User Guide

HelixNet Digital Partyline for Arcadia R3

User Guide

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HelixNet® for Arcadia® User Guide

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1 Introduction

HelixNet® Partyline is a digital intercom system that combines the simplicity and ease of use of an analog partyline system with the quality and deployment flexibility of Ethernet networks.

User stations can be added to the system without configuration

- Simple and fast global web browser or front panel configuration
- All HelixNet enabled partyline channels are available on every cable
- Easy integration with other 2-wire or 4-wire systems
- Standard Infrastructure:
    - Ethernet networks – PoE powered user stations
    - XLR Cables – daisy changing and passively splitting
    - Digital distribution for low noise floor

Note: *Cabling for a HelixNet system should always be screened.*

1.1 HelixNet wired partyline intercom

- 24 HelixNet enabled channels*
- 128 HelixNet endpoints (beltpacks, remote station, speaker station)
- 24 HXII-DPL Powerline devices

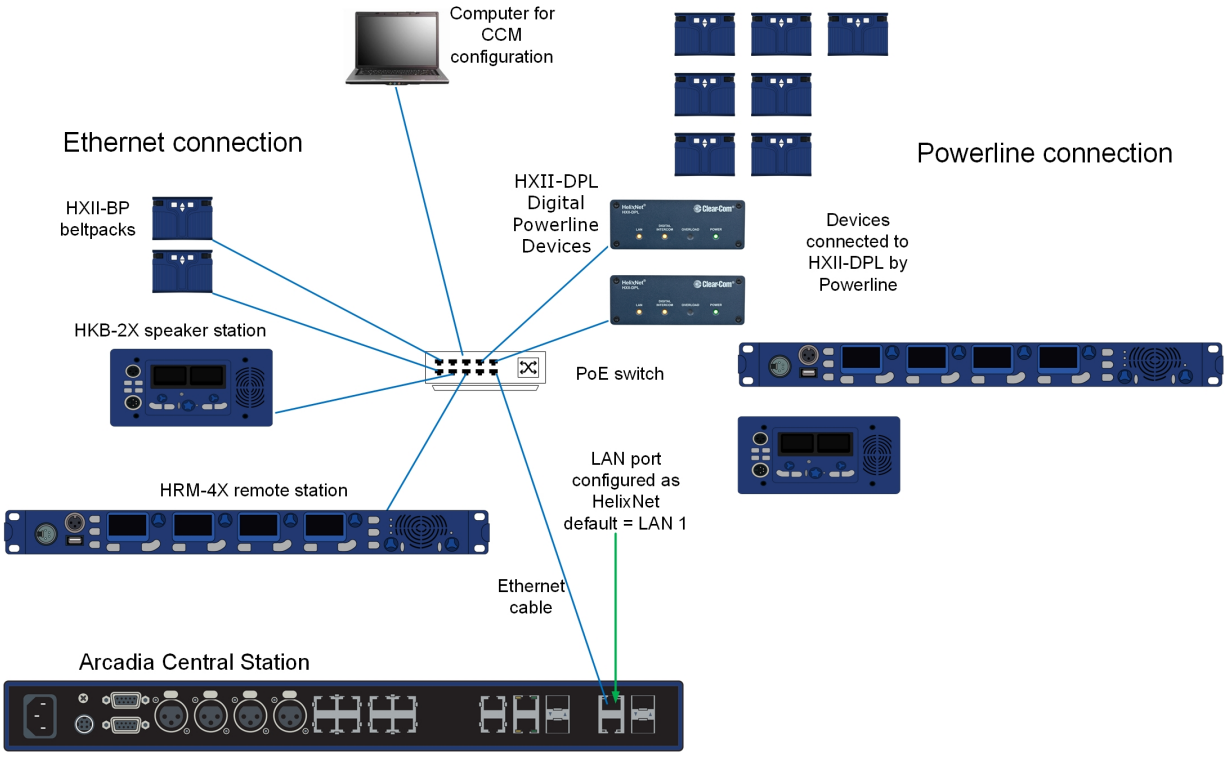
***Subject to licensed port capacity**

This guide helps you install, configure, and use the **HelixNet Partyline** system when used with the Arcadia® Central Station.

HelixNet wired user stations (beltpacks, remote stations and speaker stations) are connected to the Arcadia Central Station on the LAN port that is being used for Admin (default LAN 1) using Cat 5, 5e or 6 Ethernet cable (RJ45).

HelixNet user stations can be powered via XLR Powerline or PoE Ethernet. HelixNet remote and speaker stations can also be locally powered.

An example of a HelixNet system connected to an Arcadia Central Station is given below.



Note: *When using an IEEE-802.3af compliant PoE switch, you must take into account the switch's power budget. Each HXII-BP requires 4 Watts. The HelixNet remote and speaker station each require 13 Watts. Do not exceed the power budget of the switch when attaching devices.*

Bear in mind the following:

- You can enable up to 24 channels for HelixNet. One HelixNet enabled channel consumes one licensed port.
- User station keysets can be assigned to any HelixNet enabled channel.
- The speaker station can be used with a helixNet speaker station enclosure or inside a NEMA standard 4-gang wall box.

1.2 Further Information

For the latest information about HelixNet Partyline, including software updates, see the HelixNet Knowledge Center.

www.clear com.com/
helixnet-knowledge-center /

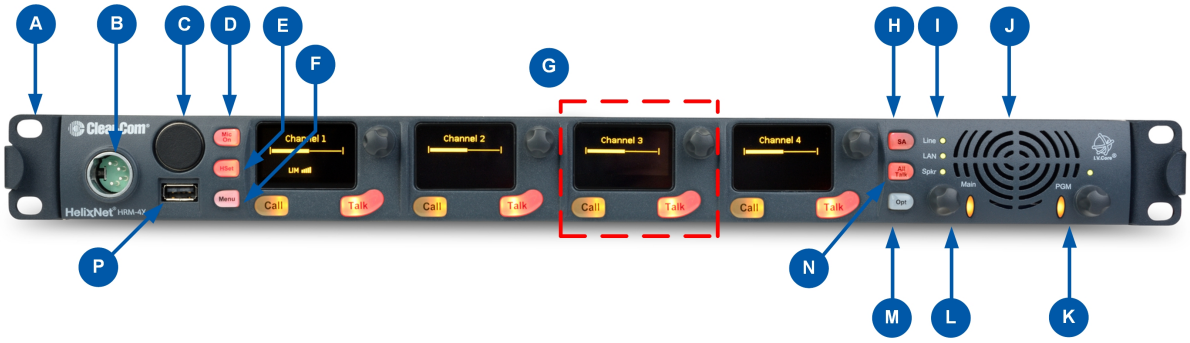
For more information about the Arcadia Central Station, see The Arcadia Central Station Knowledge Center.

www.clearcom.com/
arcadia-knowledge-center/

2 Remote Station

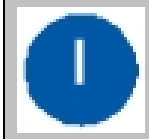
This chapter describes how to use the HelixNet Speaker Station with Arcadia. It contains the following sections:

2.1 Remote Station Front Panel



Key to Remote Station: Front panel

Feature	Description
A	**Ear for rack mounting Remote Station.**
B	**Headset socket (4-pin XLR–M)** Pin / Function: 1 – Mic ground 2 – Mic + 3 – Earphone ground 4 – Earphone
C	**Gooseneck microphone socket** (3-pin female Tuchel connector)
D	**Mic control [MIC ON]**. Enables the selected microphone input to the channels on the station with active **Talk** keys.
E	**Headset key [HSET]** Selects between headset and gooseneck microphone inputs.

Key to Remote Station: Front panel	
	**Menu**. Press to display the menus in the display screens [**G**]. Use the rotary control for each display screen to scroll and select menu items. See **Remote Station Channel, Keyset and Display on page 15**.
	**Channel keyset**. There is a keyset (set of controls) addressable to any of the available Channels. See **Remote Station Channel, Keyset and Display on page 15**.
	**Stage Announce [SA].** Press to talk to connected Public Address (PA) / Stage Announce (SA) system SA mutes any active Talk key on the station, and transmits audio from either headset or gooseneck microphone to the SA Output port on the rear of the unit. When the SA is pressed, Mic select [MIC ON] is also lit bright red, indicating that mic audio is active. See **Line and LAN LEDs on page 43**.
	Powerline connectivity is available for Arcadia with the HXII-DPL Powerline Device.
	**Loudspeaker**. When a headset is connected [**B**] and selected [**E**], loudspeaker output is diverted to the headphones.

<table>
<tr><th colspan="2">Key to Remote Station: Front panel</th></tr>
<tr><td>  </td><td>Program feed audio level rotary control [Program].
To increase the volume of the program feed to the loudspeaker / headphones, turn clockwise (up to 360°).
To decrease the volume, turn anticlockwise (up to 360°). As you increase or decrease the volume, the level control LEDs pass through a range of indicator colors:
<table><tr><th>LED color</th><th>Volume level</th></tr><tr><td>Green</td><td>Low</td></tr><tr><td>Amber / Green</td><td>Low / Medium</td></tr><tr><td>Amber</td><td>Medium</td></tr><tr><td>Red / Amber</td><td>Medium / High</td></tr><tr><td>Red</td><td>High</td></tr></table>
To mute or unmute the program audio, push the rotary control.</td></tr>
<tr><td>  </td><td>Loudspeaker / Headphone audio level rotary control [Main]. To increase the volume to the loudspeaker / headphones, turn clockwise (up to 360°). To decrease the volume, turn anticlockwise (up to 360°). Push to mute or unmute.</td></tr>
<tr><td>  </td><td>All Talk. Press to talk to all Channels (intercom devices and systems) connected to the Remote Station.</td></tr>
<tr><td>  </td><td>USB 2.0 (Standard-A) connector. Used for updating the Remote Station software.</td></tr>
</table>

***Note**: The Remote Station does not have a power switch, button or key.*

2.2 Remote Station Rear Panel

<table>
<tr><th colspan="2">Key to Remote Station: rear panel</th></tr>
<tr><th>Feature</th><th>Description</th></tr>
<tr><td>A</td><td>PSU holder for a separate external AC-DC power supply. The external PSU provides the 48V required and at its input takes 100-240V, 50-60Hz.</td></tr>
<tr><td>B</td><td>Power supply. The power input connector is a low voltage DC connection. It is 48VDC at a max power of 12.95W.</td></tr>
<tr><td>C</td><td>Powerline 1 (digital Partyline). (3-pin male and female XLR connectors).
<table>
<tr><th>Pin</th><th>Function</th></tr>
<tr><td>Pin 1</td><td>Ground</td></tr>
<tr><td>Pin 2</td><td>+30V DC and Audio</td></tr>
<tr><td>Pin 3</td><td>-30V DC and Audio</td></tr>
</table></td></tr>
</table>

Key to Remote Station: rear panel

Ethernet/Power Over Ethernet (RJ45 connector)

An LED on the left-hand side of the connector illuminates when the link is working.

An LED on the right-hand side of the connector flashes green when there is network activity.

Pin	Name	Function
1	TX+	Transmit Data+
2	TX-	Transmit Data-
3	RX+	Receive Data+
4	n/c	Not connected
5	n/c	Not connected
6	RX-	Receive Data-
7	n/c	Not connected
8	n/c	Not connected

When connected over PoE, the Remote Station draws 15.4 Watts from the PoE switch.

Key to Remote Station: rear panel

Control input/output (DB9 connector)

Pin	Function
Pin 1	Audio out +
Pin 2	Audio in +
Pin 3	GND
Pin 4	Relay NC
Pin 5	Relay NO
Pin 6	Audio out -
Pin 7	Audio in -
Pin 8	Opto
Pin 9	Relay pole

The audio connections in this connector are wired directly to the SA and program connectors. Only one or the other can be used at one time.

SA [Stage Announce] line out (3-pin female XLR)

Stage Announce output can either output local audio from the front panel SA key or be assigned to act as an output from any Channel.

Pin	Function
Pin 1	Ground
Pin 2	Positive
Pin 3	Negative

Program Input (3-pin male XLR).

Pin	Function
Pin 1	Ground
Pin 2	Positive
Pin 3	Negative

Key to Remote Station: rear panel	
H	**Hot Mic output**. This connection is a 1/4-in (0.64 cm) phone jack. It provides an output signal from the selected headset or panel microphone. The Hot Mic output is always live. Audio from the mic is routed through the Hot Mic output even if the mic is inactive (off).

Pin	Function
Tip	Mic
Ring	IFB mute signal
Sleeve	Ground

2.3 Remote Station Channel, Keyset and Display

Key to Remote Station front panel: Channel keyset	
Feature	**Description**
	**Display screen**. There are multiple screensaver options. If the Rotary controls are touched, this screen also displays the sound level on the Channel (controlled by the rotary) and the system information icons. See the next table for an explanation of system information icons. In **Menu** mode, the display screens display the four levels of menu. The menu hierarchy proceeds left to right: • The top level menu is presented in the first screen (furthest left on the front panel). • The lowest level menu is presented in the fourth screen (furthest right on the front panel). If the display is in Menu mode, the display screen times out of Menu mode and displays the Channel label if no key is pressed for 20 seconds. For more information about Menu mode, see **Using the Menus on page 18**
	**Rotary control**. Turn to increase or decrease the listen volume level for the Channel. Also, push the control to mute or unmute audio level. In Menu mode, use the control to scroll menu items. To select menu items, press the control.
	**Talk key**. Press to talk on the Channel and to all nodes (intercom devices and systems) listening into the Channel.
	**Call key**. Press to send a call signal to all nodes (intercom devices and systems) listening into the Channel.

Note: *If the Remote Station remains inactive for 10 minutes, the display screens enter screensaver mode, see* ***Setting the Screensaver on page 31***

	Remote Station display icons and indicators	
Name	**Icon**	**Description**
Channel label		A descriptive name for the Channel. The maximum length is 10 characters.
Channel listen volume level		The volume of the Channel audio.
Paired		Appears on the Remote Station and Speaker Station when it is connected properly over LAN.
Not paired		Flashes on the Remote Station and Speaker Station when the connection is not configured properly.
Signal strength		Appears on the Remote Station, Speaker Station and beltpack. One to five bars indicate the strength of the signal.
Locked	Locked	Appears on the beltpack when you try to access the menu while the menu has been locked.
Mute		Appears on the Remote Station and Speaker Station when the rotary control for any Channel is pressed.
Opto (GPI)		Appears on the Remote Station close to the Call or Talk button if it is associated with an Opto GPI.
Relay (GPO)/Logic Output Option		Appears on the Remote Station close to the Call or Talk button if it is associated with a Relay (Logic Output Option).
Program	PGM	Appears on the Remote Station, Speaker Station and beltpack when a program input is assigned to a Channel.
IFB	IFB	Appears on the Remote Station, Speaker Station and beltpack when a program input is assigned to a Channel and IFB is enabled.
2W/4W	2W/4W	Appears on the Remote Station and Speaker Station when a 2W/4W input is assigned to a Channel.
Limiter	LIM	Appears on the Remote Station, Speaker Station and beltpack when the headset limiter is enabled.

	Remote Station display icons and indicators	
Expansion		Appears on the Remote Station when the device is part of an Expansion Group.
Warning		Appears on the Remote Station, Speaker Station and beltpack when something is wrong. Warning messages can be accessed in the Diagnostic menu.

2.4 Configuring and managing Remote Station from front panel menus

This section describes how to configure the settings and manage the Remote Station using **Menu mode**. It also shows you how to monitor and diagnose performance issues, using the **Diagnostics** menus.

Tip: For a quick reference to the Remote Station menus, see **Menu Maps on page 111** .

2.4.1 Using the Menus

To place the Remote Station in **Menu mode**, press the **Menu key** to the left of the first display screen.

In Menu mode, the display screens display the four levels of menu. The menu hierarchy proceeds left to right:

The **top level** menu is presented in the first screen.

The **lowest level** menu is presented in the fourth screen (furthest right on the front panel).

***Note**: If Menu mode is **locked**, you must unlock the menus from the Role in the CCM .*

Configuring Settings

1. For each menu, turn the **rotary control** clockwise to scroll down the menu items. Turn counter clockwise to scroll up the menu items.

   Off-screen menu items are indicated by arrows at the top and/or bottom of the screen.

   Selected menu items are highlighted in solid yellow.

   The fourth menu displays the settings that relate to your previous menu choices.

   The **current setting** is indicated by a dotted box around the menu item

2. When you have selected a setting by rotating the right hand rotary control, push that rotary control to enable the setting on the Station.

Exiting Menu Mode

To exit menu mode press the menu key.

***Note**: If no key is pressed for 20 seconds, the menu will time out and display screens will revert to their normal mode of operation.*

2.4.2 Configuring the Audio settings

Audio settings for the headset

To configure the audio settings for the headset:

1. In **Menu mode**, select **Audio Settings** and then **Headset**.
2. To adjust the level of sidetone on the headset:

   In the third menu, select **Sidetone Gain**.

   a. In the fourth menu, select one of the following:

   - 0dB
   - - 3dB
   - - 6dB
   - - 9dB
   - -12dB (default)
   - -15dB
   - -18dB
   - -21dB
   - -24dB
   - -27dB
   - -30dB
   - Off

   b. To enable (confirm) the selected setting, press the **rotary control**.

3. To limit the audio level delivered to the headphones (or to disable headphone limiting):
   a. In the third menu, select **Headphone Limit**.
   b. In the fourth menu, select one of the following:
      - Off
      - +6dB
      - 0dB (default)
      - - 6dB
   c. To confirm the selected setting, press the **rotary control**.

   Note: *When Headphone Limit is set to anything but Off, a LIM indication will be shown on the leftmost display.*

4. To set the **Headphone Gain**:
   a. In the third menu, select **Headphone Gain**.
   b. In the fourth menu, select one of the following:
      - 0 dB (default)
      - +3dB
      - +6dB
      - +9dB
      - +12dB
   c. To confirm the selected setting, press the **rotary control**.

5. To set (or disable) sidetone tracking on the headset:
   a. In the third menu, select **Sidetone Control**.
   b. In the fourth menu, select one of the following:
      - **Tracking -** The sidetone volume will follow (track) the Main volume level.
      - **Non-Tracking -** The sidetone volume is set to use the selected level.
      - **Disabled -** Sidetone is disabled.

   Note: *The default is **Tracking**.*

   c. To confirm the selected setting, press the **rotary control**.

