

HRM-4X Main Station

Digital Partyline Solutions

Linking
People
Together



HRM-4X

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 PoE*
- 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 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 to HMS-4X****
- 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 HRM-4X remote station 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 HRM (or HMS-4X**** in non-Arcadia systems**) networked user stations to be combined, for a unified user station with up to 24 channels.

Local and Central Management Options

HRM-4X can be added to an Arcadia or HelixNet system host 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 HRM-4X remotely or locally. Roles can be edited locally or centrally managed from the Core Configuration Manager (CCM*).

Connectivity and Power Options

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

Alternatively, HRM-4X can connect to HelixNet HMS-4X**** main stations over XLR Powerline with power or locally powered.***

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

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

***XLR Powerline connection is not available for Arcadia. Contact Clear-Com for further information.

****HMS-4X is a legacy product as of 2022

Technical Specifications

HelixNet System Hosts

Arcadia: Supports up to 64 HelixNet endpoints (HRM-4X, HKB-2X & HXII-BP) over Ethernet. Up to 24 Channels can be HelixNet Enabled using a Licensed Port for assignment to any HelixNet endpoints keyset.

HMS-4X*:** Supports up to 64 endpoints (HRM-4X, HKB-2X, HBP-2X, HXII-BP, HLI-2W2, HLI-4W2, LQ port). User stations can connect via HMS's 2 Powerlines (see datasheet for limits) or over Ethernet via optional HLI-ET2 module. HMS*** allows use of 12 channels which can be expanded to 24 using optional license.

Connectors

XLR Powerline:** 3-pin XLR-M/F

Ethernet/PoE*: 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 0dBu 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 0dBu 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 0dBu 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 Only

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 0dBu out:

Frequency Response: 20Hz - 10kHz ±3dB

Distortion: <0.2% THD @ 1kHz

Noise: <-65dBu

Stage Announce Output

Arcadia System Host: Local SA Only

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 Ethernet*

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:

HRM (Local Power) = 1 beltpack

HRM (Speaker Off) = 2 beltpacks

HRM (Speaker On) = 3 beltpacks

Note the maximum Powerline capacity of the 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)

*Ethernet to HMS-4X requires HLI-ET2

**Not available for Arcadia. Contact Clear-Com

***HMS-4X is a legacy product as of 2022

Network Specifications (Firmware Version 4.2+)

Network Protocols

Ethernet IPv4–Unicast Audio and Control
mDNS–Multicast Device Discovery
Layer 3 routable with mDNS function limitations
HTTP–Management
RTP–Audio Transport
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 HMS/HRM Expansion

Network Parameters

HMS-4X* Endpoint Resource Use:** 1-3

Bandwidth:

300-600 (max) kbps from HRM to HMS
dependent on use of Program Audio Input
1200-2400 (max) kbps from HMS to HRM
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=41, Assured Forwarding (AF)

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

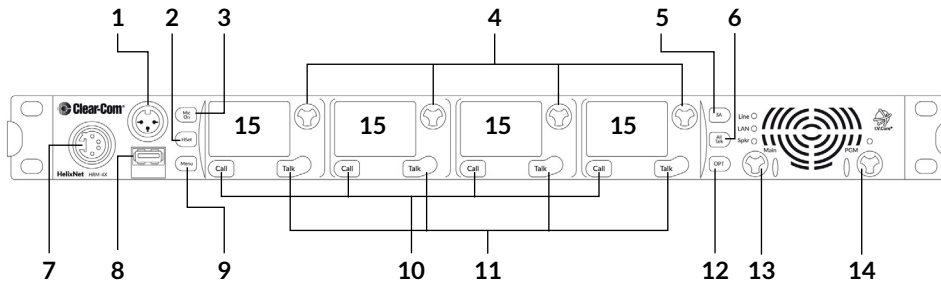
- Managed Ethernet Switch – Layer 3
- 100/1000 Base-T ports for endpoints
- 1000 Base IP Trunks between switches
- QoS Configuration
- Energy Efficient Ethernet bypass option
- IGMP Snooping bypass option

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

HRM-4X Main Station

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Front

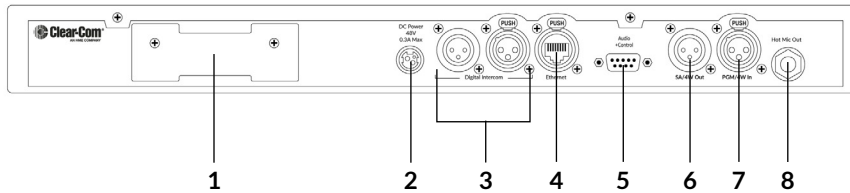


Legend

Front

1. Microphone connector
2. Headset Mic enabled
3. Mic Key enabled
4. Rotary Level/menu key
5. Stage Announcement
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



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 Announcement line out
7. Program input
8. Hot Mic output - 1/4" TRS

Order Code

HRM-4X (includes):

(1) Inline PSU 15W 48V DC (453G026)



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