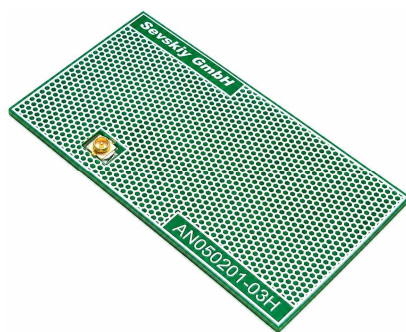


433 MHz / 868 MHz PCB Antenna (ISM, RFID, IoT, Sigfox, LoRa, LP-WAN, Smart meters)

General information

The AN050201-03H is a very compact multi-band PCB antenna designed for integration into plastic housings of mobile, IoT, M2M, and telemetry devices. The antenna supports the ISM 433 MHz and ISM/SRD 868 MHz frequency bands, delivering reliable performance for both short- and long-range wireless communication applications.

This antenna is manufactured on an FR-4 substrate and features an integrated I-PEX MHF1 / Hirose U.FL surface-mounted connector, allowing direct connection to the device's RF circuitry without the use of a pre-assembled coaxial cable. The connector interface enables flexible routing options and simplifies integration into compact enclosures. With its compact PCB form factor, linear polarization, and omnidirectional radiation pattern, the antenna is suitable for a wide range of applications, including ISM systems, RFID, IoT (Sigfox, LoRa), LP-WAN, smart meters, remote controls, wireless sensors, industrial monitoring, alarm and security systems, and general-purpose telemetry.

Electrical data

Antenna type	Embedded / internal PCB antenna	
Bands	ISM433, SRD860	
Frequency range [MHz]	433...434.8	863...870
Return loss [dB]	-10	-12
Peak gain [dBi]	-1.9	-1.3
Radiation efficiency [%]	60	43
Nominal input impedance [Ohm]	50	
Polarization	linear	
Radiation pattern	omnidirectional	
Maximum input power [W]	5	

Mechanical data

Antenna PCB dimensions [mm]	45 x 25 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.

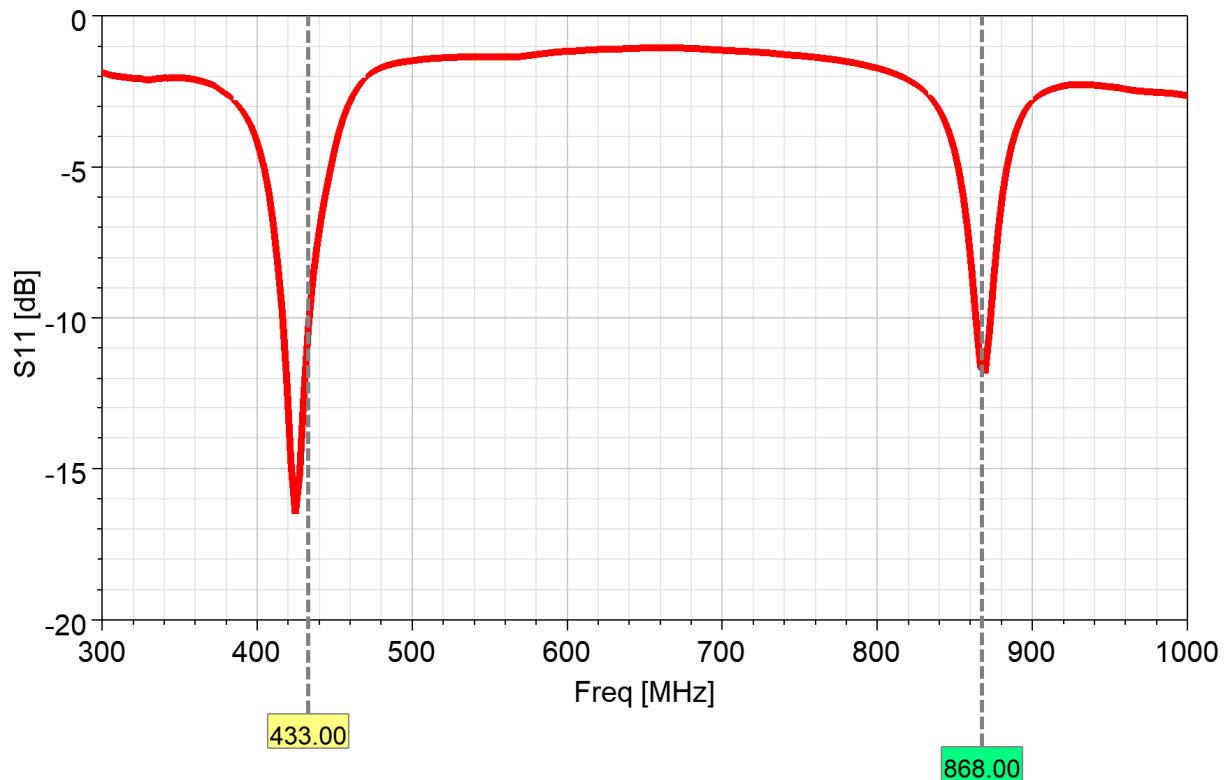
Further customization, electromagnetic simulations and measurements can be offered on request.

