APCO P25 Phase 1 and 2 Base Station Protocol Stack

P25 Phase 1 and Phase 2 Common Air Interface (CAI) plus a range of options for single site and wide area mission critical infrastructure.

Options Available:
- P25 Trunking Phase 2 Traffic Channel
- P25 Trunking Phase 1 Traffic Channel
- P25 Trunking Control Channel with Phase 2 Messages
- P25 Conventional Channel
- Analog FM (plus digital auto-sense)
- Simulcast
Etherstack engineers specialize in radio communications software. With over fifteen years of 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.

APCO P25 Base Station Protocol Stack
Etherstack’s widely fielded trunking and conventional P25 Base Station Protocol Stack is interoperable with mobile equipment from all major manufacturers. It is provided as Layers 1, 2, 3 with an optional Base Station Controller (BSC) Application for channel management and communication with an Etherstack or proprietary network solution.

Wide Area All-IP Core Network
Etherstack’s APCO 25 Base Station Protocol Stack and Base Station Controller Application are seamlessly interoperable with Etherstack’s wide area All-IP Core Network, a next-generation SIP/RTP soft-switch purpose built for secure PTT group communications. This can be deployed almost entirely using off-the-shelf industrial computing and IP equipment. It boasts advanced features such as a Soft Radio client for communication from PCs and smartphones, PSTN gateway, Over-The-Air and Over-The-Network Rekeying (OTAR/OTAN) key management, End-to-End Encryption, P25 Packet Data, legacy Analog FM and a flexible range of redundancy and deployment options. It also supports the APCO 25 ISSI and CSSI for open interoperability with third party P25 gateways, consoles, digital voice recorders and other network equipment.

P25 Flexible Signaling Module (FSM)
Etherstack’s P25 Base Station Protocol Stack can be provided on a digital card, called a P25 FSM, to upgrade existing analog RF to a fully compliant P25 digital air interface. The FSM can be integrated to an existing analog repeater or provided with the Base Station Controller on a separate 1RU P25 Channel Controller. It supports all features of the Base Station Protocol Stack including P25 Trunked and Conventional modes of operation, advanced FEC and Analogue CTCSS and DCSS signaling.

Working with Etherstack
We consider ourselves an extension of your engineering team. You have full visibility of our engineering products and processes. We also provide support as required to ensure delivered software meets your requirements as you go to market. While you concentrate on platform, package and service differentiation in an ever more complex market, we take care of the standards-based software.

P25 Specialists
Etherstack licenses APCO 25 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 very active in TIA APCO 25 standardization efforts and systematically update our fielded products in accordance with this. As a result, our protocol software forms a benchmark for APCO 25 interoperability.

P25 Phase 1 Features
- P25 Trunking Control Channel (all features)
- P25 Trunking Traffic Channel (all features)
- P25 Conventional Channel (all features)
- Analog FM (plus auto-sense between analog and digital)
- Simulcast
- Fallback to conventional operation when not connected to BSC
- Modular ANSI C Source Code
- Layers 1-3
- Specification, Integration and Warranty Services
- Automated Test and Analysis Environment
- Design, Interface and Test Documentation

P25 Phase 2 Features
- 2-slot TDMA Traffic Channel
- H-CPM uplink, H-DQPSK downlink
- VTCH / SACCH / FACCH / ISCH
- Mode Management with Phase 1
- Call Continuation
- Traffic to Control Channel Synchronization (Option)
- Audio and Call Preemption (Option)
- Closed Loop Power Control (Option)
- Full Duplex (Option)
- TIA 102.BBAA-2010
- TIA 102.BBAB-2009
- TIA 102.BBAC-2010

Other Products
- P25 Phase 1 and 2 Mobile Station Protocol Stack
- P25 All-IP Network and Test Systems
- FIPS 140-2 Crypto Modules
- P25 Transceiver Reference Designs
- DMR and TETRA MS + BS Protocol Stacks