

Linking
People
Together



HelixNet Remote Station (HXII-RM)

Key Features and Benefits

Remote Station

- Easy to use front panel with OLED displays & backlit keys
- Headset or hands-free support with speaker and mic
- 4 Keysets assignable to channels
- All Talk, Stage Announce, RMK & Program Audio level control
- Expansion mode for 8-24 channels

Connectivity

- Ethernet Network port with PoE¹
- Powerline loop-through on XLR
- Program Audio input
- Stage Announce output
- Contact closure input & output

HelixNet System

- Wired Partyline - Networked
- Hosted by Arcadia or HMS-4X
- Up to 24 Channels - Licensed
- Up to 64 or 128 HelixNet Endpoints
- Program Audio user level control

Effortless Management

- Easy to use CCM browser configuration
- Fast front panel control & configuration
- Central discovery & pairing on Arcadia
- Plug-and-go Powerline
- Central firmware upgrades from host

HelixNet[®] is a networked partyline intercom with up to 24 channels and Program Audio over XLR, LAN or WAN.

Description

The HelixNet Remote Station (HXII-RM, HRM-4X)* is a 1RU 4-channel intercom user station with utility connections for Program Audio input and Stage Announce output, hosted by Arcadia[®] Central Station or HelixNet HMS-4X main station.

User Station

The innovative front panel user station provides four keysets assignable to any intercom channel. The user station is provisioned with a headset connection, gooseneck mic connector and a loudspeaker in addition to All Call, Stage Announce, Remote Mic Kill and Program Audio level controls.

Expansion mode allows up to six remote stations (or HMS in non-Arcadia systems²) networked user stations to be combined, for a unified user station with up to 24 channels.

Local and Central Management Options

HelixNet Remote Station can be added to an Arcadia or legacy HMS-4X without central configuration or interruption. Front panel keysets form unique waterfall menus allowing tactile device configuration and channel assignments.

Roles can be created and applied to one or multiple remote stations remotely or locally. Roles can be edited locally or centrally managed from the Core Configuration Manager (CCM¹).

Connectivity and Power Options

HelixNet Remote Station connects to Arcadia Central Station or HelixNet HMS-4X main station with HLI-ET2 Ethernet module over network. Power can be supplied to the HelixNet Remote Station locally with a supplied power supply or Power over Ethernet (PoE) from 3rd party devices.

Alternatively, the HelixNet remote station can connect using XLR Powerline, with power or locally powered, to the Arcadia Central Station via HXII-DPL Powerline Device or to HelixNet HMS-4X main stations.

¹CCM and Endpoint network connection to legacy HMS-4X requires HLI-ET2

²HMS-4X is not used in Arcadia hosted HelixNet Systems

⁴HMS-4X is a legacy product

*HXII-RM & HRM-4X are form, fit and functionally equivalent, differing in material and construction

Technical Specifications

HelixNet System Hosts

Arcadia: Supports up to 128 HelixNet User Stations over Ethernet or Powerline via the HXII-DPL Powerline Device. Up to 24 Channels can be HelixNet Enabled using a Licensed Port for assignment to any HelixNet User Station keyset.

HMS-4X: Supports up to 64 endpoints (Remote Stations, Speaker Stations, Beltpacks, HLI-2W2, HLI-4W2, LQ port). User stations can connect directly to the 2 HMS-4X² Powerlines or via optional HLI-ET2 module using HXII-DPL Powerline Device or 3rd party network switch connection. HMS allows use of 12 channels which can be expanded to 24 using optional license.

Connectors

XLR Powerline: 3-pin XLR-M/F

Ethernet/PoE¹: EtherCON RJ45

Headset: 4-pin XLR-M

Gooseneck Mic: 3-pin Tuchel

Program Audio: 3-pin XLR-F

Stage Announce: 3-pin XLR-M

Hot Mic/IFB Interface: 1/4" (0.64 cm) TRS jack

GPIO: 9-pin D-type male (1xGPI, 1xGPO)

USB: Type A

DC Power: 3-pin KPJX-PM-3-S

Microphone Pre-amplifier

Headset Mic Impedance: 200Ω (Dynamic)

Headset Mic Voltage: 1.7V (Electret selectable)

