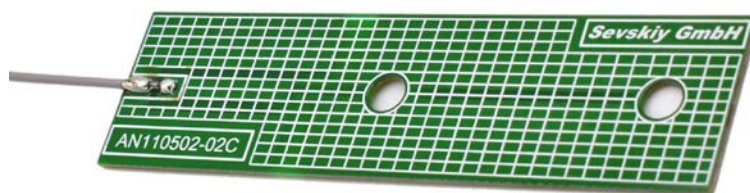


750...960 MHz / 1559...2700 MHz / 4400...6000 MHz PCB Antenna (5G, LTE, ISM, IoT, BT, Wi-Fi)



General information

The AN110502-02C is a compact multi-band embedded PCB antenna developed for internal installation in advanced wireless devices requiring broad frequency coverage from sub-GHz up to 6 GHz. The antenna operates across 750...960 MHz, 1559...2700 MHz, and 4400...6000 MHz bands, supporting LTE, 5G NR, GSM, and other cellular standards, while also covering Wi-Fi 5/6 and Bluetooth frequency ranges. In addition, the extended mid-band range starting from 1559 MHz enables GNSS reception (GPS, GLONASS, Galileo, BeiDou), making the antenna suitable for positioning-enabled communication devices. This combination of cellular, GNSS, and high-frequency WLAN coverage allows integration into modern telematics systems, asset tracking units, industrial IoT gateways, fleet management devices, smart meters, surveillance equipment, and connected infrastructure platforms.

With omnidirectional radiation characteristics and linear polarization, the antenna provides stable all-around performance in compact and space-limited enclosures.

Electrical data

Antenna type	Embedded / internal PCB antenna		
5G bands	1 - 3, 5, 7, 8, 13, 14, 18, 20, 25, 26, 30, 34, 38 - 41, 46, 47, 53, 65, 70, 79 - 82, 84, 86, 89, 90, 95, 97, 98		
4G bands	1 - 10, 13, 14, 18 - 20, 23 - 27, 30, 33 - 41, 46, 47, 53, 65, 69, 70		
Other frequency bands	SRD860, ISM915, ISM2400, Wi-Fi 5 GHz, ISM5800, GNSS		
Frequency range [MHz]	750...960	1559...2700	4400...6000
Return loss [dB]	-5	-10	-5
Peak gain [dBi]	-3.8...-0.6	1.5...2.2	0.5...4
Radiation efficiency [%]	70...90	80...92	44...90
Nominal input impedance [Ohm]	50		
Polarization	linear		
Radiation pattern	omnidirectional		
Maximum input power [W]	5		

Mechanical data

Antenna PCB dimensions [mm]	70 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.

