CONNECTION TECHNOLOGY SYSTEMS

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EPS-5112-8BT

8 x 10/100/1000Base-T RJ-45

with IEEE 802.3af/at/bt PoE++ Injector +

2 x 100M/1G/2.5G/5G/10GBase-T RJ-45 +

2 x 1/10GBase-R SFP+

Managed Layer 2 PoE Switch

Description

Connection Technology Systems (CTS) EPS-5112-8BT is a layer 2 managed PoE switch equipped with 8 ports of 10/100/1000Base-T RJ-45 with IEEE 802.3af/at/bt PoE injector, 2 ports of 100M/1G/2.5G/5G/10GBase-T (compliant with NBase-T standard), and 2 ports of 1/10GBase-R SFP+. The SFP+ slots can accommodate a wide range of SFP/SFP+ transceivers including single-mode, multi-mode, and WDM.

As bandwidth demand soars to new heights, 2 x 100M/1G/2.5G/5G/10GBase-T ports allow users to get up to the speed of 2.5/5Gbps. The multi-speed interfaces hence facilitate various network settings and applications, pushing through the bottleneck of 1Gbps with the same, predominant UTP Cat 5e/6 cables in the most cost-effective approach possible.

The EPS-5112-8BT has 8 10/100/1000Base-T RJ-45 ports that support the IEEE 802.3bt PoE++ standard technology, it can provides PoE power output up to 90 watts of power by using all the four pairs of standard Ethernet cabling to deliver power with up to 1Gbps speed for each remote PoE compliant powered device (PD). Plus, EPS-5112-8BT is 8.5 inches in width, altogether making it the best solution for network infrastructure often hindered by scarce installation space.

For the VLAN functionality, VLAN Translation allows service providers to implement metro Ethernet services by translating the original VLAN ID to a new VLAN ID with different priorities for different customers, whereas Selective Q-in-Q enables operators to differentiate various types of users (home/enterprise) and service levels by encapsulating VLAN tags.

With multicast networking, the model supports IGMP snooping, IGMP fast leave, IGMP filtering, and MVR (Multicast VLAN Registration) to intelligently transmit multicast traffic and deliver the IPTV service.

Besides the CTS' unique Fast Redundancy (Fast Ring v2 / Chain protocols) that prompts better topology stability, EPS-5112-8BT also comes with intelligent diagnostics which deliver real-time SFP/SFP+ and CPU temperature/utilization monitoring and therefore identify possible link/system failures in advance. It simplifies network maintenance and improves connection reliability.

Furthermore, EPS-5112 is equipped with the Smart Fan function, enabling automatic fan speed control based on operating temperature, reduce consumption effectively.

EPS-5112-8BT can be easily operated with a web GUI, console, telnet CLI, and SNMP, optimizing the management experience.

Features

- **2 x 100M/1G/2.5G/5G/10GBase-T Multi-G Ports**

As bandwidth demand soars to new heights, 2 x 100M/1G/2.5G/5G/10GBase-T ports allow users to get up to the speed of 2.5/5Gbps. The multi-speed interfaces hence facilitate various network settings and applications, pushing through the bottleneck of 1Gbps with the same, predominant UTP Cat 5e/6 cables in the most cost-effective approach possible.

- **8 x 802.3bt PoE++ 90-watt PoE Ports**

The IEEE 802.3bt ideal solution can provides three times PoE++ power output more than the IEEE 802.3at PoE+ for high power consuming network PDs.

- **VLAN Functionality**

VLAN Translation allows service providers to implement metro Ethernet services by translating the original VLAN ID to a new VLAN ID with different priorities for different customers, whereas Selective Q-in-Q enables operators to differentiate various types of users (home/enterprise) and service levels by encapsulating VLAN tags.

- **Smart Fan With Auto-Speed Control**

Besides high quality fan to enhance heat dissipation, Smart Fan can adjust fan speed according to temperature to have better control of the device's power consumption and noise.

- **IPv4/IPv6 Dual Stack**

Support IPv6 management, packet forwarding, and MLD v1/v2 snooping.

- **Intelligent Diagnostics**

Greatly help network operators to monitor current CPU/memory utilization, power input voltage, system voltage, CPU temperature, and whether SFP/SFP+ transceiver parameter (e.g. temperature) is beyond or below the threshold.

- **IEEE 802.3ad Link Aggregation**

A cost-efficient way to increase bandwidth and reliability by grouping multiple links into one.

- **Multicast Networking**

Support IGMP snooping, IGMP fast leave, IGMP filtering, and MVR (Multicast VLAN Registration) to intelligently transmit multicast traffic and deliver IPTV service.

