ELBER

WIRELESS INSIGHT

RK1000

User Manual

SUMMARY.

1 Figure Index.

2 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.

2.1 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

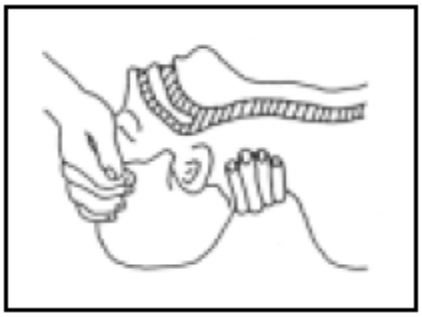

Figure 1: *Resuscitation Detail – 1.*

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.

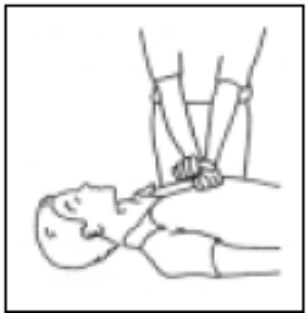

Figure 4: Resuscitation Detail – 4.

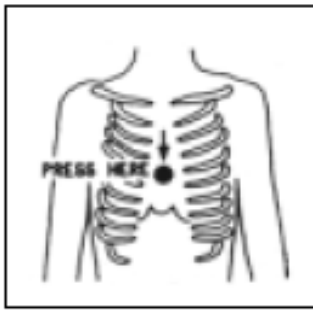

Figure 5: Resuscitation Detail – 5.

- 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.

2.2 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.

3 General description.

The RK1000 is a device developed for TV networks to be used to distribute DVB-ASI signals in DVB-S/S2/T/H/T2 transmission networks; and in Low Frequency systems for the routing or the distribution of 3G/HD/SD-SDI and DVB-ASI signals. The equipment is composed of a 3U chassis allowing up to 10 hot-swappable slots, permitting an easy maintenance and spare management. The rear panel is composed of independent panels according to the type and quantity of installed slots; the single boards are fixed onto a motherboard, which is connected to the front panel modules. Two chassis are available:

1) RK1000 managing first generation CO-01 boards
2) RK1000/A managing second generation CO-02 boards

The CO-01 board allows up to three inputs (*Main*, *Back-up* and *Disaster Recovery*) and has 7 outputs, one of which loop-through. In case of DVB-ASI connection, a seamless change-over between the Main and Back-up input evaluates the TS content regarding TS Loss, Sync Loss, PAT Loss, Continuity Counter Error and TEI, each one enablable from the user interface. In case of HD/SD-SDI signals, the change-over measures only the presence of the signal. The change-over can be reversible or not, automatic or forced.
The CO-02 board is an evolution allowing management of 3G-SDI signals as well, with integrated matrix functionalities.
The management software offers the complete control of the equipment's parameters, through an intuitive native http WEB interface through SNMP.

4 Technical specifications.

4.1 CO-01 specifications.

Table 1

Inputs and outputs	SMPTE-259-M-C (270 Mbps) SMPTE-292M (1.485 Gbps) DVB-ASI EN50083-9
Number of inputs	3 (*Main*, *Backup* and *Disaster Recovery*)
Number of outputs	7
Pass-through	Out 1 is Main input pass-through
Modality	ASI and SDI (HD/SD)
Seamless	*Main* and *Backup* inputs are in *seamless switch* in ASI modality
Cable length	200 m Belden 8281 at 270 Mbps 90 m Belden 1694A at 1.485Gbps

4.2 CO-02 specifications.

Table 2

Inputs and outputs	SMPTE-259-M-C (270 Mbps) SMPTE-292M (1.485 Gbps) SMPTE-424M (2.97 Gbps) DVB-ASI EN50083-9
Number of inputs	3 (*Main*, *Backup* and *Disaster Recovery*)
Number of outputs	7
Pass-through	CO-02: Out 1 is Last selected input (1-2) pass-through CO-02b:Out 1 is Main input pass-through Out 2 is Backup input pass-through
Modality	ASI and SDI (3G/HD/SD)
Seamless	*Main* and *Backup* inputs are in *seamless switch* in ASI modality
Cable length	200 m Belden 8281 at 270 Mbps 90 m Belden 1694A at 1.485 Gbps 50 m Belden 1694A at 2.97 Gbps

4.3 General specifications.

Table 3

Temperature range	-10°C ÷ 55°C
Relative humidity	0 ÷ 95°C without condensation
Management	Http SNMP
Firmware upgrade	WEB, FTP
Power supply	2 swappable units 100-240 V~ 50/60 Hz IEC 320
Power consumption	CO-01: 60 W in ASI modality 80 W in HD-SDI modality CO-02: 130 W in ASI modality 150 W in HD-SDI modality 160 W in 3G-SDI modality

4.4 Mechanical specifications.

Table 4

Rack	Standard 19” 3U
Width	482.6 mm
Height	130.8 mm
Depth	500 mm (without connectors)
Max. weight	4 Kg

5 Installation.

- Unpack the equipment and check for eventual damages that may have occurred during transport.
- The box should contain*:*
  - The RK1000
  - Two power supply AC cables
  - The User manual
- Install the equipment in a rack or on a flat, stable and big enough surface. The device occupies a 3 19” unit space. Verify there is enough separation between other functioning devices that might produce high temperatures and take away any parts that might obstacle the ventilation. The functioning is guaranteed in a temperature range from -10°C to +55°C.
- The equipment must be correctly grounded to guarantee the security during the functioning.
- Assure a correct power supply checking the details on the User manual or on the sticker containing the serial number attached to the device.
- Connect the network cables to the rear panel. The last used configuration will be uploaded.
- Configure the equipment according to the proper needs consulting the User manual.

6 WEB interface.

The equipment has a simple and intuitive interface, consultable through Web, logging in through different protected passwords.

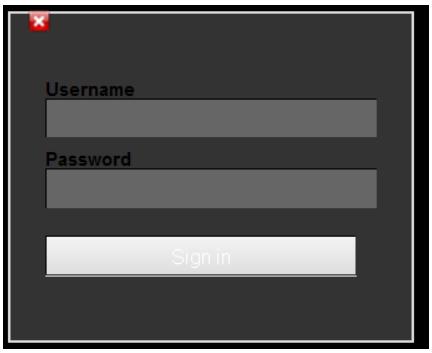

Figure 6: Initial Web interface page.

Figure 6 shows the initial Web interface page connecting to the IP address of the equipment. The figure shows the pop-up asking for a username and password to access the rest of the user interface. The default IP address of the equipment is 192.168.10.150, with subnet mask 255.255.255.0.

6.1 Common Parts.

6.1.1 Controller.

The Controller Webpage contains five frames:

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

6.1.1.1 Controller – Customer.

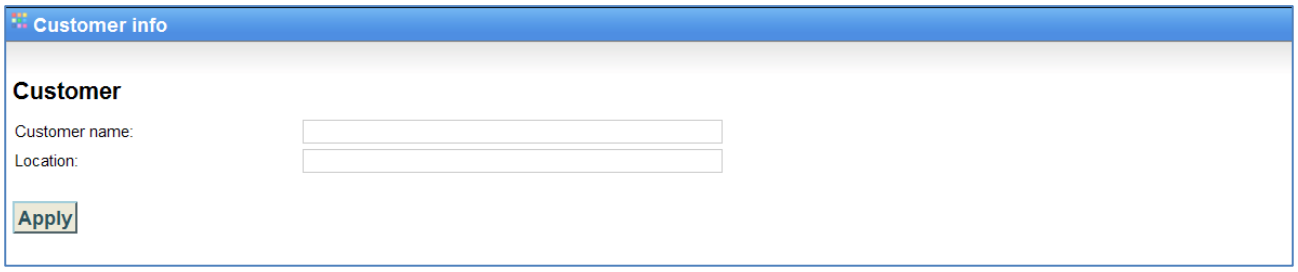

Figure 7: Controller Web Page – Customer info.

Table 5: Equipment information for the client.

Label	Description	Access
Customer name	Customer name.	R/W
Location	Place of installation.	R/W

6.1.1.2 Controller – Network.

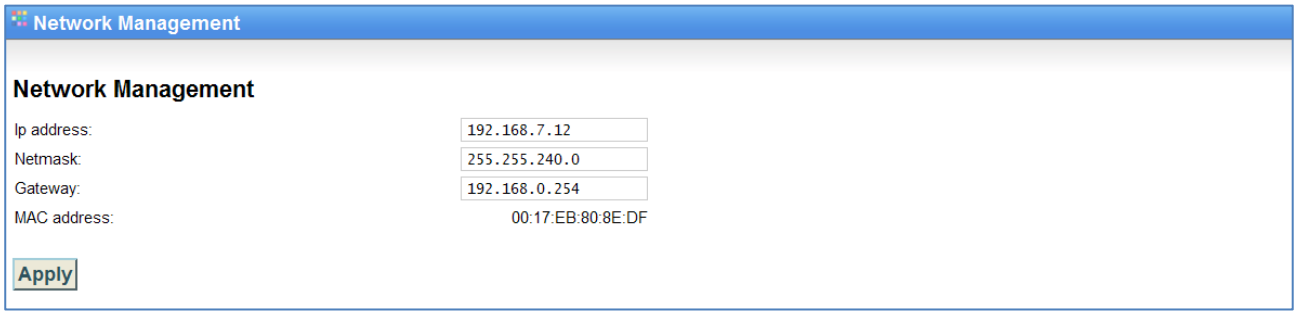

Figure 8: Controller Web Page – Network parameters.

This frame allows the consultation and the management of the network parameters of the controller interface. The user can modify IP address, Netmask and Gateway address, the MAC address is read-only.

