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CLEBER

SRS-06/SRS-07

User Manual

System: SRS-06/SRS-07
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

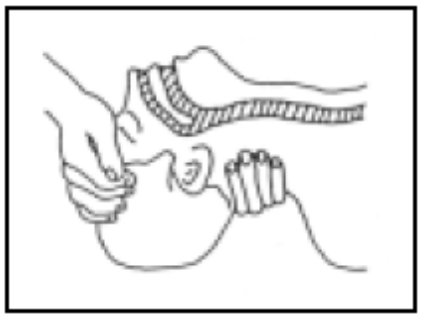


Figure 1: Resuscitation detail – 1.

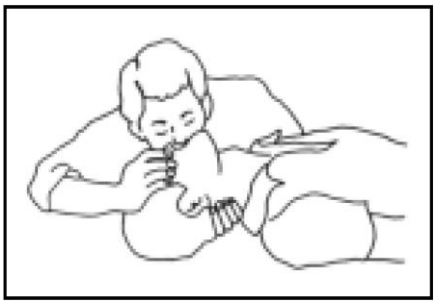


Figure 2: Resuscitation detail – 2.

- 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.

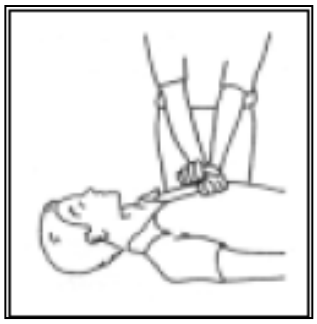


Figure 4: Resuscitation detail – 4.

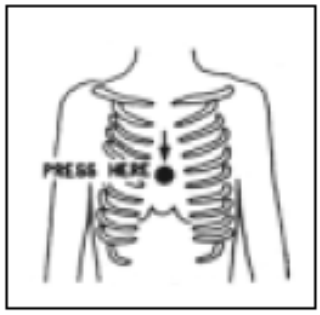


Figure 5: Resuscitation detail – 5.

- 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 gateway from MPX-FM to DVB-ASI. SRS-06 board digitalizes 4 FM-MPX and 4 FM radio channels (88-108 MHz), providing a generic ASI stream suitable for transport through broadcast radio links; it is possible to assign a PID to each channel and also insert a timestamp for coherent conversion of the received signal; furthermore, the optional D_GPS board let the system generate timestamps synchronized with an absolute 10 MHz reference. In the receiving site, SRS-07 locks the ASI signal and gives back 4 MPX-FM outputs, as well as a common RF output with up to 8 carriers modulated by each MPX (88-108 MHz range); if equipped with GPS receiver, the system is able to transmit each FM signal with prefixed delay, allowing the synchronization between different stations. Parameters control and monitoring is possible through TFT touchscreen display and web interface or SNMP.

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 base 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 requested. 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 grounded, 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.
- 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.
- Connect the flange(s) on the rear panel (or N connectors, depending on frequencies) of the equipment to the waveguide/cable for the connection to the branching system and the antenna.
- 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** function (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 function; 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 6: 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.

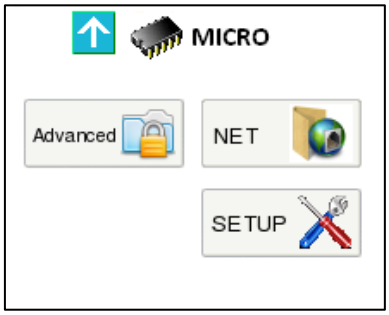


Figure 7: Microprocessor submenu.

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*.

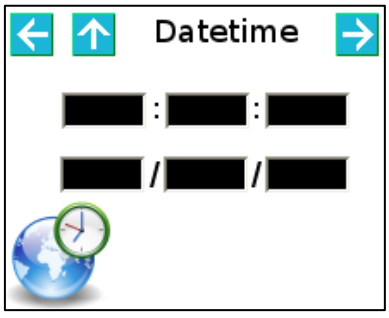


Figure 8: System time setting menu.

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.

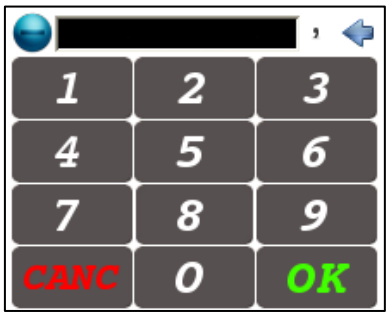


Figure 9: Virtual keypad.

7.1.2.3 Menu Setup - Touch Screen Calibration.

This menu let the user calibrate the Touch Screen function. 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 10: 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.

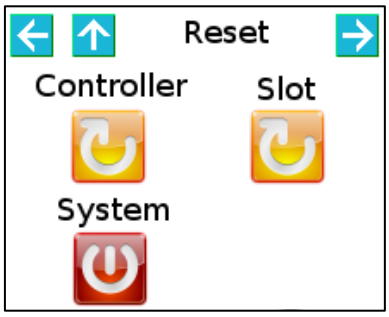


Figure 11: Reset menu.

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 eventually restart modem and data interface; 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-only.

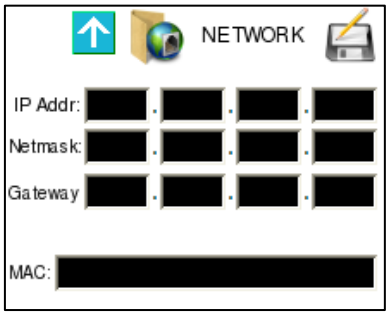


Figure 12: Network parameters menu.

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

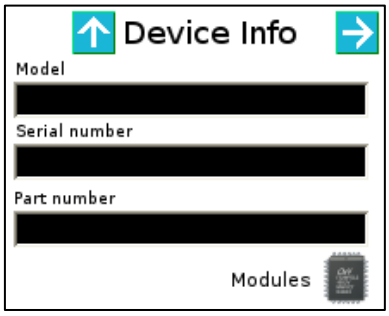


Figure 13: General info menu 1/2.

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.)

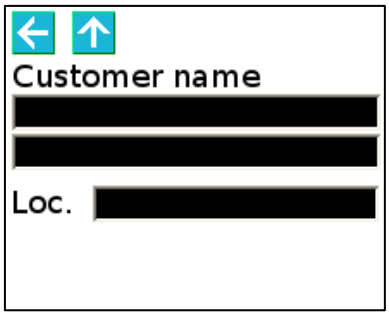


Figure 14: General info menu 2/2.

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

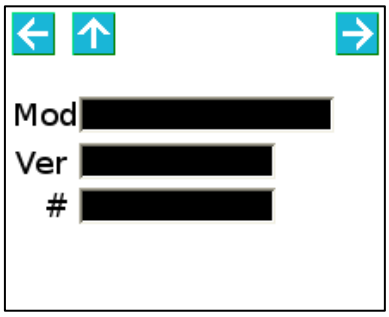


Figure 15: General purpose information controller.

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

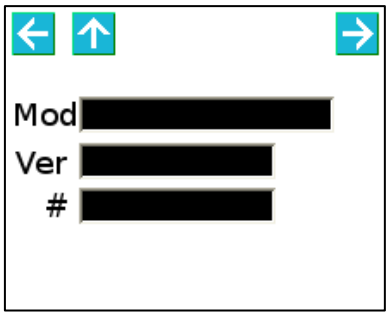


Figure 16: General purpose information Tx.

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).

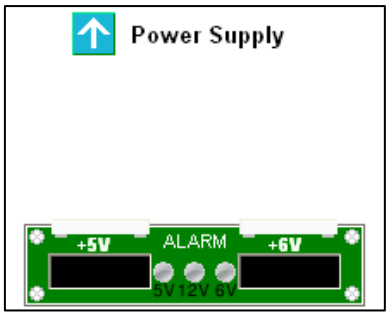


Figure 17: Power Supply menu.

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 18: Icon power supply with continuous current, primary position.

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

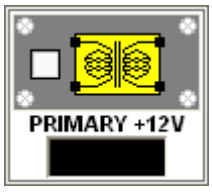


Figure 20: Icon power supply with alternating current, primary position.

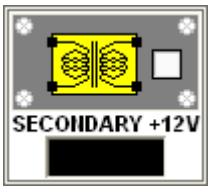


Figure 21: Icon power supply with alternating current, secondary position.

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.

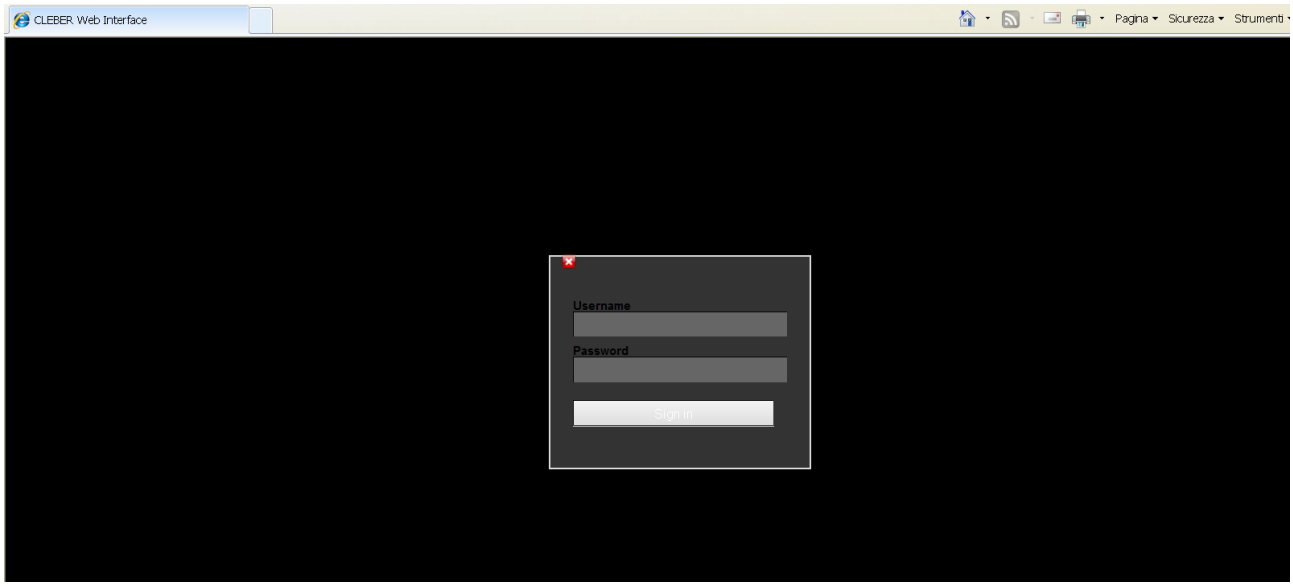


Figure 22: Web interface login page

Figure 22 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 8.3.1 and 8.3.2 .

