



Comcast XHV1 Antenna Test Report

Date : Jul. 28, 2019
Prepared by : Cell Chiou

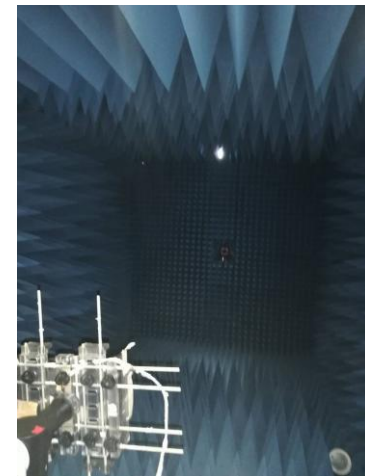
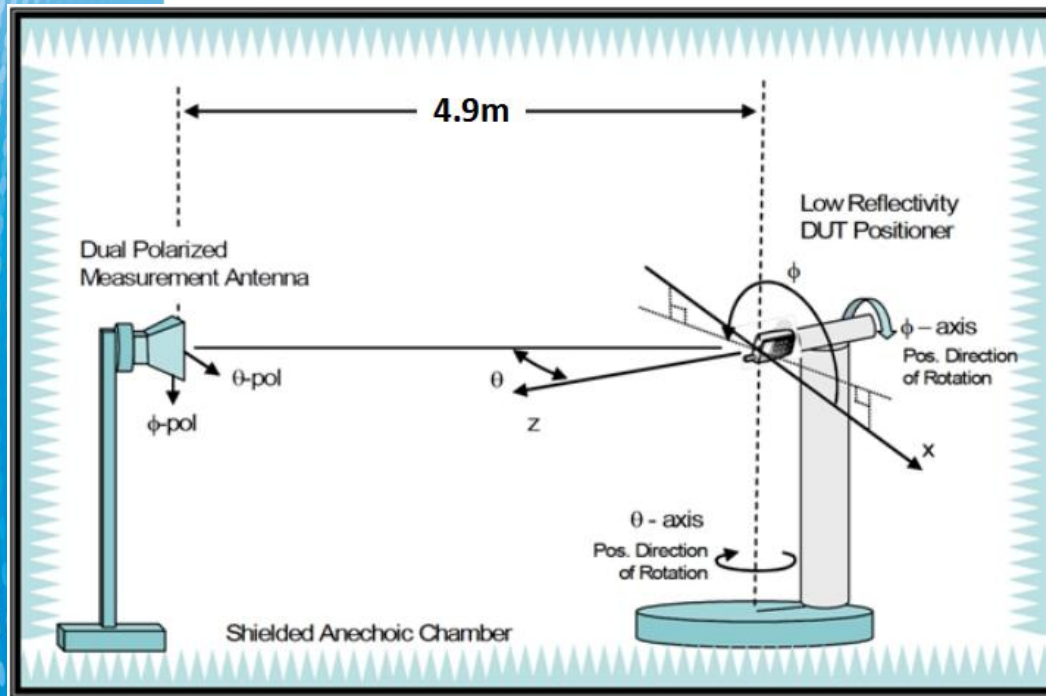


Test Information

Item	Description
Brand Name	Comcast
Equipment	Wireless Chime
Test Location	8F, No. 3-1, YuanQu St. Taipei, Taiwan 115 R.O.C.
Test Condition	Radiation
Test Engineer	Cell Chiou
Test Environment	ETS-Lindgren AMS-8500 Antenna Measurement Chamber
Test Date	Jul. 13, 2018 ~ Jul. 27, 2019

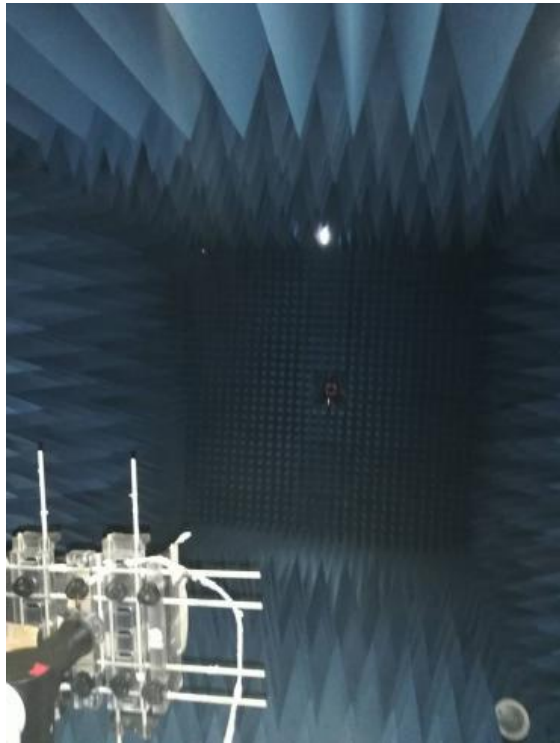
Test Configuration

ETS-Lindgren AMS-8500 antenna measurement system with a size of $7.32(L) \times 3.66(W) \times 3.66(H) \text{ m}^3$ is used for antenna performance test, which is based on the great-circle test method defined by CTIA. The multi-axis positioning system (MAPS) rotates the DUT around two orthogonal axes for full spherical coverage.



