XtendLan

XL-DM130V(A)

User Manual

1. Summarization

XL-DM130V is designed for present all kinds of xDSL line including ADSL, ADSL2, ADSL2+, READSL, VDSL2. It not only can test xDSL physical layer parameter, but also can help you to confirm whether your line is proper to provide xDSL service. It also can evaluate your line quality. It also can have PPPoE dial, do IE network page browsing, and emulate user's PC+ Modem by inside Modem of XL-DM130V to test the connection between user and ISP provider. You can have all kinds of test such as Ping, Ipconfig, Rouge, Tracert after successful dial. XL-DM130V also can emulate the user's PC to test broadband IP line or have PPPoE dial by user's Modem to test the connection of IP network and Modem problem or to remove the problem arisen by computer.

2. Checking the contents of the package

Unpack the box and check the contents before operating the instruments. If some of the contents are not correct or missing or if there is physical damage, contact our company and the dealer from which you purchased them. If you are adding or replacing the standard or optional accessories indicated below, make sure to purchase them from us or your dealer.

3. Safety

Make sure to comply with the following safety precautions. Not complying might result in injury or death.

- Power Supply

You must use the charger supplied by XtendLan which is matched with the tester. You can not use any other chargers which are not supplied by XtendLan and unmatched with tester. It may damage the tester or result in safety accident.

- Battery changing

Please use the Li-battery supplied by XtendLan. Please refer to the 7.10 item.

Do Not Operate in Explosive Atmosphere

Do not operate the instrument in the presence of flammable liquids or vapors. Operation of any electrical instrument in such an environment constitutes a safely hazard.

- Back cover

Do not separate the top and bottom cover unless you are replacing the battery or Modem. Battery replacement should only be carried out by a person who received proper training. Some areas inside the instrument have high voltage that is dangerous if they are not handled properly.

- LCD

If, by accident, the surface of the LCD is damaged and the liquid, or let it touch the skin. If the liquid happens to come in contact with the eye or the mouth, immediately rinse with water. If it comes in contact with the skin or clothes, wipe it with alcohol and then wash it with soap and water. Otherwise, damage to the skin or clothes may result. In addition, be careful not to cut the skin (fingers, hands, etc) with the broken glass. Touching the edges of the broken glass can cause injury.

4. Notice in operation and using

4.1 General operation precautions

- Test Interface

Please firstly connect the test cord to XL-DM130V test interface and then connect to the test line. Please don't touch the metal pars of clamps to avoid the high dangerous voltage.

- USB port

Don't input things with electricity to USB port and please don't short it by metal things.

- Display screen

Protective board and film are affixed to the LCD at the time of shipment. Please remove it before use.

- Cleaning

The instrument uses many plastic parts. When cleaning, wipe using a dry soft cloth. Do not use volatile chemicals since this might cause discoloring and deformation.

- Protecting the case and operating panel

Do not pour volatile agents on the case or operation panel, this can l ead to malfunctioning.

- When moving the instrument

Check that the power cord and connection cables are removed. After use, unplug the power cord from the socket.

When the instrument is not used for a long period of time, thebattery characteristics may have deteriorated. The battery also may take longer to charge. If the operation period of fully charged battery is excessively short, the battery must be replaced. To replace the battery, see the "Battery Replacement Manual".

- Malfunction

Never continue to use the instrument if there are any symptoms of trouble such as strange sounds, odors, or smoke coming from the instrument. In such cases, immediately turn off the power and unplug the power cord. If the instrument has malfunctioned, contact your dealer.

4.2 Suggestion for using

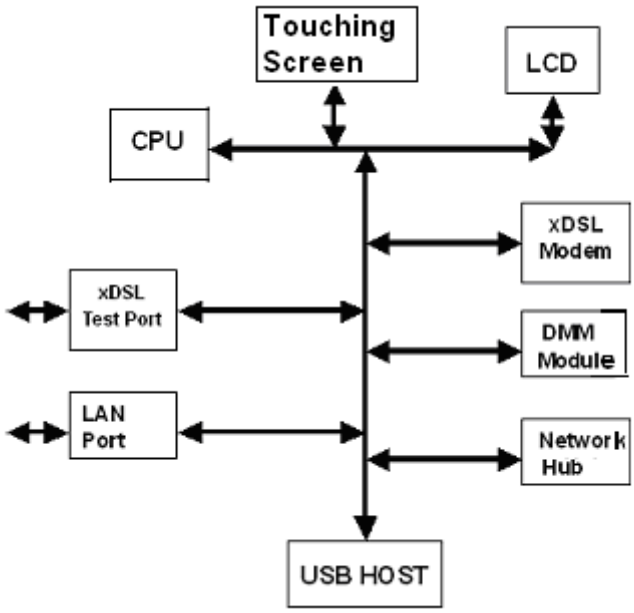
- Please charge the battery full before your first using and usually using. Please refer to 7.9 item about charging.
- When you operate function keys, please use touching stick and please click LCD proper.
- If there is any abnormal phenomenon, please press RESET key to reset or press OFF key to switch on again.
- Please don't put the instrument under the strong direct sunlight and near the origin of heat. Or else, there will be bad affect to circuit.
- Condensation may occur if the instrument is moved to another place where the ambient temperature is higher, or if the temperature if the room changes rapidly. In this case, let the instrument adjust to the new environment for at least one hour before using the instrument.
- Using the instrument near strong magnetic field sources will have adverse affects on

the internal circuit of the instrument.

- If you are using a portable phone to transmit measured data, move the portable phone at least 1 m away from the instrument and Measuring Cables. The measured data can receive undesirable effects from the electromagnetic wave generated by the portable phone.

5. System configuration and quick reference

5.1 System configuration



□ xDSL Port：For user xDSL line link and DMM test link.

□ LAN Port：Ethernet port.

□ xDSL Modem：Different modem can perform different function. Mainly include ADSL, ADSL2, ADSL2+, READSL, VDSL2, etc.

□ USB HOST：Link USB equipment, keyboard, mouse and memory key.

5.2.1. XL-DM130V Front panel

Indicator Lights
Power Indicator Light: Red color, power supplied
Ethernet Indicator Light 1 and 2: Green color, normal Ethernet connection;
Shining green color, Ethernet data transmission
xDSL LINK Indicator Light: Shining green color, xDSL Modem being connected;
Green color, xDSL connected.
xDSL ACT Indicator Light: Shining green color, xDSL data transmission.

Buttons:
ON: Switch on tester.
OFF: Switch off tester when there are abnormal phenomena, such as tester dead or slow run speed.
RESET: Reset system when there is an abnormal phenomenon occurs.

LCD Display
TFT true color screen, 240×320 lattice, touching screen.

5.2.2 XL-DM130V Up side

Touching stick
Use it to point icons from display screen to have operation. Insert it into left up corner of tester when it is not used.
Ethernet port 1
It is RJ45 port. It is used for linking Ethernet network cord or Broadband IP with RJ45 network line plugs. When connected, the corresponding light 1 will be bright.
Ethernet port 2
It is RJ45 port. It is used for linking Ethernet network cord or Broadband IP with RJ45 network line plugs. When connected, the corresponding light 2 will be bright.
xDSL port
It is the port for both xDSL line and DMM test. There are two connection ways. One is standard RJ11 port. It is for linking RJ11 port. The other one is red & black port. It is for linking test cords. These two ports are connected inside of the tester. User can use any one.

5.2.3 XL-DM130V Down side

USB Port
To link memory key, keyboard or mouse. When to link memory key, it is used to upgrade tester software or exchange record file with tester; when to link keyboard, it is used as normal keyboard to type words; when to link mouse, it is used as normal mouse to carry out operation.
Charger Port
To link charger to charge inner battery.

5.2.4 Other parts
LCD screen protection board
To protect LCD screen during storage or long distance delivery. Please take it down and put it in the back of tester when you use the tester.
Test cord
Connect tester and the line using test cord. Please do not touch clamp metal to avoid danger.

Charger port

50Hz, AC230V, Error range is±10%, Output is 8.4V. There is one indicator light in charger. If it is in red color, it means the tester is being charged; when it is in green color, it means the battery is fully charged.

Ethernet cord

The network line attached with tester is direct one, and it is used for connection with hub. Cross network line also can be linked to tester. It can be linked directly to Ethernet port when to link IP network line. When the Ethernet connection is normal, the ETHERNET indicator light will be bright.

6. Functions and specifications

6.1 xDSL test

Perform physical layer parameter test, network layer test and application layer test to confirm whether there is fault in user line or not.

