

*EPSILON SYNCHRONIZATION SUPPLY
UNIT(SSU) NETWORK MANAGER
USER'S GUIDE*

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1 Introduction

The various functions of the Spectracom EPSYNC Manager Synchronization Network Manager software are as follows:

- Supervision by IP network from a set of EPSILON SSU family equipment with various compositions (SSU, PRC) making up a synchronization network
- Management of the supervision network distributed over several stations; user-controlled access by rights and passwords
- Supervision network based on IP, SNMP, FTP protocols
- Stations operating with Windows 2000 Pro OS

The software is capable of managing a population of SSUs, organized in zones, interconnected or not. It can coexist on several stations controlling the same population simultaneously. Data concerning SSU configuration, SSU states, and monitoring are stored in a centralized database, and stations refer to this database to manage all the data. This base can be located on one of the supervision stations or on a self-contained server.

Some functions concern the configuration and direct playback of SSU states. They are described in the SSU User's Manual in the SSUWin section, SSUWin software being a subset of the EPSYNC Manager software.

The other functions concern the monitoring during which SSUs send SNMP "traps" with their own rating(s) to a privileged station called "Master." This station transmits these to the Database Server.

NOTE: SSUs managed by the current EPSYNC Manager 1.4.1 version should display a minimum 1.0.8. version number for the Management Module.

1.1 Inventory

Before installing your Spectracom product, please verify that all material ordered has been received. If there is a discrepancy, please contact please contact Spectracom Customer Service. Customer service is available by telephone at +33 (0) 1.64.53.39.80 (France), or +1.585.321.5800 (United States). Updated contacts information are available on web site, see "Support" page.

CAUTION:

Electronic equipment is sensitive to Electrostatic Discharge (ESD). Observe all applicable ESD precautions and safeguards when handling the Spectracom equipment.

NOTE: If equipment is returned to Spectracom, it must be shipped in its original packing material. Save all packaging material for this purpose.

1.2 Inspection

Unpack the equipment and inspect it for damage. If any equipment has been damaged in transit, please contact Spectracom Customer Service. Customer service is available by telephone at +33 (0) 1.64.53.39.80 (France), or +1.585.321.5800 (United States). Updated contacts information are available on web site, see "Support" page.

2 Features

2.1 Management Functions

- SSUs inventory management
- Operational management capabilities
- Management of synchronization nodes and operating nodes
- SSU configuration and re-configuration
- Alarm management, fault monitoring, and event logging
- Performance monitoring and logging, such as MTIE and TDEV characteristics of selected links
- Access control policy; every operator is granted a set of privileges
- SSU Software and firmware updated by downloading from the station through FTP protocol without disruption of synchronization operation

2.2 Graphical Presentation

- Network structure displayed in tree format and geographical map
- Color codes report link/devices selection and status
- A front panel image of any SSU can be displayed on the screen
- A synoptic representation of the inside of an SSU gives better understanding of the synchronization path

2.3 Platform Requirements

OS required:

- Windows 2000.
- Network management protocol: TCP/IP.

Hardware configuration:

- Processor type: Pentium 2 GHz mini.
- RAM mini: 1 GB DDR.
- Hard disk: 20 GB mini.
- 1xEthernet interface: 100 BaseT/RJ45.
- 1XFloppy Disk.
- 1xCD ROM: 24 x mini.
- Video Ram: 32 Mo DDR.
- Display resolution: 1280x1024, true color – 24 bits.

2.4 Protocols

- Configuration and status monitoring by SNMP V2c protocol
- Performance monitoring by SNMP traps
- SSU SNMP MIBs registered under "enterprises 6062" number
- Complete configuration and status report transfer by FTP protocol

2.5 Database Server

- Database server: MySQL
- Version required: MySQL V5.0 minimum.
- Installed on the Network Management Station or any station from the same IP network

3 Implementation of the Supervision and Synchronization Network

The supervision network includes one or more supervision stations, and a station managing the database of information from the synchronization network. This base can be located on any of the stations. Among these stations, one is declared "Master" and receives Performance Monitoring traps from the SSUs. The information is stored in the database as it is received.

The supervision software is installed on WINDOWS 2000 stations connected to the IP network also supporting the SSUs. Several supervision stations can access the synchronization network.

3.1 SSU IP Address

Each SSU has an IP address that is configured locally through the SSU RS232 link. The default gateway address in the SSU is also established so that the SSU can dialogue in the part of the supervision network to which it belongs. Refer to the SSU User's Manual for more details concerning network parameter configuration menus.

3.2 Workstation IP Address

Stations are configured by declaring (Parameters -> Network connection and remote access->Local Network) their own IP addresses and the address of the gateway to access the SSUs to be supervised, as well as the database server. Refer to the Windows 2000 documentation to set the IP parameters.

At the work station, the list of network SSUs is played back or modified from the database. Each declared SSU has an IP address that the routing tables should be able to process.

3.3 Master Workstation IP Address

With regard to monitoring, the SSU sends alarm messages and monitoring data (MTIE/TDEV) regularly through SNMP traps to the "Master" management station. It is the Master management station itself that sends the SSU the destination IP addresses of the SNMP traps.

Check, reading in the SSU routing table with the network parameter configuration software, that these addresses are accessible. If not, the routing table can be complemented locally or remotely using Telnet protocol.

4 Operations Performed by the Software

4.1 Supervision Configuration

4.1.1 Choice of the Database

A database contains:

- Configuration information for the managed synchronization network, and configuration information for network SSUs,
- Information relating to operators and relevant authorizations
- History of alarms, events, and performance measurements

A station provided with EPSYNC Manager software can supervise several synchronization networks, each with its data stored in a unique database. "Manager Setting>Base Server" menu is used to choose both the IP address of the database MySQL server and the name of the database corresponding to the managed synchronization network.

If the database server does not exist at the indicated address, the green indicator light on the general top line turns red and an error message is generated.

If the server does not know the base, the base is created.

4.1.2 Choice of the Master Station

The Master station in the supervision network is the one that receives the performance measurements and the alarms generated in the form of SNMP traps.

With the "Manager Setting>Master Manager" menu, a station can declare itself Master in the place of another, and have it known by SSUs managed by the station.

The address of a Master station can be different from that of the station including the database server. The management software for SNMP trap reception is started automatically on the Master station when set to "Master." It runs as a background task independent of the EPSYNC Manager software and displays a specific monitoring window.

4.1.3 Basic Supervision Configuration

The basic configuration is provided with one workstation running both EPSYNC Manager and MySQL database server and declared as "Master" station. The IP address of the workstation itself is referred as "localhost" or "127.0.0.1".

4.2 Directory of Users and Their Rights

On the installation of software, a user exists that has all possible rights:

- **User name: admin**
- **Password: password**

This account can be used to declare other user names.

A person with "Users & Rights" rights, for example (by default the "admin" user), can add to the database other user names and associate rights with them. Such operations are performed through the User Management menu called from the general top line.

Here are the predefined attributed rights and their properties:

- "User": Basic User, who can only consult parameters, status; not allowed to modify any parameters
- "Epsync Config": Access to Epsync Configuration Parameters, related to Database server address, database name, and corresponding to the Setup Manager menu
- "SSU settings": Access to SSU Configuration (functions equivalent to SSUWin software) and Software Upgrade
- "Sync Network": Access to SSU Base and Network Graphical Edition
- "Monitoring Cfg": Access to Monitoring Parameters
- "Users & Rights": Access to Users Account Management
- "Quit": Quit EPSYNC Manager

4.3 Directory of Supervised-Network SSUs

In order to describe the supervised network, it is first necessary to declare the network SSUs in the database managed by "SSU Base Management" menu, called from general top line of EPSYNC Manager.

This declaration must be filled in at a minimum with the SSU IP address and name. The SSU is then placed directly in a "Tree" window on the left of the screen.

To complete the SSU implementation in the network, place it in the zone to which it belongs in this "Tree" window.

4.4 Configuring the SSUs

After an SSU is declared in the database, it is configured at its inputs, while its priorities are set in "Synchronization Network Editing and Viewing" screens. These screens are called by double-clicking the SSU name in the "Tree" or by calling the contextual menu ("Configure SSU" command).

For setup, choose "Set Up" in the screen top line. To check the status, choose "View" in this top line.

This operation is the same as that done with the local control software SSUWin. See the SSU User's Manual for more details.

4.5 Description of the Synchronization Network

The synchronization network is described and configured through a graphical representation per zone or sub-zone in the "Synchronization Network Editing and Viewing" screens. The relevant screen is called by double-clicking the zone name in the "Tree" window.

The "Tree" window is the reference for the mapping of the synchronization network. Under the SSU List item, the operator may create several zones in a hierarchical way, in which the SSUs are placed. This mapping can be compared to the File manager on a PC with the zone as a folder and each SSU as a file.

The network image can include, optionally in background, an actual map of the zone (in jpeg format), on which the operator can place the SSUs.

When SSUs are declared and located in a zone at the level of the "Tree" window, SSUs also appear in the zone graphical representation.

If a zone external SSU is connected to one or more SSUs of the zone, then it is possible to add it to the zone graphical representation.

If a sub-area is included in a zone to be displayed at the level of the hierarchy in "Tree" window, an icon of the zone appears in zone graphical representation.

The zone description is an operation consisting of drawing synchronization links among SSUs and in declaring, precisely for each SSU entry, the link origin. This will be used to highlight through colors the OK and not OK links.

The links between SSUs may be direct links if the clock signal goes physically from one SSU to another. The link also may be a virtual link if the distributed clock signal goes through different network elements (ADM, Backbone) before reaching the destination SSU. The graphical description is the same for both cases.

4.6 Synchronization Performance Monitoring Functions

SSUs make, as background tasks of MTIE/TDEV, measurements on the 4+2 input channels of the SSU INPUT module and the other two input channels on the CLOCK boards.

Two methods are used to retrieve the measurements made:

- With the SSU status display functions, by direct SSU interrogation from the operator.
- Automatically, by asking the SSU to feedback continuously (programmable period) these values through SNMP traps. The Master supervision station manages the periodic measurement reception and placement in the database.

In the automatic method through SNMP traps, it is also possible to ask SSUs to send, in volts, the control voltage values of OCXO or Rubidium oscillators.

In the "SSU Graphical Parameters Monitoring" screens, it is possible to display the list of measurements and the corresponding graph. It is also possible to program the input channels you want to monitor.

4.7 Monitoring of Alarms

Alarms are accessible per zone in the "Synchronization Network Editing and Viewing" screens, with graphical representations of the zone. Tabs propose either the history of alarms occurred in the zone, on SSUs in the zone, or alarms in progress. The display in columns details the alarm origin (SSU, module, link), the description, and the appearance or disappearance and date of the event(s).

4.8 Management of Software Versions

Software versions concerned are those of each module of every SSU belonging to the checked zone.

It is possible to consult the versions of onboard software in each module.

5 INSTALLATION

5.1 Installation of EPSYNC Manager

Before upgrading "EPSYNC Manager," it is advised to uninstall the previous version under Windows OS.

The software is installed automatically by inserting the "EPSYNC Manager" CD-ROM (autorun mode) into the CD-ROM driver, or by running setup.exe.

Answer "Next" to all questions for a standard installation.

By default, EPSYNC Manager is installed in **c:\Programfiles\Temes Sync\EPSYNC Manager**.

Before launching the program, process the installation of the MySQL database server and then the initialization of the database parameters for EPSYNC Manager.

5.2 Installation OF MySQL

On each station likely to contain the database for the managed network, a sample of MySQL must be installed. On each station start-up, the server is started.

NOTE: It is possible to use a MySQL server already installed on a remote station under Windows 2000 OS. In this case, it is unnecessary to install MySQL on the supervision stations.

Download MySQL V5 from MySQL website, using the following link:

<http://dev.mysql.com/get/Downloads/MySQL-5.0/mysql-5.0.21-win32.zip> from <ftp://ftp.inria.fr/pub/MySQL/>

Run setup.exe. Answer "Next" to all questions for a standard installation.

When being prompted for the root password type **marc** on both fields, also enable root access from remote machines.

NOTE: Restart the computer after MySQL is installed.

The MySQL database server will start automatically as a Windows service on the workstation start-up. The name of the running program is mysqld-nt. An administration window (MySQLInstanceConfig) is available by using the Windows menu "Start/Programs/MySQL/MySQL server 5.0/ MySQL Server Instance Config Wizard".

Access to MySQL should be allowed compulsorily for these codes: user: root and password: marc. This is the code used by EPSYNC Manager to access it later on.

At this stage, MySQL is accessible from EPSYNC.

5.3 Software Start-up

5.3.1 Start-up

MySQL server is started automatically on workstation start-up.

EPSYNC is run through the shortcut linked to "EPSYNC Manager" icon (\Program Files\Temex Sync\supervision.exe)

The person to log in is the default administrator, having access to all functions:

user name: admin

password: password

By default, a user without a password is created at the start, in addition to "admin/password".

On the first start, check the color of the warning light of the general top line (left of on/off switch icon). If it is green, the MySQL database server is accessed. If it is red, the MySQL database server is not accessible. Either the server is not started or the IP address of the server is not correct. This can be corrected as follows.

5.3.2 Database Initialization

The first operation to be performed is the choice of the database grouping together all parameters and states relating to the network to be managed (and its operators). If a new name is entered, the corresponding database is created automatically.

The preliminary database creation operation is run directly by starting EPSYNC Manager.

The login is done with the default "admin/password" couple.

Then entering the "Setup Manager" > "Base server" function, the fields of the following screen have to be filled.

The screenshot shows a window titled "Setup Manager" with a menu bar containing "Base server", "Master manager", "Manager", "Base tools", "Status", and "MARC". The main area is divided into two sections. The first section, "Database server information", contains a text box for "IP address database server" with "localhost" entered, and a dropdown menu for "Database name" with "supervisionNEW" selected. To the right of these fields is a button labeled "Seek Databases" with a magnifying glass icon. The second section, "Database Connection Configuration", contains a text box for "Login" with "root" entered, and a text box for "PAssword" with "marc" entered. At the bottom of the window are two buttons: "Validate information" with a green checkmark icon, and "Cancel" with a red X icon.

Figure 5 - 1. Epsync Manager Database Configuration.

Enter the IP address of the database server. If it is local, use "localhost" as an address.

A scan of the available (from previous versions) databases is performed with the "Seek database" button. Then choose in the list or edit the name of your database.

If the database does not exist, it is created automatically. If it is an old version database, it is converted automatically. The reverse convention is not possible.

Base data are located in the directory **c:\mysql\data**.

Fill in the password you want to use for MySQL access (again "marc" is the suggested default password).

If the database is located on a remote workstation, the above operation also has to be executed on this station.

5.3.3 Building Network Management Database

The list of SSUs must now be created, and the synchronization network description with the graphical representation of the links can be designed. Next, it is necessary to inform the base of users' rights. Proceed as described herein.

5.3.4 Starting Alarm and Performance Monitoring

The management of SNMP trap reception (background program located in \Program Files\Temes Sync\GestionTraps.exe) must be started on the Master station. It is executed concurrently with the SNMPd (daemon) of the Management Board. It reads the information and transmits them to database server. It is started automatically by the Master station and is stopped when the station loses its Master status.

6 Description of EPSYNC Manager Menus

6.1 Software Start and Stop

Click on the EPSYNC Manager icon in the main screen on the Windows desktop.

The supervision software can be started by any user, but this user must enter a valid password to access the software menus and functions.



Figure 6 - 1. Access Validation.

Once access is validated, only authorized users can stop the software by clicking the ON/OFF button on the general top line in the home menu.

In case the authorized user is absent, this operator can also prohibit unauthorized users from accessing the software by locking it. But it still carries on running the monitoring. Clicking Login/Logout button on general top line in home menu performs locking or unlocking.

Entering an authorized user/password performs unlocking.

In a similar way, the background task managing alarms and monitoring traps needs a user name and a password with the corresponding "Quit" granted right to be stopped.

6.2 Home Screen

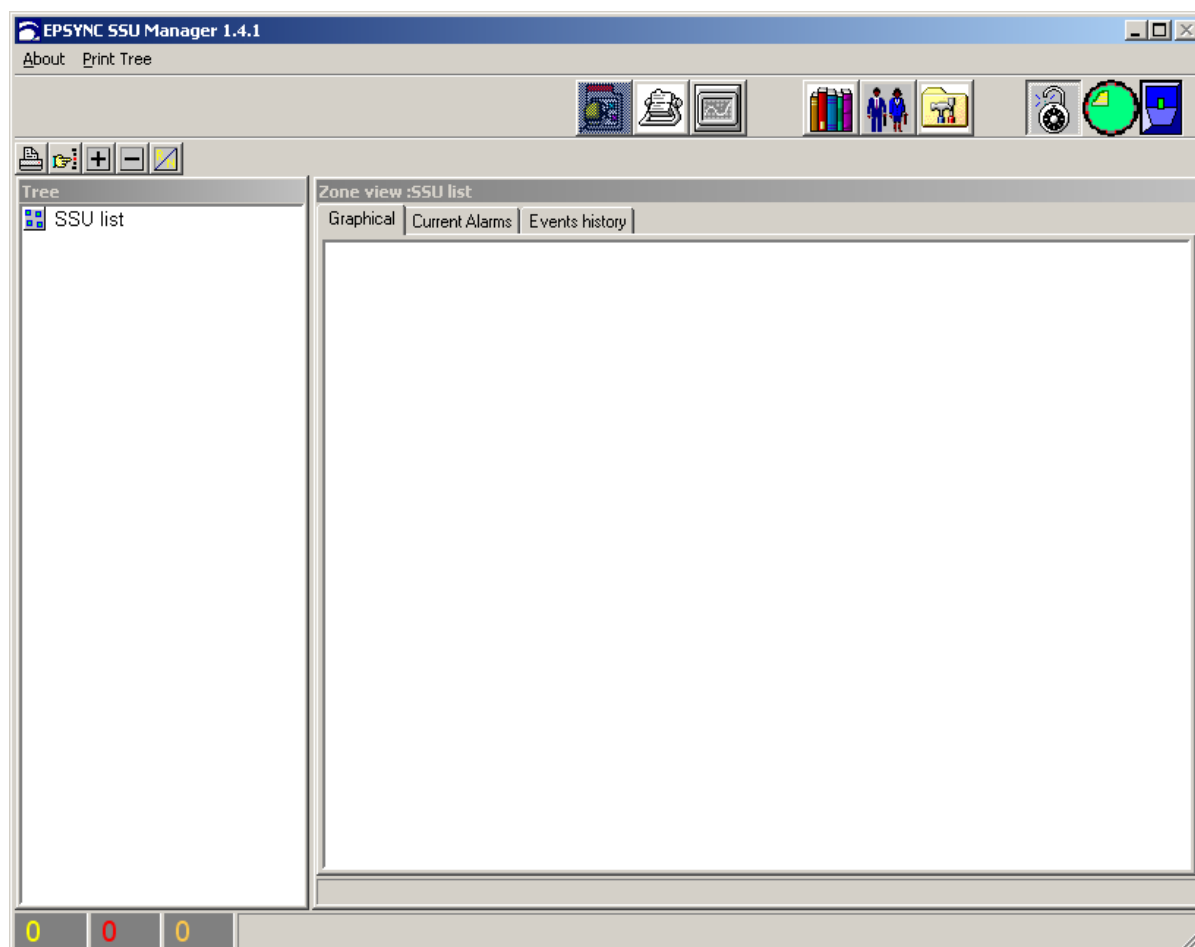


Figure 6 - 2. Home Screen.

6.2.1 The General Top Line

In the home screen, the general top line consists of icons representing the commands for main software functions and also the software exit and locking/unlocking functions.

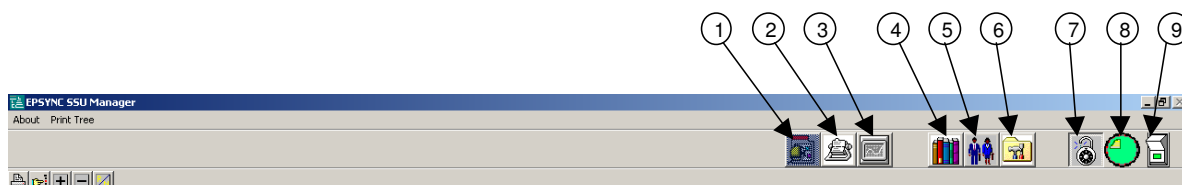


Figure 6 - 3. Top Line of the Screen.

- ① "Synchronization Network Editing and Viewing", with which the synchronization network is described in the form of zones and where each SSU and the links are configured and monitored.
- ② "SSU Base Management", with which the list of SSUs in the network and their network parameters is established.
- ③ "SSU graphical parameters monitoring", where the results of OCXO MTIE/TDEV/Control voltage measurements regularly fed back to Master station by the SSU are displayed in the list or graphical form.
- ④ "Software Version Management", which gives the software versions information of every cards of every SSUs.
- ⑤ "Users Management", with which the list of supervision users and the rights of each of them are established.
- ⑥ "Set-Up Manager", with which the address of the station including databases, the name of the database used, the Master station address are set.
- ⑦ Login/Logout button symbolized by padlock open (free access to functions) or closed (access locked).
- ⑧ Green indicator light located just on the left indicates that the software is active and the database server reachable.
- ⑨ ON/OFF button used to exit the software.

Under the general top line, the data screen is divided into two windows, the "Tree" window and the working window.

6.2.2 The Bottom Status Bar



Figure 6 - 4. Bottom Status Bar.

- ①: Number of SSUs which are declared but not seen by EpsyncManager.
- ②: Number of SSUs which are in error.
- ③: Number of SSUs which are in warning.

6.2.3 "Tree" Window

Modifications of this list are allowed only when in the "Synchronization Network Editing and Viewing" menu. In other menus, the "Tree" only displays the synchronization network structure.

On the left ("Tree" window), the complete list of supervised SSUs is organized hierarchically with the names of zones to which they belong. Zones may contain sub-zones and SSUs. This organization looks like the file manager model in Windows OS (Explorer). By clicking on + or – located in front of zone names, the hierarchy is expanded or contracted. It is also possible to move an SSU from one zone to another by clicking on the SSU with the left mouse button, moving the mouse to the destination-zone name, and then releasing the mouse button. Moving SSUs must be performed before creating links between SSUs.

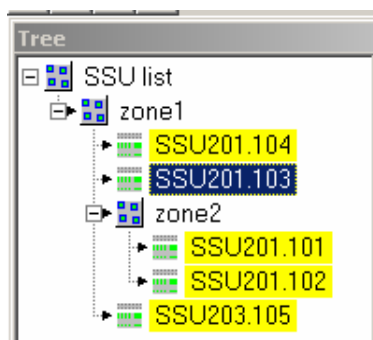


Figure 6 - 5. "Tree" Window (Part).

On this window, double clicking on an SSU activates display functions of the SSU concerned, in the right-hand window. Double clicking on a zone activates the graphical representation and organization functions of the SSU network in right-hand window. When changing over from one SSU to another, the SSU left is examined one last time and its configuration data is stored in the database. The status of the new SSU is read and then displayed.

SSU names appear with a green background if "URG" and "NURG" alarm indicators are off on the management board, red background if the "URG" alarm indicator is on, and orange background if the "NURG" alarm indicator is on. If the IP link between the station and the SSU is broken, the SSU name appears with yellow background. If an SSU is selected for an operation, its name background is colored in blue.

Clicking the right-hand button on an SSU name opens a contextual menu as shown below, in which one can set up an SSU (modify SSU parameters) or "View SSU" (display graphical information of each SSU). SSU information (such as IP address and name) can also be modified and the SSU can be deleted from the current survey.

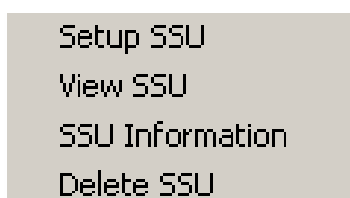


Figure 6 - 6. Contextual Menu (Right Click on One SSU).

When an SSU is deleted, it is no longer part of the SSU currently managed and monitored. But the SSU is still part of the Network and shows in the "New SSU" zone. It can be reinserted into the working zone. Only a delete operation achieved with the "SSU Base Management" menu erases the SSU from the database.

When clicking the right-hand button on a zone name, a contextual menu proposes to create a new zone name (Add New Zone), delete it (Delete Zone), and rename it (Rename Zone). "Search SSU (Name)" is helpful to point at a given SSU in the list if the list is very long.

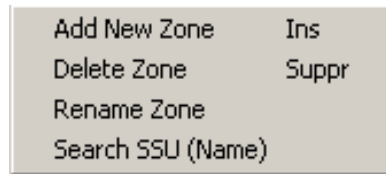


Figure 6 - 7. Contextual Menu (Right Click on One Zone).

A zone named "New SSU" appears in the window when a new SSU is created. The SSU must be moved within the zone of which it is part for it to appear later in the diagram.

In the case of small network, all SSUs may belong to the "SSU List" top zone name.

6.2.4 Working Window

On the right, the window displays information relating to functions activated through the various buttons on general top line.

