Product Catalogue

INDUSTRIAL SOLUTIONS

HIGH-SPEED AND RELIABILITY COMMUNICATION NETWORKS

IES-3110

- Industrial Switch
- Industrial Media Converter

Table Of Contents

CTS

Industrial Switch Solutions

Industrial Media Converter Solutions

Accessory

About CTS

Professional Network Solution Provider

Founded in 1998, Connection Technology System Inc. (CTS) consists of a group of design, technical, and marketing professionals with diverse backgrounds in the communication field and focuses on the professional FTTX and Industrial networking solutions to telcos, network operators, and broadband service providers all over the world. In 2017, with the advantages and experiences accumulated from FTTX markets, CTS launched SiMPNiC* to dedicate to the most cutting-edge IoT integrated solutions to meet the trend of smart living.

CTS Group

CTS CONNECTION TECHNOLOGY SYSTEMS — FTTX, Industrial Network Solutions

SiMPNiC — IoT Integrated Solutions (*www.simpnic.com)

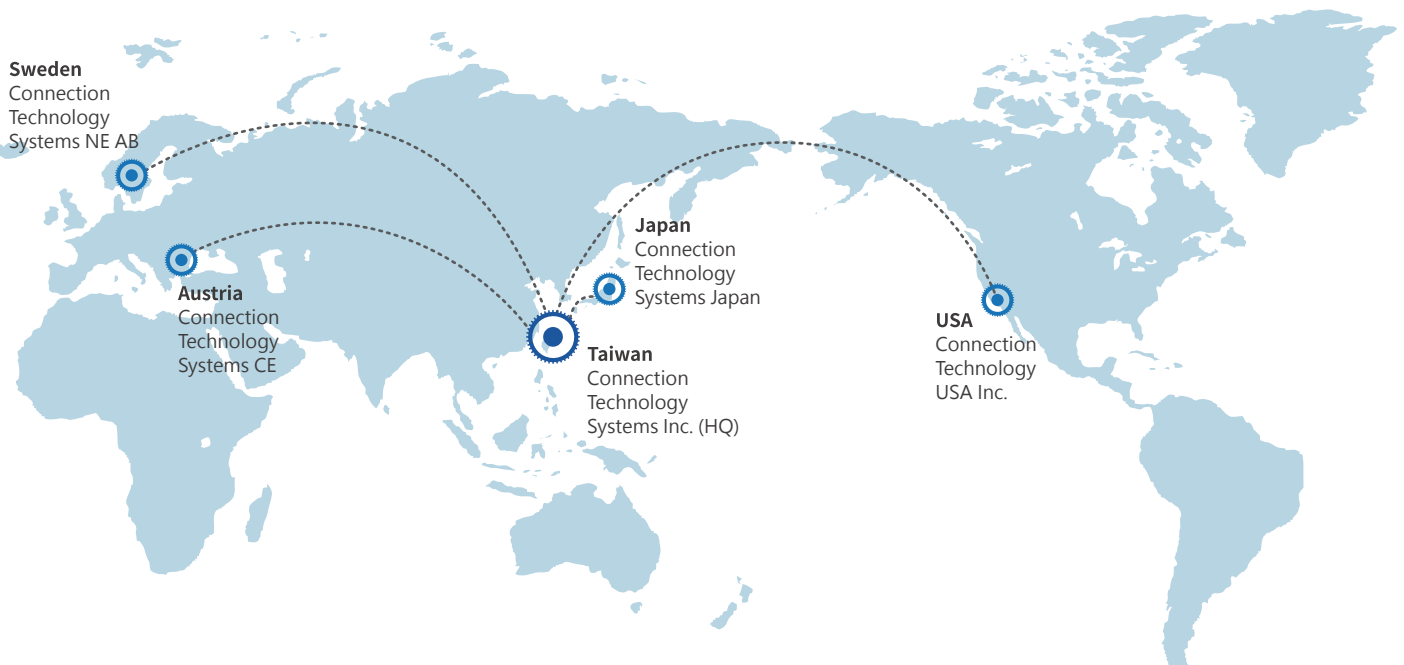### In close cooperation with our partners, CTS has achieved:

Over **1,4 Million** FTTH Last Mile Deployments

Over **750,000** Fiber Ethernet Connectivity Deployments

Over **100,000** FTTB Access-Side Deployments

With in-house design capability and over 20 years of FTTX domain knowledge, CTS has been a reliable partner who always acts proactively to understand customers needs in order to provide the most innovative and valuable solution. While our business is growing in different parts of the world, CTS established local branches in Sweden, USA, Japan and Austria since 2010 to provide fast and efficient response as well as to form a deeper understand and closer relationship with regional markets.

