Quick Installation Guide

VDTU2A-104L-4PH
VDTU2A-104R-4PH
Ethernet Extender with Remote Power Feeding PoE Switch

CTC Union Technologies Co., Ltd.
Far Eastern Vienna Technology Center
(Neihu Technology Park)
8F, No. 60 Zhouzi St., Neihu District, Taipei 114
Taiwan

T +886-2-26591021
F +886-2-26590237
E sales@ctcu.com

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http://www.ctcu.com/Industrial/

ISO 9001
ISO 14001

sales@ctcu.com

Introduction

VDTU2A-104-4PH are a pair of devices that support remote power feeding to a non-managed Fast Ethernet PoE (Power over Ethernet) switch and provides Ethernet LAN extension up to 1.2km. Housed in a rugged metal chassis, the LAN extender provides an excellent solution in IP surveillance networks to extend both Ethernet and power over a simple single pair telephone wire. Up to 4 remote IP cameras (or other PoE PD devices) may be powered, with a maximum budget of 40 watts PoE available, without the requirement to run any extra electrical power lines. Standard operating temperature range is -20 to 50°C.

Features

- Local unit accepts universal AC power
- Remote power feeding eliminates the need for power service at remote unit
- IP30 rugged metal housing
- 4 port with IEEE 802.3af/at PSE at remote (40W budget)
- Remote power feeding and data operate over one twisted pair over up to 1200 meters
- Simple DIP switch setting to set and forget
- Twisted pair with auto polarity detection for easy installation
- Twisted pair connects with terminal block or RJ-11.

Specifications
Ethernet Interface
- Connector: RJ-45 (shielded)
- 4-ports
- Auto MDI/MDI-X
- Speed: 10/100Base-TX (Auto)
- Duplex: Full/Half (Auto-negotiation per IEEE802.3u)
- Supports IEEE802.3x Flow Control
- Store & Forward Switch
- Packet buffer: 1mb
- Standards: IEEE802.3, 802.3u, 802.3x, 802.3af, 802.3at
- MTU: 64~1522 bytes

Specifications (cont.)
Power over Ethernet
- 4 PoE enabled ports, Alternate B Mode
- Supports IEEE802.3af 15.4watts PoE per port (40W budget)
- Supports IEEE802.3at 30watts PoE per port (40W budget)
- Positive (VCC+) pins 4,5 (54VDC ±1V)
- Negative (VCC-) pins 7,8

Power
- Absolute input range: 90~264VAC (local unit only)
- Dual power inputs: No
- Connector: IEC -320 type C13
- Consumption: 74Watts maximum (with 40W for PoE)

Mechanical
- Water & Dust Proof : IP30 Protection
- Dimensions : 200 x 190 x 48mm (D x W x H) local unit
  170 x 170 x 44mm (D x W x H) remote unit
- Mounting : Wall Mount (kits included)
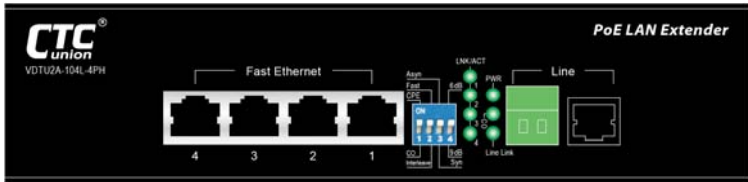- Weight : 1.3kg (local) and 1.01kg (remote)

Environmental
- Operating Temperature :
  - -20°C ~ 50°C
- Storage Temperature: -20°C ~ 70°C
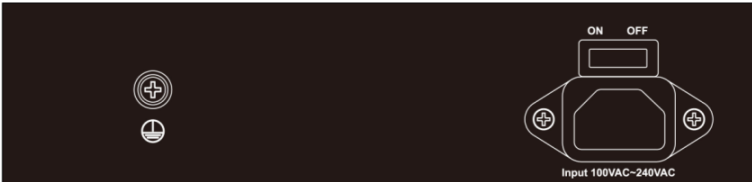- Humidity : 5 ~ 95% (non-condensing)

Certifications
- EMI: FCC Part 15 sub B class B, EN55022 Class B
- EMS: (Electromagnetic Susceptibility)
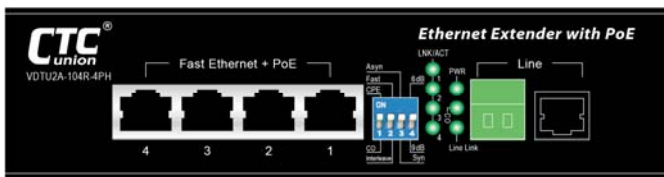 - EN61000-4-5 (Surge) Level 3,Criteria B

Connectors

VDTU2A-104L-4PH Front Panel

Local unit front with 4-port Ethernet switch, 4-Pole DIP switch, LED status indicators and copper line connectors.

VDTU2A-104L-4PH Rear Panel

Local unit rear with AC input (IEC), power switch and separate frame grounding terminal.

VDTU2A-104R-4PH Front Panel

Remote unit front with 4-port PoE enabled Ethernet switch, 4-Pole DIP switch, LED status indicators and copper line connectors.

The remote receives power from the local unit using a proprietary power feeding scheme. This remote unit requires no other power source.

