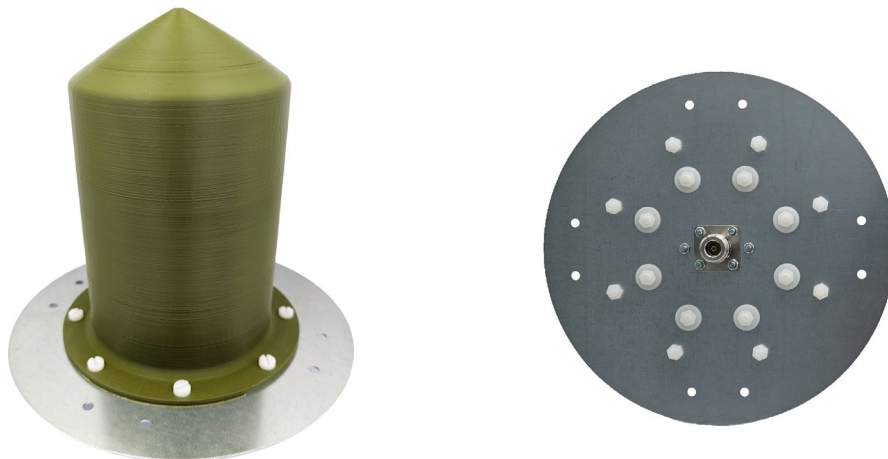


800...1000 MHz Circularly polarized helical antenna (ISM, RFID, IoT, LoRa, Smart meters)



General information

The AN220211-03N is a right-hand circularly polarized (RHCP) helical antenna designed for operation in the 800...1000 MHz frequency range. The helical structure provides stable circular polarization and a directional radiation pattern with moderate gain, ensuring reliable communication in multipath environments while reducing sensitivity to polarization mismatch and antenna orientation.

It is suitable for ISM, RFID, LPWAN, and IoT systems operating in the UHF band and is particularly effective for drone command, control, and telemetry links, where circular polarization improves link stability during flight maneuvers. Typical applications include UAV ground stations, spectrum monitoring systems, wireless sensor networks, smart metering, industrial telemetry, and remote monitoring systems. Additional use cases cover experimental radio platforms and laboratory test setups.

The robust mechanical design and standard RF connector enable easy integration into both fixed and mobile installations.

Electrical data

Antenna type	Helical antenna
Frequency bands	SRD860, ISM915, RFID, IoT, UAV
Frequency range [MHz]	800...1000
Return loss [dB]	-14
Peak gain [dBi]	7.5...9
Radiation efficiency [%]	95
Nominal input impedance [Ohm]	50
Polarization	Circular (RHCP)
Radiation pattern	directional
Maximum input power [W]	100

Mechanical data

Antenna dimensions [mm]	200 x 200 x 190
Connector type ¹⁾	N Female panel ¹⁾
Material	Steel, plastic, copper
Weight [g]	600

