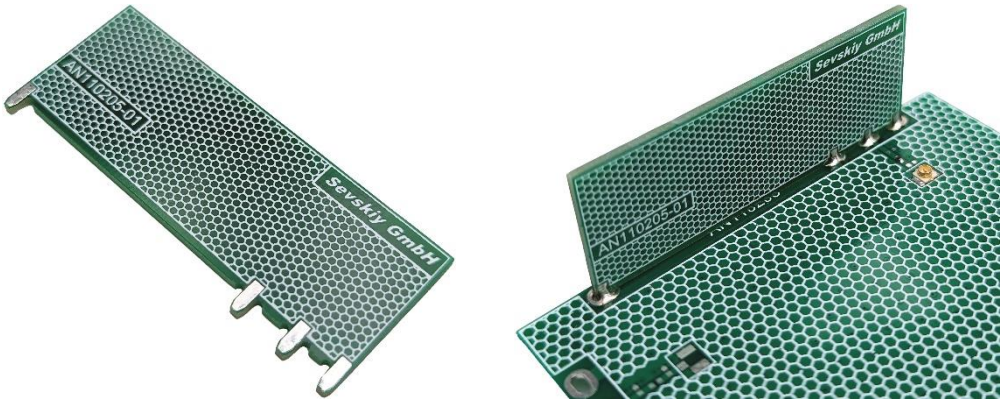
698 MHz / 960 MHz / 1695 MHz / 2700 MHz PCB Antenna (5G, LTE, Wi-Fi, IoT, WCDMA, UMTS)



General information

This small antenna is intended to be soldered to the main PCB of the mobile devices, routers or gateways. On request, the antenna geometry can be optimized for customer's housing design and material properties.

Typical applications

5G NR, LTE, GSM, CDMA, DCS, PCS, WCDMA, UMTS, HSPDA, EDGE, IMT, IoT

Electrical data

Antenna type	Embedded / internal antenna soldered on the main PCB	
5G bands	1 - 3, 5, 7, 8, 12 -14,18, 20, 25, 26, 28 - 30, 34, 38 - 41, 53, 65, 66, 70, 80 - 84, 86, 89, 90, 95, 97, 98	
4G bands	1 - 10, 12 -14, 17 - 20, 23, 25 - 30, 33 - 41, 44, 53, 65 - 70, 85	
Frequency range [MHz]	698...960	1695…2700
Return loss [dB] [1)]	-10	-10
Peak gain [dBi]	1.6	3.4
Radiation efficiency [%]	73	67
Nominal input impedance [Ohm]	50	
Polarization	linear	
Radiation pattern	omnidirectional	
Maximum input power [W]	5	

Mechanical data

Antenna PCB dimensions [mm]	55 x 22.5 x 1.6
PCB material	FR4
Weight [g]	4

Environmental data

Operating temperature [ºC]	-40…+85
Storage temperature [ºC]	-40…+85
Ambient relative humidity [%]	0…95
RoHS / REACH compliant	yes / yes

Additional information

All electrical data have been obtained in free space on the reference board (not included) with the following dimensions:130mm x 65mm x 0.8mm. Please note that the performance in the lower frequency bands is dependent on the ground plane length and may degrade in case of reducing the board size.

Other mechanical designs, materials or frequency bands are possible on request.

Further customization, electromagnetic simulations and measurements can be offered on request.

