# RSE651 DSRC TRANSCEIVER



# OVERVIEW

The Q-Free RSE651 is the modern workhorse of DSRC transceivers. It is high-performing and the smallest and lightest transceiver available on the market.

With accurate positioning technology including virtual lobe functionality, the RSE651 is truly versatile and can be used for a variety of CEN DSRC compliant applications, such as:

- Electronic tolling especially multi-lane free flow (MLFF) operations due to synchronization and highly accurate Q-Point positioning
- Congestion charging
- Electronic registration identification
- Digital tachograph verification
- Access control and parking

Save money, time, and trouble during configuration, installation, and operation with Power over Ethernet (POE) and single cable installation.

The Q-Free RSE651 also features high-performance and storage capacity and supports high-speed read and write to all CEN DSRC on-board units (OBUs).

# BENEFITS

- Utilize in CEN DSRC compliant applications
- Verify active status with multi-color LED humanmachine interface (HMI)
- Save money, time, and trouble during configuration, installation, and operation
- Mount on a gantry over the lane or on a roadside pole
- Support a wide variety of tolling, parking, and access control applications





Durable, lightweight transceiver

Cost effective, multipurpose solution



# INDUSTRY-LEADING FEATURES

The Q-Free RSE651 is a flexible product that features:

- Multi-lane/single-lane configuration
- Transparent/stand-alone software
- Built-in security hardware with high-speed Message Authentication Code (MAC) calculation
- Easy configuration of transceiver parameters to avoid cross-talk between neighboring lanes

#### FUTURE-PROOF AND BACKWARD COMPATIBLE

- Backwards compatible with RSE650
- Compatible with any CEN DSRC compliant OBU
- Supports high speed read and write to all CEN DSRC OBU's
- Can be remotely upgraded to support future applications
- Built-in Web interface for easy management

#### PERFORMANCE AND RELIABILITY

- High processing capacity short transaction times
- Low-power technology
- Compact design
- Reduced maintenance (no battery, no fan)
- Short replacement time
- Only one cable in single lane installation (POE)

# **QPOINT POSITIONING TECHNOLOGY**

Q-Free's QPoint Positioning Technology measures position in x/y coordinates of OBU with centimeter precision, enabling:

- Accurate positioning/tracking of OBU's in multilane applications
- Virtual communication zones for single lane applications
- Vehicle speed indication



### TECHNICAL SPECIFICATIONS Max vehicle speed: >200 km/h Operating frequency: 5.7975, 5.8025, 5.8075 and 5.8125

Typical communication zone: Downlink bit rate: Uplink bit rate: Sub carrier frequencies: Receiver sensitivity: Antenna polarization: Radiated power (EIRP): Ethernet: Power supply: Power consumption: Connectors: Temperature: IP rating: MTBF: CEN TC278 DSRC:

GHz 3.5 x 6 m (W x L) @ 6m height 45° installation angle 500 kbps 250 kbps 1.5 MHz (profile 0) 2.0 MHz (profile 1) Class 4 (EN 300 674) Left hand circular Max 33 dBm, (SW Adjustable) 1000BASE-T, 100BASE-TX, 10BASE-T PoE, IEEE 802.3at Type 1 Class 3 Max 12 Watts M12 (IEC61076-2-101) -33°C to +55°C (-27°F to +131°F) IP65 >100,000 hours EN 13372 EN 12253 Physical Layer EN 12795 Data Link Layer ISO 15628 DSRC Application Layer

Human exposure: RED: RoHS: WEEE: Dimensions: Weight:

2 kg

Safety:

Applications:

EN 300 674 EN IEC 62368-1 ISO 14906 / EN 15509 / ISO 15638-9 / ISO 15638-20 / EN 16312 EN62232 2014/53/EU 2011/65/EU 2012/19/EU 310 x 170 x 60 mm

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