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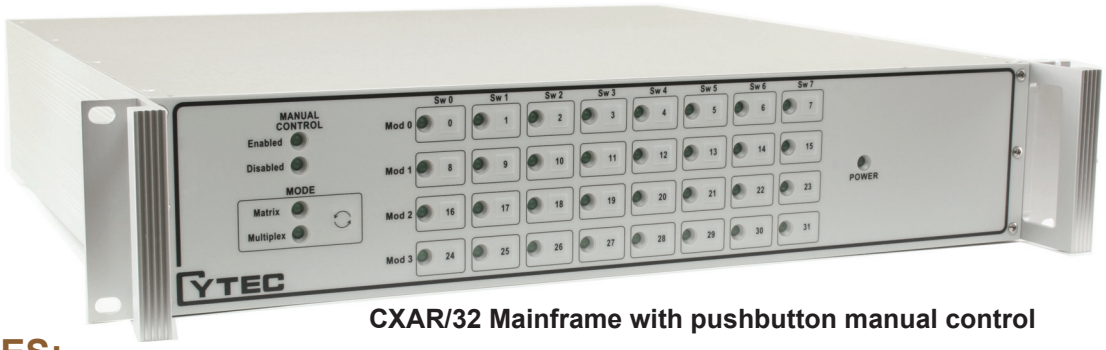
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BULLETIN
CXAR 02/2022

CXAR SERIES
COAXIAL SWITCHING SYSTEMS

The CXAR Series are computer-controlled coaxial switching systems for 50 or 75 ohm RF Signals up to 2.5 GHz, or low leakage signals down to 100 femtoamps. These systems are typically used to configure 1xN multiplexers. Both Mainframes and Expansion Chassis are offered and hold a variety of different switch modules to form the desired configuration.



CXAR/32 Mainframe with pushbutton manual control

FEATURES:

- **RF Systems with bandpass from DC to 2.5 GHz (see specs!), 50 or 75 ohm impedance and low crosstalk**
- **Low leakage modules for current measurements down to 100 femtoamps or resistance up to 100 teraohms**
- **Low cost reed relay 1 or 2 pole coaxial modules for high speed, long life switching of signals below 100 MHz**
- **Computer control from Ethernet LAN, IEEE488 BUS, RS232 Serial, USB, or TTL**
- **LED front panel display and status feedback to computer for visual indication and debugging**
- **Manual control option for use without computer control**

CHASSIS:

The **CXAR** units are 19" rack mounted chassis, and are available as either Mainframes or Expansion Chassis pre-wired to accept any of the CXR Series of Coaxial Switch Modules. All chassis have front panel LEDs showing latched switch points and have I/O connectors mounted through the rear panel.

CXAR/16 Mainframe or -E Expansion Chassis - 16 relay drives allow for two 8x1 modules or four 4x1 modules.
CXAR/32 Mainframe or -E Expansion Chassis - 32 relay drives for four 8x1 modules, eight 4x1 modules or combinations.
CXAR/64 Mainframe or -E Expansion Chassis - Up to 64 relay drives. Control up to 16 4x1 modules in a 5.25" high chassis.
CXAR/128Mainframe or -E Expansion Chassis - Up to 128 relay drives. Control up to 16 8x1 modules or 8 16x1 modules in a 7" high chassis.

SWITCH MODULES:

There are five series of Switch Modules. Each series has design features tailored to specific needs.

CXR Series use coaxial reed relays and are available with a bandpass up to 200 MHz. BNC or Screw Terminal Connectors.
CXR-G Series use armature relays in a tree configuration and have a bandpass exceeding 1 GHz. BNC or SMA Connectors.
CXR-2A Series use two pole relays to switch balanced line signals and have bandpass up to 200 MHz. BNCs or Twin-ax.
CXR-LL Series use single pole low leakage relays for currents as low as femto amps or resistance as high as teraohms.
CXS Series use solid state relays for high reliability 50 or 75 ohm switching.

CONTROL MODULES:

All systems available with Ethernet LAN, IEEE488 (GPIB), & RS232 and USB (standard), or TTL Control (optional).

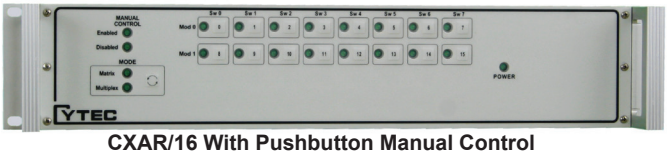
CXAR CHASSIS

The CXAR Chassis are 19" rack mounting units with power supplies and are pre-wired to accept the CXR Series of Switch Modules. The Switch Modules are mounted so that their I/O connectors protrude through the rear panel. The front panels have discrete LEDs showing the status of all switch points and also provide optional manual controls.

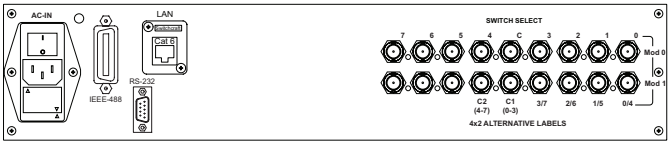
CXAR/16 MAINFRAME OR -E EXPANSION CHASSIS

These Chassis control up to 16 switch points in any configuration. LEDs on the front panel show switch and power status. Add Switch Module(s) and a Control Module to complete the system.

Dimensions: 19" rack mount (483 mm)
15" deep (381 mm)
3.5" (2 RU) high (89 mm)
Weight: 15 lbs (6.8 Kg) max
AC Power : 10 watts max. 110/220 selectable.



CXAR/16 With Pushbutton Manual Control

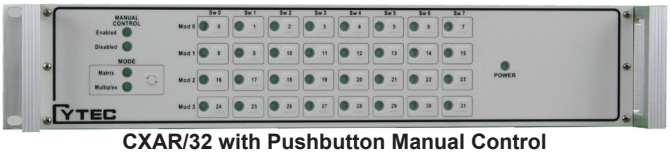


CXAR/16 Rear Panel with IEEE488, RS232 and LAN Control

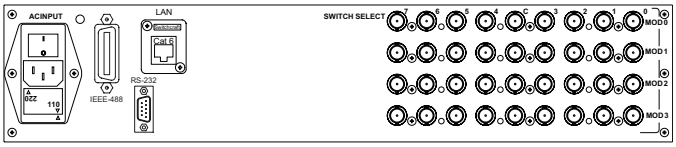
CXAR/32 MAINFRAME OR -E EXPANSION CHASSIS

These Chassis control up to 32 switch points in any configuration. LEDs on the front panel show switch and power status. Add Switch Module(s) and a Control Module to complete the system.

