



QX-240

Public Address Amplifier
USER'S MANUAL

▪

Amplificador de Megafonía
MANUAL DEL USUARIO

Rev.0

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1 Safety Instructions

Please read carefully the next safety instructions.

1. Keep these instructions for future reference
2. Locate the apparatus at places nearby power socket for quick power disconnection. Avoid places where the equipment can be an obstacle. Disconnect the AC power supply before cleaning the equipment.
3. This appliance shall not be exposed to dripping or splashing water and that no object filled with liquid shall be placed on the apparatus. Do not use any liquid or spray detergent on the equipment for cleaning purposes. This appliance should not be exposed to moisture.
4. Do not place any lit candles or similar objects on top of the apparatus.
5. Set up the equipment on a safe surface to avoid falls and damages.
6. The covering grill provides air convection. **DO NOT COVER THE GRILLS.** A gap of 5 cm should be left around the perimeter of the apparatus to allow correct ventilation.
7. The equipment shall never be opened. For safety reasons, please contact qualified personnel.
8. The apparatus should be connected to ground for protection.
9. Ask the technician to inspect the equipment if any of the next situations occur:
 - a) Cable or plug is damaged.
 - b) Liquid has penetrated inside of the equipment.
 - c) The equipment has been exposed to moisture.
 - d) The apparatus does not work correctly or does not work according to the user's manual.
 - e) The equipment has suffered a fall and has been damaged.
 - f) The appliance has clear signs of being damaged.
10. The wiring should be performed only by trained personnel. Disconnect all the audio inputs and outputs while performing connections or disconnect the equipment from the power supply. Please make sure to use the appropriate cables.

2 Functional Features

The QX240 systems are comprehensive, all-in-one mixer-amplifier solutions for commercial and industrial applications. These low-cost units provide all necessary features in a simple building-block format.

1. Six microphone or line inputs with 1/4-inch phone, XLR and RCA jacks.
2. Phantom power for all of MIC channels.
3. Acceptable wide range input level.
4. Priority input through noise gate.
5. Three layer priority for input audio sources.
6. Seven band graphic equalizer.
7. Low distortion and low noise level.
8. Warning tone and siren transmission.
9. Integrated audio source line output.
10. Extendable by adding audio mixer and power amplifier with LINK and PRE-AMP terminal.
11. Advanced protection system includes current limiting, overcurrent and thermal protection.
12. Desktop and 19-inches rack mountable type.
13. Compact size and lightweight.

3 Front Panel

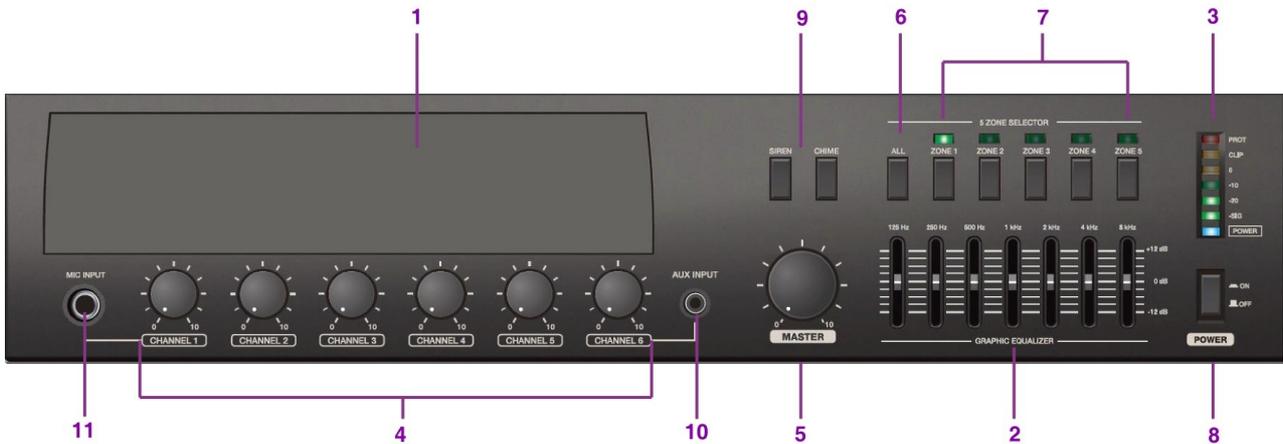


Illustration 1: QX-240 Front View

1. Bay for adding music source (optional)
2. Graphic equalizer control (125Hz/250Hz/500Hz/1KHz/2KHz/4KHz/8KHz)
3. Protection, output level and power indicators.
4. Input channel volume control.
5. Master volume control.
6. All speaker zone output selector.
7. Individual speaker zone output selector.
8. Power switch.
9. Evacuation siren and pre announcement chime switch.
10. Auxiliary input (idem CH6).
11. MIC input (idem CH1).

