User manual

TQ series

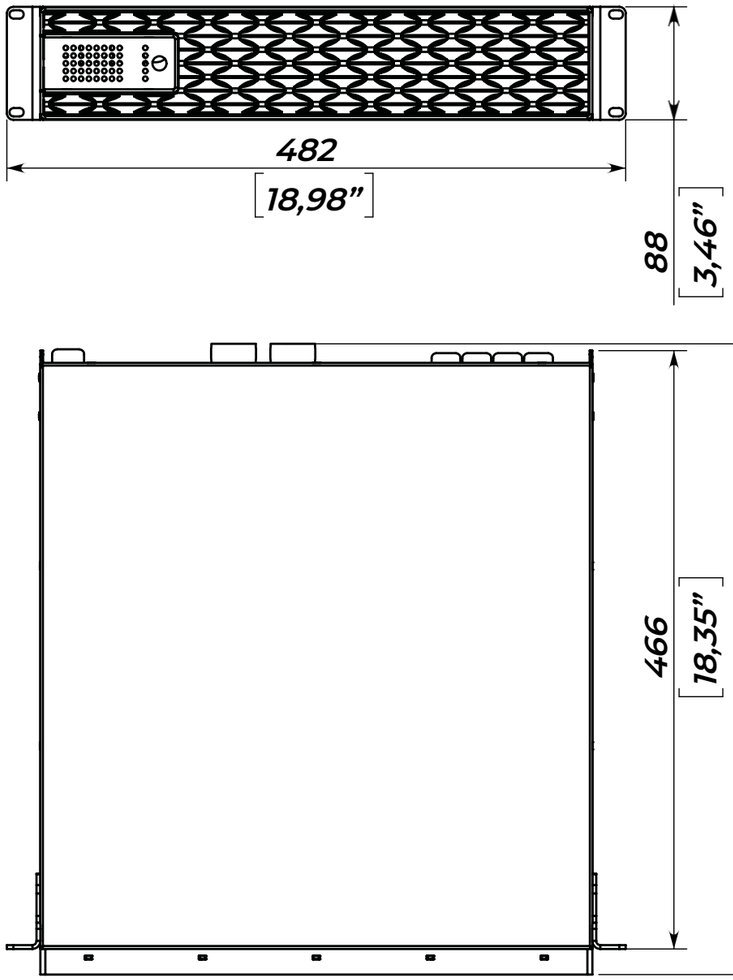
Power amplifiers

Models:

TQ-3000W
TQ-4000W
TQ-8000W

Contents

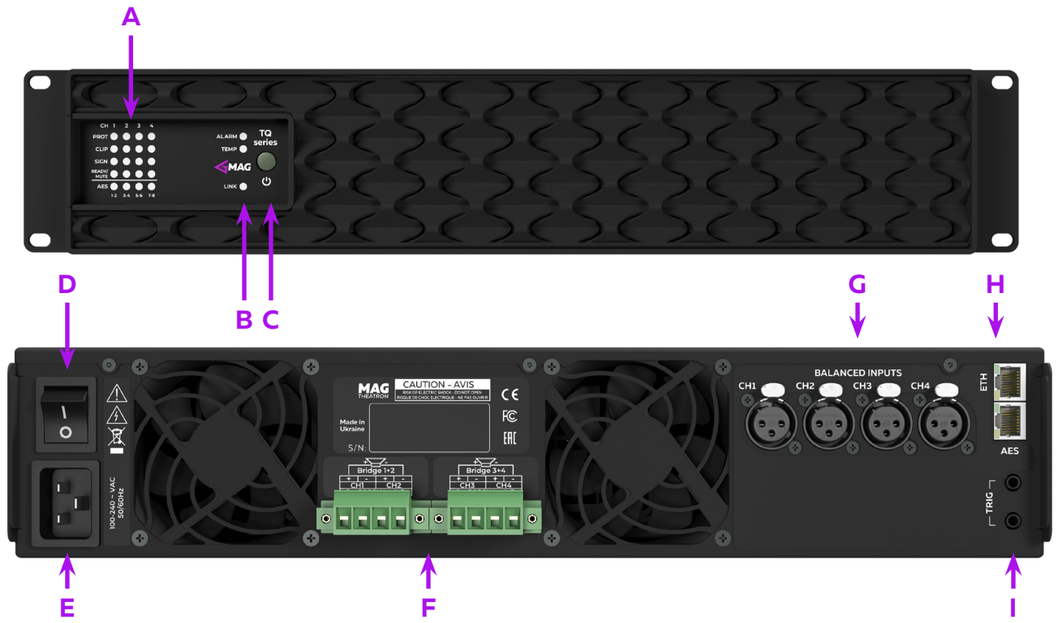
Panel A. Dimensions



Panel B. Specifications

	TQ-3000W	TQ-4000W	TQ-8000W
Frequency range	16 Hz - 24 kHz	16 Hz - 24 kHz	16 Hz - 24 kHz
Channel count	4	4	4
Nominal power, per channel, 4 Ohm load	750 W	1000 W	2000 W
Nominal power, per channel, 8 Ohm load	400 W	750 W	1000 W
Nominal power, two channels bridged, 8 Ohm load	1400 W	2000 W	3000 W
Nominal power, two channels bridged, 16 Ohm load	700 W	1000 W	2000 W
Amplifier	Class D high efficiency		
Web UI	Theatron Web UI		
Input sensitivity	+16 dBu / +4 dBu		
Maximum input level	+22 dBu / +10 dBu		
Input impedance	10 kOhm unbal., 20 kOhm bal.		
Crosstalk separation	100 dB @ 1 kHz		
THD	< 0,5%		
Power consumption, 1/8 of max output power @ 8 Ohm	400 VA	500 VA	1000 VA
Damping factor, 8 Ohm	> 500 @ 100 Hz		
S/N ratio	108 dB		
Connectors	4 x XLR bal. input, 2 x 4-pin Phoenix speaker terminals, RJ-45 Ethernet, RJ-45 AES3 input, 2 x 3,5” TRS trigger in/out		
Dimensions (W×H×D)	486 × 87 × 505 mm / 19.13” × 3.43” × 19.88”, 2U		
Net weight	8.2 kg / 18.1 lbs	8.6 kg / 19 lbs	9.7 kg / 21.4 lbs

Panel C. Front and rear panels



A. Channel status LEDs:

READY/MUTE - indicates normal channel operation and show the channel mute status.

SIGN. - indicates a signal on a channel's input.

CLIP - indicates a channel's limiter is on.

PROT. - indicates a channel's thermal protection or malfunction.

B. Amplifier status LEDs:

WARN - indicates data exchange error.

TEMP (flashing) - indicates failure of any of the fans.

TEMP (always lilt) - amplifier temperature is 68°C±5°.

LINK - shows the ETH port data exchange.

C. Stand By / On button.

D. Mains switch.

E. The C19 input power socket.

F. 4-pin Phoenix output connectors.

G. 4 x Balanced XLR inputs.

H. ETH RJ-45 socket.

I. 2x TRS 3,5mm TRIGGER inputs

1. Safety instructions

EXPLANATIONS OF GRAPHICAL SYMBOLS

The triangle with the lightning bolt is used to alert the user to the risk of electric shock.

The triangle with the exclamation point is used to alert the user to important operating or maintenance instructions.

The CE mark indicates compliance with low voltage and electromagnetic compatibility.

The symbol for earth/ground connection.

The symbol indicating that the equipment is for indoor use only.

The symbol for conformity with Directive 2002/96/EC and Directive 2003/108/EC of the European Parliament on waste electrical and electronic equipment (WEEE).

WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT ATTEMPT TO OPEN ANY PART OF THE UNIT. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

TO COMPLETELY DISCONNECT THIS APPARATUS FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE.

THE MAINS PLUG OF THE POWER SUPPLY CORD MUST REMAIN READILY ACCESSIBLE.

DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE, DRIPPING OR SPLASHING LIQUIDS. OBJECTS FILLED WITH LIQUIDES, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS APPARATUS.

WHEN THE UNIT IS INSTALLED IN RACK CABINET OR A SHEFL, MAKE SURE THAT IT HAS SUFFICIENT SPACE ON ALL SIDES TO ALLOW FOR PROPER VENTILATION (50 CM FROM THE FRONT AND REAR VENTILATION OPENINGS).

CONNECTIONS TO THE MAINS SHALL BE DONE ONLY BY AN ELECTRO TECHNICALLY SKILLED PERSON ACCORDING TO THE NATIONAL REQUIREMENTS OF THE COUNTRIES WHERE THE UNIT IS SOLD.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions carefully.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. Do not use this equipment near water.

6. Clean only with a dry cloth.

7. Do not block any ventilation openings. Install following the manufacturer's instructions.

8. Do not use near heat sources such as stoves, heat registers, radiators, or other equipment (including amplifiers) that produces heat.

9. Do not use the unit near open fire sources.

10. Connect the unit only to the electric network with grounding. Use only electric plugs that provide grounding.

11. Protect the power cord from being walked on, pinched, or otherwise damaged.

12. Use only accessories specified by the manufacturer.

13. Unplug this unit during lightning storms or when unused for long periods.

14. Refer all servicing to qualified service personnel. Servicing is required when the system has been damaged in any way, such as a power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the unit, the unit has been exposed to rain or moisture, does not operate normally, or has been dropped.

15. WARNING - TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS SYSTEM UNIT TO RAIN OR MOISTURE.

THIS UNIT CONTAINS POTENTIALLY LETHAL VOLTAGES. TO PREVENT ELECTRIC SHOCK OR HAZARD, DO NOT REMOVE THE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

INSTALLING OF THIS UNIT MUST BE PERFORMED ONLY BY QUALIFIED TRAINED PERSONNEL FOLLOWING APPLICABLE SAFETY RULES.
DO NOT ALLOW INSTALLATION OF THIS UNIT IF INSTALLATION HARDWARE IS BROKEN, BENT, PARTS ARE MISSING OR IS OTHERWISE DAMAGED.