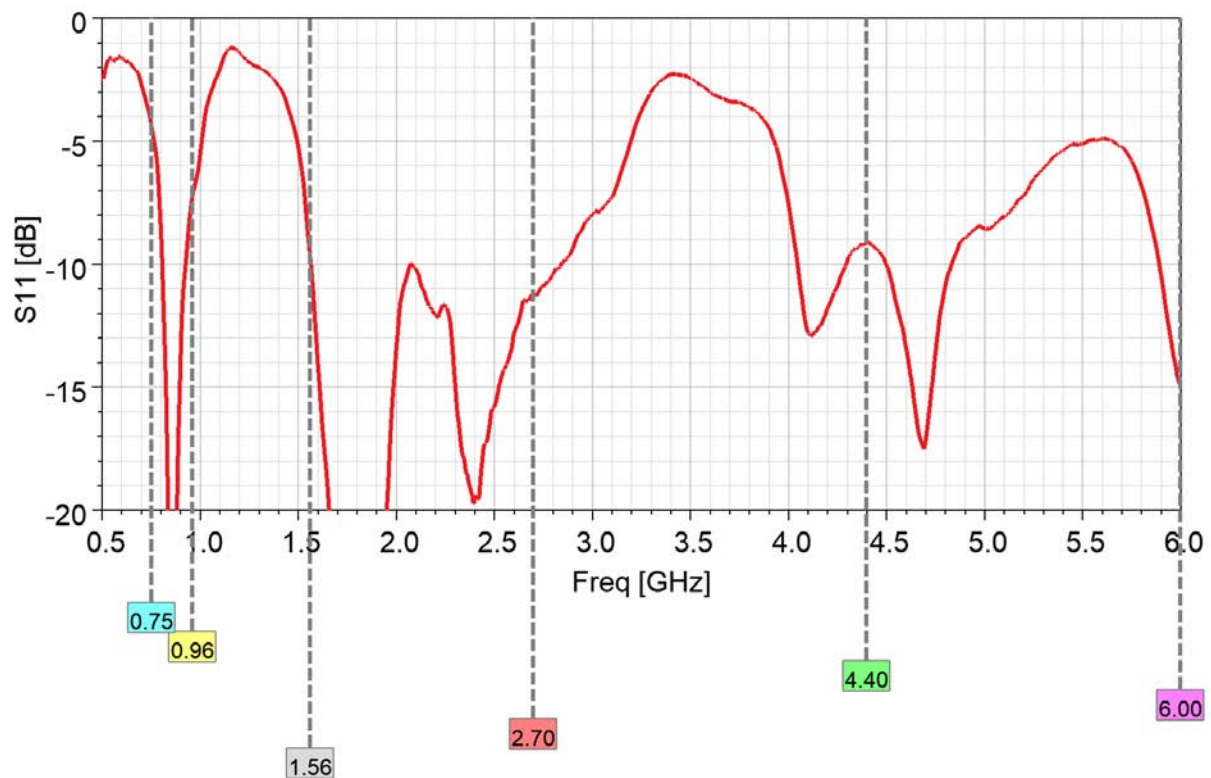
Further customization, electromagnetic simulations and measurements can be offered on request.

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