6.3 SSU Viewing

To enter this menu, press the first button on the left of the general top line ("Synchronization Network Editing and Viewing") and double-click on the name of the SSU concerned, in the "Tree" window, or through the contextual menu by pointing at the SSU name.

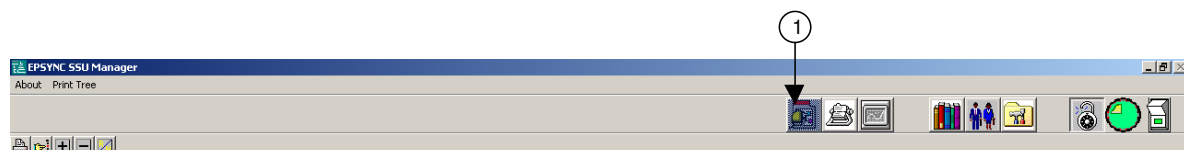


Figure 6 - 8. Top Line of the Screen.

6.3.1 SSU Front Panel

There are 4 tabs: SSU front panel (default screen), Detailed Status, which allows to access to the detailed status of every module of the SSU, Synoptic, which gives the block diagram of the SSU, and Software version. The screen below displays:

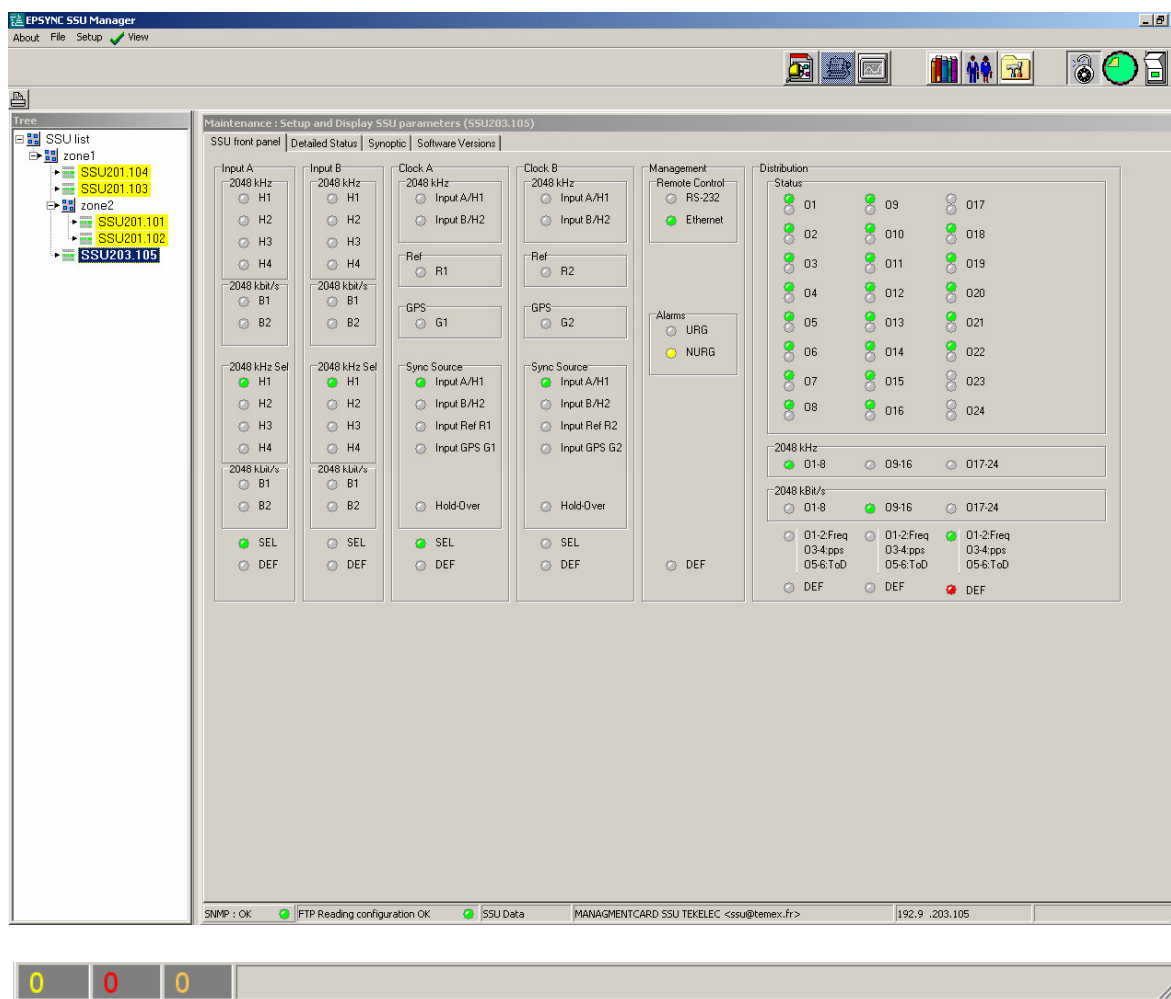


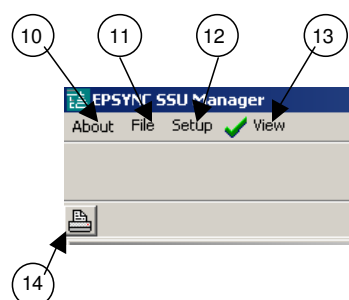
Figure 6 - 9. SSU Viewing - SSU Front Panel.

Status of the established network connection is displayed at the bottom of the screen. The first level is an exchange with SNMP protocol and the second level is an exchange with FTP protocol. A green or red indicator light indicates the transfer results and therefore the validity of IP connection between station and SSU.



Figure 6 - 10. Bottom Line.

Four actions are available on the top left line ("About", "File", "Set-Up" and "View").



The figure beside represents the functions located at the top left of the screen:

10: version of the software

11: Access to save or load configuration

12: Access to the setup screen (Configuration: § 6.5)

13: Access to the View screen (already launched: § 6.3)

14: Print the tree of SSUs and zones

Figure 6 - 11. Top Line (Left Part).

When pointing on "File", as shown below, a contextual menu appears with "Refresh status", "Save Configuration," and "Load Configuration."

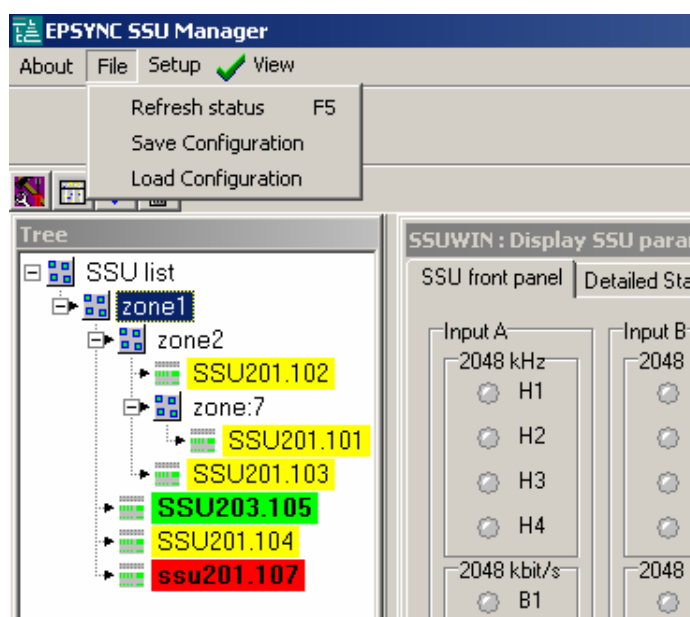


Figure 6 - 12. File Menu in View Screen

SSU configurations are stored in the PC under ".cfg" extension files. To save an SSU configuration, execute the "Save Configuration" command and choose the file name.

To retrieve a previously saved configuration, execute the "Load Configuration" command. You can then edit it and program the SSU with this configuration in the <Configuration> menu.

Refreshing data concerning the SSU can also be performed by clicking on function key [F5].

When the configuration has been changed on the "Setup" menu, the new configuration status is updated in the "View" menu only after a variable delay, which can be up to several tens of seconds. This time includes the transfer time through the network, the processing by the management board, the programming at board level, and feedback through the network of the new programmed configuration (and the effect produced on operation).

6.3.2 SSU Detailed Status

The status of each board is displayed according to the chosen tab ("Input", "Clock", "GPS" and "Distribution"). The status information includes the recall of configuration parameters and operation status. Refer to the SSU User's Manual for more information on parameters and status. The next figures represent the screens corresponding to the concerned module.

The screenshot displays the 'EPSILON SSU Manager' application window. The title bar reads 'Maintenance : Setup and Display SSU parameters (SSU203.105)'. The interface is divided into several sections:

- Tree View (Left):** Shows a hierarchy of SSU units. Under 'zone1', 'SSU201.104' and 'SSU201.103' are highlighted. Under 'zone2', 'SSU201.101', 'SSU201.102', and 'SSU203.105' are listed.
- Main Display Area:** Contains two panels for 'Input A' and 'Input B'.
 - Input A Parameters:**
 - Module Status: OK
 - Module Selection Mode: Automatic
 - Module Operation: Running
 - Synchronizing Link: H1
 - Synchronizing Link Selection Mode: Automatic
 - Input B Parameters:**
 - Module Status: OK
 - Module Selection Mode: Automatic
 - Module Operation: Spare
 - Synchronizing Link: H1
 - Synchronizing Link Selection Mode: Automatic
- Status Tables:** Below the parameters are two tables for 'Input A' and 'Input B'.

	H1	H2	H3	H4	B1	B2
Status	On	Off	Off	Off	Off	Off
Priority	1	2	3	4	5	6
MTIE	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
TDEV	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
SSM	-	-	-	-	-	-

- Status Bar (Bottom):** Displays system health indicators: 'SNMP : OK', 'FTP Reading configuration OK', 'SSU Data', and 'MANAGEMENTCARD SSU TEKELEC <ssu@temex.fr>'. It also shows the IP address '192.9.203.105'.

Figure 6 - 13. SSU Detailed Status: Input Board

It shall be noted that current MTIE and TDEV measurements are continuously available by clicking on the symbol "▼". The next screens are displayed. Measurements last respectively

30 s minimum to obtain a result relating to 10 s point, 300 s for 100 s point, 3000 s for 1000 s point.

Input CardMTIE

	Template	H1	H2	H3	H4	B1	B2
10 s	1000	-	-	-	-	60	-
100 s	2000	-	-	-	-	668	-
1000 s	5000	-	-	-	-	686	-

Measurement in ns

OK

Input CardTDEV

	Template	H1	H2	H3	H4	B1	B2
10 s	34	-	-	-	-	44	-
100 s	170	-	-	-	-	9	-
1000 s	170	-	-	-	-	11	-

Measurement in ns

OK

Figure 6 - 14. Windows obtained by clicking on ▼ (MTIE and TDEV respectively).

EPSSync SSU Manager

About

Tree

- SSU list
 - zone1
 - SSU201.104
 - SSU201.103
 - zone2
 - SSU201.101
 - SSU201.102
 - SSU203.105

Maintenance : Setup and Display SSU parameters (SSU203.105)

SSU front panel | Detailed Status | Synoptic | Software Versions

Input | Clock | GPS | Distribution

Clock A:

Module Status: OK

Module Selection Mode: Automatic

Module Operation: Master

Synchronizing Link Selection Mode: Automatic

Synchronizing Link: A/H1

H1 Frequency: 2048 kHz

Oscillator Type: Quartz Model 1

Oscillator Tracking Status: Locked

Tracking Time Constant: 1000 (std) s

	A/H1	B/H2	G1
Status	OK	OK	None
Priority	1	2	3
MTIE	Inactive	Inactive	
TDEV	Inactive	Inactive	

Clock B:

Module Status: OK

Module Selection Mode: Automatic

Module Operation: Slave

Synchronizing Link Selection Mode: Automatic

Synchronizing Link: A/H1

H1 Frequency: 10 MHz

Oscillator Type: Quartz Model 1

Oscillator Tracking Status: Locked

Tracking Time Constant: 1000 (std) s

	A/H1	B/H2	G2
Status	OK	OK	None
Priority	1	2	3
MTIE	Inactive	Inactive	
TDEV	Inactive	Inactive	

SNMP : OK | FTP Reading configuration OK | SSU Data | MANAGEMENTCARD SSU TEKELEC <ssu@temex.fr> | 192.9 .203.105

0 0 0

Figure 6 - 15. SSU Detailed Status: Clock Board

Current MTIE and TDEV measurements are continuously available by clicking on the symbol "▼". The next screens are displayed. Measurements last respectively 30 s minimum to obtain a result relating to 10 s point, 300 s for 100 s point, 3000 s for 1000 s point.

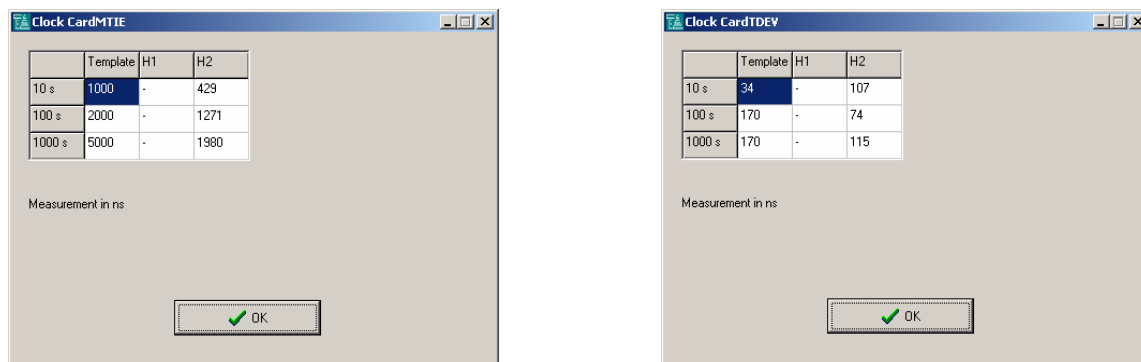


Figure 6 - 16. Windows obtained by clicking on ▼ (MTIE and TDEV respectively).

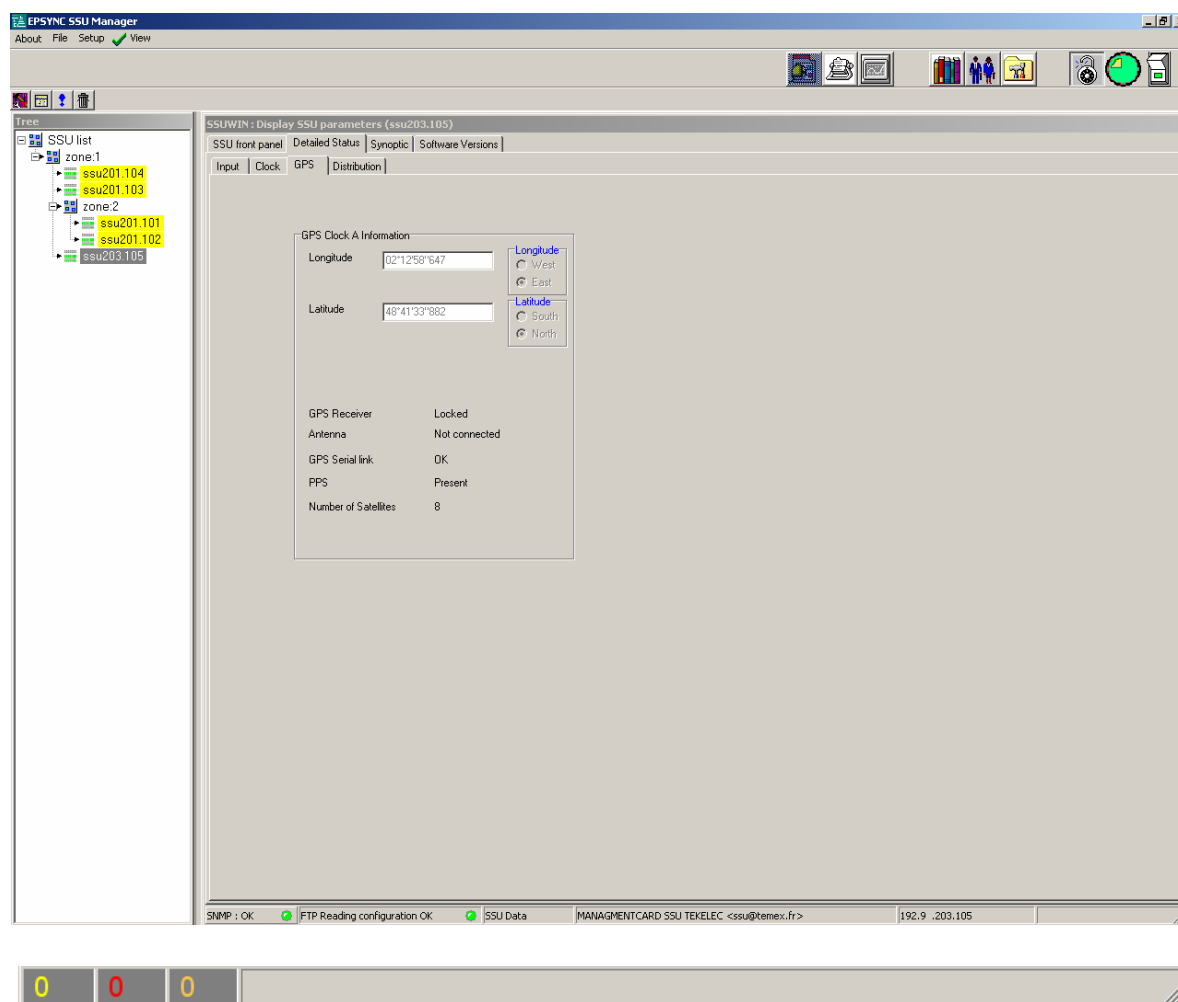


Figure 6 - 17. SSU Detailed Status: GPS Board

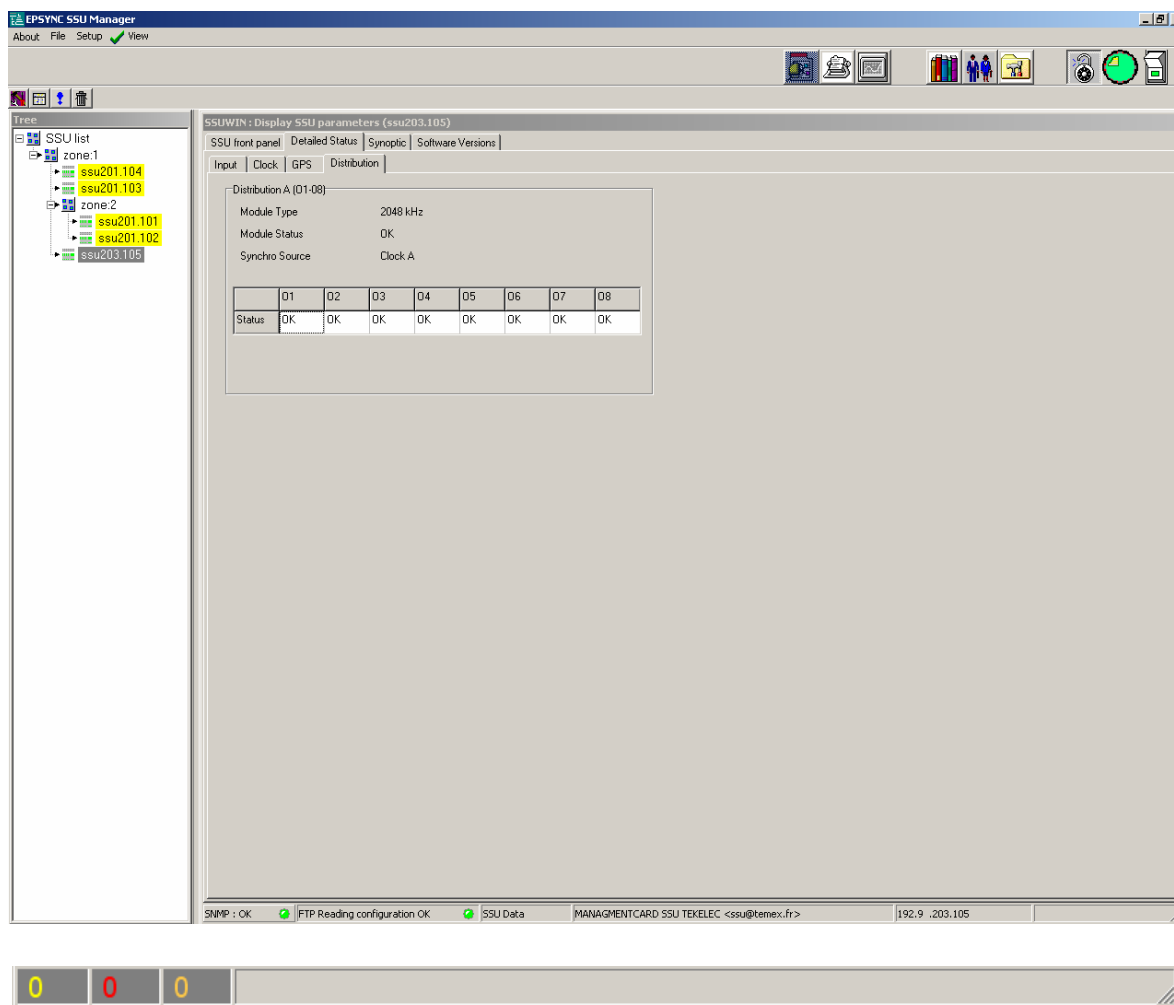


Figure 6 - 18. SSU Detailed Status: Distribution Board

6.3.3 SSU Synoptic

A representation of the SSU internal block diagram is embellished with colors whose code indicates the general status of each of the boards making up the SSU. Input links are located on the left. Synchronization links enter both at Input A and Input B. The selected link is transmitted to Clock A and Clock B. The Master Clock board distributes the synchronization to distribution boards on the right.

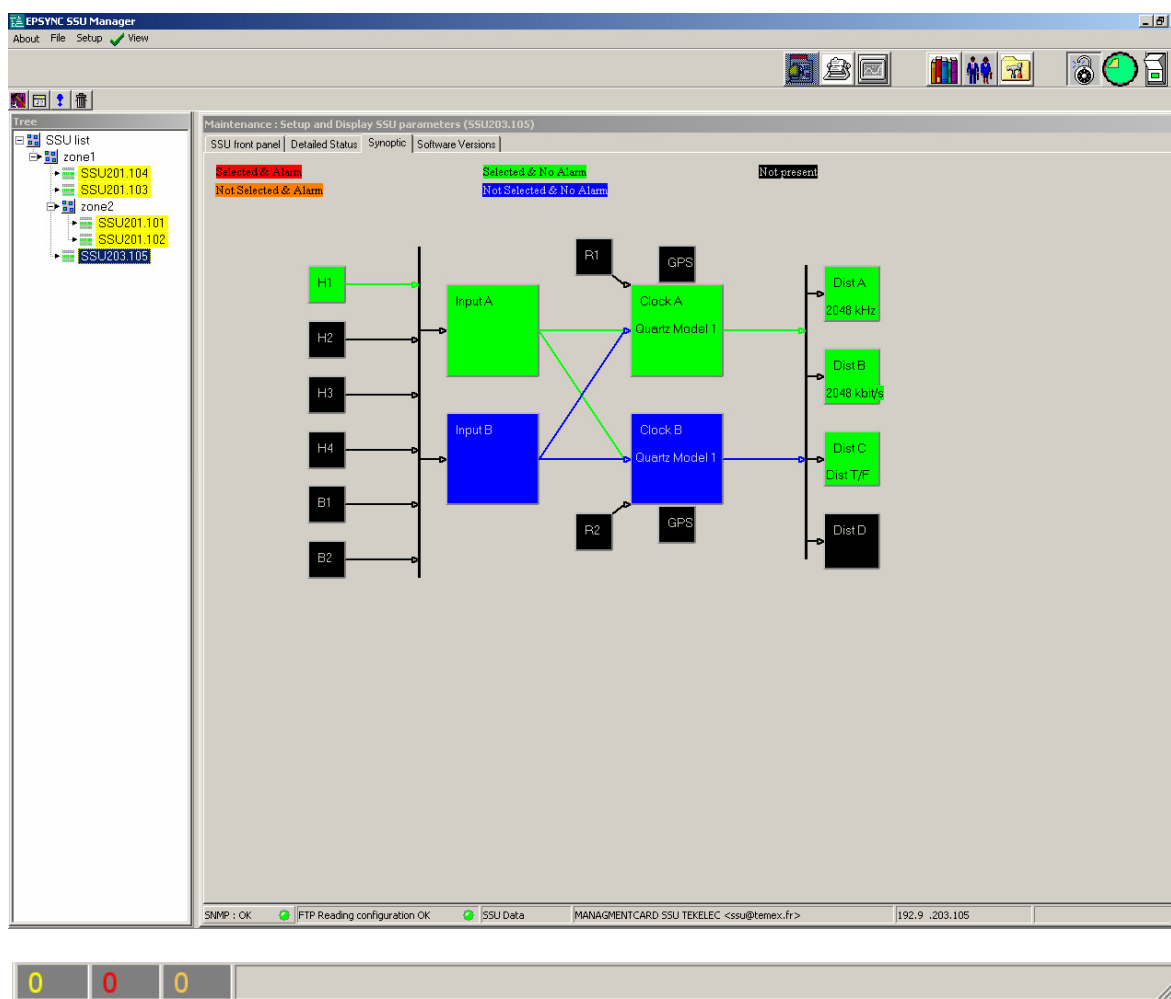


Figure 6 - 19. SSU Internal Block Diagram.

