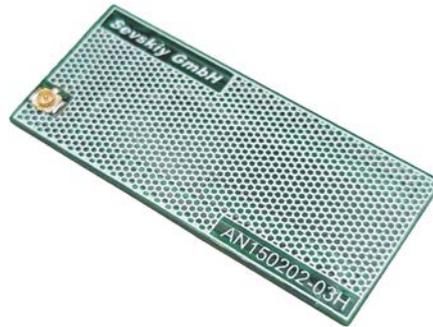


**850...924 MHz / 1559...1610 MHz PCB Antenna (ISM, IoT, Sigfox, LoRa, GNSS)**



**General information**

The AN150202-03H is a compact multi-band embedded PCB antenna designed for sub-GHz and L-band wireless applications in the 850...924 MHz and 1559...1610 MHz frequency ranges. It supports widely used standards such as SRD860, ISM915, GNSS (GPS L1 / GLONASS / Galileo / BeiDou), and LP-WAN technologies, making it suitable for both communication and positioning systems.

The antenna is optimized for integration into mobile devices, IoT nodes, trackers, sensors, gateways, and other compact wireless equipment requiring reliable connectivity and satellite navigation capability. Typical applications include IoT, LoRa, smart metering, telemetry systems, industrial monitoring, timing and synchronization units, and GNSS-enabled wireless devices.

Manufactured on an FR-4 PCB, the antenna is equipped with an onboard I-PEX MHF1 / Hirose U.FL (UMCC) compatible connector, allowing a separate micro-coax cable to be connected for RF feeding. This configuration provides flexibility in cable routing and antenna placement inside the device enclosure.

**Electrical data**

|                               |                                 |             |
|-------------------------------|---------------------------------|-------------|
| Antenna type                  | Embedded / internal PCB antenna |             |
| Frequency band                | SRD860, ISM915, GNSS            |             |
| Frequency range [MHz]         | 850...924                       | 1559...1610 |
| Return loss [dB]              | -7                              | -8          |
| Peak gain [dBi]               | 0.5...2                         | 0.5...1.5   |
| Radiation efficiency [%]      | 55...80                         | 50...60     |
| Nominal input impedance [Ohm] | 50                              |             |
| Polarization                  | Linear                          |             |
| Radiation pattern             | omnidirectional                 |             |
| Maximum input power [W]       | 5                               |             |

**Mechanical data**

|   |   |
|---|---|
| Antenna PCB dimensions [mm]                 | 45.2 x 20 x 1   |
| Connector type <sup>1)</sup>                | IPEX MHF1 / Hirose U.FL (UMCC) compatible <sup>1)</sup> |
| Cable type and thickness <sup>2)</sup> [mm] | micro coax 1.13 <sup>2)</sup>                           |
| Cable length <sup>3)</sup> [mm]             | 175 <sup>3)</sup>                                       |
| PCB material                                | FR4   |

**Additional information**

<sup>1)</sup> Other connector types can be offered on request.

<sup>2)</sup> Following cable thicknesses can be used with MHF1 connector: 0.81 mm, 1.13 mm, 1.32 mm, 1.37 mm.

<sup>3)</sup> 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.

