

2ABGH-RC609LTM Antenna

APPLICANT : Reliance Communications LLC

PRODUCT NAME : Orbic Q10

MODEL NAME : RC609L

BRAND NAME : Orbic

1. Test Laboratory

1.1 Notes of the Test report

This report shall not be reproduced in full or partial. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of applicable standards stated above.

1.2 Test facility

GTS1800 Microwave Anechoic Chamber : testing frequency ranges from 600MHz to 6GHz.

1.3 Testing Location

Company: Shenzhen 3Good Wireless Communication Co., Ltd

Address: Room501-508,jinfulaiBuilding,No.49-1,DabaoRoad,BaoanDistrict,
Shenzhen

Contact: Wu Chou

Telephone: 13554956959

E-mail: zhouwu-rfrd@3good.net.cn

1.4 Laboratory Environment

Temperature	Min.= 19°C, Max.=25°C	
Relative humidity	Min.=40%, Max.=72%	
Shield effect	0.6-7GHz	>100dB
Ground resistance	<0.5Ω	

2. General Description of Equipment under Test

2.1 Applicant and Manufacturer

OTA Test Report

Applicant Name	Reliance Communications LLC
Applicant address	91 Colin Drive, Unit 1, HOLBROOK, New York 11741, United States
Manufacturer Name	Unimaxcomm
Manufacturer address	35F, HBC HuiLong Center Building-II Minzhi Street, Longhua, Shenzhen, P.R. China 518110

2.2 General information

EUT Description	
Product Name	Orbic Q10
Model	RC609L
HW Version	V1.0
SW Version	ORB609L_V1.2.9_BT-M-ST
Antenna Type	FPC Antenna
Antenna Manufacturer	Shenzhen 3Good Wireless Communication Co., Ltd
Test Frequency	600MHz-2700MHz

2.3 Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test Method: **ANSI/IEEE Std 149-2008**

3. Test Conditions

3.1 Test Configuration

The method is used to measure the antenna 3D GAIN of EUT in OTA qualified anechoic chamber. Equipment Under Test (EUT) geometry centre vertical projection at the centre of platform, the distance from EUT to measurement antenna is 1m.

3.2 Test Measurement

Spherical coordinate system

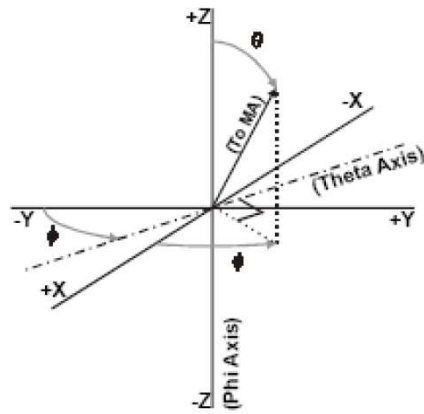
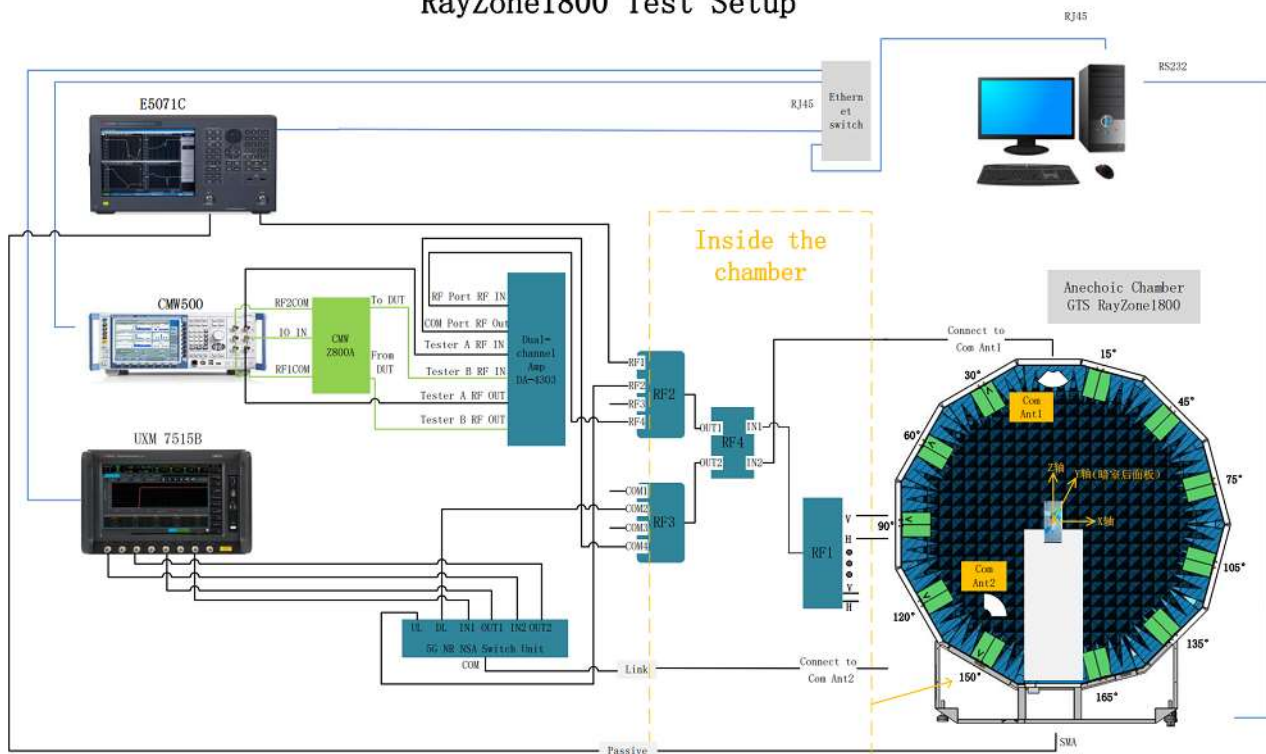


