TESTING LABORATORY
CERTIFICATE #4820.01

FCC PART 15.255

TEST REPORT

For

Nokia Shanghai Bell Co. Ltd.

No. 388, Ningqiao Rd. Pilot Free Trade Zone, Shanghai, China 201206

FCC ID: 2ADZR7577WPONAPE

Report Type:	**Product Name:**
Original Report	WPON

Report Number:	RSH180530050-00B
Report Date:	2018-06-07
Reviewed By:	Jerry Zhang EMC Manager
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:	WPON
EUT Model:	WPON AP-Ext
FCC ID:	2ADZR7577WPONAPE
Rated Input Voltage:	AC 100-240V
External Dimension:	246mm(L)* 160 mm(W)*73mm(H)
Serial Number:	180530050
EUT Received Date:	2018.05.21

Objective

This type approval report is prepared on behalf of *Nokia Shanghai Bell Co. Ltd.* in accordance with Part 2-Subpart J, and Part 15-Subparts A, B and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203 15.205 15.207 15.209 and 15.255 rules.

This device is a modified version based on model: WPON AP-Pole, FCC ID: 2ADZR7577WPONAPP, granted on 2018-07-17, the difference is the 60 GHz module 2 & 3 and related antennas of Model: WPON AP-Pole were removed by the applicant, the enclosure, PCB boards, 60 GHz module 1 & BT with antennas are fully identical.

The change made to the device affected AC Line Conducted Emissions test, and Spurious Emissions test, the data for the items recorded in this report, the other items please refer to the related report for FCC ID: 2ADZR7577WPONAPP

Related Submittal(s)/Grant(s)

FCC Part 15C DSS submissions with FCC ID: 2ADZR7577WPONAPE.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan).

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218,the FCC Designation No. : CN1220.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062D.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS 30	830245/006	2017-12-11	2018-12-11
R&S	Two-line V-network	ENV 216	101614	2017-12-08	2018-12-08
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-01	2017-09-05	2018-09-05
R&S	EMI Test Receiver	ESCI	100224	2017-12-11	2018-12-11
Sunol Sciences	Antenna	JB3	A060611-1	2017-11-10	2020-11-10
HP	Amplifier	8447D	2727A05902	2017-09-05	2018-09-05
R&S	Spectrum Analyzer	8564E	3943A01781	2018-01-04	2019-01-04
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-01	2017-09-05	2018-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0075-01	2017-09-05	2018-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-1000-01	2017-09-05	2018-09-05
TDK RF	Horn Antenna	HRN-0118	130 084	2016-01-05	2019-01-04
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2017-09-05	2018-09-05
R&S	Spectrum Analyzer	FSP 38	100478	2017-12-08	2018-12-08
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-01 1304	2016-11-18	2019-11-18
Ducommun Technolagies	Horn Antenna	ARH-2823-02	1007726-01 1302	2016-11-18	2019-11-18
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2017-06-27	2018-06-27
OML	Harmonic Mixer	WR19/M19H WD	U60313-1	2016-10-14	2019-10-14
OML	Horn Antenna	M19RH	11648-01	2016-10-14	2019-10-14
Agilent	Harmonic Mixer	Agilent 11970V	2521A01767	2016-12-07	2019-12-07
Flann Micowave	Horn Antenna	861V/385	736	2016-12-07	2019-12-07
OML	Harmonic Mixer	WR12/M12H WD	E60120-1	2016-10-19	2019-10-19
OML	Horn Antenna	M12RH	E60120-2	2016-10-19	2019-10-19
OML	Harmonic Mixer	WR08/M08H WD	F60313-1	2016-10-24	2019-10-24
OML	Horn Antenna	M08RH	F60313-2	2016-10-24	2019-10-24
OML	Harmonic Mixer	WR05/M05H WD	G60106-1	2016-10-27	2019-10-27
OML	Horn Antenna	M05RH	G60106-2	2016-10-27	2019-10-27
millitech	RF Detector	DET-15-RPFW0	A18521	2017-12-15	2019-12-15
Tektronix	Digital Phosphor Oscilloscope	TDS 3054	B015264	2017-07-18	2018-07-18
Agilent	Signal Generator	E8247C	MY43321350	2017-12-11	2018-12-11
Agilent	mm-Wave Source Modules	83557A	2735A00145	2017-08-16	2019-08-15
UNI-T	Multimeter	UT39A	M130199938	2018-05-09	2019-05-09
Dongzhixu	High Temperature Test Chamber	DP1000	201105083-4	2017-08-28	2018-08-28
OML	Diplexer	DPL.26	EM-128	2016-10-11	2019-10-10

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

FAR Field Boundary Calculations

The far-field boundary is given in ANSI C63.10-2013:

$$R_m = 2D^2 / \lambda$$

Where:

D is the largest dimension of the antenna aperture in m and

λ is the free-space wavelength in m at the frequency of measurement.

The minimum test distance for the frequency range 40GHz-200GHz determine as below:

Manufacturer	Model	Frequency Range (GHz)	Largest Dimension of the Horn Antenna (mm)	Minimum Test Distance R_m (m)
OML	M19RH	40-60	46.3	0.57
Alpha Industries	861V/385	50-75	43.7	0.64
OML	M12RH	60-90	30.02	0.36
OML	M08RH	90-140	19.7	0.23
OML	M05RH	140-220	12.5	0.30

Note: the maximum antenna dimension of the EUT was 18 mm. This length is smaller than the largest dimension of the smallest Horn Antenna used to measure up in the frequency range 40 GHz to 140 GHz. and larger than 140GHz to 220GHz. Given that the test distances used were 1.0 m from 40 GHz to 90 GHz, and 0.5 m from 90 GHz to 200 GHz, it can be seen that the EUT was always in the Far-field of the Receive Antenna during all Radiated Emissions Tests.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in Engineering Mode, which was provided by the manufacturer.

