Ethernet over VDSL2 Converter

VC-201A / VC-202A / VC-204

User's Manual

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FCC Warning

This equipment has been tested and found to comply with the regulations for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this user's guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

CE Mark Warning

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Energy Saving Note of the Device

This power required device does not support Standby mode operation.

For energy saving, please remove the DC-plug or push the hardware Power Switch to OFF position to disconnect the device from the power circuit.

Without removing the DC-plug or switch off the device, the device will still consume power from the power source. In the view of Saving the Energy and reduce the unnecessary power consuming, it is strongly suggested to power off or to remove the DC-plug for the device if this device is not intended to be active.

WEEE Warning

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Revision

Ethernet over VDSL2 Converter User's Manual
For Models: VC-201A / VC-202A / VC-204
Rev 1.0 (June 2010)
Part No.: 2350-AC0270-000

Table of Contents

1. Introduction

1.1 Checklist

Check the contents of your package for following parts:

- VC-201A / VC-202A / VC-204 x 1
- 5V DC / 2A AC-to-DC Power Adapter x 1
- RJ-11 Telephone Line x 1 (VC-201A / VC-204 only)
- User's Manual x 1

If any of these items are missing or damaged, please contact your dealer immediately, if possible, retain the carton including the original packing material, and use them against to repack the product in case there is a need to return it to us for repair.

1.2 Ethernet over VDSL2 Bridge Description

PLANET's state-of-the-art Ethernet-over-VDSL2 products are based on two core networking technologies: **Ethernet and VDSL2 (Very-high-data-rate Digital Subscriber Line 2).** This technology offers the absolute fastest possible data transmission speeds over existing copper telephone lines or coaxial cables without the need for rewiring.

The VC-201A / VC-202A / VC-204 Ethernet Over VDSL2 Converter has a switching architecture with RJ-45 10/100Mbps Ethernet port and one asymmetric or symmetric Ethernet over VDSL port (Asymmetric means upstream and downstream rate are not the same and Symmetric means upstream and downstream rate are similar) – the VDSL port can be RJ-11 connector (VC-201A / VC-204) or BNC Connector (VC-202A). The VC-201A / VC-202A / VC-204 can be set to Central Office (CO) or Customer Premises Equipment (CPE) mode via a DIP switch. When VC-20X-CO (VC-201A / VC-204) is connected with other VC-20X-CPE (VC-201A / VC-204) device, the performance

will up to 100/55Mbps for asymmetric data rate within 200m and up to 25/4Mbps for asymmetric data rate at 1.6km. The VC-202A (BNC) performance is up to 100/65Mbps for asymmetric data rate within 200m and up to 25/5Mbps Mbps for asymmetric data rate at 3.0km. This capability is ideal for use as an Ethernet extender for your existing Ethernet network.

PLANET VDSL2 Converter provides a much cheaper replacement and smooth migration for existing **Long Reach Ethernet (LRE)** networks.

The cable specifications of the connection are listed as following:

- 10Base-T, Category 3, 4 or 5 UTP
- 100Base-TX, Category 5, 5e or 6 UTP
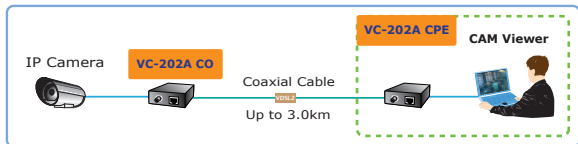- Ethernet over VDSL2, Twisted-pair telephone wires
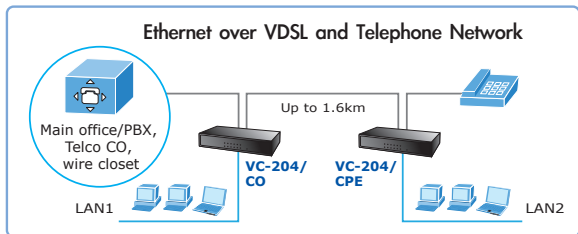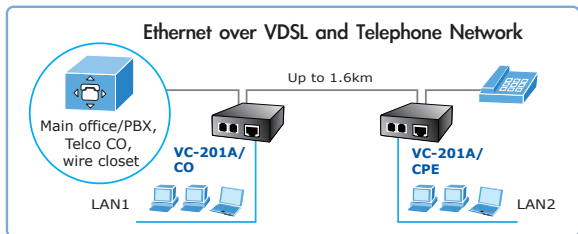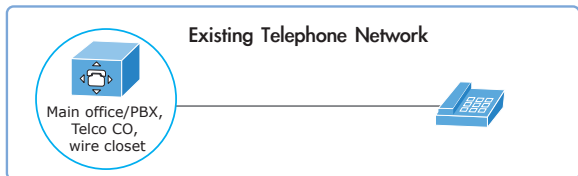- Ethernet over VDSL2, Coaxial cable

