XI AUDIO - HP505 HEADPHONE PANEL

HP505

MINI INSTRUCTION MANUAL

INTRODUCTION

XI Audio HP-505 is a stereo headphone amplifier and control panel for broadcast studios. The HP-505 can be mounted directly on the desktop or can be flush mounted. The HP-505 works with all Axia devices that have an Axia GPIO port, but can be used with other broadcast systems as well. It provides remote control of mic on/off functions.

Dedicated Mute and Talkback buttons give talent full control. The buttons can be programmed to use one of the eight predefined colours using the DIP switches on the rear panel.

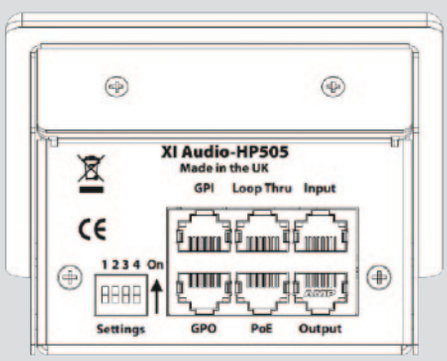
Multiple HP-505's can be daisy-chained using CAT5/6 cabling and the Loop-Thru port to produce a multi-user headphone listening system. The unit can be powered from a POE switch or POE Injector. The HP-505 is optimized for use with contemporary high-efficiency headphones. Each HP-505 contains its own amplifier so any combination of different headphones can be used. There is no interaction between units and no degradation of audio performance.

The HP-505 features a volume control and 2 headphone jack sockets - 1/4" and 1/8" (3.5mm) which allows both standard and mini headphones to be used. A volume control knob allows full control of headphone level. There is also an 1/8" stereo line input jack socket on the panel allowing audio to be played from devices such as mobile phones or tablets.

On the back panel there are total 6 RJ45 (Cat 5/6) connectors. All audio input/output and GPIO connections are made through these connectors. The GPO socket is intended for connection to an XI Audio GPIO dongle, allowing GPIs of an Axia xNode (or similar) to be triggered from the Talk Back, Mute or Mic Buttons.

GETTING STARTED

REAR PANEL CONNECTORS, CONTORLS & INDICATORS



Stereo Line Input Connector

This 3.5mm jack socket is located on the right side of the front panel above the volume control. The input is balanced up, given 12dB of gain and routed to the rear panel output.

The connections are as follows:
Tip: Left | Ring: Right | Sleeve: Screen

Headphone Connector 6.35mm

This .1/4" (6.35mm) jack socket is located on the left of the front panel above the volume control. It is connected to the headphone amplifier in parallel with the 3.5mm headphone jack socket. The maximum output is +18dBu.

The connections are as follows:
Tip: Headphone Left | Ring: Headphone Right | Sleeve: Ground

Headphone Connector 3.5mm

This 3.5mm jack socket is located at the centre of the front panel above the volume control. It is connected to the headphone amplifier in parallel with the 6.35mm headphone jack socket. The maximum output is +18dBu.

The connections are as follows:
Tip: Headphone Left
Ring: Headphone Right
Sleeve: Ground

Headphone Volume

This is the volume control of the headphone outputs with a range of +12dB to -60dB using a logarithmic potentiometer.

Talkback Button

This button, when pressed briefly (less than 350ms) activates and latches pin 3 of the GPO RJ45. When pressed for more than 350ms the button and GPO output act momentarily and deactivate when released. The button illumination responds to pin 3 of the GPI RJ45.

Mute Button

This button, when pressed briefly (less than 350ms) activates and latches pin 5 of the GPO RJ45. When pressed for more than 350ms the button and GPO output act momentarily and deactivate whenreleased. The button illumination responds to pin 5 of the GPI RJ45.

Mic Button

This button, when pressed briefly (less than 350ms) activates and latches on the GPO on pin 1 of the RJ45. Pin 2 provides an inverted output of pin 1. When pressed for more than 350ms the button and GPO output act momentarily and deactivate when released. The button illumination responds to pins 1 and 2 of the GPI RJ45 All button illumination colors can be changed using the 4 pole DIP switch on the back panel. There are 8 color choices in total: off, red, green, blue, cyan, magenta, yellow and white.

