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Ethernet over VDSL2 Converter/Bridge

VC-231G
VC-234G

VDSL2 30a | VDSL2 G.Vector | ADSL2+ | Gigabit | CO/CPE Mode | Metal Housing

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Presentation Outlines

- VDSL2 Introduction
- Product Overview
- Product Positioning
- Hardware Introduction
- Product Features
- Product Benefits
- Applications
- Product Comparison
- Appendix

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Product Overview

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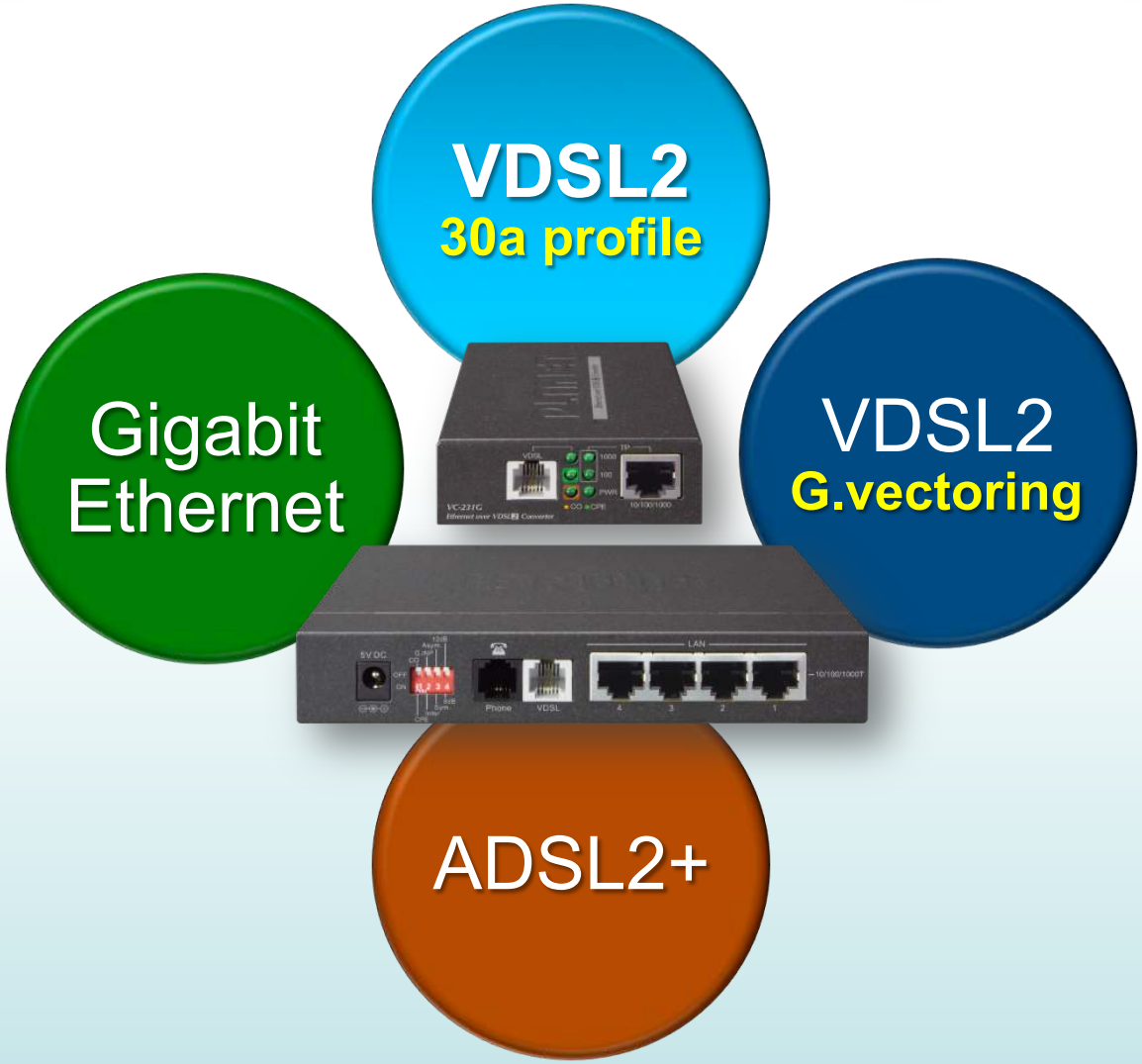
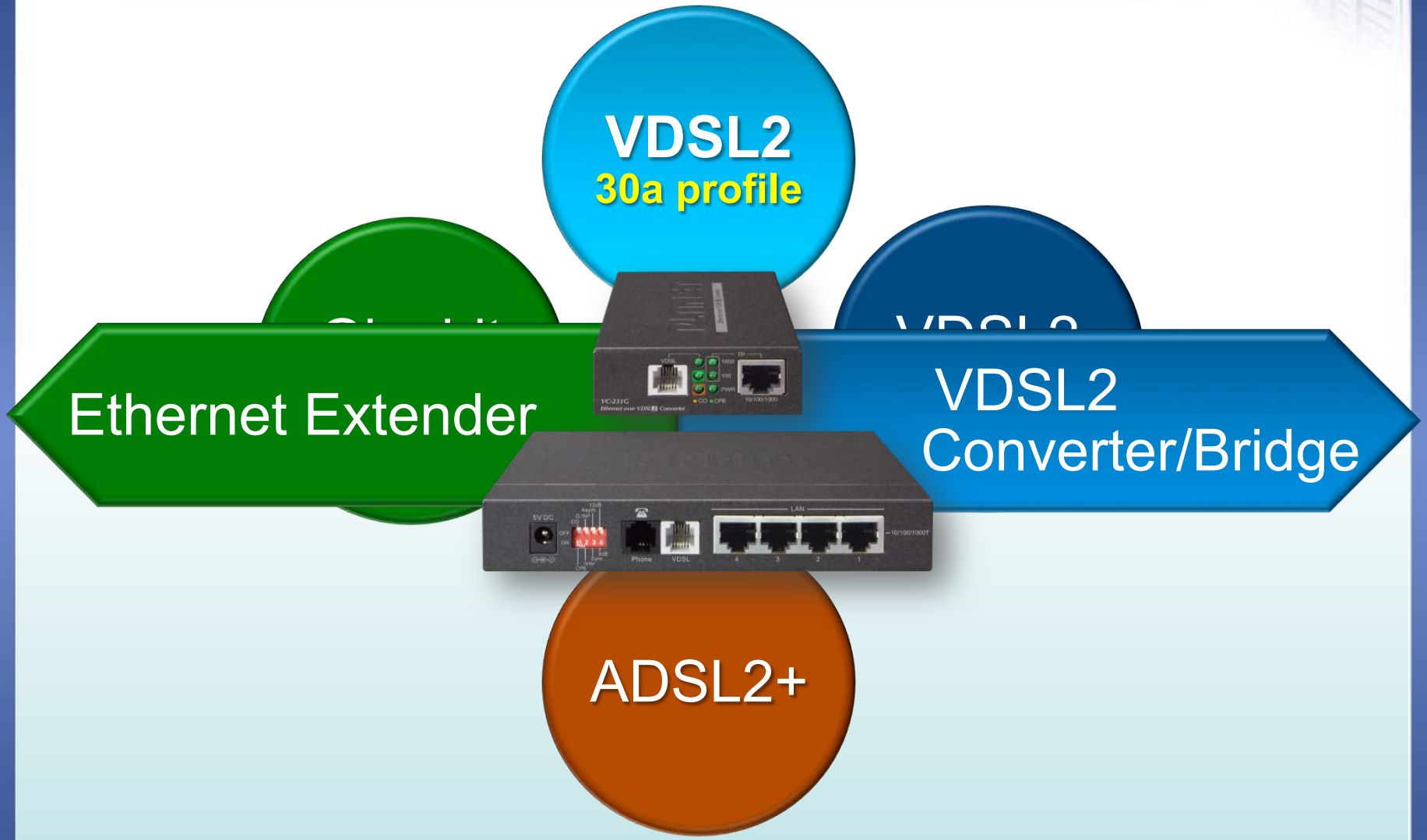
Product Overview

