8-Port VDSL2 + 1-Port Gigabit TP/SFP Combo Web Smart Switch

High Performance of VDSL2 Data Rate over Existing Phone Lines

The PLANET VC-810S is an 8-Port VDSL2 Manageable CO Switch (Central Office) for Telecom, ISP (Internet Service Provider), SI (System Integration), IP Surveillance providers and so on. It is based on two core networking technology, Ethernet and VDSL2 (Very-high-data-rate Digital Subscriber Line 2). Co-works with PLANET developed CPE (Customer Premises Equipment) – the VC-201, they offers the absolutely fastest data transmission speeds over existing cooper telephone lines without the need of rewiring. The ideal xDSL technology provides the best solution in the last mile.

Delivers High-Demand Services Connectivity for ISP / Triple Play Devices

The EoVDSL (Ethernet over VDSL) provides up to 100Mbps download capability of VC-810S and enables many Multi-Media services to be come true on local Internet, such as IPTV, VOD (Video on Demand), Voice over IP, Video phone, Internet caching servers, distance education, and so on. The VC-810S provides the excellent bandwidth to satisfy the triple play devices for home entertainment and communication.

Implements with Existing Telephone Copper Wires

Each VDSL2 port of the VC-810S provides two cooper phone wire interfaces, one for VDSL2 connection and the other one for POTS (Plain Old Telephone Service) connection. To share the existing phone line with POTS, the VC-810S has built-in POTS splitter that helps the voice of telephone and data of network applications transmitting at the same wire without interrupting

Traffic Flow QoS for application services ensured

The Switch contains robust QoS features such as Port-Based, 802.1p priority and / IP TOS/DSCP. It guarantees the best performance at VoIP and Video stream transmission and empowers / enterprises to take full advantages of the limited network resources.

Selectable VDSL2 data rate for Service Differentiation

Through the Web management interface, administrators can control the data transmit speed of each VDSL2 interface. Telecom and ISP can immediately and remotely upgrade/downgrade bandwidth services by different demands.

Friendly / Simple Web Management Interface

The VDSL2 Switch contains an advanced management capability that can be remotely accessed by Web Browsers. It provides more flexible and more effectively management function via build-in VLAN, QoS (Quality of Service), storm control, IGMP Snooping and rate control features to optimize network bandwidth and utilization for Service Providers. By affording the current network to grow and expand, the VC-810S supports standard Simple Network Management Protocol (SNMP) and can be centralize monitoring the link status and bandwidth of each VDSL2 interface These features provide a cost-effective way to manage the devices from the Internet whenever.

## Data Sheet

APPLICATIONS

Last Mile of FTTx deployment

Up to 100/55 Mbps asymmetric data rate within 300m and long range of connections provide ultra-high performance to the pervasive telephone line networks. With one build-in mini-GBIC 1000Base-SX/LX SFP (Small Factor Pluggable) interface, the deployed distance of VC-810S can be extended from 550 meters (Multi-mode fiber) up to above 10/50/70/120 kilometers (Single-mode fiber). The various distances of SFP (Small Factor Pluggable) and Bidi (WDM) transceivers are optional for customers. The feature of long distance support makes VC-810S is a great and ideal solution for FTTx (Fiber to the Building, Fiber to the Campus or Fiber to the Home) applications. It supports high bandwidth VDSL2 over existing telephone wires in the "last mile" from the ISP / Telecom / Service provider's fiber node to the buildings and customers' home.


