

SENCITY® Rail PTC Antenna with GNSS/LNA

1302.99.0026

Properties

- 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 and Cable conduit support (sold separately)

**Electrical data**

	Band 1	Band 2
Name	PTC	GNSS
Frequency	219.98 MHz ... 220.02 MHz	1559 MHz ... 1620 MHz
Impedance	50 Ω	50 Ω
VSWR	1.5	1.8
Gain	1.72 dBi	
Ambient Temperature	25 °C	
Composite Power max	80 W	

Electrical remarks

Remarks	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.
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Ports

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

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Connections		
	Port 1	Port 2
Port name	PTC	GNSS
Band 1	✓	
Band 2		✓

Electrical data LNA	
LNA is connected to	Port 2
Input voltage	3 V ... 5 V
Current consumption	20 mA
Noise figure	1.6 dB
Total gain @90° elevation	30 dBic
Remarks	MTBF (h): 3000000 Values for LNA power consumption, noise figure and gain are given for a 5V operating voltage and may differ slightly for a lower voltage. This Antenna is compliant with the Radio Equipment Directive 2014/53/EU: EMC: EN50121-3-2 (2016) ETSI EN 303 413 V1.1.1 (2017-06) ETSI EN 301 489-1 V2.2.3 (2019-03) ETSI EN 301 489-19 V2.1.1 (2019-04)

Mechanical data	
Weight	1.6 kg
Dimensions	154 mm x 100 mm x 256 mm (Height x Width x Depth)
Windload	Wind Speed survival: 500 km/h
Remarks	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.

Material data	
Radome material	PC (Polycarbonate)
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	-55 °C ... 85 °C
Storage temperature	-55 °C ... 85 °C
Transport temperature	-55 °C ... 85 °C
Environment (application)	Indoor/Outdoor
Ingress protection (IP Rating)	IP67, IP69
Flammability rating	EN 45545-2 R24 HL3
Solar radiation	UL 746C, F1

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Environmental remarks
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.

Ordering information		
Item description	Item number	Product name
1302.99.0026	85142011	SENCITY® Rail PTC Antenna with GNSS/LNA

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DOCUMENT PIM-P3324 / Date of publication: 29.07.2025 / uncontrolled copy