



Report No.: FR480504A

FCC RADIO TEST REPORT

FCC ID : 2AEM4-17731221 Equipment : Wireless Router

Brand Name : eero

Model Name : ME10001 Applicant : eero LLC

660 3rd St FI 4, San Francisco, California, 94107, United States

Manufacturer : eero LLC

660 3rd St FI 4, San Francisco, California, 94107, United States

Standard : FCC Part 15 Subpart C §15.247

The product was received on Aug. 23, 2024 and testing was performed from Aug. 28, 2024 to Nov. 08, 2024. 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 from Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

Approved by: Louis Wu

TEL: 886-3-327-0868

FAX: 886-3-327-0855

Louis Wu

Sporton International Inc. Wensan Laboratory

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

Report Template No.: BU5-FR15CBT4.0 Version 2.4 Report Version

Issue Date : Nov. 29, 2024 Report Version : 02

: 1 of 26

Page Number

Table of Contents

Report No. : FR480504A

His	story o	of this test report	3
Su	mmar	y of Test Result	4
1	Gene	eral Description	5
	1.1	Product Feature of Equipment Under Test	5
	1.2	Modification of EUT	5
	1.3	Testing Location	6
	1.4	Applicable Standards	6
2	Test	Configuration of Equipment Under Test	7
	2.1	Carrier Frequency Channel	7
	2.2	Test Mode	8
	2.3	Connection Diagram of Test System	10
	2.4	Support Unit used in test configuration and system	10
	2.5	EUT Operation Test Setup	11
	2.6	Measurement Results Explanation Example	11
3	Test	Result	12
	3.1	6dB and 99% Bandwidth Measurement	12
	3.2	Output Power Measurement	13
	3.3	Power Spectral Density Measurement	14
	3.4	Conducted Band Edges and Spurious Emission Measurement	15
	3.5	Radiated Band Edges and Spurious Emission Measurement	16
	3.6	AC Conducted Emission Measurement	21
	3.7	Antenna Requirements	23
4	List	of Measuring Equipment	24
5	Meas	surement Uncertainty	26
Аp	pendi	x A. Conducted Test Results	
Аp	pendi	x B. AC Conducted Emission Test Result	
Аp	pendi	x C. Radiated Spurious Emission Test Data	
Аp	pendi	x D. Duty Cycle Plots	

History of this test report

Report No.: FR480504A

Report No.	Version	Description	Issue Date
FR480504A	01	Initial issue of report	Nov. 21, 2024
FR480504A	02	Revise Appendix C This report is an updated version, replacing the report issued on Nov. 21, 2024.	Nov. 29, 2024

TEL: 886-3-327-0868 Page Number : 3 of 26 FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

Summary of Test Result

Report No.: FR480504A

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	Pass	-
3.2	15.247(b)(3) 15.247(b)(4)	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	1.28 dB under the limit at 2483.52 MHz
3.6	15.207	AC Conducted Emission Pass		17.09 dB under the limit at 0.16 MHz
3.7	15.203	Antenna Requirement	Pass	-

Conformity Assessment Condition:

- The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the
 regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who
 shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken
 into account.
- 2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty".

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Avis Chuang Report Producer: Emma Hsiao

TEL: 886-3-327-0868 Page Number : 4 of 26 FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature

Report No.: FR480504A

General Specs

Bluetooth-LE, IEEE 802.15.4, Wi-Fi 2.4GHz 802.11b/g/n/ac/ax/be, Wi-Fi 5GHz 802.11a/n/ac/ax/be and Wi-Fi 6GHz 802.11ax/be.

Antenna Type

WLAN:

<For WLAN (2.4GHz) and WLAN (5GHz)>:

<Ant. 1>: Dipole Antenna
<Ant. 3>: Dipole Antenna
<<For WLAN (6GHz)>:
<Ant. 2>: Dipole Antenna
<Ant. 4>: Dipole Antenna
Bluetooth-LE: Dipole Antenna
IEEE 802.15.4: Dipole Antenna

Antenna information				
2400 MHz ~ 2483.5 MHz	Peak Gain (dBi)	4.57		

Remark: The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.

1.2 Modification of EUT

No modifications made to the EUT during the testing.

TEL: 886-3-327-0868 Page Number : 5 of 26 FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

1.3 Testing Location

Test Site	Sporton International Inc. Wensan Laboratory			
Test Site Location	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			
Test Site No.	Sporton Site No. TH05-HY, CO07-HY, 03CH15-HY			

Report No.: FR480504A

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

FCC designation No.: TW3786

1.4 Applicable Standards

According to the specifications declared by 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 15.247 Meas Guidance v05r02
- FCC KDB 414788 D01 Radiated Test Site v01r01
- ANSI C63.10-2013

Remark:

- 1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
- 2. The TAF code is not including all the FCC KDB listed without accreditation.
- 3. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

TEL: 886-3-327-0868 Page Number : 6 of 26 FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

2 Test Configuration of Equipment Under Test

2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (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
2400-2483.5 MHz	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	-	-

Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : 7 of 26 FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

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). For radiated measurement, 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 only the worst case emissions were reported in this report.

Report No.: FR480504A

b. AC power line Conducted Emission was tested under maximum output power.

TEL: 886-3-327-0868 Page Number : 8 of 26
FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

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

Report No.: FR480504A

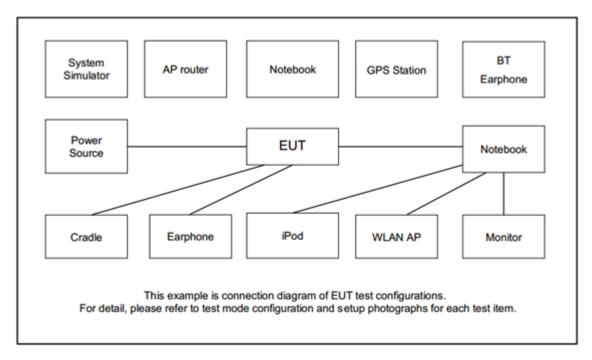
	Summary table of Test Cases
Test Item	Data Rate / Modulation
	Bluetooth – LE / GFSK
	Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps
	Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps
Conducted	Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps
Test Cases	Mode 4: Bluetooth Tx CH00_2402 MHz_2Mbps
	Mode 5: Bluetooth Tx CH19_2440 MHz_2Mbps
	Mode 6: Bluetooth Tx CH38_2478 MHz_2Mbps
	Mode 7: Bluetooth Tx CH39_2480 MHz_2Mbps
	Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps
	Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps
Radiated	Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps
Test Cases	Mode 4: Bluetooth Tx CH00_2402 MHz_2Mbps
rest oases	Mode 5: Bluetooth Tx CH19_2440 MHz_2Mbps
	Mode 6: Bluetooth Tx CH38_2478 MHz_2Mbps
	Mode 7: Bluetooth Tx CH39_2480 MHz_2Mbps
	Mode 1: BT Tx - LE 1M CH19 + LAN Link + AC Adapter
	(Luxshare_45W_Type A plug)(C310011)
AC Conducted	Mode 2: 802.15.4 Tx CH18 + LAN Link + AC Adapter
Emission	(Luxshare_45W_Type A plug)(C310011)
	Mode 3: 11be Tx (EHT20) CH06 + LAN Link + AC Adapter
	(Luxshare_45W_Type A plug)(C310011)
Romark:	

Remark:

- 1. The worst case of Conducted Emission is mode 3; only the test data of it was reported.
- 2. For radiation spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.

TEL: 886-3-327-0868 Page Number : 9 of 26 FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

2.3 Connection Diagram of Test System



Report No.: FR480504A

2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Notebook	DELL	Latitude 3420	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

TEL: 886-3-327-0868 Page Number : 10 of 26 FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

2.5 EUT Operation Test Setup

The RF test items, utility "RadioControlConsole.exe (v4.0.0.0)" 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.

Report No.: FR480504A

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 (dB)

TEL: 886-3-327-0868 Page Number : 11 of 26
FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

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

Please refer to the measuring equipment list in this test report.

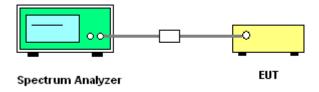
3.1.3 Test Procedures

- 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 is connected to the spectrum analyzer by RF cable and attenuator. The path loss is compensated to the results for each measurement.

Report No.: FR480504A

- 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.
- 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) ≥ 3 * 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.

3.1.6 Test Result of 99% Occupied Bandwidth

Please refer to Appendix A.

TEL: 886-3-327-0868 Page Number : 12 of 26
FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

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.

Report No.: FR480504A

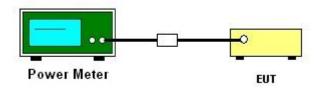
3.2.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.2.3 Test Procedures

- For Average Power, the testing follows ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G
- 2. The RF output of EUT is connected to the power meter by RF cable and attenuator.
- 3. The path loss is 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.

TEL: 886-3-327-0868 Page Number : 13 of 26 FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

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.

Report No.: FR480504A

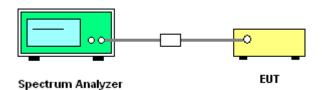
3.3.2 Measuring Instruments

Please refer to the measuring equipment list in 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 is connected to the spectrum analyzer by RF cable and attenuator. The path loss is 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. (6 dB 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.

TEL: 886-3-327-0868 Page Number : 14 of 26 FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

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 30 dB down from the highest emission level within the authorized band.

