

4900...6000 MHz Circularly polarized patch antenna array (ISM, M2M, IoT, Wi-Fi 5.5 GHz)



General information

The AN240209-01A is a high-gain circularly polarized patch antenna array designed for operation in the 4.9...6.0 GHz frequency range within the 5 GHz ISM band. It provides directional radiation characteristics combined with stable RHCP polarization, enabling reliable long-range wireless communication with reduced sensitivity to multipath fading and polarization mismatch. The antenna supports IEEE 802.11 a/n/ac/ax (Wi-Fi 5 and Wi-Fi 6) standards in the 5 GHz band and is suitable for high-throughput wireless links.

Due to its increased gain and controlled beamwidth, the antenna is well suited for point-to-point and point-to-multipoint wireless systems, outdoor Wi-Fi infrastructure, and wireless backhaul applications. Typical use cases include industrial wireless networks, video surveillance and video transmission systems, IoT and M2M gateways, private LTE/5G-NR unlicensed or shared-spectrum deployments, and UAV ground control or telemetry links. The antenna is also suitable for smart city infrastructure, wireless monitoring systems, and high-capacity data links requiring directional coverage and robust polarization performance.

Electrical data

Antenna type	Patch antenna array
Frequency bands	5.5 GHz ISM band
Frequency range [MHz]	4900...6000
Return loss [dB]	-10
Peak gain [dBi]	19...20
Radiation efficiency [%]	85...90
Nominal input impedance [Ohm]	50
Polarization	Circular (RHCP)
Radiation pattern	directional
Maximum input power [W]	5

Mechanical data

Antenna dimensions [mm]	200 x 200 x 5
Connector type ¹⁾	SMA Female ¹⁾
Material	PTFE Teflon, FR-4
Weight [g]	220

Additional information

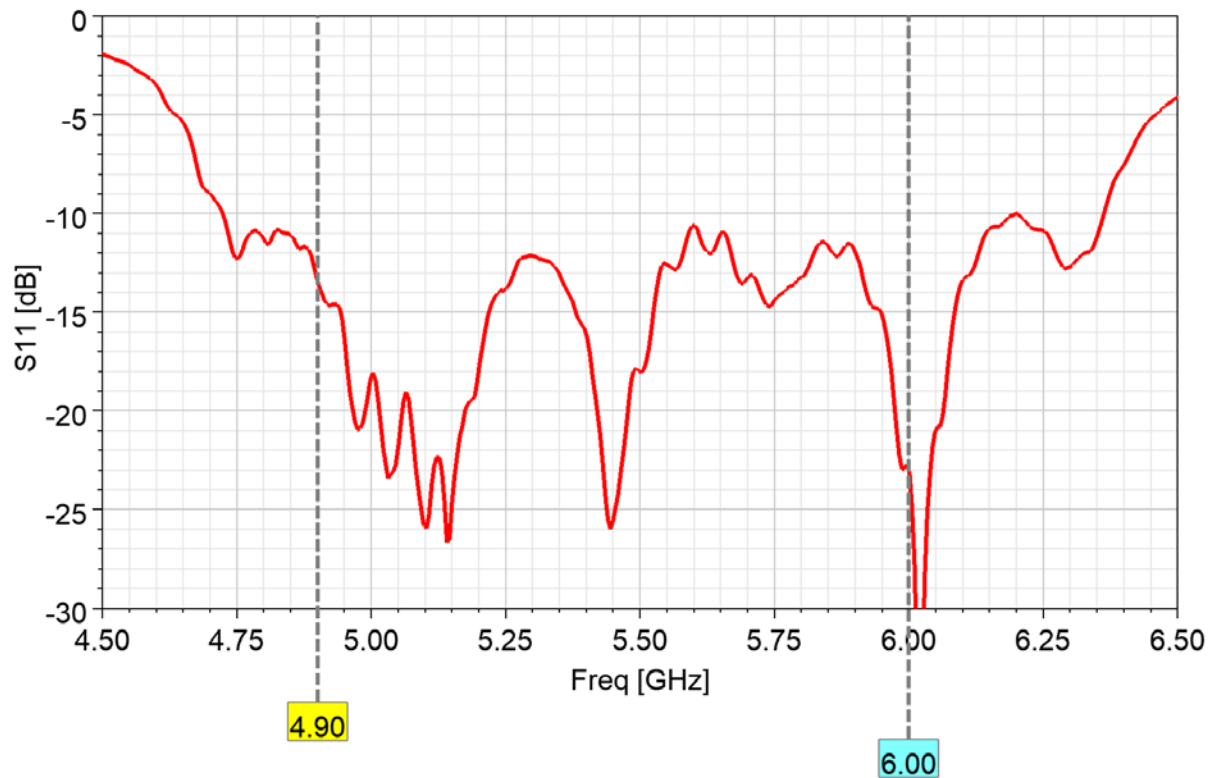
¹⁾ Other connector types can be offered on request.

