CIS4U2G2F240
Industrial L2+ Managed GbE UPoE Switch

CIS4U2G2F240industrial L2+ managed GbE UPoE switch is the next generation industrial grade Ethernet switch offering powerful L2 and basic L3 features with better functionality and usability. In addition to the extensive management features, CIS4U2G2F240also provides carrier Ethernet features such as OAM/CFM/ERPS/EPS/PTPv2, of which make them suitable for industrial and carrier Ethernet applications.

CIS4U2G2F240delivers 6 (10M/100M/1G) RJ45 with 4 UPoE (Support 802.3 at/af/UPoE, and total up to 240W) ports, 2 GbE SFP ports and RJ45 console port. CIS4U2G2F240provides high HW performance and environment flexibility for industrial and carrier Ethernet applications.

The embedded Device Managed System (DMS) features provides users with the benefits of easy-to-use/configure/install/troubleshoot in the video surveillance, wireless access, and other industrial applications. CIS4U2G2F240is ideal to deliver management simplicity, better user experience, and lowest total cost of ownership

Specifications -

- Rapid Ring (R-Ring)
- Built in Device Management System (DMS)
- iPush APP for real time alarm notification
- ITU-T G.8031 Ethernet Linear Protection Switching (EPS)
- ITU-T G.8032 Ethernet Ring Protection Switching (ERPS)
- IEEE 1588v2 PTP
- IEEE 802.3ah OAM
- IEEE 802.1ag CFM (ITU-T Y.1731 Performance monitoring)
- DHCP Server
- IEEE 802.3az Energy Efficient Ethernet standard for green Ethernet application
- IEEE 802.3af/at/UPoE Power over Ethernet
- IPv4/IPv6 L3 static route
- EtherNet/IP (by request)
- PROFINET (by request)

Benefits

- Feature-rich Specifications to Support Various Applications

  The Switch deliver extensive industrial and carrier grade functionalities, including R-Ring, ITU-T G.8031, ITU-T G.8032, IEEE 1588v2 PTP, OAM, CFM, etc. It also have enhanced L2/L3 features for better manageability and usability.

  CIS4U2G2F240provides advanced PoE features such as PoE auto-checking, PoE scheduling, and PoE power delay for users to manage the powered devices more easily.

  It offers users with better price/performance ratio in industrial application, and provide secure and reliable functionalities for metro/carrier Ethernet deployments.

- Exceptional Precision with IEEE 1588v2 PTP

  The switch performs IEEE1588v2 PTP with transparent clock capability, implementations in hardware, so there is no performance penalty on packet processing.

  The hardware architecture ensures low latency and high time accuracy – which is critical for delay-sensitive financial and mobile applications.

- Superior Reliability through OAM and CFM for Service Assurance

  Service assurance is provided through a rich feature set of operations, administration, and maintenance (OAM) functionalities. It can simplify and facilitate the management of Carrier network, resulting in diminishing operational costs.

  The Ethernet access device also offers standards-based fault and performance management in adherence with 1731 PM and 802.1ag connectivity fault management (CFM) standards.

  These features contribute to significant reduction in operational expenditures and allows for troubleshooting without expensive truck rolls.

- Easy to Install, Configure and Troubleshoot by Device Management System

  The DMS provides embedded functions to facilitate devices management at anytime and anywhere. Its user-friendly interface helps users to manage devices intuitively.

  It supports various IP device types (e.g. PC, IP-phone, IP-camera, WiFi-AP) for end users to enhance manageability and save time/cost during installation/maintenance stages.

- Lowing Total Cost of Ownership (TCO) with Energy-efficient Design

  The switch is designed to help companies to save power needs and reduce TCO by Energy Efficient Ethernet (IEEE 802.3az). It can be used for customers to build a green Ethernet networking environment.

Port Configuration

Total Ports	RJ45 (10M/100M/1G)	Uplinks (100M/1G)	Console	Ring Mgmt.	DI/DO
8	6	2 SFP	RJ45	DIP	1/1

Hardware Performance

Forwarding Capacity (Mpps)	Switching Capacity (Gbps)	Mac Table (K)	Jumbo Frames (Bytes)
11.904	16	8	9216

Environmental Range

Operating Temperature		Storage Temperature		Operating Humidity	Altitude	
Fahrenheit	Centigrade	Fahrenheit	Centigrade	5% to 95% non-condensing	Feet	Meters
-40 to 167	-40 to 75	-40 to 185	-40 to 85		< 10000	<3000

