



Test report No. : 4790066589-US-R0-V0
Page : 1 of 43
Issued date : 2021/10/15
FCC ID : 2AAUCGHTTHF

RADIO TEST REPORT

Product : ARGENT H5 Wireless RGB 7.1 Gaming Headset

Model Name : GHT-THF-WIECBK-32

FCC ID : 2AAUCGHTTHF

Test Regulation : FCC 47 CFR Part 15 Subpart C (Section 15.247)

Received Date : 2021/8/23

Test Date : 2021/8/23 ~ 2021/8/30

Issued Date : 2021/10/15

Applicant : Thermaltake Technology Co., LTD.
5F., No.185, Sec. 2, Tiding Blvd., Neihu Dist., Taipei City 114,
Taiwan

Issued By : Underwriters Laboratories Taiwan Co., Ltd.
Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd.,
Zhudong Township, Hsinchu County, Taiwan



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Test report No. : 4790066589-US-R0-V0
Page : 2 of 43
Issued date : 2021/10/15
FCC ID : 2AAUCGHTTHF

REVISION HISTORY

Original Test Report No.: 4790066589-US-R0-V0

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Table of Contents

1. Attestation of Test Results	4
2. Summary of Test Results	5
3. Test Methodology and Reference Procedures.....	6
4. Facilities and Accreditation.....	6
5. Measurement Uncertainty	7
6. Equipment under Test	8
6.1. Description of EUT	8
6.2. Channel List	9
6.3. Test Condition.....	9
6.4. Description of Available Antennas	9
6.5. Test Mode Applicability and Tested Channel Detail.....	10
6.6. Duty cycle	11
7. Test Equipment.....	12
8. Description of Test Setup.....	14
9. Test Results.....	16
9.1. 6dB Bandwidth	16
9.2. Conducted Output Power.....	18
9.3. Power Spectral Density.....	20
9.4. Conducted Out of Band Emission.....	22
9.5. Radiated Spurious Emission	25
9.6. AC Power Line Conducted Emission	35
Appendix I Radiated Band Edge Measurement	41
Appendix II Radiated Spurious Emission Measurement	43

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Page : 4 of 43
Issued date : 2021/10/15
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1. Attestation of Test Results

APPLICANT: Thermaltake Technology Co., LTD.
5F., No.185, Sec. 2, Tiding Blvd., Neihu Dist., Taipei City 114,
Taiwan

EUT DESCRIPTION: ARGENT H5 Wireless RGB 7.1 Gaming Headset

BRAND: Thermaltake

MODEL: GHT-THF-WIECBK-32

SAMPLE STAGE: Engineering Verification Test sample

DATE of TESTED: 2021/8/23 ~ 2021/8/30

APPLICABLE STANDARDS	
STANDARD	Test Results
FCC 47 CFR PART 15 Subpart C (Section 15.247)	PASS

Underwriters Laboratories Taiwan Co., Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by Underwriters Laboratories Taiwan Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Underwriters Laboratories Taiwan Co., Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Underwriters Laboratories Taiwan Co., Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Prepared By:

Sally Lu
Project Handler

Date : 2021/10/15

Approved and Authorized By:

Mike Cai
Engineer Project Associate

Date : 2021/10/15

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2. Summary of Test Results

Summary of Test Results		
FCC Clause	Test Items	Result
15.247(a)(2)	6dB Bandwidth	PASS
15.247(b)	Conducted Output Power	PASS
15.247(e)	Power Spectral Density	PASS
15.247(d)	Antenna Port Emission	PASS
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS
15.207	AC Power Conducted Emission	PASS
15.203	Antenna Requirement	PASS

Note:

1. For the Radiated Band Edge test plots were recorded in Appendix I, the Radiated Emissions test plots were recorded in Appendix II.

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3. Test Methodology and Reference Procedures

The tests documented in this report were performed in accordance with 47 CFR FCC Part 2, KDB558074 D01 Meas Guidance v05r02, KDB414788 D01 Radiated Test Site v01r01, ANSI C63.10-2013.

4. Facilities and Accreditation

Test Location	Underwriters Laboratories Taiwan Co., Ltd.
Address	Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Accreditation Certificate	Underwriters Laboratories Taiwan Co., Ltd. is accredited by TAF, Laboratory Code 3398.

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5. Measurement Uncertainty

For statement of conformity, accuracy method (Section 8.2.4 and 8.2.5 of ISO Guide 98-4) was applied as decision rule for measurement in this test report.

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor k=2.

Measurement	Frequency	Uncertainty
Conducted disturbance at mains terminals ports	150kHz ~ 30MHz	±3.1 dB
RF Conducted	9 kHz - 40GHz	±1.9 dB
Radiated disturbance below 30MHz	9 kHz - 30 MHz	±1.9 dB
Radiated disturbance below 1 GHz	30MHz ~ 1GHz	±5.4 dB
Radiated disturbance above 1 GHz	1GHz ~ 40GHz	±4.7 dB

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6. Equipment under Test

6.1. Description of EUT

Product	ARGENT H5 Wireless RGB 7.1 Gaming Headset
Brand Name	Thermaltake
Model Name	GHT-THF-WIECBK-32
Operating Frequency	2403MHz ~ 2478MHz
Modulation	GFSK
Number of Channel	26
Maximum Output Power	-0.43 dBm
Normal Voltage	3.7Vdc from battery 5Vdc from Host system
Sample ID	Conducted Test: 4154600 Radiated Test: 4154598
Software Version	N/A

Note:

1. The EUT contains following accessory devices:

Product	Brand	Model	Description
Microphone	IONE	TSB-4015A1NTCA43M3-GP	N/A
USB Cable	YUE YANG	41-200-0244-100S	Length: 2.0m
USB C to 3.5mm cable	PENGJI	41-200-0242-100S	Length: 1.9m
USB C to USB A cable	PENGJI	41-200-0243-100S	Length: 2.1m
USB Audio Receiver	Thermaltake	GHT-THF-RX	N/A

2. The above EUT information is declared by manufacturer and for more detailed features description, please refer the manufacturer's or user's manual.

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6.2. Channel List

26 channels are provided to this EUT:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2403	10	2430	19	2457
2	2406	11	2433	20	2460
3	2409	12	2436	21	2463
4	2412	13	2439	22	2466
5	2415	14	2442	23	2469
6	2418	15	2445	24	2472
7	2421	16	2448	25	2475
8	2424	17	2451	26	2478
9	2427	18	2454	-	-

6.3. Test Condition

Test Item	Test Site No.	Environmental Condition	Input Power	Test Date	Tested by
Antenna Port Conducted Measurement	SR4	23~25°C/ 60~65% RH	5Vdc	2021/08/23~ 2021/08/25	Patrick Kuan
Radiated Spurious Emission	966-2	23~25°C/ 60~65% RH	5Vdc	2021/08/23~ 2021/08/30	Patrick Kuan
AC power Line Conducted Emission	SR1	23~25°C/ 60~65% RH	120Vac/ 60Hz	2021/08/25	Patrick Kuan

FCC Test Firm Registration Number: 498077

6.4. Description of Available Antennas

Ant. No.	Transmitter Circuit	Brand Name	Model Name	Ant. Type	Maximum Gain (dBi)
1	Chain (0)	ACX	AT3216	chip	0.9

Note: The above antenna information was provided from customer and for more detailed features description, please refer the manufacturer's specification or user's manual.

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6.5. Test Mode Applicability and Tested Channel Detail

- The EUT has two power source types: 3.7Vdc from battery and 5Vdc from Adapter, above two types were pre-tested, the worst case was found in the 5Vdc. Therefore only the test data of the 5Vdc was recorded in this report.
- For AC power line conducted emissions, the pre-scan has been determined by AC power 120Vac/60Hz. (worst case)
- The fundamental of the EUT was investigated in three orthogonal axes X-Y/Y-Z/X-Z, it was determined that X-Z plane was worst-case. Therefore, all final radiated testing was performed with the EUT in X-Z plane.
- For Antenna Port Conducted Measurement, this item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- For below 1 GHz radiated emission and AC power line conducted emission have performed all modes of operation were investigated and the worst-case emissions are reported.

