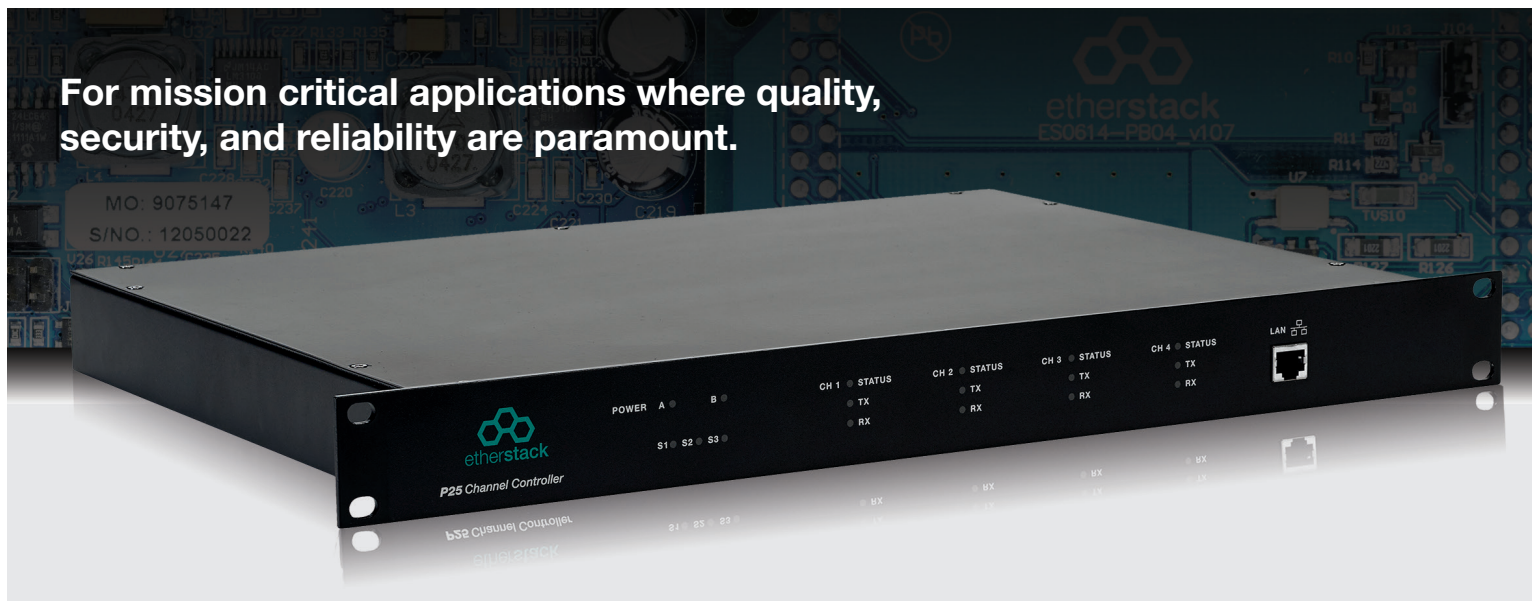


MetroNet25™

P25 Channel Controller

For mission critical applications where quality, security, and reliability are paramount.



Flexible Technology

Etherstack's advanced P25 Channel Controller connects various RF decks (transmitter and receiver) to provide flexible P25 solutions.

Our solution allows the network designer to specify the most appropriate RF deck configuration based on required transmit power, frequency band, form factor and compliance levels.

Etherstack's unique P25 architecture provides the potential for existing RF equipment to be incorporated into a new P25 network solution whilst maintaining current equipment support arrangements and spare parts, thereby reducing the cost of migrating to P25 technology.

Etherstack's channel controller solution may be configured as simple standalone conventional base/repeaters through to large scale trunked or simulcast networks that interoperate with conventional base/repeaters without the use of a gateway. Composite channel configuration is optional.

P25 Site Configurations

Single site conventional

A single P25 Channel Controller can support up to four RF channels in a 1 RU chassis. Additional P25 Channel Controllers are used when more than four channels are required.

In standalone mode, the P25 Channel Controller supports P25 Conventional digital as well as conventional analog calls with CTCSS and CDCSS signaling systems. In this mode, all channels operate independently.

Single site trunked and conventional

With the addition of Etherstack's Base Station Controller (BSC) application, the functionality of a single site conventional base station can be expanded to include intelligent call routing between channels at a site and also standalone trunking with a choice of dedicated or composite control channels.

Wide Area

Conventional voting and simulcast can operate in a multi-site wide area configuration or

become hybridized into a wide area trunked/voted simulcast network when components such as the RNC and NLR are incorporated.

Fully Scalable

Etherstack's P25 architecture enables networks to be scalable from one channel on a single site to multiple channels across multiple sites without stranded investment or major investment hurdles.

