

## SENCITY® Rail Antenna 1399.99.0026

### Description

Railway rooftop antenna for Tetra, DVB-T, 2G/3G/4G/5G cellular and Wi-Fi 4/Wi-Fi 6 bands.  
 Multiple Antenna installations support Cellular and Wi-Fi MIMO.  
 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 3	Band 4
Frequency (MHz)	380 - 694	694 - 960	1350 - 1525	1710 - 2700
VSWR	1.8	1.8	1.5	1.5
Impedance (Ohm)	50	50	50	50
Gain (dBi)	3	4	7.5	7.5
Composite power max (W)	80	80	80	80
Ambient temperature (°C)	25	25	25	25

	Band 5	Band 6	Band 7	Band 8
Band Name				GNSS
Frequency (MHz)	2700 - 3300	3300 - 4900	4900 - 6425	1559 - 1610
VSWR	1.5	1.7	1.5	1.8
Impedance (Ohm)	50	50	50	50
Gain (dBi)	6.5	7	8	
Composite power max (W)	80	80	80	
Ambient temperature (°C)	25	25	25	

#### Ports

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

#### Connections

	Band 1	Band 2	Band 3	Band 4	Band 5	Band 6	Band 7	Band 8
Port 1	X	X	X	X	X	X	X	
Port 2								X

#### General Data

Indicated VSWR values are valid for a metallic ground plane of 0.5 x 0.5m or larger. Indicated gain values will be achieved on a metallic ground plane of 1 x 1 m or larger.

#### Electrical Data LNA

LNA noise figure dB	1.6
LNA current consumption (mA)	20
LNA is connected to	Port 2

## SENCITY® Rail Antenna 1399.99.0026

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

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.

Antennas with production date prior to 01-Oct-2020 support only GPS bands between 1574.397 - 1576.443 MHz.

### 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/0.1sec)

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.

Antennas with production date prior to 01-Oct-2020 do not have NFPA-130 compliance.

### Material Data

Radome colour RAL 7043 (dark grey)  
Radome material ASA (acrylic ester-styrene-acrylonitrile)  
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-00135091  
Outline drawing 2 DOU-00154160  
3D-model DOC-0000339670  
CE compliancy DOC-0000896952

## SENCITY® Rail Antenna 1399.99.0026

### Additional Information

This product meets the Deutsche Bahn specifications for rolling stock equipment. Protected by Patents: US7327320B2, CN1765030B, AU2003218856A1, CA2521771C, SG114406, ZA200508290.