



# FCC RADIO TEST REPORT

**FCC ID** : A4RG8V0U  
**Equipment** : Phone  
**Model Name** : G8V0U, GF5KQ  
**Applicant** : Google LLC  
1600 Amphitheatre Parkway,  
Mountain View, California, 94043 USA  
**Standard** : FCC Part 15 Subpart C §15.247

The product was received on Jun. 10, 2021 and testing was started from Jun. 17, 2021 and completed on Aug. 05, 2021. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

Approved by: Louis Wu

**Sportun International Inc. Wensan Laboratory**

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)



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## History of this test report



## Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.247(a)(2)	6dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.247(b)(3)	Output Power	Pass	-
3.3	15.247(e)	Power Spectral Density	Pass	-
3.4	15.247(d)	Conducted Band Edges and Spurious Emission	Pass	-
3.5	15.247(d)	Radiated Band Edges and Spurious Emission	Pass	Under limit 4.99 dB at 17985.000 MHz
3.6	15.207	AC Conducted Emission	Pass	Under limit 8.32 dB at 0.191 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	Pass	-

**Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

**Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: William Chen

Report Producer: Amy Chen



## 1 General Description

### 1.1 Product Feature of Equipment Under Test

Product Feature	
<b>Equipment</b>	Phone
<b>Model Name</b>	G8V0U, GF5KQ
<b>FCC ID</b>	A4RG8V0U
<b>EUT supports Radios application</b>	GSM/EGPRS/WCDMA/HSPA/LTE/5G NR/ NFC/GNSS/WPC/WPT/UWB WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80/VHT160 WLAN 11ax HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE

**Remark:** The above EUT's information was declared by manufacturer.

EUT Information List	
S/N	Performed Test Item
15281FDEE0002D	RF Conducted Measurement
16011FDEE0007W	Radiated Spurious Emission
16061FDEE00001	Conducted Emission

### 1.2 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
<b>Tx/Rx Frequency Range</b>	2402 MHz ~ 2480 MHz
<b>Number of Channels</b>	40
<b>Carrier Frequency of Each Channel</b>	40 Channel (37 hopping + 3 advertising channel)
<b>Maximum Output Power to Antenna</b>	<b>&lt;Ant. 4&gt;</b> Bluetooth – LE (1Mbps): 20.15 dBm / 0.1035 W Bluetooth – LE (2Mbps): 20.25 dBm / 0.1059 W <b>&lt;Ant. 3&gt;</b> Bluetooth – LE (1Mbps): 19.65 dBm / 0.0923 W Bluetooth – LE (2Mbps): 19.75 dBm / 0.0944 W
<b>99% Occupied Bandwidth</b>	<b>&lt;Ant. 4&gt;</b> Bluetooth – LE (1Mbps): 1.037MHz Bluetooth – LE (2Mbps): 2.050MHz <b>&lt;Ant. 3&gt;</b> Bluetooth – LE (1Mbps): 1.037MHz Bluetooth – LE (2Mbps): 2.050MHz
<b>Antenna Type / Gain</b>	<b>&lt;Ant. 4&gt;</b> : IFA Antenna type with gain -1.10 dBi <b>&lt;Ant. 3&gt;</b> : IFA Antenna type with gain -0.60 dBi
<b>Type of Modulation</b>	Bluetooth LE : GFSK

**Remark:** The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.



### 1.3 Modification of EUT

No modifications are made to the EUT during all test items.

### 1.4 Testing Location

<b>Test Site</b>	Sportun International Inc. EMC & Wireless Communications Laboratory
<b>Test Site Location</b>	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
<b>Test Site No.</b>	<b>Sportun Site No.</b> CO05-HY (TAF Code: 1190)
<b>Remark</b>	The AC Conducted Emission test item subcontracted to Sporton International Inc. EMC & Wireless Communications Laboratory.

**Note:** The test site complies with ANSI C63.4 2014 requirement.

<b>Test Site</b>	Sportun International Inc. Wensan Laboratory
<b>Test Site Location</b>	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
<b>Test Site No.</b>	<b>Sportun Site No.</b> TH05-HY, 03CH11-HY

**Note:** The test site complies with ANSI C63.4 2014 requirement.

FCC designation No.: TW1190 and TW3786

### 1.5 Applicable Standards

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

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05r02
- FCC KDB 414788 D01 Radiated Test Site v01r01
- ANSI C63.10-2013

**Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. The TAF code is not including all the FCC KDB listed without accreditation.



## 2 Test Configuration of Equipment Under Test

### 2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	0	2402	21	2444
	1	2404	22	2446
	2	2406	23	2448
	3	2408	24	2450
	4	2410	25	2452
	5	2412	26	2454
	6	2414	27	2456
	7	2416	28	2458
	8	2418	29	2460
	9	2420	30	2462
	10	2422	31	2464
	11	2424	32	2466
	12	2426	33	2468
	13	2428	34	2470
	14	2430	35	2472
	15	2432	36	2474
	16	2434	37	2476
	17	2436	38	2478
	18	2438	39	2480
	19	2440	-	-
	20	2442	-	-



## 2.2 Test Mode

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). The measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and find Y plane for Ant. 4; X plane for Ant. 3 as worst plane.
- b. AC power line Conducted Emission was tested under maximum output power.

The following summary table is showing all test modes to demonstrate in compliance with the standard.

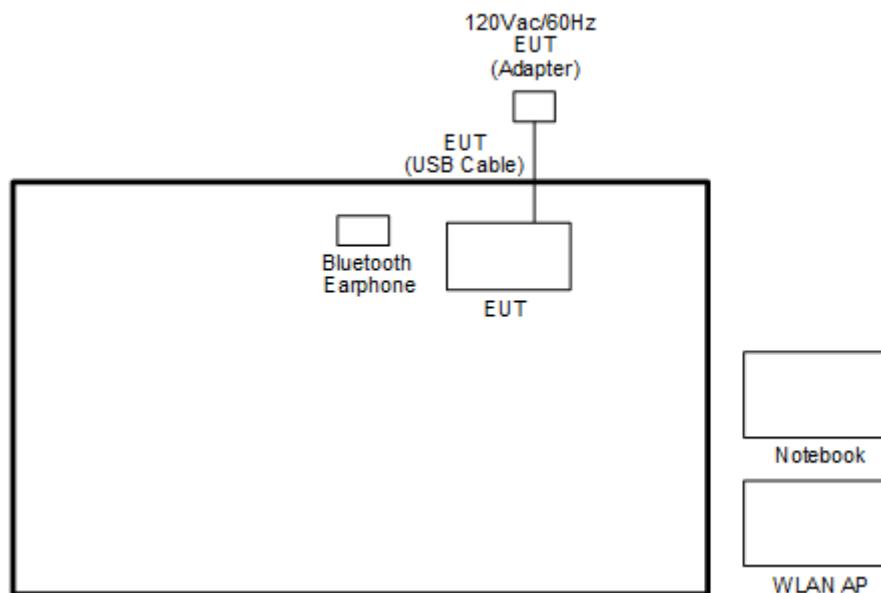
Summary table of Test Cases	
Test Item	Data Rate / Modulation
Conducted Test Cases	<b>Bluetooth – LE / GFSK</b>
	Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps
	Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps
	Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps
	Mode 4: Bluetooth Tx CH00_2402 MHz_2Mbps
	Mode 5: Bluetooth Tx CH19_2440 MHz_2Mbps
Radiated Test Cases	Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps
	Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps
	Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps
	Mode 4: Bluetooth Tx CH00_2402 MHz_2Mbps
	Mode 5: Bluetooth Tx CH19_2440 MHz_2Mbps
	Mode 6: Bluetooth Tx CH39_2480 MHz_2Mbps
AC Conducted Emission	Mode 1 WLAN (2.4GHz) Link + Bluetooth Link + USB Cable 1 (Charging from AC Adapter 2)

**Remark:**

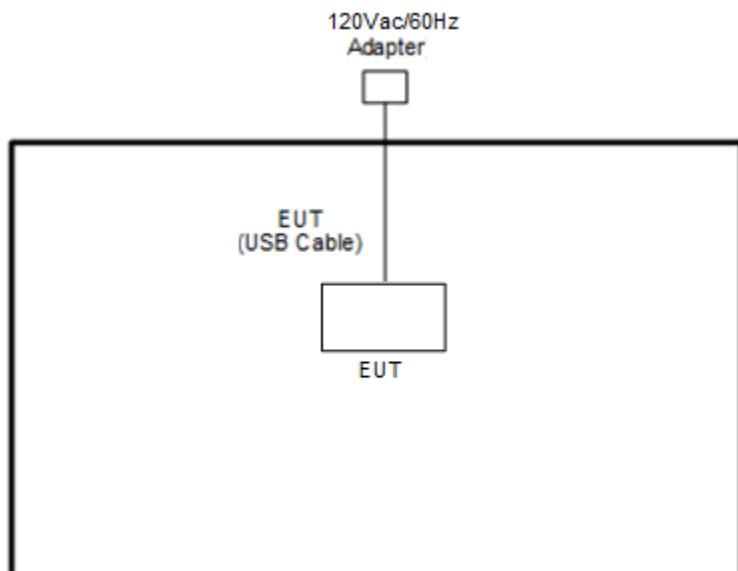
1. For Radiated Test Cases, the tests were performed with Adapter 2 and USB Cable 1.
2. During the preliminary test, both charging modes (Adapter mode and WPC Charging mode) were verified. It is determined that the adaptor mode is the worst case for official test.

## 2.3 Connection Diagram of Test System

### <AC Conducted Emission Mode>



### <Bluetooth-LE Tx Mode>





## 2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Earphone	Google	G1013	N/A	N/A	N/A
2.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
3.	Notebook	Dell	Latitude E3480	FCC DoC	N/A	AC I/P: Unshielded, 1.2m DC O/P: Shielded, 1.8m

## 2.5 EUT Operation Test Setup

The RF test items, utility “adb command V\_1.0.36” was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

## 2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

*Offset = RF cable loss + attenuator factor.*

Following shows an offset computation example with cable loss 4.2 dB and 10 dB attenuator.

*Offset(dB) = RF cable loss(dB) + attenuator factor(dB).*

$$= 4.2 + 10 = 14.2 \text{ (dB)}$$

### 3 Test Result

#### 3.1 6dB and 99% Bandwidth Measurement

##### 3.1.1 Limit of 6dB and 99% Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

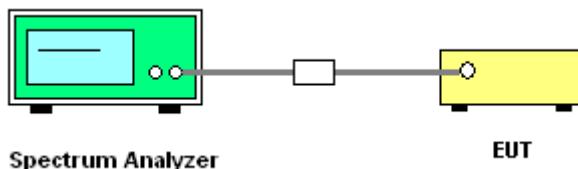
##### 3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

##### 3.1.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 6.9.3 (OBW) and 11.8.1 (6dB BW).
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the emission bandwidth and set the Video bandwidth (VBW)  $\geq 3 * \text{RBW}$ .
6. Measure and record the results in the test report.

##### 3.1.4 Test Setup



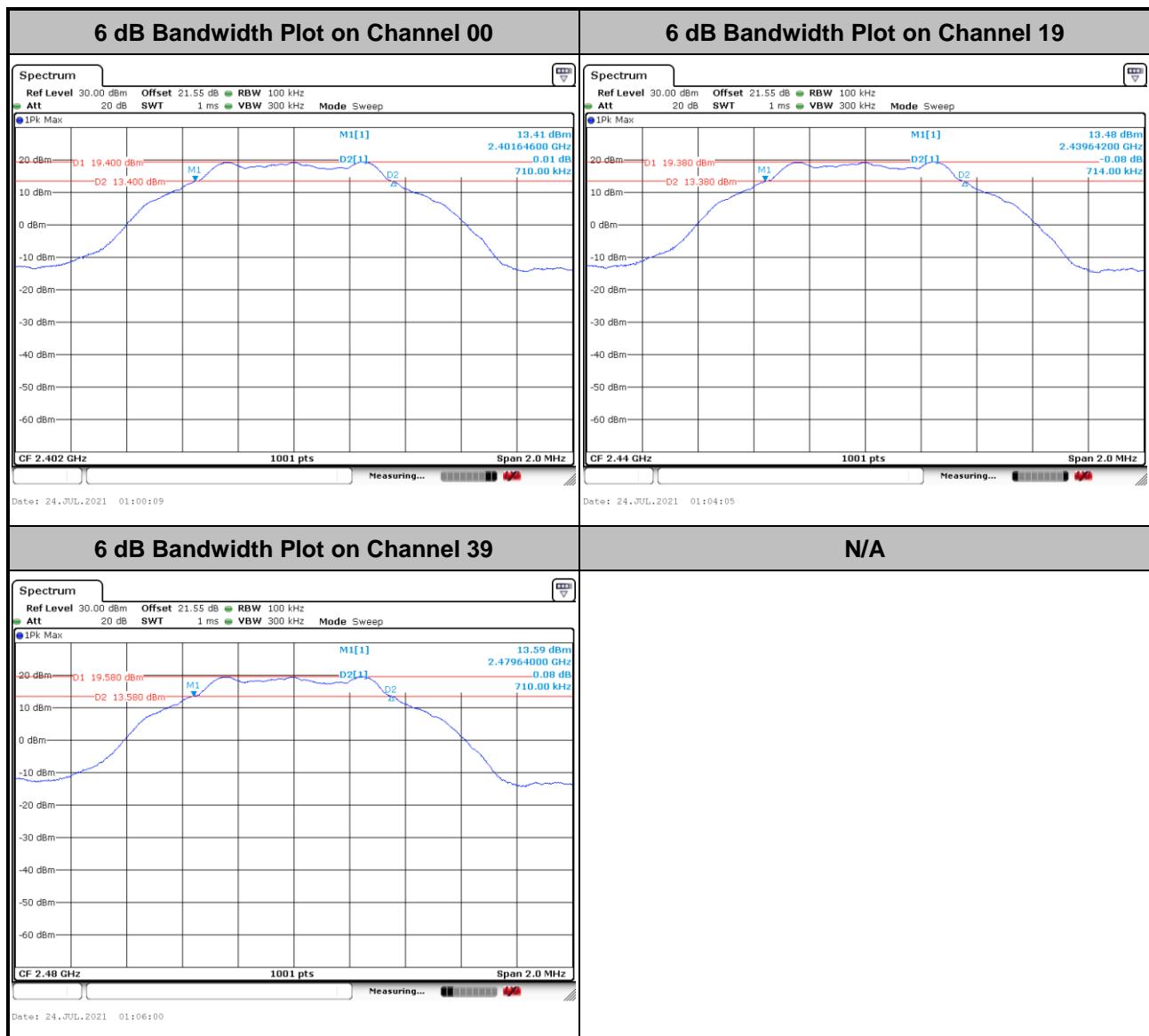


### 3.1.5 Test Result of 6dB Bandwidth

Please refer to Appendix A.

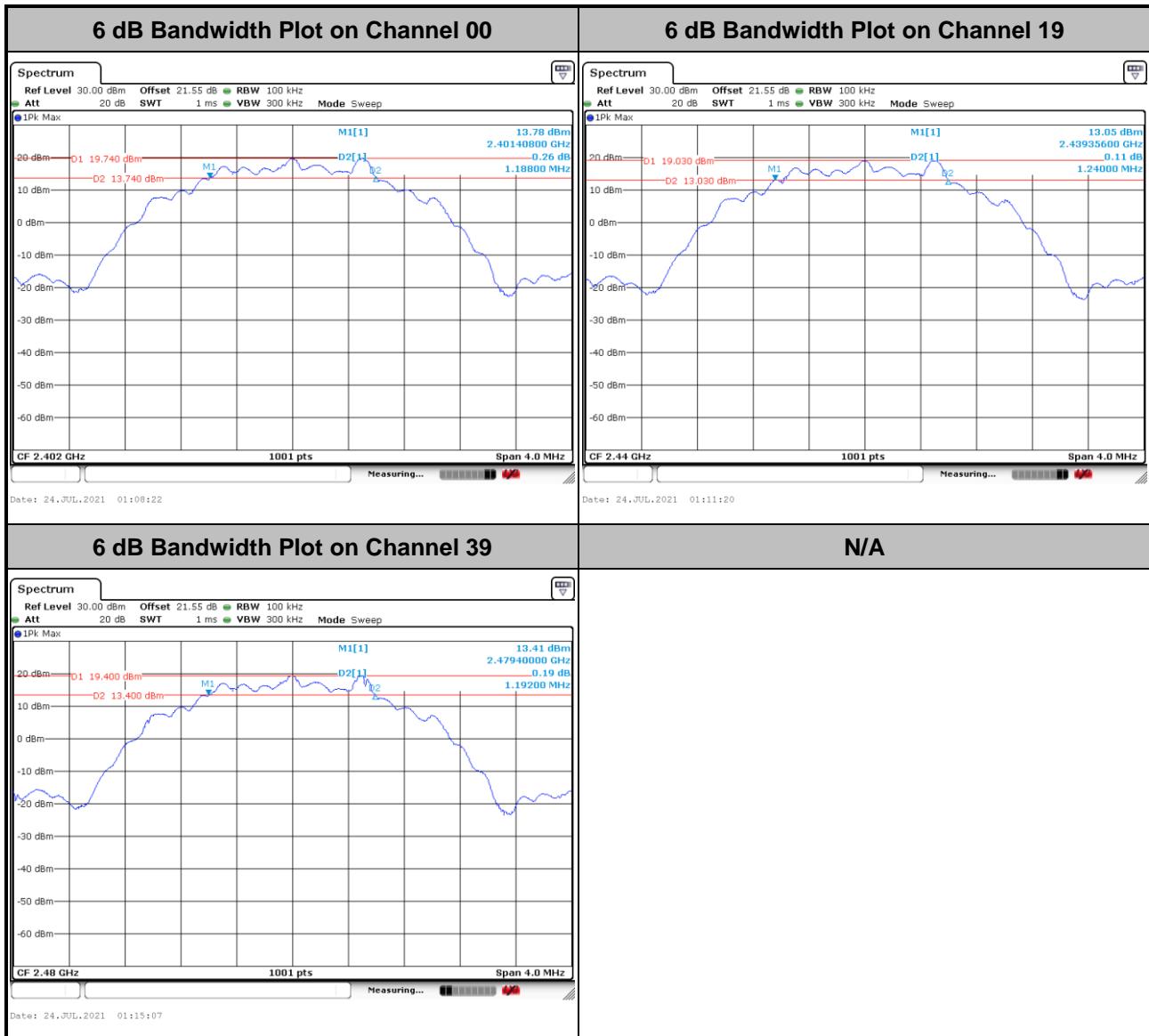
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<1Mbps>





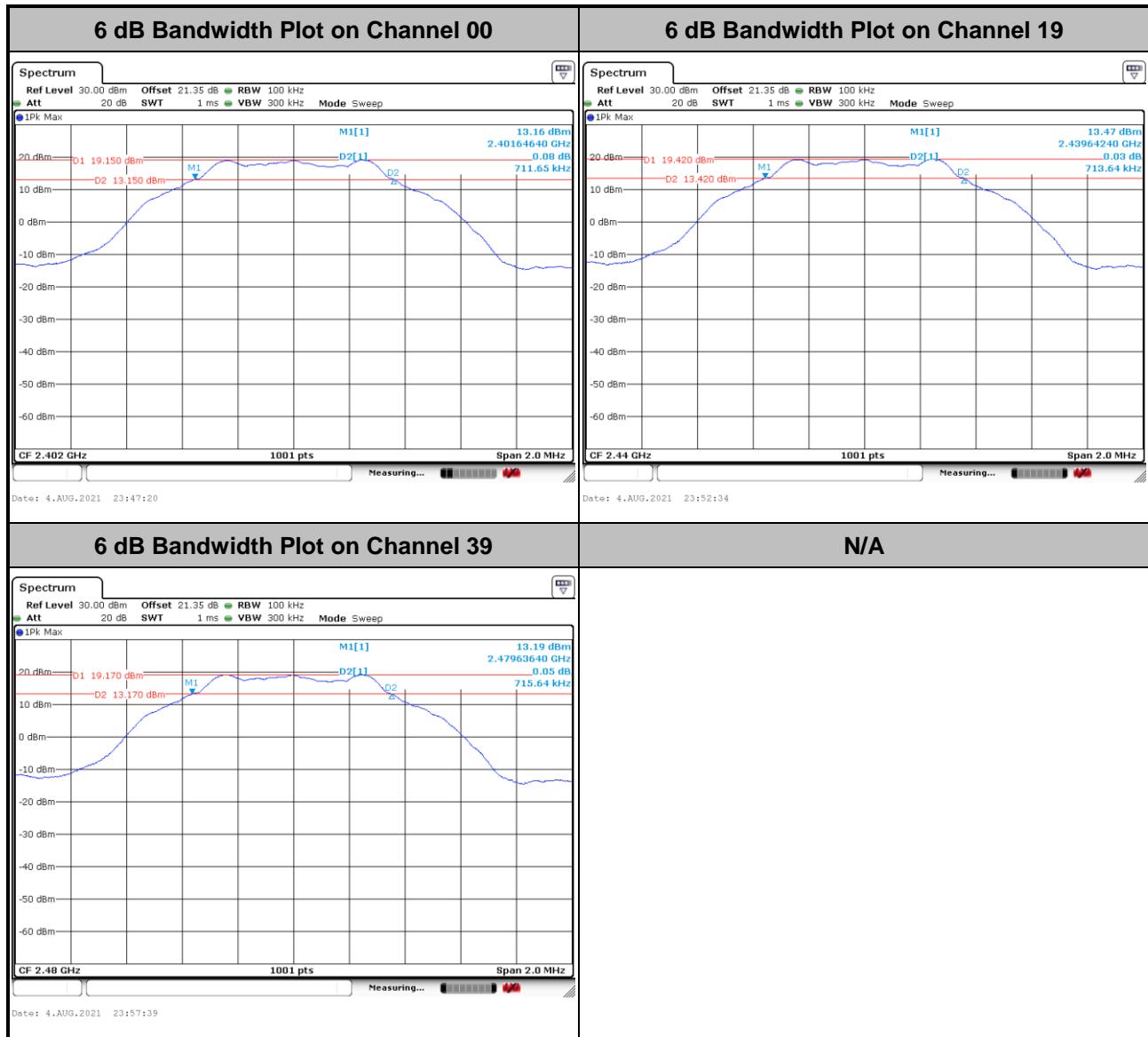
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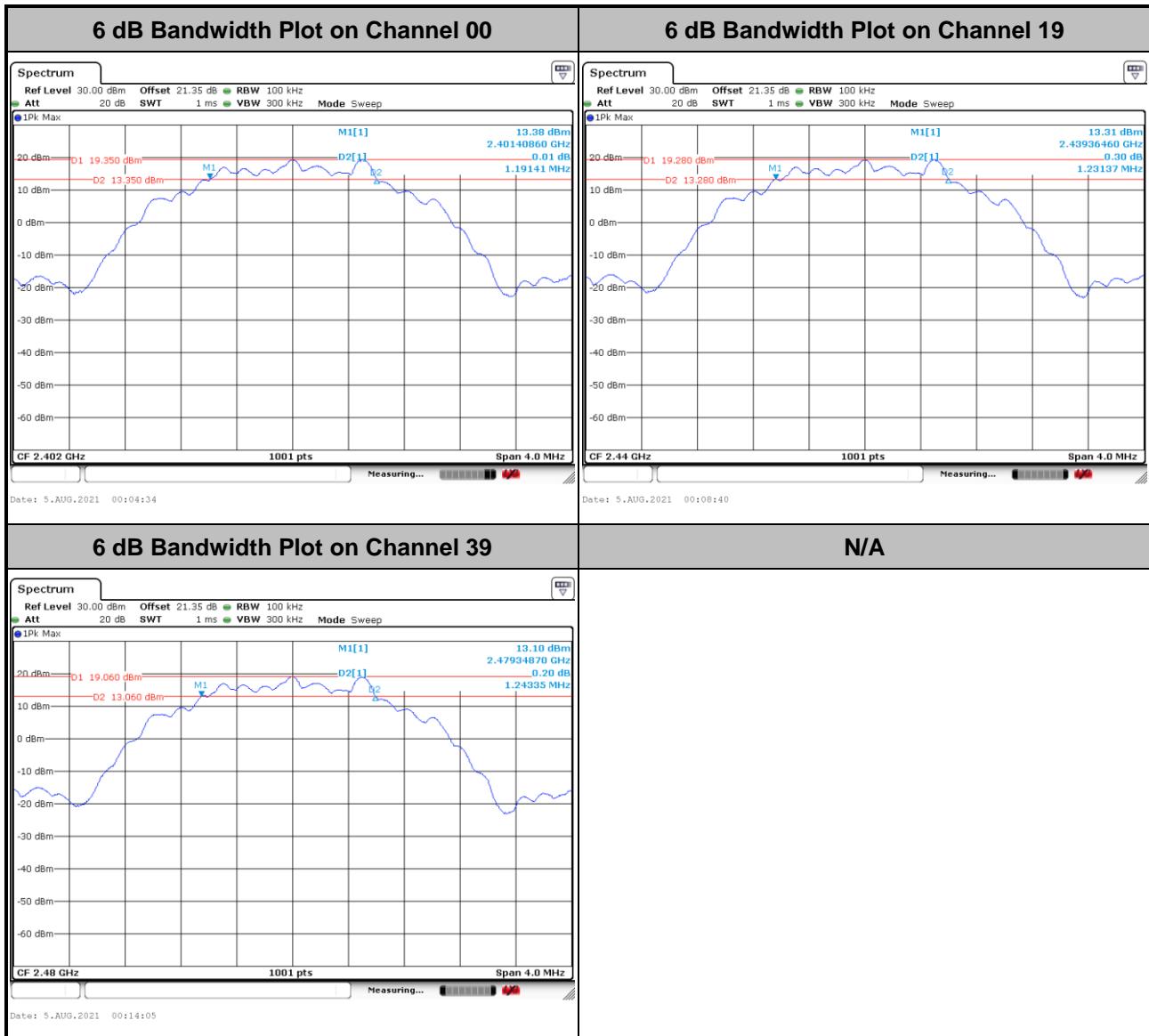
&lt;Ant. 3&gt;

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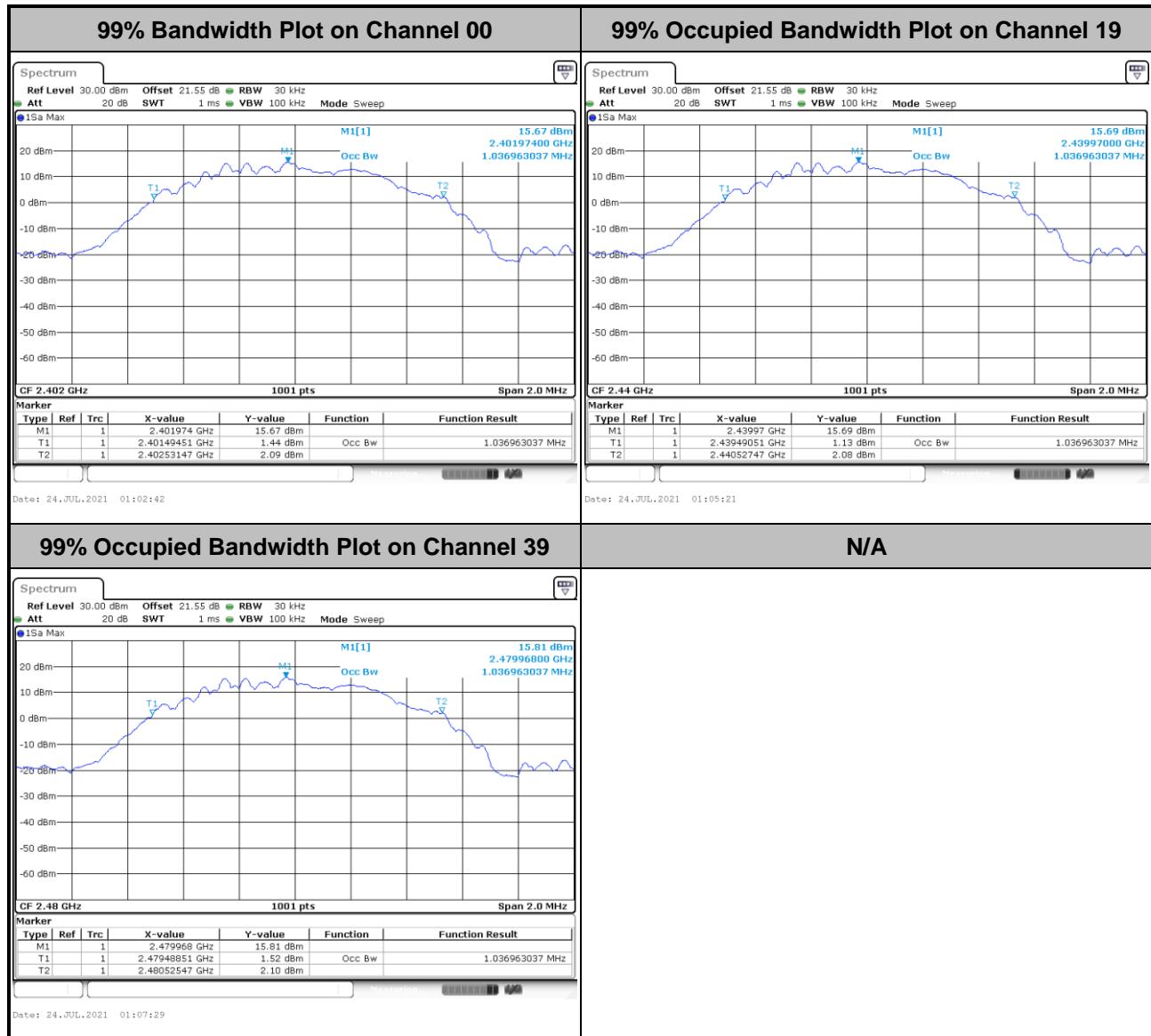


### 3.1.6 Test Result of 99% Occupied Bandwidth

Please refer to Appendix A.

<Ant. 4>

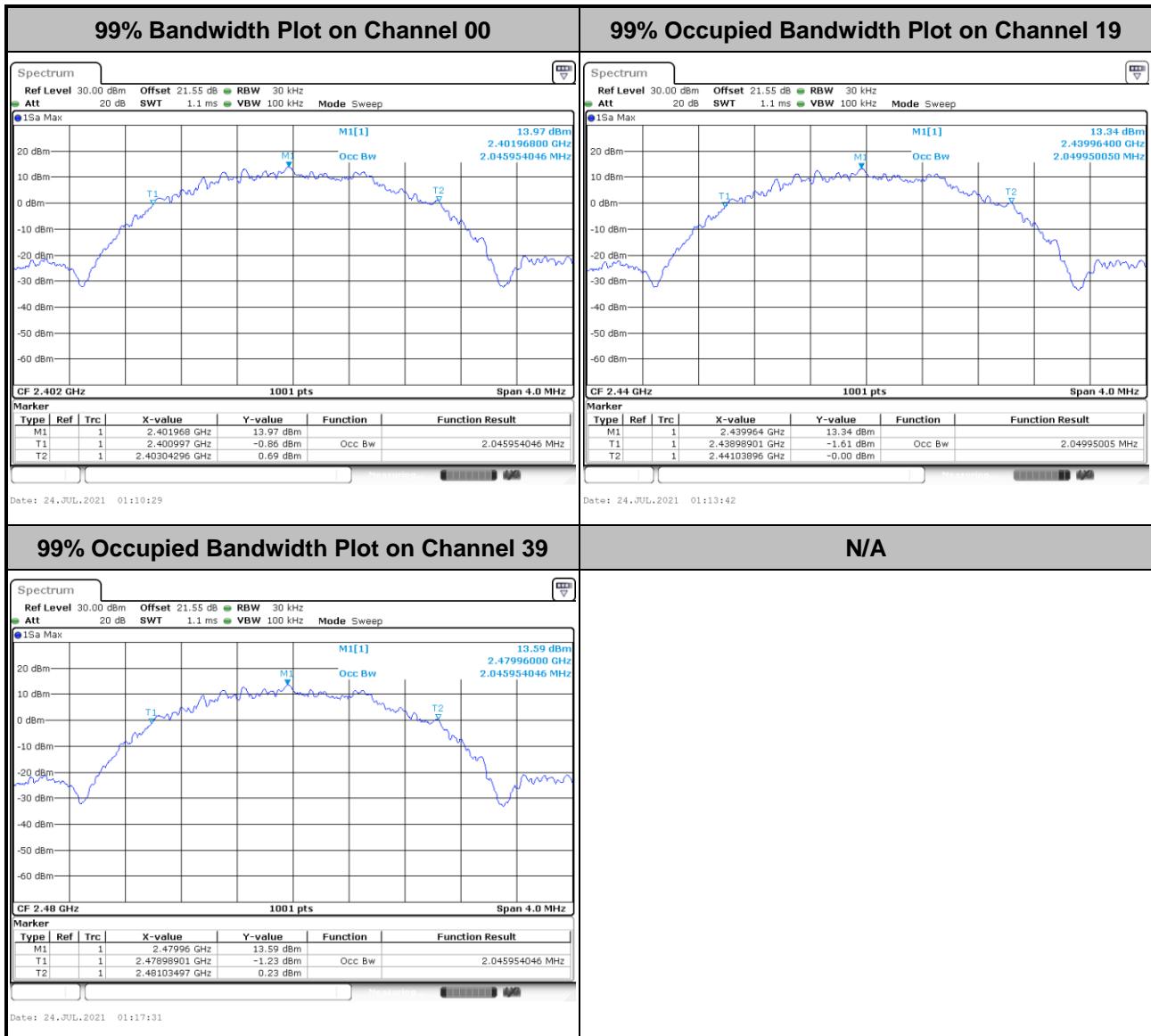
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Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.



