DIGITAL BROADCAST

MOZART Series
FM Exciters/Transmitters
From 30W to 500W

User's Manual
Release 1.6

- DB ELETTRONICA TELECOMUNICAZIONI S.p.A. -
- Riviera Maestri del Lavoro, 20/1 - 35127 Z.I. SUD PADOVA ITALY -- Ph. (049) 870-0588 - Fax. (049) 870-0747 -
- http://www.dbbroadcast.com -

The constructor reserves the right to modify the information in this manual at any time without advising update.

Issued: July 2019 – Version 1.6
© 2019. Copyright by:
DB Elettronica Telecomunicazioni SpA
Riviera Maestri del Lavoro, 20/1
35127 Z.I. SUD PADOVA ITALY

All rights reserved.

All specifications, characteristics and circuit descriptions indicated in this manual are subject to change without notice.

INDEX

1 GENERAL INFORMATION 8

1.1 SAFETY NOTICES 8
1.2 FIRST AID IN CASE OF ELECTROCUTION 9
1.3 WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE) 10
1.4 MANUFACTURE LABELS 10
1.5 RF EXPOSURE STATEMENT 11
1.6 R&TTE DIRECTIVE 2014/53/EU 11

2 GENERAL DESCRIPTION 12

2.1 MAIN CHARACTERISTICS 13
2.2 AUDIO HIGHLIGHTS 13
2.3 HUMAN INTERFACE AND CONNECTIVITY AND WEB REMOTE CONTROL 14
2.4 MECHANICAL CONSTRUCTION HIGHLIGHTS 16
2.5 HARDWARE AND SOFTWARE PROTECTIONS 16

3 TECHNICAL SPECIFICATIONS 22

4 INSTALLATION AND ACTIVATION 24

4.1 INITIAL CHECK 24
4.2 CONNECTIONS 25
4.3 FIRST SWITCHING ON: HOW TO INCREASE THE POWER (IN CASE OF STAND ALONE UNIT) 26

5 MENU DESCRIPTION 29

5.1 VISUALIZATION 29
5.1.1 Start page 29
5.1.2 Main menu 29
5.2 vMETERS AND INFO MENU 30
5.2.1 Output Modulation 31
5.2.2 Left and Right channels level 31
5.2.3 AES-EBU Left and Right channels level 31
5.2.4 Auxiliary channels level 32
5.2.5 Voltages and current 32
5.2.6 Heatsink temperature 33
5.2.7 Device information 33
5.3 SETTINGS MENU 34
5.3.1 Frequency Set menu 35
5.3.2 Power Set menu 35
5.3.3 Power AMP Set menu 36
5.3.4 Operative Mode menu 37
5.3.5 Audio Selection menu 40
5.3.6 Sensitivity menu 43
5.3.7 Presetting menu 44
5.3.8 Alarms menu 51
5.3.9 Memory menu 59
5.3.10 History menu 63
5.3.11 Generals menu 64

6 FRONT PANEL 69

6.1 FRONT PANEL KEYS 69
6.2 FRONT PANEL LEDS 71
6.2.1 Status leds 71
6.2.2 Audio leds 72
6.2.3 Control leds 73
6.2.4 Command leds 74

7 REMOTE I/O (OPTIONAL) 75

8 WEB SERVER (OPTIONAL) 76
8.1 WEB PAGES 77
8.1.1 Main page 77
8.1.2 Login page 78
8.1.3 Settings page 79
8.1.4 Presettings page 80
8.1.5 Memories scheduling 81
8.1.6 Email notifications 82
8.1.7 Log page 86
8.1.8 Administration page 87
8.1.9 Modulator Upgrade page 89
8.1.10 Webserver Upgrade page 90
8.2 UPGRADING PROCEDURES 91
8.2.1 Upgrading the modulator firmware 91
8.2.2 Upgrading the webserver board firmware 95
8.3 SNMP PROTOCOL 99
8.3.1 Management Information Base MIB 99
8.3.2 General folder 100
8.3.3 Exciter folder 102
8.3.4 Amplifier folder 104
8.3.5 Notifications enable folder 106
8.3.6 Notifications folder 108
8.3.7 Message TRAP and INFORM configuration 110
9 TOP VIEWS 111
10 APPENDIX 1: EXTERNAL REFERENCE 117
11 APPENDIX 2: STEREO OPTION INSTALLATION 118
12 APPENDIX 3: WEB OPTION INSTALLATION IN MOZART 30/50 120
13 APPENDIX 4: WEB OPTION INSTALLATION IN MOZART 100/300/500 123

FIGURES INDEX

FIG. 2.1 - MOZART 30/50 FRONT VIEW 17
FIG. 2.2 - MOZART 30/50 REAR VIEW 18
FIG. 2.3 – MOZART 100/300/500 FRONT VIEW 19
FIG. 2.4 – MOZART 100/300 REAR VIEW 20
FIG. 2.5 – MOZART 500 REAR VIEW 21
FIG. 5.1 – START PAGE 29
FIG. 5.2 – MAIN MENU 29
FIG. 5.3 – VMETERS AND INFO MENUS FLOW GRAPH 30
FIG. 5.4 – OUTPUT TOTAL MODULATION PAGE 31
FIG. 5.5 – ANALOGIC LEFT AND RIGHT INPUT LEVELS 31
FIG. 5.6 – AES-EBU LEFT AND RIGHT INPUT LEVELS 31
FIG. 5.7 – AUXILIARY CHANNELS 1 INPUT LEVELS 32
FIG. 5.8 – AUXILIARY CHANNELS 2 INPUT LEVELS 32
FIG. 5.9 – VOLTAGES AND CURRENT PAGE 32
FIG. 5.10 – VOLTAGES AND CURRENT PAGE 33
FIG. 5.11 – HEATSINK TEMPERATURE PAGE 33
FIG. 5.12 – DEVICE INFORMATION PAGE 33
FIG. 5.13 – SETTING MENU FLOW GRAPH 34
FIG. 5.14 – SET FREQUENCY MENU 35
FIG. 5.15 – SET POWER MENU 35
FIG. 5.16 – SET POWER MENU 36
FIG. 5.17 – OPERATIVE MODE MONO 37
FIG. 5.18 – OPERATIVE MODE MONO CHANNEL SELECTION 37
FIG. 5.19 – OPERATIVE MODE STEREO OPTIONS 38
FIG. 5.20 – OPERATIVE MODE STEREO MPX 38
FIG. 5.21 – AUXILIARY CHANNELS OPTIONS 39
FIG. 5.22 – AUDIO SELECTION MENU OPTIONS 40
FIG. 5.23 – INPUT IMPEDANCE MENU 40
FIG. 5.24 – PRE-EMPHASIS MENU 41
FIG. 5.25 – ENABLE LIMITER MENU 41
FIG. 5.26 – LIMITER VALUE MENU 42
FIG. 5.27 – CHANNELS SENSITIVITY 43
FIG. 5.28 – PRESETTING MODE 44
FIG. 5.29 – PRESETTING MONO MODE MENU 45
FIG. 5.30 – PRESETTING STEREO MPX INT MODE MENU 46
FIG. 5.31 – PRESETTING TOTAL DEVIATION ADJUSTMENT 47
FIG. 5.32 – AES-EBU INTERFACE ENABLE MENU 47
FIG. 5.33 – AES-EBU RATIO MENU 48
FIG. 5.34 – PRESETTING AUXILIARY CHANNELS DEVIATION ADJUSTMENT 48
FIG. 5.35 – PRESETTING 19KHZ/MPX OUT MENU 49
FIG. 5.36 – PILOT TONE DEVIATION ADJUSTMENT 49
FIG. 5.37 – PILOT TONE PHASE ADJUSTMENT 50
FIG. 5.38 – ALARMS/WARNINGS MENU FLOW GRAPH 52
FIG. 5.39 – FOLDBACK REFLECTED MENU 52
FIG. 5.40 – WARNING REFLECTED MENU 53
FIG. 5.41 – WARNING POWER LOW MENU 53
FIG. 5.42 – ALARM POWER LOW MENU 54
FIG. 5.43 – AUDIO LOW LEVEL MENU 55
FIG. 5.44 – AUDIO LOW AES MENU 55
FIG. 5.45 – AUDIO LOW TIMEOUT MENUS 55
FIG. 5.46 – AUDIO OVER LEVEL MENU 56
FIG. 5.47 – AUDIO OVER AES MENU 56
FIG. 5.48 – AUDIO OVER TIMEOUT MENUS 57
FIG. 5.49 – AUDIO EVENTS TYPE MENU 57
FIG. 5.50 – RDS LEVEL MENU 58
FIG. 5.51 – RDS TIMEOUT MENU 58
FIG. 5.52 – MEMORY MENU FLOW GRAPH 59

FIG. 5.53 – ACTIVE MEMORY MENU 60
FIG. 5.54 – EDIT MEMORY MENUS 60
FIG. 5.55 – ENABLE MEMORY EDITING PAGE 61
FIG. 5.56 – ENDING EDITING MEMORY PAGE 61
FIG. 5.57 - MEMORY MENU DURING EDITING 61
FIG. 5.58 – CONFIRMATION EDITING MEMORY PAGE 61
FIG. 5.59 – CLEAR ALL MEMORY MENU 62
FIG. 5.60 – CLEAR ALL MEMORY CONFIRMATION PAGE 62
FIG. 5.61 – HISTORY MENU 63
FIG. 5.62 – HISTORY MENU EVENT DETAIL PAGE 63
FIG. 5.63 – GENERALS MENU FLOW GRAPH 64
FIG. 5.64 – SET HOUR PAGE 64
FIG. 5.65 – SET MINUTE PAGE 65
FIG. 5.66 – SET SECOND PAGE 65
FIG. 5.67 – SET DAY PAGE 66
FIG. 5.68 – SET MONTH PAGE 66
FIG. 5.69 – SET YEAR PAGE 66
FIG. 5.70 – SET RS-485 ADDRESS PAGE 67
FIG. 5.71 – UNIT IP ADDRESS PAGE 67
FIG. 5.72 – PASSWORD SECURITY PAGE 68
FIG. 5.73 – PASSWORD SET PAGE 68
FIG. 8.1 – WEBSERVER MAIN PAGE 77
FIG. 8.2 – WEBSERVER LOGIN PAGE 78
FIG. 8.3 – WEBSERVER SETTING PAGE 79
FIG. 8.4 – WEBSERVER PRESETTING PAGE 80
FIG. 8.5 – WEBSERVER MEMORIES SCHEDULING PAGE 81
FIG. 8.6 – E-MAIL NOTIFICATIONS PAGE 82
FIG. 8.7 – E-MAIL NOTIFICATIONS SAVING SETTINGS 83
FIG. 8.8 – E-MAIL NOTIFICATIONS CONTENT FORMAT 84
FIG. 8.9 – LOG EVENT .TXT 84
FIG. 8.10 – TEST EMAIL BUTTON 85
FIG. 8.11 – CONFIRMATION MESSAGE IN THE RECEIVED TEST EMAIL 85
FIG. 8.12 – WEBSERVER LOG PAGE 86
FIG. 8.13 – WEBSERVER ADMINISTRATION PAGE 87
FIG. 8.14 – WEBSERVER MODULATOR UPGRADE PAGE 89
FIG. 8.15 – WEBSERVER UPGRADE PAGE 90
FIG. 8.16 – START IN BOOTLOADER MODE 91
FIG. 8.17 – MODULATOR UPGRADE PAGE 91
FIG. 8.18 – NEW FIRMWARE SELECTION 92
FIG. 8.19 – UPLOAD THE NEW FIRMWARE 92
FIG. 8.20 – CONFIRM THE UPLOAD 92
FIG. 8.21 – UPGRADE TO THE NEW FIRMWARE 93
FIG. 8.22 – ERASE THE FLASH BEFORE THE UPGRADE 93
FIG. 8.23 – UPGRADE IN WORKING 93
FIG. 8.24 – UPGRADE COMPLETE 94
FIG. 8.25 – WEBSERVER UPGRADE PAGE 95
FIG. 8.26 – SELECT THE NEW WEBSERVER BOARD FIRMWARE 95
FIG. 8.27 – UPLOAD THE FIRMWARE TO WEBSERVER 96
FIG. 8.28 – CONFIRM THE UPLOADING 96
FIG. 8.29 – BUSY STATE DURING UPLOAD PROCEDURE 96
FIG. 8.30 – NEW FIRMWARE READY TO UPGRADE 97
FIG. 8.31 – CONFIRMATIONS TO UPGRADE 97
FIG. 8.32 – UPGRADE IN WORKING 97
FIG. 8.33 – REBOOT THE WEBSERVER 98
FIG. 8.34 – CONFIRM THE REBOOT 98
FIG. 8.35 – WAIT UNTIL THE REBOOT IS COMPLETED 98
FIG. 8.36 – SINGLE TRANSMITTER MIB TREE 99
FIG. 8.37 – SINGLE TRANSMITTER MIB – GENERAL FOLDER 100
FIG. 8.38 – SINGLE TRANSMITTER MIB – EXCITER FOLDER 102
FIG. 8.39 – SINGLE TRANSMITTER MIB – AMPLIFIER FOLDER 104

FIG. 8.40 – SINGLE TRANSMITTER MIB – NOTIFICATION ENABLE FOLDER 106
FIG. 8.41 – SINGLE TRANSMITTER MIB – NOTIFICATION FOLDER 108
FIG. 8.42 - TRAPS AND INFORMS CONFIGURATION 110
FIG. 9.1 – MOZART 30 TOP VIEW 111
FIG. 9.2 – MOZART 50 TOP VIEW 112
FIG. 9.3 – MOZART 100 TOP VIEW 113
FIG. 9.4 – MOZART 300 TOP VIEW 114
FIG. 9.5 – MOZART 500 TOP VIEW 115
FIG. 9.6 – MOZART 500 BOTTOM VIEW 116

TABLES INDEX

TABLE 5.1 – FREQUENCY PERMITTED VALUES 35
TABLE 5.2 – SETTING POWER SPECIFICS 36
TABLE 5.3 – IMPEDANCE PERMITTED VALUES 40
TABLE 5.4 – PRE-EMPHASIS PERMITTED VALUES 41
TABLE 5.5 – LIMITER PERMITTED VALUES 42
TABLE 5.6 – SENSITIVITY PERMITTED VALUES 43
TABLE 5.7 - PRESETTING STEREO MPX EXT MODE MENU 46
TABLE 5.8 – TOTAL DEVIATION ADJUSTMENT PERMITTED VALUES 47
TABLE 5.9 – AES-EBU RATIO PERMITTED VALUES 48
TABLE 5.10 – AUXILIARY CHANNELS DEVIATION ADJUSTMENT PERMITTED VALUE 48
TABLE 5.11 – PILOT TONE DEVIATION ADJUSTMENT PERMITTED VALUES 49
TABLE 5.12 – PILOT TONE PHASE ADJUSTMENT PERMITTED VALUES 50
TABLE 5.13 – FOLDBACK REFLECTED PERMITTED VALUES 52
TABLE 5.14 – WARNING REFLECTED PERMITTED VALUES 53
TABLE 5.15 – WARNING POWER LOW PERMITTED VALUES 54
TABLE 5.16 – ALARM POWER LOW PERMITTED VALUES 54
TABLE 5.17 – AUDIO LOW LEVEL PERMITTED VALUES 55
TABLE 5.18 – AUDIO LOW TIMEOUTS PERMITTED VALUES 56
TABLE 5.19 – AUDIO OVER LEVEL PERMITTED VALUES 56
TABLE 5.20 – AUDIO OVER TIMEOUTS PERMITTED VALUES 57
TABLE 5.21 – AUDIO EVENTS PERMITTED TYPES 57
TABLE 5.22 – RDS LEVEL PERMITTED VALUES 58
TABLE 5.23 – RDS TIMEOUT PERMITTED VALUES 58
TABLE 5.24 – MEMORY AVAILABLE 60
TABLE 7.1 – REMOTE I/O PINOUT 75
TABLE 8.1 – GENERAL OID AVAILABLE 101
TABLE 8.2 – EXCITER OID AVAILABLE 103
TABLE 8.3 – AMPLIFIER OID AVAILABLE 105
TABLE 8.4 – NOTIFICATIONS ENABLE OID AVAILABLE 107
TABLE 8.5 – NOTIFICATIONS OID AVAILABLE 109

1 GENERAL INFORMATION

1.1 SAFETY NOTICES

To avoid risks of electrical shocks or fire, only qualified personnel should execute the procedures specified in this manual.

When the protective covers of any device or component connected to a 110 / 240 VAC source by a power cord are removed, voltages and currents dangerous to life may be exposed.

Contact with 110 / 240 Volts of alternating current and associated direct current and voltages can be fatal.

CAUTION

To reduce the risks of electrical shock, do not remove the cover (or the back). Refer, for servicing, to qualified service personnel. This installation should be done by a qualified person and should comply with to all local applicable laws.

Beryllium Oxide

It is dangerous component if inhaled, eaten or put into direct contact with skin, especially if the skin is cut or wounded.
Special care is required in handling beryllium material in order to NOT produce any dust, particles, fumes etc. etc. Whenever beryllium material is broken it is extremely important to collect all parts in a carefully sealed and marked container for discharging in a specific way through controlled channels.
All above operations have to be affected using gloves and tongs, with special care taken not to produce dust.
After handling beryllium components, it is essential to wash hands carefully.

Beryllium compounds are used in **RF Connectors.**

1.2 FIRST AID IN CASE OF ELECTROCUTION

Do not touch the victim until the electrical circuit has been interrupted to make sure the person is isolated. If this is not possible, move the victim away from the conductor by using insulated material.

If respiration is interrupted, artificial respiration must be applied (mouth-to-mouth respiration). Lay the patient on his back, feet elevated above the level of the head, chin up and head back.

Call a doctor urgently

In case of a mouth wound it may be necessary to apply mouth-to-nose respiration, blocking the patient's mouth.

In case of face wounds the need for manual artificial respiration may arise.
Push down on the chest of the prostrate patient whilst moving the patient's arms up and out.

If the victim has also suffered burns then, without obstructing breathing, proceed as follows:

- Do not remove clothing from burn wounds.
- If possible gently pour cold water over wounds to relieve pain.
- Do not use any medication.
- Call for urgent medical assistance.

1.3 WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

The purpose of the DIRECTIVE 2002/96/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on waste electrical and electronic equipment (WEEE) is, as first priority, the prevention of waste electrical and electronic equipment and, in addition, the reuse, recycling and other forms of recovery of such wastes so as to reduce the disposal of waste.

To do this, remember to collect separately all the electronic material.

1.4 MANUFACTURE LABELS

All the units are identified by a silver label:

Label fields:

1. **P/N (Product name)**

This field contains the model of the unit (part name).

2. **S/N (Serial number)**

This field contains the serial number of the module or equipment (made by 8 digits).

3. **Symbols (on the right of the label)**

They indicate that the unit is conform with CE indications while the crossed-out bin symbol means that the product is covered by the European Community directive 2002/96/EC and this product should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or by the local authorities.

1.5 RF EXPOSURE STATEMENT

Antennas for broadcast transmitters should be mounted on outdoor permanent structures.

The FCC assesses RF exposure issues at the time of licensing of your station, with the required FCC Bureau(s), and this will include antenna co-location issues as required in 1.1307(b)(3).

Similarly, Canada will also assess RF exposure at the time the station is licensed.

1.6 R&TTE DIRECTIVE 2014/53/EU

Declaration of Conformity with regards to the R&TTE Directive 2014/53/EU

English:	This equipment is in compliance with the essential requirements and other relevant provisions of Radio Equipment Directive 2014/53/EU
Deutsch:	Dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 2014/53/EU.
Dansk:	Dette udstyr er i overensstemmelse med de væsentlige krav og andre relevante bestemmelser i Directiv 2014/53/EU.
Español:	Este equipo cumple con los requisitos esenciales asi como con otras disposiciones de la Directiva 2014/53/EU.
'Ελληνας	Αυτός ο εξοπλισμός συμμορφώνεται με τις ουσιώδεις απαιτήσεις και τις λοιπές διατάξεις της Οδηγίας 2014/53/EU.
Français:	Cet appareil est conforme aux exigences essentielles et aux autres dispositions pertinentes de la Directive 2014/53/EU.
Íslenska:	Þessi búnaður samrýmist lögboðnum kröfum og öðrum ákvæðum tilskipunar 2014/53/EU.
Italiano:	Questo apparato é conforme ai requisiti essenziali ed agli altri principi sanciti dalla Direttiva 2014/53/EU.
Nederlands:	Deze apparatuur voldoet aan de belangrijkste eisen en andere voorzieningen van richtlijn 2014/53/EU.
Norsk:	Dette utstyret er i samsvar med de grunnleggende krav og andre relevante bestemmelser i EU-directiv 2014/53/EU.
Português:	Este equipamento satisfaz os requisitos essenciais e outras provisões da Directiva 2014/53/EU.
Suomalainen:	Tämä laite täyttää direktiivin 2014/53/EU oleelliset vaatimukset ja on siinä asetettujen muidenkin ehtojen mukainen.
Svenska:	Denna utrustning är i överensstämmelse med de väsentliga kraven och andra relevanta bestämmelser i Direktiv 2014/53/EU.

2 GENERAL DESCRIPTION

The MOZART FM exciter/transmitter is the result of the development of the MSE (Magnetic Sound Enhancer) technology together with the improvements in the FM modulation and using high performances PFC filters for the AC/DC conversion. This unit is ideal as stand-alone unit for low power transmissions or suitable as high performance exciter in modular transmitters.
This unit has been developed with the Green RF technology which increases the efficiency of the amplification part reducing the dimensions and power consumption without modifying the quality of the transmission.
The main advantages of this technology are:

- High RF efficiency
- Lower heating (lower necessity of air conditioning in the installation room)
- Higher devices safety
- Higher total reliability
- Lower AC power consumption

An user-friendly interface with the combination of leds and LCD display offers a very easy method to control the unit main parameters with a metering accuracy that helps the user to install the unit and check its status even in case he doesn't have expensive test equipments.

In case of fault of the unit or antenna system, the protection system lowers automatically the output power, in order to bring back the operating conditions to a safe area without causing a system shut down, and it indicates on the front panel display the alarm message.

The protection system reduces or stops the output power in case of:

- V.S.W.R. too high.
- Heatsink temperature too high or cooling stop (OVER HEAT).
- Missing Enable command (in case of combination with external units like control logic units)

The switch-mode power supply is largely oversized and guarantees a regular operation even in the presence of wide main voltage fluctuations.
The systems cooling grants a safe operation even in hard climatic conditions.

The unit is the latest audio excellence in the FM Broadcasting industry with the revolutionary MSE Technology

2.1 MAIN CHARACTERISTICS

- Reduced maintenance. Easy accessibility of all parts, external serviceable cooling air filters, very high MTBF for RF and power supply modules, are only some of the characteristics that explain the very high reduction of maintenance costs obtained.
- N+1 facility (optional). N+1 facility control available to modify remotely the frequency and power output for redundant systems.
- Very small dimensions and low weight, reduce transport costs and simplifying the logistic.
- High frequency stability, in short and long terms, is assured by Digital Phase Locked Loop circuit with low drift VTCXO
- External reference oscillator available as option: 10 MHz input SMA 0 dBm.
- Frequency Agile Broadband programmability from the front LCD panel with 10 KHz steps without any tuning or adjustment.
- Meets or exceeds all the international standards for safety and electrical specifications.

2.2 AUDIO HIGHLIGHTS

- MSE: Magnetic Sound Enhancer a magnetic barrier protects the VCO, the heart of FM modulator, increasing the sound quality.
- STEREO GENERATOR (optional): High performance built-in digital stereo coder provides separation typical>65dB
- Signal/noise ratio >80dB assures the highest audio quality.
- Input sensitivity and output deviation adjustable with high precision of 0,05dB through display interface or remotely by WEB.

- The level and the phase of the Pilot tone adjustable from the front panel and Web interface
- AES/EBU digital stereo audio interface available as option.
- Limiter keeps the maximum frequency deviation within international requirements to avoid over-modulation and adjacent channels invasion, the limiter levels can be set from the front panel.
- Switch-mode power supply with power factor control. Highly efficient and widely over-rated power supply modules insure low heating, low AC power consumption and superior reliability. The power factor control circuitry allows to meet all the international requirements for mains network disturbances.
- High efficiency cooling system. The air cooling system limits the heatsink temperature rise to only about 10°C above ambient temperature. This assures the transmitter ability to properly operate even in high ambient temperature sites with hard climate conditions.

2.3 HUMAN INTERFACE AND CONNECTIVITY AND WEB REMOTE CONTROL

- All parameters can be displayed and set by front panel or from Web interface.
- All the series shares the same human interface:
    - LCD Display.
    - Four arrows keys, OK key, ESC key, direct function push buttons ON/OFF, Local/Remote, Reset Alarms
    - All the main working parameters are displayed by leds and messages to easily indicate the transmitter status. On/Off, Local Remote, Trip-lock Out Alarm, On Air, Warning, Alarm, Interlock, Audio Alarm, Stereo Mode, MPX Mode, RDS On/Off, SCA On/Off, Mono Mode, Pre-emphasis On/Off, Limiter On/Off
- Full control of the transmission and modulation parameters

- Latest WEB/SNMP interface (optional):
    - TCP/IP Remote control WEB Server SNMP (v2c), with INFORMS/TRAPS, DHCP, FTP, TELNET for full remote control system.
    - The IP address can be easily read on the front panel.
    - The firmware is remotely upgradable with an easy procedure available on the WEB interface without the need for proprietary tools; the integrity of the new software is verified by checksum control; after new release has been installed it's always possible to return to the previous firmware release: in the WEB page it’s present a list of firmware that can be downloaded to the transmitter so it's possible to select which release (the new or the old one) will run on air.
    - Every alarm event is displayed on the frontal panel, up to 200 events are displayed on a history menu available on front panel display and a more accurate LOG file is available on the web page with a list of events up to 64000 entries.
    - The LOG file can be downloaded to a PC in a simple text format.
    - The LOG file keeps the history of commands, alarms, warnings and info events to rebuild accurately the state of the transmitter.
    - Save and recall of up to 6 transmitter configurations: all working parameters can be saved and exported to a PC and subsequently downloaded to the same transmitter or to another one.
- Parallel Remote Control Connector Interface with Dry contact relays outputs and Opto-isolator inputs (option)
- RS 485 Interface
- RDS option: The static RDS encoder meets requirements of most radio stations. Fully digital concept and uniquely effective design ensures high reliability, excellent signal characteristics and gives the user many advanced features. Includes scrolling, parsing, advanced weekly scheduling, EON, RT+, UECP, ASCII terminal control.

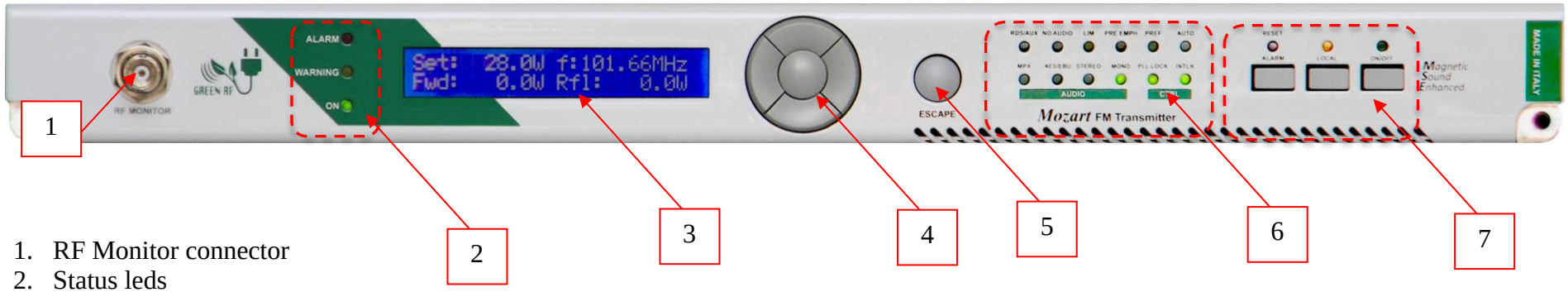
2.4 MECHANICAL CONSTRUCTION HIGHLIGHTS

- AIR FILTER: available as an option on all transmitters
- HOT-PLUG FANS: Maintenance time 5 Minutes without the need to access inside!
- 1 rack unit physical dimension for 30W and 50W version, 2 rack units for the other models
- Protection against shocks: Mechanically studied to prevents damage to connectors, fans, and all the parts that typically may be damaged during transport or installation.
- AAD Technology prevents the corrosion produced by the air and increase the reliability
    - The construction is totally in aluminium.
    - The air is ducted to reduce the electronic board's contact.
    - The electronic boards are tropicalized with a special resin to protect the circuits against salt air.

2.5 HARDWARE AND SOFTWARE PROTECTIONS

- Software algorithms and hardware circuits provide intelligent protections that reduce the output power without any on-air service interruption, keeping the transmitting system always within the safe operating parameters in the event of:
    - Load mismatching
    - Environmental over-temperature
    - Cooling failure
    - Failure in power supply
- Fast Hardware protections prevents hardware failures in case of very fast events that can damage the transmitter.
- The transmitter has two software levels of reflected power alarms: a Warning and a Failure Level.

