Arcadia Central Station
Integrated Platform

Linking People Together

Arcadia Central Station

Key Features and Benefits

Capacity
- Supports up to 32 beltpacks (FSII and/or FSE), 16 IP transceivers (FSII 1.9 or FSE 5.0GHz) and up to 10 E1 transceivers (1.9 or 2.4GHz)
- Supports up to 100 channels
- 96 ports of connectivity

Central Station
- Standard 1 rack unit (RU) device
- High quality 12kHz audio to FS Edge beltpacks
- 2 large full-color touch screen TFT displays
- 4 rotary encoders for gain and menu operation
- Headset or Microphone and Speaker connection
- Stage Announce and Prog. Audio cable included
- Functions as PTP Leader Clock

Connectivity
- Wireless 5GHz Edge transceivers and beltpacks
- Wireless 1.9GHz and 2.4GHz FSII splitters, transceivers and beltpacks
- Dante enabled audio devices
- 4-wire ports (8 ports RJ45)
- 2-Wire ports (4 XLR-3F)
- GPIO (D-type 9 pin)
- LAN - 2 x RJ45, 2 x SFP

Configuration
- CCM configuration tool
- Direct management with encoders and display

Arcadia™ Central Station is a scalable IP intercom platform which integrates analog wired and digital wireless partyline systems, including the full range of FreeSpeak™ products. With a mixture of 2-wire and 4-wire audio ports, the 1RU device serves as the centerpiece of a system that includes Clear-Com endpoints along with third-party Dante devices. HelixNet® integration will be added in 2022.

Description
The Arcadia Central Station is an IP-based standalone 1RU device supporting wired and wireless endpoints with up to 96 total ports of connectivity, 64 of which are available for Dante/AES67. Flexible licensing of features - including ports - allows Arcadia to expand over time as needed, making it a future-proof investment.

A key feature of Arcadia is its support for the entire FreeSpeak wireless family. Users can leverage a mixture of FreeSpeak Edge® 5 GHz transceivers/beltpacks, FreeSpeak II® 1.9 GHz E1 and IP transceivers/beltpacks*, and FreeSpeak II 2.4 GHz E1 transceivers/beltpacks. In total, the central station supports up to 32 beltpacks via up to 16 IPTs or FreeSpeak Edge transceivers, and up to 10 E1 transceivers (1.9 or 2.4 GHz).

Operation
Built for situations that require quick changes on the fly, Arcadia can be managed directly through two large high resolution TFT color touch screens by using four rotary encoders to quickly scroll through menus and shift pages. Beltpacks can be registered via the front USB port or OTA (Over-the-air) while transceivers can be added from the front panel. A headset connection as well as a microphone and speaker on the front panel allows Arcadia to serve as a user station.

Configuration
The system is configured through the Core Configuration Manager (CCM™) software, an integrated, browser-based software utility for enabling rapid setup, configuration and monitoring. The intuitive user interface has a consistent design for a quick and simple means of configuring the base station with role-based beltpacks, including save and restore, text messaging, individual beltpack and group call signal and remote mic kill.

*Note: A 1.9 GHz beltpack cannot roam between E1 transceivers and IPTs. However, beltpacks which are connected to different types of transceivers can communicate through the Arcadia Central Station.

Clear-Com®
AN HME COMPANY

Technical Specifications

Capacity
Beltpacks per Station: 32 BPs (FSII or FSE)
Transceivers/Antennas Supported by Station: 16 x FSII IP TCVRs (1.9 or FSE 5.0GHz) and 10 x E1 TCVRs (1.9 or 2.4GHz)

Gooseneck Microphone Input
Input Type: Dynamic/Electret - Selectable
Frequency Response: Gooseneck Mic - Partyline: 200Hz – 12kHz + 3dBu
Frequency Response: Gooseneck Mic - Line Out: 200Hz – 20kHz + 3dBu
Mic Limiter Threshold: -35dBu ±3dB
Mic Limiter Range: ≥ 20dB
Max Input Level: -10dBu
Input Level: -45dBu nominal; -10dBu MAX
Headset Mic Voltage: 5V (Electret selectable)

