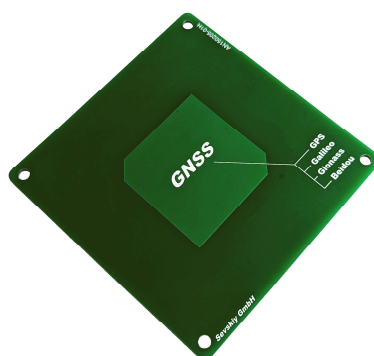


1559...1610 MHz PCB Patch Antenna (GPS L1, GLONASS L1, Galileo E1, BeiDou B1/B1-2)

General information

The AN150205-01H is a PCB patch antenna designed for precise GNSS reception in the 1559...1610 MHz frequency range, covering the primary navigation bands GPS L1, GLONASS L1, Galileo E1 and BeiDou B1/B1-2. The antenna operates with right-hand circular polarization (RHCP), which is essential for reliable satellite signal reception and effective suppression of multipath interference.

With its directional radiation pattern and stable impedance characteristics, the antenna is suitable for applications requiring high positioning accuracy and consistent signal quality. Typical use cases include GNSS receivers, telematics units, vehicle tracking systems, smart transportation systems, UAVs, marine and rail navigation, as well as timing and synchronization systems for industrial and telecom infrastructure.

The antenna is equipped with an I-PEX MHF1 / Hirose U.FL (UMCC) compatible connector, allowing connection of a micro-coaxial RF cable for the target device.

Electrical data

Antenna type	Embedded / internal PCB antenna
Frequency band	GPS L1, GLONASS L1, Galileo E1, BeiDou B1/B1-2
Frequency range [MHz]	1559...1610
Return loss [dB]	-15
Peak gain [dBi]	2
Radiation efficiency [%]	32
Nominal input impedance [Ohm]	50
Polarization	Circular RHCP
Radiation pattern	directional
Maximum input power [W]	5

Mechanical data

Antenna PCB dimensions [mm]	100 x 100 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]	200 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.

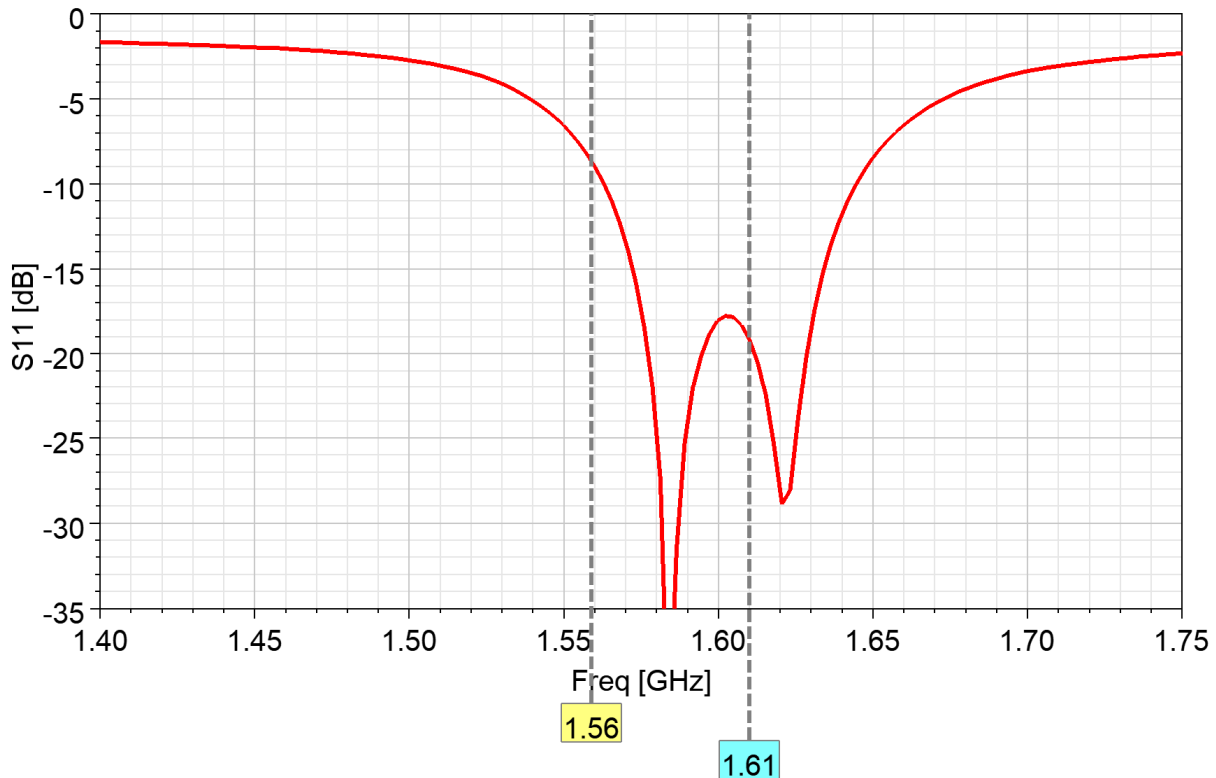
Further customization, electromagnetic simulations and measurements can be offered on request.