Dimensions: 19" rack mount (483 mm)
15" deep (381 mm)
3.5" (2 RU) high (89 mm)
Weight: 17 lbs (7.7 Kg) max
AC Power : 13 watts max. 110/220 selectable.



CXAR/32 with Pushbutton Manual Control

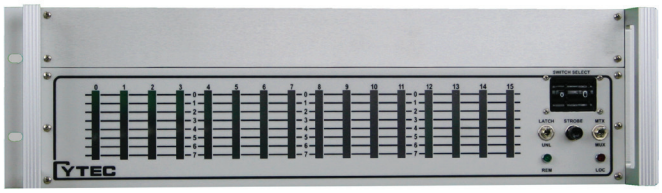


CXAR/32 Rear Panel with IEEE488, RS232 and LAN Control

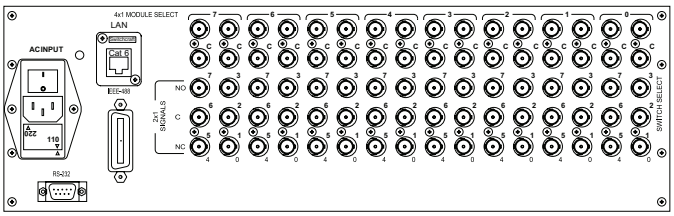
CXAR/64 MAINFRAME OR -E EXPANSION CHASSIS

These Chassis control up to 16/1x4 individual switch modules arranged as shown in the drawing. LEDs on the front panel indicate switch and power status. Add 1x4 Switch Modules, a Control Module, and one CL8 display module for every two 1x4 modules to complete the system.

Dimensions: 19" rack mount (483 mm)
15" deep (381 mm)
5.25" (3 RU) high (133 mm)
Weight: 20 lbs (9.1 Kg) max
AC Power : 22 watts max - 110/220 selectable.



CXAR/64 with Pushwheel Manual Control



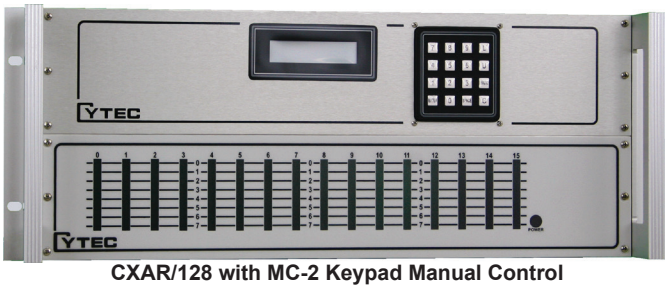
CXAR/64 Rear Panel with IEEE488, RS232 and LAN Control

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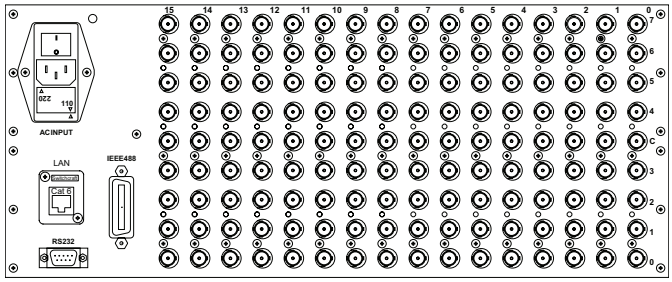
CXAR/128 MAINFRAME OR -E EXPANSION CHASSIS

These Chassis control up to 16 1x8 switch modules arranged as shown in the drawing or combinations of 1x2, 1x4 and 1x8 modules. LEDs on the front panel show switch and power status. Add Switch Module(s), a Control Module, and one CL8 display module for each eight switch points to complete the system.

Dimensions: 19" rack mount (483 mm)
15" deep (381 mm)
7" (4 RU) high (178 mm)
Weight: 25 lbs (11.4 Kg) max
AC Power : 30 watts max. 110/220 selectable



CXAR/128 with MC-2 Keypad Manual Control



CXAR/128 RearPanel with IEEEE-488, RS232 and LAN Control

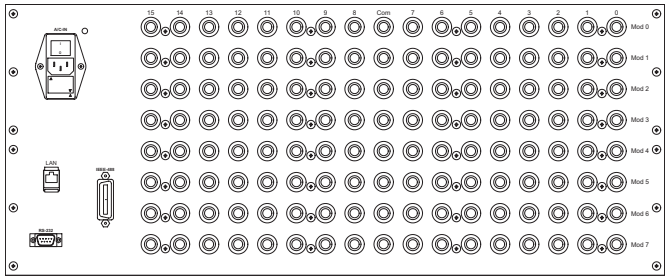
CXAR/8(16x1) MAINFRAME OR -E EXPANSION CHASSIS

This Chassis controls up to eight CXS/16x1-GT switch modules arranged as shown in the drawing or combinations of 1x2, 1x4, 1x8 and 1x16 modules. LEDs on the front panel show switch and power status. Add Switch Modules, a Control Module, and one CLE-16 display module for each 16 switch points to complete the system.

Dimensions: 19" rack mount (483 mm)
15" deep (381 mm)
7" (4 RU) high (178 mm)
Weight: 30 lbs (13.6 Kg) max
AC Power : 40 watts max. 110/220 selectable



CXAR/8(16x1) with MC-2 Keypad Manual Control


CXAR/8(16x1) RearPanel with IEEEE-488, RS232 and LAN

ALL CHASSIS

Material: Gray anodized extruded or sheet aluminum with a polycarbonate front panel overlay.
Mounting Hardware: Rack mount handles are standard. Flush mount flanges available at no cost.
Protection: Selectable AC input fused at: 2 amps 110 VAC, 1 amp 220 VAC.

For Technical Assistance, Contact CYTEC at 585-381-4740 or E-mail: sales@cytec-ate.com or Visit Our Website: cytec-ate.com

CXR REED OR ARMATURE RELAY SWITCH MODULES
Typically for DC to 200 MHz applications

These switch modules use reed or armature relays interconnected by characteristic impedance striplines and are completely bi-directional. They are an excellent, cost-effective choice for applications below 200 MHz. BNC connectors are standard. Bus bars are available to build larger configurations, but with lower bandpass. These modules provide the best solution for lower frequency applications that require coaxial connections. Most of these boards also allow you close multiple connections at once to distribute signals.

CXR/2x1-1S or -2S (Form A)
P/N: 2-101-1

This module switches a common port between A, B, or OFF positions as shown in **Fig. 1**. Module uses single or two pole, **Type S** reed relays. **Bandpass** is **400 MHz** (-3 dB). **Crosstalk** is **-60 dB** at **5 MHz.** 2 pole versions use isolated BNC or Twin BNC connectors.