Speaker Output
Speaker Type: 1.6 x 2.8in oval
Load Impedance: 4Ω
Max Output Level before 1% Distortion: 18dBu ± 2dB
Total Harmonic Distortion (THD): < 0.5% THD at 1kHz
Max Speaker Level: 87dB ± 2dB SPL A Weighted at 3ft
Frequency Response: 100Hz – 10kHz ± 9dB

Audio/Radio
4-wire I/O: Output Impedance >10kΩ, Input Impedance 200Ω + 10%, transformer isolated balanced input and output
4-wire Operating Levels: 0dBu Nominal, 18dBu headroom
2-wire I/O: Selectable RTS or Clear-Com mode, Software controlled auto-null, null depth >60dB at 1kHz
2-wire Operating Levels: -18dBu nominal (Clear-Com Mode), -12dBu nominal (RTS Mode), Headroom 18dB

Frequency Response Station-to-Beltpack:
Freespeak Edge Beltpack: 200Hz – 12kHz
Freespeak II Beltpack: 200Hz – 7.1kHz

Partyline I/O
2W Power On/Off: A/B, C/D paired- software controlled
2W Output Voltage: 25 – 28V DC, 560 mA per pair (A/B or C/D)
2W Impedance: >10kΩ
2W Frequency Response: 200 to 12kHz. ±3dB
2W Total Harmonic Distortion (THD): < 0.1% THD at 1 kHz

Relay Contacts or GPIO
Connector Type: 2 x DB9
Relay Contact Type: SPDT
Relay Quantity: 4
Relay Contact Voltage Rating: 30V DC
Relay Contact Current Rating: 1A
Input Type: Opto-Isolated
Input Quantity: 2
Input Voltage Range: 4 - 30V DC or AC
Input Current: >=1.2mA required

Connectors
4-wire I/O: (8) RJ45
2-wire I/O: (4) XLR-3F
Program Input:
XLR-3M, provided using cable assembly CAB-RJ45-PGM-SA
Stage Announce Output:
XLR-3F, provided using cable assembly CAB-RJ45-PGM-SA
Headset: 4-pin XLR-M, auto headset detect

USB: USB type A Receptacle
Number of E1 antenna ports: 2 x RJ45, 2 x Fiber (2 active at any time)
DECT Radio frequency sync:
Rear RJ45 input and output RF sync connectors

Indicators and Function
Displays: (2) 480 x 128 color TFT LED Touch Screen displays
Front Panel Indicators & Function:
(2) Power Supply Status LEDs
(1) Status LED (Edge)
(1) Three Color Level Control LED Array

Power:
AC Mains input: 100-240V AC, 50-60Hz, 160W Max, IEC60320 C14 inlet
DC Low Voltage Input: 12V DC +/- 5%, 12A

External AC/DC Power Supply (PSU-EXT-001 Supplied):
Input: 100-240V AC, 50-60Hz, 2.2A Max, IEC60320 C14 inlet
Output: 12V DC +/- 5%, 12.5A

Environmental
Operating: 32° to 113°F (0° to 45°C)
Storage: 86° to 158°F (30° to 70°C)
Humidity: 20-90% Non-Condensing

Dimensions
1RU

19 x 1.72 x 13.929in (WxHxL)
(482.6 x 43.6 x 353.8mm)

Weight
7.25lbs (3.29kg)

Network Specifications

AoIP Interfaces
Protocols:
RTSP/SAP
AES67
Dante

Audio Sampling: 24 bit Linear 48kHz
IP Addressing: Static, DHCP
Network Compatibility: Layer 2 & 3 LAN only
Quality of Service: DiffServ RFC2474
IGMP: On (AoIP)
Multicast: On (AoIP)
Network Timing: PTPv2 (AoIP) / PTP v1 (Dante)
Minimum Network Bandwidth Required
Perduplex Connection:
1 x FS II IPT bandwidth usage: ~7 Mbps
1 x FS Edge IPT: ~ 9.6Mbps