Key Technologies



Product Applications



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Product Positioning

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Product Map

PLANET *VDSL2 Product Line*

Planning
Developing
New Phase-in
Available

CPE

Gigabit LAN

VC-231G
- 1 RJ11 + 1RJ45

G.Vectoring
ADSL2+

VC-234G
- 2 RJ11 + 4 RJ45

G.Vectoring
ADSL2+

VC-232G
- 1 BNC + 1 RJ45

IVC-234GT
- 1 BNC, 1 RJ11
- 4 RJ45

G.Vectoring
ADSL2+
-40~75°C

Fast Ethernet LAN

VC-202A
- 1 BNC + 1 RJ45

IVC-2002
- 1BNC, 1 RJ11
- 4 RJ45

-40~75°C

VC-201A
- 2 RJ11 + 1 RJ45

VC-231
- 1 RJ11 + 1 RJ45

VC-234
- 2 RJ11 + 4 RJ45

VDR-300NU
- 1 RJ11 + 4 RJ45
- 2 USB

G.Vectoring
ADSL2+
11n 300Mbps

VDR-301N
- 1 RJ11 + 5 RJ45

G.Vectoring
ADSL2+
11n 300Mbps

CO

VC-820M
- 8 x VDSL2
- 2 x Gigabit LAN

VDL-2420M
- 24 x VDSL2
- 2 x Gigabit LAN

VDSL2 17a

VDSL2 30a

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Hardware Introduction

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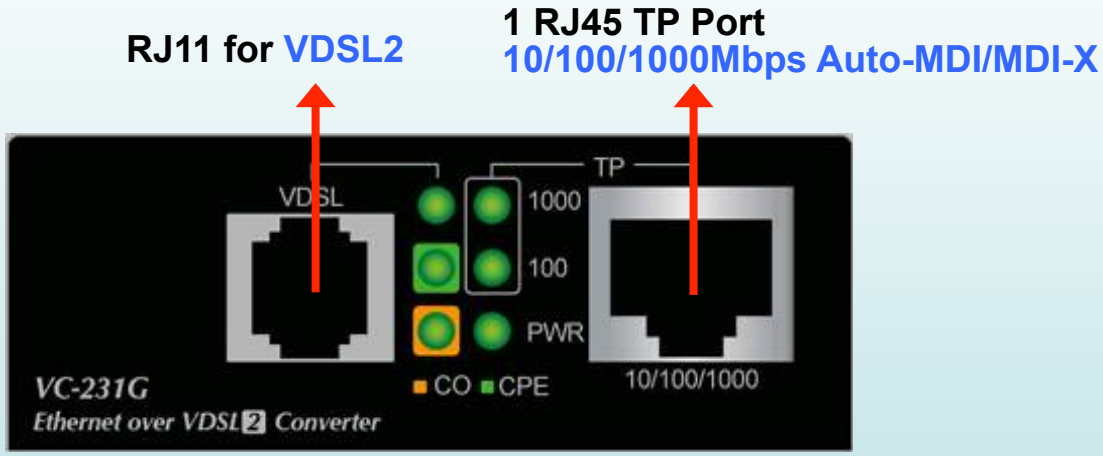
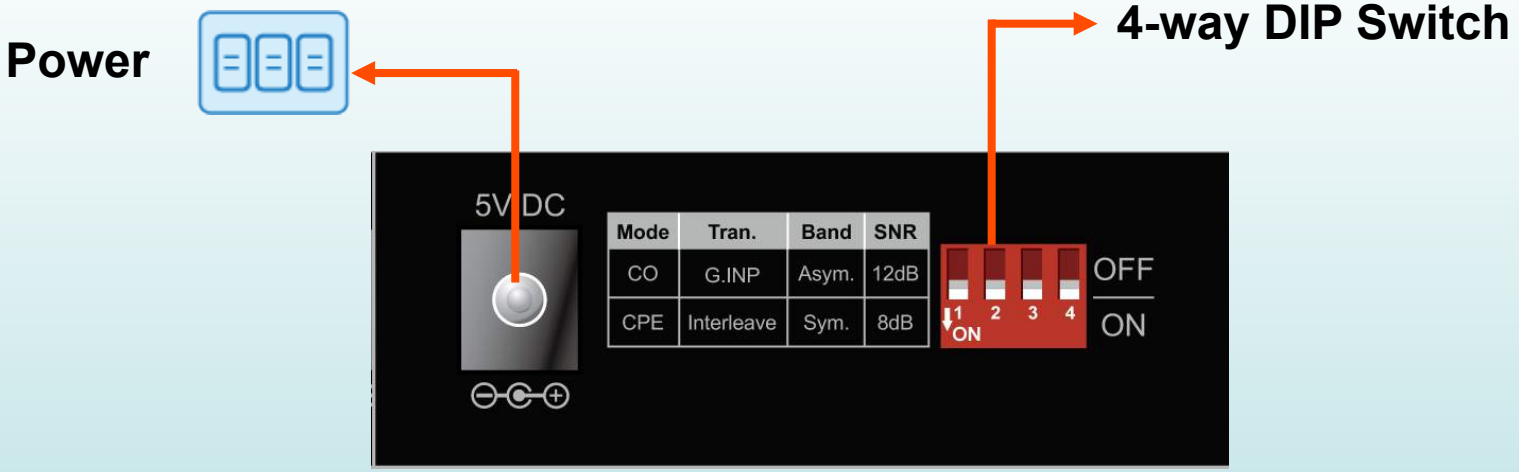
Hardware Introduction – *VC-231G*