Report No.: FR480504A

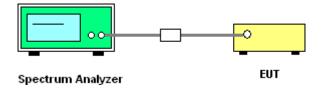
3.4.2 Measuring Instruments

Please refer to the measuring equipment list in 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 is connected to the spectrum analyzer by RF cable and attenuator. The path loss is 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

Please refer to Appendix A.

3.4.6 Test Result of Conducted Spurious Emission Plots

Please refer to Appendix A.

TEL: 886-3-327-0868 Page Number : 15 of 26
FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

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 transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required 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.

Report No.: FR480504A

Frequency	Field Strength	Measurement Distance		
(MHz)	(microvolts/meter)	(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

Please refer to the measuring equipment list in this test report.

TEL: 886-3-327-0868 Page Number : 16 of 26 FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

3.5.3 Test Procedures

- 1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements.
- 2. The EUT is 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.

Report No.: FR480504A

- 3. The EUT is 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 is set 3 meters away from the receiving antenna, which is mounted on the top of a variable height antenna tower.
- 5. Corrected Reading: Antenna Factor + Cable Loss + Read Level Preamp Factor = Level
- 6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit line, the position is marked as "-".
- 7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as "-".
- 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 ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW = 3 MHz for $f \ge 1$ GHz for peak measurement.

For average measurement:

The procedure for method trace averaging is as follows:

- a) RBW = 1 MHz.
- b) VBW \geq [3 × RBW].
- c) Detector = RMS (power averaging), if [span / (# of points in sweep)] ≤ RBW / 2. Satisfying this condition can require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, then the detector mode shall be set to peak.
- d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging.
- e) Sweep time = auto.

TEL: 886-3-327-0868 Page Number : 17 of 26
FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of 1 / D, where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)

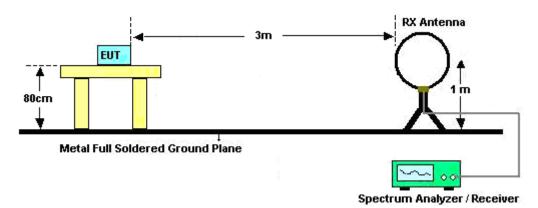
Report No.: FR480504A

- g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:
 - i. If power averaging (rms) mode was used in the preceding step e), then the correction factor is [10 log (1 / *D*)], where *D* is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB shall be added to the measured emission levels.
 - ii. If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

TEL: 886-3-327-0868 Page Number : 18 of 26
FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

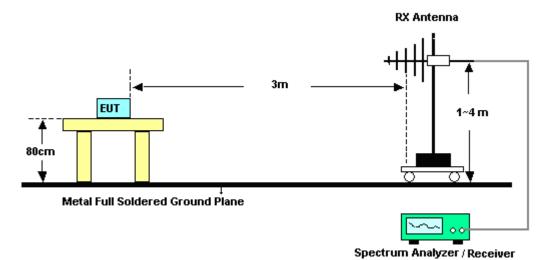
3.5.4 Test Setup

For radiated test below 30MHz

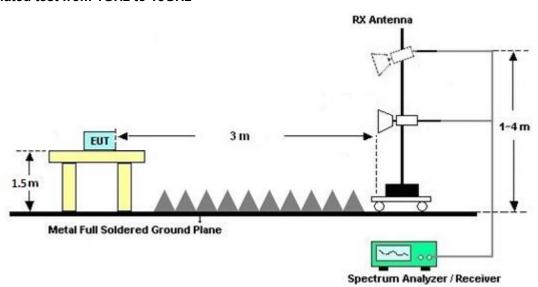


Report No.: FR480504A

For radiated test from 30MHz to 1GHz

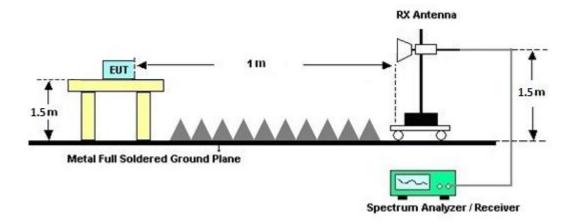


For radiated test from 1GHz to 18GHz



TEL: 886-3-327-0868 Page Number : 19 of 26
FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

For radiated test above 18GHz



Report No.: FR480504A

: 02

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

The low frequency, which starts from 9 kHz to 30 MHz, is pre-scanned and the result which is 20 dB lower than the limit line is 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 comes out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C.

3.5.7 Duty Cycle

Please refer to Appendix D.

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

Please refer to Appendix C.

TEL: 886-3-327-0868 Page Number : 20 of 26 FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

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.

Report No.: FR480504A

Frequency of emission (MHz)	Conducted limit (dBμV)				
Frequency of emission (MHZ)	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

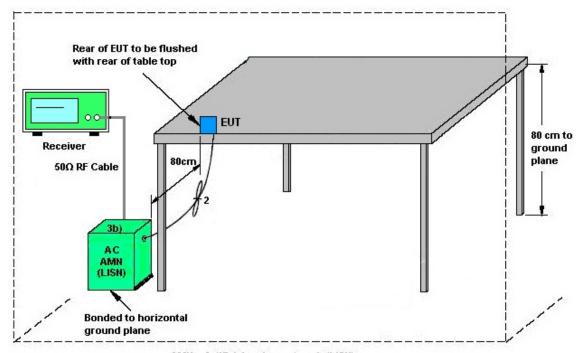
Please refer to the measuring equipment list in this test report.

3.6.3 Test Procedures

- 1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is 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 Line and Neutral shall be tested in order to find out the maximum conducted emission.
- 7. The frequency range from 150 kHz to 30 MHz is scanned.
- Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9 kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

TEL: 886-3-327-0868 Page Number : 21 of 26 FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

3.6.4 Test Setup



Report No.: FR480504A

AMN = Artificial mains network (LISN)

AE = Associated equipment

EUT = Equipment under test

ISN = Impedance stabilization network

3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

TEL: 886-3-327-0868 Page Number : 22 of 26 FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

3.7 Antenna Requirements

3.7.1 Standard Applicable

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. 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 provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, 15.213, 15.217, 15.219, 15.221, or § 15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Report No.: FR480504A

3.7.2 Antenna Anti-Replacement Construction

Unique (non-standard) antenna connector.

TEL: 886-3-327-0868 Page Number : 23 of 26
FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Feb. 23, 2024	Aug. 28, 2024~ Oct. 30, 2024	Feb. 22, 2025	Radiation (03CH15-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	41912 & 05	30MHz~1GHz	Feb. 04, 2024	Aug. 28, 2024~ Oct. 30, 2024	Feb. 03, 2025	Radiation (03CH15-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-02294	1GHz~18GHz	Jun. 20, 2024	Aug. 28, 2024~ Oct. 30, 2024	Jun. 19, 2025	Radiation (03CH15-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	00993	18GHz~40GHz	Nov. 24, 2023	Aug. 28, 2024~ Oct. 30, 2024	Nov. 23, 2024	Radiation (03CH15-HY)
Amplifier	SONOMA	310N	363440	9kHz~1GHz	Dec. 25, 2023	Aug. 28, 2024~ Oct. 30, 2024	Dec. 24, 2024	Radiation (03CH15-HY)
Preamplifier	EMEC	EM01G18G	060837	1GHz~18GHz	Feb. 15, 2024	Aug. 28, 2024~ Oct. 30, 2024	Feb. 14, 2025	Radiation (03CH15-HY)
Preamplifier	EM Electronics	EM01G18G	060802	1GHz~18GHz	Feb. 29, 2024	Aug. 28, 2024~ Oct. 30, 2024	Feb. 28, 2025	Radiation (03CH15-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	May. 27, 2024	Aug. 28, 2024~ Oct. 30, 2024	May. 26, 2025	Radiation (03CH15-HY)
Spectrum Analyzer	Keysight	N9010B	MY60241058	10Hz~44GHz	Jul. 11, 2024	Aug. 28, 2024~ Oct. 30, 2024	Jul. 10, 2025	Radiation (03CH15-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Aug. 28, 2024~ Oct. 30, 2024	N/A	Radiation (03CH15-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Aug. 28, 2024~ Oct. 30, 2024	N/A	Radiation (03CH15-HY)
Software	Audix	E3_V9_230621	RK-002394	N/A	N/A	Aug. 28, 2024~ Oct. 30, 2024	N/A	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104, 102E	MY582185/4, 519228/2,803 950/2	N/A	Jun. 11, 2024	Aug. 28, 2024~ Oct. 30, 2024	Jun. 10, 2025	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	804011/2,804 012/2	18-40G	Jan. 02, 2024	Aug. 28, 2024~ Oct. 30, 2024	Jan. 01, 2025	Radiation (03CH15-HY)
Filter	Wainwright	WHKX8-5872.5-67 50-18000-40ST	SN6	3GHz High Pass Filter	Jun. 05, 2024	Aug. 28, 2024~ Oct. 30, 2024	Jun. 04, 2025	Radiation (03CH15-HY)
Hygrometer	TECPEL	DTM-302	SN4	N/A	Aug. 29, 2024	Aug. 28, 2024~ Oct. 30, 2024	Aug. 28, 2025	Radiation (03CH15-HY)
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 07, 2023	Sep. 30, 2024	Nov. 06, 2024	Conducted (TH05-HY)
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 01, 2024	Nov. 08, 2024	Oct. 31, 2025	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	15I00041SNO 10 (NO:248)	10MHz~6GHz	Jan. 10, 2024	Sep. 30, 2024~ Nov. 08, 2024	Jan. 09, 2025	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Aug. 23, 2024	Sep. 30, 2024~ Nov. 08, 2024	Aug. 22, 2025	Conducted (TH05-HY)
Switch Control Mainframe	Burgeon	ETF-058	EC1300484 (BOX3)	N/A	May 20, 2024	Sep. 30, 2024~ Nov. 08, 2024	May 19, 2025	Conducted (TH05-HY)
Software	Sporton	BTWIFI_Final_ver sion_240821	N/A	Conducted Other Test Item	N/A	Sep. 30, 2024~ Nov. 08, 2024	N/A	Conducted (TH05-HY)

Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : 24 of 26 FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ACPOWER	AFC-11003G	F317040033	N/A	N/A	Oct. 29, 2024	N/A	Conduction (CO07-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Oct. 29, 2024	N/A	Conduction (CO07-HY)
Pulse Limiter	SCHWARZBE CK	VTSD 9561-F N	9561-F N00373	9kHz-200MHz	Oct. 23, 2024	Oct. 29, 2024	Oct. 22, 2025	Conduction (CO07-HY)
RF Cable	HUBER + SUHNER	RG 214/U	1358175	9kHz~30MHz	Mar. 14, 2024	Oct. 29, 2024	Mar. 13, 2025	Conduction (CO07-HY)
Two-Line V-Network	TESEQ	NNB 51	45051	N/A	Mar. 10, 2024	Oct. 29, 2024	Mar. 09, 2025	Conduction (CO07-HY)
Four-Line V-Network	TESEQ	NNB 52	36122	N/A	Mar. 07, 2024	Oct. 29, 2024	Mar. 06, 2025	Conduction (CO07-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102317	9kHz~3.6GHz	Sep. 23, 2024	Oct. 29, 2024	Sep. 22, 2025	Conduction (CO07-HY)

Report No. : FR480504A

TEL: 886-3-327-0868 Page Number : 25 of 26 FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

5 Measurement Uncertainty

<u>Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)</u>

Measuring Uncertainty for a Level of Confidence	3.7 dB
of 95% (U = 2Uc(y))	3.7 ub

Report No.: FR480504A

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

Measuring Uncertainty for a Level of Confidence	6.3 dB
of 95% (U = 2Uc(y))	0.3 UB

<u>Uncertainty of Radiated Emission Measurement (1000 MHz ~ 6000 MHz)</u>

Measuring Uncertainty for a Level of Confidence	4.5 dB
of 95% (U = 2Uc(y))	4.5 UB

<u>Uncertainty of Radiated Emission Measurement (6000 MHz ~ 18000 MHz)</u>

Measuring Uncertainty for a Level of Confidence	5.5 dB
of 95% (U = 2Uc(y))	3.5 UB

<u>Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)</u>

I	
Measuring Uncertainty for a Level of Confidence	5.4 dB
of 95% (U = 2Uc(y))	3.4 ub

TEL: 886-3-327-0868 Page Number : 26 of 26 FAX: 886-3-327-0855 Issue Date : Nov. 29, 2024

Report Number: FR480504A

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Sylvia Li	Temperature:	21~25	°C
Test Date:	2024/9/30~2024/11/08	Relative Humidity:	51~54	%

TEST RESULTS DATA 6dB and 99% Occupied Bandwidth

Mod.	od. Data Rate NTX		CH.	CH. Freq. 99% Occupied BW (MHz)		6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
BLE	1Mbps	1	0	2402	1.047	0.697	0.50	Pass
BLE	1Mbps	1	19	2440	1.052	0.693	0.50	Pass
BLE	1Mbps	1	39	2480	1.047	0.696	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	1Mbps	1	0	2402	17.40	30.00	4.57	21.97	36.00	Pass
BLE	1Mbps	1	19	2440	17.30	30.00	4.57	21.87	36.00	Pass
BLE	1Mbps	1	39	2480	17.60	30.00	4.57	22.17	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	1Mbps	1	0	2402	16.95	5.12	4.57	8.00	Pass
BLE	1Mbps	1	19	2440	16.82	4.74	4.57	8.00	Pass
BLE	1Mbps	1	39	2480	17.42	5.45	4.57	8.00	Pass

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

Report Number: FR480504A

TEST RESULTS DATA 6dB and 99% Occupied Bandwidth

Mod.	Rate		TTX CH. Freq. (MHz) 99% Occupied BW (MHz)		6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail	
BLE	2Mbps	1	0	2402	2.095	1.387	0.50	Pass
BLE	2Mbps	1	19	2440	2.096	1.355	0.50	Pass
BLE	2Mbps	1	38	2478	2.093	1.347	0.50	Pass
BLE	2Mbps	1	39	2480	2.093	1.360	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	17.10	30.00	4.57	21.67	36.00	Pass
BLE	2Mbps	1	19	2440	17.40	30.00	4.57	21.97	36.00	Pass
BLE	2Mbps	1	38	2478	17.50	30.00	4.57	22.07	36.00	Pass
BLE	2Mbps	1	39	2480	17.60	30.00	4.57	22.17	36.00	Pass

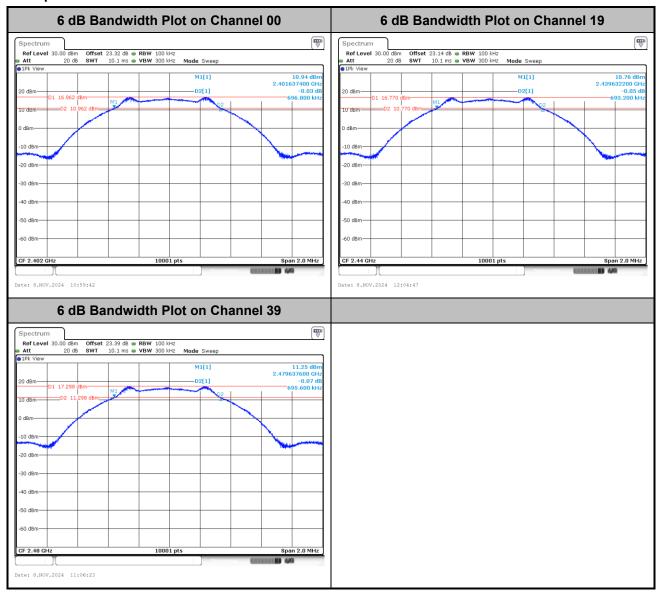
TEST RESULTS DATA Peak Power Density

Mod.	Data Rate	N⊤x	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	16.21	2.50	4.57	8.00	Pass
BLE	2Mbps	1	19	2440	16.44	2.37	4.57	8.00	Pass
BLE	2Mbps	1	38	2478	16.57	2.70	4.57	8.00	Pass
BLE	2Mbps	1	39	2480	17.51	2.55	4.57	8.00	Pass

