Road Side Unit (RSU) for 5.8 GHz CEN DSRC

Description
The Norbit RSU FZ58058 is a multi-application DSRC RSU designed for short range microwave communication in accordance with relevant CEN/TC278 and ETSI standards.

The Road Side Unit operates in the 5.8GHz microwave band. The integrated antenna has an optimized footprint, making the unit ideal for use in gantries, side-pole installations and wide multilane systems.

The Road Side Unit contains both the antenna system and a networkable computer. This results in a powerful system that enables the customer to easily integrate the Road Side Unit into their own systems.

The FZ58058 are delivered in three functional versions:

- Park and Access. Reading OBUs according to pre-defined rules
- Single-lane tolling. Full flexibility interfacing, allowing interactive control of data read and written to OBU
- Multi-lane free flow tolling. Supports any number of RSUs as a single system. Flexible redundancy modes.

Applications
- Electronic Toll Collection systems
- City Tolling / Congestion Charging
- Enforcement systems
- Single lane and Multi Lane Free Flow systems
- Parking and Access systems
- Traffic monitoring

Features
- Low weight
- Low voltage, wide operating voltage range
- Low antenna side lobes, well-defined communication zone
- Outdoor all-weather usage
- Low visual impact on driver
- Compact all-in-one solution, separate DSRC controller not needed
- Network interface
- Optional use of USB and RS485 interfaces
- Supports multiple simultaneous DSRC protocols, including EN15509, PISTA, CARDME, AI, AutoPASS, AS4962-A/B, Thailand, Brazil, OGS, CCC, LAC, AVI
- Easy and flexible interfacing with other systems, a range of interface options available
- Easy installation and maintenance
- Integrated web interface allowing software and configuration update
- Redundancy and auto-configuration support
- Speed and direction of travel for detected OBUs
- Estimated OBU position for multi-lane free flow solutions
- Standalone operation or integration into customer computer systems
- Versions with wider antenna lobes available
- Versions suitable for desktop use and vehicle roof-top integration available
- Enclosure made of UV-resistant PP plastic and corrosion resistant aluminium
### FZ58058 technical features

#### Physical
- **Size**: 580 x 110 mm
- **Weight**: 2.3 kg
- **Enclosure**: Aluminium and Polypropylene (PP)

#### Electrical
- **Power**: 10 – 32 Vdc (*
- **Supply current**: < 1 A
- **Galvanic isolation**: Yes

#### Interfaces
- **Network**: Ethernet 100BaseTx
- **Serial**: RS485 x 2, RS232, USB x 2

#### Environmental
- **Operating temperature**: -33 °C - +55 °C (**)
- **Storage temperature**: -40 °C - +85 °C
- **IP class ref. IEC 60529**: IP 66
- **Climatic**:
  - 4K2, 4Z10, 4Z1, 4Z4, 4Z7
- **Biological/chemical**: 4B1, 4C2
- **Sand/dust**: 4S3
- **Shock/vibration**: 4M4
  - Ref IEC 60721-3-4

#### Lifetime
- **MTBF, ref. MIL-217F**: 140,000 hours

#### Antenna
- **Polarization**: LHCP
- **Gain**: 20 dBi
- **Beamwidth**: 19° (±9.5°) @ -3dB
- **Sidelobe attenuation**: > 17dB
- **Output power**: +33dBm (2W) EIRP

#### Colour
- **Standard colour**: RAL 7042

(*) 24-48 Vdc with DC/DC converter available  
(**) Extended temperature range available

### DSRC Communication
- **Physical layer**: EN 12253
- **Data link layer**: EN 12795
- **Application layer**: EN 12834/ISO 15628
- **EFC application profile**: EN 13372 (Profile 0/I)
- **DSRC Profile**: GSS 3.2, EN 15509
- **Interoperability**:
  - ISO/TS 12813 (CCC)
  - ISO/TS 13141 (LAC)
  - EN 16312 (AVI/AEI)
  - EN ISO 17264 (AVI interfaces)
  - 2014/799/EU RTM/OWL

### DSRC compliance verification
- **Data link layer**: ETSI TS 102486-1
- **Application layer**: ETSI TS 102 486-2
- **EN 14906 compliance**: EN 15876
- **EN 15509 compliance**: EN 300 674, EN 301 489

#### Transmitter
- **Frequency range**: 5.7975 GHz, 5.8025 GHz, 5.8075 GHz, 5.8125 GHz

### Approvals
- **EMC**: ETSI EN 301 489-1
- **DSRC**: ETSI EN 300 674, EN 301 489

### Conformance
- **Ref. 99/5/EC**: ETSI EN 300 674-2-1
- **EMC**: ETSI EN 301 489
- **RoHS**: Ref. 2011/65/EU
- **WEEE**: Ref. 2012/19/EU

### Optional accessories
- Pre-made cable
- Tilt and swivel mounting bracket

### Ordering information

<table>
<thead>
<tr>
<th>PartNo</th>
<th>20009-4-XXXXX</th>
<th>DSRC Interrogator</th>
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<tbody>
<tr>
<td><strong>Product version</strong></td>
<td></td>
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<tr>
<td><strong>Functionality options</strong>: A = Access &amp; Parking, S = Single lane tolling, M = Multi-lane tolling</td>
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<tr>
<td><strong>Back lid options</strong>: B = standard</td>
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<tr>
<td><strong>Enclosure collar options</strong>: B = standard</td>
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<tr>
<td><strong>Enclosure colour options</strong>: A = RAL 7042 (standard), B = RAL 7043</td>
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<tr>
<td><strong>Antenna gain options</strong>: H = High (standard), M = Medium (FZ40058), L = Low (FZ29058)</td>
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