

ITS-RS4

High-performance V2X enabled roadside unit with edge computing

Designed for Cooperative ITS deployment, the fourth generation ITS-RS4 from Commsignia is the ultimate V2X communication solution for roadside applications and future edge computing solution. The platform combines a high performance application CPU with real-time V2X software stack and radio interfaces with the ability to connect it with sensors along the road. Enhanced security solutions, IP66/IP67 enclosure and Industrial grade design offers a professional solution for equipment operators and makes TMC integration easy and secure.



- Edge computing
- Pedestrian Safety
- Sensor fusion /w existing ITS sensors
- Interoperable with all major vendors globally
- Minimized TCO with durable design
- Reduced risk
- Improved performance
- Reduced deployment cost



V2X interface

- Dedicated next generation V2X chipset
- Dual-channel operation
- Extended radio coverage with a single unit
- Complete Real-Time V2X Stack (ETSI-G5 / IEEE WAVE / ISO FNTF)
- Available with Autotalks / NXP / Marvell V2X chipset



Security

- Tamper protected, Supervised system / housing
- Easy and secure remote configuration
- Support for future security upgrade
- Cryptographic Acceleration (HSM) for V2X
- Tamper proof certificate storage (HSM)



Support and Maintenance

- Software Development Kit: Linux and RTOS available for normal and time critical application development
- 4 level technical customer support
- User & Programmer's guide
- Available APIs: native C / remote C / remote Java / remote ASN.1
- Sample applications



Competitive features

- Powerful application CPU
- Pedestrian safety
- Embedded Commsignia V2X Stack
- Available Software Upgrades
- IP67 Enclosure and connectors
- Wide range of wired and wireless interfaces
- Sensor fusion /w camera, radar LiDAR



Easy integration

- Remote Management Tool
- Power over Ethernet (PoE)
- Remote logging
- Statistics and Reports
- Various TMC interfaces (DATEX II, NTCIP, ...)

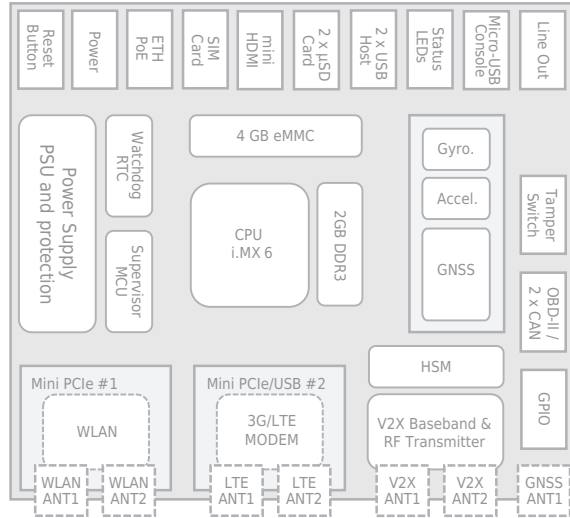


V2X Software

All V2X communication solutions are based on the same compact V2X software core which is available as separate product supporting several platforms.

Each layer of the Software Stack contains several network blocks enabling applications to transmit and receive standard compliant V2X messages over the air.





CORE FEATURES

CPU	1GHz Freescale/NXP i.MX 6
OS	Linux / RTOS (V2X)
RAM	2 GB DDR3 SDRAM
FLASH	4 GB eMMC
STORAGE	Dual micro SD Card slot
ETHERNET	10/100/1000 Mbps Ethernet PoE
EXTERNAL I/O	Dual USB 2.0, GPIO
SUPERVISOR	Yes
POWER SUPPLY	8-32 VDC / PoE (surge and reverse polarity protected)
BACKUP POWER	Yes (10s Store & Shutdown) (optional)
POSITIONING	Advanced GNSS
WIFI	Dual band a/b/g/n Mini PCIe slot #1 only (optional)
BLUETOOTH	Yes (optional)
CELLULAR	3G / LTE (MiMo) Mini PCIe slot #2 only
IMU	3 axis gyroscope BOSCH 3 axis accelerometer BMI160 3 axis magnetometer BMM150

CONNECTORS

ANTENNA	2 x V2X, 2 x WiFi, 2 x LTE/3G, 1 x GNSS
DATA	1 x ETH, 2 x USB, 1 x CAN, 1 x OBD-II
OTHER	Power connector Reset button 3 x Bicolor LEDs 3 x OUTPUT & 5 x INPUT
EXTENSION	2 x Mini PCIe slots
VIDEO	HDMI 1.4a
LINE OUT	3.5mm jack

AVAILABLE V2X RADIO VARIANTS

Autotalks Section
NXP TEF5100 (RF Transceiver) & SAF5100 (Baseband)
Renesas R-Car W2R SoC
Marvell SDIO (88W8987PA)

SECURITY

Hardware Security Module (HSM) SLI97
ECDSA verification (> 2000 verifications), encryption (< 50 usec signing delay)
NIST and Brainpool verification, encryption
Secure boot, encrypted storage, tamper proof system
EAL6+ certified and available with up to 1MB of secure SOLID FLASH
ARM TrustZone including the TZ architecture

ENCLOSURE

Protection: NEMA4X - IP67, vibration proof waterproof outdoor enclosure
Mount: pole and wall mountable
Dimensions: configuration dependent

V2X INTEGRATION

Over the years, Commsignia gained a tremendous amount of advantage and experience in V2X on-board unit deployment and operation.

- Participating in deployment and OEM/Tier-1 trials
- Fusion algorithms for ADAS systems
- Day1 / Day2 applications
- Sensor data integration