



Oncore™ Active GPS Antenna



Actual size

There is only one name for high quality and outstanding performance in GPS technology: Oncore. The Oncore GPS family includes the Active GPS Antenna in a fully packaged or subassembly configuration. Offered by Motorola for the OEM and systems integrator marketplace, the antenna offers high performance and a compact size at a price compatible with the target cost demands of the typical GPS consumer.

The Oncore Active GPS Antenna is designed to operate with Motorola's successful family of Oncore GPS receivers, as well as many GPS receivers from other manufacturers. The antenna design reflects Motorola's high standard for performance when operating in foliage/urban canyon environments and in the presence of electromagnetic interference, while drawing only 20 milliamps at 5 Vdc, diplexed from the interconnecting coaxial cable.

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. Furthermore, magnetic and direct mount options make the antenna suitable for a number of different installation configurations. Moreover, the OEM or system integrator can count on signal gain and noise figure performance over an ambient operating temperature range which leads the industry.

Add reliability, responsive integration support and the long term commitment you have come to expect from Motorola, and you will understand why the Oncore Active GPS Antenna is the high quality choice.



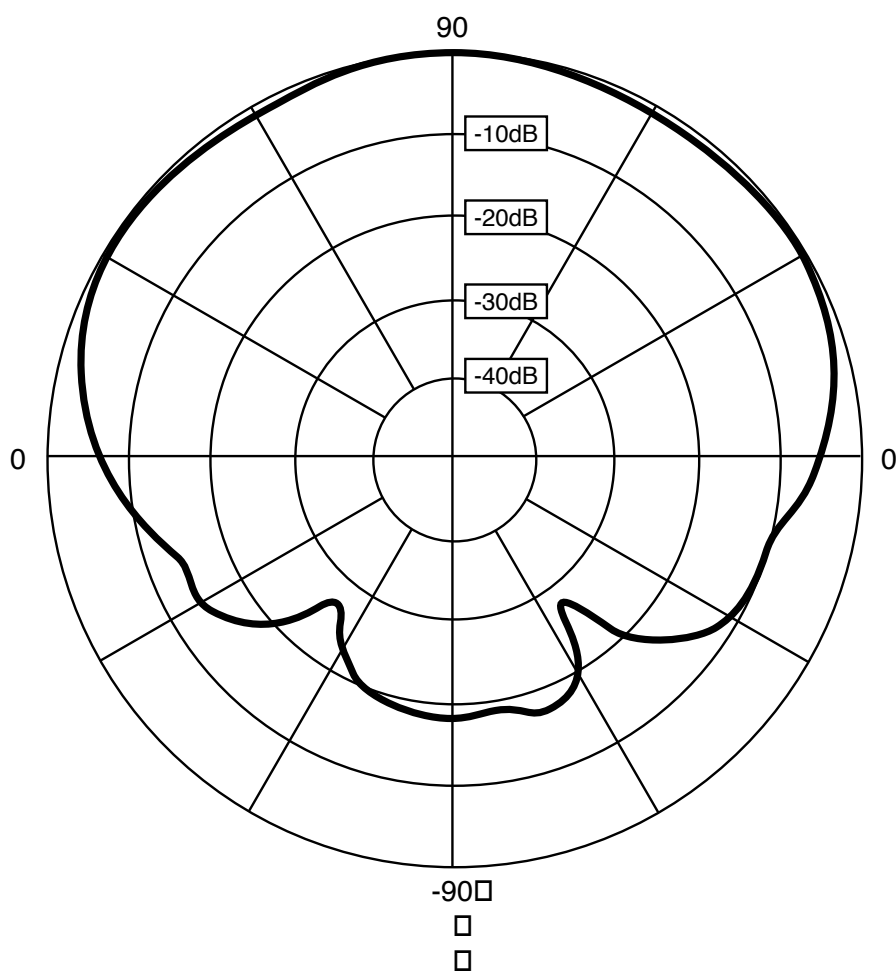
MOTOROLA



Oncore™ Active GPS Antenna

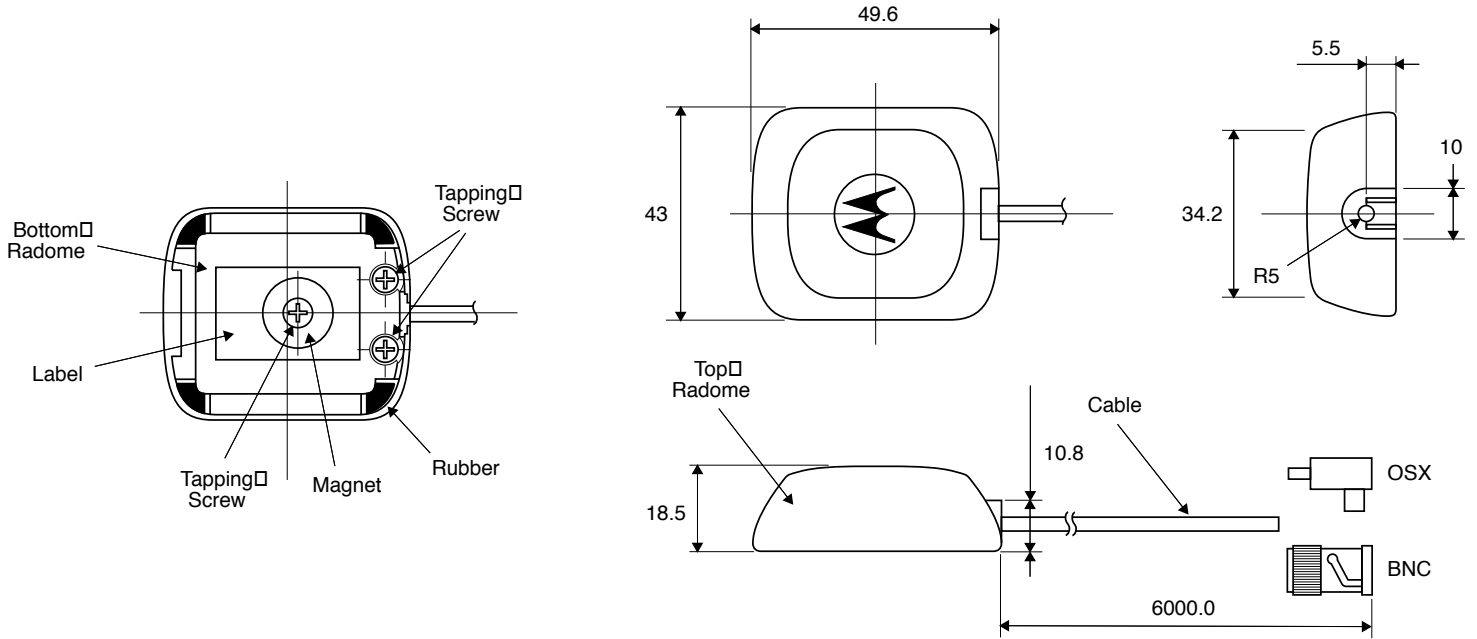
Relative Radiation Pattern

Motorola Part # GCNxxxxxxx

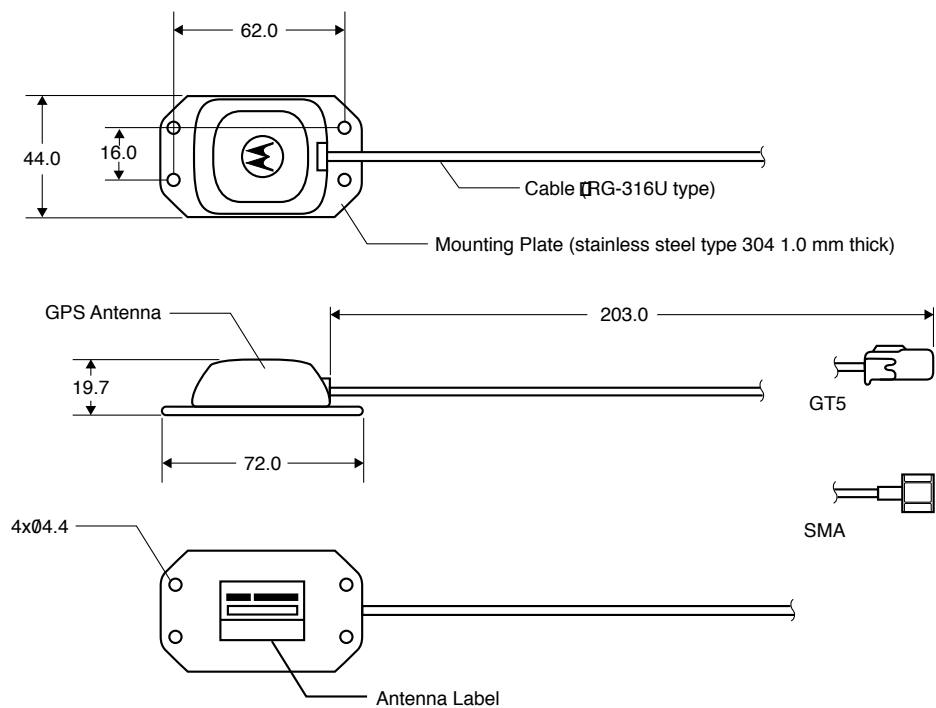