The device built in a 60 GHz module, only supports SISO mode

The module only supports 3 channels as below:

Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
1	58320	3	62640
2	60480	/	/

EUT Exercise Software

The software "QRCT3.0" was used for testing, which was provided by manufacturer. The worst condition (maximum power) was configured by system default setting. The worst data rate: 1Gbps.

Equipment Modifications

No modifications were made to the EUT.

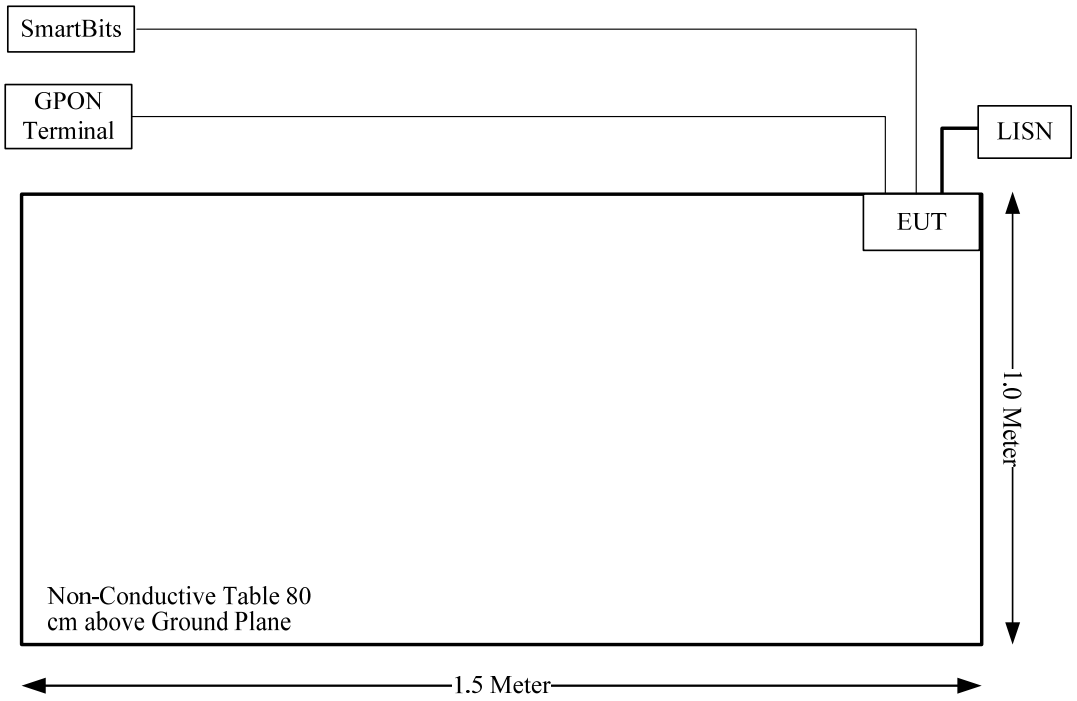
Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
HUAWEI	GPON Terminal	HG8245Q2	2102311RGB6RH1000087
Sprient	SmartBits	600B	DE7885

Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
RJ45 Cable	yes	no	10	EUT	GPON Terminal
Optical Cable	no	no	10	EUT	SmartBits

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1310&§2.1091	Maximum Permissible Exposure	Compliance
§15.203	Antenna Requirement	Compliance
§15.207 (a)	AC Line Conducted Emissions	Compliance
§ 15.255 (e)(1)	Occupied Bandwidth	Compliance*
§15.255 (c)	EIRP Power	Compliance*
§15.255 (e)	Peak Conducted Output Power	Compliance*
§15.255 (d)	Spurious Emissions	Compliance
§15.255 (f)	Frequency Stability	Compliance*
§15.255 (a)(h)	Operation Restriction And Group Installation	Compliance

Note:
Compliance*: Due to the similarity, please refer to the test report of FCC ID: 2ADZR7577WPONAPP (Test report NO.: RSH180504050-00CM2).

FCC§1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f²)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculation Formula:

Prediction of Power Density at the distance of the applicable MPE Limit

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Calculated Data:

Radio	Frequency (GHz)	E.I.R.P		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBm)	(mW)			
60G Module 1	58.32-62.64	31	1258.93	25	0.16	1.0
Bluetooth	2.402-2.48	2.92	1.96	25	0.0003	1.0

Note: The output power was declared by manufacturer(Bluetooth conducted power is -2dBm, antenna gain 4.92dBi)

The 60GHz radio and Bluetooth can transmit simultaneously:

$$\sum_i \frac{S_i}{S_{Limit,i}}$$

$= S_{60G1}/Limit_{60G1} + S_{BT}/Limit_{BT}$

$= 0.16/1.0 + 0.0003/1.0$

$=0.1603$

Result: The device complied with the applicable MPE Limit at the 25 cm distance.

FCC§15.203 - ANTENNA REQUIREMENT

Applicable Standard

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used.

Antenna Connector Construction

The EUT has 3 internal antennas, which can be seen in the EUT internal Photos. Therefore, the EUT complied with the antenna requirements stated in FCC Rules Part 15 Subpart C Section 15.203.

