



HIRSCHMANN MOBILITY

Antenna Box GNSS+CN1+WiFi/BT

Part Number 920-719-001

A 006 820 30 75

Features

- Interior installation on non conductible material
- For Cellular networks, GNSS services and WLAN/BT (2.4+5.8 GHz)

Technical Data

Dimensions	162 x 82 x25 mm
Housing materials	PC+ABS comparable UV light resistible material
Weight	140 g
Operations temp. range	-40 - +85 °C
Storage temp. range	-40 - + 90 °C
Protection class	IP6k0 (acc. ISO 20653)
Connector	GNSS: Fakra male, Code C (Blue) CN: Fakra male, Code D (Bordeaux) WiFi/BT: Fakra male, Code I (Beige)

Technical Data

Cellular	
Frequency range	698 - 960 MHz 1447 - 1511 MHz 1710 - 2690 MHz 3300 - 4200 MHz 4400 - 5000 MHz
Return loss	> 7 dB
VSWR	> 2.6
Impedance	50 Ω
Average gain*	698 - 960 MHz: >-4 dBi 1447 - 1511 MHz: >-4 dBi 1710 - 2690 MHz: >-4 dBi 3300 - 4200 MHz: >-4 dBi 4400 - 5000 MHz: >-4 dBi
Peak gain*	698 - 960 MHz: 2.5 dBi 1447 - 1511 MHz: 2.6 dBi 1710 - 2690 MHz: 3.6 dBi 3300 - 4200 MHz: 6.4 dBi 4400 - 5000 MHz: 4.3 dBi
Radiation efficiency	698 - 960 MHz: > 40% 1447 - 1511 MHz: > 40% 1710 - 2690 MHz: > 30% 3300 - 4200 MHz: > 40% 4400 - 5000 MHz: > 40%
Diagnostic Resistor	10 k Ω
BT/WiFi	
Frequency bands	2400-2480 MHz 5150-5835 MHz
Return loss	> 7 dB
VSWR	< 2.6
Impedance	50 Ω
Average gain* (0=50-90°)	2400-2480 MHz: >-4 dBi 5150-5835 MHz: >-4 dBi
Peak gain*	2400-2480 MHz: 2.6 dBi 5150-5835 MHz: 5 dBi
Radiation efficiency**	2400-2480 MHz: > 40% 5150-5835 MHz: > 40%
Diagnostic Resistor	10 k Ω

Antenna Box GNSS+CN1+WiFi/BT | Part Number 920-719-001

GNSS (GPS, Galileo, GLONASS, Beidou, QZSS)

Output Return loss	> 10 dB
Output VSWR	< 2
Impedance	50 Ω

Low Noise Amplifier

Current Consumption	typ. 22 mA
Supply Voltage	3-5.5 V
LNA Gain	typ. 28 dB
Noise Figure	< 2 dB
Out-of-Band Rejection	typ. 40 dB

Passive Antenna

Polarization	RHCP
Passive Antenna Gain	typ. 3 dBic

Coexistence

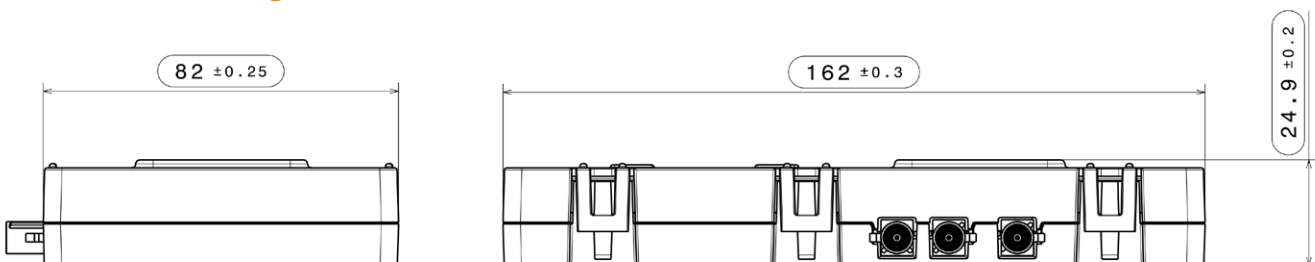
Frequency range	617 - 960 MHz
	1447 - 1511 MHz
	1710 - 2690 MHz
	3300 - 4200 MHz
	4400 - 5000 MHz
	2400 - 2480 MHz
	5150 - 5835 MHz

Isolation CN-BT/WiFi	617 - 960 MHz: 40 dB
	1447 - 1511 MHz: 40 dB
	1710 - 2690 MHz: 40 dB
	3300 - 4200 MHz: 38 dB
	4400 - 5000 MHz: 28 dB
	2400 - 2480 MHz: 40 dB
	5150 - 5835 MHz: 28 dB

