Model BCM00700U- Antenna Specification

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Summary

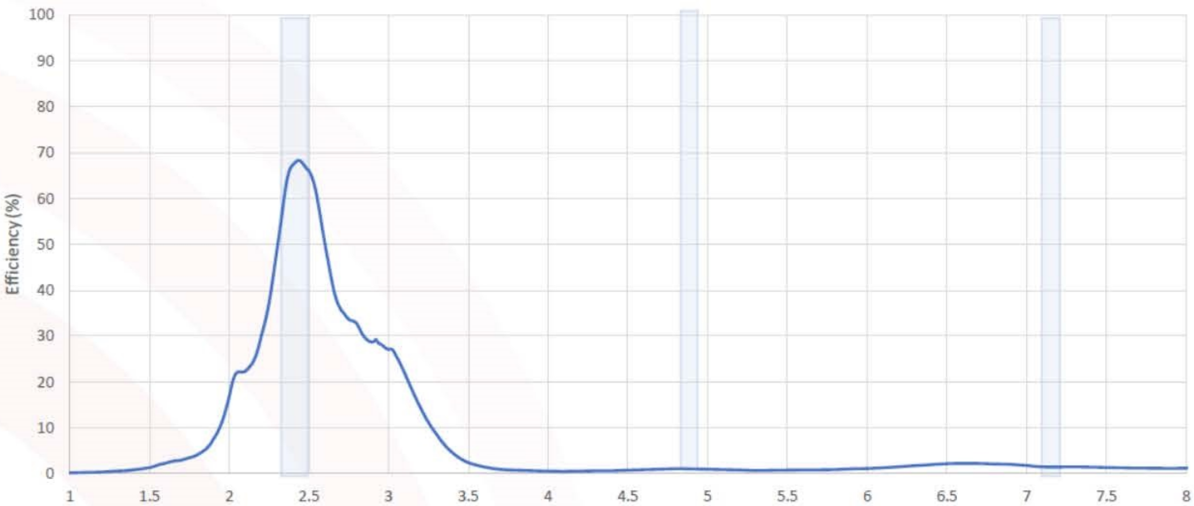
Antenna	Antenna name	Mechanical	Type	Frequency Response
ANT	2.4GHz	PCB on-board	Monopole	2400 – 2500 MHz

Performance

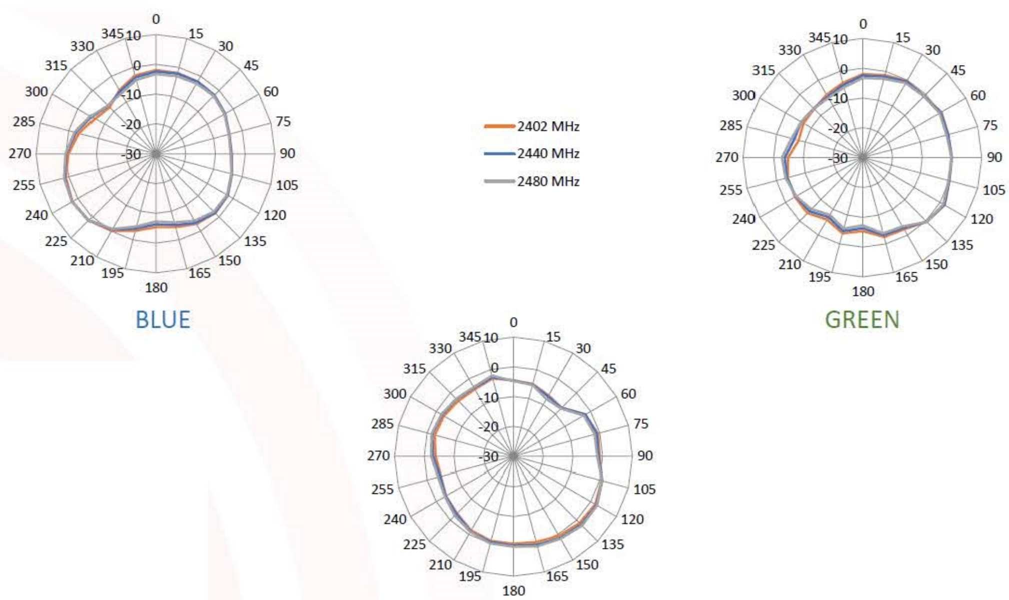
Parameters	Performance	
Frequency (MHz)	2400	2482
Efficiency (%)	67.5%	68.2%
Peak Gain (dBi)	3.0	3.4
Impedance (ohms)	50	50
Polarization	Linear	Linear
Maximum Input Power (W)	5	5

