

SENCITY® Rail Antenna with GNSS/LNA

1399.99.0026

Properties

- Railway rooftop antenna for Tetra, DVB-T, 2G/3G/4G/5G cellular and Wi-Fi 4/Wi-Fi 6 bands
- 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 and NFPA-130
- Dedicated grounding contact and Cable conduit support (sold separately)



Electrical bands				
	Band 1	Band 2	Band 3	Band 4
Name				
Frequency	380 MHz ... 694 MHz	694 MHz ... 960 MHz	1350 MHz ... 1525 MHz	1710 MHz ... 2700 MHz
Impedance	50 Ω	50 Ω	50 Ω	50 Ω
VSWR	1.8	1.8	1.5	1.5
Gain	3 dBi	4 dBi	7.5 dBi	7.5 dBi
Ambient Temperature	25 °C	25 °C	25 °C	25 °C
Composite Power max	80 W	80 W	80 W	80 W

	Band 5	Band 6	Band 7	Band 8
Name				GNSS
Frequency	2700 MHz ... 3300 MHz	3300 MHz ... 4900 MHz	4900 MHz ... 6425 MHz	1559 MHz ... 1610 MHz
Impedance	50 Ω	50 Ω	50 Ω	50 Ω
VSWR	1.5	1.7	1.5	1.8
Gain	6.5 dBi	7 dBi	8 dBi	
Ambient Temperature	25 °C	25 °C	25 °C	
Composite Power max	80 W	80 W	80 W	

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Electrical remarks	
Remarks	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. 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)

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

Connections		
	Port 1	Port 2
Band 1	✓	
Band 2	✓	
Band 3	✓	
Band 4	✓	
Band 5	✓	
Band 6	✓	
Band 7	✓	
Band 8		✓

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 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) 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	
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

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Mechanical data	
Remarks	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.

Interface and 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

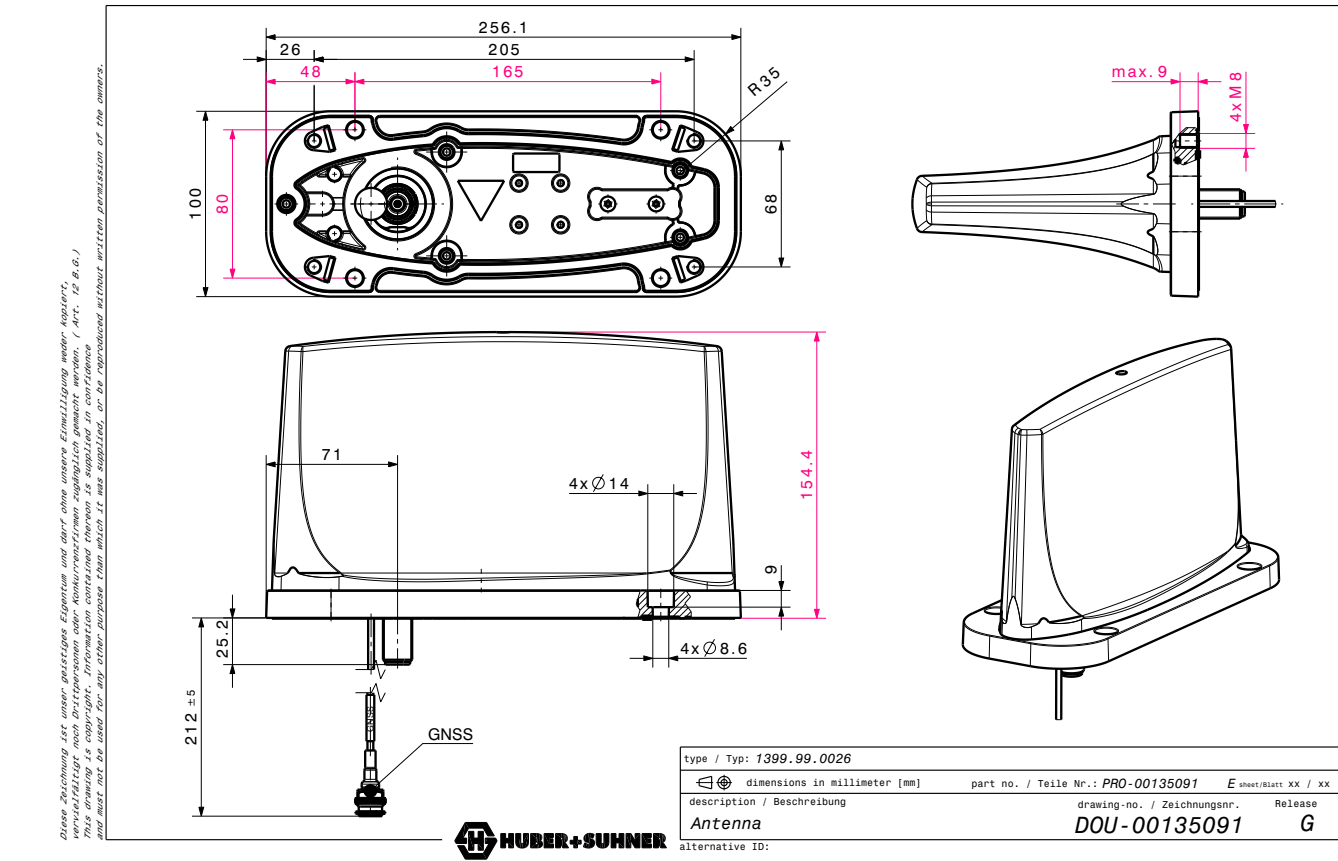
Environmental data	
Operation temperature	-55 °C ... 85 °C
Storage temperature	-55 °C ... 85 °C
Transport temperature	-55 °C ... 85 °C
Environment (application)	Indoor/Outdoor
Ingress protection (IP Rating)	Mated / IP67, IP69
Flammability rating	EN 45545-2 R24 HL3
Solar radiation	UL 746C, FI
Standards	Railway EN 45545

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

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

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Outline drawing



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