



Operation Manual

TSW400DSL2+

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1 - Introduction

1.1 - TSW400DSL2+ Operation

The TSW400DSL2+ is employed for installation, maintenance or repair of the ADSL, ADSL2 and ADSL2+ services. The product allows checking and certifying the access and the hired services. It checks the speed and the connection quality and allows checking connectivity problems between the ADSL subscriber and the internet, when a PPP connection is established. Among other capabilities, there are the protocol identification (PPPoE or PPPoA), displaying of the IP address received during the authentication phase and the evaluation of the download rate.

The TSW400DSL2+ simulates the subscriber modem functions (ATU-R) and can be connected to the office modem (ATU-C) of many network points. The TSW400DSL2+ allows the ADSL, ADSL2 and ADSL2+ line maintenance and installation companies to check if the subscriber end is able to establish the connection to the telephone company's central office at the desired rate and to evaluate the maximum possible rate for that line. The quality of service can be guaranteed analyzing the Connection Parameters. For the cases where the connection is not possible, the failure can be isolated by connecting the TSW400DSL2+ in many points between the subscriber and the telephone company's central office. The current version of the TSW400DSL2+ presents:

- Speed set at the negotiation for downstream data transfer.
- Speed set at the negotiation for upstream data transfer.
- Maximum speed at which it is possible to establish the downstream connection (direction central office - subscriber).
- Maximum speed at which it is possible to establish the upstream connection (direction subscriber – central office).
- Upstream and downstream attenuation.
- Upstream and downstream noise margin.
- Upstream and downstream transmission power.
- Downstream number of bits per channel histogram.
- Upstream number of bits per channel histogram.
- Pattern in which the connection was established (G-DMT, G-LITE, ANSI-T1.413, G.992.3, G.992.5, etc.)

The results can be stored in memory. There is memory available to store the last test and 10 consecutive tests.

Once the physical layer is tested, the TSW400DSL2+ also allows testing of the upper layers, checking the internet connectivity. These tests are PING and BROWSER.

Using the PING test, it is possible to send an IP packet (ECHO REQUEST) to any internet valid IP address. If the connection is operational, a response package (ECHO REPLY) is received and the elapsed time between sending and receiving the packages is displayed.

The BROWSER test performs a simplified navigation on any internet website. Some website data are displayed. Wise also made available a fixed address, which is often updated with the most recent news, providing the user with a second navigation option. For any of the above mentioned cases, the validity of the connection between the TSW400DSL2+ and the internet is assured.

TSW400DSL2+

The UPLOAD resource allows the user to send data stored inside the equipment to a certain internet website. This resource eases management and analysis of installing and maintaining ADSL services in real time. Data sent and stored in a data base are exactly the parameters obtained during the DSLAM connection, that is, the downstream and upstream measured rates, the attenuation, noise margin, among other information.

Finally, it is possible to connect the TSW400DSL2+ directly to the client ADSL modem through the Ethernet interface. Once connected to the ADSL modem, which could be a ROUTER modem or a the aforementioned tests can be run: PING, BROWSER and UPLOAD. These options allow testing the ADSL connection going through the client ADSL modem, locating if a certain fault is in the ADSL modem or in the client's microcomputer.

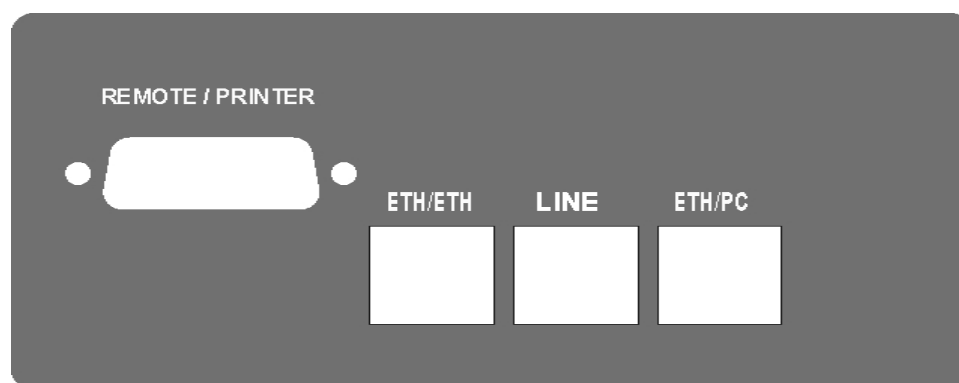
2 - Physical Characteristics

The TSW400DSL2+ is a portable equipment that is operated from a keyboard and a liquid crystal display, sporting 16 lines, each with 32 small characters. The characters can have many sizes to ease operating and visualizing the results. It also sports a set of LEDs to check equipment status.

The equipment is powered by a set of internal batteries that must be charged employing the provided power supply. In the following sections, each of the parts that comprise the equipment will be better specified.

2.1 - External Connections

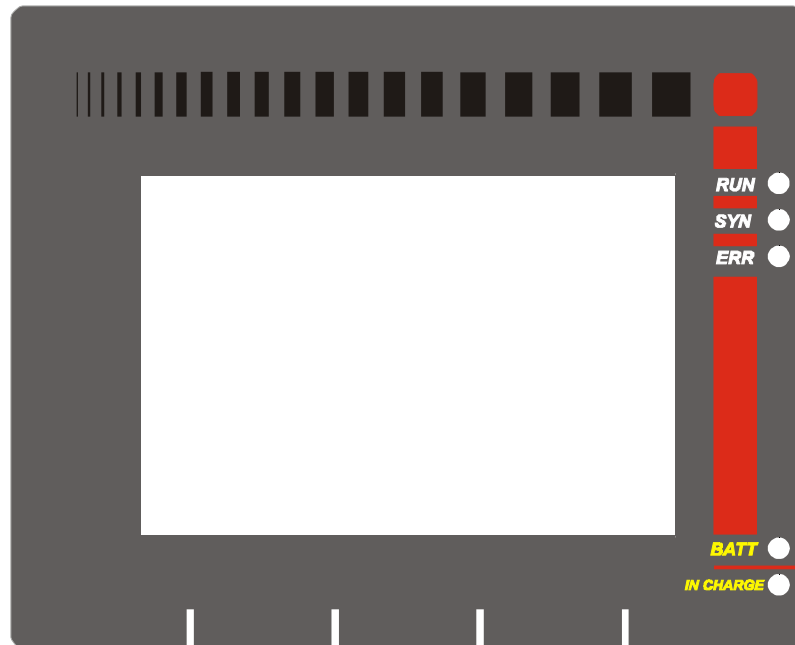
- Switching power supply SPS: located at the side of the equipment, there is a connector for the provided battery charger.
- Remote/Printer: Connector for communication with a serial device; located in the back panel.
- LINE: RJ45 connector located in the back panel, used for connecting the equipment to the ADSL, ADSL2 or ADSL2+ line through a cable provided with the TSW400DSL2+.
- ETH/ETH: RJ45 connector located in the back panel, used for connecting the equipment to the network interface. Used in the Ethernet Module.
- ETH/PC: RJ45 connector located in the back panel, used for connecting the equipment to a computer. Used in the Through Module.



2.2 - Leds

- RUN: Internet led, on when the equipment manages to get PPPoE authentication and becomes apt for the internet tests.
- SYN: Sync led, on when the equipment manages to connect to the central office.

