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RADIO TEST REPORT

Product : RetinaVue 700 Imager

Model Name : Retina Vue 700 Imager

FCC ID : 2AFB3WA-WEC700

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

Received Date : Jun. 28, 2018

Test Date : Jul. 12, 2018 ~ Feb. 12, 2019

Issued Date : Mar. 26, 2019

Applicant : Medimaging Integrated Solution Inc

1st FL, 7 R&D Rd II, Hsinchu Science Park, Hsinchu,

30076, 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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REVISION HISTORY

Original Test Report No.: 4788520121-US-R0-V0

Rev.	Test report No.	Date	Page revised	Contents
Original	4788520121-US-R0-V0	Jan. 30, 2019	-	Initial issue
-			P.1,4	Modify test date
			P. 27, 29	Modify Ch1 plots
	4788520121-US-R0-V0	Feb. 13, 2019	P. 32	Add test procedure for 9kHz~30MHz
			P.44	Add Below 1GHz data and 9kHz~30MHz data
-	4788520121-US-R0-V0	Feb. 19, 2019	P.44	Add description
-	4788520121-US-R0-V0	Feb. 20, 2019	P.11	Add Note 5
-	4788520121-US-R0-V0	Mar. 26, 2019	P.44	Modify description

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1. Attestation of Test Results

APPLICANT: Medimaging Integrated Solution Inc

1st FL, 7 R&D Rd II, Hsinchu Science Park, Hsinchu, 30076,

Taiwan

MANUFACTURER Medimaging Integrated Solution Inc

1st FL, 7 R&D Rd II, Hsinchu Science Park, Hsinchu, 30076,

Taiwan

EUT DESCRIPTION: RetinaVue 700 Imager

BRAND: Welch Allyn

MODEL: RetinaVue 700 Imager

SAMPLE STAGE: Production equivalent

DATE of TESTED: Jul. 12, 2018 ~ Feb. 12, 2019

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:

Approved and Authorized By:

Evelyn Lee Project Handler Date: Mar. 26, 2019

Stanley Wu

Date: Mar. 26, 2019

Senior Project Engineer

Underwriters Laboratories Taiwan Co., Ltd.

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2. Summary of Test Results

Summary of Test Results						
FCC Clause	FCC Clause Test Items					
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	15.207 AC Power Conducted Emission					
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

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, KDB558074 D01 DTS Meas Guidance v05, KDB414788 D01 Radiated Test Site v01, 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. The full scope of accreditation can be viewed at http://accreditation.taftw.org.tw/taf/public/basic/viewApplyItems.action?unitNo=3398

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5. Measurement Uncertainty

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

Test Item	Measurement Frequency Range	K	U(dB)
Conducted disturbance at mains terminals ports	0.15MHz ~ 30MHz	2	2.6
RF Conducted	9 kHz - 40GHz	2	1.0
Radiated disturbance below 30MHz	9 kHz - 30 MHz	2	2.4
Radiated disturbance below 1 GHz	30MHz ~ 1GHz	2	5.5
Radiated disturbance above 1 GHz	1GHz ~ 40GHz	2	5.0

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6. Equipment under Test

6.1. Description of EUT

Product	RetinaVue 700 Imager	
Brand Name	Welch Allyn	
Model Name	RetinaVue 700 Imager	
Operating Frequency	2412MHz ~ 2462MHz	
Modulation	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM	
Transfer Rate	802.11b: up to 11Mbps 802.11g: up to 54Mbps 802.11n: up to MCS7	
Number of Channel	11 for 802.11b, 802.11g, 802.11n (HT20)	
Maximum Output Power	802.11b: 17.74 dBm 802.11g: 22.10 dBm 802.11n (HT20): 21.97 dBm	
Normal Voltage	100~240Vac for adapter 7.2Vdc for battery	
Hardware Version	AM5718 Main Board (EUT): A2 WB45NBT (RF Module): 04R	
Software Version	V1.00.00	

Note

1. The EUT provides one completed transmitter and one receiver.

Modulation Mode	Tx,Rx Function
802.11b	1TX,1RX
802.11g	1TX,1RX
802.11n (HT20)	1TX,1RX

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2. The EUT contains following accessory of devices.

Product	Brand	Model	Description	
Power Adapter	EDACPOWE	EM1024PR	Input:100~240Vac, 1.0~0.5A, 50-60Hz	
Tower Adapter	R ELEC	LWH0241 K	Output:12Vdc/3A	
Rechargeable	M::C	33.0143250001	7.2Vdc, 3200 mAh	
Li-ion Battery	MiiS	33.0146500401	7.2Vdc, 6400 mAh (Option)	
USB Cable	N/A	N/A	Length: 1.8m, with 2 cores, shielded	

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

6.2. Channel List

11 channels are provided for 802.11b, 802.11g and 802.11n (HT20):

Channel	Frequency	Channel	Frequency
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz	-	-

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6.3. Test Condition

Test Item	Test Site No.	Environmental Condition	Input Power	Test Date	Tested by
Antenna Port Conducted Measurement	SR4	24°C / 68%RH	120Vac / 60 Hz	Jul. 26, 2018 ~ Feb. 12, 2019	Wayne Chen
Radiated Spurious Emission	966-2	26°C / 60%RH	120Vac / 60 Hz	Jul. 12, 2018 ~ Dec. 04, 2018	Wayne Chen
AC power Line Conducted Emission	SR1	25°C / 63%RH	120Vac / 60 Hz	Jul. 12, 2018 ~ Jul. 24, 2018	Wayne Chen

FCC Test Firm Registration Number: 498077

6.4. Description Of Available Antennas

Antenna	Brand Name	Model Name	Antenna Type	Antenna Gain(dBi)
0	Laird	ENB2449A1- 18MHF1	Embeded Dipole	2

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6.5. Test Mode Applicability and Tested Channel Detail

Test item	Mode	Modulation Technology	Modulation Type	Available Channel	Test Channel	Data Rate
Radiated	802.11b	DSSS	DBPSK	1 to 11	1,6,11	1.0
Emissions	802.11g	OFDM	BPSK	1 to 11	1,6,11	6.0
(Above 1GHz)	802.11n(HT20)	OFDM	BPSK	1 to 11	1,6,11	MCS0
Radiated Emissions (Below 1GHz)	802.11n(HT20)	OFDM	BPSK	1 to 11	1	MCS0
AC Power Line Conducted Emission	802.11n(HT20)	OFDM	BPSK	1 to 11	1	MCS0
Antenna Port	802.11b	DSSS	DBPSK	1 to 11	1,6,11	1.0
Conducted	802.11g	OFDM	BPSK	1 to 11	1,6,11	6.0
Measurement	802.11n(HT20)	OFDM	BPSK	1 to 11	1,6,11	MCS0

Note:

- 1. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- 2. For below 1 GHz radiated emission and AC power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case.
- 3. 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.
- 4. The fundamental of the EUT was investigated in three orthogonal axes X/Y/Z, it was determined that X axis was worst-case. Therefore, all final radiated testing was performed with the EUT in X axis.
- 5. The USB-B port was for data transfer (read/write) function, and pre-scan radiation has been determined by the stand-alone mode (the worst case).