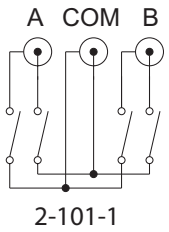


Fig. 1

CXR/8x1-1T-BNC
P/N: 21-14-10

This module has single pole **Type T** relays which terminate the inputs to the required impedance as shown in **Fig. 3**. Energizing the selected relay removes the termination from the input and closes the circuit. Terminations are typically rated to 1 Watt but can be built using higher values. 50 ohm, 75 ohm or specify termination value needed.

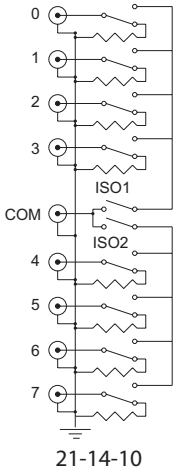


Fig. 3

CXR/4x1-1T-BNC
P/N: 21-14-12

This is the same terminated configuration but with only four relays.

CXR/2x1-2C (Form C)
P/N: 21-00-10

A two pole 2x1, Form C configuration as shown in **Fig. 2** which allow one input to be switched to two outputs (A or B). Available with Isolated **BNC** or **Twin BNC** connectors, and uses **Type A**, armature relays. This module defaults to a normally closed position when off. Bandpass of 200 MHz (differential into 100 ohms).

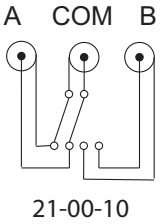


Fig. 2

CXR/8x1-1S-BNC
P/N: 21-14-11

This 8 channel switch has **Type S** relays and no terminations as shown in **Fig. 4**. It can be built with 50 or 75 ohm BNC connectors with grounded or isolated outer conductor. Modules may be connected with Bus Bars to increase the configuration size but will decrease bandpass.

CXR/4x1-1S-BNC
P/N: 21-14-13

This is the 4x1 configuration of the switch shown above.

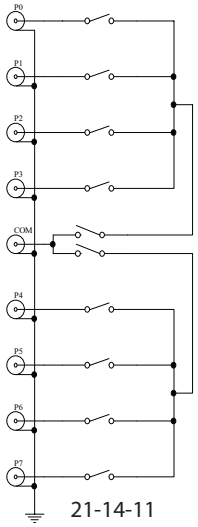
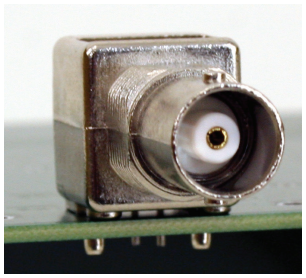
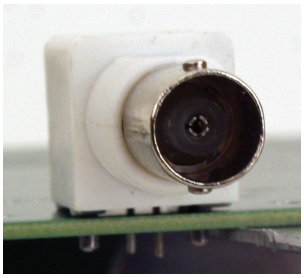


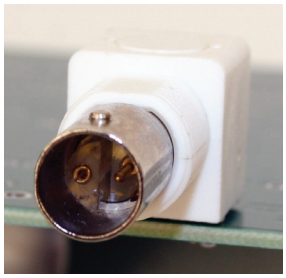
Fig. 4



Metal BNC w/ Grounded outer conductor



BNC w/ Isolated outer conductor



Twin BNC w/ Isolated outer conductor

Terminating Resistor Values are typically 50, 75, or 100 ohms and rated to 1 Watt but can be modified as needed.

HIGH FREQUENCY SPECIFICATIONS

Type	Bandpass MHz	Isolation @ 100 MHz
CXR/8x1-1 and 4x1-1	300	60dB
CXR/8x1-T and 4x1IT	300	65dB
CXR/8x1-HS and 8x1-HC	250	70dB
CXR/4x1-HS and 4x1-HT	300	70dB
CXR/8x1-2A and 4x1-2A	200	45dB

SWITCH CHARACTERISTICS

	Type S	Type T	Type 2A
Switch Voltage	200V	200V	110 V
Switch Current	0.5A	0.25A	1.0A
Breakdown Voltage	400V	200V	750V
Operating Time	1ms	1ms	3 ms
Life Expectancy	10^{8*}	10^{8}	$2x10^{5*}$
Contact Rating	10VA	3VA	60VA

CXR REED OR ARMATURE RELAY SWITCH MODULES
Typically for DC to 200 MHz applications

CXR/8x1-1HT
P/N: 21-24-10-XX

This is a high isolation module with relays which terminate the inputs to the required impedance, and they have additional isolation relays as shown in **Fig. 5** which decrease the crosstalk between channels by 10 to 20dB. Energizing a relay removes the terminating impedance and completes the selected path. Available only with grounded outer conductor BNC..

CXR/8x1-HS
P/N: 21-24-11

Has the same high isolation characteristics as the model -1HT but without input terminations.

CXR/4x1-1HT
P/N: 21-24-12-XX

This is a terminated version with only 4 channels. Has the same characteristics and configuration but with only four relays.

CXR/4x1-1HS
P/N: 21-24-13

Is the same as the model -1HT but without termination.

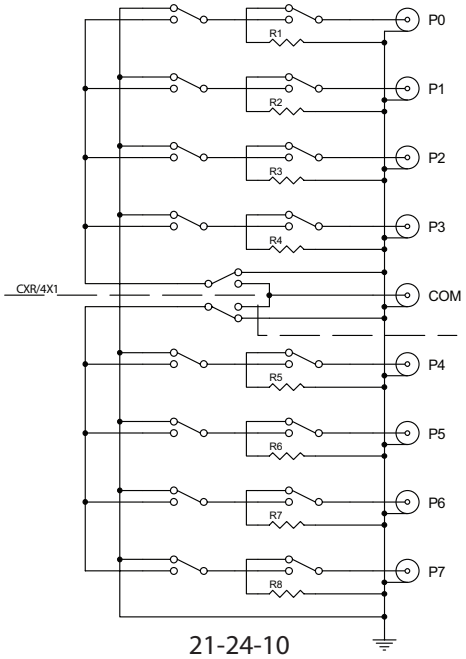


Fig. 5

Differential Signals and Balanced line Module

CXR/8x1-2A
P/N: 21-02-10-1

This is an 8x1 two pole configuration as shown in **Fig. 6**. Ideal for switching balanced line 100 ohm differential pairs. It is available with isolated BNCs, Twin BNC (Twinax) or Screw Terminal connectors. The standard board has 100 ohm terminating resistors on each of the 8 ports when in the off state and isolation relays to increase bandpass and reduce crosstalk. The module uses **Type 2A** relays.

CXR/4x1-2A
P/N: 21-02-11-1

This is the same 2 wire module but as a 4x1 configuration.

OPTIONS:

Either of these modules may be ordered without terminating resistors if not desired and without isolation relays on the 8 channel version if you need to close more than 4 relays at the same time. Terminating resistors of other values can also be used. Contact Cytec for part numbers with different options.

