

# TEST REPORT

<b>Application No:</b>	SUCR2504000355MO
<b>Applicant:</b>	METICOMM PTE. LTD.
<b>Address of Applicant:</b>	15 UPPER CIRCULAR ROAD, #06-01, SINGAPORE 058413
<b>Manufacturer:</b>	METICOMM PTE. LTD.
<b>Address of Manufacturer:</b>	15 UPPER CIRCULAR ROAD, #06-01, SINGAPORE 058413
<b>EUT Description:</b>	IoT Module
<b>Model No.:</b>	MQM744-0-50-0B, MQM744-0-50-0U, MQM744-0-50-0P, MQM748-0-50-0B, MQM748-0-50-0U, MQM748-0-50-0P
♣	Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
<b>Trade Mark:</b>	Meticomm
<b>FCC ID:</b>	2BQY7-M7400
<b>Standard(s):</b>	FCC 47 CFR Part 15, Subpart B
<b>Date of Receipt:</b>	June 7, 2025
<b>Date of Test:</b>	June 29, 2025 to July 2, 2025
<b>Date of Issue:</b>	July 3, 2025

<b>Test Result:</b>	<b>Pass*</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

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**Version**

<i>Revision Record</i>			
<i>Version</i>	<i>Description</i>	<i>Date</i>	<i>Remark</i>
01	Original	July 3, 2025	/

<b>Authorized for issue by:</b>			
<b>Tested By</b>		 _____ <b>Hayley Zhang</b> Project Manager	
<b>Approved By</b>		 _____ <b>Cloud Peng</b> Technical Manager	

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**1 Test Summary**

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at Mains Terminals (150kHz-30MHz)	FCC 47 CFR Part 15, Subpart B	ANSI C63.4:2014	Class B	Pass
Radiated Emissions (30MHz-1GHz)	FCC 47 CFR Part 15, Subpart B	ANSI C63.4:2014	Class B	Pass
Radiated Emissions (above 1GHz)	FCC 47 CFR Part 15, Subpart B	ANSI C63.4:2014	Class B	Pass

Internal Source	Upper Frequency
Below 1.705MHz	30MHz
1.705MHz to 108MHz	1GHz
108MHz to 500MHz	2GHz
500MHz to 1GHz	5GHz
Above 1GHz	5th harmonic of the highest frequency or 40GHz, whichever is lower

## 2 General Information

Hardware Version:	N/A		
Software Version:	N/A		
Frequency Bands:	Band	Tx (MHz)	Rx (MHz)
	Bluetooth	2402~2480	2402~2480
	BLE	2402~2480	2402~2480
	Thread	2405~2480	2405~2480
	Wi-Fi 2.4G: 802.11b/n(HT20)/ax(HEW20)	2412~2462	2412~2462
	Wi-Fi 2.4G: 802.11n(HT40)/ax(HEW40)	2422~2452	2422~2452
Remark: As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.			

Model	MQM744-0-50-0U	MQM744-0-50-0B	MQM744-0-50-0P
Antenna	1 types: Dipole	1 type: PCB	1 types: Dipole
Impedance	C21=1.2pF C20=1.5pF	C21=1.2pF C20=1.5pF	C21=1.8pF C20=2pF
Inductor	L2=2.7nH	L2=3nH	L2=2.2nH
Support platform system and feature	Support external antenna with antenna connect on module	Support integrated PCB antenna	Support external antenna with antenna connect on host platform. Module support RF output pins in the module package.

Model	MQM748-0-50-0U	MQM748-0-50-0B	MQM748-0-50-0P
Antenna	1 types: Dipole	1 type: PCB	1 types: Dipole
Impedance	C21=1.2pF C20=1.5pF	C21=1.2pF C20=1.5pF	C21=1.8pF C20=2pF
Inductor	L2=2.7nH	L2=3nH	L2=2.2nH
Support platform system and feature	Support external antenna with antenna connect on module	Support integrated PCB antenna	Support external antenna with antenna connect on host platform. Module support RF output pins in the module package.

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Antenna Type	Antenna Part No.	Freq.	Peak Antenna Gain (dBi)
PCB Antenna	RFIQM0744010NB001	2.4G Hz	2.52
Dipole Antenna	RPCA521010EMABY01		3.37

Remark:

1. Pre-scan was done on the above antennas, measurements were demonstrated by using the antenna with the highest gain as the worst case scenarios.
2. Antenna information is provided by the applicant.

## 2.1 Description of Support Units

Description	Manufacturer	Model No.	Inventory No.
Router	Smavwave Technology Co.,Ltd	SRT 421	SUWI-04-34-01
Computer	Lenovo	T14	SUWI-03-33-04

## 2.2 Test Location

All tests were performed at:

Company:	SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.
Address:	South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone
Post code:	215000
Test engineer:	King-p Li

## 2.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **A2LA (Certificate No. 6336.01)**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6336.01.

• **Innovation, Science and Economic Development Canada**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0120.

IC#: 27594.

• **FCC –Designation Number: CN1312**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized as an accredited testing laboratory.

Designation Number: CN1312.