* Measured on dielectric slab

**including Filtering

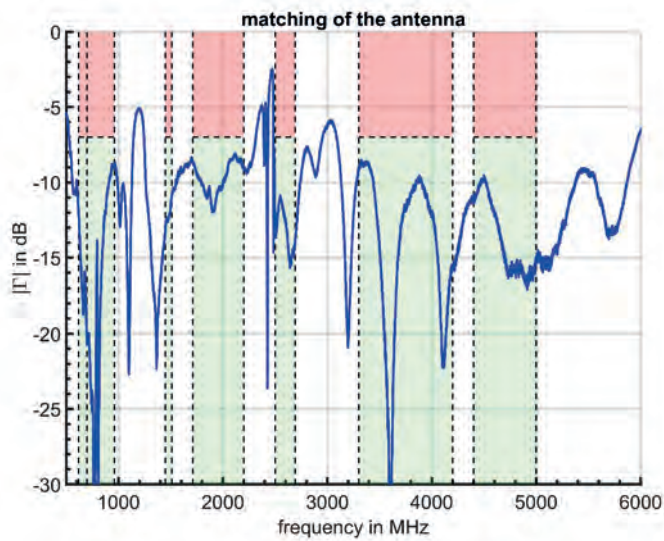
Technical Drawing



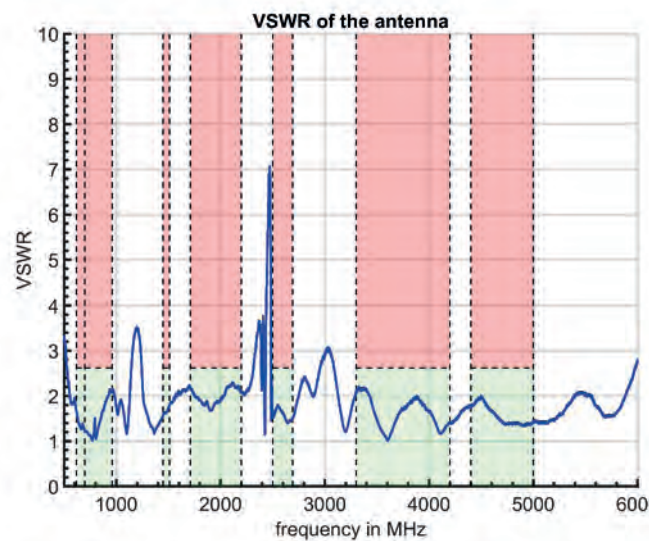
Antenna diagrams

Cellular Network

Reflection Coefficient

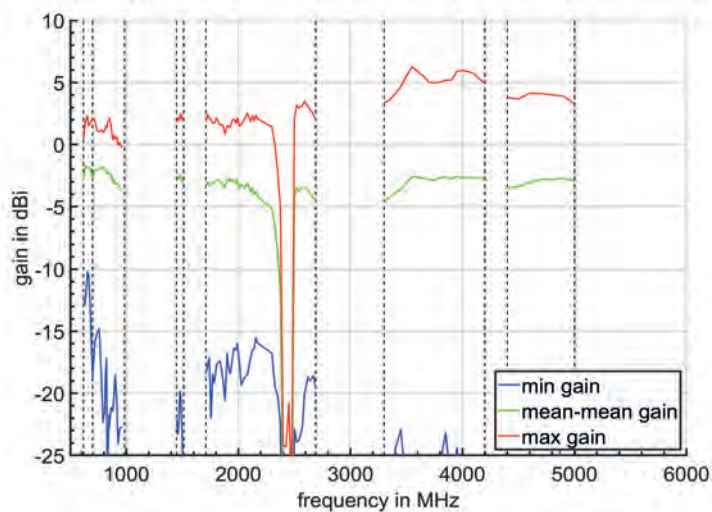


VSWR

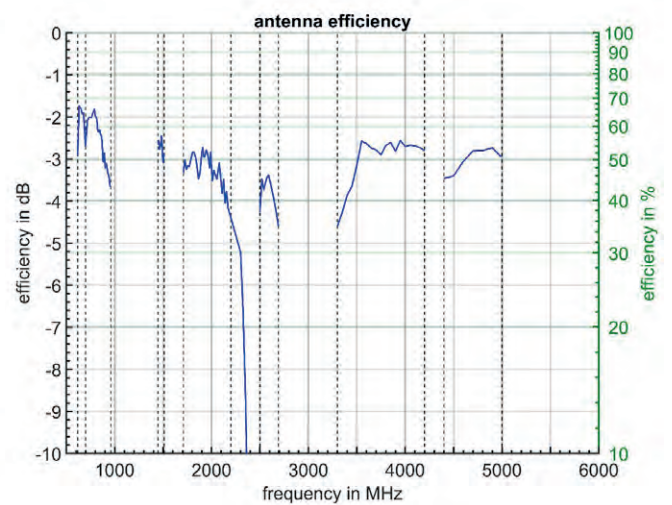


Average Gain

realized partial average gain (Theta=[0.00 - 180.00]° ; Phi=[0.00 - 355.00]°)
E_Total, Theta - linear w. spherical area consideration, Phi - linear



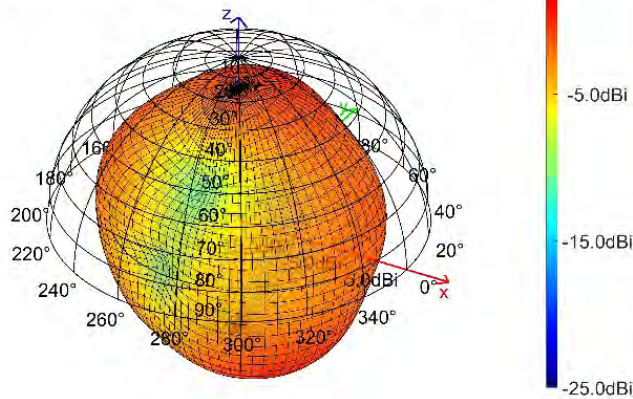
Efficiency (incl. Filtering)



