

RUGGED/INDUSTRIAL SOLUTIONS

HIGH-SPEED AND RELIABLE
COMMUNICATION NETWORK



- Rugged & 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

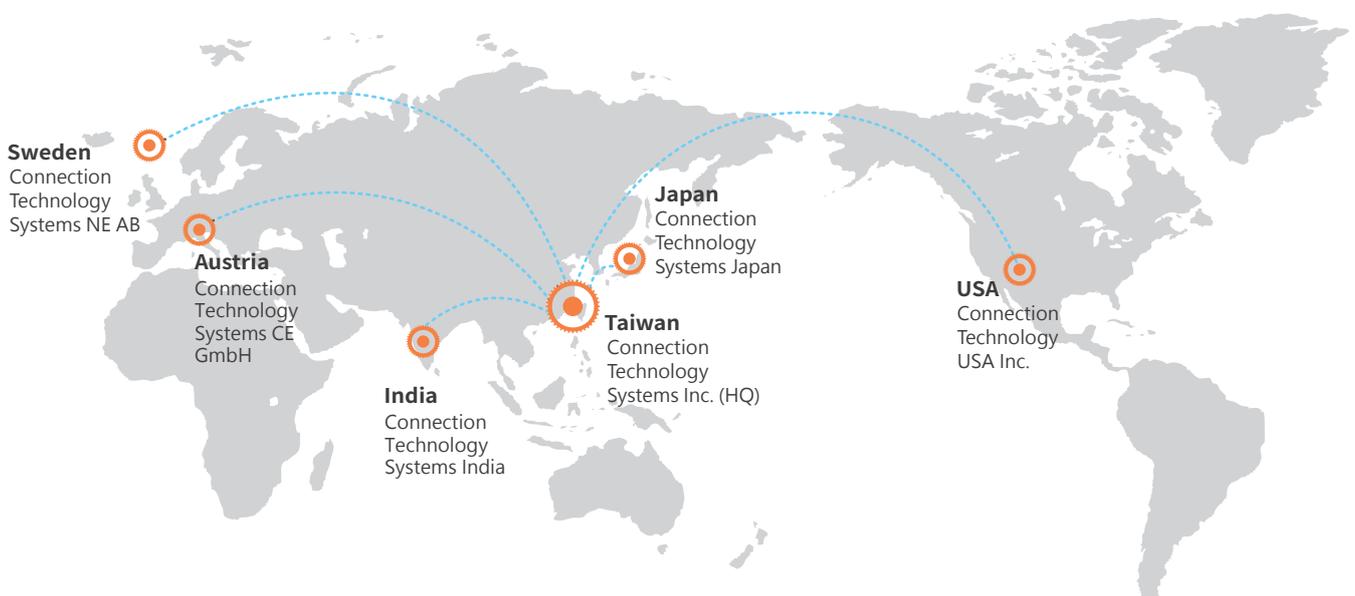
Design reliable products that connect people at the Last Mile

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.