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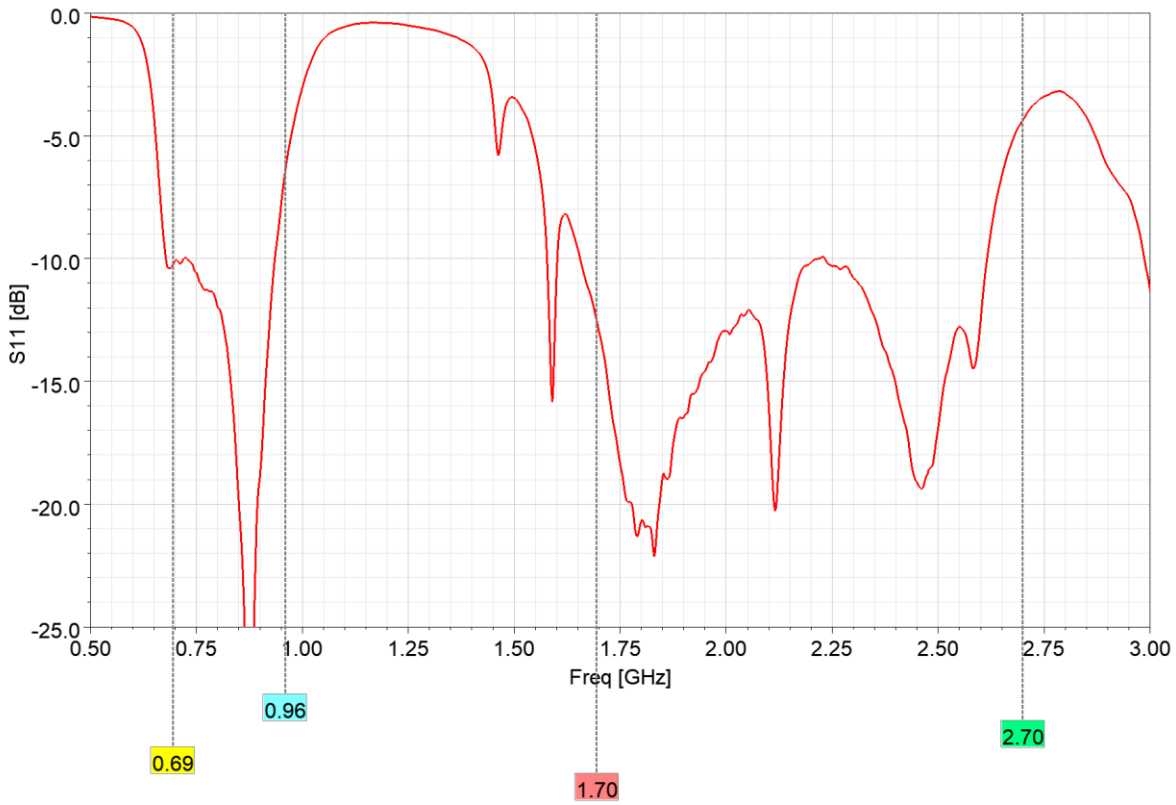
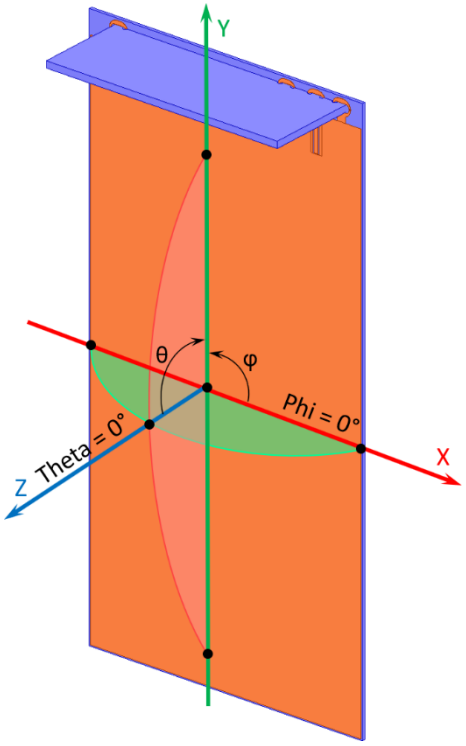
Measured input impedance matching



Coordinate system



Phi=0°, plane XZ, green curve
Phi=90°, plane YZ, red curve
Theta=90°, plane XY, blue curve