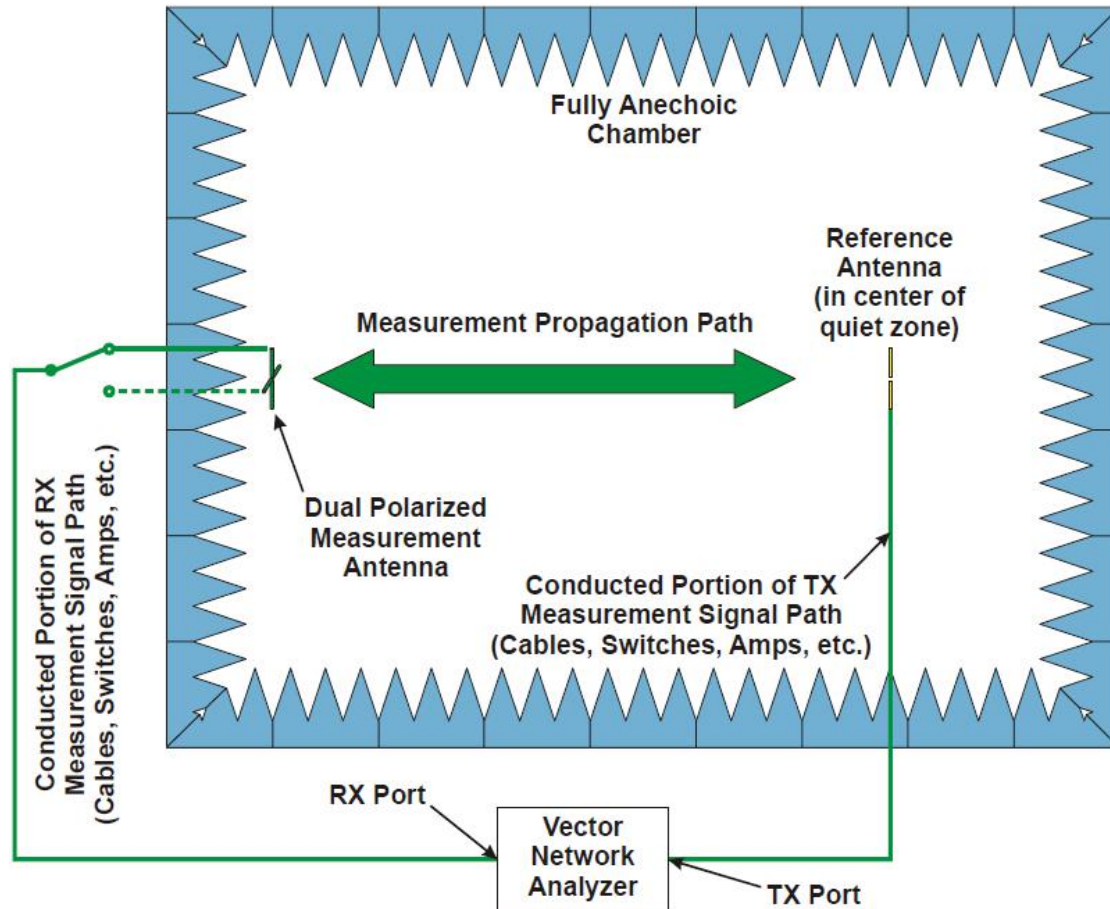
Test Setup & Procedure

1. Fix the DUT on the dielectric support structure and connect the feeding cable to the antenna used for test
2. Set measurement parameters such as frequency range and sampling angle
3. Perform test and then get far-field data (radiation pattern, gain, efficiency)
4. Repeat test procedure for other antennas



Test Equipment & Calibration

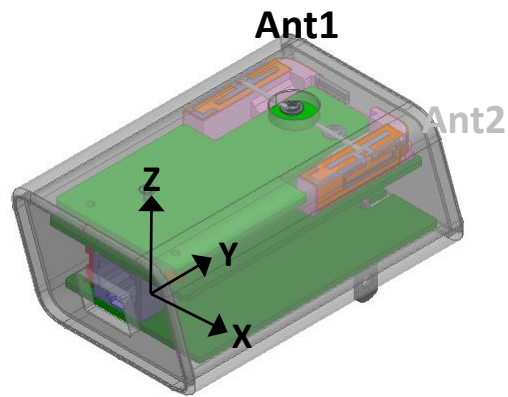
Network analyzer and reference antennas are used for calibration. Path loss and cable loss for different frequency bands can be checked and calculated.



