

824...960 MHz / 2400...2500 MHz / 5150...6000 MHz PCB Antenna (5G, LTE, IoT , ISM, RFID, Wi-Fi)



General information

The AN110506-01C is a compact multi-band embedded PCB antenna designed for internal integration into wireless devices operating across 824...960 MHz, 2400...2500 MHz, and 5150...6000 MHz frequency bands. These ranges enable support for GSM, LTE, and selected 5G NR (FR1) low bands, as well as 2.4 GHz ISM applications including Wi-Fi and Bluetooth, and high-speed 5 GHz WLAN standards.

The low band ensures reliable cellular connectivity in LTE and GSM networks, while the 2.4 GHz and 5 GHz bands provide robust short-range wireless communication and high data throughput. This combination makes the antenna suitable for devices requiring both wide-area cellular communication and local wireless connectivity. Typical applications include industrial IoT gateways, smart meters, security and alarm systems, payment terminals, asset tracking devices, portable routers, smart home hubs, and embedded communication modules.

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

Electrical data

Antenna type	Embedded / internal PCB antenna		
5G bands	5, 8, 18, 26, 46, 47, 53, 81, 82, 89		
4G bands	5, 6, 8, 18, 19, 26, 46, 47, 53		
Other frequency bands	SRD860, ISM915, ISM5800, Wi-Fi 5 GHz		
Frequency range [MHz]	824...960	2400...2500	5150...6000
Return loss [dB]	-6	-8	-6
Peak gain [dBi]	0.5...0.8	1.4...3	3.2...4.8
Radiation efficiency [%]	58...78	55...70	52...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.

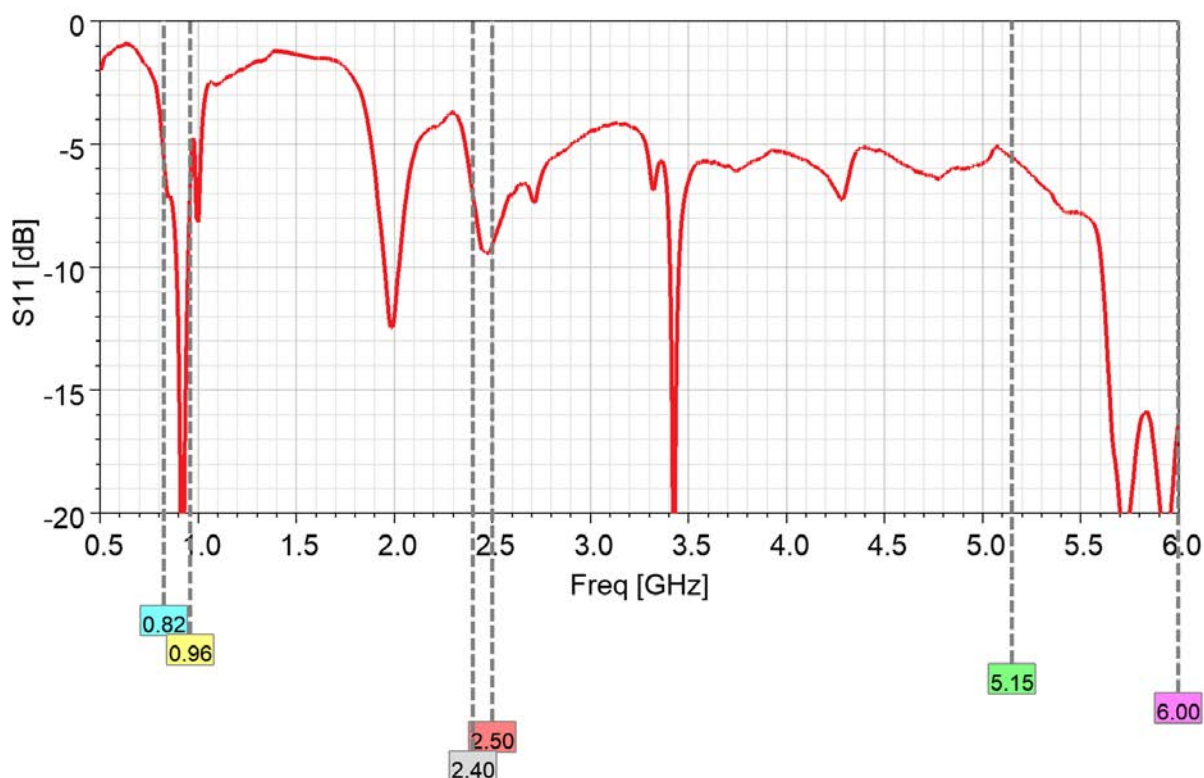
Further customization, electromagnetic simulations and measurements can be offered on request.