7.2.1.1 Status-Controller.

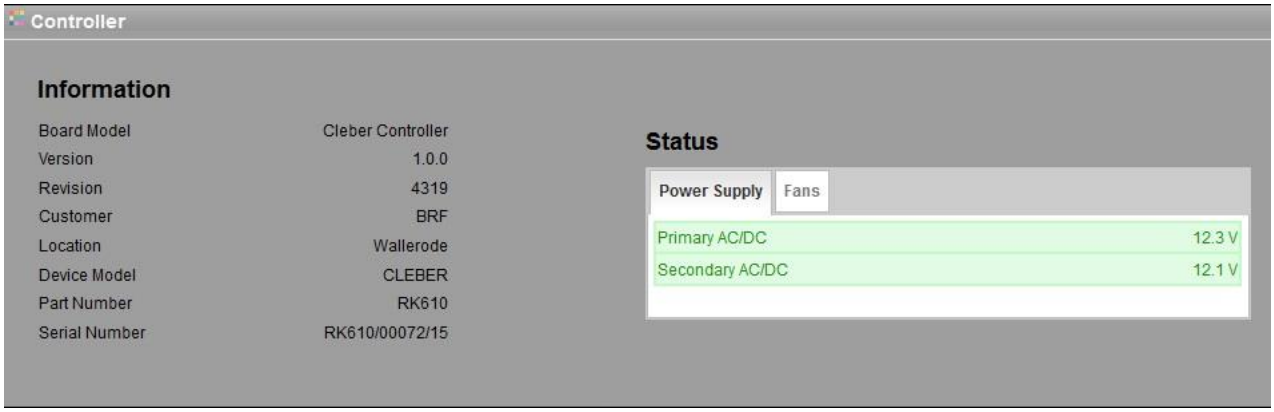


Figure 23: Web Status form – controller.

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 per 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.

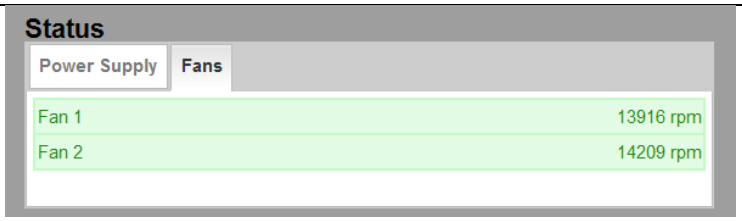


Figure 24: Web Status form – controller fans.

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.

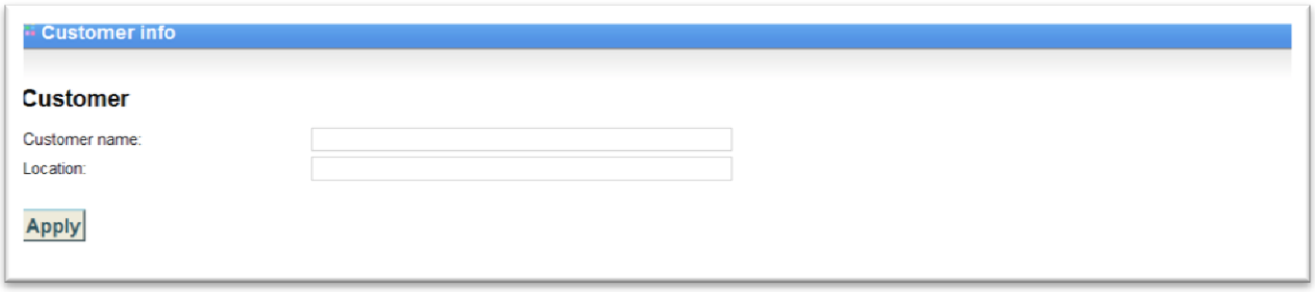


Figure 25: Web Controller Form – Customer Info.

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-only. 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 only)
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

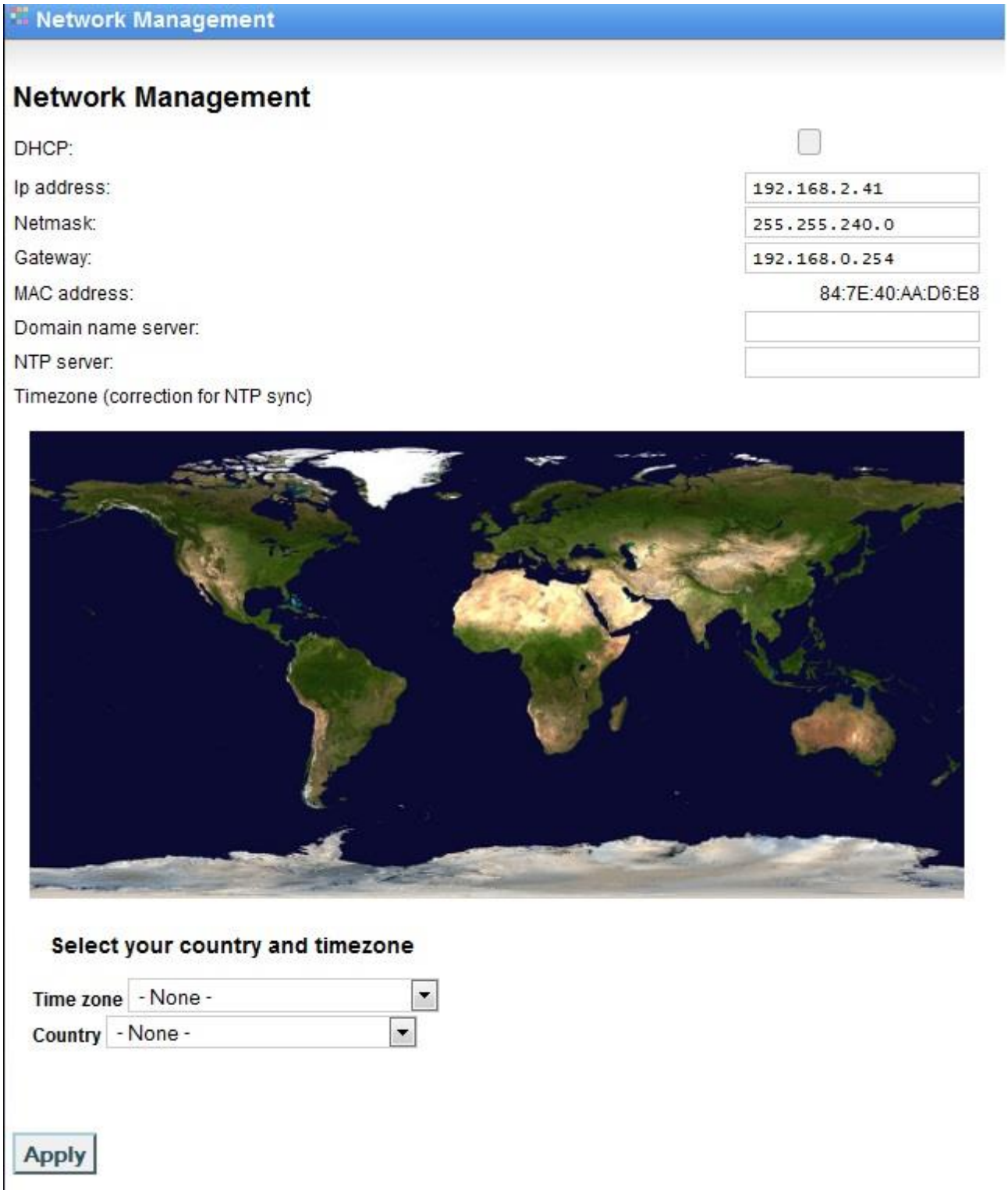


Figure 26: Web Controller Form – Network Parameters.

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).

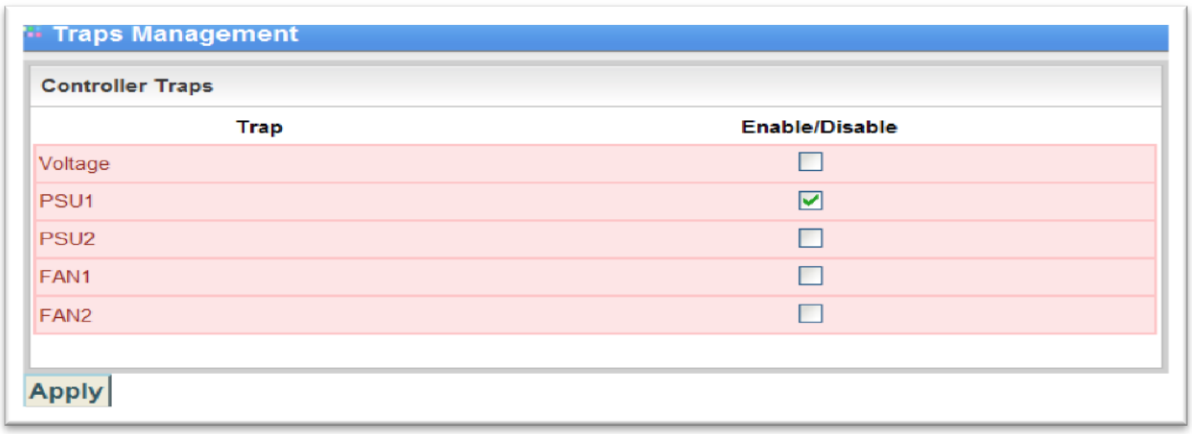


Figure 27: Web Controller Form –Traps Management.

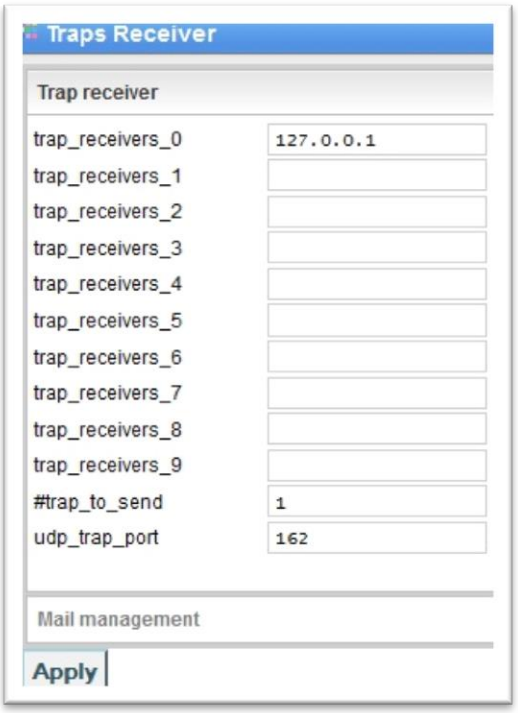


Figure 28: Web Controller Form – SNMP Traps Receivers.