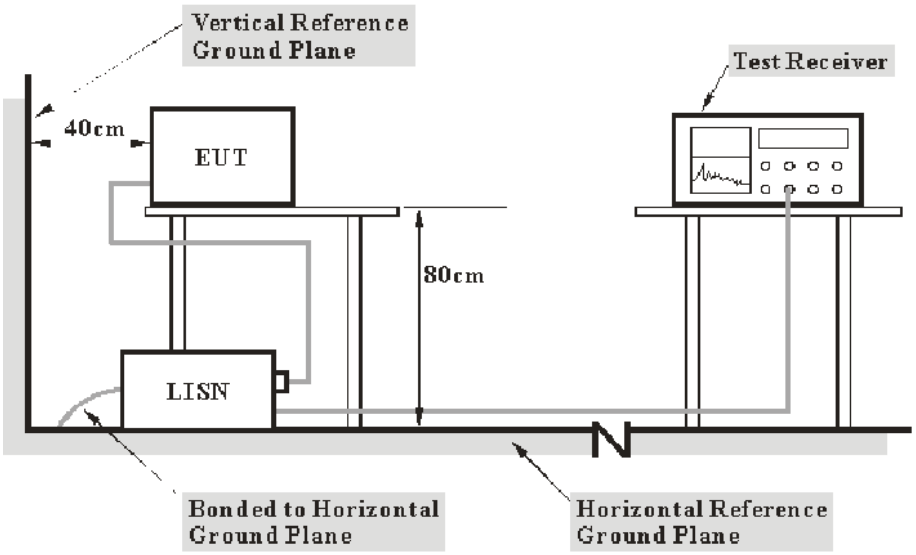
Result: Compliant.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the first LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$V_C = V_R + A_C + VDF$
$C_f = A_C + VDF$

Herein,
V_C (cord. Reading): corrected voltage amplitude
V_R: reading voltage amplitude
A_c: attenuation caused by cable loss
VDF: voltage division factor of AMN
C_f: Correction Factor

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207.

Test Data

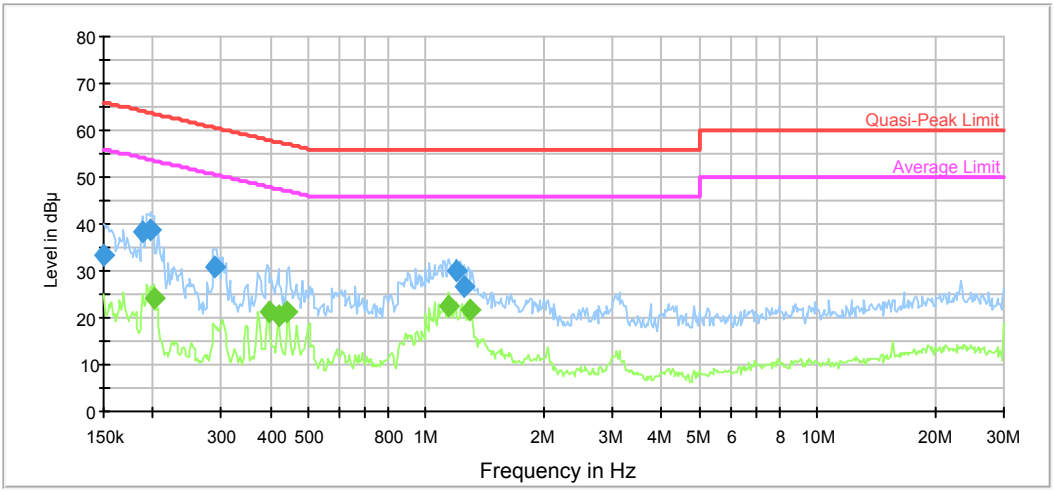
Environmental Conditions

Temperature:	28 °C
Relative Humidity:	66 %
ATM Pressure:	101.3 kPa

The testing was performed by Sider Huang on 2018-06-07.

Test Mode: Transmitting(antenna 1 active+BT)

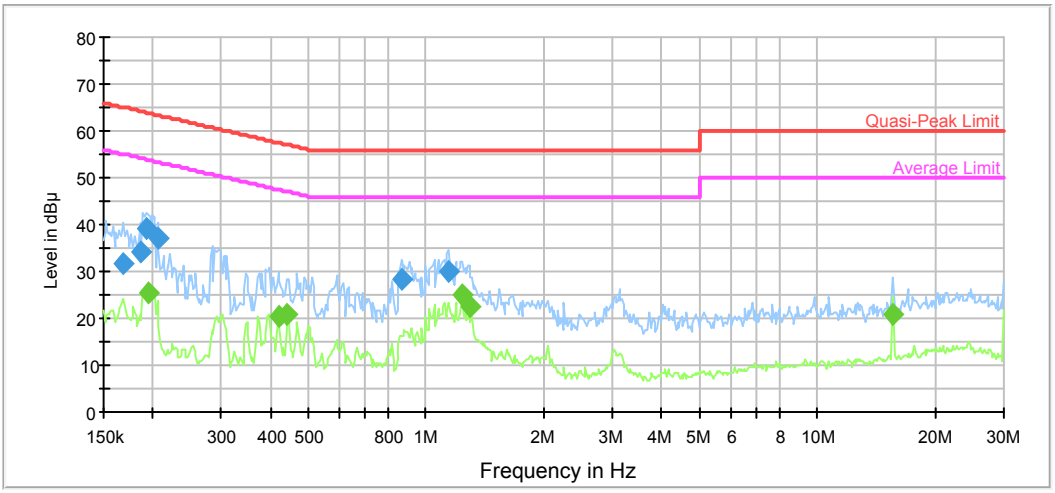
AC120 V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	33.4	9.000	L1	11.2	32.6	66.0	Compliance
0.188994	38.2	9.000	L1	10.7	25.9	64.1	Compliance
0.198249	38.8	9.000	L1	10.6	24.9	63.7	Compliance
0.288307	30.9	9.000	L1	10.2	29.7	60.6	Compliance
1.190776	30.1	9.000	L1	9.8	25.9	56.0	Compliance
1.249088	26.7	9.000	L1	9.8	29.3	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.201433	24.2	9.000	L1	10.6	29.4	53.6	Compliance
0.396530	21.3	9.000	L1	10.0	26.6	47.9	Compliance
0.419276	20.6	9.000	L1	10.0	26.9	47.5	Compliance
0.443327	21.1	9.000	L1	9.9	25.9	47.0	Compliance
1.144267	22.6	9.000	L1	9.8	23.4	46.0	Compliance
1.289541	21.5	9.000	L1	9.8	24.5	46.0	Compliance

