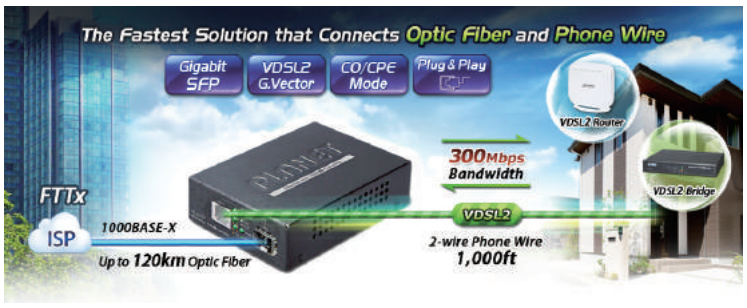
1-Port 1000BASE-X SFP + 1-Port RJ11 VDSL2 Converter

The VC-231GF, a PLANET **Long Reach Ethernet (LRE)** solution, is a **Single-port Gigabit Ethernet-over-VDSL2 Converter** for connecting ultra-fast **FTTx** deployment with the existing in-building and in-house telephone wire installation.

An Innovative Last Mile Solution Integrated with FTTx and VDSL2

The VC-231GF features one **1000BASE-X SFP** slot for remote optical fiber Ethernet connection and one **RJ11** port with the **VDSL2** technology to provide an excellent bandwidth of up to a total duplex data rate of **300Mbps** and can extend a maximum distance of up to **1.4km (4,593ft)** over existing telephone wire to the in-house VDSL2 router or bridge, which overcomes in-house fiber installation problems.



The VC-231GF realizes ISPs (internet service providers) and SIs (system integrators) to deploy Gigabit Ethernet optical fiber cables in the front of the building or subscriber's house and provide high-speed triple play services over existing telephone wire. They can simply upgrade their current networks without any difficulty. Besides, its compact-sized metal housing makes the installation in a telecom box convenient.

Fiber-Optic Link Capability Enables Extension of FTTx Deployment

With the built-in 1000BASE-X SFP (small form-factor pluggable) fiber interface, the VC-231GF supports different optic types for network extension and the distance can be up to 120 km through the fiber connection. Thus, building a network solution of FTTH (Fiber to the Home), FTTC (Fiber to the Curb) for ISPs or FTTB (Fiber to the Building) becomes so easy when long-distance deployment is employed.

Physical Ports

- One 1000BASE-X SFP interface
- 1 RJ11 connector for xDSL port with VDSL2 connection

VDSL2 Features

- VDSL2 stand-alone transceiver for simple bridge modem application
- Cost-effective bridge function to connect two Ethernet LANs
- Up to 150/150Mbps bandwidth (in G.INP, Sym, 8dB mode)
- Voice and data communication can be shared simultaneously based on the existing telephone wire with distance up to 1.4km
- ITU-T G.993.2 VDSL2 standard
- ITU-T G.993.5 G.Vectoring and G.INP
- DMT-based coding technology
- CO/CPE mode selectable via DIP switch
- Selectable target band plan (symmetric and asymmetric) and SNR margin
- Supports IEEE 802.1Q VLAN tag transparency

Hardware and Installation

- Compact size, wall-mountable design; ideal solution for space-limited locations
- Advantage of minimum installation time (Simply by Plug and Play)
- Metal case, good for heat sinking
- Supports extensive LED indicators for network diagnosis
- Additional POST splitter to share voice and data
- Supports 6KV DC Ethernet ESD protection

VDSL2 Delivering High-demanding Service Connectivity for ISP/Triple Play Devices

The VC-231G provides an excellent bandwidth demand for the triple play devices for home entertainment and communication. Via the latest VDSL2 (Very-high-data-rate Digital Subscriber Line 2) technology, the VC-231GF offers selectable asymmetric/symmetric data rate capability. It works well with a pervasive telephone line network with a symmetric data rate of up to **150/150Mbps (G.INP, Sym, 8dB)** over a distance of 300m and 25/15Mbps over a long distance of 1km. The VC-231G 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.

