

COBALT



Fully Featured FM Amplifier Installation Guide and User Manual Version 1.9.0.1-amp

Creating the Most Exciting and Engaging FM Broadcast experience possible...

We're grateful that you have chosen an Aqua Broadcast FM Amplifier. We hope that you enjoy your Aqua Broadcast product for many years to come.

Everyone here at Aqua Broadcast is passionate about developing new and innovative products. By shaping the future of FM Broadcast by delivering innovative, intuitive solutions that inspire our customers to create the most exciting and engaging content possible.

From everyone at Aqua Broadcast, thanks for your purchase.

ABOUT COBALT

The COBALT Series of FM Amplifiers has been designed with future Broadcast in mind. Utilizing the latest Control systems available from our COBALT Amplifier range, giving you the cleanest and most stable signal out there.

This user manual covers the entire COBALT Amplifier range, the user settings and controls are the same regardless of the power, so if you can use one you can use them all!

** The screen and user Interface images used in this manual may reflect a product with a different power level.



ALL MODELS OF COBALT AMPLIFIERS UTILIZE THE SAME USER INTERFACE AND FRONT PANEL CONTROLS

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The installation and service instructions in this manual are for use by qualified personnel only. To avoid electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Refer all servicing to qualified personnel

This product has an auto-ranging line voltage input. Ensure the power voltage is within the specified range stated on the rear of the unit.

CAUTION: HAZARDOUS VOLTAGES

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

Aqua Broadcast makes 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 Amplifier 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 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 products described here have been designed, manufactured and tested according the relevant standards and directive, see EC/ EU declaration of conformity attached to this manual. The products described here have left the 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 directly contact 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 centres 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 only be assumed by a 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 all instructions to use any additional special equipment.

The Product manual, and in particular safety instructions should be kept 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.



CHECK ALL ELECTRICAL CONNECTIONS ARE CORRECT AND SAFE BEFORE POWERING ON THE Amplifier

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 $\pm 15\%$ shall apply to the nominal voltage and $\pm 5\%$ 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 1 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 could result in fire and/or injuries may occur.

For measurements in circuits with voltages $V_{rms} > 30\text{ V}$, 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 over-voltage protection to ensure that no over-voltage (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 a fall in concentration, and this may cause injury or material damage.

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 removing 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, trained personnel may perform repairs. All repairs require only original spare parts to be used. After repair a safety test is recommended (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.

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

- Retain Instructions:** The safety and operating instructions should be retained for future reference. All warnings on the unit and in the operating instructions should be adhered to.
- Follow instructions:** All operation and user instructions should be followed.
- Water and Moisture:** The unit should not be used near water. The unit should not be exposed to dripping or splashing and objects filled with liquids should not be placed on or within close proximity of the Amplifier.
- Ventilation:** The unit should be situated so that its location or position does not interfere with its proper ventilation. For example, the unit should not be situated on a 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 method of the unit is not defeated or compromised.
- 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 unit.
- Cleaning:** The unit should be cleaned only as recommended by the manufacturer. Wash your hands after any cleaning.
- Non-use Periods:** The power cord of the unit 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 unit should be checked and 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

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 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:

- Parts or components containing Beryllium Oxide / Beryllium Copper ceramics must not be opened, mechanically processed, or destroyed.
- Above all, these parts or components must not be scratched, broken, ground, tempered and sandblasted, not even under exhaust hoods.
- In the Amplifier, all components containing parts made from Beryllium Oxide / Beryllium Copper are marked with a warning symbols and a labels.



DANGER! Beryllium Oxide / Beryllium Copper

Please ensure the warranty registration process is completed upon receipt of this product.

To do so, go to www.aquabroadcast.co.uk/support 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 return freight for any Warranty repair or claim will be paid by Aqua Broadcast during the 2-year Warranty, 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.

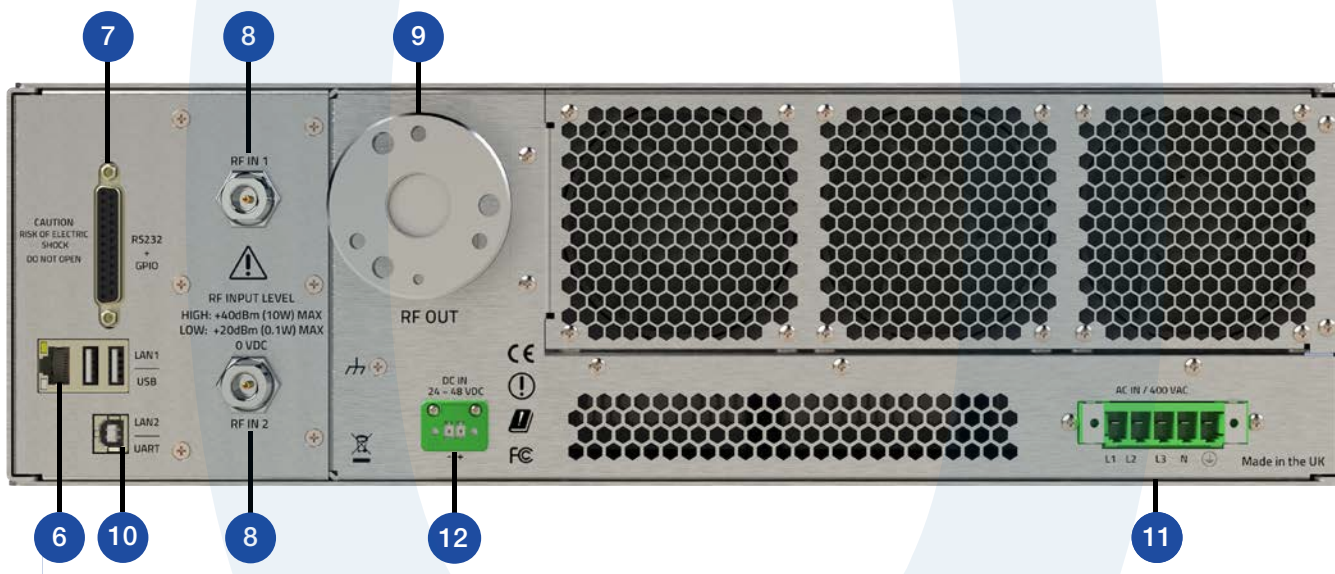
Return authorisation number: To obtain warranty service, the buyer (or his authorised dealer) must contact Aqua Broadcast during normal business hours BEFORE returning the product. All inquiries must be accompanied by a description of the problem. Aqua Broadcast will then issue a return authorisation 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 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 if caused by improper handling of the product by the user. This also applies to defects caused by normal wear and tear of 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.