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

6dB Bandwidth

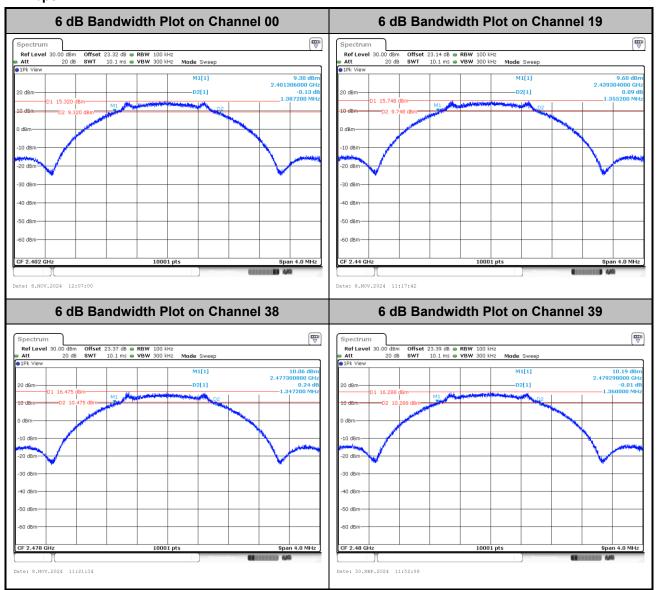
<1Mbps>



Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : A2-1 of 13

<2Mbps>

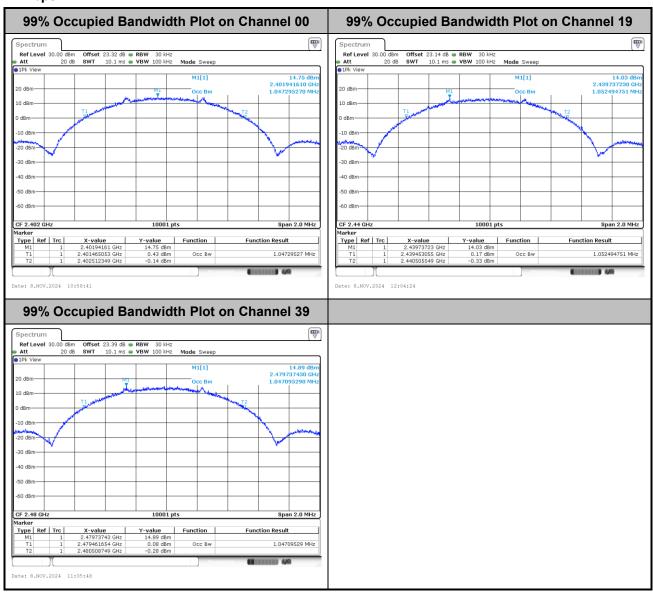


Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : A2-2 of 13

99% Occupied Bandwidth

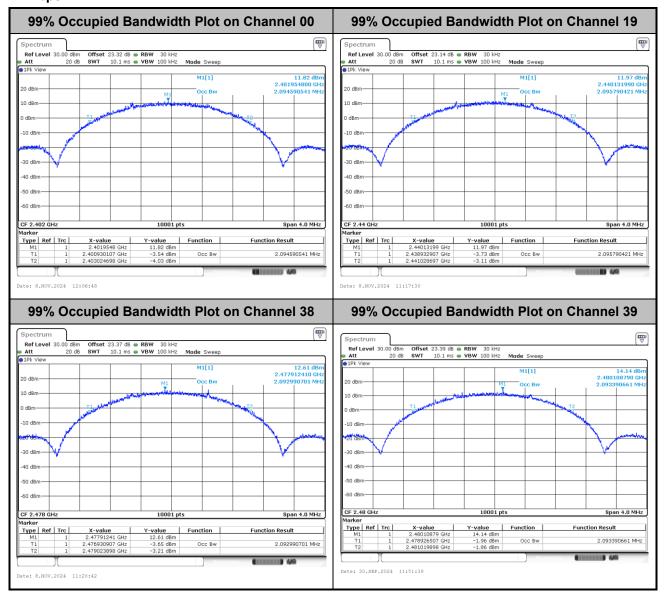
<1Mbps>



Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : A2-3 of 13

<2Mbps>

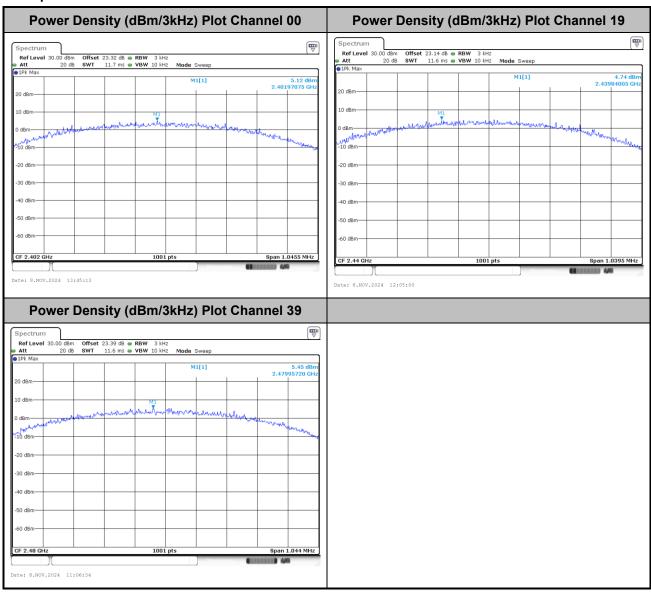


Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : A2-4 of 13

Power Spectral Density (dBm/3kHz)

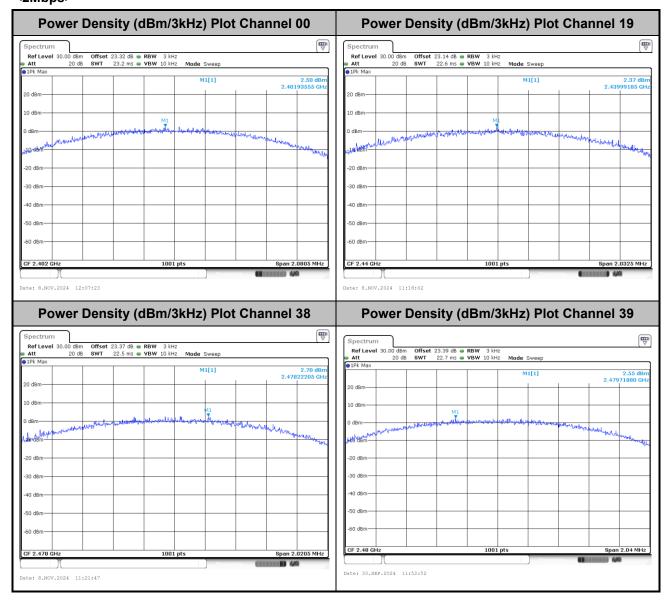
<1Mbps>



Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : A2-5 of 13

<2Mbps>

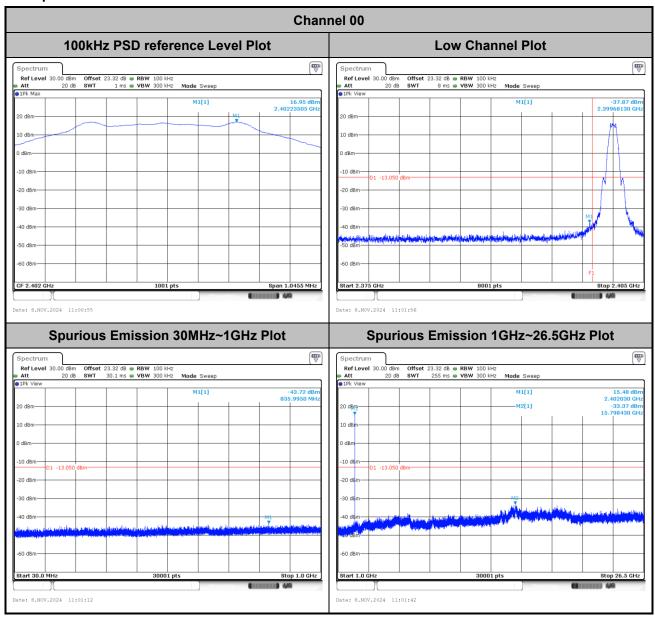


Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : A2-6 of 13

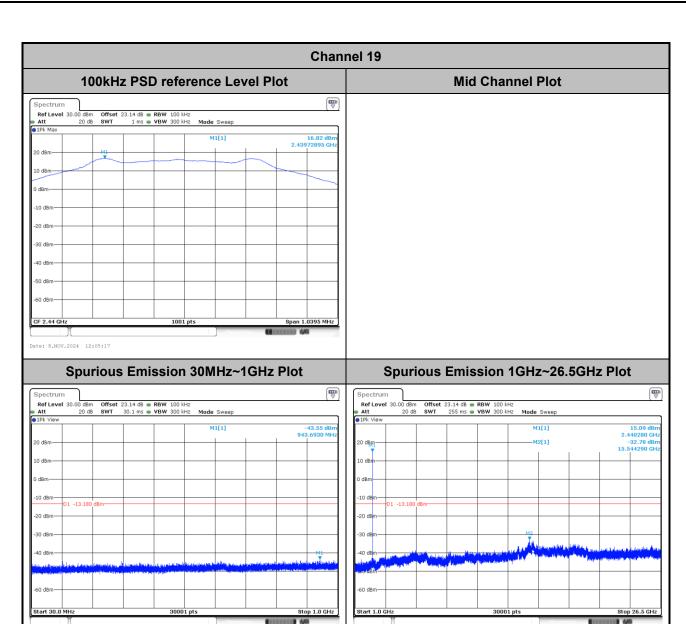
Band Edge and Conducted Spurious Emission

