

SENCITY® Rail MIMO Low Profile Antenna 1399.17.0145

Description

Railway rooftop antenna for Cellular and Wi-Fi bands.
 Supports 2x2 Cellular MIMO for 3G, 4G and 5G.
 Supports 2x2 Wi-Fi MIMO in all Wi-Fi 6E bands.
 Rugged design, meets EN 50155 railway standard.
 Fire retardant acc. to EN 45545-2 and NFPA130.
 High Voltage and High Current protection for use under catenary lines.
 Ultra low profile (40mm).



Product Configuration

Technical Data

Electrical Data

| | Band 1 | Band 2 | Band 3 | Band 4 |
|--------------------------|-----------|-------------|-------------|-------------|
| Frequency (MHz) | 694 - 960 | 1350 - 1450 | 1450 - 2700 | 3300 - 4900 |
| VSWR | 1.8 | 1.9 | 1.6 | 1.8 |
| Impedance (Ohm) | 50 | 50 | 50 | 50 |
| Gain (dBi) | 5 | 7 | 6.5 | 7.5 |
| Composite power max (W) | 40 | 40 | 40 | 40 |
| Ambient temperature (°C) | 25 | 25 | 25 | 25 |
| Port Isolation (dB) | 15 | 16 | 20 | 25 |

| | Band 5 | Band 6 |
|--------------------------|-------------|-------------|
| Frequency (MHz) | 4900 - 5150 | 5150 - 7125 |
| VSWR | 1.8 | 1.8 |
| Impedance (Ohm) | 50 | 50 |
| Gain (dBi) | 9 | 8 |
| Composite power max (W) | 40 | 40 |
| Ambient temperature (°C) | 25 | 25 |
| Port Isolation (dB) | 25 | 25 |

Ports

| | Port 1 | Port 2 |
|------------------|------------------|------------------|
| Port name | Cell/Wi-Fi 1 | Cell/Wi-Fi 2 |
| Connector | N, jack (female) | N, jack (female) |
| Cable Type | RADOX_RF_316_D | RADOX_RF_316_D |
| Cable Length (m) | 0.24 | 0.18 |
| Polarization | vertical | vertical |
| DC grounded | Yes | Yes |

Connections

| | Band 1 | Band 2 | Band 3 | Band 4 | Band 5 | Band 6 |
|--------|--------|--------|--------|--------|--------|--------|
| Port 1 | X | X | X | X | X | X |
| Port 2 | X | X | X | X | X | X |

General Data

Indicated VSWR and gain values are valid for a metallic ground plane of 0.5 x 1 m or larger.

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Mechanical Data

| | |
|-----------------|---|
| Dimensions (mm) | 40 x 108 x 474 (Height x Width x Depth) |
| Weight (kg) | 1.3 |

High-voltage-protection: no voltage on RF port, if catenary line touches antenna (EN 50124-1, 3.8 kVDC, 27.5 kVAC)

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

Corrosion: Low corrosion design acc. to MIL-F-14072(E).

Mounting: Shall be installed in longitudinal position to the wind/driving direction. 4x composite sealing washers included for silicone-free sealing of the mounting screws.

Environmental Data

| | |
|--|---------------------------|
| Environmental conditions | indoor/outdoor |
| Operation temperature (°C) | -55 to 85 |
| Storage temperature (°C) | -55 to 85 |
| IP rating | IP69 |
| Flammability rating | EN 45545-2 |
| 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 |

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.

Environmental tests: EN 50155:2018-05

§13.4.6 EN 60068-2-1:2008-01 Cold temperature test Ab, -55°C, 16h

§13.4.5 EN 60068-2-2:2008-01 Dry heat test Be +85°C, 16h

§13.4.7 EN 60068-2-30:2006-06 Damp heat cyclic test Db, +25/55°C, 2 cycles

§13.4.10 EN 60068-2-11:2000-02 Salt mist test, 96h

§13.4.11 EN 61373:2011-04 § 8, Cat. 1B Broadband Random Vibration

§13.4.11 EN 61373:2011-04 § 9, Cat. 1B Increased Random Vibration

§13.4.11 EN 61373:2011-04 § 10, Cat. 1B Mechanical shock

§13.4.12 Ingress Protection EN 60529:2014-09 IP6X, IPX5, IPX6, IPX8, IPX9

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

9091.99.0257 Sencity Rail - M10 sealing washer kit

9091.99.0235 Sencity Rail antenna grounding kit

Related Documents

| | |
|----------------------|----------------|
| Mounting instruction | DOC-0000915219 |
| Painting instruction | DOC-0000256180 |
| Security instruction | DOC-0000278984 |
| Outline drawing | DOU-00464301 |
| 3D-model | DOC-0000895402 |

Additional Information

This product meets the Deutsche Bahn specifications for rolling stock equipment. Protected by Patents: DE202015009331(U1), US10116056(B2), CN106663861B.