AC120 V, 60 Hz, Neutral:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.169044	31.6	9.000	N	10.9	33.4	65.0	Compliance
0.186006	34.4	9.000	N	10.7	29.8	64.2	Compliance
0.193566	39.2	9.000	N	10.7	24.7	63.9	Compliance
0.206306	36.9	9.000	N	10.6	26.5	63.4	Compliance
0.865782	28.5	9.000	N	9.8	27.5	56.0	Compliance
1.144267	30.0	9.000	N	9.8	26.0	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.195114	25.3	9.000	N	10.7	28.5	53.8	Compliance
0.419276	20.5	9.000	N	10.0	27.0	47.5	Compliance
0.443327	21.0	9.000	N	9.9	26.0	47.0	Compliance
1.239175	25.0	9.000	N	9.8	21.0	46.0	Compliance
1.289541	22.3	9.000	N	9.8	23.7	46.0	Compliance
15.616430	20.7	9.000	N	10.0	29.3	50.0	Compliance

FCC§15.205, §15.209&§15.255(d)- TRANSMITTER SPURIOUS EMISSIONS

Applicable Standard

(d) Limits on spurious emissions:

(1) The power density of any emissions outside the 57-64 GHz band shall consist solely of spurious emissions.

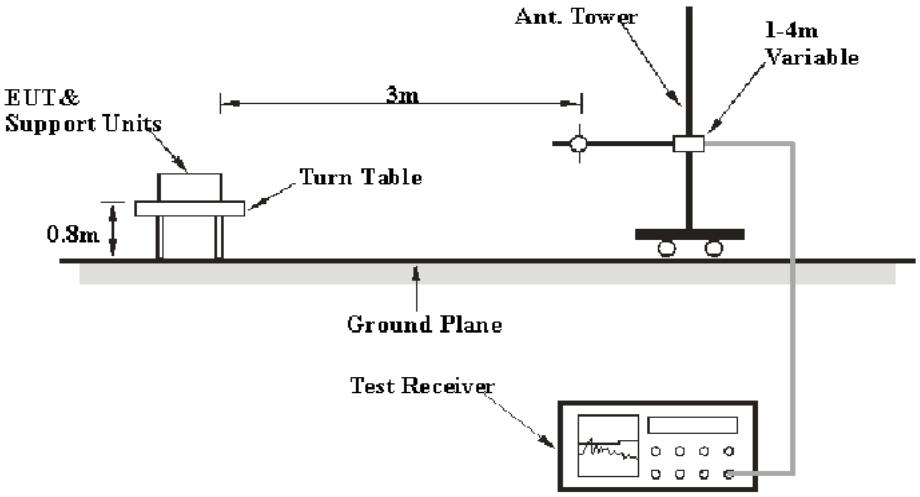
(2) Radiated emissions below 40 GHz shall not exceed the general limits in §15.209.

(3) Between 40 GHz and 200 GHz, the level of these emissions shall not exceed 90 pW/cm^2 at a distance of 3 meters.

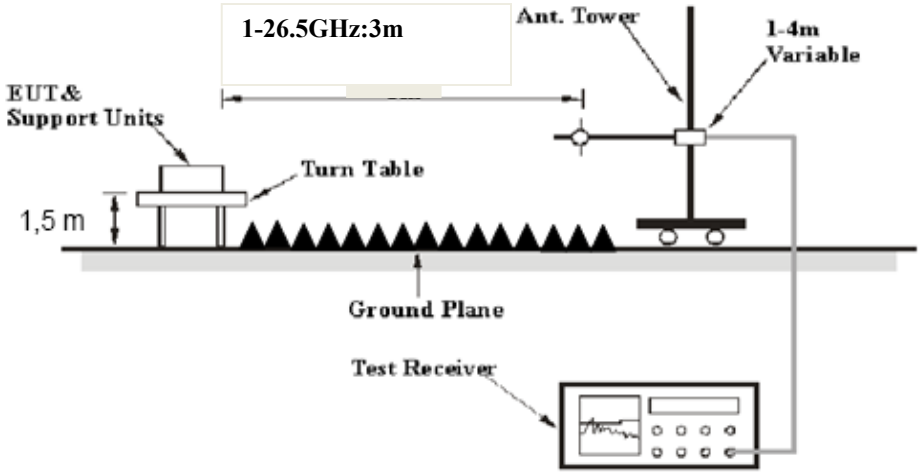
(4) The levels of the spurious emissions shall not exceed the level of the fundamental emission.

EUT Setup

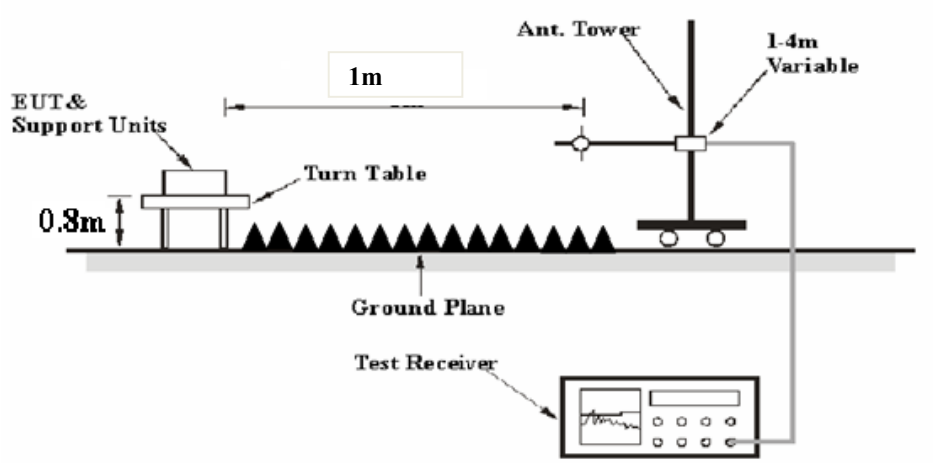
Below 1 GHz:



1-26.5 GHz:



26.5-40 GHz:



Above 40GHz:

The antenna is scanned around the entire perimeter surface of the EUT, in both horizontal and vertical polarizations, at the distance of 1.0 m from 40 GHz to 90 GHz, and 0.5 m from 90 GHz to 200 GHz.

