

Antenna Gain Information: GMN-01322

Equipment Description:

This report contains the antenna gain information for the Wi-Fi /ANT/BLE antenna for Garmin Model GMN-01322. The operational frequency of these technologies is approximately 2400-2480 MHz, and the maximum gain within the frequency band is reported.

Reported Data:

Maximum Gain for Wi-Fi/BT/BLE: -5 dBi @ 2437 MHz

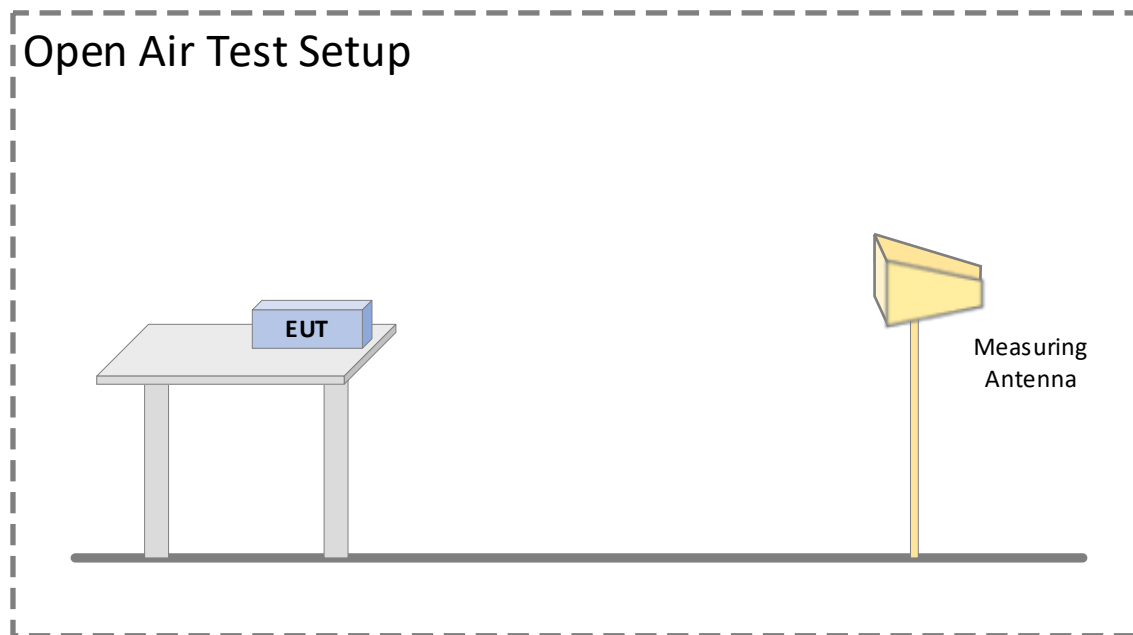
Description:

Garmin used an Open-Air Test (OAT) setup to measure the antenna gain of the EUT. A double ridge horn antenna connected to a spectrum analyzer was used to receive and measure the strength of the radiated signal. Measurements were taken with the horn antenna placed at a distance of 2 meters from the EUT. Additionally, measurements were taken with the horn antenna in both a horizontal and vertical orientation. While monitoring the radiated signal the EUT position was adjusted to find the orientation with the highest measured radiated signal strength.

A modified EUT which provided a conductive path bypassing the EUT antenna was used to connect a tuned dipole antenna with a known gain for reference. The received signal strength was measured using the reference antenna in the same configuration as the EUT antenna. A comparison between the EUT antenna and the reference antenna signal strength were used to calculate the final EUT antenna gain.

Setup:

The accuracy of the OAT setup was evaluated by measuring the signal strength at the specified test distance, as well as twice the distance. The drop in signal strength measured between distances were then compared with the theoretical 6 db power change expected.



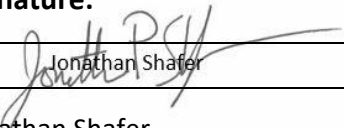
Equipment List:

Signal Hound BB60C USB Spectrum Analyzer
Double Ridge Guide Horn Antenna (EMCO M/N 3115)
Reference Dipole Antenna (Dynastream Innovations M/N P00089 Rev. 2.0)

Additional Information:

- Photos of the antenna are provided in a separate exhibit: [GMN01322 Internal Photos](#)
- The Photos include a scale for dimensions

Signature:


Jonathan Shafer

Jonathan Shafer
Senior Design Certification Engineer
Garmin International