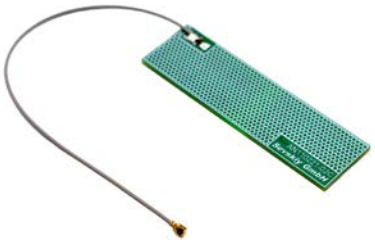
## 698…960 MHz / 1695…2700 MHz PCB Antenna (5G, LTE, Wi-Fi, IoT, WCDMA, UMTS)



## General information

The AN110221-02C is a compact wideband internal PCB antenna operating in the 0.7…0.96 GHz and 1.7…2.7 GHz frequency ranges. It supports a wide variety of cellular and wireless technologies including LTE, 5G sub-6 GHz, GSM, UMTS, WCDMA, and cellular IoT standards such as LTE-M and NB-IoT.

The antenna is intended for integration inside plastic housings of mobile devices, routers, gateways, and connected equipment used in industrial, consumer, and infrastructure applications. Typical use cases include cellular IoT devices, smart meters, tracking and telematics units, industrial gateways, remote monitoring systems, and wireless communication modules requiring stable multiband performance.

The antenna is manufactured on an FR-4 PCB and is equipped with a micro-coaxial cable terminated with an I-PEX MHF1 / Hirose U.FL (UMCC) compatible connector. This cable assembly enables flexible antenna placement inside the enclosure and easy connection to RF modules, ensuring reliable performance even in compact and space-constrained designs.

## Electrical data

| | | |
|---|---|---|
| Antenna type | Embedded / internal PCB antenna | |
| 5G bands | 1 - 3, 5, 7, 8, 12 -14,18, 20, 25, 26, 28 - 30, 34, 38 - 41, 53, 65, 66, 70, 80 - 84, 86, 89, 90, 95, 97, 98 | |
| 4G bands | 1 - 10, 12 -14, 17 - 20, 23, 25 - 30, 33 - 41, 44, 53, 65 - 70, 85 | |
| Frequency range [MHz] | 698...960 | 1695…2700 |
| Return loss [dB] | -7 | -10 |
| Peak gain [dBi] | -1…1 | -1…4 |
| Radiation efficiency [%] | 50…80 | 40…90 |
| Nominal input impedance [Ohm] | 50 | |
| Polarization | linear | |
| Radiation pattern | omnidirectional | |
| Maximum input power [W] | 5 | |

## Mechanical data

| | |
|---|---|
| Antenna PCB dimensions [mm] | 70 x 20 x 1.6 |
| 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.



Sevskiy GmbH, CEO: Dr. Sergey Sevskiy
Office: Schatzbogen 43, Munich, Germany
Tel.: +49 89 38-90-7229
Fax: +49 89 38-90-7230
E-Mail: sergey@sevskiy.de
Internet: www.sevskiy.com

