

EC-CES7000 Series Carrier Ethernet Switch

8-GigE Copper+2-MGigE Fiber | Managed | Secure

KEY FEATURES:

- Store-and-forward switching with full wire-speed forwarding rate
- Stores up to 8192 MAC addresses
- All Port Gigabit Industrial Switch
- Auto-negotiates for 10/100/1000 Mbps and full/half duplex
- Supports VLAN, ID Tagged VLAN, MAC based Trunking and Spanning Tree Algorithm
- Multiple mounting configurations: Tabletop, wall mount brackets, rackmount, and cabinet input file version
- Full suite of Operations Administration and Maintenance (OAM) functions, including 802.ag Maintenance Entity End Points (MEPs) for both MEP-Up and MEP-Down



DESCRIPTION:

The Extreme Copper CES7000 Series of Ethernet switch is designed with the demands of the Managed Ring, ITS and Mobile Backhaul markets in mind. The Extreme Copper Ethernet switch line is designed to be installed in either an air- conditioned office or in an outdoor cabinet located on the corner of an intersection or beside the highway.

The Extreme Copper Ethernet switches are temperature hardened and operate from -34C to $+74\text{C}$, making them ideal for operation in harsh environments while not sacrificing any features. The Extreme Copper Ethernet switches provide VLAN and ID tagged VLAN (IEEE802.1Q), IGMP snooping, spanning tree algorithm (IEEE 802.1D), IEEE 802.3 compliant flow control, port prioritization and MAC based trunking.

The Extreme Copper Ethernet switches provide a range of management options for remote installations. Choose from SNMP, Telnet/FTP, and web based management tools.

The CES7000 is a mobile backhaul optimized Carrier Ethernet Switch. It is designed to support carrier grade PTP with the accuracy needed for mobile backhaul. It can operate in PTP master, slave, BC and TC modes. It is

designed for backhaul and network edge applications by handling a full suite of Operations Administration and Maintenance (OAM) functions, including 802.ag Maintenance Entity End Points (MEPs) for both MEP-Up and MEP-Down. The CES7000 supports full hierarchical Quality of Service (QoS), including policing and traffic shaping. All timestamping functionality is implemented on a packet-by-packet basis, including asymmetry corrections for known asymmetries, and frame CRC updates.

The CES7000 Ethernet switch provides up to 10 ports of connectivity. The switch can be delivered in a variety of configurations. For example, the CES7000 can be configured for ten 10/100/1000BaseTx copper ports or eight 10/100/1000BaseTx copper ports and two 100/1000/2500 BaseX SFP fiber optic ports. The CES7000 series switches utilize standard SFP plug-in modules in either multimode or single-mode configurations to provide installation flexibility. POE capability is also an available option. Contact the factory for available configurations.

The Extreme Copper CES7000 is available in several mounting configurations. The CES7000 is available as a shelf mount, wall mount with mounting ears, 19" rack mount or an option for a space saving plug-in to the input file of the roadside cabinet.

Management of the switch can be accomplished thru the local RS232 port or by an HTTP web based Ethernet Graphical User Interface (GUI).

FORM FACTOR/ENVIRONMENTAL:

Size	1.6H x 5.5W x 8.00D
Weight	1 lb.
Case Material	Aluminum, black anodized
Mounting	Wall mount ears (rack mount and input file versions also available)
Temperature	TS-2 1998, Section 2, paragraphs 2.2.7.3, 2.2.7.4, 2.2.7.5, 2.2.7.6 (no fans)
Humidity	95% non-condensing Optional: Conformal Coating
Vibration	TS-2 1998, Section 2, paragraphs 2.2.8.4
Mechanical Shock	TS-2 1998, Section 2, paragraphs 2.1.10
Electrical Transients	TS-2 1998, Section 2, paragraphs 2.1.6.1, 2.1.6.2, 2.1.7, 2.1.8

POWER REQUIREMENTS:

Input Voltage	12 VDC; temperature hardened power supply (-40 to 75C)
Power Consumption	10 W
Critical Alarm Relay	Form-C failsafe contact relay: 1A @ 30 VDC (optional)

PORT CONFIGURATION:

Copper Ports	8 - 10/100/100BaseTX ports If fiber ports are not fitted 2 extra copper ports can be fitted optional PoE
Fiber Ports	2 – 100/1000/2500 BaseX ports minimum Supports standard SFP plug-in modules
Fiber Connectors	ST, SC, FC, LC
Fiber Type	Multi-mode – 850 & 1310nm Single-mode – 1310 nm
Fiber Distance	Multi-mode – 2 km Single-mode – 10,25, & 70 km
Typical Link Budget	Multi-mode 17 dB Single-mode 17 dB (10 km); 19 dB (25 km)
Local Config. Port	DB9 RS232, HTTP web-based Ethernet Graphical User Interface (GUI)

SECURITY:

- user password to guard against unauthorized configuration
- SSH/SSL
- Enable/Disable Ports
- MAC based Port Security
- Port Blocking – block either TX or RX functionality on per port basis

SWITCH PROPERTIES:

Switching Method	Store & Forward
Switching Latency	7 us
Switching Bandwidth	over 16Gbps
MAC Addresses	8192
MAC Address Table Size	32kbytes
Priority Queues	4
Frame Buffer Memory	4000kbit
VLANs	4096
IGMP Multicast Groups	8192
Port Rate Limiting	2, 16, 128, 256, 512 kbps, 1, 10, 2, 4, 8, 10, 102Mbps