The two drawings pictures are typical application for the Ethernet over VDSL2 Converter.

> **Note**
>
> Slave device (CPE) must connect to Master device (CO) through the telephone wire or coaxial cable. It is not allow connecting like Master to Master or Slave to Slave. To define the VC-201A / VC-202A / VC-204 to CO or CPE, please refer to section 2.2.1 for more detail.

LAN to LAN Connection

Existing Telephone Network

Main office/PBX, Telco CO, wire closet

Ethernet over VDSL and Telephone Network

Main office/PBX, Telco CO, wire closet

Up to 1.6km

VC-201A/ CO

VC-201A/ CPE

LAN1

LAN2

Ethernet over VDSL and Telephone Network

Main office/PBX, Telco CO, wire closet

Up to 1.6km

VC-204/ CO

VC-204/ CPE

LAN1

LAN2

VC-202A CPE

CAM Viewer

IP Camera

VC-202A CO

Coaxial Cable

Up to 3.0km

100Base-TX UTP
Telephone wire
VDSL2 Coaxial Cable

Multi-LAN Connection

Existing Telephone Network

Main office/PBX, Telco CO, wire closet

Ethernet over VDSL and Telephone Network

Main office/PBX, Telco CO, wire closet

VC-201A+ MC-700 Chassis

VC-201A/ CPE — LAN1

VC-204/ CPE — LAN2

Internet

Router

IP Camera

Coaxial — VDSL

CAM Viewer

VC-202A CPE+ MC-700 Chassis

Ethernet Switch

Coaxial — VDSL

IP Camera

VC-202A CO

- 100Base-TX UTP
- Telephone wire
- VDSL2 Coaxial Cable

1.3 Key Features

The Ethernet Over VDSL2 Converter provides the following key features:

- Cost-effective VDSL2 CO / CPE bridge solution
- One box design, CO / CPE selectable via DIP Switch
- Defines Asymmetric (Band Plan 998) and Symmetric band plans for the transmission of Upstream and Downstream signals
- Complies with IEEE 802.3, IEEE 802.3u and IEEE 802.3x standards
- DMT (Discrete Multi-Tone) line coding
- Half Duplex Back Pressure and IEEE 802.3x Full Duplex Pause Frame Flow Control
- Built-in POTS splitter to share voice and data - **(VC-201A and VC-204)**
- Voice and data communication can be shared on the existing telephone wire simultaneously - **(VC-201A and VC-204)**
- Support up to 1536 bytes packet size, 802.1Q VLAN tag transparent
- VDSL2 Stand-Alone transceiver for simple bridge modem application
- Selectable Target Band Plan and Target SNR Margin
- Support extensive LED indicators for network diagnostics

