AQUABROADCAST

PRIMA

~

USER MANUAL

FM Transmitter Range

Contents

The Aqua Broadcast Prima range

Aqua Broadcast PRIMA FM transmitters have been designed to be very simple and intuitive to set up and operate – everything is where you'd expect it to be and is easy to understand and use.

All PRIMA FM transmitters use high-quality components, robust hardware and are designed for 24/7, 365 day per year use.

This user manual is to be used for reference across the entire range, regardless of power or form factor. Anything that is specific to a particular product will be noted accordingly.

It's easy to manage or control the PRIMA from anywhere with its comprehensive remote control and Alarm's facility. Control the PRIMA via the WEB with TLC/TLS secure connection, as well as SNMP from anywhere with an Internet connection.

Of course, parameter changes are also available, including 6 useful user presets, giving you the option to remotely change the unit if you have multiple broadcasting formats (please note the use of this is governed by your local regulator)

Every Aqua Broadcast Prima product includes, as standard:

- Frequency Agile Broadband tuning 87.5-108MHz
- Modular and compact design
- Overall efficiency of more than 70%
- MPX Input
- Stereo Encoder with Analog L/R input, and AES/EBU input
- Ultra-high signal to noise ratio, extremely low distortion
- User-friendly GUI
- Remote Control via SNMP, WEB, and TLC/TLS

Innovation, usability, quality, and confidence are what you get from Aqua Broadcast.
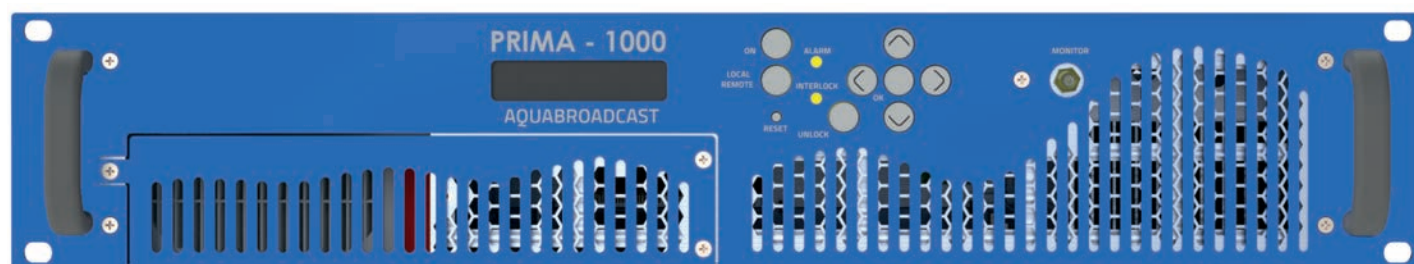
Warranty

Please ensure the warranty registration process is completed upon receipt of this product. To do so, go to www.aquabroadcast.com/warranty with your product's serial number to hand. Aqua Broadcast warrants the mechanical
and electronic components of this product to be free of defects in material and workmanship for a period of up to Two years from the original date of purchase, in accordance with the warranty regulations described below. If the product shows any defects within
the specified limited warranty period that are not due to normal wear and tear and/or improper handling by the user,
Aqua Broadcast shall, at its sole discretion, either repair or replace the product. If the warranty claim proves to be justified, the product will be returned to the user. The freight will be paid by Aqua Broadcast within the first 2 years, thereafter freight will be the
responsibility of the customer. Warranty claims other than those indicated above are expressly excluded.

Note: The warranty registration process must be carried out as described above to enable warranty cover.

Return authorisation number: To obtain warranty service, the buyer (or his authorised dealer) must contact Aqua Broadcast during normal business hours BEFORE returning the product. All inquiries must be accompanied by a description of the problem.
Aqua Broadcast will then issue a return authorisation number. Subsequently, the product must be returned in its original shipping carton, together with the return authorisation number to the address indicated by Aqua Broadcast.

Warranty regulations: Any product deemed eligible for repair or replacement by Aqua Broadcast under the terms of this warranty will be repaired or replaced within 30 days of receipt of the product at Aqua Broadcast. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship. The warranty does not cover any such modification/adaptation, irrespective of whether it was carried out properly or not. Under the terms of this warranty, Aqua Broadcast shall not be held responsible for any cost resulting from such a modification/adaptation. Free inspections and maintenance/repair work are expressly excluded from this warranty, in particular, if caused by improper handling of the product by the user. This also applies to defects caused by normal wear and tear, in particular, of faders, potentiometers, keys/buttons and similar parts. Damages/defects caused by the following conditions are not covered by this warranty: Misuse, neglect or failure to operate the unit in compliance with the instructions given in Aqua Broadcast user or service
manuals. Connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used. Damages/defects caused by force majeure or any other condition that is beyond the control of Aqua Broadcast. Any repair or opening of the unit carried out by unauthorized personnel (user included) will void the warranty. If
an inspection of the product by Aqua Broadcast shows that the defect in question is not covered by the warranty, the inspection costs are payable by the customer. Products that do not meet the terms of this warranty will be repaired exclusively at the buyer's expense. Aqua Broadcast will inform the buyer of any such circumstance.

Warranty transferability: This warranty is extended exclusively to the original buyer (customer of the retail dealer) and is not transferable to anyone who may subsequently purchase this product. No other person (retail dealer, etc.) shall be entitled to give any warranty promise on behalf of Aqua Broadcast.

Claims for damages: Failure of Aqua Broadcast to provide proper warranty service shall not entitle the buyer to claim (consequential) damages. In no event shall the liability of Aqua Broadcast exceed the invoiced value of the product.

Other warranty rights and national law: This warranty does not exclude or limit the buyer's statutory rights provided by national law, in particular, any such rights against the seller that arise from a legally effective purchase contract. The warranty regulations mentioned herein are applicable unless they constitute an infringement of national warranty law.

Safety Information

This paragraph concerns safety instruction related to all Aqua Broadcast. product in general.

Aqua Broadcast. make every effort to keep the safety standards of our products up to date and to offer our customers the highest possible degree of safety. Our products and the auxiliary equipment they require are designed, built and tested in accordance with the safety standards that apply in each case. Compliance with these standards is continuously monitored by our quality assurance system.

Aqua Broadcast. products are compliant with safety rules for broadcasting transmitter as defined by IEC / EN 60215 and its amendment. According to this standard only skilled person are allowed to operate on Aqua Broadcast. devices. IEC / EN 60215 and its amendment defines the minimum requirements for skilled electrical personnel.