Test item	Modulation Type	Available Channel	Test Channel
Radiated Emissions (Above 1GHZ)	GFSK	1 to 26	1,13,26
Radiated Emissions (Below 1GHz)	GFSK	1 to 26	1
AC Power Line Conducted Emission	GFSK	1 to 26	1
Antenna Port Conducted Measurement	GFSK	1 to 26	1,13,26

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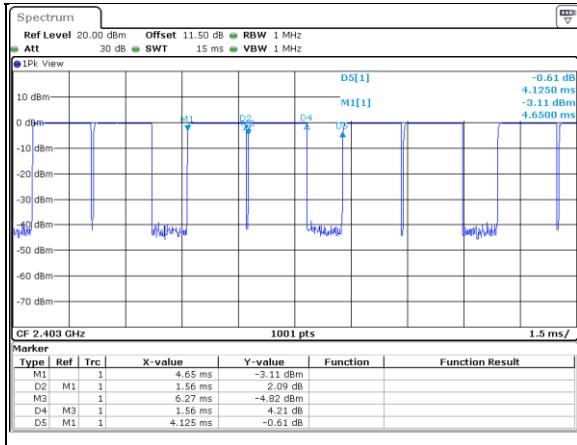
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6.6. Duty cycle

Duty cycle = $3.12/4.125 = 0.756$, Duty factor(dB) = $10 * \log(1/0.756) = 1.22$



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Doc No: 17-EM-F0876 / 6.0



7. Test Equipment

Test Equipment List					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Expired date
Radiated Spurious Emission					
Spectrum Analyzer	Keysight	N9010A	MY56070827	2020/11/11	2021/11/10
EMI Test Receiver	Rohde & Schwarz	ESR7	101754	2020/12/11	2021/12/10
Loop Antenna	ETS lindgren	6502	00213440	2020/12/25	2021/12/24
Trilog-Broadband Antenna with 5dB Attenuator	Schwarzbeck & EMCI	VULB 9168 & N-6-05	774 & AT-N0538	2021/1/13	2022/1/12
Horn Antenna (1-18 GHz)	Schwarzbeck	BBHA 9120 D	01690	2020/12/30	2021/12/29
Horn Antenna (18-40 GHz)	Schwarzbeck	BBHA 9170	781	2020/12/30	2021/12/29
Preamplifier (30-1000 MHz)	EMCI	EMC330E	980405	2021/6/8	2022/6/7
Preamplifier (1-18 GHz)	EMCI	EMC051835BE	980406	2021/2/3	2022/2/2
Preamplifier (18-40GHz)	EMCI	EMC184040SEE	980426	2021/5/19	2022/5/18
Cables	Hanyitek	K1K50-UP0264-K1K50-2500	170214-4 & 170425-2	2021/1/22	2022/1/21
Cables	Hanyitek	K1K50-UP0264-K1K50-2500	170214-1 & 170214-2	2021/1/22	2022/1/21

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Doc No: 17-EM-F0876 / 6.0



Test report No. : 4790066589-US-R0-V0
Page : 13 of 43
Issued date : 2021/10/15
FCC ID : 2AAUCGHTTHF

Test Equipment List					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Expired date
Antenna Port Conducted Measurement					
Spectrum Analyzer	Keysight	N9010A	MY56070834	2020/11/6	2021/11/5
Pulse Power Sensor	Anritsu	MA2411B	1531202	2020/12/21	2021/12/20
Power Meter	Anritsu	ML2495A	1645002	2020/12/21	2021/12/20
AC power Line Conducted Emission					
EMI Test Receiver	Rohde & Schwarz	ESR7	101753	2020/11/17	2021/11/16
V-LISN 9kHz - 30MHz	SCHWARZBECK	NSLK 8127	8127-946	2020/11/3	2021/11/2
Cables	TITAN	CFD200	T0732ACFD20020A300-1	2021/3/2	2022/3/1

UL Software		
Description	Name	Version
Radiated measurement	e3	6.191211 (V6)
Conducted measurement	RF Conducted Test Tools	ver 2.4.0.620b
AC power Line Conducted Emission	EZ_EMCA	UL-3A1.2

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Doc No: 17-EM-F0876 / 6.0



Test report No. : 4790066589-US-R0-V0
Page : 14 of 43
Issued date : 2021/10/15
FCC ID : 2AAUCGHTTHF

8. Description of Test Setup

Support Equipment

ID	Equipment	Brand Name	Model Name	S/N	Remark
A	USB Adapter	HTC	TC P900-US	79H00130-01M	Provide by Lab
B	Microphone	IONE	TSB-4015A1NTCA43M3-GP	N/A	Provide by Client

I/O Cables

ID	Equipment	Brand Name	Model Name	Length (m)	Remark
1	USB C to USB A cable	PENGJI	41-200-0243-100S	2.1	Provide by Client

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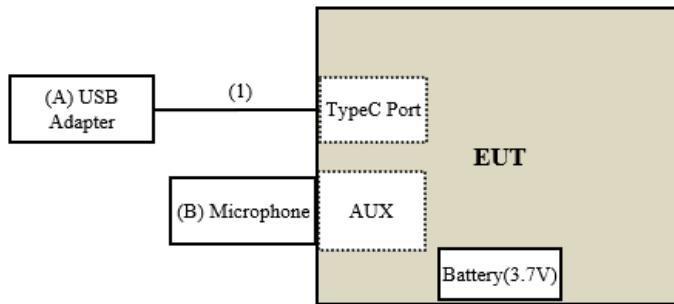
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Test Setup

Click EUT button to operate test mode.

Setup Diagram for Test



Under Table

Remote Site

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9. Test Results

9.1. 6dB Bandwidth

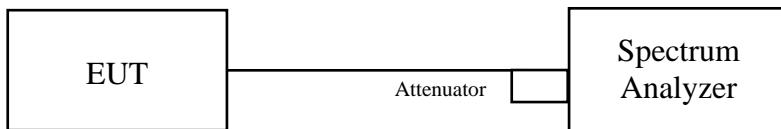
Requirements

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

Test procedure

- a. Set resolution bandwidth (RBW) = 100kHz
- b. Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- c. Trace mode = max hold.
- d. Sweep = auto couple.
- e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Test Setup



The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

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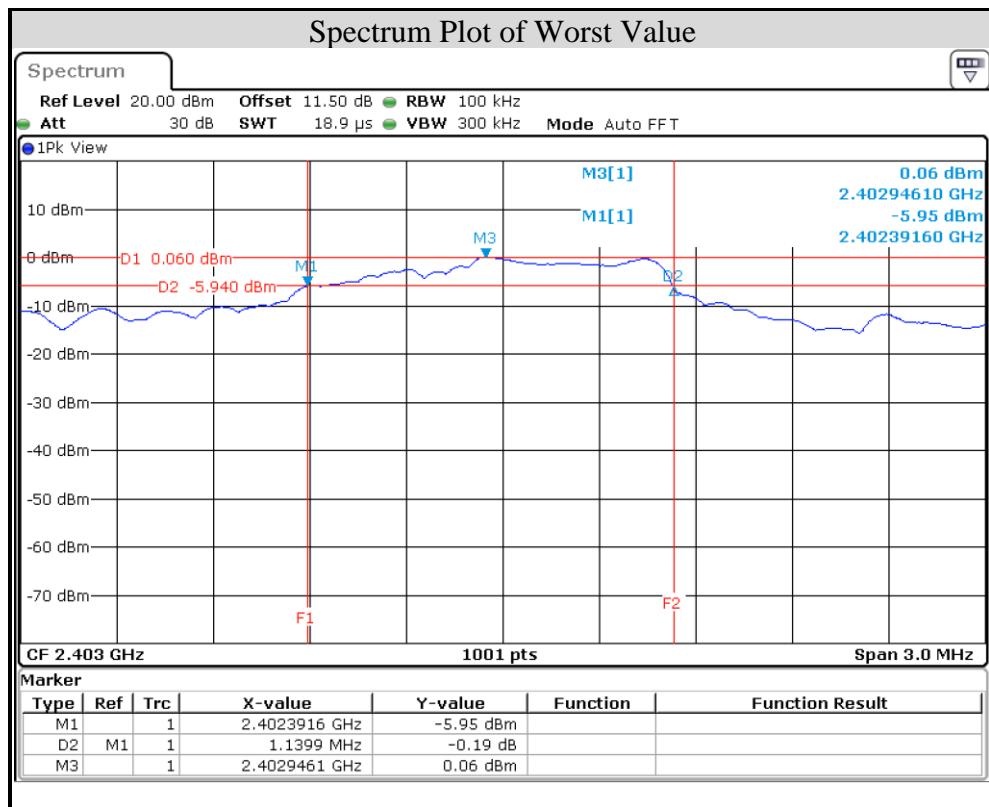
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Test Data