1. Physical layer test specifications

ADSL2+ module

Standard:

ITU G.994.1（G.hs）, ITU G.992.5, ITU G.992.5 Annex L.

Be compatible with ADSL, ADSL2 and READSL.

DSL line transmission parameter:

DSL line attenuation (dB):0～63.5

DSL line noise margin (dB):0～32

DSL line up channel speed (Mbps):0～1.2

DSL line down channel speed (Mbps):0～24

DSL line up/down maximum rate and capacity ratio

DMT sub channel bit number: 0～15

DSL line error number (CRC, HEC, FEC, NCD, OCD)

DSL line local output power

State display: signal loss, connection close.

ADSL2 module

Standard:

ITU G.992.1（G.DMT）, ITU G.992.2 (G. lite), ITU G.994.1 (G.hs) ANSI T1.413 issue #2

DSL line transmission parameter:

DSL line attenuation (dB):0～63.5

DSL line noise margin (dB):0～32

DSL line up channel speed (Mbps):0～1

DSL line down channel speed (Mbps):0～8

DSL line error number (CRC, HEC, FEC, NCD, OCD)

DSL line local output power

DSL line connection mode

VDSL2 module

Standard: ITU G.993.2（VDSL2）. Be compatible with ADSL2+, ADSL standard.

DSL line transmission parameter

DSL line attenuation

DSL line noise margin

DSL line up channel speed （Inter/Fast mode）

DSL line down channel speed（Inter/Fast rate）

DSL line up/down maximum rate and capacity ratio

DMT sub channel bit number：0～15, and each sub channel frequency points

DSL line error number (CRC, HEC, FEC, LCD, OCD)
DSL line local output power
State display: signal loss, connection close.
DSLAM information
Error Code Second
Impulse Noise Protection (INP)
3) Support the first 7 profiles in total 8 VDSL2 profiles:
profile 8a, 8b, 8c, 8d, 12a, 12b, 17a, 30a.

2. PPPoE dial and PPPoE dial properties change
To emulate user MODEM and PC, PPPoE dial, check the connection from the user end to ISP server

3. Network layer test (Ping, Ipconfig, Tracert and Route)

4. IE Webpage browsing test function

6.2 LAN test

Perform PPPoE dial test of LAN or Broadband IP; network layer and application layer test of LAN; search PC in network.
LAN port PPPoE Dial and properties change function.
Network layer test (Ping, Ipconfig, Tracert and Route).
Fixative IP scanning function.
Webpage browsing function.

6.3 DMM test

Test user line AC/DC Voltage, Loop Resistance, Capacitance and Insulation.

	Unit	Test Range	Error
Voltage	V	0--100 DC	±2%
		100--200 DC	±5%
		200--400 DC	±5%
	V	0—100 AC	±2%
		100--400 AC	±5%
Loop Resistance	Ω	0—100	±3%
		100—500	±3%
		500—2000	±2%
		2000—20K	±2%
Capacitance	nF	0—10	±2 nF
		10—1000	±2%
Insulation	MΩ	0—1.0	±0.1 MΩ
		1.0—50	±10%

6.4 Modem emulation

Perform MODEM Emulation function to dial and log on internet to check faults.

6.5 File management

Browse test record, transfer record into PC or memory key.

6.6 Help

This part includes the system upgrade, function set, recalibrate and use notes. The system software can be upgrade by Ethernet or memory key.

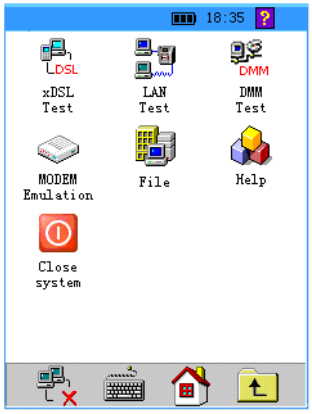
6.7 Other specifications

Memory capacity:	20 M, can save test record, can use U disk copy to exchange test data
Display:	240×320 LCD, touch screen, Embedded OS, windows interface
Power Supply	System highest power: 7.1W Internal: Rechargeable 7.4 V 2700mAH Li-ion battery
Battery Duration:	8hs (except Modem status)
Dimensions/Weight:	176mm×130mm×60mm/0.7kg(With battery)

7. Operation

7.1 Switch on/off, restart

(1) Switch on: Press ON button in the right of instrument to switch on the tester. After 7 seconds, operation window will be displayed.



(2) Switch off: Point Close System icon from operation interface, point OK to switch off the tester from the window displayed.

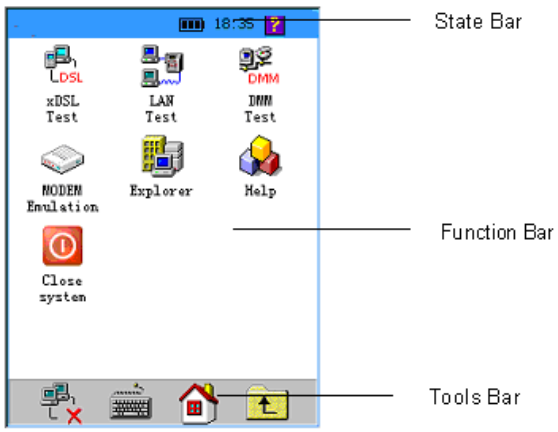
(3) OFF button: Press it in the right of the instrument to switch off the tester when there is abnormal operation phenomenon occurred. Suggestion:Switchofftesterthroughsystem.

(4) RESET button: Press it to restart the tester when there is slow run speed or tester dead phenomenon.

7.2 Operation interface description

The main operation interface is divided into 3 parts.

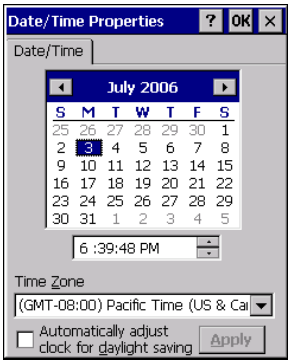
7.2.1 State bar



Battery: Show battery energy. It is divided into 3 parts. Please charge it soon when all 3 parts are empty.

Time: Show the current time. Point it to set date and time.

Point  to enter into HELP window.



You can change the current date and time by touching stick and press Apply key to save it.

7.2.2 Function bar

Point different icon to have relevant test operation.

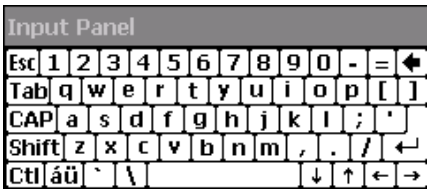
7.2.3 Tools bar

 PPPoE Disconnection icon.

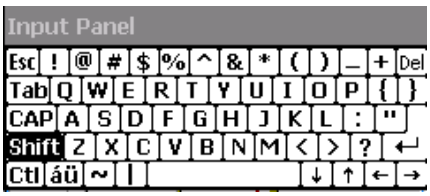
When dial is ok,  change to  . Point  , to disconnect PPPoE connection from window displayed.

 Input Panel

Point to display or hide Input Panel.



To input lowercase, number and interpunction.



Point Shift to input capital character and special symbols, parts of interpunction.

 Homepage

Point it to return main operation interface.

 Back

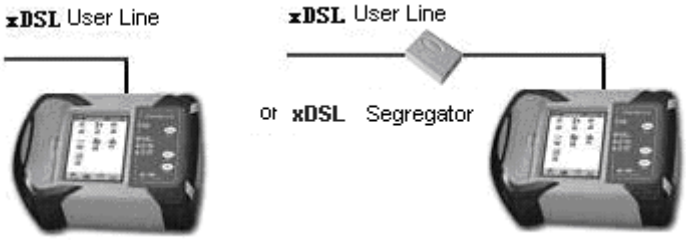
Point it to return upper interface.

7.3 xDSL test

To validate DUN (DIAL-Up Networking) and test xDSL line performance through inside Modem. xDSL test Includes physical layer test, modem parameter set, PPPoE properties, PPPoE dial, network layer test, webpage browsing, LOOPBACK, FTP client and ebpage speed test functions.

The function can emulate the user side equipment to have PPPoE dial, network test and webpage browsing. And it also can judge the testing line quality by physical layer parameters. It can exclude the fault because of user side equipment.

Two kinds of line link diagram:



The function can validate whether the user line is good and also can solve the fault from user Modem and user PC by data parameters from user line.

Link xDSL pair into RJ11 port directly or through xDSL separator. Point

 xDSL Test to enter into operation window.