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

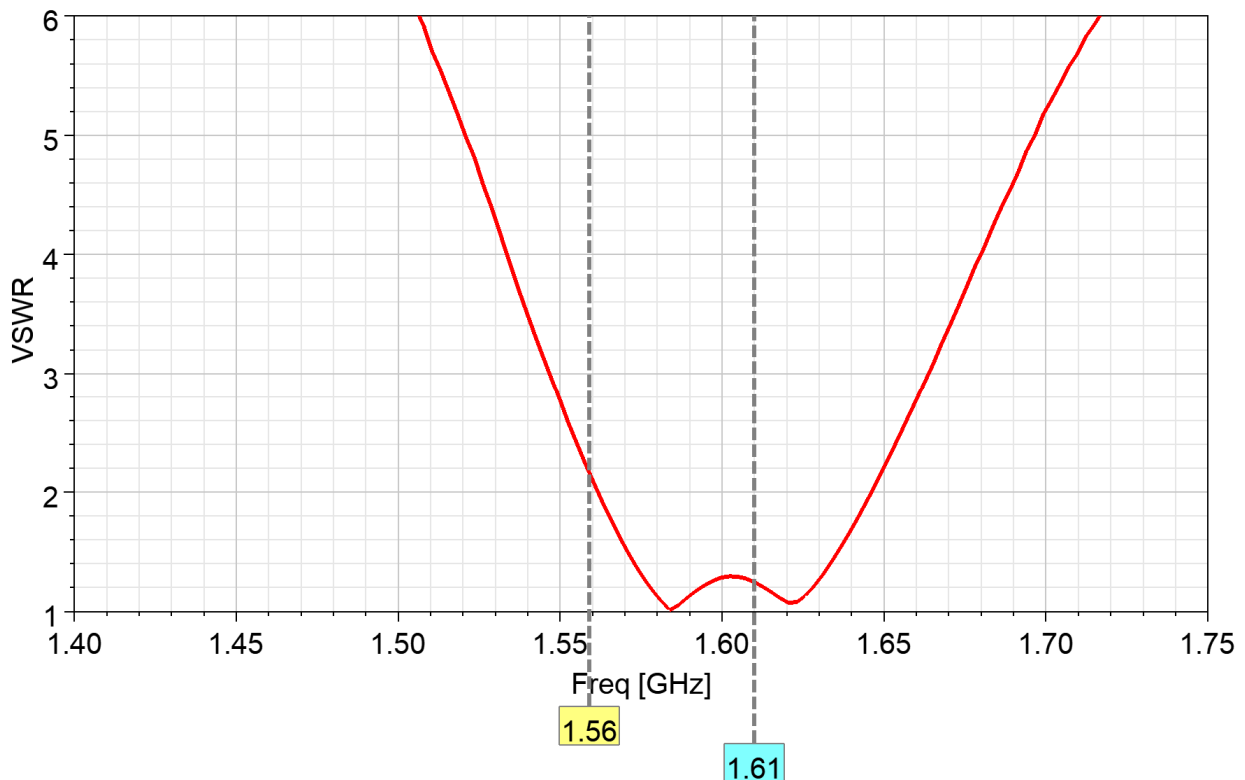
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Measured input impedance matching