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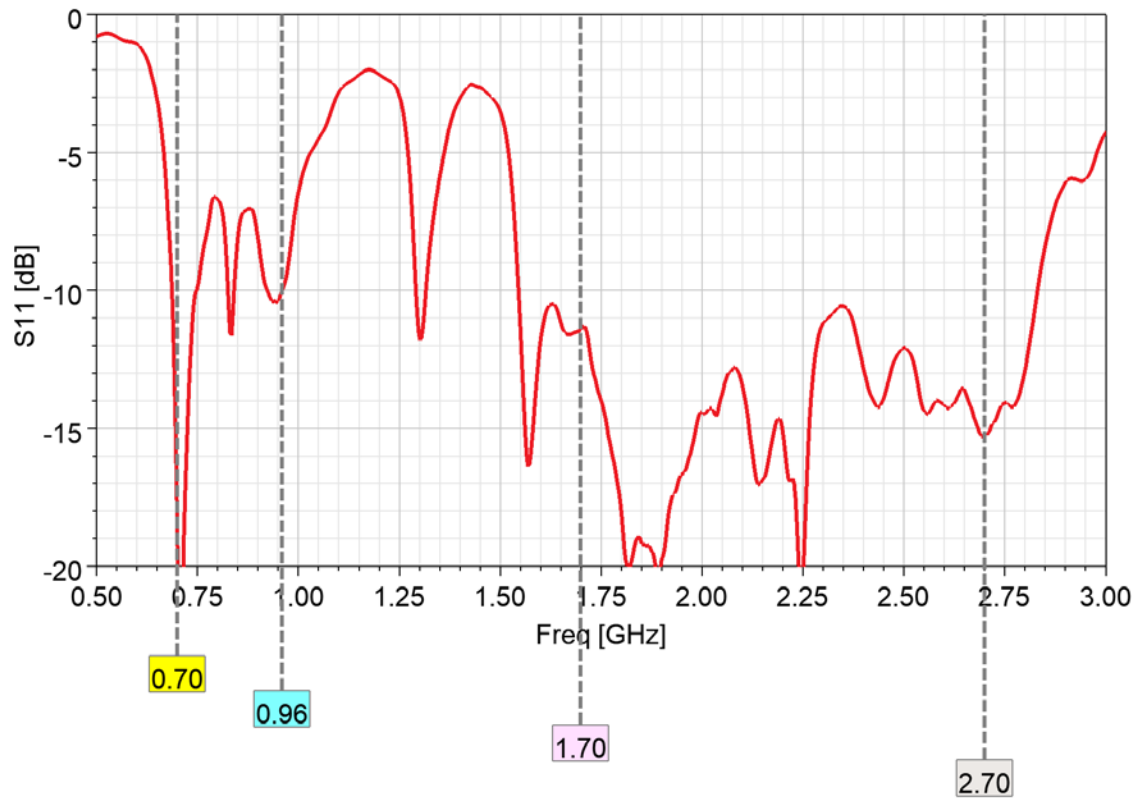
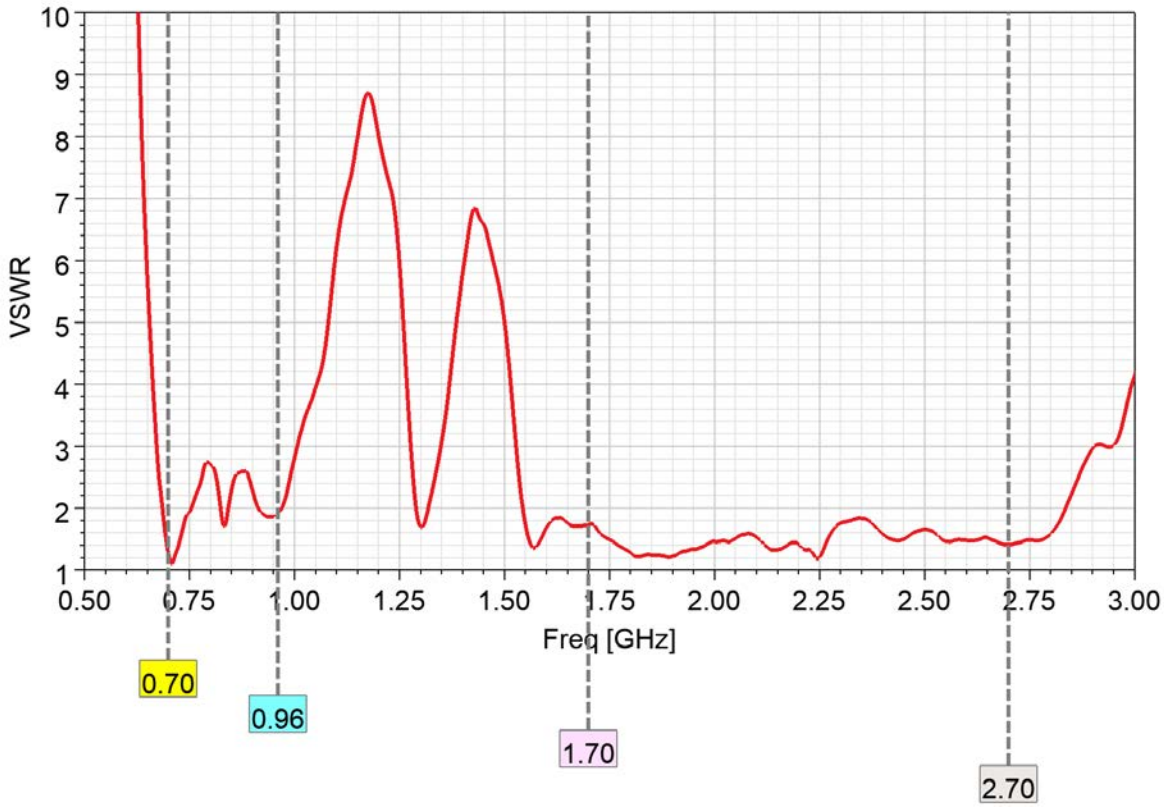
### Measured input impedance matching




