

DMS Series

MODULAR DVI MATRIX SWITCHERS

Flexible, Configurable DVI Matrix
Switching from 4x4 to 36x36

- ▶ I/O sizes from 4x4 to 36x36
- ▶ Modular and field-upgradeable design
- ▶ Hot-swappable components – DMS 1600 and DMS 3600
- ▶ Choice of DMS DVI or Fiber matrix I/O boards
- ▶ Mix-and-match DVI and Fiber Matrix Boards
- ▶ Supports data rates to 4.95 Gbps - 1.65 Gbps per color
- ▶ Supports computer-video to 1920x1200, including HDTV 1080p/60
- ▶ EDID Minder® automatically manages EDID communication
- ▶ Ethernet monitoring and control



Extron Electronics
INTERFACING, SWITCHING AND CONTROL

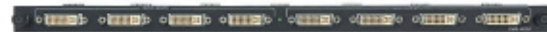
Introduction

The Extron **DMS Series Modular DVI Matrix Switchers** represent a new level of matrix switching for DVI. They combine the simplicity and reliability of a fixed I/O matrix switcher with the convenience and flexibility of a modular matrix switcher. DMS Series matrix switchers accept any combination of available DMS DVI or Fiber matrix boards. Input and output boards are available in 4-port input, 4-port output, and 4x4 I/O versions, providing various I/O size combinations from 4x4 to 36x36, depending on the DMS Matrix Switcher Frame selected. The DMS Series is ideal for a wide range of applications that require routing of high-resolution DVI digital video signals without copy protection.

The DMS Series provides substantial flexibility, expandability, and affordability by allowing the user to select the configuration required for the application. DMS DVI and DMS Fiber matrix boards can be mixed-and-matched within the DMS frame to support a wide variety of matrix switching system designs. Matrix boards may be added at any time for easy and quick system upgrades or expansion.

DMS Series Frames are available in sizes to fit I/O combinations from 4x4 to 36x36. For applications requiring a compact enclosure size with a single, fixed power supply, the DMS 2000 and DMS 3200 frames support I/O configurations up to 20x20 or 32x32, respectively. For mission critical, 24/7 applications that require dual AC power inputs and hot-swappable power supplies, the DMS 1600 and DMS 3600 frames support I/O configurations up to 16x16 or 36x36, respectively. All four DMS frames accept any combination of the available DMS DVI and Fiber Matrix Boards.

DMS Series DVI Matrix Boards feature automatic cable equalization for all inputs and output reclocking for each DVI output.



DMS I/O 44 DVI
4x4 I/O DVI Board



DMS 4i DVI
4-Input Board



DMS 4o DVI
4-Output Board



DMS I/O 44 Fiber Board



DMS 4i Fiber Board



DMS 4o Fiber Board

This reduces the need for additional signal conditioning equipment by compensating for weak source signals or signal loss when using long input cable assemblies. Additionally, DMS DVI matrix boards provide +5 VDC, 250 mA on the DVI outputs for powering external peripheral devices.

DMS Series Fiber Matrix Boards are compatible with Extron DFX 100 DVI extenders and can support transmitted distances of up to 300 meters (984 feet) on one multimode fiber. These boards utilize standard LC connectors, which provide reliable physical connectivity and precise fiber core alignment, and allow the use of low-cost, widely available pre-terminated cables.

To enhance and simplify integration, DMS Series matrix switchers feature EDID Minder, which automatically manages EDID communication between all connected input sources. EDID Minder allows the EDID from any of the displays, or pre-stored selectable EDID information, to be assigned to any input. By maintaining continuous EDID communication with all sources, EDID Minder ensures that all DVI sources power up at the proper resolution, and maintain their video outputs whether or not they are actively connected to the digital display devices.

The DMS Series DVI Matrix Switchers are ideal for various commercial, medical, military, and government environments where distribution of high resolution, digital video signals is needed, and a fully digital pathway is essential to maintain the highest possible image quality, from multiple sources to multiple displays.