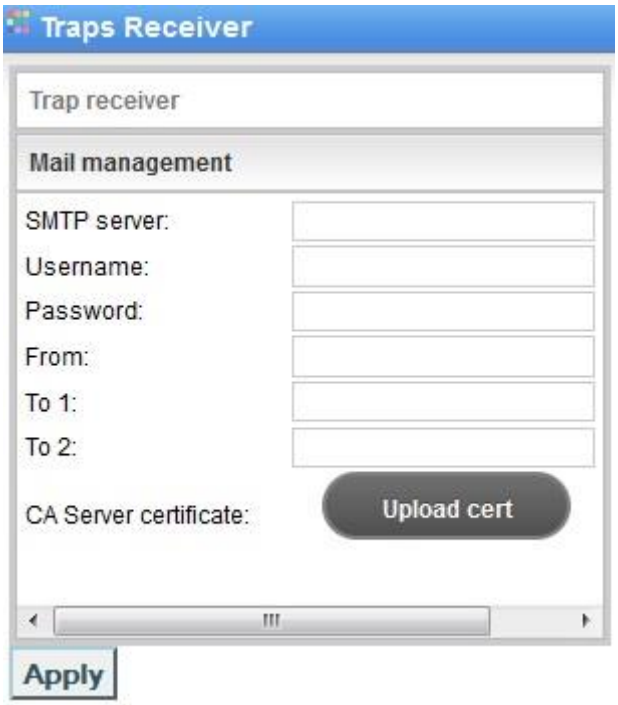


Figure 29: Web Controller Form – Mail Management.

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.

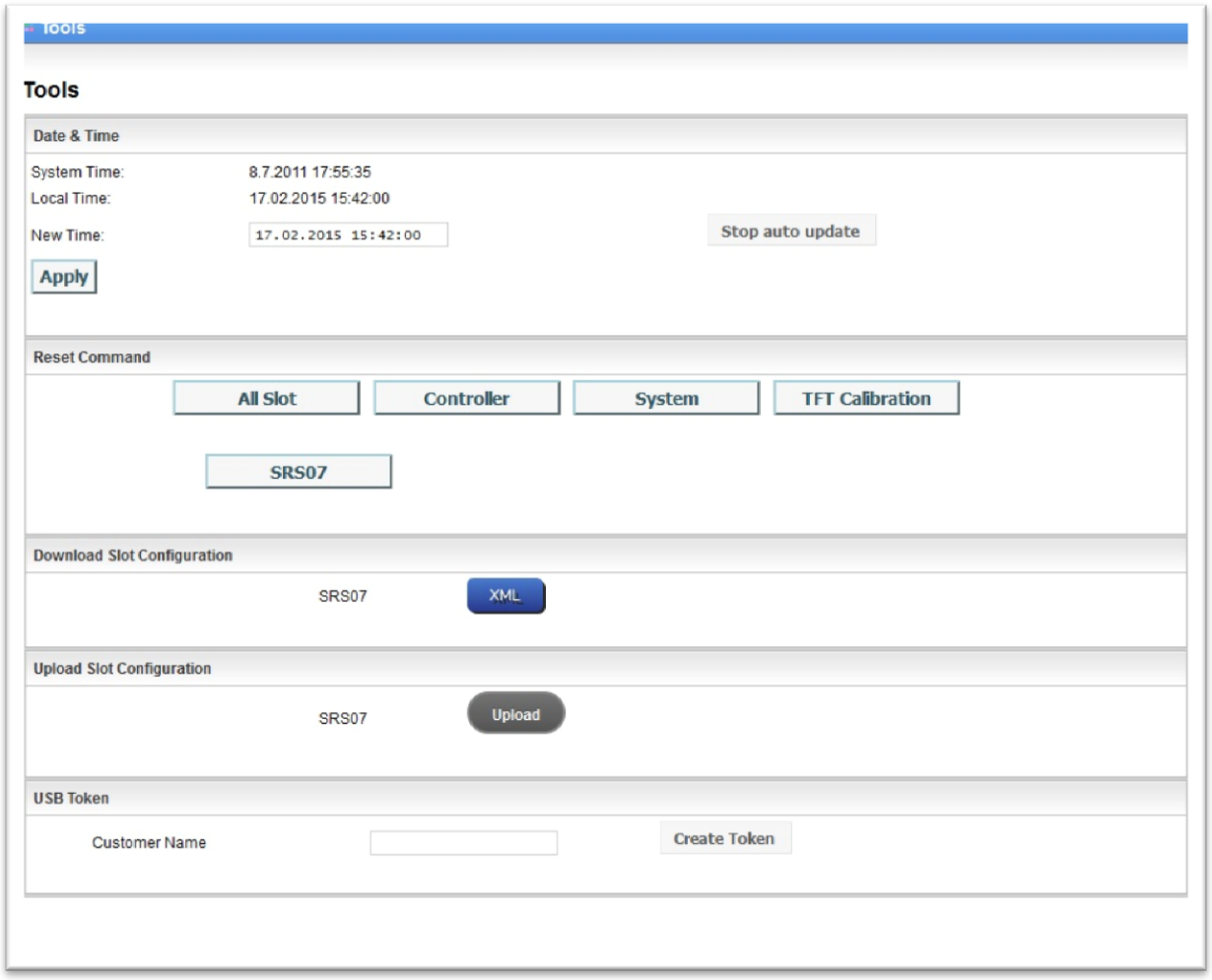


Figure 30: Web Controller Form – General Info and Tools.

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
SRS-07	Let the user reset SRS-07(ASI-MPX decoder) board

Table 11: Download Slot Configuration

SRS-07	Let the user save actual configuration for SRS-07 (ASI-MPX decoder) board

Table 12: Upload Slot Configuration

SRS-07	Let the user upload a stored configuration for SRS-07 (ASI-MPX decoder) 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.

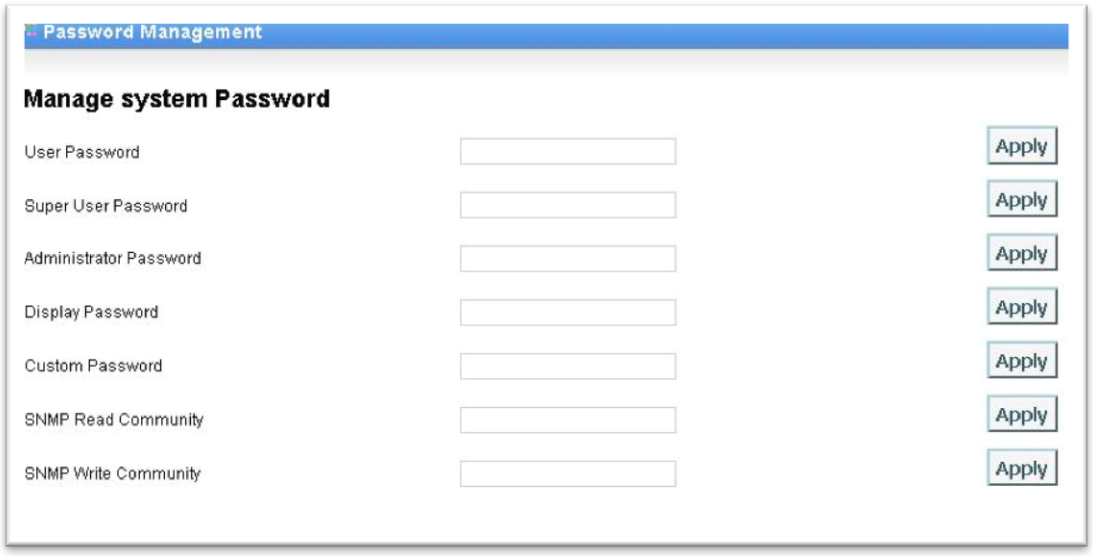


Figure 31: Web Controller Form –Password Management.

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.

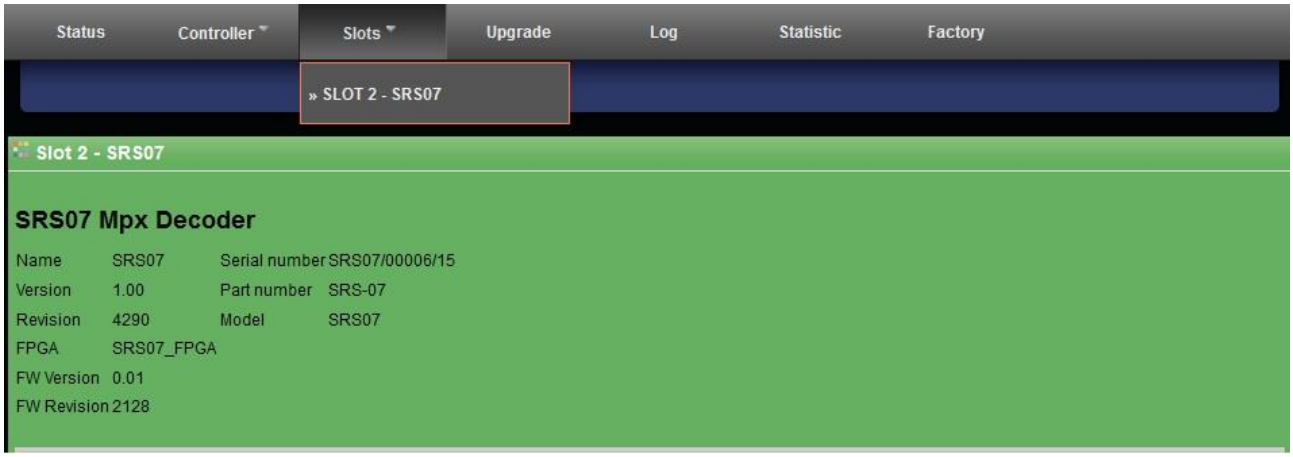


Figure 32: Web Slot Form – Plug in board selection.

See 8.3.1 and 8.3.2 for detailed description.