Test Firm Registration Number: 717327

## 2.4 Deviation from Standards

None

## 2.5 Abnormalities from Standard Conditions

None

### 3 Equipment List

Conduction Test Equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Test receiver	ROHDE&SCHWARZ	ESR7	SUWI-01-10-01	1/15/2025	1/14/2026
Wideband Radio Communication Tester	Anritsu	MT8820C	SUWI-01-26-01	9/10/2024	9/9/2025
Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-06	2/13/2025	2/12/2026
Artificial network	ROHDE&SCHWARZ	ENV216	SUWI-01-19-03	5/8/2025	5/7/2026
Artificial network	ROHDE&SCHWARZ	ENV216	SUWI-01-19-04	5/8/2025	5/7/2026
Measurement Software	Tonscend	JS32-CE 4.0.0.2	SUWI-02-09-05	NCR	NCR
DC Power Supply	HYELEC	HY3005B	SUWI-01-18-01	1/15/2025	1/14/2026
Wideband Radio Communication Tester	Anritsu	MT8821C	SUWI-01-26-03	11/19/2024	11/18/2025
Wideband Radio Communication Tester	ROHDE&SCHWARZ	CMW500	SUWI-01-16-09	9/10/2024	9/9/2025
Radio Communication Analyzer	StarPoint	SP9500E	SUWI-01-28-02	11/19/2024	11/18/2025
DC Power Supply	ROHDE&SCHWARZ	HMC8042	SUWI-01-18-03	1/16/2025	1/15/2026

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9*6*6 Test Equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Semi-Anechoic Chamber	Brilliant-emc	N/A	SUWI-04-02-01	6/3/2023	6/02/2026
Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-05	2/13/2025	2/12/2026
Signal Analyzer	ROHDE&SCHWARZ	FSW43	SUWI-01-02-04	1/20/2025	1/19/2026
Signal Analyzer	KEYSIGHT	N9020A	SUWI-01-02-07	11/21/2024	11/20/2025
Test receiver	ROHDE&SCHWARZ	ESR7	SUWI-01-10-01	1/15/2025	1/14/2026
DC Power Supply	HYELEC	HY3005B	SUWI-01-18-01	1/15/2025	1/14/2026
Receiving antenna	SCHWRZBECK MESS-ELEKTRONIK	VULB 9168	SUWI-01-11-04	8/22/2024	8/21/2026
Receiving antenna	SCHWRZBECK MESS-ELEKTRONIK	VULB 9163	SUWI-01-11-01	5/7/2025	5/6/2027
Receiving antenna	SCHWRZBECK MESS-ELEKTRONIK	BBHA 9120D	SUWI-01-11-02	5/7/2025	5/6/2027
Receiving antenna	SCHWRZBECK MESS-ELEKTRONIK	BBHA 9170	SUWI-01-11-03	5/7/2025	5/6/2027
Active Loop Antenna	SCHWRZBECK MESS-ELEKTRONIK	FMZB 1519B	SUWI-01-21-01	5/7/2025	5/6/2027
Amplifier	Tonscend	TAP9K3G40	SUWI-01-14-01	1/15/2025	1/14/2026
Amplifier	Tonscend	TAP01018050	SUWI-01-14-02	1/15/2025	1/14/2026
Amplifier	Tonscend	TAP18040048	SUWI-01-14-03	1/20/2025	1/19/2026
Wideband Radio Communication Tester	Anritsu	MT8820C	SUWI-01-26-01	9/10/2024	9/9/2025
Wideband Radio Communication Tester	Anritsu	MT8821C	SUWI-01-26-03	11/19/2024	11/18/2025
Wideband Radio Communication Tester	ROHDE&SCHWARZ	CMW500	SUWI-01-16-09	9/10/2024	9/9/2025
Measurement Software	Tonscend	JS32-RE V4.0.0.0	SUWI-02-09-04	NCR	NCR
Measurement Software	Tonscend	JS32-RSE 4.0.0.1	SUWI-02-09-06	NCR	NCR
Router	PLANET	FSD-803	SUWI-03-14-01	NCR	NCR
Open Switch and Control Unit	ROHDE&SCHWARZ	OSP220	SUWI-03-15-01	NCR	NCR
Multiplier Unit	ROHDE&SCHWARZ	TC-MX60	SUWI-03-16-01	NCR	NCR
Receive Unit	ROHDE&SCHWARZ	TC-RSE60	SUWI-03-16-02	NCR	NCR
Receive Unit	ROHDE&SCHWARZ	TC-RSE90	SUWI-03-16-03	NCR	NCR
Multiplier Unit	ROHDE&SCHWARZ	TC-MX90	SUWI-03-17-01	NCR	NCR
Receive Unit	ROHDE&SCHWARZ	TS-RSE140	SUWI-03-19-01	NCR	NCR
Multiplier Unit	ROHDE&SCHWARZ	TC-MX140	SUWI-03-19-02	NCR	NCR

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Receive Unit	ROHDE&SCHWARZ	TS-RSE200	SUWI-03-19-03	NCR	NCR
Multiplier Unit	ROHDE&SCHWARZ	TC-MX200	SUWI-03-19-04	NCR	NCR
Signal Generator	ROHDE&SCHWARZ	SMB100A	SUWI-01-08-01	1/16/2025	1/15/2026
Measurement Software	ROHDE&SCHWARZ	ELEKTRA V4.10.1	SUWI-02-09-07	NCR	NCR
Radio Communication Analyzer	StarPoint	SP9500E	SUWI-01-28-02	11/19/2024	11/18/2025
DC Power Supply	ROHDE&SCHWARZ	HMC8042	SUWI-01-18-03	1/16/2025	1/15/2026

Remark: NCR=No Calibration Requirement.