Both units have four electrical LAN ports (labeled 1, 2, 3, 4) that utilize shielded RJ-45 connectors. These ports support 10/100M Auto Negotiation and Auto MDI/MDI-X Ethernet.

LED Indicators

VDTU2A-104L-4PH has LEDs on the front face that report the condition of power, fault, PoE, LAN link and Line link.
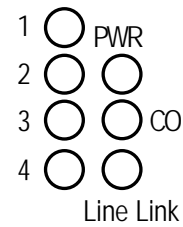
LINK/ACT: These green LEDs will light for the appropriate LAN port (1~4) when an Ethernet link is established. They will flash when there is activity on the LAN port.

PWR: This green LED will light if power is connected and active. On the local unit this means the AC mains have power and the switch has been turned on. On the remote unit this means that power has been received over the twisted pair via remote power feeding.

CO: This green LED will light if the unit has been configured as CO (for the VDSL2 data link) and will be OFF if configured as the CPE unit.

Line Link: This green LED will light when the data link between the local and remote units is up.

Power over Ethernet (PoE)

Ports 1 through 4 on Remote unit support PoE (Power over Ethernet) per IEEE802.3af (15.4W) or IEEE802.3at (30W) for connection to standard PoE PD (Power Devices) such as IP Cameras, Access Points, IP Phones, Digital Signage, etc.

Power over Ethernet eliminates the need to run separate power to these devices to simplify deployment and reduce expenses.

The PoE ports can also connect to any non-PoE device for normal Ethernet transmission without any damage to the non-PoE device or to the **VDTU2A-104L-4PH**.

Configuration DIP switch
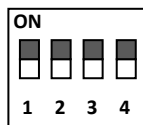
VDTU2A-104L-4PH uses a 4-pole DIP switch for configuration. Each pole of the switch has the following functions:

1. *CO/CPE*: When this switch is 'Off', the unit will be placed in CO (central office) mode. When 'On', the unit is placed in CPE (customer premises equipment) mode.
Setting logic: The data link between the local and remote units uses VDSL2 technology. This provides for very high data rates at short loop (under 1km). When operated asymmetrically, VDSL2 provides highest transfer speed in the direction of CO to CPE (downstream). If you deploy these units in an IP surveillance application, the larger bandwidth requirement will be from the IP cameras at remote to the local unit. In this application set the local unit to CPE and the remote to CO. In an application where the remote connects to Access Points (WiFi), the larger bandwidth requirement would be from local unit to remote. In this application set the local unit to CO and the remote to CPE.
Important: You must not set both units to CO or to CPE. They need to be set in CO/CPE pairs.

2. *Fast/Interleave*: This is a setting specific to VDSL technology. The 'Fast' setting (Sw2-On) will lower latency (delay) and is a preferred setting for streaming data (like video from IP cameras). The 'Interleave' setting (Sw2-Off) will introduce a slight delay but the transmission quality could be improved in an environment where there may be interference on the twisted pair link.

3. *Sym/Asym*: When planning required bandwidth, the 'Asym' setting (Sw3-On) will provide the highest bandwidth from CO to CPE device. The 'Sym' setting (Sw3-Off) will provide near equal upstream and downstream bandwidth between CO and CPE.

4. *6dB/9dB*: The 9dB setting (Sw4-Off) provides better channel noise protection. 6dB (Sw4-On) is the default SNR setting.
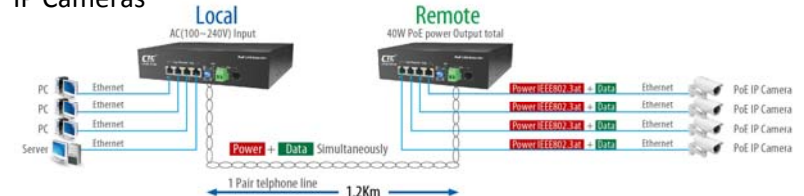
Installation

VDTU2A-104L-4PH comes with wall mount brackets. When installing the brackets, be sure to choose the threaded holes on the side of the case.
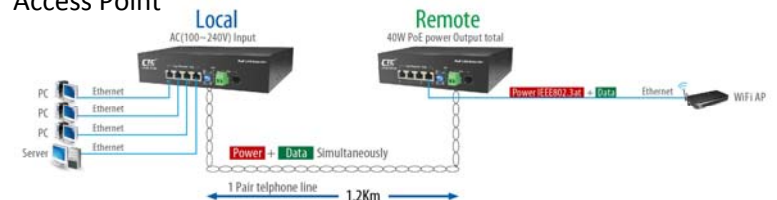
Quick Settings

The following setting tables are based upon the two most frequently used applications of the LAN extender, streaming IP cameras or hot spot service.

IP Cameras

VDTU2A-104L-4PH				VDTU2A-104R-4PH			
Local Unit (CPE mode)				Remote Unit (CO mode)			
SW	1	2	3	4	1	2	3	4
	on	on	on	off	off	on	on	off

Access Point

VDTU2A-104L-4PH				VDTU2A-104R-4PH			
Local Unit (CO mode)				Remote Unit (CPE mode)			
SW	1	2	3	4	1	2	3	4
	off	off	on	off	on	off	on	off