

MAX-120Z

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



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

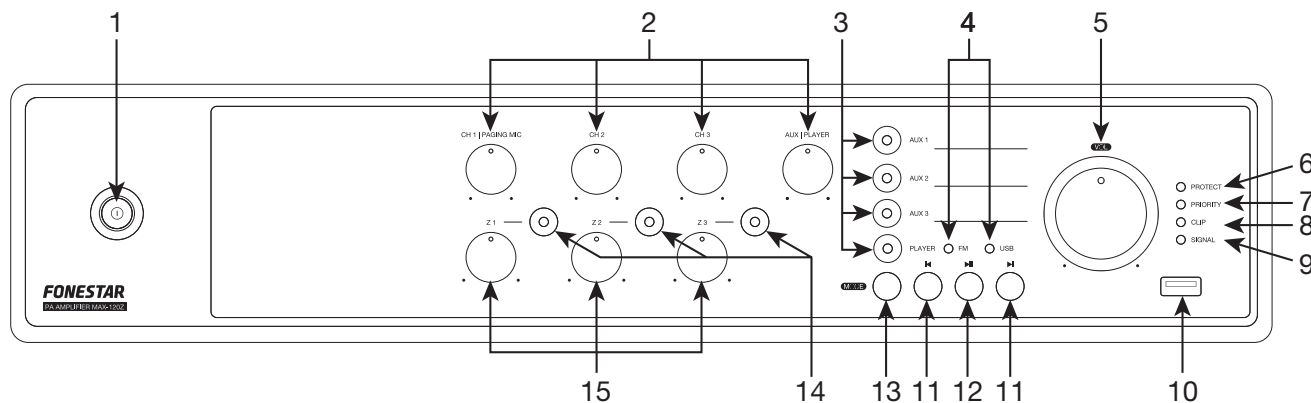
FONESTAR

DESCRIPTION

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

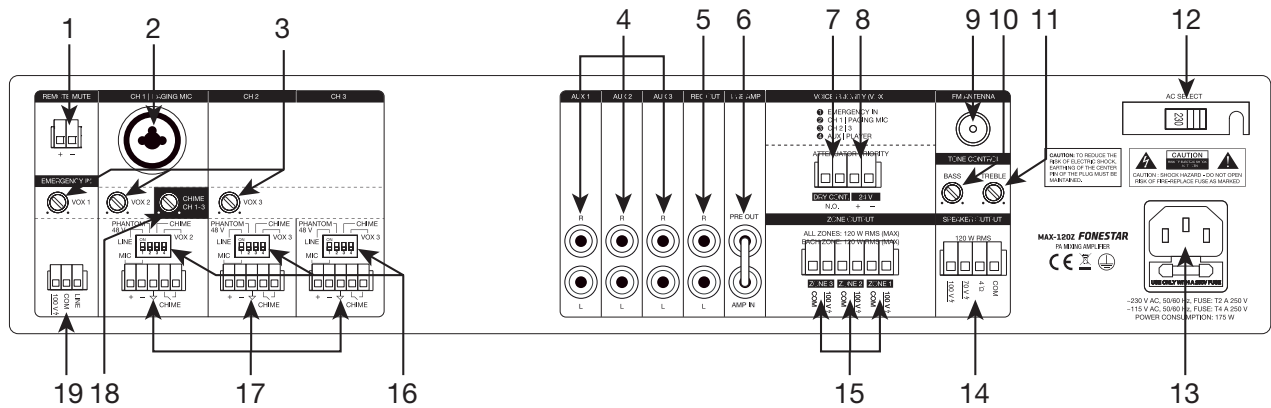
CONTROLS AND FUNCTIONS

FRONT PANEL



- 1.- **⓪**: indicator light and on/off switch of the amplifier.
- 2.- **CH 1|PAGING MIC/CH 2/CH 3/AUX|PLAYER**: volume controls for the CH 1, CH 2 and CH 3 respectively and AUX|PLAYER for AUX1-3 and the player.
- 3.- **AUX 1/AUX 2/AUX 3/PLAYER**: LED indicators and buttons to activate AUX 1, AUX 2, AUX 3 input or the integrated player (FM radio, USB).
- 4.- **FM/USB**: active mode LED indicators on the player.
- 5.- **VOL**: master amplifier volume control and amplifier on/off LED indicator.
- 6.- **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.
- 7.- **PRIORITY**: LED indicator for the existence of a signal with VOX priority.
- 8.- **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.
- 9.- **SIGNAL**: signal LED indicator. Lights up when output signal is detected.
- 10.- USB port for audio file playback.
- 11.- **◀/▶**: a short press, in USB mode skips to the next/previous audio track, in FM mode skips to the next/previous stored frequency.
- 12.- **▶||**: in USB mode, a short press starts/stops audio play 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.
- 13.- **MODE**: short presses of this button allow you to change the mode on the player to choose the desired audio source: USB or FM radio.
- 14.- **Z 1/Z 2/Z 3**: LED indicators and buttons to activate/deactivate the ZONE 1, ZONE 2 and ZONE 3 output zones respectively.
- 15.- **Z 1/Z 2/Z 3**: volume controls for output zones ZONE 1, ZONE 2 and ZONE 3 on the rear panel.

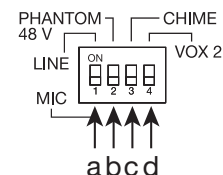
REAR PANEL



- 1.- **REMOTE MUTE:** 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.
- 2.- **CH 1|PAGING MIC:** VOX priority audio input, balanced combo connectors (XLR and 6.3 mm jack) and euroblock (17). In addition, this input has a DIP switch (16) to adjust the sensitivity of the MIC/LINE input, enable phantom power, and enable/disable VOX and CHIME priority.
- 3.- **VOX 1/VOX 2/VOX 3:** controls for sensitivity adjustment to give priority to the EMERGENCY IN, CH 1 and CH 2-3 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.
