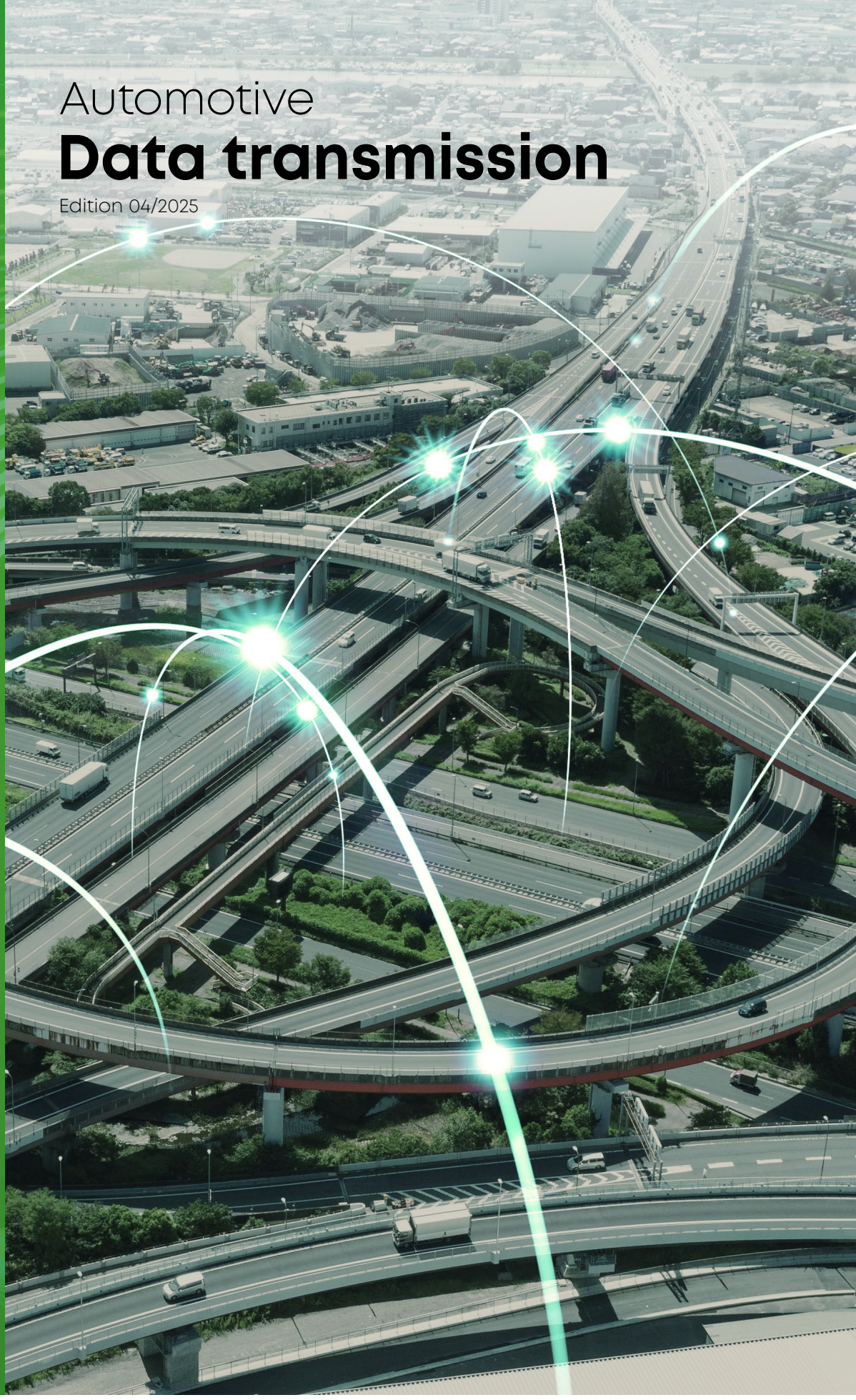
Automotive

Data transmission

Edition 04/2025



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HUBER+SUHNER


Connecting – today and beyond

HUBER+SUHNER is a global company with headquarters in Switzerland which develops and manufactures components and system solutions for electrical and optical connectivity. With cables, connectors and systems – developed from the three core technologies of radio frequency, fiber optics and low frequency – the company serves customers in the communication, transportation and industrial sectors.

The products deliver high performance, quality, reliability and long service life – even under the toughest of conditions. The company's global production network, combined with group companies and agencies, ensures that HUBER+SUHNER maintains a close relationship with its customers in over 80 countries.

HUBER+SUHNER has been developing and manufacturing specialised antenna products for over 25 years. The SENCITY® brand of antennas reflects quality, performance and our unending pursuit of innovation. Our expertise extends to wireless applications in the railway, automotive, communication, industrial and defense industries.

Content

Commercial vehicle antennas

SENCITY® Road antennas are developed to provide an all-in-one wireless solution for buses, trucks and heavy-duty vehicles. They are multi-application antennas for cellular, Wi-Fi, TETRA, UHF and GNSS.

SENCITY® Road

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The SENCITY® Road rooftop antennas are developed for buses, trucks and heavy duty vehicles. The portfolio of antennas offers bespoke solutions with different combinations of radiating elements efficiently designed to fit into a single compact housing.

SENCITY® Road MULTI

p. 8 – 11

The SENCITY® Road MULTI is designed for 4×4 MIMO operation in cellular, 8×8 MIMO in Wi-Fi networks. It also offers a variety of combinations of up to 9 radiators within one housing and comes with an GNSS option for L1, L2, L5 operation. It meets the special requirements for any kind of installation on buses, trucks or any other type of commercial vehicle.

SENCITY® Road Low Profile

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The SENCITY® Road Low Profile provides the best low profile solution for commercial vehicles and comes with basic cellular, Wi-Fi and GNSS functionalities. Combinations of Cellular MIMO with Wi-Fi and GNSS are offered as well.

SENCITY® Road MIMO

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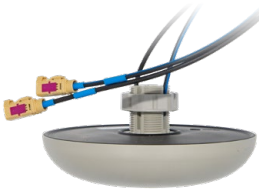
SENCITY® Road MIMO antennas offer support for MIMO systems either by use of several radiating elements within one common housing or by installing several antennas spaced from each other for an optimised performance.

SENCITY® Road IC MIMO

p. 25 – 31



The SENCITY® Road IC (in-carriage) antennas are designed for seamless and outstanding in-carriage connectivity. These antennas have several radiating elements stored in one compact housing and allow FAKRA or SMA connection.

SENCITY® Road MULTI

Product name	**SENCITY® Road MULTI with 4×4 Cellular and 4×4 Wi-Fi MIMO and Dualband GNSS**
Product ID.	**1399.99.0415**
Description	Rugged multi-element and multi-band rooftop antenna for any kind of installation on buses, trucks or any other type of commercial vehicle. Omnidirectional radiation with 4×4 MIMO operation in cellular and 4×4 MIMO in Wi-Fi networks with integrated GNSS for L1, L2, L5. More variants as described on next page.
	· Supports 2G/3G/4G/5G cellular, Wi-Fi 2.4/5 GHz, Wi-Fi 6E. · Includes Dualband GNSS antenna & integrated LNA covering GPS L1+L2+L5/Galileo E1+E5a+E5b/BeiDou B1+B2+B3/GLONASS G1+G2 · 9 separate ports for 4×4 cellular MIMO and 4×4 Wi-Fi MIMO plus Dualband GNSS. · Meets ISO16750 automotive standard. · compliant to ECE-R118. · Single-hole mounting, easy cabling feed-through
Item no.	85185103

Technical data	**Band 1**	**Band 2**	**Band 3**	**Band 4**
Band name	Cellular	Cellular	Cellular	Cellular
Frequency (MHz)	617 – 960	1350 – 2700	3300 – 4200	4900 – 7125
VSWR	2	2.1	2	2
Gain (dBi)	2	4	4	5
Port Isolation (dB)	9	18	15	18
	Band 5	**Band 6**	**Band 7**	**Band 8/9**
Band name	Wi-Fi	Wi-Fi	GNSS	GNSS
Frequency (MHz)	2400 – 2500	4900 – 7125	1164 – 1279	1559 – 1610
VSWR	2	2	1.5	1.8
Gain (dBi)	2	4	4	5
Port Isolation (dB)	9	18	15	18

Electrical data	
Impedance	50 Ohms
Number of Ports	9
Composite power max.	20 – 40 Watts (see datasheet for specific bands)
Polarisation	Vertical (Cellular and Wi-Fi)

Mechanical data	
Dimensions (height × diameter)	210 × 60 mm
Weight	1.1 kg

Environmental data	
Environmental conditions	outdoor
IP rating	IP68, IP69k
RoHS 2011/65/EU	compliant
Certifications	ECE-R118

Material data	
Radome colour	RAL 7043 (dark grey)
Radome material	PC (Polycarbonate)
Back plate / base plate material	Aluminum

For more detailed information, please visit our website's "Products" section.