Features

Modular and field-upgradeable design

DMS Series Matrix Switcher Frames provide substantial flexibility, expandability, and affordability by allowing users to select the configuration required for their systems. Additional input and output boards may be added at any time for easy and quick upgradeability or expansion, from 4x4 up to 36x36, depending on the DMS Frame size selected. All DMS frames accept any combination of available DMS DVI and Fiber Matrix Boards.

Compact, high I/O density matrix switcher frames – DMS 2000 and DMS 3200

For applications requiring a compact enclosure size with a single, fixed power supply, the DMS 2000 and DMS 3200 frames support I/O configurations up to 20x20 or 32x32, respectively.

Fully modular matrix switcher frames – DMS 1600 and DMS 3600

For mission critical, 24/7 applications that require dual AC power inputs, hot-swappable power supplies, and hot-swappable fans, the DMS 1600 and DMS 3600 frames support I/O configurations up to 16x16 or 36x36, respectively.

Redundant, hot-swappable power supplies – DMS 1600 and DMS 3600

A redundant power supply is included with the DMS 3600 and available as an option for the DMS 1600. Primary and back-up power supplies provide added reliability for critical applications.

Two AC power inputs – DMS 1600 and DMS 3600

For added power reliability, some 24-hour environments require two separate AC power sources, one as the primary source and the second for redundancy. The DMS 1600 and DMS 3600 matrix switcher frames offer two AC power inputs for continuous connection to both power sources.

Hot-swappable components – DMS 1600 and DMS 3600

Allows the replacement of a fan assembly or power supply at any time without the need to power down the switcher. This is especially useful for mission-critical applications that require continuous system operation.

Supports data rates to 4.95 Gbps - 1.65 Gbps per color

Supports computer-video to 1920x1200, including HDTV 1080p/60

EDID Minder® automatically manages EDID communication between connected devices

EDID Minder ensures that all sources power up properly and reliably output content for display.

QS-FPC - QuickSwitch Front Panel Controller with tri-color, backlit buttons

Provides a discrete button for each input and output, allowing for simple, intuitive operation. Buttons can be custom labeled for easy identification. The buttons illuminate red, green, or amber, depending on function, for ease of use in low-light environments.

Front panel security lockout

Prevents unauthorized use in non-secure environments. In lockout mode, a special button combination is required to operate the switcher from the front panel controller.

Global presets

Up to 32 frequently used I/O configurations may be saved and recalled either from the front panel, serial, or Ethernet control. This time-saving feature allows I/O configurations to be set up and stored in memory for future use.

I/O Grouping and Rooming

I/O Grouping allows the matrix switcher to be virtually divided into smaller sub-switchers. Specific outputs, such as those designated for a specific area or a particular room can be grouped together for ease of installation and control.

Rooming allows selected outputs to be grouped together into specific "rooms", each with its own set of unique presets. A total of 10 rooms, with 10 presets per room, are available.

Ethernet monitoring and control

DMS Series matrix switchers can be proactively monitored and managed over a LAN, WAN, or the Internet, using standard TCP/IP protocols. Ethernet control provides for remote selection of I/O ties, EDID Minder configuration, and monitoring system status.

RS-232 & RS-422 control port

Using serial commands, DMS Series matrix switchers can be controlled and configured via the included Windows®-based control software, or integrated into a control system. Extron products use the SIS™ - Simple Instruction Set command protocol, a set of basic ASCII code commands that allow for quick and easy programming.

Control software

Provides a graphical, drag-and-drop interface for I/O configuration and other customization functions via RS-232 and RS-422 remote control.

Choice of DMS DVI or Fiber Matrix I/O boards

DMS Series DVI and Fiber Matrix input and output boards are available in 4-port input, 4-port output, and 4x4 I/O versions. DMS Series Fiber Matrix Boards are compatible with Extron DFX Series DVI extenders and can support transmitted distances of up to 300 meters (984 feet) on one multimode fiber.

