

RSWM-16X32SR

High Switching Speed Antenna Matrix 1.5 MHz ... 30 MHz

Features

- 16 antenna inputs
- 32 outputs for receivers
- non-blocking
- modular scalable concept
- wear-free solid state switches
- high dynamic range
- extensive self-test functions

Applications

- radio monitoring
- military
- state security



At a Glance

The RSWM-16X32SR is a non-blocking antenna switch matrix as a key component in professional short wave receiving systems. It contains solid state switches that represent an optimum solution with respect to switching speed, switching cycles and maintenance.

The internal non-blocking structure allows the switching of an antenna to any number of receivers without loss in dynamic range. The short switching times allows the fast access to the different antenna inputs.

The matrix is DC supplied via an external power supply unit.

Modular, Scalable Matrix Concept

For the use in smaller distribution systems the modular structure makes the RSWM-16X32SR scalable to lower number of inputs.

A later expanding of the matrix requires only is retrofitting of additional switch modules.

For system with more than 32 outputs for receivers matrices can be linked with multicouplers. The multicoupler WSDU-1X8S is a preamplifier/splitter providing the same antenna signal at 8 outputs. Hence extensive system solutions with up to 256 outputs for receivers can be realized.

Wear-free Solid State Switches

The switching elements in the RSWM-16X32SR are solid state types. This ensures the short switching time, a huge number of switching cycles with a minimum maintenance.

Extensive Self-Test Functions

The RSWM-16X32SR has self-test functions on module level. This allows a fast and extensive report of the healthy state of the matrix during operation.

Remote Operation

The RSWM-16X32SR offers LAN and USB remote interface. In complex system the remote control normally is via TCP/IP. The firmware allows assigning receivers to antennas.

For larger systems, control software is running on a separate system controller, which collects all switching requests and distributes the commands to the individual switch matrices.

GUI (Graphic User Interface)

A GUI is provided for local control of the matrix. RF paths setting, requesting the switching status and healthy status of the device can be done via GUI.

RF Specification

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	Z_{in} / Z_{out}		50		Ohm	
low frequency	f_{min}			1.5	MHz	
high frequency	f_{max}	30			MHz	
gain	S_{21}	-1	0	+1	dB	
input return loss	S_{11}		-20	-14	dB	
output return loss	S_{22}		-15		dB	
1 dB compression	P_{1dB}		+13		dBm	
2 nd order intercept	OIP2 ¹	+60	+70		dBm	
3 rd order intercept	OIP3 ²	+32	+35		dBm	
noise figure	NF		7	9	dB	
in to in isolation	S_{II}		-75	-60	dB	
out to out isolation	S_{OO}		-36		dB	
OFF isolation	S_{21}		-70		dB	
maximum input power	P_{in}		+20		dBm	CW, no damage
switching time	t_{SW}		2		ms	after reception of „CR“
RF connectors	X_{RFIN}	N female				RF inputs
	X_{RFOUT}	BNC female				RF outputs

Note 1: test frequency pairs for OIP2: 3.0 / 3.5 MHz, 12 / 15 MHz, 22 / 27 MHz. Output level 2 x 0 dBm.

Note 2: test frequency pairs for OIP3: 2.8 / 2.9 MHz, 5.0 / 5.1 MHz, 10.1 / 10.3 MHz, 20.1 / 20.4 MHz, 29.8 / 29.9 MHz. Output level 2 x 0 dBm.