Commercial vehicle antennas

SENCITY® Road MULTI

Product name	**SENCITY® Road MULTI with 8×8 Wi-Fi and Dualband GNSS**
Product ID.	**1399.99.0419**
Description	Rugged multi-element and multi-band rooftop antenna for any kind of installation on buses, trucks or any other type of commercial vehicle. Omnidirectional radiation with 8×8 MIMO operation in Wi-Fi networks with integrated GNSS. More variants as described on next page.
	· Supports Wi-Fi 2.4/5 GHz, Wi-Fi 6E · Includes Dualband GNSS antenna & integrated LNA covering GPS L1+L2+L5/Galileo E1+E5a+E5b/BeiDou B1+B2+B3/GLONASS G1+G2 · 9 separate ports 8×8 Wi-Fi MIMO plus Dualband GNSS. · Meets ISO16750 automotive standard. · compliant to ECE-R118. · Single-hole mounting, easy cabling feed-through
Item no.	85192488

Technical data	**Band 1**	**Band 2**	**Band 3**	**Band 4**
Band name	Wi-Fi	Wi-Fi	GNSS	GNSS
Frequency (MHz)	2400 – 2500	4900 – 7125	1559 – 1610	1559 – 1610
VSWR	2	2	1.8	1.8
Gain (dBi)	6	6		
Port Isolation (dB)	24	24		

Electrical data	
Impedance	50 Ohms
Number of Ports	9
Composite power max.	30 Watts (see datasheet for specific bands)
Polarisation	Vertical (Wi-Fi) and circular right (GNSS)

Mechanical data	
Dimensions (height × diameter)	210 × 60 mm
Weight	1.1 kg

Environmental data	
Environmental conditions	outdoor
IP rating	IP68, IP69k
RoHS 2011/65/EU	compliant
Certifications	ECE-R118

Material data	
Environmental conditions	outdoor
IP rating	IP68, IP69k
RoHS 2011/65/EU	compliant
Certifications	ECE-R118

For more detailed information, please visit our website's "Products" section.

Commercial vehicle antennas

SENCITY® Road MULTI

Product name	**SENCITY® Road MULTI with 2×2 TETRA, 4×4 Wi-Fi MIMO and Dualband GNSS**
Product ID.	**1399.99.0435**
Description	Rugged multi-element and multi-band rooftop antenna for any kind of installation on buses, trucks or any other type of commercial vehicle. Omnidirectional radiation with 2×2 TETRA, 4×4 MIMO operation in Wi-Fi networks and with integrated GNSS. More variants as described on next page.
	· Supports TETRA, LTE450, 2G/3G/4G/5G cellular, Wi-Fi 2.4/5 GHz, Wi-Fi 6E. · Includes Dualband GNSS antenna & integrated LNA covering GPS L1+L2+L5/Galileo E1+E5a+E5b/BeiDou B1+B2+B3/GLONASS G1+G2 · 7 separate ports for 2×2 TETRA/cellular and 4×4 Wi-Fi MIMO plus Dualband GNSS. · Meets ISO16750 automotive standard. · compliant to ECE-R118. · Single-hole mounting, easy cabling feed-through
Item no.	85192512

Technical data	**Band 1**	**Band 2**	**Band 3**	**Band 4**
Band name	TETRA/LTE450	Cellular	Cellular	Cellular
Frequency (MHz)	380 – 470	694 – 960	1350 – 2700	3300 – 4200
VSWR	2.5	2.0	2.0	2.0
Gain (dBi)	3	2	4	4
Port Isolation (dB)	3	8	15	20
	Band 5	**Band 6**	**Band 7**	**Band 8/9**
Band name	Cellular	Wi-Fi	Wi-Fi	GNSS
Frequency (MHz)	4900 – 7125	2400 – 2500	4900 – 7125	1164 – 1279 / 1559 – 1610
VSWR	2.0	2.0	2.0	1.5 / 1.8
Gain (dBi)	5	6	6	
Port Isolation (dB)	20	20	20	

Electrical data	
Impedance	50 Ohms
Number of Ports	7
Composite power max.	30 – 40 Watts (see datasheet for specific bands)
Polarisation	Vertical (TETRA and Wi-Fi) and circular right (GNSS)

Mechanical data	
Dimensions (height × diameter)	210 × 60 mm
Weight	1.1 kg

Environmental data	
Environmental conditions	outdoor
IP rating	IP68, IP69k
RoHS 2011/65/EU	compliant
Certifications	ECE-R118

Material data	
Radome colour	RAL 7043 (dark grey)
Radome material	PC (Polycarbonate)
Back plate / base plate material	Aluminum

For more detailed information, please visit our website's "Products" section.

Commercial vehicle antennas

SENCITY® Road MULTI antenna portfolio

Product ID	Item number	Cellular	Wi-Fi	TETRA	GNSS
1399.19.0400	85192445	2			
1399.99.0401	85192444	2			L1+L2+L5
1399.99.0400	85192448	2			L1
1399.19.0402	85192449	2	2		
1399.99.0403	85192450	2	2		L1+L2+L5
1399.99.0402	85192465	2	2		L1
1399.19.0404	85192466	2	3		
1399.99.0405	85192467	2	3		L1+L2+L5
1399.99.0404	85192468	2	3		L1
1399.19.0406	85192469	2	4		
1399.99.0407	85192470	2	4		L1+L2+L5
1399.99.0406	85192471	2	4		L1
1399.19.0408	85192472	4			
1399.99.0409	85192473	4			L1+L2+L5
1399.99.0408	85192474	4			L1
1399.19.0410	85192475	4	2		
1399.99.0411	85192477	4	2		L1+L2+L5
1399.99.0410	85192478	4	2		L1
1399.19.0412	85192479	4	3		
1399.99.0413	85192480	4	3		L1+L2+L5
1399.99.0412	85192481	4	3		L1
1399.19.0414	85192482	4	4		
1399.99.0415	85185103	4	4		L1+L2+L5
1399.99.0414	85192483	4	4		L1
1399.19.0416	85192484		6		
1399.99.0417	85192485		6		L1+L2+L5
1399.99.0416	85192486		6		L1
1399.19.0418	85192487		8		
1399.99.0419	85192488		8		L1+L2+L5
1399.99.0418	85192489		8		L1
1399.19.0420	85192490			1	
1399.99.0421	85192491			1	L1+L2+L5
1399.99.0420	85192492			1	L1
1399.19.0422	85192493		2	1	
1399.99.0423	85192495		2	1	L1+L2+L5
1399.99.0422	85192496		2	1	L1
1399.19.0424	85192497		3	1	
1399.99.0425	85192498		3	1	L1+L2+L5
1399.99.0424	85192499		3	1	L1
1399.19.0426	85192500		4	1	
1399.99.0427	85192501		4	1	L1+L2+L5
1399.99.0426	85192502		4	1	L1
1399.19.0428	85185149			2	
1399.99.0429	85192503			2	L1+L2+L5
1399.99.0428	85192504			2	L1
1399.19.0430	85192505		2	2	
1399.99.0431	85192506		2	2	L1+L2+L5
1399.99.0430	85192507		2	2	L1

SENCITY® Road MIMO

Product name	**SENCITY® Road MIMO with 2×2 Cellular, 2×2 Wi-Fi and L1 GNSS**
Product ID.	**1399.99.0118**
Description	Rugged vehicle rooftop multi-band antenna can be used as the wireless interface for communication systems on bus, truck and other heavy-duty vehicles. It meets the specific requirements for automotive use.
	· Supports 2x2 MIMO for 2G/3G/4G/5G cellular and Wi-Fi 2.4/5 GHz, Wi-Fi 6E bands · Embedded GNSS antenna with integrated low-noise amplifier · 5 elements in one housing and single-hole mounting · ISO 16750, ECE-R118 compliant · Works without metal ground plane
Item no.	85090876

Technical data	**Band 1**	**Band 2**	**Band 3**	**Band 4**
Band name	Cellular	Cellular	Cellular	Cellular
Frequency (MHz)	694 – 790	790 – 960	1710 – 2170	2400 – 2690
VSWR	1.8	1.7	1.7	2
Gain (dBi)	4	4	5	6
Port Isolation (dB)	10	10	12	10
	Band 5	**Band 6**	**Band 7**	**Band 8/9**
Band name	Wi-Fi	Cellular	Wi-Fi	GNSS
Frequency (MHz)	2400 – 2690	3400 – 3800	4900 – 7125	1559 – 1610
VSWR	2	1.7	1.8	1.8
Gain (dBi)	5.5	6	7	
Port Isolation (dB)	18	18	25	

Electrical data	
Impedance	50 Ohms
Number of Ports	5
Composite power max.	30 – 40 Watts (see datasheet for specific bands)
Polarisation	Vertical (Cellular and Wi-Fi) and circular right (GNSS)

Mechanical data	
Dimensions (height × width × depth)	98 × 83 × 208 mm
Weight	0.5 kg

Environmental data	
Environmental conditions	outdoor
IP rating	IP68, IP69k
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118

Material data	
Radome colour	RAL 7043 (dark grey)
Radome material	PC (Polycarbonate)
Back plate / base plate material	Aluminum

For more detailed information, please visit our website's "Products" section.

SENCITY® Road MIMO

Product Family	**SENCITY® Road MIMO with 2×2 Cellular**
Product ID.	**1399.99.0179**
Description	Rugged vehicle rooftop multi-band antenna can be used as the wireless interface for communication systems on bus, truck and other heavy-duty vehicles. It meets the specific requirements for automotive use.
	· Supports 2G/3G/4G/5G cellular in 2×2 MIMO configuration. · 2 elements in one housing and single-hole mounting · ISO 16750, ECE-R118 compliant · Works without metal ground plane
Item no.	85152321

Technical data	Band 1	Band 2	Band 3
Band name	Cellular	Cellular	Cellular
Frequency (MHz)	694 – 790	790 – 960	1710 – 2170
VSWR	1.8	1.8	1.8
Gain (dBi)	4	4.5	5
Port Isolation (dB)	12	12	15
	Band 4	**Band 5**	**Band 6**
Band name	Cellular	Cellular	Cellular
Frequency (MHz)	2400 – 2690	3400 – 3800	4900 – 7125
VSWR	1.8	1.6	1.6
Gain (dBi)	5	6	6.5
Port Isolation (dB)	16	18	19

Electrical data	
Impedance	50 Ohms
Number of Ports	2
Composite power max.	20 – 40 Watts (see datasheet for specific bands)
Polarisation	Vertical (Cellular)

Mechanical data	
Dimensions (height × width × depth)	98 × 83 × 208 mm
Weight	0.5 kg

Environmental data	
Environmental conditions	outdoor
IP rating	IP68, IP69k
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118, ECE-R10, E-Mark, CE-Mark

Material data	
Radome colour	RAL 7043 (dark grey)
Radome material	PC (Polycarbonate)
Back plate / base plate material	Aluminum

For more detailed information, please visit our website's "Products" section.