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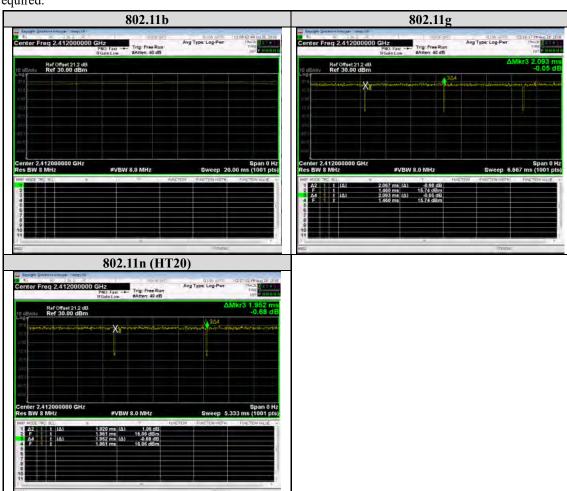
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6.6. Duty cycle

802.11b: Duty cycle of test signal is \geq 98 %, duty factor is not required.

802.11g: Duty cycle = 2.067/2.093 = 0.9876, duty cycle of test signal is ≥ 98 %, duty factor is not required.

802.11n (HT20): Duty cycle = 1.92/1.952 = 0.9836, duty cycle of test signal is ≥ 98 %, duty factor is not required.



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7. Test Equipment

	Test Equipment List						
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval		
	R	adiated Spuriou	s Emission				
Spectrum	Keysight	N9010A	MY56070827	Nov. 28, 2017	1 year		
Analyzer	Reysight	NOTOA	W1130070827	Nov. 8, 2018	1 year		
EMI Test	Rohde &	ESR7	101754	Nov. 28, 2017	1 year		
Receiver	Schwarz	ESK/	101/34	Nov. 8, 2018	1 year		
Loop Antenna	ETS lindgren	6502	00213440	Dec. 7, 2017	1 year		
Trilog- Broadband Antenna with 5dB Attenuator	Schwarzbeck & EMCI	VULB 9168 & N-6-05	774 & AT- N0538	Feb. 12, 2018	1 year		
Horn Antenna (1-18 GHz)	Schwarzbeck	BBHA 9120 D	01690	Jan. 23, 2018	1 year		
Horn Antenna(18-40 GHz)	Schwarzbeck	BBHA 9170	781	Jan.12, 2018	1 year		
Preamplifier (30- 1000 MHz)	EMCI	EMC330E	980405	Feb. 1, 2018	1 year		
Preamplifier (1- 18 GHz)	EMCI	EMC051835BE	980406	Feb. 2, 2018	1 year		
Preamplifier (18-40GHz)	EMCI	EMC184040SE E	980426	Apr. 26, 2018	1 year		
RF Cable (9 KHz~18 GHz)	UltraPhase & EMC Instrument	A1K50- UP0358- A1K50- 1500&EMC106 -NM-SM- 2500/7000	170111- 4&170219/170 102	Feb. 1, 2018	1 year		
RF Cable (18 GHz~40 GHz)	UltraPhase	K1K50- UP0264- K1K50- 2500/2500/600	170214- 2/170214- 6/170111-1	Feb. 1, 2018	1 year		

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	Test Equipment List						
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval		
	Antenna	a Port Conduc	ted Measuremen	t			
Spectrum	Voyaight	N9010A	MY56070834	Nov. 20, 2017	1 year		
Analyzer	Keysight	N9010A	WH 1 300 / 0834	Nov. 8, 2018	1 year		
Pulse Power	Anrisu	MA2411B	1531202	Dec. 14, 2017	1 year		
Sensor	Alliisu	WIAZŦIID	1331202	Dec. 17, 2018	1 year		
Power Meter	ower Meter Anrisu ML2495A 1645002	1645002	Dec. 14, 2017	1 voor			
Tower Meter	Alliisu	WILZ495A	1043002	Dec. 17, 2018	1 year		
	AC po	wer Line Con	ducted Emission				
EMI Test	Rohde &	ESR7	101753	Nov. 28, 2017	1 year		
Receiver	Schwarz	ESK/	101/33	Nov. 14, 2018	1 year		
Two-Line V-	Rohde &	END/216	102126	Aug. 2, 2017	1 year		
Network	Schwarz	ENV216	102136	Aug. 5, 2018	1 year		
Impuls-Begrenzer	Rohde &	EGI12 72	102210 04	July 31, 2017	1 year		
Pulse Limiter	Schwarz	ESH3-Z2	102219-Qt	Aug. 5, 2018	1 year		
Cables	Huber+Suhner	RG 214/U	FCC-BCICF- 4_RF	Feb. 1, 2018	1 year		

UL Software

Description	Name	Version
Radiated measurement	EZ_EMC	1.1.4.2
Conducted measurement	Keysight.TestSystem	1.0.0.0
AC power Line Conducted Emission	EZ_EMC	1.1.4.2

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8. Description of Test Setup

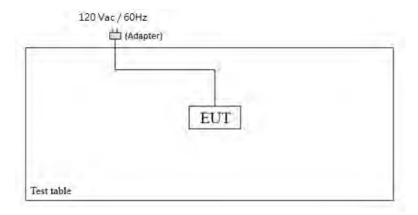
Support Equipment

Item	Equipment	Brand Name	Model Name	S/N
1	Notebook	DELL	Latitude E5470	3JFKWF2

Test Setup

Controlled using a bespoke application (Teraterm469) on a test Notebook. The application was used to enable a continuous transmission mode and to select the test channels, data rates, modulation schemes and power setting as required.

