Operation Manual

TSW800TP/TSW800TP+

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Contents

1 Introduction

1.1 TSW800TP Operation

The TSW800TP has been developed to support the installation, maintenance and repair of xDSL services. **Only the TSW800TP+ supports VDSL lines**. The product allows the user to verify the contracted service. It verifies the connection quality and connection speed by checking any connectivity problems between the users xDSL subscriber and the central office. Among other functionalities, are protocol identification (PPPoE or PPPoA), identification of IP address received during the authentication phase and the evaluation of the download rates. The TSW800TP simulates the subscriber modem functions (ATU-R) and can be connected to the office modem (ATU-C) from any point in the network. The TSW800TP allows the xDSL line maintenance and Service Providers to check if the subscriber end is able to establish a connection to the central office DSLAM at the desired QoS rate and to evaluate the maximum possible rate for that connection. The quality of the service can be guaranteed by analyzing the units connection parameters. For the cases where the connection is not possible, the fault can be isolated by connecting the TSW800TP in different points between the subscriber and the central office DSLAM. The TS800TP has the following functionalities:

- Speed for data transfer auto-negotiated,*downstream* and *upstream*.
- Maximum Speed that is possible to establish a connection, *downstream* (central office – subscriber) and *upstream* (subscriber - central office).
- *Upstream* and *downstream* attenuation.
- *Upstream* and *downstream* noise margin.
- *Upstream* and *downstream* transmission power.
- *Upstream* and *downstream* number of bits per channel histogram.
- Standard in which the connection was established - G-DMT (ADSL), ANSI-T1.413, G.992.3 (ADSL2), G.992.5 (ADSL2+), G.993.1 (VDSL), G.993.2 (VDSL2).

The results can be stored as text files.

Once the physical layer has been checked, the TSW800TP also allows tests of the upper layers, checking the Internet connectivity using PING, BROWSER and THROUGHPUT.

By using the PING test it is possible to send an IP packet (ECHO REQUEST) to any valid Internet IP address. If the connection is operational, a response package (ECHO REPLY) is received and the elapsed time between transmission and reception of the packets is displayed.

The BROWSER test performs a graphic navigation on most Internet websites, enabling the TSW800TP connection to the Internet to be tested.

The THROUGHPUT test measures the download rate on the connection.

The UPLOAD feature allows the user to send data stored inside the unit to a certain Internet website. This feature eases the real-time management and analysis of installing and maintaining xDSL services. The data obtained during the DSLAM connection, that is, the downstream and upstream measured rates, attenuation, noise margin, among other information, is sent and stored in an online database.

It is also possible to connect the TSW800TP directly to the client xDSL modem through the Ethernet interface. Once connected to the xDSL ROUTER modem, the aforementioned tests can be run: PING, BROWSER and UPLOAD. These options allow for the testing of the xDSL connection through the client's modem, locating a possible fault in the xDSL modem or in the client's computer.

It is also possible to replace the modem using the TSW800TP. This is the modem emulation mode, also known as THROUGH MODE, the TSW800TP is connected to the xDSL line and the computer acting as the modem.

1.2 Technical Specifications

- Compliant Standards:
  - ITUT G.dmt (G.9221), Annex A (ADSL over POTS)
  - ANSI T1.413 Issue 2 (On AUTO mode)
  - G.dmt.bis (G.992.3) (ADSL2 - Annex A - ADSL over POTS)
  - G.dmt.plus (G.992.5) (ADSL2+ - Annex A)
  - ITU (G.993.1) (VDSL)
  - ITU (G.993.2) (VDSL2)
- Downstream rate: Up to 24Mbs
- Upstream rate: Up to 2Mbs
- Measurements performed:
  - RATE: Current connection rate
  - MAX RATE: Estimate of the maximum rate possible on the line
  - ATTENUAT: Attenuation
  - SNR MARG: Signal to Noise Ratio margin
  - TX POWER: Transmit Power
  - Channel per bin histograms
- Counters:
  - CRC
  - FEC
  - HEC
- Additional tests:
  - Ethernet 10/100Base T: Ping, Internet browsing
    - Modem configuration
    - PING test over xDSL
    - Internet browsing over ADSL
    - Results Upload (via Internet)
    - Modem Emulation (Through Mode)
- High-resolution colour display: 320x240 pixels
- Alphanumeric keyboard with 23 keys, including function keys
- Configurable "auto power-down" mode
- NiMH battery lasts approximately 5 hours and takes 3:15 to fully charge.
  - Battery Charger:

    - IN: AC/DC 90-240VAC, 50-60Hz
    - OUT: 10VDC/1A

- Memory for test results
- Self-test
- Physical Specifications:
  - Size (HxWxD) : 24.33 x 9.69 x 5.2 inches
    - Weight: approx. 2.9lb
    - Operating temperature: 32 to 122 °F
    - Storage temperature: -4 to 158 °F
    - Humidity: 5% to 95% non-condensed
- Connectors:
  - RJ-45 @ 100Ω for xDSL line connection
  - RJ-45 10 BaseT Ethernet for network testing
  - RJ-45 100 BaseT Ethernet for the Modem Emulation (Through Mode)
  - Mini USB

2 Physical Characteristic

The TSW800TP is a portable hand-held test unit that is operated with a keyboard and provides a colour LCD display. It also provides a set of LEDs as a quick status check reference. The unit is powered with internal batteries that should be charged with the charger that comes with the device. The following sections explains each one of the parts that compose the device.

2.1 External Connections

- Switching Power Supply connector is located on the side of the unit.
- RJ45 connector located on the top panel, used for connecting the unit to the xDSL line. Cable is provided with the TSW800TP
- ETH/ETH: RJ45 connector located on the top panel, used for connecting the unit to the network interface. Used in the Ethernet Module
- ETH/PC: RJ45 connector located on the top panel, used for connecting the unit to a computer or CPE. Used in the Through Module
- USB: USB port located on the top panel, used for keyboard and mouse.

2.2 LEDs

- RUN: Internet LED, **ON** when the unit manages to get PPPoE authentication and becomes apt for the Internet tests
- SYN: Sync LED, **ON** when the unit manages to connect to the central office
- ERR: Lights up when the connection attempt fails and blinks when there are errors during the connection

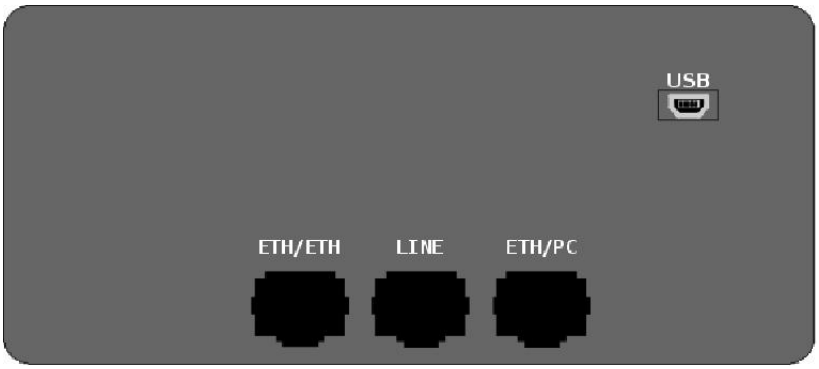

Figure 2.1: TSW800TP Top panel

- BATT: BLINKS when the battery has insufficient load for operating the unit
- IN CHARGE: Lights up whenever the battery charger is connected. **RED** when the battery is being charged and **GREEN** if the battery is fully charged

