

FCC Test Report

Product Name : JP6S
Model No. : P06SC, P06SA
FCC ID : 2AZJPJP6S

Applicant : Securus Technologies, LLC
Address : 4000 International Parkway, Carrollton Texas, United States 75007

Date of Receipt : Jul. 08, 2021
Issued Date : Nov. 24, 2021
Report No. : 2170323R-E3032110108-B
Report Version : V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

The test report shall not be reproduced except in full without the written approval of DEKRA Testing and Certification Co., Ltd.

Revision History

Version	Description	Issued Date
V1.0	Initial issue of report	Nov. 24, 2021

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1. General Information

1.1 EUT Description

Product Name	JP6S
Model No.	P06SC, P06SA
Frequency Range	1 Mbps: 2402 ~ 2480 MHz
Channel Number	1 Mbps: 40 Channels
Type of Modulation	GFSK

Accessories Information				
No.	Equipment Name	Brand Name	Model No.	Rating
1	Lithium Ion Battery	DongGuan GanFeng	6494A0	DC 3.7V 8000mAh/29.6Wh

The difference for each model is shown as below:

EUT	Model No.	Description
1	P06SC (Main Model)	The main model is P06SC with camera design. For the variant model P06SA, the Camera, FPC connector, and related RCs are not populated.
2	P06SA (Variant Model)	

Antenna Information				
Ant.	Brand Name	Model No.	Type	Gain (dBi)
0	PCI Private Limited	SRPC000101	PCB	2.86

GFSK (1 Mbps)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
00	2402 MHz	10	2422 MHz	20	2442 MHz	30	2462 MHz
01	2404 MHz	11	2424 MHz	21	2444 MHz	31	2464 MHz
02	2406 MHz	12	2426 MHz	22	2446 MHz	32	2466 MHz
03	2408 MHz	13	2428 MHz	23	2448 MHz	33	2468 MHz
04	2410 MHz	14	2430 MHz	24	2450 MHz	34	2470 MHz
05	2412 MHz	15	2432 MHz	25	2452 MHz	35	2472 MHz
06	2414 MHz	16	2434 MHz	26	2454 MHz	36	2474 MHz
07	2416MHz	17	2436 MHz	27	2456 MHz	37	2476 MHz
08	2418 MHz	18	2438 MHz	28	2458 MHz	38	2478 MHz
09	2420 MHz	19	2440 MHz	29	2460 MHz	39	2480 MHz

Note:

- Regards to the frequency band operation; the lowest · middle and highest frequency of channel were selected to perform the test, and then shown on this report.
- The above EUT information is declared by the manufacturer.

1.2 Test Mode

DEKRA has verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Test Mode	Mode 1: Transmit
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Test Items	Test Mode	EUT	Modulation	Channel	Result
AC Power Line Conducted Emission	Mode 1	1	GFSK (1 Mbps)	19	Pass
Maximum Conducted Output Power	Mode 1	1	GFSK (1 Mbps)	00/19/39	Pass
Radiated Emission Below 1 GHz	Mode 1	1/2	GFSK (1 Mbps)	19	Pass
Radiated Emission Above 1 GHz	Mode 1	1	GFSK (1 Mbps)	00/19/39	Pass
		2	GFSK (1 Mbps)	19	Pass
Antenna Port Conducted Emission	Mode 1	1	GFSK (1 Mbps)	00/19/39	Pass
Radiated Emission Band Edge	Mode 1	1	GFSK (1 Mbps)	00/19/39	Pass
		2	GFSK (1 Mbps)	19	Pass
Occupied Bandwidth & DTS Bandwidth	Mode 1	1	GFSK (1 Mbps)	00/19/39	Pass
Maximum Power Spectral Density	Mode 1	1	GFSK (1 Mbps)	00/19/39	Pass

Note:

- Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- For below 1 GHz radiated emission and AC Power Line Conducted Emission have performed all modes of operation were investigated and the worst-case emissions are reported.
- The EUT was performed at X axis, Y axis and Z axis position for radiated emission and band edge tests. The worst case was found at Z axis, so the measurement will follow this same test configuration.
- The EUT 2 was performed radiated emission and radiated emission band edge test only, and measurement was followed the worst case of EUT 1.

1.3 Comments and Remarks

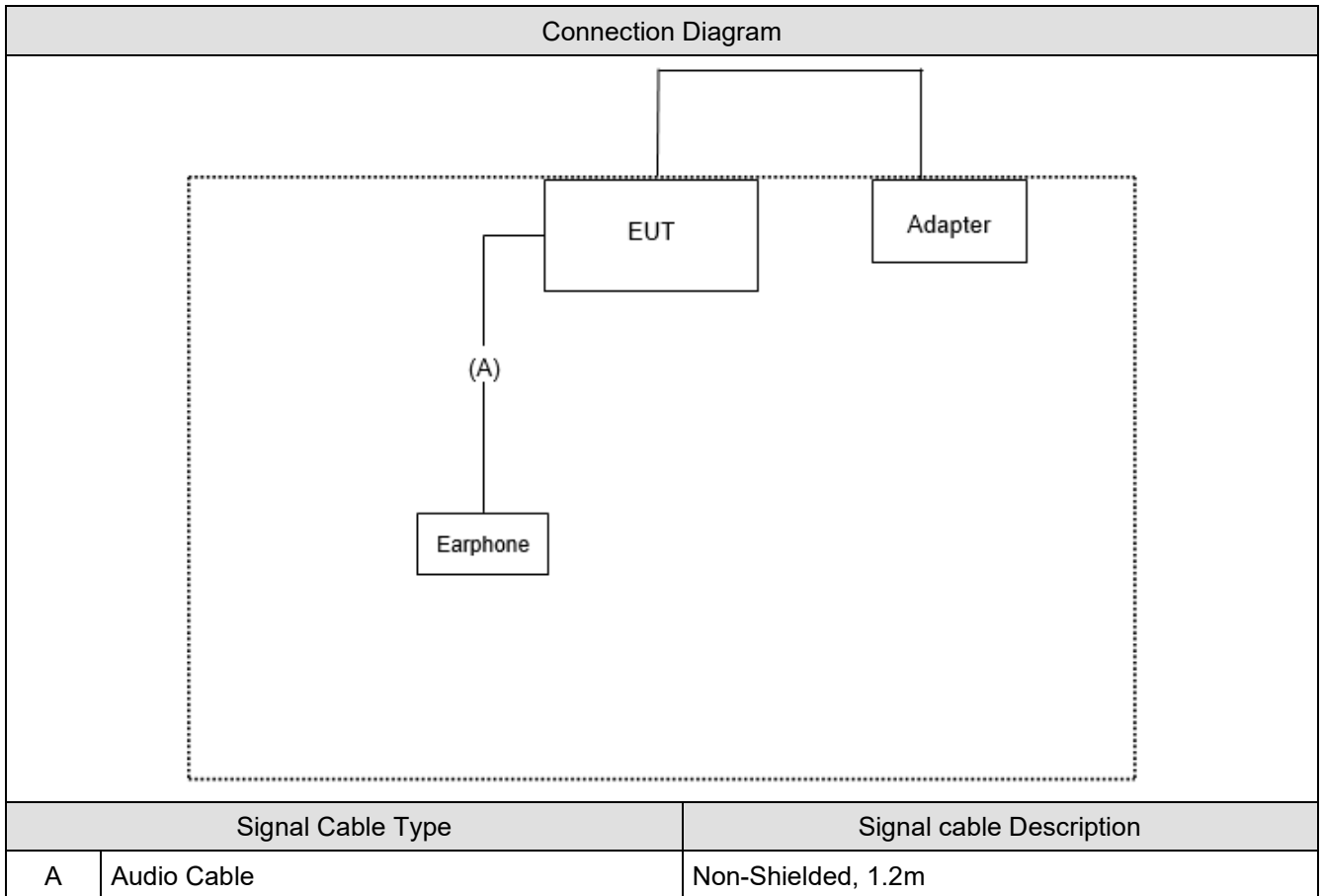
The product specification and testing instructions for the EUT declared in the report are provided by the manufacturer who will take all responsibilities for the accuracy.

1.4 Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards):

Product	Manufacturer	Model No.	Serial No.
1 Adapter	Shenzhen Mi Delan Electronic Technology Co., Ltd.	AS015C-0502500UC	N/A
2 Earphone	Shenzhen Huaxunxing Technology Co., Ltd.	HX-20208002	N/A

1.5 Configuration of tested System



1.6 EUT Operation of during Test

1	Set the EUT as shown.
2	Start engineering mode
3	Configure test mode, test channel and data rate.
4	Let the EUT start sending transmit continuously
5	Verify that device is working properly.

1.7 Test Facility

Ambient conditions in the laboratory:

Items	Test Item	EUT	Actually	Tested by	Test Date	Test Site	
Temperature (°C)	AC power Line Conducted	1	25.6	Lion Wang	2021/10/8	SR2-H	
Humidity (%RH)	Emission		55.7				
Temperature (°C)	Maximum Peak Conducted	1	22	Elwin Lin	2021/9/27	SR12-H	
Humidity (%RH)	Output Power		60				
Temperature (°C)	Radiated Emission	1	25.1	Ling Chen	2021/9/23	CB2-H	
Humidity (%RH)			58				
Temperature (°C)		2	23.5 ~ 24.1	Getaz Yang	2021/11/3 ~ 2021/11/4	CB2-H	
Humidity (%RH)			61 ~ 64				
Temperature (°C)	Antenna Port Conducted	1	22	Elwin Lin	2021/9/27	SR12-H	
Humidity (%RH)	Emission		60				
Temperature (°C)	Radiated Emission Band	1	25.1	Ling Chen	2021/9/23	CB2-H	
Humidity (%RH)			58				
Temperature (°C)		Edge	2	23.5 ~ 24.1	Getaz Yang	2021/11/3 ~ 2021/11/4	CB2-H
Humidity (%RH)				61 ~ 64			
Temperature (°C)	Occupied Bandwidth &	1	22	Elwin Lin	2021/9/27	SR12-H	
Humidity (%RH)	DTS Bandwidth		60				
Temperature (°C)	Maximum Power Spectral	1	22	Elwin Lin	2021/9/27	SR12-H	
Humidity (%RH)	Density		60				

Note: Test site information refers to Laboratory Information.

Laboratory Information

USA : **FCC Registration Number: TW3024**
Canada : **CAB identifier : TW3024**

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: <http://www.dekra.com.tw>

If you have any comments, please don't hesitate to contact us. Our test sites as below:

Test Laboratory	DEKRA Testing and Certification Co., Ltd.
Address	1. No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. 2. No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.
Phone number	1. +886-3-582-8001 2. +886-3-582-8001
Fax number	1. +886-3-582-8958 2. +886-3-582-8958
Email address	info.tw@dekra.com
Website	http://www.dekra.com.tw
Note: Test site number for address 1 includes SR2-H. Test site number for address 2 includes CB2-H, CB3-H, CB4-H, SR10-H and SR12-H.	

1.8 List of Test Equipment

SR2-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Artificial Mains Network	R&S	ENV4200	848411/010	2020/12/24	2021/12/23
Test Receiver	R&S	ESCS 30	836858/022	2021/02/22	2022/02/21
LISN	R&S	ENV216	100092	2021/06/08	2022/06/07
Coaxial Cable(9 m)	Harbour	RG-400	SR2-H	2021/08/15	2022/08/14
DEKRA Testing System	DEKRA	Version 2.0	SR2-H	NA	NA

SR12-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
High Speed Peak Power Meter Dual Input	Anritsu	ML2496A	1602004	2020/11/30	2021/11/29
Pulse Power Sensor	Anritsu	MA2411B	1531043	2020/11/30	2021/11/29
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2021/01/25	2022/01/24
Pulse Power Sensor	Anritsu	MA2411B	1531044	2020/11/30	2021/11/29
Power Meter	Keysight	8990B	MY51000248	2021/05/21	2022/05/20
Power Sensor	Keysight	N1923A	MY57240005	2021/05/21	2022/05/20
Spectrum Analyzer	Keysight	N9030B	MY57140404	2021/05/14	2022/05/13
Spectrum Analyzer	Keysight	N9010B	MY57110159	2021/03/29	2022/03/28
Spectrum Analyzer	Agilent	N9010A	US47140172	2021/05/28	2022/05/27
Signal & Spectrum Analyzer	R&S	FSV40	101049	2021/03/31	2022/03/30

CB2-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal Analyzer	R&S	FSVA40	101455	2020/10/12	2021/10/11
Signal Analyzer	R&S	FSVA40	101455	2021/10/21	2022/10/20
Signal & Spectrum Analyzer	R&S	FSV40	101049	2021/03/31	2022/03/30
Signal Analyzer	R&S	FSVA40	101435	2021/06/04	2022/06/03
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2021/01/25	2022/01/24
Trilog Broadband Antenna	Schwarzbeck	VULB 9168	1272	2021/08/20	2022/08/19
Bilog Antenna	Teseq	CBL6112D	23191	2021/02/26	2022/02/25
Horn Antenna	Schwarzbeck	BBHA 9120D	639	2021/05/17	2022/05/16
Horn Antenna	Schwarzbeck	BBHA 9170	202	2020/12/16	2021/12/15
Pre-Amplifier	EMCI	EMC01820I	980365	2021/05/28	2022/05/27
Pre-Amplifier	EMEC	EM01G18GA	060741	2021/07/02	2022/07/01
Pre-Amplifier	DEKRA	AP-400C	201801231	2020/11/16	2021/11/15
Coaxial Cable(13m)	Huber+Suhner	SF104	CB2-H	2021/08/17	2022/08/16
Radiated Software	AUDIX	e3 V9	CB2-H	N/A	N/A

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

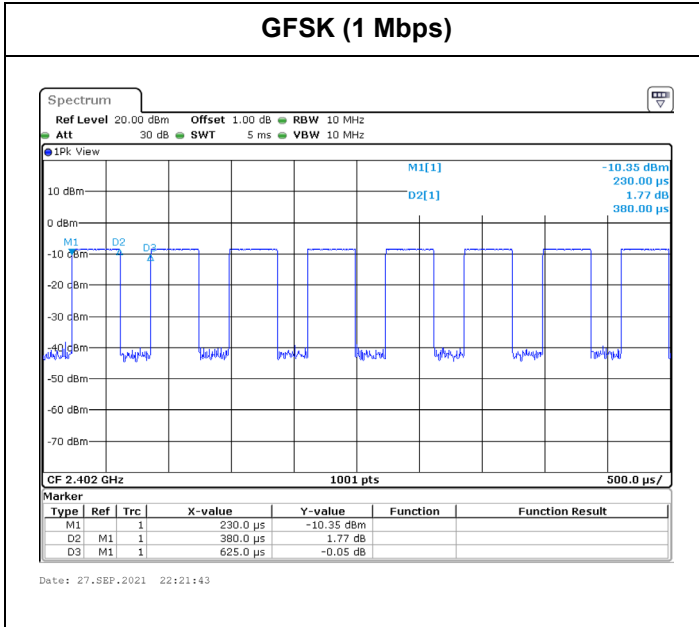
1.9 Measurement Uncertainty

Uncertainties have been calculated according to the DEKRA internal document with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor ($k=2$)).