2. Regulatory information

FCC COMPLIANCE NOTICE

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, under part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used following the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

EC DECLARATION OF CONFORMITY

Manufacturer:
MAG Audio LLC
Merezhna 2
Bila Tserkva, Kyiv region
09100 Ukraine

We declare that under our sole responsibility the products:

Model Names: TQ-3000W, TQ-4000W, TQ-8000W

Intended use: Home Cinema Audio Amplifier

Conform with the provisions of the following EC Directives, including all amendments, and with national legislation implementing these directives:

- 2006/95/EC Low Voltage Directive

- 2004/108/EC Electromagnetic Compatibility Directive

- 2002/95/CE RoHS Directive

The following harmonized standards are applied:

EN 55103-1:2009 /A1:2012

EN 55014-1:2006 /A1:2009 /A2:2011

EN 55022:2010 /AC:2011

EN 61000-3-2:2006 /A1:2009 /A2: 2009

EN 61000-3-3:2013

EN 61000-3-11:2000

EN 61000-3-12:2011

EN 55103-2:2009 /IS:2012

EN 61000-4-2:2009

EN 61000-4-3:2006 /A1:2008 /IS1:2009 /A2:2010

EN 61000-4-4:2012

EN 61000-4-5:2006

EN 61000-4-6:2014

EN 61000-4-11:2004

EN 60065:2002 /A1:2006 /A11:2008 /A2:2010 /A12:2011

Bila Tserkva,

18 Aug 2023

Alexey Asanov

CEO

For compliance questions: info@mag-audio.com

3. TQ series

3.1. Introduction

Congratulations on buying your MAG Theatron TQ series amplifier. Before you get started, please read this user's manual and safety instructions. In case you have any questions, please do not hesitate to contact your dealer of MAG Theatron.

MAG Theatron is the leading European professional and cinema audio equipment brand. MAG Theatron presents a comprehensive range of audio products, including screen, surround speakers, and subwoofers for high-demanding home cinemas, accessories, and amplification for smooth integration and convenient exploitation.

3.2. About the amplifier platform

Experience the epitome of luxury in high-end sound technology with TQ amplifiers, crafted to elevate your home cinema experience to unparalleled heights. Each TQ amplifier delivers four channels, each capable of up to 2000W of pure, powerful sound, ensuring every note and nuance is brought to life with breathtaking clarity.

Featuring the sophisticated Theatron Web UI, you have complete command over every detail of the signal processing flow, allowing for a tailored and immersive audio experience. With cutting-edge cooling and heat dissipation systems, TQ amplifiers remain cool and whisper-quiet, even when operating at peak performance, offering an exceptional blend of power, precision, and poise.

3.3. Unpacking and checking for shipping damage

Your MAG amplifier has been completely tested and inspected before leaving the factory. Carefully inspect the shipping package before opening it, and then immediately inspect your new product. If you find any damage notify the shipping company immediately.

3.4. Disposal of the packing material

The transport and protective packing have been selected from materials that are environmentally friendly for disposal and can normally be recycled.

Rather than just throwing these materials away, please ensure they are offered for recycling.

4. Installation

The common installation of the amplifier is in rack cabinets: to limit the risk of mechanical damages, the amplifiers must be fixed to the rack using both frontal and rear mounting brackets.

Note: instead of connecting the amplifier to the power grid directly, plug the amplifier's mains connection to a power distribution panel inside the rack cabinet.

4.1. Cooling

Install the amplifier in a well-ventilated location: the ventilation openings must not be impeded by any item such as newspapers, tablecloths, curtains, etc.; keep a distance of at least 50 cm from the front and rear ventilation openings of the amplifier.

Digital series amplifiers implement a forced-air cooling system to maintain low and constant operating temperatures. Drawn by the internal fans, air enters from the front panel and is forced over all components, exiting at the back of the amplifier.

The amplifier's cooling system features "intelligent" variable-speed DC fans which are controlled by the heatsink temperature sensing circuits: the fans' speed will increase only when the temperature detected by the sensors rises over carefully predetermined values. This ensures that fan noise and internal dust accumulation are kept to a strict minimum.

Should however the amplifier be subject to an extreme thermal load, the fan will force a very large volume of air through the heat sink. In the extremely rare event that the amplifier should dangerously overheat, sensing circuits shut down all channels until the amplifier cools down to a safe operating temperature. Normal operation is resumed automatically without the need for user intervention.

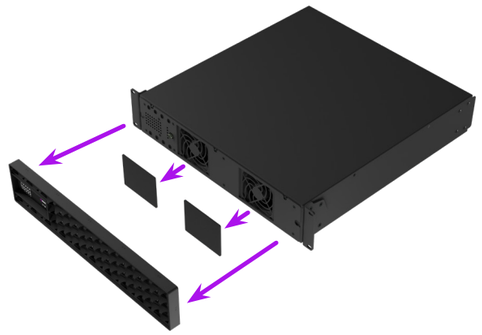
In case a rack with closed back panels is used, leave one rack unit empty for every four installed amplifiers to guarantee adequate airflow.

4.2. Cleaning

Always use a dry cloth for cleaning the chassis and the front panel. Air filter cleaning should be scheduled according to the dust levels in the amplifier's operating environment.

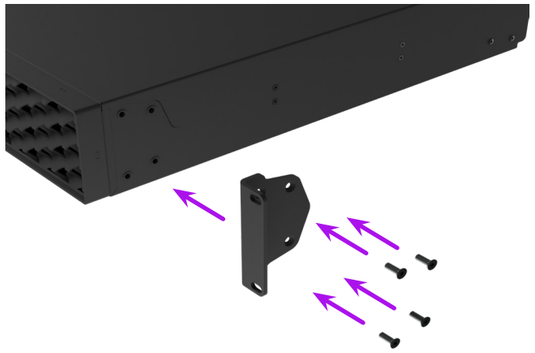
Disconnect the AC mains source before attempting to clean any part of the amplifier

To clean the vent filter, remove the front panel, which is held by two magnets. Then remove two foam filters. They can be cleaned with compressed air or washed with lukewarm water. Make sure to let the filters completely dry out before returning them into the amplifier.



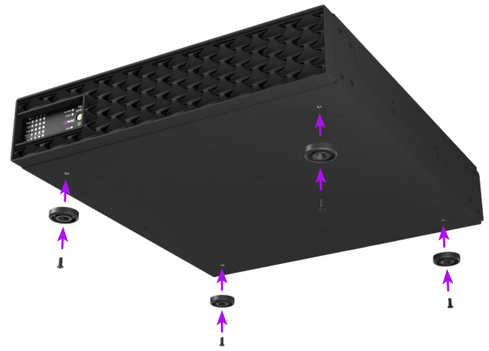
4.3. Installing rack adapters.

Install the two rack adapters onto your TQ amplifier to use it in the standard 19" rack.



4.4. Installing amplifier feet.

Install the four feet onto your TQ amplifier to use it as a stand-alone device.



4.5. AC Mains supply

The AC Main is connected via the IEC C19 connector.

Make sure the AC mains voltage used is within the acceptable operating voltage range: 115V-230V ±10%.

It is important to connect the ground for safety, do not use an adapter that disables the ground connection.

The TQ series amplifiers have an automatic power factor correction system - PFC - for a perfect mains network interface. The PFC minimizes the reactive power reflected on the network and reduces the harmonic distortion on voltage/current waveform: in this way, the amplifier is seen as a resistive load from the mains network. Furthermore, the system allows performance to be maintained even in case of varying mains voltage.

Connection to the main shall be done only by an electrotechnicaly skilled person according to the national requirements of the countries where the unit is sold.

4.6. Precautions regarding installation

Placing and using the amplifier for long periods on heat-generating sources will affect its performance. Avoid placing the amplifier on heat-generating sources. Install this amplifier as far as possible from tuners and TV sets. An amplifier installed close to such equipment may experience noise or generic performance degradation.

WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK:

- This device must be powered exclusively by earth-connected mains sockets in electrical networks compliant with the IEC 364 or similar rules.

- Install the amplifier into a rack cabinet.

- With a TQ amplifier, a sectioning breaker between the mains connections and the amplifier must be installed inside the rack cabinet. The suggested device for TQ-3000W, TQ-4000W and TQ-8000W is 10A class C or D.

- Before powering this amplifier, verify that the correct voltage rating is being used.

- Verify that your mains connection is capable of satisfying the power ratings of the device.

- Do not use this amplifier if the electrical power cord is frayed or broken.

- Output terminals are hazardous: wiring connections to these terminals require installation by an instructed person.

- Take care to secure the output terminal before switching the device on.

- Take care to secure the output terminal before switching the device on.

- To avoid electrical shock, do not touch any exposed speaker wiring while the amplifier is operating.

- Do not spill water or other liquids into or on the amplifier.

- No naked flame sources such as lighted candles should be placed on the amplifier.

- Do not remove the cover. Failing to do so will expose you to potentially dangerous voltage.

- It is necessary to verify these fundamental requirements of safety and, in case of doubt, require an accurate check by qualified personnel.

- The manufacturer cannot be held responsible for damages caused to persons, things, or data due to an improper or missing ground connection.

- Contact the authorized service center for ordinary and extraordinary maintenance.

5. Connections

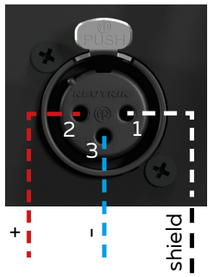
5.1. Signal grounding

There is no ground switch or terminal on the TQ series amplifiers. All shield terminals of input connectors are directly connected to the chassis. This means that the unit's signal grounding system is automatic. To limit hum and/or interference entering the signal path, use balanced input connections.

