

RSU

Road-Side Unit

DEVICE SPECIFICATIONS

► Technical Specs

- Processor: IMX-6 Quad Core
- RAM: 1 GB DDR3
- Internal NAND: 4 GB
- 1 Cellular Channel (3G/4G/5G)
- ITS-G5 (802.11p), Dual Channel

Operation

(Compliance with ETSI ITS G5 for Europe Operation)

- PC5 (C-V2X release 14)
- WIFI: 802.11a/b/g/n & Bluetooth 4.2
- Ethernet
- SIM slot (uSIM)

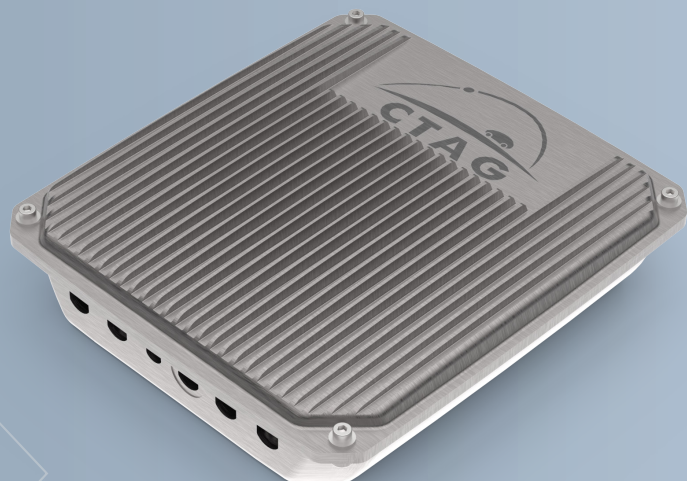
► Functionalities/Capabilities

- Possibility to deploy Cooperative services
- Possibility to deploy Infotainment & Telematic services
- Possibility to deploy AD services
- Possibility to deploy IoT services

► Other

- 12 V (230 V by using an adaptor)
- Dimensions: 238x260x61 mm
- Designed according to ISO16750-2 & 4 (electric B-code & climatic D-code loads)

CTAG ELECTRONICS & ITS DESIGN TEAM



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Road-Side Unit

MAIN INTERFACES

Connectivity

- **ITS-G5 (802.11p)**: The unit is able to communicate through the 802.11p channel, allowing a bidirectional communication with vehicles, and deploying different connectivity applications and services. Physical connector: N-type.

- **PC5**: Release 14. Cellular Vehicle-to-Everything (C-V2X), which uses device-to-device communication at 5.9GHz without requiring the presence of a base station. Physical connector: N-Type

- **Cellular**: Cellular channel can be used for the connection between Road-Side Unit and C-ITS Platform in those places where wired connections are not allowed (rural, isolated areas, etc.). The unit allows to connect different cellular modules in its M.2 connector: 3G/4G/5G. Physical connector: N-Type

- **Ethernet**: Road-Side Unit can connect with the C-ITS Platform with the use of Ethernet in order to synchronize the information of the different events, vehicles, alerts, etc. Physical connector: M12.



- **WIFI 802.11a/b/g/n**: Can be configured as Client or AP mode giving wireless connectivity. This possibility enhances enormously the usability of the device when performing tests (wireless data access ...). Physical connector: N-Type

- **Bluetooth®**: Used to get access to a mobile device (such as the mobile phone or hands-free). Physical connector: N-Type.

- **GPS**. Physical connector: N-Type.

FUNCTIONALITIES

Main Functionalities

Road-Side Unit is a system that allows the bidirectional communication with vehicles in order to allow the implementation of different applications related to Cooperative services (Day 1, Day 1.5...), Infotainment & Telematic services or Automated Driving.

Road-Side Unit also connects with the C-ITS through DATEX II Standard (or other proprietary standards) in order to access the information to be shared with the vehicles.

Software Stack

The Road-Side Unit relies on a Custom Linux distribution that can be customized for different purposes.

Applications are developed under JAVA and the OSGI Framework, allowing a very flexible environment for the implementation and development of different solutions.

ITS Stack has been developed following ETSI Standard for the Geonetworking and Application layers, complying with the latest versions of the defined Standard.

OSGI provides the possibility of creating new Bundles that can use the ITS Stack or the other connectivity functionalities enhancing the flexibility of the unit.

OTHER FEATURES

Storage

- RAM (1 GB)
- Internal Flash Memory (4 GB)

Power Supply

- Power input range: 8-16 V

Housing

- Anodized aluminum
- M12 connector to power supply
- Dimensions: 238x260x61 mm



**ELECTRONICS AND
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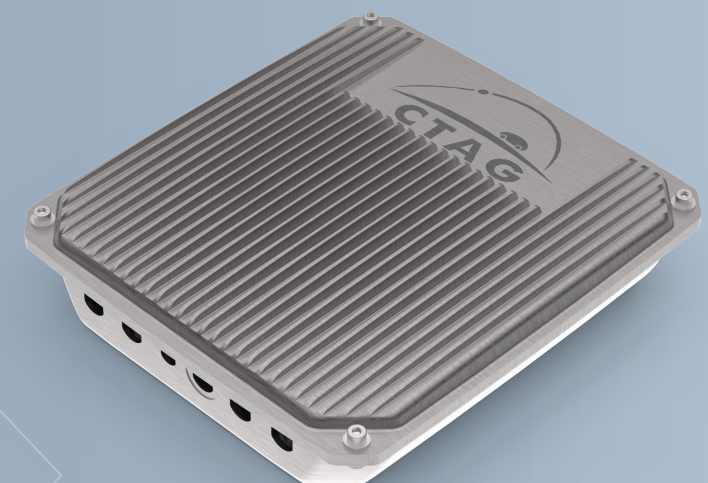
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