FULGOR SERVICE
SISTEMI DI AMPLIFICAZIONE

DIGIAMP

Amplified Matrix
Firmware 1042
Software 1032

USER AND INSTALLATION MANUAL

INDEX

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1. SOFTWARE DIGIAMP Manual

Guide to DIGIAMP software

This manual allows you to take full advantage of the many features of DIGIAMP.
Thank you for purchasing the amplified DIGIAMP processing matrix by Fulgor Service.

2. Installation and Execution of the SOFTWARE

After installing the dedicated DIGIAMP software on a computer with Windows 7 or later and connecting the PC to the DIGIAMP via an Ethernet port as shown in the diagram (set the PC's network board with an IP 192.168.100.XXX and subnet 255.255.255.0), launch the software to start working.
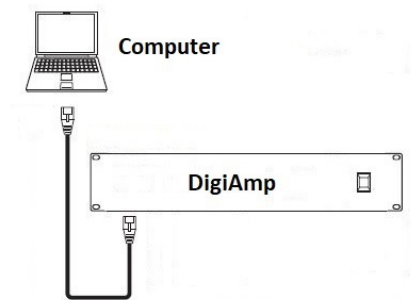
Here are the steps:

This on the right is the first screen of the DIGIAMP software.

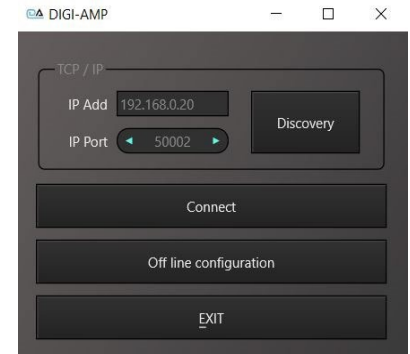In this dialog window, you can search for one or more devices on the network. After configuring the computer in DHCP mode and without knowing the DIGIAMP's IP address, you need to search for devices on the network by clicking on "**DISCOVERY**".

A second window will open, where the software will perform an automatic scan of the entire network to search for one or more DIGIAMP devices.
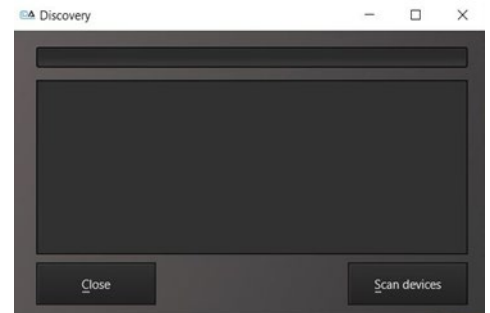
Once the scan is complete, one or more devices will be detected. You can view all information related to the machines/devices present in our network. By double-clicking on the device information, you will access a window where you can enter the DIGIAMP's password, allowing you to start interacting with the device. For the first connection, the default password is 123456.
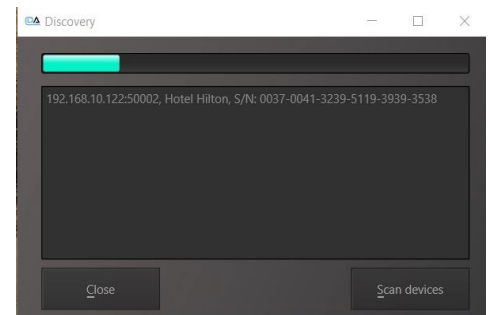
The factory/default settings are as follows:
• IP Add: 192.168.100.50
• IP Mask: 255.255.255.0
• IP Router: 192.168.100.1
• Password: 123456
• ID: 1
• PC IP Port: 50002
• APP IP Port: 50003

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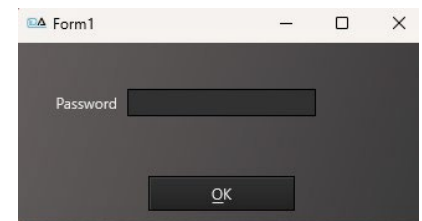
This is the main window of the DIGIAMP, from here you can access all the settings and information of the device. Let's start by dividing the window into three main areas marked in red below.

A. On the left, the first of the 10 inputs
B. On the right, we find the outputs with the matrix
C. At the top, there are all the tools
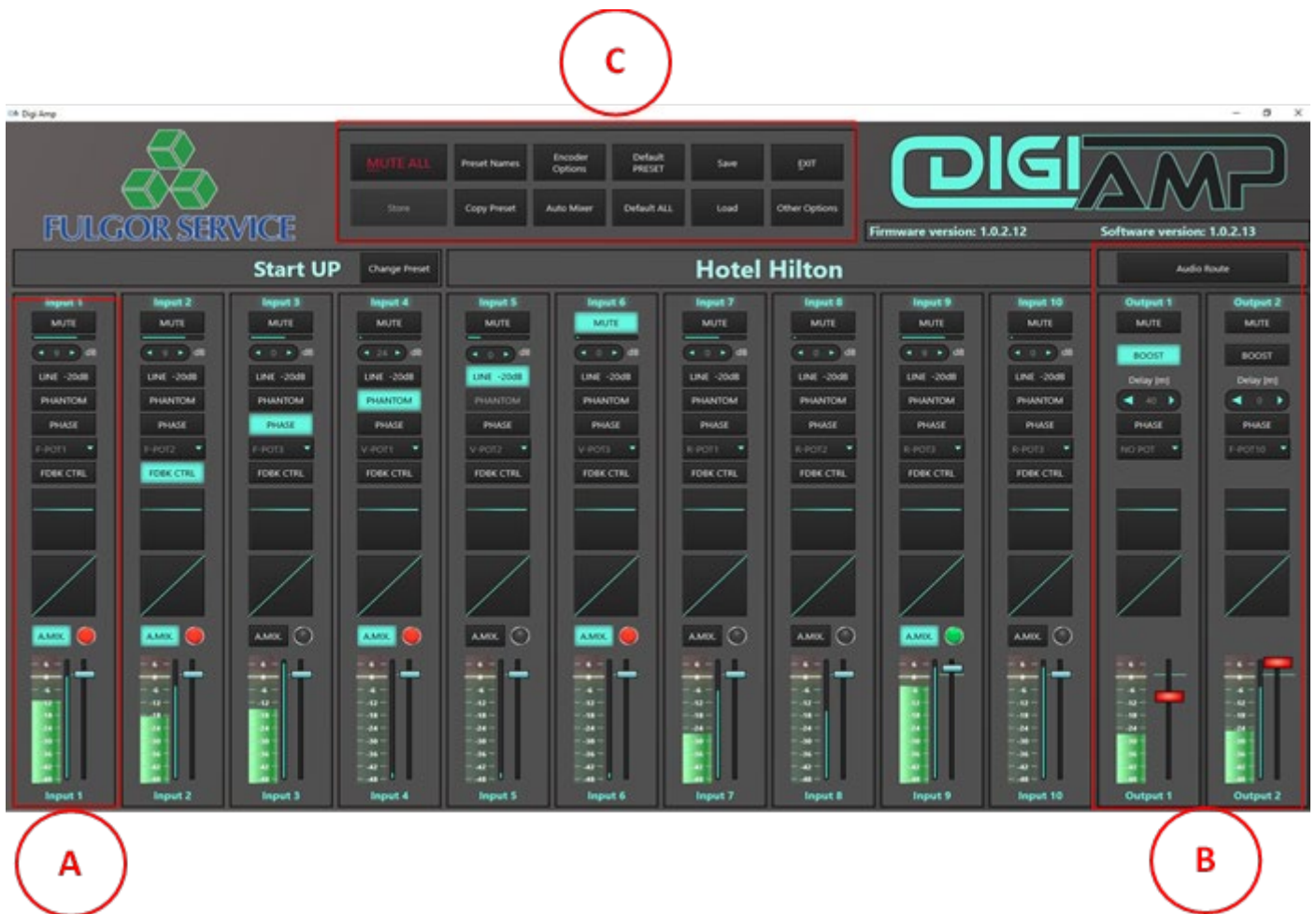
3. Section "A" Main Window "INPUTS"
All the adjustment and settings for an input are illustrated below

This part of the main window highlights an input. Starting from the top, we find:

1. Clicking on the text "**Input 1**" allows you to change the name of the input.
2. Clicking on "MUTE" mutes the channel.
3. Below "mute," we find a placed horizontally "**VU meter**," which turns blue when there is a signal present at the input. This signal is before all other adjustments.
4. The input "**GAIN**" level is in 3dB steps.
5. Clicking on "**LINE -20dB**" lowers the input sensitivity and disables phantom power.
6. Clicking on "**PHANTOM**" enables or disables the 38Vdc power supply only for that specific input.
7. Clicking on "**PHASE**" inverts the phase of the input by 180°.
8. Clicking on "**NO POT**" determines the user interface, that is, which control will be used to adjust the signal for this input.
o   **F-Pot** enables the front panel Encoders and the tablet APP.
o   **V-Pot** enables the RS485 serial, and the channel will be controlled by a specific device capable of generating pre-programmed strings.
o   **R-Pot** enables the 10K analog potentiometers (from 1 to 6).
    If no setting is selected, the channel will function without any control.
9. Clicking on "**FDBK CTRL**" opens a window to adjust the Anti-Larsen feature.
10. Clicking on the square opens the parametric equalizer window.
11. Clicking on the square opens the Dynamics Processor window.
12. Clicking on "**A.MIX**" adds the input to the Automixer system (more information in paragraph 36C).
13. On the left, we find the convenient "**VU meter**".
14. On the right, we find the "**SLIDER**" for controlling the input volume.
15. Between points 13 and 14, we find the reference for the position of the real or virtual potentiometer used for this input (see point 8). If no interface is used, the bar will not be displayed.