4 Rear Panel

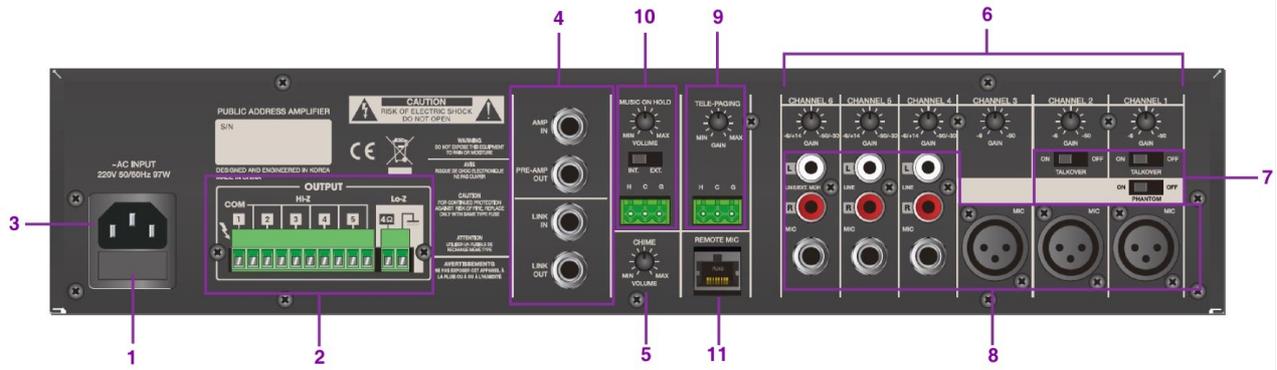


Illustration 2: QX-240 Rear View

1. AC fuse.
2. Speaker outputs connector (4-ohm, selectable 70V and 100V).
3. AC power socket.
4. Expansion ports (Amplifier input AMP-IN, Integrated mixer-equalizer output AMP-OUT, External audio processor input LINK-IN, External audio processor output LINK-OUT).

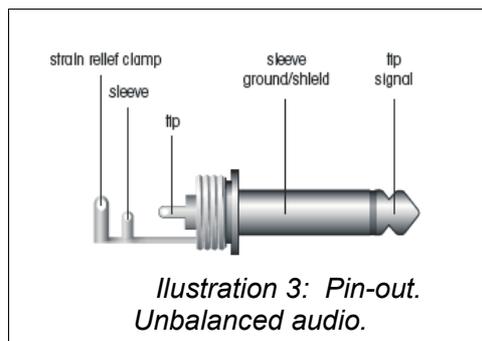


Illustration 3: Pin-out. Unbalanced audio.

5. Pre-announce chime/siren level control.
6. Gain controls for variable input level.
7. Phantom power and priority control switches.
8. Balance source input, connectors 1-3. Selectable priority inputs, 1 and 2. The input number 1 has an equivalent jack connector MIC input on the front panel of the

equipment. The rest of the inputs do not have priority, they are mixed.

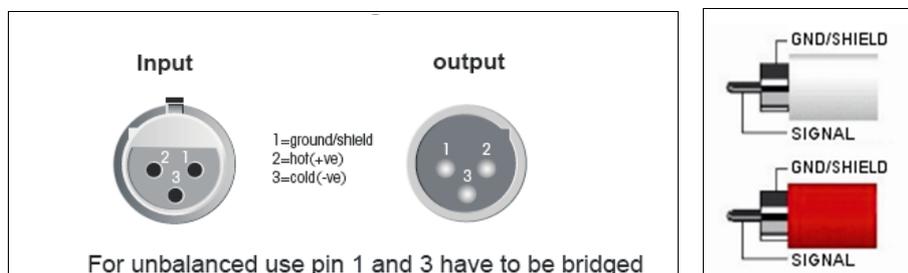


Illustration 4: Pin-out. Signal input

9. Priority input through noise gate. Priority balanced audio input, with associated activation threshold control (see Illustration 5).

