

MAX-240Z

BLUETOOTH®/USB/FM PA AND ZONE PA AMPLIFIER
AMPLIFICADOR DE MEGAFONÍA BLUETOOTH®/USB/FM Y ZONAS
AMPLIFICATEUR PUBLIC ADDRESS BLUETOOTH®/USB/FM ET ZONES
AMPLIFICADOR DE MEGAFONIA BLUETOOTH®/USB/FM E ZONAS



INSTRUCTION MANUAL/MANUAL DE USUARIO/
MODE D'EMPLOI/MANUAL DE INSTRUÇÕES

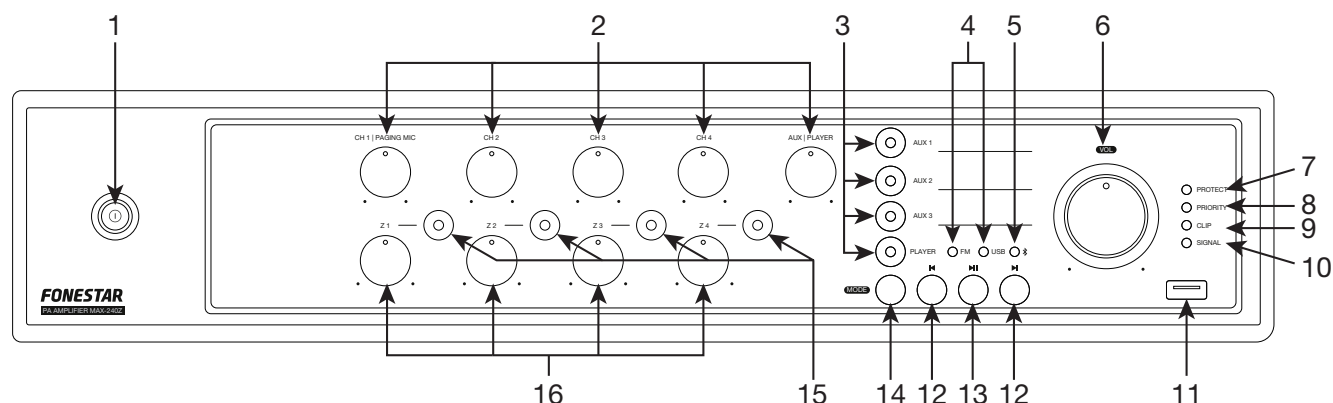
FONESTAR

DESCRIPTION

- High efficiency and reliability Class D amplifier with built-in Bluetooth®/USB player and FM radio.
- 4 input channels, 3 auxiliary inputs and 4 zone outputs with independent volume controls.
- Inputs with adjustable VOX priority control.