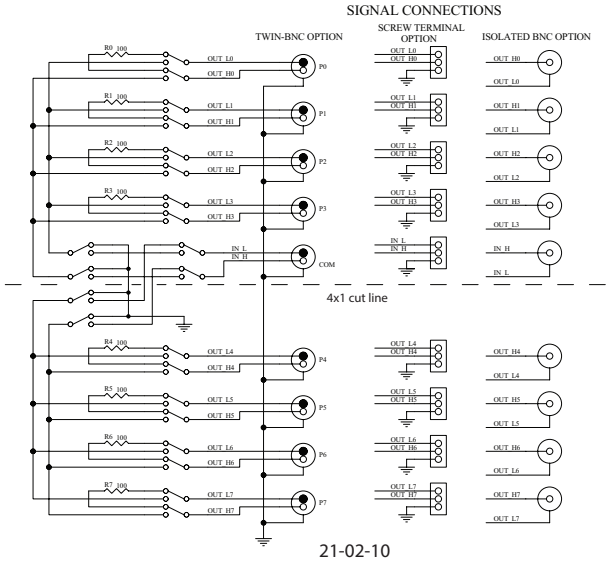
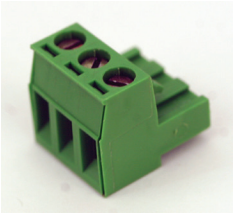


Fig. 6



3 pin Screw Terminal Connectors provided with module

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CXR-G MECHANICAL RELAY SWITCH MODULES - DC to 2 GHz

These modules are designed with Type G coaxial relays arranged in a tree configuration as shown in Figs. 6 through 10. Only one input can be switched to one output, and in the unenergized state, input #0 is connected to the common, except the terminated modules which have an open condition. All -G Modules are available with 50 or 75 ohm characteristic impedance. 50 ohm modules are available with SMA or BNC connectors. 75 ohm modules have BNCs or some have an F connector option. Combinations of these modules can be assembled to form larger multiplexers or matrices.

CXR/2x1-G-xx-nnn

where xx = 50 or 75 Ohm impedance and nnn = connector type

This module switches the common to one of two inputs as shown in **Fig. 7**.
In the unenergized position, the common is connected to input A. Bi-directional mechanical relay.

P/N: 30-25-10 = 50 Ohm, BNC or SMA
P/N: 30-10-10-1 = 75 Ohm, BNC
P/N 30-31-10 - 75 Ohm, F connector

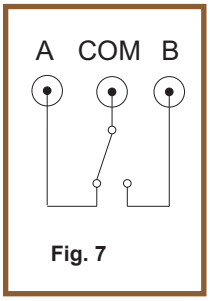


Fig. 7

CXR/2x1-GT-xx-nnn

where xx = 50 or 75 Ohm impedance and nnn = connector type

This module is a version of the CXR/2x1-G module that has the unused A/B connection terminated into **50** or **75** ohm resistors as shown in **Fig 8**. This module allows an off state with both inputs terminated. Terminations are rated for a maximum of 5 Watts CW.

P/N: 30-40-10 = 50 Ohm, BNC or SMA
P/N: 30-30-10 = 75 Ohm, BNC

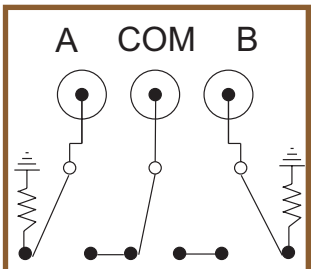


Fig. 8

CXR/2x1-GT-COM-50-nnn where nnn = BNC or SMA

This is an A/B switch that has the Common port terminated when off. Available w/ BNC or SMA connectors.

P/N 30-33-10 = 50 ohm BNC or SMA

CXR/2x2-G-xx-nnn

where xx = 50 or 75 Ohm impedance and nnn = connector type
Also known as Transfer or Baseball Switch

These switches have no off state and are used to swap connections between 2 paths as shown in **Fig. 9**. Usefull for swapping polarity or TX / RX lines and building different size matrices. Available in 50 or 75 Ohm. 50 Ohm versions available with BNC or SMA connectors. 75 Ohm versions can have BNC or F connectors. These modules can also be used as a terminated 1x2 by adding an external termination to one of the ports allowing you to use terminations with power ratings up to 20 watts.

P/N 30-27-10 = 50 ohm with BNC or SMA connectors
P/N 30-26-10 = 75 ohm with BNC connectors
P/N = 30-41-10 = 75 ohm w/ type F connectors

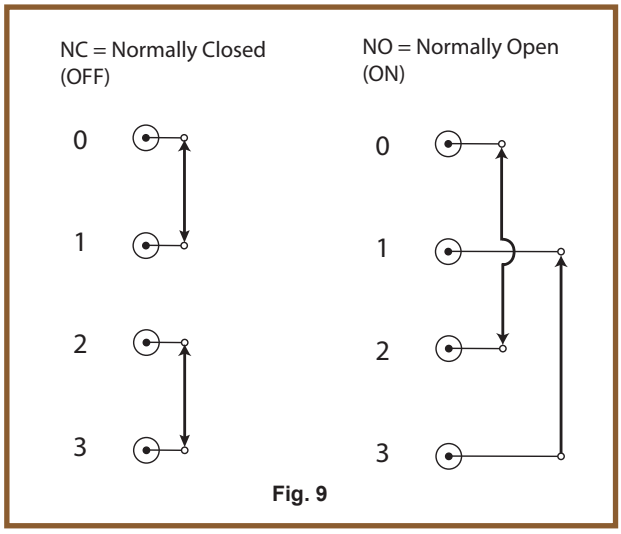
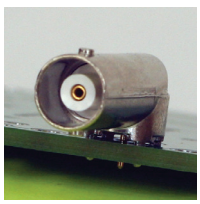


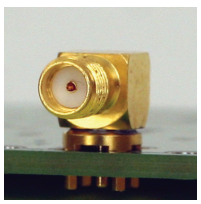
Fig. 9

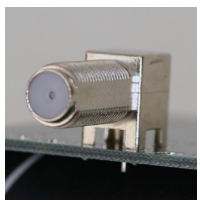
CXR/2x2-GH-50-SMA

This is the same configuration as above but uses high power relays to allow hot switching of up to 50 Watts @ 2.5 GHz. An external termination can be added to use as a terminated 2x1 switch with up to a 50 Watt termination as shown in Fig. 10.. Only available as 50 ohm version with SMA connectors.