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2403	1.14	0.5	PASS
13	2439	1.33	0.5	PASS
26	2478	1.30	0.5	PASS



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Doc No: 17-EM-F0876 / 6.0



Test report No. : 4790066589-US-R0-V0
Page : 18 of 43
Issued date : 2021/10/15
FCC ID : 2AAUCGHTTHF

9.2. Conducted Output Power

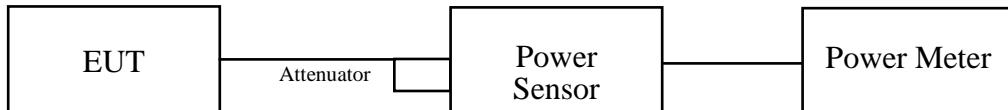
Requirements

For systems using digital modulation in the 2400-2483.5 MHz bands: 1 Watt.

Test Procedure

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

Test Setup



The loss between RF output port of the EUT and the input port of the Power Meter has been taken into consideration.

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Doc No: 17-EM-F0876 / 6.0



Test report No. : 4790066589-US-R0-V0
Page : 19 of 43
Issued date : 2021/10/15
FCC ID : 2AAUCGHTTHF

Test Data

Peak Power

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2403	0.906	-0.43	30	PASS
13	2439	0.785	-1.05	30	PASS
26	2478	0.668	-1.75	30	PASS

Average Power (Reference Only)

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2403	0.867	-0.62
13	2439	0.743	-1.29
26	2478	0.627	-2.03

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9.3. Power Spectral Density

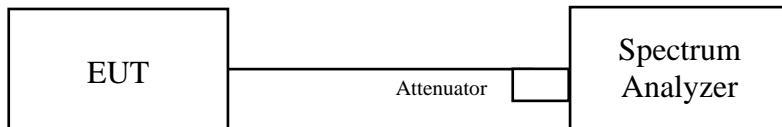
Requirements

The Maximum of Power Spectral Density Measurement is 8dBm in any 3 kHz.

Test procedure

- a. Set analyzer center frequency to DTS channel center frequency.
- b. Set the span to 1.5 times the DTS bandwidth.
- c. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- d. Set the VBW $\geq 3 \times \text{RBW}$.
- e. Detector = peak.
- f. Sweep time = auto couple.
- g. Trace mode = max hold.
- h. Allow trace to fully stabilize.
- i. Use the peak marker function to determine the maximum amplitude level within the RBW.

Test Setup



The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

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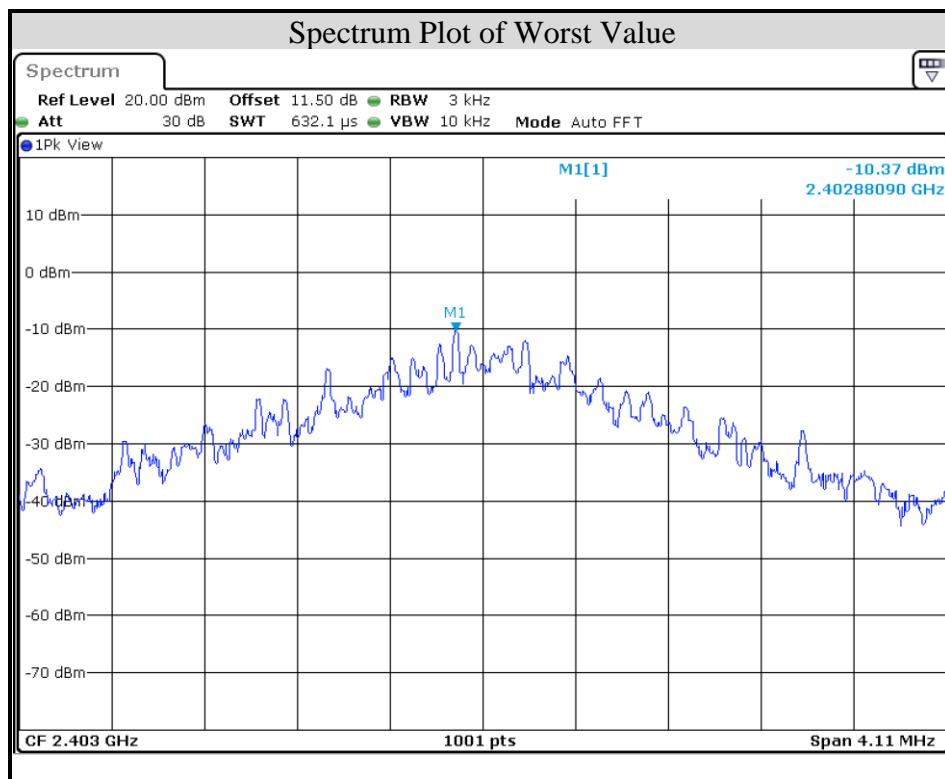
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Doc No: 17-EM-F0876 / 6.0



Test Data

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
1	2403	-10.37	8	PASS
13	2439	-12.27	8	PASS
26	2478	-14.16	8	PASS



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9.4. Conducted Out of Band Emission

Requirements

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b) (3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209 (a) is not required.

Test procedure

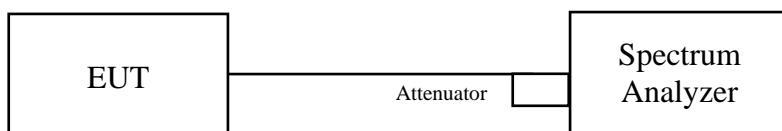
Measurement Procedure REF

- a. Set the RBW = 100 kHz.
- b. Set the VBW \geq 300 kHz.
- c. Set the span to 1.5 times the DTS bandwidth.
- d. Detector = peak.
- e. Sweep time = auto couple.
- f. Trace mode = max hold.
- g. Allow trace to fully stabilize.
- h. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

Measurement Procedure OOBE

- a. Set RBW = 100 kHz.
- b. Set VBW \geq 300 kHz.
- c. Detector = peak.
- d. Sweep = auto couple.
- e. Trace Mode = max hold.
- f. Allow trace to fully stabilize.
- g. Use the peak marker function to determine the maximum amplitude level.