The underlined points will be explained individually later.

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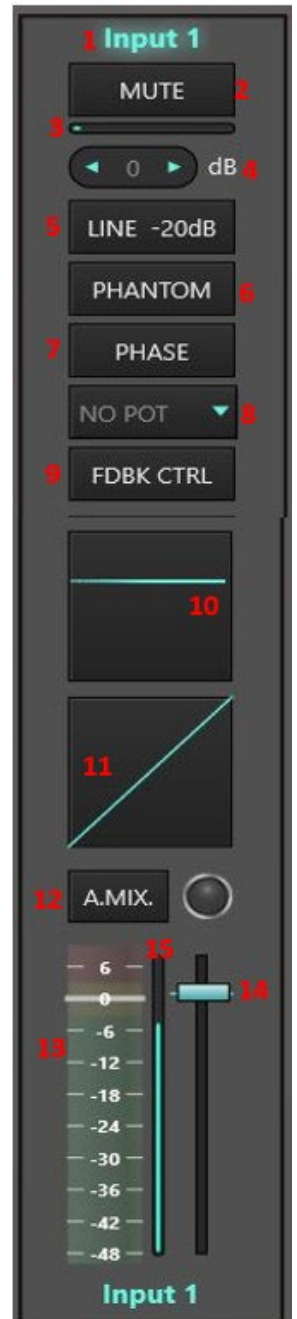
This window appears when you click on the **name of an input or output** (see point 1).

1A. Enter the desired name for the input or output using the same procedure, then confirm by clicking "OK."
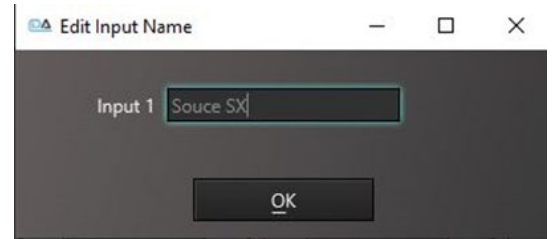
This part of the "INPUTS" window highlights points 8 and 15.

8A. From this window, we can enable volume control for this input in various modes:

- **Encoder or Tablet APP**: selecting from F-Pot1 to F-Pot10 enables the input to be controlled by the encoder located on the front panel of the DIGIAMP, or it can be controlled via a Tablet using the dedicated APP (see 30C for settings).

- **RS485**: selecting from V-Pot1 to V-Pot10 enables the input to be controlled via a dedicated string with the RS485 protocol. Configure a suitable device to generate and receive the RS485 protocol (check the corresponding box in the "Other Options" section. See DB15 in the Hardware manual, point 6) Optional MControl

- **Analog potentiometers**: selecting from R-Pot1 to R-Pot6 enables the input to be controlled by an analog potentiometer. The potentiometer can be remotely located up to a maximum distance of 50 meters with a shielded cable. (See DB15 in the Hardware manual).

15A. Enabling any control will cause a bar (highlighted in red in the figure) to appear between the VU meter and the slider, visually indicating the "position" of the device controlling the volume.

This window appears when you click the "**FDBK CTRL**" button (point 9).

9A. By enabling "**ENABLED**," the Anti-Larsen feature is activated only on the selected input. Use the "**FREQUENCY**" buttons to increase or decrease the frequency offset of the sampling frequency. Confirm everything by clicking OK.

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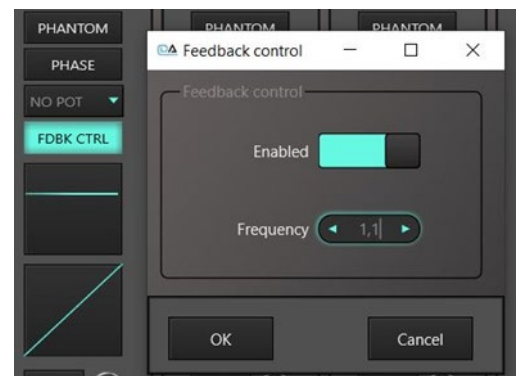
When you click on the square of the parametric equalizer, the window below appears (see point 10).
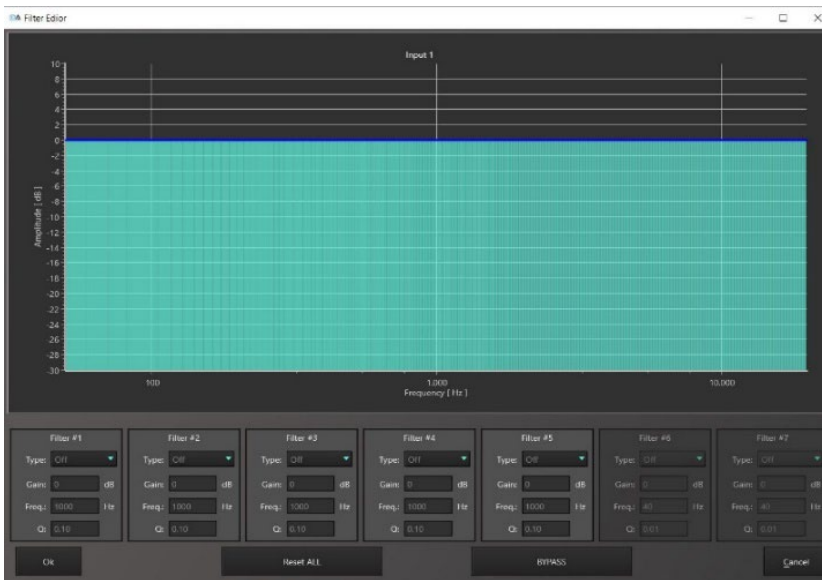
10A. **Input Equalizer** Command Window.
- In the inputs, we find five "**FILTERS**", which are configurable filters.
- By adjusting the "**TYPE**" we decide which type of filter to use (High Pass, Low Pass, or Parametric EQ).
- By adjusting the "**GAIN**" we increase or decrease the gain of the selected frequency.
- Setting the "**FREQ**" determines which frequency we need to adjust.
- By adjusting "Q," we widen or narrow the bandwidth of our intervention on the audio spectrum. Below is an example.
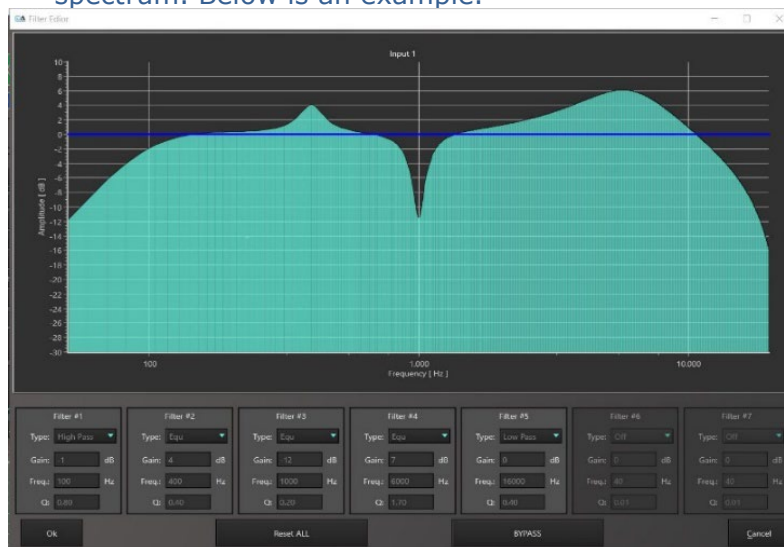
Example of equalization

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When you click on the square on the right, the **Dynamics Processor** window opens (see point 11).
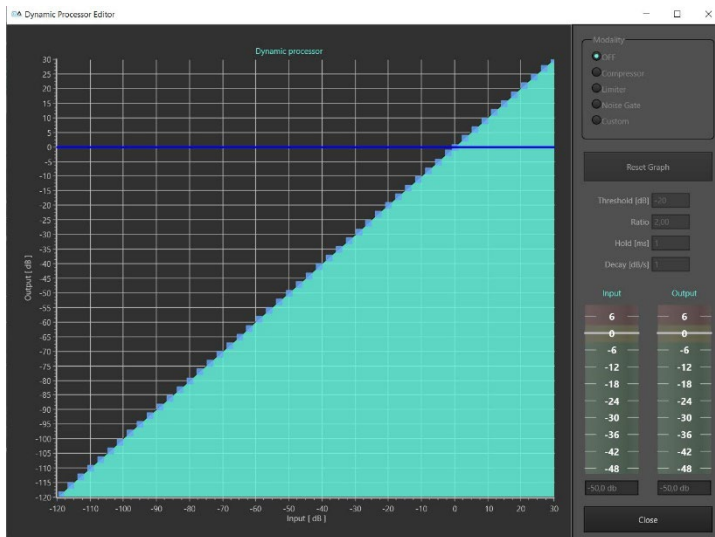
11A. Dynamics Processor Window for Inputs.

At the top right, you will find the 4 operating modes of the processor:

- **Compressor**

- **Limiter**

- **Noise Gate**

- **Custom**

It is very easy to use, thanks to the 4 adjustable parameters:

- Threshold (dB): the threshold level below which no processing occurs
- Ratio: the compression ratio
- Hold (ms): the intervention time
- Decay (dB/ms): the slope/speed

The two large VU meters are very helpful to the technician during adjustments and show in real-time the input level of the filter (left) and the output level (right).