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

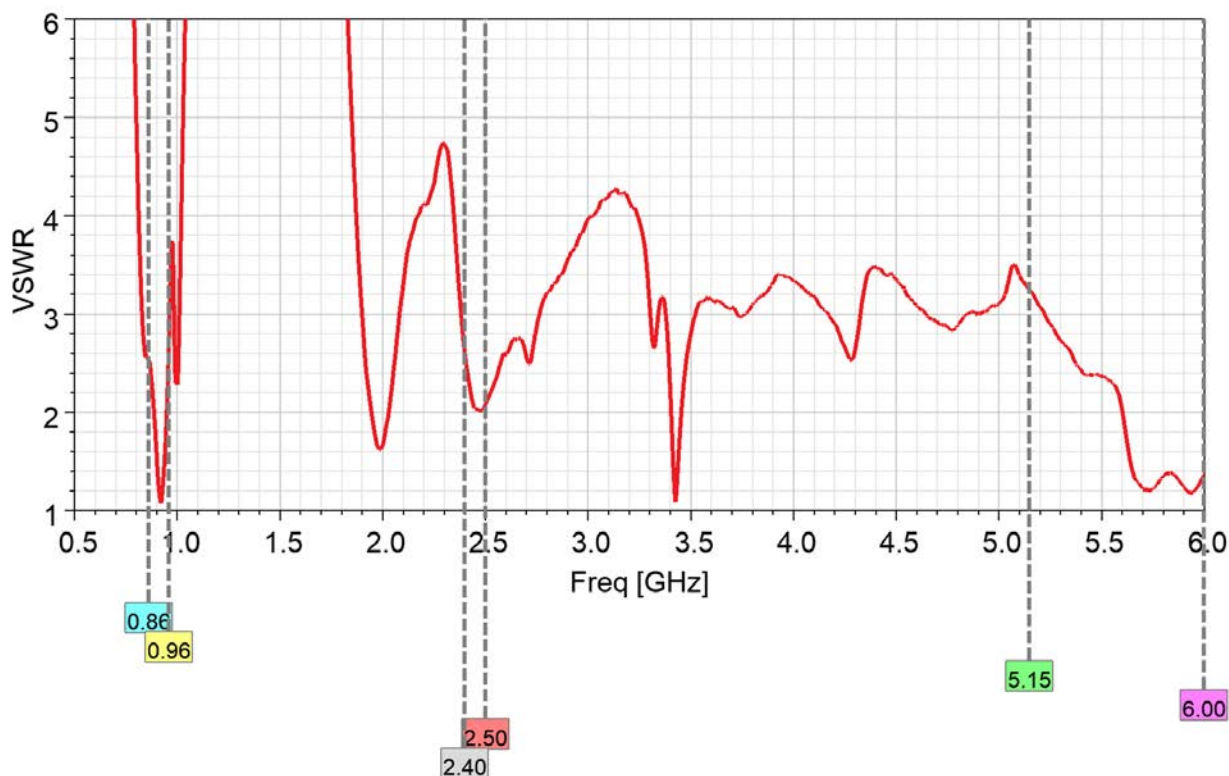
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Measured input impedance matching



