

DX/256x256 SERIES

SOLID STATE DIGITAL SWITCHING SYSTEMS

CYTEC's DX/256x256 Series Switching Systems are based on a solid state switch fabric. The Standard DX system is designed to switch TTL, CMOS, LVTTTL, IRIG, RS232 and RS422. Input and output buffers are used to convert to RS422 and/or RS232 signal levels. The DX is capable of switching data rates to 80 Mbps NRZ. The DX Matrix is a non blocking, full fan-out configurations from 64x64 up to 256x256. Control options include RS232/ IEEE488, LAN or LCD Keypad Manual Control.

DX/256X256 CHASSIS

The DX/256X256 Series are 19" rack mounting units and are built as either Mainframe or Expansion Chassis. The Solid State Digital Matrix is modular, capable of being expanded from a 64x64 to a 256x256 by adding the desired number of input and output modules. The configurations occur in 64 channel increments so typical configurations will be 64x128, 128x384, 256x64, etc. Other possible configurations such as dual 32x32 clock and data matrices or multi chassis clock and data systems are also available. The DX Series Matrix is completely non blocking and full fan-out.

DX/256X256 MAINFRAME

The Standard Mainframes are built with power supplies, user specified Control Module and optionally Keypad LCD Display Manual Control. The system is completely modular by adding the desired number of DX/64 Input and Output Switch Modules defined on page 2 of the bulletin.

DX/256x256-E EXPANSION CHASSIS

The expansion chassis is identical to the mainframe in size and function. The expansion chassis, however, is built without a dedicated control module, manual control or power supplies. Instead, it is designed to be both powered and controlled by one of CYTEC's MESA Control Chassis detailed in the **MESA Bulletin**. Ribbon Expansion Cables connect the expansion chassis to the MESA.

CUSTOM CHASSIS

Custom configurations are available upon request. Most custom systems wire out the rear panel Input/Output connections to a required connector type that is different from the standard 64 pin male header or 78 pin female D Connectors. This wiring is priced on the basis of labor and materials.



DX/256x256 Mainframe Rear View

CONTROL MODULES

IF-5 IEEE488/RS232 CONTROL MODULE

This module provides remote control via both RS232 Serial and IEEE488 Talk/Listen interfaces as detailed in Applications Bulletin AP-5.

IF-6 LAN INTERFACE

This optional module allows control over a 10BaseT Ethernet Local Area Network via TCP/IP protocols as described in Applications Bulletin AP-5.

MANUAL CONTROL

MC-2 WITH LCD DISPLAY

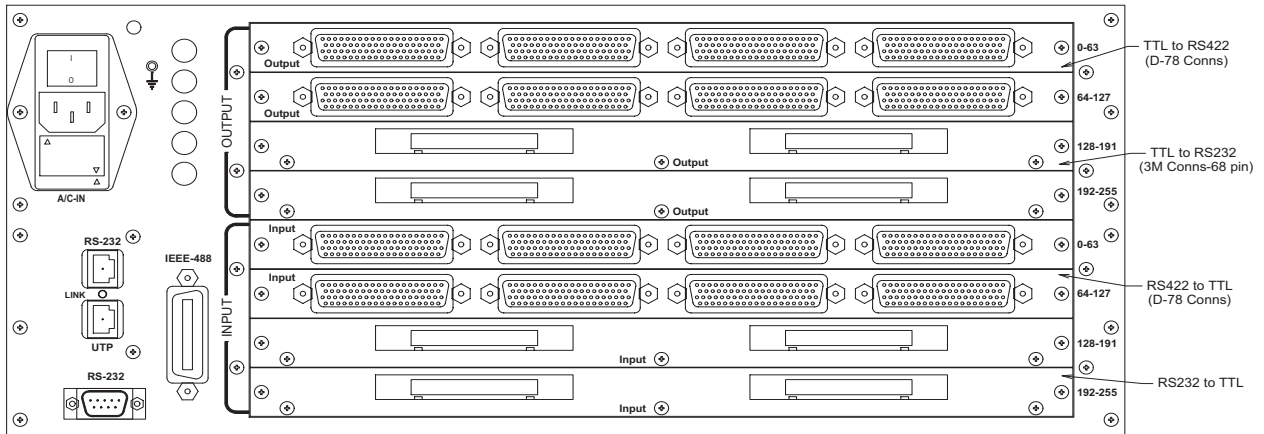
This local control supplies a front panel Keypad and LCD Display that lets the operator control any switch and verify switch status.

