etherstack

TETRA plus TEDS Protocol Stack

Combined voice and data for a global PMR communications market.

You provide the hardware, we provide the software: feature-rich highly portable TETRA plus TEDS mobile and base station protocol stacks with full test support.

- ➡ Modular ANSI C Source Code
- ➡ Layers 1-3, Application and Database
- ➡ Mobile and Base Station
- ➡ Voice only / Data only / Voice plus Data
- ➡ Highly portable
- ➡ Suitable for a variety of form-factors
- ➡ Easy to integrate and maintain
- ➡ Support from specification through to integration and warranty

For Next-Generation Communications **Next-Generation Technology**

TETRA Features

➡ **ETSI/TIP TETRA compliant TMO Voice + Data**

➡ **ETSI/TIP TETRA compliant DMO**

➡ **All mandatory TETRA Call Types**

➡ **End-to-End Encryption**

➡ **Authentication**

➡ **Energy Saving Modes / Power Control**

➡ **SNDCP Packet Data (Single and Multi-Slot)**

➡ **SDS TL**

➡ **Full Cell Reselection and Call Restoration**

➡ **Group Address Management**

TEDS Features

➡ **4,16 and 64 QAM**

➡ **25kHz, 50kHz, 100kHz and 150 kHz modes**

➡ **Data Only / Voice + Data**

➡ **Encryption**

➡ **QoS / Link Adaptation**

➡ **Napping and Scheduled Access**

Introduction

Etherstack has supplemented its field-proven TETRA Release 1 TMO+DMO protocol stack (Layer 1-3 plus Application) with TETRA Enhanced Data Service (TEDS).

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

Etherstack's TEDS solution is backwards compatible with existing TETRA equipment and includes link adaptation, advanced turbo coding and Quality of Service (QoS) support.

Working With Etherstack

Etherstack offers a highly competitive fixed price for full source code and all services and documentation. This includes complete engineering and project documentation (requirements, design, interface and test); PC-based radio configuration tools; our pioneering automated protocol stack test system (ELITE) and a comprehensive suite of test scripts developed to your requirements. We also provide support throughout a project - and beyond - to ensure your radios are fielded successfully.

We consider ourselves an extension of your engineering team. You have full visibility of our engineering products and processes.

The Protocol Stack Product

Our ANSI C mobile and base station TETRA and TEDS protocol software is constructed as a set of layered components (Layers 1, 2, 3 and Application Layer) for an adaptable architecture that can be split across multiple processors if necessary. TETRA and TEDS protocols are available either separately or integrated together and are compatible with a wide variety of hardware and software environments.

All Etherstack protocol stacks are built from the same core framework (Etherstack Core Services or ECS) and use Etherstack's automated test system (Etherstack Lightweight Integrated Test Environment or ELITE).
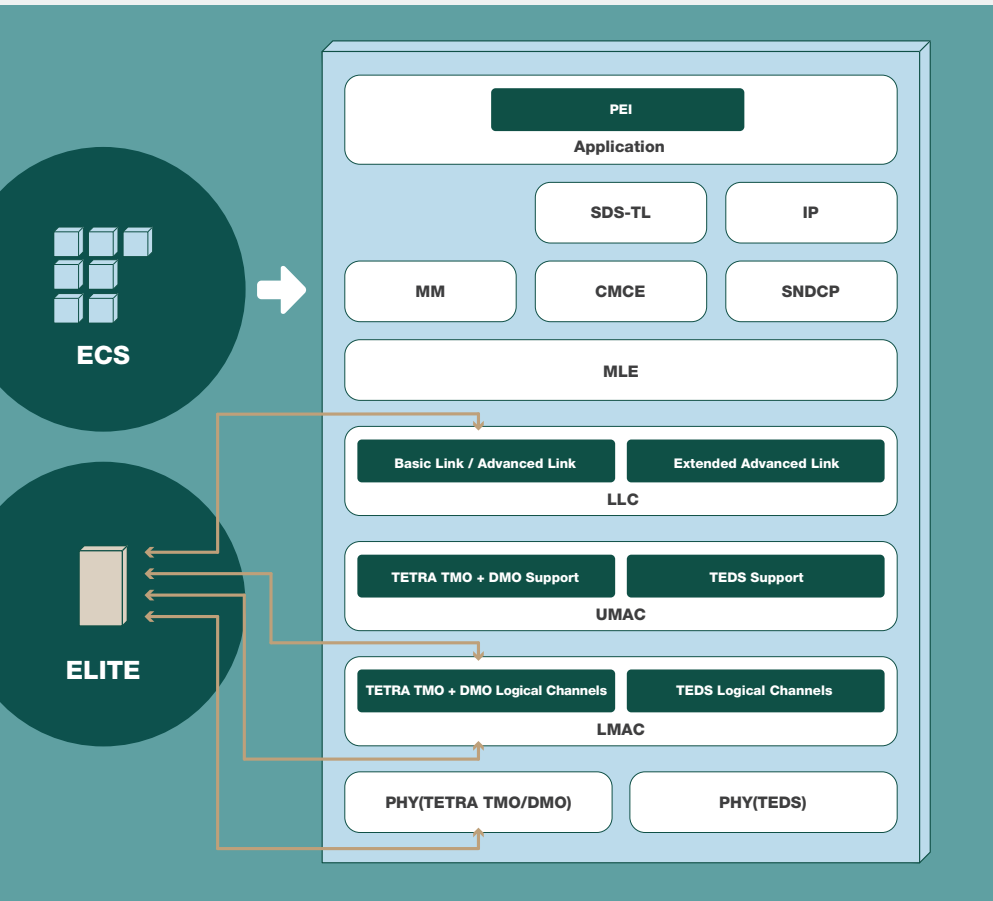
TETRA / TEDS Hardware Reference Designs