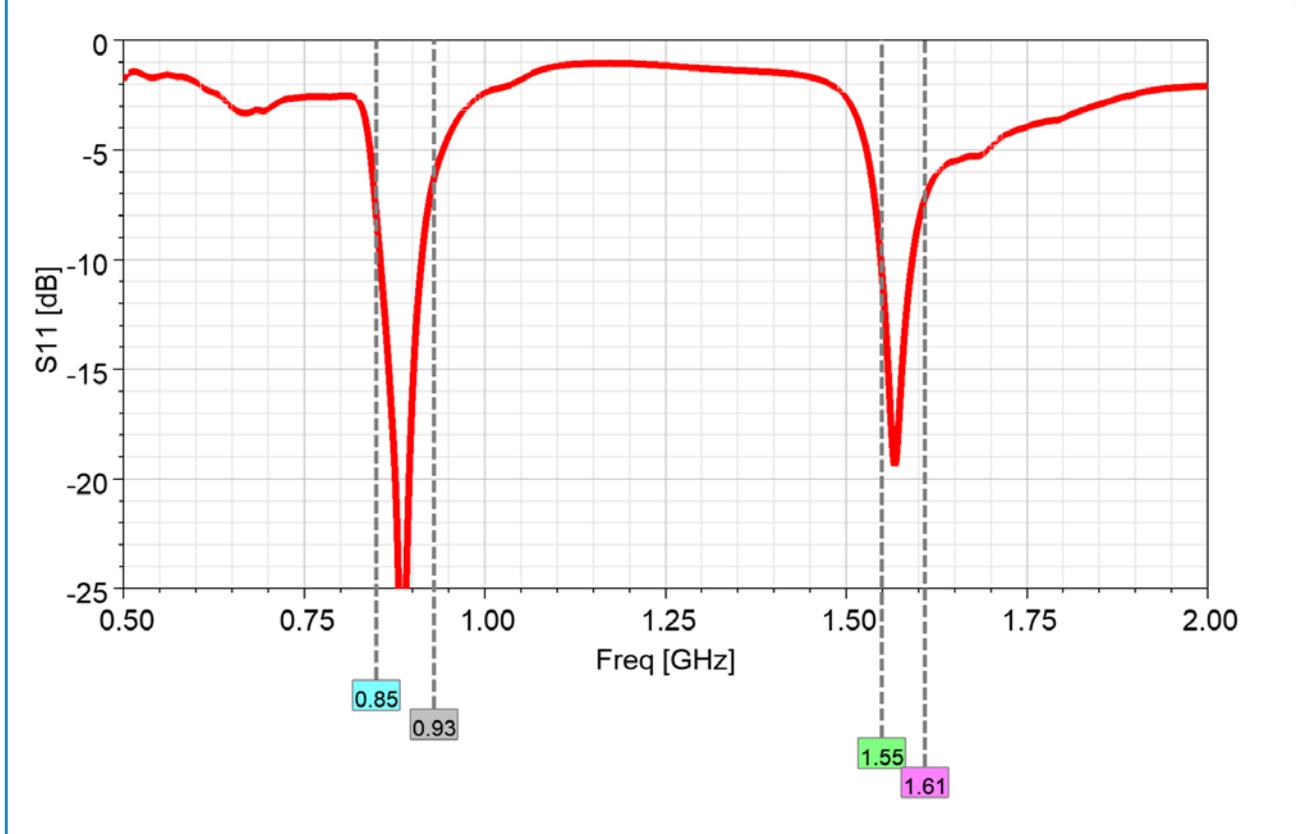
Further customization, electromagnetic simulations and measurements can be offered on request.

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