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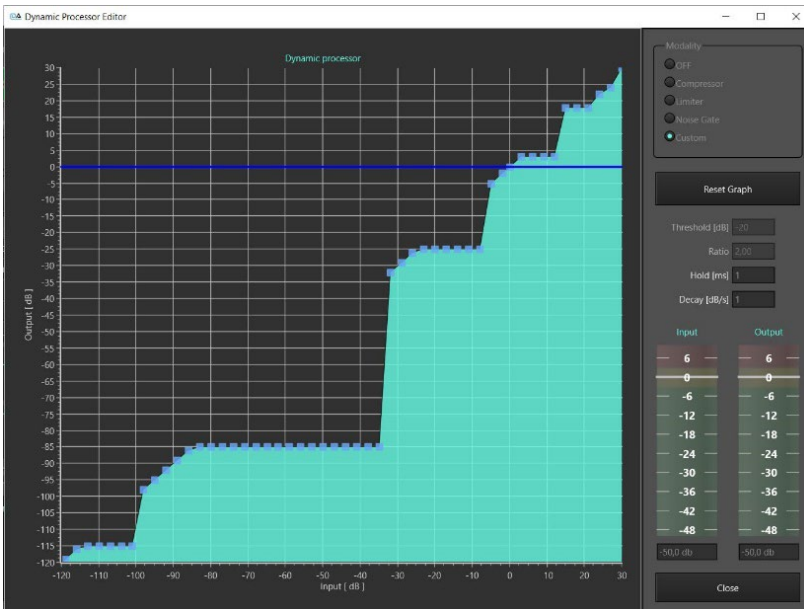
Example of a Custom configuration
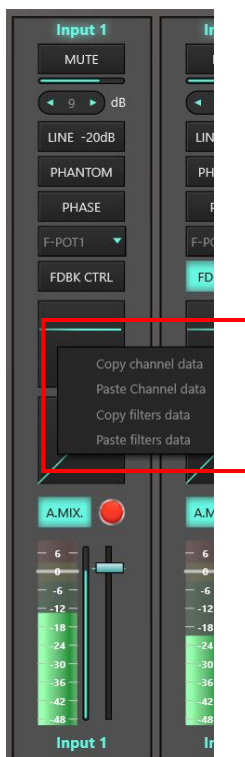
Once you have finished configuring a channel, if you are satisfied with its performance, you can copy all the settings of that channel and apply them to another input(s).

Procedure:
- right-click in an empty area of the channel, and this window will appear.
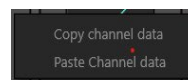
- click on "Copy Channel Data" to copy all the settings of the channel.
- to paste, right-click in an empty area of the new channel and select "Paste Channel Data." All settings will be pasted.
- alternatively, by right-clicking on the square of the equalizer or the dynamics processor (see the red box on the left), you can copy only the settings of the equalizer or the dynamics processor. Once copied, the same operation applies to paste.

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4. Section "B" Main Window "OUTPUTS"
All the adjustments and settings for an output are illustrated below.

This part of the main window highlights the outputs. Starting from the top, we find:

16. Clicking on the "**Matrix**" button gives access to the matrix.
17. Clicking on "**output 1**" or "**output 2**" allows you to change the name of the output (see point 1).
18. Clicking on "**MUTE**" mutes the channel.
19. Below "mute" is the "**BOOST**" button, which increases the output level of the channel by +6dB.
20. The delay is expressed in meters, and each channel can have up to 70 meters of delay.
21. Clicking on "**PHASE**" inverts the output phase by 180°.
22. Clicking on "**NO POT**" sets the user interface, meaning the control used to adjust the signal for this output.
    - **F-Pot** enables the Encoders on the front panel and the tablet APP.
    - **V-Pot** enables the RS485 serial, and the channel will be controlled by a dedicated device capable of generating pre-programmed strings.
    - **R-Pot** enables the 10K analog potentiometers (from 1 to 6).

    If no setting is selected, the channel will function without any control.
23. Clicking on the square opens the parametric equalizer window.
24. Clicking on the square opens the Dynamics Processor window.
25. Below, we find the convenient "**VU meter**".
26. On the bottom right, we find the "**SLIDER**" for controlling the output volume.
27. Between points 25 and 26, we find the reference for the position of the real or virtual potentiometer used for this output (see point 8); if no interface is used, the bar will not be displayed.

The underlined points will be explained individually later

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16B Matrix

From this window, you can decide which output to route the 10 signals to. Additionally, it is possible to increase or decrease the level (expressed in dB) either at each crossover point or at the matrix output.
The installer has the option to quickly test an output using the last two buttons, "**TONE**" and "**NOISE**", which are used to send a known signal to the desired output.
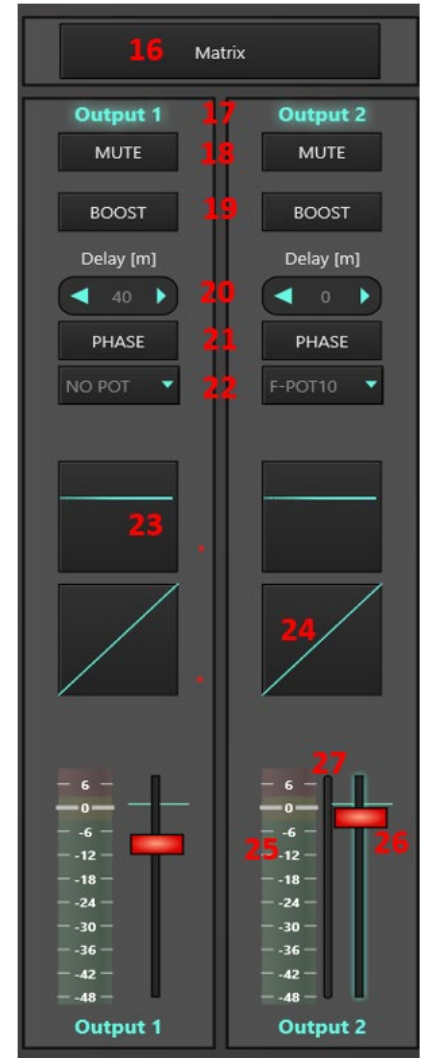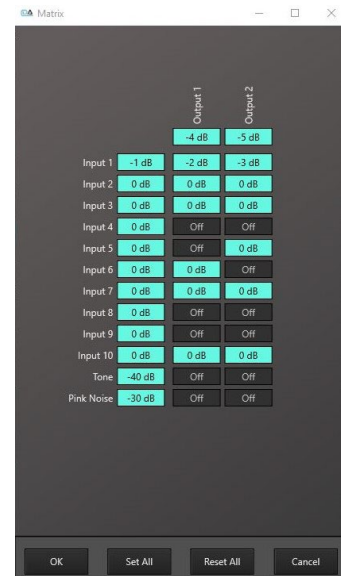
5. Section "C" Main Window "TOOLS"
All the adjustments and settings for an output are illustrated below.
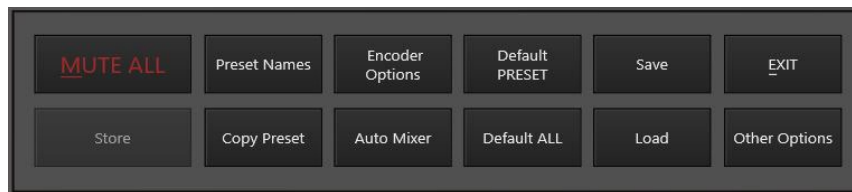
This window highlights all the buttons for various tools. Starting from left to right, you will find:

28. Clicking "**MUTE AL**L" mutes all inputs and outputs.
29. Clicking "**Preset Names**" opens a window to edit the names of the presets.
30. Clicking "**Encoder Options**" opens a window for controlling the encoders and potentiometers.
31. Clicking "**Default PRESET**" resets only the active presets to the factory configuration.
32. Clicking "**Save**" saves the configuration to the computer.
33. Clicking "**EXIT**" exits and closes the DIGIAMP program.
34. Clicking "**Store**" saves the configuration to the DIGIAMP.
35. Clicking "**Copy Preset**" opens a window to copy the preset.
36. Clicking "**Auto Mixer**" opens a window with all the parameters for setting up the automatic mixer.
37. Clicking "**Default ALL**" resets the DIGIAMP to the factory configuration.
38. Clicking "**Load**" allows you to load a configuration from the computer.
39. Clicking "**Other Options**" opens a window with information and optional settings.

The underlined points will be explained individually later.

This window appears when you click on the "**Preset Names**" button (point 29).

