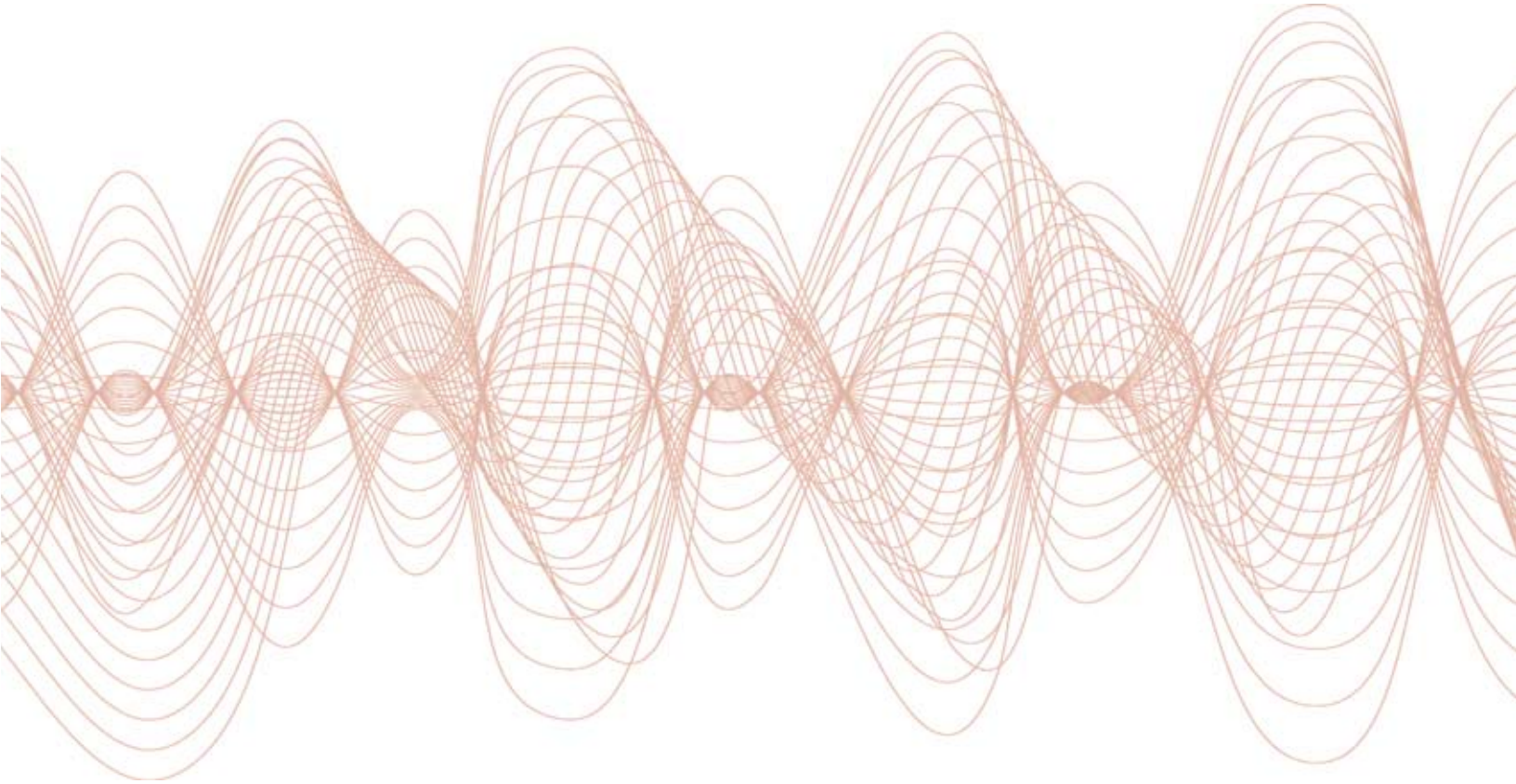
FIBER OPTIC MATRICES



DowKey® Microwave
CORPORATION
A DOVER COMPANY

7001 | C-band Crossbar/Fan-Out

7001

Features

Input/Output Configurations	16x16 Matrix utilized as 8x14 Crossbar with two 1x4 Fan-Out Segments
Operating Frequency	1530-1565 nm (C-band)
Manual Control	LCD Touch Screen
Remote Control	Ethernet

Part Number

7001

Application

The 7001 models is a non-blocking 16x16 matrix with MEMS optical switches and splitters and it is configured as a 8x14 crossbar with two 1x4 fan-out switch segments. It switches input-to-output paths in pure optical domain with a operating wavelength of 1530-1565 nm in C-band.

The crossbar segment routes any input signal to any output port such that the path between the I/O ports is unique at any given time. Whereas the fan-out configuration re-routes outputs 15 &16 back to inputs 9-to-12 & 13-to-16 respectively to make two 1x4 fan-out segments. See appendix C for more details.

This model is equipped with a MS Windows based PC, removable SATA hard drive and redundant power supplies with LED monitoring and guarded power switch on the front panel. Locally it can be controlled through an LCD touch screen with Graphical User Interface (GUI) and remotely through Ethernet.