6. To select the type of microphone on the headset:
    a. In the third menu, select **HS Mic Type**.

    Note: HS = Headset.

    b. In the fourth menu, select either of the following types of microphone:
        - Dynamic (0dB) (default)
        - Dynamic (-3dB)
        - Dynamic (-6dB)
        - Dynamic (-9dB)
        - Dynamic (-12dB)
        - Dynamic (-15dB)
        - Electret (-15dB)
        - Electret (-18dB)
        - Electret (-21dB)

    c. To confirm the selected setting, press the **rotary control**.

Audio Settings for the Microphone

To configure the audio settings for the microphone:

1. In Menu mode, select **Audio Settings** and then **Microphone**.
2. To select the Headroom:
    a. From the third menu, select **Headroom**.
    b. From the fourth menu, select one of the following:
        - Normal (default)
        - High - Reduces the analog input gain and increases the digital gain accordingly. That reduces digital clipping at the A/D converter but increases the noise floor. This setting is intended for use in environments with very high background noise.

3. To enable or disable the Contour Filter:
    a. From the third menu, select **Contour Filter**
    b. From the fourth menu, select one of the following:
        - **Enabled -** The Contour filter is a Clear-Com algorithm enhancing speech intelligibility, especially when whispering or talking at a low volume.
        - **Disabled**

    Note: *The default is* ***Disabled*** *(recommended for loud environments).*

Settings for the Program Input

To enable or disable the remote station program input to the rest of the HelixNet system:

1. In **Menu mode**, select **Audio Settings** and then **Program Input**.
2. From the third menu, select **Mode**.
3. From the fourth menu, select either:
    - **Enable**
    - **Disable**
4. Press the **rotary controller** to confirm your selection.

To configure the label for the Program Input:

1. In **Menu mode**, select **Audio Settings** and then **Program Input**.
2. From the third menu, select **Label**.
3. From the fourth menu, select the existing label by scrolling to it and pushing the rotary controller. Edit the label by rotating the controller to scroll through letters and digits and pushing to select a letter/digit.
4. When you have done, scroll to **Save** and push the rotary controller. To exit without saving changes, go back to the third screen.

To configure the audio level for the Program Input:

1. In **Menu mode**, select **Audio Settings** and then **Program Input**.

2. From the third menu, select **Gain**.
3. From the fourth menu, select one of the following:
   - + 12dB
   - + 6dB
   - 0dB (default)
   - - 6dB
   - - 12dB
4. To confirm the selected setting, press the **rotary control**.

To enable or disable

To configure the action trigger delay:

1. The action trigger activates a relay when receiving a call or activating a talk on a Partyline Channel. You can enable or disable the action trigger. To configure the audio setting for the action trigger:
   a. In **Menu mode**, select **Audio Settings** and then **Program Input**.
   b. From the third menu, select **Action Trigger**.
   c. From the fourth menu, select one of the following:
      - Enabled (default)
      - Disabled
   d. To confirm the selected setting, press the **rotary control**.

A VOX switch (audio gate) will only transmit audio when audio is above a certain threshold. This is in order to stop the channel transmitting background noise, thus wasting network bandwidth resources. You will enable or disable (default) the VOX according to the noise in your background environment.

When VOX is disabled, associated settings are hidden.

To select the VOX:

1. From the third menu, select **VOX**.
2. From the fourth menu, select one of the following:
   - Enabled
   - Disabled (default)

3. To confirm the selected setting, press the **rotary control**

To select the VOX Off Delay:

1. From the third menu, select **VOX Off Delay**.
2. From the fourth menus, select one of the following:
   - .5 sec (default)
   - 1 sec
   - 2 sec
   - 3 sec
   - 4 sec
3. To confirm the selected setting, press the **rotary control**.

Audio Settings for Program IFB [Interruptible Foldback]

IFB allows you to temporarily interrupt the program to the channel while talking on the channel.

See also **Assigning the Program Listen to a Channel on page 32**

To configure the audio settings for Program IFB [Interruptible Foldback]:

1. In **Menu mode**, select **Audio Settings** and then **Program IFB**.
2. From the third menu, select **IFB Dim Level**.

   Note: *The IFB Dim Level determines the amount that the volume level of the Program Level is reduced by when it is interrupted by the IFB.*

3. From the fourth menu (fourth display screen), select one of the following:
   - IFB Disabled (default)
   - - 6dB
   - -12dB
   - -18dB
   - -24dB
   - Full Cut
4. To confirm the selected setting, press the **rotary control**.

Audio Settings for the SA (Stage Announce) Output/4-Wire Out

On Remote Stations, SA can be disabled from channel assignment. Once SA is assigned to a channel it becomes a resource consuming output. Not putting SA into channels will conserve system resources.

To configure the settings for the SA output:

1. In **Menu mode**, select **Audio Settings** and then **SA/Audio out**.
2. To select the mode:
    a. From the third menu, select Mode.
    b. From the fourth menu, select one of the following:
        - Channel Assigned (default). When this option is selected, SA output will be available to channels.
        - SA (default). When this option is selected, SA key on the front panel of the remote station will only be available to the SA output on the rear of the remote station when pressed.
    c. To confirm the selected setting, press the **rotary control**.
3. To select the gain:
    a. From the third menu, select **Gain**.
    b. From the fourth menu, select one of the following:
        - +12dB
        - +6dB
        - 0dB (default)
        - -6dB
        - -12dB
    c. To confirm the selected setting, press the **rotary control**.

4. The Program Output setting enables the program to be delivered to this output if it is assigned to a Channel that also has another program feed assigned. To select the program output:
   a. From the third menu, select **Program Output**.
   b. From the fourth menu, select one of the following:
      - Unmute (default)
      - Mute
      - [SA Mode]
   c. To confirm the selected setting, press the **rotary control**.
5. To associate any available Channel (or to disable Channels associations) with the selected port:
   a. From the third menu, select **Channel Assign**.
   b. From the fourth menu, select one of the following:
      - Disabled (default)
      - Channel 1
      - Channel 2
      - Channel 3
      - Channel 4
      - …
   c. To confirm the selected setting, press the **rotary control**.

Audio Settings for the Hot Mic Output

To configure the audio settings for the Hot Mic Output:

1. In **Menu mode**, select **Audio Settings** and then **Hot Mic Output**.

2. From the third menu, select **Gain**.
3. From the fourth menu, select one of the following:
   - + 12dB
   - + 6dB
   - 0dB (default)
   - - 6dB
   - -12dB
4. To confirm the selected setting, press the **rotary control**.

Audio Settings for the Front Panel

To configure the audio settings for the Front Panel:

1. In **Menu mode**, select **Audio Settings** and then **Front Panel**.
2. From the third menu, select **Loudspeaker Dim**.
3. From the fourth menu, select one of the following:
   - 0 dB
   - -3 dB
   - -6 dB (default)
   - -12 dB
   - -24 dB
   - Off
4. To confirm the selected setting, press the **rotary control**.

2.4.3 Selecting Station Settings

Setting Keyset Assignments

To set the **Keyset Assignments**:

1. In Menu mode, select Station Settings and then **Keyset Assign**.
2. From the third menu, select required **Keyset** (1 – 4).
3. From the fourth menu, select a HelixNet enabled Channel to assign to the Keyset.
4. Repeat this procedure for the remaining Keysets.
5. To confirm the selected setting, press the **rotary control**.

Setting Key Latching

To enable or disable front panel keys for latching:

1. In **Menu mode**, select **Station Settings** and then **Keysets**.
2. From the third menu, select either:

Key(s)	Description
Talk #1	Talk keys for the available Channels.
Talk #2	
Talk #3	
Talk #4	
SA Out key	Key used to talk to a connected public address or Stage Announce (SA) system.

Note: *The All Talk and **RMK (Remote Mic Kill)** key are also displayed in the list. Those keys **cannot** be latched. To find out how to configure the RMK and All Talk keys, see* ***Setting the RMK (Remote Mic Kill) Key on page 29****.*

Note: *The All Talk key allows you to talk to all Channels at once with the push of a button. Select **All Channels** to talk to all HelixNet enabledChannels on your system. Select **Visible Channels** to talk to the Channels visible on your four device Keyset screens.*

3. In **menu** mode select **Station Settings** and then **Keysets**.
4. From the third menu, select **All Talk**.

5. From the fourth menu, select **All Channels** or **Visible Channels**.
6. To confirm the selected setting, press the **rotary control**.

Setting the All Talk Key

The **All Talk** key allows you to talk to all Channels at once with the push of a button. Select **All Channels** to talk to all Helix|Net enabled Channels on your system. Select **Visible Channels** to talk to the Channels visible on your four device Keyset screens.

1. In **menu** mode select **Station Settings** and then **Keysets**.
2. From the third menu, select **All Talk**.
3. From the fourth menu, select **All Channels** or **Visible Channels.**
4. To confirm the selected setting, press the **rotary control**.

Setting the RMK (Remote Mic Kill) Key

The RMK (Remote Mic Kill) key is used to:

- Deselect any latched keyset Talk routes.
- Turn off any latched Talk on connected analog Partyline equipment.
- To enable or disable the RMK (Remote Mic Kill) key:

1. In **Menu mode**, select **Station Settings** and then **Keysets**.
2. From the third menu, select **RMK.**

Note: *Talk Latch and the **SA Output Key** are also listed in this menu.*

3. From the fourth menu, select **either** of the following:
   - All HelixNet enabled Channels
   - Visible Channels (default)
   - Disabled
4. To confirm the selected setting, press the **rotary control**.

Setting Display Screen Brightness

By default, the display screens are set for medium brightness. To set the brightness of the display screens:

1. In **Menu mode**, select **Station Settings** and then **Display**.

2. From the third menu, select **OLED Brightness**.
3. From the fourth menu, select one of the following brightness settings:
   - High
   - Medium (default)
   - Low
4. To confirm the selected setting, press the **rotary control**.

Setting Key Brightness

By default, the front panel keys are set to **High / Low**. To set the brightness of all front panel keys:

1. In **Menu mode**, select **Station Settings** and then **Display**.
2. From the third menu, select **Key Brightness**.
3. From the fourth menu, select one of the following brightness settings:

Key(s)	Description
High / Low	The default setting. Keys are lit bright when active and lit dim when inactive.
High / Off	Keys are lit bright when active and are unlit when inactive.
Low / Off	Keys are lit dim when active and are unlit when inactive.
Off / Off	Keys are unlit, whether or not they are active or inactive.

4. To confirm the selected setting, press the **rotary control**.

Setting the Screensaver

The screensaver features the Channel label and is enabled by default. The display screens enter screensaver mode when the Remote Station has been inactive for 10 minutes.

Tip: To exit screensaver mode, press any key on the front.

To enable or disable the screensaver:

1. In **Menu mode**, select **Station Settings** and then **Display**.
2. From the third menu, select **Screensaver**.
3. From the fourth menu, select:
   - **Channel Name** (default)
   - Hostname
   - Role Name
   - Blank
   - Disabled
4. To confirm the selected setting, press the **rotary control**.

2.4.4 Editing the Channel label

The maximum length for a Channel label is **12 characters**. To edit the Channel label:

1. In **Menu mode**, select **Channels** and then the name of the Channel you want to edit.
2. From the third menu, select **Label**.
3. Select **Clear** and press the rotary control to clear the Channel label.
4. In the fourth menu, the following prompt is displayed above the Channel label:

   [**Press to edit**]

   Press the **rotary control**.
5. The first letter of the Channel label is shown as selected. The following prompt is displayed above the Channel label:

   [Scroll / Press to Select]

   Scroll to the character you want to edit by turning the **rotary control**. To begin editing, press the **rotary control**.
6. The character you have selected for editing is shown in a box with a dotted border.

To display alternative characters in the box, turn the rotary control. The range of available characters comprises the following:

Characters	Description / range
Numbers (numeric)	0 to 9
Letters	Capital letters = A to Z Small letters = a to z
Symbols	# & * ( ) - _ = + / ! @ : Note: You can also select a space.

To select a character, press the **rotary control**.

7. When you have selected a replacement character, scroll to the next character you want to edit. When you have finished editing the Channel label, scroll to **Save** (displayed beneath the Channel label).

   To save the Channel label, press the **rotary control**.

Assigning the Program Listen to a Channel

To assign (or unassign) the Program Listen (Program Feed) to a Channel:

1. In **Menu mode**, select **Channels** and then the name of the Channel.
2. From the third menu, select **Program Listen.**
3. From the fourth menu, select either None, or choose from the list of available programs.

   Note: *The default is None.*

4. To confirm the selected setting, press the rotary control.

Tip: When you assign the Program Listen to a Channel, PGM is displayed on the display screen (under the listen level bar, to the left) for that Channel.

Assigning a GPO relay to a Channel

You can assign a relay that is triggered on receiving a call or detecting a talk on a Partyline Channel. To assign (or unassign) a relay:

1. In **Menu mode**, select **Channels** and then the name of the Channel.
2. From the third menu, select **GPO on Talk** or **GPO on Call**.
3. From the fourth menu, select either **None**, or choose from the list of available relays.

   Note: *The default is **None**.*

4. To confirm the selected setting, press the **rotary control**.

Note: *An Action Trigger initiated by a Program Audio Input VOX can on only be assigned to a GPO on the same device.*

2.4.5 Configuring the Control I/O

The Control I/O connector on the rear panel allows you to connect one relay output or one opto input and control them through the Remote Station keysets:

I/O type	Description
Opto inputs	Opto inputs enable you to connect a foot switch or other control device and use it to trigger Call or Talk functions. Selecting the 'mic' option here allows the user to utilize a footswitch to enable talking to the pre-latched channels on the user station - hands free.
Relay outputs	Relay outputs enable you to use Call or Talk keys to trigger any external device that accepts a standard contact closure (such as a theater curtain or an On Air light).

Configuring Opto Inputs

To configure the Control I/O for the Opto input:

1. In **Menu mode**, select **Control I/O**.
2. From the second menu, select **Inputs**.
3. From the third menu, select **Opto 1**
4. From the fourth menu, select one of the following:
   - None (default)
   - Call Key 1
   - Talk Key 1
   - Call Key 2
   - Talk Key 2
   - Call Key 3
   - Talk Key 3
   - Call Key 4
   - Talk Key 4
   - Mic

   Note: *The number of the key relates to the keyset to which it belongs (for example, Call Key 1 is the Call key for the first keyset / display screen).*
5. To confirm the selected setting, press the **rotary control**.

Configuring the Relay Output

To configure the Control I/O for the Relay output:

1. In **Menu mode**, select **Control I/O**.
2. From the second menu, select **Outputs**.
3. From the third menu, select **Relay 1**
4. From the fourth menu, select one of the following:
   - None (default)
   - Call Key 1
   - Talk Key 1
   - Call Key 2
   - Talk Key 2
   - Call Key 3
   - Talk Key 3
   - Call Key 4
   - Talk Key 4
   - SA Key

     Note: *The number of the key relates to the keyset to which it belongs (for example, Call Key 1 is the Call key for the first keyset / display screen).*
5. To confirm the selected setting, press the **rotary control**.

2.4.6 Networking

In **Menu mode > Networking**, you can:

- See networking settings including Hostname, DHCP, IP address, subnet mask and gateway.
- Pair to an Arcadia Central Station.
- Set the expansion mode for your device.

Note: *When you set an IP address (static) on the front panel of any HelixNet user station, that IP address is saved and retained even if the user station later gets a DHCP IP address lease. Having once set a static IP address, the next time you disable the DHCP, the DHCP provided IP address will not be kept, nor will the user station go to a link local IP address. Instead, the user*

station will go back to the previously saved static IP address. The user configured static IP address will be deleted from the user station on the next ***Reset to Default****.*

Viewing Network Preferences

To view network preferences:

1. In **Menu** mode, select **Networking > Preferences**

   You can view the following:

   - Hostname
   - DHCP enabled or disabled
   - IP address
   - Subnet Mask
   - Gateway

Pairing to an Arcadia Central Station

To pair to an Arcadia Central Station:

1. In **Menu** mode, select **Networking > Pair to Station**.
2. Select **By Name** or **By Address**.

Using Expansion Mode

Multiple HelixNet Remote Stations can be joined together in an expansion mode for additional channels. One Remote Station is designated as the Host of the Expansion, with active headset, microphone and speaker capabilities, while the additional Remote Stations expand to the host for additional keysets.

1. In **Menu** mode, select **Networking > Expansion Mode**.
2. Enable a Remote Station to be a **Host** and **Expand** other Remote Stations to the Host.

Note: *Remote Station expansion mode is configured on the front panel of the Remote Station. Once configured, each unit will require their separate Role or Local Config.*

2.4.7 Administration

In **Menu mode > Administration**, you can:

- View the current versions of the software for the system.
- Update the software (firmware).

- Reset the Remote Station to the default (factory mode) settings.
- Manually reboot the Remote Station.
- Save and Restore the software settings.

Viewing the Current Versions of the Software

To view the current versions of the software on the Remote Station:

1. In **Menu mode**, select **Administration** and then **Software**.
2. From the third menu, select **Current**.
3. In the fourth menu, use the **rotary control** to scroll the displayed software versions. The software versions for the HelixNet system and Remote Station are shown.

Updating the Software

Software is automatically updated from an Arcadia Central Station

Do **not** turn off the power to the Remote Station during the software (firmware) update. Turning off the power can damage the device.

Note: *HelixNet Endpoints manufactured in January 2023 (serial number ends with C00 or higher letter/number) or later can only be used with Arcadia version 2.8 or HMS-4X version 4.4. These endpoints cannot be used with older versions due to difference in hardware components.*

Resetting the Remote Station to Default Settings

To reset the Remote Station to its default (factory mode) settings:

1. In **Menu mode**, select **Administration** and then **Reset**.
2. The third menu displays a selected menu item: **Reset to Default**.
3. In the fourth menu, select **Reset Now**.

Manually Rebooting the Remote Station

To manually reboot the Remote Station:

1. In **Menu mode**, select **Administration** and then **Reset**.
2. The third menu select **Reboot**.
3. In the fourth menu, select **Reboot Now**.

When the **rotary control** is pressed, the display changes to **Rebooting** … for two seconds, and then the Remote Station reboots.