Table 6: Equipment Network parameters

Label	Description	Access
Ip Address	Allows the configuration of the IP address for the control	R/W
Netmask	Allows the configuration of the subnet mask IP.	R/W
Gateway	Allows the configuration of the Gateway IP address.	R/W
MAC address	Allows reading the MAC address of the equipment.	R

6.1.1.3 Controller – Traps manager.

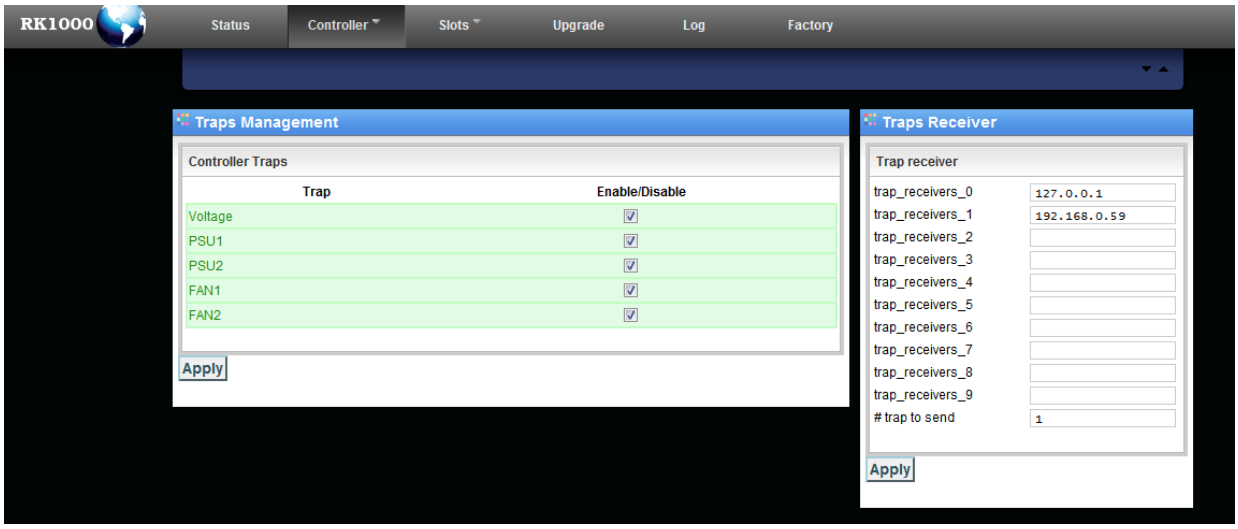

Figure 9: Controller Web Page - Traps management.

Table 7: Traps management description.

Label	Description	Access
Voltage	To enable Voltage alarm trap.	R/W
PSU1	To enable the main power supply alarm trap.	R/W
PSU2	To enable the back-up alarm trap.	R/W
FAN1	To enable the main power supply fan alarm trap.	R/W
FAN2	To enable the back-up power supply fan alarm trap.	R/W

Table 8: Trap receiver description.

Label	Description	Access

Trap_receivers_0	To configure the destination IP address of the traps.	R/W
Trap_receivers_1	To configure the destination IP address of the traps.	R/W
Trap_receivers_2	To configure the destination IP address of the traps.	R/W
Trap_receivers_3	To configure the destination IP address of the traps.	R/W
Trap_receivers_4	To configure the destination IP address of the traps.	R/W
Trap_receivers_5	To configure the destination IP address of the traps.	R/W
Trap_receivers_6	To configure the destination IP address of the traps.	R/W
Trap_receivers_7	To configure the destination IP address of the traps.	R/W
Trap_receivers_8	To configure the destination IP address of the traps.	R/W
Trap_receivers_9	To configure the destination IP address of the traps.	R/W
# Trap to send	To configure the number of repetitions to send a trap.	R/W

6.1.1.4 Controller – Tools.

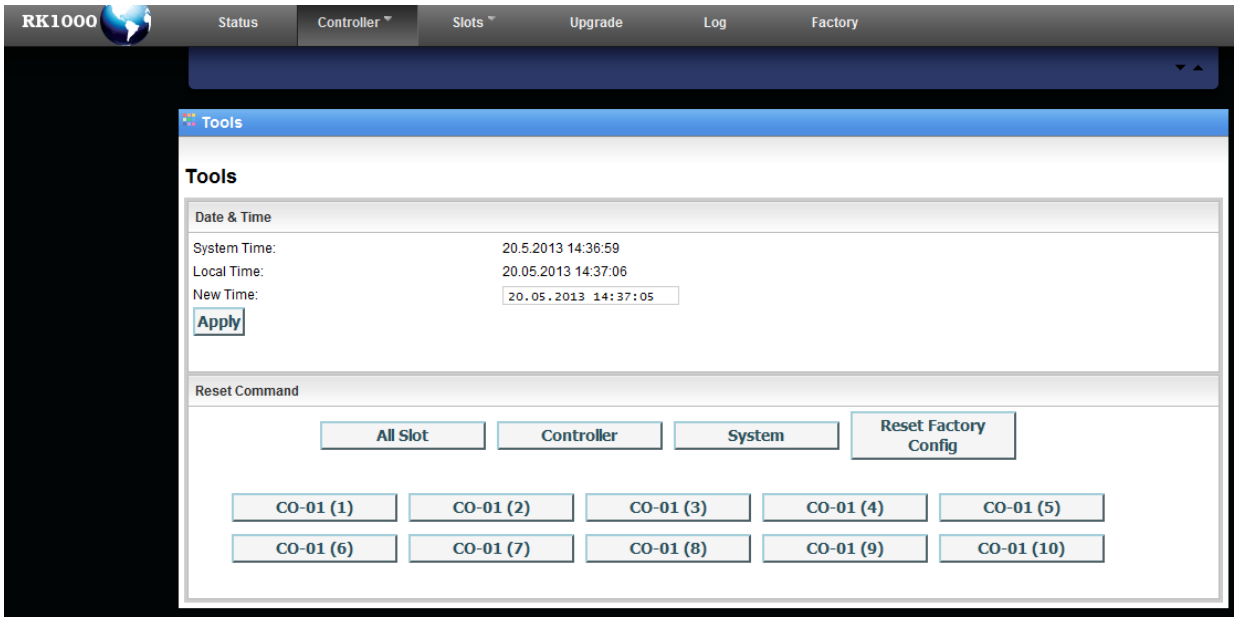

Figure 10: Controller Web Page – general instruments.

Table 9: General instruments.

Label	Description	Access
System Time	Indicates the system time setting.	R
Local Time	Indicates the local time.	R
New Time	Text box to modify the System Time.	R/W
All Slot	To reset all parallel boards.	W
Controller	To reset the system controller.	W

System	To reset the complete system.	W
Reset Factory Config	To restore the default Factory Configuration.	W
CO-01 (x)	To reset only slot x.	W

Through the subsection “Reset Command” the user can send a reset command separately to the relative subsections, to the complete system or the controller.

6.1.1.5 *Controller – Password management.*

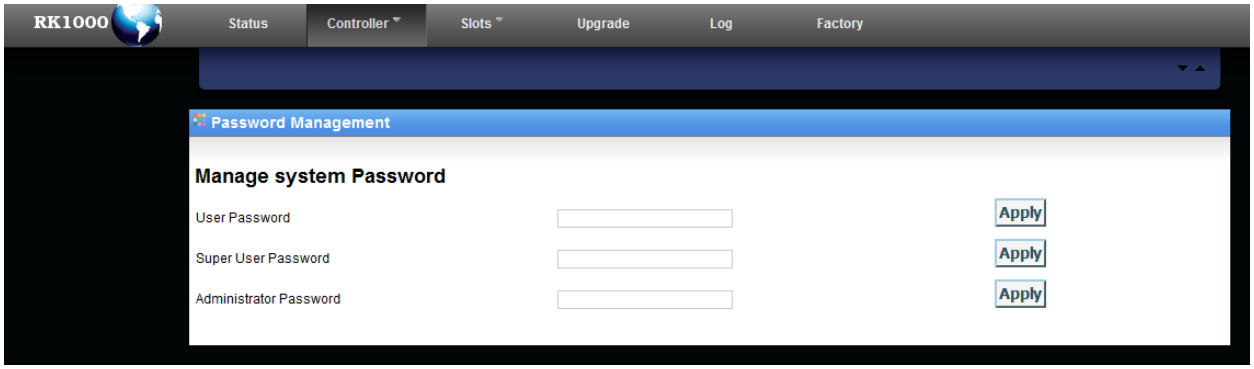

Figure 11: Controller Web Page – password management.

This section allows the modification of the password to access the Web interface.

The password must contain at least six and maximum fifteen characters. The password level that can be modified changes according to the user type.

The “User” cannot change the password. The “Super User” can change the proper password and the User password. The “Administrator” can change all passwords.

Table 10: Password management.

Label	**Description**	**Access**
User Password	To modify the User access password.	R/W
Super User Password	To modify the Super User access password.	R/W
Administrator	To modify the access password as Administrator.	R/W

6.1.2 Upgrade.

The Web page regarding the upgrade consists of 1 frame:

- Machine upgrade

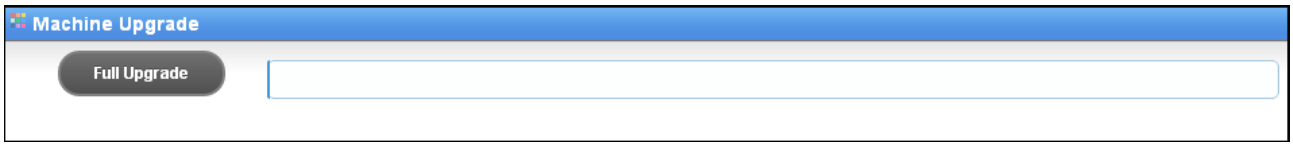

Figure 12: Upgrade Web Page – firmware update.

6.1.3 Log.

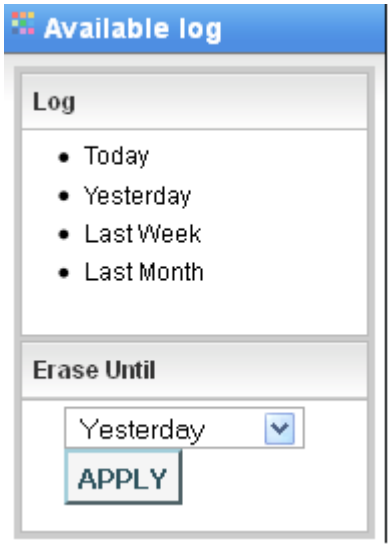

Figure 13: Log Web page – Available log.

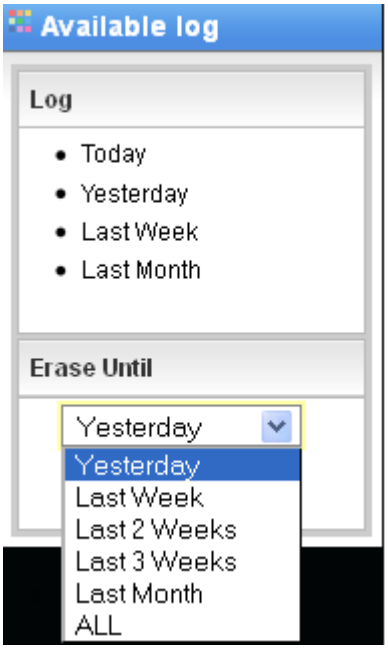

Figure 14: Log Web page – Available log expanded.