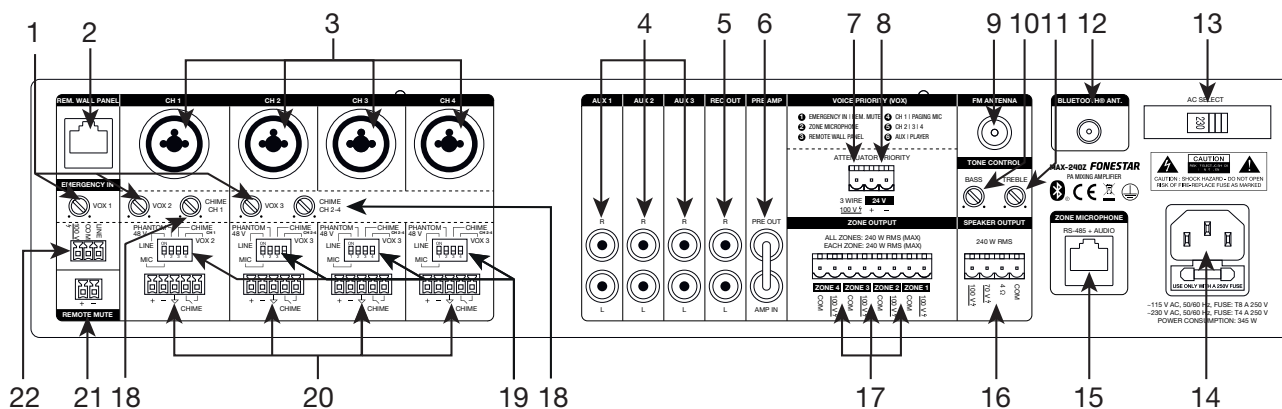
CONTROLS AND FUNCTIONS

FRONT PANEL



- 1.- **⓪**: indicator light and on/off switch of the amplifier.
- 2.- **CH 1|PAGING MIC/CH 2/CH 3/CH 4/AUX|PLAYER**: volume controls for inputs CH 1, CH 2, CH 3, and CH 4 respectively and AUX|PLAYER for AUX 1-3 and player.
- 3.- **AUX 1/AUX 2/AUX 3/PLAY**: indicator lights and buttons to activate AUX input 1, AUX 2, AUX 3 or the built-in player (Bluetooth, FM radio, USB).
- 4.- **FM/USB**: active mode LED indicators on the player.
- 5.- **✳**: Bluetooth receiver operation indicator light. If there is no paired device it will flash and it will remain fixed when a paired device is present and ready to send audio.
- 6.- **VOL**: master amplifier volume control and amplifier on/off LED indicator.
- 7.- **PROTECT**: protection LED indicator. Lights up when the temperature amplifier protection is activated. With protection enabled, the audio output of that channel is cut off. If this happens, turn off the device, make sure that the vents for air intake and exhaust are free of obstructions and turn down the input volume. Wait a few minutes for the appliance to stabilize before you switch it on again.
- 8.- **PRIORITY**: light indicator for the existence of a signal with VOX priority.
- 9.- **CLIP**: signal peak LED indicator. If it lights up lightly or occasionally you should reduce the output volume. If the indicator light stays on continuously, it is because the input signal is very high. In this case, reduce the volume of the input signal that's causing it.
- 10.- **SIGNAL**: signal LED indicator. Lights up when signal is detected at the outputs.
- 11.- USB port for audio file playback.
- 12.- **⏮ / ⏭**: a short press, in Bluetooth or USB mode skips to the previous/next audio track; in FM mode it skips to the previous/next stored frequency. In all modes, a long press decreases/increases the volume of the player.
- 13.- **⏸**: in Bluetooth mode, a short press starts/stops audio playback and a long press unpairs the connected device and awaits pairing again. In USB mode, a short press starts/stops audio playback and a long press switches the play mode between: repeat all (1 tone) and shuffle (2 tones). In FM mode, it auto-stores all detected frequencies with sufficient signal quality.
- 14.- **MODE**: Short presses of this button allow you to change the mode on the player to choose the desired audio source: Bluetooth, USB or FM radio.
- 15.- **Z 1/Z 2/Z 3/Z 4**: light indicators and buttons to activate/deactivate the ZONE 1, ZONE 2, ZONE 3 and ZONE 4 output zones respectively.
- 16.- **Z 1/Z 2/Z 3/Z 4**: rear panel ZONE 1, ZONE 2, ZONE 3 and ZONE 4 output zone volume controls.