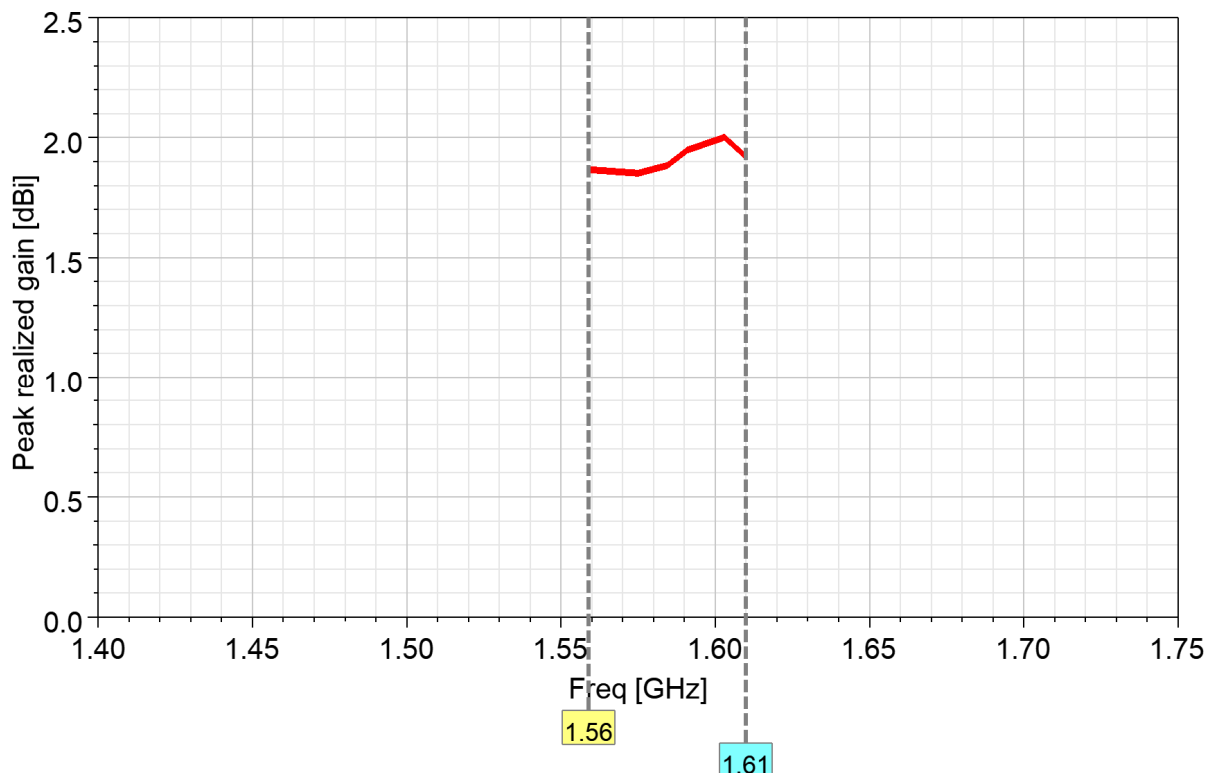
VSWR



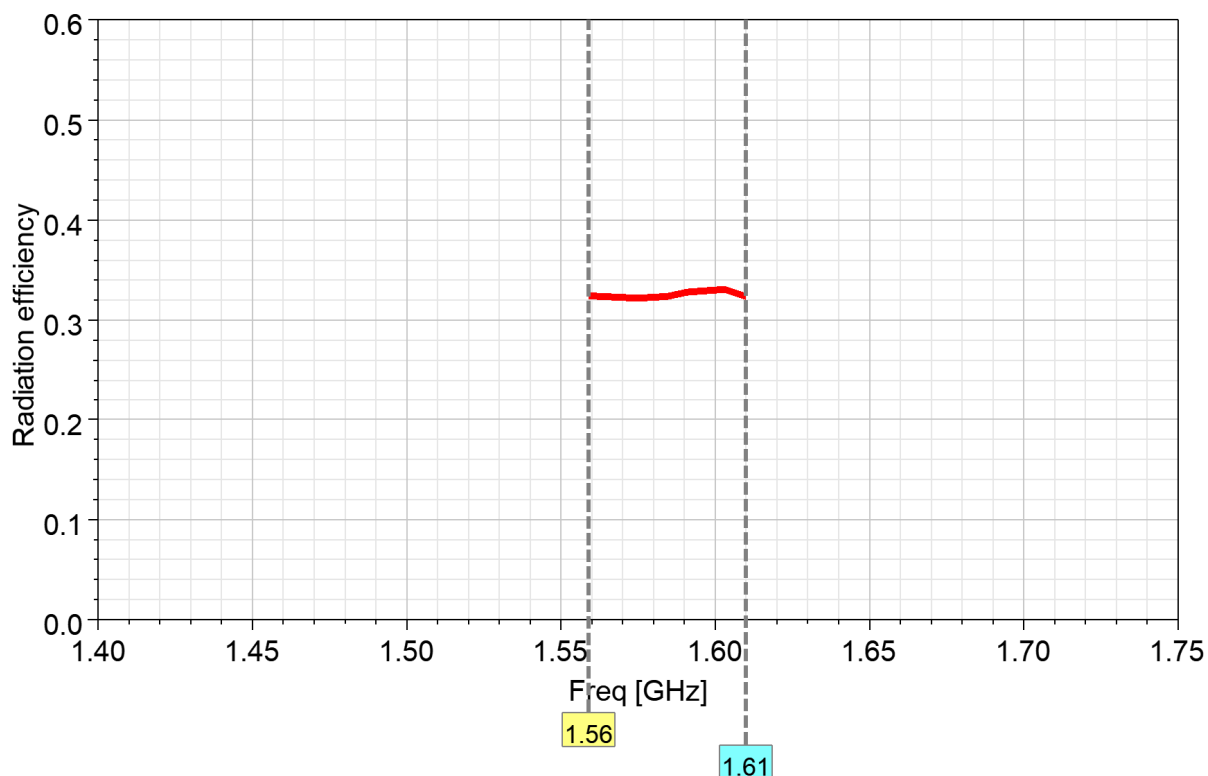
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Peak realized gain



