

8-Port **VDSL2** with 2-Port Gigabit TP/SFP Combo Managed Switch

VC-820M



- ◆ **Product Overview**
- ◆ **Product Benefits**
- ◆ **Product Features**
- ◆ **Application**
- ◆ **Comparison**

VC-820M



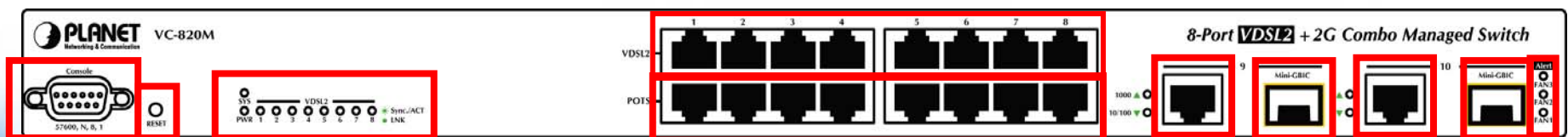
- ◆ **What is EoVDSL2 (Ethernet over VDSL2)?**
 - VDSL2 (Very-high-data-rate Digital Subscriber Line 2)
 - VDSL2 is the newest and more advanced standard of DSL
 - VDSL2 has been standardized as ITU G.993.2
 - VDSL2 (ITU G.993.2) is an enhancement to VDSL (G.993.1)
 - DMT (Discrete Multi-Tone) line coding

◆ DSL Standard

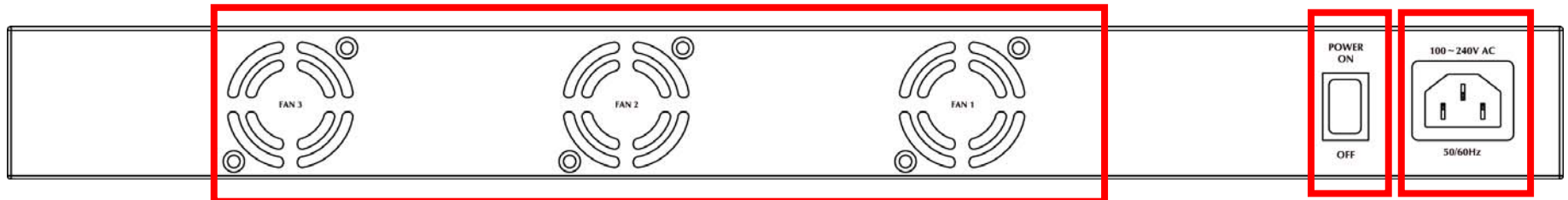
Family	ITU	Name	Ratified	Maximum Speed capabilities
ADSL	G.992.1	G.dmt	1999	8 Mbps down 1 Mbps up
ADSL2	G.992.3	G.dmt.bis	2002	12 Mb/s down 1 Mbps up
ADSL2plus	G.992.5	ADSL2plus	2003	24 Mbps down 1 Mbps up
ADSL2-RE	G.992.3	Reach Extended	2003	8 Mbps down 1 Mbps up
SHDSL (updated 2003)	G.991.2	G.SHDSL	2003	5.6 Mbps up/down
VDSL	G.993.1	Very-high-data-rate DSL	2004	55 Mbps down 15 Mbps up
VDSL2 -12 MHz long reach	G.993.2	Very-high-data-rate DSL 2	2005	55 Mbps down 30 Mbps up
VDSL2 - 30 MHz Short reach	G.993.2	Very-high-data-rate DSL 2	2006	100 Mbps up/down

◆ Front Panel of VC-820M

- 8-Port VDSL2 interface (RJ-11)
- 8-Port POTS interface (RJ-11)
- 1 DB9 console port
- System and Power LED
- 2-Port 10/100/1000Mbps Ethernet port
- 2 Gigabit mini-GBIC slot (share)
- 3 FAN alert LEDs
- Reset Button



- **Rear Panel of VC-820M**
 - 100~240V AC, universal Power Supply
 - One Power Switch
 - 3 cooling FANs



- **High-Performance of Ethernet over VDSL2 Solution**
 - ✓ Up to **100/100Mbps** symmetric data rate within 300m
- **Implements with Existing Telephone Copper Wires**
- **Delivers High-Demand Services Connectivity for ISP / Triple Play Devices**
 - ✓ VOD (Video on Demand),
 - ✓ Voice over IP,
 - ✓ Video phone,
 - ✓ IPTV
 - ✓ Distance education

- Traffic Flow **QoS** for application services ensured
- IGMP snooping v1, v2 and v2 fast leave, IGMP querier mode
- Selectable VDSL2 data rate for Service Differentiation
- Powerful management interface by Web (**SSL**) / Telnet / SNMP
- 2-Port Gigabit TP/SFP Combo mini-GBIC slot for up link to backbone network
- Powerful security design such as ACL, MAC Limit, 802.1x