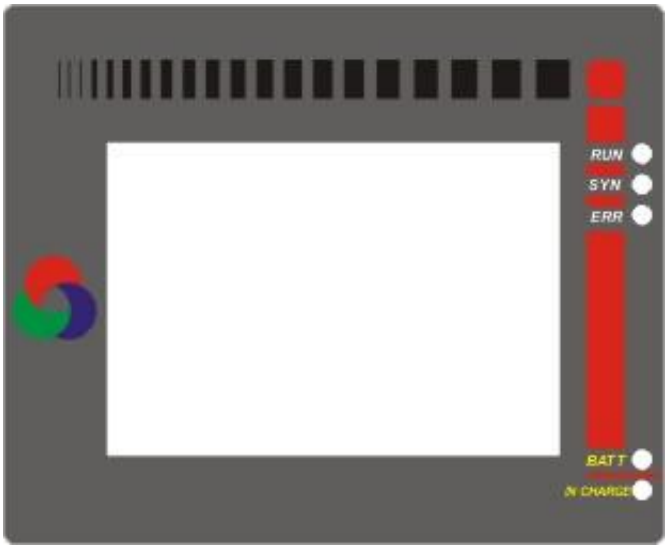

Figure 2.2: TSW800TP LEDs

2.3 Keyboard

The TSW800TP keyboard offers multiple keys to ease operation:

- **ON/OFF**: Turns the unit on and off
- **F1,F2,F3,F4**: Function of these keys are dependent on the screen displayed. These functions are defined by the label displayed in the lower line, right above the keys
- $\leftarrow$, $\rightarrow$, $\uparrow$ and $\downarrow$: Used for navigating the cursors on the screen and changing the option pointed to by the cursor.
- **Volume+, volume-** : not used
- **START/STOP**: Starts or ends the test, selects test/mode and applies text modifications.
- **PRINT(.)**: Provides the " . " symbol (the dot)

- **DATA (0)**: Works as the number 0 (zero), @ or space
- **CLEAR**: clears editing or counters, according to the displayed screen
- **ERROR (-)**: Provides the symbol "-" (minus sign or hyphen) or "#"
- **Alphanumeric keys**: Used for editing. For entering numbers, each key provides the associated number. When entering text, they operate just like a mobile phone keyboard: pressing the key once yields the first letter; pressing the key again gives the second letter; pressing one more time changes it to the third letter; once (or twice, according to the particular key) more yields the corresponding number.

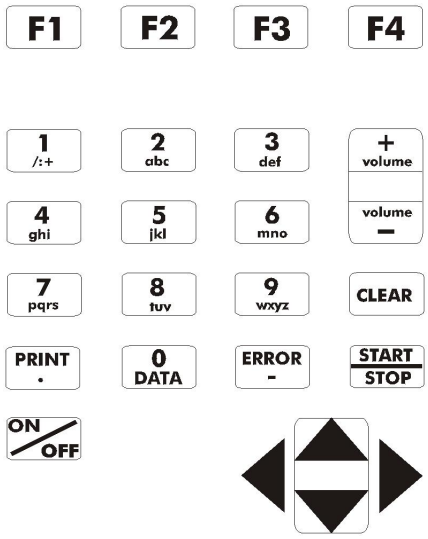

Figure 2.3: TSW800TP keyboard

2.4 Battery

The TSW800TP is powered by NiMH batteries, capable of sustaining an average continuous operation of 3 hours , depending on use and battery charge. The complete recharging of the battery is achieved in approximately 5.5 hours. When the TSW800TP internal batteries need recharging, the unit should be connected to the provided power supply (Input: 90 to 240 VAC / 60 Hz) via input connector, located on the side of the unit, it is also recommended that the device should only be charged when the battery is at it's minimum charge, that will assure the device will have the life-time specified. It is also important to remember that even with the device off the battery suffers discharge and it is recommended to recharge it at least once a month. Keeping the battery totally discharged lowers the life-time specified.

During battery charge, the user may monitor to see if it is fully charged by checking the status of the "IN CHARGE" LED at the front panel display. If the LED is red; means that the battery is currently being charged. If the LED turns green; means that the battery has achieved its maximum charge capacity.

If the battery is not charged up to its maximum capacity, the TSW800TP operating time will be reduced.

To avoid power line interferences that may alter the test results, it is wise to avoid connecting or disconnecting the TSW800TP battery charger whenever a test is in progress.

The TSW800TP has a battery manager that informs the percentage of battery charge available (please see Section 3 of this booklet). When a battery gets to its minimum level, the BATT

LED, adjacent to the display, will blink for 3 minutes and a beep will be heard. After this time, the unit turns itself off. If the battery level is normal, this LED will remain off.

Note: The TSW800TP must only be charged with the provided power supply. Otherwise, Wise cannot be held responsible for unit damage and diminished battery life.

3 Unit Operation: Starting Up

When the unit is turned on, the TSW800TP logo will be the first one to appear. The logo screen then changes automatically to the one below, where it's possible to choose which module to use: LINE, ETHERNET, SYSTEM or MODULES.

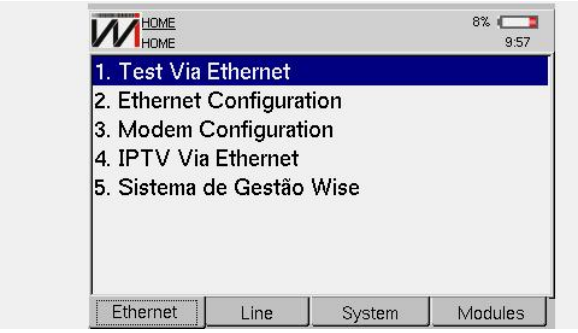

Figure 3.1: Ethernet tab

The option is made using the function keys below each tab (F1, F2, F3) or by using arrow keys (← or →) to navigate between tabs. Each tab has a menu with the tests and settings available for each module. To select the desired option, press the ↑ or ↓ keys and then START/STOP or simply press the alphanumeric key associated with the feature.

4 Ethernet

When selecting the ETHERNET module; the following screen will be displayed: 4.1

To access this screen's functionality, move the selection with the ↑ or ↓ keys and then START/STOP or press the alphanumeric key associated with the option.

The ETHERNET module allows checking of the Internet connectivity through the Ethernet interface. While in this mode, it's possible to connect the unit to the subscriber's xDSL modem, thus including it in the test. It's also possible to choose one of the other three tests: PING, BROWSER or TROUGHPUT. The TSW800TP also may send the memory data to a website using the UPLOAD feature. For details on these tests, check the Internet tests section. These options are available by pressing F3 (ACTIONS).

Another option is to allow the user to automatically configure modems.

4.1 Test via Ethernet

This option is used when connecting through a Router Modem. When Test via Ethernet mode is selected on the Ethernet tab, a network configuration and connection status screen will be displayed. This connection is automatically set up using the settings defined on 2. ETHERNET CONFIGURATION. The connection status may be observed in the line below the WISE logo.

It is also possible to check the connection statistics screen. This option is available through the F2 (VIEW) menu. To navigate between screens, change the selection using the ↑ and ↓ keys and then press START, or simply key in the number associated to the desired feature.

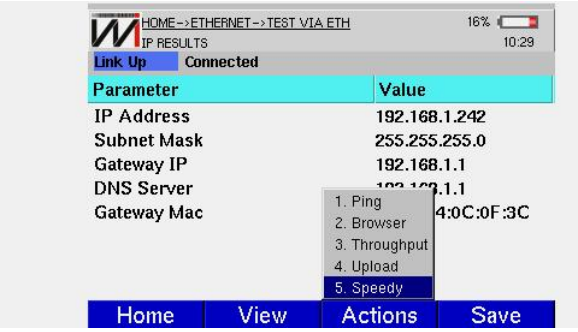

Figure 4.1: Teste via Ethernet

The F3 (ACTIONS) menu permits the selection of PING, BROWSER, THROUGHPUT and UPLOAD modes. The item number 5 (SPEEDY) will be explained later on (item 4.4). The option REFRESH DHCP will appear if the equipment fail when trying a connection with a local network. These modes are better explained on the Internet Tests section.

4.2 Ethernet Configuration

This option allows the connection parameters of the ETHERNET mode to be configured. Use the ↑ and ↓ keys to select the desired line. Press F4 (EDIT) and use the arrows and the alphanumeric keys to edit the field. When the configuration is done, press F4 (OK) to save the changes or F1 (CANCEL) to discard them.