- **Dimensions (W x D x H): 97 x 70 x 26 mm**
- **Front Panel – LED Indicators and Interface**
  - ✓ **Interfaces**
    - 1 x RJ45: 10/100/1000Mbps auto-MDI/MDI-X, auto negotiation
    - 1 x RJ11: VDSL2 port
  - ✓ **LEDs**
    - 1 x PWR: Lights to indicate that the VDSL Converter has power.
    - 2 x 100 LED and 1000 LED: To indicate that the port is operating at 10/100Mbps or 1000Mbps.
    - 3 x VDSL LED: To indicate that the VDSL link is established in CO/CPE mode.



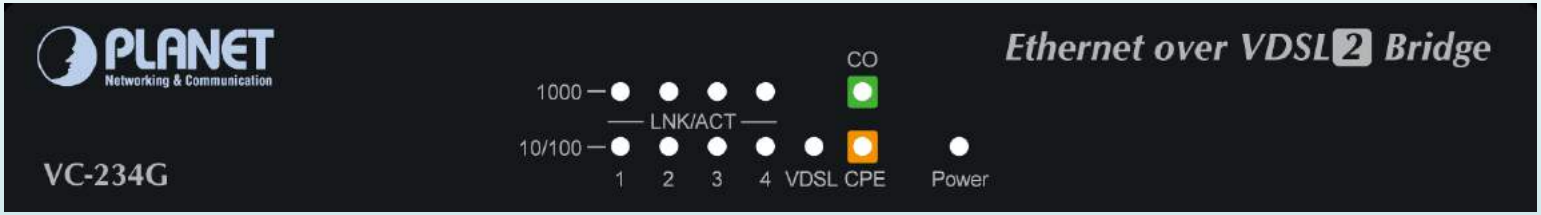
Hardware Introduction – *VC-231G*

- **Rear Panel**
  - ✓ 1 DC jack for 5V DC, 2A adapter
  - ✓ 4-position DIP switch



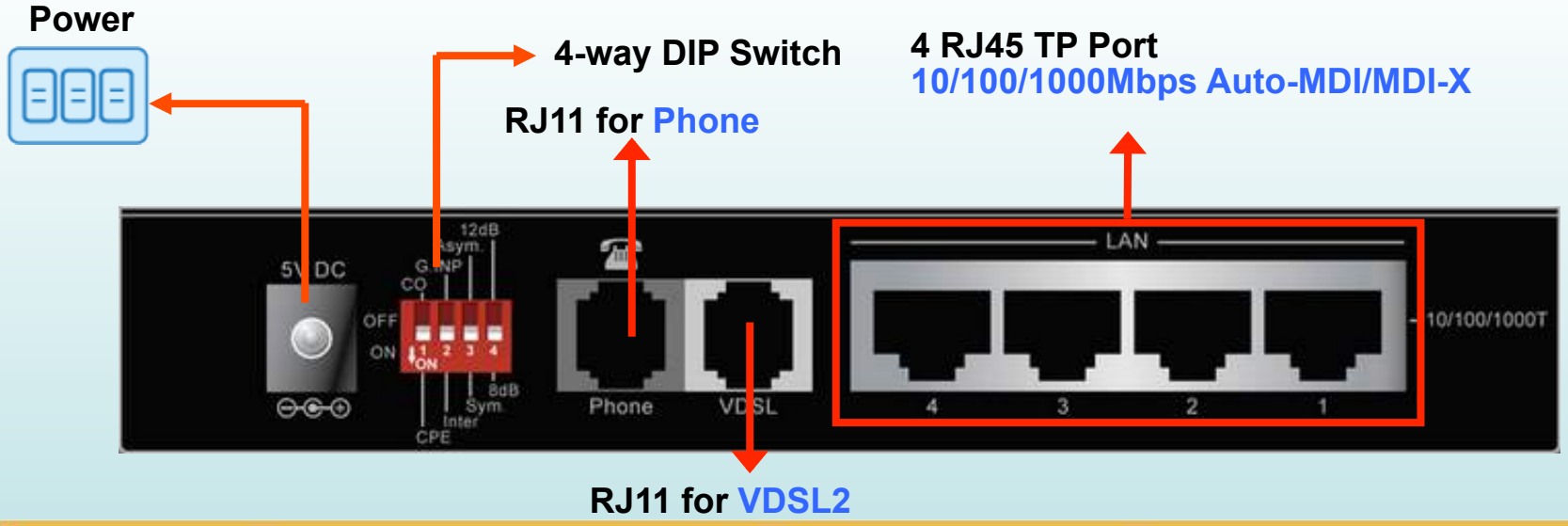
Hardware Introduction – *VC-234G*

- **Dimensions (W x D x H):** 154.6 x 86.0 x 26.3 mm
- **Front Panel with LED Indicators**
  - ✓ **LEDs**
  - **1 x PWR**: Lights to indicate that the VDSL Converter has power.
  - **4 x 1000 LED**: To indicate that the port is operating at 1000Mbps.
  - **4 x 100 LED**: To indicate that the port is operating at 10/100Mbps.
  - **3 x VDSL LED**: To indicate that the VDSL link is established in CO/CPE mode.