- **ERR:** On when the connection attempt fails and blinks when there are errors during the connection.
- **BATT:** Blinks when the battery has insufficient load for operating the equipment.
- **IN CHARGE:** On whenever the battery charger is connected. Gets red when the battery is being charged and green if the battery is already charged.

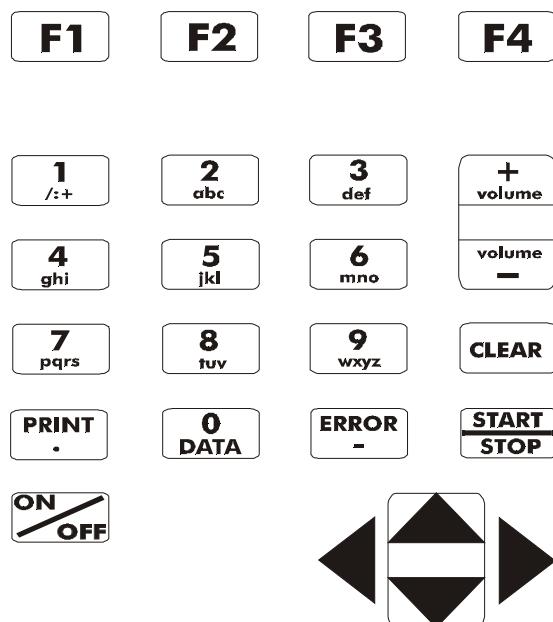


2.3 - Keyboard

The TSW400DSL2+ keyboard has many keys to ease its operation:

- **ON/OFF:** Turns the equipment on and off.
- **F1,F2,F3,F4:** The function of these keys depend upon the screen displayed. It is defined by the label displayed in the lower line, right above the keys.
- **←, →, ↓, and ↑:** 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.
- **PRINT(.):** Sends memory data to the printer, or from the last test and also provides the “ . “ symbol (the dot).
- **DATA (0):** According to the screen in which it is pressed, puts the equipment in the editing mode or provides the number 0 (zero).
- **CLEAR:** clears editing or the counters, according to the displayed screen.
- **ERROR (-):** Provides the symbol “-“ (minus sign or hyphen).
- **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: the first pressing of the key provide the first letter; pressing the key again

- gives the second letter; another pressing gives the third letter; once (or twice, according to the particular key) more give the corresponding number.
- **BACKLIGHT:** When ← and → are simultaneously pressed, at any screen, the display backlight is toggled on or off.



2.4 - Battery

The TSW400DSL2+ is fed by NiMH batteries, capable of sustaining continuous operation for 5 hours in average, according to equipment use and the battery charge. The complete recharging of the battery is achieved in approximately 5 hours and a half. Due to NiMH battery charge characteristics, for getting the best performance, it is wise to use up the battery charge before recharging again. This procedure allows the battery to get full charge and ensures the battery lasts for the maker specified lifetime. 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.

When the TSW400DSL2+ internal batteries need recharging, the equipment should be connected to the switching power supply (Input: 90 to 240 VAC / 60 Hz) by means of the battery charger input connector, located on the side of the equipment. When the switching power supply is plugged to an electrical outlet, a LED will go on indicating that the power supply is ready for charge.

During battery charge, the user can monitor if it is already fully charged by checking the “IN CHARGE” led at the TSW400DSL2+ front panel. While this LED is red, this means that the battery is getting charge. When the LED turns green, this means that the battery has achieved its maximum charge. The TSW400DSL2+ keeps on running on the power supply so that when this supply is disconnected or in the event of a power failure, the batteries will be fully charged.

If the battery is not charged up to its maximum limit, the TSW400DSL2+ operating time will be reduced.

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To avoid power line interferences to alter test results, it is wise to avoid connecting or disconnecting the TSW400DSL2+ battery charger whenever a test is in progress.

The TSW400DSL2+ has a battery manager that informs the percent of available battery charge (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 the beeper will come on. After this time, the equipment turns itself off. If the battery level is normal, this led will remain off.

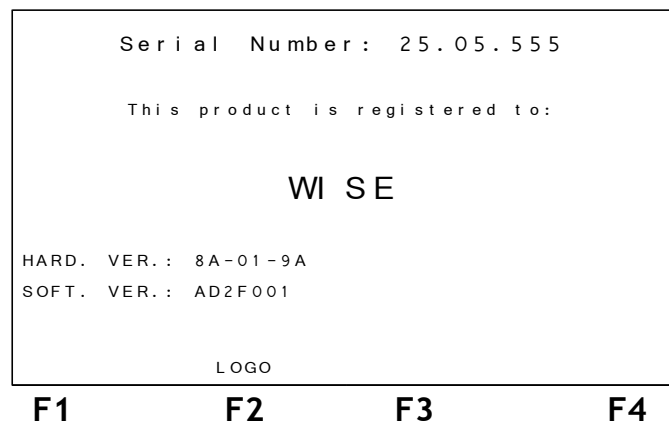
Note: The TSW400DSL2+ must be only charged with the provided power supply. Otherwise, the maker cannot be held responsible for equipment damage and diminished battery life.

3 - Operating the equipment

When turning the equipment on, with fully charged batteries, the first screen displayed is the logo screen, shown below.



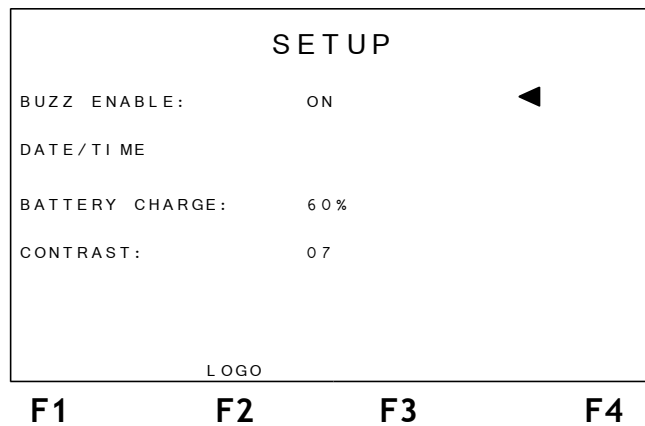
The logo screen is the initial equipment screen. From this starting point, it is possible to follow four courses of action. The first one is to check the equipment register and the current software and hardware versions, by pressing the **F1 (REGIST)** key. The following screen will be presented:



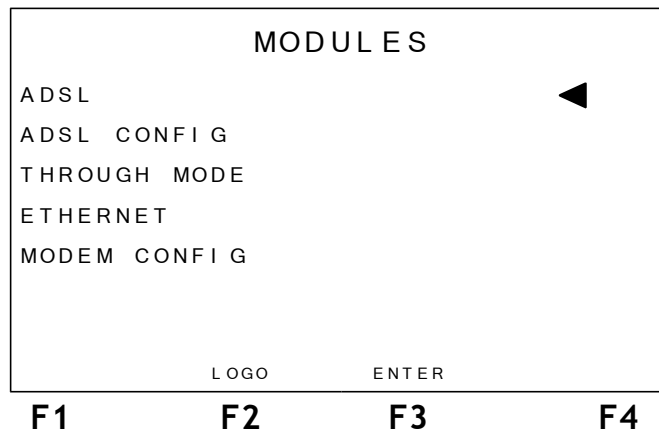
To go back to the logo screen press **F2**.