Commercial vehicle antennas

SENCITY® Road MIMO

Product Family	**SENCITY® Road MIMO with 2×2 Cellular and L1 GNSS**
Product ID.	**1399.99.0180**
Description	Rugged vehicle rooftop multi-band antenna for heavy duty vehicles like bus and truck. Meets specific requirements for automotive use. Can be used as the wireless interface for multi-band communication on buses, trucks and heavy-duty vehicles.
	· Supports 2G/3G/4G/5G cellular in 2×2 MIMO configuration plus GNSS. · Embedded GNSS antenna with integrated low-noise amplifier · 3 elements in one housing and single-hole mounting · ISO 16750, ECE-R118 compliant · Works without metal ground plane
Item no.	85151777

Technical data	**Band 1**	**Band 2**	**Band 3**	**Band 4**
Band name	Cellular / Wi-Fi	Cellular / Wi-Fi	Cellular / Wi-Fi	Cellular / Wi-Fi
Frequency (MHz)	694 – 790	790 – 960	1710 – 2170	2400 – 2690
VSWR	1.8	1.8	1.8	1.8
Gain (dBi)	4	4.5	5	5
Port Isolation (dB)	12	12	15	18

	Band 5	**Band 6**	**Band 7**
Band name	Cellular / Wi-Fi	Cellular / Wi-Fi	GNSS
Frequency (MHz)	3400 – 4200	4900 – 7125	1559 – 1610
VSWR	1.7	1.6	1.8
Gain (dBi)	6	6.5	
Port Isolation (dB)	15	19	

Electrical data	
Impedance	50 Ohms
Number of Ports	3
Composite power max.	20 – 40 Watts (see datasheet for specific bands)
Polarisation	Vertical (Cellular / Wi-Fi) and circular right (GNSS)

Mechanical data	
Dimensions (height × width × depth)	98 × 83 × 208 mm
Weight	0.5 kg

Environmental data	
Environmental conditions	outdoor
IP rating	IP68, IP69k
RoHS 2011/65/EU	compliant
Certifications	ECE-R118, ISO 16750, ECE-R10, E-Mark, CE-Mark

Material data	
Radome colour	RAL 7043 (dark grey)
Radome material	PC (Polycarbonate)
Back plate / base plate material	Aluminum

For more detailed information, please visit our website's "Products" section.

SENCITY® Road MIMO

Product Family	**SENCITY® Road MIMO with 3×3 Wi-Fi**
Product ID.	**1399.99.0178**
Description	Rugged vehicle rooftop multi-band antenna can be used as the wireless interface for communication systems on bus, truck and other heavy-duty vehicles. It meets the specific requirements for automotive use.
	· Supports MIMO for Wi-Fi 2.4/5 GHz, Wi-Fi 6E bands in 3x3 configuration. · 3 elements in one housing and single-hole mounting · ISO 16750, ECE-R118 compliant · Works without metal ground plane
Item no.	85158316

Technical data	Band 1	Band 2
Band name	Wi-Fi	Wi-Fi
Frequency (MHz)	2400 – 2690	4900 – 7125
VSWR	2.0	2.0
Gain (dBi)	6	7
Port Isolation (dB)	14	22

Electrical data	
Impedance	50 Ohms
Number of Ports	3
Composite power max.	30 – 40 Watts (see datasheet for specific bands)
Polarisation	Vertical (Wi-Fi)

Mechanical data	
Dimensions (height × width × depth)	82 × 83 × 208 mm
Weight	0.41 kg

Environmental data	
Environmental conditions	outdoor
IP rating	IP68, IP69k
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118, E-Mark, CE-Mark

Material data	
Radome colour	RAL 7043 (dark grey)
Radome material	PC (Polycarbonate)
Back plate / base plate material	Aluminum

For more detailed information, please visit our website's "Products" section.

SENCITY® Road

Product name	**SENCITY® Road with Cellular, Wi-Fi, GNSS, and Stick-option**
Product ID.	**1399.99.0175**
Description	Rugged vehicle rooftop multi-band antenna can be used as the wireless interface for communication systems on bus, truck and other heavy-duty vehicles. It meets the specific requirements for automotive use.
	· Supports 2G/3G/4G/5G cellular and Wi-Fi 2.4/5 GHz, Wi-Fi 6E bands and GNSS. · Stick antenna option for TETRA, VHF, etc. · Embedded GNSS antenna with integrated low-noise amplifier · 3 elements in one housing and single-hole mounting · ISO 16750, ECE-R118 compliant · Works without metal ground plane
Item no.	85158713

Technical data	**Band 1**	**Band 2**	**Band 3**	**Band 4**
Band name	Cellular	Cellular	Cellular	Wi-Fi
Frequency (MHz)	694 – 790	790 – 960	1710 – 2690	1710 – 2690
VSWR	2.1	1.8	2	1.8
Gain (dBi)	5	5	4	6
Port Isolation (dB)	25	25	25	25
	Band 5	**Band 6**	**Band 7**	**Band 8/9**
Band name	Cellular	Wi-Fi	GNSS	Socket
Frequency	3400 – 3800 MHz	4900 – 7125 MHz	1559 – 1610 MHz	
VSWR	2	2	1.8	
Gain (dBi)	6	7		
Port Isolation (dB)	25	25		

Electrical data	
Impedance	50 Ohms
Number of Ports	3
Composite power max.	30 – 40 Watts (see datasheet for specific bands)
Polarisation	Vertical (Cellular and Wi-Fi) and circular right (GNSS)

Mechanical data	
Dimensions (height × width × depth)	82 × 83 × 208 mm
Weight	0.41 kg

Environmental data	
Environmental conditions	outdoor
IP rating	IP68, IP69k
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118, ECE-R10, E-Mark, CE-Mark

Material data	
Radome colour	RAL 7043 (dark grey)
Radome material	PC (Polycarbonate)
Back plate / base plate material	Aluminum

For more detailed information, please visit our website's "Products" section.

Product name	**SENCITY® Road with Cellular, Wi-Fi and L1 GNSS**
Product ID.	**1399.99.0176**
Description	Rugged vehicle rooftop multi-band antenna can be used as the wireless interface for communication systems on bus, truck and other heavy-duty vehicles. It meets the specific requirements for automotive use.
	· Supports 2G/3G/4G/5G cellular and Wi-Fi 2.4/5 GHz, Wi-Fi 6E bands and GNSS. · Embedded GNSS antenna with integrated low-noise amplifier · 3 elements in one housing and single-hole mounting · ISO 16750, ECE-R118 compliant · Works without metal ground plane
Item no.	85158714

Technical data	**Band 1**	**Band 2**	**Band 3**	**Band 4**
Band name	Cellular	Cellular	Cellular	Wi-Fi
Frequency (MHz)	694 – 790	790 – 960	1710 – 2690	1710 – 2690
VSWR	2.1	1.8	2	1.8
Gain (dBi)	5	5	4	6
Port Isolation (dB)			20	20

	Band 5	**Band 6**	**Band 7**
Band name	Cellular	Wi-Fi	GNSS
Frequency (MHz)	3400 – 3800	4900 – 7125	1559 – 1610
VSWR	2	2	1.8
Gain (dBi)	5	5	5
Port Isolation (dB)	25	25	

Electrical data	
Impedance	50 Ohms
Number of Ports	3
Composite power max.	30 – 40 Watts (see datasheet for specific bands)
Polarisation	Vertical (Cellular and Wi-Fi) and circular right (GNSS)

Mechanical data	
Dimensions (height × width × depth)	82 × 83 × 208 mm
Weight	0.41 kg

Environmental data	
Environmental conditions	outdoor
IP rating	IP68, IP69k
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118, ECE-R10, E-Mark, CE-Mark

Material data	
Radome colour	RAL 7043 (dark grey)
Radome material	PC (Polycarbonate)
Back plate / base plate material	Aluminum

For more detailed information, please visit our website's "Products" section.

Product name	**SENCITY® Road with TETRA, Wi-Fi and L1 GNSS**
Product ID.	**1399.99.0177**
Description	Rugged vehicle rooftop multi-band antenna can be used as the wireless interface for communication systems on bus, truck and other heavy-duty vehicles. It meets the specific requirements for automotive use.
	· Supports TETRA and Wi-Fi 2.4/5 GHz, Wi-Fi 6E bands and GNSS. Stick antenna option for Cellular, VHF, etc. · Embedded GNSS antenna with integrated low-noise amplifier · 3 elements in one housing and single-hole mounting · ISO 16750, ECE-R118 compliant · Works without metal ground plane
Item no.	85158715

Technical data	Band 1	Band 2	Band 3	Band 4
Band name	TETRA	Wi-Fi	Wi-Fi	GNSS
Frequency (MHz)	410 – 430	2400 – 2690	4900 – 7125	1559 – 1610
VSWR	2	1.8	1.8	1.8
Gain (dBi)	4	7	7	
Port Isolation (dB)	20	20	20	

Electrical data	
Impedance	50 Ohms
Number of Ports	3 (plus 1 spare slot for a stick antenna)
Composite power max.	30 – 40 Watts (see datasheet for specific bands)
Polarisation	Vertical (TETRA and Wi-Fi) and circular right (GNSS)

Mechanical data	
Dimensions (height × width × depth)	82 × 83 × 208 mm
Weight	0.41 kg

Environmental data	
Environmental conditions	outdoor
IP rating	IP68, IP69k
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118, ECE-R10, E-Mark, CE-Mark

Material data	
Radome colour	RAL 7043 (dark grey)
Radome material	PC (Polycarbonate)
Back plate / base plate material	Aluminum

For more detailed information, please visit our website's "Products" section.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SENCITY® Road Low Profile