In the interests of safety, the unit MUST always operate with electrical safety earth connected to the chassis via the dedicated wire in the 3-wire cable. (ref. Chapter 4:3. AC mains supply.) Never disconnect the ground pin on the AC mains power cord.

5.2. Analog balanced input

Balanced analog inputs are provided with two XLR female connectors.



5.3. Loudspeaker connections

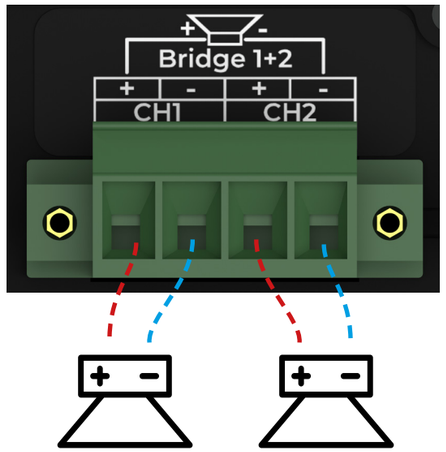
TQ-3000W, TQ-4000W, TQ-8000W

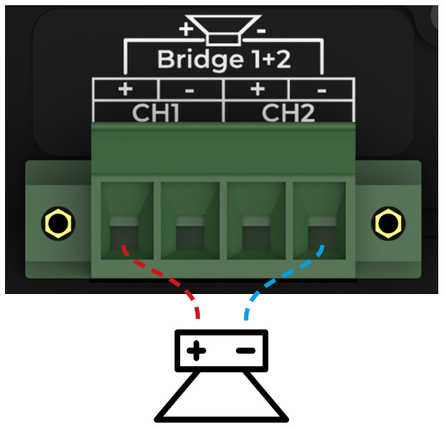
CLASS2 WIRING

CLASS 2 WIRING

Phoenix (Euroblock) terminal with 4 pins is provided for loudspeaker connections.

To remain within safe operating conditions, when using low impedance loads - i.e. 4 Ohm or less (8 Ohm or less in bridge mode) - connections must be made with a four-wire cable. Use suitable wire gauges to minimize power and damping factor losses in speaker cables.





5.4. Ethernet connection

Ethernet connection is provided via the rear port labeled "ETHERNET".

MAG Cinema recommends the use of Ethernet Cat5 straight-through - patch - cables with pin/pair assignments TIA/EIA-568-B, i.e. T568B.

			568A	568B
1	ETH TX+	GREEN/WHITE		
2	ETH TX-	GREEN		
3	ETH RX+	ORANGE/WHITE		
4	nc	BLUE		
5	nc	BLUE/WHITE		
6	ETH RX-	ORANGE		
7	nc	BROWN/WHITE		
8	nc	BROWN		

5.5. Trigger inputs

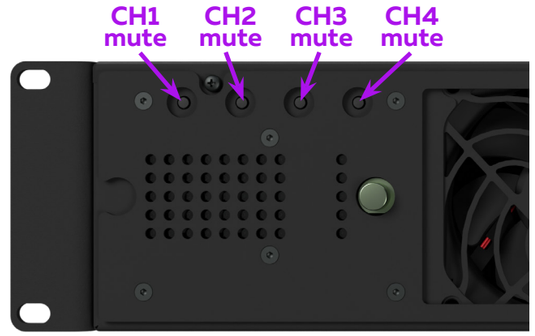
Two 3,5mm TS-jack inputs are provided for voltage trigger standby mode.

Apply **4V-30V** voltage to the trigger input to wake the amplifier from the stand-by mode. When the voltage is lifted, amplifier will automatically enter the stand-by mode.

The operation logic of the **trigger may be reversed** (i.e. amplifier will enter the stand-by mode on application of the voltage) using WEB UI -> Config -> Start parameter -> Standby trigger active level. Refer to 7.15.2 for more details.

6. Front panel mute

Detach the magnetically secured front panel to access the hard mute buttons.



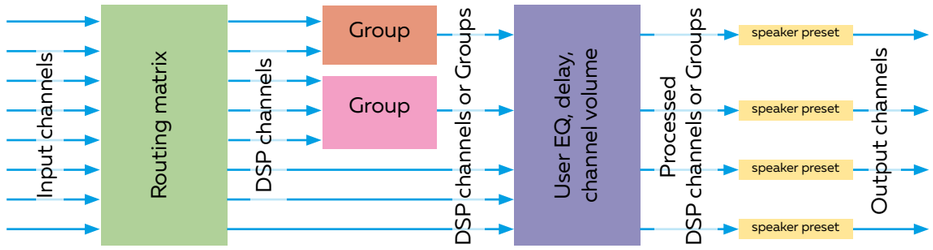
7. Theatron Web UI

7.1. About Theatron Web UI

The TQ offers an intuitive Web UI that brings the full power of our amplifiers to your fingertips. With comprehensive feature access, setting up your cinema system is now easier than ever. Simplify every aspect of customization, from channel routing and speaker preset management to room equalization and streamlined tuning through channel grouping. Convenient macro functions make recalling system presets as simple as pressing a button. Additionally, the Theatron Web UI provides system health monitoring and easy access to essential parameters like Master Mute or and Master Stand-by. Experience unmatched control and convenience with our TQ Series, and accelerate your set-up and tuning process today.

7.2 Processing signal flow

TQ series DSP signal processing flow is designed to combine powerful processing capabilities with ease of understanding for the operator.



- Physical Input channels are flexibly routed into DSP channels using the Routing matrix.

- DSP channels are primary processing units of TQ series DSP. DSP channels can be joined into groups for simultaneous process, or can be processed independently.

- DSP channels and groups are processed with user equalizer and delay adjustment.

- Speaker presets are assigned to processed DSP channels and groups.

- Processed DSP channels and groups with assigned speaker presets are sent to output channels.

7.3. Log in to Web UI

To access the Web UI of a Digital series amplifier, connect the PC to same network that allows the access to the amplifiers. Type the amplifier's IP address in the web browser.

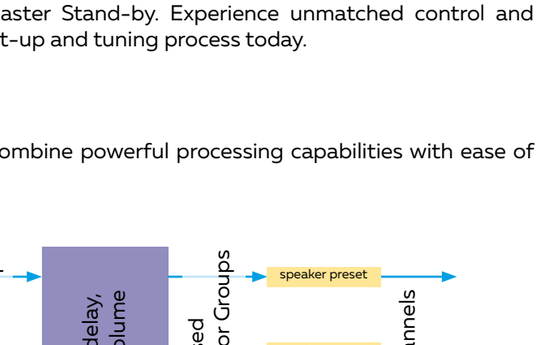
Default TQ series IP: **192.168.0.8**

The login page will appear.

The default Username and Password are provided below and can be changed later in the Settings:

Username: **admin**

Password: **m.a.g**

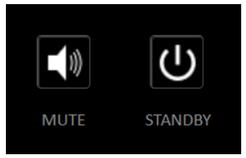


7.4. Theatron Web UI header

The Theatron Web UI header on the top gives access to the overall parameters of the entire system:

7.4.2. Master Mute and Master Stand-by

Master Mute button mutes all the output channels of all the amplifiers. Master Stand-by button puts all the amplifiers into the power-saving stand-by mode.

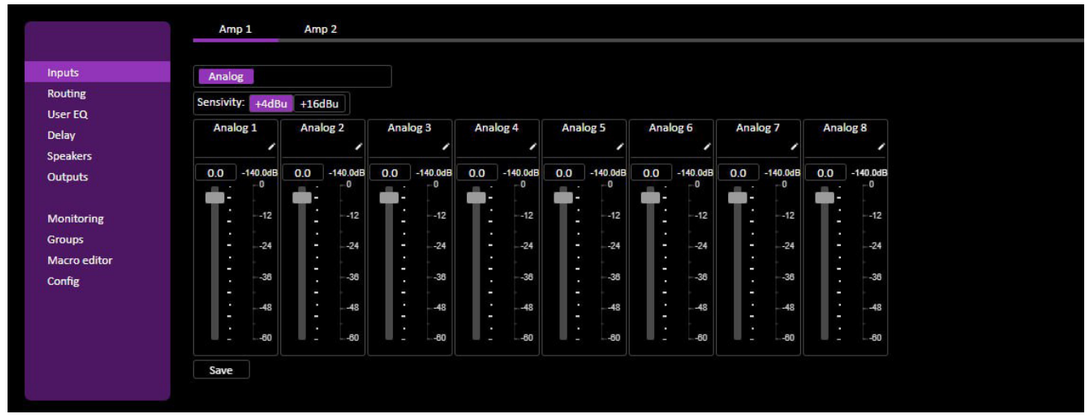


7.4.3. Quick Macros Buttons

Quick Macros Buttons allow to quickly recall up first six setting sets created in the Macros Editor. For more details, refer to 7.9.1. Macro Editor.

7.5. INPUTS section

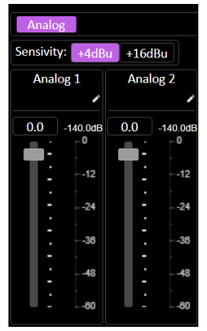
The INPUTS section of the Theatron WEB UI gives information on all the analog inputs of the system.



Inputs of every amplifier in the system can be adjusted independently. Amplifiers can be selected using tabs at the top of the section.

