

700...960 MHz / 1427...8000 MHz PCB Antenna (5G NR, LTE, ISM, RFID, IoT, Wi-Fi, GNSS)



General information

The AN120501-01H is a large, symmetric ultra-wideband dipole PCB antenna designed for external / internal installation in advanced multi-standard wireless systems. Covering an exceptionally broad frequency range from 700...960 MHz and 1427...8000 MHz, it supports LTE, 5G NR, LTE-M, NB-IoT, and cellular networks, as well as ISM, Wi-Fi (2.4 / 5 / 6 GHz), and GNSS bands.

Its extended upper frequency range up to 8 GHz enables operation in modern high-capacity 5G and Wi-Fi 6/6E environments, while the sub-GHz coverage ensures reliable long-range cellular connectivity.

The antenna is suitable for 5G routers and CPE devices, industrial gateways, smart city infrastructure, transportation and railway communication systems, video surveillance platforms, telematics and fleet management units, GNSS-enabled tracking systems, and broadband wireless terminals.

Electrical data

Antenna type	External / internal PCB antenna	
5G bands	1, 2, 3, 5, 7, 8, 12, 13, 14, 18, 20, 25, 26, 28 - 30, 34, 38, 39, 40, 41, 46 - 48, 50, 53, 65, 66, 70, 74 - 84, 86, 89, 90 - 98	
4G bands	1 - 14, 17 - 30, 32 - 53, 65 - 70, 74 - 76, 85	
Other frequency bands	SRD860, ISM915, ISM2400, ISM5800, GNSS, Wi-Fi 6 GHz	
Frequency range [MHz]	700...960	1427...8000
Return loss [dB]	-8	-10
Peak gain [dBi]	1.2...2	2.3...4.5
Radiation efficiency [%]	75...92	70...90
Nominal input impedance [Ohm]	50	
Polarization	linear	
Radiation pattern	omnidirectional	
Maximum input power [W]	5	

Mechanical data

Antenna PCB dimensions [mm]	155 x 49.7 x 0.8
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.

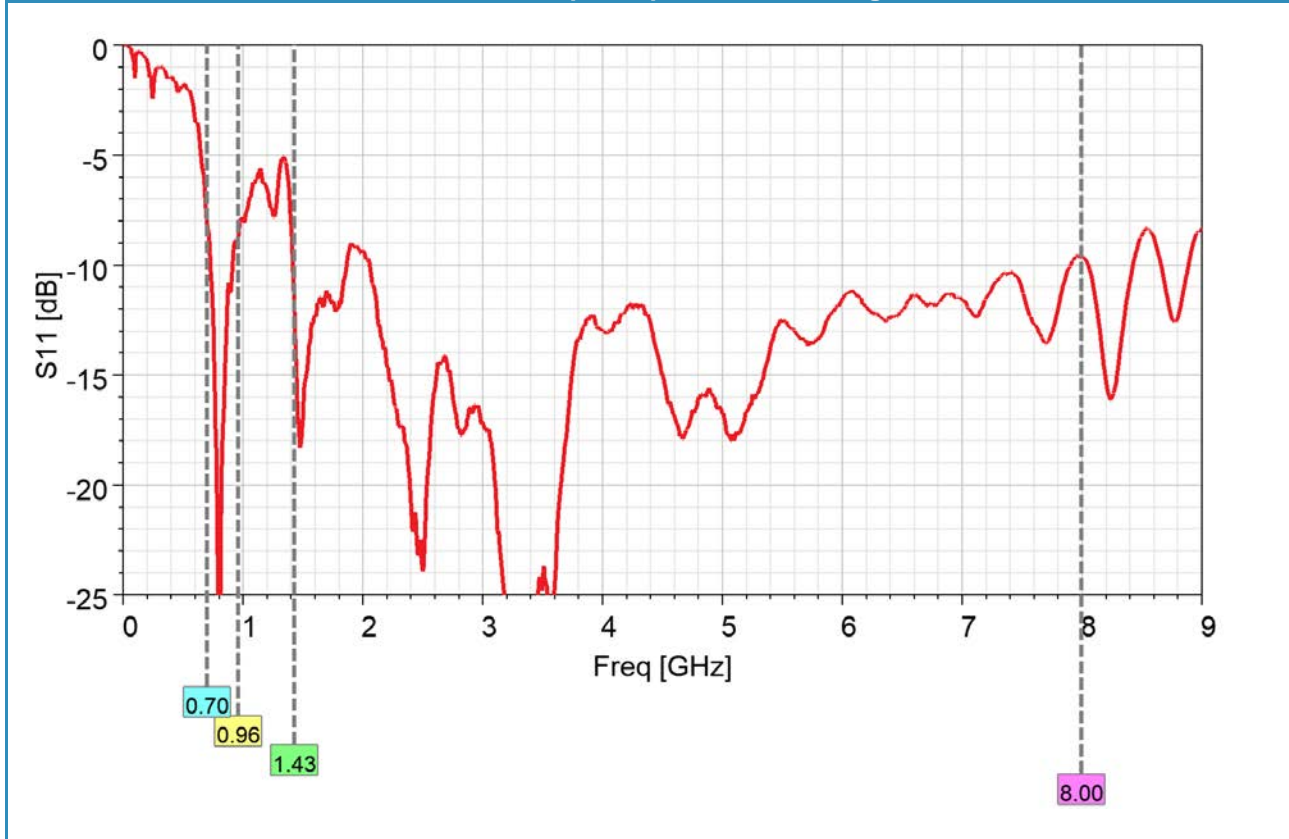
Further customization, electromagnetic simulations and measurements can be offered on request.

