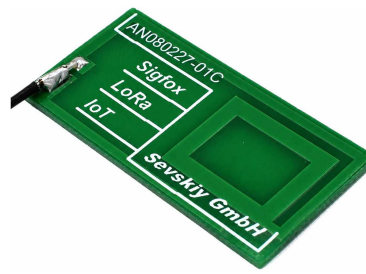


750...960 MHz / 4400...5000 MHz / 5725...6000 MHz PCB Antenna (ISM, RFID, IoT, LoRa, 5G NR, LTE)



General information

The AN080227-01C is a compact multi-band internal PCB antenna designed for reliable wireless communication across frequency bands 900 MHz, 4400 MHz, and 5800 MHz. It supports SRD860, ISM915, and ISM5800, making it suitable for a wide variety of short- and long-range wireless systems. The antenna is optimized for applications such as IoT devices, LP-WAN solutions (LoRa, Sigfox), smart meters, industrial telemetry, wireless sensors, and Wi-Fi connectivity.

The antenna is manufactured on an FR-4 PCB and is supplied with an integrated micro-coaxial cable terminated with an I-PEX MHF1 / Hirose U.FL (UMCC) connector. This cable-based design enables flexible antenna placement inside the device enclosure and simplifies integration with RF modules. With its compact dimensions, linear polarization, and omnidirectional radiation pattern, the antenna delivers stable RF performance even in space-constrained plastic housings.

Electrical data

Antenna type	Embedded / internal PCB antenna		
5G bands	5, 8, 13, 14, 18, 20, 26, 47, 79, 81, 82, 89		
4G bands	5, 6, 8, 13, 14, 18, 19, 20, 26, 27, 47		
Other frequency bands	SRD860, ISM915, ISM5800		
Frequency range [MHz]	750...960	4400...5000	5725...6000
Return loss [dB]	-7	-6	-6
Peak gain [dBi]	-0.9...1	1...4	4...4.5
Radiation efficiency [%]	65...90	50...70	50...80
Nominal input impedance [Ohm]	50		
Polarization	linear		
Radiation pattern	omnidirectional		
Maximum input power [W]	5		

Mechanical data

Antenna PCB dimensions [mm]	35 x 17 x 1
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 specified cable length in free space.

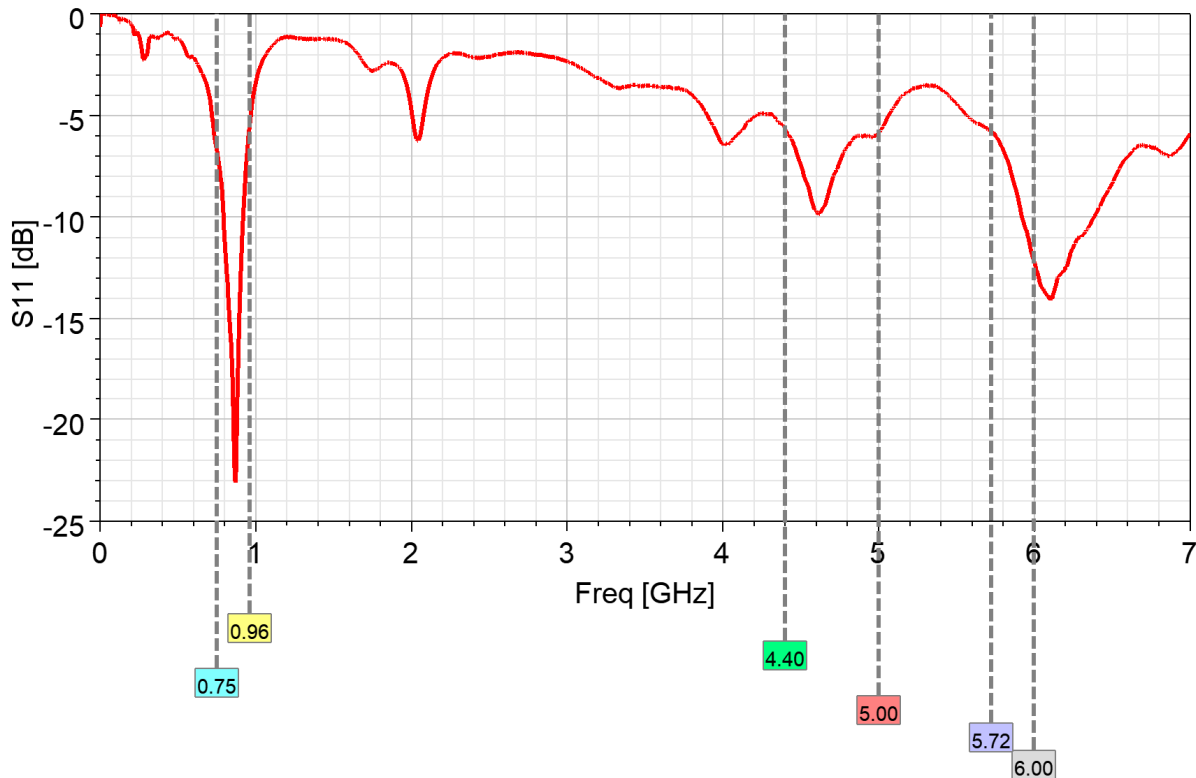
Further customization, electromagnetic simulations and measurements can be offered on request.