Another possible action from the logo screen is to access the equipment memory. To do this, press the **F2 (MEMORY)** key. For more details about using memory, see Section 8 of this manual.

From the logo screen, it is also possible to access the equipment utility screen by using the **F4 (SETUP)** key. See the following figure. In this screen, some basic equipment settings are done. For turning the beeper on or off, move the cursor to the proper line and use the ← and → keys. The date and hour that appear on the logo screen can be set. To do this, move the cursor to DATE/TIME and use the **DATA** key for accessing the editing screen. The battery charge level is displayed, in percentage, on this screen. The CONTRAST option allows the user to select the display contrast level.



The fourth option available at the logo screen is to access the equipment modules screen. Check this screen on the figure below.



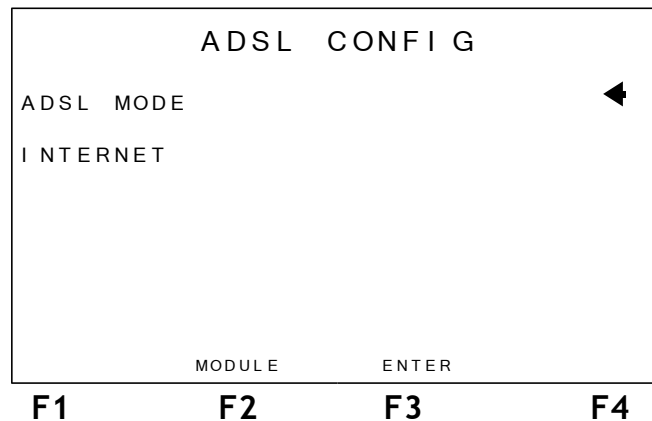
The Modules screen allows the user to select which of the equipment functions will be used. To choose one of the Modules, place the cursor at the appropriate line and press the **F3 (ENTER)** key. In the following sections of this manual, the use of each of this modules will be described in detail.

When the equipment is turned on, the screen displays INITIALIZING, at every initial screen. Some navigations are permitted while this message is being displayed, but it is important to note that the ADSL and ADSL CONFIG modules are only accessible after the INITIALIZING message gets replaced by READY.

4 - ADSL MODULE and ADSL CONFIG

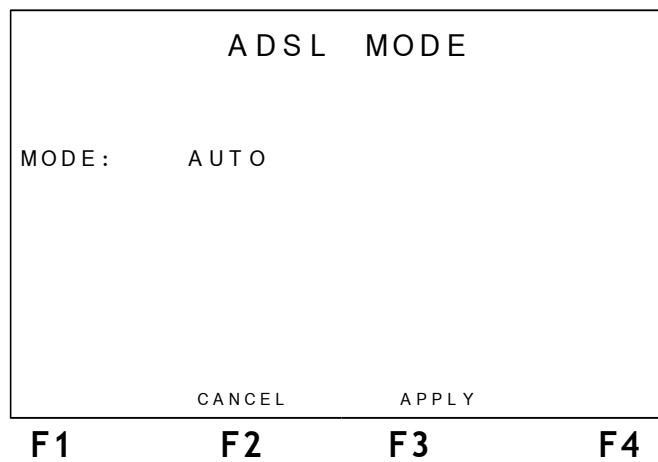
The ADSL MODULE performs a qualitative line test providing many Connection Parameters. It is also possible to perform the internet tests. But, for establishing the connection, some parameters need to be configured, which can be chosen in the ADSL MODULE CONFIG.

When choosing the ADSL CONFIG option at the Modules screen, the following screen will be shown.



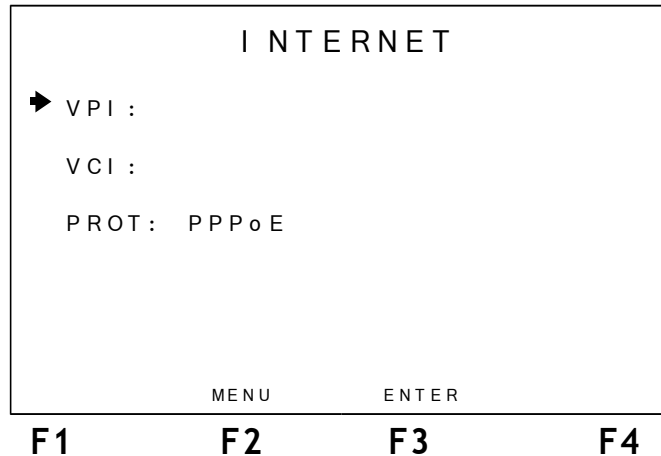
At this screen, the user selects the chooses one of the ADSL connection configuration or of the internet connection. It is possible to reach the ADSL mode by pressing the **START** key.

When selecting the ADSL MODE option, the following screen will be displayed, where the connection mode to be used can be chosen.



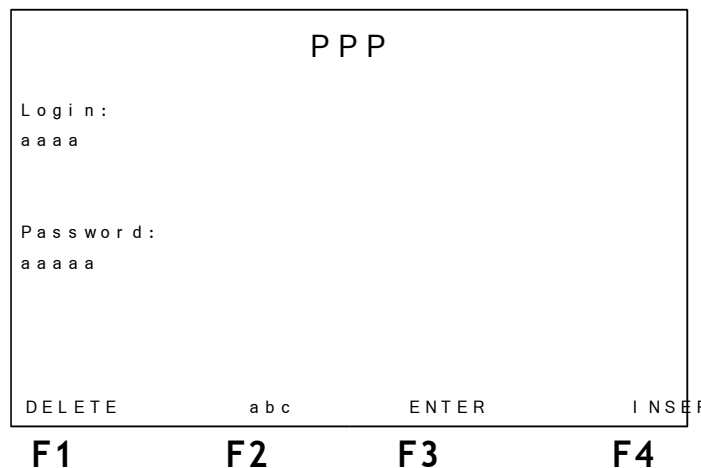
To program the desired configuration, press the **F3 (APPLY)** key. When this is done, the screen will display the message “SAVING” and the equipment goes back to the ADSL CONFIG screen.

If the user wants to configure the internet connection parameters, the INTERNET option must be selected at the ADSL CONFIG screen. The following screen will appear:



On this screen, it is possible to choose the VPI (Virtual Path Identifier) and the VCI (Virtual Channel Identifier) and also the connection protocol: PPPoE, RFC2684 (MER), RFC2684 (IPoA).

To select the VCI and VPI, use the alphanumeric keys, with the cursor pointing to the option to be changed. For the protocol case, use the ← and → keys until the desired protocol name is displayed. Press **F3 (ENTER)** to continue configuring. The following screen will be presented if the chosen protocol is PPPoE:



For running the internet access tests, at first the connection must be established between the equipment and the ISP (Internet Service Provider). For such connection, if the PPP (Point to Point Protocol) is used, the login and password chosen at this screen will be used.