Saving and Restoring the Software Settings

To save or restore the software settings:

1. In **Menu mode**, select **Administration** and then **Settings**.
2. To save, in the third menu, select **Save**. Once you select **Save** you should not remove the USB stick right away. Depending on the USB stick it might take up to 5 seconds to complete.
    a. In the fourth menu, select either saving to a USB stick or saving locally.
3. To restore, in the third menu, select **Restore**.
    a. In the fourth menu, select either restoring from a USB stick or restoring from a list of files.

2.4.8 Diagnostics

The **Diagnostics** menus help you to monitor the performance of the Remote Station and diagnose possible system issues.

Viewing Network Information

To view network status information:

1. In **Menu mode**, select **Diagnostics** and then **Network**.
2. To view status information about the powerline:
    a. From the third menu, select **Powerline**.
    b. On the fourth menu, the IP address is given.
3. To view status information about the Ethernet:
    a. From the third menu, select **Ethernet**.
    b. On the fourth menu, the IP address is given.

Viewing Keyset Information

To view information about the keysets:

1. In **Menu mode**, select **Diagnostics** and then **Keysets**.
2. From the third menu, select a keyset from 1 to 4.
3. The fourth menu displays the following status information:
    - **Name** – The Channel name
    - **Talkers** – The number of talkers on the Partyline
    - **Beltpacks** – The number of beltpacks listening on the Partyline
    - **Remote** – The number of Remote Stations listening
    - **Speaker** – The number of Speaker Stations listening
    - **2-Wire** – The number of 2-wire ports listening
    - **4-Wire** – The number of 4-wire ports listening

2.5 Using the Remote Station

This section describes how to use theRemote Station, after your HelixNet Partyline system has been installed and configured.

2.5.1 Using the Gooseneck Mic, Loudspeaker and Headset

To use a **gooseneck mic** to talk to connected intercom users, devices (including beltpacks) and systems:

1. Connect the gooseneck mic, using the gooseneck mic connector (3-pin female Tuchel connector) on the left of the front panel.

   Note**: For the location of the gooseneck mic connector, see C in* ***Remote Station on page 8*.*

2. To talk to other intercom users and devices:

   a. Press the appropriate **Talk key**

   When the mic (gooseneck or headset) is live, the **Mic On key** is activated automatically.

   b. Speak into the mic.

Use the front panel **loudspeaker** to listen to connected intercom users, devices and the Program Feed.

To adjust the volume level:

3. Adjust the volume of all incoming audio by turning the loudspeaker rotary control **[Main]**, located to the left of the loudspeaker.

   Adjust the volume of the Program Feed in **relation to** the overall volume level by turning the auxiliary loudspeaker rotary control [**Prog**], located to the right of the loudspeaker. The **Prog** volume control is subordinate to the **Main** volume control.

   To increase the volume level, turn the **rotary control(s)** clockwise. To decrease the volume level, turn the **rotary control(s)** counter-clockwise.

   ***Note**: When you connect a headset, incoming audio is routed to the headset instead of the loudspeaker.*

   ***Note:** You can mute the speaker by pressing the rotary control.*

   As you increase or decrease the volume, the level control LEDs pass through a range of indicator colors:

LED color	Volume level
Green	Low
Amber/Green	Low/Medium
Amber	Medium
Red/Amber	Medium/High
Red	High

To use a **headset** to talk and listen to connected intercom users, devices and systems:

1. Connect the headset, using the headset connector (4-pin XLR–M) on the far left of the front panel.

   The **Headset key** is automatically activated. Incoming audio is routed to the headset instead of the loudspeaker.

   Note: *For the location of the headset connector and the headset key, see B & E in* ***Remote Station on page 8****.*

   To configure audio settings for the headset, see **Configuring the Audio settings on page 19**

2. To talk to other intercom users and devices:

   a. Press the appropriate **Talk key**.

   When the microphone (gooseneck or headset) is live, the **Mic On key** is activated automatically.

   b. Speak into the microphone.

3. To adjust the volume level of incoming audio to the headset..

   a. Adjust the volume of all incoming audio by turning the loudspeaker rotary control **[Main]**. The control is located to the left of the loudspeaker.

   a. Adjust the volume of the Program Feed in **relation to** the overall volume level by turning the auxiliary loudspeaker rotary control [**Prog**. The control is located to the right of the loudspeaker.

The **Prog** volume control is subordinate to the **Main** volume control.

Switching between the headset mic and the gooseneck mic

When both a Headset microphone and a gooseneck microphone are connected, press the **Headset key** to activate the headset mic.

Press the **Headset key** again to switch to the gooseneck mic (and deactivate the headset mic).

Tip: To find out more about Clear-Com accessories, including headsets and gooseneck microphones, see http://www.clearcom.com/product/accessories.

2.5.2 Entering and Exiting Menu Mode

Use **Menu mode** to:

Configure the settings for the Remote Station, including Channel and audio settings.

Administrate the system, monitor system performance and diagnose system issues.

Perform software updates.

In **Menu mode**, the display screens display the four levels of menu. The menu hierarchy proceeds left to right:

The **top level** menu is presented in the first screen (furthest left on the front panel).

The **lowest level** menu is presented in the fourth screen (furthest right on the front panel).

To place the Remote Station in **Menu mode**, press the **Menu key** to the left of the first (left) display screen. To exit Menu mode, do either of the following:

Press the **Menu key** again.

Wait until Menu mode times out. If you fail to press any key on the front panel for 20 seconds, the display screens revert to showing the standard Channel information.

2.5.3 Using the Channel Keysets

A keyset (set of controls) is located next to each of the four display screens. In operating mode, each keyset is dedicated to the control of one of the four assigned intercom Channels. For details of the standard on screen information for each Channel, see table in **Remote Station Channel, Keyset and Display on page 15**.

Note: *To change (edit) the Channel label (name), see* ***Editing the Channel label on page 31***

The display screens enters screensaver mode (if enabled) if theRemote Station remains inactive for 10 minutes. Press any key to leave screensaver mode.

To send a **call signal** to all the connected devices on that Channel, press the **Call key**.

To **talk** to the all the devices on that Channel:

1. Press the **Talk key**. When the gooseneck or headset mic is live, the Mic **On key** is activated automatically.
2. Speak into the headset or gooseneck mic

To **adjust the volume** of incoming audio per channel, turn the rotary control. Turn the rotary control clockwise to increase the volume, and counter-clockwise to decrease volume. The current volume level is shown on screen.

To **mute** incoming audio per channel, press the **rotary control**. The display screen displays the muted volume bar.

To **unmute** incoming audio (restoring the audio to its previous volume level), press the **rotary control** again.

Note*: In* ***Menu mode****, the* ***rotary control*** *for each Channel keyset is used to scroll and select menu items. For more information, see* ***Using the Menus on page 18***

2.5.4 Using the All Talk Key

To talk to all connected intercom users, devices and systems, **excluding** the SA (Stage Announce) facility:

1. Press the **All Talk key** to the right of the fourth (last) display screen.

   Talk keys for all Channels are activated automatically.

   When the mic (gooseneck or headset) is live, the **Mic On key** is also activated automatically.

2. Speak into the headset or gooseneck mic - see also **Using the Gooseneck Mic, Loudspeaker and Headset on page 39**

Note: ***All Channels*** *will enable you to talk to 12 (or 24, according to license) Channels.* ***Visible Channels*** *will enable you to talk to the four visible Channels.*

2.5.5 Using the SA [Stage Announce] key

Use the **SA [Stage Announce] key** to speak to an attached SA or Public Address system (sometimes simply a loudspeaker within the studio, theater or event area).To make a studio / public announcement:

1. Press the **SA key** to the right of the fourth (last) display screen.

   When the mic (gooseneck or headset) is live, the **Mic On key** is also activated automatically.

2. Speak into the headset or gooseneck mic - see also **Using the Gooseneck Mic, Loudspeaker and Headset on page 39**

2.5.6 Line and LAN LEDs

The LAN LED indicates the status of the Ethernet connection, if present.

The color of the **Line and LAN LEDs** to the left of the front panel loudspeaker indicate the service status:

Green LED = **OK**

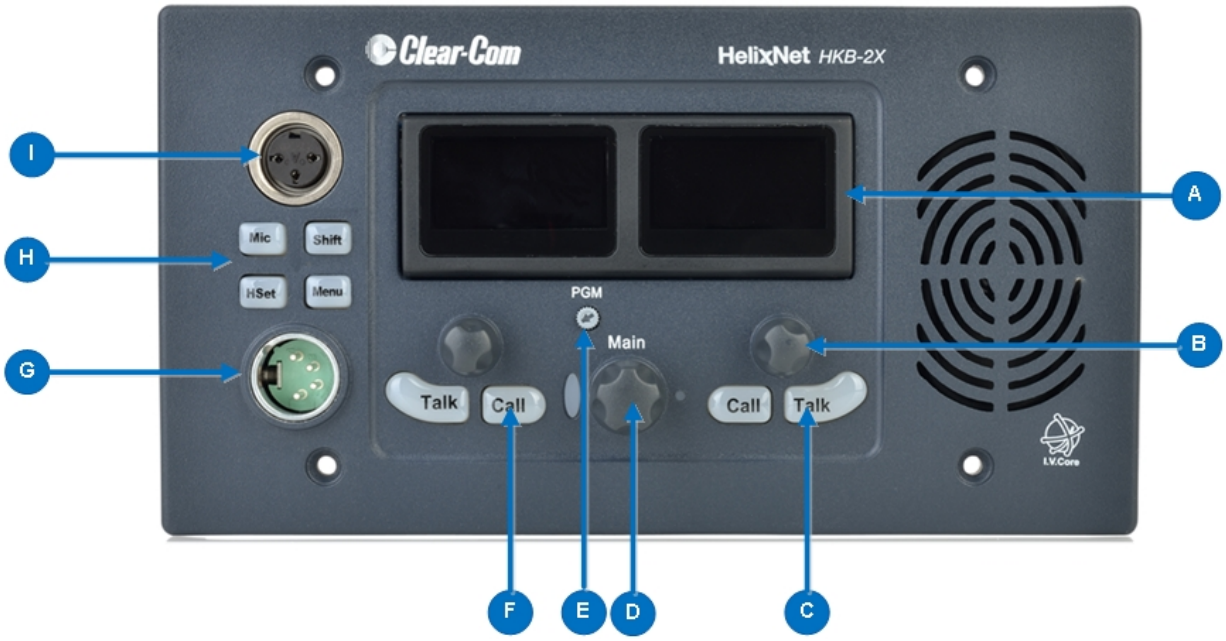
Amber LED = **Busy**

Red LED = **Error**

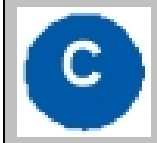
3 Speaker Station

This chapter describes how to use the HelixNet Speaker Station with Arcadia. It contains the following sections:

3.1 Speaker Station Front Panel



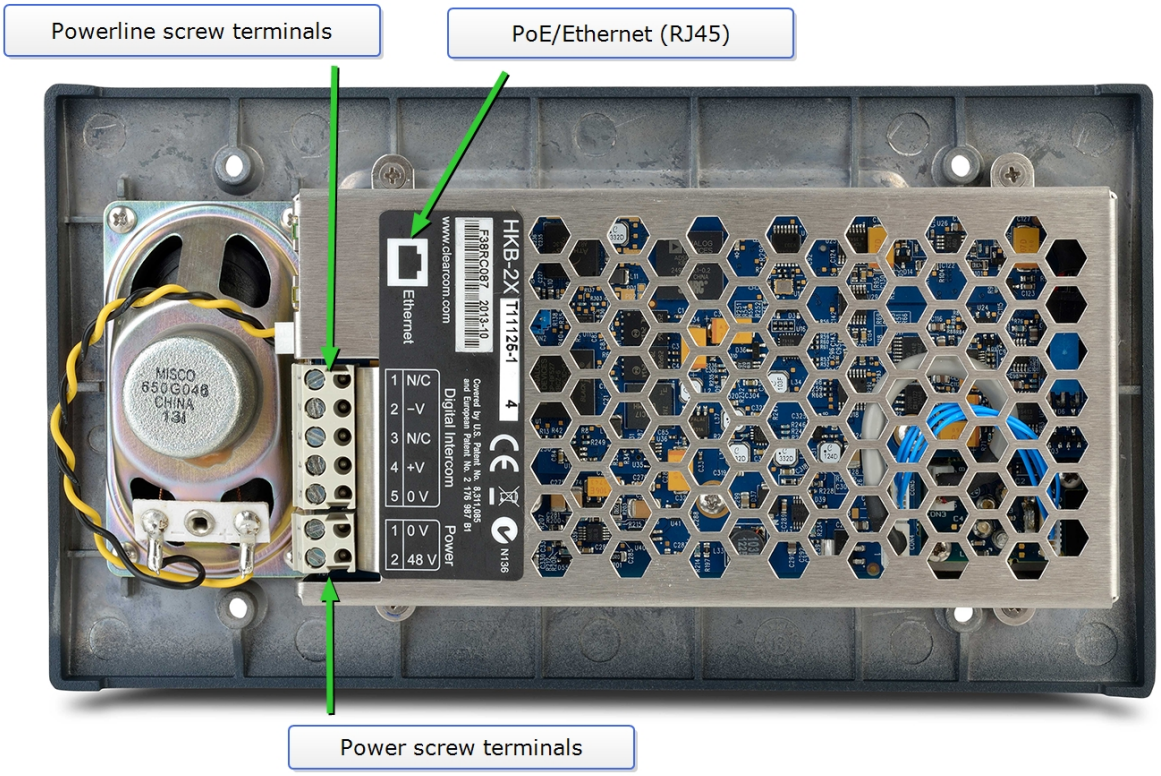
Key to Speaker Station front panel	
Feature	**Description**
A	**Tilt adjustable display screen**. The following default information is displayed: • The Channel label. • The Channel listen (volume) level. In Menu mode, the display screens display the two levels of menu. The menu hierarchy proceeds left to right: • The top level menu is presented in the first screen (furthest left on the front panel). • The lower level menu is presented in the second screen. If the display is in Menu mode, the display screen times out of Menu mode and displays the Channel label if no key is pressed for 20 seconds. For more information about Menu mode, see Using the Menus on page 18
B	**Rotary control.** Turn to increase or decrease the listen volume level for the Channel. Also, tap the control to mute or unmute audio level. In Menu mode, use the control to scroll menu items. To select menu items, tap the control.

<table>
<tr><th colspan="2">Key to Speaker Station front panel</th></tr>
<tr><td>  </td><td>Talk key. Press to talk on the Channel and to listen to the Channel.</td></tr>
<tr><td>  </td><td>Loudspeaker / Headphone audio level rotary control [Main]. To increase the volume to the loudspeaker / headphones, turn clockwise (up to 360°). To decrease the volume, turn counter clockwise (up to 360°). As you increase or decrease the volume, the level control LEDs pass through a range of indicator colors.</td></tr>
<tr><td>  </td><td>Program feed audio level Trim Pot control [PGM]. To increase the volume of the program feed to the loudspeaker / headphones, turn clockwise (up to 360°).
To decrease the volume, turn counter clockwise (up to 360°).
To mute or unmute the Channel audio, tap the control.</td></tr>
<tr><td>  </td><td>Call key. Press to send a call signal to all Keysets assigned to the same Channel. There are two Call keys on the beltpack, one for each of the displayed Channels.</td></tr>
<tr><td>  </td><td>Headset socket (4-pin XLR–M)
<table>
<tr><th>Pin</th><th>Function</th></tr>
<tr><td>1</td><td>Mic ground</td></tr>
<tr><td>2</td><td>Mic positive</td></tr>
<tr><td>3</td><td>Earphone ground</td></tr>
<tr><td>4</td><td>Earphone positive</td></tr>
</table></td></tr>
<tr><td>  </td><td>Headset/microphone key Selects between headset and gooseneck microphone inputs.
MIC Enables the selected microphone input to the channels on the station with active Talk keys.</td></tr>
<tr><td>  </td><td>Gooseneck microphone connector (3-pin female Tuchel connector)</td></tr>
</table>

3.2 Speaker Station Front Panel Function Buttons

Key to Speaker Station front panel function buttons	
Feature	**Description**
A	**Mic control [MIC ON].** Press to activate mic audio.
B	**Shift key**. Press to display two alternative Channels on the Speaker Station displays.
C	**Menu**. Press to display the Speaker Station menus in the display screens. Use the rotary control for each display screen to scroll and select menu items.
D	**Headset key [HSET].** Press to activate the headset mic. When the headset is connected, the gooseneck microphone is disconnected. Audio output to the loudspeaker is diverted to the headphones.

3.3 Speaker Station Rear Panel



Note: *HelixNet speaker station rear panel must be earthed to a clean ground when POE is used, preferably with the screen of a shielded CAT5/6 cable.*

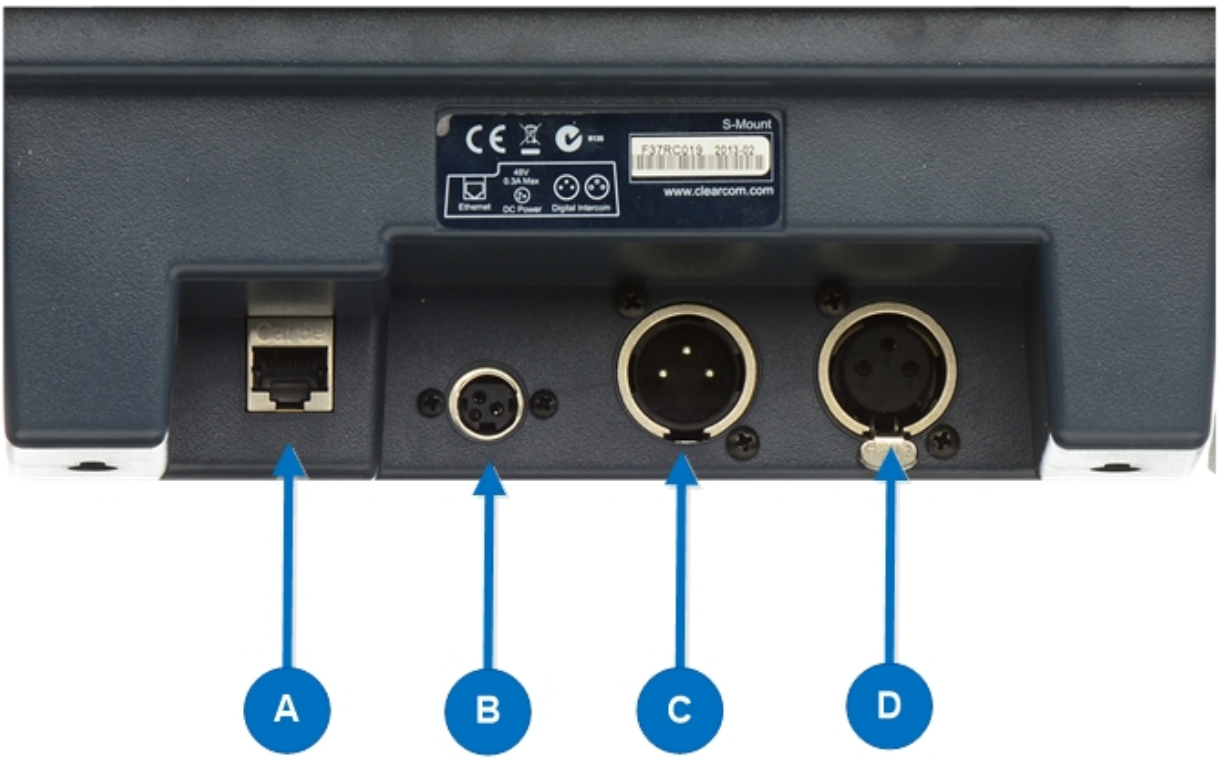
Speaker Station rear connectors	
Digital Intercom	
1	Not connected
2	-30V DC
3	Not connected
4	+30V DC
5	Ground
Power	
1	Ground
2	48V DC

For power draw, see the **Specifications** section in this manual.