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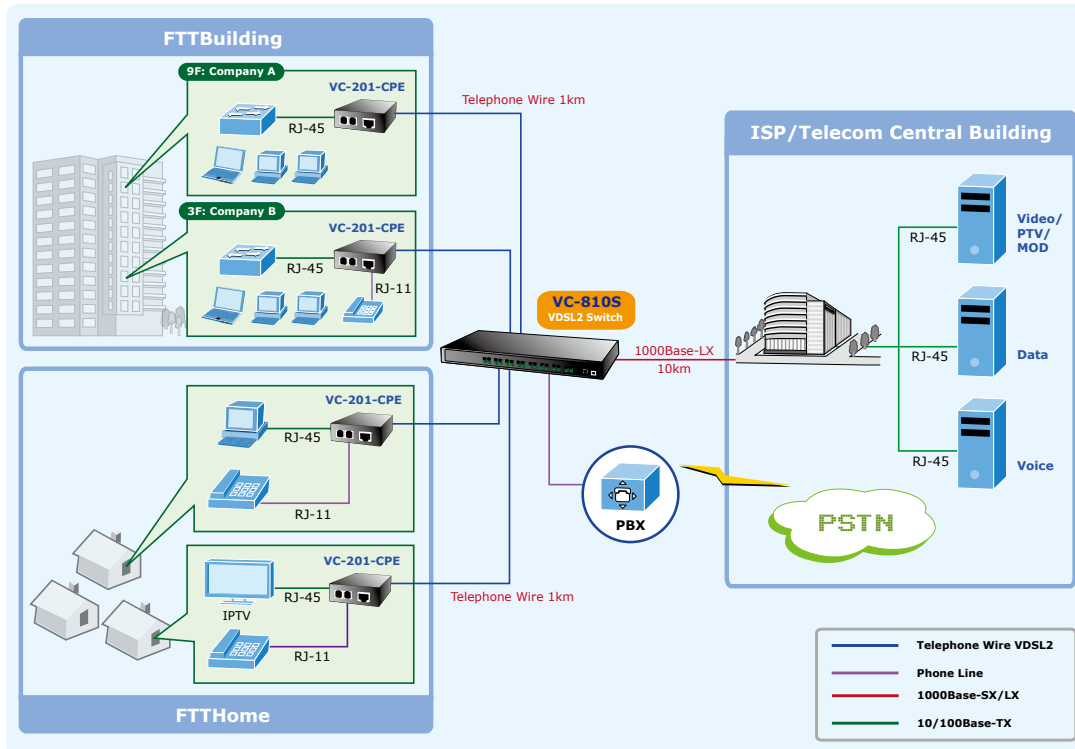
MTU/MDU/Hospitality Solution

IPTV, VOD and digital message broadcasting services are the worldwide hot trends, and more and more service providers have upgraded the devices of client side from analog system to digital system gradually. The VC-810S, VDSL2 CO Switch, and VC-201, VDSL2 CPE converter, are the best solution to quickly provide cost-effective and high speed network services by utilizing the existing telephone wire infrastructure. IP network installation is straightforward and requires no new wiring. With enough bandwidth, the 100/55 Mbps symmetric capability of VC-810S enables many Multi-Media services on local Internet to be come true, such as VOD (Video on Demand), Voice over IP, Video phone, IPTV, distance education, and so on. The VC-810S provides excellent bandwidth to satisfy the triple play devices for entertainment and communication. Meanwhile, this kind of infrastructure is able to minimize the burden on the Internet.
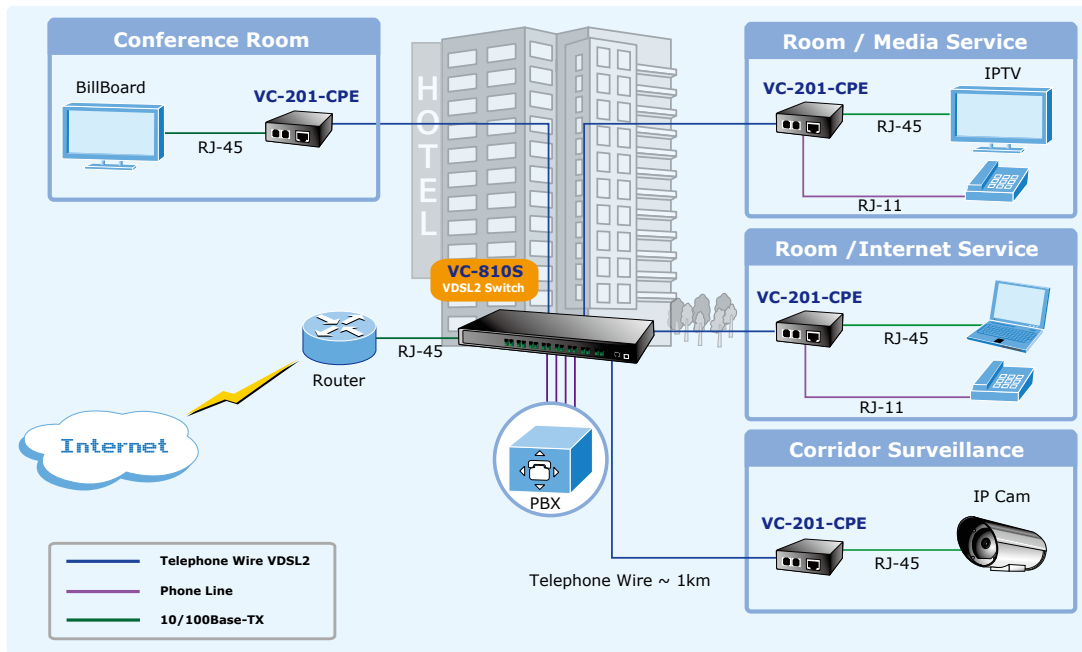
Community / Campus Surveillance and Security over Telephone Lines