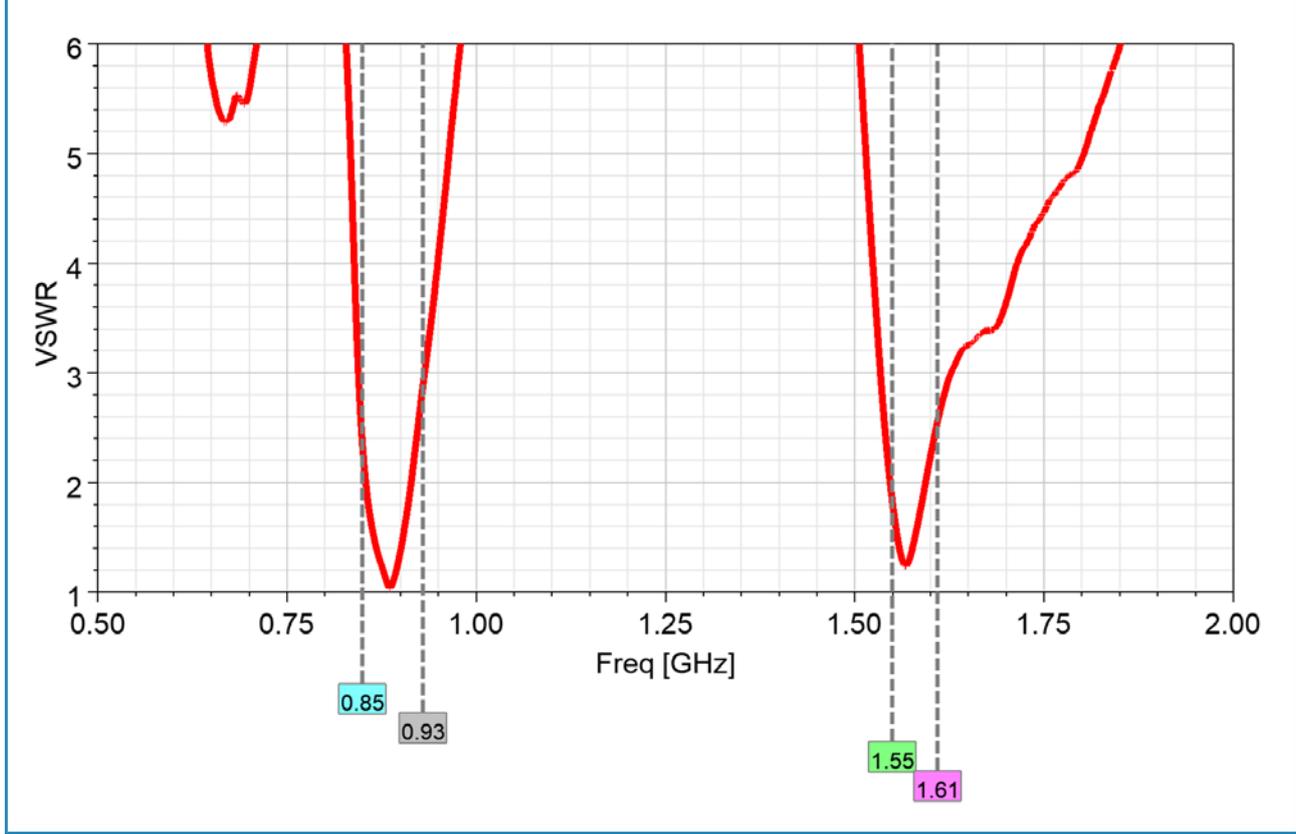
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850...924 MHz / 1559...1610 MHz PCB Antenna (ISM, IoT, Sigfox, LoRa, GNSS)