The equipment offers a log service, available in this web interface page.
On the left-hand side, the following logs are available:

- Today
- Yesterday
- Last week
- Last month

To avoid too much memory space occupation, it is considered worthwhile to delete stored information using the ERASE UNTIL form, selecting the desired time interval (Figure 14).
On the right-hand side, the log messages are reported in a table that can be organized, filtered and visualized differently in terms of number of lines per page.
There are four types of records, each one highlighted with a different color:

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

Each record has a date, a description and an origin; in case of alarm an appendix reports the word OCCURRED, while a return from an alarm situation results in RECOVERED. The records can be ordered in each field and can be filtered based on the type (through the specific checkbox) and based on the description.
The logs can be saved as .csv files clicking the “SAVE TO DISK” key.

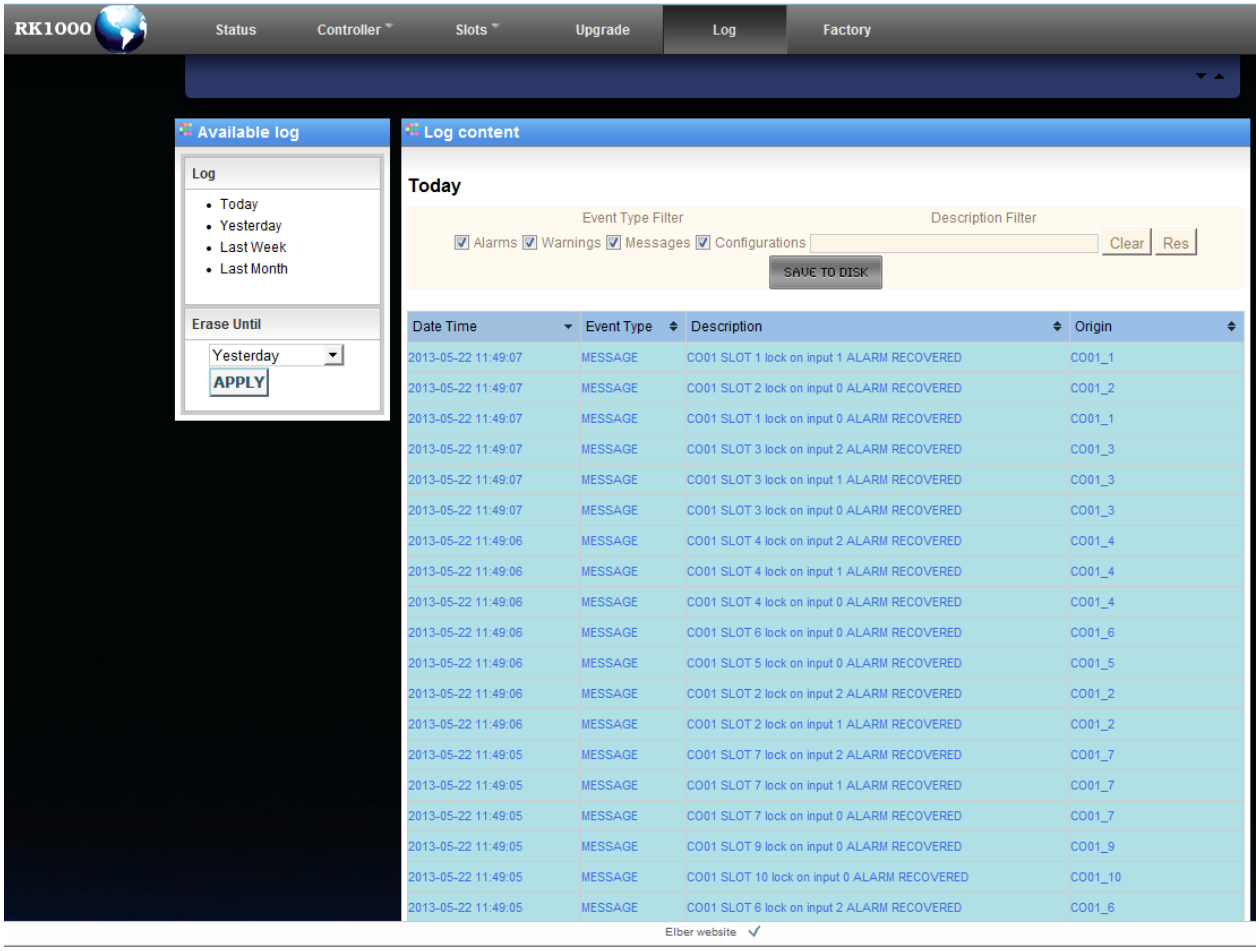

Figure 15: Log Web page – log.

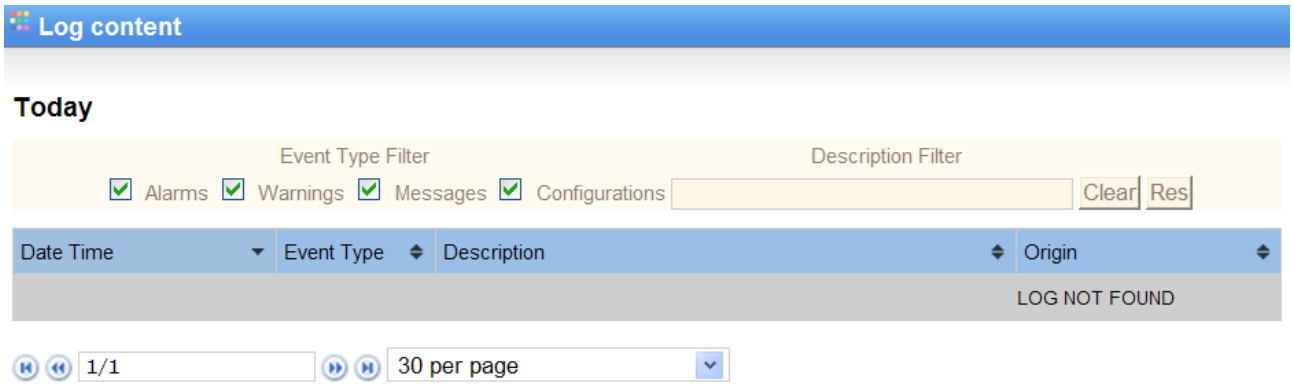

Figure 16: Log Web page – filters.

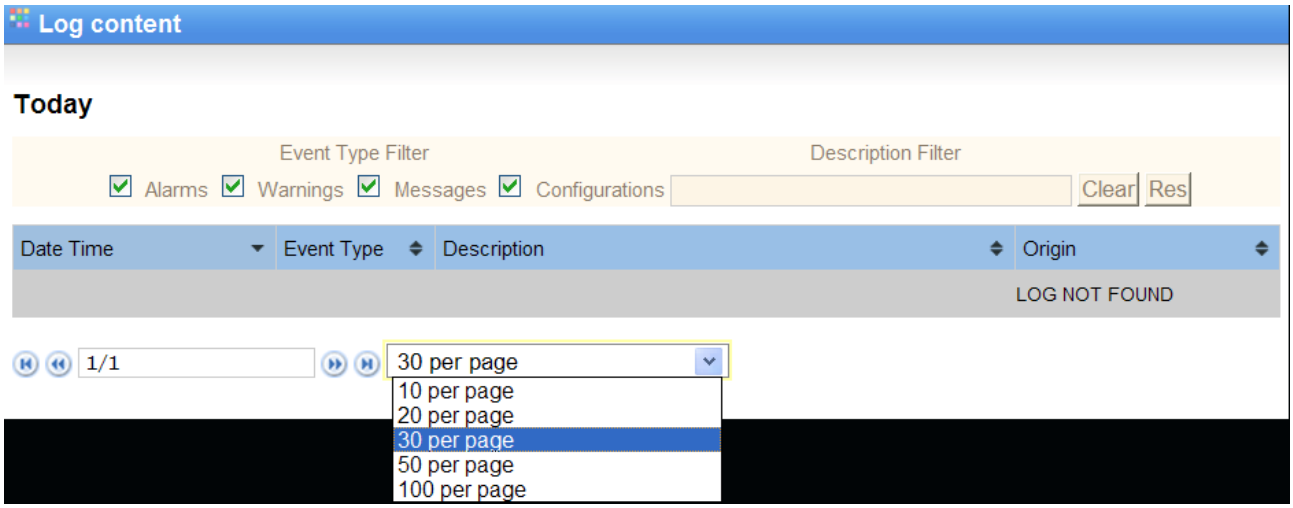

Figure 17: Log Web page – filters (selection number of records per page).

6.2 Home.

The Homepage of the User interface is divided in two sections that can be organized in a personalized way (they can be visualized differently and moved). The first section is referred to the controller, while the second one regards the equipment and it's different in case of RK1000 (with CO-01) rather than RK1000/A (with CO-02).

6.2.1 Status-Controller.

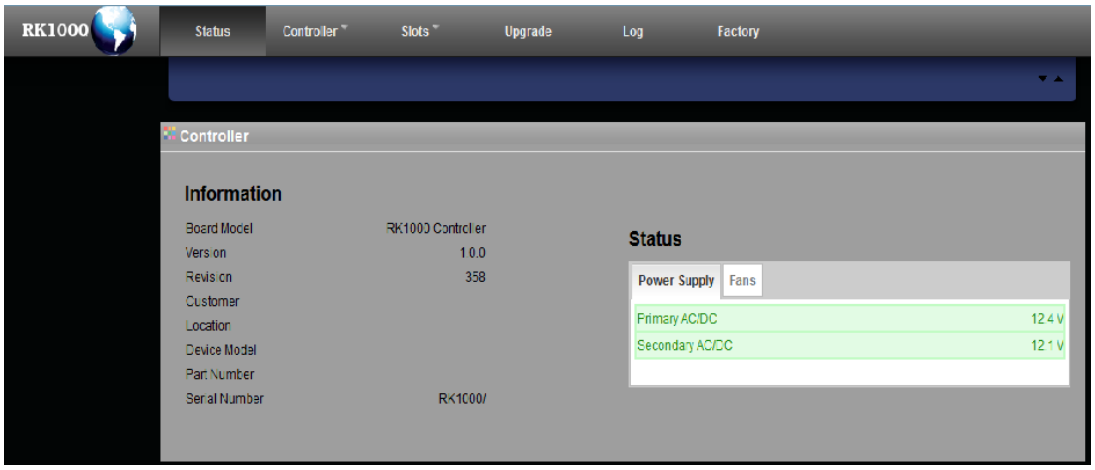

Figure 18: Homepage -Controller.