Throughout the past two decades, CTS has seamlessly teamed up with our customers and delivered a wide range of professional fiber connectivity solutions. We will continue to keep our customer in mind and think steps-ahead to develop flexible, high-quality and efficient solutions that create the most value to our customers around the world.

Sweden
Connection Technology Systems NE AB

Austria
Connection Technology Systems CE

Japan
Connection Technology Systems Japan

Taiwan
Connection Technology Systems Inc. (HQ)

USA
Connection Technology USA Inc.

Why CTS

The Spirit of Pursuing Excellence

For CTS, our achievement is defined by each successful story our customers have experienced. Until this day, with 20 years experiences in the field, CTS' innovative spirit and passion still driving the company to pursue excellence. Through continuously interact with the clients and the markets, CTS has insisted on keeping "Differentiation and Glocalization" which has make us one of the leading solution providers for telecom companies, network operators, and broadband service providers all over the world.
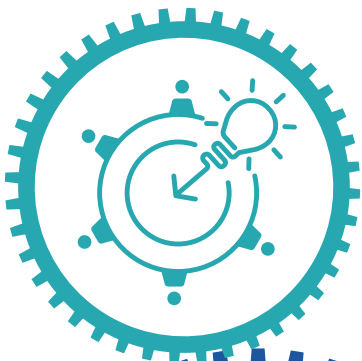
Networking Consultant

- With more than 20 years of FTTX experiences, our " Smart-consult Team" combines the best of CTS members who work closely with customers.
- Local professional team in CTS branches offers quick and regional-specific assist and allows us to response value-added information and can think steps ahead.

In-house Designer

- With the ability to design and manufacture by ourselves, CTS continuously pursues to optimize the solution for better fiber connectivity deployment and future applications.
- Conscientiously research on the market in order to create innovative differentiations to fulfill the ever-growing expectation from the customers worldwide.

Trustworthy Partner

- CTS is not just a vender but partner to our client because we always keep our customer's goal in mind to develop the most fitted solution.
- 0.07% DOA rate is a result of CTS' high-standard quality control program that demonstrate throughout the design, manufacturing, customer service process.

Largest Ski Resort in Austria Adopts CTS Industrial and Fiber Switch for Ski Lift Network

Background

Skiwelt in Ellmau, Tyrol is the largest and state of the art ski resort in Austria which has 284km of ski runs in Austrian Alps. In order to enhance safety and to provide better service, the resort planned to invest to update its communication infrastructure into fiber in order to overcome longer distances. The City of Ellmau and Skiwelt also developed an application with regional information such as events, special offerings, local weather, and entertainment. Hopefully tourists can access to real-time information anytime anywhere in the resort. Skiwelt needed a solution reliable provider who can help with fulfill this plan…

CTS Products

IPS-3110
8-Port Gigabit 802.3at PoE + 2-Port Gigabit Combo Industrial Managed Switch

IPS-3106-SE-PB
4-Port Gigabit 802.3at PoE + 2-Port Gigabit SFP Industrial Managed Switch

FOS-3128
28-Port Managed Fiber Access Switch

" We need products that work stable at 50 degrees Celsius as well as in -25 degrees Celsius and CTS has proven that their products are reliable and persistent even in harsh environment like in the Austrian Alps "

Johannes Winkler,
Operations Manager, Skiwelt

Networking Consultant

CTS' regional technical support can quickly identified and resolved the issues.

Trustworthy Partner

High quality and stability over several years in extremely harsh weather conditions.

In-house Designer

Reliable and robust network helps Skiwelt to provide the best experience for their visitors.

