

DMR Mobile Signaling Module

DMR and P25 Digital Board

A single-board baseband module with all protocol stack software required for conformance to the ETSI DMR and TIA P25 standards. Integrate it with existing analogue RF circuitry for straightforward modernisation of legacy portable and mobile equipment.

Advanced features including encryption and data are available.



Features

- DMR Tier 2 and DMR Tier 3
- P25 Conventional and Trunking
- Legacy analogue operation including CTCSS and CDCSS
- Mixed digital and analogue operation
- Basic and advanced scanning algorithms, e.g. priority with lookback
- Individual, group, emergency, announcement, PSTN calls
- Emergency Mode, Radio Unit Monitor, Radio Inhibit
- Basic and advanced data services
- Supplementary Services
- Secure operation with software or hardware cryptography
- Secure key management via OTAR or Key Fill Device (KFD)
- MMI and DTMF audio tone generation and control

Etherstack's Mobile Signaling Module (MSM) is integrated to legacy radio equipment or new radio designs to introduce feature-rich P25 and DMR operation within the limits of the underlying radio's RF performance capability.

The MSM has been successfully deployed to different manufacturers to allow their legacy analogue FM radios to be upgraded to support these digital standards.

The MSM can interface to a radio at an analogue baseband or digital I+Q interface, and provides additional interfaces for MMI integration and optional cryptographic modules, such as Etherstack's EAC4 module.

Etherstack's Mobile Signaling Module can breathe new life into expensive fielded radio equipment, allowing new secure digital waveform communications operation without expensive refit. Industry standard and custom waveforms can be deployed on the module by Etherstack's waveform engineers.

Speak to an Etherstack engineer today about how Etherstack can solve your digital upgrade problems.

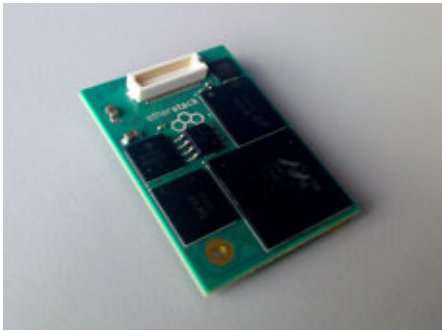
Package

- Product Specification summarising feature support
- User Manual
- API and Database Schema Specification
- Manufacturing Package
- Warranty
- Option: Technical Support, Production Support
- Option: Development kit plus two prototypes

Uses

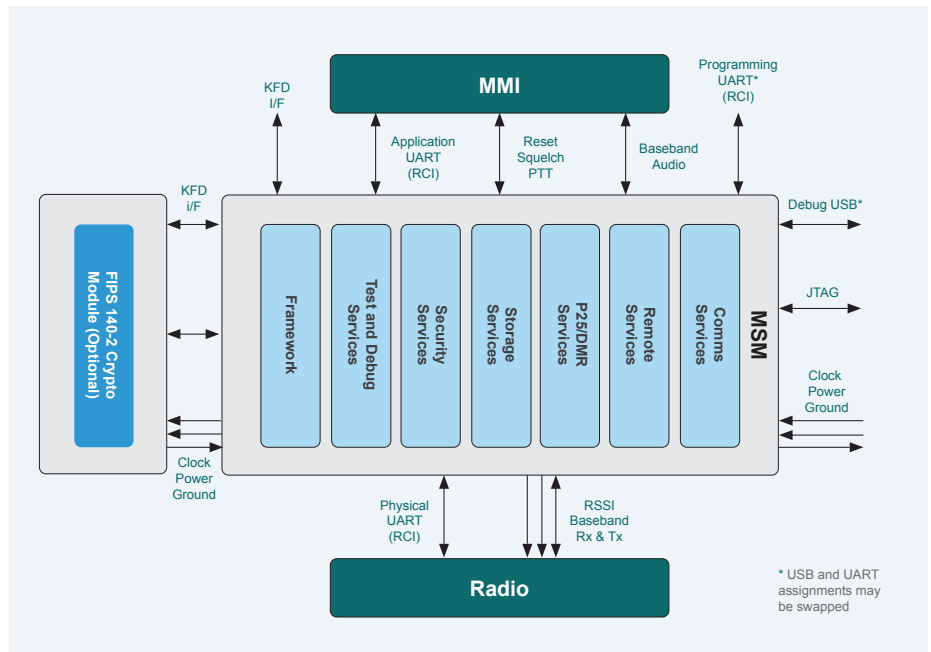
- Handheld radio equipment
- In-vehicle radio equipment
- Airborne radio equipment
- Fixed and portable infrastructure

Module Overview



Key Specifications

- Dimensions: 35 x 24 x 6mm
- High performance 32-bit processor
- Audio and Baseband Codecs
- 32 MB RAM (8M x 16b x 4 banks)
- 128 MB Flash (8M x 16b x 4 banks)
- 3.3V operation
- Analog or digital I&Q interface to RF



Remote Control Interface

Remote access to all internal Service Access Points (SAPs) on the MSM software is provided via Etherstack's RCI protocol. This acts as a single remote interfacing protocol to all software sub-systems on the device. It is compatible with several physical interface options including USB, UART and SPI.

Functions exposed via RCI include:

- Call Management, Channel Selection, Feature Services
- Image Management (database/firmware)
- Test, Debug and Profiling
- RF Control

Programming Management

The MSM database, crypto module database, MSM firmware and crypto module firmware can be upgraded individually via a single SAP exposed by Etherstack's Remote Control Interface (RCI) protocol. Programming is achieved using the MSM database programming function. This uses an XML based external format for data representation which can be replaced by a customer specific format if necessary.

FIPS 140-2 Crypto Module

- NIST FIPS certified cryptographic module
- AES-256 ECB / OFB / CBC
- DES ECB / OFB / CBC
- PRNG
- SHA-1
- DSA
- HMAC
- Custom Algorithms

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.