29C Procedure to name the presets

Highlight the preset name, type (numbers or letters in lowercase or uppercase), repeat for each preset, then click OK.
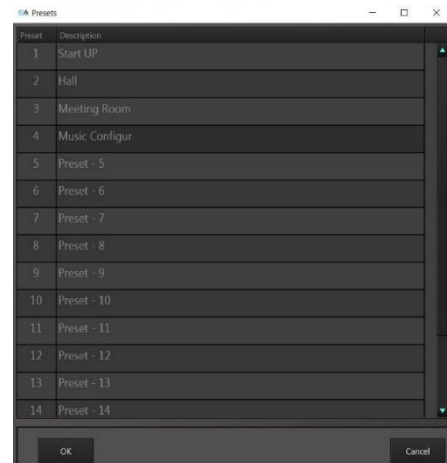
This window appears when you click on the "Encoder Options" button (see point 30)

30C the area is formally divided into three main sections:
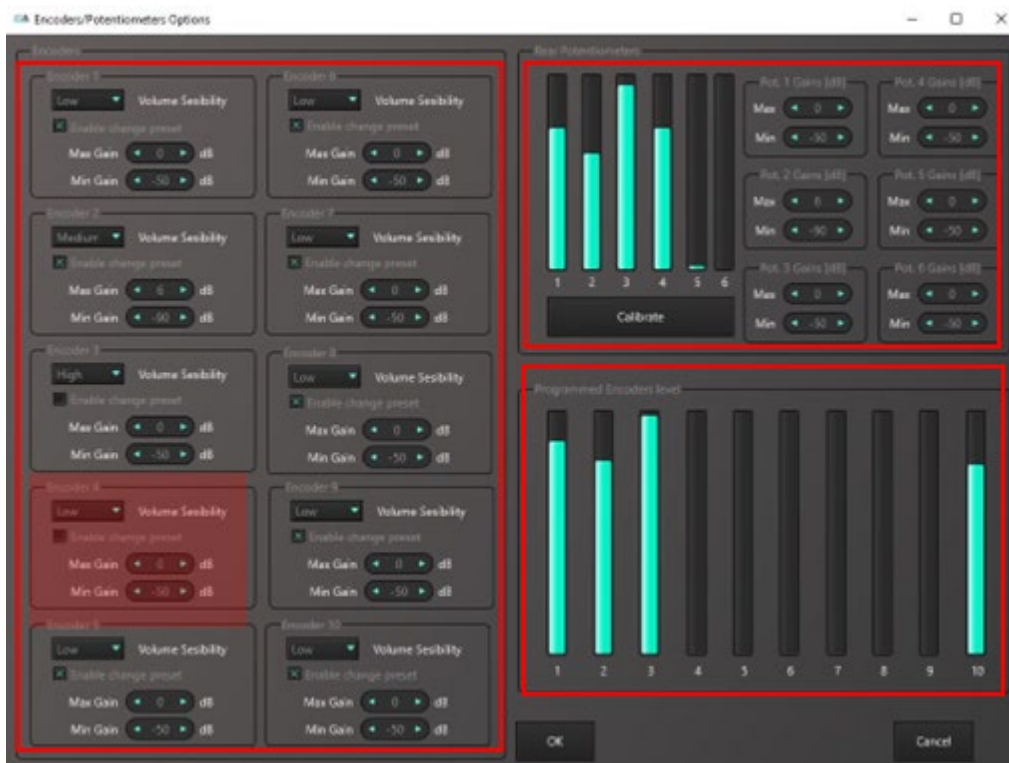
Encoder Area
Programmed Encoders level Area
Rear Potentiometer Area

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30C Encoder Area

Guide to Managing the Encoders

The encoder settings are independent of the presets. When recalling a preset, you have the option to enable or disable the encoders for one or more channels, but the encoder parameters will always remain the same across all presets.

The encoder management window presents 10 identical panels, each controlling the functionality of one of the Encoders. These Encoders must be activated (see points 8 or 15 of the main window). A single Encoder can control multiple inputs or outputs. Below is the procedure for configuring an Encoder, using Encoder 4 (highlighted in transparent red) as a reference.

Encoder Configuration
Activating the Encoder: Ensure that the encoder is activated (see points 8 or 15 of the main window).

Volume Sensibility: this determines how quickly the Encoder will affect the volume when rotated left or right. There are three options:
- o **LOW**: Slow response speed
- o **MEDIUM**: Medium response speed
- o **HIGH**: Fast response speed

- **Encoder Gain Setting (Gain)**

Max Gain: Sets the maximum gain in dB.
For example, setting the Max Gain to +6 dB means that turning the Encoder fully to the right will provide a maximum increase of +6 dB over the volume value of the input associated with this Encoder.

Min Gain: Sets the maximum reduction in dB.
For example, setting the Min Gain to -12 dB means that turning the Encoder fully to the left will provide a maximum reduction of -12 dB from the volume value of the input associated with this Encoder.

<u>**Important:**</u>

Preserving Encoder Value.
When recalling a new preset, the Encoder value will not be changed and will remain at the last setting left by the user.

Step-by-Step Configuration Procedure

Ensure the encoder is activated: check that Encoder 4 (or any other Encoder you wish to configure) is activated (see points 8 or 15 of the main window).

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Set the rotation speed: Select between LOW, MEDIUM, and HIGH depending on operational needs.

Set the gain parameters:

Enter the desired value for Max Gain (e.g., +6 dB)
Enter the desired value for Min Gain (e.g., -12 dB)
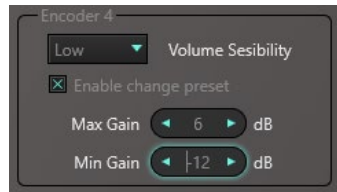
By following this procedure, you will be able to correctly configure each Encoder to control the inputs or outputs with the desired parameters.

30C Programmed Encoders level Area

This section of the window serves as a visual reference for the technician/programmer, to monitor the levels of all the enabled encoders during programming and audio system setup.
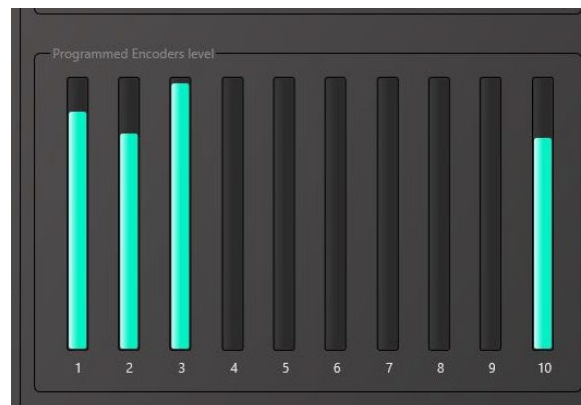
30C Rear Potentiometer Area

Guide to Calibration and Management of Volume with Analog Potentiometers

The "Rear/Potentiometer" window presents 6 identical panels for adjusting the volume through 6 optional analog potentiometers. These potentiometers must be connected via the port DB15,

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as described in the hardware manual. Below is the procedure for the calibration and management of volume gain.
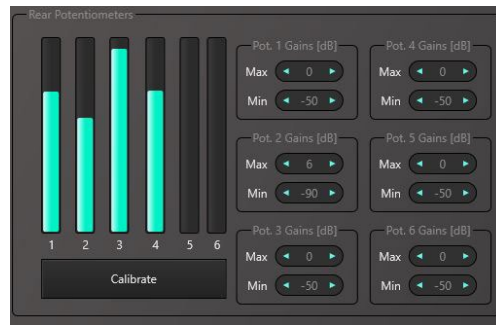
Calibration Procedure

- Connecting the Potentiometers: connect the potentiometers to the DB15 port.
- Positioning the Potentiometers: turn all the potentiometers to their maximum position.
- Calibration: press the "Calibrate" button in the "Rear/Potentiometer" window. This step measures the exact impedance of the analog potentiometers.

Gain Management (Gain)
Each potentiometer can control the volume gain in decibels (dB). Here's how you can configure the maximum and minimum gain for each potentiometer:

- **Max** (Maximum Gain): this parameter defines the maximum gain achievable by turning the potentiometer to the right.
- **Min** (Minimum Gain): this parameter defines the maximum reduction achievable by turning the potentiometer to the left.

Example of Gain Configuration:
- Max Parameter: +6 dB

    Turning the potentiometer fully to the right will result in a gain of +6 dB over the volume of the input associated with this potentiometer.
- Min Parameter: -12 dB

    Turning the potentiometer fully to the left will result in a reduction of -12 dB from the volume of the input associated with this potentiometer.

Summary:

- Connect the potentiometers to the DB15 port.
- Turn the potentiometers to their maximum position.
- Press "Calibrate" to calibrate the potentiometers.
- Set the gain parameters (Max and Min) for each potentiometer:

    Max: Sets the maximum increase in dB.

    Min: Sets the maximum reduction in dB.

By following this procedure, you will be able to correctly calibrate the potentiometers and manage the volume gain for each input.

APP Tablet

APP Configuration Procedure for the Tablet

The APP works in parallel with the Encoders, so the procedure to enable the ability to control the volume is the same.
Ensure the Encoder is activated: as an example, verify that Encoder 4 (or any other Encoder you wish to configure) is activated from point 8 or 15 of the main window.

You can now manage the volume both from the APP and the encoders simultaneously.
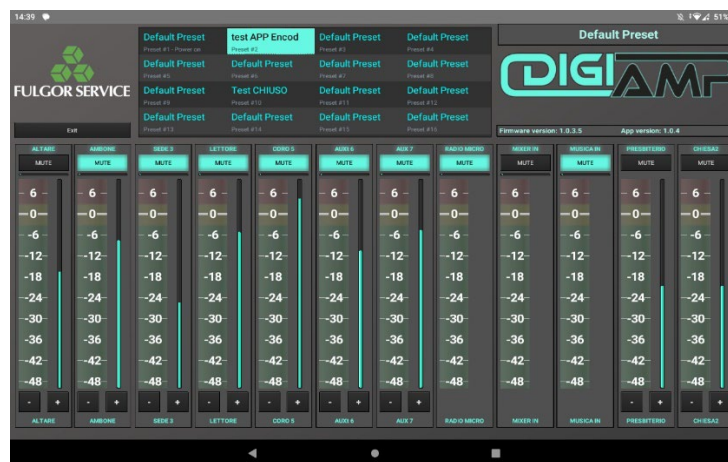
Changing Preset

In the window of each Encoder, there is a square to select (for example, see the Encoder 4 image).
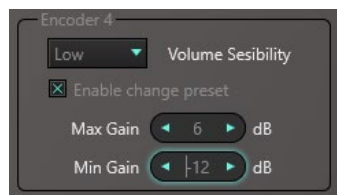
If selected, it will recall preset 4; if deselected, nothing will happen. When the PC is connected, the recall will not work.
All unselected Encoders will not recall anything.
Additionally, presets can be recalled via the APP, through RS485 (see codes at the bottom), or via a logical contact, as shown in the DB15 on the hardware manual.