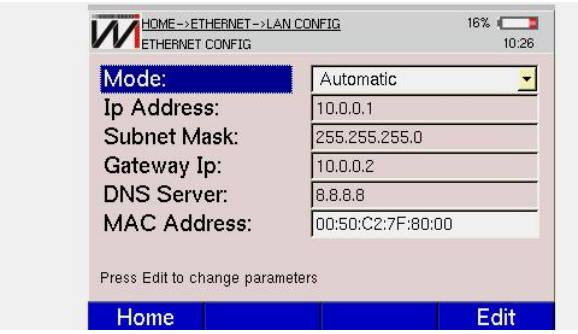

Figure 4.2: LAN Configuration

To automatically configure the connection, choose AUTOMATIC on the IP Address field. If the MANUAL option is chosen the user will have to edit all the fields shown. The MAC address does not need to be changed, the default value should be used. It is only recommended to change this value if it´s required for tests. The original value is restored every time the option FACTORY DEFAULT on DEVICE SETUP is chosen (HOME→SYSTEM→SETUP).

4.3 Modem Configuration

After entering the Modem Config mode the display will show the following screen, where all the modem models currently configurable by the TSW800TP can be found.

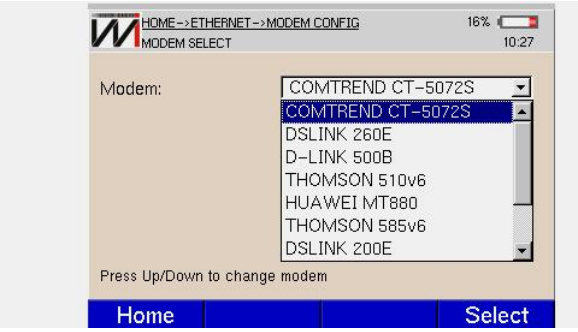

Figure 4.3: Modem Select

Choose the desired modem and press F4 (SELECT) to initiate the configuration. Doing so will change the screen to the one below, where the user may choose the desired modem parameters.

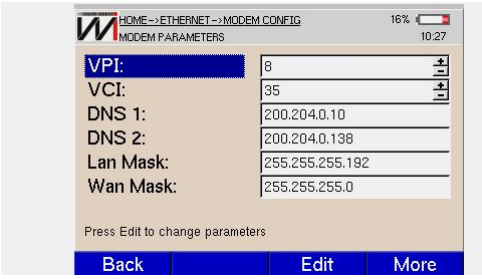

Figure 4.4: Modem Parameters

This screen presents some of the necessary settings to configure the modem:

- VPI.
- VCI.
- Endereços IP: two DNS addresses, LAN mask and WAN mask.

Press F4 (MORE) to continue the process. This new screen allows the user to choose the current modem operation mode, as shown below.

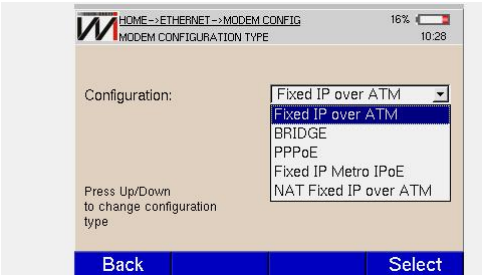

Figure 4.5: Modem Configuration Type

Pressing F4 (SELECT) will show one more screen with the remaining settings. These settings may vary according to the modem model and operation mode chosen. Below is an example screen.

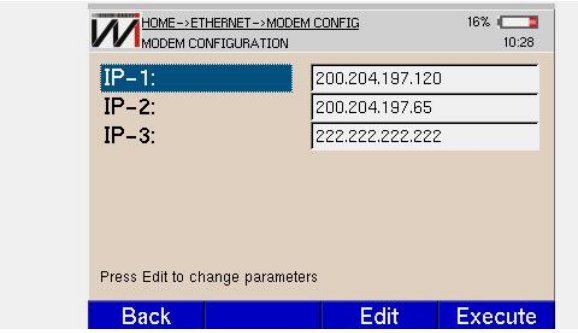

Figure 4.6: Modem Configuration

To access previous screen, press F1 (BACK). After editing all the settings, make sure the modem is turned on and connected through a cross Ethernet cable to the TSW800TP unit and press F4 (EXECUTE) to perform the modem config. A status bar will indicate the progress through the whole process.

4.4 Speedy*

For technicians of *TELEFONICA-SP*, this option registers the login and password needed to access the lines. Such authentication is only needed for fixed IP protocols (IPoA and Metro Ethernet – MER), so dynamic IP protocols (PPPoE) and those that do not require authentication (BRIDGE) do not require the access to this module.

Because the equipment is connected to a configured modem, this option will be visible in the ETHERNET tab in case the modem is set to either IPoA or MER. In the HOME screen, displayed below 3, select option 1 (TEST VIA ETHERNET) by using the ↑, ↓ and START/STOP keys or, alternatively, alphanumeric key 1. On the next screen, press F3 (ACTIONS) and select option 5 (SPEEDY).

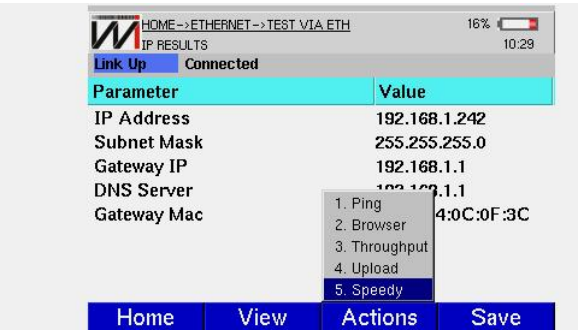

Figure 4.7: Speedy option on Test via Ethernet

In the next screen, fill in the login and password fields to be authorized to access the lines.

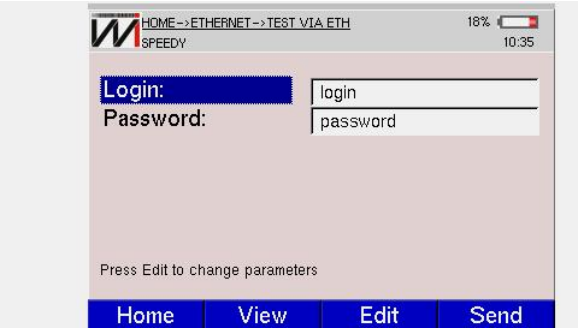

Figure 4.8: Login screen

5 Line

The *LINE* module performs a quality test on the line, measuring several connection parameters. It's also possible to use it to perform the Internet Tests. When the *LINE* tab is selected, the following screen will be displayed.

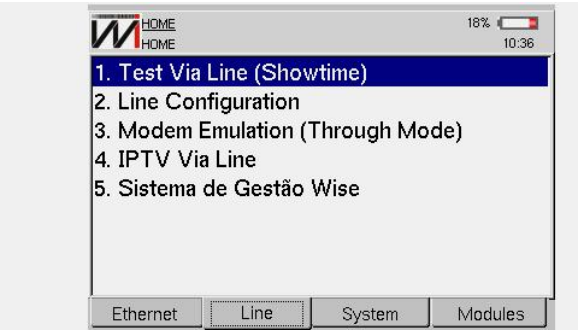

Figure 5.1: LINE tab

To access this screen's feature, move the selection with the ↑ and ↓ keys and then START/STOP or press the alphanumeric key associated with the option.

According to the selected option, the user may start a connection, configure the operation mode and the PPP protocol details or use the Modem Emulation (THROUGH MODE).

5.1 Test via Line (Showtime)

When Test via Line (Showtime) is chosen, the Summary screen below is displayed.

Obs.: The options in the following screen 1. DISCONNECT e 5.SPEEDY are never shown together in the ACTIONS menu. Option 1. DISCONNECT is only enabled for the PPPoE protocol, whereas option 5. SPEEDY is only enabled for the IPoA and MER protocols. Such protocols are set in the Line Configuration page.