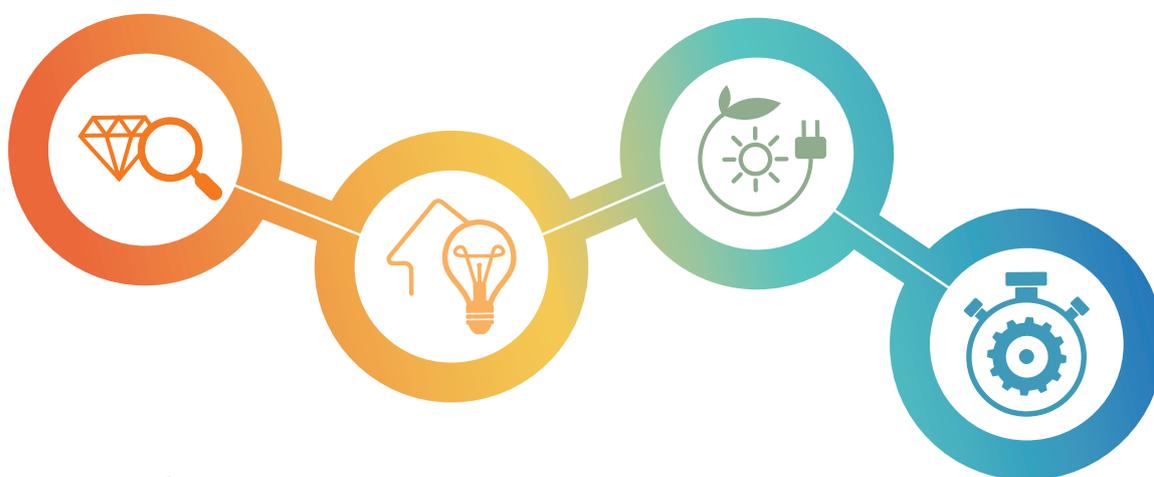
CTS acknowledges the importance of the UN Sustainable Development Goals (SDGs) and we've integrated into our business strategy. We've started to work with our suppliers and partners on the GHGs and PCF. We plan to release sustainability report to our stakeholders every year.



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 Adopted CTS Industrial and Fiber Switches for Ski Lift Network

Background

Skiwelt in Ellmau, Tyrol is the largest & the most 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 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 reliable solution provider who can help fulfill this plan...



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.



