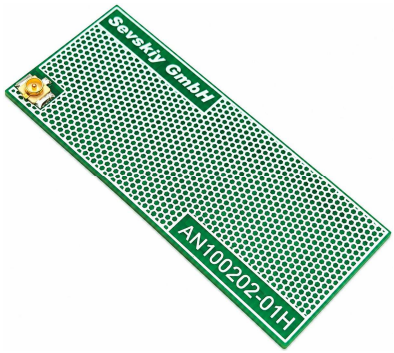
800…960 MHz PCB Antenna (ISM, RFID, IoT, Sigfox, LoRa, LP-WAN, Smart meters)



General information

The AN100202-01H is a compact embedded PCB antenna designed for reliable operation in the 800…960 MHz frequency range, supporting SRD860, ISM915, and various sub-GHz IoT communication standards. Its small FR4-based structure is optimized for integration inside the plastic housing of mobile devices, handheld terminals, compact IoT units, and other space-constrained electronics.

This antenna is suitable for numerous applications, including RFID systems (UHF RFID), smart metering, AMR/AMI devices, LP-WAN communication (LoRa, Sigfox, proprietary sub-GHz), wireless sensor networks, industrial IoT platforms, smart agriculture and environmental monitoring systems, access control systems, home and building automation, alarm and security equipment, remote monitoring units, low-power telemetry modules, fleet management and logistics tracking units, wireless handheld terminals and portable scanners.

Electrical data

Antenna type	Embedded / internal PCB antenna
Frequency band	SRD860, ISM915
Frequency range [MHz]	800...960
Return loss [dB]	-10
Peak gain [dBi]	1…2.3
Radiation efficiency [%]	80…90
Nominal input impedance [Ohm]	50
Polarization	linear
Radiation pattern	omnidirectional
Maximum input power [W]	5

Mechanical data

Antenna PCB dimensions [mm]	42 x 17.5 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)] Recommended length. Cable is not included but can be customized and provided separately.