3.4 Speaker Station Enclosure Rear Panel

The HelixNet speaker station enclosure (HXII-MOUNT, S-MOUNT) is an optional unit that allows you to mount the speaker station on a desk or wall.

Note: *There are cables pre-installed in the enclosure that connect to the speaker station terminals.*



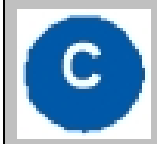
Key to speaker station enclosure rear panel connectors

Feature	Description
	**Ethernet/Power over Ethernet connection (RJ45).**

Pin	Name	Function
1	TX+	Transmit Data+
2	TX-	Transmit Data-
3	RX+	Receive Data+
4	n/c	Not connected
5	n/c	Not connected
6	RX-	Receive Data-
7	n/c	Not connected
8	n/c	Not connected

Power connection.

The power input connector is a low voltage DC connection.



Powerline 1 Digital Partyline. (3-pin male XLR connector).

Pin	Function
Pin 1	Ground
Pin 2	+30V DC and Audio
Pin 3	-30V DC and Audio

Powerline 2 Digital Partyline. (3-pin female XLR connector).

Pin	Function
Pin 1	Ground
Pin 2	+30V DC and Audio
Pin 3	-30V DC and Audio

3.5 Configuring and Managing Speaker Station from Front Panel Menus

This section describes how to configure the settings and manage the Speaker Station using **Menu mode**. It also shows you how to monitor and diagnose performance issues, using the **Diagnostics** menus.

Tip: For a quick reference to the Speaker Station menus, see **Menu Maps on page 111**.

For general information about using the menus and configuring settings, see Using the Menus.

There is a next and a back activated by pressing the rotary encoders (right one for next, left one for back). There are two levels of the menu, one on the left screen and one on the right. Next and back shifts the menu by one level down or up.

3.5.1 Using the Menus

To place the Speaker Station in **Menu mode**, press the **Menu key**. The Speaker Station menus appear in the display screens.

***Notes**: The **Speaker Station** menu comes up in the **Roles** menu by default.*

If Menu mode is **locked**, you must unlock the menus from CCM before you can enter the menu.

Configuring Settings

To configure settings:

1. For each menu, turn the **rotary control** to scroll the menu items. Turn the rotary control:
   - Counter-clockwise to scroll up the menu items.
   - Clockwise to scroll down the menu items.

To return to the previous level of menu, press the **left-hand rotary key**.

To go to the next level of menu, press the **right-hand rotary key.**

Selected menu items are highlighted in solid yellow.

2. When you have selected a setting, press the **right-hand rotary key** to enable the setting on the Speaker Station.

Exiting Menu Mode

To exit **Menu mode** do either of the following:

Press the **Menu** key.

Wait until Menu mode times out. If you fail to press any key on the Speaker Station for 20 seconds, the display screen reverts to showing the standard Channel information.

3.5.2 Configuring the Audio settings

Audio settings for the headset

To configure the audio settings for the headset, see **Configuring the Audio settings on page 19**.

Audio Settings for the Microphone

To configure the audio settings for the microphone, see **Audio Settings for the Microphone on page 21**.

Audio Settings for the Front Panel

To configure the audio settings for the front panel, see **Audio Settings for the Front Panel on page 27**.

3.5.3 Station Settings

Setting Keyset Assignments

To configure the Keyset Assignments settings, see **Setting Keyset Assignments on page 28**.

Setting key latching

To configure key latching, see **Setting Key Latching on page 28**.

You can also configure key latching so that the Talk keys automatically unlatch whenever the Shift key is pressed. To do so:

1. In Menu mode, select **Station Settings** and then **Keysets**.
2. From the third menu, select **Unlatch on Shift**.
3. From the fourth menu select:
   - Enabled (default)
   - Disabled

Setting display screen brightness

To configure display screen brightness, see **Setting Display Screen Brightness on page 29**.

Setting key brightness

To configure key brightness, see **Setting Key Brightness on page 30**.

Setting the screensaver

To configure the screensaver, see **Setting the Screensaver on page 31**.

3.5.4 Networking

In **Menu mode > Networking**, you can:

- See networking settings including DHCP, IP address, subnet mask and gateway.
- Pair to an Arcadia Central Station.

Note: *When you set an IP address (static) on the front panel of any HelixNet user station, that IP address is saved and retained even if the user station later gets a DHCP IP address lease. Having once set a static IP address, the next time you disable the DHCP, the DHCP provided IP address will not be kept, nor will the user station go to a link local IP address. Instead, the user station will go back to the previously saved static IP address. The user configured static IP address will be deleted from the user station on the next **Reset to Default**.*

Viewing Network Preferences

To view network preferences:

1. In **Menu** mode, select **Networking > Preferences**

You can view the following:

- DHCP enabled or disabled
- IP address
- Subnet Mask
- Gateway

3.5.5 Administration

Viewing the current versions of the software

To view the current version of the software, see **Viewing the Current Versions of the Software on page 37**.

Updating the Software

To update the software, see **Updating the Software on page 37**.

Resetting the Speaker Station to Default (Factory Mode) settings.

To reset the Speaker Station to its default (factory mode) settings see:

1. In **Menu mode**, select **Administration** and then **Reset**.
2. The third menu displays a selected menu item: **Reset to Default**.
3. In the fourth menu, select **Reset Now**.

3.5.6 Diagnostics

Viewing network information

To view network information, see **Viewing Network Information on page 39**.

Viewing Keysets Information

To view key sets information, see **Viewing Keyset Information on page 39**.

3.6 Using the Speaker Station

This section describes how to use the Speaker Station, after your HelixNet Partyline system has been installed and configured.

3.6.1 Using the gooseneck mic, loudspeaker and headset

To use a **gooseneck mic** to talk to connected intercom users, devices (including beltpacks) and systems:

1. Connect the gooseneck mic, using the gooseneck mic connector (3-pin female Tuchel connector) on the left of the front panel.

   ***Note**: For the location of the gooseneck mic connector, see **Speaker Station on page 44**.*

2. To talk to other intercom users and devices:

   a. Press the **Talk Key**.

      When the mic (gooseneck or headset) is live, the **Mic** key is activated automatically.

   b. Speak into the microphone.

   Use the front panel **loudspeaker** to listen to connected intercom users, devices and the Program Feed.

To adjust the volume level:

3. Adjust the volume of all incoming audio by turning the loudspeaker rotary control [**Main**], located in the center of the panel.

   To increase the volume level, turn the **rotary control(s)** clockwise. To decrease the volume level, turn the **rotary control(s)** counter-clockwise.

   ***Note**: When you connect a headset, incoming audio is routed to the headset instead of the loudspeaker.*

Note: *You can mute the speaker by pressing the rotary control.*

As you increase or decrease the volume, the level control LED passes through a range of indicator colors.

LED color	Volume level
Green	Low
Amber/Green	Low/Medium
Amber	Medium
Red/Amber	Medium/High
Red	High

To use a **headset** to talk and listen to connected intercom users, devices and systems:

1. Connect the headset, using the headset connector (4-pin XLR–M) on the far left of the front panel.

   The **Headset key** is automatically activated. Incoming audio is routed to the headset instead of the loudspeaker.

   Note: *For the location of the headset connector and the headset key, see* ***Speaker Station on page 44****.*

   To configure audio settings for the headset, see **Configuring the Audio settings on page 19**.

2. To talk to other intercom users and devices:

   a. Press the appropriate **Talk key**.

   When the microphone (gooseneck or headset) is live, the **Mic key** is activated automatically.

   b. Speak into the microphone.

3. To adjust the volume level of incoming audio to the headset:

   a. Adjust the volume of all incoming audio by turning the loudspeaker rotary control **[Main]**. The control is located to the left of the loudspeaker.

   b. Adjust the volume of the Program Feed using the **PGM** Trim Pot.

Switching Between the Headset Mic and the Gooseneck Mic

When both a Headset microphone and a gooseneck microphone are connected, press the Headset key to activate the headset microphone, and press the **Mic** key to activate the microphone.

Tip: To find out more about Clear-Com accessories, including headsets and gooseneck microphones, see http://www.clearcom.com/product/accessories.

3.6.2 Entering and exiting Menu Mode

Use **Menu mode** to:

Configure the settings for the Speaker Station, including Channel and audio settings.

Administrate the system, monitor system performance and diagnose system issues.

In **Menu mode**, the display screens show two out of four levels of menu. The menu hierarchy proceeds left to right:

The **top level** menu is presented in the first screen (left on the front panel).

The **second level** menu is presented in the second screen (right on the front panel).

Note: *Press the right-hand rotary control to shift to the next menu level.*

To place the Speaker Station in **Menu mode**, press the **Menu key** to the left of the first (left) display screen. To exit Menu mode, do either of the following:

Press the **Menu key** again.

Wait until Menu mode times out. If you fail to press any key on the front panel for 20 seconds, the display screens revert to showing the standard Channel information:

- Channel label (name).
- Listen (volume) level.

This section describes how to use the Speaker Station, after your HelixNet Partyline system has been installed and configured.

Tip: For a quick reference to the functionality of the Speaker Station, the optional interface modules and the , see **Remote Station on page 8**.

3.6.3 Using the Channel Keysets

A keyset (set of controls) is located next to each of the two display screens. In operating mode, each keyset is dedicated to the control of one of the four assigned intercom Channels. You can also use the shift key to switch to the other channels configured on keysets 3-4. For details of the standard on screen information for each Channel, see **Speaker Station Front Panel Function Buttons on page 47**.

To send a **call signal** to all the connected devices on that Channel, press the **Call key**.

To **talk** to all the devices on that Channel:

1. Press the **Talk key**. When the gooseneck or headset mic is live, the **Mic On** key is activated automatically.
2. Speak into the headset or gooseneck mic - see also **Using the gooseneck mic, loudspeaker and headset on page 54**.

To **adjust the volume** of incoming audio, turn the **rotary control**. Turn the rotary control clockwise to increase the volume, and counter-clockwise to decrease volume. The current volume level is shown on screen.

To **mute** incoming audio, press the **rotary control**. The display screen displays the muted volume bar.

To **unmute** incoming audio (restoring the audio to its previous volume level), press the **rotary control** again.

Note: *In **Menu mode**, the **rotary control** for each Channel keyset is used to scroll and select menu items. For more information, see* **Using the Menus on page 18**

3.6.4 Using the speaker station with push-to-talk (PTT) actions

The HelixNet speaker station is available in a special configuration with a 7-pin XLR headset connector. This is used with two assignable GPI/Push-to-talk (PTT) controls that enable you to configure various buttons press actions from a switch wired to the GPI/PTT.

More than one button press can be configured on each GPI/PTT. There are three configurable actions available: PPT1, PPT2 and PTT 1 & 2 (both buttons pushed at the same time).

The four local talk and call keys, the headset (**Hset**) key and the microphone (**Mic**) key can be assigned to any GPI/PTT.

The GPI/PTTs can be configured from the CCM or from the front panel menu system.

Please contact your Clear-Com representative for further information about the availability of the Speaker Station with 7-pin XLR.

4 HXII-BP Beltpack

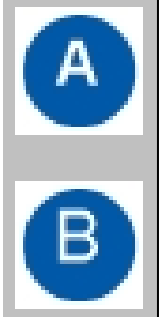
This chapter describes how to use the HXII-BP Beltpack with Arcadia. It contains the following sections:

This section covers the HXII-BP beltpack that has a 4-pin headset connector, and the HXII-BP-X5 beltpack that has a 5-pin headset connector for the ability to pan the keysets channels between left and right ears.

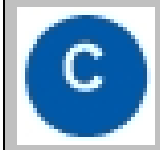
For more information about the using the HXII-BP-X5 beltpack with binaural audio, see **Binaural Audio on page 80**.

Note: *HBP-2X beltpacks can only be used with the Arcadia Central Station when connected via the Powerline device*

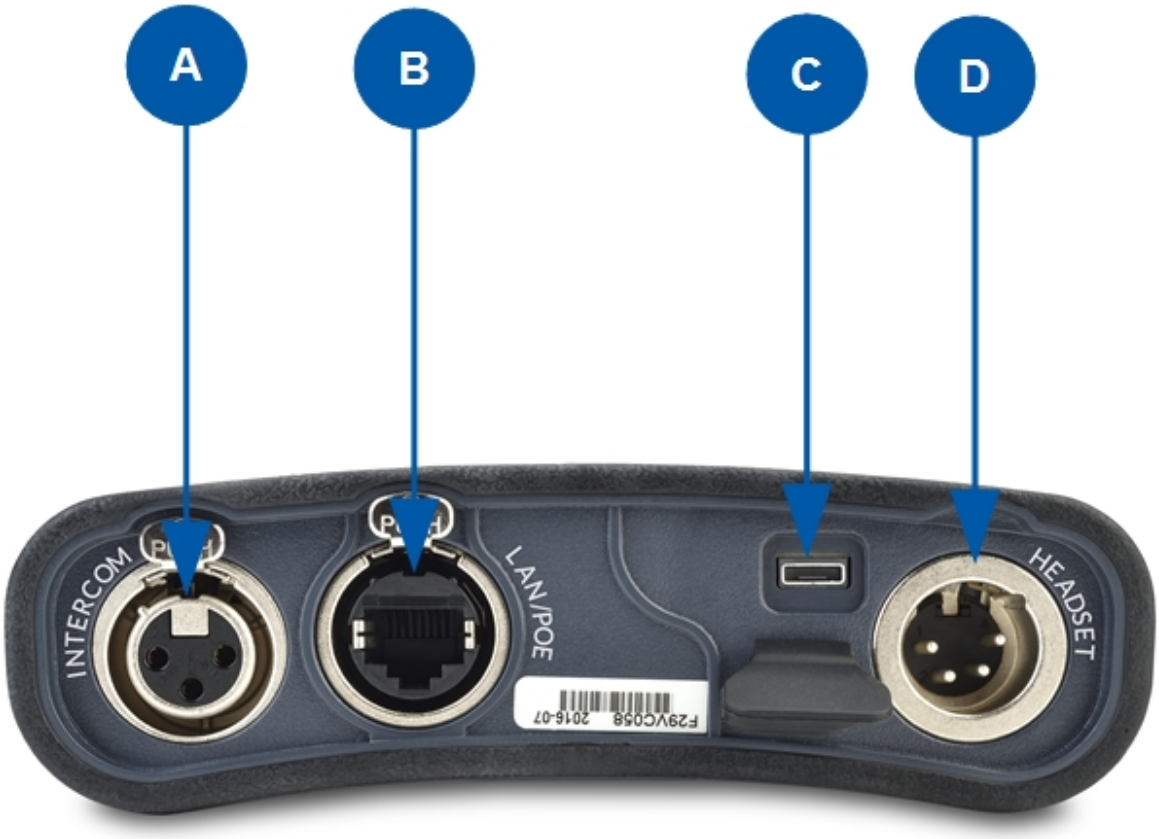
4.1 HXII-BP Beltpack User Controls (Top View)

Key to HXII-BP user controls (top view)	
Feature	**Description**
	**Talk keys**. Press to talk to all nodes (intercom devices and systems) listening into the Channel. There are two Talk keys on the beltpack, one for each of the supported Channels.
	**Call keys.** Press to send a call signal to all Keysets assigned to the same Channel. There are two Call keys on the beltpack, one for each of the supported Channels. In **Menu** mode, press the right-hand Call key to select (enter) menu items. Use the left-hand Call key to go back one menu level.

4.2 HXII-BP Beltpack Connectors and Controls (Front View)

Key to HXII-BP user controls (front view)	
Feature	**Description**
 	**Channel volume control.** Turn to increase and decrease the listen volume level for the Channel. In Menu mode, you can turn either of the side-mounted rotary controls to scroll menu items. To select (enter) items, press the right-hand Call key. In Menu mode, you can turn either of the side-mounted rotary controls to scroll menu items. To select (enter) items, press the right-hand Call key. These controls also adjust binaural audio volume in beltpacks with 5-pin headset connectors.
	**Menu key.** Press firmly to enter **Menu** mode. To exit **Menu** mode, press the **Menu** key again. The display screen times out of **Menu** mode and displays the Channel label(s) if no key is pressed for 20 seconds.
	**Program feed volume controls.** Use the up and down arrow buttons to increase or decrease the overall listen volume level of the program feed. To assign programs to a Channel, see **Assigning the Program Listen to a Channel on page 32** .
	**OPT Programmable function key.** This button selects the binaural audio volume adjustment screen on beltpacks with a 5-pin headset connector.

4.3 HXII-BP Beltpack (Bottom View)



Key to HXII-BP user controls (bottom view)

Feature	Description
	**Powerline (Digital Partyline)** (3-pin female XLR connector).