Etherstack is partnered with Nexus to supply hardware reference designs in conjunction with our protocol stacks for a complete turnkey design solution.
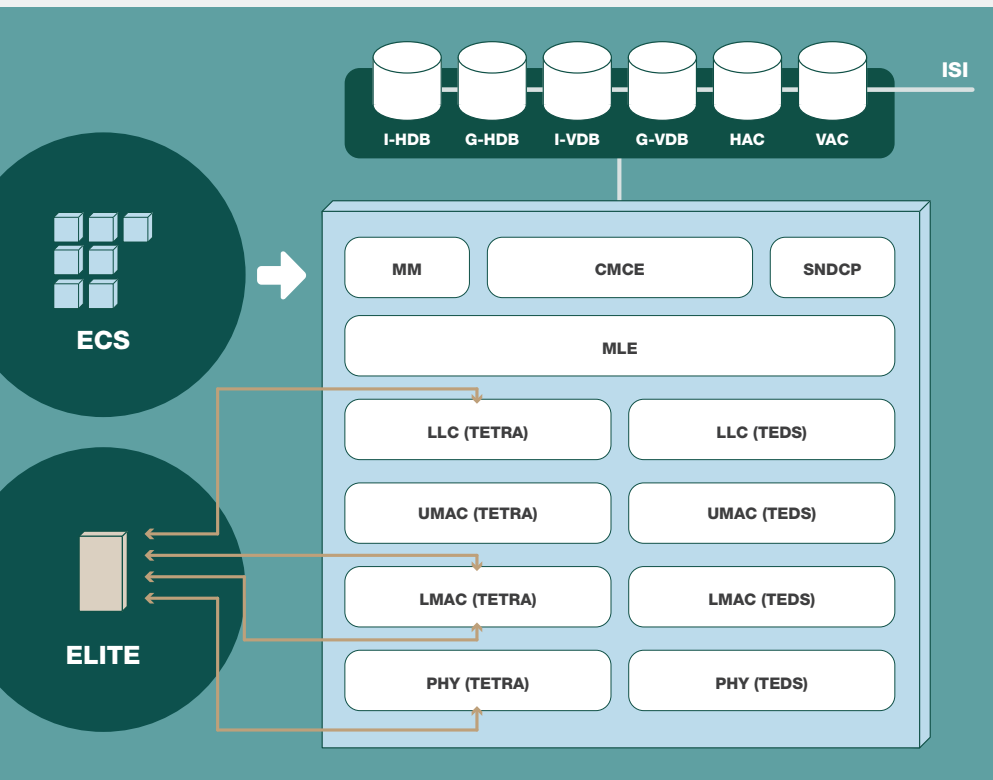
Nexus TETRA/TEDS transceiver solutions are fully compatible with our software architectures.

Contact Etherstack for further information.

Etherstack TETRA plus TEDS Mobile Station Protocol Stack

Diagram labels (top stack):

- ECS
- ELITE
- PEI
- Application
- SDS-TL
- IP
- MM
- CMCE
- SNDCP
- MLE
- Basic Link / Advanced Link
- Extended Advanced Link
- LLC
- TETRA TMO + DMO Support
- TEDS Support
- UMAC
- TETRA TMO + DMO Logical Channels
- TEDS Logical Channels
- LMAC
- PHY(TETRA TMO/DMO)
- PHY(TEDS)

Etherstack TETRA plus TEDS Base Station Protocol Stack

Diagram labels (bottom stack):

- ECS
- ELITE
- I-HDB
- G-HDB
- I-VDB
- G-VDB
- HAC
- VAC
- ISI
- MM
- CMCE
- SNDCP
- MLE
- LLC (TETRA)
- LLC (TEDS)
- UMAC (TETRA)
- UMAC (TEDS)
- LMAC (TETRA)
- LMAC (TEDS)
- PHY (TETRA)
- PHY (TEDS)

Software Reuse

Reduce Costs and Speed Time-to-Market

➡ Protocol stack software represents a key investment. It is important you can reuse it on future platforms and in derivative products to save money, reduce risk, speed time-to-market and respond quickly to changing markets. Reuse also allows you to make use of new and more capable processors as they inevitably become available.

Software Reuse: Design

➡ Code reuse is our priority. We specialise in highly modular operating-system agnostic software that can be ported to a wide range of embedded platforms without compromising performance.

Software Reuse: Maintenance

➡ Successfully maintaining software used in fielded radio systems is complex. The details are important: it is our job to pay close attention to documentation, test script generation, source control and code updates as standards and features evolve.

Software Reuse: ELITE

➡ Etherstack has developed ELITE - a pioneering automated test system - to ensure successful code development, delivery and maintenance. ELITE allows automated testing of the protocol stack (or a single protocol stack module or group of modules) in the development environment, after integration, during field trials and as new features are introduced over time.

➡ Comprehensive TCL test script suites are provided with each protocol stack to allow rapid regression testing and expansion of test capability as new features are added.

Software Reuse: ECS

➡ Etherstack Core Services (ECS) is an abstraction system used to build every Etherstack protocol stack. ECS provides protocol stack modules with all the services they require to execute, thereby permitting abstraction of each module from the underlying operating system and from each other to maximise possible operating system and processor combinations. Note that ECS still allows processor specific optimisation.

About 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

- APCO 25 Protocol Stacks (Mobile / Base Station)
- dPMR / DMR Protocol Stacks (Mobile / Base Station)
- Combined TETRA / APCO / DMR / Analogue All-IP Core Network
- Nexus TETRA / TEDS Hardware Reference Designs