



HIRSCHMANN MOBILITY

**Cellular (2G/3G/4G)/
GNSS (GPS/GLONASS)/
WLAN (2.4GHz/5.8GHz) Screw Antenna**

**CGNW 702659 LP S/Series
Part Number 920-630-XXX**

Features

- Combination antenna for positioning, data-services and short range radio services
- Terrestrial based transmission and satellite-based positioning
- Embedded high performance LNA with dual feed ceramic patch antenna and phase shift network for optimized cross polarization discrimination(XPD)
- Screw mounting on metallic and nonmetallic ground
- Designed for installation in harsh environment

Some technical optimization with minor effect to the overall performance of this product are still pending. This document will be updated according the finalization of the optimization measures without prior information.

Technical Data

Dimensions	124 mm x 80 mm x 31 mm
Temperature range	-40°C - +85°C
Protection class	IP6k6
Cable type	RG 174

Technical Data

Cellular	
Frequency range	Low: 698 - 960 MHz High: 1710 - 2690 MHz
Services	2G: GSM 850/900 MHz GSM 1800/1900 MHz 3G: UMTS 4G: LTE-bands (1 - 10; 12 - 20; 23, 25; 26 - 30; 33 - 41; 44)
Impedance	50 Ohm
Load capacity	max. 10 W pulsed acc. GSM standard
VSWR	≤ 2.0
Gain	0 dBi ¹⁾
Diagnostic resistor	10 kOhms
GNSS	
Frequency range	GPS: 1563 - 1587 MHz (L1) Galileo: 1559 - 1591 MHz (E1) Beidou: 1559 - 1591 MHz (B1C) GLONASS: 1593 - 1610 MHz (G1)
Impedance	50 Ohm
VSWR	≤ 2.0
Gain	1 dBic ²⁾
Amplification	27 ±1 dB
Noise figure (50 Ohm)	≤ 2.2 dB
Voltage supply	3.0 - 5.5 VDC (remotely fed)
Current consumption	24 mA ± 1 mA at 5 V
WLAN	
Frequency range	IEEE 802.11 b, g: 2400 - 2484 MHz IEEE 802.11 a,h: 5150 - 5725 MHz IEEE 802.11 n: 2400 - 2484 MHz and 5150 - 5725 MHz IEEE 802.11 p: 5755 - 5925 MHz
Polarization	linear

Technical Data

Load capacity	IEEE 802.11 b, g: ≤ 200 mW
	IEEE 802.11 a,h: ≤ 1000 mW
	IEEE 802.11 n: ≤ 200 (2.4-2.84 GHz)
	≤ 1000 (5.1-5.72 GHz)
	IEEE 802.11 p: ≤ 8 W EIRP (5.79 - 5.81 GHz)
	≤ 2 W EIRP (5.85 - 5.92 GHz)
Diagnostic resistor	10 kOhms

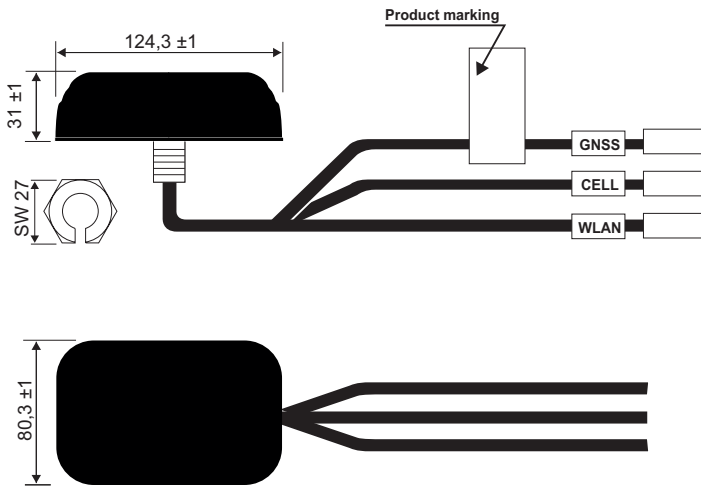
¹⁾ dBi: referenced to an isotropic radiator

²⁾ dBic: referenced to an isotropic radiator, circular polarization

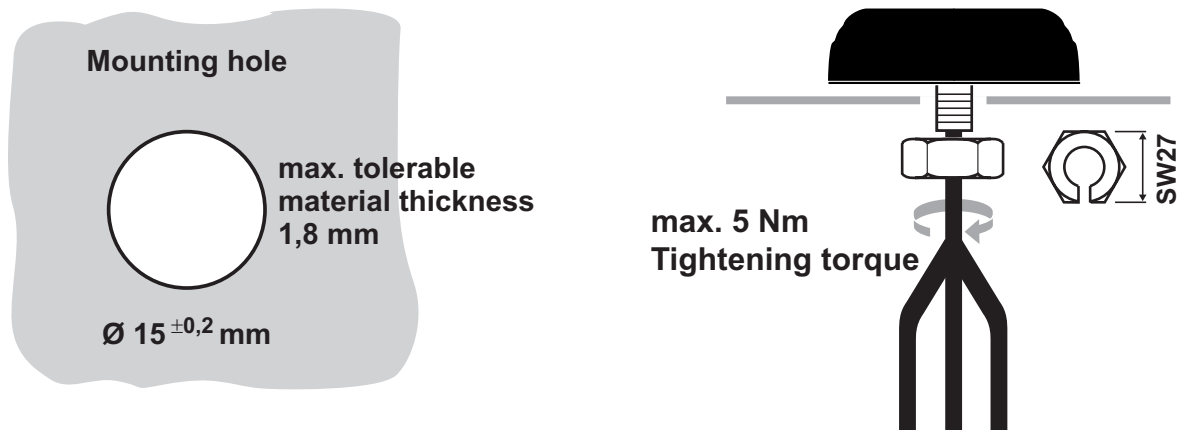
Versions

PN	Description	CELL	GNSS	WLAN
920-630-001	CGNW 702659 LP S/FAKRAm/0.2	200 mm FAKRAm, D	200 mm FAKRAm, C	200 mm FAKRAm, E
920-630-002	CGNW 702659 LP S/FAKRaf/3.0	3000 mm FAKRaf, D	3000 mm FAKRaf, C	3000 mm FAKRaf, E

Technical Drawing



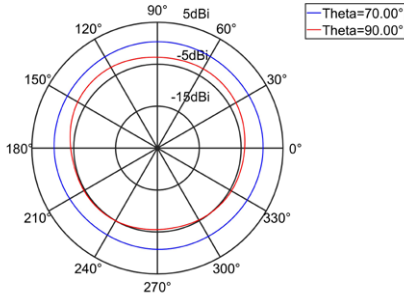
Installation



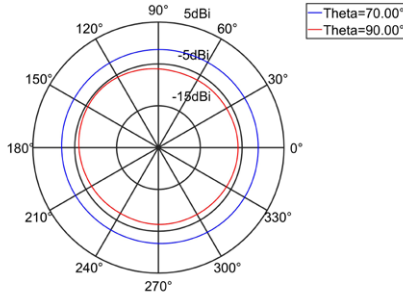
Antenna diagrams

4G antenna measurement on Sirius GND plane

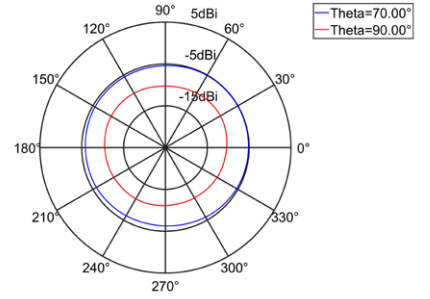
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 698.00 MHz)



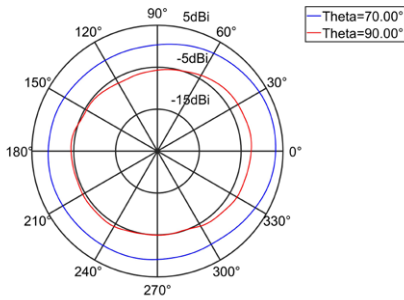
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 830.00 MHz)



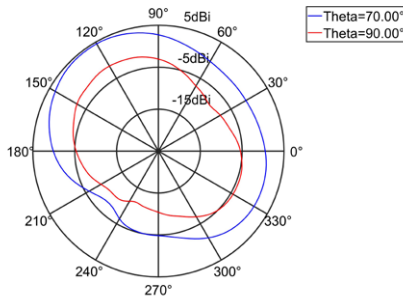
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 960.00 MHz)