The compliance with this standard is a pre-condition for operating with radio and TV broadcasting equipment. The operator or the operator's authorized representative is responsible for ensuring compliance with these guidelines. They are also responsible to achieve necessary authorization by site owner or according to local laws to operate hereunder. They must also ensure that the operating personnel meets the applicable country-specific training requirements. These requirements also may include any periodic training that is necessary.

The product here described has been designed, manufactured and tested according the relevant standards and directive, see EC/ EU declaration of conformity attached to this manual. The product here described has left manufacturers facilities fully compliant with safety standards. To maintain this condition and to ensure safe operation, you must observe all instructions and warnings provided in this manual. For any clarification on it, for any doubt or any suggestion please contact directly Aqua Broadcast at support@aquabroadcast.co.uk

Furthermore it is your responsibility to operate the device in an appropriate manner. This product is designed to work in telecommunications centers only, except when expressly authorized, and must not be used in any way that may cause injury to persons or goods. In case the product is used for any intention other than its designated purpose or in disregard of its instructions you, the operator, are the sole responsible for any damage that this un-proper operation may cause.

The product is used properly when it is used in accordance with its instructions and under its operating conditions and its performance limits (refer to product manual, modules, manuals and products or modules datasheets). This condition may be get only by skilled person with a basic knowledge of English (since all symbols, labels and message displayed are referred to in this language).

Skilled people also have to check if particular requirements or special equipment or tools are required depending on the product or the environment and to follow instructions to use special equipment.

The Product manual and in particular safety instructions should be left near the product in a safe place, in order to be available for all skilled personnel who operate the device. Observing the safety instructions will help prevent personal injury or damage to goods caused by dangerous situations. Therefore, carefully read through and adhere to the following safety instructions before and when using the product. It is also absolutely essential to observe the additional safety instructions on personal safety, for example, that appear in relevant parts of the product documentation or that are given on the operating site.

⚠️ **CAUTION**

Every issue, setting, repair and maintenance task has to be performed only by qualified and authorized personnel with both theoretical and practical experience.

Operating environment / state / position

The product may be operated only under the operating conditions and in the positions specified by the manufacturer, without any obstruction in product's ventilation. If the manufacturer's specifications are not observed, this can result in electric shock, fire and/or serious personal injury or death. Applicable local or national safety regulations and rules for the prevention of accidents must be observed in all cases. Unless otherwise specified, the following environmental requirements apply to Aqua Broadcast. products: Use only indoors, the maximum operating altitude 3000 m above sea level, maximum transport altitude 6000 m above sea level. A tolerance of ±15 % shall apply to the nominal voltage and ±5 % to the nominal frequency.

Do not place the product on surfaces, cabinets or tables that for reasons of weight or stability are unsuitable for this purpose. Always follow the manufacturer's installation instructions when installing the product and fastening it to objects or structures (e.g. walls and shelves). An installation that is not carried out as described in the product documentation could result in personal injury or death.
Do not place the product on heat-generating devices such as radiators or fan heaters. The ambient temperature must not exceed the maximum temperature specified in the product documentation or in the data sheet. Product overheating can cause electric shock, fire and/or serious personal injury or death Do not install, operate, maintain the device if you are physically or mentally stressed.

Installation

If the information on electrical safety is not observed there is a possibility that electric shock, fire and/or serious personal injury or death may occur.

Prior to switching on the product, always ensure that the product nominal voltage setting matches with the nominal voltage of the AC supply network. If there is a mismatch do not connect the product to the power network until the mismatch is resolved. If a different voltage is to be set, the power fuse of the product may have to be changed accordingly.

In the case of products of safety class I with a removable power cord and connector, operation is permitted only on sockets with an earth contact and protective earth connection.

Intentionally breaking the protective earth connection either in the feed line or in the product itself is not permitted. Doing so can result in the danger of an electric shock from the product. If extension cords or connector strips are implemented, they must be checked on a regular basis to ensure that they are safe to use.

If the product does not have a power switch for disconnection from the AC supply network, the plug of the connecting cable must be considered as the disconnecting device. In this case, always ensure that the power plug is always easily reachable and accessible. Ensure also that the plug-in connection is secure, bad connections may cause damage to the equipment and may be unsafe. Functional or electronic switches are not suitable for providing disconnection from the AC supply network. If products without power switches are integrated into racks or systems, a disconnecting device must be provided at the system level is site main electrical switchboard.

Never use the product if the power cable is damaged. Check the power cable on a regular basis to ensure that it is in proper operating condition. Check the power cable is suitable for the power ratings of the device by taking appropriate safety measures and carefully laying the power cable, you must ensure that the cable will not be damaged and that no one can be hurt by. Tripping over the cable or suffering an electric shock.

The product may be operated only from TN/TT supply networks.

Do not insert the plug into sockets that are dusty or dirty. Insert the plug firmly and all the way into the socket. Otherwise, sparks that result in fire and/or injuries may occur.

For measurements in circuits with voltages Vrms > 30 V, suitable precautions (e.g. appropriate measuring equipment, fusing, current limiting, electrical separation, insulation) should be taken to avoid any hazards.

Ensure that the connections with information technology equipment, e.g. PCs or other industrial computers, comply with the IEC60950-1/EN60950-1 or IEC61010-1/EN 61010-1 standards that apply in each case.

Unless expressly permitted, never remove the cover or any part of the housing while the product is in operation. Doing so will expose circuits and components and can lead to injuries, electrical shock, fire or damage to the product.

Aqua Broadcast products are designed to be permanently installed, so the connection between the PE terminal on site and the product's PE conductor must be made first before any other connection is made.

Permanently installed equipment must have either built-in fuses, circuit breakers or similar protective devices, moreover the supply circuit must be fused in such a way that anyone who has access to the product, as well as the product itself, is adequately protected from injury or damage.

Use suitable overvoltage protection to ensure that no overvoltage (such as that caused by a bolt of lightning) can reach the product. Otherwise, the person operating the product will be exposed to the danger of an electric shock.

Products are normally designed to operate in an indoor environment (IP 20 typically) no liquid protection is therefore given , the equipment must be protected from all liquids. If the necessary precautions are not taken, the user may suffer electric shock or the product itself may be damaged, which can also lead to personal injury.