Passive Efficiency

2.4GHz Antenna



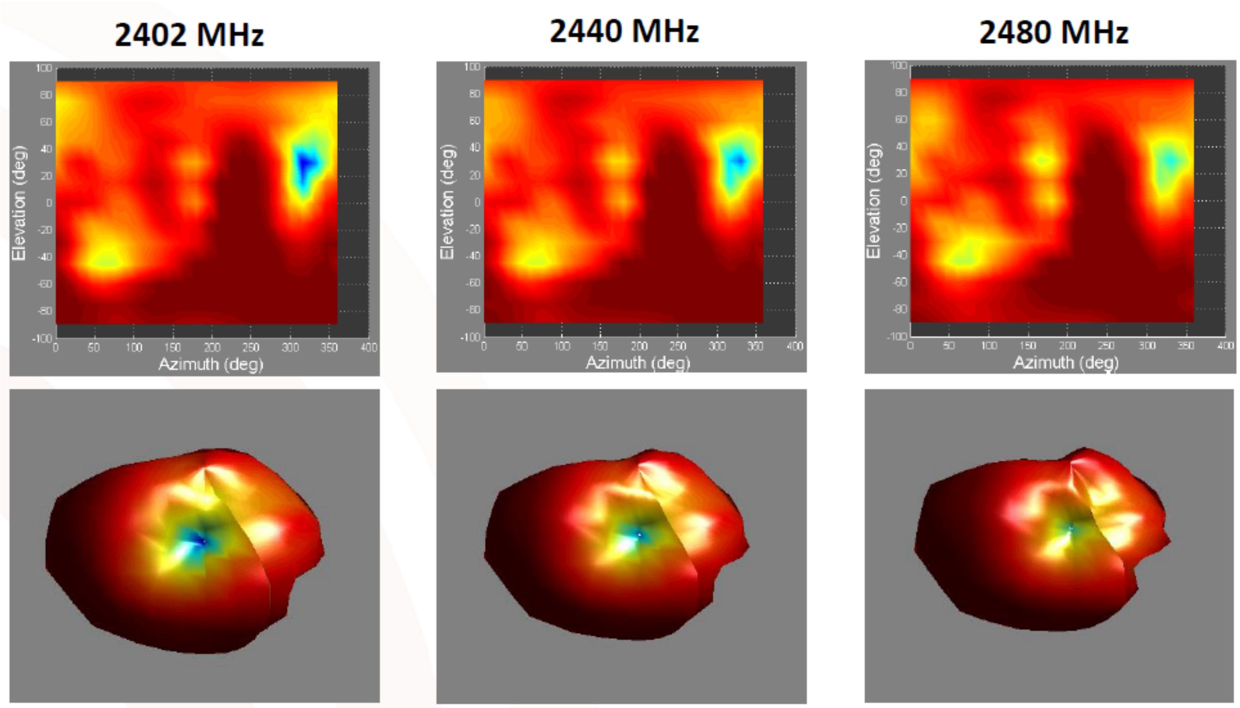
Radiation Patterns



CONFIDENTIAL

2-D / 3-D Plots

2.4GHz Antenna



Antenna Measurement Procedure

Measurement Procedure

Antenna characterization is performed using industry standardized test methods. These are described in the Wireless Device Over-the-Air Performance CTIA test plan, current version V3.5.9.