REAR PANEL

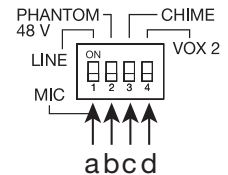


- 1.- **VOX 1/VOX 2/VOX 3:** controls for sensitivity adjustment to give priority to the EMERGENCY IN, CH 1, and CH 2-4 inputs respectively over the other signals. Depending on this setting, the signal level required at the inputs to cut audio from other sources will be higher or lower. Please note the order of priority of the amplifier inputs, for more information see OPERATION - INPUT PRIORITY.
- 2.- **REM. WALL PANEL:** connection port for remote wall panel, RJ45 connector. For more information see section OPERATION - REMOTE WALL PANEL INPUT.
- 3.- **CH 1|PAGING MIC, CH 2, CH 3, CH 4:** VOX audio inputs, balanced combo connectors (XLR and 6.3 mm jack) and euroblock (20). In addition, these inputs have a DIP switch (19) to adjust the sensitivity of the MIC/LINE input, activate phantom power and enable/disable VOX priority (VOX 2 for CH 1|PAGING MIC and VOX 3 for CH 2, CH 3 and CH 4) and CHIME priority (CHIME CH 1 for CH 1|PAGING MIC and CHIME CH 2-4 for CH 2, CH 3 and CH 4).
- 4.- **AUX 1/AUX 2/AUX 3:** stereo auxiliary inputs for connection of audio devices such as mixers, computers, etc. 2 x RCA connectors.
- 5.- **REC OUT:** stereo recording output with line level, 2 x RCA connectors.
- 6.- **PRE OUT/AMP IN:** pre-amplifier stage signal output (PRE OUT) and amplifier stage input (AMP IN), RCA connectors. These inputs and outputs have a jumper to connect these 2 stages for the equipment to function as a whole. If you want to use only the pre-amp stage, remove the jumper and connect your amplifier to the PRE OUT output; or if you want to use the amp stage, remove the jumper and connect your mixer/pre-amp output to the AMP IN input.
- 7.- **ATTENUATOR PRIORITY - 3 WIRE:** 100 V audio output for message priority on 3-wire attenuators. For more information, see section OPERATION - 3rd WIRE PRIORITY.
- 8.- **ATTENUATOR PRIORITY - 24 V:** 24 V output for message priority on attenuators with priority relay (4-wire attenuators). This output is at 0 V if no priority is activated, and will provide 24 V when priority is activated. For more information, see section OPERATION - 24 V PRIORITY.
- 9.- **FM ANTENNA:** FM antenna connection input.
- 10.- **TONE CONTROL - BASS:** 100 Hz cut-off frequency low pass filter that attenuates/enhances low frequencies.
- 11.- **TONE CONTROL - TREBLE:** high pass filter with 10 kHz cut-off frequency which attenuates/enhances high frequencies.
- 12.- **BLUETOOTH ANT:** Bluetooth signal antenna.
- 13.- **AC SELECT:** power supply voltage selector. If you need to change the voltage you should be aware that the fuse must be modified as specified on the product.
- 14.- 115/230 V amplifier power supply input .
- 15.- **ZONE MICROPHONE:** port for zone microphone connection, RJ45 connector. For further information see section OPERATION - ZONE MICROPHONE INPUT.

- 16.- **SPEAKER OUTPUT:** 4 Ω low impedance, 100 V and 70 V line, 240 W RMS speaker outputs, euroblock connector. Please note that the choice of low impedance speakers must conform to the amplifier specifications for serial or parallel connection (only parallel for 100 V line) to obtain power and impedance appropriate to the amplifier output.
- 17.- **ZONE OUTPUT:** 100 V line speaker outputs, euroblock connector. Each zone is limited to a maximum of 240 W RMS and the sum of the 4 zones cannot exceed the 240 W RMS provided by the amplifier. Please note that the choice of low impedance speakers must conform to the amplifier specifications for serial or parallel connection to obtain power and impedance appropriate to the amplifier output.
- 18.- **CHIME CH 1, CHIME CH 2-4:** CHIME volume controls. CHIME CH 1 for CH 1|PAGING MIC and CHIME CH 2-4 for CH 2, CH 3 and CH 4.

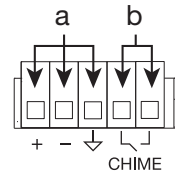
19.- DIP selectors:

- a.- **LINE/MIC:** modifies microphone input (MIC) sensitivity or for players/mixers (LINE).
- b.- **PHANTOM 48 V:** enables/disables the PHANTOM 48 V power at the connectors of this input, required for condenser microphones.
- c.- **CHIME:** enables/disables CHIME tone generation function when a contact closure is performed on the corresponding CHIME entry.
- d.- **VOX 1-3:** enables/disables the priority of this input.