Never use the product under conditions in which condensation has formed or can form in or on the product, e.g. if the product has been moved from a cold to a warm environment. Penetration by water increases the risk of electric shock.

Prior to cleaning the product, disconnect it completely from the power supply (e.g. AC supply network or battery). Use a soft, non-lining cloth to clean the product. Never use chemical aggressive cleaning agents such as alcohol, acid, acetone or diluents for cellulose lacquers.

Operation
Operating the equipment requires trained and skilled personnel. It requires also intense concentration. Make sure that people who operates is physically, intellectually, and mentally fit to do so. Physical or mental stress may cause fall of concentration, and this may cause injury or material damages.

Before you install, connect, operate, disconnect, or dismount the equipment, read the relative safety instructions.

In case of fire, some hazardous substances may be released by the unit, such as gas or fluids. This can cause health problems. So, in this case necessary measures must be taken, such as protective masks, gloves, clothing and so on should be used.

Repair and service
Special training is required to open and repair Aqua Broadcast devices. Before remove the lid and before opening it, the AC mains must be switched off and disconnected and then wait at least 30 seconds for the discharge of energy of any capacitors. Otherwise, there could be a risk of electrical shock.

It is strongly recommended to send faulty devices / modules to the factory for repair, if feasible. Otherwise only when authorized by Aqua Broadcast and trained personnel may perform repairs. All repairs require only original spare parts has to be used. After repair a safety test is recommeneded (visual inspection, electrical test, insulation test, ground continuity test, leakage current measurement, functional test and so on) This helps to assure the continued safety of the device.

If products or their components are mechanically and/or thermally processed in a manner that goes beyond their intended use, hazardous substances (heavy-metal dust such as lead, beryllium, nickel) may be released. For this reason, the product may only be disassembled by specially trained personnel. Improper disassembly may be hazardous to your health. National waste disposal regulations must be observed. The improper disposal of hazardous substances or fuels can cause health problems and lead to environmental damage.

DETAILED SAFETY INSTRUCTIONS:

All the safety and operation instructions should be read before the appliance is operated.

Retain Instructions: The safety and operating instructions should be retained for future reference. Heed Warnings: All warnings on the appliance and in the operating instructions should be adhered to.

Follow instructions: All operation and user instructions should be followed.

Water and Moisture: The appliance should not be used near water (e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool etc.). The appliance should not be exposed to dripping or splashing and objects filled with liquids should not be placed on the appliance.

Ventilation: The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings, or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

Grounding or Polarisation: Precautions should be taken so that the grounding or polarisation means of an appliance is not defeated.

Power-Cord Protection: Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles and the point where they exit from the appliance.

Cleaning: The appliance should be cleaned only as recommended by the manufacturer. Wash your hands.

Non-use Periods: The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

Object and Liquid Entry: Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

Damage Requiring Service: The appliance should be serviced by qualified service personnel when:

- The power supply cord or the plug has been damaged
- Objects have fallen, or liquid has been spilled into the appliance
- The appliance has been exposed to rain
- The appliance does not appear to operate normally or exhibits a marked change in performance
- The appliance has been dropped, or the enclosure damaged

⚠ **CAUTION**

Servicing: The user should not attempt to service the appliance beyond that is described in the Operating Instructions. All other servicing should be referred to qualified service personnel.

Customer Information Regarding Product Disposal

During product disposal the following directives must be adhered to:

- 2002/96/EC on waste electrical and electronic equipment (WEEE),
- 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).

Once a product is at the end of its lifetime, the product must not to be disposed of in standard domestic civil refuse. Even disposal of on municipal collection points for waste electrical electronic device is not allowed. It has to be treated as electronic waste.

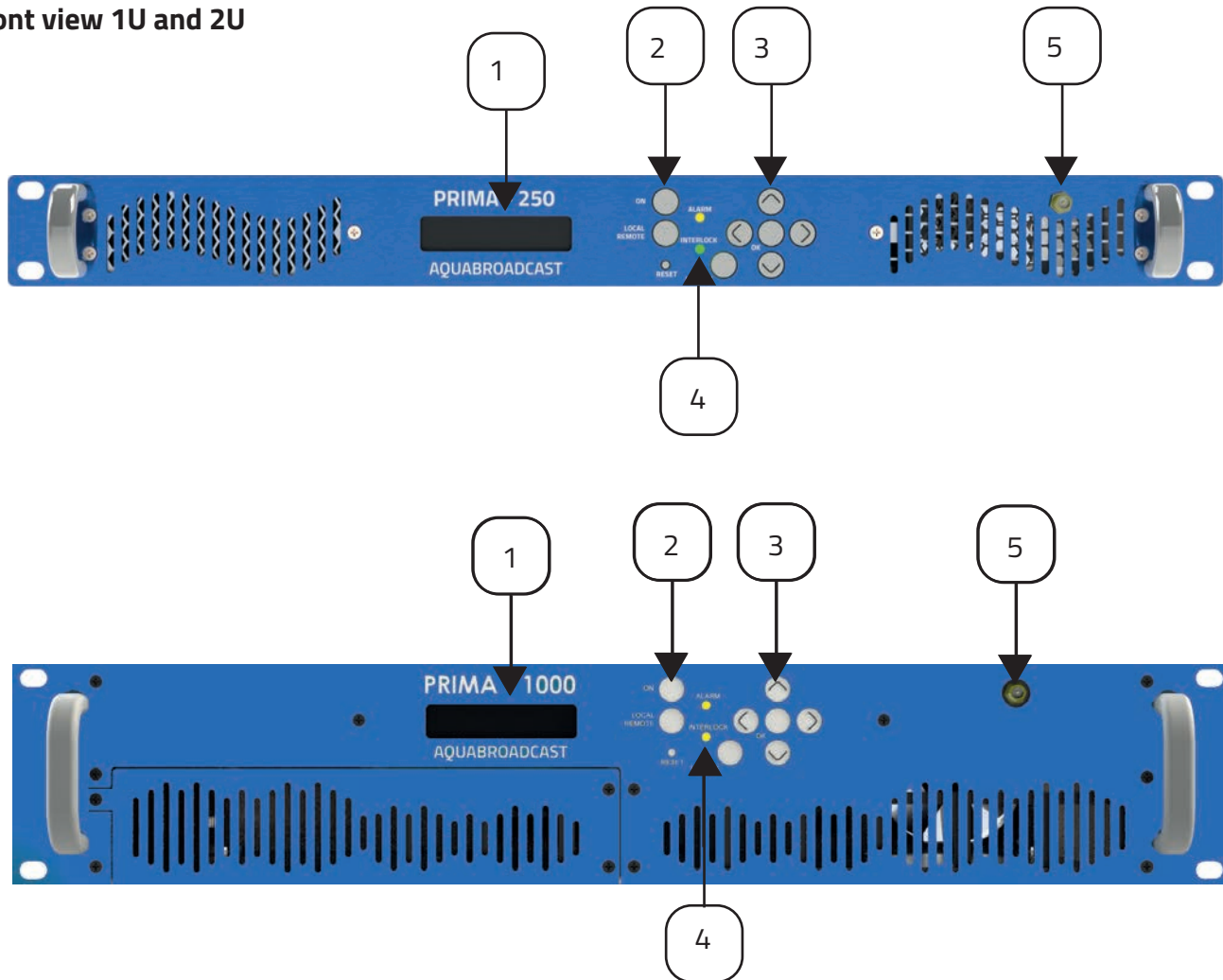## Hazards due to Beryllium Oxide / Beryllium Copper (BeO)