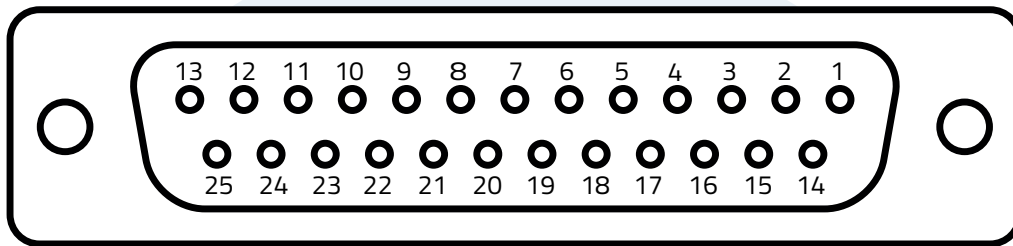
Warranty transferability: This warranty is extended exclusively to the original buyer (customer of the retail dealer) and is not transferable to anyone who may subsequently purchase this product. No other person (retail dealer, etc.) shall be entitled to give any warranty promises on behalf of Aqua Broadcast.

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 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.



- 1. RF Monitor Port
- 2. Meters
- 3. Quick Buttons
- 4. RGB Screen
- 5. Joystick
- 6. LAN 1 and USB
- 7. RS232 and GPIO
- 8. RF 1 & 2 Inputs
- 9. RF Out
- 10. LAN 2 / UART
- 11. AC Input
- 12. Optional 24/48V DC Input



D-SUB 25 FEMALE CONNECTOR

PIN NUMBER	SIGNAL COMMAND
1	GP OUT
2	GP OUT
3	GP OUT
4	GP OUT
5	GP IN
6	GP IN
7	GP IN
8	GP IN
9	ANALOG OUT (330Ohm, 0-5 V)
10	ANALOG OUT (330Ohm, 0-5 V)
11	UART (RS232 CONVERTER)
12	5V (SPARE POWER) 250mA
13	INTERLOCK
14	GP OUT
15	GP OUT
16	GP OUT
17	GP OUT
18	GP IN
19	GP IN
20	GP IN
21	GP IN
22	ANALOG OUT (330 Ohm, 0-5 V)
23	ANALOG OUT (330 Ohm, 0-5 V)
24	UART (RS232 CONVERTER)
25	GND

The Cobalt series features a click-able joystick as the main input interface so you can move and click with just one hand. The incorporated haptics compliment the visual information with tactile feedback for a complete experience. The analogue capabilities of the joystick are put to good use during parameter editing, where you can tilt the joystick further to accelerate value changes. Change the values more slowly by tilting the joystick less or just tap it shortly for precise small step value changes.

The navigation through the menus occurs at two levels.

- On the first level you can quickly browse through the different screens:

The main menu categories are connected as a ring, on the left/right direction, but there might be related screens hanging up or down. On each screen, BLUE labels on its sides show the available navigation directions.

- On the second level you can navigate inside a particular screen:

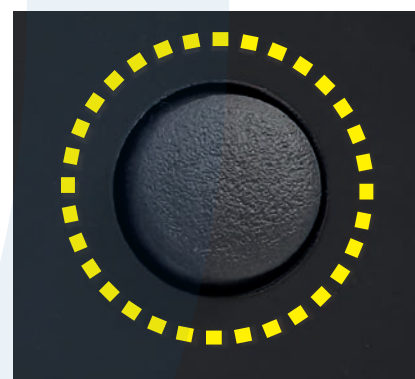
Once you have reached the screen where the parameter you want to change is, hit the button once to enter that screen. You can now move through the parameters in that page.

Move to that parameter and click to start editing that parameter. Use the joystick to change the value and then click to accept or double click to cancel (revert to the previous value). Double click again to go back to screen navigation.

When editing a parameter, the LED ring shows the value of the parameter with respect to the parameter range.

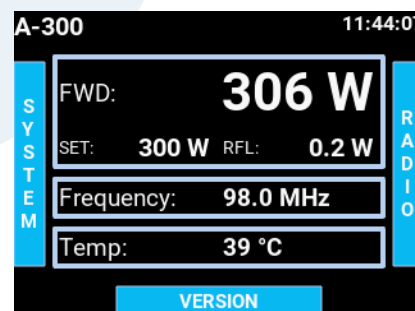
Enter and exit menu navigation

- ~ To select one screen: click
- ~ To resume screen navigation: double click.



Enter and exit menu navigation

- ~ Move through the menus until reaching the relevant screen.
- ~ Press the joystick once to enter that category.
- ~ Use the joystick to navigate to the desired parameter
- ~ Click once to start editing the selected parameter.
- ~ Move the joystick to edit the parameter value/option. Tilt the joystick further to change the value faster.
- ~ If you want to save the new value, click the joystick. Double click will revert the value to the previous one. This will also deselect the parameter and also exit the parameter editing mode.
- ~ Double click to deselect the parameter and return to navigation inside the screen.
- ~ Double click to exit to menu navigation.

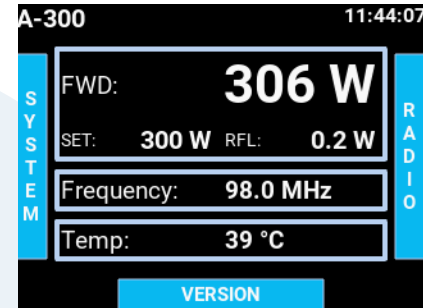


THE FRONT PANEL RF ON BUTTON NEEDS TO BE PRESSED FOR ONE SECOND FOR IT TO BE ACTIVATED OR DE-ACTIVATED

The Home screen on the front of all Cobalt products is equivalent to the dashboard used in the web-remote, showing the most important details on the units' operation.

The top row shows

- ~ Model name
- ~ System Time



The screen also shows RF power, and PA Temperature

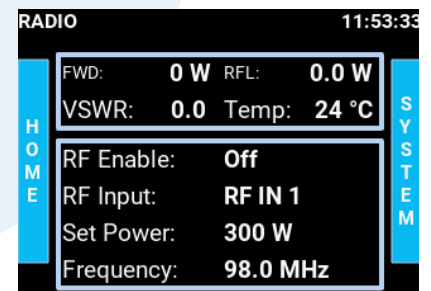
- ~ **FWD:** Shows forward power read from the PA. Press the joystick once to enter that category.
- ~ **SET:** Shows power setting from the Radio menu.
- ~ **RFL:** Shows reflected power reading.
- ~ **Temp:** Shows the amplifier temperature read from the PA.

RADIO SCREEN

The Radio screen on the front of all Cobalt products allows for changes and setting of Radio parameters such as Power, Frequency, and Enable (RF On/Off).