20.- Euroblock connector:

- a.- **+, -, ↓** : input terminals for connection of the balanced input signal. CH 1 has another combo connector for connection of the input signal, CH 2, CH 3 and CH 4 only has this euroblock connector for connecting the input signal. In addition, this input has DIP switches (19) to adjust the sensitivity of the MIC/LINE input, enable phantom power, and enable/disable VOX and CHIME priority.
- b.- **CHIME:** closing contacts to trigger a CHIME tone.



- 21.- **REMOTE MUTE:** allows to remotely mute all amplifier inputs except EMERGENCY IN with the help of a switch. Euroblock connector. This input is in open circuit, to silence it you must close the circuit.
- 22.- **EMERGENCY IN:** 100 V line level audio emergency system input connection, euroblock. If it is a line signal use LINE and COM, if it is 100 V use 100 V and COM.

NOTE: the 100 V EMERGENCY IN input only supports 100 V and COM signals. The 100 V output on some Class D amplifiers delivers -50 V and +50 V (BTL) instead of 100 V and COM. Such 100 V outputs (+50 V, -50 V) are not compatible with this input as the ground port will receive a -50 V signal which could cause the amplifier providing the output to detect a fault and activate its protection mechanism.

OPERATION

INPUT PRIORITY

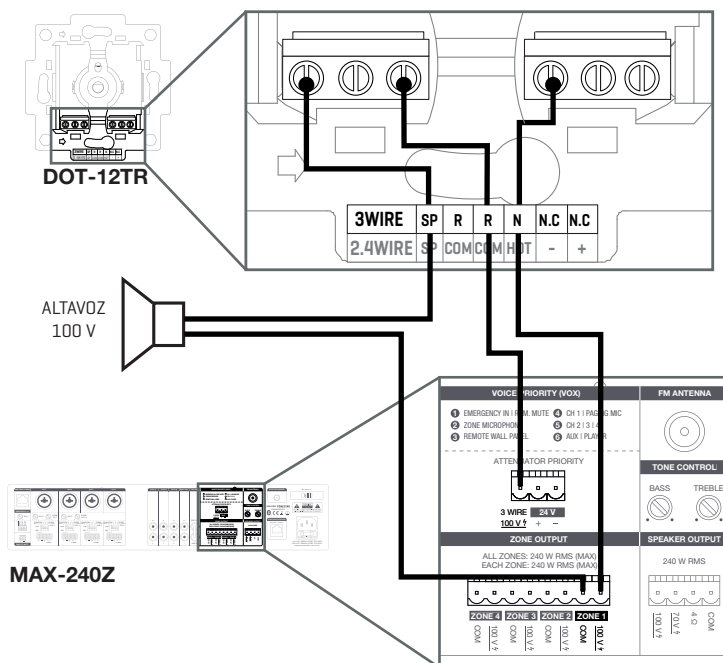
- The VOX priority of the various inputs is activated by signal level and can be regulated with the VOX controls on the rear panel.
- The priority of CH 1-4 can be disabled by means of DIP-switch VOX 2 (CH 1) or VOX 3 (CH 2-4).
- Priority order:

The REMOTE MUTE input attenuates all inputs except the EMERGENCY IN input when a contact closure of its terminals is performed.

- 1.- The EMERGENCY IN input has the highest priority and attenuates the other inputs when it has a signal.
- 2.- The ZONE MICROPHONE input has priority over all inputs except the EMERGENCY IN input.
- 3.- The REMOTE WALL PANEL input has priority over all inputs except the EMERGENCY IN and ZONE MICROPHONE input.
- 4.- The CH 1|PAGING MIC input has priority over the inputs CH 2, CH 3, CH 4, AUX 1-3 and the player.
- 5.- The inputs CH 2, CH 3 and CH 4 have priority over the AUX inputs and the player.
- 6.- The AUX inputs and the player have no priority over any other signal.