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

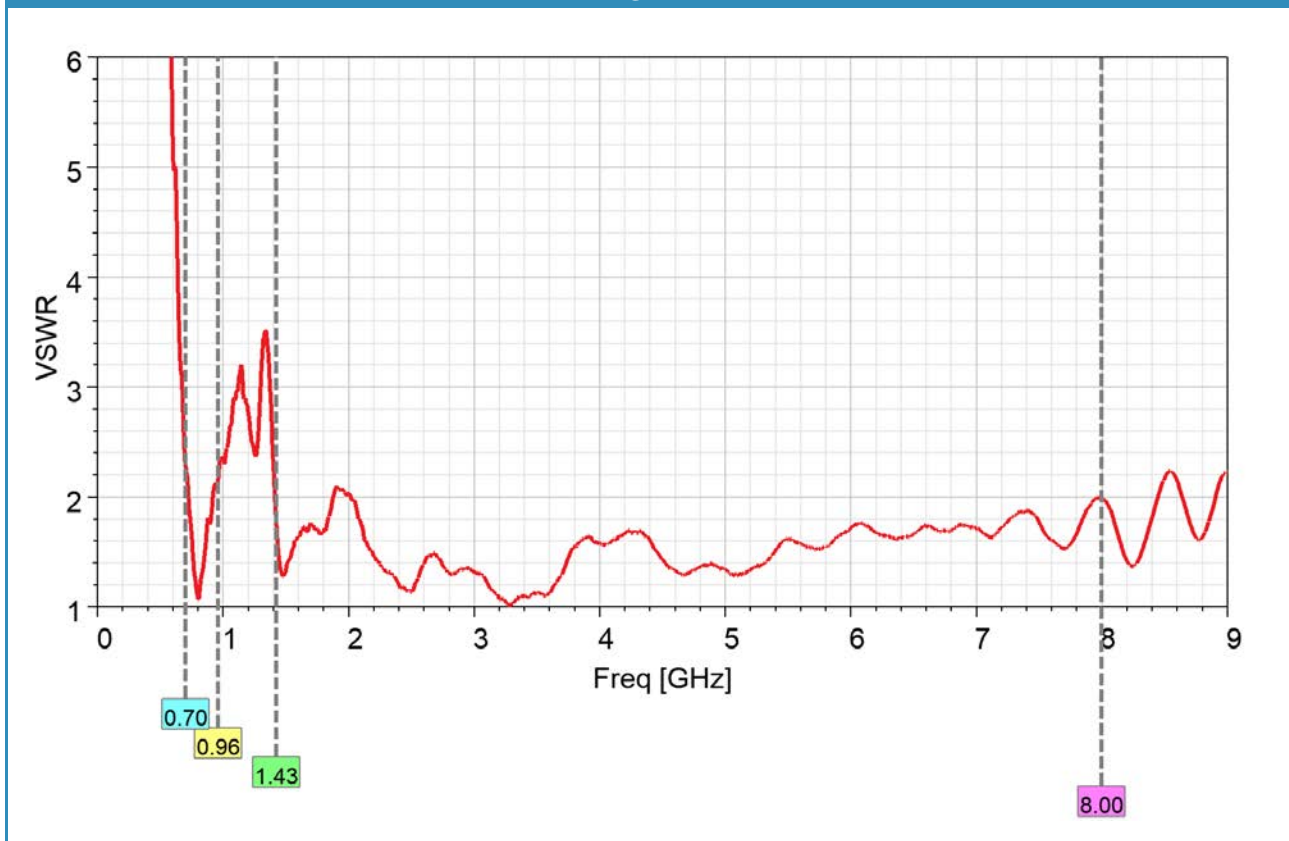
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Measured input impedance matching