DIP Switch

DIP Switch 1: LED current bit 1 (see table)
DIP Switch 2: LED current bit 0 (see table)
DIP Switch 3: Enables/disables LED color programming mode (see table)
DIP Switch 4: Determines which switch state programming mode is active on (DIP off = off color, DIP on = on color) (see table)

LED BRIGHTNESS TABLE		
1	2	LED Brightness Level
Off	Off	25%
Off	On	50%
On	Off	75%
On	On	100%

LED Color Programming (on start-up)

When DIP3 is enabled on power up, the unit will enter programming mode. Each button illuminates in the color designated for its off or on state (controlled by DIP4). The user can press each button to cycle through 8 color options to set the desired color. Setting DIP3 switch back to off stores the colors to EEPROM and enters normal run mode. See programming mode flowchart for more information.

DEFAULT COLORS UPON SHIPPING		
Function	Off Color	On Color
Talkack	Off	Green
Mute	Off	Red
Mic	Red	Green

SAMPLE CONNECTION - DRAWING

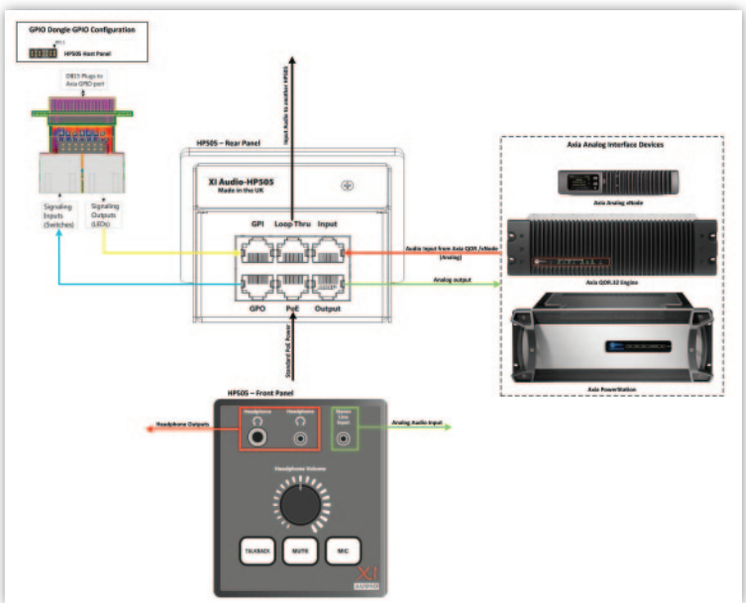
Technical Specifications

Audio Input Performance Specifications

Parameter	Input (Headphone Source)
Input Impedance	>20kΩ, electronically balanced
Maximum Input Level	+24dBu
Parameter	**3.5mm Line Input**
Input Impedance	>20kΩ, electronically balanced
Maximum Input Level	+12dBu
Gain	+12dB fixed (designed to interface a -10dBV (-8dBu) nominal level unbalanced input to a +4dBu nominal level balanced output)

Audio Output Performance Specifications

Parameter	Line Output
Output Impedance	<50Ω, electronically balanced
Maximum Output Level	+24dBu
Noise (A-weighted)	-86dBu, 20kHz BW, Rs=200Ω, ref. 12dB gain
Frequency Response	20Hz to 20kHz, +0/-0.5dB
THD+N	0.01% THD, +8dBu, 1kHz, 20kHz BW
Crosstalk	<-100dB
Parameter	**Headphone Outputs**
Supported Load Impedance	Drives 150mW into 32Ω to 600Ω headphones
Maximum Output Level	+18dBu
Noise (A-weighted)	-82dBu, 20kHz BW, Rs=200Ω, ref. 12dB gain
Frequency Response	20Hz to 20kHz, +0/-0.5dB
THD+N	0.01% THD, +8dBu, 1kHz, 20kHz BW
Crosstalk	<-100dB