Additional information

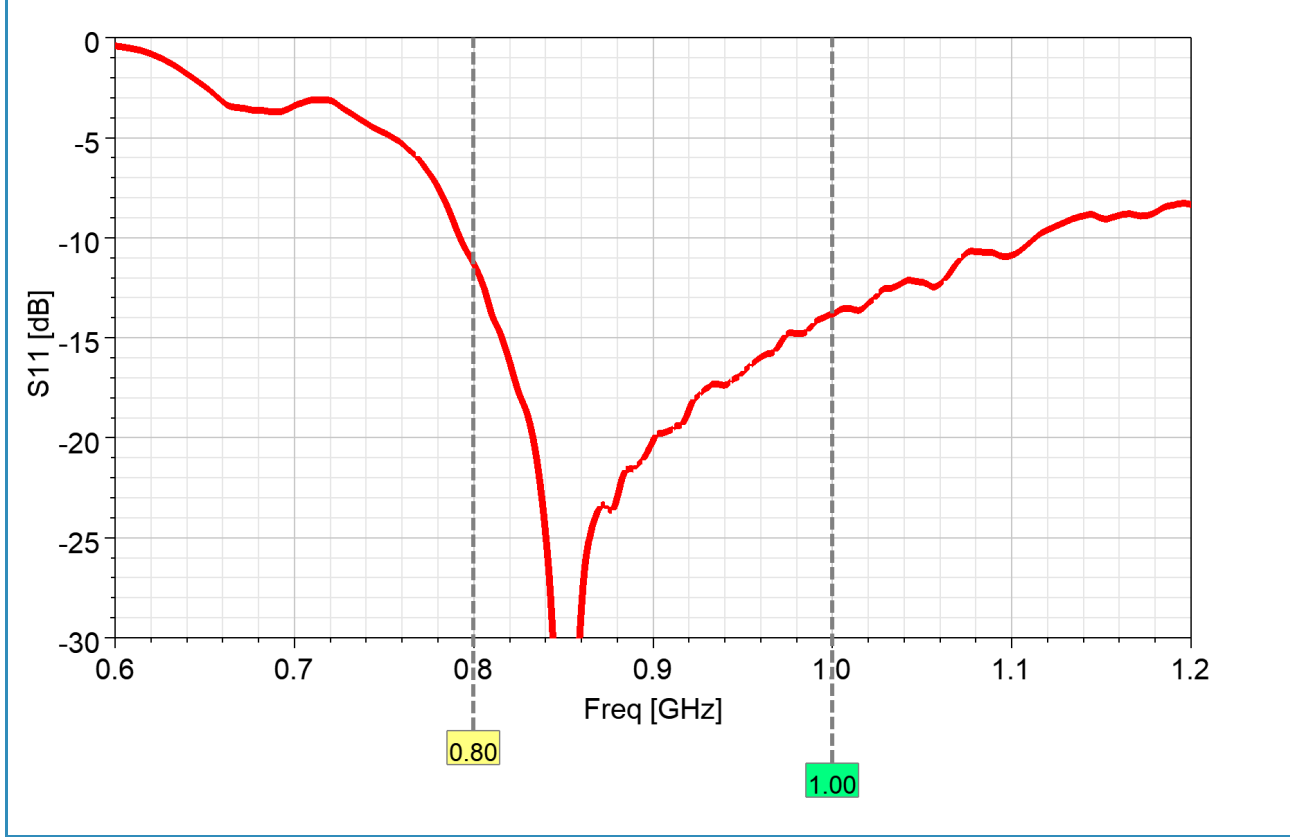
¹⁾ Other connector types can be offered on request.

Other designs, geometries or materials are possible on request.