Target Applications

- **Power over Ethernet Implementations for SMBs and Enterprises.**

Specification

Interface
-RJ-45 Port
 8 x 10/100/1000Base-T RJ-45 with
 IEEE 802.3af/at/bt PoE++ injector
 2 x 100M/1G/2.5G/5G/10GBase-T RJ-45
-Fiber Port
 2 x 10GBase-SR/LR SFP+ and
 compatible with 1000Base-X Transceiver
-Console Port
 1 x RS-232 to RJ-45 Serial Port
-Terminal Block
 1 x Digital Input (Dry Contact)

Standards
IEEE 802.3 10Base-T
IEEE 802.3u 100Base-TX
IEEE 802.3z 1000Base-X
IEEE 802.3ab 1000Base-T
IEEE 802.3bz 2.5G/5GBase-T (NBase-T)
IEEE 802.3an 10GBase-T
IEEE 802.3ae 10GBase-R
IEEE 802.3ad Link Aggregation (LACP)
IEEE 802.1ab LLDP
IEEE 802.1p Priority
IEEE 802.1q Tag VLAN
IEEE 802.1d STP
IEEE 802.1w RSTP
IEEE 802.1x Port-Based Network Access Control
IEEE 802.3af Power over Ethernet
IEEE 802.3at Power over Ethernet +
IEEE 802.3bt Power over Ethernet ++

H/W Specification
-MAC Address Table: 16K
-Non-Blocking Switching Fabric: 96Gbps
-Throughput @ 64Bytes: 71.4Mpps
-Packet Buffer: 12Mbit
-Jumbo Frame: 12K Bytes
-Store and Forward Switching Mechanism
-Auto-Cross Over for MDI/MDIX in TP Ports
-Auto-Negotiation in TP Ports
-Full/Half Duplex Mode Operation

LED
-Power, Status, COM, Speed/Link/Act, PoE

Ventilation
-Smart Fan
 1 x Speed Auto-adjusting Fan

Forward/Filter Rate
10M: 14,880/14,880pps
100M: 148,800/148,800pps
1000M: 1,488,000/1,488,000pps
2.5G: 3,720,000/3,720,000pps
5G: 7,440,000/7,440,000pps
10G: 14,880,000/14,880,000pps

Power over Ethernet
-Per Port Power Pin Assignment
 IEEE 802.3af/at (mode A/end-span):
  1/2(-), 3/6(+)
  max. PoE output Budget: 15/30W
IEEE 802.3bt
(4-pair mode, 4-pair mode mandatory):
  1/2(-), 3/6(+) & 4/5(+), 7/8(-)
  max. PoE output Budget: 90W
-Total PoE Power Budget: 200W

Layer 2 Switch Features
VLAN
-IEEE 802.1q VLAN
 VLAN ID: 4094 IDs
 VLAN Concurrent Groups: 4K VLAN Groups
-Port-Based VLAN
-VLAN Translation
-Q-in-Q Double Tag with Configurable
 EtherType
-Selective Q-in-Q

QoS
-QoS 802.1p CoS/DSCP
-Scheduling Algorithm
 Weighted Round Robin (WRR)
 Strict Priority Queuing (SPQ)
-QoS Priority Queues: 8 Queues
-802.1p P-bit & DSCP Remarking
-Port-Based Rate Limit (Ingress/Egress)

Network Redundancy
-IEEE 802.1d Spanning Tree Protocol (STP)
-IEEE 802.1w Rapid Spanning Tree Protocol
 (RSTP)
-Fast Ring v2/Chain Redundancy Protocols
-IEEE 802.3ad Link Aggregation (LACP)
-Static Port Trunking
-Up to 6 Aggregation Groups, 8 Ports per Group

Multicast
-IGMP Snooping v1/v2/v3
-IGMP Fast Leave and Querier
-MLD v1/v2 Snooping
-MLD Querier
-IGMP/MLD Snooping Group: 512/128 Groups
-IP Multicast Filter with Segment and Profile
-Static Multicast Group
-Multicast VLAN Replication (MVR)

IPv6 Feature
-IPv6 over Ethernet (RFC 2464)
-IPv6 Addressing Architecture (RFC 4291)
-IPv6 Dual Stack (RFC 4213)
-ICMPv6 (RFC 4884)
-Path MTU Discovery for IPv6 (RFC 1981)
-Neighbour Discovery (RFC 4861)
-DHCPv6 Client

Layer 2 Protocol Tunnelling
-CDP, LLDP, STP, VTP, LACP, PAgP & UDLD

Access Control List
-Physical Port, Ether Type, MAC Address,
 VID, ToS/DSCP, Protocol Type, L4 Port
 and IP Address
-ACL Entries (IPv4: 64 Entries, IPv6: 32 Entries)

PoE Management
-System/per port PoE off and on
-PoE Usage Alarm Threshold
-PoE Port Start Up Sequence
-PoE Inline Mode
 Auto af/at, auto bt, force, fix
-PoE priority, on/off by schedule

