

860...960 MHz / 1710...2170 MHz / 5150...6000 MHz PCB Antenna (5G, LTE, IoT, ISM, RFID, Wi-Fi)



General information

The AN110505-02C is a wideband embedded PCB antenna designed for internal integration into wireless devices operating across 860...960 MHz, 1710...2170 MHz, and 5150...6000 MHz frequency ranges. These bands support GSM, UMTS, LTE, and selected 5G NR allocations, as well as 5 GHz Wi-Fi standards (IEEE 802.11 a/n/ac/ax).

With omnidirectional radiation performance and linear polarization, the antenna ensures stable and consistent signal coverage in compact and space-constrained enclosures. It is well suited for industrial IoT gateways, smart metering systems, POS terminals, alarm and security panels, telematics units, portable routers, EV charging stations, and connected monitoring devices requiring combined cellular and Wi-Fi connectivity.

The antenna is manufactured on an FR-4 substrate and is supplied with a soldered micro-coaxial RF cable terminated with an I-PEX MHF1 / Hirose U.FL (UMCC) compatible connector for straightforward integration with RF modules.

Electrical data

Antenna type	Embedded / internal PCB antenna		
5G bands	1 - 3, 7, 8, 25, 30, 34, 38 - 41, 46, 47, 53, 65, 70, 79 - 81, 84, 86, 90		
4G bands	1 - 4, 7 - 10, 23, 25, 30, 33 - 41, 46, 47, 53, 65, 69, 70		
Other frequency bands	SRD860, ISM915, ISM5800, Wi-Fi 5 GHz		
Frequency range [MHz]	860...960	1710...2170	5150...6000
Return loss [dB]	-5	-5	-6
Peak gain [dBi]	-0.3...2.2	-3.9...4	1...5
Radiation efficiency [%]	41...92	24...90	50...75
Nominal input impedance [Ohm]	50		
Polarization	linear		
Radiation pattern	omnidirectional		
Maximum input power [W]	5		

Mechanical data

Antenna PCB dimensions [mm]	100 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.

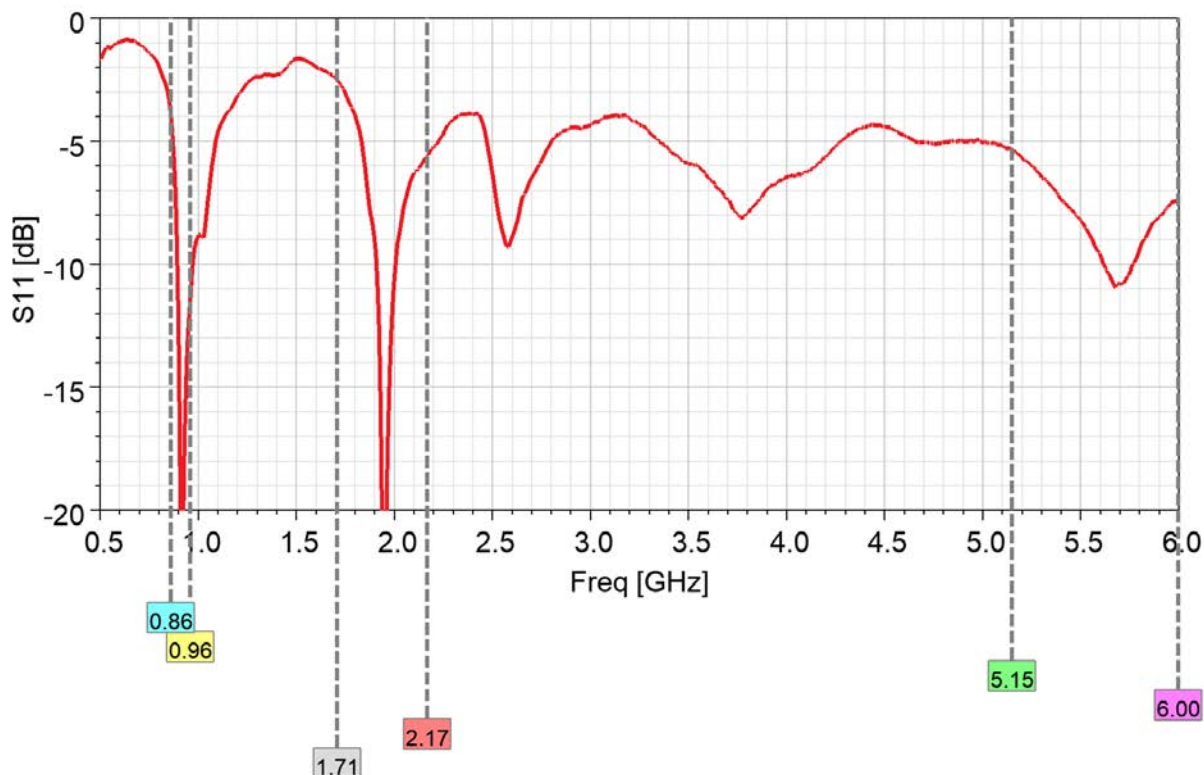
Further customization, electromagnetic simulations and measurements can be offered on request.