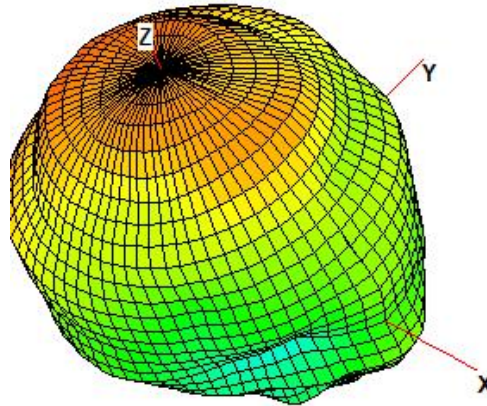
Test Equipment & Calibration

Instrument	Brand	Characteristics	Model No.	Serial No.	Calibration Due Date
Precision Sleeve Dipole	ETS-Lindgren	700 MHz ~ 900 MHz	3126-700	00169715	Jan. 21, 2020
Precision Sleeve Dipole	ETS-Lindgren	900 MHz ~ 1000 MHz	3126-900	00169592	Jan. 21, 2020
Precision Sleeve Dipole	ETS-Lindgren	1400 MHz ~ 1700 MHz	3126-1550	00164599	Jan. 21, 2020
Precision Sleeve Dipole	ETS-Lindgren	1700 MHz ~ 2000 MHz	3126-1850	00169588	Jan. 21, 2020
Precision Sleeve Dipole	ETS-Lindgren	2000 MHz ~ 2300 MHz	3126-2150	00169593	Jan. 21, 2020
Precision Sleeve Dipole	ETS-Lindgren	2300 MHz ~ 2700 MHz	3126-2500	00169597	Jan. 21, 2020
Precision Sleeve Dipole	ETS-Lindgren	5000 MHz ~ 6000 MHz	3126-5500	00169728	Jan. 21, 2020
Horn Antenna	SCHWARZBECK	1 GHz ~ 18 GHz	BBHA 9120D	BBHA 9120D-1294	Jan. 07, 2020
EMQuest Antenna Measurement Software	ETS-Lindgren	Control chamber system	EMQ-100	1437	Non-Calibration Required

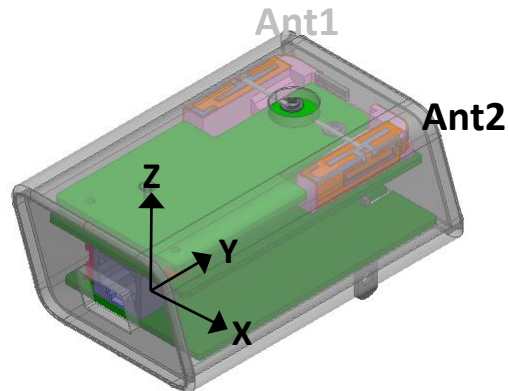
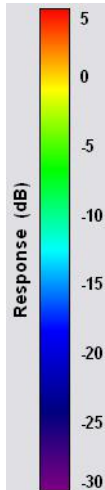
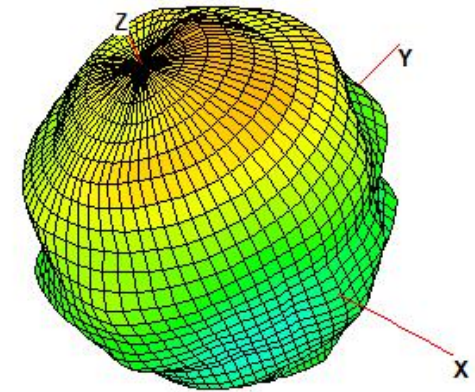
Radiation Pattern