## 4 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conduction Emission	± 2.90dB (150kHz to 30MHz)
2	Radiated Emission	± 3.13dB (9k -30MHz)
		± 4.8dB (30M -1GHz)
		± 4.8dB (1GHz to 18GHz)

**Remark:**

The  $U_{lab}$  (lab Uncertainty) is less than  $U_{cispri/ETSI}$  (CISPR/ETSI Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

## 5 Emission Test Results

### 5.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement:	47 CFR Part 15, Subpart B		
Test Method:	ANSI C63.4:2014		
Frequency Range:	150kHz to 30MHz		
Receiver Setup:	RBW = 9kHz, VBW = 30kHz		
Limit:	Frequency Range (MHz)		Limit(dB $\mu$ V)
		Quasi-peak	average
	0.15M-0.5MHz	66 ~ 56*	56 ~ 46*
	0.5M-5MHz	56	46
	5M-30MHz	60	50

\*Decreases with the logarithm of the frequency

Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

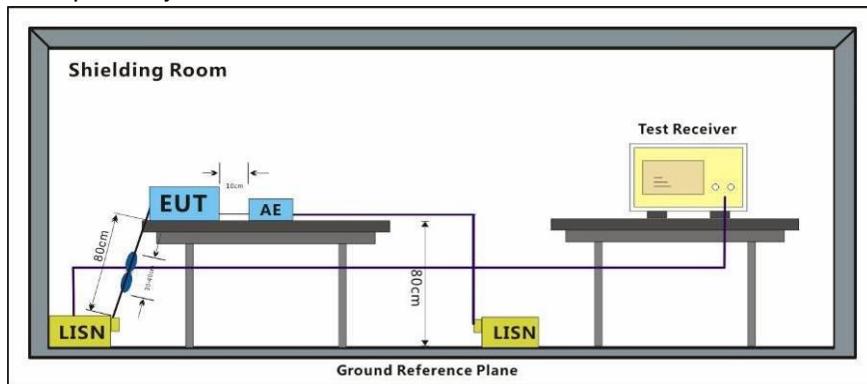
#### 2.1.1 E.U.T. Operation

Operating Environment:

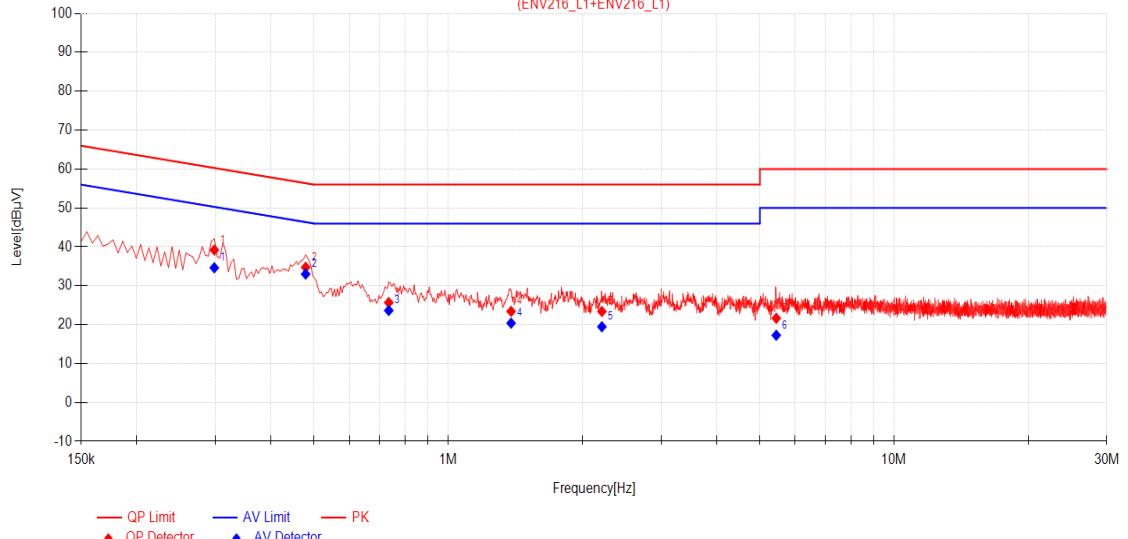
Temperature:	22~23°C
Humidity:	44~46%RH
Atmospheric Pressure:	101kPa
Pretest these modes to find the worst case:	a: Bluetooth Link + EUT + Powered by Test Kit b: WIFI 2.4G + EUT + Powered by Test Kit c: Thread + EUT + Powered by Test Kit
The worst case for final test:	a: WIFI 2.4G + EUT + Powered by Test Kit

