

# HelixNet Speaker Station

Digital Partyline Solutions

Linking  
People  
Together



HelixNet Speaker Station (HXII-KB)

## Key Features and Benefits

### Speaker Station

- Easy to use front panel with OLED displays & backlit keys
- Headset or hands free support with speaker and mic
- 2 Keysets assignable to channels
- Shift page for 4-channel operation
- Program Audio level control
- Display swivels for optimal viewing angles

### Connectivity

- Ethernet Network port with PoE<sup>1</sup>
- Powerline terminal plug

### Mechanical

- 4-gang for flush mounting
- Optional enclosure for desktop use

### 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 Speaker Station (HXII-KB, HKB-2X)\* is a 4-gang flush-mountable user station with four channels over two shift pages hosted by the Arcadia® Central Station or HelixNet HMS-4X main station.

## User Station

This innovative front panel user station provides two keysets assignable to any intercom channel to each of the two pages, which the user can toggle between for a total of four channels. The station's displays can be swiveled for optimal viewing angle. The user station is provided with a headset connection, gooseneck mic connector, loudspeaker and Program Audio level controls.

HelixNet Speaker Station can be mounted in a standard 4-gang electrical enclosure or the optional Speaker Station enclosure (HXII-MOUNT, S-MOUNT) for portable and desktop applications.

The X7 variant of the speaker station provides seven-pin headset connection with additional PTT GPI, assignable to user station keys.

## Local and Central Management Options

HelixNet Speaker Station can be added to an Arcadia or legacy HMS-4X<sup>2</sup> without central configuration or interruption. Front panel keysets form unique waterfall menu allowing tactile device configuration and channel assignments. Roles can be created and applied to one or multiple speaker stations remotely or locally.

Roles can be edited locally or centrally managed from the Core Configuration Manager™ (CCM<sup>1</sup>).

## Connectivity and Power Options

HKB-2X connects to the Arcadia Central Station or HelixNet HMS-4X main station with HLI-ET2 Ethernet module over network. Power can be supplied to the speaker station locally with an optional power supply or Power over Ethernet (PoE) from 3rd party devices.

Alternatively, the HelixNet speaker 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. Powerline and local DC inputs connections are on Terminal Block Connectors for ease of installation.

<sup>1</sup>CCM and Endpoint network connection to legacy HMS-4X requires HLI-ET2

<sup>2</sup>HMS-4X is a legacy product

\*HXII-KB and HKB-2X are form, fit and functional 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-4X 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

**Powerline:** Powerline, Terminal Block 5 pole, 5mm pitch

**Ethernet/PoE\*:** RJ45

**Headset:** 4-pin XLR-M or 7-pin XLR-M with (2) PTT GPI (-X7)

**Gooseneck Mic:** 3-pin Tuchel

**Power Connector:** Terminal Block 2 Pole, 5mm

### Microphone Pre-amplifier

**Headset Mic Impedance:** 200Ω (Dynamic)

**Headset Mic Voltage:** 1.7V (Electret selectable)

**Limiter:** +23dB

Route to four-wire output at 0dB out:

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

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

**Distortion:** <0.1% THD @ 1kHz

**Noise:** <-65dBu

**Headphone Limiter:** 0dB (selectable)

### Headphone Amplifier

**Load Impedance:** >32Ω

**Output Level:** +12dBu before clipping

**Sidetone:** -12dB (selectable)

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

**Max Gain:** 18dB

**Frequency Response:** 200Hz - 10kHz ±3dB

**Distortion:** <0.1% THD @ 1kHz

**Noise:** <-50dBu

### Logic Inputs - PTT/GPI (-X7 only)

Assignable to talk, call, mic and headset keys  
**Input:** 2

**Style:** Powered input, close contact to ground

**Detection Voltage (Min):** 3V

**Input Voltage (Max):** 5V

**Output Voltage:** 5V

**Output Current (Max):** 1mA

### Device Power

**Voltage:** 48V DC

**Current (Max):** 0.3A

**Power (Max):** 14.4W

**BTU (Max):** 49BTU/hr

**Input Power Connector:** Terminal Block 2 Pole, 5mm

This unit can be powered via:

### AC Adapter - Plug-In (not included)

**Input Voltage Range:** 100 - 240V AC

**Input Frequency Range:** 50 - 60Hz

**Input Power Connector:** Universal

**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

**Note:** HelixNet Speaker Station must be earthed to a clean ground when PoE is used. Preferably with the screen of a shielded CAT5/6 cable.