1.4 Specifications

Product		VC-201A	VC-204	VC-202A
Hardware Specification				
Ports	10/100 Base-TX	1 x RJ-45, Auto-negotiation Auto-MDI/MDI-X	4 x RJ-45, Auto-negotiation Auto-MDI/MDI-X	1 x RJ-45, Auto-negotiation Auto-MDI/MDI-X
	VDSL	1 x RJ-11, female Phone Jack		1 x BNC, female connector
	PHONE	1 x RJ-11, Built-in splitters for POTS connection		-
DIP Switch		4 position DIP switch		
Functionality		• **CO / CPE** mode select • Selectable **fast** and **interleaved** mode • Selectable target **Band Plan** • Selectable target **SNR mode**		
Encoding		• VDSL-DMT - ITU-T G.993.1 VDSL - ITU-T G.997.1 - ITU-T G.993.2 VDSL2 (Profile 17a Support)		
LED Indicators		One Power	One Power	One Power
		3 for RJ-11/VDSL2	4 for RJ-11/VDSL2	3 for RJ-11/VDSL2
		2 for RJ-45 10/100Base-TX port	1 for RJ-45 10/100Base-TX port	2 for RJ-45 10/100Base-TX port
Cabling	Ethernet	• 10Base-T: 2-pair UTP Cat.3, 4, 5 up to 100m (328ft) • 100Base-TX: 2-pair UTP Cat.5, 5e, 6 up to 100m (328ft)		
	VDSL	Twisted-pair telephone wires (AWG24 or better) up to 1.6km		50 ohm, RG58A/U, RG58C/U, RG58/U or 75 ohm, RG6 (Distance 3.0km)

	Asymmetric Mode	
Performance* (Down Stream / Up Stream)	200m -> 100/55Mbps 400m -> 90/50Mbps 600m -> 70/40Mbps 800m -> 60/25Mbps 1000m -> 45/15Mbps 1200m -> 35/10Mbps 1400m -> 30/6Mbps 1600m -> 25/4Mbps	200m->100/65Mbps 400m->100/64Mbps 600m->100/59Mbps 800m->100/53Mbps 1000m->94/44Mbps 1200m->84/36Mbps 1400m->74/28Mbps 1600m->66/19Mbps 1800m->60/14Mbps 2000m->44/15Mbps 2200m->35/12Mbps 2400m->32/10Mbps 2600m->29/8Mbps 2800m->27/6Mbps 3000m->25/5Mbps
	Symmetric Mode	
	200m -> 100/100Mbps 400m -> 90/95Mbps 600m -> 70/70Mbps 800m -> 55/50Mbps 1000m -> 45/35Mbps 1200m -> 30/25Mbps 1400m -> 25/20Mbps 1600m -> 20/15Mbps	200m->99.7/100Mbps 400m->97/100Mbps 600m->86/91Mbps 800m->79/80Mbps 1000m->69/66Mbps 1200m->60/52Mbps 1400m->51/41Mbps 1600m->45/36Mbps 1800m->40/29Mbps 2000m->27/26Mbps 2200m->23/24Mbps 2400m->22/21Mbps 2600m->20/18Mbps 2800m->18/15Mbps 3000m->17/13Mbps
Power Requirement	5V DC, 2A	
Operating Temperature	0~50ºC	

Storage Temperature	-10~70ºC
Operating Humidity	10% to 90%, relative humidity, non-condensing
Storage Humidity	10% to 90%, relative humidity, non-condensing
Standard Conformance	
Regulation Compliance	FCC Part 15 Class A, CE
Standards Compliance	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX IEEE 802.3x Full Duplex Pause frame Flow Control ITU-T • G.993.1 (VDSL) • G.997.1 • G.993.2 VDSL2 (Profile 17a)

* The actual data rate will vary on the quality of the copper wire and environment factors.

2. Hardware Description

■ **VC-201A / VC-204**

The VC-201A / VC-204 provides 2 RJ-11 ports for voice connection (like telephone) and for network line connection.

■ **VC-202A**

The VC-202A provides 1 BNC connector and supports 50 or 75 ohm cable with distance up to 3.0km.

The VC-201A / VC-202A provide 1 RJ-45 port and VC-204 provides 4 RJ-45 ports with two different running speed – 10Mbps and 100Mbps. It will distingish the speed of incoming connection automatically.

This section describes the hardware features of the Ethernet over VDSL2 Converter. For easier control of the converter, familiarize yourself with its display indicators and ports. Front panel illustrations in this chapter display the unit LED indicators. Before connecting any network device to the converter, read this chapter carefully.