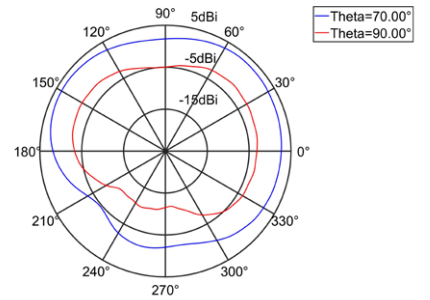
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 1710.00 MHz)



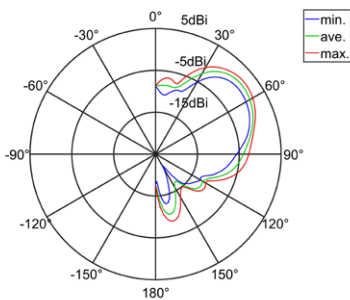
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 2170.00 MHz)



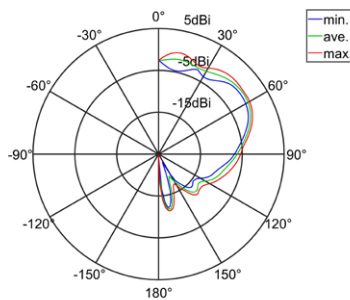
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 2690.00 MHz)



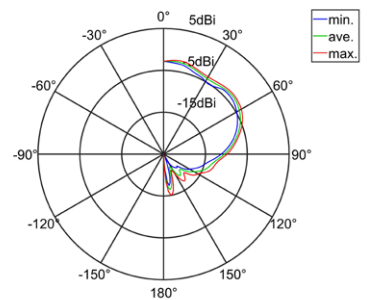
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 698.00 MHz)



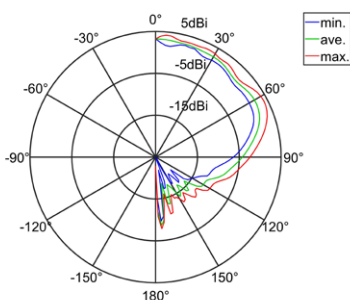
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 830.00 MHz)



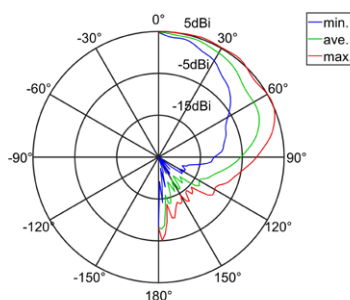
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 960.00 MHz)



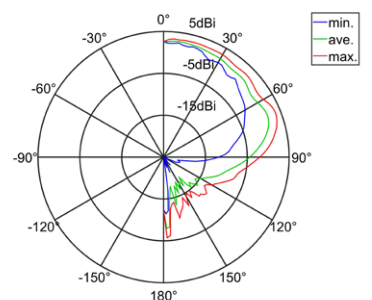
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 1710.00 MHz)



radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 2170.00 MHz)



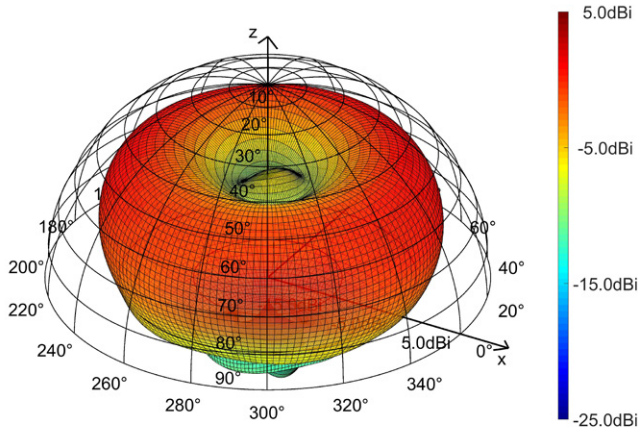
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 2690.00 MHz)



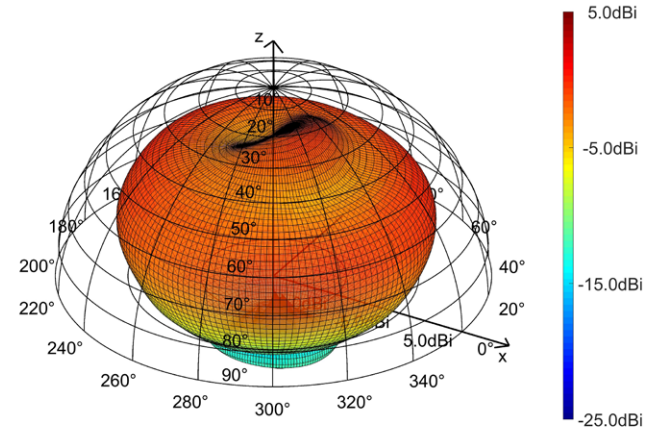
Antenna diagrams

4G antenna measurement on Sirius GND plane

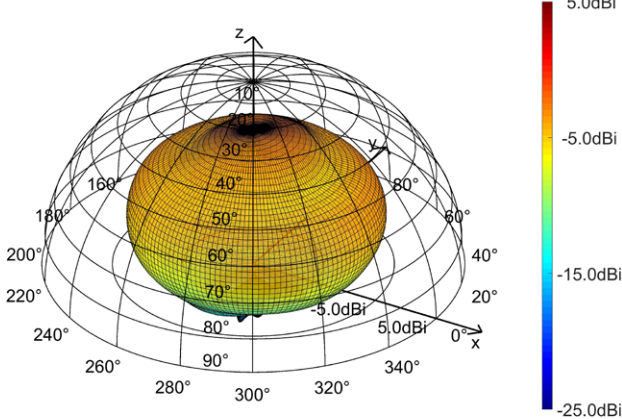
realized antenna gain (E_Total, frequency = 698.0 MHz)



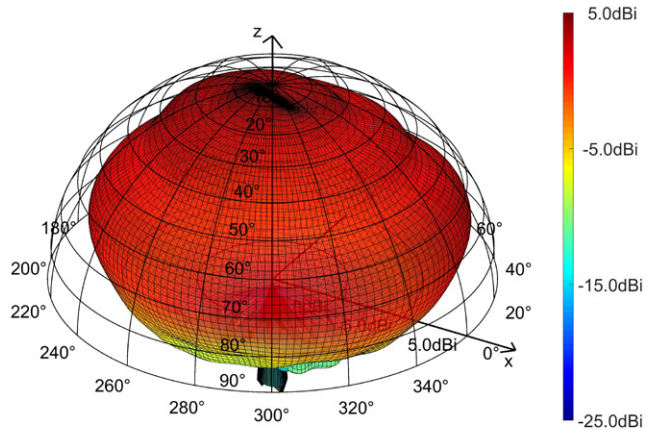
realized antenna gain (E_Total, frequency = 830.0 MHz)



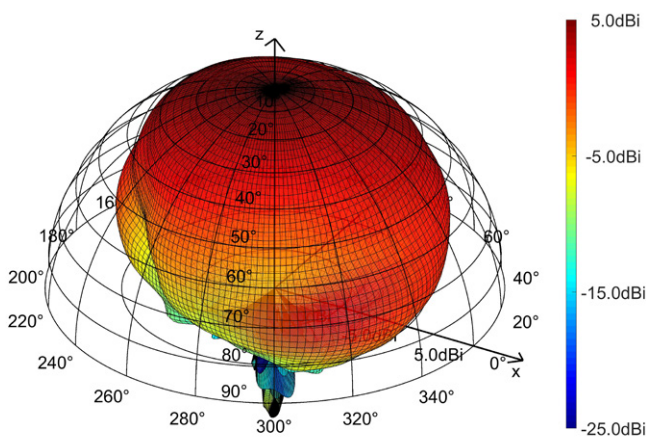
3D radiation pattern
 realized antenna gain (E_Total, frequency = 960.0 MHz)



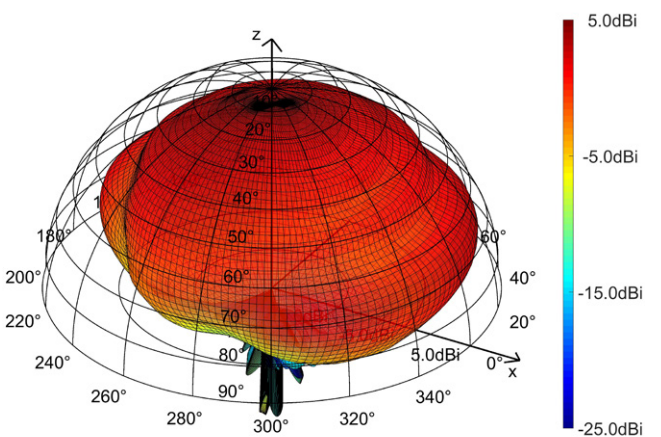
realized antenna gain (E_Total, frequency = 1710.0 MHz)



realized antenna gain (E_Total, frequency = 2170.0 MHz)



