becker nachrichtentechnik

RSWM-4X32E

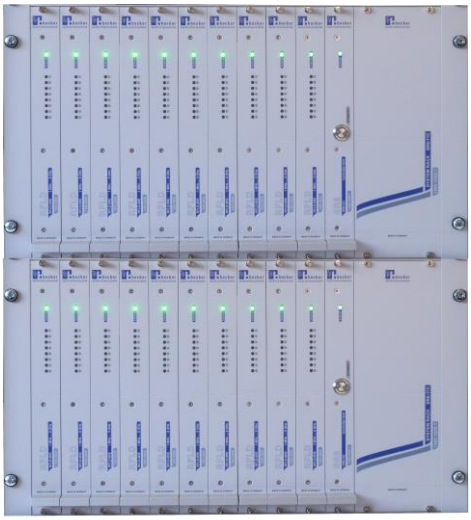
4 Channel 1X32 Wideband Solid State RF Switch Matrix, 100 kHz…8500 MHz

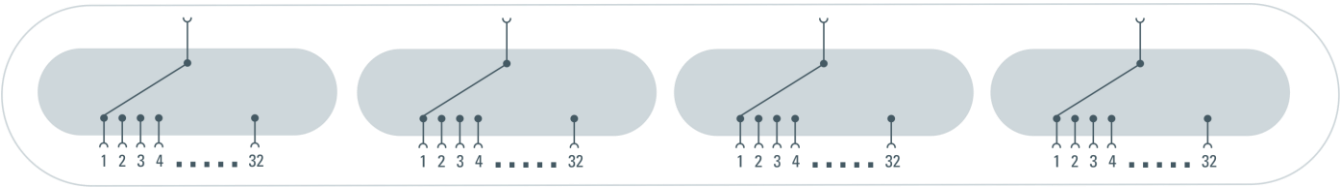
Features

- 4 channel SP32T switch
- wear free
- modular design
- LAN and USB remote interface
- synchronous trigger capability

Applications

- antenna switching
- beam position monitoring
- RF signal routing





Scope

RSWM-4X32E is a compact, modular RF switch unit for the frequency range 100 kHz…8500 MHz. It contains 4 channels with SP32T switches. The switches are semiconductor based solid state types. The RSWM-4X32E can be controlled via LAN or USB remote interface with SCPI99 oriented ASCII strings.

Synchronous Switching

For synchronous switching pre-loaded switch setting can be taken over in few micro seconds by an external hardware trigger signal.

RF Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	Z_{in} / Z_{out}		50		Ohm	
number of channels	n_{CH}		4			SP32T RF switch units
low frequency	f_{min}			100	kHz	
high frequency	f_{max}	6000	8500		MHz	
insertion loss	S_{21}		4.0		dB	f < 3000 MHz
	S_{21}		6.5		dB	3000 MHz ≤ f < 6000 MHz
	S_{21}		9.5		dB	f ≥ 6000 MHz ≤ f < 6000 MHz
OFF isolation	S_{21}		80		dB	
transfer power	P_{CWTR}			+30	dBm	f ≥ 6 MHz, switch closed
	P_{CWTR}			+20	dBm	f < 6 MHz, switch closed
hot switch	P_{CWHOT}			+20	dBm	f ≥ 6 MHz
	P_{CWHOT}			0	dBm	f < 6 MHz
terminated power	P_{TERM}			+20	dBm	f ≥ 6 MHz
	P_{TERM}			0	dBm	f < 6 MHz
input IP3	IIP3		50		dBm	@ 8000 MHz
input IP2	IIP2		90		dBm	@ 8000 MHz
DC voltage	U_{DC}			20	V	all RF ports
ESD discharge resistor	R_{ESD}		4.7		kΩ	all RF ports
RF connectors			SMA female			all RF ports
switching delay*	t_{SW}		1		ms	receiving <CR> to execute
switch delay	t_{50-50}		4.5		µs	50 % trigger to 50 % RF
switch on time	t_{10-90}		4		µs	10 % RF to 90 % RF
switch off time	t_{90-10}		5		µs	90 % RF to 10 % RF

