

RUGGED/INDUSTRIAL SOLUTIONS

HIGH-SPEED AND RELIABLE
COMMUNICATION NETWORK



- Industrial Switch
- Rugged & Industrial Media Converter

CTS

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About CTS

- CTS is a leading network solution provider headquartered in Taiwan. We are professional in design and manufacture products for the Last Mile Connectivity. With branch offices in Japan, Sweden, Austria, India, and the U.S., we aim to develop solutions to achieve sustainability, and grow together with partners worldwide.
- Founded in 1998, public since 2015
- 142 employees internationally, 20% belong to R&D
- 350+ Customers in over 40 countries
- 97.8% Customer Satisfaction

Our Mission

Find the market gap from user scenario and application

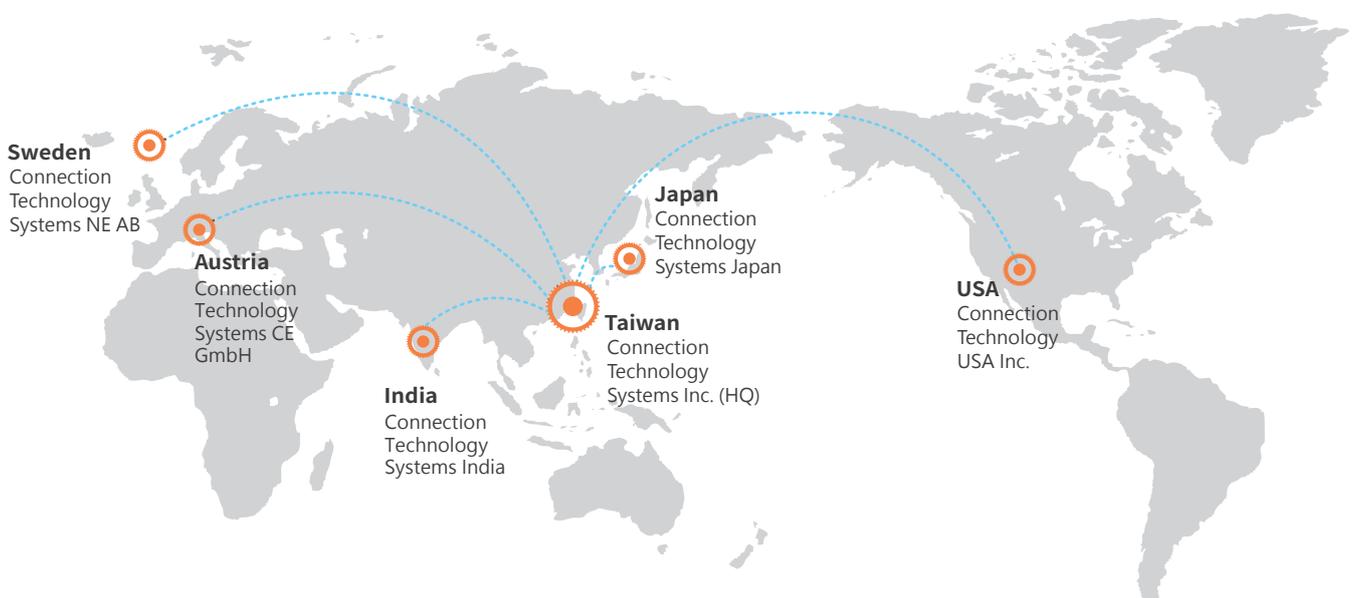
Design reliable products that connect people at the Last Mile

Fulfill customer demands with differentiated and sustainable solutions

Sustainability

We provide reliable and sustainable solution for our customers so they can use for a long time, reducing the waste of our planet. We also adhere to the most stringent global compliance standards.