**2.1.2 Test Setup Procedures**

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

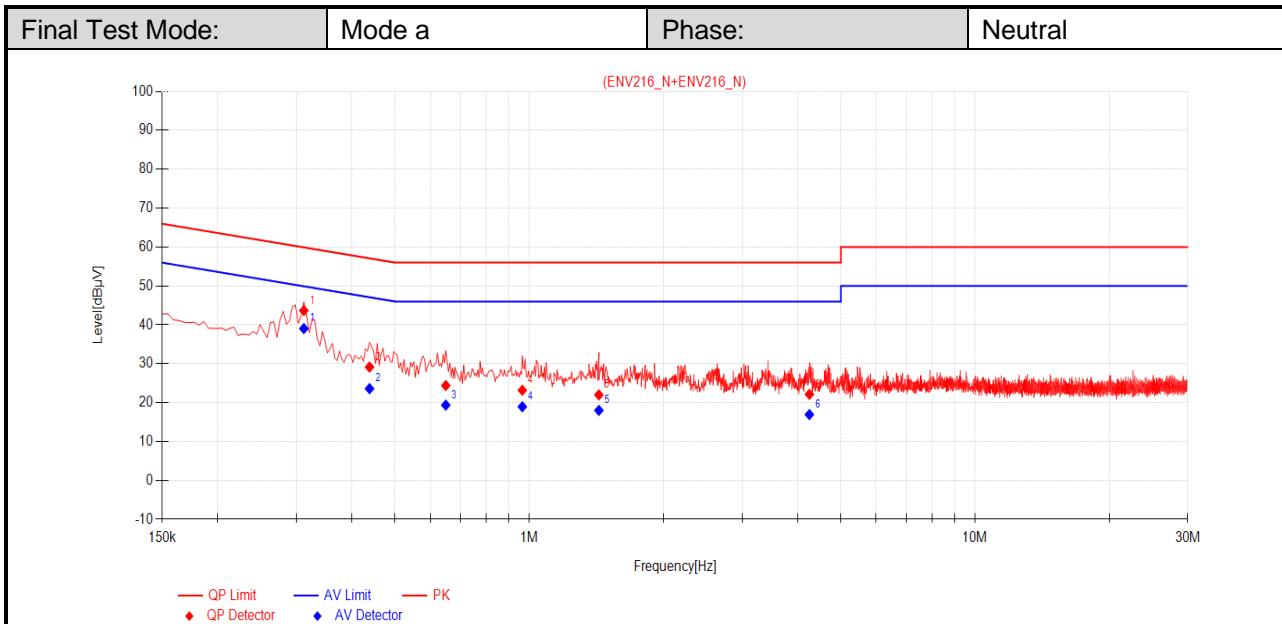
**2.1.3 Measurement Data**

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

Final Test Mode:	Mode a	Phase:	Line																																																																																				
 <p style="color: red; font-size: small;">(ENV216_L1+ENV216_L1)</p>																																																																																							
<b>Final Data List</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO.</th><th>Frequency [MHz]</th><th>Factor [dB]</th><th>QP Reading [dBμV]</th><th>QP Value [dBμV]</th><th>QP Limit [dBμV]</th><th>QP Margin [dB]</th><th>AV Reading [dBμV]</th><th>AV Value [dBμV]</th><th>AV Limit [dBμV]</th><th>AV Margin [dB]</th><th>Verdict</th></tr> </thead> <tbody> <tr><td>1</td><td>0.2985</td><td>10.05</td><td>29.14</td><td>39.19</td><td>60.28</td><td>21.09</td><td>24.57</td><td>34.62</td><td>50.28</td><td>15.66</td><td>PASS</td></tr> <tr><td>2</td><td>0.4785</td><td>10.07</td><td>24.67</td><td>34.74</td><td>56.37</td><td>21.63</td><td>22.93</td><td>33.00</td><td>46.37</td><td>13.37</td><td>PASS</td></tr> <tr><td>3</td><td>0.7350</td><td>10.05</td><td>15.63</td><td>25.68</td><td>56.00</td><td>30.32</td><td>13.59</td><td>23.64</td><td>46.00</td><td>22.36</td><td>PASS</td></tr> <tr><td>4</td><td>1.3830</td><td>9.91</td><td>13.50</td><td>23.41</td><td>56.00</td><td>32.59</td><td>10.47</td><td>20.38</td><td>46.00</td><td>25.62</td><td>PASS</td></tr> <tr><td>5</td><td>2.2110</td><td>9.83</td><td>13.55</td><td>23.38</td><td>56.00</td><td>32.62</td><td>9.63</td><td>19.46</td><td>46.00</td><td>26.54</td><td>PASS</td></tr> <tr><td>6</td><td>5.4420</td><td>9.82</td><td>11.81</td><td>21.63</td><td>60.00</td><td>38.37</td><td>7.45</td><td>17.27</td><td>50.00</td><td>32.73</td><td>PASS</td></tr> </tbody> </table>				NO.	Frequency [MHz]	Factor [dB]	QP Reading [dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict	1	0.2985	10.05	29.14	39.19	60.28	21.09	24.57	34.62	50.28	15.66	PASS	2	0.4785	10.07	24.67	34.74	56.37	21.63	22.93	33.00	46.37	13.37	PASS	3	0.7350	10.05	15.63	25.68	56.00	30.32	13.59	23.64	46.00	22.36	PASS	4	1.3830	9.91	13.50	23.41	56.00	32.59	10.47	20.38	46.00	25.62	PASS	5	2.2110	9.83	13.55	23.38	56.00	32.62	9.63	19.46	46.00	26.54	PASS	6	5.4420	9.82	11.81	21.63	60.00	38.37	7.45	17.27	50.00	32.73	PASS
NO.	Frequency [MHz]	Factor [dB]	QP Reading [dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict																																																																												
1	0.2985	10.05	29.14	39.19	60.28	21.09	24.57	34.62	50.28	15.66	PASS																																																																												
2	0.4785	10.07	24.67	34.74	56.37	21.63	22.93	33.00	46.37	13.37	PASS																																																																												
3	0.7350	10.05	15.63	25.68	56.00	30.32	13.59	23.64	46.00	22.36	PASS																																																																												
4	1.3830	9.91	13.50	23.41	56.00	32.59	10.47	20.38	46.00	25.62	PASS																																																																												
5	2.2110	9.83	13.55	23.38	56.00	32.62	9.63	19.46	46.00	26.54	PASS																																																																												
6	5.4420	9.82	11.81	21.63	60.00	38.37	7.45	17.27	50.00	32.73	PASS																																																																												

**Remark:**

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Value =Reading[dBμV] + Factor(Lisn factor[dB] + cable loss[dB]).
3. Margin = Limit[dBμV] – Value[dBμV]



