

Please read this user manual carefully before using the equipment

ADSL Repeater VER170R6 User Manual

Version: 001
May 2005

Table of Contents

I.	Function and Features	2
II.	Technical Specifications.....	3
III.	Physical Structure	3
IV.	Equipment Installation.....	4
1.	Equipment Installation Diagram ...	4
2.	Installation Environment.....	4
3.	Installation Procedures.....	4
V.	Troubleshooting	7
VI.	Package List.....	8

ADSL technology has great advantages in terms of bandwidth and performance and is the major broadband access technology. However, the longer the distance between CO and CPE, the lower the speed ADSL can achieve.

ADSL repeater can extend the coverage of ADSL and resolve the above issue very well. It will provide systems with higher performance-to-cost ratio for telecom operators, improve the equipment utilization rate, optimize the network and boost the ability to compete. Along with protection of current investment, this ADSL repeater can have more broadband access subscribers and value-added services accommodated by extending coverage of existing ADSL network. As the result, it will bring back huge return.

I. Function and Features

- Extend the transmission distance between CO DSLAM and CPE Modem. Ensure the upstream/downstream rate is no less than 128kbps/512kbps.
 - ◆ Deploying with traditional ADSL system: the repeater can extend the range between DSLAM and Modem from 3.5KM to 5.5KM~6KM without affecting existing POTS service;
 - ◆ Deploying with ADSL2+ system: the repeater can extend the cover range of DSLAM from 5.5KM to 6KM~7.5KM without affecting existing POTS service.
- Avoid customer loss due to broadband service unavailability caused by extra long distance.
- Improve network bandwidth and service quality.
- Comprehensive thunder lightning, over-current and over-voltage protection.

- Easy to install, deploy and maintain.
- Fully compatible with all ADSL/ADSL2+ system.

II. Technical Specifications

Table 1 – ADSL Repeater Technical Specifications

Input Voltage	VER170R6	AC 110-240V
Power Consumption	1.6W/line	
Weight	<1.5Kg	
Working Environment	Temperature	-40°C ~ 60°C
	Relative Humidity	5%~95% (Non-condensing)
# of Supported User	VER170R6	Six ADSL subscribers

III. Physical Structure

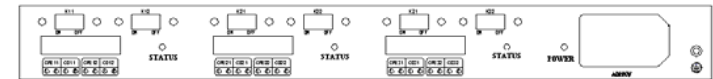


Fig. 1 - VER170R6 Faceplate Diagram

- Metal enclosure.
- Wiring sockets on front panel for CO and CPE side signal wiring and power supply wiring.
- Metal mast on front panel for ground connection.
- Three status indicator showing the status of the equipment.
- Six switches and one power switch on front panel for controlling the working status of the equipment
- AC 110-240V power entry module (includes power socket, fuse and switch).

IV. Equipment Installation

1. Equipment Installation Diagram

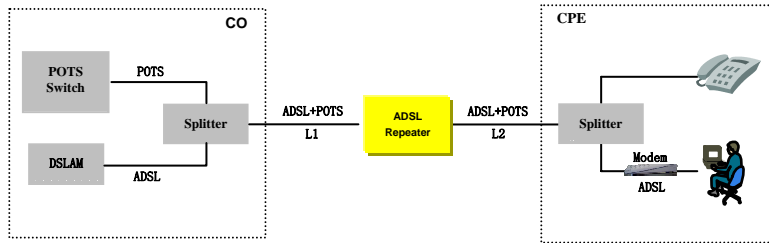


Fig. 2 - VER170R6 Network Application Diagram

L1: The signal wire pair connecting ADSL repeater to CO equipment.

L2: The signal wire pair connecting ADSL repeater to CPE equipment.

2. Installation Environment

Before installation, the DC 48V or AC 110-240V power supply and reliable ground connection should be assured. The customer should order the corresponding type of power supply according to the available power source.

3. Installation Procedures

The recommended installation conditions are as follows. Total line loop resistance is about 800ohm to 1600ohm; loop resistance between repeater and CO is about 450ohm to 1260ohm; loop resistance between repeater and CPE is about 200ohm to 900ohm.

3. 1 Unpack the package.

Unpack the package and take out the equipment, check items according to the package list. Visually inspect it for signs of damage.

3. 2 Install the ADSL repeater

3. 2. 1 Secure the enclosure

(1) Install the repeater in the 19" rack

Attention: Copper-core wire with no less than 1.5mm² section area is required as ground wire. One end of the wire should connect to repeater's ground terminal. The other end of the wire should connect to a good grounding point.

(2) Install the repeater in cabinet box

Remove the mounting brackets from repeater's enclosure and secure the repeater in the available room of cabinet box.

Attention: Copper-core wire with no less than 1.5mm² section area is required as ground wire. One end of the wire should connect to repeater's ground terminal. The other end of the wire should connect to a good grounding point.

3. 2. 2 Connect the cable for VER170R6



Fig. 3 - VER170R6 Connection Terminals Diagram

As illustrated in Fig. 3, the equipment is composed by three parts. Each part can support ADSL signal extension for two channels. ON/OFF of each part is controlled by two switches. Step by step cable connection procedure is shown as follow.

① Remove about 10mm insulation coat of the twist-pair for CPE side.

Press the orange part of the wiring terminals marked as “CPE1”, insert the wire end and secure it. Do this for terminal A and B separately.

- ② Remove about 10mm insulation coat of the twist-pair for CO side. Press the orange part of the wiring terminals marked as “CO1”, insert the wire end and secure it. Do this for terminal A and B separately.
- ③ Connect a reliable AC 200V power source to the equipment. **Use copper-core wire with no less than 1.5mm² section area is required as ground wire. One end of the wire should connect to repeater’s ground terminal. The other end of the wire should connect to a good grounding point.**
- ④ Turn on the power switch. “Power” indicator should be steadily ON.
- ⑤ Turn on the channel switch. The repeater on corresponding channel would start to work. The status indicator for that channel would be steadily ON.

Attention:

- a) “A” and “B” represent A and B wire of the twist-pair. No polarity.
- b) To ensure the normal working of equipment, the switch for unused must be set to “OFF” position.
- c) Before power up the system, please make sure all the connections are correct.

Table 2 VER170R6 Switches and Terminals Relationship

	Switch	Terminals to CO	Terminals to CPE
1 st Part	K11	CO11	CPE11
	K12	CO12	CPE12
2 nd Part	K21	CO21	CPE21
	K22	CO22	CPE22
3 rd Part	K31	CO31	CPE31
	K32	CO32	CPE32
4 th Part	AC 110-240V local power supply entry module (includes power socket, fuse and switch)		

V. Troubleshooting

Table 4 VER170R6 Troubleshooting

Problem Description		Possible Reason	Suggested Resolution
Equipment does not work after power-up. Status LED is OFF.		Power supply cable is not connected properly.	Check power supply and power cable
No connection	Status LED is always on.	Cable to CO or CPE is not connected properly.	Correct the cable connection
	Status LED flashes.	Cable on repeater is not connected properly.	

VI. Package List

- ADSL repeater.
- Power cord.
- Accessories bag (includes mounting brackets, screws and nuts).
- User manual.