

Smarteq™ SmartDisc™ MIMO Low-Profile Antenna

Combination Antennas - GNSS + Cellular + WiFi + Bluetooth®

710635 , 710640, 710641, 710642, 710643, 710682, 710683, 710685



Description

Configurable, low-profile, combination antenna that delivers reliable RF performance.

Technologies

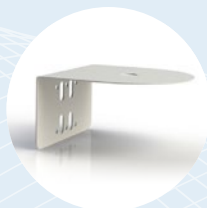
- Cellular MIMO 2G/3G/4G
- GPS
- Galileo
- GLONASS
- Beidou
- WiFi
- Bluetooth®

Features

- Configurable
- Easy installations with hole mount
- Durable design for a range of M2M, IoT, and vehicle installations
- Patented technology



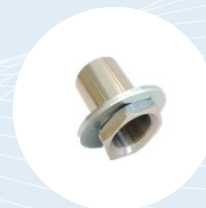
Smarteq™ SmartDisc™ MIMO can be equipped with a feature enabling galvanic isolated installation at the antenna. Use case electric forklifts and other EV-vehicles EN 1175:2020, 50HZ, 1KVrms, 500 VA. Optional plastic center screw and plastic washer (pictured left). Ssee separate datasheet for details.



710452 – Bracket



710598 – Slitted nut



710206 – Extension nut
(for installation thickness 25-50mm)

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The Smarteq™ SmartDisc™ MIMO is a configurable, combination antenna supporting up to 4-in-1 cellular MIMO 2G, 3G, 4G, GNSS, and Bluetooth®/WiFi. It features a low-profile enclosure with a durable design. The antenna can be mounted on metal or non-conductive materials enabling flexible and easy installation. The Smarteq™ SmartDisc™ MIMO antenna is ideal for vehicle and load-handling equipment utilizing fleet management, smart city, and mobile gateways. The dual-feed GNSS antenna enables excellent Axial ratio and gain, and pre-filtered LNA ensures functionality in this combination antenna.

Features

- Cellular: 4G, 3G, 2G, 698-960MHz and 1710-2690MHz
- GNSS: 1559-1606MHz (GPS, Galileo, Glonass and Beidou)
- Bluetooth®/WiFi: 2400-2485/4900-5900MHz
- Pre-filter LNA with dual-feed GNSS antenna
- IP67 class
- Option available enabling DC isolated installation of antenna to fulfill EV-forklift/EV vehicle requirements

Applications

- Off-Highway Vehicle (OHV)
- ECU/Gateway
- M2M
- Public Safety
- Smart Metering
- Smart City
- EV-chargers
- Vending machines
- Parking meters

Certifications



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Standard Configurations

Model	Cellular 1 (Main) Connector	Cellular 2 (Sec.) Connector	GNSS+ Connector	WiFi-1 Connector	WiFi-2 Connector
710635	SMA-m				RPSMA-m
710640	FAKRA-m/D	FAKRA-m/D	FAKRA-m/C	FAKRA-m/I	
710641	FAKRA-m/D	FAKRA-m/D	FAKRA-m/C		
710642	FAKRA-m/D		FAKRA-m/C	FAKRA-m/I	FAKRA-m/I
710643	FAKRA-m/D			FAKRA-m/I	FAKRA-m/I
710682	FAKRA-m/D	FAKRA-m/D			
710683	SMA-m			SMA-m	
710685	FAKRA-m/D		FAKRA-m/C		

Electrical Specifications – Cellular on Ground Plane

Frequency Ranges	VSWR ¹	Average Gain ²	Radiation Efficiency ²	Impedance	Polarization	Radiation Pattern	Max. Power
Cellular 1 (Main)							
698-790 MHz	5:1	0 dBi	25%	50Ω	Linear	Omnidirectional	10W
790-960 MHz	3.5:1	1.5 dBi	45%				
1710-2170 MHz	2:1	6 dBi	53%				
2500-2690 MHz	2:1	3.5 dBi	35%				
Cellular 2 (Sec.)							
1710-2170 MHz	2:1	5 dBi	52%	50Ω	Linear	Omnidirectional	10W
2500-2690 MHz	2:1	7 dBi	54%				

Electrical Specifications – Cellular in Free Space

Frequency Ranges	VSWR ¹	Average Gain ³	Radiation Efficiency ³	Impedance	Polarization	Radiation Pattern	Max. Power
Cellular 1 (Main)							
698-790 MHz	5:1	-3.1 dBi	14%	50Ω	Linear	Omnidirectional	10W
790-960 MHz	3.5:1	-1 dBi	27%				
1710-2170 MHz	2:1	2 dBi	53%				
2500-2690 MHz	2:1	1.4 dBi	37%				
Cellular 2 (Sec.)							
1710-2170 MHz	2:1	4.3 dBi	57%	50Ω	Linear	Omnidirectional	10W
2500-2690 MHz	2:1	2.5 dBi	57%				

