Ethernet over VDSL2 Bridge (4*RJ45, 1*VDSL2/RJ11, 1*Phone-30a)

100/100Mbps Downstream/Upstream, High-performance Ethernet over Phone Wire Solution

PLANET VC-234, a new-designed and high-performance Fast Ethernet-over-VDSL2 Converter with the ITU-T G.993.2 VDSL2 17A/30A profile, works well with a pervasive telephone line network with a symmetric data rate of up to **100/100Mbps (Fast, 30A 6dB)** over a distance of **200m and 23/21Mbps** over a long distance of **1.4km**. It is based on the two-core networking technology, Fast Ethernet and VDSL2 (Very-high-data-rate Digital Subscriber Line 2). The VDSL2 technology offers absolutely the fastest data transmission speed over the existing copper telephone lines without the need of rewiring.

High-performance Ethernet over VDSL2

Via the latest VDSL2 technology, PLANET VC-234 offers high-speed access to Internet, up to 100Mbps for both upstream and downstream data transmissions. With integrated support for the ITU-T's **G.993.2 VDSL2 technology**, the VC-234 works in conjunction with VDSL2 DSLAMs to remove crosstalk interference and improve maximum line bandwidth across the existing copper infrastructure.

Implementing with Existing Telephone Copper Wires

The VC-234 is also a **Long Reach Ethernet (LRE)** Bridge providing four RJ45 Ethernet ports and two RJ11 phone jacks, in which one is for VDSL connection and the other one is for POTS (Plain Old Telephone Service) connection. The VC-234 has a built-in POTS splitter to share the existing phone line with POTS; therefore, there is no need to replace the existing copper wiring. Just plug the VC-234 into the existing RJ11 telephone jack and a high-performance VDSL2 network can be connected. The VC-234 is ideal to be used as an Ethernet extender to an existing Ethernet network.

Physical Port

- Four 10/100BASE-TX RJ45 ports with auto MDI/MDI-X function
- One RJ11 connector for VDSL port with VDSL connection
- One RJ11 phone connector for telephone connection

VDSL2 Features

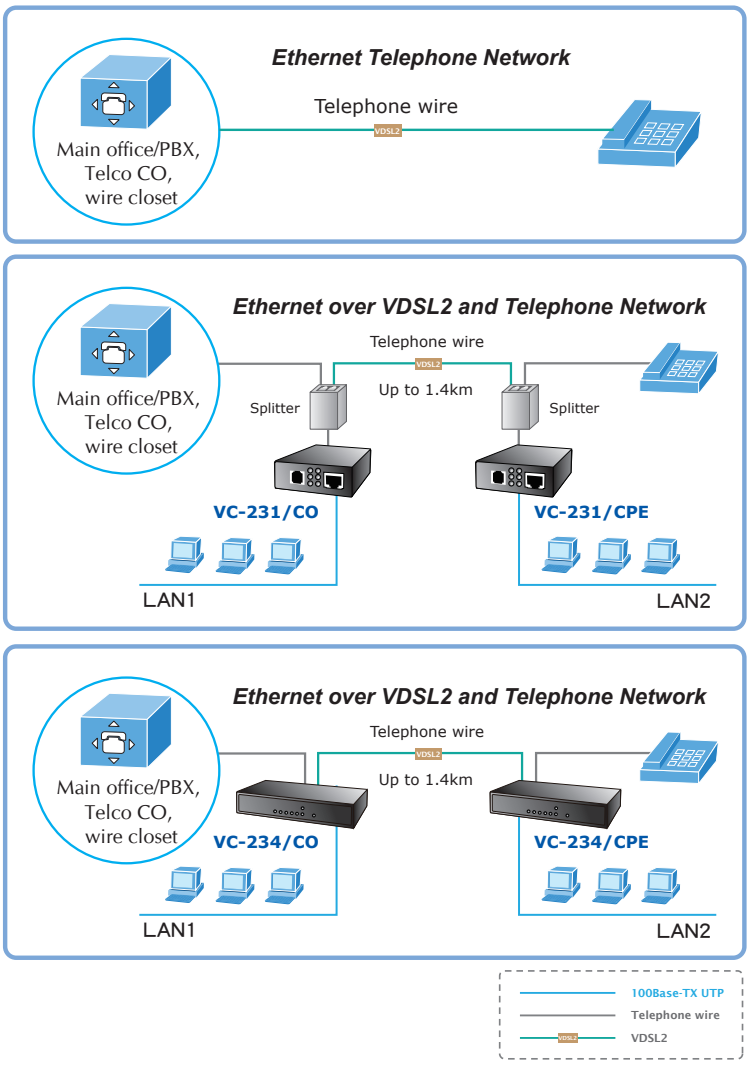
- ITU-T G.993.2 **VDSL2 Profile 17a/30a**
- DMT-based coding technology
- Built-in POTS splitter to share voice and date
- CO/CPE mode selectable via DIP switch
- Selectable target band plan and SNR margin
- Up to 100/100Mbps bandwidth (in **Fast**, **30A 6dB** mode)
- Voice and data communication can be shared simultaneously based on the existing telephone wire
- Used in pairs to extend Point-to-Point connection up to 1.4km