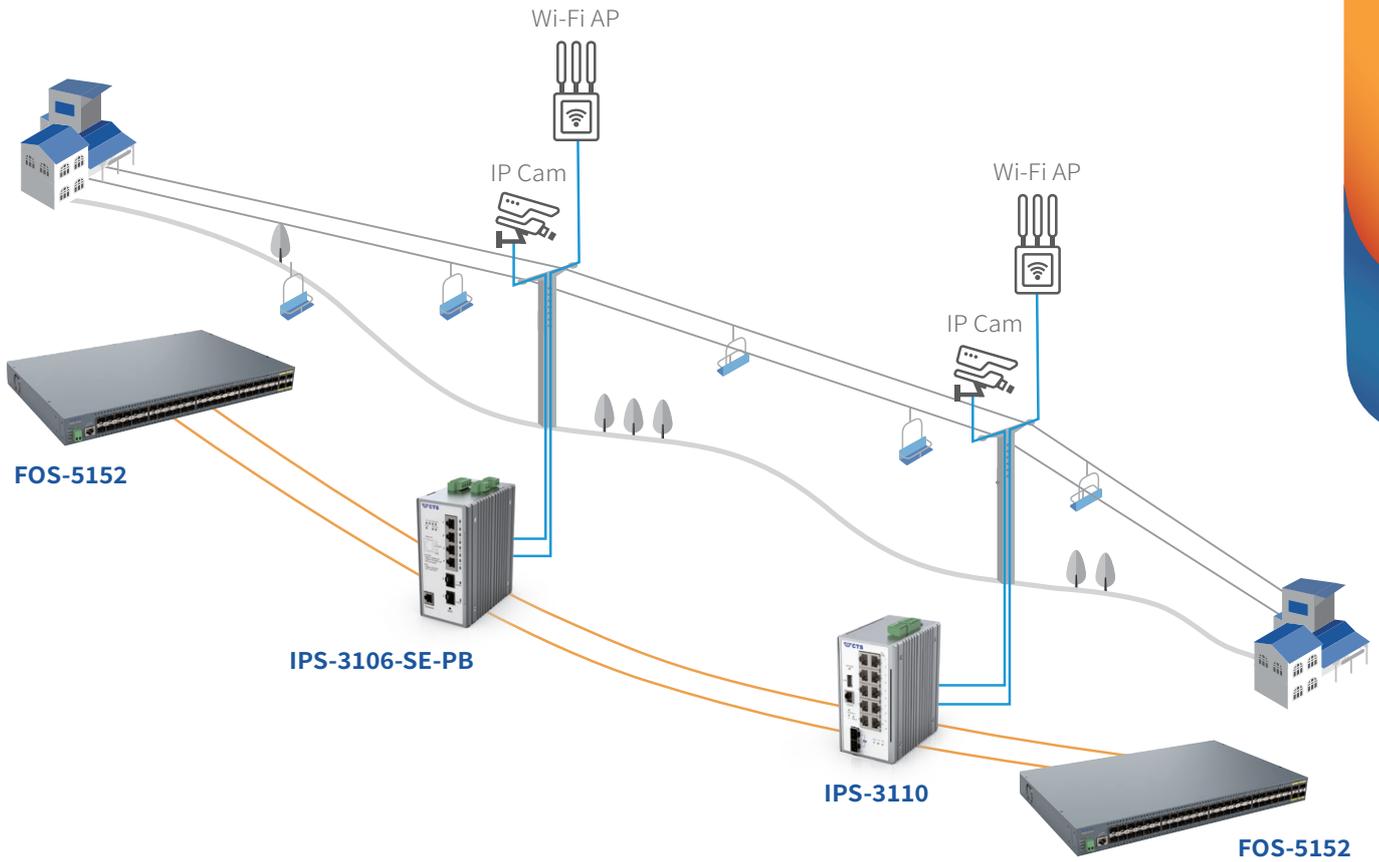
Trustworthy Partner

High quality and stability over several years under 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 Harsh Environment

The CTS Rugged/Industrial Ethernet Switch series are enclosed in IP30 case which can endure wide-ranging operating temperature from -20 to 60°C/-40 to 75°C. All 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 PoE Switch series support IEEE 802.3af/at/bt 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
- -20~60°C/-40~75°C Operating Temperature Range
- Dual Power Input for Uninterrupted Network System
- PoE Series Support IEEE 802.3af/at/bt PoE Power Output
- IEEE 802.1q Tagged VLAN and Q-in-Q
- IGMP Snooping v1, v2 and v3
- IEEE 802.1p QoS, CoS and DSCP
- IEEE 802.3ad Link Aggregation and Static Trunk
- STP, RSTP and Fast Ring v2