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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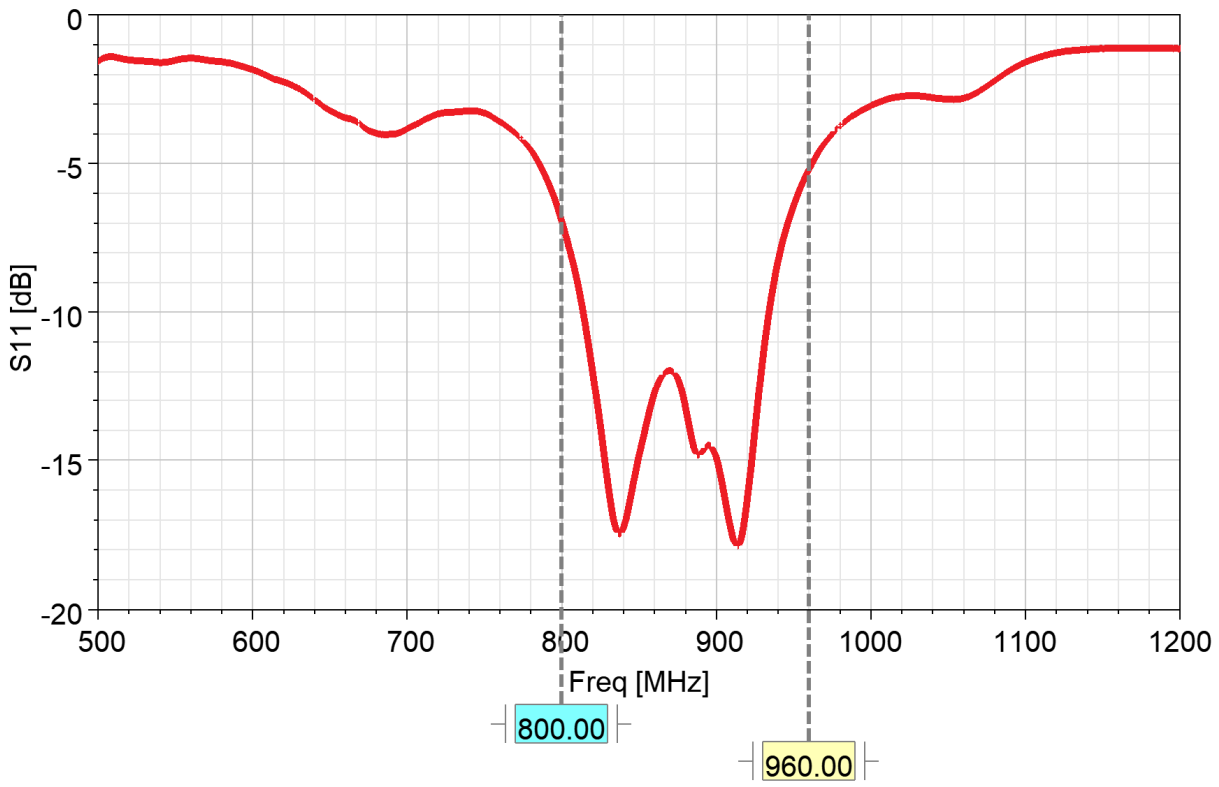
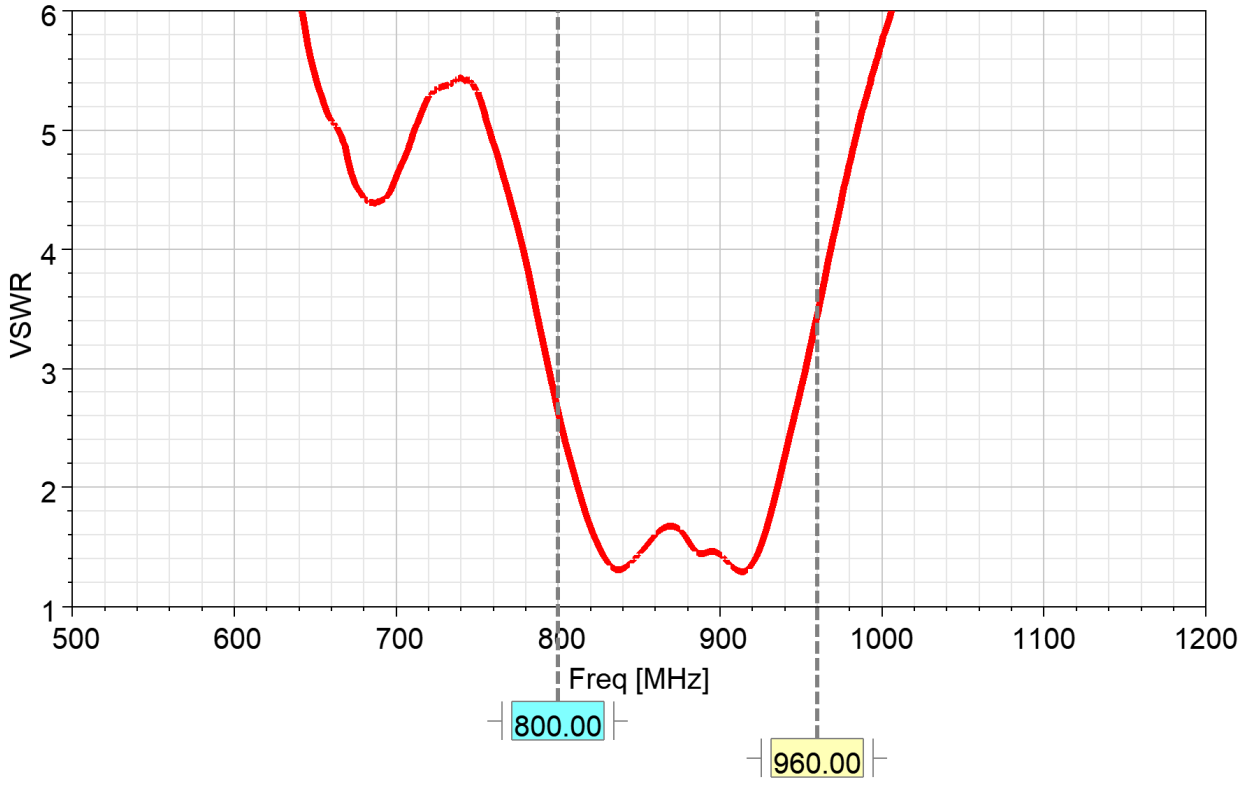
Measured input impedance matching



