



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

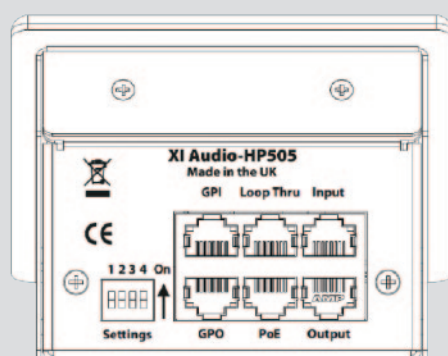
allowing audio to be played from devices such as mobile phones or tablets.

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 GPIOs of an Axia xNode (or similar) to be triggered from the Talk Back, Mute or Mic Buttons.



GETTING STARTED

REAR PANEL CONNECTORS, CONTROLS & 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 when released. 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 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

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

SAMPLE CONNECTION - DRAWING

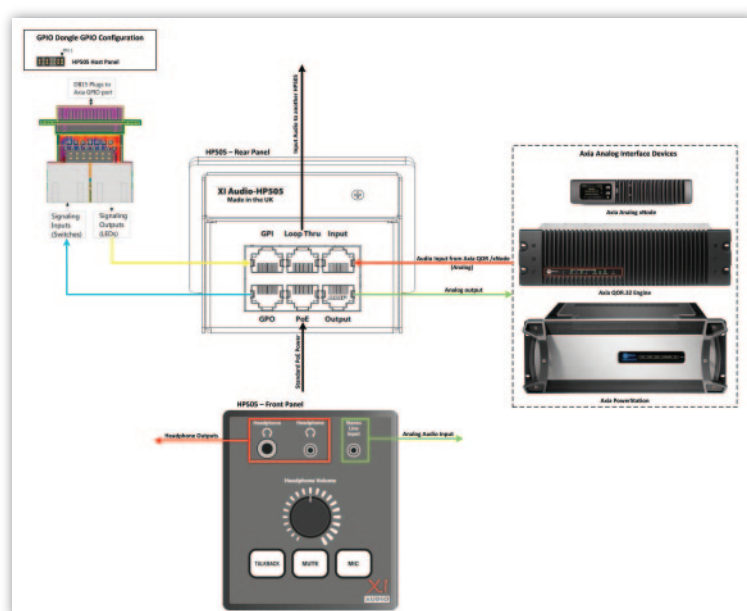
Technical Specifications

Audio Input Performance Specifications

Parameter	Input (Headphone Source)
Input Impedance	>20k Ω , electronically balanced
Maximum Input Level	+24dBu
Parameter	3.5mm Line Input
Input Impedance	>20k Ω , 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	<50 Ω , electronically balanced
Maximum Output Level	+24dBu
Noise (A-weighted)	-86dBu, 20kHz BW, Rs=200 Ω , 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 32 Ω to 600 Ω headphones
Maximum Output Level	+18dBu
Noise (A-weighted)	-82dBu, 20kHz BW, Rs=200 Ω , 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 AxiastNode (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



QOR (QOR-STD2) Control Center
LU Meter ▲

System
Status
Setup
Customize
Log
Log Setup
Backup / Restore
Synchronization
Switch
Status
Statistics
IGMP
Module Manager
Module information
Brightness control
Console Config
Console Control
Remote
Profile Manager
Sources
Shows
Changes
IO Manager
Inputs
Outputs
GPIO
V-Mixer & V-Mode

Source Profile:

Source type: Operator Microphone
Source name: RJ MIC
Source input: Microphone 1
Primary source: 0
Signal mode: Left
Signal phase: Normal
Signal mode for Record bus: Stereo
Input trim gain (-25 .. 25 dB): +0.0 dB
Panorama position (-24 .. 24): 0
Audio delay (0 .. 250 ms): 0 ms

Microphone Processing:

☐ Noise Gate: Threshold (-50 .. 0 dB): +0.0 dB Depth (-30 .. 0 dB): +0.0 dB

☐ Compressor: Threshold (-30 .. 0 dB): +0.0 dB Ratio (1:1 .. 16:1): 1.0 :1 ☐ Freeze Mode

☐ De-Esser: Threshold (-20 .. 0 dB): +0.0 dB Ratio (1:1 .. 8:1): 1.0 :1

Post-Processing Trim Gain (-20 .. 20 dB): +0.0 dB

☐ Equalizer:

Band: Low (20 .. 320 Hz)
Frequency: 25 Hz
Gain (-25 .. 15 dB): +0.0 dB
Mode: Auto

Band: Mid (125 .. 2000 Hz)
Frequency: 1000 Hz
Gain (-25 .. 15 dB): +0.0 dB
Mode: Peak

Band: High (1250 .. 20000 Hz)
Frequency: 16000 Hz
Gain (-25 .. 15 dB): +0.0 dB
Mode: Peak

Source availability:

☒ Channel 1
☒ Channel 2
☒ Channel 3
☒ Channel 4
☒ Channel 5
☒ Channel 6
☒ Channel 7
☒ Channel 8

☒ Channel 9
☒ Channel 10
☒ Channel 11
☒ Channel 12
☒ Channel 13
☒ Channel 14

☒ All Channels
☒ External
☒ V-Mixer

Fader mode: Normal
Preview mode: Pre-Fader (CUE)
Preview switching: ☐ Channel ON turns Preview OFF ☐ Preview ON turns Channel OFF
Auto-start timer: ☐ Enabled
Logic port: Exclusive mode

Live Controls:

SOURCE	<input type="radio"/> Disabled	<input checked="" type="radio"/> Enabled	<input type="radio"/> Primary
GAIN	<input type="radio"/> Disabled	<input checked="" type="radio"/> Enabled	<input type="radio"/> Primary
PANORAMA	<input type="radio"/> Disabled	<input checked="" type="radio"/> Enabled	<input type="radio"/> Primary
DYNAMICS	<input type="radio"/> Disabled	<input checked="" type="radio"/> Enabled	<input type="radio"/> Primary
EQUALIZER	<input type="radio"/> Disabled	<input checked="" type="radio"/> Enabled	<input type="radio"/> Primary


Apply Ok Cancel

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HP505 MINI INSTRUCTION MANUAL

SAMPLE CONFIGURATION WITH QOR FOR GUEST MICROPHONE



QOR (QOR-STD2) Control Center
LU Meter ▲

System
Status
Setup
Customize
Log
Log Setup
Backup / Restore
Synchronization
Switch
Status
Statistics
IGMP
Module Manager
Module information
Brightness control
Console Config
Console Control
Remote
Profile Manager
Sources
Shows
Changes
IO Manager
Inputs
Outputs
GPIO
V-Mixer & V-Mode

Source Profile:

Source type: Studio Guest Microphone
Source name: Guest MIC
Source input: Microphone 2
Primary source: 0
Signal mode: Left
Signal phase: Normal
Signal mode for Record bus: Stereo
Input trim gain (-25 .. 25 dB): +0.0 dB
Panorama position (-24 .. 24): 0
Audio delay (0 .. 250 ms): 0 ms

Microphone Processing:

☐ Noise Gate: Threshold (-50 .. 0 dB): +0.0 dB Depth (-20 .. 0 dB): +0.0 dB

☐ Compressor: Threshold (-30 .. 0 dB): +0.0 dB Ratio (1:1 .. 16:1): 1.0 :1 ☐ Freeze Mode

☐ De-Esser: Threshold (-20 .. 0 dB): +0.0 dB Ratio (1:1 .. 8:1): 1.0 :1

Post-Processing Trim Gain (-20 .. 20 dB): +0.0 dB

☐ Equalizer:

Bands: Low (20 .. 320 Hz)
Frequency: 25 Hz
Gain (-25 .. 15 dB): +0.0 dB
Mode: Auto