To take advantages of digital surveillance system and break limitation of RJ-45 UTP cables only up to 100 meters, the VC-810S helps communities, campuses and enterprises to quickly upgrade and build IP cameras system with telephone copper wires. It is easily deployed and ideal for extending the distance and signal conversion by transmitting the Ethernet data from standard telephone wire. Furthermore, with high transmitting data rate, the solution supports multiple IP Camera inputs for sharing in one phone line to reduce the cost of cabling.

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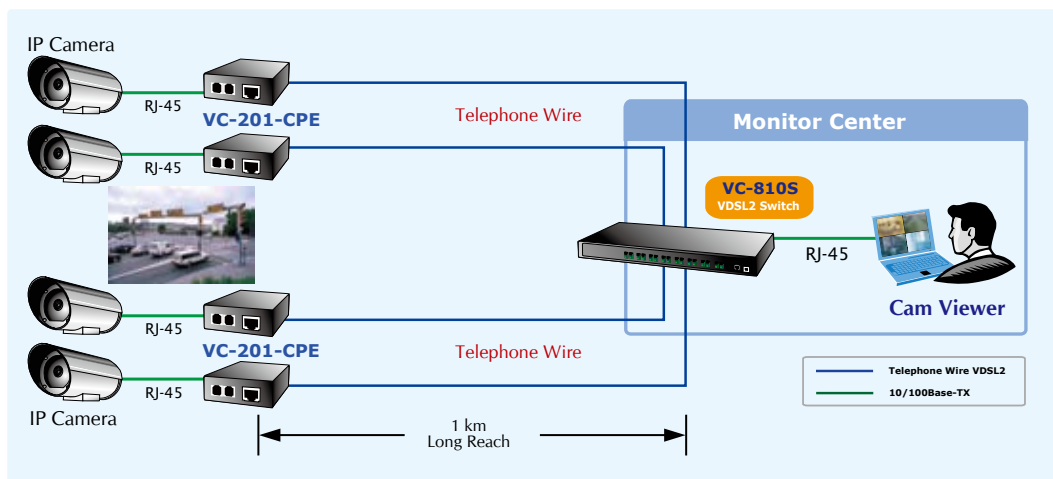
KEY FEATURES

VDSL INTERFACE

- 8 x **Spring terminal block** connectors for **VDSL** connection

- 8 x **Spring terminal block** connectors for **telephone/POTS** connection

- Built-in POTS splitter for each VDSL port

- Link to VC-201 CPE Bridge

- Auto-speed function for VDSL2 link (by distance and cable quality)

ETHERNET INTERFACE

- 1-Port Gigabit TP/SFP combo interface

- Auto-MDI/MDI-X detection on Gigabit RJ-45 port

VDSL2 FEATURES

- Cost-effect VDSL2 link and central management solution

- ITU-T G.993.2 VDSL2 standard

- DMT (Discrete Multi-Tone) line coding for VDSL

- Up to 100/55Mbps asymmetric data rate

- Copper wiring distance up to 1km

- Selectable target data rate and target SNR margin

- Build-in surge protection against surge damage from high energy spike

- Voice and data communication can be shared on the existing telephone wire simultaneously