&lt;2Mbps&gt;

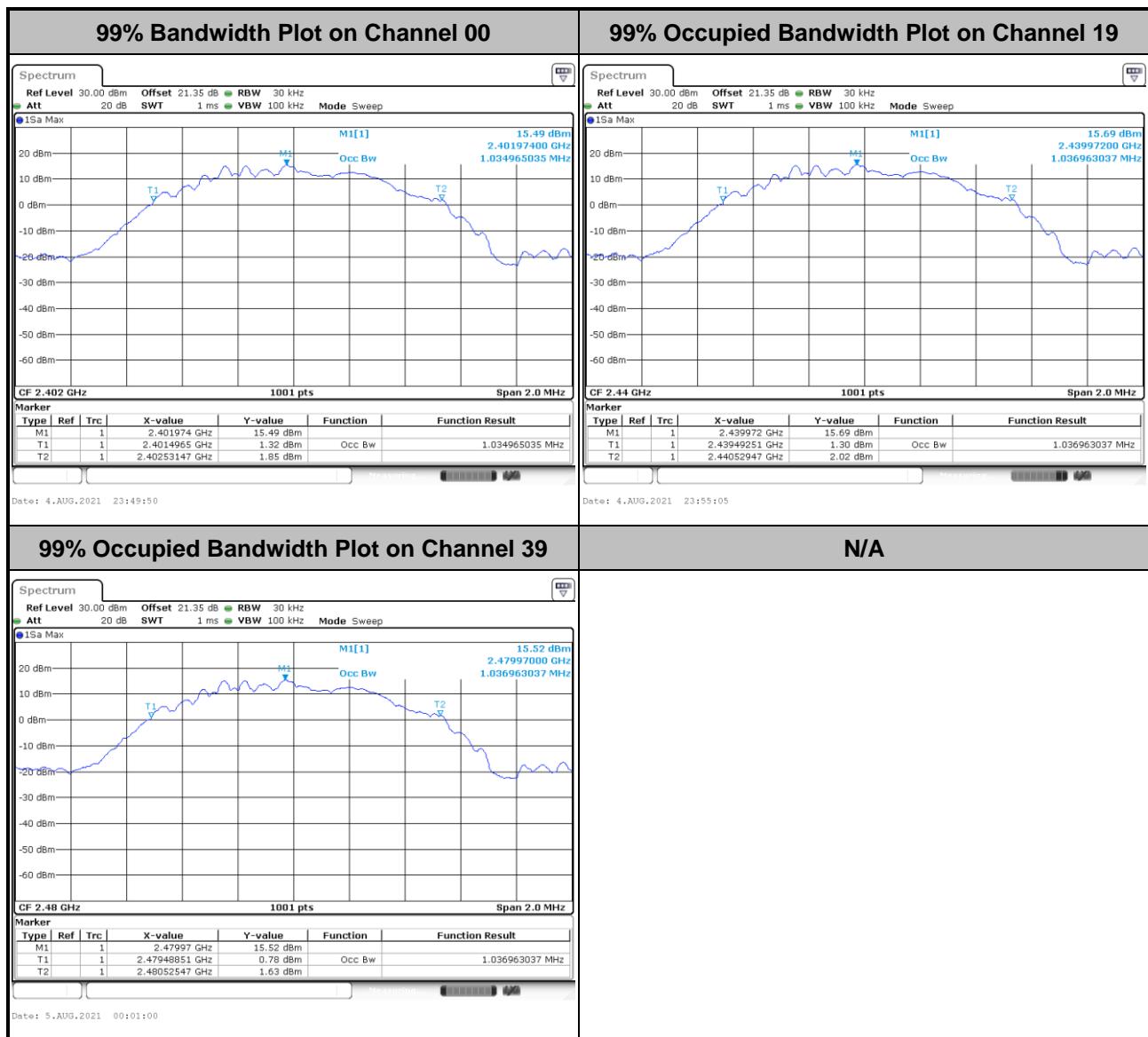


Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.



&lt;Ant. 3&gt;

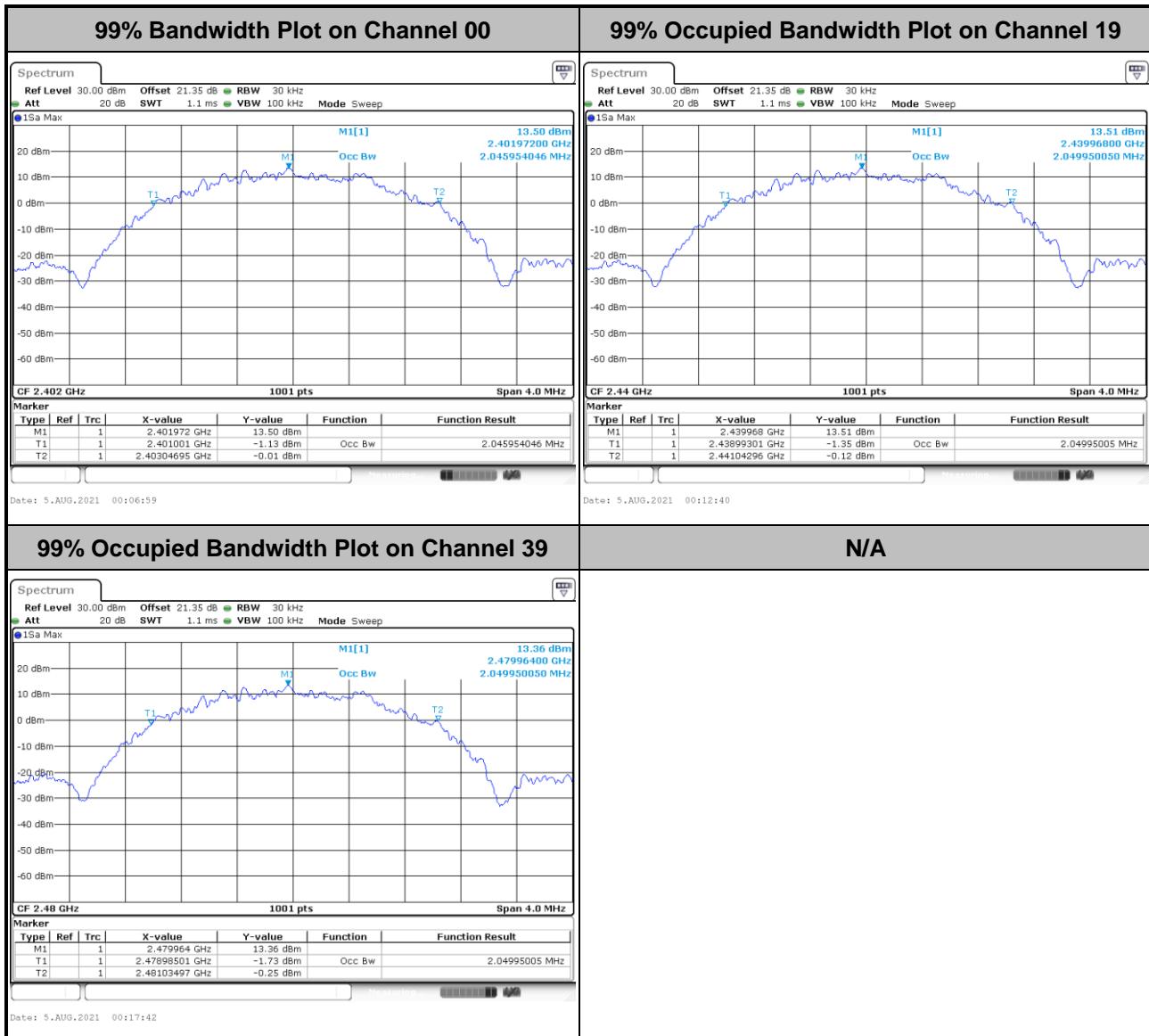
&lt;1Mbps&gt;



Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.



&lt;2Mbps&gt;



Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

## 3.2 Output Power Measurement

### 3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5 MHz, the limit for output power is 30 dBm. If transmitting antenna of directional gain greater than 6 dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

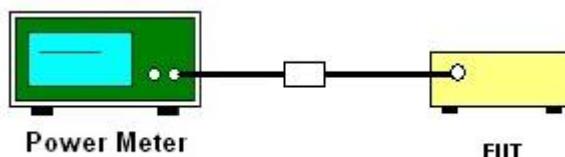
### 3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

### 3.2.3 Test Procedures

1. For Average Power, the testing follows ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G
2. The RF output of EUT was connected to the power meter by RF cable and attenuator.
3. The path loss was compensated to the results for each measurement.
4. Set the maximum power setting and enable the EUT to transmit continuously.
5. Measure the conducted output power and record the results in the test report.

### 3.2.4 Test Setup



### 3.2.5 Test Result of Average Output Power

Please refer to Appendix A.

### 3.3 Power Spectral Density Measurement

#### 3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8 dBm in any 3 kHz band at any time interval of continuous transmission.

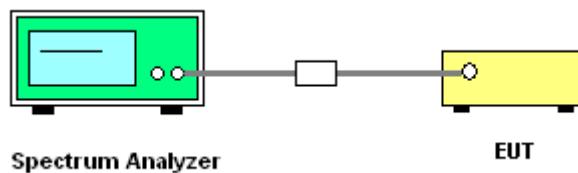
#### 3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

#### 3.3.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.10.2 Method PKPSD.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz. In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.
7. The Measured power density (dBm)/ 100 kHz is a reference level and is used as 20 dBc down limit line for Conducted Band Edges and Conducted Spurious Emission.

#### 3.3.4 Test Setup



#### 3.3.5 Test Result of Power Spectral Density

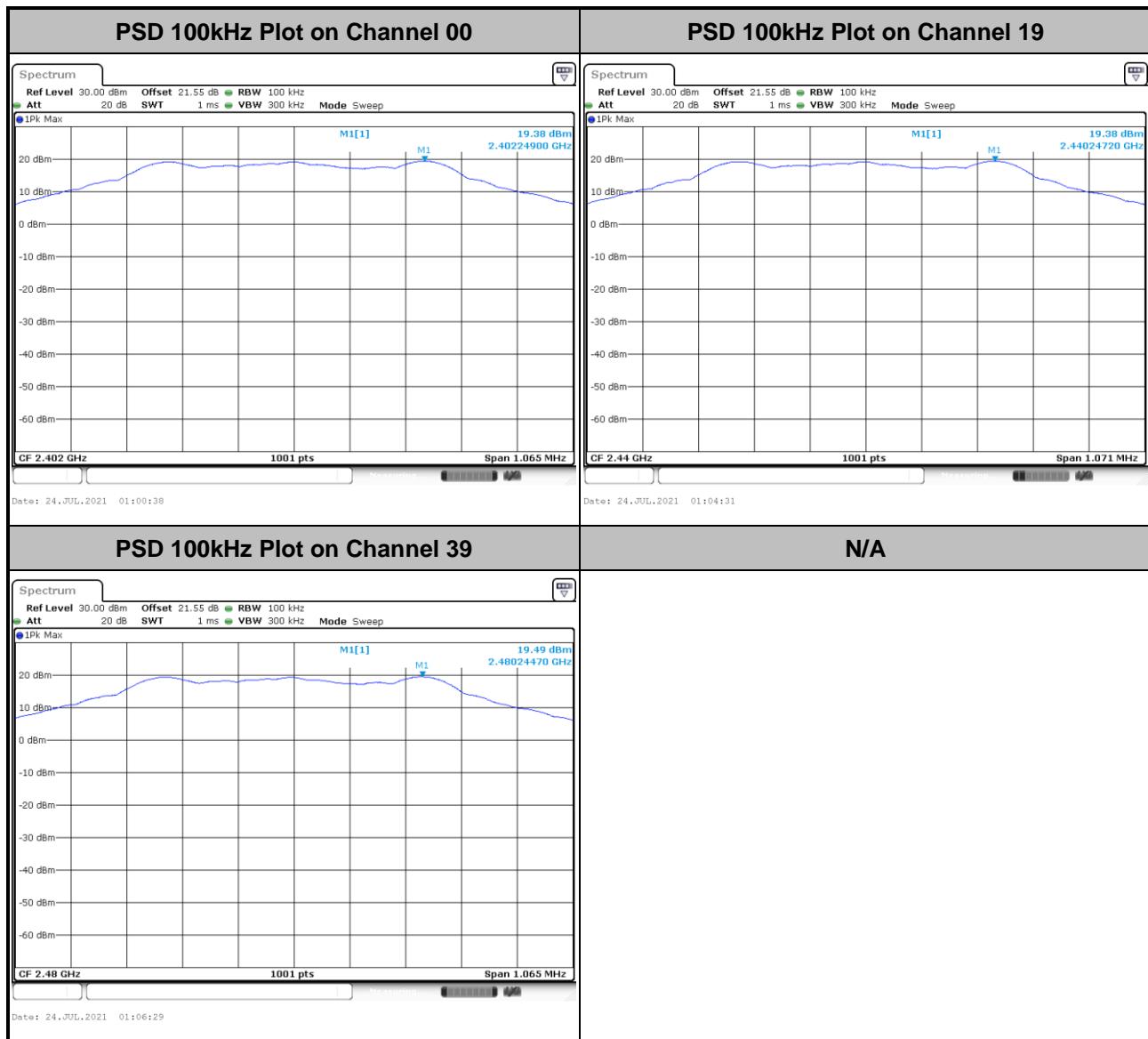
Please refer to Appendix A.



### 3.3.6 Test Result of Power Spectral Density Plots (100kHz)

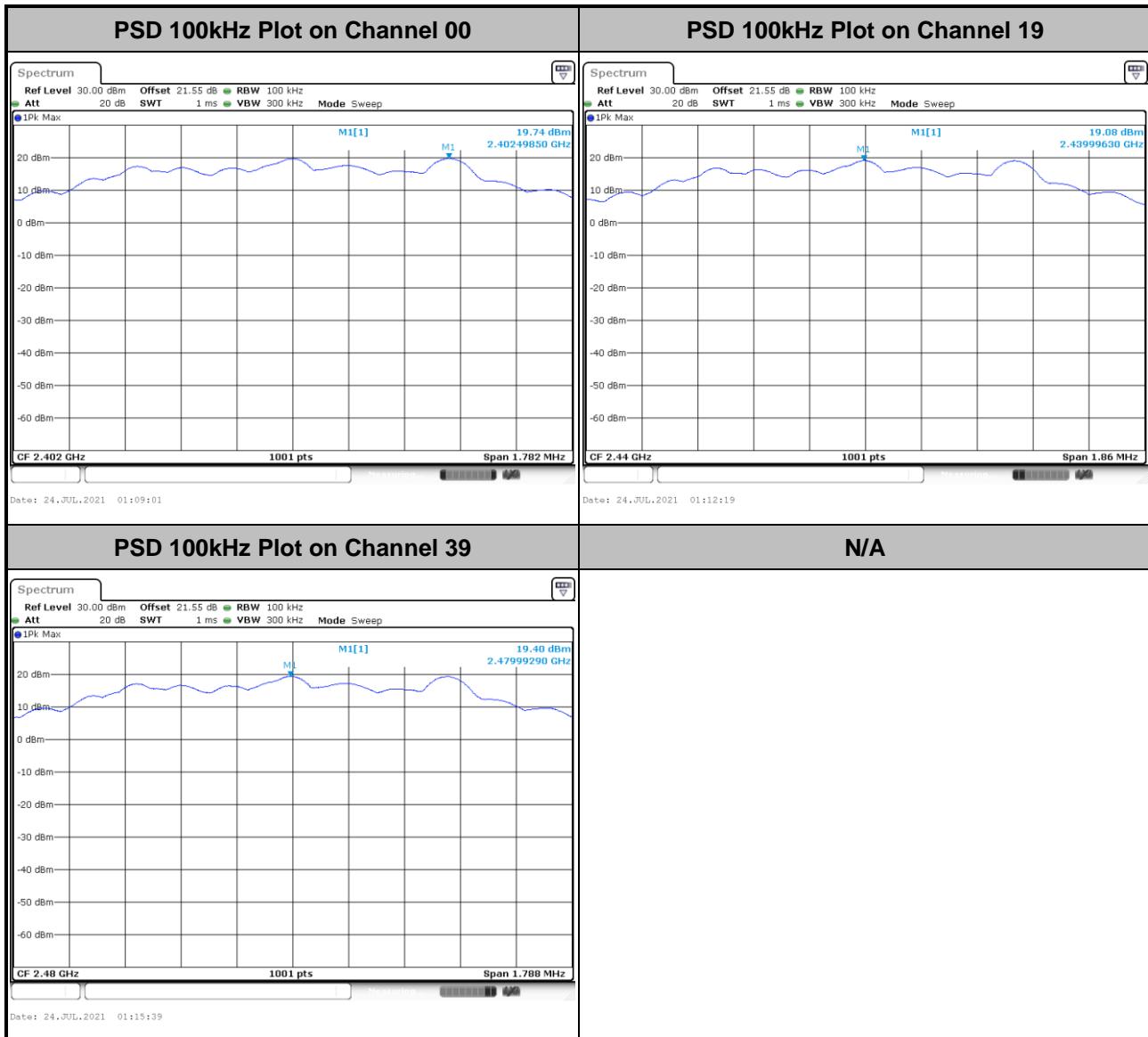
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<1Mbps>





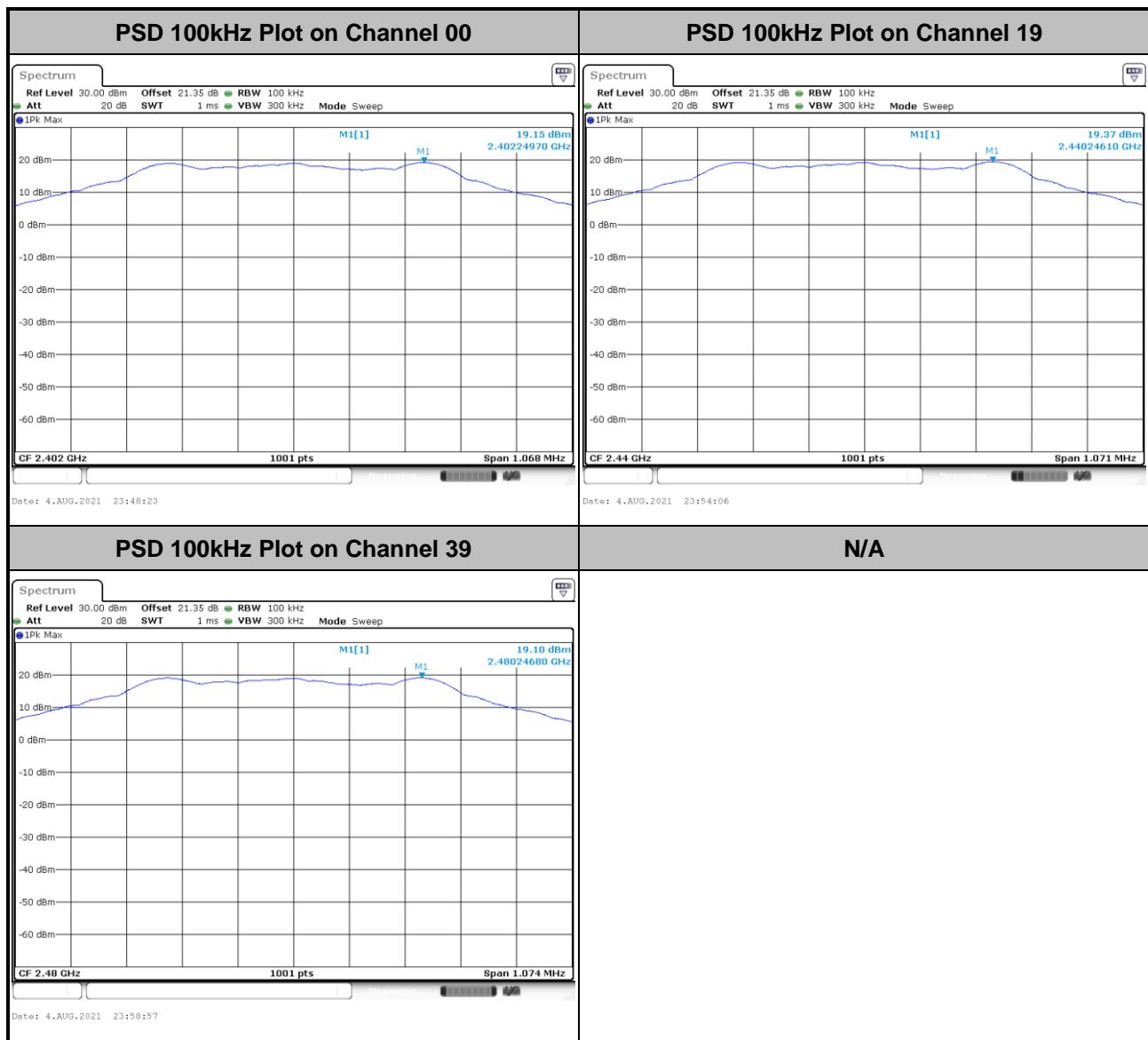
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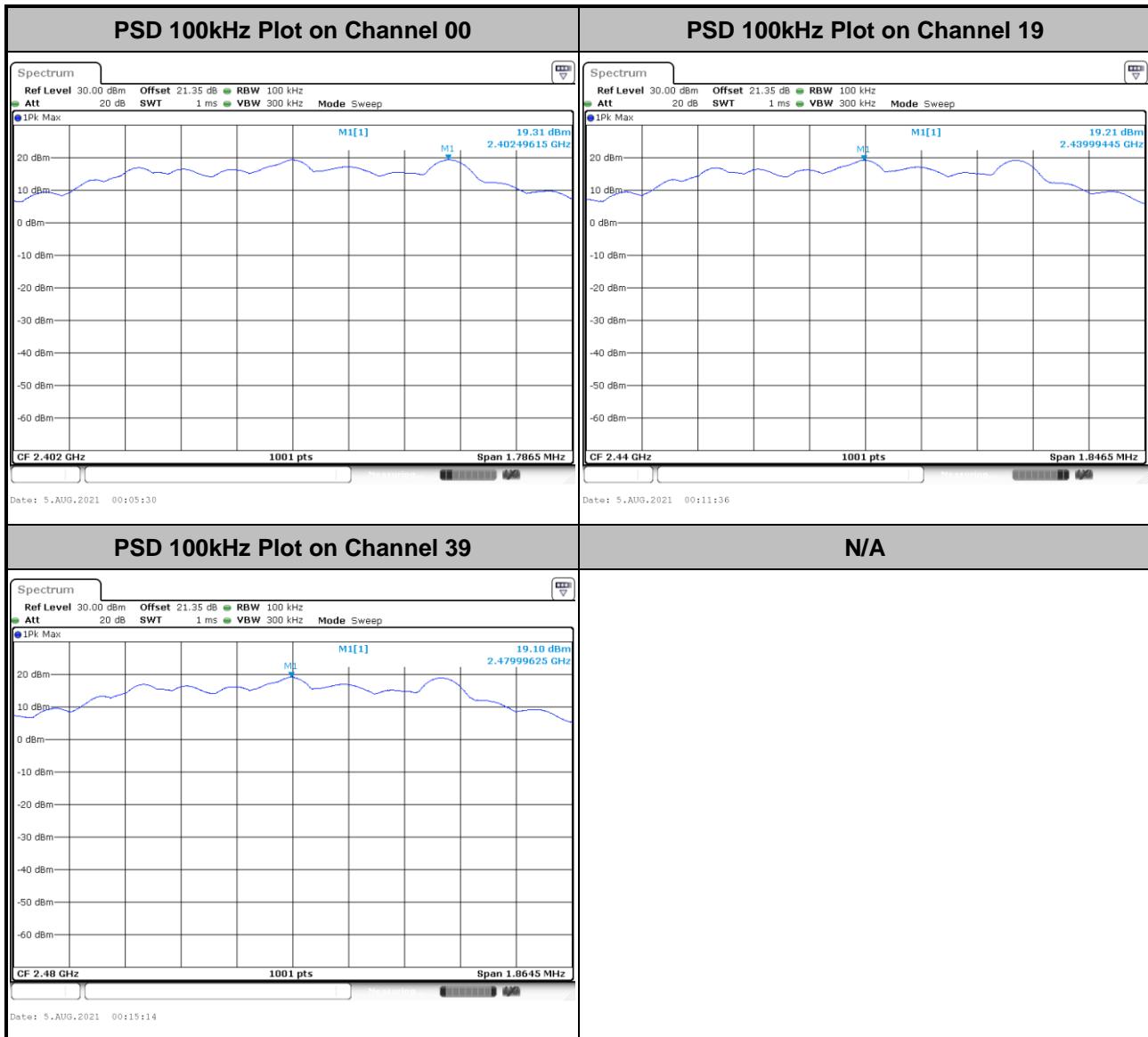
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&lt;1Mbps&gt;





&lt;2Mbps&gt;