Wi-Fi AP

IP Cam

Wi-Fi AP

IP Cam

FOS-3128

IPS-3106-SE-PB

IPS-3110

FOS-3128
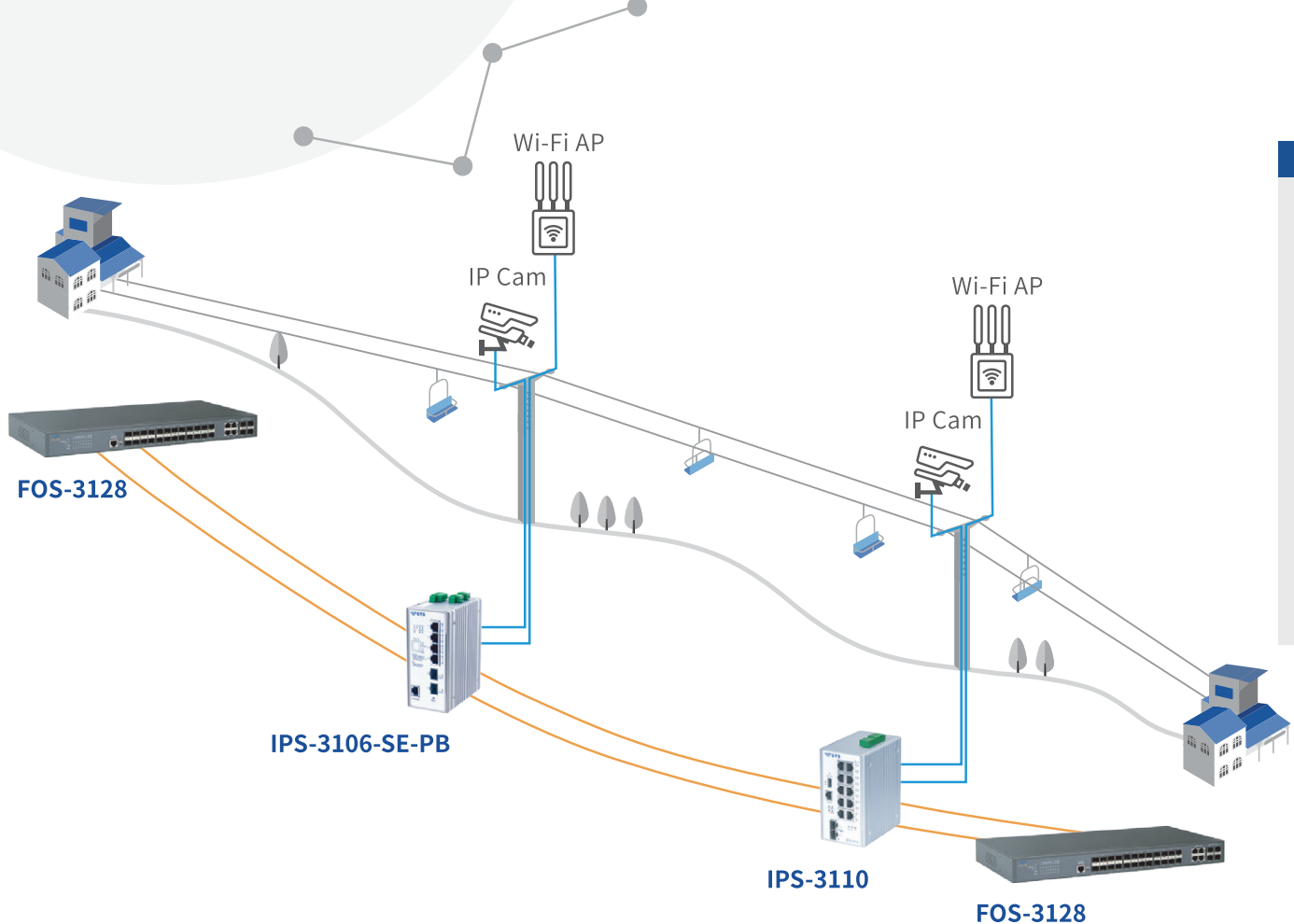
Challenge

① Build long distance networks along cable car systems with the longest over 3km.

② Lightening can easily strike when devices are being installed on the cable car mask.

③ Outdoor devices have to be able to endure local temperature from -10~26 degrees Celsius.

④ Offer public Wi-Fi along the ski-lift for visitors as well as IP cameras for slop monitoring.

⑤ Provide a stable connection for security and safety control.

Solution & Benefit

① CTS fiber connectivity solution help to overcome the challenge of long-distance transmission.

② CTS IPS-3110 equips with K.21 surge protection to protect devices from damage.

③ CTS industrial solutions is designed to endure harsh outdoor environment and it can operate under temperature from -40 to 75 degrees Celsius.

④ PoE features on both IPS-3106-SE-PB and IPS-3110 ease Skiwelt's effort in deploying Wi-Fi networks along the lifts and IP cameras by the slope.

⑤ Supports redundancy protocol to provide a 24/7 stable security network.

Providing Robust, Reliable & Flexible Solution for Industrial Environment

The CTS Industrial Ethernet Switch series is enclosed in IP30 case which can endure wide-ranging operating temperature from -40 to 75 degrees Celsius. All CTS Industrial Ethernet Switches support DIN-rail mounts which allows efficient use of cabinet space. CTS also provide redundant supply system to enable a more secure, stable and sustainable connection.The industrial PoE Ethernet Switch series support IEEE 802.3af/at or 60W PoE power output that is able to supply power to PoE compliant devices which greatly reduce wiring complexity and save trouble to search for extra power outlets.