Point different icons to have relevant test operation.

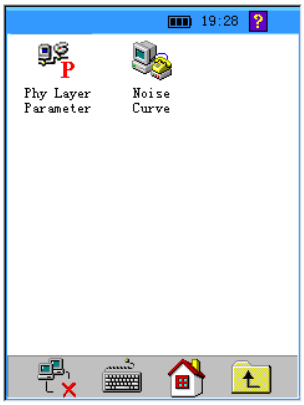
The steps for logon webpage by xDSL line, like following: Set Modem parameter (VPI/VCI)→Set PPPoE Properties Security →PPPoE Dial Have PPPoE dial When the Link indicator is bright, Type user name and password test.

If it needs to test possibility of connection between Modem and OE (Office End), no set steps need to be done. If the xDSL Act indicator light is bright, the physical layer test parameters need to be checked, please point it.

7.3.1 Physical layer test

Perform the test of the physical layer.

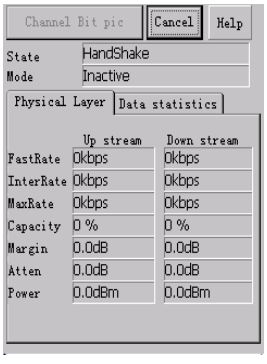
Point  to enter the physical layer test window.



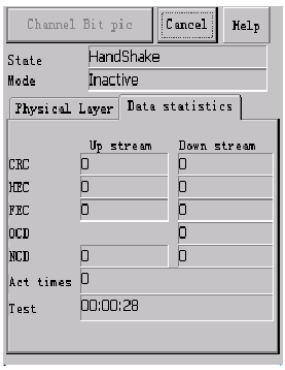
7.3.1.1 Physical layer parameters

Test xDSL line physical layer parameters. It includes xDSL Connecting State, connecting Mode, Up/Down Stream Speed, Noise Margin, Attenuation, Output Power, CRC Error, CRC Error, HEC Error, FEC Error, OCD Error, NCD Error and Channel Bit pic.

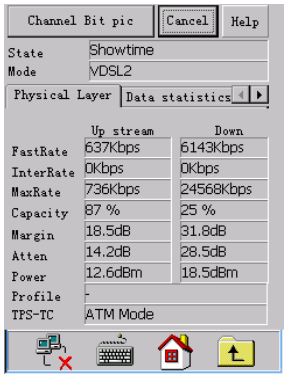
✓ Click  Physical Layer Test, the Preparing test environment Window will be displayed, please wait for seconds till to enter into operation window.



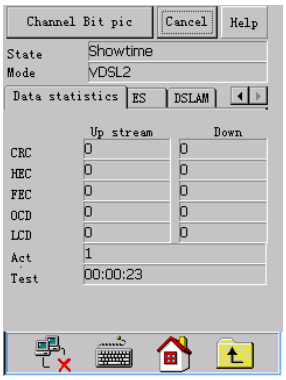
ADSL2+ physical layer parameters 1



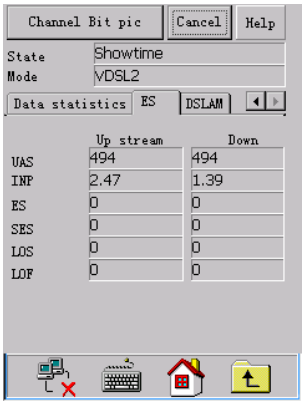
ADSL2+ physical layer parameters 2



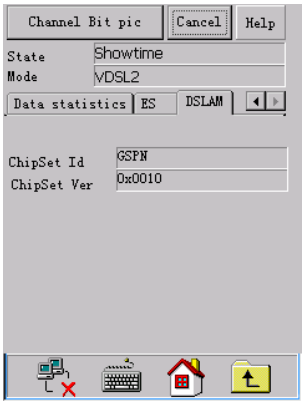
VDSL2 physical layer parameters 1



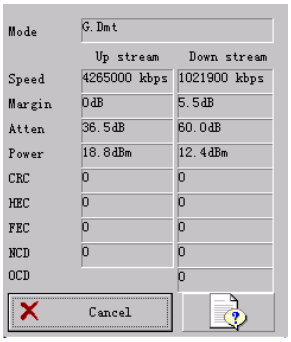
VDSL2 physical layer parameters 2



VDSL2+ physical layer parameters 3



VDSL2 physical layer parameters 3



ADSL Physical layer parameters

Every parameter value will be displayed. They will be refreshed in real time to show the current state. The connection process of xDSL line and OE (Office End) equipment will be displayed from State bar (Idle, Handshake, Training, and Showtime); the current connection mode will be displayed from Mode bar.

A. Current mode interpretation

- Idle: no connection or trying to do connection. Handshake: perform handshaking.
- Discovery: the OE DSLAM is found.
- Training: in the training of the connection.
- Showtime: Remote DSLAM connected.

B. Connection mode interpretation

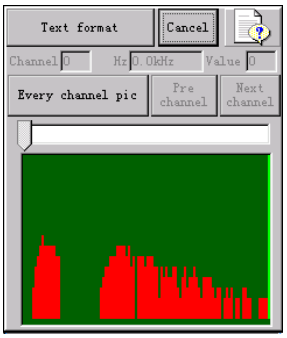
- ADI: ADSL ADI mode
- G.DMT: ADSL G.DMT protocol mode, in accordance with ITU-T G992.1 standard
- G.LITE: ADSL G.LITE protocol mode， in accordance with ITU-T G992.2 standard
- T1.413: ADSL T1.413 protocol mode，in accordance with ANSI T1.413 issue1 & Issue 2 standard
- G.DMT.BIS: ADSL2 G.DMT.BIS protocol mode，in accordance with ITU-T G992.3 standard
- G.DMT.BISPLUS：ADSL2+ G.DMT.BISPLUS protocol mode in accordance with ITU-T G992.5

C. Physical layer parameters interpretation

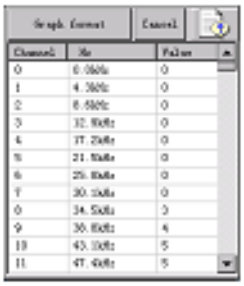
Activate times: It counts the modem activated times from the beginning if the test. Once the modem is activated the number will tally up.

Test time: It will show the test time after the modem is initialized.

- ✓ (2) Point Channel Bit pic, the Channel Bit pic will be displayed in red color.

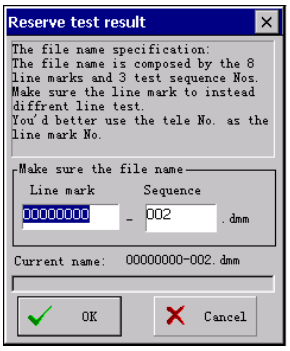


Now the user can see the bit value of current connection which can also be displayed in map. If user needs to see the results in text you can point the “text format” then the following window will be displayed.



- ✓ (3) Point Cancel to close bit map window.

- ✓ (4) Point Cancel from Physical layer Test window, one test record window will be displayed.
- ✓ (5) Point Cancel if you do not save record.
- ✓ (6) Point OK if you save the record.

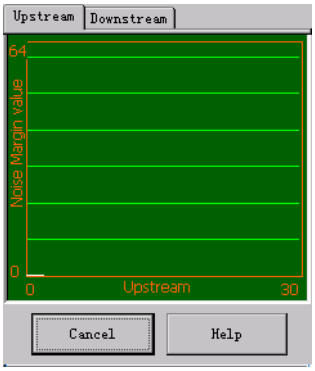


The default file name is linexxxx-xxx.phy, in which “x” means the number. User can modify the line number as telephone number.

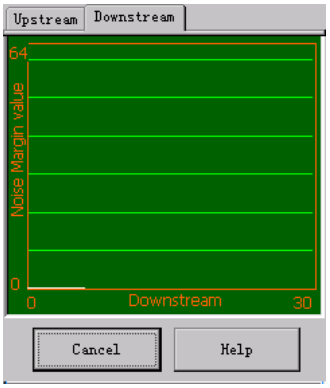
7.3.1.2 Noise curve

It used to browse the real time noise margin curve.

Point  noise margin icon it will display the following noise curve picture.



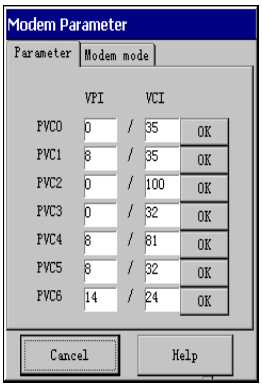
This part contains up stream noise margin curve and down stream noise margin curve. They are reflects the noise margin varies as the time pass. If user press “upstream” or “downstream” at the top of the window the below real time picture will change.