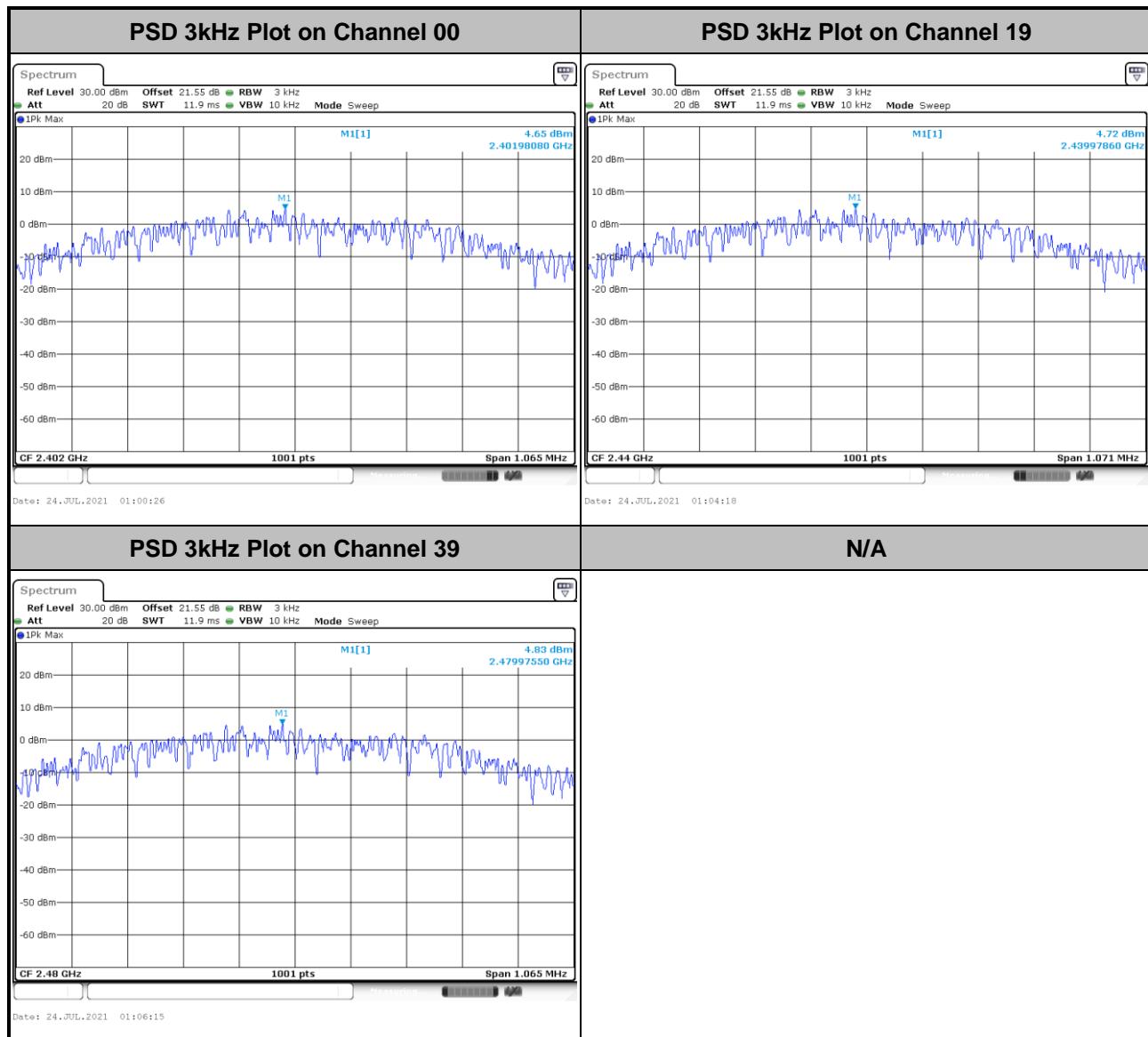




### 3.3.7 Test Result of Power Spectral Density Plots (3kHz)

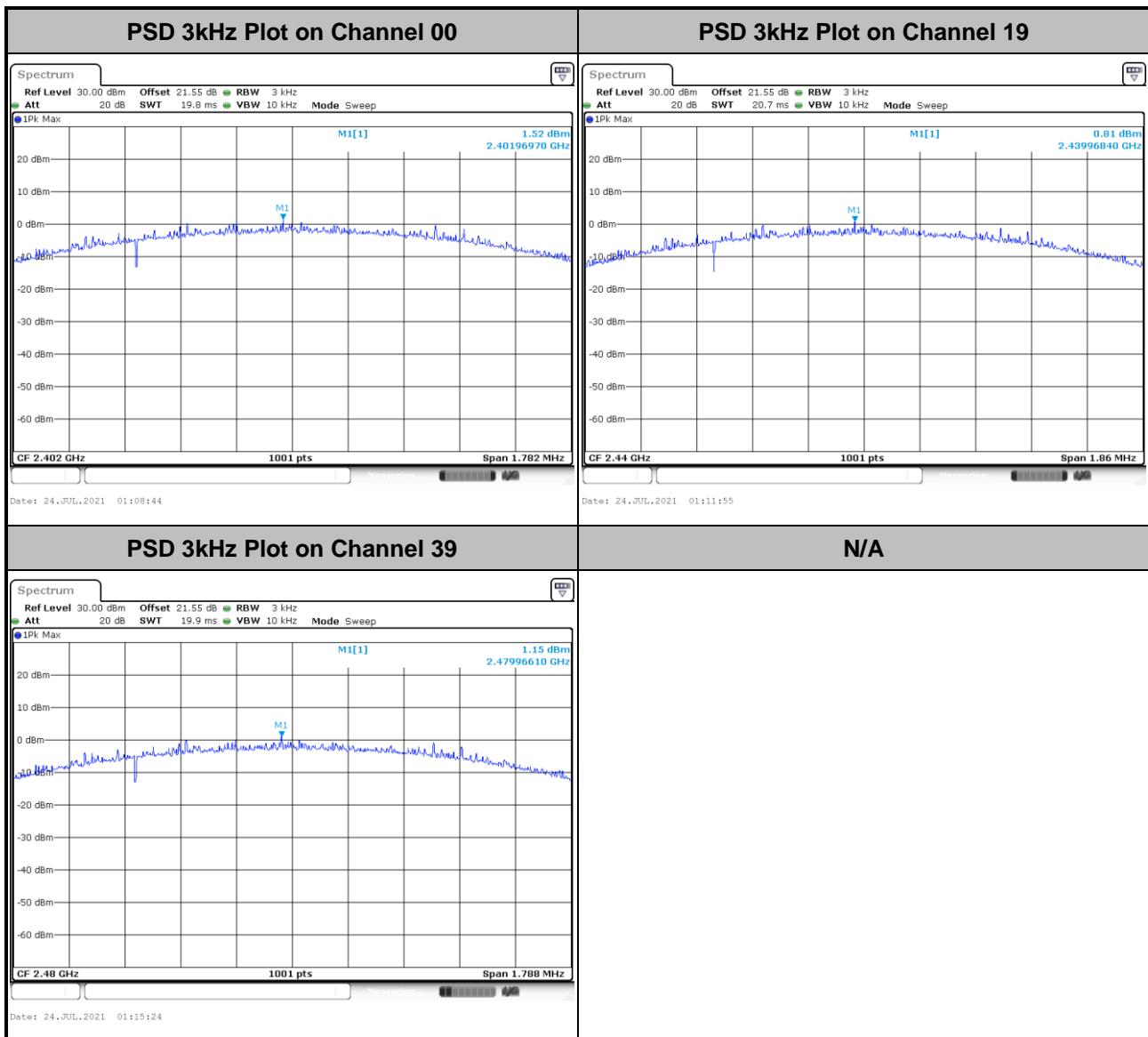
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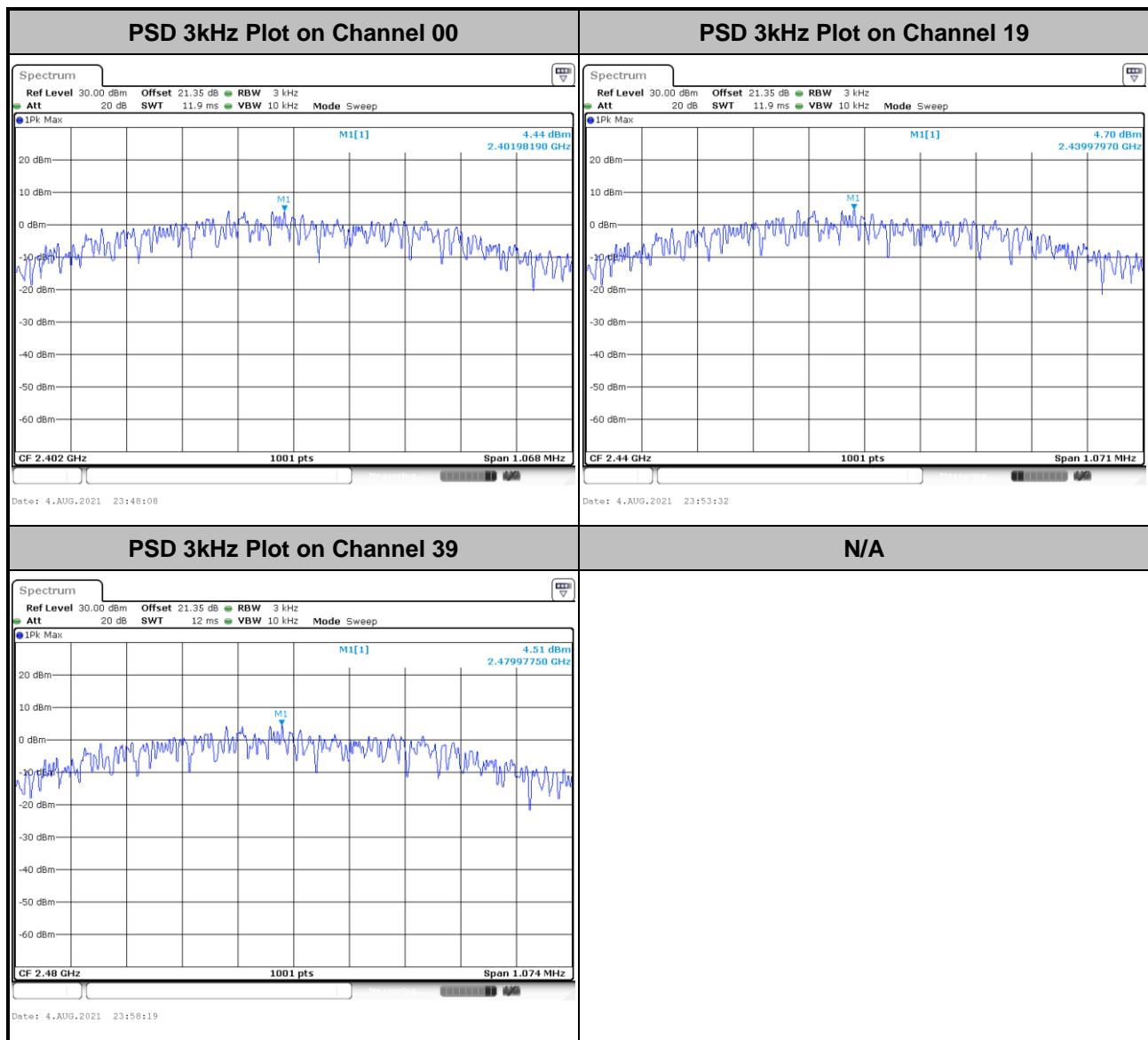
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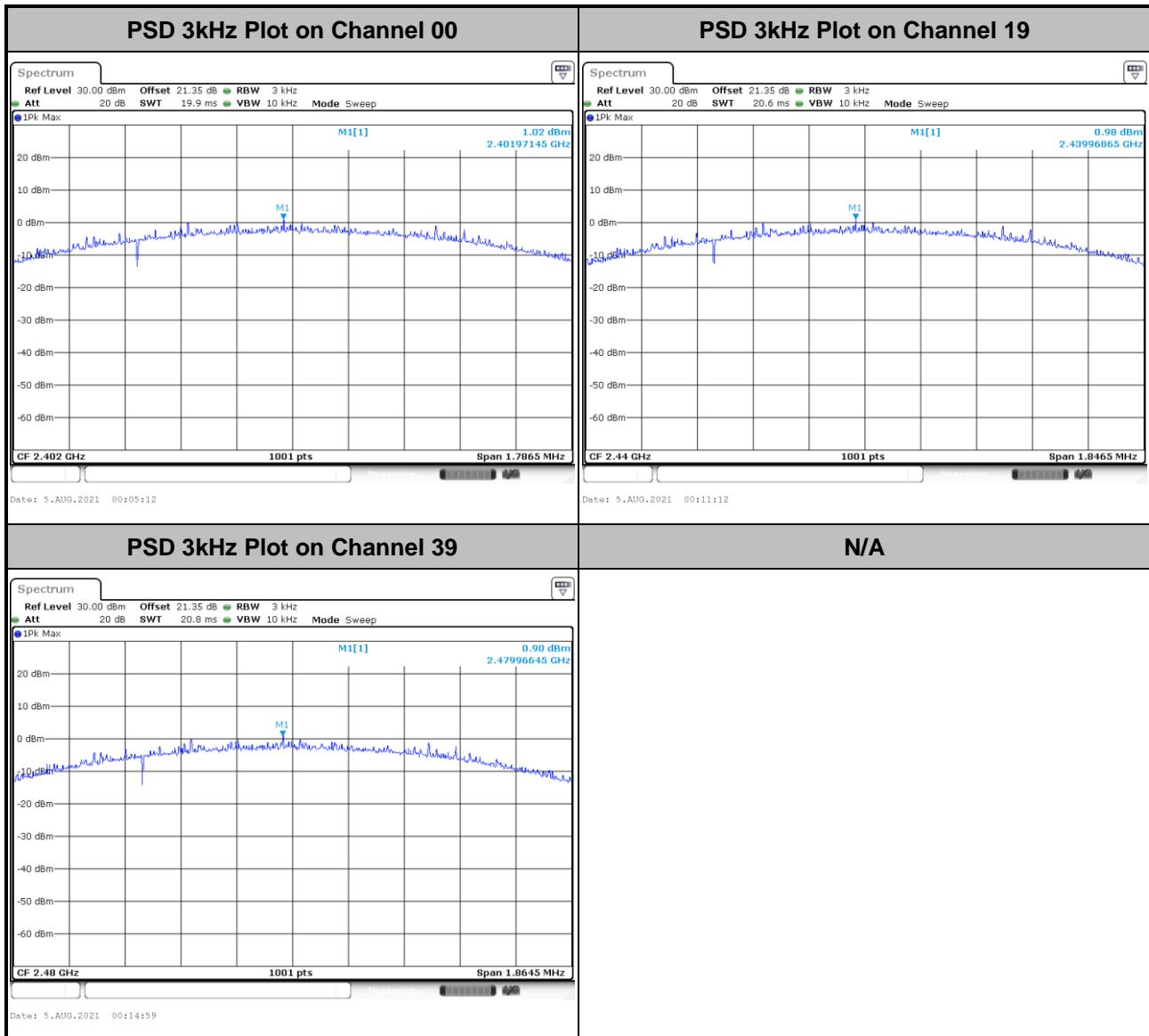
&lt;Ant. 3&gt;

&lt;1Mbps&gt;





&lt;2Mbps&gt;





## 3.4 Conducted Band Edges and Spurious Emission Measurement

### 3.4.1 Limit of Conducted Band Edges and Spurious Emission

All harmonics/spurious must be at least 20 dB down from the highest emission level within the authorized band.

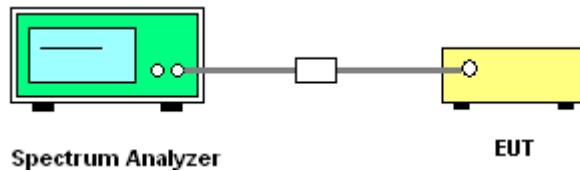
### 3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

### 3.4.3 Test Procedure

1. The testing follows the ANSI C63.10 Section 11.11.3 Emission level measurement.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to transmit continuously.
4. Set RBW = 100 kHz, VBW = 300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits 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.
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

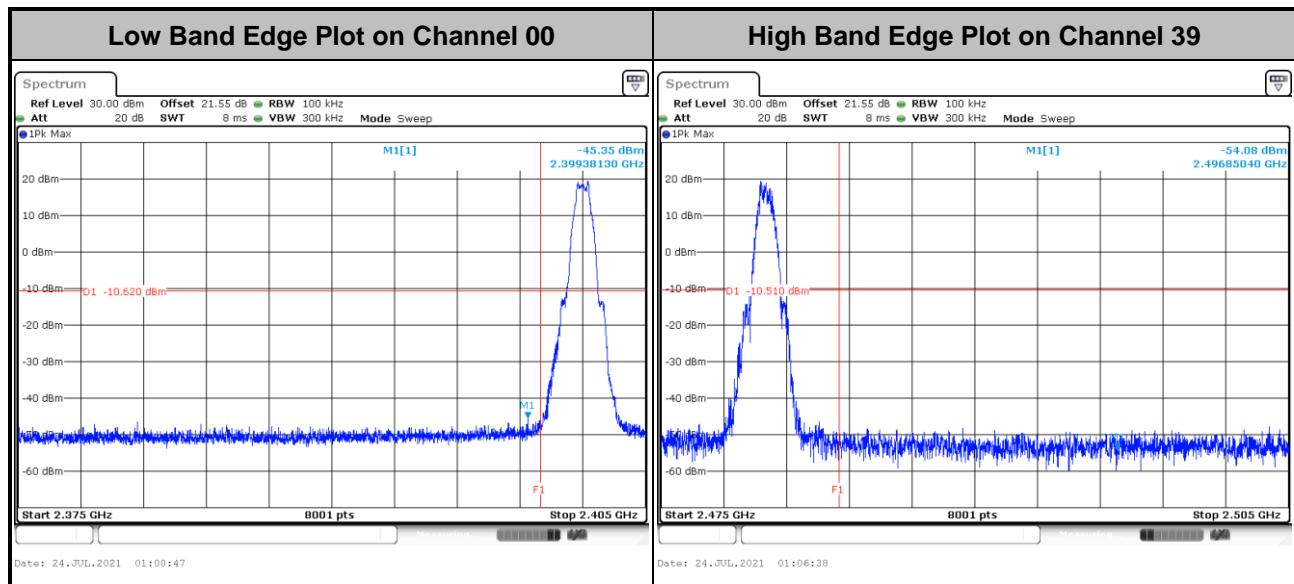
### 3.4.4 Test Setup



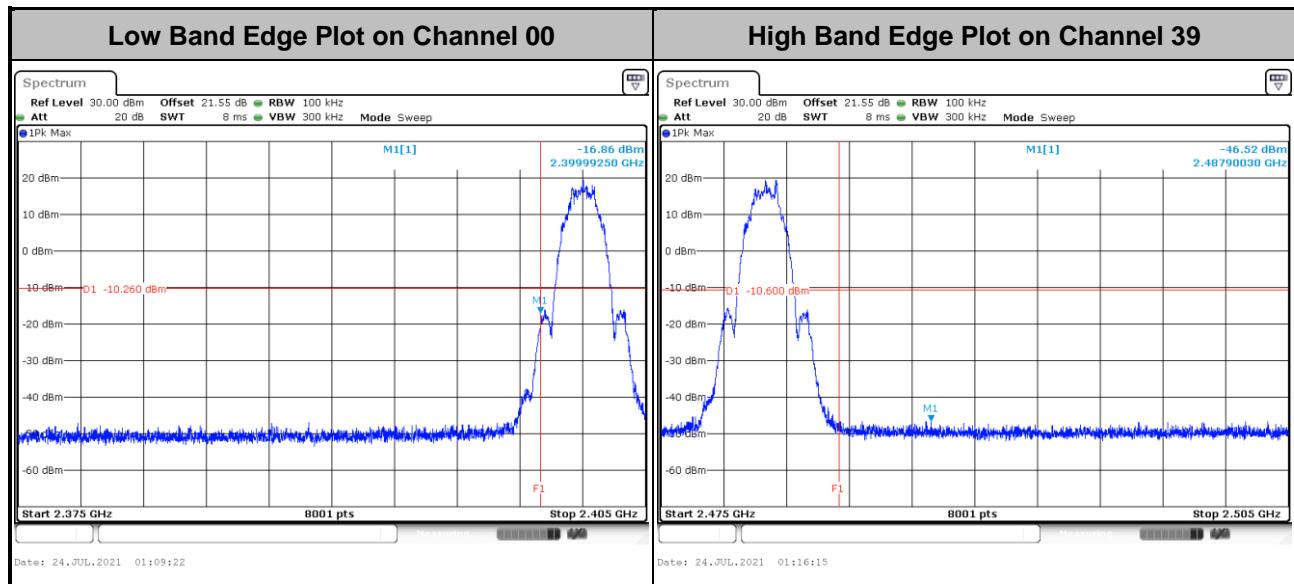
### 3.4.5 Test Result of Conducted Band Edges Plots

<Ant. 4>

<1Mbps>



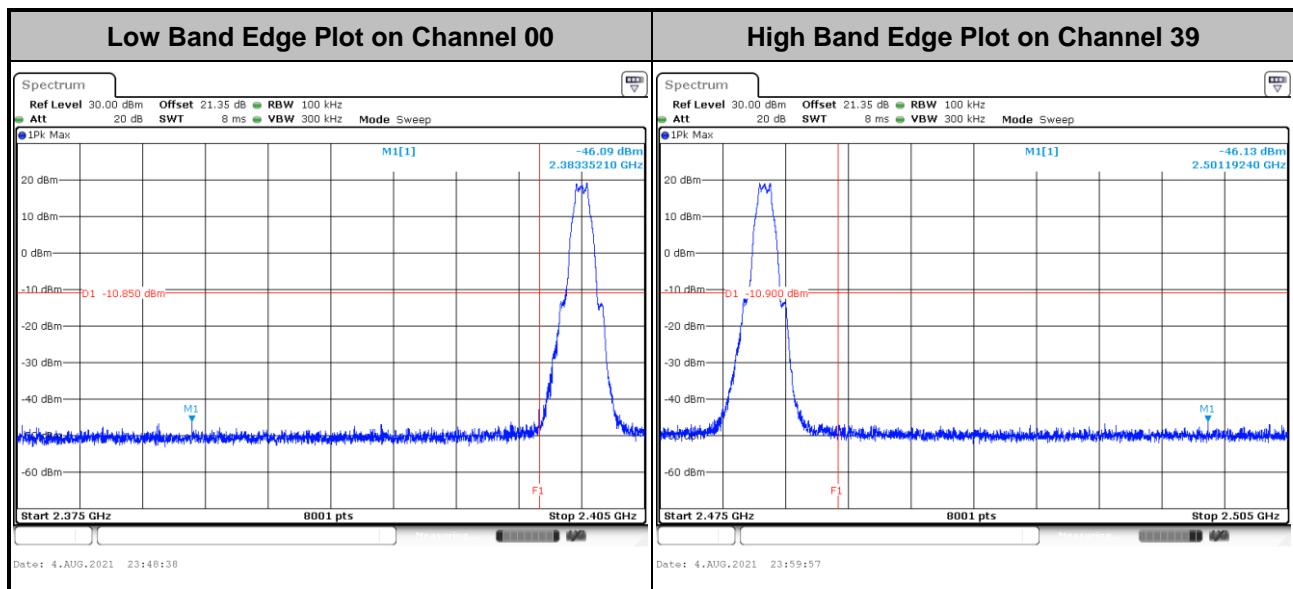
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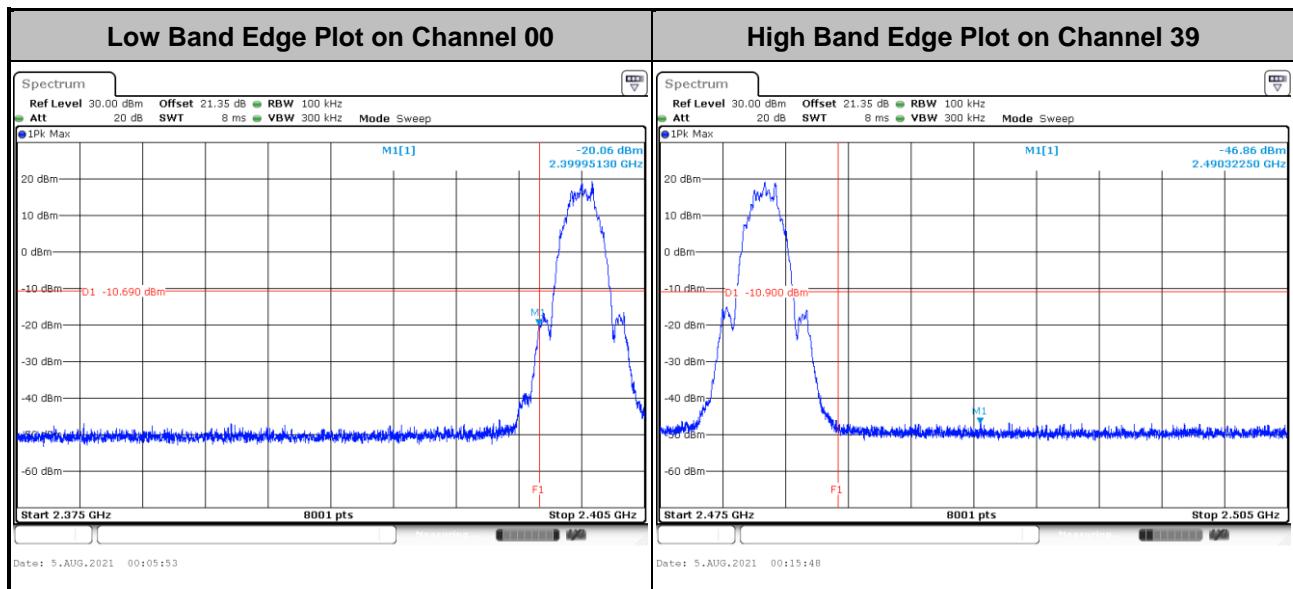


&lt;Ant. 3&gt;

&lt;1Mbps&gt;



&lt;2Mbps&gt;

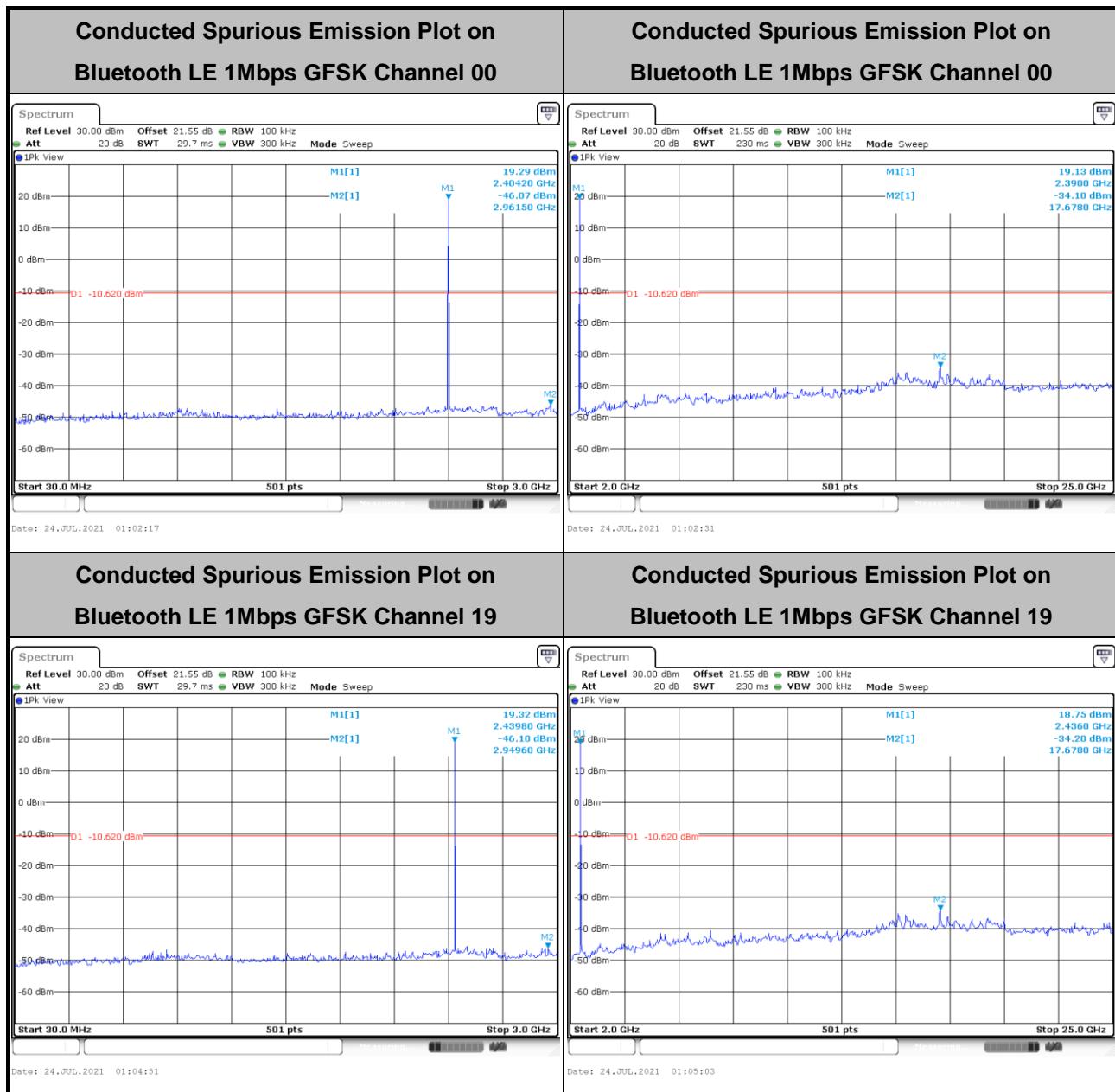


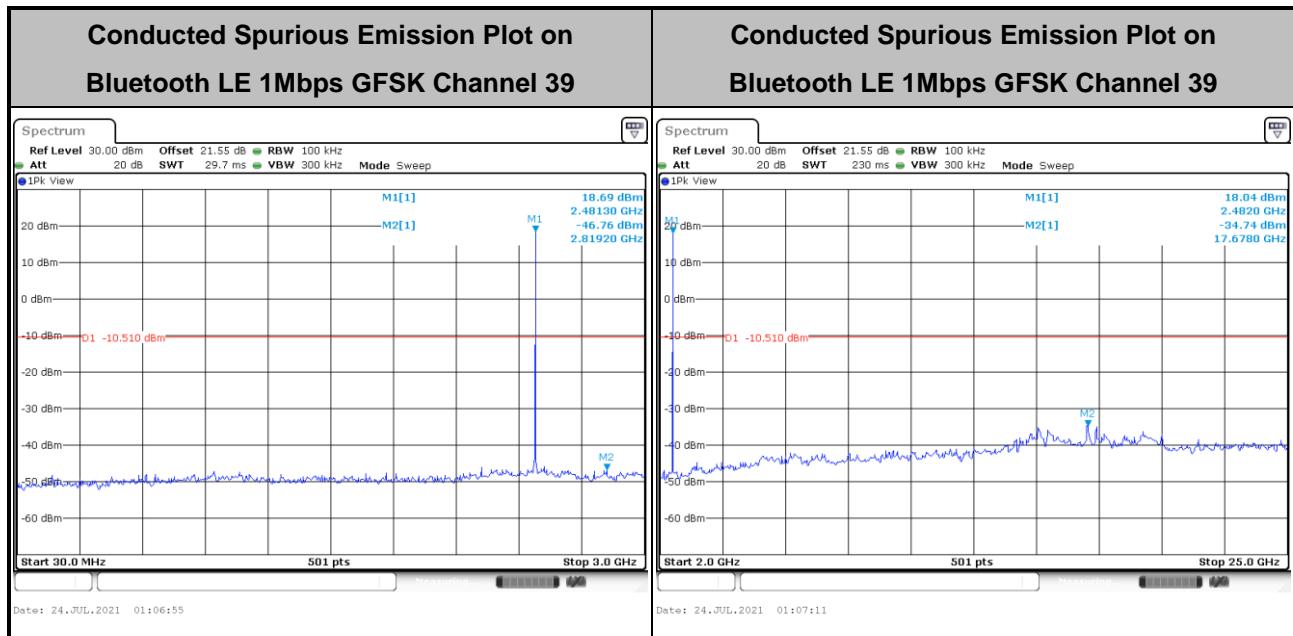


### 3.4.6 Test Result of Conducted Spurious Emission Plots

<Ant. 4>

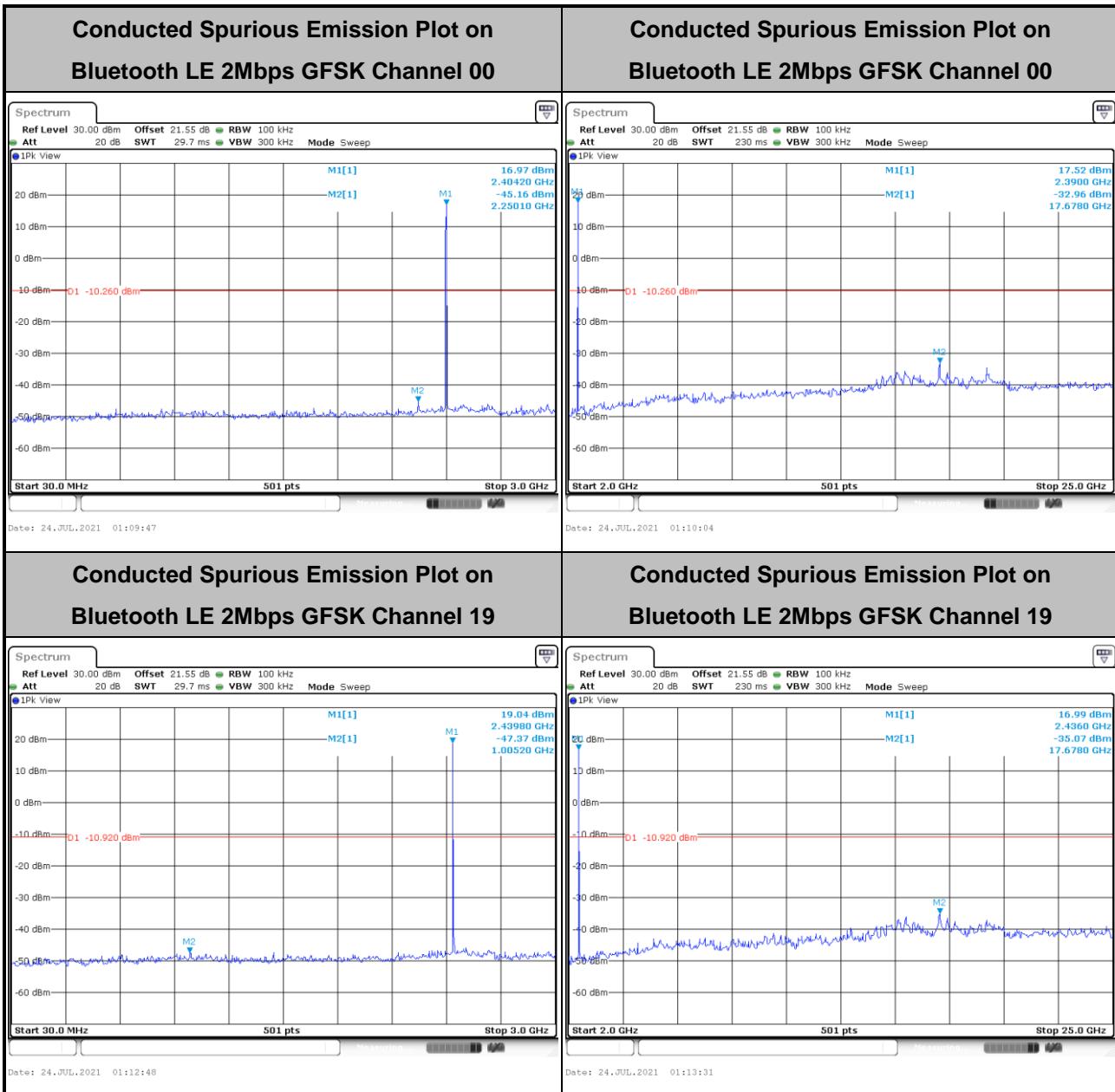
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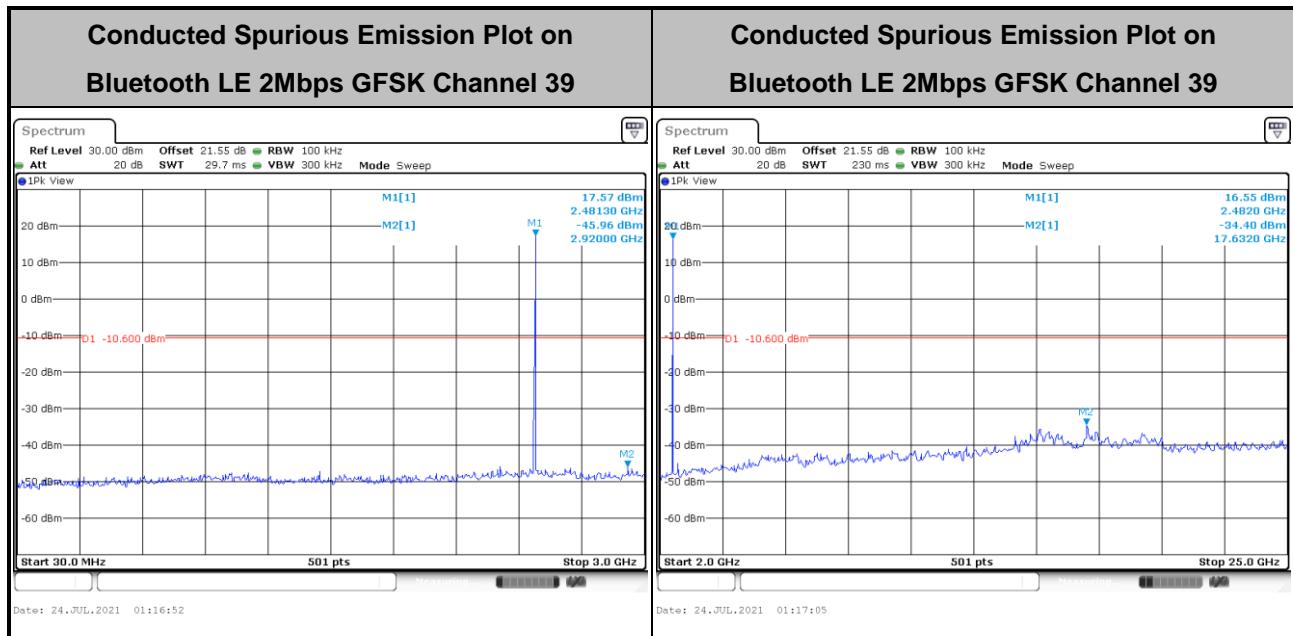