Security
-802.1x Port Base Access Control
-802.1x RADIUS Authentication
-802.1x MAC Authentication Bypass
-RADIUS Based VLAN Assignment
-DHCP Option 82 Relay Agent
-DHCP Option 82 with Configurable
 Circuit and Remote ID
-DHCP Snooping and DHCP Server Trust Port
-IP Source Guard
-Port Isolation
-Storm Control
 Unknown Unicast/Unknown Multicast/Broadcast
-MAC Limiter
-Loop Detection

Management
-SNMP v1, v2c & v3
 /Web/Telnet/HTTPS/SSHv2/CLI
-Text Base CLI Configure File
-Port Configuration
 Speed/Duplex/Flow Control/Description
-NTP with Daylight Saving Time
-Layer 2 Control Protocol Filter
-Static MAC Address Table
-LLDP

Maintenance
Diagnostic
-Port Mirror
-ICMP Ping
-Event log
-Syslog
-SFP SFF-8472 DDMI & Threshold Monitor
 Temp/Volt/TX Bias/TX Power/RX Power
-CPU Temperature/Utilization
-Memory Statistics
-FAN Speed
-System Voltage
-Cable Diagnostics

Upgrade/Restore
-Firmware Upgrade/Downgrade
 HTTP/HTTPS/FTP/TFTP
 DHCP Auto-provision via DHCP Option 60/43
-Configuration Upload/Backup
 HTTP/HTTPS/FTP/TFTP
 DHCP Auto-provision via DHCP Option 60/43

Power Requirement
Input AC: 100V - 240V, 50/60Hz, 2.5~1.2A
Max. Power Consumption: 241W (822.32BTU/h)

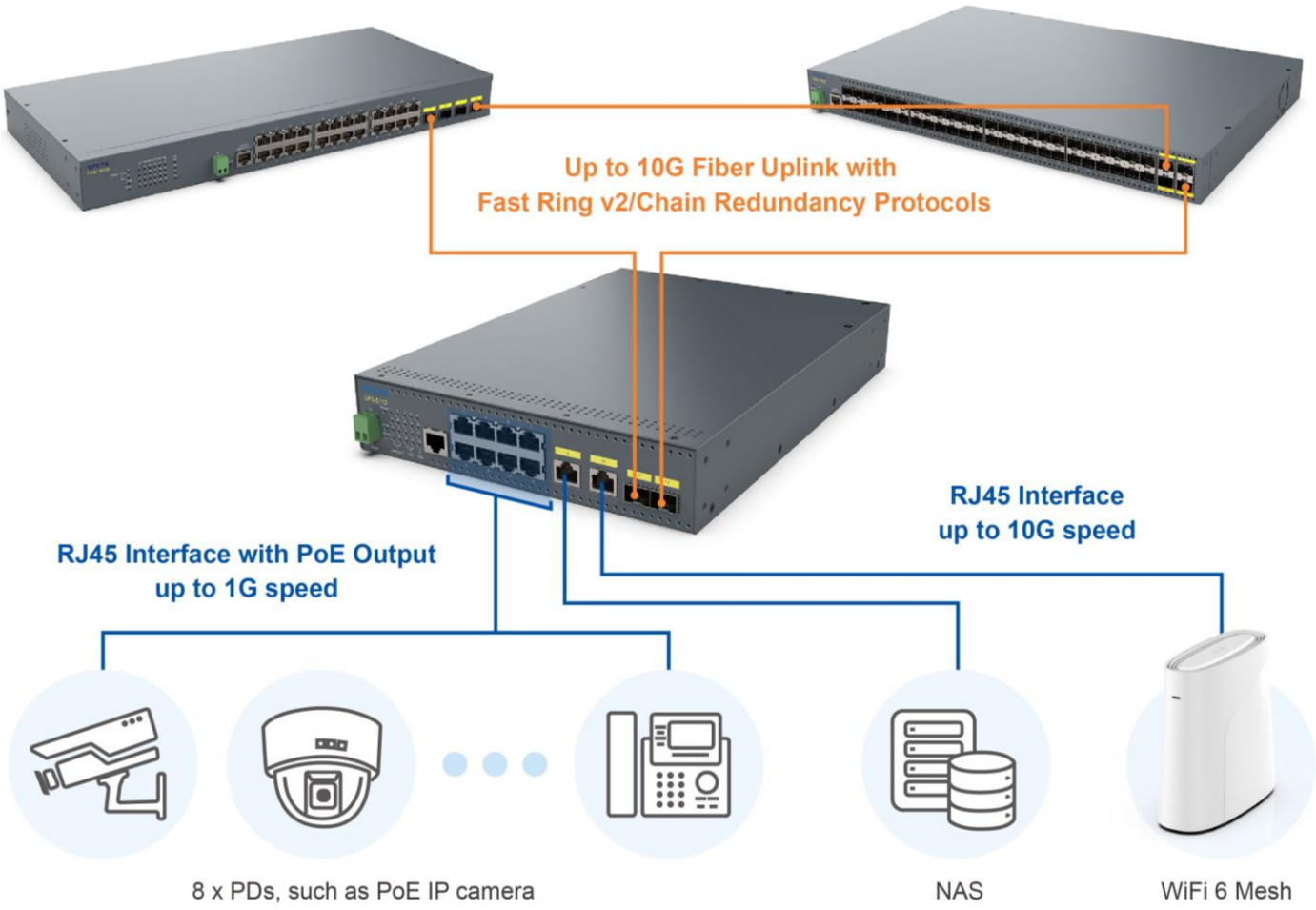
Environmental Condition
Operation: 0˚C ~ 50˚C *
Storage: -20˚C ~ 60˚C
Humidity: 5% ~ 90%, Non-condensing