Mid (125 .. 2000 Hz)
Frequency: 1000 Hz
Gain (-25 .. 15 dB): +0.0 dB
Mode: Peak

High (1250 .. 20000 Hz)
Frequency: 16000 Hz
Gain (-25 .. 15 dB): +0.0 dB
Mode: Peak

Source availability:

☒ Channel 1
☒ Channel 2
☒ Channel 3
☒ Channel 4
☒ Channel 5
☒ Channel 6
☒ Channel 7
☒ Channel 8

☒ Channel 9
☒ Channel 10
☒ Channel 11
☒ Channel 12
☒ Channel 13
☒ Channel 14

☒ All Channels
☒ External
☒ V-Mixer

Fader mode: Normal
Preview mode: Pre-Fader (CUE)
Preview switching: ☐ Channel ON turns Preview OFF ☐ Preview ON turns Channel OFF
Auto-start timer: ☐ Enabled
Logic port: Exclusive mode


Live Controls:

SOURCE	<input type="radio"/> Disabled	<input checked="" type="radio"/> Enabled	<input type="radio"/> Primary
GAIN	<input type="radio"/> Disabled	<input checked="" type="radio"/> Enabled	<input type="radio"/> Primary
PANORAMA	<input type="radio"/> Disabled	<input checked="" type="radio"/> Enabled	<input type="radio"/> Primary
DYNAMICS	<input type="radio"/> Disabled	<input checked="" type="radio"/> Enabled	<input type="radio"/> Primary
EQUALIZER	<input type="radio"/> Disabled	<input checked="" type="radio"/> Enabled	<input type="radio"/> Primary

Apply Ok Cancel

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SAMPLE CONFIGURATION WITH QOR


QOR (QOR-STD2) Control Center
LU Meter ▲


System
 Status
 Setup
 Customize
 Log
 Log Setup
 Backup / Restore
 Synchronization
Switch
 Status
 Statistics
 IGMP
Module Manager
 Module information
 Brightness control
 Console Config
Console Control
 Remote
Profile Manager
 Sources

Local Outputs:

#	Name	Output	Output Gain (-127.5 .. 0 dB)
Analog 1	RJ HEADPHONES	CR Headphones ▼	+0.0 dB
Analog 2	GUEST HEADPHONES	Studio Talent HP ▼	+0.0 dB
Analog 3		Disabled ▼	+0.0 dB
Analog 4		Disabled ▼	+0.0 dB
Analog 5		Disabled ▼	-10.0 dB
Analog 6		Disabled ▼	+0.0 dB
Analog 7		Disabled ▼	+0.0 dB
Analog 8		Disabled ▼	+0.0 dB
AES/EBU 1		Disabled ▼	
AES/EBU 2		Disabled ▼	

Has to be a Talent Headphone

Apply


QOR (QOR-STD2) Control Center
LU Meter ▲

System
 Status
 Setup
 Customize
 Log
 Log Setup
 Backup / Restore
 Synchronization
Switch
 Status
 Statistics
 IGMP
Module Manager
 Module information
 Brightness control
 Console Config
Console Control
 Remote
Profile Manager
 Sources
 Shows
 Changes
IO Manager
 Inputs
 Outputs
GPIO

Local GPIO Status:

Port 1 Port 3 Port 5 Port 7
 Inputs Outputs

Port 2 Port 4 Port 6 Port 8
 Inputs Outputs

Local GPIO Configuration:

#	Name	Logic for	Livewire Channel
1	RJ-MIC	Microphone 1 ▼	0
2	GUEST-MIC	Microphone 2 ▼	0
3	GPIO 3	LWRP ▼	0
4	GPIO 4	LWRP ▼	0
5	GPIO 5	LWRP ▼	0
6	GPIO 6	LWRP ▼	0
7	GPIO 7	LWRP ▼	0
8	GPIO 8	LWRP ▼	0

Apply



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