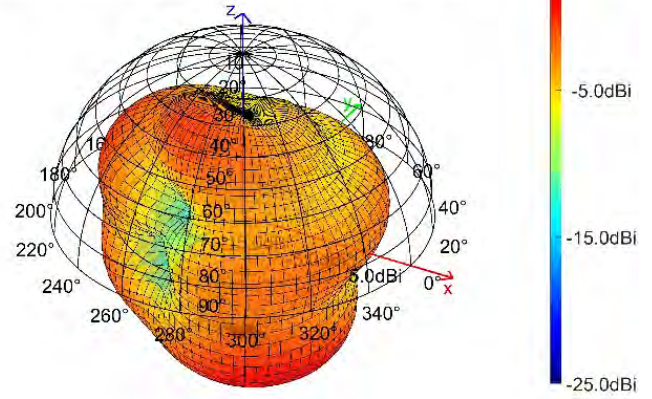
Antenna diagrams Cellular Network

Radiation pattern

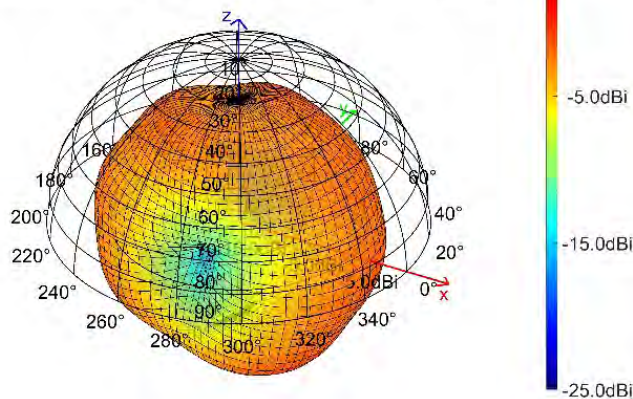
3D radiation pattern
realized antenna gain (E_Total, frequency = 617.0 MHz)



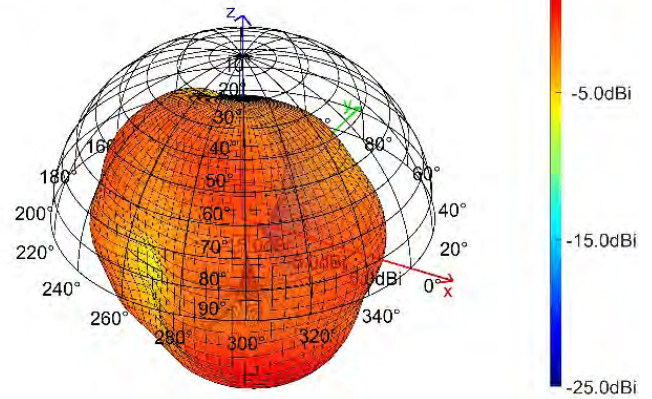
3D radiation pattern
realized antenna gain (E_Total, frequency = 698.0 MHz)



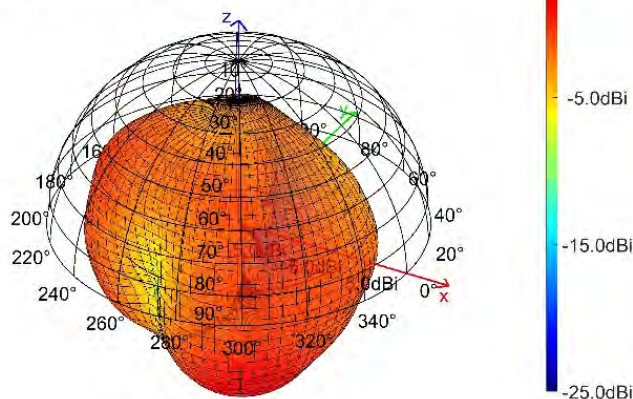
3D radiation pattern
realized antenna gain (E_Total, frequency = 960.0 MHz)



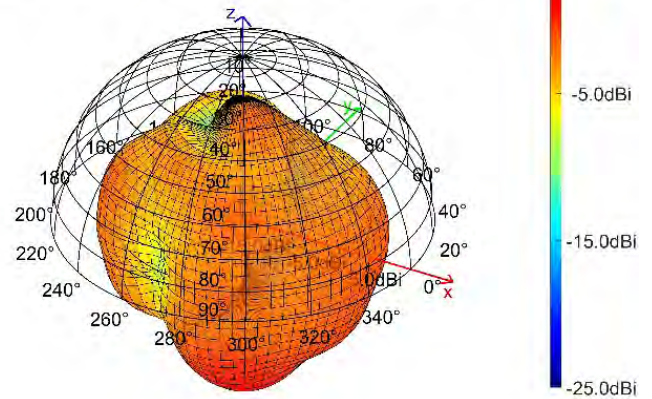
3D radiation pattern
realized antenna gain (E_Total, frequency = 1447.9 MHz)



3D radiation pattern
realized antenna gain (E_Total, frequency = 1510.9 MHz)



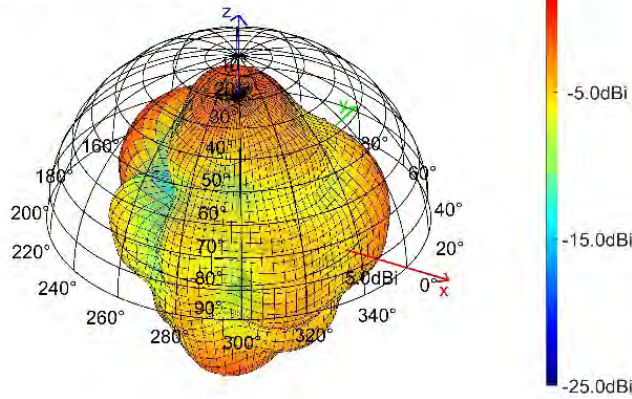
3D radiation pattern
realized antenna gain (E_Total, frequency = 1710.0 MHz)