Hardware Introduction – VC-234G

- **Rear Panel –Interface**
  - ✓ **Interface**
    - **4 x RJ45**: 10/100/1000Mbps auto-MDI/MDI-X, auto negotiation
    - **2 x RJ11**: VDSL2 Port
      - 1 for VDSL connection
      - 1 for POTS connection
    - 1 DC jack for 5V DC, 2A adapter
    - 4-position DIP switch



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Product Features

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Product Features

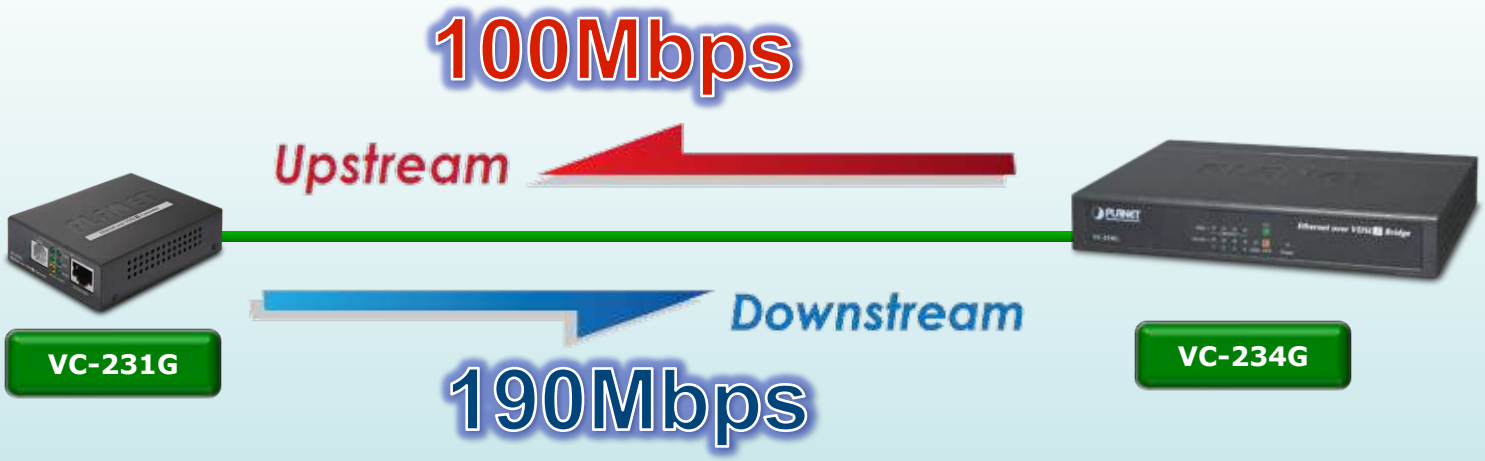
G. Vectoring:

- ✓ **G.993.5** (**G.Vectoring**) significantly reduces crosstalk and improves VDSL2 line performance.
- ✓ The VC-231G and VC-234G work in conjunction with vectoring-enabled DSLAMs to **remove crosstalk interference** and **improve maximum line bandwidth** across the existing copper infrastructure.

Product Features

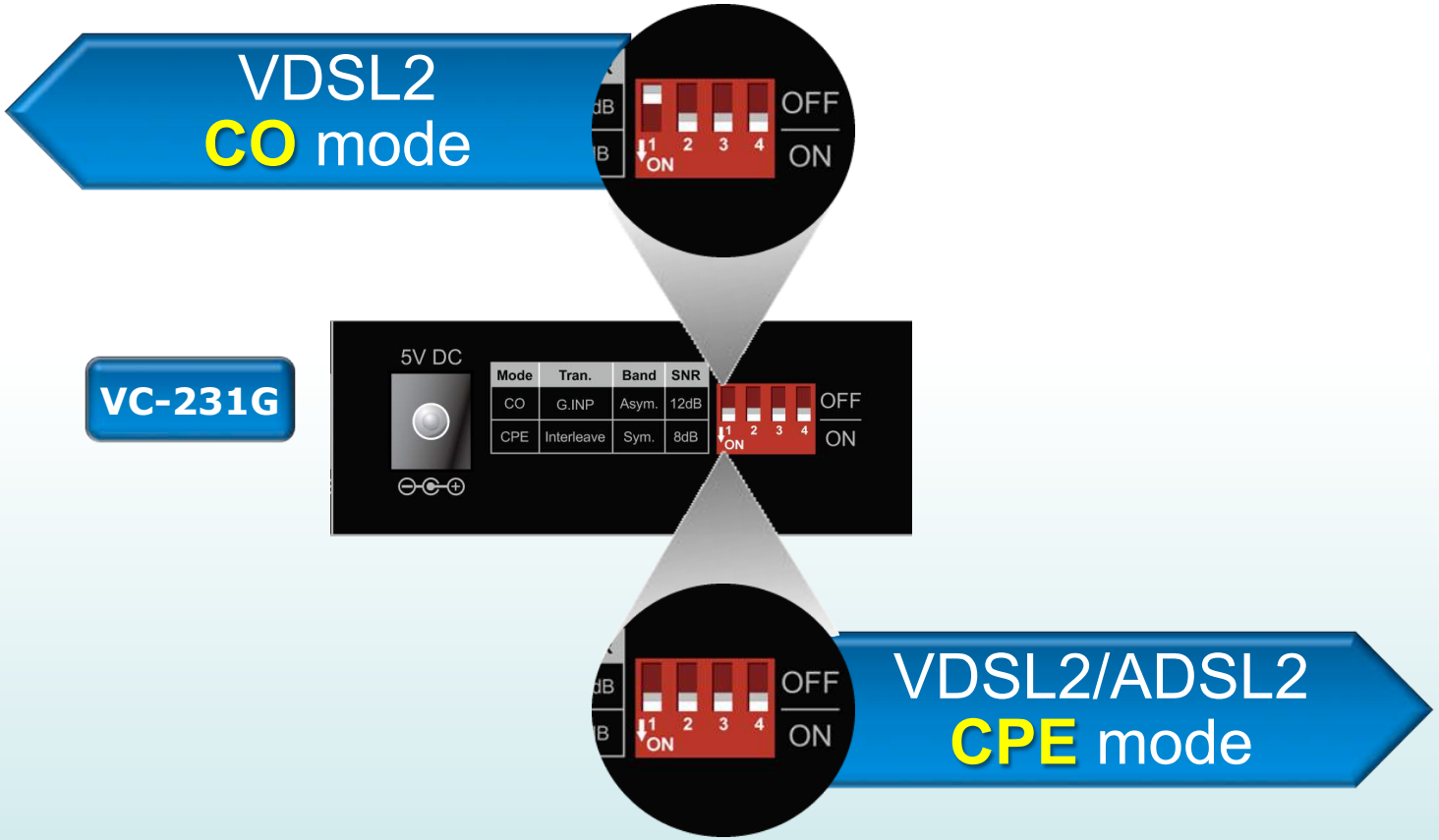
High-performance Ethernet Over VDSL

- ✓ The VC-231G and VC-234G provide fast access to Internet, up to **190Mbps** for downstream data transmission and **100Mbps** for upstream data transmission.



