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CLEBER

AS-03/AS-13

User Manual

System: AS-03/AS-13
Release: 1.0
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3 Safety regulations.

The personnel engaged with the installation, the use and the maintenance of the equipment has to be familiar with the theory and practice of first aid.

3.1 Treatment of electrical shocks.

When the victim loses his consciousness*:*

Put into practice the following first aid principles.

- Position the victim lying down on his back on a rigid surface.
- Open the respiratory airways lifting up the neck and pushing down the front (Fig. 1).
- If necessary, open the mouth to check the respiration.
- In case the victim doesn't breath, start immediately the artificial respiration (figure 2): bend the head, close the nostrils, attach the mouth to the victim one's and do 4 quick mouth-to-mouth respirations

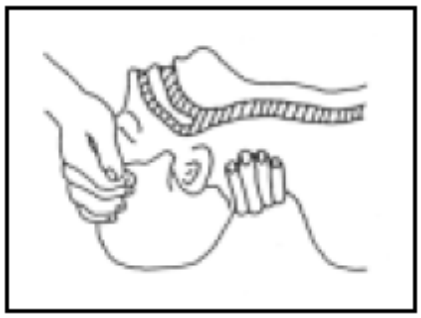


Figure 1: Resuscitation detail – 1.

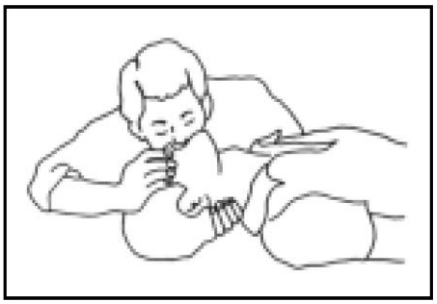


Figure 2: Resuscitation detail – 2.

- Check the pulsation (Figure 3); in case of absence of pulsation, start immediately the cardiac massage (Figure 4) pressing the breastbone in the middle of the thorax (Figure 5).

Figure 3 : Resuscitation detail – 3.

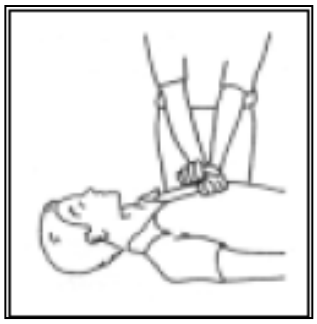


Figure 4: Resuscitation detail – 4.

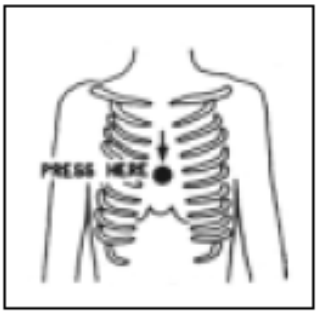


Figure 5: Resuscitation detail – 5.

- When there is only one rescuer, he has to maintain a rhythm of 15 compressions alternated with 2 quick respirations.
- In case there are two rescuers, the rhythm should be one respiration each 5 compressions.
- Do not interrupt the cardiac massage during the artificial breathing
- Call a doctor as soon as possible

When the victim is conscious

- Cover up the victim with a blanket.
- Try to calm down the victim.
- Unbutton the cloche and lay down the victim.
- Call a doctor as soon as possible.

3.2 Treatment of electrical burns.

Large burns and cuts of the skin

- Cover up the interested area with a clean sheet or cloth.
- Do not open the blisters; remove the fabric and the parts of the clothes attached to the skin; apply a suitable ointment.
- Treat the victim according to the type of accident.
- Take the victim to the hospital as soon as possible.
- When the arms and legs are affected keep them raised.
- When there is no doctor available within an hour and the victim is conscious and does not retch, give a liquid solution containing salt and sodium bicarbonate: 1 teaspoon of salt and half a teaspoon of sodium bicarbonate for each 250 ml of water.
- Have the victim sip half a glass of the solution for four times and for 15 minutes.
- Stop when retching.
- Do not give any alcoholics

Less serious burns

- Apply cold (not frozen) gauzes using a clean as possible cloth.
- Do not open the blisters; remove the fabric and the parts of the clothes attached to the skin; apply a suitable ointment.
- When necessary, put on clean and dry clothes.
- Treat the victim according to the type of accident.
- Take the victim to the hospital as soon as possible.
- When the arms and legs are affected keep them raised.

4 General Description.

Cleber offers a powerful, flexible and modular hardware and software platform for broadcasting and contribution networks, where customers can install up to six boards with no limitations in terms of position and number. Based on a Linux embedded OS, it detects the presence of the boards and shows the related control interface to the user, either through web GUI and Touchscreen TFT display. Power supply can be single (AC and/or DC) or dual (hot swappable for redundancy); customer may choose between two ranges for DC sources, that is 22-65 or 10-36 Vdc.

Despite Cleber supports any combination of boards, it is possible to describe separately some particular applications, such as ASI Switch.

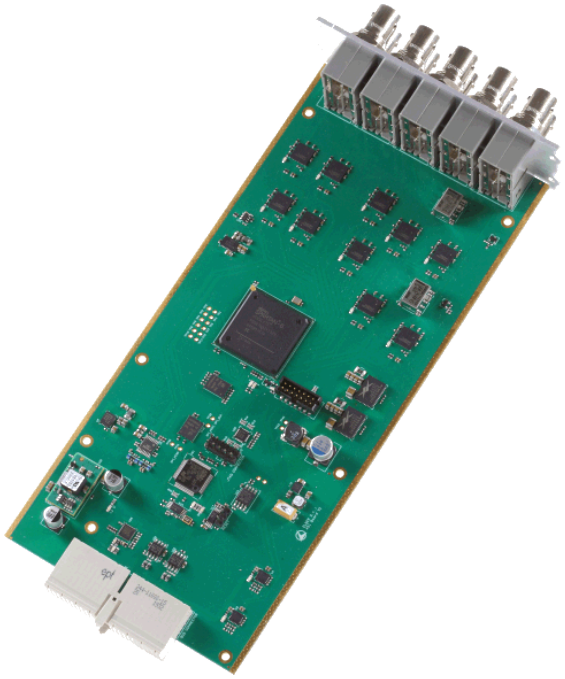


Figure 6: AS13 board picture.

AS-03 and AS-13 are the codes identifying the same board of DVB-ASI seamless switch. This board features three inputs and two (AS-03) or seven (AS-13) outputs and occupy one (AS-03) or two (AS-13) slots of the RK610 chassis (see Figure 39); the switch is performed on the basis of some quality parameters of the signal which will be described in the following, while, in case of absence of power supply, the signal on the input 1 is however available on the output OUT[P] to ensure continuity (see 8.3).

Input selection can be automatic or manual; in first case, the board selects the inputs on the basis of a set of rules defining the signal quality; in manual modality, the user is able to force at the output one of the signals available at anyone of the three inputs, so utilizing the equipment as a selector.

Switch Control software is able to perform a commutation without errors (hitless) so to avoid *sync loss* or *sync drop* during the switch, and features a transport stream (TS) analysis module which let verify all services present: in case of data loss in anyone of these services, system is able to switch to another input without generating errors.

The management software let a basic analysis of TS according to TR 101 290, that let the customer have not just an optimum change over, but else a good analysis instrument of the DVB-ASI TS content.

AS-03 and AS-13 have, besides the two seamless inputs, a third input called “disaster recovery input”; if both main streams are considered invalid by the control software, the third input is redirected at the output. Such an event may generate interruptions on the output stream.

On every output connector the same signal is presented.

Quality signal measurements taken into account are:

- *Transport error indicator (TEI)*
- *Continuity counter Error*
- *Sync byte unstable*

- *Sync byte loss*
- *PAT (Program Association Table) loss*

While AS-03 board can be installed in any slot of CLEBER chassis RK610, AS-13, due to its double height, can be installed in slots 4, 5, 6.

5 Technical Specifications.

5.1 General specifications.

Table 1: General specifications

Operative Temperature Range	-10°C ÷ 55°C
Relative Humidity	0 ÷ 95°C without condensing
Management	• Front panel (Display TFT touchscreen) • SNMP • Web browser
Firmware upgrade	USB, WEB, FTP
Power supply	Version 1: AC 90-260 V~ 50/60 Hz IEC 320 Swappable Version 2: AC 90-260 V~ 50/60 Hz IEC 320 and DC 22 ÷ 65 V 2 pins socket Swappable Version 3: AC 90-260 V~ 50/60 Hz IEC 320 and DC 10 ÷ 36 V 2 pins socket Swappable Version 4: Dual redundant AC 90-260 V~ 50/60 Hz IEC 320 Hot swappable Version 5: Dual redundant DC 10 ÷ 36 V 2 pins socket Hot swappable Version 6: Dual redundant DC 22 ÷ 65 V 2 pins socket Hot swappable
Base power consumption (no optional boards installed)	4.5 W
Maximum power consumption	120 W

5.2 Mechanical specifications.

Table 2: Mechanical specifications

Rack	Standard 19” 1U
Width	482.5 mm
Height	43.65 mm
Depth	380.65 mm (without connectors) 357.80 mm (without front handles and connectors)
Weight basis chassis	2.5 Kg
Maximum weight	7 Kg

6 Installation.

- Unpack the equipment and check first of all check if there are any damages due to the transport.
- The box should contain:

- The CLEBER
- 1 or two AC supply cable (depending on number and type of power supplies purchased)
- 1 or two DC supply cable, equipment adapted connector on one side, free wires at other end (depending on number and type of power supplies purchased)
- An envelope containing:
  - Reserved web and display passwords
  - USB pen with Token for display access and user manual

- Install the equipment in a rack cabinet. A one-unit space is required. Verify that there is enough space between other functioning equipment generating high temperatures and that there are no obstructions in the ventilation. (The functioning is guaranteed in a temperature range from -10 ºC ÷ +55 ºC).
- The equipment must be correctly connected to ground earth, to guarantee a secure functioning.
- Connect to the correct power tension reading the information on the manual or on the label attached to each equipment, containing the serial number, located in the bottom side of the chassis.
- Connect the network cable to the plug on the rear of the equipment or connect the battery cable to the related connector. The last used configuration will be loaded.
- Setup the equipment according to the needs consulting the user manual.

7 Universal chassis.

7.1 User interface.

The user interface consists of a general alarm led and a graphical TFT display with **TOUCH SCREEN** faction (for more comfortable use, a stick is available in a compartment located in the front panel, see 7.3.1).
According to equipment configuration (i.e. optional boards installed) related menu are shown.
In order to have a read/write privilege and thus modify the configuration of the equipment, it's required the connection of a USB pen with the right token to the USB port in the front panel; on the other end, it's required to digit a numeric password while trying to modify one parameter (the password is tied to the customer's name and it's notified at delivery).

7.1.1 Main menu.

At equipment switch on, after embedded software boot, display shows the main menu, according to the configuration, as can be seen in figure below. This menu shows the equipment block diagram, for an easy and intuitive access to modules parameters according to their faction; on every active area, one or more circles symbolizing alarm led are shown, eventually red or green depending on the status of the related block.

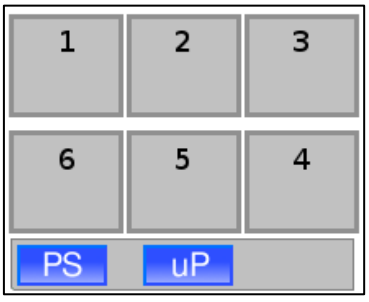


Figure 7: General main menu.

Active areas:

- 1
- 2
- 3
- 4
- 5
- 6

- PS 

- uP 

7.1.2 Menu uProcessor (uP).

7.1.2.1 MicroProcessor submenu.

The submenu let a fast access to the elements to be controlled; icons meaning, concerning different sections, is intuitive.

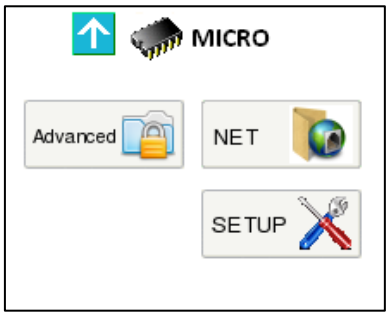


Figure 8: Microprocessor submenu.