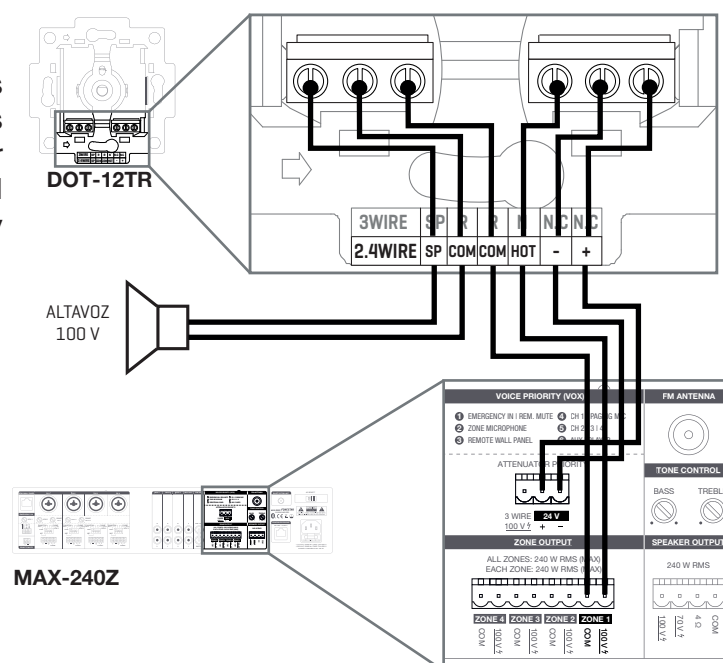
3rd WIRE PRIORITY

For connection to three-wire attenuators such as the **DOT-12TR**. When a signal is present at the 3WIRE PIN, which contains the 100 V audio signal, it will be passed directly to the loudspeaker without any attenuation.



24 V PRIORITY

For connection with 4-wire attenuators such as the **DOT-12TR**. When the 3WIRE PIN provides a 24 V DC signal, the signal from the amplifier that was passing through the attenuator will pass directly to the loudspeaker without any attenuation.



PLAYER

To use the player, you must activate this input by pressing the PLAY button and the indicator light of this button will turn on. Select the mode with the MODE button:

BLUETOOTH MODE

- Select Bluetooth mode on the amplifier to pair the smartphone or tablet from which you wish to send audio. The indicator light will flash indicating that it is ready to link.
- On your smartphone/tablet, activate Bluetooth mode, search for the MAX-240Z device and select it. The indicator light will be permanently lit to indicate that it is linked.
- Finally, select the music on your smartphone/tablet and start playback.
- Press ◀ and ▶ to change the song or ⏸ to pause/resume playback.

NOTE: make sure that your smartphone/tablet is loud enough to be heard through the amplifier. This allows you to control the volume from the amplifier itself at a later time without having to operate any other equipment.

FM RADIO MODE

- Select FM mode.

NOTE: To use this mode, you need to connect an antenna to FM ANTENNA on the rear panel.

- Perform an automatic tuning of the stations to start using this mode by long pressing the button ►||.
- Once finished, you can select the station you wish to listen to from among those already set with ◀ and ▶.

USB MODE

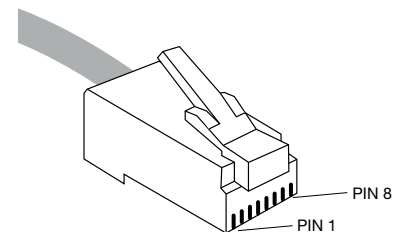
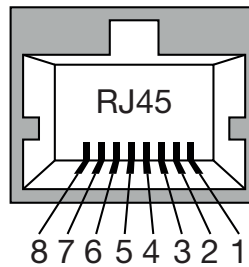
- Select USB mode.
- Connect the USB device.
- Press ◀ and ▶ to change the song or ►|| to pause/resume playback.
- You can change the play mode between repeat all (1 tone) and shuffle (2 tones) by long pressing the ►|| button.

