4-Port 10/100Base-TX with PoE + 1-Port BNC / RJ-11 Industrial Ethernet Extender

Ideal Integration of PoE Industrial Ethernet Extender

The PLANET IVC-2004PT, an Industrial grade Ethernet Extender with PoE supported, integrates three advanced technologies:

- Ethernet extend over coaxial cable or phone wire
- IEEE 802.3af Power over Ethernet
- Industrial wide range operating temperature

The IVC-2004PT is designed to utilize the commonly existed coaxial cables or phone wires to extend the UTP Ethernet over 100m distance limitation and transmits both power and data over single Ethernet cable to remote PoE capable devices in heavy industrial demanding environments.

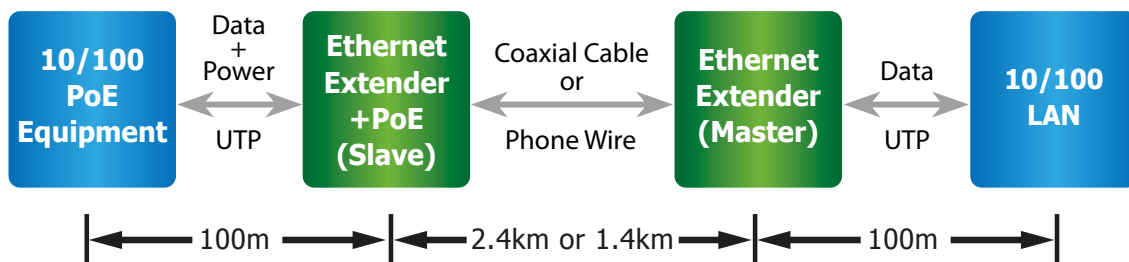### IEEE 802.3af Power over Ethernet Integrated

The IVC-2004PT provides 4 10/100Mbps copper ports with 4-Port IEEE 802.3af Power over Ethernet inject interfaces delivered in an IP-30 rugged strong case. Supporting up to 15.4Watts power per port for any remote IEEE 802.3af powered device (PD) such as PoE IP cameras and PoE wireless LAN access point, the IVC-2004PT is an ideal solution to deploy surveillance system, secure control and wireless service in climatically demanding wide temperature range (-40 to 75 Degree C) environments.

Long Reach Ethernet

To extend the network distance and provide reliable Ethernet networking in harden environments, the IVC-2004PT equips one asymmetric / symmetric Ethernet extender port– the extender port can be RJ-11 or BNC Connector. Customers can use either BNC or RJ-11 for their network deployment and the IVC-2004PT offers the absolutely fastest data transmission speed up to 99/65Mbps over existing coaxial cable and telephone wire without the need of rewiring.

Flexible Combination of Applications

The IVC-2004PT helps users to flexibly re-deploy a new local Intranet in the apartment, intelligent transportation systems, building automation, campus and hospitality environment by applying the original network structure without spending extra cost. The IVC-2004PT can be adjusted to Master or Slave mode via a DIP switch. It also can be setup to connect with another one IVC-2004PT or with other PLANET Ethernet extenders- the IVC-2002, VC-201A and VC-202A. Therefore, users can easily expand the current network structure easily and with more flexibilities.

Environmentally Hardened Design for Industrial PoE Networks

The IVC-2004PT provides a high level of immunity to electromagnetic interference and heavy electrical surges typical of environments like plant floors or in curb side traffic control cabinets. The IVC-2004PT is packaged in a compact, IP-30 rugged strong case that allows operating in wide temperature range of -40 to 75 Degree C and installation with either DIN Rail or Wall mounting for efficient use of cabinet space.

KEY FEATURES

- Ethernet over Twist pair / Coaxial

- Cost-effective Long Reach Ethernet (LRE) solution

- One box design, Master / Slave mode selectable via DIP Switch

- Defines Asymmetric (Band Plan 998) and Symmetric band plans for the transmission of Upstream and Downstream signals

IEEE 802.3AF POE

- 4 x Ports IEEE 802.3af Power over Ethernet / PSE Standard

- 48V DC Power Input for PoE and 12~ 36V DC for Non-PoE devices

- Supports PoE Power up to 15.4 Watts for each PoE port

- Auto-Detect powered device (PD)