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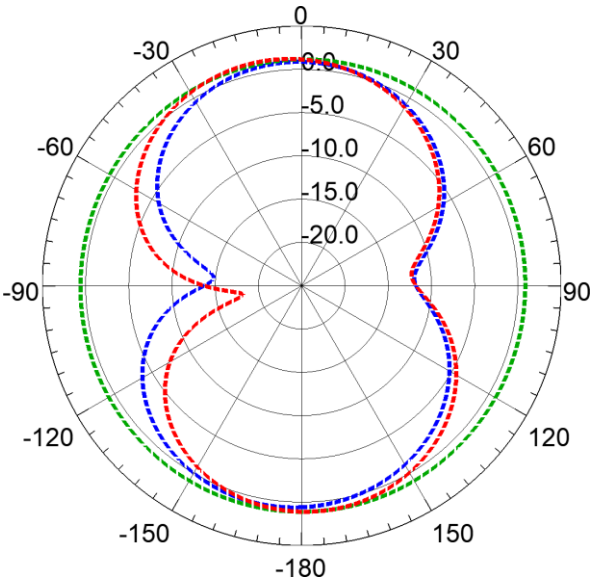
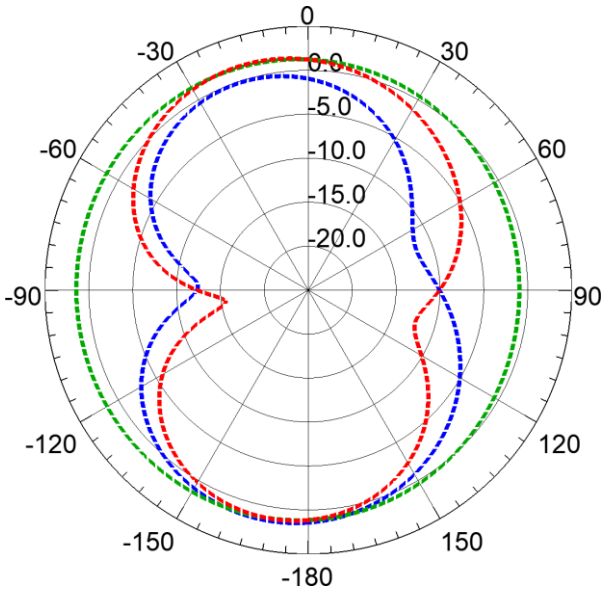
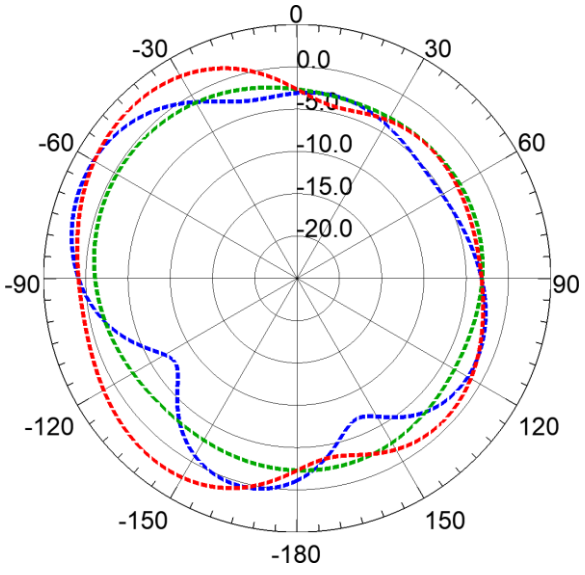
Radiation pattern (total realized gain, dBi)



