

Reconfigurable PXI RF Switching Modules

12K3S - Series

DC-26.5 GHz

High Density - Reconfigurable Switching Modules

12K3S-3/D	3 Dual SPDT (High Density Changeover)
12K3S-3/X	3 DPDT (High Density Transfer)
12K3S-3/3	3 SP3T (High Density 3 Channel Mux)
12K3S-3/6	3 SP6T (High Density 6 Channel Mux)

Description

The 12K3S-Series modules are designed to provide solutions to complex broadband signal routing and switching applications. Each module uses non-terminated normally open electromechanical switches that operate with less than 1 dB insertion loss up to 26.5 GHz and extended switching life up to 2 million cycles.

The module occupies 2 slots of a 3U PXI chassis and is composed in one assembly with up to 3 individual switches (Dual SPDT-Changeover, DPDT-Transfer, SP3T or SP6T). Given that all four types of switches use the same dimensional platform each module can be reconfigured to have SPDT, DPDT, SP3T, and SP6T on the same module.

This reconfigurable platform is well suited for wide selection of switching applications for inserting and removing components in signal paths. 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.

RF Characteristics

Impedance:	50 Ohms
Operating Frequency:	DC – 26.5 GHz
Switching Speed:	20 ms (max)
Operating Life:	2,000,000 cycles (Cold Switching)

Voltage Standing Wave Ratio (VSWR)

Frequency (GHz)				
DC-4	4-8	8-12	12-18	18-26.5
1.25:1	1.35:1	1.40:1	1.50:1	1.80:1

Insertion Loss (dB)

Frequency (GHz)				
DC-4	4-8	8-12	12-18	18-26.5
0.2	0.3	0.4	0.5	0.8

Open Channel Isolation (dB)

Frequency (GHz)				
DC-4	4-8	8-12	12-18	18-26.5
70	65	60	60	50

RF CW Power (W)

Frequency (GHz)				
DC-4	4-8	8-12	12-18	18-26.5
100 W	70 W	60 W	45 W	30 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:	2-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 grms
>> Nonoperating	5 to 500 Hz, 2.4 grms

Environment

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



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