Test Setup



The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

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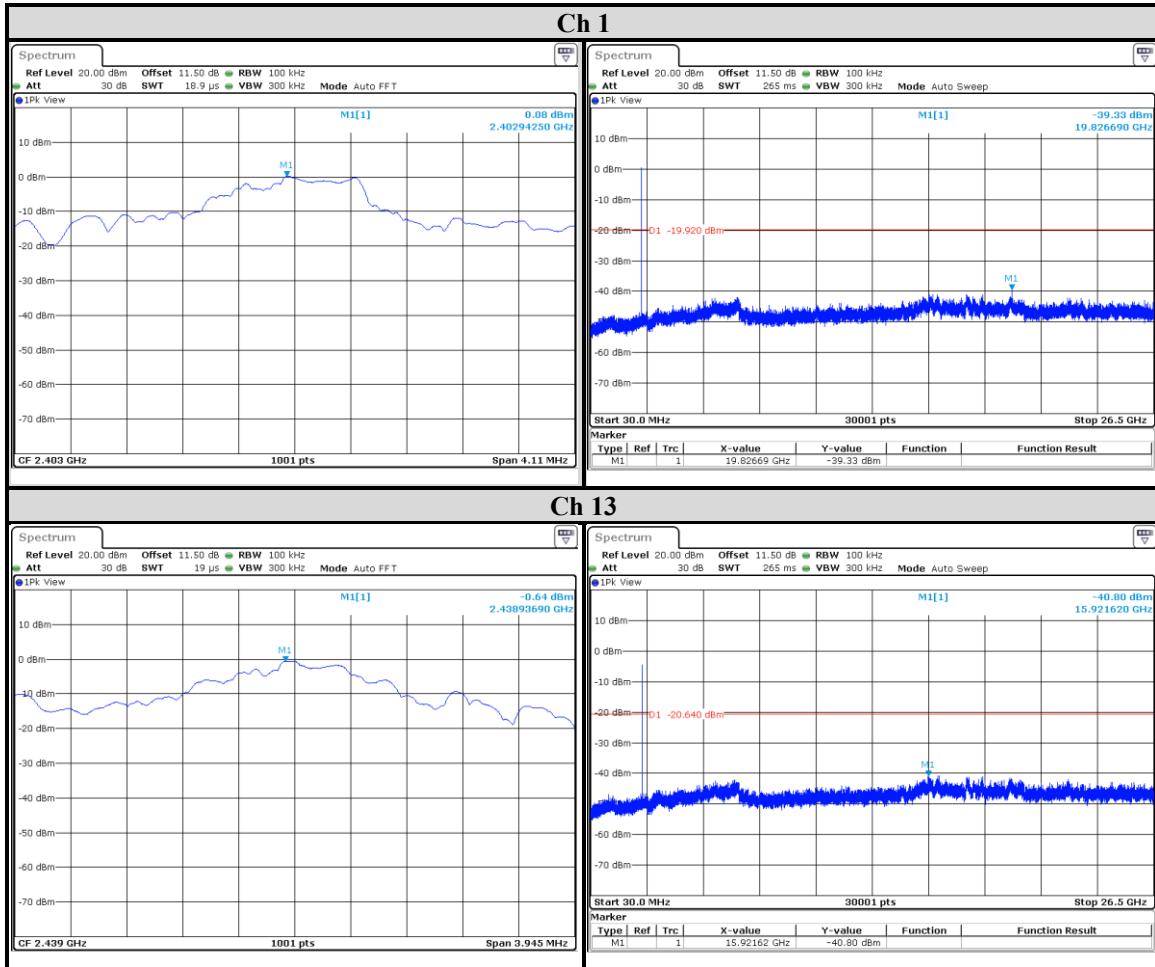
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Doc No: 17-EM-F0876 / 6.0



Test Data



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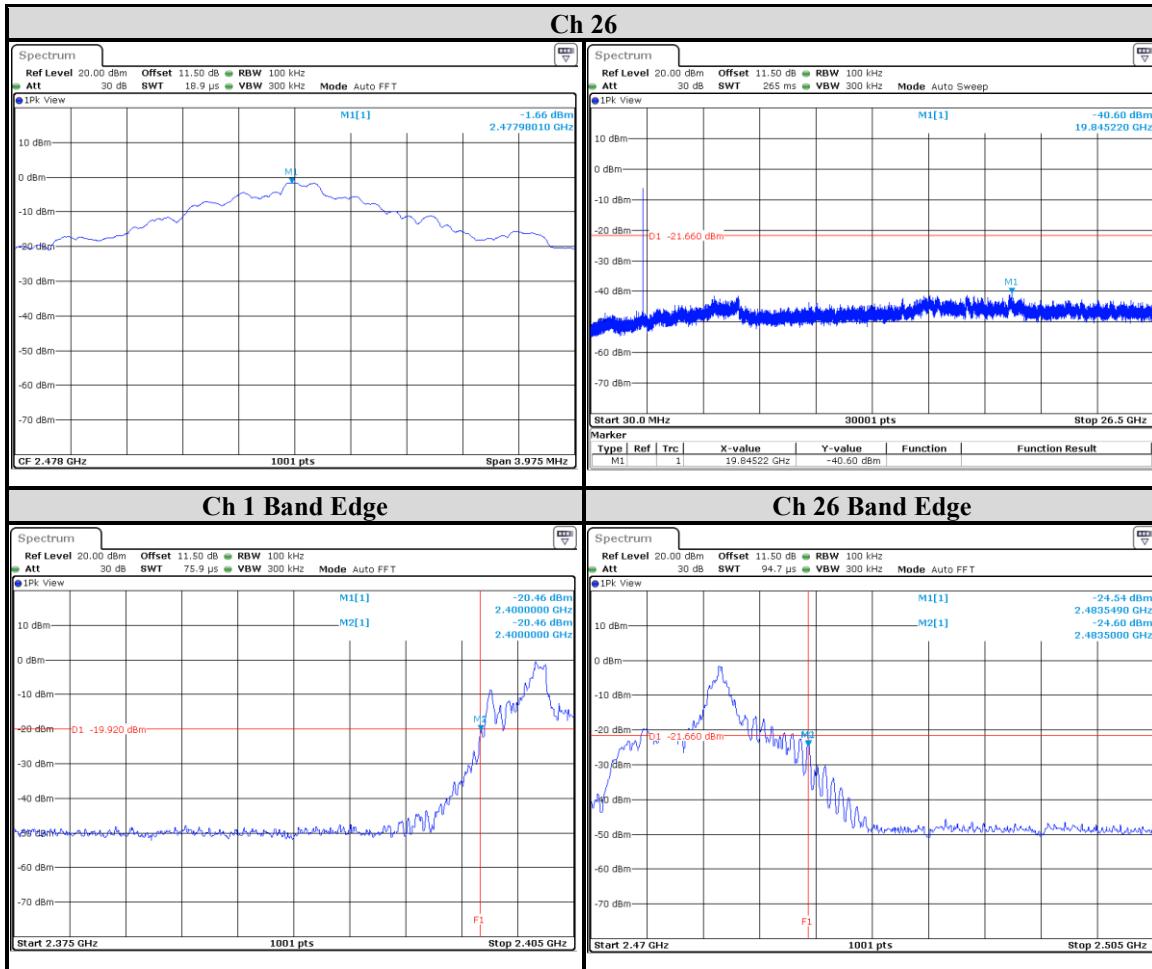
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Test report No. : 4790066589-US-R0-V0
Page : 24 of 43
Issued date : 2021/10/15
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9.5. Radiated Spurious Emission

Requirements

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

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

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dB_uV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

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Test Procedures

[For 9 kHz ~ 30 MHz]

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. For measurement below 30MHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

[For above 30 MHz]

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
- f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

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Doc No: 17-EM-F0876 / 6.0

Note:

- a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
- b. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
- c. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.

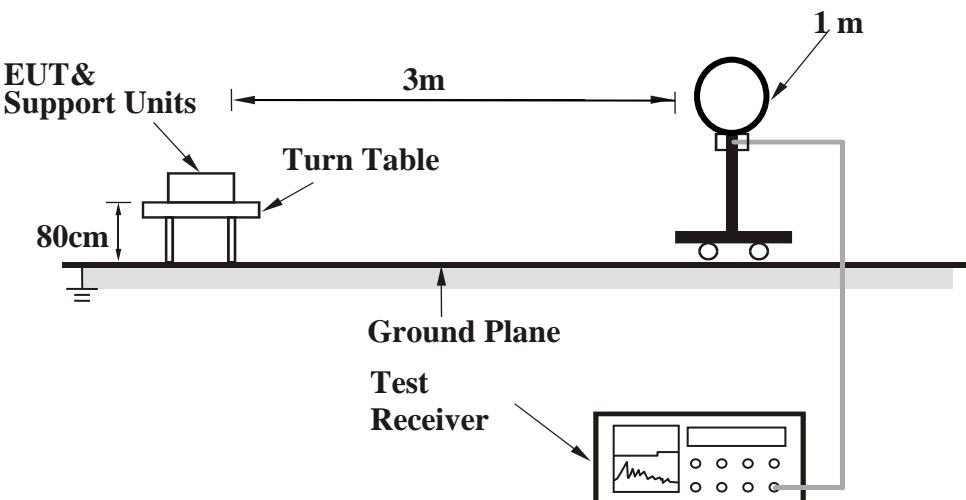
Configuration	Average	
	RBW	VBW
GFSK	1MHz	510Hz

Note: Refer to section 6.6 for duty cycle.

- d. All modes of operation were investigated (includes all external accessories) and the worst-case emissions are reported.

