HARDENED
-40° TO +75°

ETHERNET OVER COPPER
EXTENDER

PoE
15W PoE
PASS-THRU

The Ethernet over copper TEC-F / TEC-U Series supports up to sixteen channels of 10/100Mbps Ethernet with Pass-through PoE over twisted pair cable (CAT-5, UTP), or over coaxial cable. The single channel units may be powered by a PoE switch or the included power supply. Four and sixteen channel units operate from local power. These units provide the ultimate flexibility for extending a powered device (PD) over long distance copper. DIP switches are provided for user-selection of local or remote, 10/100Mbps, and 1-pair or 4-pair (UTP) settings.

FEATURES

› Transmits individual Ethernet data channels with Pass-through PoE over standard UTP or Coaxial cable

› Extends Ethernet up to 3,000 feet (914 m) at 10 Mbps or 2,000 feet (610 m) at 100 Mbps over UTP cable

› Extends Ethernet up to 5,000 feet (1,524 m) at 10 Mbps or 2,000 feet (610m) at 100 Mbps over Coaxial cable

› Extended temperature operation from -40°C to +75°C

› Extended Pass-through PoE meets the IEEE 802.3af standard for Power over Ethernet

› Full 10/100 Mbps Bandwidth

› Supports Multicast, Unicast and Jumbo Frame

› Symmetric Bandwidth provides consistent upload and download with virtually zero packet loss over the total usable distance

› Type tested to RFC-2544 TCP/IP network bandwidth packet transmission standards

› User-selectable data rate for maximum bandwidth and transmission distance utilization

› Complies with all major IEEE standards and RFC network protocols for UDP, TCP/IP, HTTP/HTTPs

› Designed to meet full compliance with the environmental requirements (ambient operating temperature, mechanical shock, vibration, humidity with condensation, high-line/low-line voltage conditions and transient voltage protection) of NEMA TS-1/TS-2 and the Caltrans Specification for Traffic Signal Control Equipment.

› LED status indicators confirm operating status

› Available in small-size, standard interchangeable stand alone or 1RU high rack mounted models

APPLICATIONS

› Retrofit existing analog CCTV installations to Ethernet-based systems

› CCTV systems for casinos, airports, school campuses

Hanwha Techwin

SPECIFICATIONS

Ethernet

Data Interface	10/100BaseT(X) Ethernet
Data Rate	DIP-switch selectable 10/100Mbps
	Full data rate / full duplex up to the maximum rated distance
RFC	2544 TCP/IP Packet Transmission
Standards	IEEE 802.3af PoE,
	RFC: 768 UDP, 2068 HTTP, 793 TCP
	791 IP, 1783 TFTP, 894 IP over Ethernet.
Transmission Distances[1]	See chart below

Connectors

Ethernet	RJ-45
Extended Distance	Coaxial (C): female BNC
	Ethernet (U): RJ-45
Operating Power	Powered by PoE or 2-pin screw terminal for local power

Power

Pass-Through Mode	1 CH: Operates on PoE power or optional 9 to 36 VDC or 24 VAC, 1.5 W
	4 CH: 9 to 15 VDC, 5W
	16 CH: 9 to 15 VDC, 20W
Current Protection	Automatic Resettable Solid-State Current Limiters

Mechanical

LED Indicators	Operating Power
	Ethernet Link/Activity
	Extended Link/Activity
Circuit Board	Meets IPC Standard
Size (L×W×H)	1 CH: 3.3 × 2.5 × 1.1 in (8.4 × 6.4 × 2.8 cm)
	4 CH: 6.1 × 5.3 × 1.1 in (15.5 × 13.5 × 2.8 cm)
	16 CH: 6.1 × 19 × 1.75 in (15.5 × 48.26 × 4.45 cm)
Number of Rack Slots	1 (4CH Version Only)
Shipping Weight	1 CH: <1 lbs./0.5 kg
	4 CH: <2 lbs./0.9 kg
	16 CH: <5 lbs./2.3 kg