7.1.2.2 Menu Setup - System Time.

This menu let the user set right time and date, used by the system for alarm logging. Information about system time is preserved by the battery of the *Real Time Clock*.

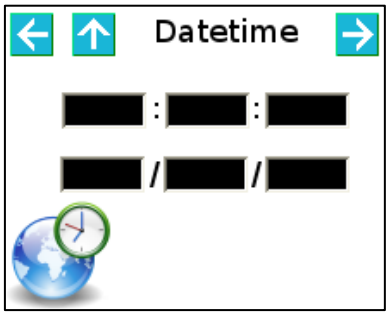


Figure 9: System time setting menu.

Active areas:

- Directional arrow “UP”  to go back to main menu.
- Directional arrows “LEFT”  and “RIGHT”  to browse microprocessor menu.
- Every text box which opens a virtual keypad to enter information.

Figure 10: Virtual keypad.

7.1.2.3 Menu Setup - Touch Screen Calibration.

This menu let the user calibrate the Touch Screen faction. It’s recommended to use the stick provided with the equipment to touch the red cross, three times as required by the system, after **Calibrate** button pushing.

Figure 11: Touch Screen Calibration menu.

Active areas:

- Directional arrow “UP” to go back to main menu.
- Directional arrows “LEFT” and “RIGHT” to browse microprocessor menu.

7.1.2.4 Menu Setup - Reset.

This menu let the user reset each microcontroller and FPGA of the equipment.

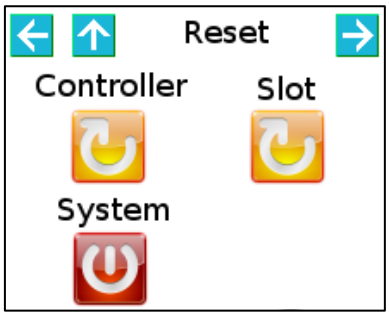


Figure 12: Reset menu.

Active areas:

- Directional arrow “UP” to go back to main menu.
- Directional arrows “LEFT” and “RIGHT” to browse microprocessor menu.
- Reset icons.

SLOT reset will (as per name) reset the boards installed in each slot; CONTROLLER reset just reboot system supervisor, SYSTEM reset is the complete reset of the equipment.

7.1.2.5 Menu Net - Network parameters.

This menu let the user modify management port network parameters; in detail, it is possible to set IP address, Subnet Mask and Gateway IP. MAC Address is read-on they.

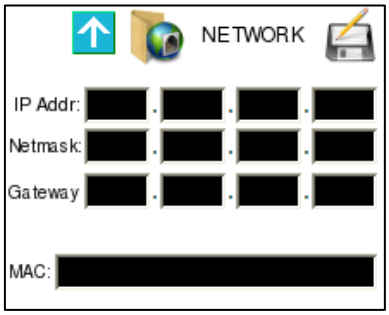


Figure 13: Network parameters menu.

Active areas:

- Directional arrow “UP” to go back to main menu.

- Directional arrows “LEFT” and “RIGHT” to browse microprocessor menu.
- Every text box, which opens the virtual keypad to insert characters.

7.1.2.6 Menu Misc - General information 1/2.

This menu shows general purpose information, such as*:*

- Model
- Serial Number
- Part Number

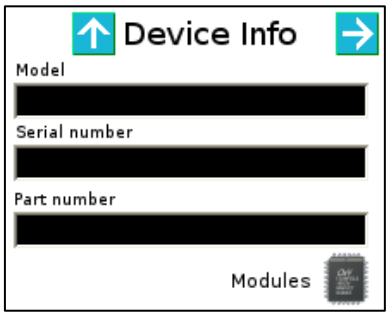


Figure 14*:* General info menu 1/2.

Active areas:

- Directional arrow “UP” to go back to main menu.
- Directional arrow “RIGHT” to browse microprocessor menu.
- Modules icon.

7.1.2.7 Menu Misc - General information 2/2.

This menu shows general purpose information, such as*:*

- Customer name (two rows)
- Installation site (Loc.)

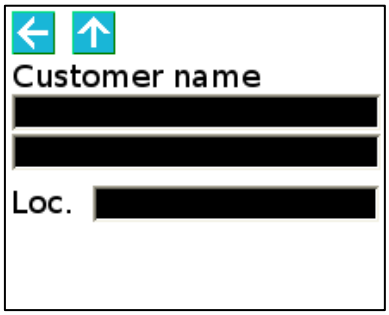


Figure 15*:* General info menu 2/2.

Active areas:

- Directional arrow “UP” to go back to main menu.
- Directional arrows “LEFT” and “RIGHT” to browse microprocessor menu.

7.1.2.8 Menu Misc - Modules.

7.1.2.8.1 Menu Misc - Modules - Controller.

This menu shows controller general purpose information such as:

- Model
- Version

- Revision

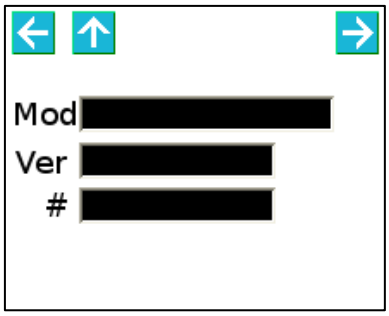


Figure 16: General purpose information controller.

Active areas:

- Directional arrow “UP” to go back to main menu.
- Directional arrows “LEFT” and “RIGHT” to browse microprocessor menu.

7.1.2.8.2 Menu Misc - Modules - Tx.

This menu shows transmitter general purpose information such as:

- Model
- Version
- Revision

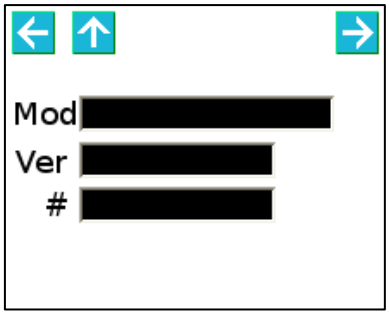


Figure 17: General purpose information Tx.

Active areas:

- Directional arrow “UP” to go back to main menu.
- Directional arrows “LEFT” and “RIGHT” to browse microprocessor menu.

7.1.3 Menu Power Supply (PS).

The Power Supply menu allows verifying whether both power supply modules are fed, what type of feeding they are receiving and whether the secondary voltages are correct (+5V and +6V).

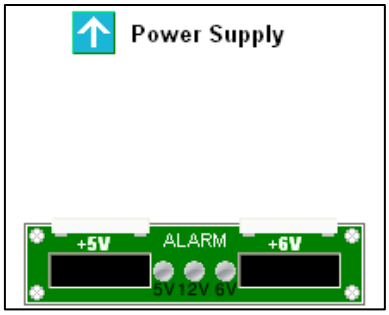


Figure 18: Power Supply menu.

Active areas:

- Directional arrow "UP"  to go back to main menu.

There is as well a general alarm indicator in case one of the voltage values is not being respected.

The upper zone of the menu is dynamically filled by the icon of the corresponding power supply module, which can be in alternating or continuous current. It is hence possible to see the different combinations reported in the following figures.

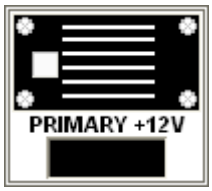


Figure 19: Icon power supply with continuous current, primary position.

Figure 20: Icon power supply with continuous current, secondary position.

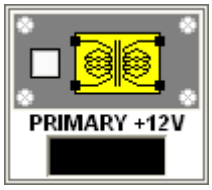


Figure 21: Icon power supply with alternating current, primary position.

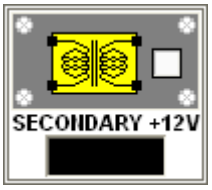


Figure 22: Icon power supply with alternating current, secondary position.

7.2 WEB interface.

CLEBER is equipped with a WEB interface for an easier and intuitive monitoring and equipment configuration. The connection to Web server can be achieved through RJ-45 connector in the front panel; with a very common *Web browser* (like Internet Explorer, Mozilla Firefox, Google Chrome, Opera, Safari…) it is possible to check equipment status and verify performances even remotely simply writing in the address bar the IP address of the equipment. In order to check the IP address, please refer par.7.1.2.5.

Important Note: Default IP address is 192.168.10.150.

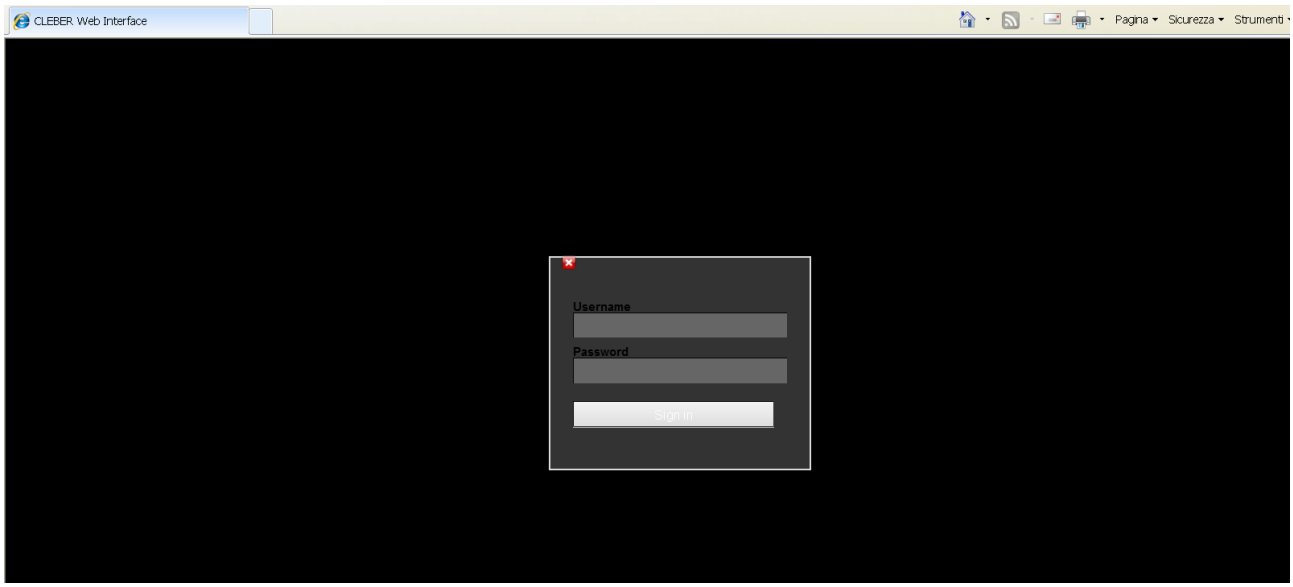


Figure 23: Web interface login page

Figure 23 shows the login page of the Web interface, which let the user access after successful insertion of username and password.

7.2.1 Status.

Once the login process has been validated, the general status page opens; it let the user immediately check alarmed parts; the page is divided into 2 parts:

- The upper part reports Controller general information and power supply's
- The lower part, divided into up to 6 different modules according to the number of optional boards installed, is explained in 8.2.