Product Features

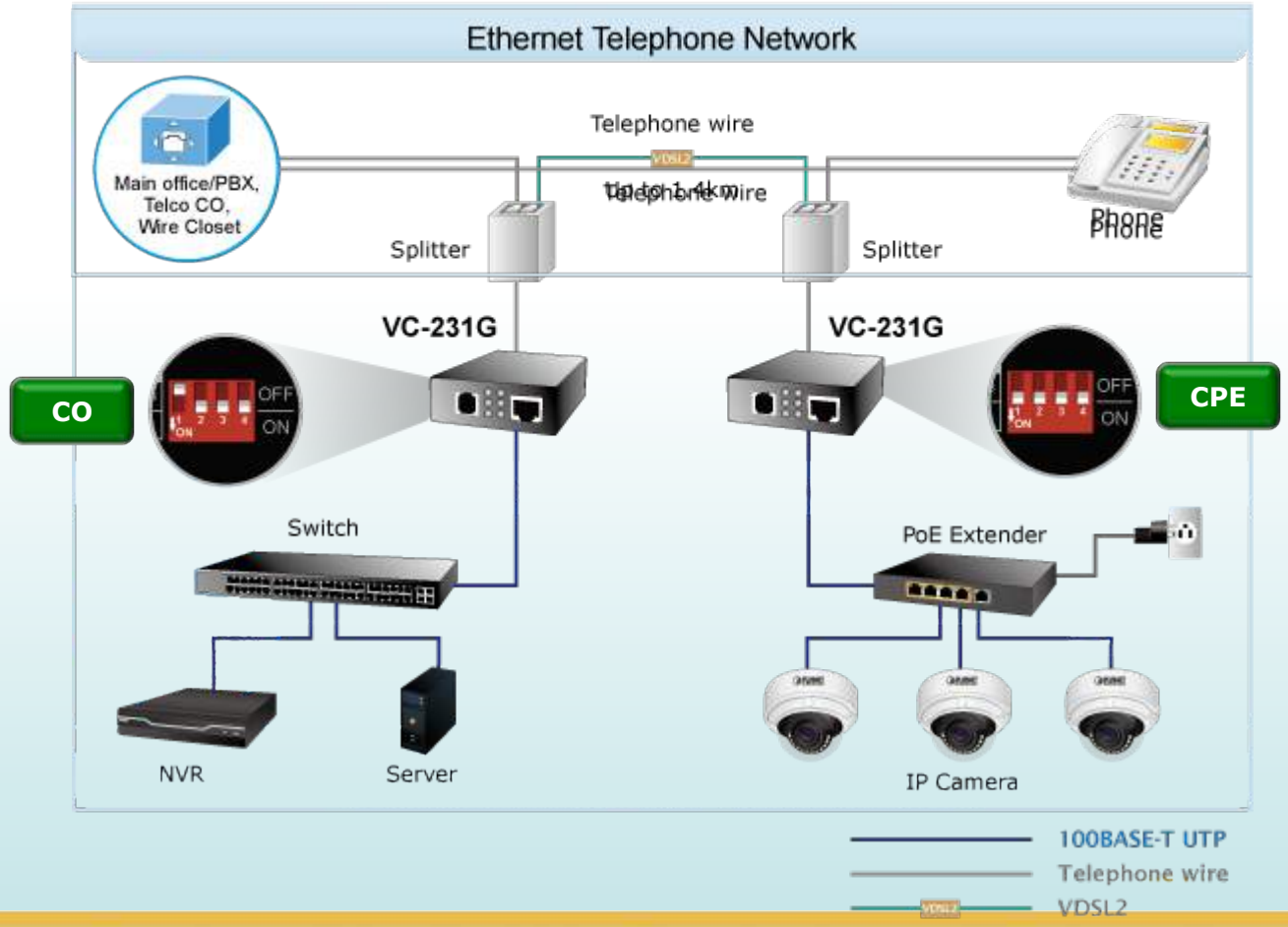
- **CO/CPE mode selectable via DIP switch**



Product Features

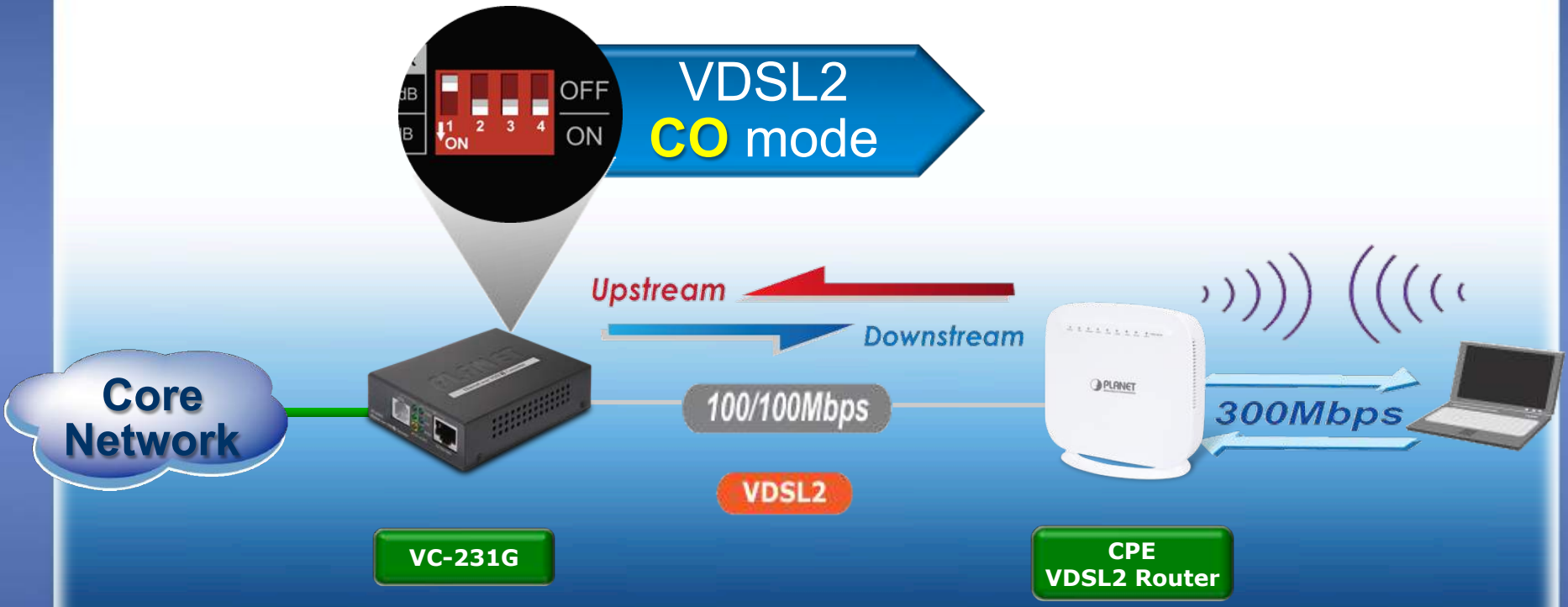
- **CO/CPE mode selectable via DIP switch**