Other designs, geometries or materials are possible on request.

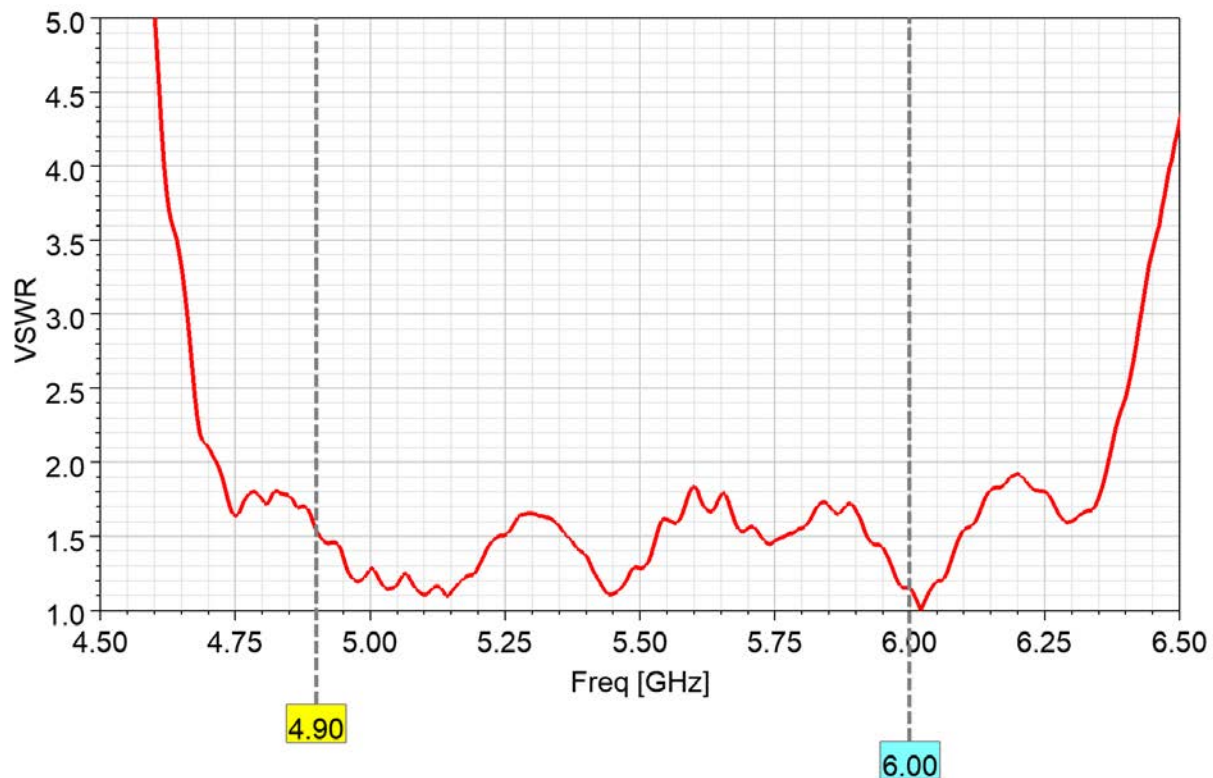
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Measured input impedance matching