Setup Diagram for Test



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9. Test Results

9.1. 6dB Bandwidth

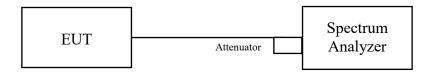
Requirements

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 x 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



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Test Data

802.11b

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	7.08	0.5	Pass
6	2437	7.08	0.5	Pass
11	2462	7.08	0.5	Pass

802.11g

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	16.32	0.5	Pass
6	2437	16.32	0.5	Pass
11	2462	16.32	0.5	Pass

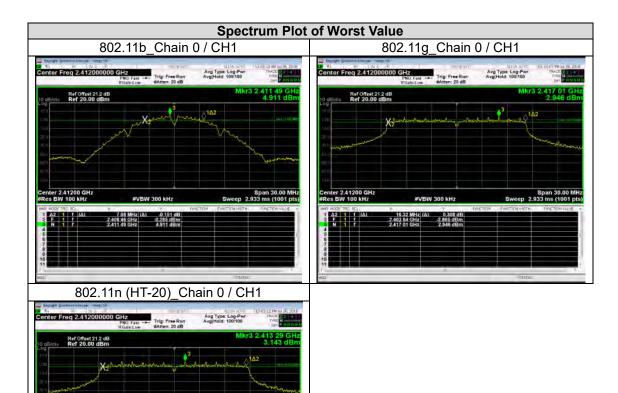
802.11n (HT20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	17.07	0.5	Pass
6	2437	17.31	0.5	Pass
11	2462	17.28	0.5	Pass

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17.07 MHz (Δ) 2.403 48 GHz 2.413 29 GHz



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9.2. Conducted output power

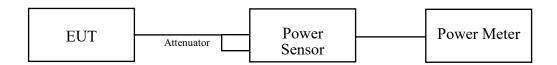
Requirements

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



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Test Data

802.11b

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	51.17	17.09	30	Pass
6	2437	59.43	17.74	30	Pass
11	2462	51.76	17.14	30	Pass

802.11g

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	157.40	21.97	30	Pass
6	2437	162.18	22.10	30	Pass
11	2462	122.18	20.87	30	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	148.94	21.73	30	Pass
6	2437	157.40	21.97	30	Pass
11	2462	119.12	20.76	30	Pass

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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: $3 \text{ kHz} \le \text{RBW} \le 100 \text{ kHz}$.
- d. Set the VBW \geq 3 × 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



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Test Data

802.11b

Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
1	2412	-11.109	8	Pass
6	2437	-10.583	8	Pass
11	2462	-11.160	8	Pass

802.11g

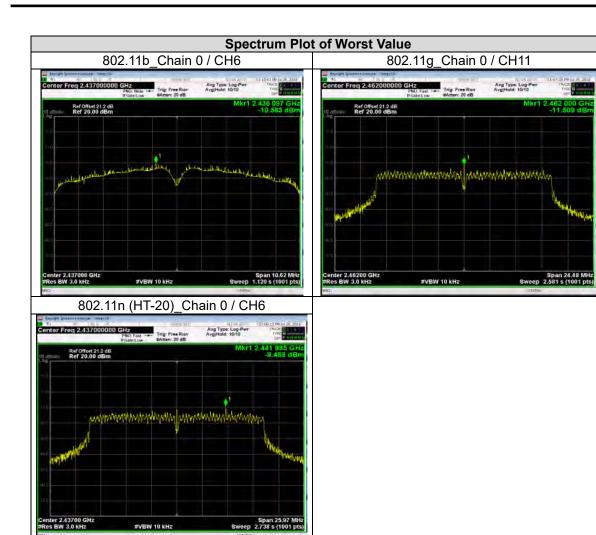
Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail
1	2412	-11.637	8	Pass
6	2437	-11.636	8	Pass
11	2462	-11.509	8	Pass

802.11n (HT20)

Channel	Frequency (MHz)	PSD (dBm/3 kHz)	Limit (dBm/3 kHz)	Pass / Fail	
1	2412	-9.733	8	Pass	
6	2437	-9.488	8	Pass	
11	2462	-9.953	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

- 1. Set the RBW = 100 kHz.
- 2. Set the VBW \geq 300 kHz.
- 3. Set the span to 1.5 times the DTS bandwidth.
- 4. Detector = peak.
- 5. Sweep time = auto couple.
- 6. Trace mode = max hold.
- 7. Allow trace to fully stabilize.
- 8. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

Measurement Procedure OOBE

- 1. Set RBW = 100 kHz.
- 2. Set VBW \geq 300 kHz.
- 3. Detector = peak.
- 4. Sweep = auto couple.
- 5. Trace Mode = max hold.
- 6. Allow trace to fully stabilize.
- 7. Use the peak marker function to determine the maximum amplitude level.

Test Setup



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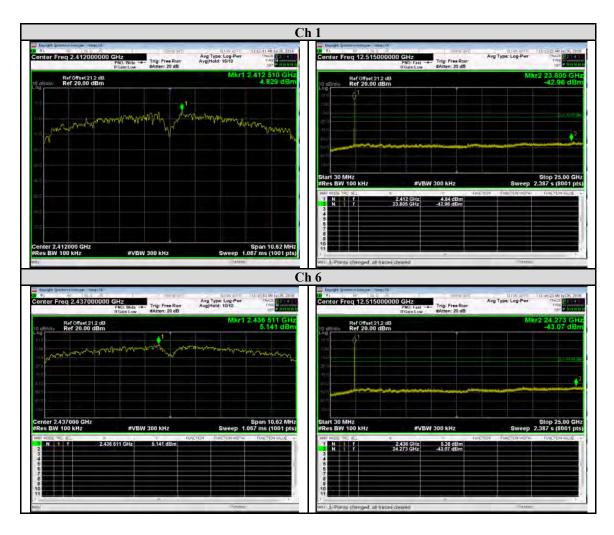
Facsimile (FAX) :+886-3-583-7948 Doc No: 17-EM-F0876 / 2.0



