824…960 MHz / 1880…2170 MHz / 5150…6000 MHz PCB Antenna (5G, LTE, IoT , ISM, RFID, Wi-Fi)

General information

The AN110507-01C is a compact multi-band embedded PCB antenna developed for internal integration into wireless devices requiring reliable connectivity from sub-GHz up to 6 GHz. It operates across 824…960 MHz, 1880…2170 MHz, and 5150…6000 MHz frequency ranges, supporting GSM, LTE, and selected 5G NR bands, as well as 5 GHz Wi-Fi (IEEE 802.11 a/n/ac/ax).

The low-frequency band enables stable cellular communication in LTE low bands and GSM networks, while the 1880–2170 MHz range supports PCS, UMTS, and multiple LTE mid-band deployments. The 5 GHz band ensures high-speed WLAN connectivity for data-intensive applications.

With omnidirectional radiation characteristics and linear polarization, the antenna provides consistent performance in compact and space-constrained enclosures. It is suitable for industrial IoT gateways, smart metering systems, alarm and security equipment, telematics and fleet management devices, payment terminals, portable routers, and embedded communication modules combining cellular and Wi-Fi functionality.

Electrical data

Antenna type	Embedded / internal PCB antenna		
5G bands	1, 2, 5, 8, 18, 25, 34, 39, 46, 47, 65, 81, 82, 84, 89, 95, 98		
4G bands	1, 2, 5, 6, 8, 18, 19, 25, 26, 33 - 37, 39, 46, 47, 65		
Other frequency bands	SRD860, ISM915, ISM5800, Wi-Fi 5 GHz		
Frequency range [MHz]	824...960	1880…2170	5150…6000
Return loss [dB]	-5	-6	-8
Peak gain [dBi]	0.5…1.2	1.6…2.6	3.4…4.3
Radiation efficiency [%]	48…80	44…72	55…73
Nominal input impedance [Ohm]	50		
Polarization	linear		
Radiation pattern	omnidirectional		
Maximum input power [W]	5		

Mechanical data

Antenna PCB dimensions [mm]	97 x 19 x 0.8
Connector type [1)]	IPEX MHF1 / Hirose U.FL (UMCC) compatible [1)]
Cable type and thickness [2)] [mm]	micro coax 1.13 [2)]
Cable length [3)] [mm]	175 [3)]
PCB material	FR4

Additional information

[1)] Other connector types can be offered on request.

[2)] Following cable thicknesses can be used with MHF1 connector: 0.81 mm, 1.13 mm, 1.32 mm, 1.37 mm.

[3)] Other cable lengths can be provided.

Antenna performance was measured using the recommended cable length in free space.

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

The antenna can be additionally equipped with adhesive tape and mounting holes.