90W PoE Output



SRS-3106-4BT



-40~75°C



IPS-3110



-20~60°C



SRS-3106

Robust, Reliable & Extendable Solutions to Reach Copper Devices Effortlessly



10G/Multi-G



SRC-5102SFP-MG



90W PoE Output



SRC-3002SFP-BT



-20~60°C/
-40~75°C



SRC-3002/ IAC-3012

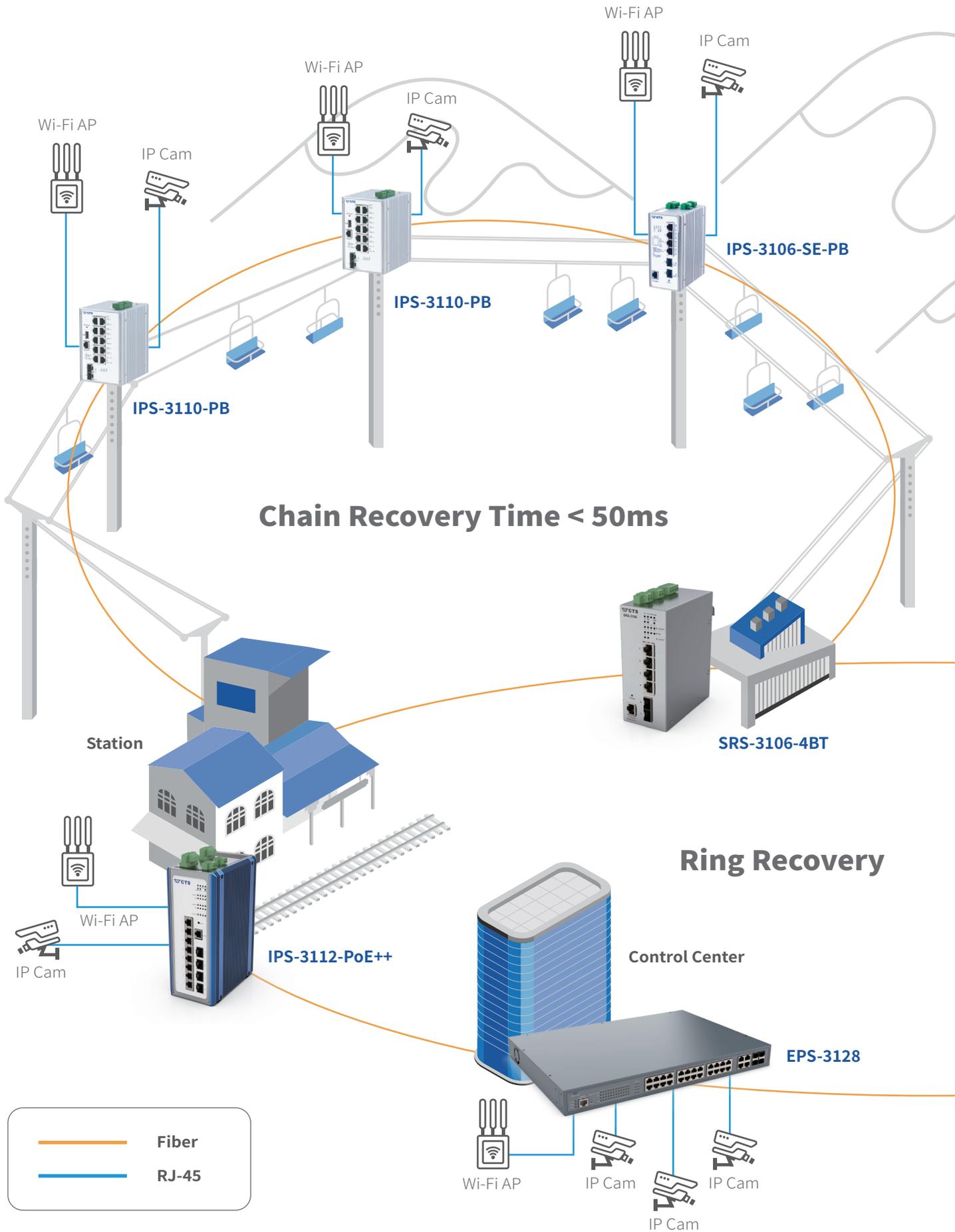
CTS Rugged/Industrial Media Converters in a robust IP30 housing are designed to meet the demands of plug-and-play usage. These series can extend your Ethernet networks beyond 100-meter limitation and convert fiber links from multi-mode to single-mode or vice versa. These models can extend from 2 to 120km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