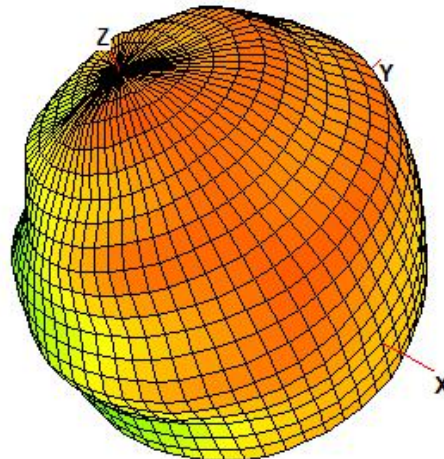
2.4G pattern



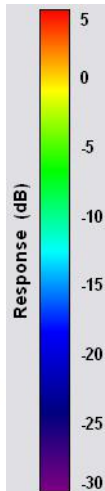
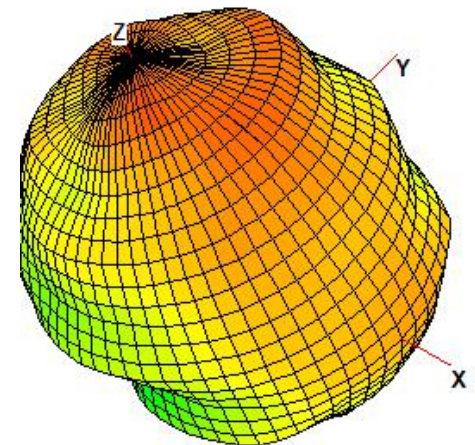
5G pattern



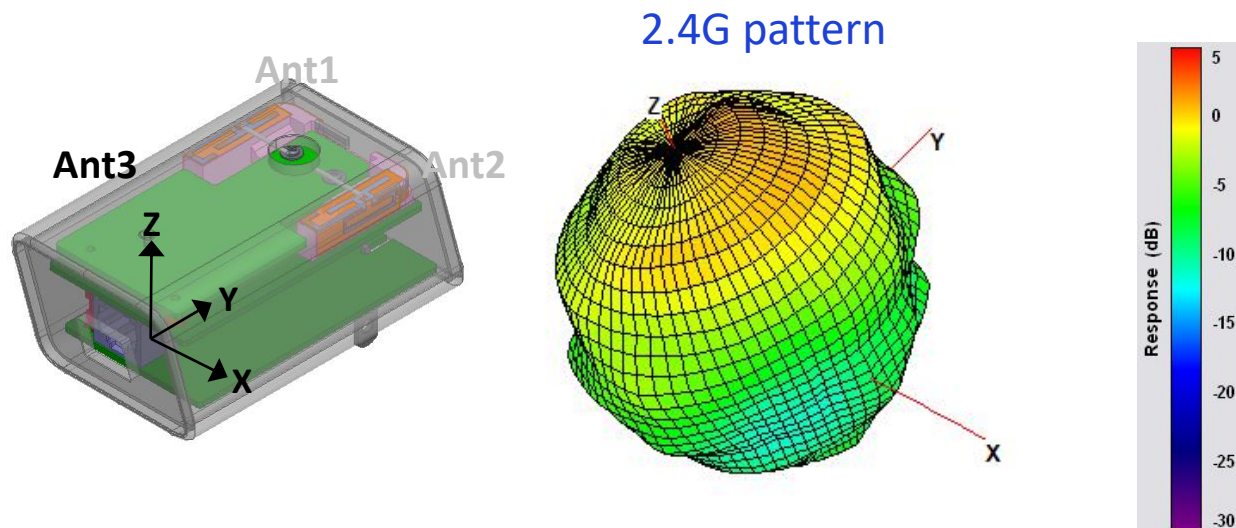
2.4G pattern



5G pattern



Radiation Pattern



Ant No.	Operating Band	Type	Material	Feeding
Ant1 WiFi 1	2400 ~ 2500 MHz 5150 ~ 5850 MHz	Dipole	FPCB	Cable
Ant2 WiFi 2	2400 ~ 2500 MHz 5150 ~ 5850 MHz	Dipole	FPCB	Cable
Ant3 BT	2400 ~ 2500 MHz	Monopole	Printing	Trace/Cable

Peak Gain & Efficiency

Ant 1 Performance		
Frequency (MHz)	Gain (dBi)	Efficiency (%)
2400	3.31	64.5
2450	3.41	66.9
2500	3.25	64.3
5150	3.22	56.1
5500	3.65	62.1
5850	3.12	55.7

Ant 2 Performance		
Frequency (MHz)	Gain (dBi)	Efficiency (%)
2400	3.66	67.8
2450	3.70	69.7
2500	3.55	66.4
5150	3.71	58.4
5500	3.70	63.0
5850	3.53	58.8

Ant 3 Performance		
Frequency (MHz)	Gain (dBi)	Efficiency (%)
2400	0.5	29.1
2450	0.9	29.7
2500	1.0	30.5

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