- In case the apparatus contains components are using Beryllium Oxide / Beryllium Copper, these shall be labelled with special symbols.
- DANGER! Beryllium Oxide / Beryllium Copper is dangerous when inhaled, ingested or in contact with the skin, especially if cut or scratched. After handling products containing Beryllium Oxide / Beryllium Copper, wash your hands immediately.
- If handled correctly, parts or components containing Beryllium Oxide / Beryllium Copper are not hazardous to health. If used improperly, however, Beryllium Oxide / Beryllium Copper dust may be released. Beryllium Oxide / Beryllium Copper dust causes chronic disease (berylliosis); inhaling large amounts over an extended period of time is toxic, causing respiratory paralysis and death.
- Rules for Handling Beryllium Oxide / Beryllium Copper:
- o Parts or components containing Beryllium Oxide / Beryllium Copper ceramics must not be opened, mechanically pro-cessed or destroyed.
- o Above all, these parts or components must not be scratched, broken, ground, tempered and sandblasted, not even under exhaust hoods.
- o In the transmitter, all components containing parts made from Beryllium Oxide / Beryllium Copper are marked with a warning symbol and a label:

DANGER! Beryllium Oxide / Beryllium Copper

Front view 1U and 2U

Ref.	Description
1	**Display**
2	**ON:** in local mode, turns transmitter power on and off; **Local-Remote:** local or remote mode of the transmitter. In local mode it is possible to control the transmitter from the navigator buttons/display. In remote mode it is possible to control the transmitter from the web page; **Reset button:** hard reset in local or remote mode
3	**Display navigation buttons ◄/ ▲ / ▼ / ►:** navigation within the display interface in local and remote mode; **OK:** in local mode it selects the menu of the display interface; **UNLOCK:** In local mode, press for 5 seconds to silence the UNLOCK alarm.
4	**Alarms led (red):** signals an alarm on the transmitter; **Interlock led (yellow):** signals a warning on the transmitter (for example if the power level below the threshold).
5	**Monitor connector (SMA female):** transmitter output power monitoring.

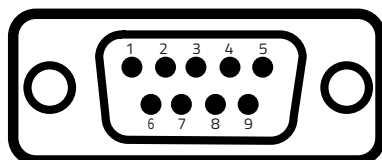**Rear view 1U and 2U**
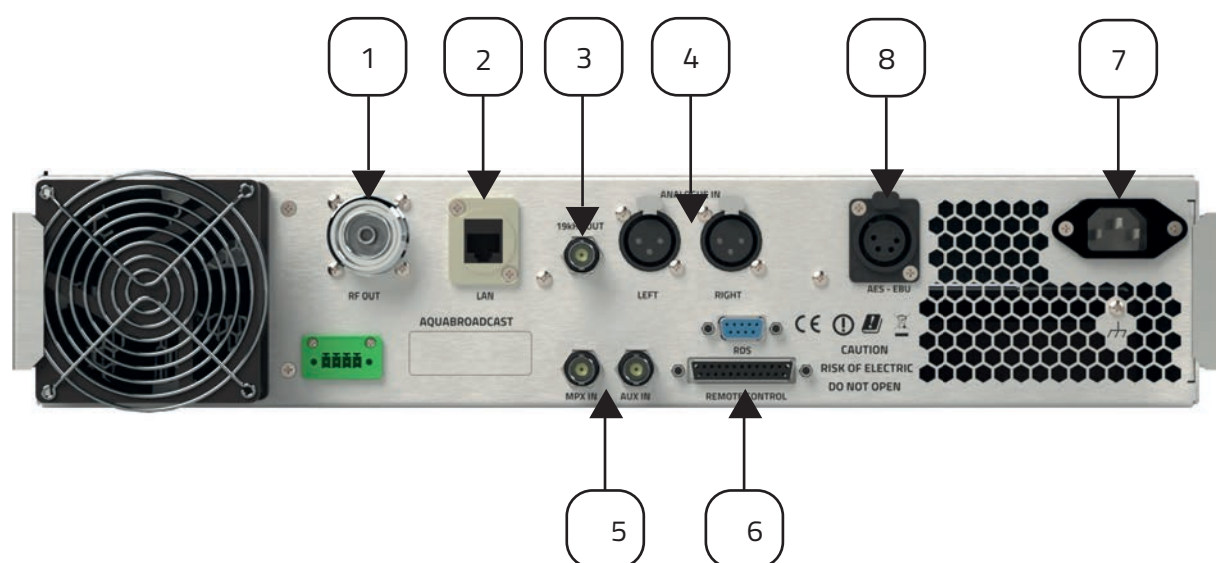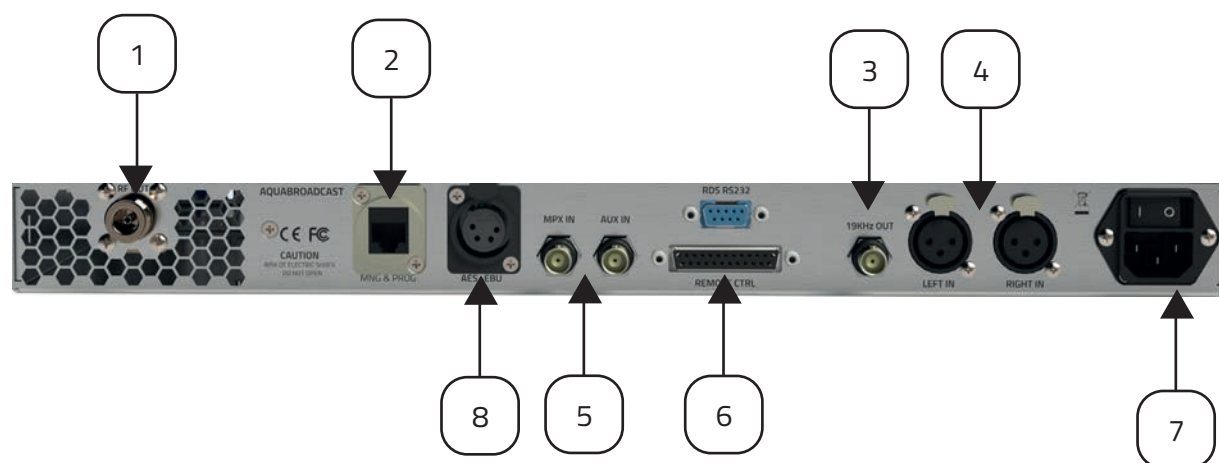
Ref.	Description
1	RF output signal
2	LAN connector (WEB / SNMP)
3	19 kHz signal input
4	LEFT and RIGHT audio signal input (XLR female connector)
5	MPX and AUX signal input
6	TLC/TLS and RDS (RS232) signal
7	Power mains input and button
8	AES/EBU Input

