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HelixNet Powerline Device

Digital Partyline Solutions

HelixNet Powerline Device (HXII-DPL)

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

Description

The HelixNet powerline device (HXII-DPL) facilitates connectivity of HelixNet user stations, beltpacks, speaker stations and remote stations to a HelixNet system host, such as the Arcadia Central Station or HelixNet HMS-4X[1] main station over powerline.

Key Features and Benefits

HelixNet Powerline Device

- Networked Powerline Bridge for: HelixNet on Arcadia or HMS-4X[1]
- Powerline to HelixNet User Stations to: Beltpack, Speaker & Remote Stations
- Device Status Indicators
- Central Diagnositics in Arcadia CCM
- Compact for Optimal Installation
- Multiple Installation Options
  Portable
  Surface Mount - Optional
  Rack Mount - Optional

Powerline

- Digital over 3-pin XLR cable
- Passive Cabling Infrastructure
  Supporting Y Splits & Daisy Chain
- Long Cable Distances
- Robust Connectivity

Connectivity

- Ethernet
- Powerline
- DC Power Input

Capacity

- (24) Powerline Devices per system
- (1) Powerline per device
- (7) HelixNet Beltpacks or power equivalent Remote & Speaker Stations

Technical Specifications

Compatability

Arcadia Central Station v2.11+
HelixNet HMS-4X[1] v4.5+[2]
HelixNet User Stations:
   -Beltpack (HXII-BP, HBP-2X)
   -Speaker Station (HKII-KB, HKB-2X)[3]
   -Remote Station (HXII-RM, HRM-4X)[3]
Note: HelixNet User Stations must be upgraded to a compatible firmware version prior to regular use with the HXII-DPL Powerline Device. Upgrade options include: User station Network connection or HMS-4X[1] Powerline connection.

Capacity

(24) HXII-DPL Powerline Devices on a HelixNet System Host such as Arcadia or HMS-4X[1]

Connectors

(1) Digital Intercom / XLR Powerline: 3-pin XLR-M
(1) LAN Ethernet: EtherCON RJ45
(1) DC Power: 3-pin KPJX-PM-3-S

Controls & Indicators

Front Panel:
(1) LAN / Network Activity Link & Activity LED - Amber
(1) Digital Intercom / XLR Powerline Link & Activity LED - Amber
(1) Overload LED - Red
(1) Power - Green
Rear Panel:
(1) LAN / Network Activity Link & Activity LED - Amber
(1) Digital Intercom / XLR Powerline Link & Activity LED - Amber
(1) Digital Intercom / XLR Powerline Overload LED - Red

Network

Data Rate: 100Mb

Powerline

One independent network XLR Powerline Frequency Modulated Ethernet - OFDM
Output Voltage: ±28.5V DC
Output Current (Max): 0.8A per Powerline
Protected for cable shorts or overload
Frequency: 1.8 - 67.5MHz
Requires shielding integrity between different Powerlines
Supports up to 7 beltpacks each
Supports up to 2-7 remote & Speaker Stations each
Locally power remote & speaker stations count as beltpack

Use HelixNet Cable Calculator to validate load and cable distance.

Power

Voltage: 48V DC
Current (Max): 1.8A
Power (Max): 87W
BTU (Max): 297 BTU/hr
Dependent on powerline connected devices
Input Power Connector: KPJX-PM-3-S

[1]HMS-4X is a legacy product. HMS-4X operation requires HLI-ET2 Ethernet Interface Module.
[2]Use with HMS-4X does not feature central pairing and diagnostics
[3]Remote and Speaker Station are form, fit and functionally equivalent material and construction

HelixNet Powerline Device

Technical Specifications (Continued)

This unit is powered via:
AC Adapter - Inline:
Type: PSU-EXT-005 (supplied)
Input Voltage Range: 100 - 240V AC
Input Frequency Range: 50 - 60HZ
Input Power Connector: IEC-C14
Output Voltage: 48V DC
Output Current (Max): 1.88A
Output Power (Max): 90W
Output Power Connector: KPPX-3P
Cable Length: 59in (1.5m)
Dimensions:
1.3 x 2.1 x 5.23in (HxWxD)
(33 x 53 x 133mm)
Weight: 0.55lbs (0.25kg)

Mounting
VESA Sockets Center-to-Center: 2.95in (75mm)
VESA Thread Type: M4x10
Note: Velcro is included for optional mounting of PSU. Apply Velcro to plastic (non-label) surface and cure for 24 hours before use