In this screen, the unit automatically tries to communicate with the central (DSLAM). To indicate this, the word HANDSHAKE is displayed in the line below the WISE logo and the Syn LED blinks. This word remains on the screen until the TSW800TP detects a signal from the central DSLAM.

If the connection fails or no signal is detected, the equipment shows the word READY, indicating the unit is ready to receive a test signal. If that happens, check if the cables are properly connected to the correct slots.

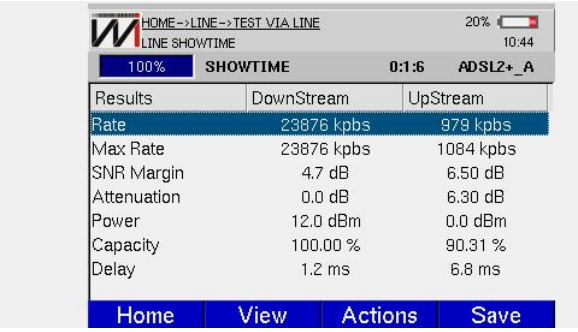

Figure 5.2: Line Showtime

When the TSW800TP detects the DSLAM signal, the word TRAINING appears on the display and the SYN LED starts blinking faster. After a few seconds, the connection is established. Occasionally, the words TRAINING and HANDSHAKE will alternate and the unit will take longer to connect.

If the connection is successful, the SYN LED will remain on. This is the indication that the unit is connected to the central DSLAM. From this moment the test results may be viewed. They will be displayed in a screen with the connection parameters and two screens with graphs.

If the unit is connected and the signal is lost, the unit will automatically disconnect and try to set up a new connection.

After connecting to the DSLAM, the unit automatically tries to connect to the Internet, using the settings from 2.LINE CONFIGURATION. This process is indicated by the RUN LED.

The unit will display four kinds of connection results: a summary of connection parameters (Summary), error counters (Counters), a graphs of bits per tone (Graphs) and some details of the connection with the DSLAM (Details). F2 (VIEW) 5.1 opens a menu where the user may choose which kind of results to see. Use the ↑ and ↓ keys to select the desired option and press START/STOP.

To return to the LINE menu press F1 (HOME).

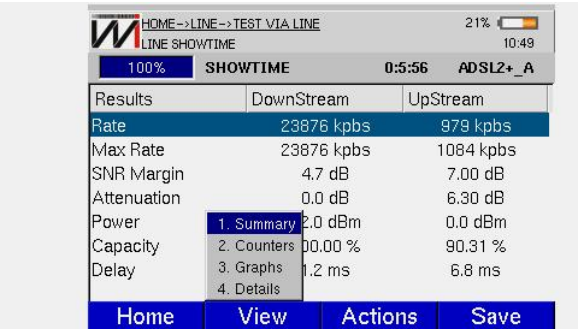

Figure 5.3: View tab

The results may be stored in the unit's memory. To do so, press F4 (SAVE) and edit the name of the file where the results are to be stored.

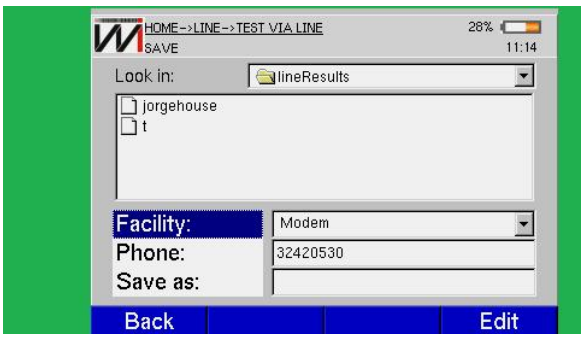

Figure 5.4: Saving results

With the xDSL connection up, it's possible to check connectivity to the Internet. To do so, press F3 (ACTIONS). Check the Internet Testing section for information on how to perform the PING, BROWSER, THROUGHPUT, UPLOAD or SPEEDY tests.

5.1.1 Summary

A tela mostra uma série de parâmetros para upstream e downstream:

- Rate: Connection rate;
- Max Rate: Maximum connection estimated rate. If the DSLAM is configured for a very low fixed rate, this measure becomes more imprecise;
- SNR Margin: Signal to noise connection ratio margin;
- Attenuation: Signal attenuation for the connection;
- Capacity: Ratio of connection rate and maximum estimated rate;
- Tx Power: Transmit power;
- Int Depth: Interleaved depth;

5.1.2 Counters

The screen below is displayed on the Counters option in the results menu. It displays counters that are updated as remote faults and anomalies occur on the xDSL line.

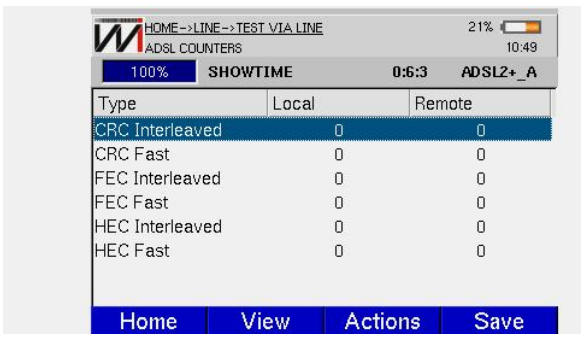

Figure 5.5: xDSL Counters

Below is a description of each counter.

- CRC - CRC anomalies counter;
- FEC - Reed-Solomon error correction counter;
- HEC - Header error counter;

To reset any counter, select it and press CLEAR.

5.1.3 Graphs

The results include bits per bin graphs, bringing together upstream and downstream data.

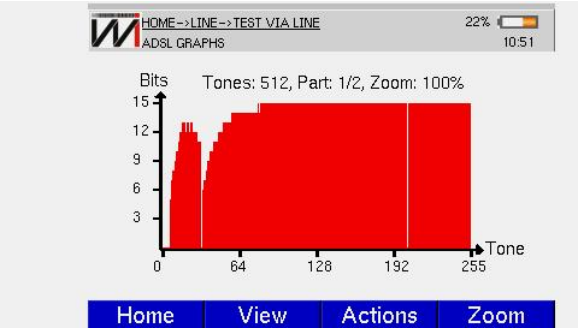

Figure 5.6: Line Graphs

The green line cursor in the graph may be positioned on any bin. At the upper part of the display, the number of the bin selected can be seen (with its associated frequency) and the amount of bits. To move the cursor between channels, use the ← and → keys. If the cursor hits the end of the graph, it shifts so the remaining channels may be shown.

The graphs have a zoom feature which allows you to see some areas of the graph more clearly. To zoom in or out, press F4 (ZOOM). Using ↑, ↓ and START select the desired zoom.

5.1.4 Details

When the unit connects to the DSLAM there will be two DNS addresses and one IP. They are shown on the screen below. To reset any value, select it and press CLEAR.

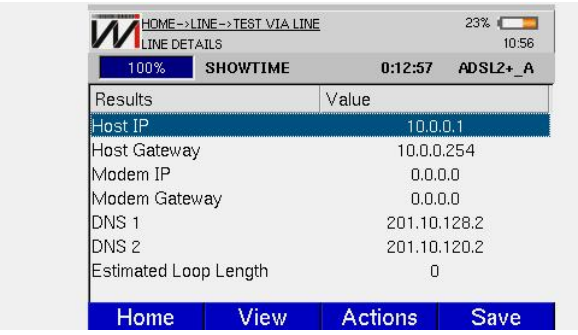

Figure 5.7: Line Details

5.1.5 Line Configuration

To run the Internet access tests, first it is necessary to establish a connection between the unit and the subscriber's ISP (Internet Service Provider). By selecting the Line Configuration option, the following screen will appear, where you can choose the connection mode (LINE

MODE), the virtual channels VC1 and VC2, the Internet protocol. In some protocols, the login and the password for the connection are required. Usually only one virtual channel is needed to be configured. If necessary, the user may adjust the settings for a second one. The protocols available are: PPPoE, RFC2684(MER), IPoA and BRIDGE.