Test item	Uncertainty
AC Power Line Conducted Emission	± 2.10 dB
Maximum Conducted Output Power	± 1.16 dB
Radiated Emission	± 3.25 dB below 1 GHz ± 3.32 dB above 1 GHz
Antenna Port Conducted Emission	± 1.60 dB
Radiated Emission Band Edge	± 3.32 dB
Occupied Bandwidth & DTS Bandwidth	± 282.55 Hz
Maximum Power Spectral Density	± 1.60 dB

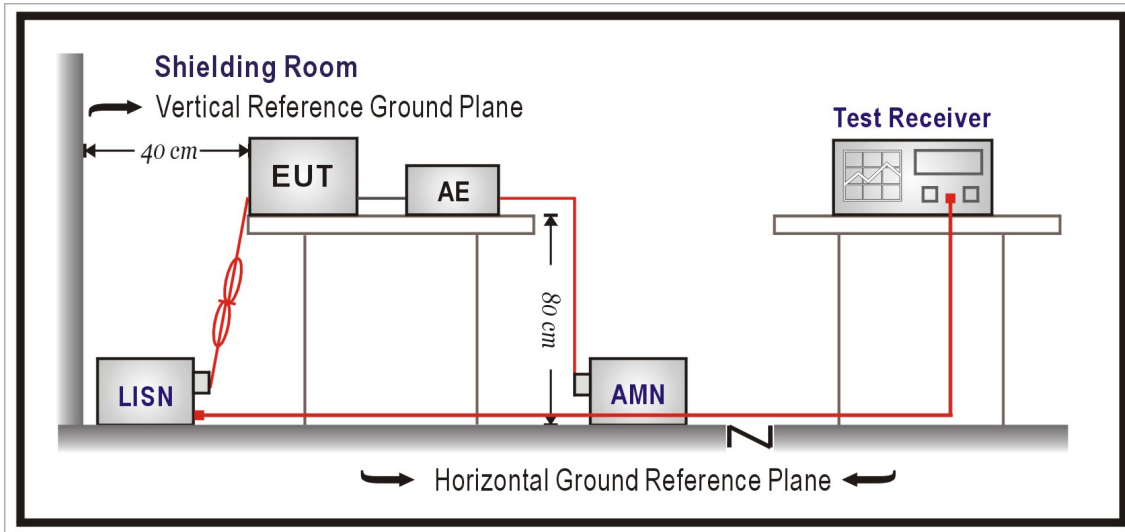
1.10 Duty Cycle

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
GFSK (1 Mbps)	0.380	0.625	60.80	2.16	2.632



2. AC Power Line Conducted Emission

2.1 Test Setup



2.2 Test Limit

Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

2.3 Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50 uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50 ohm/50 uH coupling impedance with 50 ohm termination. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.

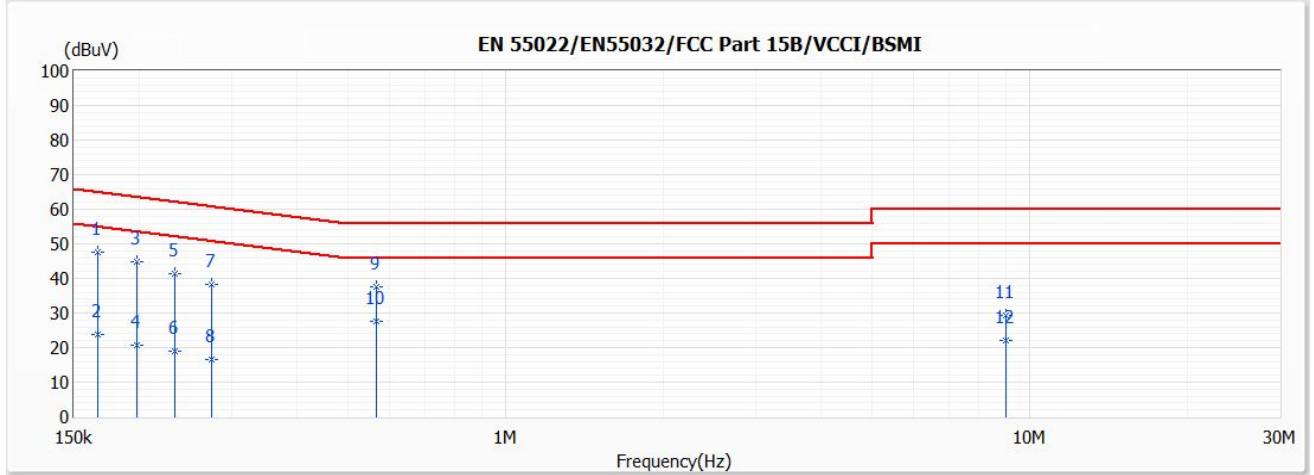
AC Power Line Conducted Emissions were investigated over the frequency range from 0.15 MHz to 30 MHz using a receiver bandwidth of 9 kHz.

2.4 Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207.

2.5 Test Result of AC Power Line Conducted Emission

Test Mode	Mode 1: Transmit	Phase	Line
Test Condition	GFSK (1 Mbps) / 2440 MHz		

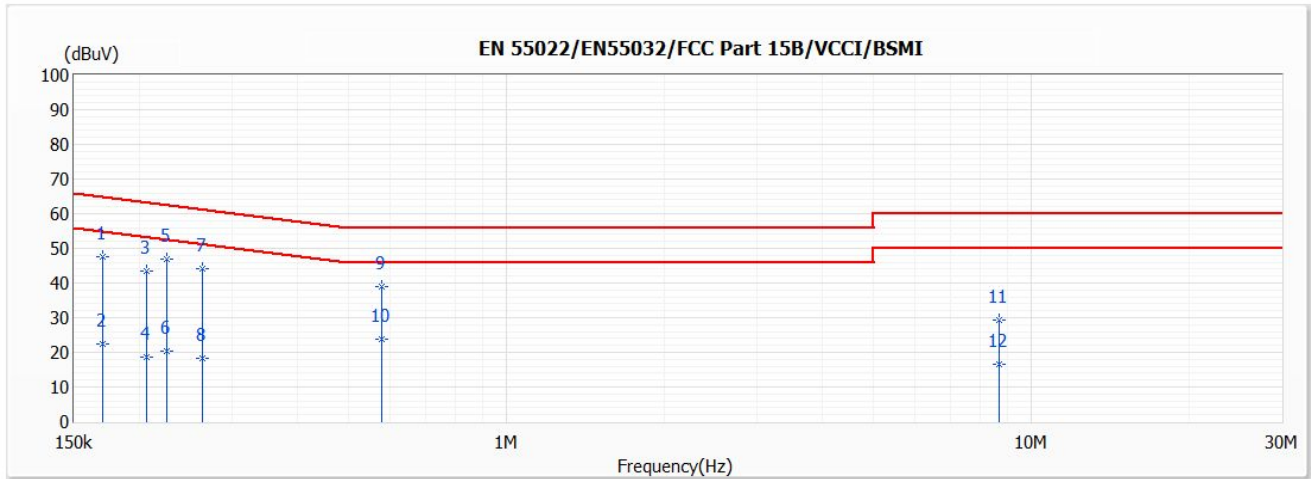


No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
*1	0.167	47.71	65.12	-17.41	38.08	9.63	QP
2	0.167	23.73	55.12	-31.39	14.10	9.63	AV
3	0.198	45.00	63.69	-18.69	35.36	9.64	QP
4	0.198	20.85	53.69	-32.84	11.21	9.64	AV
5	0.234	41.46	62.31	-20.85	31.82	9.64	QP
6	0.234	18.93	52.31	-33.38	9.29	9.64	AV
7	0.274	38.27	61.00	-22.73	28.63	9.64	QP
8	0.274	16.39	51.00	-34.61	6.75	9.64	AV
9	0.565	37.48	56.00	-18.52	27.80	9.68	QP
10	0.565	27.75	46.00	-18.25	18.07	9.68	AV
11	8.997	29.23	60.00	-30.77	19.15	10.08	QP
12	8.997	22.20	50.00	-27.80	12.12	10.08	AV

Remark:

1. "*" means this data is the worst emission level.
2. Emission Level = Reading Level + Correct Factor (Correct Factor = LISN Insertion Loss + Cable Loss).
3. Margin = Emission Level - Limit.

Test Mode	Mode 1: Transmit	Phase	Neutral
Test Condition	GFSK (1 Mbps) / 2440 MHz		



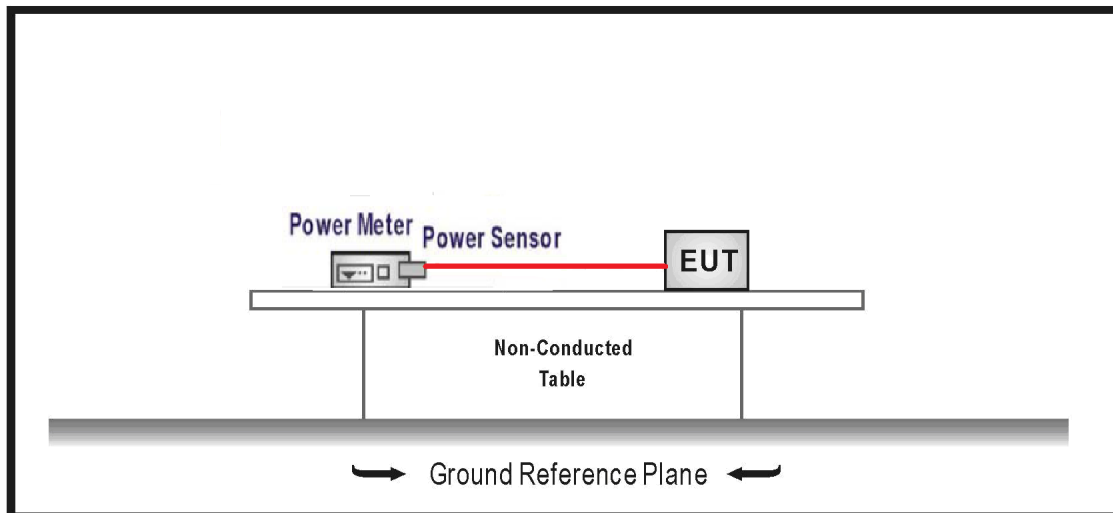
No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.170	47.56	64.95	-17.39	37.92	9.64	QP
2	0.170	22.43	54.95	-32.52	12.79	9.64	AV
3	0.206	43.40	63.38	-19.98	33.76	9.64	QP
4	0.206	18.73	53.38	-34.65	9.09	9.64	AV
*5	0.225	46.86	62.62	-15.76	37.22	9.64	QP
6	0.225	20.21	52.62	-32.41	10.57	9.64	AV
7	0.263	44.27	61.34	-17.07	34.63	9.64	QP
8	0.263	18.24	51.34	-33.10	8.60	9.64	AV
9	0.579	38.81	56.00	-17.19	29.12	9.69	QP
10	0.579	23.76	46.00	-22.24	14.07	9.69	AV
11	8.703	29.20	60.00	-30.80	19.10	10.10	QP
12	8.703	16.60	50.00	-33.40	6.50	10.10	AV

Remark:

1. "*" means this data is the worst emission level.
2. Emission Level = Reading Level + Correct Factor (Correct Factor = LISN Insertion Loss + Cable Loss).
3. Margin = Emission Level - Limit.

