Data Sheet

SENCITY® Rail Excel Antenna
1356.17.0042

Description

Railway rooftop 2 port bi-directional high gain antenna for Wi-Fi 2 / Wi-Fi 5 bands.
Designed for use with dedicated trackside/tunnel antennas.
Supports the 4.9 to 5.975 GHz bands.
Vertically polarised radiation pattern.
Rugged design, meets EN 50155 Railway Standard.
Fire retardant according to EN 45545-2 and NFPA-130.
Works also on non-metallic surfaces.



Product Configuration

Technical Data

Electrical Data

	Band 1	Band 2	Band 3	Band 4
Frequency (MHz)	4900 - 5150	5150 - 5470	5470 - 5725	5725 - 5935
VSWR	1.7	1.6	1.6	1.6
Impedance (Ohm)	50	50	50	50
Gain (dBi)	11.5	11.5	11.5	11.5
3dB beamwidth (h) (°)	47	43	36	35
3dB beamwidth (v) (°)	20	17	17	19
Composite power max (W)	300	300	300	300
Ambient temperature (°C)	25	25	25	25

Ports

	Port 1	Port 2
Port name	Forward	Backward
Connector	N, jack (female)	N, jack (female)
Polarization	vertical	vertical
DC grounded	Yes	Yes

Connections

	Band 1	Band 2	Band 3	Band 4
Port 1	X	X	X	X
Port 2	X	X	X	X

General Data

Indicated VSWR values are also valid for installations on non-metallic surfaces (no specific ground plane requirements). Indicated gain values will be achieved on a metallic ground plane of 1 x 1 m or larger.

The above listed parameters are valid for port 1. Port2 meets the following specification:
frequency range 4900 - 5150 MHz, VSWR 1.7, Gain 12.5 dBi
frequency range 5150 - 5470 MHz, VSWR 1.6, Gain 13.0 dBi
frequency range 5470 - 5725 MHz, VSWR 1.6, Gain 13.0 dBi
frequency range 5725 - 5935 MHz, VSWR 1.6, Gain 13.0 dBi

Please refer to the outline drawing to identify port 1 and port 2.

There is no applicable EU directive nor related harmonized standard for passive antennas. Consequently there is no CE marking on these antennas and no EU Declaration of Conformity can be issued.

Data Sheet

SENCITY® Rail Excel Antenna
1356.17.0042

Mechanical Data

Dimensions (mm)	90 x 260 x 100 (Heigth x Width x Depth)
Weight (kg)	1.4

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	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	not soldered
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	PC (Polycarbonate)
Back plate/base plate colour	RAL 7043 (dark grey)
Back plate/base plate material	Aluminium

Related Documents

Mounting instruction	DOC-0000246460
Painting instruction	DOC-0000256180
Security instruction	DOC-0000278984
Outline drawing	DOU-00090300
3D-model	DOC-0000252389

Additional Information

This product meets the Deutsche Bahn specifications for rolling stock equipment.

Waiver: Fact and figures herein are for information only and do not represent any warranty of any kind.