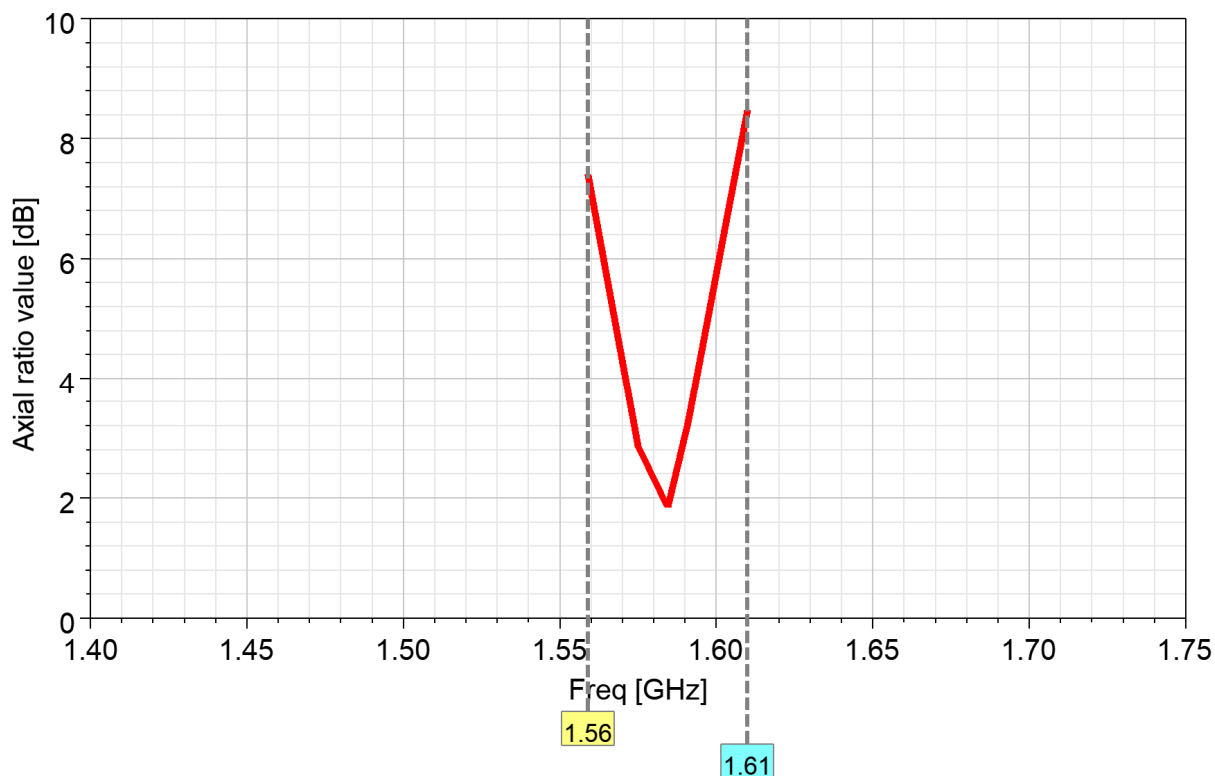
Radiation efficiency



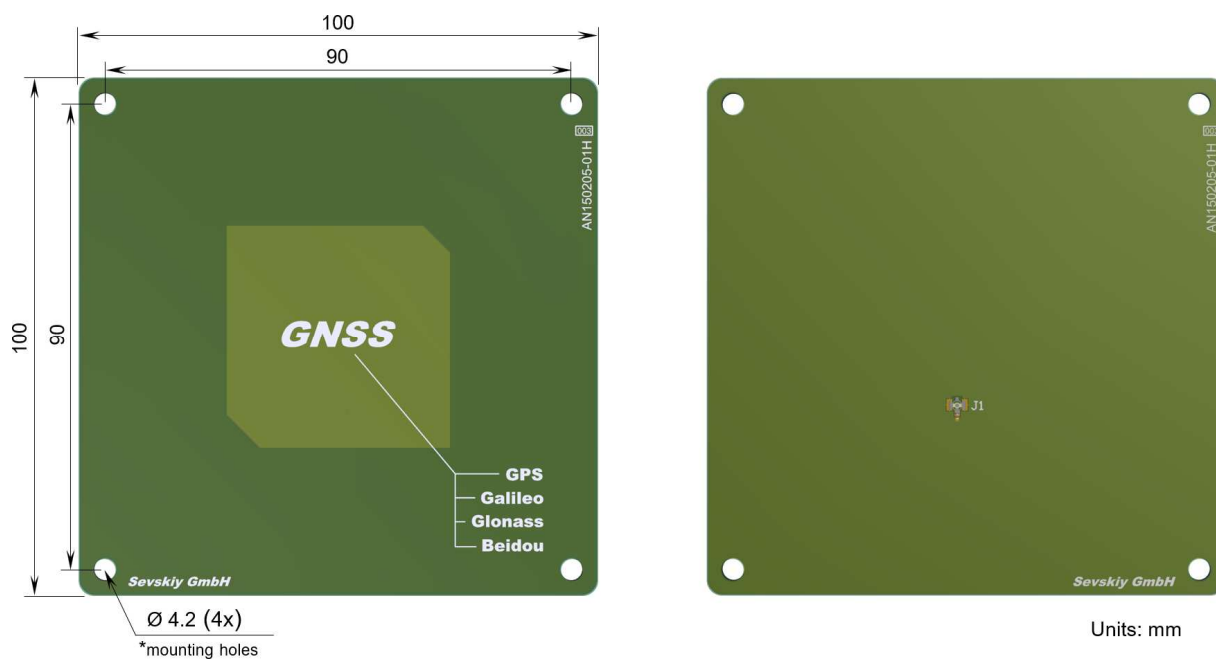
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1559...1610 MHz PCB Patch Antenna (GPS L1, GLONASS L1, Galileo E1, BeiDou B1/B1-2)