Layer 2 Features

- Complies with IEEE 802.3, 10BASE-T, IEEE 802.3u, 100BASE-TX Ethernet standards
- High-performance Store and Forward architecture, broadcast storm control and runt/CRC filtering eliminate erroneous packets to optimize the network bandwidth
- Integrated address look-up engine, supporting 1K absolute MAC addresses
- 1522bytes packet size
- Automatic address learning and address aging
- IEEE 802.1Q VLAN transparency

Industrial Case and Installation

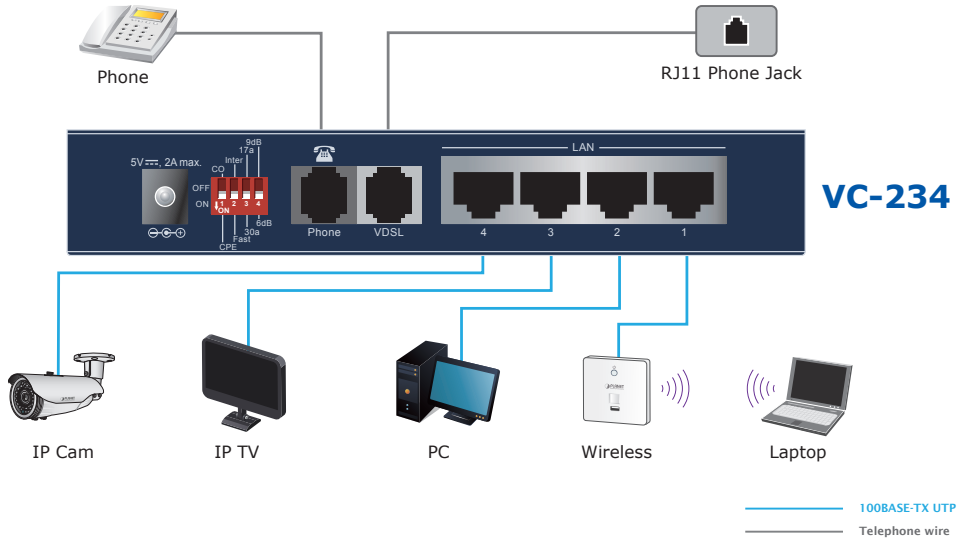
- Metal case
- Supports extensive LED indicators for network diagnosis
- External 5V DC, 2A power input socket
- Wall mounting or desktop installation
- 0 to 50 degrees C operating temperature
- Advantage of minimum installation time (Simply by Plug-and-Play)



Delivering High-demanding Service Connectivity for ISP/Triple Play Devices

The VC-234 provides an excellent bandwidth demand for the triple play devices for home entertainment and communication. The **Fast, 30A, 6dB VDSL2 profile with 100/100Mbps data transmission**, the VC-234 enables many multi-media services to work on the local Internet, such as VoD (video on demand), voice over IP, video phone, IPTV, Internet caching server, distance education, and so on, which is ideal for the following network applications:

- Long-distance IP network devices
- IP digital signage
- Cable TV to IPTV
- Distance video education
- Electronic billboards
- Other applications



Easy and Flexible Installation

The Ethernet-over-VDSL2 Bridge comes with a plug-and-play design and is fully compatible with all kinds of network protocols. Moreover, the operating status of each individual port and the whole system can be watched via the rich diagnostic LEDs on the front panel. The VC-234 offers two modes, **CPE** and **CO**, for application -- CPE mode is used at client side and CO mode is at central side. The CPE or CO mode can be adjusted by using a built-in DIP switch. For point-to-point connection, a CPE mode VC-234 and a CO mode VC-234 must be set up as one pair of Bridges to perform the connection.

