

EA2400 AccuWave™ 2.4 GHz Bluetooth™/802.11 Antenna

Product Description

Etenna's EA2400 AccuWave™ is an ultra-small, low-cost, low profile antenna for 802.11b/g wireless local area network (WLAN) and Bluetooth™ personal area network (PAN) applications. Available today for integration within 2.4 GHz wireless devices, the EA2400 AccuWave technology will allow Bluetooth and Wi-Fi module manufacturers to design one antenna that works in multiple devices. The AccuWave antenna product utilizes Etenna's DC-Inductive (DCL) Frequency Selective Surface (FSS) antenna technology (patents pending); its energy storage mechanism and radiation characteristics create a frequency stable antenna. Ultimately, the cost and size of AccuWave antennas will enable the development of Bluetooth or Wi-Fi standard modules that can plug into any wireless device including handsets, PDAs and laptops.

Features & Benefits

- Small form factor (10 x 14 x 2.4 mm)
- Ability to be mounted directly over board components thus saving board space; components can sit beneath the antenna
- High-volume production design using light-weight molded plastics
- Assembled using standard surface mount technology (SMT) processes (no cables or connectors required)
- Very competitive pricing
- Mounts directly to groundplanes
- No external matching components required



Figure 1. Etenna's EA2400 AccuWave antenna.

The EA2400's unique table top form factor is relatively insensitive to anything in its near-field; the frequency of operation varies little with close proximity to other components, plastic housing or users (in-situ). Varying the groundplane size from 30 mm x 20 mm to 250 mm x 250 mm causes a frequency shift of only ±15 MHz. The total shift in resonant frequency due to humidity and temperature extremes is 12 MHz. All environmental tests have been performed on a standard 45 mm x 45 mm test board, with the antenna mounted on the corner of the board (the preferred location).

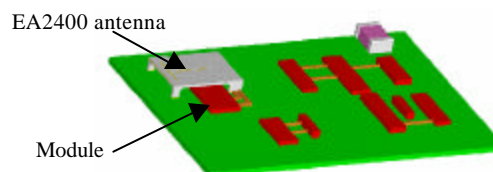


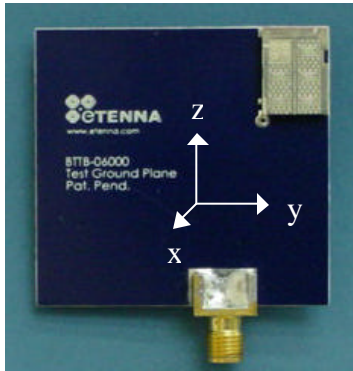
Figure 2. EA2400 antenna covering components on a printed circuit board.

Specifications

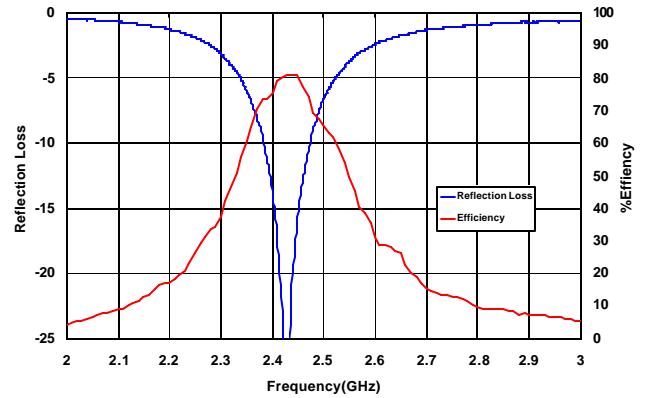
Frequency Range	2400–2485 MHz
Efficiency	50% min., 70% typical
Peak Gain	+3 dBi nominal
3 dB Bandwidth	200 MHz minimum
Voltage Standing Wave Ratio	<2.0:1 nominal
Polarization	Linear
Power Handling	2 watt cw
Feed Point Impedance	50 ohms unbalanced
Temperature	-35° C to 85° C
Size	10 x 14 x 2.4 mm
Weight	0.19 g maximum
Mounting Area Required on Printed Circuit Board (PCB)	140 mm ² total
Total Contact Area on PCB	2.5 mm ² total
Maximum Height of Components Under Antenna	1.2 mm

Note: Specs are subject to change without notice.

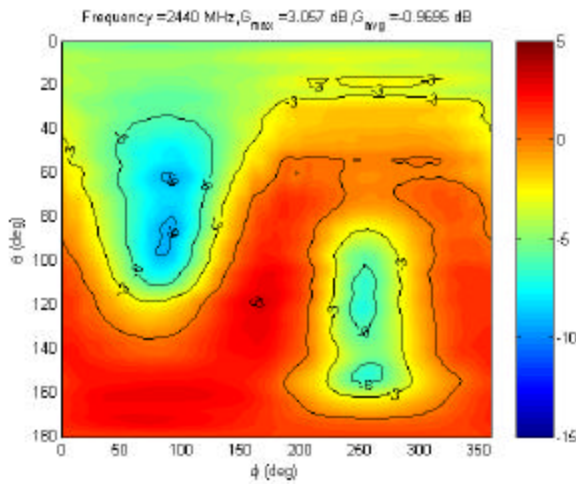
A1.1 - Antenna mounted on a 45 mm sq. test board.



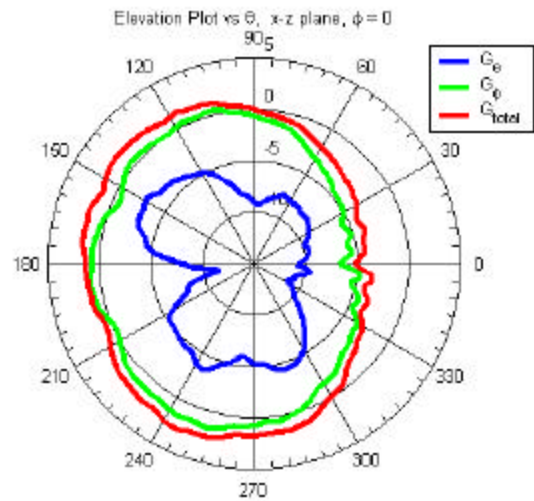
A1.2 – Efficiency and return loss.



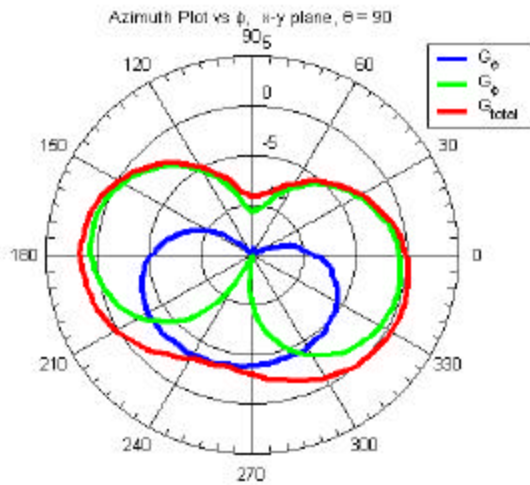
A1.3 – Total gain contour plot (dBi).



A1.4 – Elevation gain plot (dBi).



A1.5 – Azimuth gain plot (dBi).



A1.6 – Elevation gain plot (dBi).