6.3.4 SSU Software Versions

The software versions of each board of the SSU are displayed. The first displayed number is the currently running version. The number in parenthesis on the right of the current version is the waiting version in case an update version has been downloaded. This waiting version will be activated at the next reset of the corresponding module.

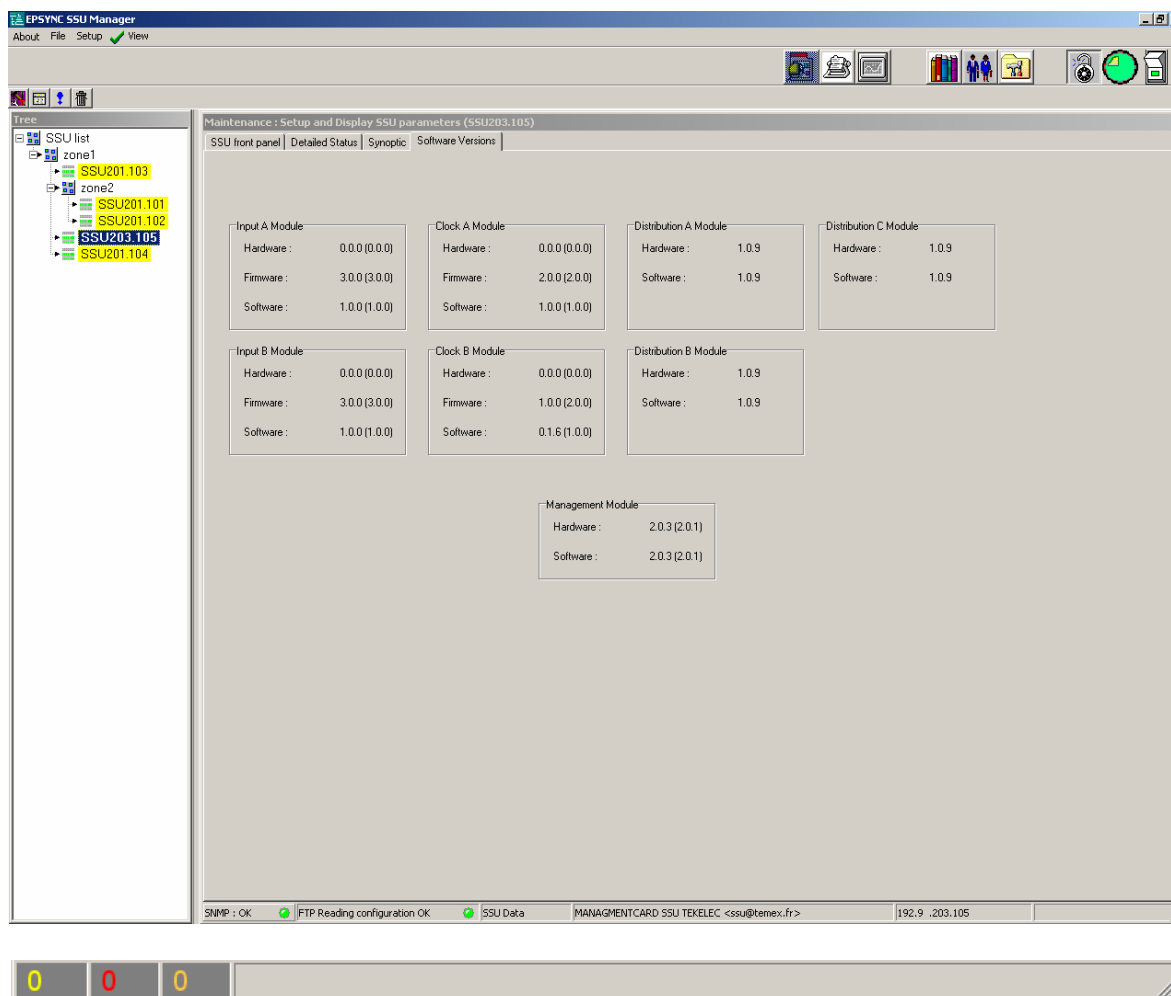


Figure 6 - 20. SSU Software Versions.

6.3.5 Monitoring Status

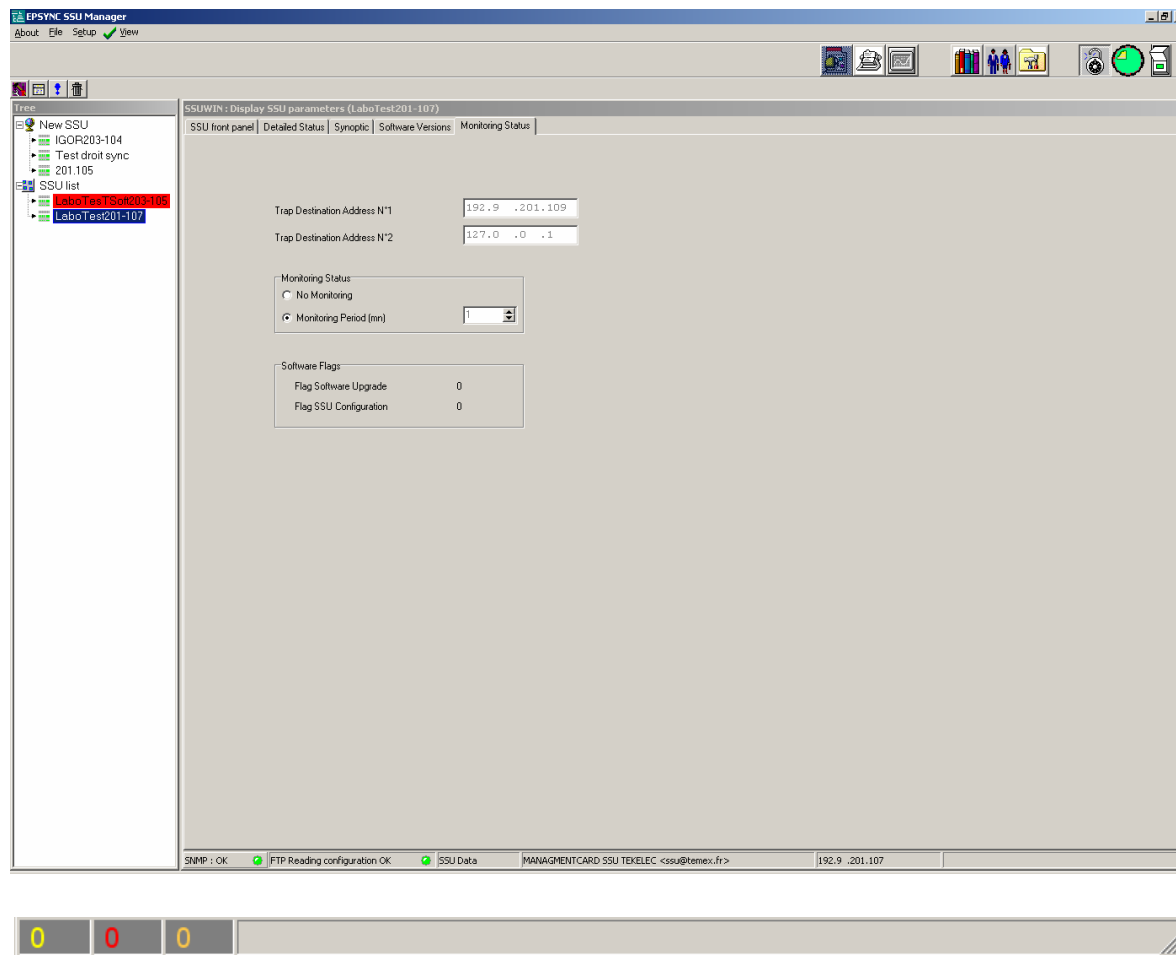


Figure 6 - 21. SSU Monitoring Status.

For each SSU, it is still possible to check the parameters set by the "SSU Monitoring Parameters" menu.

The first display shows the destination addresses of the alarms messages (SNMP traps) and performance monitoring. The second address can be modified by a SNMP MIB Browser in case a second station would process the traps. The default inactive IP address is 127.0.0.1 (local loopback address), showing no transmitted trap out of the SSU.

Then the "Monitoring Status" frame shows if the monitoring is enabled or disabled and the period of monitoring in minutes.

The "Software Flags" is an indicator of FTP transfer status of files between the PC and the SSU. The normal state is 0. The "Software release download" flag goes to 1 during the "Release Download" operation (Input or Clock or Management module). When the file has been acknowledged by the SSU, the flag resets. The "SSU Configuration" flag goes to 1 when the

Configuration Parameters are sent down to an SSU. The meaning of a permanent "1" flag would be a failure of the Management module to process the sent files.

6.4 Description of the Synchronization Network

Pressing the first button on the left of general top line ("Synchronization Network Editing and Viewing") starts the menu.

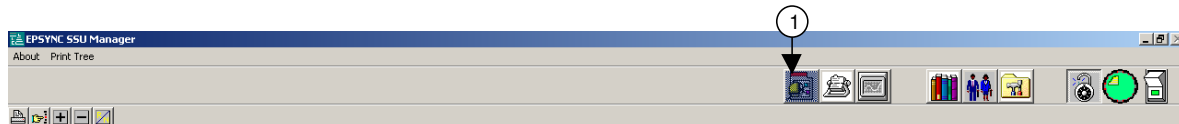


Figure 6 - 22. Top Line of the Screen.

To enter in a description function for a zone of the synchronization network, double-click on the name of the zone concerned in the "Tree" window.

NOTE: The access right "Network" must be attributed to access to all features of this menu.

6.4.1 Diagram of a Zone

In the working window, the following items appears:

- SSUs being parts of the zone, (square logo representing an SSU, followed by the name)
- SSUs being parts of another zone, but having a synchronization link with an SSU in this zone (round logo with an SSU inside)
- Logos of sub-zones being part of the displayed zone, to be positioned near SSUs being parts of them

The screen background is a loadable image (.jpg).

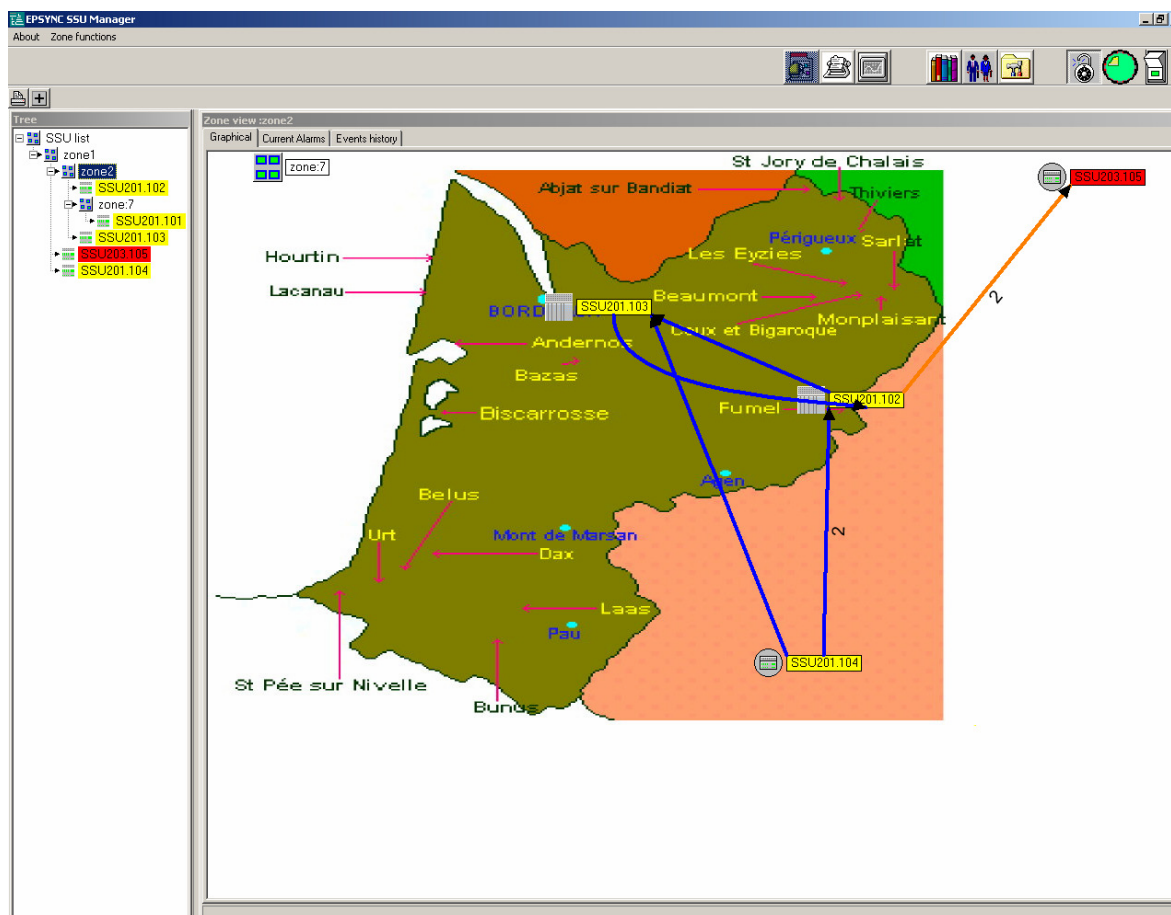


Figure 6 - 23. Diagram of a Zone.

By clicking on the mouse right-hand button, a contextual menu is used to modify or erase the background image by reloading another one in its place and erasing it.

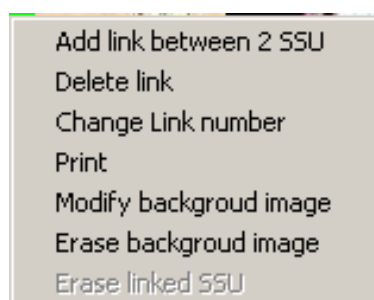


Figure 6 - 24. Contextual Menu.

To move an SSU, click on its representation with the left mouse button, drag it to the desired position, and then release the button.

When an SSU that is part of another zone has to be connected to an SSU that is part of this zone, pick it up from the TREE window and drag it into the diagram window (left-click and move the mouse and release the button). The user can then add a link between an SSU from the current zone and this graphically imported SSU.

6.4.2 Declaration and Plotting of Links

An arrow symbolizes synchronization links between SSUs for each direction accompanied by the number of links. The link color indicates whether the link is OK and used (green), defective and used (red), not connected (blue), or defective and not used (orange).

With the contextual menu, by clicking with the right-hand button somewhere other than on an SSU, it is possible to add a link, erase it (if the link is pointed at), or change the number of links (if the link is pointed). When "Add Link between 2 SSUs" is activated, the method to be followed to add the link is to click once on the origin SSU and then to click on the destination SSU.

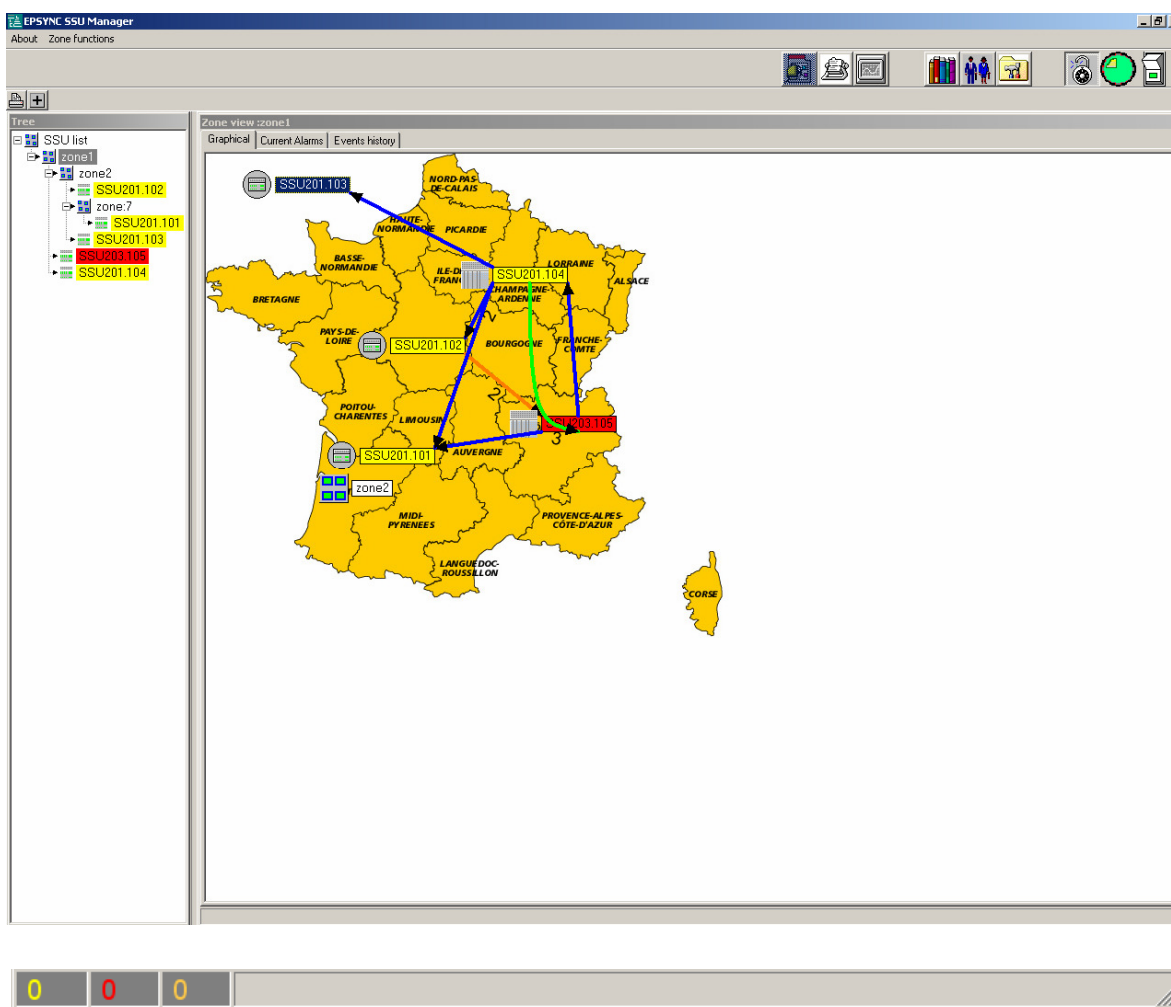


Figure 6 - 25. Declaration and Plotting of Links.

Pointing at an SSU, clicking twice with the left-hand button opens the input links connection window. On each access (H1 to H4, B1, B2) it is possible to set the name of the link origin SSU. Proposed choices correspond to arrows drawn on the diagram.

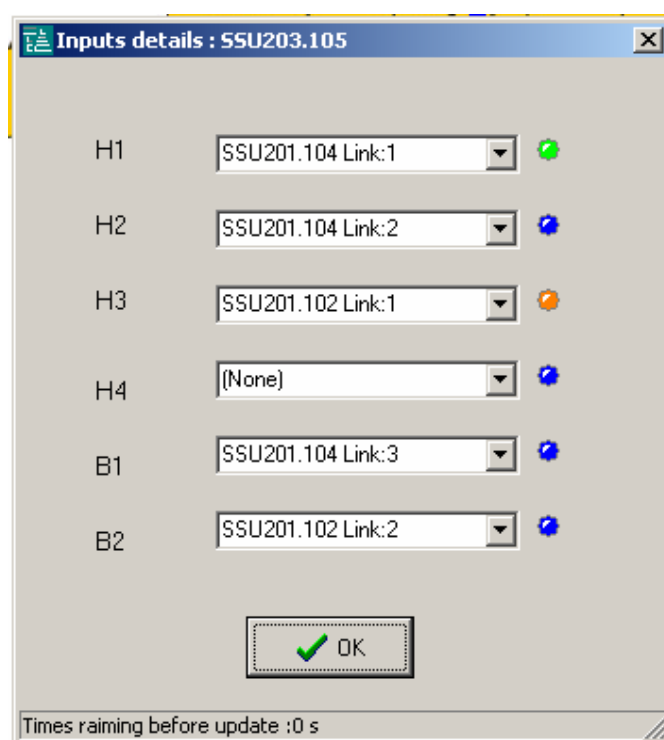


Figure 6 - 26. Connection of Input Links.

To connect an SSU in the zone to another SSU not part of the zone, select this zone from the list in the "Tree" window (except "New SSU") and drag it into the zone, then see to the desired links. If you want to delete the SSU from the zone, disconnect it and press the "Del" key. An SSU that is part of the zone is not erased.

Likewise, drag an SSU located in the "New SSU" zone and position it in the right-hand window to have it integrated into a zone.

When the SSU comes with no INPUT module, only two links are available. If previous links were declared in an INPUT equipped configuration, erase these links before creating new ones.

6.4.3 Alarms in Progress in a Zone

When clicking on "Current Alarms" tab in the description window for a zone, all the last changes in SSU alarm states are displayed indicating the faulty module, the type of detected alarm, the alarm seriousness level, the value (1 means appearance of the alarm, 0 means disappearance), and the last reading date.

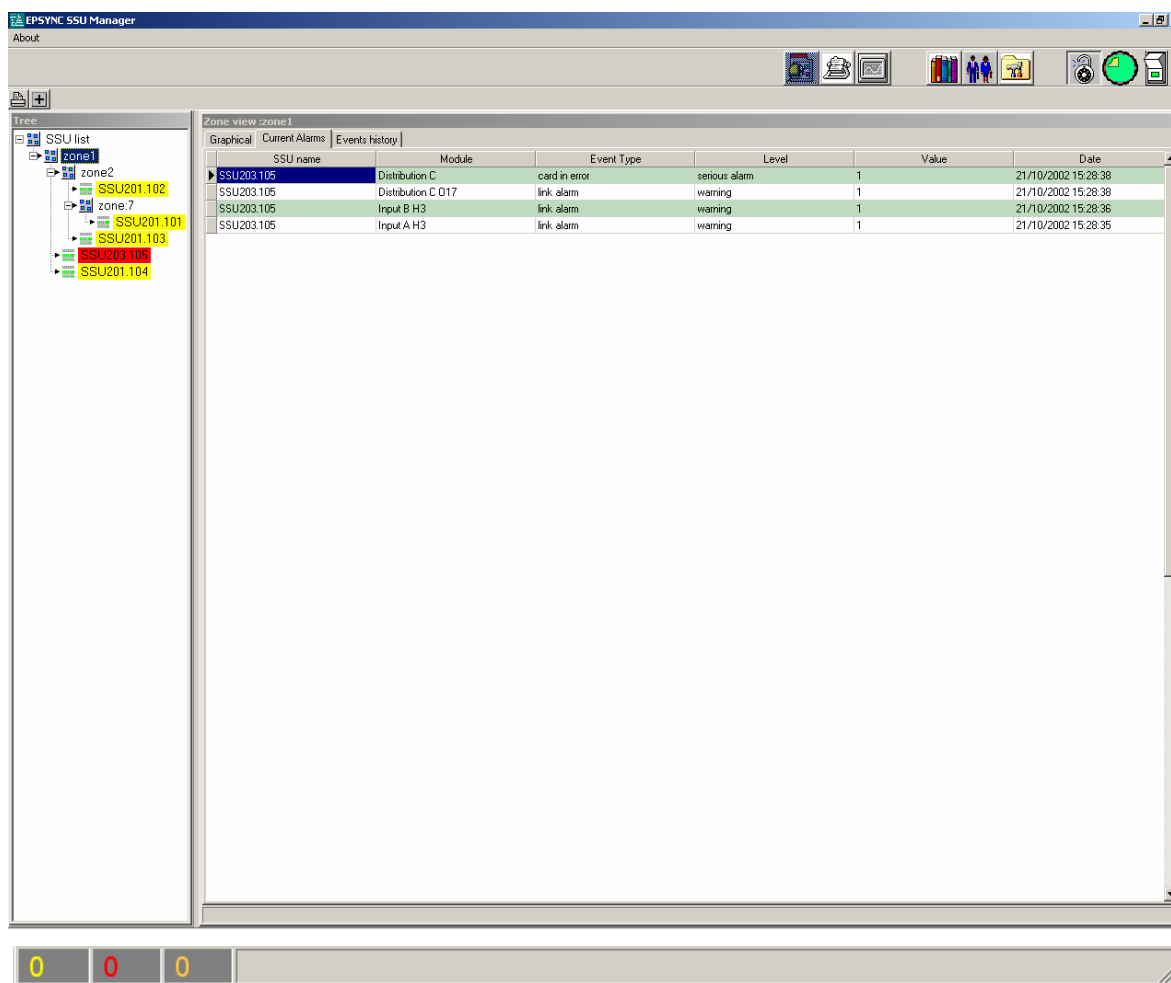


Figure 6 - 27. Alarms in Progress on a Zone.