LAN to LAN Connection



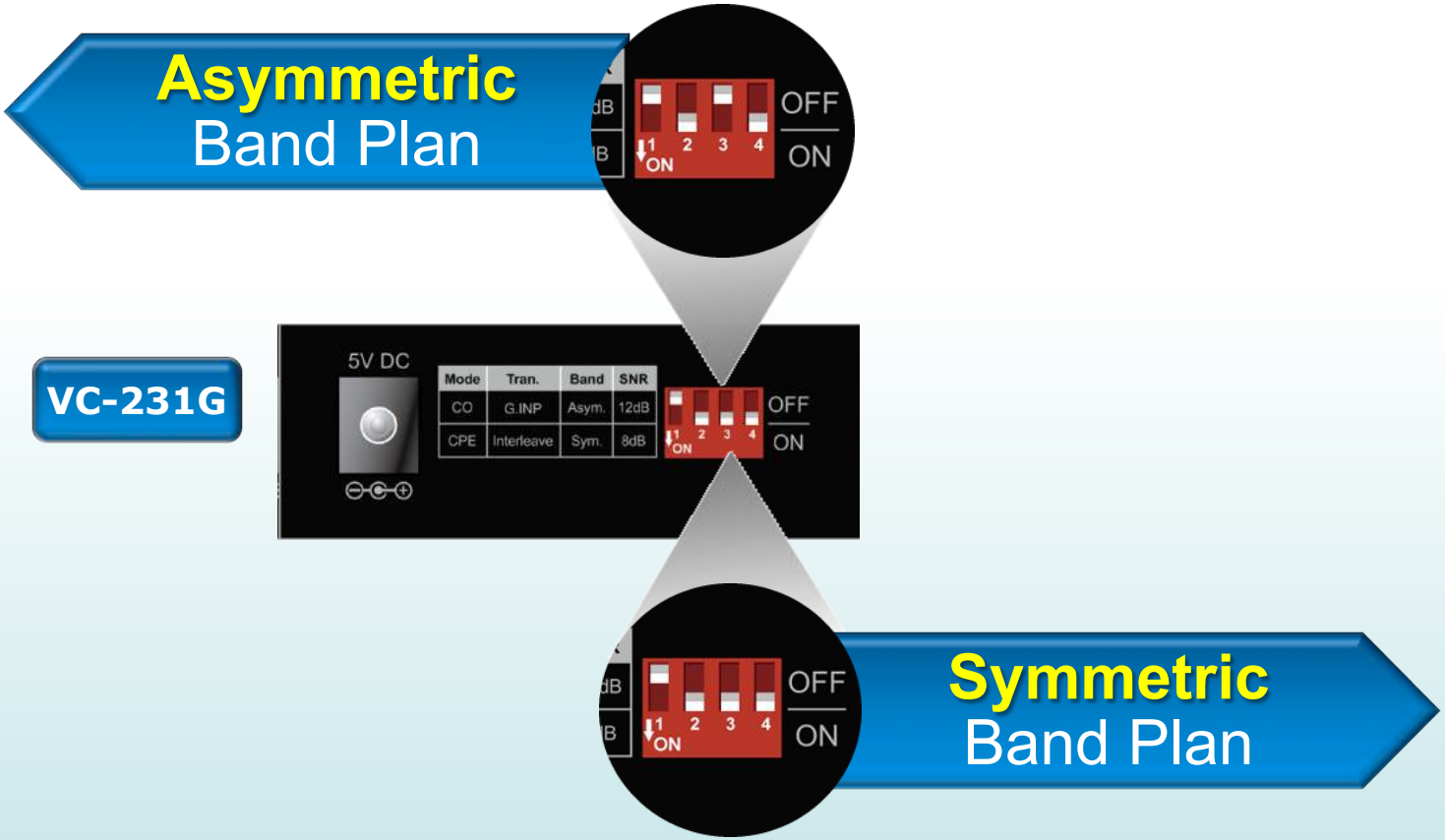
Product Features

- VDSL2 *CO mode* provides connectivity with *VDSL2 Routers*



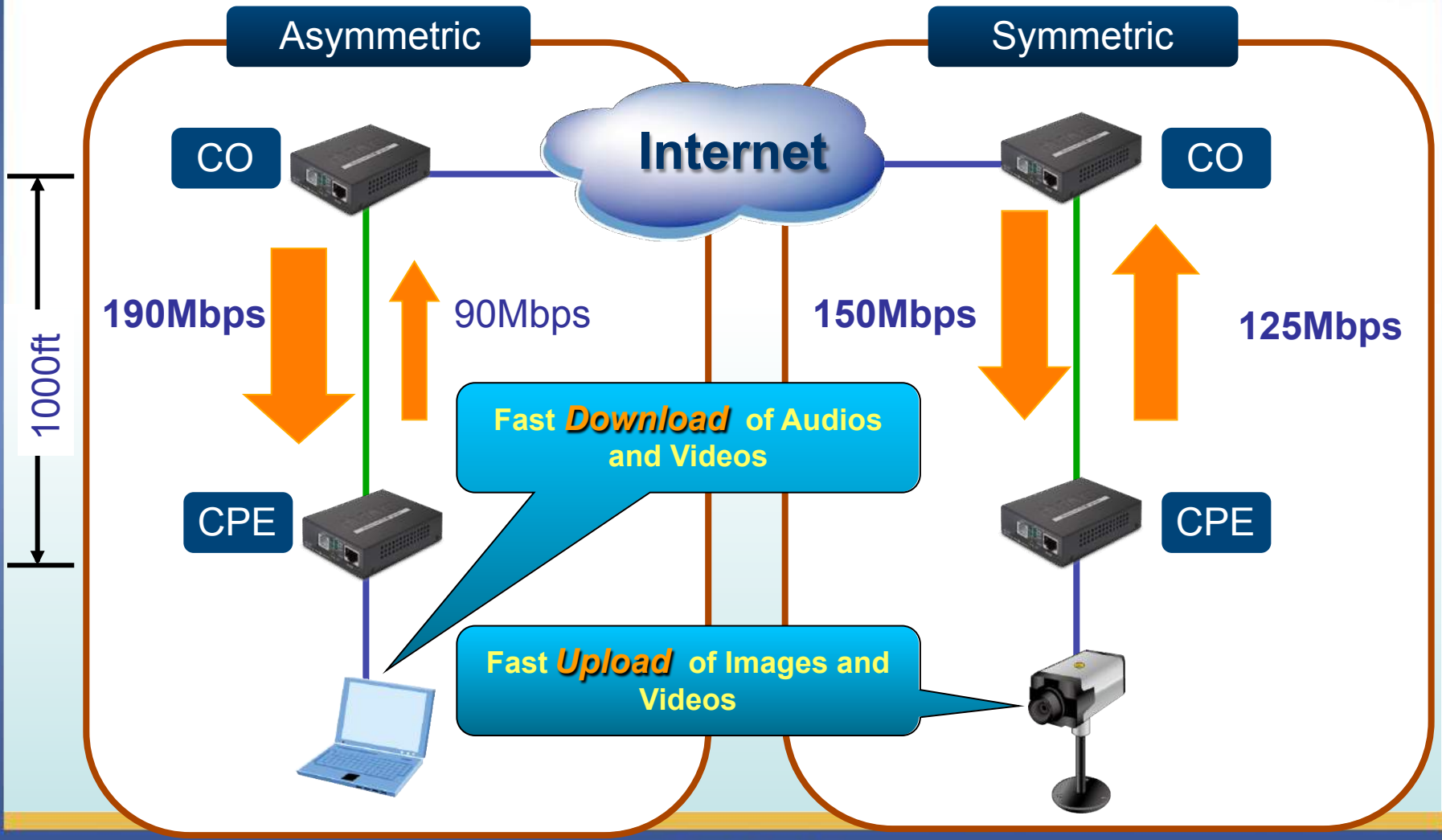
Product Features

- **Selectable band plan -- Asymmetric and Symmetric via DIP switch**



Product Features

- **VC-231G selectable band: Asymmetric and Symmetric**



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Product Benefits

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Product Benefits

- **High-performance Ethernet over VDSL Solution**
  - **G.993.5 vectoring** technology to improve maximum line bandwidth
  - An asymmetric data rate of up to **190/100Mbps** within **300m**
  - Distance of **1.4km** for long reach Ethernet