- 4.- **AUX 1/AUX 2/AUX 3:** stereo auxiliary inputs for connection of audio devices such as mixer, computers, etc. Connectors 2 x RCA.
- 5.- **REC OUT:** line level zones recording output, 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 - DRY CONT:** priority signal presence output for attenuators. This output is normally open and will close when there is signal at a priority input.
- 8.- **ATTENUATOR PRIORITY - 24 V:** priority signal presence output for attenuators. This output is at 0 V and will provide 24 V when there is a signal on a priority input.
- 9.- **FM ANTENNA:** FM antenna connection input.
- 10.- **STONE CONTROL - BASS:** 100 Hz cut-off frequency low pass filter that attenuates/enhances low frequencies.
- 11.- **STONE CONTROL - TREBLE:** high pass filter with 10 kHz cut-off frequency which attenuates/enhances high frequencies.
- 12.- **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.
- 13.- 115/230 V amplifier power supply input .
- 14.- **SPEAKER OUTPUT:** 4 Ω low impedance, 100 V line and 70 V line outputs provide 120 W RMS, 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.
- 15.- **ZONE OUTPUT:** 100 V line speaker outputs, euroblock connector. Each zone is limited to a maximum of 120 W RMS and the sum of the 3 zones cannot exceed the 120 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.

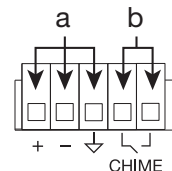
16.- DIP selectors:

- 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.



17.- Euroblock connector:

- a.- **+**, **-**, **↓** : input terminals for balanced input signal connection. CH 1 has another combo connector to connect the input signal, CH 2 and CH 3 only have this euroblock connector for the input signal connection. In addition, this input has DIP switches (16) 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.

18.- **CHIME**: CHIME tone inputs CH 1-3 volume control.19.- **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.

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 1-3 can be disabled by using the VOX 2 (CH 1) or VOX 3 (CH 2-3) DIP switch.
- Priority order:

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

- 1.- EMERGENCY IN input has the highest priority attenuating all other inputs when it has a signal.
- 2.- CH 1|PAGING MIC input has priority over inputs CH 2, CH 3, AUX 1-3 and the player.
- 3.- The CH 2 and CH 3 inputs have priority over the AUX inputs and the player.
- 4.- The AUX inputs and the player have no priority over any other signal.

