

VDSL2 Converter

User's Manual

FCC Certifications



This Equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received; including interference that may cause undesired operation.

CE Mark Warning



This equipment complies with the requirements relating to electromagnetic compatibility, EN 55022 Class A for ITE, the essential protection requirement of Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

Company has an on-going policy of upgrading its products and it may be possible that information in this document is not up-to-date. Please check with your local distributors for the latest information. No part of this document can be copied or reproduced in any form without written consent from the company.

Trademarks:

All trade names and trademarks are the properties of their respective companies. Copyright © 2007, All Rights Reserved.

Unpacking Information

Thank you for purchasing the Ethernet over VDSL2 converter. Before installation, please check that your package contains the following items.

1. One Ethernet over VDSL2 converter
2. One power adapter
3. One telephone line
4. One user's manual

Introduction

General Description

The VDSL2 supports the signal conversion between traditional Ethernet and innovative VDSL2 technology. The device is a right solution to integrate current Ethernet application with the new building phone line networking technology, like hotel, office and apartment environment.

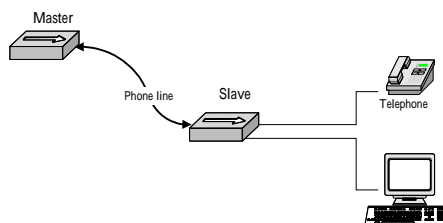
The EoVDSL2 port supports symmetry and asymmetry data transmission bandwidth up to 50Mbps and transmission distance up to 1000ft. It is ideal for providing video-on-demand and multi-media service to apartment, hotel and campus without rewiring cable consideration. Moreover, the distance expansion also provides wide range coverage.

The converter is plug-n-play without any software to configure and also fully compliant with all kinds of network protocols. Moreover, the rich diagnostic LEDs on the front-panel provide the operating status of the system.

The cable specifications of the connection are listed as following:

- 10BASE-T, Category 3, 4 or 5 UTP/STP
- 100BASE-TX, Category 5 UTP/STP
- Ethernet over VDSL2, Twisted-pair telephone wires

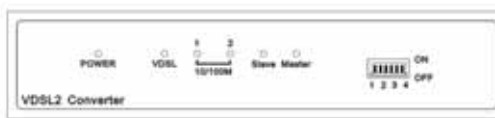
The drawing listed below is typical application for the Ethernet over VDSL2 converter.



Key Features

- Complies with IEEE802.3 10BASE-T standard.
- Complies with IEEE802.3u 100BASE-TX standard.
- Compliance with VDSL2 ITU-T G.993.2
- Supports 1 * RJ-11 port for Ethernet over VDSL2.
- Provides 1 * RJ-11 port for telephone connection.
- Provides 2 * RJ-45 ports for 10/100Mbps Ethernet.
- Provides 1 * Dip Switch for mode selection
- Voice and Data work on the same telephone line
- EoVDSL2 port supports maximum bandwidth 100Mbps/50Mbps (downstream /upstream) over 1000ft (300m)
- Long Reach VDSL2 performance around 7Mbps downstream over 5000ft (1500m)
- Mini size design (120 x 75 x 25mm)
- Provides rich diagnostic LED indicators
- External Power Adapter

The Front Panel



The Rear Panel



Dip Switch Settings

	Pin1	Pin2	Pin3	Pin4
	Side	Mode	Rate limit	SNR
ON	Slave (CPE)	Fast	No limit	6dB
OFF	Master (CO)	Interleave	50/20 Mbps	9dB

Pin1: Master, slave switch

Master (CO): EoVDSL2 converter acts as **Master** / Central Office (CO) side.

Slave (CPE): EoVDSL2 converter acts as **Slave** / Customer Premise Equipment (CPE) side.

Pin2: Impulse noise protection

Fast mode: Direct data transmission with latency less than 1 ms.

Interleave mode: Provides communication protection for up to 250ms impulse noise with latency less than 6 ms.