To edit each of the parameters, move the cursor with the ↑ and ↓ keys up to the desired line. Use the alphanumeric keys and the **F1(DELETE)**, **F4 (INSERT)** keys for editing. The **F2 (abc, ABC, 123)** key selects if the alphanumeric keys will represent uppercap, lowercap or numbers, respectively. The **CLEAR** key erases the editing done so far. **The space and @ characters can be inserted by pressing the DATA key two or three times.**

If the chosen protocol is RFC2684 the following screen will be presented, containing the connection parameters.


```

      F I X E D   I P

▶ IP Addr : 000.000.000.000
  Mask :   222.222.222.222
  Gateway : 192.168.001.001
  DNS1 :   192.168.000.000
  DNS2 :   000.000.000.000

      BACK          ENTER          EDI
  
```

F1 F2 F3 F4

To edit each of the parameters, move the cursor with the ↑ and ↓ keys up to the desired line and press **F4 (EDIT)**. Use the alphanumeric keys for editing. The **CLEAR** key erases the editing done so far. The **F3 (ENTER)** key configures the parameters. The **F2 (BACK)** returns to the previous screen.

After editing every needed parameter, go back to the ADSL CONFIG screen and press the **F3 (ENTER)** key. The following screen will appear, showing the selected configuration.

```

      C O N F I G U R A T I O N

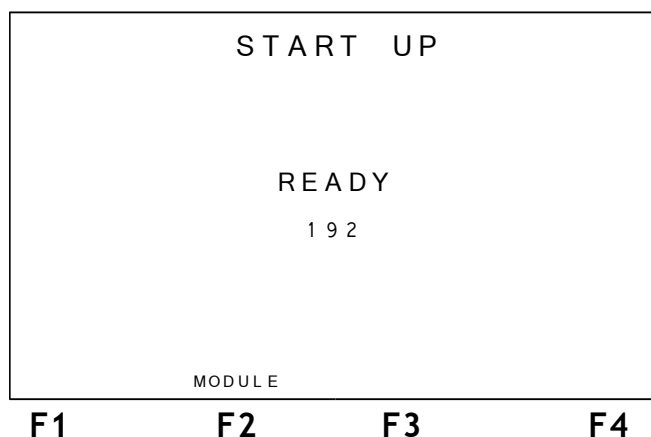
▶ V P I :
  V C I :
  P R O T : P P P o E
  L O G I N :
  S E N H A :

      C A N C E L          A P P L Y
  
```

F1 F2 F3 F4

The **F2 (CANCEL)** key cancels all changes. Press the **F3 (APPLY)** key for saving the changes. The screen will display the message **SAVING** with a bar displaying the progress of the operation and the equipment goes back to the ADSL CONFIG screen.

When choosing the ADSL option at the logo screen, the following screen is presented.



4.1 - Running the test

Whenever it is turned on, the TSW400DSL2+ automatically tries to communicate with the central office (DSLAM) displaying the word HANDSHAKE at the center of the screen. The SYN led will blink. This word will be displayed until the TSW400DSL2+ detects the central office signal.

If there is no signal, after 200 seconds, the TSW400DSL2+ will give up connecting and will display the word FAIL to mean test failure. If that happens, the user should check the proper connection of the cables. There is a countdown counter, in seconds.

When the TSW400DSL2+ recognizes the central office signal, the word TRAINING appears in the display alongside the connection progress bar. In this moment, the SYN led blinks faster. Some seconds later, connection is established. For certain connection attempts, the words TRAINING and HANDSHAKE can alternate and the negotiation time can be greater.

If the connection is well-succeeded, the SYN led will remain on. This is the indication that the equipment is connected to the central office DSLAM. From then on the user can navigate through the result screens. These are presented in a screen with the connection parameters and two graph screens. It is also possible to store the results from this connection into memory. The last test results are always stored in memory.

If the equipment is connected and there is signal loss, it stores the present results in memory, disconnects and automatically tries a new negotiation.

4.2 - Displaying the results

Displaying the results is done by a list of Connection Parameters, bits per tone graphs and error counters.

4.2.1 - Connection Parameters

The SHOWTIME screen displays the mode in which the connection was established. In the example depicted in the figure below, the connection was established in the G.DMT-Annex A mode, and a series of parameters for upstream and 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.
- **CAPACITY:** Ratio of connection rate and maximum estimated rate.
- **ATTENUAT.:** Signal attenuation for the connection.
- **SNR MARGIN:** Signal to noise connection ratio.
- **TX POWER:** Transmission power.

SHOW TIME			
G. DMT A		DOWN	UP
RATE (k b p s)		0 0 2 5 6	0 0 1 2 8
MAX RATE (k b p s)		0 0 2 5 6	0 0 9 6 0
CAPACITY (%)		0 9 3	0 5 1
SNR. MARG. (d B)		4 4 . 8	3 0 . 0
ATTENUAT. (d B)		0 0 . 0	0 3 . 5
MEMORY	MODULE	INTERNET	MORE
F1	F2	F3	F4

From this screen, it is possible to go back to the module screen, to do so use the **F2 (MODULE)** key. The user can also access memory through the **F1 (MEMORY)** key.

With the ADSL connection established, it is possible to check the internet connection, to do so, press the **F3 (INTERNET)** key. The following sections explain how to perform the PING, BROWSER or UPLOAD tests.

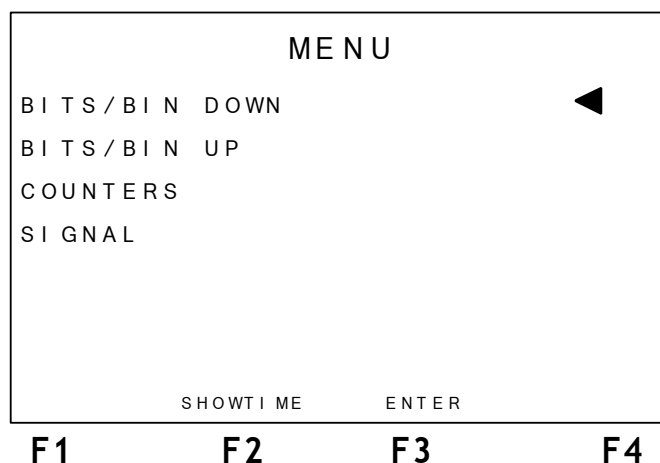
The **F4 (MORE)** key gives access to the Histograms and Counters menu. Next section describe their use. This option can take longer to show up on the screen, along with the TX POWER parameter, for this information takes longer to be obtained.

4.2.2 - Histograms and Counters

The results include Histograms and Error Counters. The Histograms are a graphical form to present the results. Two bits/bin Histograms are presented:

- upstream
- downstream

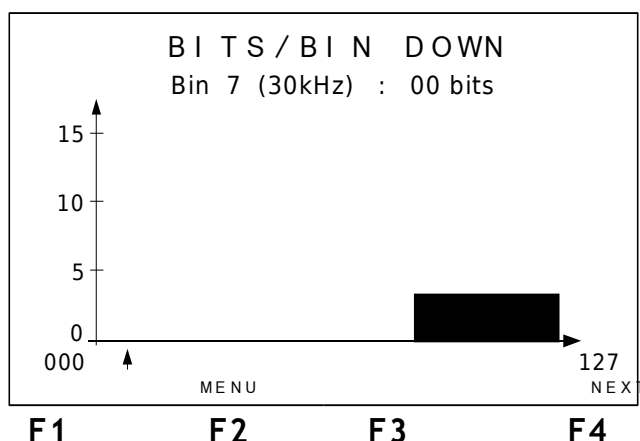
In the screen shown below, it is possible to choose how to display the results, in graph form or using counters.