Test Setup

<Frequency Range 9 kHz ~ 30 MHz>



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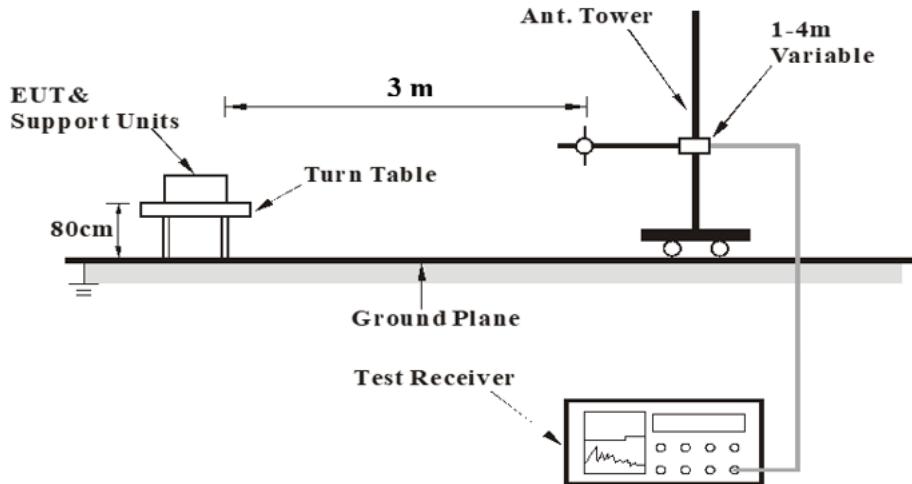
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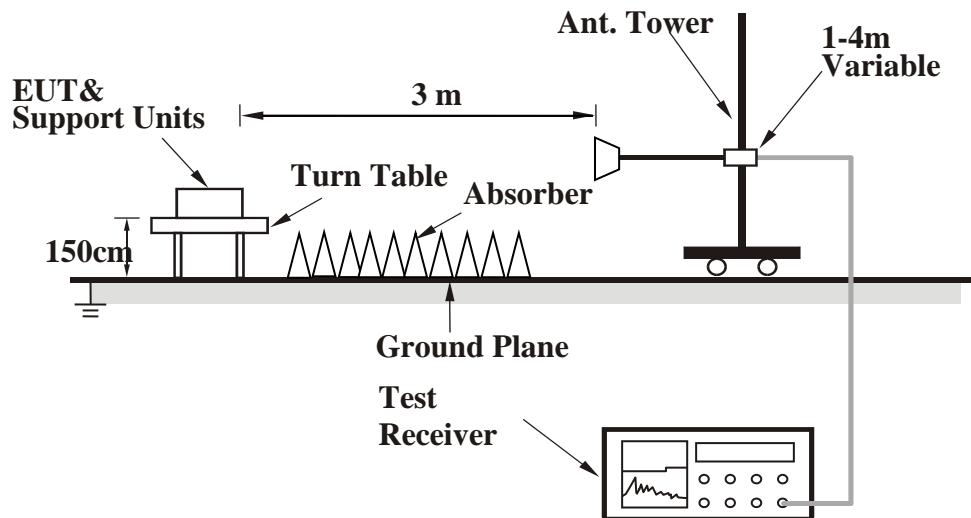
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<Frequency Range 30 MHz ~ 1 GHz >



<Frequency Range above 1 GHz>



For the actual test configuration, please refer to the Setup Configurations.

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Doc No: 17-EM-F0876 / 6.0



Test Data

Above 1GHz Data

EUT Test Condition		Measurement Detail		
Channel	Channel 1	Frequency Range	1 GHz ~ 26.5 GHz	

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
*	4806	49.93	2.46	52.39	74	-21.61	Peak
-	7209	40.64	10.32	50.96	54	-3.04	Average
-	7209	48.19	10.32	58.51	74	-15.49	Peak
-	2389.99	30.4	6.1	36.5	54	-17.5	Average
@	2403	93.25	6.12	99.37	-	-	Average
-	2367.57	46.26	6.07	52.33	74	-21.67	Peak
@	2403	94.99	6.12	101.11	-	-	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
*	4806	50.66	2.46	53.12	74	-20.88	Peak
-	7209	40.57	10.32	50.89	54	-3.11	Average
-	7209	47.31	10.32	57.63	74	-16.37	Peak
-	2366.62	30.33	6.06	36.39	54	-17.61	Average
@	2403	91.42	6.12	97.54	-	-	Average
-	2388.09	43.06	6.1	49.16	74	-24.84	Peak
@	2403	93.12	6.12	99.24	-	-	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@" : Fundamental Frequency.
5. "*" : The peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail					
Channel	Channel 13	Frequency Range			1 GHz ~ 26.5 GHz		

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
*	4878	50.9	2.65	53.55	74	-20.45	Peak
-	7317	40.15	10.6	50.75	54	-3.25	Average
-	7317	45.48	10.6	56.08	74	-17.92	Peak
-	2331.09	30.34	6.1	36.44	54	-17.56	Average
@	2439	91.01	6.11	97.12	-	-	Average
-	2488.03	30.28	6.1	36.38	54	-17.62	Average
-	2350.09	41.55	6.03	47.58	74	-26.42	Peak
@	2439	93.09	6.11	99.2	-	-	Peak
-	2489.93	40.14	6.1	46.24	74	-27.76	Peak

Antenna Polarity & Test Distance: Vertical at 3 m

Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
*	4878	51.17	2.65	53.82	74	-20.18	Peak
-	7317	39.84	10.6	50.44	54	-3.56	Average
-	7317	47.67	10.6	58.27	74	-15.73	Peak
-	2337.74	30.21	6.08	36.29	54	-17.71	Average
@	2439	90.26	6.11	96.37	-	-	Average
-	2490.31	30.27	6.1	36.37	54	-17.63	Average
-	2344.96	40.66	6.05	46.71	74	-27.29	Peak
@	2439	91.03	6.11	97.14	-	-	Peak
-	2488.6	41.3	6.1	47.4	74	-26.6	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@" : Fundamental Frequency.
5. " * ": The peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail					
Channel	Channel 26	Frequency Range			1 GHz ~ 26.5 GHz		

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
*	4956	55.5	2.61	58.11	74	-15.89	Peak
-	7434	36.96	10.85	47.81	54	-6.19	Average
-	7434	43.65	10.85	54.5	74	-19.5	Peak
@	2478	86.05	6.1	92.15	-	-	Average
-	2483.85	40.29	6.1	46.39	54	-7.61	Average
@	2478	88.42	6.1	94.52	-	-	Peak
-	2484.04	61.13	6.1	67.23	74	-6.77	Peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
*	4956	55.32	2.61	57.93	74	-16.07	Peak
-	7434	37.09	10.85	47.94	54	-6.06	Average
-	7434	45.5	10.85	56.35	74	-17.65	Peak
@	2478	84.92	6.1	91.02	-	-	Average
-	2483.66	40.05	6.1	46.15	54	-7.85	Average
@	2478	87.36	6.1	93.46	-	-	Peak
-	2484.23	67.85	6.1	73.95	74	-0.05	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@" : Fundamental Frequency.
5. " * ": The peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.
6. The other emission levels were very low against the limit.

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9 kHz ~ 30 MHz Data:

For 9 kHz to 30 MHz radiated emission have performed all modes of operation were investigated. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

No non-compliance noted:

KDB 414788 D01 OATS and Chamber Correlation Justification

- Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.
- OATs and chamber correlation testing had been performed and chamber measured test results is the worst case test result.