Environmental

MTBF	>100,000 hours
Operating Temp	– 40˚ C to +75˚ C
	UL Safety certifications conducted at maximum ambient temperatures (Tma) of 65ºC.
Storage Temp	– 40˚ C to +80˚ C
Relative Humidity	0% to 95% (non-condensing)[2]

AGENCY COMPLIANCE

FC PART 15 COMPLIANT   CE   cULus   RoHS

ORDERING INFORMATION

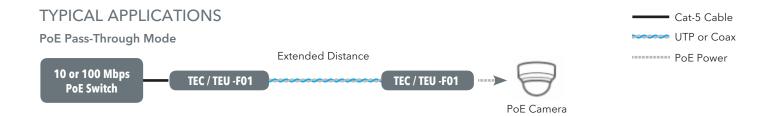| Model Name	Description	Position	Channels	Form Factor	Cable
TEC-F01	1 Port Ethernet-over-Coax Extender	Local/Remote Configurable	1	Small Size	Coax
TEU-F01	1 Port Ethernet-over-UTP Extender	Local/Remote Configurable	1	Small Size	UTP
TEC-F04	4 Port Ethernet-over-Coax Extender	Local/Remote Configurable	4	Standard (1 Slot)	Coax
TEU-F04	4 Port Ethernet-over-UTP Extender	Local/Remote Configurable	4	Standard (1 Slot)	UTP
TEC-F16	16 Port Ethernet-over-Coax Extender	Local	16	1 RU 19" Rack Mount	Coax
TEU-F16	16 Port Ethernet-over-UTP Extender	Local	16	1 RU 19" Rack Mount	UTP
Accessories:	Unit-appropriate power supply (one each provided with each extender unit, for benign 0 to 50ºC applications only. Hardened power supply available)				
Options	DIN-Rail Mounting Adaptor Kit - With Mounting Hardware (Optional, order model SBP-UDR) (Suitable for 1CH and 4CH units only) SBP-C14 / SBP-C03 Card Cage Racks				

[1] Distance figures are based on a 50 V PSE PoE power source, and external power supplies for the extenders. Distance figures are obtained using in-house testing mirroring installations. Factors such as coaxial and copper cable quality, the number of connectors and splices in the cable run, the use of PoE, and environmental conditions encountered within the installation might affect the actual transmission distance and should be taken into consideration. Due to advanced negotiation signaling required in IEEE802.3at applications, pass-through applications are limited to IEEE802.3af PD devices only. When using UTP models Pass-Through PoE is only possible in 4-pair mode.

MAXIMUM TRANSMISSION DISTANCES[1]

Media	COAX - RG59/U				UTP - 4 pair				UTP - 1 pair	
Data Rate	10M		100M		10M		100M		10M	100M
Source Power	15W	30W	15W	30W	15W	30W	15W	30W	N/A	
Non-PoE Max.Distance[1]	5,000 ft 1,524 m		2,000 ft 610 m		3,000 ft 914 m		2,000 ft 610 m		3,000 ft 914 m	1,000 ft 305 m
PoE CLASS2 (6.5W)[1]	3,000 ft 914 m	3,000 ft 914 m	2,000 ft 610 m	2,000 ft 610 m	3,000 ft 914 m	3,000 ft 914 m	2,000 ft 610 m	2,000 ft 610 m	N/A	
PoE CLASS3 (13W)[1]	750 ft 228 m	850 ft 259 m	750 ft 228 m	850 ft 259 m	750 ft 228 m	850 ft 259 m	750 ft 228 m	850 ft 259 m	N/A	

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TYPICAL APPLICATIONS

——— Cat-5 Cable
∿∿∿ UTP or Coax
||||||||| PoE Power

PoE Pass-Through Mode

PoE Pass-Through Mode with Multiple Remote Units

Non-PoE Mode