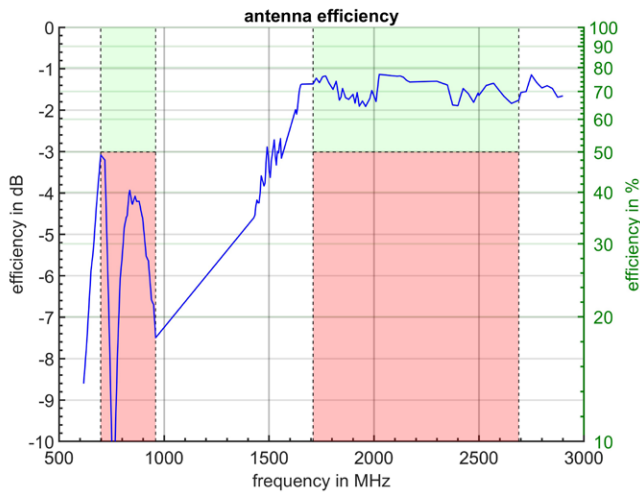
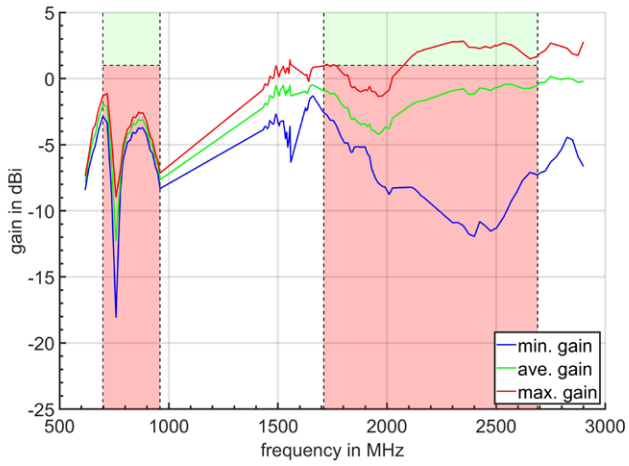
realized antenna gain (E_Total, frequency = 2690.0 MHz)



Antenna diagrams

4G antenna measurement on Sirius GND plane

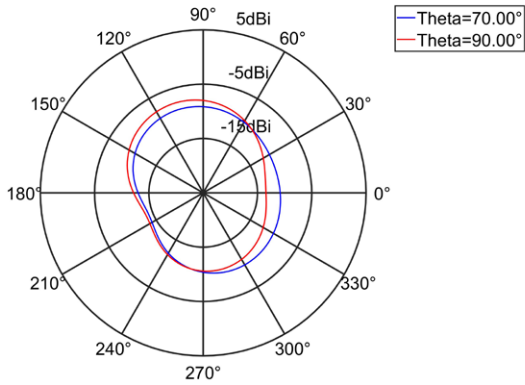
partial average antenna gain (Theta=[70.00 - 90.00]° ; Phi=[0.00 - 360.00]°)
E_Total, Theta - linear w. spherical area consideration, Phi - linear



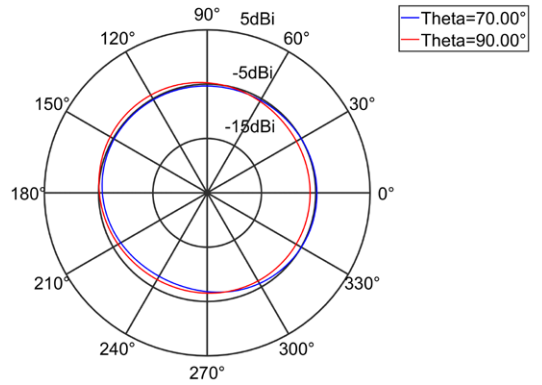
Antenna diagrams

4G antenna measurement in air

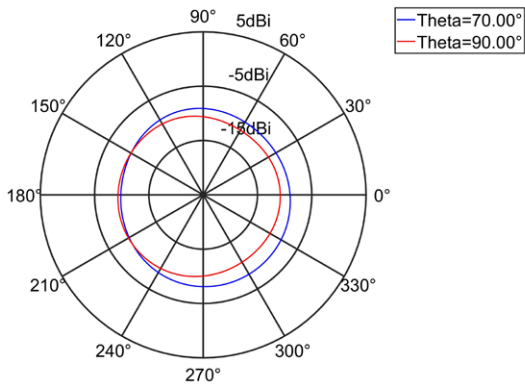
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 698.00 MHz)



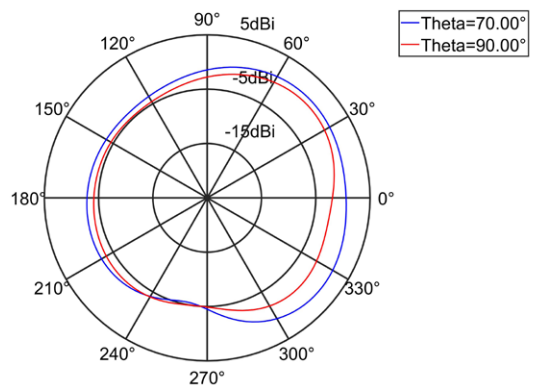
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 830.00 MHz)



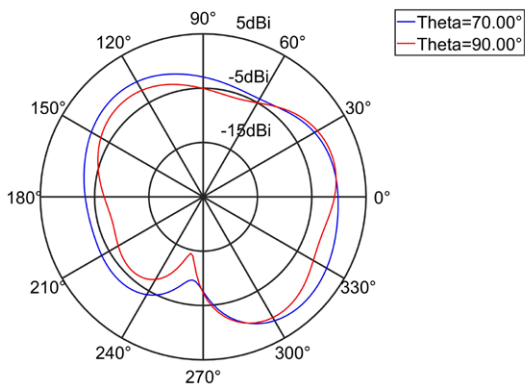
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 960.00 MHz)



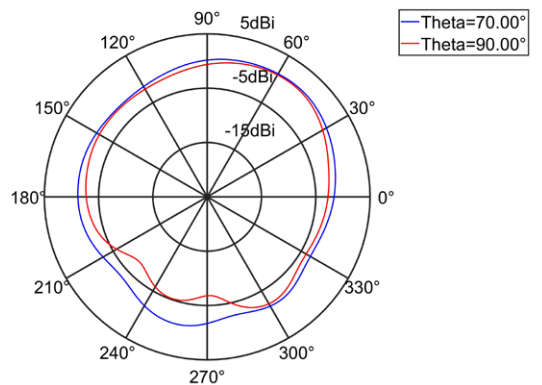
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 1710.00 MHz)



radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 2170.00 MHz)



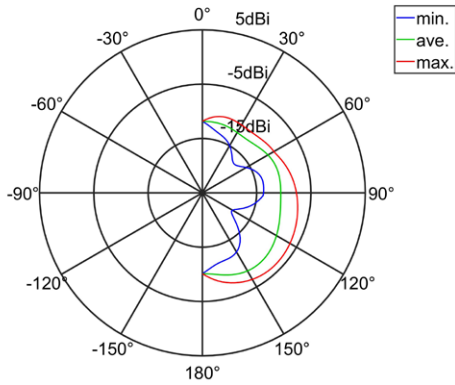
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 2690.00 MHz)



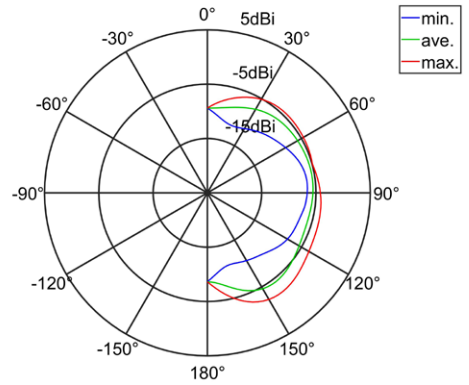
Antenna diagrams

4G antenna measurement in air

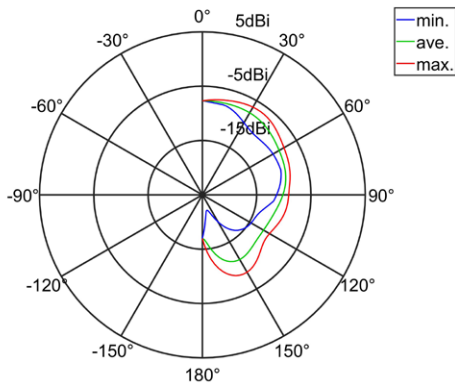
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 698.00 MHz)