Pin	Function
1	Ground
2	+30V DC and Audio
3	-30V DC and Audio

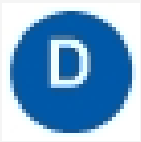
etherCon connector. Used for Power over Ethernet (PoE).

Pin	Name	Function
1	TX+	Transmit Data+
2	TX-	Transmit Data-
3	RX+	Receive Data+
4	n/c	Not connected
5	n/c	Not connected
6	RX-	Receive Data-
7	n/c	Not connected
8	n/c	Not connected

When using PoE, the beltpack draws 4 Watts from the PoE switch.

USB 2.0 (Micro-AB) connector

Key to HXII-BP user controls (bottom view)



Headset connector

HX-II-BP-X headset connection: 4-pin XLR male

Pin	Function
1	Mic ground
2	Mic positive
3	Earphone ground
4	Earphone positive

HX-II-BP-X5 headset connection: 5-pin XLR female

Pin	Function
1	Mic ground
2	Mic positive
3	Earphone ground
4	Earphone left
5	Earphone right

4.4 HXII-BP Beltpack (Rear)

Key to HXII-BP Rear	
Feature	**Description**
A	**Beltloops.** Use to thread through a belt or strap for securing the beltpack to a belt or a fixed position. You can also extend the beltloops to allow you to mount the beltpack on a flat surface.
B	**Beltclip.** Use to fasten to a belt or similar. The beltclip additionally includes three screw holes for wall mounting**.**

4.5 Configuring and managing beltpack from front panel menus

This section describes how to configure the settings and manage the beltpacks using **Menu mode**. It also shows you how to monitor and diagnose performance issues, using the **Diagnostics** menus.

Tip: For a quick reference to the Remote Station menus, see **Menu Maps on page 111**.

4.5.1 Using the Menus

To place the beltpack in **Menu mode**, press the **Menu key** on the top of the beltpack.

Notes *The **Beltpack** menu shows the **Roles** menu by default.*

:

*If Menu mode is **locked** on the beltpack, you must unlock the menus from CCM before you can enter the menu.*

To enter the menu mode from the Roles screen, press the left hand Call button.

Configuring settings

To configure settings:

1. For each menu, turn either of the side-mounted **rotary controls** to scroll the menu items. Turn the rotary control:
   - Counter-clockwise to scroll up the menu items.
   - Clockwise to scroll down the menu items.

Off-screen menu items are indicated with arrows at the top and / or bottom of the display screen.

Back (with an arrow pointing **left**) indicates a previous level of menu.

To return to the previous level of menu, press the **left-hand Call key**.

An arrow pointing **right** indicates another level of menu under that menu item.

To go to the next level of menu, press the **right-hand Call key**.

Selected menu items are highlighted in solid yellow.

2. The final level of menu (the second or third display screen) displays the settings that relate to your previous menu choices (system features or functionality).

The **current setting** is indicated by a dotted box around the menu item

When you have selected a setting, press the **right-hand Call key** to enable the setting on the Remote Station.

Exiting Menu mode

To exit **Menu mode** on the beltpack, do either of the following:

Press the Menu key.

Wait until Menu mode times out. If you fail to press any key on the beltpack for 20 seconds, the display screen reverts to showing the standard Channel information.

4.5.2 Configuring the Role Settings

To configure the Role settings for the headset

1. In **Menu mode** press the left-hand Call Key and then select **Roles**.
2. Select the required Role.
3. To confirm the selected setting, press the **right-hand Call key**.
4. The beltpack applies the setting and reverts to the standard display screen.

Viewing Hostname

The hostname (the unique name given to any device on a network) of your beltpack can be seen in the Roles section of the menu.

To view the hostname for your beltpack:

1. In **Menu mode** press the left-hand Call Key and then select **Roles**.
2. The device's hostname can be seen at the top of the list of available Roles.

Note: *You cannot change the hostname from this screen. The hostname for beltpacks must be changed from the browser-based Core configuration Manager (the CCM). From the* ***Overview*** *page of the CCM, click on any device image to access configuration details for that device's hostname.*

4.5.3 Configuring the Audio Settings

To configure the audio settings for the headset:

1. In **Menu mode** press the left-hand Call Key and then select **Audio Settings.**

2. To adjust sidetone gain on the headset:
    a. Select Sidetone Gain.
    b. Select one of the following:
        - 0dB
        - - 6dB
        - -12dB
        - -12dB (default)
        - -15dB
        - -18dB
        - -21dB
        - -24dB
        - -27dB
        - -30dB
        - OFF
    c. To confirm the selected setting, press the **right-hand Call key**.

Go back to the previous menu level by pressing the **left-hand Call key**.

3. To limit the maximum audio level that can be delivered to the headphones:
    a. Select Headphone Limit.
    b. Select one of the following:
        - Off
        - +6dB
        - 0dB (default)
        - - 6dB
    c. To confirm the selected setting, press the **right-hand Call key**.

    ***Note**: When Headphone Limit is set to anything except **Off**, a LIM indication will show up at the top right of the display.*

Go back to the previous menu level by pressing the **left-hand Call key**.

4. Sidetone tracking means that the sidetone level varies according to the main volume level. To set (or disable) sidetone tracking on the headset:
    a. Select Sidetone Control.
    b. Select one of the following:
        - Tracking (default)
        - Non-Tracking
        - Disabled
    c. To confirm the selected setting, press the **right-hand Call key**.

Go back to the previous menu level by pressing the **left-hand Call key**.

5. To set the type of mic on the headset:
    a. Select **HS Mic Type**.
    b. Select either of the following types of mic.
        - Dynamic (0 dB) (default)
        - Dynamic (-3dB)
        - Dynamic (-6dB)
        - Dynamic (-9dB)
        - Dynamic (-12dB)
        - Dynamic (-15dB)
        - Electret (-15dB)
        - Electret (-18dB)
        - Electret (-21dB)
        - ***Note**: In electret mode, phantom power is provided for an electret mic. In dynamic mode, no phantom power is provided. Mic input levels are also adjusted between the different modes to suit the different mic types.*
    c. To confirm the selected setting, press the **right-hand Call key**.

4.5.4 Audio Settings for the Microphone

To configure the audio settings for the microphone:

1. In Menu mode, select **Audio Settings**.

   Note: *The Headroom setting is only available on the HBP-2X Beltpack*

2. To select the Headroom:
   a. From the third menu, select **Headroom**.
   b. From the fourth menu, select one of the following:
      - Normal (default)
      - High
3. To enable or disable the Contour Filter:
   a. From the third menu, select **Contour Filter**
   b. From the fourth menu, select one of the following:
      - Enabled
      - Disabled (default)

4.5.5 Configuring the beltpack Settings

In **Menu mode > Beltpack Settings**, you can:

- Assign Channels to the left and right beltpack keysets (set of controls).
- Enable (or disable) **Talk key** latching.
- Enable (or disable) beltpack vibration when a call signal is received.
- Enable (or disable) the USB flasher mode for the beltpack.
- **Tip:** For a quick reference to the keysets on the beltpack, see **HXII-BP Beltpack User Controls (Top View) on page 59**.

Assigning Channels

You can assign any two available Channels to the beltpack.

To assign a Channel:

1. In Beltpack Settings select Left Channel or Right Channel.
2. Select one of the available Channels (or none):
3. To confirm the selected setting, press the **right-hand Call key.**

Setting Talk Key Latching

To enable (or disable) **Talk key** latching:

1. In Beltpack Settings select Right Talk Latch or Left Talk Latch
2. Select one of the following:
   - Latching (default)
   - Non-Latching
   - Disabled

   ***Note**: The setting applies to both Channels on the beltpack.*
3. To confirm the selected setting, press the **right-hand Call key**.

Setting USB Flasher Mode

To enable (or disable) **USB Flasher** mode

1. In Beltpack Settings select either Left Keyset or Right Keyset
2. Select USB Flasher
3. Select one of the following:
   - Disabled (default)
   - Blinking
   - Solid
4. To confirm the selected setting, press the **right-hand Call key**.

Setting the Beltpack to Vibrate When Called

To enable (or disable) vibration when a **Call signal** is received:

1. In Beltpack Settings select Vibrate on Call.
2. Select one of the following:
   - On
   - Off (default)
3. To confirm the selected setting, press the **right-hand Call key**.

4.5.6 Configuring the Display Settings

In **Menu mode > Display Settings**, you can:

- Set the brightness of the display screen.
- Set the brightness of the **Talk** and **Call** keys.
- Enable (or disable) the screensaver.
- Rotate the display.

Setting Display Screen Brightness

By default, the display screen is set to **medium** brightness. To set the brightness of the display screen:

1. In **Menu mode**, press the left-hand Call Key and then select **Display Settings**.
2. Select OLED Brightness.
3. Select one of the following:
   - High
   - Medium (default)
   - Low
4. To confirm the selected setting, press the **right-hand Call key**.

Setting the Brightness of the Talk and Call Keys

By default, the **Talk** and **Call keys** are lit when **active (on)** and dim when **inactive (off) (High / Low).**

To set the brightness of the Talk and Call keys:

1. In **Menu mode**, press the left-hand Call Key and then select **Display Settings**.
2. Select Key Brightness.
3. Select one of the following brightness settings:

Key(s)	Description
High / Low (default)	Keys are brightly lit when active (on) and dim when inactive (off).
High / Off	Keys are lit when active (on) and are unlit when inactive (off).
Low / Off	Keys are lit dim when active (on) and are unlit when inactive (off).
Off / Off	Keys are unlit, whether or not they are active (on) or inactive (off).

4. To confirm the selected setting, press the **right-hand Call key.**

Set Rotate Display

You can set the beltpack display to rotate according to its physical position.

1. In **Menu mode**, press the left-hand Call Key and then select **Display Settings**.
2. Select **Rotate Display**.
3. Select one of the following:
   - Enabled
   - Disabled (default)

Setting the Screensaver

The screensaver is displayed on screen after 10 minutes of inactivity on the beltpack. To enable (or disable) the screensaver:

1. In **Menu mode**, press the left-hand Call Key and then select **Display Settings**.
2. Select **Screensaver**.
3. Select one of the following:

- Channel Name (default)
- Hostname
- Role Name
- Blank
- Disabled

4. To confirm the selected setting, press the **right-hand Call key.**

4.5.7 Network - Ethernet

***Note**: This section applies only to the HXII-BP when powered over Ethernet.*

In **Menu mode > Networking**, you can:

- See networking settings including DHCP, IP address, subnet mask and gateway.
- Pair to an Arcadia Central Station.

Note: *When you set an IP address (static) on the front panel of any HelixNet user station, that IP address is saved and retained even if the user station later gets a DHCP IP address lease. Having once set a static IP address, the next time you disable the DHCP, the DHCP provided IP address will not be kept, nor will the user station go to a link local IP address. Instead, the user station will go back to the previously saved static IP address. The user configured static IP address will be deleted from the user station on the next **Reset to Default**.*

Viewing Network Preferences

To view network preferences:

1. In **Menu** mode, select **Networking > Preferences**

   You can view the following:

- DHCP enabled or disabled
- IP address
- Subnet Mask
- Gateway

Pairing to an Arcadia Central Station

To pair to aArcadia Central Station:

1. In **Menu** mode, select **Networking > Pair to Station**.

   Select **By Name** or **By IP Address**.

4.5.8 Administration

In **Menu mode** > **Administration**, you can:

- View the current version of the software on the beltpack.
- Reset the beltpack to default (factory mode) settings.
- The beltpacks receive updated (default) Channel label information. Other local beltpack settings will not be reset if the Arcadia Central Station is reset to default settings.

To View the Current Version of the Software on the Beltpack:

1. In **Menu mode**, press the left-hand Call Key and then select **Administration**.
2. Select **Software Version**.
3. The current version of the software is displayed. The software version information will appear similar to the following example:

   npl-x.x.xx.xxxx, uboot

   Where x is a numerical value.

Resetting the Beltpack to Default (Factory Mode) Settings

To reset the beltpack to default (factory mode) settings:

1. In **Menu mode**, press the left-hand Call Key and then select Administration.
2. Select **Reset to Default**.
3. **Reset Now** is displayed (shown as selected). To reset the beltpack, press the **right-hand Call key**.

   ***Note**: Resetting the beltpack to default (factory mode) settings will delete any IP settings, and remove the pairing with the Arcadia Central Station.*

4.5.9 Diagnostics

The **Diagnostics** menus help you to monitor the performance of the beltpack and diagnose possible system issues.

Viewing Information About the Hardware (Main PCB) on the Beltpack

To view information about the **Part, Revision** and **Serial number** of the main PCB on the beltpack:

1. In **Menu mode**, press the left-hand Call Key and then select **Diagnostics**.
2. Select **Hardware > Main PCB**.

   The **Part, Revision** and **Serial number** for the PCB are displayed. The format is similar to the following:

   Part xxxxxxx
   Revision: x
   Serial: x

   Where x is a numerical value.

4.6 Using the Beltpack

This section describes how to use the HXII-BP Beltpack, after your HelixNet Partyline system has been installed and configured.

4.6.1 Using the Beltpack Keysets

The HXII-BP Beltpack supports two Partyline Channels, with a separate keyset (set of controls) dedicated to the control of each Channel:

The **left-hand keyset** controls the first (top) Channel displayed on screen.

The **right-hand keyset** controls the second (bottom) Channel displayed on screen.

For details of the standard on screen information for each Channel, see **Remote Station Channel, Keyset and Display on page 15**.

Note: *For more information about using the beltpack in Menu mode, see* ***Configuring and managing beltpack from front panel menus on page 67****.*

The display screens enter screensaver mode (if enabled) if the beltpack remains inactive for a period of time. Press any key to exit screensaver mode.

To send a **call signal** to all the connected devices on that Channel, press the **Call key**.

To **talk** to all the devices connected to the Channel:

1. Connect a headset, using the 4-pin or 5-pin XLR–M connector on the bottom of the beltpack.

Note: *For the location of the headset connector and the headset key, see D in* ***HXII-BP Beltpack (Bottom View) on page 63****.*

2. Press the **Talk key**.
3. Speak into the headset mic.

To adjust the volume of incoming audio for a Channel, turn the appropriate side-mounted **rotary control**.

Turn the rotary control clockwise to increase the volume, and counter-clockwise to decrease volume. The current volume level for the Channel is shown on screen.

4.6.2 Entering and Exiting Menu Mode

Use **Menu mode** to:

Configure the settings for the Beltpack, including Channel and audio settings.

Monitor beltpack performance and diagnose issues.

To enter Menu mode, press the **Menu key**. To exit Menu mode, press the Menu key again.

For more information about using Menu mode on the beltpack, see Configuring and managing beltpack from front panel menus on page 67 .

4.6.3 Adjusting the Program Audio Volume Level

To adjust the listen level of the **Program audio** to the beltpack, use the up and down controls on the front of the beltpack.

Use the up arrow control to increase the listen level, and use the down arrow control to decrease the listen level.

While the listen level is adjusted, the listen level for the Program Audio replaces the standard Channel information on screen.

The Remote Station is used to assign the Program Audio or the Program Audio coming from the Arcadia to Channels. For more information, see **Assigning the Program Listen to a Channel on page 32**.

4.6.4 Binaural Audio

The HXII-BP-X5 beltpack with 5-pin headset connector has a binaural audio adjustment for the left and right earphone. This means that you can separately adjust the audio volume level in the left and right earphone. To adjust the left or right hand earphone volume:

1. Press the **OPT** button on the beltpack.
2. Use the left and right rotary controllers to balance the volume of the left and right channels respectively. Turn the rotary control clockwise to balance the volume to the right ear, and counter-clockwise to balance the volume to the left ear. The current balance level for each Channel is shown on screen.

5 Digital Powerline Device

The HelixNet HXII-DPL Powerline device adds the ability to connect HelixNet user stations to the Arcadia Central Station or HelixNet HMS-4X Main Station over 3 pin XLR as an alternative to Ethernet connectivity.

Powerline is a connectivity method allowing Ethernet to be carried on the Powerline via 3-pin shielded XLR cable, providing devices on the line with power and network connection. The Powerline can be passively split, daisy-chained and otherwise distributed over traditional XLR infrastructure to provide various installation options.

- All HelixNet channels and program audio are carried on 3-pin XLR cable
- Up to 24 HXII-DPL devices per system
- Up to 7 HelixNet beltpacks can be powered by each HXII-DPL device
    - Alternatively, 2 speaker/remote stations can be powered by each HXII-DPL device
- Up to 7 HelixNet user stations (beltpacks, remote stations and speaker stations) per device if the remote and speaker stations are locally powered

Note: *HelixNet Powerline is not compatible with analog partyline devices.*

Note: *You can mix Powerline and Ethernet connectivity on an Arcadia Central Station.*

Note: *It is not recommended to operate the HXII-DPL with higher load than specified.*

For information on cable type and lengths see *The HelixNet Cabling Calculator* available from the HelixNet Knowledge Center.

