

# TETRA / TEDS

## Base Station Protocol Stack

### Building a TETRA base station?

Etherstack combines TETRA and all-IP soft-switching expertise for a future-proof TEDS and LTE compatible solution.

Etherstack offers a comprehensive range of TIP/ETSI TETRA and TEDS compliant base station and networking options. With 14 years' experience in TETRA and 20 in successful protocol stack development, our highly knowledgeable engineers act as an extension of your engineering team.

#### High Quality Software

Our standard TETRA/TEDS Base Station Protocol Stack is available with a single site trunking application and features Trunked Mode Voice+Data (TMO V+D), all call types and supplementary services, all registration and migration mechanisms, and address management. A management interface - including configuration, alarm and monitoring functions - is also available.

It is constructed as a set of layered components (LPHY/UPHY/LMAC/UMAC/ Channel Management Module) that can be supplied individually or together, and can be split across multiple processors if necessary. Typically, the upper layers run

on a base station processor and the lower layers on the transceivers.

#### Performance

Performance is a priority and our mathematicians (including internationally recognised FEC experts) go all-out to extract that extra dB of link budget and ensure our implementation is computationally efficient.

#### All-IP Wide Area Network

If you're looking beyond the site to the SwMI, Etherstack's all-IP softswitch forms the foundation for a next generation network. Purpose built for PMR, fast PTT call set-up and E2EE, it also supports data, rekeying, E2EE, a range of location and supplementary services, third party peripheral equipment – and has already been deployed over LTE.

Potential customers are welcome to appraise our TETRA technology in our labs in Yokohama, London, Sydney or New York.

#### Technology Package

- Modular ANSI C90 TETRA Source or Binary Code
- Modular ANSI C90 TEDS Source or Binary Code (Optional)
- Software Requirements Specifications (to ETSI ETS and TIPs)
- Interface Requirements Specifications
- High Level Design
- Software Test Plan
- Software Test Description (traceable to SRS)
- Test Scripts (traceable to SRS)
- ELITE and ESTV
- Integration Services
- 12 Month Warranty (Option to Renew)

## Features

- TIP/ETSI TETRA Trunked Mode Voice+Data (TMO V+D)
- Single and Multi-Site Support
- Sophisticated Management Interface
- Registration and Migration
- Comprehensive Address Management
- All TETRA Voice Call types
- All TETRA Supplementary Services
- Short Data Service (SDS) Support (Types 1 through 4)
- SMDCP Packet Data
- Single-Slot Packet Data (SSPD)
- Multi-Slot Packet Data (MSPD)
- TEDS
- Air Interface Encryption (Classes 1, 2 and 3) and Key Management
- PABX, PSTN and dispatcher calls
- Advanced link MS-BS communication & FCS support
- Energy saving modes and closed-loop power control

## TEDS Protocol Stack

TEDS is a spectrally efficient integrated high speed data service that is scalable to wideband and ultimately broadband rates.

Etherstack has invested significant effort to overcome the technical challenges of high rate data extension. We have implemented advanced link adaptation, turbo coding and Quality of Service (QoS) algorithms that ensure the best possible performance outcome.

TETRA and TEDS protocol stacks are available either separately or integrated together and are compatible with a wide variety of hardware and software environments.

## Full Package, Fixed Price

Etherstack offers a highly competitive fixed price for a full technology package that includes technical documentation for straightforward integration, our pioneering automated protocol stack test system (ELITE), Etherstack TraceViewer and a comprehensive test script library that provides traceability to the requirements.

## Software Reuse

Protocol software represents a key investment. It is important you can update it and reuse it on future platforms to save money, reduce risk, hasten time-to-market and respond quickly to changing requirements. **Code portability, reuse and maintenance** are our priorities.

## Risk-Free 12 Month Warranty

After delivery, Etherstack provides a 12-month warranty against any defects. If an issue is found we fix it immediately at no extra cost.

More information on Etherstack protocol stacks can be found on our website: <http://www.etherstack.com/eu/pmr.html>

## About Etherstack

Etherstack engineers specialise in radio communications software.

With two decades 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.