DVI Matrix Board Features: Automatic cable equalization for each DVI input

DMS Series DVI Matrix Boards provide automatic cable equalization to 100 feet (30 meters) at 1920x1200/8-bit color when used with Extron DVI Pro cables.

Automatic output reclocking

DMS Series DVI Matrix Boards provide automatic output reclocking, which reshapes and restores the timing of DVI signals at each output, enabling transmission over long DVI cables.

Provides +5 VDC, 250 mA power on each DVI output for external peripheral devices

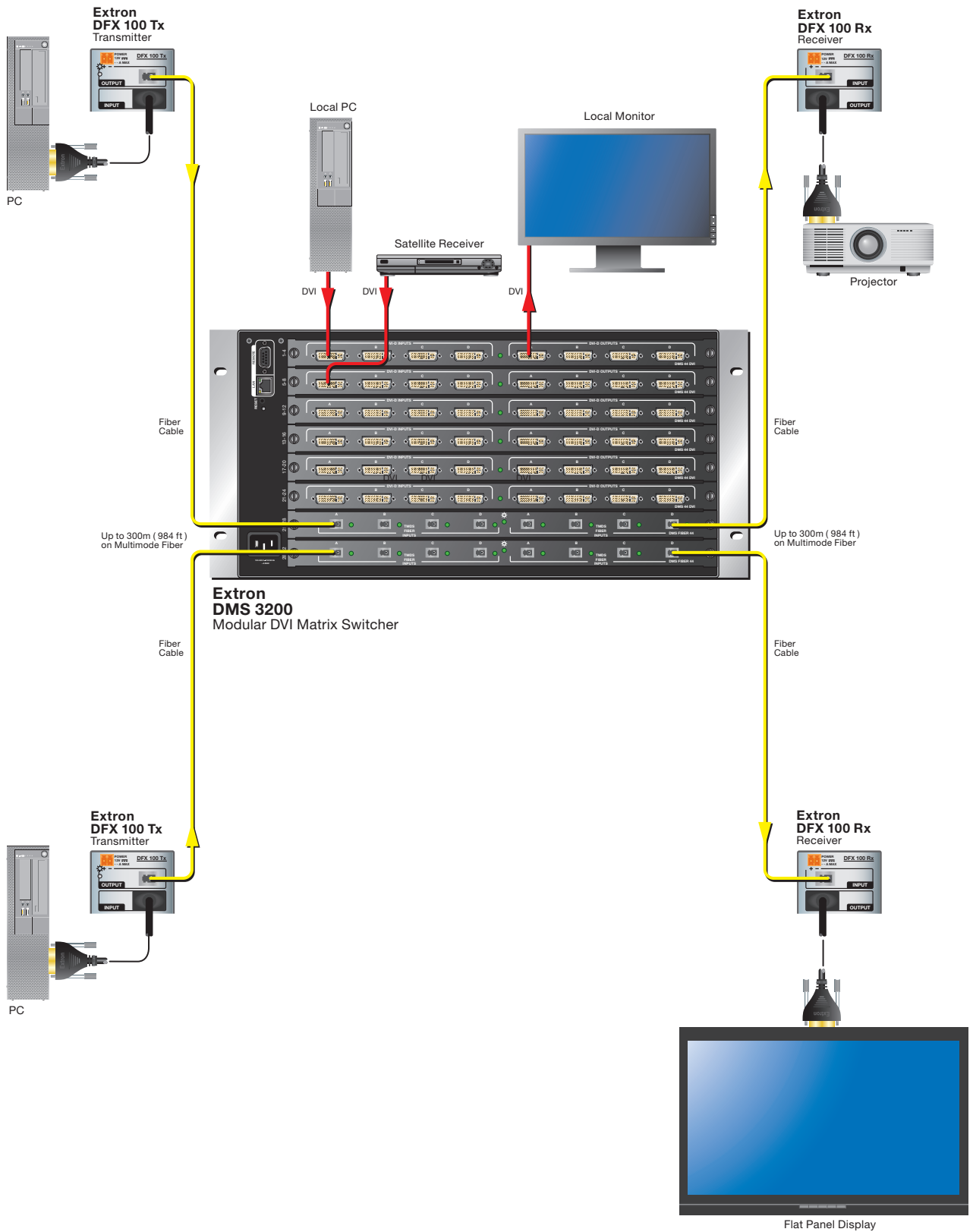
Fiber Matrix Board Features: Supports transmission of DVI over one multimode fiber