Environmental
Operating: 32° to 104°F (0° to 40°C)
Storage: -22° to 158°F (-30° to 70°C)
Humidity: 20-90% Non-Condensing
Acoustical: 42dB SPL A-Weighted @ 1ft (32dB SPL A-Weighted @ 1 mtr)

Dimensions
Device: 1.555 x 4.213 x 7.78in (HxWxD)
(39.5 x 107 x 197.58mm) - Includes handles
Shipping: 5.5 x 8.5 x 12.25in (HxWxD)
(140 x 216 x 311mm)

Weight
Device: 1.3lbs (0.65kg) - Excludes power supply & regional power cable
Maximum Level: 5lbs (2.25kg) - Excludes regional power cable

HelixNet Powerline Device

Technical Specifications (Continued)

SM-100 - Surface Mount Bracket (optional part)
Fits (1) HXII-DPL Powerline Device

HXII-DPL Mounting
(3) VESA75 patterns for HXII-DPL for center or side mounting
(4) M4 Counter sunk screw hole sfor each pattern
VESA Socket Pattern Center-to-Center: 2.95in (75mm) squared

3rd Party DIN Rail Clip Mounting
For use with Bud Industries Inc. Part number: DNC-4796
(1) M4 Counter sunk screw hole for 3rd party DIN rail clip
Center to SM-100 top edge: 0.734in (18.6mm)
Note: Use with flat head M4 screw.

Screw Head Mounting
(2) Keyholes for screw head mounting
Keyhole Position Center-to-Center: 5in (127mm)
Keyhole Diameter: 0.4-0.183in (10.16-.4.65mm)

Strap Mounting
(4) Slots for Strap or Screw Mounting
Slot Position Center-to-Center: 5in (127mm)
Slot Width: 0.15in (3.81mm)
Slot Length: 0.75in (19.05mm)
Includes: (4) M4 x 10 screws

Dimensions: 7.154 x 6.37 x 0.075in (HxWxD)
(181.7 x 161.8 x 1.9mm)
Weight: 0.9lbs (0.4kg)

RK-100 - Rackmount Kit (optional part)
Fits (4) HXII-DPL Powerline Devices or (1) FSII-SPL FreeSpeak II Splitter

HXII-DPL Mounting
(4) VESA75 patterns for HXII-DPL
(4) M4 Counter sunk screw hole sfor each pattern
VESA Socket Pattern Center-to-Center: 2.95in (75mm) squared

FSII-SPL Mounting
(1) FSII-SPL pattern
(4) 4-40 Counter sunk screw holes
Max screw length: 0.25in (6.35mm)
Screw Hole Pattern Center-to-Center:
4.37 x 3.55in (WxD) (111 x 90.2mm)

Includes: (16) M4 x 10 screws
Notes: 4-40 x 0.2in screws for FSII-PL are not included

Dimensions: 1RU, 1.725 x 19 x 7.2in (HxWxD)
(43.82 x 482.6 x 183mm)
Weight: 3.6lbs (1.46kg)

HelixNet Powerline Device

Technical Specifications (Continued)
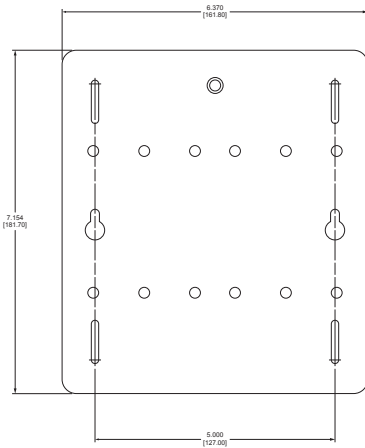
Figure 1. SM-100 Front

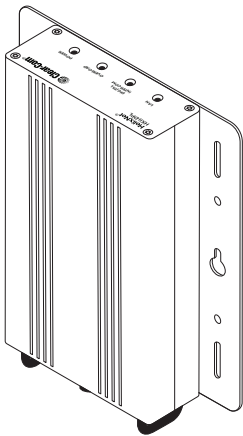Figure 2. SM-100 with HXII-DPL for surface mounting

Figure 3. SM-100 with HXII-DPL and PSU for portable use
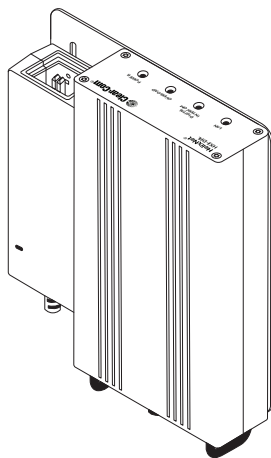