3. Maximum Conducted Output Power

3.1 Test Setup



3.2 Test Limit

The Maximum Conducted Output Power shall be less 1 Watt.

3.3 Test procedures

The EUT was setup according to ANSI C63.10: 2013; tested according to DTS test procedure of KDB 558074 D01 v05r02 for compliance to FCC 47CFR 15.247 requirements.

3.4 Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247.

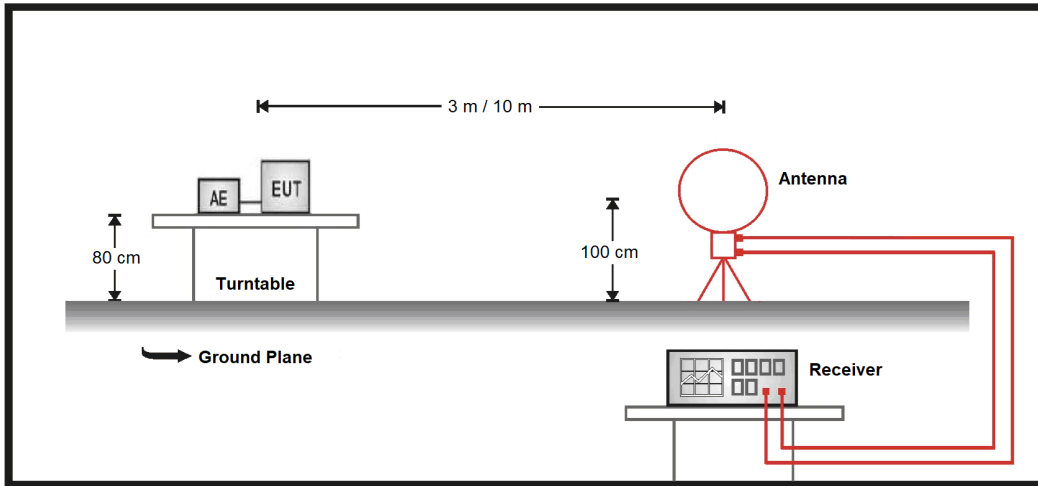
3.5 Test Result of Maximum Conducted Output Power

Modulation	Channel	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
GFSK (1 Mbps)	00	2402	-8.420	≤ 30.00	Pass
	19	2440	-8.630	≤ 30.00	Pass
	39	2480	-8.780	≤ 30.00	Pass

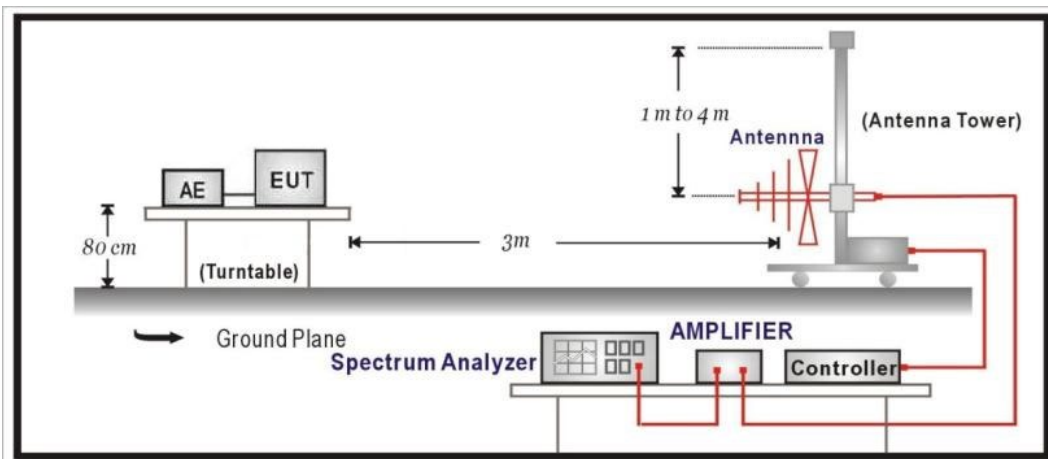
4. Radiated Emission

4.1 Test Setup

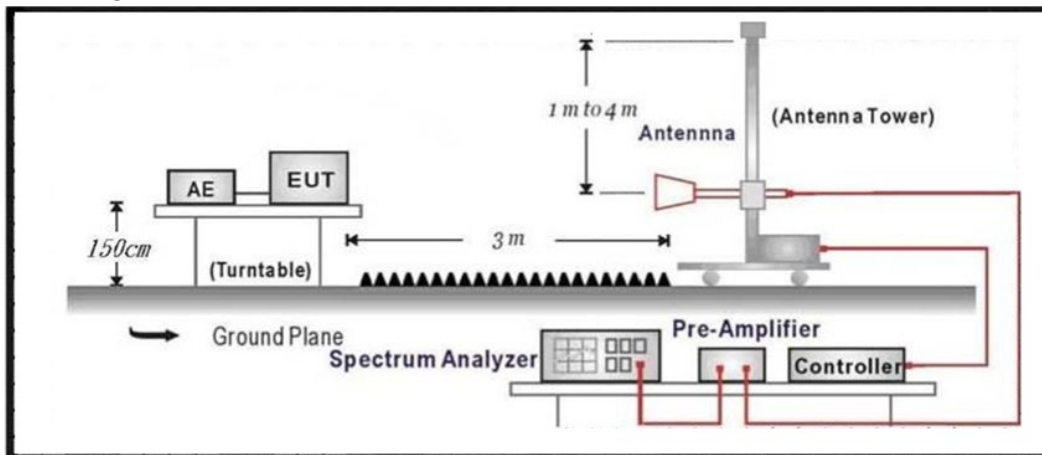
9 kHz ~ 30 MHz



30 MHz ~ 1 GHz



Above 1 GHz



4.2 Test Limit

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20 dB below the level of the fundamental or to the general radiated emission limit in paragraph 15.209, whichever is the lesser attenuation.

Frequency (MHz)	Field strength (uV/m)	Field strength (dBuV/m)	Measurement distance (m)
0.009 – 0.490	2400/F(kHz)	20 log (2400/F(kHz))	300
0.490 – 1.705	24000/F(kHz)	20 log (24000/F(kHz))	30
1.705 - 30	30	29.5	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
Above 960	500	54	3

Remarks:

1. Field strength (dBuV/m) = 20 log Field strength (uV/m)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

4.3 Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB 558074 D01V05r02 for compliance to FCC 47CFR 15.247 requirements.

The EUT and its simulators are placed on a turn table which is 0.8 or 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

On any frequency or frequencies from 9 kHz(include The the lowest oscillator frequency generated within the device up to the 10th harmonic) to 1000 MHz, the limit shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limit shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

The bandwidth below 1 GHz setting on the field strength meter is 120 kHz and above 1 GHz is 1MHz.

4.4 Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247.

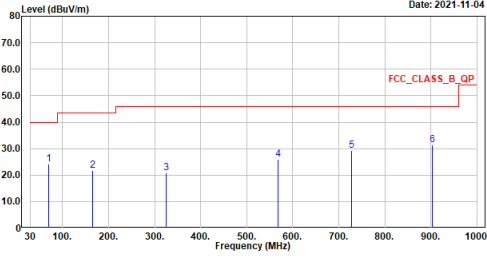
4.5 Test Result of Radiated Emissions (30 MHz ~ 1 GHz)

<For EUT 1>

<p>Site :CB2-H Condition :3m Horizontal Mode :BLE_TX_2440MHz Test By :Ling</p> <p style="text-align: right;">Date: 2021-10-14</p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>No.</th> <th>Frequency MHz</th> <th>Level dBuV/m</th> <th>Limit Line dBuV/m</th> <th>Over Limit dB</th> <th>Read Level dBuV</th> <th>Factor dB</th> <th>Remark</th> </tr> </thead> <tbody> <tr><td>1</td><td>102.653</td><td>29.53</td><td>43.50</td><td>-13.97</td><td>36.40</td><td>-6.87</td><td>QP</td></tr> <tr><td>2</td><td>231.566</td><td>25.36</td><td>46.00</td><td>-20.64</td><td>30.23</td><td>-4.87</td><td>QP</td></tr> <tr><td>3</td><td>335.938</td><td>25.04</td><td>46.00</td><td>-20.96</td><td>25.78</td><td>-0.74</td><td>QP</td></tr> <tr><td>4</td><td>504.524</td><td>26.95</td><td>46.00</td><td>-19.05</td><td>23.54</td><td>3.41</td><td>QP</td></tr> <tr><td>5</td><td>726.848</td><td>29.75</td><td>46.00</td><td>-16.25</td><td>21.89</td><td>7.86</td><td>QP</td></tr> <tr><td>6</td><td>833.839</td><td>33.67</td><td>46.00</td><td>-12.33</td><td>24.12</td><td>9.55</td><td>QP</td></tr> </tbody> </table> <p>Note: 1. Level = Read Level + Factor 2. Factor = Antenna Factor + Cable Loss - Preamp Factor 3. Over Limit = Level - Limit Line 4. The emission under 30MHz was not included since the emission levels are very low against the limit. 5. The other emission levels were very low against the limit.</p>	No.	Frequency MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	Factor dB	Remark	1	102.653	29.53	43.50	-13.97	36.40	-6.87	QP	2	231.566	25.36	46.00	-20.64	30.23	-4.87	QP	3	335.938	25.04	46.00	-20.96	25.78	-0.74	QP	4	504.524	26.95	46.00	-19.05	23.54	3.41	QP	5	726.848	29.75	46.00	-16.25	21.89	7.86	QP	6	833.839	33.67	46.00	-12.33	24.12	9.55	QP	<p>Site :CB2-H Condition :3m Vertical Mode :BLE_TX_2440MHz Test By :Ling</p> <p style="text-align: right;">Date: 2021-10-14</p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>No.</th> <th>Frequency MHz</th> <th>Level dBuV/m</th> <th>Limit Line dBuV/m</th> <th>Over Limit dB</th> <th>Read Level dBuV</th> <th>Factor dB</th> <th>Remark</th> </tr> </thead> <tbody> <tr><td>1</td><td>55.026</td><td>26.72</td><td>40.00</td><td>-13.28</td><td>29.18</td><td>-2.46</td><td>QP</td></tr> <tr><td>2</td><td>180.738</td><td>27.49</td><td>43.50</td><td>-16.01</td><td>31.44</td><td>-3.95</td><td>QP</td></tr> <tr><td>3</td><td>305.771</td><td>22.47</td><td>46.00</td><td>-23.53</td><td>24.14</td><td>-1.67</td><td>QP</td></tr> <tr><td>4</td><td>468.925</td><td>26.31</td><td>46.00</td><td>-19.69</td><td>23.52</td><td>2.79</td><td>QP</td></tr> <tr><td>5</td><td>608.799</td><td>28.87</td><td>46.00</td><td>-17.13</td><td>22.67</td><td>6.20</td><td>QP</td></tr> <tr><td>6</td><td>964.789</td><td>34.15</td><td>54.00</td><td>-19.85</td><td>22.92</td><td>11.23</td><td>QP</td></tr> </tbody> </table> <p>Note: 1. Level = Read Level + Factor 2. Factor = Antenna Factor + Cable Loss - Preamp Factor 3. Over Limit = Level - Limit Line 4. The emission under 30MHz was not included since the emission levels are very low against the limit. 5. The other emission levels were very low against the limit.</p>	No.	Frequency MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	Factor dB	Remark	1	55.026	26.72	40.00	-13.28	29.18	-2.46	QP	2	180.738	27.49	43.50	-16.01	31.44	-3.95	QP	3	305.771	22.47	46.00	-23.53	24.14	-1.67	QP	4	468.925	26.31	46.00	-19.69	23.52	2.79	QP	5	608.799	28.87	46.00	-17.13	22.67	6.20	QP	6	964.789	34.15	54.00	-19.85	22.92	11.23	QP
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<For EUT 2>

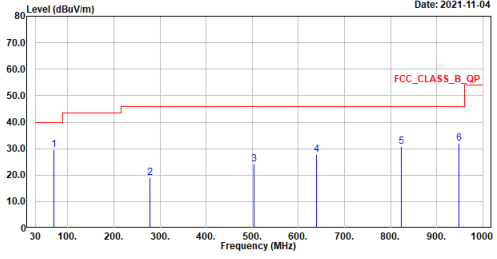
Site :CB2-H
 Condition :3m Horizontal
 Mode :BLE_TX_2440MHz
 Test By :Getaz



No.	Frequency MHz	Level dBuV/m	Limit dBuV/m	Over Limit dB	Read Level dBuV	Factor dB	Remark
1	69.770	24.25	40.00	-15.75	28.42	-4.17	QP
2	164.830	21.75	43.50	-21.75	24.27	-2.52	QP
3	324.880	20.93	46.00	-25.07	21.95	-1.02	QP
4	568.350	26.05	46.00	-19.95	21.41	4.64	QP
5	728.400	29.25	46.00	-16.75	21.36	7.89	QP
6	903.000	31.41	46.00	-14.59	21.16	10.25	QP

- Note:
1. Level = Read Level + Factor
 2. Factor = Antenna Factor + Cable Loss - Preamp Factor
 3. Over Limit = Level - Limit Line
 4. The emission under 30MHz was not included since the emission levels are very low against the limit.
 5. The other emission levels were very low against the limit.