The radiated emission and out of band emission tests were performed in the 3 meters chamber test site A, using the setup accordance with the ANSI C63.10-2013 The specification used was the FCC 15.209/15.205 and FCC 15.255 limits.

Test Equipment Setup

The system was investigated from 30 MHz to 200 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
1-40 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave
40 GHz – 200 GHz	1MHz	3 MHz	/	PK

Test Procedure

Refer to ANSI C63.10-2013 Clauses 9.9, 9.12, and 9.13.

A Maximizing procedure was performed to ensure that the highest emissions from the EUT were actually measured in all of the Test Arrangements of the EUT and Local Support Equipment.

In accordance with FCC Rules Part 15 Subpart A Section 15.35, from 30 MHz to 1 GHz all radiated emissions measurements were made using a Quasi-peak Detector, and from 1 GHz to 40 GHz, all radiated emissions measurements were made using a Peak Detector and CISPR Average Detector. In accordance with FCC Rules Part 15 Subpart C Section 15.255, from 40 GHz to 200 GHz, all radiated emissions measurements were made using a Peak Detector.

According to C63.10, the 26.5-40GHz test result shall be extrapolated to the specified distance using an extrapolation factor of 20dB/decade from 3m to 1m

Distance extrapolation factor =20 log (specific distance [3m]/test distance [1m]) dB= 9.54 dB

All emissions under the average limit and under the noise floor have not recorded in the report.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected = Antenna Loss + Cable Loss - Amplifier Gain

Or

Corrected Amplitude = Antenna Loss + Cable Loss - Amplifier Gain- Distance extrapolation factor

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Result = Reading + Corrected

Margin = Limit - Result

Environmental Conditions

Temperature:	29.4 °C
Relative Humidity:	37 %
ATM Pressure:	101.3 kPa

The testing was performed by Steven Zuo,Vern Shen on 2018-05-21.

Test Data

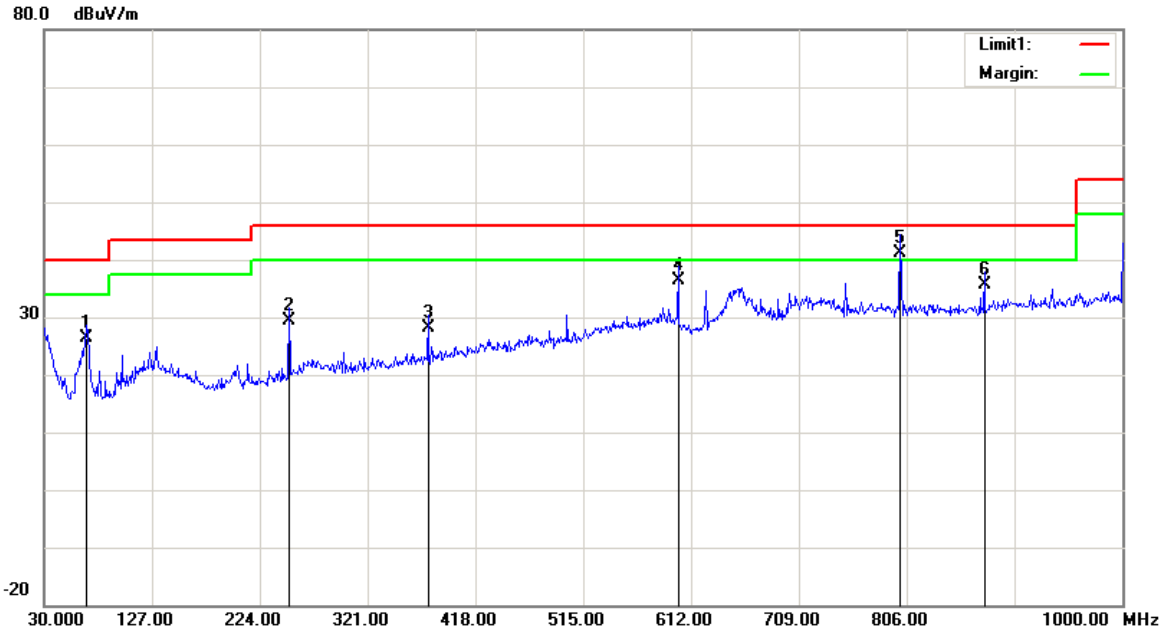
Please refer to the following table:

Test Mode: Transmitting(ANT 1 was the worst)

30MHz-1GHz (Middle channel was the worst)