- IP30 Design Housing
- -40~75 degrees Celsius Operating Temperature Range for Harsh Operating Environment
- 9.6~55/12~54/24~54/44~55/48~54VDC Dual Power Input for Uninterrupted Network System
- Industrial PoE Switch Series Support IEEE 802.3at/af PoE and 60W PoE++ Power Output
- IEEE 802.1q Tagged VLAN and Q-in-Q
- IGMP Snooping v1, v2 and v3
- IEEE 802.1p QoS, ToS and DSCP
- IEEE 802.3ad Link Aggregation and Static Trunk
- STP, RSTP and Fast Ring v2

60W PoE Output

IPS-3120-PoE++

-40~75 Degrees Celsius

IES-3110

Power Booster

IPS-3106-SE-PB

Robust, Reliable & Extendable Solution to Reach Copper Devices Effortlessly

Dual Fiber

60W PoE Output

-40~75 Degrees Celsius

IPC-3014-PoE++

IPC-3012-PoE++

IAC-3012

CTS Industrial Media Converters in a robust IP30 housing are designed to meet the demands of industrial network for plug-and-play usage. Industrial Media Converters can extend your Ethernet network beyond 100-meter limitation and convert fiber links from multi-mode to single-mode or vice versa. The wiring distance of CTS Industrial Media Converters can extend from 2 to 120km and data transmission distance is up to 120km.

- IP30 Slim Design Housing
- -40~75 Degrees Celsius Operating Temperature for Harsh Operating Environment
- 12~48/12~57/48~54 Dual Power Input for Uninterrupted Network System
- 1-/2-port Copper to 1-/2-port Fiber-optic Interface
- Supports 1-/2-port PoE Injector
- Supports IEEE 802.3at/af PoE and 60W PoE++ Power Output
- Built-in DIP Switch Provides Port Isolation and Fiber Redundancy Mode