6.4.4 History of Events on a Zone

When clicking on "Events History" in the description window for a zone, all changes in SSU alarm states are displayed, indicating the defective module, the type of detected alarm, the alarm seriousness level, the value (1 means appearance, 0 means disappearance), and the change date.

SSU name	Module	Event Type	Level	Value	Date
SSU203.105	Distribution A	card in error	serious alarm	0	21/10/2002 03:53:15
SSU203.105	Distribution A	card in error	serious alarm	1	21/10/2002 03:51:15
SSU203.105	Distribution B	card in error	serious alarm	0	21/10/2002 01:33:14
SSU203.105	Distribution B	card in error	serious alarm	1	21/10/2002 01:31:14
SSU203.105	Distribution A	card in error	serious alarm	0	20/10/2002 16:27:09
SSU203.105	Distribution A	card in error	serious alarm	1	20/10/2002 16:25:09
SSU203.105	Distribution A	card in error	serious alarm	0	20/10/2002 06:25:04
SSU203.105	Distribution A	card in error	serious alarm	1	20/10/2002 06:23:04
SSU203.105	Distribution A	card in error	serious alarm	0	20/10/2002 03:07:03
SSU203.105	Distribution A	card in error	serious alarm	1	20/10/2002 03:05:03
SSU203.105	Distribution A	card in error	serious alarm	0	19/10/2002 14:52:57
SSU203.105	Distribution A	card in error	serious alarm	1	19/10/2002 14:50:57
SSU203.105	Distribution A	card in error	serious alarm	0	19/10/2002 07:35:53
SSU203.105	Distribution A	card in error	serious alarm	1	19/10/2002 07:33:54
SSU203.105	Input B H3	link alarm	warning	1	18/10/2002 18:53:56
SSU203.105	Input A H3	link alarm	warning	1	18/10/2002 18:53:47
SSU203.105	Distribution A	card in error	serious alarm	0	18/10/2002 17:53:47
SSU203.105	Distribution A	card in error	serious alarm	1	18/10/2002 17:51:47
SSU203.105	Distribution A	card in error	serious alarm	0	18/10/2002 16:03:46
SSU203.105	Distribution A	card in error	serious alarm	1	18/10/2002 16:01:46
SSU203.105	Distribution B	card in error	serious alarm	0	18/10/2002 13:21:44
SSU203.105	Distribution B	card in error	serious alarm	1	18/10/2002 13:19:44
SSU203.105	Distribution A	card in error	serious alarm	0	18/10/2002 12:21:44
SSU203.105	Distribution A	card in error	serious alarm	1	18/10/2002 12:19:44
SSU203.105	Distribution A	card in error	serious alarm	0	18/10/2002 10:45:43
SSU203.105	Distribution A	card in error	serious alarm	1	18/10/2002 10:43:43
SSU203.105	Distribution A	card in error	serious alarm	0	18/10/2002 06:15:41
SSU203.105	Distribution A	card in error	serious alarm	1	18/10/2002 06:13:41
SSU203.105	Distribution A	card in error	serious alarm	0	16/10/2002 18:01:23
SSU203.105	Distribution A	card in error	serious alarm	1	16/10/2002 17:59:23
SSU203.105	clock B	card in error	serious alarm	0	16/10/2002 15:30:15
SSU203.105	clock B	card in error	serious alarm	1	16/10/2002 15:29:11
SSU203.105	Management	Communication lost	serious alarm	0	16/10/2002 14:24:18
SSU203.105	Distribution A	card in error	serious alarm	0	16/10/2002 08:35:36
SSU203.105	Distribution A	card in error	serious alarm	1	16/10/2002 08:33:36
SSU203.105	Distribution A	card in error	serious alarm	0	16/10/2002 05:25:25
SSU203.105	Distribution A	card in error	serious alarm	1	16/10/2002 05:23:25
SSU203.105	Distribution A	card in error	serious alarm	0	16/10/2002 03:03:24
SSU203.105	Distribution A	card in error	serious alarm	1	16/10/2002 03:01:24
SSU203.105	Distribution A	card in error	serious alarm	0	16/10/2002 00:07:23
SSU203.105	Distribution A	card in error	serious alarm	1	16/10/2002 00:05:23
SSU203.105	Input B H3	link alarm	warning	0	15/10/2002 17:39:28
SSU203.105	Input A H3	link alarm	warning	0	15/10/2002 17:39:19
SSU203.105	Distribution C D18	link alarm	warning	0	15/10/2002 17:35:19

Figure 6 - 28. History of Events on a Zone.

When clicking on the header of one of the columns, the data is ranked with respect to the content of this column. For elements with identical wording in the column, the order is not modified. That is, sorting can be multi-criteria by controlling the sorting on the various columns successively.

The presentation can be modified through filter functions.



Figure 6 - 29. Contextual Menu.

To access filter functions, click on "Alarms Filter" of the contextual menu. The next screen is displayed.

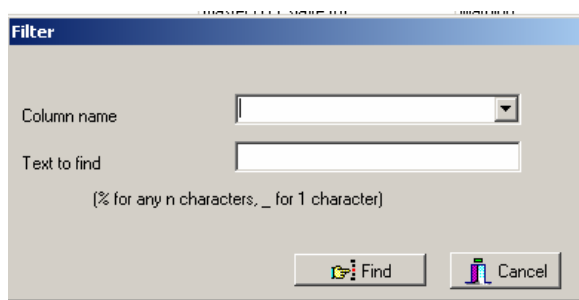


Figure 6 - 30. Alarms Filter Menu 1.

Clicking on "▼" at the end of "Column name" of the contextual menu, open the next screen to chose the concerned column. Then the text to find is entered and by clicking on "Find" the events corresponding to the text in the concerned column are displayed.

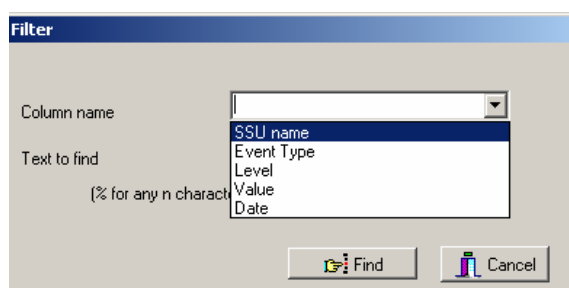


Figure 6 - 31. Alarms Filter Menu 2.

"Remove Filter" is used to return to complete display of records.

"Export Data" is used to save displayed data (ranked and screened) to Windows Excel format.

"Print" displays the data in a printable page (see the figure below).

Events history

SSU name	Module	Event Type	Level	Value	Date
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	12/06/2003 16:11:54
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	12/06/2003 16:09:51
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	12/06/2003 16:01:49
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	12/06/2003 15:59:47
LaboTest201-107	Clock A	card in error	serious_ala	0	12/06/2003 15:57:12
LaboTest201-107	SSU	Communication loss	serious_ala	0	12/06/2003 15:53:46
LaboTest201-107	Clock A & H1	link alarm	warning	0	12/06/2003 15:53:12
LaboTest201-107	SSU	Communication loss	serious_ala	1	12/06/2003 15:51:45
LaboTest[Scit203-106]	Clock B	card in error	serious_ala	0	12/06/2003 15:51:22
LaboTest[Scit203-106]	Clock A	card in error	serious_ala	0	12/06/2003 15:51:22
LaboTest201-107	Input A H1	link selected	warning	0	12/06/2003 15:49:23
LaboTest201-107	Input A	card in error	serious_ala	0	12/06/2003 15:49:23
LaboTest201-107	Input A B1	link selected	warning	1	12/06/2003 15:49:23
LaboTest201-107	Input A	does exist (1)	serious_ala	1	12/06/2003 15:49:53
LaboTest201-107	Input A H1	link selected	warning	1	12/06/2003 15:49:53
LaboTest201-107	Input A H3	link alarm	warning	1	12/06/2003 15:49:53
LaboTest201-107	Input A B2	link alarm	warning	1	12/06/2003 15:49:53
LaboTest201-107	Input A	running (1) / spare (0)	warning	1	12/06/2003 15:49:53
LaboTest201-107	Input A H1	link alarm	warning	1	12/06/2003 15:49:53
LaboTest201-107	Input A H2	link alarm	warning	1	12/06/2003 15:49:53
LaboTest201-107	Input A H4	link alarm	warning	1	12/06/2003 15:49:53
LaboTest201-107	Input A	card in error	serious_ala	1	12/06/2003 15:49:52
LaboTest[Scit203-106]	Clock A & H1	link selected	warning	0	12/06/2003 15:48:22
LaboTest[Scit203-106]	Clock B B/H2	link selected	warning	1	12/06/2003 15:48:22
LaboTest[Scit203-106]	Clock A B/H2	link selected	warning	1	12/06/2003 15:48:22
LaboTest[Scit203-106]	Clock B GPS	link selected	warning	0	12/06/2003 15:48:22
LaboTest[Scit203-106]	Clock A	master (1) / slave (0)	warning	1	12/06/2003 15:47:52
LaboTest[Scit203-106]	Clock B	master (1) / slave (0)	warning	0	12/06/2003 15:47:52
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	12/06/2003 15:02:51
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	12/06/2003 15:00:49
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	12/06/2003 15:00:37
LaboTest201-107	SSU	Communication loss	serious_ala	0	12/06/2003 15:00:13
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	12/06/2003 15:00:12
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	12/06/2003 14:56:48
LaboTest201-107	SSU	Communication loss	serious_ala	1	12/06/2003 11:35:58
LaboTest201-107	SSU	Communication loss	serious_ala	1	12/06/2003 11:35:58
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	12/06/2003 10:55:26
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	12/06/2003 10:53:14
LaboTest201-107	SSU	Communication loss	serious_ala	0	12/06/2003 10:17:01
LaboTest201-107	SSU	Communication loss	serious_ala	1	12/06/2003 10:14:59
LaboTest201-107	SSU	Communication loss	serious_ala	0	12/06/2003 10:12:59
LaboTest201-107	Clock A B/H2	link alarm	warning	1	12/06/2003 10:12:23
LaboTest201-107	SSU	Communication loss	serious_ala	1	12/06/2003 10:08:57
LaboTest201-107	Input A	does exist (1)	serious_ala	0	12/06/2003 10:08:34
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	12/06/2003 09:38:35
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	12/06/2003 09:36:37
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	16/06/2003 17:40:14
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	16/06/2003 17:38:19
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	16/06/2003 17:32:01
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	16/06/2003 17:29:57
LaboTest[Scit203-106]	Clock A	card in error	serious_ala	0	16/06/2003 14:56:15
LaboTest[Scit203-106]	Clock A B/H2	link selected	warning	1	16/06/2003 14:53:15
LaboTest[Scit203-106]	Clock A & H1	link selected	warning	0	16/06/2003 14:53:15
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	16/06/2003 14:51:27
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	16/06/2003 14:49:45
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	16/06/2003 13:39:01
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	16/06/2003 13:37:00
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	16/06/2003 07:55:23
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	13/06/2003 20:07:27
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	13/06/2003 19:24:53
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	13/06/2003 19:22:52
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	13/06/2003 18:46:36
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	13/06/2003 18:44:34
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	13/06/2003 18:24:28
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	13/06/2003 18:22:26
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	13/06/2003 13:27:39
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	13/06/2003 13:25:37
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	13/06/2003 13:13:32
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	13/06/2003 13:11:33
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	13/06/2003 12:35:14
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	13/06/2003 12:33:13
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	0	13/06/2003 07:25:25
LaboTest[Scit203-106]	SSU	Communication loss	serious_ala	1	13/06/2003 07:23:23

Page 1

Figure 6 - 32. Print Menu.

6.5 Configuration of SSUs by Module (Set-up)

The operation can be performed identically with maintenance software SSUWin. Refer to "SSU Installation, Operating and Maintenance Manual" to get the full detailed operation.

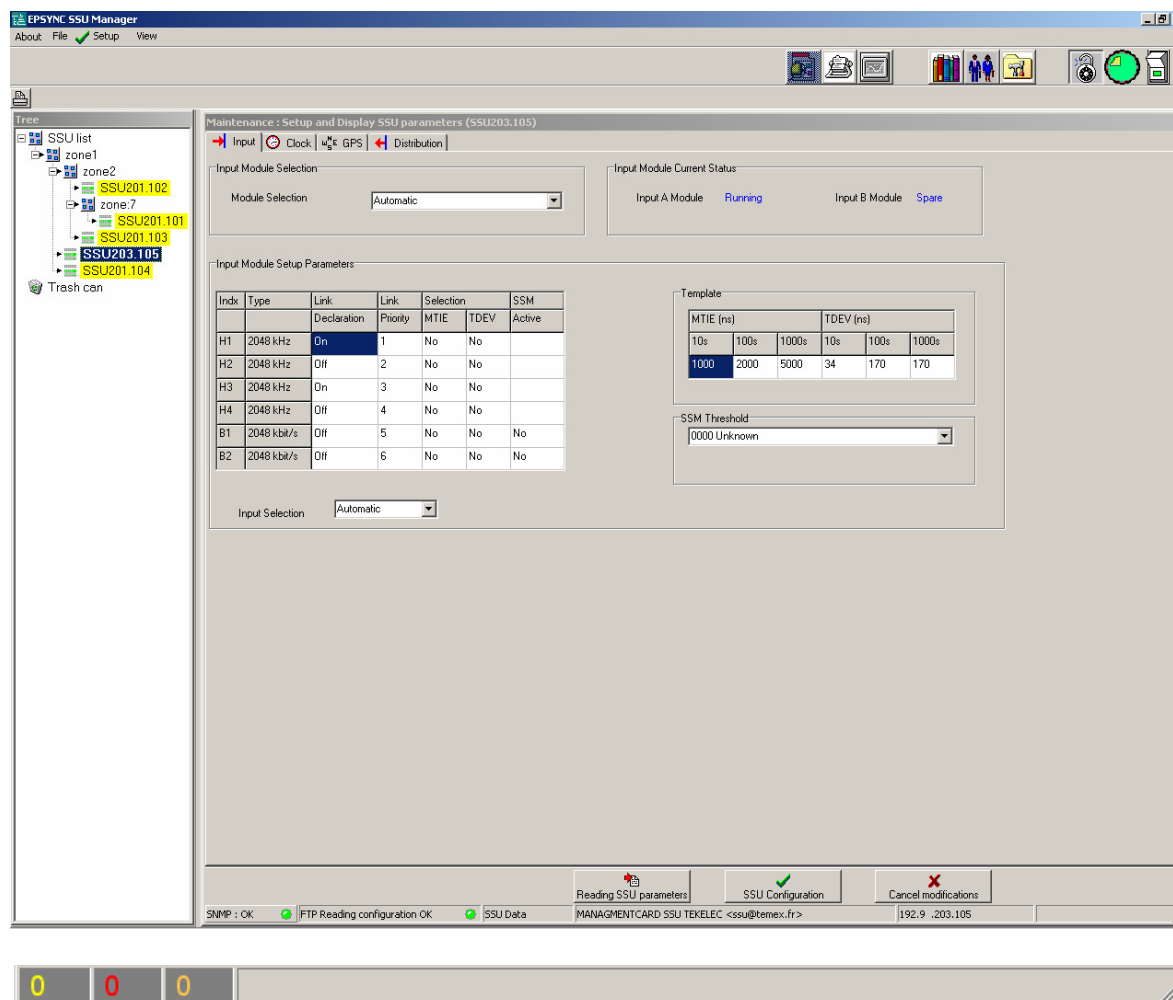


Figure 6 - 33. SSU Set Up: Input Module.

At the top left of the menu are tabs similar to those previously described.

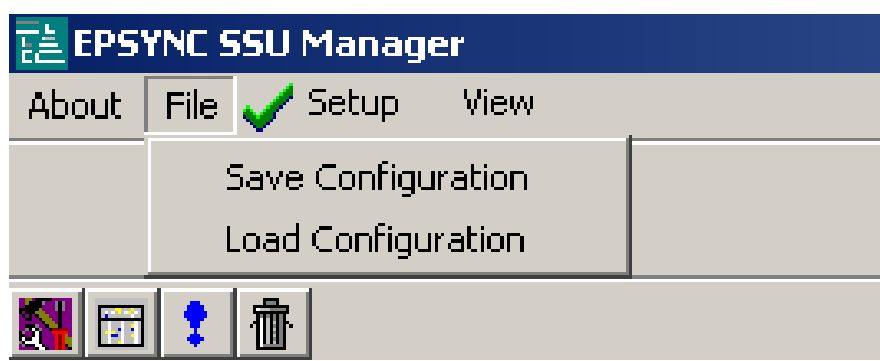


Figure 6 - 34. SSU Set Up: File Menu.

Configuration parameters of each board can be configured in the menus corresponding to the chosen tab.

Clicking on the "SSU Configuration" button (bottom of the screen) starts programming the SSU. If an already programmed SSU has a configuration that can be used as a model for another SSU, it is convenient to play back its configuration by clicking on "Reading SSU Parameters". Save and retrieve tools in files are available in "File" menu on upper top line.

NOTE: "SSU Configuration" is only available if the access right "SSU Setting" is granted.

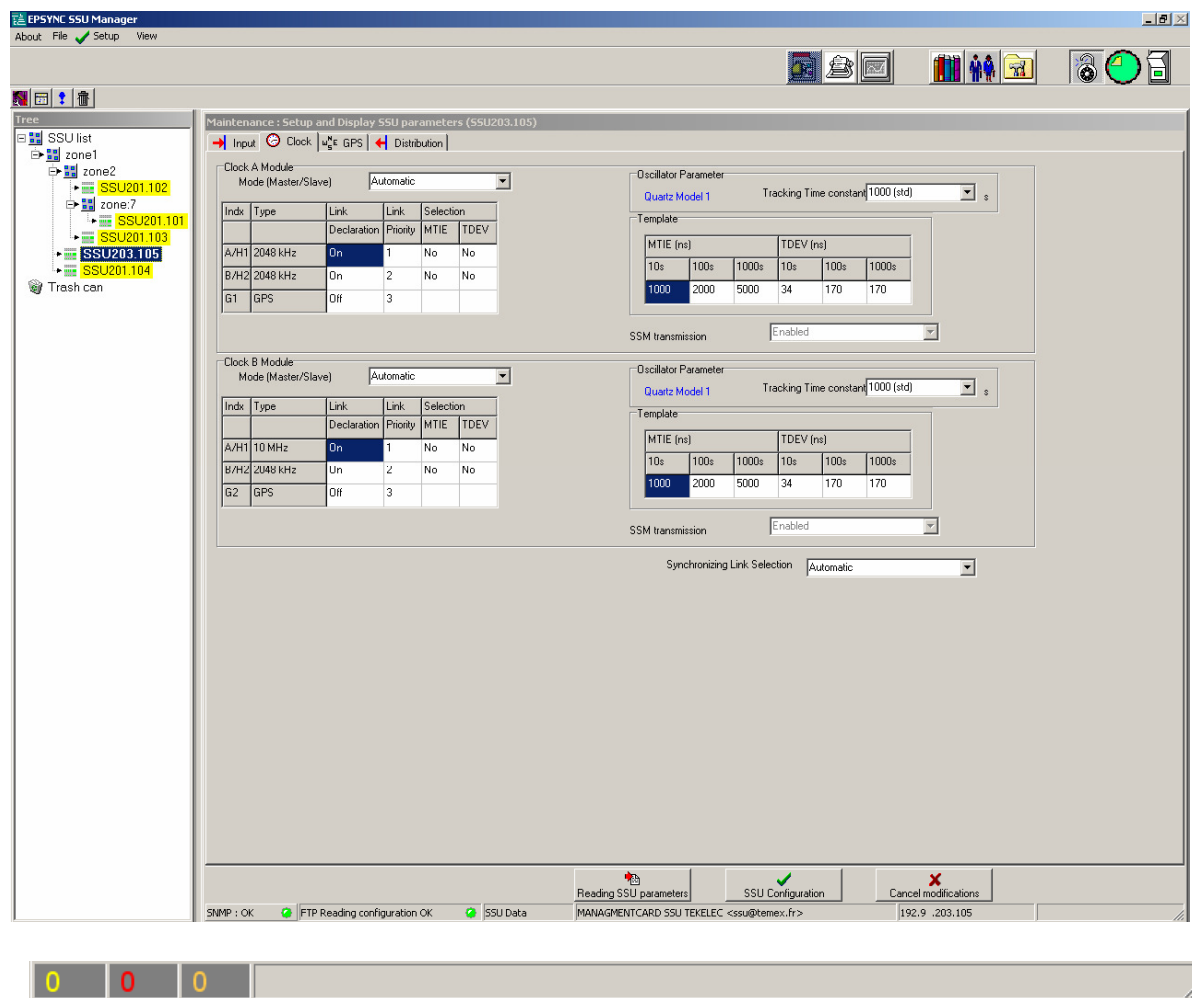


Figure 6 - 35. SSU Set Up: Clock Module.

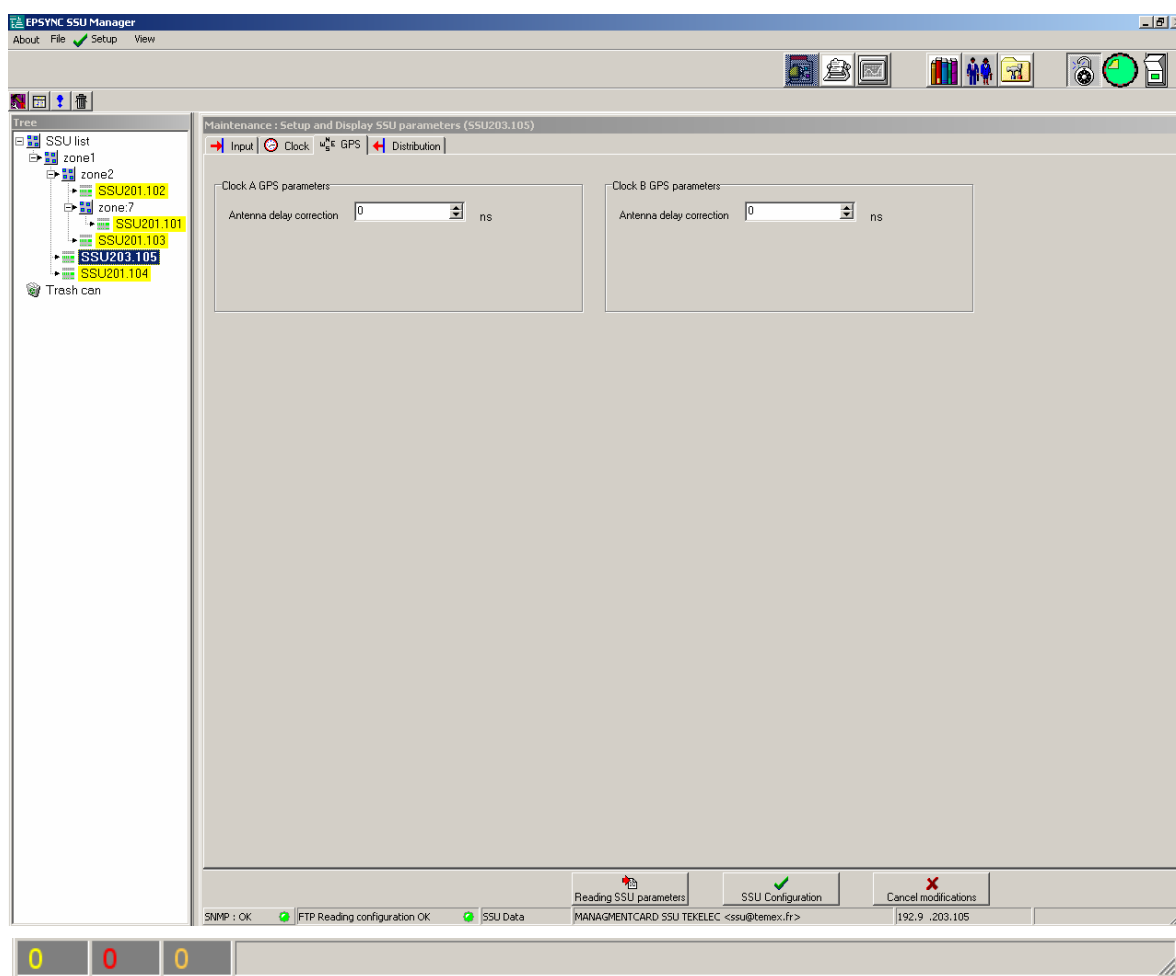


Figure 6 - 36. SSU Set Up: GPS Module.