&lt;2Mbps&gt;

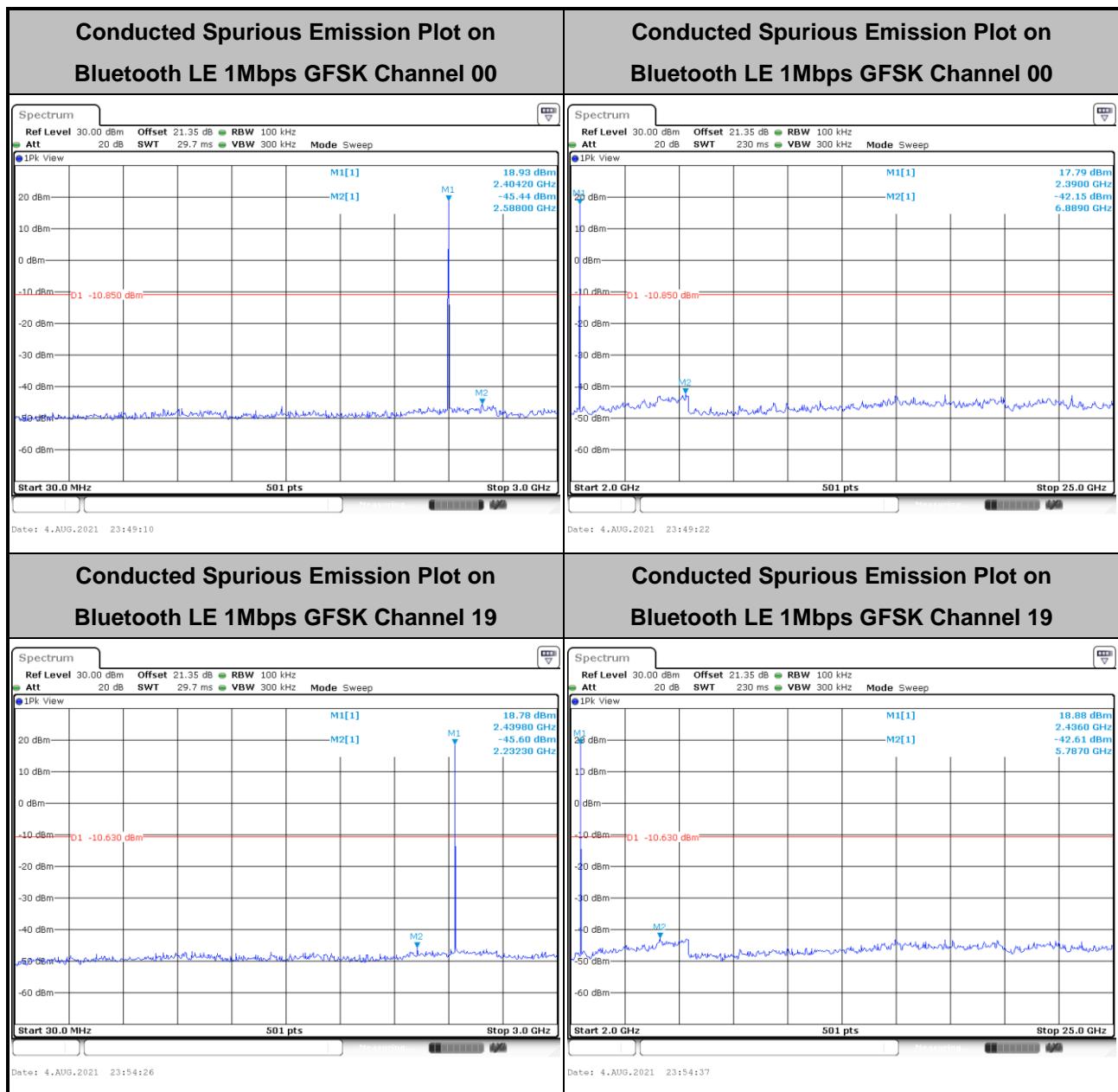


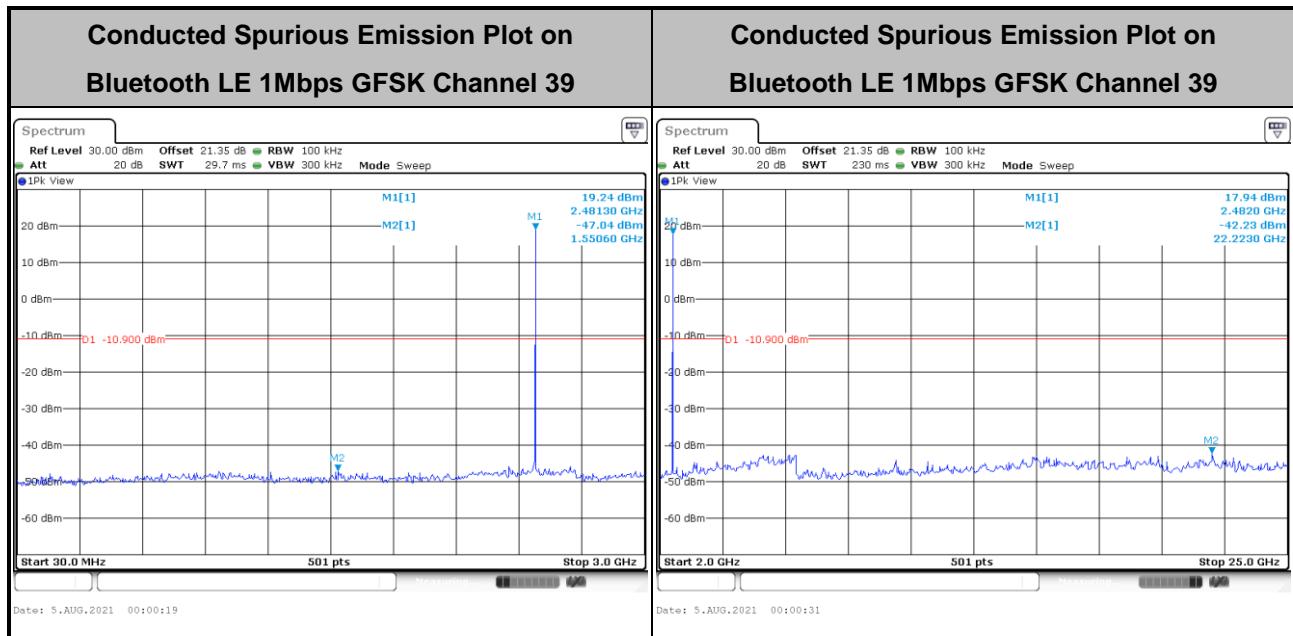




&lt;Ant. 3&gt;

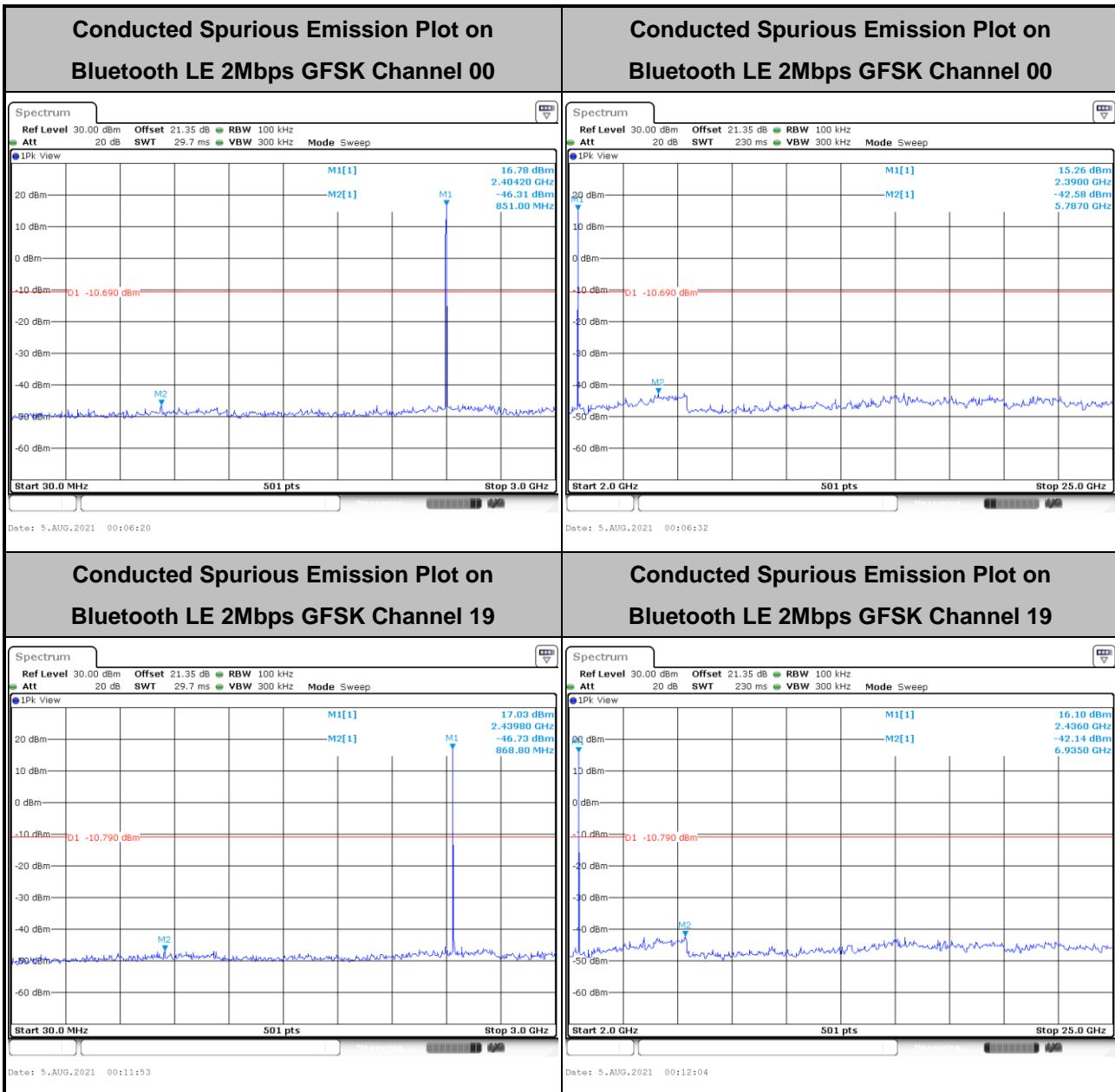
&lt;1Mbps&gt;

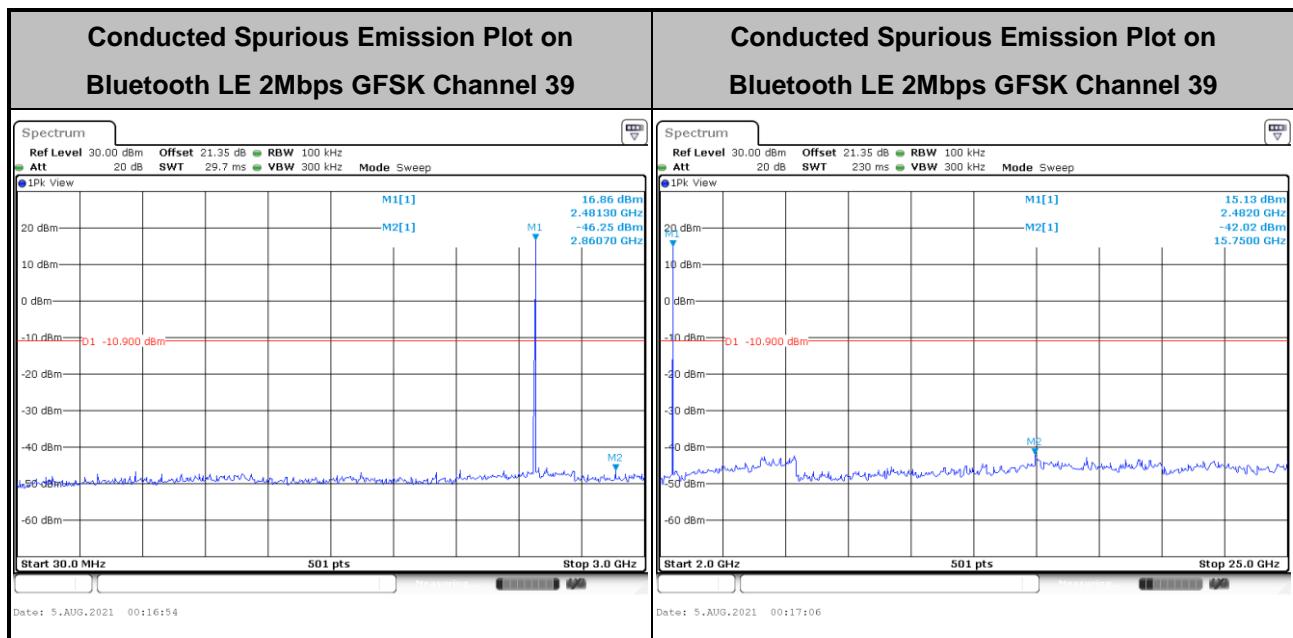






&lt;2Mbps&gt;







## 3.5 Radiated Band Edges and Spurious Emission Measurement

### 3.5.1 Limit of Radiated Band Edges and Spurious Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

### 3.5.2 Measuring Instruments

See list of measuring equipment of this test report.



### 3.5.3 Test Procedures

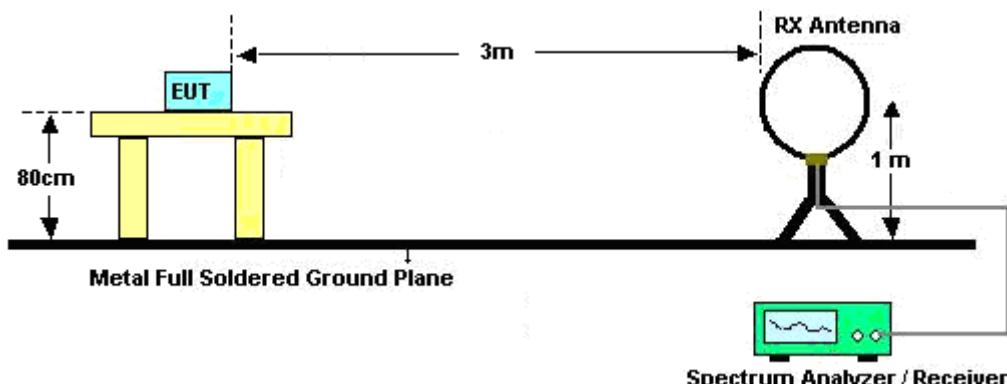
1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For testing below 1 GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and be reported.
7. For testing above 1 GHz, the emission level of the EUT in peak mode was 20 dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and be reported.
8. Use the following spectrum analyzer settings:
  - (1) Span shall wide enough to fully capture the emission being measured;
  - (2) Set RBW = 100 kHz for  $f < 1$  GHz; VBW  $\geq$  RBW; Sweep = auto; Detector function = peak; Trace = max hold;
  - (3) Set RBW = 1 MHz, VBW = 3 MHz for  $f \geq 1$  GHz for peak measurement.

For average measurement:

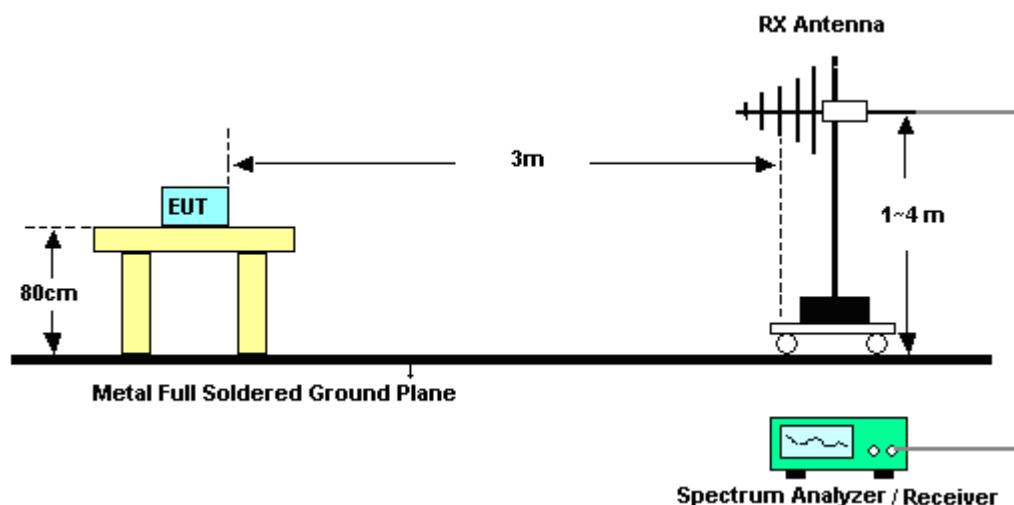
  - VBW = 10 Hz, when duty cycle is no less than 98 percent.
  - VBW  $\geq 1/T$ , when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

### 3.5.4 Test Setup

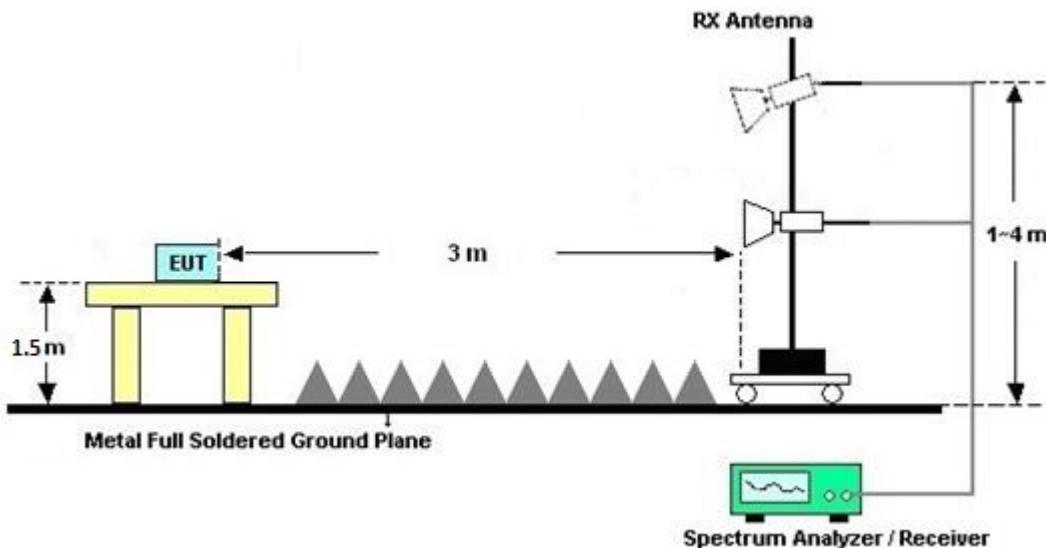
For radiated test below 30MHz



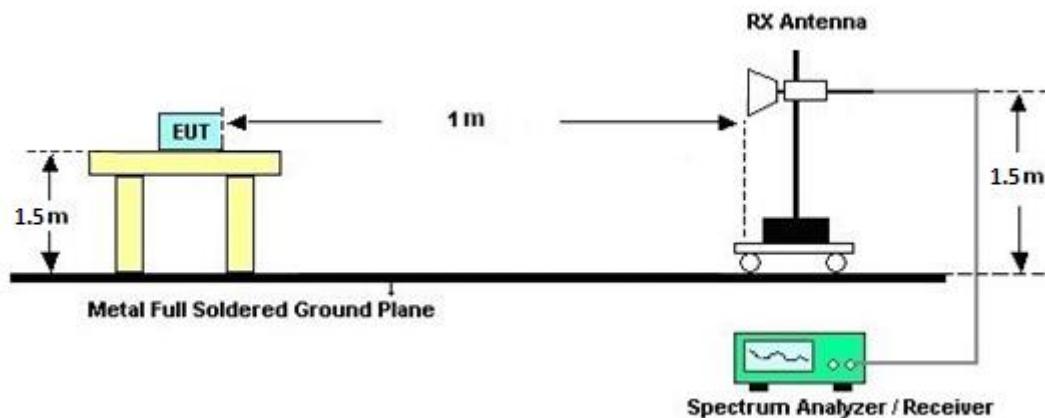
For radiated test from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



### 3.5.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

### 3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

### 3.5.7 Duty Cycle

Please refer to Appendix E.

### 3.5.8 Test Result of Radiated Spurious Emission (30 MHz ~ 10th Harmonic)

Please refer to Appendix C and D.



## 3.6 AC Conducted Emission Measurement

### 3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\*Decreases with the logarithm of the frequency.

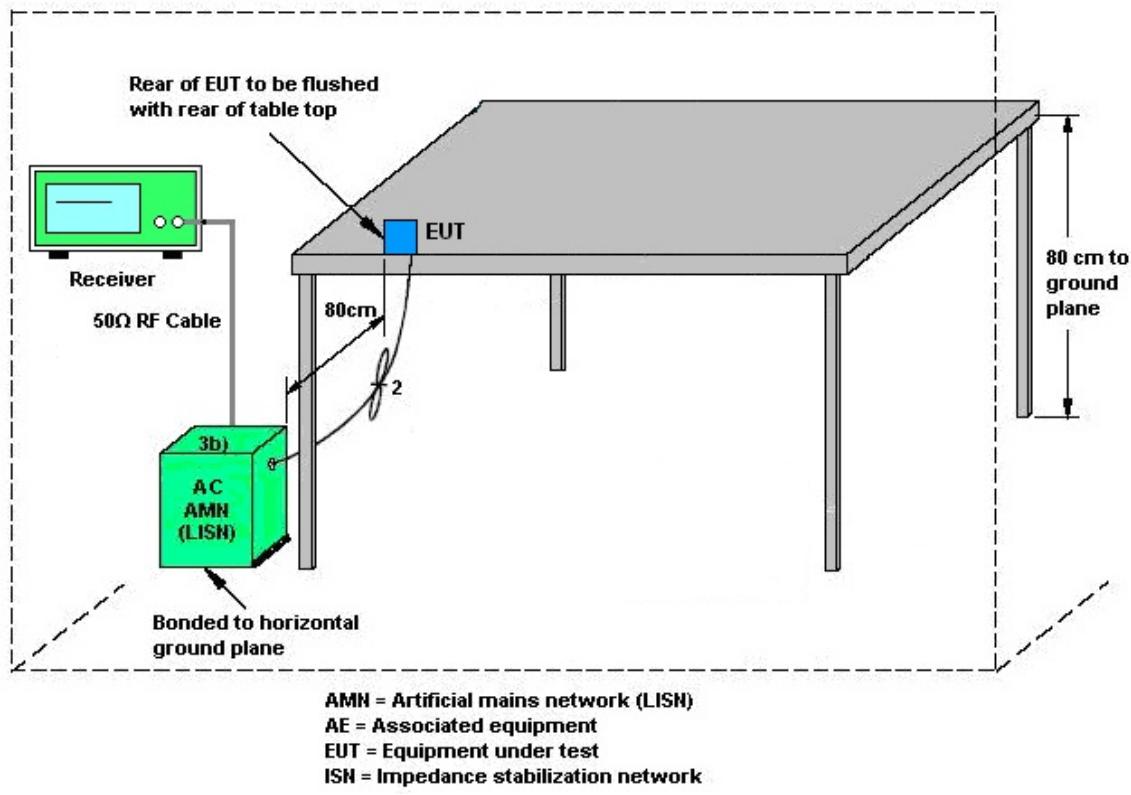
### 3.6.2 Measuring Instruments

See list of measuring equipment of this test report.

### 3.6.3 Test 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 shall 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.

### 3.6.4 Test Setup



### 3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



## 3.7 Antenna Requirements

### 3.7.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

### 3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

### 3.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



## 4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1326	1GHz ~ 18GHz	Nov. 03, 2020	Jul. 04, 2021~Aug. 05, 2021	Nov. 02, 2021	Radiation (03CH11-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA9170	00991	18GHz~40GHz	May 12, 2021	Jul. 04, 2021~Aug. 05, 2021	May 11, 2022	Radiation (03CH11-HY)
Bilog Antenna	TESEQ	CBL 6111D & N-6-06	35414 & AT-N0602	30MHz~1GHz	Oct. 11, 2020	Jul. 04, 2021~Aug. 05, 2021	Oct. 10, 2021	Radiation (03CH11-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jan. 04, 2021	Jul. 04, 2021~Aug. 05, 2021	Jan. 03, 2022	Radiation (03CH11-HY)
Preamplifier	EMEC	EM1G18G	060812	1GHz~18GHz	Oct. 27, 2020	Jul. 04, 2021~Aug. 05, 2021	Oct. 26, 2021	Radiation (03CH11-HY)
Preamplifier	Keysight	83017A	MY53270080	1GHz~26.5GHz	Nov. 12, 2020	Jul. 04, 2021~Aug. 05, 2021	Nov. 11, 2021	Radiation (03CH11-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 22, 2021	Jul. 04, 2021~Aug. 05, 2021	Jun. 21, 2022	Radiation (03CH11-HY)
Amplifier	SONOMA	310N	187312	9kHz~1GHz	Dec. 02, 2020	Jul. 04, 2021~Aug. 05, 2021	Dec. 01, 2021	Radiation (03CH11-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200486	10Hz~44GHz	Oct. 23, 2020	Jul. 04, 2021~Aug. 05, 2021	Oct. 22, 2021	Radiation (03CH11-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY54130085	20MHz~8.4GHz	Nov. 02, 2020	Jul. 04, 2021~Aug. 05, 2021	Nov. 01, 2021	Radiation (03CH11-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Jul. 04, 2021~Aug. 05, 2021	N/A	Radiation (03CH11-HY)
Turn Table	EMEC	TT 2000	N/A	0~360 Degree	N/A	Jul. 04, 2021~Aug. 05, 2021	N/A	Radiation (03CH11-HY)
Software	Audix	E3 6.2009-8-24	RK-001053	N/A	N/A	Jul. 04, 2021~Aug. 05, 2021	N/A	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	9kHz-30MHz	Mar. 11, 2021	Jul. 04, 2021~Aug. 05, 2021	Mar. 10, 2022	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2859/2	30MHz-40GHz	Mar. 11, 2021	Jul. 04, 2021~Aug. 05, 2021	Mar. 10, 2022	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	30M-18G	Mar. 11, 2021	Jul. 04, 2021~Aug. 05, 2021	Mar. 10, 2022	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY4274/2	30MHz-40GHz	Mar. 11, 2021	Jul. 04, 2021~Aug. 05, 2021	Mar. 10, 2022	Radiation (03CH11-HY)
Filter	Wainwright	WHKX12-2700-3000-18000-60SS	SN3	3GHz High Pass Filter	Sep. 14, 2020	Jul. 04, 2021~Aug. 05, 2021	Sep. 13, 2021	Radiation (03CH11-HY)
Filter	Wainwright	WLK4-1000-1530-8000-40SS	SN1	1.53GHz Low Pass Filter	Sep. 14, 2020	Jul. 04, 2021~Aug. 05, 2021	Sep. 13, 2021	Radiation (03CH11-HY)
Hygrometer	TECPTEL	DTM-303B	TP140325	N/A	Nov. 18, 2020	Jul. 04, 2021~Aug. 05, 2021	Nov. 17, 2021	Radiation (03CH11-HY)
Hygrometer	TECPTEL	DTM-303B	TP200880	QA-3-031	Oct. 22, 2020	Jul. 04, 2021~Aug. 05, 2021	Oct. 21, 2021	Radiation (03CH11-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Jul. 07, 2021	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 30, 2020	Jul. 07, 2021	Nov. 29, 2021	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 18, 2020	Jul. 07, 2021	Nov. 17, 2021	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 16, 2020	Jul. 07, 2021	Nov. 15, 2021	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Jul. 07, 2021	N/A	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Feb. 25, 2021	Jul. 07, 2021	Feb. 24, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 31, 2020	Jul. 07, 2021	Dec. 30, 2021	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34893241	N/A	Mar. 02, 2021	Jun. 17, 2021~ Aug. 05, 2021	Mar. 01, 2022	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	RPR6W-2101 001	10MHz~8GHz	Feb. 03, 2021	Jun. 17, 2021~ Aug. 05, 2021	Feb. 02, 2022	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Nov. 27, 2020	Jun. 17, 2021~ Aug. 05, 2021	Nov. 26, 2021	Conducted (TH05-HY)
Switch Box & RF Cable	EM Electronics	EMSW18SE	SW200302	N/A	Mar. 17, 2021	Jun. 17, 2021~ Aug. 05, 2021	Mar. 16, 2022	Conducted (TH05-HY)



## 5 Uncertainty of Evaluation

### Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2U <sub>c</sub> (y))	2.3 dB
---	--------

### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2U <sub>c</sub> (y))	4.7 dB
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### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2U <sub>c</sub> (y))	4.9 dB
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### Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2U <sub>c</sub> (y))	4.2 dB
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## Appendix A. Test Result of Conducted Test Items

Test Engineer:	Hank Hsu and Shiming Liu			Temperature:	22.5~25.9		°C
Test Date:	2021/6/17~2021/8/5			Relative Humidity:	45.1~58.7		%

&lt;Ant. 4&gt;

<b><u>TEST RESULTS DATA</u></b> <b><u>6dB and 99% Occupied Bandwidth</u></b>								
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
BLE	1Mbps	1	0	2402	1.037	0.710	0.50	Pass
BLE	1Mbps	1	19	2440	1.037	0.714	0.50	Pass
BLE	1Mbps	1	39	2480	1.037	0.710	0.50	Pass

<b><u>TEST RESULTS DATA</u></b> <b><u>Average Power Table</u></b>										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)	Conducted Power Limit (dBm)	DG (dBi)	EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail
BLE	1Mbps	1	0	2402	20.15	30.00	-1.10	19.05	36.00	Pass
BLE	1Mbps	1	19	2440	19.55	30.00	-1.10	18.45	36.00	Pass
BLE	1Mbps	1	39	2480	19.75	30.00	-1.10	18.65	36.00	Pass

<b><u>TEST RESULTS DATA</u></b> <b><u>Peak Power Density</u></b>									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak PSD (dBm /100kHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
BLE	1Mbps	1	0	2402	19.38	4.65	-1.10	8.00	Pass
BLE	1Mbps	1	19	2440	19.38	4.72	-1.10	8.00	Pass
BLE	1Mbps	1	39	2480	19.49	4.83	-1.10	8.00	Pass

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 30dBc limit.

**TEST RESULTS DATA**  
**6dB and 99% Occupied Bandwidth**

Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
BLE	2Mbps	1	0	2402	2.046	1.188	0.50	Pass
BLE	2Mbps	1	19	2440	2.050	1.240	0.50	Pass
BLE	2Mbps	1	39	2480	2.046	1.192	0.50	Pass

**TEST RESULTS DATA**  
**Average Power Table**

Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)	Conducted Power Limit (dBm)	DG (dBi)	EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail
BLE	2Mbps	1	0	2402	20.25	30.00	-1.10	19.15	36.00	Pass
BLE	2Mbps	1	19	2440	19.65	30.00	-1.10	18.55	36.00	Pass
BLE	2Mbps	1	39	2480	19.75	30.00	-1.10	18.65	36.00	Pass

**TEST RESULTS DATA**  
**Peak Power Density**

Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak PSD (dBm /100kHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
BLE	2Mbps	1	0	2402	19.74	1.52	-1.10	8.00	Pass
BLE	2Mbps	1	19	2440	19.08	0.81	-1.10	8.00	Pass
BLE	2Mbps	1	39	2480	19.40	1.15	-1.10	8.00	Pass

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 30dBc limit.