- Circuit Protection prevent power interference between ports

- Remote power feeding up to 100m

INDUSTRIAL DESIGN

- IP-30 Aluminum Metal case Protection

- -40~75 Degree C Operating Temperature

- DIN Rail and Wall Mount Design

- Redundant Power Design: 48V DC Power Input for PoE

- Supports EFT protection 6000V DC for power line

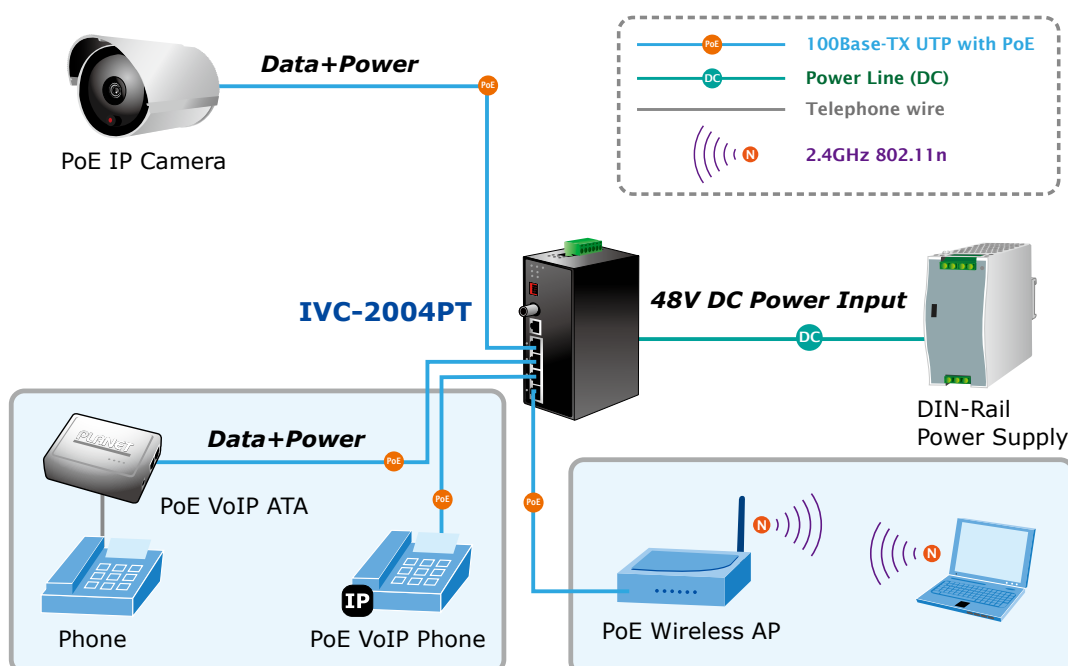- Supports 6000V DC Ethernet ESD protection

DATA COMMUNICATION

- Complies with the IEEE 802.3, IEEE 802.3u Fast Ethernet standard

- Auto-MDI/MDI-X detection and Auto-Negotiation with Half-Duplex / Full-Duplex modes for 10 / 100Base-TX RJ-45 port

- Prevents packet loss with back pressure (Half-Duplex) and IEEE 802.3x PAUSE frame flow control (Full-Duplex)

- Supports up to 1536 bytes packet size, 802.1Q VLAN tag transparent

- Integrated address look-up engine, supports 2K absolute MAC addresses
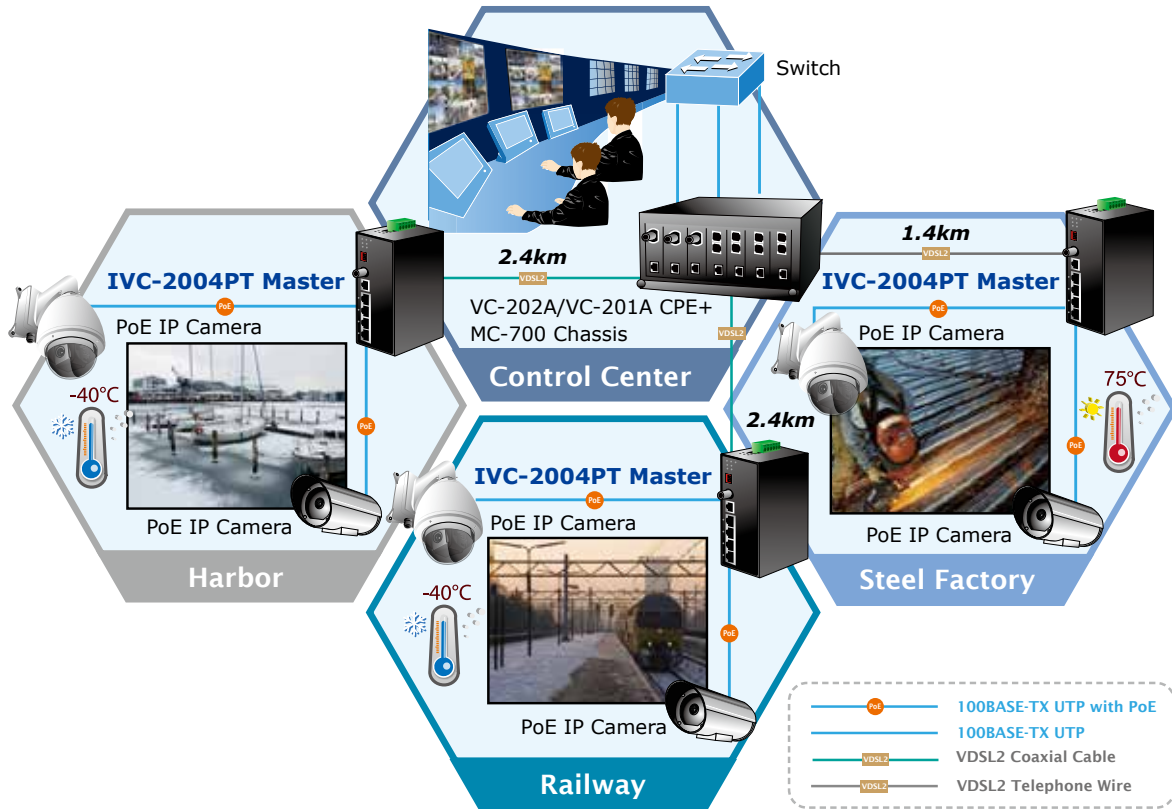
APPLICATIONS