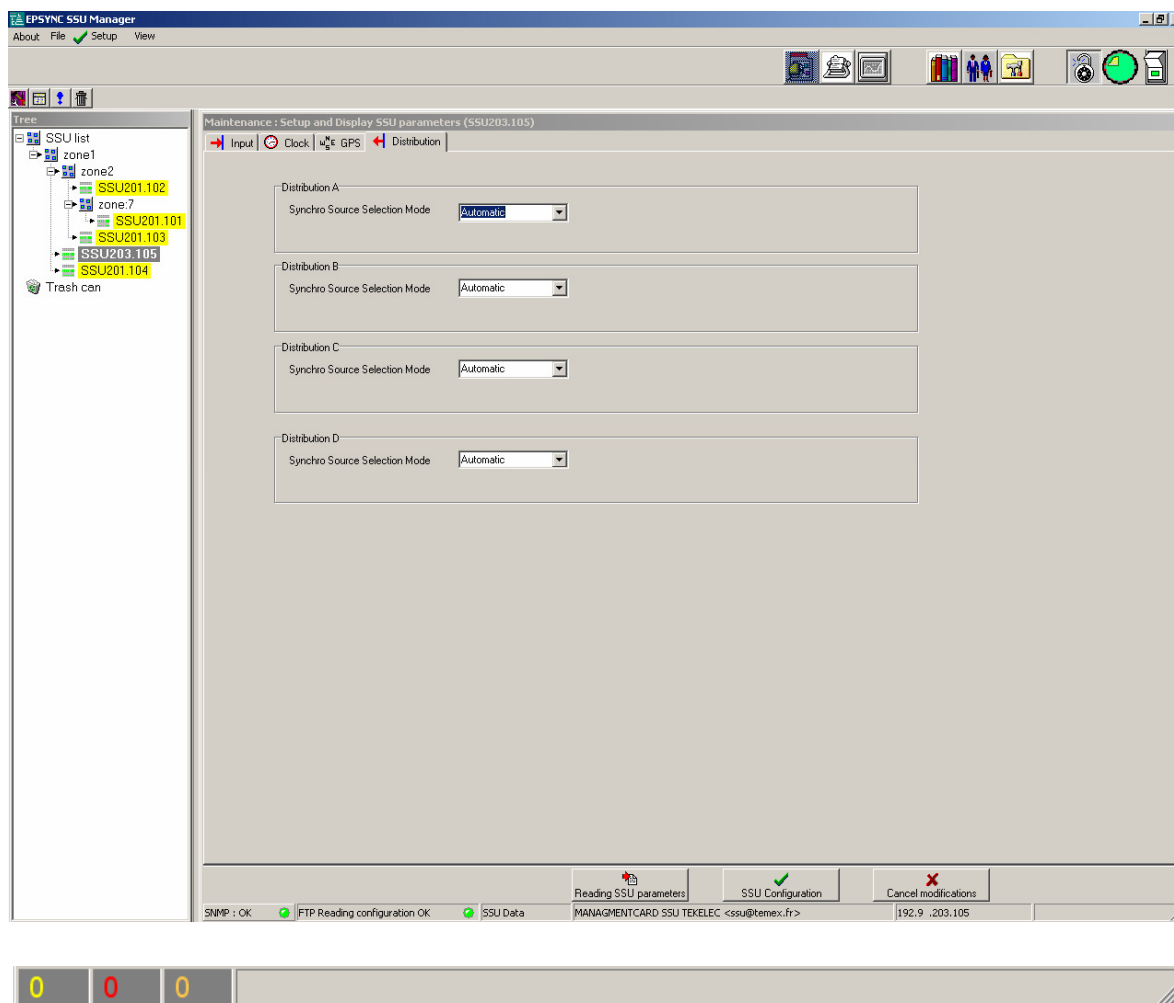


Figure 6 - 37. SSU Set Up: Distribution Module.

6.6 SSU Base Management

Pressing the second button from the left of the general top line ("SSU Base Management") runs the menu.



Figure 6 - 38. Top Line of the Screen.

NOTE: The access right "Maintenance" must be attributed to access to this menu.

6.6.1 Complete List

The next screen is displayed.

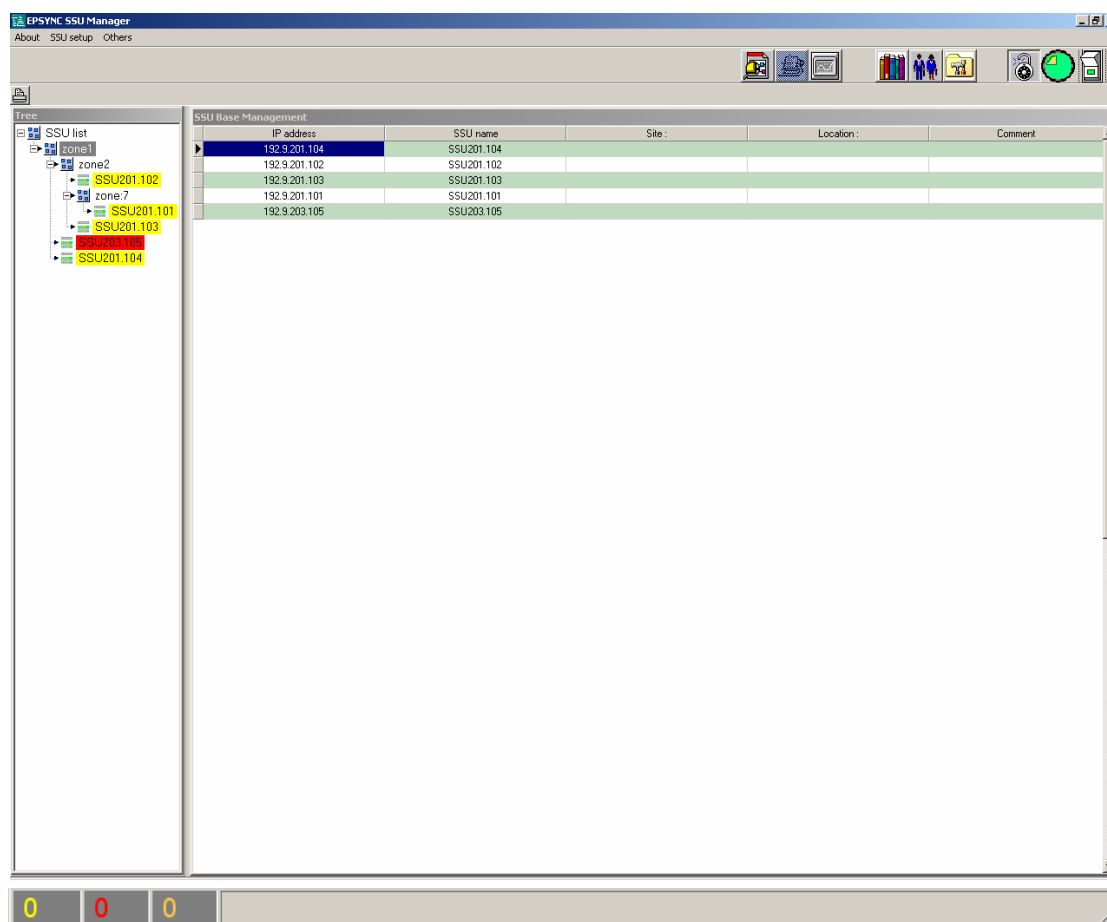


Figure 6 - 39. Complete List.

Functions available through the contextual menu called with right-hand button are the addition of SSU to the list ("Add"), removing an SSU ("Delete"), modification to information concerning an SSU ("Change"), searching for an existing SSU through its name or its IP address ("Search"), and a print menu ("Print"). To call the information modification function for an SSU, double-click on the line corresponding to the list.

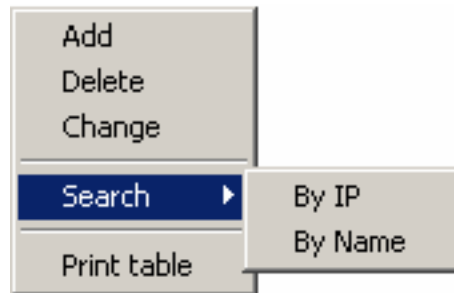


Figure 6 - 40. Contextual Menu.

Clicking on "Add" open the text screen.

A dialog box titled 'New SSU' with a standard Windows-style title bar (minimize, maximize, close buttons). The dialog has a light gray background. It contains four input fields: 'SSU IP Address' (a small field with a blue background and three dots), 'SSU Name' (a standard text field), 'Site' (a standard text field), and 'Location' (a standard text field). Below these fields is a large text area labeled 'Commentaire'. At the bottom of the dialog are two buttons: 'Create' (with a checkmark icon) and 'Close' (with a red X icon).

Figure 6 - 41. "Add" Menu.

Filling the two first lines ("SSU IP Address" and SSU "Name") is mandatory to create the SSU (press on "Create" then "Close" to close the menu).

An SSU added to the list will be positioned in the "New SSU" zone of the "Tree" window on the left of the screen.

6.6.2 Entry of Information Concerning an SSU

Double clicking on a line in the SSU or clicking on "Change" in the contextual menu above opens this window. Click on one information item to modify it.

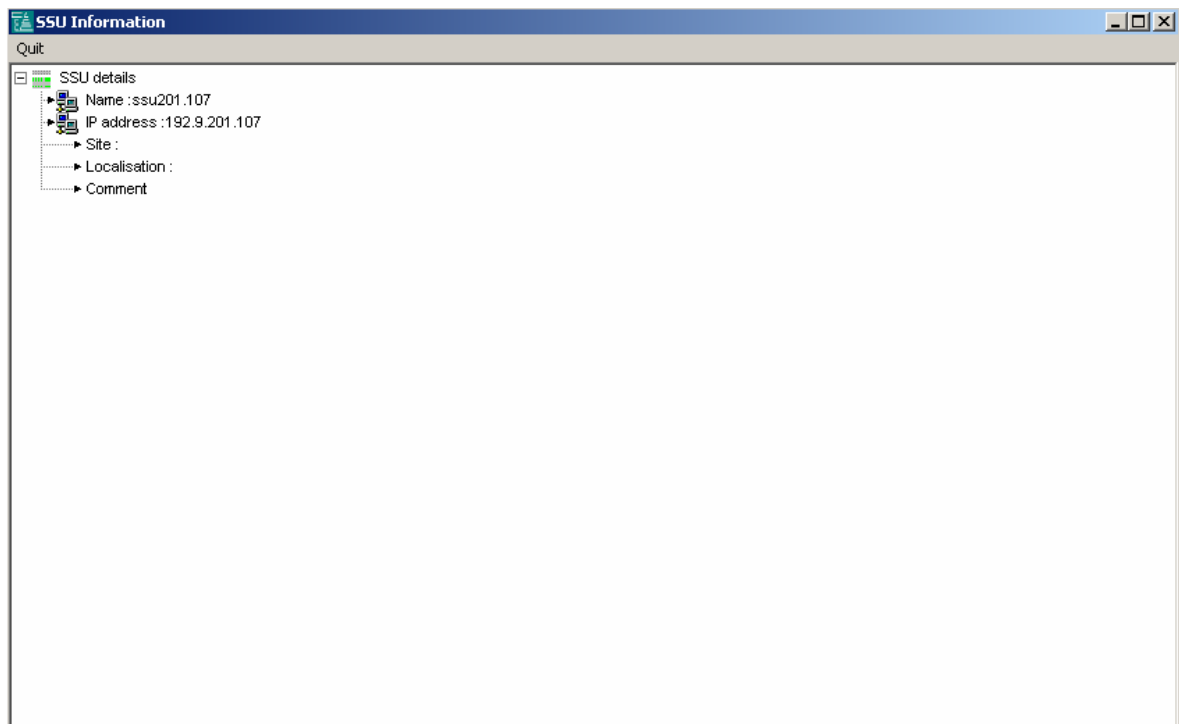


Figure 6 - 42. Entry of Information Concerning an SSU.

6.7 User Management

The menu is run by clicking on the fifth button from the left of general top line ("Users Management").

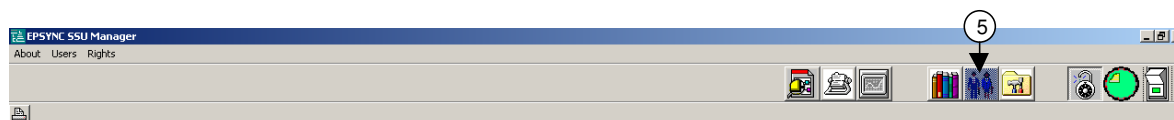


Figure 6 - 43. Top Line of the Screen.

NOTE: The access right "User" must be attributed to access to this menu.

Two sub-menus can be chosen concerning the users list and rights list by clicking on "Users" or "Rights" in the window immediately at the left of the "Tree" window. By default the screen "Rights" is open.

6.7.1 Rights

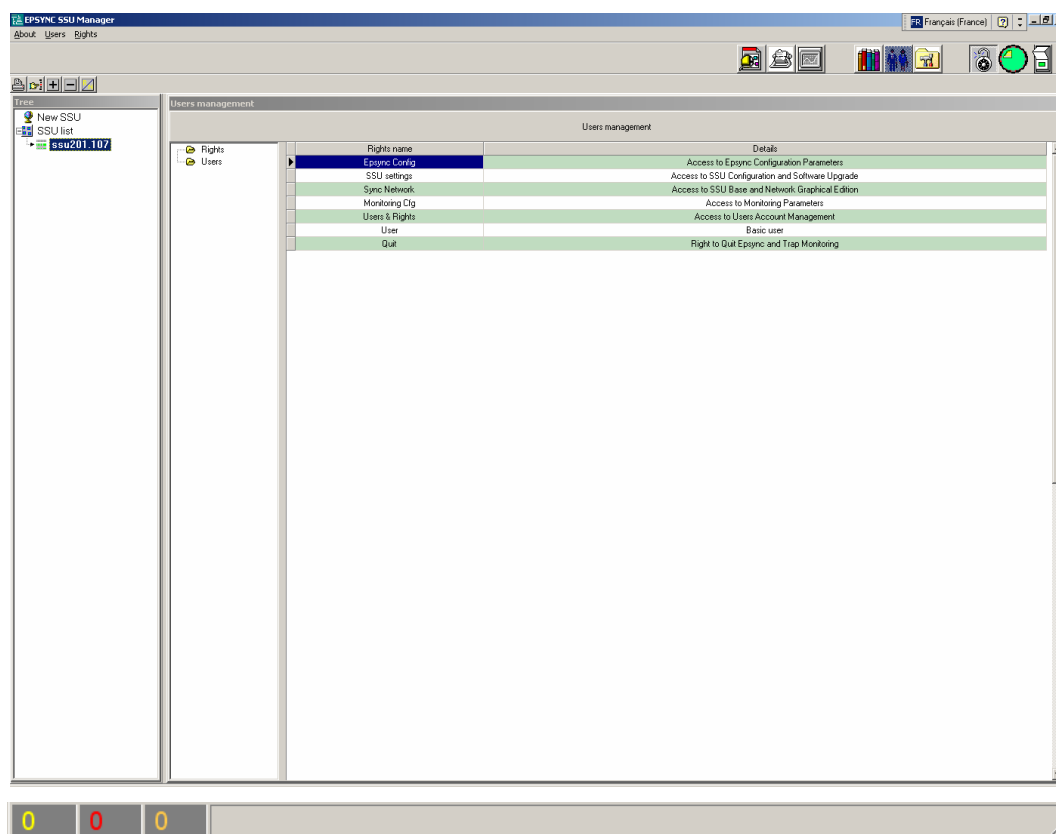


Figure 6 - 44. User Rights.

The "User" right is the most basic one. Every right includes it even if it is removed. This right does not allow access to the following tasks:

- In setup, it is not possible to send the modification to the SSU.
- The "SSU Base Management" is not accessible.
- The "Software Version Management" is not accessible.
- The "Users Management" is not accessible.
- The "Setup Manager" is not accessible.
- The "Monitoring parameters" is not accessible.
- It is not possible to close the software ("Quit").

The " Epsync Config " right adds to " User " the following task:

- Access to Epsync Configuration Parameters, related to Database server address, database name, and corresponding to the Setup Manager menu.

The " SSU settings " right adds to " User " the following task:

- Access to SSU Configuration (functions equivalent to SSUWin software) with the possibility to send the modification to the SSU.
- Software Upgrade.

The " Sync Network " right adds to " User " the following task:

- Access to SSU Base and Network Graphical Edition.

The " Monitoring Cfg " right adds to " User " the following task:

- Access to Monitoring Parameters.

The " Users & Rights " right adds to "User" the following task:

- Access to Users Account Management.

The "Quit" right adds to " User " the following task:

- Allows closing the software EPSYNC Manager. Moreover, a user granted with that right is also required to stop the background traps monitoring software on the Master station.

By selecting a "Right name" then by a mouse right click, the tab "List of Users for this Access Right" appears.

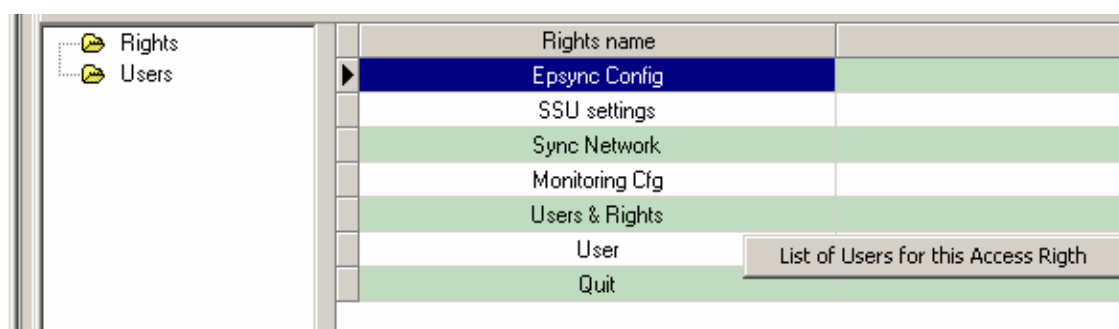


Figure 6 - 45. User rights - List of Users Having a Specific Access Right

Clicking on this tab open the next screen, which displays the list of users having the concerned right(s).

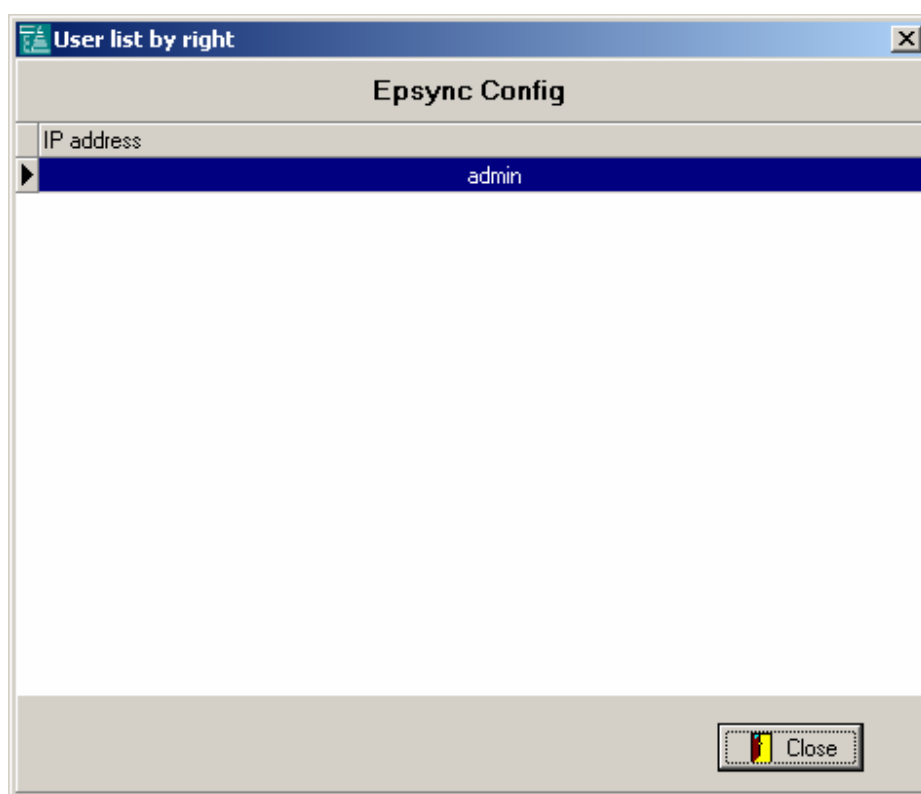


Figure 6 - 46. User rights - List of Users Having a Specific Access Right - 2

6.7.2 Users

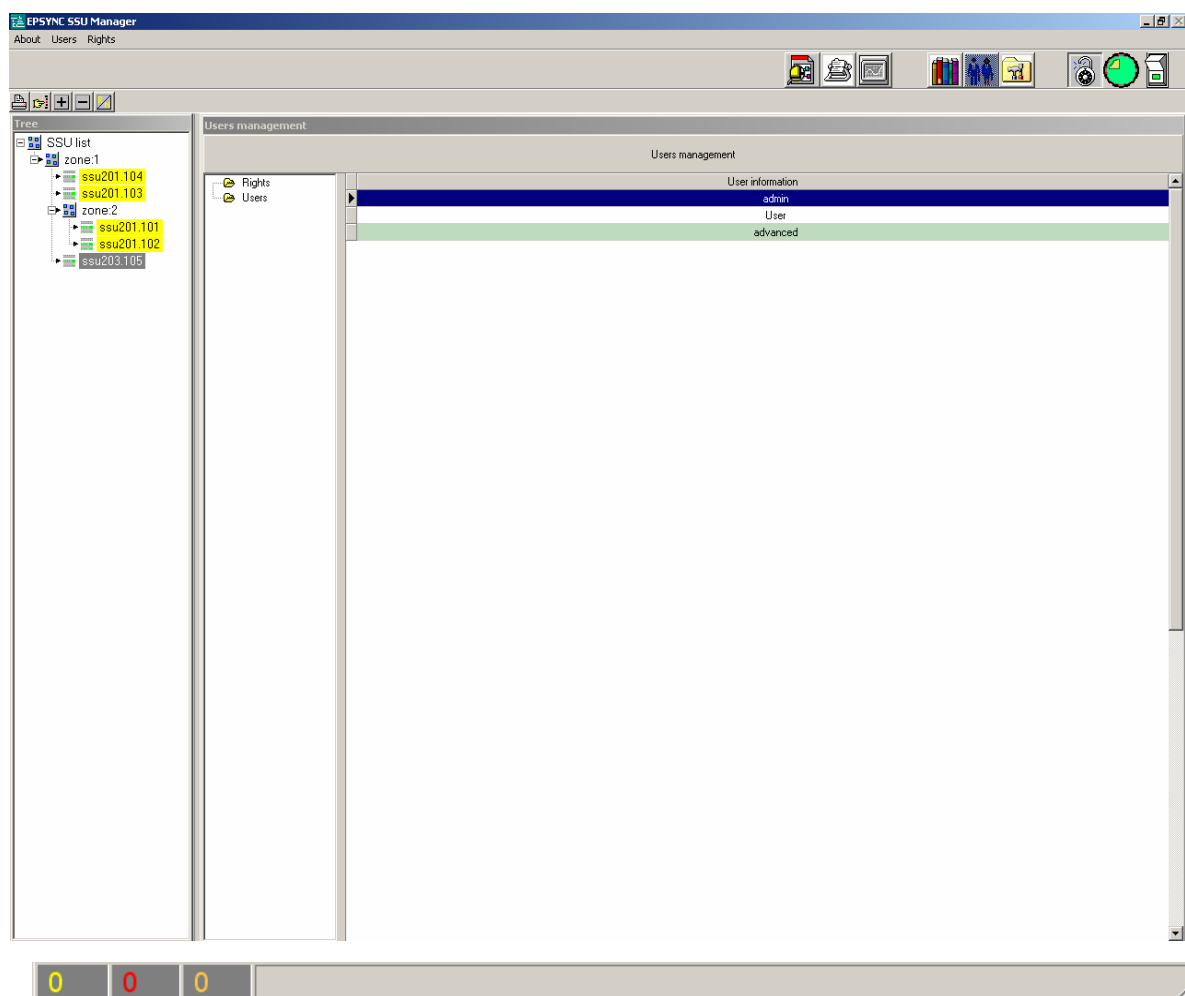


Figure 6 - 47. Users List.

When positioning on a user name, right-clicking opens a contextual menu to add a user, delete the user, or modify its parameters.

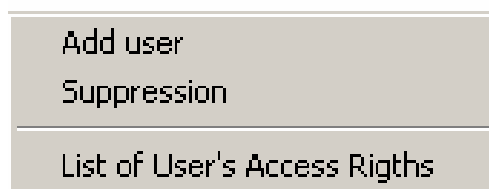


Figure 6 - 48. Users List Contextual Menu.

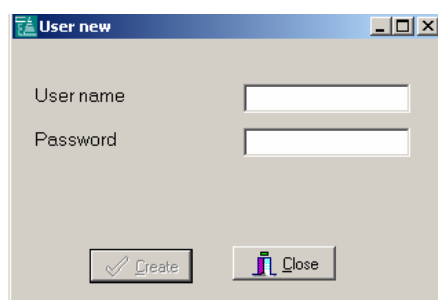


Figure 6 - 49. Users List Add User Menu.

