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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 (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. The RSU configuration modes include DSRC, C-V2X and dual-mode/dual-active. Our open interface architecture contributes to the scalable and future proof RIS-9260 platform. The RIS-9260 provides fast data exchange between vehicles and the infrastructure 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 may operate simultaneously 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. 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 the 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 party integration.

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

DSRC Radio Characteristics

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

C-V2X Radio Characteristics

3GPP LTE-V2X Rel.14
Freq. band: 5.850 – 5.925 GHz (LTE B47)
10 MHz / 20 MHz, PC5 sidelink
Output power: 20 dBm (power class 3)
Sensitivity: typ. -95 dBm
Antenna 2 (for diversity)

Power Supply

PoE 802.3at-2009 < 25 W max.

Positioning and Time (pps)

Multi GNSS (GPS, GLONASS, Galileo, BeiDou)

External Interfaces (incl. Options)

2 + 2 x 5.9 GHz 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

ECC
Hardware Security Module

MTBF

> 100.000 Hours

Mechanical Enclosure

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

General Conformity

FCC, CE
FCC Class C, range < 400m
Experimental license needed for C-V2X mode operation in US.

Configuration Options

Cellular modem module (3G/LTE) *
3 x GPIO in, 3 x GPIO out
24 V / 48 V DC

Computer Platform

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

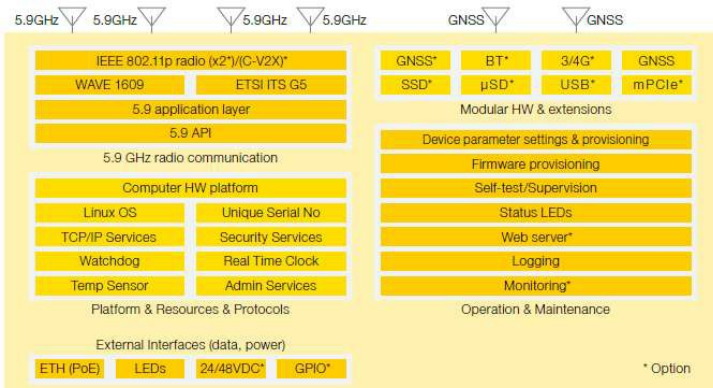
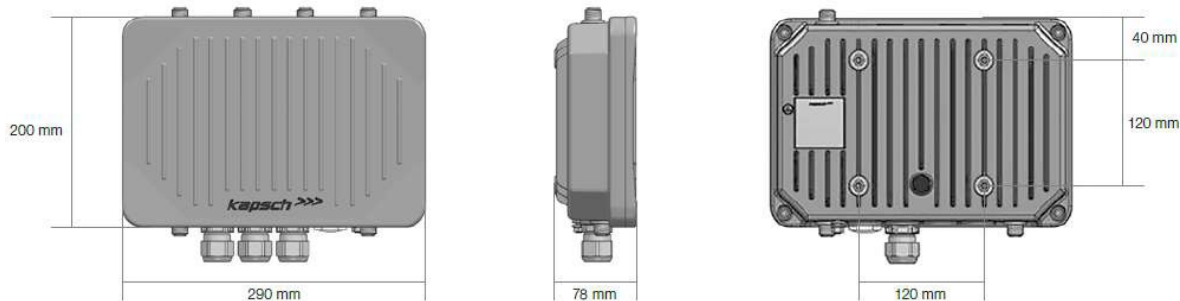
Accessories

5.9 GHz Data Antenna
GNSS Antenna
Mounting kit
PoE power injector

*) Only option

**) Request for datasheet

QAEW basic configuration without options.



Kapsch TrafficCom

Kapsch TrafficCom is a globally renowned provider of transportation solutions for sustainable mobility. Our innovative solutions in the application fields of Tolling, Traffic Management, Demand Management and Mobility Services contribute to a healthy world without traffic congestion. We have brought projects to fruition in more than 50 countries around the globe. With our one-stop solutions, we cover the entire value chain of our customers, from components to design and implementation to the operation of systems.

As part of the Kapsch Group and headquartered in Vienna, Kapsch TrafficCom has subsidiaries and branches in more than 30 countries. It has been listed in the Prime Market segment of the Vienna Stock Exchange since 2007 (ticker symbol: KTCG). Kapsch TrafficCom's about 5,100 employees generated revenues of EUR 731.2 million in financial year 2019/20.