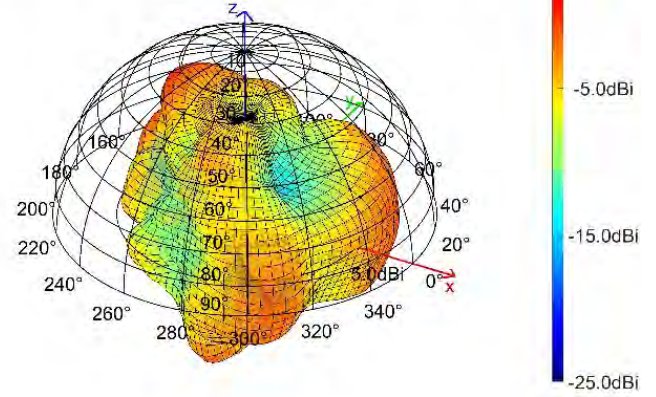
Antenna diagrams Cellular Network

Radiation pattern

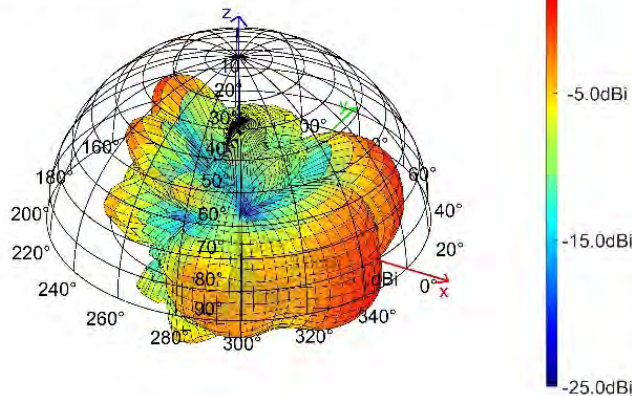
3D radiation pattern
realized antenna gain (E_Total, frequency = 2155.0 MHz)



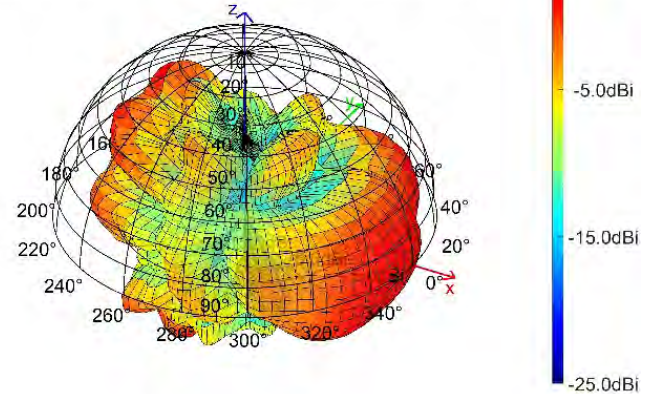
3D radiation pattern
realized antenna gain (E_Total, frequency = 2690.0 MHz)



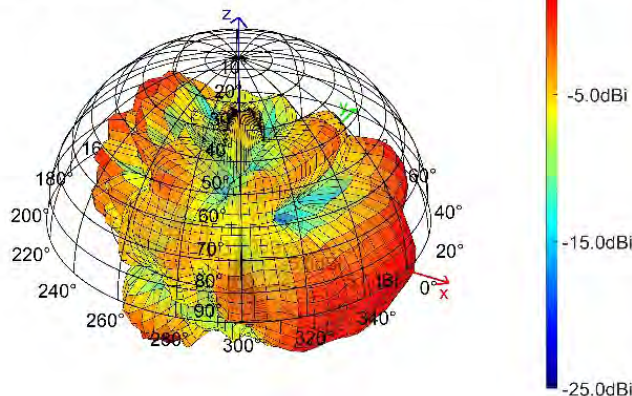
3D radiation pattern
realized antenna gain (E_Total, frequency = 3300.0 MHz)



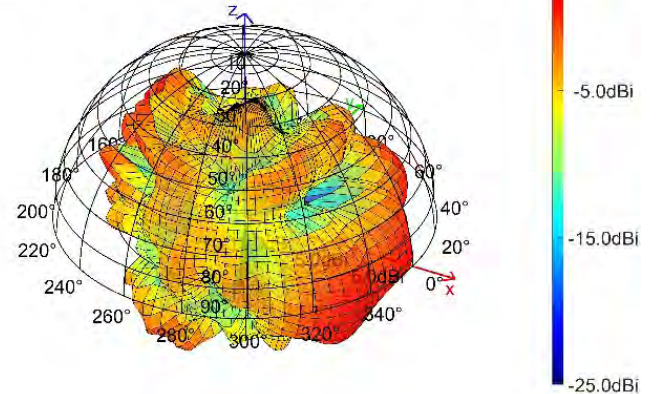
3D radiation pattern
realized antenna gain (E_Total, frequency = 3750.0 MHz)



3D radiation pattern
realized antenna gain (E_Total, frequency = 4200.0 MHz)



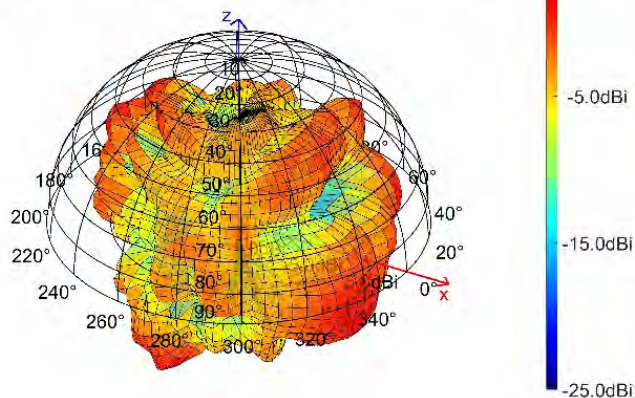
3D radiation pattern
realized antenna gain (E_Total, frequency = 4400.0 MHz)