The Radio screen shows all the RF current settings

- ~ **FWD:** Shows the actual forward power reading.
- ~ **RFL:** Shows the actual reflected power reading.
- ~ **VSWR:** Shows the actual calculated VSWR value reading.
- ~ **PA Temp:** Shows the current Amplifier Temperature reading
- ~ **RF Input:** Selects the RF Input you want to use
- ~ **RF Enable:** ON or OFF enables or disables the RF.
- ~ **Set power:** Sets the RF power in Watts that you require.
- ~ **Frequency:** Sets the Frequency you require



The RFL, VSWR and PA Temp have associated thresholds for protection. When the threshold is reached (excessive RFL or VSWR or too high temperature) the Cobalt protection measures will proportionally decrease the RF power produced to keep the values at safe levels. If excessive VSWR or high PA temperatures occur, the unit will display the associated front panel LED Indicators, and at the same time if set up - will also send any email alerts you may have set up. The front panel LED indicators for ALARM / VSWR / TEMP have the following status conditions:

- Green - Shown during normal operation.
- Yellow - Caution that the unit is experiencing a condition that could affect normal operation.
- Red - the unit is protecting itself under high VSWR conditions.

The front panel LEDs provide a quick and efficient insight into unit's status and condition. Some LED colours may have different meaning that are dependent on the configuration of the Amplifier.

Status LEDs

RF: Indicates status of the RF Amplifier

When RF is OFF, the LED is OFF
When RF ON and loop in "Power Seek" mode, LED is
When RF ON and loop in "Power Locked" mode, LED is
When RF ON and fault is indicated "Zero RF Power", LED is
When INTERLOCK/External RF MUTE is active, LED is

■ Yellow
■ Green
■ Red
■ Blue

VSWR: Indicates status of the RF reflected power and protection

When RF is OFF, the LED is OFF
When RF is ON and VSWR is under 1.5, LED is GREEN
When RF is ON and VSWR is 1.5 and over, LED is
When RF is ON and VSWR fault is indicated "High Reflected RF Power" , LED is

■ Green
■ Yellow
■ Red

TEMP: Indicates status of the RF amplifier temperature and protection

When PA Temp is lower than Fallback Temperature, the LED is
When PA Temp is equal or higher than Fallback Temperature, the LED is
When "Over Temperature" fault is reported the LED is

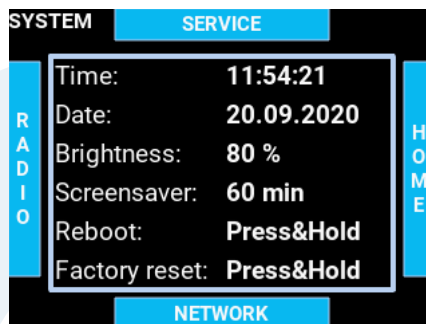
■ Green
■ Yellow
■ Red

ALARM/FAULT : Indicates overall health status of the unit

When a fault is reported the LED is

■ Red

The System screen shows parameters for the various settings relating to the Cobalt Amplifier. This menu has 2 pages, System, and Network.



System

On the System page, you will first see the following useful information.

Time

This adjusts the manual Time setting.

Date

This adjusts the manual Date setting.

Brightness

This adjusts the screen and LED meters brightness, to your own level.

Screensaver

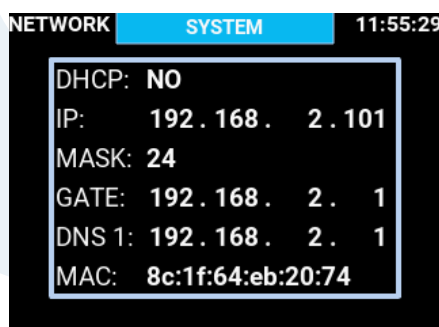
The screen saver has the following options, OFF, 1min, 5min, 15min, 30min

Network

The Network screen provides basic network settings, and also shows the current settings at a glance.

DHCP

Set DHCP to ON /OFF



IP

Set your desired IP address here. Use the Joystick to navigate and to enter in the details.

Mask

Set the Mask here. Use the Joystick to navigate and to enter in the details.

Gateway

Set your Gateway here. Use the Joystick to navigate and to enter in the details.

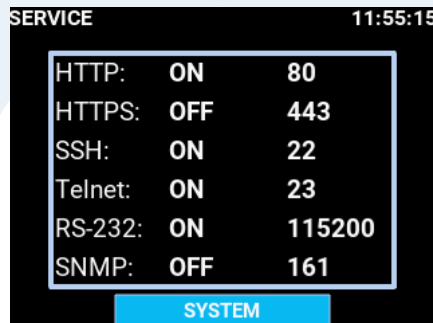
DNS1

Set the DNS here. Use the Joystick to navigate and to enter in the details.

MAC

Set your MAC address here. Use the Joystick to navigate and to enter in the details.

The service screen shows parameters for the various settings relating to the Cobalt Amplifier.



The screenshot shows a terminal window titled 'SERVICE' with a timestamp '11:55:19'. It displays a list of services and their configurations:

Service	Status	Port
HTTP:	ON	80
HTTPS:	OFF	443
SSH:	ON	22
Telnet:	ON	23
RS-232:	ON	115200
SNMP:	OFF	161

Below the table is a blue button labeled 'SYSTEM'.

System

On the System page, you will first see the following useful information.

HTTP

ON or OFF and shows port number

HTTPS

ON or OFF and shows port number

SSH

ON or OFF and shows port number

Telnet

ON or OFF and shows port number

RS232

ON or OFF and shows Baud rate

SNMP

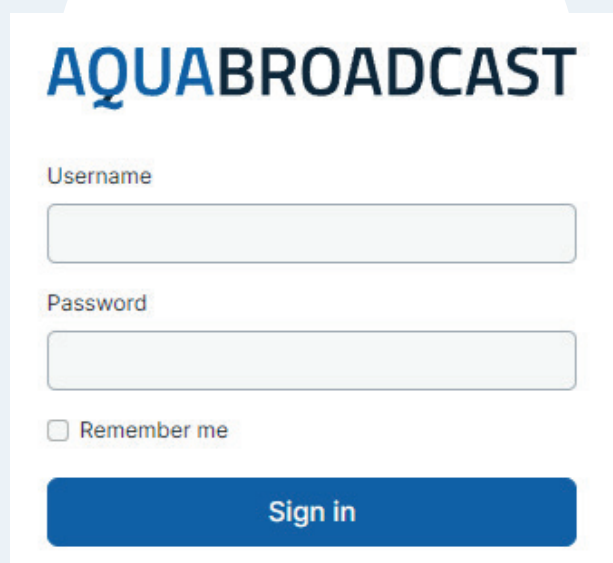
ON or OFF and shows port number

All COBALT FM Amplifiers feature a user-friendly Interface that is accessible from any web browser.

Please use the network screen on the front of the unit to determine or set the IP address and any other Network Parameters of the Cobalt Amplifier.

On any web browser, please enter the IP address of the unit, and press enter/search on the Browser bar.

You will then see the following screen, allowing you to enter in the default user credentials.