Network Protocols
Ethernet IPv4 Unicast Audio and Control
mDNS–Multicast Device Discovery

Network Ports
Unicast:
Port 80 TCP–Web Interface, System Management, Expansion
Port 443 for HTTPS
Port 6001 UDP–AES67 Data
Port 15000 – 15256 UDP – AES67 Audio

Multicast:
Port 5353 UDP–mDNS, Names, Discovery, Linking, Expansion, Dante
(through various ports)

Network Jitter Tolerance:
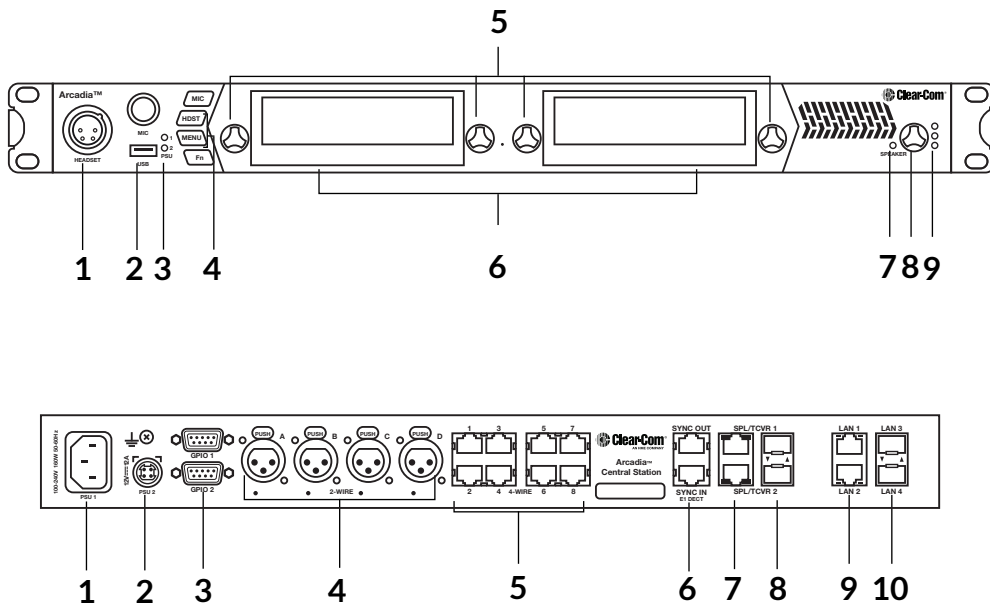< 1µs required for RF Syncing of Transceivers

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

Please refer to the Clear-Com AoIP Network Recommendations guide for
additional switch settings and network characteristics.

Clear-Com
AN HME COMPANY

Legend

Front

1. 4-pin XLR (M) or 5-pin XLR (F)
2. USB A
3. PSU LED indicators
4. Microphone, Headset, Menu and Function keys
5. Rotary encoders
6. Touchscreen displays
7. Speaker status LED
8. Main volume encoder
9. Main volume level LEDs

Rear

1. Internal PSU
2. External PSU
3. GPIO
4. 2-wire ports
5. 4-wire ports
6. DECT sync in & out
7. E1 RJ45
8. E1 Fiber SFP
9. LAN ports
10. LAN SFP ports

Order Codes

ARCADIA-X4-32P
ARCADIA-X4-48P
ARCADIA-X4-64P
ARCADIA-X4-80P
ARCADIA-X4-96P
ARCADIA-X5-32P
ARCADIA-X5-48P
ARCADIA-X5-64P
ARCADIA-X5-80P
ARCADIA-X5-96P
ARCADIA-16P-LIC