

## VDM SERIES SOLID STATE VIDEO, RF or BALANCED LINE SWITCHING SYSTEMS

CYTEC's VDM Series Switching Systems are based on a solid state switch fabric and are available in nonblocking, full fan-out configurations from 8x8 to 32x32, with a small signal bandpass to over 400 MHz. Input and output buffers are added to the basic switch fabric allowing a broad range of both 75 and 50 ohm coaxial or two-wire signals to be switched. Control is via the new CM-11 Control Module, which supplies LAN, RS232 and IEEE488 remote controls.

### TYPICAL APPLICATIONS INCLUDE:

- Programmable Routing of T3/DS3, Video or Low Level RF (Antenna Downlink, IF, etc).
- Broadcast Video to Multiple Locations.
- Signal Distribution for Communications and Test.
- Automated Patch Panels.

### SYSTEM HIGHLIGHTS:

- Modular Design** - System can be configured in increments from 8x8 to 32x32 matrix sizes.
- Systems are designed for single ended 50 or 75 ohm coaxial as well as two-wire pairs.
- Different buffer modules provide for impedance transformation (e.g., 50 to 75 ohms) and balanced to unbalanced signals.
- Input and Output buffer modules are hot-swappable.
- Control via IEEE488, RS232 & Ethernet all standard.
- Firmware upgrades can be downloaded from Cytec's web site.

### CONTROL OPTIONS

#### CM-11 LAN/GPIB/RS232 CONTROL MODULE

These controls are standard. All interfaces may be active and in use simultaneously. Setup information is stored in NVRAM, which also allows the system to be configured for various matrix addressing combinations which are then remembered.

**LAN** - 10/100BaseT Ethernet with an RJ45 Connector.

**GPIB** - IEEE488.2 compliant control module.

**RS232** - Standard D9 serial port which can be used from computer com ports or USB to COM port cables.

#### MC-2 Keypad Manual Control

This optional front panel control includes a keypad and LCD Display. The operator can open, close and verify the status of any switch point.



VDM/32x32 Chassis w/ Keypad Manual Control

### VDM CHASSIS

The VDM Chassis are standard 19" rack mount with RS232, IEEE488 and Ethernet Controls. These solid state systems are nonblocking and full fanout: any input connects to any or even all outputs. BNC Input and Output connectors are standard, while other connectors, such as SMA or Twinax, are also offered. Small signal bandpass is DC to over 400 MHz, while crosstalk is better than -60 dB at 50 MHz.

The following chassis are available:

**VDM/32x32 Mainframe**- 5.25" high and 15.6 " depth

Configured from an 8x8 to 32x32 Matrix

**VDM/32x32-E Expansion Chassis** - is used to build larger systems. Multiple VDM Chassis can be controlled from one MESA II Control Chassis, as shown in the **MESA Bulletin**.

### ALL CHASSIS

**Material:** Gray anodized extruded or sheet aluminum

**Mounting Hardware:** Rack mount handles are standard  
Flush mount flanges available at no extra cost.

**AC Power:** Autoranges from 90 - 264 VAC at 47-63 Hz

**Custom configurations are available on request. Please contact our Technical Sales Department for application assistance.**

FOR TECHNICAL ASSISTANCE, PLEASE CONTACT CYTEC AT  
585-381-4740 OR VISIT OUR WEBSITE AT [cytec-ate.com](http://cytec-ate.com)