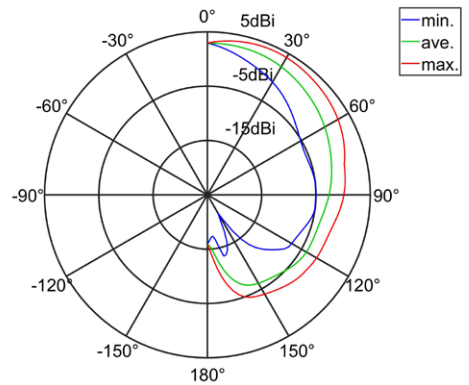
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 830.00 MHz)



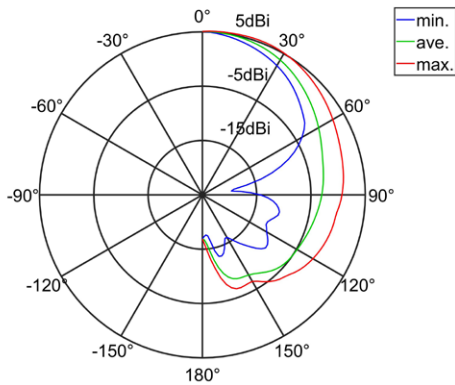
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 960.00 MHz)



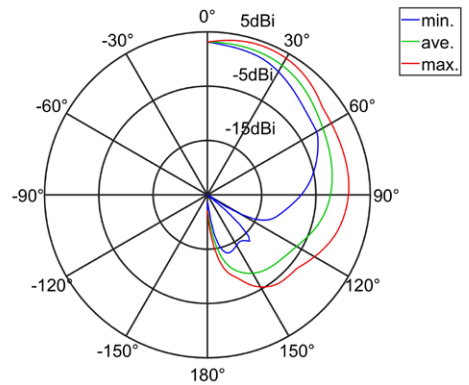
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 1710.00 MHz)



radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 2170.00 MHz)



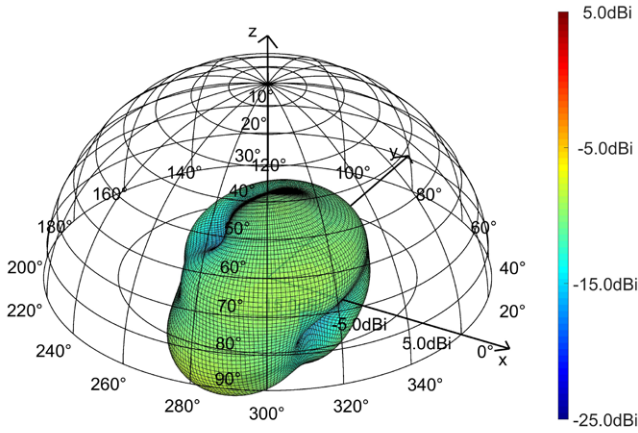
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 2690.00 MHz)



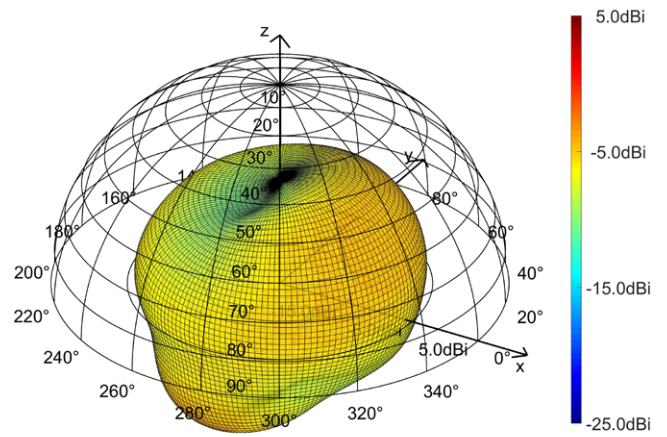
Antenna diagrams

4G antenna measurement in air

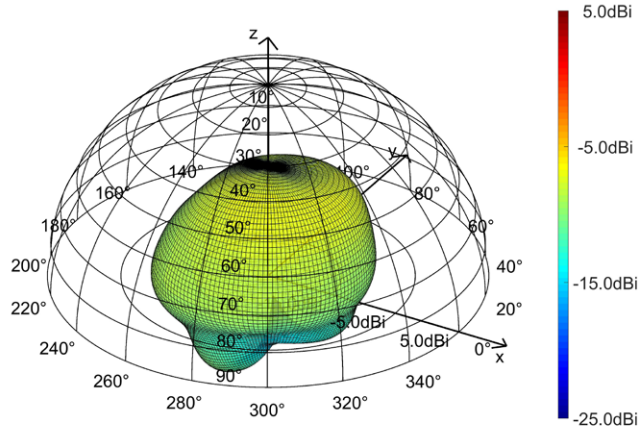
realized antenna gain (E_Total, frequency = 698.0 MHz)



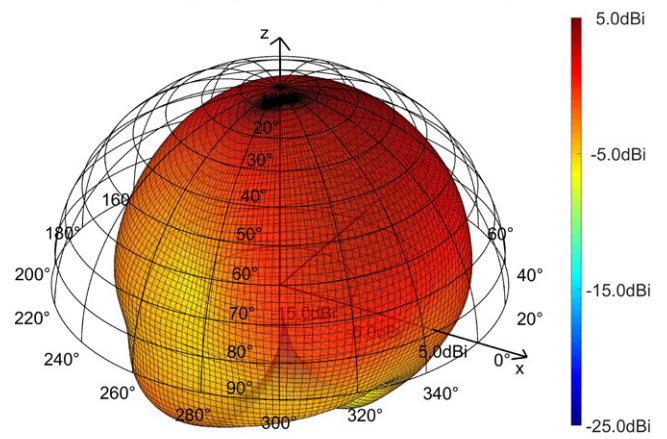
realized antenna gain (E_Total, frequency = 830.0 MHz)



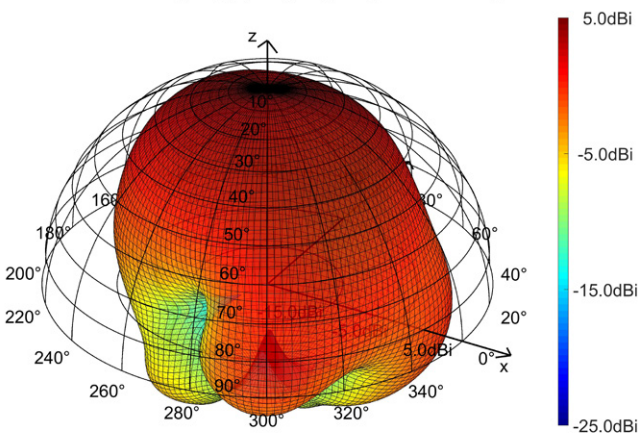
realized antenna gain (E_Total, frequency = 960.0 MHz)



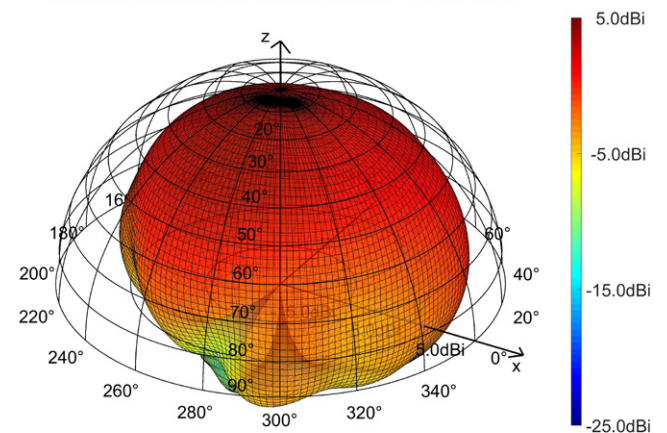
realized antenna gain (E_Total, frequency = 1710.0 MHz)



realized antenna gain (E_Total, frequency = 2170.0 MHz)



