Reconfigurable PXI RF Switching Modules

14F3S-1/4x4

DC-18 GHz
PXI 4x4 Reconfigurable MUX

Description

The 14F3S-1/4x4 PXI Module is designed to provide solutions to complex broadband switching applications. This switching matrix can be also utilized for inserting and removing components in signal paths.

The module occupies 4 slots of a 3U PXI chassis. In addition, since only the first left slot in a chassis requires electrical connection, the unit can also be used in a low cost version with extension slots.

Although the product is originally configured as a 4X4 Non-Blocking Matrix, this unit can offer many additional switching configurations, making it true a Re-Configurable RF Switching Module.

After removal of six semi-rigid cables, the user has direct access to 12 internal ports allowing configuration of the switching network as a set of standard switches (2 X SP4T, or SP4T Terminated, or 3 x SPDT and Transfer, or 4 x SPDT, and SP3T, to mention just a few, or as a custom switching network. The flexibility of changing control functions is also included in the software package.

RF Characteristics

Impedance:	50 Ohms
Operating Frequency:	DC – 18 GHz
Switching Speed:	20 ms (max)
Operating Life:	1,000,000 cycles (Cold Switching)

Voltage Standing Wave Ratio (VSWR)

Frequency (GHz)				
DC-4	4-8	8-12	12-16	16-18
1.30:1	1.35:1	1.40:1	1.50:1	1.80:1

Insertion Loss (dB)

Frequency (GHz)				
DC-4	4-8	8-12	12-16	16-18
0.3	0.4	0.6	0.8	0.9

Open Channel Isolation (dB)

Frequency (GHz)				
DC-4	4-8	8-12	12-16	16-18
80	80	70	60	50

RF CW Power (W)

Frequency (Ghz)				
DC-4	4-8	8-12	12-16	16-18
100 W	70 W	60 W	50 W	50 W

Power Consumption Backplane Supply

+12 VDC	+5 VDC	+3.3 VDC	-12 VDC
1 A	0.15 A	0.1 A	0 A

Command and Control

Software

The Dow-Key PXI card is supplied with an IVI compliant driver providing complete functionality for the matrix module. The driver supports the following Windows platforms: 98/2000/XP.

PXI Interface

The Dow-Key PXI Card complies with the PXI Specification 2.1.
Trigger Bus, Star Trigger, Interrupts, and Local Bus are not implemented.

Recommended Software

LabVIEW
LabWindows
Visual Basic
C/C++

Physical

Relay Type:	Electromechanical
Contact Material:	Beryllium copper, gold-plated
I/O Connectors:	SMA Female
Dimensions:	4-slot, 3U, PXI/PCI module

Shock and Vibration

Operational Shock:	30 g peak, half-sine, 11 ms pulse
Random Vibration:	
>> Operating	5 to 500 Hz, 0.3 g_{rms}
>> Nonoperating	5 to 500 Hz, 2.4 g_{rms}
Operating Life:	1,000,000 cycles (Cold Switching)

Environmental

Operating Temperature:	0 °C to +55 °C
Storage Temperature:	-20 °C to +70 °C
Relative Humidity:	5% to 85% Non-Condensing
Operating Altitude:	5,000 m
Storage Altitude:	15,000 m

Reconfigurable Solutions

Switching Combinations

- Direct Access to 12 internal ports
- 4x4 RF Matrix

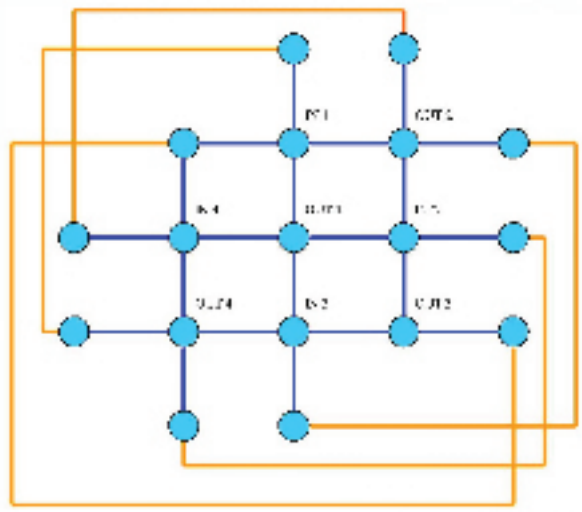
Individual switch contols* :

- 2 SP4T
- 2 SP4T with terminations
- 2 SP4T with terminations + 2 SPDT
- 3 SPDT + DPDT
- DPDT + SPDT with terminations + SPDT

* For exact Part Numbers - consult with the Headquarter.

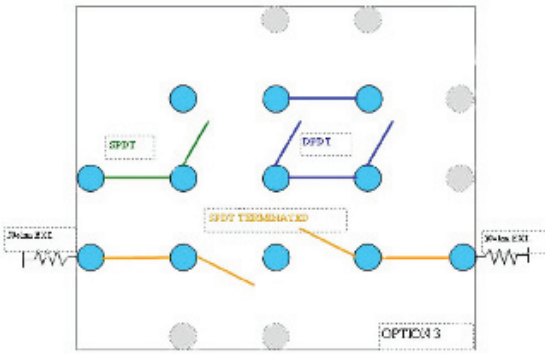
Part Number: 14F3S-1/4x4

4X4 RF Matrix



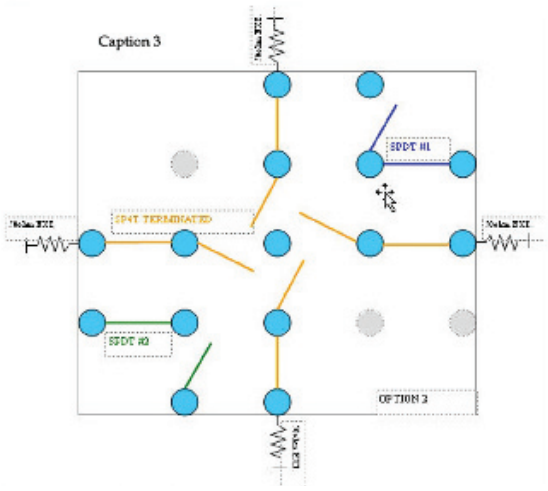
RECONFIGURED FOR 3 SWITCH SOLUTIONS

1 - DPDT (Transfer)
1 - Terminated SPDT
1 - Standard SPDT



RECONFIGURED FOR 3 INDEPENDENT SWITCH SOLUTIONS

1- Terminated SP4T with terminations
2 - Standard SP2T



Dow-Key® Microwave
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* For custom reconfigurations - consult with the Main Office