&lt;Ant. 3&gt;

**TEST RESULTS DATA**  
**6dB and 99% Occupied Bandwidth**

Mod.	Data Rate	N <sub>tx</sub>	CH.	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
BLE	1Mbps	1	0	2402	1.035	0.712	0.50	Pass
BLE	1Mbps	1	19	2440	1.037	0.714	0.50	Pass
BLE	1Mbps	1	39	2480	1.037	0.716	0.50	Pass

**TEST RESULTS DATA**  
**Average Power Table**

Mod.	Data Rate	N <sub>tx</sub>	CH.	Freq. (MHz)	Average Conducted Power (dBm)	Conducted Power Limit (dBm)	DG (dBi)	EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail
BLE	1Mbps	1	0	2402	19.65	30.00	-0.60	19.05	36.00	Pass
BLE	1Mbps	1	19	2440	19.55	30.00	-0.60	18.95	36.00	Pass
BLE	1Mbps	1	39	2480	19.55	30.00	-0.60	18.95	36.00	Pass

**TEST RESULTS DATA**  
**Peak Power Density**

Mod.	Data Rate	N <sub>tx</sub>	CH.	Freq. (MHz)	Peak PSD (dBm /100kHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
BLE	1Mbps	1	0	2402	19.15	4.44	-0.60	8.00	Pass
BLE	1Mbps	1	19	2440	19.37	4.70	-0.60	8.00	Pass
BLE	1Mbps	1	39	2480	19.10	4.51	-0.60	8.00	Pass

**Note:** PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 30dBc limit.

**TEST RESULTS DATA**  
**6dB and 99% Occupied Bandwidth**

Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
BLE	2Mbps	1	0	2402	2.046	1.191	0.50	Pass
BLE	2Mbps	1	19	2440	2.050	1.231	0.50	Pass
BLE	2Mbps	1	39	2480	2.050	1.243	0.50	Pass

**TEST RESULTS DATA**  
**Average Power Table**

Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)	Conducted Power Limit (dBm)	DG (dBi)	EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail
BLE	2Mbps	1	0	2402	19.65	30.00	-0.60	19.05	36.00	Pass
BLE	2Mbps	1	19	2440	19.75	30.00	-0.60	19.15	36.00	Pass
BLE	2Mbps	1	39	2480	19.65	30.00	-0.60	19.05	36.00	Pass

**TEST RESULTS DATA**  
**Peak Power Density**

Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak PSD (dBm /100kHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
BLE	2Mbps	1	0	2402	19.31	1.02	-0.60	8.00	Pass
BLE	2Mbps	1	19	2440	19.21	0.98	-0.60	8.00	Pass
BLE	2Mbps	1	39	2480	19.10	0.90	-0.60	8.00	Pass

Note: PSD (dBm/ 100kHz) is a reference level used for Conducted Band Edges and Conducted Spurious Emission 30dBc limit.



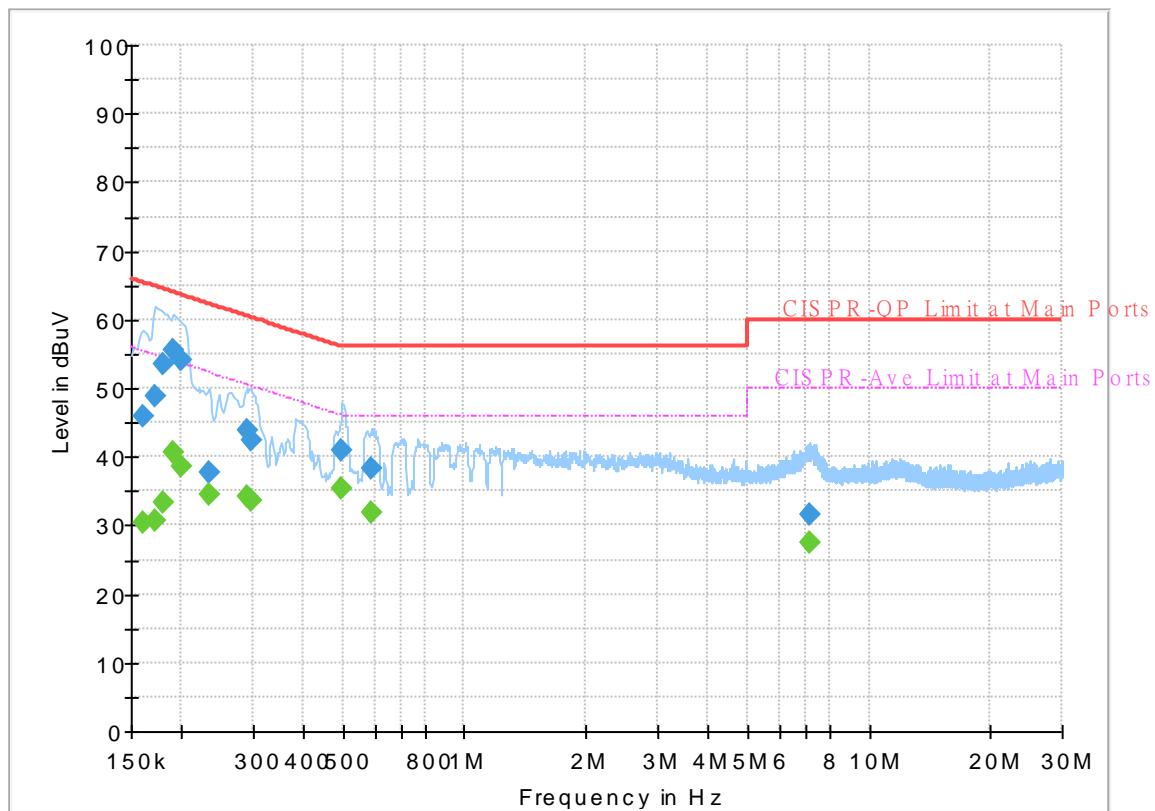
## **Appendix B. AC Conducted Emission Test Results**

<b>Test Engineer :</b>	Calvin Wang	<b>Temperature :</b>	23~26°C
		<b>Relative Humidity :</b>	40~50%

## EUT Information

Report NO : 121931-04  
 Test Mode : Mode 1  
 Test Voltage : 120Vac/60Hz  
 Phase : Line

Full Spectrum



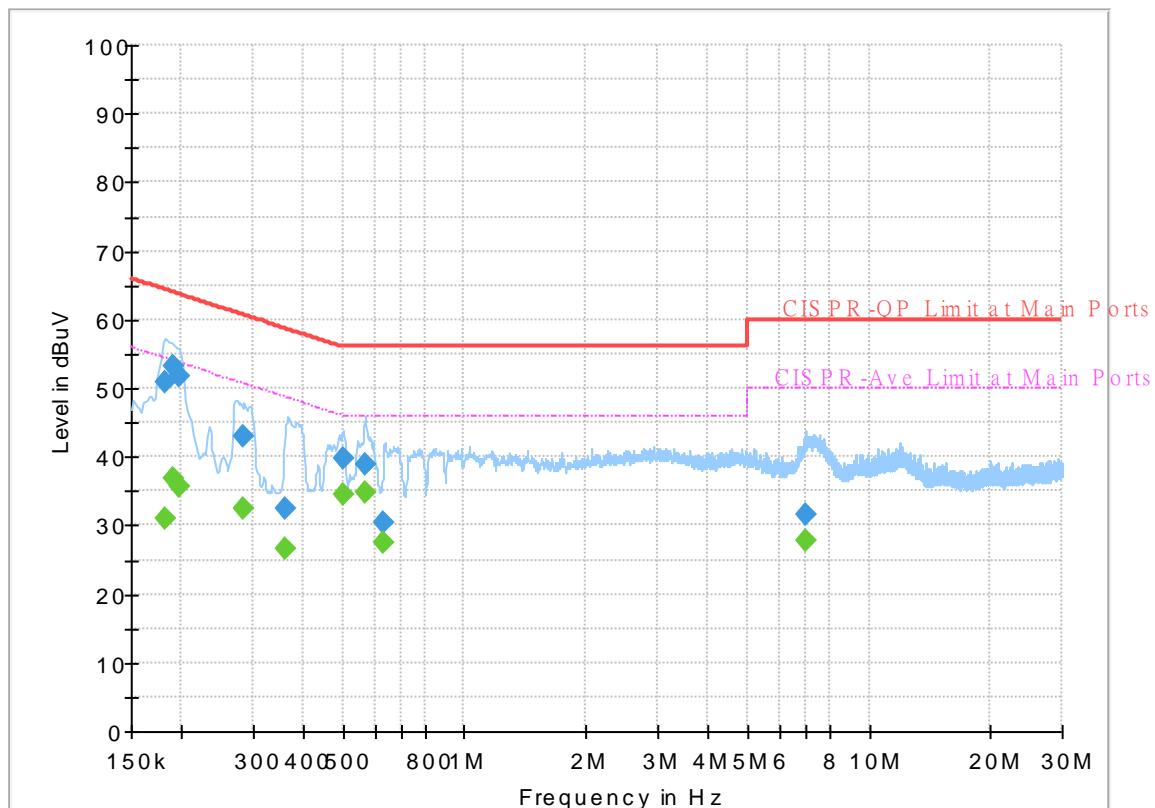
## Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.161250	---	30.43	55.40	24.97	L1	OFF	19.5
0.161250	45.89	---	65.40	19.51	L1	OFF	19.5
0.172500	---	30.66	54.84	24.18	L1	OFF	19.5
0.172500	48.77	---	64.84	16.07	L1	OFF	19.5
0.179250	---	33.31	54.52	21.21	L1	OFF	19.5
0.179250	53.62	---	64.52	10.90	L1	OFF	19.5
0.190500	---	40.66	54.02	13.36	L1	OFF	19.5
0.190500	55.70	---	64.02	8.32	L1	OFF	19.5
0.199500	---	38.60	53.63	15.03	L1	OFF	19.5
0.199500	54.07	---	63.63	9.56	L1	OFF	19.5
0.233250	---	34.38	52.33	17.95	L1	OFF	19.5
0.233250	37.76	---	62.33	24.57	L1	OFF	19.5
0.289500	---	34.31	50.54	16.23	L1	OFF	19.5
0.289500	43.96	---	60.54	16.58	L1	OFF	19.5
0.298500	---	33.74	50.28	16.54	L1	OFF	19.5
0.298500	42.35	---	60.28	17.93	L1	OFF	19.5
0.498750	---	35.37	46.02	10.65	L1	OFF	19.7
0.498750	40.82	---	56.02	15.20	L1	OFF	19.7
0.591000	---	31.95	46.00	14.05	L1	OFF	19.8
0.591000	38.22	---	56.00	17.78	L1	OFF	19.8
7.163250	---	27.55	50.00	22.45	L1	OFF	19.9
7.163250	31.67	---	60.00	28.33	L1	OFF	19.9

## EUT Information

Report NO : 121931-04  
 Test Mode : Mode 1  
 Test Voltage : 120Vac/60Hz  
 Phase : Neutral

Full Spectrum



## Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.181500	---	31.05	54.42	23.37	N	OFF	19.5
0.181500	50.90	---	64.42	13.52	N	OFF	19.5
0.190500	---	36.89	54.02	17.13	N	OFF	19.5
0.190500	53.34	---	64.02	10.68	N	OFF	19.5
0.197250	---	35.66	53.73	18.07	N	OFF	19.5
0.197250	51.67	---	63.73	12.06	N	OFF	19.5
0.285000	---	32.37	50.67	18.30	N	OFF	19.5
0.285000	43.03	---	60.67	17.64	N	OFF	19.5
0.361500	---	26.71	48.69	21.98	N	OFF	19.6
0.361500	32.51	---	58.69	26.18	N	OFF	19.6
0.503250	---	34.62	46.00	11.38	N	OFF	19.7
0.503250	39.68	---	56.00	16.32	N	OFF	19.7
0.568500	---	34.78	46.00	11.22	N	OFF	19.8
0.568500	38.91	---	56.00	17.09	N	OFF	19.8
0.631500	---	27.35	46.00	18.65	N	OFF	19.8
0.631500	30.46	---	56.00	25.54	N	OFF	19.8
6.965250	---	27.76	50.00	22.24	N	OFF	20.0
6.965250	31.46	---	60.00	28.54	N	OFF	20.0



## Appendix C. Radiated Spurious Emission

Test Engineer :	Harvey Guo, Fu Chen, and Troye Hsieh	Temperature :	19.1~23.3°C
		Relative Humidity :	60.2~69.5%

&lt;1Mbps&gt;

2.4GHz 2400~2483.5MHz

BLE (Band Edge @ 3m)

BLE Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
4		( MHz )	( dB $\mu$ V/m )	( dB )	( dB $\mu$ V/m )	( dB $\mu$ V )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
BLE CH 00 2402MHz		2373.42	53.2	-20.8	74	42.06	27.55	17.05	33.46	193	158	P	H
		2360.4	43.89	-10.11	54	32.75	27.58	17.03	33.47	193	158	A	H
	*	2402	108.92	-	-	97.8	27.5	17.07	33.45	193	158	P	H
	*	2402	108.33	-	-	97.21	27.5	17.07	33.45	193	158	A	H
													H
		2350.425	52.8	-21.2	74	41.64	27.6	17.03	33.47	241	88	P	V
		2339.085	43.59	-10.41	54	32.43	27.62	17.02	33.48	241	88	A	V
	*	2402	106.84	-	-	95.72	27.5	17.07	33.45	241	88	P	V
	*	2402	106.22	-	-	95.1	27.5	17.07	33.45	241	88	A	V
													V
BLE CH 19 2440MHz		2351.44	52.79	-21.21	74	41.63	27.6	17.03	33.47	115	159	P	H
		2325.04	43.7	-10.3	54	32.54	27.65	17	33.49	115	159	A	H
	*	2440	111.2	-	-	100	27.5	17.13	33.43	115	159	P	H
	*	2440	110.39	-	-	99.19	27.5	17.13	33.43	115	159	A	H
		2495.52	54.11	-19.89	74	42.88	27.41	17.22	33.4	115	159	P	H
		2497.6	43.41	-10.59	54	32.19	27.4	17.22	33.4	115	159	A	H
		2350	53.13	-20.87	74	41.99	27.6	17.02	33.48	253	106	P	V
		2310	43.24	-10.76	54	32.07	27.68	16.99	33.5	253	106	A	V
	*	2440	109.3	-	-	98.1	27.5	17.13	33.43	253	106	P	V
	*	2440	108.67	-	-	97.47	27.5	17.13	33.43	253	106	A	V
		2495.76	52.75	-21.25	74	41.52	27.41	17.22	33.4	253	106	P	V
		2494.16	43.39	-10.61	54	32.16	27.41	17.22	33.4	253	106	A	V



BLE CH 39 2480MHz	*	2480	111.27	-	-	100.05	27.44	17.19	33.41	113	160	P	H
	*	2480	110.69	-	-	99.47	27.44	17.19	33.41	113	160	A	H
		2486.12	53.03	-20.97	74	41.81	27.43	17.2	33.41	113	160	P	H
		2485.76	43.55	-10.45	54	32.33	27.43	17.2	33.41	113	160	A	H
													H
													H
	*	2480	109.84	-	-	98.62	27.44	17.19	33.41	250	91	P	V
	*	2480	109.13	-	-	97.91	27.44	17.19	33.41	250	91	A	V
		2493.64	52.84	-21.16	74	41.61	27.41	17.22	33.4	250	91	P	V
		2483.92	43.87	-10.13	54	32.65	27.43	17.2	33.41	250	91	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



## 2.4GHz 2400~2483.5MHz

## BLE (Harmonic @ 3m)

BLE Ant. 4	Note	Frequency ( MHz )	Level ( dB $\mu$ V/m )	Over Limit ( dB )	Limit Line ( dB $\mu$ V/m )	Read Level ( dB $\mu$ V )	Antenna Factor ( dB/m )	Path Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. (P/A)	Pol. (H/V)
BLE CH 00 2402MHz		4804	38.87	-35.13	74	62.86	31	11.18	66.17	100	0	P	H
		17970	58.07	-15.93	74	52.55	46.8	23.87	65.15	100	0	P	H
		17970	48.45	-5.55	54	42.93	46.8	23.87	65.15	100	0	A	H
													H
		4804	38.08	-35.92	74	62.07	31	11.18	66.17	100	0	P	V
		17985	57.46	-16.54	74	51.59	47.1	23.89	65.12	100	0	P	V
		17985	49.01	-4.99	54	43.14	47.1	23.89	65.12	100	0	A	V
													V
BLE CH 19 2440MHz		4880	38.8	-35.2	74	62.04	31.54	11.34	66.12	100	0	P	H
		7320	43.52	-30.48	74	59.39	36.4	13.45	65.72	100	0	P	H
		17955	58.36	-15.64	74	53.17	46.5	23.86	65.17	100	0	P	H
		17955	48.08	-5.92	54	42.89	46.5	23.86	65.17	100	0	A	H
		4880	37.82	-36.18	74	61.06	31.54	11.34	66.12	100	0	P	V
		7320	41.69	-32.31	74	57.56	36.4	13.45	65.72	100	0	P	V
		17955	57.32	-16.68	74	52.13	46.5	23.86	65.17	100	0	P	V
		17955	48.32	-5.68	54	43.13	46.5	23.86	65.17	100	0	A	V
BLE CH 39 2480MHz		4960	39.24	-34.76	74	62.73	31.06	11.51	66.06	100	0	P	H
		7440	41.91	-32.09	74	57.4	36.56	13.74	65.79	100	0	P	H
		17955	57.11	-16.89	74	51.92	46.5	23.86	65.17	100	0	P	H
		17955	48.17	-5.83	54	42.98	46.5	23.86	65.17	100	0	A	H
		4960	39.76	-34.24	74	63.25	31.06	11.51	66.06	100	0	P	V
		7440	42.74	-31.26	74	58.23	36.56	13.74	65.79	100	0	P	V
		17925	57.39	-16.61	74	52.88	45.9	23.83	65.22	100	0	P	V
		17925	47.52	-6.48	54	43.01	45.9	23.83	65.22	100	0	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



## 2.4GHz 2400~2483.5MHz

## BLE (Band Edge @ 3m)

BLE Ant. 3	Note	Frequency ( MHz )	Level ( dB $\mu$ V/m )	Over Limit ( dB )	Limit Line ( dB $\mu$ V/m )	Read Level ( dB $\mu$ V )	Antenna Factor ( dB/m )	Path Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. (P/A)	Pol. (H/V)
BLE CH 00 2402MHz		2387.385	53.64	-20.36	74	42.51	27.53	17.06	33.46	125	76	P	H
		2385.075	43.71	-10.29	54	32.58	27.53	17.06	33.46	125	76	A	H
	*	2402	112.09	-	-	100.97	27.5	17.07	33.45	125	76	P	H
	*	2402	111.51	-	-	100.39	27.5	17.07	33.45	125	76	A	H
													H
													H
		2384.655	53.36	-20.64	74	42.23	27.53	17.06	33.46	390	112	P	V
		2386.86	43.64	-10.36	54	32.51	27.53	17.06	33.46	390	112	A	V
	*	2402	106.73	-	-	95.61	27.5	17.07	33.45	390	112	P	V
	*	2402	106.1	-	-	94.98	27.5	17.07	33.45	390	112	A	V
													V
													V
BLE CH 19 2440MHz		2314.8	52.69	-21.31	74	41.52	27.67	16.99	33.49	146	77	P	H
		2368.08	43.43	-10.57	54	32.3	27.56	17.04	33.47	146	77	A	H
	*	2440	111.46	-	-	100.26	27.5	17.13	33.43	146	77	P	H
	*	2440	110.89	-	-	99.69	27.5	17.13	33.43	146	77	A	H
		2486	52.95	-21.05	74	41.73	27.43	17.2	33.41	146	77	P	H
		2490.56	43.35	-10.65	54	32.12	27.42	17.21	33.4	146	77	A	H
		2351.12	53.21	-20.79	74	42.05	27.6	17.03	33.47	343	101	P	V
		2384.08	43.46	-10.54	54	32.33	27.53	17.06	33.46	343	101	A	V
	*	2440	107.84	-	-	96.64	27.5	17.13	33.43	343	101	P	V
	*	2440	107.22	-	-	96.02	27.5	17.13	33.43	343	101	A	V
		2483.92	52.79	-21.21	74	41.57	27.43	17.2	33.41	343	101	P	V
		2494.56	43.43	-10.57	54	32.2	27.41	17.22	33.4	343	101	A	V



BLE CH 39 2480MHz	*	2480	112.14	-	-	100.92	27.44	17.19	33.41	119	81	P	H
	*	2480	111.54	-	-	100.32	27.44	17.19	33.41	119	81	A	H
		2484.36	53.77	-20.23	74	42.55	27.43	17.2	33.41	119	81	P	H
		2483.52	44.23	-9.77	54	33.01	27.43	17.2	33.41	119	81	A	H
													H
													H
	*	2480	107.68	-	-	96.46	27.44	17.19	33.41	331	125	P	V
	*	2480	106.99	-	-	95.77	27.44	17.19	33.41	331	125	A	V
		2493.68	52.96	-21.04	74	41.73	27.41	17.22	33.4	331	125	P	V
		2483.96	43.52	-10.48	54	32.3	27.43	17.2	33.41	331	125	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



## 2.4GHz 2400~2483.5MHz

## BLE (Harmonic @ 3m)

BLE Ant. 3	Note	Frequency ( MHz )	Level ( dB $\mu$ V/m )	Over Limit ( dB )	Limit Line ( dB $\mu$ V/m )	Read Level ( dB $\mu$ V )	Antenna Factor ( dB/m )	Path Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. (P/A)	Pol. (H/V)
BLE CH 00 2402MHz		4804	38.91	-35.09	74	55.19	31	11.18	58.46	100	0	P	H
		17985	57.3	-16.7	74	42.95	47.1	23.89	56.64	100	0	P	H
		17985	48.28	-5.72	54	33.93	47.1	23.89	56.64	100	0	A	H
													H
		4804	38.26	-35.74	74	54.54	31	11.18	58.46	100	0	P	V
		17970	56.6	-17.4	74	42.6	46.8	23.87	56.67	100	0	P	V
		17970	47.94	-6.06	54	33.94	46.8	23.87	56.67	100	0	A	V
													V
BLE CH 19 2440MHz		4880	40.35	-33.65	74	55.95	31.54	11.34	58.48	100	0	P	H
		7320	43	-31	74	52.32	36.4	13.45	59.17	100	0	P	H
		17985	55.79	-18.21	74	41.44	47.1	23.89	56.64	100	0	P	H
		17985	48.24	-5.76	54	33.89	47.1	23.89	56.64	100	0	A	H
		4880	40.2	-33.8	74	55.8	31.54	11.34	58.48	100	0	P	V
		7320	44.06	-29.94	74	53.38	36.4	13.45	59.17	100	0	P	V
		17985	56.45	-17.55	74	42.1	47.1	23.89	56.64	100	0	P	V
		17985	48.13	-5.87	54	33.78	47.1	23.89	56.64	100	0	A	V
BLE CH 39 2480MHz		4960	39.9	-34.1	74	55.82	31.06	11.51	58.49	100	0	P	H
		7440	42.77	-31.23	74	51.59	36.56	13.74	59.12	100	0	P	H
		17985	57.27	-16.73	74	42.92	47.1	23.89	56.64	100	0	P	H
		17985	47.88	-6.12	54	33.53	47.1	23.89	56.64	100	0	A	H
		4960	40.98	-33.02	74	56.9	31.06	11.51	58.49	100	0	P	V
		7440	43.15	-30.85	74	51.97	36.56	13.74	59.12	100	0	P	V
		17985	56.33	-17.67	74	41.98	47.1	23.89	56.64	100	0	P	V
		17985	48.05	-5.95	54	33.7	47.1	23.89	56.64	100	0	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



&lt;2Mbps&gt;

## 2.4GHz 2400~2483.5MHz

## BLE (Band Edge @ 3m)

BLE Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
4		( MHz )	( dB $\mu$ V/m )	( dB )	( dB $\mu$ V/m )	( dB $\mu$ V )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
BLE CH 00 2402MHz		2314.41	51.97	-22.03	74	40.8	27.67	16.99	33.49	264	189	P	H
		2379.72	42.54	-11.46	54	31.41	27.54	17.05	33.46	264	189	A	H
	*	2402	111.31	-	-	100.19	27.5	17.07	33.45	264	189	P	H
	*	2402	110.35	-	-	99.23	27.5	17.07	33.45	264	189	A	H
													H
													H
		2335.83	52.71	-21.29	74	41.55	27.63	17.01	33.48	235	74	P	V
		2367.96	42.53	-11.47	54	31.4	27.56	17.04	33.47	235	74	A	V
	*	2402	110.82	-	-	99.7	27.5	17.07	33.45	235	74	P	V
	*	2402	108.94	-	-	97.82	27.5	17.07	33.45	235	74	A	V
BLE CH 19 2440MHz													V
		2356.08	52.55	-21.45	74	41.4	27.59	17.03	33.47	253	197	P	H
		2349.68	42.64	-11.36	54	31.5	27.6	17.02	33.48	253	197	A	H
	*	2440	110.92	-	-	99.72	27.5	17.13	33.43	253	197	P	H
	*	2440	109.27	-	-	98.07	27.5	17.13	33.43	253	197	A	H
		2492.24	52.72	-21.28	74	41.49	27.42	17.21	33.4	253	197	P	H
		2496.08	42.68	-11.32	54	31.45	27.41	17.22	33.4	253	197	A	H
		2372.88	52.62	-21.38	74	41.48	27.55	17.05	33.46	257	65	P	V
		2357.84	42.52	-11.48	54	31.38	27.58	17.03	33.47	257	65	A	V
	*	2440	111.5	-	-	100.3	27.5	17.13	33.43	257	65	P	V
	*	2440	109.83	-	-	98.63	27.5	17.13	33.43	257	65	A	V
		2498	53.29	-20.71	74	42.07	27.4	17.22	33.4	257	65	P	V
		2484.88	42.64	-11.36	54	31.42	27.43	17.2	33.41	257	65	A	V



BLE CH 39 2480MHz	*	2480	108.4	-	-	97.18	27.44	17.19	33.41	229	333	P	H
	*	2480	108.71	-	-	97.49	27.44	17.19	33.41	229	333	A	H
		2487.9	52.39	-21.61	74	41.17	27.42	17.21	33.41	229	333	P	H
		2483.5	43.78	-10.22	54	32.56	27.43	17.2	33.41	229	333	A	H
													H
													H
	*	2480	111.75	-	-	100.53	27.44	17.19	33.41	251	62	P	V
	*	2480	110.2	-	-	98.98	27.44	17.19	33.41	251	62	A	V
		2483.75	53.52	-20.48	74	42.3	27.43	17.2	33.41	251	62	P	V
		2483.5	46.18	-7.82	54	34.96	27.43	17.2	33.41	251	62	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



## 2.4GHz 2400~2483.5MHz

## BLE (Harmonic @ 3m)

BLE Ant. 4	Note	Frequency ( MHz )	Level ( dB $\mu$ V/m )	Over Limit ( dB )	Limit Line ( dB $\mu$ V/m )	Read Level ( dB $\mu$ V )	Antenna Factor ( dB/m )	Path Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. (P/A)	Pol. (H/V)
BLE CH 00 2402MHz		4804	39.13	-34.87	74	63.12	31	11.18	66.17	100	0	P	H
		17955	57.03	-16.97	74	51.84	46.5	23.86	65.17	100	0	P	H
		17955	47.17	-6.83	54	41.98	46.5	23.86	65.17	100	0	A	H
													H
		4804	38.25	-35.75	74	62.24	31	11.18	66.17	100	0	P	V
		17955	56.31	-17.69	74	51.12	46.5	23.86	65.17	100	0	P	V
		17955	46.58	-7.42	54	41.39	46.5	23.86	65.17	100	0	A	V
													V
BLE CH 19 2440MHz		4880	40.89	-33.11	74	64.13	31.54	11.34	66.12	100	0	P	H
		7320	44.13	-29.87	74	60	36.4	13.45	65.72	100	0	P	H
		17955	57.1	-16.9	74	51.91	46.5	23.86	65.17	100	0	P	H
		17955	47.03	-6.97	54	41.84	46.5	23.86	65.17	100	0	A	H
		4880	41.94	-32.06	74	65.18	31.54	11.34	66.12	100	0	P	V
		7320	42.84	-31.16	74	58.71	36.4	13.45	65.72	100	0	P	V
		17955	56.67	-17.33	74	51.48	46.5	23.86	65.17	100	0	P	V
		17955	46.88	-7.12	54	41.69	46.5	23.86	65.17	100	0	A	V
BLE CH 39 2480MHz		4960	40.28	-33.72	74	63.77	31.06	11.51	66.06	100	0	P	H
		7440	44.44	-29.56	74	59.93	36.56	13.74	65.79	100	0	P	H
		17940	57.43	-16.57	74	52.58	46.2	23.84	65.19	100	0	P	H
		17940	47	-7	54	42.15	46.2	23.84	65.19	100	0	A	H
		4960	45.21	-28.79	74	68.7	31.06	11.51	66.06	100	0	P	V
		7440	43.45	-30.55	74	58.94	36.56	13.74	65.79	100	0	P	V
		17955	57.97	-16.03	74	52.78	46.5	23.86	65.17	100	0	P	V
		17955	47.11	-6.89	54	41.92	46.5	23.86	65.17	100	0	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



## Emission above 18GHz

## 2.4GHz BLE (SHF)

BLE Ant. 4	Note	Frequency ( MHz )	Level ( dB $\mu$ V/m )	Over Limit ( dB )	Limit Line ( dB $\mu$ V/m )	Read Level ( dB $\mu$ V )	Antenna Factor ( dB/m )	Path Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. (P/A)	Pol. (H/V)
		24860	36.29	-31.91	68.2	53.05	39.23	-2.81	53.18	150	0	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
2.4GHz													H
BLE SHF		24839	36.54	-31.66	68.2	53.34	39.21	-2.81	53.2	150	0	P	V
													V
													V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



## Emission below 1GHz

## 2.4GHz BLE (LF)

BLE	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4		( MHz )	( dB $\mu$ V/m )	( dB )	( dB $\mu$ V/m )	( dB $\mu$ V )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
2.4GHz BLE LF		30	20.29	-19.71	40	27.88	24.06	0.79	32.44	-	-	P	H
		93.05	30.82	-12.68	43.5	46.79	15.06	1.48	32.51	100	0	P	H
		176.47	23.45	-20.05	43.5	38.94	14.96	2.08	32.53	-	-	P	H
		866.14	30.16	-15.84	46	27.78	29.27	4.45	31.34	-	-	P	H
		898.15	30.23	-15.77	46	27.74	29.14	4.56	31.21	-	-	P	H
		956.35	31.3	-14.7	46	26.44	30.98	4.71	30.83	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



## 2.4GHz 2400~2483.5MHz

## BLE (Band Edge @ 3m)

BLE	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
3		( MHz )	( dB $\mu$ V/m )	( dB )	( dB $\mu$ V/m )	( dB $\mu$ V )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
BLE CH 00 2402MHz		2378.355	52.57	-21.43	74	41.44	27.54	17.05	33.46	184	76	P	H
		2389.065	42.77	-11.23	54	31.65	27.52	17.06	33.46	184	76	A	H
	*	2402	111.09	-	-	99.97	27.5	17.07	33.45	184	76	P	H
	*	2402	109.49	-	-	98.37	27.5	17.07	33.45	184	76	A	H
													H
													H
		2386.335	52.89	-21.11	74	41.76	27.53	17.06	33.46	349	115	P	V
		2369.535	42.64	-11.36	54	31.51	27.56	17.04	33.47	349	115	A	V
	*	2402	106.95	-	-	95.83	27.5	17.07	33.45	349	115	P	V
	*	2402	105.45	-	-	94.33	27.5	17.07	33.45	349	115	A	V
BLE CH 19 2440MHz													V
		2362.8	52.89	-21.11	74	41.75	27.57	17.04	33.47	177	36	P	H
		2366.8	42.7	-11.3	54	31.56	27.57	17.04	33.47	177	36	A	H
	*	2440	112.11	-	-	100.91	27.5	17.13	33.43	177	36	P	H
	*	2440	110.43	-	-	99.23	27.5	17.13	33.43	177	36	A	H
		2484.48	53.57	-20.43	74	42.35	27.43	17.2	33.41	177	36	P	H
		2485.52	42.73	-11.27	54	31.51	27.43	17.2	33.41	177	36	A	H
		2323.28	53.34	-20.66	74	42.18	27.65	17	33.49	338	116	P	V
		2329.04	42.78	-11.22	54	31.62	27.64	17.01	33.49	338	116	A	V
	*	2440	106.92	-	-	95.72	27.5	17.13	33.43	338	116	P	V
	*	2440	105.34	-	-	94.14	27.5	17.13	33.43	338	116	A	V
		2496.24	53.36	-20.64	74	42.13	27.41	17.22	33.4	338	116	P	V
		2489.76	42.91	-11.09	54	31.69	27.42	17.21	33.41	338	116	A	V