To go back to the previous screen, press **F1 (BACK)**. The **F2 (MODULE)** key allows going back to the Modules screen.

To move the cursor that selects the desired result, use the ↑ and ↓ keys. When the cursor points to the desired graph, press **F3 (ENTER)**.

When a histogram is selected, it will be displayed as shown in the next figure.



There is a small cursor right below the graph that points to a channel (bin). At the upper part of the display, right below the title, the number of the channel pointed to by the cursor (with the associated frequency) and the number of bits. To move the cursor by the graph, use the ← and → keys to move the cursor a channel at a time, the ↑ and ↓ keys to move the cursor 16 positions at a time. To visualize the other graph, go back to the menu screen using the **F2 (MENU)** key.

The graph is divided in four parts that display the channels 0 to 127, 128 to 255, 256 to 383 and 384 to 511. Initially the first part is displayed. To see the second part of the graph, press **F4 (NEXT)** or move the cursor until it reaches the last displayed bin. From then on, each time the cursor is advanced, the complete graph is shifted by one position.

The screen presented in the figure below is shown when the COUNTERS option is selected in the result menu. It displays the counters that are updated according to the occurrence of anomalies or local and remote defects in the ADSL line.

COUNTERS		
	LOCAL	REMOTE
CRC	00000	00000
FEC	00000	00000
HEC	00000	00000

MENU

F1 F2 F3 F4

To go back to the menu, press the **F2 (MENU)** key.
A description of each counter follows.

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

When choosing the SIGNAL option, the following screen is presented. It displays connection details like the transmission power.

SIGNAL			
Latency Type:			
INTERLEAVED			
TX POWER (dBm)		DOWN	UP
12.3		07.0	

MENU

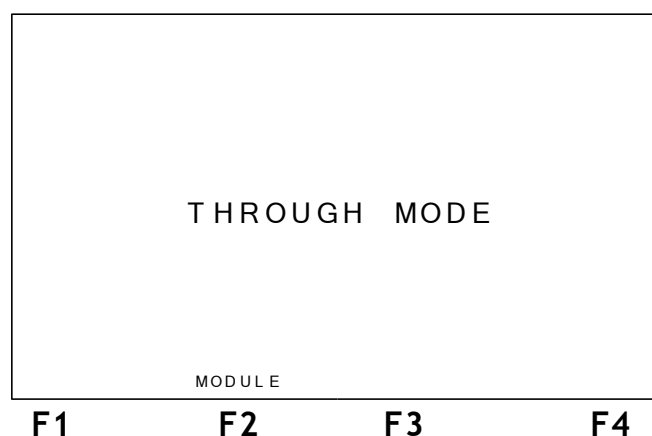
F1 F2 F3 F4

5 - The Through Mode Module

In this module, the TSW400DSL2+ must be connected to a PC, a notebook or a PDA (*Personal Digital Assistant*) in its Ethernet interface, through the ETH/PC connector. The line interface, by means of the LINE connector, is directly connected in the ADSL link. The equipment completely replaces the user modem from then on for failure location.

It is important to note that, in this configuration, the TSW400DSL2+ allows graphical navigation of internet sites with a PDA, so that the technician does not need to use a notebook.

When the THROUGH MODE option is selected, the following screen is displayed.



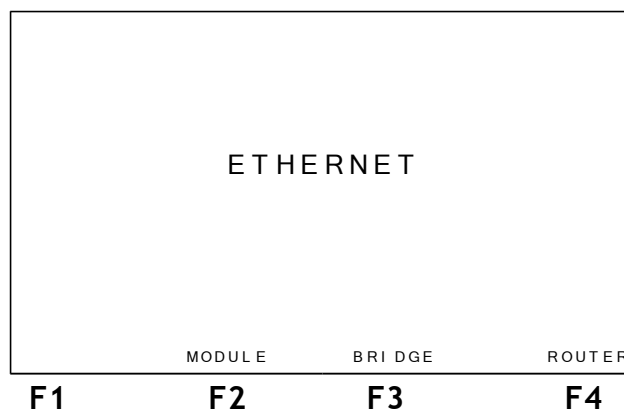
The **F2 (MODULE)** key allows going back to the Module screen.

6 - The ETHERNET Module

The ETHERNET module allows checking the internet connectivity by means of the ethernet interface. With the ETHERNET mode it is possible that the equipment is connected to the client ADSL modem, so that the test includes this modem. One of two tests can be chosen: PING or BROWSER. There is also the possibility of sending the memory data via internet for a specified website, through the UPLOAD capability. For details about these tests, check Section 7 – Internet Tests.

The equipment can operate with modems configured as ROUTER or as BRIDGE.

When the ETHERNET mode is selected from the Module screen, the following screen will be displayed.



The **F2 (MODULE)** key going back to the Module screen.

For an internet connection to be achieved, select which kind of modem will be used with the **F3 (BRIDGE)** or **F4 (ROUTER)** keys. When the equipment is plugged to the internet, it is possible to run one of these three tests: PING, BROWSER or UPLOAD. Check Section 7 to see how to configure and run these internet tests.

6.1 - Bridge Modem

When selecting the bridge modem, the following screen will be displayed.

BRIDGE

Login:
wise@wi.com.br ←

Password:
20032003

ETHERNET DELETE INSERT CONNECT

F1 **F2** **F3** **F4**

When the modem is configured as Bridge, a login and a password must be provided. If the modem is configured as Router, this is not necessary, for these data will already be configured in the modem. To edit the parameters, use the alphanumeric keys and the **F2 (DELETE)** and **F3 (INSERT)** keys. **The space and @ characters can be inserted by pressing the DATA key two or three times.** When finished editing, the **START** key can be pressed and the equipment will try to connect with the data provided for the PPPoE link until it receives an answer or until time is over. For this phase the following screen is shown.

Trying Link PPPoE

Discovery OK
LCP OK
Authenticate OK
IPCP OK

CANCEL

F1 **F2** **F3** **F4**

If the connection is achieved, the screen will change to the following format:

BRIDGE

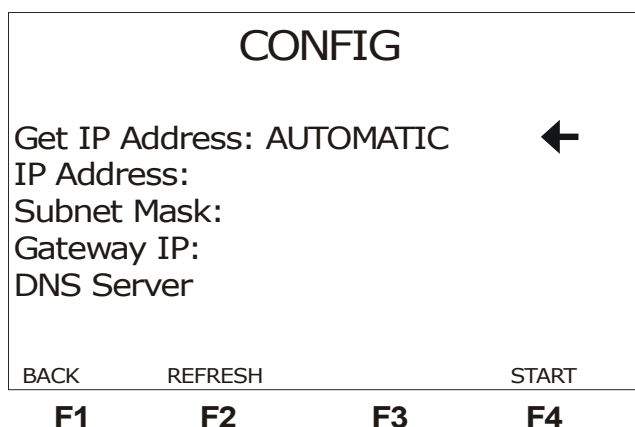
ETHERNET PING BROWSER UPLOAD

F1 **F2** **F3** **F4**

From this screen the user can choose which of the tests to run: PING (pressing the **F2** key), BROWSER (pressing the **F3** key) or UPLOAD memory data (pressing the **F4** key). See Section 7 – Internet Tests for how to proceed for configuring and running tests.