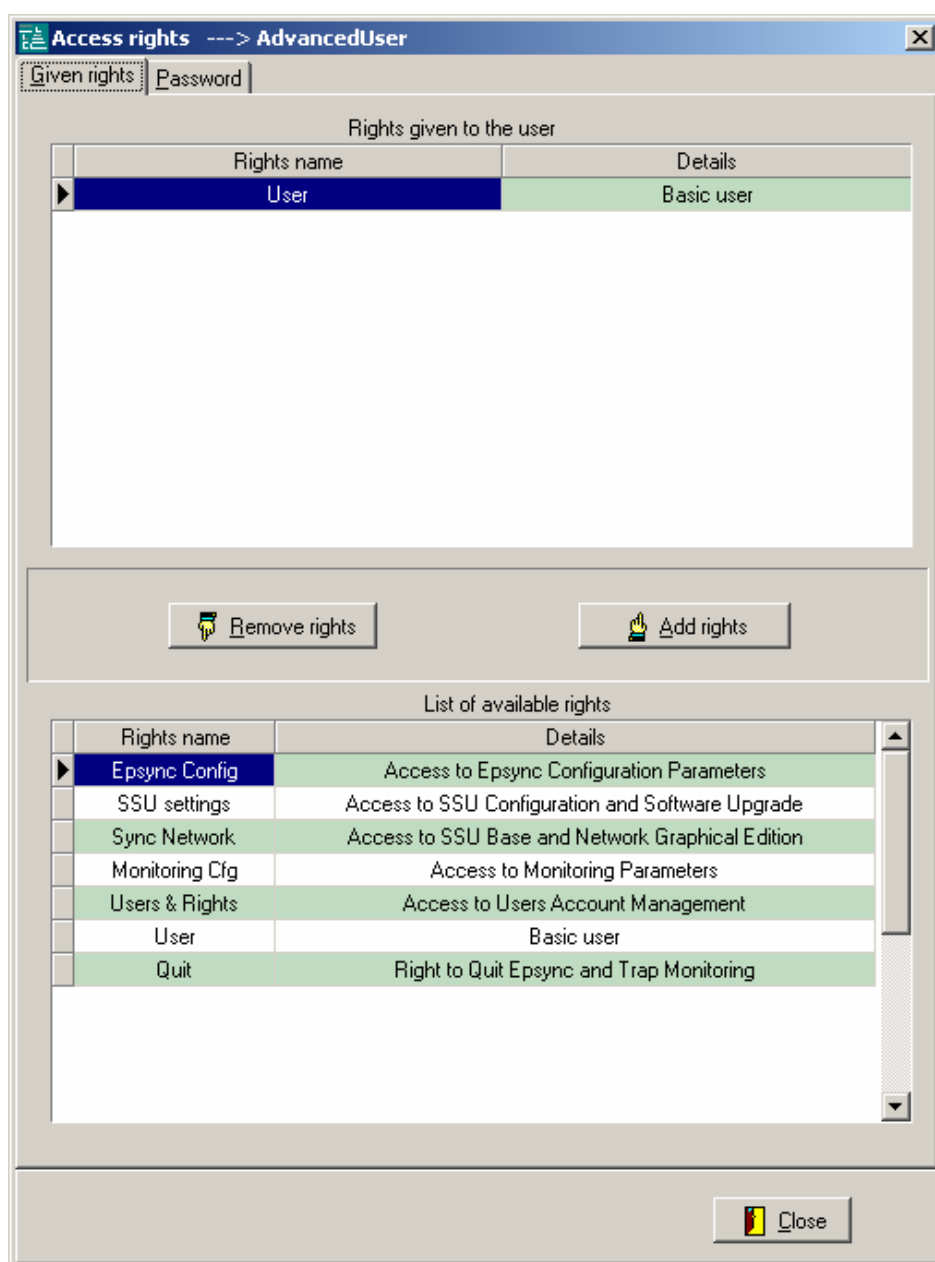


Figure 6 - 50. List of User Rights.

Double clicking on the user's name in the Users List opens this menu.

The top screen displays the list of user's actual rights. The bottom screen represents all the existing rights.

To complement with other rights, select a right in the window lower section and click on the "Add Rights" button. The right is added to the list in the upper section.

To delete a user's right, select the right in the window upper section and click on the "Remove Rights" button.

The "Detail" column provides a comment on the definition of rights.

6.7.3 Modification of User Password

The password can be modified by a person having list management rights, by clicking on the "Password" tab. No password is displayed.

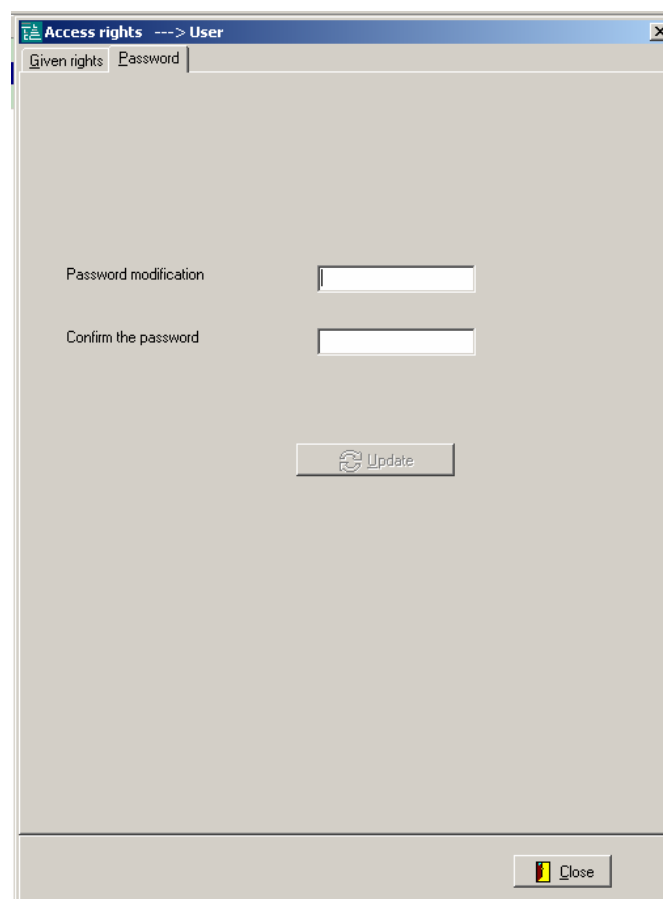
The image shows a software window titled "Access rights" with a sub-header "----> User". It has two tabs: "Given rights" and "Password", with "Password" being the active tab. The main area contains two text input fields. The first is labeled "Password modification" and the second is labeled "Confirm the password". Below these fields is a button with a circular arrow icon and the text "Update". At the bottom right of the window is a "Close" button with a small icon.

Figure 6 - 51. Modification to a User's Password.

The new password must be written in "Password modification" and in "Confirm the password". Then the tab "Update" must be pressed to validate the modification.

6.7.4 Rights List

When double-clicking on the line of a right in the rights list, a window displays the list of users having this right.

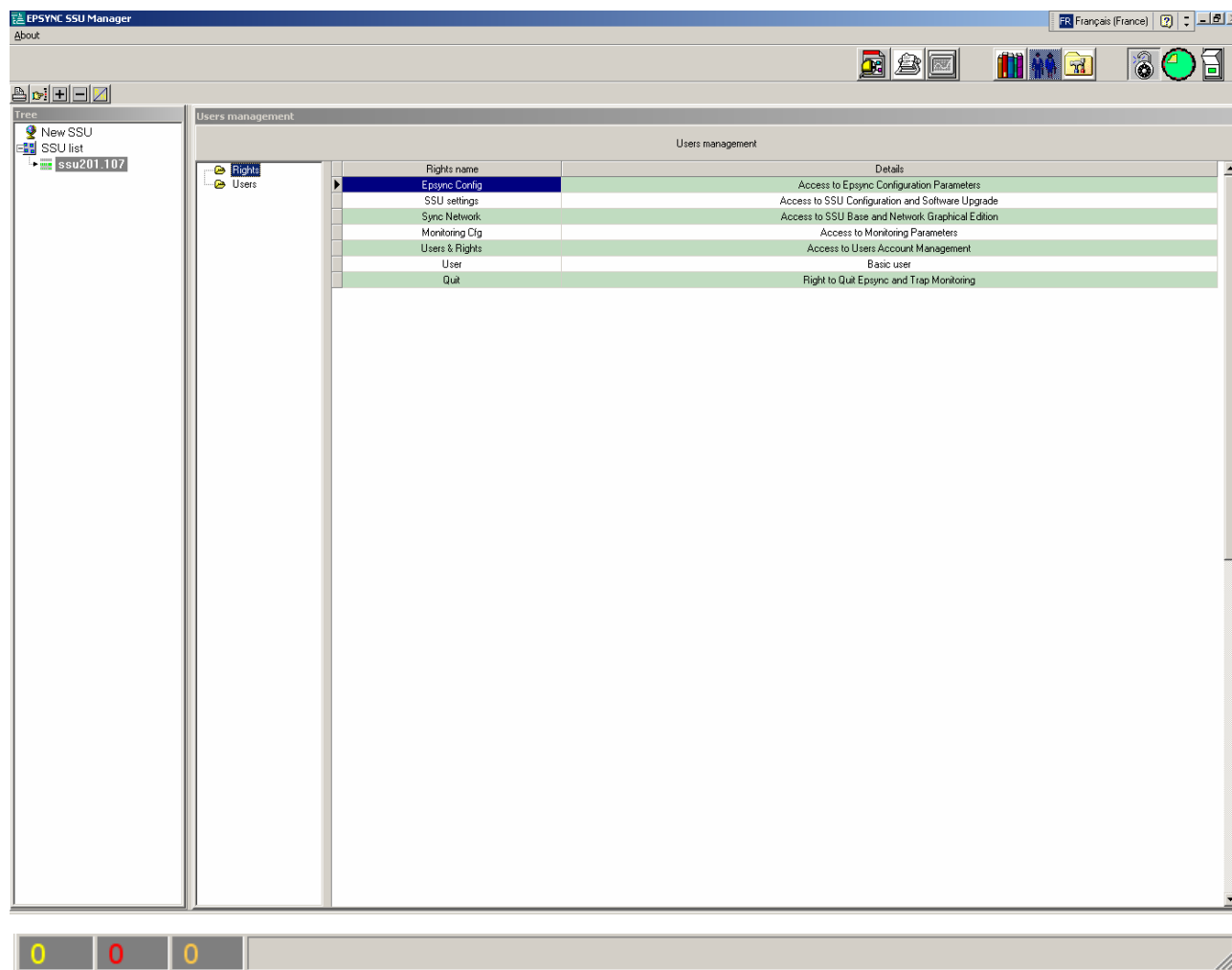


Figure 6 - 52. Rights List.

6.8 Monitoring of MTIE, TDEV, and Oscillator Voltage

The menu is run by pressing the third button from the left of general top line ("SSU Graphical Parameters Monitoring"). Only a user having "Exploitation" type rights is allowed to modify the "Monitoring parameters".

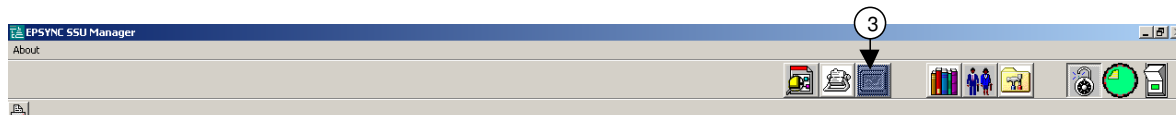


Figure 6 - 53. Top Line of the Screen.

6.8.1 Display Per List

The display concerns an SSU selected from the "Tree" list. It displays either MTIE, TDEV, or Oscillator Control Voltage measurement results (choice from a pop-up list).

The following screen represents the MTIE values of the Input modules. The six frames represent the six channels, H1 to H4, B1, B2 of input to active INPUT board. Measured values form three points MTIE graph abscissa for 10 s, 100 s, 1000 s. If the values are not available (the first value for 1000 s abscissa is available after 3000 s (after locking)), they are not displayed.

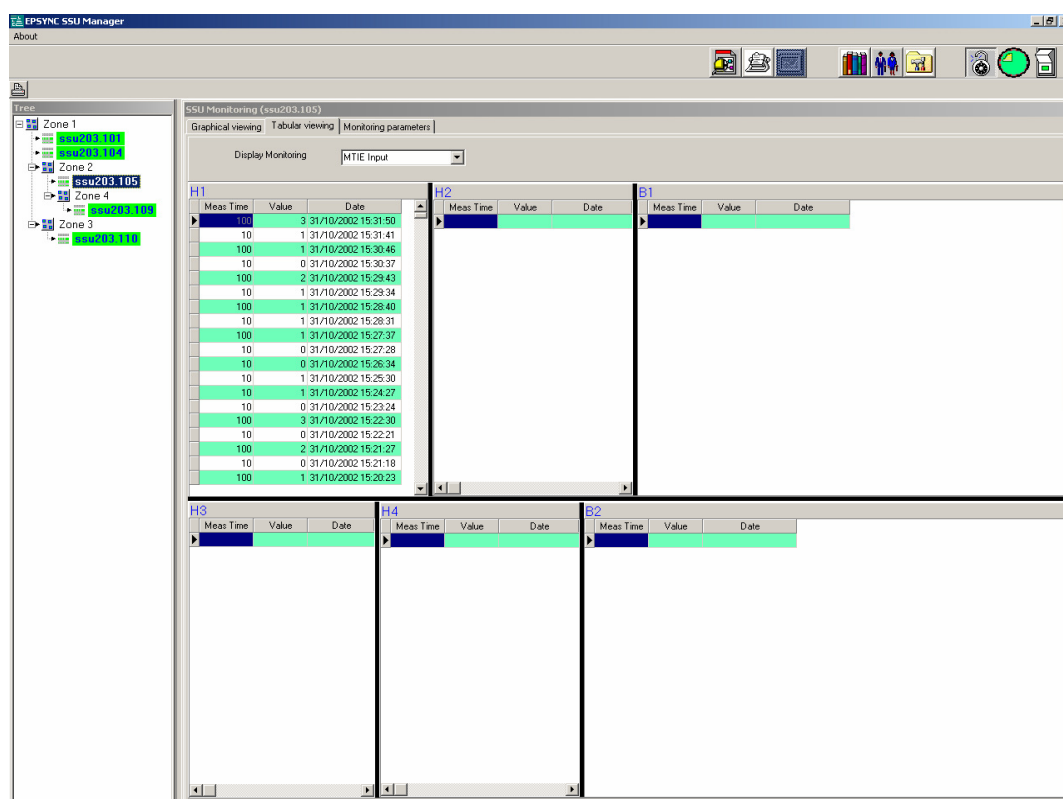


Figure 6 - 54. MTIE Display Per List.

A similar display exists for the Clock module but only if there is no input module. In that case there are only two frames (H1 and H2).

The following screen represents the TDEV values of the Input modules. The six frames represent the six channels, H1 to H4, B1, B2 of input to active INPUT board. Measured values form three points TDEV graph abscissa for 10 s, 100 s, 1000 s. If the values are not available (the first value for 1000 s abscissa is available after 3000 s (after locking), they are not displayed.

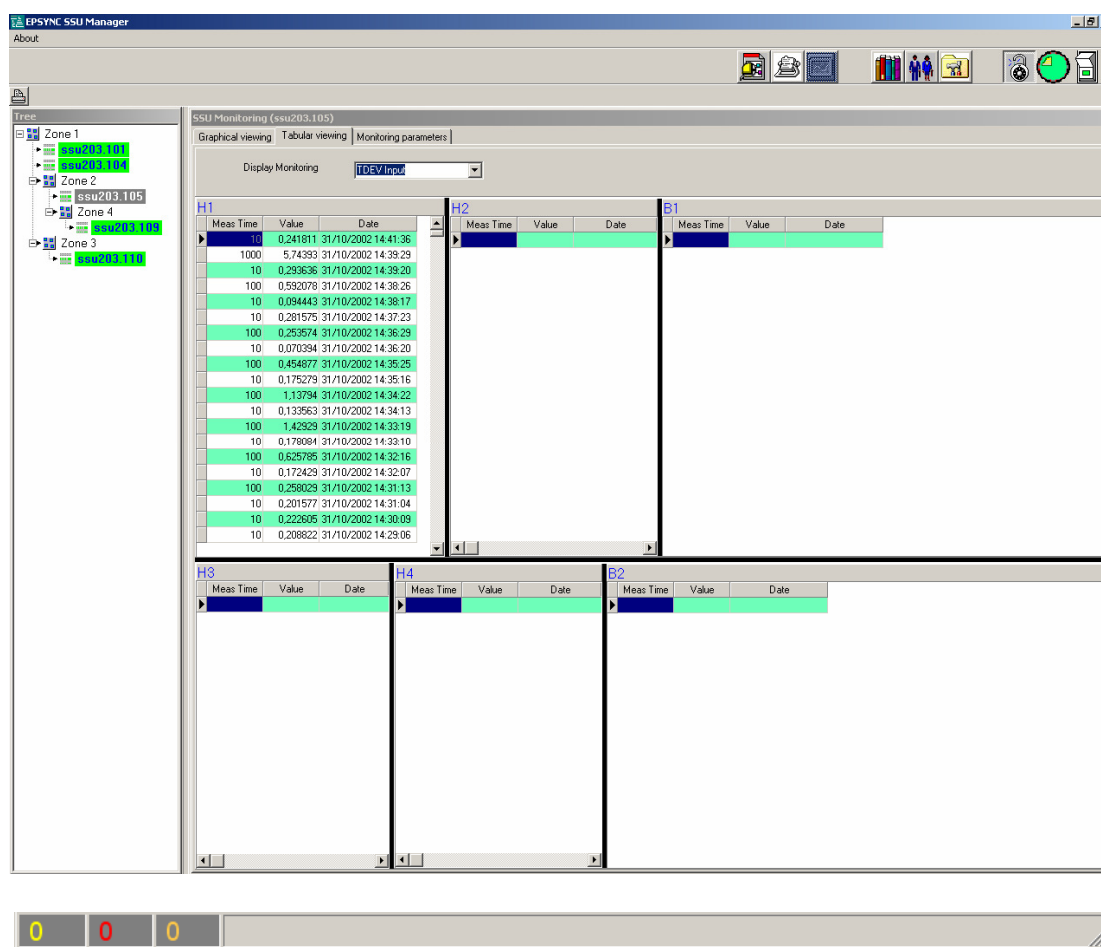


Figure 6 - 55. TDEV Display Per List.

A similar display exists for the Clock module but only if there is no input module. In that case there are only two frames (H1 and H2).

The following screen represents the Oscillator Control Voltage of the two clock modules.

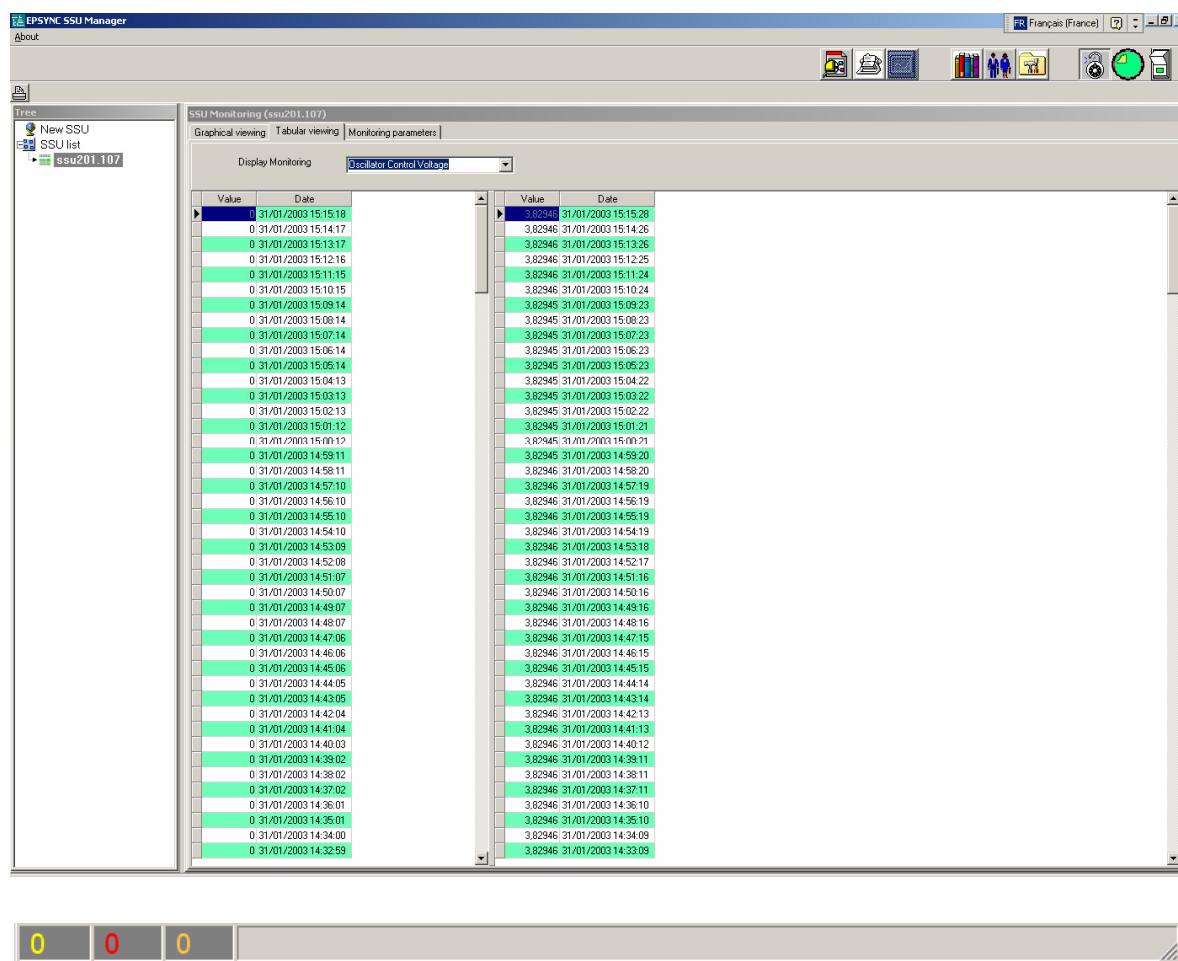


Figure 6 - 56. Oscillator Control Voltage Display Per List.

6.8.2 Graphical Display

All the list points are carried back to the graph corresponding to a monitored link. The maximum tolerance pattern on the input is plotted red.

The MTIE TDEV or Oscillator control voltage selection is performed by pop-up list on the window. The size of the frame can be changed easily by the user.

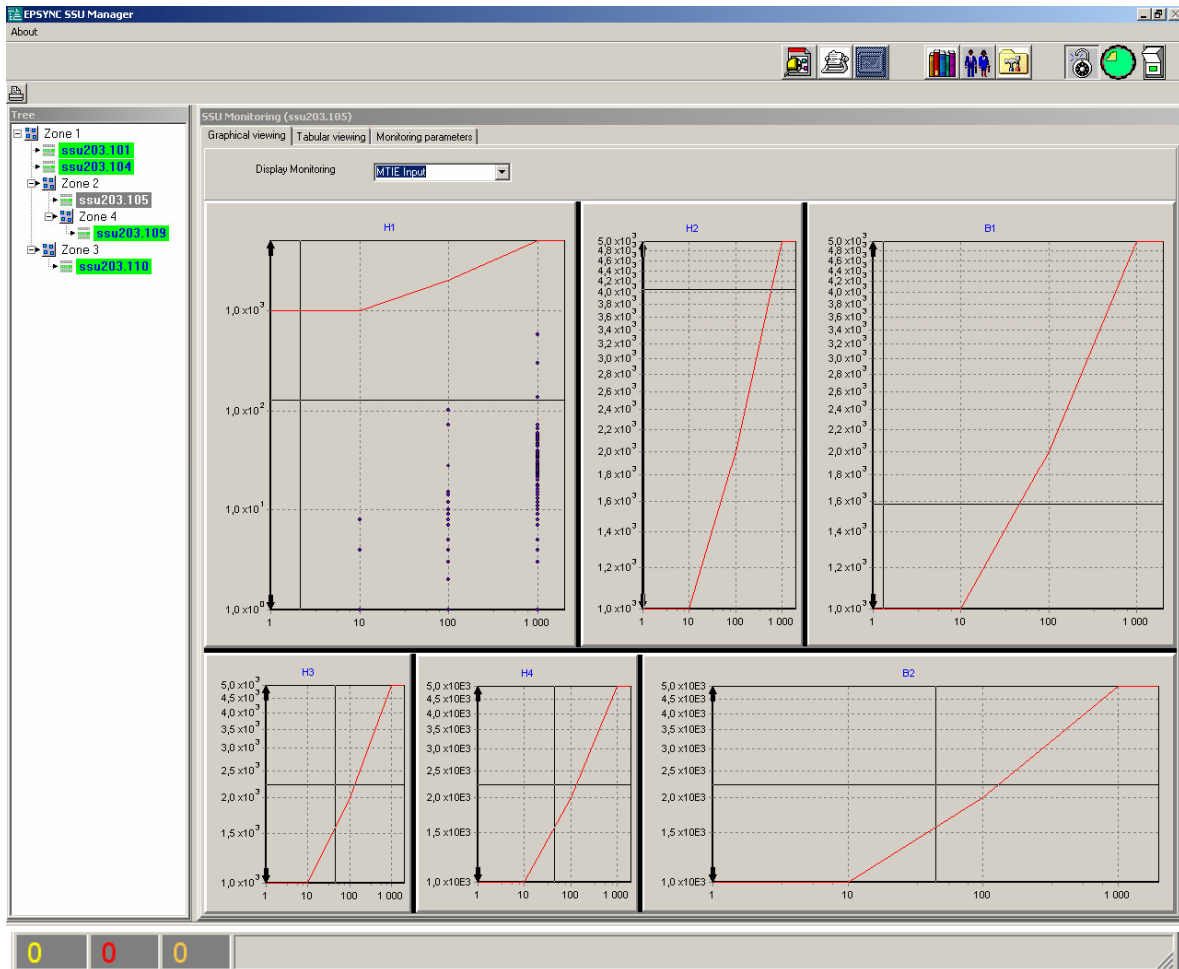


Figure 6 - 57. MTIE Graphical Display.