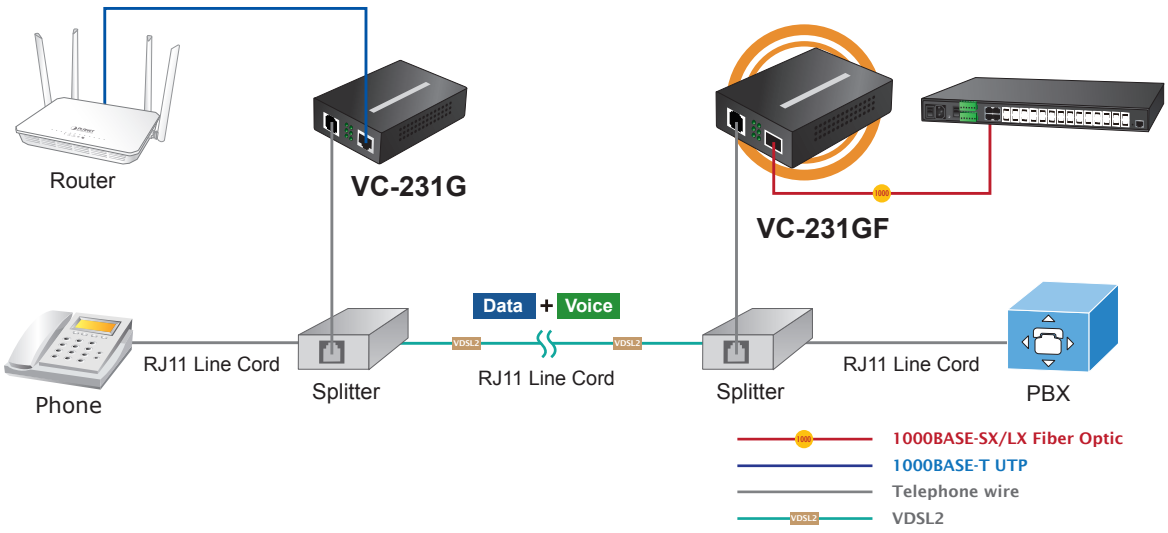
Versatile, Flexible and Easy Installation

PLANET Gigabit Ethernet-over-VDSL2 converters come with a Plug and Play design. The VC-231GF offers two operation modes, **CPE** for client side and **CO** for central side. The CPE or CO mode can be adjusted by using a built-in DIP switch.

For point-to-point connection, the VC-231GF's CO mode and the VC-231G's, VC-234G's or VDR-301N's CPE mode must be set up as one pair of converters to perform the connection. It gives administrators the ability to reply a fresh local Intranet in various locations by utilizing the original network structure without additional costs.

Implementing with Existing Telephone System

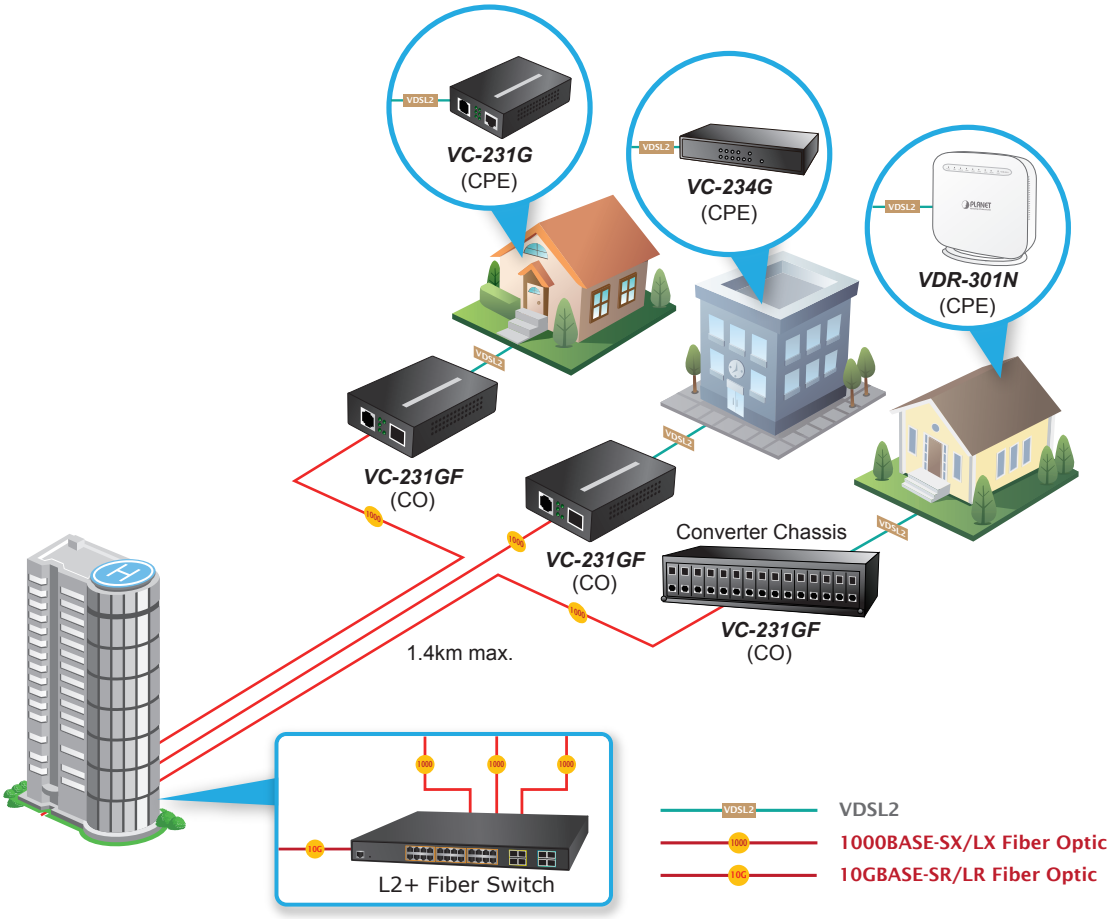
Use the additional splitter from the package of the VC-231GF to share the existing phone line with POTS, thus replacing the existing copper wiring is not necessary. Just plug the VC-231GF with the additional splitter into the existing RJ11 telephone jack and a high-performance VDSL2 network can be connected. It is ideal for use as an Ethernet extender to an existing Ethernet network.