6.2 - Router Modem

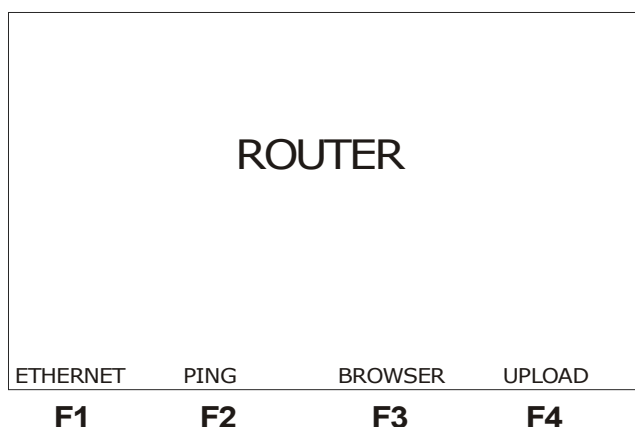
If the Router Modem option is selected at the Ethernet screen, a network configuration screen will be exhibited, like the one below.



To automatically get the necessary information, choose the AUTOMATIC option in the Get IP Address parameter. Use the ← and → keys to change the change the option. The **F2** key (**REFRESH**) updates the parameter values when the AUTOMATIC option is chosen. If the MANUAL option is selected, the user must edit every parameter displayed on the screen. Use the ↑ and ↓ keys to move the cursor up to the desired line. Editing is done by pressing the **DATA** or **F3** (**EDIT**) keys, whenever the cursor is pointing to the parameter to be changed.

When every parameter is enter, press the **F4** (**START**) key to establish the connection.

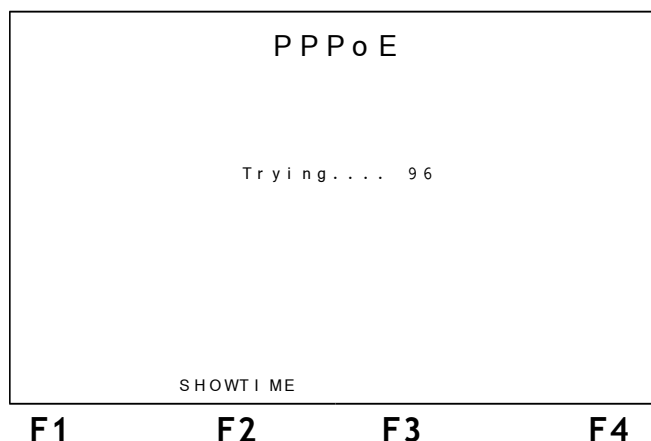
If the connection is established, a screen similar to the one shown below will be displayed:



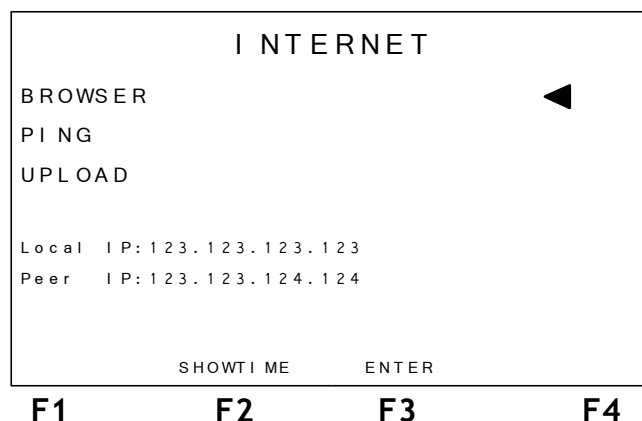
From this screen the user can select the test to run: PING (by pressing the **F2** key), BROWSER (by pressing the **F3** key) or memory data UPLOAD (by pressing the **F4** key). See Section 7 – Internet Tests on how to proceed for configuring and running the tests.

7 - Internet Tests

When the internet connection is being established, the equipment goes through different phases automatically. If the protocol is PPPoE, there are four phases: Discovery, LCP, Authenticate and IP Config. When every one of these steps is concluded, the TSW4DSL2+ turns on the RUN led, to signal it is ready for the internet tests. This process can occur from any screen, independently of any user command. When the **F3** key (**INTERNET**) is pressed in the Showtime screen, the following screen is displayed:



At the Authenticate phase, the login and password previously provided in the configuration screen. If authentication fails, the equipment will go back to the configuration screen. When the connection is achieved, the equipment displays the screen depicted below.



In this screen it is possible to select which of the tests will be run. To do this, place the cursor appropriately and press the **F3** key (**ENTER**). The screen also informs the IP Local and Peer addresses.

If the screen is being accessed from the ADSL MODULE, it is possible to go back to the Showtime screen by pressing the **F2** (**SHOWTIME**) key.

7.1 - BROWSER

Using the browser mode an internet page can be accessed. When the BROWSER option, the following screen will be displayed.

B R O W S E R			
h t t p : // w w w . w i . c o m . b r / t e s t e . t x t			
h t t p : // w w w . b o l . c o m . b r			
I N T E R N E T G O T O E D I T			
F1	F2	F3	F4

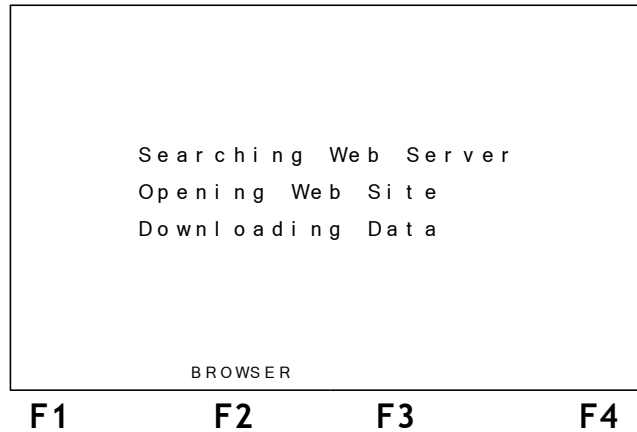
This screen displays two electronic addresses. The first one is fixed and the other is user-editable. The user can choose one of these addresses for accessing.

To edit the second address, place the cursor at the proper line and press the **DATA** or **F3 (EDIT)** key. The following screen will be displayed.

E D I T			
Host :			
Path :			
/			
D E L E T E A . Z I P E N T E R I N S E R T			
F1	F2	F3	F4

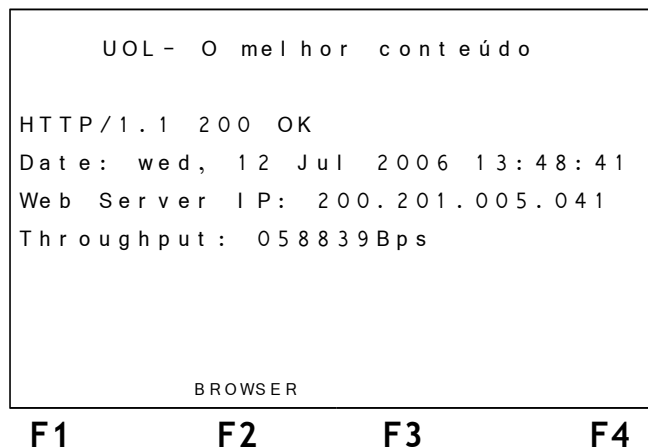
Fill the first field with the host address. Use the alphanumeric keys to do this. The **CLEAR** keys erases from the cursor position onward. **The space and @ characters can be inserted by pressing the DATA key two or three times.** The second field must be filled with the desired *path*. The **F2 (A.ZIP)** key fills the fields with the A.zip file address, at the Wise Indústria de Telecomunicações website, used to measure the link download speed. To go back to the previous screen press the **F3 (ENTER)** key.