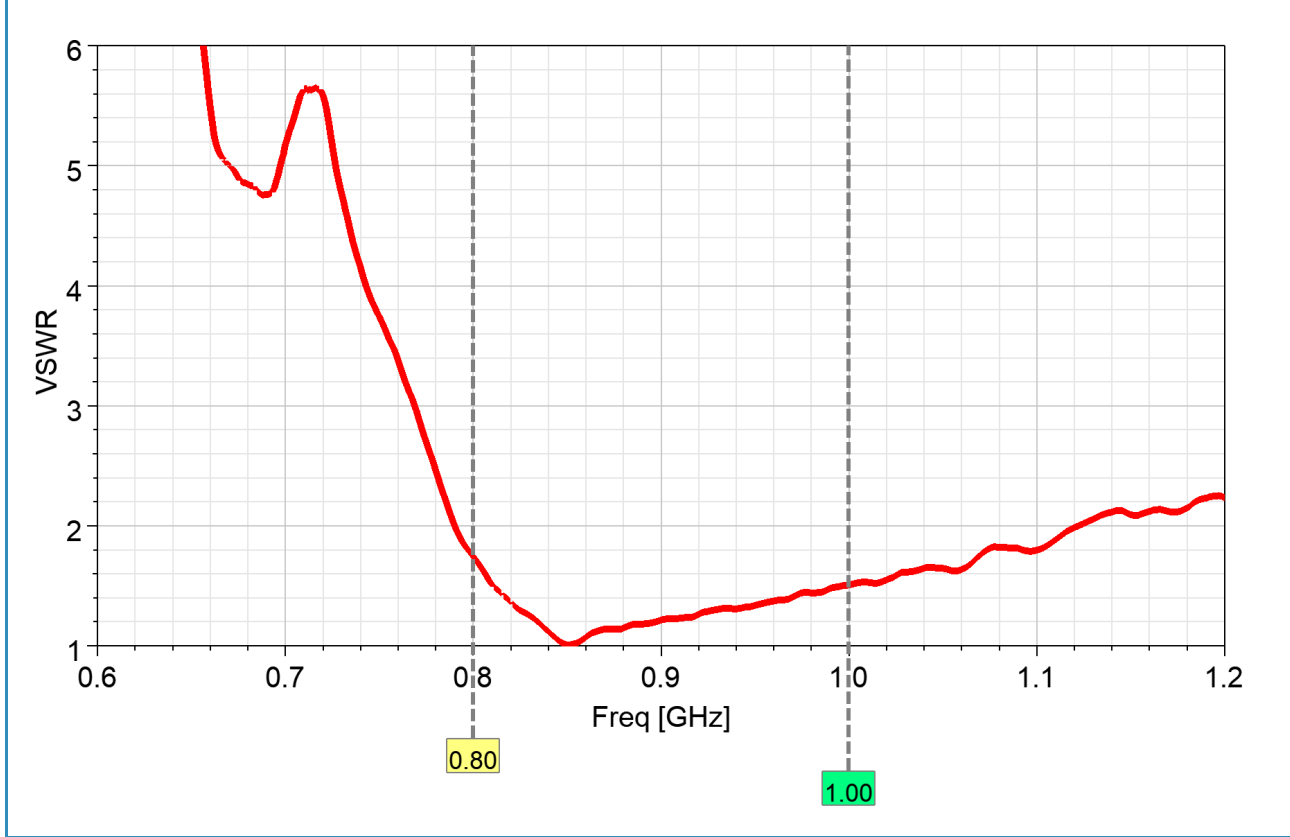
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Measured input impedance matching