FM/USB PLAYER

To operate the player you must activate this input by pressing the PLAYER button and the LED on this button will light up. Select the mode with the MODE button:

- 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 ►►.

CONNECTION

IMPORTANT: refrigerate the 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.

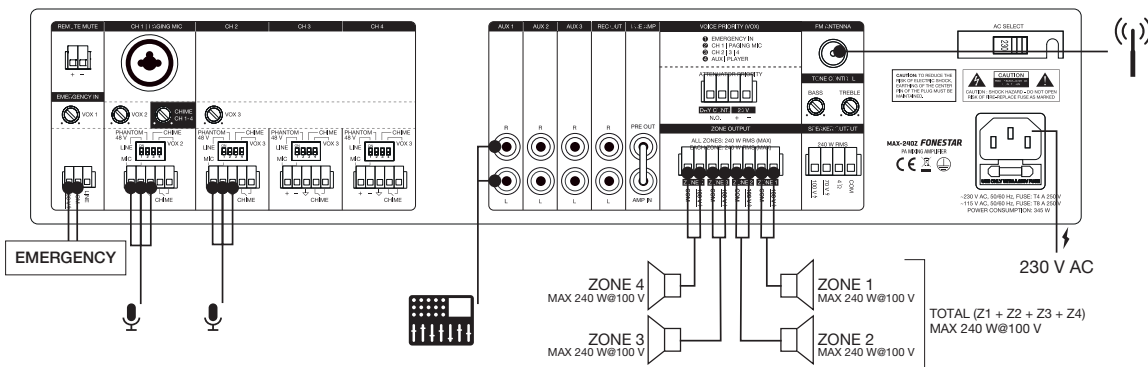
- With the amplifier turned off, connect all CH, AUX and EMERGENCY IN audio sources and select the LINE/MIC input type and enable/disable PHANTOM power on channels CH 1 to CH 3 using the DIP switches on each input channel. If you are going to use the FM radio, you will need to connect an FM receiver antenna.
- Connect the speakers to the corresponding low impedance output* (4 Ω + COM), 100 V line* (100 V + COM), 70 V line (70 V + COM), zones* (ZONE 1-3) or to the stereo recording output (REC OUT).

***IMPORTANT:** for proper operation and performance of the equipment, 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:

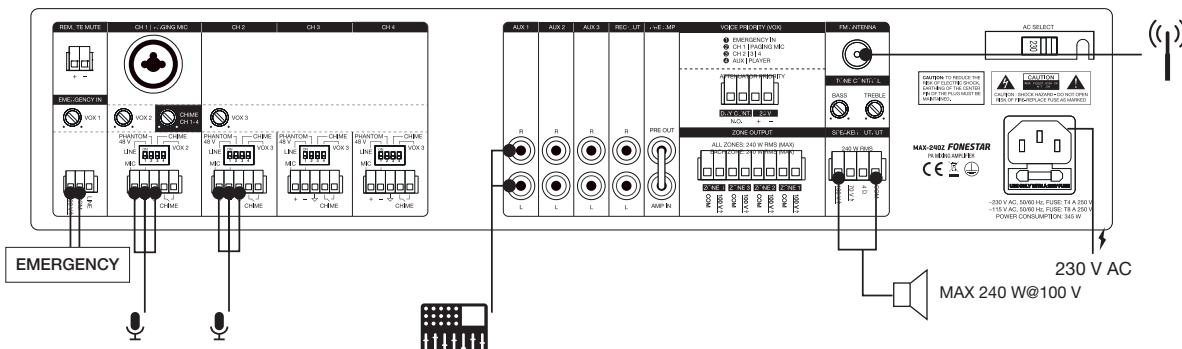
fonestar.com/downloads/install_fonestar_es.pdf

- 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 PLAYER input and outputs (if you are using the ZONES zone 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.