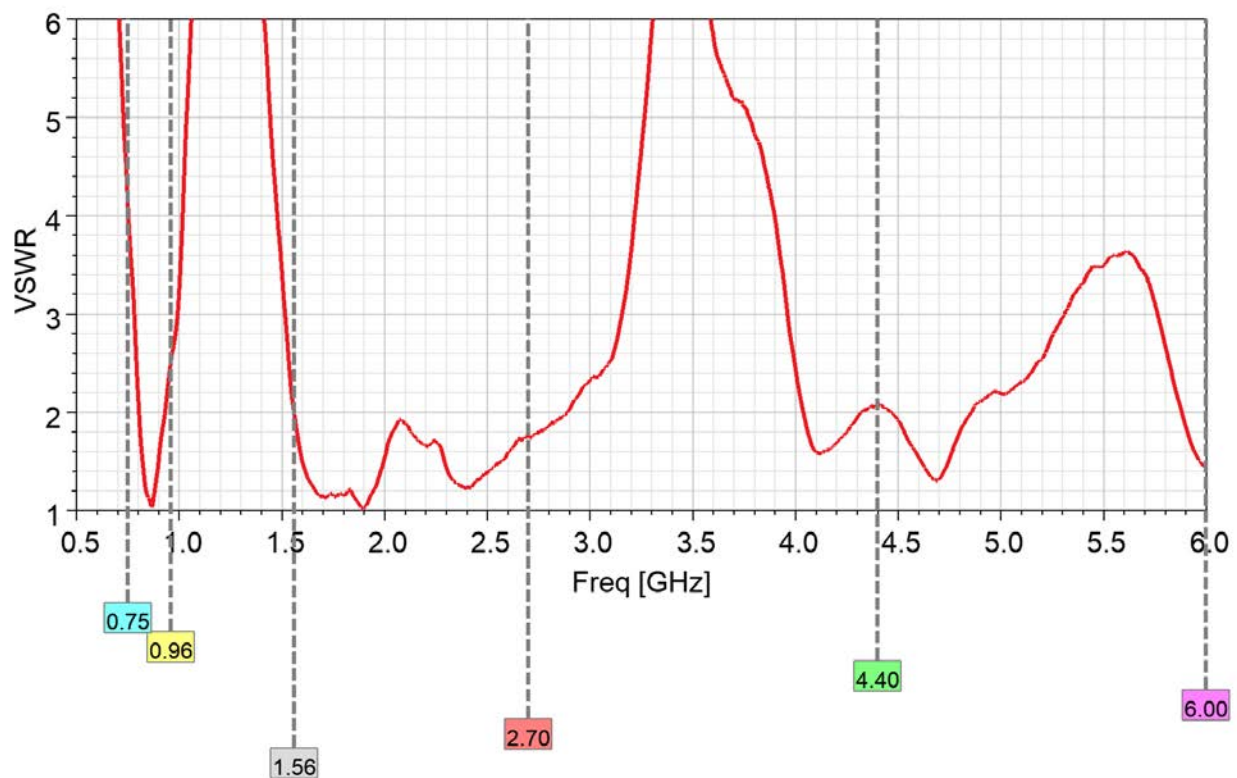
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750...960 MHz / 1559...2700 MHz / 4400...6000 MHz PCB Antenna (5G, LTE, ISM, IoT, BT, Wi-Fi)