Site :CB2-H
 Condition :3m Vertical
 Mode :BLE_TX_2440MHz
 Test By :Getaz

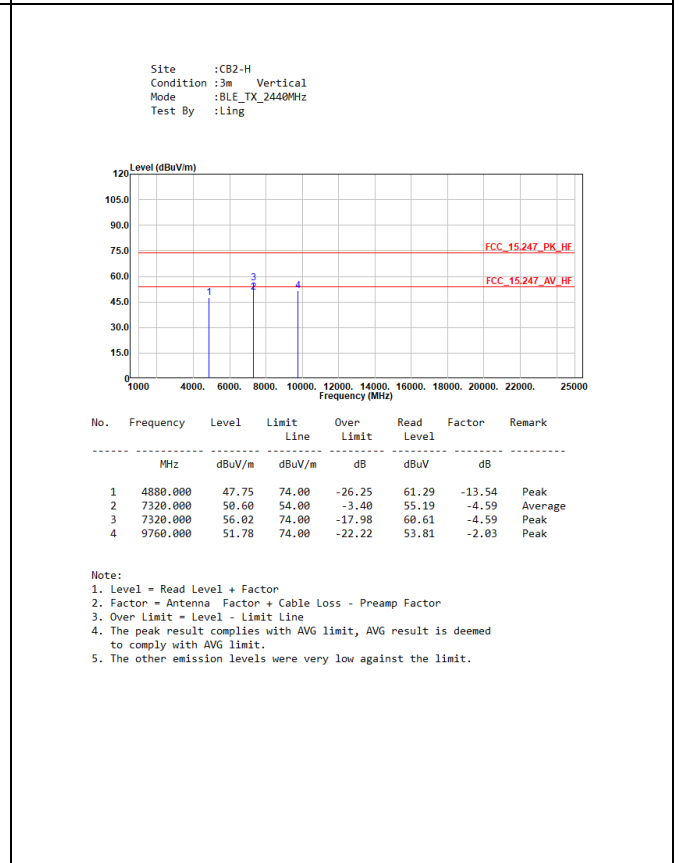
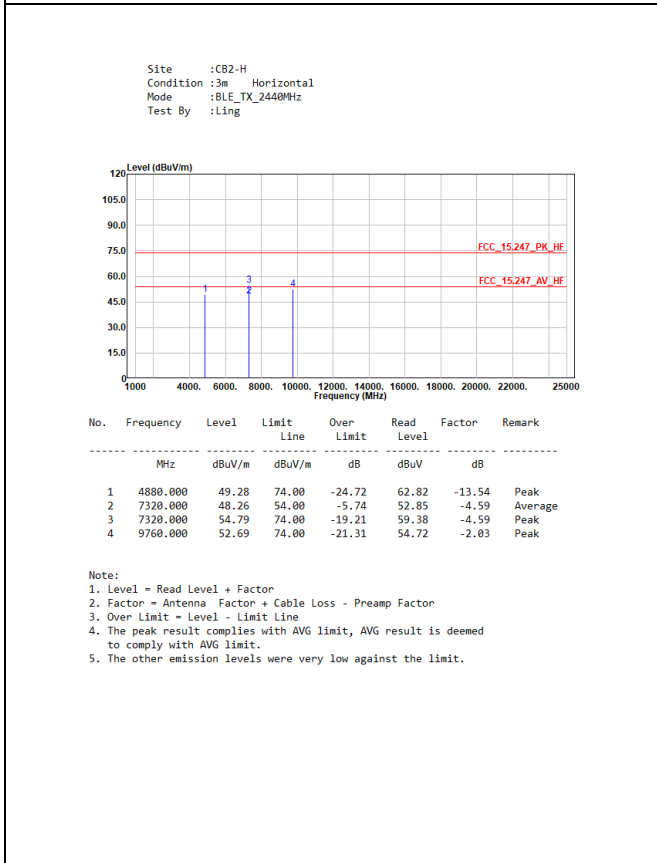
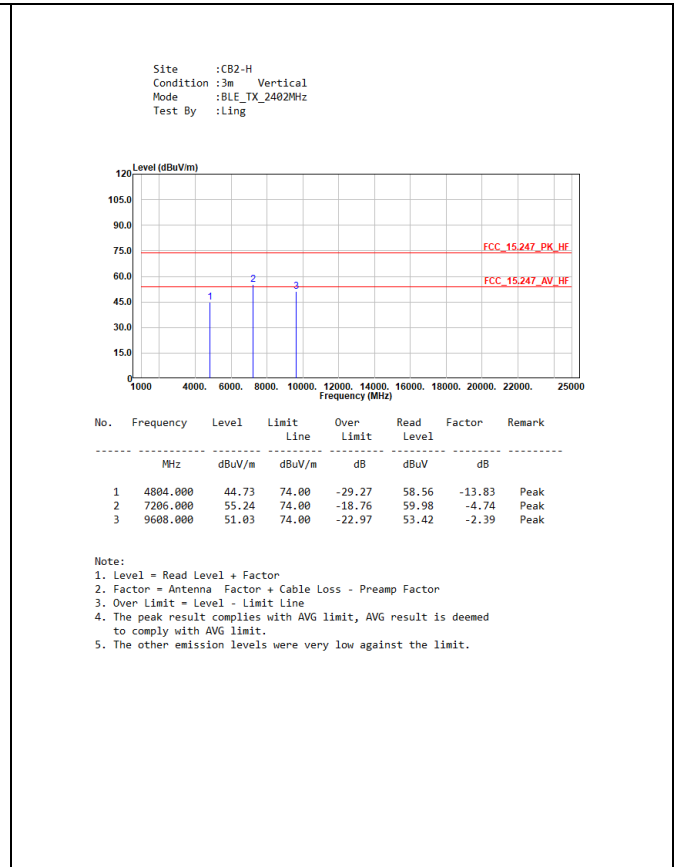
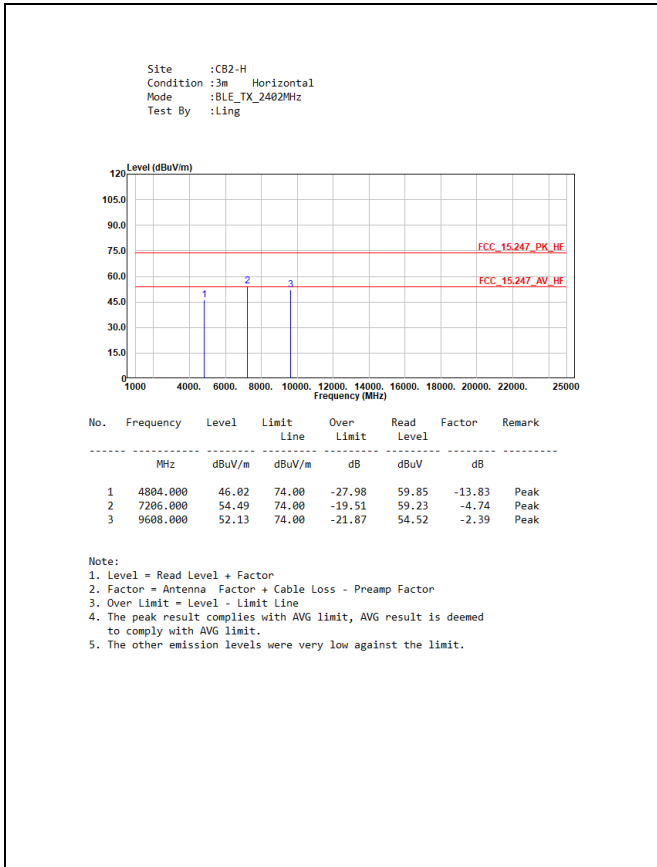


No.	Frequency MHz	Level dBuV/m	Limit dBuV/m	Over Limit dB	Read Level dBuV	Factor dB	Remark
1	69.770	29.43	40.00	-10.57	33.60	-4.17	QP
2	277.350	19.05	46.00	-26.95	21.52	-2.47	QP
3	503.360	24.11	46.00	-21.89	20.75	3.36	QP
4	639.160	27.86	46.00	-18.14	21.32	6.54	QP
5	823.460	30.71	46.00	-15.29	21.33	9.38	QP
6	948.590	32.10	46.00	-13.90	20.97	11.13	QP

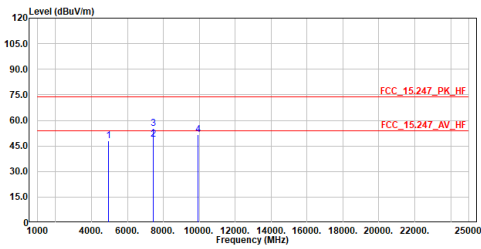
- Note:
1. Level = Read Level + Factor
 2. Factor = Antenna Factor + Cable Loss - Preamp Factor
 3. Over Limit = Level - Limit Line
 4. The emission under 30MHz was not included since the emission levels are very low against the limit.
 5. The other emission levels were very low against the limit.

4.6 Test Result of Radiated Emissions (1 GHz ~ 10th Harmonic)

<For EUT 1>



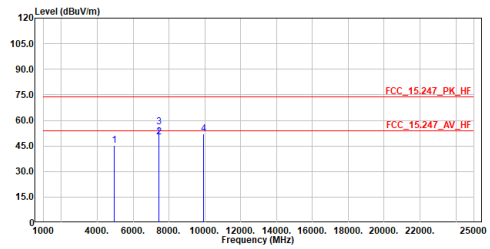
Site :CB2-H
 Condition :3m Horizontal
 Mode :BLE_TX_2480MHz
 Test By :Ling



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4960.000	47.91	74.00	-26.09	61.14	-13.23	Peak
2	7440.000	48.82	54.00	-5.18	53.26	-4.44	Average
3	7440.000	55.43	74.00	-18.57	59.87	-4.44	Peak
4	9920.000	51.47	74.00	-22.53	53.11	-1.64	Peak

Note:
 1. Level = Read Level + Factor
 2. Factor = Antenna Factor + Cable Loss - Preamp Factor
 3. Over Limit = Level - Limit Line
 4. The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
 5. The other emission levels were very low against the limit.

Site :CB2-H
 Condition :3m Vertical
 Mode :BLE_TX_2480MHz
 Test By :Ling

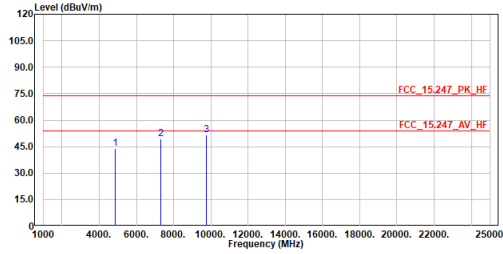


No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4960.000	45.16	74.00	-28.84	58.39	-13.23	Peak
2	7440.000	50.44	54.00	-3.56	54.88	-4.44	Average
3	7440.000	56.20	74.00	-17.80	60.64	-4.44	Peak
4	9920.000	52.10	74.00	-21.90	53.74	-1.64	Peak

Note:
 1. Level = Read Level + Factor
 2. Factor = Antenna Factor + Cable Loss - Preamp Factor
 3. Over Limit = Level - Limit Line
 4. The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
 5. The other emission levels were very low against the limit.

<For EUT 2>

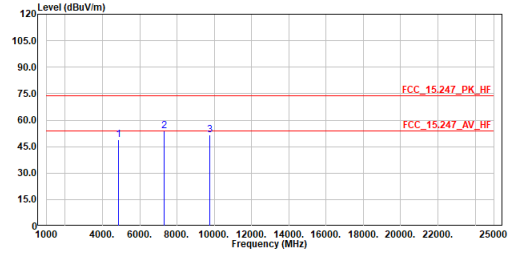
Site :CB2-H
 Condition :3m Horizontal
 Mode :BLE_TX_2440MHz
 Test By :Getaz



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4880.000	44.04	74.00	-29.96	57.58	-13.54	Peak
2	7320.000	49.16	74.00	-24.84	53.75	-4.59	Peak
3	9760.000	51.50	74.00	-22.50	53.53	-2.03	Peak

Note:
 1. Level = Read Level + Factor
 2. Factor = Antenna Factor + Cable Loss - Preamp Factor
 3. Over Limit = Level - Limit Line
 4. The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
 5. The other emission levels were very low against the limit.

