ITP-2204GTM-16PH

22x FE M12 + 4x GbE M12 with 16x PoE 120W, 24/48/72/110VDC

- » EN50155, EN50121-4, EN45545-2, EN61000-6-2, EN61000-6-4, CE and FCC Certified
- >> 24/48/72/96/110VDC Redundant Dual Power Input
- ≫ Regulated PoE Output Voltage
- » Auto Checking and Auto Reset when PoE PD Fail
- *≫* 4KV Surge Protection for PoE and UTP Ports





The ITP series models are managed, industrial grade, L2 Fast Ethernet PoE (Power over Ethernet) switches that provide 22x 10/100Base-TX and 4x 10/100/1000Base-T(X) ports. Up to 16 IEEE 802.3at compliant PoE plus ports are classified as power source equipment (PSE) and provide up to 30 watts of power per port with a maximum power budget of 120W. Housed in rugged wall mountable enclosures, these switches are designed for IEEE 802.3af/at compliant powered devices (PDs), such as surveillance cameras, wireless access points, and IP phones. The PoE switches use M12 connectors to ensure tight, robust connections and guarantee reliable connections against vibration and shock. These models are also compliant with EN50155, covering power input voltage, surge, EFT, ESD, vibration and shock, making these switches suitable for industrial applications, such as vehicle, rolling stock, or vessel. With a wide power input range of 24/48/72/96/110VDC (operating range 20 to 137.5VDC), this product series is especially suitable for rolling stock and track side installations.

Features

- M12 and M23 connector against vibration and shock, M12 X-code for Gigabit port
- Cable diagnostics, identifies opens/shorts distance
- STP, RSTP, MSTP, ITU-T G.8031 ERP, ITU-T G.8032 Ethernet Protection Ring (ERPS) for redundant cabling
- Provides up to 5 instances that each supports μ-Ring, μ-Chain or Sub-Ring type for flexible uses.
 - (Please see CTC Union's $\mu\text{-Ring}$ white paper for more details)
- $\mu\text{-Ring}$ for Redundant Cabling, recovery time<10ms in 250 maximum devices
- Supports TTDP for train application
- Supports IEEE 1588 PTP V2 for precise time synchronization to operate in Ordinary-Boundary, Peer to Peer Transparent Clock, End to End Transparent Clock, Master, Slave mode by each port
- Supports EMS Management

Specifications

Standard	IEEE 802.3	10Base-T 10Mbit/s Ethernet					
	IEEE 802.3u	100Base-TX, 100Base-FX, Fast Ethernet					
	IEEE 802.3ab	1000Base-T Gbit/s Ethernet over twisted pair					
	STP (Spanning Tree Protocol)						
	IEEE 802.1w RSTP (Rapid Spanning Tree Protocol)						
	MSTP (Multiple Spanning Tree Protocol)						
	ITU-T G.8032 / Y.1344	ERPS (Ethernet Ring Protection Switching)					
ITU-T G.8031 / Y.1342 EPS (Ethernet Protection Switching)							
IEEE 802.1Q Virtual LANs (VLAN)							
	IEEE 802.1X	Port based and MAC based Network Access Control, Authentication					
	IEEE 802.3ac	Max frame size extended to 1522Bytes					
	IEEE 802.3ad	Link aggregation for parallel links with LACP (Link Aggregation Control Protocol)					
	IEEE 802.1AX	Link aggregation for parallel links with LACP (Link Aggregation Control Protocol)					

www.ctcu.com / sales@ctcu.com / Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