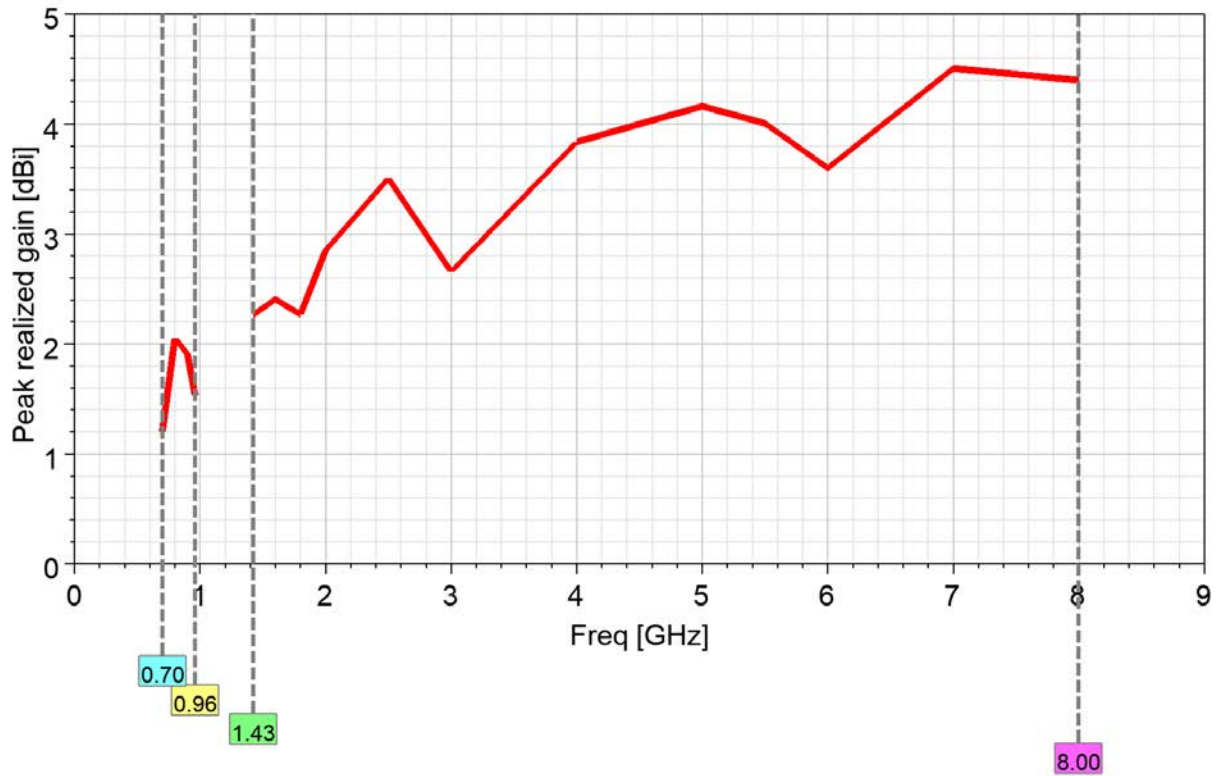
VSWR



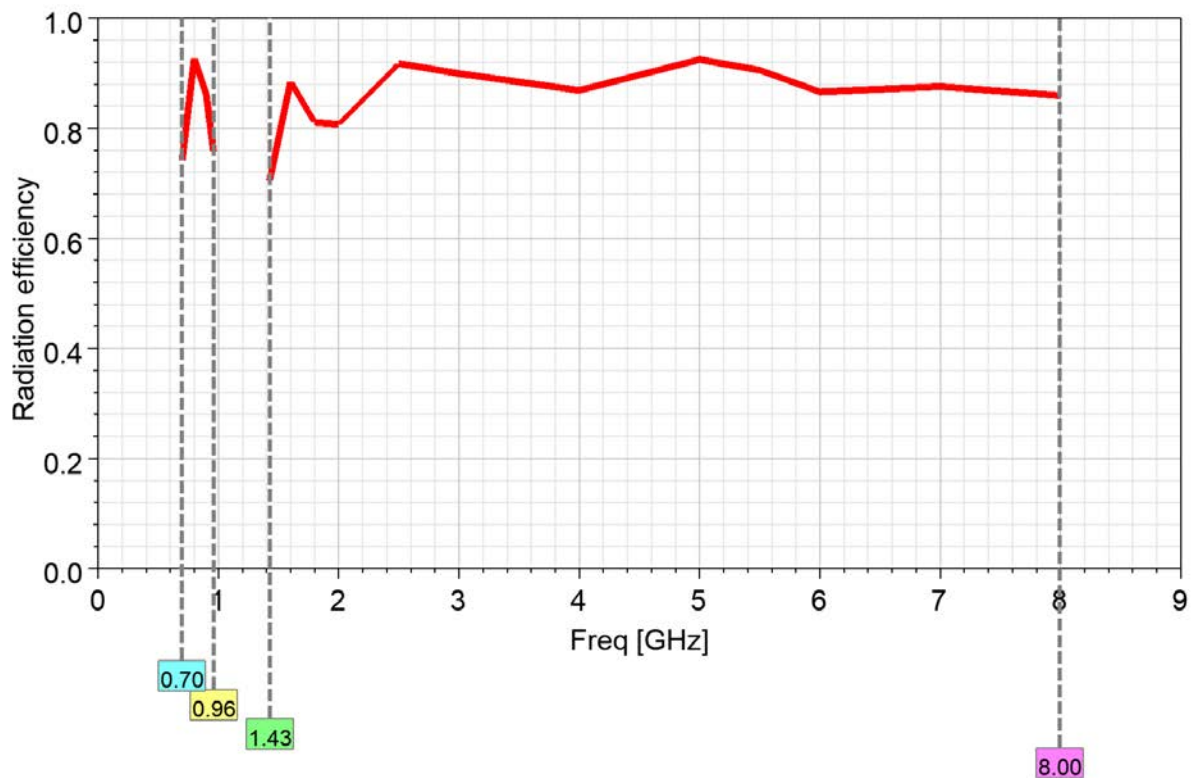
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Peak realized gain