Product name	**SENCITY® Road Low Profile with Cellular, Wi-Fi and L1 GNSS**
Product ID.	**1399.99.0194**
Description	Compact omni-directional rooftop antenna for commercial vehicles offering SISO cellular functionality plus Wi-Fi and GNSS. Meets specific requirements for automotive use.
	· Rugged low profile vehicle rooftop antenna for commercial vehicles like bus and truck · Supports 2G/3G/4G/5G cellular and Wi-Fi 2.4/5 GHz, Wi-Fi 6E bands and L1 GNSS. · 3 separate ports for cellular, Wi-Fi and GNSS · Meets ISO16750 automotive standard · Fire retardant acc. to ECE-R118 · Single hole mounting, easy cabling feedthrough
Item no.	85215703

Technical data	**Band 1**	**Band 2**	**Band 3**
Band name	Cellular	Cellular	Cellular
Frequency (MHz)	694 – 960	1710 – 2690	3400 – 3800
VSWR	2.5	2.0	2.0
Gain (dBi)	2	4	5
Port Isolation (dB)	20	15	20
	Band 4	**Band 5**	**Band 6**
Band name	Wi-Fi	Wi-Fi	GNSS
Frequency (MHz)	2400 – 2500	4900 – 7125	1559 – 1610
VSWR	2.0	2.0	1.8
Gain (dBi)	5	6.0	
Port Isolation (dB)	15	20	

Electrical data	
Impedance	50 Ohms
Number of Ports	3
Composite power max.	25 – 30 Watts (see datasheet for specific bands)
Polarisation	Vertical (Cellular and Wi-Fi) and circular right (GNSS)

Mechanical data	
Dimensions (height × diameter)	33.2 × 145 mm
Weight	0.3 kg
Connector	1 × SMA, plug (male), 1 × TNC, plug (male)

Environmental data	
Environmental conditions	outdoor
IP rating	IP68, IP69k
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118, ECE-R10, E-Mark, CE-Mark

Material data	
Radome colour	RAL 7043 (dark grey)
Radome material	PC (Polycarbonate)

For more detailed information, please visit our website's "Products" section.

SENCITY® Road Low Profile

Product name	**SENCITY® Road Low Profile with 2×2 Cellular and L1 GNSS**
Product ID.	**1399.99.0195**
Description	Compact omni-directional rooftop antenna for commercial vehicles offering MIMO cellular functionality plus GNSS. Meets specific requirements for automotive use.
	· Rugged low profile vehicle rooftop antenna for commercial vehicles like bus and truck · Supports 2G/3G/4G/5G cellular and and L1 GNSS. · 3 separate ports for 2×2 cellular and GNSS · Meets ISO16750 automotive standard · Fire retardant acc. to ECE-R118 · Single hole mounting, easy cabling feedthrough
Item no.	85191553

Technical data	Band 1	Band 2	Band 3	Band 4
Band name	Cellular	Cellular	Cellular	GNSS
Frequency (MHz)	694 – 960	1710 – 2690	3400 – 3800	1559 – 1610
VSWR	2.5	2.0	2.0	1.8
Gain (dBi)	2	4	5	
Port Isolation (dB)	5	12	10	

Electrical data	
Impedance	50 Ohms
Number of Ports	3
Composite power max.	25 – 30 Watts (see datasheet for specific bands)
Polarisation	Vertical (Cellular) and circular right (GNSS)

Mechanical data	
Dimensions (height × diameter)	33.2 × 145 mm
Weight	0.3 kg
Connector	1 × SMA, plug (male), 1 × TNC, plug (male)

Environmental data	
Environmental conditions	outdoor
IP rating	IP68, IP69k
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118, ECE-R10, E-Mark, CE-Mark

Material data	
Radome colour	RAL 7043 (dark grey)
Radome material	PC (Polycarbonate)

For more detailed information, please visit our website's "Products" section.

SENCITY® Road Low Profile

Product name	**SENCITY® Road Low Profile with Cellular, Wi-Fi and L1 GNSS**
Product ID.	**1399.99.0196**
Description	Compact omni-directional rooftop antenna for commercial vehicles offering MIMO cellular functionality plus Wi-Fi. Meets specific requirements for automotive use.
	· Rugged low profile vehicle rooftop antenna for commercial vehicles like bus and truck · Supports 2G/3G/4G/5G cellular and Wi-Fi 2.4/5 GHz, Wi-Fi 6E bands. · 3 separate ports for 2×2 cellular, Wi-Fi · Meets ISO16750 automotive standard · Fire retardant acc. to ECE-R118 · Single hole mounting, easy cabling feedthrough
Item no.	85215704

Technical data	Band 1	Band 2	Band 3
Band name	Cellular	Cellular	Cellular
Frequency (MHz)	694 – 960	1710 – 2690	3400 – 3800
VSWR	2.5	2.0	2.0
Gain (dBi)	2	4	5
Port Isolation (dB)	5	12	10

	Band 4	Band 5
Band name	Wi-Fi	Wi-Fi
Frequency (MHz)	2400 – 2500	4900 – 7125
VSWR	2.0	2.0
Gain (dBi)	5	6.0
Port Isolation (dB)	12	20

Electrical data	
Impedance	50 Ohms
Number of Ports	3
Composite power max.	25 – 30 Watts (see datasheet for specific bands)
Polarisation	Vertical (Cellular and Wi-Fi) and circular right (GNSS)

Mechanical data	
Dimensions (height × diameter)	33.2 × 145 mm
Weight	0.3 kg
Connector	1 × SMA, plug (male), 1 × TNC, plug (male)

Environmental data	
Environmental conditions	outdoor
IP rating	IP68, IP69k
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118, E-Mark, CE-Mark

Material data	
Radome colour	RAL 7043 (dark grey)
Radome material	PC (Polycarbonate)

For more detailed information, please visit our website's "Products" section.

SENCITY® Road VHF

Product name	**SENCITY® Road VHF antenna**
Product ID.	**K5022211-R / K5022221-R**
Description	The SENCITY® Road VHF antenna is designed for applications in the 2-meter band.
	· 3-hole installation · Frequency bands from 143 MHz to 178 MHz · Meets EN 50155 standard · Fire retardant according to EN 45545 · ECE-R118 approved
Item no.	85164939 / 85164941

Technical data	**Band 1**
Band name	VHF
Frequency (MHz)	143 – 162 / 152 - 178
VSWR	2

Electrical data	
Impedance	50 Ohms
Number of Ports	1
Composite power max.	100 Watts
Polarisation	Vertical

Mechanical data	
Dimensions (height × width × depth)	225 x 252 x 126 mm
Weight	1.2 kg

Environmental data	
Environmental conditions	outdoor
IP rating	IP66
RoHS 2011/65/EU	compliant
Certifications	EN50155, EN45545, ECE-R118

Material data	
Radome colour	Grey
Radome material	Glass Reinforced Plastic (GRP)
Back plate / base plate material	Aluminum

For more detailed information, please visit our website's "Products" section.

SENCITY® Road PUCK

Product name	**SENCITY® Road PUCK antenna**
Product ID.	**K7023231 / K7023211**
Description	This SENCITY® Road antenna is in a PUCK form factor and designed for connection in SISO applications in 400 MHz bands / TETRA.
	· Single-hole mounting · 70 mm height · Frequency bands 406-428 MHz and 440-470 MHz · Supports TETRA · Meets EN50155 standard · ECE-R118 approved
Item no.	84459192 / 84465799

Technical data	**Band 1**
Band name	TETRA
Frequency (MHz)	406 – 428 / 440 - 470
VSWR	<1.9 / <1.7

Electrical data	
Impedance	50 Ohms
Number of Ports	1
Polarisation	Vertical

Mechanical data	
Dimensions (height × diameter)	70 x 110 mm
Weight	0.4 kg

Environmental data	
Environmental conditions	outdoor
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118

Material data	
Radome colour	black
Radome material	High impact plastic
Back plate / base plate material	Aluminum

For more detailed information, please visit our website's "Products" section.

SENCITY® Road IC MIMO

Product name	**SENCITY® Road IC MIMO with 2×2 Wi-Fi**
Product ID.	**1399.19.0186**
Description	Compact omni-directional 2×2 MIMO in-carriage antenna fur busses. Can be used as the onboard antenna in modern equipped busses with high data-rate passenger entertainment systems.
	· Supports 2×2 MIMO for Wi-Fi and ready for Wi-Fi 6E · Single hole mounting, low profile and vandalism proof. · Works without metal ground plane · ISO 16750, ECE-R118 compliant · 0.5 m of cable and SMA connector
Item no.	85161336

Technical data	**Band 1**	**Band 2**	**Band 3**
Band name	Wi-Fi	Wi-Fi	Cellular
Frequency (MHz)	2300 – 2500	2500 – 2690	3400 – 4200
VSWR	1.8	1.7	2.0
Gain (dBi)	5	5	6
Port Isolation (dB)	15	15	17
	Band 4	**Band 5**	
Band name	Wi-Fi	Wi-Fi	
Frequency (MHz)	4900 – 5975	5975 – 7125	
VSWR	1.7	1.8	
Gain (dBi)	7	7	
Port Isolation (dB)	17	18	

Electrical data	
Impedance	50 Ohms
Number of Ports	2
Composite power max.	20 – 40 Watts (see datasheet for specific bands)
Polarisation	Vertical (Cellular and Wi-Fi)

Mechanical data	
Dimensions (height × diameter)	33.2 × 145 mm
Weight	0.9 kg

Environmental data	
Environmental conditions	indoor
IP rating	IP68, IP69
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118

Material data	
Radome colour	RAL 7044 (grey)
Radome material	Reinforced PC (Polycarbonate)

For more detailed information, please visit our website's "Products" section.

