

## Introducing the new Oncore Active “HAWK” Antenna



There's only one name for quality and performance in GPS technology: Oncore. The next introduction to the Oncore family of GPS products is the HAWK Active Antenna developed by Motorola. The HAWK antenna is a general purpose GPS active antenna designed to meet the stringent environmental and performance needs of the automotive market place. The 3Vdc version of the HAWK GPS Antenna is designed to operate with Motorola's M12 Oncore GPS receiver, as well as many other 3 Vdc GPS receivers from other manufacturers

The Oncore HAWK Active 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 offer significantly enhanced performance while operating in a variety of GPS environments. Furthermore, the magnetic and blind hole direct mounting scheme make the antenna suitable for a number of different installation configurations.

Add performance, reliability, responsive integration support, and the long-term commitment you've come to expect from Motorola, and you will understand why Oncore is the quality choice.

GPS PRODUCT  
BUSINESS

## Oncore “HAWK” Active GPS Antenna

<b>General Characteristics</b>	Architecture	<ul style="list-style-type: none"> <li>Passive Dielectric Patch Antenna Element</li> <li>Active Low Noise Amplifier /Filter - PWB assembly</li> <li>Top and Bottom Radome Plastic Housing Assembly</li> <li>RF Cable with connector assembly</li> </ul>
	Operating Frequency	<ul style="list-style-type: none"> <li>L1 (1575.42 MHz, <math>\pm</math> 1.02 MHz)</li> </ul>
<b>Performance Characteristics</b>	Input Impedance	<ul style="list-style-type: none"> <li>50 Ohm</li> </ul>
	VSWR	<ul style="list-style-type: none"> <li>1.5 Typical @1575.42 MHz (2.5 max)</li> </ul>
	Bandwidth	<ul style="list-style-type: none"> <li>10 to 45 MHz (<math>\pm</math> 3 dB points)</li> </ul>
	Polarization	<ul style="list-style-type: none"> <li>Right Hand Circular</li> </ul>
	Azimuth Coverage	<ul style="list-style-type: none"> <li>360 degrees</li> </ul>
	Elevation Coverage	<ul style="list-style-type: none"> <li>0 degrees to 90 degrees</li> </ul>
	Gain Characteristics of Antenna Element	<ul style="list-style-type: none"> <li>+2.0 dBic minimum at zenith</li> <li>-10 dBic minimum at 0 degrees elevation</li> </ul>
	Filtering	<ul style="list-style-type: none"> <li>-30 dB @ 1675 MHz (typical)</li> <li>-30 dB @ 1475 MHz (typical)</li> </ul>
	Gain 3 Vdc version	<ul style="list-style-type: none"> <li>24 dB (typical, including 5 dB cable loss)</li> </ul>
	Noise Figure	<ul style="list-style-type: none"> <li>&lt;1.8 dB (typical), 2.2 dB (max)</li> </ul>
Dynamics	<ul style="list-style-type: none"> <li>Vibration: 7.7 G's (Mil Std 810E)</li> <li>Shock: 100 G's (Mil Std 810E)</li> </ul>	
<b>Electrical Characteristics</b>	Power Requirements	<ul style="list-style-type: none"> <li>3 <math>\pm</math> 0.2 Vdc for GC3LPxxxxx models</li> </ul>
	Power Consumption 3 Vdc version	<ul style="list-style-type: none"> <li>16 (typical), 20 mA (max)</li> </ul>
<b>Physical Characteristics</b>	Dimensions	<ul style="list-style-type: none"> <li>38 x 34 x 13.2 mm <math>\pm</math>0.5 mm</li> </ul>
	Weight	<ul style="list-style-type: none"> <li>&lt;89 grams (including 5m cable and connector)</li> </ul>
	Mount	<ul style="list-style-type: none"> <li>Magnetic and Blind Holes (2)</li> <li>Taplite Screw size of 2.6 x 5 mm (1 mm thick base plate)</li> </ul>

<b>Environmental Characteristics</b>	Plastic Color 3 Vdc version	<ul style="list-style-type: none"> <li>Black</li> </ul>
	Cable Connector	<ul style="list-style-type: none"> <li>BNC (straight)</li> <li>SMA (straight)</li> <li>MMCX (right angle)</li> </ul>
	Antenna to Receiver Interconnection	<ul style="list-style-type: none"> <li>Single shield RG-316 type coaxial cable 5 meters (15 ft.) long (See connectors above)</li> </ul>
	Operating Temperature	<ul style="list-style-type: none"> <li>-40°C to +100°C</li> </ul>
	Storage Temperature	<ul style="list-style-type: none"> <li>-40°C to +100°C</li> </ul>
	Thermal Testing	<ul style="list-style-type: none"> <li>Cycled 600 hours at -40°C and +100°C</li> </ul>
	UV Radiation	<ul style="list-style-type: none"> <li>Sunshine Carbon Arc System - JIS D0205</li> </ul>
<b>Miscellaneous</b>	Salt Spray Test	<ul style="list-style-type: none"> <li>320 Hours, Spray 5% NaCl solvent at +35°C</li> </ul>
	Immersion Test	<ul style="list-style-type: none"> <li>60 minutes at 1 meter</li> </ul>
	Options	Special order models: <ul style="list-style-type: none"> <li>Substrate (no plastic) version with cable and connector</li> </ul>

Please note that all values above are reference to 25°C unless indicated otherwise.

## APPENDIX I

### HAWK GPS Antenna Part Numbers:

Motorola Part Number/Type of Antenna –	Motorola Model No:	Operating Voltage	Mounting Style	Length of Cable (mm)	Connector Style
01R43913L01 Active- 3V dc	GC3LP272CA	3.0	Magnet/ Direct	5000 ± 70	BNC St.
01R43913L03 Active-3V dc	GC3LP273CA	3.0	Magnet/ Direct	5000 ± 70	St. SMA
01R43913L04 Active-3V dc	GC3LP279CA	3.0	Magnet/ Direct	5000 ± 70	MMCX Rt. angle
01R43913L05 Active-3V dc	GC3SU2790A	3.0	Substrate	5000 ± 70	MMCX Rt. angle