BLE CH 39 2480MHz	*	2480	112.88	-	-	101.66	27.44	17.19	33.41	169	36	P	H
	*	2480	109.7	-	-	98.48	27.44	17.19	33.41	169	36	A	H
		2483.5	53.73	-20.27	74	42.51	27.43	17.2	33.41	169	36	P	H
		2483.5	46.02	-7.98	54	34.8	27.43	17.2	33.41	169	36	A	H
													H
													H
	*	2480	107.08	-	-	95.86	27.44	17.19	33.41	288	139	P	V
	*	2480	105.61	-	-	94.39	27.44	17.19	33.41	288	139	A	V
		2485	54.61	-19.39	74	43.39	27.43	17.2	33.41	288	139	P	V
		2483.5	43.74	-10.26	54	32.52	27.43	17.2	33.41	288	139	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



## 2.4GHz 2400~2483.5MHz

## BLE (Harmonic @ 3m)

BLE Ant. 3	Note	Frequency ( MHz )	Level ( dB $\mu$ V/m )	Over Limit ( dB )	Limit Line ( dB $\mu$ V/m )	Read Level ( dB $\mu$ V )	Antenna Factor ( dB/m )	Path Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. (P/A)	Pol. (H/V)
BLE CH 00 2402MHz		4804	39.36	-34.64	74	55.64	31	11.18	58.46	100	0	P	H
		17985	58.84	-15.16	74	44.49	47.1	23.89	56.64	100	0	P	H
		17985	48.47	-5.53	54	34.12	47.1	23.89	56.64	100	0	A	H
													H
		4804	40.02	-33.98	74	56.31	31	11.17	58.46	100	0	P	V
		17985	58.57	-15.43	74	44.22	47.1	23.89	56.64	100	0	P	V
		17985	48.59	-5.41	54	34.24	47.1	23.89	56.64	100	0	A	V
													V
BLE CH 19 2440MHz		4880	39.75	-34.25	74	55.35	31.54	11.34	58.48	100	0	P	H
		7320	43.17	-30.83	74	52.49	36.4	13.45	59.17	100	0	P	H
		17985	57.27	-16.73	74	42.92	47.1	23.89	56.64	100	0	P	H
		17985	47.44	-6.56	54	33.09	47.1	23.89	56.64	100	0	A	H
		4880	40.41	-33.59	74	56.01	31.54	11.34	58.48	100	0	P	V
		7320	43.13	-30.87	74	52.45	36.4	13.45	59.17	100	0	P	V
		17985	57.44	-16.56	74	43.09	47.1	23.89	56.64	100	0	P	V
		17985	47.63	-6.37	54	33.28	47.1	23.89	56.64	100	0	A	V
BLE CH 39 2480MHz		4960	39.12	-34.88	74	55.04	31.06	11.51	58.49	100	0	P	H
		7440	43.99	-30.01	74	52.81	36.56	13.74	59.12	100	0	P	H
		17940	55.94	-18.06	74	42.64	46.2	23.84	56.74	100	0	P	H
		17940	46.75	-7.25	54	33.45	46.2	23.84	56.74	100	0	A	H
		4960	41.4	-32.6	74	57.32	31.06	11.51	58.49	100	0	P	V
		7440	43.7	-30.3	74	52.52	36.56	13.74	59.12	100	0	P	V
		17985	56.3	-17.7	74	41.95	47.1	23.89	56.64	100	0	P	V
		17985	47.74	-6.26	54	33.39	47.1	23.89	56.64	100	0	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Note symbol**

*	<b>Fundamental Frequency</b> which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is <b>over limit</b> line.
P/A	<b>Peak or Average</b>
H/V	<b>Horizontal or Vertical</b>



**A calculation example for radiated spurious emission is shown as below:**

BLE	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
			Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
		( MHz )	( dB $\mu$ V/m )	( dB )	( dB $\mu$ V/m )	( dB $\mu$ V )	( dB/m )	( dB )	( dB )	( cm )	( deg )	(P/A)	(H/V)
<b>BLE CH 00 2402MHz</b>		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)

2. Level(dB $\mu$ V/m) =

Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dB $\mu$ V) - Preamp Factor(dB)

3. Over Limit(dB) = Level(dB $\mu$ V/m) – Limit Line(dB $\mu$ V/m)

#### For Peak Limit @ 2390MHz:

1. Level(dB $\mu$ V/m)

= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dB $\mu$ V) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dB $\mu$ V) – 35.86 (dB)

= 55.45 (dB $\mu$ V/m)

2. Over Limit(dB)

= Level(dB $\mu$ V/m) – Limit Line(dB $\mu$ V/m)

= 55.45(dB $\mu$ V/m) – 74(dB $\mu$ V/m)

= -18.55(dB)

#### For Average Limit @ 2390MHz:

1. Level(dB $\mu$ V/m)

= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dB $\mu$ V) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dB $\mu$ V) – 35.86 (dB)

= 43.54 (dB $\mu$ V/m)

2. Over Limit(dB)

= Level(dB $\mu$ V/m) – Limit Line(dB $\mu$ V/m)

= 43.54(dB $\mu$ V/m) – 54(dB $\mu$ V/m)

= -10.46(dB)

**Both peak and average measured complies with the limit line, so test result is “PASS”.**



## Appendix D. Radiated Spurious Emission Plots

<b>Test Engineer :</b>	Harvey Guo, Fu Chen, and Troye Hsieh	<b>Temperature :</b>	19.1~23.3°C
		<b>Relative Humidity :</b>	60.2~69.5%

### Note symbol

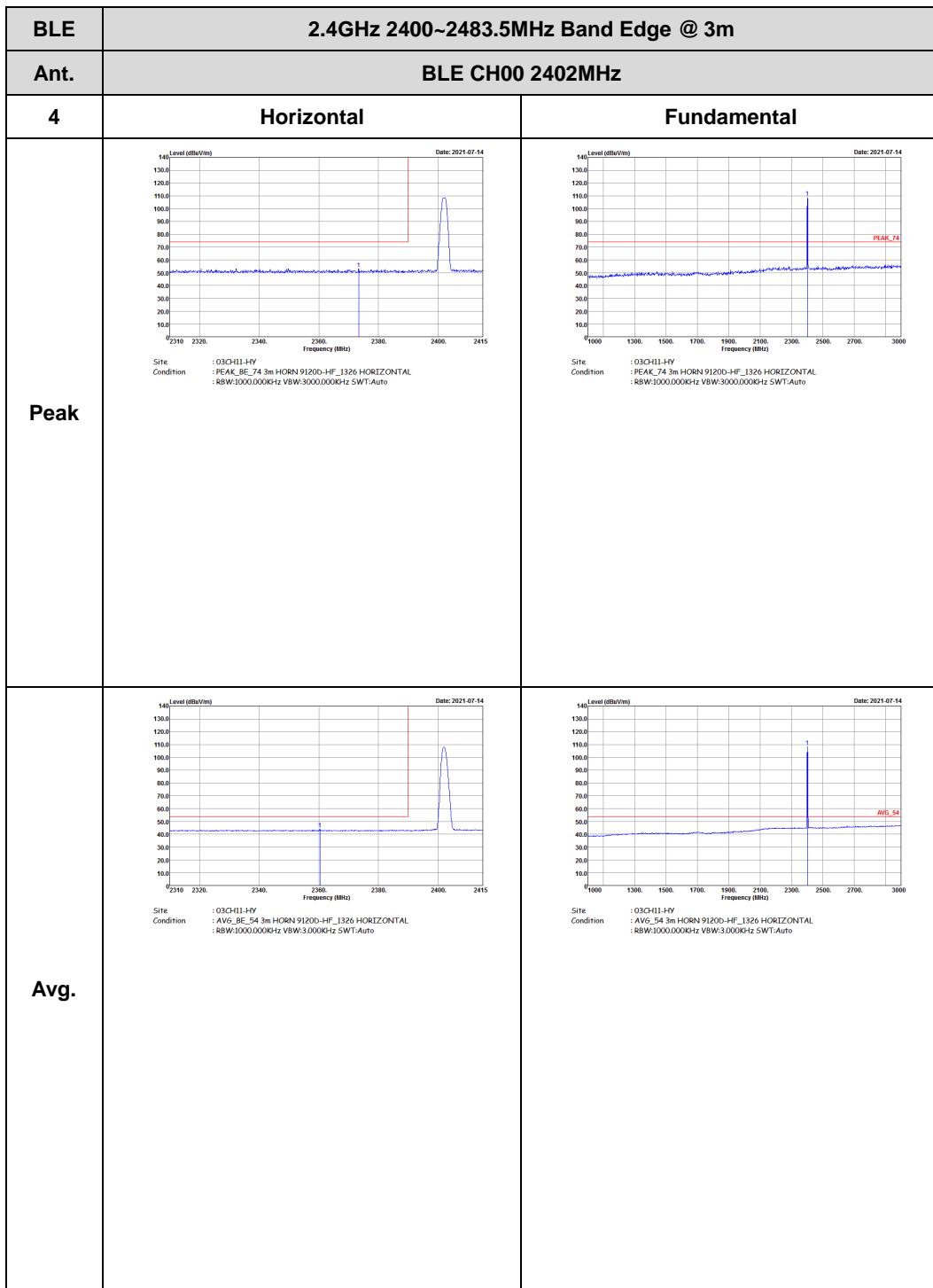
-L	<b>Low channel location</b>
-R	<b>High channel location</b>

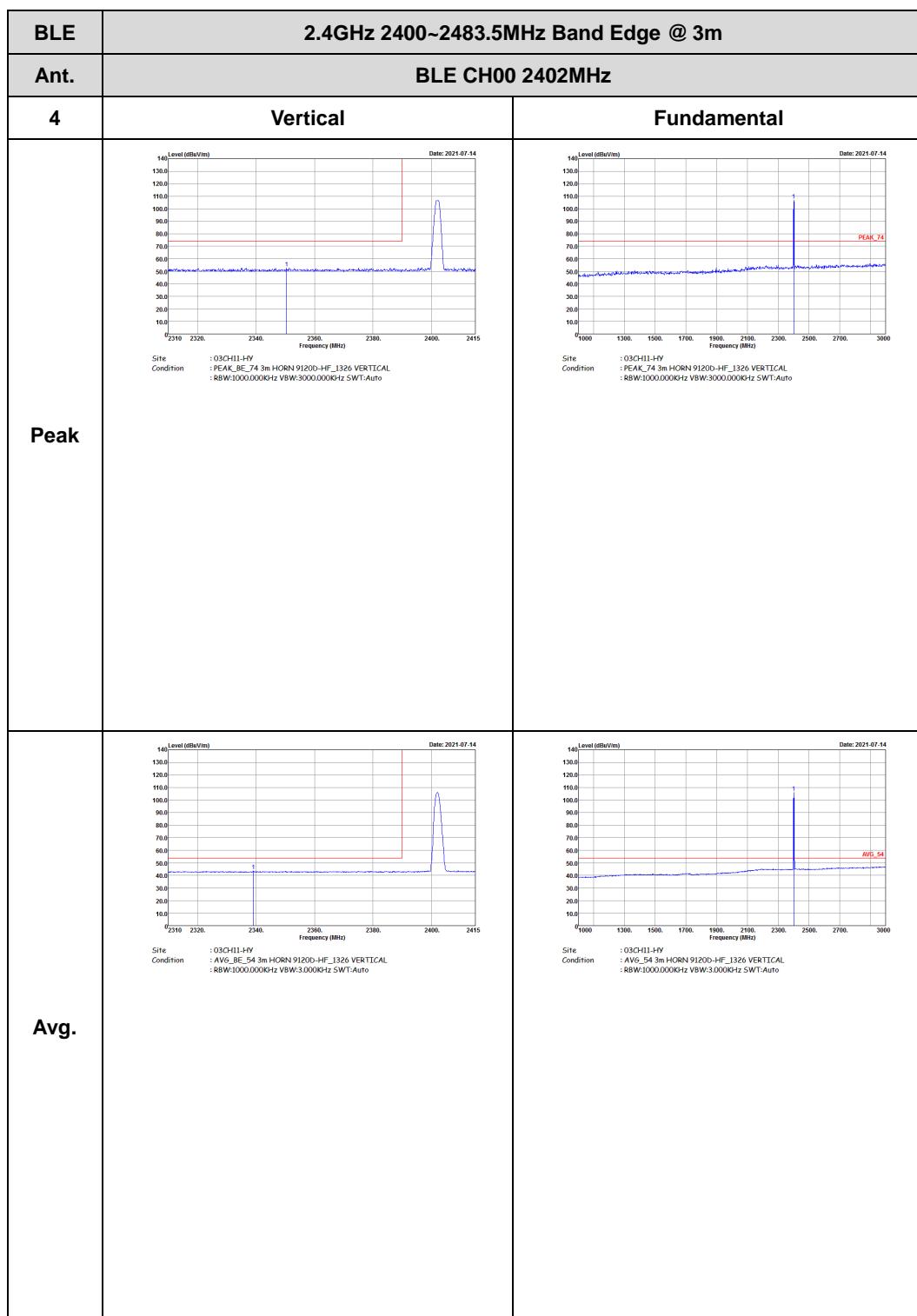


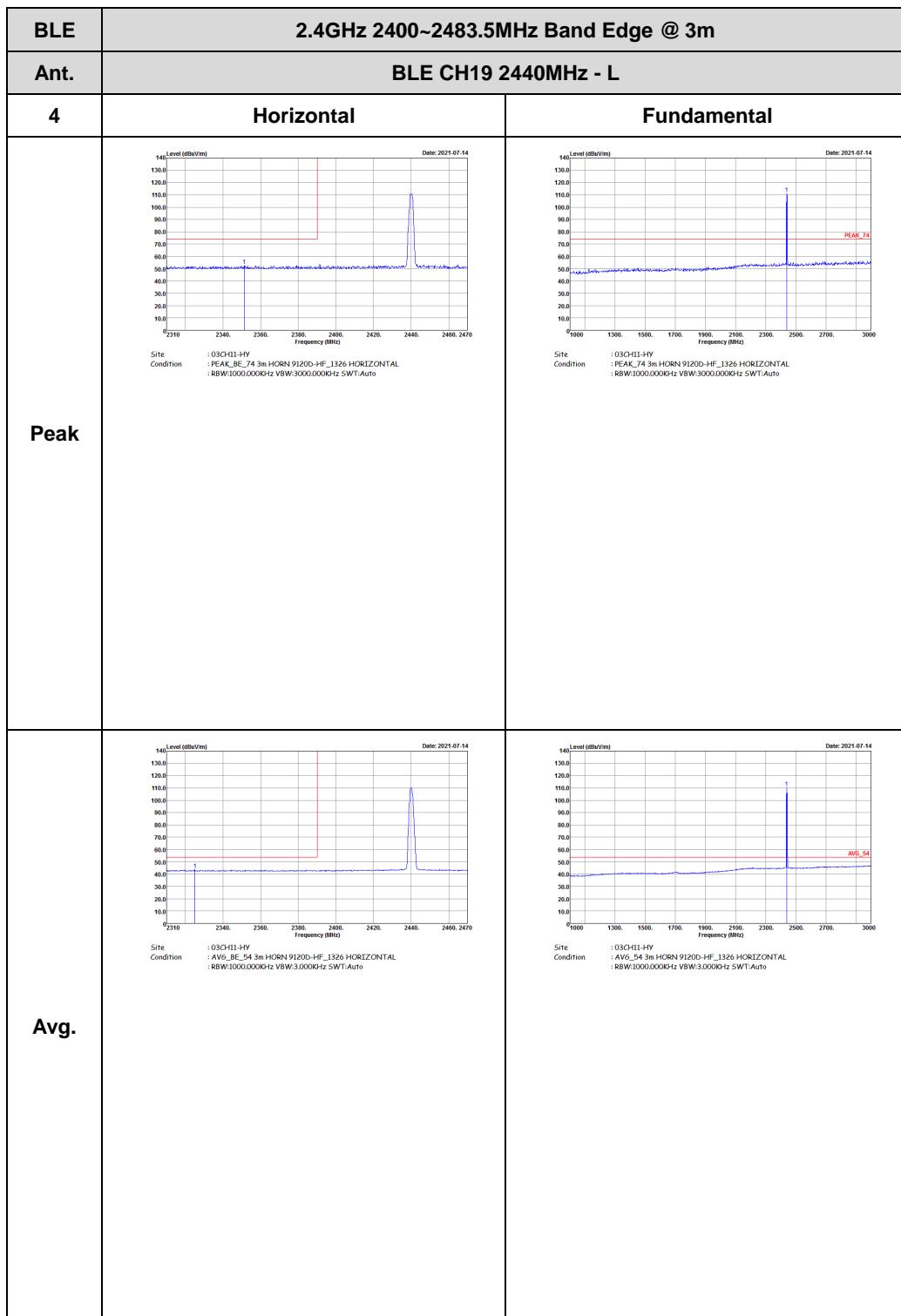
&lt;1Mbps&gt;

## 2.4GHz 2400~2483.5MHz

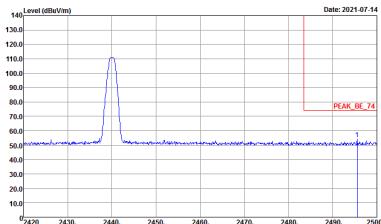
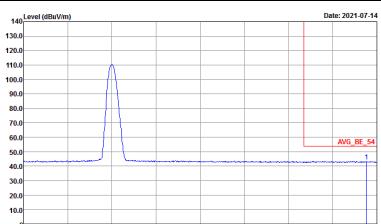
## BLE (Band Edge @ 3m)

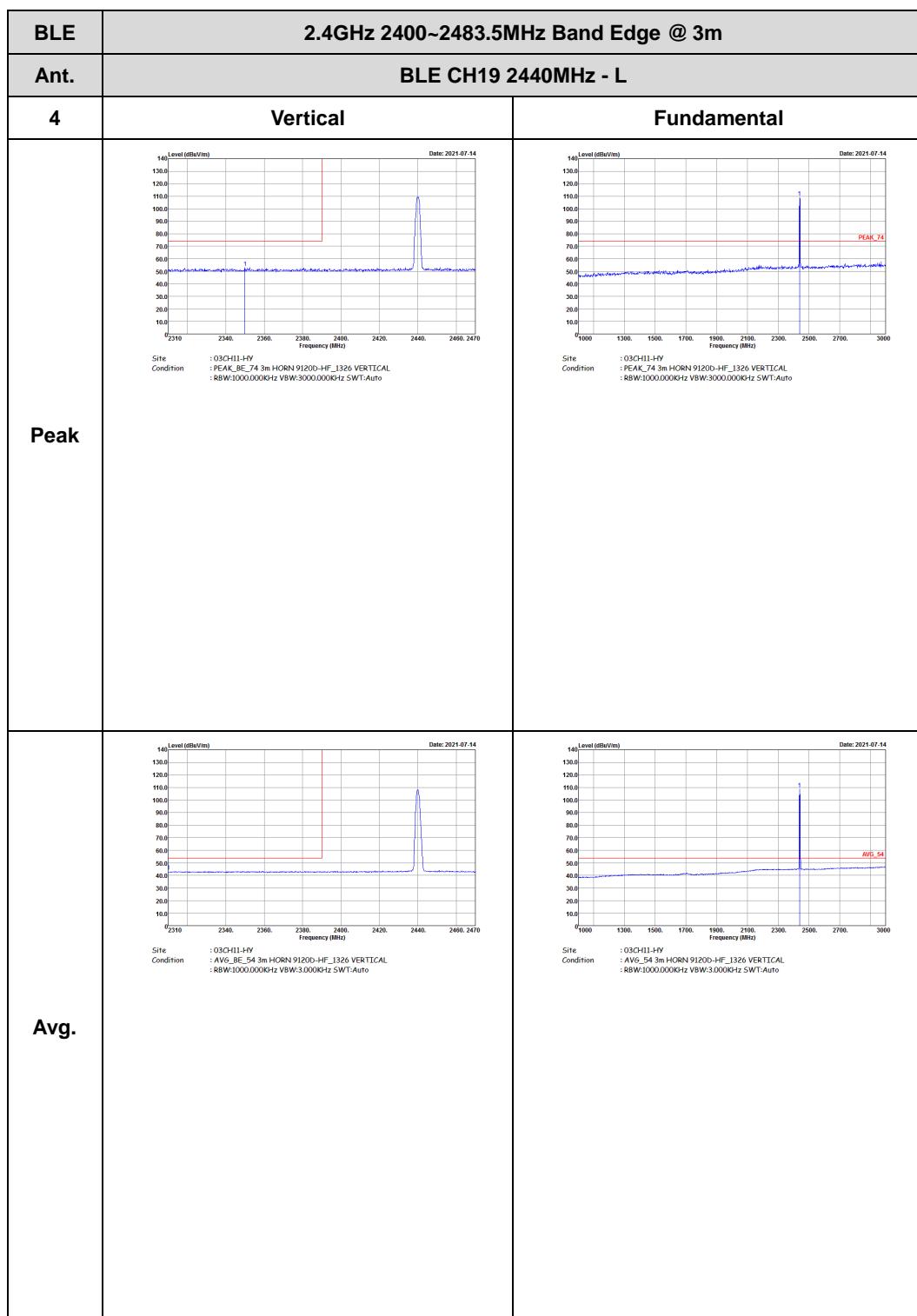




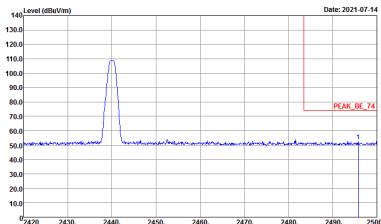
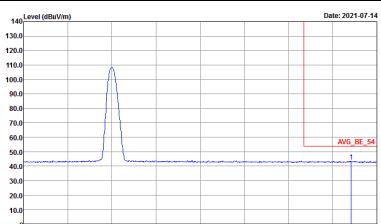


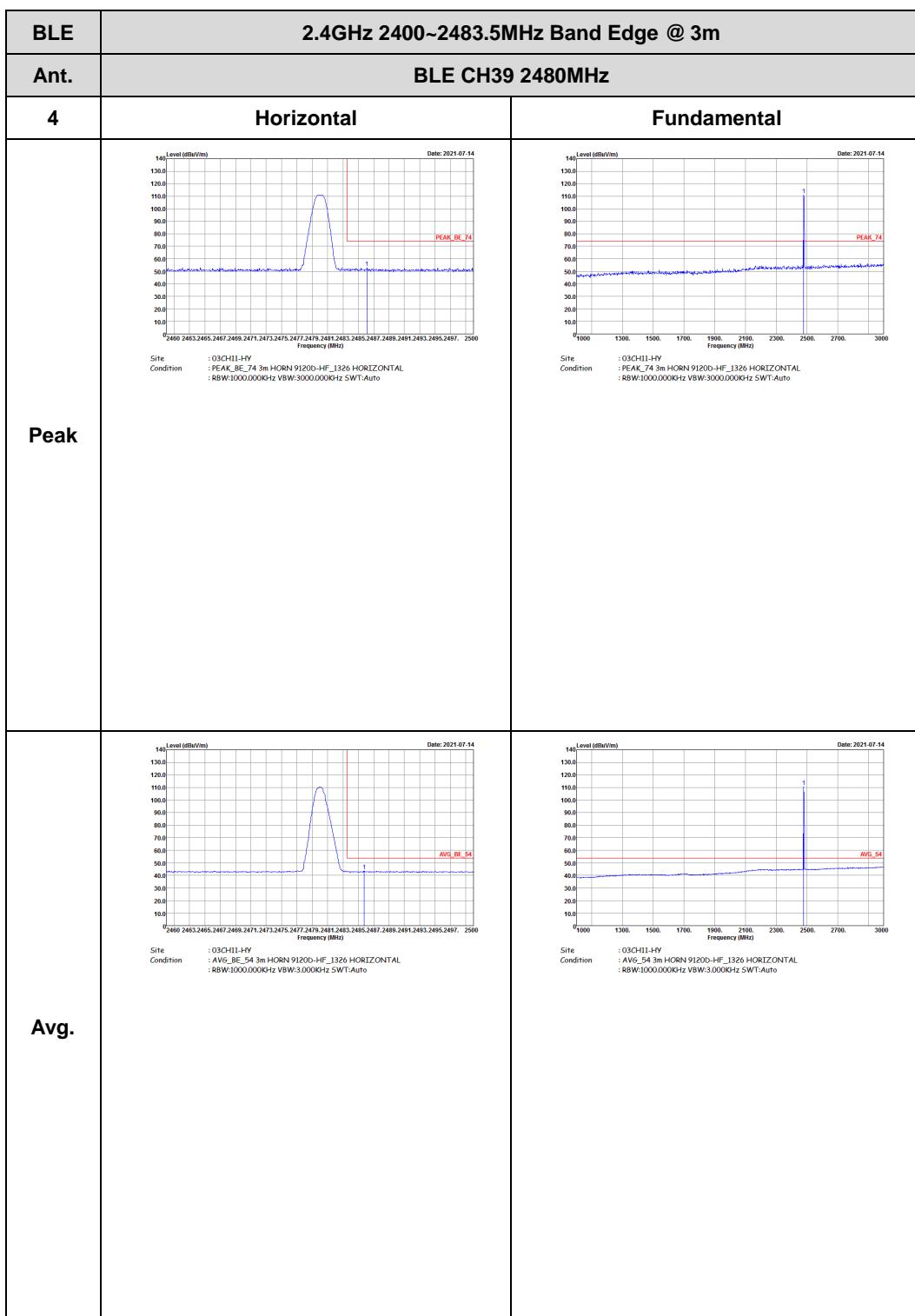


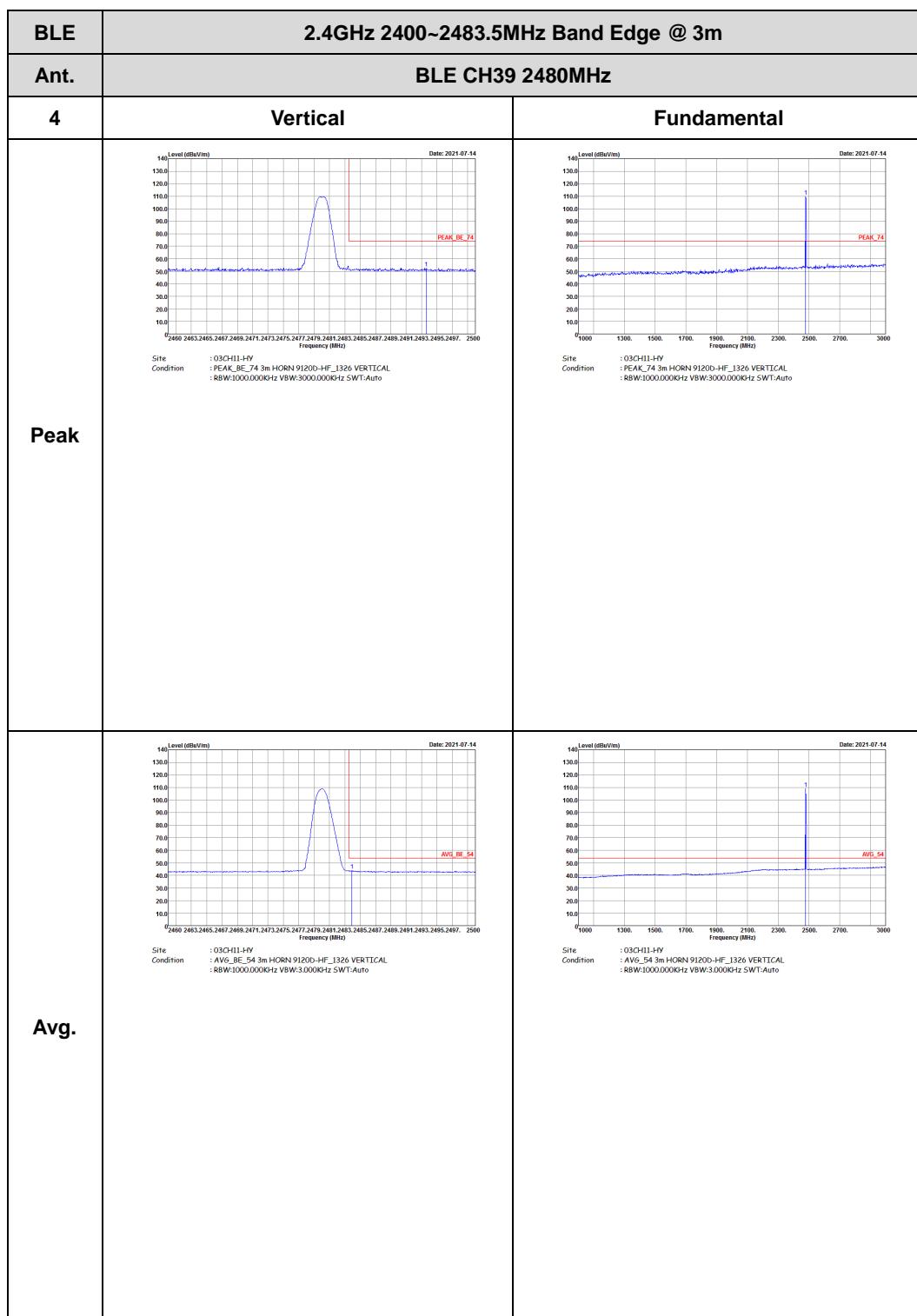
BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	BLE CH19 2440MHz - R	
4	Horizontal	Fundamental
Peak	 <p>Site : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 HORIZONTAL : RBW:1000.0000Hz VBW:3.0000Hz SWT:Auto</p>	Left blank
Avg.	 <p>Site : 03CH11-HY Condition : AVG_BE_54 3m HORN 91200-HF_1326 HORIZONTAL : RBW:1000.0000Hz VBW:3.0000Hz SWT:Auto</p>	Left blank





BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	BLE CH19 2440MHz - R	
4	Vertical	Fundamental
Peak	 <p>Site : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 VERTICAL : RBW:10000000Hz VBW:3000000Hz SWT:Auto</p>	Left blank
Avg.	 <p>Site : 03CH11-HY Condition : AVG_BE_54 3m HORN 91200-HF_1326 VERTICAL : RBW:10000000Hz VBW:3000000Hz SWT:Auto</p>	Left blank