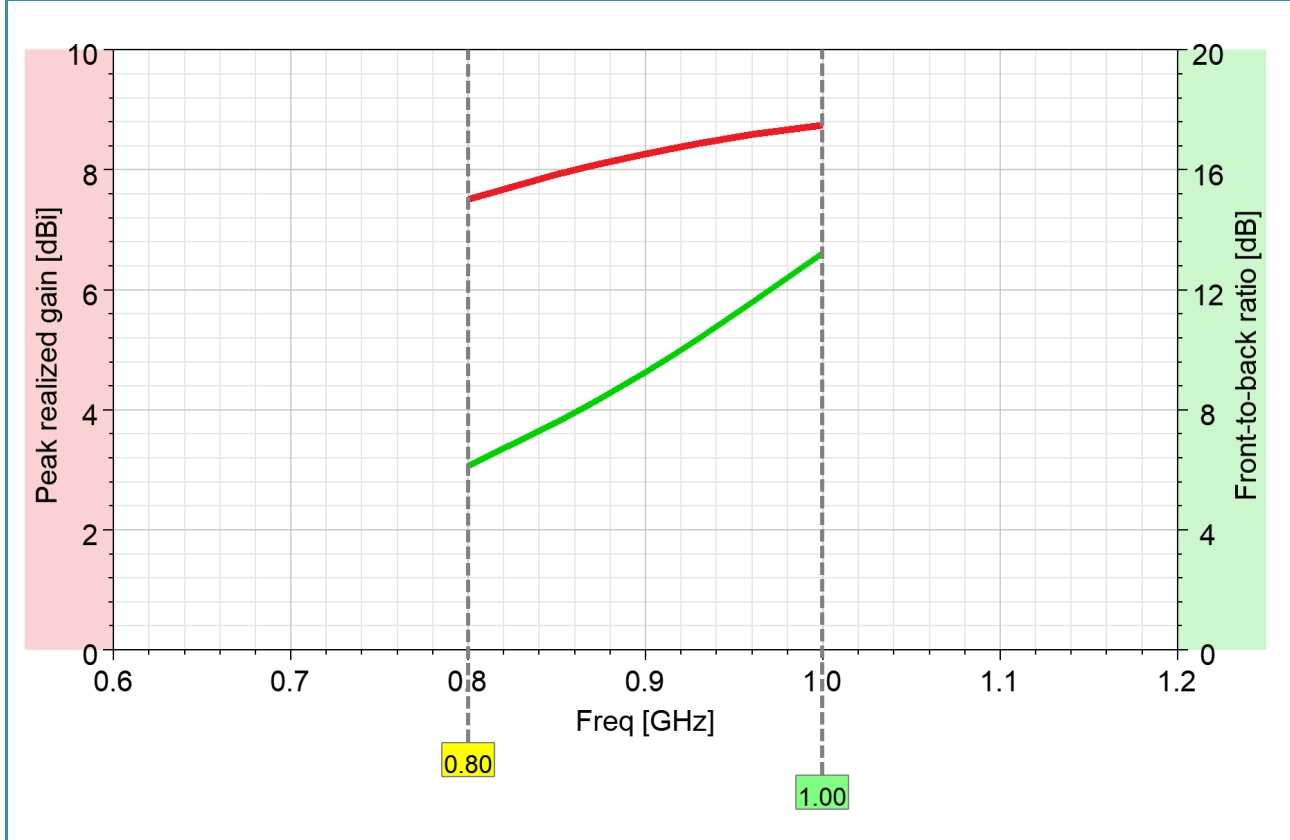
VSWR



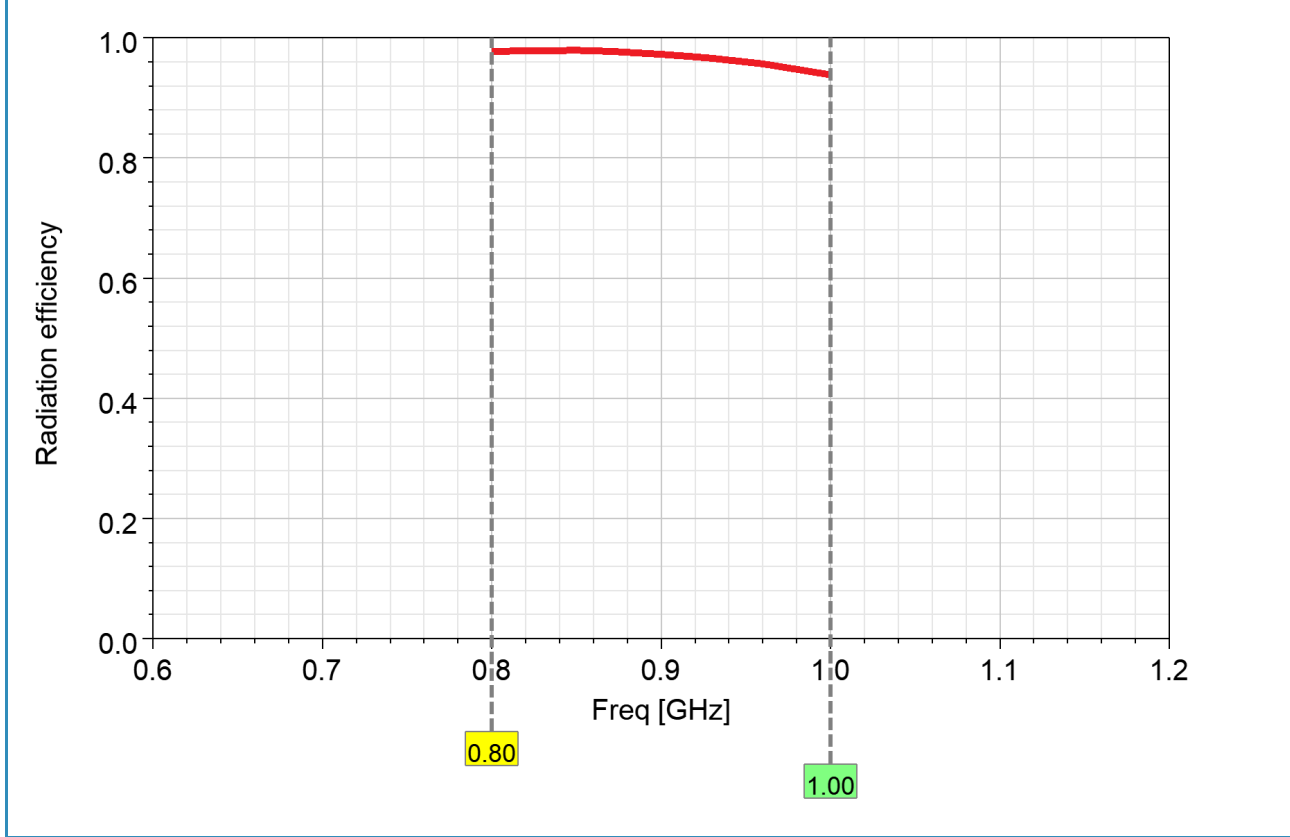
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Peak realized gain and front-to-back ratio