To access one of the addresses of the BROWSER screen, place the cursor properly and press the **F3 (GO TO)** key. While the connection is being established the following screen is shown:



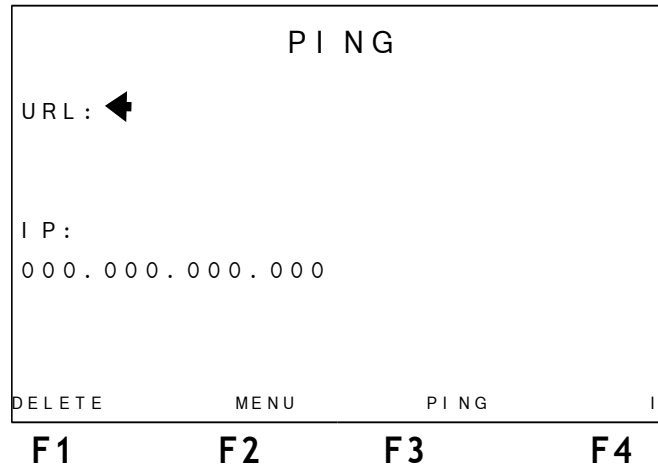
If the connection attempt succeeds, will be exhibited the OK option over the **F4** key. If the first address is chosen (<http://www.wi.with.br/test.txt>), when the **F4 (OK)** key is pressed, a screen will be displayed containing text with fresh news from the internet. This text is updated at the company's website.

For the other option, a screen will be displayed containing the accessed website title, besides some server status information, like IP address and connection date and time. In this moment, the Throughput test is run, that is, the link maximum rate without frames loss is determined. See an example in the figure below.



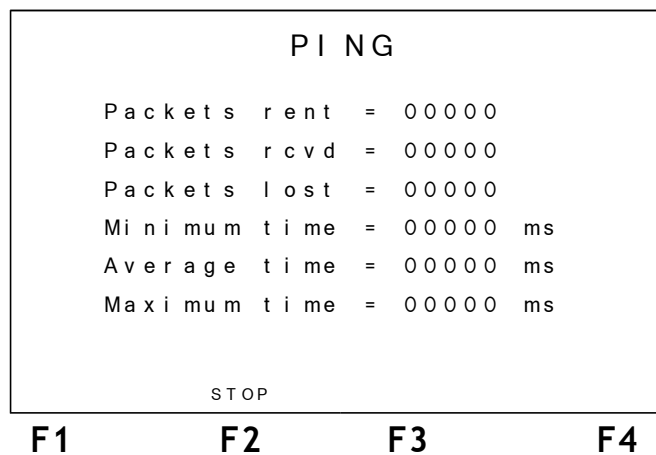
7.2 - PING

When the PING test is selected, the following screen will be displayed.



In this screen, the user chooses the IP address or the URL where to send the PING packets. This address can be changed. To edit, use the alphanumeric keys for entering the desired address and the **F1 (DELETE)** and **F4 (INSERT)** keys. If the user decides not to run the PING test, just press the **F2 (INTERNET)** key to go back to the previous screen.

To start the test, press the **F3 (PING)** key. PING packets will continuously be sent to the previously configured address. The following result screen will be displayed.



The description of the screen items follows.

- Packets sent: displays the number of ECHO REQUEST packets sent up to the present instant.
- Packets rcvd: displays the number of ECHO REPLY responses received up to the present instant.
- Packets lost: displays the quantity of ECHO REQUEST packets that were no answered.
- Min Time: Displays the minimum time elapsed between sending an ECHO REQUEST and receiving a corresponding ECHO REPLY.
- Avg. Time: Displays the average time elapsed between sending the packets and receiving the corresponding answers.
- Max Time: Displays the maximum time elapsed between sending an ECHO REQUEST and receiving the corresponding ECHO REPLY.

To end the test, press the **F2 (STOP)** key and the equipment displays the previous screen.

7.3 - **UPLOAD**

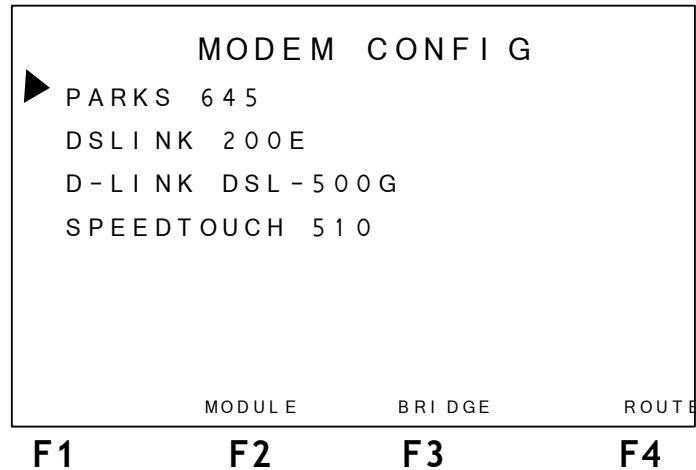
The Upload function is to send the tests over the internet to a storage place where later analyses can be done. If there is an interest in using this resource, the client must contact Wise Indústria de Telecomunicações to define which parameters will be stored in the site and even how to personalize his/her website with data sent to him/her by the TSW400DSL2+. Presently, the upload can be done by sending data from any of the 10 memories available in the equipment. When choosing the **UPLOAD** option, the following screen will be presented:

U P L O A D			
User ID:			←
Station:			
Memory:	01	-	teste1
Phone:	11	-	11111111
DELETE	MENU	SEND	INS
F1	F2	F3	F4

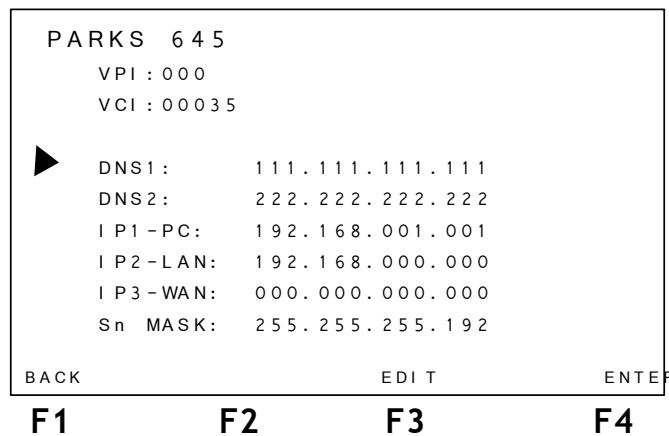
This screen gathers some information that will be sent via internet alongside memory data. This information can be edited. With the cursor pointing to the parameter to be changed, use the alphanumeric keys and the **F1 (DELETE)** and **F4 (INSERT)** keys and the alphanumeric keys to edit. It is possible to choose which of the 10 memories will be sent via internet. Just use the ← and → keys. When all parameters are correct, press the **F3 (SEND)** key, to send the memory contents. After sending, the message **SENDING** will be displayed. If the transfer is successfully completed, the message **MEMORY SENT** will be displayed.

