

## **Configurable 10/100/1000 Mbs Ethernet Modular Multi-Media Switch**



*Illustrated: Configurable CSX-2400G with UTP and LC Fiber Modules*

Canary's Configurable CSX-2400G, 24-Port, 10/100/1000 Mbs plus Gigabit Ethernet Switch is derived from our experience in developing innovative network communications solutions. The CSX-2400G, is a "Smart" Ethernet Switch that combines Configurability with leading edge switching technology and high-port density, all within a slim 1-Rack Unit chassis. The CSX-2400G represents an industry first - no other switch on the market today can match its low price and flexibility. It offers two GBIC slots plus three large slots for card modules, each providing up to eight Ethernet network connections. The CSX-2400G's power and flexibility is harnessed by a System Configuration that is easily accomplished via an intuitive, menu-based interface accessible by the front panel-mounted Serial Console port.

With the CSX-2400G, smart network configuration with flexible management, translates into increased network efficiency and performance.

**Creating value ... advancing the state of the art.**

**CSX-2400G**  
Modular three-slot  
Configurable  
10/100/1000 Mbs  
Ethernet Workgroup  
Switch Chassis

### **Featuring:**

**Modules with  
eight 10/100 UTP  
or LC Fiber ports**

**Modules with  
four SC or  
ST Fiber ports**

**2 GBIC Slots**

**Supports QoS,  
2 output queues/  
port-based, high &  
normal priorities**

**High priority  
packet forwarding,  
including VLAN tags**

**IEEE 802.1D Spanning Tree**

**A Configurable,  
'Smart', advanced  
technology 24-Port,  
10/100/1000 Mbs  
Ethernet Switch**



## Product Specifications

### Performance

- Throughput:
  - 14,880 packets per second (pps) [10 Mbps]
  - 148,800 pps at 100 Mbps
  - 1,488,000 pps at 1000 Mbps
- Switching Scheme: Store-and-forward
- Address Table: 8K MAC entries
- Flow Control: IEEE 802.3x for full-duplex, Back pressure for half-duplex (CSMA/CD)
- Broadcast Suppression:
  - Discards broadcasts at a critical threshold

### Connectors and Cabling

- Console Port: RS-232 [DB-9] connector
- RJ-45 connectors:
  - 10BASE-T: Two-pair, Category 3, 4, 5 UTP cable
  - 100BASE-TX: Two-pair, Category 5 UTP cable
  - 100BASE-FX:
    - SC connector, 50/125 / 62.5/125-micron multi-mode fiber or 9.0/125-micron single-mode fiber cable

### Slide-in GBIC Modules

- 1000BASE-SX Gigabit multi-mode Fiber port
- 1000BASE-LX Gigabit single-mode Fiber port
- 1000BASE-T Gigabit Unshielded twisted-pair port

### Environmental Characteristics

- Operating Temperature:
  - 0° to 50° C (32° to 122° F)
- Storage Temperature:
  - 20° to 65° C (-4° to 149° F)
- Operating Humidity:
  - 5% to 95% (non-condensing)

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## Configurable 10/100 Mbs Ethernet Modular Multi-Media Switch

### Electromagnetic Compatibility

- Emissions: FCC Class A
- CE Mark: EN50081-1, EN55022 Class A, EN50082-1, IEC 1000-4-2/3/4/6

### Diagnostic LEDs

- Link, Full-duplex, Activity, 100 Mbs

### Management

- System Configuration: Console port
- IEEE 802.1D Spanning Tree Algorithm:
  - Provides redundant link support
- 802.1Q or Port-based VLANs:
  - 24 ports / VLAN groups

### Standards and Compliance

- IEEE 802.3: 10BASE-T specification
- IEEE 802.3u: 100BASE-TX & 100BASE-FX spec.
- IEEE 802.3x: 10BASE-T & 100BASE-TX: Full-Duplex
- IEEE 802.3z: 1000BASE-TSX / LX specification
- IEEE 802.3ab: 1000BASE-T specification
- IEEE 802.1D: Spanning-Tree Protocol
- IEEE 802.1p: Class of Service / Priority Queues
- IEEE 802.1Q: VLAN Tagging
- RFC 1350: TFTP

### Power Characteristics

- AC Input Voltage: 100 - 120/200 - 240 VAC, 50/60 Hz (auto-ranging)
- Power Consumption:
  - 70W, 90W, 170W (maximum with 2 modules installed)