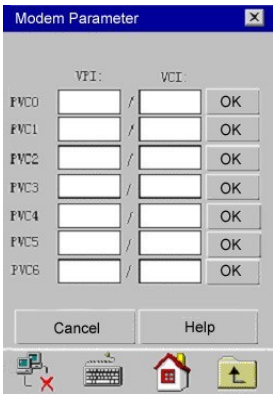
7.3.2 Modem parameter set

The function is to modify xDSL Modem parameters, VPI/VCI values.

✓ (1) Point  MODEM Parameter to enter operation window.



ADSL2+ Module Setting Window



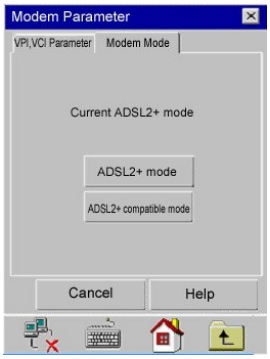
ADSL, VDSL2 Module Setting Window

✓ (2) The VPI/VCI parameters which were set before will be displayed. If it needs to be modified, type new VPI/VCI value from VPI and VCI bar. Point OK, and the Modem VPI/VCI will be set.

When the MODEM is ADSL2+, it also can be set as ADSL compatible mode.

➢ ADSL2+ Mode: It is standard ADSL2+ mode. The current connection mode can be automatically chosen according to OE mode.

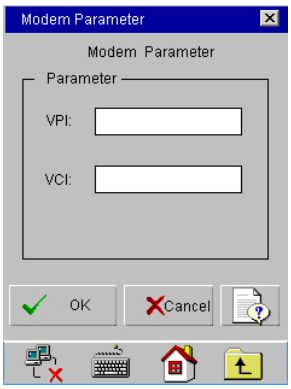
➢ ADSL Compatible Mode: The ADSL2+ connection mode is unavailable under such mode.



If the MODEM Mode is modified as another kind of it, please exit the xDSL Test and re-enter it again.

Notice

(1) In the ADSL2+ Module, if the MODEM Mode is modified as another kind of it, please exit the xDSL Test and re-enter it again. Otherwise, the MODE Modifying will not be effective.

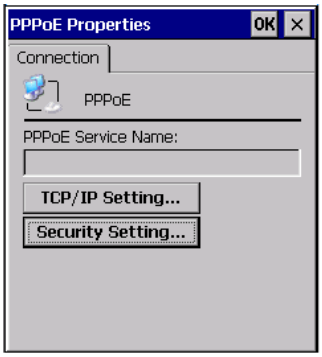


(2) The VPI/VCI parameters which were set before will be displayed. If it needs to be modified, type new VPI/VCI value from VPI and VCI bar. Click OK, and the Modem VPI/VCI will be set.

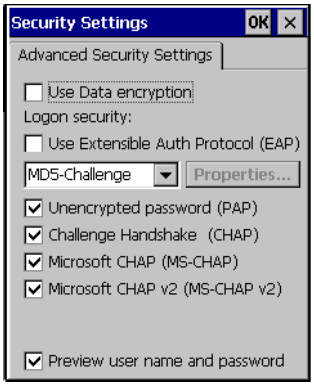
7.3.3 PPPoE properties

Check and modify PPPoE Dial Properties set.

✓ (1) Point  PPPoE Properties icon to enter the operation window



Point Security Settings… to enter into operation window.



Choose Unencrypted password (PAP) and Preview user name and password, cancel other options. Point OK to set it. Point  from Connection window to close these windows.

Notice

If there is wrong PPPoE set, PPPoE dial will be failed. Please be careful to modify PPPoE properties.

All other parameters have already been well set. Please do not modify or delete anything except PPPoE to avoid fail use of network card and PPPoE Dial.

7.3.4 PPPoE dial

To build PPPoE Dial connection through inside xDSL Modem.

(1) Point  PPPoE Dial to enter into operation window.

(2) Type user name and password from the User Name and Password bar. The "save password" default option is selected and can not be revised. Please keep Domain column be blank, otherwise, the PPPoE Dialing will be failed.

(3) Keep Domain be black. Point OK, displays like following

(4) After PPPoE Dial connected,  will become as  , if it needs to be disconnected, point  , the connection window will be displayed, point Cancel to disconnect it.

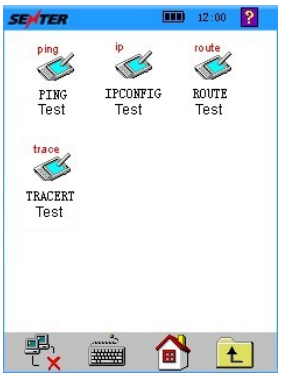
Note:

1. You can do PPP dial after the LINK indicator is light all the time, otherwise PPP dialing will fail.
2. PPP safety property parameters should be set by runner's cryptographic way, otherwise PPP dialing will fail.
3. The user name and password must be matched with the cable, otherwise PPP dialing will fail.

7.3.5 Network layer test

After the PPPoE Dial connection through inside Modem, to have Network Layer Test (Ping, Ipconfig, Tracert and Route test).

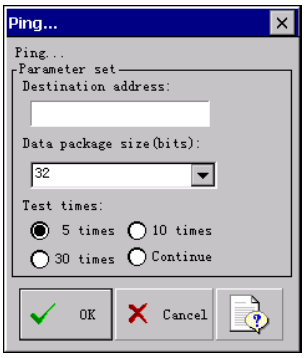
Point Network Layer Test to enter into operation window



(2) Point different icon to have relevant test operation.

7.3.5.1 PING test

- ✓ (1) Point PING Test to enter into operation window.



- ✓ (2) Type IP address or domain name into Destination bar.
- ✓ (3) Choose the data package size in the data package size bar.
- ✓ (4) Choose Ping times from Test times. The default Ping times is 5 times.
- ✓ (5) Point OK, the Ping test process will be displayed in dynamic.
- ✓ (6) When the Ping test result window displayed, point which is in the right top corner of screen to close the window.

7.3.5.2 IPCONFIG test

The current TCP/IP, network configuration value, DHCP and DNS set will be displayed.
Display all the completed TCP/IP configuration information of all the adaptors. If there are not all these paramenters in Ipconfig, it will only display IP address, subnet mask, and default gateway of all adaptors. The adaptors are the physical connect port (Such as: Installed network adaptor) or logic connect port (Such as: Dial connection).

- ✓ (1) Point IPCONFIG Test to enter into operation window.

- ✓ (2) Choose Ipconfig Parameter from Ipconfig Parameter bar, point OK to have Ipconfig test.
- ✓ (3) One test result window will be displayed. Point from the right top corner of screen to close the window after the Ipconfig result window displayed.

7.3.5.3 ROUTE test

Display the parameters in the local IP routing table

Command and optional parameters explanation

- Command

Specify the running command. The following table lists the effective commands:

Command	Purpose
Add	Adding Route
Change	Changing the current route
Delete	Deleting route
Print	Printing Route

- Destination

It is the net destination of appointed route. The destination is an IP address (The host address of network address should be set as 0), host route is IP address, and default route is 0.0.0.0.

- Netmask

It appoints netmask that is related to net destination address (It is also called subnet mask). Subnet mask is a suitable subnet mask to the IP net address, and is 255.255.255.255 to the host route; it is 0.0.0.0 to the default route. If it is neglected, it is 255.255.255.255. We defined it based on the relationship between destination address and subnet mask, the destination address can not be much more detailed than subnet mask. Other words, if one bit of the subnet mask is 0, the corresponding part in destination can not be 1.

- Gateway

Designate to exceed previous or next hop IP address of available IP address collection, this IP address is named by network objective and netmask. To the local subnet route, the gateway address is the distributed IP address that connects to the subnet connected port. To the long-range route which can be used via one or many routers. The gateway is an IP address which can be reached directly or distributed to one close router.

- Metric

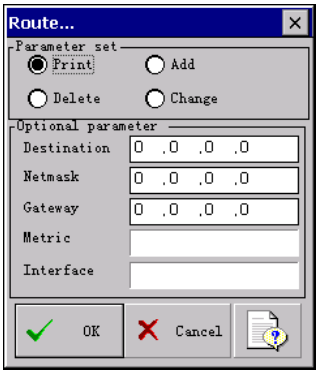
Is the integer value of needed hops that the route designates (the scope is 1 ~ 9999), it is used in the route which is chosen from many routes in the route table to well match the destination address in the forward packages. The chosen route should have the least hops. Hops can reflect the number of hops, path speed, path reliability, path throughput and management property.