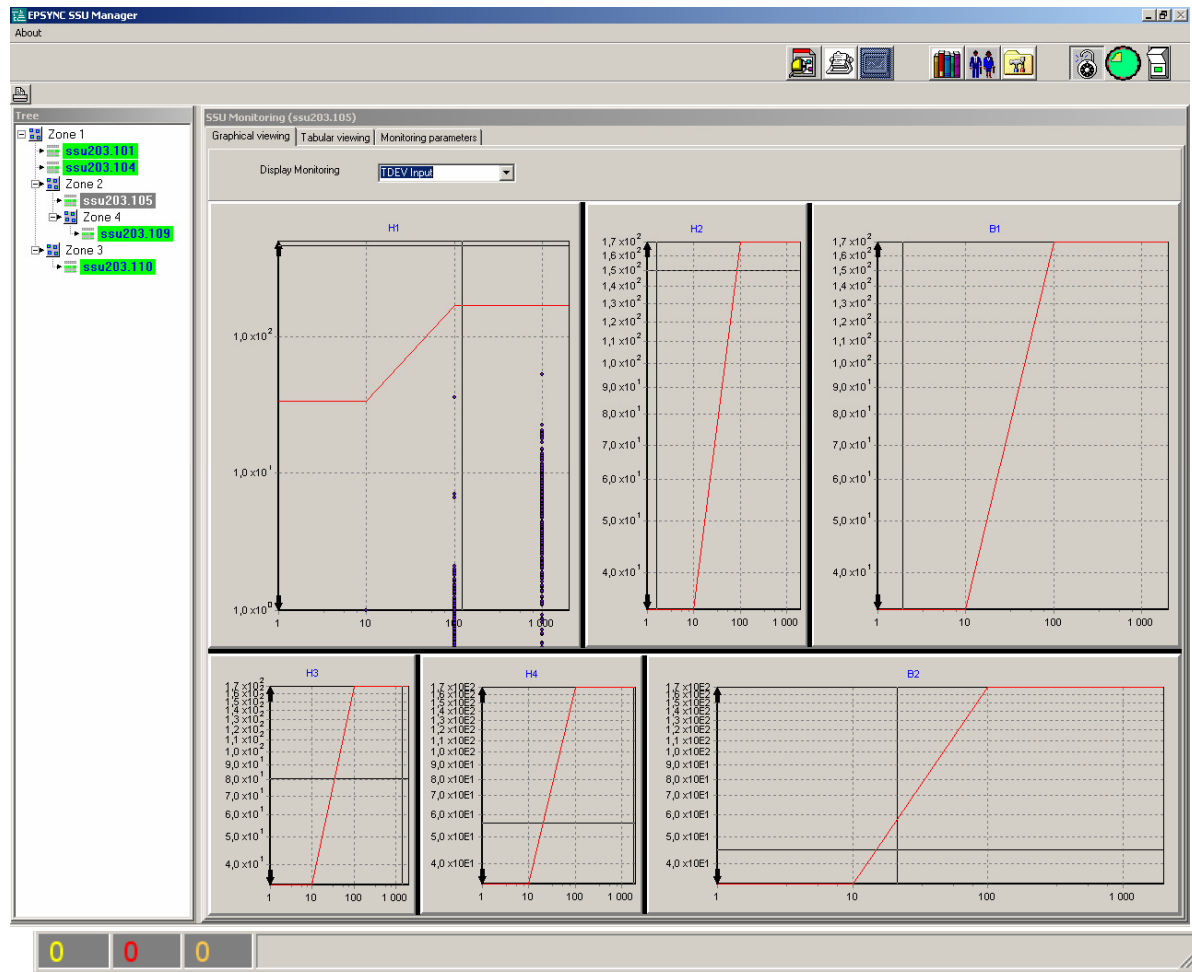


Figure 6 - 58. TDEV Graphical Display.

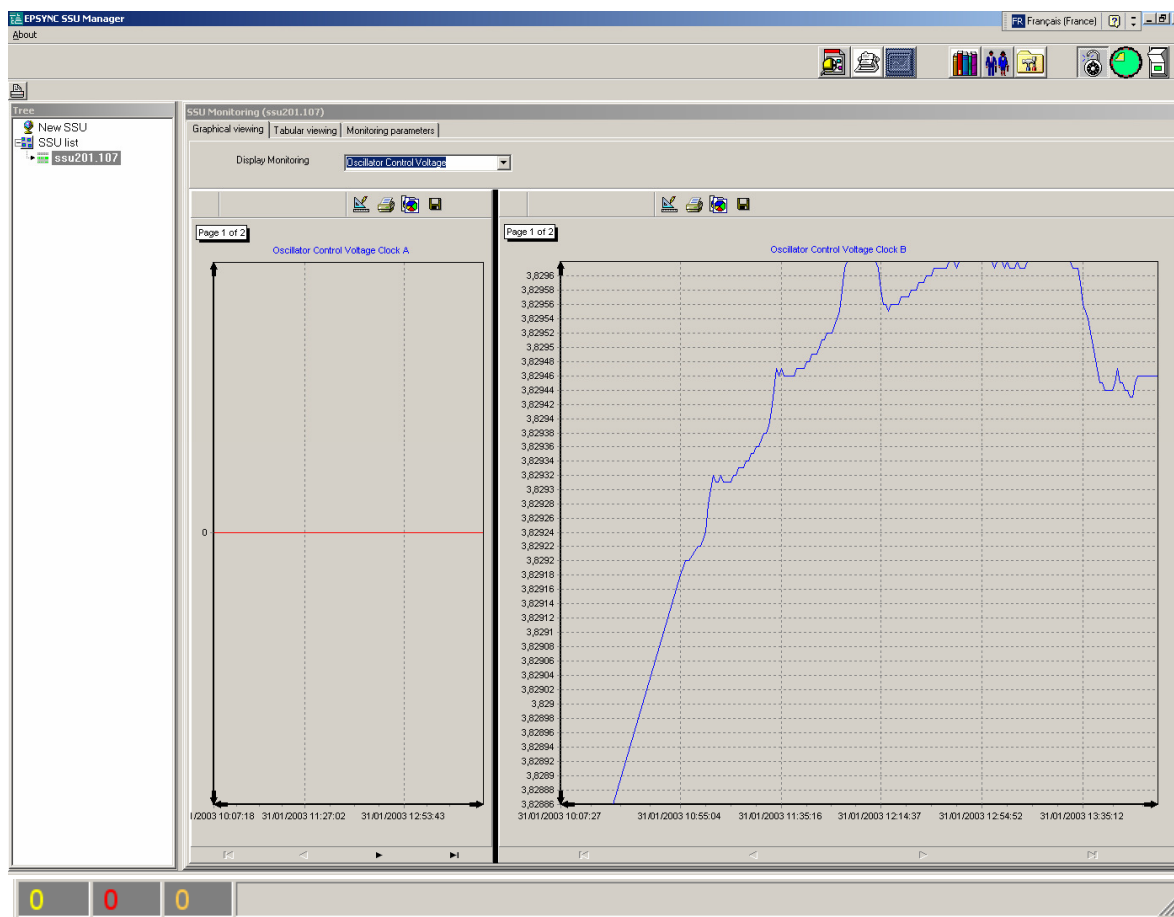


Figure 6 - 59. Oscillator Control Voltage Graphical Display.

6.8.3 Monitoring parameters

Measured values to be exploited and stored in the database are parameterizable.

The switch symbol is used to stop or start the monitoring.

The "Timing Parameters" value sets the periodicity of monitored values recording.

The choice of channels to be monitored is validated by checking the relevant boxes and with off/on action on the switch symbols.

Measures originating from the CLOCK board will be fed back in a future version.

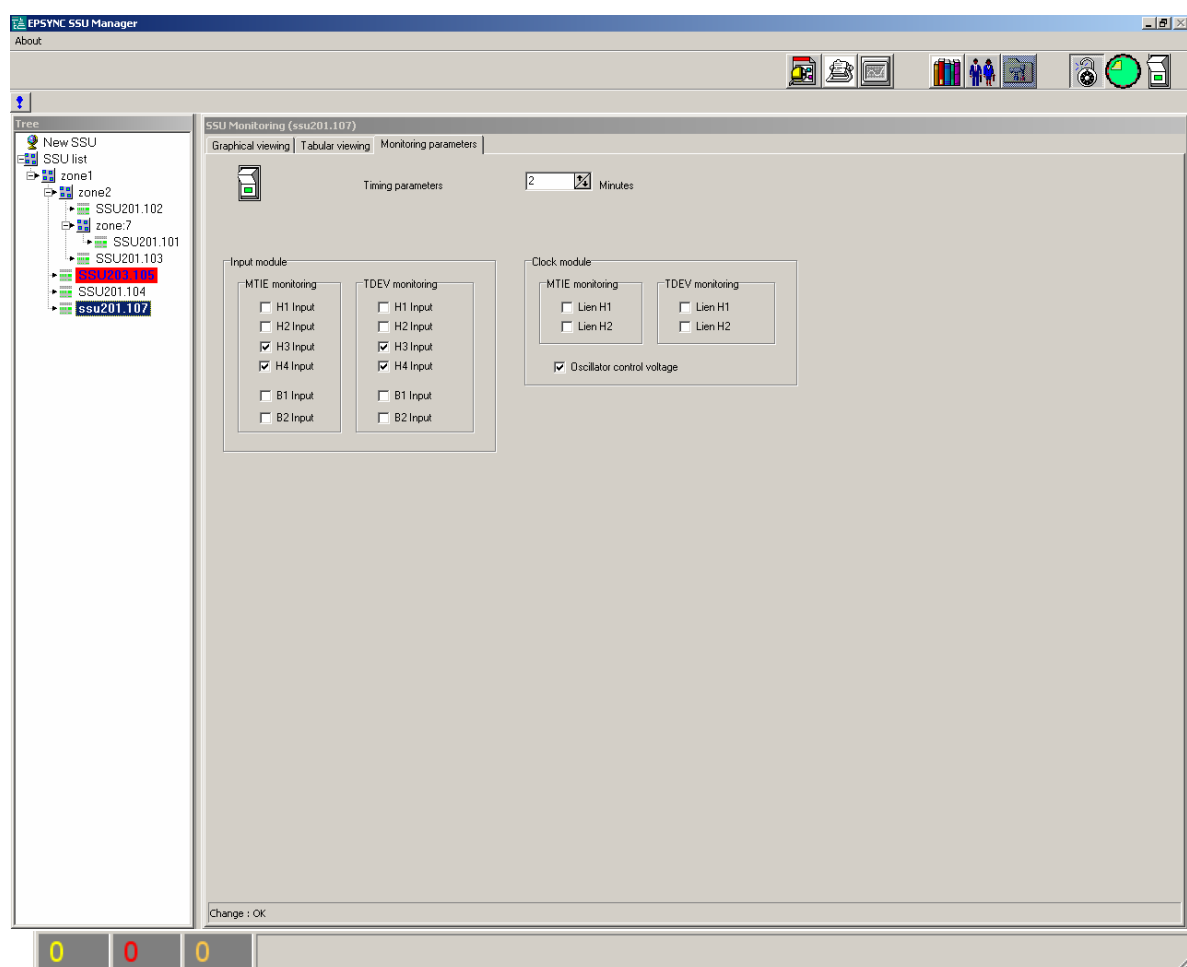


Figure 6 - 60. Monitoring Parameters.

6.9 "Set Up Manager" Menu

Pressing the sixth button from the left of general top line ("Set Up Manager") runs the menu. "Epsync Config" type rights are mandatory to perform these operations.



Figure 6 - 61. Top Line of the Screen.

6.9.1 Database Parameters

The 'Setup Manager' dialog box is shown with the 'Base server' tab selected. It contains two main sections: 'Database server information' and 'Database Connection Configuration'. In the first section, the 'IP address database server' is set to 'localhost' and the 'Database name' is 'supervisionNEW'. A 'Seek Databases' button is to the right. In the second section, the 'Login' is 'root' and the 'Password' is 'marc'. At the bottom, there are 'Validate information' and 'Cancel' buttons.

Figure 6 - 62. Database Parameters.

The database server is located on a station in the supervision network, whose IP address must be declared in every supervision station. If this database is located in the supervision station

itself, then the address to be declared is "localhost". For a remote server, the declared IP address takes the standard format.

A database name is associated with the managed synchronization network. The characters allowed for the database name only are figures and letters, without spaces, uppercase/lowercase style.

If you do not remember the database name, click on "Seek Databases". The available names at the supplied IP address are displayed in the list.

The "Login" and Password" information are parameters to be set at the configuration stage to access the database server.

6.9.2 Master Manager

In the supervision network, a station is declared Master and receives the supervision measurements originating from SSUs. These measurements are transmitted through trap messages of SNMP protocol.

The top display provides the Master station current address. This address can be changed if the host PC have more than one network adapter.

The "Set this workstation to Master" button beneath gives the capability of replacing the current station with the station on which the replacement operation is performed.

Clicking on "Set this workstation to Master" gives this station the capability of accepting the received traps.

"Send Master to SSU" operation send to the supervised SSUs the destination address for the Traps they generate (the address group can be selected in the "Manager" tab).

A table displays the Trap Destination for each SSU. A "Refresh" operation enables the operator to validate a destination address update.

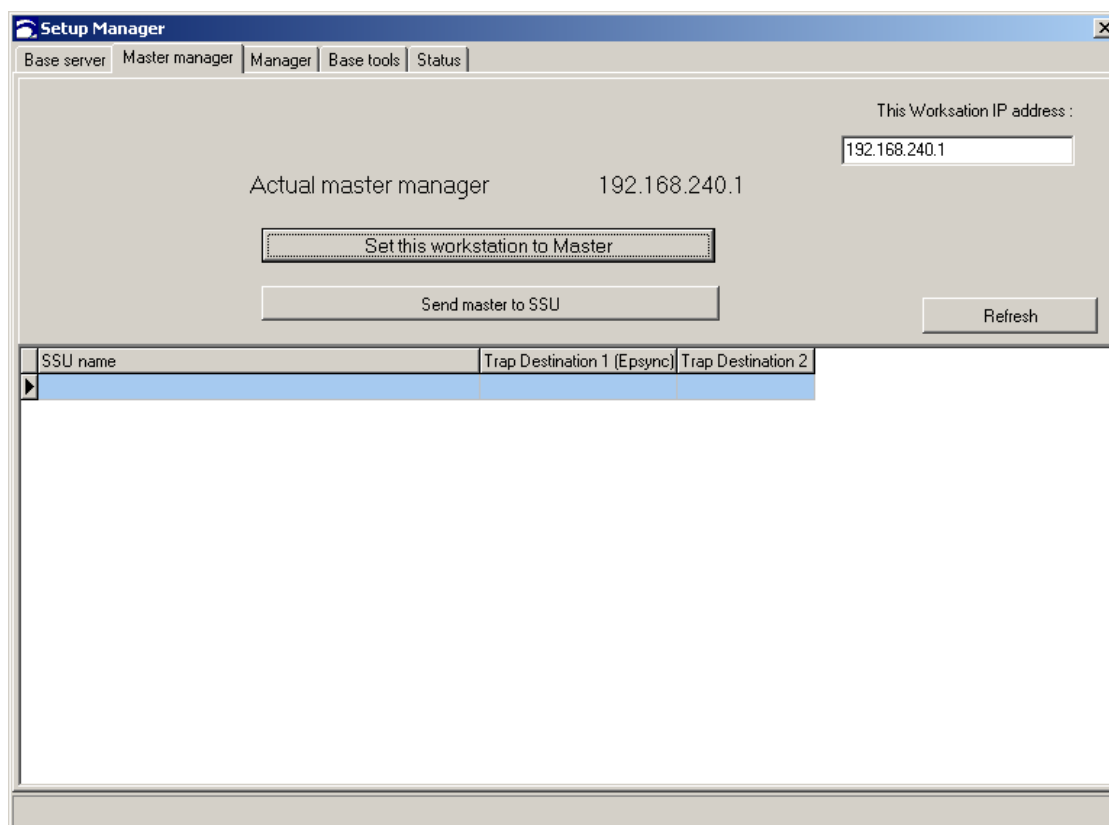


Figure 6 - 63. Master Station Control.

Once the "Set this workstation to Master" has been pressed, the background software is started and the following screen appears.

Hide it with the corresponding icon next to the stop icon. To make it reappear, click right on the blue square icon in the Windows OS bottom task bar.

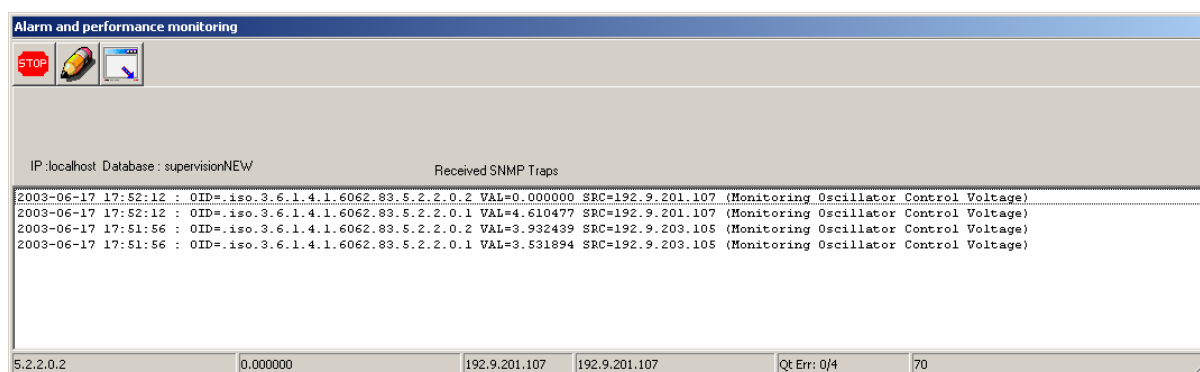


Figure 6 - 64. Alarm and Performance Monitoring Screen.

6.9.3 Manager

Parameters concern the synchronization network data refresh and the supervision station behavior.

If Automatic disconnection is on, EPSYNC Manager is put in an idle state, requiring a new log-in to restart. Monitoring and Alarms logging is still performed after disconnection.

The Data refresh number applies to the data read from the database.

The Loading SSU configuration is the period of time between two complete Configuration and Status inspection of every SSU of the Network. Don't forget that loading SSU configuration too often can slow down your PC and EPSYNC Manager.

Each SSU can be programmed with two traps destination addresses. The trap address group represents one of the two addresses.

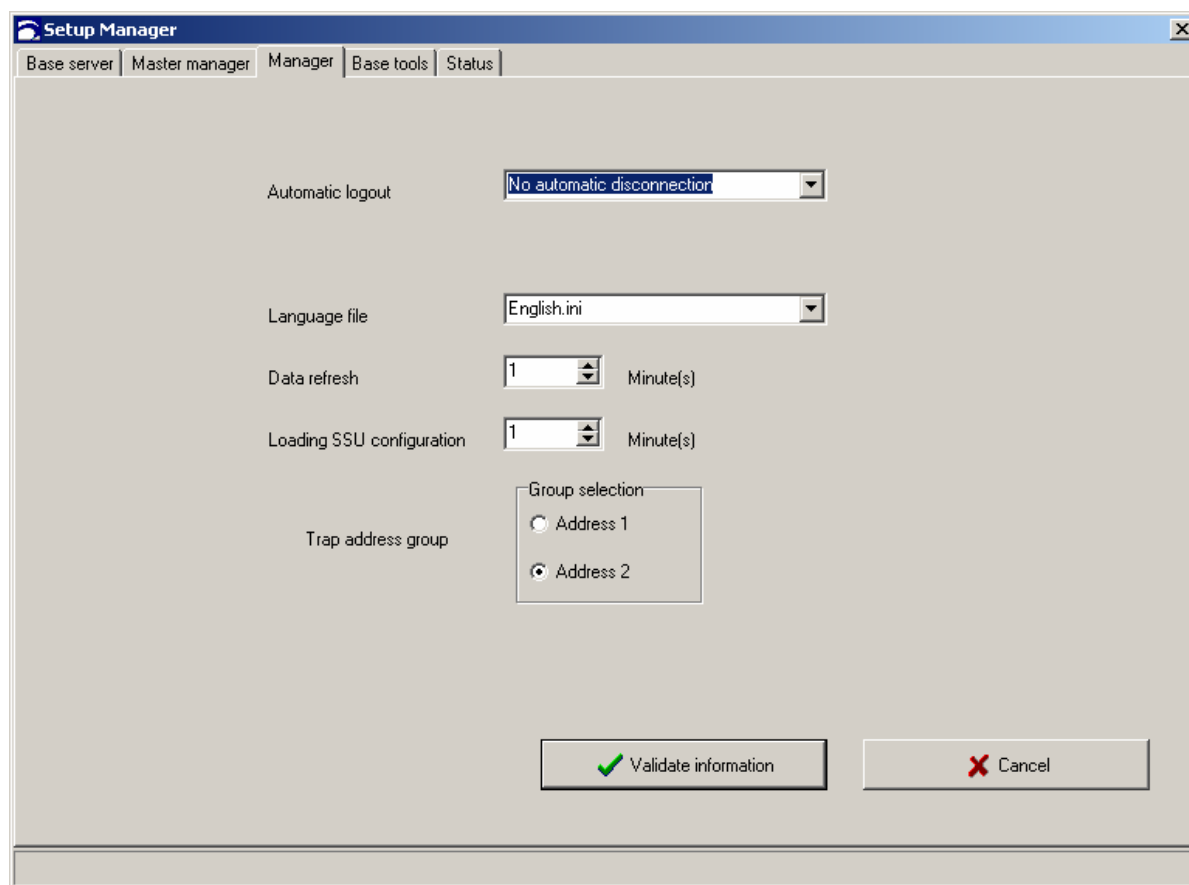


Figure 6 - 65. Supervision Station Parameters.

6.9.4 Management Tools for Synchronization Network Supervision

As the supervision is a task shared between several stations. Mechanisms protecting from simultaneous accesses to base and SSUs are implemented through flags (acting as latches) located in database.

It may happen that during aborted communications with SSUs, flags are positioned in base and not freed subsequently. Message "The SSU is already in use" is then displayed during next access tests.