PIN out RDS (RS232)

D-SUB 9 female connector

PIN	SIGNAL
1	
2	TX
3	RX
4	
5	GND
6	
7	
8	

PIN out TLC/TLS
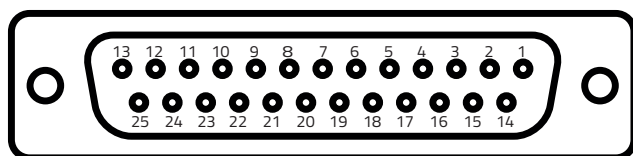
PIN	SIGNAL - COMMAND
1	GND
2	RX (RS232)
3	GND
4	INTERLOCK
5	ON-CTRL-REM (SIG)
6	MEM2 (SIG)
7	MEM4 (SIG)
8	MEM6 (SIG)
9	ALARM (COM)
10	P-GOOD (COM)
11	ON-STBY (COM)
12	LOC-REM (COM)
13	FALLO-AC (COM)

PIN	SIGNAL - COMMAND
14	TX (RS232)
15	+5V
16	ALM-RESET (SIG)
17	OFF-CTRL-REM (SIG)
18	MEM1 (SIG)
19	MEM3 (SIG)
20	MEM5 (SIG)
21	GND
22	NC
23	NC
24	NC
25	GND

General installation of the Transmitter

- Position the transmitter cabinet correctly, check the horizontal and vertical positioning in respect of the floor, use the adjustable feet, if provided, to do that
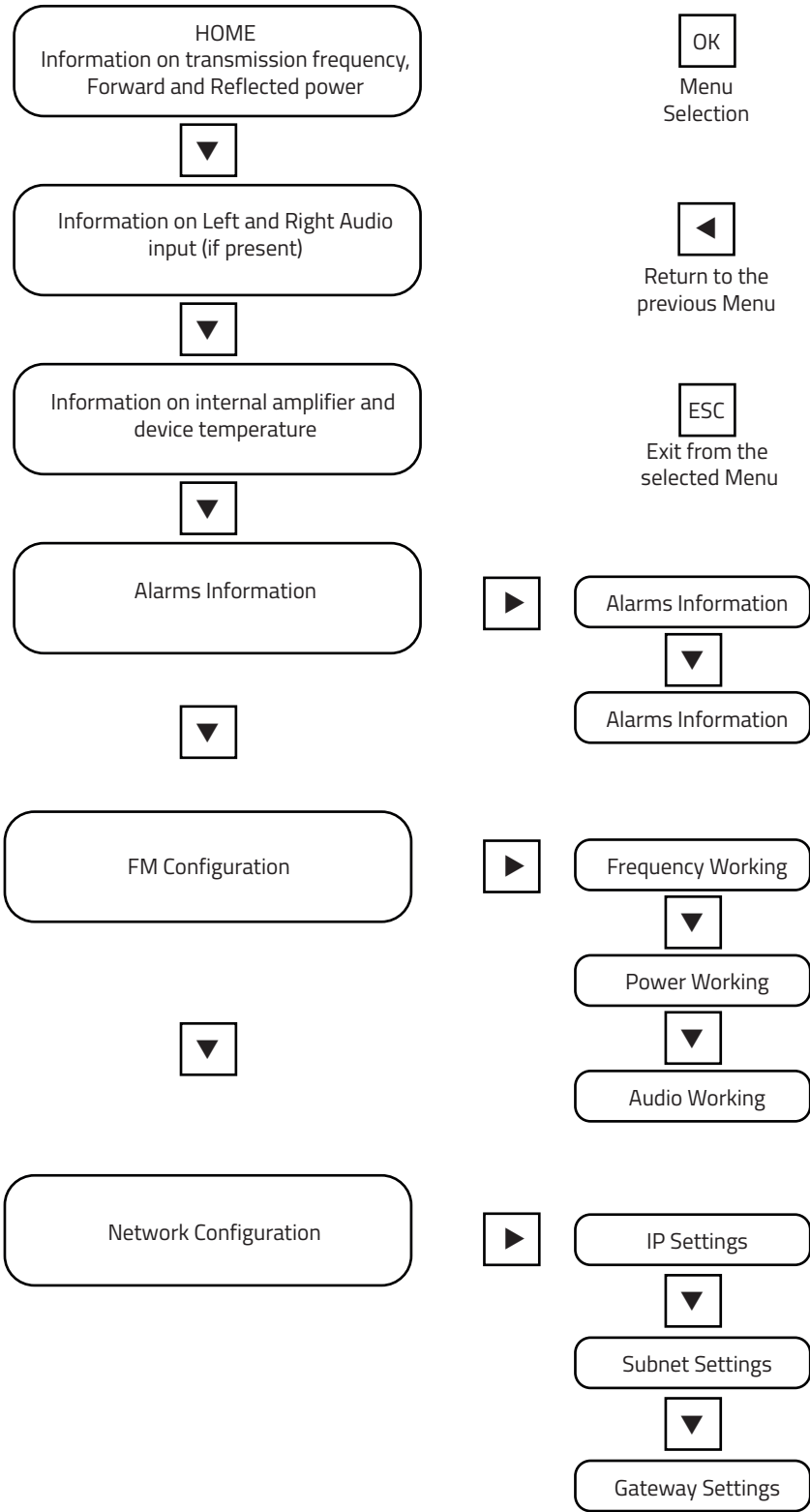
- If the transmitter installation is made up of several cabinets, it is good practice to fix them together.