# SPECIFICATIONS AND BUFFER OPTIONS

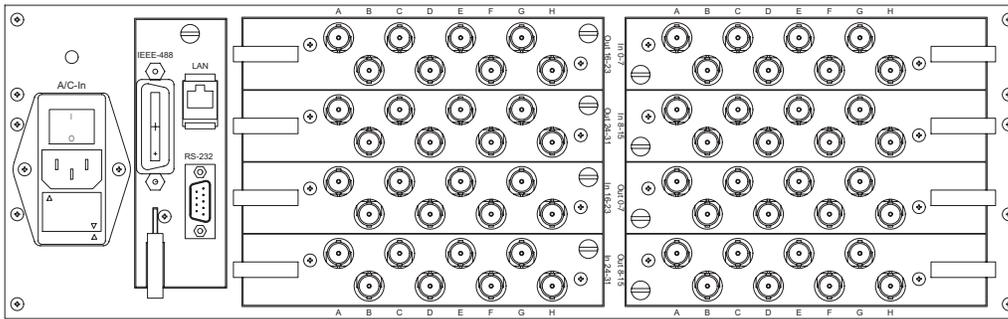


Fig. 1 VDM/32x32 Mainframe with RS232, IEEE488 and LAN Control, with BNC Signal Connections

## VDM SERIES MATRIX

The VDM Series is intended to switch small signal levels in a nonblocking (any input to any output) and full fan out (any input to any or all outputs) configuration. The heart of the system is a solid state 32x32 switch fabric. The basic system holds the necessary control module, power supplies and the switch fabric. The system is completed by adding the required input or output buffers. The buffers supply impedance matching and/or signal level transformations. This design provides switching for a large number of different signal types.

## VDM SPECIFICATIONS

### Connections

BNC Signal Connections, AC input and Remote Control input are on rearpanel shown in Fig.1. Optional signal connectors including SMA, SMB, TwinBNC and Triax.

### ENVIRONMENTAL

Dimensions	19" rack mount x 5.25" H x 15.6" D
Weight	20 lbs. max. with buffers installed
Operating Temperature	0° to 65° C
Storage Temperature	-25° to 80° C
Altitude, Operational	3,000 meters
Altitude, Storage	15,000 meters
Humidity	95% RH noncondensing to 30° C

### POWER

AC Input	90-264 Volts AC, 47-63 Hz
DC Supply Type	High Efficiency Switching
Consumption	250 Watts Maximum for 32x32 Matrix

### BANDPASS

Small Signal	Approx. 500 MHz (-3dB) for 0 dBm
Flatness	0.5 dB at 0 - 300 MHz
Slew Rate	1800 V/usec

### CROSSTALK / ISOLATION

Crosstalk	-50 dB at 240 MHz
	-60 dB at 240 MHz Non Adjacent
Isolation	-40 dB at 360 MHz
	-50 dB at 360 MHz Non Adjacent

### MISCELLANEOUS

Switching Speed	100 ns plus any computer delay
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## INPUT and OUTPUT BUFFERS

Optional very wideband Buffers are available for all Input and Output Channels. These buffers serve up to three different purposes:

- 1) They transform impedances to allow the solid state switch fabric to be used for signals requiring other than two wire analog, for example 50 ohm coax.
- 2) Input Buffers can be used to reduce signals to levels where they can be safely switched by the matrix.
- 3) Output Buffers can have preset gains to boost signals to required voltages.

A typical Output buffer is shown schematically in Fig. 2. Resistors **R<sub>s</sub>** and **R<sub>i</sub>** set the input impedance and also attenuate the input signal (if needed), while **R<sub>out</sub>** determines the output impedance. The circuit is typically built with one of several standard small signal Op Amps, but custom amplifiers are also possible. Specifications for a typical small signal amplifier are shown below.

### BUFFER SPECIFICATIONS

Bandpass (-3dB)	Typically >500 MHz
Preset Gains (A <sub>v</sub> )	2 to 16
Output Current	80 mA typical
Rise Time	3100 V/us typical

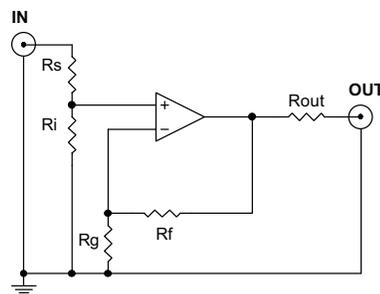


Fig. 2 Typical Output Buffer

## SOFTWARE

Free drivers and/or sample programs are available for the most commonly available application programming languages.

## WARRANTY

CYTEC Corp. warrants that all products are free from defects in material or workmanship for a period of five years.

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