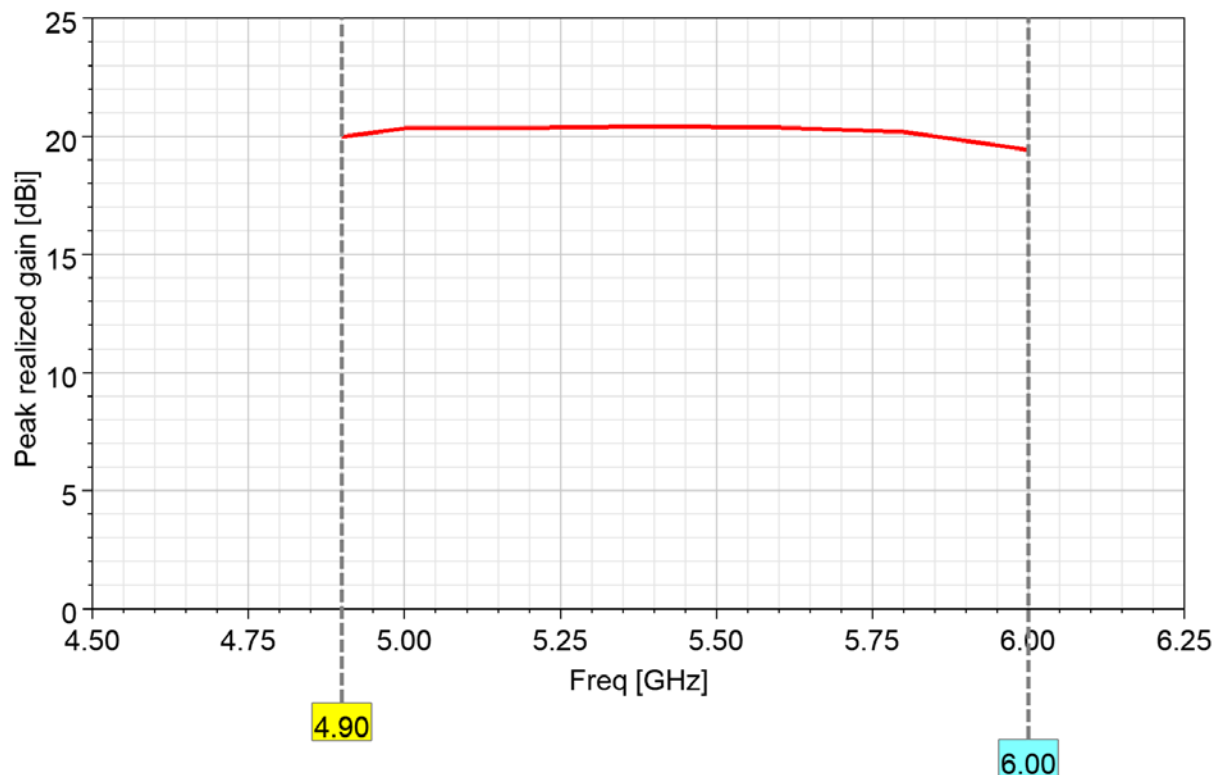
VSWR



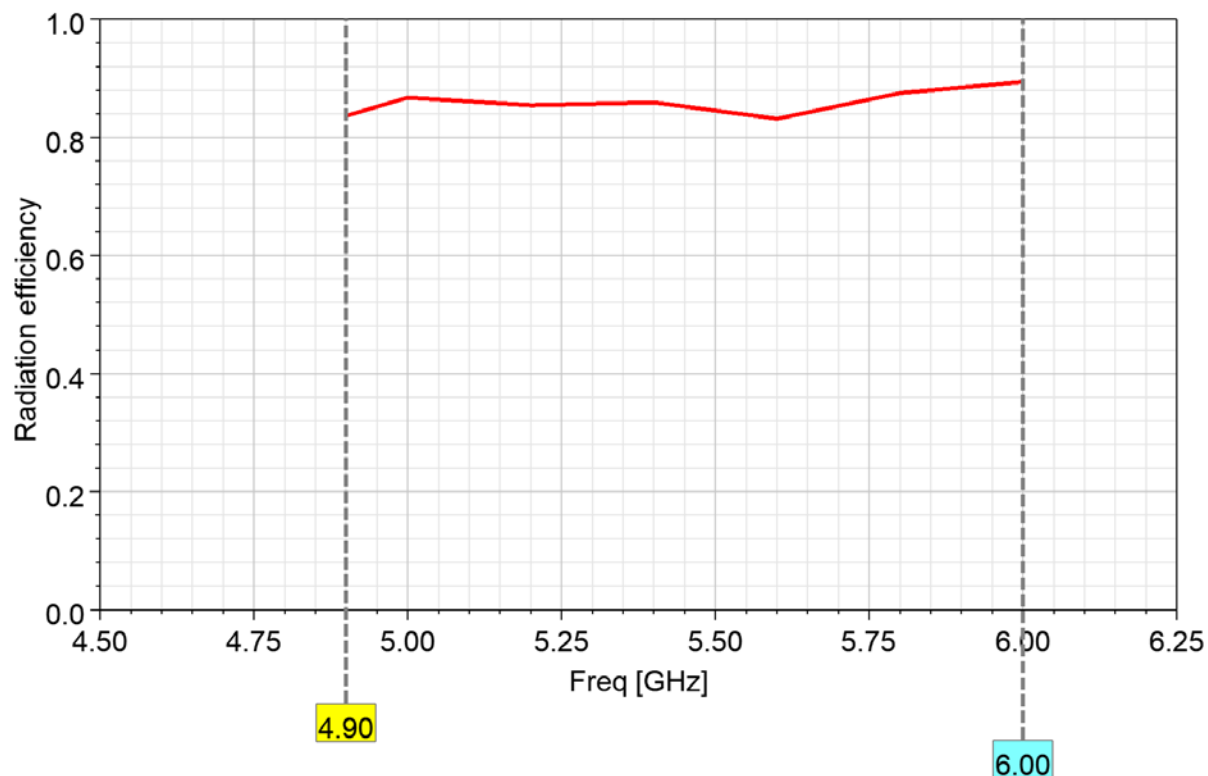
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Peak realized gain



