6.25G ROUTERS MATRIX SWITCHES

thinklogical®

Thinklogical's MX and VX Routers are high performance, protocol agnostic, modular, non-blocking routers for complete, end-to-end routing of video and peripheral signals over multi-mode or single-mode fiber optic cable. The bi-directional configuration capability adds simplicity and control over sophisticated video and KVM visual computing environments. Installed in hundreds of applications, MX and VX Routers provide scalability, flexibility, security and resiliency for routing systems worldwide.

Router Features

Highest Performance with Easiest Integration

MX and VX Routers support **6.25Gbps per port**, preserving signal integrity to provide uncompressed, high resolution video with no artifacts, latency or lost frames. Thinklogical's **re-clocking technology** ensures that every video and data stream is delivered in perfect synchronization. MX and VX Routers are protocol agnostic, supporting numerous video, audio and peripheral signals, allowing users to consolidate all of their system switching requirements into a single chassis. Routing systems may be configured as **multi-mode or single mode**, on a port-by-port basis, for increased flexibility. Designed with **completely non-blocking architectures**, Thinklogical Routers offer the ability to switch between all ports, maximizing system efficiency. Scalable from **5 ports to 640 ports**, the MX and VX Routers are ideal for small to large system applications.

Certified Security

Fiber-Based System

Fiber-based systems are inherently more secure than copper-based systems. Copper cabling presents security risks through electromagnetic interference, such as content sniffing and eavesdropping. Secure data transmitted over fiber optics cannot be compromised. Additionally, fiber extends content significantly greater distances than copper. Creating physical separation between potential threats (users) and the target (secure data) is essential to a secure system design. Thinklogical's fiber-based system permits users to **access sources up to 80 kilometers away**, with no performance degradation. System administrators can safeguard sources in a centralized location, while users maintain remote access to the sources without the ability to accidentally or intentionally breach the system (such as downloading sensitive information onto a USB drive).

Partitioned and Restricted Switching

Thinklogical protects user's critical data, and **maintains information assurance between multiple networks**, through partitioned and restricted switching. Partitioning allows the router resources to be divided to support more than one network, and does not allow for switching between networks. Restricted switching allows the administrator to manage access on a port-by-port basis. Partitioned and restricted switching are enabled through the router's firmware, and therefore, a threat would have to physically access the router to tamper with the settings.

Accreditations

Thinklogical offers the only fiber optic KVM and Video Routers in the world that have achieved accreditation to **The Common Criteria EAL4, TEMPEST Level B**, and **NATO (National Information Assurance Partnership) Green Status**, having met stringent criteria that support information assurance directives for military-intelligence secure facilities worldwide. Learn more about Thinklogical's accreditations at www.thinklogical.com/accreditations.

Exceptional Resiliency

VX and MX Routers are designed to maximize system uptime. In addition to a **Mean Time between Failure (MTBF) of over 100,000 hours**, the modular approach of the VX and MX Routers allow users to hot-swap all critical system components. **Power supplies, fan trays, control cards, input/output cards and pluggable optics are hot-swappable**, to minimize system downtime in the unlikely event a component should fail. Furthermore, the system can be easily reconfigured, such as adding additional input/output cards for expansion, without ever powering down the router or interrupting active signals. **Dual, redundant power supplies** ensure continuous, uninterrupted power to the router. Power supplies are current sharing; if the first power supply were to fail, the redundant power supply would automatically power the unit 100 percent to continue full system operation. The user can replace the malfunctioned power supply, without ever experiencing a moment of downtime. Routers are also configurable to include **redundant control cards**. In the event the primary control card were to fail, the system will automatically failover to the redundant control card, with no delay or data loss. **Enhanced diagnostics and alarms** provide extensive real-time monitoring and diagnostics of the internal product operating temperature, power supply voltages, input and output fiber links, fans, and other critical functions of the router. Redundant control cards exhibit LED indicators to provide active and fault monitoring, while the system alarms can be configured to trigger an external control system, generate SNMP traps, or generate email notifications.