Standard EEE 20:2.8: Pow control for Ful Duples HFF 8122.94 Put - Power over Eithernel + tancaruena) HFF 8122.94 Put - Power over Eithernel + tancaruena) HFF 812.94 Statebul LANDE, Q+n-Q HFF 812.94 Link Layer 2 DocCoSC Protocol tor Teffic Prioritzation HFF 812.94 Link Layer 2 DocCoSC Protocol tor Teffic Prioritzation HFF 812.94 Link Layer 2 DocCoSC Protocol tor Teffic Prioritzation HFF 812.94 Link Layer 2 DocCoSC Protocol tor Teffic Prioritzation WLAN ID 4054 EEE802.10 VLAN ID Switch Architecture 12-20ps (Full wer-speed) Data Procession Size and Forward HFF 812.92.47 Link 2014 Pression Protocol (LLPP) HFF 812.92.47 Link 2014 Protocol (LLPP)											
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Device Memory 16M Bytes Flash ROM, 128M Bytes RAM Power Supply Provides 1x M23 (5-Pin, male) for redundant dual DC 24/48/72/96/110VDC (16.8~137.5VDC) wide input pow Regulated PoE output voltage (52VDC) to stabilize PoE device, and guarantee delivery PoE power distance to 1 meter Power Consumption Input Voltage Total Power Consumption Device Power Consumption PoE Budget 24 VDC 149W 17.1W 120W 48 vDC 141.1W 17.8W 120W 110VDC 140.8W 19.8 120W Warning Message System Syslog, SMTP/ e-mail event message, alarm relay 5-pin A-code M12 male, Relay outputs with current carrying capacity of 1A @24VDC Operating Femperature -40 ~ 75°C -40 ~ 75°C Operating Humidity 5% to 95% (Non-condensing) -40 ~ 85°C Rugged Metal, Fanless and IP54 grade housing protection 113 x 360 x 132mm (D x W x H) Weight 3.9kg 127.899 Hours (MIL-HDBK-217) Sy ars 5 years 5 years Certification CE (EN55035, EN55032) Ce (EN55035, EN55032) EMI (Electromagnetic Interference) Ce (art 15 Subpart B Class A, CE Ce Port 15 Subpart B Class A, CE	MAC Address Table	8K									
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Regulated PoE output voltage (52VDC) to stabilize PoE device, and guarantee delivery PoE power distance to 'neter' Power Consumption Input Voltage Total Power Consumption Device Power Consumption PoE Budget 24 VDC 149W 17.1W 120W 48 VDC 141.1W 17.8W 120W 110VDC 140.8W 19.8 120W Marm Relay Contact 5-pin A-code M12 male, Relay outputs with current carrying capacity of 1A @24VDC -40 ~ 75°C Operating Temperature -40 ~ 75°C -40 ~ 75°C -40 ~ 85°C Rugged Metal, Fanless and IP54 grade housing protection 8ugged Metal, Fanless and IP54 grade housing protection -40 ~ 85°C Numerisins 113 x 360 x 132mm (D x W x H) 39kg -40 ~ 27,899 Hours (MIL-HDBK-217) -40 ~ 27,899 Hours (MIL-HDBK-217) -40 ~ 39kg Storage Temperature 5 yagrs 5 yagrs -40 ~ 27,899 Hours (MIL-HDBK-217) -40 ~ 39kg Marting	Device Memory	16M Bytes Flash ROM	, 128M Bytes RAM								
Index Input Voltage Total Power Consumption Device Power Consumption PoE Budget 24 VDC 149W 17.1W 120W 48 VDC 141.1W 17.8W 120W 110VDC 140.8W 19.8 120W Alarm Relay Contact 5-pin A-code M12 male, Relay outputs with current carrying capacity of 1A @24VDC -40 ~ 75°C Operating Temperature -40 ~ 75°C -40 ~ 75°C -40 ~ 75°C Operating Temperature -40 ~ 85°C -40 ~ 85°C -40 ~ 85°C Rugged Metal, Fanless and IP54 grade housing protection 113 x 360 x 132mm (D x W x H) -40 ~ 75°C Weight 3.9kg	Power Supply	Provides 1x M23 (5-Pin, male) for redundant dual DC 24/48/72/96/110VDC (16.8~137.5VDC) wide input power									
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48 VDC141.1W17.8W120W110VDC140.8W19.8120WWarning MessageSystem Syslog, SMTP/ e-mail event message, alarm relay120WAlarm Relay Contact5-pin A-code M12 male, Relay outputs with current carrying capacity of 1A @24VDC-Operating Temperature-40 ~ 75°COperating Humidity5% to 95% (Non-condensing)40 ~ 85°C-40 ~ 85°CBugged Metal, Fanless and IP54 grade housing protectionDimensions113 x 360 x 132mm (D x W x H)Weight3.9kgMaranty5 yearsCertificationCE (EN55035, EN55032)EMI (Electromagnetic interference)FCC Part 15 Subpart B Class A, CE	Power Consumption	Input Voltage	Total Power Consumption	Device Power Consumption	PoE Budget						
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Warning MessageSystem Syslog, SMTP/ e-mail event message, alarm relayAlarm Relay Contact5-pin A-code M12 male, Relay outputs with current carrying capacity of 1A @24VDCOperating Temperature-40 ~ 75°COperating Humidity5% to 95% (Non-condensing)Storage Temperature-40 ~ 85°CHousingRugged Metal, Fanless and IP54 grade housing protectionDimensions113 x 360 x 132mm (D x W x H)3.9kg3.9kgInstallation MountingWall mountingWarranty5 yearsCertificationEMCCE (EN55035, EN55032)FMI (Electromagnetici Interference)FCC Part 15 Subpart B Class A, CE		48 VDC	141.1W	17.8W	120W						
Alarm Relay Contact5-pin A-code M12 male, Relay outputs with current carrying capacity of 1A @24VDCOperating Temperature-40 ~ 75°COperating Humidity5% to 95% (Non-condensing)Storage Temperature-40 ~ 85°CHousingRugged Metal, Fanless and IP54 grade housing protectionDimensions113 x 360 x 132mm (D x W x H)Weight3.9kgInstallation MountingWall mountingWarranty5 yearsCertificationCE (EN55035, EN55032)EMI (Electromagnetic Interference)FCC Part 15 Subpart B Class A, CE		110VDC	140.8W	19.8	120W						
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Warranty 5 years Certification EMC EMI (Electromagnetic Interference) FCC Part 15 Subpart B Class A, CE	•		IDBK_217)								
Certification EMC CE (EN55035, EN55032) EMI (Electromagnetic Interference) FCC Part 15 Subpart B Class A, CE											
EMI (Electromagnetic Interference) FCC Part 15 Subpart B Class A, CE	Certification										
Interference) FOU Pail 10 Subpail D Class A, CE		CE (EN55035, EN550	32)								
	Interference)	FOU Pait 15 Subpait D Glass A, CE									
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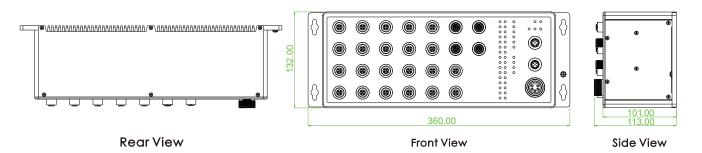
Fire protection of railway vehicles	EN 45545-2
Immunity for Heavy Industrial Environment	EN61000-6-2
Emission for Heavy Industrial Environment	EN61000-6-4
EMS	EN61000-4-2 (ESD) Level 3, Criteria B
(Electromagnetic Susceptibility)	EN61000-4-3 (RS) Level 3, Criteria A
Protection Level	EN61000-4-4 (Burst) Level 3, Criteria A
	EN61000-4-5 (Surge) Level 3, Criteria B
	EN61000-4-6 (CS) Level 3, Criteria A
	EN61000-4-8 (PFMF, Magnetic Field) Field Strength: 300A/m, Criteria A
4KV surge protection	Supported for PoE and UTP port
Shock	IEC-61373
Freefall	IEC 60068-2-32
Vibration	IEC-61373