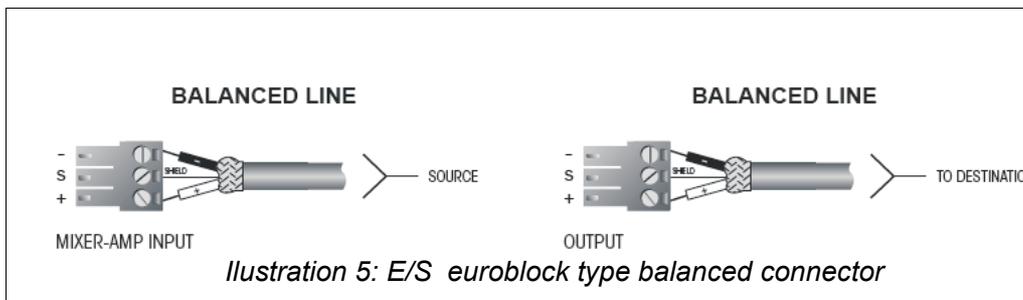


Illustration 5: E/S euroblock type balanced connector

10. Integrated source output: origin of the input source can be chosen by the INT/EXT selector: integrated in the front bay or the source connected to CH6. Balanced audio output (see Illustration 5), with associated gain control.

11. RJ45 terminal reserved for other purposes.

5 Speaker wiring.

5.1 Low impedance speaker connection. 4 Ω

In order to connect conventional 4 Ω speaker systems, connect positive terminal of the speaker (+) to 4Ω terminal. Connect the negative side (-) to COM terminal.

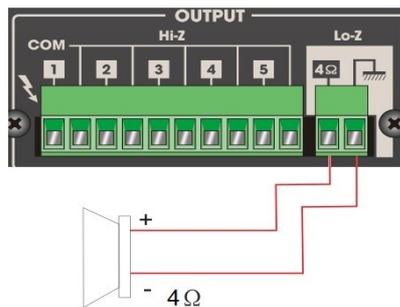


Illustration 6: Low Impedance 4 Ω speaker connection

5.2 High impedance speaker connection. 70/100V

In order to parallel connect high impedance speaker systems (70/100V), connect the positive side of the speaker (+) to 70/100V terminal. Connect the negative side (-) to COM terminal.

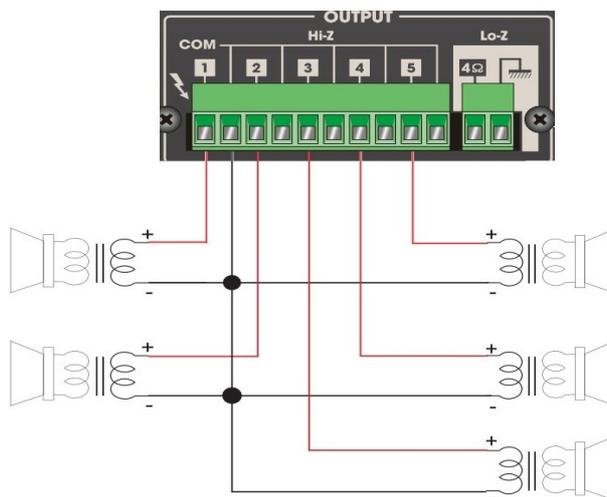


Illustration 7: High Impedance speaker connection 70/100V

5.3 Incorrect speaker connection.

CAUTION: 70/100V output lines should never be used simultaneously with the low impedance output, otherwise the equipment could be seriously damaged.

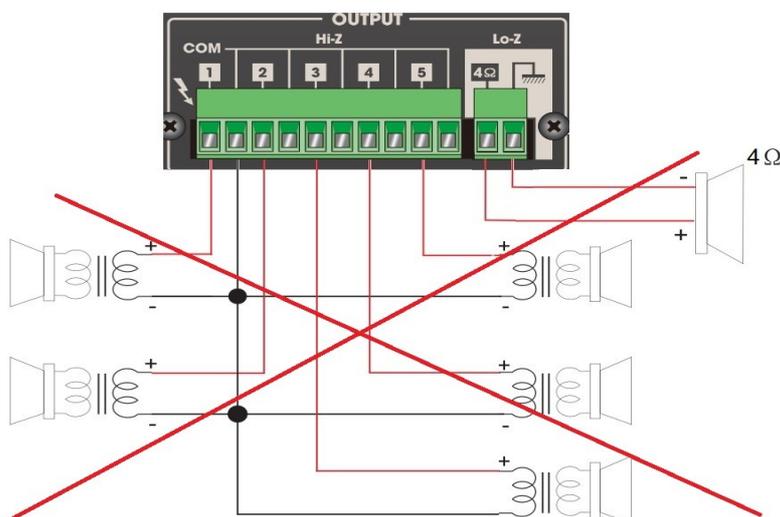


Illustration 8: Incorrect speaker connection

6 Operating Overview

1. Power On:

The computer is connected to the 230V AC. Press the ON/OFF switch on the front panel.