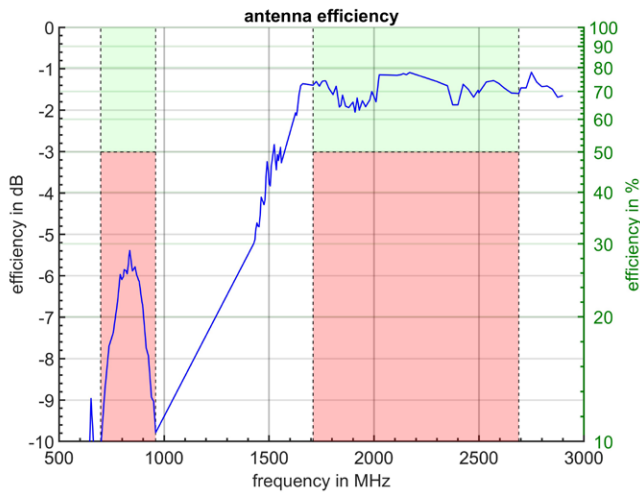
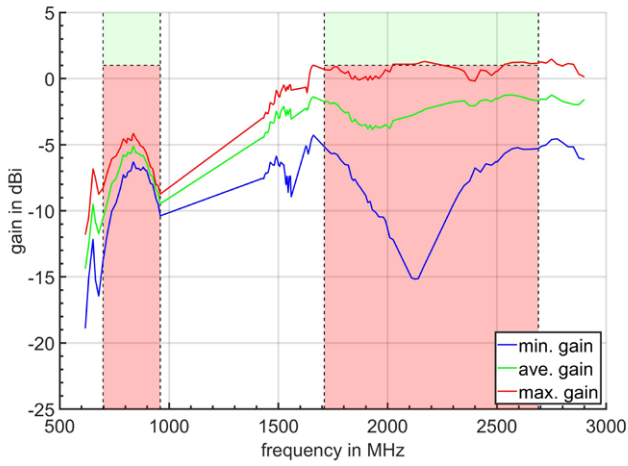
realized antenna gain (E_Total, frequency = 2690.0 MHz)



Antenna diagrams

4G antenna measurement in air

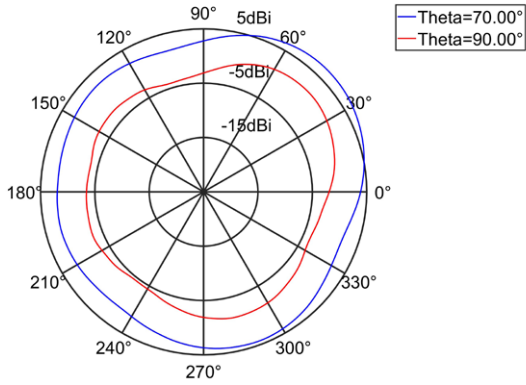
partial average antenna gain (Theta=[70.00 - 90.00]° ; Phi=[0.00 - 360.00]°)
 E_Total, Theta - linear w. spherical area consideration, Phi - linear



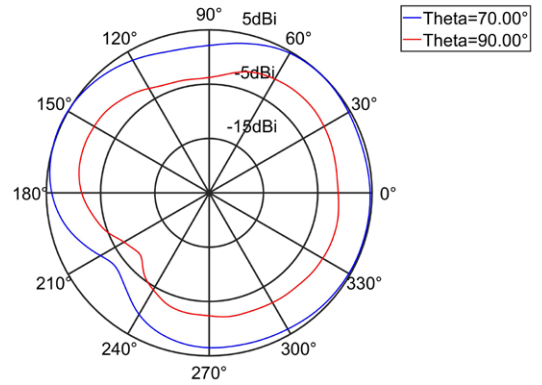
Antenna diagrams

WLAN antenna measurement on Sirius GND plane

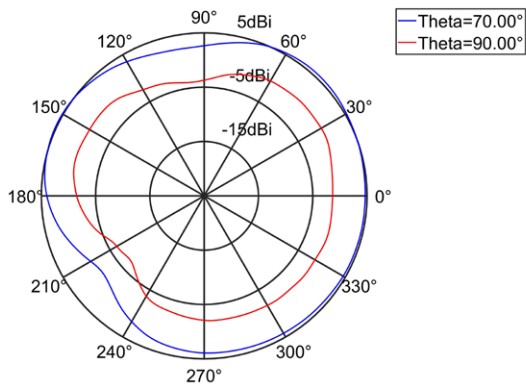
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 2400.00 MHz)



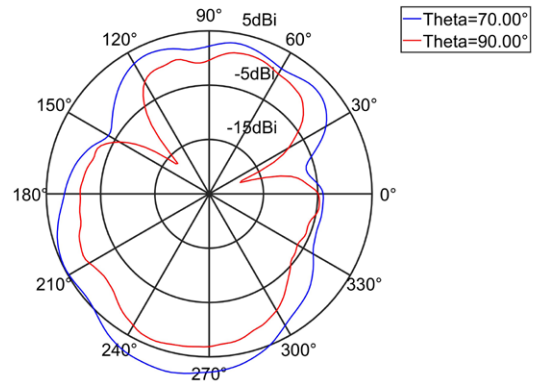
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 2440.00 MHz)



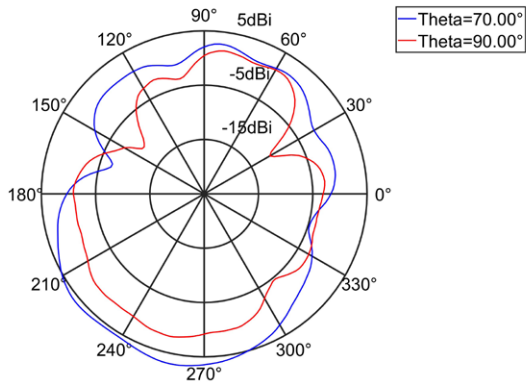
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 2483.00 MHz)



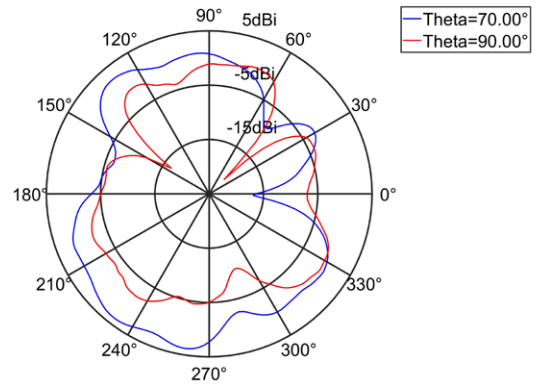
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 5150.00 MHz)



radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 5550.00 MHz)



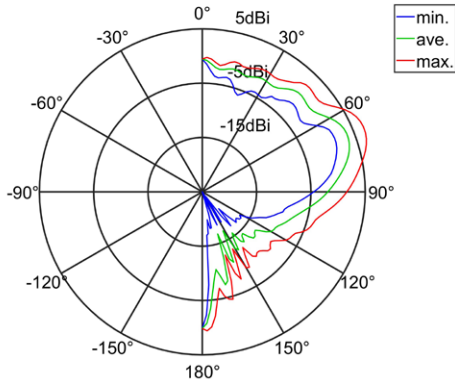
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 5925.00 MHz)



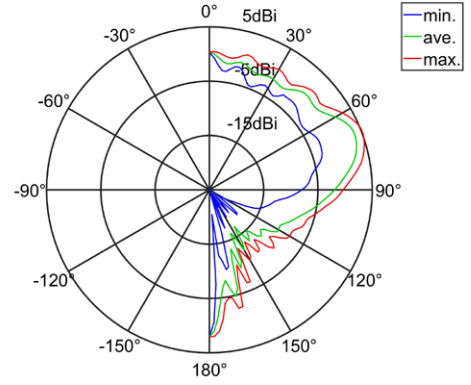
Antenna diagrams

WLAN antenna measurement on Sirius GND plane

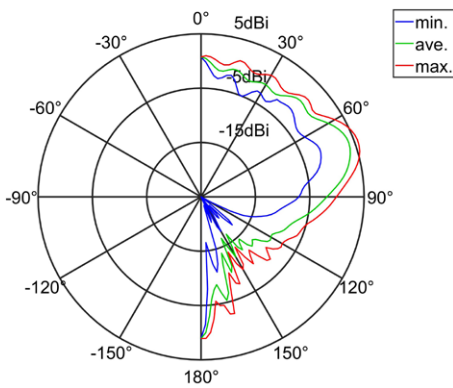
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 2400.00 MHz)



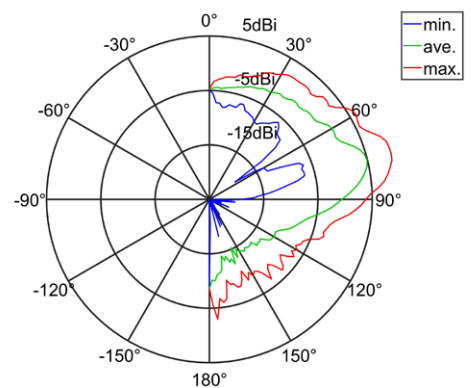
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 2440.00 MHz)



