1. HARDWARE

1.1 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.

1.2 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.

1.3 Trademarks:

All trade names and trademarks are the properties of their respective companies. Copyright © 2010-14. All Rights Reserved.

1.4 Unpacking Information

Thank you for purchasing the VX-1000SP Before installation, please check that your package contains the following items.

1. One VX-1000SP
2. One power adapter
3. One RJ-45 line
4. One user's manual

Introduction the signal conversion between traditional Ethernet and innovative technology. The device is a right solution to integrate current Ethernet application with the new building phone line networking technology, like large campus, hotel, office and apartment as well as the long distance environment.

The VX-1000SP port supports Symmetry data transmission bandwidth maximum up to 271.5Mbps and transmission maximum distance up to 13,000ft. It is ideal for providing video-on-demand and multi-media service to highway traffic, street intersection, Oilfield, Flood Control, Subway and country border’s Video Surveillance etc.

It is also ideally for hotel and campus without rewiring cable consideration. Moreover, the distance expansion also provides wide range coverage.

The IP DLAM is plug-n-play with the software to configure if you need more functions hand 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
- Twisted-pair telephone wires

The drawings listed below are typical applications for the VX-1000SP

1.5 Key Features

- Complies with IEEE802.3 10BASE-T standard.
- Complies with IEEE802.3u 100BASE-TX standard.
- Consolidates ADSL/ADSL2+ and Connection interfaces with max. of 27M/10M upstream and 1/1Mbps downstream (Reversed)
- Standard ITU-T Rec.G.992.1,G.992.2,G.992.3 and G.992.5 with Annex A,g.994.1,G.997.1,ANSI T1,413 Issue 2
- Supports 1* RJ-45 port for Ethernet over ADSL2+
- Provides Optional 1* RJ-45 port for telephone connection.
- Provides 4* RJ-45 ports for 10/100M Ethernet.
- Provides 1* Dip Switch for mode selection
- Voice and Data work on the same telephone line
- VX-1000SP port supports maximum bandwidth 27Mbps/1.5Mbps (downstream/upstream)
- Long Reach - performance up to 11000ft
- Mini size design (129.8 x 85 x 27mm)
- Provides rich diagnostic LED indicators
- Easy Power Adapter
- Easy installation with magnetic mounting assembly: The unit with 2 bottom light - magnetic base but extremely powerful magnets attach or mounts to any metal surface

1.6 The Front Panel

1.7 The Rear Panel
1.8 LEDs Definition

<table>
<thead>
<tr>
<th>LED</th>
<th>Status</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>Green</td>
<td>The device is powered on.</td>
</tr>
<tr>
<td>Off</td>
<td>The device is powered off.</td>
<td></td>
</tr>
<tr>
<td>Green</td>
<td>The ports connected.</td>
<td></td>
</tr>
<tr>
<td>Blinking Green</td>
<td>Data transmitting.</td>
<td></td>
</tr>
<tr>
<td>Off</td>
<td>No valid link on this port.</td>
<td></td>
</tr>
<tr>
<td>10/100M</td>
<td>Green</td>
<td>The ports connected.</td>
</tr>
<tr>
<td>Blinking Green</td>
<td>Data transmitting.</td>
<td></td>
</tr>
<tr>
<td>Link</td>
<td>Green</td>
<td>The CO and CPE are linked.</td>
</tr>
<tr>
<td>Off</td>
<td>The CO and CPE are not linked.</td>
<td></td>
</tr>
</tbody>
</table>

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

2. Installing and Using VX-1000SP IP

2.1 Installing the VX-1000SP

Users can immediately see any feature of this product simply by attaching the cables and plug power on. There is some key limitation on the Ethernet over 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-45 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 Freeway/Highway, street intersection, Oilfield, country border, 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 Video Surveillance, 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 DSLAM is used for LAN to LAN extension through the normal telephone line.

2.2 Connect to Internet Access Concentrator

In order to build up a local Internet in Freeway/highway, street intersection, Oilfield, Subway, Country border, 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 DSLAM on the individual client side and connect to the Concentrator through the telephone lines.

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

- It is accessible and cables can be connected easily. Cabling is away from sources of electrical noise such as radars, 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.

2.3 Installing Network Cables

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

2.4 Station Connections with Telephone Wires

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

3. Product Specifications

<table>
<thead>
<tr>
<th>Standard</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IEEE802.3 standard</td>
</tr>
<tr>
<td></td>
<td>IEEE802.3u standard</td>
</tr>
<tr>
<td></td>
<td>Ethernet over T1-U G.993.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interface</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4 * RJ-45 10/100Mbps Ethernet ports</td>
</tr>
<tr>
<td></td>
<td>1 * RJ-45 connector for DSLAM</td>
</tr>
<tr>
<td></td>
<td>1 * Optional RJ-45 connector for telephone connection</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LED indications</th>
<th>Power1, &quot;1&quot;, LAN&quot;4, Master mode1, Slave mode1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission</td>
<td>FCC Class A, CE, VCCI Class A</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>Operating --0°C- 40°C (32°F- 104°F)</td>
</tr>
<tr>
<td>Storage</td>
<td>40% - 70%</td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>Operating —10% - 90% (non-condensing)</td>
</tr>
<tr>
<td>Storage</td>
<td>5% - 95%</td>
</tr>
</tbody>
</table>

* Other settings will be restored to default values.

* If you forget the IP address, username or password modified by yourself, you can restore the default settings.

1. Q: How to look over the system status?
   A: After you login the device, you can click the "Device Info" / "System Info" menu to check the system status. You can refer to 4.1.1.

2. Q: What will cause Firmware upgrade to be failed?
   A: The upgrade process is as 4.4.2.2. Before you update a firmware, you must make sure the firmware is correct. During the process, the firmware will be downloaded by HTTP, and the flash will be erased and written, so you must not close the browser or change the page of firmware update, and you must not power down the device, otherwise it will cause the file in flash destroyed.

3. Q: How to test TR-069?
   A: For TR-069 is a WAN management protocol, you must select and apply one encapsulation mode supported by your ISP in "Advanced Setup / WAN" page, and make sure a valid IP address is gotten for WAN interface. Make sure the parameters about TR-069 in "Management / TR-069 Client" page are correct, for example, whether the TR-069 function is enabled, the URL of ACS is correct, the user name and password is OK, and so on. If the settings are correct, the device will send Inform to ACS for connecting to ACS. If the connection is established, the device is under the control of ACS.