Limiter: +23dB

Route to 4-wire output at 0dB out:

Mic Gain: 60dB (Dynamic), 45dB (Electret)

Frequency Response: 300Hz - 10 kHz ±3dB, contoured for intelligibility

Distortion: <0.2% THD @ 1kHz

Noise: <-55dBu (Dynamic), <-65dBu (Electret)

Headphone Amplifier

Load Impedance: >32Ω

Output Level: +12dBu before clipping

Sidetone: -12dB (selectable)

Route from a 4-wire input at 0dB in:

Max Gain: 0dB

Frequency Response: 180Hz - 10kHz +3dB

Distortion: <0.1% THD @ 1kHz

Noise: <-65dBu

Headphone Limiter: 0dB (selectable)

Loudspeaker Amplifier

Load Impedance: 8Ω

Output Level: +18dBu before clipping

Route from a 4-wire input at 0dB in:

Max Gain: 18dB

Frequency Response: 200Hz - 10kHz ±3dB

Distortion: <0.1% THD @ 1kHz

Noise: <-50dBu

Program Audio Line Input

Arcadia System Host: Local Listen

HMS-4X System Host: Local or Channel Assignable.

Maximum Level Before Clipping: +18dBu

Nominal Input Level: 0dBu (selectable)

Input Impedance: >= 10KΩ

Route to 4-wire output at 0dB out:

Frequency Response: 20Hz - 10kHz ±3dB

Distortion: <0.2% THD @ 1kHz

Noise: <-65dBu

Stage Announce Output

Arcadia System Host: Local SA or Channel Assignable from front panel or Role

HMS-4X System Host: Local SA or Channel Assignable.

Maximum Level Before Clipping: 18dBu

Nominal Output Level: 0dBu (selectable)

Output Impedance: <= 100Ω

Route from a dynamic headset:

Frequency Response: 300Hz - 12kHz ±3dB

Distortion: <0.1% THD @ 1kHz

Noise: <-55dBu

Hot Mic Output

Maximum Level Before Clipping: +12dBu

Nominal Output Level: 0dBu (selectable)

Output Impedance: <= 100Ω

Route from a dynamic headset:

Frequency Response: 300Hz - 12kHz ±3dB

Distortion: <0.2% THD @ 1kHz

Noise: <-55dBu

Logic Inputs - GPI

Assignable talk, call, mic and headset keys

Input: 1

Style: Powered input, close contact to ground

Detection Voltage (Min): 3V

Input Voltage (Max): 5V

Output Voltage: 5V

Output Current (Max): 1mA

Logic Outputs - GPO/Relay

Assignable to talk, call, SA, channel events

Outputs: 1

Style: Power Relay

Normalized: Open or Closed, separate pins

Switching Voltage (Max): 30V

Switching Current (Max): 2A

Power

Voltage: 48V DC

Current (Max): 0.3A

Power (Max): 14.4W

BTU (Max): 49BTU/hr

Input Power Connector: KPJX-PM-3-S

This unit can be powered via:

AC Adapter - Inline:

Input Voltage Range: 100 - 240V AC

Input Frequency Range: 50 - 60Hz

Input Power Connector: IEC-C14

Output Voltage: 48V DC

Output Power (Max): 15W

Output Power Connector: KPPX-3-P

PoE - Power over Ethernet¹

IEEE 802.3af-2003 - Class 0

PSE: 15.4W DC max @ Power Source Req.

PD: 12.95W DC max @ Powered Device Draw

Powerline:

Input Voltage: ±29.5V DC

Input Current (Speaker Off): 0.3A

Input Current (Max): 0.5A

Powerline Utilization:

Remote Station (Local Power) = 1 beltpack

Remote Station (Speaker Off) = 2 beltpacks

Remote Station (Speaker On) = 3 beltpacks

Note the maximum Powerline capacity of the HXII-DPL and HMS-4X.

Use [HelixNet Cable Calculator](#) to validate load and cable distance.