Fig. 2.1 - MOZART 30/50 FRONT VIEW

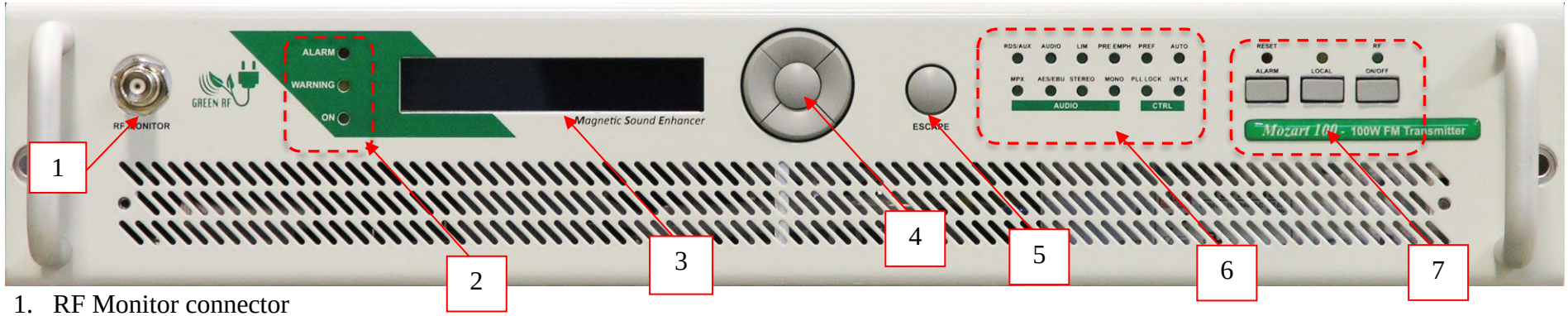


1. RF Monitor connector
2. Status leds
   a. ALARM: in case of a temporary alarm (it returns automatically to the normal status at next attempt of the unit) – RED led
   b. WARNING: in case of a warning is present - YELLOW led
   c. ON: in case the unit is connected to the mains and switched on – GREEN led
3. LCD Display
4. Navigation keys (UP /DOWN / RIGHT / LEFT / OK)
5. Escape key
6. AUDIO and CONTROL leds
   a. RDS/AUX: it is ON in case the RDS/SCA/AUX are on
   b. MPX: it is ON in case the MPX EXT mode is selected
   c. AUDIO: it is ON in case of correct level of input audio signal
   d. AES-EBU: it is ON in case the AES-EBU is on
   e. LIM: it is ON in case the limiter is set to on
   f. STEREO: it is ON in case the MPX INT mode is selected
   g. PRE EMPH: it is ON in case the pre-emphasis is on
   h. MONO: it is ON in case the MONO mode is selected
   i. PREF: no actually available
   j. PLL LOCK: it is ON in case the PLL is correctly locked
   k. AUTO: no actually available
   l. INTLK: it is ON in case the ENABLE is closed
7. Command keys (Reset Alarms, Local/Remote, ON/OFF) and leds (Fault, Local, RF ON)

Fig. 2.2 - MOZART 30/50 REAR VIEW

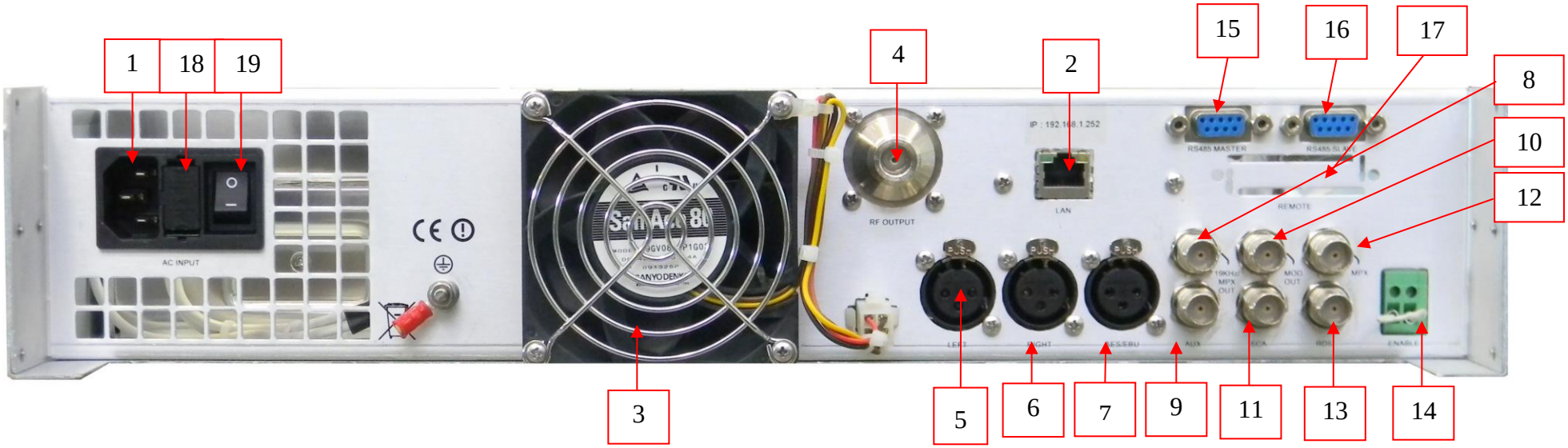
1. AC input
2. LAN port
3. Cooling FAN
4. RF output connector (N)
5. Left XLR connector
6. Right XLR connector
7. AES/EBU XLR connector
8. 19kHz / MPX OUT BNC connector
9. AUX BNC connector
10. MOD OUT BNC connector
11. SCA BNC connector
12. MPX BNC connector
13. RDS BNC connector
14. ENABLE connector
15. RS 485 MASTER connector
16. RS 485 SLAVE connector
17. REMOTE connector
18. RDS port

Fig. 2.3 – MOZART 100/300/500 FRONT VIEW



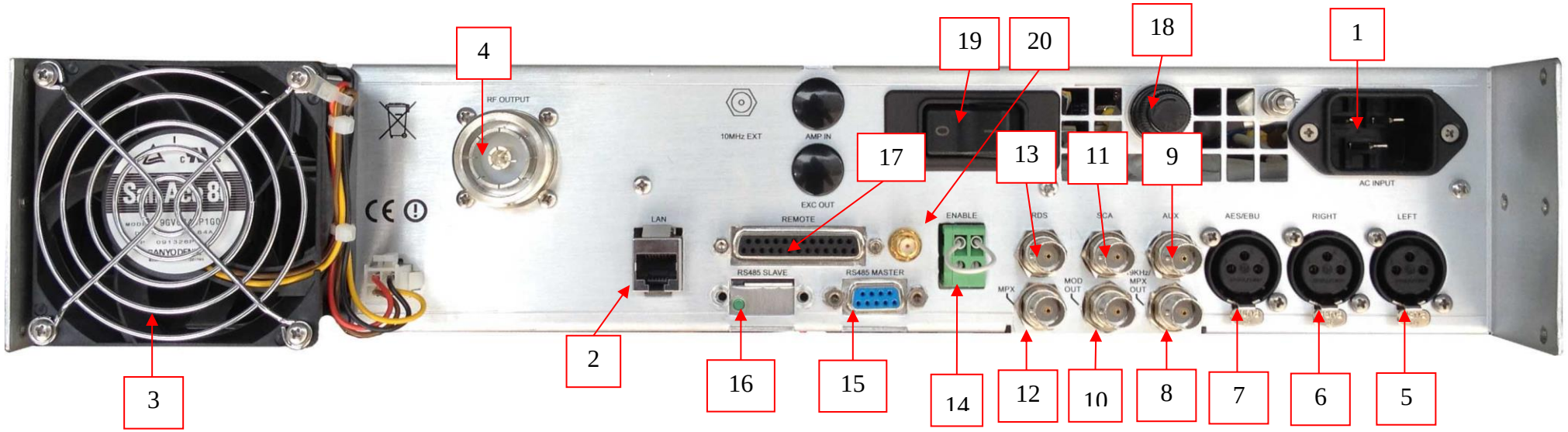
1. RF Monitor connector
2. Status leds
    a. ALARM: in case of a temporary alarm (it returns automatically to the normal status at next attempt of the unit) – RED led
    b. WARNING: in case of a warning is present - YELLOW led
    c. ON: in case the unit is connected to the mains and switched on – GREEN led
3. LCD Display
4. Navigation keys (UP / DOWN / RIGHT / LEFT / OK)
5. ESCAPE key
6. AUDIO and CONTROL leds
    a. RDS/AUX: it is ON in case the RDS/SCA/AUX are on
    b. MPX: it is ON in case the MPX EXT mode is selected
    c. AUDIO: it is ON in case of correct level of input audio signal
    d. AES-EBU: it is ON in case the AES-EBU is on
    e. LIM: it is ON in case the limiter is set to on
    f. STEREO: it is ON in case the MPX INT mode is selected
    g. PRE EMPH: it is ON in case the pre-emphasis is on
    h. MONO: it is ON in case the MONO mode is selected
    i. PREF: no actually available
    j. PLL LOCK: it is ON in case the PLL is correctly locked
    k. AUTO: no actually available
    l. INTLK: it is ON in case the ENABLE is closed
7. Command keys (Reset Alarms, Local/Remote, ON/OFF) and leds (Fault, Local, RF ON)

Fig. 2.4 – MOZART 100/300 REAR VIEW



1. AC input
2. LAN port
3. Cooling FAN
4. RF output connector (N)
5. Left XLR connector
6. Right XLR connector
7. AES/EBU XLR connector
8. 19kHz / MPX OUT BNC connector
9. AUX BNC connector
10. MOD OUT BNC connector
11. SCA BNC connector
12. MPX BNC connector
13. RDS BNC connector
14. ENABLE connector
15. RS 485 MASTER connector
16. RS 485 SLAVE connector (or space for SIM card in case of SMS option)
17. REMOTE connector (optional)
18. Fuse
19. Switching on button

Fig. 2.5 – MOZART 500 REAR VIEW



1. AC input
2. LAN port
3. Cooling FAN
4. RF output connector (N)
5. Left XLR connector
6. Right XLR connector
7. AES/EBU XLR connector
8. 19kHz / MPX OUT BNC connector
9. AUX BNC connector
10. MOD OUT BNC connector
11. SCA BNC connector
12. MPX BNC connector
13. RDS BNC connector
14. ENABLE connector
15. RS 485 MASTER connector
16. RS 485 AUX connector (or space for SIM card in case of SMS option)
17. REMOTE connector
18. Fuse
19. Switching on button
20. Antenna connector for SMS option

3 TECHNICAL SPECIFICATIONS

RF FEATURES	
RF Output impedance	50Ω unbalanced
Frequency range	87.5 to 108 MHz
Frequency control	Synthesizer μprocessor controlled
Off-lock attenuation	> 75 dBc (typical -80 dB)
Type of modulation	F3E / F8E direct FM at the carrier frequency
Modulation mode	Mono, Stereo, Multiplex, SCA, RDS, AUX (input selected by front panel)
Frequency deviation	±75 kHz =100 %, ±150 kHz capability (others on request)
Reference	VCTCXO 10 MHz ± 1ppm or 10 MHz external (Optional)
Constancy of freq. dev.	±1 % over six months
Variation of freq.	± 1ppm/year
Short term stability	± 1 ppm from -5 to +45 °C
Instantaneous BW	>20 MHz
RF harmonics	Exceeds CCIR/FCC requirements
RF spurious	Exceeds CCIR/FCC requirements
Pre-emphasis	Flat/25/50/75μs selectable via front panel
Pre-emphasis precision	Nominal 1% (typical 0.4%)
Stereo operation	CCIR 450/S2 "pilot tone system"

STEREO OPERATION	
1. Audio response	±0.3 dB from 20 Hz to 15 kHz
2. Audio filter attenuation	> 55 dB @ 19 kHz, >45dB 19 to 100kHz
3. Common mode rejection	20 Hz to 15 kHz > 45 dB
4. Stereo Separation	30-80Hz >53dB (typ. 56), 80Hz-15kHz >60 dB (typ.70)
5. Crosstalk attenuation (M / S)	> 40 dB 30 Hz to 15 kHz (typ. 52dB / 400Hz to 5kHz)
6. Spurious products	> 53 kHz > 50 dB
7. Subcarrier frequency	38 kHz ± 2 Hz
8. Subcarrier generation	Internal crystal
9. Pilot frequency	19 kHz ± 1 Hz
10. THD+N on encoded channels	< 0.03 % 30 Hz TO 15 kHz (typ. -75dB)
11. Nominal pilot deviation	±7 kHz

MONO OPERATION	
Audio response	±0.3 dB 20 Hz to 15 kHz (+0/-2%)
THD+N on encoded channels	30 Hz to 15 kHz < 0.06% (typ. 0.03%) typ. -78dB

MPX OPERATION (External coder)	
Audio response	30Hz - 100kHz ± 0.15 dB
THD+N on encoded channels	30 Hz to 15 kHz < 0.03% (typ. 0.02%, < -75dB)

AUDIO INPUTS						
Function	**Input level / Adjustment range**	**BW**	**Impedance**	**Type**	**Conn.**	**N°**
Composite	-6 ÷ +6 dBu (+6 ÷ +18 dBu available on request)	±0.15 dB 30 Hz÷100kHz	>5 kΩ	Unbal.	BNC	1
SCA/RDS/AUX	-19.5 ÷ -7.5 dBu	±0.15 dB 40kHz÷100kHz	~2 kΩ (other on request)	Unbal.	BNC	2
AES/EBU	-3 dBFS for ± 75 kHz 15 dBu (12.33 Vpp) -15 … 0 dBFS 0 to 15 dBu (2.19 Vpp to 12.3 Vpp)	0.15 dB 40kHz÷100kHz	110 Ω	Unbal	XLR	3
L	-9 ÷ +18 dBu	±0.15 dB 30Hz÷15kHz	10 kΩ 600 Ω	Unbal. Bal.	XLR	4
R	-9 ÷ +18 dBu	±0.15 dB 30Hz÷15kHz	10 kΩ 600 Ω	Unbal. Bal.	XLR	5

OUTPUTS	
Monitor RF output	-44dBc±2dB from 87.5 to 108 MHz
Pilot/MPX	BNC connector 19 kHz or MPX, level 1 Vpp, internally adjustable
Mod. Output	BNC Connector

MODEL	NOMINAL POWER	CONNECTOR	SIZE (HxWxD)*
MOZART 30	30 W	N	1U x 19", 463.5 mm
MOZART 50	50 W	N	1U x 19", 463.5 mm
MOZART 100	100 W	N	2U x 19", 512.5 mm
MOZART 300	300 W	N	2U x 19", 512.5 mm
MOZART 500	500 W	N	2U x 19", 497.5 mm

* except the handles (dimension of the handles = 42 mm)

ENVIRONMENT	
Storage temperature	-20°C TO + 60 °C
Operating temperature	0 °C TO + 50 °C
Guaranteed performance temperature	0 °C TO + 45 °C
Relative non-condensing humidity	90 % MA
Max operating altitude	3000 mt.
Max extraneous field strength	≤10 V/m; ≤ 4 A/m

SIZE & ELECTRICS	
Power supply	110/220V single phase AC (+10 / -15 %) 50-60Hz/ ± 5%
Display	Blue back panel; 2 raw 24 characters LCD
Cooling	Forced air, with external long life brushless ball bearing fan

Features and specifications subject to change without notice.

4 INSTALLATION AND ACTIVATION

4.1 INITIAL CHECK

The equipment becomes the property of the customer when the equipment is delivered to the carrier. Carefully unpack the transmitter. Perform a visual inspection to determine that no apparent damage has been incurred during shipment. All shipping materials should be retained until it is determined that the unit has not been damaged. Claims for damaged equipment must be promptly filed with the carrier or the carrier may not accept the claim.
The contents of the shipment should be as indicated on the packing list. If the contents are incomplete, or if the unit is damaged electrically or mechanically, notify both the carrier and the supplier.

CAUTION: Before switch the equipment on, ensure that all RF Loads, RF cables and connectors are properly connected. To prevent damage to the amplifiers, it is essential that either the feeder and antenna system or the dummy load have a good in band return loss.
Failure to observe the above caution and also the installation instructions of this amplifier may cause damages to the amplifiers for which the supplier cannot be considered responsible.

❶ PREVENTION OF ACCIDENTS

When it is used in normal applications and within the parameters defined in the technical specifications, this equipment does not endanger health and safety, provided that normal operating and engineering safety practices are observed and that it is used only by authorized, trained and qualified personnel.

❷ THERMIC AND ENVIRONMENTAL CONDITIONS

- A too high environmental temperature (in any case not higher than 45°C) shall cause a non-adequate rack cooling putting the equipment in hard working conditions.
- An air conditioner should be installed to keep the room temperature constant even in case of external temperature variation.

4.2 CONNECTIONS

Install the transmitter so that the space over and under the equipment is sufficient for the cooling air to flow through.

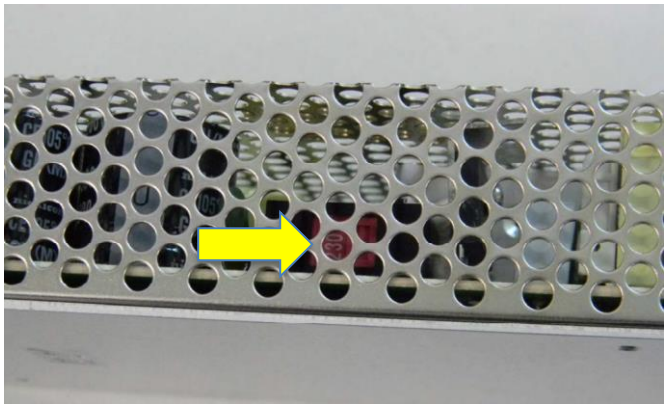
Before installing the equipment always make sure that the transmitter is not powered. This has the purpose to prevent electrical shocks to the operators and damage to the equipment.

Before carrying out any other electrical connection, connect the rack to the station ground.

- Connect the transmitting antenna cable or the cable related to the connection of the output filter to the output connector of the unit (in the latest case connect the output of the filter to the transmitting antenna) using a 50 Ohms coaxial cable.
- In case the transmitter is not connected to an external control unit, check that the ENABLE connector on the back panel is correctly inserted.
- Connect the power cord to an operating source. Make sure that the power supply source provides the nominal voltage prescribed.

Note: the unit is designed to operate with the nominal voltage ±15%. We suggest the installation of spike suppressors, line conditioners, isolation transformers, AVR and/or UPS or other devices useful to protect the equipment from eventual damages that can be caused by the mains fluctuations.

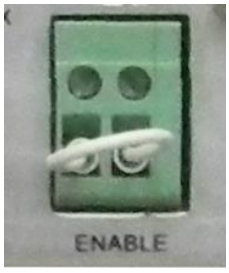
Note: In case of change of the AC supply voltage from 230 VAC to 115 VAC or vice versa, all the models will work in the correct way without any degradation. The AC/DC switching boards are all able to support these voltages but in case of 30W and 50W models, it is necessary to make a change in a switch present in the lateral side of the RS 150-48 switching board (while in the other models no change is necessary). See in the photo here below the dip switch position: move it with a screwdriver in the correct position.



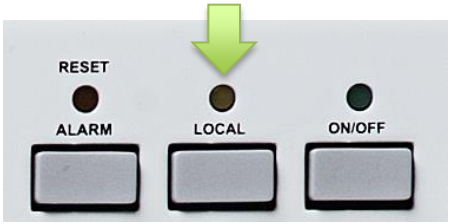
4.3 FIRST SWITCHING ON: HOW TO INCREASE THE POWER (IN CASE OF STAND ALONE UNIT)

Follow these steps for the first switching on of the unit:

- Verify the antenna is correctly connected to the output of the transmitter or, in case of modular transmitter, verify that the output of the unit is connected to the input of the amplifier and the antenna is correctly connected to the output of the amplifier.
- Connect the power cord to a power supply source and switch on the unit.
- Verify that on the back panel the ENABLE connector is correctly closed to enable the unit.



- Verify the ON led on the front panel is on. This means it is correctly powered.
- Verify the ALARM led and the WARNING led are switched off.
- Verify if the external fans have started.
- Connect the audio signal to the unit (see Operative mode menu, Audio selection menu, Sensitivity menu, Presetting menu paragraphs for more information).
- Check that the unit is in LOCAL mode (led above the LOCAL button switched on) otherwise push the button LOCAL.



- Increase slowly the output power following the instructions here below:
  - <u>CASE 1: Stand-alone unit</u>

    Enter the [02] Power set menu. Press the OK key to enter the program mode (blinking arrow in second row on the right).

    In the first row the forward power value indicates the actual output power, in the second row the Set Pout is the value that the customer is setting.

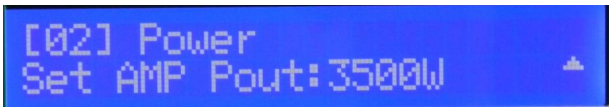
The value can be modified pressing UP and DOWN keys to increase or decrease the value. Confirm new value and exit routine pressing the OK button or press ESC key to exit without saving.

The new power value is applied in real time.

Press the ON/OFF button to exit the stand-by mode and enable the RF.

- CASE 2: Exciter with only one amplifier

Set the exciter power as indicated in CASE 1. Press DOWN button to enter the [2] Power AMP set menu. Press the OK key to enter the program mode (blinking arrow in second row on the right).



The value can be modified pressing UP and DOWN keys to increase or decrease the value. Confirm new value and exit routine pressing the OK button or press ESC key to exit without saving.

The new power value is applied in real time.

NOTE: check that the exciter and amplifier are connected together with RS485 connection and that the amplifier is set in ALC remote mode (for more information refer to the amplifier manual)

Press the ON/OFF button to exit the stand-by mode and enable the exciter to work.

- CASE 3: Exciter with a modular amplifier with a control logic unit
  Set the exciter power as indicated in CASE 1. Set the total output power from control logic unit display (see the manual of the CLU for more references).

- Verify the following data:
  - ALARM led is off
  - The REFL power is lower than 10% of the output power
  - The heat-sink temperature is lower than 60°C.
  - In case of more than one RF module present inside the unit, check that the voltage and current of all the modules are more or less similar (no unbalancing on the RF part)

5 MENU DESCRIPTION

5.1 VISUALIZATION

The following pages are related to parameters that are visualized on the front panel: they are indications of the actual operating parameters of the unit.

5.1.1 START PAGE

After the unit power on, the first page in the display shows information about the internal hardware revision and supplier (first row), and about firmware revision and unit model (second row).

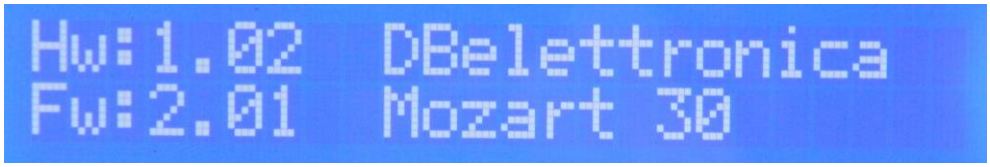


Fig. 5.1 – Start page

The page remains active for a few seconds before moving to the main menu.

5.1.2 MAIN MENU

This is the default page and it indicates the output power set by the customer (SET), the transmission frequency in MHz, the real forward power in Watt (that can be different from SET in case of an alarm, warning, failure or in case the unit is in OFF state), and the reflected power in Watt.

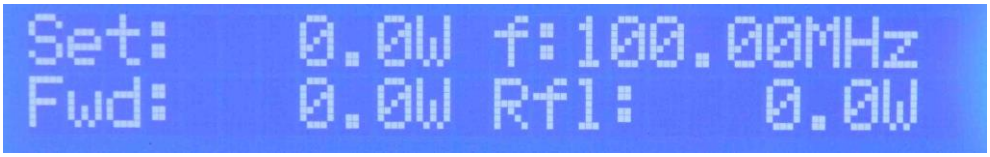


Fig. 5.2 – Main menu

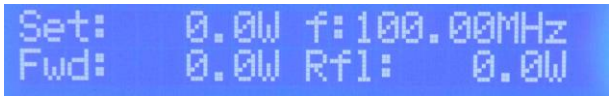
The unit moves to this page in case no key is pressed for 60 seconds.

5.2 VMETERS AND INFO MENU

In these menus it is possible to find the levels of the input channels, the internal voltages, currents, temperatures and the software/hardware revisions.

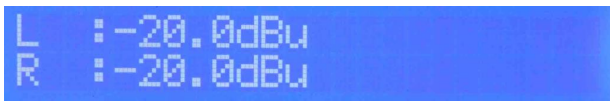
In the Main Menu page press DOWN key to enter these pages and UP and DOWN keys to navigate in the sub-menus.

[0]
Main Page



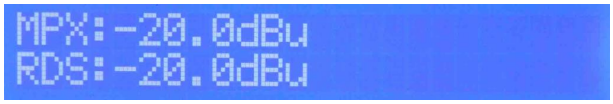
[1]
Output Modulation

[2]
Left and Right channels input level

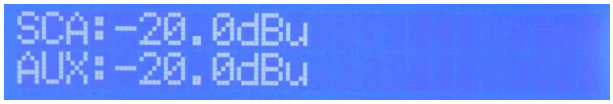


[3]
Left and Right AES-EBU channels input level

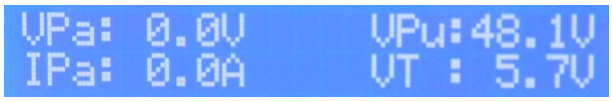
[4]
MPX External, RDS External input levels



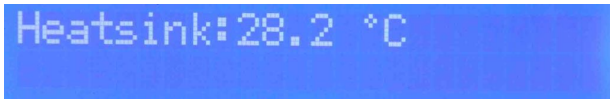
[5]
SCA and AUX input levels



[6]
Internal voltages and current



[7]
Heatsink temperature



[8]
Device information

[9]
Date and Time

Fig. 5.3 – Vmeters and Info menus flow graph

5.2.1 OUTPUT MODULATION

In this page the Total Output modulation (deviation) level is indicated in kHz.

Fig. 5.4 – Output Total Modulation page

Pressing the UP or DOWN buttons you can move inside this menu and see the different pages indicated here below.

5.2.2 LEFT AND RIGHT CHANNELS LEVEL

In this page the analogic Left and Right channels levels are indicated in dBu.

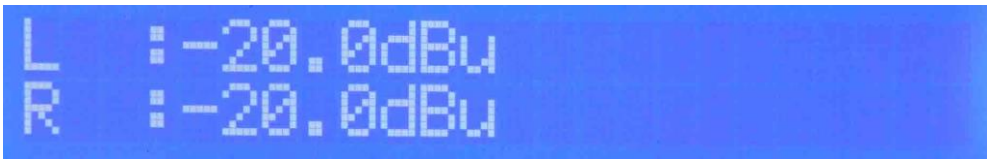


Fig. 5.5 – Analogic Left and Right input levels

5.2.3 AES-EBU LEFT AND RIGHT CHANNELS LEVEL

Pressing the DOWN button you can see the Left and Right levels for the AES-EBU input channels indicated in dBFS.

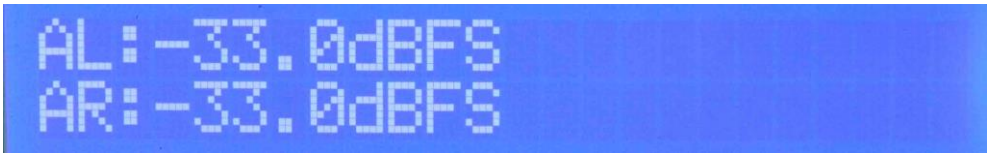


Fig. 5.6 – AES-EBU Left and Right input levels

5.2.4 AUXILIARY CHANNELS LEVEL

Pressing the DOWN button you can see the MPX External and RDS External levels indicated in dBu.

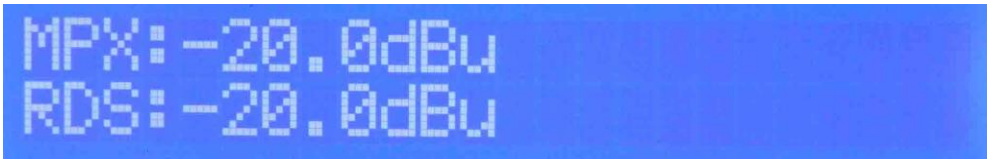


Fig. 5.7 – Auxiliary channels 1 input levels

Pressing the DOWN button you can see the SCA and AUX levels indicated in dBu.

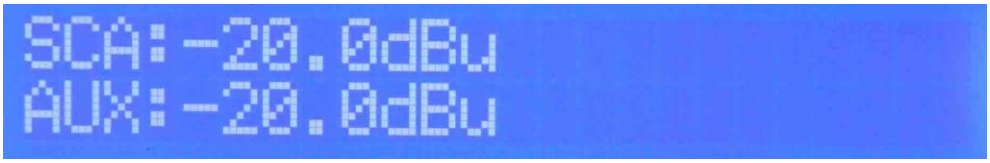


Fig. 5.8 – Auxiliary channels 2 input levels

5.2.5 VOLTAGES AND CURRENT

This page allows the visualization of the unit analogic working values. In case of transmitter units below 1kW the visualization will be the following one:

VPA = voltage that supplies the RF module in Volt.
IPA = current absorbed by the RF module in Ampere.
VPu = Main power supply voltage in Volt.
VT = Voltage Tuning (VCO working voltage) in Volt.

Fig. 5.9 – Voltages and Current page

In case of 2000W or 3000W transmitter unit the visualization will be the following one:

V1 = DC supply voltage related to the RF module nr 1

V2 = DC supply voltage related to the RF module nr 2

V3 = DC supply voltage related to the RF module nr 3 (present only in 3000W unit)

I1 = absorbed current of the RF module nr 1

I2 = absorbed current of the RF module nr 2

I3 = absorbed current of the RF module nr 3 (present only in 3000W unit)

Fig. 5.10 – Voltages and Current page

5.2.6 HEATSINK TEMPERATURE

This page allows the visualization of the RF heatsink temperature in Celsius degrees.

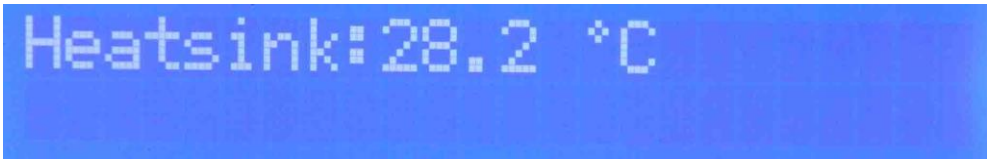


Fig. 5.11 – Heatsink temperature page

5.2.7 DEVICE INFORMATION

This page allows the visualization of device model, manufacturer name, hardware and firmware revisions.

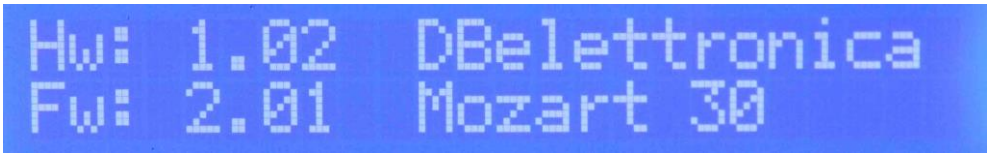


Fig. 5.12 – Device information page

5.3 SETTINGS MENU

The following pages are related to the unit main parameters. To navigate on **Setting** menu press LEFT or RIGHT key from Main Menu.

In case sub-menu is present, an arrow pointing downwards will be showed in the second row on the right, press DOWN or UP to navigate on sub-menus.

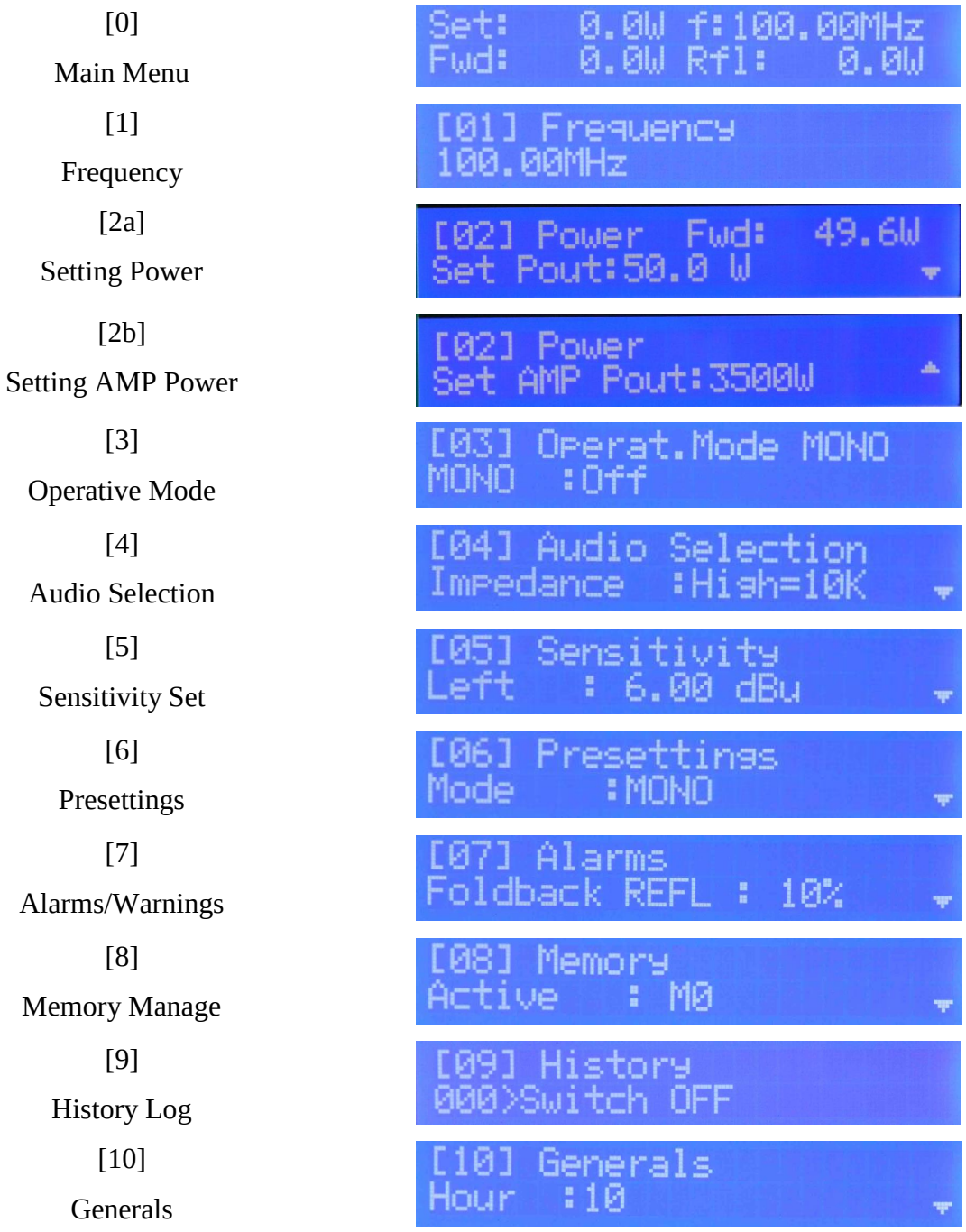


Fig. 5.13 – Setting menu flow graph

5.3.1 FREQUENCY SET MENU

Press the LEFT or RIGHT keys to access the set frequency menu. Push the OK key to enter the menu (a blinking arrow will be showed in the second row on the right), press UP key to increase or DOWN key to decrease the frequency value. Confirm the new value pressing the OK key or ESC key to exit without saving.
During the frequency change the PLL LOCK led will be switched off until the PLL will be locked to the new frequency.

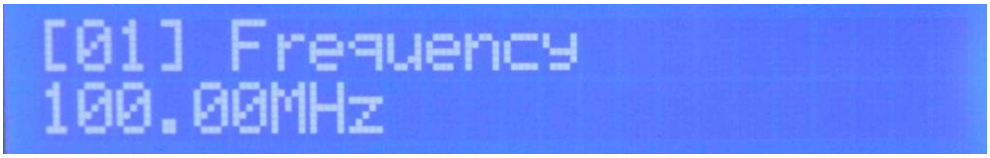


Fig. 5.14 – Set frequency menu

MIN value: 87.50 MHz	MAX value: 108.00 MHz	STEP: ±0.01MHz

Table 5.1 – Frequency permitted values

5.3.2 POWER SET MENU

IMPORTANT NOTE: This menu is present only in Local mode from firmware version 2.71

To program the RF Power output in Watt, press the LEFT or RIGHT key up to select the menu here below. Press the OK key to enter the program mode (blinking arrow in second row on the right).
In the first row the forward power value indicates the actual output power level, in the second row the Set Pout is the value to set.

Fig. 5.15 – Set power menu

The value can be modified pressing UP and DOWN keys to increase or decrease the value. Confirm new value and exit routine pressing the OK button or press ESC key to exit without saving.
The new power value is applied in real time.

MODEL	MIN POWER	MAX POWER	STEP
Mozart 30	3 W	30 W	0.1 W
Mozart 50	5 W	50 W	0.1 W
Mozart 100	5 W	100 W	1 W
Mozart 300	15 W	330 W	1 W
Mozart 500	10 W	550 W	10 W

Table 5.2 – Setting power specifics

5.3.3 POWER AMP SET MENU

In case the unit is the exciter for only one amplifier, the control of the output power of the amplifier is realized through the unit menu and the command arrive by RS485 connection. To program the RF Power output of the amplifier (in Watt), press the DOWN key to access the set AMP power menu from Set Power menu. Press the OK key to enter the program mode (blinking arrow in second row on the right).
In the first row the forward power value indicates the actual output power, in the second row the Set Pout is the value that the customer is setting.