VMCS

This Virtual Manual Control Software allows a remote operator using a PC to view matrix Status and control switches using a full Graphical User Interface.

**CONTACT 1-800-346-3117 OR WWW.CYTEC-ATE.COM
FOR TECHNICAL ASSISTANCE**

SPECIFICATIONS AND BUFFER OPTIONS



**DX/256x256 Mainframe Rear View with IEEE488, RS232 and LAN Control
Shown with RS422 and RS232 Buffer Modules**

DX/256x256 SERIES MATRIX

The DX Series is intended to switch almost any digital stream data stream in a non blocking (any input to any output without disturbing previously set paths), full fan out (any one input to any or all outputs) configurations. The Basic system is intended to switch TTL or CMOS signal levels.

When used without buffer modules, the system conforms to all TTL/LVTTL specifications below

DX SPECIFICATIONS (signal w/o buffers)

Input Voltage High (VIH) :	2.1V Min	5.25V Max
Input Voltage Low (VIL)	-0.3V Min	0.8V Max
Output Voltage High (VOH)	2.4V Min	3.7V Max
Output Voltage Low (VOL)	-----	0.4V Max
Data Rate	-----	80Mb/s Max
Output Current	-----	8 mA Max

CONNECTIONS

Signal Connections:

64 pin Headers or 78 pin female D connectors. Patch panels can be provided to convert 64 pin headers or 78 pin female "D" to BNC, SMA or customer specified connector.

AC Input:	Universal, US Standard AC
RS232:	D9 Male
GPIB:	IEEE488
10BaseT LAN:	RJ45
LAN to RS232:	RJ45

GENERAL SPECIFICATIONS

Dimensions - 19" rack mount, 7" (4U) high and 20" deep
Weight - <45 lbs (20.41 Kg)
AC Input - 100 to 130 VAC or 200 to 260 VAC, 47/63 Hz,
Operating Temperature - 0 to 50 °C
Storage Temperatures - -25 to 65 °C
Switching Speed - 50 ns + Control Interface Delay
Humidity - 95% RH non condensing to 30° C

INPUT and OUTPUT BUFFERS

Optional Input and/or output buffer modules convert the system to RS422 and/or RS232 levels. Each buffer module has sixty-four (64) channels so a fully buffered 256x256 system has four input buffers and four output buffers. When these modules are used, the specifications of the system are determined by the input and/ or output buffers present.

The RS422 input and output buffer modules have two options for connectors, 68 pin male header or 78 pin female "D" connector.

DX SPECIFICATIONS (signal with buffers)

RS422 Input Buffer Characteristic:

Common Mode Input Voltage (Vcm)	-7V < Vcm < +7V
Differential Voltage Swing	200 mV Min
Input Resistance	6.8 KOhm Typical
Data Rate	20 Mb/s Max

RS422 Output Buffer Characteristic:

Common Mode Output Voltage	1.8V Typical
Output Voltage High (VOH)	2.5V Min / 3.4V Max
Output Voltage Low (VOL)	.3V Typical / .5V Max
Data Rate	20 Mb/s Max
Output Current	150 mA Max

RS-232 Input Buffer Characteristic:

Input Voltage Range	-25V Min / +25V Max
Input Voltage High (VIH)	2.17V Min
Input Voltage Low (VIL)	1.06V Max
Data Rate	200 kb/s Typical
Input Resistance	5.0k Ohms Typical

RS-232 Output Buffer Characteristic :

Output Voltage High (VOH)	+5V Min / +8V Max
Output voltage Low (VOL)	-8V Typical / -5V Max
Data Rate	120 kb/s Typical
Output Current	±10mA Typical