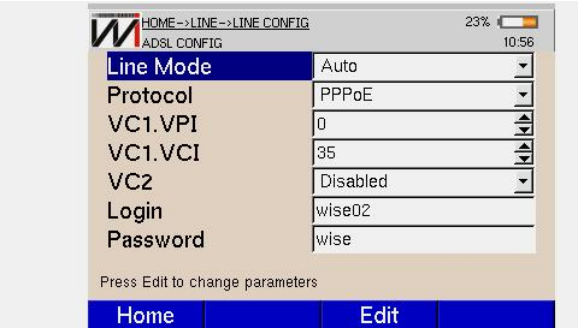

Figure 5.8: xDSL Line Configuration

To edit the parameters, select with the keys ↑ and ↓ to the desired option and press → or F4 (EDIT).

To choose the Line Mode, use . and . to move the selection and press F4 to confirm the selected mode. On the VPI and VCI fields, use F2(-) and F3(+) or . and . to increase or decrease. For the login and password, use the alphanumeric keys and F3 (DELETE) for editing. F2 (abc, ABC, 123) selects whether the alphanumeric keys should assume small caps, capital letters or numbers. The characters SPACE and "@" may be inserted pressing DATA two or three times respectively, as well as "_", "–" and "#" may be inserted by repeatedly pressing ERROR.

If the chosen protocol is RFC2684(MER), it is necessary access another configuration screen to complete connection settings. This screen, shown below, may be accessed by pressing F3 (MORE).

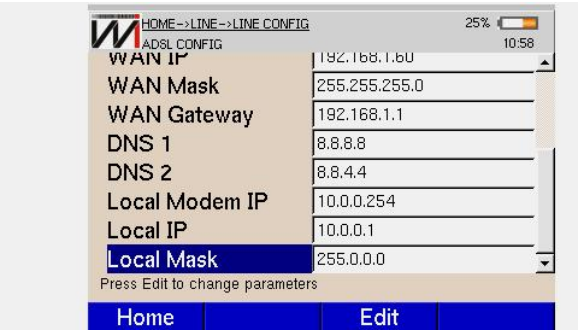

Figure 5.9: MER mode configuration

If the protocol chosen is RFC2684 (IPoA), other configuration screen with other parameters will appear as shown bellow:

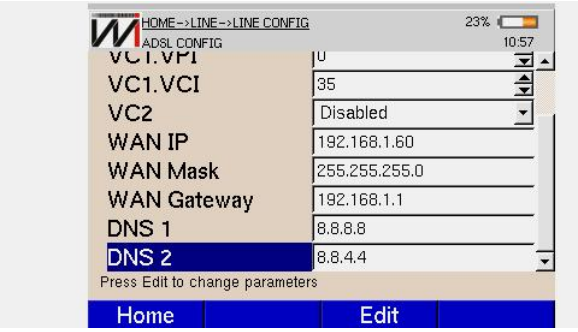

Figure 5.10: IPoA mode configuration

If BRIDGE is selected, the option IP MODE will appear and it can be configured as FIXED or DHCP. If FIXED is chosen, the screen above can be accessed through the F3 (MORE) button for IP configuration. If DHCP is chosen, the IP addresses will be acquired through a DHCP.

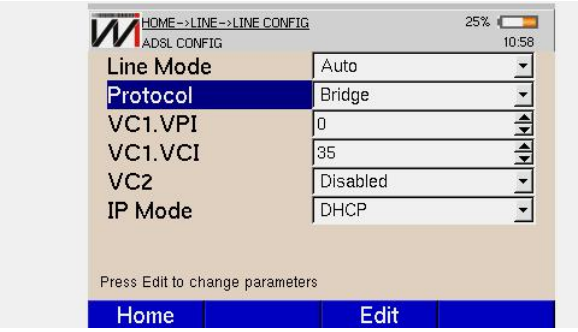

Figure 5.11: Bridge mode configuration

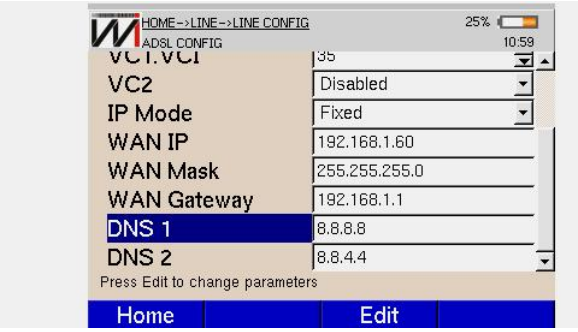

Figure 5.12: Fixed IP configuration

5.2 Modem Emulation (Through Mode)

In this mode, the TSW800TP must have its Ethernet interface connected to a PC, notebook CPE, or a PDA (Personal Digital Assistant) through its ETH/PC connector. The LINE connector is connected directly to the xDSL line. The unit then acts as a subscriber modem and can carry on fault detection.

When the Modem Emulation (Through Mode) is entered, the following screen is displayed.

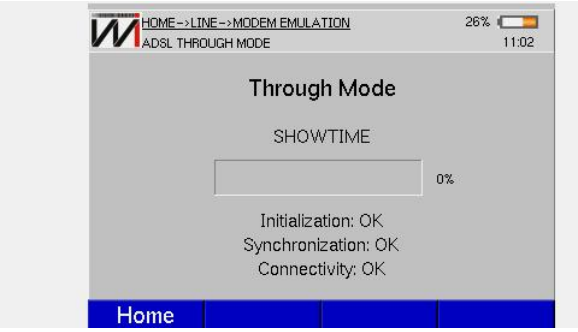

Figure 5.13: Progress bar on Through Mode

5.3 Speedy*

For technicians of TELEFONICA-SP, this option registers the login and password needed to access the lines. This action is only necessary if RFC2684(MER) or RFC2684 (IPoA) protocols are selected, because they are fixed IP protocols. On the other hand, for accessing the lines using the protocols that are based on dynamic IPs (PPPoE) or that do not need any authentication (BRIDGE), it is not needed to access to this module. In the LINE screen, select option 2 (LINE CONFIGURATION).

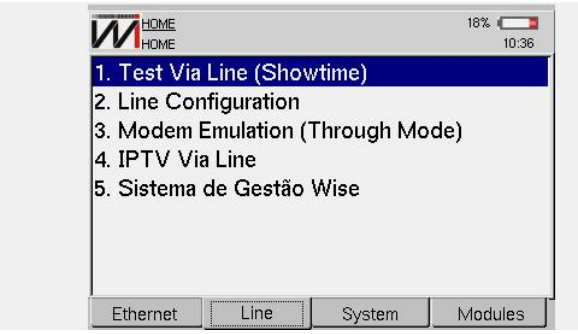

Figure 5.14: Line Configuration on LINE tab

In the LINE CONFIGURATION screen, displayed below, in case the IPoA or MER protocols are selected, press the F1 (RETURN) key.

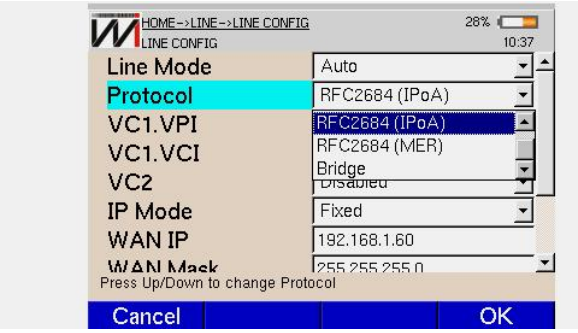

Figure 5.15: Protocol selection screen

In the LINE screen, select option 1 (TEST VIA LINE), to display the following screen. Press F3 (ACTIONS) and select option 6 (SPEEDY), by using the ↑, ↓ and START/STOP keys.