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Features can be modified without any notice   V20241218

This window appears when you click the "Copy Preset" button (see point 35).

35C by selecting one or more checkboxes, it is possible to copy the current preset configuration to one or more other presets.
Clicking OK will close the window.
NOTE: The DIGIAMP will remain on the preset that is being worked on.

This window appears when you click the "Auto Mixer" button (see point 36).

36C From this screen, it is possible to calibrate the parameters of the automatic system that manages the inputs enabled from the main screen (see point 12).

The operation logic for calibrating the automixer is highlighted by the diagram in the red rectangle at point 36C.

"**Enable**" button: enables/disables the AM function. We recommend calibrating all parameters first (inputs, outputs, equalizations, etc.) and only then enabling the automixer operation by selecting the "**Enable**" checkbox.

> From the main screen, the inputs that are part of the automixer can be controlled:
> green = open, red = closed, gray = not in AM.

- **Attenuation**: attenuation in dB of the input gain when "closed" by the logic.
- **Level delta to be a leader**: required difference, expressed in dB, for an input to become the leader.
- **Max num open mic**: the maximum number of inputs that can be open simultaneously.
- **Delta level for sync opening**: the minimum difference, expressed in dB, required in relation to the leader's level for a channel to activate.
- **Noma**: this function allows for a greater working margin even with many microphones open simultaneously (as long as they are part of the AM). The parameter and management algorithm are not modifiable.
- **Min level for open inputs**: the minimum value required to open one or more inputs: the channels will be closed

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Features can be modified without any notice   V20241218

This window appears when you click the "**Other Options**" button (see point 39).

39C The window contains the following from top to bottom:

Plant
- Name: enter the project name, which will also be the File name when saved on the PC.

Change board password
- Follow the instructions

Network
- MAC Add: this is the unique machine number.
- DHCP: if selected, the machine will automatically assign itself a network address.
- IP Add: used to assign a static IP address to the machine.
- IP Mask: enter the subnet.
- IP Router: used to assign a static IP address to the router.
- Pc.Sw IP Port: enter the port number to be used via the network.
- APP IP Port: enter the port number to be used by the DIGIAMP APP.

Power Amp
- Led Pwfail: if green, all is OK; if red, there is a problem with the Amp board.
- Led DcError: if red, there is a DC power issue.
- Led Amp1 Clip: if red, channel 1 is clipping.
- Led Amp2 Clip: if red, channel 2 is clipping.
- Led Amp1 Mute: if red, channel 1 is muted.
- Led Amp2 Mute: if red, channel 2 is muted.
- Amp Temp: reads the temperature of the amplifier.

RS485
- If selected, it enables the transmission of the RS485 protocol via the DB15 connector, and it will be possible to send and receive strings.
- ID: this is the identification number of the DIGIAMP in the RS485 network.

Power
- Led ACFAIL: if on, there is an AC power issue.
- V.Alim: Board power supply level (reference 37V).
- V.Bat: Battery backup power supply level, used to store the Encoder levels (reference 3V).

- I am Master: if selected, it becomes the master.
- Enable APP control: if selected, it enables control from the DIGIAMP app with the dedicated tablet.

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Features can be modified without any notice   V20241218

4-Position Dip Switches

  By setting dip switches 1 and 2 to the Down position and dip switches 3 and 4 to the Up position, and then turning on the DIGIAMP, the device enters Plug and Play mode (the encoders light up white). There is a single configuration set by Fulgor Service with one preset suitable for most Churches (see configuration photo at the end of the manual). In this mode, it is not possible to connect to the DIGIAMP with any type of external control.

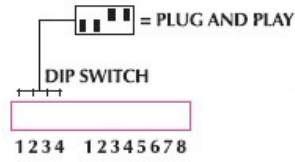**8-Position Dip Switches: Not used in this version.**

Update board firmware
-    Follow the instructions.

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Hardware - Plug and Play Configurations

Preset Plug and Play

6. APP DIGIAMP software and hardware manual

DIGIAMP Software and Hardware Guide

This manual allows you to fully take advantage of the many features of the DIGIAMP via the dedicated APP.

To use the APP, you must first create an intranet network with Wi-Fi connected to the DIGIAMP, using a common Ethernet router with Wi-Fi.

Only after connecting to the device you should change the connection type between the PC and the DIGIAMP by inserting a router (see diagram provided). At this point, configure the router with the network parameters according to your needs, keeping in mind that the tablet must connect via Wi-Fi created by the router and operate on the intranet with the DIGIAMP.

Alternatively, using the pre-configured router model FULGOR NET (optional), all parameters are already set. This router allows easy connection to the DIGIAMP via Wi-Fi using either the tablet or the PC. To connect to the intranet network "FULGOR NET," leave the network pcb configurations of the Wi-Fi devices set to DHCP mode.
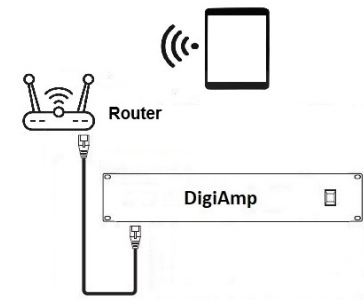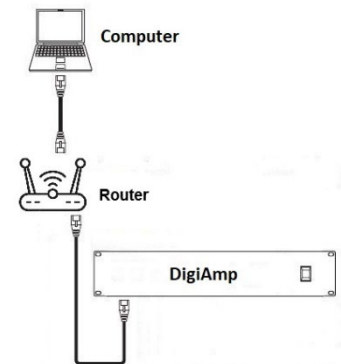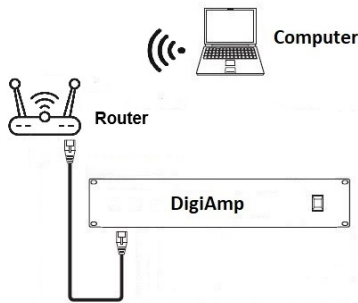
See the FULGOR NET router manual.

Enable software control for the DIGIAMP APP (Enable APP control) and verify that the communication port (APP IP Port) is set to 50003 (see point 39C).

Now, install the .APK file on the tablet with Android 13 or higher. This file contains the operational APP to connect to and control the DIGIAMP. Connect to the Wi-Fi intranet network created specifically for this purpose and launch the APP.

With the APP, you can control all the volumes that have been enabled via software to be managed by the APP, recall any Preset, and view the exact positions of input and output signals via the VU meter.

NOTE: The software for both the PC and tablet is not redundant, so do not use them simultaneously.

7. FULGOR NET Router Manual

Guide to the FULGOR NET Router Hardware **(optional)**

This manual allows you to fully take advantage of the many features of the pre-configured router. Below are some examples of how to connect the router, which creates a network named "FULGOR NET" that can be accessed without a password via a PC or tablet by configuring the network card to DHCP.
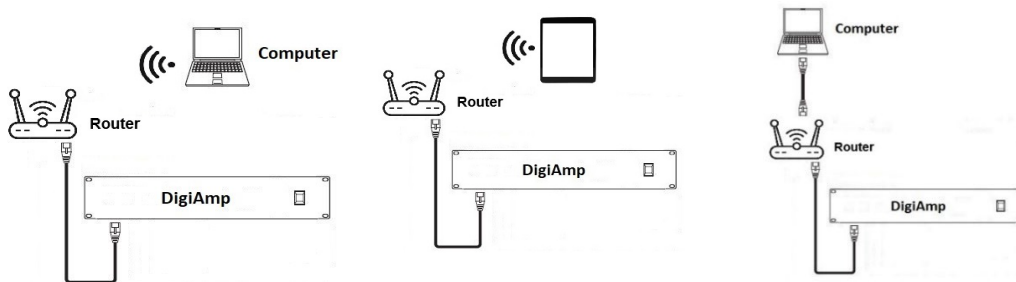
WARNING: Do not use the WAN port on the router (see diagram).