Fig. 5.16 – Set power menu

The value can be modified pressing UP and DOWN keys to increase or decrease the value. Confirm new value and exit routine pressing the OK button or press ESC key to exit without saving.

5.3.4 OPERATIVE MODE MENU

In the Operative Mode menu is possible activate/deactivate the various input channels depending on MONO/STEREO configuration (set in the **Presettings** Menu).

5.3.4.1 MONO ACTIVE

In case the MONO is active, the page in the Operative Mode menu will be the one here below:

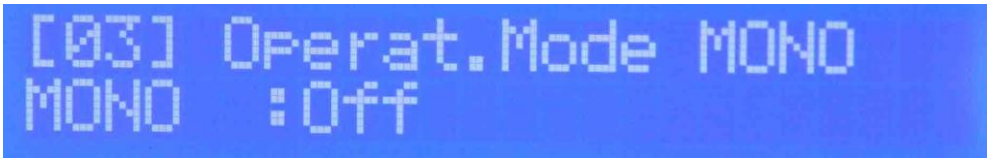


Fig. 5.17 – Operative Mode MONO

Starting condition in case the configuration is changed from STEREO to MONO is always **OFF**.
To activate the desired channel press the OK key to enter the program mode (blinking arrow in second row on the right).
To select Left, Right or Left+Right channels press UP or DOWN keys, press OK key to confirm the channel selected or ESC key to exit routine without saving.

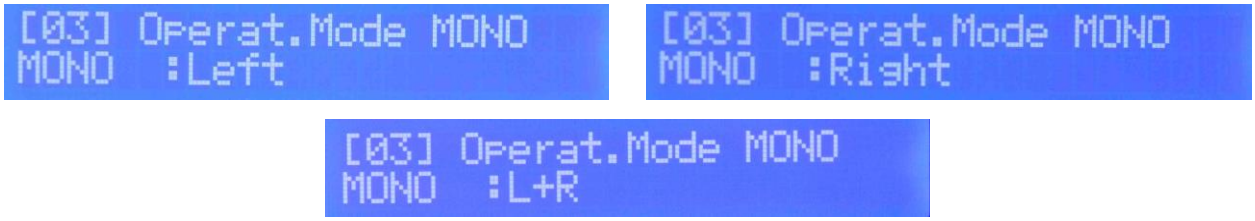


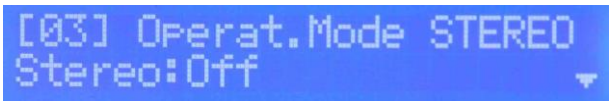
Fig. 5.18 – Operative Mode MONO channel selection

In case the AES-EBU is active (Presetting Menu), the enabled channel is relative to AES-EBU, please select **AES-EBU:Off** for using the analogic input channels.

5.3.4.2 STEREO ACTIVE

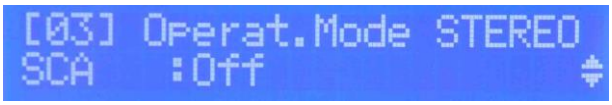
In case the STEREO mode is active, in the Operative Mode menu is present a sub menu with the options for the auxiliary channels:

[0]
STEREO selection



[1]
Auxiliary channel RDS

[2]
Auxiliary channel SCA



[3]
Auxiliary channel AUX

Fig. 5.19 – Operative Mode STEREO options

Starting condition for STEREO selection and auxiliary channels, in case the mode is changed from MONO to STEREO, is always **OFF**.

In the STEREO selection can be selected the MPX External (rear connector) or the MPX Internal (if Stereo Coder card is available) mode.

Fig. 5.20 – Operative Mode STEREO MPX

To activate the desired mode press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select the desired mode. Press OK key to confirm or ESC key to exit routine without saving.

5.3.4.3 AUXILIARY CHANNELS

To enable the auxiliary channels (available only in STEREO mode) navigate in the sub-menu with the UP and DOWN keys until the channel desired and press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to change the ON/OFF state. Press OK key to confirm or ESC key to exit routine without saving.

Fig. 5.21 – Auxiliary channels options

In case one auxiliary channel is enabled the led RDS/AUX in the frontal panel will be switched on.

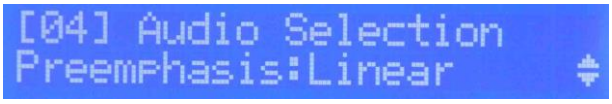
5.3.5 AUDIO SELECTION MENU

In the Audio Selection sub-menu the regulations of input impedance, pre-emphasis and limiter are available.

To navigate in the sub-menu press UP or DOWN keys.

[0]
Input Impedance

[1]
Preemphasis



[2]
Limiter

[3]
Limiter Value

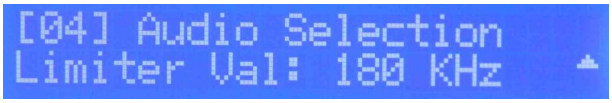


Fig. 5.22 – Audio Selection menu options

5.3.5.1 INPUT IMPEDANCE

In this sub-menu the impedance of analogic Left and Right channels can be selected.

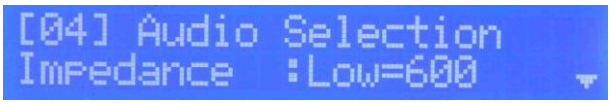


Fig. 5.23 – Input Impedance menu

To change the input impedance, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select the impedance value. Press OK key to confirm or ESC key to exit routine without saving.

Impedance value (Ohms):	600, 10K

Table 5.3 – Impedance permitted values

5.3.5.2 PRE-EMPHASIS REGULATION

In this sub-menu pre-emphasis value can be changed.

Fig. 5.24 – Pre-emphasis menu

To change the pre-emphasis value, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select the new value. Press OK key to confirm or ESC key to exit routine without saving.

Pre-emphasis values:	Linear, 25us 50us, 75us

Table 5.4 – Pre-emphasis permitted values

In case the pre-emphasis is set different from Linear the led PRE EMPH on the frontal panel will be switched on.

5.3.5.3 LIMITER REGULATION

In these sub-menus an upper limit for the output signal deviation can be enabled and regulated.
The menu **Limiter** permits to enable or disable the limiter, if the limiter is enabled the value can be regulated in the next menu.

Fig. 5.25 – Enable limiter menu

To enable/disable the limiter press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select the on/off state. Press OK key to confirm or ESC key to exit routine without saving.

In case the Limiter is enabled the green led LIM on the frontal panel will switched on.

To adjust the limiter value, press DOWN key to select the Limiter value sub-menu.

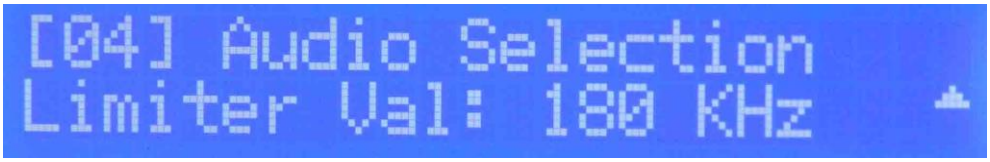


Fig. 5.26 – Limiter value menu

To change the limiter value, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select the new value. Press OK key to confirm or ESC key to exit routine without saving.
The limiter value is applied in real time and only if the limiter is enabled.

MIN value: 30 KHz	MAX value: 180 KHz	STEP: 1 KHz

Table 5.5 – Limiter permitted values

5.3.6 SENSITIVITY MENU

In this menu it is possible to set the sensitivity value in of all available input channels, the sensitivity level will induce an auto regulation of channels internal attenuators.

A sensitivity value equal to the relative channel input level will cause an output signal deviation of 75 KHz in case of mono signal or 71 KHz in case of stereo signal.

To navigate in this sub-menu press UP or DOWN keys until the channel desired.

Fig. 5.27 – Channels Sensitivity

To change the sensitivity level, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to increase or decrease the value. Press OK key to confirm or ESC key to exit routine without saving.

The sensitivity value is applied in real time and only if the relative channel is in ON state (see menu **Operat.Mode**).

CHANNELS	MIN value	MAX value	STEP
LEFT+RIGHT, LEFT, RIGHT	-9 dBu	+18 dBu	±0.05 dB
AES-EBU LEFT, RIGHT, LEFT+RIGHT	-15 dBFS	0 dBFS	±0.05 dB
MPX Ext (standard)	-6 dBu	+6 dBu	±0.05 dB
MPX Ext available on request	+6 dBu	+18 dBu	±0.05 dB
RDS, SCA, AUX	-19.5 dBu	-7.5 dBu	±0.5 dB

Table 5.6 – Sensitivity permitted values

5.3.7 PRESETTING MENU

In this menu it is possible to set the other main parameters of the unit: MONO/STEREO mode, channels deviation offset, pilot tone frequency and phase shift, AES-EBU and MPX/19KHz Out.
The menu layout is different depending on MONO, STEREO (MPX Int or MPX Ext) mode.

5.3.7.1 MODE: MONO/STEREO

To change the operational mode, select the first entry in the **Presettings** menu and press the OK key to enter the program mode (blinking arrow in second row on the right).
Press UP or DOWN keys to select MONO or STEREO. Press OK key to confirm or ESC key to exit routine without saving.

Fig. 5.28 – Presetting mode

*Note: Now in the menu **Operat.Mode** the channels or the configuration MPX Internal/MPX External (in case of STEREO mode) have to be activated.*
*Every change from MONO-to-STEREO or STEREO-to-MONO will set the channels and the MPX Int/Ext in OFF state so the configuration has to be set again in the menu **Operat.Mode.***

If MONO mode is enabled the led MONO in the frontal panel will be switched on, in case of STEREO MPX Internal is enabled the led STEREO will be switched on, in case of STEREO MPX External is enabled the led MPX will be switched on.

5.3.7.2 PRESETTINGS IN MONO MODE

[0]
Mode Selection

[1]
Total Deviation Adjustment

[2]
AES-EBU Deviation Adjustment

[3]
AES-EBU Enable

[4]
AES-EBU Ratio

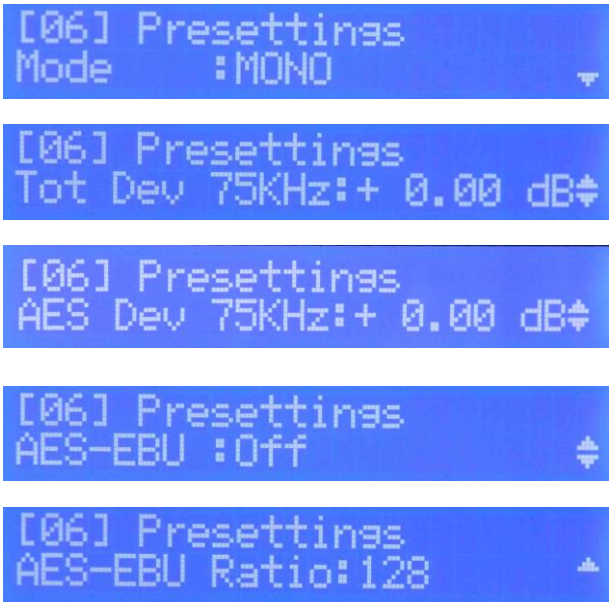


Fig. 5.29 – Presetting MONO mode menu

In MONO mode the options available are the fine adjustment of output signal deviation and the AES-EBU controls. To navigate in these menus press UP or DOWN keys.

5.3.7.3 PRESETTINGS IN STEREO MPX INTERNAL MODE

[0]
Mode Selection

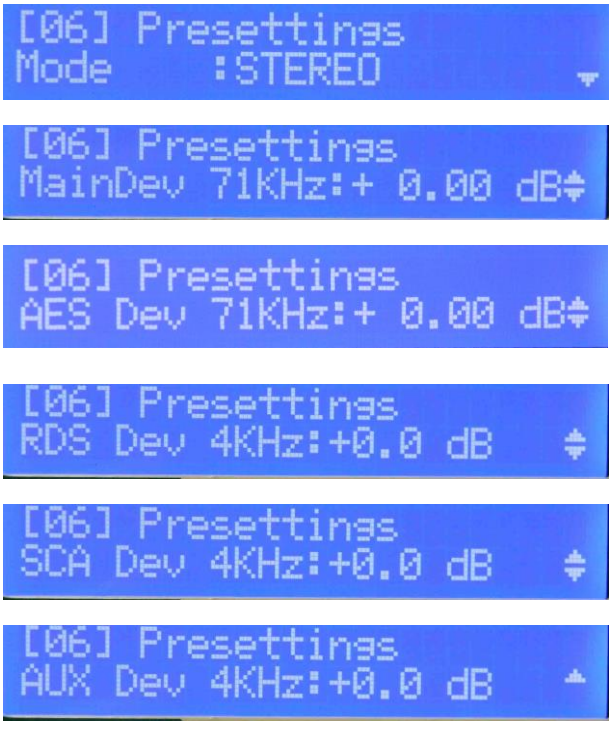
[1]
Total Deviation Adjustment

[2]
AES-EBU Deviation Adjustment

[3]
RDS Deviation Adjustment

[4]
SCA Deviation Adjustment

[5]
AUX Deviation Adjustment



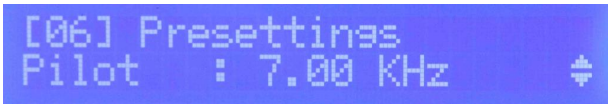
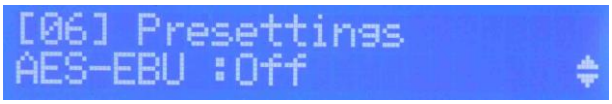
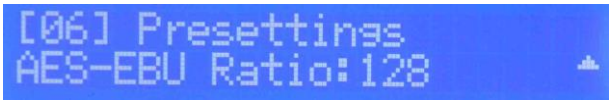
[6] 19KHz/MPX Selection	
[7] Pilot Tone Deviation	
[8] Pilot Tone Phase Shift	
[9] AES-EBU Enable	
[10] AES-EBU Ratio	

Fig. 5.30 – Presetting STEREO MPX Int mode menu

In STEREO mode MPX Internal enabled, the options available are the fine adjustment of output signal and auxiliary channels deviation, 19KHz/MPX output selection, Pilot Tone regulation and AES-EBU controls.

To navigate in these menus press UP or DOWN keys.

5.3.7.4 PRESETTINGS IN STEREO MPX EXTERNAL MODE

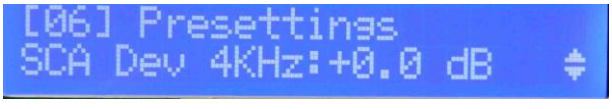
[0] Mode Selection	
[1] Total Deviation Adjustment	
[2] RDS Deviation Adjustment	
[3] SCA Deviation Adjustment	
[4] AUX Deviation Adjustment	

Table 5.7 - Presetting STEREO MPX Ext mode menu

5.3.7.5 TOTAL DEVIATION ADJUSTMENT

In this menu it is possible to apply a fine offset (in dB) to adjust the total output signal deviation to 75KHz (in MONO mode) or 71KHz (in STEREO MODE) regardless the sensitivity level set in the **Sensitivity** menu.

Fig. 5.31 – Presetting total deviation adjustment

To change the offset value, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to increase or decrease the value. Press OK key to confirm or ESC key to exit routine without saving.

MIN value: -3 dB	MAX value: +3 dB	STEP: ±0.05 dB

Table 5.8 – Total deviation adjustment permitted values

5.3.7.6 AES-EBU CONTROLS

In these menus it is possible enable/disable the AES-EBU interface. The menus are available in MONO and STEREO MPX Internal modes only if the AES/EBU board is installed.

Fig. 5.32 – AES-EBU interface enable menu

To enable/disable the AES-EBU interface, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select ON or OFF. Press OK key to confirm or ESC key to exit routine without saving.

If the interface is enabled, the internal switch will commutate from analogic Left/Right channels to digital Left/Right ones but the active channels set in the **Operat.Mode** menu will not change.
In case of interface enabled the AES-EBU led in the frontal panel will be switched on.

It is possible to change the AES-EBU interface Recovered Master Clock Frequency in the Ratio menu.

Fig. 5.33 – AES-EBU Ratio menu

To change the AES-EBU Ratio, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select desired value. Press OK key to confirm or ESC key to exit routine without saving.

Values available:	128, 256

Table 5.9 – AES-EBU Ratio permitted values

5.3.7.7 RDS, SCA, AUX DEVIATION ADJUSTMENT

In this menu it is possible to apply a fine offset (in dB) to adjust the particular auxiliary channel deviation to 4KHz regardless the sensitivity level set in the **Sensitivity** menu.
This option is available only in STEREO mode.

Fig. 5.34 – Presetting auxiliary channels deviation adjustment

Press UP or DOWN key to select the channel desired. To change the offset value, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to increase or decrease the value. Press OK key to confirm or ESC key to exit routine without saving.

MIN value: -2 dB	MAX value: +2 dB	STEP: ±0.5 dB

Table 5.10 – Auxiliary channels deviation adjustment permitted value

5.3.7.8 19KHZ/MPX OUTPUT SELECTION

In this menu it is possible to select the output signal at the **19KHz/MPX OUT** rear connector: the 19KHz signal or the MPX Internal signal.
This option is available only in STEREO MPX Internal mode.

Fig. 5.35 – Presetting 19KHz/MPX Out menu

To change the output, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select the desired output. Press OK key to confirm or ESC key to exit routine without saving.

5.3.7.9 PILOT TONE DEVIATION

In this menu it is possible adjust the deviation of pilot tone, the standard value is 7 KHz (10% of stereo signal deviation of 71 KHz). The deviation change is obtained through an increment-decrement of the pilot tone level.
This option is available only in STEREO MPX Internal mode.

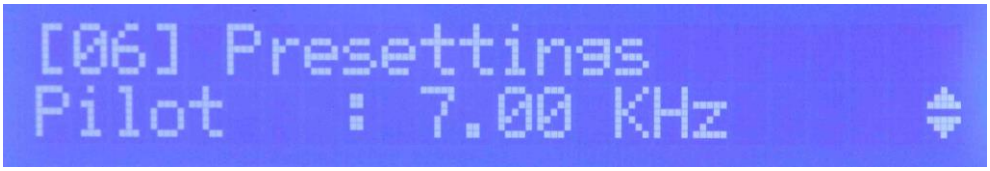


Fig. 5.36 – Pilot tone deviation adjustment

To change the deviation value, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to increase or decrease the deviation value. Press OK key to confirm or ESC key to exit routine without saving.

MIN value: 2 KHz	MAX value: 15KHz	STEP: ±0.25 KHz

Table 5.11 – Pilot tone deviation adjustment permitted values

5.3.7.10 PILOT TONE PHASE SHIFT

In this menu it is possible adjust the phase of 19KHz pilot tone. This option is available only in STEREO MPX Internal mode.

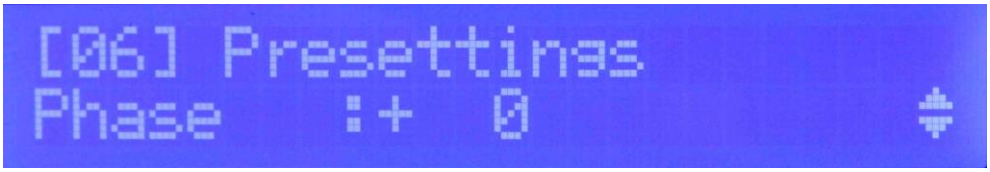


Fig. 5.37 – Pilot tone phase adjustment

To change the phase value, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to increase or decrease the value. Press OK key to confirm or ESC key to exit routine without saving.

MIN value: -100°	MAX value: +100°	STEP: ±1°

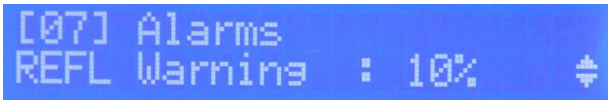
Table 5.12 – Pilot tone phase adjustment permitted values

5.3.8 ALARMS MENU

In these menus it is possible to set the thresholds of intervention of alarms/warnings. In case an event is verified an info will be saved in the history log and the warning or alarm led (depending on event type) will be switched on. To navigate in these menus press UP or DOWN keys.

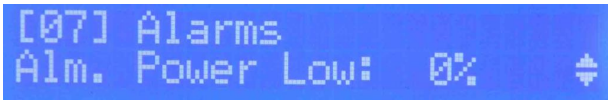
[0]
Foldback Reflected

[1]
Warning Reflected

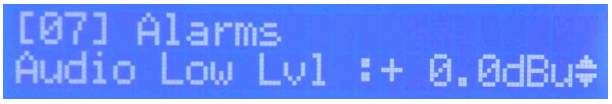


[2]
Warning Power Low

[3]
Alarm Power Low



[4]
Audio Low Level

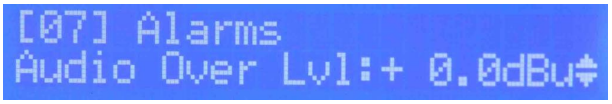


[5]
Audio Low AES

[6]
Audio Low T1

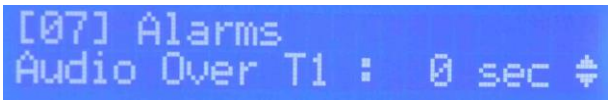
[7]
Audio Low T2

[8]
Audio Over Level

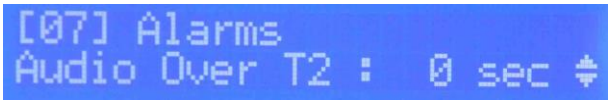


[9]
Audio Over AES

[10]
Audio Over T1

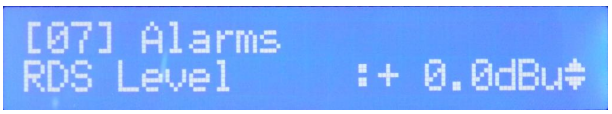


[11]
Audio Over T2



[12]
Audio Event Type

[13]
RDS Level



[14]
RDS timer

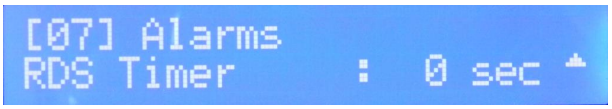


Fig. 5.38 – Alarms/Warnings menu flow graph

5.3.8.1 WARNING FOLDBACK REFLECTED POWER

The unit is provided with a reflected power level proportional protection: in case the output reflected power exceeds the foldback threshold value the unit enters in warning mode and the output forward power is proportionally lowered to maintain the reflected power under the foldback threshold level. The folbadck threshold is indicated as percentage of unit set power. **Standard factory calibration is 15% of nominal power.**

Fig. 5.39 – Foldback Reflected menu

To change the foldback threshold level, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select desired value. Press OK key to confirm or ESC key to exit routine without saving.

MIN value: 0%	MAX value: 100%	STEP: ±1%

Table 5.13 – Foldback Reflected permitted values

5.3.8.2 WARNING REFLECTED POWER

In this menu it is possible to set a threshold value for a reflected power warning in similar way to the previous menu.

The presence of this warning does not alter in any way the output forward power unlike by the foldback reflected warning. This event has a pure notification purpose.

The Warning Reflected threshold is indicated as percentage of nominal unit power.

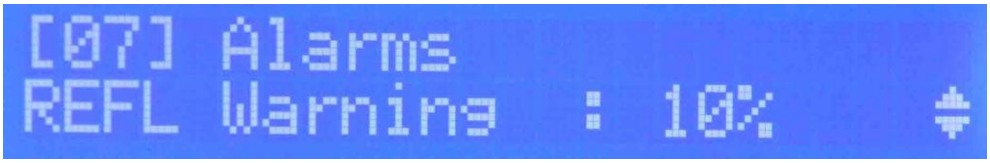


Fig. 5.40 – Warning Reflected menu

To change the Warning Reflected threshold level, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select desired value. Press OK key to confirm or ESC key to exit routine without saving.

MIN value: 0%	MAX value: 100%	STEP: ±1%

Table 5.14 – Warning Reflected permitted values

5.3.8.3 WARNING POWER LOW

In this menu it is possible to set a warning in case the forward power level drops below a threshold.

In case the forward power never exceeds the Warning Power Low threshold from the unit switch ON the warning is generated after 50 seconds otherwise after 4 seconds.

The Warning Power Low threshold is indicated as percentage of nominal unit power.

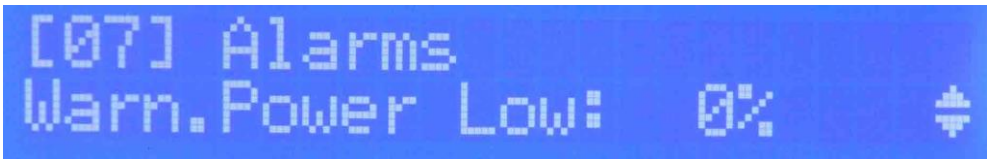


Fig. 5.41 – Warning power Low menu

To change the Warning Power Low threshold, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select desired value. Press OK key to confirm or ESC key to exit routine without saving.

MIN value: 0%	MAX value: 100%	STEP: ±1%

Table 5.15 – Warning power Low permitted values

To disable this warning set the Warning Power Low to 0%.

5.3.8.4 ALARM POWER LOW

In this menu it is possible to set an alarm in case the forward power level drops below a threshold in a similar mode as previous menu.
In case the forward power never exceeds the Alarm Power Low threshold from the unit switch ON the warning is generated after 50 seconds otherwise after 4 seconds.
The Alarm Power Low threshold is indicated as percentage of nominal unit power.

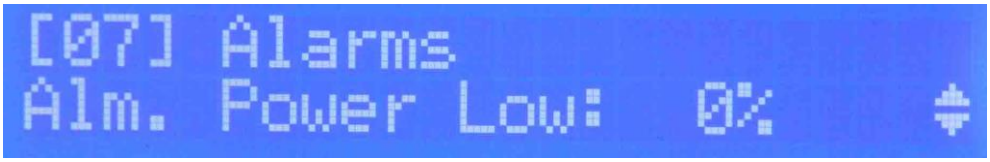


Fig. 5.42 – Alarm power Low menu

To change the Alarm Power Low threshold, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select desired value. Press OK key to confirm or ESC key to exit routine without saving.

MIN value: 0%	MAX value: 100%	STEP: ±1%

Table 5.16 – Alarm power Low permitted values

To disable this alarm set the Alarm Power Low to 0%.

5.3.8.5 AUDIO LOW EVENT

The Audio Low warning/alarm is generated if the audio level at an active input channel drops below a threshold set in the menu **Audio Low Level** (or **Audio Low AES** for AES/EBU input) for at least T1 seconds.

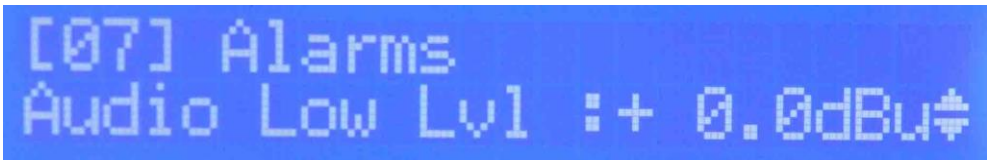


Fig. 5.43 – Audio Low Level menu

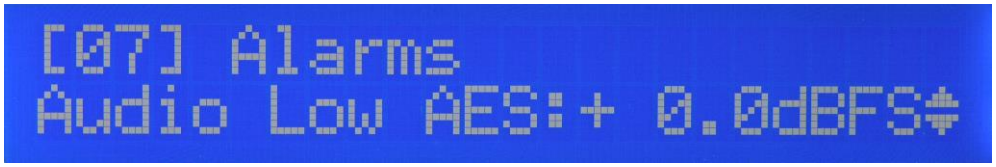


Fig. 5.44 – Audio Low AES menu

In presence of Audio Low warning/alarm, in case the audio level exceeds the Audio Low threshold for at least T2 seconds the warning/alarm status is automatically ended. In case the input audio signal is lower than Audio Low Level the front panel led AUDIO will be switched off.
The timeouts T1 and T2 are set in the menus **Audio Low T1** and **Audio Low T2**.
To change the Audio Low level, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select desired value. Press OK key to confirm or ESC key to exit routine without saving.

MIN value: -20 dBu	MAX value: +20 dBu	STEP: ±0.1 dB

Table 5.17 – Audio Low Level permitted values

To setup the timeouts Audio Low T1 and T2 navigate to the relative menus with UP or DOWN keys.

Fig. 5.45 – Audio Low timeout menus

To change the Audio Low timeouts, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select desired value. Press OK key to confirm or ESC key to exit routine without saving.

MIN value: 0 sec	MAX value: 1000 sec	STEP: ±1 sec

Table 5.18 – Audio Low timeouts permitted values

To disable this warning/alarm set both the timeouts Audio Low T1 and T2 to 0 sec.

5.3.8.6 AUDIO OVER EVENT

The Audio Over warning/alarm is generated if the audio level at an active input channel exceeds a threshold set in the menu **Audio Over Level** (or **Audio Over AES** for AES/EBU input) for at least T1 seconds.

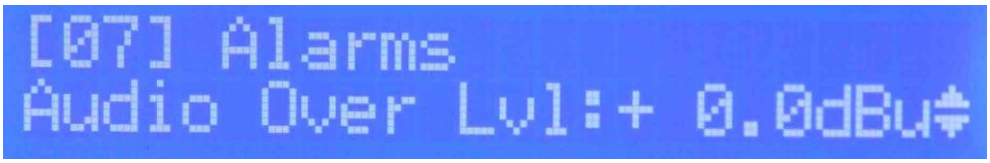


Fig. 5.46 – Audio Over Level menu

Fig. 5.47 – Audio Over AES menu

In presence of Audio Over warning/alarm in case the audio level drops below the Audio Over threshold for at least T2 seconds the warning/alarm status is automatically ended. In case the input audio signal is higher than Audio Over Level the front panel led AUDIO will be switched off.
The timeouts T1 and T2 are set in the menus **Audio Over T1** and **Audio Over T2**.
To change the Audio Over level, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select desired value. Press OK key to confirm or ESC key to exit routine without saving.

MIN value: -20 dBu	MAX value: +20 dBu	STEP: ±0.1 dB

Table 5.19 – Audio Over Level permitted values

To setup the Audio Over timeouts navigate to the relative menus with UP or DOWN keys.

Fig. 5.48 – Audio Over timeout menus

To change the Audio Over timeouts, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select desired value. Press OK key to confirm or ESC key to exit routine without saving.

MIN value: 0 sec	MAX value: 1000 sec	STEP: 1 sec

Table 5.20 – Audio Over timeouts permitted values

To disable this warning/alarm set both the timeouts Audio Over T1 and T2 to 0 sec.

5.3.8.7 AUDIO WARNING/ALARMS MENU

In this menu it is possible to configure the type of audio event for both Audio Low and Audio Over. In case the audio event is configured as warning the yellow warning led will be switched on in the frontal panel and in the history log the event will be saved as warning.
In case the audio event is configured as alarm, the red alarm led will be switched on in the frontal panel and the event will be saved as alarm in the history log.

Fig. 5.49 – Audio events type menu

To change the Audio Event type, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select type desired. Press OK key to confirm or ESC key to exit routine without saving.

TYPE AVAILABLE:	Warning, Alarm

Table 5.21 – Audio events permitted types

5.3.8.8 ALARM RDS LEVEL

The alarm RDS level is generated if the RDS signal level drops below a threshold set in the menu **RDS Level** for at least a defined time (RDS timer).
In case the RDS level exceeds the specified threshold the alarm status is automatically ended.

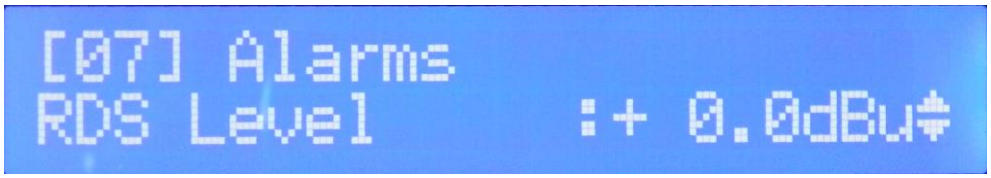


Fig. 5.50 – RDS Level menu

To change the RDS level, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select desired value. Press OK key to confirm or ESC key to exit routine without saving.

MIN value: -20 dBu	MAX value: +20 dBu	STEP: ±0.1 dB

Table 5.22 – RDS Level permitted values

To setup the timeout for RDS alarm navigate to the relative menu with UP or DOWN keys.

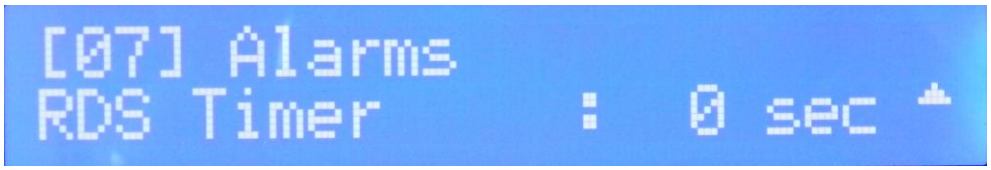


Fig. 5.51 – RDS timeout menu

To change the RDS timeout, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select desired value. Press OK key to confirm or ESC key to exit routine without saving.