### Physical Characteristics

- Dimensions: (D x W x H)
- Depth: 11.8" (30cm)
- Width: 17.3" (44cm)
- Height: 1.7" (4.4cm)
- Weight: 7.9 lb (3.6kg)
- Mounting: 19" rack mountable

### Warranty:

- Three (3) Years, parts and labor

The pages that follow provide ordering information for Canary's Configurable 10/100 Mbs Ethernet Modular Multi-Media Switch and modules:

- Modular three-slot Workgroup Switch chassis with two GBIC slots CSX-2400G**
- Modules with eight 10/100 UTP or LC Fiber ports CMX-8TX, CMX-8M6, CMX-8S6**
- Modules with four SC or ST Fiber ports CMX-4M1/CMX-4M2, CMX-4S1/CMX-4S2**
- GBIC Modules with Single Gigabit Ethernet CGB-555X, CGB-31LX, CGB-1000T**



ISO 9001 : 2000

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## Configurable 10/100/1000 Mbs Ethernet Modular Multi-Media Switch

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**CSX-2400G** – Modular three-slot Workgroup Switch chassis with two GBIC slots:

**CMX-8TX, CMX-8M6, CMX-8S6** – Modules with eight 10/100 UTP or LC Fiber ports:

**CMX-4M1/CMX-4M2 & CMX-4S1/CMX-4S2** – Modules with four SC or ST Fiber ports:

The CSX-2400G's RS-232 Console port provides powerful configuration options without the complexity and cost of a full scale, in-band, SNMP management system. This innovation offers very economical CSX-2400G feature and performance tuning including complete flexibility to "mix-and-match" cabling types (fiber and copper), while offering VLAN (Virtual LAN) services and 10 Mb Ethernet through Gigabit Ethernet data rates. All ports on an installed module can be configured either individually or as a group.

Accessing the CSX-2400G's Configuration utility allows a user to select and assign port-based VLAN groups, Quality of Service (QoS) levels, Flow Control and, Port speed and duplex modes. A CSX-2400G port-based VLAN, in conjunction with VLAN tagging, network traffic segmentation and broadcast domain extension, can result in a decrease in overall network congestion. A CSX-2400G delivers the increased network security and performance promised by VLAN technology. Expensive and complex SNMP management applications are unneeded!

Scalability is a hallmark of the CSX-2400G design. With twenty-four 10/100 Mbs RJ-45 or 100BASE-FX ports arrayed as 8-port modules, a CSX-2400G Switch offers exceptional high-port density, performance and unrivalled value as the primary backbone switch for small and medium sized organizations that have not deployed SNMP management.

With the CSX-2400G deployed as an Access Point, a network administrator can launch eight subscriber (user) lines and then add modules to provide 16 or 24 ports as the number of users grow. By connecting up to four CSX-2400G switches together, it is possible to cascade 96-ports on a single Gigabit uplink connection. A CSX-2400G's configuration flexibility plus optional GBIC modules makes it a perfect choice as a high-performance workgroup switch that can be easily tuned to fit in the largest enterprise.

Ordering information on the following page.

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- Chassis offers three slots for switch modules with (8) 10/100 Ethernet Ports, plus 2 GBIC slots ... switch modules provide (8) LC Fiber Ports or four (4) SC or ST Fiber ports ... uses same 8-port modules and GBICs as CMX-2400G SNMP manageable switch version.
  - Flow Control in full-duplex mode: Supports 802.3x PAUSE Frames ... Flow Control in half-duplex mode: Uses CSMA/CD Back Pressure.
  - Supports QoS, 2 output queues per port, high and normal priorities.
  - Provides high priority forwarding, including VLAN Tags and TOS/DS (Ethernet frame extended from 1518 to 1522 octets).
  - Programmable Frame Aging time: default is 300 seconds.
  - Automatic MDI/MDI-X crossover on RJ-45 ports ... diagnostic LEDs for at-a-glance device status
  - Supports 24 port grouping(s) for VLANs.
  - Store-and-forward at full wire speed
  - Embedded 8K MAC address table
  - Broadcast storm prevention
  - RS-232 Serial Console port
  - FCC Class A & CE approved
  - 1U form factor. 19-inch chassis
  - Internal auto-sensing power supply.
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# Configurable 10/100/1000 Mbs Ethernet Modular Multi-Media Switch