Environmental

32° - +104°F (0 - +40°C)

90% relative humidity

Dimensions

1RU, 1.75 x 19 x 6.4in (HxWxD)

(44 x 483 x 165mm)

Weight

4lbs (1.8kg)

¹Ethernet to legacy HMS-4X requires HLI-ET2

²HMS-4X is a legacy product

Network Specifications (Firmware Version 4.5+)

Network Protocols

Ethernet IPv4–Unicast Audio and Control
mDNS–Multicast Device Discovery
Layer 3 routable with mDNS function limitations
HTTP–Management
I.V. Core–Decentralized Network Routing & Mixing
IVP–Proprietary intercom Audio and Control
WavPack–Audio Codec

Network Ports

Unicast:

Port 80 TCP–System Management, Expansion
Port 6001 TCP–System Management
Port 6001 UDP–Audio Streams

Multicast:

Port 5353 UDP–mDNS, Names, Discovery, Linking, Expansion
Optional for device names and linking
Mandatory for Expansion mode

Network Parameters

HMS-4X Endpoint Resource Use: 1-3

Bandwidth:

300-600 (max) kbps from Remote Station to Arcadia/HMS-4X dependent on use of Program
Audio Input 1200-2400 (max) kbps from Arcadia/HMS-4X to Remote Station dependent on use of Stage Announce Output

Network Jitter Tolerance:

<= 128ms jitter buffer per audio stream receiver
automatically adjusted to network performance

QoS Tags:

DSCP=34, Assured Forwarding (AF=41)

Link-Local Default IP Address Range:

169.254.0.0/16

System Reserved IP Range:

10.0.0.0/8 for endpoints

Recommended Ethernet Switches

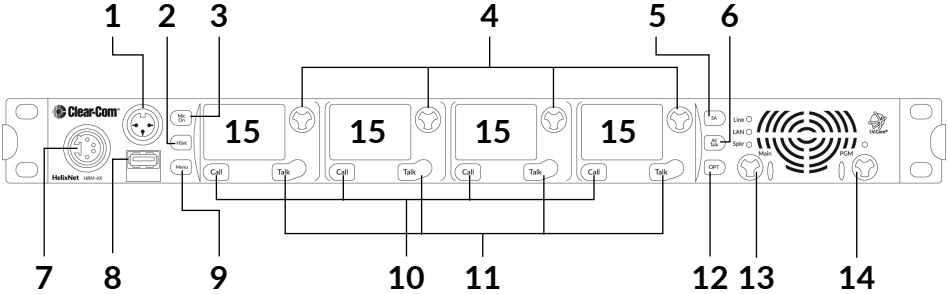
- Managed Ethernet Switch – Layer 3
- 100/1000 Base-T ports for endpoints
- 1000 Base IP Trunks between switches
- QoS Configuration
- Energy Efficient Ethernet bypass option
- IGMP Snooping bypass option

Please refer to the [Clear-Com HelixNet Network Guide](#) for additional switch settings and network characteristics

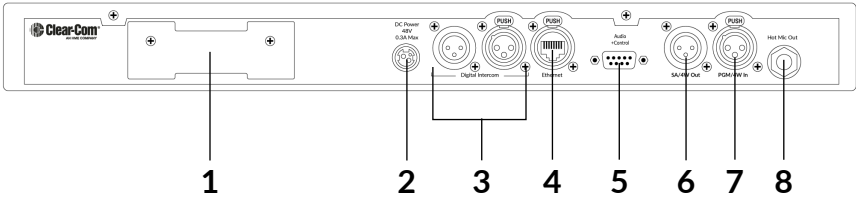
HelixNet Remote Station

Digital Partyline Solutions

Front



Back



Legend

Front

1. Microphone connector
2. Headset Mic enabled
3. Mic Key enabled
4. Rotary Level/menu key
5. Stage Announce
6. All Talk
7. Headset connector
8. USB 2.0 connector
9. Menu key
10. Call key
11. Talk key
12. Option key
13. Speaker/Headphone volume control
14. Program Volume control
15. Menu keyset display

Back

1. Power supply holder clip
2. DC power connector
3. XLR Powerline
4. Ethernet connector
5. GPIO DB9, control inputs and outputs
6. Stage Announce line out
7. Program input
8. Hot Mic output - 1/4" TRS

Order Code

HXII-RM/HRM-4X (includes):
 (1) Inline PSU 15W 48V DC (453G026)



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