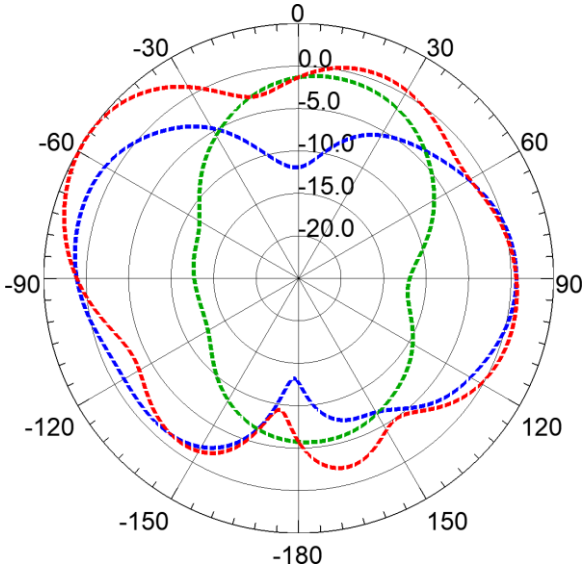
700 MHz



960 MHz



1700 MHz



2700 MHz

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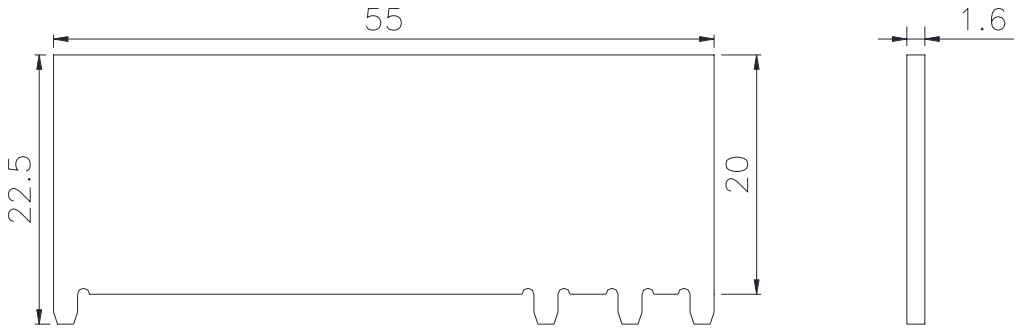
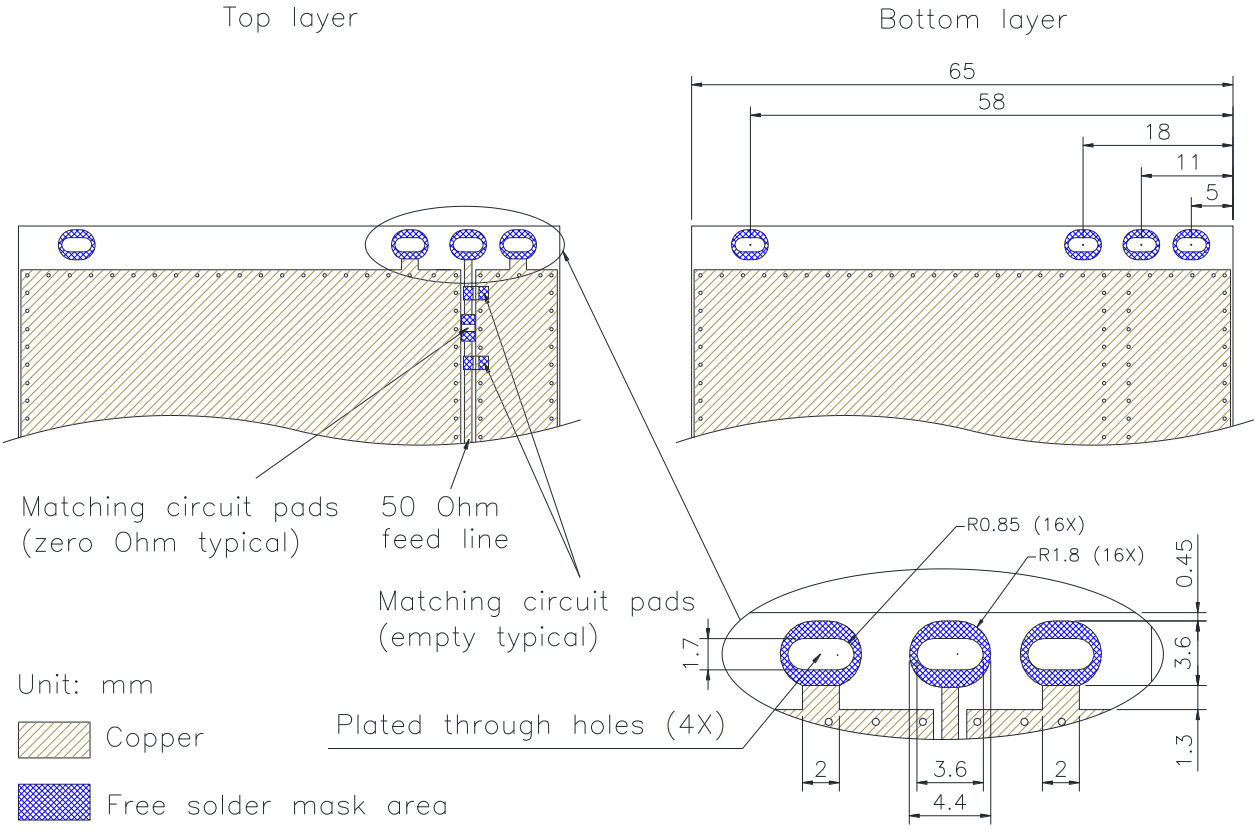
Product dimensions and recommended layout