Cross Sectional View

Magnetic Mount Configuration



Direct Mount Configuration



All dimensions are in millimeters

For reference purposes only



Oncore™

Active GPS Antenna

Technical Characteristics

Motorola Part # GCNAXxxxxxx

General Characteristics

Antenna Description	<ul style="list-style-type: none">• Low profile active microstrip patch antenna• Molded plastic radome• Electrically shielded LNA PWB assembly
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Performance Characteristics

Operating Frequency	<ul style="list-style-type: none">• L1 (1575.42 MHz, +/- 1.023 MHz)
Input Impedance	<ul style="list-style-type: none">• 50 Ohm
VSWR	<ul style="list-style-type: none">• 1.5 (typical) @ 1575.42 MHz
Bandwidth	<ul style="list-style-type: none">• 45 MHz @ 3 dB points (typical)
Polarization	<ul style="list-style-type: none">• Right hand circular
Azimuth Coverage	<ul style="list-style-type: none">• 360 degrees
Elevation Coverage	<ul style="list-style-type: none">• 0 degrees to 90 degrees
Gain Characteristics of Antenna Element	<ul style="list-style-type: none">• +2 dBic minimum at zenith (typical)• -10 dBic minimum at 0 degrees elevation (typical)
Filtering	<ul style="list-style-type: none">• -25 dB @ 1670 MHz (typical)• -25 dB @ 1480 MHz (typical)
LNA Gain	<ul style="list-style-type: none">• 24 dB (typical, including 6 dB cable loss)
Noise Figure	<ul style="list-style-type: none">• 1.8 dB (typical)
Burnout Protection	<ul style="list-style-type: none">• Protected from damage by RF signals, when the power received by the antenna is no greater than +17 dBm absolute maximum