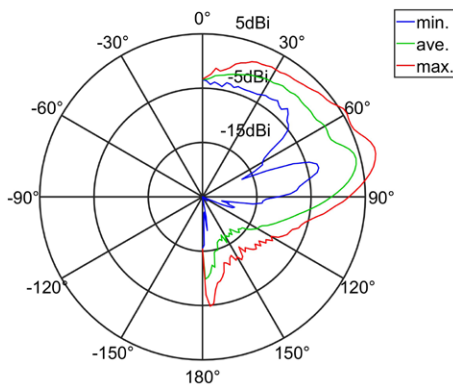
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 2483.00 MHz)



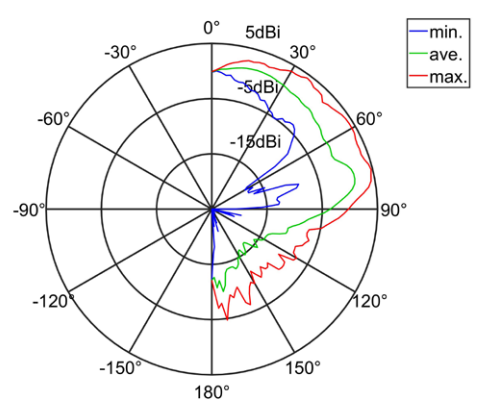
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 5150.00 MHz)



radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 5550.00 MHz)



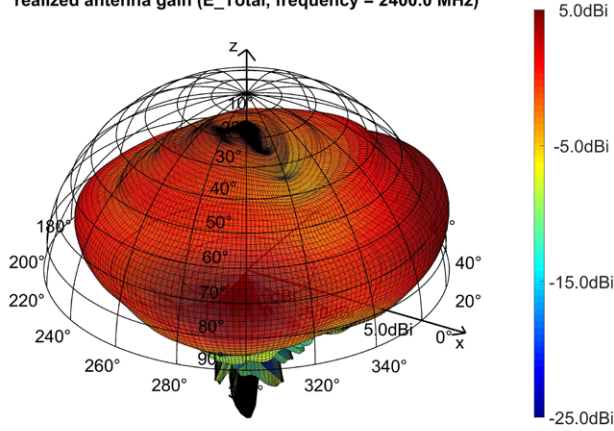
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 5925.00 MHz)



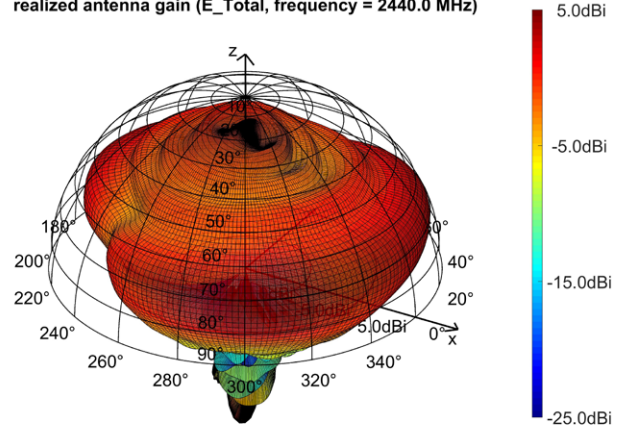
Antenna diagrams

WLAN antenna measurement on Sirius GND plane

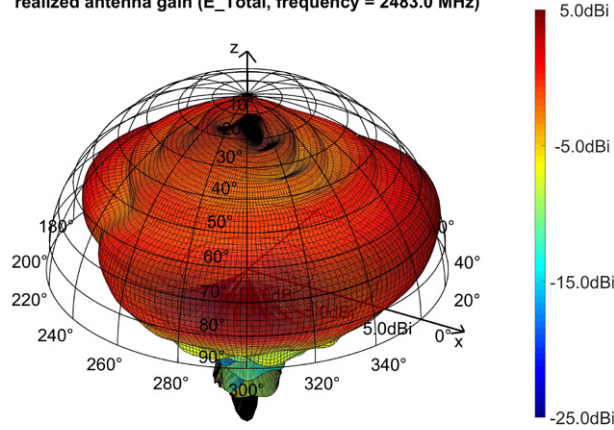
3D radiation pattern
 realized antenna gain (E_Total, frequency = 2400.0 MHz)



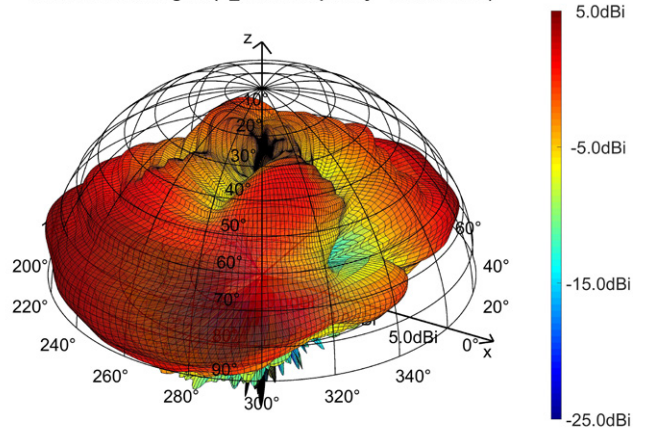
3D radiation pattern
 realized antenna gain (E_Total, frequency = 2440.0 MHz)



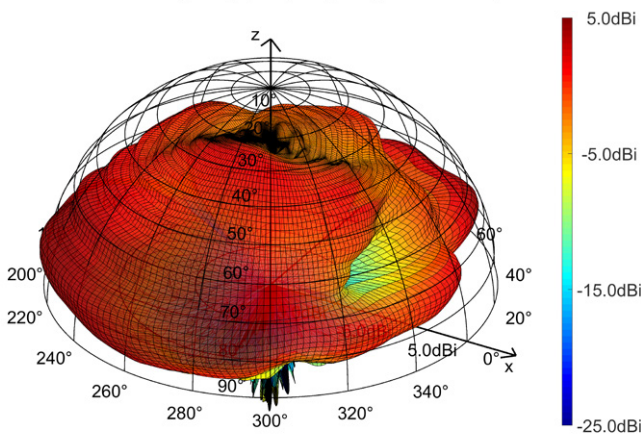
3D radiation pattern
 realized antenna gain (E_Total, frequency = 2483.0 MHz)



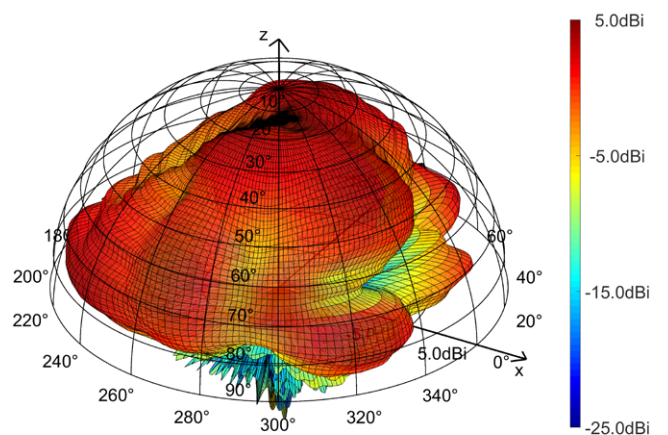
3D radiation pattern
 realized antenna gain (E_Total, frequency = 5150.0 MHz)



realized antenna gain (E_Total, frequency = 5550.0 MHz)



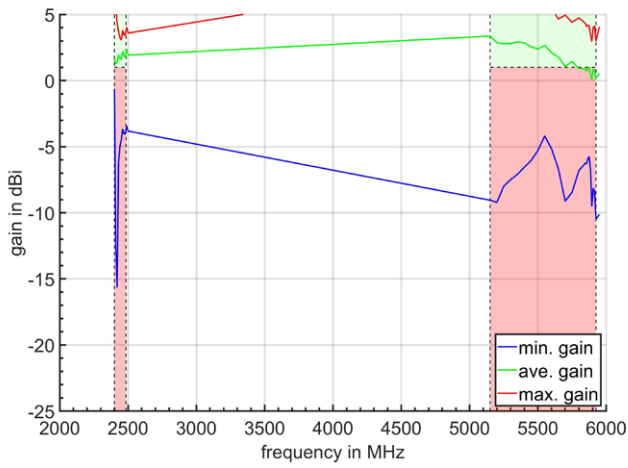
realized antenna gain (E_Total, frequency = 5925.0 MHz)