RJ45 Block

GPI :

The GPI socket is intended for connection to a GPIO port to illuminate the Talkback, Mute or Mic LEDs.
Pin 1: Mic On Input
Pin 2: Mic Off Input
Pin 3: Talkback Input
Pin 4: No Connection
Pin 5: Mute Input
Pin 6: No Connection
Pin 7: Ground
Pin 8: No Connection

GPO:

The GPO socket is intended for connection to an XI audio GPIO dongle, allowing GPIs of an AxiaxNode (or similar) to be triggered from the Talkback, Mute or Mic buttons.
Pin 1: Mic On Output
Pin 2: Mic Off Output (set on power-up)
Pin 3: Talkback Output
Pin 4: No Connection
Pin 5: Mute Output
Pin 6: No Connection
Pin 7: Fused +5V 200mA Output
Pin 8: No Connection

Loop Thru:

The Loop Thru socket is a non-driven, parallel connection of the audio input, allowing the user to distribute the audio feed to another location after passing through the HP505. The high input impedance of the HP505 means multiple units could be daisy chained, providing several headphone
outputs from a single audio feed.
Pin 1: Line Left Loop Thru Phase
Pin 2: Line Left Loop Thru Non-Phase
Pin 3: Line Right Loop Thru Phase
Pin 4: Ground
Pin 5: No Connection
Pin 6: Line Right Loop Thru Non-Phase
Pin 7: No Connection
Pin 8: No Connection

PoE:

The PoE socket allows the user to power the HP505 from a PoE switch or PoE injector. It has an input range of 36V to 57V (designed to work with standard 48V PoE). The RJ45 pinout complies with IEEE 802.3af pinout standards A and B.
Pin 1&2: Bridge Rectifier A
Pin 3&6: Bridge Rectifier A
Pin 4&5: Bridge Rectifier B
Pin 7&8: Bridge Rectifier B

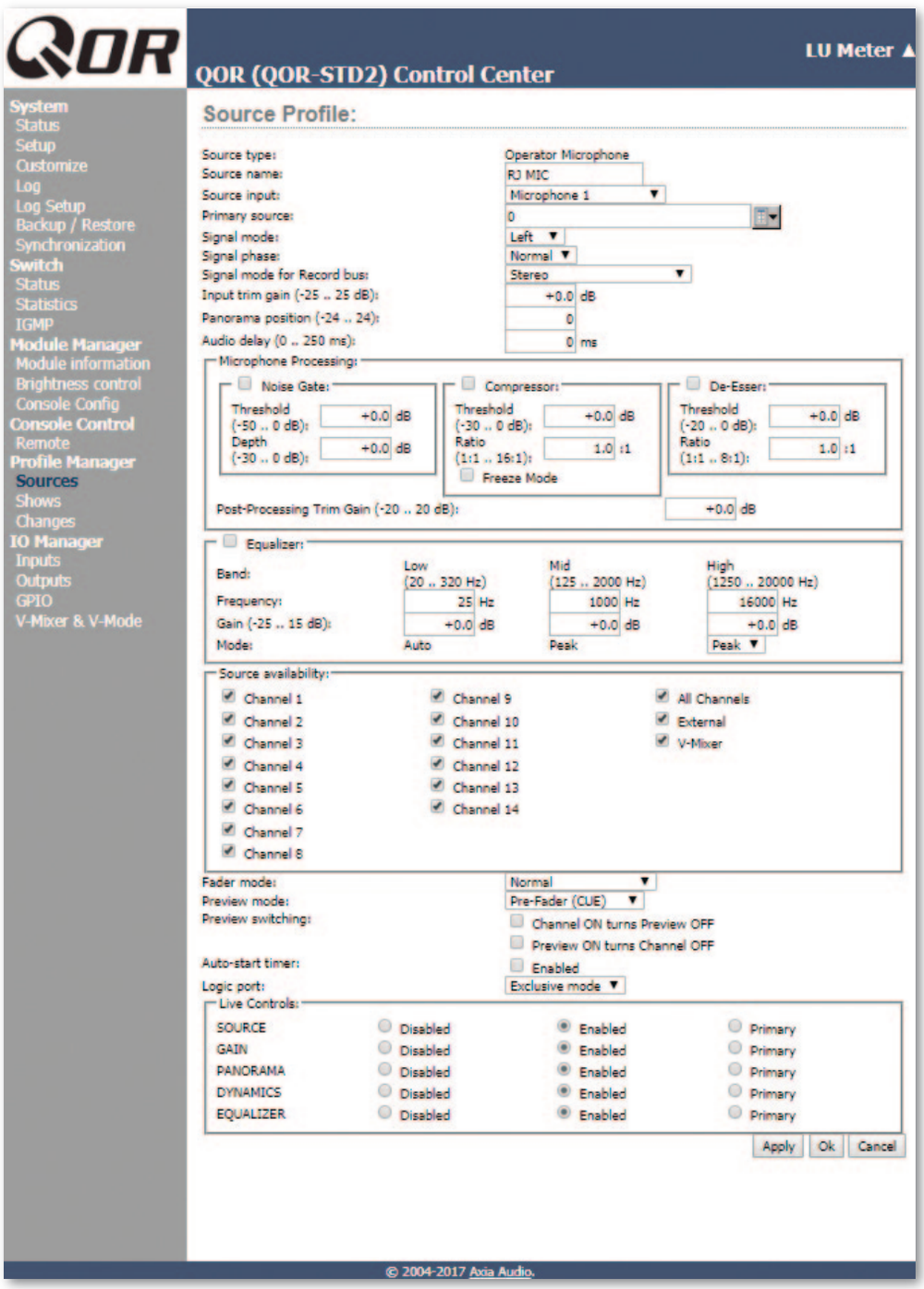
Input:

The input socket is a balanced line input (Studiohub™ pinout) that is routed to the volume control (and then
the headphone output connectors). It has a maximum audio input level of +24dBu.
Pin 1: Line Left In Phase
Pin 2: Line Left In Non-Phase
Pin 3: Line Right In Phase
Pin 4: Ground
Pin 5: No Connection
Pin 6: Line Right In Non-Phase
Pin 7: No Connection
Pin 8: No Connection

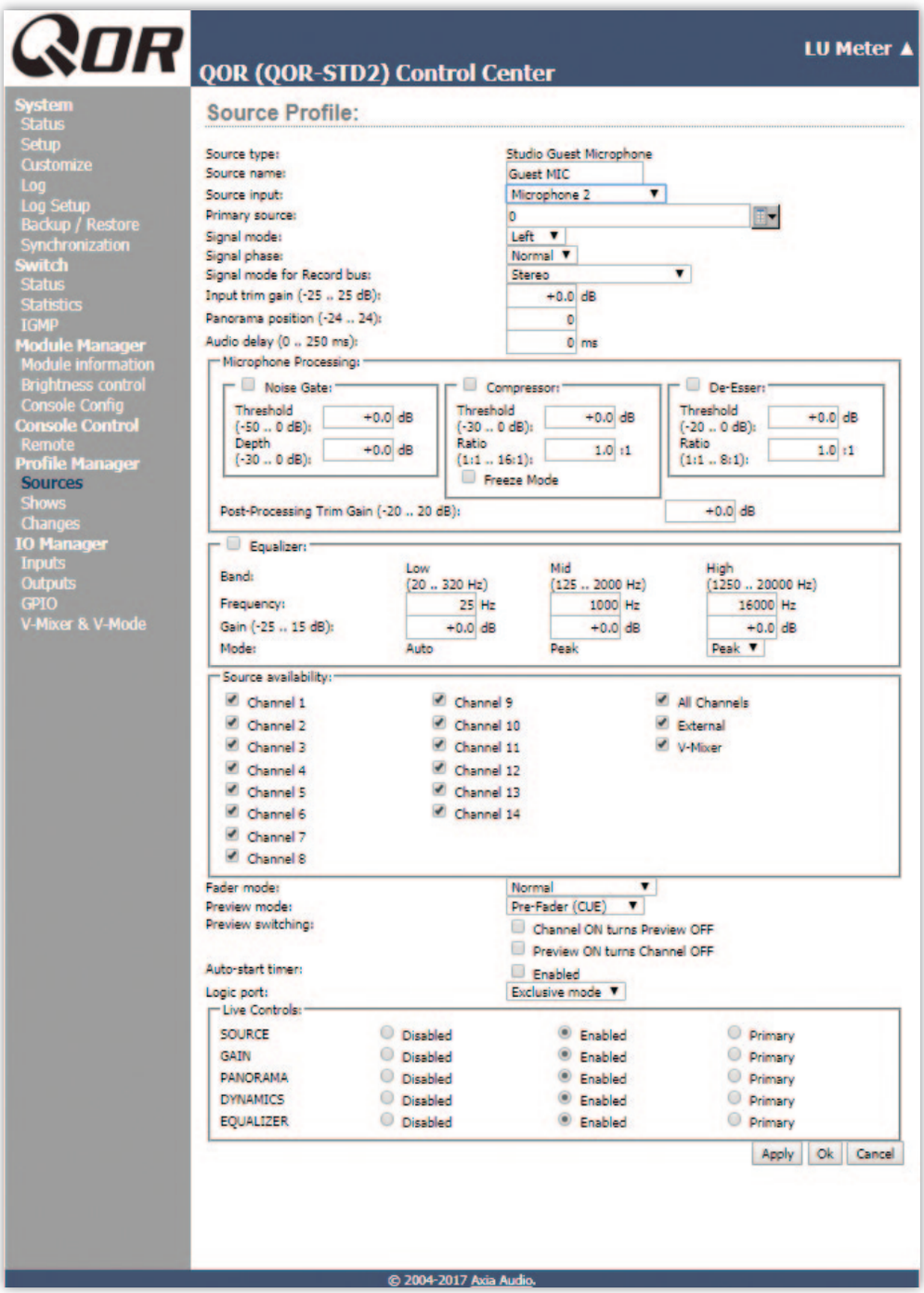
Output:

The output socket is a balanced line output (Studiohub™ pinout) that is fed from the front panel 3.5mm line input jack. It has a maximum output
level of +24dBu.
Pin 1: Line Left Out Phase
Pin 2: Line Left Out Non-Phase
Pin 3: Line Right Out Phase
Pin 4: Ground
Pin 5: No Connection
Pin 6: Line Right Out Non-Phase
Pin 7: No Connection
Pin 8: No Connection

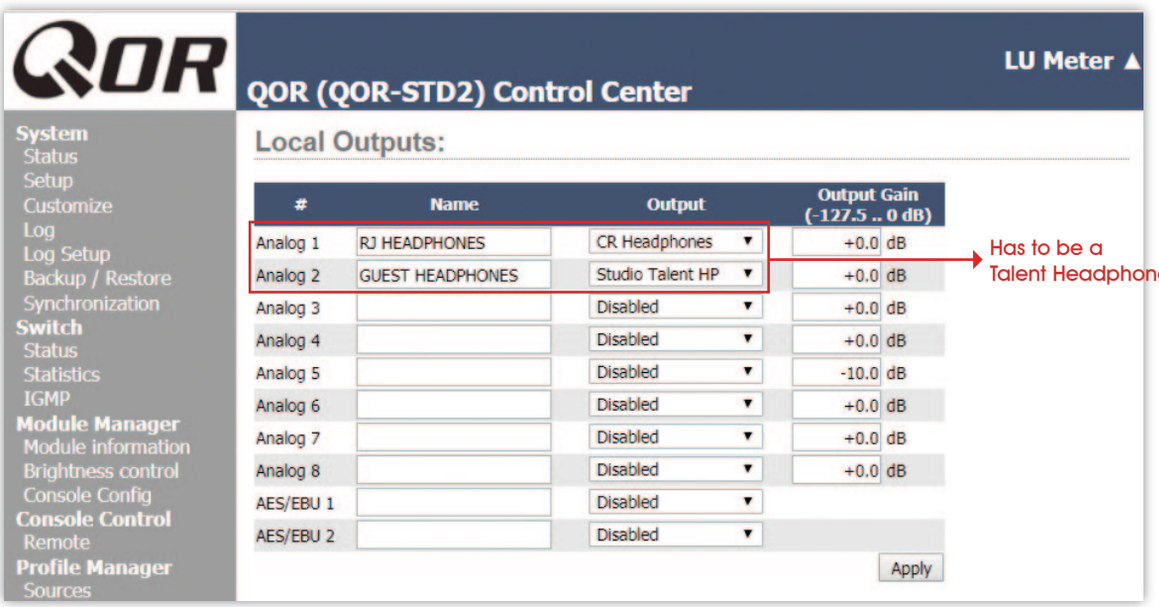
SAMPLE CONFIGURATION WITH QOR FOR MAIN MICROPHONE