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Test Data

802.11b



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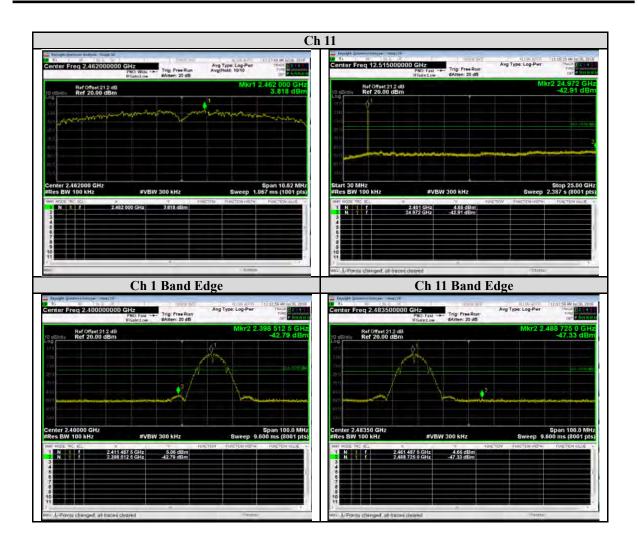
Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

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802.11g



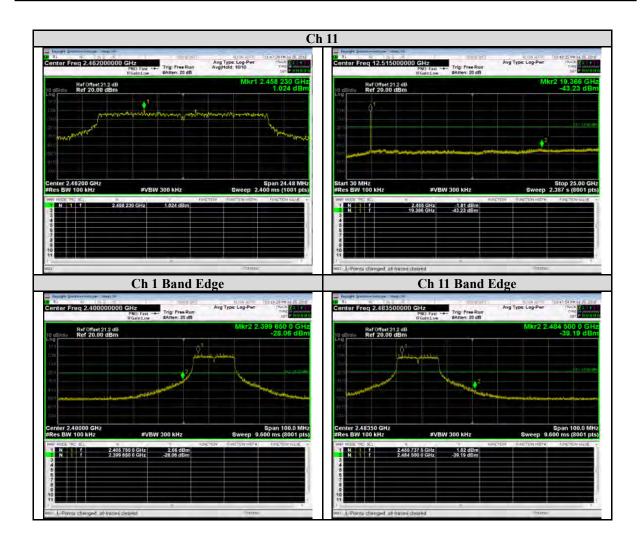
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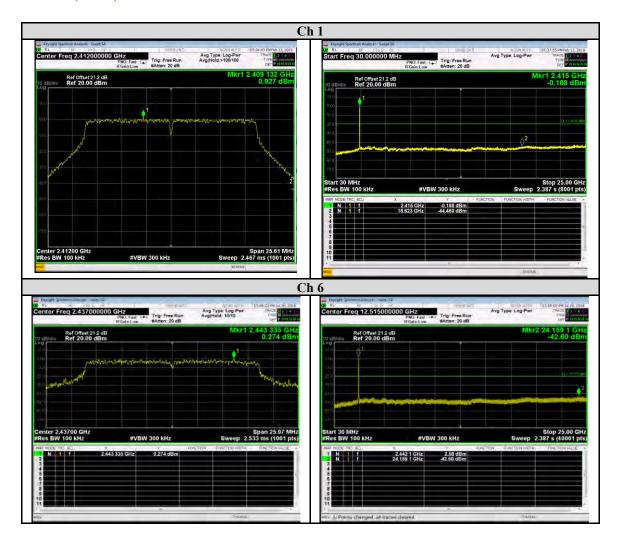
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802.11n (HT20)



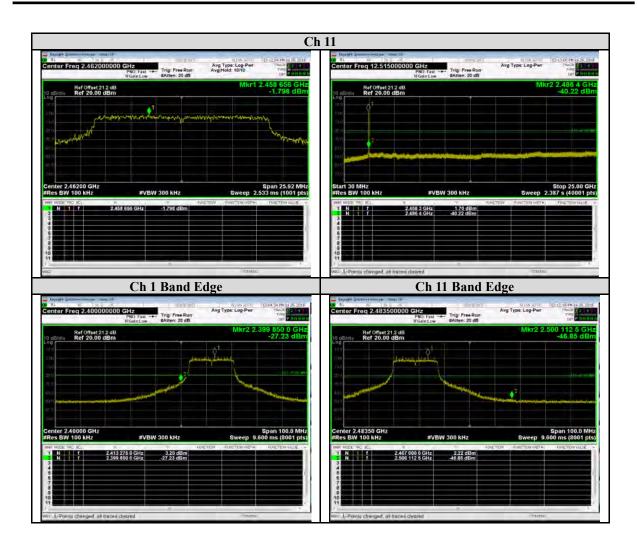
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9.5. Radiated Spurious Emission

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 $(dBuV/m) = 20 \log Emission level (uV/m)$.
- 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 $9 \text{ kHz} \sim 30 \text{ MHz}$]

- 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 $30\text{MHz} \sim 1\text{GHz}$) / 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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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 ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.

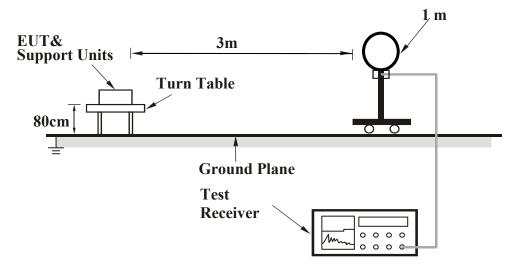
Con Constant	Average			
Configuration	RBW	VBW		
802.11b		10 Hz		
802.11g	1MHz	10 Hz		
802.11n (HT20)		10 Hz		

Note: Refer to section 6.6 for duty cycle.

d. All modes of operation were investigated and the worst-case emissions are reported.