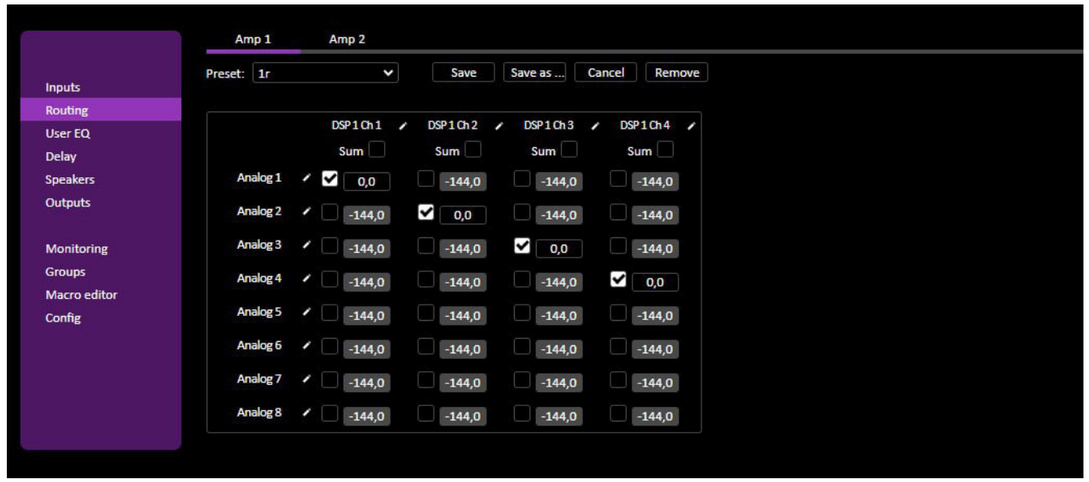
For each input, user can adjust the input gain.

Analog input channel sensitivity can be set to either +4 dBu or +16 dBu for better compatibility with other devices.



7.6. ROUTING section

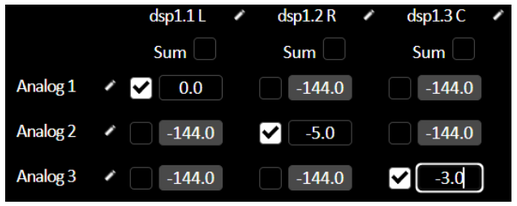
The ROUTING section gives access to powerful and flexible features of fully customizable routing matrix.



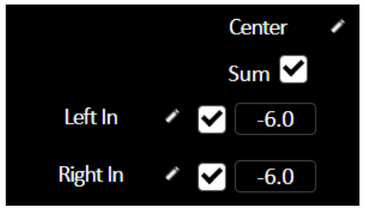
Input-to-output assignment of channels can be done for each amplifier independently.

Amplifiers can be selected using tabs on the top of the section.

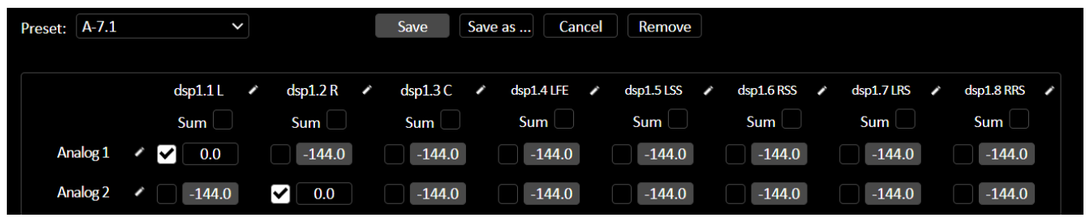
Users can choose the input for every output channel by clicking the tick-box and typing the gain.



Users can also sum several of the input channels into one output channel by clicking the “Sum” tick box on the top of each column.

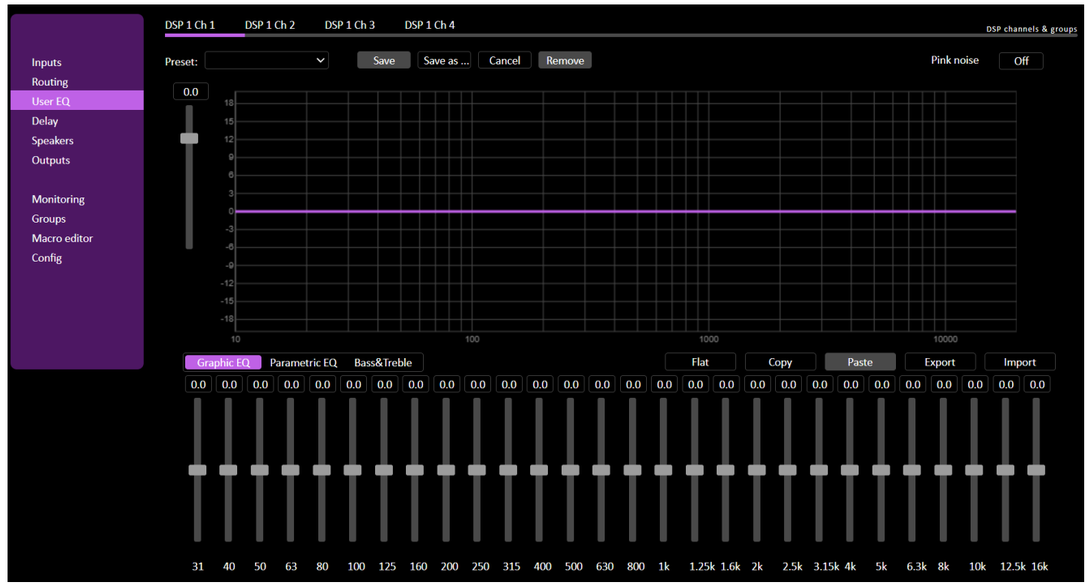


Every routing setup can be saved as a Routing Preset on the top of the section.



7.7. EQ section

The EQ section provides a powerful tool for adjusting the frequency curve of every processing channel.



Equalization can be done independently for every DSP Channel or Group.

DSP Channels or Groups can be selected using tabs on the top of the section.

Every EQ setting set for all the channels can be saved as an EQ Preset at the top of the section.

The setting of the current EQ channel can be copied and pasted into other EQ channels with the “Copy“ and “Paste“ buttons on the bottom of the EQ graph. EQ settings can also be saved to a file and loaded from a file using the “Export“ and “Import“ buttons.

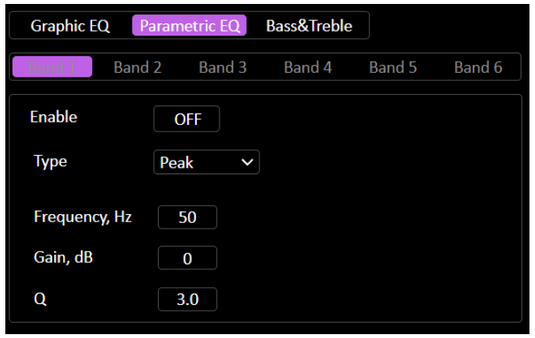
The “Flat“ button resets all the current channel EQ settings.

The slider to the left of the EQ graph adjusts the overall gain of the current DSP channel or the Group.

7.7.1. GRAPHIC EQ

The “Graphic EQ” tab on the bottom of the EQ graph gives access to powerful 1/3 octave band graphical equalizer. Each band allows for ±6 dB of gain adjustment.

7.7.2. PARAMETRIC EQ



The "Parametric EQ" tab on the bottom of the EQ graph gives access to the 6-band parametric equalizer great for precise response adjustment.

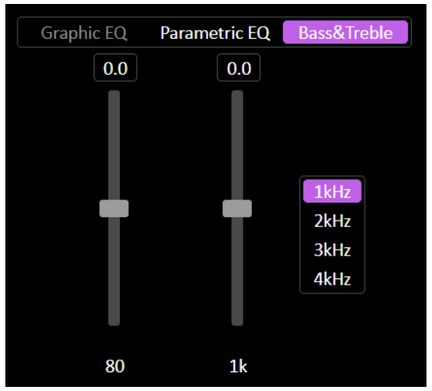
Use "Band 1" ... "Band 6" tabs to select the parametric band to adjust.

The "Enable ON/OFF" button turns the selected parametric band On and Off.

"Type" allows choosing the Peak, High-shelf or Low-shelf band type.

Use "Frequency, Hz", "Gain, dB" and "Q" inputs to adjust the parameters of the selected parametric band.

7.7.3. BASS & TREBLE EQ

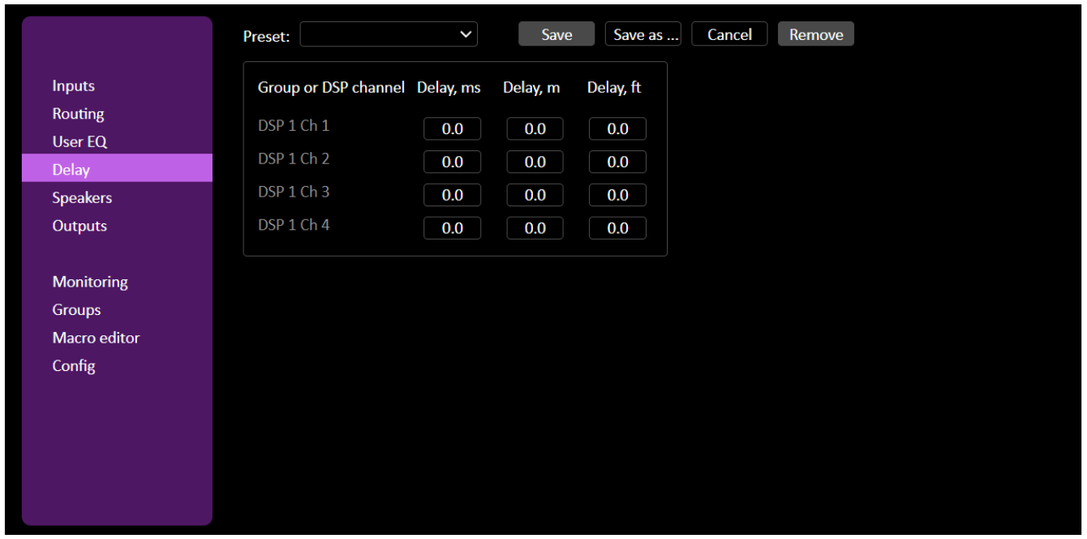


The "Bass & Treble" tab on the bottom of the EQ graph gives access to additional High-Shelving and Low-Shelving band for quick general tuning of the response curve.