P/N 30-37-10 = 50 ohm high power w/ SMA connectors


BNC


SMA


Type F

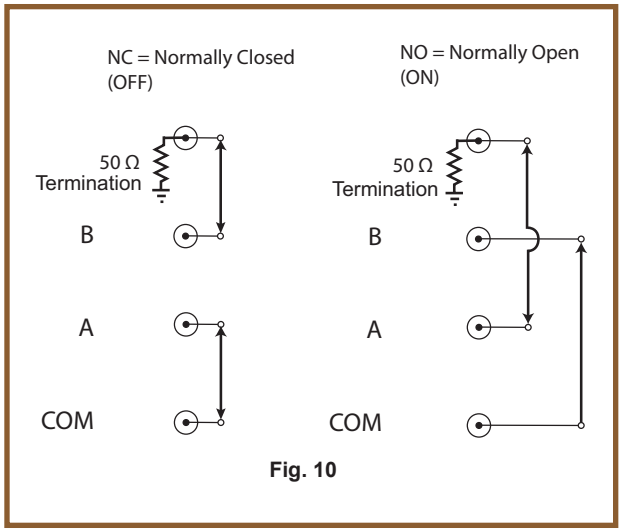


Fig. 10

CXR-G MECHANICAL RELAY SWITCH MODULES - DC to 2 GHz

CXR/8x1-G-xx-nnn (Unterminated or Reflective)

where xx = 50 or 75 ohm impedance
and nnn = SMA, BNC or F

This Is a bidirectional 8x1 configuration as shown in **Fig. 11**. The module is normally closed to connector 0 when off so there is always one port connected. The module is available with BNC or SMA connectors for 50 ohm versions and BNC or F connectors for 75 ohm versions..

P/N: 30-17-10 = 50 ohm, BNC or SMA
P/N: 30-18-10 = 75 ohm, BNC
P/N: 30-38-10 = 75 ohm, Type F

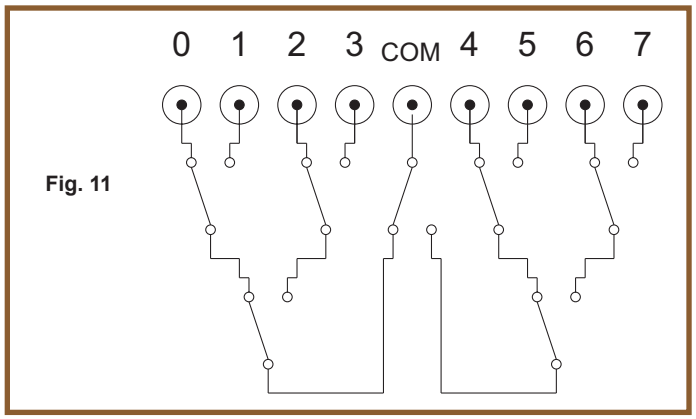


Fig. 11

CXR/8x1-GT-xx-nnn (Terminated or Absorbative)

where xx = 50 or 75 ohm impedance
and nnn = SMA, BNC or F

This module switches any one of eight **50** or **75** ohm terminated coaxial inputs to one output as shown in **Fig. 12**. Switching any input removes the termination from that input and connects it to the common. Terminations are rated to 5 Watts.

P/N: 30-29-10 = 50 ohm, BNC or SMA
P/N: 30-19-10 = 75 ohm, BNC
P/N: 30-39-10 = 75 ohm, Type F

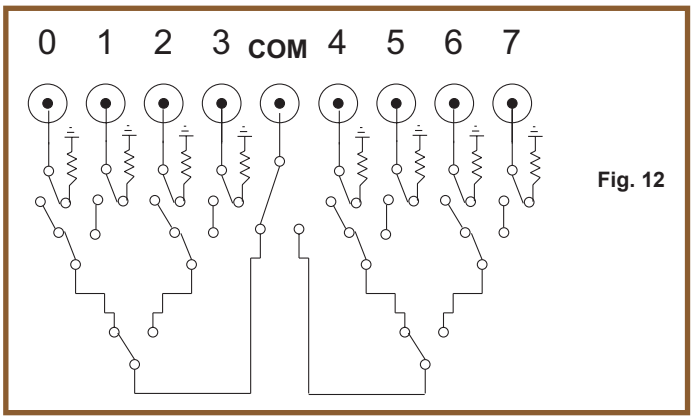


Fig. 12

CXR/4x1-G-xx-nnn (Unterminated or Reflective)

This module is a bidirectional 4x1 configuration using connectors 0 thru 3 of **Fig. 11**. It is available with the same connectors and has the same bandpass and isolation as the 8x1 module.

CXR/4x1-GT-xx-nnn (Terminated or Absorbative)

This module is a bidirectional 4x1 configuration using connectors 0 thru 3 of **Fig. 11**. It is available with the same connectors and has the same bandpass and isolation as the 8x1 module.

CXR/4x2-G-xx-nnn (Unterminated or Reflective)

where xx = 50 or 75 ohm impedance and nnn = SMA, BNC or F

This module switches any two of 4 coaxial ports to the two commons as shown in **Fig. 13.** In the off state Common 0 is connected to port 0 by default. Only 2 paths may be connected at once.

P/N: 30-21-10 = 50 ohm, BNC or SMA
P/N: 30-22-10 = 75 ohm, BNC

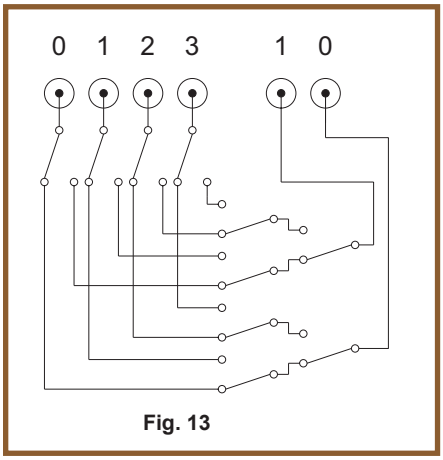


Fig. 13

RELAY SPECIFICATIONS For all G and GT modules

	G relays 50 or 75 ohm	GH relays 50 ohm only
Switched Power	10 Watts* (+40 dBm)	50 Watts (+47 dBm)
Carry Power	20 Watts	60 Watts
Termination rating	5 Watts	60 Watts as term 2x1
Operating Time	3 ms	3 ms
Life Expectancy*	$3x10^5$	$3x10^5$
Max Voltage	30 VDC	30 VDC