RF Characteristics

	Crossbar Segment	Fan-Out Segment
Insertion Loss (1) (max)	2 dB	1.60 dB
Crosstalk (max)	-70 dB	-70 dB
Back Reflection (max)	-50 dB	-50 dB
TDL (2) (max)	0.30 dB	0.30 dB
WDL(3) (max)	0.25 dB	0.25 dB
PDL (4) (max)	0.05 dB	0.05 dB
Repeatability (max)	± 0.02 dB	± 0.02 dB
Stability (max)	± 0.02 dB	± 0.02 dB
Optical Power (max)	500 mW	500 mW

(1) Measured at 1550 nm
(2) Time Dependent Loss
(3) Wavelength Dependent Loss specified in ± 20nm range
(4) Polarization Dependent Loss

SEE APPENDIX C FOR SWITCH SCHEMATIC

Specifications

Relay Type	Non-Latching MEMS
I/O Connector Type	LC
Switching Time (max)	35 ms (excl. software delay)
Fiber Type	9/125 μm single mode
Lifetime (min)	10^9 cycles
Dimensions (max)	19" wide full rack 20" Depth 3U Height (5.25")
Operating Temperature	0 °C to +50 °C
Storage Temperature	-20 °C to +65 °C
Operating Humidity	10-80% non-condensing
Weight (typ)	30 lbs

Local Control	6.5" (640x480) LCD Touch Screen GUI USB port for keyboard or mouse
Remote Control	Ethernet (TCP/IP)
Fault & Error Reporting	via Ethernet and LCD (visual)
Commands/Syntax	Dow-Key SCPI commands
Operating System	Microsoft Windows
Hard drive (min)	120 GB SATA HD / removable
Power Supply	120-240 VAC, 50-60 Hz, 250 W (max) Power ON/OFF switch with guard on the front and LED indicators for redundancy
Fuse	Accessible/replaceable on the rear
Cooling / Venting	2 fans / side-to-side

7002

Features

Input/Output Configurations	16x16 Matrix utilized as 14x15 crossbar with a 1x2 Fan-Out Segment
Operating Frequency	1530-1560 nm (C-band)
Manual Control	LCD Touch Screen
Remote Control	Ethernet

Part Number

7002

Application

The 7002 models is a non-blocking 16x16 matrix with MEMS optical switches and splitters and it is configured as a 14x15 crossbar with a 1x2 fan-out switch segment. It switches input-to-output paths in pure optical domain with a operating wavelength of 1530-1565 nm in C-band.

The crossbar segment routes any input signal to any output port such that the path between the I/O ports is unique at any given time. Whereas the fan-out segment amplifies output 16 and re-routes it to input 15 & 16 to configure a 1x2 fan-out switch. See appendix C for more details.

This model is equipped with a MS Windows based PC, removable SATA hard drive and redundant power supplies with LED monitoring and guarded power switch on the front panel. Locally it can be controlled through an LCD touch screen with Graphical User Interface (GUI) and remotely through Ethernet.

RF Characteristics

	Crossbar Segment	Fan-Out Segment
Insertion Loss (1) (max)	2 dB	5.4 dB
Crosstalk (max)	-70 dB	-70 dB
Back Reflection (max)	-47 dB	-47 dB
TDL (2) (max)	0.40 dB	0.55 dB
PDL (3) (max)	0.20 dB	0.30 dB
Repeatability (max)	± 0.04 dB	± 0.04 dB
Optical Power (max)	500 mW	500 mW

(1) Measured at 1550 nm
(2) Time Dependent Loss
(3) Polarization Dependent Loss

SEE APPENDIX C FOR SWITCH SCHEMATIC

Specifications

Relay Type	Non-Latching MEMS
I/O Connector Type	FC/APC
Switching Time (max)	35 ms (excl. software delay)
Filter Type	9 μm single mode
Lifetime (min)	10^9 cycles
Dimensions (max)	19" wide full rack 20" Depth 3U Height (5.25")
Operating Temperature	0 °C to +50 °C
Storage Temperature	-20 °C to +65 °C
Operating Humidity	10-80% non-condensing
Weight (typ)	30 lbs

Local Control	6.5" (640x480) LCD Touch Screen GUI USB port for keyboard or mouse
Remote Control	Ethernet (TCP/IP)
Fault & Error Reporting	via Ethernet and LCD (visual)
Commands/Syntax	Dow-Key SCPI commands
Operating System	Microsoft Windows
Hard drive (min)	120 GB SATA HD / removable
Power Supply	120-240 VAC, 50-60 Hz, 250 W (max) Power ON/OFF switch with guard on the front and LED indicators for redundancy
Fuse	Accessible/replaceable on the rear
Cooling / Venting	2 fans / side-to-side

MICROWAVE PRODUCTS GROUP

A DOVER COMPANY

Microwave Products Group (MPG) designs, manufactures and sells special electronic components and systems, including high-performance filters, switches, diplexers, duplexers, Integrated Cosite Equipments (ICE), EMI filters and Low PIM solutions. Our products are used in military, space, telecom infrastructure, medical and industrial applications where function and reliability are crucial.

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