- **Implementing with Existing Telephone Copper Wires**
  - **Voice** and **data** communication can be shared on the existing telephone wire simultaneously
- **Delivering High-demand Connectivity for ISP/Triple Play Devices**
  - VoD (video on demand), IPTV
    voice over IP, video phone,
    distance education

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Applications

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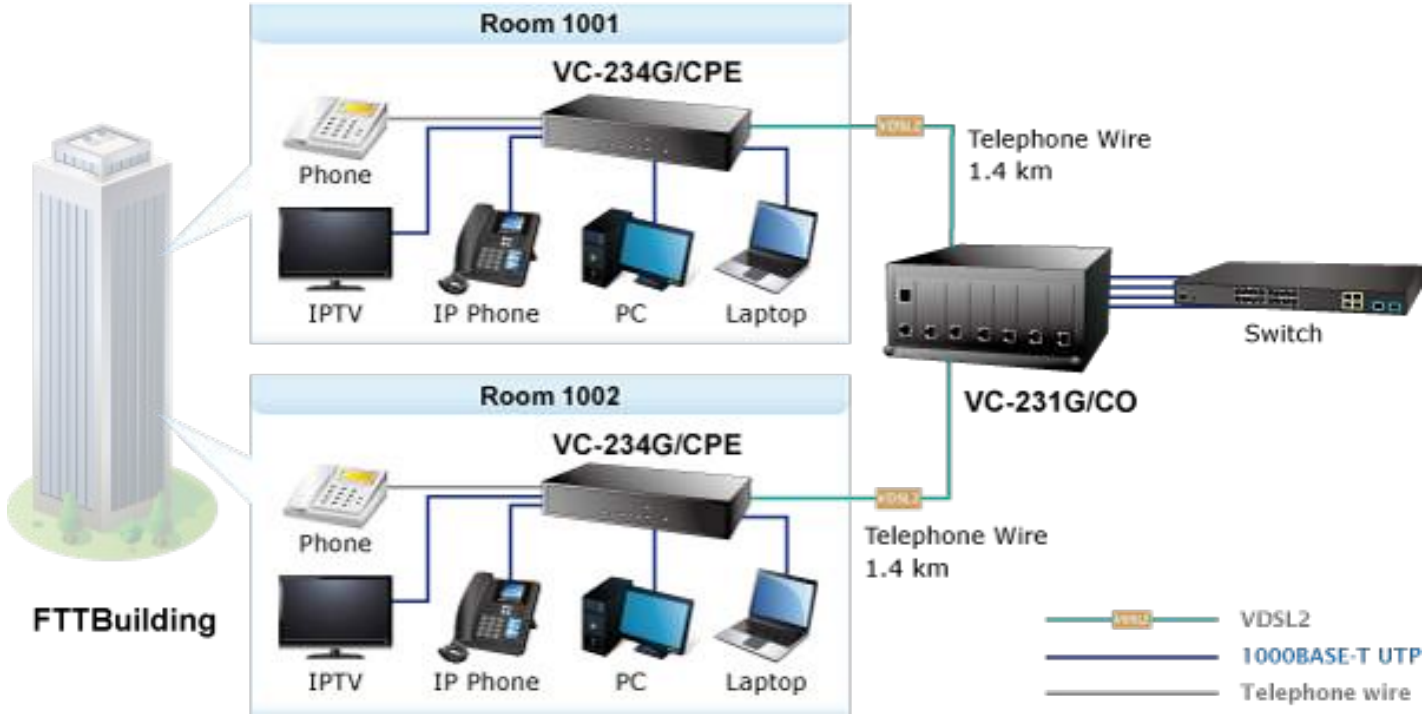
Applications

Solution for Multi-unit Buildings

- The VC-231G and VC-234G are perfect for providing cost-effective, high speed network services to multi-unit buildings, using the existing telephony infrastructure without the need for new wiring.

