

## Antenna Info Exhibit

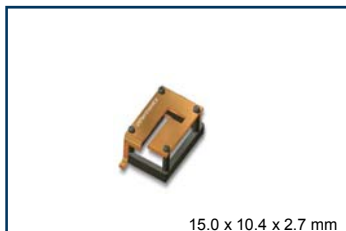
Antennas: Isolated Magnetic Dipole antenna

Manufacturer: Ethertronics

Model number: GB04001

Maximum measured gain: 2.54 dBi (see next page for maximum NWEMC data)





GB04001 Internal Antenna

Ethertronics introduces its new, high performance GB series internal (embedded) antennas - part of the Ethertronics' line of Isolated Magnetic Dipole™ (IMD) solutions for use in wireless devices. The antenna, designed for use in dual band WLAN or Bluetooth applications, leverages our proprietary technology combining high performance in a small form-factor for quick and easy integration.

The GB series antenna is ideally suited for small, space-constrained wireless devices, where size, performance and range are critical. Like all of Ethertronics' products, the GB is ready for high volume manufacturing and can be ramped quickly to meet the volume requirements of any project.

Ethertronics' exclusive and patented Isolated Magnetic Dipole antenna technology is increasingly the choice of discriminating RF Engineers and Product Designers looking for:

#### Unparalleled Performance

- High efficiency, omnidirectional radiation patterns.
- Superior signal strength.
- Increased range over existing internal antenna solutions.
- Increased range and battery life / talk time.

#### Outstanding Isolation

- Proprietary IMD design allows multiple antennas to be placed closer together without performance compromises.
- Performance Impact of head and hand is significantly reduced.
- Antennas are much less affected by surrounding componentry than competing technologies.
- Perfect for devices with multiple antennas and diversity applications.

#### Design Flexibility

- Smaller form factors for quick and easy placement in complex environments.
- Smaller ground plane requirements than competing solutions.
- Reduced interaction makes integration easier than ever.

### Advantages:

#### Proven Performance, Standard Design

- Used by major OEM's around the world
- No Design issues or ramp-up hassles

#### Super-Small Package, Robust Support

- Ultra-Low profile—only 2.7mm
- Minimal ground plane requirements and keep-out areas
- Solid mechanicals for use in any device

#### Multi-Band Design, Application Flexibility

- Covers both 2.4 and 5.0GHz bands
- Support for 802.11a, b, g and Bluetooth

#### Quicker Time to Market

- Ready for high volume manufacturing
- Quick production ramp, high reliability

### Potential Applications

**Cell Phones • Notebooks • PDA's**  
**Industrial Handhelds • Access Points**  
**Printers • Wireless Headsets**



**WLAN / Bluetooth**

#### Ethertronics

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# GB Series—2.400-2.485 / 5.150-5.825 GHz Internal (Embedded) Antenna Specifications

## Electrical Specifications:

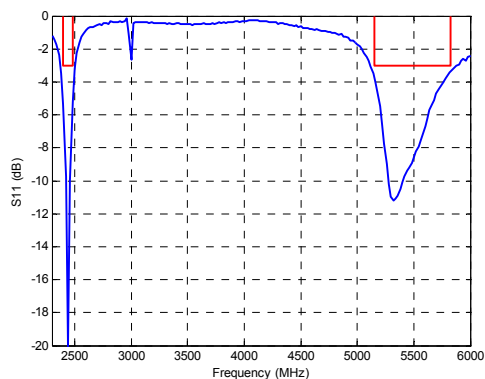
Typical Characteristics\*

Model: GB	2.400-2.485 GHz Band	5.150-5.350 GHz Band
<b>Peak Gain</b>	.7 dBi	5.8 dBi
<b>Efficiency</b>	45 %	49 %
VSWR Match	5 : 1	5 : 1
Front to Back Ratio	5 dB	7 dB
Feed Point Impedance	50 ohms unbalanced (other if required)	
Power Handling	2 Watt cw	
Polarization	Linear	
Shielding Ratio	6 to 1 (near field)	

## Mechanical Specifications:

Size	15.0 x 10.4 x 2.7 mm
Mounting	Surface mount, 3 connection points + 1 feeding point
Weight	1 gram
Packaging	Tape and reel, tray/pick and place

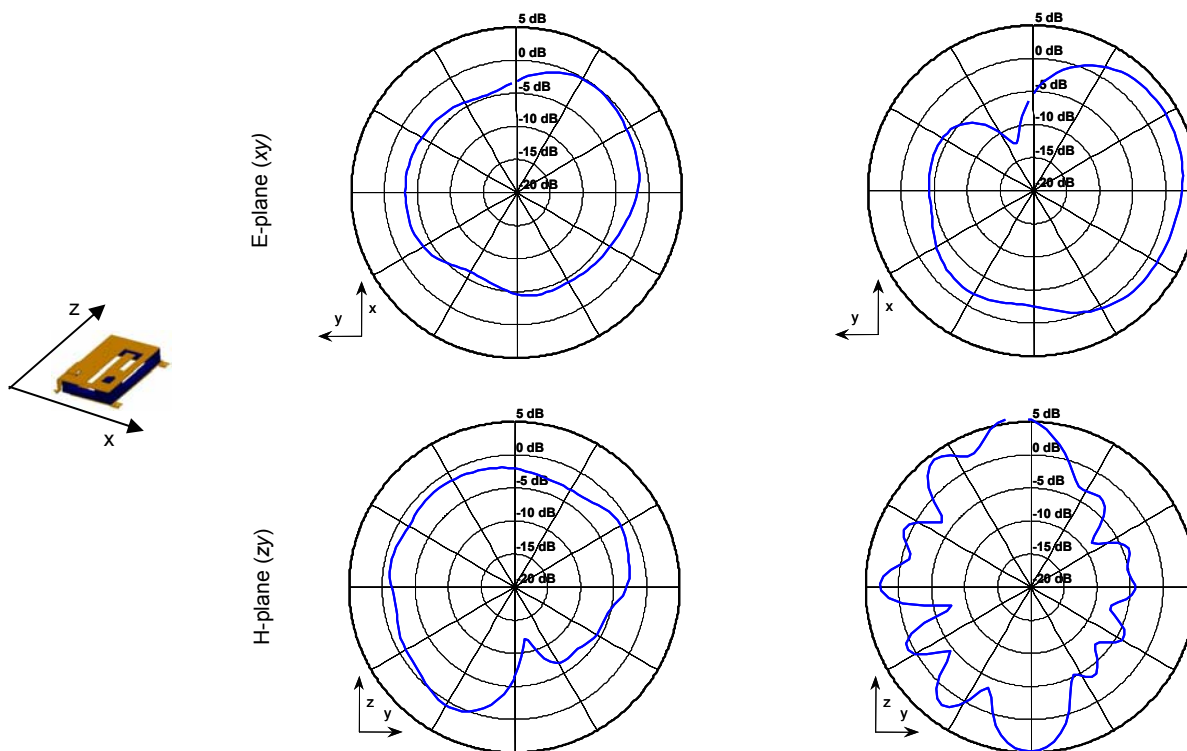
## Typical Return/Loss:



## Antenna Radiation Patterns:

2.400-2.485 GHz Band

5.150-5.825 GHz Band



Specifications subject to change without notice.

\*Actual performance results may vary based on individual device characteristics.

## ABSOLUTE GAIN DATA SHEET

EUT:	Lamar Antenna 2	Work Order:	PROT0285
Serial Number:		Date:	03/01/07
Customer:	Welch Allyn Protocol, Inc.	Temperature:	21°C
Attendees:	Steve Baker	Humidity:	30%
Project:		Barometric Pres.:	29.65
Tested by:	Rod Peloquin	Power:	N/A
		Job Site:	EV01

## TEST SPECIFICATIONS

Test Method

## TEST PARAMETERS

Antenna Height(s) (m)		Test Distance (m)	3
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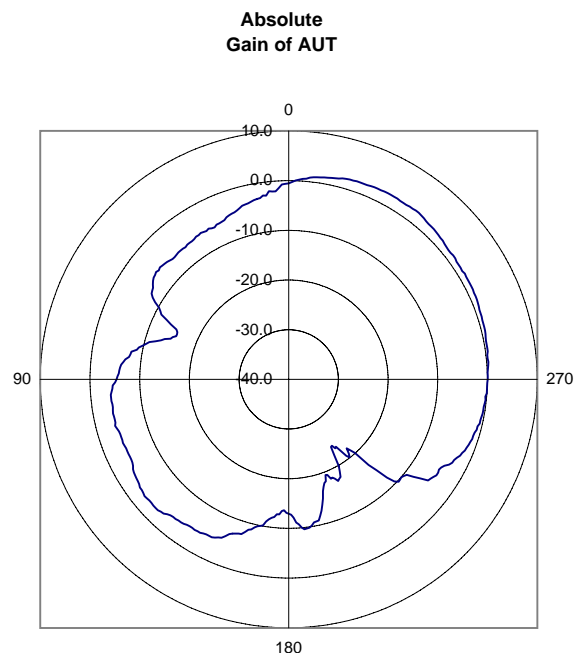
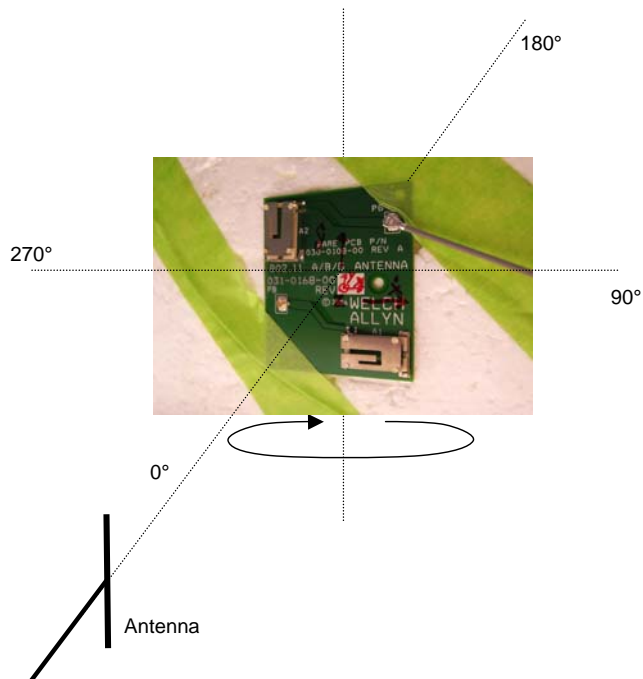
## COMMENTS

## EUT OPERATING MODES

CW from signal generator

## DEVIATIONS FROM TEST STANDARD

Run #	24	Signature
Configuration #	1	
Results		



Frequency	5600.00
Absolute Gain of Reference Antenna (dBi)	11.04
Reference Antenna Relative Gain Max (dBuV/m)	105.30
AUT Relative Gain Max (dBuV/m)	96.80
Difference (Reference Antenna - AUT) (dB)	8.50
AUT Setup Loss (dB)	0.00
<b>Maximum Absolute Gain of AUT (dBi)</b>	<b>2.54</b>
Correction Factor (Convert From Relative to Absolute Gain) (dB)	94.26
Measurement Antenna Polarity	Vertical
Antenna Under Test (AUT) Polarity	X