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

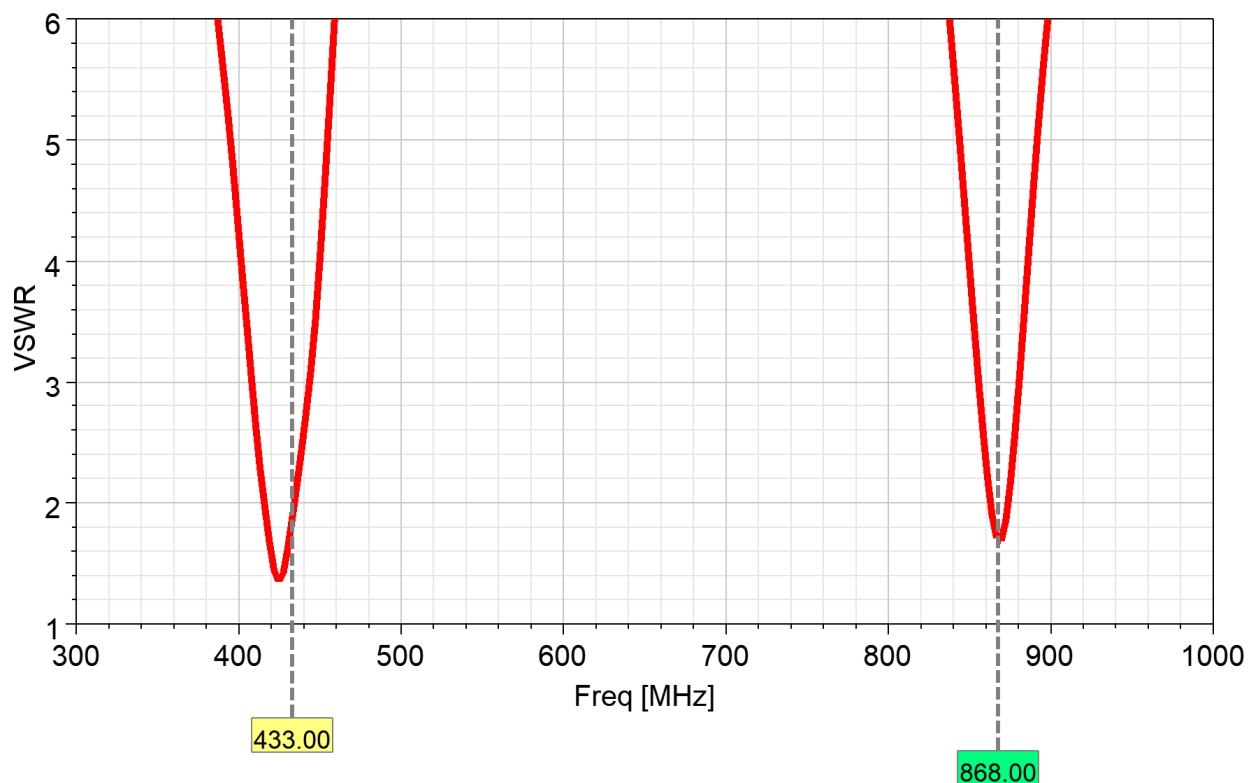
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433 MHz / 868 MHz PCB Antenna (ISM, RFID, IoT, Sigfox, LoRa, LP-WAN, Smart meters)