In the Base tools screen, "Unlock SSU" and "Unlock User" buttons are used to free access latches. **Only the administrator should manipulate these functions.**

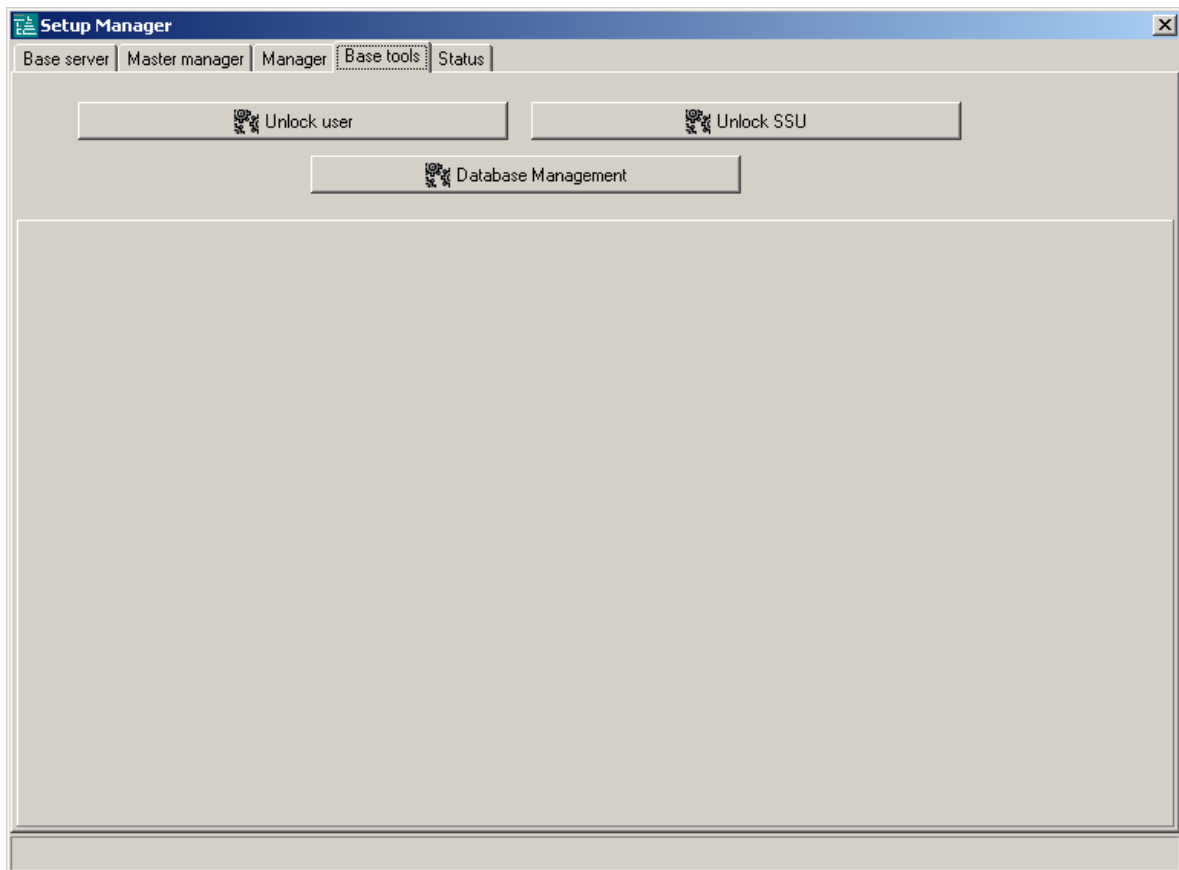


Figure 6 - 66. Supervision Station Management Tools.

If you click on the "Database Management" button, the following tools shows:

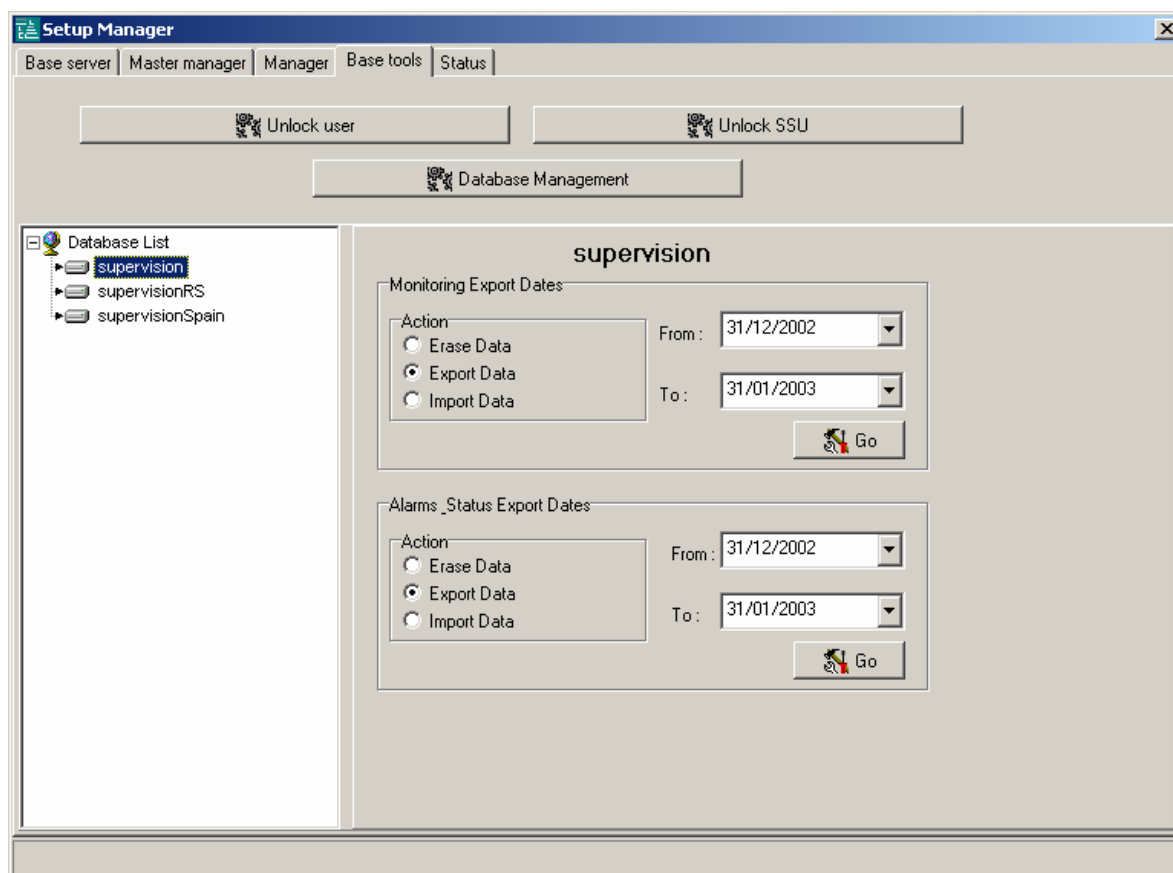


Figure 6 - 67. Supervision Station Management Tools Detail.

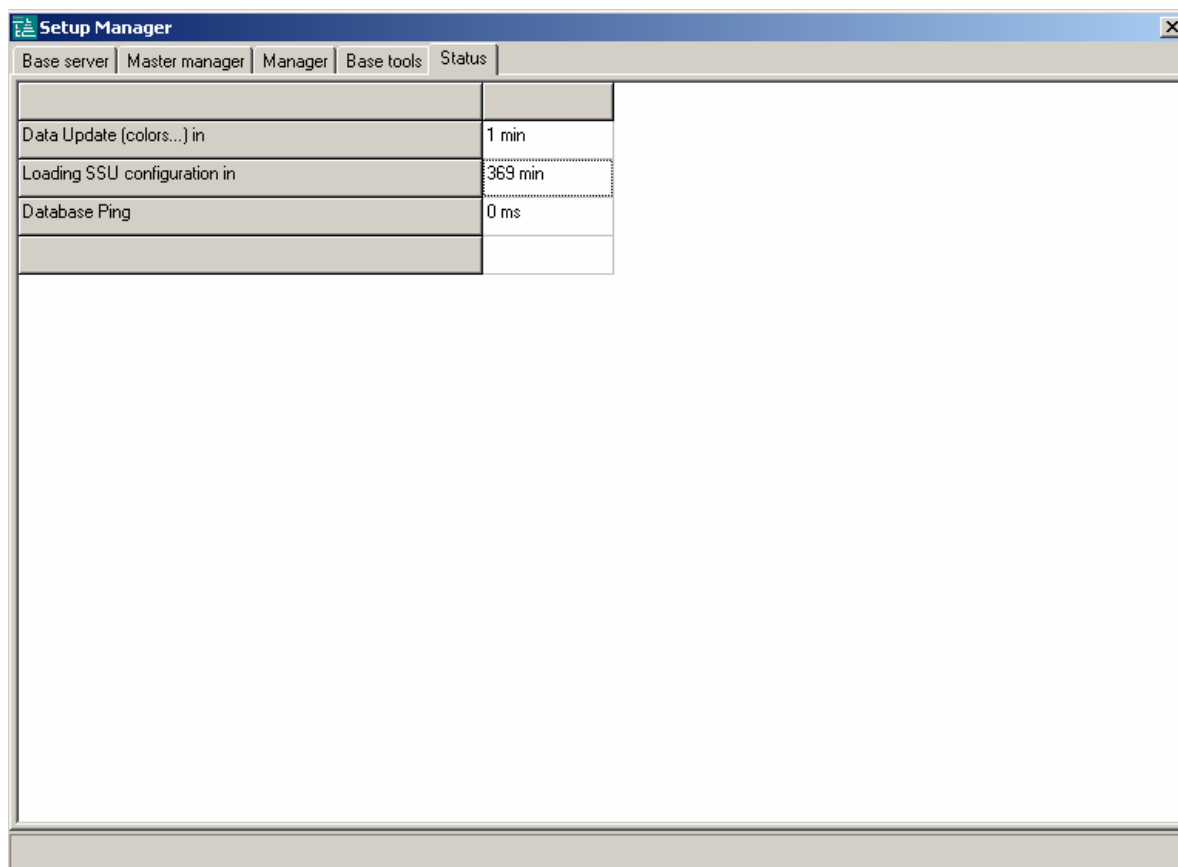
This tool manipulates the data recorded in the database: Monitoring records (MTIE/TDEV, Control Voltage) and Alarms (displayed in Events History).

With the "Erase Data" function execution (click on "Go" button), data are erased from the current database. They can be exported (not erased) as SQL request script text files, so they can be reimported in the current base.

During import operation (execution of above SQL file), saved data are added to the current data.

6.9.5 Status

This screen is only a status of the time for the next data upload of the SSU and the next loading of the SSU configuration as programmed herein. The database Ping represents the delay of the link to the database. When the database is on the same station, as in the next figure, this time is null.



The screenshot shows a window titled "Setup Manager" with a tabbed interface. The "Status" tab is selected. It contains a table with the following data:

Data Update (colors...) in	1 min
Loading SSU configuration in	369 min
Database Ping	0 ms

Figure 6 - 68. Supervision Station Management Tools.

6.10 Software Version Management

Pressing the fourth button from the left of general top line ("Software Version Management") runs the menu.

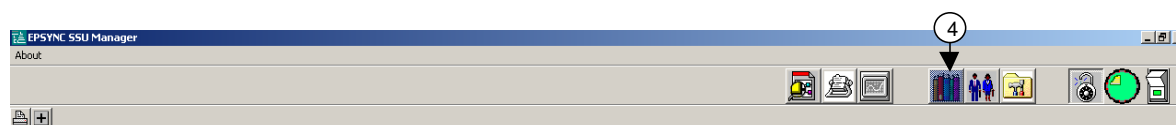


Figure 6-69. Top Line of the Screen.

NOTE: The access right "Maintenance" must be attributed to access to this menu.

6.10.1 SSUs Software Versions

Software versions are displayed choosing (double-click on) the zone of SSUs, whose software status check is wanted.

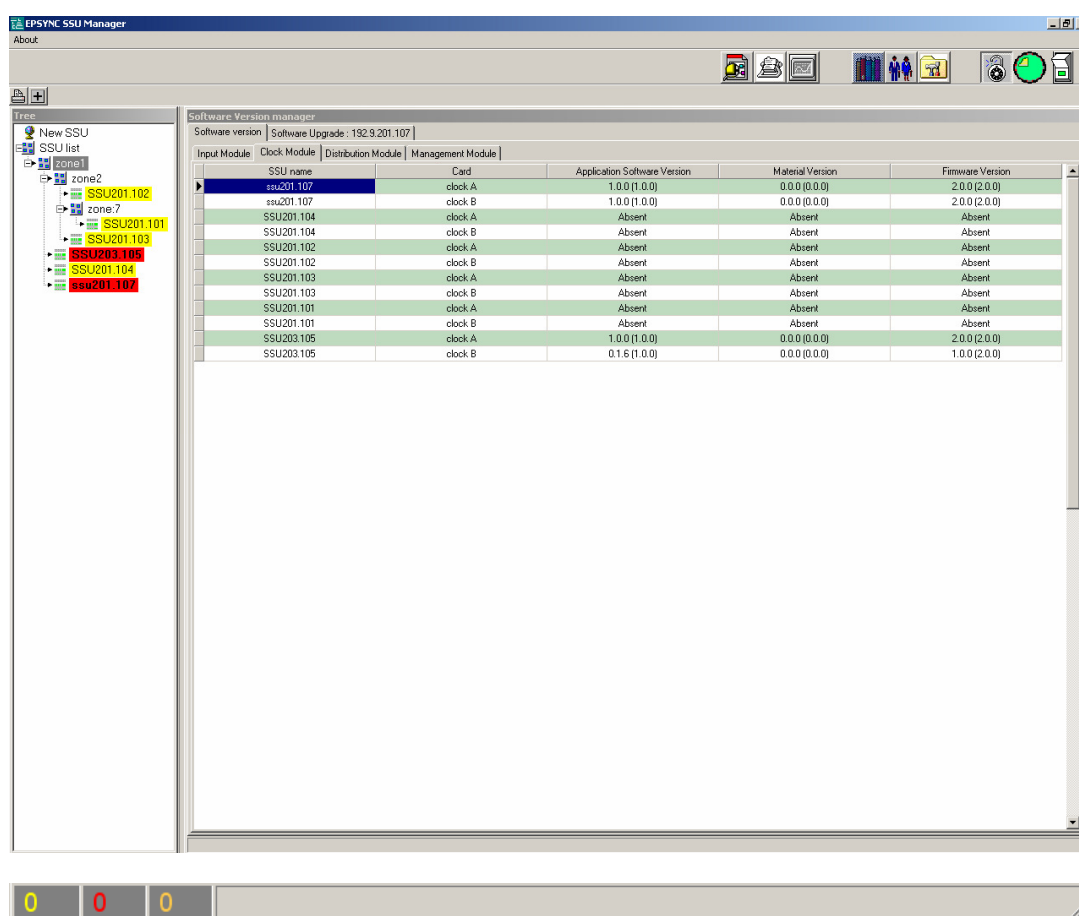


Figure 6 - 70. Software Versions: Clock Modules.

Before starting the "Software Upgrade" operation from this screen, select the SSU name by left-clicking the corresponding line of the list.

6.10.2 SSUs Software Upgrade

A new software version of any SSU module (Input, Clock, Management) is upgraded with the "Software Upgrade" function of the "Software Version Manager" menu. Distribution module software is not remotely upgradable.

Software releases are performed through this screen for a particular SSU whose name has been selected in the "Software version" screen list.

Upgrading a software is done in several steps.

When available for upgrade, the new release is copied in any chosen directory of the PC running EPSYNC MANAGER. Its extension is always ".tgz". Then, the SSU operator can decide to download the files into the SSU. Downloading does not interrupt the ongoing synchronization of the SSU. The release file is just stored in the Management Module waiting to be activated. The activation will take place at the next reset of the board to be upgraded, which can be started either with the "Release Activation" menu, or with a power on/off operation of the module.

The files directory will be selected in the "Select files to download" window. Then click on the files to be downloaded and pass them into the right window with the ">>" button. To delete a file from the list, click on the "<<" button.

To start downloading, click on the "Download Files" button. Follow the status of the download in the rightmost window.

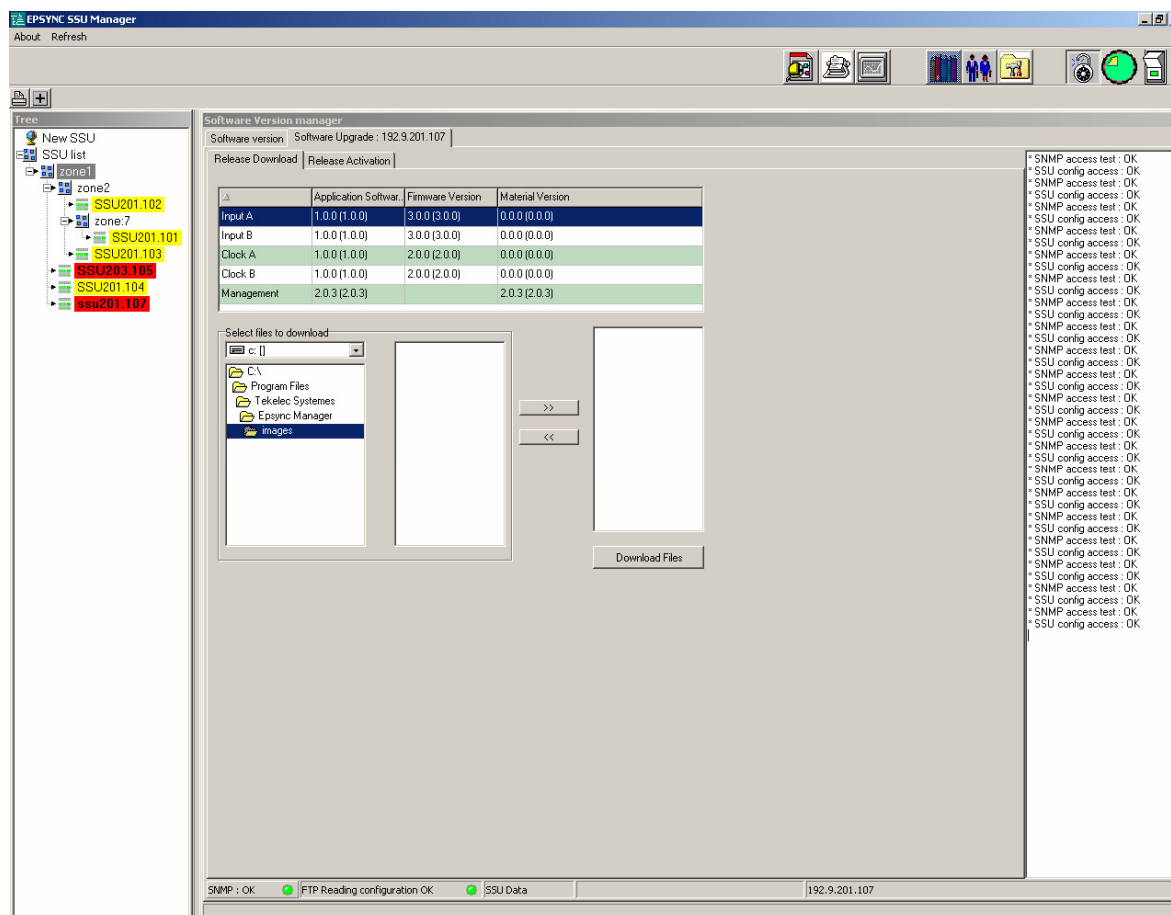


Figure 6 - 71. Software Management: Software Upgrade - Release Download.

When displayed, a software version is made up of two parts, whose first part is the version currently running and whose second part, in parenthesis, is the new version downloaded into Management module and ready to replace the old version at the next reset of the module to be upgraded. An exception to the rule is when a management board is reset as soon as the new version is downloaded.

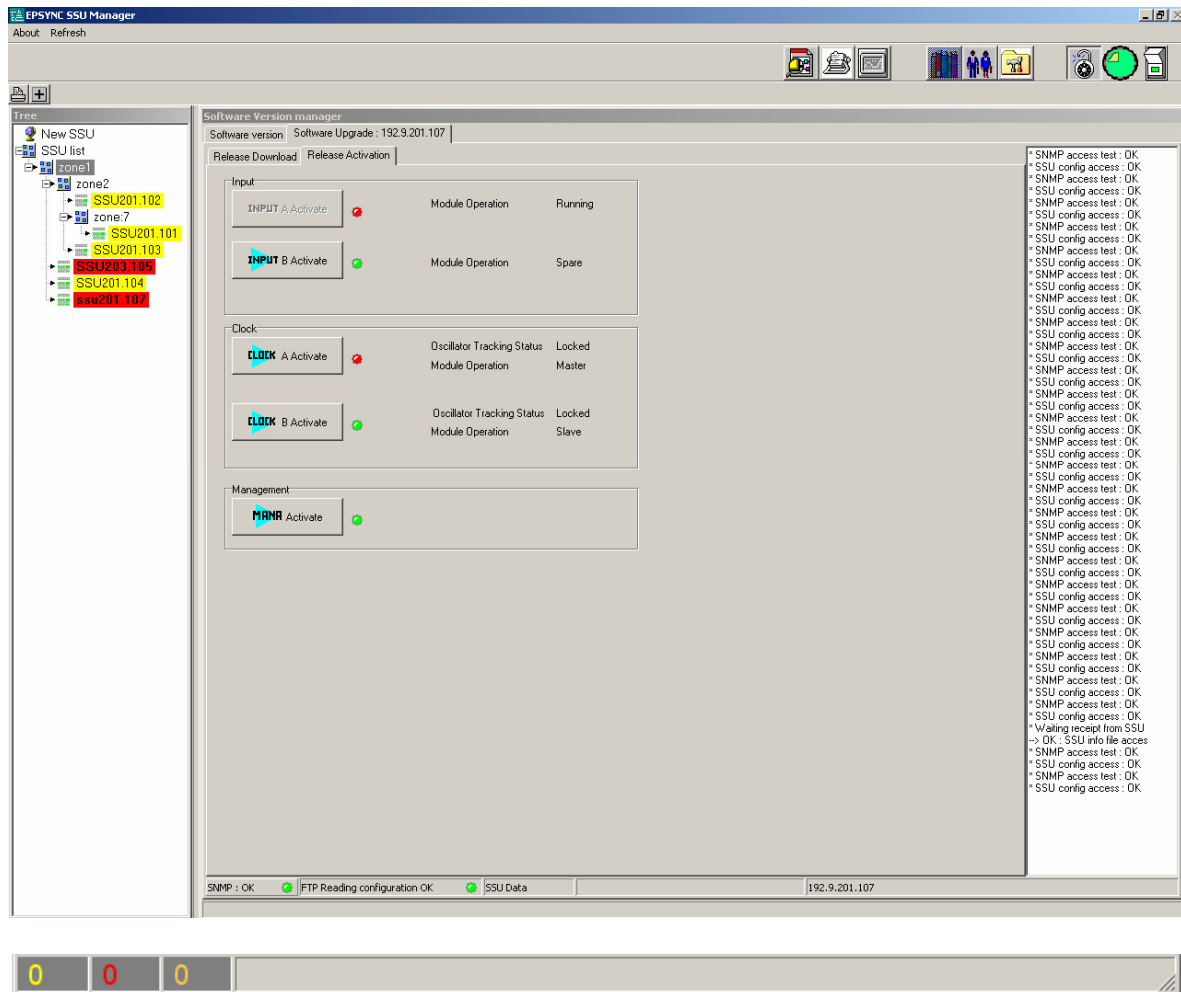


Figure 6 - 72. Software Management: Software Upgrade - Release Activation.

Choose the "Release Activation" menu to activate the downloaded version. Click on the button corresponding to the module to be upgraded. The module is reset and the new version replaces the running version. The reset and loading of the new software is controlled by the Management Module.

You must be careful not to reset the Master Clock Module for a release. Instead, force the Master Clock to Slave in the "Set Up" menu. Make the "Release Activation" operation and program back the Master/Slave Mode to "Automatic" for a normal state.

The LEDs on the right of the "Activate" buttons give an indication about the safety of the procedure. A green light means "go". A red light means "not safe". On the right of the LED, the current module operation give the reason why it may or may not be safe to activate the reset.

In a fully equipped SSU, the Input B Module (Spare) and the Clock B Module (Slave) and the Management Module should show a green light and can be reset (one after the other). Once

this release is done, use the "Set Up>Clock" menu to program the Master/Slave mode to Master for the Clock B module and Slave for the Clock A module. Use the "Set Up>Input" menu to program the Module Selection Mode to "Input B running, Input A Spare". Click on the "SSU Configuration" button to program the SSU.

Going back to the "Release Activation", wait for the green light to be on and click the "Activate" button for Input A and Clock A modules (one after the other).

7 Abbreviations and Acronyms

ALURGO	Urgent Alarm Open contact
CLOCK-SM	CLOCK-Synchronization Module
CRC4	Cyclic Redundancy Check (4 bits)
DEF	Default
DIST-SM	DISTribution-Synchronization Module
ETSI	European Telecommunication Standards Institute
GPS	Global Positioning System
FAS	Frame Alignment Signal
FTP	File Transfer Protocol
IP	Internet Protocol
INP-SM	INPUT Synchronization Module
ITU-T	International Telecommunications Union-Telecommunications sector
LOF	Loss Of Frame alignment
LOS	Loss Of Signal
LSB	Lowest Significant Bit
MFAS	MultiFrame Alignment Signal
MIB	Management Information Base
MSB	Most Significant Bit
M-SM	Management-Synchronization Module
MTIE	Maximum Time Interval Error
MySQL	Base server
NURG	Non Urgent
OCXO	Oven-Controlled Crystal Oscillator
PRC	Primary Reference Clock
PRS	Primary Reference Source
Rb	Rubidium
SDH	Synchronous Digital Hierarchy
SEC	SDH Equipment Clock
SEL	SElection
SLN	Synchronization Local Node
SNMP	Simple Network Management Protocol
SSM	Synchronization Status Message
SSU	Synchronization Supply Unit
SSUWIN	Maintenance Software for SSU, subset of EPSYNC Manager Software
STN	Synchronization Transit Node
TDEV	Time DEviation
TIE	Time Interval Error
ToD	Time of Day
TS	Time Slot
TTY	Tele TYpe
IU	Interval Unit
URG	URGent
XO	Crystal Oscillator

REVISION HISTORY

[illegible]

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