A screenshot of the Aquabroadcast login interface. The page has a white background with a large, light blue circular graphic behind the form. At the top, the word "AQUABROADCAST" is written in a bold, blue, sans-serif font. Below this, there are two input fields: "Username" and "Password", each with a light blue border and a white background. Under the "Password" field, there is a checkbox labeled "Remember me". At the bottom of the form is a blue button with the text "Sign in" in white.

Please enter the username and password, and sign in.

LOGIN DETAILS

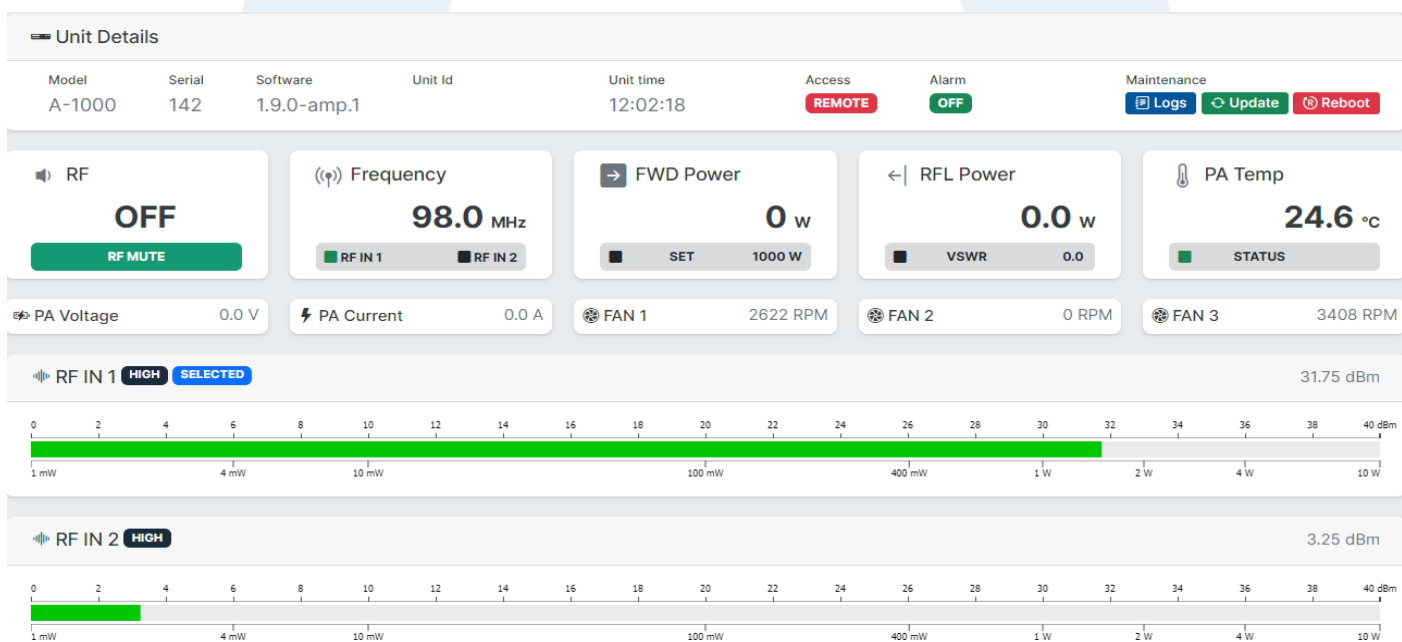
THE DEFAULT USER LOGIN
CREDENTIALS FOR ALL COBALT FM
AMPLIFIER PRODUCTS IS

USERNAME - admin

PASSWORD - pass

The main Dashboard is the default starting point of the Web Interface. From here , you can quickly see the most important information such as,

- ~ RF Status
- ~ RF1 & RF2 Level
- ~ Frequency
- ~ Model
- ~ FWD Power
- ~ Serial Number
- ~ REV Power
- ~ Status
- ~ Temperature
- ~ Software Update



Local Button

On the front panel, there is a button labelled LOCAL. This feature allows the user to lock-out any remote user from changing any Amplifier parameters, when connected and accessed remotely. In local mode (Push the LOCAL button to enable this mode) it is possible to control the Amplifier from the Front panel Joystick and buttons/display. In remote mode, this transfers full control of the COBALT Amplifier from the web remote.

The top right of the dashboard has an Icon showing any Alarm notifications, as well as language settings of the GUI, and the current user logged in to the unit.

CAUTION

Please ensure that after using the Front panel controls (LOCAL Mode), you press the button for one second to allow for full remote access to be available. You can set the timeout in the unit menu to revert automatically to remote mode.

This screen gives the an overview of the current RF status and settings for each RF input. Additionally you can also see the following information,

- VSWR Status
- PA Temp (stated in degrees Celcius)
- PA Voltage
- PA Current
- Fan Speed (Note, depending on the COBALT model, there may be several Fans installed. Not all models have all Fans installed).

The screenshot displays the RF Status and Settings interface. The top section, titled 'RF Status', shows a summary of current values: RF is OFF, Frequency is 98.0 MHz, FWD Power is 0 W, and RFL Power is 0.0 W. Below this, a row of gauges shows VSWR at 0.0, PA Temp at 24.6 °C, PA Voltage at 0.1 V, PA Current at 0.0 A, and FAN 1 at 2622 RPM. The middle section, 'RF Settings', includes an 'RF Enable' toggle (currently Off), a Frequency slider (98.0 MHz), a PA Requested Power slider (1000 W), and 'External RF Control' buttons for 'RF mute' and 'Interlock'. Below the sliders are radio buttons for 'Interlock/RF Mute', 'Fault', and 'No Inputs'. The bottom section, 'RF Settings', shows 'RF IN 1' selected with a 'HIGH' status and a signal level of 31.75 dBm, and 'RF IN 2' with a signal level of 3.25 dBm. A 'Save' button is located at the bottom right of this section.

To adjust the Frequency, and PA requested Power, you need to click the **RED** padlock icon to unlock the editing mode, and then enter your desired value. Select the required RF input source you will use as the main input.

RF Enable

This lets you turn the RF power on or Off. The status indicators below the button show what is active when the RF is enabled ON.

External RF Control

Used on the external Pins, to allow either RF mute or Interlock when using an N+1 system.

The Automations function in every COBALT Amplifier has been designed to be more powerful than anything else out there.

Unlike basic input source failovers that merely facilitate the switch between audio sources, we believe in providing a more comprehensive solution. Our system is meticulously designed to offer unparalleled flexibility in terms of routing RF inputs to the amplifier, complemented by a robust failover mechanism.

By changing the configuration instead of only the source means you can change not only the RF power but also the Frequency and any other option available in the web interface.

Changing the Amplifier configuration usually involves adjusting several settings.

The configurations are there to help you set up the Amplifier by altering the values of many parameters with the press of a button, which also prevents errors. These configurations can be utilized independently—either manually loading a configuration for a specific scenario or pre-loading them for seamless integration with automated processes.

