# HelixNet Remote Station

**Digital Partyline Solutions**

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 PoE[1]
- 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 systems[2]) 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 stationsremotely or locally. Roles can be edited locally or centrally managed from the Core Configuration Manager (CCM[1]).

## 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.

[1]CCM and Endpoint network connection to legacy HMS-4X requires HLI-ET2
[2]HMS-4X is not used in Arcadia hosted HelixNet Systems
[4]HMS-4X is a legacy product
*HXII-RM & HRM-4X are form, fit and functionally equivalent, differing in material and construction

Clear-Com® AN HME COMPANY

# HelixNet Remote Station

**Digital Partyline Solutions**

## 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-4X[2] 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/PoE[1]:** 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:** 40Hz – 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
**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 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 Ethernet[1]**
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)

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

[2]HMS-4X is a legacy product

Clear-Com®
AN HME COMPANY

## 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:**
10.0.0.0/24 for endpoints on HMS-4X
10.0.0.0-7 for Arcadia

### Recommended Ethernet Switches

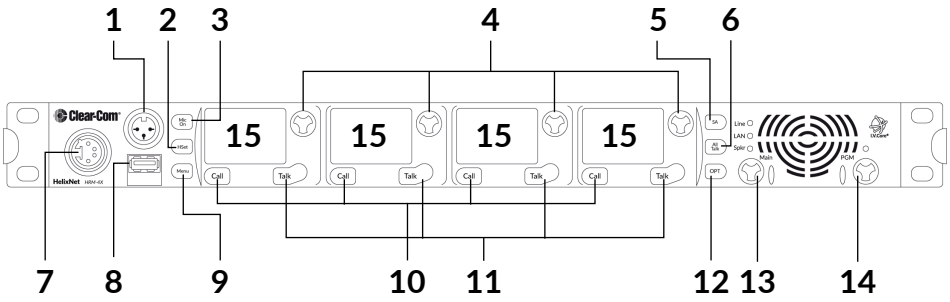
- Managed Ethernet Switch – Layer 3
- 100/1000 Base-T ports for endpoints
- 1000 Base IP Trunks between switches
- QoS Configuration
- Energy Efficient Ethernet bypass option
- IGMP Snooping bypass option

Please refer to the Clear-Com HelixNet Network Guide for additional switch settings and network characteristics

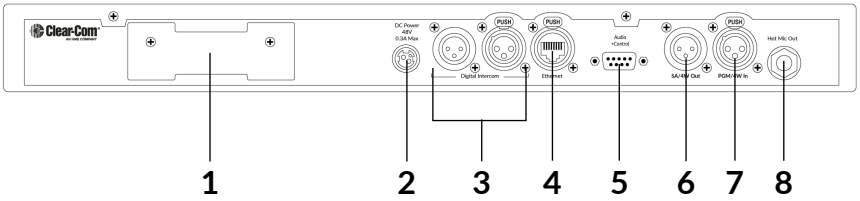
# HelixNet Remote Station

**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)


Clear-Com AN HME COMPANY

www.clearcom.com

© 2024 Clear-Com LLC. All rights reserved.
Clear-Com, HelixNet, Arcadia and the Clear-Com logo are registered trademarks of Clear-Com LLC.

**Notice About Specifications** | While Clear-Com makes every attempt to maintain the accuracy of the information contained in its documentation, that information is subject to change without notice. Performance specifications included in this document are design-center specifications and are included for customer guidance and to facilitate system installation. Actual operating performance may vary.

**WARNING:** Cancer and Reproductive Harm - **www.P65Warnings.CA.Gov**


Rev: Apr/2024