7.2.4 Tab Upgrade.

Web tab regarding upgrade is composed by 1 frame:

- Machine upgrade

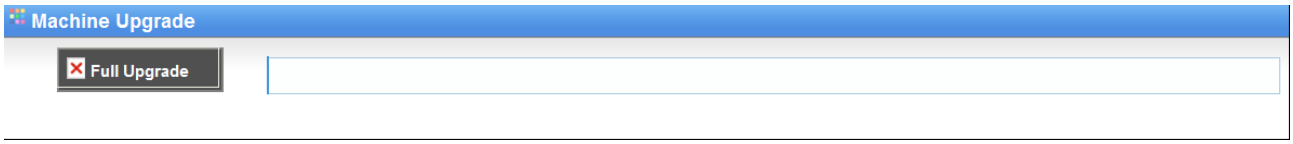


Figure 33: Web upgrade form – firmware upgrade.

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.

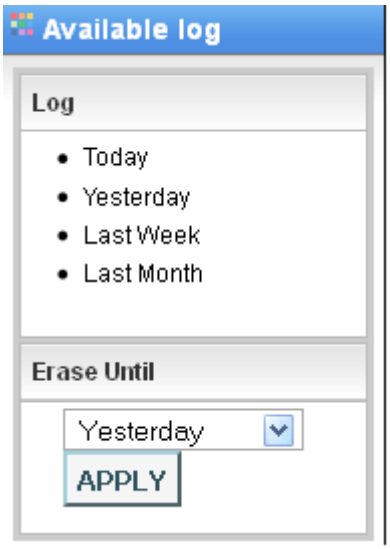


Figure 34 : Web Log form – available log.

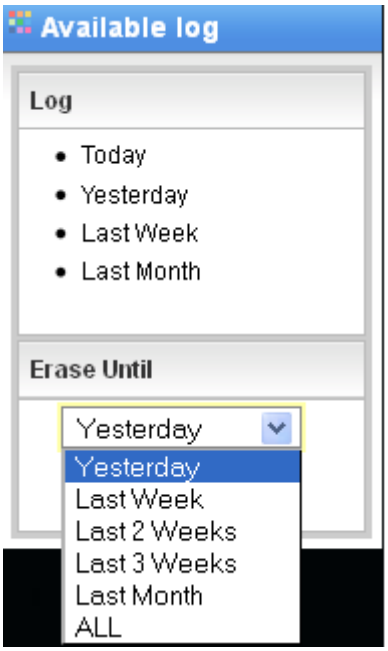


Figure 35: Web Log form – available log expanded.

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 35).

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 per 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

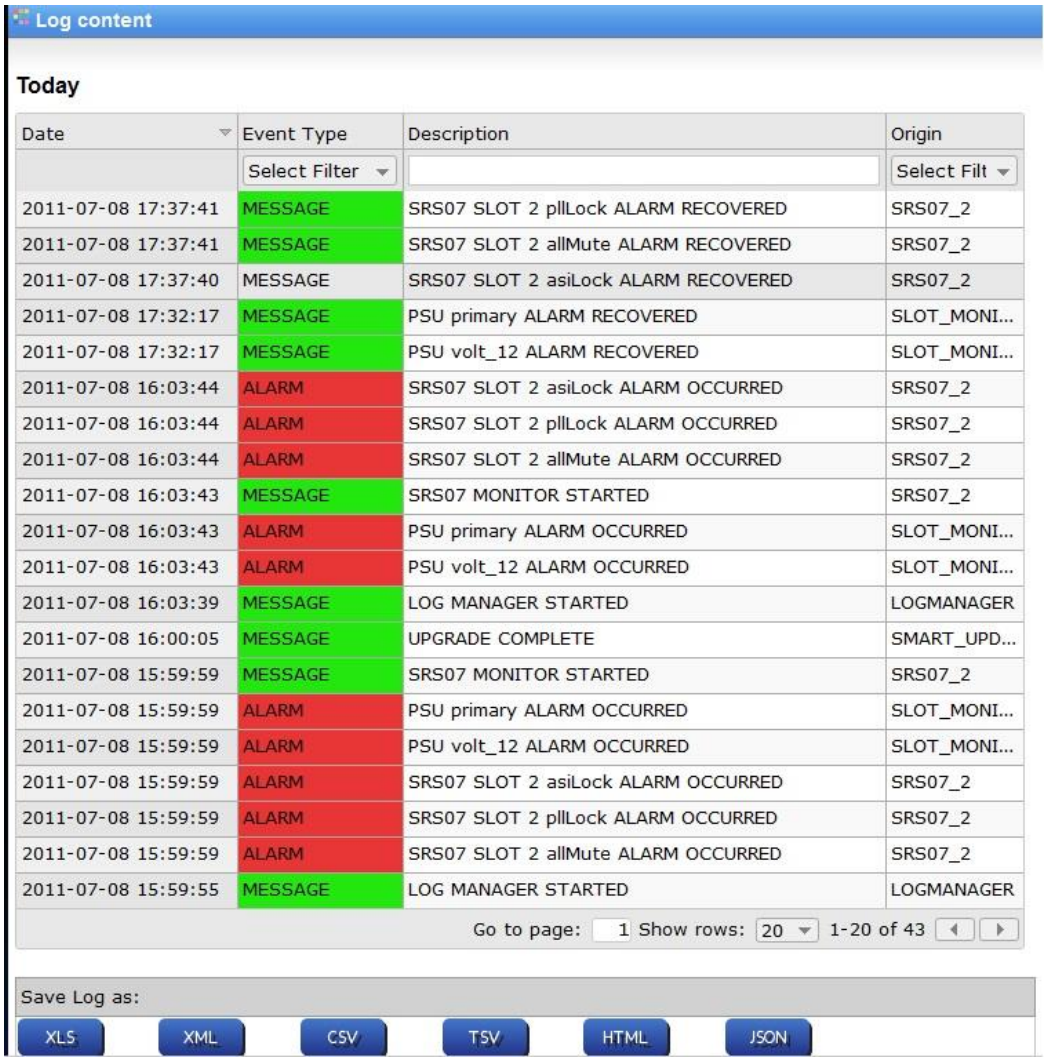


Figure 36: Web Log form – log.

7.3 Panels.

7.3.1 Front Panel.

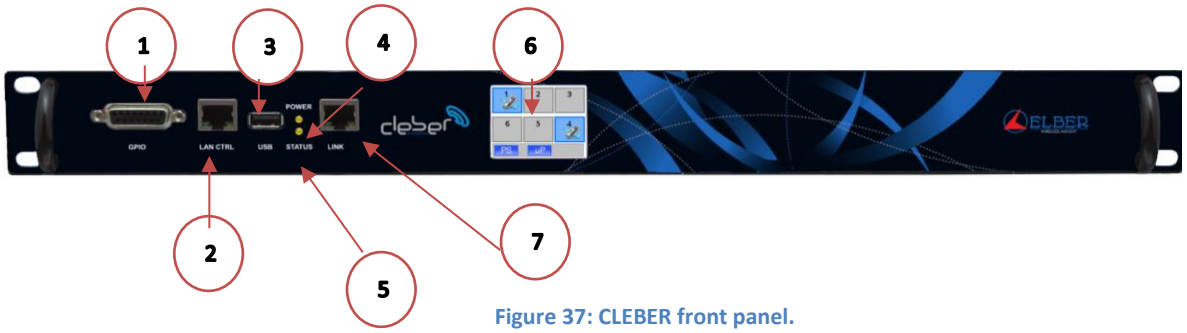
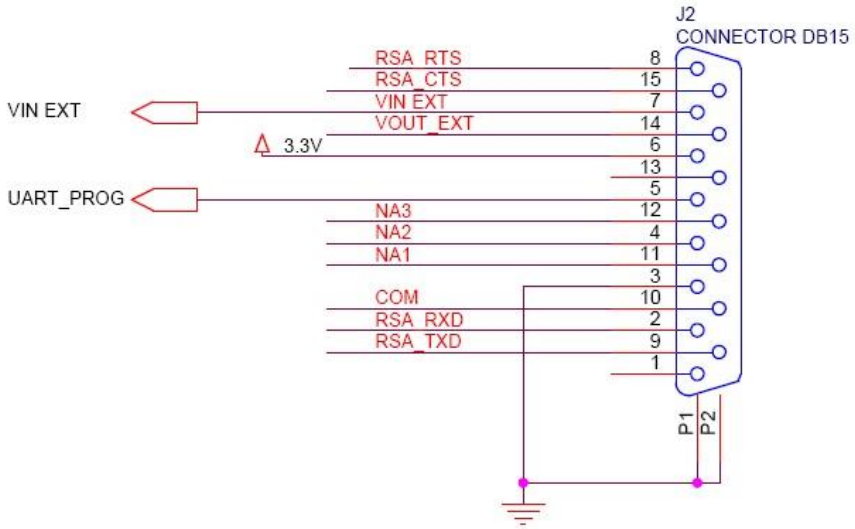


Figure 37: CLEBER front panel.

Table 14

Tag	Description	Function
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	Function
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.

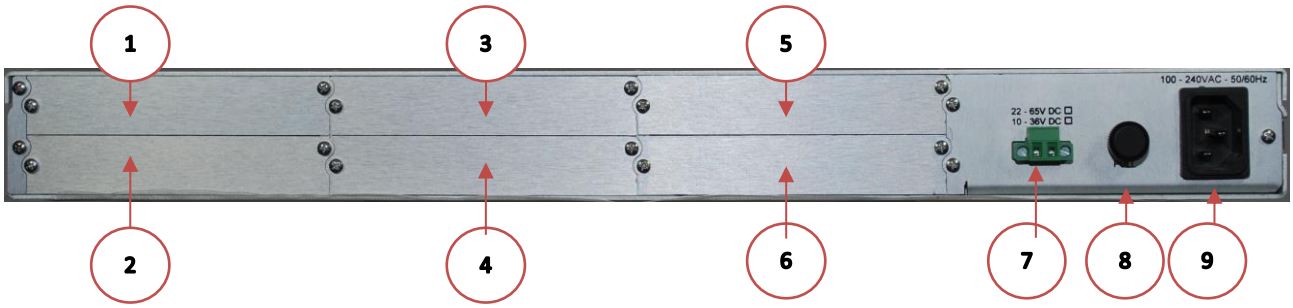


Figure 38: Rear Panel CLEBER (no slots installed).

Table 15: Rear Panel - Empty

Item	Description	Function
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 SRS-06/SRS-07.

