

SENCITY® Rail MULTI 7-Port Antenna with Dualband GNSS/LNA

1399.99.0162

Properties

- Railway rooftop antenna for 2G/3G/4G/5G cellular and Wi-Fi 4/Wi-Fi 6 bands.
- Cellular 4x4 MIMO with four separate broadband integrated antennas and Wi-Fi 2x2 MIMO with two separate antennas
- Rugged design, meets EN 50155 Railway Standard
- Fire retardant acc. to EN 45545-2 and NFPA130
- Includes dualband GNSS antenna & integrated LNA covering GPS L1+L2+L5/ Galileo E1+E5a+E5b/BeiDou B1+B2+B3/GLONASS G1+G2



Electrical bands				
	Band 1	Band 2	Band 3	Band 4
Name	Cellular 1-4	Cellular 1-4	Cellular 1-4	Cellular 1-4
Frequency	617 MHz ... 694 MHz	694 MHz ... 960 MHz	1350 MHz ... 3300 MHz	3300 MHz ... 7125 MHz
Impedance	50 Ω	50 Ω	50 Ω	50 Ω
VSWR	1.7	1.6	1.8	1.9
Gain	3.5 dBi	5 dBi	6 dBi	6 dBi
Isolation between Ports	13 dB	13 dB	20 dB	25 dB
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	Wi-Fi 1-2	Wi-Fi 1-2	GNSS 1	GNSS 2
Frequency	2400 MHz ... 2500 MHz	4900 MHz ... 7125 MHz	1164 MHz ... 1279 MHz	1555 MHz ... 1610 MHz
Impedance	50 Ω	50 Ω	50 Ω	50 Ω
VSWR	1.7	1.5		1.5
Gain	7 dBi	7 dBi		
Isolation between Ports	22 dB	35 dB		
Ambient Temperature	25 °C	25 °C		
Composite Power max	80 W	80 W		

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Electrical remarks	
Remarks	The antenna provides 4 separate cable leads defined as "Port 1". The antenna provides 2 separate cable leads defined as "Port 2". Ground plane: VSWR and gain values are also valid for installations on non-metallic surfaces (no specific ground plane requirements). Please refer to the outline drawing to read the cable pigtail length of each port.

Ports			
	Port 1	Port 2	Port 3
Port name	Cellular 1-4	Wi-Fi 1-2	GNSS
Connector	N, jack (female)	N, jack (female)	TNC, plug (male)
Cable type	RADOX_RF_316_D	RADOX_RF_316_D	
Polarization	vertical	vertical	circular right
DC grounded	Yes	Yes	

Connections			
	Port 1	Port 2	Port 3
Port name	Cellular 1-4	Wi-Fi 1-2	GNSS
Band 1	✓		
Band 2	✓		
Band 3	✓		
Band 4	✓		
Band 5		✓	
Band 6		✓	
Band 7			✓
Band 8			✓

Mechanical data	
Weight	8 kg
Dimensions	84 mm x 380 mm x 439.5 mm (Height x Width x Depth)
Remarks	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	PC (Polycarbonate)
Radome colour	RAL 7043 (dark grey)
Back plate/base plate material	Aluminium

Environmental data	
Operation temperature	-40 °C ... 85 °C
Storage temperature	-55 °C ... 85 °C
Transport temperature	-40 °C ... 85 °C
Environment (application)	Outdoor
Ingress protection (IP Rating)	IP69

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Environmental data

Flammability rating	EN 45545-2 R24 HL3
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Environmental remarks

Environmental tests: EN 50155:2022-06

§12.2.3 EN 60068-2-1 Cold temperature test Ad, -55°C, 16h

§12.2.4 EN 60068-2-2 Dry heat test Bd +85°C, 16h

§12.2.5 EN 60068-2-30 Damp heat cyclic test Db, +25/55°C, 2 cycles

§12.2.10 EN 60068-2-11 Salt Mist test Ka, 96h

§12.2.11 EN 61373 § 9 Random Vibration (Long life) test, Cat. 1 class B

§12.2.11 EN 61373 § 10 Mechanical shock test, Cat. 1 class B

§12.2.12 DIN EN 60529 Ingress protection test, IP69

Flammability rating: EN45545-2:2020 + A1:2015, NFPA-130:2020

Tested according to ISO 4589-2:2017, NFX 70-100-1:2006, ISO 5659-2:2011

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.

