12K3S Model

PXI RF Switching Module

Features

DC - 26.5 GHz

Reconfigurable Bidirectional Switches:

Any (3) switches: SP3T, SP6T, DPDT, or Dual SPDT

Software Control:

- >> ***Custom GUI in LabVIEW, LabWindows/CVI and Visual Basic***
- >> ***VISA/IVI drivers (for advanced programming)***

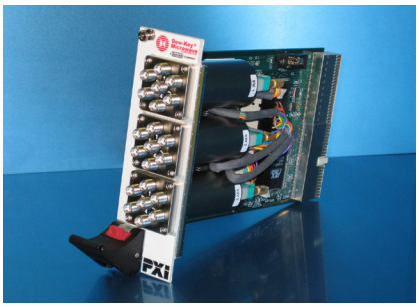

Photo: 12K3S-3/6

Photo (left to right):
Dual SPDT, DPDT, SP6T switch

Part Number

12K3S- * / ** E.g. **12K3S-3/X**, **12K3S-2/6-1/D**, **12K3S-1/6-1/X-1/3**, **12K3S-1/X-2/3**

* **Number of coaxial switches: ranging from (1) to maximum (3)**

** **Type of switch:**

SP3T = 3 ; SP6T = 6 ; Dual SPDT = D ; DPDT (transfer) = X

Note: *The order of switches are dictated from left to right with left being the top switch.*

Description

Overview:

The 12K3S-Series is a bidirectional PXI (PCI eXtensions for Instrumentation) RF switching module, which can be populated with maximum (3) miniature coaxial switches and with any SP3T, SP6T, Dual SPDT (two SPDT in one switch), and DPDT (Transfer) switch. Thus, it can be reconfigured as one wishes.

Furthermore, the operating frequency for each switch is from DC to 26.5 GHz and the module occupies 2 slots of a 3U PXI chassis. The NI PXI-1036 chassis, provided by National Instrument, is recommended; however the module is compatible with any desired PXI chassis. It is design for advanced and massive test setups, in addition to, sophisticated switching requirements.

Physical

Relay Type:	Electromechanical
Contact Material:	Beryllium copper, gold-plated
I/O Connector Type:	SMA Female
Dimensions:	2-slots wide
	3U maximum height (5.25")
	7" maximum depth (NI chassis compatible)
Front Panel Color:	Gray
Weight (max):	0.92 lbs (420 grams)

RF Characteristics

Impedance:	50 Ohms
Operating Frequency:	DC – 18 GHz
Switching Speed*:	25 ms (max)
Operating Life:	1,000,000 cycles (Cold Switching)

* software delays are not taken into account

	Frequency (GHz)				
	DC-4	**4-8**	**8-12**	**12-16**	**16-18**
VSWR (Voltage Standing Wave Ratio)	1.25:1	1.35:1	1.40:1	1.50:1	1.80:1
Insertion Loss (dB)	0.2	0.3	0.4	0.5	0.8
Open Channel Isolation (dB)	70	65	60	60	50
RF CW Power (W)	100 W	70 W	60 W	45 W	30 W

Power Consumption Backplane Supply				
Voltage	+12 VDC	+5 VDC	+3.3 VDC	-12 VDC
Current	1 A	0.15 A	0.1 A	0 A

Software Control and Platforms

PXI Compliance:

All Dow-Key PXI modules support full PXI/cPCI bus interface and complies with both PXI 2.1 specifications and CompactPCI specification (from the PCI Industrial Computer Group - PICMG).

Drivers :
- >> VISA driver
- >> IVI driver

Supported Platforms:
- >> Windows 98/2000/XP
- >> NI platforms: LabVIEW, LabWindows/CVI
- >> Any programming language using VISA drivers

Developed GUIs (Graphical User Interfaces) *:
- >> LabVIEW GUI
- >> Visual Basic GUI
- >> LabWindows GUI

* Refer to 14F3S-1/4x4 data sheet for more details or contact factory.

Shock and Vibration

Operational Shock:	30 g peak, half-sine, 11 ms pulse
Random Vibration:	
>> Operating	5 to 500 Hz, 0.3 g_{rms}
>> Non-operating	5 to 500 Hz, 2.4 g_{rms}

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