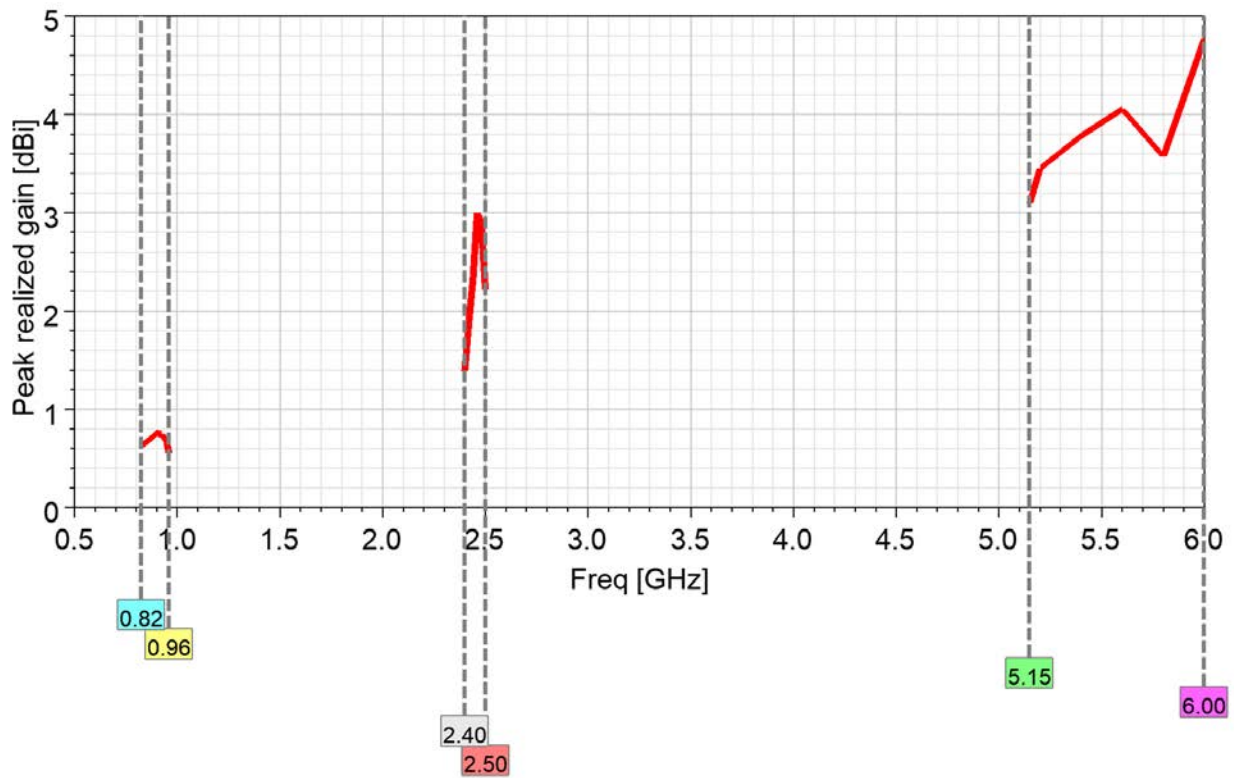
VSWR



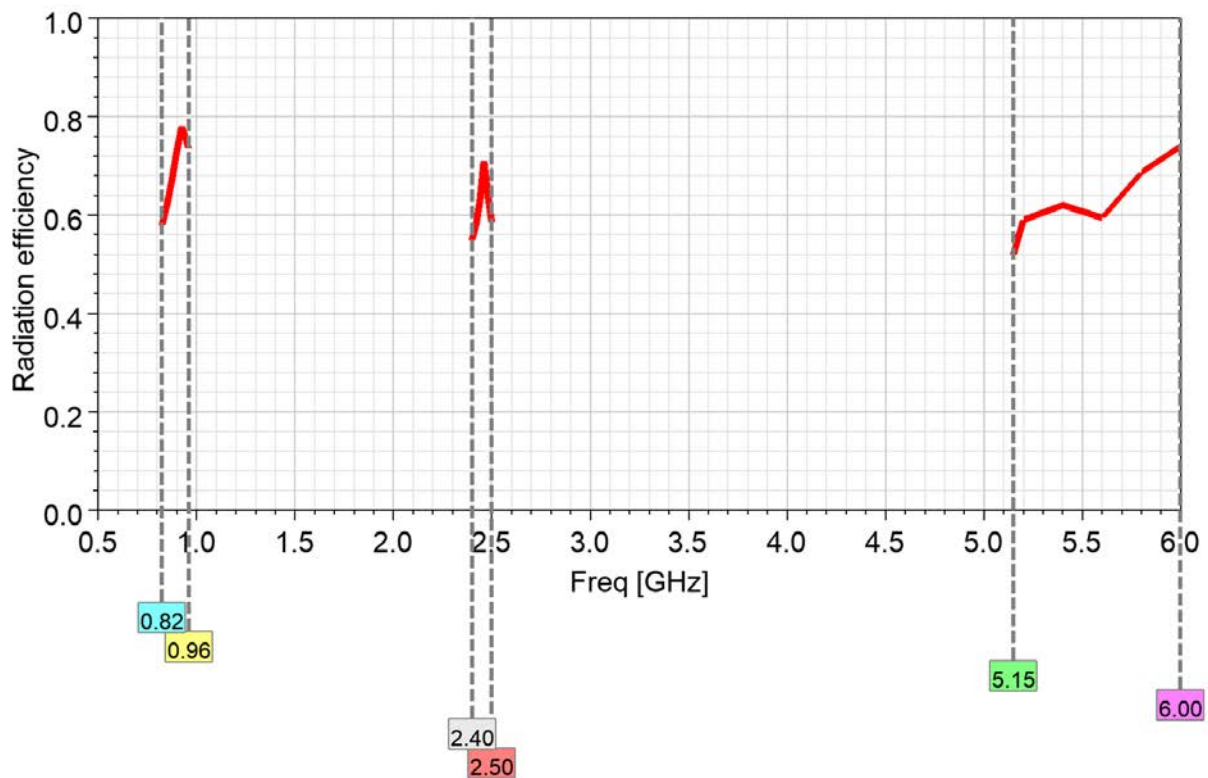
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Peak realized gain