◆ Hardware

▪ VDSL2 Interface

- ✓ **8 x RJ11** connectors for VDSL2 connection
- ✓ **8 x RJ11** connectors for telephone/POTS connection
- ✓ Built-in **POTS splitter** for each VDSL2 port
- ✓ Link to CPE Bridge
- ✓ **Auto-speed** function for VDSL2 link (by distance and cable quality)

▪ Ethernet Interface

- ✓ 2-Port **Gigabit TP/SFP** combo interface

▪ VDSL2 Features

- ✓ Cost-effect VDSL2 link and central management solution
- ✓ ITU-T G.993.2 VDSL2 standard
- ✓ **DMT** (Discrete Multi-Tone) line coding VDSL2
- ✓ Up to **100/100Mbps** symmetric data rate
- ✓ Copper wiring distance up to **1.4 km**
- ✓ Selectable target data rate and target SNR margin
- ✓ Build-in **surge protection** to against surge damage from high energy spike

- ◆ **Software (Layer 2 Feature)**
 - 8K MAC address table, auto-ageing
 - IEEE **802.1Q** Tagged based VLAN and Port-Based VLAN, up to 255 VLAN groups
 - Broadcast storm Control

 - **Console / Telnet** Command Line interface
 - **HTTP** remote Web management
 - Secure Socket Layer (**SSL**) secure remote Web management
 - ✓ Which encrypts the packet content at each session.
 - **SNMP v1, v2c and V3** management
 - ✓ Four RMON groups 1, 2, 3, 9 (history, statistics, alarms, and events)
 - ✓ SNMP trap for interface Link Up, Link Down and PoE port fail notification
 - Configuration upload/download via TFTP or HTTP
 - **LLDP** (Link Layer Discovery Protocol)

◆ VLAN

- IEEE 802.1Q Tag-based VLAN
- Port-Based VLAN
- Q-in-Q tunneling
- Up to 255 VLANs groups, out of 4041 VLAN IDs
- GVRP

◆ Spanning Tree Protocol

- STP, IEEE 802.1D (Classic Spanning Tree Protocol)
- MSTP, IEEE 802.1s (Multiple Spanning Tree Protocol)

◆ Link Aggregation

- Up to 5 trunk groups
- Up to 8 ports per trunk group (Full Duplex Mode)
- IEEE 802.3ad LACP (Link Aggregation Control Protocol)
- Cisco ether-channel (Static Trunk)

◆ Quality of Service

- 4 priority queues
- Traffic classification:
 - ✓ IEEE 802.1p CoS
 - ✓ **IP TOS / DSCP** to 802.1p priority mapping
 - ✓ Port-Based priority
- QoS policies
 - ✓ Strict priority
 - ✓ Weighted Round Robin (**WRR**)