FIGURE A-25 TYPICAL SETUP FOR A COMBINED-AXES SYSTEM

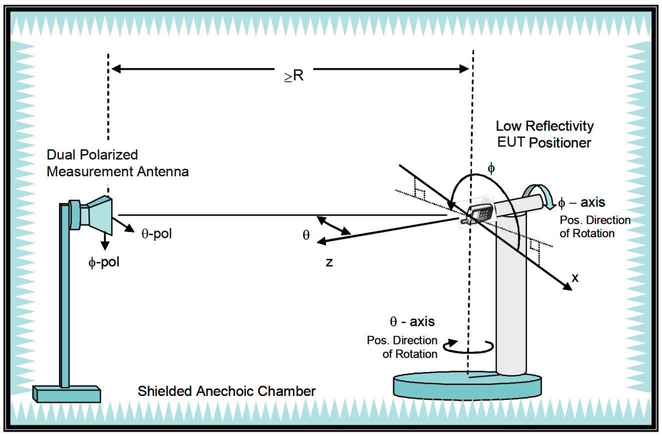


Figure A-26 below shows the typical setup using the distributed-axes system. In this configuration, the phi and theta angles are traversed separately by the distributed positioners in the chamber.

Calibration Information

The system calibration process is described in CTIA OTA Test Plan, see extract from Section 4 below.

Figure 4-2 shows a typical real world configuration for measuring the path loss. In this case, a reference antenna with known gain is used in place of the theoretical isotropic source. The path loss may then be determined from the power into the reference antenna by adding the gain of the reference antenna. That is:

EQUATION 4.2

$$P_{ISO} = P_{RA} + G_{RA}$$

where P_{RA} is the power radiated by reference antenna, and G_{RA} is the gain of the reference antenna, so that:

EQUATION 4.3

$$PL = P_{RA} + G_{RA} - P_{TE}$$

FIGURE 4-2 TYPICAL CONFIGURATION FOR MEASURING PATH LOSS

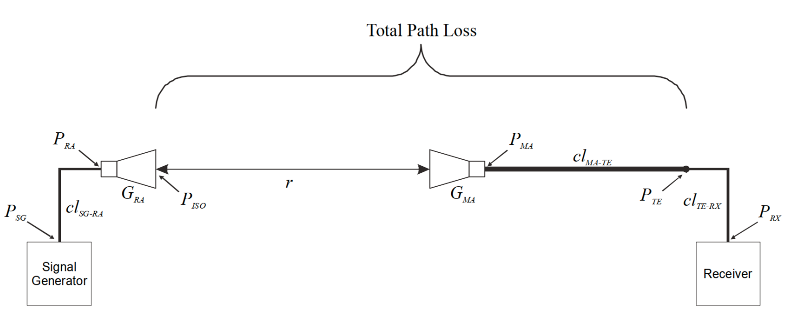
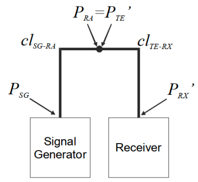


FIGURE 4-3 CABLE REFERENCE CALIBRATION CONFIGURATION



where P_{RX}' is the power measured at the receiver during the cable reference test, and P_{RX} is the power measured at the receiver during the range path loss measurement in Figure 4-2. Note that this formulation assumes that the effects of the reference antenna VSWR are accounted for in the gain of the reference antenna. For more information on this subject, refer to [1]. Thus, the path loss is then just given by:

EQUATION 4.5

$$PL = G_{RA} + P_{RX}' - P_{RX}$$

Equipment Details

Anechoic chamber and spherical positioning system complete with measurement antenna, compliant to CTIA test methods. In addition to the OTA chamber, an external power meter and spectrum analyzer are used, together with a PC for postprocessing of data.