8 - Modem Config

When choosing the MODEM CONFIG option at the Modules screen, the following screen will be shown. There is a list of the modems that can be configured.



By moving the cursor it is possible to select the modem and by pressing **F3 (BRIDGE)** or **F4 (ROUTER)** the user can choose the configuration. Then the screen bellow is shown.



Some parameters need to be informed in order to correctly configure the modem. If the selected modem is Router the TSW400DSL2+ need the following parameters:

- VPI
- VCI
- IP addresses: two DNS addresses, one for the used PC, one for the LAN and another for the WAN.

If the selected modem configuration is bridge there is no parameter needed and this options will not be shown on the screen.

When every parameter is edited, press **F4 (ENTER)** key for saving the changes.

This screen is show to warn that the MODEM must be reseted and connected to the TSW400DSL2+ using the ETHERNET RJ45 connector.

```

                A T E N Ç Ã O

Antes de confirmar o procedimento de
configuração, certifique-se que o
MODEM tenha sido resetado e esteja
conectado a placa de rede ethernet
                TSW400DSL2+

BACK

F1          F2          F3          F4
```

After verifying this conditions press **F4 (ENTER)** to start the modem config process. The screen bellow is shown, it displays the status of configuration steps.

```

PARKS 645

        ARP:  OK
        LOGI N:OK
        AUTH:  OK
        DATA: OK

BACK

F1          F2          F3          F4
```


9 - Memory

The TSW400DSL2+ has 10 memories for storing tests other than the last performed test, which is automatically saved. Only the connection parameters that were shown at the Showtime screen are stored.

9.1 - Saving a test and editing the memory title

For saving a test in memory, press **F3 (MEMORY)**. The following screen will be displayed:

MEMORY			
MEMORY: 01 - 09:24 25/08/06 ◀			
PHONE: (61) 4444-5555			
LOGO	VIEW	SAVE	
F1	F2	F3	F4

Using the ← and → keys, select the memory to store the performed test and press the **F4 (SAVE)** key.

Automatically, a screen is displayed where the user can enter a telephone number and select the place where the test was realized. To cancel the operation, press **F1 (CANCEL)**. Use the alphanumeric keys to edit. If the **CLEAR** key is pressed, the title is erased from the cursor position onward. When done editing the number, press **F3 (PLACE)** for selecting one of the following options for the test place:

- TAS: subscriber plug
- QIA: subscriber intermediate closet
- DGA: subscriber general distributor
- ARD: distribution closet
- DGC: central office general distributor

When selecting and editing is done, use the **F4 (SAVE)** key to save the last test results in the selected memory.

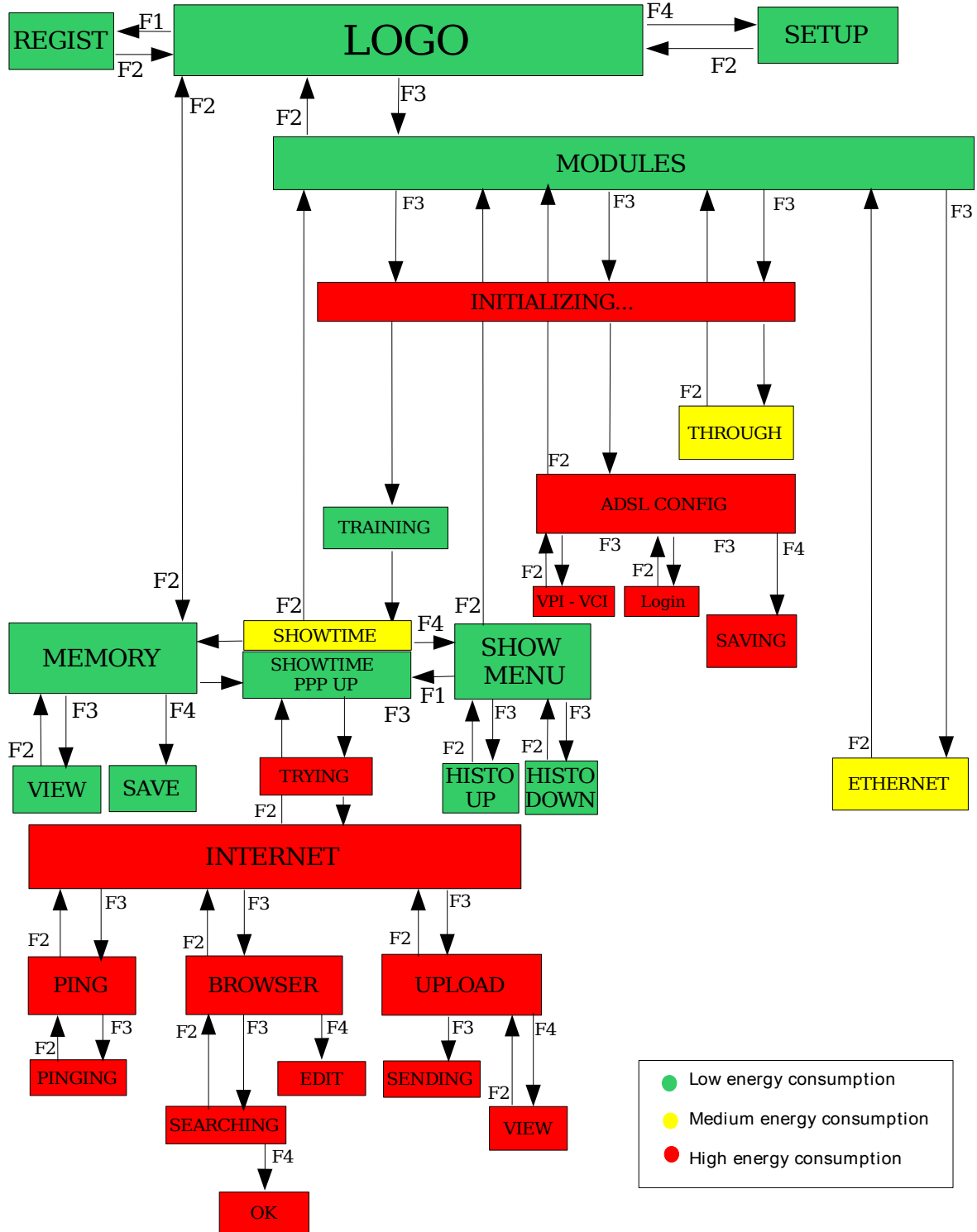
9.2 - Visualizing a test stored in memory

To visualize the contents of any of the memories, select the memory using the ← and → keys and press the **F3 (VIEW)** key.

The display will present a screen like the one that depicts the test results with the title changed to **MEMORY**, displaying the parameters obtained in the stored test.

10 - Screen Diagram and Battery Use

SCREEN DIAGRAM



11 - Software Update

To update the equipment's software, insert or remove modules, look for UPW Operation Manual.