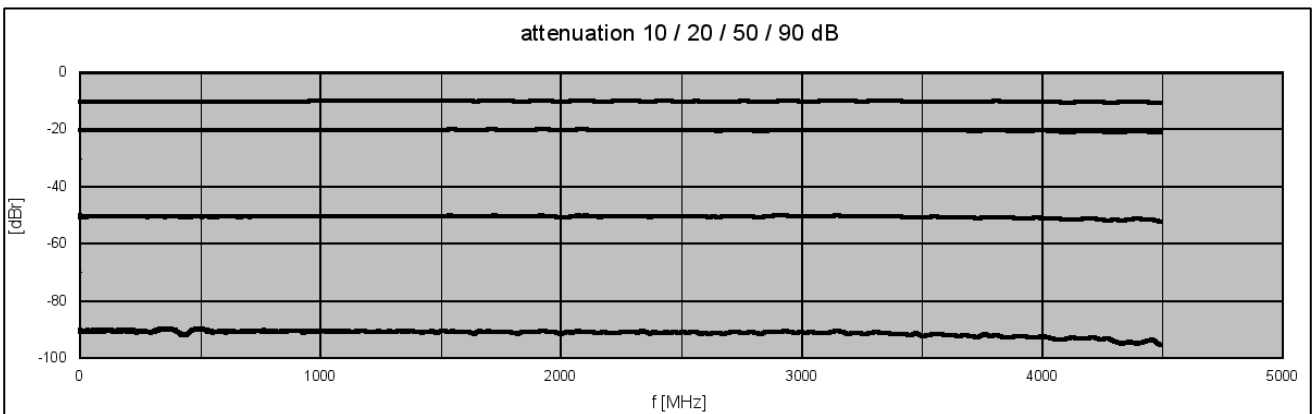
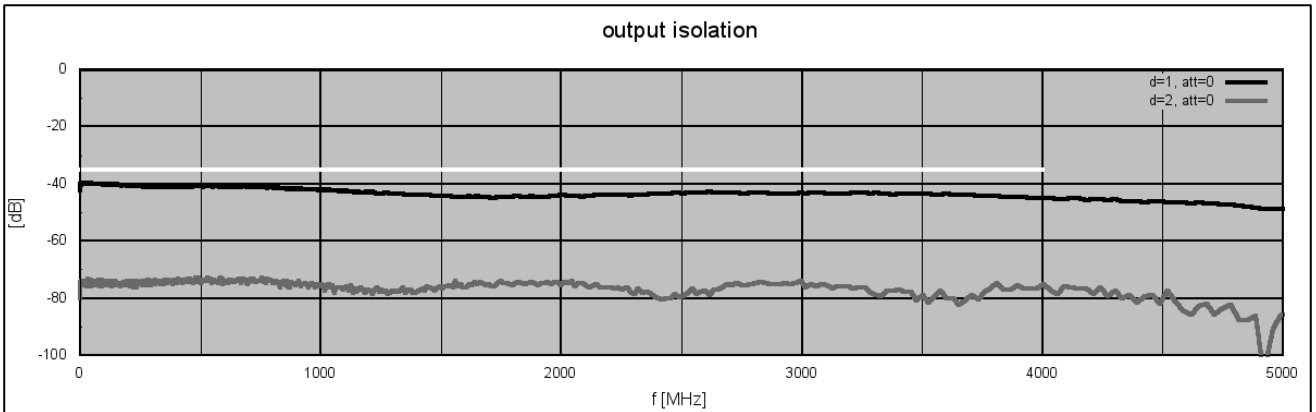
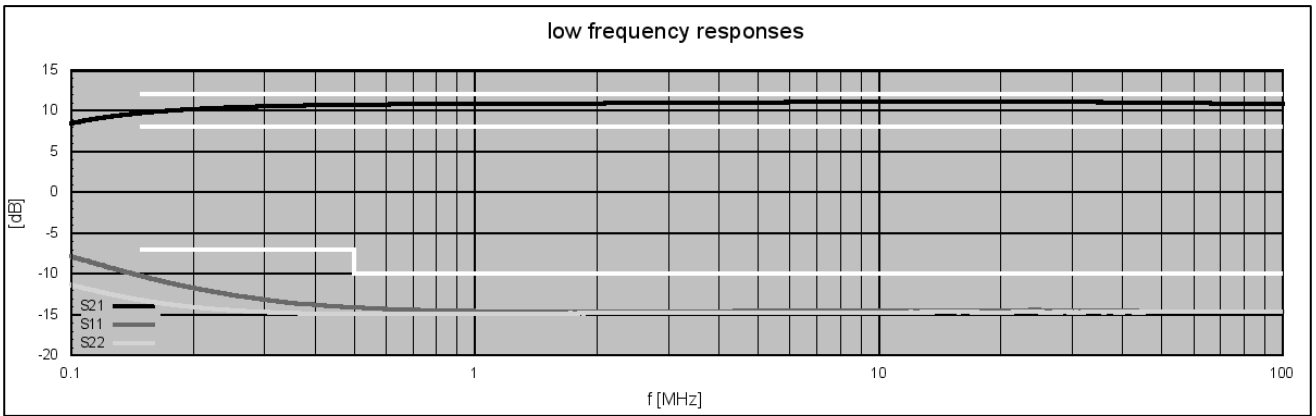
Related Products

Product	Description	P/N
WSDU-1X8R	High Dynamic 8 Way Multicoupler 100 kHz ... 4000 MHz	1107.6102
WSDU-2X4R	High Dynamic 2 Channel 4 Way Multicoupler 100 kHz ... 4000 MHz	1107.6202
WSDU-1X8ER	Extremely Wideband 1 to 8 Signal Distribution Unit 20 ... 8000 MHz	1501.6302
WSDU-2X4ER	Extremely Wideband 2 Channel 1 to 4 Signal Distribution Unit 20 ... 8000 MHz	1501.6202
WSDU-1X8SR	High Dynamic 1X8 Shortwave Signal Distribution Unit 1.7 (0.5) ... 30 MHz	1502.6102



S-Parameters (typical responses)





Dynamic Range