Figure 1 Test coordinate system

Note: Theta is from 0-180degree. Phi is from EUT and record the Date, the step of rotation is 15 degree.

Test Setup

RayZone1800 Test Setup



4. Test Results

4.1 Antenna Effi.& Max. Peak Gain

4.1.1 Main Antenna

Main Antenna RF1 (B5/8+MHB)							
frequency 频率(MHz)	gain 增益 (dBi)	efficiency 效率(dB)	efficiency 效率(%)	frequency 频率(MHz)	gain 增益 (dBi)	efficiency 效率(dB)	efficiency 效率(%)
800	-4.39	-7.35	18.4	1700	1.15	-3.55	44.15
810	-4.05	-6.57	22.03	1720	1.67	-3.17	48.16
820	-3.26	-6.36	23.11	1740	0.9	-3.59	43.71
830	-3.42	-6.52	22.29	1760	1.21	-3.44	45.34
840	-2.23	-5.18	30.37	1780	1.18	-3.48	44.87
850	-2.14	-5.07	31.11	1800	1.25	-3.52	44.47
860	-2.19	-5.65	27.21	1820	1.06	-3.63	43.35
870	-3.91	-5.53	27.99	1840	0.99	-3.46	45.04
880	-3.67	-5.69	26.99	1860	1.04	-3.33	46.46
890	-4.08	-6.13	24.36	1880	0.85	-3.64	43.3
900	-3.95	-6.03	24.97	1900	1.08	-3.3	46.81
910	-3.99	-6.36	23.11	1920	0.72	-3.38	45.88
920	-3.76	-6.16	24.23	1940	0.57	-3.49	44.74
				1960	0.72	-3.43	45.39
				1980	0.9	-3.12	48.7
				2000	0.55	-3.38	45.89
				2020	0.22	-3.48	44.84
				2040	1.17	-3.03	49.82
				2060	0.89	-3.09	49.14
				2080	1.38	-3.24	47.41
				2100	1.61	-3.54	44.28
				2120	1	-3.96	40.2
				2140	1.73	-3.84	41.26
				2160	0.99	-4.7	33.88
				2180	0.18	-5.69	27
				2200	-0.13	-6.16	24.23

Main Antenna RF3(B12)			
frequency 频率(MHz)	gain 增益 (dBi)	efficiency 效率(dB)	efficiency 效率(%)
700	-3.24	-6.58	21.98
710	-2.53	-5.77	26.48
720	-2.33	-5.78	26.42
730	-1.69	-5.39	28.88
740	-1.71	-5.72	26.78
750	-1.64	-5.91	25.63
760	-2.45	-6.70	21.39

4.1.2 DIV Antenna

Div Antenna RF1(LMH)