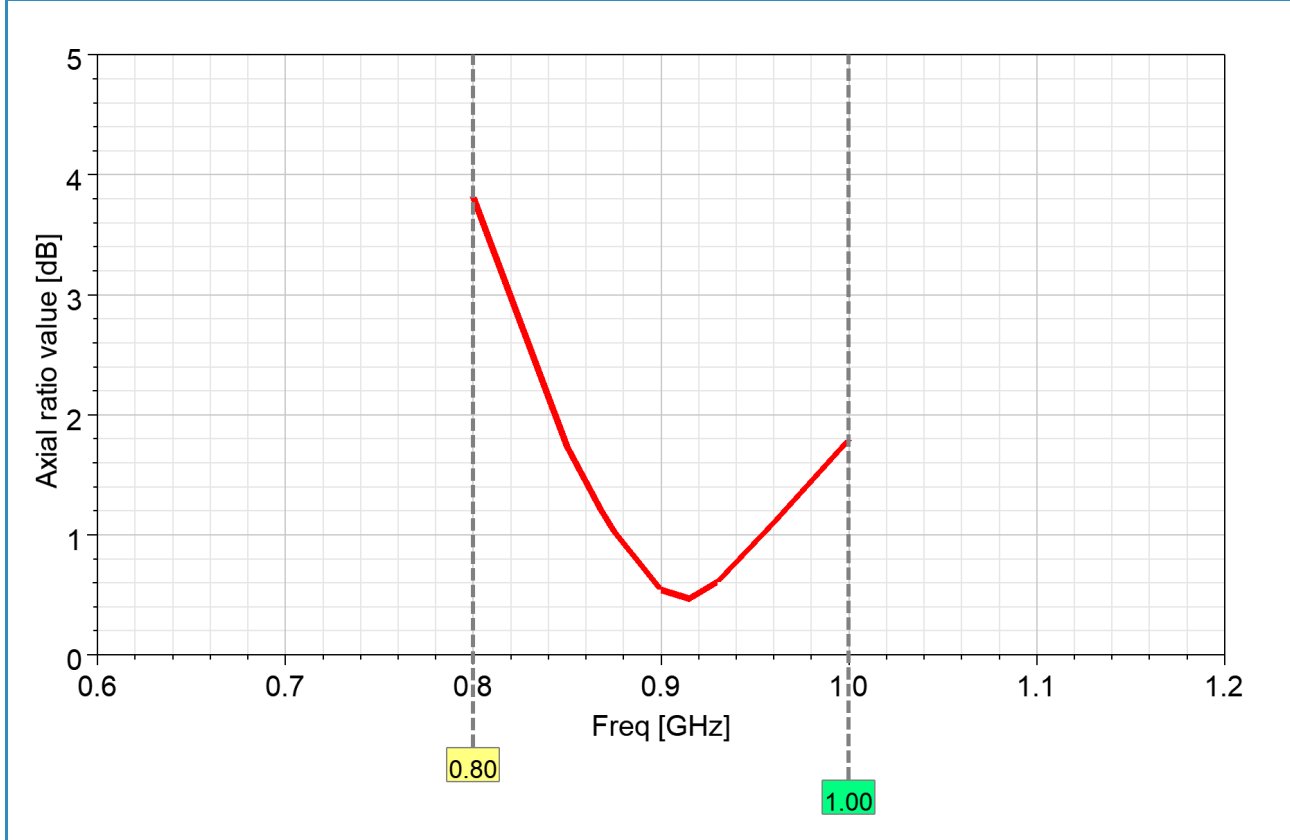
Radiation efficiency



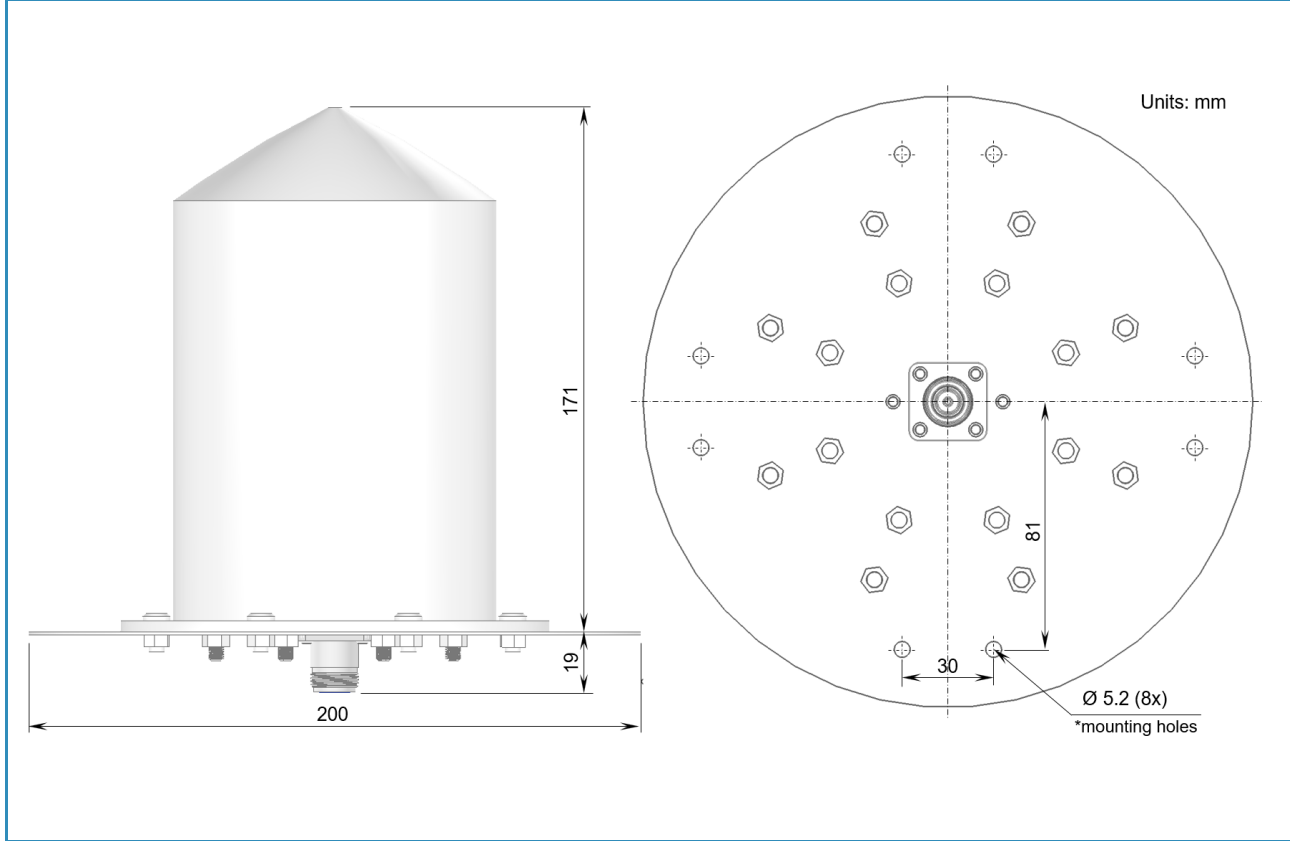
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800...1000 MHz Circularly polarized helical antenna (ISM, RFID, IoT, LoRa, Smart meters)