◆ In/Out bandwidth control

- Allow to configure per 128Kbps

◆ Multicast

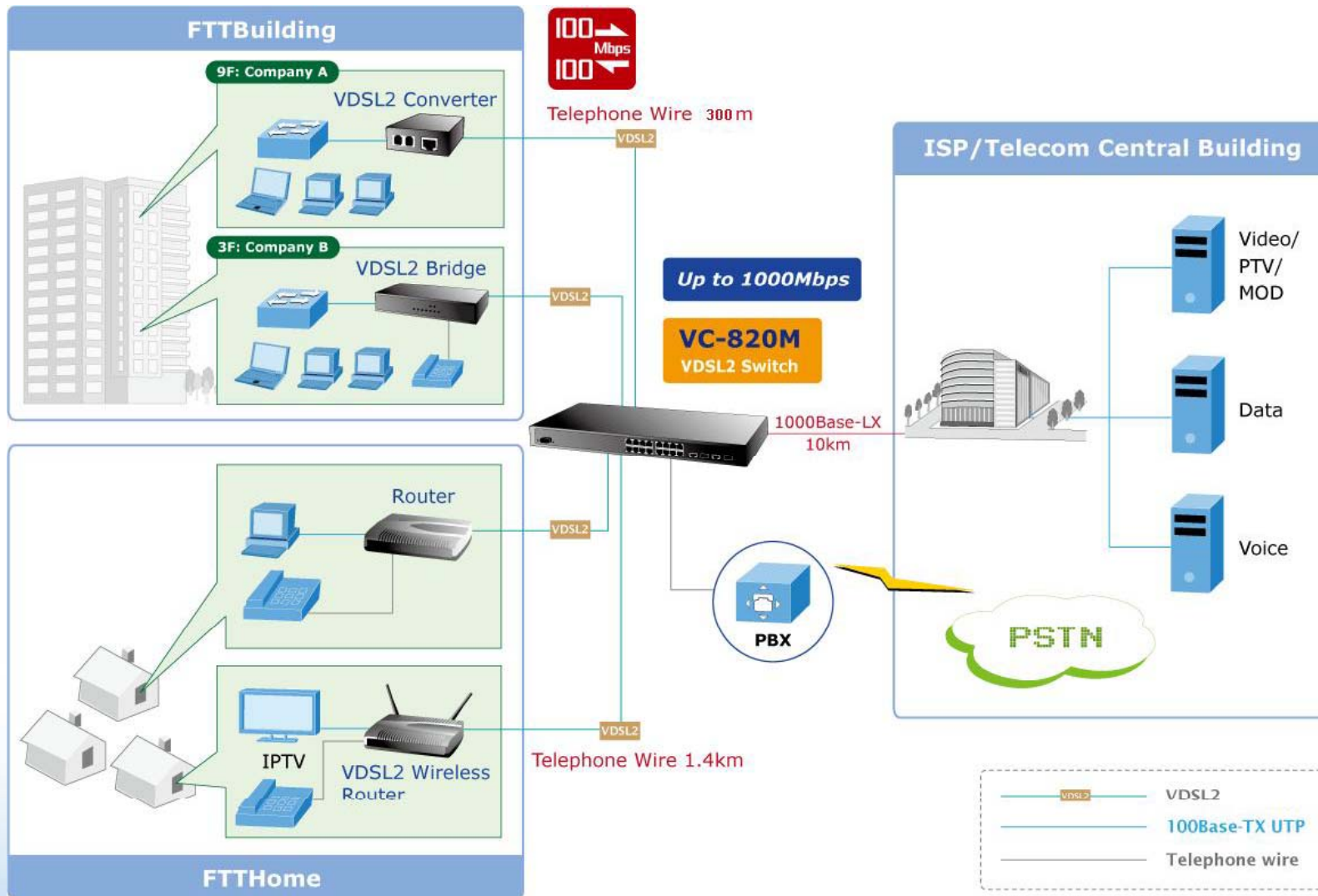
- Supports IGMP Snooping **v1** and **v2**
- IGMP Snooping **v2 fast leave**
- **Querier** mode support

◆ Security

- DHCP Relay and DHCP Option 82
- Network Access Control
 - ✓ 802.1X Port-Based network access control protocol
 - ✓ RADIUS users access authentication
- Access Control List
 - ✓ Layer 3 IP-Based ACL
 - ✓ Layer 4 Port NO. ACL
- MAC Address Control
 - ✓ **Port Security** for source MAC address entries filtering
 - ✓ Static MAC
 - ✓ MAC Filter
 - ✓ **IP / MAC Binding**

- **Last Mile of FTTx deployment**
 - Up to **100/100 Mbps** asymmetric data rate within 300m and long range connections provides ultra-high performance to the pervasive telephone line network.
 - And with the **two** build-in mini-GBIC 1000Base-SX/LX SFP (Small Factor Pluggable) interface, the deployed distance of VDSL2 Switch 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-form factor) and Bidi (WDM) transceivers are optional for customers.
 - The long distance support feature makes VDSL2 Switch be 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.