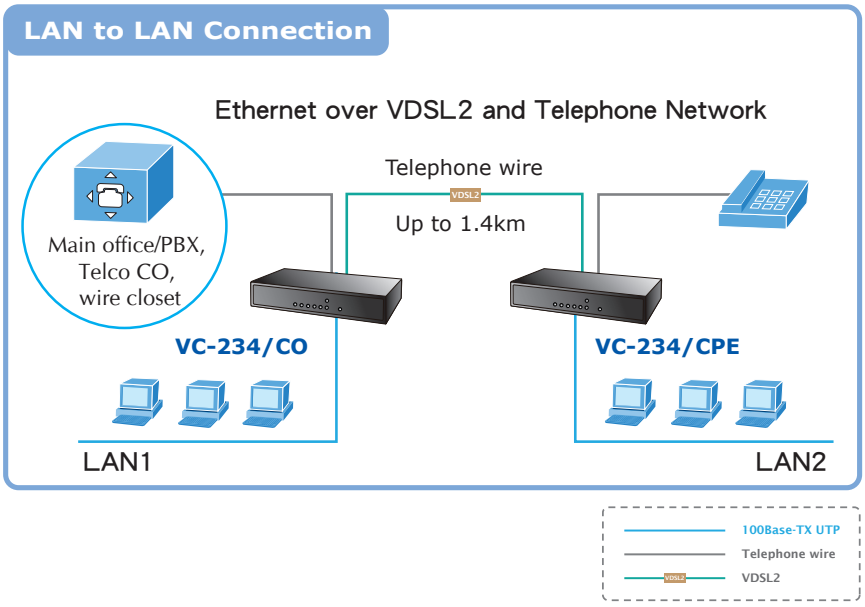
ADSL2+ Fallback

For those ISPs that still provide ADSL broadband service, the VC-234 can support transmission rates up to 24Mbps downstream and 1Mbps upstream with the ADSL2+ technology. The VC-234 establishes a connection with ISP and can be also directly switched over to VDSL2 after the ISP network upgrade.

Applications

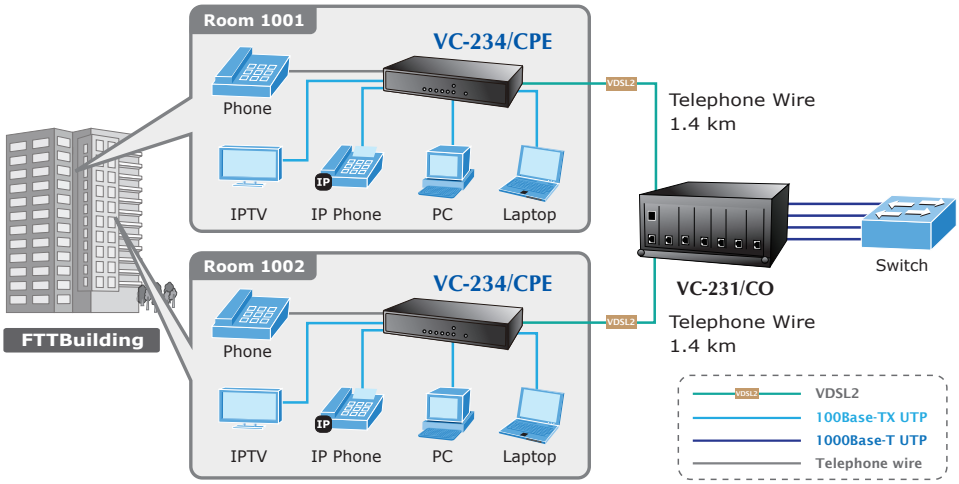
Ethernet Distance Extension

Two VC-234 Bridge can act as a standalone pair which is good for Ethernet distance extension over the existing telephone wires. With just one pair of AWG-24 copper wires, two Ethernet networks can be easily connected to each other with a maximum data transmission rate of 100Mbps. The telephone service can still be used while the VC-234 CO/CPE is in operation. The two solutions listed below are typical applications for the Ethernet over VDSL2 Bridge.