- Interface

The interface index of the interface that designated target can reach. Using Route print command can show interface and index list of corresponding interface. As for interface index, we can use decimal system value and hexadecimal system value. As for hexadecimal system value, 0x should be added in front of the hexadecimal system numbers. When “if” parameter is ignored, the interface is decided by gateway address.

(1) Point 

ROUTE Test to enter into operation window.



(2) Choose Route Parameter from Parameter set and point OK to have Route test. The default one is Print.

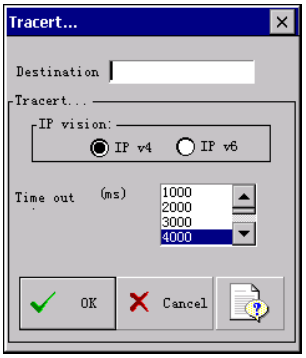
(3) One Route result window will be displayed. Point  from the right top corner of screen to close the window after the Route result window displayed.

7.3.5.4 TRACERT test

Through the value of increasing TTL, send the “ICMP echo request” info to certainly accessible path. The displayed path is the nearside router interface list of the router in the path between source host and destination host. Nearside interface is the nearest router interface near to sending server of the path.

- ✓ (1) Point 

TRACERT Test to enter into operation window.



- ✓ (2) Type address or web address in Destination bar, choose parameter from Tracert bar, point OK to have Tracert Test.
- ✓ (3) One Tracert result window will be displayed. Point from the right top corner of screen to close the window after the Tracert result window displayed.

7.3.6 Webpage browse

Logon and browse webpage.

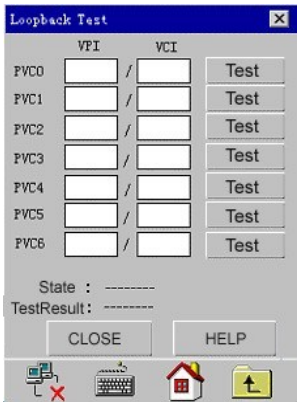
- ✓ (1) Point Webpage Browse to open webpage browser

- ✓ (2) Point Address bar, the Input Panel will be displayed.

- ✓ (3) Type website address and point Enter using input panel to logon the web site.

7.3.7 LOOPBACK test

Ping Test for F5 OAM of ATM layer to verify ATM layer connection. Point  Loopback Test icon to enter into operation window.



Choose PVC access, point Test to have its LOOPBACK test. The test result will be displayed. Test Result: Success or fail

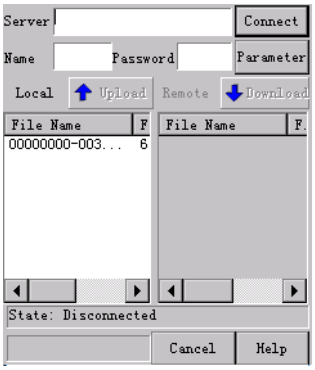
Notice:

The PVC chosen by user should be the same as line VPI/VCI; otherwise, the Loopback Test will be failed.

7.3.8 FTP client

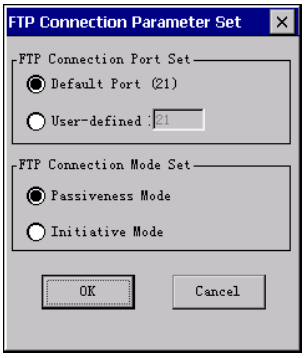
The tester can provide the FTP client function test.

- ✓ (1) Point the FTP Client icon to open the following FTP client window.



- ✓ (2) Fill the IP address of the website will be tested in to the address bar and also the username and password then point the connect key to enter. (3) Point the parameter key to select the FTP mode and port.
- ✓ (4) The left blanket is the listing of the Local catalog while the right one is the listing of the remote catalog. And the connection state will be displayed at the down left corner.

- ✓ (5) Point  to enter the FTP connection parameter setting.

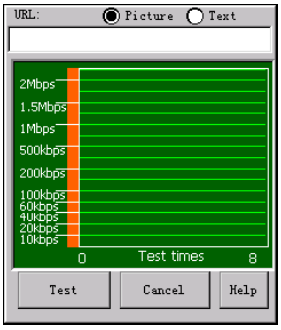


The user can set the port and connection mode.

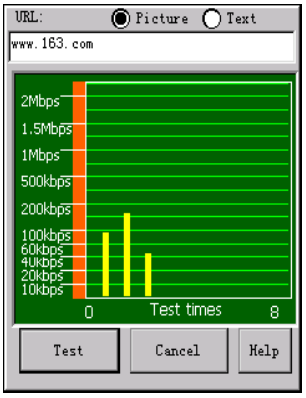
7.3.9 Webpage speed test

The webpage speed test is used to validate the network flux.

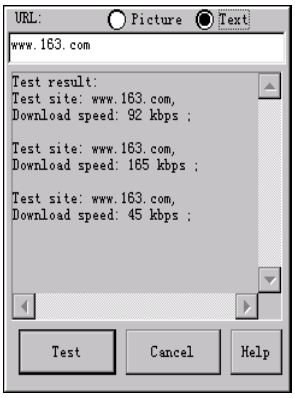
- ✓ Point  Web Speed test icon to open the speed test window.



- ✓ (2) Input the website IP address into the address bar. Then press the test key to start the website speed test. The results will be displayed in form of picture or text according the option.



Result in picture



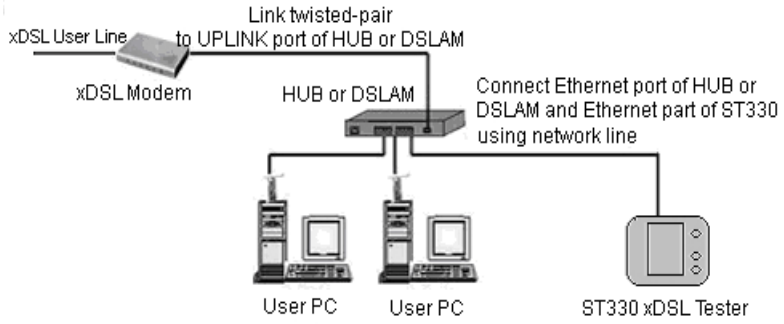
Result in text

Attentions:

1. In LAN test the user should set the gateway and DNS while in xDSL test canceling the gateway and DNS setting is necessary and connected through PPPoE.
2. Please do notice that fill the right address into the address bar. It can not get good effect while testing the website which is used to make address jump at the server.

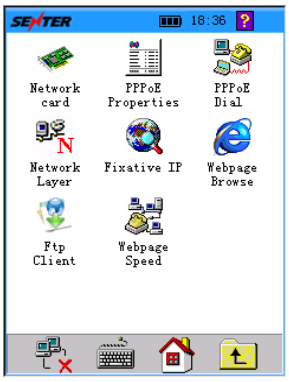
7.4 LAN test

For Ethernet and Broadband IP network test.



Emulate tester as user PC to have PPPoE DUN (Dial-Up Networking). It includes Network Card Properties, PPPoE Properties, PPPoE Dial, Network Layer Test (Ping, Ipconfig, Route and Tracert) , Fixative IP Scan, Webpage Browse, FTP client and webpage speed test functions.

✓ (1) Point  LAN Test to enter into operation window.

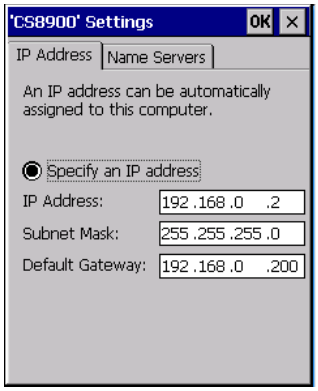


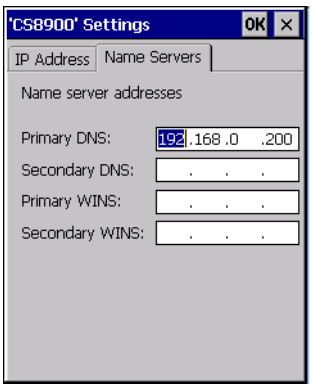
✓ (2) Point different icon to have relevant test operation.

7.4.1 Network card properties

Check and modify network card properties, including IP address, gateway and DNS.