### Powerline:

**Input Voltage:** ±29.5V DC

**Input Current (Speaker Off):** 0.3A

**Input Current (Max):** 0.5A

**Powerline Utilization:**

**Speaker Station (Local Power)** = 1 beltpack

**Speaker Station (Speaker Off)** = 2 beltpacks

**Speaker 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° - +113°F (0 - +45°C)

90% relative humidity

### Dimensions

4-Gang NEMA, 4.5 x 8.2 x 2.4in (HxWxD)

(114 x 209 x 61mm)

### Weight

**HKII-KB:** 15.2oz (0.43kg)

**HKB-2X:** 18.8oz (0.53kg)

## Network Specifications

(Firmware Version 4.5+)

### Network Protocols

Ethernet IPv4 - Unicast Audio and Control  
mDNS - Multicast Device Discovery  
Layer 3-Routable w. 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

Port 6001 TCP - System Management

Port 6001 UDP - Audio Streams

**Multicast:**

Port 5353 UDP - mDNS, Names, Discovery, Linking

Optional for device names and linking

### Network Parameters

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

**Bandwidth:**

300 (max) kbps from each Speaker Station to Arcadia/HMS-4X

1200 (max) kbps from Arcadia/HMS-4X to Speaker Station

**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.

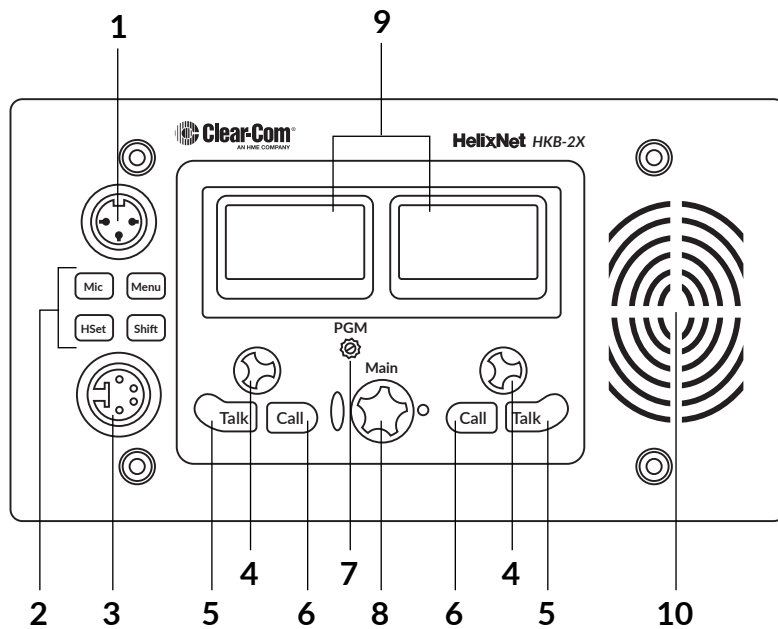
\*Ethernet to legacy HMS-4X requires HLI-ET2

\*\*HMS-4X is a legacy product

# HelixNet Speaker Station

Digital Partyline Solutions

## Front



## Legend

### Front

1. Gooseneck microphone connector
2. Configuration keys
3. XLR headset jack
  - 4-pin XLR-M
  - 7-pin XLR-F (X7 variant-only)
4. Rotary volume controls
5. Talk keys
6. Call keys
7. Program Audio level control
8. Speaker/Headphone rotary control and Speaker Mute
9. Tilt-adjustable display screens
10. Loudspeaker

## Order Code

HKII-KB/HKB-2X

HKII-KB-X7/HKB-2X-X7

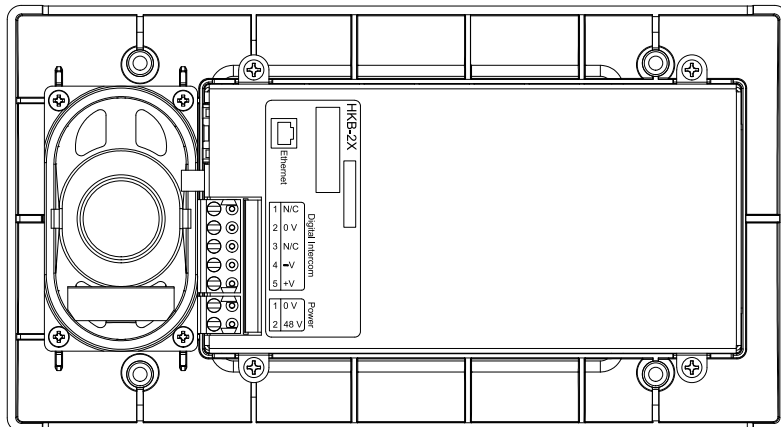
### Includes:

- (4) 6-32 x 1/2" mounting screws (280038Z)
- (4) Screw cover (416G054)
- (1) Terminal block connector for powerline (210085Z)
- (1) Terminal block connector for DC power (210369Z)

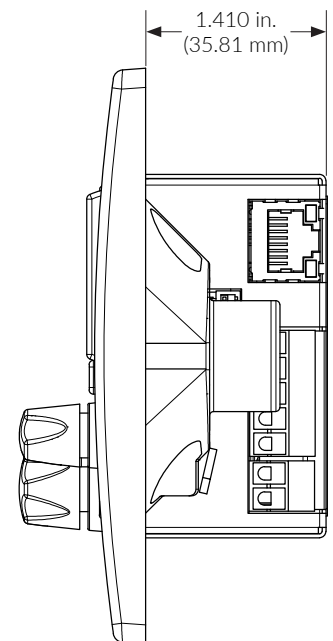
### Optional Accessories (sold separately):

- HXII-MOUNT / S-MOUNT ENCLOSURE
- Plug-In PSU 15W 48V DC (453G025)
- Inline PSU 15W 48V DC (453G026)

## Rear



## Side



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**WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.CA.gov](http://www.P65Warnings.CA.gov)