Industrial Area Department / Workgroup PoE Switch

With 4 PoE, in-line power interfaces, the PoE Industrial Ethernet Extender IVC-2004PT can build a power centrally controlled IP phone system, IP camera system, or wireless AP group for the enterprise. For instance, 4 IP cameras or wireless APs can be easily installed around the corner in the company for surveillance demands or build a wireless roaming environment in the offices. Without the power-socket limitation, it makes the installation of cameras or WLAN AP more easily and efficiently.

Data+Power

PoE IP Camera

100Base-TX UTP with PoE
Power Line (DC)
Telephone wire
2.4GHz 802.11n

IVC-2004PT

48V DC Power Input

DIN-Rail Power Supply

Data+Power

PoE VoIP ATA

Phone

PoE VoIP Phone

PoE Wireless AP

Flexible Industrial Extender integrates BNC and RJ-11 Connection

The IVC-2004PT can operates stably under temperature range from -40 to 75 Degree C so it can be installed in any harsh environment. It also compatibles with PLANET Ethernet over VDSL2 Converter VC-201A and VC-202A therefore users do not need to spend extra cost to deploy a new local Internet in apartment, hotel, campus and hospitality environment. The network administrator can re-deploy the original network structure with the IVC-2004PT with no further effort. For example, PLANET MC-700, MC-1500 and MC-1500R chassis with the VC-201A and VC-202A inside are set as CPE (Customer Premises Equipment) mode which placed in the wiring center (MDF room). On the other hand, connects an IVC-2004PT extender with Master mode by using telephone line or coaxial cable. Therefore, the new network structure can be constructed efficiently.

SPECIFICATION

Product	4-Port 10/100TX with PoE+ 1-Port BNC / RJ-11 Industrial Ethernet Extender
Model	IVC-2004PT
Hardware Specification	
Extender Ports	• Coaxial: 1 BNC, female connector • Phone-Line: 1 RJ-11, female connector
Ethernet LAN Ports	• 10/100Base-TX: 4 RJ-45, Auto-Negotiation and Auto-MDI / MDI-X • 4 PoE Ports (Port1 ~ 4)
DIP Switch	4 position DIP switch
Functionality	• Master / Slave mode select • Selectable fast and interleaved mode • Selectable target Band Plan • Selectable target SNR mode

Encoding	• DMT (Discrete Multi-Tone) line coding
	  - ITU-T G.997.1
	  - ITU-T G.993.1
	  - ITU-T G.993.2 (VDSL2 Profile 17a Support)

LED Indicators	• **System**
	  P1 (Green)
	  P2 (Green)
	  Fault (Green)
	• **VDSL2**
	  Master (Green)
	  Slave (Green)
	  ACT (Green)
	  Sync. (Green)
	• **10/100Mbps port**
	  LNK/ACT (Green)
	  PoE In-Use (Orange)

Cabling	• Ethernet : 10Base-T: 2-pair UTP Cat.3, 4 and 5 up to 100m (328ft)
	• Fast Ethernet : 100Base-TX: 2-pair UTP Cat.5, 5e and 6 up to 100m (328ft)
	• Ethernet : 100Base-TX: 2-pair UTP Cat.5, 5e and 6 up to 100m (328ft)
	• Coaxial Cable:
	  – 50ohm, RG58A / U, RG58C / U, RG58 / U or equivalent;
	  – 75ohm, RG-6 (Distance up to 2.4km)
	• Twisted-pair telephone wires (AWG24 or better) up to 1.4km