Application of Industrial Networking Solutions

Wi-Fi AP

IP Cam

IPS-3106-SE-PB

Wi-Fi AP

IP Cam

IPS-3110-PB

Wi-Fi AP

IP Cam

IPS-3110-PB

Chain Recovery Time < 50ms

Station

IPS-3120-PoE++

Station

Ring Recovery

Wi-Fi AP

IPS-3112-PoE++

IP Cam

Control Center

EPS-3128

Wi-Fi AP

IP Cam

IP Cam

IP Cam

────	**Fiber**
────	**RJ-45**

Wi-Fi AP

IP Cam

Wi-Fi AP

IP Cam

Wi-Fi AP

IP Cam

IPS-3106-SE-PB

IPS-3110-PB

IPS-3110-PB

Station

IPS-3112-PoE++

Station

IPS-3120-PoE++

Time < 50ms
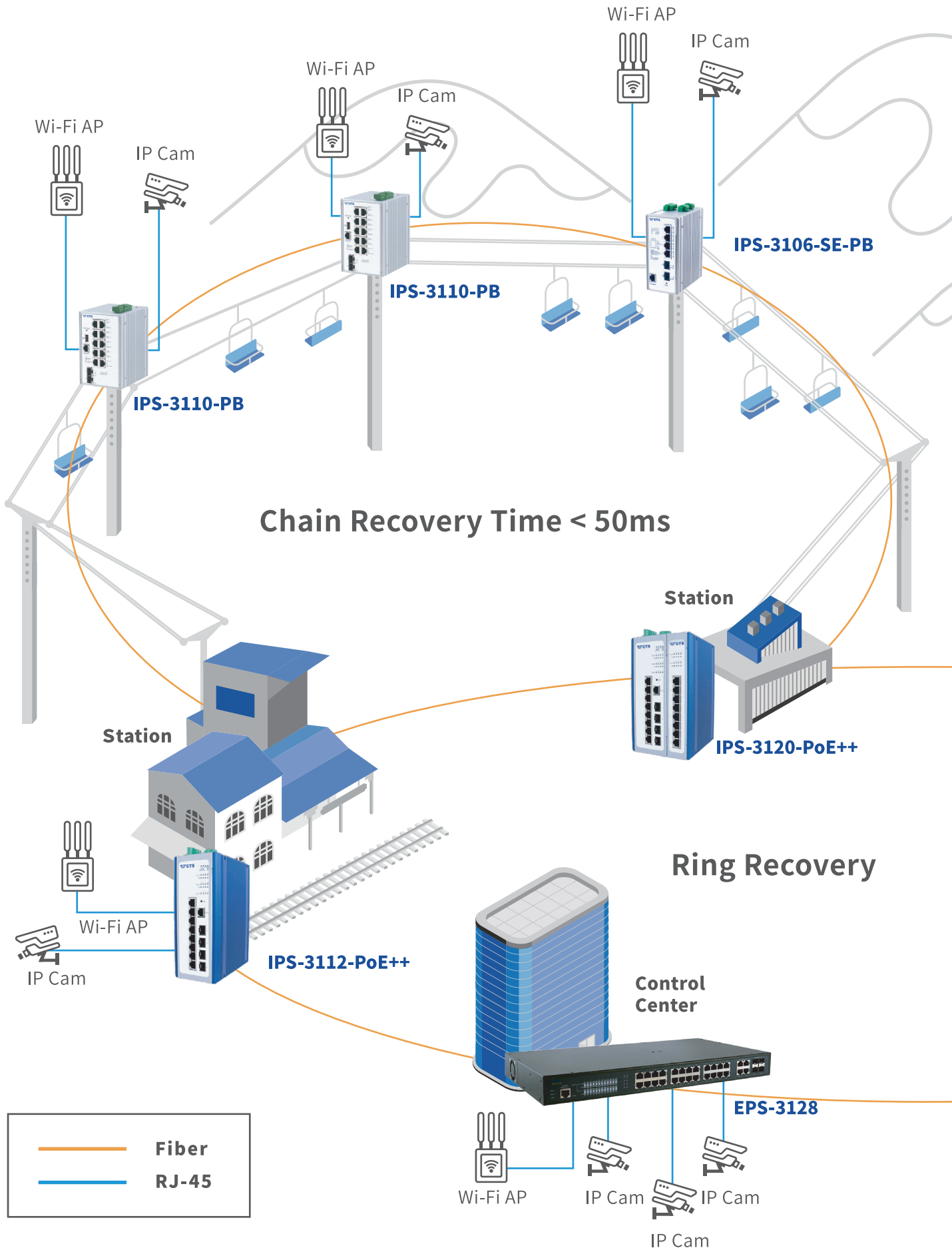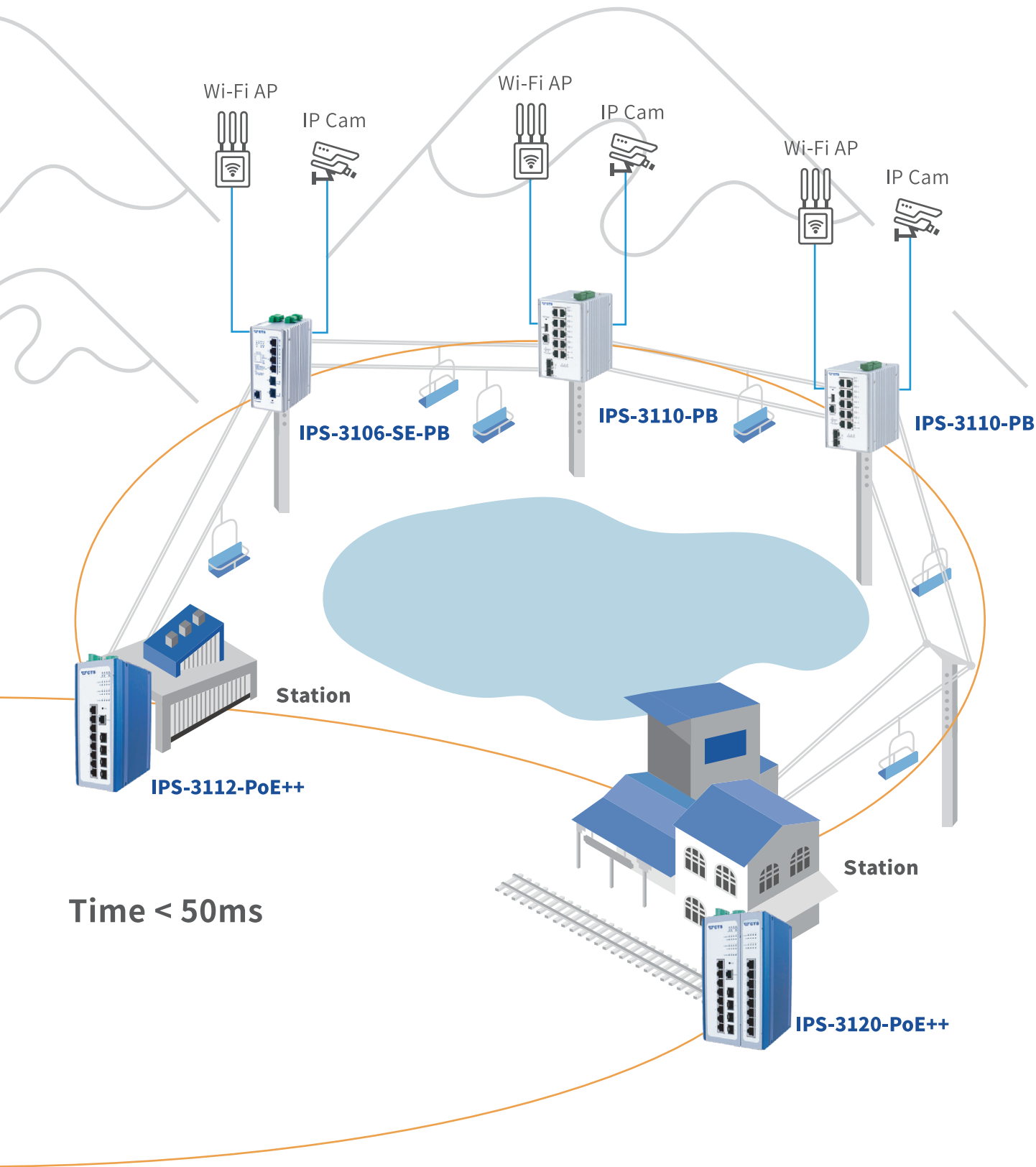
Industrial 60W PoE++ Managed Switch			
Model Name	IPS-3120-PoE++	IPS-3112-PoE++	IPS-3108-EXP*
Product Image			
Hardware 10/100/1000Base-T	16	8	8
10/100Base-TX	-	-	-
1000Base-X	4	4	-
100Base-FX	Compatible	Compatible	-
RS-232 Console Port (RJ-45)	1	1	-
Digital Input/Output	1 x DI + 1 x DO		-
PoE	8 x 60W PoE++ + 8 x 802.3af/at PoE+	8 x 60W PoE++	8 x 802.3af/at PoE+
PoE Budget (Max.)	720W	480W	-
Power Connector	Terminal Block		-
Power Source	48~55VDC Dual Input		-
