



# Quad-band Automotive Antenna

for AMPS, GPS, PCS, Satellite Radio



EMAG Quad-band Antenna

A single low-cost, compact, integrated antenna covering AMPS, PCS, GPS and XM satellite radio bands that gives you the same performance as four separate antennas. The EMAG quad-band antenna minimizes the need for wiring, connectors, tool-and-die design and stamping and greatly reduces the cost of labor and installation. Typical antenna locations are instrument panel, windshield, headliner duck bill, rear shelf package and spoiler. The antenna is made of simple printed circuit boards that are easily integrated with the rest of the electronic system including active LNAs and filters.

## EMAG Quad-band Antenna Specification (AMPS, PCS, GPS, XM Satellite & Terrestrial)

Antenna Type	AMPS	PCS	GPS	Satellite Radio Sat.	Satellite Radio Terr.
<b>Performance Characteristics / Specifications</b>					
<b>Frequency</b>	824-894 MHz	1850-1990 MHz	1575.42 MHz	2332.5-2345.0 MHz	2332.5-2345.0 MHz
<b>Bandwidth</b>	75 MHz $\pm$ 5 MHz	145 MHz $\pm$ 5 MHz	15 MHz $\pm$ 5 MHz	12.5 MHz $\pm$ 5 MHz	12.5 MHz $\pm$ 5 MHz
<b>Impedance</b>	50 $\Omega$	50 $\Omega$	50 $\Omega$	50 $\Omega$	50 $\Omega$
<b>VSWR</b>	< 2.0	< 2.0	< 1.7	< 2.0	< 1.8
<b>Polarization</b>	Linear	Linear	Right-hand Circular	Left-hand Circular	Linear
<b>Coverage</b>	Omni-directional	Omni-directional	From zenith to 10° above horizon	From zenith to 10° above horizon	Omni-directional
<b>Axial Ratio</b>	NA	NA	< 2.0dB @ zenith	< 2.0dB @ zenith	NA
<b>Passive Element Gain</b>	> 1.0 dBi	> 1.0 dBi	> 2 dBiC > -10 dBiC @ 80°	> -2 dBiC > -10 dBiC @ 80°	> -3 dBi
<b>LNA Gain</b>	NA	NA	> 26 dB	> 22 dB	> 22dB
<b>Noise Figure</b>	NA	NA	< 1.2 dB	< 1.5 dB	< 1.5dB
<b>Current Draw</b>	NA	NA	20 mA typical	100 mA typical	100 mA typical
<b>Input Voltage</b>	NA	NA	5.0 Vdc typical	5.0 Vdc typical	5.0 Vdc typical
<b>Physical Characteristics</b>					
<b>Size</b>	2.5" x 8.0" x 0.08" (in L-shape package)	2.5" x 8.0" x 0.08" (in L-shape package)	3.0" x 4.0" x 0.12" (in L-shape package)	3.0" x 4.0" x 0.12" (in L-shape package)	1.5" x 8.0" x 0.08" (in L-shape package)
<b>Connector</b>	FAKRA-type SMB Automotive Grade (color coded)	FAKRA-type SMB Automotive Grade (color coded)	FAKRA-type SMB Automotive Grade (color coded)	FAKRA-type SMB Automotive Grade (color coded)	FAKRA-type SMB Automotive Grade (color coded)
<b>Cables</b>	5 ft coaxial	5 ft coaxial	5 ft coaxial	5 ft coaxial	5 ft coaxial
<b>Weight</b>	< 1 oz (w/o cables)	< 1 oz (w/o cables)	< 1.5 oz (w/o cables)	< 1.5 oz (w/o cables)	< 1 oz (w/o cables)

- Reduced cost, reduced size, and reduced complexity