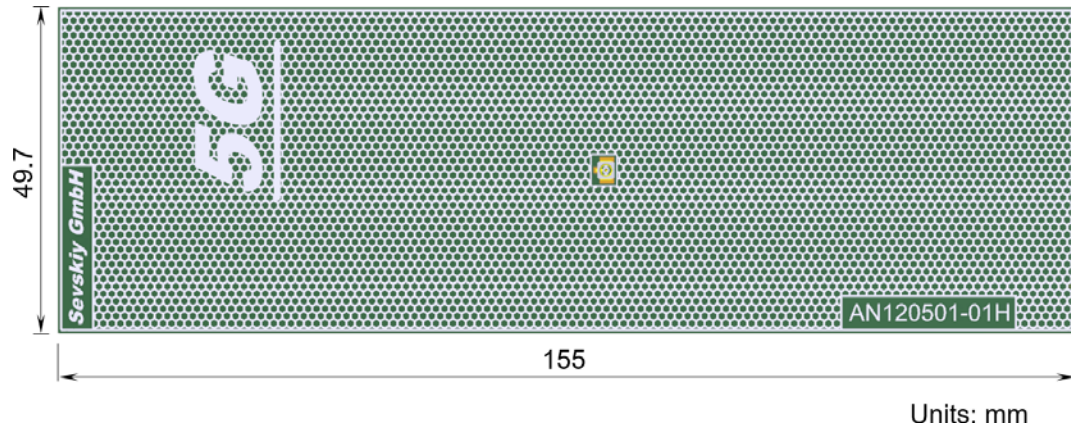
Radiation efficiency



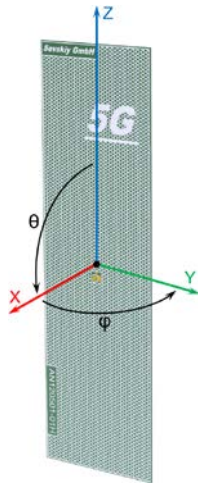
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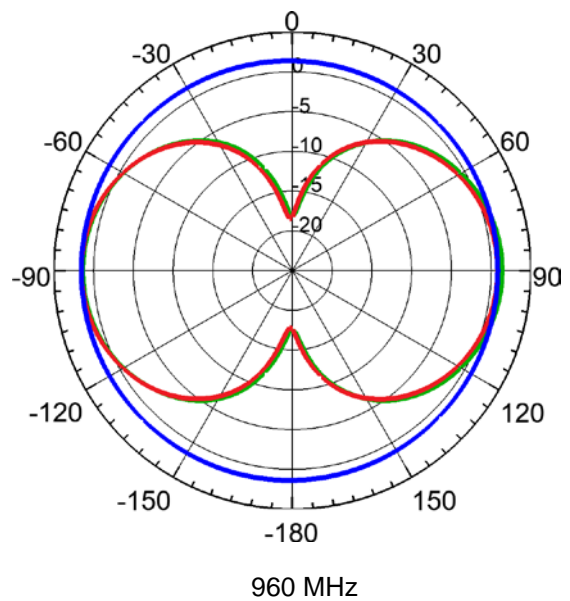
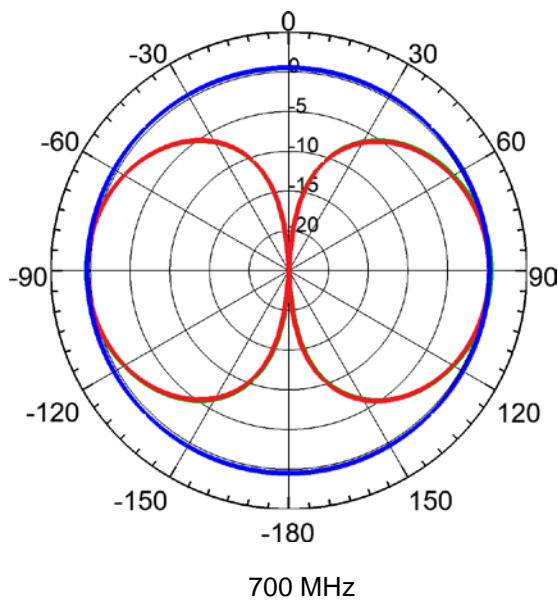
Product dimensions