Optional plug-in boards SRS-06 and SRS-07 compose the so-called Elber FM-ASI gateway system.
Indeed, while SRS-06 digitalize up to 4 MPX stereo signals and/or 4 demodulated FM carriers (88-108 MHz band), encapsulating the samples in a ASI data stream, SRS-07 locks on this stream, decodes the original MPX signals and generates a multiplex of up to 4 carriers FM modulated in the 88-108 MHz band.
General block diagram of the system is shown in Figure 39.
Every SRS-06 needs a SRS-07 to decode the encapsulated stream.

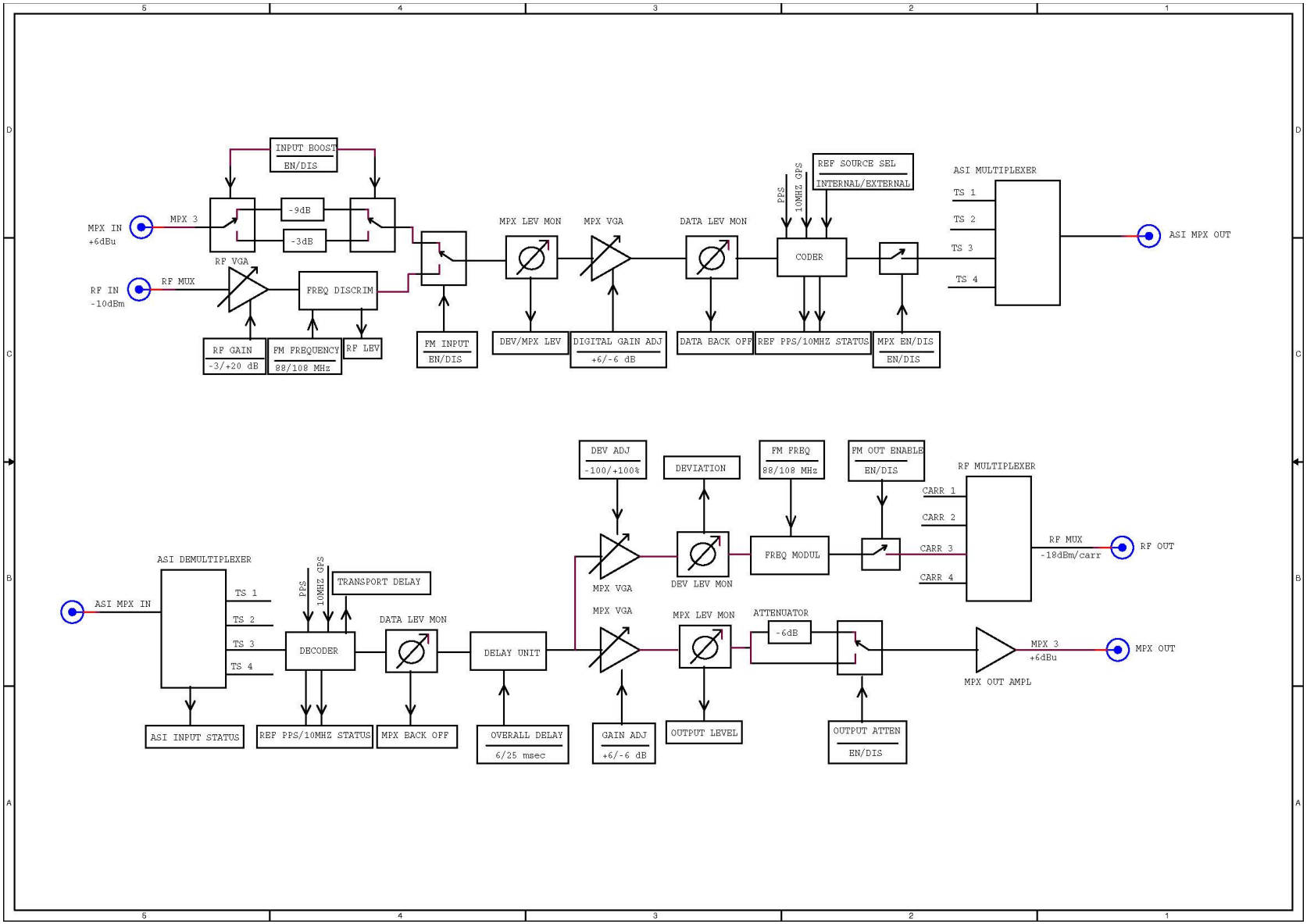


Figure 39: FM gateway block diagram.

8.1 System Performances.

8.1.1 MPX In – MPX Out.

Table 16: System Performances MPX In – MPX Out

Noise (unweighted)	> -66 dBu
Max S/N (unweighted)	> 72 dB
Noise (weighted)	> -60 dBu
Max S/N (weighted)	> 66 dB
Stereo separation	> 50 dB
Amplitude Flatness	< 0.2 dB
THD 0÷5 KHz	< 0.06%
THD 5÷15 KHz	< 0.15%

8.1.2 RF In – MPX Out.

Table 17 System Performances RF In – MPX Out

Noise (unweighted)	> 66 dBu
Max S/N (unweighted)	> 72 dB
Noise (weighted)	> -60 dBu
Max S/N (weighted)	> 66 dB
Stereo separation	> 45 dB
Amplitude Flatness	< 0.2 dB
THD 0÷5 KHz	< 0.06%
THD 5÷15 KHz	< 0.15%

8.1.3 MPX In – RF Out.

Table 18 System Performances MPX In – RF Out

Noise (unweighted)	> - 66 dBu
Max S/N (unweighted)	> 72 dB
Noise (weighted)	> 60 dBu
Max S/N (weighted)	> -66 dB
Stereo separation	> 39 dB
Amplitude Flatness	< 0.2 dB
THD 0÷5 KHz	< 0.06%
THD 5÷15 KHz	< 0.16%

8.1.4 RF In – RF Out.

Table 19 System Performances RF In – RF Out

Noise (unweighted)	> -63 dBu
Max S/N (unweighted)	> 69 dB
Noise (weighted)	> -59 dBu
Max S/N (weighted)	> 65 dB
Stereo separation	> 38 dB
Amplitude Flatness	< 0.2 dB
THD 0÷5 KHz	< 0.06%
THD 5÷15 KHz	< 0.22%

8.2 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 shows the display menu related to SRS-06/SRS-07 boards.

Figure 40: General main menu.

Example shown in Figure 40 reports the main menu of a CLEBER equipped with a SRS-06 card in slot 1 and a SRS-07 in slot 3.
Clicking on each icons, user accede to related menu described in following paragraphs.

8.2.1 SRS-06.

8.2.1.1 Main Menu.

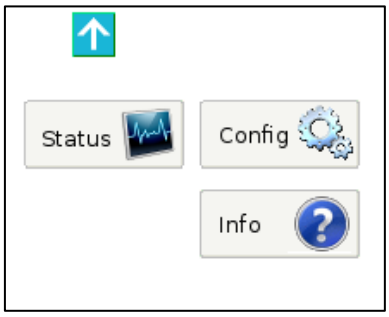


Figure 41: SRS-06 main menu.

Active areas:

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

icon to go to Status Submenu;
- 

icon to go to Config Submenu;
- 

icon to go to Info Submenu.

8.2.1.2 Status Submenu.

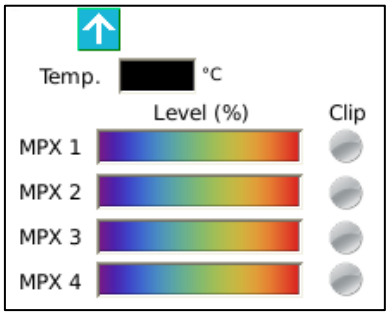


Figure 42: SRS-06 status submenu.

Active areas:

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

Table 20: TFT SRS-06 status parameters

Tag	Type	Description
Temp.	Text box	Shows board temperature in °C
MPX 1	Coloured bar	Shows MPX 1 input level [%]
MPX 2	Coloured bar	Shows MPX 2 input level [%]
MPX 3	Coloured bar	Shows MPX 3 input level [%]
MPX 4	Coloured bar	Shows MPX 4 input level [%]
Clip	Led	Indicates if signal clipping is occurring

8.2.1.3 Config Submenu.

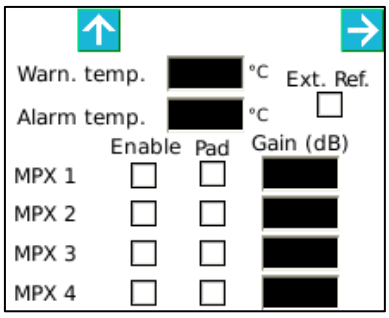


Figure 43: SRS-06 config submenu-1.

Active areas:

- Directional arrow "UP" to go back to main menu;
- Directional arrows "RIGHT" to browse config menu.
- Checkbox as described in Table 21
- Textbox as described in Table 21

Table 21: TFT SRS-06 config parameters-1

Tag	Type	Description
Warn. temp.	Text box	Let the user set the warning temperature threshold in °C
Alarm temp.	Text box	Let the user set the alarm temperature threshold in °C
MPX 1 Enable	Checkbox	Let the user enable input MPX 1
MPX 1 Pad	Checkbox	Let the user enable 6 dB attenuation for MPX 1
MPX 1 Gain	Text Box	Let the user set a digital Gain for MPX 1
MPX 2 Enable	Checkbox	Let the user enable input MPX 2

MPX 2 Pad	Checkbox	Let the user enable 6 dB attenuation for MPX 2
MPX 2 Gain	Text Box	Let the user set a digital Gain for MPX 2
MPX 3 Enable	Checkbox	Let the user enable input MPX 3
MPX 3 Pad	Checkbox	Let the user enable 6 dB attenuation for MPX 3
MPX 3 Gain	Text Box	Let the user set a digital Gain for MPX 3
MPX 4 Enable	Checkbox	Let the user enable input MPX 4
MPX 4 Pad	Checkbox	Let the user enable 6 dB attenuation for MPX 4
MPX 4 Gain	Text Box	Let the user set a digital Gain for MPX 4
Ext. Ref.	Checkbox	Let the user enable external reference (10 MHz and PPS) [require D_GPS optional board]

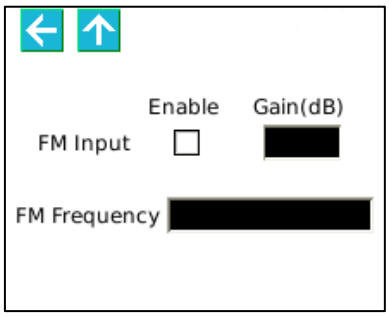


Figure 44: SRS-06 config submenu-2.