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30m open area test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

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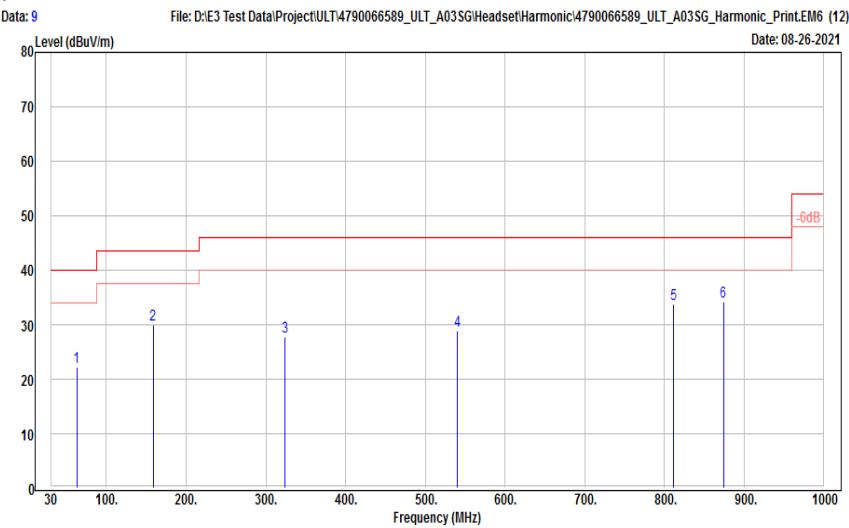
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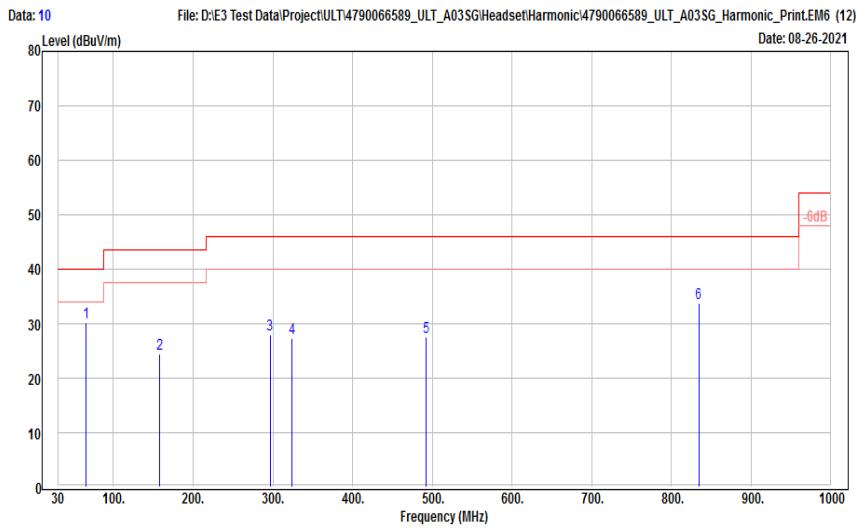
30 MHz ~ 1 GHz Data

EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	30 MHz ~ 1 GHz

Horizontal



Vertical





Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	62.98	34.69	-12.44	22.25	40	-17.75	Peak
-	159.01	41.25	-11.19	30.06	43.5	-13.44	Peak
-	323.91	36.97	-9.18	27.79	46	-18.21	Peak
-	540.22	32.35	-3.47	28.88	46	-17.12	Peak
-	811.82	32.42	1.36	33.78	46	-12.22	Peak
-	873.9	31.9	2.34	34.24	46	-11.76	Peak

Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	65.89	43.34	-13.1	30.24	40	-9.76	Peak
-	158.04	35.56	-11.09	24.47	43.5	-19.03	Peak
-	296.75	38.13	-10.08	28.05	46	-17.95	Peak
-	323.91	36.41	-9.18	27.23	46	-18.77	Peak
-	492.69	32.38	-4.82	27.56	46	-18.44	Peak
-	834.13	32.1	1.73	33.83	46	-12.17	Peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. The peak result complies with QP limit, QP result is deemed to comply with QP limit.
5. The other emission levels were very low against the limit.

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9.6. AC Power Line Conducted Emission

Requirements

Frequency (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

Test Procedures

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

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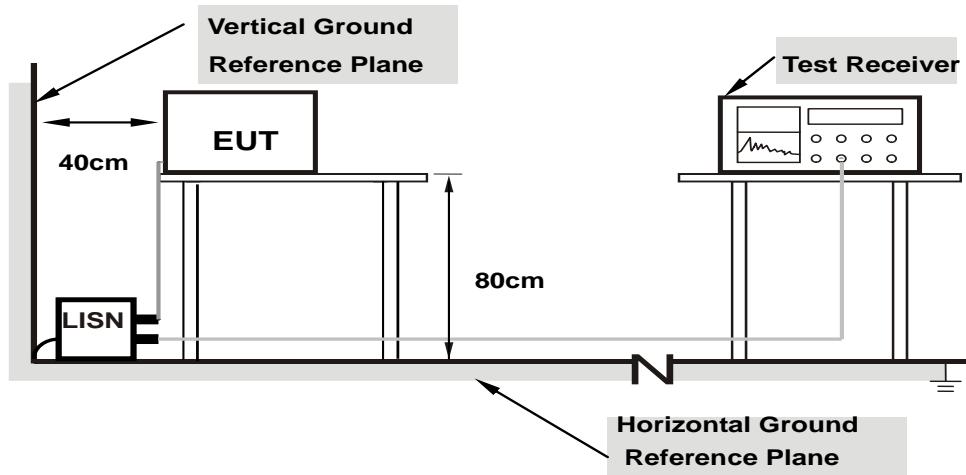
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Test Setup



Note: 1. Support units were connected to second LISN.

For the actual test configuration, please refer to the Setup Configurations.

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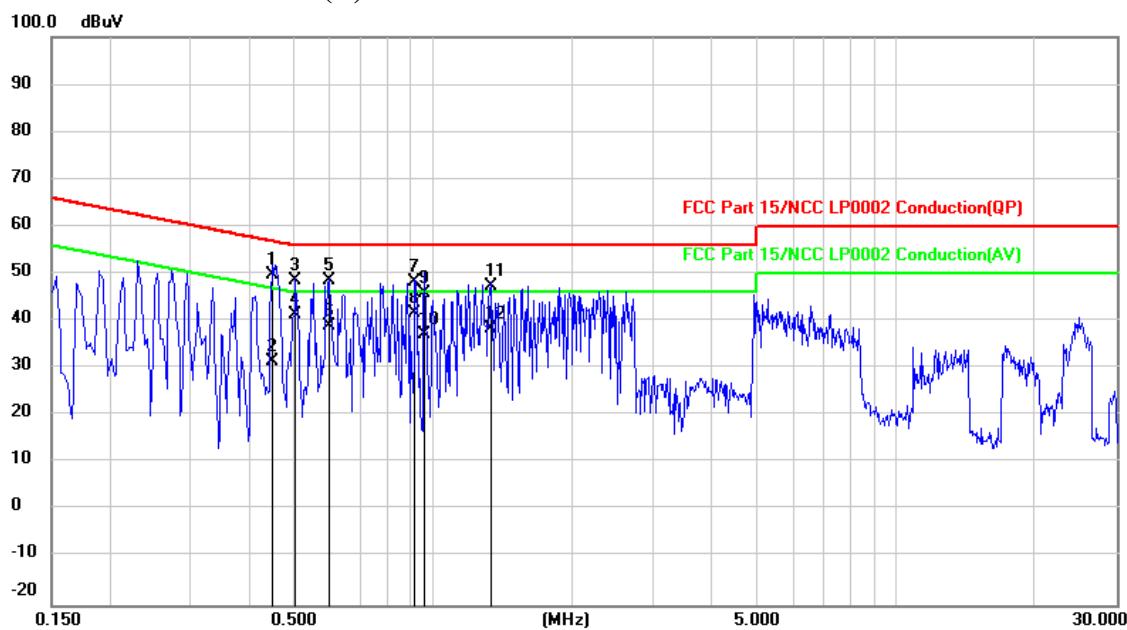


Test report No. : 4790066589-US-R0-V0
Page : 37 of 43
Issued date : 2021/10/15
FCC ID : 2AAUCGHTTHF

Test Data

EUT Test Condition		Measurement Detail	
Channel	Channel 1	Frequency Range	150 kHz ~ 30 MHz

Phase of Power : Line (L)



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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	dB	(dBuV)	(dBuV)	(dB)	
1	0.4500	40.23	9.62	49.85	56.88	-7.03	QP
2	0.4500	21.83	9.62	31.45	46.88	-15.43	AVG
3	0.5060	38.99	9.62	48.61	56.00	-7.39	QP
4	0.5060	31.63	9.62	41.25	46.00	-4.75	AVG
5	0.5980	38.96	9.62	48.58	56.00	-7.42	QP
6	0.5980	29.38	9.62	39.00	46.00	-7.00	AVG
7	0.9180	38.69	9.64	48.33	56.00	-7.67	QP
8	0.9180	31.95	9.64	41.59	46.00	-4.41	AVG
9	0.9620	36.22	9.64	45.86	56.00	-10.14	QP
10	0.9620	27.58	9.64	37.22	46.00	-8.78	AVG
11	1.3340	37.76	9.64	47.40	56.00	-8.60	QP
12	1.3340	28.71	9.64	38.35	46.00	-7.65	AVG

Remarks:

1. Result value (dBuV) = Reading value (dBuV) + Correction Factor (dB)
2. Margin(dB) = Result value (dBuV) - Limit value (dBuV)
3. Correction Factor(dB) = Insertion loss(dB) + Cable loss(dB)
4. The other emission levels were very low against the limit.