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

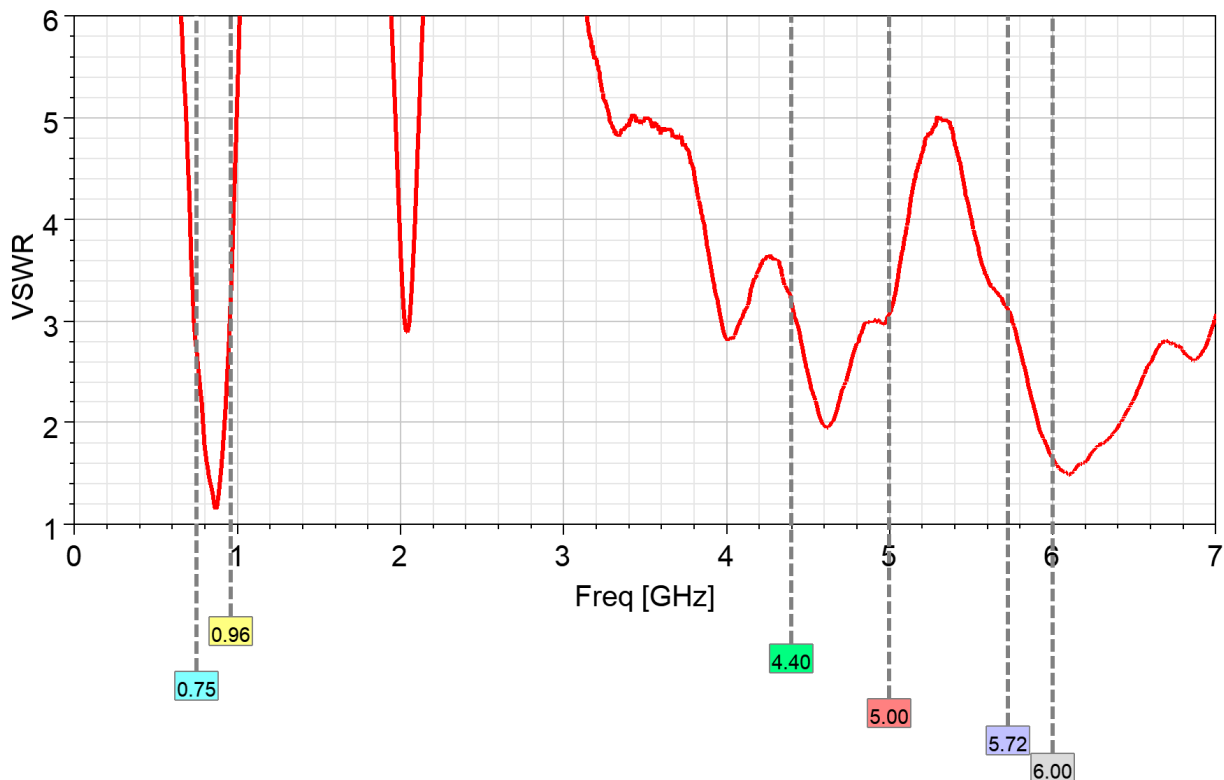
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Measured input impedance matching