Test Setup

<Frequency Range 9 kHz ~ 30 MHz>



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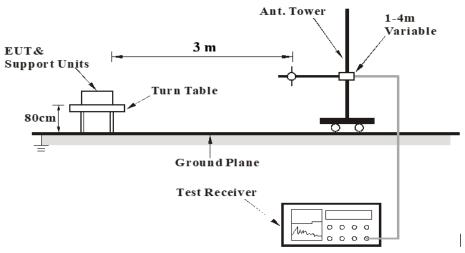
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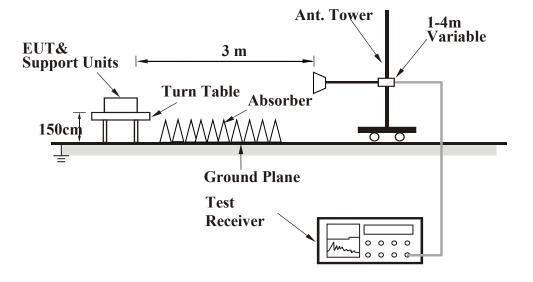


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<Frequency Range 30 MHz ~ 1 GHz >



<Frequency Range above 1 GHz>



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

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Test Data

Above 1GHz Data

802.11b

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)	
-	2389.887	52.03	1.53	53.56	74.00	-20.44	peak
@	2412.093	107.19	1.51	108.70	-	-	peak
-	2387.053	42.29	1.53	43.82	54.00	-10.18	AVG
@	2411.233	103.55	1.51	105.06	-	-	AVG
*	4824.000	48.11	-4.36	43.75	74.00	-30.25	peak
#	7236.000	44.58	1.34	45.92	88.70	-42.78	peak
		Antenna Po	larity & Test	Distance: Ver	tical at 3 m		
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2390.000	49.23	1.53	50.76	74.00	-23.24	peak
<u>@</u>	2411.993	101.47	1.51	102.98	-	-	peak
-	2385.067	38.96	1.54	40.50	54.00	-13.50	AVG
<u>@</u>	2411.220	97.27	1.51	98.78	-	-	AVG
*	4824.000	45.52	-4.36	41.16	74.00	-32.84	peak
#	7236.000	43.04	1.34	44.38	82.98	-38.60	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 radiated frequency is out of the restricted band.
- 6. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
- 7. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail			
Channel	Channel 6 Frequency Range 1 GHz ~		1 GHz ~ 26.5 GHz		

		Antenna Pola	rity & Test I	Distance: Hori	zontal at 3 m		
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2390.000	49.40	1.53	50.93	74.00	-23.07	peak
@	2437.053	106.48	1.50	107.98	-	-	peak
-	2483.500	48.22	1.45	49.67	74.00	-24.33	peak
-	2390.000	38.50	1.53	40.03	54.00	-13.97	AVG
@	2436.227	102.77	1.50	104.27	-	-	AVG
-	2483.500	37.86	1.45	39.31	54.00	-14.69	AVG
*	4874.000	51.04	-4.24	46.80	74.00	-27.20	peak
*	7311.000	42.15	1.56	43.71	74.00	-30.29	peak
		Antenna Po	larity & Test	Distance: Vei	rtical at 3 m		
Notation	Frequency	Reading	Correct	Result Limit		Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2390.000	48.95	1.53	50.48	74.00	-23.52	peak
<u>@</u>	2437.007	101.31	1.50	102.81	-	-	peak
-	2483.500	49.17	1.45	50.62	74.00	-23.38	peak
-	2390.000	37.03	1.53	38.56	54.00	-15.44	AVG
@	2436.267	97.48	1.50	98.98	-	-	AVG
-	2483.500	36.66	1.45	38.11	54.00	-15.89	AVG
*	4874.000	49.10	-4.24	44.86	74.00	-29.14	peak
*	7311.000	42.27	1.56	43.83	74.00	-30.17	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. "@": Fundamental Frequency.
- 5. "#": The radiated frequency is out of the restricted band.
- 6. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
- 7. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail			
Channel	Channel 11	Frequency Range	1 GHz ~ 26.5 GHz		

		Antenna Pola	rity & Test I	Distance: Hori	zontal at 3 m		
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
<u>@</u>	2461.933	105.70	1.47	107.17	-	-	peak
-	2483.500	49.37	1.45	50.82	74.00	-23.18	peak
-	2488.807	55.07	1.46	56.53	74.00	-17.47	peak
<u>@</u>	2461.260	101.56	1.48	103.04	-	-	AVG
-	2483.500	38.65	1.45	40.10	54.00	-13.90	AVG
-	2486.553	40.71	1.45	42.16	54.00	-11.84	AVG
*	4924.000	52.85	-4.13	48.72	74.00	-25.28	peak
*	7386.000	42.09	1.78	43.87	74.00	-30.13	peak
		Antenna Po	larity & Test	Distance: Vei	rtical at 3 m		
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2462.033	100.80	1.47	102.27	-	-	peak
-	2483.500	48.95	1.45	50.40	74.00	-23.60	peak
-	2489.613	51.31	1.45	52.76	74.00	-21.24	peak
@	2461.300	97.04	1.48	98.52	-	-	AVG
-	2483.500	38.96	1.45	40.41	54.00	-13.59	AVG
-	2487.060	40.04	1.45	41.49	54.00	-12.51	AVG
*	4924.000	51.03	-4.13	46.90	74.00	-27.10	peak
*	7386.000	45.99	1.78	47.77	74.00	-26.23	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 radiated frequency is out of the restricted band.
- 6. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
- 7. The other emission levels were very low against the limit.

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802.11g

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

		Antenna Pola	rity & Test I	Distance: Hori	zontal at 3 m		
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2390.000	69.24	1.53	70.77	74.00	-3.23	peak
<u>@</u>	2417.267	106.44	1.51	107.95	-	-	peak
-	2390.000	51.54	1.53	53.07	54.00	-0.93	AVG
<u>@</u>	2415.200	96.33	1.51	97.84	-	-	AVG
*	4824.000	48.82	-4.36	44.46	74.00	-29.54	peak
#	7236.000	43.80	1.34	45.14	87.95	-42.81	peak
		Antenna Po	larity & Test	Distance: Vei	rtical at 3 m		
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2390.000	62.60	1.53	64.13	74.00	-9.87	peak
<u>@</u>	2418.240	100.82	1.51	102.33	-	-	peak
-	2390.000	45.77	1.53	47.30	54.00	-6.70	AVG
<u>@</u>	2418.207	90.06	1.51	91.57	-	-	AVG
*	4824.000	48.86	-4.36	44.50	74.00	-29.50	peak
#	7236.000	42.78	1.34	44.12	82.33	-38.21	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 radiated frequency is out of the restricted band.
- 6. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
- 7. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail			
Channel	Channel 6	Frequency Range	1 GHz ~ 26.5 GHz		

