MObIQ

MOBILITY INTELLIGENCE & QUALITY

Advanced Technology On Board Unit

(On Board Unit) OBU 5931

OBU Platform

The OBU is a modular telematics control unit (TCU) designed to support development of advanced vehicle safety and mobility features. Our company has built on the success of the Wireless Safety Unit (WSU) product line to create a highly capable development platform bringing together the latest short-range and wide-area automotive communication technologies. Automotive grade components ensure reliable operation and MobiQ provides excellent customer support for integration, customization, and testing.

- The OBU includes C-V2X to enable V2X performance benchmarking and technology transition strategies, plus LTE.
- Server configurations - OTA software and configuration update, log file upload, and integration with the Security Credential Management System (IEEE 1609.2.1 SCMS).

Quality & Stability

- Tier 1 supplier of OEM safety and communication products.
- Over 75 years of leadership in the automotive market and a proven track record of strong customer support.

Security

- Uses the latest generation V2X hardware security module for tamper resistant key storage.
- V2X Hardware Security Module (HSM)
- 15-year retention
- FIPS 140-2 Hardware Security Module
- Secure boot

Features

- Modular design with plug-in daughter cards
- Supports US (IEEE, SAE) V2X protocols
- V2X Facilities Software (SAE protocols)
- V2X Services API (CAN, GNSS, V2X Radio)
- Quad-core ARM Automotive System On-Chip
- LPDDR4 SDRAM / NOR Flash / eMMC
- GNSS w/ multi-constellation support
- 4G LTE Modem
- CANbus (x2)*
- USB-C, Ethernet, & USB Debug
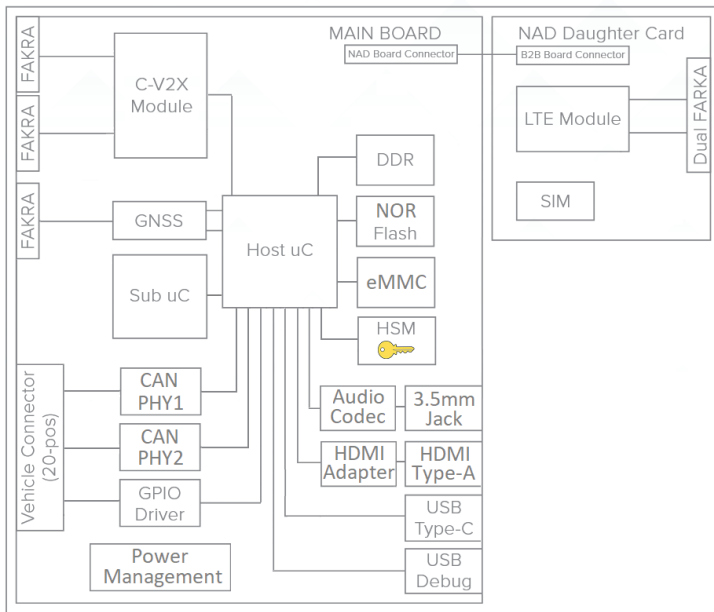- HDMI Output / Audio Output
- PWR/DIAG indicators

Applications

- V2X application suite
- Comprehensive list of CV applications (V2I, V2V, V2P) ready for customer deployment and integration
- Transit Signal Priority (TSP)
- Emergency Vehicle Preemption (EVP)
- Freight Signal Priority (FSP)
- Pedestrian Collision Warning (PCW)
- Red Light Violation Warning (RLVW)
- Intersection Movement Assist (IMA)
- Emergency Electronic Brake Lights (EEBL)
- Forward Collision Warning (FCW)
- Blind Spot /Lane Change Warning (BSW/LCW)
- Signal Countdown
- Wrong Way Driving
- Graphical browser based Installation Tool

Traveler Information Message (TIM) based alerts:

- Speed Limit Advisory
- Wrong Way Remote Vehicle
- Curve Speed Warning
- Weather Advisories (e.g., freezing rain, thunderstorm, strong winds, hail)
- Road Condition Advisories (e.g., pothole, icy bridge, snow on road)
- Construction Advisories (e.g., road construction, lane closures, work-in-the-median)
- End of Queue Alerts

All specifications subject to change without notice

Contact DPAM for further information

Hardware Architecture

Software Architecture
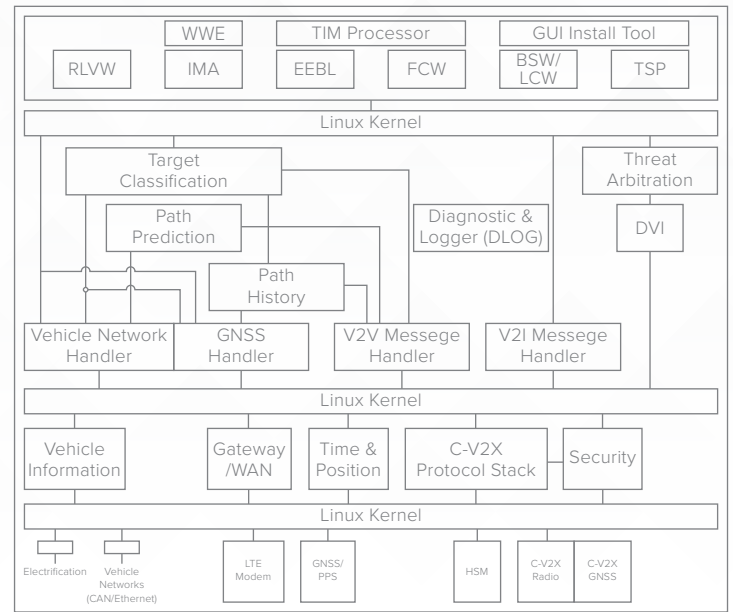
V2X Standard Conformance

- 3GPP R14/R15 (PC5 C-V2X)
- IEEE 1609.2-2022
- IEEE 1609.3-2020
- IEEE 1609.2.1-2022
- SAE J2735-2024
- SAE J3161/1-2022

Frequency Band

- C-V2X: 5.9GHz ITS
- LTE: 2 / 4 / 5 / 7 / 12 / 14 / 17 / 25 / 26 / 66
- GNSS: L1 C/A, L1OF*, B1I*, E1/BC*

Bandwidth

- C-V2X (20 MHz)

Data Rate

- LTE CAT6 300Mbps DL/50Mbps UL

Antenna Diversity

- C-V2X: RX-MRC, HARQ packet redundant transmission
- LTE: 1x2 MIMO

Max Transmit Power

- C-V2X: 19 dbm (FCC Waiver Certification)
- LTE: +23dBm

Receiver Sensitivity (w/ diversity)

- C-V2X: -96.5 dBm

GNSS

- 1.5m 2D error (1-sigma) under open sky conditions, per SAE J3161/1
- RTCM support

Operating Temperature Range

- LTE: -20°C to +70°C
- All other systems: -25°C - 70°C

Dimensions

- 160mm x 138mm x 50mm (W x D x H)

Power Supply

- 12V (< 22 Watts)

Vehicle Wire Harness

- (Included)