VSWR



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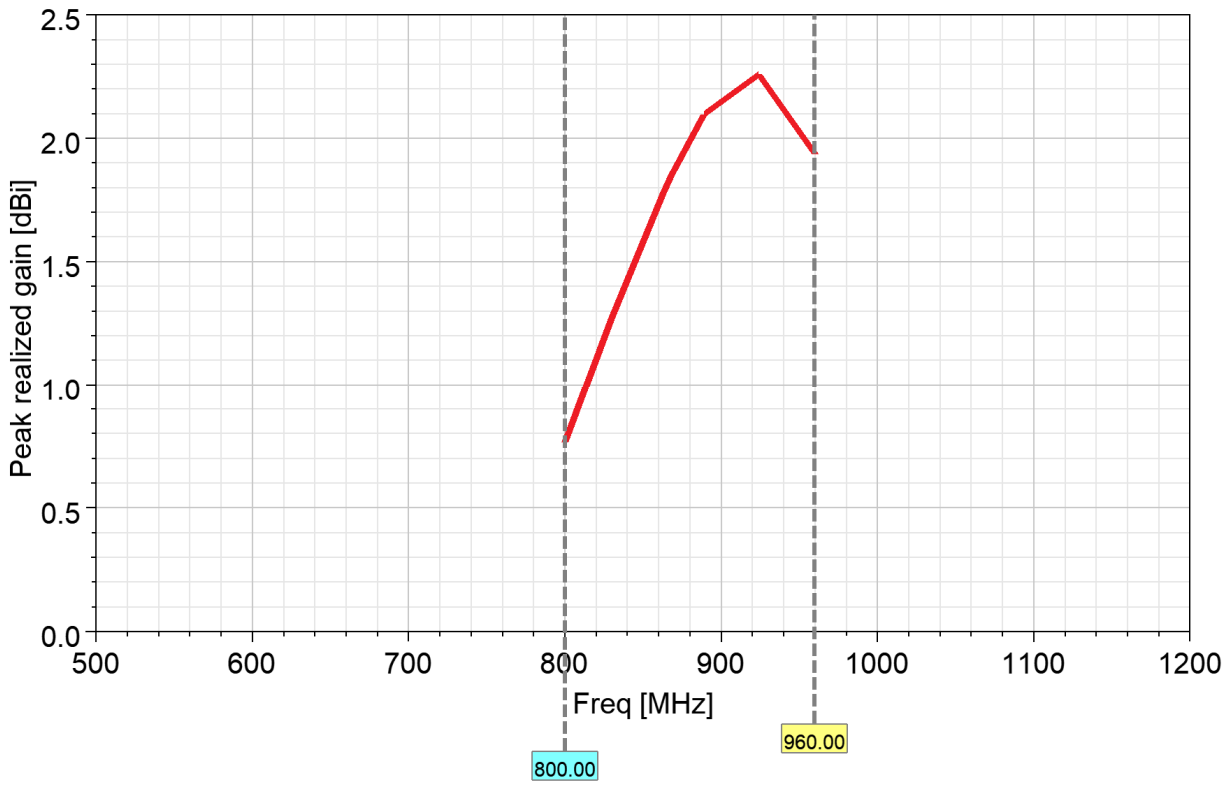
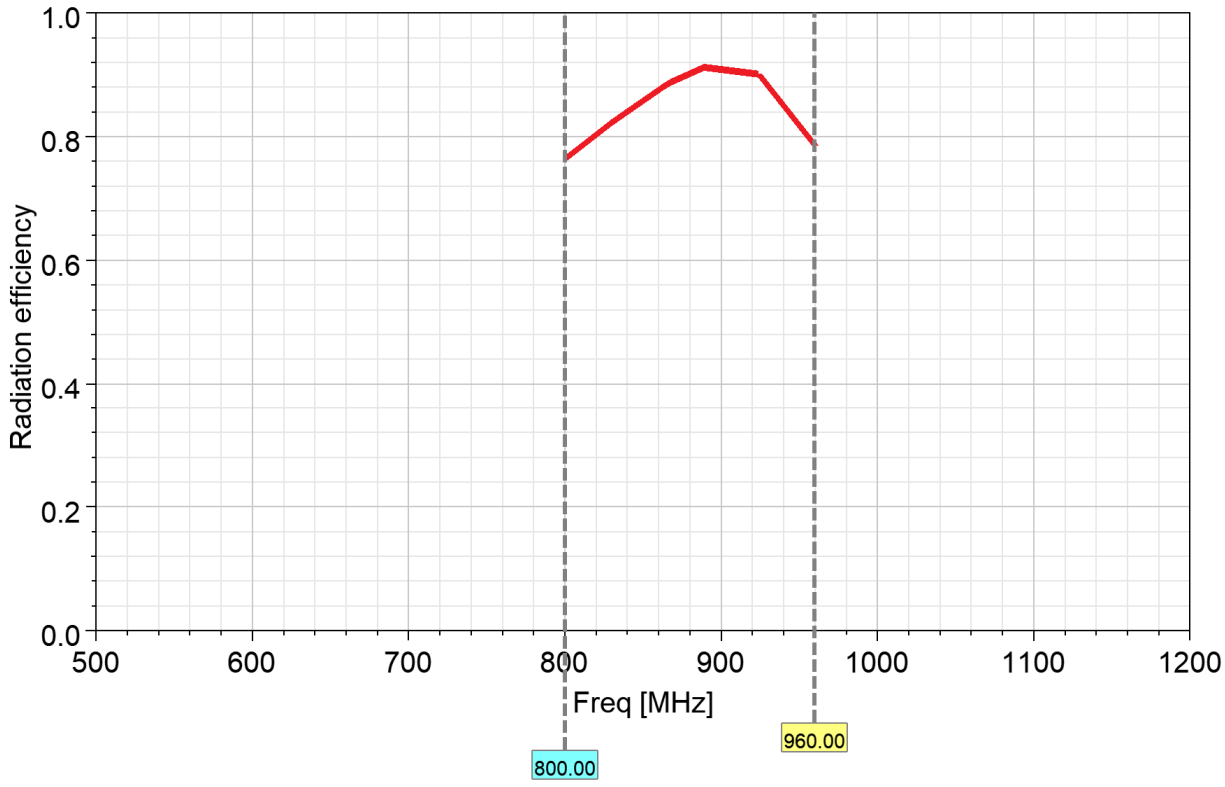
Peak realized gain