- ✓ (1) Point Network icon Card to enter into operation window.



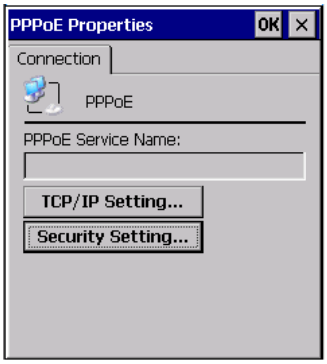


- ✓ (2) User can modify IP address, gateway and DNS value from IP address, Default and DNS bar separately. Point OK to save it and point Cancel to close it.

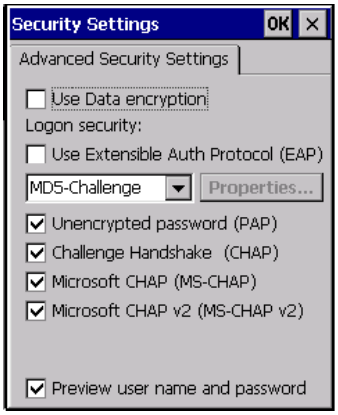
7.4.2 PPPoE properties

Check and modify PPPoE Security settings of PPPoE Properties.

- ✓ (1) Point  PPPoE Properties to enter into operation window.



- ✓ (2) Point Security Settings…to enter into operation window.



- ✓ (3) Choose Unencrypted Password (PAP) and Preview user name and password, cancel other options. Point OK to set it.
- ✓ (4) Point  from Connection window to close it.

Notice

If there is wrong PPPoE set, PPPoE dial will be failed. Please be careful to modify PPPoE properties.

All other parameters have already been well set. Please do not modify or delete anything except PPPoE to avoid fail use of network card and PPPoE Dial.

7.4.3 PPPoE dial

Build PPPoE Dial through outside Modem.

- ✓ (1) Point PPPoE Dial to enter into operation window.

- ✓ (2) Type user name and password from User Name and Password bar separately. Choose Save password to save it. The save password option is default and can not be revised.
- ✓ (3) Keep Domain bar be black. Point OK to have DUN (Dial-Up Networking).

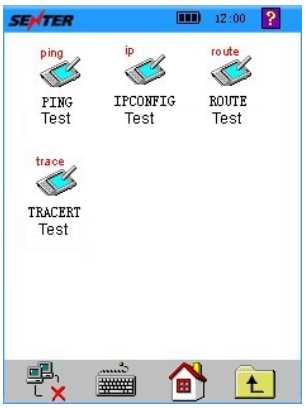
Note

If you want to do PPPoE dial through the LAN port, and use the tester to login the webpage, you should ensure all items of DNS and the default gateway of net card are 0.0.0.0, Otherwise, you can do PPP dial successfully, but can not browse the webpage

7.4.4 Network layer test

After the PPPoE Dial connection through inside Modem, to have Network Layer Test (Ping, Ipconfig, Tracert and Route test).

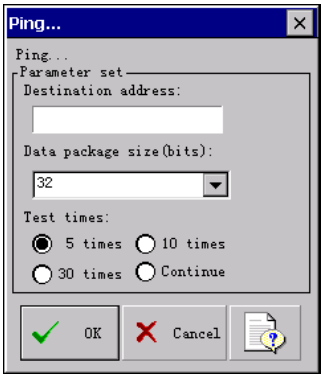
- ✓ Point Network Layer Test to enter into operation window.



7.4.4.1 PING test

Through sending “ICMP” echo request info, to check the IP connection with another TCP/IP computer. The receiving situation and two way process times will be displayed together. Ping is the main TCP/IP command, it is used to check the problems of the network connection, reachability and name resolution.

- ✓ (1) Point PING Test to enter into operation window.



- ✓ (2) Type IP address or domain name into Destination bar. Choose Ping times from Test times. The default Ping times is 5 times.
- ✓ (3) Select data package size in the data package size bar.
- ✓ (4) Point OK, the Ping test process will be displayed in dynamic.
- ✓ (5) When Ping test result window displayed, point which is in the right top corner of screen to close the window.

7.4.4.2 IPCONFIG test

The current TCP/IP, network configuration value, DHCP and DNS set will be displayed.

Display all current TCP/IP network configuration value, configurations of DHCP and DNS. Using Ipconfig without parameters can display IP address, netmask and default gateway of all adapters.

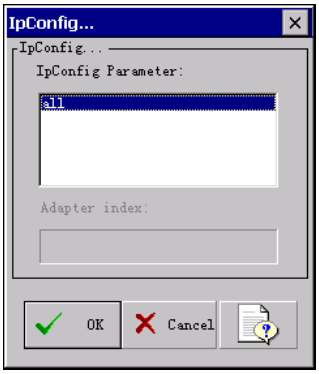
Parameters specification

- All

Display all the completed TCP/IP configuration information of all the adapters. In the situation without setting parameters, Ipconfig will only display IP address, subnet mask, and default gateway value of all adapters. The adapters can stand for the physical connect port (Such as: Installed network adapter) or logic connect port (Such as: Dial connection).

- ✓ (1) Point 

IPCONFIG Test to enter into Ipconfig test window.



- ✓ (2) Choose Ipconfig Parameter from Ipconfig Parameter bar, point OK to have Ipconfig test.
- ✓ (3) One test result window will be displayed. Point  from the right top corner of screen to close the window after the Ipconfig result window displayed.

7.4.4.3 ROUTE test

Display the parameters in the local IP routing table

- Command

Specify the running command. The following table lists the effective commands:

Command	Purpose
Add	Adding Route
Change	Changing the current route
Delete	Deleting route
Print	Printing Route

- Destination

It is the net destination of appointed route. The destination is an IP address (The host address of network address should be set as 0), host route is IP address, and default route is 0.0.0.0

- Netmask

It appoints netmask that is related to net destination address (It is also called subnet mask). Subnet mask is a suitable subnet mask to the IP net address, and is 255.255.255.255 to the host route; it is 0.0.0.0 to the default route. If it is neglected, it is 255.255.255.255. We defined it based on the relationship between destination address and subnet mask, the destination address can not be much more detailed than subnet mask. Other words, if one bit of the subnet mask is 0, the corresponding part in destination can not be 1.

- Gateway

Designate to exceed previous or next hop IP address of available IP address collection, this IP address is named by network objective and netmask. To the local subnet route, the gateway address is the distributed IP address that connects to the subnet connected port. To the long-range route which can be used via one or many routers. The gateway is an IP address which can be reached directly or distributed to one close router.

- Metric

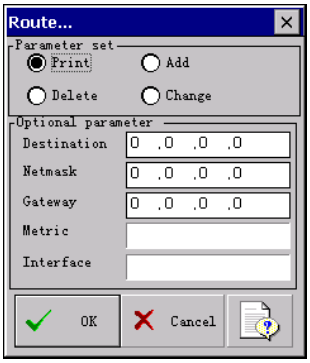
Is the integer value of needed hops that the route designates (the scope is 1 ~ 9999), it is used in the route which is chosen from many routes in the route table to well match the destination address in the forward packages. The chosen route should have the least hops. Hops can reflect the number of hops, path speed, path reliability, path throughput and management property.

- Interface

The interface index of the interface that designated target can reach. Using Route print command can show interface and index list of corresponding interface. As for interface index, we can use decimal system value and hexadecimal system value. As for hexadecimal system value, 0x should be added in front of the hexadecimal system numbers. When “if” parameter is ignored, the interface is decided by gateway address.

✓ Point 

ROUTE Test to enter into operation window.



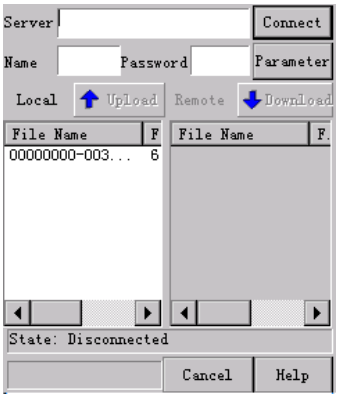
✓ (2) Choose Route Parameter from Parameter set and point OK to have Route test. The default one is Print.

✓ (3) One Route result window will be displayed. Point  from the right top corner of screen to close the window after the Route result window displayed.

7.4.7 FTP client

The tester can provide the FTP client test function.

- ✓ (1) Point  FTP Client icon to open the following FTP client window.