Various scenarios can be effectively addressed using configurations. You have the option to save settings for individual sections in the web menu or save them all simultaneously.

Saving all sections proves beneficial when you need a backup of your default configuration, providing a point to revert to or allowing the fast setup of a replacement Amplifier. This approach is particularly useful when deploying and configuring multiple Cobalt Amplifiers is necessary, leaving the final site-specific configurations (system, network, etc.) to be completed later. Additionally, you may want to share a new configuration across your network.

Configurations become essential when Cobalt's are integral to a redundant system, ensuring that the backup Amplifier rapidly replicates the configuration of the failed Amplifier. In troubleshooting scenarios or when seeking support, configurations transform into invaluable tools.

On the other hand, if your objective is to address a specific situation (such as input source failure) or to modify Amplifier behaviour based on a schedule (e.g., RF Power), you can easily do this.

Advice and Planning

The configurations act as if the user changed some parameters; this is they just recall a set of parameter values. We recommend you to follow some guidelines to use the configurations more efficiently:

PLAN AHEAD - Think of different scenarios and situations, what sections you need to change and consider if those sections depend on some other sections and you need to include them as well.

The best practice is to configure the Amplifier and any other equipment for a given situation, test it thoroughly, and save it with a meaningful name related to the scenario or maybe the automation it is intended for.

ONLY SAVE THE SECTIONS YOU NEED TO CHANGE - If you want to have several automations operating at the same time without interfering with each other, it's best to limit the sections you include in a config.

Otherwise, there is a risk of inadvertently overwriting settings and encountering unpredictable behaviour. For example, once you have all your input sources' levels adjusted, it's unlikely you want to change them, so probably you will leave this section out of most configurations.

MAKE A DEFAULT CONFIGURATION - It is very useful to have a default configuration to use as a starting point or as a backup which you can return to if you get lost or if the Amplifier is left in a strange state.

Failover

This facility lets you define a primary RF input source, as well as 1 additional backup. The meters show all inputs that are live with the RF inputs.

SETUP SOURCES

- Assign the required config here in the drop-down
- Activate this as the primary source, so the failover starts from the here. Configure the threshold, delay, and reset delay (recovery)
- Toggle the enable switches for any other failovers you need, and again select the appropriate config from the drop-down list.
- On the Backup source, there is a configure menu. Here you can configure the threshold, delay, and reset delay (recovery), additionally you can also set the revert to primary on so that in the event the Main source is restored, this will take over in full again.
- Remember to click save on any changes you make, and make sure all are enabled for this to work.

At these early stages, we advise you to run some test to ensure that all works, by simulating issues such as unplugging one of the exciters.

Failover
 Enable

RF IN 1 HIGH SELECTED
31.75 dBm

RF IN 2 HIGH
3.25 dBm

Primary Source
Config ⓘ
Input

DETECTOR: NOT SILENCE
Activate
RF input one
RF IN 1
Configure ^

Input meter < than threshold [dBm]

Set delay [s]

Reset delay [s]

Backup Source
Config ⓘ
Input

DETECTOR: SILENCE
 Enable
Rf input two
RF IN 2
Configure ^

Input meter < than threshold [dBm]

Set delay [s]

Reset delay [s]

Revert to Primary

AUTOMATION: ACTIVE
Save

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Scheduler

You need to set up configurations first, in order to use the scheduler function.

The scheduler function allows you to create custom actions at set times and days to load a configuration that you setup. There are 9 schedules that you can set-up.

Each action must have its own schedule setup. If you want something to turn on at a time and date, you also need to set another schedule to revert it back to any other configuration you require.

Examples include, setting a specific power level at pre-determined times, changing an input for an alternative exciter source, or an alternative frequency.

Scheduler
 Enable

#1

Time

Schedule on

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

Sunday

Config

No config

Enable

Reset

Work days Weekend

Copy Paste

#2

Time

Schedule on

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

Sunday

Config

No config

Enable

Reset

Work days Weekend

Copy Paste

#3

Time

Schedule on

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

Sunday

Config

No config

Enable

Reset

Work days Weekend

Copy Paste

#4

Time

Schedule on

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

Sunday

Config

No config

Enable

Reset

Work days Weekend

Copy Paste

HOW TO SET THIS UP

Go to the automations section labelled "Scheduler"

For each schedule, you need to set the Time, days and configuration you want to load/activate. Each day can be individually turned on or off.

To set the time, simply click on the element and enter the time (24Hr format)

Schedule on

Select the days you require for the schedule to run, or use the two shortcuts below
 Click Work Days - this will turn on all days Monday to Friday
 Weekend - this will only turn on Saturday and Sunday

You can also copy the settings and then paste into another schedule for ease of use.

The top right enable is the switch to turn ON/OFF all schedules. This must be on to have any scheduled events active. Each of the 9 schedules needs to also be enabled ON/OFF for them to work.

Configs

To make a new Configuration is easy!

1. Setup all the required Amplifier settings you need, such as Frequency, Power, Input etc.
2. Click New.
3. Give it a name of your choice.
4. We advise adding a description, especially if you have multiple configs.
5. Once you have selected all you need for the config, click SAVE.

Repeat the process for each Config you may need

Actions

Activate
Save
New
Remove
Import
Export

Selected config

RF input one (?)

UUID: 8a31746f-d164-4d14-9206-c5a8f8e929d4

Rf input two (?)

UUID: f0333969-c9e9-4ffe-8d33-e83cf5021961

Name

RF input one

Description

Add a description so others will know what exactly it's intended for

Used sections

(?) Radio Frequency

Parameters preview

(?) Radio Frequency	
RF Enable	On
RF Input	RF IN 1
Frequency	98.0 MHz
PA Requested Power	1,000 W
External RF Control	RF mute

The Parameters review shows all settings relevant to the Config highlighted.



NOTE

AN ACTIVE CONFIGURATION WILL ALWAYS BE OVERRIDDEN BY ANOTHER CONFIG IF IT IS EITHER TRIGGERED OR ACTIVATED BY A SCHEDULED EVENT. YOU CAN ALSO MANUAL FORCE A CONFIG TO BE ACTIVE BY SIMPLY CLICKING ACTIVATE

Notifications

This section comprises of 5 parts.

At a glance you will be able to see any and all Notifications which may be associated with a Config setting.

HOW TO SET THIS UP

Go to the automations section labelled "Notifications"

For each of the 5 top sections, you need to set which variable you want to activate.

Faults

Be notified of various fault conditions by email or SNMP.

Find the relevant Fault you want to be notified of. Set email or SNMP (or both) to be notified accordingly if this fault occurs.