Radiation pattern



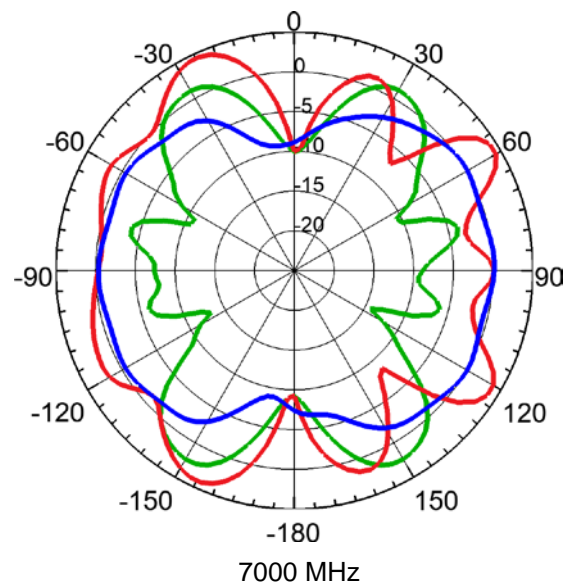
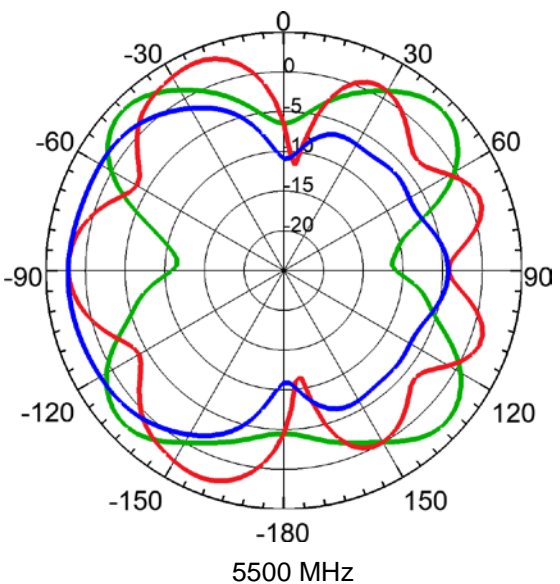
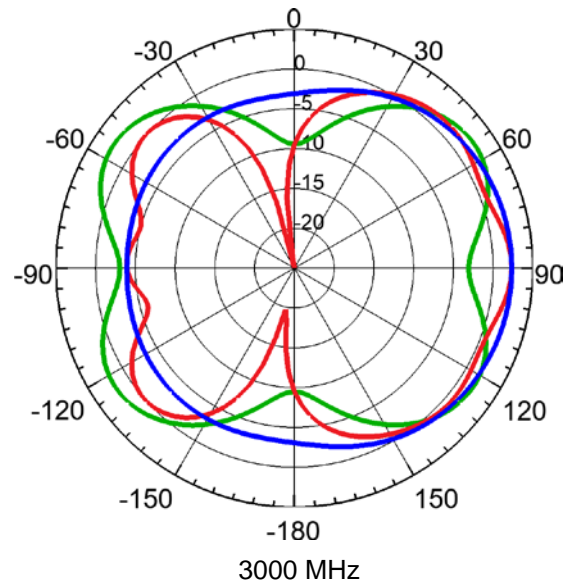
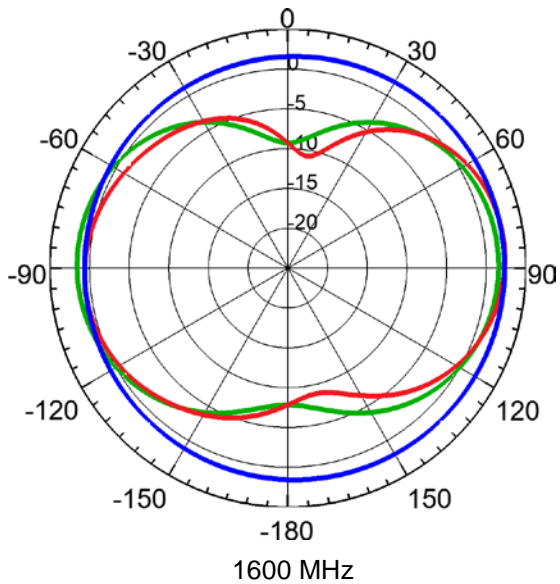
Total realized gain [dBi]
 Phi=0°, plane XZ, green curve
 Phi=90°, plane YZ, red curve
 Theta=90°, plane XY, blue curve



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Radiation pattern



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