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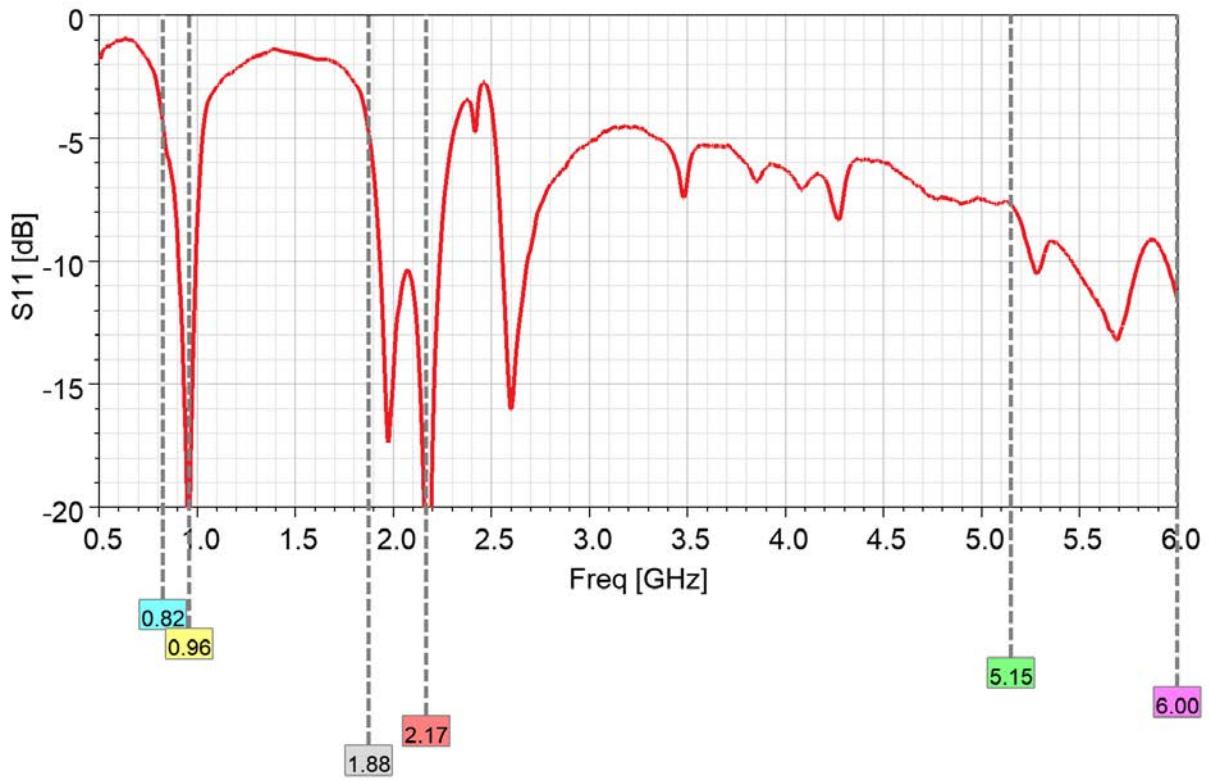