WARRANTY

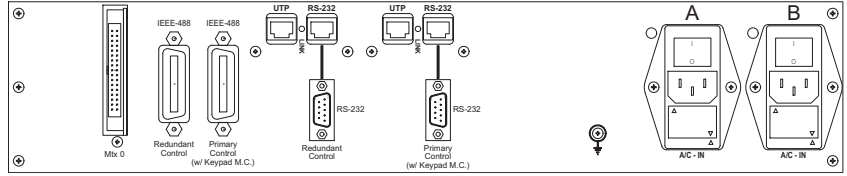
CYTEC Corp. warrants that all products are free from defects in Material or Workmanship for a period of five years

OPTIONS

Control Options

Single Chassis Mesa Controller with Redundant Supplies and Controls

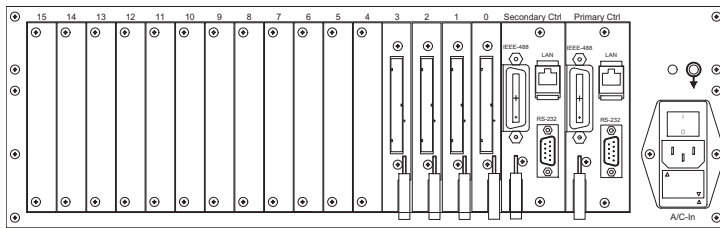
- Allows for redundant supplies but not hot swappable.
- Allows for redundant controls on a single DX chassis.
- Allows for remote Power Supply monitoring.



Single Chassis Mesa Controller P/N 16-13-00

MESA II Modular Controllers

These controllers allow you to run multiple DX/256x256 Expansion Chassis from a single point of control and provides the following benefits:



- Configuration of multiple chassis larger than 128x128, driven in parallel for Clock and Data systems.
- Allows for modular redundant control modules to increase MTBF and decrease MTTR.
- Allows for power supply status remote monitoring.
- Provides a single point of control for multiple chassis.
- CM-8 Interface allows IEEE488, RS232 and 100BaseT Ethernet LAN with two TCP/IP ports.

Hot Swap Power Supply Option

All power supplies are either universal 90 to 260 VAC input or selectable 110 / 220.

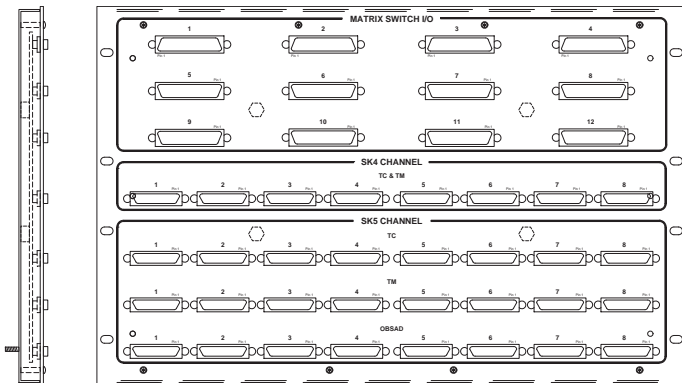
19" rack mount modular power supplies. These supplies allow you provide redundant hot-swappable power supply modules for each DC voltage. Supplies are diode isolated to share the load unless one supply fails. Failure results in an alert LED or can be setup to trigger an alarm. Power supply status monitor option for the Mesa control chassis allows you to remote monitor the supply status.



Buffer Options

Custom Buffer Modules can be built to switch any type of serial data below 80 Mbps NRZ. E-mail or call us with your specs for a quote on custom buffer modules.