Underwriters Laboratories Taiwan Co., Ltd.

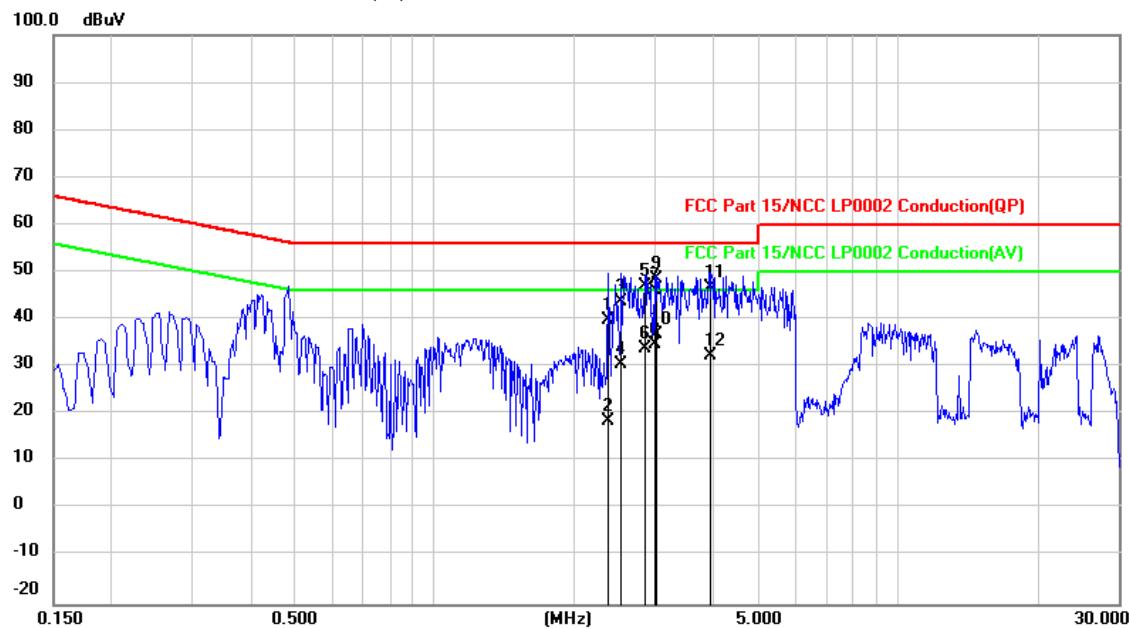
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Phase of Power : Neutral (N)



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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	dB	(dBuV)	(dBuV)	(dB)	
1	2.3699	30.26	9.66	39.92	56.00	-16.08	QP
2	2.3699	9.02	9.66	18.68	46.00	-27.32	AVG
3	2.5300	34.20	9.67	43.87	56.00	-12.13	QP
4	2.5300	21.02	9.67	30.69	46.00	-15.31	AVG
5	2.8460	37.31	9.67	46.98	56.00	-9.02	QP
6	2.8460	24.06	9.67	33.73	46.00	-12.27	AVG
7	2.9860	36.59	9.67	46.26	56.00	-9.74	QP
8	2.9860	25.22	9.67	34.89	46.00	-11.11	AVG
9	3.0220	38.76	9.68	48.44	56.00	-7.56	QP
10	3.0220	27.19	9.68	36.87	46.00	-9.13	AVG
11	3.9460	36.94	9.70	46.64	56.00	-9.36	QP
12	3.9460	22.79	9.70	32.49	46.00	-13.51	AVG

Remarks:

1. Result value (dBuV) = Reading value (dBuV) + Correction Factor (dB)
2. Margin(dB) = Result value (dBuV) - Limit value (dBuV)
3. Correction Factor(dB) = Insertion loss(dB) + Cable loss(dB)
4. The other emission levels were very low against the limit.

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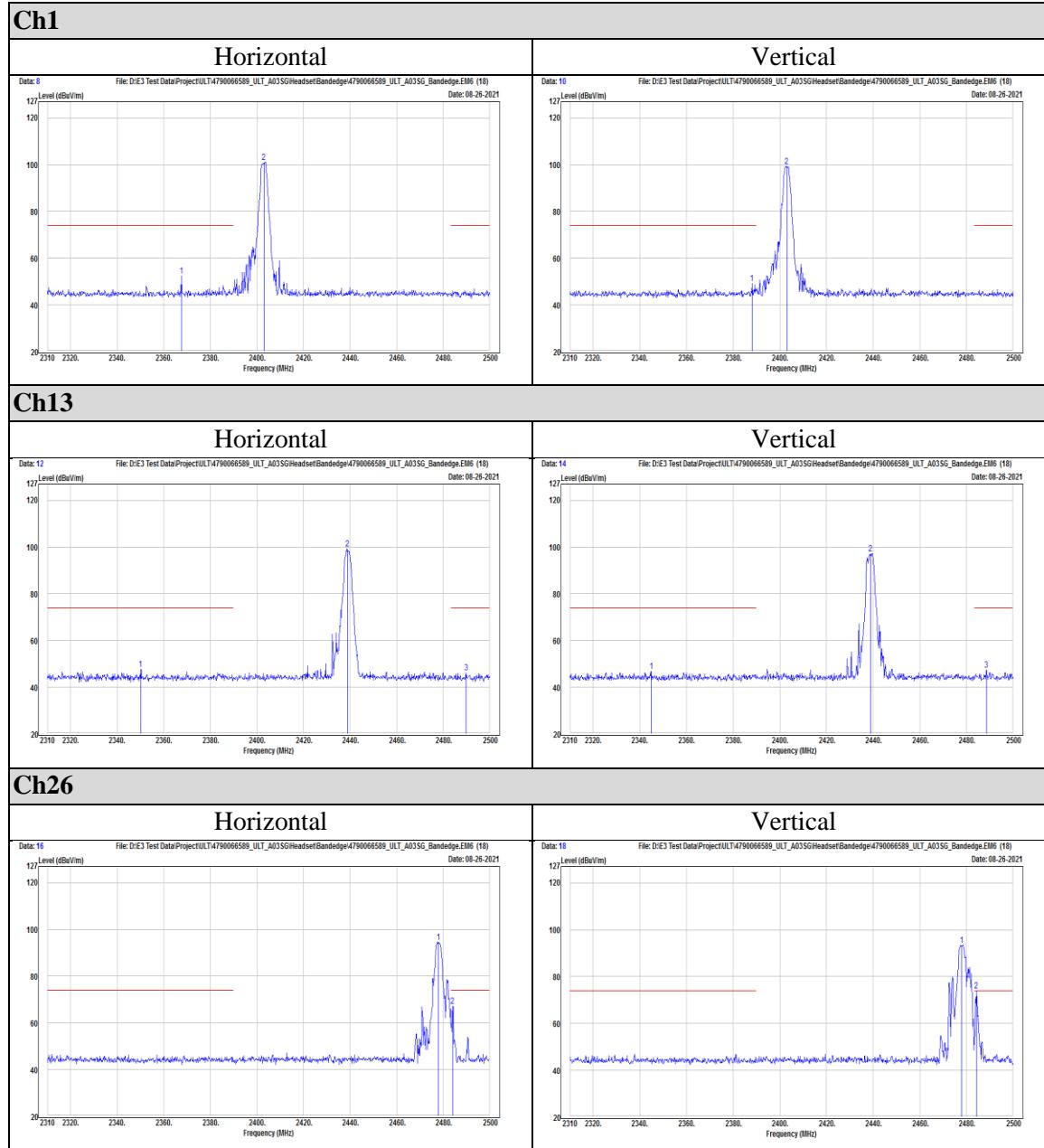
Facsimile (FAX) :+886-3-583-7948