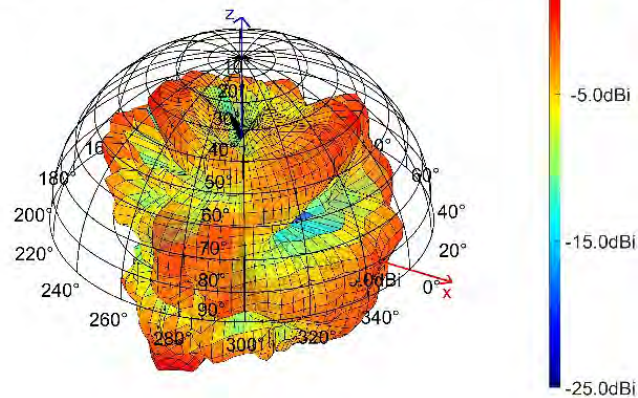
Antenna diagrams Cellular Network

Radiation pattern

3D radiation pattern
realized antenna gain (E_Total, frequency = 4700.0 MHz)

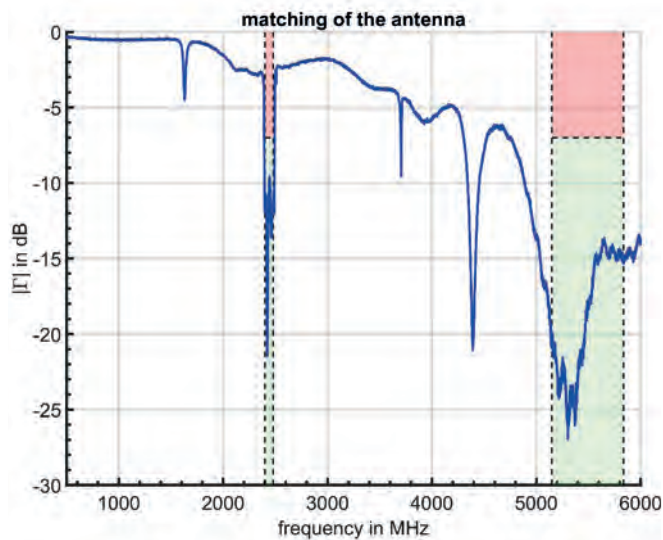


3D radiation pattern
realized antenna gain (E_Total, frequency = 4990.0 MHz)