MTU/MDU/Hospitality Solution

The VC-234 is a perfect solution to quickly providing cost-effective yet high-speed network services to multi-unit buildings such as residential buildings (multi-dwelling units), commercial (multi-tenant units) buildings, hotels and hospitals. By utilizing the existing telephony infrastructure, a new network installation can be easily built, without requiring new wiring. With a transmission rate of up to **100/100Mbps (Fast, 30A, 6dB)**, VoD, IP telephony and various broadband services can be easily provided.



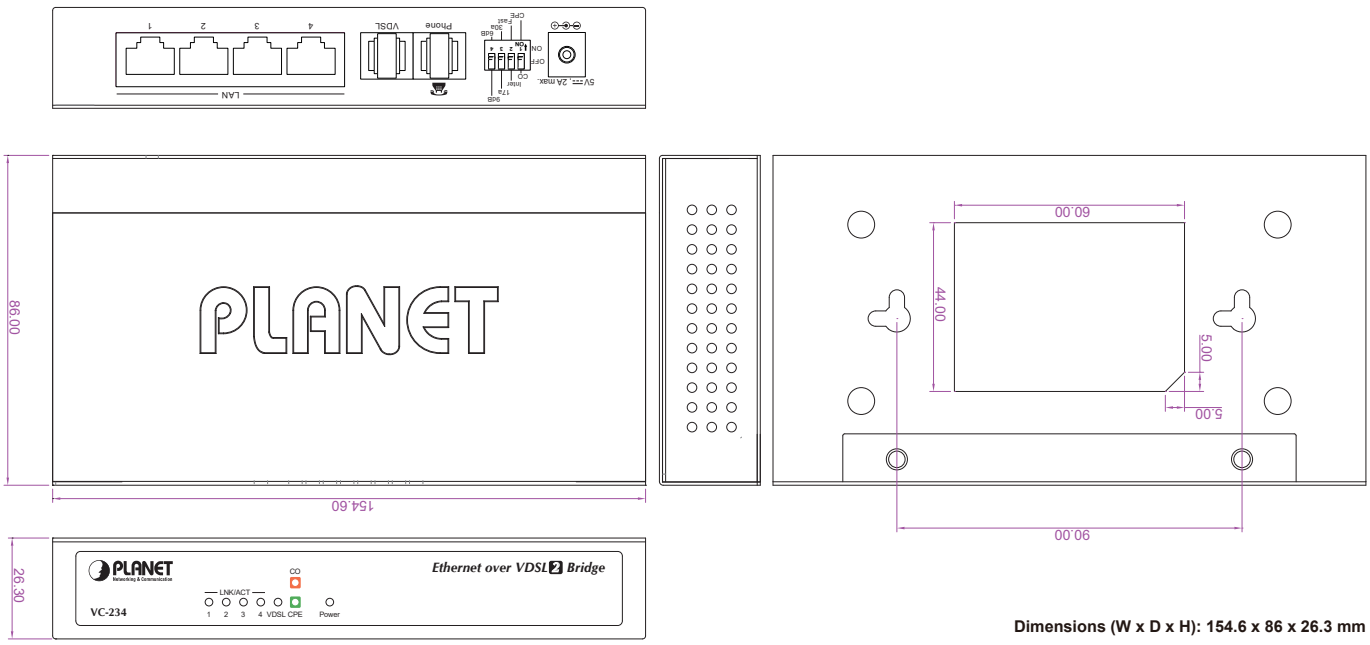
Product Specifications

Product	VC-234	
Hardware Specifications		
Hardware Version	2	
LAN Ports	4 10/100BASE-TX RJ45 auto-MDI/MDI-X ports	
VDSL Port	1 VDSL2 RJ11 female phone jack Twisted-pair telephone wires (AWG-24 or better) up to 1.4km	
Phone Port	1 RJ11 female phone jack, built-in splitter for POTS connection	
DIP Switch & Functionality	DIP-1	Select CO or CPE mode.
	DIP-2	Select Interleaved and Fast mode.
	DIP-3	Select target 17A / 30A profiles.
	DIP-4	Select target SNR mode.
Dimensions (W x D x H)	154.6 x 86 x 26.3 mm	
Weight	366g	
Power Requirements	DC 5V, 2A external power	
Power Consumption/Dissipation	Max. 2.1 watts / 7.1 BTU (Power on without any connection) Max. 3.5 watts / 11.9 BTU (Full Loading)	
LED Indicators	1 x power: Green 4 x 10/100BASE-TX LNK/ACT: Green 1 x VDSL: Green 1 x CO: Green 1 x CPE: Green	
Housing	Metal	
Switch Specifications		
Switch Processing Scheme	Store-and-Forward	
Address Table	1K entries	
Maximum Packet Size	1522bytes	
Standards Conformance		
VDSL Compliance	**VDSL**-DMT ● ITU-T G.993.2 VDSL2 (Profile 17a/30a support) ● ITU-T G.997.1 ● ITU-T G.998	
ADSL Compliance	Capable of **ADSL2/2+** standard ● ITU G.992.3 G.dmt.bis ● ITU G.992.5 G.dmt.bisplus Data Rate: Up to 24Mbps	