Measured input impedance matching



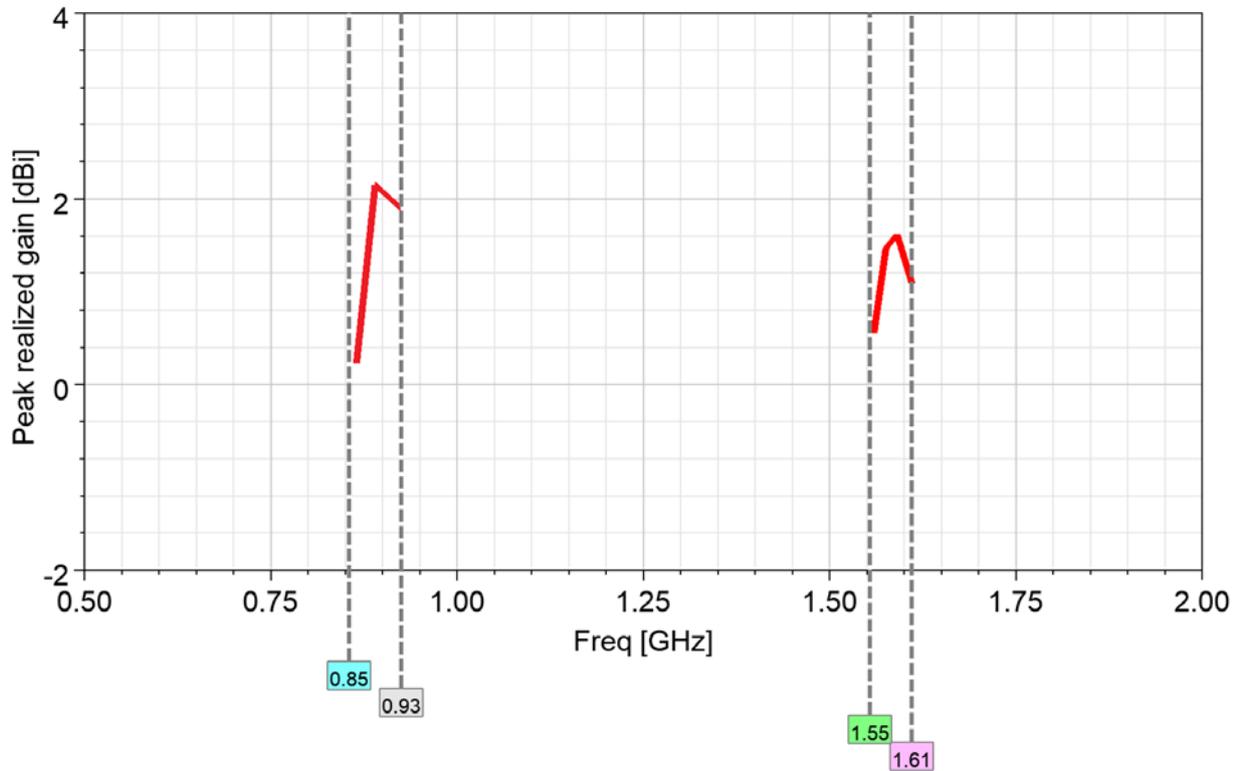
VSWR



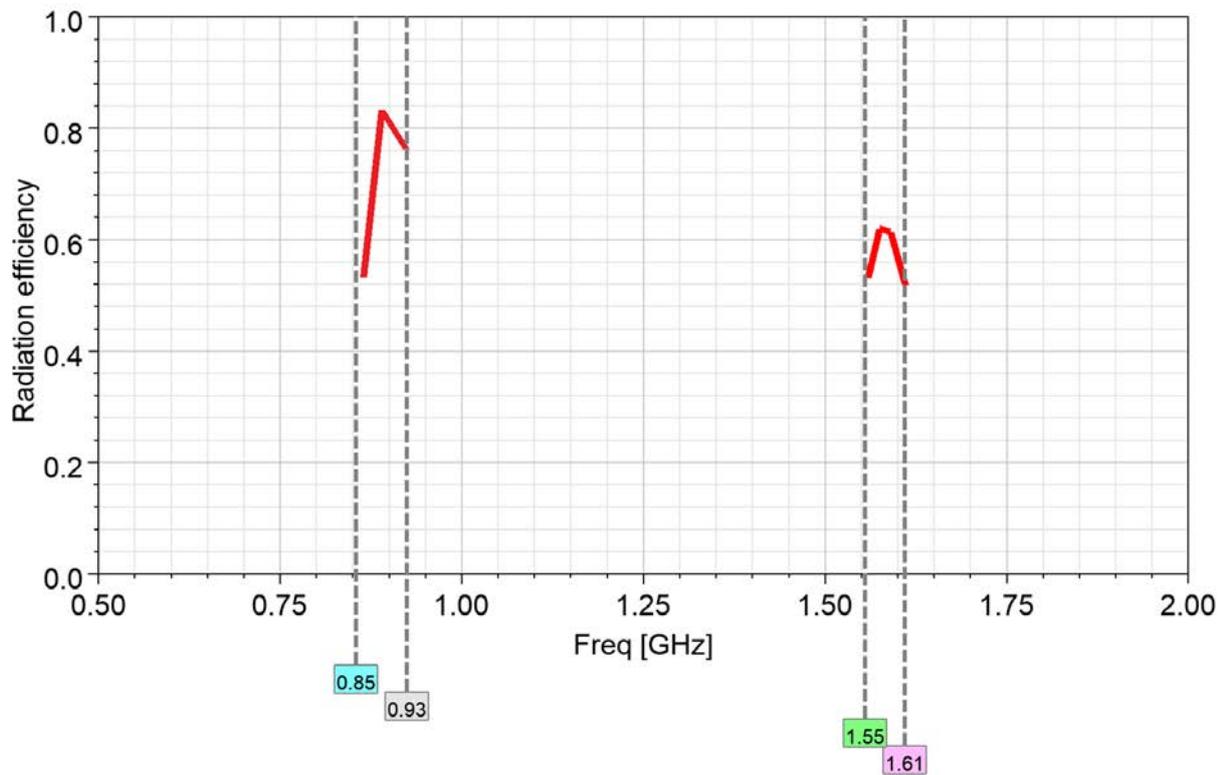
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850...924 MHz / 1559...1610 MHz PCB Antenna (ISM, IoT, Sigfox, LoRa, GNSS)