Final Data List											
NO.	Frequency [MHz]	Factor [dB]	QP Reading [dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.3120	10.07	33.60	43.67	59.92	16.25	28.97	39.04	49.92	10.88	PASS
2	0.4380	10.06	19.09	29.15	57.10	27.95	13.54	23.60	47.10	23.50	PASS
3	0.6495	10.06	14.34	24.40	56.00	31.60	9.30	19.36	46.00	26.64	PASS
4	0.9645	9.97	13.20	23.17	56.00	32.83	8.98	18.95	46.00	27.05	PASS
5	1.4325	9.94	12.05	21.99	56.00	34.01	8.07	18.01	46.00	27.99	PASS
6	4.2495	9.85	12.29	22.14	56.00	33.86	7.08	16.93	46.00	29.07	PASS

**Remark:**

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Value =Reading[dBμV] + Factor(Lisn factor[dB] + cable loss[dB]).
3. Margin = Limit[dBμV] – Value[dBμV]

**5.2 Radiated Emissions (30MHz-1GHz)**

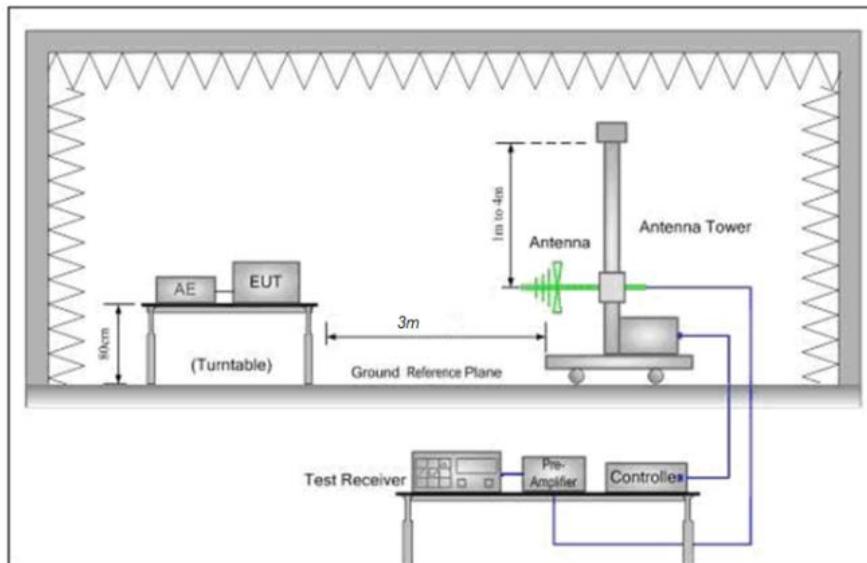
Test Requirement:	47 CFR Part 15, Subpart B		
Test Method:	ANSI C63.4:2014		
Frequency Range:	30MHz to 1GHz		
Measurement Distance:	3m		
Limit:	Frequency Range (MHz)	Limit(dB $\mu$ V/m)	Detector
	30MHz -88MHz	40.0	Quasi-peak
	88MHz-216MHz	43.5	Quasi-peak
	216MHz-960MHz	46.0	Quasi-peak
	960MHz-1000MHz	54.0	Quasi-peak
Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to1000MHz		

**5.2.1 E.U.T. Operation**

Temperature:	22~23°C
Humidity:	44~46%RH
Atmospheric Pressure:	101kPa
Pretest these modes to find the worst case:	a: Bluetooth Link + EUT + Powered by Test Kit b: WIFI 2.4G + EUT + Powered by Test Kit c: Thread + EUT + Powered by Test Kit
The worst case for final test:	a: WIFI 2.4G + EUT + Powered by Test Kit

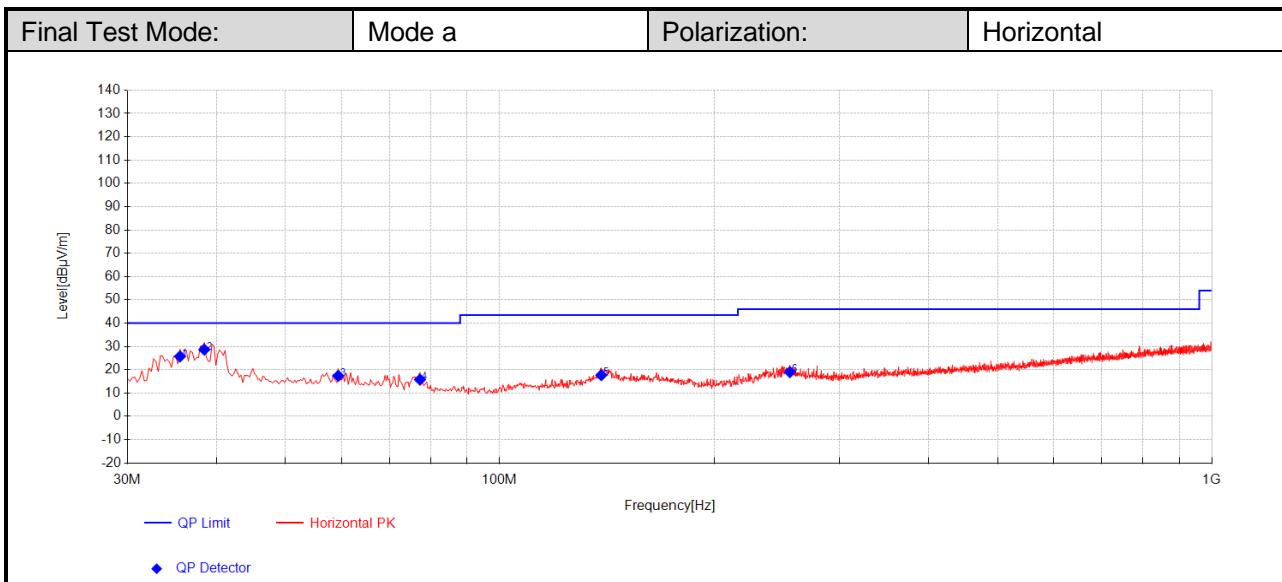
**5.2.2 Test Setup Procedures**

1. The EUT was placed in a semi Anechoic Chamber as show below
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna height is adjusted between 1 to 4 meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function with specified bandwidth with Maximum Hold Mode, and the trace was allowed to stabilize.
7. If the emission level of the EUT in peak mode was 6 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.