7.2.1.1 Status-Controller.

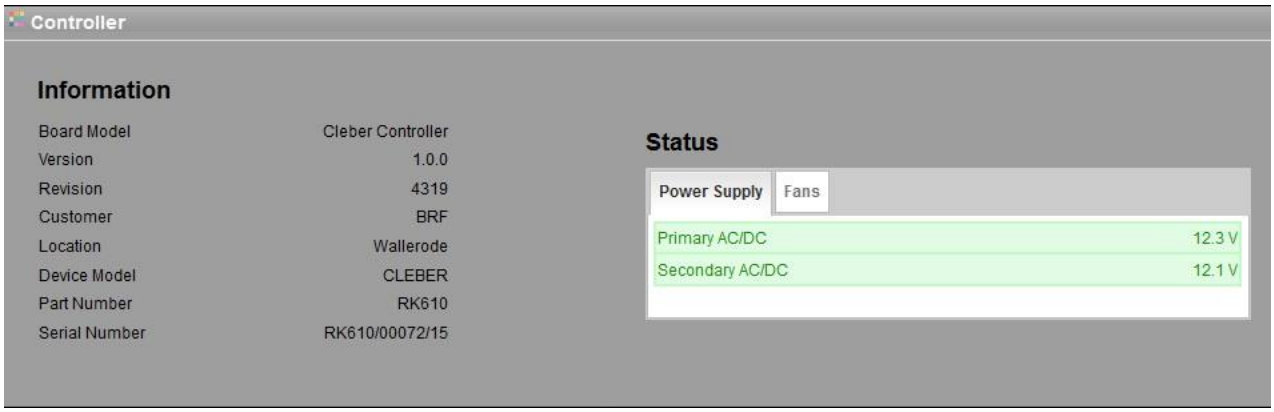


Figure 24: Web Status form – controller.

Table 3: Controller Information.

Board Model	Controller board model
Version	Firmware version
Revision	Firmware version revision
Customer	Customer name
Location	Installation site
Device Model	As to name
Serial Number	Ex. RK610/00072/15 where RK610 is the chassis name 00072 is progressive number 15 stands for 2015 (fabrication year)
Part Number	RK610 (Chassis name)

Table 4: Power supply status.

Primary AC/DC	12V output of main supply measurements; indication if AC/DC or DC/DC. Line is green if value is between limits, red otherwise.

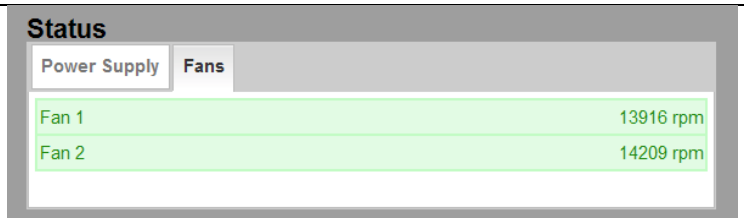


Figure 25: Web Status form – controller fans.

Table 5: Fans status

Fan 1	Main power supply fan speed.

Fan 2	Backup power supply fan speed.

7.2.2 Tab Controller.

Tab web concerning Controller is composed by five frames:

1. Customer.
2. Network.
3. Traps Manager.
4. Tools.
5. Password Management.

7.2.2.1 Controller – Customer.

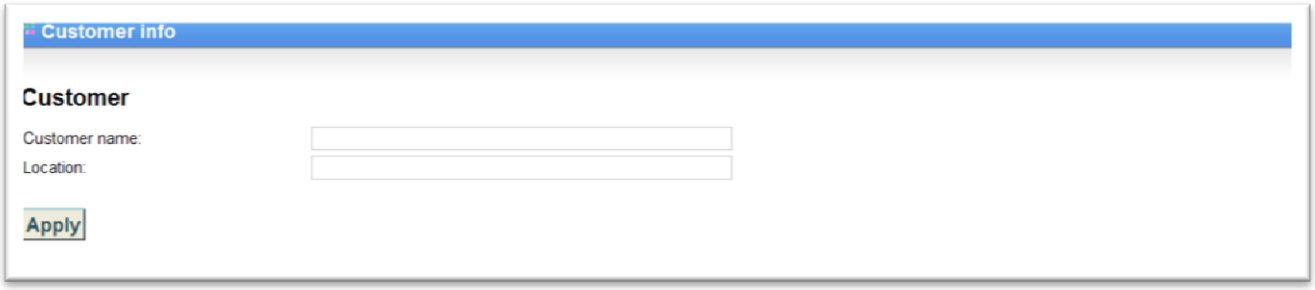


Figure 26: Web Controller Form – Customer Info.

Table 6: Equipment Information for Customers.

Customer name	Customer name.
Location	Installation site.

7.2.2.2 Controller – Network.

This frame let check and modify network parameters of the user interface.

Ip Address, Netmask and Gateway Address can be modified by the user writing in the dedicated text box while Mac Address is read-on they. Moreover, it's possible to configure a DNS, a NTP server IP address, the Time Zone and the Country where the equipment is installed.

Table 7: Network Parameters configuration.

DHCP	Enable DHCP protocol to get network configuration automatically (if supported by user network; please contact your network administrator for further details).
IP Address	Equipment IP Address
Netmask	Equipment IP Subnet Mask
Gateway	Gateway IP Address
MAC address	Equipment MAC Address (read on they)
Domain Name Server	DNS IP Address
NTP Server	NTP Server IP Address
Time Zone	Selection of Time Zone for Time synchronization
Country	Selection of Country for Time synchronization

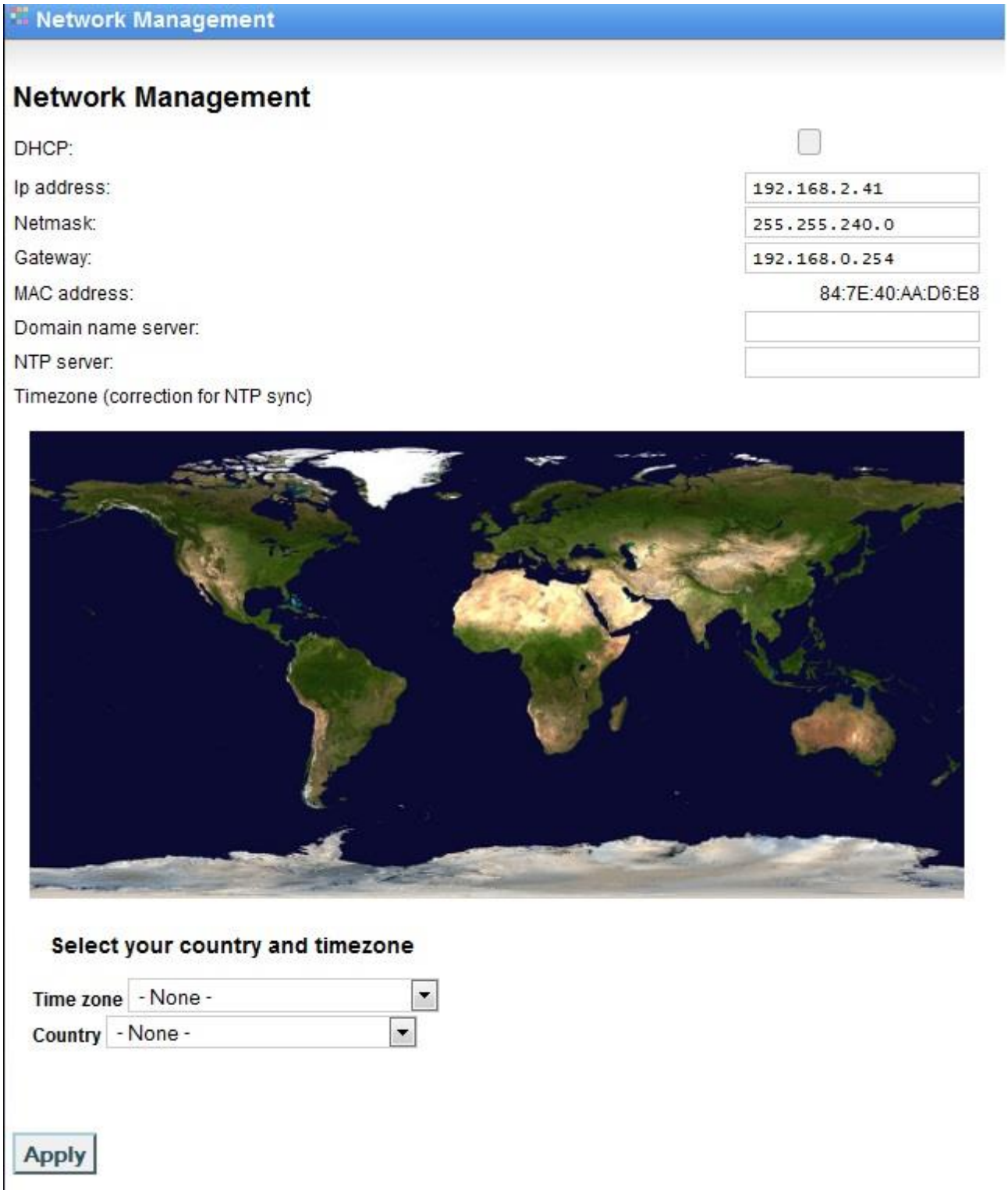


Figure 27: Web Controller Form – Network Parameters.

7.2.2.3 Controller – Traps Manager.

This frame let the user accede to SNMP traps management; for every possible alarm it allows to enable or disable the traps sending. Moreover, it is possible to set their destination address and configure a destination mail address (if supported by customer's network).

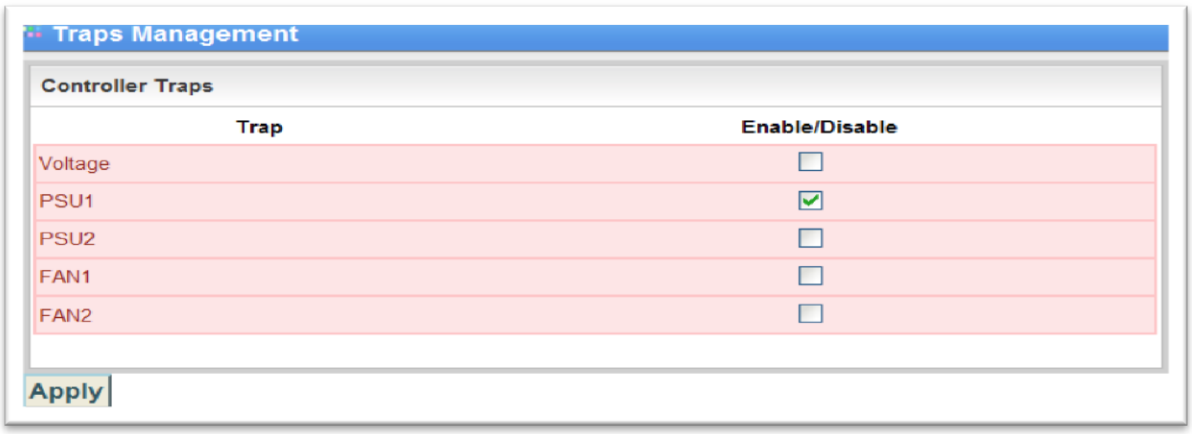


Figure 28: Web Controller Form –Traps Management.

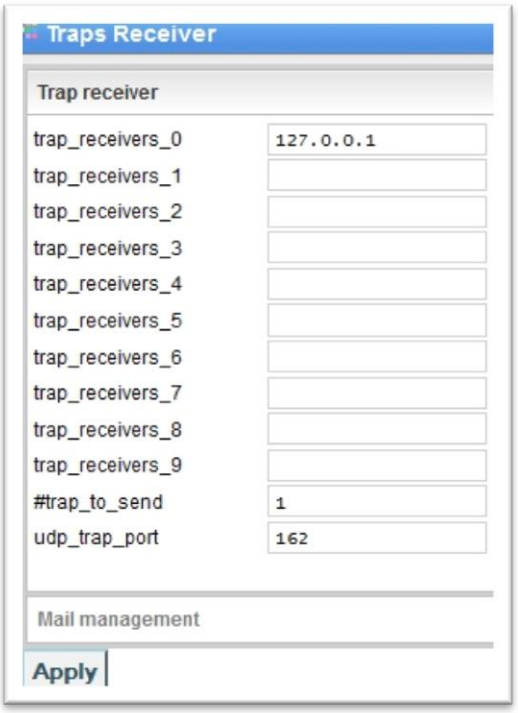


Figure 29: Web Controller Form – SNMP Traps Receivers.