2.1 Front Panel

The units' front panel provides a simple interface monitoring the Ethernet over VDSL2 Converter.
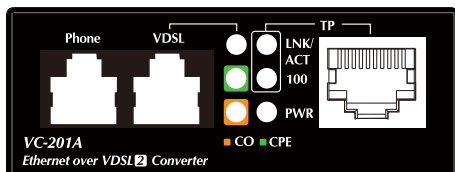
■ **VC-201A Front Panel**
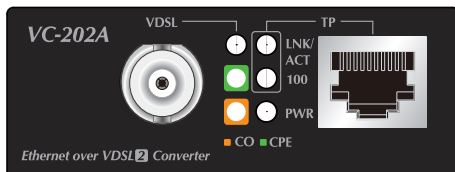

Figure 2-1: VC-201A front panel

■ **VC-202A Front Panel**

Figure 2-2: VC-202A front panel

■ **VC-204 Front Panel**

Figure 2-3: VC-204 front panel

2.1.1 LED indicators for VC-201A and VC-202A

The rich diagnostic LEDs on the front panel can provide the operating status of individual port and whole system.

■ System

LED	Color	Function	
PWR	Green	Light	Power ON
		Off	Power OFF

■ VDSL

LED	Color	Function	
LNK/ACT	Green	Light	Indicate that the VDSL link is established.
		Fast Blink	Indicate that the VDSL link is at training status (about 10 seconds).
		Slow Blink	Indicate that the VDSL link is at idle status.
CO	Green	Light	Indicate the VDSL Bridge is running at **CO** mode.
CPE	Green	Light	Indicate the VDSL Bridge is running at **CPE** mode.

■ 10/100Base-TX Port

LED	Color		Function
LNK/ACT	Green	Light	Indicate that the port is **Link Up**.
		Blink	Indicate that the Converter is actively sending or receiving data over that port.
		Off	Indicate that the port is **Link Down**.
100	Green	Light	Indicate that the port is operating at 1**00Mbps**.
		Off	Indicate that the port is **Link Down** or **10Mbps**.

2.1.2 LED indicators for VC-204

The rich diagnostic LEDs on the front panel can provide the operating status of individual port and whole system.

■ System

LED	Color		Function
PWR	Green	Light	Power ON
		Off	Power OFF

■ VDSL

LED	Color		Function
ACT	Green	Light	Indicate that the VDSL link is established.
		Fast Blink	Indicate that the VDSL link is at training status (about 10 seconds).
		Slow Blink	Indicate that the VDSL link is at idle status.
Sync	Green	Light	Indicate that the VDSL link is established.
		Fast Blink	Indicate that the VDSL link is at training status (about 10 seconds).
		Slow Blink	Indicate that the VDSL link is at idle status.
CO	Green	Light	Indicate the VDSL Bridge is running at **CO** mode.
CPE	Green	Light	Indicate the VDSL Bridge is running at **CPE** mode.

■ 10/100Base-TX Port

LED	Color		Function
LNK/ACT	Green	Light	Indicate that the port is link up.
		Blink	Indicate that the Converter is actively sending or receiving data over that port.
		Off	Indicate that the port is **link down**.

2.2 The Rear Panel

The rear panel of the Ethernet over VDSL2 Converter is shown as below.
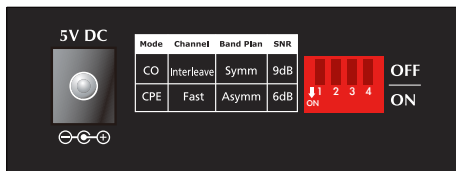
■ **VC-201A / VC-202A Rear Panel**

Figure 2-4: VC-201A / VC-202A rear panel

■ **VC-204 Rear Panel**

Figure 2-5: VC-204 rear panel

2.2.1 MODE DIP Switch

The Ethernet over VDSL2 Converter provides 4 selective transmission modes. By switching the transmission modes, you can obtain a best transmission mode to suit with phone line quality or distance of connectivity. The following is the summary table of transmission setting, bandwidth and distance extensibility tested for AWG 24 (0.5mm) twisted-pair without noise and cross talk.