2. Manual alarm/message broadcasting:

To activate the warning tone, or alarm you must press the button on the front panel.

3. Phantom Power:

This unit allows phantom power for all microphones inputs. To activate it you must activate the corresponding switch on the rear panel.

4. Gain control input:

To adjust the gain of the inputs, the QX series features a potentiometer per input channel, located on the rear panel. This potentiometer allows a dynamic range of 44dB.

5. Priority control:

Priority adjustment of the sources can be done by using the switches on the rear panel for channels 1 and 2 "Talkover". QX240 has three priority levels :

- (1) Priority input (Tele-Paging)

- (2) Notification tone and inputs 1 and 2: If several of these inputs are active, the signal will mix them.
- (3) No priority: All inputs without priority will enter mixed.

Input	Priority
1	2 (selectable)
2	2 (selectable)
3	3 No priority
4	3 No priority
5	3 No priority
6	3 No priority
Tone	2
Tele-Paging	1

Table 1: Input priorities

7 Block Diagram

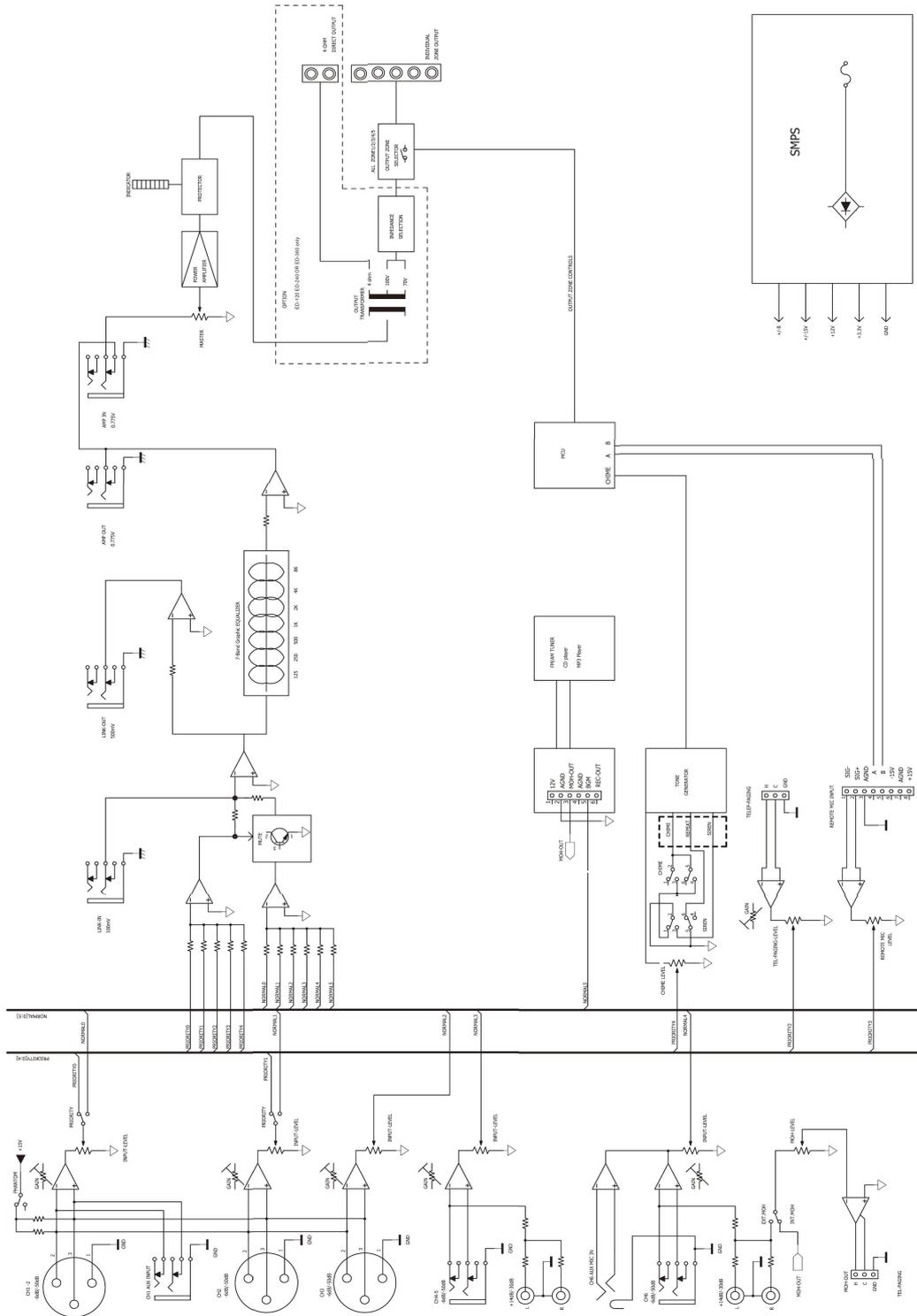