Features can be modified without any notice   V20241218
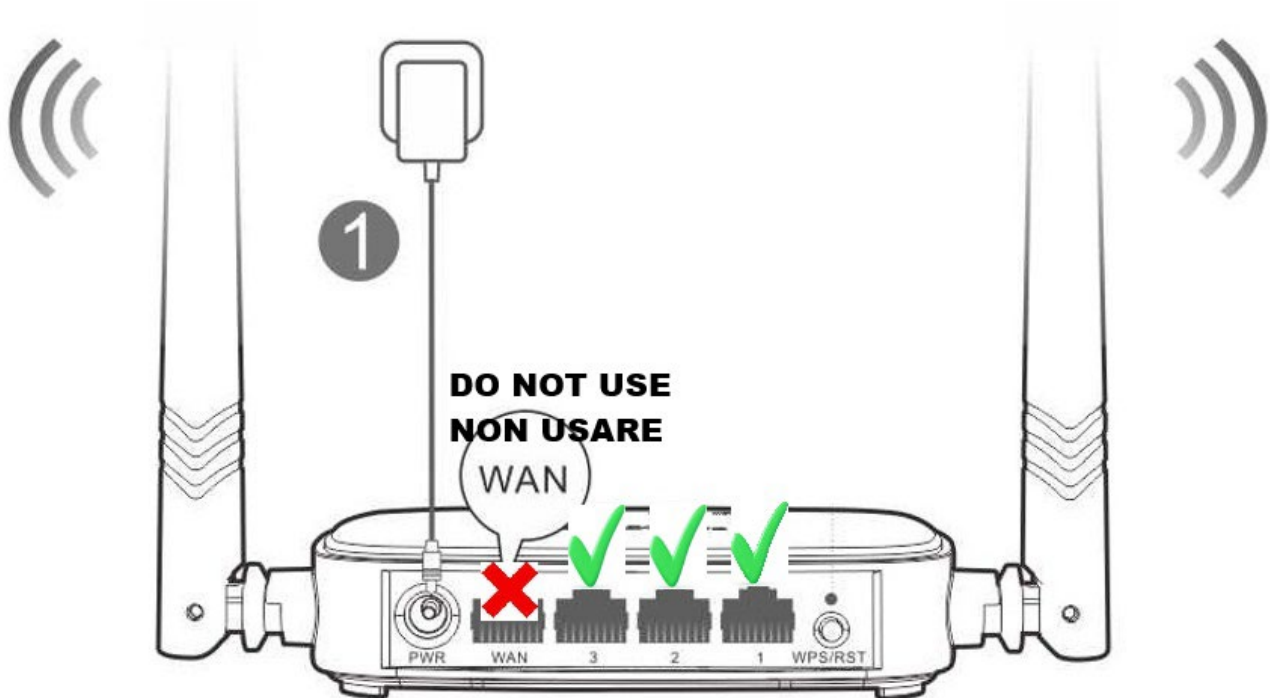
8. Manuale HARDWARE DIGIAMP

Guide to the DIGIAMP Hardware

This manual allows you to fully take advantage of the many features of the DIGIAMP.

Thank you for purchasing the DIGIAMP amplified processing matrix, produced and designed by Fulgor Service. Your DIGIAMP has been carefully crafted in every detail, from the selection of components to the final assembly. All FULGOR SERVICE products aim for complete customer satisfaction, highlighting that the product you have chosen benefits from advanced technology and robust components.
Inside the packaging, you will find the DIGIAMP, the 230VAC connection cable, and the instruction manual.

9. Precautions for use

This symbol indicates the presence of important instructions for use and information that should be carefully followed to ensure correct usage of the product.

This symbol indicates the presence of "dangerous voltage" which can pose a risk of electric shock. Pay special attention and proceed with caution.

1. Carefully follow all documentation provided with the product and keep it for future reference.
2. Follow the warnings.
3. Keep the packaging and check that all material is in excellent condition.
4. Do not use near water, and do not spill water or other liquids on the amplifier. Be careful not to use it with wet hands or when standing in water.
5. Do not use near heat sources such as radiators, heaters, or other heat-producing devices.
6. Check that the power cable is intact. Do not step on the cable and be careful not to crush the plug.
7. Connect the plug to a socket with grounding. Do not tamper with the plug. If the provided plug is not compatible with your socket, contact an electrician for replacement.
8. Connect to power networks with the voltage as indicated on the back of the amplifier.
9. Install the amplifier according to the instructions.
10. Do not obstruct ventilation ducts.
11. Disconnect during thunderstorms and when the device is not in use.
12. Connect only as per instructions.
13. Do not connect an input signal that exceeds the specified limits in the manual.
14. Do not connect the output of the device to the input of another channel on the same device.
15. Do not connect an output of the device to any power source such as batteries, power supplies or sockets, whether the amplifier is on or off.
16. Keep the volume controls at a minimum when turning the amplifier on or off.
17. Do not remove the top or bottom cover, as there is a risk of electric shock.
18. Do not attempt to repair the product; contact qualified personnel.
19. Clean only with a dry cloth.
20. The product should be serviced by qualified personnel if:

- The power cable or plug is damaged
- The product has been exposed to rain or humidity
- Liquid has entered the unit
- An object has fallen on the unit

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- The unit has fallen and is damaged
- The product seems to malfunction or shows a significant performance change.

21. Close supervision is required if the product is used in the presence of children or inexperienced adults.
22. This product may produce sound levels that can cause hearing damage. Pay special attention and avoid prolonged operation at high volume levels or at uncomfortable levels. If you experience hearing loss or ear ringing, consult an audiometric specialist.

9.1. Declaration of Conformity

This device complies with the requirements of the Electromagnetic Compatibility Directive 2014/30/EU, and the Low Voltage Directive 2014/35/EU.

Applicable Standards:

- EN55103-1 (Emissions)
- EN55103-2 (Immunity)
- EN60065, Class I (Safety)

9.2. User's Responsibility
9.2.1 Damage to speakers

Always verify the peak and continuous power ratings of your speakers. This amplifier is extremely powerful and can potentially be dangerous for both the speakers and the user. Most speakers can be easily damaged or destroyed. Even with the gain reduced through the attenuators on the amplifier's front panel, maximum output power can still be reached if the input signal level is sufficiently high.

9.2.2 Dangerous Output Voltages

Amplifiers can generate dangerous output voltages. Do not touch any exposed speaker cables while the amplifier is operating.

9.2.3 Radio Interference

These limits are defined to provide reasonable protection against harmful interference from electrical devices. If this product is not installed or used in accordance with the instructions, it may interfere with other devices, such as radio receivers. However, it is not guaranteed that interference will not occur in a particular installation. If the device interferes with radio communication equipment (this can be tested by turning the device on and off), the user must attempt to eliminate the interference by adopting one or more of the following measures:

- Increase the distance between the device and the receiver.

- Connect the device to a socket on a different circuit from the receiver.

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- Reorient or move the antenna of the receiving device.

- Verify that the affected unit complies with EMC immunity limits (it should bear the CE mark). All electrical devices sold within the EU must be certified for immunity against electromagnetic fields, high voltages, and radio interference.

- Contact qualified and authorized personnel.

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10. DIGIAMP Introduction

It is recommended that improper use could compromise the correct functioning of the device; therefore, careful and correct usage is strongly advised. Please read this manual carefully as all the information contained is vital for the safe operation of your device.

10.1   Installation/Mounting

This FULGOR SERVICE product is designed for surface use (e.g., table) or for installation in standard 19" racks.

Maximum dimensions of the DIGIAMP unit:
- Width: 480mm
- Height: 88mm
- Depth: 280mm

Thanks to its unique mechanical design, the DIGIAMP offers excellent heat dissipation even in the most demanding rack installations. The DIGIAMP does not have internal fans, which over time can cause issues or inconvenience. The heatsink placed on the side of the unit is capable of dissipating a large amount of heat, and the oblique position of the heatsink allows the dissipated heat to rise laterally and upwards.

Particular attention should be paid when installing the DIGIAMP to avoid placing it in:

- Environments with already very high temperatures.
- Completely enclosed spaces that prevent any airflow.
- Environments with excessive dust, humidity, or water near the product.
- Areas with strong magnetic fields.
- Environments with strong vibrations or tremors.

11. **Description**

DIGIAMP by FULGOR SERVICE represents an evolution of two historic series, the M series and the AMP series. It combines the versatility of a digital matrix with a dual amplifier output of 125W per channel, offering a single, highly performant product. It delivers exceptional performance and a range of features specifically designed to address and optimize acoustic challenges. Capable of creating an excellent sound experience even in highly professional settings.

12. **DIGIAMP Front Panel**
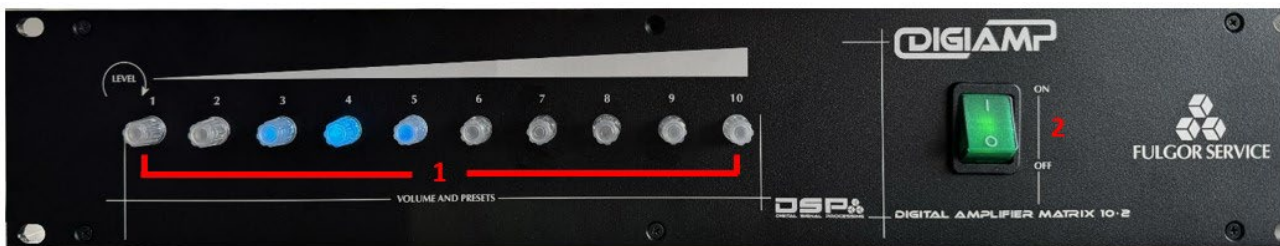
1. Encoders 1 – 10 control volumes and presets (which can be programmed via software).
2. DIGIAMP Power Switch: when the device is powered on, the power button is illuminated in green.

Multifunction Encoders 1 – 10

In the DIGIAMP, the 10 encoders have multiple functions:

A. Recall 10 preset
B. Adjust the volume
C. General Information on the device status

"A" The DIGIAMP, after powering on, always defaults to preset 1, indicated by Encoder 1 lighting up blue. By clicking on an encoder (programmed as a preset), the selected preset is recalled, and the corresponding encoder lights up blue. This applies to any encoder programmed with a preset.

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"B" When programmed, the encoders can adjust the signal of Inputs or Outputs. Turning the transparent knob of an encoder programmed as a volume control to the right will cause all 10 encoders to function as a volume bar/scale, lighting up green from left to right.

"C" all encoders are used as indicators for various machine statuses:

- Only one encoder lit up blue indicates which preset the DIGIAMP is currently using.
- When connected to a PC or tablet app, all encoders will alternate flashing blue.
- As a volume bar/scale, the encoders light up green.
- In **Plug and Play** mode, all encoders will alternate flashing white.
- Upon startup, all encoders will alternate flashing blue to check the system status.