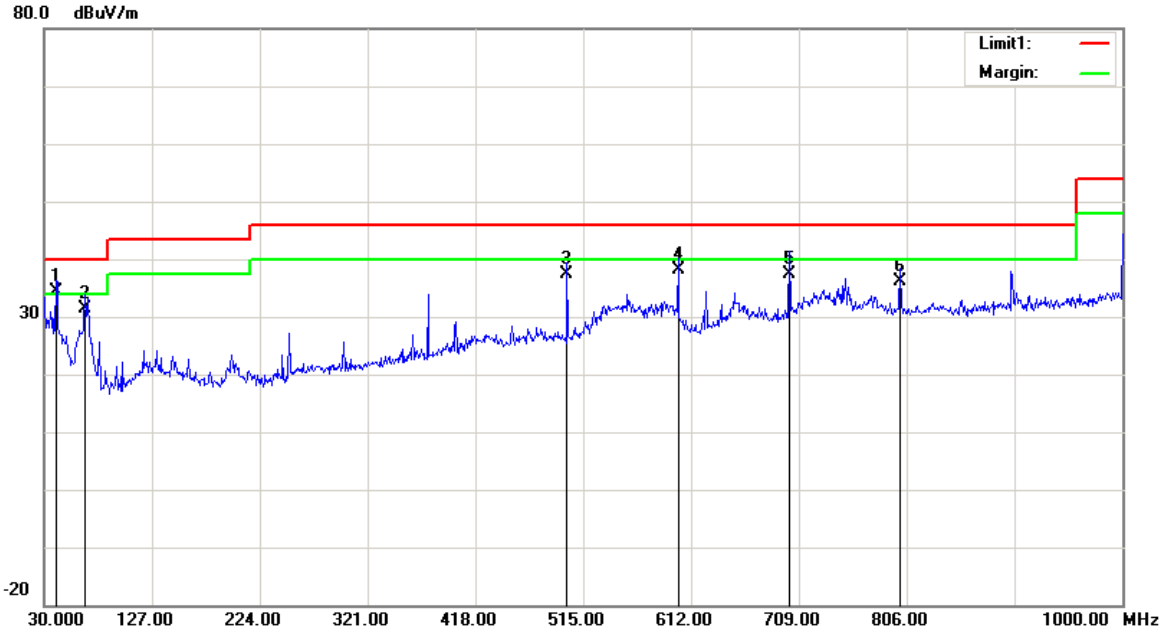
Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
67.8300	37.89	QP	-11.59	26.30	40.00	13.70
250.1900	35.58	QP	-6.18	29.40	46.00	16.60
375.3200	30.86	QP	-2.66	28.20	46.00	17.80
600.3600	35.50	QP	0.90	36.40	46.00	9.60
800.1800	36.61	QP	4.59	41.20	46.00	4.80
875.8400	30.17	QP	5.53	35.70	46.00	10.30



Vertical

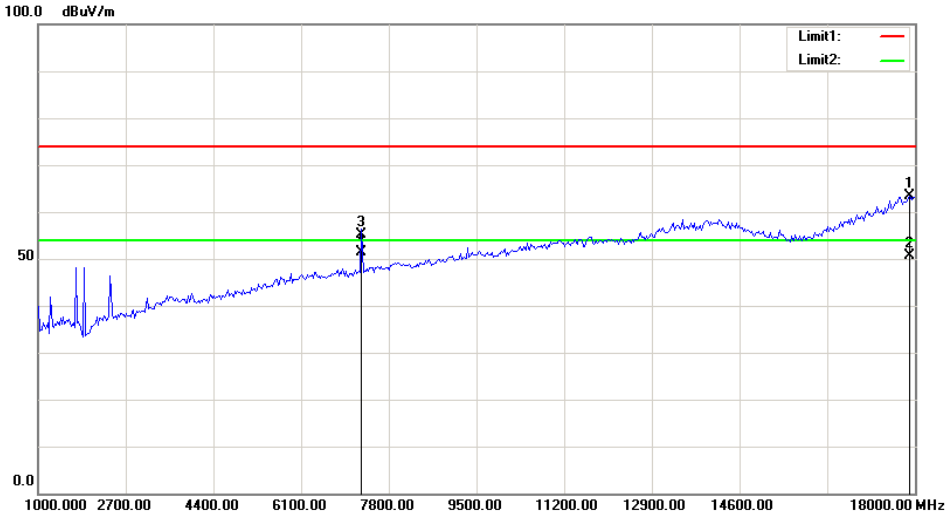
Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
40.6700	40.87	QP	-6.37	34.50	40.00	5.50
66.8600	42.96	QP	-11.66	31.30	40.00	8.70
500.4500	37.81	QP	-0.31	37.50	46.00	8.50
600.3600	37.20	QP	0.90	38.10	46.00	7.90
700.2700	34.31	QP	3.19	37.50	46.00	8.50
800.1800	31.61	QP	4.59	36.20	46.00	9.80

