Pathway+ Digital Legacy Gateway

SPEC SHEET

The Pathway+ product has been designed to provide a connection between radio infrastructure repeaters/base station and up to four console systems using the TIA P25 Digital Fixed Station Interface (DFSI) protocol. A single Pathway+ provides a pair of radio interfaces, allowing communication and control with legacy radios, via 4-Wire analog, Motorola Quantar Base Station though the v.24 interface, or modern DFSI enable radio devices. Pathway+ acts as a DFSI proxy providing arbitration and control of a radio and the multiple console systems sharing a single resource. It directs appropriate messages and handles mes-sage conflicts, overcoming the point-to-point limitations of the DFSI protocol allowing it to act as a multi-point communication device.

Console systems interface to the Pathway+ via the P25 DFSI standard. This allows Pathway+ to connect with up to four console systems from any vendor's console supporting the P25 DFSI standard. Voice streams from each console system are shared with the other console systems allowing dispatchers to monitor and participate in activities originating from other console systems. When connected to P25 radio systems the Pathway+ supports packet data transmissions, allowing features such as Key Management to be implemented.

FEATURES

- Supports communication and control of P25 DFSI base stations, Analog 4-Wire E&M Radios, and Motorola V.24 Quantar Base Stations and infrastructure.
- Provides connections between modern IP Command and Control faculties and legacy radio infrastructure.
- Uses the TIA P25 Digital Fixed Station Interface protocol standard, provides a connection with any manufacturer's dispatch console that is compliant with the TIA P25 DFSI open standard.
- Provides connection and arbitration of up to four DFSI console systems, providing shared connections with two radio channels.
- Easy to use local or remote web based configuration.

APPLICATIONS

The Pathway+ is ideal for applications that may include console system migration, disaster recovery, backup center operation, multi-agency control while maintaining use of legacy fixed sta-tions. This allows the same base station resource to be accessed by multiple agencies or jurisdictions. Transmissions made from any one of the console systems are passed to the connected fixed station interface and onto any other connected console system or controller.
Users migrating and replacing legacy console systems and in-frastructure can manage replacement costs by continuing to use their radio investment without whole sale replacement of the control room, the radio system and subscribers.

The Pathway+ provides an excellent method of providing con-nectivity to backup control rooms while providing redundant paths to a shared radio resource.

Specifications

Dimensions (HxWxD)
Metric: 31.75 x 190.5 x 254 mm
Imperial: 1.25 X 7.5 X 10 inches

Mounting
Two Pathway+ units in one RU 19" rack space with mounting bracket

POWER AND ENVIRONMENTAL CHARACTERISTICS

Input Voltage
+ 13.5Vdc (+10.5 to +16Vdc)

Max. Current
600mA at 10.5Vdc

Operating Temprature
5˚C to 55˚C (41˚-131˚F)

RADIO INTERFACE

Number of Radios
Two Interfaces

Type
User selectable between, Analog 4-Wire, V.24, and DFSI

CONSOLE INTERFACE

Number of Consoles
Up to four console systems

Type
Follows P25 DFSI Standard

NETWORK REQUIREMENTS

Device Payload
1 Kbps idle, 130 Kbps active

Bandwidth Ratio
< 40% (< 30% mission critical). Bandwidth Ratio of IP bearer should be 2 to 3 times actual payload to ensure optimum voice quality

Packet Loss
< 5% (<0.1% mission critical)

Packet Delay
< 500 ms (< 40 ms mission critical)

Packet Jitter
< 1000 ms (< 20 ms mission critical)

Network Type
Two fully switched Ethernet, full-duplex, operating on separate sub-nets

LAN Speed
10/100 Mbps

Sharing the network with other IP traffic may negatively impact voice quality and therefore should not be considered for mission-critical applications

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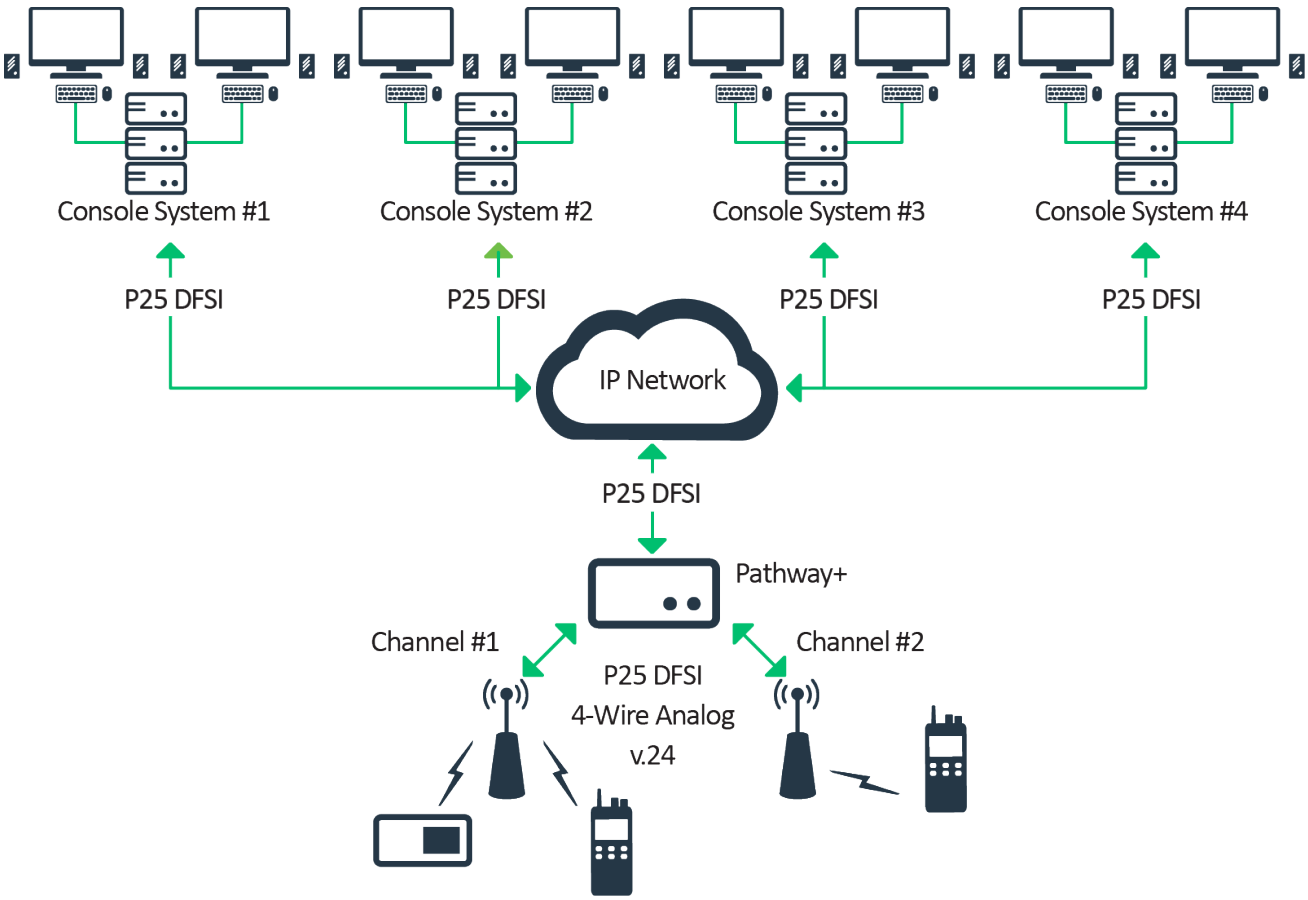
System Diagram



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