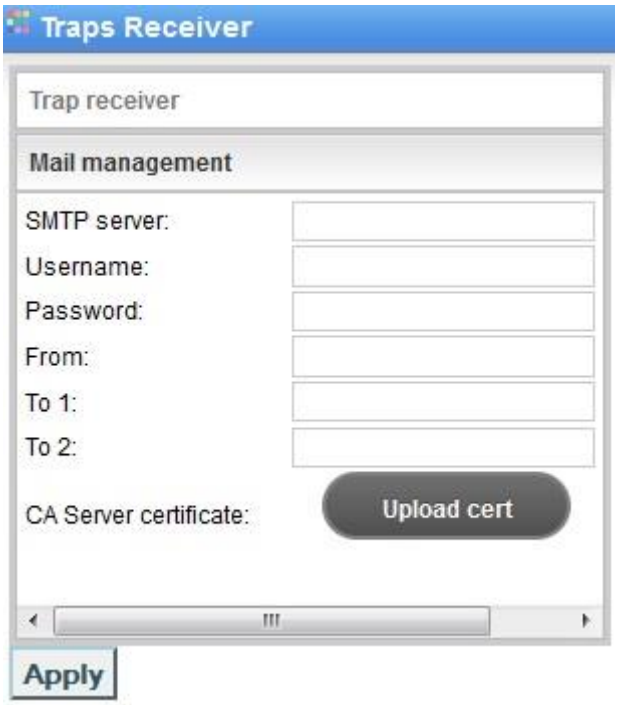


Figure 30: Web Controller Form – Mail Management.

Table 8: Mail Management

SMTP Server	Setting of SMTP server
Username	Setting of Username
Password	Setting of Password
From	Setting Source Name
To 1	Setting Destination address
To 2	Setting Destination address
CA Server certificate	Upload CA certificate for security

These parameters depend on customer's network. If you don't know them, please contact your network administrator.

7.2.2.4 Controller – Tools.

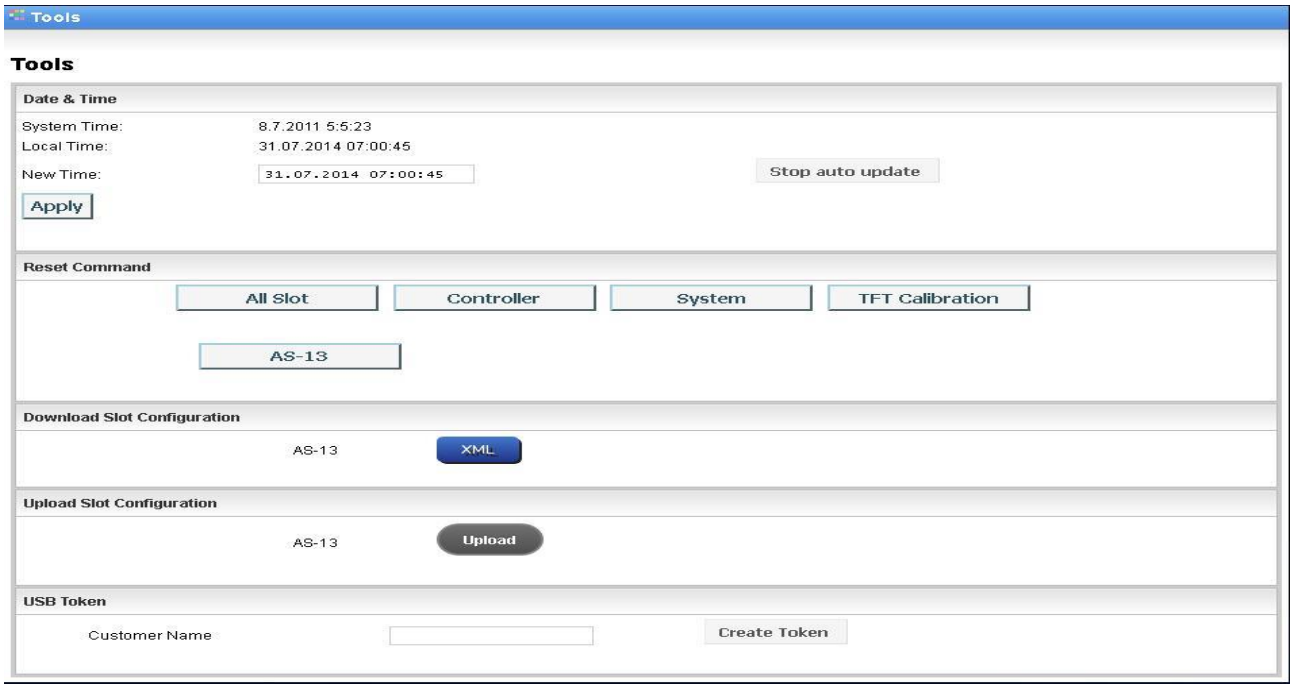


Figure 31: Web Controller Form – General Info and Tools.

Table 9: Date and Time

System Time	It shows System Time
Local Time	It shows local time (if taken from NTP server)
New Time	Text box to modify local time.
Stop auto update	Button; let the user disable "auto-updating" of Local Time.

Table 10: Reset Command

All Slot	Let the user reset all boards in the control unit
Controller	Let the user reset just the user-interface microprocessor
System	Let the user reset both microprocessor and optional boards
TFT Calibration	Let the user launch the TFT calibration procedure
AS-13	Let the user reset AS-13 board

Table 11: Download Slot Configuration

AS-13	Let the user save actual configuration for AS-13 board

Table 12: Upload Slot Configuration

AS-13	Let the user upload a stored configuration for AS-13 board

Table 13: Create Token

Customer Name	Indicate exact Customer Name (see Table 3); Token is generated on the basis of the Customer Name.
Create Token	Push this button to generate the Token file. Token is to be installed on a USB Pen-Drive and connected to front panel USB connector to grant read/write rights while using the TFT.

7.2.2.5 Controller – Password management.

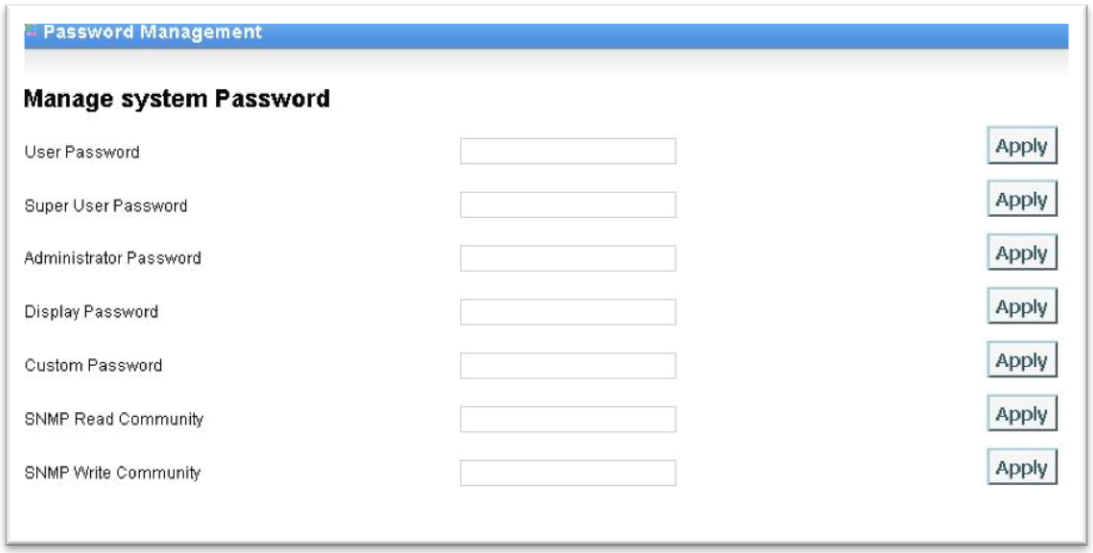


Figure 32: Web Controller Form –Password Management.

This form let modify the passwords for web interface, TFT and the SNMP communities. Passwords should be composed of at least six characters and cannot overcome fifteen characters. The password level that can be modified is subject to the rights of the user. The user "User" cannot change passwords. User "Super-User" can change its own and the "User" ones. The "Administrator" can change any password.

7.2.3 Tab Slot.

The Tab "Slot" let the user monitor and configure every single board composing the system; user is asked to select the board he may want to check, like the number 2 in the example below.

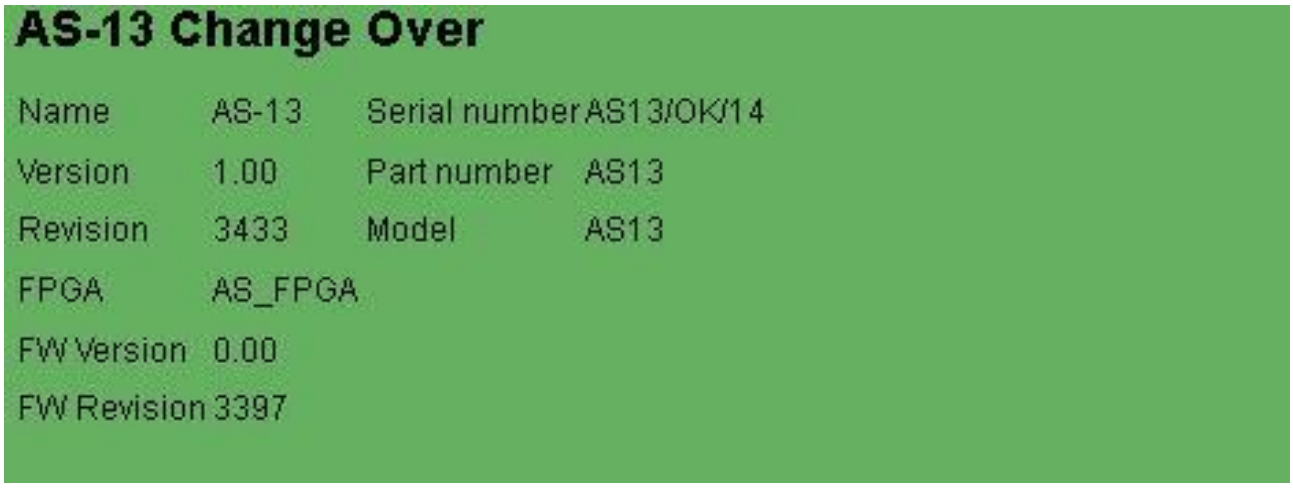


Figure 33: Web Slot Form – Plug in board selection.

See 8.2 for detailed description.

7.2.4 Tab Upgrade.

Web tab regarding upgrade is composed by 1 frame:

- Machine upgrade

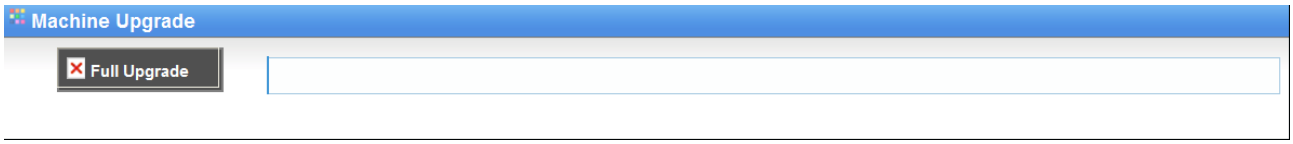


Figure 34: Web upgrade form – firmware upgrade.

Clicking on Full Upgrade button, user is asked to select the upgrade file, to be browser in its personal device memory.

7.2.5 Tab Log.

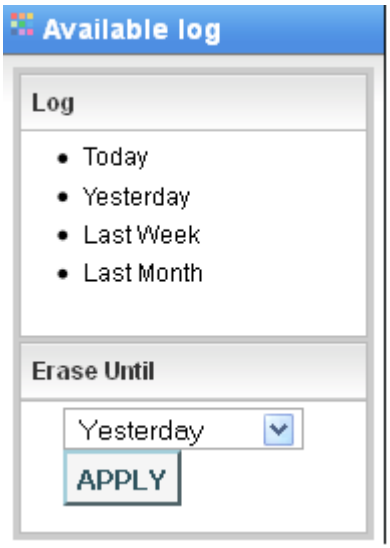


Figure 35 : Web Log form – available log.