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

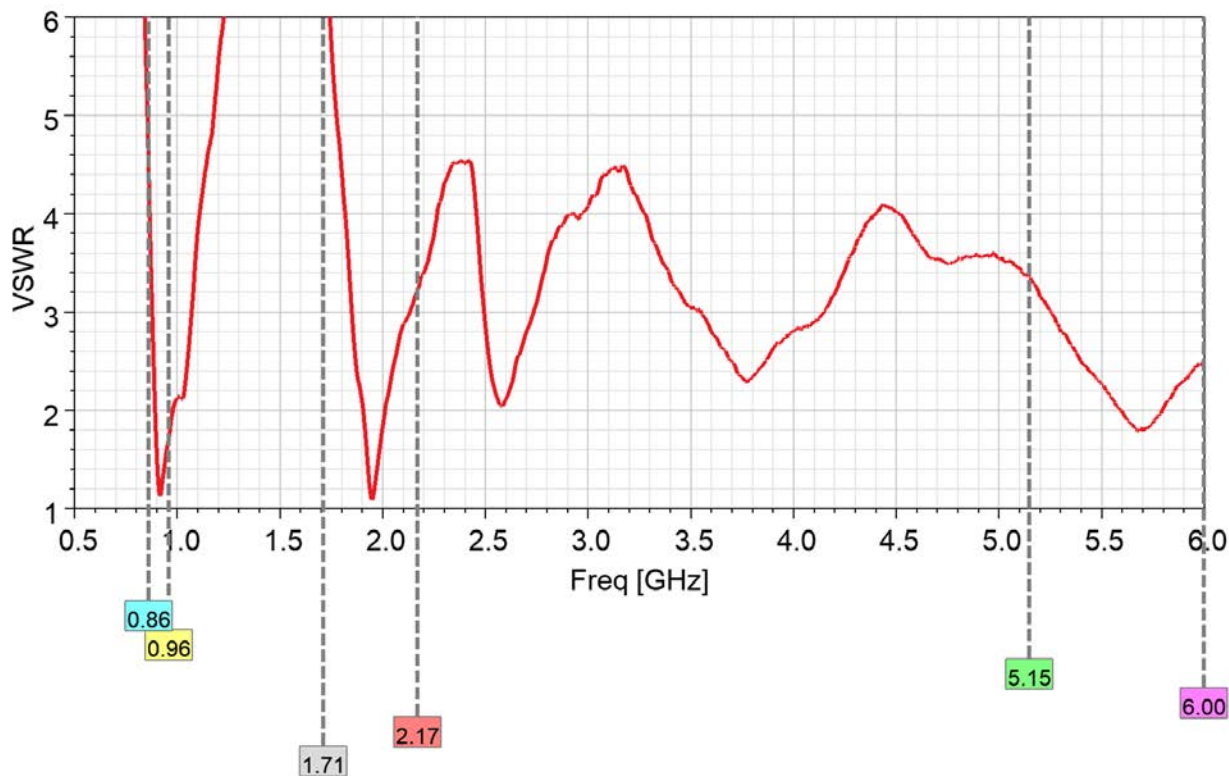
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Measured input impedance matching



