

Antenna Exhibit

FCC ID: 2AL2U-020002

Model: ET71001

Manufacturer: etectRx, Inc .
747 SW 2nd Ave., Suite 365T
Gainesville, FL 32601

General Information:

Applicant: etectRx, Inc.

Antenna description: The antenna used on the Reader is a based loaded monopole type made from a short piece of wire. The antenna meanders around the internal structure of the Reader.

Lowest and Highest Operating Frequency: 2402 to 2480 MHz

The Reader uses BLE modulation in the 2.4 GHz ISM band.

Gain Measurement Procedure:

System Check

An open-air test site in rural Gilchrist County Florida was used to make all the measurements.

First an antenna of known characteristics was used to validate the receive system. A tuned dipole antenna having a gain of 2 dBi was fed with a 3 dBm RF signal at 2450 MHz. 3 dBm was used as the loss in the coaxial cable was 3 dB. This gave a net 0dBm to the dipole antenna.

The dipole was mounted on a Styrofoam table 80cm tall and 3 meters from the receiving system. The receiver used was an Agilent CXA N9000A spectrum analyzer. The receiving antenna was a broadband Vivaldi antenna with a gain of 9 dBi over the frequency range of 2402 to 2480 MHz. The receiving antenna was scanned over different heights to capture the peak field strength.

The Friss free space equation was used to calculate the field strength of 0dBm/1mW conducted power fed to the dipole.

Comparing this to the field strength measured on the receiving system and compensating for the coax losses and the receiving antenna's gain yielded.

Frequency (MHz)	2450
Measured gain in dBi	2

Reader Antenna Measurements

This same procedure was used to make measurements on the product with its integrated antenna. In this case the EUT was rotated continuously, and the receiver placed in max hold to capture the peak radiated field strength. Test software was used allow individual channels to be selected.

First the RF conducted output power was measured on 2402, 2440, and 2480.

Frequency (MHz)	2402	2440	2480
Conducted RF Power Output dBm (mW)	-5.34	-4.37	-3.26 (0.47)

Then, radiated measurements were made and compared to the field strengths calculated, the resulting antenna gain (loss) is tabulated in the table below.

Frequency (MHz)	2402	2440	2480
Measured gain in dBi	-9.9	-10.4	-10.7



Figure 1 Antenna stand-alone

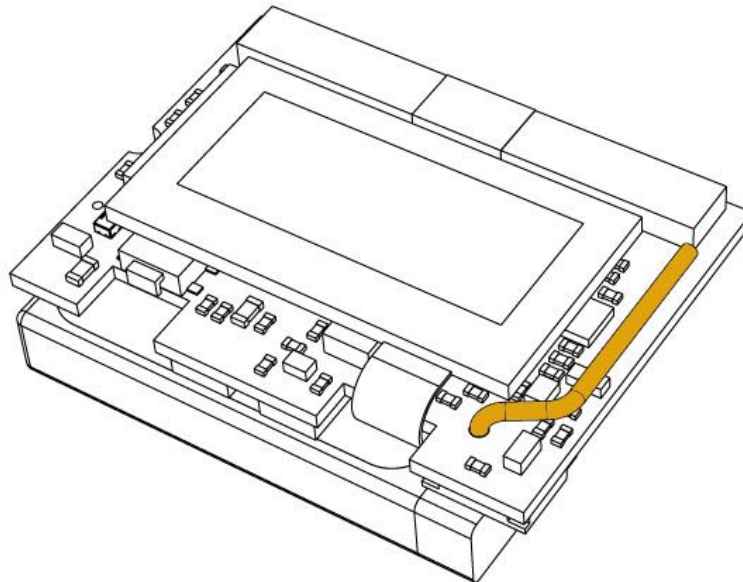


Figure 2 Mechanical Drawing of Antenna as attached to PCB.

Measurements made by:

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Document prepared by:

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