No head of line blocking

Broadcast Storm Filtering

Port Rate Limiting: limits unicast and multicast traffic

Port Based Network Access Control

Standard, Multiple and Rapid Spanning Tree

Event Logging and Alarms

IEEE COMPLIANCE:

- 802.3-10BaseT
- 802.3u-100BaseTX, 100BaseFX
- 802.3x-Flow Control
- 802.3z-1000BaseLX
- 802.3ab-1000BaseTX
- 802.3ad-Link Aggregation
- 802.ag Maintenance Entity End Points (MEPs)
- 802.1d-MAC Bridges
- 802.1d-Spanning Tree Protocol
- 802.1p-Class of Service
- 802.1q-VLAN Tagging
- 802.1w-Rapid Spanning Tree Protocol
- 802.1x-Port Based Network Access Control

IETF RFC COMPLIANCE:

- RFC768-UDP
- RFC783-TFTP
- RFC791-IP
- RFC792-ICMP
- RFC793-TCP
- RFC826-ARP
- RFC854-Telnet
- RFC894-IP over Ethernet
- RFC1112-IGMP v1

- RFC1541-DHCP (client)
- RFC2068-HTTP
- RFC2236-IGMP v2
- RFC2284-EAP
- RFC2475-Differentiated Services

IETF SNMP MIBS:

- RFC1493-BRIDGE-MIB
- RFC1907-SNMPv2-MIB
- RFC2012-TCP-MIB
- RFC2013-UDP-MIB
- RFC2578-SNMPv2-SMI
- RFC2579-SNMPv2-TC
- RFC2819-RMON-MIB
- RFC2863-IF-MIB

NETWORK MANAGEMENT:

- HTTP graphical web-based
- SNMP v1, v2c
- Telnet, VT100
- Command Line Interface (CLI)
- Port Mirroring
- Loss of Link Management: Dynamically scales the bandwidth and provides failover when a link goes down
- Configuration via ASCII Text File
- Ability to update firmware on like switches remotely on a per switch basis via TFTP

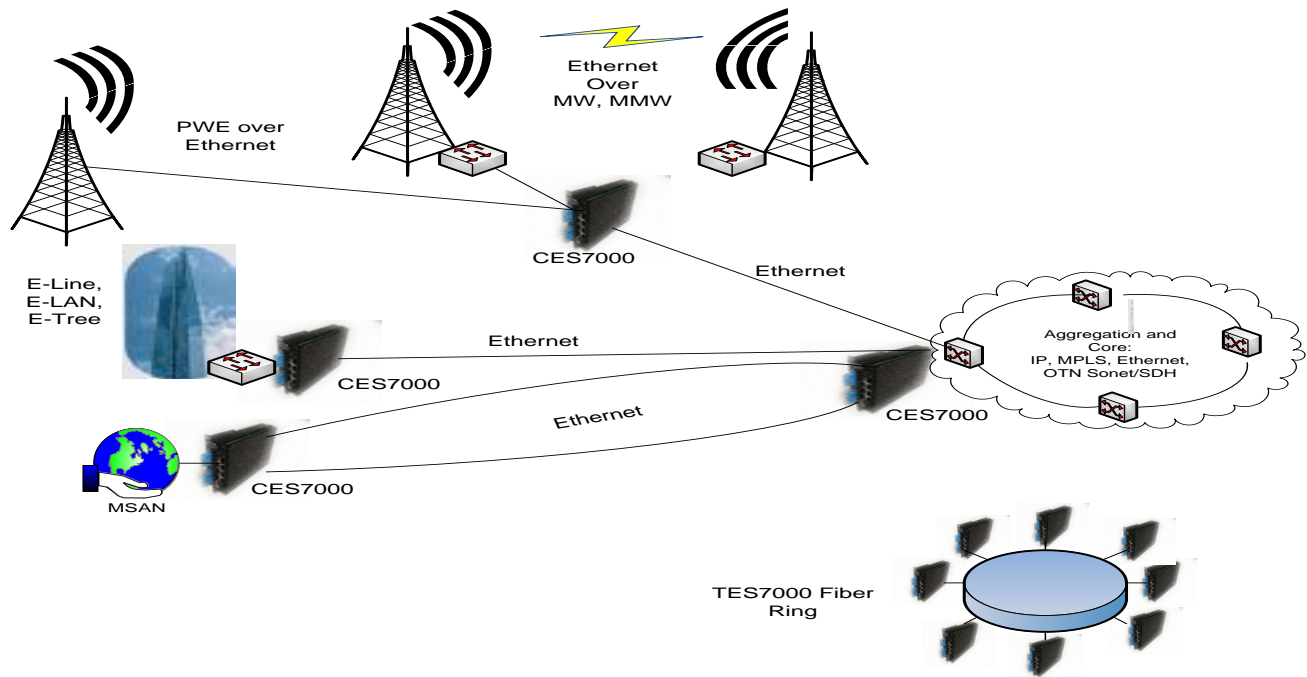
DESIGN FOR FOLLOWING APPROVALS:

- Hazardous Locations: Class 1, Division 2
- ISO: Designed and manufactured using an ISO9001:2000 certified quality program
- CE Marking
- Emissions: FCC Part 15 (Class A), EN55022 (CISPR22 Class A)
- Safety: cCSAus (Compliant with CSA C22.2 No. 60950, UL 60950, EN60950)
- Laser Eye Safety (FDA/CDRH): Complies with 21 CFR Chapter1, Subchapter J.

WARRANTY:

5 Years-Applicable to design or manufacturing related product defects

Specifications are subject to change without notice.



eXtreme copper

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