High-Shelving band can be switched between 1kHz, 2kHz, 3kHz or 4kHz tuning frequency.

7.8. DELAY section

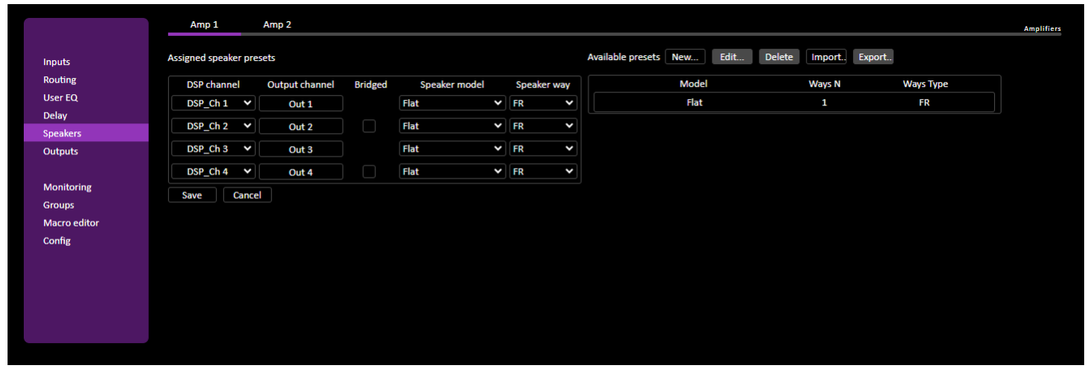
The Delay section allows for adjustment of the delay for every DSP channel of Group.



Delay settings for all the channels can be saved as a Delay Preset at the top of the section.

7.9. SPEAKERS section

The SPEAKERS section gives access to speaker presets, allows the assigning speaker presets to output channels, assigns DSP channels and Groups to output channels, and the creation of custom speaker presets.



Speaker presets are chosen independently for every Amplifier.

Amplifiers can be selected using tabs on the top of the section.

The "Available presets" subsection on the right shows speaker presets available in the amplifier memory. Presets can loaded from the PC using the "Import..." button, and stored on the PC with the "Export..." button.

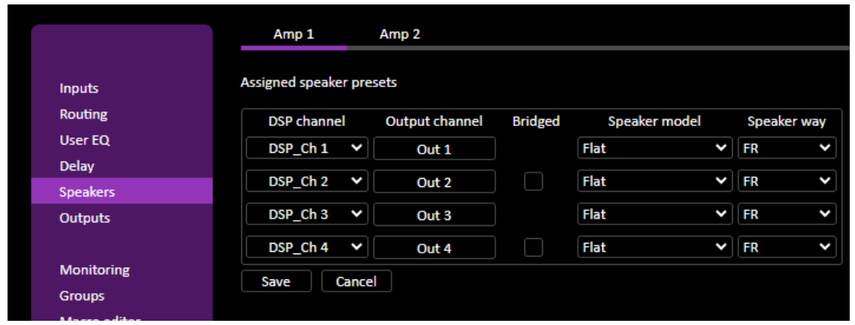
"New..." button opens the Preset Creation dialogue. (See detailed info in 7.7.2. Preset Creator).

"Edit..." button opens selected preset to edit with Preset Creator. Note: only user presets can be edited this way. Factory presets can not be edited.

"Delete" button removes the preset for the amplifier.

7.9.1. Assigned Speaker Presets subsection

Assigned Speaker Presets subsection assigns DSP channels, Groups and Speakers to the Output channel. It also allows to bridge output channel pair.



"DSP channel" dropdowns allow to select the DSP channel or Group assigned for every Output Channel.

"Output channel" fields allow to rename every output channel.

"Bridged" tick boxes allow to bridge every adjacent pair of output channels.

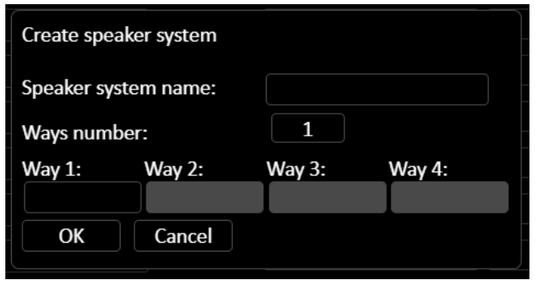
"Speaker model" dropdowns allow to choose the Speaker Preset for every Output Channel.

"Speaker way" dropdowns choose the connection type of the selected Speaker Preset.

To apply any changes to the configuration of Output Channels, press "Save" button.

7.9.2. Custom speaker presets

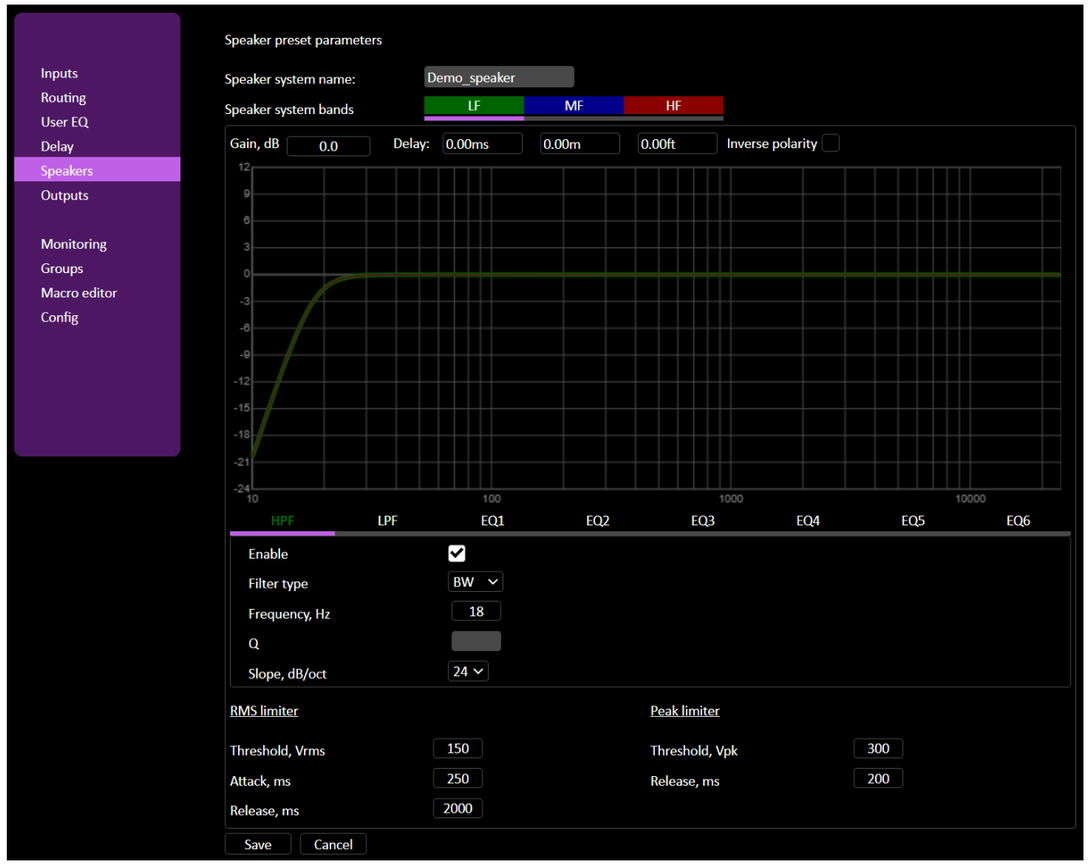
Pressing the "New..." button in the "Available presets" subsection opens the "Create speaker system" dialogue.



Before proceeding, type in the new Speaker preset name, select the number of ways, and choose names for every way.

Note: Speaker preset name allows only for numbers, capital and lowercase letters, hyphen "-" and underscore "_". No spaces are allowed.

Confirm by pressing "OK". The "Speaker Preset parameters" subsection will open.



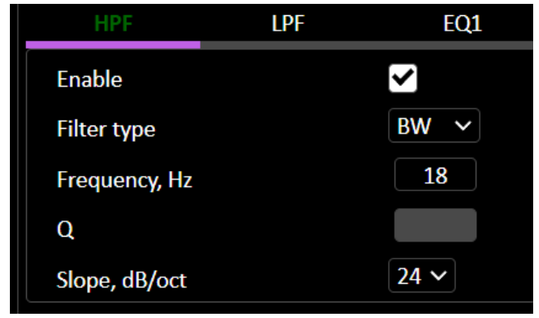
Switch between settings for different speaker system ways using the "Speaker system bands" tabs.

Enter the way volume gain and delay using fields just below the "Speaker system bands" tabs.

Use the "Inverse polarity" tick box to flip the polarity of the selected speaker way.

Every preset can have a High-Pass Filter, a Low-Pass Filter, and up to six Parametric EQ bands.

The High-Pass Filter and Low-Pass Filter can be enabled using the "Enable" tick boxes on their respective tabs.



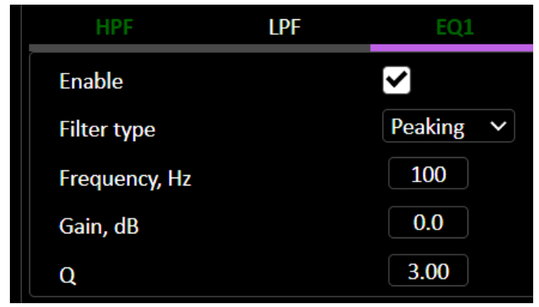
Filter type allows to choose between Butterworth, Linkwitz-Riley, and VarQ filters.