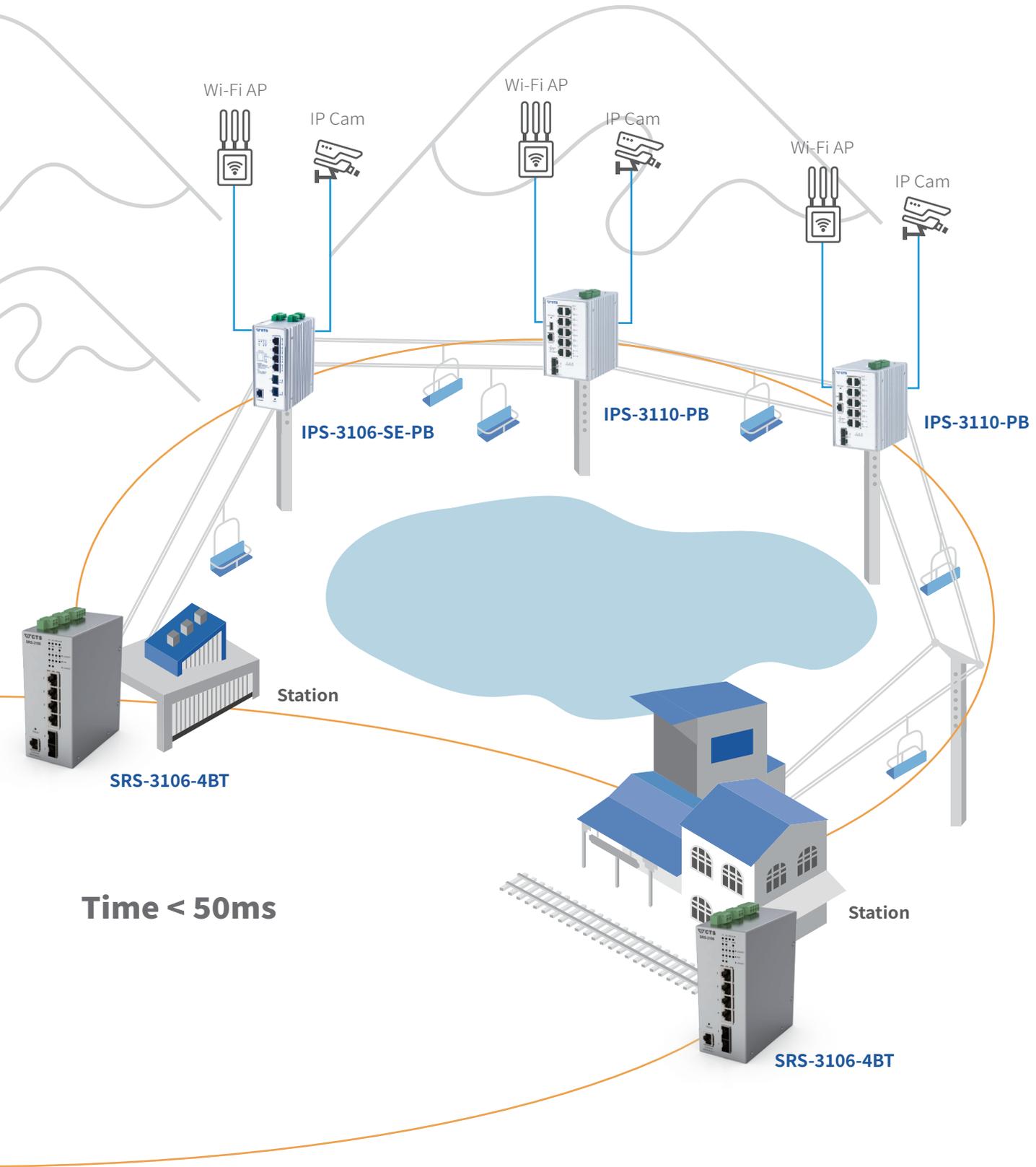
Our rugged media converters feature a very useful function, PSE Auto Power Off! PSE Auto Power Off allows you to turn on/off PoE power with Link Alarm. By shutting down the fiber port in the switch, the IPC/SRC stops transmitting both data and power to connected PoE-fed products such as IP camera and 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
- -20~60°C/-40~75°C Operating Temperature
- Dual DC Power Inputs 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/bt 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





Rugged 6-port Switch

Model Name

SRS-3106-4BT

SRS-3106

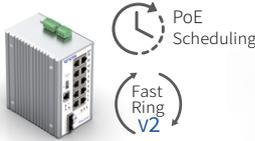
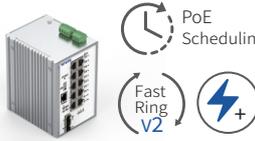
Product Image