Site :CB2-H
 Condition :3m Vertical
 Mode :BLE_TX_2440MHz
 Test By :Getaz

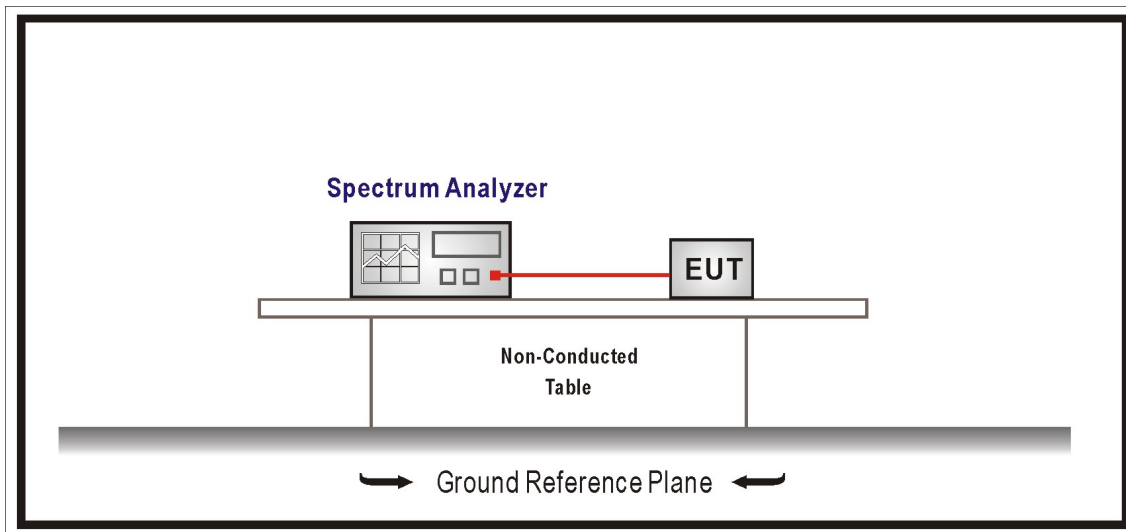


No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	
1	4880.000	48.84	74.00	-25.16	62.38	-13.54	Peak
2	7320.000	53.97	74.00	-20.03	58.56	-4.59	Peak
3	9760.000	51.83	74.00	-22.17	53.86	-2.03	Peak

Note:
 1. Level = Read Level + Factor
 2. Factor = Antenna Factor + Cable Loss - Preamp Factor
 3. Over Limit = Level - Limit Line
 4. The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
 5. The other emission levels were very low against the limit.

5. Antenna Port Conducted Emission

5.1 Test Setup



5.2 Test Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limit. If the transmitter complies with the conducted power limit based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limit specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limit specified in §15.209(a) (see §15.205(c)).

5.3 Test Procedure

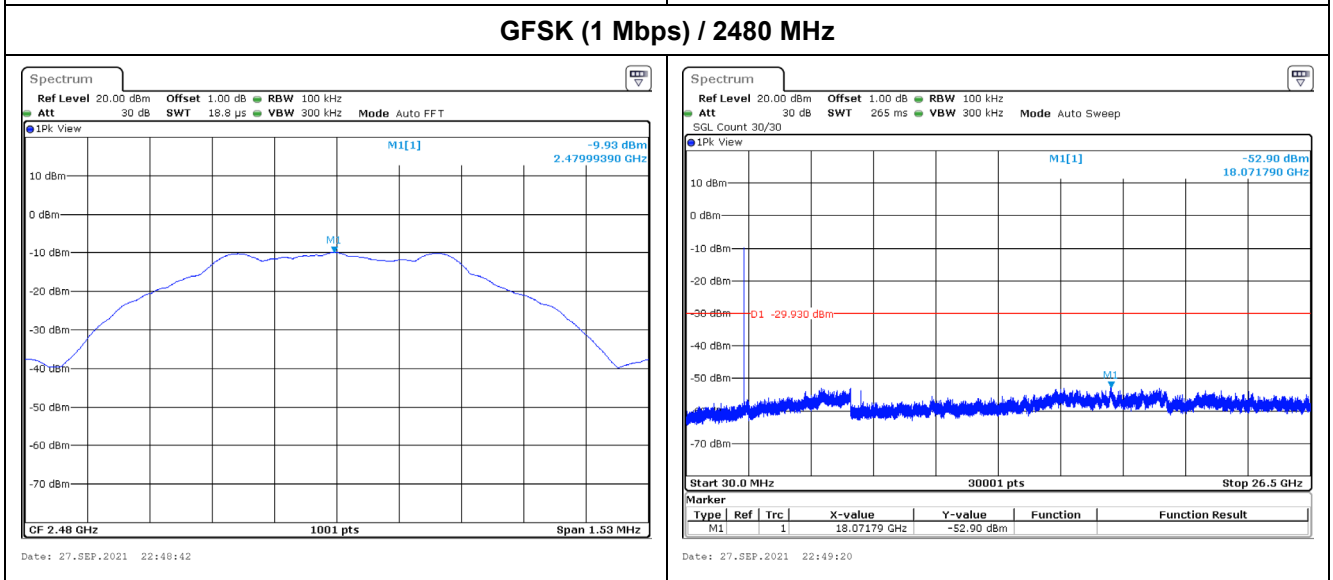
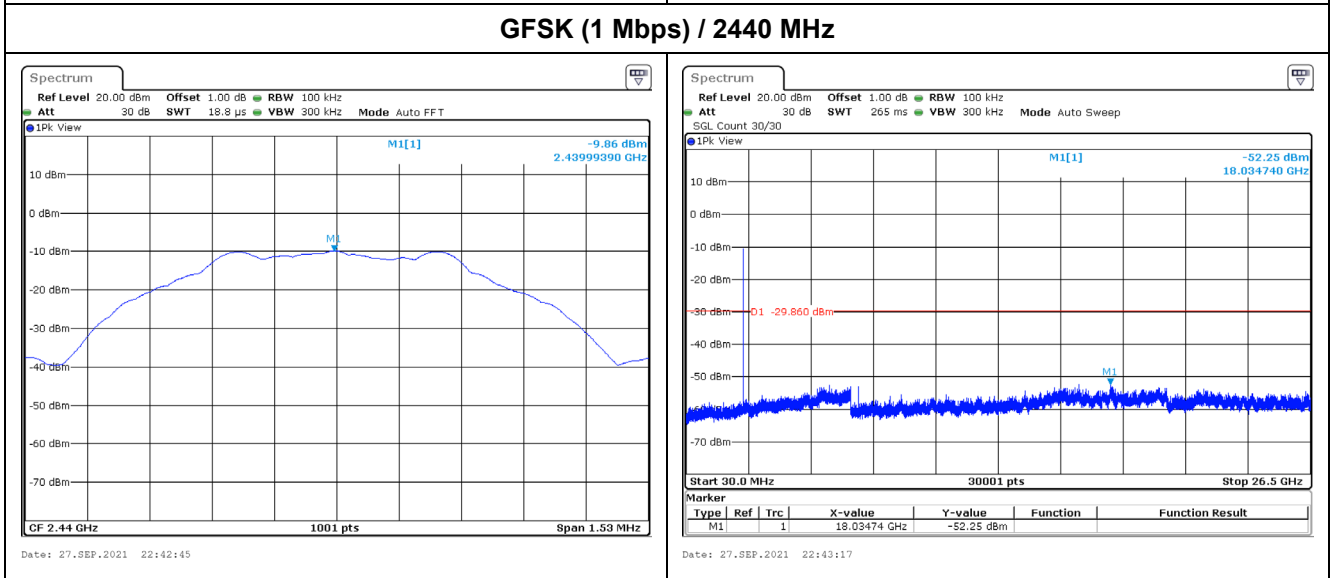
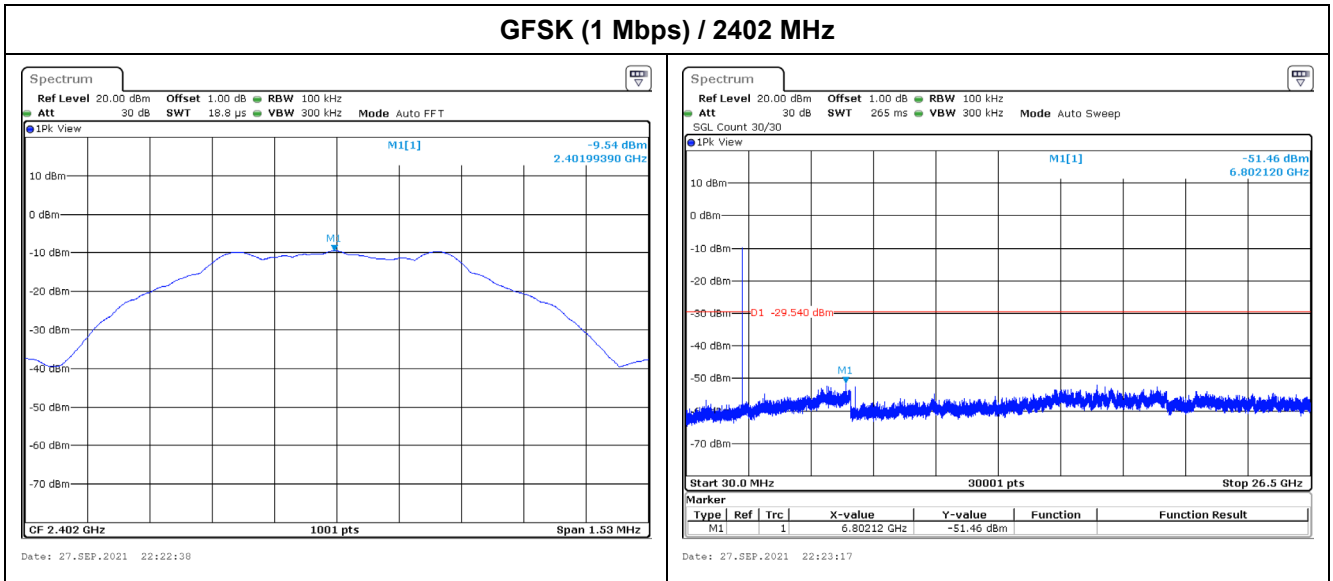
The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB 558074 D01 V05r02 for compliance to FCC 47CFR 15.247 requirements.

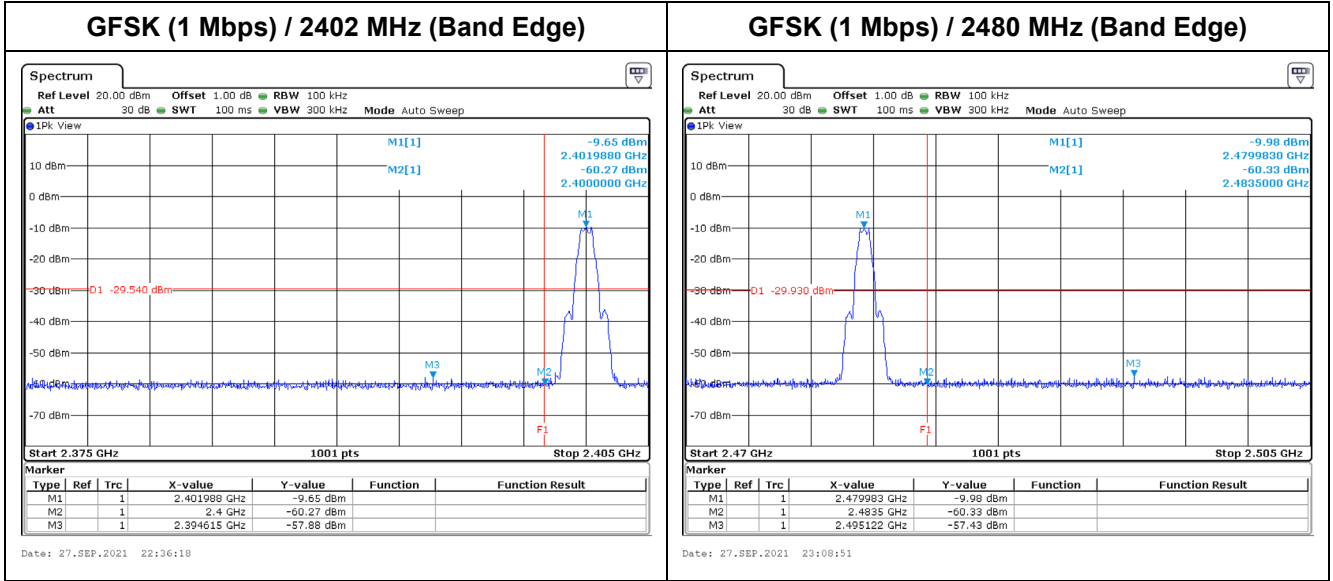
Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

5.4 Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247.

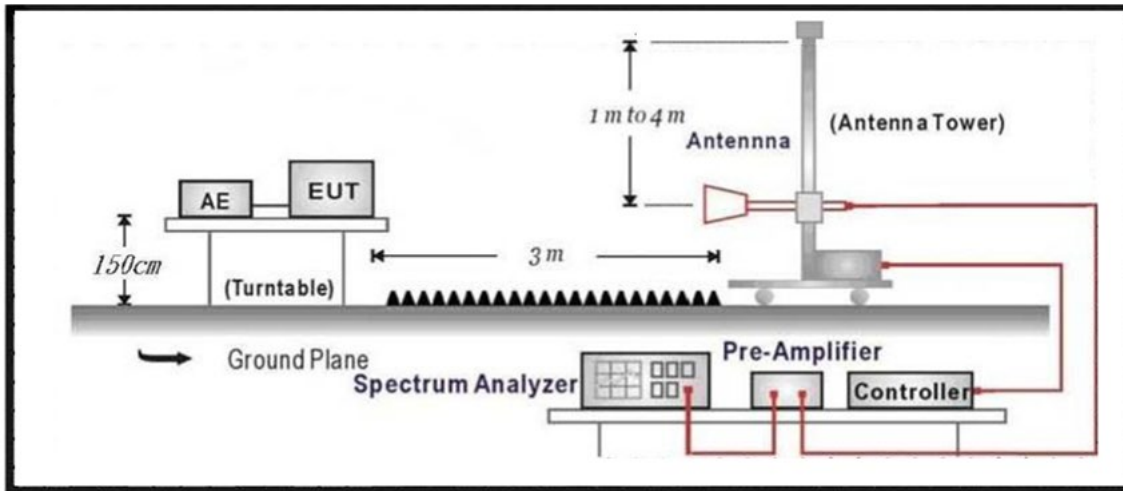
5.5 Test Result of Antenna Port Conducted Emission





6. Radiated Emission Band Edge

6.1 Test Setup



6.2 Test Limit

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20 dB below the level of the fundamental or to the general radiated emission limit in paragraph 15.209, whichever is the lesser attenuation.