Commercial vehicle antennas

SENCITY® Road IC MIMO

Product name	**SENCITY® Road IC MIMO with 2×2 Wi-Fi and FAKRA connector**
Product ID.	**1399.99.0186**
Description	Compact omni-directional 2×2 MIMO in-carriage antenna fur busses. Can be used as the onboard antenna in modern equipped busses with high data-rate passenger entertainment systems.
	· Supports 2×2 MIMO for Wi-Fi and ready for Wi-Fi 6E · Single hole mounting, low profile and vandalism proof. · Works without metal ground plane · ISO 16750, ECE-R118 compliant · 3 m of cable and FAKRA connector
Item no.	85161177

Technical data	Band 1	Band 2	Band 3
Band name	Wi-Fi	Wi-Fi	Cellular
Frequency (MHz)	2300 – 2500	2500 – 2690	3400 – 4200
VSWR	1.5	1.5	1.8
Gain (dBi)	2	2	2
Port Isolation (dB)	22	22	25

	Band 4	Band 5
Band name	Wi-Fi	Wi-Fi
Frequency (MHz)	4900 – 5975	5975 – 7125
VSWR	1.5	1.7
Gain (dBi)	1	0
Port Isolation (dB)	27	30

Electrical data	
Impedance	50 Ohms
Number of Ports	2
Composite power max.	20 – 40 Watts (see datasheet for specific bands)
Polarisation	Vertical (Cellular and Wi-Fi)

Mechanical data	
Dimensions (height × diameter)	33.2 × 145 mm
Weight	0.9 kg

Environmental data	
Environmental conditions	indoor
IP rating	IP68, IP69
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118

Material data	
Radome colour	RAL 7044 (grey)
Radome material	Reinforced PC (Polycarbonate)

For more detailed information, please visit our website's "Products" section.

Commercial vehicle antennas

SENCITY® Road IC MIMO

Product name	**SENCITY® Road IC MIMO with 3×3 Wi-Fi**
Product ID.	**1399.19.0187**
Description	Compact omni-directional 3×3 MIMO in-carriage antenna fur busses. Can be used as the onboard antenna in modern equipped busses with high data-rate passenger entertainment systems.
	· Supports 3×3 MIMO for Wi-Fi and ready for Wi-Fi 6E · Single hole mounting, low profile and vandalism proof. · Works without metal ground plane · ISO 16750, ECE-R118 compliant · 0.5 m of cable and SMA connector
Item no.	85177502

Technical data	**Band 1**	**Band 2**	**Band 3**
Band name	Wi-Fi	Wi-Fi	Cellular
Frequency (MHz)	2300 – 2500	2500 – 2690	3400 – 4200
VSWR	1.8	1.7	2.0
Gain (dBi)	5	5	6
Port Isolation (dB)	15	25	25

	Band 4	**Band 5**
Band name	Wi-Fi	Wi-Fi
Frequency (MHz)	4900 – 5975	5975 – 7125
VSWR	1.7	1.8
Gain (dBi)	7	7
Port Isolation (dB)	25	25

Electrical data	
Impedance	50 Ohms
Number of Ports	3
Composite power max.	20 – 40 Watts (see datasheet for specific bands)
Polarisation	Vertical (Cellular and Wi-Fi)

Mechanical data	
Dimensions (height × diameter)	33.2 × 145 mm
Weight	0.9 kg

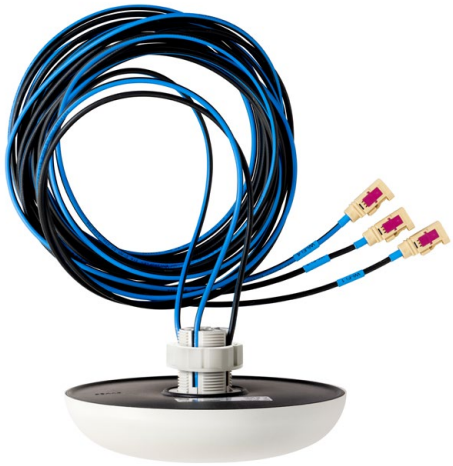
Environmental data	
Environmental conditions	indoor
IP rating	IP68, IP69
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118

Material data	
Radome colour	RAL 7044 (grey)
Radome material	Reinforced PC (Polycarbonate)

For more detailed information, please visit our website's "Products" section.

Commercial vehicle antennas

SENCITY® Road IC MIMO



Product name	**SENCITY® Road IC MIMO with 3×3 Wi-Fi and FAKRA connector**
Product ID.	**1399.99.0187**
Description	Compact omni-directional 3×3 MIMO in-carriage antenna fur busses. Can be used as the onboard antenna in modern equipped busses with high data-rate passenger entertainment systems.
	· Supports 3×3 MIMO for Wi-Fi and ready for Wi-Fi 6E · Single hole mounting, low profile and vandalism proof. · Works without metal ground plane · ISO 16750, ECE-R118 compliant · 3 m of cable and FAKRA connector
Item no.	85177757

Technical data	**Band 1**	**Band 2**	**Band 3**
Band name	Wi-Fi	Wi-Fi	Cellular
Frequency (MHz)	2300 – 2500	2500 – 2690	3400 – 4200
VSWR	1.5	1.5	1.8
Gain (dBi)	2	2	2
Port Isolation (dB)	20	30	30
	Band 4	**Band 5**	
Band name	Wi-Fi	Wi-Fi	
Frequency (MHz)	4900 – 5975	5975 – 7125	
VSWR	1.5	1.7	
Gain (dBi)	1	0	
Port Isolation (dB)	30	30	

Electrical data	
Impedance	50 Ohms
Number of Ports	3
Composite power max.	20 – 40 Watts (see datasheet for specific bands)
Polarisation	Vertical (Cellular and Wi-Fi)

Mechanical data	
Dimensions (height × diameter)	33.2 × 145 mm
Weight	0.9 kg

Environmental data	
Environmental conditions	indoor
IP rating	IP68, IP69
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118

Material data	
Radome colour	RAL 7044 (grey)
Radome material	Reinforced PC (Polycarbonate)
Back plate / base plate material	Aluminum

For more detailed information, please visit our website's "Products" section.

Commercial vehicle antennas

SENCITY® Road IC MIMO

Product name	**SENCITY® Road IC MIMO with 4×4 Wi-Fi**
Product ID.	**1399.19.0188**
Description	Compact omni-directional 4×4 MIMO in-carriage antenna fur busses. Can be used as the onboard antenna in modern equipped busses with high data-rate passenger entertainment systems.
	· Supports 4×4 MIMO for Wi-Fi and ready for Wi-Fi 6E · Single hole mounting, low profile and vandalism proof. · Works without metal ground plane · ISO 16750, ECE-R118 compliant · 0.5 m of cable and SMA connector
Item no.	85178679

Technical data	**Band 1**	**Band 2**	**Band 3**
Band name	Wi-Fi	Wi-Fi	Cellular
Frequency (MHz)	2300 – 2500	2500 – 2690	3400 – 4200
VSWR	1.8	1.7	2.0
Gain (dBi)	5	5	6
Port Isolation (dB)	15	15	25

	Band 4	**Band 5**
Band name	Wi-Fi	Wi-Fi
Frequency (MHz)	4900 – 5975	5975 – 7125
VSWR	1.7	1.8
Gain (dBi)	7	7
Port Isolation (dB)	25	30 / 20

Electrical data	
Impedance	50 Ohms
Number of Ports	4
Composite power max.	20 – 40 Watts (see datasheet for specific bands)
Polarisation	Vertical (Cellular and Wi-Fi)

Mechanical data	
Dimensions (height × diameter)	33.2 × 145 mm
Weight	0.9 kg

Environmental data	
Environmental conditions	indoor
IP rating	IP68, IP69
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118

Material data	
Radome colour	RAL 7044 (grey)
Radome material	Reinforced PC (Polycarbonate)
Back plate / base plate material	Aluminum

For more detailed information, please visit our website's "Products" section.

Commercial vehicle antennas

SENCITY® Road IC MIMO

Product name	**SENCITY® Road IC MIMO with 4×4 Wi-Fi and FAKRA connector**
Product ID.	**1399.99.0188**
Description	Compact omni-directional 4×4 MIMO in-carriage antenna fur busses. Can be used as the onboard antenna in modern equipped busses with high data-rate passenger entertainment systems.
	· Supports 4×4 MIMO for Wi-Fi and ready for Wi-Fi 6E · Single hole mounting, low profile and vandalism proof. · Works without metal ground plane · ISO 16750, ECE-R118 compliant · 3 m of cable and FAKRA connector
Item no.	85178904

Technical data	**Band 1**	**Band 2**	**Band 3**
Band name	Wi-Fi	Wi-Fi	Cellular
Frequency (MHz)	2300 – 2500	2500 – 2690	3400 – 4200
VSWR	1.5	1.5	1.8
Gain (dBi)	2	2	2
Port Isolation (dB)	20	30	30
	Band 4	**Band 5**	
Band name	Wi-Fi	WI-Fi	
Frequency (MHz)	4900 – 5975	5975 – 7125	
VSWR	1.5	1.7	
Gain (dBi)	1	0	
Port Isolation (dB)	30	30	

Electrical data	
Impedance	50 Ohms
Number of Ports	4
Composite power max.	20 – 40 Watts (see datasheet for specific bands)
Polarisation	Vertical (Cellular and Wi-Fi)

Mechanical data	
Dimensions (height × diameter)	33.2 × 145 mm
Weight	0.9 kg

Environmental data	
Environmental conditions	indoor
IP rating	IP68, IP69
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118

Material data	
Radome colour	RAL 7044 (grey)
Radome material	Reinforced PC (Polycarbonate)

For more detailed information, please visit our website's "Products" section.