Table 11: General information description.

Label	Description
Board Model	Controller board model.
Version	Firmware version.
Revision	Firmware revision version.
Customer	Customer's name.
Location	Place of installation.
Device	Equipment configuration.
Part Number	Part number
Serial Number	Serial number

Table 12: Power supply status description.

Label	Description
Primary AC/DC	12 V output level at the main power supply. Green when ok, red when I alarm.
Secondary DC/DC	12 V output level at the back-up power supply. Green when ok, red when I alarm.

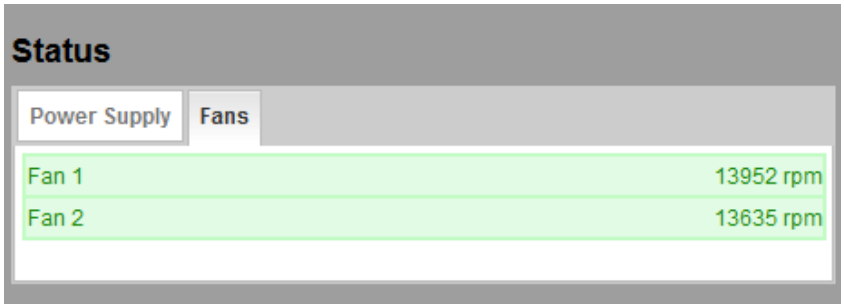

Figure 19: Homepage – Fan Status.

Table 13: Fans status description.

Label	Description
Fan 1	Fan speed main power supply, expressed in rpm (revolutions per minute).
Fan 2	Fan speed back-up power supply, expressed in rpm (revolutions per minute).

6.2.2 CO-01 Status-Slot.

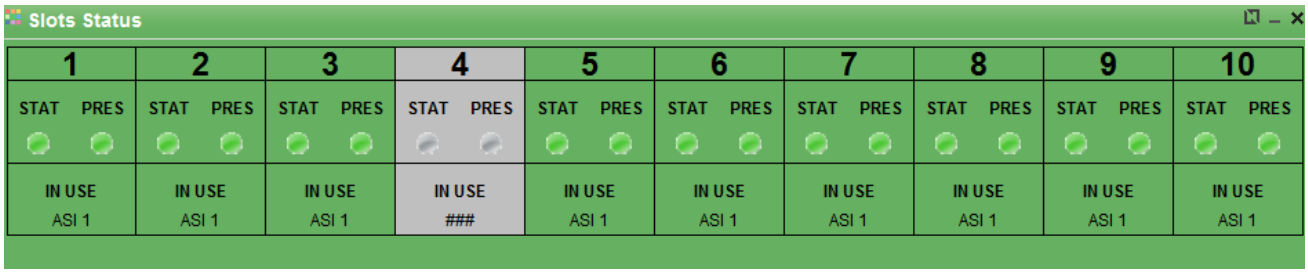

Figure 20: Homepage -Slots.

The Status Slots screen, in case of CO-01 modules, shows 10 positions, one for each slot available in the RK1000. As shown in the case of Figure 20, slot 4 is not present and shown in grey, while all other slots are alarm free and therefor marked in green. In case of alarm situations, the relative slot is marked in red. Each position contains an active link to the relative configuration/status page of the relative slot. (see par.6.5 for further details).

Table 14: Slot status description.

Label	Description	Access
STAT	Led status indication (as on the front panel of the slot).	R
PRES	Indicates the slot presence.	R
IN USE	Indicates the selected input.	R

6.2.3 CO-02 Slot.

Figure 21: Homepage -Slots.

The Slots screen, in case of CO-02 modules, shows 10 positions, one for each slot available in the RK1000.
Next figures show in detail the parameters for each slot.
The first section shows the Changeover modality (ASI/SDI).

Figure 22: Homepage -Slots-Modality.

The second section shows the inputs status. The circles surrounding the BNC connectors icons can be:

- Light green, i.e. Input active
- Dark Green, i.e. Input status ok, input not active
- Red, i.e. Input in alarm condition
- Yellow, i.e. Input in warning condition

Figure 23: Homepage -Slots-Inputs status.

In the bottom part, it's indicated as text the input selected.

By right-clicking on a connector icon, a tile menu appears:

Figure 24: Homepage -Slots-Inputs config.

User can Enable, Disable or set as "Preferred" the related input; additionally, it is possible to check deeply the status menu (See 6.3) and the configuration menu (See 6.4).

The third section shows the inputs configuration. The upper part of the section let the user check the status of the slot (whether it's enabled or not) and the Automatic switching condition.

The lower part shows the preferred input marked with blue circle; user can only choose between input 1 and input 2 as input 3 is for Disaster Recovery.

Figure 25: Homepage -Slots-inputs enabling.

The fourth section shows the outputs configuration; for every connector, it is indicated the input signal connected to the related output; in the example shown, all connectors deliver Input 1. The circles surrounding the BNC connectors icons can be:

- Light green, i.e. Input selected by the switching algorithm
- Dark Green, i.e. Input status ok, input not selected by the switching algorithm
- Red, i.e. Input in alarm condition
- Yellow, i.e. Input in warning condition

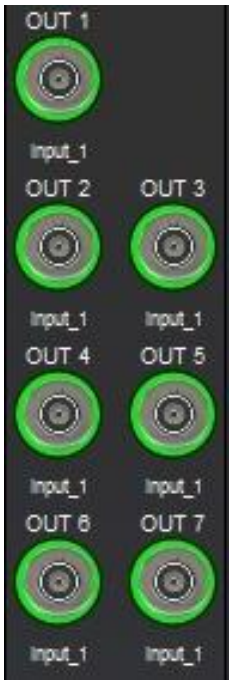

Figure 26: Homepage -Slots-outputs status.

By right-clicking on a connector icon, a tile menu appears:

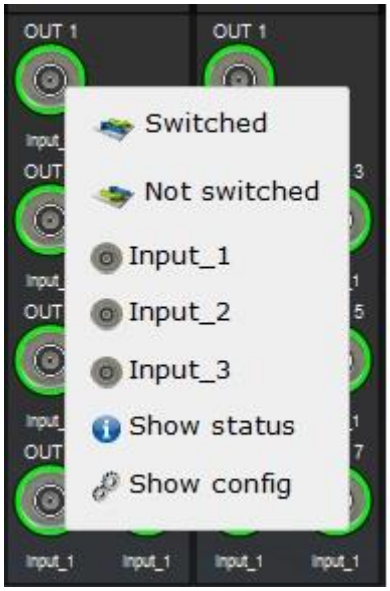

Figure 27: Homepage -Slots-outputs configuration.

User is asked to assign an input signal to each output (matrix functionalities); selection can be made between:

1) Input 1
2) Input 2
3) Input 3
4) Signal selected by the switching algorithm
5) Signal not selected by the switching algorithm

Additionally, it is possible to check deeply the status menu and the configuration menu of the related output.

The last section, at the page bottom, some quick commands are shown.

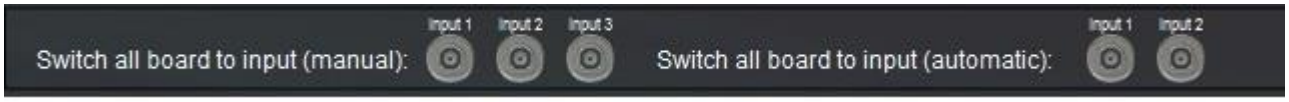

Figure 28: Homepage –quick commands.

User can configure at the same time every slot to switch on related input, both in manual (left side) and automatic modality (right side).

6.3 CO-02 Status.

Figure 29: Slot CO-02 Web Page – General information.

Table 15: CO-02 General Data.

Label	Description	Access
Name	Nome of the board of the selected slot.	R
Version	Software version of the board.	R
Revision	Software revision version of the board.	R
FPGA	Used FPGA firmware name.	R
FW version	Firmware version of the board.	R
FW Revision	Firmware revision version of the board.	R
MODE	CO-02 board modality indication (ASI/SDI).	R
Serial Number	Serial number of the board.	R
Part Number	Part number of the board.	R
Model	Model of the board.	R

Figure 30: Slot CO-02 Web Page - Status Change Over ASI.

Table 16: Status Slot ASI description.

Label	Description	Access
Temperature	Slot temperature indication, in °C; red line when in alarm, green otherwise.	R
Input selected	Selected input indication.	R
INPUT 1/INPUT 2/INPUT 3	1/2/3 Input lock status indication; red line when in alarm, green otherwise.	R
Input name	Label assigned by the user to the related input	R
Transport Stream ID	Input transport stream ID identification indication.	R
Type	Input ASI type indication (188/204).	R
Bitrate	Input *Bitrate* indication in Mbit/s.	R
Aligner Lock	Status of the synchronization between input 1 and 2 algorithm	R
Sync loss	Input Sync loss status indication. Red line when in alarm, green otherwise. The alarm is activated in case of 3 consecutive sync byte losses.	R
Pat loss	Input PAT loss status indication. Red line when in alarm, green otherwise. The alarm is activated in case PAT loss, detected each 500 ms.	R
Tei	Input TEI status indication. Red line when in alarm, green otherwise.	R
TS unstable	Input unstable TS status indication; red line when in alarm, green otherwise. TS is unstable when 16 *Continuity Counter* are detected in the TS.	R
Continuity	Input *Continuity Counter* error rate indication. Red	R

counter error rate	line when in alarm, green otherwise.	
Sync unstable	Input *sync unstable* status indication; red when in alarm, green otherwise. The alarm is activated with a sync loss of 8 byte in one second.	R
Sync error rate	*Input Sync error rate* indication; Red line when in alarm, green otherwise.	R

