

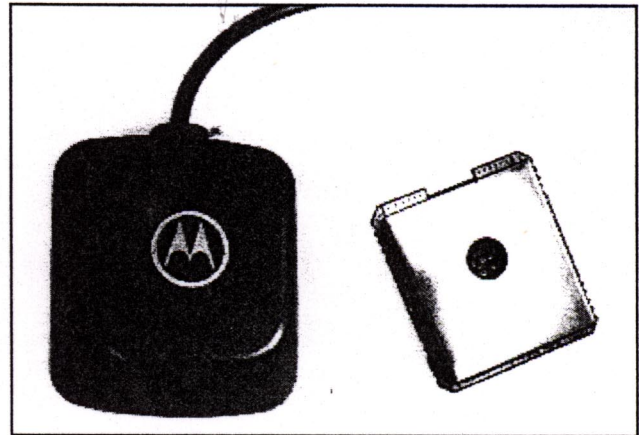
Revised: August 29, 1997

ONCORE™ Active GPS Antenna97

Introduction:

Motorola's newest GPS antenna is a high performance, compact size designed to accommodate a wide variety of OEM, system integrator and end user applications. The 24 dB (including 6 Meter coax cable) active patch, Antenna97 operates from 5 VDC at just 20 mA supplied by the ONCORE GPS receiver or an external source depending on the specific application. All Antenna97 configurations feature molded-in coaxial cable and offer a choice of coaxial connectors and two cable lengths. The antenna design reflects Motorola's high standard for performance when operating in foliage/urban canyon environments and in the presence of electromagnetic interference.

The small footprint, low profile package and the shielded LNA (low noise amplifier) offers significantly enhanced performance while operating in a variety of GPS environments. Magnetic and direct mount options make the antenna suitable for a number of different installation

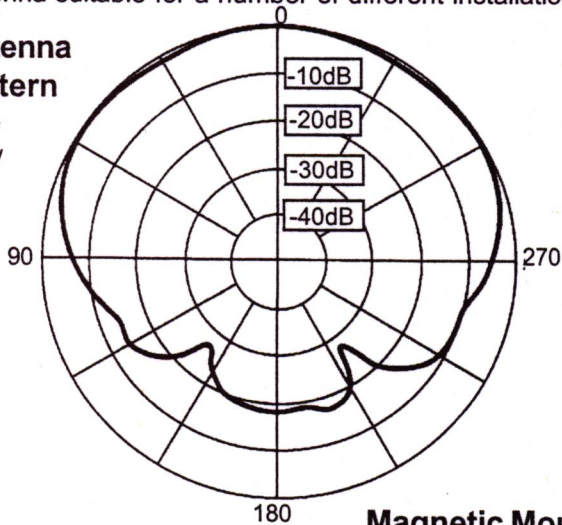


ONCORE™ Active GPS Antennas

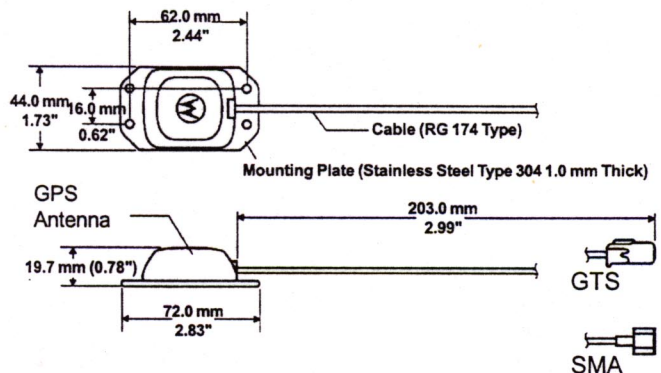
configurations. The OEM or system integrator can count on signal gain and noise figure performance over an ambient operating temperature range which leads the industry.

Antenna Pattern

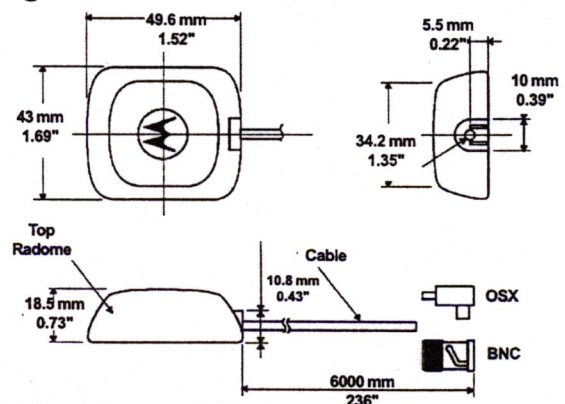
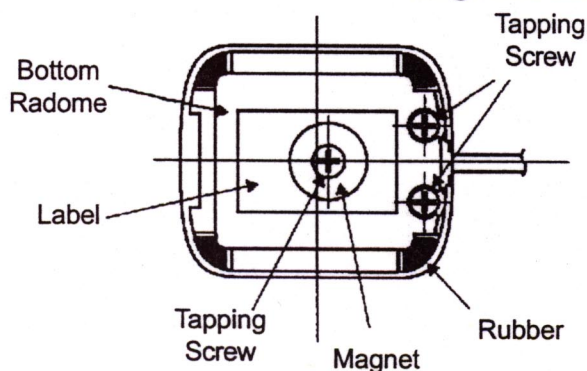
Side View



