Kapsch RIS-9260

V2X Roadside ITS Station

RIS-9260 is the dual mode 5.9GHz Roadside Unit (RSU). RIS-9260 provides IEEE 802.11p™ DSRC and 3GPP C-V2X (LTE-V2X) wireless communication for both the ETSI ITS G5 and IEEE WAVE standards for applications within the Connected Vehicle and 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 three 5.9GHz radio channels, two IEEE 802.11p™ and one C-V2X which are activated and operated by configuration. RIS-9x60 family 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.

Due to its modular design the product is able to be delivered in different hardware configurations and related software features and applications. 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.

The product comes with a standard compliant V2X communication stack as needed for deployment in IEEE WAVE™ or ETSI ITS G5 based cooperative systems. RIS-9260 meets the US DOT 4.1 RSU Specifications and it has been certified by OmniAir™ for US.

The RIS-9260 works with a wide range of traffic controllers and supports various applications from SPaT, Red-Light Warning, Emergency Vehicle Preemption, Special Vehicle Priority and Vehicle Data aggregation for Traffic Operations. The RIS-9260 can be remotely configured, monitored and controlled using the Kapsch Connected Mobility Control Center solution and also provides open interfaces for 3rd parties.

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Dual mode V2X Roadside ITS Station.

Technical features

ITS communication standards
- IEEE 802.11p™/IEEE 802.11™
- C-V2X 3GPP Rel.14
- SAE J2735 2016 / 2020
- IEEE WAVE 2016 standard set
- ETSI ITS-G5 standard set

DSRC radio characteristics
- IEEE 802.11p™ radio
- Freq. Band*: 5.850 – 5.925GHz
- 10MHz channel spacing
- Output power: max. 20dBm
- Sensitivity: typ. -92dBm @ 6Mbps
- Antenna 1 (or 2, diversity or 2nd radio chann.).

C-V2X radio characteristics
- 3GPP LTE-V2X Rel.14
- Freq. Band*: 5.895 – 5.925GHz (LTE B47)
- 10MHz / 20MHz, PC5 sidelink
- Output power: 20dBm (power class 3)
- Sensitivity: typ. -95dBm
- Antenna 2 (2nd for diversity)

Power supply
- PoE 802.3at-2009 < 25W max
- 24V / 48V DC

Positioning and time (pps)
- Multi GNSS* (GPS, GLONASS*, Galileo, BeiDou*)

External interfaces (incl. options)
- 2 + 2 x 5.9GHz Antenna 50 Ohm, N female
- 1 x GBit Ethernet (1 x PoE feed-in)
- 1 + 1 x GPS, N female
- 2 x LED, 3-col.(power, status) +2 x

Security
- Hardware Security Module, ECC
- FIPS 140-2 level 3 compliant, CC EAL4+

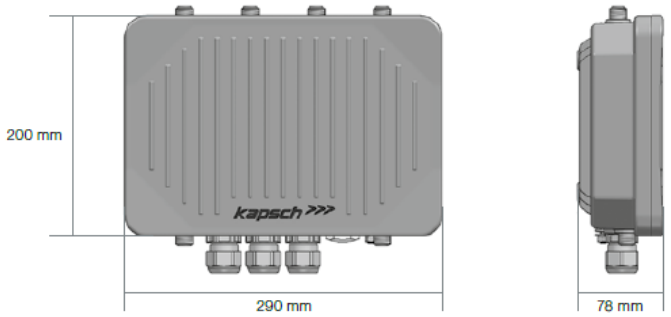
Environmental conditions
- Operation: -40°C to +74°C
- Storage: -40°C to +85°C
- Protection: NEMA Type 4X, IP67

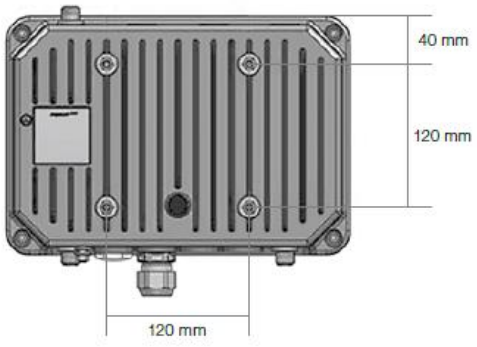
MTBF
- >100.000 hours

Mechanical / Enclosure
- IP67, Ref: IEC 60529
- Aluminium die-cast
- Dimension: 290 x 200 x 78 mm
- Weight: approx.. 3kg

General conformity
- FCC*, CE *

Configuration options**
- 3 x GPIO in, 3 x GPIO out





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

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

CONCORDA

OMNIAIR CERTIFIED

* for DSRC based operation only.

Accesories**
5.9GHz Antenna
GNSS Antenna
Mounting kit
PoE power injector

* Please consider local radio spectrum regulations.
** Request for datasheet

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