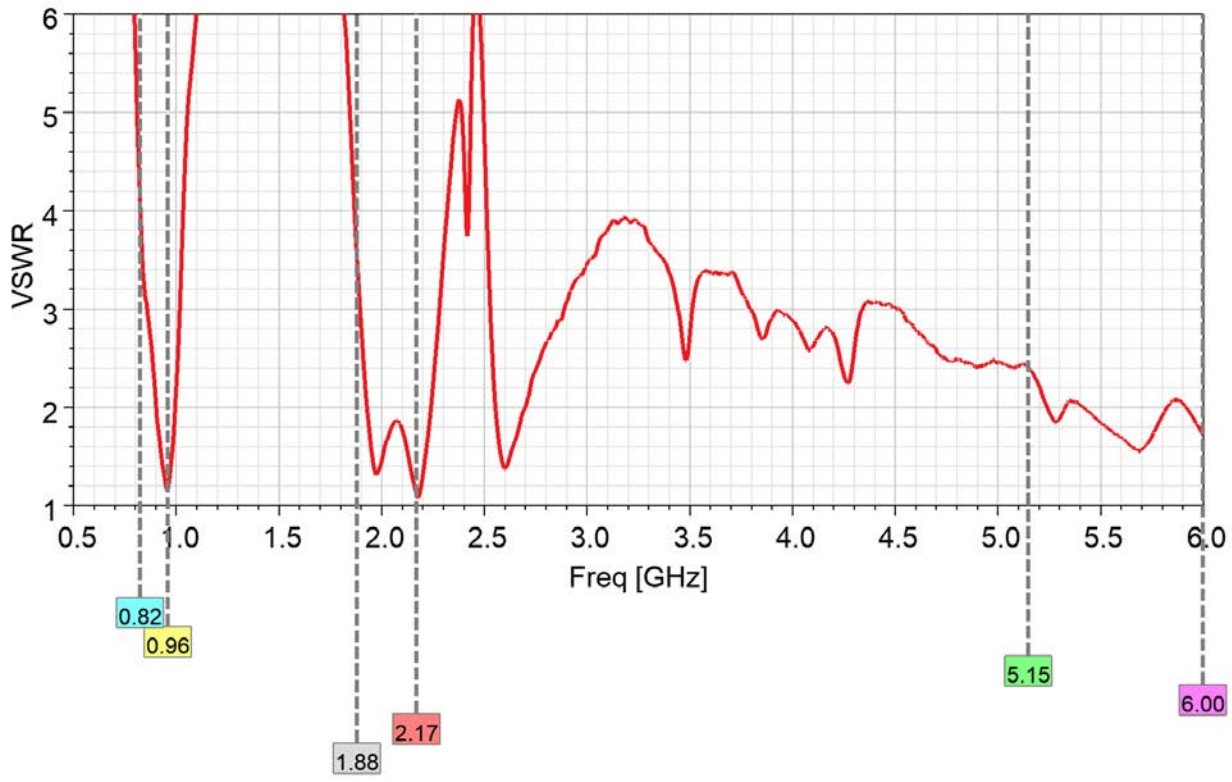
Measured input impedance matching