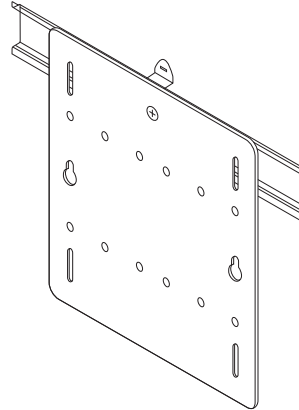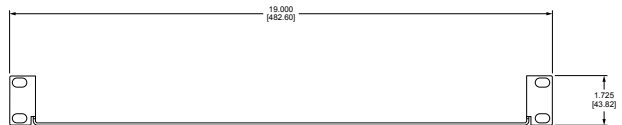Figure 4. SM-100 with 3rd Party DIN Rail Clip
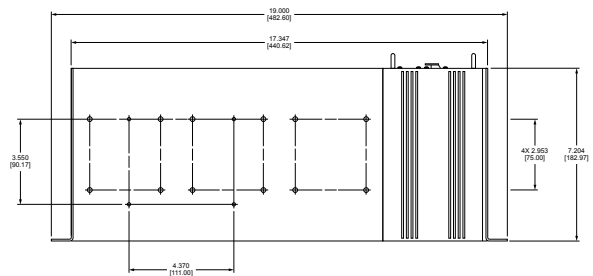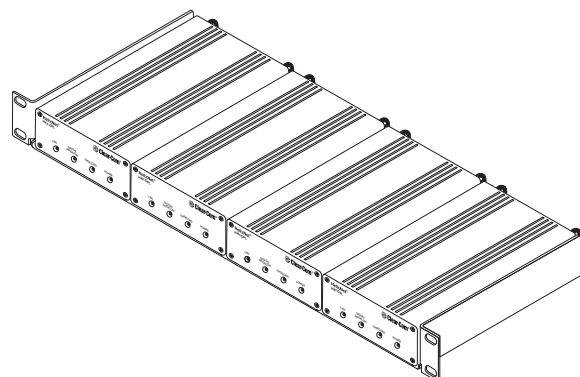

Figure 1. RK-100 Front

Figure 2. RK-100 Top

Figure 3. RK-100 with (4) HXII-DPL

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Network Specifications | Firmware Version 4.5+

Network Protocols
Ethernet IPv4–Unicast Audio and Control
mDNS–Multicast Device Discovery
Layer 3 routable with mDNS function limitations
HTTP–Management
TFTP-File Transport Protocol
NTP-Network Time Protocol
RTP-Audio Transport
WavPack-Audio Codec

Network Ports
Unicast:
Port 69 UDP-Firmware File Server
Port 80 TCP–Web Interface, System Management, Expansion
Port 123 UDP–Time Stamps for Service Logs
Port 655 TCP-Link Group Audio/Databse
Port 6001 TCP-System Management
Port 6001 TCP-Audio Streams

Multicast:
Port 5353 UDP-mDNS, Names, Discovery, Linking, Expansion
Optional for device names and linkings, mandatory for HMS/HRM Expansion

Network Parameters

HMS-4X[1] Endpoint Resource Use: None

Bandwidth:

300-600 (max) kbps from each HelixNet endpoint audio input to HelixNet System Host

1200-2400 (max) kbps from HelixNet Sytem Host to each HelixNet endpoint audio output

Network Jitter Tolerance:
<= 128ms jitter buffer per audio stream receiver automatically adjusted to network performance

QoS Tags: DSCP=34, Assured Forwarding (AF=41)

HelixNet Link-Local Default IP Address Range: 169.254.0.0/16

System Reserved IP Ranges:

10.0.0.0/16 for HelixNet endpoints

172.23.0.0/16 for HMS-4X Link Group

Recommended Ethernet Switches:
• Managed Ethernet Switch – Layer 3
• 100/1000 Base-T Ports
• 1000 Base IP Switch Trunks
• QoS Configuration
• Energy Efficient Ethernet bypass option
• GMP Snooping options

Please refer to the Clear-Com HelixNet Network Guide for additional switch settings and network chracteristic.
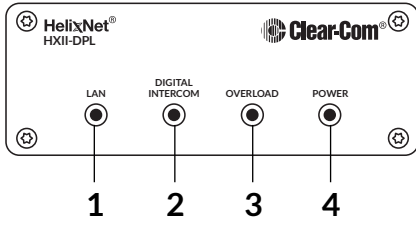
Notes: HelixNet Powerline Device is the functional equivalent of a dual port switch that otherwise does not generate network traffic or connections. Port, protocols and other specifications listed in this section refer to the traffic that is passed through the HelixNet Powerline device between HelixNet System Host and Endpoints.

