

TRX-1320

Single-Lane Transceiver



The single-lane transceiver TRX-1320 is part of the TS3200-06 road-side system. The transceiver is intended for use in applications based on 5.8 GHz Dedicated Short Range Communication (DSRC) according to the European Committee for Standardization (CEN) TC278 DSRC and electronic fee collection (EFC) standards.

The transceiver is designed to be mounted overhead in a single-lane environment. The advanced design of the integral antenna ensures a well-defined zone that eliminates cross lane reading. Within the limits given by the CEN standards, the physical link characteristics of the transceiver such as frequency channel and radiated power are configurable by the host application software.

The transceiver is pre-programmed for several harmonized basic transaction schemes such as A1, CESARE/PISTA, CARDME and AutoPASS. The unit can be configured to handle several different EFC applications based on these schemes. Also the security in the transactions may be handled by the unit and this will reduce and simplify the integration work.

The transceiver interface to the host computer (lane controller) is based on ethernet and the TCP/IP protocol is used to transfer messages between the units. A serial interface (RS232 or RS422/RS485) is also available for service purposes or as an optional connection to the lane controller.

A built-in web server in the transceiver enables the unit to be configured simply by using an ordinary web browser.

Features

- CEN DSRC compliant
- GSS compliant
- ISO/CEN EFC compliant
- A1, CESARE/PISTA, CARDME, AutoPASS compliant
- Well defined communication zone
- Compact
- Software configurable via built-in WEB server
- Rugged design complying IP67

- Ethernet, TCP/IP interface IF to Host Computer
- RS232 or RS422/RS485 IF
- Simultaneous communication with several transponders
- Supervision and logging functionality
- Can autonomously perform parts of or complete transactions
- Built-in security functions



Technical features

DSRC Communication

- In accordance with RTTT-DSRC and EFC standards:
 - EN 12253:2004 DSRC physical layer
 - EN 12795:2003 DSRC data link layer
 - EN 12834:2003 DSRC application layer
 - EN 13372:2004 DSRC profiles for RTTT applications
 - EN ISO 14906:2004 EFC – application interface for DSRC communications
 - GSS (Global Specification for Short Range Communication)
 - Frequency channels: 5.7975 GHz, 5.8025 GHz, 5.8075 GHz, 5.8125 GHz
 - Emitted power max. 2 W (33dBm) EIRP

EFC Functionality

- Communicates with any CEN/GSS compliant transponder
- Supports common transaction schemes such as: A1, CESARE/PISTA, CARDME-4, AutoPASS, etc.
- Supports several EFC applications
- Manages all DES and triple DES security operations according to the different transaction schemes

Host Computer Interface

- Ethernet 10/100BaseT
- TCP/IP Protocol
- API (Application Protocol Interface) including messages for DSRC configuration, EFC application definition and transfer of application data to/from the transponder
- Optional:
 - Serial IF (RS232 or RS422/RS485)
 - BAC (Protocol)

Configuration and test Interface

- Web based interface for:
 - TRX configuration
 - Application definition
 - Log management

Cable Connector

- Connector: Souriau UT0614-12S-H02
- Cable: combined CAT-5 and power supply
- Cable length max: 100 m

Power Supply

- Voltage: 24-48 VDC
- Power consumption: max. 13W, standby 4W

Casing

- Aluminium die casting
- Colour: White (antenna radome)
- Stone grey, RAL7030 (housing)

Weight

- 3 kg

Dimensions

- Width: 260 mm,
- Height: 170 mm
- Depth:
 - 101 mm (TRX-1320-E or R)
 - 86 mm (TRX-1220-E)

MTBF

- 130 000 hours

Temperature Range

- Storage: -40 °C to +70 °C
- Operating: -33 °C to +55 °C

Vibration

- 1–9 Hz, 3,5 mm
- 10–150 Hz, 10 m/s²

Shock

- 150 m/s², 11 ms

Housing

- IP67 ref: IEC 60529

Conformity

- Conforms to R&TTE directive 1999/5/EC test standards:
 - Radio: EN 300 674-1, -2
 - EMC: EN 301 489-1, -3
 - Safety: EN 60 950-1

Models

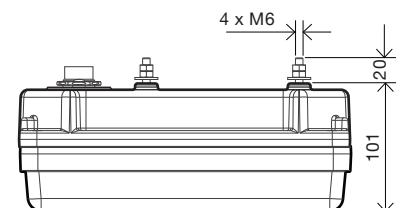
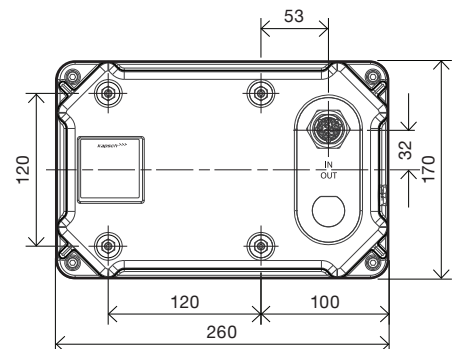
- TRX-1320-E: small communication zone, ethernet and RS232 interface
- TRX-1220-E: wide communication zone, ethernet and RS232 interface
- TRX-1320-R: small communication zone, ethernet and RS422/RS485 interface

Accessories

- Transceiver cable, length and connector assembly specified at time of order
- Connector kit including transceiver connector
- Transceiver power supply 48 VDC, 1 A
- Transient and overvoltage protection for data and powerlines
- For more details see “Electronic Fee Collection System Roadside System TS3200-06 System Description”

Mounting

- Four M6 bolts with 20 mm height on the transceiver rear positioned according to the drawing above. (all dimensions in mm)



Measurements in mm.

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