TETRA / TETRA 2 / TEDS
WIDEBAND DATA FOR A GLOBAL PMR COMMUNICATIONS MARKET

INTRODUCTION

The majority of the world’s police and security services use ETSI TETRA compliant equipment for wireless mobile communication. In step with the requirements of this market, Etherstack is supplementing our popular, field-proven off-the-shelf TETRA Release 1 protocol waveform (Layer 1-3 plus Application) with TETRA Enhanced Data Service (TEDS).

TEDS is a technically-proven, spectrally-efficient integrated narrowband voice + 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 full Quality of Service (QoS) support. Starting with 16QAM modulation for the 25kHz and 50kHz bandwidths, our solution will be extended to higher QAM orders and ultimately higher bandwidths.

LOWER YOUR TECHNICAL AND COMMERCIAL RISK

At the moment it is not certain which mobile communication technologies will win and which will lose.

Working with Etherstack will reduce your time to market and future-proof your radio software investment – allowing you to respond more quickly to changing market conditions.

Etherstack was the first company in the world to design, develop and supply wireless air interface protocol software (waveforms) as a specialist activity separate to the wireless manufacturing process.

Because our waveforms needed to be deployable on any commercial platform, we devised new methods to maximize modularity, portability and resource efficiency - the same concepts that motivate today’s SDR and SCA initiatives.

Designed as native base waveforms written in ANSI C, Etherstack’s air interface protocol stacks are easy to maintain, upgrade with new features, and port across to new platforms as your hardware evolves.

SOFTWARE
COMMUNICATIONS
ARCHITECTURE (SCA)

Etherstack’s design approach means that our base waveforms are easily ported to the SCA. All waveforms can be supplied in either native or SCA-ported form. Etherstack’s native waveforms are ported to the SCA by integrating them to SCA wrappers – so complete consistency between native and SCA-deployed function is ensured.

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RADIO SOFTWARE DEVELOPMENT WITH ETHERSTACK

Etherstack has a field-proven track record in developing small footprint optimally portable real-world complex waveforms.

Each waveform consists of a series of layers and functional sub-modules that have well defined interfaces and can be deployed on the same or on separate processing nodes as required by the platform. These are supported by our "Core Services" harness, which provides efficient communication, state machine, test/debug and timing support to the protocol function - minimizing reliance on the underlying operating system.

Our design technology aims to minimize the work required to port a waveform to a new embedded platform without compromising on footprint, speed or power consumption.

ETHERSTACK CAN SEE YOU THROUGH FROM CONCEPT TO RELEASE

We assist customers throughout the radio development lifecycle from specification to development, feature customization (if necessary), integration and field trials. We also offer a comprehensive warranty and support package for ongoing support and maintenance.

TEST TOOLS

Etherstack has developed custom tools to allow comprehensive testing of our protocol software before and after integration.

All waveforms are delivered with test plans, a full-featured test script suite and a custom test execution and analysis framework. This allows automated testing of the base waveform in simulation on a PC and execution of the same tests against the software once it is ported to the target platform.

ALL-IP CORE NETWORK SOLUTIONS

Etherstack offers core network products based on current commercial Radio over IP (RoIP) technology and wireless communications standards. These network products can be deployed on COTS industrial computers to build flexible, powerful, future-proof end-to-end IP soft-switched radio networks that vary in scale from single site to nationwide.

ABOUT ETHERSTACK

Modern wireless communications are driven by a need for improved data throughput, interoperability, security and spectral efficiency. These requirements demand extensive, complex and well managed software. Etherstack has been a specialist licensor of such software to commercial, public safety and defense radio equipment manufacturers around the world for over ten years.

We license protocol stacks, IP-based communication network software and cryptographic solutions.

The company is also a leading Defense SDR waveform developer and has won multiple waveform contracts including a major development for the Swedish Defense Ministry related to the international program of the U.S. DoD JTRS program.

www.etherstack.com