Application – VC-820M

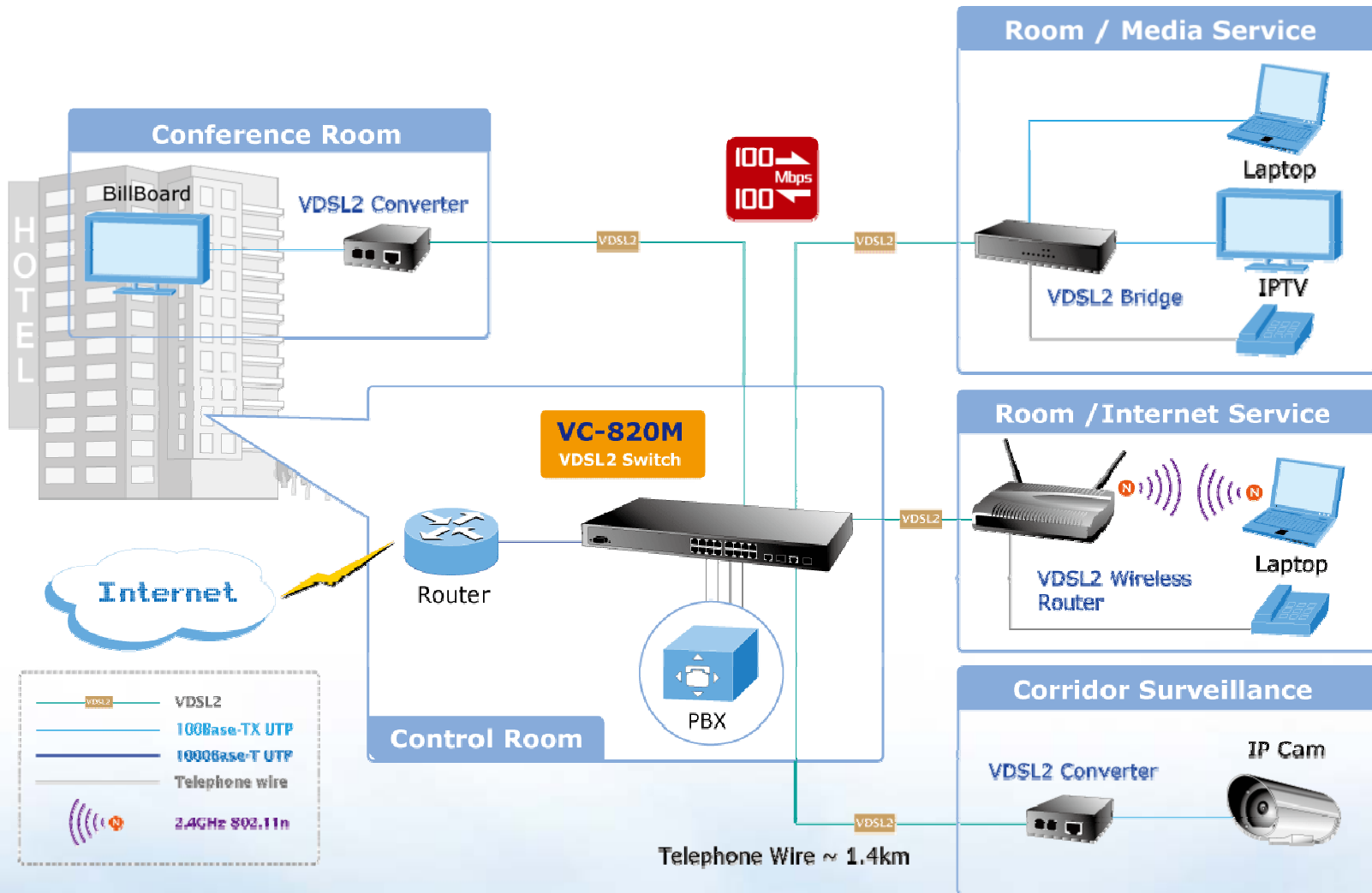


- **MTU/MDU/Hospitality Solution**

- IPTV, VOD and digital message broadcasting services are the worldwide hot trends, and more and more service providers have upgraded the client side devices from analog system to digital system gradually.
- The VDSL2 CO Switch and CPE devices (such as VC-231, VC234) are the best solution to quickly provide cost-effective, 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 **100/100Mbps** symmetric capability of VDSL2 Switch enables many Multi-Media services on local Internet to come true, such as VOD (Video on Demand), Voice over IP, Video phone, IPTV, distance education, and so on.
- The VDSL2 Switch provides excellent bandwidth to satisfy the triple play devices for entertainment and communication. Meanwhile, this kind of infrastructure will minimize the burden on the Internet.

Application – VC-820M

ACTIVATING IP POWER











◆ Compare VDSL2 Managed Switch with VC-810S

	VC-810S	VC-810S-48	VC-820M
Features	Web Smart	Web Smart	Managed
VDSL Interface	Terminal Block	Terminal Block	RJ-11
Telephone / POTS Interface	Terminal Block	Terminal Block	RJ-11
Subscriber Port	8	8	8
10/100/1000Mbps RJ-45 Port	1	1	2
Gigabit mini-GBIC SFP Slot (share)	1	1	2
Switch Fabric	3.6Gbps		5.6Gbps
Console Port	-	-	■
Management Interface	WEB	WEB	WEB/Telnet/SNMP
VDSL2 Profile Support	12a/17a	12a/17a	8a/b/c/d, 12a/b 17a, 30a
SNMP	v1, v2c	v1, v2c	v1, v2c, v3
ACL	-	-	■
SNTP	■	■	-
Chassis Height	1U	1U	1U
Power Supply	AC	DC	AC

- Available SFP Modules:

- ✓ **MGB-GT** SFP-Port 1000Base-T Module
- ✓ **MGB-SX** SFP-Port 1000Base-SX mini-GBIC module
- ✓ **MGB-LX** SFP-Port 1000Base-LX mini-GBIC module
- ✓ **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 (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

◆ VDSL2 CPE Device Support

CO \ VDSL2 CPE	VC-820M
VC-231	
VC-234	
VC-230	
VC-230N	
VC-201A	
VC-201	
VC-204	
VC-301	

ACTIVATING IP POWER