Choose the knee frequency with the "Frequency" field.

For Butterworth and Linkwitz-Riley filters, use the "Slope" dropdown to adjust the steepness of the filter.

For VarQ filter, use "Q" field to set the steepness of the filter.

Each of the 6 parametric bands can be enabled using the "Enable" tick boxes on their respective tabs.



"Filter type" allows choosing between Peaking, Low-shelf, and High-shelf filters.

Use "Frequency", "Gain" and "Q" fields to adjust center frequency, band gain and band filter steepness.

7.10 LIMITER section

The Limiter section allows to protect the speaker from excessive input power from the amplifier.

The "RMS limiter" subsection allows to set the Threshold voltage, as well as Attack and Release times.

The "Peak limiter" subsection sets the Threshold voltage and Release time.

Confirm the creating of the custom preset by pressing the "Save" button at the bottom of the section.

7.11. OUTPUTS section

The outputs section shows the information about the outputs of all the amplifiers.

Outputs are monitored independently for every Amplifier.

Amplifiers can be selected using tabs on the top of the section.

The “Out channels” row allows giving custom names for output channels.

The “Status” row signals possible problems with output channels.

The “Input channels“ row shows the input channel assigned to each output channel.

The “User EQ group” row shows the EQ group assigned to the output channel (See 7.10 Groups for more detailed info).

The“Delay group” row shows the EQ group assigned to the output channel (See 7.10 Groups for more detailed info)

The “Delay” row shows the delay for each output channel

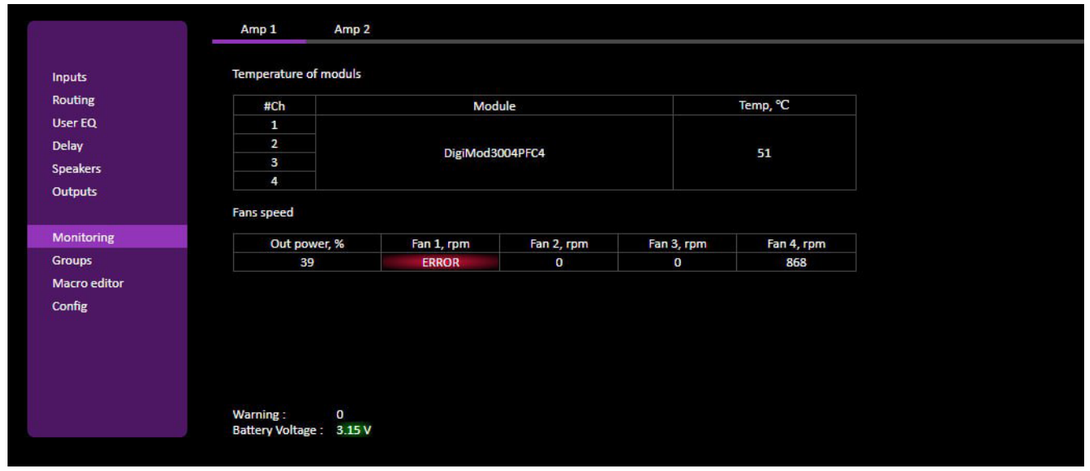
The “Speaker Preset” row shows the selected speaker preset for each output channel.

The “Level” row allows to set the output gain of every channel. Fader below also adjusts the output gain of every channel.

“Mute” buttons turn the mute for each channel on and off.

7.12. MONITORING section

The monitoring section shows the technical system health information such as temperature and fan status.



Amplifiers’ health information are monitored independently for every Amplifier.

Amplifiers can be selected using tabs on the top of the section.

The “Temperature of modules” subsection shows the temperature of amplifier modules of the selected amplifier.

“Fans speed” subsection shows the rotation speed of fans of the selected amplifier.

“Warning” shows the number of warning in the operation of the amplifier.

“Battery Voltage” shows the RAM chip battery voltage (last values).

TQ series uses the CR-2032 battery for the RAM chip.

7.12.1 FAN location reference

Fans 1, 2, 3, and 4, as seen in the Monitoring section, are as follows:

FRONT

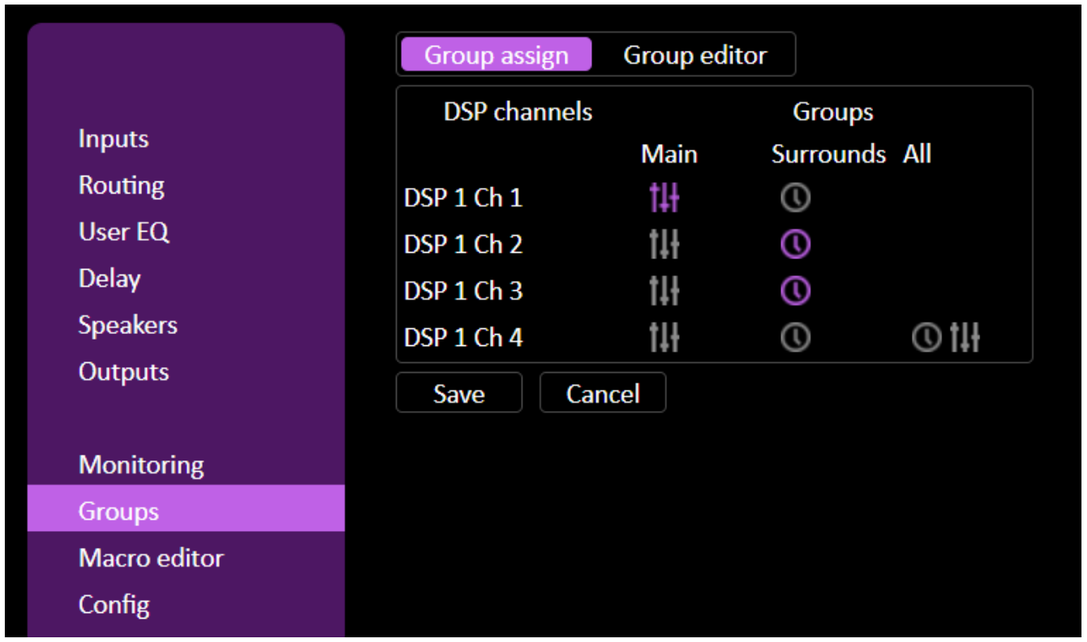
BACK

7.13. GROUPS section

The GROUPS section allows uniting the DSP channels into groups to control their parameters as a bulk.

7.13.1 Groups assign tab

Group assign tabs allow to grouping of DSP channels into groups.



Theatron Web UI allows to grouping of channels independently by delay, EQ, or both.

The “Delay” icon at the intersection of a DSP channel (row) and a group (column) indicates the delay of a DSP channel will be grouped.

The “Equalizer” icon indicates the User EQ of a DSP channel will be grouped.

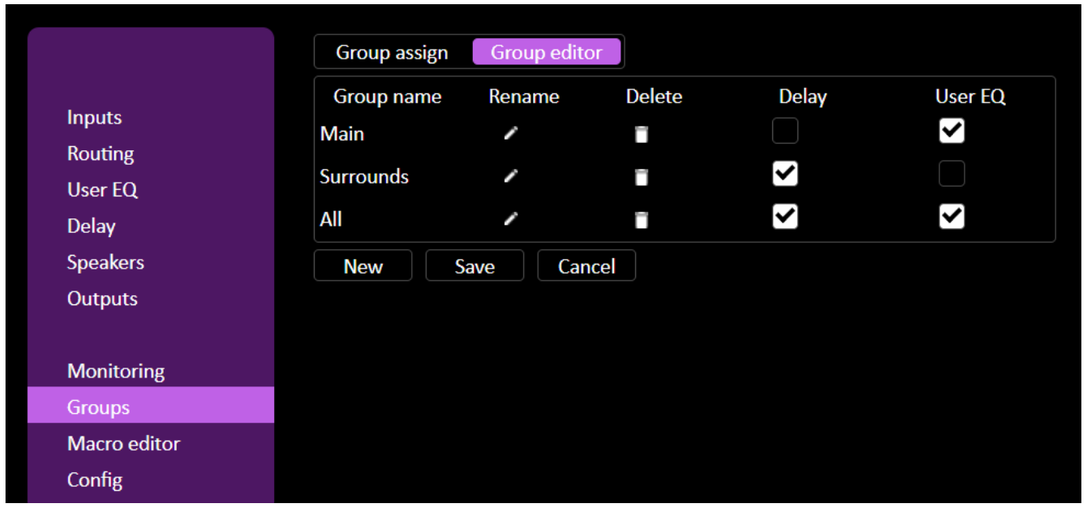
Press icons at the intersection of the DSP channel and the Group to assign the DSP channel to this Group.

DSP channels may only be assigned to one group at a time, or not assigned to any group.

Press the “Save” button to apply grouping changes.

7.13.2 Group editor tab.

The Group editor tab allows to create and edit Groups.



Use the “Rename” icon to rename a Group

Use the “Delete” icon to delete a group.

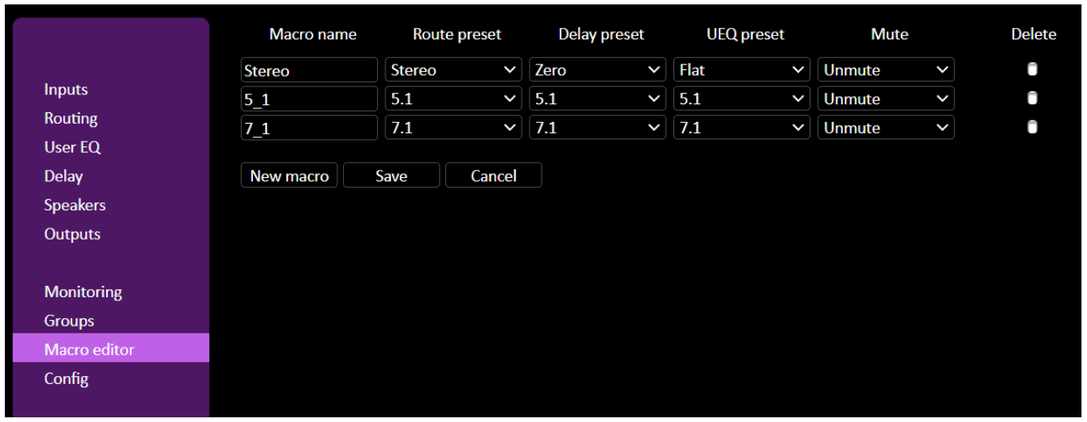
Use Delay and User EQ tick boxes to select which parameters will by handled by the Group.

