SmartDisc II Combi

Cellular MIMO, GNSS+, BT/WiFi

SmartDisc II Combi, Combination antenna supporting -Cellular MIMO 2G, 3G, 4G, GNSS and BT/WiFi in a low-profile enclosure with durable design. The antenna can be mounted on metal or non-conductive materials enabling flexible and easy installation. Ideal for vehicle and load handling equipment utilizing fleet management, track and trace, mobile gateways. Dual feed GNSS antenna enables excellent Axial ratio and gain. Pre-filtered LNA ensures functionality in a combination antenna.

- Cellular: 4G, 3G, 2G, 698-960MHz and 1710-2690MHz
- GNSS: 1559-1606MHz (GPS, Galileo, Glonass and Beidou)
- BT/WiFi: 2400-2485/4900-5900MHz
- Pre-filter LNA
- Dual feed GNSS antenna
- IP67 class
- Designed in Sweden with Patented technology

Specifications

Cellular -Ground plane	**LTE 1**		**LTE 2**
Frequencies	698-960MHz 1710-2170MHz 2500-2690MHz		1710-2170MHz 2500-2690MHz
Impedance	50Ω		50Ω
Polarization	Linear		Linear
VSWR*	698-790MHz	5:1	NA
	790-960MHz	3.5:1	NA
	1710-2170MHz	2:1	2:1
	2500-2690MHz	2:1	2:1
Gain^{GP} (Averaged over frequency band)	698-790MHz	0dBi	-
	790-960MHz	1.5dBi	-
	1710-2170MHz	6dBi	5dBi
	2500-2690MHz	3.5dBi	7dBi
Radiation Efficiency^{GP}	698-790MHz	25%	NA
	790-960MHz	45%	NA
	1710-2170MHz	53%	52%
	2500-2690MHz	35%	54%

*Measured with 2m cable
GP: Measured on ground plane Ø1m and 10cm cable

SMARTEQ WIRELESS

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 vehicles.

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Cellular -Free space	**LTE 1**		**LTE 2**
Frequencies	698-960MHz 1710-2170MHz 2500-2690MHz		1710-2170MHz 2500-2690MHz
Impedance	50Ω		50Ω
Polarization	Linear		Linear
VSWR*	698-790MHz	5:1	NA
	790-960MHz	3.5:1	NA
	1710-2170MHz	2:1	2:1
	2500-2690MHz	2:1	2:1
Gain[FS] (Averaged over frequency band)	698-790MHz	-3.1dBi	-
	790-960MHz	-1dBi	-
	1710-2170MHz	2dBi	4.3dBi
	2500-2690MHz	1.4dBi	2.5dBi
Radiation Efficiency[FS]	698-790MHz	14%	NA
	790-960MHz	27%	NA
	1710-2170MHz	53%	57%
	2500-2690MHz	37%	57%

*Measured with 2m cable
FS: Measured in free space with 10cm cable

GNSS* **		
Frequencies	1559-1606MHz (GPS, Galileo, Glonass, Beidou)	
Impedance	50Ω	
Polarization	RHCP	
VSWR	< 2.5:1	
Gain Passive (peak gain)	GPS	3.0dBic
	GLONASS	2.0dBic
	BEIDOU	1,5dBic
	GALILEO	2.0dBic
Gain Active	30 ± 1 dB	
Noise figure	< 2.5 dB with pre-filter	
Out of band rejection	< 960MHz	> 60dB
	> 1710MHz	> 60dB
Compression point	-20 dBm	
Supply Voltage	2.5 - 6V (voltage regulator in LNA)	
Current Consumption	8 - 10mA	

*** Peak at zenith

BT / WiFi
- Ground plane

Frequencies	2400-2485 / 4900-5900MHz	
Impedance	50Ω	
Polarization	RHCP	
VSWR*	2400-2485MHz	4900-5900MHz
	< 1.5:1	< 1.5 :1
Gain^{GP} (Averaged over frequency band)	5.7dBi	9dBi
Radiation efficiency^{GP}	63%	53%
Isolation*		
WiFi to LTE-1	>14.5dB	>24dB
WiFi to LTE-2	>24.5dB	>26dB

BT / WiFi
- Free space

Frequencies	2400-2485 / 4900-5900MHz	
Impedance	50Ω	
Polarization	RHCP	
VSWR*	2400-2485MHz	4900-5900MHz
	< 1.5:1	< 1.5 :1
Gain^{FS} (Averaged over frequency band)	2.4dBi	2.7dBi
Radiation efficiency^{FS}	69%	60%
Isolation*		
WiFi to LTE-1	>14.5dB	>24dB
WiFi to LTE-2	>24.5dB	>26dB

Mechanical

Dimensions (D x H)	96 x 26mm		
Installation	Hole mount with center screw Installation surface thickness < 5mm Hole dimension Ø22,5mm Mounting torque 5-6Nm		
Cable length/type	LTE -1		500mm, RG174
	LTE -2		530mm, RG174
	GNSS		560mm, RG174
	WiFi		590mm, RG174
Connector FAKRA Female Water proof	LTE -1	Bordeux	Code D
	LTE -2	Red	Code L
	GNSS	Blue	Code C
	WiFi	Violet	Code H
Weight	~200g		
Material	PC / PBT / Aluminum alloy		
Colour	Black		
IP class	IP67		
Temperature	Operating/Storage		-40°C to +85°C

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Other

Galvanic separated from mounting surface, isolation strength 1kV
RoHS compliant