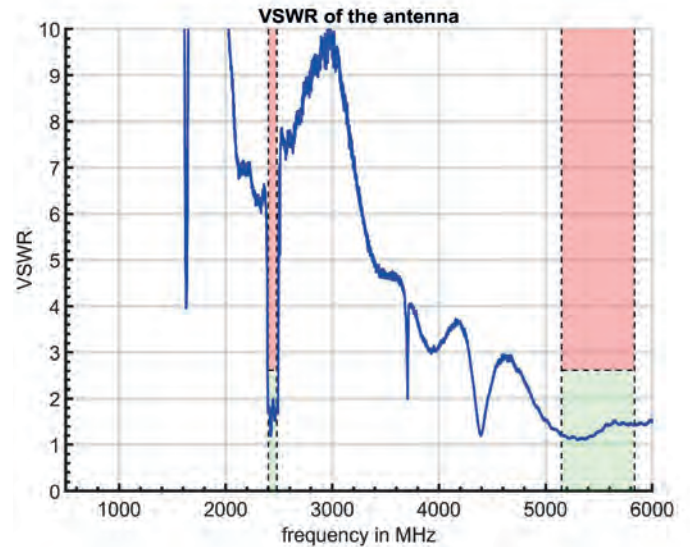


Antenna diagrams Bluetooth/WiFi

Reflection Coefficient

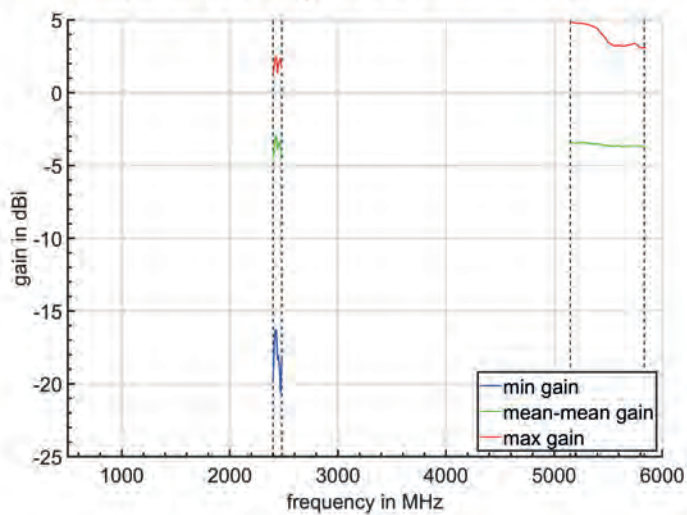


VSWR

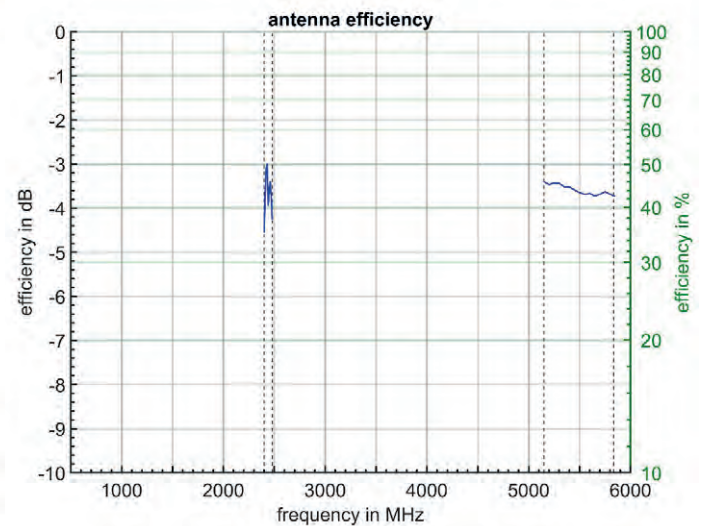


Average Gain

realized partial average gain (Theta=[0.00 - 180.00]° ; Phi=[0.00 - 355.00]°)
E_Total, Theta - linear w. spherical area consideration, Phi - linear



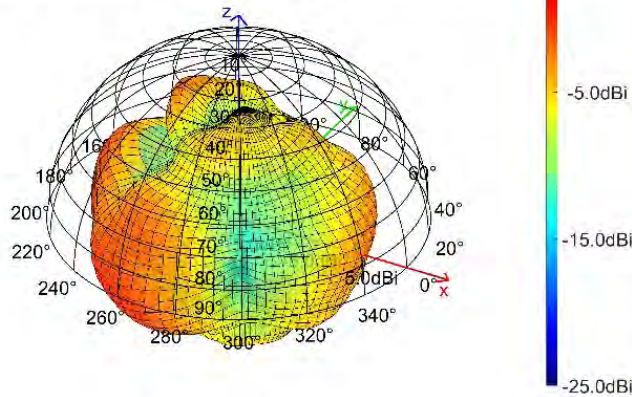
Efficiency (incl. Filtering)



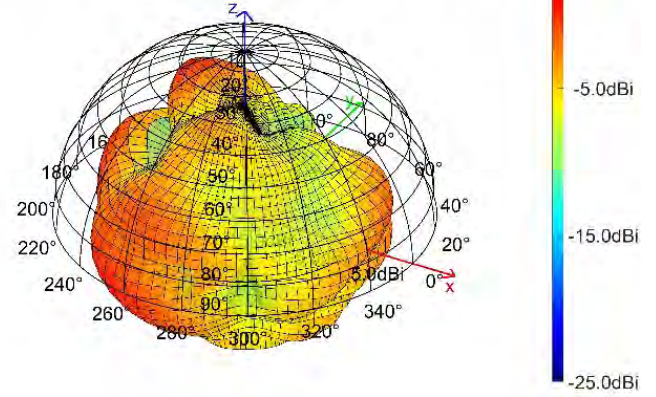
Antenna diagrams Bluetooth/WiFi

Radiation pattern

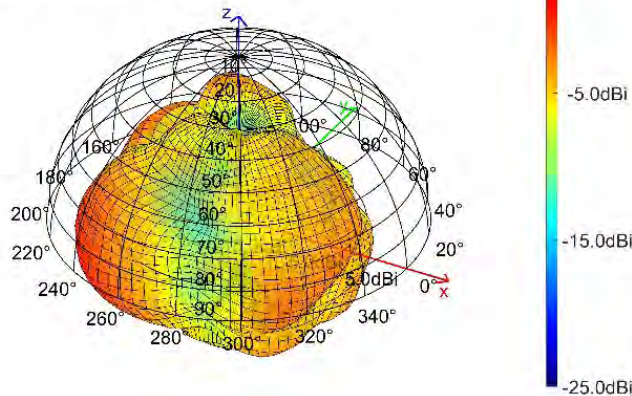
3D radiation pattern
realized antenna gain (E_Total, frequency = 2400.0 MHz)



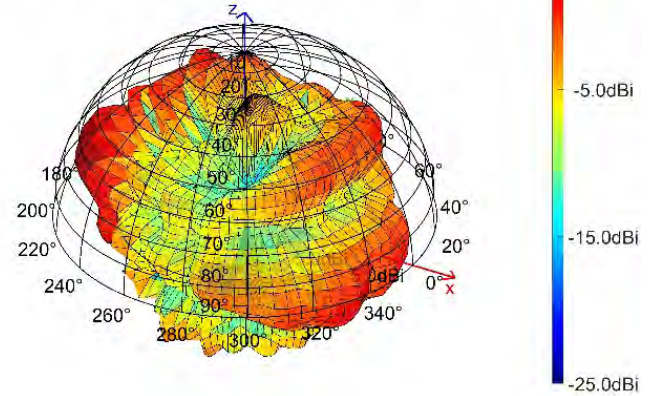
3D radiation pattern
realized antenna gain (E_Total, frequency = 2450.0 MHz)



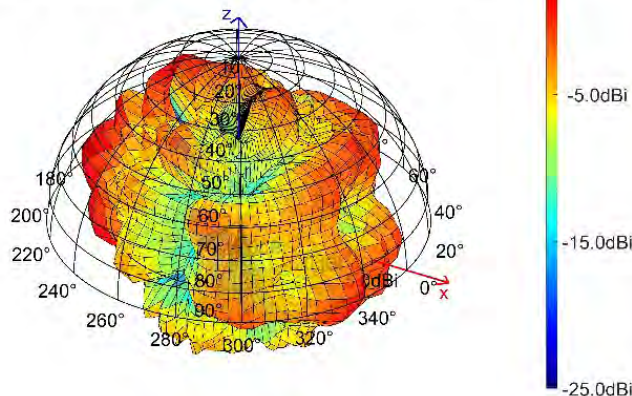
3D radiation pattern
realized antenna gain (E_Total, frequency = 2480.0 MHz)