Dimension & Weight
Size: 210 x 290 x 44mm (W x D x H)
Weight: 2.3kg

EMC/Safety
FCC Class A, CE
ESD
- Air Discharge: +/-8kV
- Contact Discharge: +/-4kV
EFT
- AC input: +/-1kV
Surge Protection: +/-2kV

* Please use industrial SFP/SFP+ transceiver (operation temperature can up to 85˚C) on SFP+ slots (port 11~12) when EPS-5112-8BT is working under 45~50˚C.

Application Diagram



Order Information

Model	Fiber Port			TP Port		Support Power Source
	Speed	Type	Ports	Speed	Ports	
EPS-5112-8BT-200W	1/10Gbps	SFP+	2	10/100/1000Mbps	8 with 802.3af/at/bt Injector	Fixed 1 Internal AC
				100M/1G/2.5G/5G/10Gbps	2	

Accessory

SFP-51

Model	Specification					
	Speed	Type	Connector	Distance	Wavelength	Operating Temperature
SFP-51FC	10Gbps	MM	LC	300M	850nm	0˚C~70˚C
SFP-51FC(SM-10/20)	10Gbps	SM	LC	10/20KM	1310/1310nm	0˚C~70˚C
SFP-51W2A(SM-10/20)	10Gbps	WDM	LC	10/20KM	TX: 1270/1270nm RX: 1330/1330nm	0˚C~70˚C
SFP-51W2B(SM-10/20)	10Gbps	WDM	LC	10/20KM	TX: 1330/1330nm RX: 1270/1270nm	0˚C~70˚C

SFP-31

Model	Specification					
	Speed	Type	Connector	Distance	Wavelength	Operating Temperature
SFP-31FC-DR	100/1000Mbps	MM	LC	550M/2KM	1310nm	0˚C~70˚C
SFP-31FC(SM-10)-DR	100/1000Mbps	SM	LC	10KM	1310nm	0˚C~70˚C
SFP-31W2A(SM-10/20)-DR	100/1000Mbps	WDM	LC	10/20KM	TX: 1310/1310nm RX: 1550/1550nm	0˚C~70˚C
SFP-31W2B(SM-10/20)-DR	100/1000Mbps	WDM	LC	10/20KM	TX: 1550/1550nm RX: 1310/1310nm	0˚C~70˚C
SFP-31FC	1000Mbps	MM	LC	550M	850nm	0˚C~70˚C
SFP-31FC(SM-10/20)	1000Mbps	SM	LC	10/20KM	1310/1310nm	0˚C~70˚C
SFP-31W2A(SM-10/20)	1000Mbps	WDM	LC	10/20KM	TX: 1310/1310nm RX: 1550/1550nm	0˚C~70˚C
SFP-31W2B(SM-10/20)	1000Mbps	WDM	LC	10/20KM	TX: 1550/1550nm RX: 1310/1310nm	0˚C~70˚C
SFP-31FC-D	1000Mbps	MM	LC	550M	850nm	-40˚C ~ 85˚C
SFP-31FC-(MM-02)-D	1000Mbps	MM	LC	2KM	1310nm	-40˚C ~ 85˚C
SFP-31FC(SM-10/20)-D	1000Mbps	SM	LC	10/20KM	1310/1310nm	-40˚C ~ 85˚C
SFP-31W2A(SM-10/20)-D	1000Mbps	WDM	LC	10/20KM	TX: 1310/1310nm RX: 1550/1550nm	-40˚C ~ 85˚C
SFP-31W2B(SM-10/20)-D	1000Mbps	WDM	LC	10/20KM	TX: 1550/1550nm RX: 1310/1310nm	-40˚C ~ 85˚C

* SFP-31xxx-DR modules only support 1000Mbps on EPS-5112-8BT

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