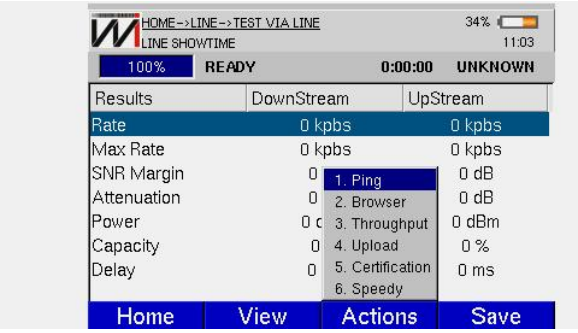

Figure 5.16: Speedy option on Line Showtime

The next step is to log on, using the login and password, in order to access the lines.

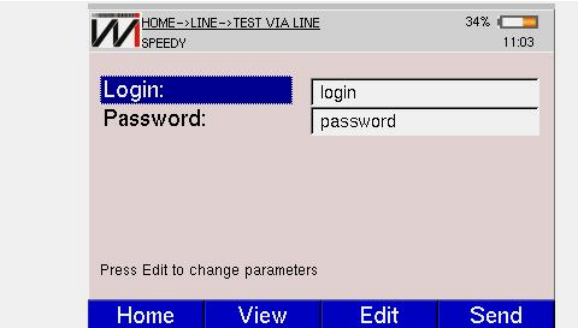

Figure 5.17: Speedy option on Line Showtime

6 Internet Tests

While establishing the Internet connection, the unit goes through several automatic steps. If the protocol is PPPoE: The steps are: Discovery, LCP, Authenticate and IP Config. After finishing the procedures, the unit lights up the RUN LED, indicating it is ready to perform the Internet tests. This process may occur in any screen, independent of any user command.

In the Authenticate step, the login and password entered beforehand are authenticated. If the authentication fails, the RUN LED will not light up.

The F3 (ACTIONS) menu on the result screens allows the selection of which test can be started both in the xDSL and the ETHERNET mode. To do this, select the test and press START/STOP. The instructions to access the test in Ethernet or LINE mode are described in sections 4.1 - TEST VIA ETHERNET and 5.1 - TEST VIA LINE (SHOWTIME), respectively.

6.1 Browser

The browser mode allows a web page on the Internet to be viewed. Selecting the option BROWSER on the ACTIONS menu opens the window below in which the user can access the web site. The key F1 (Home) return to TSW800TP's opening page, F2 (View) shows the selected result from test via Ethernet, F3 (Edit) edits the Home Page field and F4 (Browser) starts a browser similar to the ones used on PCs.

The alphanumeric keys are used to edit the URL the same way it's done on most mobile phones. The CLEAR key clears the character in front of the cursor. The characters SPACE

Figure 6.1: Browser screen

and "@" may be inserted pressing DATA two or three times respectively, as well as "_", "–" and "#" may be inserted by repeatedly pressing ERROR.

In the browser, the F1 key places the cursor in the address bar, the F2 and F3 keys may be used to move the selection between the browser's URL, links and other web objects. When the desired link is selected, press START to access. The F4 key quits the browser, and the keys VOL+ and VOL- return and advance one page, respectively.

It is possible to connect a keyboard and mouse to the unit using an USB adapter for internet navigation, these parts are optional and don´t come with the unit.

6.2 Ping

After selecting PING on the ACTIONS menu the following screen will appear.

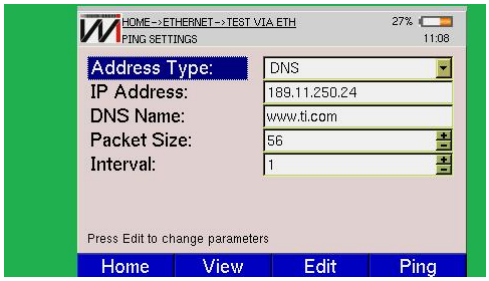

Figure 6.2: Ping Settings

On this screen the user chooses the IP or URL which will receive the PING packets. To edit, use the alphanumeric keys to enter the desired address. F4 (OK) applies the edited value. To go back press F1 (HOME) to return to the initial screen or F2 (VIEW) and select the desired option.

To start the test, press F4 (PING). PING packets will be continuously sent to the previously configured IP/URL. The following screen will be shown.

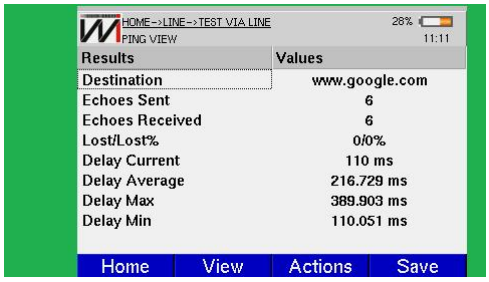

Figure 6.3: Ping Results

While the unit displays this screen, pressing START/STOP will start or stop sending PING packets.

The items shown in this screen are:

- Destination: Address where the packets are being sent;
- Echos sent: Number of ECHO REQUEST packets sent so far;
- Echos Received: Number of ECHO REPLY packets received;
- Lost/Lost%: Quantity of unanswered ECHO REQUEST and ratio of unanswered ECHO REQUEST packets to sent ECHO REQUEST packets;
- Delay current: Measures the time interval between the sending of the last ECHO REQUEST and receiving its ECHO REPLY;
- Delay Average: Average time elapsed between sending a packet and receiving its answer;
- Delay Max: The longest time interval between sending an ECHO REQUEST and receiving its ECHO REPLY;
- Delay Min: The shortest time interval between sending an ECHO REQUEST and receiving its ECHO REPLY.

To stop the test, select the option 1. STOP PING on the ACTIONS menu.

6.3 Upload

The Upload mode is responsible for sending test results through the Internet to a remote server where they are stored for future reference. In case there is interest in using this feature, the customer must contact Wise to define which results to store and how to customize your website with the data received from TSW800TP. Currently, the upload may be done with any file in the unit's memory. After entering upload, the user will be presented with the following screen:

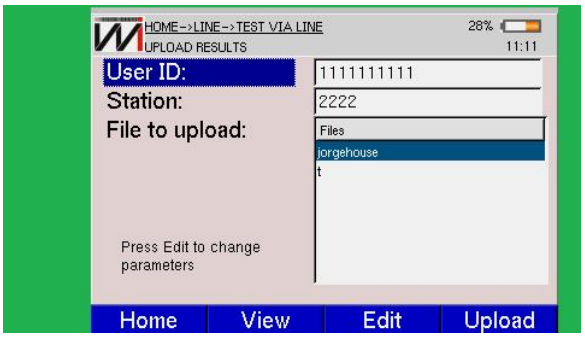

Figure 6.4: Upload Results

This screen presents some parameters which will be sent to the web server along with the test data. This information may be edited. Just put the cursor on the desired field and press F3 (EDIT). Use the alphanumeric keys, F2 (abc/ABC/123) and F3 (DELETE) to edit.

It's possible to choose which file to send: Just use the ↑ and ↓ keys to select the desired file and press F4 (SELECT). When all the settings are OK, press F4 (UPLOAD) to send it. After the upload, a message will appear to confirm its success.