**5.2.3 Measurement Data**

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

The three polarities of X,Y,Z were measured by EUT, but only the worst data had been displayed.



Final Data List										
NO.	Frequency [MHz]	Reading [dB $\mu$ V]	AF [dB/m]	Factor [dB]	QP Value [dB $\mu$ V/m]	QP Limit [dB $\mu$ V/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	35.5775	41.41	18.26	-33.94	25.73	40.00	14.27	269	19	Horizontal
2	38.4875	43.93	18.60	-33.89	28.64	40.00	11.36	187	19	Horizontal
3	59.3425	33.38	17.57	-33.56	17.38	40.00	22.62	234	214	Horizontal
4	77.2875	33.72	15.37	-33.36	15.73	40.00	24.27	199	222	Horizontal
5	138.8825	31.97	18.49	-32.77	17.68	43.50	25.82	254	244	Horizontal
6	255.525	33.80	17.10	-31.92	18.98	46.00	27.02	162	276	Horizontal

**Remark:**

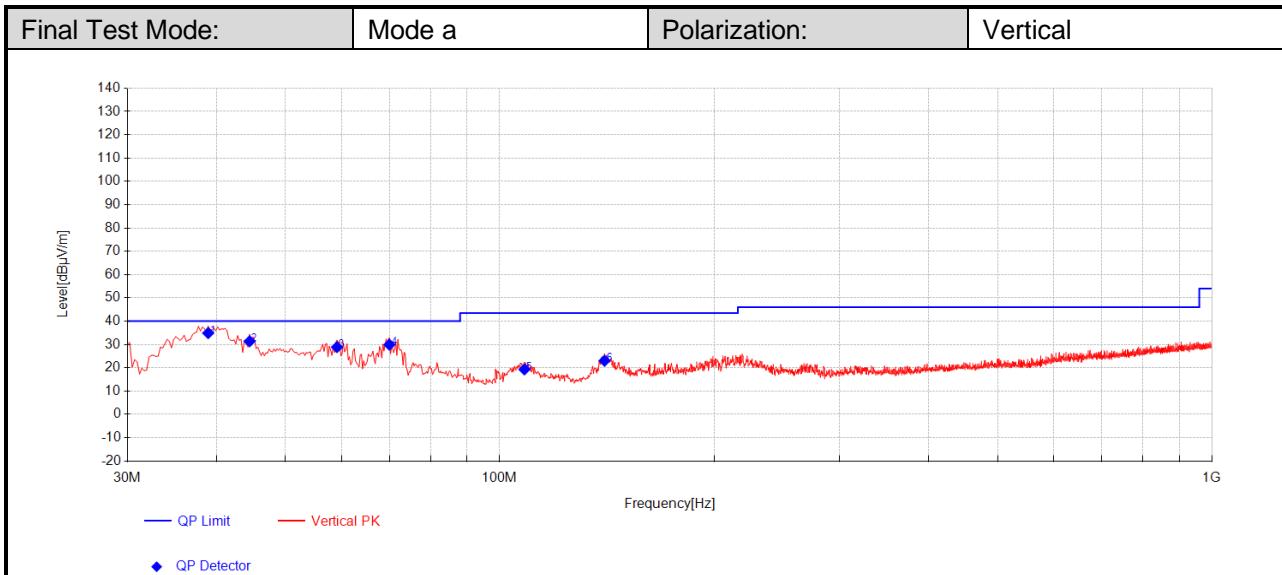
1. The Quasi-Peak measurements were performed on the EUT.

2. Value = Reading + AF + Factor:

AF = Antenna Factor(dB/m)

Factor = Cable Factor(dB) - Preamplifier (dB)

Margin = Limit[dB $\mu$ V/m] - Value[dB $\mu$ V/m]



Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	38.9725	50.15	18.60	-33.88	34.87	40.00	5.13	251	91	Vertical
2	44.55	46.26	18.86	-33.78	31.33	40.00	8.67	198	137	Vertical
3	59.1	44.83	17.59	-33.57	28.85	40.00	11.15	264	170	Vertical
4	70.0125	47.10	16.20	-33.42	29.88	40.00	10.12	238	303	Vertical
5	108.3275	36.80	15.50	-33.01	19.29	43.50	24.21	185	193	Vertical
6	140.3375	37.22	18.53	-32.76	22.99	43.50	20.51	194	248	Vertical

**Remark:**

1. The Quasi-Peak measurements were performed on the EUT.

2. Value = Reading + AF + Factor:

AF = Antenna Factor(dB/m)

Factor = Cable Factor(dB) - Preamplifier (dB)

Margin = Limit[dBμV/m] - Value[dBμV/m]