<1Mbps>



Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : A2-7 of 13



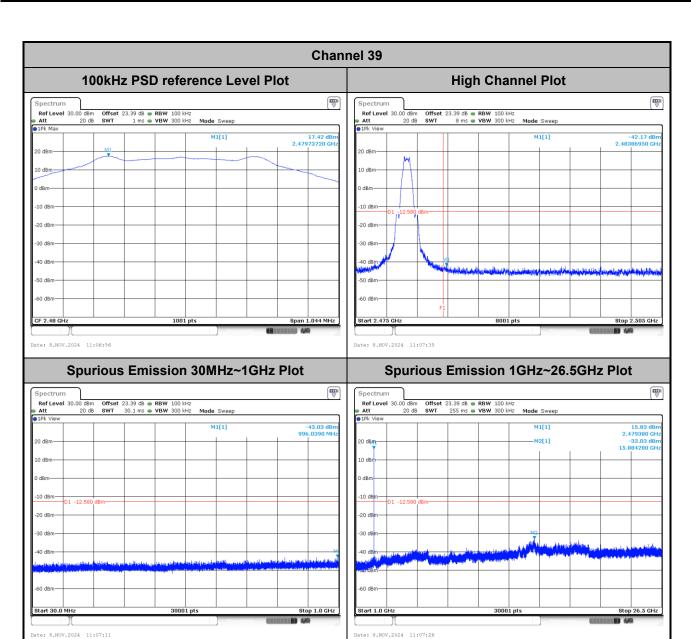
Date: 8.NOV.2024 12:05:52

Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : A2-8 of 13

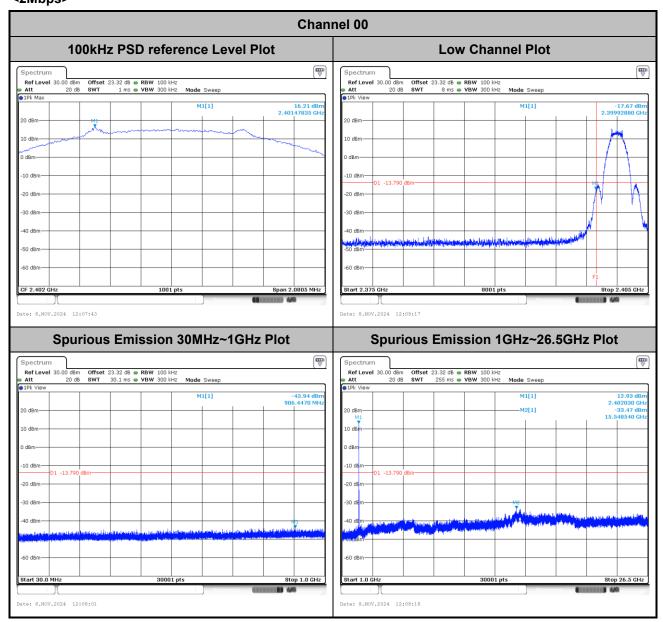
FAX: 886-3-327-0855

Date: 8.Nov.2024 12:05:38



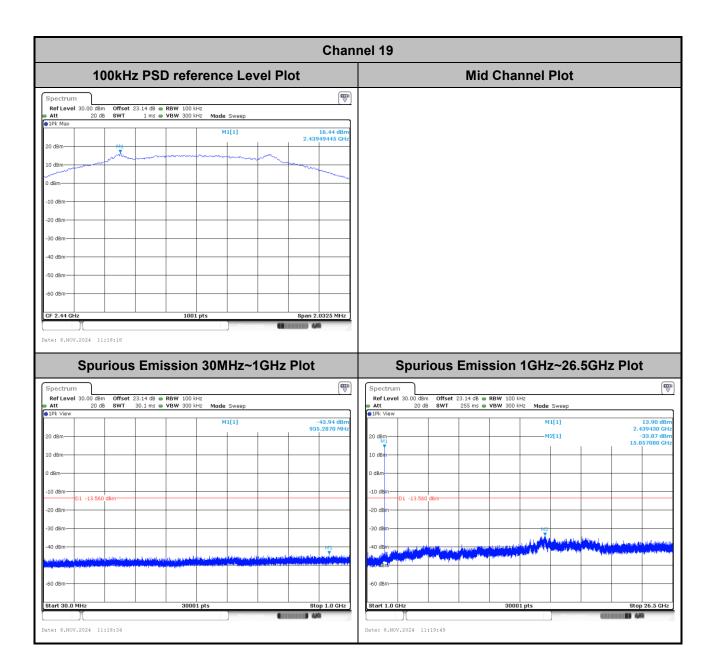
TEL: 886-3-327-0868 Page Number : A2-9 of 13

<2Mbps>

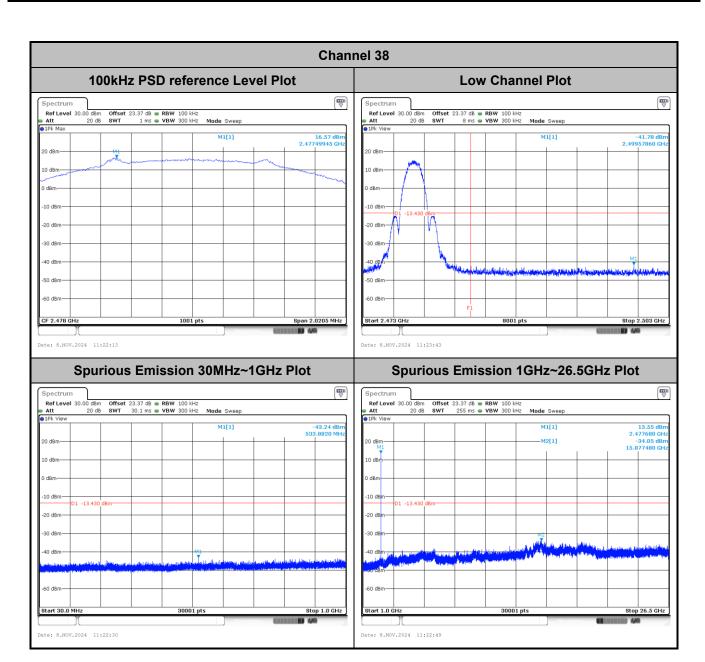


Report No.: FR480504A

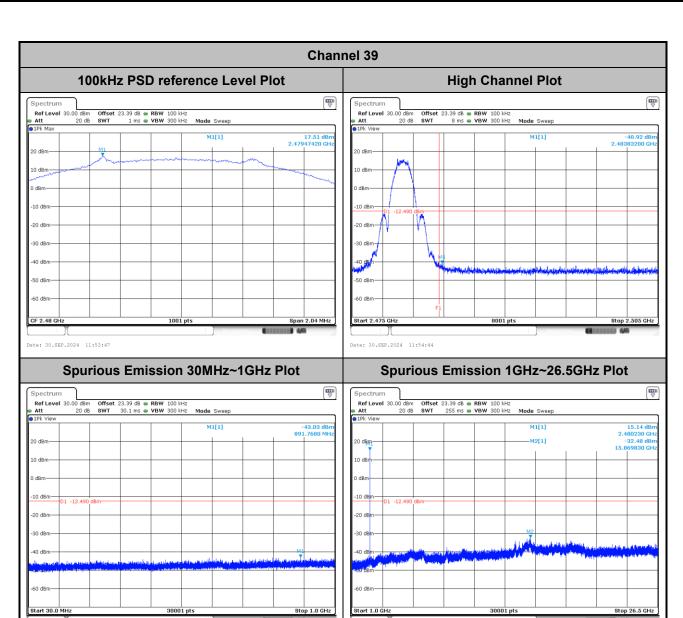
TEL: 886-3-327-0868 Page Number : A2-10 of 13



TEL: 886-3-327-0868 Page Number : A2-11 of 13



TEL: 886-3-327-0868 Page Number : A2-12 of 13



Date: 30.SEP.2024 11:54:29

Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : A2-13 of 13

FAX: 886-3-327-0855

Date: 30.SEP.2024 11:54:06

Appendix B. AC Conducted Emission Test Results

Took Empires v	Lavia Ohuma		Temperature :	21.2~24.7°C
Test Engineer :	Louis Chung	Relative Humidity :	45.7~51.3%	

Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : B1 of B4

EUT Information

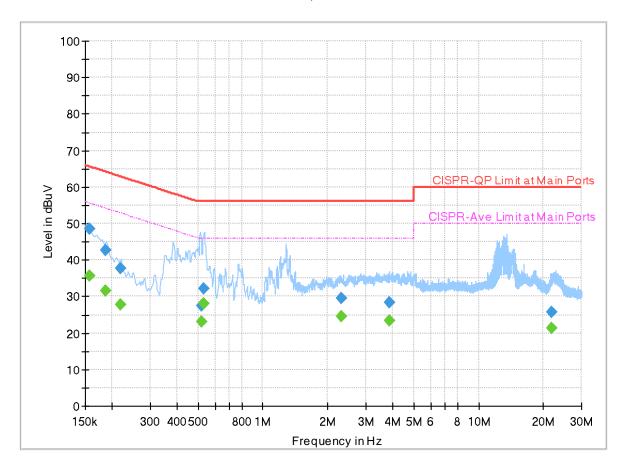
 Report NO :
 480504

 Test Mode :
 Mode 3

 Test Voltage :
 120Vac/60Hz

Phase: Line

Full Spectrum



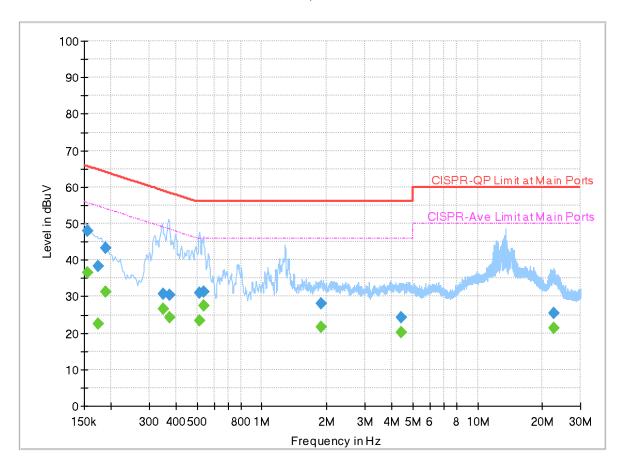
Final Result

aoo	ин						
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	PE	Corr. (dB)
0.156390		35.55	55.65	20.10	L1	FLO	19.9
0.156390	48.56		65.65	17.09	L1	FLO	19.9
0.186630		31.72	54.19	22.47	L1	FLO	19.9
0.186630	42.55	-	64.19	21.64	L1	FLO	19.9
0.219120		27.67	52.85	25.18	L1	FLO	19.9
0.219120	37.67		62.85	25.18	L1	FLO	19.9
0.516750		23.14	46.00	22.86	L1	FLO	19.9
0.516750	27.53		56.00	28.47	L1	FLO	19.9
0.532770		28.10	46.00	17.90	L1	FLO	19.9
0.532770	32.19		56.00	23.81	L1	FLO	19.9
2.322600		24.46	46.00	21.54	L1	FLO	20.0
2.322600	29.64		56.00	26.36	L1	FLO	20.0
3.869250		23.40	46.00	22.60	L1	FLO	20.0
3.869250	28.31		56.00	27.69	L1	FLO	20.0
21.864570		21.28	50.00	28.72	L1	FLO	20.2
21.864570	25.70		60.00	34.30	L1	FLO	20.2