* @ 900 MHz 10 Watts

	Insertion Loss			Isolation			VSWR
	.5 GHZ	1 GHz	-3 dB Point	.5 GHZ	1 GHz	2 GHz	
CXR/2x1-G-50-SMA or BNC	0.25 dB	.5 dB	2.5 GHz	-65 dB	-55 dB	-40 dB	<1.25:1 @ 1 GHz
CXR/2x1-G-75-BNC	0.6 dB	2.0 dB	1.3 GHz	-65 dB	-50 dB	NA	<1.25:1 @ 750 MHz
CXR/2x1-GT-50-SMA or BNC	0.4 dB	0.7 dB	2.5 GHz	-70 dB	-60 dB	-50 dB	<1.4:1 @ 1.25 GHz
CXR/2x1-GT-75-BNC	0.8 dB	2.8 dB	1.1 GHz	-70 dB	-55 dB	NA	<1.3:1 @ 900 MHz
CXR/2x2-G-50-SMA or BNC	0.5 dB	1.0 dB	2.3 GHz	-55 dB	-50 dB	-40 dB	<1.25:1 @ 1 GHz
CXR/2x2-G-75-BNC	0.9 dB	1.5 dB	1.8 GHz	-65 dB	-50 dB	NA	<1.25:1 @ 750 MHz
CXR/8x1-G-50 -SMA or BNC	0.5 dB	.9 dB	2.6 GHz	-70 db	-65 dB	-50 dB	<1.3:1 @ 1 GHz
CXR/8x1-G-75-BNC	1.2 dB	2.5 dB	1.2 GHz	-65 dB	-50 dB	NA	<1.3:1 @ 750 MHz
CXR/8x1-GT-50-SMA or BNC	0.7 dB	1.3 dB	2.0 GHz	-70 db	-65 dB	-50 dB	<1.3:1 @ 1 GHz
CXR/8x1-GT-75-F	**0**.8 dB	1.4 dB	1.8 GHz	-65 dB	-50 dB	NA	<1.3:1 @ 750 MHz
CXR/4x2-G-50-SMA	0.7 dB	1.5 dB	2.0 GHz	-60 dB	-50 dB	NA	<1.3:1 @ 650 MHz
CXR/4x2-G-75-BNC	1.5 dB	3.5 dB	800 MHz	-60 dB	-45 dB	NA	<1.3:1 @ 500 MHz

CXS SOLID STATE 50 OHM COAX SWITCH MODULES

These modules are designed for high frequency 50 ohm applications from 10 KHz to 2.75 GHz. Solid state relays have the advantage of faster switch speeds and almost infinate life expectancy but are limited in low frequency performance and will not handle as much power. Switch speeds up to 50 KHz with TTL control and rise / fall times of 50 ns. Terminated inputs and outputs for impedance matching on unused channels.

CXS/2x1-GT-50-SMA Switch Module -- Fig. 14

High speed 50 ohm A/B switch with SMA connectors.
Bandpass of 10 KHz to 2.7 GHz (-3 dB point)
VSWR < 1.3:1 to 1.2 GHz, < 2.0:1 to 2.75 GHz
Isolation > -60 dB to 600 MHz, > -50 dB to 2 GHz
Max Power = 27 dBm (0.25 watts)
Max Switch Frequency = 50 KHz
Switch Rise time = < 50 ns (10% to 90%)

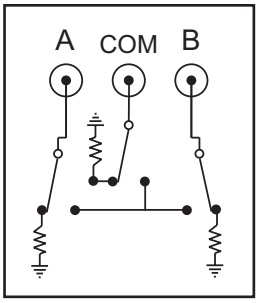


Fig. 14

CXS/2x1-GT-50-SMA
P/N: 64-12-10

CXS/16x1-GT-50-SMA Switch Module -- Fig. 15

High speed 50 ohm 16x1 mux with SMA connectors.
Bandpass of 10 KHz to 1.2 GHz (-6 dB point)
Insertion loss of -3 dB +/- 1 dB from 300 KHz to 800 MHz
VSWR < 1.3:1 to 1.2 GHz, < 2.0:1 to 2.75 GHz
Isolation > -60 dB to 300 MHz, > -50 dB to 1 GHz
Max Power = 27 dBm (.25 watts)
Max Switch Frequency = 50 KHz
Switch Rise time = < 50 ns (10% to 90%)

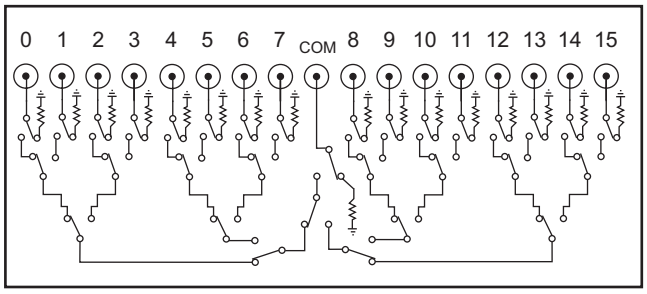


Fig. 15 CXS/16x1-GT-50-SMA
P/N: 64-13-10

CXS SOLID STATE 75 OHM CABLE TV or MODEM MODULES

These modules are designed for 75 ohm applications operating at frequencies from DC to 1 GHz, making them perfect for cable TV and cable modem applications. Terminated inputs and outputs guarantee impedance matching on unused channels. Insertion loss is flat within 1 dB over the range of 1 MHz to 1000 MHz.

CXS/8x1-GT-75 Switch Module -- Fig. 16

This switch is identical in function to the electro-mechanical relay version of our 75 ohm 1x8 mux, but the use of solid state components makes it operate with very good specifications over the frequencies of 1 to 1000 MHz commonly used for cable modems and cable TV. Available with BNC or F type connectors. This switch module fits in any standard Cytec CXAR Series chassis.

	100 MHz	1000 MHz	2000 MHz
INSERTION LOSS	-2.0 dB	-3.5 dB	-6 dB
ISOLATION	-60 dB	-55 dB	-50 dB
SWITCHED POWER	24 dBm (0.25 watts)		
SWITCHING SPEED	< 1 ms		
LIFE EXPECTANCY	$1x10^8$ operations		

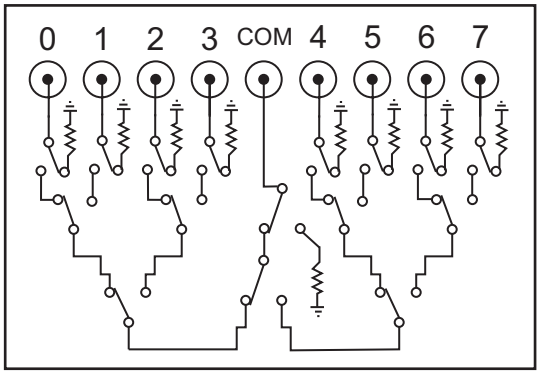


Fig. 16

CXS/8x1-GT-75 P/N: 64-00-10 = BNC
P/N: 64-01-00 = Type F

CXS/16x1-GT-75-F Switch Module -- Fig 17

This is a 16x1 version of the solid state switch with F connectors. The specifications are the same as shown above but the -6 dB point is approximately 1500 MHz.

Up to 8 of these modules may be installed into a standard Cytec CXAR/8(16x1) Mainframe or Expansion Chassis.