[1]HMS-4X is a legacy product. HMS-4X operation requires HLI-ET2 Ethernet Interface Module.
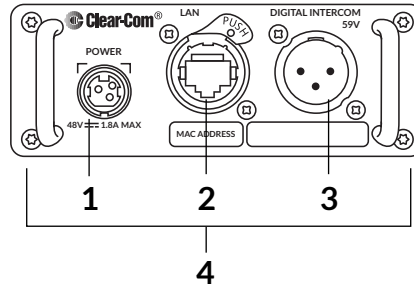
HelixNet Powerline Device
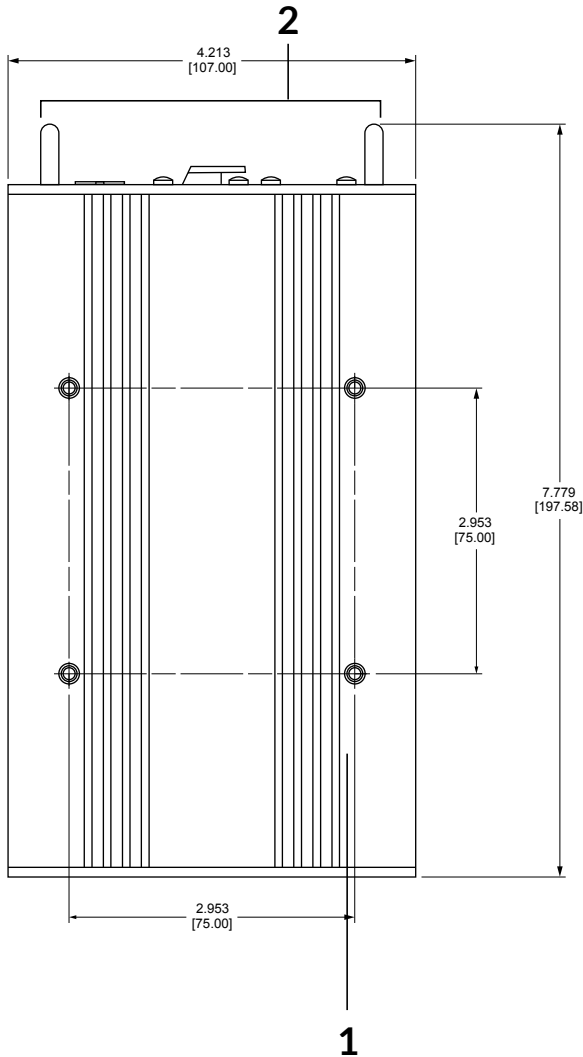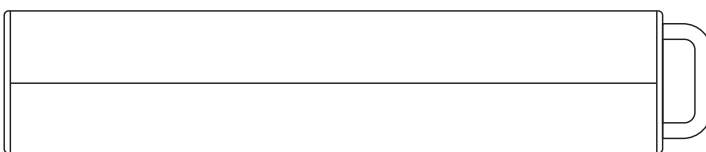
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Front

Rear

Bottom

Side

Legend

Front

1. LAN / Network Link & Activity LED
2. Digital Intercom / XLR Powerline Link & Activity LED
3. Digital Intercom / XLR Powerline Overload LED
4. Power

Rear

1. DC Power Input
2. LAN / Network
3. Digital Intercom / XLR Powerline
4. Handles

Bottom

1. VESA 75 M4 Screw sockets for mounting accessories
2. Rubber feet (optionally installed)

Order Codes

HXII-DPL: HelixNet Powerline Device

Includes:
(1) Inline PSU 90W 48V DC (PSU-EXT-005)
(1) Rubber Feet kit (MECH-00379)
(1) Velcro for PSU Mounting (235G032)

Optional Accessories
SM-100 Surface Mount
RK-100 Rack Mount
SP-2 Intercom Splitter Cable - XLR-M to XLR-M & F
SP-3 Intercom Splitter - (1) XLR-F to (3) XLR-M

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