Pin3: Rate limit control

No limit: Provides up to 100Mbps/50Mbps line rate in short line.

50/20 Mbps: Line rate limited to 50/20Mbps.

Pin4: General protection

6dB: Original channel noise protection with 6 dB SNR.

9dB: Better channel noise protection with SNR up to 9 dB.

Note: SNR (Signal Noise Rate) = Signal / Noise. Switch on this pin depends on your network demand.

LEDs Definition

LED	Status	Operation
Power	Green	The device is powered on.
	Off	The device is powered off.
VDSL	Green	The port is connected.
	*Blinking Green	Data transceiving.
	Off	No valid link on this port
10/100M	Green	The port is connected.
	*Blinking Green	Data transceiving.
Master	Green	The device acts as Master mode.
	Off	The master mode is off.
Slave	Green	The device acts as Slave mode.
	Off	The slave mode is off.

* Once the converter connects to a power source, the LEDs of 10/100M will blink once, and the converter begins looking for other converter automatically. During searching, the VDSL LEDs keeps blinking; it will stop blinking after success detection.

Installing and Using VDSL2 Converter

Installing the Ethernet over VDSL2 Converter

The converter does not require any software configuration. Users can immediately use any feature of this product simply by attaching the cables and plug power on. There is some key limitation on the Ethernet over VDSL2 networking, please check the following items:

- The device is used for point-to-point connection only and allows data and voice work on the same telephone lines.
- The two RJ-11 connectors, one for voice device connection (like telephone) and the other one for network line connection

This device is an ideal client access unit for the applications of apartment, hotel, campus and hospitality. Integration with the Internet access Concentrator, the total infrastructure could be a perfect solution for multi-media local Internet. This structure could support many multi-media applications, like VOD (Video on Demand), Distant education, Internet caching server, ... and so on. Therefore, most of the traffic will be limited on the local phone line network instead of flooding to the Internet. Another application for the converter is used for LAN to LAN extension through the normal telephone line.

Connect to Internet Access Concentrator

In order to build up a local Internet in apartment, hotel, campus and hospitality environment, the Internet Access Concentrators need to be placed in the wiring center (MDF room) and connect to the telephone line system. On the other hand, you need to install a converter on the individual client side and connect to the Concentrator through the telephone lines.

When deciding where to put the converter then you must ensure:

- It is accessible and cables can be connected easily. Cabling is away from sources of electrical noise such as radios, transmitters and power lines and fluorescent lighting fixtures.
- Water or moisture cannot enter the unit.
- Airflow around the unit and through the vents in the side of the case is not restricted (company recommend that you provide a minimum of 25mm clearance).

To prolong the operational life of your units:

- Do not place objects on top of any unit or stack.
- Do not obstruct any vents at the sides of the case.

Installing Network Cables

After placing the converter on the desktop, then we need to know how to connect the device to network.

Station Connections with Telephone Wires

Connect the network adapters in stations to the converter's RJ-45 port through category 3, 4 or 5 UTP/STP cables. There are two RJ-11 phone jacks; one for telephone set connection and the other one is used for phone line network connection. If you have telephone wall jacks at home then all you need to do is connecting the RJ-11 network port to the wall jack through telephone wires.

Product Specifications

Standard	IEEE802.3 standard IEEE802.3u standard Ethernet over VDSL2 VDSL2 ITU-T G.993.2
Interface	2 * RJ-45 10/100Mbps Ethernet ports 1 * RJ-11 connector for EoVDSL2 1 * RJ-11 connector for telephone connection 1 * DIP switch for selective transmission modes
LED indications	Power*1, VDSL*1, LAN*2, Master mode*1, Slave mode*1
Emission	FCC Class A, CE, VCCI Class A
Operating Temperature	Operating -- 0 ^o - 40 ^o C (32 ^o - 104 ^o F) Storage -- -10 ^o - 70 ^o C
Operating Humidity	Operating -- 10% ~ 90% (non-condensing) Storage -- 5%~95%