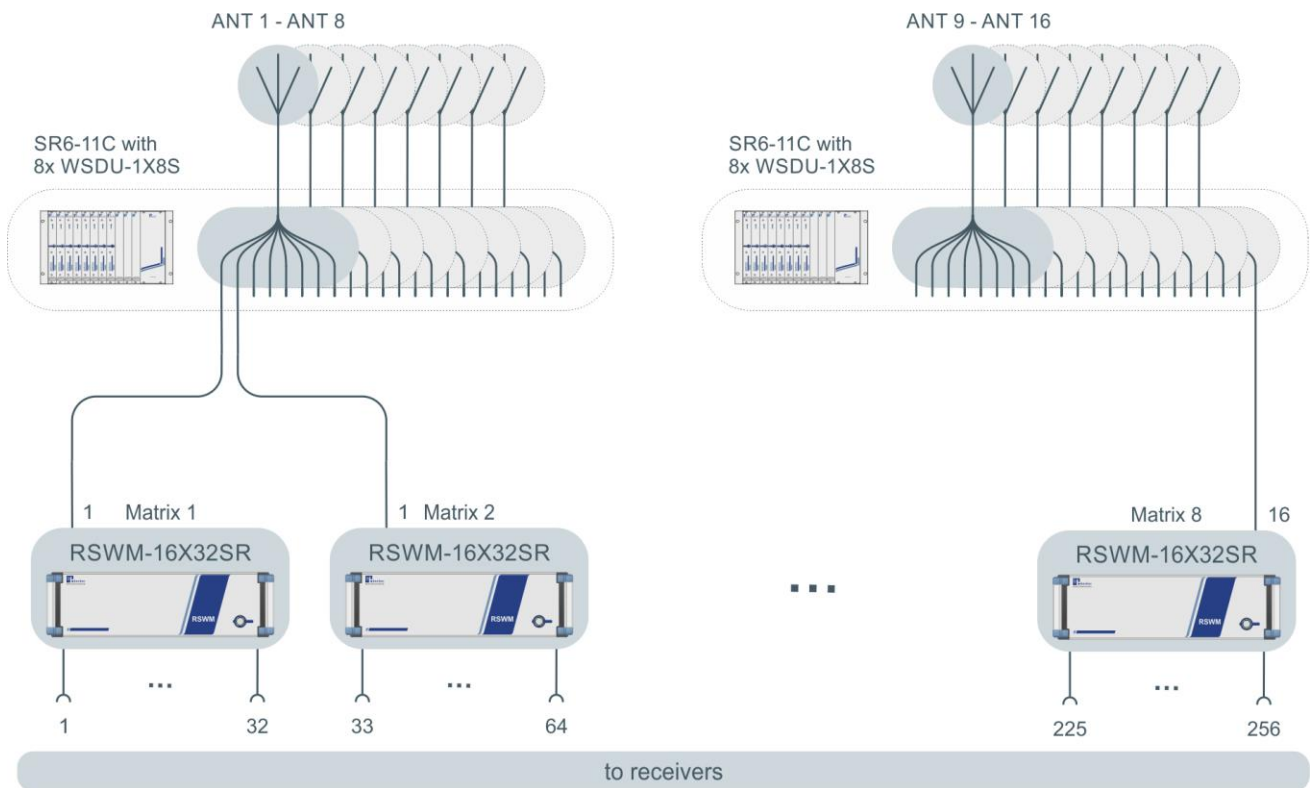
Common Specification

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
voltage supply range	U_{AC}	90	230	260	V	50 / 60 Hz AC
power consumption	P_{AC}		200		W	
power socket	X_{AC}	IEC-60320 C14				country specific mains cable
Dimensions and weight						
dimensions	W x H x D	approx. 482 x 190 x 650			mm	19" 4 U, without connectors and handles
weight	m		10		kg	
Environment conditions						
operating temp. range	T_o	+5		+45	°C	
storage temp. range	T_s	-40		+70	°C	
Remote interfaces						
remote ports	LAN	10/100BaseT		TCP/IP		RJ45
	USB	2.0 (high speed)				USB type B
Product conformity						
Electromagnetic compatibility	EU: in line with EMC directive (2014/30/EC)					applied harmonized standards: EN 61326-1 (for use in industrial environment), EN 61326-2-1, EN 55011 (class B), EN 61000-3-2, EN 61000-3-3
Electrical safety	EU: in line with low voltage directive (2014/35/EC)					applied harmonized standard: EN 61010-1
Ordering information	RSWM-16X32SR	P/N: 1205.4312.1				



Application Diagram

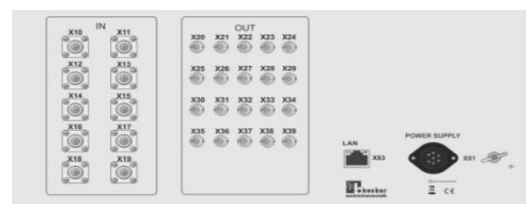
The following structure shows an antenna matrix system with 16 antenna inputs and 256 outputs for receivers. The multicoupler WSDU-1X8S distributes the antenna signal each to 8 outputs. 16 pcs of WSDU-1X8S multicouplers are modular installed in 2 pcs of SR6-11C system platform.



Appearances



Front View



Rear View



Related Products

Multicouplers slot-in modules for systems with more than 32 outputs for receivers.



Related Products / Further Slot-In Modules

Product	Description	P/N
SR6-11C	System Platform with 11 Slots	1409.1202.1
WSDU-1X8S	1X8 HF Multicoupler, 1.5 MHz ... 30 MHz	1502.6100
RSWM-PS	Power Supply Unit for RSWM-16X32SR Matrix	1205.2002.1
RSWM-C	DC Power Cable	1205.0187.1