Antenna diagrams

WLAN antenna measurement on Sirius GND plane

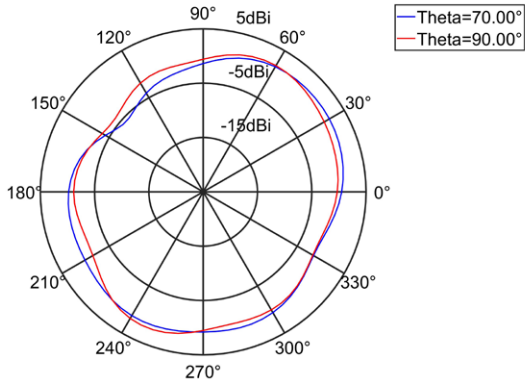
partial average antenna gain (Theta=[70.00 - 90.00]° ; Phi=[0.00 - 360.00]°)
E_Total, Theta - linear w. spherical area consideration, Phi - linear



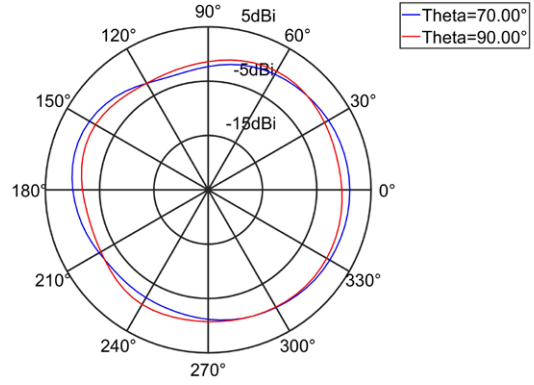
Antenna diagrams

WLAN antenna measurement in air

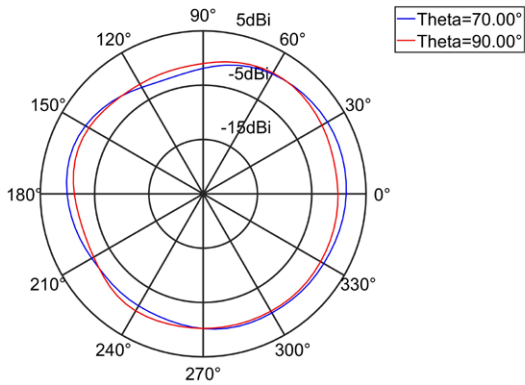
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 2400.00 MHz)



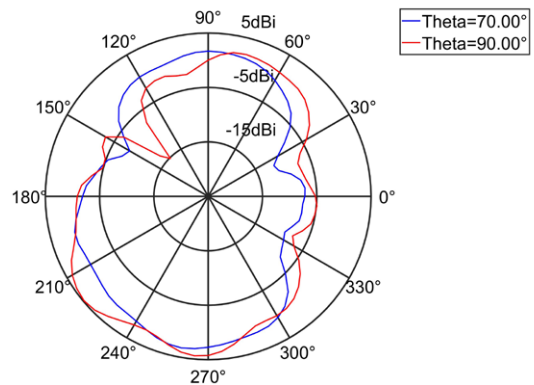
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 2440.00 MHz)



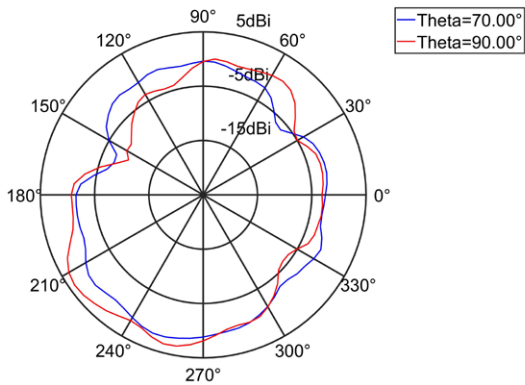
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 2483.00 MHz)



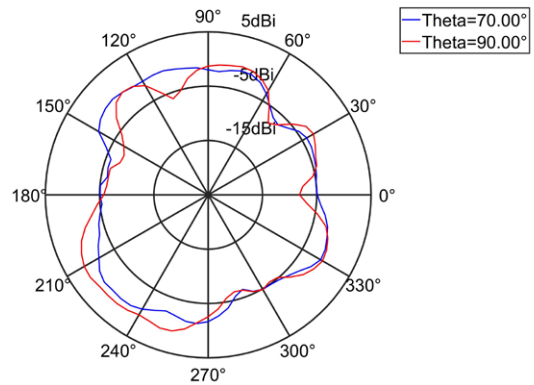
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 5150.00 MHz)



radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 5550.00 MHz)



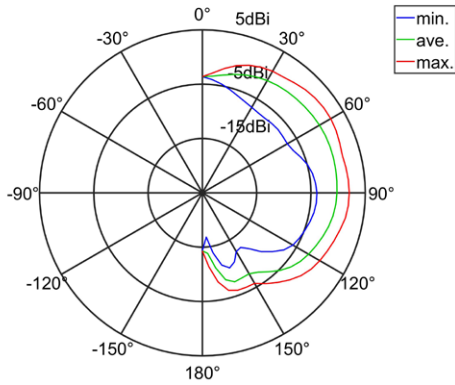
radiation pattern of the antenna (azimuth cut)
 realized gain (E_Total, Freq = 5925.00 MHz)



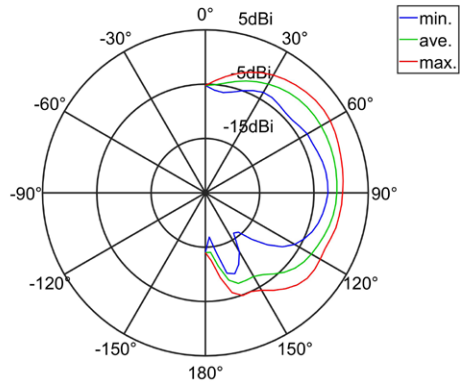
Antenna diagrams

WLAN antenna measurement in air

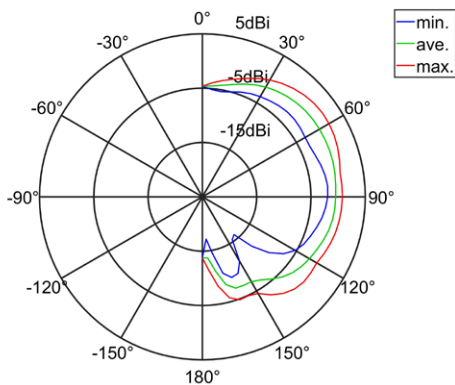
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 2400.00 MHz)



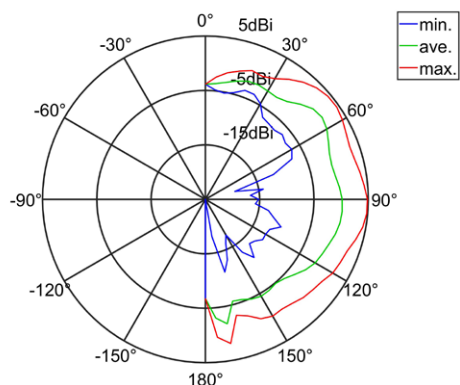
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 2440.00 MHz)



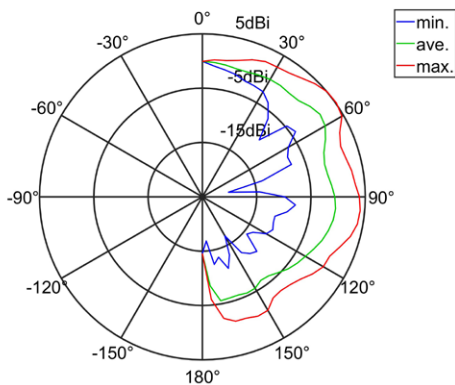
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 2483.00 MHz)



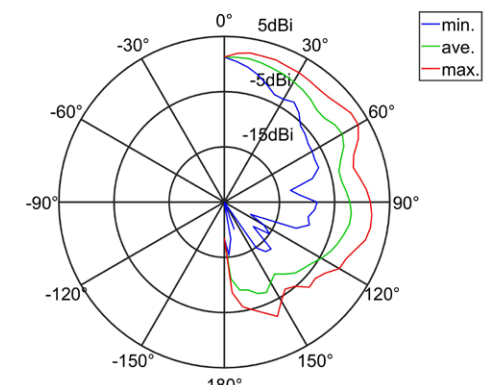
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 5150.00 MHz)



radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 5550.00 MHz)