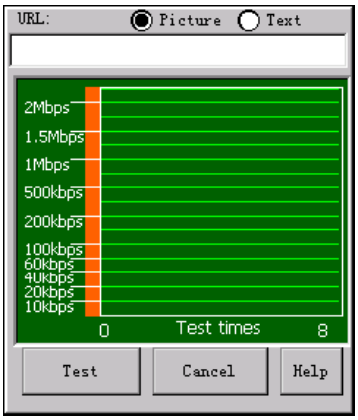


- ✓ (2) Fill the IP address of the website will be tested in to the address bar and also the username and password then point the connect key to enter.
- ✓ (3) Point the Parameter key to select the FTP mode and port.
- ✓ (4) The left blanket is the listing of the Local catalog while the right one is the listing of the remote catalog. And the connection state will be displayed at the down left corner.
- ✓ (5) Point the Parameter key to enter the FTP connection parameter setting.

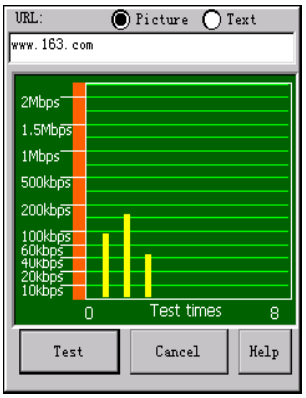
7.4.8 Webpage speed test

The webpage speed test is for validating the network flux.

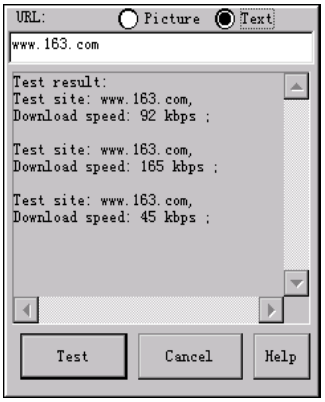
- ✓ (1) Point  Web Speed test icon to open the speed test window.



- ✓ (2) Input the website IP address into the address bar. Then press the test key to start the website speed test. The results will be displayed in form of picture or text according the option.



Result in picture



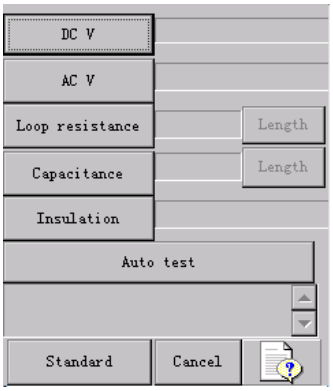
Result in text

- ✓ (1) In LAN test the user should set the gateway and DNS while in xDSL test canceling the gateway and DNS setting is necessary and connected through PPPoE.
- ✓ (2) Please do notice that fill the right address into the address bar. It can not get good effect while testing the website which is used to make address jump at the server.

7.5 DMM test

AC/DC Voltage, Loop Resistance, Capacitance and Insulation Resistance can be tested by built-in MΩ. The lineman will be informed whether there is dangerous voltage in the line or 48V voltage of tel line or not.

1) Point to DMM Test to enter into operation window.



(2) Connect the test cord and the line which will be tested, point different icon to have relevant test operation.

DC Voltage Test:

To test whether there is signal in the test line or not. It only can be operated for DC voltage test. The test range is –262 ~262V. When it exceeds test range. The tester warns as “Over max”.

AC Voltage Test:

To test whether there is high AC voltage in the line or not in order to avoid dangers for lineman. When there is high AC voltage, please take off test clamp carefully.

It is only for AC voltage test. The test range is -262～262V. When it exceeds the range, the tester warns as “Over max”.

Loop Resistance Test:

To calculate line length. If the line length is known, to adjust whether the line connection is right

or not. Calculate line length using loop resistance value tested:

L=RL/RO (Km)

For 0.32mm diameter of copper line, RO=435.2Ω; for 0.4mm diameter of copper line, RO=278.5Ω; for 0.5mm diameter of copper line, RO=178.3Ω.

If it displays “Over max”, it means the test clamp is not well linked, or line is not loop linked, or the loop resistance exceeds range. Please check the test clamp or link the line well and have test again. If there is voltage (> 2V) in the line, it displays “AC in line”. It means there is voltage in the line, the loop resistance cannot be tested. Please check the line and have test when there is no voltage.

Capacitance Test:

The line length can be calculated with capacitance tested if there is no bridge connection in the line and it is not soggy.

L=Cab/CO(Km)

If it displays “Over max” during the test process, it means the line capacitance exceeds range or there is fault in the line. Please check the line and have test again.

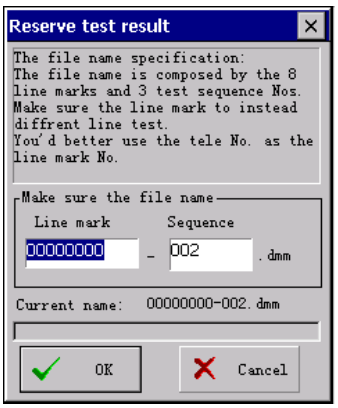
If there is voltage (> 2V) in the line, it displays “AC in line. It means there is voltage in the line, and the capacitance cannot be tested. Please check the line and have test when there is no voltage.

Insulation Test:

If there is small insulation resistance value, it means there is bad insulation in the line. The ADSL transmission performance will be influenced. The maintenance is required. ADSL line insulation resistance value should be more than 10MΩ.

If there is voltage (> 2V) in the line, it displays “AC in line”. It means there is voltage in the line, the insulation cannot be tested. Please check the line and have test when there is no voltage. If the line insulation resistance exceeds the range, it displays “〉 50.0 MΩ”, it means the line insulation is good.

(3) Point Cancel to close DMM test window. There is note message of test result storage. Press OK to save record and press Cancel to close it.

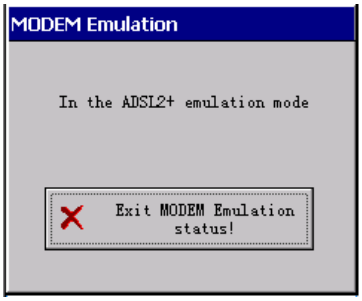


The default file name is linexxxx-xxx.dmm in which x is number. User can modify it as telephone number.

7.6 Modem emulation

Emulate user Modem to test whether there is fault in user Modem or not.

- ✓ (1) Point the MODEM Emulation icon to enter into operation window.

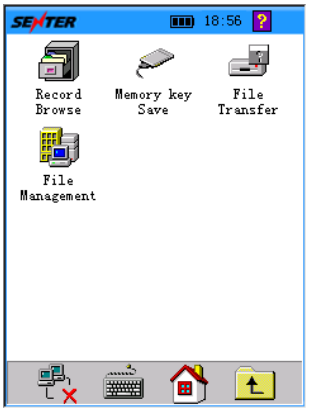


- ✓ (2) The tester will emulate user Modem to realize PPPoE DUN (Dial-Up Network).If the VPI/VCI value needs to be modified, please modify it from Modem Parameter window.
- ✓ (3) If it needs to exit Modem Emulation state, please point Exit MODEM.

7.7 File management

To manage and check files save in tester, including record browse, save data in memory key and file transfer functions

- ✓ (1) Point  File Management to enter into operation window.



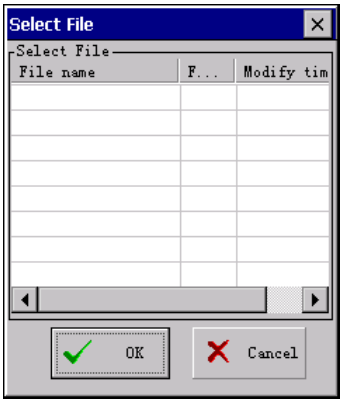
- ✓ (2) Point different icon to have relative test operation.

7.7.1 Record browse

Browse test record, including information of DMM test, physical layer parameter, and channel bit pic.

- ✓ (1) Point  Record Browse to enter into operation window.

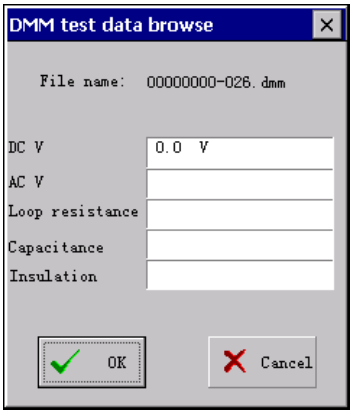
- ✓ (2) The tester will emulate user Modem to realize PPPoE DUN (Dial-Up Network).If the VPI/VCI value needs to be modified, please modify it from Modem Parameter window.