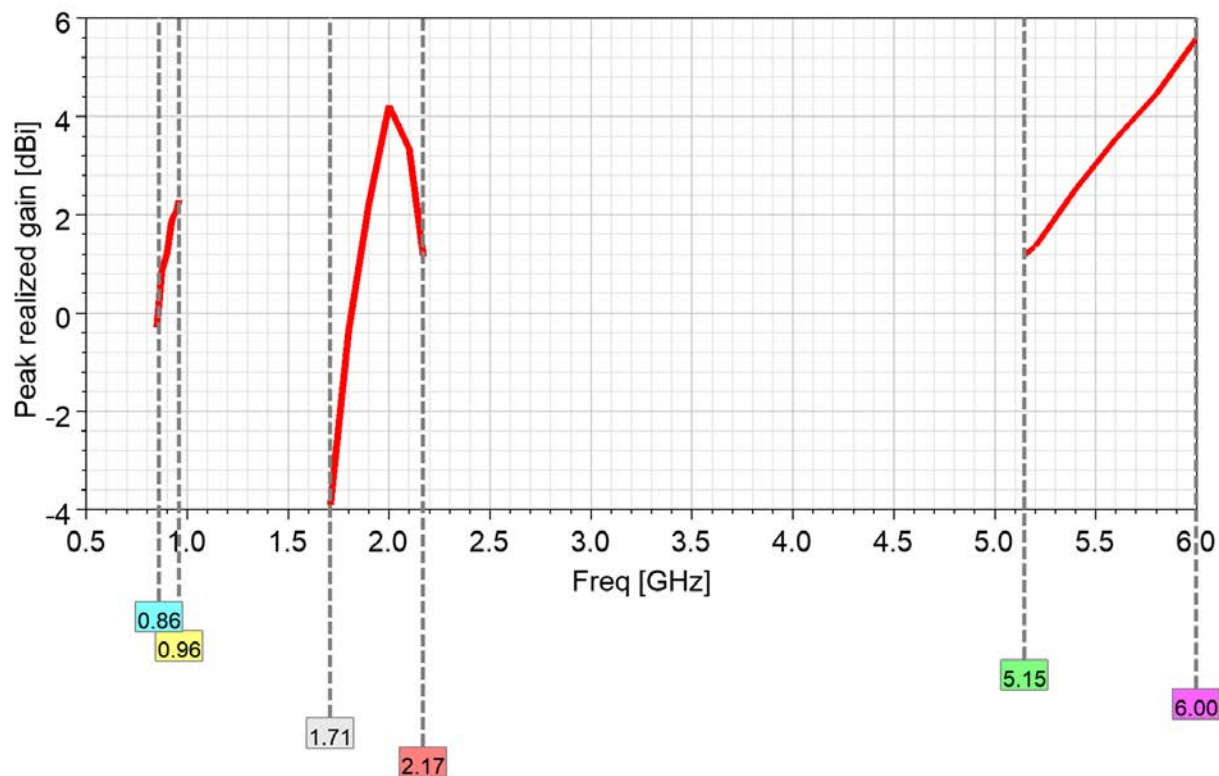
VSWR



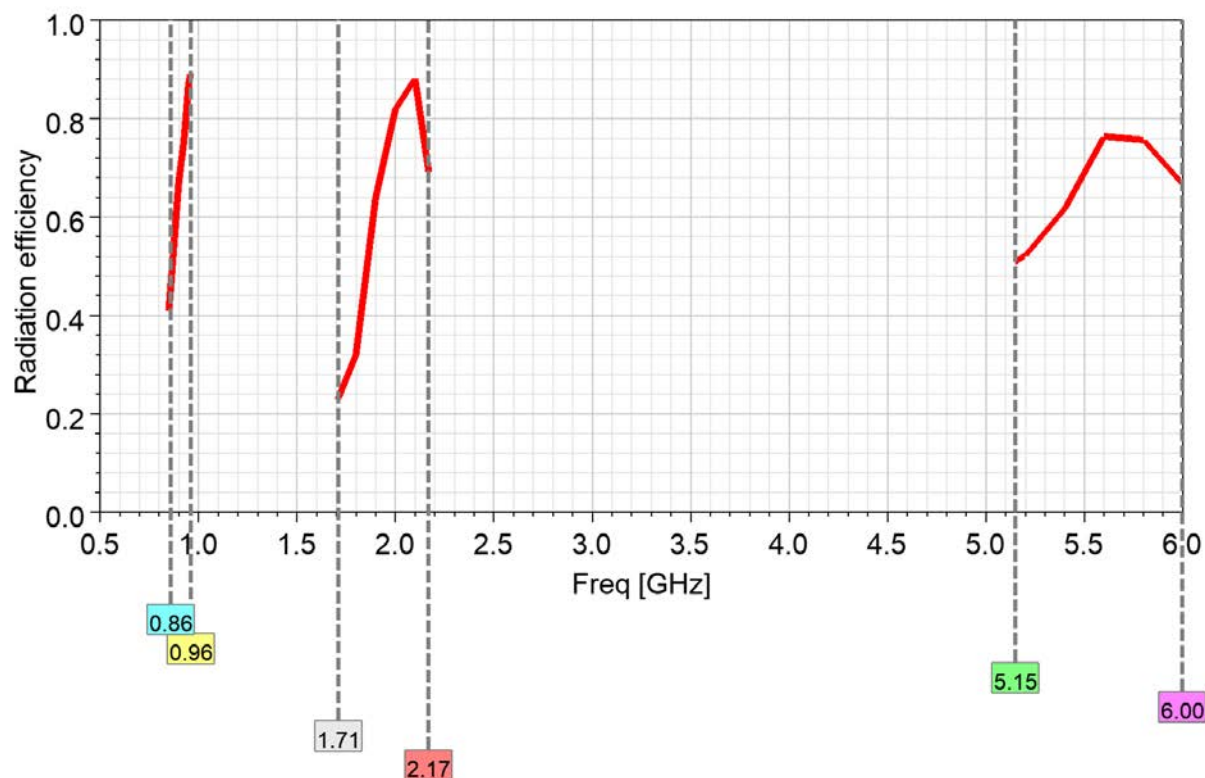
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Peak realized gain