Axial ratio value



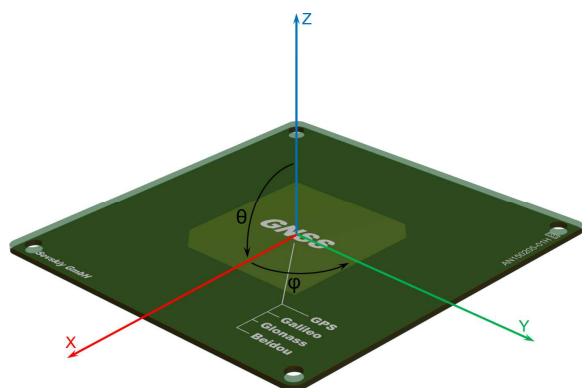
Product dimensions



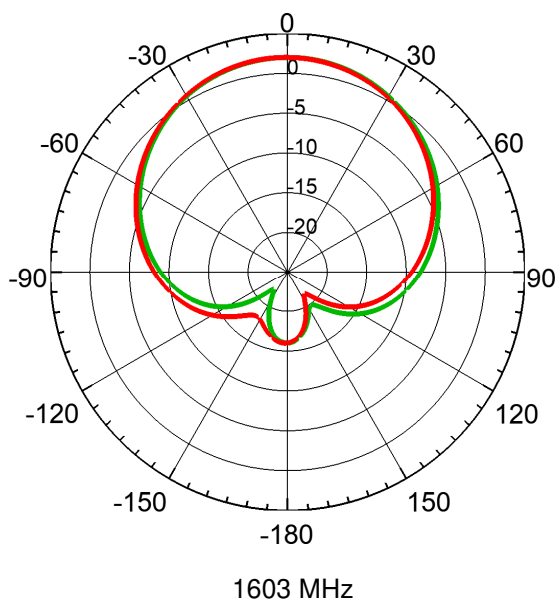
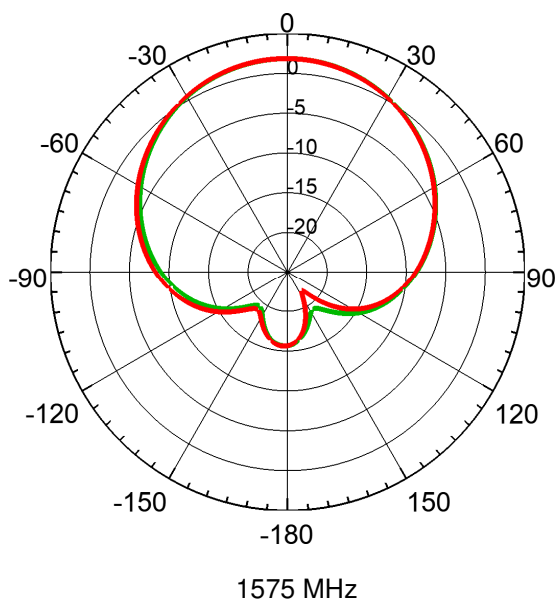
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1559...1610 MHz PCB Patch Antenna (GPS L1, GLONASS L1, Galileo E1, BeiDou B1/B1-2)

Radiation pattern



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



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