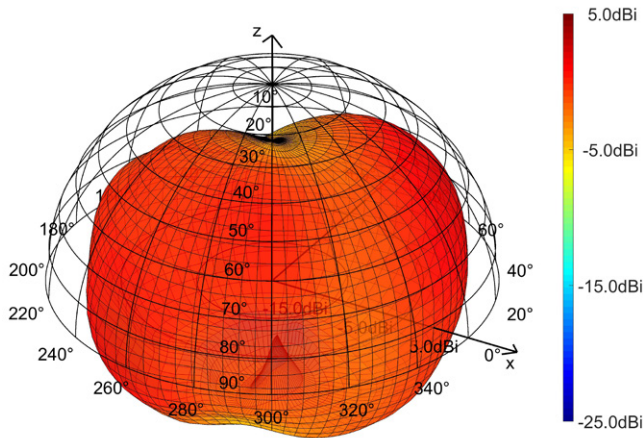
radiation pattern of the antenna (elevation cut)
 realized gain (E_Total, Freq = 5925.00 MHz)



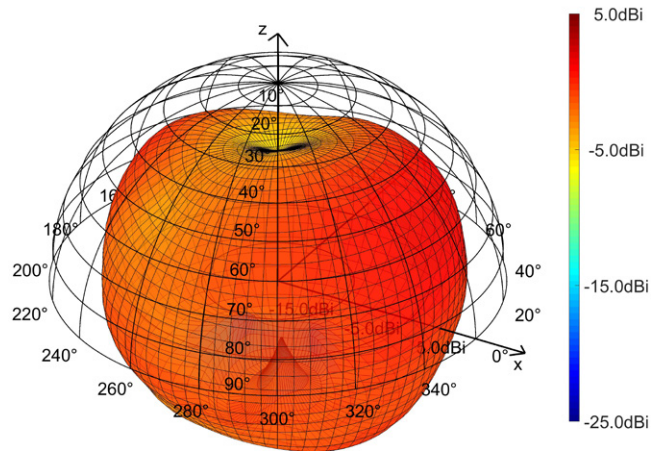
Antenna diagrams

WLAN antenna measurement in air

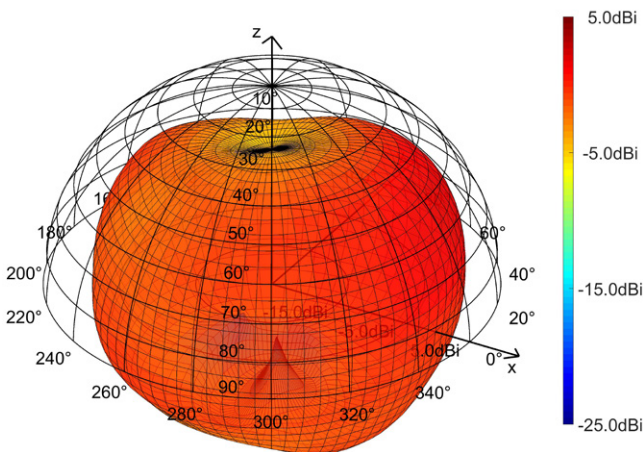
realized antenna gain (E_Total, frequency = 2400.0 MHz)



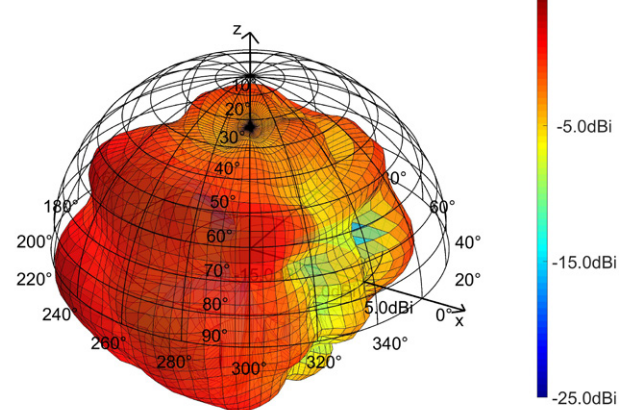
realized antenna gain (E_Total, frequency = 2440.0 MHz)



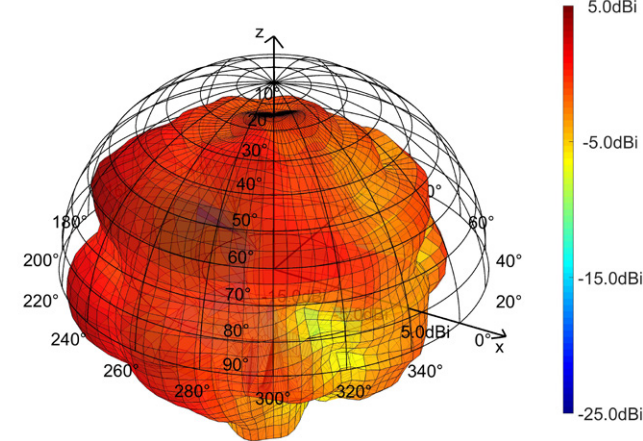
realized antenna gain (E_Total, frequency = 2483.0 MHz)



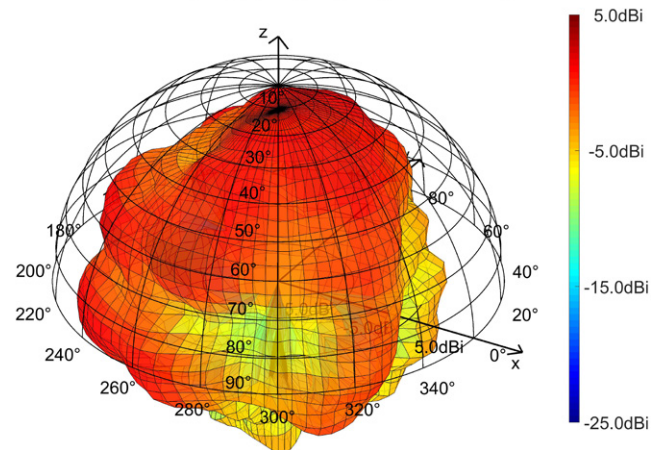
3D radiation pattern
 realized antenna gain (E_Total, frequency = 5150.0 MHz)



realized antenna gain (E_Total, frequency = 5550.0 MHz)



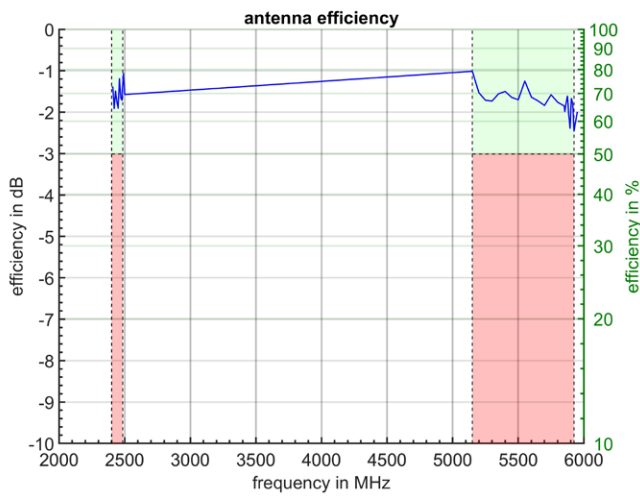
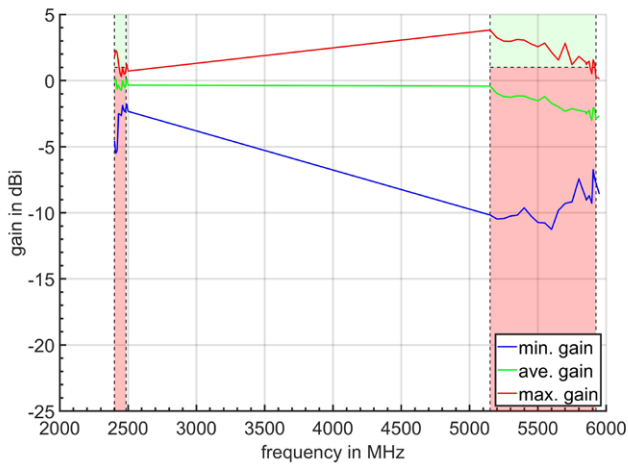
realized antenna gain (E_Total, frequency = 5925.0 MHz)



Antenna diagrams

WLAN antenna measurement in air

partial average antenna gain (Theta=[70.00 - 90.00]° ; Phi=[0.00 - 360.00]°)
 E_Total, Theta - linear w. spherical area consideration, Phi - linear



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