Power Consumption	740W	495W	-
Dimension W x D x H	115 x 135 x 200mm	80 x 135 x 200mm	35 x 135 x 200mm
Operating Temperature (Humidity)	-40~75°C (5~90%)		
MAC Address Table	8K		-
Non-blocking Switching Fabric	40Gbps	24Gbps	16Gbps
Memory Buffer	4.1M Bytes		-
Jumbo Frame	9K Bytes		-
Traffic Management IPv6	-		
QoS	802.1p, ToS/DSCP		-
QoS Priority Queue	8		-
Bandwidth Control	-		
Broadcast Storm Control	-		
IPTV Multicast	IGMP Snooping v1/v2/v3		-
Network Redundancy	CTS Fast Ring v2** STP/RSTP		-
LACP	●		-
VLAN	802.1q, Q-in-Q, Port Based		-
VLAN ID	4094		-
VLAN Group	2K		-
Security & Authentication SSHv2	●		-
DHCP Option 82	-		
Authentication	RADIUS, TACACS+, 802.1x MAB		-
ACL (Access Control List)	●		-
Network Management & Maintenance Management	Telnet, CLI, WEB, SNMP v1/v2c/v3		-
Port Mirroring	-		
SNMP Power Down Trap	-		
DHCP	Client		-
SNTP	●		-
Firmware/Configuration Upgrade	FTP/TFTP/HTTP		-
Certifications EMC/Safety	FCC Class A, CE		
Stability	IEC 60068-2-27 (Shock), IEC 60068-2-32 (Freefall), IEC 60068-2-6 (Vibration)		
Surge	ITU-T K.21 Enhanced Level 6KV		