ZONE MICROPHONE INPUT

Input for connecting zone microphones such as the **ZONEMIC-6** which can be used for announcing 1 or more zones. These announcements may be live or recorded messages.

NOTE: up to a total of 4 **ZONEMIC-6** microphone units can be cascaded, taking into account that the total wiring may not exceed 200 metres, from the **MAX-240Z** amplifier to the last microphone in the installation. The pinout of the female RJ45 connector of the **MAX-240Z** amplifier is:

CONNECTOR FEMALE	PINOUT T-568B	FUNCTION	
Pin 1	White-Orange	audio+	Balanced audio signal
Pin 2	Orange	audio-	
Pin 3	White-Green	GND	
Pin 4	Blue	D+ (A)	RS485 communication
Pin 5	White-Blue	D- (B)	
Pin 6	Green	+15 V DC	Power supply
Pin 7	White-Brown	GND	
Pin 8	Brown	-15 V DC	

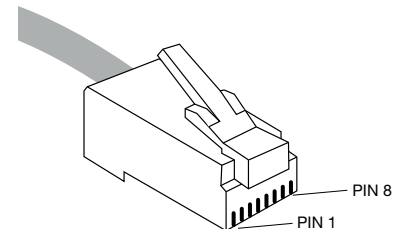
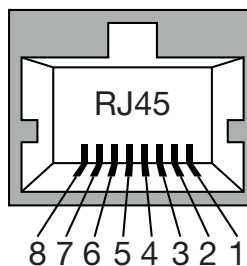


REMOTE WALL PANEL INPUT

On an audio input providing 15 V DC power. Normally for connecting a remote wall connection panel or the output of a mixer/player. Due to its priority, this signal will not be mixed with the other signals of CH 1-4 or AUX integrated in the amplifier.

The pinout of the female RJ45 connector of the **MAX-240Z** amplifier is:

CONNECTOR FEMALE	PINOUT T-568B	FUNCTION	
Pin 1	White-Orange	audio +	Balanced L channel
Pin 2	Orange	audio -	
Pin 3	White-Green	GND	
Pin 4	Blue	audio +	Balanced R channel
Pin 5	White-Blue	audio -	
Pin 6	Green	GND	
Pin 7	White-Brown	+15 V DC	Power supply
Pin 8	Brown	GND	



CONNECTION

IMPORTANT: cool the power amplifier properly. To do this, make sure that the place where it is installed has access to airflow and that the slots in the chassis are free of obstructions.

- With the amplifier turned off, connect all CH, AUX and EMERGENCY IN audio sources and select the LINE/MIC input type and enable/disable PHANTOM power on channels CH 1 to CH 4 using the DIP switches on each input channel.

(OPTIONAL) Connect the zone microphone and wall panel.

If you are going to use the FM radio, you will need to connect an FM receiver antenna.