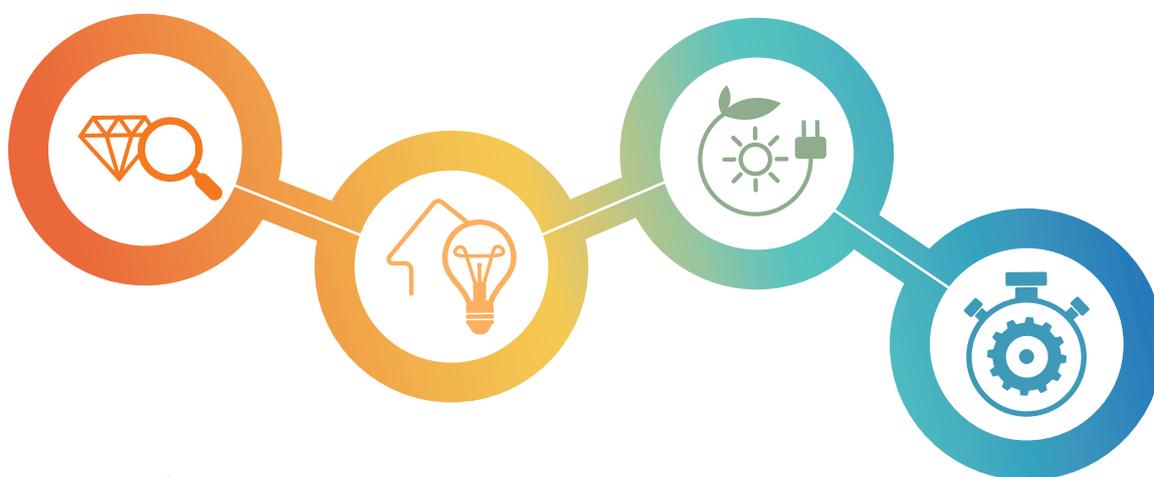
CTS acknowledges the importance of the UN Sustainable Development Goals (SDGs) and we've integrated into our business strategy. We've started to work with our suppliers and partners on the GHGs and PCF. We plan to release sustainability report to our stakeholders every year.



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.



Quality Assurance

Engineering Design

- SW/HW Collaboration
- Design Verification Test
- Design for Manufacturing
- Solution & Risk Analysis

Own Production

- Made in Taiwan
- IQC/PQC/FQC/OQC
- First Pass Yield
- Dynamic Burn-in Test

Reliability Test

- High Temperature Operating
- High Temperature Storage
- Damp Heat Cycling Test
- Accelerated Aging Test
- MTBF with MIL-HDBK-217F
- ISO 9001, 14001, CE, FCC

Timely Services

- Engineering Services
- Local Branch Support
- RMA Center
- Root Cause Analysis

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-5152

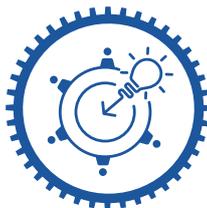
- 52-Port Managed Fiber
- Managed Access Switch