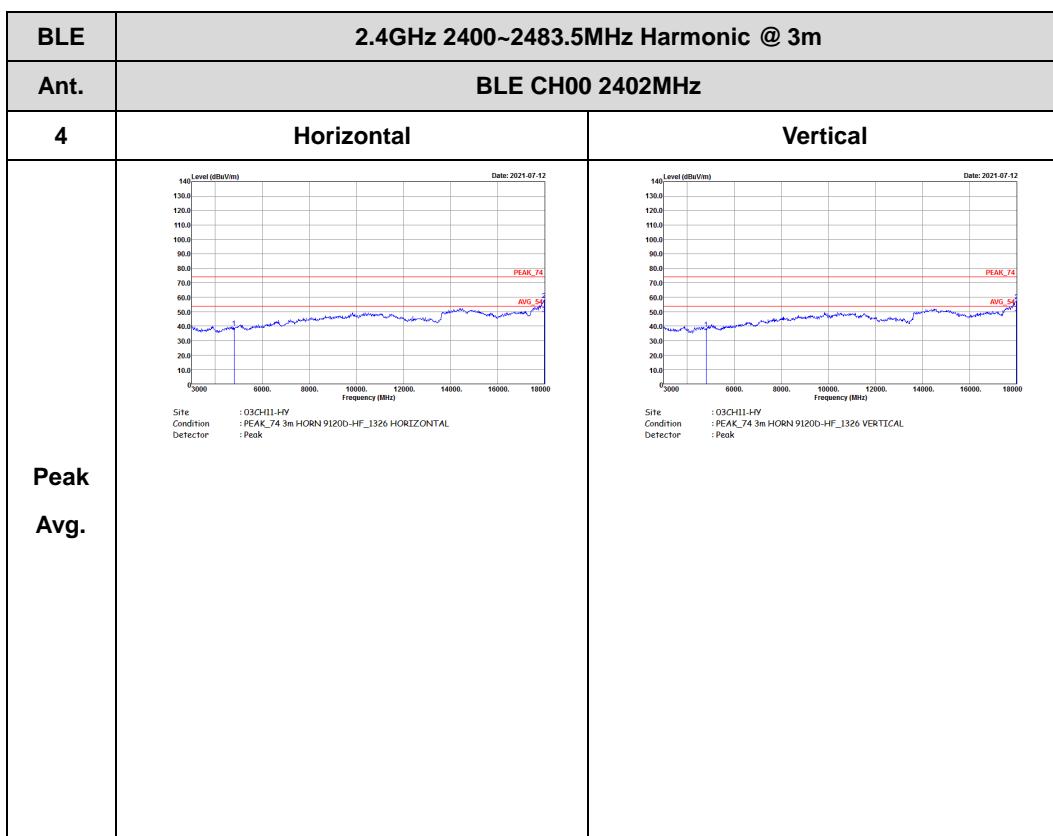


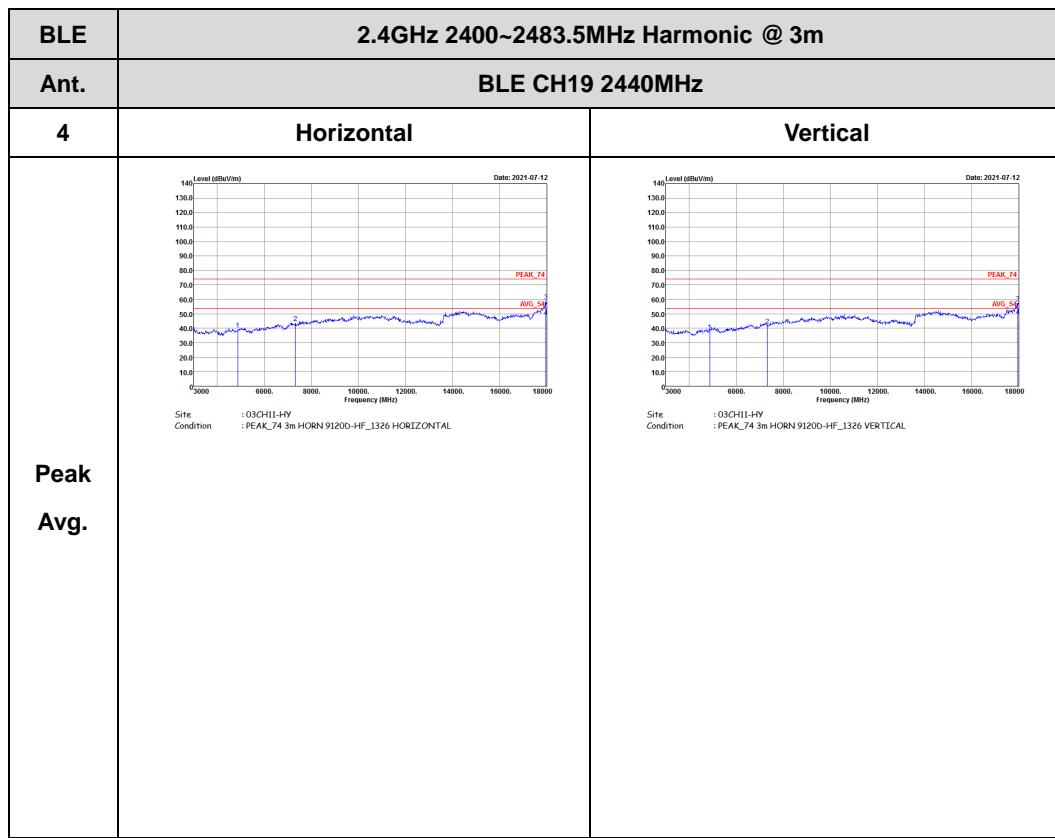


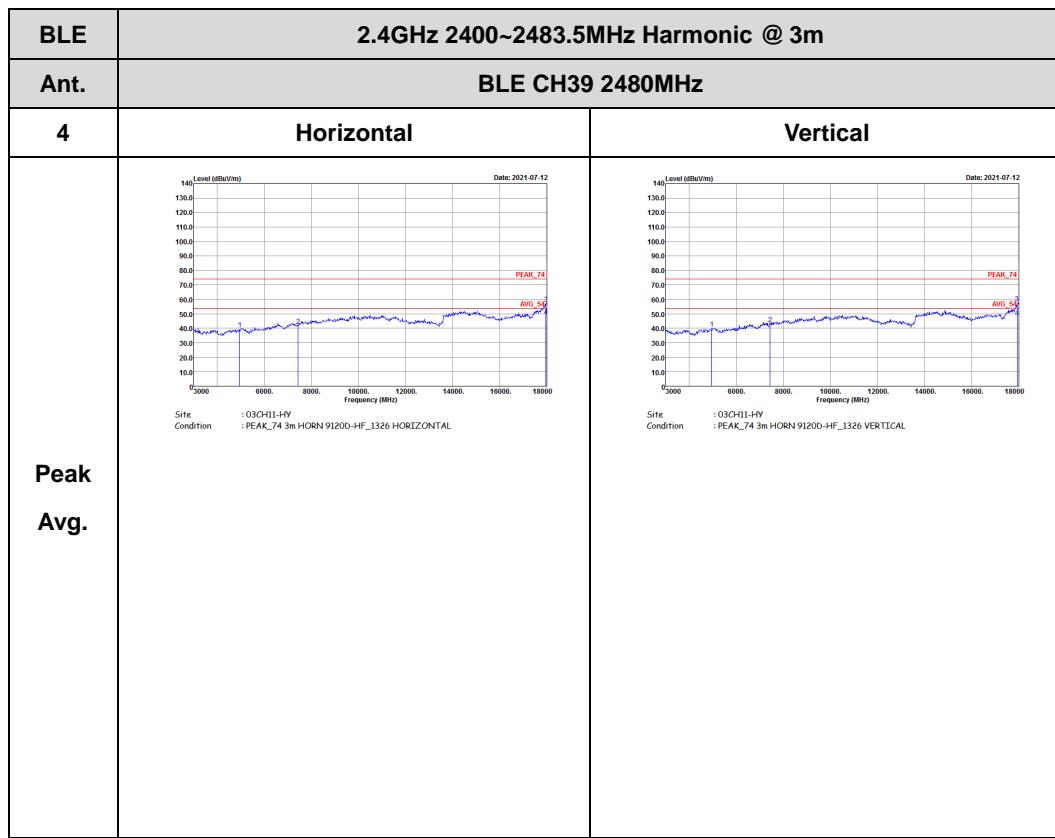


## 2.4GHz 2400~2483.5MHz

## BLE (Harmonic @ 3m)



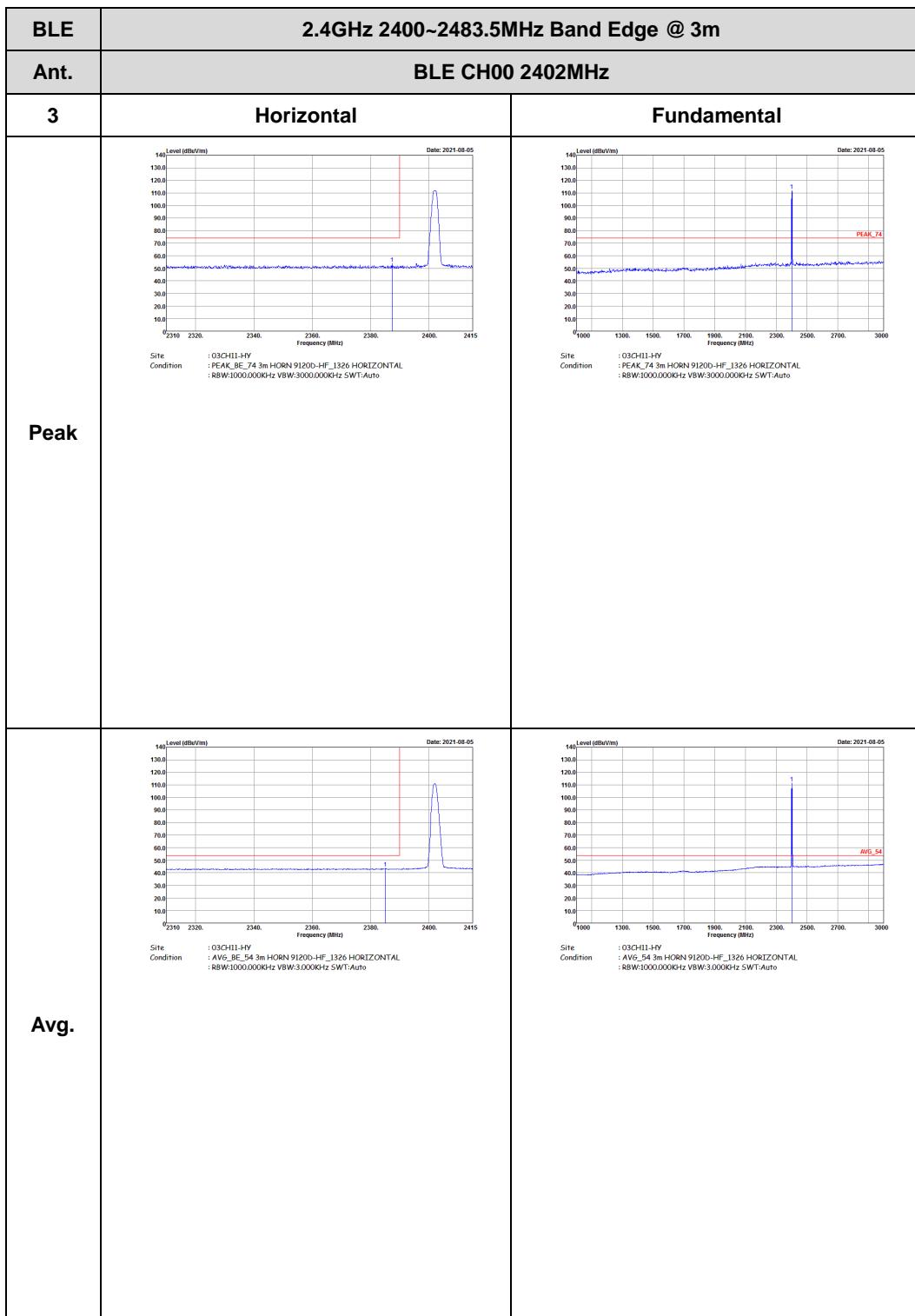


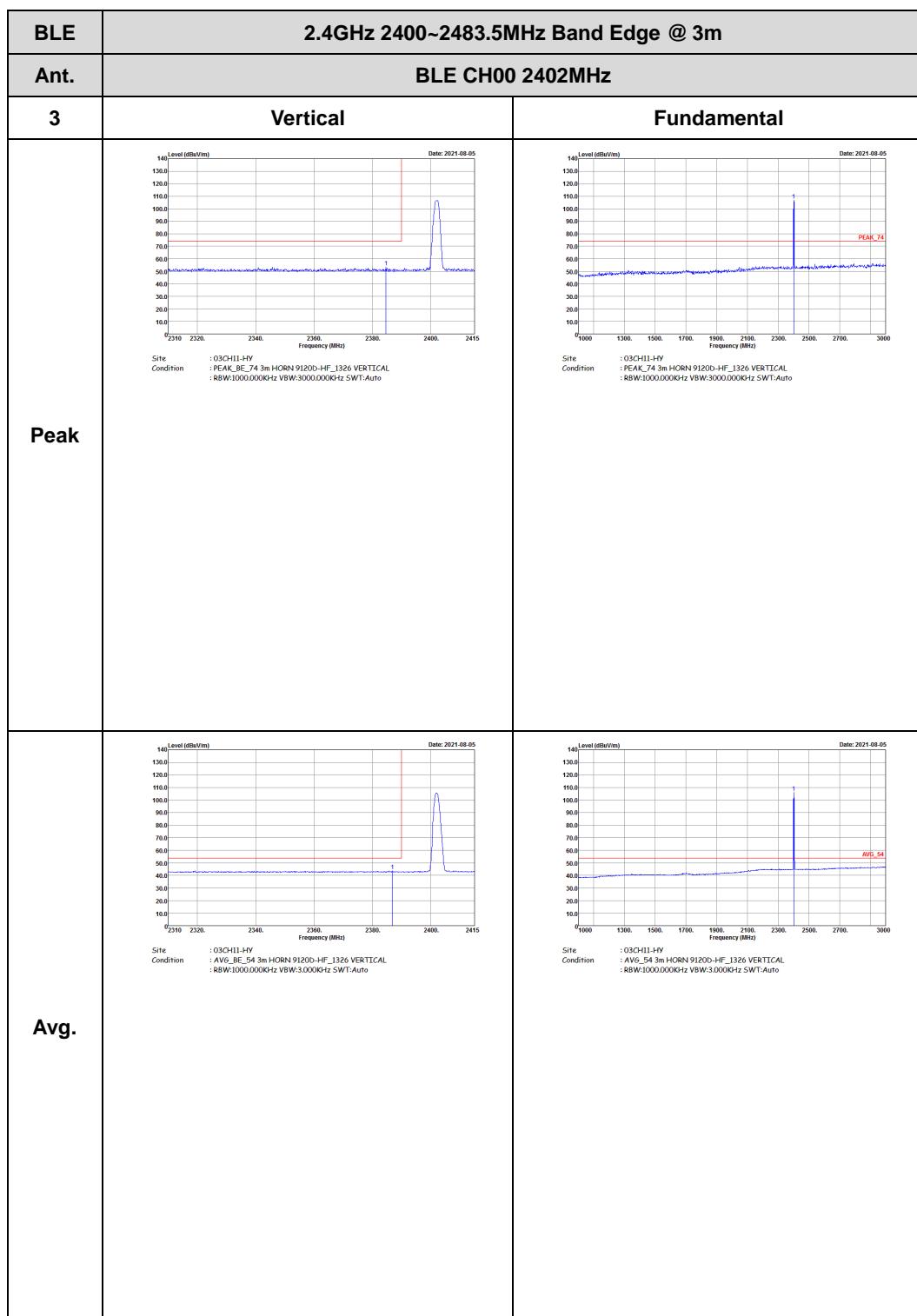


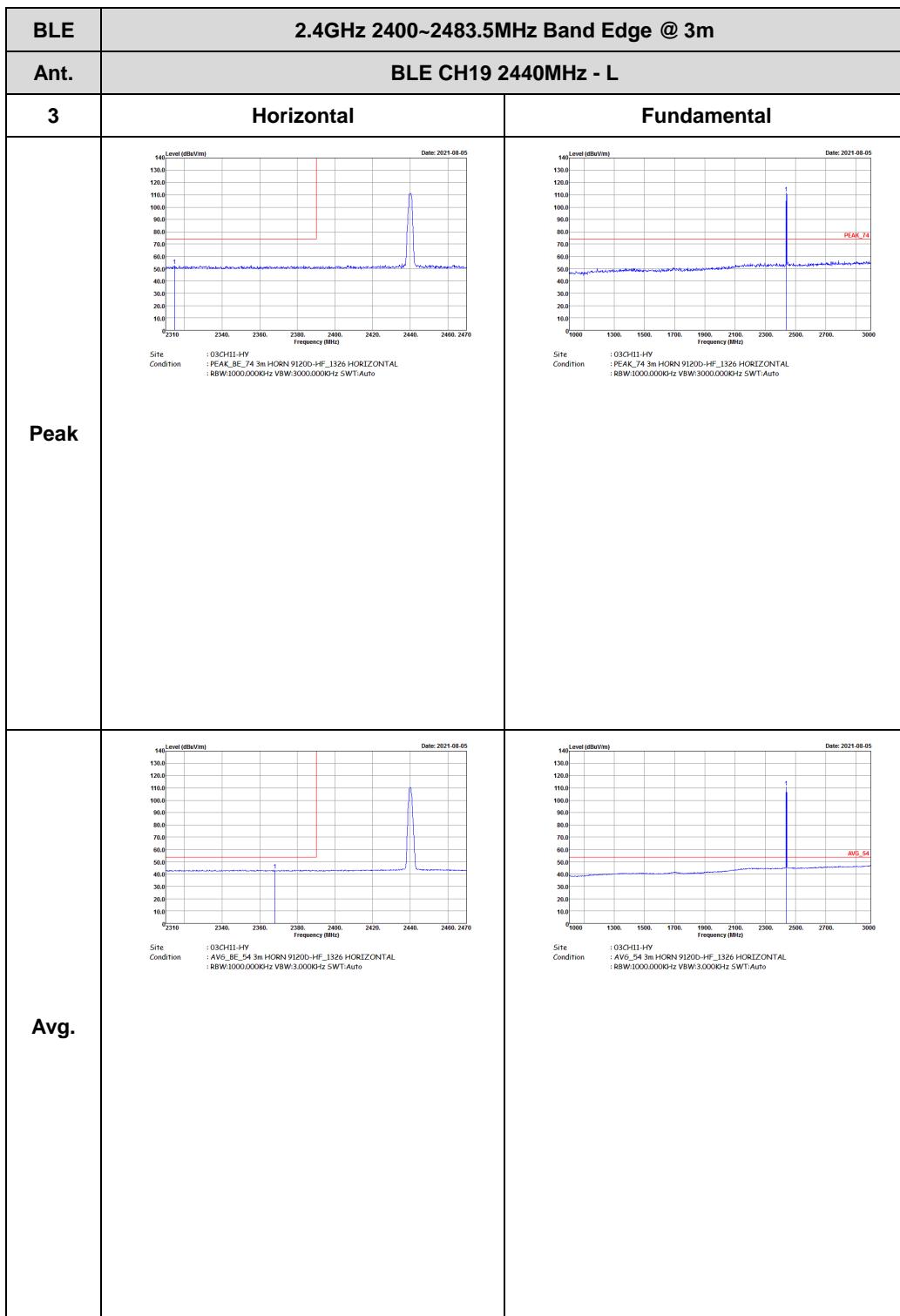


## 2.4GHz 2400~2483.5MHz

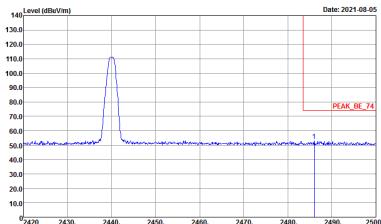
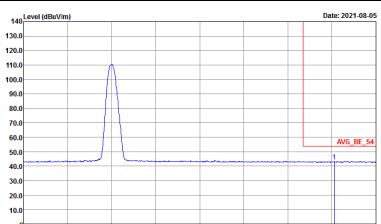
## BLE (Band Edge @ 3m)

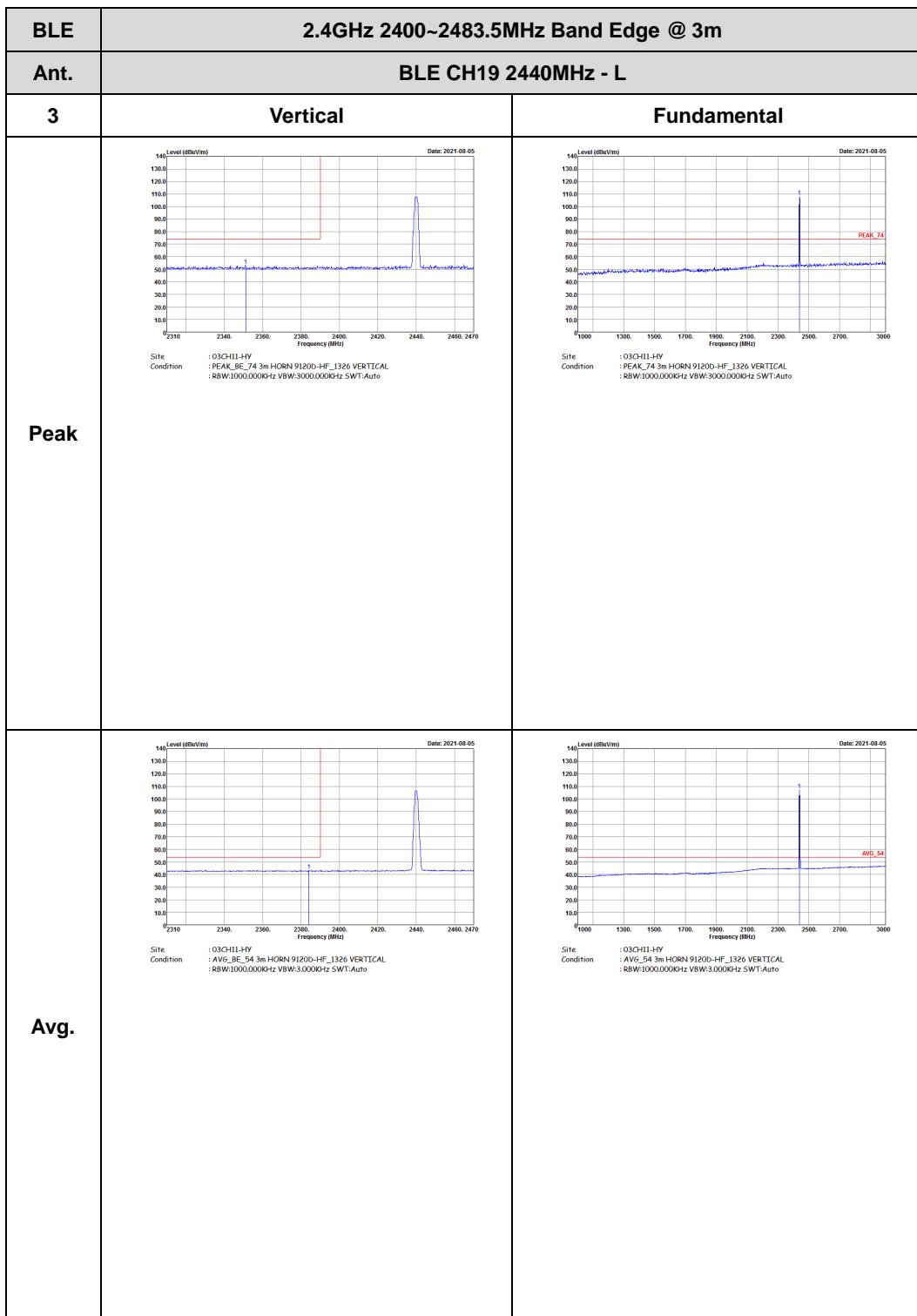




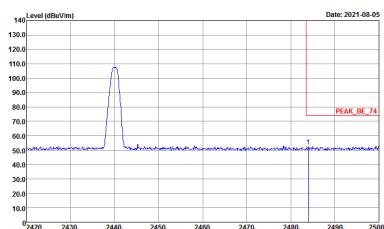
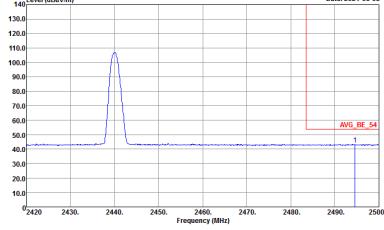


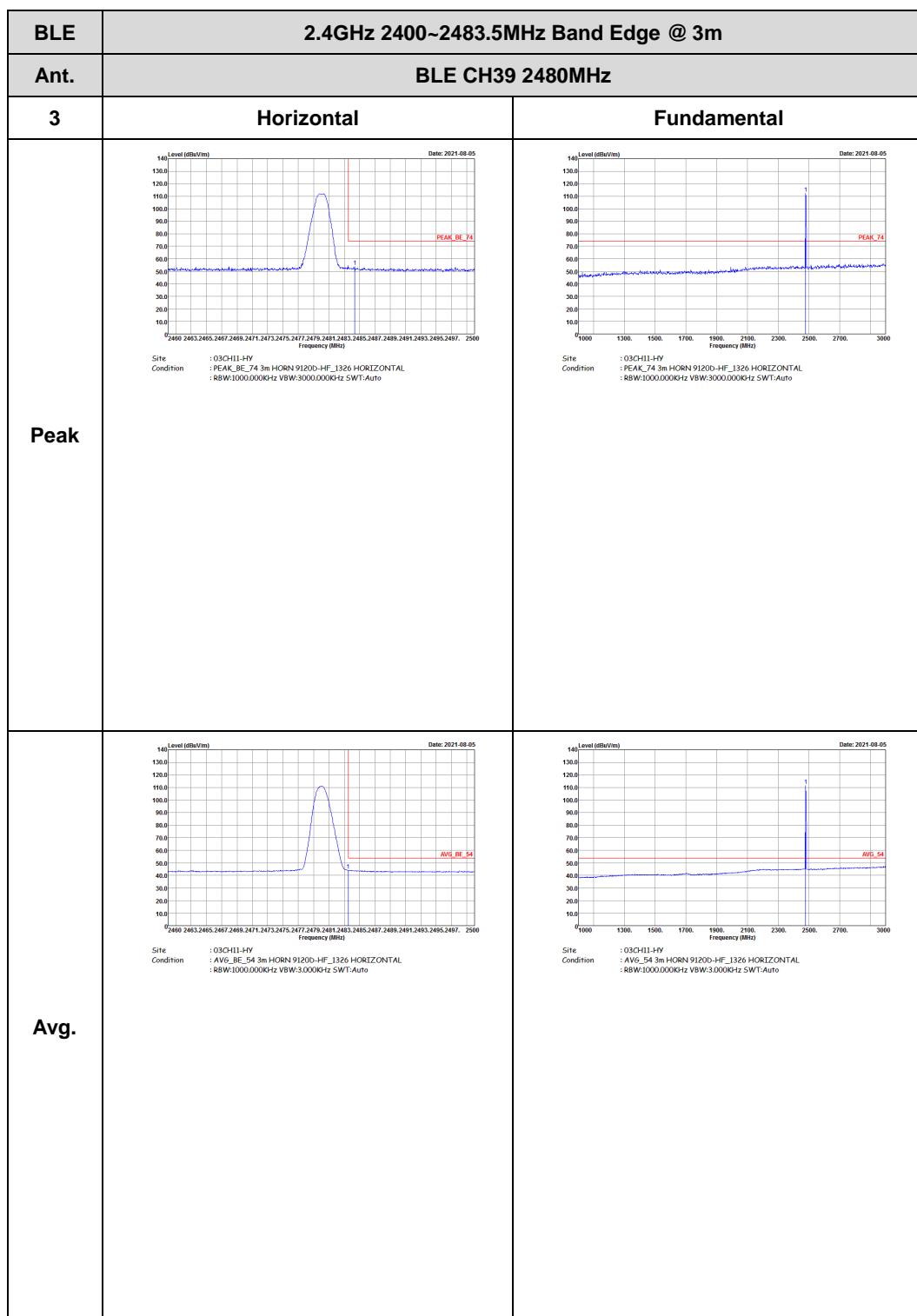


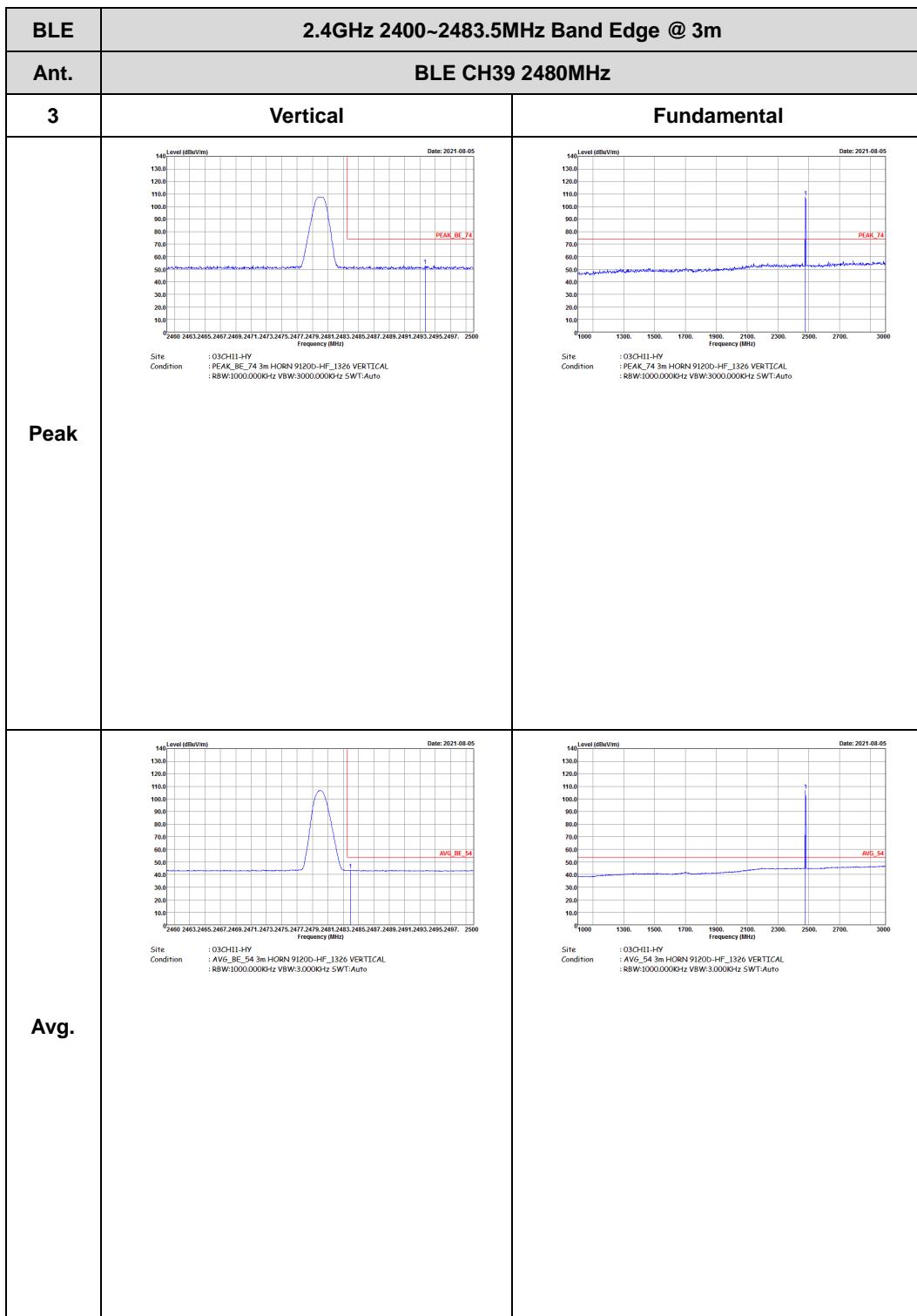
BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	BLE CH19 2440MHz - R	
3	Horizontal	Fundamental
Peak	 <p>Site : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 HORIZONTAL : R8W:1000.000kHz VBW:3.0000Hz SWT:Auto</p>	Left blank
Avg.	 <p>Site : 03CH11-HY Condition : AVG_BE_54 3m HORN 91200-HF_1326 HORIZONTAL : R8W:1000.000kHz VBW:3.0000Hz SWT:Auto</p>	Left blank





BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	BLE CH19 2440MHz - R	
3	Vertical	Fundamental
Peak	 <p>Site : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 VERTICAL : R8W:1000.000kHz VBW:3.0000Hz SWT:Auto</p>	Left blank
Avg.	 <p>Site : 03CH11-HY Condition : AVG_BE_54 3m HORN 91200-HF_1326 VERTICAL : R8W:1000.000kHz VBW:3.0000Hz SWT:Auto</p>	Left blank