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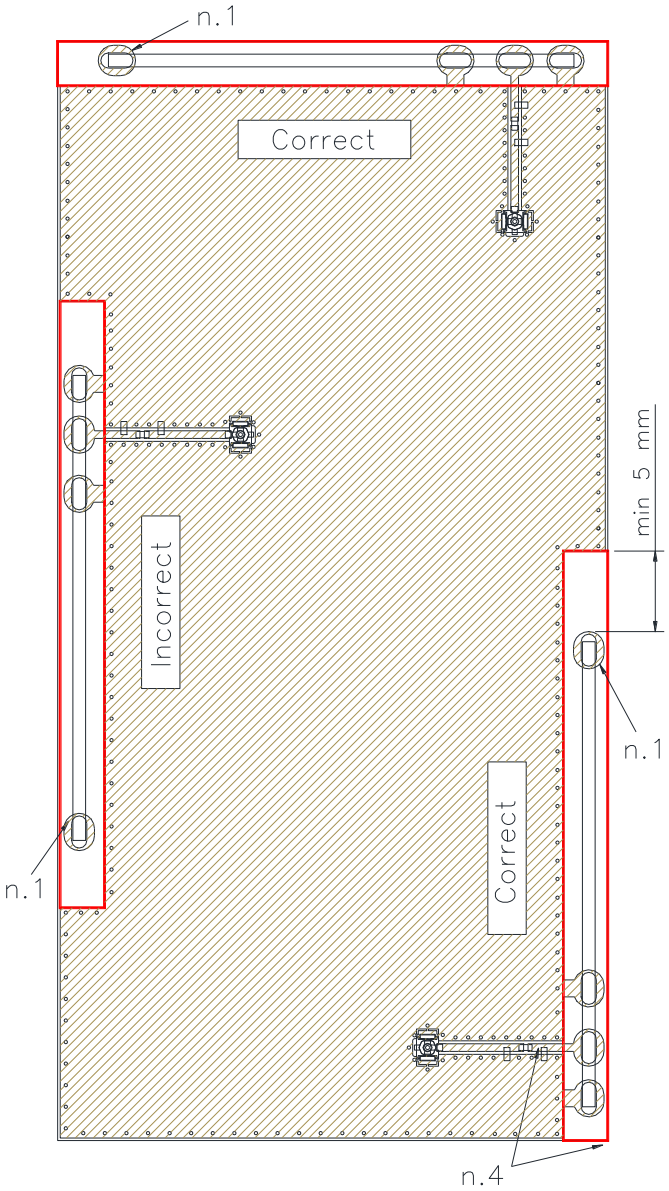
Antenna placement



Copper

Copper keep–out area through the all PCB layers

Notes:
1. Mechanical mounting pads (without GND connection)
2. Reference board size: 130x65mm
3. Antenna must be mounted on the PCB board edge
4. The feedline should be placed as close as possible to the PCB corner

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