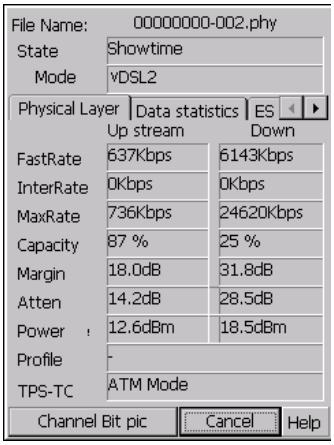
The file which postfix is “dmm” is the DMM test record; the file which postfix is “phy” is the physical layer test record.

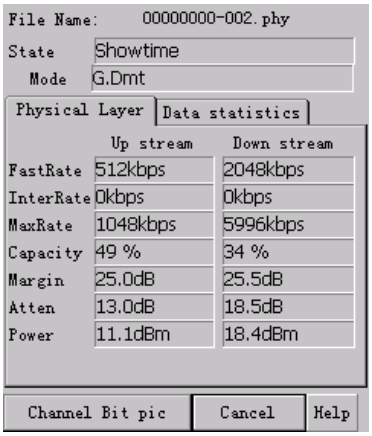
Choose the files which will be checked from select file dialog box and choose the needed recording file from the list. Then confirm and open the relevant file and the record will be displayed,

DMM Test Record window:



Physical Layer Parameter Test Record window:





VDSL2 module test record

ADSL2+ module test record

7.7.2 Memory key save

Transfer files saved in tester or memory key to each other. Make sure to insert memory key into tester, and the memory key is not in write-protect state.

Point  Memory key Save to enter into operation window.

The file saved in tester will be displayed in the Local file bar; the file saved in memory key will be displayed in Remote file bar.

Choose file from Local file bar, then point 

to transfer file into memory key;

choose file from Remote file bar, then point 

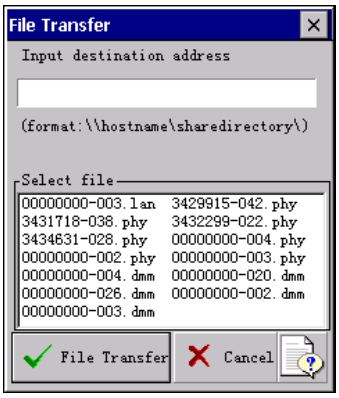
to copy file into tester.

Point Cancel to close the window.

7.7.3 File transfer

Copy test record from tester to Share directory in other PC in LAN. Make sure the IP address of tester and PC are in the same network part, and there is one share directory.

- ✓ (1) Link network line into Ethernet port well, the Ethernet indicator light will be bright.
- ✓ (2) Point  File Transfer to enter into operation window.



- ✓ (3) Type address into Input destination address bar, choose file will be transferred from Select file bar, point File Transfer, the file chosen will be transferred to the directory.

Notice

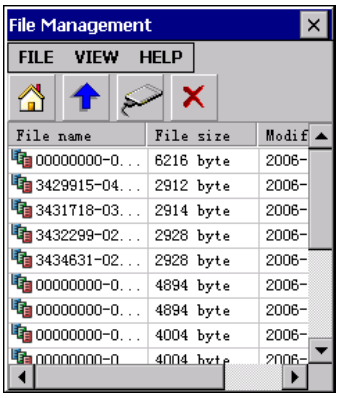
1. Please type in right format when the destination address is inputted.

2. If it is the first time to visit destination address, the user name and password window will be displayed. If you have no user name and password, just point OK.

7.7.4 File management

Manage files saved in the tester, including file deletion and file transferring to memory key.

✓ (1) Point the  File Management to enter the window:



✓ (2) Press  to return to the root catalog. (3) Press  to return the next higher level.

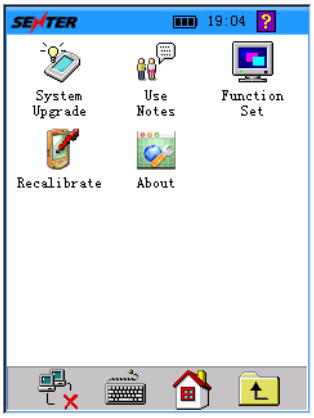
✓ (4) Press  to copy the file to the memory key.

✓ (5) Press  to delete file.

7.8 Help

Providing information on system upgrading, operation, function setting, recalibrate and about.

✓ (1) Point  HELP to enter into operation window.



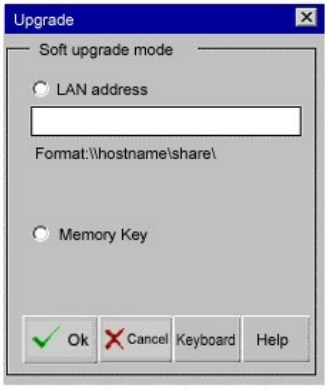
✓ (2) Point different icon to have relevant test operation.

7.8.1 System upgrade

There are two ways to upgrade the software.

1. Upgrade software through LAN.
2. Upgrade software through memory key.

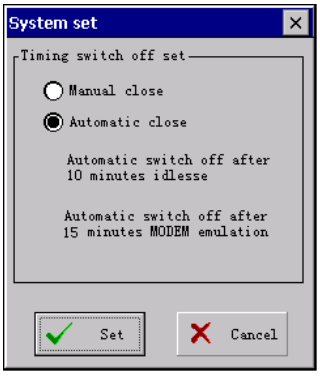
- ✓ Point  System Upgrade to enter into System Upgrade window, to choose the upgrade mode.



7.8.3 Function set

To perform the Manual close/ Automatic close switch set. The user can open/close timing switching off by this function set.

- ✓ Point  function set icon to enter the function set window.

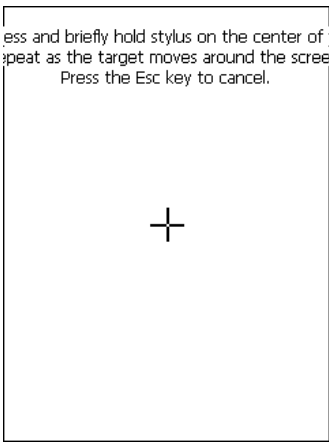


- ✓ (2)If you choose the Manual close option the instrument will be closed by yourself. If you do not close the instrument it will keep on open.
- ✓ (3)Once select Automatic close option the tester will auto switch off after 10 minutes' idle to save power or 15 minutes modem emulation. We regard Automatic close as our default option in order to save power.
- ✓ (4) The revising of the switching off is effective in current operation. If you close the tester setting will be the default automatic close.
- ✓ (5) Please do remember to press the set key to save your option.

7.8.4 Recalibrate

This part provides the accuracy recalibrating of screen response to the touching stick.

- ✓ Point  recalibrate icon to enter the recalibrate window



7.9 Charge

The tester battery is inner 7.4V2700mAh Li-battery, the battery sign is empty, and the tester will prompt low battery to power off. About one minute later, the tester will be auto off. To make sure your using, please charge it immediately.

Due to the Li-battery not having the memory function, you can charge it at any time. We suggest you charge it when the battery sign is one pane to avoid low battery affecting your job.

Charging method:

(1) Switch off tester, insert charger input plug into AC 220V power supply, the indicator light will be green color.

(2) Insert charger output plug into tester CHARGER port, the indicator light will be red color, it means the tester is being charged.

(3) After the indicator light becomes green color, the tester has been fully charged. Please take off the charger.

8. Analysis and solution for faults

Phenomenon	Reason	Solution
Unable switch on tester	Low battery	Charge tester
Under the xDSL test state, link XL-DM130V to the ADSL activation for long time	1. Bad link for test line. 2. If no signal in the line, please test whether there 48V voltage by DMM test	1. Please have test after confirm the well connection. means there is no service in
Failed modem initialization	1. User set the network card properties as DHCP mode. 2. User forbids the using	1. Modify the network card properties and set a fixed IP address. 2. Make network properties in
After enter into xDSL test, the under voltage warning will be display in a very	The power of the Modem is big and the electricity will be consumed fast by the xDSL	Confirm the full charge when you have the xDSL
Memory key cannot be	Not all the memory keys can	Please try again, or to change
PPPoE Dial connection	To confirm the right user name and password, and the PPPoE	Modify the PPPoE property according as the connection request of the line and input
Webpage browse failed	Confirm successful PPPoE	First dial the PPPoE No. Then change a web address to confirm the mistake is not
Ethernet indicator light is dark when the Ethernet cord is	Network cord is divided into cross and direct	Please try another Ethernet port.