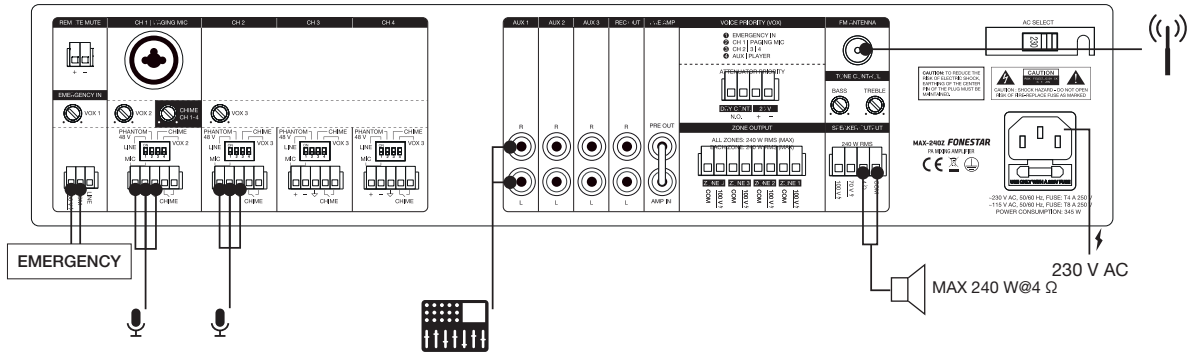
3 ZONES - 100 V LINE



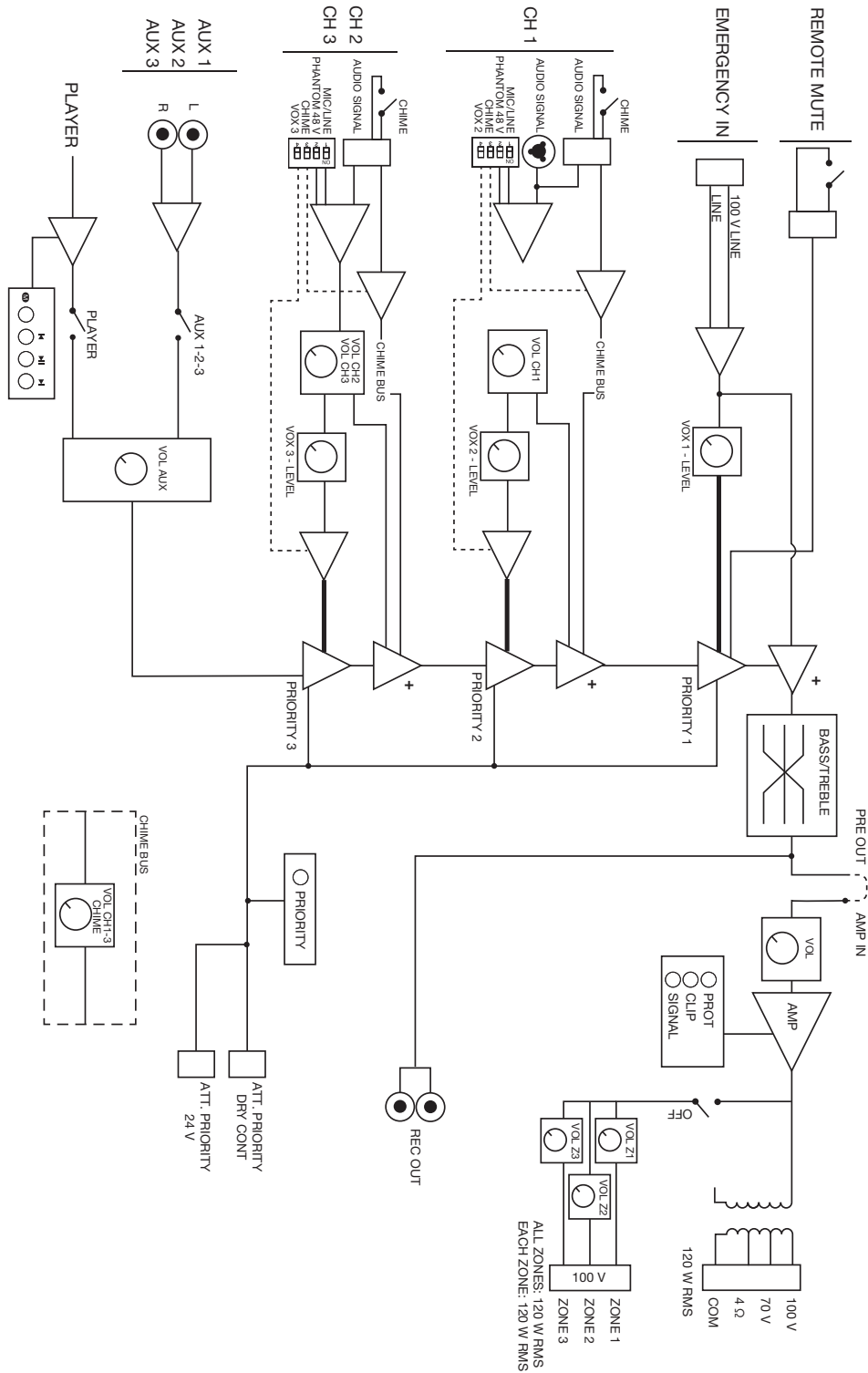
100 V LINE



LOW IMPEDANCE



BLOCK DIAGRAM



TECHNICAL SPECIFICATIONS

	MAX-120Z
FEATURES	Class D PA amplifier and switch-mode power supply SMPS. USB/FM player. Microphone inputs with mix, gain and priority level control. Chime tone generator. 3 auxiliary inputs. Emergency and mute input 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 and Off control.
POWER	120 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, overcurrent, overload, temperature and short circuit
INPUTS	CH 1: 1 balanced mic/line with 48 V phantom, Combo (XLR + 6.3 mm) 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 and 3: 2 balanced mic/line with 48V phantom, euroblock. Mic: 600 Ω , 5.6 mV RMS (-45 dBV). Line: 100k Ω , 250 mV RMS (-12 dBV). Contact closure ring tones 3 auxiliary, 2 x RCA, 47.000 Ω 316 mV RMS (-10 dBV) 1 emergency line/100 V euroblock. Line: 326 mV RMS (-10 dBV). 100 V line Mute (Emergency Priority) by contact closure, euroblock 1 Amp-in, RCA, 1.2 V RMS (+ 1.5 dBV)
OUTPUTS	1 REC, 2 x RCA, 316 mV RMS (-10 dBV). Pre-master 1 Pre-out, RCA, 1.2 V RMS (+1.5 dBV) 3 x 100 V loudspeaker zones with 7-position volume selector and OFF, euroblock 1 attenuator priority, 24 V and contact closure