MIN value: 0 sec	MAX value: 1000 sec	STEP: ±1 sec

Table 5.23 – RDS timeout permitted values

To disable this alarm set the timeout to 0 sec.

5.3.9 MEMORY MENU

The unit can be completely configured in 6 different modes (Memories) and these configurations are stored in the internal unit memory.

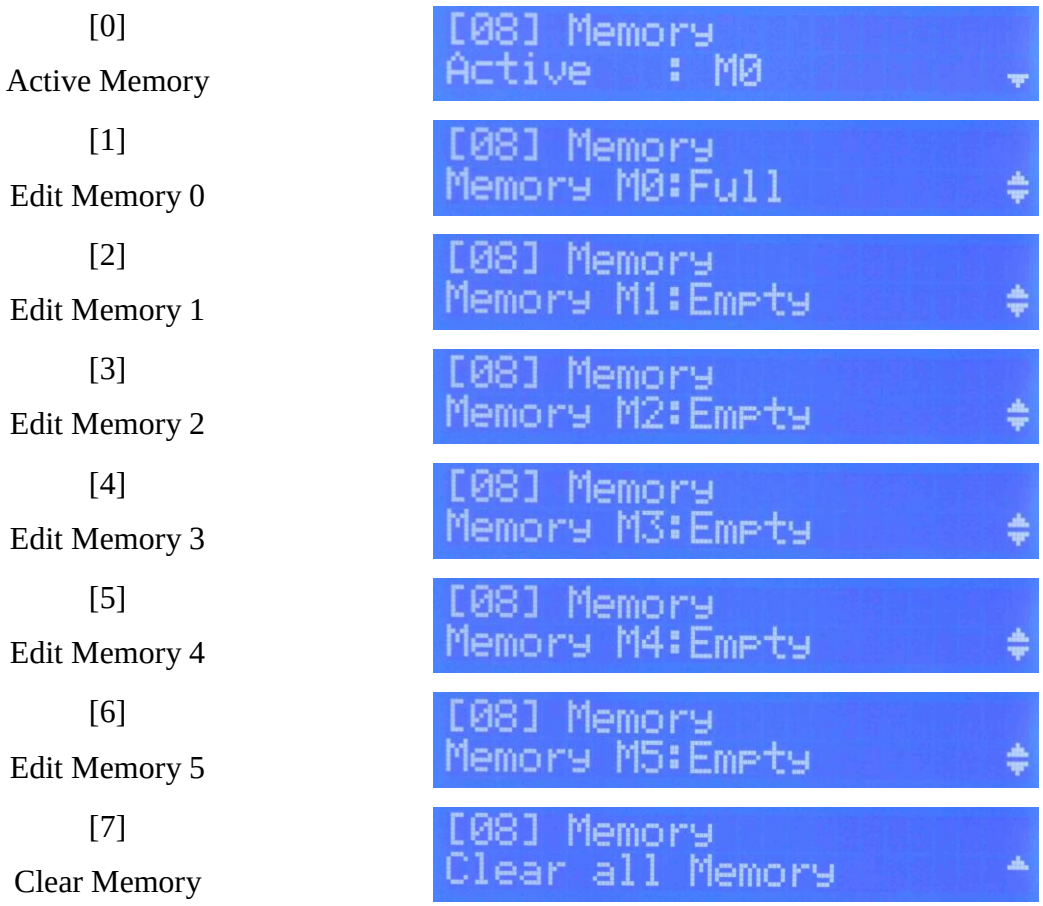


Fig. 5.52 – Memory menu flow graph

5.3.9.1 ACTIVE MEMORY

The active Memory is the current configuration applied to the unit. Any parameter changed during normal unit working mode is automatically applied and saved in the current active Memory.
The active Memory is indicated in the sub-menu **Active.**

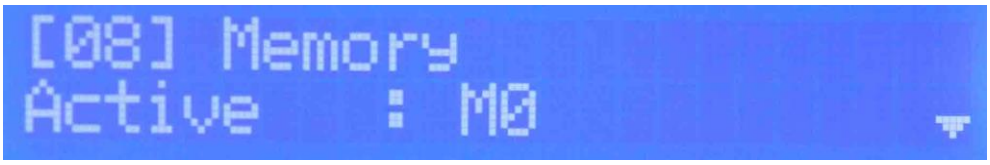


Fig. 5.53 – Active Memory menu

To change the active Memory, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select Memory desired. Press OK key to confirm or ESC key to exit routine without saving.

MEMORY AVAILABLE:	M0, M1, M2, M3, M4, M5

Table 5.24 – Memory available

When a Memory is recalled the unit is reconfigured with the parameters saved in that particular Memory.
NOTE: the unit will be off air during the re-configuration.

5.3.9.2 EDITING A MEMORY

In these menus it is possible enable the editing of a Memory parameters, the editing is not available for the Active Memory because for this particular Memory the parameters change is executed and saved in real time.

Fig. 5.54 – Edit Memory menus

A Memory already edited has Full state otherwise has Empty state. It has no sense to recall an empty Memory but, if it is recalled, the empty Memory will be an exact copy of the last Active Memory.

To enable the editing of a Memory navigate with UP or DOWN keys in the sub-menus up to the desired Memory M, keep pressing OK key until the display shows the line

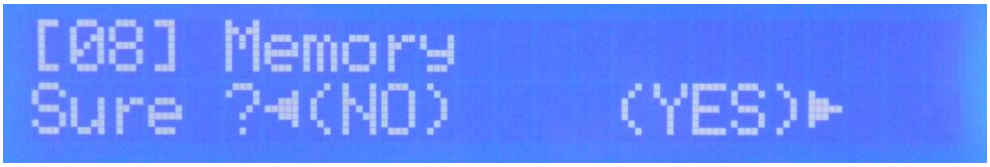


Fig. 5.55 – Enable Memory editing page

Press RIGHT key to enable the editing or LEFT key to exit, if the editing is confirmed the display shows the following line

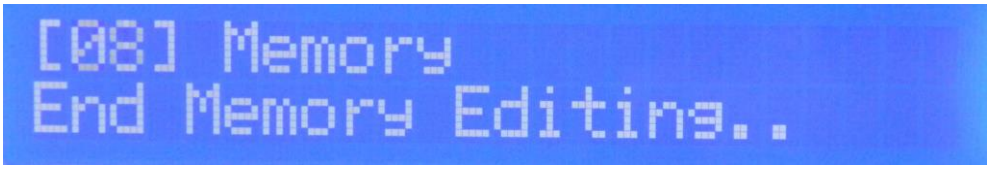


Fig. 5.56 – Ending Editing Memory page

If editing Memory is enabled, in the first row of every menu between the brackets the edited Memory number will be alternated with the menu ID. Changing parameters in this modality does not influence the unit on air working mode but only the parameters saved in the Memory edited.
Pressing ESC key will exit from editing Memory state without any change in that Memory.
To save the new parameters it is necessary return in the **Memory** menu

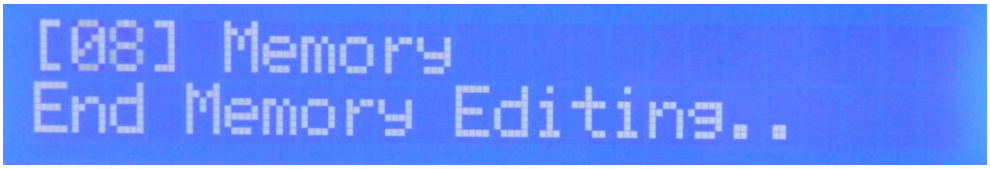


Fig. 5.57 - Memory menu during editing

And keep pressing the OK key until the display shows the line

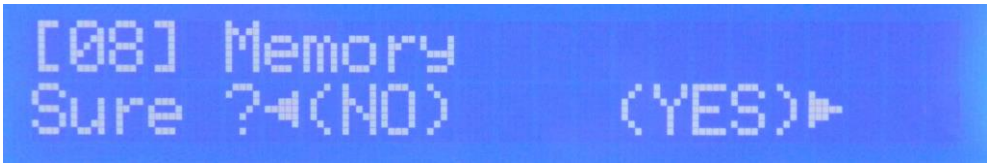


Fig. 5.58 – Confirmation editing Memory page

Press RIGHT key to confirm the saving procedure or LEFT key to discard the editing.

5.3.9.3 CLEAR ALL MEMORY

It is possible clear all Memory configurations with the exception of the Active Memory one. To clear all Memory navigate to the menu **Clear all Memory** with DOWN key.

Fig. 5.59 – Clear all Memory menu

Keep pressing the OK key until the display shows the line

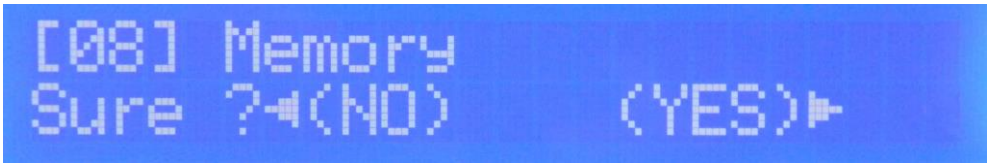


Fig. 5.60 – Clear all Memory confirmation page

Press RIGHT key to confirm the cleaning operation, press LEFT key to exit without cleaning.

5.3.10 HISTORY MENU

In the History menu is present the list of events occurred during the unit operation. The events recorded can be grouped in three types: alarm, warning and info.

The alarm is an event type that can compromise the normal unit operation, the warning doesn't compromise the unit operation but have to be examined to prevent alarms. The info is an information about a unit change of state (for example passing in local mode, or exit from warning or alarm state).

The menu shows always the last event happened

Fig. 5.61 – History menu

In the second row on the left the numbers 000 identify the last event (there is the possibility to check the last 200 events), after the symbol ">" a brief event description is provided.

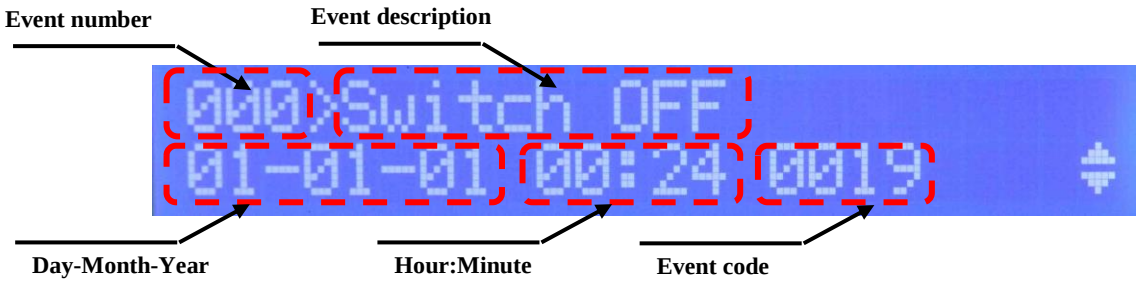
To see a total event information and the complete event list press OK key:

Fig. 5.62 – History menu event detail page

The first row shows the same message as the second row of previous menu, while in the second row the information showed are in order: date, hour and code of event recorded.

Press UP or DOWN keys to navigate the event list press OK or ESC key to exit.

The events are indicated with the following format:



Every Warning and Alarm event has the corresponding END info event to indicate the time instant of ending from that particular warning/alarm condition.

5.3.11 GENERALS MENU

The Generals menu contains options as time and date set, the RS-485 address, the IP address and netmask.

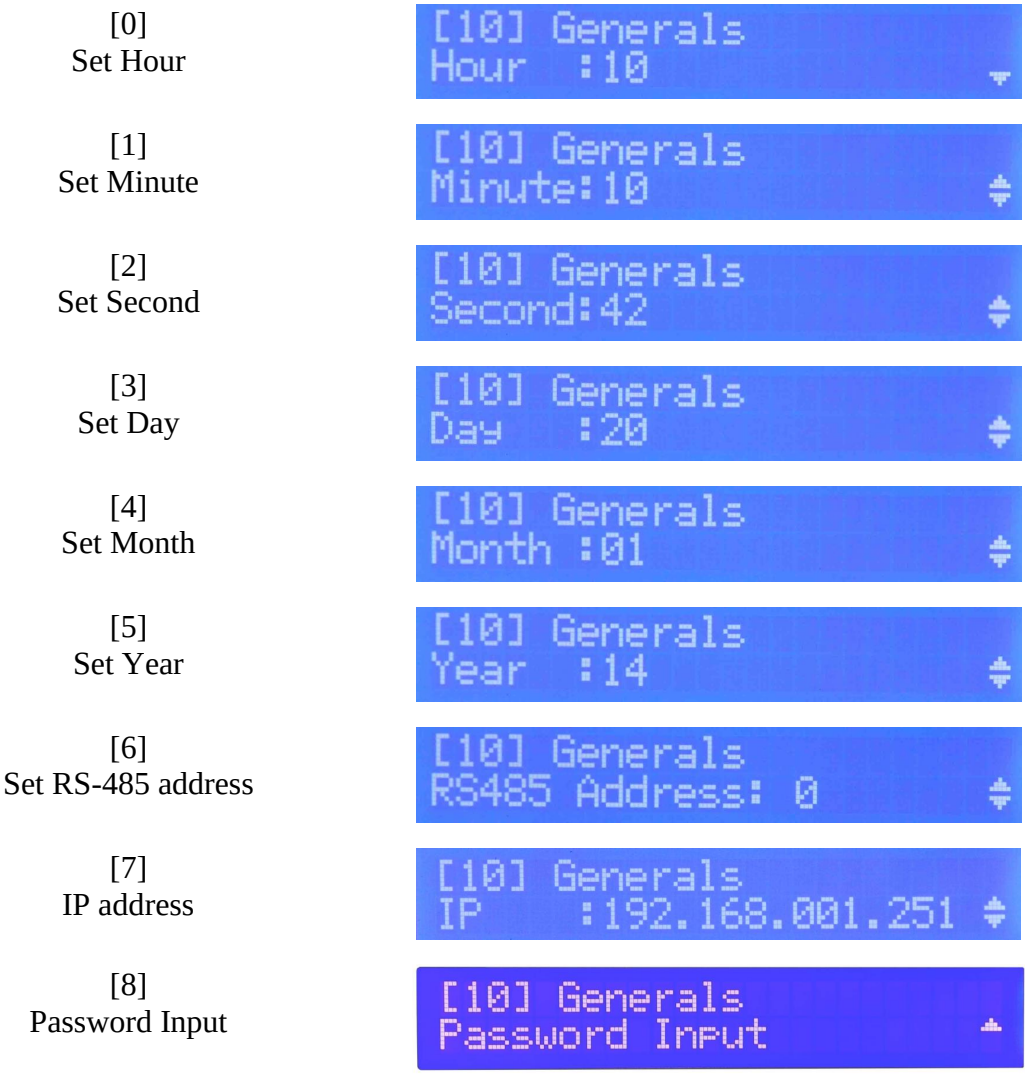


Fig. 5.63 – Generals menu flow graph

5.3.11.1 TIME SET

In these menus it is possible to set the time of day: this time is used in the history log menu during the events saving.

To adjust the hour localize the menu

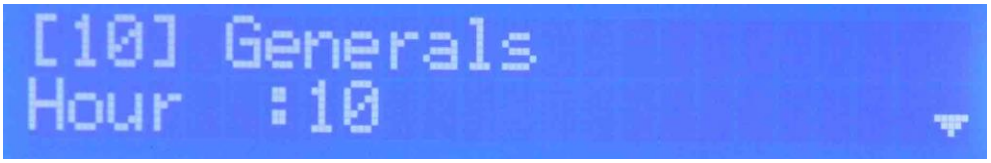


Fig. 5.64 – Set hour page

To change the hour, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select right value. Press OK key to confirm or ESC key to exit routine without saving.

To adjust the minutes press UP or DOWN key

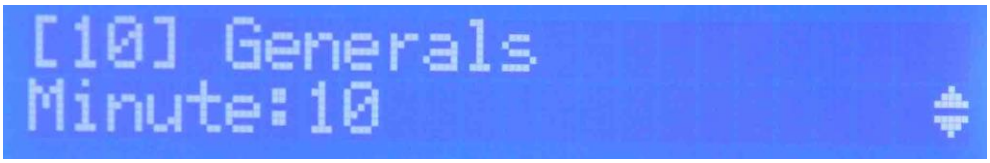


Fig. 5.65 – Set minute page

To change the minutes, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select right value. Press OK key to confirm or ESC key to exit routine without saving.

To adjust the seconds press UP or DOWN key

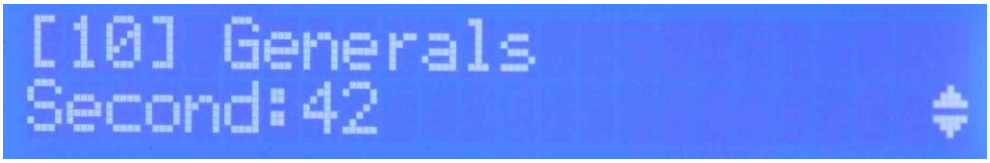


Fig. 5.66 – Set second page

To change the seconds, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select right value. Press OK key to confirm or ESC key to exit routine without saving.

5.3.11.2 DATE SET

In these menus it is possible to set the date: the date is used in the history log menu during the events saving as the time of the day.
To adjust the day press UP or DOWN key

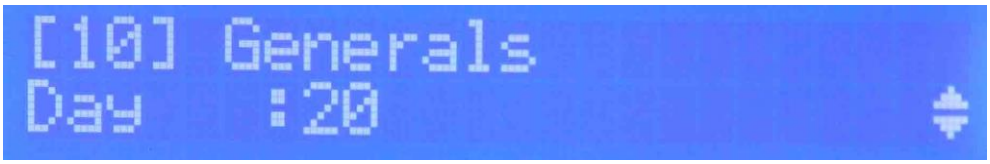


Fig. 5.67 – Set day page

To change the current day, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select right value. Press OK key to confirm or ESC key to exit routine without saving.

To adjust the month press UP or DOWN key

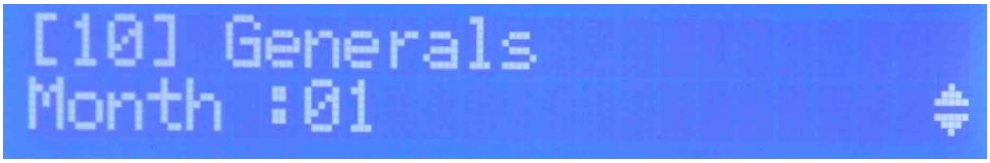


Fig. 5.68 – Set month page

To change the current month, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select right value. Press OK key to confirm or ESC key to exit routine without saving.

To adjust the year press UP or DOWN key

Fig. 5.69 – Set year page

To change the current year, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select right value. Press OK key to confirm or ESC key to exit routine without saving.

5.3.11.3 RS-485 ADDRESS MENU

In this menu it is possible set the RS-485 address in case the unit is used as slave device in a bus system (for example a high power transmitter or a 1+1 system).
Navigate to the menu **RS485 Address** with UP or DOWN key.

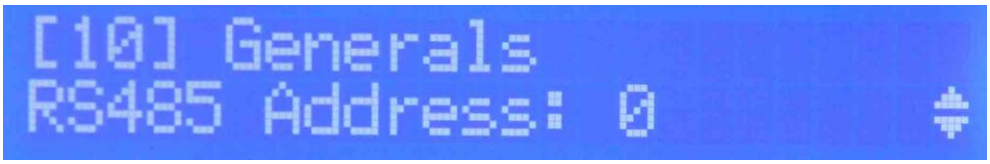


Fig. 5.70 – Set RS-485 address page

To change the RS-485 address, press the OK key to enter the program mode (blinking arrow in second row on the right). Press UP or DOWN keys to select the desired value. Press OK key to confirm or ESC key to exit routine without saving.

5.3.11.4 NETWORK PARAMETERS

These are **read only menus**, the IP address is set directly from webpage if webserver option is available.

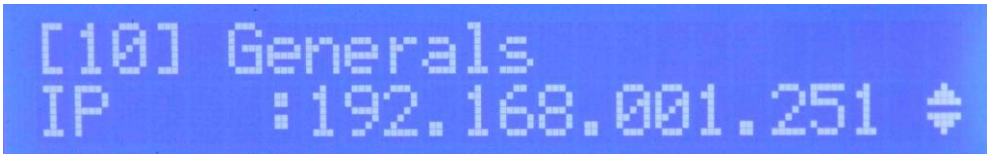


Fig. 5.71 – Unit IP address page

In this menu the actual unit IP address is showed.

5.3.11.5 PASSWORD SECURITY MENU

IMPORTANT NOTE: The password security feature is available ONLY from firmware version 2.71

This feature allows the user to protect his transmitter from unauthorized access. The unit is protected by a 6 numbers password that can be set only in local mode. When the password is set and the unit is in remote mode, by pressing the LOCAL button the user must insert the password to have local access to the unit, in case of wrong password the unit will remain in remote mode.

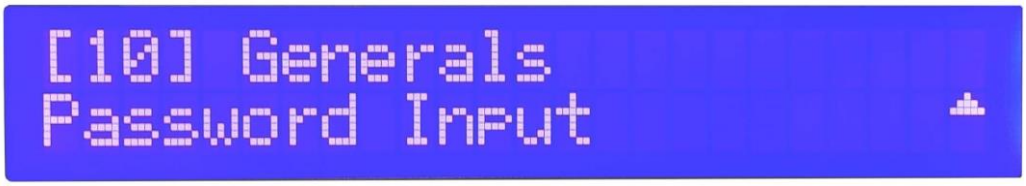


Fig. 5.72 – Password security page

To set a new password:

- Press Enter key to enter in the Password Input menu
- Select a number from 0 to 9 scrolling with up and down keys.
- Press than the Right key to confirm the first number of the password and slide to the second number to be chosen.

Fig. 5.73 – Password set page

Press the Enter key at the end of the procedure to confirm the new password.

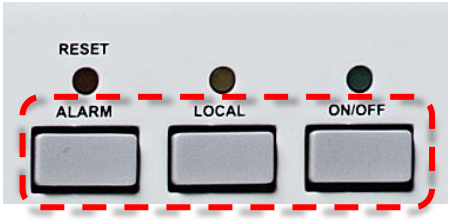
To deactivate the password:

- Press Local key on the front panel and insert the current password to log in.
- Scroll the menu and find “Password security menu” then press Enter key.
- Insert the password “000000” and confirm with Enter key to deactivate the previous password.
- Now the unit will not require the password when in local mode.

6 FRONT PANEL

Not all the functions are available from the LCD display: the most important ones are available from the front panel keys and leds present on the unit front panel.

6.1 FRONT PANEL KEYS



- **Reset**

In case the unit is completely blocked (Fault status) due for example to the repetition of an alarm multiple times, the FAULT led will switch on and to restore the functioning of the unit it is sufficient to press this key (Reset of the alarm/warning/fault status).

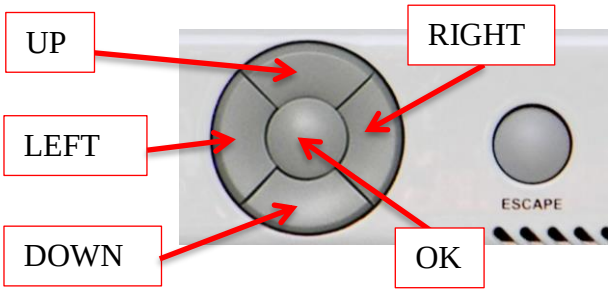
- **Local**

In case the led LOCAL is switched on, the unit is in LOCAL mode and all the functions from the front panel are enabled. If the led is off the unit is in REMOTE mode and it will accept only the commands given by remote. To change the status of the led it is sufficient to press the key.

NOTE: In case of security password presence, insert the current password and press Enter key.

- **ON/OFF**

In case the led ON/OFF is switched on, the unit is in ON mode and the RF power is enabled. If the led is off the unit is in OFF mode (standby) and it is only powered but it will not give any output power. To change the status of the led it is sufficient to press the key.



- **UP/DOWN/LEFT/RIGHT**

The keys are available for the menus navigation and the parameter editing if the menu editing is enabled.

- **OK**

The key is available to enable the editing menu mode and to confirm the parameters change.

- **ESCAPE**

The key is available to exit from editing menu mode without any change or to return to main menu from any other menu.

6.2 FRONT PANEL LEDS

The frontal panel leds don’t change depending on units model. For the leds name see the Fig.2.1 or Fig.2.3

6.2.1 STATUS LEDS

- **ALARM led**

This led is switched on in case an alarm event is recognized. It is automatically switched off at the end of the alarm event without the reset needed. It is still possible press reset key to clear the alarm condition.

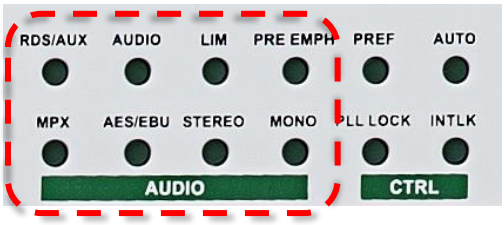
- **WARNING led**

This led is switched on in case a warning event is recognized or in case of a parameter is saved or read from unit internal Eeprom memory. It is automatically switched off at the end of the warning event or when the read/write operation on internal Eeprom memory is terminated.

- **ON led**

This led is switched on at the unit power on.

6.2.2 AUDIO LEDS



- **RDS/AUX led**

This led is switched on if an auxiliary channel (RDS, SCA, AUX) is enabled.

- **MPX led**

This led is switched on in case the STEREO MPX External mode is enabled.

- **AUDIO led**

This led is switched on in case of the input audio signal has a level between the Audio Low and Audio Over thresholds.

- **AES EBU led**

This led is switched on in case the AES-EBU interface is enabled.

- **LIM led**

This led is switched on in case the limiter is enabled.

- **STEREO led**

This led is switched on in case the STEREO MPX Internal mode is enabled.

- **PRE EMPH led**

This led is switched on in case the preemphasis value set is different from Linear.

- **MONO led**

This led is switched on in case the MONO mode is enabled.

6.2.3 CONTROL LEDS

- **PREF led**

This led is reserved for future uses.

- **PLL LOCK led**

This led is switched on when the PLL is locked to the frequency set value.

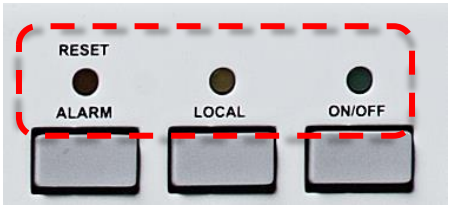
- **AUTO led**

This led is reserved for future uses.

- **INTLK led**

This led is switched on in case the rear connector ENABLE is closed.

6.2.4 COMMAND LEDS



- **ALARM RESET led**

This led is switched on in case of unit fault. The unit enters in fault state when 5 alarm hardware reflected events are recognized in 2 minutes. In this case a reset is necessary.

- **LOCAL led**

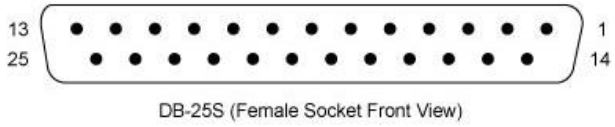
This led is switched on in case the unit is in local mode.

- **RF ON led**

This led is switched on in case the unit is switched on and the RF power is enabled. The output power level is set in the relative menu.

7 REMOTE I/O (OPTIONAL)

The Remote I/O is an optional interface that provides the DB25 connector **REMOTE** to monitor and control the unit through digital signals. The signals available are:



DB-25S (Female Socket Front View)

Pin	Name	I/O	Function
1	TC_1	Tele Command	-
2	TC_3	Tele Command	OFF
3	TC_5	Tele Command	Change to MEMORY 0
4	TC_7	Tele Command	Change to MEMORY 2
5	TC_9	Tele Command	Change to MEMORY 4
6	TC_11	Tele Command	-
7	VCC_FIELD	Vcc	+12V
8	TS_11	Tele Signal	ON
9	TS_9	Tele Signal	REMOTE
10	TS_7/OUT_ANA7	Tele Signal	AUDIO_OK
11	TS_5/OUT_ANA5	Tele Signal	MEMORY 1
12	TS_3/OUT_ANA3	Tele Signal	MEMORY 3
13	TS_1/OUT_ANA1	Tele Signal	MEMORY 5
14	TC_2	Tele Command	ON
15	TC_4	Tele Command	RESET
16	TC_6	Tele Command	Change to MEMORY 1
17	TC_8	Tele Command	Change to MEMORY 3
18	TC_10	Tele Command	Change to MEMORY 5
19	GND_OUT	GND	GND
20	TS_COM	COMMON	Tele Signals Common
21	TS_10	Tele Signal	NO_FAULT
22	TS_8/OUT_ANA8	Tele Signal	RF_OK
23	TS_6/OUT_ANA6	Tele Signal	MEMORY 0
24	TS_4/OUT_ANA4	Tele Signal	MEMORY 2
25	TS_2/OUT_ANA2	Tele Signal	MEMORY 4

Table 7.1 – Remote I/O pinout

The particular unit state is verified if there is a short-circuit between the relative Tele Signal pin and the Common pin (pin 20).

To send a command to the unit (only in remote state) is necessary a short-circuit between the particular Tele Command pin and GND for at least 100ms.

8 WEB SERVER (OPTIONAL)

As option it is possible to add a remote webserver system via TCP/IP and SNMP.
A webserver board is installed on the exciter and, through an Ethernet port, it is possible to read the main parameters of the transmitter and make all main settings.

NOTE: The WEB GUI commands work only if the unit is in REMOTE MODE.

Connect the unit to a LAN or directly to the computer using a cross cable. Enter the default address from an internet browser. This address is indicated in the **GENERALS** menu on the front panel of the unit.

8.1 WEB PAGES

8.1.1 MAIN PAGE

The default page is the MAIN page:

Fig. 8.1 – Webserver main page

Here all the information regarding the unit and the software are indicated:

1. Unit audio and RF state
2. Login Status: Administrator, Guest
3. Available web pages
4. Unit model and hardware/firmware revision
5. Webserver info and firmware build

8.1.2 LOGIN PAGE

To have the possibility to change the functioning parameters of the unit you need to enter as administrator.

Here the Login page:

Fig. 8.2 – Webserver Login page

The standard Administration username and password:

FACTORY ADMIN ID: admin
FACTORY ADMIN PASSWORD: admin
FACTORY IP ADDRESS: 192.168.1.251

8.1.3 SETTINGS PAGE

In this page is present a view of the status of unit parameters, as normally indicated in the front panel on the LCD display. If the login has been done it will be possible to change the values, otherwise it is possible only to see them.

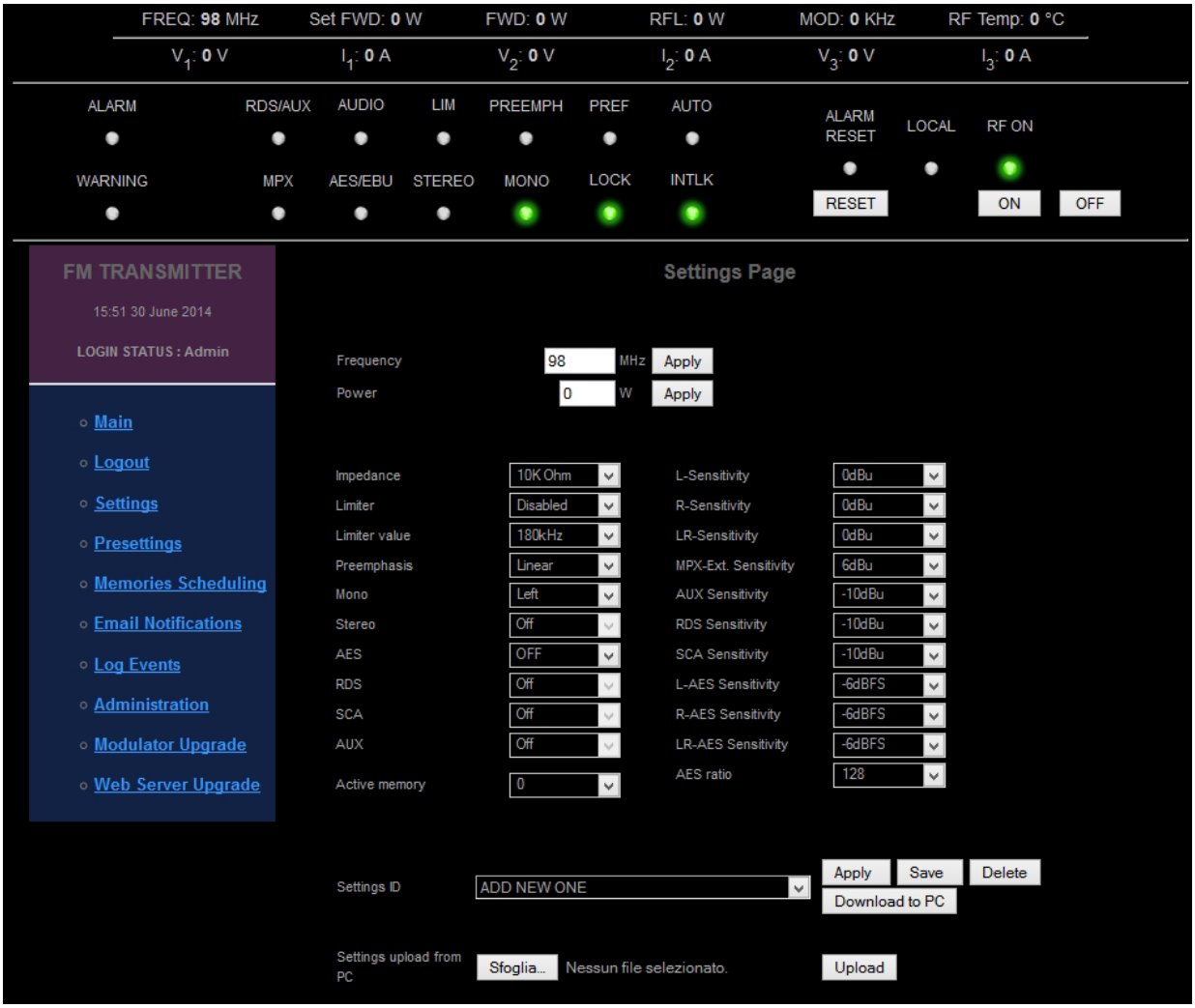


Fig. 8.3 – Webserver Setting page

The parameters available in this page are:

1. Frequency
2. Power Set
3. Audio options
4. Sensitivity option
5. AES-EBU options
6. Mono/Stereo and Auxiliary channels enable
7. Active Memory status

8.1.4 PRESETTINGS PAGE

In the Presettings page it is possible to see and change the status of all remains unit parameters. If the login has been done it will be possible to change the values, otherwise it is possible only to see them.

