ethertronics
shaping antenna technology

PRODUCT Data Sheet: GPS

Part No. M420110

Savvi™ Embedded Ceramic GPS Antenna

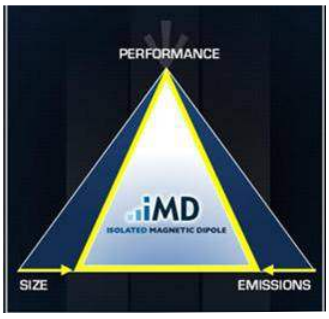
1.575 GHz

Ethertronics' Savvi series of Isolated Magnetic Dipole™ (IMD) antennas deliver on the key needs of device designers for higher functionality and performance in smaller/thinner designs. These innovative antennas provide compelling advantages for GPS enabled cell phones, navigation equipment, and other mobile devices.

TECHNOLOGY ADVANTAGES

Real-World Performance and Implementation

Ceramic antennas may look alike on the outside, but the important difference is inside. Other antennas may contain simple PiFA or monopole designs that interact with their surroundings, complicating component layout or changing performance with use position. Ethertronics' antennas utilize patented IMD technology to deliver a unique size and performance combination.



Stays in Tune

High RF isolation means IMD antennas resist detuning regardless of usage position. And one standardized part can typically be placed in a variety of locations.

Smallest Effective Size

IMD antennas require a smaller keep-out area for surrounding components, leading to a smaller effective size.

High Performance

IMD's high efficiency and simple design rules lower development risk and speed time-to-market without sacrificing performance. Plus, high RF selectivity eliminates the cost and space for band-pass circuitry.

More information is available on our Website at www.ethertronics.com/resources/.

KEY BENEFITS

DESIGN ADVANTAGES

Best in Class Performance—Smallest Occupied Volume

- Powerful combination of 63% peak efficiency and simple implementation guidelines.
- Minimal ground clearance and component "keep out" area. Very low component height.
- High selectivity eliminates the need for additional filters and frees up board space.

High Tolerance to Frequency Shifts

- IMD's high RF isolation resists antenna de-tuning that can otherwise impair reception.
- Single part works for various PCB sizes and layouts.

Quicker Time-to-Market

- Fewer design changes.
- Simpler implementation—no matching networks.

RoHS Compliant

- Antennas comply with appropriate RoHS Directives.

END USER ADVANTAGES

Superior Range

- Greater antenna efficiency means longer range and a better end user experience.

Exceptional Coverage

- Better coverage results in improved performance while inside buildings, cars or other areas where signal reflection occurs.

Faster Acquisition Times

- Users experience faster signal acquisition for GPS readings.

SERVICE AND SUPPORT

Extensive RF Experience

- Our Savvi ceramic antennas are supported by extensive application notes, and when needed, by the expertise of RF engineers who have integrated hundreds of antenna designs into wireless devices.

Global Operations & Design Support

- Ethertronics' global operations encompass an integrated network of design centers that provide local customer support.

ETHERTRONICS
9605 Scranton Road, Suite 300 | San Diego, CA 92121 - USA | www.ethertronics.com
tel +(1) 858.550.3820 | fax +(1) 858.550.3821 | contact: info@ethertronics.com

PRODUCT: GPS Antenna

Ethertronics' Savvi™ GPS Embedded Antenna Specifications

Ethertronics produces a wide variety of standard and custom antennas to meet user needs.
Below are the typical specs for a GPS application.

Electrical Specifications

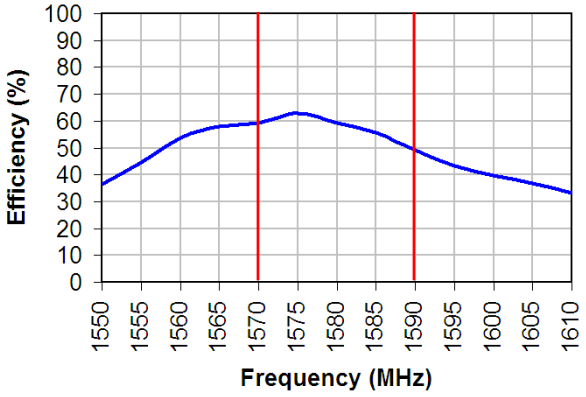
Typical Characteristics
(inside an enclosure)

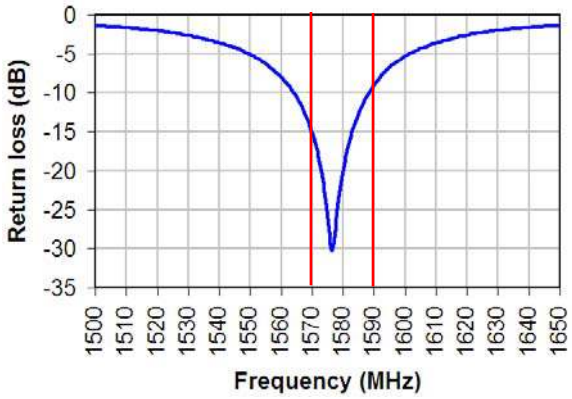
GPS Antenna	1.575 GHz
Peak Gain	1.1 dBi
Average Efficiency	59%
VSWR Match	1.9:1 max
Feed Point Impedance	50 ohms unbalanced
Power Handling	.5 Watt cw
Polarization	Linear

Mechanical Specifications

Size	4.00x2.00x1.08mm
Mounting	Surface mount
Packaging	Tape & Reel

Typical Efficiency, Return Loss

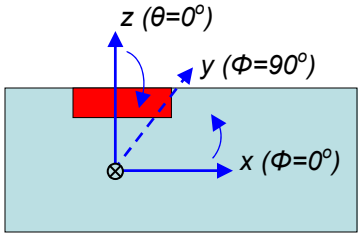




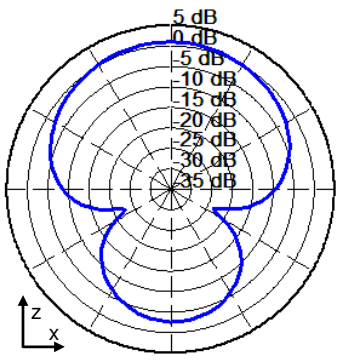
Antenna Radiation Patterns

1.575 GHz Band

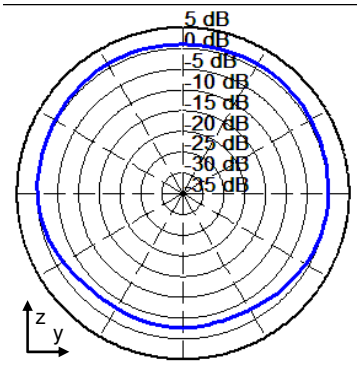
Typical Performance
Ethertronics' Test Board
PCB: 40x80mm



Phi = 0° Plane



Phi = 90° Plane



Theta = 90° Plane