	DIP-1	DIP-2	DIP-3	DIP-4
	Mode	**Channel**	**Band Plan**	**SNR**
OFF	CO	Interleave	Symm	9dB
ON (default)	**CPE**	**Fast**	**Asymm**	**6dB**

■ **CO / CPE**
  - CO (Central Office) – the Master device mode, usually the CO device will be located at the data center of ISP or enterprise to link to the backbone.
  - CPE (Customer Premises Equipment) – the Slave device mode, usually the CPE device will be located at branch office, home or remote side as the long reach data receiver. The CPE can be connected to the PC, IP Camera or Wireless Access Point and etc network devices.

> **Note**
> When the Ethernet Over VDSL2 Converter operate at CPE mode, the DIP switch 2,3,4 is no function.

■ **Fast and Interleave mode**
  - Fast mode guarantees a minimum end to end latency less than 1 ms.
  - Interleaved mode provides impulse noises protection with a duration less than 250 us. Interleaved mode has a maximum end to end latency of 10m sec.

■ **Band Plan**
  - User can switch the Band Plan either Symmetric or Asymmetric by their own. When Symmetric is selected that provides better upstream performance, when Asymmetric is selected that provides better downstream performance. Refer to table above for details.

- ■ **Target SNR (Signal Noise Ratio) Margin**
  • When fixed SNR margin is selected, the system will maintain the SNR margin at 9 dB across all usable loop length.

> **Note**
> By default setting, the four DIP switch at **"ON"** position and operate as **"CPE"**. For operate as **"CO"**, please adjust the DIP 1 switch to **"OFF"** position. Adjust other DIP switch setting to fill different network application demand.

Please power off the Ethernet over VDSL2 Converter before making any transmission mode adjustment.

2.2.2 DC Power Jack

VC-201A / VC-202A / VC-204 require 5V DC power input. It will conform to the bundled AC adapter. If you have the issue to make the power connection, please contact your local sales representative.

> **Note**
> 1. The device is a power-required device, it means, it will not work till it is powered. If your networks should active all the time, please consider using UPS (Uninterrupted Power Supply) for your device. It will prevent you from network data loss or network downtime.
> 2. In some area, installing a surge suppression device may also help to protect your Ethernet Over VDSL2 Converter from being damaged by unregulated surge or current to the Ethernet over VDSL2 Converter or the power adapter.

3. Installation

3.1 Install Ethernet over VDSL2 Converter

The Ethernet over VDSL2 Converter does not require any software configuration. Users can immediately use any feature of this product simply by attached the cables and plug power on. There is some key limitation on the Ethernet over VDSL2 Converter. Please check the following items:

● **VC-201A and VC-204:** The device is used for Point-to-Point connection only (Master device to Slave device) and has equipped with 2 RJ-11 connectors for VDSL port. One for voice device connection (like telephone) and the other one for network link connection.

Depending on the quality of telephone line, the maximum distance of one VDSL segment is 1.6km (5250ft) with AWG 24 telephone wires.

● **VC-202A:** 1 BNC connector and supports 50 or 75 ohm cable. Depending on the quality of coaxial cable, the maximum distance of one VDSL segment is 3.0km (9842ft) with 5C coaxial cable.

The distance will change by the quality of telephone wires and coaxial cables.

3.1.1 VC-201A / VC-202A / VC-204 LAN to LAN connection

Two sets of the Ethernet over VDSL2 Converters could be used to link two local Area networks that are located in different place. Through the normal telephone line, it could setup a 100/55Mbps asymmetric backbone, but one Ethernet over VDSL2 Converter must be Master (CO mode) and the other one is Slave (CPE mode).
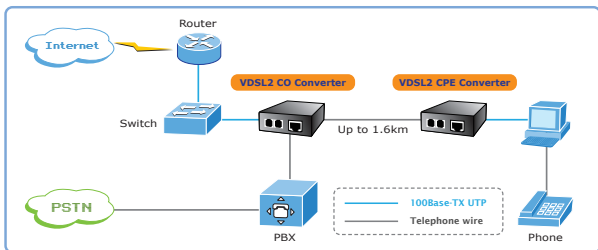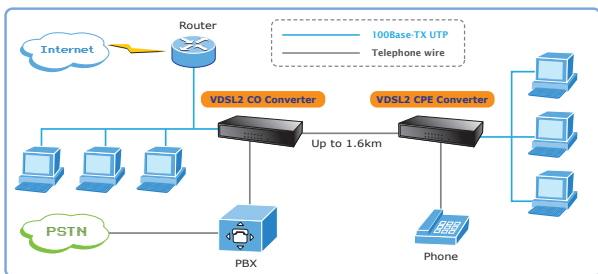