Frequency (MHz)	Field strength (uV/m)	Field strength (dBuV/m)	Measurement distance (m)
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
Above 960	500	54	3

Remarks:

1. Field strength (dBuV/m) = 20 log Field strength (uV/m)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system

6.3 Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 v05r02 for compliance to FCC 47CFR 15.247 requirements.

The EUT and its simulators are placed on a turn table which is 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

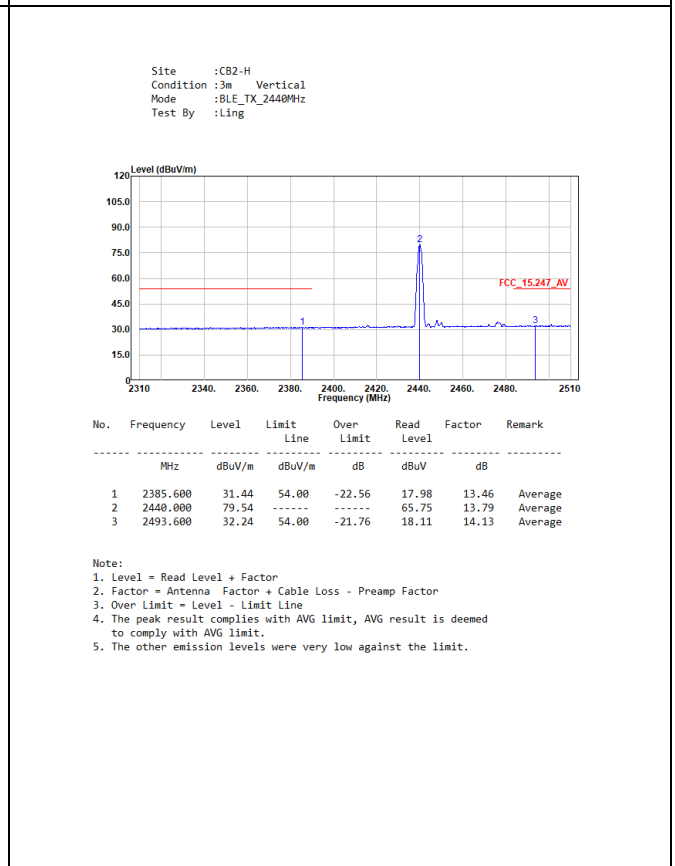
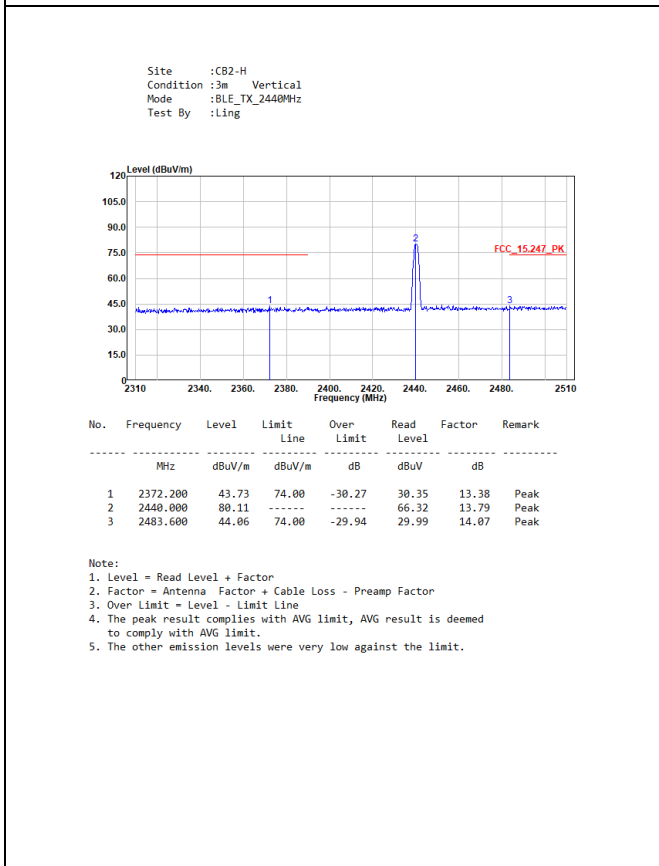
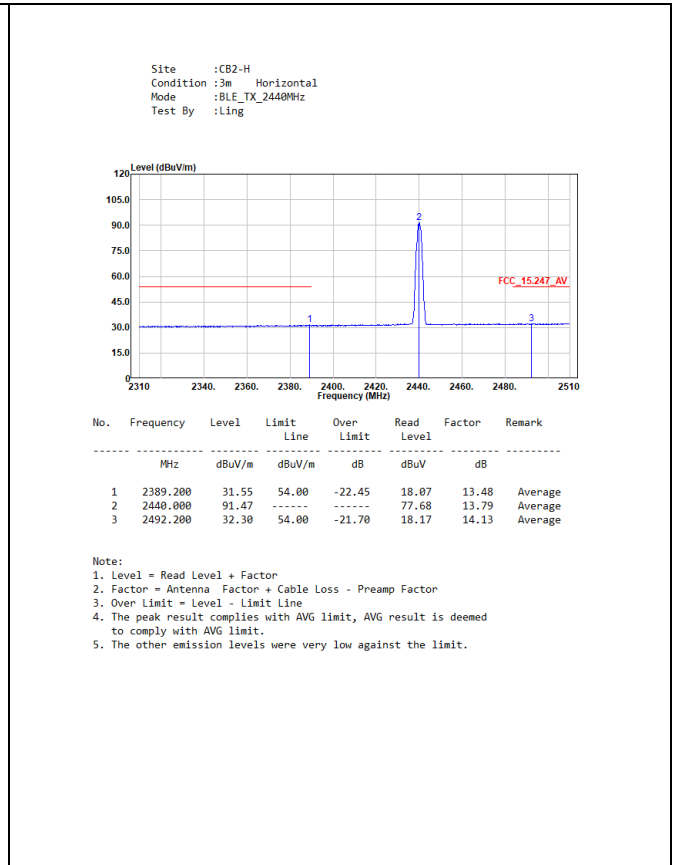
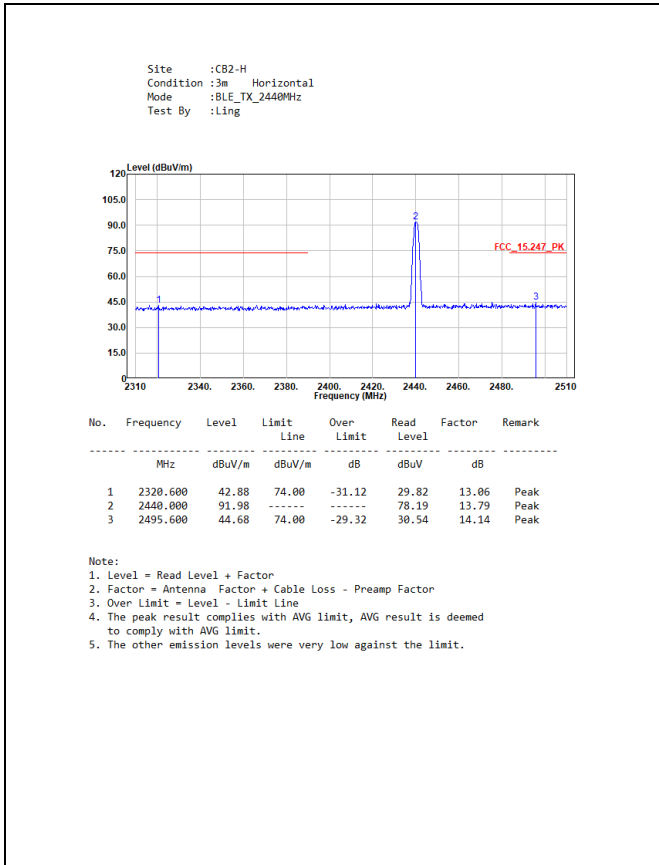
6.4 Test Specification

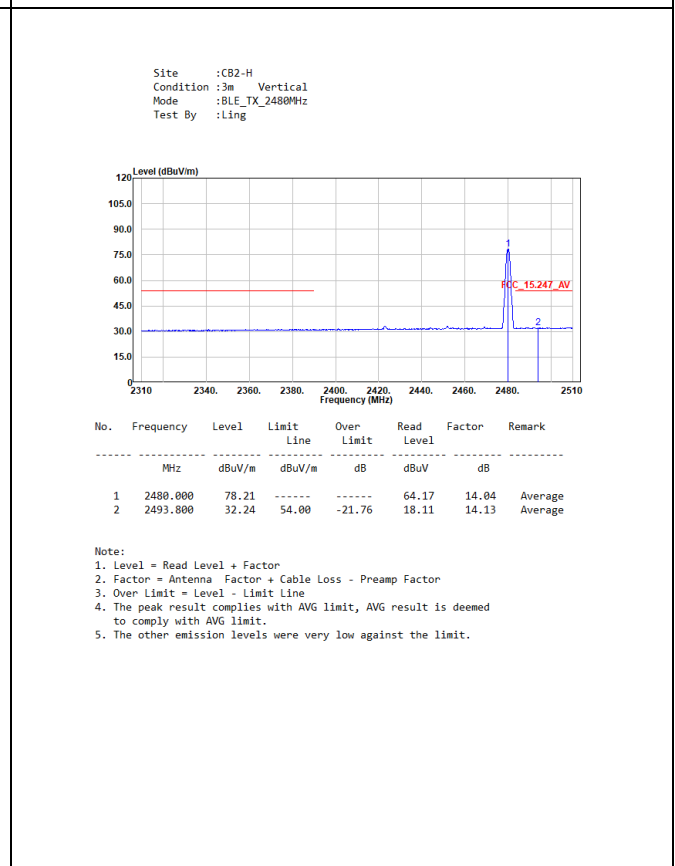
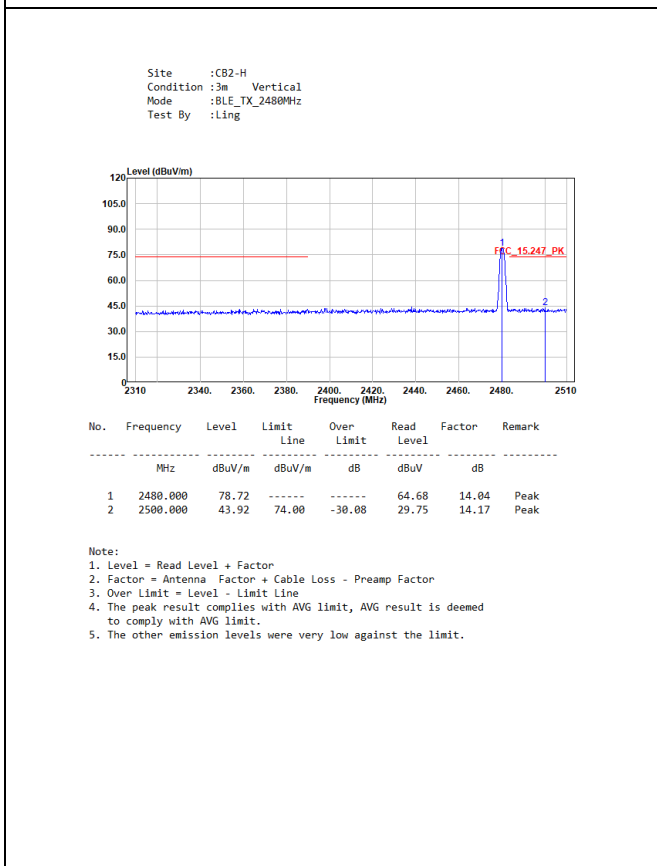
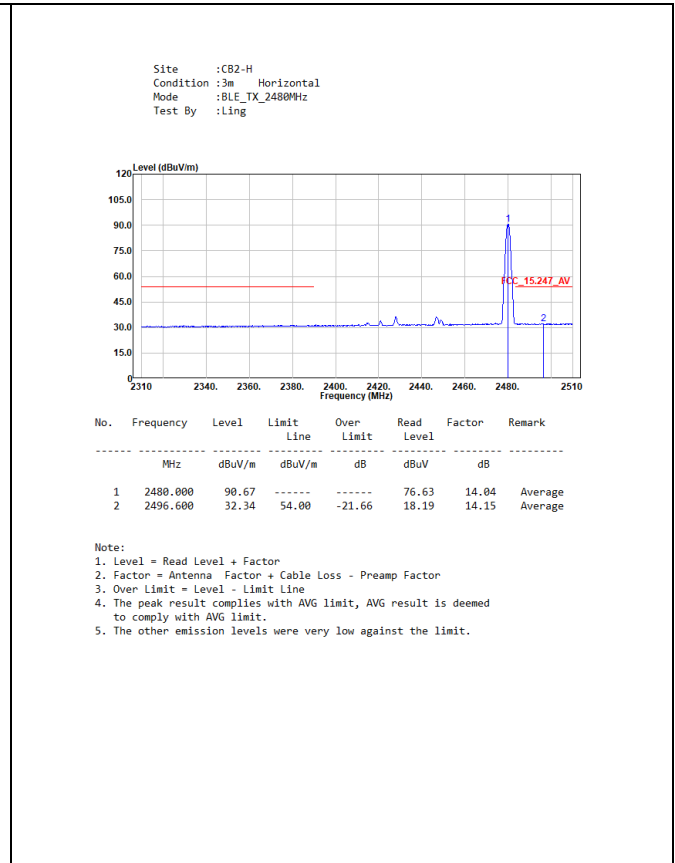
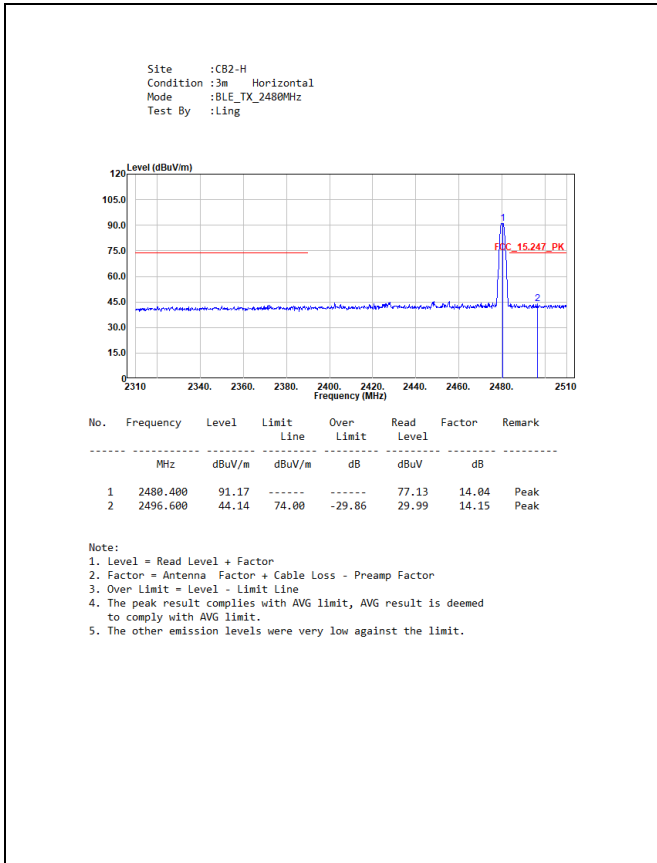
According to FCC Part 15 Subpart C Paragraph 15.247.