DMS Fiber Matrix Boards are compatible with Extron DFX Series single-fiber DVI transmitters and receivers and support transmitted distances up to 300 meters (984 feet) on one multimode fiber.

Industry-standard LC connectors

DMS Fiber Matrix Boards utilize standard LC connectors, which provide reliable physical connectivity and precise fiber core alignment, and allow the use of low-cost, widely available pre-terminated cables.

Application Diagram



Overview

Choice of DMS DVI or Fiber Matrix I/O boards

Available in 4-port input, 4-port output, and 4x4 I/O versions that can be mixed and matched to support a variety of system designs

Modular and field upgradeable design

Ensures system flexibility and reliability without having to power down the matrix switcher

EDID Minder[®]

Automatically manages EDID communication between connected devices

Automatic output reclocking

Restores DVI signal integrity and enables transmission over long cables



DMS 3600

High speed digital switching

Supports all signal resolutions up to 1920x1200, and HDTV 1080p/60

Automatic input equalization

Compensates for DVI signal loss due to long cables or sources that output weak signals

Redundant and hot-swappable power supplies

Provide added reliability for continuous, mission-critical applications

+5VDC, 250 mA power on each DVI output

Provides remote powering of signal extension devices and other peripherals



DMS 2000



DMS 1600



DMS 3200

Supports transmission of DVI over one multimode fiber

Compatible with Extron DFX Series single-fiber DVI extenders and supports distances up to 300 meters (984 feet) on one multimode fiber

Standard LC connectors

Provide reliable physical connectivity and precise fiber core alignment, and allow the use of low cost, pre-terminated cables

Automatically disables laser when fiber is disconnected

For safety during installation or service, lasers are turned off whenever the fiber is disconnected

Specifications

VIDEO — DMS DVI	
Resolution range	Up to 1080p (HDTV) or 1920x1200 (the highest resolution of the single link DVI standard) @ 48, 50, or 60 Hz
Maximum data rate	4.95 Gbps (1.65 Gbps per color)
Maximum pixel clock	165 MHz
Standards	DVI 1.0
VIDEO INPUT — DMS 44 DVI AND DMS 4i DVI INPUT BOARDS	
Number/signal type	4 digital RGB single link DVI-D per input board
Equalization	Automatic
Input cable length	100' (30 m) at 1920x1200 @ 48, 50, or 60 Hz; or 1080p; 8 bit color
NOTE: The transmission distance varies depending on the signal resolution and on the type of cable, graphics card, and display used in the system.	
VIDEO OUTPUT — DMS 44 DVI AND DMS 4o DVI OUTPUT BOARDS	
Re-clocking	Automatic
Output cable length	50' (15.24 m) at 1920x1200 @ 48, 50, or 60 Hz; or 1080p
Peripheral device power	250 mA per output
OPTICAL SPECIFICATIONS — FIBER OPTIC BOARDS	
Operating distance	300 m (985')
NOTE: Operating distance is approximate. These are typical distances. The maximum distance may be greater than these typical numbers depending on factors such as fiber type, fiber bandwidth, connector splicing, losses, modal or chromatic dispersion, environmental factors, and kinks.	
VIDEO INPUT — DMS 44 FIBER AND DMS 4i FIBER INPUT BOARDS	
NOTE: The fiber optic input boards require connection to a DFX 100 Tx transmitter.	
Number/signal type	4 fiber optic, multimode (OM3 or OM4 fiber recommended)
Input cable length	300 m (985')
VIDEO OUTPUT — DMS 44 FIBER AND DMS 4o FIBER OUTPUT BOARDS	
NOTE: The fiber optic output boards require connection to a DFX 100 Rx receiver.	
Number/signal type	4 fiber optic, multimode (OM3 or OM 4 recommended)
Output cable length	300 m (985')
CONTROL/REMOTE — SWITCHER HOST PORTS	
Serial host control port	1 bidirectional RS-232 or RS-422, rear panel 9-pin female D connector
Ethernet control port	1 RJ-45 female
Ethernet data rate (for network communication)	10/100Base-T, half/full duplex with autodetect
GENERAL	
Power consumption	
DMS 1600	Primary power supply: 97 watts Primary and redundant supplies: 107 watts Measured fully loaded with (4) 4x4 I/O boards
DMS 2000	116 watts Measured fully loaded with (5) 4x4 I/O boards
DMS 3200	174 watts Measured fully loaded with (8) 4x4 I/O boards
DMS 3600	212 watts Measured fully loaded with (9) 4x4 I/O boards