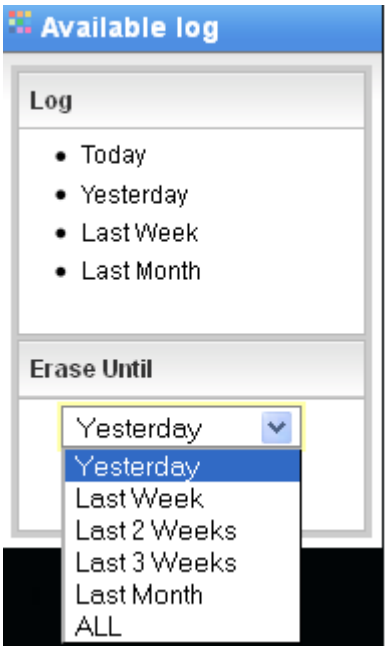


Figure 36: Web Log form – available log expanded.

The equipment offers an operation log service that can be checked in this tab of the web interface.

In left part of the web page, the form concerning available logs is present, grouped by:

- Daily report

- Last day
- Last week
- Last month

In order to avoid huge memory usage, it is recommended to delete old records using **Erase until** form and selecting desired interval (Figure 36).

In central part of the page, log messages are reported, organized in a table that can be ordered, filtered and resized in terms of number of rows to page.

Records belong to 4 different categories are shown with different colours for user facility:

1. Messages
2. Configurations
3. Alarms
4. Warnings

Every record has a time, a description and an origin; an alarm event is described in appendix with OCCURRED tag, while the alarm condition recovery is a Message with appendix RECOVERED. Records can be ordered in every column and filtered.

Log can be saved with many different formats for further elaborations and storage; files formats available are:

- .xls
- .xml
- .csv
- .tsv
- .html
- .json

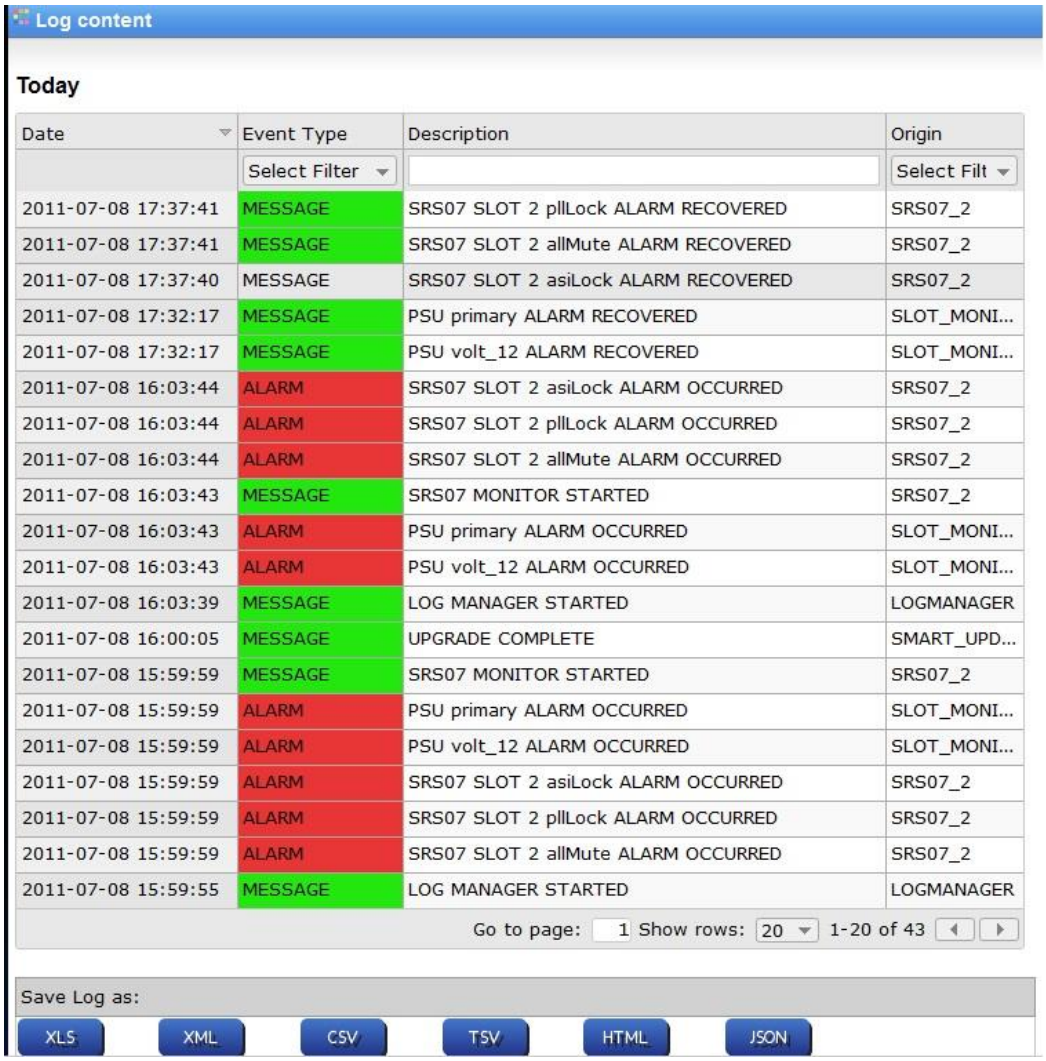


Figure 37: Web Log form – log.

7.3 Panels.

7.3.1 Front Panel.

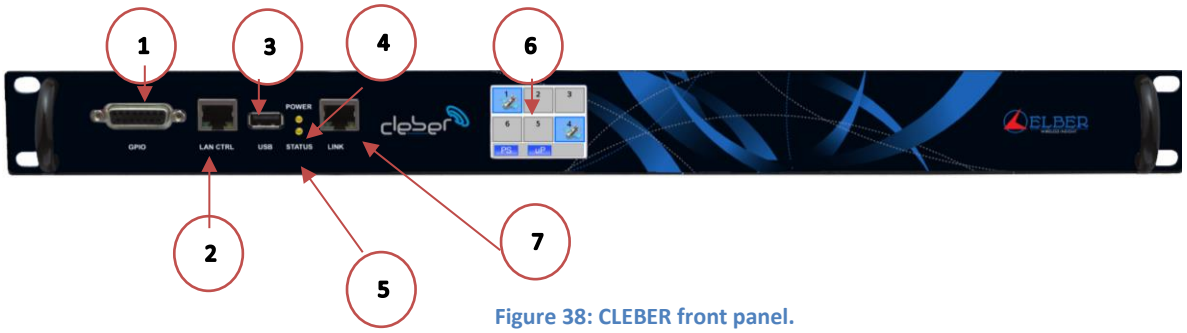
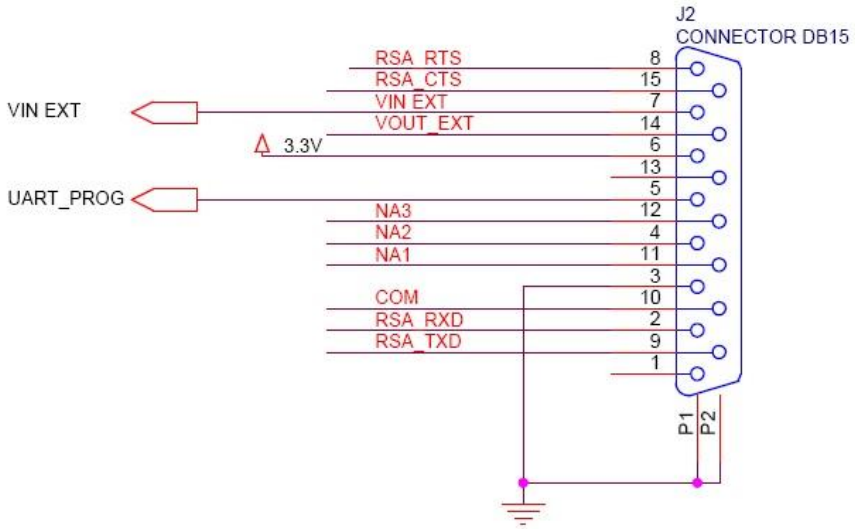


Figure 38: CLEBER front panel.

Table 14: Front panel description.

Tag	Description	Faction
1	DB15 Connector	
2	RJ-45 Connector	Port Ethernet 10/100 for Management
3	USB Connector	USB pen drive connection for firmware upgrade and token connection (read/write accede to TFT).

Pin	Faction
1	Not connected
2	Debug serial Rx Pin
3	Ground
4	Relay 2, Normally open contact
5	Reset pin for In-System-Programming modality
6	+3.3V
7	0-5V controlled voltage for analogue remote control; programmable upon customer request.
8	Debug serial RTS Pin
9	Debug serial Tx Pin
10	Relay 1-2-3 Common Contact
11	Relay 1, Normally open contact
12	Relay 3, Normally open contact
13	Not connected
14	0-5V controlled voltage for analogue remote control; programmable upon customer request.
15	Debug serial CTS Pin

4	Led green	Power supply on
5	Three colours led	Green: ok Yellow: warning Red: alarm
6	Display TFT touchscreen	User Interface
7	Connector RJ-45	Fast Ethernet Port for Debug and equipment extensions

7.3.2 Rear Panel.

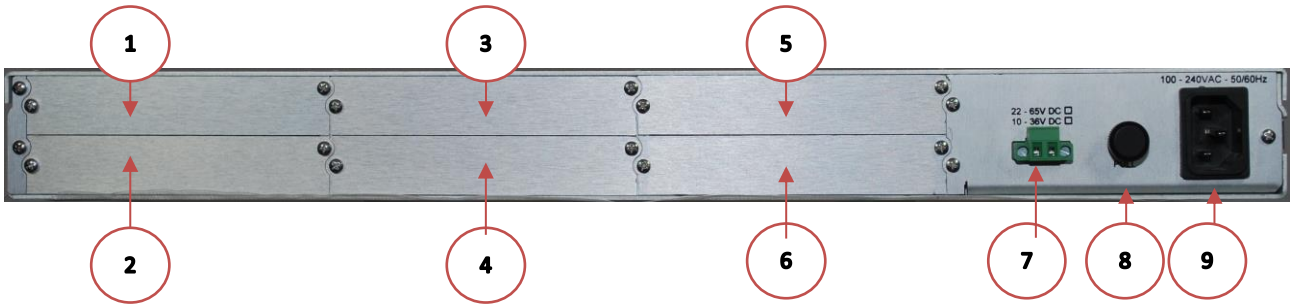


Figure 39: Rear Panel CLEBER (no slots installed).

Table 15: Rear Panel - Empty

Item	Description	Faction
1	Blind Panel	Slot number 3
2	Blind Panel	Slot number 4
3	Blind Panel	Slot number 2
4	Blind Panel	Slot number 5
5	Blind Panel	Slot number 1
6	Blind Panel	Slot number 6
7	2 pin Socket	DC supply connection
8	Knob	Knob to extract power supply module
9	IEC320 socket	AC supply connection

8 AS-03/AS-13.

Table 16: AS-03/AS-13 Technical Specifications.