Commercial vehicle antennas

SENCITY® Road IC MIMO

Product Family	**SENCITY® Road IC MIMO with 6×6 Wi-Fi**
Product ID.	**1399.19.0189**
Description	Compact omni-directional 6×6 MIMO in-carriage antenna fur busses. Can be used as the onboard antenna in modern equipped busses with high data-rate passenger entertainment systems.
	· Supports 6×6 MIMO for Wi-Fi and ready for Wi-Fi 6E · Single hole mounting, low profile and vandalism proof. · Works without metal ground plane · ISO 16750, ECE-R118 compliant · 0.5 m of cable and SMA connector
Item no.	85191789

Technical data	**Band 1**	**Band 2**	**Band 3**
Band name	Wi-Fi	Wi-Fi	Cellular
Frequency (MHz)	2300 – 2500	2500 – 2690	3400 – 4200
VSWR	2.0	2.0	2.5
Gain (dBi)	5	5	6
Port Isolation (dB)	12	12	20
	Band 4	**Band 5**	
Band name	Wi-Fi	Wi-Fi	
Frequency (MHz)	4900 – 5975	5975 – 7125	
VSWR	2.5	2.5	
Gain (dBi)	6.5	6.5	
Port Isolation (dB)	20	20	

Electrical data	
Impedance	50 Ohms
Number of Ports	6
Composite power max.	20 – 40 Watts (see datasheet for specific bands)
Polarisation	Vertical (Cellular and Wi-Fi)

Mechanical data	
Dimensions (height × diameter)	33.2 × 145 mm
Weight	0.9 kg

Environmental data	
Environmental conditions	indoor
IP rating	IP68, IP69
RoHS 2011/65/EU	compliant
Certifications	ISO 16750, ECE-R118, CE-Mark

Material data	
Radome colour	RAL 7043 (dark grey)
Radome material	Reinforced PC (Polycarbonate)
Back plate / base plate material	Aluminum

For more detailed information, please visit our website's "Products" section.

Accessories for SENCITY® Road

Product name	**Stick antenna for SENCITY® Road – TETRA Stick antenna 380 – 430 MHz**
Product ID.	**9091.99.0247**
Description	TETRA Stick antenna for use with SENCITY® Road products. Can be used as the accessory antenna for additional frequency bands.
	· Frequency range from 380 to 430 MHz · Easy installation by M5 interface
Item no.	84112256

Technical data	**Band 1**
Band name	TETRA
Frequency (MHz)	380 – 430
VSWR	2
Gain (dBi)	3.5

Electrical data	
Impedance	50 Ohms
Number of Ports	1
Composite power max.	10 Watts (see datasheet for specific bands)
Polarisation	Vertical

Mechanical data	
Dimensions (height × diameter)	145 × 15 mm
Weight	0.05 kg

Environmental data	
Environmental conditions	outdoor
RoHS 2011/65/EU	compliant
Certifications	UL 94-HB

Material data	
Radome colour	Black

For more detailed information, please visit our website's "Products" section.

Accessories for SENCITY® Road

Product name	**Stick antenna for SENCITY® Road – TETRA Stick antenna 450 – 470 MHz**
Product ID.	**9091.99.0248**
Description	TETRA Stick antenna for use with SENCITY® Road products. Can be used as the accessory antenna for additional frequency bands.
	· Frequency range from 450 to 470 MHz · Easy installation by M5 interface
Item no.	84112257

Technical data	**Band 1**
Band name	TETRA
Frequency (MHz)	450 - 470
VSWR	2
Gain (dBi)	3

Electrical data	
Impedance	50 Ohms
Number of Ports	1
Composite power max.	10 Watts (see datasheet for specific bands)
Polarisation	Vertical

Mechanical data	
Dimensions (height × diameter)	120 x 15 mm
Weight	0.05 kg

Environmental data	
Environmental conditions	outdoor
RoHS 2011/65/EU	compliant
Certifications	UL 94-HB

Material data	
Radome colour	Black

For more detailed information, please visit our website's "Products" section.

Accessories for SENCITY® Road

Product name	**Stick antenna for SENCITY® Road – TETRA Stick antenna 410 – 430 MHz**
Product ID.	**9091.99.0254**
Description	TETRA Stick antenna for use with SENCITY® Road products. Can be used as the accessory antenna for additional frequency bands.
	· Frequency range from 410 to 430 MHz · Easy installation by M5 interface
Item no.	85007967

Technical data	**Band 1**
Band name	TETRA
Frequency (MHz)	410 – 430
VSWR	2
Gain (dBi)	3.5

Electrical data	
Impedance	50 Ohms
Number of Ports	1
Composite power max.	10 Watts (see datasheet for specific bands)
Polarisation	Vertical

Mechanical data	
Dimensions (height × diameter)	131 × 15 mm
Weight	0.05 kg

Environmental data	
Environmental conditions	outdoor
RoHS 2011/65/EU	compliant
Certifications	UL 94-HB

Material data	
Radome colour	Black

For more detailed information, please visit our website's "Products" section.

Accessories for SENCITY® Road

Product name	**Stick antenna for SENCITY® Road – FM Radio Stick antenna 88 – 108 MHz**
Product ID.	**9091.99.0246**
Description	FM Radio Stick antenna for use with SENCITY® Road products. Can be used as the accessory antenna for additional frequency bands.
	· Frequency range from 88 to 108 MHz · Easy installation by M5 interface · Can be equipped on optional antenna socket.
Item no.	84112255

Technical data	**Band 1**
Frequency (MHz)	88 – 108

Electrical data	
Impedance	50 Ohms
Number of Ports	1
Polarisation	Vertical

Mechanical data	
Dimensions (height × diameter)	425 × 16 mm
Weight	0.1 kg

Environmental data	
Environmental conditions	outdoor
RoHS 2011/65/EU	compliant
Certifications	UL 94-HB

Material data	
Radome colour	Black

For more detailed information, please visit our website's "Products" section.

Accessories for SENCITY® Road

Product name	**Metal ground plane foil 0.6×0.6m**
Product ID.	**9091.99.0250**
Description	Metal ground plane foil 0.6x0.6m. Can be used as an accessory for SENCITY® Road products.
	· Adhesive Aluminum foil kit. · Easy mounting using 3 strips each 0.2×0.6 m · Builds a metal ground plane for monopole stick antennas, if mounted on non-metal materials
Item no.	84124410

Mechanical data	
Dimensions (height × width × depth)	600 × 600 × 0.06mm
Weight	0.69 kg

Material data	
Back plate / base plate material	Aluminum

For more detailed information, please visit our website's "Products" section.

Radio frequency cable connectivity

Product name	**ENVIROFLEX_178-AM**
Product ID.	/
Description	RG178 LSFH, 50 Ohm, 3 GHz, 105°C, Ø 1.84 mm, RADOX® jacket
	· Halogen free alternative to RG cables · Ozone, UV and weathering resistance · Bus qualified
Item no.	85183340

Electrical data	
Impedance	50 Ω +/– 2 Ω
Operating frequency	≤ 3 GHz
Capacitance	94.5 pF/m
Velocity of signal propagation	70.7 %
Signal delay	4.71 ns/m
Screening effectiveness	40dB
Insulation resistance	10000000 MΩ*m
Operating Voltage (at sea level)	≤ 1 kVrms
Test voltage (50 Hz/1 min)	≤ 2 kVrms

Construction			
Impedance	**Material**	**Detail**	**Diameter**
Centre conductor	Steel, Copper + Silver plated	Strand-07	0.305 mm
Dielectric	SPEX (Crosslink Foam PE)		0.82 mm
Outer conductor	Copper, Silver plated	Braid, 95%	1.27 mm
Jacket	RADOX	RAL 5010 – bl	1.84 mm +/– 0.07 mm

Mechanical data	
Weight (g)	approx. 6.5g/m
Static bending radius	≥ 5 mm
Repeated bending radius	≥20 mm

Environmental data	
Operation temperature	–40 °C ... 105 °C
Installation temperature	–20 °C ... 60 °C
Fire characteristics	free of halogenes, acc. standard IEC 60754

Additional information
ISO 6722-1 5.22 (UN ECE-R 118.01) compliant

For more detailed information, please visit our website's "Products" section.

Radio frequency cable connectivity

ENVIROFLEX

Product name	**ENVIROFLEX_316_D-AM**
Product ID.	/
Description	RG316D LSFH, 50 Ohm, 8 GHz, 105°C, Ø 3.16 mm, RADOX® jacket
	· Halogen free alternative to RG cables · Ozone, UV and weathering resistance · Bus qualified
Item no.	85070084

Electrical data	
Impedance	50 Ω +/– 2 Ω
Operating frequency	≤ 8 GHz
Capacitance	94.5 pF/m
Velocity of signal propagation	70.1 %
Signal delay	4.72 ns/m
Screening effectiveness	70dB
Insulation resistance	10000000 MΩ*m
Operating Voltage (at sea level)	≤ 1.3 kVrms
Test voltage (50 Hz/1 min)	≤ 3 kVrms

Construction

Impedance	**Material**	**Detail**	**Diameter**
Centre conductor	Steel, Copper + Silver plated	Strand-07	0.54 mm
Dielectric	SPEX (Crosslink Foam PE)		1.53 mm
Outer conductor	Copper, Silver plated	Braid, 96%	1.99 mm
Outer conductor	Copper, Silver plated	90%	2.44 mm
Jacket	RADOX	RAL 9005 – bk	3.16 mm +/– 0.08 mm

Mechanical data	
Weight	approx. 21 g/m
Static bending radius	≥ 5 mm
Repeated bending radius	≥ 30 mm

Environmental data	
Operation temperature	–40 °C ... 105 °C
Installation temperature	–20 °C ... 60 °C
Fire characteristics	free of halogenes, acc. standard IEC 60754

Additional information
ISO 6722-1 5.22 (UN ECE-R 118.01) compliant

For more detailed information, please visit our website's "Products" section.