Dimension, Weights, Mounting

Dimension (WxHxD)		Weight		Mounting Type
Millimeter	Inches	Kilograms	Pounds	
62x 135x 130	2.4x 5.3x 5.1	< 1	<2.2	DIN rail

Voltage and Frequency

Primary Power Supply - DC Input Voltage	
DC Nominal	54 VDC dual inputs
DC Operating Range	48 to 57 VDC
PoE SKUs	• Required >48 VDC for PoE IEEE 802.3af (Max. 15.4W) output • Required >54 VDC for PoE+ IEEE802.3at (Max. 30W) output • Required >54 VDC for UPoE (Max. 60W) output

PoE Power Capacity

Available PoE Power	Number of Ports That Support PoE(15.4W), PoE+(30.0W), or UPoE(60W)
240W	Each of port 1 - 4 support UPOE within available PoE Power

Certifications

Regulatory Compliance	
EMS	EN61000-4-2 ESD, EN61000-4-3 RS, EN61000-4-4 EFT, EN61000-4-5 (for RJ45 Port, Surge 6KV), EN61000-4-6 CS, EN61000-4-8 PFMF, (EN61000-6-2 by request)
EMI	FCC Part 15 Class A (EN61000-3-2, EN61000-3-3, EN61000-6-4, EN55022, EN55011 by request)
Safety	CE, (EN60950 by request)
Mechanical Stability	
Vibration	IEC 60068-2-6
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Approvals (by request)	
Railway Norm	EN50121-4, EN50155
Transportation	NEMA TS2
Substation	IEC61850-3, IEEE1613
Marine	DNV

Software Features

Ring Management	
ITU-T G.8031	Supports ITU-T G.8031 Ethernet Linear Protection Switching
ITU-T G.8032	Supports ITU-T G.8032 Ethernet Ring Protection Switching
Rapid Ring	Enable self-recover time in less than 20ms
Device Management System (DMS)	
Graphical Monitoring	• Topology view: Support intuitive way to configure and manage switches and devices with visual relations • Floor view: It's easy to drag and drop PoE devices and help you to build smart workforces • Map view: Enhance efficiency to drag and drop devices and monitor surroundings on google map

Find my Switch	Search and manage your real switches quickly.
Traffic Monitoring	Display visual chart of network traffic of all devices and monitor every port at any time from switches
Trouble Shooting	• Network diagnostic between master switch and devices • Support protection mechanism, such as rate-limiting to protect your devices from brute-force downloading • Support performance management and link management through IEEE 802.3ah and IEEE 802.1ag (Y.1731)
Industrial Protocols (by Request)	
EtherNet/IP	EtherNet/IP is an industrial Ethernet network that combines standard Ethernet technologies with the media-independent Common Industrial Protocol.
PROFINET	It can be recorded and displayed using an Ethernet analysis tool such as Wireshark. The topology can be shown using analysis tools such as TH Scope.
Ethernet OAM	
IEEE 802.3ah OAM	Supports Operations, Administration & Management
IEEE 802.1ag & ITU-T Y.1731 Flow OAM	• Supports IEEE 802.1ag Ethernet CFM (Connectivity Fault Management) • Supports ITU-T Y.1731 Performance Monitoring
Layer 2 Switching	
Spanning Tree Protocol (STP)	• Standard Spanning Tree 802.1d • Rapid Spanning Tree (RSTP) 802.1w • Multiple Spanning Tree (MSTP) 802.1s
Trunking	• Link Aggregation Control Protocol (LACP) IEEE 802.3ad • Up to 4 groups and up to 4 ports per group
VLAN	• Port-based VLAN • 802.1Q tag-based VLAN • MAC-based VLAN • Management VLAN • Private VLAN Edge (PVE) • Q-in-Q (double tag) VLAN • Voice VLAN • GARP VLAN Registration Protocol (GVRP)
DHCP Relay	• Relay of DHCP traffic to DHCP server in different VLAN. • Works with DHCP Option 82
IGMP v1/v2/v3 Snooping	IGMP limits bandwidth-intensive multicast traffic to only the requesters. Supports 1024 multicast groups
IGMP Querier	IGMP querier is used to support a Layer 2 multicast domain of snooping switches in the absence of a multicast router
IGMP Proxy	IGMP snooping with proxy reporting or report suppression actively filters IGMP packets in order to reduce load on the multicast router
MLD v1/v2 Snooping	Delivers IPv6 multicast packets only to the required receivers
Multicast VLAN Registration (MVR)	It uses a dedicated manually configured VLAN, called the multicast VLAN, to forward multicast traffic over Layer 2 network in conjunction with IGMP snooping.
Layer 3 Switching	

