



etherstack

# APCO 25 CSSI and ISSI Interoperability Software

Off-the-shelf software for the swift introduction of CSSI and ISSI compliant operation to fixed site, network and dispatch equipment.

Achieve plug-and-play P25 interoperability now:

- Integrate Network Devices (such as Consoles and Digital Voice Recorders) into P25 Networks
- Build Secure P25 Gateways for Network-of-Networks
- Build Secure CSSI / ISSI Dispatch
- Integrate Analog and Conventional Repeaters to P25 Networks

## Off-The-Shelf P25 Software

Etherstack's P25 Console Sub-System Interface (CSSI) and Inter Sub-System Interface (ISSI) solutions are derived from the company's field-proven P25 software and use the following off-the-shelf software components:

### Protocol Stacks

- ➔ Trunked ISSI
- ➔ Trunked CSSI
- ➔ Conventional ISSI with the following three complexities:
  - ➔ Complexity One; introduces multiple console support to the conventional digital FSI
  - ➔ Complexity Two; defines the interface between two conventional systems and uses the Trunked ISSI without mobility management
  - ➔ Complexity Three; introduces mobility management to Complexity Two
- ➔ Conventional Fixed Station Interface (FSI) (Analog and Digital)

### P25 Security Suite

Etherstack's P25 Security Suite offers all the software required for end-to-end encryption within a P25 network, ensuring decryption is executed just before presentation of audio payload to a listening user.

This includes:

- ➔ P25 Vocoder (source code or binary)
- ➔ AES/DES Encryption
- ➔ Key Management and Storage
- ➔ Over The Network Rekeying (OTNR)
- ➔ Key Fill Device (KFD) support

## P25 Specialists

Etherstack licenses P25 technology to radio manufacturers around the world and now offers all of the software required to build an advanced P25 network, from the handheld radio to the system edge. We are also active in TIA APCO 25 standardization and update our fielded products as this evolves.



The security suite is also available on a FIPS 140-2 certified module or dongle.

## Example Applications

### Console Solutions

Etherstack's **P25 Console Engine** provides console endpoint and gateway functionality. It comprises our CSSI/FSI protocol stack, a Console Application Layer, P25 vocoding and optional P25 Security Suite for end-to-end encryption.

It is provided as a library accessed through a C++ / C API for integration onto a customer's platform.

Etherstack's **P25 Console Server** adds multiple console support to the function of the console engine. It executes on an Linux industrial PC and uses a socket interface for communication with many consoles at a time.

Etherstack's **P25 Console Gateway** is a Console Engine or a Server that is controlled using physical interface such as 4 wire (tone or E&M).

## Features

- ➔ All P25 Standard Features: Trunked Calls, Conventional Calls, Mobility Management, Supplementary Services and Packet Data
- ➔ SIP / RTP All-IP Solution
- ➔ Scalable Parallel IMBE Voice Channels
- ➔ FIPS 140-2 Compliant Encryption Module
- ➔ Compatible with BSI and PTT over Cellular
- ➔ P25 IMBE Vocoder (Source Code and Binary)

### P25 ISSI Gateways

Etherstack's ISSI protocol based solutions help build the equipment required to solve complex multi-network and multi-agency communications.

They provide the P25 component to any potential next-generation gateway product, whether it be for the Bridging System Interface (BSI), PTT over cellular, generic SIP / RTP or a proprietary network. They can also be used to upgrade analog or conventional repeater network interfaces to P25.

### P25 Media Server

Etherstack also offers a scalable 1RU P25 Media Server for real-time voice channel processing at a network gateway or console interface. This uses multiple instances of the P25 Security Suite and P25 Vocoder and exposes G711 / PCM interfaces.

## Working With Etherstack

Etherstack engineers specialise in radio communications software.

With fourteen years experience and an international client base, Etherstack combines wireless protocol software design with all-IP soft switching expertise derived across professional mobile radio, military and cellular communications.

We work closely with our customers to achieve technical excellence, successful delivery at fixed price, ongoing support and software that can be reused.

## Other Products

- P25 All-IP Soft-Switch
- P25 PSTN Gateway
- P25 Key Management System
- P25 Air Interface Protocol Stacks
- Nexus P25 Hardware Reference Designs



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