		Antenna Pola	rity & Test I	Distance: Hori	zontal at 3 m		
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2390.000	50.39	1.53	51.92	74.00	-22.08	peak
@	2431.147	106.08	1.51	107.59	-	-	peak
-	2483.500	51.00	1.45	52.45	74.00	-21.55	peak
-	2390.000	39.21	1.53	40.74	54.00	-13.26	AVG
<u>@</u>	2430.780	96.89	1.51	98.40	-	-	AVG
-	2483.500	38.40	1.45	39.85	54.00	-14.15	AVG
*	4874.000	50.80	-4.24	46.56	74.00	-27.44	peak
*	7311.000	42.64	1.56	44.20	74.00	-29.80	peak
		Antenna Po	larity & Test	Distance: Vei	rtical at 3 m		
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2390.000	48.87	1.53	50.40	74.00	-23.60	peak
<u>@</u>	2443.560	101.42	1.50	102.92	-	-	peak
-	2483.500	49.21	1.45	50.66	74.00	-23.34	peak
-	2390.000	37.24	1.53	38.77	54.00	-15.23	AVG
<u>@</u>	2443.393	92.27	1.50	93.77	-	-	AVG
-	2483.500	36.92	1.45	38.37	54.00	-15.63	AVG
*	4874.000	49.06	-4.24	44.82	74.00	-29.18	peak
*	7311.000	42.27	1.56	43.83	74.00	-30.17	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. "@": Fundamental Frequency.
- 5. "#": The radiated frequency is out of the restricted band.
- 6. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
- 7. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail			
Channel	Channel 11	Frequency Range	1 GHz ~ 26.5 GHz		

		Antenna Pola	rity & Test I	Distance: Hori	zontal at 3 m		
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2455.680	104.64	1.49	106.13	-	-	peak
-	2484.180	69.10	1.46	70.56	74.00	-3.44	peak
<u>@</u>	2468.553	95.06	1.47	96.53	-	-	AVG
-	2483.500	50.01	1.45	51.46	54.00	-2.54	AVG
*	4924.000	50.07	-4.13	45.94	74.00	-28.06	peak
*	7386.000	41.47	1.78	43.25	74.00	-30.75	peak
		Antenna Po	larity & Test	Distance: Vei	rtical at 3 m		
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2457.840	100.33	1.48	101.81	-	-	peak
-	2484.680	62.82	1.46	64.28	74.00	-9.72	peak
@	2455.660	89.11	1.49	90.60	-	-	AVG
-	2483.500	43.82	1.45	45.27	54.00	-8.73	AVG
*	4924.000	49.26	-4.13	45.13	74.00	-28.87	peak
*	7386.000	41.68	1.78	43.46	74.00	-30.54	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 radiated frequency is out of the restricted band.
- 6. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
- 7. The other emission levels were very low against the limit.

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802.11n (HT-20)

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

		Antenna Pola	rity & Test I	Distance: Hori	zontal at 3 m		
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2390.000	69.27	1.53	70.80	74.00	-3.20	peak
<u>@</u>	2418.480	105.86	1.51	107.37	-	-	peak
-	2390.000	51.90	1.53	53.43	54.00	-0.57	AVG
<u>@</u>	2417.380	96.05	1.51	97.56	-	-	AVG
*	4824.000	52.12	-4.36	47.76	74.00	-26.24	peak
#	7236.000	42.07	1.34	43.41	87.37	-43.96	peak
		Antenna Po	larity & Test	Distance: Ver	rtical at 3 m		
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	2390.000	63.92	1.53	65.45	74.00	-8.55	peak
@	2409.073	100.58	1.53	102.11	-	-	peak
-	2390.000	47.00	1.53	48.53	54.00	-5.47	AVG
<u>@</u>	2417.353	91.23	1.51	92.74	-	-	AVG
*	4824.000	49.34	-4.36	44.98	74.00	-29.02	peak
#	7236.000	42.97	1.34	44.31	82.11	-37.80	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 radiated frequency is out of the restricted band.
- 6. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
- 7. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail			
Channel	Channel 6	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)			
-	2390.000	50.98	1.53	52.51	74.00	-21.49	peak		
<u>@</u>	2431.660	105.80	1.50	107.30	-	-	peak		
-	2483.500	52.16	1.45	53.61	74.00	-20.39	peak		
-	2390.000	39.38	1.53	40.91	54.00	-13.09	AVG		
<u>@</u>	2431.567	96.70	1.50	98.20	-	-	AVG		
-	2483.500	38.39	1.45	39.84	54.00	-14.16	AVG		
*	4874.000	50.43	-4.24	46.19	74.00	-27.81	peak		
*	7311.000	42.32	1.56	43.88	74.00	-30.12	peak		
		Antenna Po	larity & Test	Distance: Vei	rtical at 3 m				
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark		
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)			
-	2390.000	49.47	1.53	51.00	74.00	-23.00	peak		
@	2441.813	100.71	1.50	102.21	-	-	peak		
_	2483.500	51.34	1.45	52.79	74.00	-21.21	peak		
_	2390.000	37.09	1.53	38.62	54.00	-15.38	AVG		
<u>@</u>	2442.347	90.54	1.50	92.04	-	-	AVG		
-	2483.500	36.96	1.45	38.41	54.00	-15.59	AVG		
*	4874.000	50.32	-4.24	46.08	74.00	-27.92	peak		
*	7311.000	41.78	1.56	43.34	74.00	-30.66	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 radiated frequency is out of the restricted band.
- 6. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
- 7. The other emission levels were very low against the limit.

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EUT Test Condition		Measurement Detail		
Channel	Channel 11	nel 11 Frequency Range 1 GHz ~ 26.		