7 System

When the tab SYSTEM is selected the following options are shown:

1. Unit memory access (1.FILE MANAGER).
2. Change date, screen and energy management (2.SETUP).
3. Software update screen (3.SOFTWARE UPDATE).
4. Software update through internet (4.SOFTWARE UPDATE (INTERNET)).
5. Unit information access (5.UNIT INFO (REGISTRY)).
6. Activate WISE remote assistance for customization and maintenance (6. REMOTE ASSISTANCE).
7. Transfer the tests result to a computer (7. RESULTS DOWNLOAD)

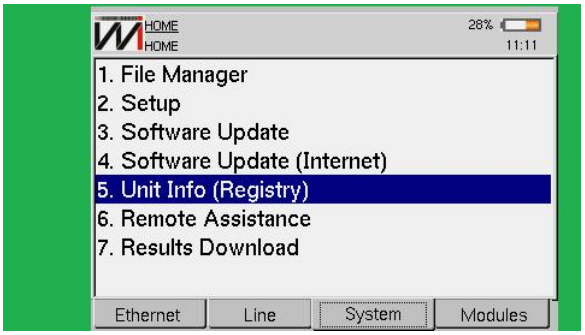

Figure 7.1: System tab

7.1 File Manager

7.1.1 Saving a test and editing the memory title

To save a test to the memory, press F4 (SAVE) from any result screen. The following screen will be displayed:

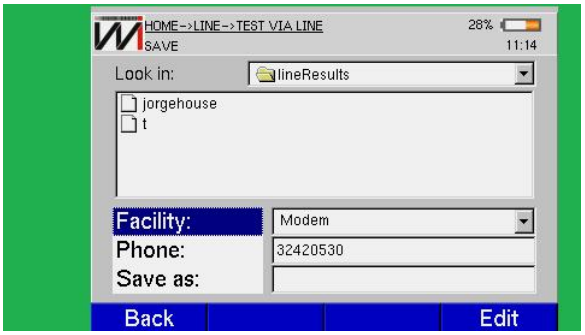

Figure 7.2: Save em Line

Edit the file where the results are to be saved and press F4 (OK). The file will be saved in the folder corresponding to the test performed.

7.1.2 Viewing or editing memory content

To view or edit memory content from the adslResults, ethernetResults or iptvResults folder, select the folder on the screen below using the ↑ and ↓ keys and press F4 (SELECT).

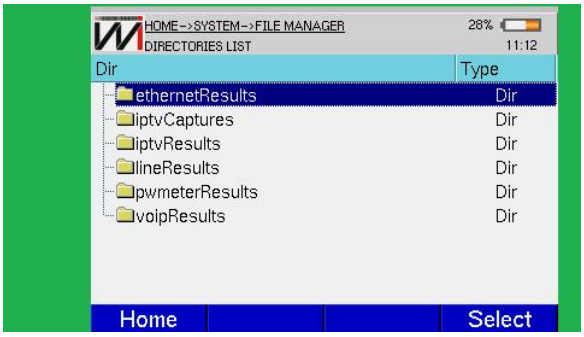

Figure 7.3: Directories List

AA screen like the one below will show up listing the files of the selected folder.

Figure 7.4: Files List

The files may be sorted by name or date. The sorting type may be changed by pressing F3 (SORT). Use ↑, ↓ and START, to select the desired sorting type.

By pressing F2 (FILE), all the file options are displayed. Select the desired action using ↑, ↓ and START or the alphanumeric keys.

The option 3.FTP SEND allows the user to send the file using a FTP. A screen, as shown below, shows the FTP configurations and the file can be sent when the equipment is connected directly into an xDSL line or into a local network (or a modem) trough the Ethernet interface. To edit each field, press F4 (EDIT). The file can be sent by pressing F3 (SEND) after setting the parameters.

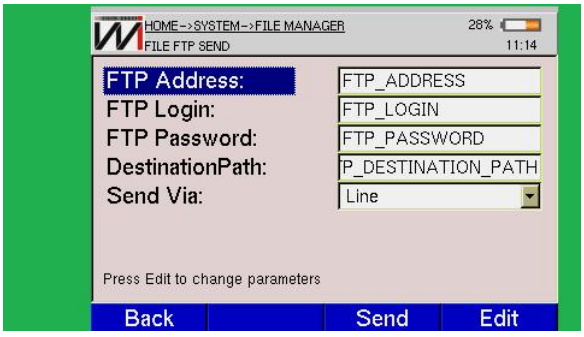

Figure 7.5: File FTP Send

7.2 Setup

The setup screen shows a menu with settings related to the units behavior, this is used to suit the unit to the each client.

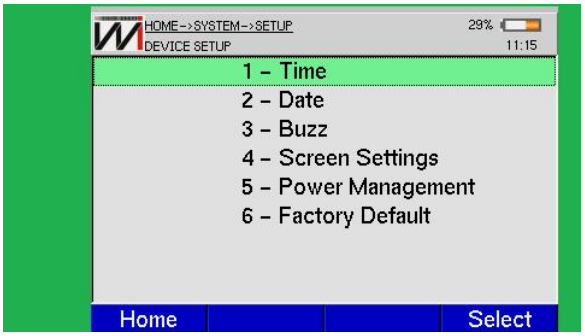

Figure 7.6: Device Setup

From this screen you may enter the time and date settings, buzz, display contrast, energy savings and reset to factory default. Select the desired option and press F4 (SELECT) to edit. In each case, an editing or configuration screen will appear.

7.3 Software Update

The SOFTWARE UPDATE option is used for updating the unit's software. It is necessary to type the the host and local IPs. For further instructions, look for UPW Operation Manual.

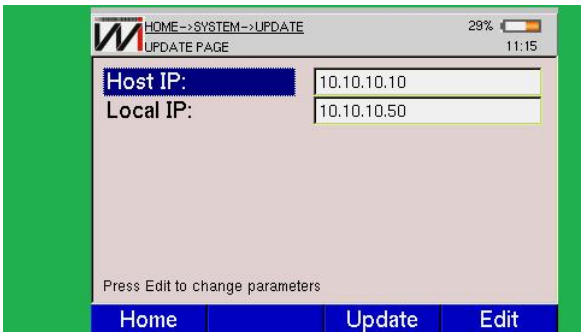

Figure 7.7: Update Page

7.4 Software Update (Internet)

Allows software update via Internet. In the following screen, select the Update Mode by pressing the F4 key (EDIT), followed by the keys ↑, ↓ and START/STOP. There are two options, line and Ethernet. Their configuration is made in the Line Configuration and Ethernet Configuration options, in the LINE and ETHERNET tabs.

The Repository type has two options as well. The first one (RELEASE) is the commercial version used at most equipments, whereas the second option (BETA) is the last commercial version with some modifications that are in process of consolidation. The Beta version is only available in specific situations agreed with Wise, thus it is password protected.

The update process starts when the F3 key (UPDATE) is pressed.

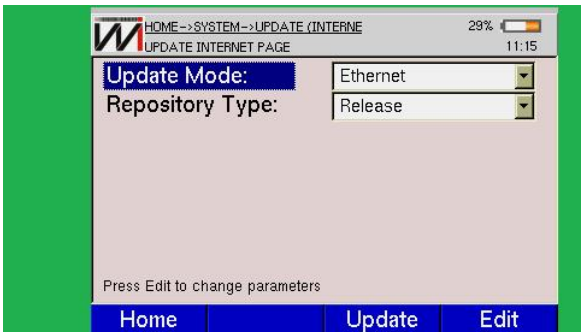

Figure 7.8: Update Internet Page

7.5 Registry

The REGISTRY option presents the screen below.

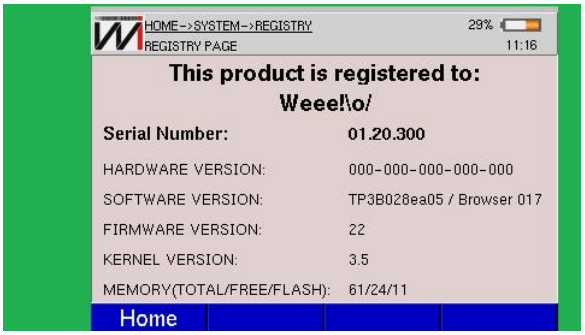

Figure 7.9: Registry Screen on System tab

It shows some information regarding the equipment's configuration, such as serial number, software, hardware, firmware and Kernel versions, as well as memory (RAM and FLASH). Always have this information in hands when contacting customer support.

7.6 Remote Assistance

The Remote Assistance module allows the user to obtain remote customization and maintenance services. Wise is responsible for them, and the user needs a password to access such services. Please contact the company for more information.