Johannes Winkler,
Operations Manager, Skiwelt



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



Networking Consultant

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



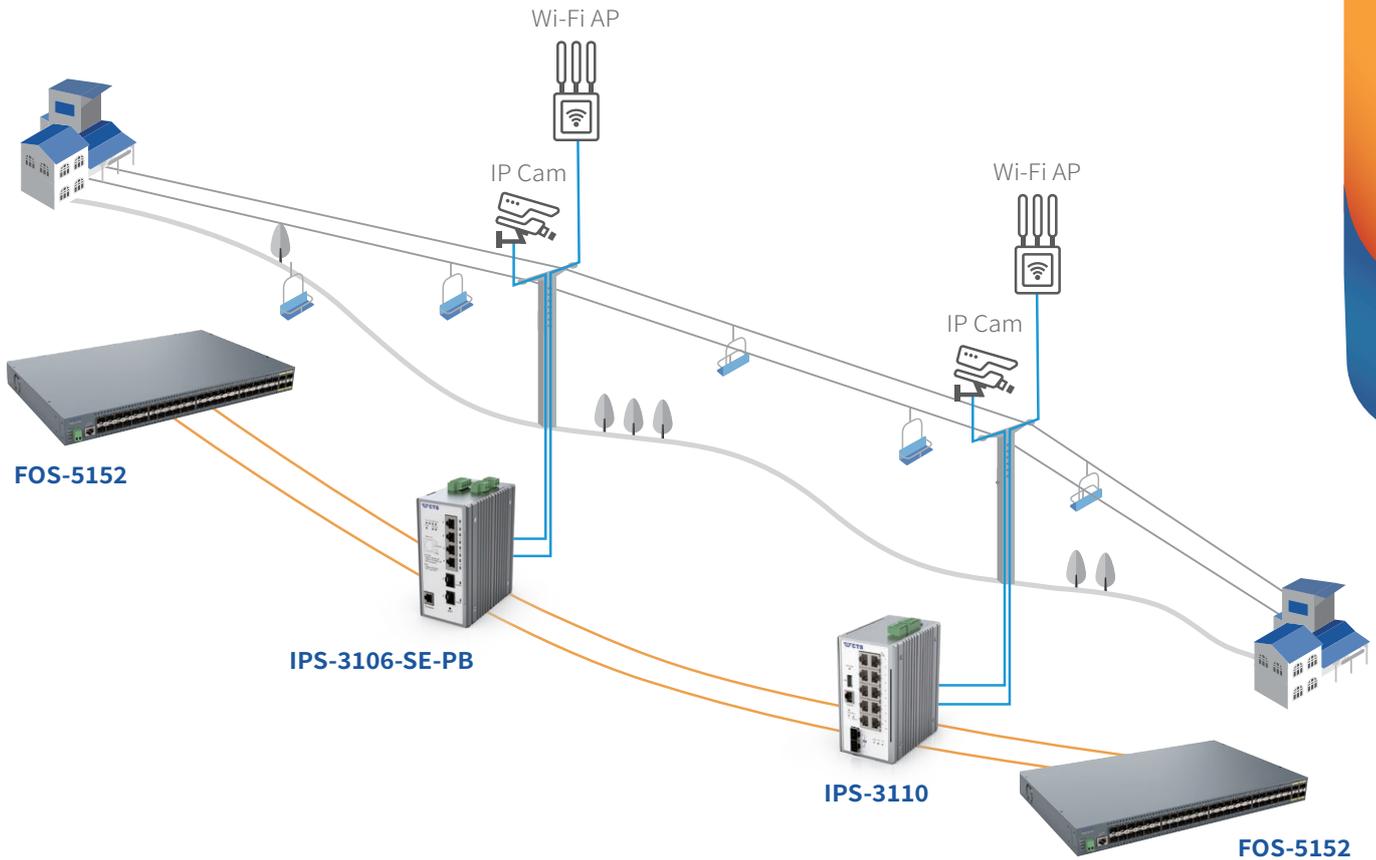
Trustworthy Partner

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.



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 are 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 up to Force 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



IPS-3014-PoE++



60W PoE Output



IPS-3012-PoE++



-40~75
Degrees
Celsius



IAC-3012

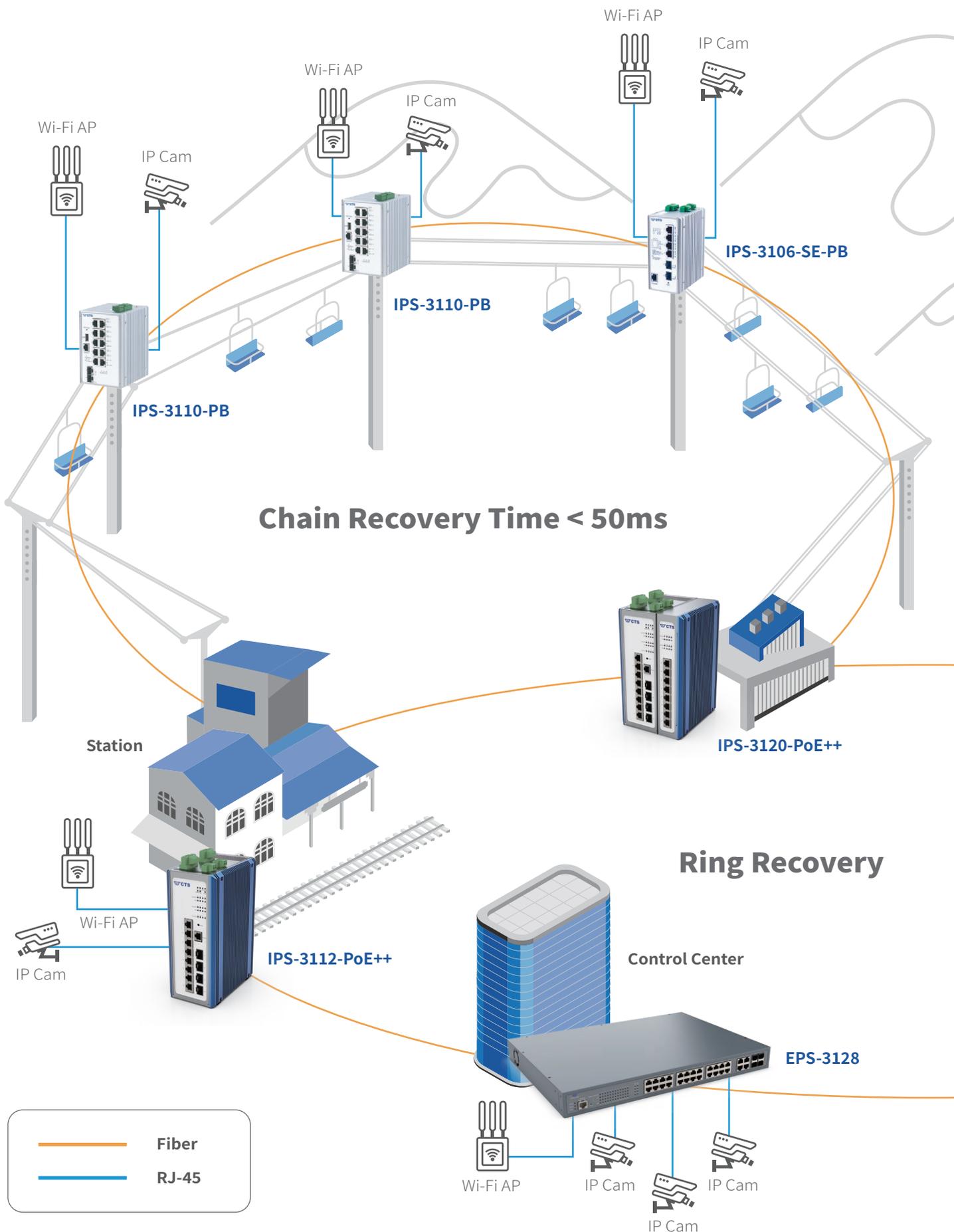
CTS Industrial Media Converters in a robust IP30 housing are designed to meet the demands of industrial network for plug-and-play usage. Industrial Media Converters can extend your Ethernet network beyond 100-meter limitation and convert fiber links from multi-mode to single-mode or vice versa. The wiring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