Measured input impedance matching



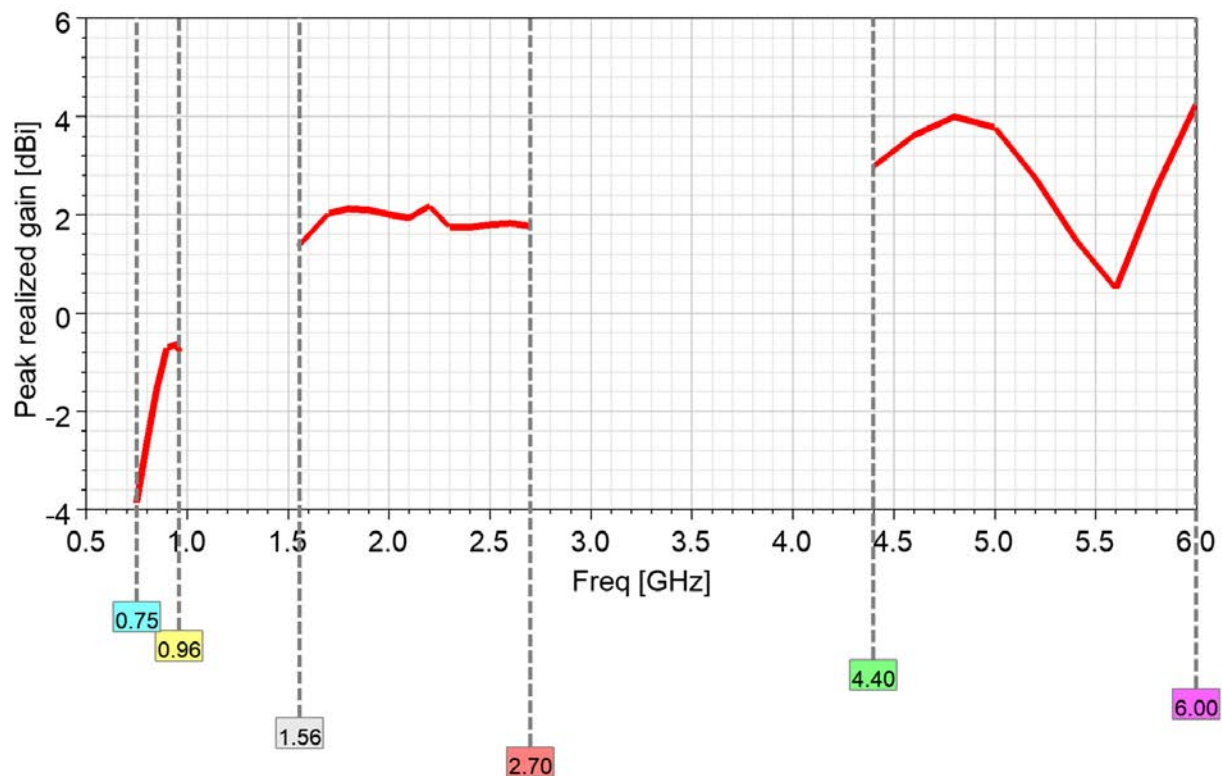
VSWR



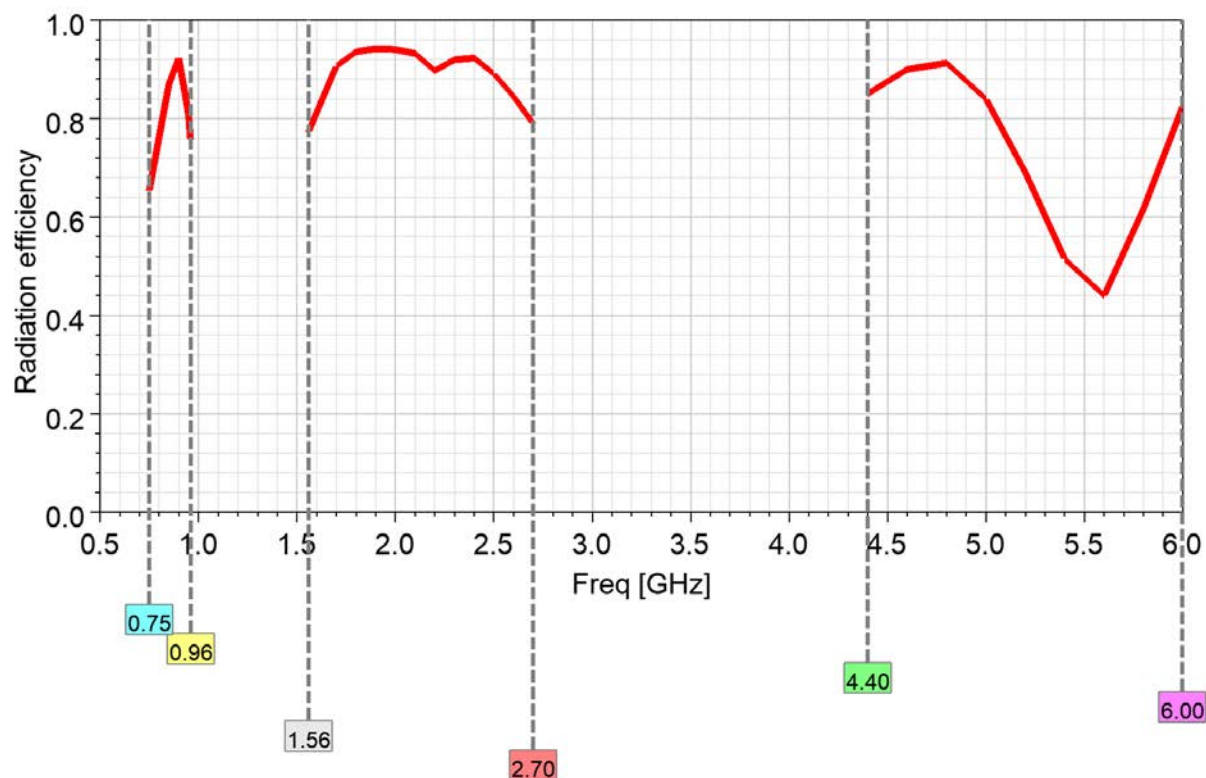
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Peak realized gain