EUT Information

Report NO: 480504
Test Mode: Mode 3
Test Voltage: 120Vac/60Hz
Phase: Neutral

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	PE	Corr. (dB)
0.154500		36.53	55.75	19.22	N	FLO	20.0
0.154500	48.08		65.75	17.67	N	FLO	20.0
0.174750		22.42	54.73	32.31	N	FLO	19.9
0.174750	38.22		64.73	26.51	N	FLO	19.9
0.188430		31.37	54.11	22.74	N	FLO	19.9
0.188430	43.41		64.11	20.70	N	FLO	19.9
0.346740		26.47	49.04	22.57	N	FLO	19.9
0.346740	30.64		59.04	28.40	N	FLO	19.9
0.373380		24.18	48.43	24.25	N	FLO	19.9
0.373380	30.37		58.43	28.06	N	FLO	19.9
0.515130		23.30	46.00	22.70	N	FLO	19.9
0.515130	31.10		56.00	24.90	N	FLO	19.9
0.535380		27.47	46.00	18.53	N	FLO	19.9
0.535380	31.25		56.00	24.75	N	FLO	19.9
1.890060		21.53	46.00	24.47	N	FLO	20.0
1.890060	28.19		56.00	27.81	N	FLO	20.0
4.427250		20.08	46.00	25.92	N	FLO	20.0
4.427250	24.39		56.00	31.61	N	FLO	20.0
22.541730		21.29	50.00	28.71	N	FLO	20.2

22.541730	25.58	 60.00	34.42	N	FLO	20.2



Appendix C. Radiated Spurious Emission Test Data

Test Engineer :	Sam Dan and Quantin Liv	Temperature :	21.0~23.2°C
	Sam Pan and Quentin Liu	Relative Humidity :	48~58%

Report No.: FR480504A

Note symbol

-L	Low channel location
-R	High channel location

C1. Radiated Spurious Emission Test Modes

Mode	Band (MHz)	Antenna	Modulation	Channel	Frequency	Data Rate	RU	Remark
Mode 1	2400-2483.5	5	Bluetooth-LE_GFSK	00	2402	1Mbps	-	-
Mode 2	2400-2483.5	5	Bluetooth-LE_GFSK	19 2440		1Mbps	-	-
Mode 3	2400-2483.5	5	Bluetooth-LE_GFSK	39	39 2480		-	-
Mode 4	2400-2483.5	5	Bluetooth-LE_GFSK	00	2402	2Mbps	-	-
Mode 5	2400-2483.5	5	Bluetooth-LE_GFSK	19 2440		2Mbps	-	-
Mode 6	2400-2483.5	5	Bluetooth-LE_GFSK	39 2480		2Mbps	-	-
Mode 7	2400-2483.5	5	Bluetooth-LE_GFSK	39 2480		2Mbps	-	LF
Mode 8	2400-2483.5	5	Bluetooth-LE_GFSK	39	2480	2Mbps	-	SHF

TEL: 886-3-327-0868 Page Number : C1 of C22



C2. Summary of each worse mode

Mode	Modulation	Ch.	Freq.	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pol.	Peak Avg.	Result	RU	Remark
1	Bluetooth-LE_GFSK	00	-	-	-	-	-	-	-	-	Band Edge
, 	Bluetooth-LE_GFSK	00	12010.00	48.25	54.00	-5.75	٧	Avg.	Pass	-	Harmonic
2	Bluetooth-LE_GFSK	19	-	-	-	-	-	-	ı	-	Band Edge
2	Bluetooth-LE_GFSK	19	12200.00	50.87	54.00	-3.13	٧	Avg.	Pass	-	Harmonic
3	Bluetooth-LE_GFSK	39	-	-	-	-	-	-	-	-	Band Edge
3	Bluetooth-LE_GFSK	39	12400.00	51.32	54.00	-2.68	٧	Avg.	Pass	-	Harmonic
4	Bluetooth-LE_GFSK	00	2338.15	44.23	54.00	-9.77	٧	Avg.	Pass	-	Band Edge
	Bluetooth-LE_GFSK	00	-	-	-	-	-	-	1	-	Harmonic
5	Bluetooth-LE_GFSK	19	2376.02	43.61	54.00	-10.39	٧	Avg.	Pass	-	Band Edge
3	Bluetooth-LE_GFSK	19	12200.00	52.00	54.00	-2.00	V	Avg.	Pass	-	Harmonic
6	Bluetooth-LE_GFSK	39	2483.52	52.72	54.00	-1.28	٧	Avg.	Pass	-	Band Edge
O	Bluetooth-LE_GFSK	39	-	-	-	-	-	-	-	-	Harmonic
7	LF	39	49.40	37.69	40.00	-2.31	V	QP	Pass	-	LF
8	SHF	39	39112.00	46.77	74.00	-27.23	Н	Peak	Pass	-	SHF

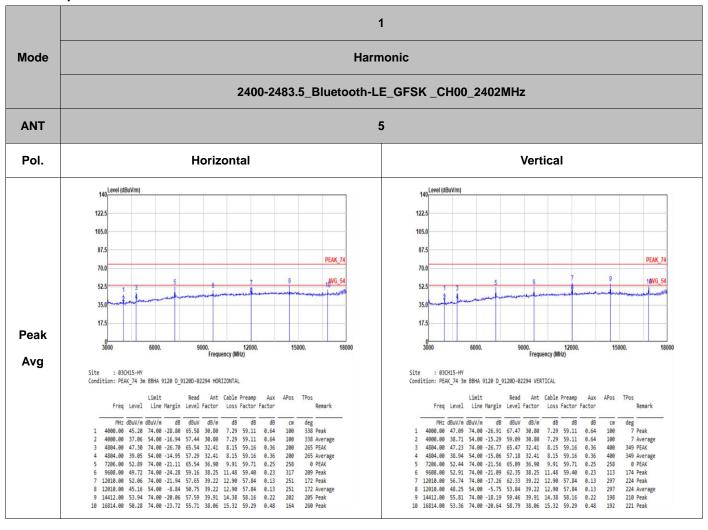
Report No. : FR480504A

TEL: 886-3-327-0868 Page Number : C2 of C22



Report No.: FR480504A

<1Mbps>



TEL: 886-3-327-0868 Page Number : C3 of C22

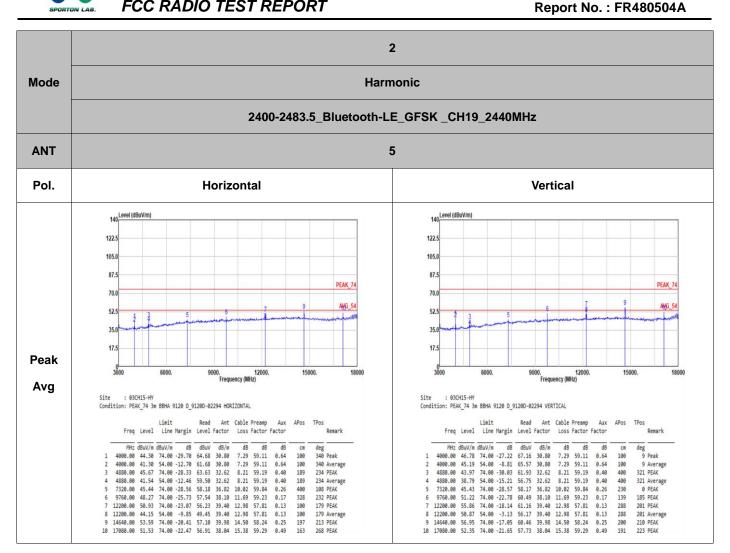


1 Mode **Harmonic** 2400-2483.5_Bluetooth-LE_GFSK _CH00_2402MHz ANT 5 Pol. Horizontal Vertical 140_Level (dBuVim) 140_Level (dBuV/m) 122.5 122.5 105.0 105.0 87.5 87.5 70.0 70.0 14.47G AVG_54 AVG_54 ~14.5G 52.5 52.5 Avg 35.0 35.0 17.5 17.5 14482. 14 Frequency (MHz) 14470 14476. 14488. 14494. 14500 14470 14476. 14482. 14488. 14494. 14500 Frequency (MHz) Site : 03CH15-HY Site : 03CH15-HY Condition: AVG_54 3m BBHA 9120 D_9120D-02294 HORIZONTAL Condition: AVG_54 3m BBHA 9120 D_9120D-02294 VERTICAL 140_Level (dBuVim) 140 Level (dBuV/m) 122.5 122.5 105.0 105.0 87.5 87.5 70.0 70.0 17.7G AVG_54 AVG_54 ~18G 52.5 52.5 Avg 35.0 35.0 17.5 17.5 17700 17700 17760. 17880. 17940. 18000 17760. 17940. 18000 Frequency (MHz) Frequency (MHz) Site : 03CH15-HY Site : 03CH15-HY Condition: AVG_54 3m BBHA 9120 D_9120D-02294 HORIZONTAL Condition: AVG_54 3m BBHA 9120 D_9120D-02294 VERTICAL

Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : C4 of C22





TEL: 886-3-327-0868 Page Number : C5 of C22



2 Mode **Harmonic** 2400-2483.5_Bluetooth-LE_GFSK _CH19_2440MHz ANT 5 Pol. Horizontal Vertical 140_Level (dBuVim) 140_Level (dBuV/m) 122.5 122.5 105.0 105.0 87.5 87.5 70.0 70.0 14.47G AVG_54 AVG_54 ~14.5G 52.5 52.5 Avg 35.0 35.0 17.5 17.5 14482. 14 Frequency (MHz) 14470 14476. 14488. 14494. 14500 14470 14476. 14482. 14488. 14494. 14500 Frequency (MHz) Site : 03CH15-HY Site : 03CH15-HY Condition: AVG_54 3m BBHA 9120 D_9120D-02294 HORIZONTAL Condition: AVG_54 3m BBHA 9120 D_9120D-02294 VERTICAL 140_Level (dBuVim) 140 Level (dBuV/m) 122.5 122.5 105.0 105.0 87.5 87.5 70.0 70.0 17.7G AVG_54 AVG_54 ~18G 52.5 52.5 Avg 35.0 35.0 17.5 17.5 17700 17700 17760. 17880. 17940. 18000 17760. 17940. 18000 Frequency (MHz) Frequency (MHz) Site : 03CH15-HY Site : 03CH15-HY Condition: AVG_54 3m BBHA 9120 D_9120D-02294 HORIZONTAL Condition: AVG_54 3m BBHA 9120 D_9120D-02294 VERTICAL

Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : C6 of C22



3 Mode **Band Edge** 2400-2483.5_Bluetooth-LE_GFSK _CH39_2480MHz **ANT** 5 Pol. Horizontal **Fundamental** 140 Level (dBuV/m) 140 Level (dBuV/m) 122.5 122.5 105.0 105.0 87.5 87.5 PEAK_BE_74 PEAK_74 70.0 52.5 52.5 35.0 35.0 Peak 17.5 17.5 1000 2480 2488. 2492. Frequency (MHz) 2484. 2496. 2500 1400. 2600. 3000 Site : 03CH15-HY Site : 03CH15-HY Condition: PEAK_BE_74 3m BBHA 9120 D_9120D-02294 HORIZONTAL Condition: PEAK_74 3m BBHA 9120 D_9120D-02294 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor MHz dBull/m dBull/m dB dBull dB/m dB dB dB cm deg 1 2483.64 57.58 74.00 -16.42 50.55 27.80 5.77 36.46 9.92 100 263 PEAK MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2480.00 112.23 ----- 105.23 27.78 5.76 36.46 9.92 100 263 PEAK 140 Level (dBuV/m) 140 Level (dBuV/m) 122.5 122.5 105.0 105.0 87.5 70.0 70.0 AVG_54 AVG BE 5 52.5 52.5 35.0 35.0 Avg 17.5 17.5 2480 2488. 2492. Frequency (MHz) 1000 2484. 2496. 2500 1400. 3000 : 03CH15-HY Site : 03CH15-HY Condition: AVG_BE_54 3m BBHA 9120 D_9120D-02294 HORIZONTAL Condition: AVG_54 3m BBHA 9120 D_9120D-02294 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Remark Remark

Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : C7 of C22

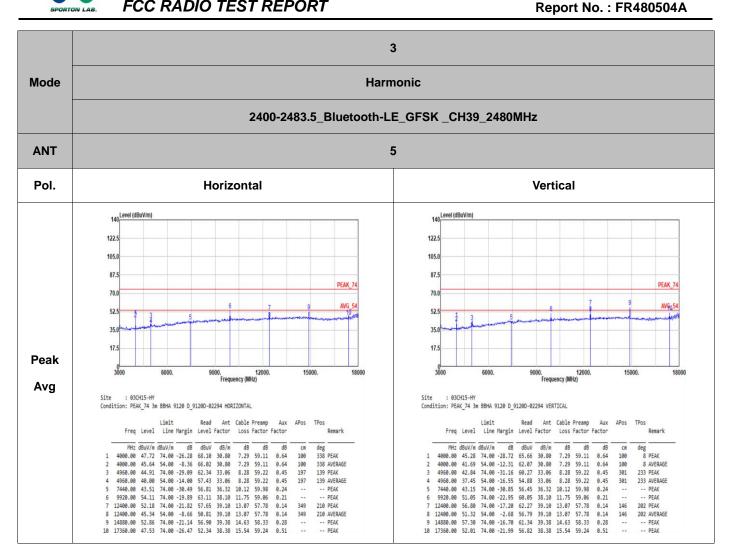


3 Mode **Band Edge** 2400-2483.5_Bluetooth-LE_GFSK _CH39_2480MHz **ANT** 5 Pol. Vertical **Fundamental** 140 Level (dBuV/m) 140 Level (dBuV/m) 122.5 122.5 105.0 105.0 87.5 87.5 PEAK_BE_74 PEAK_74 70.0 52.5 52.5 35.0 35.0 Peak 17.5 17.5 1800. 2 Frequency (MHz) 1000 2480 2488. 2492. Frequency (MHz) 2484. 2496. 2500 1400. 2600. 3000 Site : 03CH15-HY Site : 03CH15-HY Condition: PEAK_BE_74 3m BBHA 9120 D_9120D-02294 VERTICAL Condition: PEAK_74 3m BBHA 9120 D_9120D-02294 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB dB cm deg 1 2483.74 61.59 74.00 -12.41 54.56 27.80 5.77 36.46 9.92 220 183 PEAK MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2480.00 116.55 ----- 109.55 27.78 5.76 36.46 9.92 220 183 PEAK 140 Level (dBuV/m) 140 Level (dBuV/m) 122.5 122.5 105.0 105.0 87.5 70.0 70.0 AVG_54 AVG BE 5 52.5 52.5 35.0 35.0 Avg 17.5 17.5 2480 2488. 2492. Frequency (MHz) 1000 2484. 2496. 2500 1400. 3000 : 03CH15-HY Site : 03CH15-HY Condition: AVG_BE_54 3m BBHA 9120 D_9120D-02294 VERTICAL Condition: AVG_54 3m BBHA 9120 D_9120D-02294 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Remark Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB 1 2483.54 51.08 54.00 -2.92 44.05 27.80 5.77 36.46 9.92 220 183 PEAK

Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : C8 of C22





TEL: 886-3-327-0868 Page Number : C9 of C22



3 Mode **Harmonic** 2400-2483.5_Bluetooth-LE_GFSK _CH39_2480MHz ANT 5 Pol. Horizontal Vertical 140_Level (dBuVim) 140_Level (dBuV/m) 122.5 122.5 105.0 105.0 87.5 87.5 70.0 70.0 14.47G AVG_54 AVG_54 ~14.5G 52.5 52.5 Avg 35.0 35.0 17.5 17.5 14482. 14 Frequency (MHz) 14470 14476. 14488. 14494. 14500 14470 14476. 14482. 14488. 14494. 14500 Frequency (MHz) Site : 03CH15-HY Site : 03CH15-HY Condition: AVG_54 3m BBHA 9120 D_9120D-02294 HORIZONTAL Condition: AVG_54 3m BBHA 9120 D_9120D-02294 VERTICAL 140_Level (dBuVim) 140 Level (dBuV/m) 122.5 122.5 105.0 105.0 87.5 87.5 70.0 70.0 17.7G AVG_54 AVG_54 ~18G 52.5 52.5 Avg 35.0 35.0 17.5 17.5 17700 17700 17760. 17880. 17940. 18000 17760. 17940. 18000 Frequency (MHz) Frequency (MHz) Site : 03CH15-HY Site : 03CH15-HY Condition: AVG_54 3m BBHA 9120 D_9120D-02294 HORIZONTAL Condition: AVG_54 3m BBHA 9120 D_9120D-02294 VERTICAL

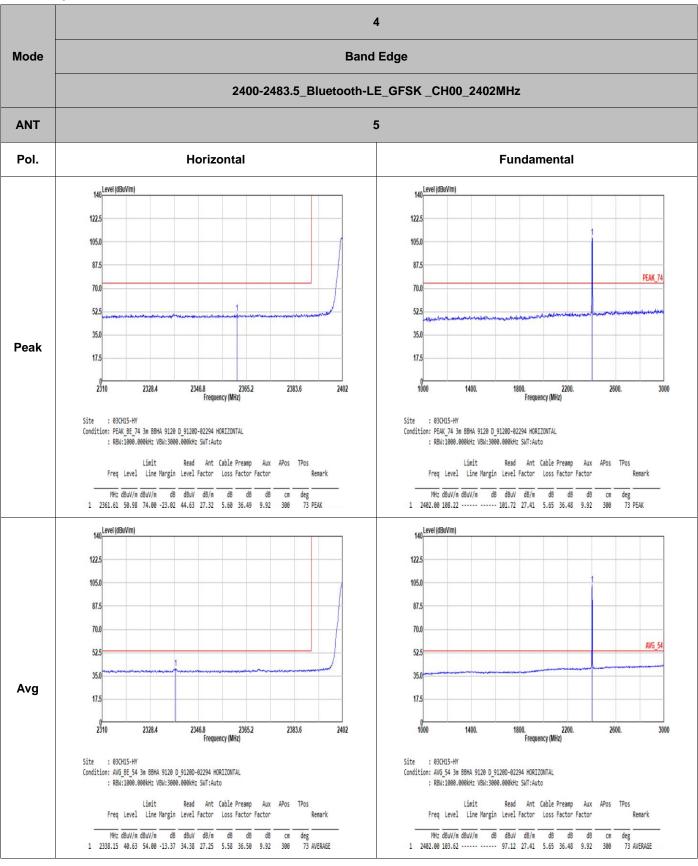
Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : C10 of C22