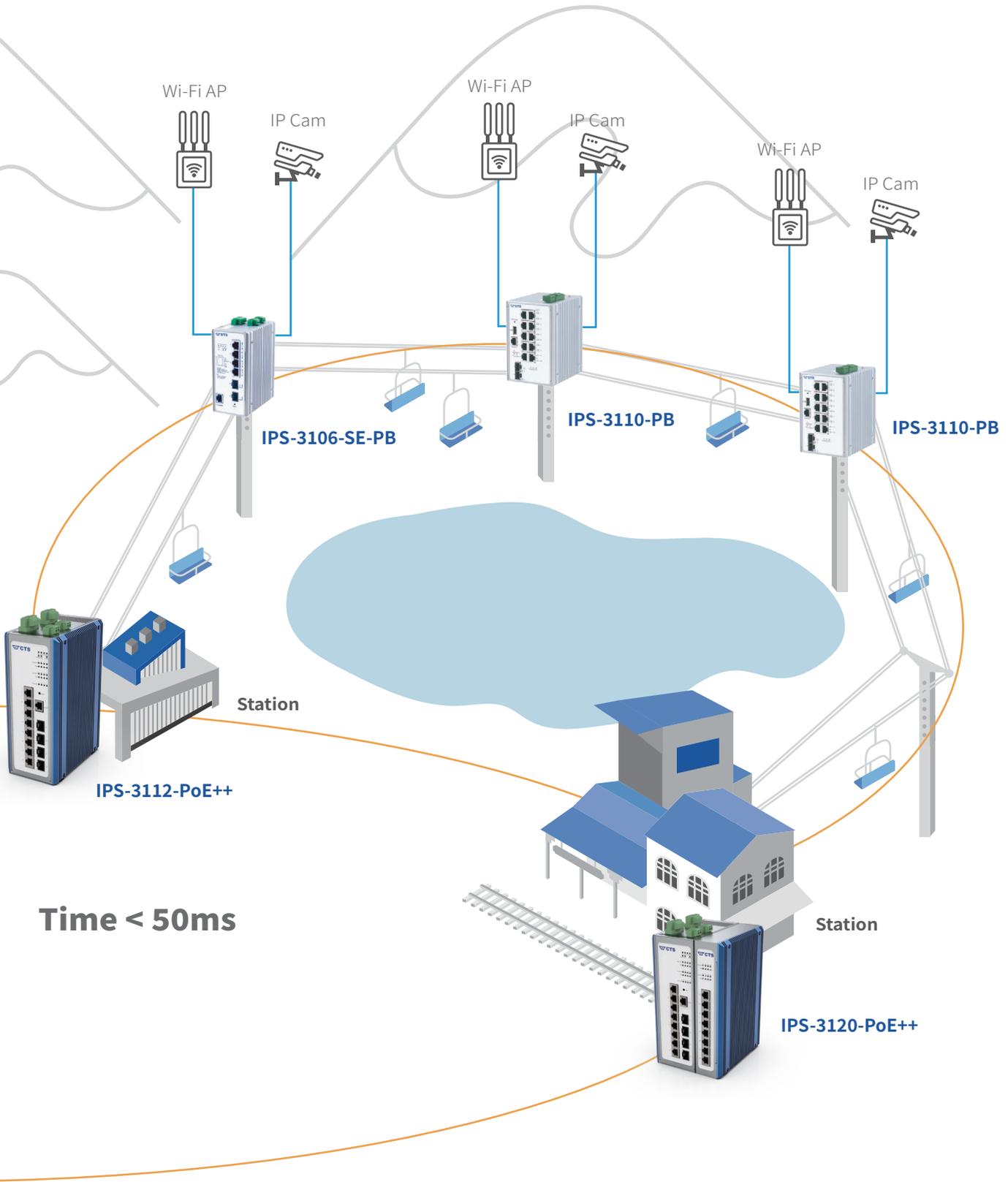
Our rugged media converter added a very useful function, PSE Auto Power Off! PSE Auto Power Off allows you to turn on/off PoE power with Link Alarm. By shutting down the fiber port in the switch, the IPC-3014/3012 stops transmitting both data and power to connected PoE-fed products such as IP camera and Wi-Fi access point.