frequency 频率(MHz)	gain 增益(dBi)	efficiency 效率(dB)	efficiency 效率(%)	frequency 频率(MHz)	gain 增益(dBi)	efficiency 效率(dB)	efficiency 效率(%)
800	-5.95	-10.14	9.69	1700	1.46	-4.22	37.88
810	-5.06	-9.42	11.43	1720	0.51	-5	31.65
820	-3.99	-8.17	15.24	1740	0.38	-4.95	31.99
830	-3.08	-6.88	20.49	1760	0.9	-4.44	35.96
840	-2.55	-5.6	27.55	1780	-0.07	-5.01	31.56
850	-2.4	-5.8	26.32	1800	0.23	-5.06	31.18
860	-2.6	-6.13	24.35	1820	0.44	-5.1	30.87
870	-2.82	-6.71	21.33	1840	0.45	-5.17	30.4
880	-2.84	-7.67	17.11	1860	0.79	-5.18	30.32
890	-3.82	-8.39	14.49	1880	0.22	-5.82	26.17
900	-4.06	-8.63	13.69	1900	1.2	-5.4	28.85
				1920	0.98	-5.09	30.94
				1940	0.78	-5.22	30.08
				1960	0.51	-5.19	30.25
				1980	0.34	-4.48	35.67
				2000	-0.47	-4.61	34.56
				2020	0.05	-4.59	34.78
				2040	0.77	-3.98	39.96
				2060	0.91	-3.97	40.1
				2080	0.99	-4.16	38.35
				2100	1.23	-4.34	36.85
				2120	1.42	-4.62	34.51
				2140	1.94	-4.31	37.05
				2160	1.63	-4.48	35.63
				2180	1.24	-4.77	33.35
				2200	0.8	-4.76	33.38

Div Antenna RF3(B12)

frequency 频率(MHz)	gain 增益(dBi)	efficiency 效率(dB)	efficiency 效率(%)
700	-4.08	-6.98	20.07
710	-3.72	-6.84	20.73
720	-3.13	-6.35	23.19
730	-3.65	-6.94	20.22
740	-2.85	-6.28	23.53
750	-2.92	-6.43	22.73
760	-4.18	-7.69	17.01

4.1.3 G/W/B Antenna

GPS无源效率

frequency 频率(MHz)	gain 增益(dBi)	efficiency 效率(dB)	efficiency 效率(%)
1515	-0.48	-4.27	37.37
1525	-0.15	-4	39.79
1535	-0.6	-4.14	38.57
1545	-0.33	-3.87	41
1555	-0.17	-4.01	39.75
1565	0.18	-4.14	38.56
1575	-0.04	-4.42	36.14
1585	-0.01	-4.47	35.73
1595	-0.29	-4.73	33.63
1605	-1.06	-5.22	30.04
1615	-0.96	-5.17	30.44

2.4G WIFI无源效率

frequency 频率(MHz)	gain 增益(dBi)	efficiency 效率(dB)	efficiency 效率(%)
2400	4.43	-3.45	45.21
2410	3.97	-3.91	40.6
2420	4.6	-3.5	44.69
2430	3.81	-4.21	37.92
2440	3.73	-4	39.82
2450	4.25	-3.65	43.17
2460	3.85	-4.05	39.37
2470	4.18	-3.76	42.11
2480	4.34	-3.68	42.9
2490	4.06	-4	39.84
2500	4.38	-3.59	43.78

5G WIFI无源效率							
frequency 频率(MHz)	gain 增益(dBi)	efficiency 效率(dB)	efficiency 效率(%)	frequency 频率(MHz)	gain 增益(dBi)	efficiency 效率(dB)	efficiency 效率(%)
5140	-0.9	-5.81	26.25	5500	0.1	-5.47	28.38
5160	-1.22	-5.89	25.78	5520	0.12	-5.83	26.13
5180	-2.13	-6.24	23.75	5540	0.06	-5.86	25.96
5200	-1.82	-6.54	22.18	5560	0.22	-5.81	26.24
5220	-0.72	-5.79	26.34	5580	1.25	-5.37	29.04
5240	-1.67	-5.71	26.88	5600	1.04	-5.49	28.25
5260	-2.19	-5.99	25.2	5620	0.7	-5.52	28.04
5280	-3.26	-6.25	23.72	5640	0.35	-5.95	25.43
5300	-2.6	-5.55	27.85	5660	0.93	-5.75	26.62
5320	-2.59	-5.35	29.18	5680	0.86	-6.07	24.7
5340	-2.14	-5.46	28.44	5700	0.56	-6.46	22.57
5360	-2.19	-5.69	26.96	5720	1.32	-5.72	26.82
5380	-1.62	-5.67	27.08	5740	1.2	-5.93	25.5
5400	-1.91	-5.86	25.92	5760	0.74	-5.97	25.3
5420	-0.49	-5.14	30.62	5780	0.77	-6.11	24.47
5440	0.11	-4.94	32.03	5800	1.36	-6.15	24.26
5460	-0.36	-5.34	29.25	5820	1.05	-6.37	23.05
5480	-0.29	-5.49	28.28	5840	-0.11	-7.25	20.84
				5860	0.02	-7.2	20.05

5. Equipment List

Type of Equipment	Manufacture	Model Number
Network Analyzer	Agilent Technologies	E5071B
Switch control System	GTS	RayZone1800
Software	GTS	MaxSign 100 Patten Measurement software