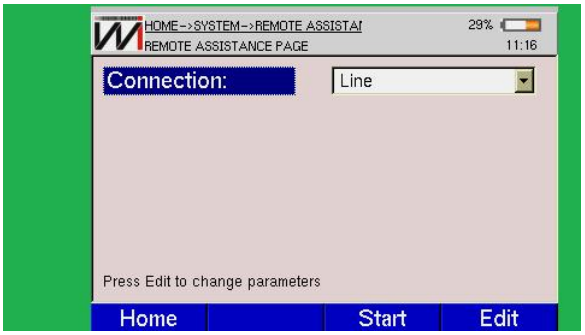

Figure 7.10: Remote Assistance

In the SYSTEM tab, select option 6. REMOTE ASSISTANCE, and the previous screen will be shown. Choose the type of connection – line or Ethernet – and press F3 (START) or the

START/ STOP key. An IP number will be shown, and this information should be given when contacting Wise to request the desired service.

7.7 Results Download

The Results Download module allows the user to transfer files saved in the equipment to a computer. In the SYSTEM tab, select option 7. RESULTS DOWNLOAD, by pushing the alphanumeric key 7 or, alternatively, highlighting this option and pressing the START/ STOP key. The following screen will be shown:

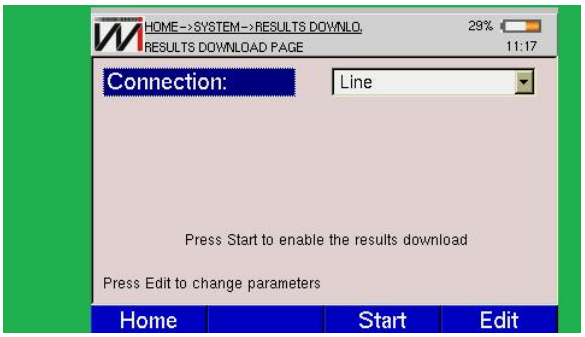

Figure 7.11: Results Download

In the connection field, it is possible to choose the type of connection – line or Ethernet – by highlighting the desired option and pressing F3 (START) or the START/STOP key. The IP address to which the equipment has connected will be shown in the screen. It should be typed in the address bar of a certain browser in the computer that will download the files. The following screen will be shown in the browser:

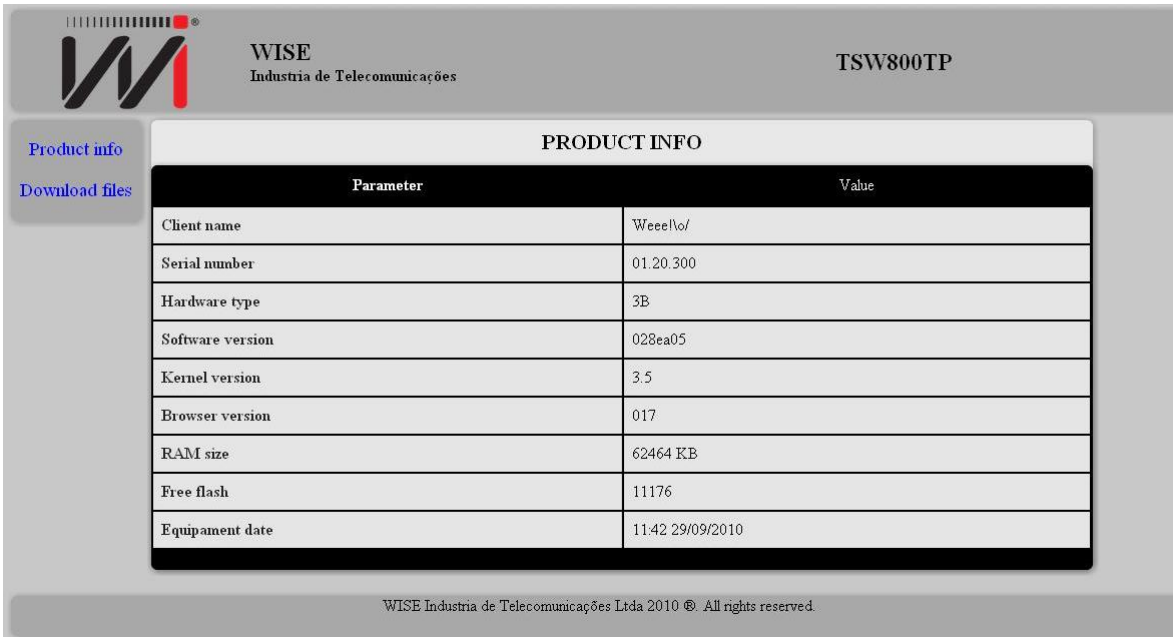

Figure 7.12: Product Info screen, from a pc browser

Select the DOWNLOAD FILES link, on the left side, and a new screen containing the files names and directories will be opened. To download, select the desired file and click it.

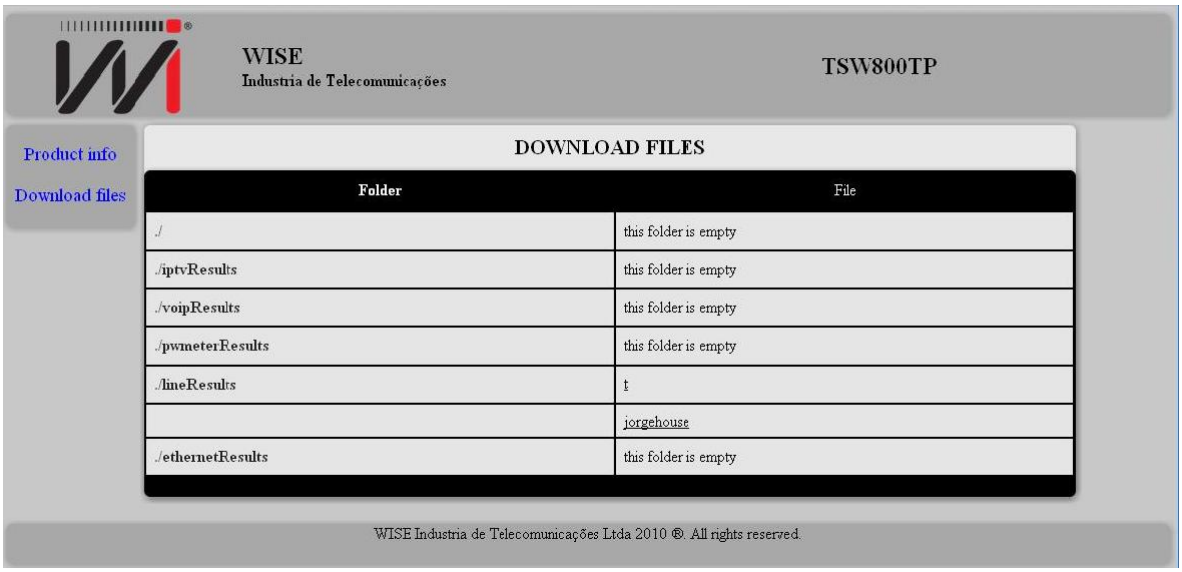

Figure 7.13: Download Files screen, from a pc browser

8 Modules

When the MODULES tag is selected, the following screen is shown. In this mode, it is possible to access Power Meter (1.OPTICAL METER TEST) in order to measure the power of a signal travelling along an optical fiber. The other possible option in this screen allows the user to make Ping tests in Wifi networks (2.WIFI TEST) and use the GPRS browser (3. GPRS BROWSER). For additional information on item 1, please read the Power Meter manual.

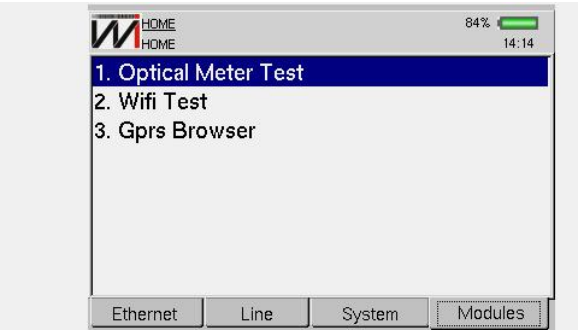

Figure 8.1: Modules tab