Radiation efficiency



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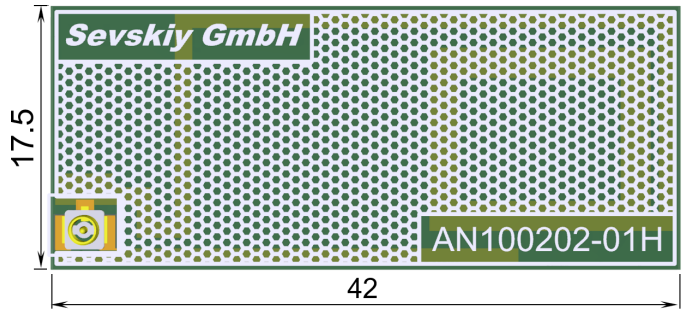
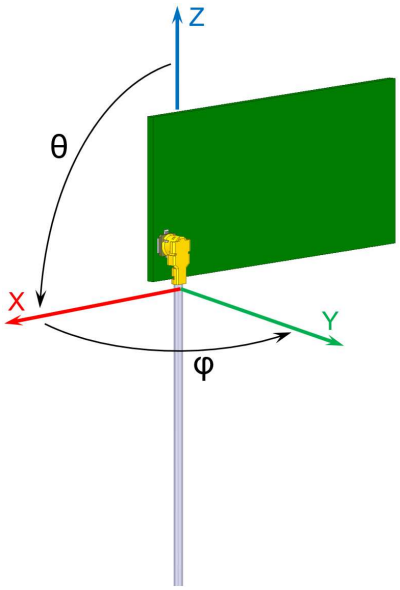
Product dimensions

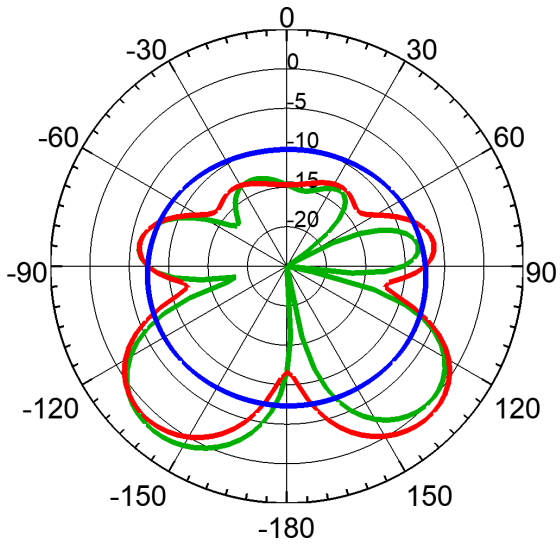


Units: mm

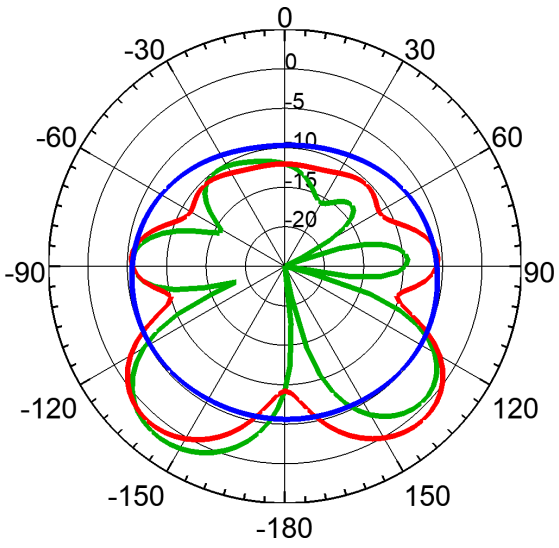
Radiation pattern



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



868 MHz



960 MHz

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