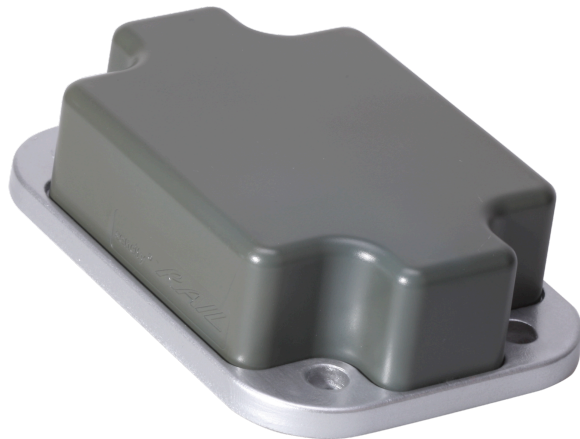


**SENCITY® Rail Low Profile Antenna with GNSS/LNA**

1399.99.0037

**Properties**

- Railway rooftop antenna for 2G/3G/4G cellular and Wi-Fi 4/Wi-Fi 6 bands
- Multiple Antenna installations support Cellular and Wi-Fi MIMO
- Includes embedded GNSS antenna with integrated LNA supporting GPS L1, Galileo E1, BeiDou B1 and GLONASS G1
- Rugged design, meets EN 50155 Railway Standard
- Fire retardant according to EN 45545-2
- Extremely low profile (40mm)



| Electrical data     |                     |                     |                     |                       |
|---------------------|---------------------|---------------------|---------------------|-----------------------|
|                     | Band 1              | Band 2              | Band 3              | Band 4                |
| Name                |                     |                     |                     |                       |
| Frequency           | 790 MHz ... 806 MHz | 806 MHz ... 870 MHz | 870 MHz ... 960 MHz | 1350 MHz ... 2700 MHz |
| Impedance           | 50 Ω                | 50 Ω                | 50 Ω                | 50 Ω                  |
| VSWR                | 2.2                 | 1.8                 | 1.5                 | 2                     |
| Gain                | 5 dBi               | 5 dBi               | 5 dBi               | 5 dBi                 |
| Ambient Temperature | 25 °C               | 25 °C               | 25 °C               | 25 °C                 |
| Composite Power max | 200 W               | 192 W               | 183 W               | 123 W                 |

|                     | Band 5                | Band 6                |
|---------------------|-----------------------|-----------------------|
| Name                |                       | GNSS                  |
| Frequency           | 4900 MHz ... 6425 MHz | 1559 MHz ... 1610 MHz |
| Impedance           | 50 Ω                  | 50 Ω                  |
| VSWR                | 2.1                   | 1.8                   |
| Gain                | 8 dBi                 |                       |
| Ambient Temperature | 25 °C                 |                       |
| Composite Power max | 67 W                  |                       |

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| Electrical remarks |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remarks            | <p>Indicated VSWR values are valid for a metallic ground plane of 0.2 x 0.2m or larger. Indicated gain values will be achieved on a metallic ground plane of 1 x 1 m or larger.</p> <p>High-voltage-protection: no voltage on RF port, if catenary line touches antenna (EN 50124-1, 24 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/0.1sec)</p> |

| Ports        |                  |                  |
|--------------|------------------|------------------|
|              | Port 1           | Port 2           |
| Connector    | N, jack (female) | TNC, plug (male) |
| Polarization | vertical         | circular right   |
| DC grounded  | Yes              | Yes              |

| Connections |        |        |
|-------------|--------|--------|
|             | Port 1 | Port 2 |
| Band 1      | ✓      |        |
| Band 2      | ✓      |        |
| Band 3      | ✓      |        |
| Band 4      | ✓      |        |
| Band 5      | ✓      |        |
| Band 6      |        | ✓      |

| Electrical data LNA       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LNA is connected to       | Port 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Input voltage             | 3 V ... 5 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Current consumption       | 30 mA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Noise figure              | 1.8 dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Total gain @90° elevation | 30 dBic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Remarks                   | <p>This Antenna is compliant with the Radio Equipment Directive 2014/53/EU<br/>           EMC: EN50121-3-2 (2016)<br/>           ETSI EN 303 413 V.1.1.1 (2017-06)<br/>           ETSI EN 301 489-1 V2.2.3 (2019-03)<br/>           ETSI EN 301 489-19 V2.1.1 (2019-04)<br/>           Values for LNA power consumption, noise figure and gain are given for a 5V operating voltage and may differ slightly for a lower voltage.<br/>           Antennas with production date prior to 01-Oct-2020 support only GPS bands between 1574.397 - 1576.443 MHz</p> |

| Mechanical data |                                                  |
|-----------------|--------------------------------------------------|
| Weight          | 0.535 kg                                         |
| Dimensions      | 40 mm x 100 mm x 145 mm (Height x Width x Depth) |
| Windload        | Wind Speed survival: 500 km/h                    |

**SENCITY® Rail Low Profile Antenna with GNSS/LNA**

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| Mechanical data |                                                                                                                                                                                                                                                                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remarks         | Corrosion Low corrosion design acc. to MIL-F-14072(E).<br>Mounting Shall be installed in longitudinal position to the wind/<br>driving direction.<br>Suitable for installation on high speed trains with a maximum<br>speed of 500 km/hr.<br>4x composite sealing washers included for silicone-free<br>sealing of the mounting screws. |

| Material data                  |                                           |
|--------------------------------|-------------------------------------------|
| Radome material                | ASA (acrylic ester-styrene-acrylonitrile) |
| Radome colour                  | RAL 7043 (dark grey)                      |
| Back plate/base plate material | Aluminum                                  |
| Back plate/base plate plating  | Passivated (Plating)                      |
| Back plate/base plate colour   | Grey                                      |

| Environmental data             |                  |
|--------------------------------|------------------|
| Operation temperature          | -40 °C ... 85 °C |
| Storage temperature            | -55 °C ... 85 °C |
| Environment (application)      | Outdoor          |
| Ingress protection (IP Rating) | Mated / IP69     |
| Flammability rating            | EN 45545-2       |
| Solar radiation                | DIN 75220        |

| Environmental remarks              |
|------------------------------------|
| Environmental tests: EN 50155:2007 |

| Additional Information                                                           |
|----------------------------------------------------------------------------------|
| This product meets the Deutsche Bahn specifications for rolling stock equipment. |

| Antenna accessories |             |                                       |
|---------------------|-------------|---------------------------------------|
| Item description    | Item number | Product name                          |
| 9091.99.0257        | 85068234    | Sencity Rail - M10 sealing washer kit |
| 9090.99.0062        | 84098894    | Sencity Rail mounting plate           |

| Ordering information |             |                                                    |
|----------------------|-------------|----------------------------------------------------|
| Item description     | Item number | Product name                                       |
| 1399.99.0037         | 84080682    | SENCITY® Rail Low Profile<br>Antenna with GNSS/LNA |

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