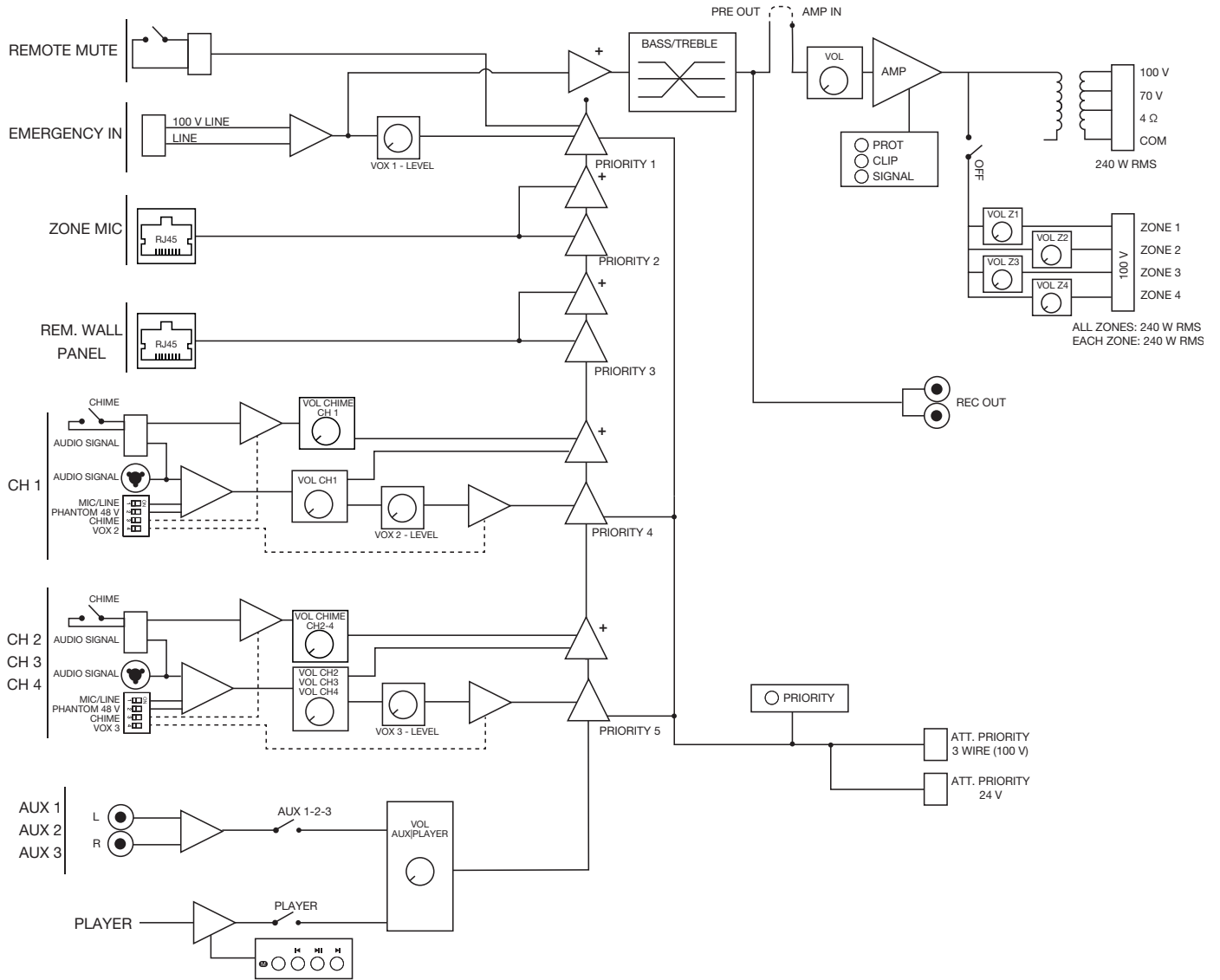
- Connect the loudspeakers to the corresponding low impedance output* (4 Ω + COM), 100 V line* (100 V + COM), 70 V line* (70 V + COM), zones* (ZONE 1-4) or to the stereo recording output (REC OUT).

***IMPORTANT:** for proper operation and performance of the device, use the correct power, impedance and frequency limits. Before connecting to other equipment, be aware of the conditions required in a HIGH IMPEDANCE (100 V) and LOW IMPEDANCE installation.. More information can be found at:

fonestar.com/downloads/install_fonestar_es.pdf

- Check that the volume and gain controls are at minimum and connect the amplifier to power.
- Turn on the amplifier and activate the AUX or PLAY input and outputs (if using the ZONES output) you wish to use using the buttons on the front panel of the amplifier.
- Check the volume controls for inputs, outputs, and master volume.
- PRIORITY: enable priority on the desired inputs using the DIP microswitches and regulate sensitivity using the VOX controls on the inputs.
- Finally, adjust the equalisation using the BASS and TREBLE controls on the rear panel.