Applications

Distance Extension with High Performance FTTx Network Communications

A set of the VC-231GF and VC-231G (VDSL2 Converter) or VDR-301N (VDSL2 Router) could be used to link fiber network and home network that are located in a different place. Through the normal telephone line, it could be set up a **150/150Mbps** (G.INP, Sym, 8dB) symmetric backbone, but one VC-231GF must be Master **(CO mode)** and the remote VDSL2 converter or VDSL2 Router is Slave **(CPE mode)**.



Specifications

Product	VC-231GF	
Hardware Specifications		
LAN Port	1 1000BASE-SX/LX SFP interface	
VDSL Port	1 VDSL2 RJ11 female phone jack Twisted-pair telephone wires (AWG-24 or better) up to 1.4km	
Phone Port	Additional splitter for POTS connection	
DIP Switch & Functionality	4-position DIP switch ● CO or CPE mode selectable ● Selectable G.INP and interleaved mode ● Selectable target Band plan ● Selectable target SNR mode	
LED Indicators	1 Power: Green 1 1000BASE-SX/LX LNK/ACT: Green 1 VDSL: Green 1 CO: Green 1 CPE: Green	
ESD Protection	6KV DC	
Enclosure	Metal	
Installation	Wall mount or DIN rail with optional kit	
Dimensions (W x D x H)	97 x 70 x 26 mm	
Weight	206g	
Power Requirements	DC 5V, 2A external power	
Power Consumption	4.3 watts/14BTU (maximum)	
Switch Specifications		
Switch Processing Scheme	Store-and-Forward	
Address Table	2K entries	
Flow Control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex	
Maximum Packet Size	1522bytes	
System Specifications		
VDSL Compliance	**VDSL**-DMT ■ ITU-T G.993.1 VDSL ■ ITU-T G.997.1 ■ ITU-T G.993.2 VDSL2 (Profile 17a/30a support) ■ ITU-T G.993.5 **G.Vectoring** ■ ITU-T G.998 ■ G.INP	
Address Table	Capable of **ADSL2/2+** standard ■ ITU G.992.3 G.dmt.bis ■ ITU G.992.5 G.dmt.bisplus Data Rate: Up to 24Mbps	
Performance* (Downstream/Upstream)	**Interleave, Asym, 8dB** 200M ----> 190Mbps/90Mbps 400M ----> 163Mbps/64Mbps 600M ----> 110Mbps/34Mbps 800M ----> 73Mbps/18Mbps 1000M --> 49Mbps/10Mbps 1200M --> 39Mbps/8Mbps 1400M --> 25Mbps/6Mbps	**Interleave, Asym, 12dB** 200M ----> 177Mbps/83Mbps 400M ----> 145Mbps/57Mbps 600M ----> 92Mbps/31Mbps 800M ----> 59Mbps/15Mbps 1000M --> 44Mbps/10Mbps 1200M --> 32Mbps/6Mbps 1400M --> 22Mbps/3Mbps
	Interleave, Sym, 8dB 200M ----> 149Mbps/141Mbps 400M ----> 116Mbps/115Mbps 600M ----> 72Mbps/70Mbps 800M ----> 45Mbps/44Mbps 1000M --> 26Mbps/16Mbps 1200M --> 26Mbps/12Mbps 1400M --> 29Mbps/12Mbps	**Interleave, Sym, 12dB** 200M ----> 136Mbps/129Mbps 400M ----> 100Mbps/101Mbps 600M ----> 58Mbps/57Mbps 800M ----> 42Mbps/36Mbps 1000M --> 23Mbps/12Mbps 1200M --> 23Mbps/10Mbps 1400M --> 17Mbps/11Mbps
	G.INP, Asym, 8dB 200M ----> 192Mbps/93Mbps 400M ----> 159Mbps/64Mbps 600M ----> 106Mbps/37Mbps 800M ----> 68Mbps/19Mbps 1000M --> 49Mbps/8Mbps 1200M --> 29Mbps/8Mbps 1400M --> 26Mbps/6Mbps	**G.INP, Asym, 12dB** 200M ----> 177Mbps/85Mbps 400M ----> 144Mbps/51Mbps 600M ----> 87Mbps/29Mbps 800M ----> 55Mbps/15Mbps 1000M --> 40Mbps/8Mbps 1200M --> 38Mbps/8Mbps 1400M --> 26Mbps/4Mbps