Measured input impedance matching



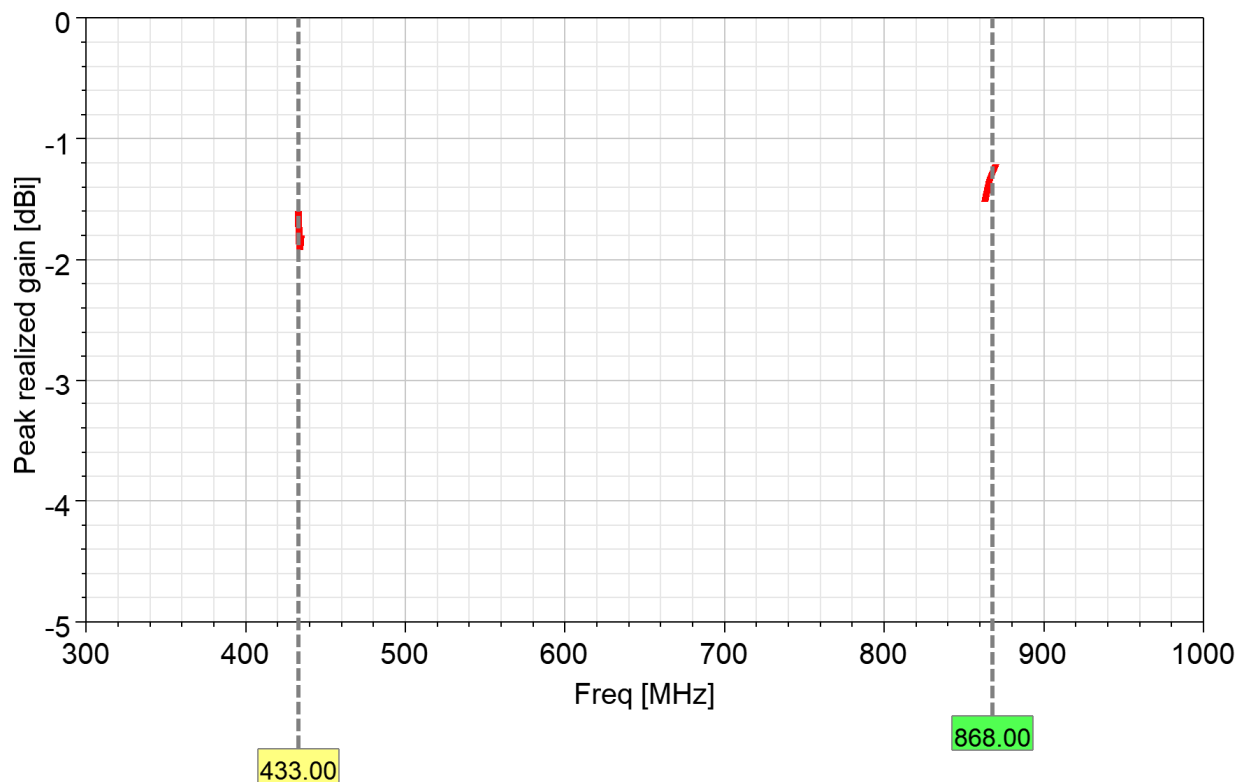
VSWR



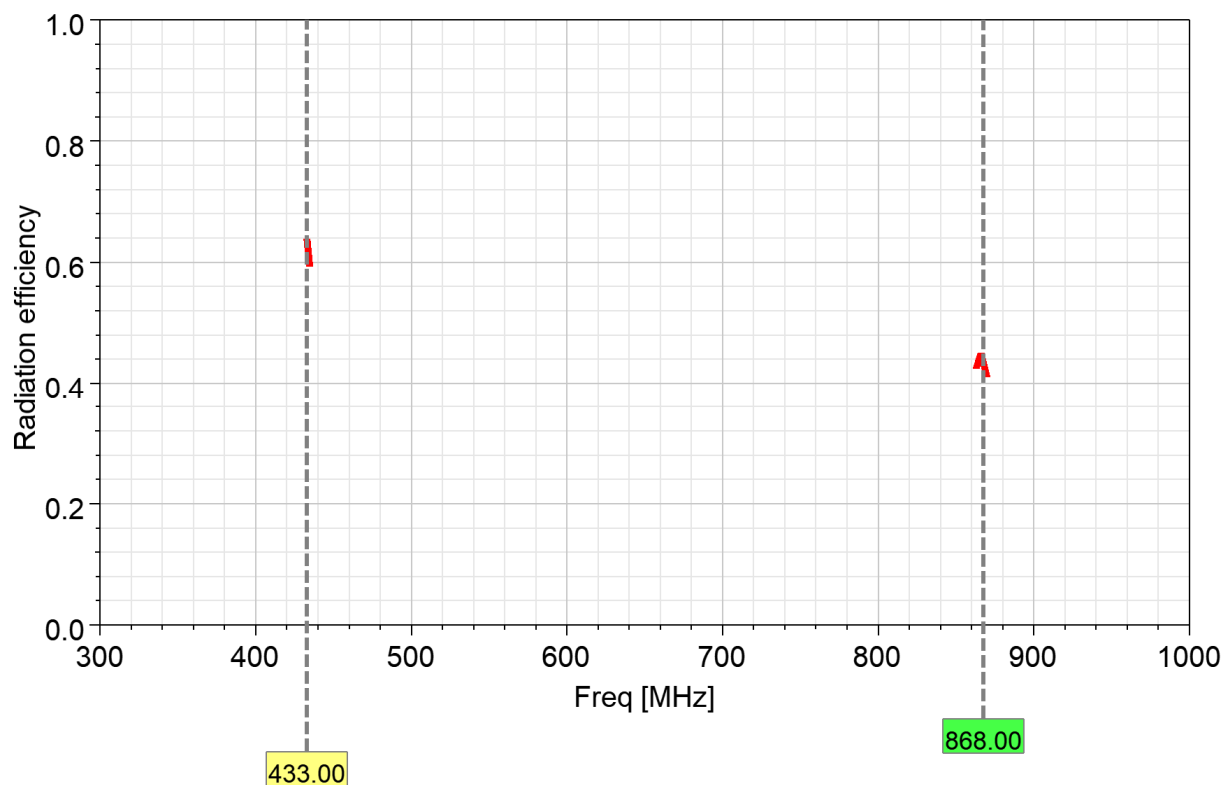
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Peak realized gain