**5.3 Radiated Emissions (above 1GHz)**

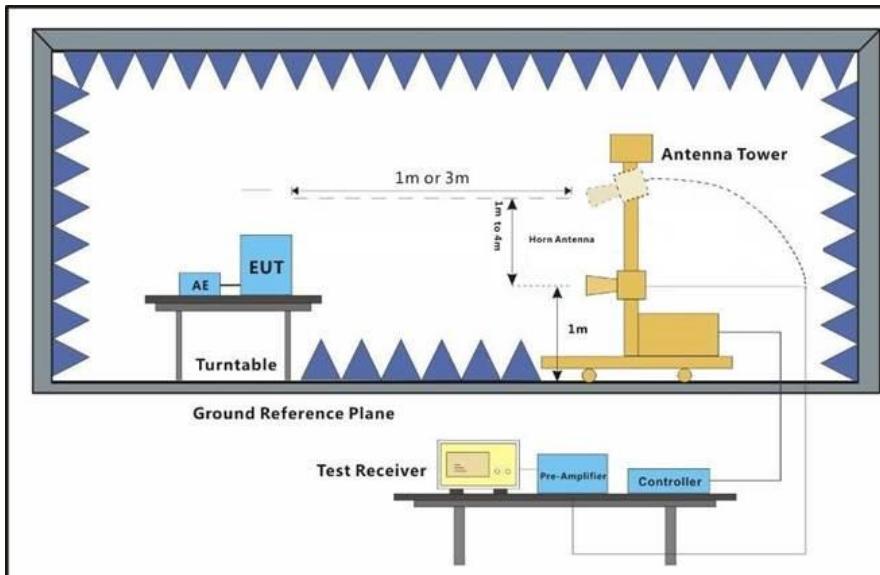
Test Requirement:	47 CFR Part 15, Subpart B		
Test Method:	ANSI C63.4:2014		
Frequency Range:	Above 1GHz		
Measurement Distance:	3m		
Limit:	Frequency (MHz)	Limit (dB $\mu$ V/m)	Detector
	Above 1GHz	74 54	Peak Average
Detector:	Peak for pre-scan (1000kHz resolution bandwidth) 5th harmonic of the highest frequency or 40GHz, whichever is lower.		

**5.3.1 E.U.T. Operation**

Temperature:	22~23°C
Humidity:	44~46%RH
Atmospheric Pressure:	101kPa
Pretest these modes to find the worst case:	a: Bluetooth Link + EUT + Powered by Test Kit b: WIFI 2.4G + EUT + Powered by Test Kit c: Thread + EUT + Powered by Test Kit
The worst case for final test:	a: WIFI 2.4G + EUT + Powered by Test Kit

**5.3.2 Test Setup Procedures**

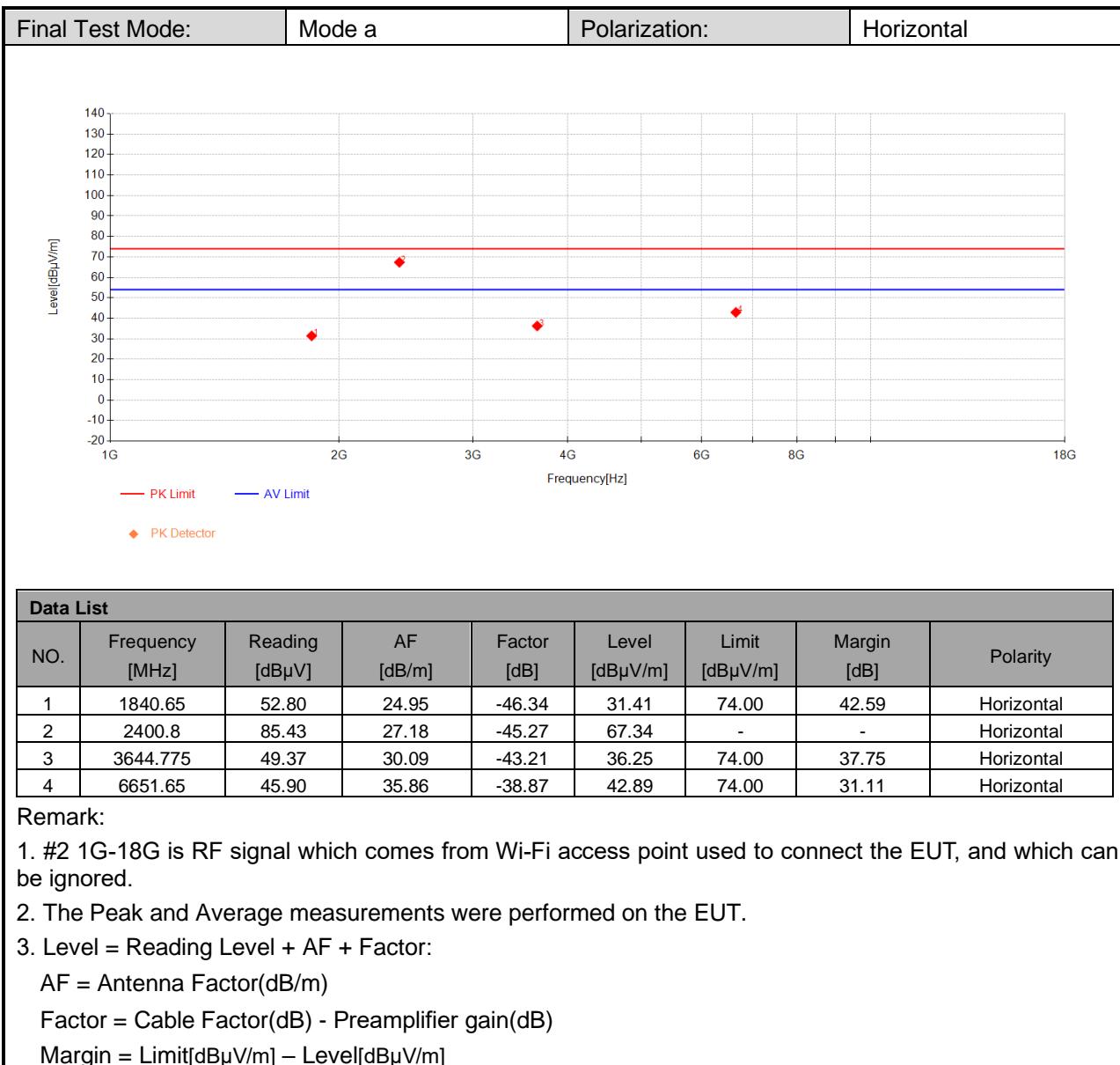
1. The EUT was placed in a full Anechoic Chamber as show below
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation (Distance from antenna to EUT is 1m for measurements >18GHz).
4. The antenna height is adjusted between 1 to 4 meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak and AV Detect Function with specified bandwidth with Maximum Hold Mode, and the trace was allowed to stabilize.
7. At a measurement distance of 1 meter the limit line was increased by  $20 \times \text{LOG}(3/1) = 9.54 \text{ dB}$ .