VSWR



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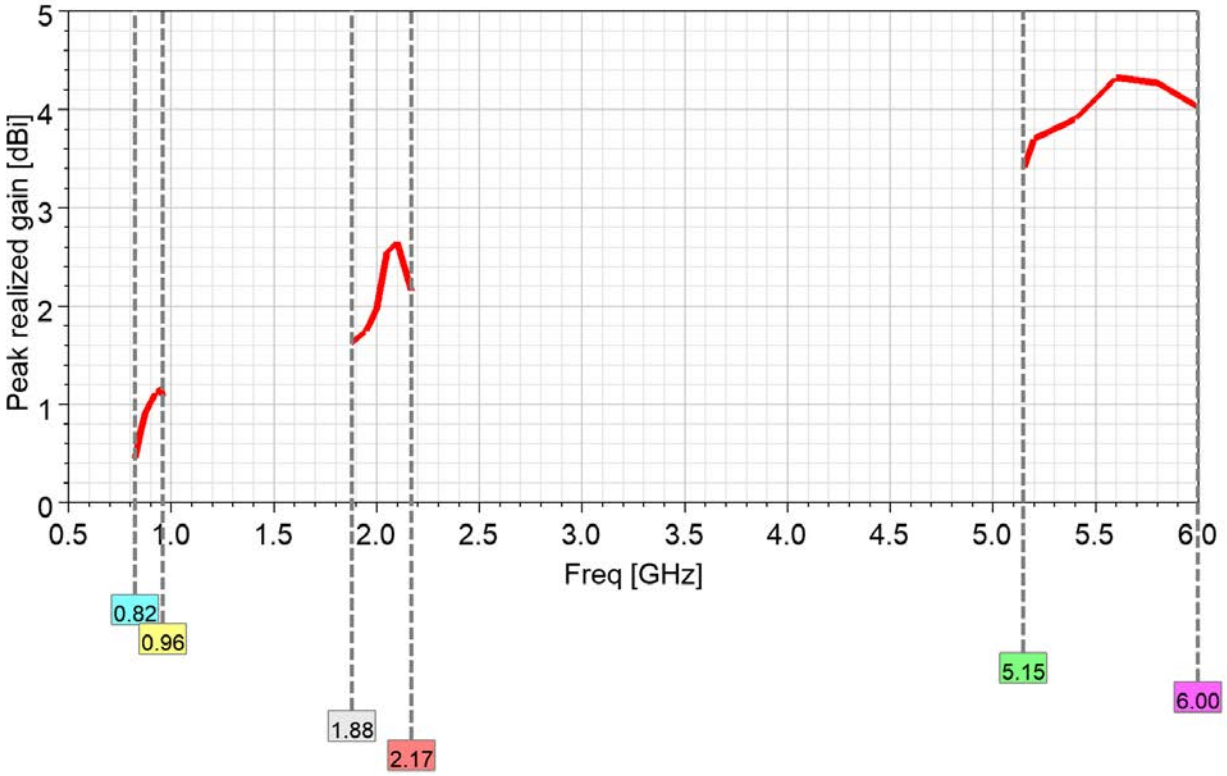
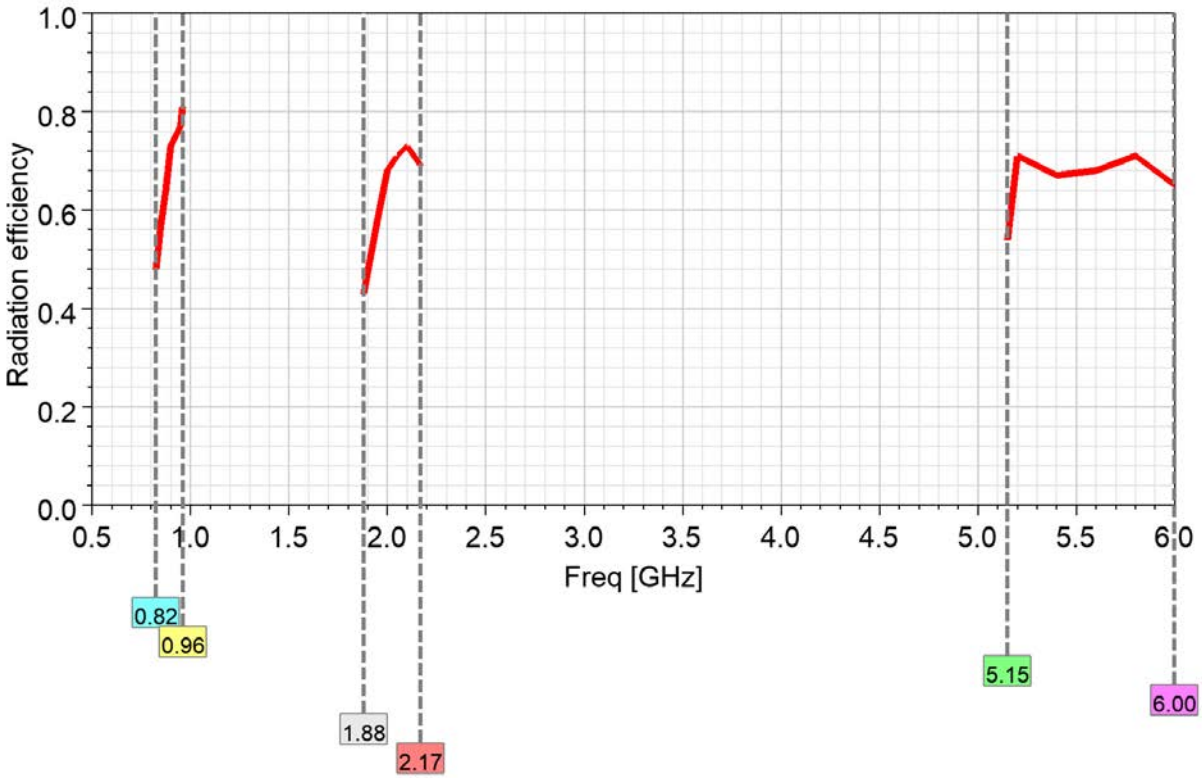
Peak realized gain