- Connect all the electrical connections between the power panel and the transmitter mains distribution box. The dimensions of the conductors must be adequate for absorption, make the ground connections.

- The transmitter is tested at the factory, the test report is always supplied; this document contains useful information to check the proper operation of the transmitter.

- Before inserting the units, check that the rear connectors are free of plugs or any protection covers, that there are no interfering materials or cables in the chassis.

- Lifting and insertion of the unit, or other unit of considerable weight, must be carried out by two persons if possible, and carefully inserted by sliding into the rack until it is completely inserted , incorrect insertion may cause damage to connectors.

- Verify the wiring between the various units that make up the transmitter, all the parts must be correctly connected as per specific diagrams and instructions, the cables inside the transmitter are appropriately labelled in order to allow an easy identification of the connections to be made.

- Verify all the mains connections to the various units of the transmitter, check and verify the correct mains voltage, The back panel may include a ground screw for the ground connection, to be connected to the cabinet ground.

- Connect, or if already performed, check for any interlock connections.

- Any on-site testing must be performed on an artificial load having an adaptation better than -30 dB, all the connections necessary for final use, ie antenna combiner. Verify before the connection that the measurements are expected and record the measured values for future reference.

- Connect the transmitter output to the antenna.

- Before powering up the Transmitter, check that the coaxial lines and the RF cables are well connected

Display navigation

Below is the navigation tree for the screens relating to the other transmitter controls and signal features from the main menu. The values displayed in the figures are purely indicative.

```
┌─────────────────────────────────────┐          ┌────┐
│              HOME                    │          │ OK │
│ Information on transmission frequency,│         └────┘
│  Forward and Reflected power         │          Menu
└─────────────────────────────────────┘          Selection
                  ▼
┌─────────────────────────────────────┐          ┌────┐
│  Information on Left and Right Audio  │          │ ◄  │
│         input (if present)           │          └────┘
└─────────────────────────────────────┘          Return to the
                  ▼                               previous Menu
┌─────────────────────────────────────┐
│ Information on internal amplifier and │          ┌─────┐
│        device temperature            │          │ ESC │
└─────────────────────────────────────┘          └─────┘
                  ▼                               Exit from the
┌─────────────────────────────────────┐          selected Menu
│        Alarms Information             │  ►  ┌──────────────────┐
└─────────────────────────────────────┘     │ Alarms Information│
                                             └──────────────────┘
                  ▼                                    ▼
                                             ┌──────────────────┐
                                             │ Alarms Information│
                                             └──────────────────┘
┌─────────────────────────────────────┐  ►  ┌──────────────────┐
│        FM Configuration              │     │ Frequency Working│
└─────────────────────────────────────┘     └──────────────────┘
                                                    ▼
                                             ┌──────────────────┐
                                             │  Power Working   │
                  ▼                          └──────────────────┘
                                                    ▼
                                             ┌──────────────────┐
                                             │  Audio Working   │
                                             └──────────────────┘
┌─────────────────────────────────────┐  ►  ┌──────────────────┐
│      Network Configuration           │     │   IP Settings    │
└─────────────────────────────────────┘     └──────────────────┘
                                                    ▼
                                             ┌──────────────────┐
                                             │  Subnet Settings │
                                             └──────────────────┘
                                                    ▼
                                             ┌──────────────────┐
                                             │ Gateway Settings │
                                             └──────────────────┘
```

Display interface

The following images show the various menus that can be selected from the display. It is possible to select the device parameters only if the device is in local mode. If the device is remote, it is only possible to view the various parameters of the unit.

Freq: Frequency set;
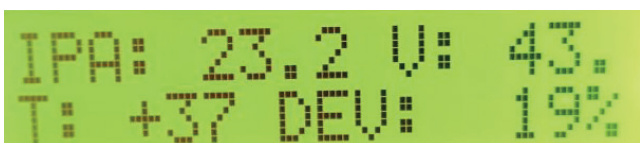**FW:** Forward power;
R: Reflected power.

Home page
This main screen highlights the working frequency of the device, the transmission power and the reflected power.

Audio L/R page
This page shows the LEFT and RIGHT audio parameters (if present on the device).

IPA: Power amplifier current
V: Power amplifier voltage
T: Power amplifier temperature
DEV: Deviation

Parameters page
This page displays the parameters of the amplifier inside the unit and its temperature

Alarms page
This page shows the device alarms
ALM = Alarm
WRN = Warning
LCK = Lockout (Unlock by hand)

Sys: ALM/WRN/LCK if any alarm is present
PLL: Internal PLL
Int: Interlock
FOv: Forward Overpower
FUn: Forward Underpower
Rfl: Reflected power
OvC: Over Current
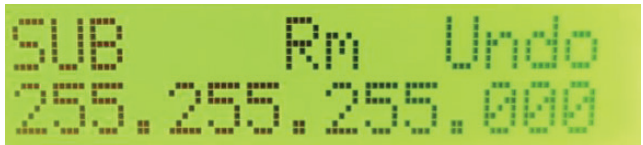**OvV:** Over Voltage
Tmp: Temperature
Fan: Fan Alarm.