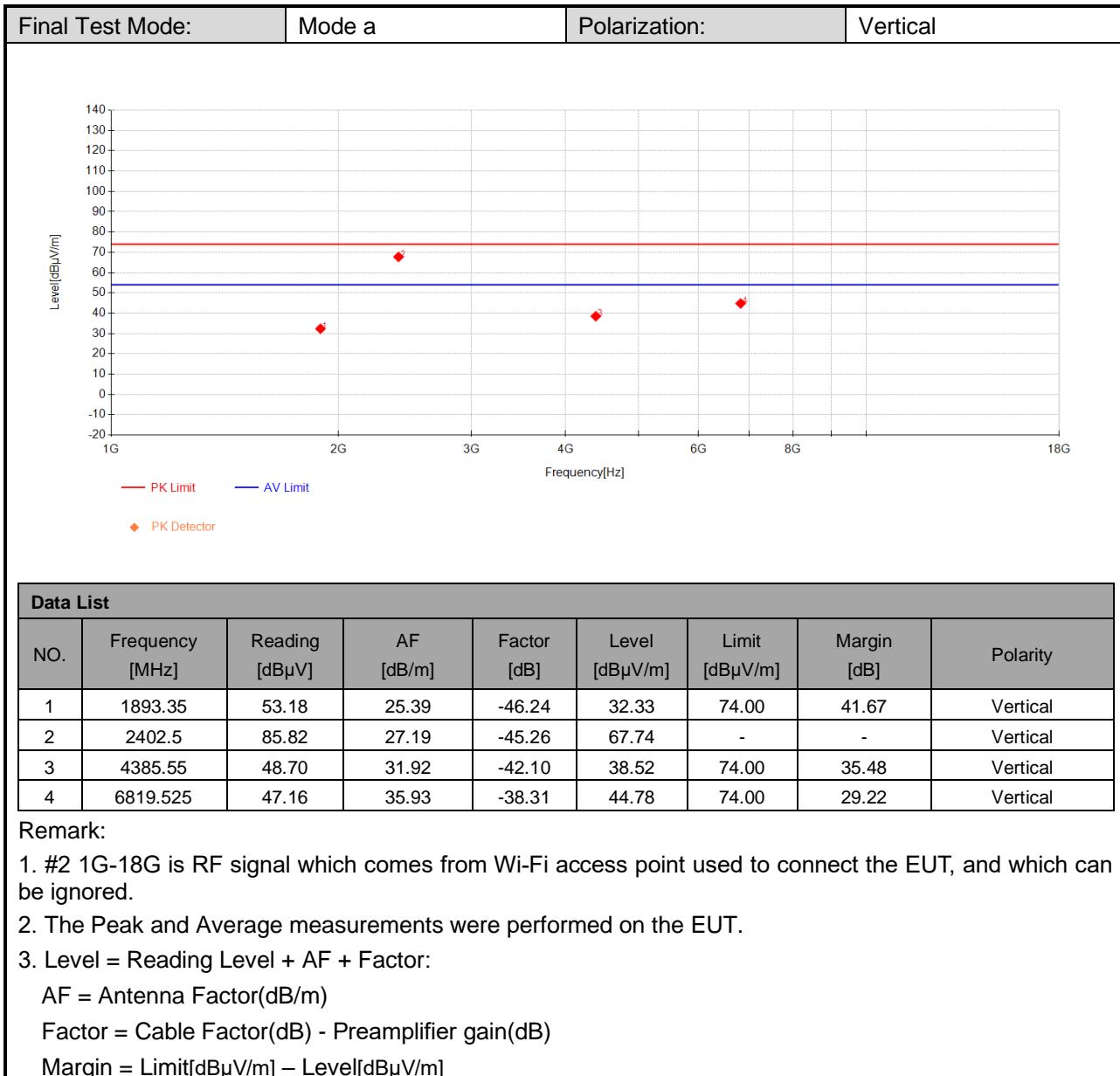
**5.3.3 Measurement Data**

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.

The three polarities of X, Y, Z were measured by EUT, but only the worst data had been displayed.

Scan from 5th harmonic of the highest frequency or 40GHz, whichever is lower, the disturbance above 18GHz was very low. The points marked on below plots are the highest emissions could be found when testing, so only below points had been displayed.





## **6 Photographs**

### **6.1 Test Setup**

Refer to Appendix A.1 15B Setup Photos.

---End of Report---