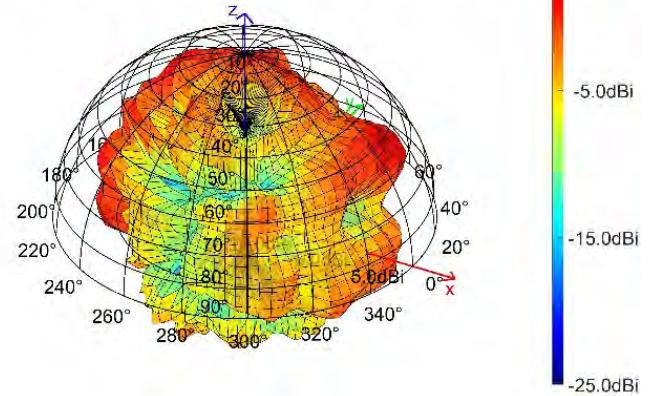
3D radiation pattern
realized antenna gain (E_Total, frequency = 5150.0 MHz)



3D radiation pattern
realized antenna gain (E_Total, frequency = 5500.0 MHz)

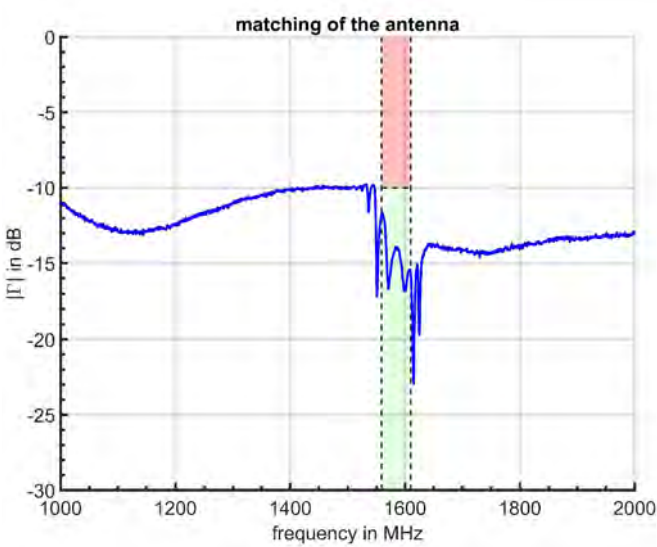


3D radiation pattern
realized antenna gain (E_Total, frequency = 5800.0 MHz)