Peak realized gain



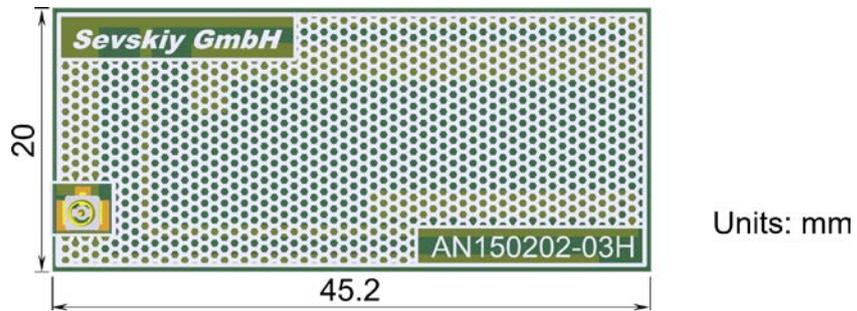
Radiation efficiency



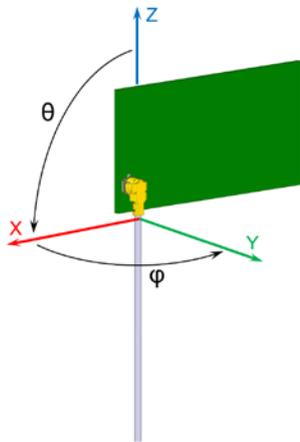
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**850...924 MHz / 1559...1610 MHz PCB Antenna (ISM, IoT, Sigfox, LoRa, GNSS)**

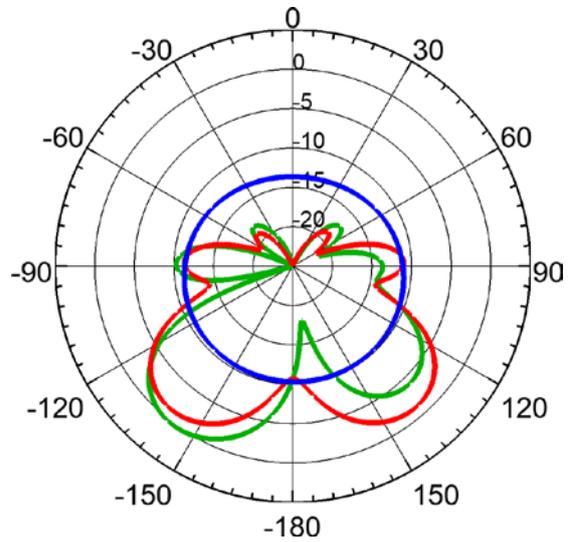
**Product dimensions**



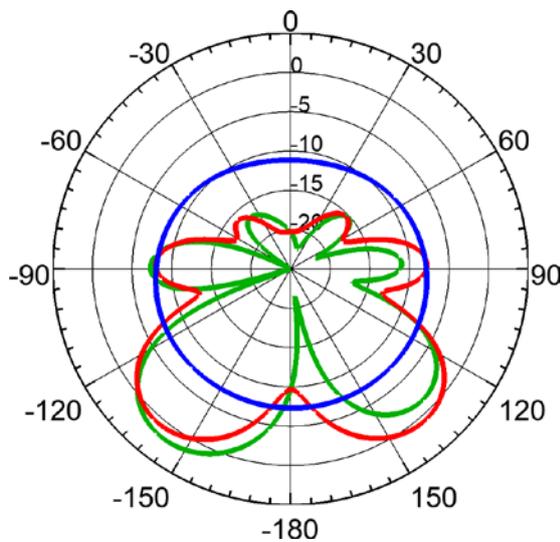
**Radiation pattern**



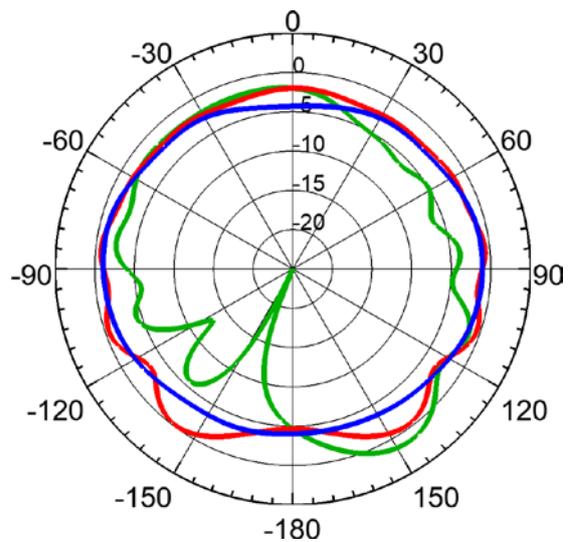
Total realized gain [dBi]  
 Phi=0°, plane XZ, green curve  
 Phi=90°, plane YZ, red curve  
 Theta=90°, plane XY, blue curve



865 MHz



924 MHz



1575 MHz

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