Radiation efficiency



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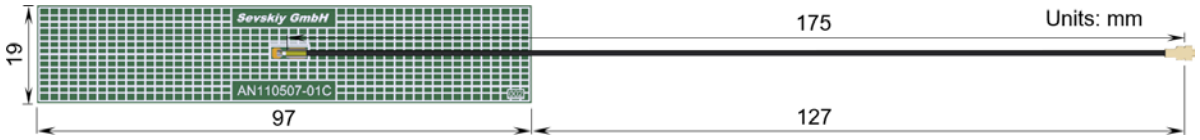
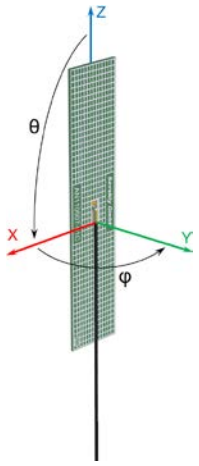
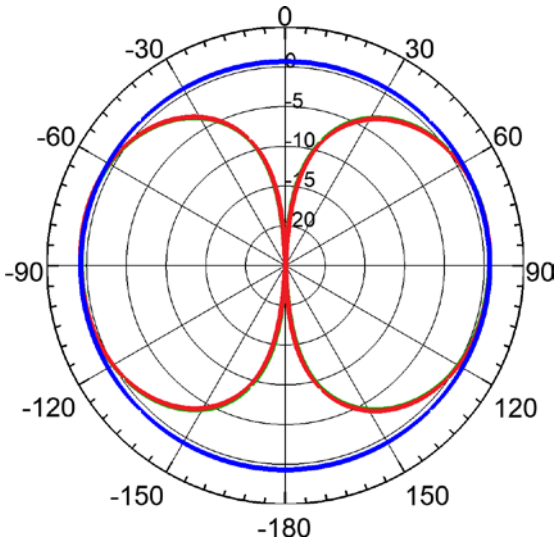
Product dimensions



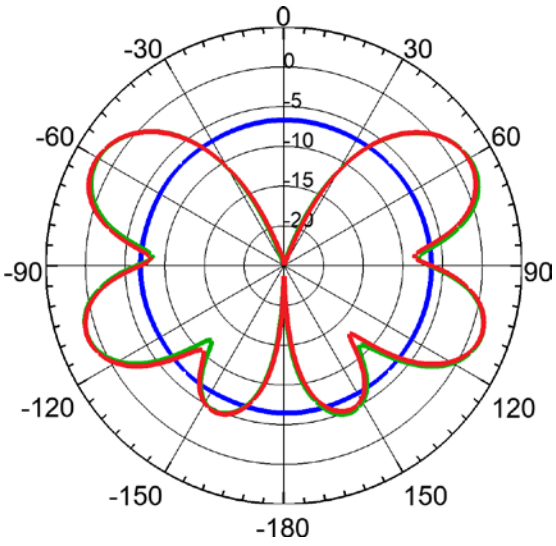
Radiation pattern



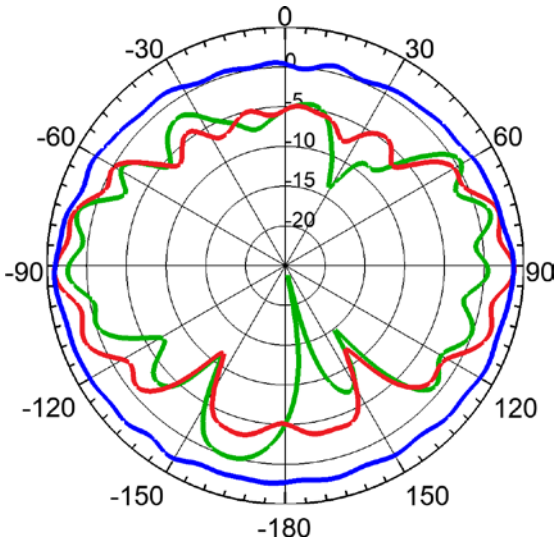
Total realized gain [dBi]
Phi=0°, plane XZ, green curve
Phi=90°, plane YZ, red curve
Theta=90°, plane XY, blue curve



960 MHz



2170 MHz



5600 MHz

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