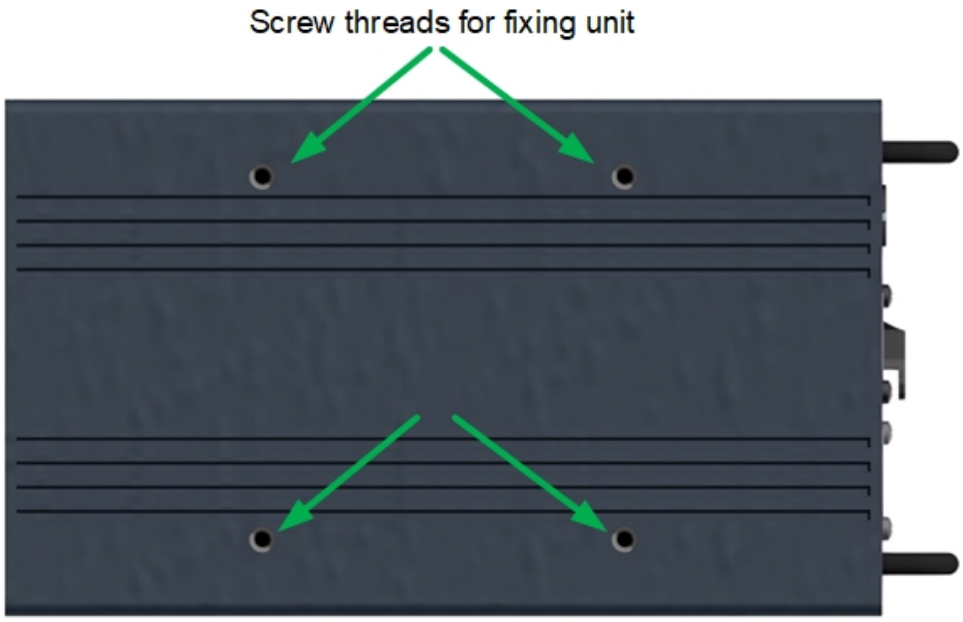
5.1 Front Indicators - Digital Powerline Device

	Status indicator
A	Ethernet network indicator. Amber indicates 100Mb link. Flashing indicates network activity
B	Digital Powerline indicator. Amber indicates link. Flashing indicates Powerline activity
C	Powerline overload indicator. This lights solid red while the Powerline port is overloaded due to: • Power overload: more devices on the line than the device is designed to power • Short-circuit: caused by damaged or miswired cables Power will be automatically restored to the Powerline once the overload has been rectified
D	Power indicator. Green indicates that the device is powered

5.2 Rear Connectors and Indicators - Digital Powerline Device

	Connector and Indicators
A	Power input. Connects to PSU-EXT-005 (supplied)
B	EtherCon RJ45. 100Mb Fast Ethernet input. This connects to the system host (Arcadia, HMS-4X) via network. Amber status light indicates connection, flashing indicates network activity
C	Powerline output. 3-pin XLR (M) Amber status light indicates Powerline link. Flashing indicates Powerline activity Red status light indicates that the Powerline is overloaded This provides power and data for up to 7 beltpacks or equivalent mix of user stations
D	Handles for protecting connectors, securing cabling or for fixing a safety wire
E	Device MAC address
F	Device serial number

5.2.1 Base of Unit



Note: *These are VESA75 standard provisions for Clear-Com or 3rd party mounting accessories*

5.3 Theory of Operation - Digital Powerline Device

The Powerline device is a bridge for Ethernet and power to the Powerline, allowing it to connect HelixNet channels and power to multiple HelixNet user stations on 3-pin XLR cabling.

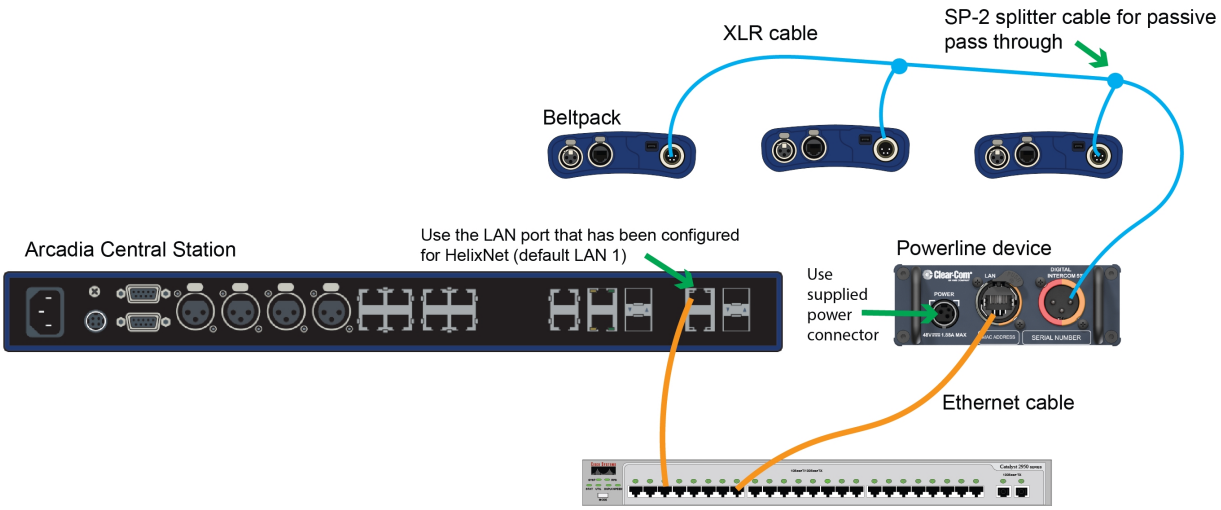
Clear-Com's HelixNet Powerline is a unique connection method for Ethernet network connectivity and power between multiple devices over a shielded twisted pair cabling for long and robust cable connection without active distribution components.

Powerline carries Ethernet network packages to and from HelixNet User Stations as modulated RF carriers in the MHz range, which are automatically configured and managed by the system.

5.4 Connecting User Stations via Digital Powerline Device

HXII-DPL Powerline device connects to your Arcadia via network and must be powered using the supplied power supply (PSU-EXT-005). Multiple HXII-DPL Powerline devices (24 max) can be added to a system either at a central location, or, for best performance, locally where connections to HelixNet user stations are needed.

Note: *HelixNet user stations must run HelixNet firmware v.4.5 (included with Arcadia 2.11+) before use with the HXII-DPL Powerline device.*



Connect the HXII-DPL Powerline device to HelixNet user stations using 3-pin XLR cabling, via passive splits or daisy chaining as appropriate.

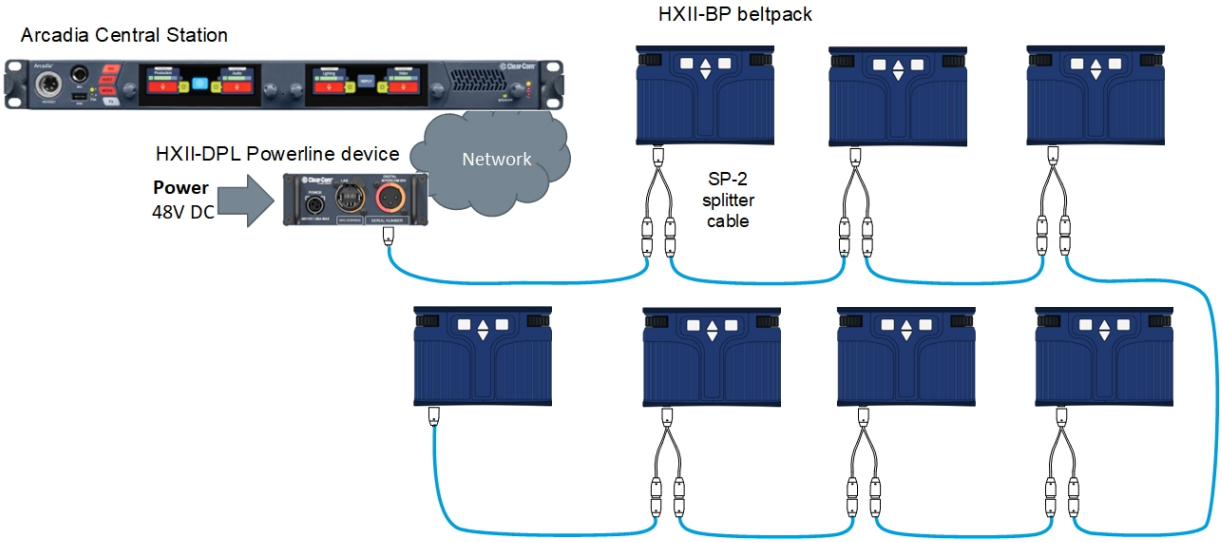
Once physically connected and powered, the HelixNet user stations can be paired to the system.

HXII-DPL Powerline device does not need to be paired to the system. It is not visible in the CCM (**Status > Overview > Wired**) on first connection until a HelixNet endpoint is paired and connected via the device.

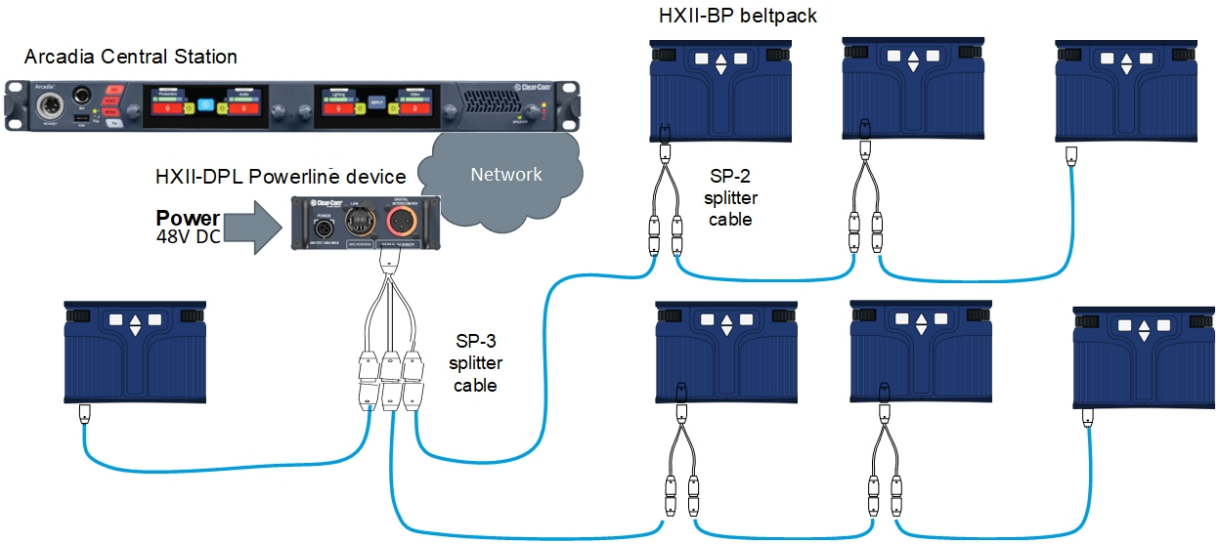
5.5 Cabling Topologies - Digital Powerline Device

Powerline cabling allows system components to be wired in daisy chain, star, or ring topologies using standard shielded 3-pin XLR cabling. Splitting and combining can be achieved using passive splitters such as Clear-Com's SP-2 and SP-3 splitter cables.

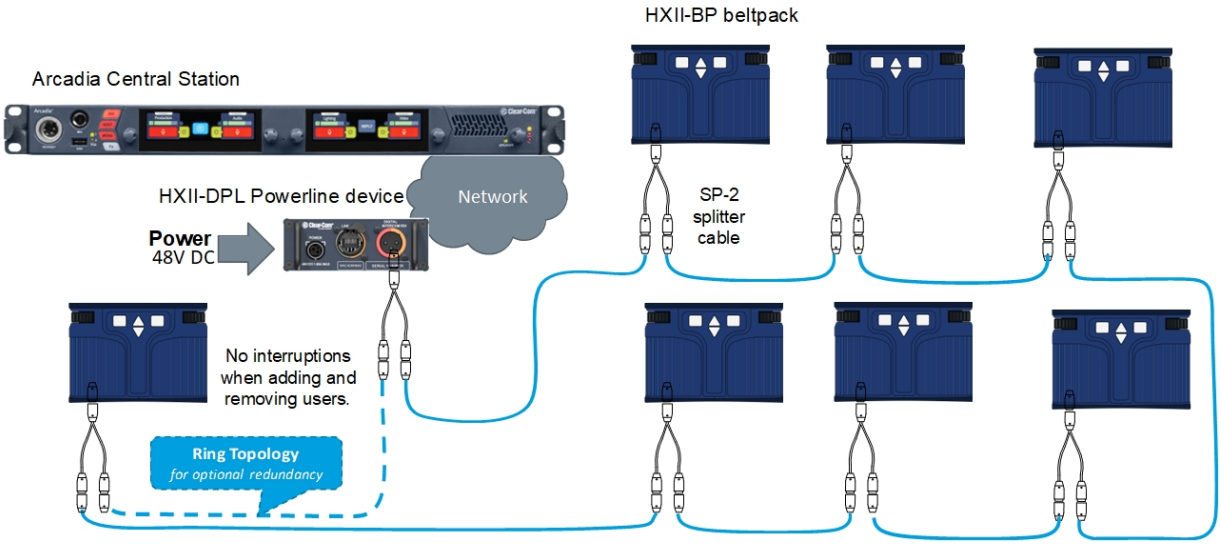
5.5.1 Daisy chain topology



5.5.2 Star topology

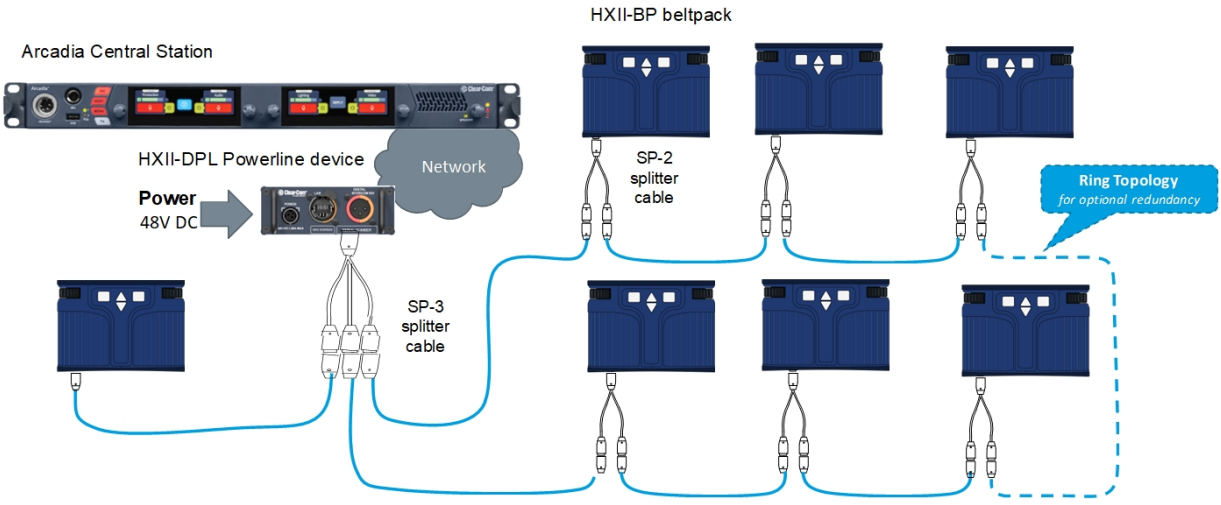


5.5.3 Ring topology with cabling redundancy



Note: *Ring topology redundant connections must be maintained within the same Powerline device and not connected to other Powerline devices.*

5.5.4 Ring and star topology



5.6 Powerline General Guidelines

5.6.1 Capacitance and resistance

Capacitance and resistance should be kept low. These increase with cable length and number of endpoints on the line. High capacitance and resistance causes fewer carrier frequencies to be available, which causes data collisions as multiple devices try to use the same carrier frequencies. This contributes also to low data rates.

In these conditions, the user may experience audible clicks. As the collisions increase, audio may stutter intermittently and even drop.

Therefore, the use of low capacitance and low resistance cables is important with extended cable lengths and more devices on the line.

5.6.2 Power

Low resistance cable is best for power handling (low AWG #). Higher resistance cable can cause voltage drops on the powerline.

5.6.3 Crosstalk and Interference

High frequencies can be susceptible to crosstalk and interference. Maintaining cable shielding important for Powerline installations, especially between Powerlines that originate from different Powerline Devices.

5.7 Powerline Troubleshooting - Digital Powerline Device

For general guidance on the use of Powerlines see **Powerline General Guidelines on page 86**

In the event of poor performance on the Powerline consider the following diagnostic steps:

5.7.1 Check if the Powerline is overloaded

Check if the Powerline is overloaded with HelixNet endpoints (maximum 7 for the Digital Powerline device).

5.7.2 Check for data rate and voltage at HelixNet endpoints

Beltpack screen check QoS indicator (5 bars)

Number of bars

0 < 5 mbps Rx and Tx

1 >15 mbps Rx and Tx

2 > 40 mbps Rx and Tx

3 > 70 mbps Rx and Tx

4 > 100 mbps Rx and Tx

5 > 130 mbps Rx and Tx

- One bar or more required for audio (> 15 mbps)

In the endpoint menu system navigate to: **Powerline > Diagnostics**

- Voltage must be > 24V DC

5.7.3 Check for cross-connected Powerlines

Check if Powerlines are cross-connected between Powerline devices. An HXII-DPL Powerline device should never connect to another Powerline device.

5.7.4 Check cable shielding

Cable shields should be continuously maintained through cable, function boxes and connections to avoid digital crosstalk. Physical separation between Powerlines originating from different Powerline devices is especially important.

5.7.5 Check HelixNet user stations

Check that the HelixNet user stations are in good working order by testing with a known good cable connected directly to the system host.

Note: *To ensure good audio quality, consider adding more HXII-DPL Powerline devices to your system.*

5.8 Digital Powerline Device Statistics and Messages

You may see the following statistics and messages in the Arcadia Central Station CCM:

Powerline statistics	
Collision rate	25-35% - high ≥ 35% - very high
Error rate	0-0.1% error - low data quality ≥ 0-0.1 % error - very low data quality
Bandwidth	40 - 130 Mbps - working range 15 - 40 Mbps - low data rate ≤ 15 Mbps - very low data rate
Voltage	< 18 V DC - very low power < 24 V DC - low power > 24 < 31 V DC - working range > 31 V DC - high power

Condition	Steps to take
The Powerline data collisions are high or very high	1. Check if Powerline is overloaded 2. Check cable shielding 3. Check HelixNet user stations
The Powerline data quality is low or very low Note: can be caused by external interference or too many devices trying to use the same carriers	1. Check if Powerline is overloaded 2. Check for cross-connected Powerlines 3. Check cable shielding 4. Check HelixNet user stations
The Powerline voltage is low/very low	1. Check if the Powerline is overloaded, cable length, shielding and capacitance.
The Powerline voltage is high	1. Check the HelixNet user station and the cable that connects it
The Powerline voltage at [name] endpoint is unbalanced.	1. Check cabling for continuity and resistance 2. Check the HelixNet user station
HXII-DPL Powerline device is not reachable.	1. Ensure user stations are connected to the Powerline device, network is connected, addresses, and that the user stations are paired Contact Clear-Com if the problem persists
HXII-DPL Powerline device has a connection >7.	1. Check the number of physically connected HelixNet user stations on the Powerline output 2. If the problem persists when the number of connected units is ≤ 7, check the integrity of the Powerline cable shields

Note: *To ensure good audio quality, consider adding more HXII-DPL devices to your system.*

5.9 Accessories - Digital Powerline Device

Optional parts for the Powerline device	
SM-100 surface mount for 1 Powerline device This image shows the powerline device on the surface mount. The mount has slots for strap or screw mounting	
RK-100 rack mount for up to 4 Powerline devices	
SP-2 intercom splitter cable Ideal for pass through along a line	
SP-3 intercom splitter cable Use for splitting into multiple lines	

6 Monitoring Wired Devices

Navigate to **Status>Overview>Wired**. A screen appears that gives information about the HelixNet wired user stations (beltpacks, remote stations and speaker stations) and enables various procedures including:

Procedure

- Reboot
- Reset to Default

Reboot is in the Hardware page. Click the cog icon (interlink) in this page to go Reboot and Reset.