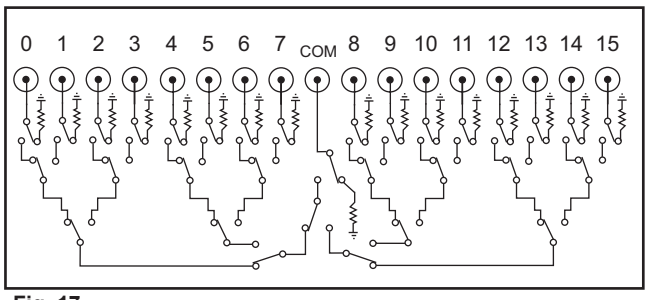


Fig. 17 CXS/16x1-GT-75-F P/N: 64-13-10

CXR LOW LEAKAGE MODULE

This module is designed with for applications where you need to measure extremely low currents or extremely high resistance. A schematical representation of the module is shown in Fig. 18. Many jumpering options allow this module to be grounded or ungrounded or used with a driven guard circuit to improve speed and accuracy. Above board wiring with coax cables keeps noise and charge times to a minimum. Combinations of these modules can be assembled to form larger multiplexers or matrices.

CXR/2(4x1)-LL SWITCH MODULE

Dual 4x1 low leakage modules can be used to measure currents down to 50 femtoamps (5x10E-14 amps), or resistances up to 100's of teraohms (100x10E+12). Maximum breakdown voltage of 1500 VDC. It is available with either BNC (normal low leakage), Triax (fast driven guard) or SHV (> 100 Tera ohms) connectors.

The module may be used in Cytec CXAR Series 16, 32, or 8.75" high 128 channel chassis. Bus bars are available to form larger multiplexers or matrices. Custom configurations are available.

Measurements of this type are difficult and dependent on environment. Cytec can help.
Call us or e-mail for application assistance.



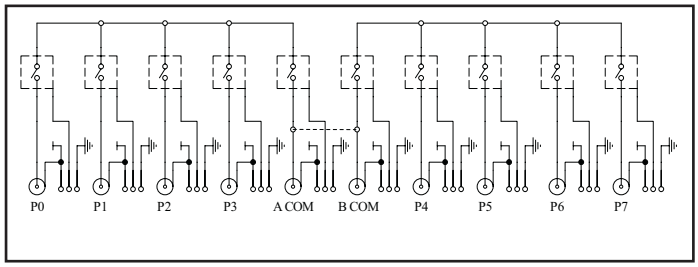


Fig. 18

CXR/4x1-LL SWITCH MODULE

4x1 low leakage modules as shown in **Fig. 19**. Maximum breakdown voltage of 1500 VDC. It is available with either BNC (normal low leakage), Triax (fast driven guard) or SHV (> 100 teraohms) connectors.

P/N: 21-13-12 = BNC
P/N: 21-13-13 = Triax
P/N: 21-13-19 = SHV

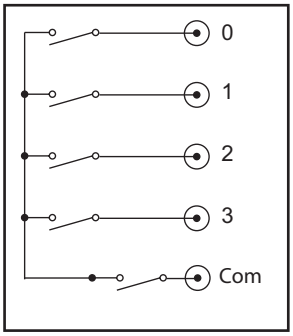


Fig. 19

CXR/4x2-LL SWITCH MODULE

4x2 low leakage modules allow you to switch Hi and Lo between any two points as shown in **Fig 20.** Modules may be interconnected to form any size Nx2 matrix. It is available with either BNC (normal low leakage), Triax (fast driven guard) or SHV (>100 teraohms) connectors.

P/N: 21-13-14 = BNC
P/N: 21-13-11 = Triax
P/N: 21-13-20 = SHV

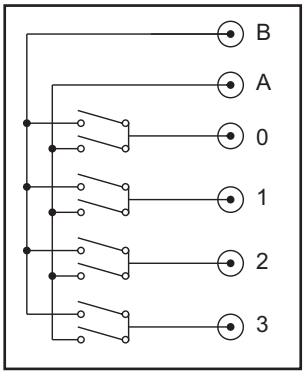


Fig. 20

CXR/8x1-LL SWITCH MODULE

8x1 low leakage modules as shown in **Fig. 21**.
Maximum switched voltage of 1500 VDC. Dual commons allow simple interconnects to build large 1xN mux configurations or sub mux modules for maximizing low leakage specifications.

It is available with either BNC (normal low leakage), Triax (fast driven guard) or SHV (> 100 teraohms) connectors.

P/N: 21-13-10 = BNC
P/N: 21-13-11 = Triax
P/N: 21-13-20 = SHV

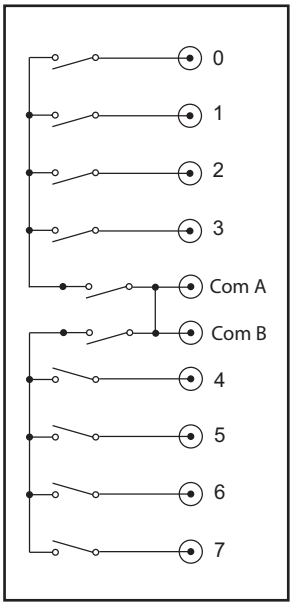


Fig. 21

For Technical Assistance, Contact CYTEC at 585-381-4740 or E-mail: sales@cytec-ate.com or Visit Our Website: cytec-ate.com

CONTROL MODULES

IF-11 LAN / GPIB / RS232 Control
Cytec's newest control module has the three most popular control interface protocols built into one module and is backwards compatible with all previous Cytec control modules.

LAN - 10/100BaseT Ethernet with an RJ45 Connector.
The interfaces uses a static IP easily reset by the end user. There are three ports available and all may be used at the same time. Two ports can be set by the end user and one is the default Telnet which may be disabled.

GPIB - IEEE488.2 compliant control module.
Commonly used with automated test applications. Works with all GPIB control cards and software including National Instruments, Matlab and Keysight.
Drivers available upon request.

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

MANUAL CONTROL OPTIONS

Manual Controls are available for all mainframe chassis.
CXAR/16 and **CTC/16** chassis can be purchased with optional 16 channel pushbutton manual control PB/16.
CXAR/32, CTC/32 and CTA/32 mainframes use PB/32 thirty-two channel pushbuttons.
CXAR/64 and **CTC/64** mainframes are built with pushwheel manual controls MC/64-TW.
CXAR/128, CTA/128 and CTC/64 chassis can be built with keypad manual controls MC-2.

PATCH PANELS

Patch panels are available to convert the standard switch module coaxial connectors (typically BNCs or SMAs) to a type specified by the customer, including Triax, Dual BNCs, and Twin BNCs. Please contact Cytec with your specific requirement.