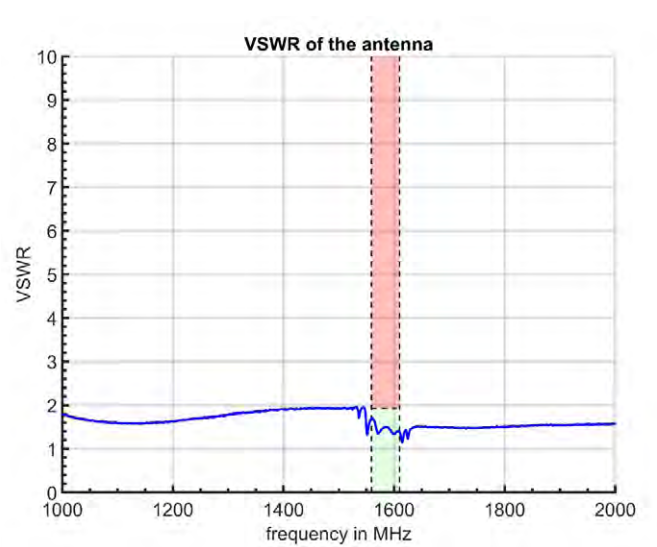


Antenna diagrams
 GNSS

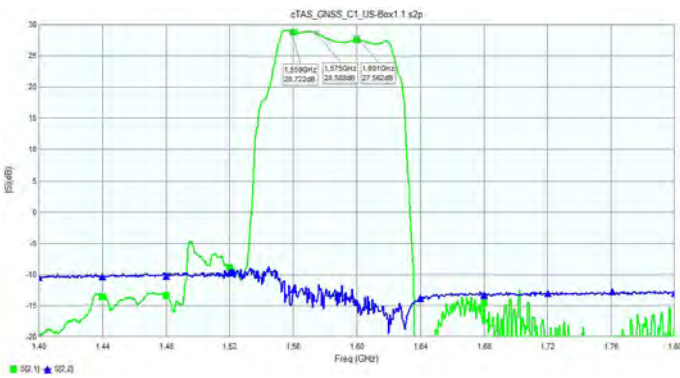
Output Reflection Coefficient



Output VSWR



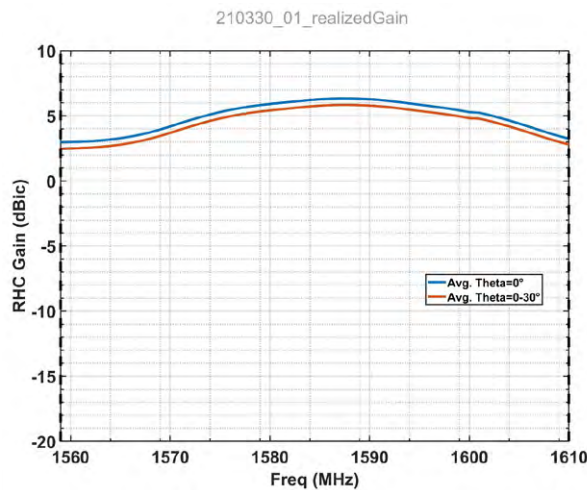
LNA Gain



LNA Noise Figure

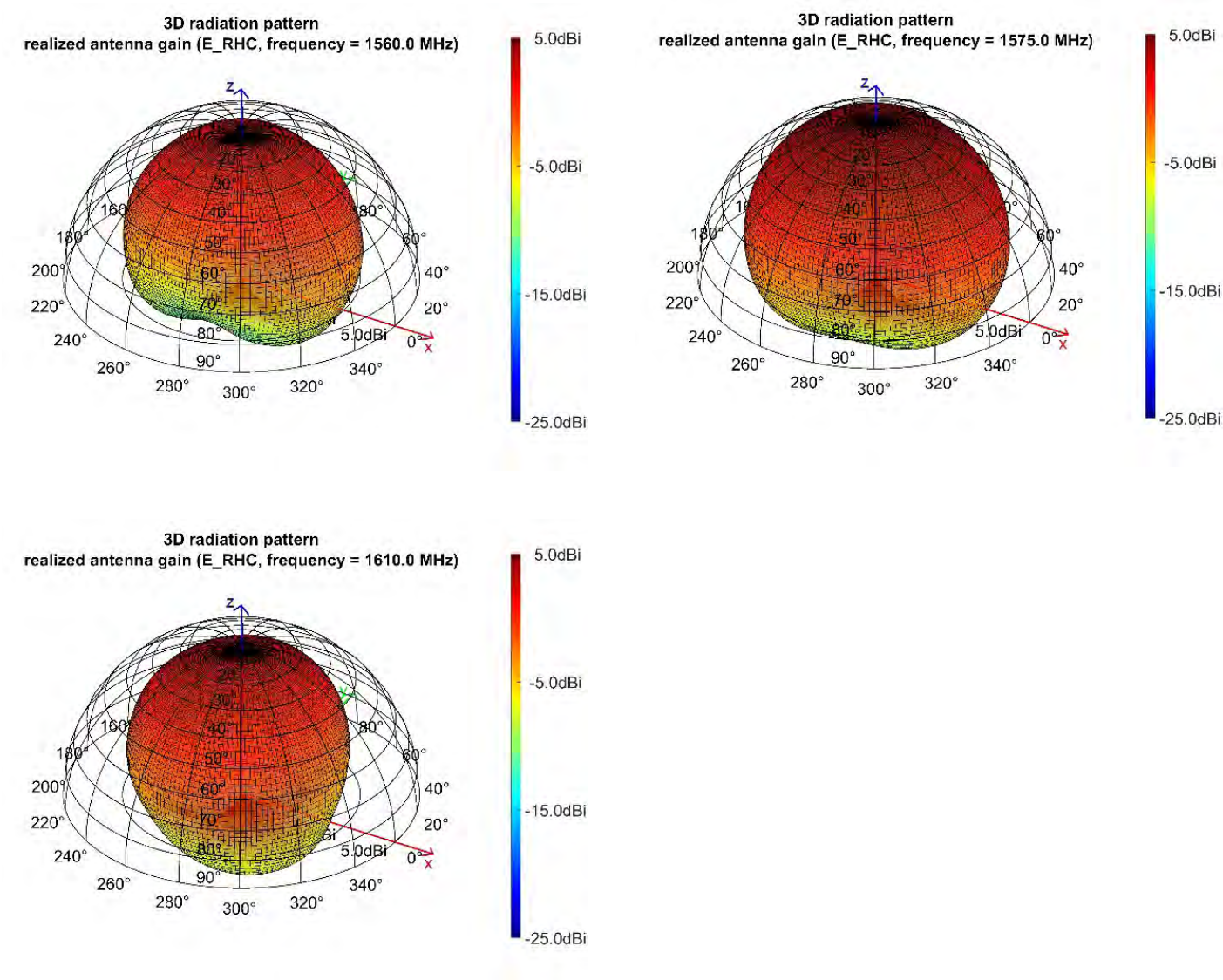


Passive Antenna Gain



Antenna diagrams
GNSS

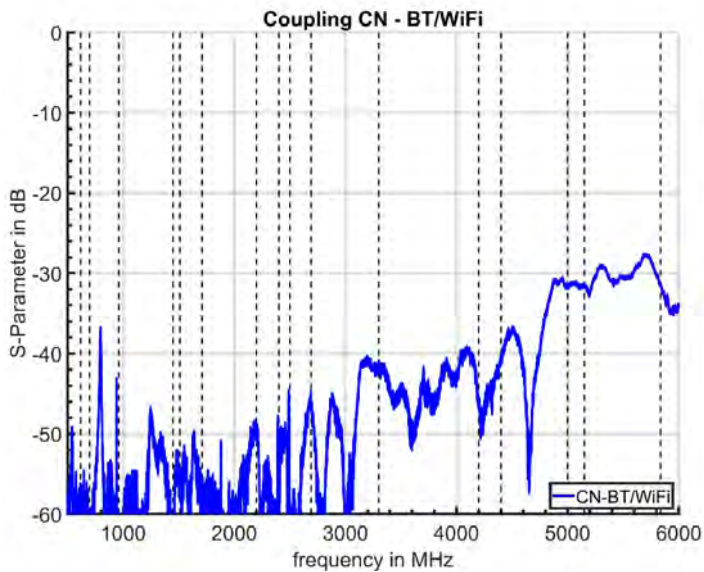
Passive Patch Antenna Radiation Pattern*



*Measured on 150mm Groundplane

Antenna diagrams

Coexistence CN-BT/WiFi



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