Thermal dissipation, full load		
DMS 1600	Primary power supply: 332 BTU/hr Primary and redundant supplies: 366 BTU/hr Measured fully loaded with (4) 4x4 I/O boards	
DMS 2000	398 BTU/hr Measured fully loaded with (5) 4x4 I/O boards	
DMS 3200	596 BTU/hr Measured fully loaded with (8) 4x4 I/O boards	
DMS 3600	724 BTU/hr Measured fully loaded with (9) 4x4 I/O boards	
Enclosure dimensions		
DMS 1600	7.0" H x 17.0" W x 12" D (4U high, full rack wide) (13.3 cm H x 43.2 cm W x 30.5 cm D) (Depth excludes connectors and buttons. Width excludes rack ears.)	
DMS 2000	5.2" H x 17.0" W x 12.2" D (3U high, full rack wide) (13.3 cm H x 43.2 cm W x 31.0 cm D) (Depth excludes connectors and buttons. Width excludes rack ears.)	
DMS 3200	8.7" H x 17.0" W x 12.2" D (5U high, full rack wide) (22.1 cm H x 43.2 cm W x 31.0 cm D) (Depth excludes connectors and buttons. Width excludes rack ears.)	
DMS 3600	14.0" H x 17.0" W x 12.25" D (8U high, full rack wide) (35.6 cm H x 43.1 cm W x 31.1 cm D) (Depth excludes connectors and handles. Width excludes rack ears.)	
Shipping weight with boards installed		
DMS 1600	32 lbs (15 kg)	
DMS 2000	21 lbs (10 kg)	
DMS 3200	33 lbs (15 kg)	
DMS 3600	48 lbs (22 kg)	
Vibration	ISTA 1A in carton (International Safe Transit Association)	
Regulatory compliance		
Safety	CE, c-UL, UL	
EM/EMC	CE, C-tick, FCC Class A, ICES, VCCI	
Environmental	Complies with the appropriate requirements of RoHS, WEEE	
Warranty	3 years parts and labor	
NOTE: All nominal levels are at ±10%.		
Model	Version Description	Part number
DMS 1600 Frame	4U, 4-Slot Frame	60-1091-01
DMS 2000 Frame	3U, 5-Slot Frame	60-1349-01
DMS 3200 Frame	5U, 8-Slot Frame	60-1350-01
DMS 3600 Frame	8U, 9-Slot Frame	60-1092-01
DMS 4i DVI	4-Input DVI Board	70-741-02
DMS 4i Fiber	4-Input Fiber Optic Board	70-975-02
DMS 4o DVI	4-Output DVI Board	70-741-03
DMS 4o Fiber	4-Output Fiber Optic Board	70-975-03
DMS I/O 44 DVI	4x4 I/O DVI Board	70-741-01
DMS I/O 44 Fiber	4x4 I/O Fiber Optic Board	70-975-01

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

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