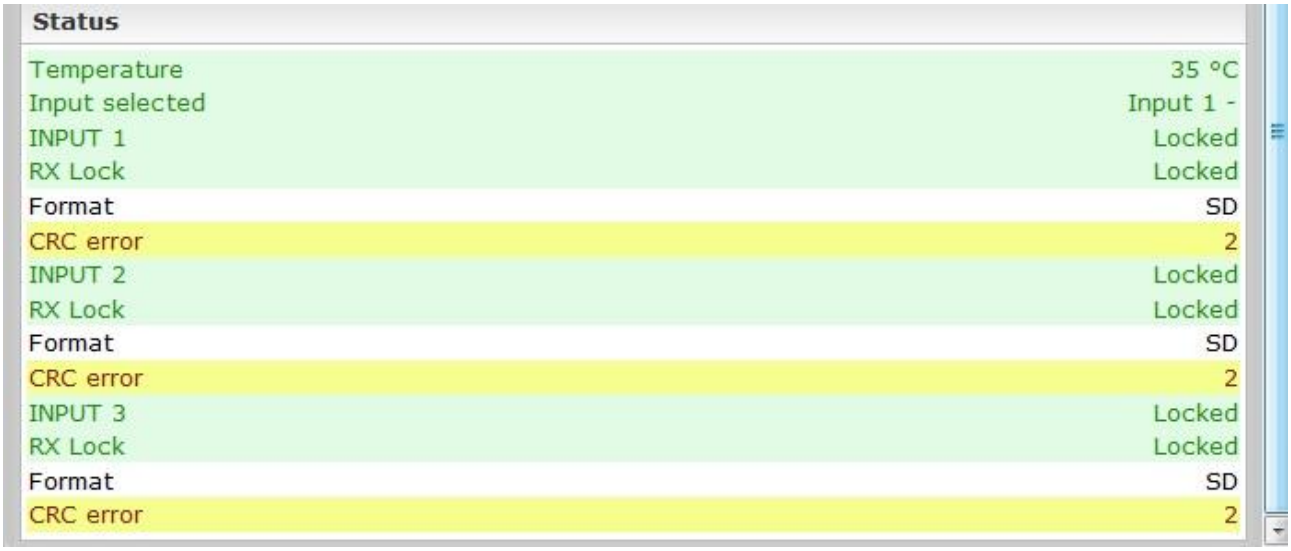

Figure 31: Slot CO-02 Web Page - Status Change Over SDI.

Table 17: Status Slot SDI description.

Label	Description	Access
Temperature	Slot temperature indication, in °C; red line when in alarm, green otherwise.	R
Input selected	Selected input indication.	R
INPUT 1/INPUT 2/INPUT 3	1/2/3 Input lock status indication; red line when in alarm, green otherwise.	R
RX Lock	Signal presence indication; red line when in alarm, green otherwise.	R
Format	SDI input format indication (SD/HD/3G).	R
CRC Error	Indication of CRC errors detected; yellow line when errors are detected, green otherwise.	R

6.4 CO-02 Config.

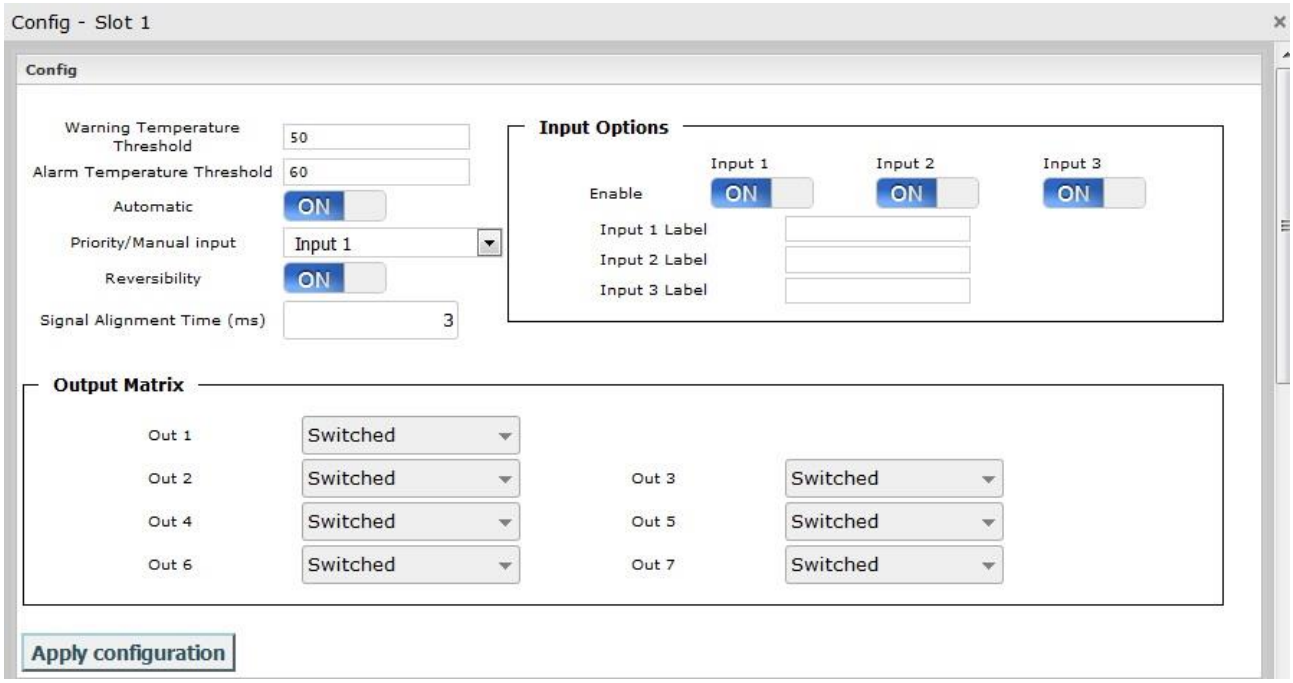

Figure 32: Slot CO-02 Web Page - Config Change Over SDI - 1.

Table 18: Slot description – General Config - SDI.

Label	Description	Access
Warning temperature Threshold	Configuration of the temperature threshold for the selected slot.	R/W
Alarm temperature Threshold	Configuration of the alarm of the temperature threshold for the selected slot (indicates most probably damage to a fan).	R/W
Automatic	To select the change-over modality between automatic and manual. In case of manual configuration (OFF), the input selected in the following drop-down menu will be forwarded in output; in case of automatic configuration (ON), the selection between the inputs is determined by the subsequent configurations and by the analysis of the input TS (ASI).	R/W
Priority/Manual input	To assign priority to one of the inputs between input 1 and input 2 (in case of reversibility ON) or forced in output on of the three inputs (in case of Automatic OFF).	R/W
Reversibility	To configure the reversibility; when ON, the switch commutes to the back-up input when a failure has been detected on the priority input; when OFF, the same input remains selected.	R/W
Signal Alignment Time (ms)	To configure the maximum time to validate the alignment of input 1 and input 2	R/W

Table 19: Slot description – Input options.

Label	Description	Access
Enable	Enabling/disabling of related input.	R/W
Input 1/2/3 Label	Configuration of internal label for related	R/W

	input	

Table 20: Slot description – Output matrix.

Label	Description	Access
Out 1/2/3/4/5/6	Configuration of signal to be redirected to related output connector. Selection can be made between the following: • Switched (the signal validated by seamless switching algorithm) • Not switched (the signal not validated by seamless switching algorithm) • Input 1 • Input 2 • Input 3	R/W

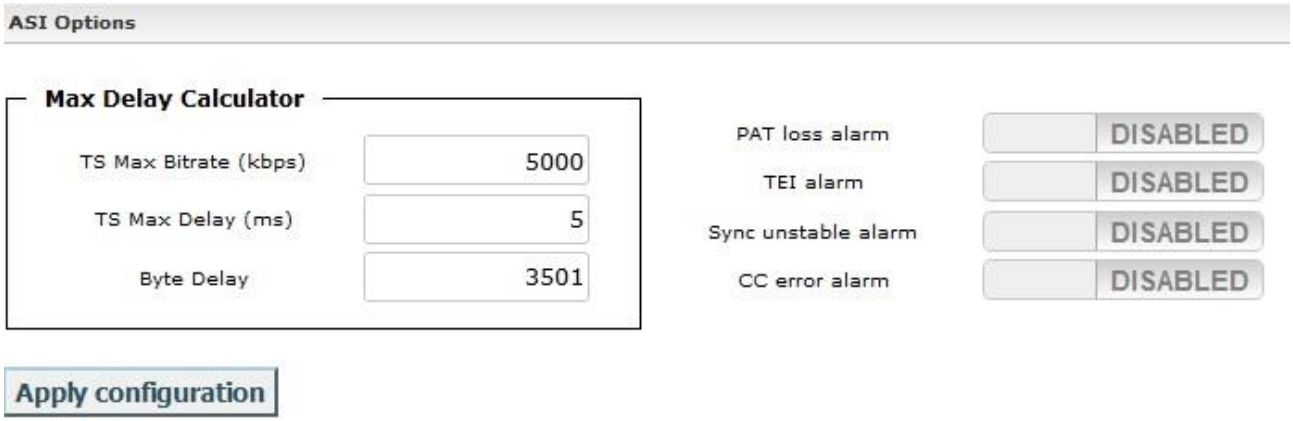

Figure 33: Slot CO-02 Web Page - Config ASI.

Table 21: Slot description - Config ASI.

Label	Description	Access
TS Max Bitrate (kbps)	To configure the expected maximum bitrate at ASI inputs	R/W
TS Max Delay (ms)	To configure expected maximum delay between signals at input 1 and input 2.	R/W
Byte Delay	Indication of the delay in terms of number of bytes between signals at input 1 and input 2.	R
PAT loss alarm	To enable the PAT loss analysis as a criterion for the commutation (PAT presence each 500ms).	R/W
TEI alarm	To enable the TEI analysis (*Transport Error Indicator*) as a criterion for the commutation.	R/W
Sync Unstable Alarm	To enable the presence of various non-consecutive sync losses as a criterion for the commutation. Default: 8 sync loss per second are considered as alarm.	R/W
CC Error Alarm	To enable the continuity counter analysis as a criterion for the commutation. Default 15 per second are considered as alarm.	R/W

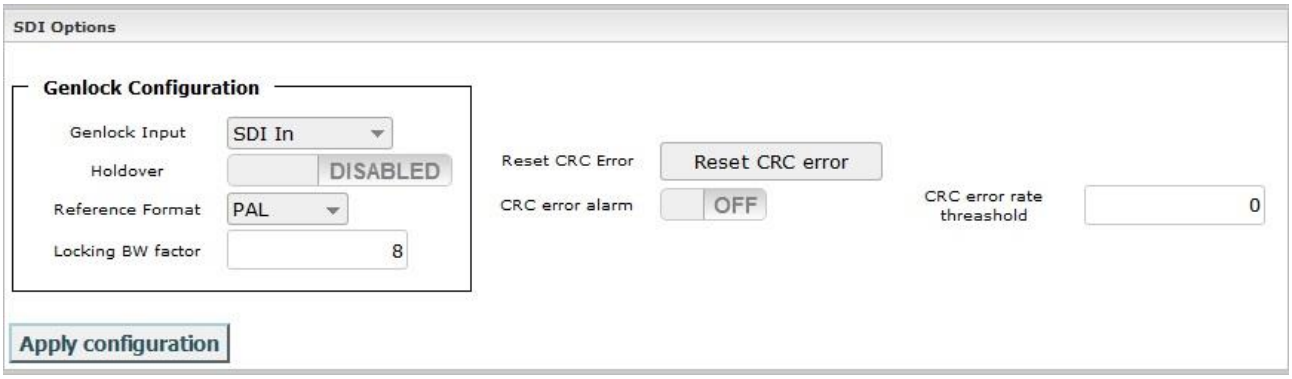

Figure 34 Slot CO-02 Web Page - Config SDI.