6.5 Test Result of Radiated Emission Band Edge

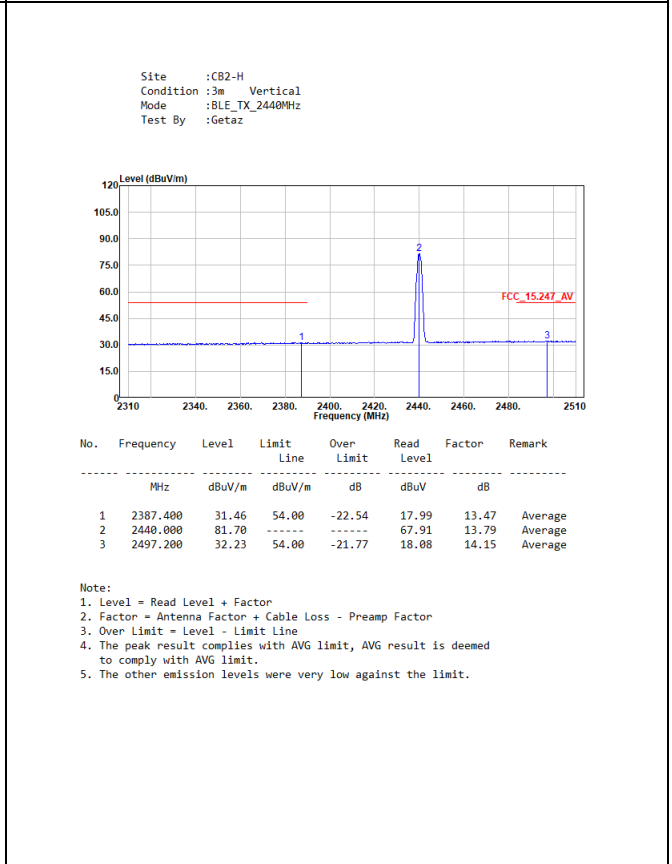
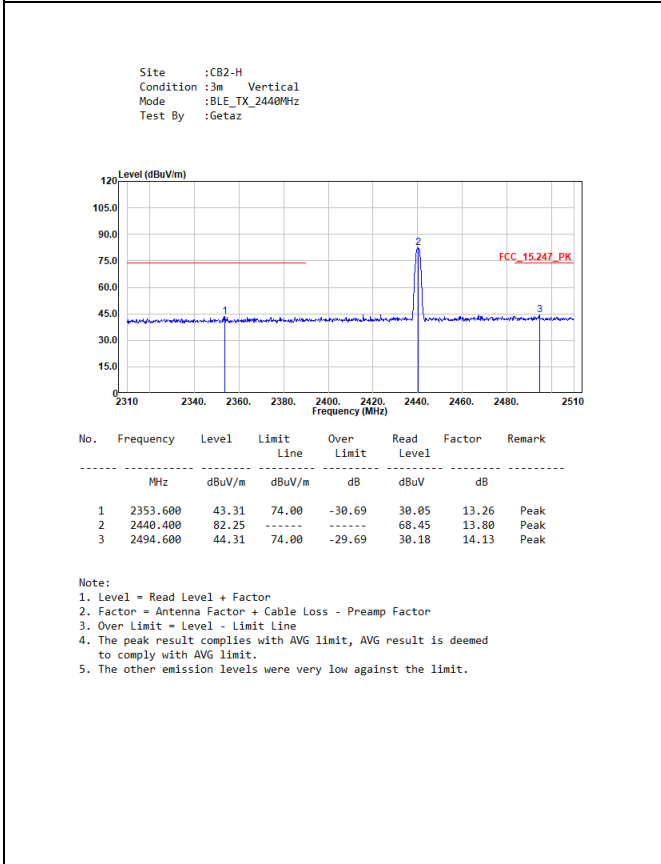
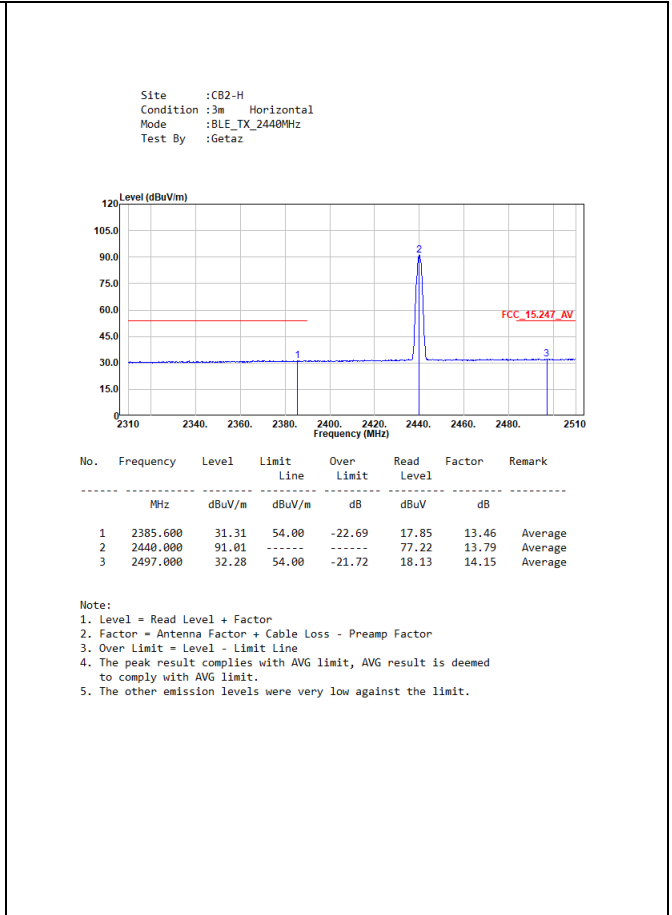
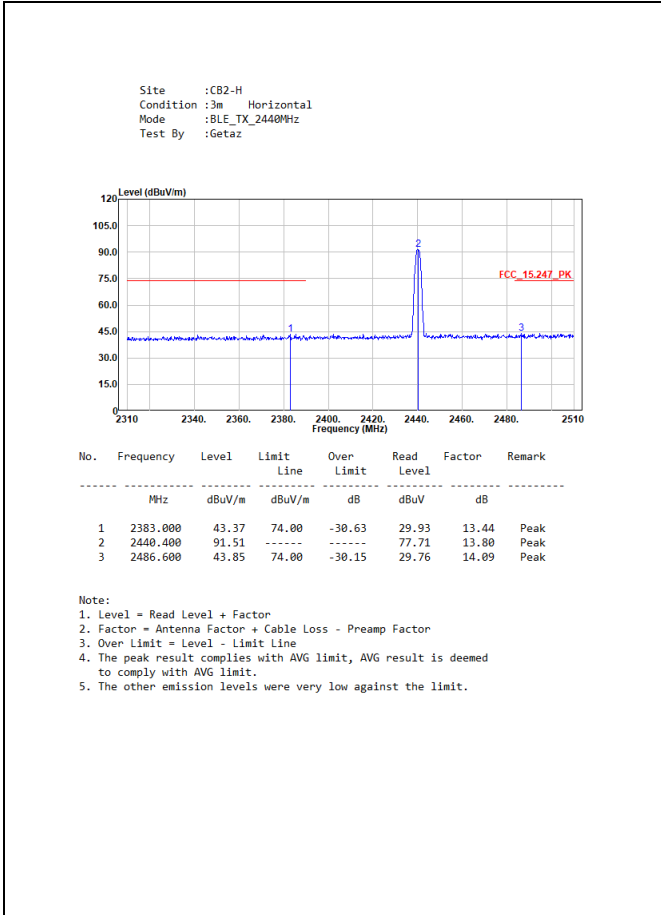
<For EUT 1>

<p>Site :CB2-H Condition :3m Horizontal Mode :BLE_TX_2402MHz Test By :Ling</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Frequency MHz</th> <th>Level dBuV/m</th> <th>Limit Line dBuV/m</th> <th>Over Limit dB</th> <th>Read Level dBuV</th> <th>Factor dB</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2381.400</td> <td>43.03</td> <td>74.00</td> <td>-30.97</td> <td>29.60</td> <td>13.43</td> <td>Peak</td> </tr> <tr> <td>2</td> <td>2402.000</td> <td>91.07</td> <td>74.00</td> <td>17.07</td> <td>77.51</td> <td>13.56</td> <td>Peak</td> </tr> </tbody> </table> <p>Note: 1. Level = Read Level + Factor 2. Factor = Antenna Factor + Cable Loss - Preamp Factor 3. Over Limit = Level - Limit Line 4. The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit. 5. The other emission levels were very low against the limit.</p>	No.	Frequency MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	Factor dB	Remark	1	2381.400	43.03	74.00	-30.97	29.60	13.43	Peak	2	2402.000	91.07	74.00	17.07	77.51	13.56	Peak	<p>Site :CB2-H Condition :3m Horizontal Mode :BLE_TX_2402MHz Test By :Ling</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Frequency MHz</th> <th>Level dBuV/m</th> <th>Limit Line dBuV/m</th> <th>Over Limit dB</th> <th>Read Level dBuV</th> <th>Factor dB</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2373.000</td> <td>31.40</td> <td>54.00</td> <td>-22.60</td> <td>18.02</td> <td>13.38</td> <td>Average</td> </tr> <tr> <td>2</td> <td>2402.000</td> <td>90.55</td> <td>54.00</td> <td>36.55</td> <td>76.99</td> <td>13.56</td> <td>Average</td> </tr> </tbody> </table> <p>Note: 1. Level = Read Level + Factor 2. Factor = Antenna Factor + Cable Loss - Preamp Factor 3. Over Limit = Level - Limit Line 4. The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit. 5. The other emission levels were very low against the limit.</p>	No.	Frequency MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	Factor dB	Remark	1	2373.000	31.40	54.00	-22.60	18.02	13.38	Average	2	2402.000	90.55	54.00	36.55	76.99	13.56	Average
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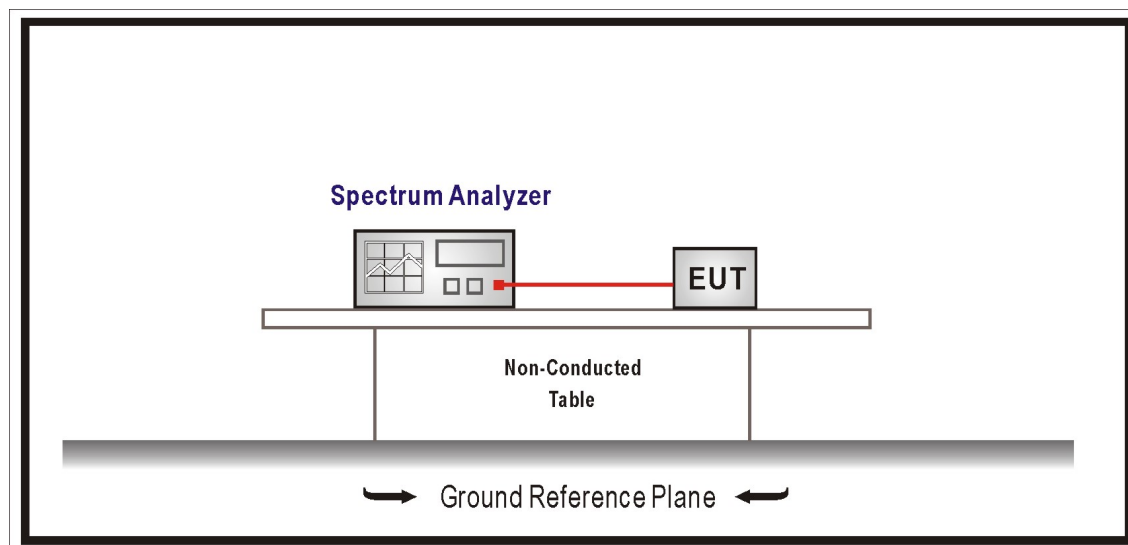


<For EUT 2>



7. Occupied Bandwidth & DTS Bandwidth

7.1 Test Setup



7.2 Test Limit

Occupied Bandwidth: NA

The DTS bandwidth (6 dB): ≥ 500 kHz.