Notifications
Setup limit
Clear notifications

✖
Fault

⚠
Alarm

⦿
GPI

📺
Automation

🔑
User

RF Fault	<input type="checkbox"/> Send on revert	<input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	NOT DETECTED
Critical VSWR	<input type="checkbox"/> Send on revert	<input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	NOT DETECTED
Fast VSWR Trip	<input type="checkbox"/> Send on revert	<input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	NOT DETECTED
Critical PA Temp	<input type="checkbox"/> Send on revert	<input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	NOT DETECTED
Fan Fault	<input type="checkbox"/> Send on revert	<input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	NOT DETECTED
PSU Fault	<input type="checkbox"/> Send on revert	<input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	NOT DETECTED

Save Fault Changes

Alarms

Critical Alarms can be notified by Email, SNMP Traps, and also entered into system Logs.

Find the relevant Alarm you want to be notified of. Set to write to the Log, send an email or SNMP (or all) to be notified accordingly if this fault occurs.

Select "Alarm LED" Toggle switch ON to show the LED lit on the front panel display. Each Alarm notification required must have the "enable" toggle switch turned on

If the fault condition is resolved, and you want a notification of the fault no longer being active, toggle the "Send on revert" switch.

Notifications
Setup limit
Clear notifications

Fault	Alarm	GPI	Automation	User
VSWR Fallback				
<input checked="" type="checkbox"/> Enable <input type="checkbox"/> Send on revert		<input checked="" type="checkbox"/> Log <input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap		NOT DETECTED <input checked="" type="checkbox"/> Alarm LED
Temp Fallback				
<input checked="" type="checkbox"/> Enable <input type="checkbox"/> Send on revert		<input checked="" type="checkbox"/> Log <input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap		NOT DETECTED <input checked="" type="checkbox"/> Alarm LED
Reboot				
<input checked="" type="checkbox"/> Enable		<input checked="" type="checkbox"/> Log <input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap		NOT DETECTED <input checked="" type="checkbox"/> Alarm LED
AC Power Loss				
<input checked="" type="checkbox"/> Enable <input type="checkbox"/> Send on revert		<input checked="" type="checkbox"/> Log <input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap		NOT DETECTED <input checked="" type="checkbox"/> Alarm LED
DC Power Loss				
<input checked="" type="checkbox"/> Enable <input type="checkbox"/> Send on revert		<input checked="" type="checkbox"/> Log <input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap		DETECTED <input checked="" type="checkbox"/> Alarm LED
Interlock/RF Mute				
<input checked="" type="checkbox"/> Enable <input type="checkbox"/> Send on revert		<input checked="" type="checkbox"/> Log <input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap		NOT DETECTED <input checked="" type="checkbox"/> Alarm LED

Save Alarm Changes

GPI Setup

The GPI when Triggered, can notify you by Email, or SNMP Trap. The GPI pins are number relevantly to the actual available pins on the DB25 connector at the back of the unit.

Find the relevant GPI pin you want to be notified of triggering. Set to send an email or SNMP (or both) to be notified accordingly if this fault occurs.

You also can Trigger an LED on the front Panel in either RED, GREEN, BLUE, or YELLOW as a visual indication of the event. These are on the LED labelled USER on the front panel.

Notifications

Setup limit
Clear notifications

⊗
Fault

⚠
Alarm

●
GPI

🔒
Automation

🔧
User

GPI 5	<input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	<div style="text-align: right; font-size: 0.8em; margin-bottom: 5px;">NOT DETECTED</div> <div style="text-align: right; font-size: 0.8em; margin-bottom: 5px;">User Status LED</div> <div style="text-align: right; font-size: 0.8em;"> none R G B Y </div>
GPI 6	<input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	<div style="text-align: right; font-size: 0.8em; margin-bottom: 5px;">NOT DETECTED</div> <div style="text-align: right; font-size: 0.8em; margin-bottom: 5px;">User Status LED</div> <div style="text-align: right; font-size: 0.8em;"> none R G B Y </div>
GPI 7	<input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	<div style="text-align: right; font-size: 0.8em; margin-bottom: 5px;">NOT DETECTED</div> <div style="text-align: right; font-size: 0.8em; margin-bottom: 5px;">User Status LED</div> <div style="text-align: right; font-size: 0.8em;"> none R G B Y </div>
GPI 8	<input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	<div style="text-align: right; font-size: 0.8em; margin-bottom: 5px;">NOT DETECTED</div> <div style="text-align: right; font-size: 0.8em; margin-bottom: 5px;">User Status LED</div> <div style="text-align: right; font-size: 0.8em;"> none R G B Y </div>
GPI 18	<input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	<div style="text-align: right; font-size: 0.8em; margin-bottom: 5px;">NOT DETECTED</div> <div style="text-align: right; font-size: 0.8em; margin-bottom: 5px;">User Status LED</div> <div style="text-align: right; font-size: 0.8em;"> none R G B Y </div>
GPI 19	<input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	<div style="text-align: right; font-size: 0.8em; margin-bottom: 5px;">NOT DETECTED</div> <div style="text-align: right; font-size: 0.8em; margin-bottom: 5px;">User Status LED</div> <div style="text-align: right; font-size: 0.8em;"> none R G B Y </div>
GPI 20	<input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	<div style="text-align: right; font-size: 0.8em; margin-bottom: 5px;">NOT DETECTED</div> <div style="text-align: right; font-size: 0.8em; margin-bottom: 5px;">User Status LED</div> <div style="text-align: right; font-size: 0.8em;"> none R G B Y </div>
GPI 21	<input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	<div style="text-align: right; font-size: 0.8em; margin-bottom: 5px;">NOT DETECTED</div> <div style="text-align: right; font-size: 0.8em; margin-bottom: 5px;">User Status LED</div> <div style="text-align: right; font-size: 0.8em;"> none R G B Y </div>

Save GPI Changes

GPO Setup

The GPO pins can be configured to pull High or Low. The GPI pins are number relevantly to the actually available pins on the connector at the back of the unit.