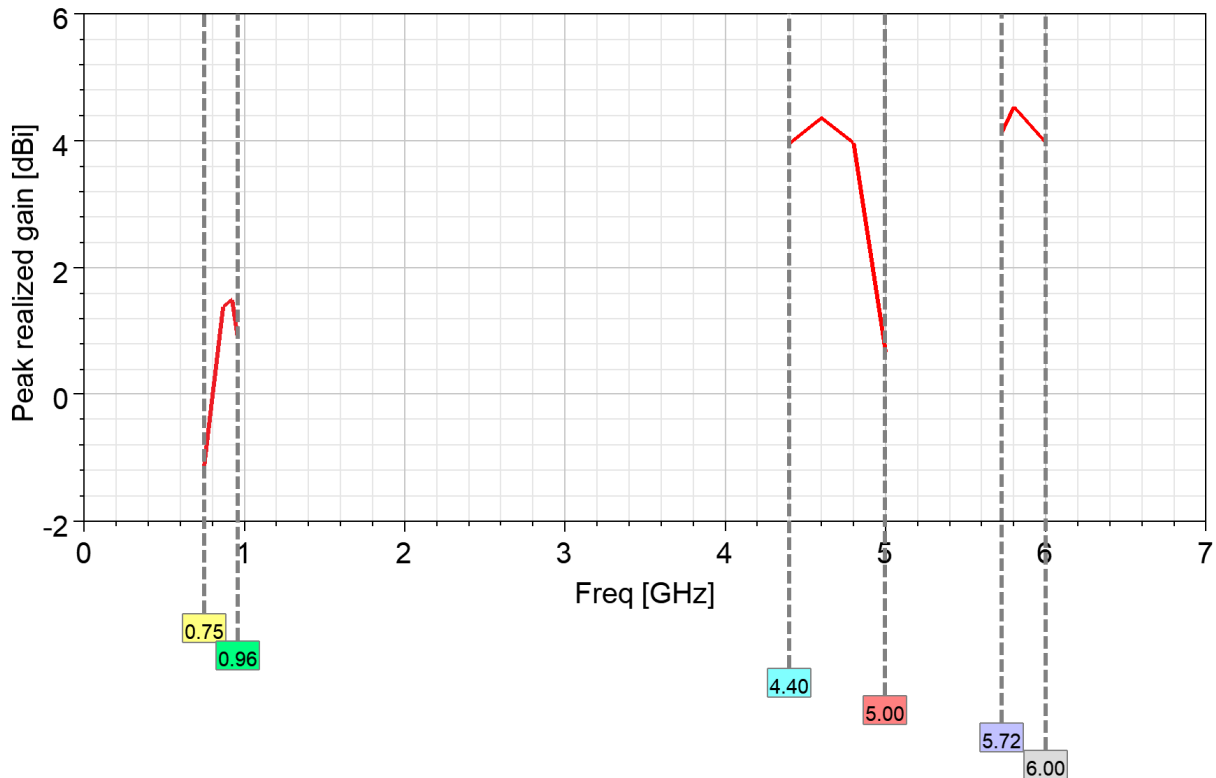
VSWR



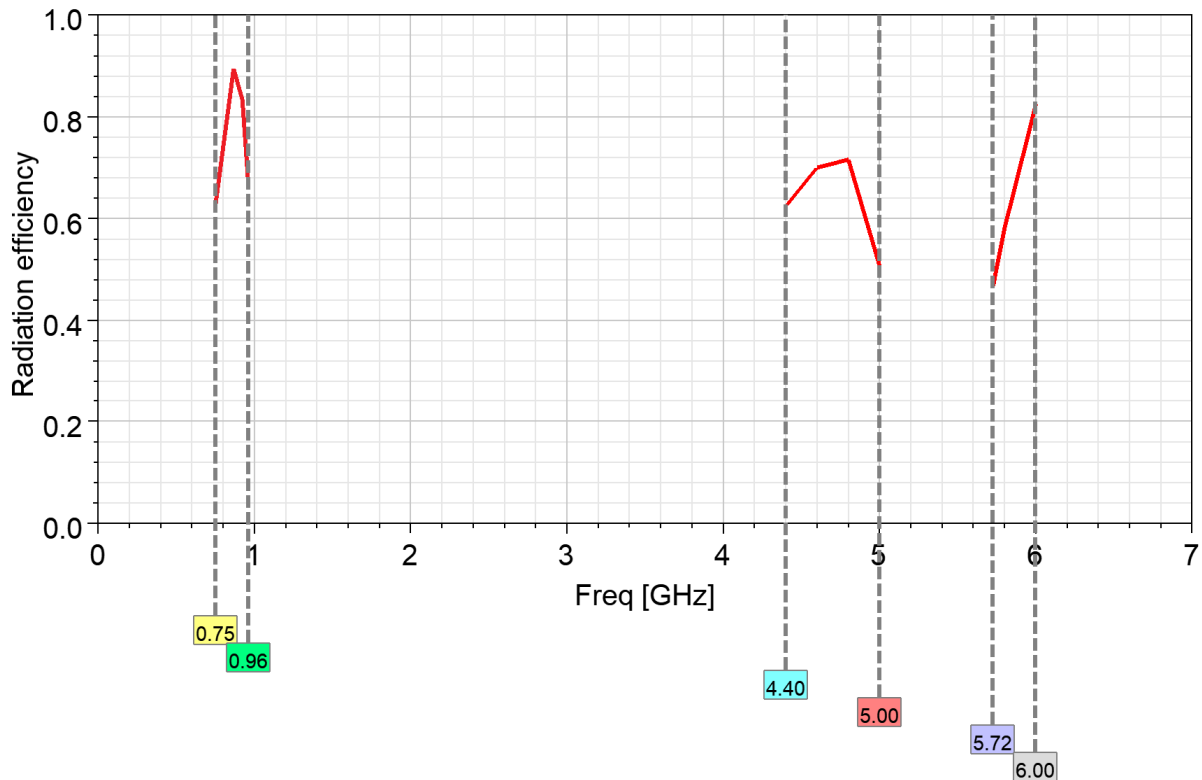
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Peak realized gain