* IPS-3108-EXP is expansion module for IPS-3112-PoE++

** CTS Fast Ring v2 includes Ring and Chain Protocol

Industrial 802.3at PoE+ Managed Switch			
Model Name	IPS-3110	IPS-3110-PB	IPS-3106-SE-PB
Product Image			

		IPS-3110	IPS-3110-PB	IPS-3106-SE-PB
Hardware	10/100/1000Base-T	10	10	4
	10/100Base-TX	-	-	-
	1000Base-X	2 (COMBO)	2 (COMBO)	2
	100Base-FX	Compatible	Compatible	Compatible
	RS-232 Console Port (RJ-45)	1	1	1
	Digital Input/Output	1 x DO		1 x DI + 1 x DO
	PoE	8 x 802.3af/at PoE+		4 x 802.3af/at PoE+
	PoE Budget (Max.)	240W		120W
	Power Connector	Terminal Block		
	Power Source	48~54VDC Dual Input	24~54VDC Dual Input	
	Power Consumption	255W		135W
	Dimension W x D x H	73 x 110 x 135mm	88 x 110 x 135mm	63 x 110 x 135mm
	Operating Temperature (Humidity)	-40~75°C (5~90%)		
	MAC Address Table	16K		8K
	Non-blocking Switching Fabric	20Gbps		12Gbps
	Memory Buffer	256K Bytes		4.1M Bytes
	Jumbo Frame	9K Bytes		
Traffic Management	IPv6	-		•
	QoS	802.1p, ToS/DSCP		
	QoS Priority Queue	8		
	Bandwidth Control	•		
	Broadcast Storm Control	•		
	IPTV Multicast	IGMP Snooping v1/v2		IGMP Snooping v1/v2/v3 MLD Snooping v1/v2
	Network Redundancy	CTS Fast Ring v2** STP/RSTP		
	LACP	•		
	VLAN	802.1q, Q-in-Q, Port Based		
	VLAN ID	4094		
	VLAN Group	128		2048
Security & Authentication	SSHv2	•		
	DHCP Option 82	-		•
	Authentication	RADIUS, 802.1x		RADIUS, TACACS+, 802.1x MAB
	ACL (Access Control List)	•		
Network Management & Maintenance	Management	Telnet, CLI, WEB, SNMP v1/v2c/v3		
	Port Mirroring	•		
	SNMP Power Down Trap	-		
	DHCP	Client, Auto Provisioning, Snooping		
	SNTP	•		
	Firmware/Configuration Upgrade	FTP/TFTP/HTTP/USB 2.0 Type A		FTP/TFTP/HTTP
Certifications	EMC/Safety	FCC Class A, CE		
	Stability	IEC 60068-2-27 (Shock), IEC 60068-2-32 (Freefall), IEC 60068-2-6 (Vibration)		
	Surge	ITU-T K.21 Enhanced Level 6KV		

** CTS Fast Ring v2 includes Ring and Chain Protocol

Industrial Ethernet Managed Switch	
Model Name	IES-3110
Product Image	

Hardware	10/100/1000Base-T	10
	10/100Base-TX	-
	1000Base-X	2 (COMBO)
	100Base-FX	Compatible
	RS-232 Console Port (RJ-45)	1
	Digital Input/Output	1 x DO
	PoE	-
	PoE Budget (Max.)	-
	Power Connector	Terminal Block
	Power Source	12~54VDC Dual Input
	Power Consumption	15W
	Dimension W x D x H	73 x 110 x 135mm
	Operating Temperature (Humidity)	-40~75°C (5~90%)
	MAC Address Table	16K
	Non-blocking Switching Fabric	20Gbps
	Memory Buffer	256K Bytes
	Jumbo Frame	9K Bytes
Traffic Management	IPv6	-
	QoS	802.1p, ToS/DSCP
	QoS Priority Queue	8
	Bandwidth Control	●
	Broadcast Storm Control	●
	IPTV Multicast	IGMP Snooping v1/v2
	Network Redundancy	CTS Fast Ring v2*, STP/RSTP
	LACP	●
	VLAN	802.1q, Q-in-Q, Port Based
	VLAN ID	4094
	VLAN Group	128
Security & Authentication	SSHv2	●
	DHCP Option 82	-
	Authentication	RADIUS, 802.1x
	ACL (Access Control List)	●
Network Management & Maintenance	Management	Telnet, CLI, WEB, SNMP v1/v2c/v3
	Port Mirroring	●
	SNMP Power Down Trap	●
	DHCP	Client, Auto Provisioning, Snooping
	SNTP	●
	Firmware/Configuration Upgrade	FTP/TFTP/HTTP/USB 2.0 Type A
Certifications	EMC/Safety	FCC Class A, CE
	Stability	IEC 60068-2-27 (Shock), IEC 60068-2-32 (Freefall), IEC 60068-2-6 (Vibration)
	Surge	ITU-T K.21 Enhanced Level 6KV