Axial ratio value



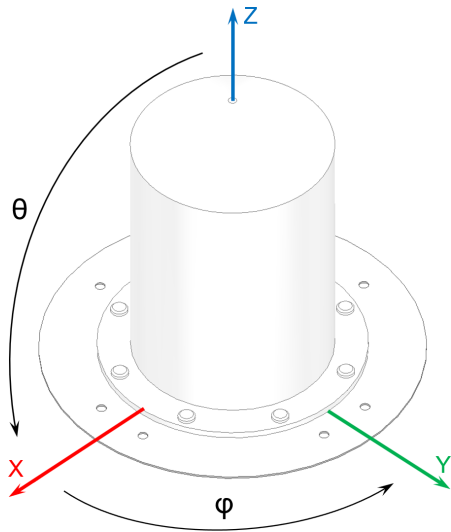
Product dimensions



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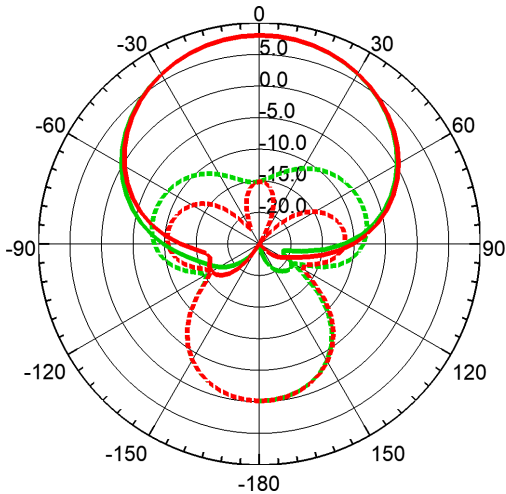
800...1000 MHz Circularly polarized helical antenna (ISM, RFID, IoT, LoRa, Smart meters)

Radiation pattern

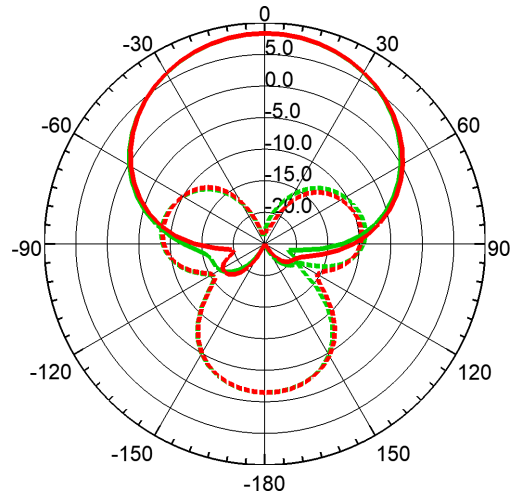


Total realized gain [dBi]
Phi=0°, plane XZ, green curve
Phi=90°, plane YZ, red curve

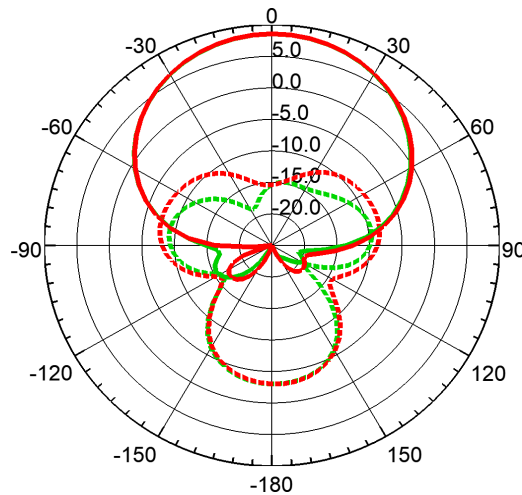
Solid curves – co-polarization RHCP
Dash curves – cross-polarization LHCP



868 MHz



915 MHz



960 MHz

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