Report No.: FR480504A

<2Mbps>



TEL: 886-3-327-0868 Page Number : C11 of C22



Mode **Band Edge** 2400-2483.5_Bluetooth-LE_GFSK _CH00_2402MHz **ANT** 5 Pol. Vertical **Fundamental** 140 Level (dBuV/m) 140 Level (dBuV/m) 122.5 122.5 105.0 105.0 87.5 87.5 PEAK_74 70.0 70.0 52.5 52.5 35.0 35.0 Peak 17.5 17.5 2310 2346.8 2365.2 Frequency (MHz) 1000 0. 2200. Frequency (MHz) 2328.4 2383.6 2402 1400. 3000 Site : 03CH15-HY Site : 03CH15-HY Condition: PEAK BE 74 3m BBHA 9120 D 9120D-02294 VERTICAL Condition: PEAK 74 3m BBHA 9120 D 9120D-02294 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Limit Read Ant Cable Preamp Aux APos TPos Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Freq Level Line Margin Level Factor Loss Factor Factor Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2337.78 52.27 74.00 -21.73 46.02 27.25 5.58 36.50 9.92 252 177 PEAK 1 2402.00 112.35 ----- 105.85 27.41 5.65 36.48 9.92 252 177 PEAK 140 Level (dBuV/m) 140 Level (dBuV/m) 122.5 122.5 105.0 105.0 87.5 87.5 70.0 70.0 AVG_54 52.5 52.5 35.0 35.0 Avg 17.5 17.5 2346.8 Z3 Frequency (MHz) 2310 1000 2328.4 2383.6 2402 1800. Frequency (MHz) 3000 Site : 03CH15-HY Site : 03CH15-HY Condition: AVG_BE_54 3m BBHA 9120 D_9120D-02294 VERTICAL Condition: AVG_54 3m BBHA 9120 D_9120D-02294 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Remark Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2338.15 44.23 54.00 -9.77 37.98 27.25 5.58 36.50 9.92 252 177 AVERAGE

Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : C12 of C22



5 Band Edge - L Mode 2400-2483.5_Bluetooth-LE_GFSK _CH19_2440MHz **ANT** 5 Pol. Horizontal **Fundamental** 140 Level (dBuV/m) 140 Level (dBuV/m) 122.5 122.5 105.0 105.0 87.5 87.5 PEAK_74 70.0 70.0 52.5 52.5 35.0 35.0 Peak 17.5 17.5 Frequency (MHz) 2310 .4 2388.6 Frequency (MHz) 1000 2336.2 2414.8 2441 1400. 2600. 3000 Site : 03CH15-HY Site : 03CH15-HY Condition: PEAK BE 74 3m BBHA 9120 D 9120D-02294 HORIZONTAL Condition: PEAK 74 3m BBHA 9120 D 9120D-02294 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Limit Read Ant Cable Preamp Aux APos TPos Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Freq Level Line Margin Level Factor Loss Factor Factor Remark Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2375.89 52.04 74.00 -21.96 45.64 27.35 5.62 36.49 9.92 300 203 PEAK 1 2440.00 103.74 ----- 97.02 27.56 5.71 36.47 9.92 300 203 PEAK 140 Level (dBuV/m) 140 Level (dBuV/m) 122.5 122.5 105.0 105.0 87.5 87.5 70.0 70.0 AVG 54 52.5 52.5 35.0 35.0 Avg 17.5 17.5 2310 1000 2336.2 2414.8 2441 1800. Frequency (MHz) 3000 Site : 03CH15-HY Site : 03CH15-HY Condition: AVG BE 54 3m BBHA 9120 D 9120D-02294 HORIZONTAL Condition: AVG 54 3m BBHA 9120 D 9120D-02294 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Remark Remark | MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg | 1 2440.00 99.30 ------ 92.58 27.56 5.71 36.47 9.92 300 203 AVERAGE MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2376.02 42.48 54.00 -11.52 36.08 27.35 5.62 36.49 9.92 300 203 AVERAGE

Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : C13 of C22



5 Mode Band Edge - R 2400-2483.5_Bluetooth-LE_GFSK _CH19_2440MHz **ANT** 5 Pol. Horizontal **Fundamental** 140 Level (dBuV/m) 122.5 105.0 87.5 PEAK_BE_74 70.0 52.5 35.0 Peak **Blank** 17.5 2441 2464.6 2476.4 Frequency (MHz) 2452.8 2488.2 2500 Site : 03CH15-HY Condition: PEAK_BE_74 3m BBHA 9120 D_9120D-02294 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2497.40 50.92 74.00 -23.08 43.79 27.88 5.79 36.46 9.92 300 203 PEAK 140 Level (dBuV/m) 122.5 105.0 87.5 70.0 52.5 35.0 Avg **Blank** 17.5 2441 2464.6 2476.4 Frequency (MHz) 2452.8 2488.2 2500 Site : 03CH15-HY Condition: AVG_BE_54 3m BBHA 9120 D_9120D-02294 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2492.39 40.11 54.00 -13.89 33.02 27.85 5.78 36.46 9.92 300 203 AVERAGE

Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : C14 of C22



5 Band Edge - L Mode 2400-2483.5_Bluetooth-LE_GFSK _CH19_2440MHz **ANT** 5 Pol. Vertical **Fundamental** 140 Level (dBuV/m) 140 Level (dBuV/m) 122.5 122.5 105.0 105.0 87.5 87.5 PEAK_74 70.0 70.0 52.5 52.5 35.0 35.0 Peak 17.5 17.5 Frequency (MHz) 2310 .4 2388.6 Frequency (MHz) 1000 2336.2 2414.8 2441 1400. 2600. 3000 Site : 03CH15-HY Site : 03CH15-HY Condition: PEAK_BE_74 3m BBHA 9120 D_9120D-02294 VERTICAL Condition: PEAK 74 3m BBHA 9120 D 9120D-02294 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Limit Read Ant Cable Preamp Aux APos TPos Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Freq Level Line Margin Level Factor Loss Factor Factor Remark Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2376.29 52.19 74.00 -21.81 45.79 27.35 5.62 36.49 9.92 300 182 PEAK 1 2440.00 112.71 ----- 105.99 27.56 5.71 36.47 9.92 300 182 PEAK 140 Level (dBuV/m) 140 Level (dBuV/m) 122.5 122.5 105.0 105.0 87.5 87.5 70.0 70.0 AVG_54 52.5 52.5 35.0 35.0 Avg 17.5 17.5 2310 1000 2336.2 2414.8 2441 1800. Frequency (MHz) 3000 Site : 03CH15-HY Site : 03CH15-HY Condition: AVG BE 54 3m BBHA 9120 D 9120D-02294 VERTICAL Condition: AVG 54 3m BBHA 9120 D 9120D-02294 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Remark Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2376.02 43.61 54.00 -10.39 37.21 27.35 5.62 36.49 9.92 300 182 AVERAGE MHz dBuV/m dBuV/m dB dBuV dB/m dB

Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : C15 of C22

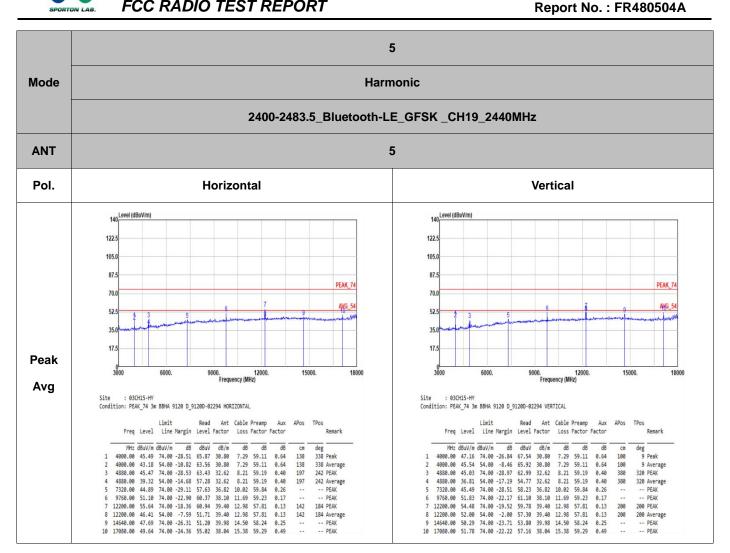


5 Mode Band Edge - R 2400-2483.5_Bluetooth-LE_GFSK _CH19_2440MHz **ANT** 5 Pol. Vertical **Fundamental** 140 Level (dBuV/m) 122.5 105.0 87.5 PEAK_BE_74 70.0 52.5 35.0 Peak **Blank** 17.5 2441 2464.6 2476.4 Frequency (MHz) 2452.8 2488.2 2500 Site : 03CH15-HY Condition: PEAK_BE_74 3m BBHA 9120 D_9120D-02294 VERTICAL : RBN:1000.000KHz VBN:3000.000KHz SWT:Auto Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2490.15 51.90 74.00 -22.10 44.82 27.84 5.78 36.46 9.92 300 182 PEAK 140 Level (dBuV/m) 122.5 105.0 87.5 70.0 AVG BE 54 52.5 35.0 Avg **Blank** 17.5 2441 2464.6 2476.4 Frequency (MHz) 2452.8 2488.2 2500 Site : 03CH15-HY Condition: AVG_BE_54 3m 8BHA 9120 D_9120D-02294 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Limit Read Ant Cable Preamp Aux APos TPos Freq Level Line Margin Level Factor Loss Factor Factor Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB dB cm deg 1 2495.28 40.40 54.00 -13.60 33.29 27.87 5.78 36.46 9.92 300 182 AVERAGE

Report No.: FR480504A

TEL: 886-3-327-0868 Page Number : C16 of C22





TEL: 886-3-327-0868 Page Number : C17 of C22