Standards Compliance	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.1p Class of Service ITU-T G.993.2 VDSL2 (Profile 17a/30a support) ITU-T G.997.1 ITU-T G.998	
Regulatory Compliance	FCC Part 15 Class A, CE	
Environment		
Temperature	Operating: 0~50 degrees C Storage: -10~70 degrees C	
Humidity	Operating: 5~95% (non-condensing) Storage: 5~95% (non-condensing)	

Performance

	Distance (meter)	Interleave (Downstream/Upstream: Mbps)			
		17A		30A	
		6dB	9dB	6dB	9dB
RJ11 Performance* (Downstream/Upstream)	200m	94/57	94/57	94/94	94/94
	400m	94/55	94/54	94/94	94/94
	600m	94/55	93/52	82/94	80/92
	800m	81/46	73/44	68/77	60/71
	1000m	51/30	39/26	42/43	29/37
	1200m	43/14	38/12	31/29	27/27
	1400m	39/9	33/10	26/24	23/22
	Distance (meter)	Fast (Downstream/Upstream: Mbps)			
		17A		30A	
		6dB	9dB	6dB	9dB
	200m	94/62	94/62	94/94	94/94
	400m	94/59	94/57	94/94	94/94
	600m	94/56	94/53	82/94	81/94
	800m	78/47	78/44	76/75	69/68
	1000m	61/27	61/22	45/42	40/37
	1200m	40/13	40/11	29/28	25/25
	1400m	36/6	36/6	23/21	21/20
	* The performance data above is for reference only. The actual data rate will vary on the quality of the copper wire and environmental factors.				

Dimensions



Dimensions (W x D x H): 154.6 x 86 x 26.3 mm

Ordering Information

VC-234	Ethernet over VDSL2 Bridge (4*RJ45, 1*VDSL2/RJ11, 1*Phone-30a)

Related Products

VC-231	Ethernet over VDSL2 Converter (1 x RJ45, 1 x VDSL2/RJ11-30a)
VC-231G	1-Port 10/100/1000T Ethernet to VDSL2 Converter (35b profile w/ G.vector)
VC-231GP	1-Port 10/100/1000T 802.3at PoE+ Ethernet to VDSL2 Converter (35b profile w/ G.vector)
VC-232G	1-Port 10/100/1000T Ethernet over Coaxial Converter (35b profile w/ G.vector)
VC-234G	4-Port 10/100/1000T Ethernet to VDSL2 Bridge (35b profile w/ G.vector)
IVC-234GT	Industrial 1-Port BNC/RJ11 to 4-Port Gigabit Ethernet Extender (35b profile w/ G.vector)

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