FM CONFIGURATION
In this menu you can set the frequency, RF power and audio of the unit.

```
FM
CONFIGURATION    >
```

```
Freq    Rm    Undo
098.00 MHz
```

```
Power   Rm    Undo
1000 W
```

```
        Rm    Undo
Stereo
```
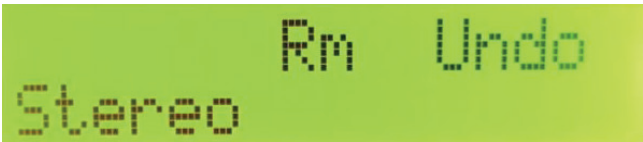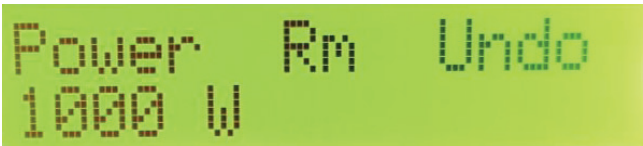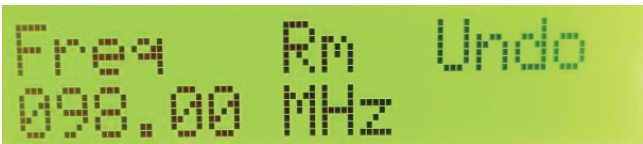
NETWORK CONFIGURATION
On this page you can configure the IP address, the Subnet and the Gateway of the unit.
NB: Reboot the transmitter to make the address changes effective.

```
NETWORK
CONFIGURATION    >
```

```
IP      Rm    Undo
010.200.009.067
```

```
SUB     Rm    Undo
255.255.255.000
```

```
GTW     Rm    Undo
010.200.009.254
```

```
FM Modulator
FW:1.1.44
```
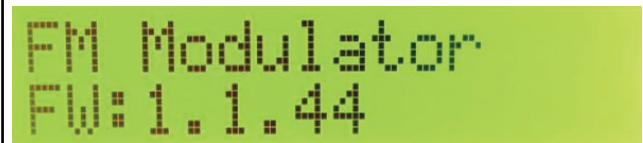
Device information
This page displays the firmware version of the device

Display menu

To scroll through the various menus on the display, use the "up" and "down" arrows on the navigation buttons.

If the selected menu has a right arrow, it means that there is a submenu. Press the "right" arrow of the navigation buttons to enter. The submenus appear as shown in the photo:

"Rm" indicates that the transmitter is in Remote mode; "Ok" indicates that the transmitter is in Local mode.

Title of the submenu

Cancel the change
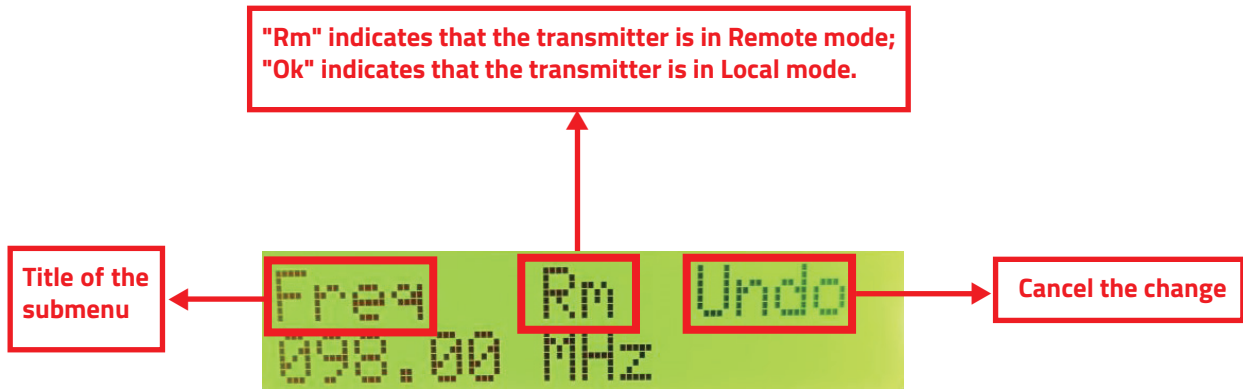
It is ONLY possible to modify the parameters in the submenu if the transmitter is in local mode (on the display it shows "Ok"). If you change a parameter, to make it effective, you must press "OK" on the navigation buttons. If you want to undo a change, press "Undo" on the display.

Parameters for connection

These settings can be set from the Web page by connecting an RJ45 cable . Connect from the unit to a PC or suitable Network to the Ethernet port of the PRIMA

📝 **NOTICE**

The network parameters of the PRIMA are visible on the display by following the path: HOME PAGE ▼ NETWORK CONFIGU-RATION ▶ IP ▼ SUB ▼GTW

Home

This page shows the status of the system:
System is Remote
(Operated from WEB pages);
System is Local
(Operated from the display).

COMMANDS
The "circle" indicates the system status:
Green: system on;
Yellow: system in stand-by;
If the device is remote, it is possible to put the system in **ON** or **STAND-BY**.

MEASURES
The system parameters are displayed:
- Transmission frequency;
- Transmitted power and reflected power;
- Left / right and MPX audio deviation parameters;
- Parameters of the internal amplifier of the unit;
- Transmitter power supply parameters.

ALARMS
System alarms are indicated. When the system is in an alarm or warning, the type is displayed in bold (for example "FWD overpower: **Alarm**").
In addition, the error history is indicated.
The error history is indicated by the number **[X] with the date and time** of the last error occurred.

STATUS
Indicates whether the stereo encoder is present, the serial number of the device, the date and time of the last switch on.

Device Settings

DEVICE SETTING

On this page it is possible to set the device parameters:
- Input impedance;
- MPX input level;
- AUX input level;
- Left and Right stereo input level;
- Date and time;
- IP address.

Each time a parameter is changed, the "**SET**" button must be pressed to store the changes.

Device Settings

USER SETTINGS
On this page it is possible to select, save or recall a user configuration. In the drop-down menu it is possible to select and save a maximum of six different configurations. The selected configuration will be indicated under this menu, and can also be changed and saved again.

Save the configuration
Configure the device with the desired parameters. Select the position where to save the configuration (from 1 to 6) and press the **SAVE** button. This way the configuration will be saved to the desired location.

Load the configuration
To reload a saved configuration, select the desired position (1 to 6) and then press the **LOAD** button.

View the configuration
Select the desired position (1 to 6) and press the **DISPLAY** button. The configuration will be displayed at the bottom of the page (the configuration will be displayed only, to activate it please press **LOAD**).

The drop-down menu will show "**active**" next to the position number if the configuration is active and "**on display**" if the configuration is only displayed on the page.

These are the possible settings:

- Frequency
- Transmission power (from 100 to 1000 W)
- Underpower FWD intervention (warning and alarm)
- Temperature power derating
- Audio mode (stereo or mono)
- RDS present or not present
- Set stereo preemphasis.

Device Settings

MAINTENANCE

Upgrade Firmware
The firmware version loaded on the device is indicated. To update the version, select the file from the PC by pressing the "**Select File**" button. The selected file will be displayed. Press the "**Submit Firmware (.s19)**" button to start the update.