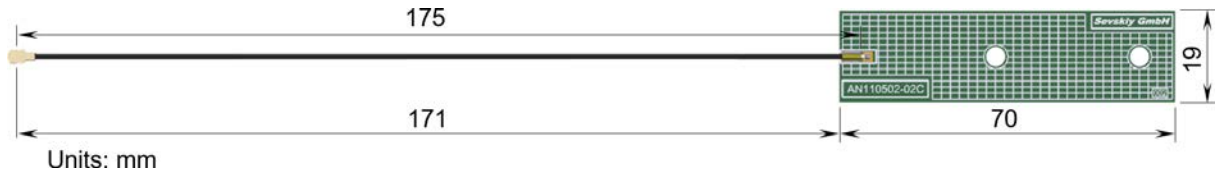
Radiation efficiency



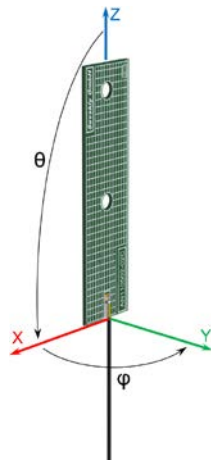
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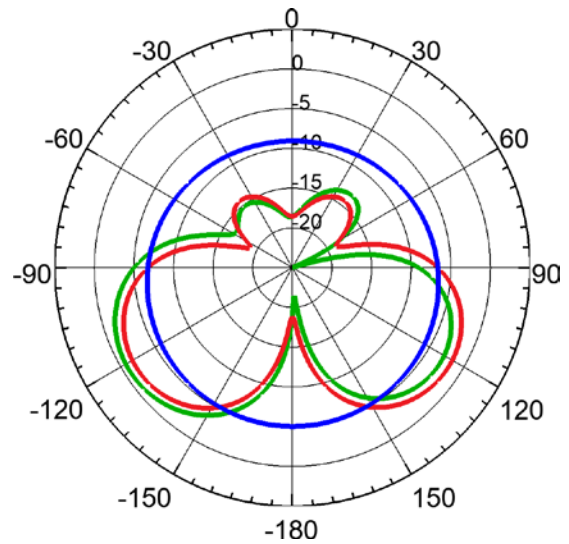
Product dimensions



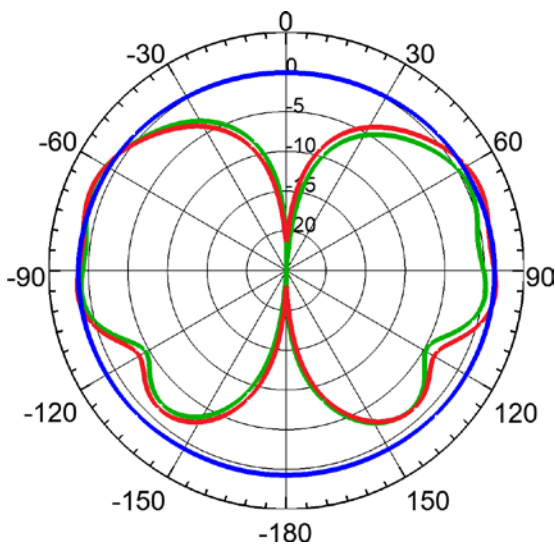
Radiation pattern



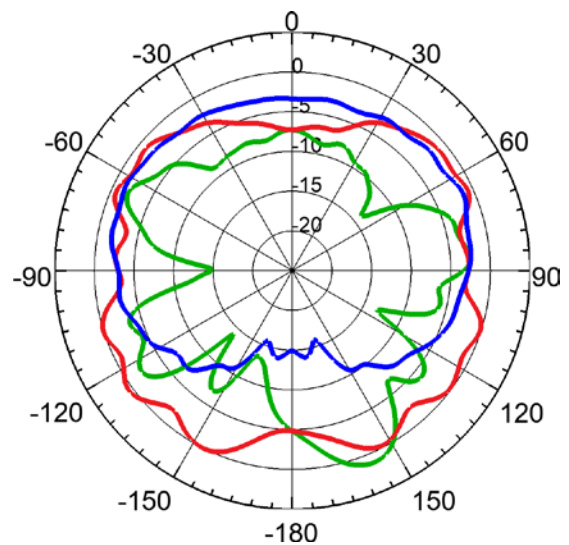
Total realized gain [dBi]
Phi=0°, plane XZ, green curve
Phi=90°, plane YZ, red curve
Theta=90°, plane XY, blue curve



900 MHz



2500 MHz



5400 MHz

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