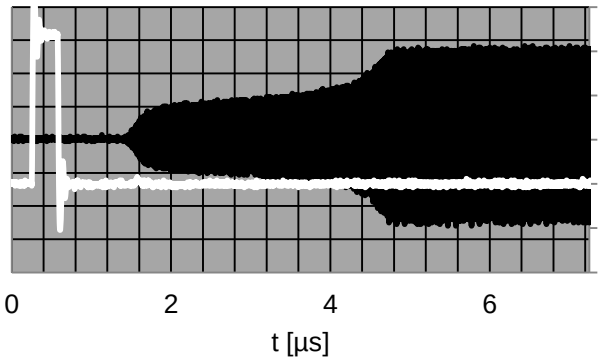
*: Time from reception of carriage return <CR> symbol to hardware execution. In synchronous switching mode it is the minimum time to recognize an incoming command before execution a hardware trigger.

Common Specifications

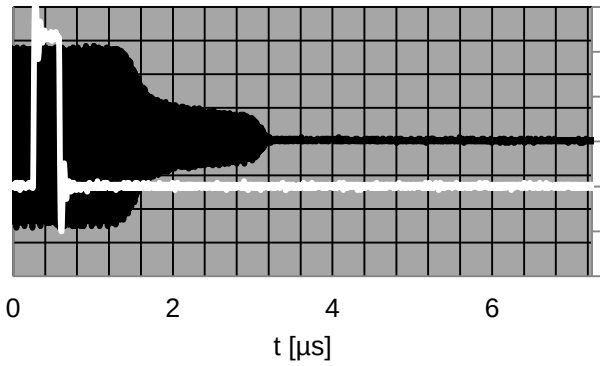
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply	u_{AC}	90	230	260	V	50 / 60 Hz
power consumption	P		10		W	
power plug		type „F“ CEE7/4				
dimensions	W x H x D	approx. 482 x 534 x 180			mm	19”, 12 U (2 system racks)
weight			5		kg	
remote interface	LAN	10/100BaseT				RJ45
	USB	USB 2.0 (high speed)				USB type B
trigger input	X_{TRIG}	BNC female				LVTTL
operating temp. range	T_o	+ 20		+ 30	°C	within specification
storage temp. range	T_s	- 40		+ 70	°C	
Ordering information	P/N		RSWM4X32E			

Typical switching characteristics after trigger command

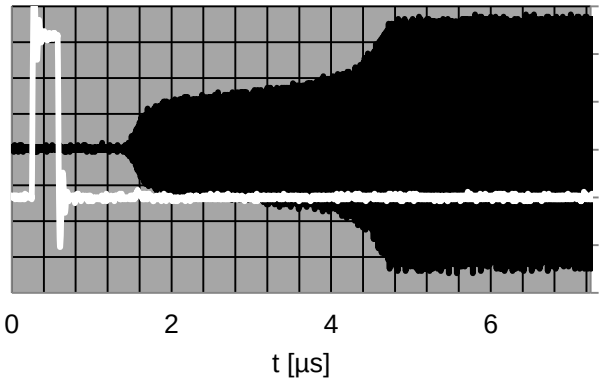
Switching from Open to Closed (SP4T)



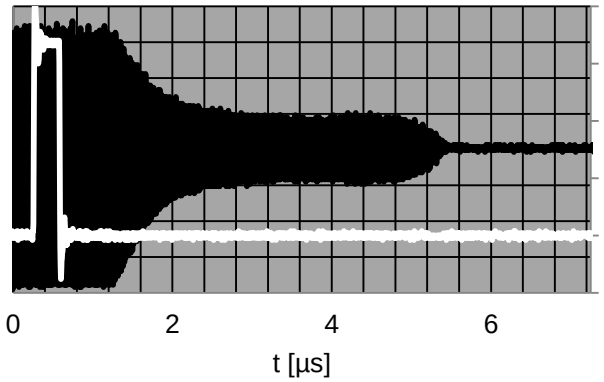
Switching from Closed to Open (SP4T)



Switching from Open to Closed (SP2T)



Switching from Closed to Open (SP2T)



Related Products

Product	Description	P/N
RSWM-4X4R	Non-blocking 4X4 Switching Matrix, (100 kHz) 20 MHz … 4000 MHz	1205.4102.1