Table 22: Slot description - Config SDI.

Label	Description	Access
Genlock Input	To configure the source for Genlock between: • Free run • SDI In • External	R/W
Holdover	To enable or disable holdover function with Genlock active.	R/W
Reference Format	To configure Genlock reference format, selecting between PAL and NTSC	R/W
Locking BW Factor		R/W
Reset CRC Error	To reset the CRC Error Counter	R/W
CRC error alarm	To enable CRC error as alarm condition	R/W
CRC Error Rate threshold	To set a threshold for CRC error rate in case of activation of CRC error alarm.	R/W

Figure 35: Slot CO-02 Web Page - Config Traps.

Table 23: Traps management Slot description.

Label	Description	Access
Temperature	Enables the SNMP trap of the slot's temperature alarm, based on the setup threshold.	R/W
Sync Loss	Enables the SNMP trap of the slot's sync loss alarm.	R/W
PAT Loss	Enables the SNMP trap of the slot's PAT loss alarm.	R/W
Sync Unstable	Enables the SNMP trap of the slot's sync unstable alarm.	R/W
TEI	Enables the SNMP trap of the slot's TE1 alarm.	R/W
TS Error	Enables the SNMP trap of the slot's TS error.	R/W
SDI Lock	Enables the SNMP trap of the slot's SDI lock alarm.	R/W

CRC Error	Enables the SNMP trap of the slot's SDI CRC error alarm.	R/W
Genlock	Enables the SNMP trap of the slot's Genlock alarm.	R/W

Figure 36: Slot CO-02 Web Page - Config Mode.

Table 24: Traps management Slot description.

Label	Description	Access
CO Mode	To select the change-over modality between ASI and SDI; the change, validated by the APPLY key, implicates a reconfiguration of the board taking about 45 sec.	R/W

6.5 Slot.

The Slot Web page is present just for RK1000 and CO-01 boards (first generation) and it allows the configuration and monitoring of each optional board status of the equipment. The Web interface shows a drop-down menu with only the active slots as shown in Figure 37.

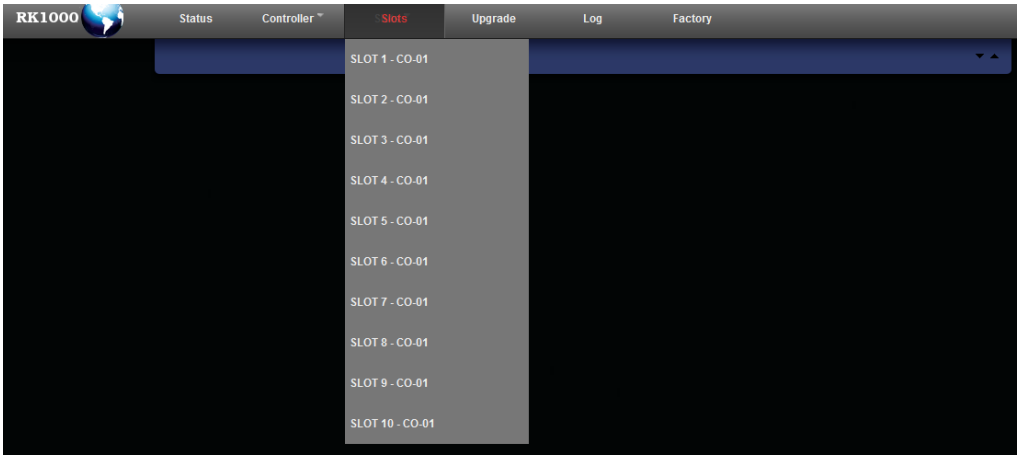

Figure 37: Drop-down menu for the Slot selection.

Figure 38: Slot CO-01 Web Page – General information.

Table 25: Status Slot description.

Label	Description	Access
Name	Nome of the board of the selected slot.	R
Version	Software version of the board.	R
Revision	Software revision version of the board.	R
FPGA	Used FPGA firmware name.	R
FW version	Firmware version of the board.	R
FW Revision	Firmware revision version of the board.	R
MODE	CO-01 board modality indication (ASI/SDI).	R
Serial Number	Serial number of the board.	R
Part Number	Part number of the board.	R
Model	Model of the board.	R

Figure 39: Slot CO-01 Web Page - Status Change Over ASI.

Table 26: Status Slot description.

Label	Description	Access
Temperature	Slot temperature indication, in °C; red line when in alarm, green otherwise.	R
Input selected	Selected input indication.	R
INPUT 1/INPUT 2/INPUT 3	1/2/3 Input lock status indication; red line when in alarm, green otherwise.	R
Transport Stream ID	Input transport stream ID identification indication.	R
Type	Input ASI type indication (188/204).	R
Bitrate	Input *Bitrate* indication in Mbit/s.	R
Sync loss	Input Sync loss status indication. Red line when in alarm, green otherwise. The alarm is activated in case of 3 consecutive sync byte losses.	R
Pat loss	Input PAT loss status indication. Red line when in alarm, green otherwise. The alarm is activated in case PAT loss, detected each 500 ms.	R
Tei	Input TEI status indication. Red line when in alarm, green otherwise.	R
TS unstable	Input unstable TS status indication; red line when in alarm, green otherwise. TS is unstable when 16 *Continuity Counter* are detected in the TS.	R
Continuity	Input *Continuity Counter* error rate indication. Red	R

counter error rate	line when in alarm, green otherwise.	
Sync unstable	Input *sync unstable* status indication; red when in alarm, green otherwise. The alarm is activated with a sync loss of 8 byte in one second.	R
Sync error rate	*Input Sync error rate* indication; Red line when in alarm, green otherwise.	R

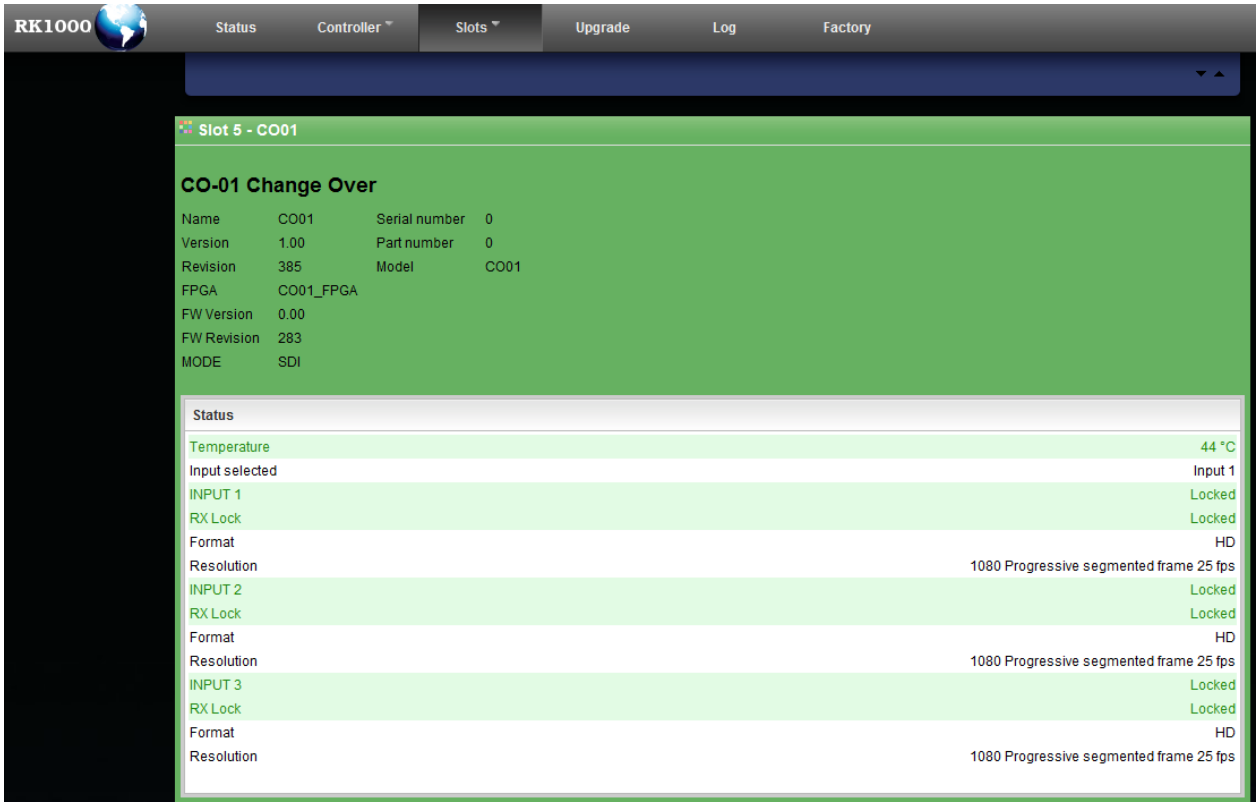

Figure 40: Slot CO-01 Web Page - Status Change Over SDI.