Dynamics	<ul style="list-style-type: none">• Vibration: 7.7G per Military Standard 810E Method 514.4• Shock: 100G (18 ms sawtooth) Military Standard 810E Method 516.4

Electrical Characteristics

Power Requirements	<ul style="list-style-type: none">• 5 ± 0.5 Vdc 50 mV p-p ripple (maximum)
Power Consumption	<ul style="list-style-type: none">• 20 mA @ 5 Vdc (typical)

Physical Characteristics

Dimensions	<ul style="list-style-type: none">• 49.6 L x 43.0 W x 18.0 H mm• 33.3 L x 29.8 W x 8.8 H mm (Substrate w/shield)
Weight	<ul style="list-style-type: none">• < 40 grams (housed assembly, less cable)
Cable Connector	<ul style="list-style-type: none">• 90 degree OSX/MCX (subminiature push on)• BNC• Call for other connector types (SMB, GT5...)
Antenna to Receiver Interconnection	<ul style="list-style-type: none">• Single RG-316U type coaxial cable 6 meters (20 ft.) long (10 dB maximum loss at 1575.42 MHz)• Single RG-316U type coaxial cable 203 mm (8 in.) long

Environmental Characteristics

Operating Temperature	<ul style="list-style-type: none">• -40°C to +100°C
Storage Temperature	<ul style="list-style-type: none">• -40°C to +100°C
Humidity	<ul style="list-style-type: none">• 95% noncondensing +30°C to +60°C
UV Radiation	<ul style="list-style-type: none">• 1200 hrs. @ +63°C w/rain @ 12 min./hr.
Salt Spray Test	<ul style="list-style-type: none">• Spray 5% NaCl solvent at +35°C for 320 hrs.

Miscellaneous

Optional Features	<ul style="list-style-type: none">• Mounting options:<ul style="list-style-type: none">- Magnetic mount- Direct mount• Substrate: patch antenna and shielded LNA on PWB with 6 meters of RG-316U type coaxial cable with 90 degree OSX/MCX connector
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