iW-Rainbow-G41
V2X Connectivity Hub

Integrated with C-V2X and DSRC technologies, the hybrid V2X Connectivity Unit provides as a scalable and modular platform reducing complexity to support global Connected Mobility solutions. Equipped with various wireless technologies such as 4G, Wi-Fi, Bluetooth and the support for multiple CAN interfaces, the hub serves to enhance safety and advance intelligent transportation systems. Designed to serve a plethora of V2X Applications, the V2X Gateway can be positioned as an On-Board Unit (OBU) or as a Road-Side Unit (RSU).

HIGHLIGHTS

- Hybrid Hub: C-V2X and DSRC Radios

- Powered by NXP i.MX 8

- Positioned as an OBU (On-Board Unit) and RSU (Road Side Unit)

- Wireless Connectivity: 4G LTE Cat-4 / Cat-M1 / NB-IoT / Wi-Fi / Bluetooth

- 4 CAN Interfaces: CAN FD / HS CAN / LS CAN

- High Accuracy GNSS Module & UWB Radio (Ultra Wide Band)

- Security: Integrated HSM and TPM

- M.2 Expansion Connector: 5G / Wi-Fi 6

APPLICATIONS

V2V

- Lane Change
- Collision Warning
- Driver and Incident Recording

V2I

- Blind Spot visualization
- Curve Zone Warning
- Work / School Zone Warning

V2P

- Pedestrian Notifications
- Infotainment Analytics
- In-vehicle Safety

Processor Core

CPU: NXP i.MX 8 DXL

RAM: 1GB LPDDR4 (Upgradable upto 2GB)

FLASH: 8GB eMMC Flash (Upgradable upto 64GB)

V2X Radio

C-V2X PC5 with 1.28 GHz

DSRC 802.11p operates in the 5.9 GHz band

Wireless Communication

Cellular: 4G LTE Cat 4, LTE Cat M1/NB1

Wi-Fi: 802.11 a/b/g/n/ac in 2.4 GHz or 5 GHz

Bluetooth: BLE 5.0

Ultra-Wideband (UWB) wireless transceiver

Interfaces

CAN: 4 Interfaces (CAN FD / HS CAN / LS CAN)

10/100 Mbps Ethernet

RS232/RS485

K-Line/LIN Interface

Analog Input x 2

GPIOs x 4 (2DI, 2DO)

Software

Operating System: Linux 5.4.70

Protocol Stacks: ISO 15765-4 CAN, J1939

GNSS

GPS/GLONASS/BeiDou/Galileo

Security

Hardware Security Module (HSM)

Trusted Platform Module (TPM)

Sensors

Accelerometer, Gyroscope, Magnetometer

Temperature sensor

Antenna

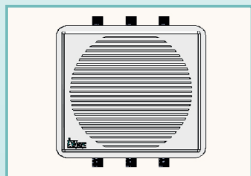1 x GNSS, 1 x Cellular, 1 x WiFi/BLE

Power

12V – 36V/POE support

Connectors

Enclosure Connector: 36 Pin Micro-fit

External Fakra connector: C-V2X/DSRC

External connector: M.2 with Key B/Key E

Enclosure

Protecting Class: IP66 with tamper detection

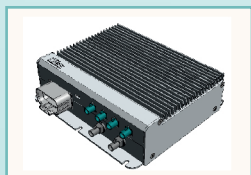Mounting Options: Pole Mounting/Cable Tie Slots

Environmental

Operating Temperature: -40°C to +85°C (Excluding Battery)

RELATED PRODUCTS

WaveConnect RSU

WaveConnect, The V2X Road Side Unit is built as an rugged IP solution with the option of Power over Ethernet. The road side unit, is an hybrid V2X Solution, integrated with DSRC and C-V2X Modules. The RSU can be fit into external road infrastructure such as traffic signals and toll plazas.

AutoConnect OBU

AutoConnect, The V2X On board Unit is integrated with DSRC & C-V2X radio technologies. Integrated with 4 CAN Interfaces & a multitude of wireless technologies such as 4G, Wi-Fi and Bluetooth. The OBU can enable Vehicle to Vehicle communication and the next generation of connected mobility solutions.