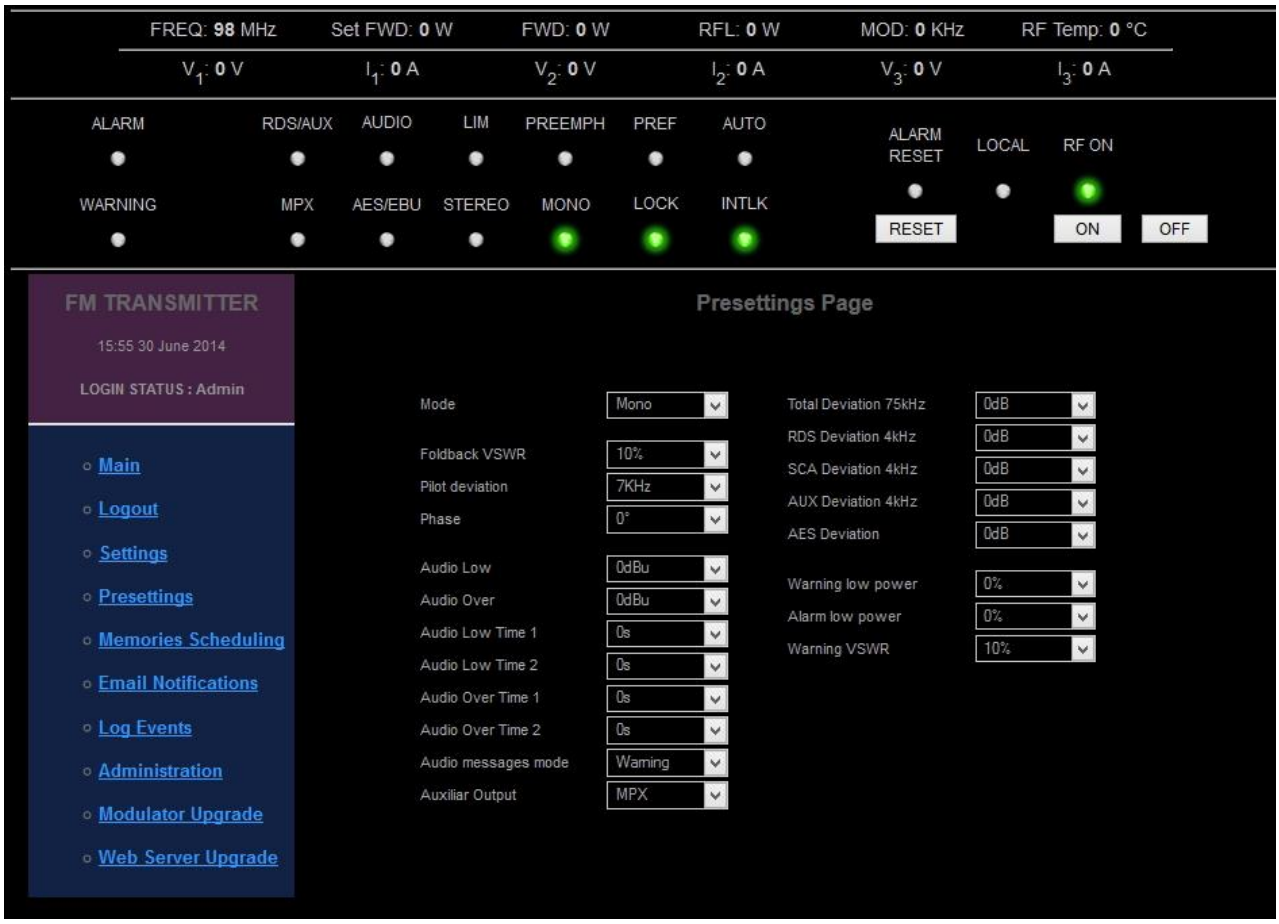


Fig. 8.4 – Webserver Presetting page

Parameters available are:

1. Mono/Stereo mode
2. Alarms and Warnings Settings
3. Deviation offsets adjustment

8.1.5 MEMORIES SCHEDULING

In the Memories scheduling page it is possible to set a desired scheduling memories for one week with 4 different start times.

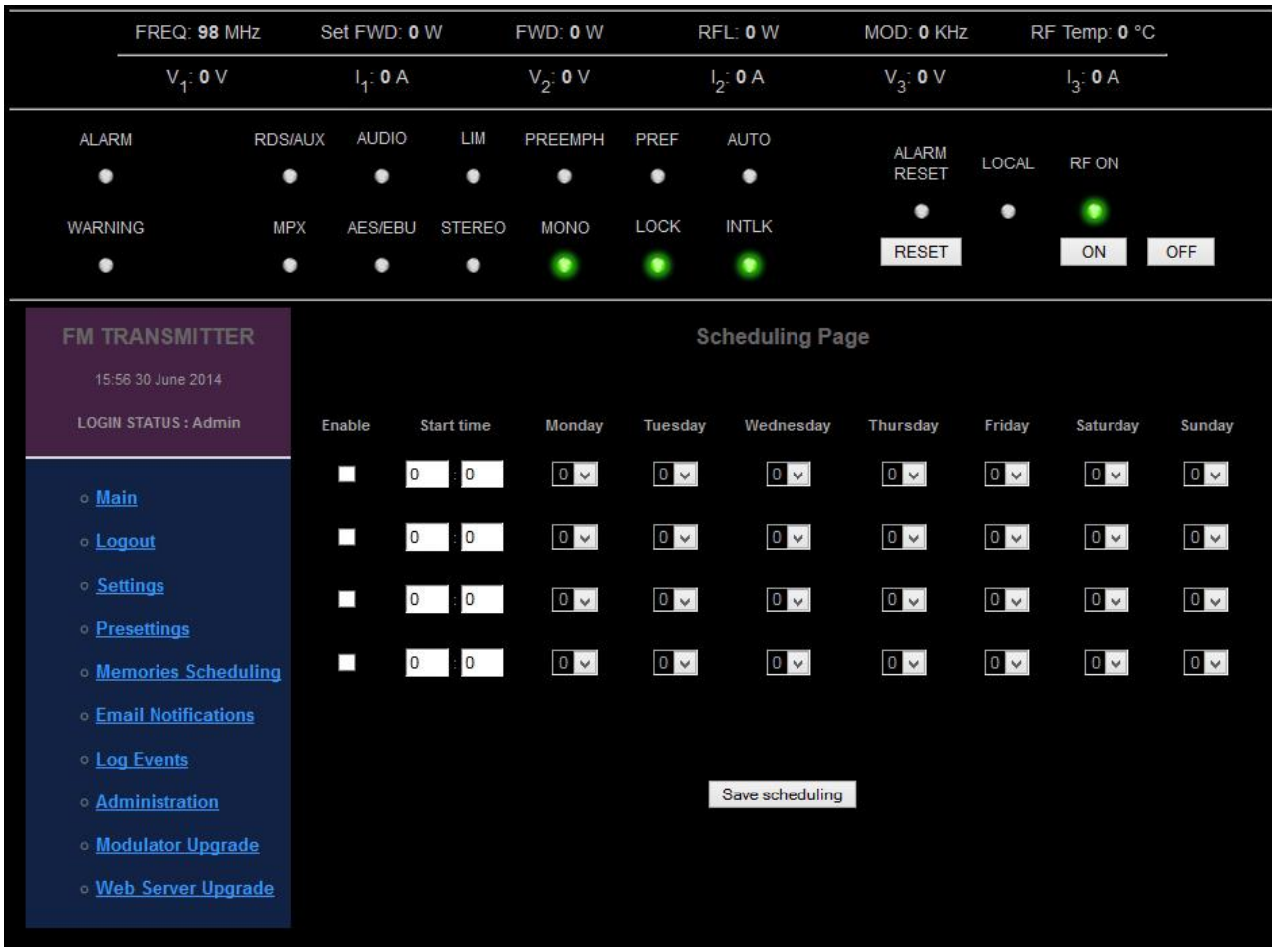


Fig. 8.5 – Webserver Memories scheduling page

8.1.6 EMAIL NOTIFICATIONS

The remote monitoring interface includes an automatic e-mail notification: e-mails are sent to recipients in case of alarm events or warnings in the modulator.
The notification e-mail indicates the main parameters of the unit (also present in the front panel menu) and a summary of the history of the equipment (events log file).

1) Configuration of the notification system

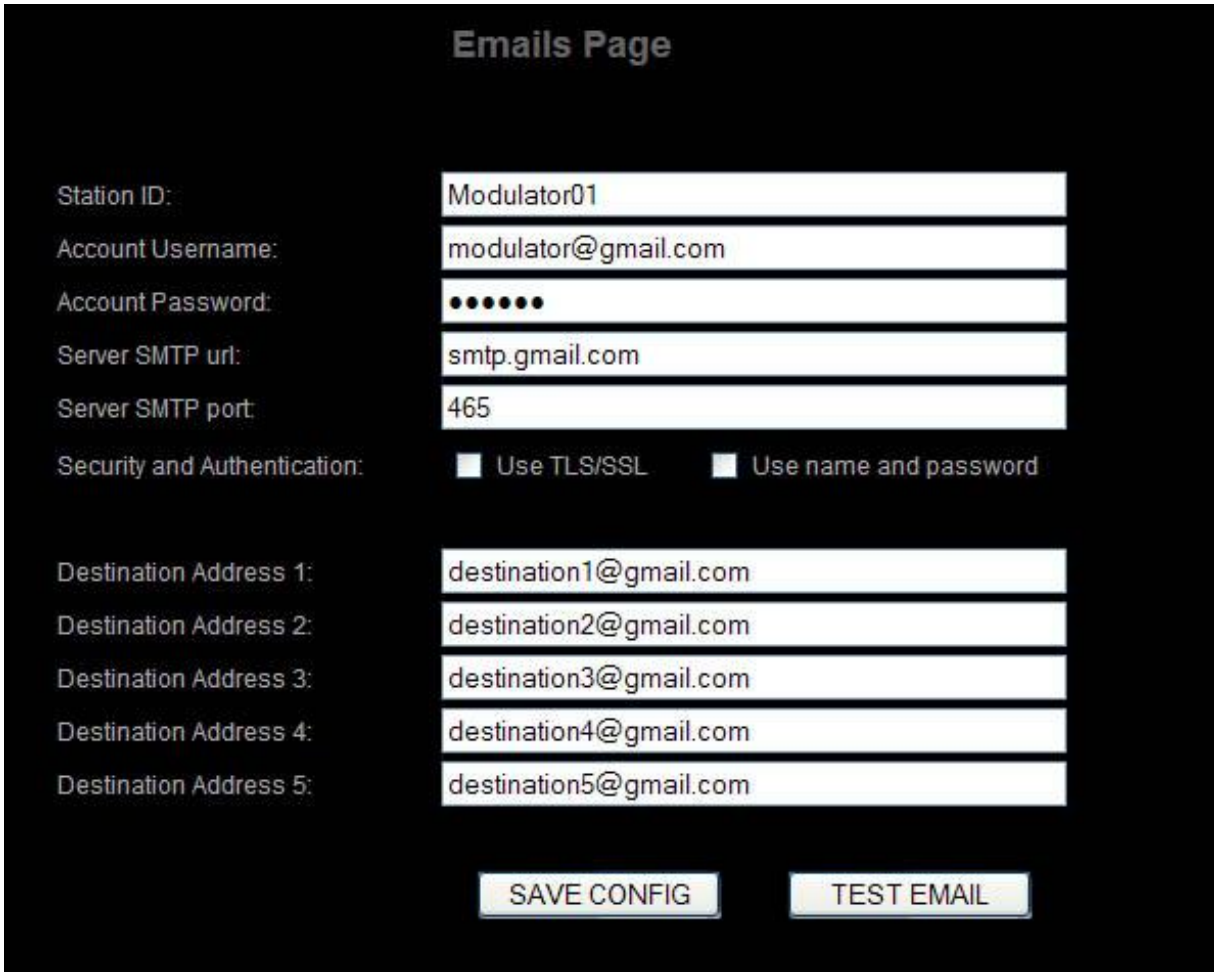


Fig. 8.6 – E-mail notifications page

The explanation of all the fields is indicated in the table present in next page.

Fields	Description
Station ID	Insert the name that will appear as the sender of the notification e-mail.
Account Username	Insert the email account username. *Ex: modulator@gmail.com*
Account Password	Insert the email account password.
Server SMTP url	Insert the Server SMPT url of the email account. *Ex: smtp.gmail.com (google SMTP server)*
Server SMTP port	Enter the port of the SMTP server. *Ex: 25, 465 or 587 (typical ports)*
Security and Authentication	Select "TLS/SSL" checkbox to enable the TLS/SSL protocols. Select "Use name and password" checkbox if the SMTP server requires the authentication.
Destination Address	Enter the email addresses of notification recipients. Note: Up to 5 emails are allowed.

Press the "SAVE CONFIG" button to save the configurations and press "OK" when the following pop-up window will appear:

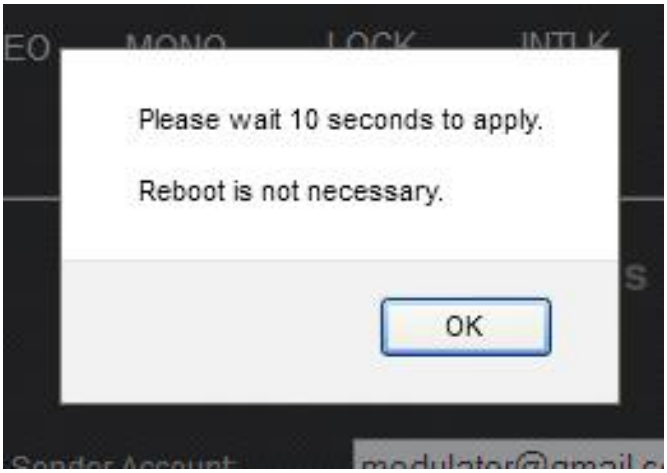


Fig. 8.7 – E-mail notifications saving settings

The content of the e-mail notification is provided in the following format:

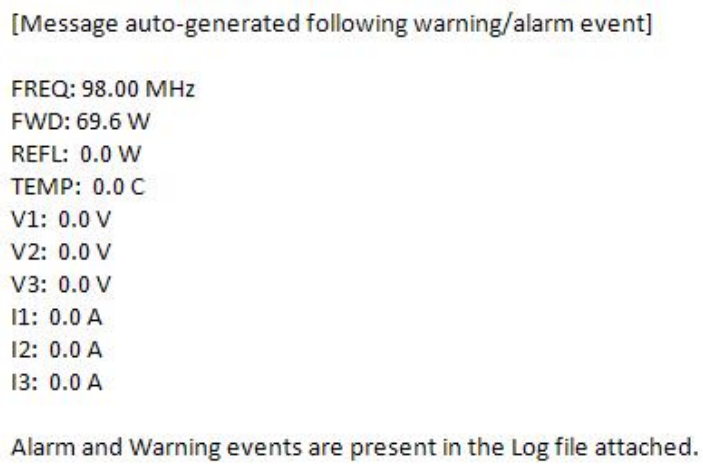


Fig. 8.8 – E-mail notifications content format

In the notification the information indicated are:

- Transmission frequency (in MHz)
- Forward power (in Watt)
- Reflected power (in Watt)
- Heat-sink temperature (in degrees Celsius)
- DC voltage to supply each RF board (in Volt)
- Absorbed current of each RF board (in Ampere)

Information about the type of event that generated the notification is present in the attached file **log_events.txt** with following format:

[TIME DATE] [EVENT TYPE]

```
[11:38  30/06/2014] [Switch ON          ]
[11:38  30/06/2014] [Warning Interlock  ]
[11:38  30/06/2014] [Warnings Present   ]
[12:00  30/06/2014] [RF Present         ]
[12:00  30/06/2014] [Interlock OK       ]
[12:00  30/06/2014] [Warnings Absent    ]
```

Fig. 8.9 – Log event .txt

This log file has a capacity of 200 events listed for lines. Exceeded this number all the events are automatically erased and a new file is started. The complete log file can be accessed also from the web page.

2) You can test the notification system using the button “TEST EMAIL”, in this way, a test e-mail will be sent to the address set in the “Destination address 1” field.

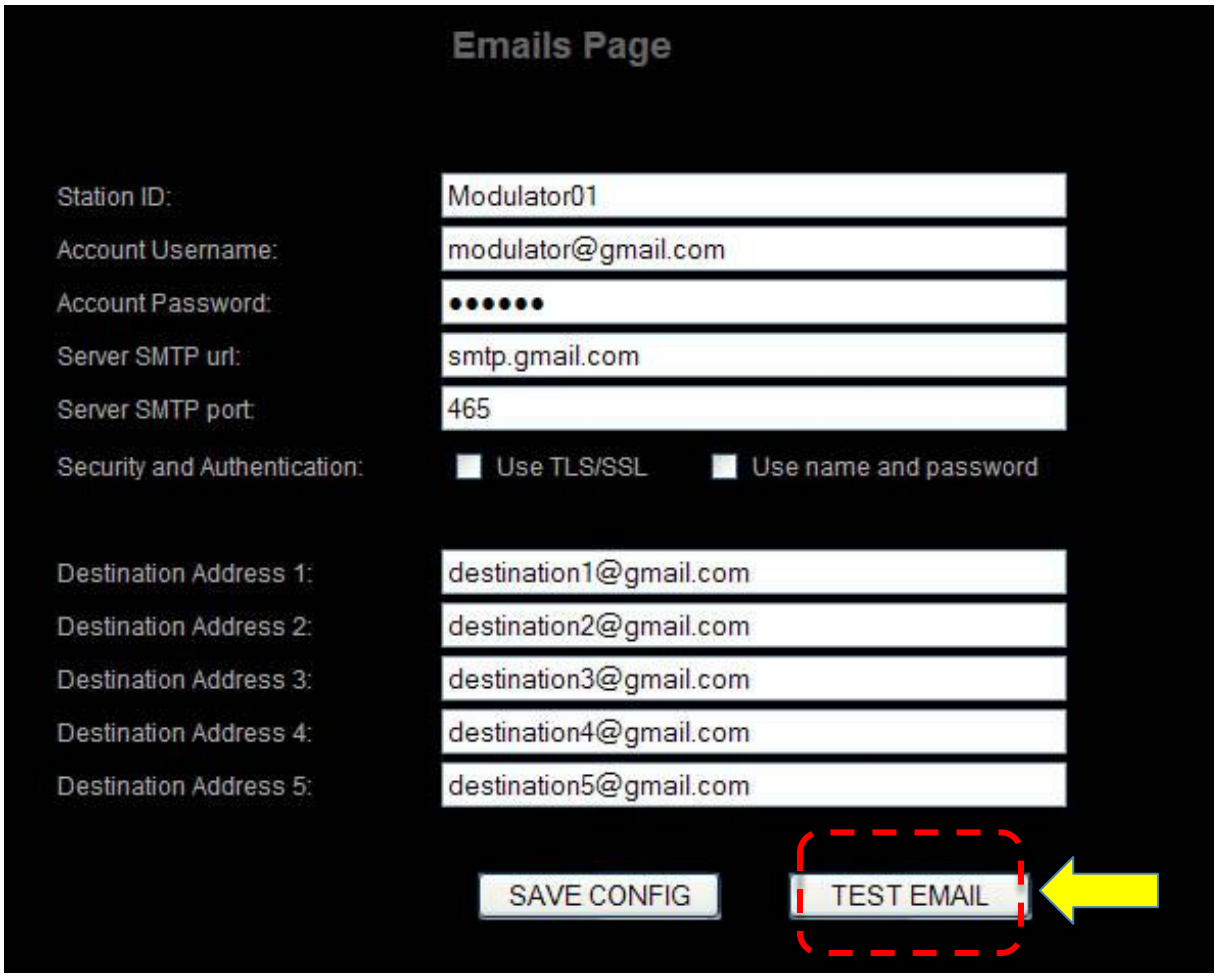


Fig. 8.10 – TEST EMAIL button

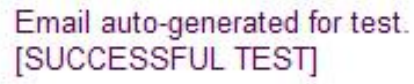


Fig. 8.11 – Confirmation message in the received test email

8.1.7 LOG PAGE

The LOG page allows the visualization and the download of the unit history (the register of all the events happened with date, hour and event code). If the login has been done it will be possible to download the file, otherwise it is possible only to see it.

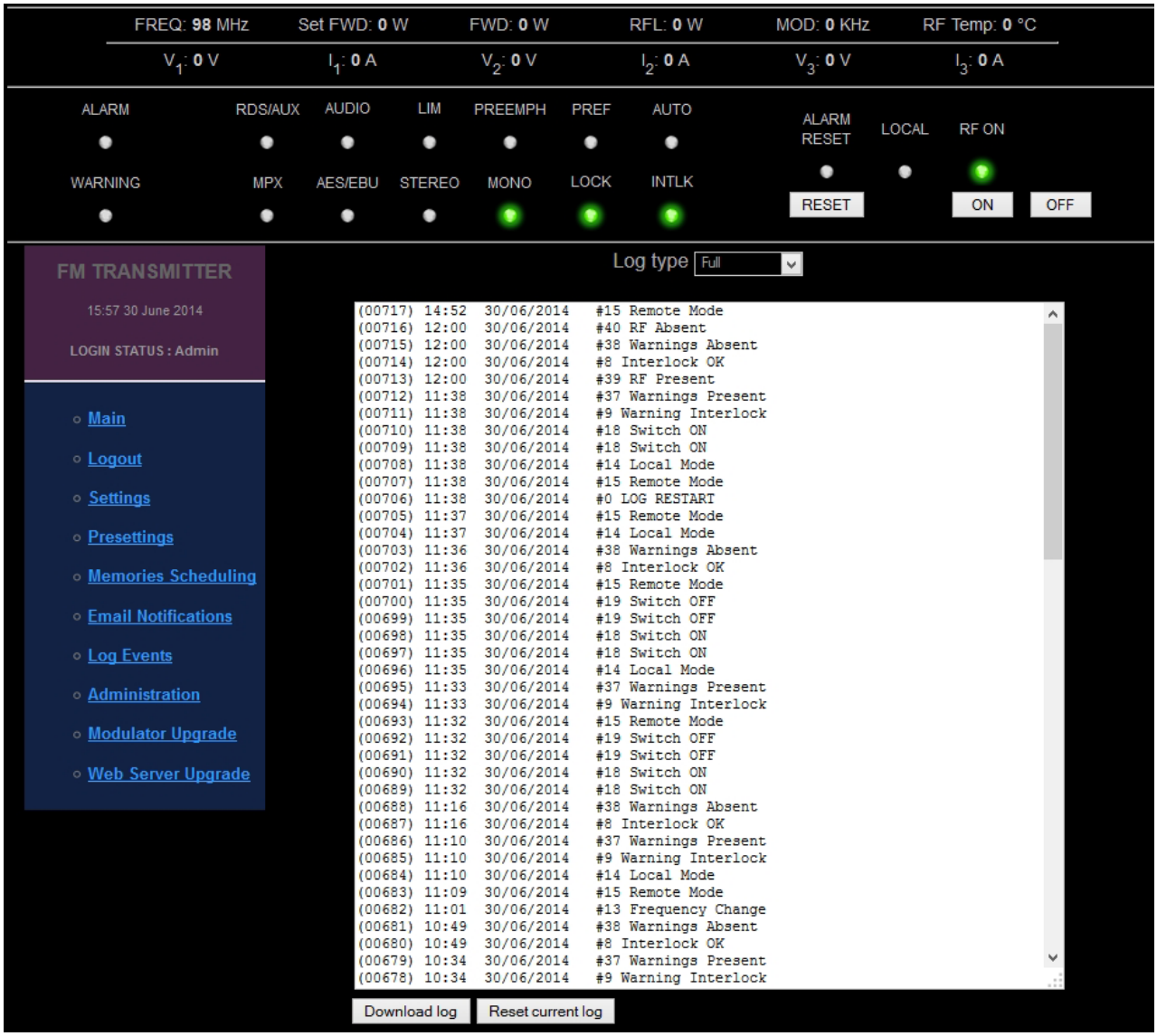


Fig. 8.12 – Webserver Log page

The Log type can be configured as FULL or RECENT.

In FULL mode it is possible see the unit complete list of event saved, in RECENT mode it is available a list of events starting from the selection of RECENT option.

The *Reset current log* button will restart only the RECENT mode of the Log. To restart the Log FULL mode it is necessary to go on Administration page.

8.1.8 ADMINISTRATION PAGE

If the user is logged as administrator it is possible change all parameters related to the connection of the unit to the network and the SNMP configuration.

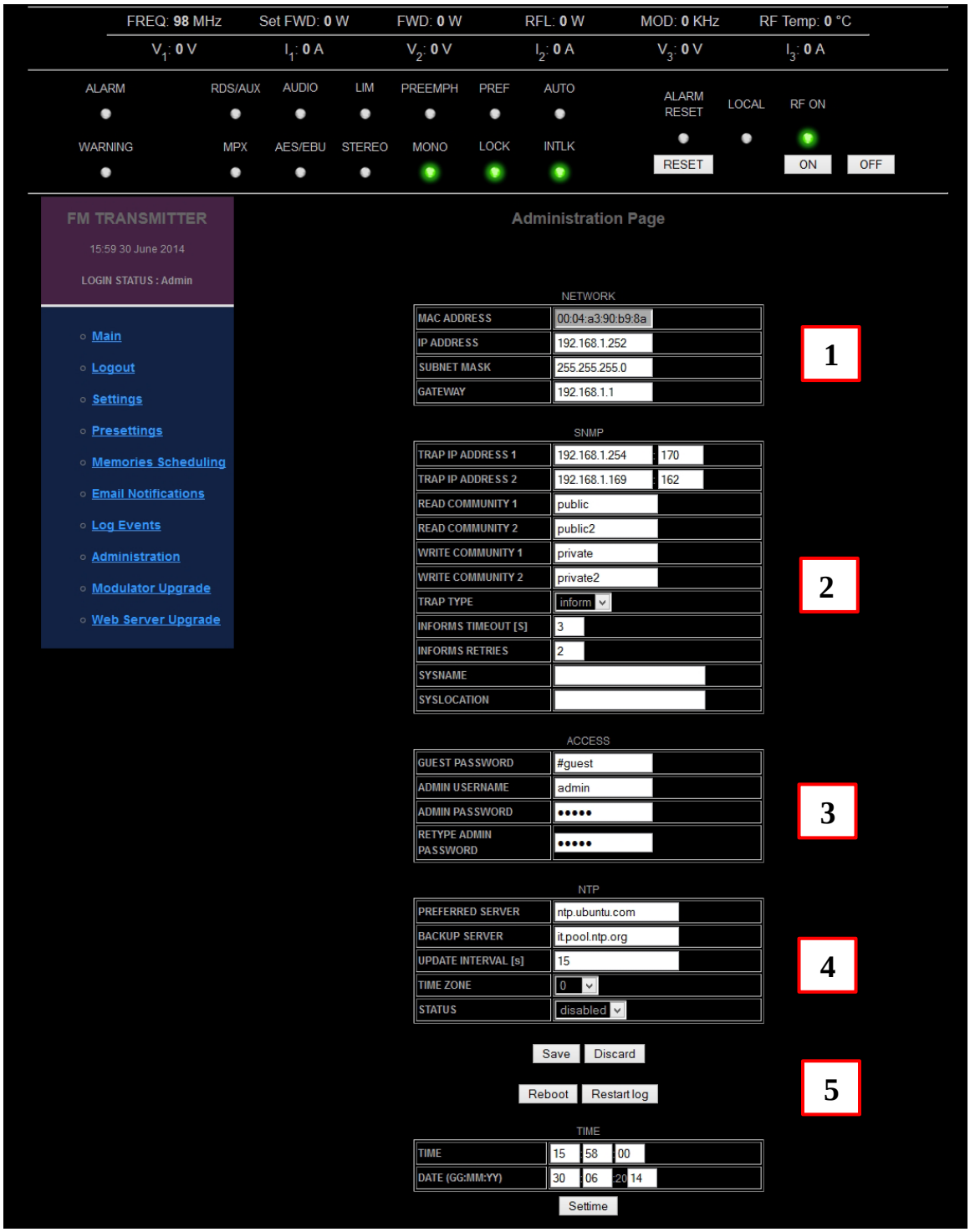


Fig. 8.13 – Webserver Administration page

The parameters available are:

1. Network parameters: IP address, netmask and Gateway address.
2. SNMP configuration.
3. Username and password for both administrator and guest users.
4. NTP configuration
5. Buttons necessary to reconfigure the webserver board.

To save a new network or SNMP configuration press SAVE button after the new parameters are set.

To apply the new configuration press REBOOT button to restart the webserver board.

The RESTART LOG button will restart the FULL mode of webserver Log.

8.1.9 MODULATOR UPGRADE PAGE

If the login has been done it is possible to upgrade the firmware of the unit uploading the file from this page. The upgrade will be automatically done once the file has been uploaded. The upload is done in 2 steps:

- The software is uploaded into the web server board (web module) and stored in it
- The software is passed from the web module to the microprocessor of the unit

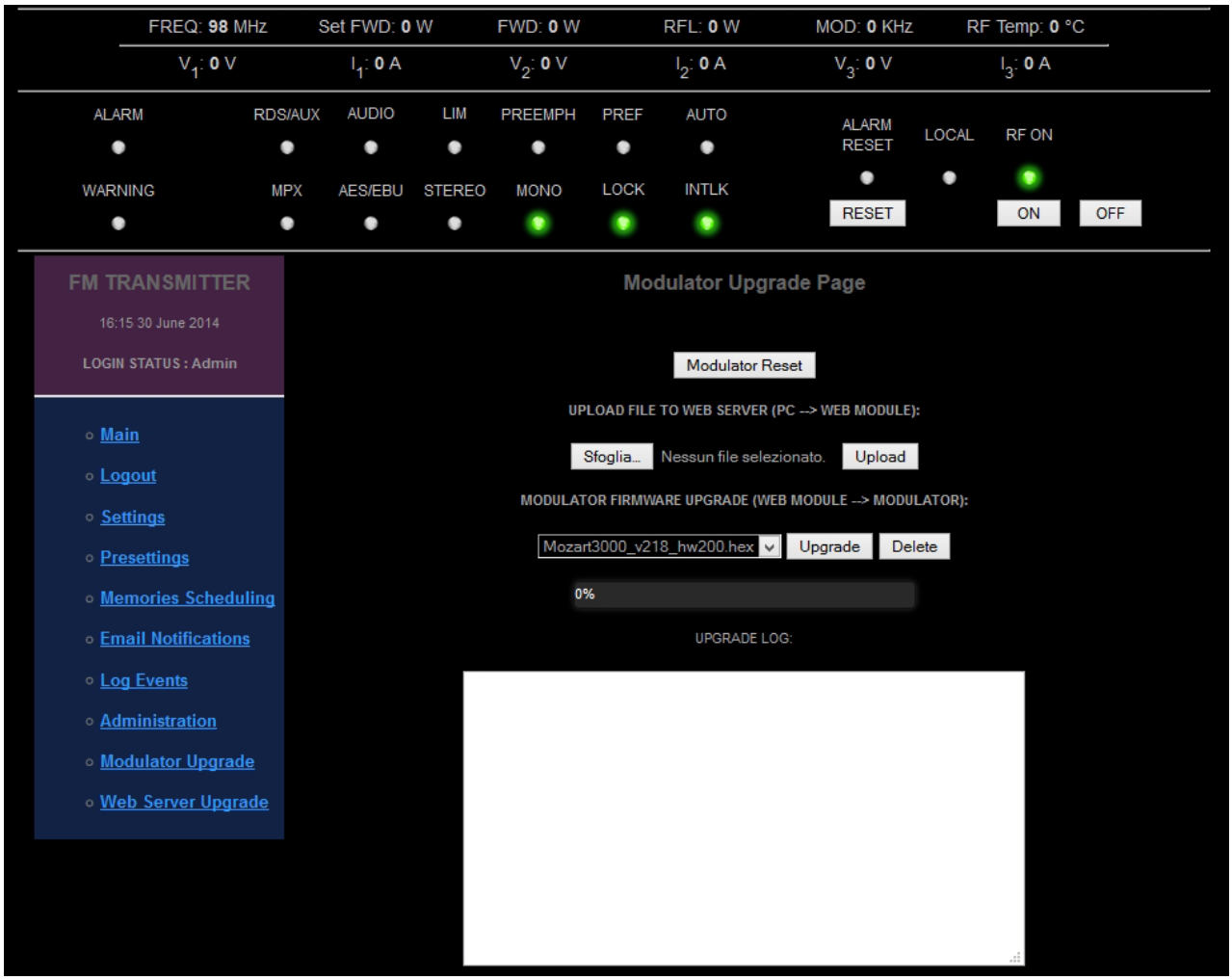


Fig. 8.14 – Webserver Modulator Upgrade page

To upgrade the modulator refer to the “Upgrading modulator firmware” paragraph.