MX & VX Routers · Product Features

ROUTER FEATURES	PORT CONFIGURATIONS							ROUTER SPECIFICATIONS						
Router Name	Data Card Port Count	Max Data Cards	Max Port Count	Uni-Directional Configuration up to	Bi-Directional Configuration up to	Input/Output at any Port	Automatic Tie-Line Reclocking	Height (Rack Units)	Touch Panel Included	Redundant Power Supplies	Hot-Swappable Switch Cards	Common Criteria EAL4	TEMPEST Level B	NATO (NAIPC) Green
Multi-Media Matrix Router (MXR)														
MXR-48	16	3	48	48x48	24x24	✓	✓	3RU	✓	Configurable		✓		
Velocity Matrix Routers (VXR)														
VXR-40	5	16	80	80x80	40x40		Configurable	6RU		✓		✓	✓	✓
VXR-80	5	16	80	80x80	40x40	✓	Configurable	6RU		✓		✓		
VXR-160	20	16	320	160x160	160x160		Configurable	16RU		✓		✓	✓	✓
VXR-V320	16	20	320	320x320	160x160	✓	Configurable	13RU		✓		✓		
VXR-320	16	40	640	320x320	320x320	✓	Configurable	24RU		✓		✓	✓	✓
VXR-640	20	32	640	640x640	320x320	✓	✓	28RU		✓	✓	✓		

Hot-Swappable Router Modules

All Routers Feature

· 6.25Gbps per Port

· Modular and Hot-Swappable Components, including:

· Control Cards

· Data Input and Output Cards

· Power Supplies

· Fan Trays

· Optical Modules

· Configurable Redundant Control Cards with Automatic Failover

· Multi-Mode, Single Mode and Coaxial Configurations

· Compatibility with CWDM and DWDM Optical Modules

· Non-Blocking Architecture

VX160 ROUTER

The VX160 is a high performance, non-blocking matrix switch for complete, end-to-end routing of video and peripheral signals. The VX160 is **scalable in increments of 20 ports, up to 320 ports**, for a unidirectional 160x160 or a bidirectional 160x160 switch.

VX160 Router · Front

VX160 Router · Backpanel

PRODUCT FEATURES

- Configurable up to a 160x160 switch
- Modular, 20 port data cards
- 6.25Gbps bandwidth per port
- Re-clocking technology maintains signal integrity
- Protocol agnostic
- Multi-mode and/or single mode applications
- Completely non-blocking architecture
- Route video and data up to 80 kilometers
- MTBF over 100,000 hours
- Hot-swappable control cards, data input/output cards, power supplies, fan trays, optical modules
- Optional redundant control cards and power supplies
- System Management Portfolio for complete router control and management
- Certified to maintain Information Assurance between networks, Common Criteria EAL4, NATO (NIAPC) Green Status, TEMPEST Level B

Specifications

Optical Distance	Multi-Mode 1000m · 65m: OM1; 350m: OM2; 750m: OM3; 1000m: OM4 Single Mode up to 80km · All Distances: OS2 (9/125)
Optical Wavelength	Multi-Mode: 850nm; Single Mode: 1310nm (CWDM and DWDM wavelengths available, contact Thinklogical for information)
Data Rate	50Mbps to 6.25Gbps per port; Switching Capacity: 2000Gbps
Environmental	Operating Temperature: 0°C-50°C Humidity: 5-95% RH, non-condensing
Compliance	Approvals for United States of America, Canada, and EU
Warranty	One year · Extended warranties available for purchase
Mounting Brackets	19" Rack Mounting Brackets Included
Power Consumption	850 Watts (fully loaded)
Supply Voltage	Universal AC Power Supply, 100-240VAC, 47-63Hz
Weight	103.50lbs (46.95kg)
Dimensions [Tolerance ± 0.039" (1.00mm)]	
Rack Size (Width)	EIA 19" (482.60mm)
Height x Depth	16RU 27.97" (710.44mm) x 19.65" (499.13mm) w/ fiber mgmt tray
Software Updates	USB B Connector (1)
RS-232 Serial Ports	DB9 Female Connectors (2)
10/100 Network	RJ45 Connector (1)
Alarm	Closed contact alarm, ten position terminal block
Cables Included	(2) AC Power Cable & (1) CAT 5, 4.5m (CBL000001-015FR) (40) 24" 1.0/2.3 to Female BNC Cables per Coaxial Data Card

Ordering Information

Part Number	Description
Router Chassis	
VXR-000160	VX160 Router Chassis
Data Input/Output Cards	
VXM-DI0020	VX160 20 Port Multi-Mode Data Input Card
VXM-DI0R20	VX160 20 Port Multi-Mode Data Input Repeater Card
VXM-DI0S20	VX160 20 Port Single Mode Data Input Card
VXM-DI0C20	VX160 20 Port Coaxial Data Input Card
VXM-DO0020	VX160 20 Port Multi-Mode Data Output Card
VXM-DO0S20	VX160 20 Port Single Mode Data Output Card
VXM-DO0C20	VX160 20 Port Coaxial Data Output Card
Spares	
VXM-000033	VX160 Control Card
VXM-000002	VX160 Fan Tray
VXM-000003	VX160 Power Supply

For EAL4 Certified Routers, please contact Thinklogical for additional ordering information.

Common Criteria