Figure 3-1: VC-201A LAN to LAN connection
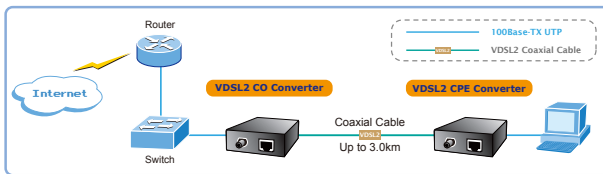

Figure 3-2: VC-204 LAN to LAN connection

Figure 3-3: VC-202A LAN to LAN connection

3.1.2 VC-201A / VC-204 Connect to Multi-Port Master

To built up a local Internet in apartment, hotel, campus and hospitality environment.

The Multi-port Master (for example, VC-820M VDSL2 Switch) need to be placed in the wiring center (MDF room) and connect to the telephone line system, on the other hand, need to install a Slave (VC-201A / VC-204 CPE) converter on the individual client side and connect to the Multi-port Master through the telephone lines.

When deciding where to put the converter then you must ensure:

● It is accessible and cables can be connected easily.

● Cabling is away from sources of electrical noise such as radios, transmitters and power lines and fluorescent lighting fixtures.

● Water or moisture can not enter the Converter.

● Air flow around the unit and through the vents in the side of the case is not restricted (company recommend that you provide a minimum of 25mm inch clearance)

To prolong the operational life of your units:

● Do not place objects on top of any unit or stack

3.2 Connecting VC-201A / VC-202A / VC-204

3.2.1 Connecting Standalone PC

Refer to the following procedures to setup the VC-201A to a standalone PC.

1. Set the VC-201A to be CO or CPE mode from the DIP switch at the rear panel.

2. Power on the VC-201A by connecting its power source.

3. Power LED will illuminate.

4. Connect VDSL line from another VDSL device to VDSL port of the VC-201A.

5. LNK LED will blink to illuminate.

6. Connect telephone to the PHONE port.

7. Connect Ethernet port to PC Network Interface Card (NIC) via regular Cat. 5, 5e or 6 cable.
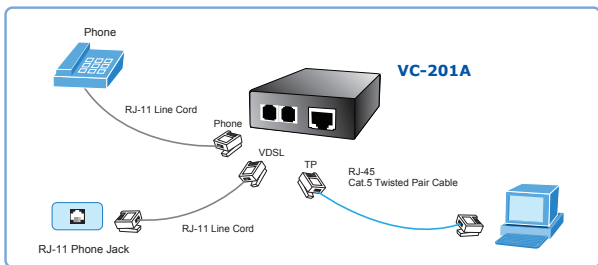

Figure 3-4: Connecting Standalone PC

3.2.2 Connecting Multiple PCs to an Ethernet LAN

Refer to the following procedures to setup the VC-201A / VC-204 to an Ethernet LAN.

1. Set the VC-201A / VC-204 to be CO or CPE mode from the DIP switch at the rear panel.
2. Power on the VC-201A / VC-204 by connecting its power source.
3. Power LED will illuminate.
4. Connect VDSL line from another VDSL device to VDSL port of the VC-201A / VC-204.
5. LNK LED will illuminate.
6. Connect telephone to the PHONE port.
7. VC-201A: Connect Ethernet port to Ethernet Switch (or Broadband Router) via regular Cat. 5, 5e or 6 cables.

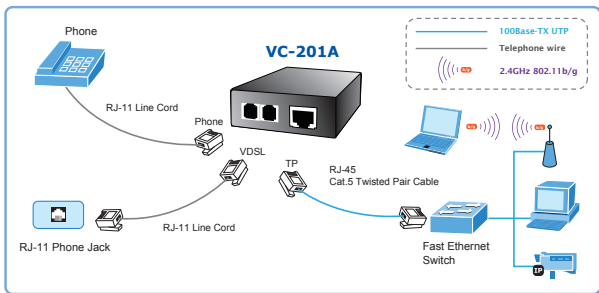   VC-204: Connect per Ethernet port to each network device via regular Cat 5, 5e or 6 cables.