### VSWR



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Office: Schatzbogen 43, Munich, Germany

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Fax: +49 89 38-90-7230

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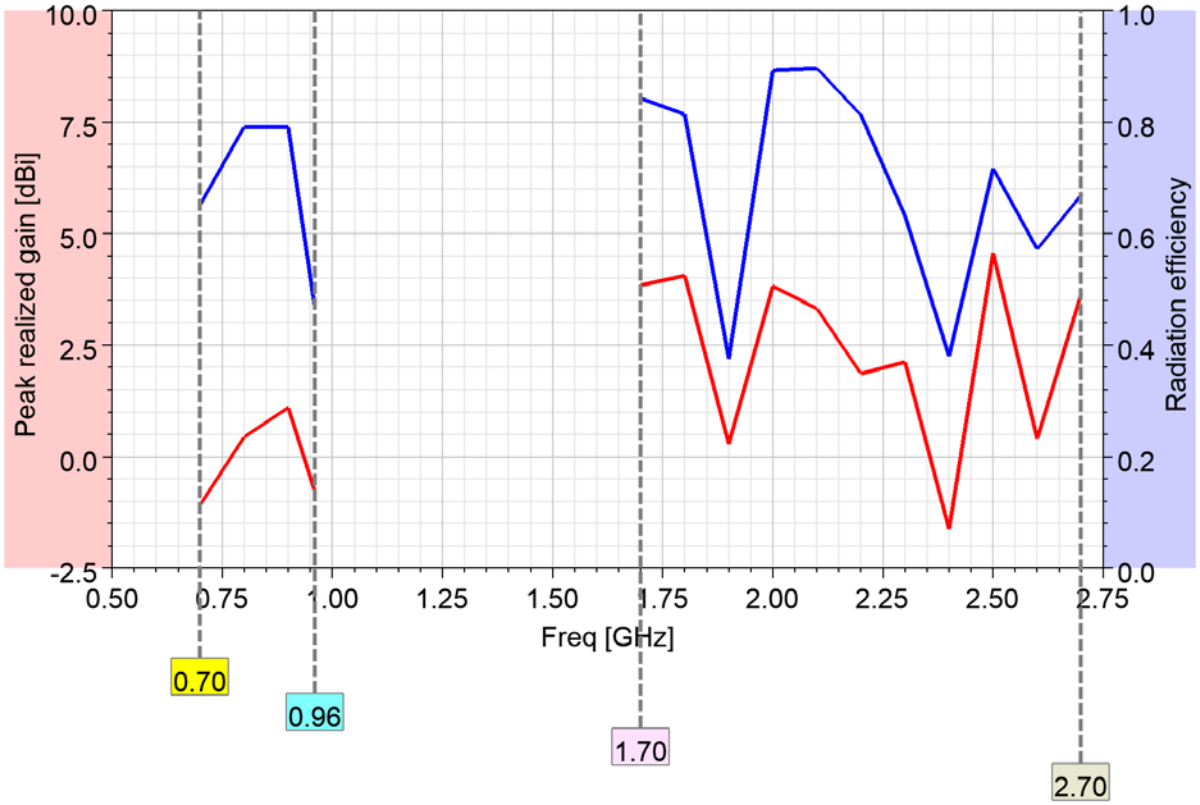
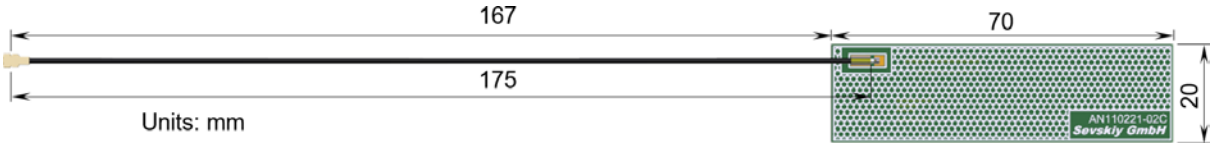
### Peak realized gain and radiation efficiency




