etherstack
wireless innovation

Digital Mobile Radio (DMR)
Base Station Protocol Stack

Building a digital base station?

Etherstack combines ETSI DMR and all-IP softswitching expertise for a modern, future-proof solution.

DMR is positioned as an ideal digital upgrade technology for analogue two-way radio. It offers increased capacity and advanced digital features within existing channel plans and network footprints.

Etherstack now offers DMR alongside our field-proven APCO 25, TETRA and MPT1327 protocol stacks. We know the ETSI DMR standards inside-out and have off-the-shelf mobile and base station stacks available.

Fast-Track to Digital Interoperability

Etherstack's ETSI DMR Base Station Protocol Stack is fully compatible with the standards and also with our purpose built PMR all-IP network technology, so it can be used as a simple repeater or scaled to multi-site, wide area operation.

The stack is constructed as a set of modular, layered components and can be split across multiple processors as required.
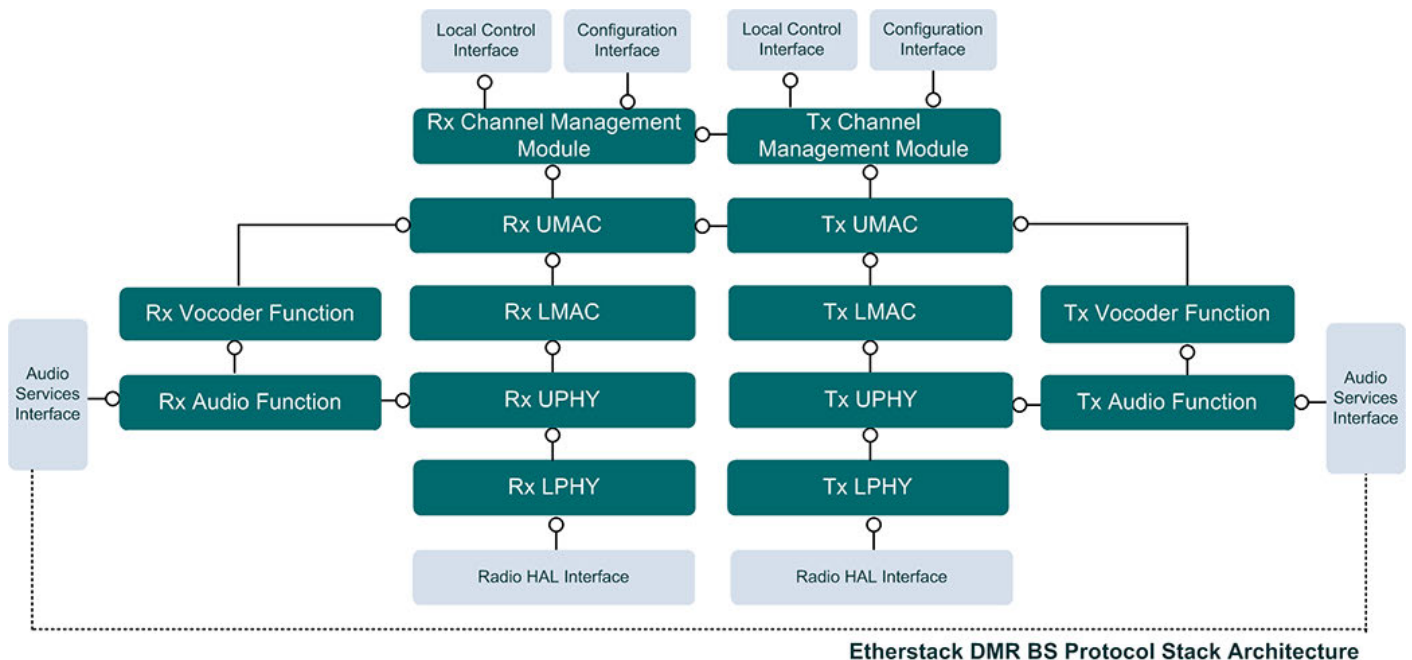
We offer DMR Tier 2 Repeater and Tier 3 Trunking starter packages alongside a full suite of advanced features such as data, encryption and IP multi-site networking. You can purchase these immediately or upgrade as your customer requirements evolve.

Advanced Coverage

In addition to superior FEC, we have implemented a configurable full error correction relay repeater to ensure coverage and performance exceeds that of analogue equipment. Our mathematicians (including internationally recognised FEC experts) extract that extra dB of link budget and ensure our implementation is computationally efficient.

Technology Package

- ANSI C90 DMR Software
- Software Specifications
- Interface Specifications
- High Level Design
- Software Test Plan
- Software Test Description (traceable to specifications)
- DMR Test Script Library (traceable to specifications)
- ELITE and ESTV
- Integration Services
- 12 Month Warranty

Etherstack DMR BS Protocol Stack Architecture

Tier 2 Features

- Local Vocoding for Monitoring and PTT
- Simulcast
- Voting
- Encryption
- Standalone Dual Digital and Analogue Mode
- CTCSS and DCS
- Multi-Site
- Single Frequency Operation
- Analogue Transcoding
- Duplex Call

Further Tier 3 Features

- Line Connected Calls
- Packet Data
- Authentication
- Stun, Revive, Kill
- Call Diversion
- Power Save
- Composite Control Channel

Graceful Analogue Upgrade

Are you an analogue repeater manufacturer? If so, you can reuse your existing radio assets and upgrade gracefully to digital with Etherstack's DMR Channel Controller.

Our DMR Channel Controller is a 1RU baseband digital device that hosts our DMR Base Station Protocol Stack. It connects to existing analogue RF via the audio or digital I/Q interface, enabling the upgrade of legacy equipment to feature-rich digital DMR Tier 2 and Tier 3 operation.

Full Package, Fixed Price

Etherstack offers a highly competitive fixed price for a full technology package that includes technical documentation, 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.

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

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.

Related Products

- DMR Channel Controller
- DMR All-IP Network and Test Systems
- FIPS 140-2 Crypto Module
- DMR Mobile Station Protocol Stack

Want to learn more about our DMR base station protocol stack?

Email us at info.eu@etherstack.com.