Radio frequency cable connectivity

SPUMA

Product name	**SPUMA_195-FR-AM**
Product ID.	**/**
Description	Low-loss, 50 Ohm, 8 GHz, 85°C, Ø 4.98 mm, LSFH jacket
	· Halogen free cable with standard dimensions · Ozone, UV and weathering resistance · Bus qualified
Item no.	85069658

Electrical data	
Impedance	50 Ω +/– 2 Ω
Operating frequency	≤ 8 GHz
Capacitance	90.8 pF/m
Velocity of signal propagation	76.1 %
Signal delay	4.54 ns/m
Screening effectiveness	90 dB at frequency 6GHz
Insulation resistance	1000000 MΩ*m
Operating Voltage (at sea level)	≤ 0.5 kVrms
Test voltage (50 Hz/1 min)	≤ 1.0 kVrms

Construction

Impedance	**Material**	**Detail**	**Diameter**
Centre conductor	Copper	Wire	0.94 mm
Dielectric	SPE (Foamed Polyethylene)		2.83 mm
Outer conductor	Aluminum / PES	longitudinal Foil, 100%	2.95 mm
Outer conductor	Copper, Tin plated	Braid	3.52 mm
Jacket	LSFH (modified polyethylene)	RAL 9005 – bk	4.98 mm +/– 0.1 mm

Mechanical data	
Weight	approx. 39.7 g/m
Static bending radius	≥ 10 mm
Repeated bending radius	≥ 40 mm

Environmental data	
Operation temperature	–40 °C ... 85 °C
Installation temperature	–20 °C ... 60 °C
Fire characteristics	free of halogenes, acc. standard IEC 60754

Additional information
ISO 6722-1 5.22 (UN ECE-R 118.01) compliant

For more detailed information, please visit our website's "Products" section.

Radio frequency cable connectivity

SPUMA

Product name	**SPUMA_240-FR-AM**
Product ID.	**/**
Description	Low-loss, 50 Ohm, 6 GHz, 85°C, Ø 6.17 mm, LSFH jacket
	· Halogen free cable with standard dimensions · Ozone, UV and weathering resistance · Bus qualified
Item no.	85069656

Electrical data	
Impedance	50 Ω +/– 2 Ω
Operating frequency	≤ 6 GHz
Capacitance	78.9 pF/m
Inductance	0.2 µH/m
Velocity of signal propagation	82.6 %
Signal delay	4.05 ns/m
Screening effectiveness	90 dB at frequency 6GHz
Insulation resistance	1000000 MΩ*m
Operating Voltage (at sea level)	≤ 0.9 kVrms
Test voltage (50 Hz/1 min)	≤ 1.5 kVrms

Construction			
Impedance	**Material**	**Detail**	**Diameter**
Centre conductor	Copper	Wire	1.42 mm
Dielectric	SPE (Foamed Polyethylene)		3.82 mm
Outer conductor	Aluminum / PES	longitudinal Foil, 100%	3.94 mm
Outer conductor	Copper, Tin plated	Braid, 94%	4.52 mm
Jacket	LSFH (modified polyethylene)	RAL 9005 – bk	6.17 mm +/– 0.1 mm

Mechanical data	
Weight	approx. 61 g/m
Static bending radius	≥ 14 mm
Repeated bending radius	≥ 53 mm

Environmental data	
Operation temperature	–40 °C ... 85 °C
Installation temperature	–20 °C ... 60 °C
Fire characteristics	free of halogenes, acc. standard IEC 60754

Additional information
ISO 6722-1 5.22 (UN ECE-R 118.01) compliant

For more detailed information, please visit our website's "Products" section.

Radio frequency cable connectivity

SPUMA

Product name	**SPUMA_400-FR-AM**
Product ID.	**/**
Description	Low-loss, 50 Ohm, 8 GHz, 85°C, Ø 10.25 mm, LSFH jacket
	· Halogen free cable with standard dimensions · Ozone, UV and weathering resistance · Bus qualified
Item no.	/

Electrical data	
Impedance	50 Ω +/– 2 Ω
Operating frequency	≤ 8 GHz
Capacitance	78 pF/m
Velocity of signal propagation	85 %
Signal delay	3.9 ns/m
Screening effectiveness	90 dB at frequency 6GHz
Insulation resistance	1000000 MΩ*m
Operating Voltage (at sea level)	≤ 1.6 kVrms
Test voltage (50 Hz/1 min)	≤ 3 kVrms

Construction			
Impedance	**Material**	**Detail**	**Diameter**
Centre conductor	Alluminium / copper	Wire	2.74 mm
Dielectric	SPE (Foamed Polyethylene)		7.24 mm
Outer conductor	Aluminum / PES	longitudinal Foil, 100%	7.4 mm
Outer conductor	Copper, Tin plated	Braid, 94%	8.15 mm
Jacket	LSFH (modified polyethylene)	RAL 9005 – bk	10.25 mm +/– 0.1 mm

Mechanical data	
Weight	approx. 115 g/m
Static bending radius	≥ 25 mm
Repeated bending radius	≥ 100 mm

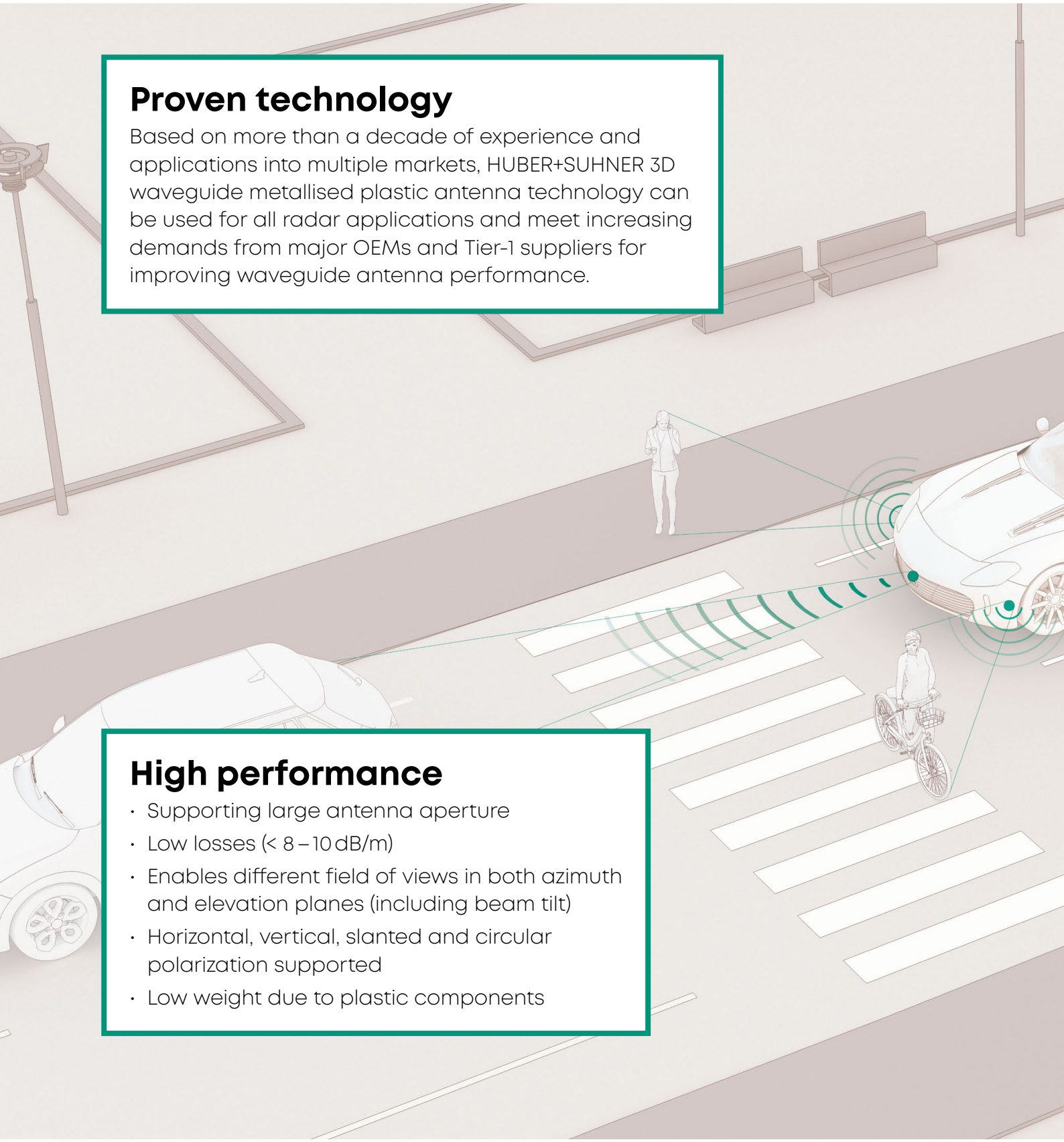
Environmental data	
Operation temperature	–40 °C ... 85 °C
Installation temperature	–20 °C ... 60 °C
Fire characteristics	free of halogenes, acc. standard IEC 60754

Additional information
ISO 6722-1 5.22 (UN ECE-R 118.01) compliant: qualifications ongoing.

For more detailed information, please visit our website's "Products" section.