		Antenna Pola	rity & Test I	Distance: Hori	zontal at 3 m		
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2457.293	104.09	1.48	105.57	-	-	peak
-	2483.500	66.55	1.45	68.00	74.00	-6.00	peak
<u>@</u>	2456.647	94.91	1.48	96.39	-	-	AVG
-	2483.500	50.37	1.45	51.82	54.00	-2.18	AVG
*	4924.000	50.63	-4.13	46.50	74.00	-27.50	peak
*	7386.000	42.56	1.78	44.34	74.00	-29.66	peak
		Antenna Po	larity & Test	Distance: Vei	rtical at 3 m		
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	2457.167	99.79	1.48	101.27	-	-	peak
-	2485.667	62.68	1.46	64.14	74.00	-9.86	peak
<u>@</u>	2456.620	88.24	1.48	89.72	-	-	AVG
-	2483.500	41.86	1.45	43.31	54.00	-10.69	AVG
*	4924.000	49.79	-4.13	45.66	74.00	-28.34	peak
*	7386.000	43.32	1.78	45.10	74.00	-28.90	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 radiated frequency is out of the restricted band.
- 6. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
- 7. The other emission levels were very low against the limit.

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Below 1GHz Data

No non-compliance noted:

KDB 414788

- 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.
- OFS 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 field site, adequate comparison measurements were confirmed against 30m open field 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.

9 kHz \sim 30 MHz Data:

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

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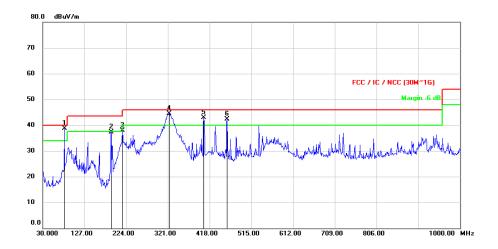
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30 MHz ~ 1 GHz Data:

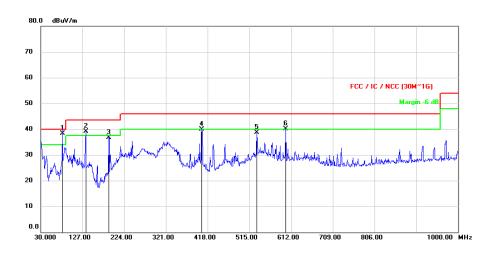
802.11n (HT-20)

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

Horizontal



Vertical



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		Antenna Pola	rity & Test I	Distance: Hori	zontal at 3 m		
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	81.0220	58.74	-20.11	38.63	40.00	-1.37	peak
-	189.0800	54.91	-17.58	37.33	43.50	-6.17	peak
-	216.0460	55.82	-17.94	37.88	46.00	-8.12	peak
-	324.5890	58.53	-13.94	44.59	46.00	-1.41	peak
-	405.1960	54.65	-11.78	42.87	46.00	-3.13	peak
-	459.1927	52.79	-10.49	42.30	46.00	-3.70	peak
		Antenna Po	larity & Test	Distance: Vei	rtical at 3 m		
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	81.0220	58.51	-20.11	38.40	40.00	-1.60	QP
-	135.0833	55.63	-16.54	39.09	43.50	-4.41	peak
-	189.0477	54.37	-17.57	36.80	43.50	-6.70	peak
-	405.0343	51.60	-11.78	39.82	46.00	-6.18	peak
-	533.3330	47.88	-9.17	38.71	46.00	-7.29	peak
_	600.0690	47.60	-7.43	40.17	46.00	-5.83	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 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 (dBμV)				
Frequency (MIIIZ)	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: 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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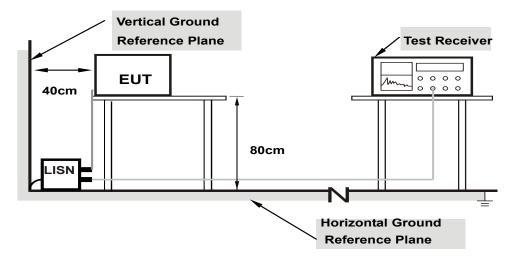
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Test Setup



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

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

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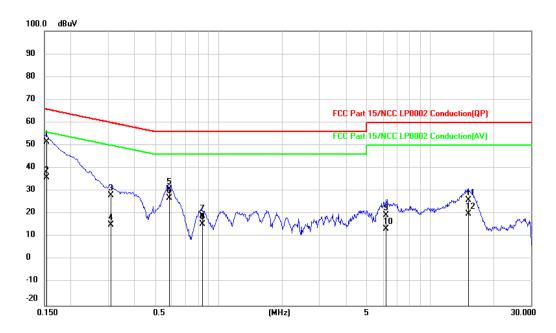
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Test Data

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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	0.1526	31.99	19.57	51.56	65.86	-14.30	QP
2	0.1526	16.25	19.57	35.82	55.86	-20.04	AVG
3	0.3087	8.42	19.60	28.02	60.01	-31.99	QP
4	0.3087	-4.29	19.60	15.31	50.01	-34.70	AVG
5	0.5828	11.41	19.58	30.99	56.00	-25.01	QP
6	0.5828	7.34	19.58	26.92	46.00	-19.08	AVG
7	0.8454	-0.31	19.61	19.30	56.00	-36.70	QP
8	0.8454	-4.07	19.61	15.54	46.00	-30.46	AVG
9	6.1774	-0.43	19.85	19.42	60.00	-40.58	QP
10	6.1774	-6.39	19.85	13.46	50.00	-36.54	AVG
11	15.2153	6.09	20.04	26.13	60.00	-33.87	QP
12	15.2153	-0.01	20.04	20.03	50.00	-29.97	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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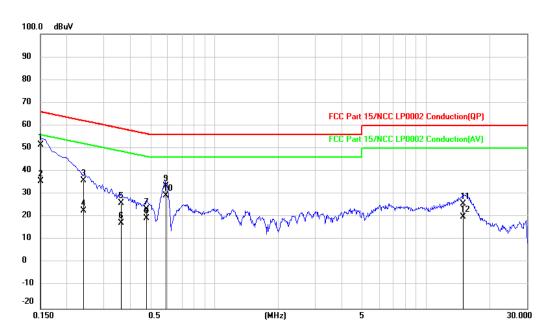


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Phase of Power: Neutral (N)