Analog Output Setup

The 4 available Pins can be individually turned on or off. Under the source, the following options are available;

Enable the required Pin

Select the source from the following options

- Always Low
- Always High
- FWD Power
- RFL Power
- PA Temp
- Frequency
- PA Voltage
- Fan Speed

Press save

GPO Setup

<div style="display: flex; justify-content: space-between; align-items: center;"> + GPO 1</div>	Active level	<div style="display: flex; justify-content: space-between; align-items: center;"> + GPO 2</div>	Active level
--	--------------	--	--------------

Low

High

 + GPO 3 | Active level |

Low

High

 + GPO 4 | Active level |

Low

High

| + GPO 14 | Active level |

Low

High

 + GPO 15 | Active level |

Low

High

 + GPO 16 | Active level |

Low

High

 + GPO 17 | Active level |

Low

High

[Save](#)

Analog Out Setup

<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="width: 30%;"> <p>Analog Out 9</p> <input type="checkbox"/> Enable </div> <div style="width: 30%;"> <p>Source</p> <div style="border: 1px solid #ccc; padding: 2px; display: flex; justify-content: space-between; align-items: center;"> Always Low ▼ </div> </div> </div>	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="width: 30%;"> <p>Analog Out 10</p> <input type="checkbox"/> Enable </div> <div style="width: 30%;"> <p>Source</p> <div style="border: 1px solid #ccc; padding: 2px; display: flex; justify-content: space-between; align-items: center;"> Always Low ▼ </div> </div> </div>
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="width: 30%;"> <p>Analog Out 22</p> <input type="checkbox"/> Enable </div> <div style="width: 30%;"> <p>Source</p> <div style="border: 1px solid #ccc; padding: 2px; display: flex; justify-content: space-between; align-items: center;"> Always Low ▼ </div> </div> </div>	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="width: 30%;"> <p>Analog Out 23</p> <input type="checkbox"/> Enable </div> <div style="width: 30%;"> <p>Source</p> <div style="border: 1px solid #ccc; padding: 2px; display: flex; justify-content: space-between; align-items: center;"> Always Low ▼ </div> </div> </div>

[Save](#)

Automations

When Triggered, can notify you by Email, or SNMP Trap. They also can Trigger an LED on the front Panel in either RED, GREEN, BLUE, or YELLOW as a visual indication of the event. These are on the LED labelled USER on the front panel. Enable "Send on revert" to allow notifications to be sent when the fault condition is cleared and no longer triggering an alert.

Notifications
Setup limit
Clear notifications

Fault

Alarm

GPI

Automation

User

Main Source not Present NOT DETECTED

Enable
 Log
User Status LED

Send on revert
 Email

Send on revert
 SNMP Trap

Backup Source not Present DETECTED

Enable
 Log
User Status LED

Send on revert
 Email

Send on revert
 SNMP Trap

Input Source Switched

Enable
 Log
User Status LED

Send on revert
 Email

Send on revert
 SNMP Trap

Save Automation Changes



AN ACTIVE CONFIGURATION WILL ALWAYS BE OVERRIDDEN BY ANOTHER CONFIG IF IT IS EITHER TRIGGERED OR ACTIVATED BY A SCHEDULED EVENT

User

These have similar functions to the others above, but can also be used to not only send Emails, and SNMP traps, but also to trigger a GPO. Each detector can be configured individually to allow for greater control. The GPO could be used in many ways, but some examples are for indicator warning lights, starting remote Audio players etc. Enable "Send on revert" to allow notifications to be sent when the fault condition is cleared and no longer triggering an alert.

Notifications Setup limit Clear notifications

Fault Alarm GPI Automation **User**

FWD Power <input checked="" type="checkbox"/> Enable <input type="checkbox"/> Send on revert Configure	GPO ⓘ None	<input checked="" type="checkbox"/> Log <input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	DETECTED User Status LED none R G B Y
RFL Power <input checked="" type="checkbox"/> Enable <input type="checkbox"/> Send on revert Configure	GPO ⓘ None	<input checked="" type="checkbox"/> Log <input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	NOT DETECTED User Status LED none R G B Y
VSWR <input checked="" type="checkbox"/> Enable <input type="checkbox"/> Send on revert Configure	GPO ⓘ None	<input checked="" type="checkbox"/> Log <input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	DETECTED User Status LED none R G B Y
PA Temp <input checked="" type="checkbox"/> Enable <input type="checkbox"/> Send on revert Configure	GPO ⓘ None	<input checked="" type="checkbox"/> Log <input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	NOT DETECTED User Status LED none R G B Y
PA Fan <input checked="" type="checkbox"/> Enable <input type="checkbox"/> Send on revert Configure	GPO ⓘ None	<input checked="" type="checkbox"/> Log <input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	NOT DETECTED User Status LED none R G B Y
RF IN 1 <input checked="" type="checkbox"/> Enable <input type="checkbox"/> Send on revert Configure	GPO ⓘ None	<input checked="" type="checkbox"/> Log <input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	NOT DETECTED User Status LED none R G B Y
RF IN 2 <input checked="" type="checkbox"/> Enable <input type="checkbox"/> Send on revert Configure	GPO ⓘ None	<input checked="" type="checkbox"/> Log <input type="checkbox"/> Email <input type="checkbox"/> SNMP Trap	NOT DETECTED User Status LED none R G B Y

Save User Changes

Services

Here you can enable and set various additional services like SNMP, Telnet and RS232. After enabling and/or changing a parameter, please make sure you save each relevant section before proceeding to the next section.

HTTP <input checked="" type="checkbox"/> Enabled	SSH <input checked="" type="checkbox"/> Enabled
Port: 80	Port: 22
<input type="button" value="Save"/>	<input type="button" value="Save"/>
HTTPS <input type="checkbox"/> Enabled	
Port: 443	Certificate details: No info to show
Certificate: Choose file No file chosen	
Private key: Choose file No file chosen	
<input type="button" value="Save"/>	

When the HTTPS is enabled, you can also upload your own security certificate and credentials that you may already own.

Telnet <input checked="" type="checkbox"/> Enabled	RS232 <input type="checkbox"/> Enabled
Port: 23	Baudrate [bd]: 115200
<input type="button" value="Save"/>	Parity: <input checked="" type="radio"/> no, <input type="radio"/> odd, <input type="radio"/> even
	Data bits: <input type="radio"/> 7, <input checked="" type="radio"/> 8, <input type="radio"/> 9
	Stop bits: <input checked="" type="radio"/> 1, <input type="radio"/> 2
	<input type="button" value="Save"/>

All Cobalt Amplifiers support SNMP

v1, v2c and v3 protocols are supported as standard.

The MIB files can easily be downloaded and saved when you click the "Download MIB" button

SNMP Enabled

Engine ID:

Port
161

v1/v2c communities Add community

COMMUNITY	HOST	ACCESS	
public	*	Read-only	

v3 users
SNMPv3 users are managed in User Management

Trap receivers Add trap receiver

TYPE	HOST	DETAILS
No trap receiver configured		

[Send test trap](#)

[Download MIB](#) [Save](#)

NOTE

Please enable each relevant section you need, and after making any value changes, remember to click SAVE

Unit

Front Panel

Brightness - adjust the Front panel Display and LED brightness to your choosing.

Local mode timeout - set the delay you want the screensaver to come on when using the front panel controls.

Screensaver level - Choose what you want to enter into a screensaver mode

OFF - No screensaver is enabled

Display only - The OLED will turn off, but the meters and LED will still be shown.

Display & LED's - all will turn OFF.

Screensaver timeout - set how long you want the delay to enable screensaver to come on.

Factory Reset- this will wipe out all settings and restore back to factory state with no parameters set.