ADAS

Advanced driver assistance system



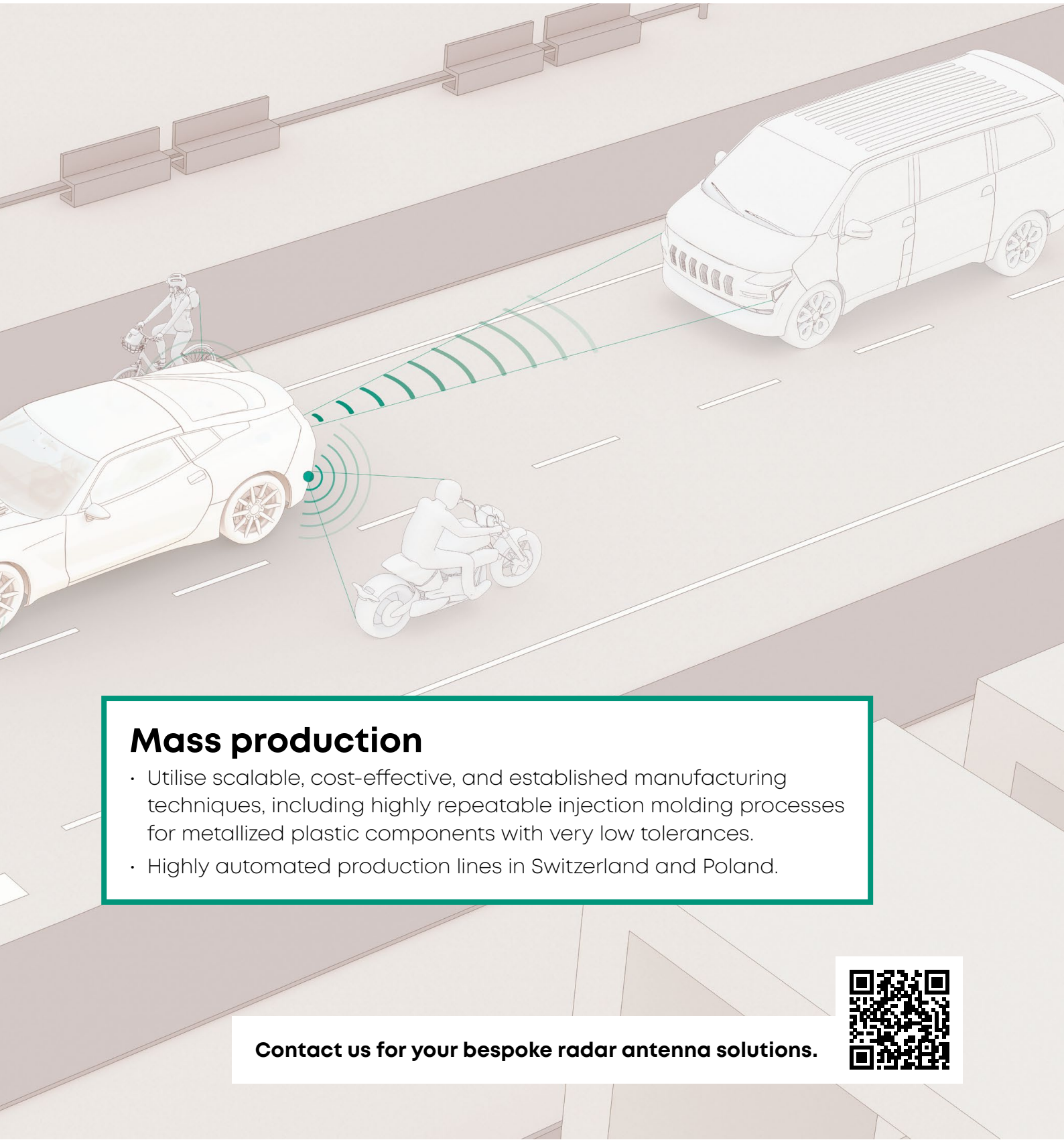
Proven technology

Based on more than a decade of experience and applications into multiple markets, HUBER+SUHNER 3D waveguide metallised plastic antenna technology can be used for all radar applications and meet increasing demands from major OEMs and Tier-1 suppliers for improving waveguide antenna performance.

High performance

- Supporting large antenna aperture
- Low losses (< 8 – 10 dB/m)
- Enables different field of views in both azimuth and elevation planes (including beam tilt)
- Horizontal, vertical, slanted and circular polarization supported
- Low weight due to plastic components

HUBER+SUHNER is the leading supplier for **3D waveguide metallised plastic antennas** which are revolutionising the automotive radar market. These antennas are developed for all automotive radars including long-, mid-, short-range radars and corner radars. We specialise in the design and manufacturing of fully customised mm-Wave products using metallised injection moulded parts.

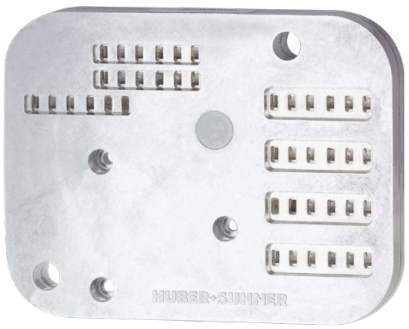


Mass production

- Utilise scalable, cost-effective, and established manufacturing techniques, including highly repeatable injection molding processes for metallized plastic components with very low tolerances.
- Highly automated production lines in Switzerland and Poland.

Contact us for your bespoke radar antenna solutions.

ADAS radar antennas



Product name	**FARAD ADAS Radar antenna**
Product ID.	**/**
Description	3D injection molded waveguide antenna for ADAS long-range MIMO radar applications. Supports operation in the 76 GHz to 81 GHz frequency range.
	· Features 8 receiving and 8 transmitting radiating elements with vertically polarized radiation pattern. · Designed for use in combination with Launcher-in-Package CARKIT radar evaluation kit developed and provided by Infineon Technologies.
Item no.	/

Electrical data	
Operating Frequency (GHz)	76– 81
Reflection coefficient (dB)	< – 10
Isolation (dB)	> 35
Boresight Gain (dBi)	16.4
3dB beamwidth (az.) (°)	44
3dB beamwidth (el.) (°)	14
Polarization	Vertical

General data

Indicated VSWR, pattern and gain values are valid for installations on PCB without radome material covering the antenna.

Mechanical data	
Dimensions (mm)	8.6 × 80 × 70
Weight (g)	

Environmental data	
Environmental conditions	Outdoor with housing
RoHS 2011/65/EU - REACH 2006/1907/EC	compliant
Certifications	UL 94-HB

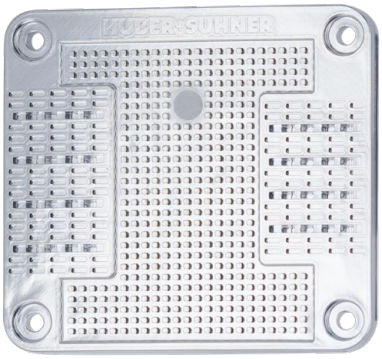
Reliability performances

The product is MIMO 3D waveguide demonstrator which enables RF tests and RF evaluation campaigns only (in the lab, on the field, in the car). The demonstrator is fabricated according to prototyping technology not validated against automotive standards. HUBER+SUHNER proprietary technology for 3D waveguide serial delivery are fully validated according to automotive standards.

For more detailed information, please visit our website's "Products" section.

Advanced driver assistance system

ADAS radar antennas



Product name	**NIDAR ADAS Radar antenna**
Product ID.	**/**
Description	3D injection molded waveguide antenna for ADAS long-range MIMO radar applications. Supports operation in the 76 GHz to 81 GHz frequency range.
	· Features 4 receiving and 4 transmitting radiating elements with horizontally polarized radiation pattern and meta-surfaces for bumper reflections mitigation. · Designed for use in combination with Launcher-in-Package SAF85xx radar evaluation kit developed and provided by NXP Semiconductors.
Item no.	/

Electrical data	
Operating Frequency (GHz)	76 – 81
Reflection coefficient (dB)	< – 10
Isolation (dB)	< – 30
Gain – average max. (dBi)	14.8
3dB beamwidth (az.) (°)	70
3dB beamwidth (el.) (°)	17

General data
Indicated VSWR, pattern and gain values are valid for installations on PCB without radome material covering the antenna.

Mechanical data	
Dimensions (mm)	7.9 × 60.7 × 66.2 (Height × Width × Depth)
Weight (g)	30.2
RoHS 2011/65/EC	Compliant
Lead-free soldered	Yes
REACH 2006/1907/EC	Compliant

Environmental data	
Environmental conditions	Outdoor
RoHS 2011/65/EU	compliant
Certifications	UL 94-HB

Reliability performances
The product is MIMO 3D waveguide demonstrator which enables RF tests and RF evaluation campaigns only (in the lab, on the field, in the car). The demonstrator is fabricated according to prototyping technology not validated against automotive standards. HUBER+SUHNER proprietary technology for 3D waveguide serial delivery are fully validated according to automotive standards.

For more detailed information, please visit our website's "Products" section.

Advanced driver assistance system

ADAS radar antennas

Product name	**TIHS Radar antenna**
Product ID.	**85214625**
Description	3D injection molded waveguide antenna for ADAS long-range MIMO radar applications. · Features 4 receiving and 4 transmitting radiating elements with horizontally polarized radiation pattern with a compact port area of 125 mm². · Designed for use in combination with Launcher-on-Package AWR2544 / AWR2E44 kit developed and provided by Texas Instruments.
Item no.	/

Electrical data	
Operating Frequency (GHz)	76 – 81
Reflection coefficient (dB)	< – 10
Isolation RX to TX (dB)	> 30
Boresight Gain (dBi)	15.0
10dB beamwidth (az.) (°)	140
10dB beamwidth (el.) (°)	20
Polarization	horizontal

General data
Indicated VSWR, pattern and gain values are valid for installations on PCB without radome material covering the antenna.

Mechanical data	
Dimensions (mm)	7.1 × 80.3 × 43.0
Weight (g)	23.8

Environmental data	
Environmental conditions	Outdoor with housing
RoHS 2011/65/EU - REACH 2006/1907/EC	compliant
Certifications	UL 94-HB

Reliability performances
The product is MIMO 3D waveguide demonstrator which enables RF tests and RF evaluation campaigns only (in the lab, on the field, in the car). The demonstrator is fabricated according to prototyping technology not validated against automotive standards. HUBER+SUHNER proprietary technology for 3D waveguide serial delivery are fully validated according to automotive standards.

For more detailed information, please visit our website's "Products" section.

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HUBER+SUHNER is certified to ISO 9001, ISO 14001, ISO 45001, EN/AS 9100, IATF 16949 and ISO/TS 22163-IRIS.