Active areas:

- Directional arrow “UP” to go back to main menu;
- Directional arrows “LEFT” to browse config menu.
- Checkbox as described in Table 22
- Textbox as described in Table 22

Table 22: TFT SRS-06 config parameters-2

Tag	Type	Description
FM Input Enable	Checkbox	Let the user enable RF input
FM Input Gain	Text Box	Let the user set a digital Gain for RF Input
FM Frequency	Text Box	Let the user set the RF frequency to be demodulated

8.2.1.4 Info Submenu.

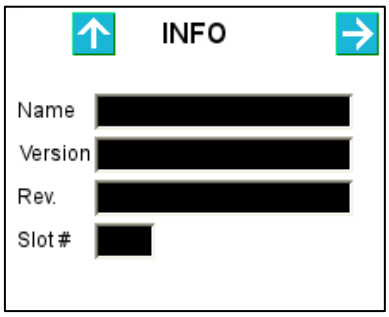


Figure 45: SRS-06 info submenu-1.

Active areas:

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

Table 23: TFT SRS-06 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

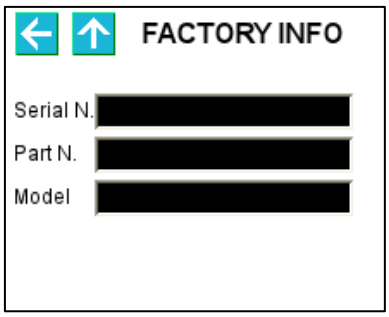


Figure 46: SRS-06 info submenu-2.

Active areas:

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

Table 24: TFT SRS-06 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

8.2.2 SRS-07.

8.2.2.1 Main Menu.

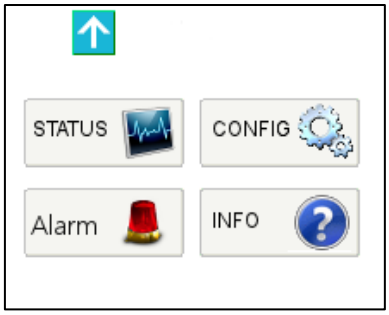


Figure 47: SRS-07 main menu.

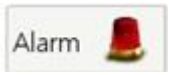
Active areas:

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

icon to go to Status Submenu;
- 

icon to go to Config Submenu;

- 

icon to go to Info Submenu;
- 

icon to go to Alarm Submenu;

8.2.2.2 Status Submenu.

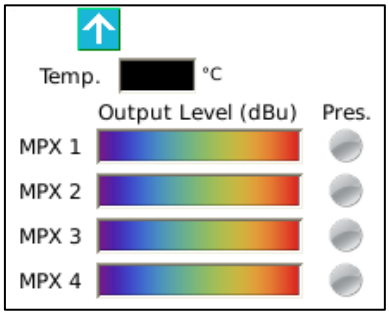


Figure 48: SRS-07 status submenu.

Active areas:

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

Table 25: TFT SRS-07 status parameters

Tag	Type	Description
Temp.	Text box	Shows board temperature in °C
MPX 1	Coloured bar	Shows MPX 1 output level [dBu]
MPX 2	Coloured bar	Shows MPX 2 output level [dBu]
MPX 3	Coloured bar	Shows MPX 3 output level [dBu]
MPX 4	Coloured bar	Shows MPX 4 output level [dBu]
Pres.	Led	Indicates if related MPX is present in the input stream

8.2.2.3 Config Submenu.

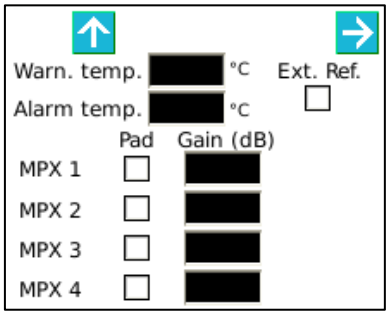


Figure 49: SRS-07 config submenu-1.

Active areas:

- Directional arrow "UP"  to go back to main menu;
- Directional arrow "RIGHT"  to browse config menu.
- Checkbox as described in Table 26
- Textbox as described in Table 26

Table 26: TFT SRS-07 config parameters-1

Tag	Type	Description

Warn. temp.	Text box	Let the user set the warning temperature threshold in °C
Alarm temp.	Text box	Let the user set the alarm temperature threshold in °C
MPX 1 Gain	Checkbox	Let the user set additional gain to MPX 1
MPX 1 Pad	Checkbox	Let the user enable 6 dB attenuation for MPX 1
MPX 2 Gain	Checkbox	Let the user set additional gain to MPX 2
MPX 2 Pad	Checkbox	Let the user enable 6 dB attenuation for MPX 2
MPX 3 Gain	Checkbox	Let the user set additional gain to MPX 3
MPX 3 Pad	Checkbox	Let the user enable 6 dB attenuation for MPX 3
MPX 4 Gain	Checkbox	Let the user set additional gain to MPX 4
MPX 4 Pad	Checkbox	Let the user enable 6 dB attenuation for MPX 4
Ext. Ref.	Checkbox	Let the user enable external reference (10 MHz and PPS) [require D_GPS optional board]

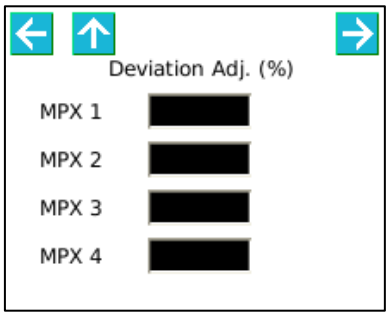


Figure 50: SRS-07 config submenu-2.

Active areas:

- Directional arrow “UP” to go back to main menu;
- Directional arrows “LEFT” and “RIGHT” to browse config menu.
- Checkbox as described in Table 26
- Textbox as described in Table 26

Table 27: TFT SRS-07 config parameters-2

Tag	Type	Description
MPX 1	Text box	Let the user set a deviation adjustment in %
MPX 2	Text box	Let the user set a deviation adjustment in %
MPX 3	Text box	Let the user set a deviation adjustment in %
MPX 4	Text box	Let the user set a deviation adjustment in %

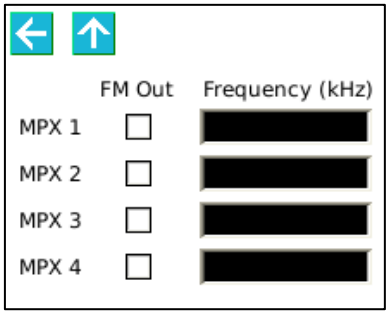


Figure 51: SRS-07 config submenu-3.

Active areas:

- Directional arrow “UP” to go back to main menu;
- Directional arrow “LEFT” to browse config menu.
- Checkbox as described in Table 26
- Textbox as described in Table 26

Table 28: TFT SRS-07 config parameters-3

Tag	Type	Description
MPX 1 FM out	Checkbox	Let the user enable carrier to be modulated by MPX 1 content
MPX 1 Frequency (kHz)	Text Box	Let the user set output frequency for the carrier modulated by MPX 1 content
MPX 2 FM out	Checkbox	Let the user enable carrier to be modulated by MPX 2 content
MPX 2 Frequency (kHz)	Text Box	Let the user set output frequency for the carrier modulated by MPX 2 content
MPX 3 FM out	Checkbox	Let the user enable carrier to be modulated by MPX 3 content
MPX 3 Frequency (kHz)	Text Box	Let the user set output frequency for the carrier modulated by MPX 3 content
MPX 4 FM out	Checkbox	Let the user enable carrier to be modulated by MPX 4 content
MPX 4 Frequency (kHz)	Text Box	Let the user set output frequency for the carrier modulated by MPX 4 content

8.2.2.4 Info Submenu.

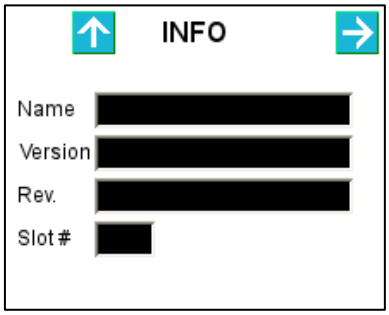


Figure 52: SRS-07 info submenu-1.

Active areas:

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

Table 29: TFT SRS-07 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

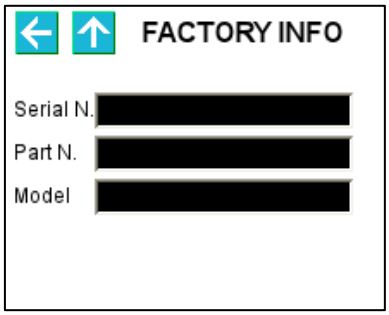


Figure 53: SRS-07 info submenu-2.

Active areas:

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

Table 30: TFT SRS-07 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

8.2.2.5 Alarm Submenu.

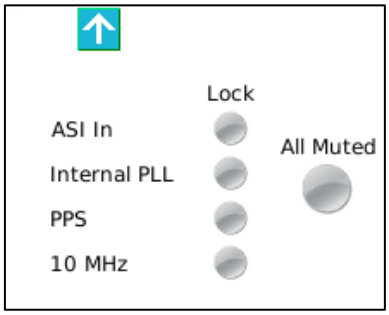


Figure 54: SRS-07 alarm submenu.

Active areas:

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

Table 31: TFT SRS-07 alarm parameters

Tag	Type	Description
ASI In	Led	No ASI input stream detected
Internal PLL	Led	Internal Oscillator not locked
PPS	Led	Input PPS not detected
10 MHz	Led	Input 10 MHz not detected
All Muted	Led	All FM carriers muted for alarm condition

8.3 Web Interface.

8.3.1 SRS-06.

SRS-06 slot form is divided into two subparts:

1) Status
2) Configuration

8.3.1.1 Slot Status.

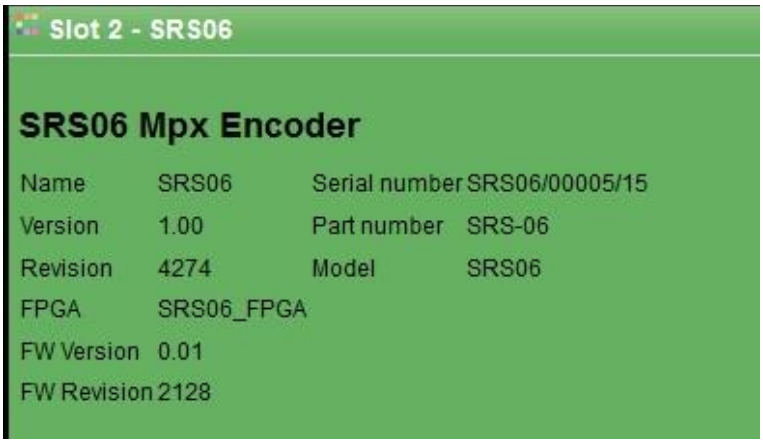


Figure 55: Web slot form – SRS-06 Status-1.