BLOCK DIAGRAM



SIMPLIFIED EU DECLARATION OF CONFORMITY

FONESTAR SISTEMAS S.A. hereby declares that the BLUETOOTH/USB/FM PA and zone PA amplifier MAX-240Z
 The complete text of the EU Declaration of Conformity is available at the following internet address: fonestar.com/MAX-240Z

TECHNICAL SPECIFICATIONS

	MAX-240Z
FEATURES	Class D PA amplifier and SMPS switch-mode power supply. USB/FM player. Microphone input with mix, gain and priority level control. Ringtone generator (Chime). 3 auxiliary inputs. Emergency input and mute for connection to alarm and evacuation systems. 24 V attenuator priority. Tone controls. 100 V, 70 V and 4 Ω outputs. Output zones with volume control and Off.
POWER	240 W RMS
RESPONSE	45-22,000 Hz -10 dB (@5W)
DISTORTION	THD+N: < 0.5% at 1 kHz
S/N RATIO	Mic >75 dB, Line >83 dB, Aux >81 dB
PROTECTIONS	Soft start, over-current, overload, over-temperature and short circuit
INPUTS	CH 1: 1 x balanced mic/line with 48V phantom, Combo (XLR + 6.3mm) and euroblock. Mic: 600 Ω , 5.6 mV RMS (-45 dBV) Line: 100k Ω , 250 mV RMS (-12 dBV). Contact closure ring tones. CH 2, 3 and 4: 3 x balanced mic/line with Phantom 48V, euroblock. Mic: 600 Ω , 5.6 mV RMS (-45 dBV). Line: 100k Ω , 250 mV RMS (-12 dBV). Contact closure ring tones. 3 x auxiliary, 2 x RCA, 47,000 Ω 316 mV RMS (-10 dBV) 1 x emergency line/100 V euroblock. Line: 326 mV RMS (-10 dBV). 100 V line Mute (Emergency Priority) by contact closure, euroblock 1 x Amp-in, RCA, 1.2 V RMS (+ 1.5 dBV)
OUTPUTS	1 x REC, 2 x RCA, 316 mV RMS (-10 dBV). Pre-master 1 x Pre-out, RCA, 1.2 V RMS (+1.5 dBV) 4 x 100 V loudspeaker zones with 7-position volume selector and OFF, euroblock 1 x Attenuator priority, 24 V and contact closure.
FUNCTIONS	Input priority: 100V Emergency input with maximum priority, attenuates all other inputs. Mute by contact closure, attenuates all inputs except the 100 V Emergency input. Channel 1 with priority over all other inputs, level selectable Channel 2, 3 and 4 with priority over auxiliary and player inputs, level selectable Power, signal, clip, priority activation and protection indicator lights Induction cooling, fanless. Silent and maintenance-free
CONTROLS	Microphone volume Mic/line/phantom selector, ring tones and priority Master volume Auxiliary input selector or player Zones with power on and 7 volume positions Tone: bass and treble (\pm 10 dB 100 Hz and 10k Hz). Ringing tone level Priority activation signal level (VOX)
PLAYER	USB/FM player for background music playback Autoplay, starts playback automatically when switched on Memory of the last selected mode Playback mode memory (random, repeat).
IMPEDANCE	4 Ω , 100 V (42 Ω) and 70 V (20 Ω) line, euroblock
OPERATION TEMPERATURE	Operation: -10° ~ 40°C Storage: -20° ~ 60°C
MAXIMUM HUMIDITY	90%
POWER SUPPLY	230/115 V AC 50-60Hz, Power consumption: 345 W Fuse AC 230 V 4 A/115 V 8 A
DIMENSIONS	430 x 89 x 320 mm depth
ACCESSORIES	FM antenna Power cable Rack mounts