---

13. DIGIAMP Rear Panel

---

1. <u>IEC C14 Male Power Socket with Fuse.</u>
2. <u>Two Amplified Outputs with Euro-Block Connector used for connecting the device to speakers (see below for details).</u>
3. RJ45 Network Protocol Connector: this is used to connect to a switch or access point and to utilize the PC software or Tablet application (refer to the hardware manual).
4. <u>Two Balanced Audio Outputs with Euro-Block Connectors (see below).</u>
5. <u>Ten Balanced Microphone/Line Audio Inputs with Euro-Block Connectors (see below).</u>
6. <u>DB15 Connector with 15ins: this connector enables communication between the DIGIAMP and various technologies, including RS485 with dedicated strings, logarithmic potentiometers (10K) to control volume, or to trigger presets via GPIO.</u>
7. <u>4-Position Dip Switch and 8-Position Dip Switch: these switches allow the setup of various operations upon powering on the unit.</u>
8. Small Switch which allows you to either join or separate the electrical ground of the internal boards in the DIGIAMP from the ground of the electrical power supply.

The underlined points will be explained in detail later in the manual.

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14. Connections and links to DIGIAMP

This section details all types of connections and links to the DIGIAMP.
It is recommended that installation be carried out by qualified audio technicians and that high-quality connectors and cables be used to avoid undesirable noise and hum.

Point 1
IEC C14 Male Power Socket with 4A 250V T Fuse: Use the provided power cord with an Italian three-prong plug or Schuko plug.

Point 2

Amplified Power Outputs 1 and 2.

These are two amplified outputs, each providing 125W RMS at 4Ω. For each output channel, one or more speaker lines can be connected. To facilitate installation, Euro-Block connectors with 4 pins are used. Each Euro-Block has 2 pins for negative and 2 pins for positive (see diagram on the left).
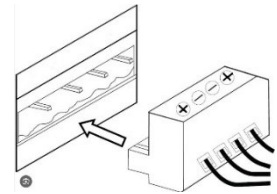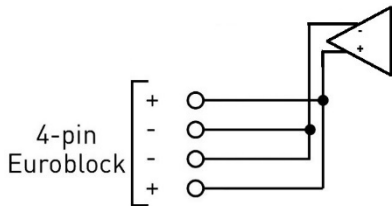
Point 4

Two Balanced Line Outputs with 3-Pin Euro-Block Connectors.
Each output channel can be connected to audio devices that can receive pre-amplified, balanced or unbalanced line signals (depending on the type of connection used).

Attention: the internal connection of the signals from the output channels (Out 1 and Out 2) is in parallel with the amplified outputs, so ensure these outputs are correctly managed.
Use only the Euro-Block connectors provided, connect the cables as shown in the diagram, and ensure the screws are properly tightened.

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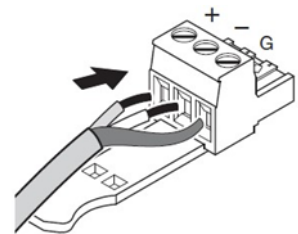
Point 5

Ten Balanced Micro/Line Inputs with 3-Pin Euro-Block Connectors.
Each input is managed via software, with sensitivity adjustable from 0dB (for line inputs) to +60dB (for microphone inputs), including 37V Phantom Power for microphones.

Types of Connections:
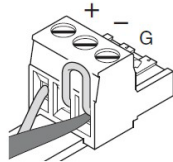
Unbalanced   Balanced
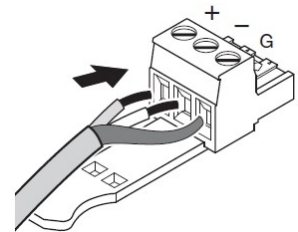
Point 6

DB15 Connector with 15 pins: this connector enables communication between the DIGIAMP and various technologies.

- Preset recall via binary code through GPIO.
- Analog potentiometers (up to 6) logarithmic 10K.
- RS485 with dedicated strings.

Socket contacts:
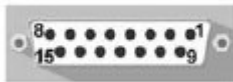
1	POT EXT 1	9	POT EXT 2
2	POT EXT 3	10	POT EXT 4
3	POT EXT 5	11	POT EXT 6
4	RS485 A	12	RS485 B
5	10 V	13	GND
6	PRESET 1	14	PRESET 2
7	PRESET 4	15	NC
8	GND		

Changing configurations or recalling presets via GPIO with binary logic. You can create a control panel or rotary switch for installation wherever most convenient for the user. Use the DB15 connector and an appropriate cable. Example: a typical RP6 schema with a rotary switch.
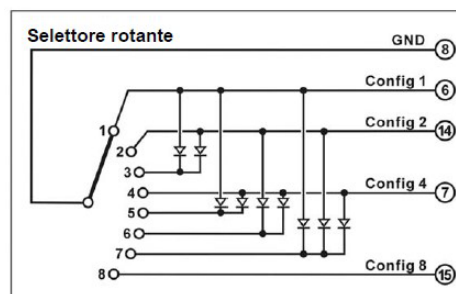
Remember to deactivate all preset recalls via software; otherwise, the GPIO contacts will not function (see Encoder Options, Point 30).

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A maximum of 6 external analog potentiometers (10K) can be used to control volumes remotely. Use the DB15 connector and an appropriate cable for this connection.

Example diagram here below
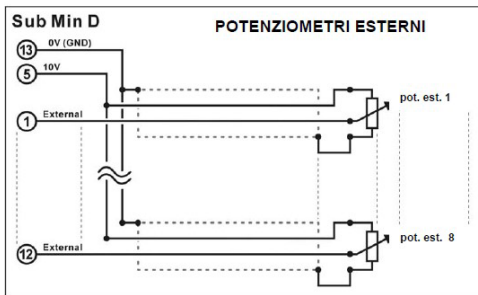
Each potentiometer can be assigned to any input or output channel, and it can control the signal within any chosen range.

Through the RS485 protocol, you can change configurations, adjust volumes, and mute inputs and outputs. Ensure the protocol is enabled via the software. Use the DB15 socket and a suitable cable.

RS485 General Notes

Remember to enable RS485 transmission via the software (see Other Options section).

The communication with the devices occurs via an asynchronous serial line configured as 8 data bits, one stop bit, and no parity.

The baud rate is 38400 bits/sec.

The electrical standard for the physical medium is an RS485 bus, properly terminated.

The RS485 bus can be up to 800 meters in length.

The bus termination consists of a resistor (100Ω) at both ends of the RS485 bus.

"Stub" connections (branches from the main bus) **SHOULD NOT** exceed 50cm in length.

The following pins are used in the DB15 remote control connector:

      Pin 4: Hot pole (or signal A) of the RS485 serial line.

      Pin 12: Cold pole (or signal B) of the RS485 serial line.

      Pin 15: If connected to pin 4, it terminates the bus with a 100Ω resistor.

A general format for a string to control the device is:

:ddmmccxxxx\<CR\>

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Where:

> **dd** - Destination device address in hexadecimal [1..1E].
> **mm** - Source device address in hexadecimal [1..1E].
> **cc** - Command code (as detailed below).
> **xxxx -** Data related to the command, may not be present if the command does not require data.
> **<CRZ -** Carriage return character (13 decimal, 0x0D hexadecimal, or \n).

PRESET CHANGE vis RS485

To select Preset 2, use the string **:0102CP01** and the return carriage character.

> **01** is the destination device address, which in this case is DIGIAMP; the number that identifies the target device can be changed in the **Other Options** window in the software.
>
> **02** is the source device address.
>
> **CP** is the command code to change preset.
>
> **01** is the selected preset number (Preset 2).

And finally, a return character will be needed (13 decimal, 0x0D hexadecimal or n).

Example

stringa	Preset	risposta
:0102CP00\n	1	:0201CP00cr
:0102CP0F\n	16	:0201CP0Fcr

CHANGING VOLUME via RS485

To select and change Volume 2, use the string **:0102CV0180** and the return character.

> **01** is the destination device address, in this case DIGIAMP; the number that identifies the target device can be changed in the **Other Options** window in the software.
>
> **02** is the source device address.
>
> **CV** is the command code to change volume.
>
> **01** is the selected volume (V-Pot 2).
>
> **80** is the medium volume level (128 in decimal).

And finally, a return character will be needed (13 decimal or 0x0D hexadecimal).

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In this case we set the volume of the V-Pot2 to half exact   .

stringa	potenziometro	risposta
:0102CV0180\n	V-Pot2, volume 128 dec.	:0201CV0180cr

NOTE 1: in all strings you must use hexadecimal values (except the carriage return character). The volume value can vary from minimum 00 (0 decimal) to maximum FF (255 decimal).

NOTE 2: the maximum number of callable presets is 16, of controllable volumes is 10. If we have a value in the code that exceeds the maximum number of numbers managed, the machine may respond incorrectly.

Point 7

Dip Switches (4-Position and 8-Position).

Up firmware version 1.0.4.2, the 8-position DIP switch is inactive. The 4-position DIP switch includes a configuration called Plug and Play, which allows the DIGIAMP to be used without needing to be configured via a PC.
To enter Plug and Play mode, set the DIP switches as shown in the figure and then turn the unit on. As confirmation, the encoders will flash white back and forth.
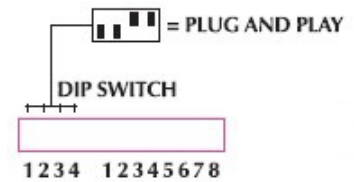
This configuration can be managed via the software.