Configuration
The current configuration of the device can be downloaded to the PC by clicking on "**Download current configuration**". To load a configuration saved on the PC, press the "**Select file**" button. The selected file name will be displayed. Press "**Load config**" to load the configuration.

Lockout reset
This button is used to reset errors due to "Lockout".

Reboot
This button restarts the device.

NOTICE

The firmware update takes several minutes. It is not possible to work on the device during the update.

Ordinary maintenance

To help ensure the optimal performance of the Transmitter it is necessary to carry out regular maintenance operations.

The following is the general guide-line for preventive maintenance procedures of the Transmitter:

- Proper cleaning of the transmitter site can help reduce the amount of corrective maintenance work.

- We recommend periodic measurement of the current absorbed by the RF power amplification devices. Please note that the variations in these values may indicate power fluctuations from the amplifier, thus suggesting the status and conditions of the amplifier.

- At regular intervals, carefully check for irregular heating or other anomalies (wiring, RF connections, mains fuses, mains cables, etc.).

- Check the air filters and the fans regularly, checking for any anomalies that may affect correct operation (abnormal vibrations, dust, etc.)

CAUTION

Please disconnect the Transmitter from the mains power source before any maintenance

General

	PRIMA 100	PRIMA 250	PRIMA 600	PRIMA 1000
Output power	100W	250W	600W	1000W
Working frequency	87,5 to 108 MHz			
Standard	FM			
Output connector	N (F) N (F) N (F) 7/16 7/16			
Intermodulation products	In band ≤1 µW - Out of band ≤10 µW			
Harmonics /spurious emission	≥ 80 dB			
Frequency stability	< ± 1 Hz without external reference (10 MHz) and modulation < ± 0,1 Hz with external reference (10 MHz) and without modulation In case of absence of external 10 MHz the modulator turns to the internal one automatically			
RF Technology	LDMOS			
Cooling	Forced air			
Max relative humidity	95% @ 35°C without condensing			
Working temperature range	0°... +45°C			
Max. altitude	4000 m s.l.m.			
Mains	230 V a.c. ± 15 %, 47...63 Hz, 3 wires (L+N+PE)			
Power consumption	150 VA			
Dimensions	(1U)483x45x350mm (WxHxD), (2U)483x45x500mm (WxHxD)			
Weight	(1U) 6 kg, (2U) 9Kg			
Power factor	>0.98			

Standard and directives

Directives	2014/53/UE & 1995/5/EC
Safety standard	EN 60215
EMC standard	EN 301 849-11
Spectrum usage standard	EN 302018 V2.1

Monitoring and control

RF Monitoring Connectors FWD		SMA fem. 50 Ω
Local Control		Front panel Display and keyboard
Remote Control	Netw. Mgmt.	Web browser / SNMP agent
	Direct signalling	IEC 60864-1

Input features

Input	Connector	Impedance
Audio Left and Right	XLR female	600 Ω o 2kΩ selectable
MPX	BNC female	600 Ω o 2kΩ selectable
AUX	BNC female	110 Ω
MPX IN	Band 40 Hz ... 100 kHz	
	Input level adjustable from -12dBu up to +12dBu @ 0,1 dB steps Sensitivity tenable by web pages).	
MONO IN (L input is the default input, set by the web on L or R input)	40 Hz ... 15 kHz impedance > 2kΩ o 600Ω pre-emphasis 0/50/75µs, input adjustable on the L or R input (locally or remotely). Level from -12dBu ... up to +12dBu @ 0,1 dB steps (Sensitivity tuneable by web pages).	
L and R Audio IN	Built-in stereo encoder. Impedance > 2kΩ or 600Ω pre- emphasis 0/50/75 µs (locally or remotely). Input level from -12dBu up to +12dBu @ 0,1 dB steps for Δf ±75 kHz. Clipper Δf: Clipper profile: OFF – normal – hard -ideal (remotely by the web pages).	
AUX IN	GBE input / SFP connector on rear panel Impedance 110 ohm	
AES/EBU IN	Sensitivity from 0dBFs up to – 24dBFs @ 0.1 dB steps	
MONO/RDS	Available	
RF IN (repeater / transposer)	75 Ohm BNC female	

ASI IN (Decoding)	75 Ohm BNC female
DVB IN (T/T2-S/S2)	50 Ohm F female Dynamic range -80 ÷ -20 dBm
Max. Deviation	From 50 up to 100 kHz @ 1 kHz steps
Frequency deviation	Δf ± 75 kHz ... ± 100 kHz (max.)
Deviation Limiter (ΔF)	OFF-Normal-Hard-Ideal settings available (through web pages)
Modulation signal missing alarm	On all input signal
Delay time	Alarm activation in case of modulation signal missing
	From 10 up to 120 s @ 1 s steps
Threshold	Alarm activation in case of modulation signal missing
	From -20 up to -50 dBr @ 1 dB steps
Static Delay	Between input and output signals
	From 0 to 900 μs @ 0.1 μs steps

Stereo output features MPX or L/R input

Amplitude / frequency	40 Hz... 43 kHz < ± 0.2 dB
(With Δf ± 75 kHz)	43 kHz... 53 kHz < ± 0.3 dB
	53 kHz... 100 kHz < ± 0.5 dB
Non-linear distortion (MPX Input)	> 0.3 %
(With Δf ± 100 kHz <0.6 dB)	
Non-linear distortion (L and R Input)	> 0.3 %
AM Noise (MPX input)	≤ - 60 dB
(With 100% of the carrier.)	
AM Sync (MPX Input)	≤ - 50 dB
(With f = 400 Hz and Δf ±75 kHz, with 100% modulation)	
Signal to noise ratio (un-weighted)	> 70 dB
(Referred to f=400 Hz with Δf ± 75 kHz)	
Linear diaphone (L and R input)	40 Hz... 120 Hz < -47 dB
(With Δf ±75 kHz)	120 Hz... 10kHz < -60 dB
	10 kHz... 15 kHz < -60 dB
Non-linear diaphone (L and R input)	40 Hz... 10 kHz < -65 dB
(With Δf ± 75 kHz)	10 kHz... 15 kHz < -70 dB

Audio mono output

Non-linear distortion	> 0.3 %
Signal to noise ratio (un-weighted)	> 70 dB
(Referred to f=400 Hz with Δf ± 75 kHz)	

All Specifications are subject to change without notice