FREE CYTEC SWITCH SOFTWARE

Check out the latest version of free GUI software on our webpage at: http://cytec-ate.com/support
The software runs on Windows XP or later. Source code available on request.

SOFTWARE HELP

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.

OTHER HELPFUL COMPONENTS...

CXBS COAXIAL BUS STRIPS

The bus strips are used to connect between CXR coaxial switch modules and are designed for maximum bandpass and minimum stub length. They are available to interconnect up to 16 modules. ***Cannot*** be used with **Type G** or **Type 2A** Modules.

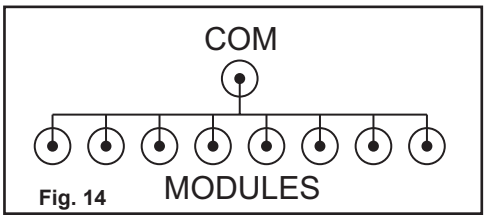


Fig. 14

CX/G AMPLIFIER

This amplifier has one BNC input and up to 3 BNC outputs. It can be used to restore signal levels or as a signal distributor to 3 Devices, as shown in **Fig. 15**. It has a **bandpass** of **DC to 200 MHz** with a 4 volt p/p output and preset gains from 1 to 16. Impedances on both inputs and outputs can be preset for impedance matching.

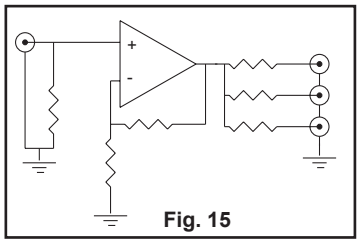


Fig. 15

CXR/1x8-PD POWER DIVIDER MODULE

This module is a 1x8 power divider intended for use between 5 MHz and 500 MHz. The module has a unity gain amplifier so that all 8 outputs maintain the signal input level (+/- 2 dB) in the given frequency range. The module is available with **SMA** or **BNC** connectors. A schematic is shown in **Fig. 16**.

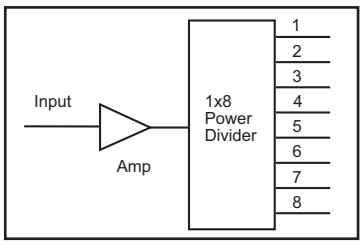


Fig. 16

CUSTOM SYSTEMS ARE AVAILABLE.
DON'T SEE WHAT YOU NEED?
PLEASE CALL FOR MORE OPTIONS.

Contact Cytec for technical questions or support at:
Phone: 585-381-4740
Email: sales@cytec-ate.com Web: cytec-ate.com

CXAR EXPANSION CHASSIS

All CXAR Chassis are available as Expansion Chassis for use with a MESA Control Chassis. This design allows configuration of large or complex systems with one point of control. Using a Mesa Controller and multiple Expansion Chassis has the following advantages:

Cost Savings

Expansion Chassis do not need power supplies or their own Control Modules or Manual Controls, which adds up to cost savings that pay for the Mesa on any system requiring three or more expansion chassis.

Single Point of Control

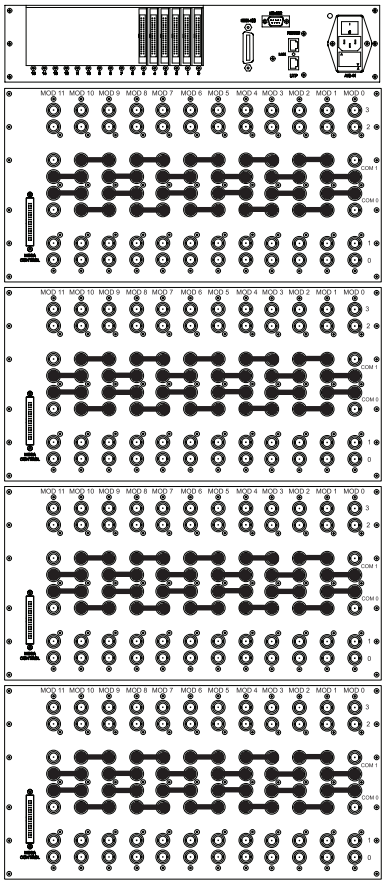
You can control up to 32 CXAR Chassis, or combinations of different chassis, from a single Mesa Control. This allows control of up to 32 chassis from a single GPIB address, RS232 Port or LAN IP address.

Remote Location of Multiple Chassis

Expansion Chassis can be located up to 50' from the Mesa, so the switching chassis can be located where needed and still not require a separate control.

Complex Test Systems

Since any Cytec chassis may be controlled from the Mesa, you can build complicated systems switching a number of different signal types using different Cytec products for each signal type.



Mesa Example - 256x2 Low Leakage Coax System

LED INDICATORS / STATUS FEEDBACK

All CXAR Mainframe and Expansion Chassis have LED displays that show state of every relay. These LED indicators are visible on the front panel and correspond to the programmatic address for each relay.

The LEDs provide an invaluable aid for program debugging and troubleshooting. They allow you to verify switch point staus instantly simply by watching the system's front panel.

CXAR/16 and CXAR/32 LED Indicators

On these systems the LEDs are built into the front panel of the chassis and are included in the chassis prices.

CXAR/64 and CXAR/128 LED Indicators -- CP8 Modules

On these systems the LEDs are provided by a CP8 Display / Driver Modules which must be purchased separately. Each CP8 module provides eight relay drives and LEDs so they are not optional, and one CP8 is required for every eight switch points. The display / driver is also sold separatly because some customers use them to drive external relays, or they buy sets of different switch modules for different applications and separate CP8's reduce the total price.

CXAR CUSTOM CHASSIS

Cytec can easily customize your chassis to fit specific needs with little or no NRE (Non Recurring Engineering) charges. The following examples are only some of the options available. If you don't see what you need feel free to ask us if it can be done. Our engineers will work with you to provide a tailored solution for your specific application.

Labeling

Cytec's laser etch labeling system allows rapid custom labeling of front or rear panels. Silk screening options or custom poly carbonite overlays are also available for OEM systems.

Configuration

Cytec can preconfigure your system according to your exact needs. Some examples are listed below:

- Build large multiplexers using bus bars or interconnecting tree switches in series.
- Build large group switches with parallel drive wiring.
- Custom configured modules.
- Customized connectors, false rear panels or patch panels.

Don't see it? Just ask!

Chassis Dimensions or Mounting Options

We can build chassis with different dimensions or mounting options, including reverse mounting the chassis to get the connector out of the front, add connectors to the front panel or flush mount the chassis for tight rack enclosures.

Custom components

Need a system with non-Cytec components added to get the exact performance you need? Just let us know what you want to accomplish. We can add splitters, amps, couplers and other RF components to give you exactly what you need.

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

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We're here to make your life easier. How can we help you today?

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