Software Specific	ations				
Topology					
VLAN	IEEE 802.1q VLAN, up to 4094 802.1Q VLAN ID				
	IEEE 802.1 qVLAN, up to 4094 Groups				
	IEEE 802.1ad Q-in-Q				
	MAC-based VLAN, up to 256 entries				
	IP Subnet-based VLAN, up to 128 entries				
	Protocol-based VLAN (Ethernt, SNAP, LLC), up to 128 entries				
	VLAN Translation, up to 256 entries				
	Private VLAN for port isolation				
	GVRP (GARP VLAN Registration Protocol)				
	MVR (Multicast VLAN Registration)				
	Voice VLAN				
Link Aggregation	Static (Hash with SA, DA, IP, TCP/UDP port), up to 5 trunk group				
(Port Trunk)	Dynamic (IEEE 802.3ad LACP), up to 5 trunk group				
	Support IEEE802.1AX passive and active mode				
Spanning Tree	IEEE802.1d STP, IEEE802.1w RSTP, IEEE802.1s MSTP				
Multiple µ-Ring	Up to 5 instances that each supports µ-Ring, µ-Chain or Sub-Ring type for flexible uses, and maximum up to 5 Rings				
	Recovery time <10ms				
	The maximum number of device is allowed 250 nodes in a Ring.				
Loop Protection	Supported				
ITU-T G.8032 / Y.1344 ERPS	Recovery time <10ms				
(Ethernet Ring Protection)	Single Ring, Sub-Ring, Multiple ring topology network				
ITU-T G.8031 / Y.1342 EPS (Ethernet Protection Switching)	Supported				
QoS Feature					
Class of Service	IEEE802.1p 8 active priorities queues per port				
Traffic Classification QoS	IEEE802.1p based CoS				
	IP Precedence based CoS				
	IP DSCP based CoS				
	QCL (QoS Control List): Frame Type, Source/Destination MAC, VLAN ID, PCP, DEI, Protocol, Source IP,				
	IP Fragment, DSCP, TCP/UDP port number				
Bandwidth Control for Ingress	100~1,000,000 when the "Unit" is "kbps", and 1~1,000 when the "Unit" is "Mbps"				
Bandwidth Control for Egress	100~1,000,000 when the "Unit" is "kbps", and 1~1,000 when the "Unit" is "Mbps"				
	Rate Unit : bit Per queue / Port shaper				
DiffServ (RF 2474) Remarking					
Storm Control	For Unicast, Broadcast and Multicast				