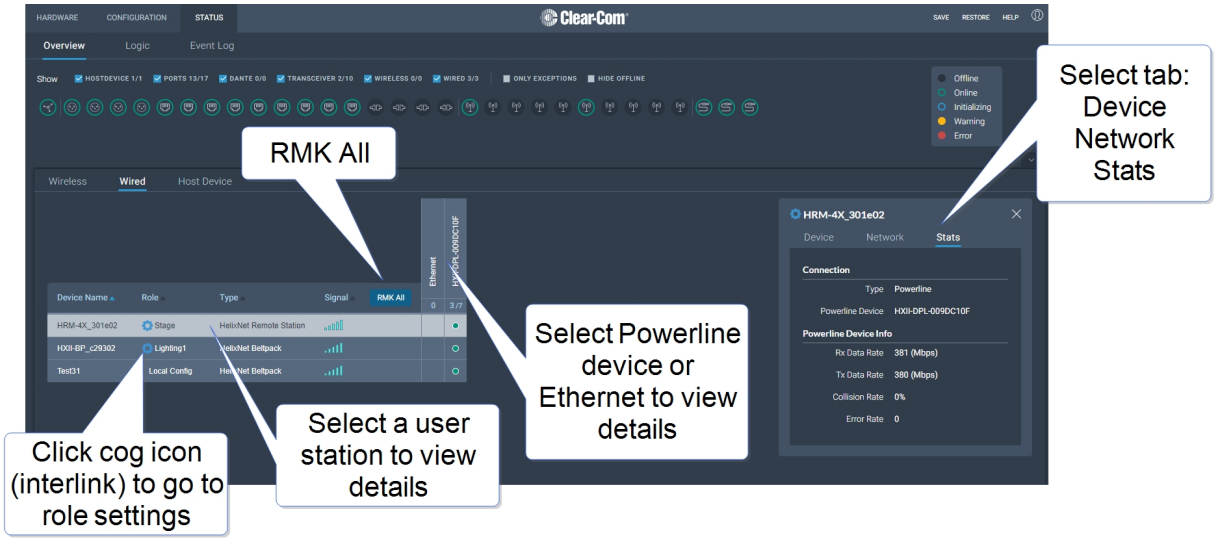
Information

- Status
- ID
- Role
- Firmware version
- Powerline device info

From this page you can also **RMK all**. This will close the mic on all beltpacks, both wired and wireless.

You can also see information on the method of connection to the Arcadia host:

- Ethernet or
- Powerline device



7 Specifications

This chapter lists the technical specification for HelixNet Digital Partyline with Arcadia. It contains the following sections:

7.1 Remote Station HXII-RM (HRM)

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

7.1.1 Connectors

Specification	Description / value
Powerlines	3-pin XLR (M/F) Powerline connectivity is available for Arcadia with the HXII-DPL Powerline device
Headset	4-pin XLR–M
Gooseneck mic	3-pin Tuchel
USB	USB Type A
Program	3-pin XLR–F
SA (Stage Announce)	3-pin XLR–M
Hot Mic / IFB Interface	1/4 in. (0.64 cm) phone jack
Control and audio input/output	9-pin D-type
DC power	3-pin KPJX-PM-3-S

7.1.2 Microphone Pre-Amplifier

Specification	Description / value
Headset Mic impedance:	200Ω (Dynamic)
Headset Mic Voltage	1.7V (Electret selectable)
Limiter	+23dB
Routed to 4-wire output @ 0dBu out	
Mic gain	60dB (dynamic) 45dB (electret)
Frequency response	300Hz – 10kHz + / -3dB (contoured for intelligibility)
Distortion	<0.2% THD @ 1 kHz
Noise-	<-55dBu dynamic, <-65dBu electret

7.1.3 Headphone Amplifier

Specification	Description / value
Load impedance	32Ω
Output level	+12dBu before clipping
Sidetone	-12dB (selectable)
Routed from a 4-wire input @ 0dBu in	
Max gain	0dB
Frequency response	180Hz - 10kHz ±3dB
Distortion	<0.1% THD @ 1 kHz
Noise	<-65dBu
Headphone limiter	0dBu (selectable)

7.1.4 Loudspeaker Amplifier

Specification	Description / value
Load impedance	8Ω
Output level	+18dBu before clipping
Max gain	18dB
Routed from a 4-wire input @ 0dBu in:	
Frequency response	200Hz - 10kHz ±3dB
Distortion	<0.1% THD @ 1 kHz
Noise	<-50dBu

7.1.5 Program Line Input

Specification	Description / value
Maximum level before clipping	18dBu
Nominal input level	0dBu(selectable)
Input impedance	>= 10 KΩ
Routed to 4-wire output @ 0dBu out	
Frequency response	20Hz - 10kHz ±3dB
Distortion	<0.2% THD @ 1kHz
Noise	<-65dBu

7.1.6 Four-wire module outputs

Specification	Description / value
Maximum level before clipping	18dBu
Nominal input level	0dBu(selectable)
Input impedance	<= 100Ω

7.1.7 Stage Announce Output

Specification	Description / value
Maximum level before clipping	18dBu
Nominal output level	0dBu(selectable)
Output impedance	<= 100Ω
Routed from a dynamic headset:	
Frequency response	300Hz – 12kHz ±3dB
Distortion	<0.1% THD @ 1kHz
Noise	<-55dBu

7.1.8 20.4.8 Hot Mic Output

Specification	Description / value
Maximum level before clipping	+12dBu
Nominal output level	0dBu(selectable)
Output impedance	<= 100Ω
Routed from a dynamic headset:	
Frequency response	300Hz - 12kHz ±2dB
Distortion	<0.2% THD @ 1 kHz
Noise	<-55dBu

7.1.9 Power

Specification	Description / value
Voltage	48V DC
Current (Max)	0.3A
Power (Max)	14.4W
BTU (Max)	49BTU/hr
Input voltage	±29.5V DC
Input current (speaker off)	0.3A
Input current (Max)	0.5A
Powerline	Powerline connectivity is available for the Arcadia with an HXII-DPL Powerline device. Up to 7 beltpacks per Powerline device. For power requirements see the *HelixNet Powerline Calculator* available from the online *HelixNet Knowledge Center*.

Specification	Description / value
Powerline utilization	
Remote Station (local power) =	1 beltpack
Remote Station (speaker off) =	2 beltpacks
Remote Station(speaker on) =	3 beltpacks
AC adapter - inline	
Input Voltage range	100 – 240VAC
Input frequency range	50 – 60Hz
Input power connector	IEC-C14
Output voltage	48V DC
Output power (Max)	15W
Output power connector	KPPX-3-P
Input power	<=14W
PoE - Power over Ethernet	
Device class	IEEE 802.3af-2003 - Class 0
PSE	15.4W DC max @ Power Source Req.
PD	12.95W DC max @ Powered Device Draw

7.1.10 Environmental

Specification	Description / value
Temperature	0˚C - 40˚C (32˚F - 104˚F)
Humidity	0 - 90% relative humidity

7.1.11 Dimensions and Weight

Specification	Description / value
Dimensions	19 in. W x 1.75 in. H x 6.4 in. D (483 mm x 44 mm x 165 mm)
Weight	4 lbs. (1.8 kg)

7.2 Speaker Station HXII-KB (HKB)

Note: *HXII-KB and HKB-2X are form, fit and functionally equivalent, differing in material and construction.*

7.2.1 Connectors

Specification	Description / value
Powerline	3-pin XLR (M/F) Powerline connectivity is available for Arcadia with the HXI-DPL Powerline device
Ethernet/PoE	RJ45
Headset	4-pin XLR–M
Gooseneck mic	3-pin Tuchel
Input power connector	Terminal Block 2 Pole, 5mm

7.2.2 Microphone Pre-Amplifier

Specification	Description / value
Headset Mic impedance:	200Ω (Dynamic)
Headset Mic Voltage	1.7V (Electret selectable)
Limiter	+23dB
Routed to 4-wire output @ 0dBu out:	
Mic gain	60dB (dynamic) 45dB (electret)
Frequency response	300Hz – 10kHz + / -3dB (contoured for intelligibility)
Distortion	<0.1% THD @ 1kHz
Noise-	<-55dBu dynamic, <-65dBu electret
Headphone limiter	0dB (selectable)

7.2.3 Headphone Amplifier

Specification	Description / value
Load impedance	>32Ω
Output level	+12dBu before clipping
Sidetone	-12dB (selectable)
Routed from a 4-wire input @0dBu in:	
Max gain	0dB
Frequency response	40Hz - 10kHz ±3dB
Distortion	<0.1% THD @ 1 kHz
Noise	<-65dBu (@ max gain)
Headphone limiter	-0dBu (selectable)

7.2.4 Power

Specification	Description / value
Voltage	48V DC
Current (Max)	0.3A
BTU (Max)	49BTU/hr
Input power connector	Terminal Block 2 Pole, 5mm
Input Voltage	±29.5V DC
Input current (speaker off)	0.3A
Input current (Max)	0.5A
Powerline	Powerline connectivity is available for the Arcadia with an HXII-DPL Powerline device. Up to 7 beltpacks per Powerline device. For power requirements see the *HelixNet Powerline Calculator* available from the online *HelixNet Knowledge Center*.
Powerline utilization	
Speaker Station (local power) =	1 beltpack
Speaker Station (speaker off) =	2 beltpacks
Speaker Station (speaker on) =	3 beltpacks
AC adapter - wall (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

Specification	Description / value
PoE - Power over Ethernet	
Device class	IEEE 802.3af-2003 – Class 0
PSE	15.4 W DC max @ Power Source Req.
PD	12.95 W DC max @ Powered Device Draw Environmental

7.2.5 Environmental

Specification	Description / value
Temperature	0˚C - 45˚C (32˚F - 113˚F)
Humidity	0 - 90% relative humidity

7.2.6 Dimensions and Weight

Specification	Description / value
Weight	18.8 oz (0.53 kg)
Dimensions	4.5 x 8.2 x 2.4 in (114 x 209 x 61 mm) HxWxD

7.3 Beltpack HXII-BP

7.3.1 Connectors

Specification	Description / value
XLR Powerline	XLR 3-pin. Powerline connectivity to Arcadia is available with the HXII-DPL Powerline device
LAN/PoE	RJ45 etherCON
Headset	4-pin XLR–M
USB	Micro-AB

7.3.2 Microphone Pre-Amplifier

Specification	Description / value
Headset Mic impedance:	200Ω (Dynamic)
Headset Mic Voltage	1.7V (Electret selectable)
Routed to 4-wire output @ 0dBu out:	
Mic gain	60dB (dynamic) 45dB (electret)
Frequency response	300Hz – 10kHz + / -3dB (contoured for intelligibility)
Distortion	<0.2% THD @ 1kHz
Noise-	<-55dBu dynamic, <-65dBu electret

7.3.3 Headphone Amplifier

Specification	Description / value
Load impedance	>32Ω
Output level	+12dBu before clipping
Sidetone	-12dB (selectable)
Routed from a 4-wire input @0dBu in:	
Max gain	0dB
Frequency response	40Hz - 10kHz ±3dB
Noise	<-65dBu (@ max gain)
Headphone limiter	-0dBu (selectable)

7.3.4 Power Requirements

Specification	Description / value
Voltage	48V DC
Current (Max)	0.09A
Power (Max)	4W
BTU (Max)	13BTU/hr
Unit powered by Powerline	
Input Voltage	±29.5V DC
Input Current (Max)	0.13A
Powerline utilization	
HXII-BP =	1 beltpack
Powerline	Powerline connectivity is available for the Arcadia with an HXII-DPL Powerline device. Up to 7 beltpacks per Powerline device.
Unit powered by Power over Ethernet (PoE)	
Class of device	IEEE 802.3af-2003 - Class 1
PSE	4.0W DC max @Power Source Req
PD	3.84 DC max @ Powered Device Draw

7.3.5 Environmental

Specification	Description / value
Temperature	0˚C - 40˚C (32˚F - 104˚F)
Humidity	0 - 90% relative humidity

7.4 Beltpack HBP-2X

Note: *HBP-2X beltpacks can only be used with the Arcadia Central Station when connected via the Powerline device.*

7.4.1 Connectors

Specification	Description / value
Intercom line	Two 3-pin XLR. One male and one female.
Headset	4-pin XLR–M and 2.5mm TRS jack
USB	Micro-AB

7.4.2 Headphone Amplifier

Specification	Description / value
Load impedance	>32 Ω
Output level	+12dBu before clipping
Sidetone	-12dB (selectable)
The following specified for a route from a 4-wire input @0dBu in:	
Max gain	0dB
Frequency response	40Hz - 10kHz ±3dB
Noise	<-65dBu (@ max gain)
Headphone limiter	-0dBu (selectable)

7.4.3 Microphone Pre-Amplifier

Specification	Description / value
Headset Mic impedance:	200Ω (Dynamic)
Headset Mic Voltage	1.7V (Electret selectable)
The following specified for a route to 4-wire output @ 0dBu out:	
Mic gain	60dB (dynamic) 45dB (electret)
Frequency response	300Hz – 10kHz + / -3dB (contoured for intelligibility)
Noise-	<-55dBu dynamic, <-65dBu electret

7.4.4 Power Requirements HBP-2X Beltpack

Specification	Description / Value
Power requirement	4W
DC Voltage range	3- - 60V

7.4.5 Environmental

Specification	Description / value
Temperature	0˚C - 40˚C (32˚F - 104˚F)
Humidity	0 - 90% relative humidity

7.5 Digital Powerline Device HXII-DPL

Electrical interfacing	
Digital Intercom	XLR Powerline: 3-pin XLR M
LAN Ethernet	EtherCon RJ45
DC Power	3-pin KPJX PM 3-S

Power Consumption	
Voltage	48V DC
Current (max)	1.8 A
Power (max)	87 W
AC Connector	Part number: PSU-EXT-005 (supplied) IEC-C14

Powerline	
Output voltage	±28.5V DC
Output current (max)	0.9A Powerline
Network data rate	100Mb
Frequency range	1.8 to 67.5MHz
Protected for cable shorts or overload Powerline cabling must be shielded	

Weight and Dimensions of HXII-DPL	
Device dimensions	1.55 x 4.2 x 7.8 inches, 39.5 x 107 x 197.6 mm (HxWxD) Includes handles
Device weight	1.3lbs (0.65kg) excludes power supply and regional power cable

Environmental	
Device operating temperature range	32 to 104°F (0 to 40°C)
Device storage temperature range	-22 to 158°F (-30 to 70°C)
Humidity	20 - 90% non-condensing
Heat production	297 BT/hr max Dependent on Powerline connected devices

7.6 Network

7.6.1 Network Protocols (HelixNet v4.5)

Specification	Description / value
Ethernet IPv4	Unicast audio and control
mDNS (multicast domain name system)	Multicast device discovery
Layer 3 (OSI model)	Routable with mDNS function limitations
WavPac	Audio codec

7.6.2 Network Ports (HelixNet v4.5)

	Description / Value
Unicast	• Port 80 TCP – web interface, system management, expansion • Port 655 TCP – Link Group audio/database • 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 remote station expansion

7.6.3 Network Parameters (HelixNet v4.5)

	Description / Value
Endpoint support	128 endpoints
Bandwidth	• 300-600 (max) kbps from each audio input • 1200-2400 (max) kbps to each endpoint
Network jitter tolerance	<= 128ms jitter buffer per audio stream received, automatically adjusted to network performance
QoS tags	DSCP=41, Assured Forwarding (AF)
Default link-local IP address range	169.254.0.0/16
Reserved IP ranges	• 10.0.0.0/8 for endpoints • 172.23.0.0/16 for Link Group

7.6.4 Recommended Ethernet Switch Features

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

8 Menu Maps

This chapter describes the menu maps that you can use with HelixNet Digital Partyline with Arcadia. It contains the following sections:

8.1 Remote Station Menu Map

Menu 1 (First) >	Menu 2 >	Menu 3 >	Menu 4 (Last)
Audio Settings	Headset	Sidetone Gain	Range: 0dB to -30dB , OFF Default: -12db
		Headphone Limit	Off + Range: +6dB to -6dB Default: 0db
		Sidetone Control	Tracking Non-Tracking Disabled Default: Tracking
		HS Mic Type	Dynamic (0dB, -3dB, -6dB, -9dB, -12dB, -15dB) Electret (-15dB, -18dB, -21dB) Default: Dynamic (0 dB)
	Microphone	Headroom	Normal High Default: Normal
		Contour Filter	Enabled Disabled Default: Disabled
	Program Input	Mode	Enabled/Disabled Default: Disabled

Menu 1 (First) >	Menu 2 >	Menu 3 >	Menu 4 (Last)
		Gain	Range: +12dB to -12dB Default: 0db
		IFB Dim Level	Range: --6dB to -24dB Default: Off
		Action Trigger	Enabled Disabled Default: Enabled
		VOX	Enabled Disabled Default: Disabled
		VOX Off Delay	Range: 0.5 - 4sec Default: 0.5sec
	SA Output	Mode	Channel Assigned SA Default: Channel Assigned
		Gain	Range: +12 to -12dB Default: 0dB
		Program Output	Unmute Mute Default: Mute
		Channel Assign	Any HelixNet enabled channel can be selected Default: Disabled
	Hot Mic Output	Gain	Range: +12 to -12dB Default: 0dB