	G.INP, Sym, 8dB 200M ----> 150Mbps/150Mbps 400M ----> 114Mbps/113Mbps 600M ----> 69Mbps/69Mbps 800M ----> 49Mbps/39Mbps 1000M --> 27Mbps/24Mbps 1200M --> 26Mbps/12Mbps 1400M --> 21Mbps/11Mbps	**G.INP, Sym, 12dB** 200M ----> 136Mbps/133Mbps 400M ----> 97Mbps/102Mbps 600M ----> 54Mbps/56Mbps 800M ----> 40Mbps/35Mbps 1000M --> 24Mbps/22Mbps 1200M --> 24Mbps/9Mbps 1400M --> 18Mbps/12Mbps
Standards Conformance		
Standards Compliance	IEEE 802.3z Gigabit SX/LX IEEE 802.3x Full-duplex flow control IEEE 802.1p Class of Service ITU-T G.993.1 VDSL ITU-T G.997.1 ITU-T G.993.2 VDSL2 (Profile 17a/30a support) ITU-T G.993.5 G.Vectoring & G.INP ITU-T G.998	
xDSL Compatibility		
VDSL2	VC-231G VC-231GP VC-234G VC-231 VC-820M VDR-301N	

* Performace is based on the VC-231GF (CO mode) that coworks with PLANET VC-231G (CPE mode). The actual data rate will vary on the quality of the copper wire and environmental factors.

Ordering Information

VC-231GF	1-Port 1000BASE-X SFP + 1-Port RJ11 VDSL2 Converter (30a profile w/G.Vectoring)

Related Products

VC-231G	1-Port 10/100/1000T Ethernet to VDSL2 Converter (30a profile w/G.Vectoring)
VC-234G	4-Port 10/100/1000T Ethernet to VDSL2 Bridge (30a profile w/G.Vectoring)
VC-234	Ethernet over VDSL2 Bridge (4 x RJ45, 1 x VDSL2/RJ11, 1 x Phone-30a)
VC-231	Ethernet over VDSL2 Converter (1 x RJ45, 1 x VDSL2/RJ11-30a)
VC-820M	8-Port VDSL2 + 2G TP/SFP Managed Switch
VDR-301N	802.11n Wireless VDSL2 Bridge Router
MGSD-10080F	L2+ 8-Port 100/1000X SFP + 2-Port 10/100/1000T Managed Metro Ethernet Switch
MGSW-24160F	L2+ 16-Port 100/1000BASE-X SFP + 8-Port 10/100/1000BASE-T Managed Metro Ethernet Switch
MGSW-28240F	L3 24-Port 100/1000BASE-X SFP + 4-Port 10G SFP+ Metro Ethernet Switch
SGS-6341-16S8C4XR	L3 16-Port 100/1000X SFP + 8-Port Gigabit TP/SFP + 4-Port 10G SFP+ Stackable Managed Switch (100~240V AC, 12V DC)
MC-700	7-Slot Media Converter Chassis
MC-1500	15-Slot Media Converter Chassis
MC-1500R	15-Slot Media Converter Chassis (AC Power)

Available 1000Mbps Modules

MGB-GT	SFP-Port 1000BASE-T Module
MGB-SX	SFP-Port 1000BASE-SX mini-GBIC module - 550m
MGB-SX2	SFP-Port 1000BASE-SX mini-GBIC module - 2km
MGB-LX	SFP-Port 1000BASE-LX mini-GBIC module - 20km
MGB-L40	SFP-Port 1000BASE-LX mini-GBIC module - 30km
MGB-L80	SFP-Port 1000BASE-LX mini-GBIC module - 70km
MGB-L120	SFP-Port 1000BASE-LX mini-GBIC module - 120km
MGB-LA10	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 10km
MGB-LB10	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 10km
MGB-LA20	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 20km
MGB-LB20	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 20km
MGB-LA40	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 40km
MGB-LB40	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 40km
MGB-TSX	SFP-Port 1000BASE-SX mini-GBIC module - 550m (-40 ~ 75 degrees C)
MGB-TSX2	SFP-Port 1000BASE-SX mini-GBIC module - 2km (-40 ~ 75 degrees C)
MGB-TLX	SFP-Port 1000BASE-LX mini-GBIC module - 20km (-40 ~ 75 degrees C)
MGB-TL40	SFP-Port 1000BASE-LX mini-GBIC module - 30km (-40 ~ 75 degrees C)
MGB-TL80	SFP-Port 1000BASE-LX mini-GBIC module - 70km (-40 ~ 75 degrees C)

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