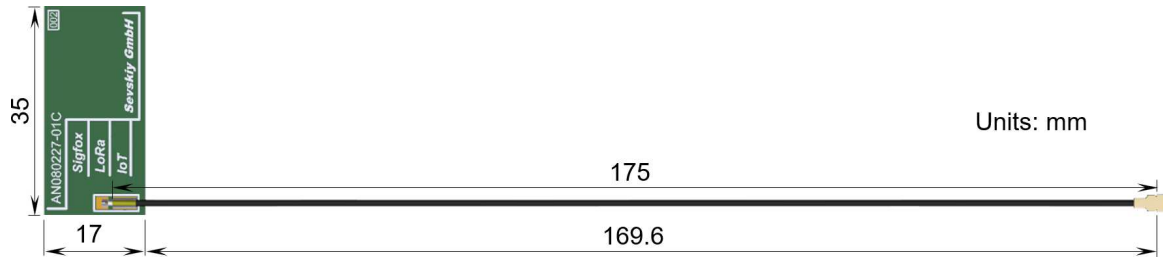
Radiation efficiency



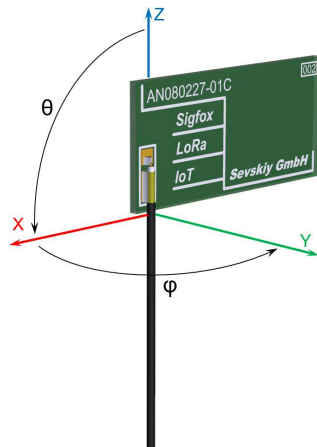
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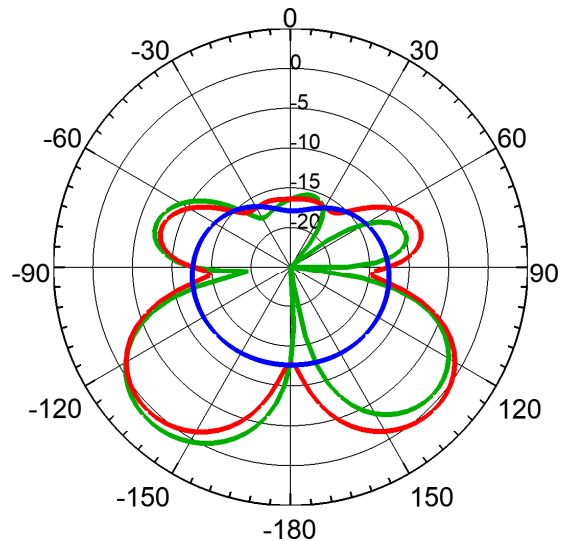
Product dimensions



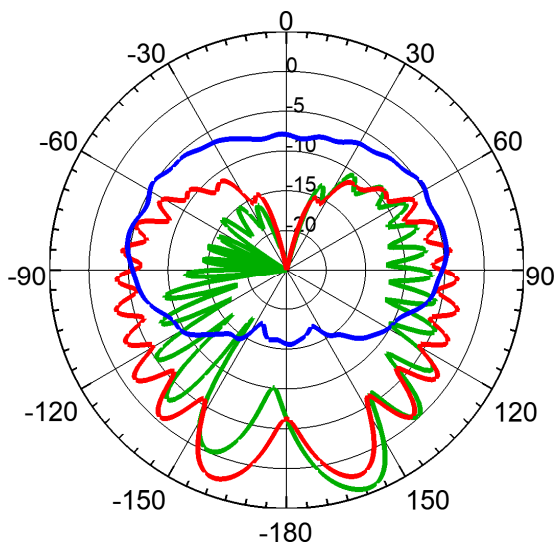
Radiation pattern



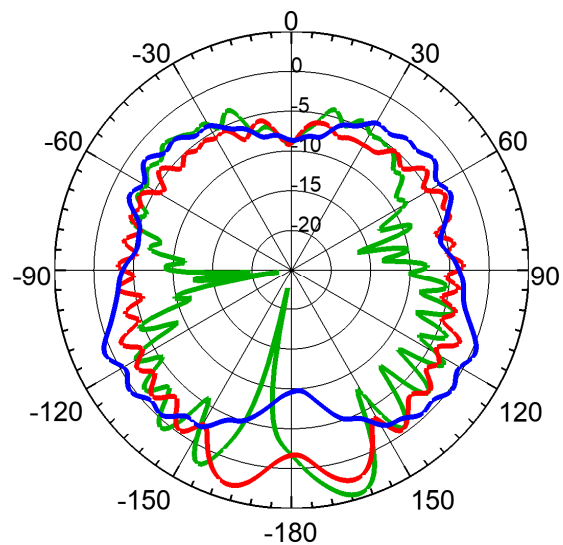
Total realized gain [dBi]
Phi=0°, plane XZ, green curve
Phi=90°, plane YZ, red curve
Theta=90°, plane XY, blue curve



868 MHz



4600 MHz



5800 MHz

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