8.1.10 WEBSERVER UPGRADE PAGE

If the login has been done it will be possible to upgrade the firmware of the webserver board uploading the file from this page. The upgrade will be automatically done once the file has been uploaded. The upgrade will be automatically done once the file has been uploaded. The upload is done in 2 steps:

- The software is uploaded into the webserver board (web module) and stored in it
- The software is applied to the web server

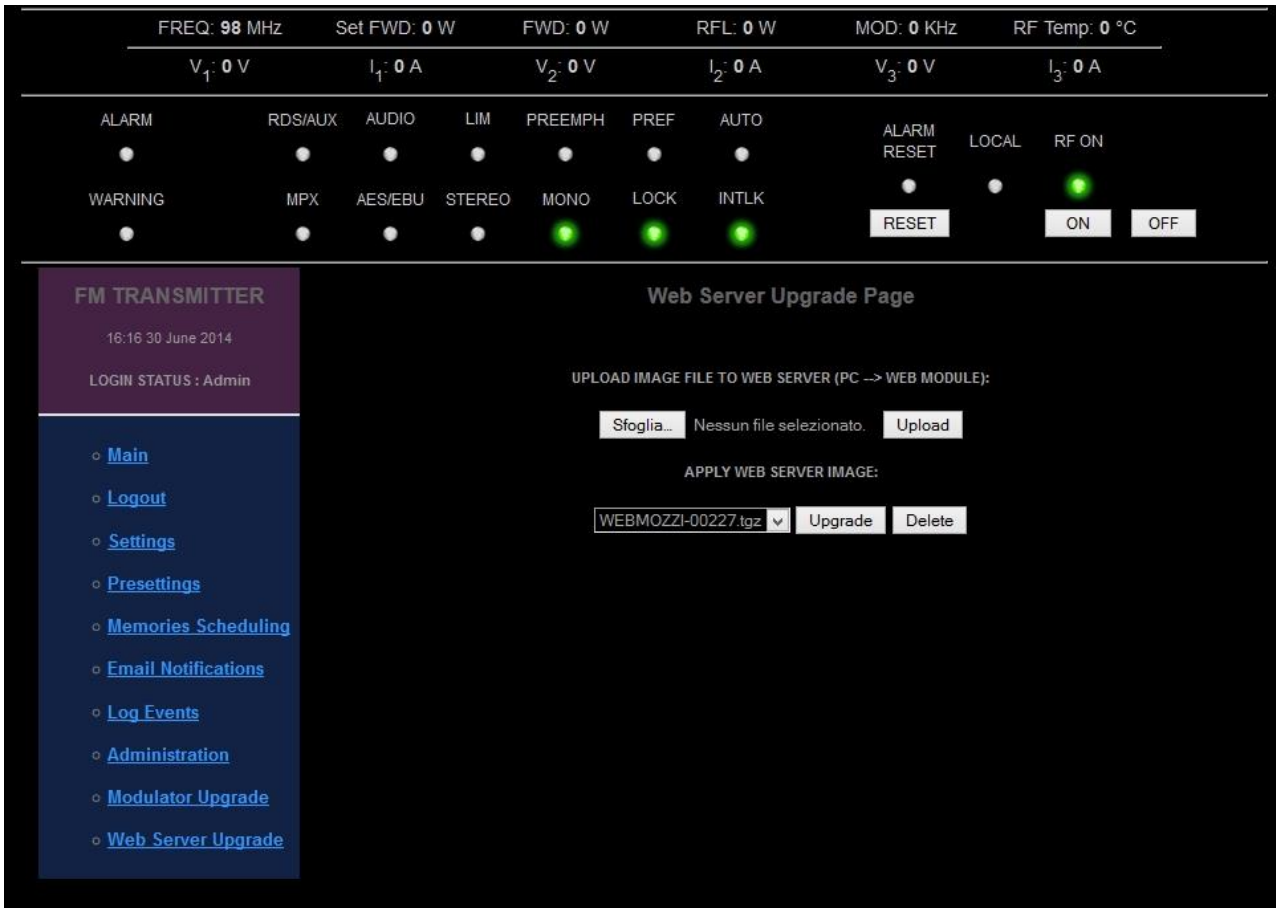


Fig. 8.15 – Webserver Upgrade page

To upgrade the webserver board refer to the “Upgrading webserver board firmware” paragraph.

8.2 UPGRADING PROCEDURES

8.2.1 UPGRADING THE MODULATOR FIRMWARE

The modulator firmware upgrade is available only with the webserver board installed.
The copies of modulator firmwares are always stored in the webserver board so it is possible the downgrade in case of failed upgrading attempts.

To start the procedure please follow these points:

1. Power on the unit maintaining pressed the OK key to start the unit in bootloader mode.

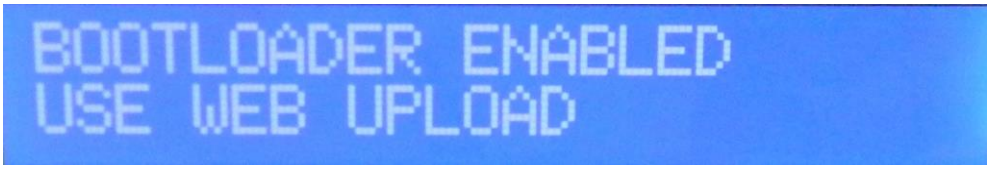


Fig. 8.16 – Start in bootloader mode

2. Connect a PC to the unit using a crossover LAN cable. Open a browser and type the IP address of the unit. Usually the boot time of webserver loading is 1 minute, after that the webpage will be active.
3. Login as administrator.
4. Go to the "Modulator Upgrade" menu and press the "Sfoglia" button to select the new firmware.

Fig. 8.17 – Modulator Upgrade page

5. Select the latest firmware *.hex* file and click "OPEN" (The file below is just an example, please use the firmware provided by DB Elettronica).

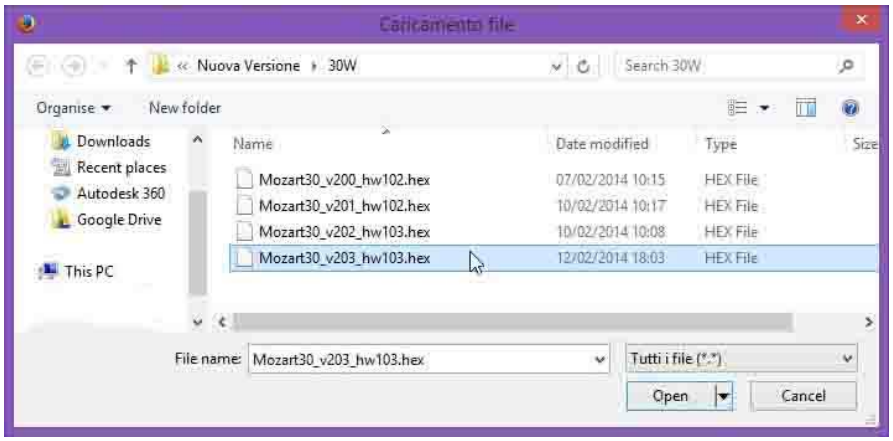


Fig. 8.18 – New firmware selection

6. Click on "Upload" button and confirm the operation pressing "OK" button on the popup window.

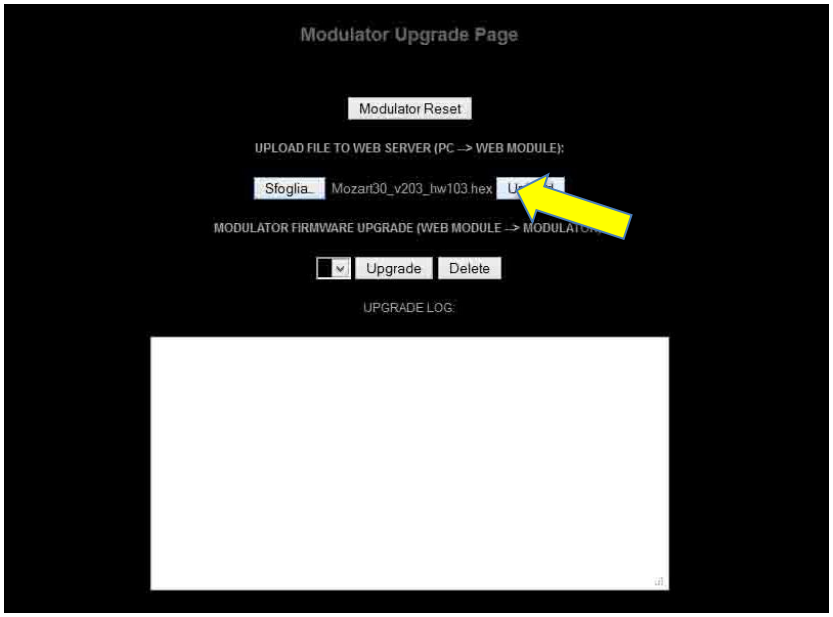


Fig. 8.19 – Upload the new firmware

Fig. 8.20 – Confirm the upload

7. The new firmware will be added on the list. Select it from the list and click on “Upgrade” button.

Fig. 8.21 – Upgrade to the new firmware

8. The procedure starts erasing the flash, on the display of the transmitter the text “ERASE FLASH” will show on.

Fig. 8.22 – Erase the flash before the upgrade

9. During the firmware upgrade on the display of the transmitter the text “upgrading …” will show on.

Fig. 8.23 – Upgrade in working

10. The Control Board will be upgraded with the new firmware. The operation process will take about 5 minutes. When the process is finished the text “END” will be shown at the end of the log report.

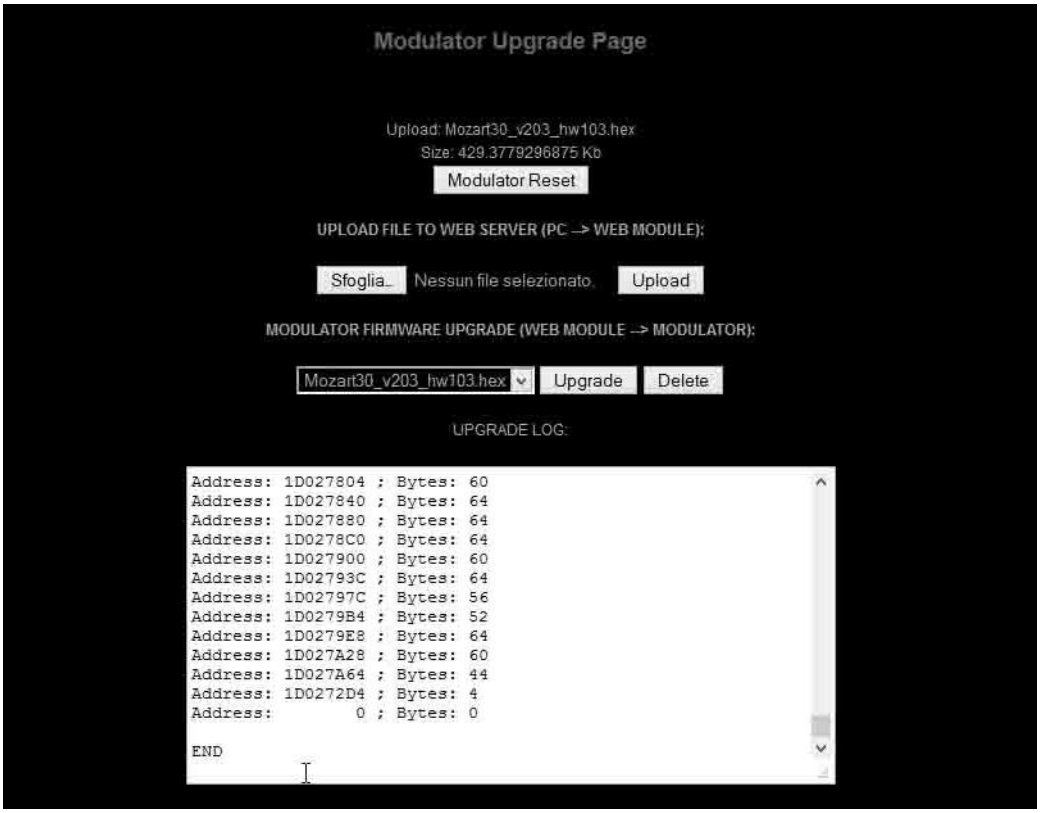


Fig. 8.24 – Upgrade complete

When the upgrade is complete, the transmitter will be restarted automatically. In case of procedure failed, power off the unit, wait some seconds and power on the unit. Now retry the upgrade procedure again.

In case of new upgrading failed contact the assistance.

8.2.2 UPGRADING THE WEBSERVER BOARD FIRMWARE

To upgrade the webserver board please follow the next steps:

1. Connect a PC to the unit transmitter using a crossover LAN cable. Open a browser and type the IP Address of transmitter.
2. Login as administrator.
3. Go to the "Webserver Upgrade" menu and click on "Sfoglia" button.

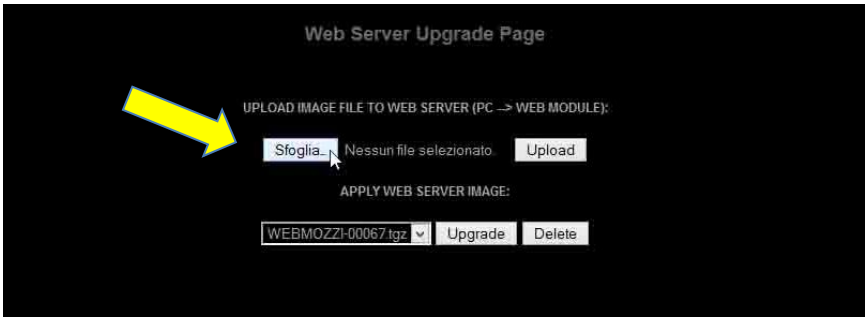


Fig. 8.25 – Webserver Upgrade page

4. Select the latest firmware .tgz file and click "OPEN". (The file below is just an example, please use the firmware provided by DB Elettronica).

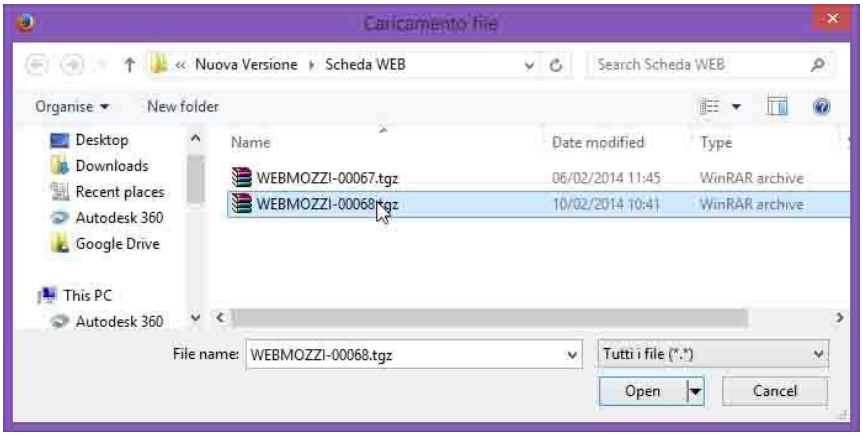


Fig. 8.26 – Select the new webserver board firmware

5. Click on “Upload” button and confirm the operation pressing “OK” button.

Fig. 8.27 – Upload the firmware to webserver

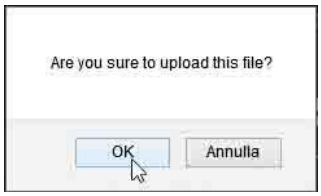


Fig. 8.28 – Confirm the uploading

6. The following screen will be shown on while the process is running.

Fig. 8.29 – Busy state during upload procedure

7. The new firmware will be added on the list. Select it and click on “Upgrade” button.

Fig. 8.30 – New firmware ready to upgrade

8. Select “OK” to confirm the operation and “OK” after the message was read.

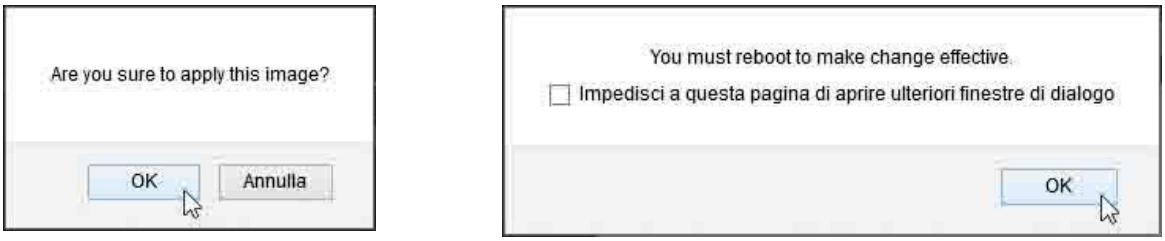


Fig. 8.31 – Confirmations to upgrade

9. Wait until the following screen will disappear

Fig. 8.32 – Upgrade in working

10. The webserver is ready to be upgraded. Go to “Administration” menu and click on the “REBOOT” button. Confirm the operation pressing “OK” button. The webserver will be restarted with the new firmware.

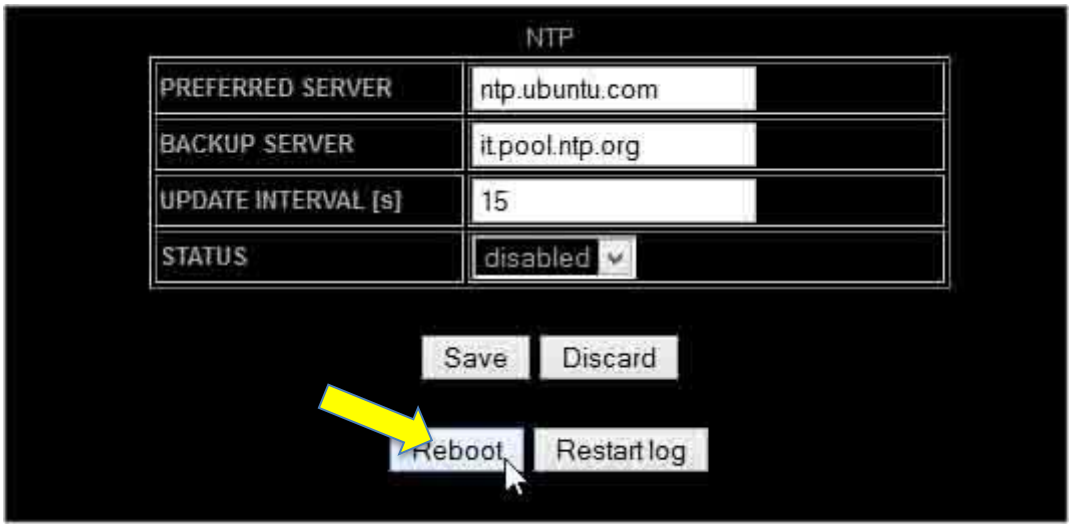


Fig. 8.33 – Reboot the webserver

Fig. 8.34 – Confirm the reboot

11. Wait until the process is finished. The operation process will take about 90 seconds.

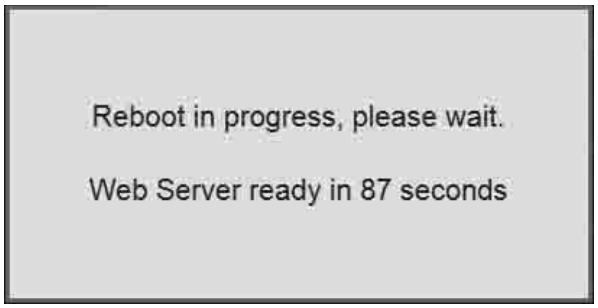


Fig. 8.35 – Wait until the reboot is completed

8.3 SNMP PROTOCOL

SNMP (Simple Network Management Protocol) is used for monitoring and controlling a wide variety of different units in a network.
A description of the unit - the MIB (Management Information Base) - must be loaded in the central unit ("manager") from which the unit is monitored.
A monitored unit contains a program ("agent") which can answer queries from the manager and execute commands. Furthermore, the agent may of its own accord generate a message (“trap” or “inform”) and send it to the manager. In this way, the central unit can be informed of a fault.

The commands are accepted by the unit only in remote mode and if the community strings are correctly set for both read and write operations.
The community read/write strings have to be set both to the agent and manager units. In the webpage can be set in the Administration menu.

8.3.1 MANAGEMENT INFORMATION BASE MIB

The MIB required for monitoring and controlling the unit can be requested to assistance. Select and load the file **SINGLE-TRANSMITTER-MIB** in the MIB browser of unit manager.
The supported protocol is SNMPv2c.

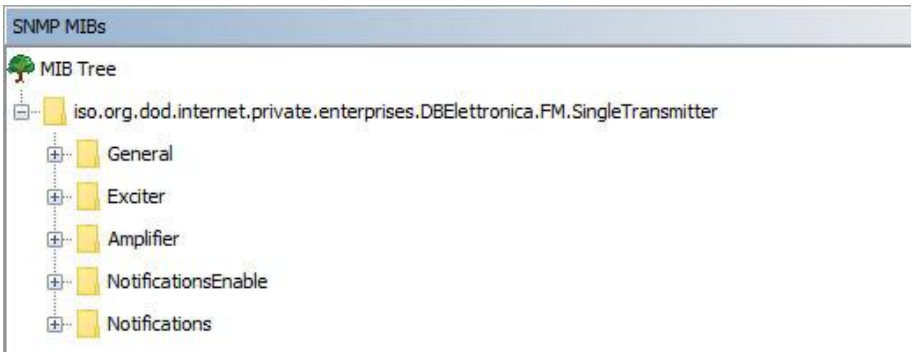


Fig. 8.36 – Single Transmitter MIB Tree

* For 30/50W exciter version a decimal number is present, for example a read value of 105 is 10.5W
** For 30/50W exciter version a decimal number is present, for example a set value of 105 is 10.5W
*** The read frequency has two decimal numbers

8.3.2 GENERAL FOLDER

The general folder includes the variables state of the transmitter.

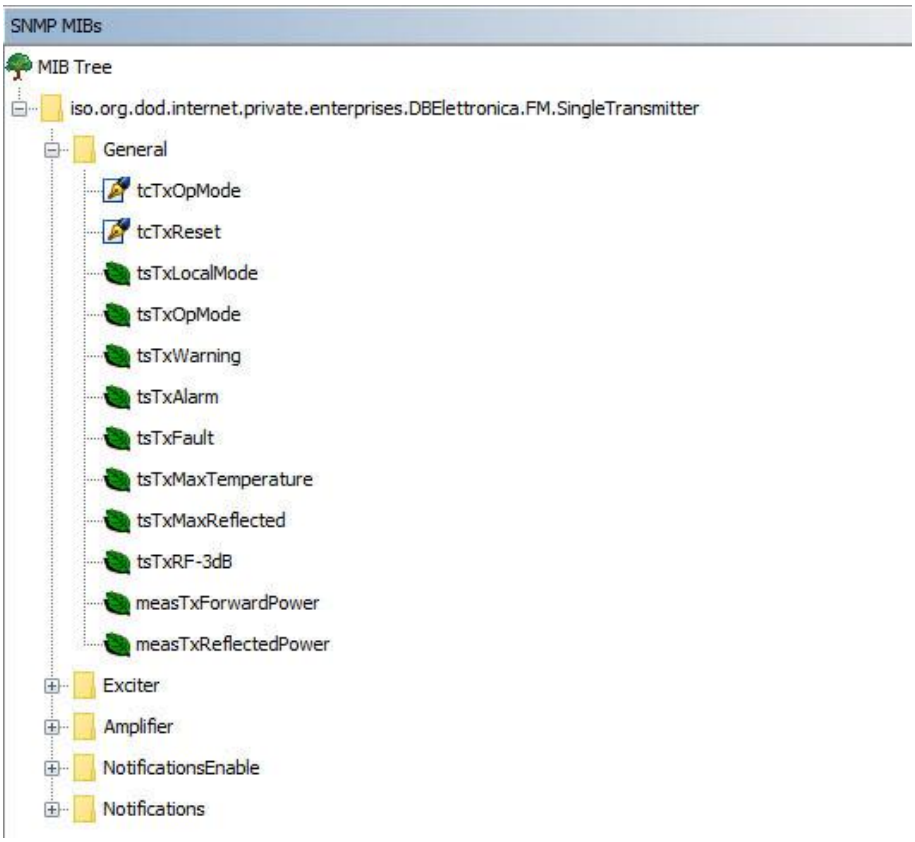


Fig. 8.37 – Single Transmitter MIB – General folder

EVENT	OID	ACCESS	DESCRIPTION
tcTxOpMode	.1.3.6.1.4.1.35305.1.1.1.1	read-write	Turn on/off the transmitter
tcTxReset	.1.3.6.1.4.1.35305.1.1.1.2	read-write	Reset the transmitter alarm/fault state
tsTxLocalMode	.1.3.6.1.4.1.35305.1.1.1.3	read-only	Local/remote mode
tsTxOpMode	.1.3.6.1.4.1.35305.1.1.1.4	read-only	Operation state of the transmitter
tsTxWarning	.1.3.6.1.4.1.35305.1.1.1.5	read-only	Transmitter in warning
tsTxAlarm	.1.3.6.1.4.1.35305.1.1.1.6	read-only	Transmitter in alarm
tsTxFault	.1.3.6.1.4.1.35305.1.1.1.7	read-only	Transmitter in fault
tsTxMaxTemperature	.1.3.6.1.4.1.35305.1.1.1.8	read-only	Temperature state of the transmitter
tsTxMaxReflected	.1.3.6.1.4.1.35305.1.1.1.9	read-only	Reflected state of the transmitter
tsTxRF-3dB	.1.3.6.1.4.1.35305.1.1.1.10	read-only	RF -3dB state of the transmitter
measTxForwardPower	.1.3.6.1.4.1.35305.1.1.1.11	read-only	*****Transmitter output power
measTxReflectedPower	.1.3.6.1.4.1.35305.1.1.1.12	read-only	*****Transmitter reflected power

Table 8.1 – General OID available

8.3.3 EXCITER FOLDER

The exciter folder includes the variables state of the exciter.

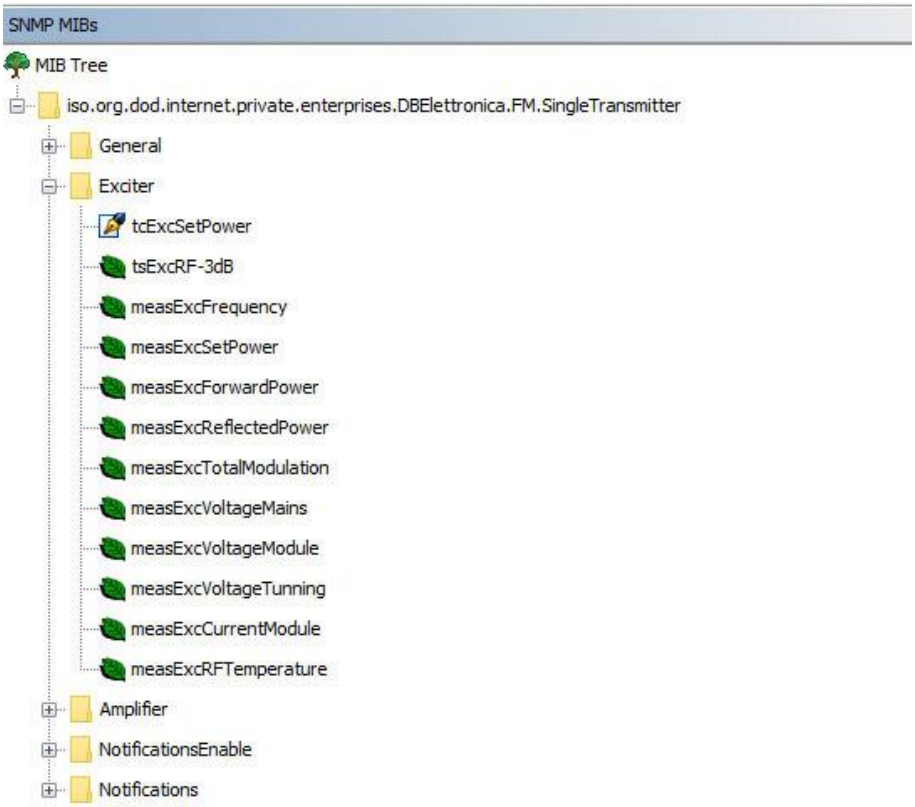


Fig. 8.38 – Single Transmitter MIB – Exciter folder

EVENT	OID	ACCESS	DESCRIPTION
tcExcSetPower	.1.3.6.1.4.1.35305.1.1.2.1	read-write	**Exciter set output power
tsExcRF-3dB	.1.3.6.1.4.1.35305.1.1.2.2	read-only	RF -3dB state of the exciter
measExcFrequency	.1.3.6.1.4.1.35305.1.1.2.3	read-only	***Exciter set frequency
measExcSetPower	.1.3.6.1.4.1.35305.1.1.2.4	read-only	*Exciter set power
measExcForwardPower	.1.3.6.1.4.1.35305.1.1.2.5	read-only	*Exciter output power
measExcReflectedPower	.1.3.6.1.4.1.35305.1.1.2.6	read-only	*Exciter reflected power
measExcTotalModulation	.1.3.6.1.4.1.35305.1.1.2.7	read-only	*Exciter total modulation
measExcVoltageMains	.1.3.6.1.4.1.35305.1.1.2.8	read-only	*Exciter mains voltage
measExcVoltageModule	.1.3.6.1.4.1.35305.1.1.2.9	read-only	*Exciter RF module voltage
measExcVoltageTunning	.1.3.6.1.4.1.35305.1.1.2.10	read-only	*Exciter VCO voltage
measExcCurrentModule	.1.3.6.1.4.1.35305.1.1.2.11	read-only	*Exciter RF module current
measExcRFTemperature	.1.3.6.1.4.1.35305.1.1.2.12	read-only	*Exciter RF temperature

Table 8.2 – Exciter OID available

8.3.4 AMPLIFIER FOLDER

The amplifier folder includes the variables state of the amplifier.