Board Name	AS-03/AS-13
Input interface type	DVB DVB-ASI [EN50083-9 (V2:3/98)]
Input numbers	3 (2 primaries + 1 disaster recovery)
Input connectors	3 x BNC (f) 75 Ohm
Output interface type	DVB-ASI [EN50083-9 (V2:3/98)]
Outputs Number	AS-03 2(1 pass-through) AS-13 7(1 pass-through)
Output connectors	AS-03 2 x BNC (f) 75 Ohm AS-13 7 x BNC (f) 75 Ohm
Data bit rate	270 Mbps
Switch Modalities	• Automatic (Switch) - With priority (reversible) - Without priority (not reversible) • Manual. Selection of one of the inputs
Priority	In automatic modality on: • Input 1 • Input 2
Quality criteria	Reduced version of TR 101-290 • Signal loss • PAT Loss • TS Unstable • Sync Loss • Sync Unstable • Transport Error Indicator
Transport stream Analysis	• PID present Summary • PAT Analysis • PMT Analysis • SDT Decoding
Available Statistics	• Instantaneous value • Mean value • Mean value over 15 minutes • Mean value over 24 hours • Maximum value • Minimum value
Measurements recorded	• Board Temperature • Selected stream bitrate • Lock Status DVB-ASI 1 • Bitrate DVB-ASI 1 • Lock Status DVB-ASI 2 • Bitrate DVB-ASI 2 • Lock Status DVB-ASI 3 • Bitrate DVB-ASI 3
Maximum delay between two streams for seamless switching	Up to 10 ms
Maximum transport jitter tolerated	Up to 2 ms
Control Interface	• Display TFT touch screen • WEB interface HTML based • SNMP V2
Firmware upgrade	• USB, WEB, FTP

Alarms management	• Alarm log • Trap SNMP (up to 10 destinations) • Alarm configuration to send SNMP TRAP • Port configuration to send SNMP TRAP • Email sending with server SMTP or SMTP with certificate • Up to 2 destination e-mail addresses • Led status power supply • Led status alarm
Management functionality	• Configuration Domain Name Server • Configuration NTP with time correction • Fast device status visualization • Statistics with exportation facilities • Events Log with filters and exportation facilities • Configuration exportation and importation • Equipment remote upgrade • Upgrade through Flash drive USB
Authentication systems	• Three levels access for WEB interface • Authentication Token for configuration operations via TFT • Dedicated set of passwords for each customer • Community SNMP modifiable
GPIO	• Up to 3 GPI configurable • Up to 3 GPO configurable
Expansion ports	• 1 RJ45 Port for equipment expansions • Master/Slave Modality for multiple equipment systems
Fans	• Fan speed status • Alarm in case of failure

8.1 User Interface.

As already described in par. 7.1 and following, CLEBER offers to the operator the possibility to manage board parameters through the TFT display located in the front panel.

Next paragraphs show the display menu related to AS-03/AS-13 boards.

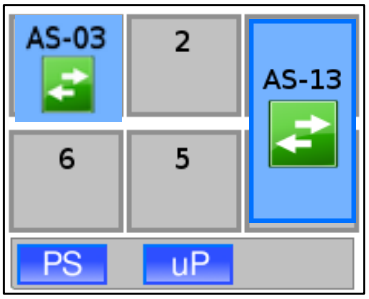


Figure 40: General main menu.

Example shown in Figure 40 reports the main menu of a CLEBER equipped with an AS-03 card in slot 1 and an AS-13 in slot 3-4.

Clicking on each icon, user accedes to related menu described in following paragraphs.

8.1.1 Main Menu.

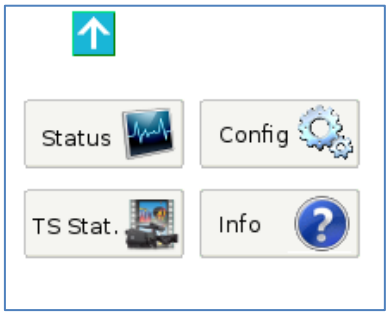


Figure 41: Menu AS-03/AS13

Active areas:

- Directional arrow "UP" to go back to main menu;
- STATUS
- CONFIG
- INFO
- TS Stat.

8.1.2 Status submenu.

Clicking on *Status* STATUS user can accede to a submenu showing measurements and information:

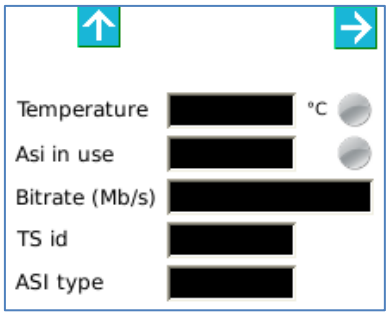


Figure 42: Menu status AS-03/AS-13

Table 17: TFT AS-03/AS-13 status parameters

Temperature	It shows the temperature of the board.
Asi in use	It shows which DVB-ASI is analysed.
Bitrate (Mb/s)	Indication of bitrate of stream DVB-ASI at the input.
TS id	Identifier of transport stream.
ASI type	It shows if the ASI is a 188 bit or a 204 bit.

Active areas:

- to return to the main menu
- To access to the submenu of TS analysis.

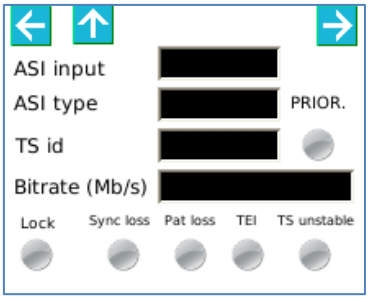


Figure 43: Status DVB-ASI - AS-03/AS-13

Active areas:

- Directional arrow UP, to return to the main menu
- Directional arrows RIGHT and LEFT, to select which DVB-ASI analyse

Table 18: Description menu status AS-03/AS-13

ASI input	It shows which DVB-ASI is analysed.
ASI type	It shows if the ASI is a 188 bit or a 204 bit.
TS id	Identifier of transport stream.
Bitrate (Mb/s)	It shows the Bitrate of signal.
Lock	It shows with coloured led icon if the signal is locked.
Sync loss	It shows with coloured led icon errors of TS Sync.
PAT loss	It shows with coloured led icon the absence of the PAT.
TEI	It shows presence TEI (Transport Error Indicator).
TS unstable	Presence of errors not consecutive in continuity counter.

8.1.3 Configuration.

Clicking on the icon CONFIG user can accede to the submenu of Figure 44.

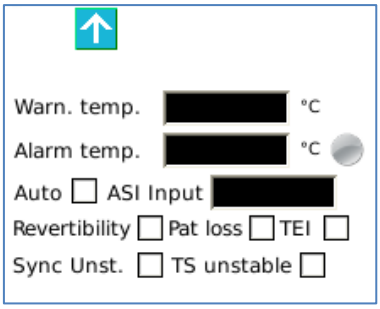


Figure 44: Menu Config AS-03/AS-13

Table 19: Menu Config AS-03/AS-13

Warn. temp.	Let the user set the warning temperature threshold in °C
Alarm temp.	Let the user set the alarm temperature threshold in °C
Auto	It let the user set the switch in modality automatic.
ASI Input	It shows which input DVB-ASI is analysed.
Revertibility	If checked, it sets the reversibility function to the switch.
PAT loss	Let the user configure as alarm the loss of the PAT (*Program Association Table*)
TEI	Let the user configure as alarm the *Transport Error Indicator.*
Sync Unst.	Let the user configure as alarm the instability of TS (many not Sync Loss consecutive errors)
TS unstable	Let the user configure as alarm the instability of *Transport Stream.*

Active areas:

- Directional arrow UP, to return to the previous menu.
- Checkbox as described in Table 19
- Textbox as described in Table 19. By clicking on the textbox, virtual keypad shows up.

Figure 45: Virtual Keypad

8.1.4 TS Status.

This menu let the user analyse the TS information. Clicking on the icon 

customer will accede to this menu.

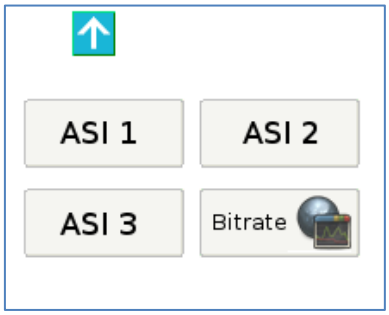
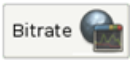


Figure 46: Menu ASI

Active areas:

- Directional arrow UP  , to return to the previous menu
- 

to see the TS information
- 

to see the TS bitrate

Clicking on the icon 

customer will accede to this menu:

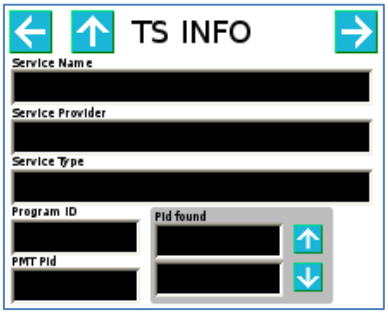


Figure 47: Menu TS info

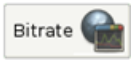
Active areas:

- Directional arrows  , to browse between the menu or to return to the previous one;
- Directional arrows  to select the PID.

Table 20: Description TS status AS-03/AS-13

Service name	Name of service
Service Provider	Name of service provider
Service type	Type of service
Program ID	Identifier of service
PMT Pid	PID of the PMT (Program Map Table)
PID Found	List of PID of the service to be

	analysed.

Clicking on the icon 

customer will accede to this menu:

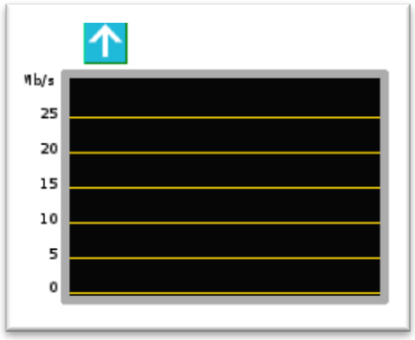


Figure 48: Menu Bitrate

The graphic shows the instantaneous bitrate of the DVB-ASI streams at the input of the board. To see historical data, please check Statistic tab of the Web Interface.

Active areas:

- Directional arrow UP  , to return to the previous menu

8.1.4.1 *Info Submenu.*

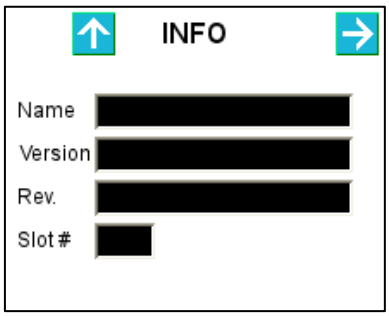


Figure 49: AS-03/AS-13 info submenu-1.

Active areas:

- Directional arrow “UP”  to go back to main menu;
- Directional arrows “RIGHT”  to browse info menu.

Table 21: TFT AS-03/AS-13 info parameters-1

Tag	Type	Description
Name	Text Box	Shows Board name
Version	Text Box	Shows firmware version
Rev.	Text Box	Shows firmware revision
Slot #	Text Box	Shows the slot number

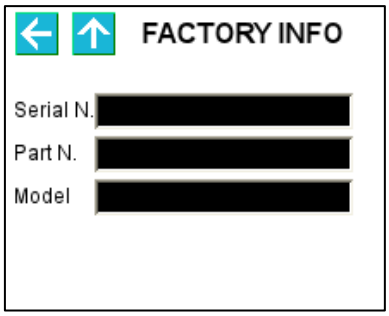


Figure 50: AS-03/AS-13 info submenu-2.

Active areas:

- Directional arrow “UP” to go back to main menu;
- Directional arrow “LEFT” to browse info menu.

Table 22: TFT AS-03/AS-13 info parameters-2

Tag	Type	Description
Serial N.	Text Box	Shows Serial Number of the board
Part N.	Text Box	Shows Part Number of the board
Model	Text Box	Shows Model type of the board

8.2 Web Interface.

8.2.1 Status.

In the home page of the web interface, named STATUS, main information relative to the board AS-03/AS-13 can be seen.

Figure 51: Web slot form – AS-13 Status.

Table 23: AS-03/AS-13 status.

Name	Board name
Version	Microcontroller software version
Revision	Microcontroller software revision
FPGA	Name of FPGA configuration file
FW Version	FPGA firmware version
FW Revision	FPGA firmware revision
Serial number	Board Serial Number
Part number	Board name
Model	Board model
Temperature	It shows the temperature on the board
Input selected	It shows which signal has been selected by the switch to the output.
Input 1	It shows if the input signal is locked.
Input name	It shows the label of the input, if assigned.
Transport Stream ID	Identifier of transport stream.