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 IEEE 802.3af/at/bt	
	PoE Budget (Max.)	300W	-
	Power Connector	Terminal Block	
	Power Source	48-57VDC Dual Input	12-57VDC Dual Input
	Power Consumption	313W	7.4W
	Dimension W x D x H	56.5 x 110 x 135mm	
	Operating Temperature (Humidity)	-20~60°C (5~90%)	
	MAC Address Table	2K	
	Non-blocking Switching Fabric	12Gbps	
	Memory Buffer	1Mbit	
Jumbo Frame	9K Bytes		
Traffic Management	IPv6	●	
	QoS	802.1p, CoS/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	128	
Security & Authentication	SSHv2	●	
	DHCP Option 82	-	
	Authentication	RADIUS, TACACS+	
	ACL (Access Control List)	-	
Network Management & Maintenance	Management	Telnet, SSHv2, 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	

* 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 IEEE 802.3af/at		-
	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, CoS/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 MAB		
	ACL (Access Control List)	●		
Network Management & Maintenance	Management	Telnet, SSHv2, 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 IEEE 802.3af/at	
	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, CoS/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, SSHv2, 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 10G Media Converter

Model Name	SRC-5102SFP-MG	SRC-5002SFP-MG-BT	SRC-5002SFP-MG
		Managed	Non-managed

Product Image



Hardware	10G SFP+	1	1	1
	1G/2.5G/5G/10GBase-T	1	1	1
	1000Base-X	Compatible	Compatible	Compatible
	Digital Input/Output	1 x DI	1 x DO	1 x DO
	PoE	-	1 x IEEE 802.3af/at/bt	-
	Store and Forward		●	
	Auto-MDI/MDI-X		●	
	Auto-negotiation in TP Port		●	
	Flow Control		●	
	MAC Address Table		4K	
	Memory Buffer		8Mbit	
	Jumbo Frame		16K Bytes	
	Slide-in Chassis		-	
	Dimension W x D x H		71 x 94 x 26mm	
	Operating Temperature (Humidity)		-20~60°C (5~90%)	
	Power Source	12~57VDC	48~57VDC	
Power Consumption	11W	108W	12~57VDC	
Management & Features	PSE Auto Power Off	-	●*	8W
	IEEE 802.3ah OAM		-	-
	Loopback Mode		-	
	QoS	802.1p, CoS/DSCP		-
	QoS Priority Queue	8		-
	Bandwidth Control	●		-
	VLAN	802.1q, Q-in-Q, Port based		-
	VLAN ID	4094		-
	VLAN Groups	128		-
	Management	Telnet, SSHv2, CLI, WEB, SNMP v1/v2c/v3		-
	SNMP Power Down Trap		-	
	DHCP	Client, Auto Provisioning, Snooping		-
	Link Fault	-		Link Alarm
Firmware Upgrade	FTP/TFTP/HTTP		-	
Certifications	EMC/Safety	FCC Class A, CE		

* Only operates when the fiber interface link goes down, with link alarm function enabled

Rugged 1G Media Converter

Model Name	SRC-3002SFP-BT-DO	SRC-3002SFP-BT	SRC-3002SFP-DO	SRC-3002SFP
	Non-managed	Non-managed	Non-managed	Non-managed

Product Image



Hardware	10/100/1000Base-T	1	1	1	1
	10/100Base-TX	-	-	-	-
	1000Base-X	1	1	1	1
	100Base-FX	Compatible	Compatible	Compatible	Compatible
	Digital Output	●	-	●	-
	PoE	1 x IEEE 802.3af/at/bt		-	
	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, with link alarm function enabled

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 IEEE 802.3af/at	1 x up to Force 60W PoE or 1 x IEEE 802.3af/at
	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	Voltage 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			63 x 113.5 x 125.2mm
SDR-120-48	120W		0~2.5A				40 x 113.5 x 125.2mm
SDR-75-48	76.8W		0~1.6A	-30~70°C		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	Overload, Over Voltage	-20~70°C	40 x 100 x 90mm
MDR-20-12	20W	10.8~13.2V	0~1.67A	120~370VDC		-20~70°C	22.5 x 100 x 90mm

* Output Voltage Tolerance: ± 1.0%

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