IP Multicasting Fe	ature					
IGMP / MLD Snooping	IGMP Snooping v1, v2, v3 / MLD Snooping v1, v2					
	Port Filtering Profile, Throttling					
	Fast Leave					
	Maximum Multicast Group : up to 1022 entries					
	Query / Static Router Port					
Security Features						
IEEE 802.1X	Port-Based, MAC-Based					
ACL	Number of rules : up to 256 entries					
	for L2 / L3 / L4 L2: Mac address SA/DA/VLAN					
	L3: IP address SA/DA, Subnet L4: TCP/UDP					
RADIUS	Authentication & Accounting					
TACACS+	Authentication					
HTTPS, HTTP	Supported					
SSL / SSH v2	Supported					
User Name Password	Local Authentication					
Authentication	Remote Authentication (via RADIUS / TACACS+)					
Management Interface Access Filtering	Web, Telnet / SSH, CLI, RS-232 console					
Management Featu	res					
CLI	Cisco® like CLI					
Web UI	Supported					
Telnet	Server					
SNMP	V1, V2c, V3					
sFlow	Supported					
Modbus/TCP	Supports for management and monitoring					
SW & Configuration Upgrade	TFTP, HTTP					
	Redundant firmware in case of upgrade failure					
FTP client	Supports for upload/download configuration					
RMON	RMON I (1, 2, 3, 9 group), RMON II					
MIB II	RFC 1213					
UPnP	Supported					
BOOTP	Supported					
DHCP	Server, Client, Relay, Relay option 82, Snooping					
RARP	Supported					
TTDP	Supported (Train Topology Discovery Protocol)					
IP Source Guard	Supported					
Port Mirroring	Supported					
Event Syslog	Syslog server (RFC3164)					
Warning Message	System syslog, e-mail, alarm relay					
DNS	Client, Proxy					
IEEE1588 PTP V2	Supports 5 operating mode in each port : Ordinary-Boundary, Peer to Peer Transparent Clock, End to End Transparent Clock, Master and Slave					
NTP, SNTP	Client					
	Link Layer Discovery Protocol					
(IEEE 802.1ab)	LLDP-MED					
IPv6 Features						
ιγνο γσαιμίσδ						
IPv6 Management	Telnet Server/ICMP v6					
	Telnet Server/ICMP v6 Supported					
IPv6 Management	Supported					
IPv6 Management SNMP over IPv6	Supported Supported					
IPv6 Management SNMP over IPv6 HTTP over IPv6	Supported					

IPv6 TFTP	Supported						
IPv6 QoS	Supported						
IPv6 ACL	Number of rules: up to 256 entries						
	for L2 / L3 / L4 L2: Mac address SA/DA/VLAN L3: IP address SIP, Subnet (32bit) L4: TCP/UDP						
Others Features							
Green Ethernet	Supports IEEE802.3az EEE (Energy Efficient Ethernet) Management to optimize the power consumption						
	Determine the cable length and lowering the power for ports with short cables						
	Lower the power for a port when there is no link						
	LED Power Management: Adjustment LEDs intensity						
Cable Diagnostic	Measuring UTP cable OK or broken point distance						
Advanced PoE Management	PoE PD Failure Auto Checking, and Auto reset when PD fail						
	PoE Scheduling (On/Off schedule weekly)						
	PoE Configuration						
	PoE Enable/Disable						
	Power limit by classification						
	Power limit by management						
	Total PoE Power budge (maximum 120W) limitation						
	Power feeding priority						

Dimensions



Ordering Information

Model Name	Managed Protection		FE	GbE		PoE		
		Protection	otection Fotal Port	D-code M12	GbE X-code M12 UTP	GbE X-code M12 UTP Bypass	IEEE802.3at	PoE Total Power Budget
ITP-2204GTM-16PHE-BP	V	IP54	26	22	2	2	16	120W

Redundant Dual Input Power	Certification							
24/48/72/96/110VDC (16.8~137.5VDC)	EN45545-2	EN50155	EN61000-6-2 / EN61000-6-4	CE, FCC	IEC61373			
V	V	V	V	V	V			

Optional Accessories

Optional Cable/Connector

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P/N: CAB-M12XM8-RJ45 M12 X-code Male (8-Pin) to RJ-45, AWG 24 ,IP67, 1 meter



For GbE UTP (X-code)

P/N: CAB-M23F5-OPEN M23 Female (5-Pin) to open wire, (AWG 16) , IP67, 1 meter



P/N: CAB-M12DM4-RJ45

M12 D-code Male (4-Pin) to RJ-45, AWG 24 ,IP67, 1 meter



For FE UTP

P/N: M12D-M4 M12 D-code Male (4-Pin) connector, IP67



P/N: CAB-M12AF5-OPEN

M12 A-code Female (5-Pin) to open wire , AWG 22 , IP67, 1 meter



For Alarm

P/N: M12A-F5 M12 A-code Female (5-Pin) connector, IP67