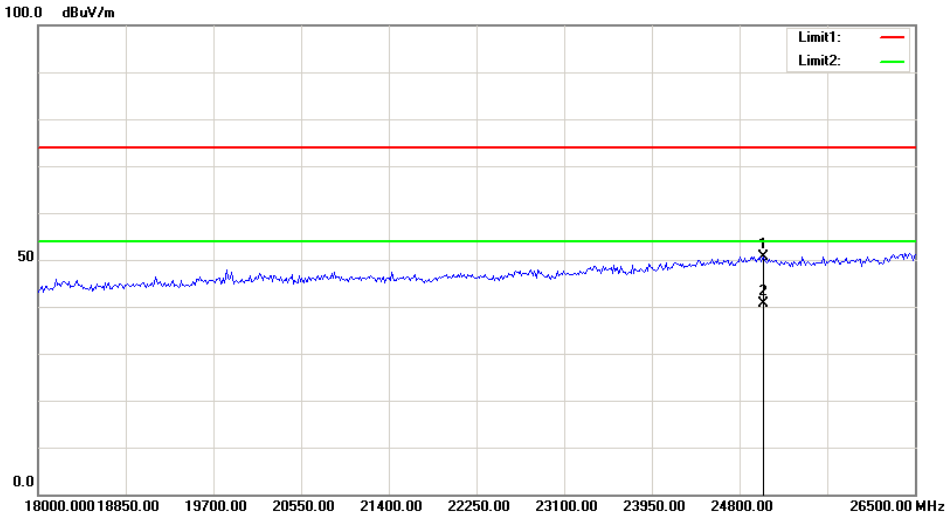


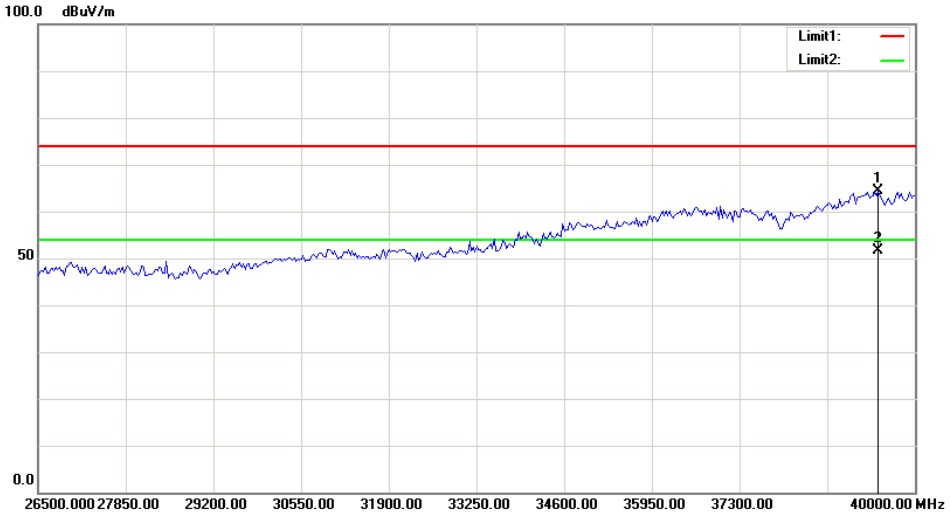
1GHz - 40GHz(Middle channel was the worst)

Horizontal

Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
7290.000	42.75	peak	12.44	55.19	74.00	18.81
7290.000	38.97	AVG	12.44	51.41	54.00	2.59
17891.026	34.85	peak	28.47	63.32	74.00	10.68
17891.026	22.17	AVG	28.47	50.64	54.00	3.36
25028.846	39.86	peak	10.88	50.74	74.00	23.26
25028.846	29.66	AVG	10.88	40.54	54.00	13.46
39433.000	48.38	peak	15.90	64.28	74.00	9.72
39433.000	35.84	AVG	15.90	51.74	54.00	2.26