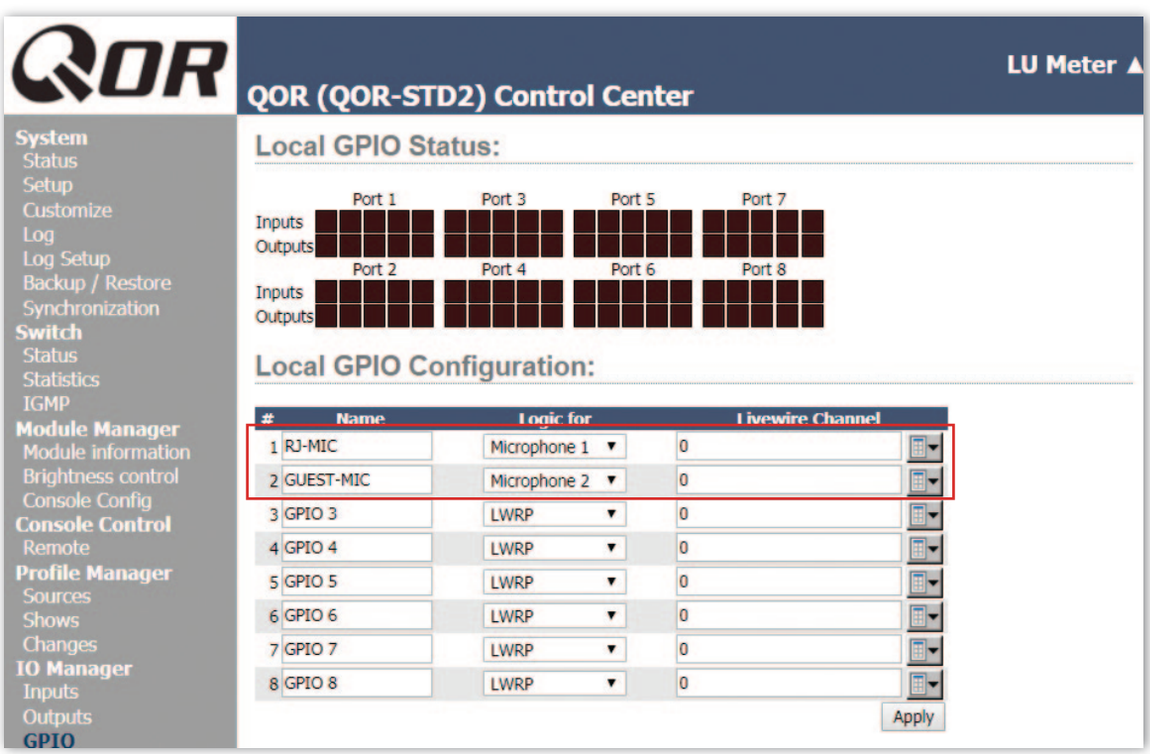


SAMPLE CONFIGURATION WITH QOR FOR GUEST MICROPHONE



SAMPLE CONFIGURATION WITH QOR





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