Since the first step when troubleshooting an IP camera or Wi-Fi access point is almost always is to reboot it, PSE Auto Power Off is a valuable feature in these situations.

- IP30 Slim Design Housing
- -40 ~75 Degrees Celsius Operating Temperature for Harsh Operating Environment
- 12~48/12~57/48~54 Dual DC 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 up to Force 60W PoE Power Output
- Built-in DIP Switch Provides Port Isolation and Fiber Redundancy Mode
- PSE Auto Power Off to turn on and off PoE power with Link Alarm

Application of Fast Ring v2





Industrial Force 60W PoE Managed Switch

Model Name	IPS-3120-PoE++	IPS-3112-PoE++	
Product Image	   	   	
Hardware	10/100/1000Base-T	16	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 up to Force 60W PoE + 8 x 802.3af/at PoE+	8 x up to Force 60W PoE
	PoE Budget (Max.)	720W	480W
	Power Connector	Terminal Block	
	Power Source	48~54VDC Dual Input	
	Power Consumption	740W	495W
	Dimension W x D x H	115 x 135 x 200mm	80 x 135 x 200mm
	Operating Temperature (Humidity)	-40~75°C (5~90%)	
	MAC Address Table	8K	
	Traffic Management	Non-blocking Switching Fabric	40Gbps
Memory Buffer		4.1M Bytes	
Jumbo Frame		9K Bytes	
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	
Security & Authentication	LACP	●	
	VLAN	802.1q, Q-in-Q, Port Based	
	VLAN ID	4094	
	VLAN Group	2K	
Network Management & Maintenance	SSHv2	●	
	DHCP Option 82	-	
	Authentication	RADIUS, 802.1x MAB	
	ACL (Access Control List)	●	
	Management	Telnet, CLI, WEB, SNMP v1/v2c/v3	
Certifications	Port Mirroring	-	
	SNMP Power Down Trap	-	
	DHCP	Client, Auto Provisioning	
	SNTP	●	
	Firmware/Configuration Upgrade	FTP/TFTP/HTTP	
	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 10-port Managed Switch

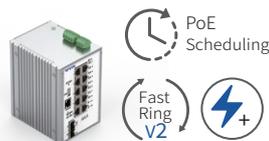
Model Name

IPS-3110

IPS-3110-PB

IES-3110

Product Image



Hardware	10/100/1000Base-T	10	10	10
	10/100Base-TX	-	-	-
	1000Base-X	2 (COMBO)	2 (COMBO)	2 (COMBO)
	100Base-FX	Compatible	Compatible	Compatible
	RS-232 Console Port (RJ-45)	1	1	1
	Digital Input/Output	1 x DO		
	PoE	8 x 802.3af/at PoE+		
	PoE Budget (Max.)	240W		
	Power Connector	Terminal Block		
	Power Source	48~54VDC Dual Input	24~54VDC Dual Input	12~54VDC Dual Input
	Power Consumption	255W		15W
	Dimension W x D x H	73 x 110 x 135mm	88 x 110 x 135mm	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 6-port Managed Switch