Table 27

Label	Description	Access
Temperature	Slot temperature indication, in °C; red line when in alarm, green otherwise.	R
Input selected	Selected input indication.	R
INPUT 1/INPUT 2/INPUT 3	1/2/3 Input lock status indication; red line when in alarm, green otherwise.	R
RX Lock	Signal presence indication; red line when in alarm, green otherwise.	R
Format	SDI input format indication (SD/HD).	R
Resolution	Video resolution indication.	R

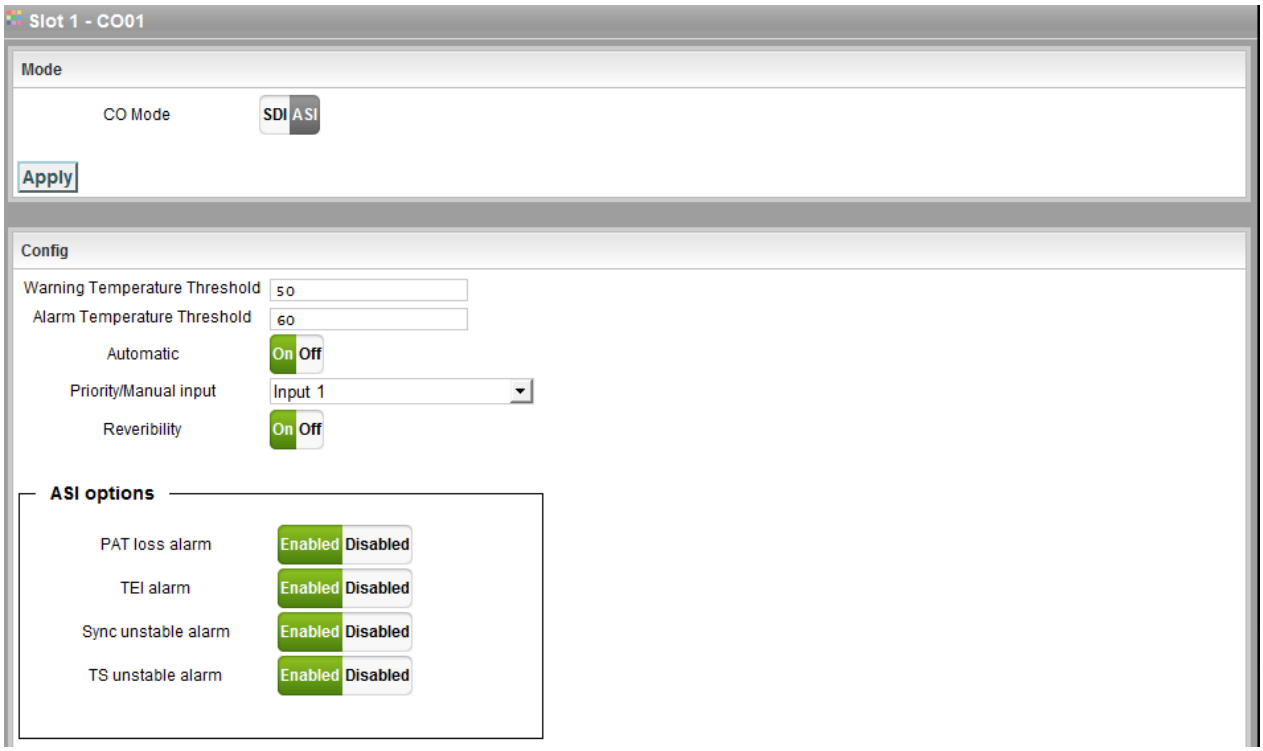

Figure 41: Slot CO-01 Web Page - Config Mode.

Table 28: Slot description - Config mode.

Label	Description	Access
CO Mode	To select the change-over modality between ASI and SDI; the change, validated by the APPLY key, implicates a reconfiguration of the board taking about 45 sec.	R/W
Warning temperature Threshold	Configuration of the temperature threshold for the selected slot.	R/W
Alarm temperature Threshold	Configuration of the alarm of the temperature threshold for the selected slot (indicates most probably damage to a fan).	R/W
Automatic	To select the change-over modality between automatic and manual. In case of manual configuration (OFF), the input selected in the following drop-down menu will be forwarded in output; in case of automatic configuration (ON), the selection between the inputs is determined by the subsequent configurations and by the analysis of the input TS (ASI).	R/W
Priority/Manual input	To assign priority to one of the inputs between input 1 and input 2 (in case of reversibility ON) or forced in output on of the three inputs (in case of Automatic OFF).	R/W
Reversibility	To configure the reversibility; when ON, the switch commutes to the back-up input when a failure has been detected on the priority input; when OFF, the same input remains selected.	R/W
PAT loss alarm	To enable the PAT loss analysis as a criterion for the commutation (PAT presence each 500ms).	R/W

TEI alarm	To enable the TEI analysis (*Transport Error Indicator*) as a criterion for the commutation.	R/W
Sync Unstable Alarm	To enable the presence of various non-consecutive sync losses as a criterion for the commutation. Default: 8 sync loss per second are considered as alarm.	R/W
TS Unstable Alarm	To enable the continuity counter analysis as a criterion for the commutation. Default 15 per second are considered as alarm.	R/W

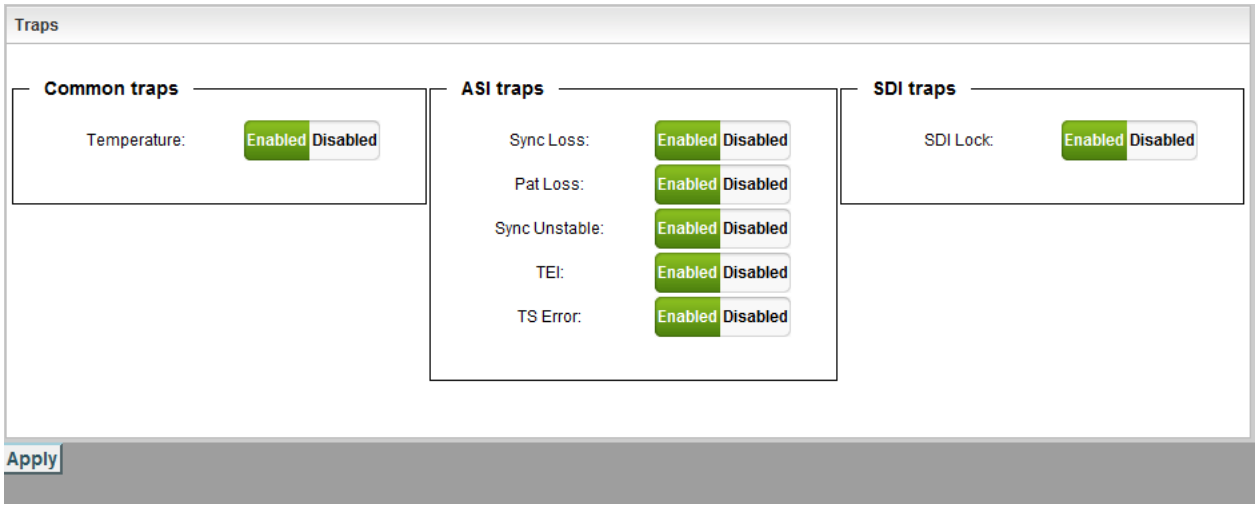

Figure 42: Slot CO-01 Web Page - Config Traps.

Table 29: Traps management Slot description.

Label	Description	Access
Temperature	Enables the SNMP trap of the slot's temperature alarm, based on the setup threshold.	R/W
Sync Loss	Enables the SNMP trap of the slot's sync loss alarm.	R/W
PAT Loss	Enables the SNMP trap of the slot's PAT loss alarm.	R/W
Sync Unstable	Enables the SNMP trap of the slot's sync unstable alarm.	R/W
TEI	Enables the SNMP trap of the slot's TE1 alarm.	R/W
TS Error	Enables the SNMP trap of the slot's TS error.	R/W
SDI Lock	Enables the SNMP trap of the slot's SDI lock alarm.	R/W

7 Panels.

7.1 Front panel.

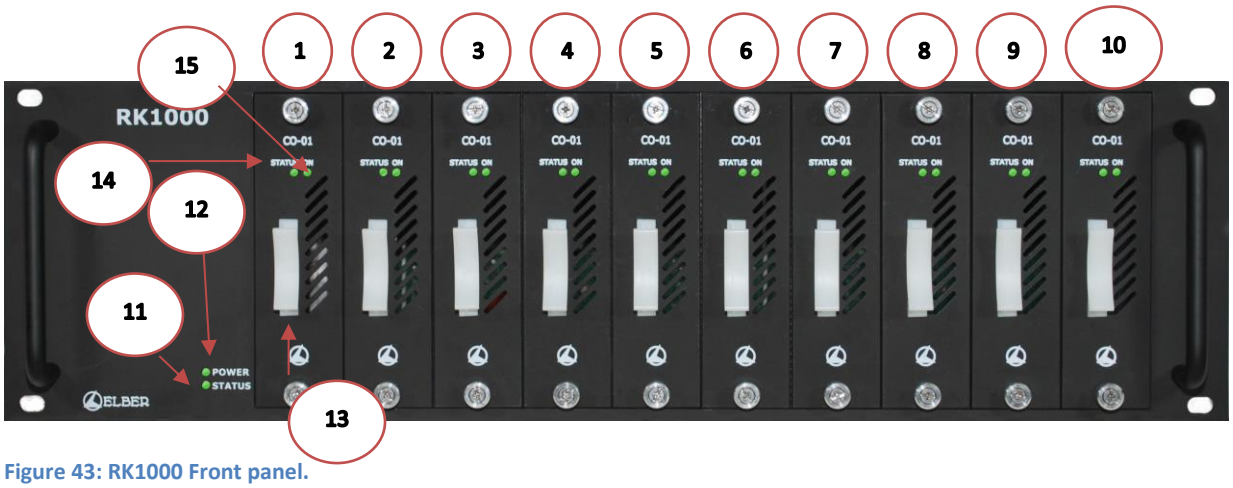

Figure 43: RK1000 Front panel.

Figure 44: RK1000/A Front panel.

Table 30: Front panel description.

N°	Description	Function
1	Slot n° 1	Position number 1 for the optional slot.
2	Slot n° 2	Position number 2 for the optional slot.
3	Slot n° 3	Position number 3 for the optional slot.
4	Slot n° 4	Position number 4 for the optional slot.
5	Slot n° 5	Position number 5 for the optional slot.
6	Slot n° 6	Position number 6 for the optional slot.
7	Slot n° 7	Position number 7 for the optional slot.
8	Slot n° 8	Position number 8 for the optional slot.
9	Slot n° 9	Position number 9 for the optional slot.
10	Slot n° 10	Position number 10 for the optional slot.
11	General Status led	General status led: • green : ok • red : alarm on any slot • yellow : warning on any slot
12	Power led	Power supply presence indication; yellow when one of the power supplies is absent or out of order.
13	Handle	Handle to extract the slot.
14	Status led slot	CO-01 or CO-02 led, indicates the board status, according to the following scheme: • green: ok • red: alarm

		• yellow: on of the off-air inputs is in alarm.
15	On led slot	CO-01 or CO-02 led, indicates that the board is active and functioning correctly.