Direct Mount Configuration



Magnetic Mount Configuration



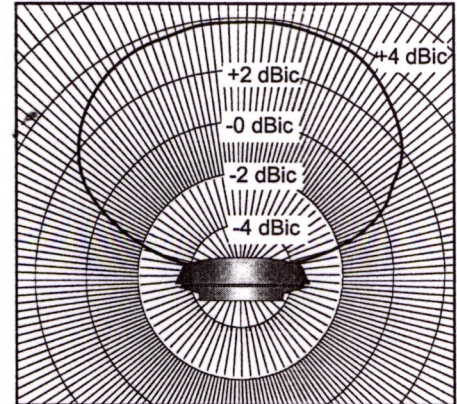
For configuration assistance, order placement and technical support call:

SYNERGY SYSTEMS, LLC
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ONCORE™ GPS Antenna Technical Characteristics

Introduction: Motorola GPS antennas with model designations beginning with "ANT" are based on a 2 inch, 24 dB active patch design which may be powered by 5 VDC at 25 mA from a Motorola ONCORE GPS receiver or a separate power source depending on the application. Since 1992 this antenna design has proven extremely reliable and has performed successfully in a wide range of uses including automobile, truck and bus tracking, timing, GIS and airborne applications. The antenna module is supplied with one of four different types of mounting shrouds, depending on customer needs, but may be used alone for integration into custom designs. The new, smaller Motorola Antenna97 (available in September, 1997) provides the same general performance characteristics at a lower cost. See Tech-Note #491-1 and #491-2 for details.



General Characteristics	Antenna Description	• Low Profile Active Microstrip Patch Antenna encapsulated in a molded plastic housing
	Operating Frequency	• L1 (1575.42 MHz)
Performance Characteristics	Input Impedance	• 50 Ohm
	VSWR	• 2:1 (typical) @ 1575.42 MHz
	Bandwidth	• 60 MHz (typical)
	Polarization	• Right hand circular
	Azimuth Coverage	• 360 degrees
	Elevation Coverage	• 0 degrees to 90 degrees
	Gain Characteristics	• + 3 dBic minimum at zenith • 0 dBic minimum at 30 degrees elevation • - 6 dBic minimum at 0 degrees elevation
	Filtering	• - 30 dB @ 1625 MHz • - 30 dB @ 1475 MHz
	LNA Gain	• 22 dB minimum
	Noise Figure	• 2.5 dB maximum
	Burnout Protection	• Protected from damage by RF signals when the power receive by the antenna is no greater than +17 dBm absolute maximum
	Dynamics	• Vibration: 7.7G per Military Standard 810E Method 514.4 • Shock: 30 g (18 ms sawtooth) Military Standard 810E Method 516.4
	Electrical Characteristics	Power Requirements
Power Consumption		• 22 mA typical @ 5 Vdc (50 mA maximum)
Physical Characteristics	Dimensions	• 4.01 (dia.) x 0.89 in. (102 mm dia x 22.6 mm) • 33.3 L x 29.8 W x 8.8 H mm (Substrate with shield)
	Weight	• 4.8 oz. (136.3 g)
	Connectors	• 90 degree OSX (subminiature snap-on)
Environmental Characteristics	Antenna to Receiver Interconnection	• Single coaxial cable (- 12 dB maximum loss at L1:1575.42 Mhz for Motorola GPS receivers)
	Operating Temp.	• - 40°C to + 100°C
	Storage Temp	• - 40°C to + 65°C
	Humidity	• 95% noncondensing + 30°C to + 60°C
	UV Radiation	• 1000 hrs. @ + 60°C as per ASTM G53-88
	Salt Spray Test	• 96 hrs at 35°C
Miscellaneous	Optional Features	• Four mounting options: direct, post, lip, magnetic • 6 & 3 meters of RG-58 cable asy: subminiature to subminiature or subminiature to BNC or SMB (offer TNC & SMA, model numbers not available)

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