Table 32: SRS-06 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 56: Web slot form – SRS-06 Status-2.

Table 33: SRS-06 Status parameters

Temperature	Board Temperature (green if between limits)
MPX 'x'	If MPX 'x' is detected at the input, related level is shown in dBu.
Data Backoff	Once digitalized, Data Backoff indicates the margin from the maximum allowed level tolerated by input Analog to Digital Converter (ADC). **Important notice:** Optimal performances are achieved with -2 dB Backoff.

8.3.1.2 Slot Configuration.

Configuration form is divided into two parts:

1) Config
2) Traps

8.3.1.2.1 Slot configuration – Config.

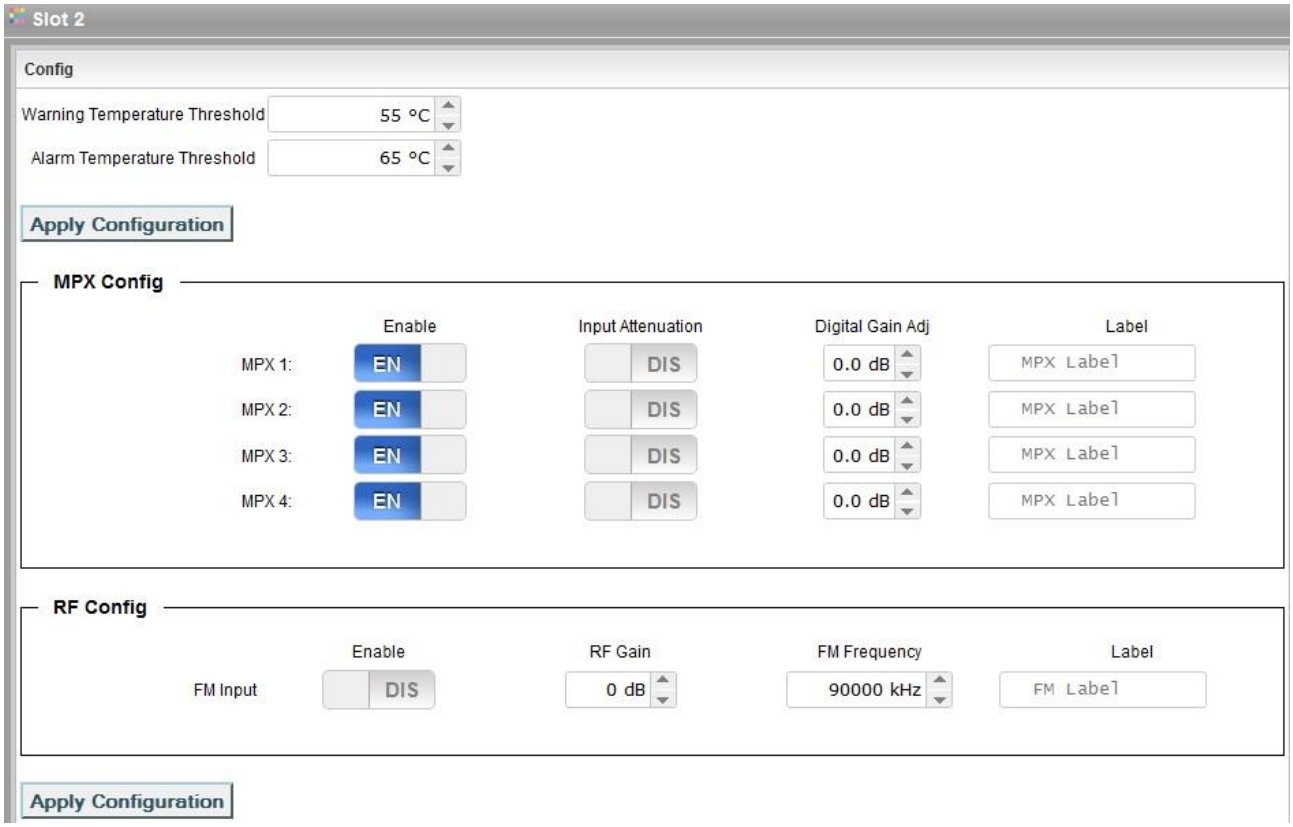


Figure 57: Web slot form – SRS-06 configuration

Table 34: SRS-06 MPX configuration parameters

Warning Temperature Threshold	Let the user set the warning temperature threshold for the board.
Alarm Temperature Threshold	Let the user set the alarm temperature threshold for the board.
Enable	Let the user enable the related MPX input.
Input Attenuation	Let the user enable a 6 dB "analogue" attenuation at the related input.
Digital Gain Adj	Let the user adjust MPX level digitally before encapsulation.
Label	Let the user assign a label to the related MPX.

Table 35: SRS-06 RF configuration parameters

FM input	Let the user enable the FM demodulation input.
RF Gain	Let the user adjust the RF front-end gain.
FM Frequency	Let the user configure the carrier frequency to be demodulated.
Label	Let the user assign a label to the FM input.

8.3.1.2.2 Slot configuration – Traps.

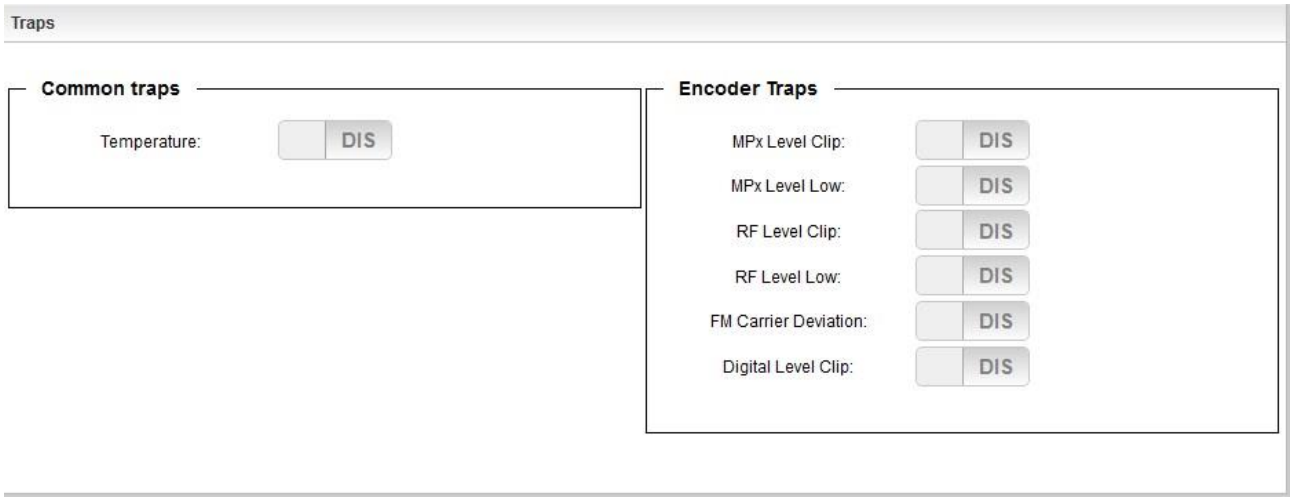


Figure 58: Web slot form – SRS-06 traps configuration.

Table 36: SRS-06 Traps enabling

Temperature	Let the user enable/disable Trap message associated to Temperature alarm.
MPX Level Clip	Let the user enable/disable Trap message associated to MPX (only the enabled ones) Level in case of clipping.
MPX Level Low	Let the user enable/disable Trap message associated to Low MPX input level (only the enabled ones).
RF Level Clip	Let the user enable/disable Trap message associated to high RF Level (if enabled) to indicate clipping.
RF Level Low	Let the user enable/disable Trap message associated to low RF Level (if enabled).
FM Carrier Deviation	Let the user enable/disable Trap message associated to overmodulation of FM carrier (if enabled).
Digital Level Clip	Let the user enable/disable Trap message associated to a clipping condition of the digitalized MPX content.

8.3.2 SRS-07.

SRS-07 slot form is divided into two subparts:

3) Status
4) Configuration

8.3.2.1 Slot Status.

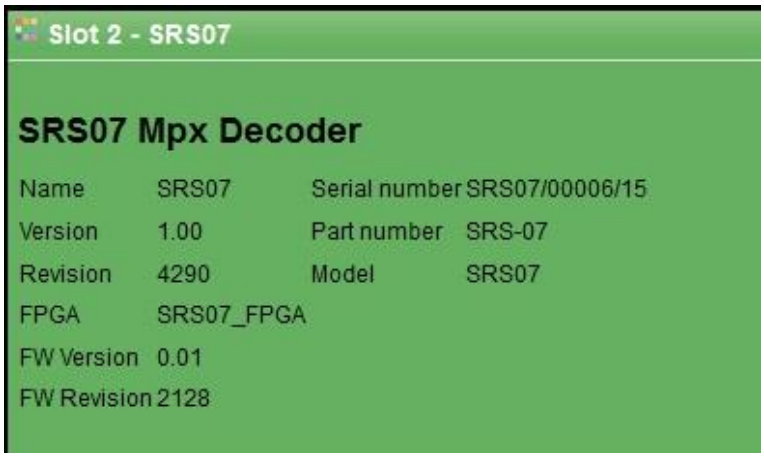


Figure 59: Web slot form – SRS-07 Status-1.

Table 37: SRS-07 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 60: Web slot form – SRS-07 Status-2.

Table 38: SRS-07 Status parameters

Temperature	Board Temperature (green if between limits)
ASI input	Indication of locking status of ASI input stream (green if locked)
MPX 'x'	If MPX 'x' is detected in the input stream, related level referenced to the maximum allowed is shown as

	"Backoff". **Important notice:** Optimal performances are achieved with -2 dB Backoff.
Output Level	Indication of output level of MPX 'x' in dBu
FM out	Indication of operating FM band frequency of internal modulator for MPX "x"; "disabled" otherwise.
Deviation	Shown only if related FM out is enabled. It shows peak deviation in Khz of the FM carrier.