## Fiber Port Specifications (Module Connectors):

Model Numbers	Min. Tx PWR	Max. Tx PWR	Rx Sensitivity	Min. PWR Budget	Max. PWR Budget	Max. Input PWR	Connector Type	Wavelength (nm)	Transmit Distance
CMX-4M1	-20.0 dBm	-14.0 dBm	-31.0 dBm	11.0 dB	17.0 dB	-8.0 dBm	(4) SC	1310 nm	2000 m
CMX-4M2	-20.0 dBm	-14.0 dBm	-31.0 dBm	11.0 dB	17.0 dB	-8.0 dBm	(4) ST	1310 nm	2000 m
CMX-8M6	-20.0 dBm	-14.0 dBm	-31.0 dBm	11.0 dB	17.0 dB	-8.0 dBm	(8) LC	1310 nm	2000 m
CGB-55SX	-9.5 dBm	-4.0 dBm	-17.0 dBm	7.5 dB	13.0 dB	0.0 dBm	(1) SC	850 nm	220/550 m
<i>Specifications above in blue are for multi-mode, fiber connectors. Specifications below for single-mode, fiber connectors.</i>									
CMX-4S1	-15.0 dBm	-8.0 dBm	-34.0 dBm	19.0 dB	26.0 dB	-7.0 dBm	(4) SC	1310 nm	30 Km
CMX-4S2	-15.0 dBm	-8.0 dBm	-34.0 dBm	19.0 dB	26.0 dB	-7.0 dBm	(4) ST	1310 nm	30 Km
CMX-8S6	-20.0 dBm	-14.0 dBm	-31.0 dBm	11.0 dB	17.0 dB	-8.0 dBm	(8) LC	1310 nm	20 Km
CGB-31LX	-10.0 dBm	-3.0 dBm	-20.0 dBm	10.0 dB	17.0 dB	-3.0 dBm	(1) SC	1310 nm	10 Km

\*NOTE: Manageable CMX-XXX modules can be ordered with Long-Reach single-mode and Single-Fiber Bi-Directional single-mode fiber connectors. For special orders, contact Canary for information.

## Ordering Information

Model Numbers	Product Description	Number of UTP Ports	Number of Fiber Ports	Fiber Connector	Transmit Distance
CSX-2400G	Configurable Multi-media Switch: 3-slots for media blades (up to 24 ports) plus two GBIC ports	See Below	See Below	See Below	See Below
CMX-8TX	Configurable 10/100 Mbs Switch module: 8-port twisted pair with RJ-45 type, Cat-5 connectors	(8) RJ-45	N/A	N/A	100 m
CMX-8M6	Configurable 100 Mbs Switch module: 8-port multi-mode with LC-type Fiber connectors	N/A	(8) m/m	LC	2000 m
CMX-8S6	Configurable 100 Mbs Switch module: 8-port single-mode with LC-type Fiber connectors	N/A	(8) s/m	LC	30 Km
CMX-4M1	Configurable 100 Mbs Switch module: 4-port multi-mode with SC-type Fiber connectors	N/A	(4) m/m	SC	2000 m
CMX-4M2	Configurable 100 Mbs Switch module: 4-port multi-mode with ST-type Fiber connectors	N/A	(4) m/m	ST	2000 m
CMX-4S1	Configurable 100 Mbs Switch module: 4-port single-mode with SC-type Fiber connectors	N/A	(4) s/m	SC	30 Km
CMX-4S2	Configurable 100 Mbs Switch module: 4-port single-mode with ST-type Fiber connectors	N/A	(4) s/m	ST	30 Km
CGB-55SX	Configurable 1000 Mbs Switch module: 1-port multi-mode with SC-type Fiber connector	N/A	(1) m/m	SC	550 m
CGB-31LX	Configurable 1000 Mbs Switch module: 1-port single-mode with SC-type Fiber connector	N/A	(1) s/m	SC	10 Km
CGB-1000T	Configurable 1000 Mbs Switch module: 1-port twisted pair with RJ-45 type, Cat-5 connector	(1) RJ-45	N/A	N/A	100 m

NOTE: Configurable CMX-XXX models can be ordered with Long-Reach single-mode and Single-Fiber Bi-Directional single-mode fiber connectors. For special order, please contact Canary for additional information.

More versions of the CSX-XXXX & CMX-XXXX series may be found on the Canary web site as they become available.



Illustrated: Configurable CSX-2400G – close up.



# Configurable 10/100/1000 Mbs Ethernet Modular Multi-Media Switch

Figure 1

CSX-2400G Switch with CR-8MD1-E Eight-Channel CWDM Multiplexer

Eight-Channel CWDM Multiplexer / De-Multiplexer with Two Gigabit Switch Connections plus Single Gigabit Fiber-to-Fiber and Fast Ethernet UTP-to-Fiber Converters & User-Channels,  
(Group E 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610 nm)