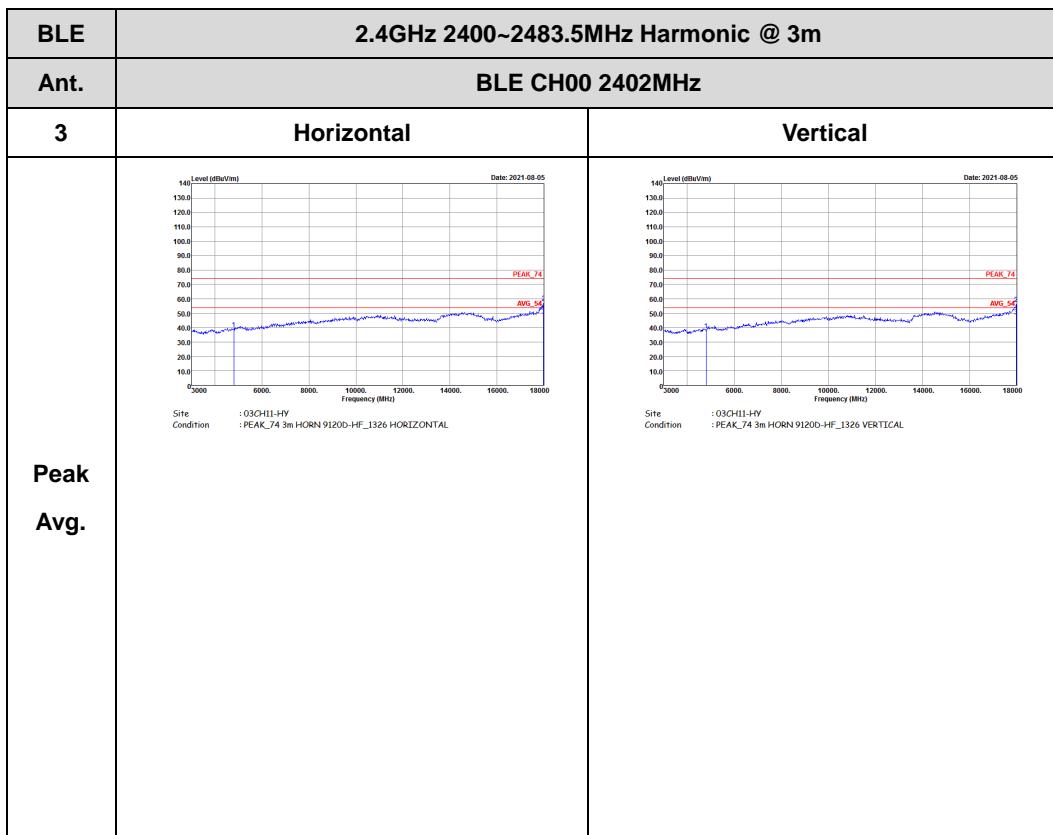


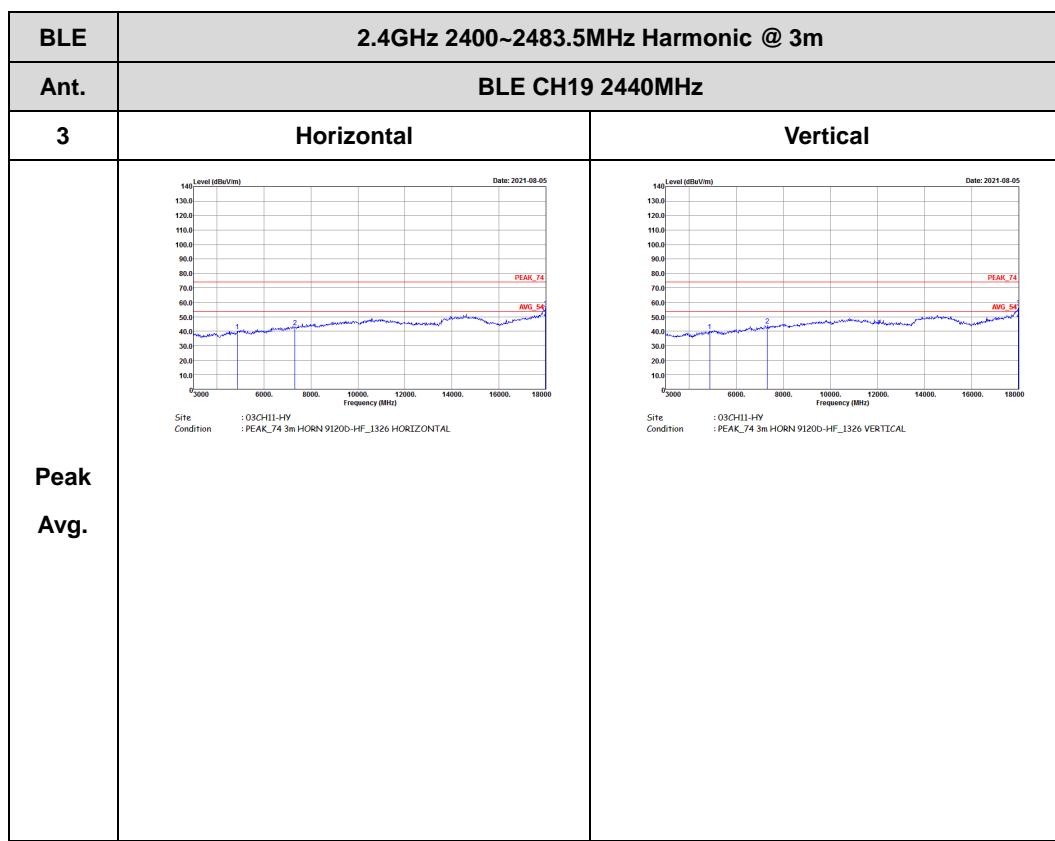


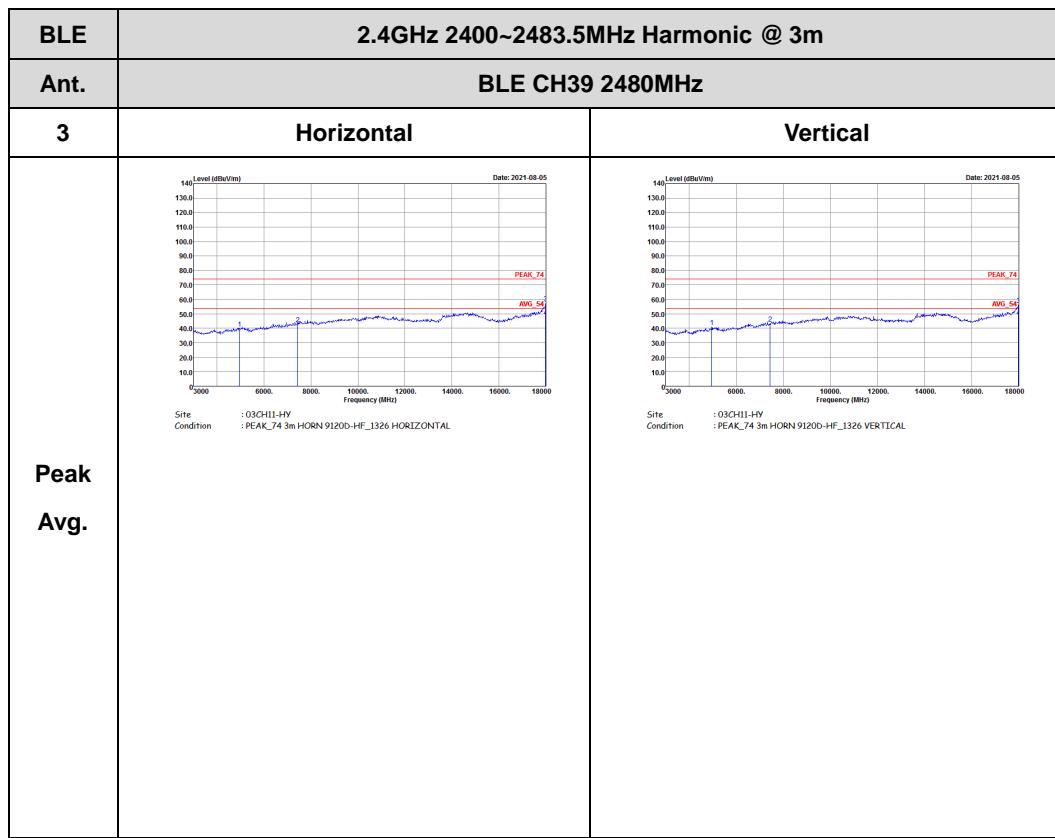


## 2.4GHz 2400~2483.5MHz

## BLE (Harmonic @ 3m)





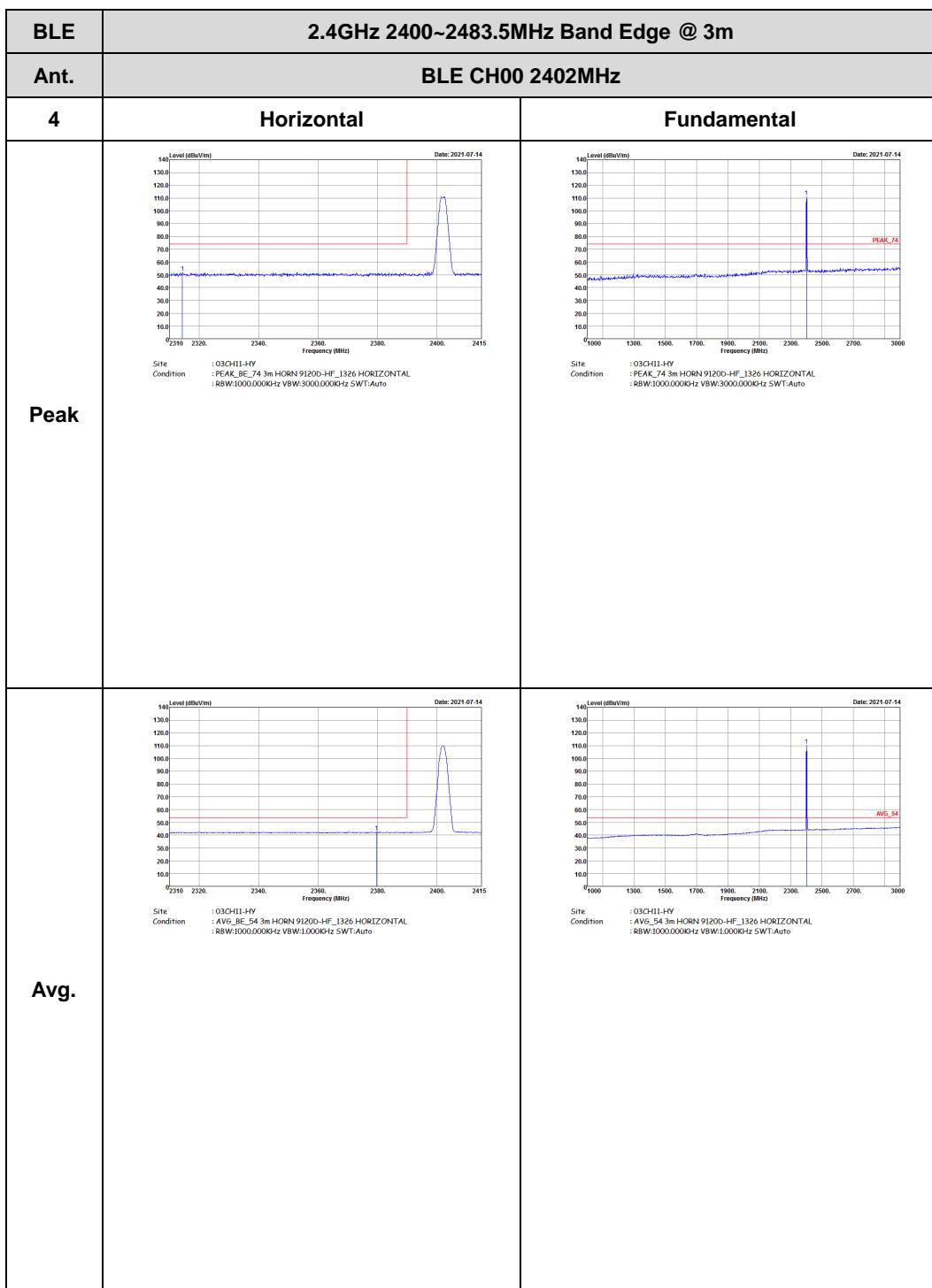


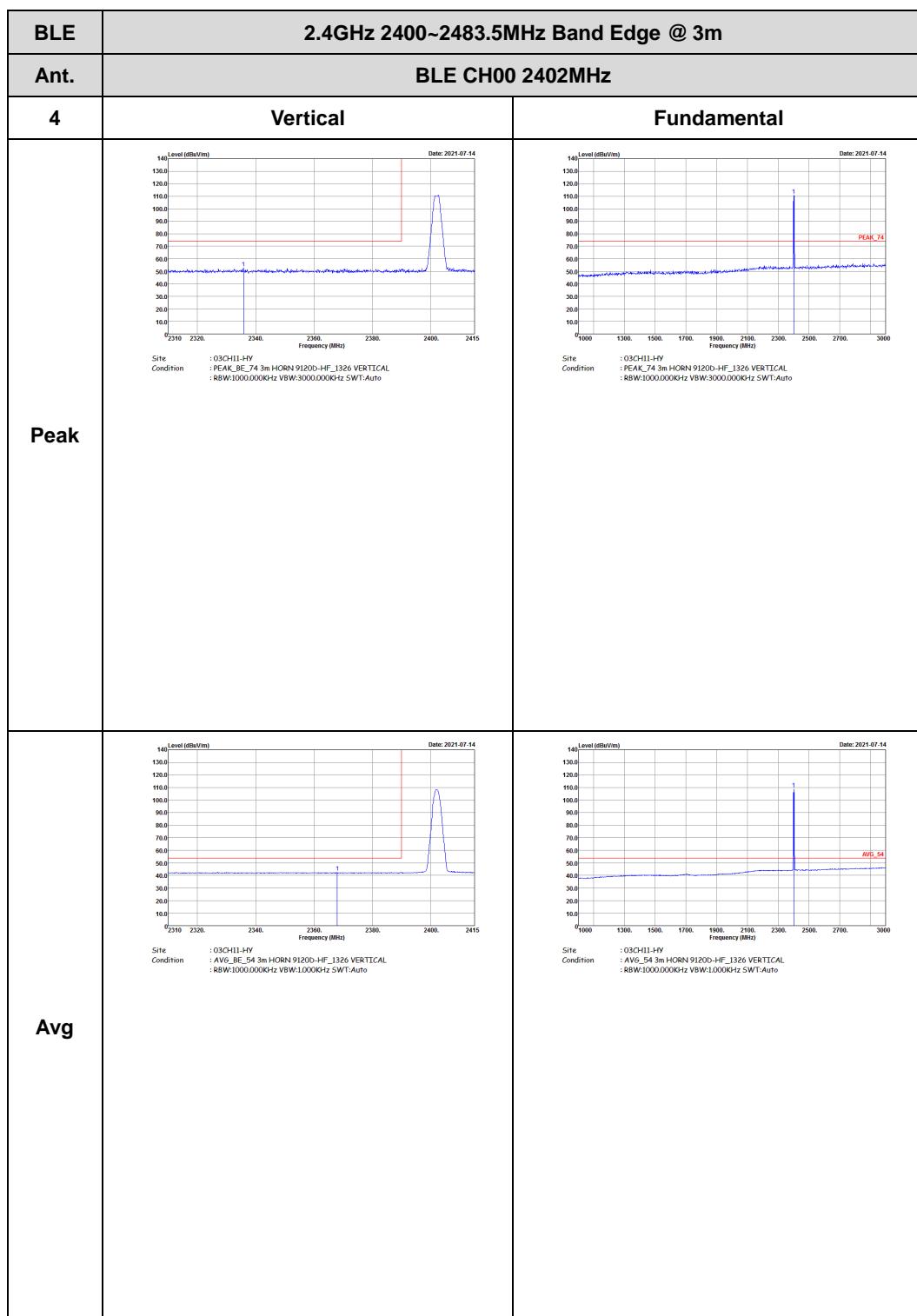


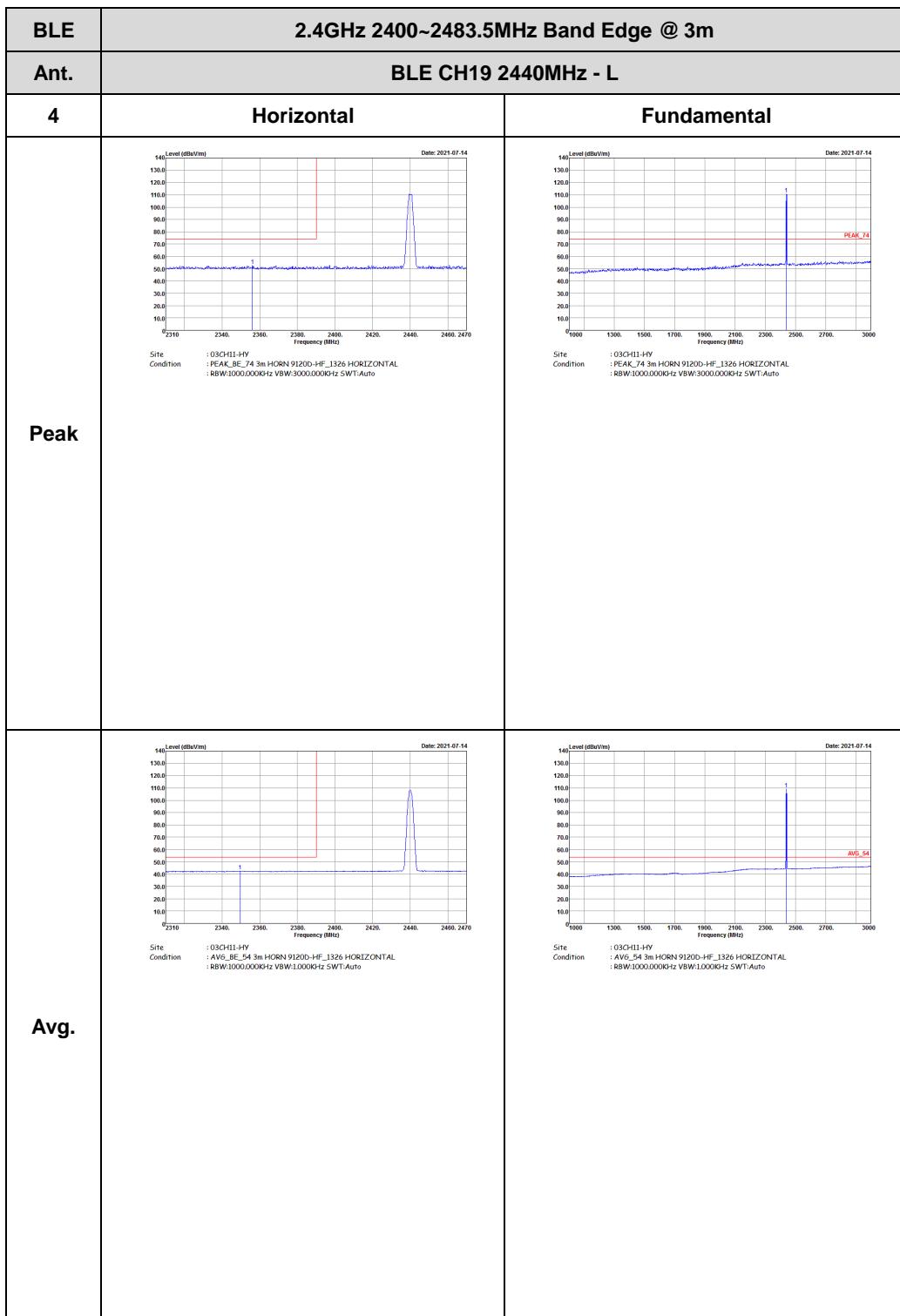
&lt;2Mbps&gt;

## 2.4GHz 2400~2483.5MHz

## BLE (Band Edge @ 3m)

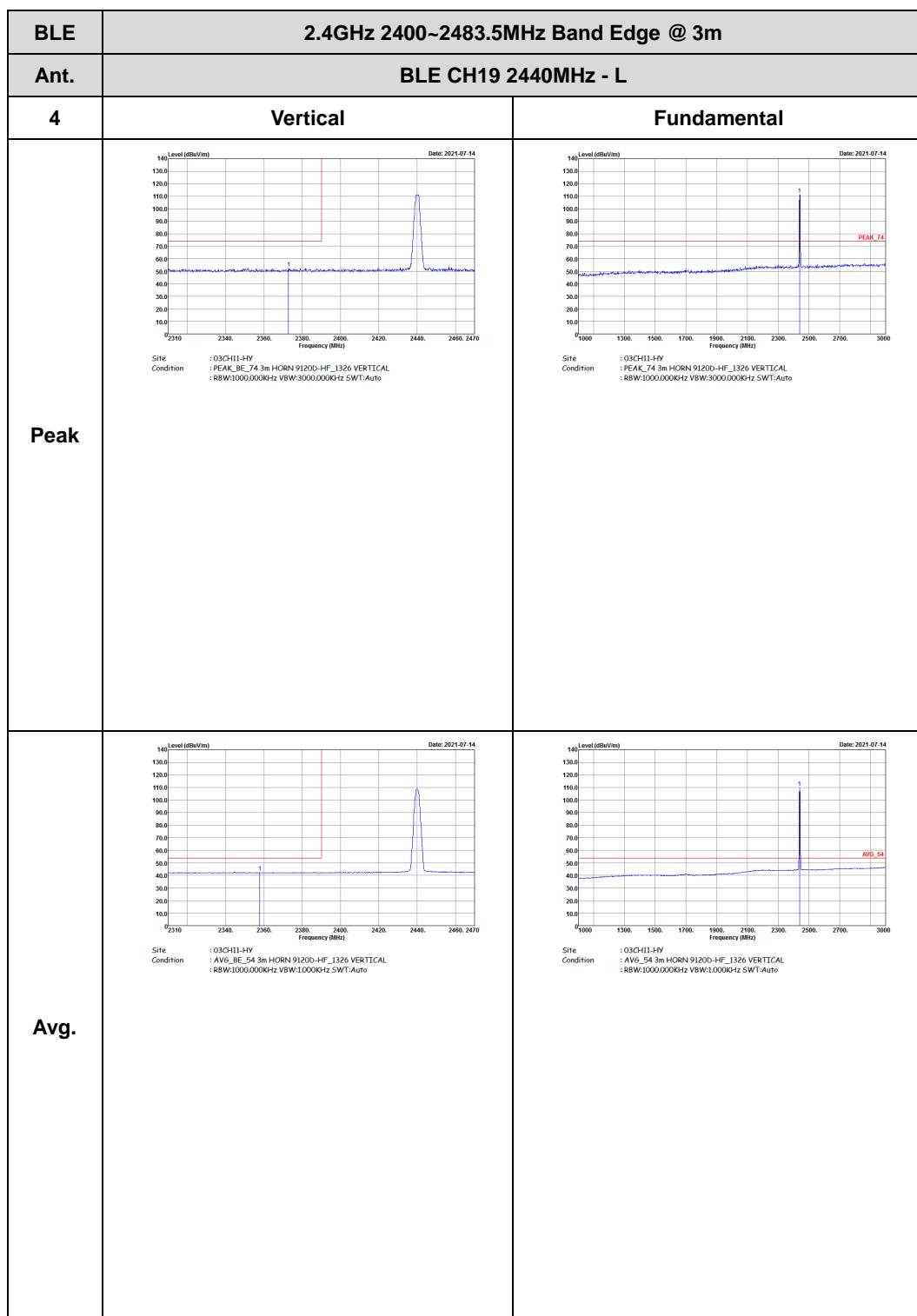




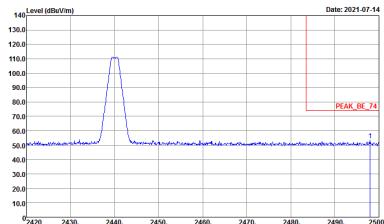
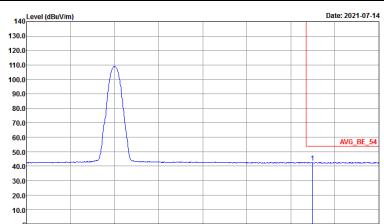


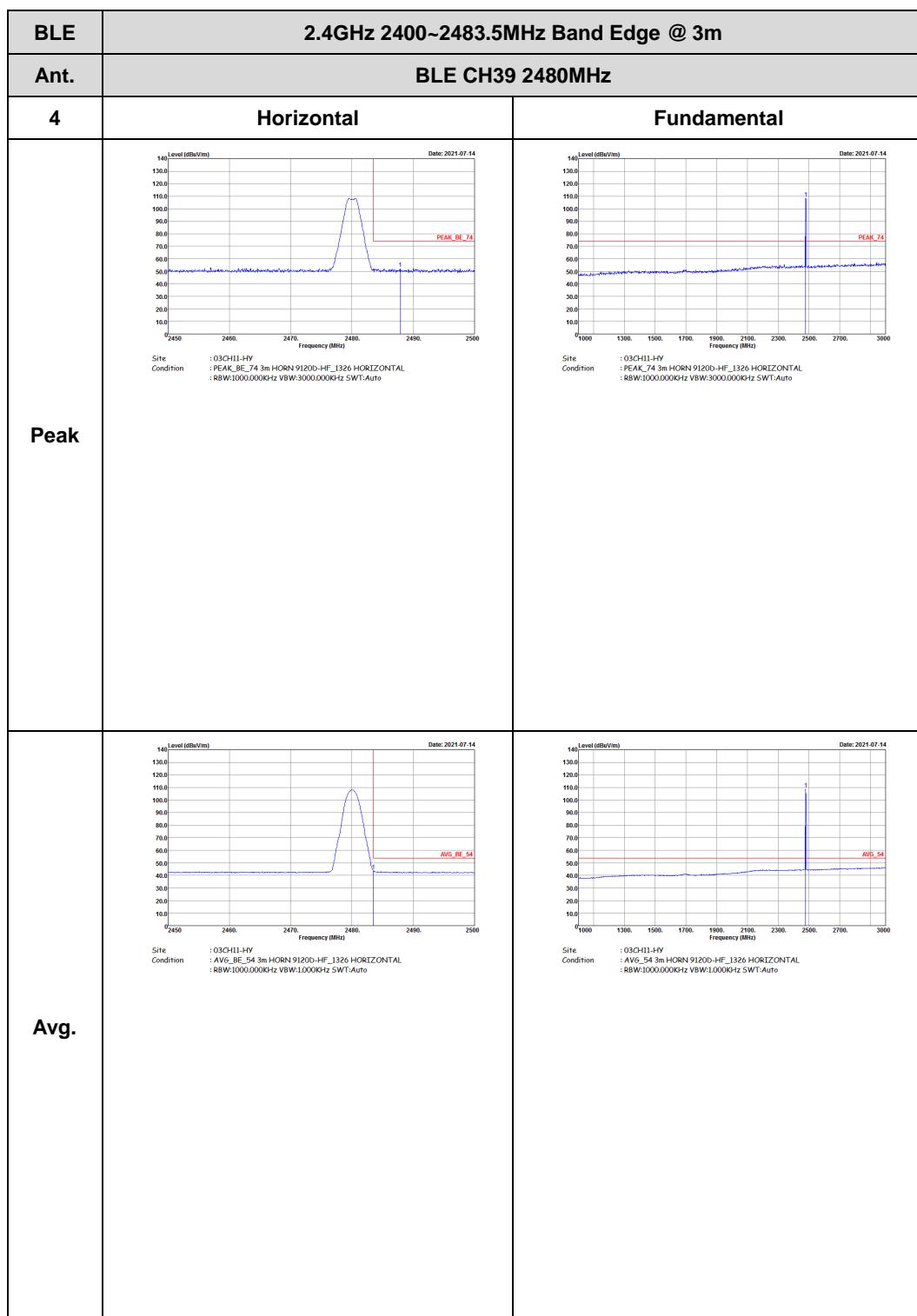


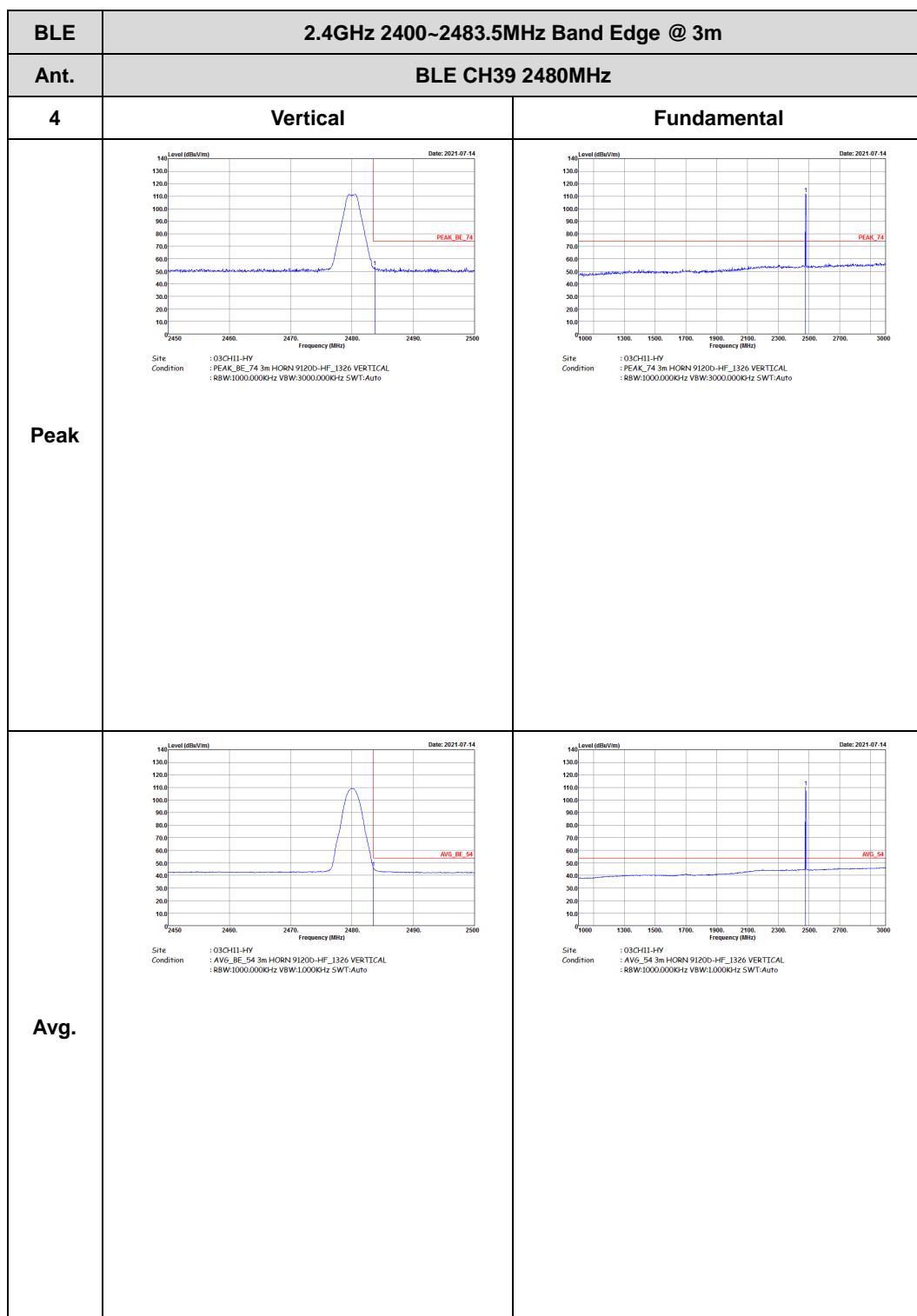
BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	BLE CH19 2440MHz - R	
4	Horizontal	Fundamental
Peak	<p>Site : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 HORIZONTAL : R8W:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	Left blank
Avg.	<p>Site : 03CH11-HY Condition : AVG_BE_54 3m HORN 91200-HF_1326 HORIZONTAL : R8W:1000.000kHz VBW:1000kHz SWT:Auto</p>	Left blank





BLE	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	BLE CH19 2440MHz - R	
4	Vertical	Fundamental
Peak	 <p>Site : 03CH11-HY Condition : PEAK_BE_74 3m HORN 91200-HF_1326 VERTICAL : R8W:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	Left blank
Avg.	 <p>Site : 03CH11-HY Condition : AVG_BE_54 3m HORN 91200-HF_1326 VERTICAL : R8W:1000.000kHz VBW:1000kHz SWT:Auto</p>	Left blank







## 2.4GHz 2400~2483.5MHz

## BLE (Harmonic @ 3m)