7.2 Rear panel.

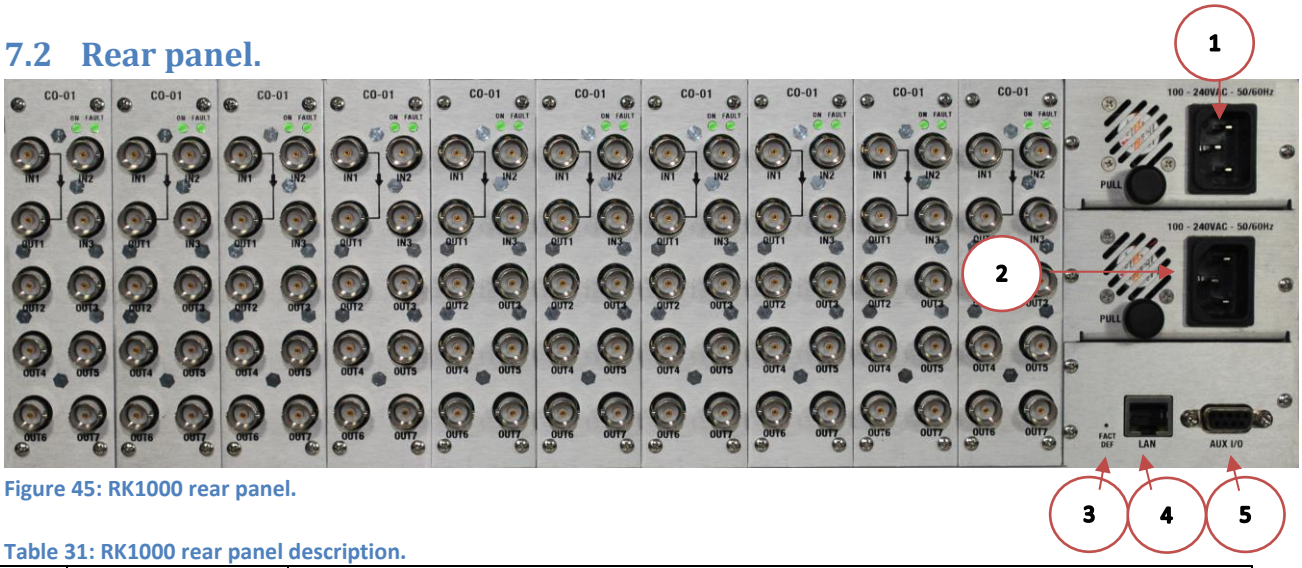

Figure 45: RK1000 rear panel.

Table 31: RK1000 rear panel description.

N°	Description	Function
1	IEC320 plug	Plug for power supply number 1.
2	IEC320 plug	Plug for power supply number 2.
3	FACT DEF	Key to reset the default settings of the equipment's network parameters. IP address: 192.168.10.150 Subnet mask: 255.255.255.0 Gateway IP: 192.168.10.254
4	LAN	RJ-45 connector for the management through Ethernet 10/100.
5	AUX I/O	GPIO connector.

Pin	Function
1	
2	Serial debug port RX.
3	Serial debug port TX.
4	COM contact of the alarm relay.
5	Mass.
6	3.3V
7	NA contact of the first alarm relay.
8	NA contact of the second alarm relay. (not managed).
9	Program reset for the microcontroller (debug use).

7.2.1 CO-01

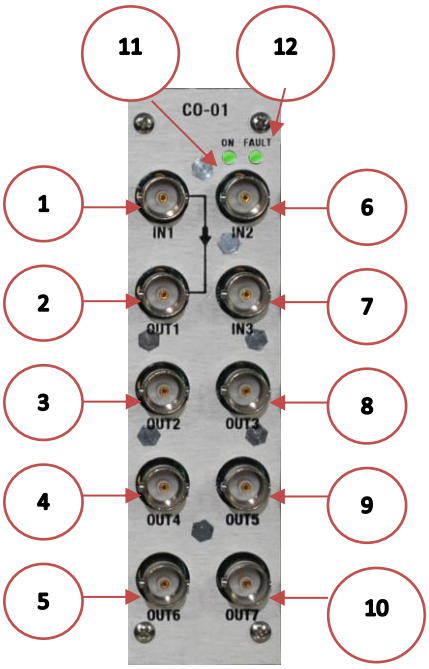

Figure 46: CO-01 rear panel.

Table 32: CO-01 rear panel description.

N°	Description	Function
1	BNC(f) 75 Ω Connector	IN1 : HD/SD-SDI/ASI input, main.
2	BNC(f) 75 Ω Connector	OUT1 : HD/SD-SDI/ASI main output, pass-through.
3	BNC(f) 75 Ω Connector	OUT2 : HD/SD-SDI/ASI output.
4	BNC(f) 75 Ω Connector	OUT4 : HD/SD-SDI/ASI output.
5	BNC(f) 75 Ω Connector	OUT6 : HD/SD-SDI/ASI output.
6	BNC(f) 75 Ω Connector	IN2 : HD/SD-SDI/ASI input, *Backup.*
7	BNC(f) 75 Ω Connector	IN3 : HD/SD-SDI/ASI input, *disaster recovery.*
8	BNC(f) 75 Ω Connector	OUT3 : HD/SD-SDI/ASI output.
9	BNC(f) 75 Ω Connector	OUT5 : HD/SD-SDI/ASI output.
10	BNC(f) 75 Ω Connector	OUT7 : HD/SD-SDI/ASI output.
11	*Led On*	Slot presence indication.
12	*Led Fault*	Slot problem indication.

7.2.2 CO-02.

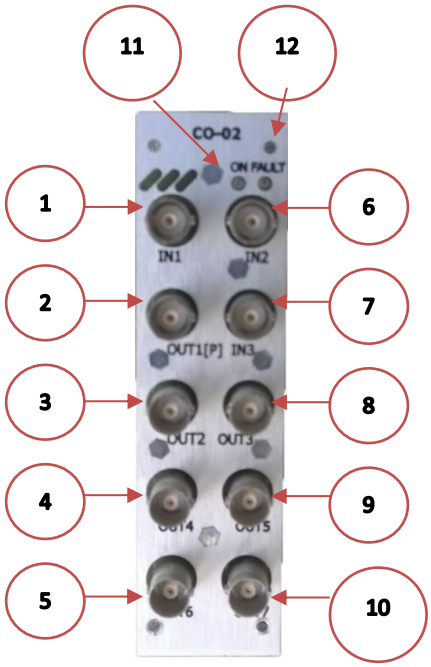

Figure 47: CO-02 rear panel.

Table 33: CO-02 rear panel description.

N°	Description	Function
1	BNC(f) 75 Ω Connector	IN1 : 3G/HD/SD-SDI/ASI input, main.
2	BNC(f) 75 Ω Connector	OUT1[P] : 3G/HD/SD-SDI/ASI output, last input (1 or 2) selected pass-through.
3	BNC(f) 75 Ω Connector	OUT2 : 3G/HD/SD-SDI/ASI output.
4	BNC(f) 75 Ω Connector	OUT4 : 3G/HD/SD-SDI/ASI output.
5	BNC(f) 75 Ω Connector	OUT6 : 3G/HD/SD-SDI/ASI output.
6	BNC(f) 75 Ω Connector	IN2 : 3G/HD/SD-SDI/ASI input, *Backup*.
7	BNC(f) 75 Ω Connector	IN3 : 3G/HD/SD-SDI/ASI input, *disaster recovery*.
8	BNC(f) 75 Ω Connector	OUT3 : 3G/HD/SD-SDI/ASI output.
9	BNC(f) 75 Ω Connector	OUT5 : 3G/HD/SD-SDI/ASI output.
10	BNC(f) 75 Ω Connector	OUT7 : 3G/HD/SD-SDI/ASI output.
11	*Led On*	Slot presence indication.
12	*Led Fault*	Slot problem indication.

7.2.3 CO-02b.

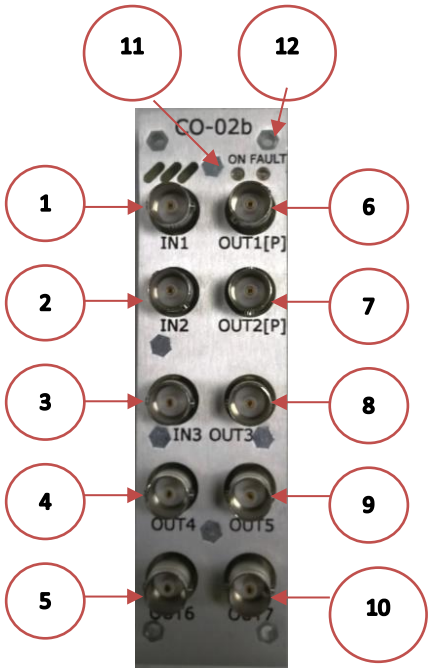

Figure 48: CO-02b rear panel.

Table 34: CO-02b rear panel description.

N°	Description	Function
1	BNC(f) 75 Ω Connector	IN1 : 3G/HD/SD-SDI/ASI input, main.
2	BNC(f) 75 Ω Connector	IN2 : 3G/HD/SD-SDI/ASI input, *Backup.*
3	BNC(f) 75 Ω Connector	IN3 : 3G/HD/SD-SDI/ASI input, *disaster recovery.*
4	BNC(f) 75 Ω Connector	OUT4 : 3G/HD/SD-SDI/ASI output.
5	BNC(f) 75 Ω Connector	OUT6 : 3G/HD/SD-SDI/ASI output.
6	BNC(f) 75 Ω Connector	OUT1[P] : 3G/HD/SD-SDI/ASI output, IN 1pass-through.
7	BNC(f) 75 Ω Connector	OUT2[P] : 3G/HD/SD-SDI/ASI output, IN2 pass-through.
8	BNC(f) 75 Ω Connector	OUT3 : 3G/HD/SD-SDI/ASI output.
9	BNC(f) 75 Ω Connector	OUT5 : 3G/HD/SD-SDI/ASI output.
10	BNC(f) 75 Ω Connector	OUT7 : 3G/HD/SD-SDI/ASI output.
11	*Led On*	Slot presence indication.
12	*Led Fault*	Slot problem indication.