¹ Measured with 2m cable

² Measured on ground plane Ø1m and 10cm cable

³ Measured in free space with 10cm cable

⁴ Peak at zenith

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Electrical Specifications – GNSS⁴

Frequency Range	1559-1606 MHz (GPS, Galileo, GLONASS, Beidou)		
Impedance	50Ω		
Polarization	RHCP		
VSWR	< 2.5:1		
Gain Passive (Peak Gain)	GPS	3.0 dBic	
	Galileo	2.0 dBic	
	GLONASS	1.5 dBic	
	Beidou	2.0 dBic	
Gain Active	30 ± 1 dB		
Noise Figure	< 2.5 dB with pre-filter		
Out-of-Band Rejection	< 960 MHz	> 60 dB	
	>1710 MHz	> 60 dB	
Compression Point	-20 dBm		
Supply Voltage	2.5 - 6V (voltage regulation in LNA)		
Current Consumption	8 - 10mA		

Electrical Specifications – Bluetooth®/WiFi on Ground Plane

Frequency Ranges	VSWR ¹	Average Gain ²	Radiation Efficiency ²	Impedance	Polarization	Isolation ¹ WiFi to Cellular 1 (Main)	Isolation ¹ WiFi to Cellular 2 (Sec.)
2400-2485 MHz	< 1.5:1	5.7 dBi	63%	50Ω	RHCP	>14.5 dB	>24 dB
4900-5900MHz	< 1.5:1	9 dBi	53%			>24.5 dB	>26 dB

Electrical Specifications – Bluetooth®/WiFi in Free Space

Frequency Ranges	VSWR ¹	Average Gain ²	Radiation Efficiency ²	Impedance	Polarization	Isolation ¹ WiFi to Cellular 1 (Main)	Isolation ¹ WiFi to Cellular 2 (Sec.)
2400-2485 MHz	< 1.5:1	2.4 dBi	69%	50Ω	RHCP	>14.5 dB	>24 dB
4900-5900MHz	< 1.5:1	2.7 dBi	60%			>24.5 dB	>26 dB

¹ Measured with 2m cable

² Measured on ground plane Ø1m and 10cm cable

³ Measured in free space with 10cm cable

⁴ Peak at zenith

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Mechanical and Environmental Specifications

Dimensions (D x H)		98 x 27,5mm
Installation		Hole mount with center screw Installation surface thickness < 3.5mm Hole dimension Ø19mm Mounting torque 6-8Nm
Cable Length and Type	Cellular 1 (Main)	500mm, RG316
	Cellular 2 (Sec.)	530mm, RG316
	GNSS	560mm, RG316
	WiFi	590mm, RG316
Weight		~220g
Material		PC / PBT / Aluminum alloy
Color		Black (options white and grey available)
IP Class		IP67
Operating/Storage Temperature		-40°C to +85°C
Certifications		RoHS REACH ECE-R118 certified cables

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Extensions Cables – FAKRA

Cable Type	Part Number	Connector 1 / 2	Gender 1 / 2	Code
LL58				
2,5 meter	710606	FAKRA/SMA	Female/Male	Z
	710608	FAKRA	Female/Male	D
	710609	FAKRA	Female/Male	C
	710610	FAKRA	Female/Male	I
	710668	FAKRA/RP SMA	Female/Male	I
	710727	FAKRA/SMA	Female/Male	D
	710729	FAKRA/SMA	Female/Male	C
5 meter	710617	FAKRA/SMA	Female/Male	Z
	710611	FAKRA	Female/Male	D
	710612	FAKRA	Female/Male	C
	710613	FAKRA	Female/Male	I
	710669	FAKRA/RP SMA	Female/Male	I
	710728	FAKRA/SMA	Female/Male	D
	710730	FAKRA/SMA	Female/Male	C

Extension Cables – SMA

Cable Type	Part Number	Connector	Gender	Color
LL58				
3 meter	201417-1	SMA	Female/Male	White
5 meter	201417-2	SMA	Female/Male	White
	201417-7	SMA	Female/Male	Black
10 meter	201417-3	SMA	Female/Male	White
Low Loss				
3 meter	707220	SMA	Female/Male	Black
5 meter	710298	SMA	Female/Male	Black
10 meter	707222	SMA	Female/Male	Black

Accessories – Other

Part Number	
710452	Angled Bracket, white
710598	Slitted nut
710206	Extension nut

CONTACT US

**For more information about
this product contact your
sales representative or visit
> pctel.com/antenna-products**

Solving Complex Wireless Challenges

PCTEL is a leading global provider of wireless technology solutions, including purpose-built Industrial IoT devices, antenna systems, and test and measurement products. Trusted by our customers for 29 years, we solve complex wireless challenges to help organizations stay connected, transform, and grow.



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