* CTS Fast Ring v2 includes Ring and Chain Protocol

Industrial 60W PoE++ Media Converter (-40~75°C)		
Model Name	IPC-3014-PoE++ Non-managed	IPC-3012-PoE++ Non-managed
Product Image		
Hardware	10/100/1000Base-T	2	1
	1000Base-X	2	1
	100Base-FX	Compatible	Compatible
	Digital Output	●	
	PoE	1 x 60W PoE++ + 1 x 802.3af/at PoE+	1 x 60W PoE++ or 1 x 802.3af/at PoE+
	PoE Budget (Max.)	90W	60W
	Power Connector	Terminal Block	
	Power Source	12~57VDC Dual Input	
	Power Consumption	96W	64.8W
	Store and Forward	●	
	Auto-MDI/MDI-X	●	
	Auto-negotiation in Fiber Port	●	
	MAC Address Table	2K	
	Memory Buffer	128K Bytes	
	Jumbo Frame	9K Bytes	
	Link Alarm	●*	
	Dimension W x D x H	36 x 110 x 135mm	
	Operating Temperature (Humidity)	-40~75°C (5~90%)	
	Network Redundancy	Fiber Backup Mode	-
Certifications	EMC/Safety	FCC Class A, CE	
	Stability	IEC 60068-2-27 (Shock), IEC 60068-2-32 (Freefall), IEC 60068-2-6 (Vibration)	
	Surge	ITU-T K.21 Enhanced Level 6KV	

* Customer should inform CTS before manufacturing if they request for adding link alarm function

Industrial Media Converter (-40~75°C)		
Model Name	IAC-3014 Non-managed	IAC-3012 Non-managed
Product Image		
Hardware 10/100/1000Base-T	2	1
1000Base-X	2	1
100Base-FX	Compatible	Compatible
Digital Output	●	
Power Connector	Terminal Block	
Power Source	12~48VDC Dual Input	
Power Consumption	4.8W	3.4W
Store and Forward	●	
Auto-MDI/MDI-X	●	
Auto-negotiation in Fiber Port	●	
MAC Address Table	2K	
Memory Buffer	128K Bytes	
Jumbo Frame	9K Bytes	
Link Alarm	●*	
Dimension W x D x H	36 x 110 x 135mm	
Operating Temperature (Humidity)	-40~75°C (5~90%)	
Network Redundancy	Fiber Backup Mode	-
Certifications EMC/Safety	FCC Class A, CE	
Stability	IEC 60068-2-27 (Shock), IEC 60068-2-32 (Freefall), IEC 60068-2-6 (Vibration)	
Surge	ITU-T K.21 Enhanced Level 6KV	

* Customer should inform CTS before manufacturing if they request for adding link alarm function

Industrial Gigabit Ethernet SFP Transceiver

Product Image

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

Industrial Power Supply

Product Image

Model Name		SDR-480-48	SDR-240-48	SDR-120-48	SDR-75-48
Output	Rated Power	480W	240W	120W	76.8W
	Voltage Adj. Range*	48~55V			
	Current Range	0~10A	0~5A	0~2.5A	0~1.6A
Input	Voltage Range	90~264VAC 127~370VDC	88~264VAC 124~370VDC		
Protection		Overload, Over Voltage, Over Temperature			
Temperature		-25~70°C			
Dimension W x D x H		85.5 x 128.5 x 125.2mm	63 x 113.5 x 125.2mm	40 x 113.5 x 125.2mm	32 x 102 x 125.2mm

* Voltage Tolerance: ± 1.0%

Industrial Power Supply

Product Image				
Model Name		NDR-480-48	NDR-240-48	NDR-120-48
Output	Rated Power	480W	240W	120W
	Voltage Adj. Range*	48~55V		
	Current Range	0~10A	0~5A	0~2.5A
Input	Voltage Range	90~264VAC 127~370VDC		
Protection		Overload, Over Voltage, Over Temperature		
Temperature		-20~70°C		
Dimension W x D x H		85.5 x 128.5 x 125.2mm	63 x 113.5 x 125.2mm	40 x 113.5 x 125.2mm

Product Image				
Model Name		NDR-75-48	MDR-60-48	MDR-20-12
Output	Rated Power	76.8W	60W	20W
	Voltage Adj. Range*	48~55V	48~56V	10.8~13.2V
	Current Range	0~1.6A	0~1.25A	0~1.67A
Input	Voltage Range	90~264VAC 127~370VDC	85~264VAC 120~370VDC	
Protection		Overload, Over Voltage, Over Temperature	Overload, Over Voltage	
Temperature		-20~70°C		
Dimension W x D x H		32 x 102 x 125.2mm	40 x 100 x 90mm	22.5 x 100 x 90mm

* Voltage Tolerance: ± 1.0%

CTS

Innovation to Your Needs

www.ctsystem.com

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