Press the “Save” button to apply changes to the Groups settings.

Press the “New” button to add a new group to the list.

7.14. MACRO EDITOR section.

The MACRO EDITOR sections allow to organization of different presets created throughout the Theatron Web UI into easy-to-manage recall buttons.



The “Macro name” column field contains the Marco button name, which can be edited.

The “Route preset” column dropdown chooses the Routing preset to be recalled.

The “Delay preset” column dropdown chooses the Delay preset to be recalled.

The “UEQ preset” column dropdown chooses the User EQ preset to be recalled.

The “Mute” column chooses whether the Master Mute should be engaged while Macro is run.

The first six Macros from the list are available as buttons in the header in the MACROS subsection.

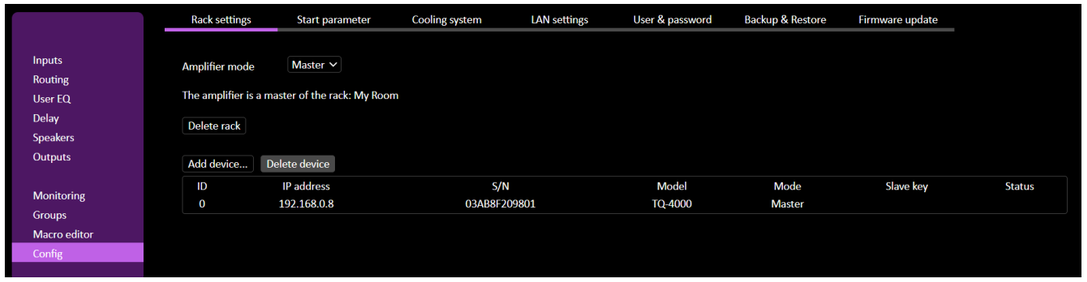
All the Macros can be run by other devices in the network using the macro protocol. Refer 8. Theatron macro protocol for detailed information.

7.15. CONFIG section.

The CONFIG section gives access to various settings of the your TQ amplifier.

7.15.1. Room settings tab

Room settings tab help to organize separate amplifiers into one system.



“Amplifier mode” dropdown selects the operation mode of the current amplifier between Master and Slave. There can only be one Master amplifier per room. All other amplifiers must be manually set to Slave mode.

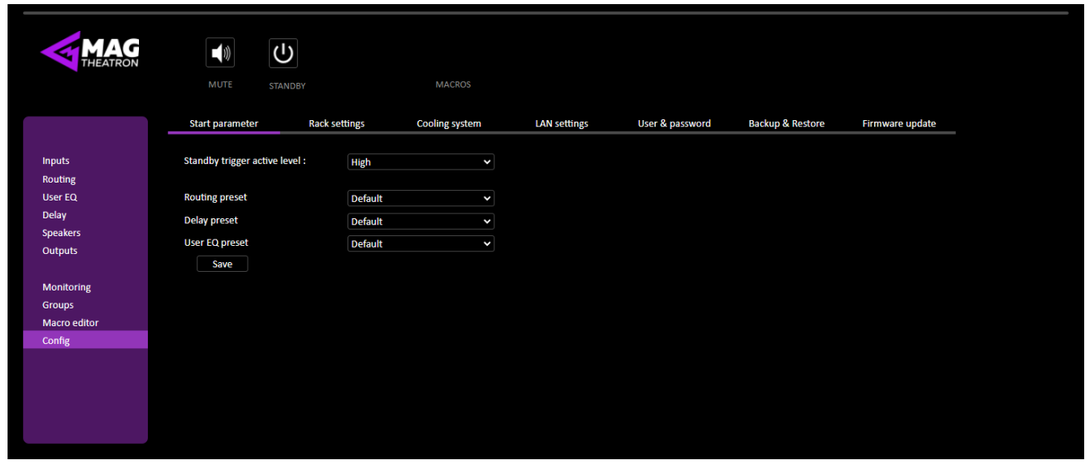
“Delete room” button resets all the room settings.

The table below the “Delete room” button shows all the amplifiers, including Master and Slaves added to the room.

Use the “Add device...” button to add a new Slave amplifier to the room by entering its IP address.

7.15.2. Start parameter tab

The Start parameter tab allows to choose the system parameters used at start-up.



“Standby trigger active level” chooses whether the standby mode will be activated on the “high” trigger level (applied 4V-30V voltage) or on the “low” trigger lever (no voltage appied).

“Routing preset” chooses start-up routing preset.

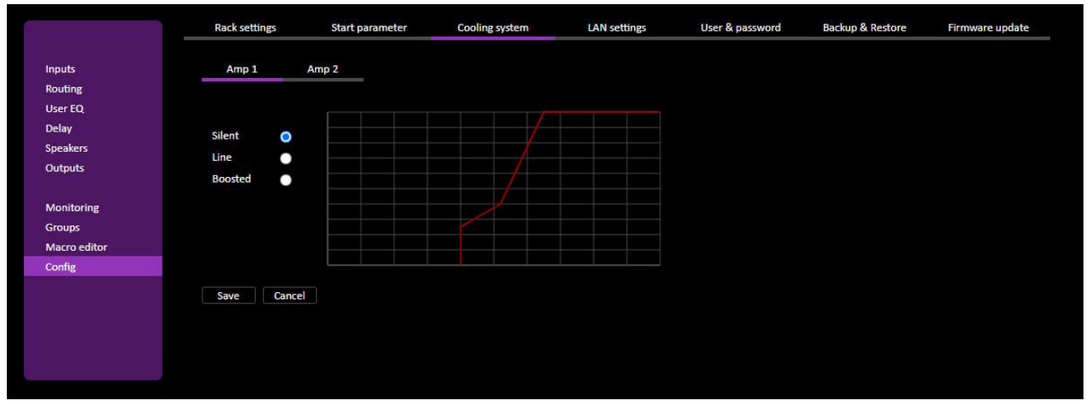
“Delay preset” chooses start-up delay preset.

“User EQ preset” chooses start-up User EQ preset.

Press the “Save” button to apply Start parameters settings.

7.15.3. Cooling system tab

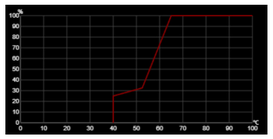
The Cooling system tab sets the dynamic behavior of the cooling fan, choosing more aggressive conservative cooling or quieter setting.



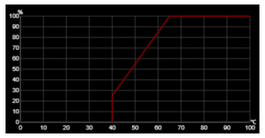
Cooling settings are set independently for every Amplifier.

Amplifiers can be selected using tabs on the top of the section.

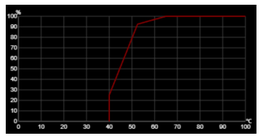
The “Silent” setting turns the fans late after amplifiers are significantly heated, and is great for “relaxed” installations with lots of amplifier power threshold or when noise reduction is a key factor.



The “Line” setting is a good balance between fan noise and amplifier safety.

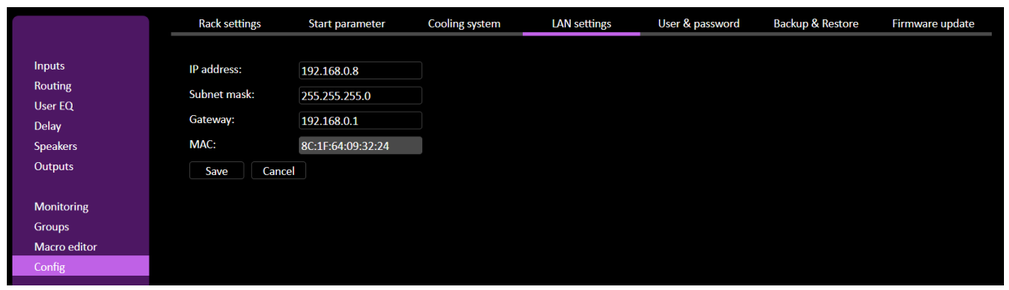


The “Boosted” setting is an aggressive cooling strategy that turns fans very early in the curve. It is great for hard-working conditions in high-temperature environments or as a conservative fail-proof setting.



7.15.4 LAN settings tab

The LAN setting tab allows to change the network setting of current amplifier.



“IP address” allows to enter the IP address.

“Subnet mask” sets the Subnet mask.

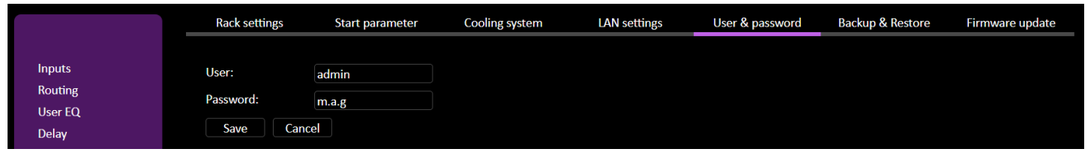
“Gateway” sets the IP gateway.

“MAC” shows the MAC address of the amplifier and cannot be changes.

Press the “Save” button to apply the network settings.

7.15.5. User & password tab

The User & password tab allows you to change Username and password to login into the DANA WEB UI.