IPv4 Static Routing	IPv4 Unicast: Static routing
IPv6 Static Routing	IPv6 Unicast: Static routing
Security	
Secure Shell (SSH)	SSH secures Telnet traffic in or out of the switch, SSH v1 and v2 are supported
Secure Sockets Layer (SSL)	SSL encrypts the http traffic, allowing advanced secure access to the browser-based management GUI in the switch
IEEE 802.1X	• IEEE802.1X: RADIUS authentication, authorization and accounting, MD5 hash, guest VLAN, single/multiple host mode and single/multiple sessions • Supports IGMP-RADIUS based 802.1X • Dynamic VLAN assignment
Layer 2 Isolation Private VLAN Edge	PVE (also known as protected ports) provides L2 isolation between clients in the same VLAN. Supports multiple uplinks
Port Security	Locks MAC addresses to ports, and limits the number of learned MAC address
IP Source Guard	Prevents illegal IP address from accessing to specific port in the switch
RADIUS/ TACACS+	Supports RADIUS and TACACS+ authentication. Switch as a client
Storm Control	Prevents traffic on a LAN from being disrupted by a broadcast, multicast, or unicast storm on a port
DHCP Snooping	A feature acts as a firewall between untrusted hosts and trusted DHCP servers
ACLs	Supports up to 256 entries. Drop or rate limitation based on: • Source and destination MAC, VLAN ID or IP address, protocol, port, • Differentiated services code point (DSCP) / IP precedence • TCP/ UDP source and destination ports • 802.1p priority • Ethernet type • Internet Control Message Protocol (ICMP) packets • TCP flag
Loop Protection	To prevent unknown unicast, broadcast and multicast loops in Layer 2 switching configurations.
Quality of Service	
Hardware Queue	Supports 8 hardware queues
Scheduling	• Strict priority and weighted round-robin (WRR) • Queue assignment based on DSCP and class of service
Classification	• Port based • 802.1p VLAN priority based • IPv4/IPv6 precedence / DSCP based • Differentiated Services (DiffServ) • Classification and re-marking ACLs
Rate Limiting	• Ingress policer • Egress shaping and rate control • Per port
Management	
HW Monitoring	Temperature Detection and Alarm

HW Watchdog	Supported to resume operation from CPU hang up
IEEE 1588v2 PTP	Support IEEE 1588 v2 PTP (Precision Time Protocol)
iPush	• The real time alarm notification could lower technical support cost • Works with iOS and Android devices to make quick work of even the most demanding tasks.
DHCP Server	Support DHCP server to assign IP to DHCP clients
Remote Monitoring (RMON)	Embedded RMON agent supports RMON groups 1,2,3,9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring and analysis
Port Mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to N-1 (N is Switch's Ports) ports can be mirrored to single destination port. A single session is supported.
UPnP	The Universal Plug and Play Forum, an industry group of companies working to enable device-to-device interoperability by promoting Universal Plug and Play
s-Flow	The industry standard for monitoring high speed switched networks. It gives complete visibility into the use of networks enabling performance optimization, accounting/billing for usage, and defense against security threats
IEEE 802.1ab (LLDP)	• Used by network devices for advertising their identities, capabilities, and neighbors on an IEEE 802ab local area network • Support LLDP-MED extensions
Web GUI Interface	Built-in switch configuration utility for browser-based device configuration
CLI	For users to configure/manage switches in command line modes
Dual Image	Independent primary and secondary images for backup while upgrading
SNMP	SNMP version1, 2c and 3 with support for traps, and SNMP version 3 user-based security model (USM)
Firmware Upgrade	• Web browser upgrade (HTTP/ HTTPs) and TFTP • Upgrade through console port as well
NTP	Network Time Protocol (NTP) is a networking protocol for clock synchronization between computer systems over packet-switched
Other Management	• HTTP/HTTPs; SSH • DHCP Client/ DHCPv6 Client • Cable Diagnostics • Ping • Syslog • IPv6 Management
Power over Ethernet (PoE)	
Port Configuration	Supports per port PoE configuration function
PoE Scheduling	Supports per port PoE scheduling to turn on/off the PoE devices (PDs).
Auto-checking	Check the link status of PDs. Reboot PDs if there is no responses.
Power Delay	The switch provides power to the PDs based on delay time when PoE switch boots up, in order to protect switch from misuse of the PDs