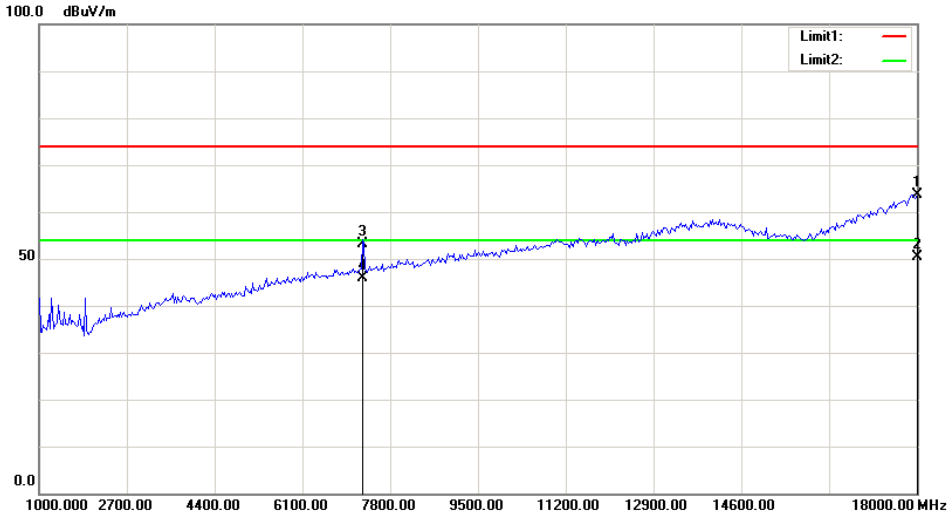


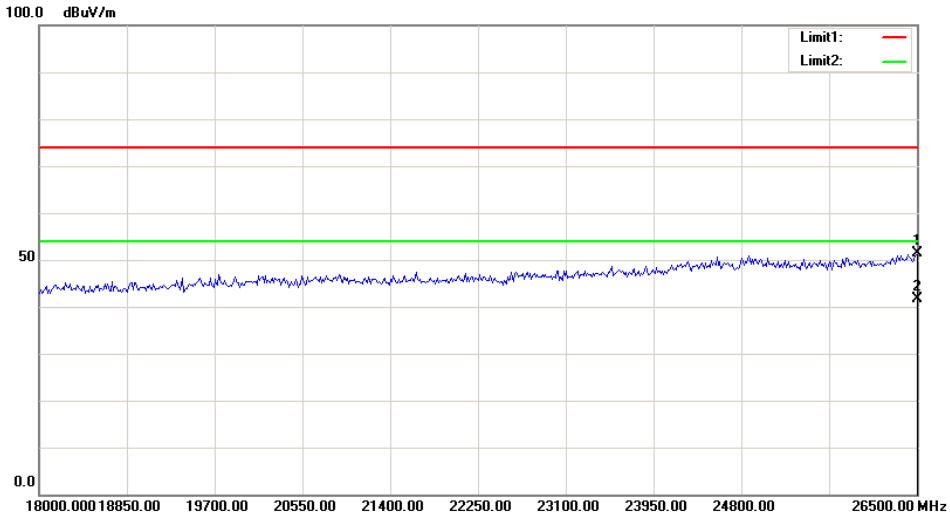


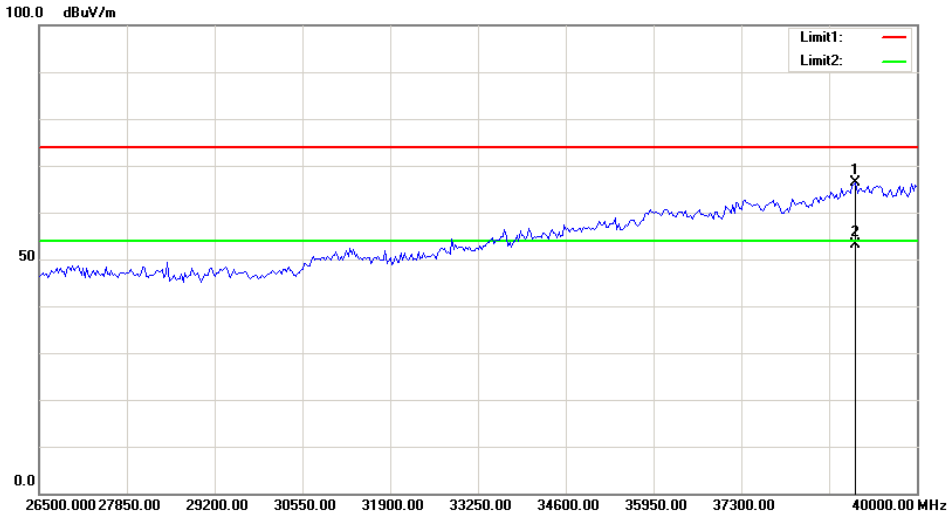


Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
7290.000	40.60	peak	12.44	53.04	74.00	20.96
7290.000	33.33	AVG	12.44	45.77	54.00	8.23
18000.000	35.29	peak	28.33	63.62	74.00	10.38
18000.000	21.98	AVG	28.33	50.31	54.00	3.69
26500.000	40.37	peak	11.11	51.48	74.00	22.52
26500.000	30.42	AVG	11.11	41.53	54.00	12.47
39055.000	50.15	peak	16.21	66.36	74.00	7.64
39055.000	37.00	AVG	16.21	53.21	54.00	0.79




100.0 dBuV/m
Limit1:
Limit2:
50
0.0
18000.000 18850.00 19700.00 20550.00 21400.00 22250.00 23100.00 23950.00 24800.00 26500.00 MHz


100.0 dBuV/m
Limit1:
Limit2:
50
0.0
26500.000 27850.00 29200.00 30550.00 31900.00 33250.00 34600.00 35950.00 37300.00 40000.00 MHz

40GHz~200GHz:

Frequency	Receiver		Rx Antenna		Corrected Amplitude	EIPR Power	Power Density	Limit
	Reading	Detector	Polar	Factor				
GHz	dBµV	PK/QP/AV	H/V	dB(1/m)	dBµV/m	dBm	pW/cm^2	pW/cm^2
Frequency: 58.32 GHz								
47.9	38.90	PK	H	40.33	79.23	-25.47	2.51	90
47.9	39.12	PK	V	40.33	79.45	-25.25	2.64	90
77.55	42.98	PK	H	45.87	88.85	-15.85	22.99	90
77.55	43.10	PK	V	45.87	88.97	-15.73	23.64	90
116.64	45.87	PK	H	53.18	99.05	-11.67	60.2	90
116.64	44.10	PK	V	53.18	97.28	-13.44	40.05	90
Frequency: 60.48GHz								
48.9	38.00	PK	H	40.52	78.52	-26.18	2.13	90
48.9	38.67	PK	V	40.52	79.19	-25.51	2.49	90
63.14	42.30	PK	H	43.18	85.48	-19.22	10.58	90
63.14	43.67	PK	V	43.18	86.85	-17.85	14.51	90
120.96	44.58	PK	H	53.98	98.56	-12.16	53.77	90
120.96	44.90	PK	V	53.98	98.88	-11.84	57.88	90
Frequency: 62.64GHz								
50.12	39.14	PK	H	40.75	79.89	-24.81	2.92	90
50.12	39.89	PK	V	40.75	80.64	-24.06	3.47	90
80.65	44.12	PK	H	46.45	90.57	-14.13	34.16	90
80.65	45.32	PK	V	46.45	91.77	-12.93	45.04	90
125.28	43.02	PK	H	54.79	97.81	-12.91	45.24	90
125.28	45.02	PK	V	54.79	99.81	-10.91	71.71	90

Note 1:

EIRP = E-meas +20log(d-meas)-104.7

where:

EIRP : is the equivalent isotopically radiated power, in dBm

E-meas. : is the field strength of the emission at the measurement distance, in dBµV/m

d-meas. : is the measurement distance, in m

Note 2:The test distance is 1 m. for 40-90GHz, and 0.5m for 90-200GHz

Note 3:Corrected Amplitude = Meter Reading + Antenna Factor

Note 4: The Mixers and it`s RF cables is compose a system for calibration, the conversion factor was added into the test Spectrum Analyzer in testing.

Note 5:

$$PD = \frac{EIRP_{Linear}}{4\pi d^2}$$

where

PD is the power density at the distance specified by the limit, in W/m^2

$EIRP_{Linear}$ is the equivalent isotropically radiated power, in watts

d is the distance at which the power density limit is specified, in m

The Specified distance is 3m.

§15.255(a) (h)– OPERATION RESTRICTION AND GROUP INSTALLTION

Applicable Standard

§15.255 (a) Operation under the provisions of this section is not permitted for the following products:
(1) Equipment used on aircraft or satellites.
(2) Field disturbance sensors, including vehicle radar systems, unless the field disturbance sensors are employed for fixed operation. For the purposes of this section, the reference to fixed operation includes field disturbance sensors installed in fixed equipment, even if the sensor itself moves within the equipment.

§15.255 (h) Any transmitter that has received the necessary FCC equipment authorization under the rules of this chapter may be mounted in a group installation for simultaneous operation with one or more other transmitter(s) that have received the necessary FCC equipment authorization, without any additional equipment authorization. However, no transmitter operating under the provisions of this section may be equipped with external phase-locking inputs that permit beam-forming arrays to be realized.

Result of Operation Restriction

The Manufacturer declared that the EUT will not be advertised or sold for use on aircraft or satellites. The user manual includes a statement that cautions users that it is not permitted to use the product on aircraft or satellites.

Result of Group installation

The frequency, amplitude and phase of the transmit sign al are set within the EUT. There are no external phase-locking inputs or any other means of combining two or more units together to realize a beam-forming array

******* END OF REPORT *******