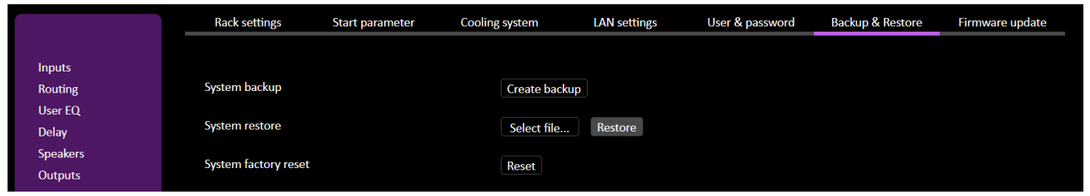


Use “User” and “Password” fields to enter respectively new Username and Password.

Confirm by pressing the “Save” button.

7.15.6. Backup & Restore tab

The Backup & Restore tab allows to create the backup files with the setting of the entire system



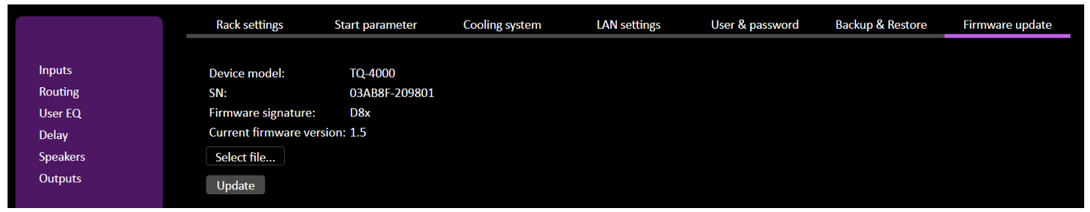
“Create backup“ saves the system settings backup file to the PC.

“System restore“ allows to restore the system from the backup file.

“System factory reset“ resets the system to the factory default..

7.15.7. Firmware update tab

The firmware update tab allows to update the firmware of the connected amplifier.



Use the “Select file” button to navigate to the firmware update file on the PC.

Press the “Update” button to upload the firmware to the device.

8. Theatron Macro protocol

8.1. About the Theatron macro protocol

Theatron system equipment can be controlled remotely from a PC, media server, or other devices. Communication is implemented through an Ethernet connection via TCP/IP. Control is performed through the macroprotocol: a set of semi-human readable commands allowing switching the master mute, stand-by mode, and launch one of the preset macros.

8.2. TQ amplifier connection for remote control

Digital series amplifiers are connected for data and remote control using the ETH RJ-45 socket on the back panel.

A PC or other device used to remote control the Master amplifier must be in the same subnet as the amplifier.

Macro commands are sent to the IP of the Master amplifier, **TCP port number 8234**. Master amplifier will automatically send all the necessary commands to all the Slave amplifiers assigned to it.

8.3. Macro protocol syntaxis

Standard syntaxis of the Theatron macro protocol is as follows:

s	y	s	.	<	c	o	m	>		<	p	a	r	>

Where:

- sys. - Marker stating the start of the remote control command;

- <com> - name of the command;

- <par> - command parameter.

8.4. Macro protocol commands

List of available Theatron macro protocol commands and possible values for them:

Command	Value	Comments
macro_name	<macro name>	Launches the macro with name <macro name> [Example: sys.macro_name 7.1 launches the macro named "7.1"] For more info on macros refer to section 7.14
macro_name	?	Reads the list of available macro names [Example: sys.macro_name ? returns the string of macro names] For more info on macros refer to section 7.14
mute	1	Turns the Master Mute ON [Example: sys.mute 1]
mute	0	Turns the Master Mute OFF [Example: sys.mute 0]
mute	?	Reads the status of the Master Mute [Example: sys.mute ? returns the value of 0 or 1]
standby	1	Puts the amplifier to the Stand By mode [Example: sys.standby 1]
standby	0	Wakes the amplifier for the Stand By mode [Example: sys.standby 0]
standby	?	Reads the status of the Stand By mode [Example: sys.standby ? returns the value of 0 or 1]

8.5 Status read "?" commands

Using "?" for value in Theatron macro commands reads the set values of the Master amplifiers.

The result returns as the text string:

- *sys.macro_name ?* returns the available macros list divided with spaces: *Macro_7.1 Macro_5.1 Macro_Stereo* etc.

- *sys.mute ?* returns the Master Mute status as a value of 0 or 1.

- *sys.standby ?* returns the Stand By status as a value of 0 or 1.

9. Recovery mode

The TQ series provides a recovery mode to change the amplifier's IP address, update user and password settings, or update the firmware.

In recovery mode, TQ amplifiers have a fixed IP address of **192.168.0.8**. Follow these steps to enter recovery mode:

Do the following to enter the recovery mode:

1. Connect the amplifier directly to the PC using a cable connection. Do not use Wi-Fi, an intermediate switch, or a router.

2. Set the PC's IP address to 192.168.0.5.

3. Disconnect the amplifier from the mains power.

4. Press and hold the Stand By button on the amplifier's front panel.

5. While keeping the Stand By button pressed, reconnect the mains power to the amplifier.

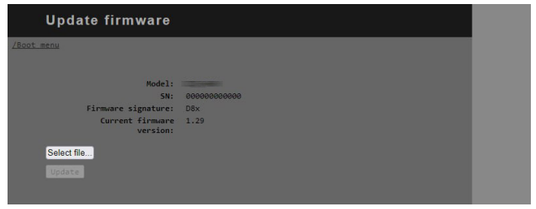
6. The front LED will show a 30-second countdown.

7. Release the Stand By button, and open the 192.168.0.8 page in your PC's web browser.

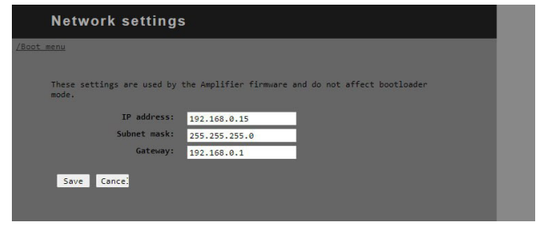
8. In the window that appears, click anywhere to stop the countdown.

9. The "Boot Menu" allows access to different settings.

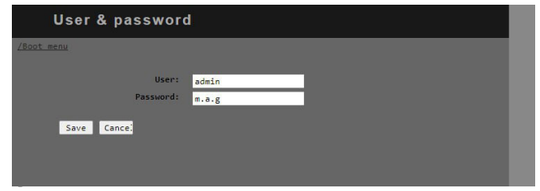
9.1. Update Firmware: Update the firmware of the amplifier.



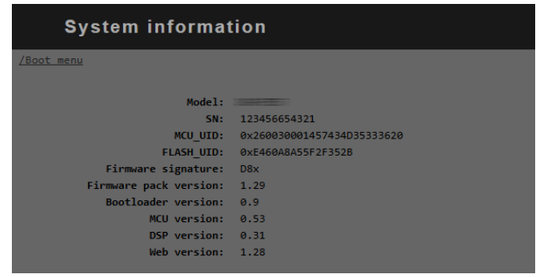
9.2. Network Settings: View and change the IP address and subnet mask of the amplifier.



9.3. User & Password: View and change the user and password for accessing the Web



9.4. Info: View various amplifier information.



10. To exit to the "Boot Menu" from any submenu, press "/Boot Menu."

11. To exit Recovery Mode and boot the amplifier normally, press "Start Application."

10. Package contents

10.1. Package contents.

Please check the contents of your TQ amplifier upon receiving the package.

- TQ series amplifier - 1pcs

- Power cable: 1pcs

- Rack adapter: 2pcs

- Amplifier feet: 4pcs

- Rack adapter and amplifier feet mounting bolts: 12 pcs

- 4-pin Phoenix speaker output connectors: 2pcs

- Anti-scratch plastic bag: 1pcs

- Carton box: 1pcs

10.2. Regional version.

The TQ amplifier will come with different power cables based on your region:

- European Union: default, Type F

- United States: TQ-xxxx-US, Type B

- United Kingdom: TQ-xxxx-UK, Type G

11. Warranty and assistance

11.1. Product warranty

By this warranty MAG Audio grants that all equipment manufactured under the MAG Theatron trademark is free from defects in material, components and factory workmanship under the normal use and maintenance for the time as specified below.

All warranty repairs and maintenance of MAG Theatron products shall be carried out at MAG Audio production sites or by MAG Audio authorized personnel at no cost for the product purchaser.

Warranty period for TQ series MAG Theatron amplifiers is 3 years from the date of purchase.

Warranty repairs or maintenance will be performed only if a) MAG Theatron product was purchased from an official MAG Theatron distributor / dealer and b) warranty card with specified serial number, production date, realization date, vendor's signature and stamp is presented.

Warranty shall not cover following: damage caused by accident, misuse or failure to follow exploitation rules stated in technical manual; repairs performed by non-authorized personnel; mechanical damage caused by shipping accidents and normal tear and wear.

Warranty shall not be applicable to any product with defaced, removed, or modified serial number.

If your MAG Theatron product needs repairs or maintenance, contact your official MAG Theatron distributor / dealer. Please do not ship your MAG Theatron product without prior authorization.

11.2. Assistance

There are no user-serviceable parts in your amplifier. Refer servicing to qualified technical personnel. In addition to in-house service department, MAG Theatron supports the chain of distributors, authorized in repairs and service. If your amplifier needs repair contact your MAG Cinema dealer or distributor.

Occasionally, due to the nature of the failure, it might be necessary to return defective products to MAG Audio for repair. In this case, before shipping, please kindly contact your MAG Theatron distributor or dealer, or MAG Audio directly. You will be provided the RMA number code and detailed instructions regarding your particular case. Please do not send products without a prior authorization.

Thank you for your understanding and cooperation and continued support as we work to improve our partnership.

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MAG THEATRON

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