

SENCITY® Rail PTC Antenna 1302.99.0026

Description

Railway rooftop antenna for Positive train control (220 MHz).
 Embedded GNSS antenna with integrated LNA.
 Supports GPS L1, Galileo E1, BeiDou B1 and GLONASS G1.
 Rugged design, meets EN 50155 Railway Standard.
 Fire retardant according to EN 45545-2 and NFPA-130.
 Dedicated grounding contact (optional).
 Cable conduit support (optional).



Product Configuration

Technical Data

Electrical Data

| | Band 1 | Band 2 |
|--------------------------|-----------------|-------------|
| Band Name | PTC | GNSS |
| Frequency (MHz) | 219.98 - 220.02 | 1559 - 1620 |
| VSWR | 1.5 | 1.8 |
| Impedance (Ohm) | 50 | 50 |
| Gain (dBi) | 1.72 | |
| Composite power max (W) | 80 | |
| Ambient temperature (°C) | 25 | |

Ports

| | Port 1 | Port 2 |
|--------------|------------------|------------------|
| Port name | PTC | GNSS |
| Connector | N, jack (female) | TNC, plug (male) |
| Polarization | vertical | circular right |
| DC grounded | Yes | No |

Connections

| | Band 1 | Band 2 |
|--------|--------|--------|
| Port 1 | X | |
| Port 2 | | X |

General Data

Indicated VSWR values are valid for a metallic ground plane of 2.0 x 2.0m or larger. Indicated gain values will be achieved on a metallic ground plane of 1.0 x 1.0 m or larger.

Electrical Data LNA

| | |
|------------------------------|---------|
| LNA noise figure dB | 1.6 |
| LNA current consumption (mA) | 20 |
| LNA is connected to | Port 2 |
| MTBF (h) | 3000000 |

This Antenna is compliant with the Radio Equipment Directive 2014/53/EU

EMC: EN50121-3-2 (2016)

ETSI EN 303 413 V.1.1.1 (2017-06)

ETSI EN 301 489-1 V2.2.3 (2019-03)

ETSI EN 301 489-19 V2.1.1 (2019-04)

LNA input voltage range: 3...5V

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Total gain @90° elevation: 30 dBiC

Values for LNA power consumption, noise figure and gain are given for a 5V operating voltage and may differ slightly for a lower voltage.

Mechanical Data

| | |
|-----------------|--|
| Dimensions (mm) | 154 x 100 x 256 (Height x Width x Depth) |
| Weight (kg) | 1.6 |

High-voltage-protection: no voltage on RF port, if the catenary line touches antenna (EN 50124-1, 27.5 kVAC/1min).

High-current-protection: Designed acc. to UIC 533, DC-grounded antenna element protection against lightning and short circuit with catenary lines (EN50388, EN 50122-1, 40kA/0.125sec)

Corrosion: Low corrosion design according to MIL-F-14072(E), 96 hours Salt Spray test.

Mounting: Shall be installed in longitudinal position to the wind/driving direction.

Suitable for installation on high speed trains with a maximum speed of 500 km/hr.

Environmental Data

| | |
|--|---------------------------|
| Environmental conditions | indoor/outdoor |
| Operation temperature (°C) | -55 to 85 |
| Storage temperature (°C) | -55 to 85 |
| Transport temperature (°C) | -55 to 85 |
| IP rating | IP67, IP69 |
| Flammability rating | EN 45545-2 R24 HL3 |
| Solar radiation | UL 746C, F1 |
| 2011/65/EU (RoHS - including 2015/863 and 2017/2102) | compliant acc. Annex III |
| Lead-free soldered | yes |
| WEEE 2012/19/EU | no special marking needed |
| ELV 2000/53/EC | compliant |
| REACH 1907/2006/EC | compliant |

Environmental tests: EN 50155:2018-05

Flammability rating: EN45545-2:2013 + A1:2015, NFPA-130:2017

Tested according to ISO 4589-2:2017, NFX 70-100-1:2006, ISO 5659-2:2011.

Material Data

| | |
|--------------------------------|----------------------|
| Radome colour | RAL 7043 (dark grey) |
| Radome material | PC (Polycarbonate) |
| Back plate/base plate colour | grey |
| Back plate/base plate material | Aluminium |
| Plating | Passivated (Plating) |

Related Products

9091.99.0235 Sencity Rail antenna grounding kit

9091.99.0236 Sencity Rail antenna conduit support Kit

9091.99.0261 Sencity Rail antenna mounting plate

9091.99.0252 Sencity Rail antenna adaptor plate

Related Documents

| | |
|----------------------|----------------|
| Mounting instruction | DOC-0000295392 |
| Painting instruction | DOC-0000256180 |
| Security instruction | DOC-0000278984 |
| Outline drawing | DOU-00399698 |
| Outline drawing 2 | DOU-00154160 |
| 3D-model | DOC-0000890925 |
| CE compliancy | DOC-0000896952 |

Additional Information

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