Front Panel

Brightness [%] Local mode timeout [min]

Screensaver level Screensaver timeout [min]

Save

Date and time NTP synchronized

Use NTP to obtain current date and time

Timezone

Fill browser values **Save**

Factory reset

Factory reset wipes all user configuration and brings the unit into a clean state.

Do factory reset

Network

You can adjust these parameters to suit your own network requirements, this can also be done from the front panel controls.

Network setting

MAC address: 8c:1f:64:eb:20:01

DHCP

IP address Netmask prefix length

Gateway

DNS 1 DNS 2

Save

Emails

Setup your Email notifications to recipients here. You can also choose secured methods (preferred)
These emails will form the basis of any notifications on the unit that you may have chosen to use when setting up Automations and notifications.

SMTP

SMTP server address SMTP server port

Sender email SMTP security

Unsecured StartTLS SSL/TLS

SMTP server username SMTP server password

Leave username and passwords fields empty if there is no authentication

Recipients

Multiple recipients separated by comma

Send test email Save

User Management

You can setup multiple users on every Cobalt Amplifier. These can have different permission levels.

When setting up a User, please remember to set the Role and Password for each user.

Admin - set this for full control of the unit, with the ability to change any parameter.

Viewer - set this for limited control of the unit, restrictions will apply on certain parameters.

👤 User Management New user

USERNAME	FULL NAME	ROLE	SNMPV3	
admin	Admin	admin	-	✎ 🗑️
viewer	Viewer	viewer	-	✎ 🗑️

To setup , please click New User

Username - This may contain only lowercase characters, digits and '_' characters, no spaces can be used.

Fullname - set this to identify the user.

Role- Choose the type for this user.

Password - Choose your secure password

Edit user

Username Full name

Role

Change password

Password Password again

Allow SNMPv3

Security level Access

Authentication algorithm Authentication password

Privacy algorithm Privacy password

Save

Allow SNMP

Here you can select if the user needs access to SNMP settings.

You must choose the Security level, as well as the access level, whether the user can only read, or read/write SNMP

Select your Authentication and privacy type and login credentials.



NOTICE

An Admin user can also edit and change settings for any other user

LOGS

System logs can be accessed from here. They are also accessible at all times from any page at the top right corner.

Each relevant log will be sorted by the most recent timestamp.

Clicking "SHOW" will open up further information showing the log including any errors.

You can also download the log and save to your Computer for further reference, archiving, or to share the log with our support department.

DATE	ACTIONS
13.12.2023	Show Download
08.12.2023	Show Download
07.12.2023	Show Download
29.11.2023	Show Download
28.11.2023	Show Download
17.11.2023	Show Download
28.09.2023	Show Download
27.09.2023	Show Download
18.09.2023	Show Download
17.09.2023	Show Download



NOTICE

The logs Timestamp will only be accurate when the Cobalt Amplifier is connected to a network with access to NTP Time servers on the Internet.

COBALT A-2000**GENERAL**

Output Power (W)	3000
Range (W)	300-3000
RF Output connector	7/8 EIA
Input ACV @ 50/60Hz	100-240
Power Connector	Phoenix connector
Power supplies (Fitted as standard)	1 (2nd and 3rd PSU is optional for redundancy)
Dimensions WxDxH (inch)	19 x 24 x 3RU (7")
Dimensions WxDxH (cm)	48.3 x 60.0 x 17.8
Weight	24kg / 53lb

COBALT A-3000**GENERAL**

Output Power (W)	700
Range (W)	200-700
RF Output connector	7/16 DIN (Female)
Input ACV @ 50/60Hz	100-240 (for 110V the optional 2nd PSU must be fitted)
Power Connector	IEC 13A filtered
Power supplies	1 (second PSU is optional for redundancy)
Dimensions WxDxH (inch)	19 x 24 x 3RU (7")
Dimensions WxDxH (cm)	48.3 x 60.0 x 17.8
Weight	24kg / 53lb

COMMON SPECIFICATIONS**PREAMP**

Power Stability	≤ ± 0.25dB
Asynchronous/AM noise	≤ -60dB
Synchronous AM s/n ratio	≤ -60dB
RF Harmonic and Spurious suppression AM s/n ratio	Meets ETSI requirements
VSWR operation	Fully protected against gradual Or sudden VSWR condition

RF INPUTS

High mode is default, low mode is factory fitted option.

RF1	N type
	23dBm to 40dBm, nominal 30dBm (200mW to 10W, nominal 1W)
	Low mode input range is 3dBm to 20dBm, nominal 10dBm (2mW to 100mW, nominal 10mW)
	Automatic input gain adjustment

RF1	N type
	23dBm to 40dBm, nominal 30dBm (200mW to 10W, nominal 1W)
	Low mode input range is 3dBm to 20dBm, nominal 10dBm (2mW to 100mW, nominal 10mW)
	Automatic input gain adjustment

POWER SUPPLIES

Type	Hot swappable
Number of Power Supplies	1 Standard up to 2 additional Power Supplied fitted as an option at the Factory

ENVIRONMENTAL

Altitude	15,000 ft / 4,420m AMSL
Temperature range	0 to +45°C working -10 to +50°C storage
Humidity	95% @ 35°C, non-condensing

EU DECLARATION OF CONFORMITY



Aqua Broadcast Ltd declare under our sole responsibility that the radio equipment below,

Type: FM Amplifiers
Models: Cobalt A-2000, Cobalt A-3000
Intended use: Broadcast Amplifier

are in conformity with the essential requirements of the Directive 2014/53/EU (RED) and of the Directive 2011/65/EU (RoHS).

The models mentioned have been tested against the following standards or technical specifications:

1. Essential requirements for the protection of the health and safety of people, pets and goods, Article 3.1a) of Directive 2014/53/UE:
 - IEC/EN 60215(1998)+A1(1992)+A2(1994)
2. Essential requirements on electromagnetic compatibility levels, Article 3.1b) of Directive 2014/53/UE:
 - ETSI EN 301 489-53 V1.1.1 (2019-04)
 - ETSI EN 301 489-01 V2.2.3 (2019-11)
3. Essential requirements for the effective use of radio spectrum, Article 3.2 of Directive 2014/53/UE:
 - ETSI EN 302 018 V2.1.1 (2017-04)
4. Requirements in the Article 4 of Directive 2011/65/EU, towards the maximum tolerated concentrations of the substances listed in Annex II as modified by directive 2015/863/UE:
 - EN IEC 63000:2018

If you need and advice or support, we are always on hand to help you as fast as we can.

We have various ways that you can contact us, and we always recommend any additional information is sent to us so we can quickly assist you.

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Firmware updates

Please visit <https://www.aquabroadcast.co.uk/support> then simply click on the Downloads tab and select the latest firmware version available.

Alternatively, please scan the QR code below to link directly to the downloads section.



FIRMWARE

You will find the latest firmware version of your COBALT FM Amplifier on our website.

<https://www.aquabroadcast.co.uk/support>