7.3 Test Procedures

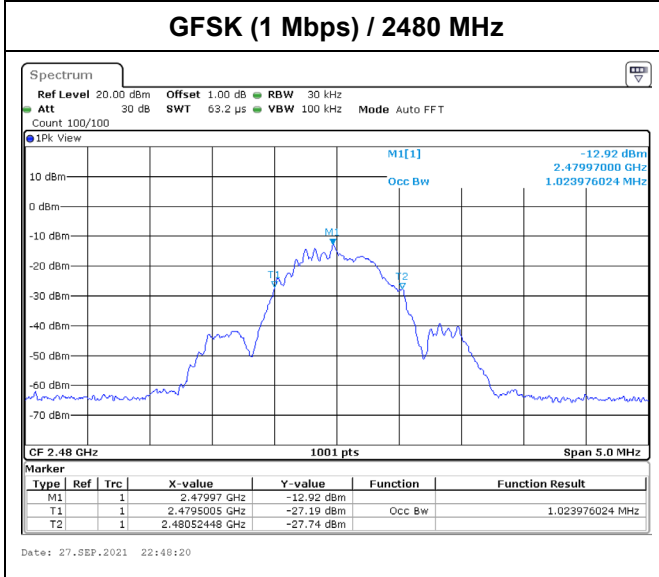
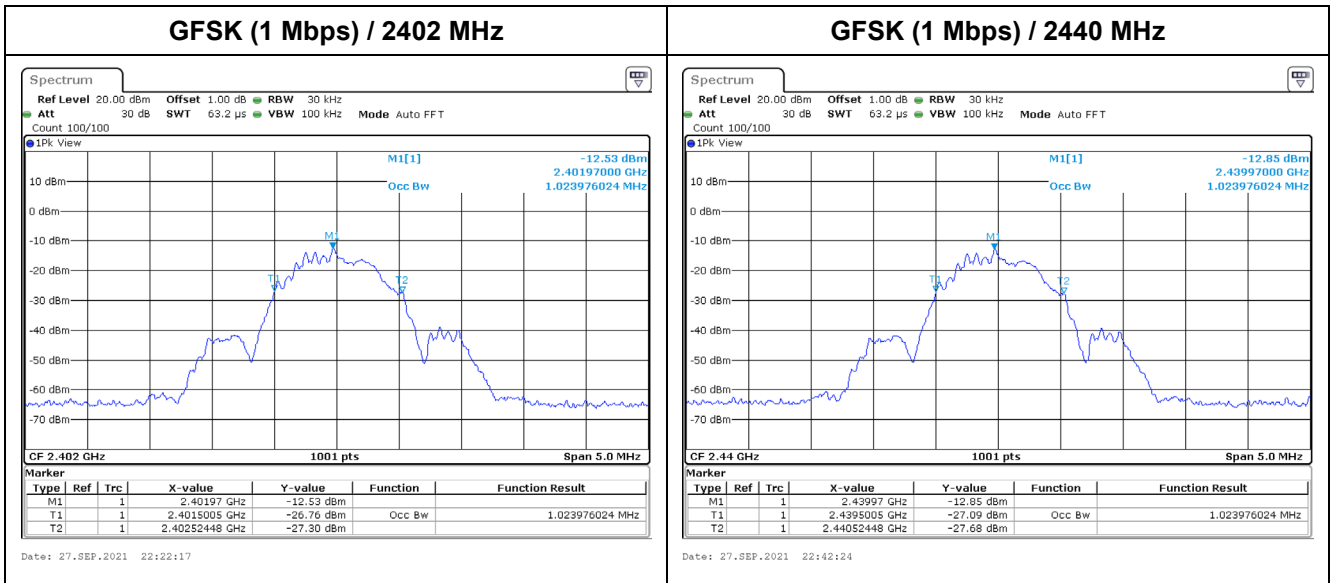
The EUT was setup according to ANSI C63.10: 2013; tested according to DTS test procedure of KDB 558074 D01 V05r02 for compliance to FCC 47CFR 15.247 requirements.

7.4 Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247.

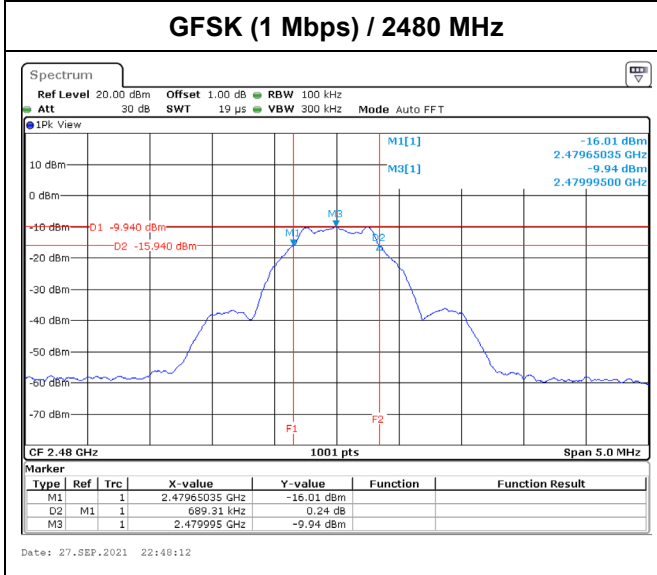
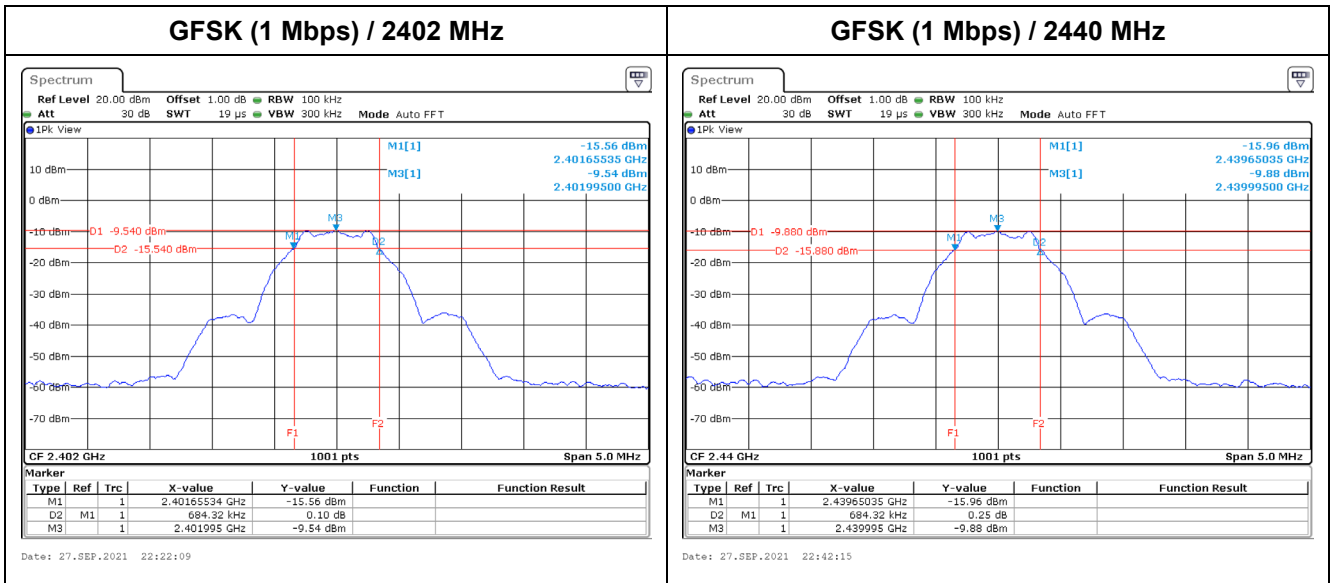
7.5 Test Result of Occupied Bandwidth

Modulation	Channel	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)
GFSK (1 Mbps)	00	2402	1.024	-
	19	2440	1.024	-
	39	2480	1.024	-



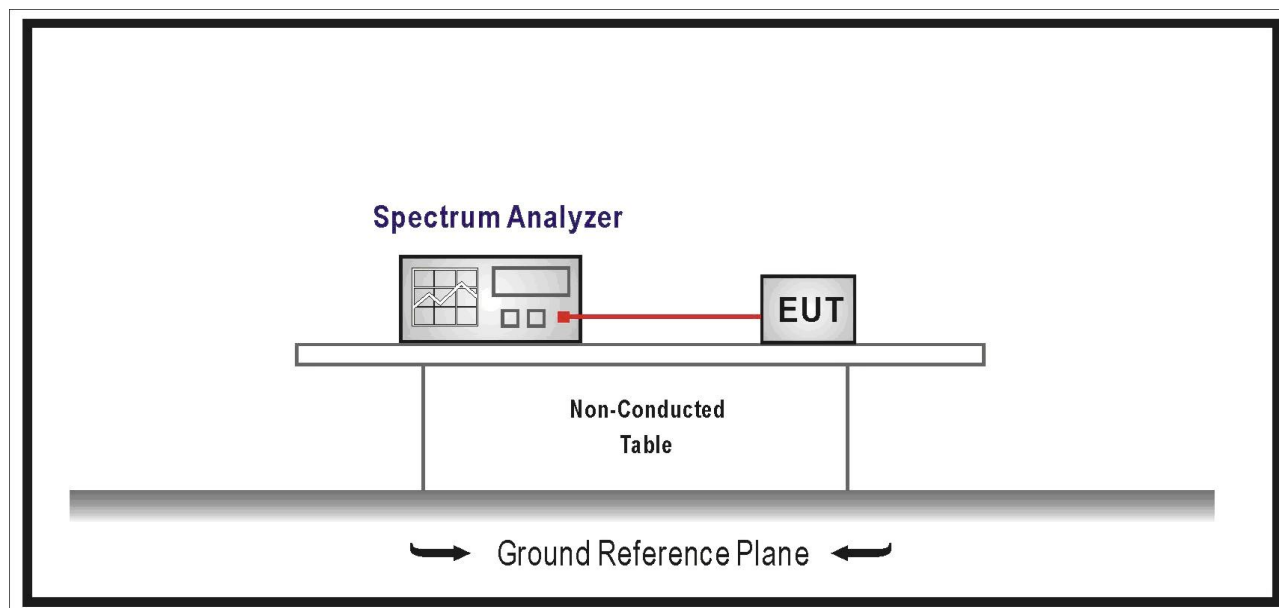
7.6 Test Result of DTS Bandwidth

Modulation	Channel	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
GFSK (1 Mbps)	00	2402	0.684	≥ 0.500	Pass
	19	2440	0.684	≥ 0.500	Pass
	39	2480	0.689	≥ 0.500	Pass



8. Maximum Power Spectral Density

8.1 Test Setup



8.2 Test Limit

The peak power spectral density conducted from the intentional radiated to the antenna shall not be greater than +8 dBm in any 3 kHz band during any time interval of continuous transmission.

8.3 Test Procedures

The EUT was setup according to ANSI C63.10: 2013; tested according to DTS test procedure of KDB 558074 D01 V05r02 for compliance to FCC 47CFR 15.247 requirements.

8.4 Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247

8.5 Test Result of Maximum Power Spectral Density

Modulation	Channel	Frequency (MHz)	Measure Value (dBm/3kHz)	Limit (dBm/3kHz)	Result
GFSK (1 Mbps)	00	2402	-21.969	≤8.000	Pass
	19	2440	-22.229	≤8.000	Pass
	39	2480	-22.339	≤8.000	Pass