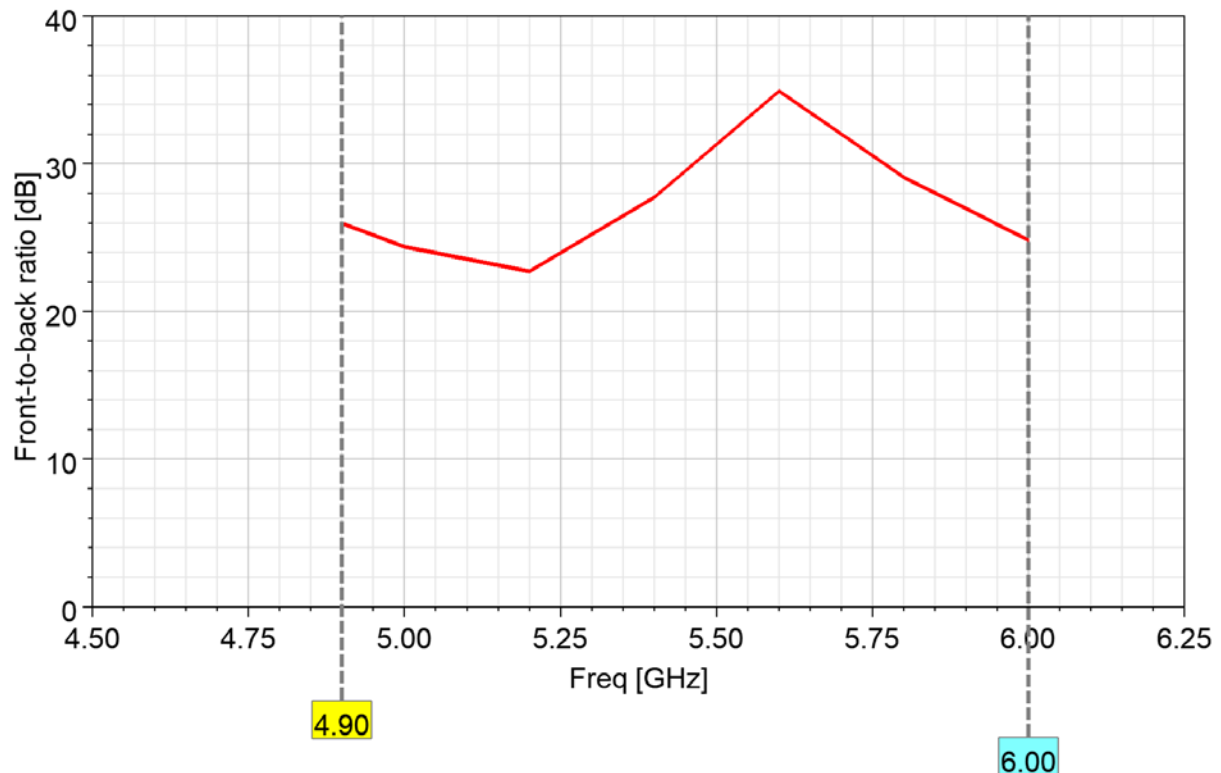
Radiation efficiency



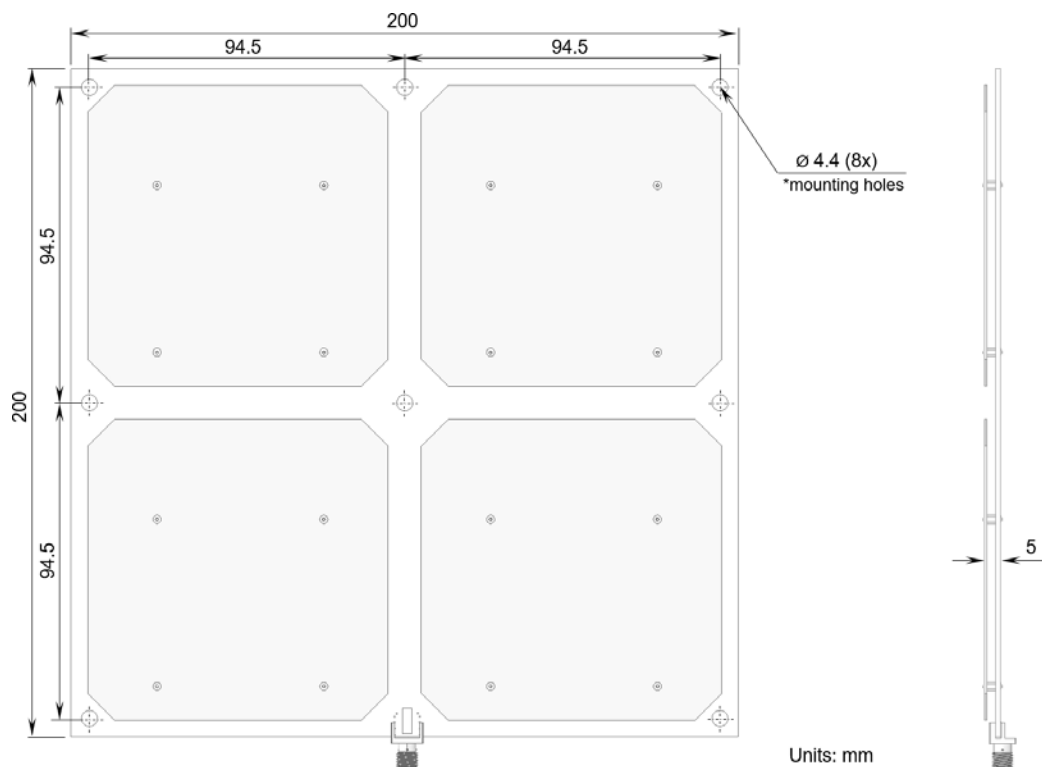
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Front-to-back ratio