Menu 1 (First) >	Menu 2 >	Menu 3 >	Menu 4 (Last)
	Front Panel	Loudspeaker Dim	Range: 0dB to -24dB Default: -6dB Full Cut
		Loudspeaker Mute	Toggle w HS Ctrl Muted Toggle Unmute w HS Ctrl Unmuted Default: Toggle w HS Ctrl

Menu 1 (First) >	Menu 2 >	Menu 3 >	Menu 4 (Last)
Station Settings	Preferences	Roles	Select Role or Local Config
	Keyset Assign	Keyset 1 – 4	Any HelixNet enabled channel can be selected
	Keysets	Talk 1 - 4	Latching Non-Latching Permanent Disabled Default: Latching
		All Talk	All Channels Visible Channels Default: Visible Channels
		SA Output Key	Latching Non-Latching Default: Non-latching
		RMK	Enabled Disabled Default: Enabled
	Display	OLED Brightness	High Medium Low Default: Medium
		Key Brightness	High / Low High / Off Low / Off Off / Off Default: High / Low
		Screensaver	Enabled Disabled Default: Enabled

Menu 1 (First) >	Menu 2 >	Menu 3 >	Menu 4 (Last)
Channels	Channel 1 Channel 2 Channel 3 Channel 4 […]	Label	Press to Edit
		Program Listen	None List of program audio inputs to the system Default: None
		GPO on Talk	Relay 1 - 4 Default: None
		GPO on Call	Relay 1 - 4 Default: None
Control I/O	Inputs	Opto 1	None Call Key 1 Talk Key 1 Call Key 2 Talk Key 2 Call Key 3 Talk Key 3 Call Key 4 Talk Key 4 Default: None
	Outputs	Relay 1	
Network	Preferences	Hostname DHCP IP address Subnet mask Gateway	Enabled/Disabled
	Pair to Station	By Name By Address	None or Hostname IP Address
	Expansion mode	Host Expand to Host	Enabled or Disabled None or Hostname

Menu 1 (First) >	Menu 2 >	Menu 3 >	Menu 4 (Last)
Administration	Software	Current	HelixNet System Version Remote Station Version
		Update	None or version list
	Reset	Reset to Default	Reset Now
		Reboot	Reboot Now
	Settings	Save	USB drive or local
		Restore local	USB drive or file list

<table>
<tr><th>Menu 1 (First) ></th><th>Menu 2 ></th><th>Menu 3 ></th><th>Menu 4 (Last)</th></tr>
<tr><td rowspan="6">Diagnostics</td><td>Main PCB</td><td></td><td></td></tr>
<tr><td>Powerlines</td><td>Powerline</td><td><table><tr><th>Status: [status]</th></tr><tr><td>DMC: {MAC]</td></tr><tr><td>HMC: [MAC]</td></tr><tr><td>MMC: [MAC]</td></tr><tr><td>Rx rate: [Mbps]</td></tr><tr><td>Tx rate: [Mbps]</td></tr></table></td></tr>
<tr><td rowspan="4">Network</td><td>Status</td><td rowspan="4">IP Address</td></tr>
<tr><td>IP Address</td></tr>
<tr><td>IP Mask</td></tr>
<tr><td>Mac</td></tr>
<tr><td rowspan="2">Keysets</td><td rowspan="2">Keyset 1
Keyset 2
Keyset 3
Keyset 4</td><td rowspan="2">Name: Channel name
Talkers: Number of talkers on Partyline
Devices: Number of beltpacks listening on Partyline

2-Wire: Number of HLI 2-Wire ports listening (only for HMS-4X hosted systems)
4-Wire: Number of HLI 4-Wire ports listening (only for HMS-4X hosted systems)</td></tr>
<tr></tr>
</table>

8.2 Speaker Station Menu Map

Menu 1 (First) >	Menu 2 >	Menu 3 >	Menu 4 (Last)
Roles	Select Role or Local Config.		
Audio Settings	Headset	Sidetone Gain	Range: 0dB to -30dB , OFF Default: -12db
		Headphone Limit	Off + Range: +6dB to -6dB Default: 0dB
		Headphone Gain	0 to +12dB Default: 0dB
		Sidetone Control	Tracking Non-Tracking Disabled Default: Tracking
		HS Mic Type	Dynamic (0dB, -3dB, -6dB, -9dB, -12dB, -15dB) Electret (-15dB, -18dB, -21dB) Default: Dynamic (0 dB)
	Microphone	Contour Filter	Enabled Disabled Default: Disabled
	Front Panel	Loudspkr Dim	Range: 0dB to --24dB Default: 0db
		Loudspker Mute	Toggle w HS Ctrl Muted Toggle Unmute w HS Ctrl Unmuted Default: Toggle w HS Ctrl

Menu 1 (First) >	Menu 2 >	Menu 3 >	Menu 4 (Last)
Station Settings	Keyset Assign	Keyset 1 – 4	Any HelixNet enabled channel can be selected
	Keysets	Talk 1 - 4	Latching Non-Latching Permanent Disabled Default: Latching
		Secondary Talk Action 1 - 4	Unassigned Call Control Event 1 Control Event 2 Default: Unassigned
		Shift Page	Auto Shift Toggle Disabled Default: Auto Shift
		Interlock	Talk #1 Talk #2 Talk #3 Talk #4 * interlocked and only 1 can be active at a time

Menu 1 (First) >	Menu 2 >	Menu 3 >	Menu 4 (Last)
	Display	OLED Brightness	High Medium Low Default: Medium
		Key Brightness	High / Low High / Off Low / Off Off / Off Default: High / Low
		Screensaver	Enabled Disabled Default: Enabled
	Headset button	Latch Mode	Toggle Permanent Disabled Non-Latching Default: Toggle
Network	Pair to Station	By Name By Address	None or Hostname IP Address
	Preferences	DHCP	Enabled Disabled Default: Enabled
		IP Address	IP address: xx.xx.xx.xx where x is a numeric value
		Gateway	IP address: xx.xx.xx.xx where x is a numeric value
		Subnet Mask	IP address: xx.xx.xx.xx where x is a numeric value

Menu 1 (First) >	Menu 2 >	Menu 3 >	Menu 4 (Last)
Administration	Software	Current	HelixNet Speaker Station
	Reset	Reset to Default	Reset Now
		Reboot	Reboot Now
Diagnostics	Powerlines	Powerline	Status: [OK or BUSY (according to responses to MME requests)]. DMC:[MAC of powerline modem] HMC: [MAC of local blackfin processor Rx rate:[Mbps] Tx rate:[Mbps] Status:[status] IP Addr [IP Address] IP Mask [Subnet Mask] MAC:[MAC Address]
	Networking	Ethernet	
	Keysets	Keyset 1 Keyset 2 Keyset 3 Keyset 4	Name: Channel name Talkers: Number of talkers on Partyline Devices: Number of beltpacks listening on Partyline 2-Wire: Number of HLI 2-Wire ports listening (only for HMS-4X hosted systems) 4-Wire: Number of HLI 4-Wire ports listening (only for HMS-4X hosted systems)

Menu 1 (First) >	Menu 2 >	Menu 3 >	Menu 4 (Last)
	Hardware		

8.3 Beltpack Menu Map

Menu 1 (First) >	Menu 2 >	Menu 3 (Last)
Roles	Select Role or Local Config	
Audio Settings	Sidetone Gain	Range: 0dB to -30dB, OFF Default: -12dB
	Headphone Limit	Off + Range: +6 to -12dB Default: 0dB
	Headphone Gain	0 - 12dB (increments of 3 dB) Default : 0dB
	Sidetone Control	Tracking Non-tracking Disabled Default: Tracking
	HS Mic Type	Dynamic (0db, -3dB, -6dB, -9dB, -12dB, -15dB) Electret (-15dB, -18dB, -21dB) Default: Dynamic 0dB
	Headroom (only for HBP-2X)	Normal High Default: Normal
	Contour Filter	Enabled Disabled Default: Disabled

Menu 1 (First) >	Menu 2 >	Menu 3 (Last)
Beltpack Settings	Left Keyset Right Keyset	Any HelixNet enabled channel can be selected Talk (latch/non latch/disabled) Default: Latch Secondary Talk Action (unassigned/call/control event 1/control event 2) USB flasher (disabled/blinking/solid) Default: disabled
	Vibrate on Call	On/Off Default: Off
Display Settings	OLED Brightness	High Medium Low Default: Medium
	Key Brightness	High / Low High / Off Low / Off Off / Off Default: High / Low
	Rotate Display	Enabled Disabled Default: Disabled
	Screensaver	Channel Hostname Role Blank Disabled Default: Channel

Menu 1 (First) >	Menu 2 >	Menu 3 (Last)
Network (HXII-BP powered over Ethernet only)	Pair to Station	By Name By Address
Administration	Software Version	npl-1.0.x, uboot
	Software Update	npl-1.0.x
	Reset to Default	Reset Now
Diagnostics	Hardware Important Note: There are 4 levels of Menu for Hardware	Main PCB Part: [Part_Number] Revision: [Revision] Serial number: [Serial number]

Menu 1 (First) >	Menu 2 >	Menu 3 (Last)	
	Powerline to the network (and which also powers the beltpack).	Status: [OK or BUSY (according to responses to MME requests)]. DMC:[MAC of powerline modem] HMC: [MAC of local blackfin processor] Rx rate: Mbps Tx rate: Mbps Volts:	
	Networking (	Ethernet	Connection Type: Ethernet or Powerline IP address

Menu 1 (First) >	Menu 2 >	Menu 3 (Last)	
		DHCP (Ethernet only)	
		IP address	
		Gateway	
		Subnet mask	
		Mac address	
		IVP Router	(Ethernet only)
		Keysets 1 & 2	Name: Channel name Talkers: Number of talkers on Partyline Beltpacks: Number of beltpacks listening on Partyline 2-Wire: Number of HLI 2-Wire ports listening (only for HMS-4X hosted systems) 4-Wire: Number of *4*-Wire ports listening(only for HMS-4X hosted systems)

9 Cabling reference

This chapter describes the cables that you should use to connect HelixNet devices. It contains the following sections:

9.1 Introduction

You can connect beltpacks using:

- A wide range of standard microphone (intercom) cable types (16 AWG – 26 AWG).
- CAT5, CAT5e and CAT6 cable types.

XLR cable	CAT5/6 cable
Pin 1	Pin 1 and Pin 2 and shield/drain wire
Pin 2	Pin 4, Pin 6 and Pin 8
Pin 3	Pin 3, Pin 5 and Pin 7

Clear-Com recommends the following cable types:

Belden 9207 for fixed installation

Belden 9463F for portable installations

***Note**: Cat 5 screen should be connected to chassis at one end of cable only.*

You can also mix CAT cables and microphone cables when connecting to the Arcadia Central Station. For example, you might use CAT cables to trunk long distances, and flexible microphone cables to connect beltpacks to bulkheads.

***Note**: The cabling information provided in this guide is for guidance only. For in-depth, tailored advice on cabling, Clear-Com recommends that you contact your Clear-Com representative.*

9.2 Ethernet Cable Recommendations

Cable recommendations	
Category (Cat)	Higher Cat numbers will support a higher bandwidth. Therefore, by using a higher Cat number you are future proofing you system to some extent. Use Cat 5e or higher.
American Wire Gauge (AWG)	The lower the AWG number, the less temperature rise there wil be in the cable when using PoE. This is particularly important for bundles. Local building regulations may rule out the use of 26 AWG or higher, depending on the installation. Check with your local building regulations. Use AWG 24 or lower.
Shielded Twisted Pair (STP) or Foiled Twisted Pair (FTP)	Using shielded cable means less problems with interference from other sources. This means that your network will be more robust if you use shielded cables.

***Note**: Overall recommendation: Use Cat 6a, 23 AWG STP cable.*

9.3 Microphone Cable for Intercom Recommendations

Standard microphone cables impose distance limitations at their upper limits due to cable capacitance.

If your priority is audio quality, experiment with attaching one or two fewer devices to each line. Your choice of topology (daisy chain, star or tree) may also impact audio quality over distance.

Manufacturer	Cable type	Gauge (AWG)	Style	Attenuation / 100m
Belden	9463f	20	Std	16 dB
Belden	9207	20	Std	9 dB
Belden	1533P	24	Cat5e	11 dB

10 Troubleshooting

Issue	Solution
The Call functionality on my analog beltpack is no longer working.	HelixNet Partyline operates at different voltage levels than analog two-wire Partyline systems. Contact Clear-Com for repair options.
I cannot pass audio to wired / wireless intercom equipment over the Two-wire module.	Two-wire option modules require an external power supply.
Why do I hear an echo when interfacing via a two-wire audio port?	Run auto-nulling. Ensure that all unused Talk keys in the system are unlatched.
Echo occurs even after Two wire module has been auto-nulled.	Check to ensure all open Talk keys are not latched and re-null.
There is no audio or only partial audio (send or receive, but not both) between other audio systems / sources connected over four-wire.	Check the cable used to connect the equipment. HelixNet to Eclipse four-wire connections only require a standard CAT cable, whereas other four-wire connections may require an audio crossover cable or an appropriately configured 4-wire port.

Issue	Solution
User stations have no bars showing up for signal strength.	There are digital errors or there is cross-talk on that Powerline. If the number of user station showing is greater than what you physically connected to that Powerline, cross-talk is happening between the Powerlines. Make sure you are using properly shielded Mic cables or Cat cables. If the number of user stations showing there does match what you physically connected to that Powerline and errors or high collision rate is displayed, verify that you don't exceed the number of user stations per Powerline or distance as per the Cable capacity versus distance table. High collision rate means communication issues on the powerline. Possible causes are: • Unshielded or bad cables • Powerline 1 looped back into Powerline 2 (or from one HMS to another) • Cables too long • Too many cables in the infrastructure (even unconnected strand count) • Too many devices on the Powerline • Faulty device
My connection to the CCM is intermittent.	This is generally caused by more than one device using the same IP address. Check with your network administrator that there is no IP clash.
My device has gone into link-local mode. (IP address = 169.254.XX.XX)	If your device is set to Dynamic Host Configuration Protocol (DHCP) and there is no DHCP available on the network, it is connected to it will revert to link-local automatically. You need to allocate a static IP address to this device.

11 Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do **not** use this apparatus near water.
6. Clean only with dry cloth.
7. Do **not** block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do **not** install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do **not** defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-cord supply or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

***Warning**: To reduce the risk of fire or electric shock, do not expose this product to rain or moisture.*

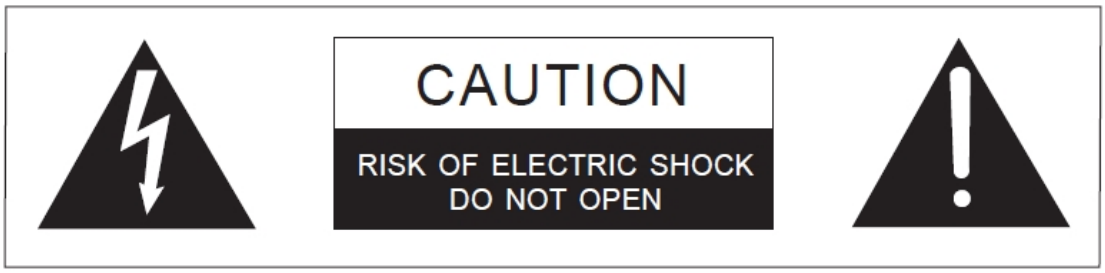
12 Additional instructions

1. The equipment is for use in locations where children are not likely to be present.
2. Do not open the equipment as this will void the safety warranty.
3. The coin-cell battery is not operator replaceable and only to be replace by qualified personnel.
4. Replacement of incorrect battery type can defeat a safeguard.
5. Disposal of a battery into a fire or hot oven, or mechanically crushing or cutting of a battery can result in an explosion.
6. Leaving a battery in extreme high temperature surrounding environment can result in an explosion or leakage of flammable liquid or gas.

12.1 Safety symbols

Familiarize yourself with the safety symbols in the diagram below.

These symbols are displayed on the apparatus and warn you of the potential danger of electric shock if the system is used improperly.



This symbol alerts you to the presence of uninsulated dangerous voltage within the product's enclosure that might be of sufficient magnitude to constitute a risk of electric shock. Do not open the product's case.

This symbol informs you that important operating and maintenance instructions are included in the literature accompanying this product.

Note**: For compliance purposes, see* ***Regulatory Information on page 138*.*

13 Regulatory Information

Manufacturer

HM Electronics Inc.
Carlsbad
California
US

FCC notice

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communication. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by Clear-Com, LLC, an HM Electronics, Inc. company could void the user's authority to operate this equipment.

Industry Canada Compliance Statement

This Class[A] digital device complies with Canadian ICES-003.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la class[A] est conforme à la norme NMB-003 du Canada.

13.1 United Kingdom (UKCA Mark)

The UKCA (UK Conformity Assessed) marking is a new UK product marking that will be used for goods being placed on the market in Great Britain (England, Wales and Scotland). The UKCA marking alone cannot be used for goods placed on the Northern Ireland market, which require the CE marking or UK(NI) marking.

Korean notice

A급 기기 (업무용 방송통신기자재)

이 기기는 업무용(A급)으로 전자파적합기기로

서 판매자 또는 사용자는 이 점을 주의하시기

바라며, 가정외의 지역에서 사용하는 것을 목

적으로 합니다.

The HXII-RM (HRM-4X), HXII-KB (HKB-2X), HXII-BP products comply with the following specifications:

EN55032	Emissions
EN55035	Immunity

Electromagnetic Compatibility Directive 2014/30/EU

Warning: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Waste Electrical And Electronic Equipment (WEEE)

The European Union (EU) WEEE Directive (2012/19/EU) places an obligation on producers (manufacturers, distributors and/or retailers) to take-back electronic products at the end of their useful life. The WEEE Directive covers most Clear-Com products being sold into the EU as of August 13, 2005. Manufacturers, distributors and retailers are obliged to finance the costs of recovery from municipal collection points, reuse, and recycling of specified percentages per the WEEE requirements.

Instructions for Disposal of WEEE by Users in the European Union

The symbol shown below is on the product or on its packaging which indicates that this product was put on the market after August 13, 2005 and must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of the user's waste equipment by handing it over to a designated collection point for the recycling of WEEE. The separate collection and recycling of waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local authority, your household waste disposal service or the seller from whom you purchased the product.