Custom Patch Panels

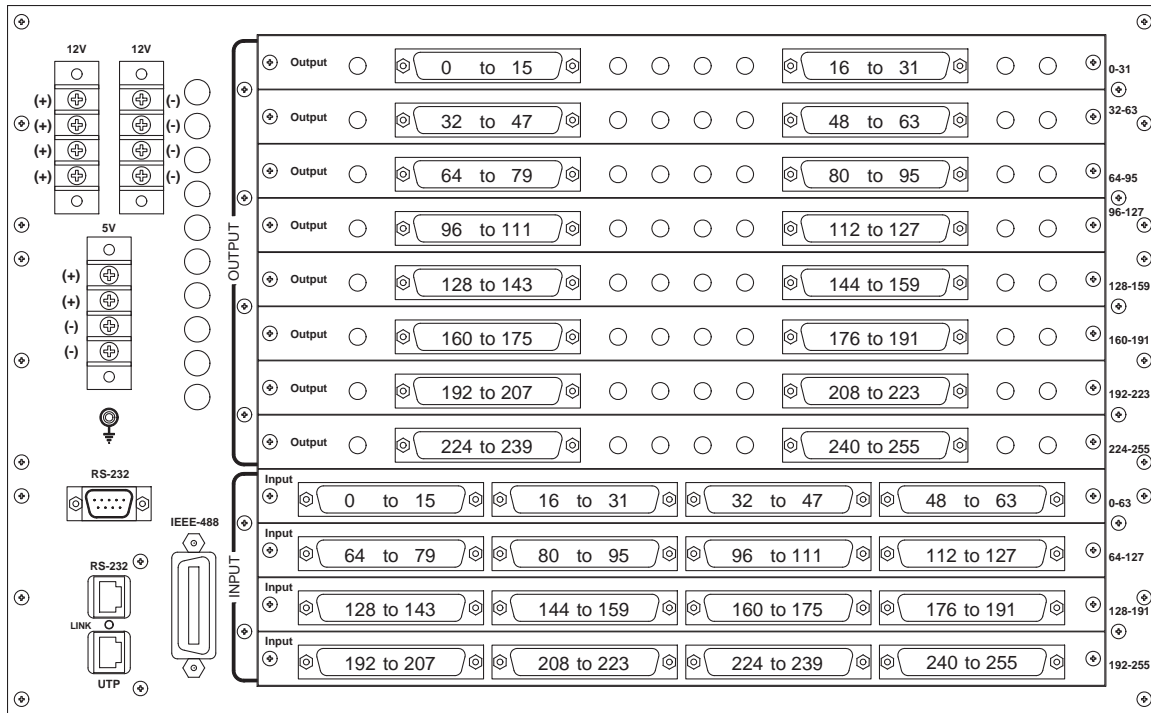


Cytec can produce custom patch panels with almost any type of connector to interface between your cables and the connectors on our buffer modules. Call or e-mail your specs for details.

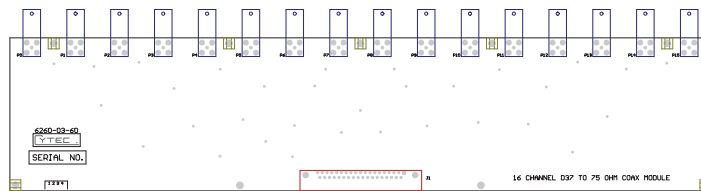
Model 5215 Patch Panel converts D78 connectors to D25 connectors with a specific pin-out for RS422 Clock and Data Pairs.

Need a custom system? No problem! Here's a good example:

Model 6260 DX/256x256 75 ohm TTL Matrix



Cytec can modify existing designs to build systems that do exactly what you need. The Model 6260 is a modified version of the DX/256x256 that is used to switch 75 ohm TTL signals up to 40 Mbps NRZ. The Input buffers are terminated into 75 ohms and are able to withstand +/- 15 vpp signal surges. The output buffers are capable of driving +4.8 V TTL signals into a 75 ohm load over 200 feet of coax cable with only a 0.4 volt drop. The rise time at the output is 2.8 ns increasing to 7 ns at the end of 200 feet of coax. All outputs are short circuit protected.



16 channel D37 to BNC Patch Panel Module

The system was provided with D37 to 75 ohm BNC patch panel modules shown above. These modules were mounted onto 19" rack mount panels with custom labeling.

The system was provided to run on DC power and then a 19" rack mount Kepco Power Supply chassis was used. The rack mount power supplies provided hot-swap, redundant, modular power for all voltage levels with warning LED's.

An Optional Mesa Controller is available with redundant control modules and power supply sense modules that allow the supply status to be monitored remotely.

Don't see what you need? Call or e-mail us.

Cytec can provide fully custom systems with little to no NRE and back them all up with a 5 year warranty.

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