LAYER 2 FEATURES

- Complies with IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX, IEEE 802.3z 1000Base-SX/LX, IEEE 802.3ab 1000Base-T, IEEE 802.3x flow control, IEEE 802.1Q VLAN and 802.1p priority queuing

- 8K MAC address table, auto-ageing, 3.6G backbone

- IEEE 802.3x Full-duplex flow-control and back-pressure in half-duplex eliminate packets loss

- High performance of Store and Forward architecture, **broadcast storm control** and runt/CRC filtering eliminate erroneous packets to optimize the network bandwidth

- **IEEE 802.1Q** Tagged based VLAN and **Port-Based** VLAN

- IEEE 802.1Q Tagged VLAN, supports tag insertion and removal, and up to 32 VLAN groups

- Supports up to 2 **Trunk** groups, up to maximum 4 ports per group each trunk

QUALITY OF SERVICE

- 2 priority queues on all switch ports

- Supports QoS and bandwidth control (Rate Limit) on each VDSL and GbE port

- Traffic class assignment based on IP TOS/DSCP mode, 802.1p priority tag mode and Port-Based mode

- Support for strict priority and Weighted Round Robin (WRR) CoS policies

MULTICAST

- IGMP Snooping v1 and v2

SECURITY

- Port mirroring for dedicated port monitoring

- MAC address based on port security, unknown source of MAC address will be ignored on a specified port

MANAGEMENT

- WEB-based management

- SNMP v1, v2c interface monitor*

- SNMP Trap* for status alarm of VDSL port link up and link down

- 48VDC power input for telecom installation (VC-810S48)

- Reset Button for system reset and Reset to factory default

- Firmware upgrade by TFTP file transfer protocol through Ethernet networks

- Port Description (Double bit column)

- PLANET Smart Discovery Utility for deploy management

- EMI standards comply with FCC, CE class A

* Future Released

Data Sheet

SPECIFICATION

Product	8-Port VDSL2 + 1-Port Gigabit TP/SFP Web Smart CO Switch	
Model	VC-810S / VC-810S48	
Hardware Specification		
Interface	VDSL	8-Port VDSL2, 2-Pin screwless spring terminal block connectors 8-Port POTS/Telephone, 2-Pin screwless spring terminal block connectors
	Ethernet	1-Port Gigabit TP/SFP Combo interface, Auto-negotiation, Auto MDI/MDI-X
VDSL2 Features		Selectable **Fast** and **Interleaved** mode Selectable target **data rate** Selectable target **SNR (signal to Noise Ratio) mode** POTS voices pass through
Surge Protect		8KV
Switch Architecture		Store-and-Forward
Switch Fabric		3.6Gbps / non-blocking
Address Table		8K entries
Share Data Buffer		1.25Mbit
Maximum Frame Size		1,536 Bytes packet
Flow Control		Back pressure for Half Duplex IEEE 802.3x Pause Frame for Full Duplex
LED		System: Power, Status VDSL: Data Active, VDSL Link/Sync. Gigabit Port: 1000 Link/Active, 100 Link/Active
Dimensions		440 x 220 x 44mm (W x D x H), 1U height
Weight		2.8kg
Power Requirement		VC-810S: 100 - 240VAC, 50 / 60Hz, Auto-sensing VC-810S48: -48VDC (Range -30V ~ -60V)
Power Consumption		25 watts / 85 BTU
Temperature		0~50 degree C
Humidity Operating		5~95% (non-condensing)
Performance / Distance* (Based on AWG26 wires)		• Full VDSL2 Downstream / Upstream bandwidth up to: ▪ 200m -> 100/55Mbps ▪ 400m -> 85/36Mbps ▪ 600m -> 60/11Mbps ▪ 800m -> 40/5Mbps ▪ 1000m -> 30/1Mbps
Other		Reset Button for system reset and Reset to factory default
Layer 2 Function		
Management Interface		Web Browser, SNMP v1 and v2c**, SNMP Trap PLANET Smart Discovery Utility
Port Configuration		Port Enable / Disable. Flow Control Enable / Disable. Bandwidth control on each port.
Port Status		VDSL: Displays each port's status, Mode, Rate Limit and SNR Gigabit Ethernet interface: Displays each port's speed duplex mode, link status, and flow control status. Auto-negotiation status
Port Statistics		• TX/RX packet/byte • CRC error
VLAN		Port-Based VLAN, up to 9 VLAN groups IEEE 802.1Q Tagged Based VLAN, 4094 VLAN ID, up to 32VLAN groups
Link Aggregation		Supports 2 groups of 4-Port trunk
QoS		2 priority queues for three type of Class of Service • Port-Based • IEEE 802.1p priority tag • TCP/IP header's TOS/DSCP classification Weighted Round Robin for queue scheduling
IGMP Snooping		v1 and v2 Allows disabling or enabling
Bandwidth Control		Bandwidth control of per port Downstream: 1Mbps~100Mbps Upstream: 1Mbps~60Mbps
Port Mirror		RX or TX

