



LPCA-MIMO 5G

Low Profile Combination Antenna

5 in 1: MIMO LTE / 5G, WiFi-6E, GNSS

LPCA-MIMO 5G offer excellent RF performance in a discreet rugged, low-profile design supporting, Cellular MIMO 4x4 LTE/5G, GNSS or 2x2 LTE/5G and 2x2 MIMO Wifi-6E in a low profile casing with durable design. The antenna platform is configurable enabling adaption to your antenna system need. LPCA-MIMO 5G standard configuration contains two cellular band antennas designed for 617-960/1710-2690/3300-5000MHz, two secondary LTE/WIFI-6E antennas 1427-7125MHz and a LNA equipped GNSS antenna. LPCA-MIMO antenna platform is designed to support multi system solutions making it perfect for fleet management, track and trace, navigation, cargo handling and V2X. Dual feed GNSS antenna enables excellent Axial ratio and gain. Pre-filtered LNA ensures functionality in a combination antenna.

Features

- 5 in 1 antenna
- 5G and Wifi 6E
- 2x Cellular Main: 617-960 / 1710-2690MHz / 3300-5000MHz
- 2x Cellular Secondary/ WIF-6E: 1427-7200MHz
- 1x GNSS: GPS, Galileo, Glonass, BeiDou
- LNA gain 30dB with pre-filter
- Approved according to ECE-R118

Applications

- Public safety
- Fleet management
- Navigation / Positioning
- Agriculture, construction equipment
- V2X
- Cargo/load handling



Specifications

Electrical

2x Main Cellular LTE/5G

Frequency band [MHz]	617 – 698	698 – 960	1710 – 2690	3300 – 4400	4400 – 5000
VSWR (typical)*	$\leq 3:1$	$\leq 2.7:1$	$< 2.1:1$	$< 1.9:1$	$< 5:1$
Peak gain*	1dBi	3.3dBi	7.5dBi	6.3dBi	5.2dBi
Antenna efficiency*	~40%	~65%	~78%	~58%	~35%
Isolation Port 1 to 2	13dB	13dB	26dB	26dB	38dB
Isolation Port 1 to 3	23dB	17dB	31dB	24dB	32dB
Isolation Port 1 to 4	15dB	13dB	19dB	26dB	32dB
Correlation factor	< 0.04 on ground plane				
Impedance	50 Ω				
Polarization	Linear				
Radiation characteristics	Omnidirectional				
Max power	10W				
DC short	Yes				

2x Secondary LTE/5G/WiFi-6E

Frequency band [MHz]	1427-1510	1710-2690	3300-5000	4900-7200	
VSWR (typical)*	2:1	2:1	2.5:1	2:1	
Peak gain*	6.5dBi	7dBi	6.5dBi	9dBi	
Antenna efficiency*	78%	80%	75%	70%	
Isolation Port 3 to 4	15dB	13dB	15dB	20dB	
Impedance	50 Ω				
Polarization	Linear				
Radiation characteristics	Omnidirectional				
Max power	10W				

GPS/Glonass/Galileo/Beidou

Frequency	1559 - 1610MHz	
Impedance	50 Ω	
Polarization	RHCP	
VSWR	$\leq 2:1$	
Gain Passive (peak gain)	1585MHz	4.5dBic
	GPS	3.0dBic
	GLONASS	2.0dBic
	BEIDOU	1.5dBic
	GALILEO	2.0dBic
Active gain	30 $\pm$ 1 dB	
Noise figure	< 2.5 dB including pre-filter	
Out of band rejection	< 960 MHz	> 60 dB
	> 1710 MHz	> 60 dB
Supply voltage	2.4 - 6V	
Typical current consumption	8 - 10mA	

Smarteq, based in Stockholm, Sweden, is a leading developer of antennas and antenna systems for increased availability. Smarteq aims towards the market segments industry, energy and vehicles.

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Mechanical

Dimensions (L x W x H)	280 x 120 x 50mm		
Color	Black, other colors available upon request		
Installation	Hole mount, Ø19mm Installation thickness ≤ 6mm		
Cable type	RG316		
Connector	FAKRA-Male		
Cable length	Port	System	Length (mm)
	1	Cellular	500
	2	Cellular	530
	3	GNSS+	560
	4	LTE-Sec/Wifi-6E	470
	5	LTE-Sec/Wifi-6E	440
Connector code	Port	Color	Code
	Cellular	Bordeaux	D
	GNSS+	Blue	C
	LTE-Sec /WiFi-6E	Beige	I
IP class	IP67		
Temperature	Storage / Operating	-40°C to +85°C	

*Measurements are made on Ø0,3 ground plane 0,3m cable.

Selection of LPCA versions

Part number	Antenna port				
	Cellular 5G/LTE	Cellular 5G/LTE	GNSS+	LTE-Sec WIFI-6E	LTE-Sec WIFI-6E
710673	■	■			
710674	■	■		■	
710675	■	■	■		
710676	■	■	■	■	
710677	■	■		■	■
710678	■	■	■	■	■

710673 LPCA Mimo 5G

710674 LPCA Mimo 5G WiFi/LTE Sec

710675 LPCA Mimo 5G GNSS+

710676 LPCA Mimo 5G WiFi /LTE Sec GNSS+

710677 LPCA Mimo 5G Mimo WiFi/LTE Sec

710678 LPCA Mimo 5G Mimo WiFi/LTE Sec GNSS+

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Slitted nut



Extension nut to be used on
LPCA with long screw
enabling installation
thickness 25-50mm

Accessories

710598	Slitted nut
710206	Extension nut

Extension cables

LL58	Part number	Connector	Gender	Code
2,5 meter	710606	FAKRA/SMA	Female/Male	Z/
	710608	FAKRA	Female/Male	D
	710609	FAKRA	Female/Male	C
	710610	FAKRA	Female/Male	I
5 meter	710607	FAKRA/SMA	Female/Male	Z/
	710611	FAKRA	Female/Male	D
	710612	FAKRA	Female/Male	C
	710613	FAKRA	Female/Male	I

Other

REACH, RoHS compliant.

Certified according to 2014/53/EU Radio Equipment Directive (RED)

Type approval: E5 (ECE R10.5)

Smarteq reserves the right to change specifications without prior notice.