### Product dimensions



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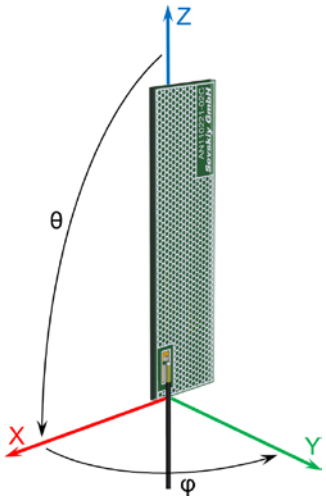
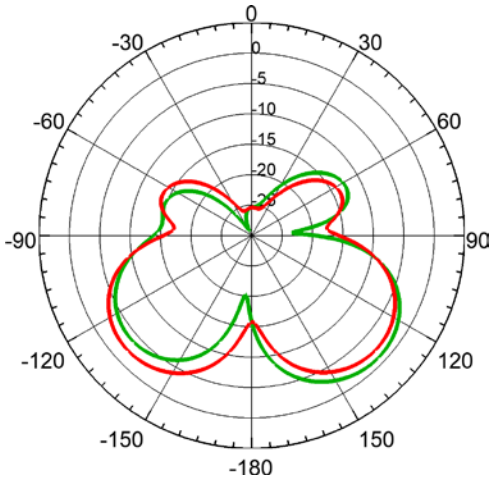
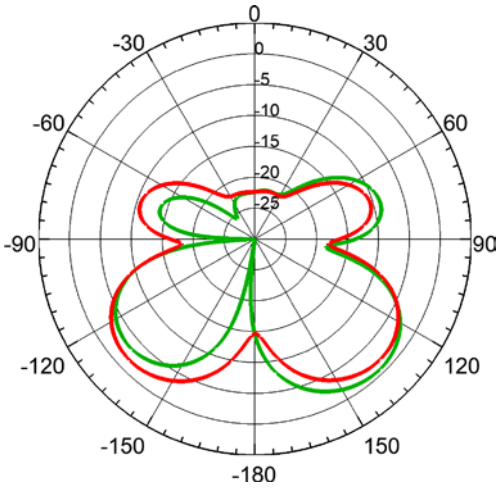
### Radiation pattern



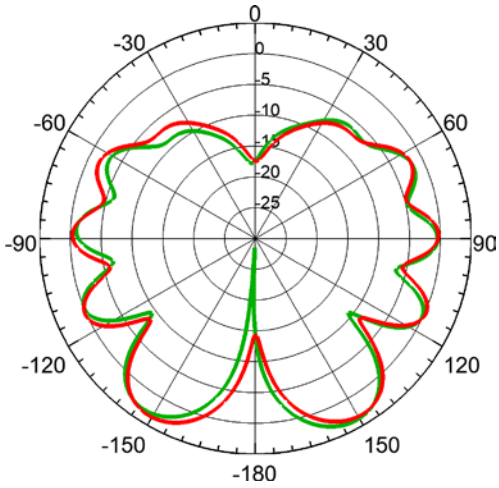

Total realized gain [dBi]
Phi=0°, plane XZ, green curve
Phi=90°, plane YZ, red curve



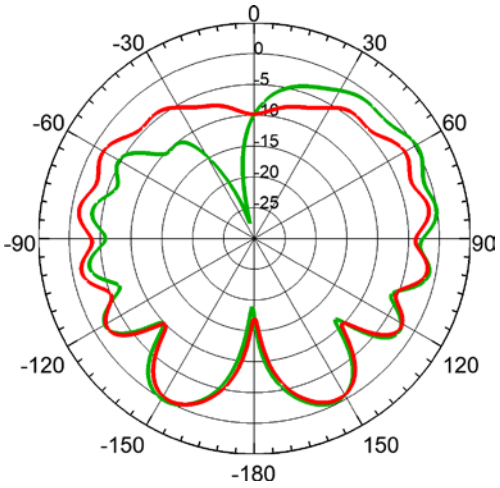

700 MHz




960 MHz




2000 MHz




2600 MHz



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