Radiation efficiency



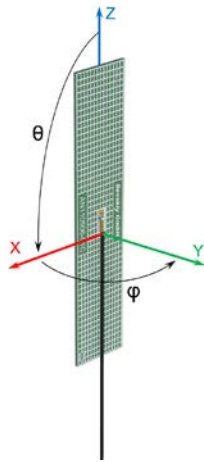
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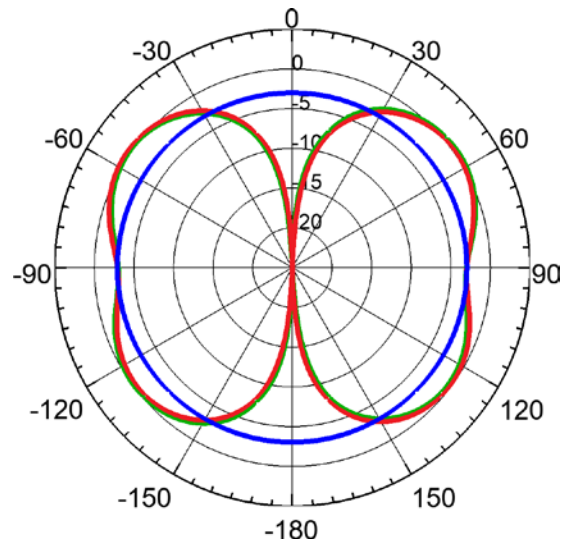
Product dimensions



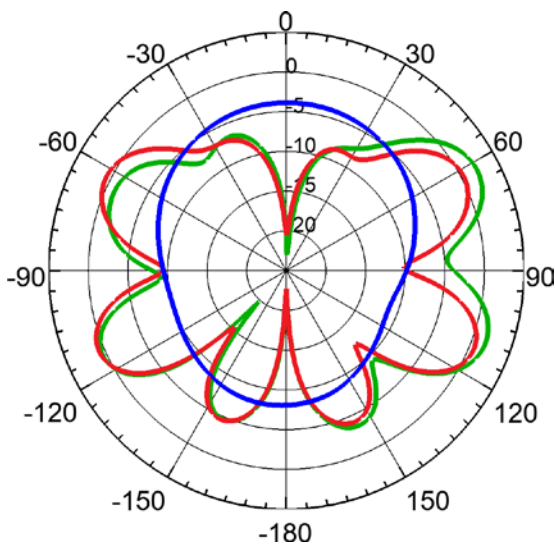
Radiation pattern



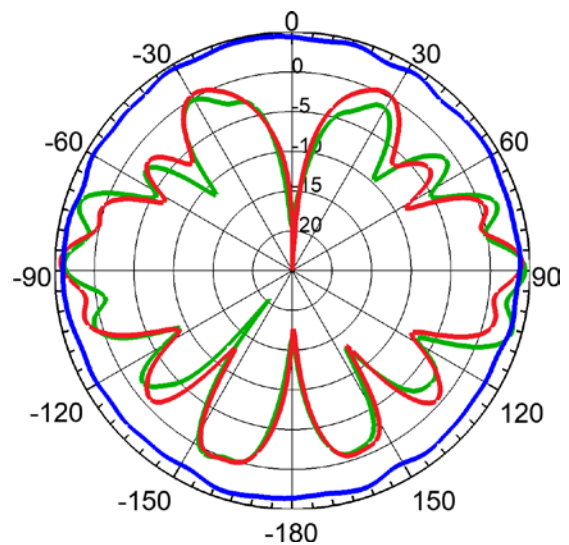
Total realized gain [dBi]
Phi=0°, plane XZ, green curve
Phi=90°, plane YZ, red curve
Theta=90°, plane XY, blue curve



960 MHz



2500 MHz



5800 MHz

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