Specifications

Etherstack can provide base station solutions suitable for almost any application:

Form Factor: 1 RU to 9 RU (excluding BSC server; dependent on power output and number of channels)

Compliance Standards:

- TIA/EIA-603 & TIA-102 CAAB
- FCC Part 22, 74, 90, 90.210, 80.475
- AS4295-1995
- R&TTE EC Directive 1995/05/EC
- EN300 086 -1, 2 (2001-03)
- EN 300 113, EN 301 489 - 1, 5 (2002-08)
- EN 60950 (2000)
- RFS25, RFS26, RFS32
- BAPT 225 ZV 1/2098
- MIL-STD-810E

P25 Solution Overview

Etherstack has a comprehensive range of TIA APCO P25 compliant RFSS, Core Network and Key Management solutions, depending on your network topology requirements:

1. APCO P25 Conventional Only,
2. APCO P25 Trunked (Single Site) + Conventional, and
3. APCO P25 Trunked (Multi Site) + Conventional

Each solution supports:

- All APCO P25 Mandatory Call Types
- APCO P25 Supplementary Services
- OTAR
- SNDCP Packet Data
- Full integration, testing, servicing and support from expert P25 engineers
- Product customization services
- Ongoing updates for compliance with developing TIA Standards

The most sophisticated of Etherstack's P25 solutions supports full Trunked and Conventional operation and all mandatory Call Types, Supplementary Services and System Broadcasts. This system employs a multi-site half-leg call model that can defer call setup decisions to central arbitration, and includes single site fallback and a wide area site-to-switch protocol.

Network Infrastructure Flexibility

Etherstack's P25 base station solution can incorporate elements of your existing network infrastructure, including transceivers, or we can offer a complete, turnkey system to replace or upgrade your network facility based on our P25 solutions.

P25 Channel Controller

Etherstack's P25 Channel Controller allows base station transceivers to be configured for mixed analog and conventional operation, with analog voice supporting CTCSS and CDCSS, conventional P25 digital repeater channels and trunking P25 digital channels.

Etherstack's P25 Channel Controller

- Supports one to four channels per channel controller
- Interfaces to RF transceivers
- Provides decoding and encoding of P25 Common Air Interface (CAI)
- Detects and generates traditional CTCSS and CDCSS signals for analog LMR channel operation
- Allows each channel to be configured to support:
 - P25 Conventional Channel (digital repeater function)
 - P25 Trunking Control Channel
 - P25 Trunking Traffic Channel
 - Analog FM LMR channel option
 - Mixed Analog and P25 Conventional operation (automatic detection of terminal type)
- Facilitates a local connection to the BSC via IP (Ethernet port)
- Provides status indications (Power, Rx and Tx status, Channel Ready, Error state)
- Provides simple repeater functionality in standalone mode (Fall back)
- Provides analog channel PCM coding for wide area networking
- Provides P25 vocoding / transcoding functions for analog to P25 calls
- Provides extended temperature range functionality, from -40°C to +85°C
- Optional integration with Etherstack FIPS 140-2 crypto module

Simulcast & Voting Options

An Etherstack P25 site can support the following functions:

- Simulcast P25 Trunked & Conventional digital
- Simulcast analog transmissions
- Receiver voting of P25 Trunked & Conventional transmissions
- Receiver voting analog

Base Station Controller

Etherstack's BSC has the following functions:

- Provides management, configuration and control of P25 channels
- Mobility management including registration and affiliation for trunked and conventional units
- Call setup for wide area calls
- Setting up media streams for analog and P25 calls

The BSC has the following features:

- Connects to wide area network via IP (Ethernet Port) using SIP and RTP based protocols
- BSC applications run on standard industry PC platform with Linux operating system
- SNMP agent for alarm reporting
- Can operate in Standalone Trunked or Conventional mode if site IP connectivity is lost
- Supports Conventional and Trunked Supplementary Services, Conventional and Trunked P25 Data, SNDCP Data (Trunking only), Over The Air Rekeying (OTAR)
- Legacy Analog calls
- Clear and Encrypted Conventional and Trunked Calls (AES/DES)
- Mixed Operation (Conventional + Trunked simultaneously)
- Current release supports configurations of up to 32 channels
- Fall back mode (local site Trunking) if remote area connectivity is lost

IP Core Network

Etherstack's P25 IP Core Network consists of:

- RNC – RFSS Node Controller (softswitch controlling wide area calls)
- NLR – Network Location Register (authentication and registration of users)
- PSTNG – PSTN Gateway (interface to PSTN or PABX devices)
- DSN – Data Service Node
- ISSIG – Inter subsystem interface signaling Gateway

Warranty and Support

Etherstack offers a comprehensive warranty and support package to back up our product range. This package keeps you up to date with the latest innovations in the APCO P25 standard.



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Want to learn more about the P25 Channel Controller?
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