Dimension (W x D x H)	135 x 87.8 x 50 mm
Weight	631g
Power Requirement	48V DC for PoE Devices 12~ 36V DC for Non-PoE Devices Redundant power with polarity reverse protection function
Power Consumption	66.4 Watts / 226BTU Max. (PoE) 5.64 Watts / 19BTU (Non-PoE)
Installation	DIN Rail kit and Wall Mount ear
Alarm	Provides one relay output for power fail Alarm Relay current carry ability: 1A @ DC 24V

Performance

BNC (Coaxial Cable)	Asymmetric (Download / Upload)	Symmetric (Download / Upload)
	200m -> 99/65Mbps	200m -> 95/99Mbps
	400m -> 99/64Mbps	400m -> 92/97Mbps
	600m -> 97/59Mbps	600m -> 81/82Mbps
	800m -> 94/51Mbps	800m -> 71/70Mbps
	1000m -> 84/45Mbps	1000m -> 60/57Mbps
	1200m -> 73/37Mbps	1200m -> 50/44Mbps
	1400m -> 61/28Mbps	1400m -> 42/33Mbps
	1600m -> 54/20Mbps	1600m -> 37/27Mbps
	1800m -> 48/13Mbps	1800m -> 29/22Mbps
	2000m -> 38/9Mbps	2000m -> 23/21Mbps
	2200m -> 35/6Mbps	2200m -> 19/17Mbps
	2400m -> 31/4Mbps	2400m -> 19/13Mbps
RJ-11 (Phone-Line)	Asymmetric (Download / Upload)	Symmetric (Download / Upload)
	200m -> 99/63Mbps	200m -> 91/99Mbps
	400m -> 91/48Mbps	400m -> 74/79Mbps
	600m -> 71/32Mbps	600m -> 54/51Mbps
	800m -> 53/18Mbps	800m -> 38/34Mbps
	1000m -> 38/8Mbps	1000m -> 27/21Mbps
	1200m -> 33/5Mbps	1200m -> 24/15Mbps
	1400m -> 28/2Mbps	1400m -> 21/10Mbps

Power over Ethernet

PoE Standard	IEEE 802.3af Power over Ethernet / PSE
PoE Type	End-Span
PoE Power Output	48V DC Per Port, 350mA. Max. 15.4 Watts
PoE Pin Assignment	1/2(+), 3/6(-)

Standard Conformance

Regulation Compliance	FCC Part 15 Class A, CE
Stability Testing	IEC60068-2-32 (Free Fall) IEC60068-2-27 (Shock) IEC60068-2-6 (Vibration)

Standards Compliance	IEEE 802.3 10Base-T
	IEEE 802.3u 100Base-TX
	IEEE 802.3af Power over Ethernet
	IEEE 802.3x Full Duplex Pause Frame Flow-Control
	ITU-T
	  - G.993.1
	  - G.997.1
	  - G.993.2 (Profile 17a Support)

Environment

Operating Temperature	-40 ~ 75 Degree C
Operating Humidity	5~90%, relative humidity, non-condensing
Storage Temperature	-40 ~ 85 Degree C
Storage Humidity	5~90%, relative humidity, non-condensing

ORDERING INFORMATION

IVC-2004PT	4-Port 10/100TX with PoE+ 1-Port BNC / RJ-11 Industrial Ethernet Extender (-40 ~ 75 Degree C)

RELATIVE PRODUCTS

IVC-2002	4-Port 10/100Base-TX + 1-Port BNC / RJ-11 Industrial Ethernet Extender (-40 ~ 75 Degree C)
VC-201A	Ethernet over VDSL2 Converter (1*RJ-45, 1*VDSL2 / RJ-11, 1*Phone-17a)
VC-202A	Ethernet over Coaxial Converter (1*RJ-45 and 1*BNC-17a)

RELATIVE PRODUCTS

POE-151S	IEEE 802.3af Power over Ethernet Splitter with 5V/12V DC output
POE-E101	IEEE 802.3af Power over Ethernet Extender
ICA-H312	H.264 25-meter IR Internet Camera
ICA-H610	H.264 Indoor CCD Internet Camera
ICA-HM100	Wired H.264 Mega-Pixel IP Camera
ICA-HM120	H.264 Mega-Pixel Box IP Camera
ICA-HM125	2 Mega-Pixel H.264 Box IP Camera
ICA-HM126	H.264 Full HD Box IP Camera
ICA-HM131	H.264 Full-HD Fixed Dome IP Camera
ICA-HM135	H.264 Mega-Pixel 20M IR Vandal Proof Dome IP Camera
ICA-HM240	H.264 Mega-Pixel Vandal Proof Pan/Tilt IP Camera
WNAP-1120PE	802.11n Wireless Access Point with PoE
WNAP-3000PE	802.11n Enterprise PoE Access Point
WNAP-4033PE	54Mbps Wireless PoE Access Point

C-IVC-2004PT