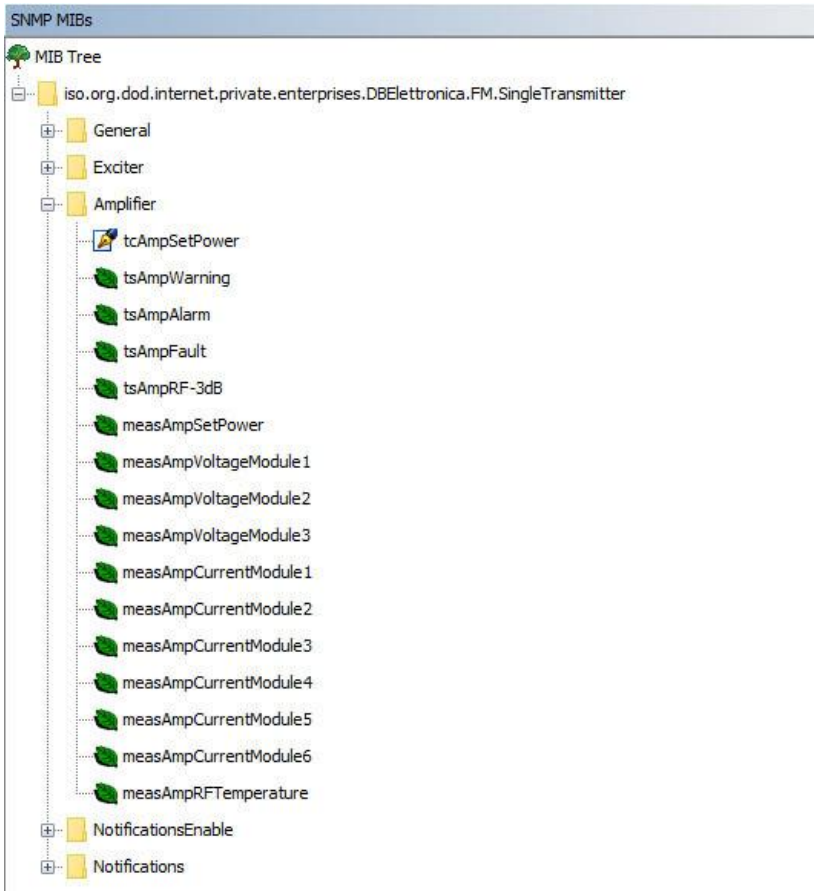


Fig. 8.39 – Single Transmitter MIB – Amplifier folder

EVENT	OID	ACCESS	DESCRIPTION
tcAmpSetPower	.1.3.6.1.4.1.35305.1.1.3.1	read-write	Amplifier set output power
tsAmpWarning	.1.3.6.1.4.1.35305.1.1.3.2	read-only	Amplifier in warning
tsAmpAlarm	.1.3.6.1.4.1.35305.1.1.3.3	read-only	Amplifier in alarm
tsAmpFault	.1.3.6.1.4.1.35305.1.1.3.4	read-only	Amplifier in fault
tsAmpRF-3dB	.1.3.6.1.4.1.35305.1.1.3.5	read-only	RF -3dB state of the amplifier
measAmpSetPower	.1.3.6.1.4.1.35305.1.1.3.6	read-only	Amplifier set power
measAmpVoltageModule1	.1.3.6.1.4.1.35305.1.1.3.7	read-only	*****Amplifier RF module 1 voltage
measAmpVoltageModule2	.1.3.6.1.4.1.35305.1.1.3.8	read-only	*****Amplifier RF module 2 voltage
measAmpVoltageModule3	.1.3.6.1.4.1.35305.1.1.3.9	read-only	*****Amplifier RF module 3 voltage
measAmpCurrentModule1	.1.3.6.1.4.1.35305.1.1.3.10	read-only	*****Amplifier RF module 1 current
measAmpCurrentModule2	.1.3.6.1.4.1.35305.1.1.3.11	read-only	*****Amplifier RF module 2 current
measAmpCurrentModule3	.1.3.6.1.4.1.35305.1.1.3.12	read-only	*****Amplifier RF module 3 current
measAmpCurrentModule4	.1.3.6.1.4.1.35305.1.1.3.13	read-only	*****Amplifier RF module 4 current
measAmpCurrentModule5	.1.3.6.1.4.1.35305.1.1.3.14	read-only	*****Amplifier RF module 5 current
measAmpCurrentModule6	.1.3.6.1.4.1.35305.1.1.3.15	read-only	*****Amplifier RF module 6 current
measAmpRFTemperature	.1.3.6.1.4.1.35305.1.1.3.16	read-only	Amplifier RF temperature

Table 8.3 – Amplifier OID available

8.3.5 NOTIFICATIONS ENABLE FOLDER

The notifications enable folder includes the event control of the transmitter. The messages trap/inform have to be enable to be sent and can be enable singly.

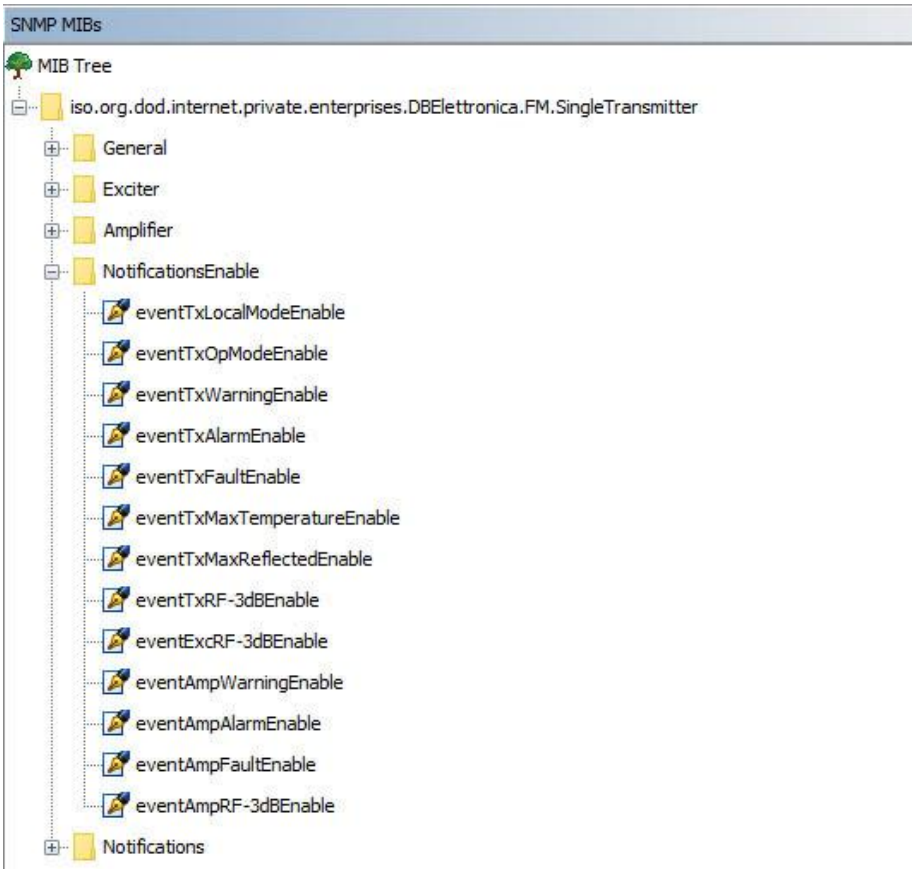


Fig. 8.40 – Single Transmitter MIB – Notification enable folder

EVENT	OID	ACCESS	DESCRIPTION
eventTxLocalModeEnable	.1.3.6.1.4.1.35305.1.1.4.1	read-write	Enable Local/remote transmitter event
eventTxOpModeEnable	.1.3.6.1.4.1.35305.1.1.4.2	read-write	Enable Operational transmitter event
eventTxWarningEnable	.1.3.6.1.4.1.35305.1.1.4.3	read-write	Enable Warning transmitter event
eventTxAlarmEnable	.1.3.6.1.4.1.35305.1.1.4.4	read-write	Enable Alarm transmitter event
eventTxFaultEnable	.1.3.6.1.4.1.35305.1.1.4.5	read-write	Enable Fault transmitter event
eventTxMaxTemperatureEnable	.1.3.6.1.4.1.35305.1.1.4.6	read-write	Enable Temperature transmitter event
eventTxMaxReflectedEnable	.1.3.6.1.4.1.35305.1.1.4.7	read-write	Enable Reflected transmitter event
eventTxRF-3dBEnable	.1.3.6.1.4.1.35305.1.1.4.8	read-write	Enable RF-3dB transmitter event
eventExcRF-3dBEnable	.1.3.6.1.4.1.35305.1.1.4.9	read-write	Enable RF-3dB exciter event
eventAmpWarningEnable	.1.3.6.1.4.1.35305.1.1.4.10	read-write	Enable Warning amplifier event
eventAmpAlarmEnable	.1.3.6.1.4.1.35305.1.1.4.11	read-write	Enable Alarm amplifier event
eventAmpFaultEnable	.1.3.6.1.4.1.35305.1.1.4.12	read-write	Enable Fault amplifier event
eventAmpRF-3dBEnable	.1.3.6.1.4.1.35305.1.1.4.13	read-write	Enable RF-3dB amplifier event

Table 8.4 – Notifications Enable OID available

8.3.6 NOTIFICATIONS FOLDER

The notifications folder includes the event state of the transmitter. The events can generate a trap or inform (depending on user configuration).

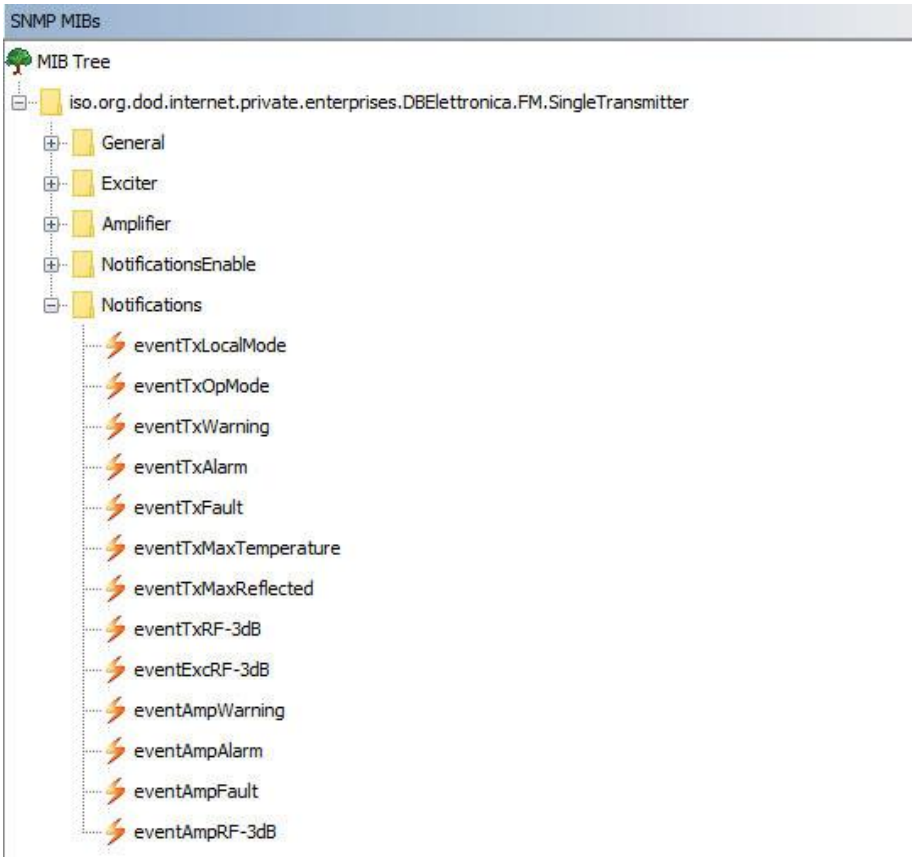


Fig. 8.41 – Single Transmitter MIB – Notification folder

EVENT	OID	ACCESS	DESCRIPTION
eventTxLocalMode	.1.3.6.1.4.1.35305.1.1.4.1	read-write	Local/remote mode transmitter notification
eventTxOpMode	.1.3.6.1.4.1.35305.1.1.4.2	read-write	Operational mode transmitter notification
eventTxWarning	.1.3.6.1.4.1.35305.1.1.4.3	read-write	Warning transmitter notification
eventTxAlarm	.1.3.6.1.4.1.35305.1.1.4.4	read-write	Alarm transmitter notification
eventTxFault	.1.3.6.1.4.1.35305.1.1.4.5	read-write	Fault transmitter notification
eventTxMaxTemperature	.1.3.6.1.4.1.35305.1.1.4.6	read-write	Temperature transmitter notification
eventTxMaxReflected	.1.3.6.1.4.1.35305.1.1.4.7	read-write	Reflected transmitter notification
eventTxRF-3dB	.1.3.6.1.4.1.35305.1.1.4.8	read-write	RF-3dB transmitter notification
eventExcRF-3dB	.1.3.6.1.4.1.35305.1.1.4.9	read-write	RF-3dB exciter notification
eventAmpWarning	.1.3.6.1.4.1.35305.1.1.4.10	read-write	Warning amplifier notification
eventAmpAlarm	.1.3.6.1.4.1.35305.1.1.4.11	read-write	Alarm amplifier notification
eventAmpFault	.1.3.6.1.4.1.35305.1.1.4.12	read-write	Fault amplifier notification
eventAmpRF-3dB	.1.3.6.1.4.1.35305.1.1.4.13	read-write	RF-3dB amplifier notification

Table 8.5 – Notifications OID available

8.3.7 MESSAGE TRAP AND INFORM CONFIGURATION

The Traps/Informs can be configured in the webpage on Administration menu.

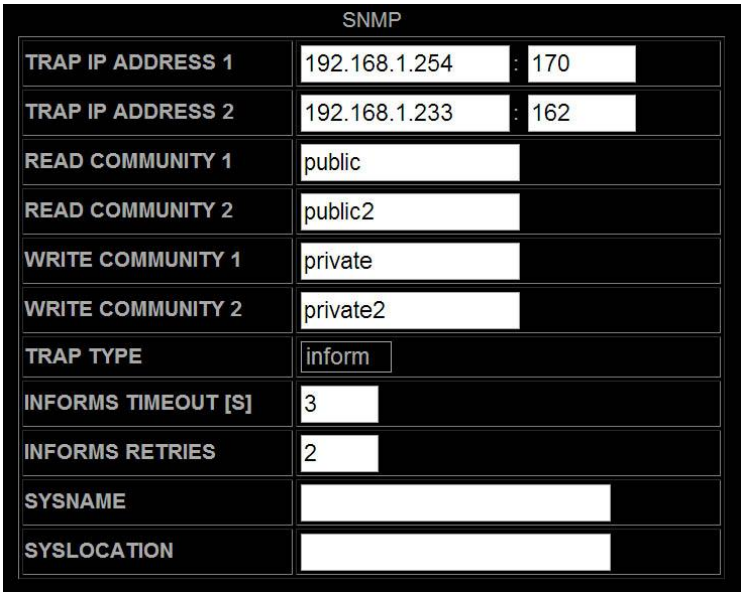


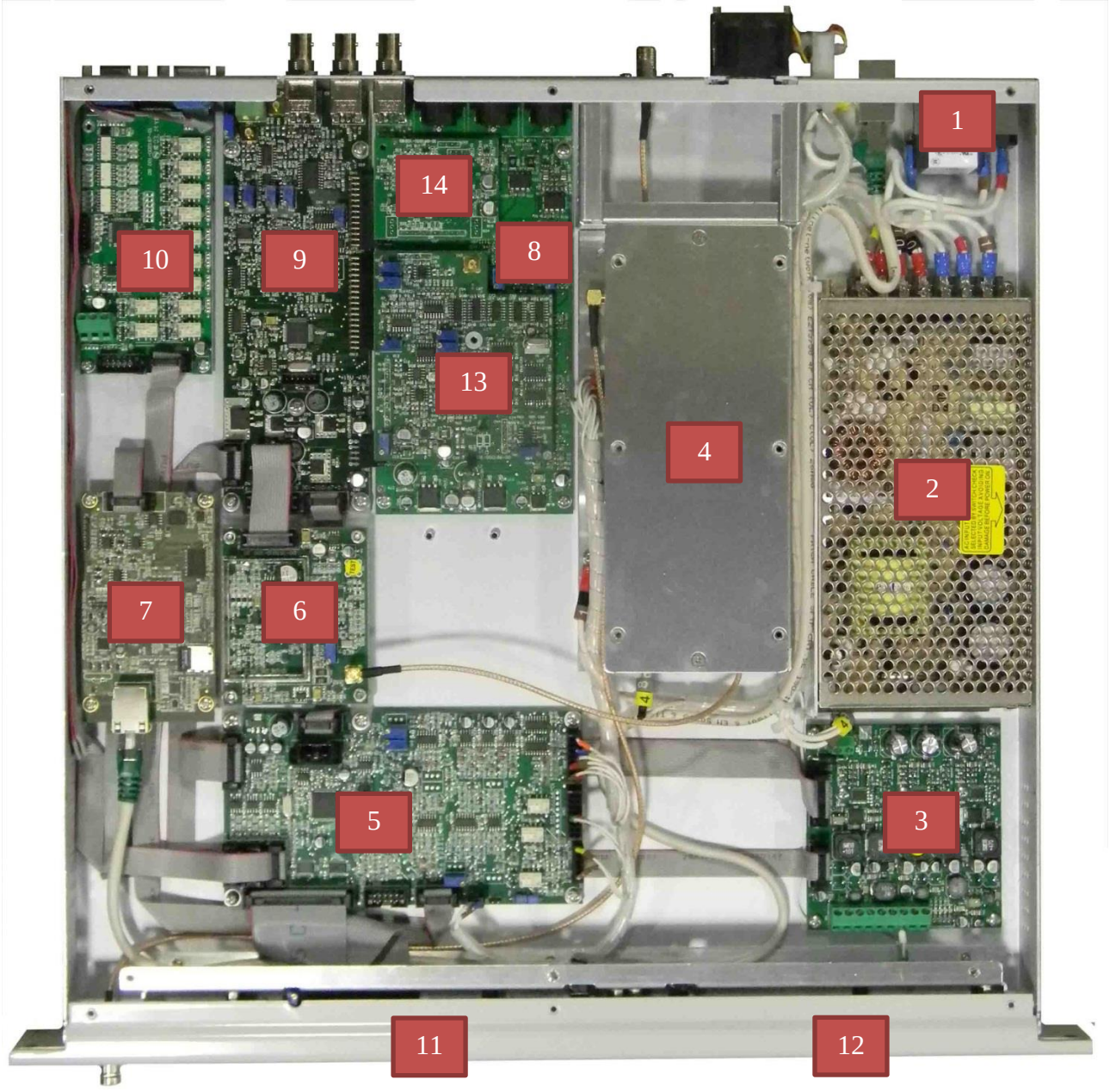
Fig. 8.42 - Traps and Informs configuration

The trap/inform messages can be sent to 2 different IP address set in TRAP IP ADDRESS box with the relative port.

In the TRAP TYPE box select the message type desired, trap or inform. If inform is selected, the timeout the agent waits (if no answer from the manager) before re-send the inform message can be set in the INFORMS TIMEOUT box, the number of inform retransmission can be set in INFORMS RETRIES box.

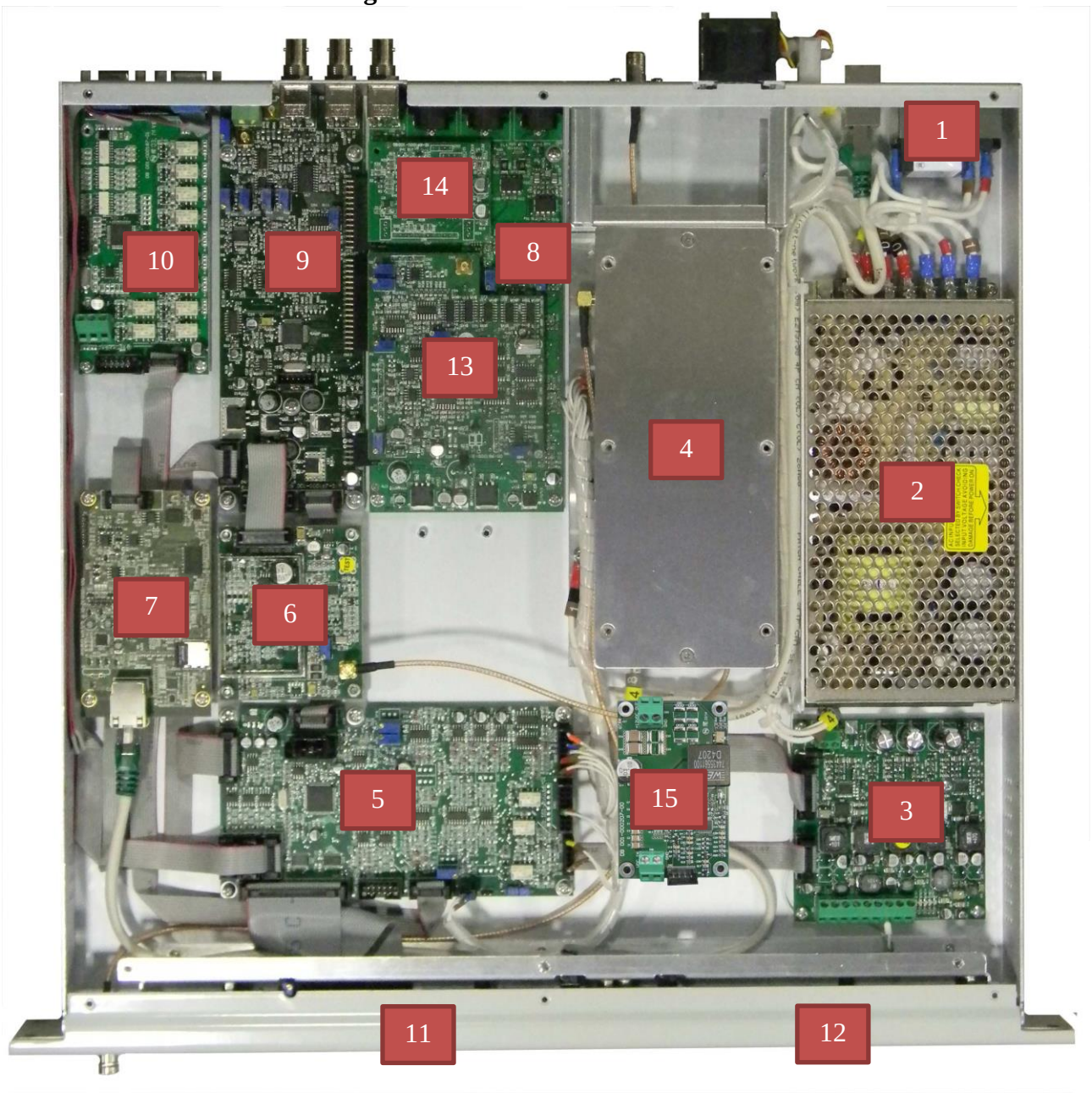
9 TOP VIEWS

Fig. 9.1 – MOZART 30 TOP VIEW



1. AC Mains input
2. RS-150 AC/DC power supply
3. DC/DC converter
4. AMP30 RF module
5. Control board
6. PLL-VCO board
7. Web Server board
8. Left & Right audio board
9. MPX audio board
10. Remote I/O board
11. LCD Display board
12. Buttons & led board
13. Coder stereo board
14. AES/EBU board

Fig. 9.2 – MOZART 50 TOP VIEW



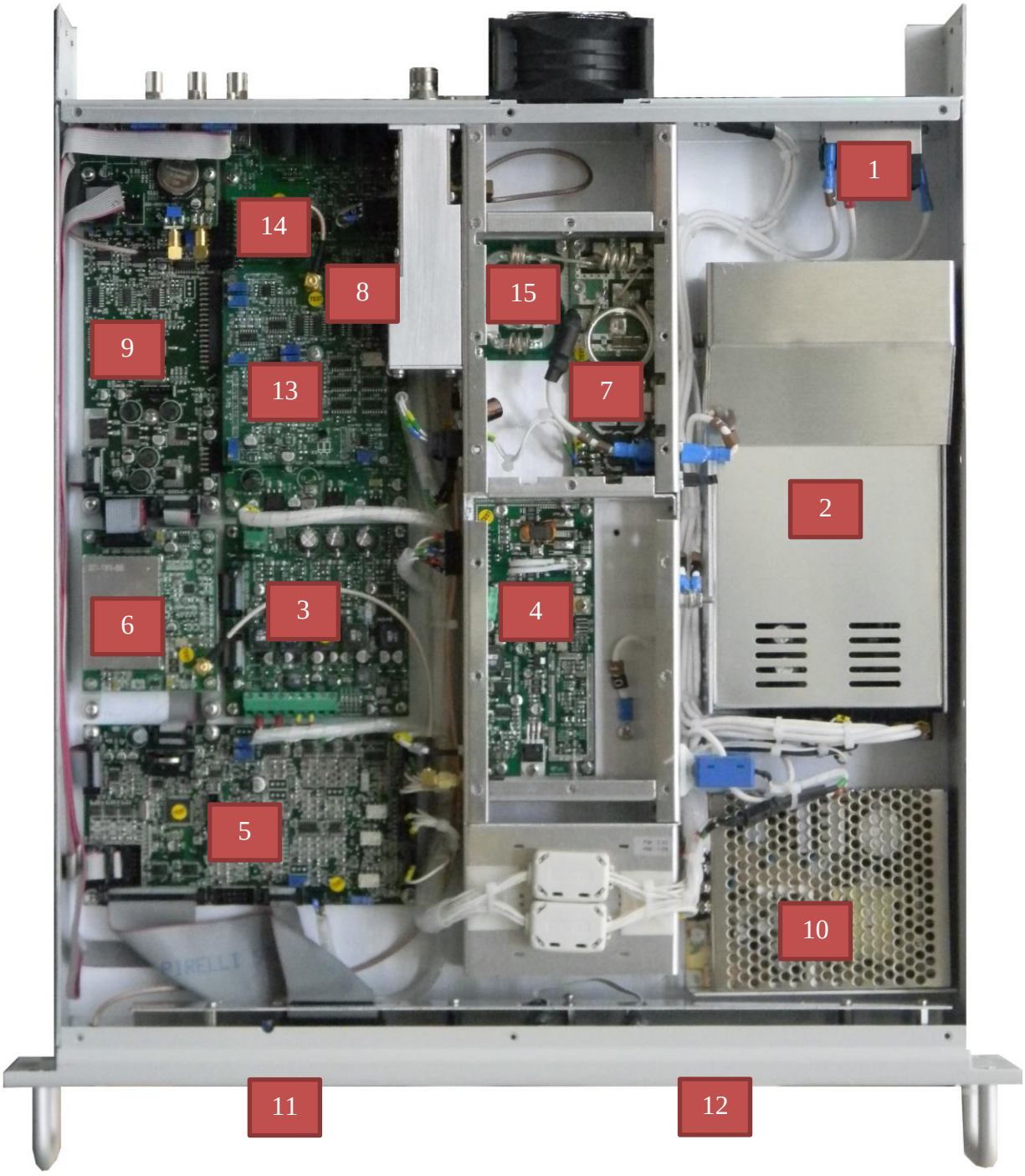
1. AC Mains input
2. RS-150 AC/DC power supply
3. DC/DC converter
4. AMP50 RF module
5. Control board
6. PLL-VCO board
7. Web Server board
8. Left & Right audio board
9. MPX audio board
10. Remote I/O board
11. LCD Display board
12. Buttons & led board
13. Coder stereo board
14. AES/EBU board
15. DC/DC Buck converter

Fig. 9.3 – MOZART 100 TOP VIEW

1. AC Mains input
2. SPV 300-48 AC/DC power supply
3. DC-DC converter
4. AMP100 RF board
5. Control board
6. PLL-VCO board
7. Output filter board
8. Left & Right audio board
9. MPX audio board
10. RS 100-24 AC/DC power supply
11. LCD Display board
12. Buttons & led board
13. Coder stereo board
14. AES/EBU board

Available options Remote I/O board and Webserver board

Fig. 9.4 – MOZART 300 TOP VIEW



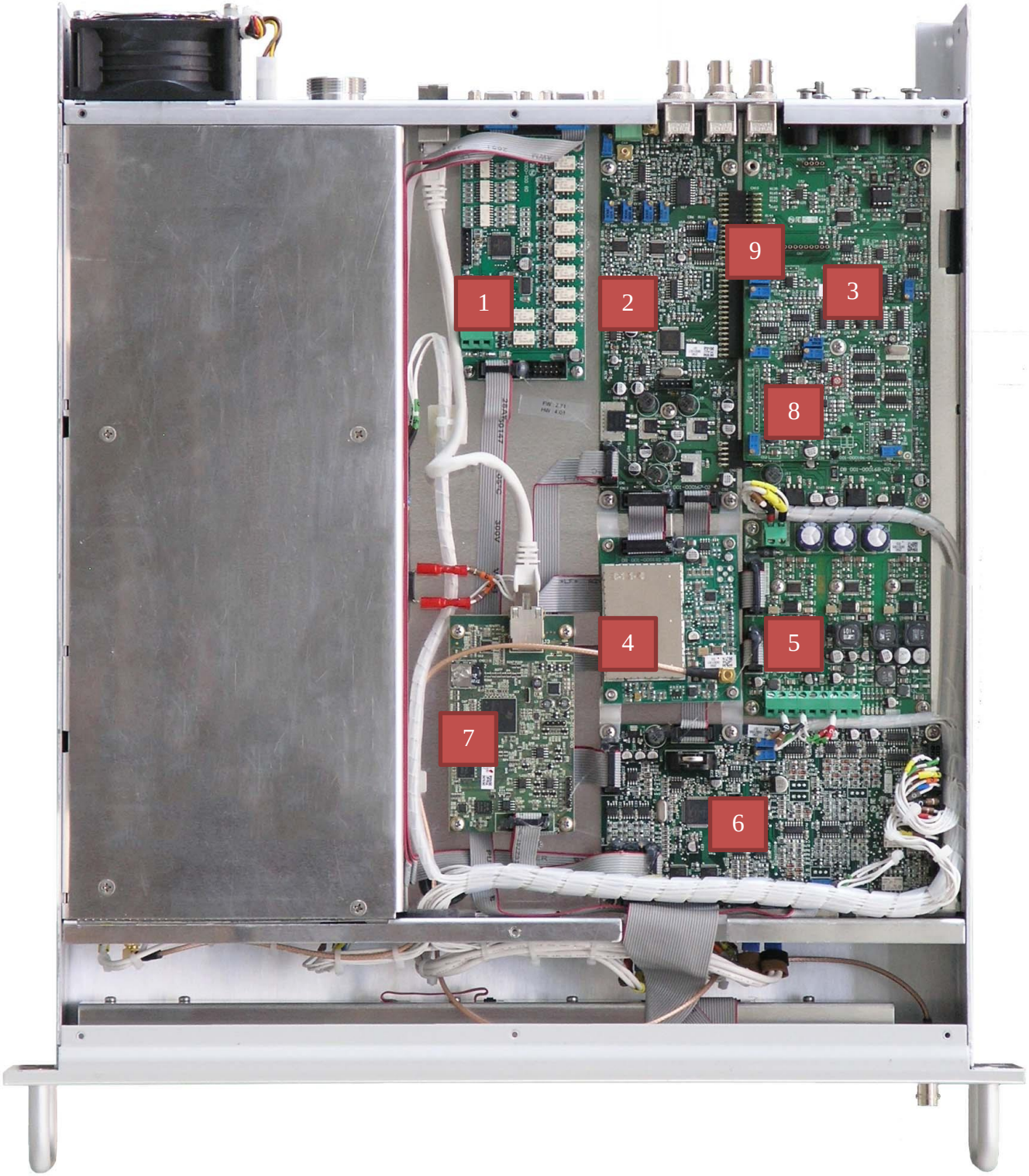
1. AC Mains input
2. RSP 750-48 AC/DC power supply
3. DC-DC converter
4. AMP30 RF board
5. Control Board
6. PLL-VCO board
7. AMP RF board
8. Left & Right audio board
9. MPX audio board
10. RS 100-24 AC/DC power supply
11. LCD Display board
12. Buttons & led board
13. Coder stereo board
14. AES/EBU board
15. Output filter

Available options Remote I/O board and Webserver board

Fig. 9.5 – MOZART 500 TOP VIEW

1. AC Mains input
2. Mains switch
3. RSP 2000-48 AC/DC power supply
4. RS 100-24 AC/DC power supply
5. AMP RF module
6. LCD Display board
7. Buttons & led board

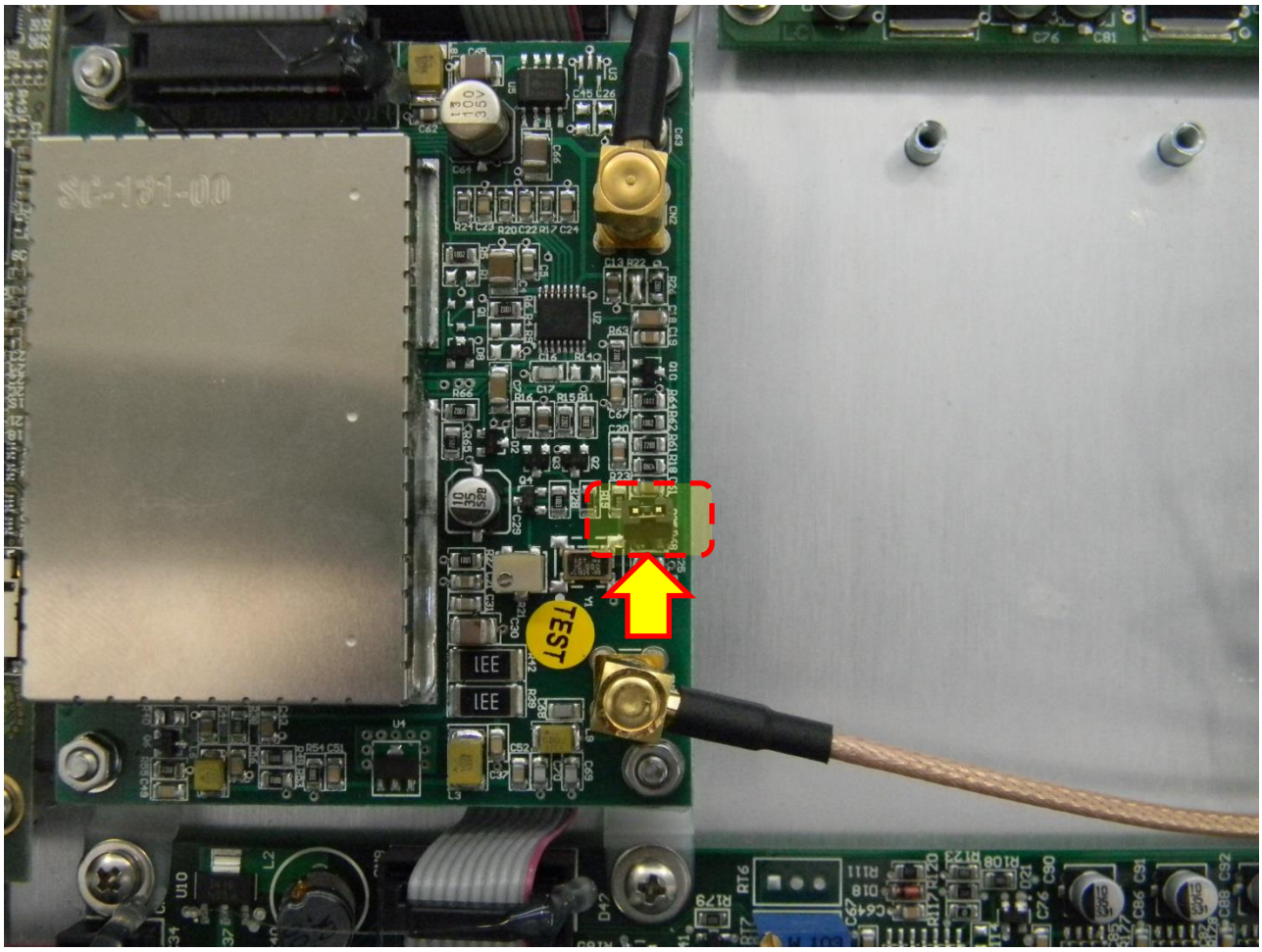
Fig. 9.6 – MOZART 500 BOTTOM VIEW



1. Remote I/O board
2. MPX audio board
3. Left & Right audio board
4. PLL-VCO board
5. DC/DC converter
6. Control Board
7. Web Server board
8. Coder stereo board
9. AES/EBU board

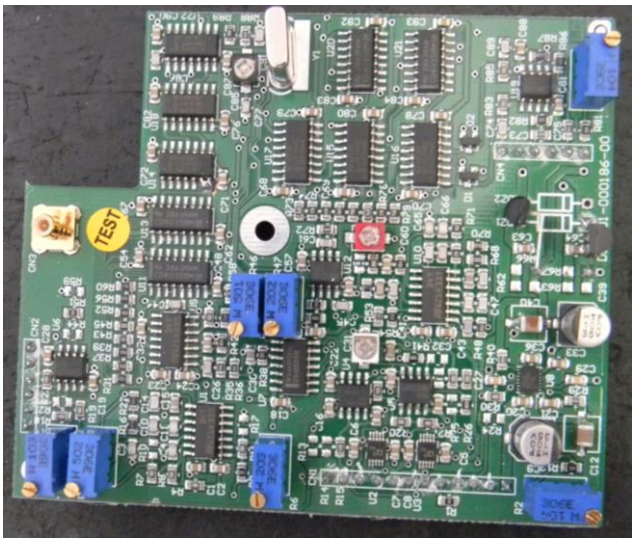
10 APPENDIX 1: EXTERNAL REFERENCE

In case of connection of an external reference to the unit, remove the top cover of the transmitter and remove the jumper on the PLL VCO board indicated in the photo here below. In this way the internal reference will be disabled and the unit will work only using the external reference.