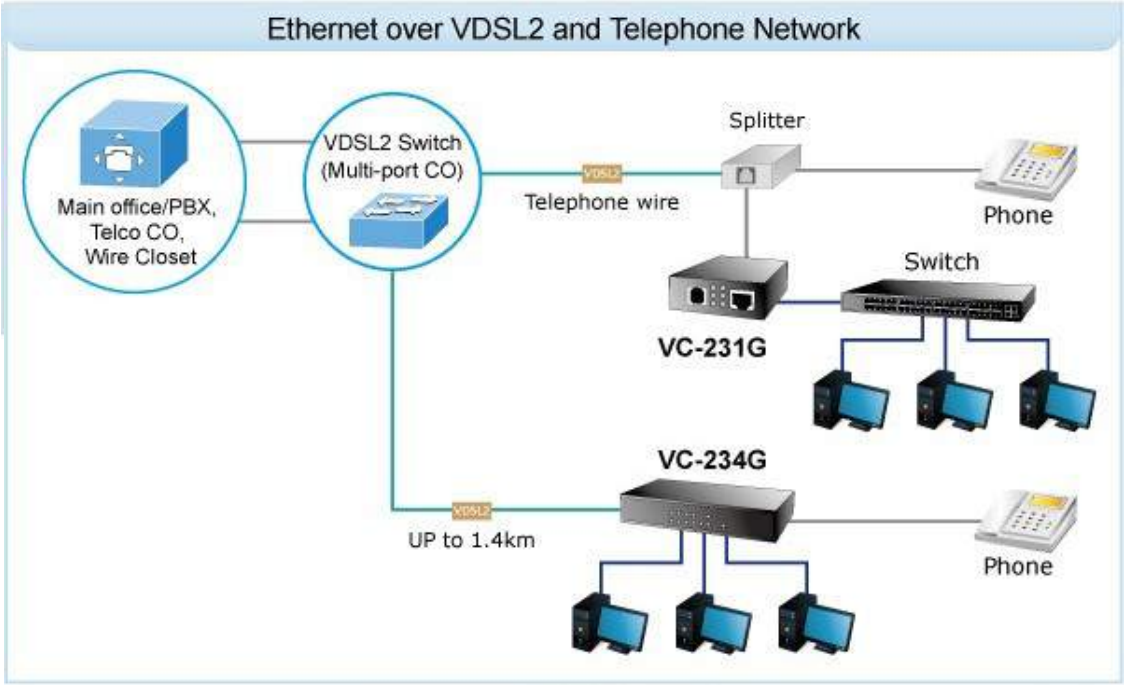


- With a transmission rate of up to **190**/**100Mbps**, video on demand, IP telephony and various broadband services can be easily provisioned.

Applications

Ethernet Distance Extension

- The VC-231G and VC-234G, acting as a standalone pair, are good for Ethernet distance extension over the **existing telephone wires**.



- With just one pair of AWG-24 copper wire, you can easily connect two Ethernet networks together with a maximum data rate of **190/100Mbps**. With the built-in splitter (VC-234G) or additional splitter (VC-231G), the telephone service can still be used while the VC-234G (CPE) and VC-231G (CO) are in operation.

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Product Comparison

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Product Comparison

	VC-231G	VC-231
Product Outlook		
VDSL Standard	λ ITU-T G.993.2 VDSL2 (Profile 17a/30a)	λ ITU-T G.993.2 VDSL2 (Profile 17a/30a)
	ν ITU-T G.993.5 **G.Vectoring** ν ITU-T G.998.4 G.INP	N/A
ADSL Compliance	λ **ADSL2/2+** standard ν λ Data Rate: Up to 24Mbps	N/A
LAN	1 x **10/100/1000T** RJ45	1 x 10/100TX RJ45
DIP Switch	■ CO/CPE mode ■ G.INP/Interleaved mode ■ Symm/Asymm band plan ■ 8dB/12dB SNR	■ CO/CPE mode ■ Fast/Interleaved mode ■ 17a/30a Profile ■ 6dB/9dB SNR
Performance	Asymmetric ■ 200m: **190**/**90**Mbps ■ 800m: 57/29Mbps ■ 1.4km: 34/5Mbps	30a Asymmetric ■ 200m: 100/100Mbps ■ 800m: 54/8Mbps ■ 1.4km: N/A
	Symmetric ■ 200m: **150**/**125**Mbps ■ 1.4km: 28/12Mbps	17a Asymmetric ■ 200m: 85/65Mbps ■ 1.4km: 50/2Mbps

Product Comparison

	VC-234G	VC-234
Product Outlook		
VDSL Standard	λ ITU-T G.993.2 VDSL2 (Profile 17a/30a)	λ ITU-T G.993.2 VDSL2 (Profile 17a/30a)
	ν ITU-T G.993.5 **G.Vectoring** ν ITU-T G.998.4 G.INP	N/A
ADSL Compliance	λ **ADSL2/2+** standard ν λ Data Rate: Up to 24Mbps	N/A
LAN	4 x **10/100/1000T** RJ45	4 x 10/100TX RJ45
DIP Switch	■ CO/CPE mode ■ G.inp/Interleaved mode ■ Symm/Asymm band plan ■ 8dB/12dB SNR	■ CO/CPE mode ■ Fast/Interleaved mode ■ 17a/30a Profile ■ 6dB/9dB SNR
Performance	Asymmetric ■ 200m: **190**/**100**Mbps ■ 800m: 69/23Mbps ■ 1.4km: 34/5Mbps	30a Asymmetric ■ 200m: 100/100Mbps ■ 800m: 48/9Mbps ■ 1.4km: N/A
	Symmetric ■ 200m: **145**/**145**Mbps ■ 1.4km: 28/12Mbps	17a Asymmetric ■ 200m: 100/70Mbps ■ 1.4km: 20/4Mbps

Product Comparison

VDSL2

190/90Mbps

RJ11 phone wire, Data + Voice

VC-231G | **VC-231G**

VDSL2

100/100Mbps

RJ11 phone wire, Data + Voice

VC-231 | **VC-231**

Long Reach PoE

82/82Mbps

RJ11 phone wire, Data + **Power**

LRP-101UH | **LRP-101UE**

200m

Product Comparison

VDSL2

57/29Mbps

RJ11 phone wire, Data + Voice

VC-231G

VC-231G

VDSL2

54/8Mbps

RJ11 phone wire, Data + Voice

VC-231

VC-231

Long Reach PoE

Not supported

RJ11 phone wire, Data + **Power**

LRP-101UH

LRP-101UE

800m