Type	It shows the format of the frame of TS (188 or 204).
Bitrate	Indication of bitrate of stream DVB-ASI at the input.
Aligner Lock	It shows if the streams alignment process is locked.
Sync loss	Indication of loss of input synchronization.
PAT loss	Indication of absence of a PAT packet (*Program Association Table*) within the time prefixed by the standard TR 101-290.
TEI	It shows presence TEI (Transport Error Indicator).
TS unstable	Indication of Transport stream unstable (many *continuity counter errors* in one second over different PIDs).
Continuity Counter error rate	Indication of the *continuity counter error* number in one second.
Sync unstable	Indication of many wrong *Sync bytes* not consecutive in one second.
Sync error rate	Indication of the *sync byte error* number in one second.

8.2.2 Slots.

AS-03/AS-13 slot form is divided into two subparts:

1) Status
2) Configuration

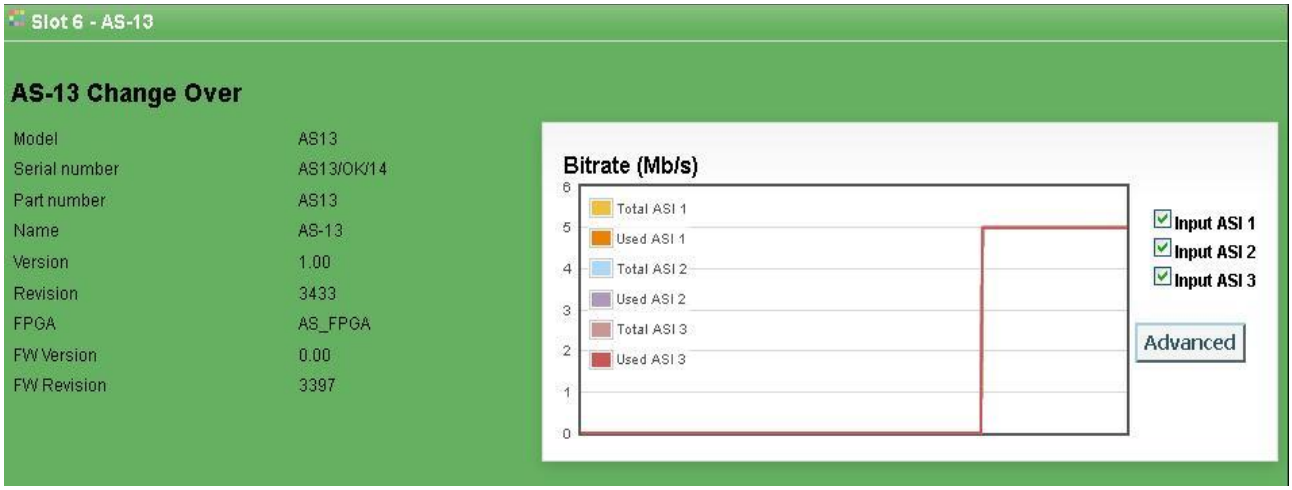


Figure 52: Web Slot Form – AS-13 Status-1

Figure 52 shows board general information and the graphic of instantaneous "*Bitrate*" for every ASI input. Clicking on the button *"Advanced",* user is redirected to another menu, where is possible to check the historical graphics of *"Bitrate", PID and TS ID* (Figure 53).

Table 24: AS-03/AS-13 information

Name	Board name
Version	Microcontroller software version
Revision	Microcontroller software revision
FPGA	Name of FPGA configuration file
FW Version	FPGA firmware version
FW Revision	FPGA firmware revision
Serial number	Board Serial Number
Part number	Board name
Model	Board model

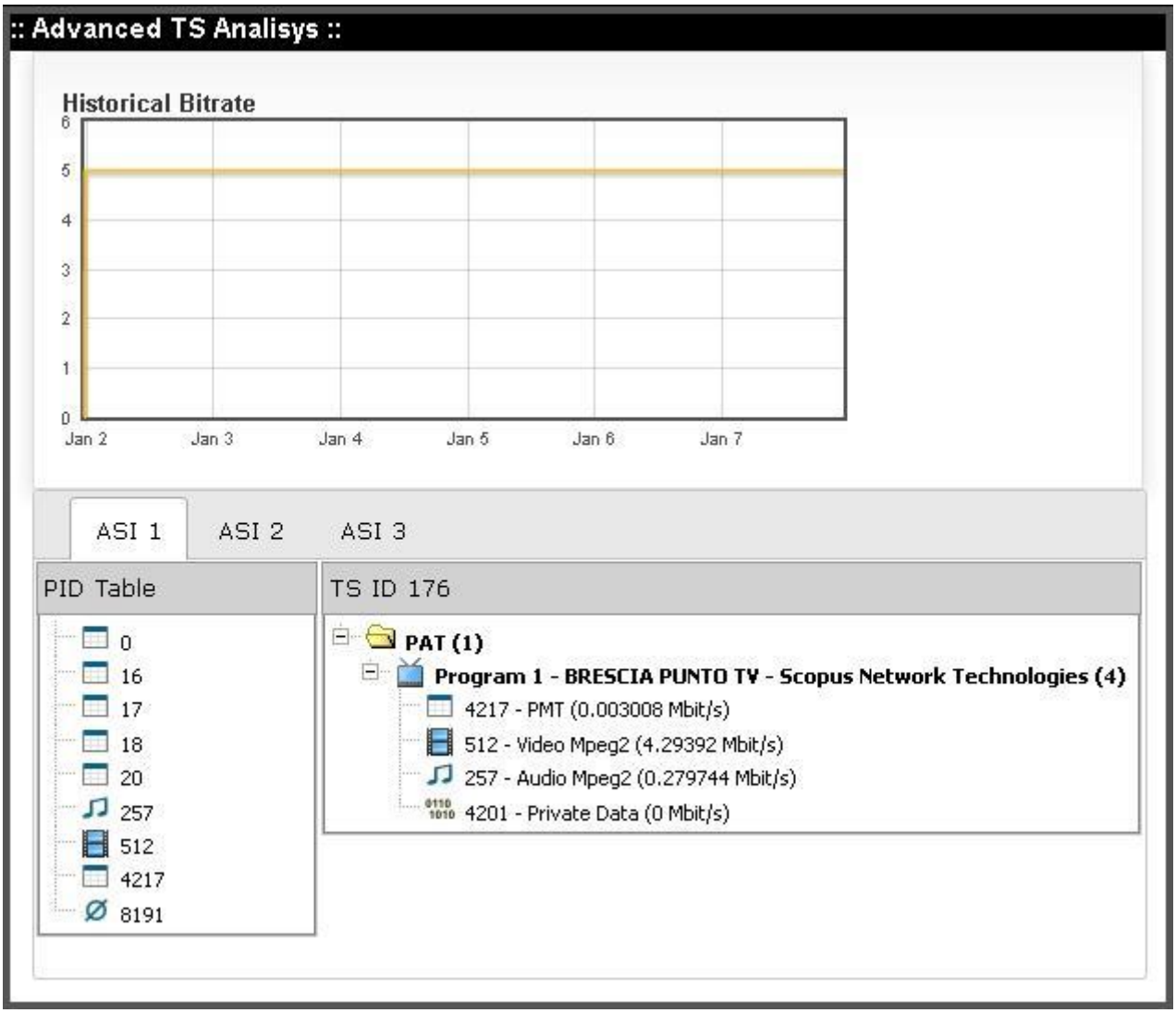


Figure 53: Web Form Slot - Advanced TS Analysis

Table 25: Description TS Analysis

ASI	Selection of the input signal to be analysed.
PID Table	Indication of PID of service to be analysed.
TS ID ###	Identifier of transport stream.

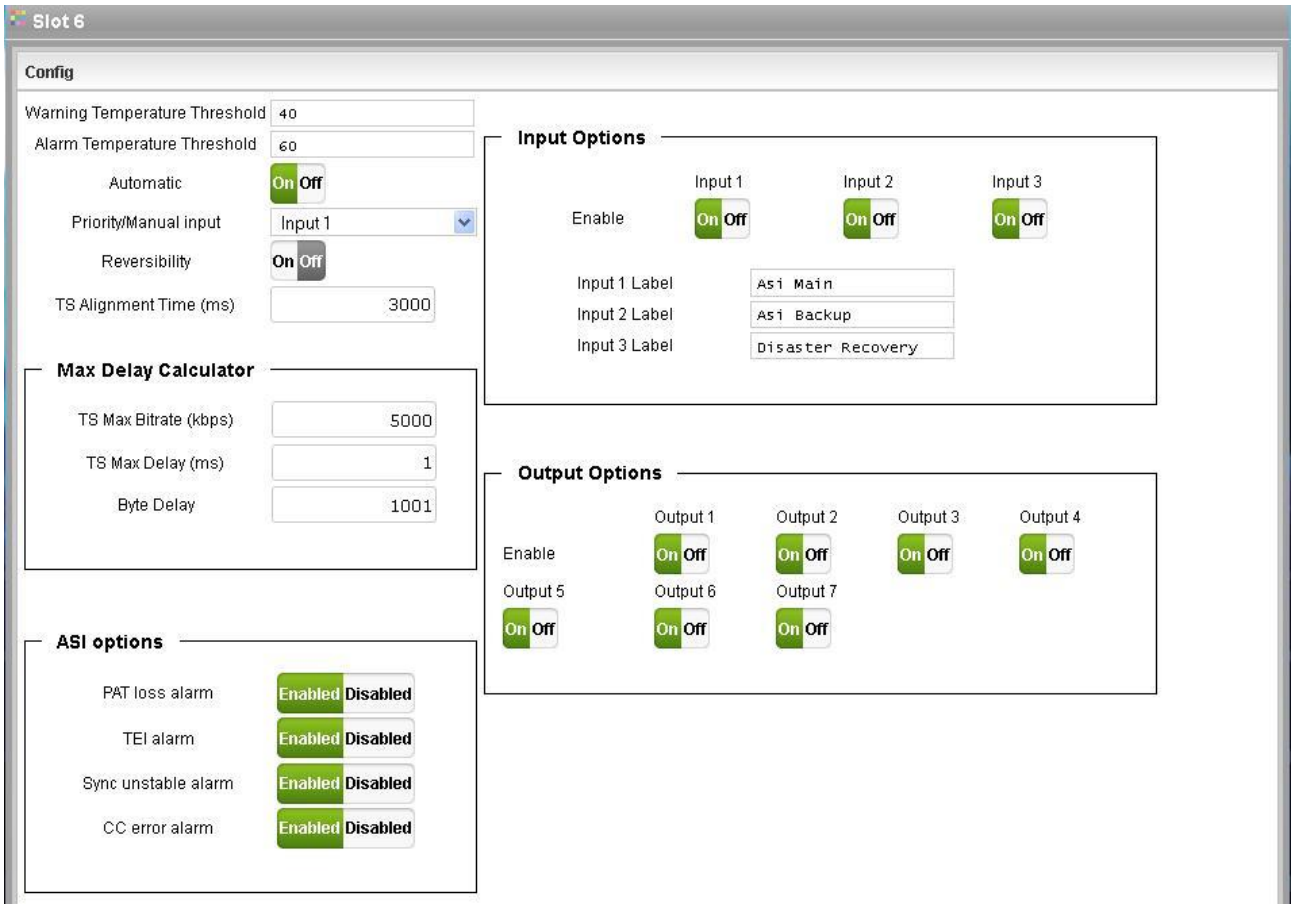


Figure 54: Web Slot Form for the AS-13 configuration.

Table 26: Tab Slots, AS13 Config.

Warning Temperature Threshold	It let the user set the Warning Temperature threshold.
Alarm Temperature Threshold	It let the user set the Alarm Temperature threshold.
Automatic	Let the user set the switch in automatic or manual modality.
Priority/Manual input	Let the user set the inputs priority. In case of switch set in modality non automatic (manual) it identifies the signal DVB-ASI forced in output. In modality automatic is possible to set priority just between the input 1 and 2.
Reversibility	Let the user enable the reversibility.
TS Alignment Time (ms)	Let the user set the waiting time of the switch to validate one input and, consequently, the time to switch to it if the reversibility is enabled.