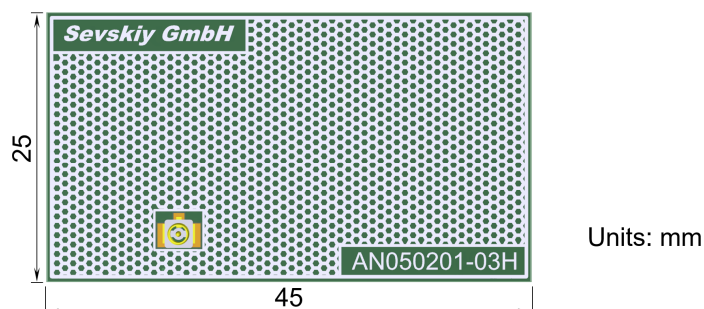
Radiation efficiency



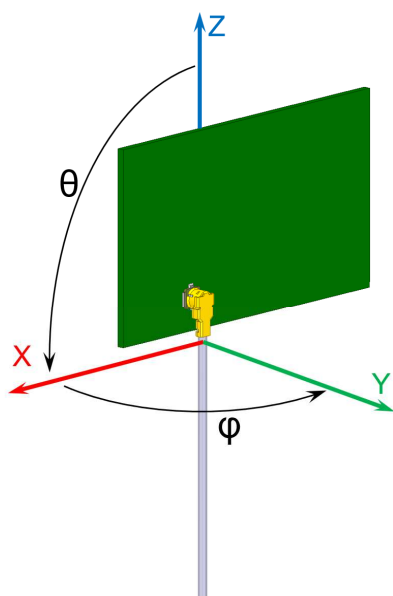
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433 MHz / 868 MHz PCB Antenna (ISM, RFID, IoT, Sigfox, LoRa, LP-WAN, Smart meters)

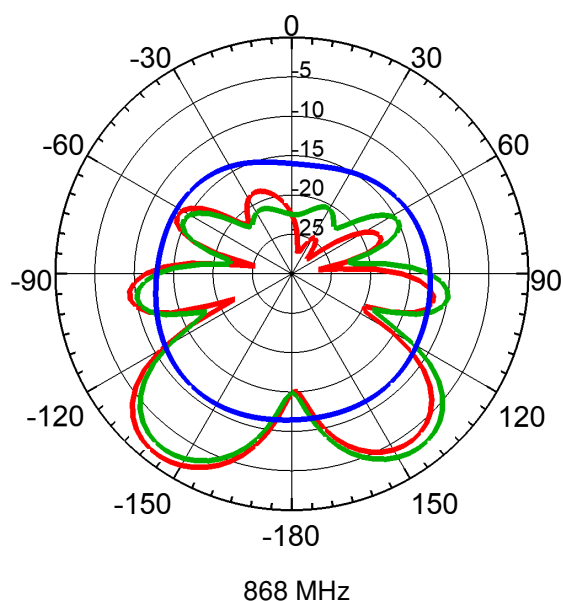
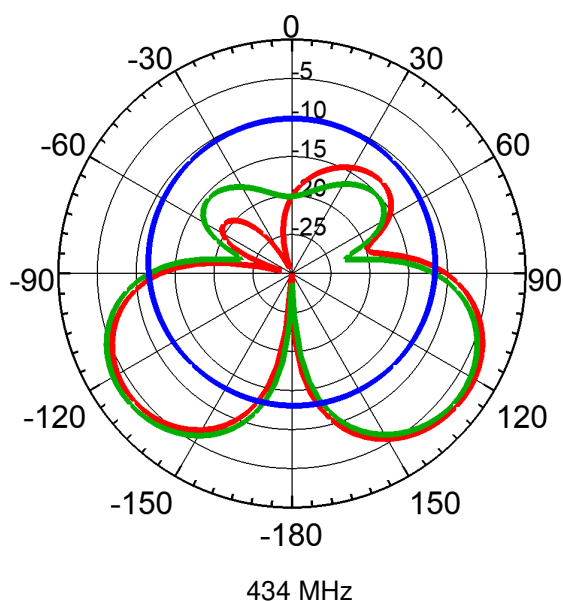
Product dimensions



Radiation pattern



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



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