Figure 3-5: Connecting Multiple PCs to an Ethernet LAN

> Please refer to your Ethernet device User's Manual for the device's set up information.
>
> Note

3.3 Connecting VC-202A

3.3.1 Connecting Standalone IP device

Refer to the following procedures to setup the VC-202A to a standalone PC.

1. Set the VC-202A to be CO or CPE mode from the DIP switch at the rear panel.
2. Power on the VC-202A by connecting its power source.
3. Power LED will illuminate.
4. Connect coaxial cable from another VDSL device to VDSL BNC port of the VC-202A.
5. LNK LED will blink for illuminating.
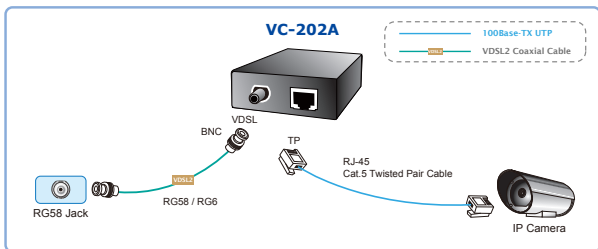6. Connect Ethernet port to Ethernet device via regular Cat. 5, 5e or 6 cables.

Figure 3-6: Connecting Standalone IP device

3.3.2 Connecting Multiple PCs to an Ethernet LAN

Refer to the following procedures to setup the VC-202A to an Ethernet LAN.

1. Set the VC-202A to be CO or CPE mode from the DIP switch at the rear panel.

2. Power on the VC-202A by connecting its power source.

3. Power LED will illuminate.

4. Connect coaxial cable from another VDSL device to VDSL BNC port of the VC-202A.

5. LNK LED will illuminate.

6. Connect Ethernet port to Ethernet Switch (or Broadband Router) via regular Cat. 5, 5e or 6 cables.
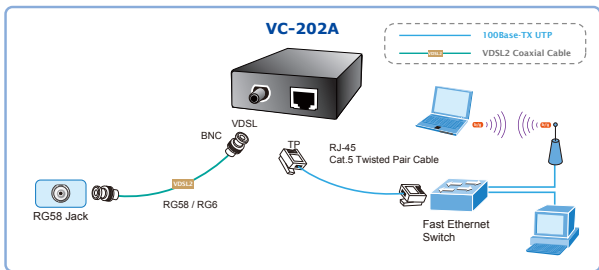

Figure 3-7: Connecting Multiple PCs to an Ethernet LAN

Please refer to your Ethernet device User's Manual for the device's set up information.

3.4 Chassis Installation and Rack Mounting (VC-201A and VC-202A)

To install the Ethernet over VDSL2 Converter in a **10-inch** or **19-inch** Converter Chassis with standard rack, follow the instructions described below.

Step 1: Place your VC-201A / VC-202A on a hard flat surface, with the front panel positioned towards your front side.

Step 2: Carefully slide in the module until it is fully and firmly fitted into the slot of the converter chassis.
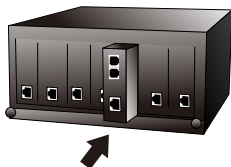

Figure 3-8: Insert a VDSL2 converter into an available slot

Step 3: Attach a rack-mount bracket to each side of the Converter Chassis with supplied screws attached to the package.

Step 4: After the brackets are attached to the Converter Chassis, use suitable screws to securely attach the brackets to the rack.

Step 5: Proceed with the steps 4 and steps 5 of session 3.2 **Stand-alone Installation** to connect the network cabling and supply power to your Converter Chassis.

⚠ Caution	You must use the screws supplied with the mounting brackets. Damage caused to the parts by using incorrect screws would invalidate your warranty.

4. Power Information

The power jack of VC-201A / VC-202A / VC-204 is with 2.5mm in the central post and required +5VDC power input. It will conform to the bundled AC-DC adapter and Planet's Media Chassis. If you have encountered the issue to make the power connection, please contact your local sales representative.