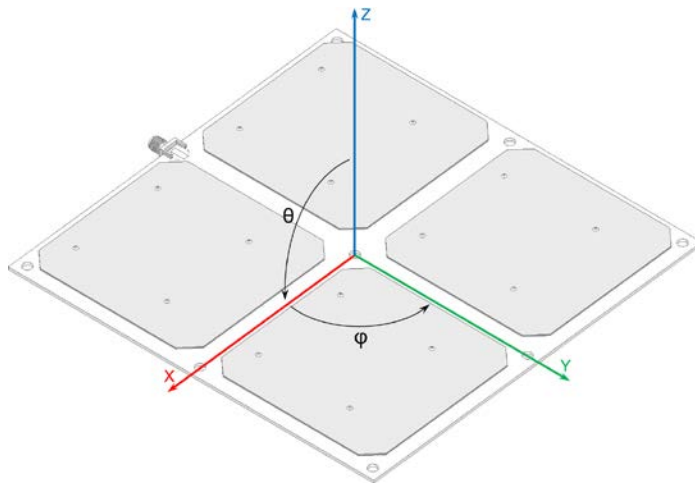
Product dimensions



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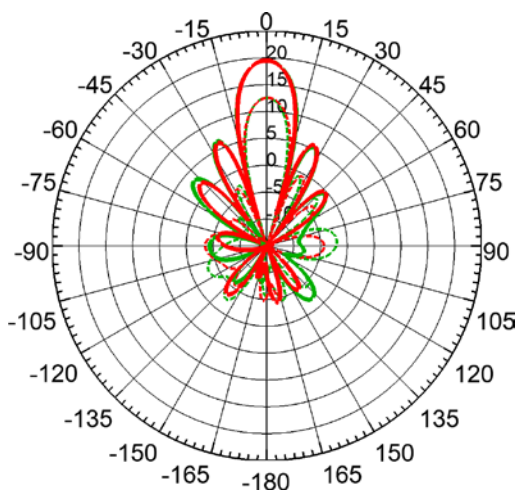
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Radiation pattern

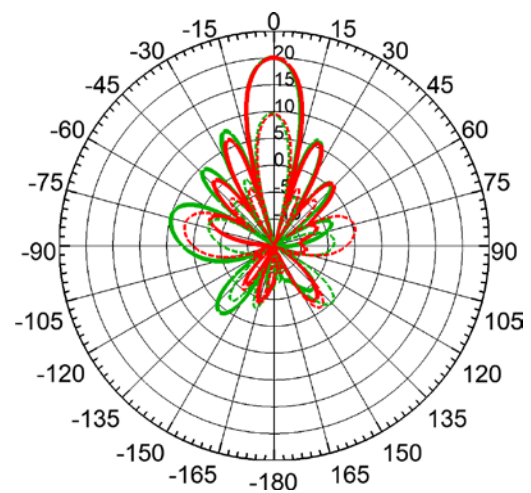


Total realized gain [dBi]
Phi=0°, plane XZ, green curve
Phi=90°, plane YZ, red curve

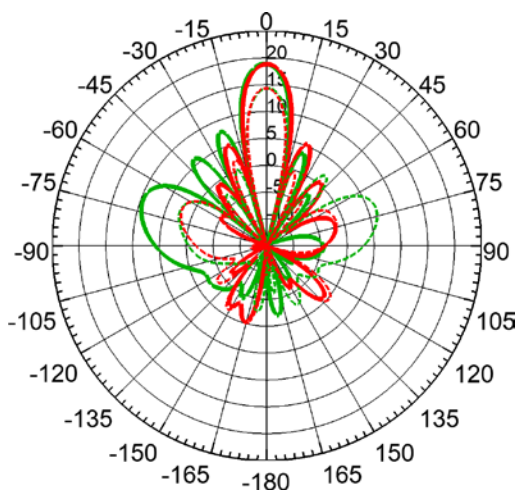
Solid curves – co-polarization RHCP
Dash curves – cross-polarization LHCP



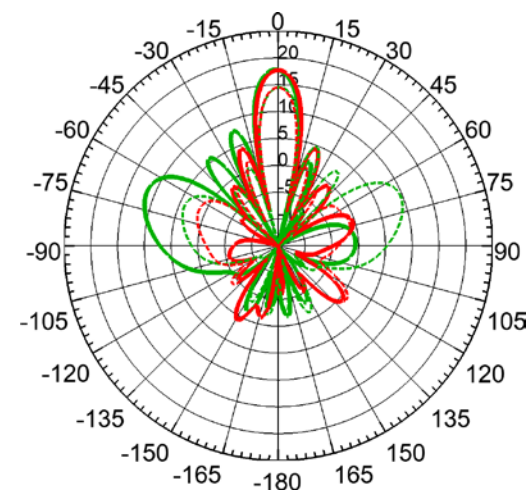
5000 MHz



5400 MHz



5800 MHz



6000 MHz

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