FUNCTIONS	Input priority: 100 V Emergency input with highest priority, attenuates all other inputs Mute by contact closure, attenuates all inputs except the 100V Emergency input Channel 1 with priority over all other inputs, level selectable Channels 2 and 3 with priority over aux and player inputs, level selectable Indicator lights for power, signal, clip, priority and protection activation Induction cooling, fanless. Silent and maintenance-free
CONTROLS	Microphone volume Mic/line/phantom selector, ring tones and priority Master volume Selector for aux inputs or player Zones with power on and 7 volume positions Tone: bass and treble (+/- 10 dB 100 Hz and 10k Hz) Ring tone level Priority activation signal level (VOX)
PLAYER	USB/FM player for background music playback Autoplay, playback starts automatically when power is switched on Memory of last selected mode Play mode memory (random, repeat)
IMPEDANCE	4 Ω and 100 V line (83 Ω), euroblock
TEMPERATURE	Operation: -10° ~ 40°C Storage: -20° ~ 60°C
MAXIMUM HUMIDITY	90%
POWER SUPPLY	230/115 V AC 50-60 Hz, Power consumption: 175 W AC fuse 230 V 2 A/115 V 4 A
DIMENSIONS	430 x 89 x 320 mm depth
ACCESSORIES	FM Antenna Power cable Rack mounts