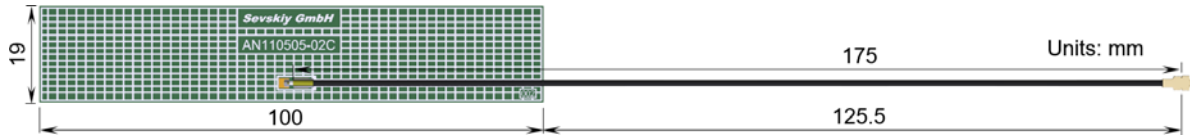
Radiation efficiency



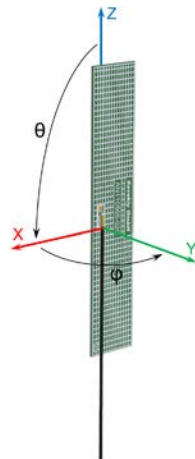
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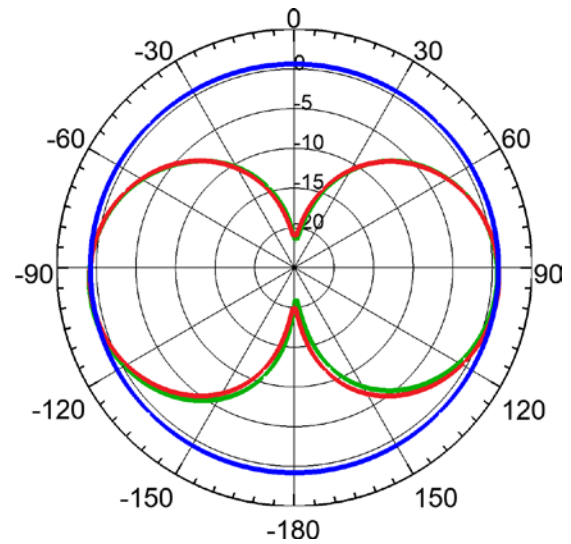
Product dimensions



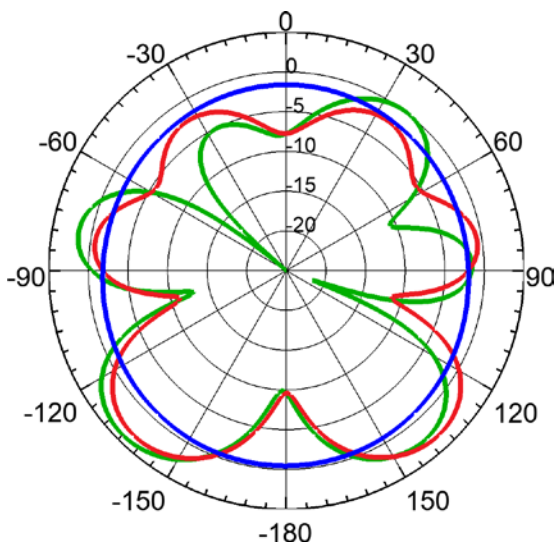
Radiation pattern



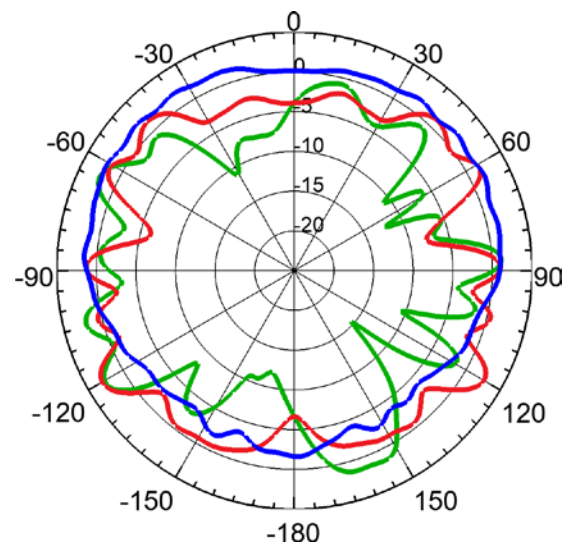
Total realized gain [dBi]
Phi=0°, plane XZ, green curve
Phi=90°, plane YZ, red curve
Theta=90°, plane XY, blue curve



900 MHz



2000 MHz



5600 MHz

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