Max Delay Calculator section is necessary to calculate the buffer depth to be allocated for the alignment process. Such a depth depends on nominal bitrate in Kbps and on the delay between switch inputs, in absolute value, estimated and expressed in ms.

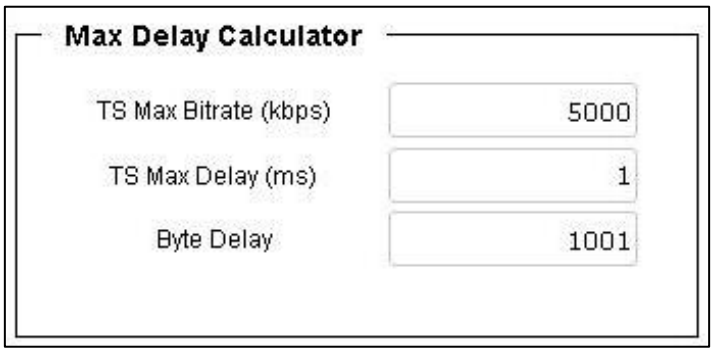


Figure 55: Web Form for the Max Delay Calculator.

Table 27: Tab Slots, Max Delay Calculator

TS Max Bitrate (kbps)	Let the user set the nominal bitrate for memory depth calculation.
TS Max Delay (ms)	Let the user set the delay time, in absolute value, estimated between the inputs. Such a value should fall within 1 and 10 ms.
Byte Delay	It shows the calculated buffer depth.

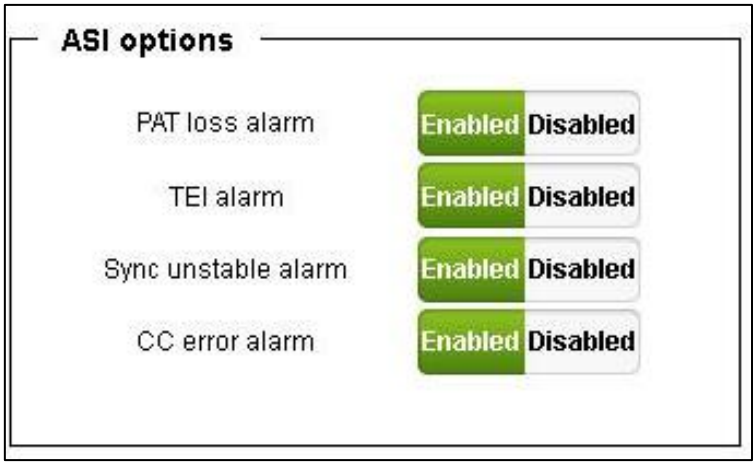


Figure 56: Web Form - the ASI configuration.

Table 28: Tab Slots, ASI configuration

PAT loss alarm	Enable/disable the absence of PAT as commutation criteria of the switch.
TEI alarm	Enable/disable the presence of TEI (Transport Error Indicator) as commutation criteria of the switch.
Sync unstable alarm	Enable/disable the alarm of *Sync unstable* as commutation criteria of the switch.
CC error alarm	Enable/disable the alarm of *TS unstable* as commutation criteria of the switch.

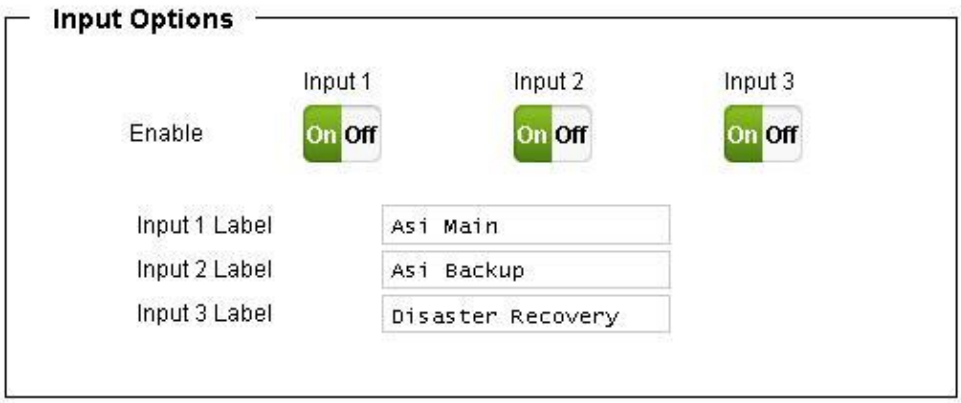


Figure 57: Web Form - Input Options ASI

Table 29: Tab Slots, Input Options ASI

Enable	Let the user enable/disable to related input ASI
Input 1 Label	Let the user assign a label to the input DVB-ASI 1
Input 2 Label	Let the user assign a label to the input DVB-ASI 2
Input 3 Label	Let the user assign a label to the input DVB-ASI 3

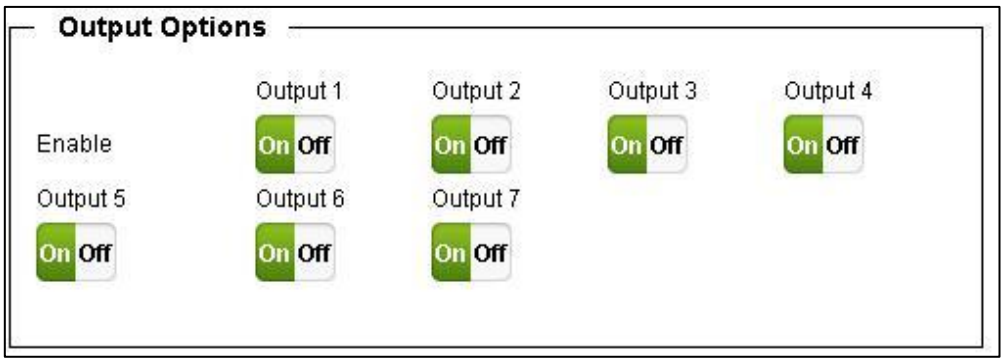


Figure 58: Web Form - Output Options ASI (AS-13)

Frame “Output Options” let enable/disable the two (AS-03) or seven (AS-13) outputs of the boards. In case of board malfunctioning or power supply absence, the input 1 is automatically redirected on the output 1 (Bypass Function).

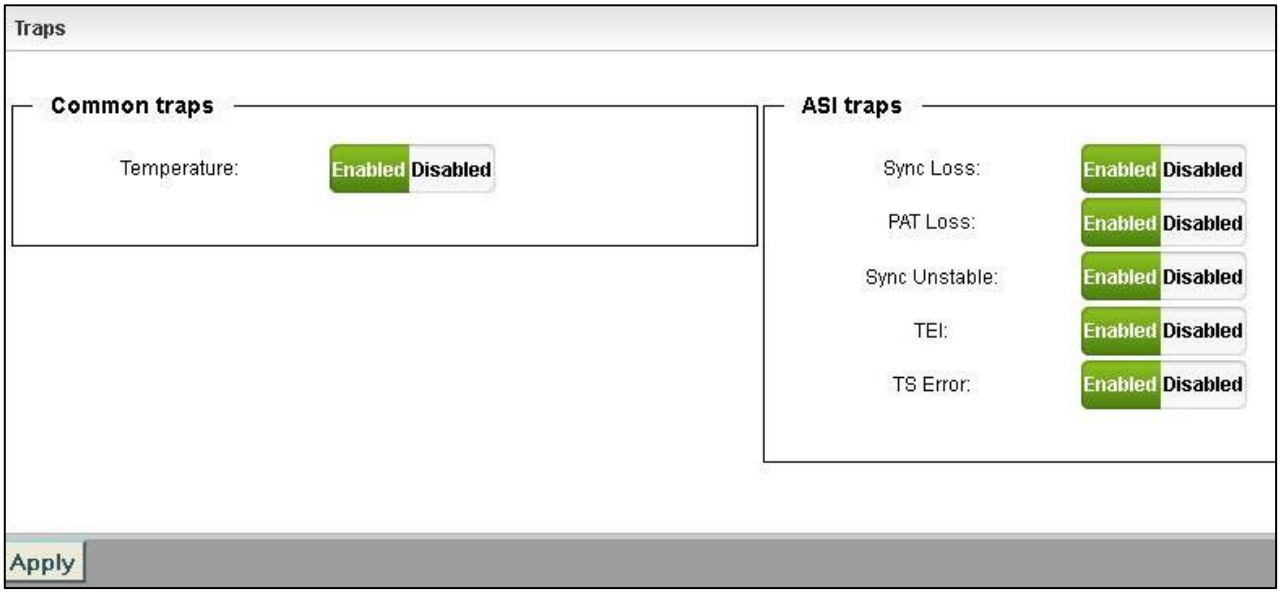


Figure 59: Web Form – Traps configuration.

In this Web Form, it is possible to enable or disable the SNMP trap sending to destinations set by the user (see 7.1.2.5).

For following status variables it is possible to enable or disable the related trap sending: Temperature, Sync Loss, PAT Loss, Sync Unstable, TEI, and TS Error.

8.3 Rear Panel.

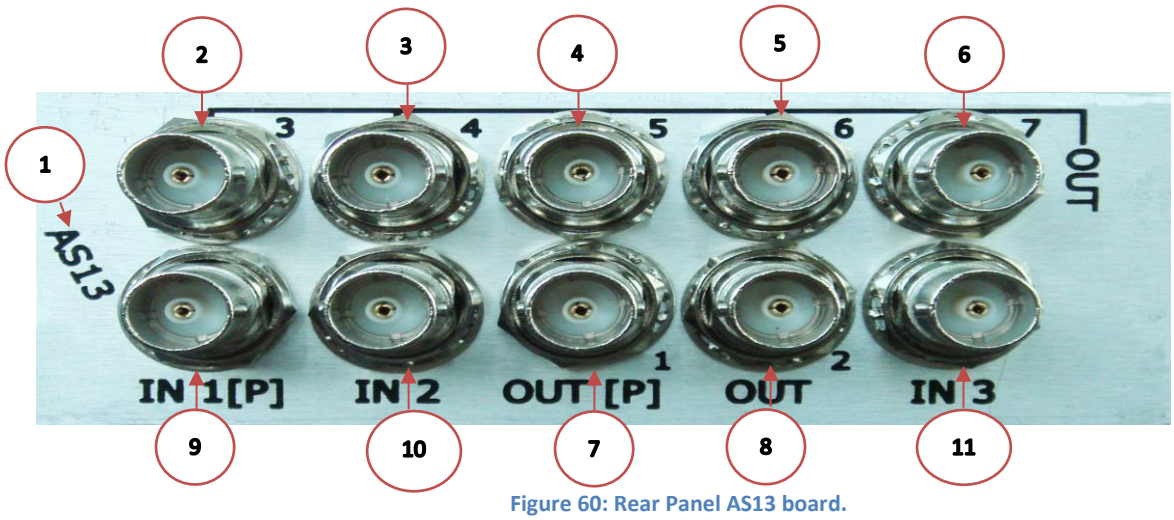


Figure 60: Rear Panel AS13 board.

Table 30: Rear Panel AS13 board.

Item	Description	Faction
1	Label	Board Name.
2	OUT 3	BNC(f) connector, 75 Ohm, output DVB-ASI number 3
3	OUT 4	BNC(f) connector, 75 Ohm, output DVB-ASI number 4
4	OUT 5	BNC(f) connector, 75 Ohm, output DVB-ASI number 5
5	OUT 6	BNC(f) connector, 75 Ohm, output DVB-ASI number 6
6	OUT 7	BNC(f) connector, 75 Ohm, output DVB-ASI number 7
7	OUT 1"P"	BNC(f) connector, 75 Ohm, output DVB-ASI number 1 (Priority)
8	OUT 2	BNC(f) connector, 75 Ohm, output DVB-ASI number 2
9	IN 1 "P"	BNC(f) connector, 75 Ohm, input 1 DVB-ASI (Priority).
10	IN 2	BNC(f) connector, 75 Ohm, input 2 DVB-ASI.
11	IN 3	BNC(f) connector, 75 Ohm, input 3 DVB-ASI.