Model Name	IPS-3106-SE-PB	IPS-3106-SE	
Product Image	   	  	
Hardware	10/100/1000Base-T	4	4
	10/100Base-TX	-	-
	1000Base-X	2	2
	100Base-FX	Compatible	Compatible
	RS-232 Console Port (RJ-45)	1	1
	Digital Input/Output	1 x DI + 1 x DO	
	PoE	4 x 802.3af/at PoE+	
	PoE Budget (Max.)	120W	
	Power Connector	Terminal Block	
	Power Source	24-54VDC Dual Input	48-54VDC Dual Input
	Power Consumption	135W	
	Dimension W x D x H	63 x 110 x 135mm	57 x 110 x 135mm
	Operating Temperature (Humidity)	-40~75°C (5~90%)	
	MAC Address Table	8K	
	Non-blocking Switching Fabric	12Gbps	
	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 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	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, Auto Provisioning, Snooping	
	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	

* CTS Fast Ring v2 includes Ring and Chain Protocol

Rugged 1G Media Converter		
Model Name	SRC-3002SFP-BT	SRC-3002SFP
	Non-managed	Non-managed

Product Image



Hardware	10/100/1000Base-T	1	1
	10/100Base-TX	-	-
	PoE	1 x 802.3af/at/bt PoE++	-
	1000Base-X	1 (SFP)	1 (SFP)
	100Base-FX	Compatible	Compatible
	Store and Forward		●
	Auto-MDI/MDI-X		●
	Auto-negotiation in TP Port		●
	Flow Control		-
	MAC Address Table		2K
	Memory Buffer		128K Bytes
	Jumbo Frame		9K Bytes
	Slide-in Chassis		-
	Dimension W x D x H	71 x 94 x 26mm	
	Operating Temperature (Humidity)	-20~60°C (5~95%)	-40~75°C (5~95%)
	Power Source	48~57VDC	12~57VDC
	Power Consumption	102W	2.45W
Management & Features	PSE Auto Power Off	●*	-
	Data-diode Direction		●
	Link Alarm		●
Certifications	EMC/Safety		FCC Class A, CE

* Only operates when the fiber interface link goes down by the link alarm function

Industrial Force 60W PoE Media Converter

Model Name	IPC-3014-PoE++	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 up to Force 60W PoE + 1 x 802.3af/at PoE+	1 x up to Force 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

Model Name	IAC-3014	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 10G Ethernet SFP+ Transceiver

Product Image



MODEL	SFP-51-D					
	Speed (Gbps)	Type	Connector	Distance	Wavelength (nm)	Temperature
SFP-51FC(SM-02)-D	10	SM	LC	2KM	1310	-40~85°C

Industrial Gigabit Ethernet SFP Transceiver

Product Image



MODEL	SFP-31-D					
	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 RX:1550/1550	-40~85°C
SFP-31W2B(SM-10/20)-D	1000	WDM	LC	10/20KM	TX:1550/1550 RX:1310/1310	-40~85°C

Power Supply

Product Image



MODEL	Output			Input	Protection	Temperature	Dimension W x D x H
	Rated Power	Voltage Adj. Range*	Current Range				
SDR-480-48	480W	48~55V	0~10A	90~264VAC 127~370VDC	Overload, Over Voltage, Over Temperature	-25~70°C	85.5 x 128.5 x 125.2mm
SDR-240-48	240W		0~5A				88~264VAC 124~370VDC
SDR-120-48	120W		0~2.5A	40 x 113.5 x 125.2mm			
SDR-75-48	76.8W		0~1.6A	32 x 102 x 125.2mm			
NDR-480-48	480W	48~55V	0~10A	90~264VAC 127~370VDC	Overload, Over Voltage, Over Temperature	-20~70°C	85.5 x 128.5 x 125.2mm
NDR-240-48	240W		0~5A				63 x 113.5 x 125.2mm
NDR-120-48	120W		0~2.5A				40 x 113.5 x 125.2mm
NDR-75-48	76.8W		0~1.6A				32 x 102 x 125.2mm
MDR-60-48	60W	48~56V	0~1.25A	85~264VAC 120~370VDC	Overload, Over Voltage	-20~70°C	40 x 100 x 90mm
MDR-20-12	20W	10.8~13.2V	0~1.67A				-20~70°C

* Output Voltage Tolerance: ± 1.0%

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