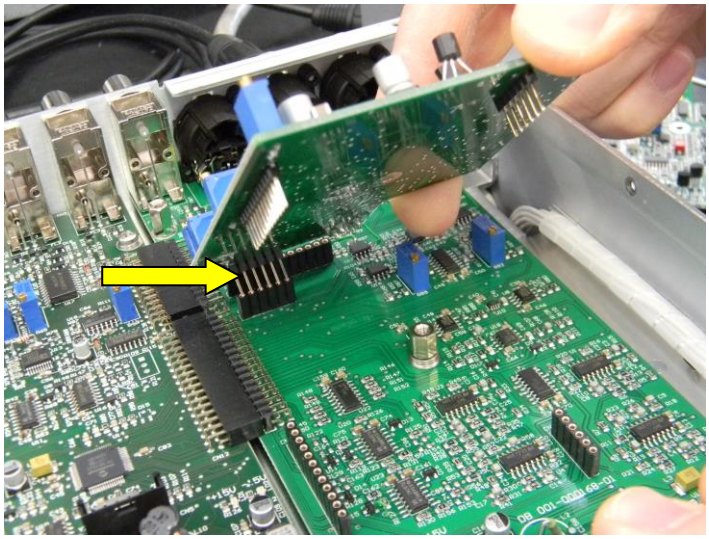
11 APPENDIX 2: STEREO OPTION INSTALLATION

In case of installation of the stereo option after receiving the unit, the board that will be sent you is the one here below:

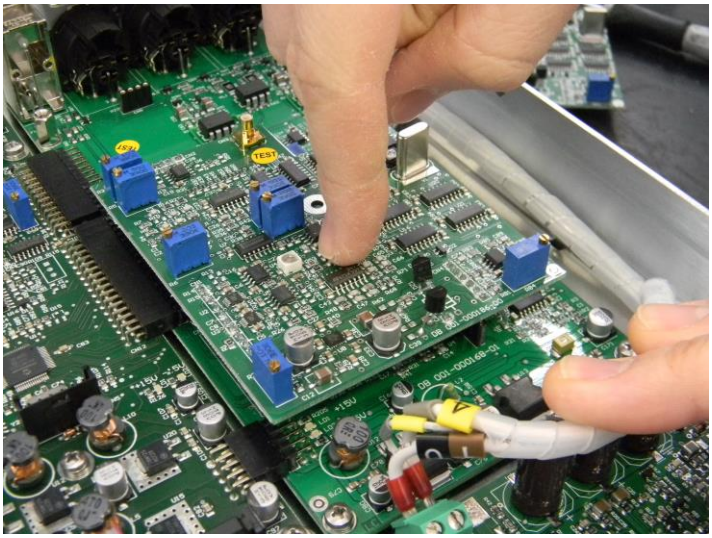


1. With the equipment switched off, remove the cover of the side where the main audio board is installed (in the 30/50W transmitter it's the top side, in the other models it's the bottom side).

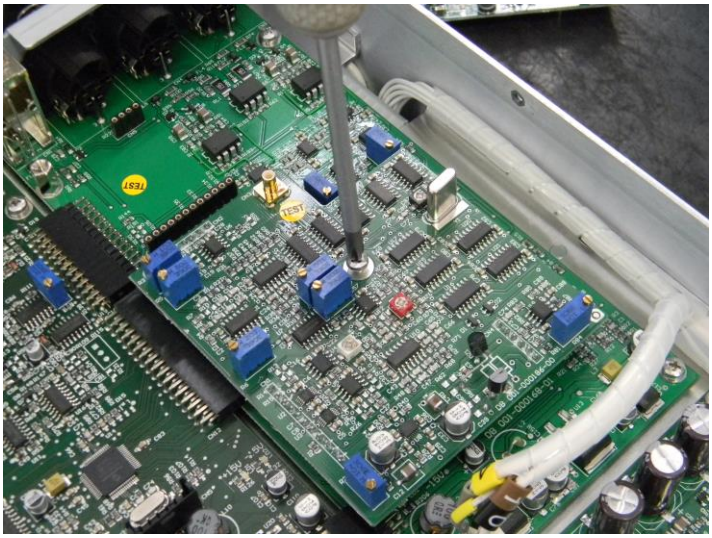
2. Position the stereo board on the top of the Left & Right audio board as showed in the photos here below, taking care that the pins are correctly positioned in the connectors



3. Press it to fix the board on the Left & Right audio board



4. Fix the board with the screw on the center

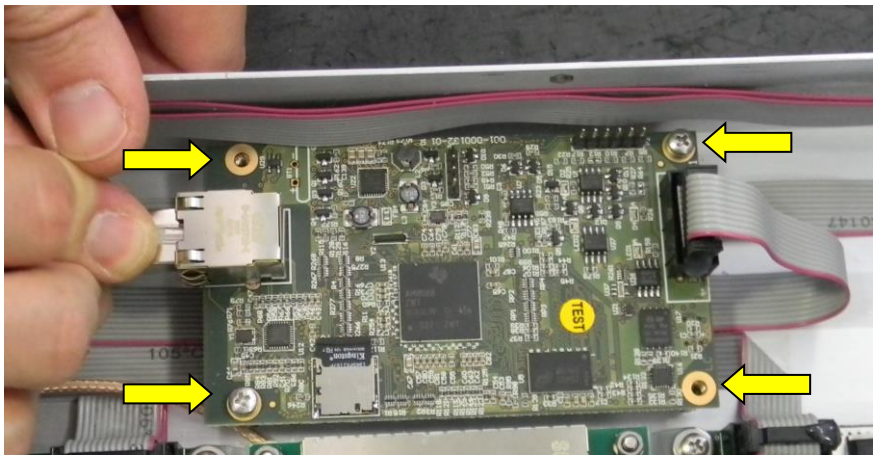


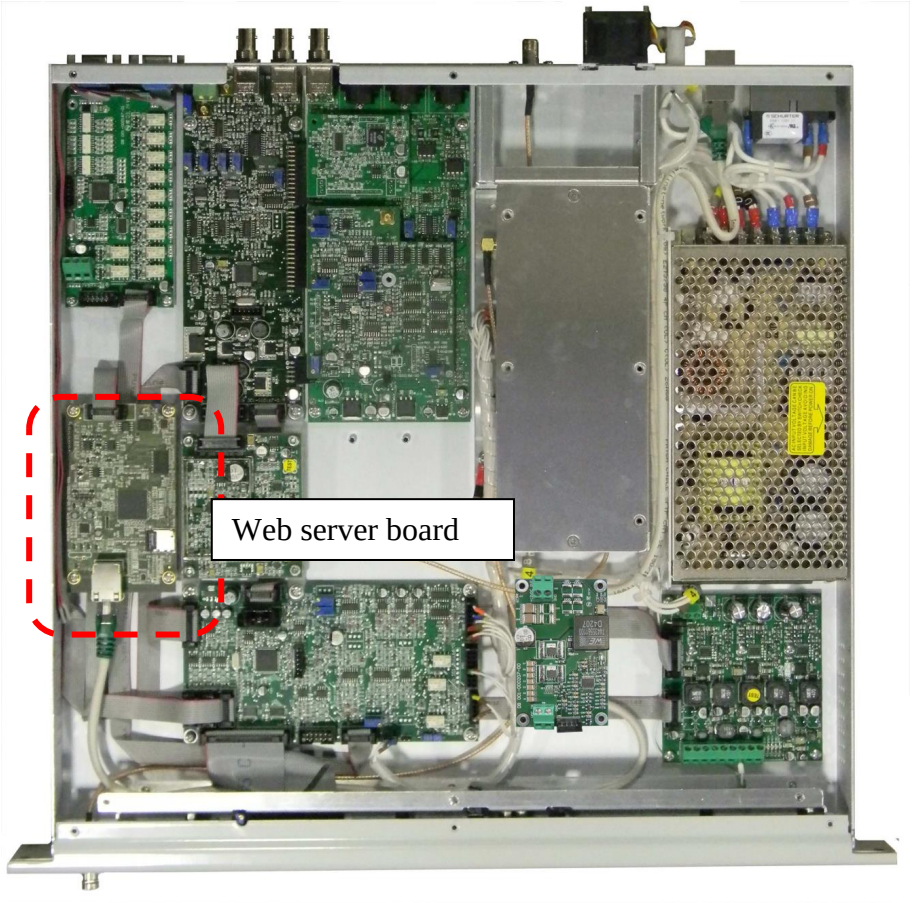
The software recognizes automatically the presence of the board, so fix from the front panel menu all the parameters related to the stereo signal as for your necessity.

12 APPENDIX 3: WEB OPTION INSTALLATION IN MOZART 30/50

To fix the web board on the Mozart transmitters in the chassis with 1U height follow the instructions here below:

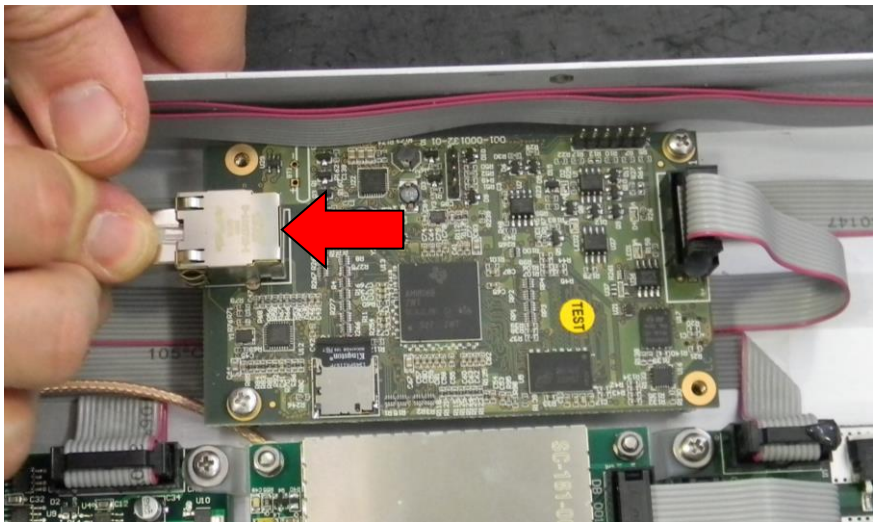
1. Position the Web server board near to the PLL & VCO board and fix it with the screws to the metallic box.



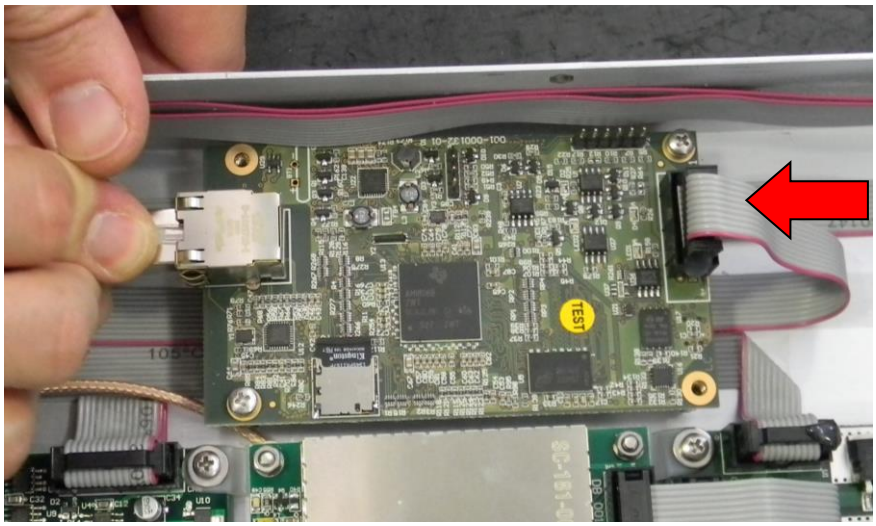


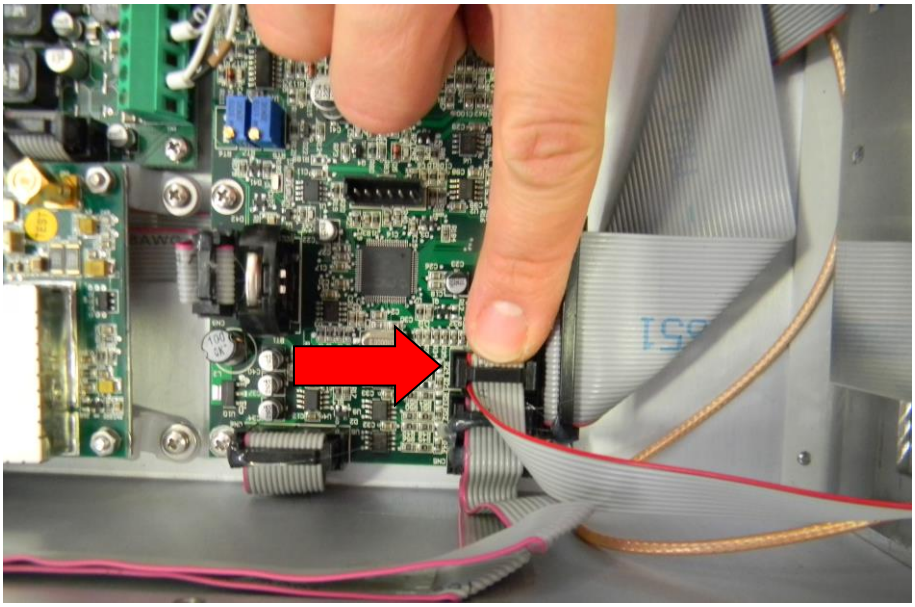
- Open the rear panel hole for the LAN port and fix the LAN connector we gave you.

- Connect the LAN cable between the WEB board and the rear panel to the LAN connector just fixed:



- Connect the flat cable between the WEB board and the control board in the position indicated here below:



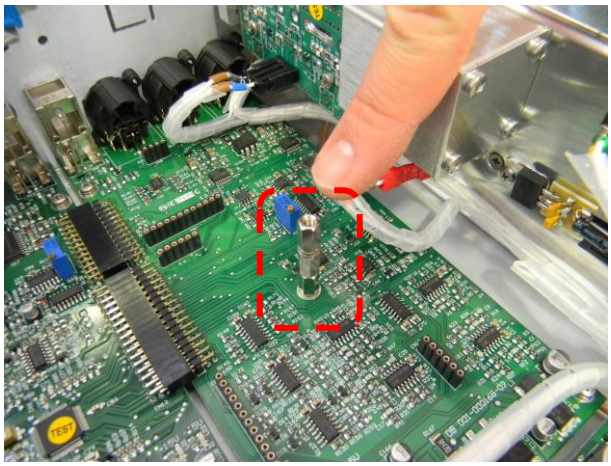


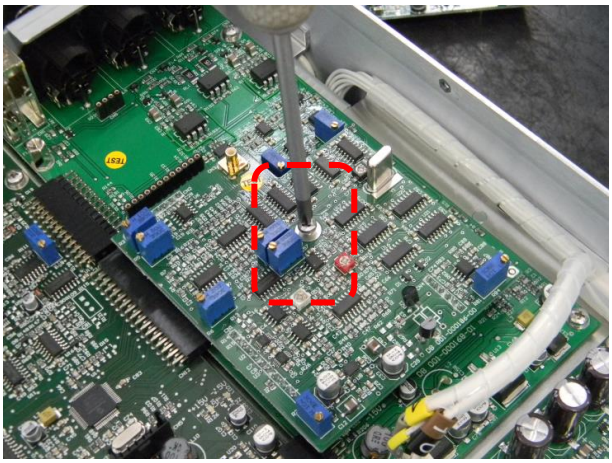
The installation is complete.

13 APPENDIX 4: WEB OPTION INSTALLATION IN MOZART 100/300/500

To fix the web board on the Mozart 100/300/500 transmitters follow the instructions here below:

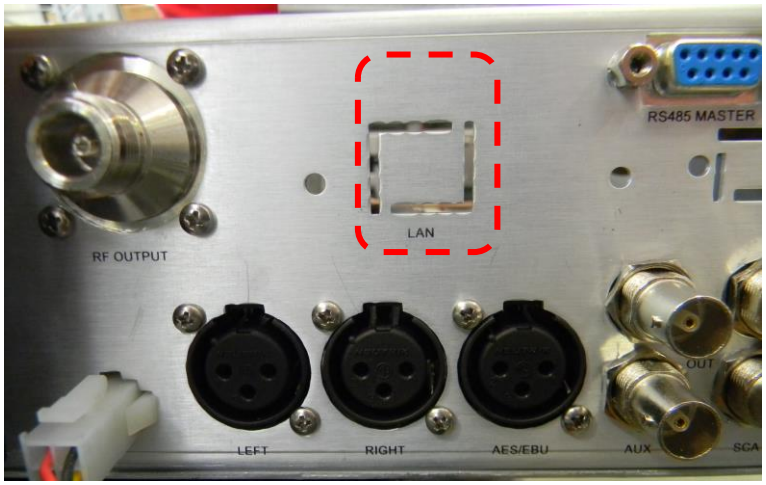
- If you have the Left&Right board installed in the transmitter, place a spacer on the position indicated in the photo in order to fix the new metallic plate on it (or in the same position over the stereo coder board if present)

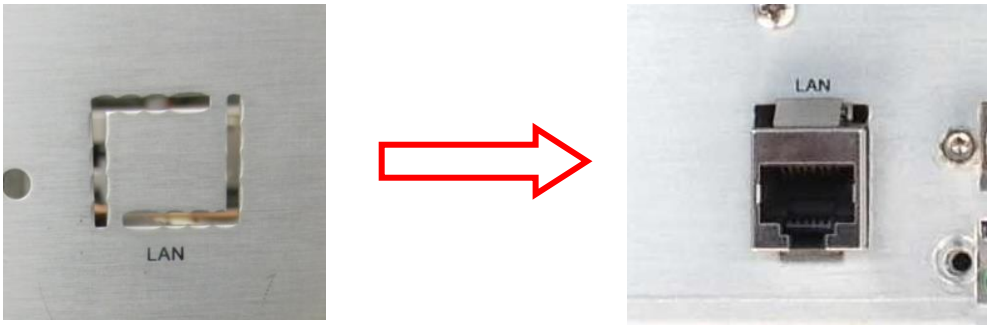




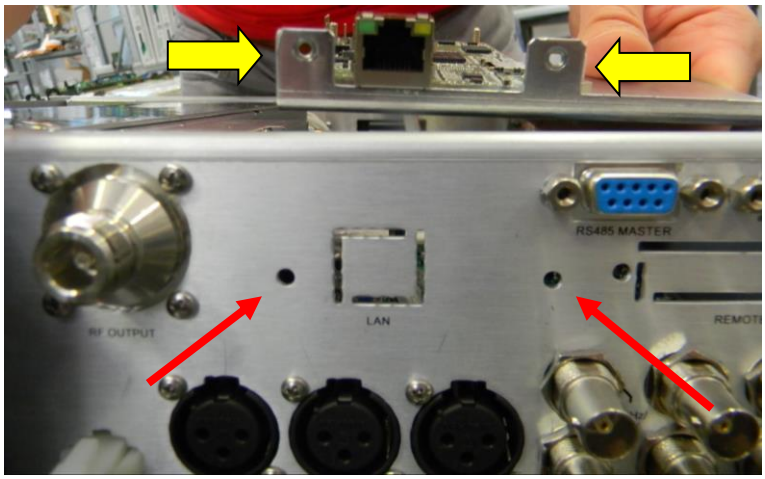
If you don't have such board, the metallic plate will be fixed only on the rear panel of the Mozart transmitter.

- Open the rear panel hole for the LAN port

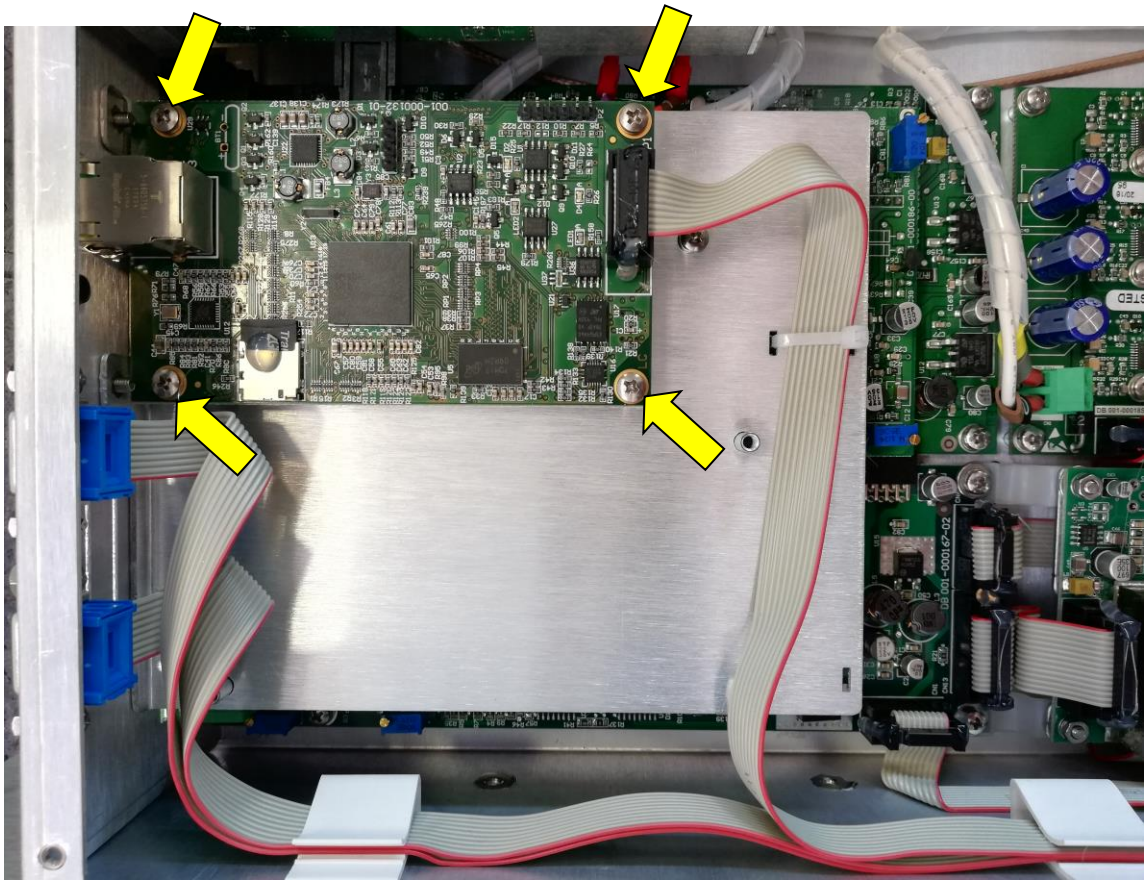




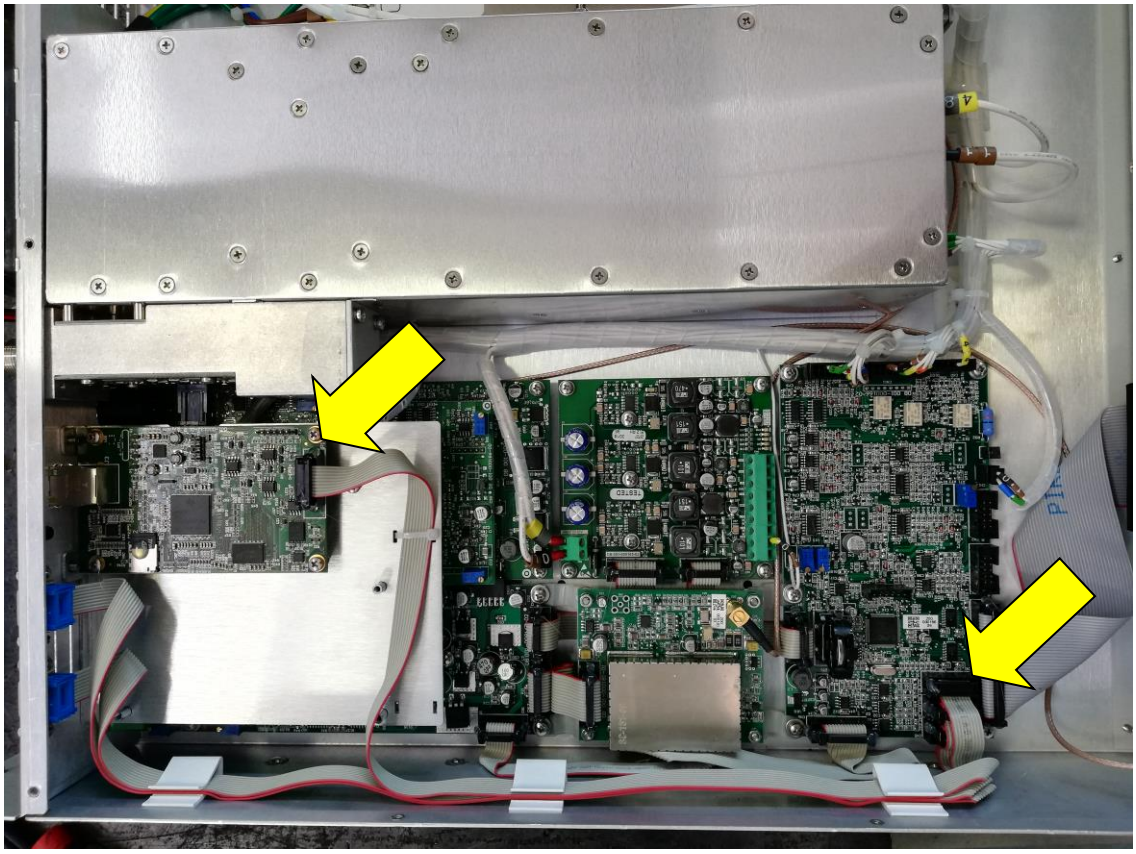
- Fix the WEB board on the metallic plate and fix them on the rear panel with the screws

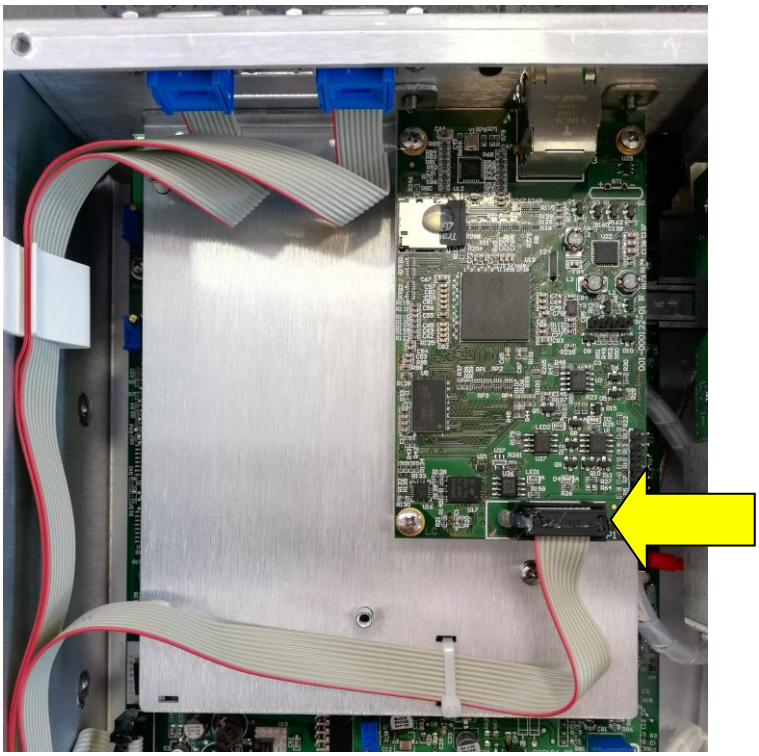


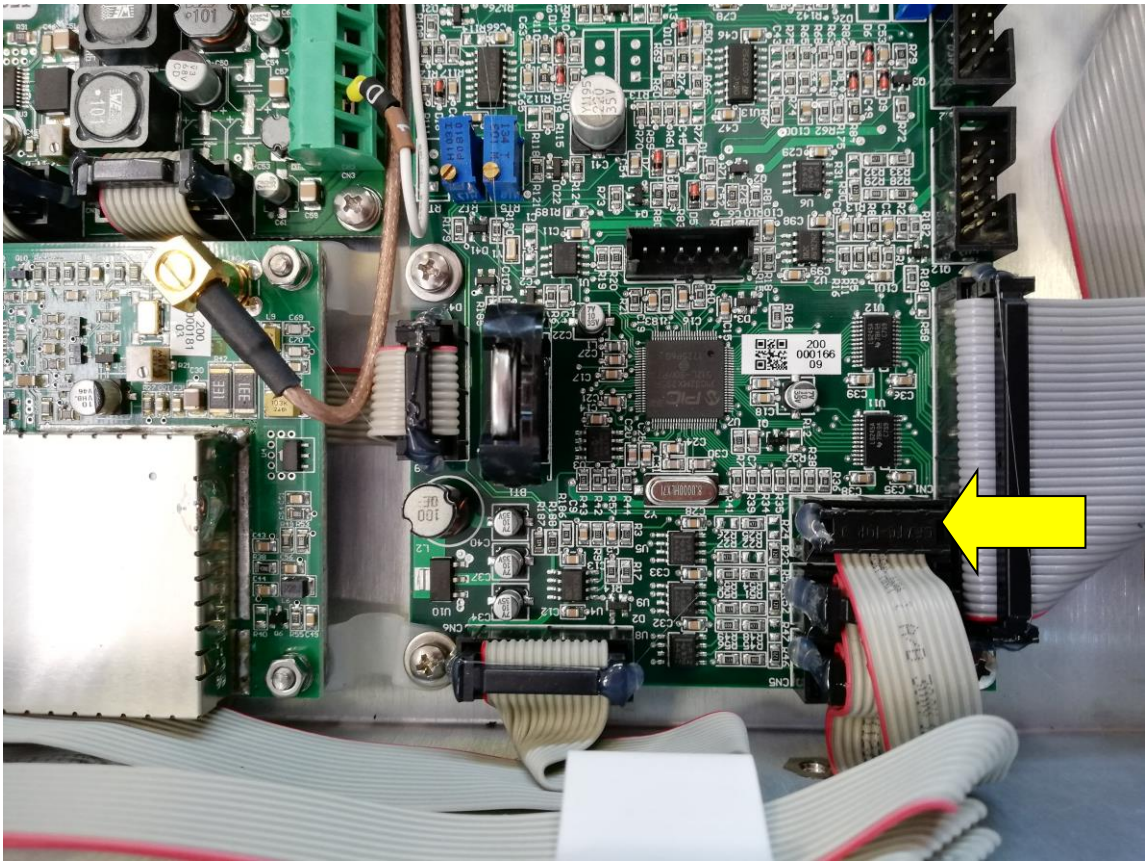
These holes must match the ones on the rear panel. Fix the board inserting the screws on the correspondent holes.



- Connect the flat cable between the WEB board and the control board in the position indicated here below:







The installation is complete.