Please keep the AC-DC adapter as spare parts when your VC-201A / VC-202A are installed to a Media Chassis.

2.5mm
DC Receptacle 2.5mm
+5V for each slot

⊖-⊙-⊕
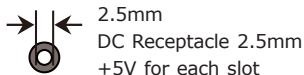
For Media Chassis DC receptacle is 2.5mm wide that conforms to and matches the VDSL2 Converter 2.5mm DC jack's central post. Do not install any improper devices in Media Chassis

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5. Troubleshooting

SYMPTOM:

VDSL LNK LED does not light after wire is connected to the VDSL port.

CHECKPOINT:
1. Verify the length of the wire connected between two VC-201A / VC-204 is not more than 2.0km and VC-202A is not more than 3.0km. Please also try to adjust the DIP switch of VC-201A / VC-202A / VC-204 to other SNR mode.
2. Please note you must use one VC-201A / VC-202A / VC-204 with CO mode and the other VC-201A / VC-202A / VC-204 with CPE mode, connect to each other to make it work.

SYMPTOM:

TP LED does not light after cable is connected to the port.

CHECKPOINT:
1. Verify you are using the Cat.5, 5e or 6 cables with RJ-45 connector to connect to the port.
2. If your device (like LAN card) supports to Auto-Negotiation, please try to modify at a fixed speed of your device by manually.
3. Check the converter and the connected device's power are ON or OFF.
4. Check the port's cable is firmly seated in its connectors in the switch and in the associated device.
5. Check the connecting cable is good.
6. Check the power adapters are functional, including the connecting device.

6. FAQ

Q1: What voltage that VC-201A / VC-202A / VC-204 used?

A1: 5V DC, 2A

Q2: What is VDSL2?

A2: VDSL2 (Very High-Bit-Rate Digital Subscriber Line 2), G.993.2 is the newest and most advanced standard of xDSL broadband wire line communications.

Designed to support the wide deployment of Triple Play services such as voice, data, high definition television (HDTV) and interactive gaming, VDSL2 enable operators and carrier to gradually, flexibly, and cost efficiently upgrade exiting xDSL-infrastructure.

Q3: What is the best distance for VC-201A / VC-202A / VC-204?

A3: In order to guarantee the stability and better quality of network, so we would suggest the distance within 1.6 kilometer is the best for VC-201A / VC-204 and 3.0kilometer for VC-202A.

Q4: What is the best date rate for VC-201A / VC-202A / VC-204?

A4: We provide the data rate of the VC-201A / VC-204 is up to 100Mbps/55Mbps and the VC-202A is up to 100Mbps/ 65Mbps (downstream / upstream) in 200 meters

Q5: Can VC-201 compatible with VC-201A / VC-204?

A5: Currently NO. Although VC-201 (profile 12a) and VC-201A / VC-204 (profile 17a) are base on ITU-T G.993.2 VDSL2, but with different Profiles, so far they are not compatible with each other.

Q6: Can VC-202 compatible with VC-202A?

A6: Currently NO. Although VC-202 (profile 12a) and VC-202A (profile 17a) is base on ITU-T G.993.2 VDSL2, but with different Profiles, so far they are not compatible with each other.

Q7: What is SNR and what's the effect?

A7: In analog and digital communications, Signal-to-Noise Ratio, often written SNR, is a measure of signal strength relative to background noise. The ratio is usually measured in decibels (dB).

In digital communications, the SNR will probably cause a reduction in data speed because of frequent errors that require the source (transmitting) computer or terminal to resend some packets of data. SNR measures the quality of a transmission channel over a network channel. The greater the ratio, the easier it is to identify and subsequently isolate and eliminate the source of noise.

Generally speaking, the higher SNR value gets better line quality, but lower performance.

Q8: What is band plan and what's the effect?

A8: VDSL2 defines multiple band plans and configuration modes (profiles) to allow asymmetric and symmetric services in the same binder (by designated frequency bands) for the transmission of upstream and downstream signals. User has the ability to select fixed band plan. When Symmetric is selected that provides better downstream performance, when Asymmetric is selected that provides better upstream performance.

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