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Appendix I Radiated Band Edge Measurement

Peak



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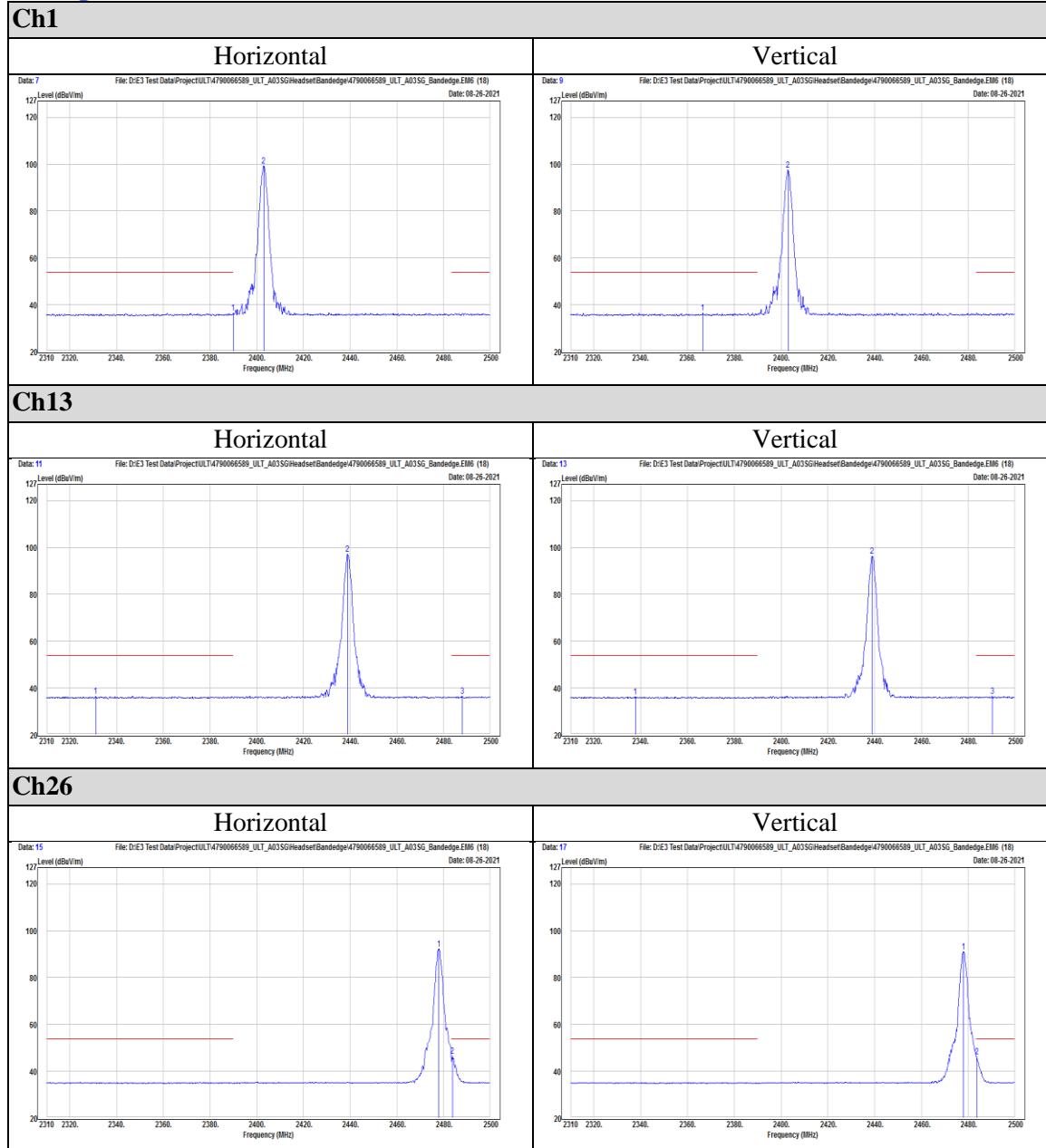
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Average



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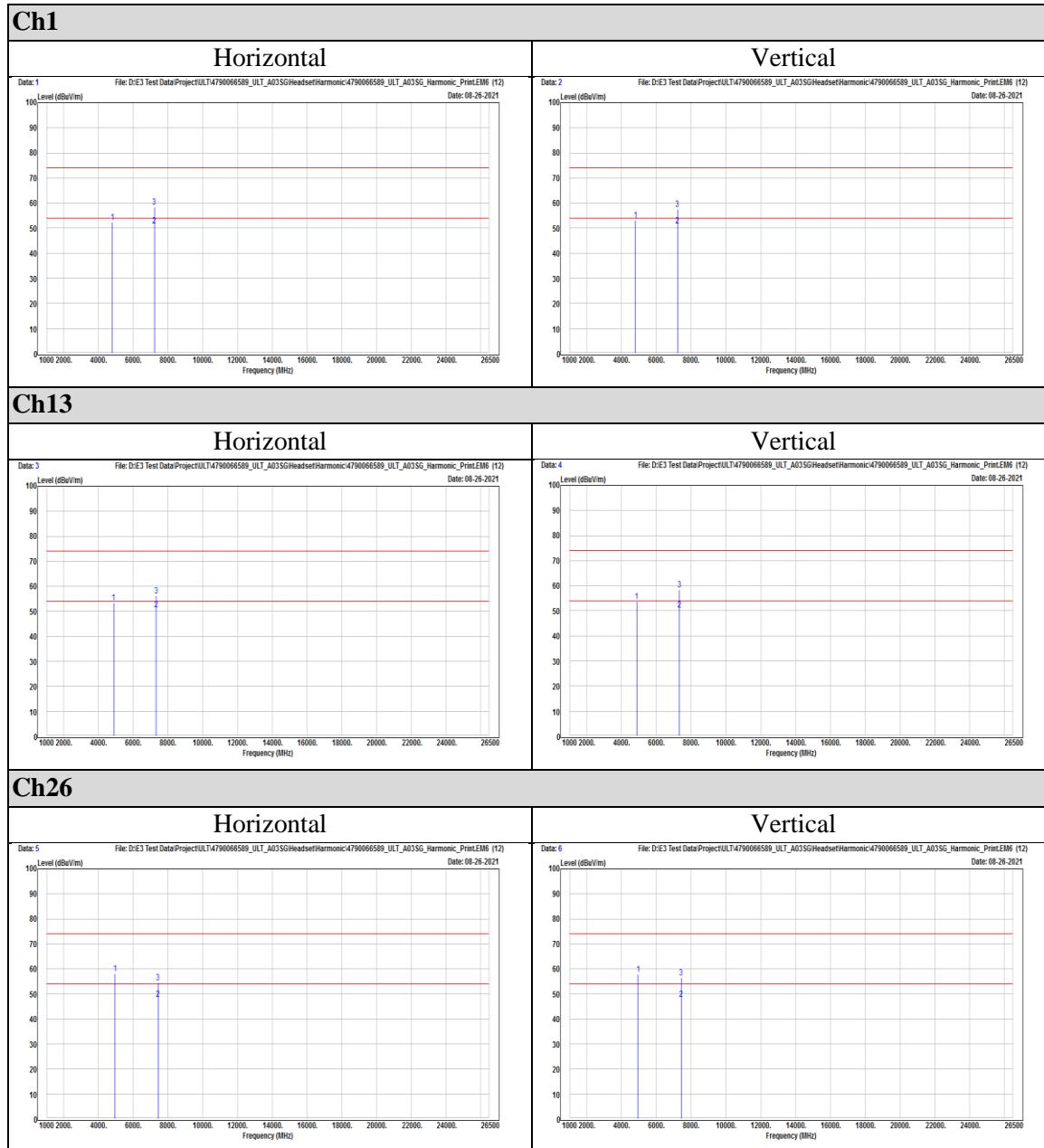
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Appendix II Radiated Spurious Emission Measurement



END OF REPORT

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