8.3.2.2 Slot Configuration.

Configuration form is divided into two parts:

3) Config
4) Traps

8.3.2.2.1 Slot configuration – Config.

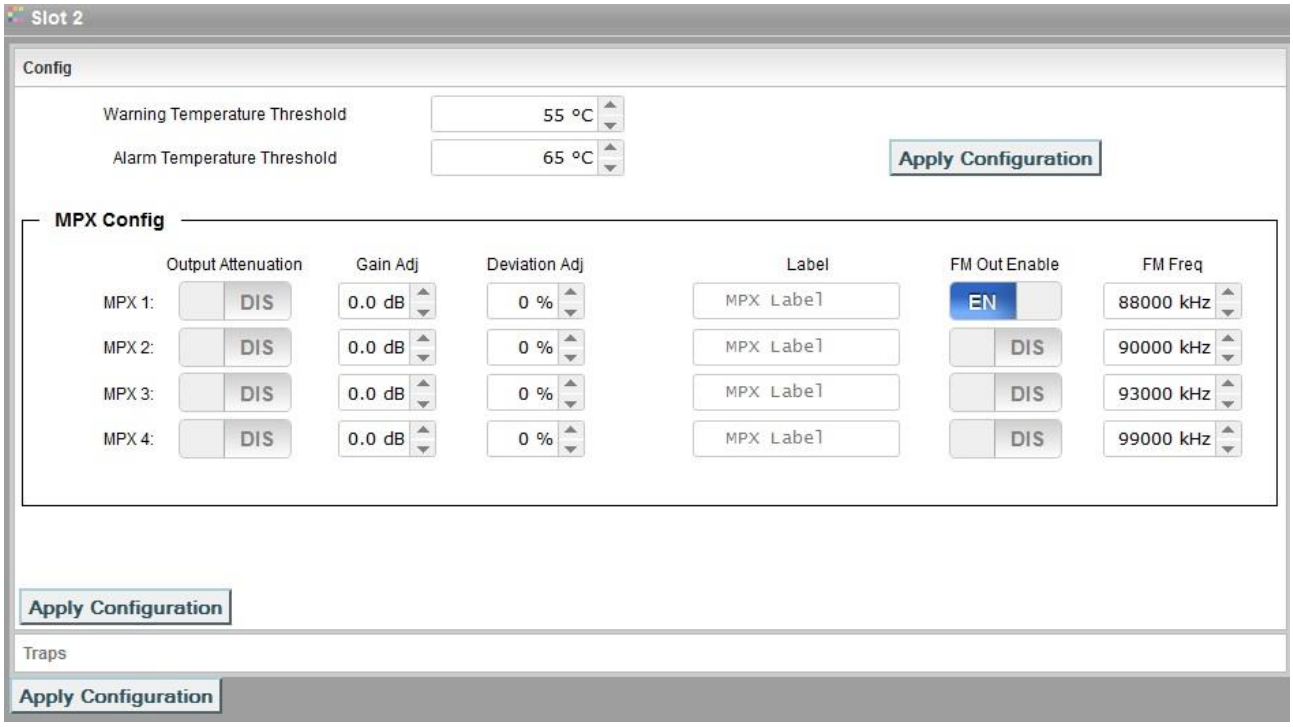


Figure 61: Web slot form – SRS-07 configuration

Table 39: SRS-07 configuration parameters

Warning Temperature Threshold	Let the user set the warning temperature threshold for the board.
Alarm Temperature Threshold	Let the user set the alarm temperature threshold for the board.
Output Attenuation	Let the user enable a 6 dB "analogue" attenuation at the related output.
Gain Adj	Let the user adjust MPX output level digitally.
Deviation Adj	Let the user adjust FM carrier deviation.
Label	Let the user assign a label to the related MPX.
FM Out Enable	Let the user enable the FM modulation of the related MPX.
FM Freq	Let the user configure output frequency (if FM output is enabled) in KHz.

8.3.2.2.2 Slot configuration – Traps.

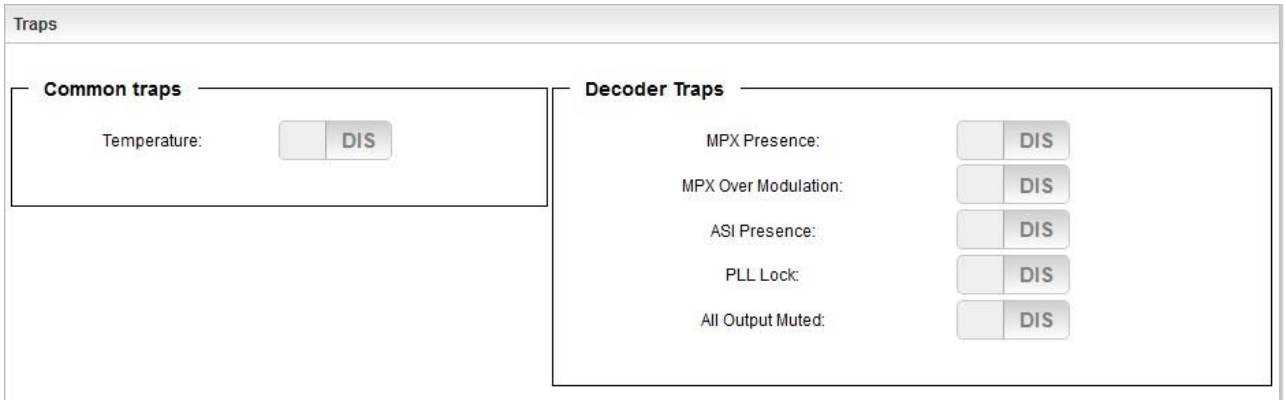


Figure 62: Web slot form – SRS-07 traps configuration.

Table 40: SRS-07 Traps enabling

Temperature	Let the user enable/disable Trap message associated to Temperature alarm
MPX presence	Let the user enable/disable Trap message associated to MPX (only the enabled ones) presence
MPX over modulation	Let the user enable/disable Trap message associated to MPX (only the enabled ones)Over Modulation
ASI presence	Let the user enable/disable Trap message associated to ASI locking status
PLL Lock	Let the user enable/disable Trap message associated to PLL locking status
All output muted	Let the user enable/disable Trap message associated to the event "all output muted"

8.4 Rear Panel.

8.4.1 SRS-06.

Hereunder in Figure 63 we report the rear panel of SRS-06 board.

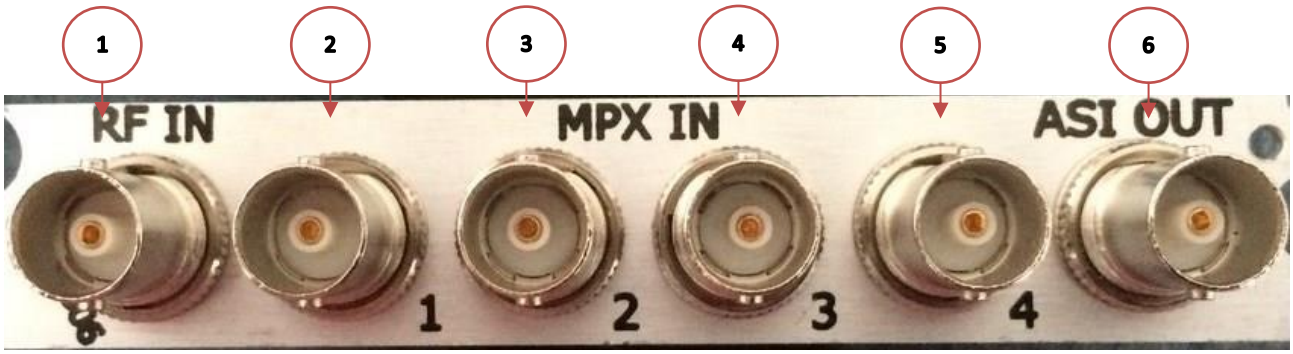


Figure 63: Back Panel – SRS-06.

Table 41: Rear Panel SRS-06 Board

Item	Tag	Connector type	Function
1	RF IN	BNC 75 Ω	RF input 88-108 MHz
2	MPX IN 1	BNC 75 Ω	FM Stereo MPX input 1
3	MPX IN 2	BNC 75 Ω	FM Stereo MPX input 2
4	MPX IN 3	BNC 75 Ω	FM Stereo MPX input 3
5	MPX IN 4	BNC 75 Ω	FM Stereo MPX input 4
6	ASI OUT	BNC 75 Ω	ASI output

8.4.2 SRS-07.

Hereunder in Figure 64 we report the rear panel of SRS-07 board.

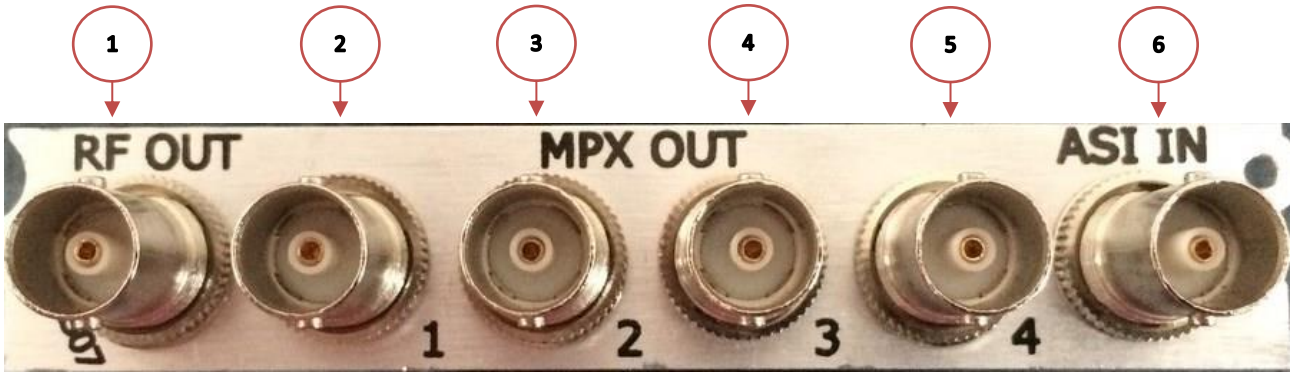


Figure 64: Back Panel – SRS-07.

Table 42: Rear Panel SRS-06 Board

Item	Tag	Connector type	Function
1	RF OUT	BNC 75 Ω	RF output 88-108 MHz
2	MPX OUT 1	BNC 75 Ω	FM Stereo MPX output 1
3	MPX OUT 2	BNC 75 Ω	FM Stereo MPX output 2
4	MPX OUT 3	BNC 75 Ω	FM Stereo MPX output 3
5	MPX OUT 4	BNC 75 Ω	FM Stereo MPX output 4
6	ASI IN	BNC 75 Ω	ASI input