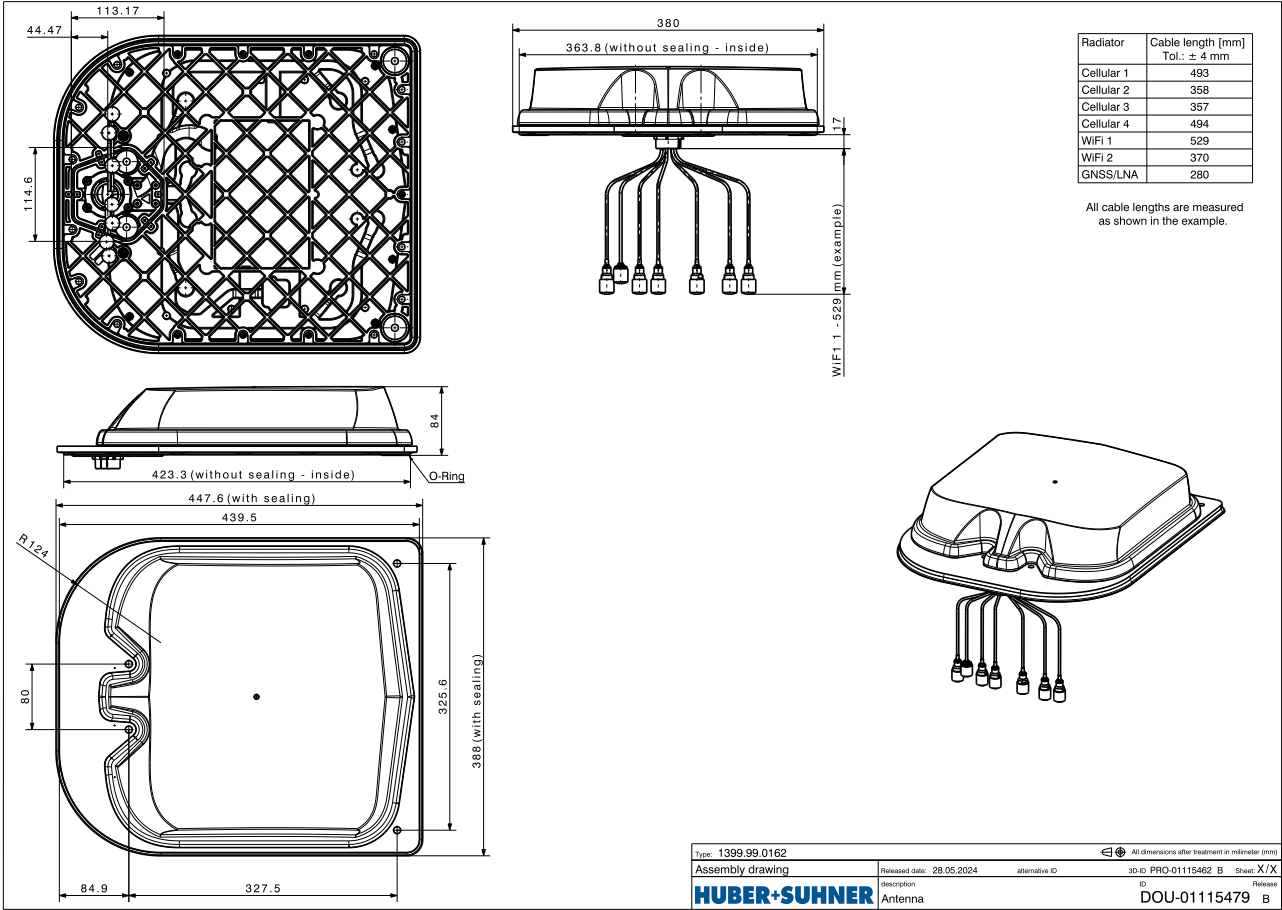
Additional Information

The antenna needs a customer specific bracket when mounted on a curved roof (not part of the delivery content of the antenna). A standard bracket is available for the antenna mounting above an existing cable breakthrough on a flat roof (Article Number 9091.99.0270).

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Outline drawing



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