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Security	Port Security (Disable Per Port of MAC Address Learning)
SNMP MIBs	RFC-1213 MIB-II RFC-2863 Interface MIB
Other	SNTP Client
MAC Address Table	Aging time: selectable Default Mode (300 Sec.) and Fast Mode (30 Sec.)

Standards Conformance

Regulation Compliance	FCC Part 15 Class A, CE
Protocol and Standard Compliance	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T IEEE 802.3x Flow Control IEEE 802.1p Class of service IEEE 802.1Q VLAN Tagging ITU-T G.993.1 (VDSL) G.997.1 G.993.2 VDSL2 (Profile 12a Support), Annex A RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 2030 SNTP RFC 1112 IGMP versions 1 RFC 2236 IGMP versions 2
Cables	• VDSL2: twisted-pair telephone wires (AWG24 or better) up to 1km • 10/100Base-TX: 2-Pair UTP Cat. 5, up to 100m (328ft) • 1000Base-T: 4-pair UTP Cat. 5e/6, up to 100m • 1000Base-SX: 50/125 and 62.5/125 fiber-optic cable, up to 550m • 1000Base-LX: 9/125 fiber optic cable, up to 10km 50/125 and 62.5/125 fiber-optic cable, up to 550m

* The actual data rate will vary on the quality of the copper wire or coaxial cable and environment factors
** Future released

ORDERING INFORMATION

VC-810S	8-Port VDSL2 + 1-Port Gigabit TP/SFP Combo Web Smart Switch (AC Power)
VC-810S48	8-Port VDSL2 + 1-Port Gigabit TP/SFP Combo Web Smart Switch (48V DC Power)

RELATIVE PRODUCT

VC-201	Ethernet over VDSL 2 Converter (2 x RJ-11, 1 x RJ-45)
VC-202	Ethernet over VDSL 2 Converter (1 x BNC, 1 x RJ-45)

AVAILABLE MODULES FOR MINI-GBIC SFP SLOTS

MGB-GT	SFP-Port 1000Base-T mini-GBIC module
MGB-SX	SFP-Port 1000Base-SX mini-GBIC module
MGB-LX	SFP-Port 1000Base-LX mini-GBIC module
MGB-L30	SFP-Port 1000Base-LX mini-GBIC module -30km
MGB-L50	SFP-Port 1000Base-LX mini-GBIC module -50km
MGB-L70	SFP-Port 1000Base-LX mini-GBIC module -70km
MGB-L120	SFP-Port 1000Base-LX mini-GBIC module -120km
MGB-LA10	SFP-Port 1000Base-LX mini-GBIC module- LC WDM (TX: 1310nm), SM, 10km
MGB-LB10	SFP-Port 1000Base-LX mini-GBIC module- LC WDM (TX: 1550nm), SM, 10km
MGB-LA20	SFP-Port 1000Base-LX mini-GBIC module- LC WDM (TX: 1310nm), SM, 20km
MGB-LB20	SFP-Port 1000Base-LX mini-GBIC module- LC WDM (TX: 1550nm), SM, 20km
MGB-LA40	SFP-Port 1000Base-LX mini-GBIC module- LC WDM (TX: 1310nm), SM, 40km
MGB-LB40	SFP-Port 1000Base-LX mini-GBIC module- LC WDM (TX: 1550nm), SM, 40km

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