15. Technical product specifications

Sampling frequency	48KHz/44,1KHz
Frequency response	from 20Hz to 20KHz, ±1,5dB
Dinamic	Higher than 101dB
Inputs	10 Micro/Line balanced Max Gain +60dB Euro-Block 3pin connectors (pitch from 5,08mm)
Outputs	2 Line balanced Level Max +24dBu Euro-Block 4pin connectors (pitch from 5,08mm)
Amplified outputs	2x125W RMS on 4Ω each Euro-Block 4pin connectors (pitch from 5,08mm)
Front indicators	10 multi-function encoders
Number of Encoder	10
Number of Preset	16
Maximum number of devices that can be used simultaneously in a single network	6 with firmware 1.0.4.2
Operating temperature range	0°C ~ 45°C
Storage temperature range	-20°C ~ 60°C
Phantom power supply	37V (per channel; individually adjustable)
Supply voltage	240V 50/60Hz
Power consumption	165W max.
Lenght of electrical cable	1,5m
Dimensions (L x H x D)	480 x 88 x 280mm 2U
Weight	4,9kg
Optionis sold separately	MCONTROL, APP for Android

16. Environmental Packaging

Packaging Disposal according to Italian Legislative Decree 116/2020

Below are the codes of our packaging related to disposal.

Box (Corrugated Paper)
Paper (PAP 20)

♲ Separated Collection (Paper)

- Check the provisions of your municipality
- Empty packaging before collection
- Reduce the volume of the box

Box (Corrugated Paper)

Paper (PAP 21)

♲ Separated Collection (Paper)

- Check the provisions of your municipality
- Empty packaging before collection
- Reduce the volume of the box

Service Booklets and documents
Paper (PAP 22)

♲ Separated Collection (Paper)

- Check the provisions of your municipality
- Remove the back (LDPE 4) before harvesting
- Reduce the volume of the manual

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Plastic bags
Plastic (LDPE 4)

♲ Separated Collection (Plastic)

- Check the provisions of your municipality
- Empty packaging before collection
- Reduce the volume of the bag

Plastic bag
Plastic (LDPE 4)

♲ Separated Collection (Plastic)

- Check the provisions of your municipality
- Empty packaging before collection
- Reduce the volume of the bag

Plastic
Low-density polyethylene (LDPE 4)

♲ Separated Collection (Plastic)

- Check the provisions of your municipality
- Empty packaging before collection
- Reduce the volume of the packaging

Plastic
Polyethylene (PP 5)

♲ Separated Collection (Plastic)

- Check the provisions of your municipality
- Empty packaging before collection
- Reduce the volume of the packaging

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Pallet
Wood (FOR 50)

♲ Separated Collection (Wood)

- Check the provisions of your municipality
- Empty packaging before collection
- Reduce the volume of the packaging

Plastic
Low-density Polyethylene (LDPE 4)

♲ Separated Collection (Plastic)

- Check the provisions of your municipality
- Empty packaging before collection
- Reduce the volume of the packaging

Plastic
Low-density Polyethylene (O 07)

♲ Separated Collection (Plastic)

- Check the provisions of your municipality
- Empty packaging before collection
- Reduce the volume of the packaging

Plastic
Low-density Polyethylene (LDPE 4)

♲ Separated Collection (Plastic)

- Check the provisions of your municipality
- Empty packaging before collection
- Reduce the volume of the packaging

FULGOR SERVICE
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17. WARRANTY CERTIFICATE

Dear Customer,
We are pleased to inform you that it has been transposed into Italian law, through Legislative Decree no. 24 of 2 February 2002, a community directive on sales and consumer protection.
This Directive makes a distinction between consumer goods for private use and those used exclusively in the professional field.
In particular, the new standard applies only to consumer goods for private use, and consequently consumer goods used in the course of their professional or business activities will be guaranteed according to the normal general sales rules provided by the civil code.
In both cases, FULGOR SERVICE, by virtue of the quality of its products, applies a 24 months warranty period.

Warranty management
As Directive 1999/44 / EC represents a high level of consumer protection, the decree governs certain aspects of sales contracts concluded between **the consumer and the seller** and guarantees relating to the consumer goods sold.
For the purpose of the Legislative Decree, it is understood that:
For Consumers any natural person who purchases consumer goods for use solely in the private sector and hence outside his or her professional or business activity;
For Seller, any natural or legal person, whether public or private, who uses one of the above-mentioned contracts in the course of his or her business or professional activity;
For the sake of consumption any mobile goods, with express exclusion of the forced sale of goods; Water and gas, when not packaged for sale in a volumetric volume or in a specified quantity.
Consumers are entitled to rights under applicable national legislation governing the sale of consumer goods. The warranty does not affect these rights.
The warranty is valid in all EU Member States.
According to the new legislation, any claim by the consumer to the warranty must be submitted to the retailer and / or point of sale at which the product was purchased.
FULGOR SERVICE has also set up a toll-free number 800-804067. By calling this number we will be able to collect your reports regarding warranty issues and possibly arrange direct return / repair methods.
The number is active from Monday to Friday (excluding holidays), from 8am to 12.30pm and from 14am to 5pm in the winter months and from 7.30am to 12.30pm during the summer months (July and August)

GUARANTEE CLAUSES
The product is guaranteed for a period of 24 (twenty-four) months from the date of purchase. Warranty means repairing or replacing equipment that is defective in the sales contract (and generally product information), the warranty is free of charge and excludes shipping costs for the Consumer.
The warranty is valid only if this warranty certificate, completed in all its parts by the buyer and accompanied by a valid proof of purchase (copy of the invoice or tax receipt for the consumer), is presented to the Of the request for intervention. The non-compliant product must be returned to the original packaging, complete with all accessories.
The serial number on the product must not be erased or made unreadable, since the warranty is invalid.
The warranty does not apply in the case of damage caused by improper use, use or installation that does not comply with the instructions given, tampering, product or serial numbering, accidental or negligent damage to the buyer with particular reference to the outside parts. It also does not apply in case of faults due to connections of the device at voltages other than those indicated or sudden changes in the mains voltage to which the appliance is connected, as well as in case of faults caused by liquid infiltration, fire, discharges Inductive / electrostatic or discharge caused by lightning, overvoltages or other phenomena outside the device.
Warranty includes parts subject to wear after use, batteries when supplied, connectors and connectors, connectors, external parts and plastic supports, which do not have manufacturing defects.
They are excluded from the warranty: periodic checks, software updates, settings, maintenance.

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After the warranty period has expired, the assistance will be charged by charging the replaced parts, labor and transport costs, according to the rates in force.
The guarantee is provided by: FULGOR SERVICE snc., Via Caduti del lavoro 58, 19021 Arcola - La Spezia.
For each dispute, the Forum of La Spezia will have sole jurisdiction.

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18. CONSUMER DATA

Fill in every part and join the product. In the case of warranty, please always enclose a copy of the valid **proof of purchase** and send the product to the following address: FULGOR SERVICE snc., Via Caduti del lavoro 58, 19021 Arcola La Spezia or fax 01 87 952326.

Surname _____ Name_____

Parish/Religious Institute/other_____

Street _____

Zip Code _____   City _____   Prov _____

Tax Code/VAT _____

19. PRODUCT DATA

MODEL _____SERIAL NUMBER _____FREQ.MHz _____

DATE OF PURCHASE __ / __ / __ N. INVOICE _____ RESELLER _____

AT	BE	BG	HR	CY	CZ	DK
EE	FI	FR	DE	EL	HU	IE
IT	LV	LT	LU	MT	NL	PL
PT	RO	SK	SI	ES	SE	UK

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20. Personal Data Protection Code

Dear Customer,
We inform you that FULGOR SERVICE, pursuant to art. 13 of Legislative Decree 196/2003, will process your data provided by you in compliance with the legislation on the protection of the processing of personal data. The disclosure of the data is optional but any refusal to provide them will result in the impossibility of performing the obligations arising out of the repair service of which you are a party (Article 13, paragraph 1, letter C, Legislative Decree 196 of 2003). The personal data you provide is collected by electronic means and processed, including by means of electronic means, directly and / or through delegated third parties (repair and delivery company) for the following purposes:
- **purposes related to the execution of the service and the management of the repair and return of the products sent for repair.**
In any case, your data will not be disclosed (if not to a repair or redemption company) or sold to third parties. Within FULGOR SERVICE the data can only be acquired by persons specifically assigned to the Information Systems, Administration and Accounting, Customer Service departments.
According to art. 7 of Legislative Decree 196/2003 You have the right, at any time, to obtain from the Data Manager the information on the processing of your data, the manner and purpose and the logic applied to it.
The Data Controller is the legal representative of FULGOR SERVICE snc., Via Caduti del lavoro 58, 19021 Arcola - La Spezia. www.fulgorservice.it

Date _____   Signature _____   Stamp and signature of the reseller

Il simbolo di un bidone della spazzatura barrato da una croce, indica che il prodotto non deve essere smaltito con altri rifiuti domestici al termine del ciclo di vita, ma essere oggetto di raccolta separata. Per evitare eventuali danni all'ambiente e alla salute umana dovuti alla presenza di sostanze pericolose, si invita l'utente a conferire detti rifiuti al distributore/Rivenditore all'atto dell'acquisto di un nuovo prodotto o tramite conferimento presso i centri di raccolta designati dalle autorità locali. Sono previste sanzioni in caso di smaltimento abusivo di detti prodotti.

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