Illustration 9: QX-240 block diagram

8 Frequency Response Curve

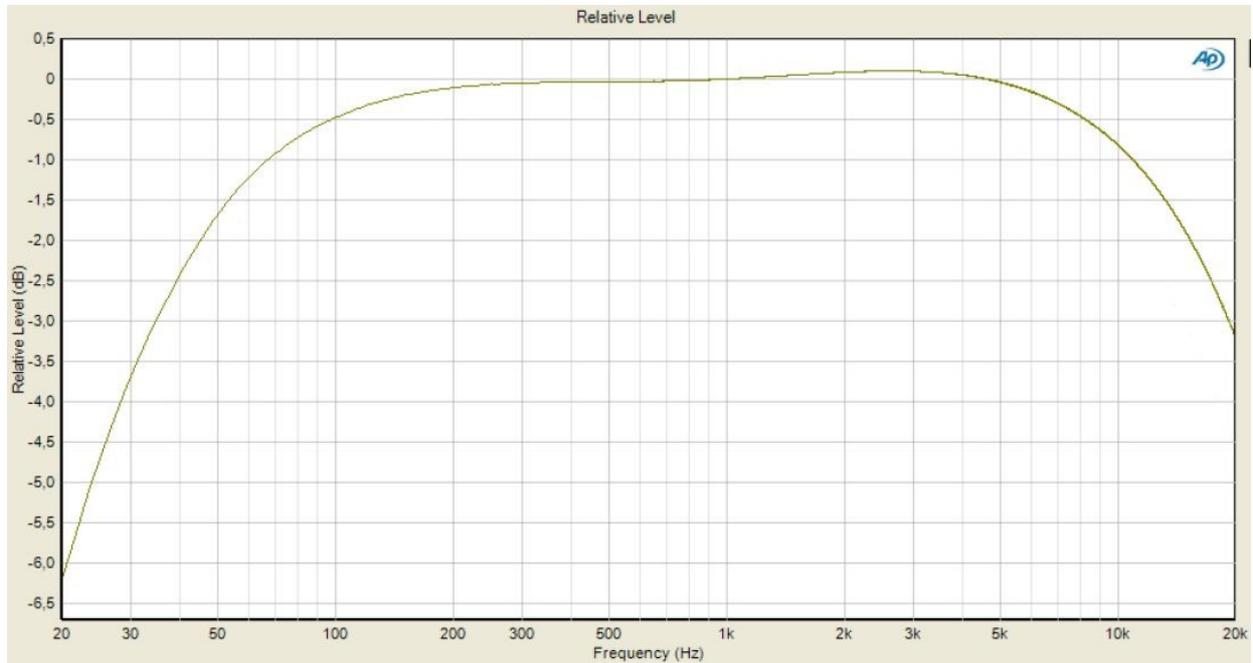


Illustration 10: Frequency response curve

9 Specifications

Model	QX-240
Input sensitivity for full output at maximum gain	
Balanced Microphone Channels	-50dB ± 3dB
Balanced Line Channels	-22dB ± 3 dB
Balanced TELE – PAGING input	-21dB ± 3dB
Unbalanced Link-in	-17dB ± 3dB
Unbalanced Amp-in	0dB ± 3dB
Frequency Response at 1 watt from speaker out tap. 100 Hz ~ 10 KHz	+0.5dB -1dB
Graphic Equalizer	
125Hz,250Hz,500Hz,1kHz,2kHz,4kHz,8kHz	±12dB ± 3dB
Signal to Noise Ratio at rated power output	> 90dB
Crosstalk at all control maximum	-70dB at 1kHz
Output Power at THD 0.5%	240Watts
Total Harmonic Distortion(THD) at 1kHz rated power	Less than 0.5%
Phantom Power	15VDC
Operating Temperature/Humidity at non-condensing	0~40° at 95% humidity
Output Voltage and Impedance	
4Ω	31V
70V	20.4Ω
100V	41.6Ω
Construction	
Refrigeración	Convection Cooled
Dimensions (Width/Height/Depth)	420(W) x 88(H) x 320(D) mm
Net Weight	7.3 kg

NOTES



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