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challenging limits

**Kapsch TrafficCom**

## **Kapsch RIS-9260.** **V2X Roadside ITS Station.**

**RIS-9260 is the latest generation Kapsch 5.9GHz Roadside Unit (RSU). RIS-9260 provides IEEE 802.11p™ DSRC and 3GPP C-V2X wireless communication for both the ETSI ITS G5 and IEEE WAVE standards for applications within the Cooperative ITS (C-ITS) environment and ITS applications based on communication technology in general. Various configuration options and open interfaces contribute to the scalable and future proof RIS-9260 platform. The RIS-9260 provides fast data exchange between vehicles and the infra-structure e. g. Traffic Management Center or Signal Controllers to enable full capabilities of cooperative systems.**

The V2X Roadside Unit supports up to two 5.9GHz radio channels and is based on a ruggedized high performance Linux driven dual-core 64 Bit single board computer platform utilizing extensive interface capabilities while keeping the advantages of Power Over Ethernet (PoE) feed-in and passive cooling.

The product comes with standard compliant V2X communication stack as needed for deployment in IEEE WAVE™ and ETSI ITS G5 based cooperative systems. A software development kit (SDK) is available for integrators and infrastructure operators allowing them to create own software applications running on the device.

Due to its modular design the product is able to be delivered in different hardware configurations. The modularity helps sustainable infrastructure investments with respect to evolutions within the C-ITS environment, especially in technical, legislative and standardization aspects.

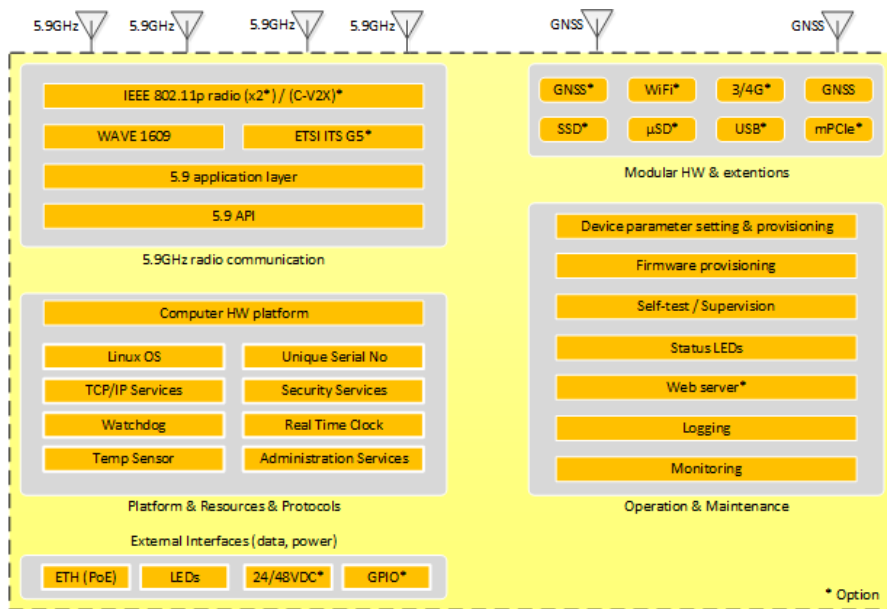
The IP67/NEMA 4X conform housing is made of die cast aluminum designed for long life roadside deployments in rural and urban environments.

Extended temperature range, shock and vibration durability combined with high MTBF are the key factors for sustainable, reliable and maintenance-efficient large-scale field deployments.

RIS-9260 represents the latest generation of Roadside ITS Stations (R-ITS-S) providing V2X applications a powerful computer platform for "Day 1" V2X use cases and beyond.

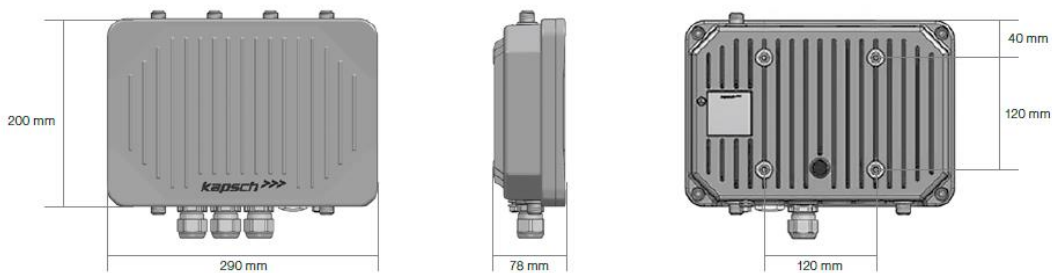


The product targets the worldwide 5.9GHz ITS market.



**Interfaces:**  
 IEEE 802.11p™ DSRC or 3GPP C-V2X  
 IEEE WAVE and ITS G5  
 WAN Ethernet (PoE)  
 Traffic Management Center / Central ITS Station  
 Traffic Light Controller

**References:**



**Technical features.**

**ITS protocol standards**

- > IEEE 802.11p™ / IEEE 802.11™
- > C-V2X 3GPP Rel. 14
- > SAE J2735 2016
- > ETSI ITS-G5 standard set
- > IEEE WAVE 2016 standard set

**Positioning and time (pps)**

- > Multi GNSS (GPS, GLONASS, Galileo, BeiDou)

**Security**

- > ECC
- > Hardware Security Module

**DSRC radio characteristics**

- > IEEE 802.11p™ radio
- > Frequency band: 5.850 – 5.925 GHz
- > 10 MHz channel spacing
- > Output power: max. 20 dBm
- > Sensitivity: typ. -92 dBm @ 6 Mbps
- > Antenna 1 or 2

**Enclosure**

- > IP67, IEC 60529

**Mechanical**

- > Aluminium die-cast
- > Dimension: 290x200x78 mm (wo installation bracket)
- > Weight: 3 kg

**C-V2X radio characteristics**

- > 3GPP C-V2X Rel. 14
- > Frequency band: 5.855 – 5.925 GHz (LTE B47)
- > 10 MHz channel spacing, PC5 sidelink
- > Output power: 20 dBm (power class 3)
- > Sensitivity: typ. -95 dBm
- > Antenna 2 (for diversity)

**Environmental conditions**

- > Operation: -40 °C to +74 °C
- > Storage: -40 °C to +85 °C
- > Protection: NEMA Type 4X, IP67

**MTBF**

- > > 100.000 hours

**Power supply**

- > PoE 802.3at-2009
- > < 14 W (basic configuration) max. < 25 W

**General conformity**

- > FCC, CE (DSRC, ITS G5)
- > Experimental license needed for C-V2X

**External interfaces**

- > 2 + 2x 5.9GHz Antenna 50 Ohm, N female
- > 1x GBit Ethernet (1 x PoE feed-in)
- > 1 + 1x GPS, N female
- > 2 x LED, 3-color (power, status) +2 x\*

**Computer platform**

- > 1,33 GHz, 64 Bit, dual-core
- > x86 CPU Architecture, 1 GB RAM ECC
- > 4 GB Flash
- > SD-Card Slot
- > SSD Slot