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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	dB	(dBuV)	(dBuV)	(dB)	
1	0.1514	31.95	19.59	51.54	65.92	-14.38	QP
2	0.1514	16.18	19.59	35.77	55.92	-20.15	AVG
3	0.2398	16.41	19.60	36.01	62.10	-26.09	QP
4	0.2398	3.22	19.60	22.82	52.10	-29.28	AVG
5	0.3619	6.34	19.62	25.96	58.68	-32.72	QP
6	0.3619	-2.32	19.62	17.30	48.68	-31.38	AVG
7	0.4763	3.84	19.61	23.45	56.40	-32.95	QP
8	0.4763	-0.30	19.61	19.31	46.40	-27.09	AVG
9	0.5906	13.89	19.60	33.49	56.00	-22.51	QP
10	0.5906	9.63	19.60	29.23	46.00	-16.77	AVG
11	15.0288	5.79	20.05	25.84	60.00	-34.16	QP
12	15.0288	0.02	20.05	20.07	50.00	-29.93	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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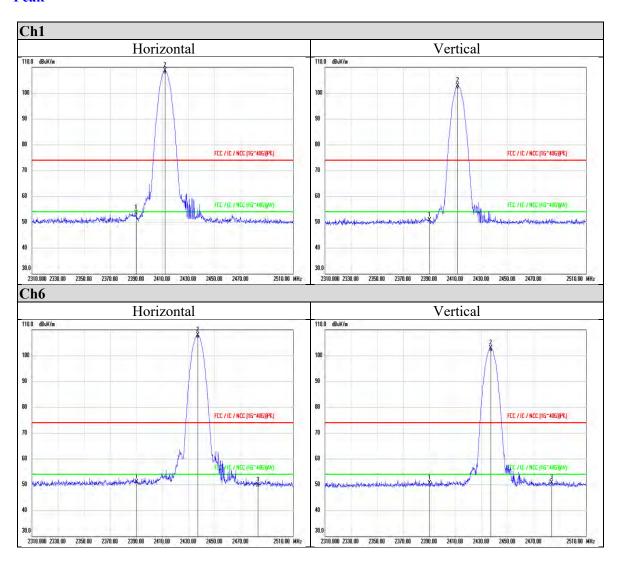
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Appendix I Radiated Band Edge Measurement

802.11b

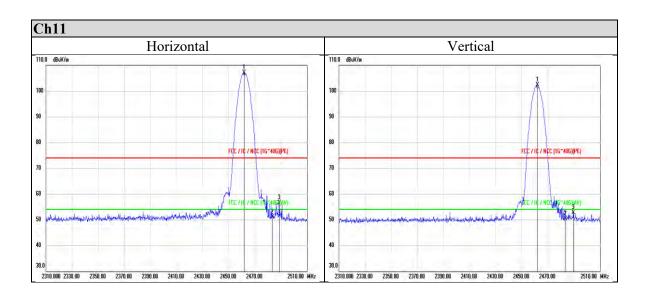
Peak



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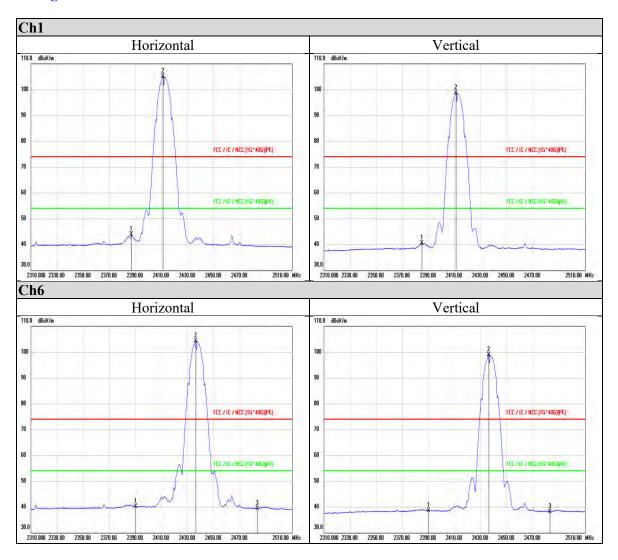


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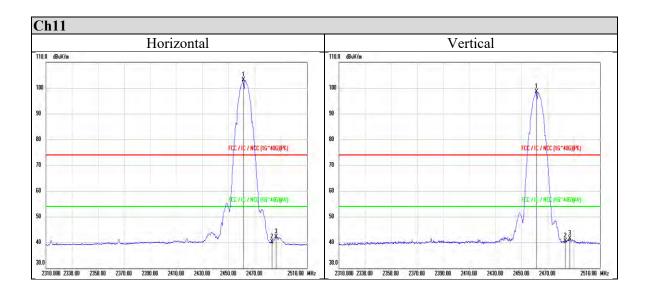
Average



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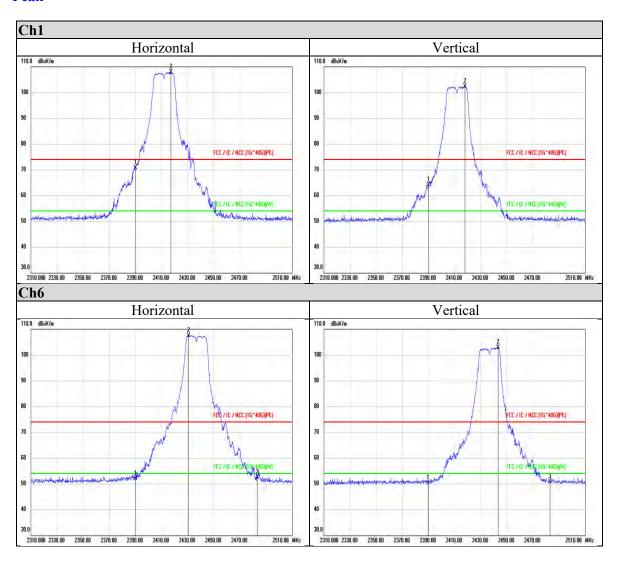
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802.11g

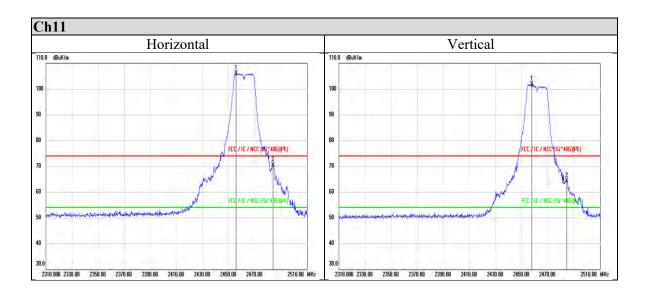
Peak



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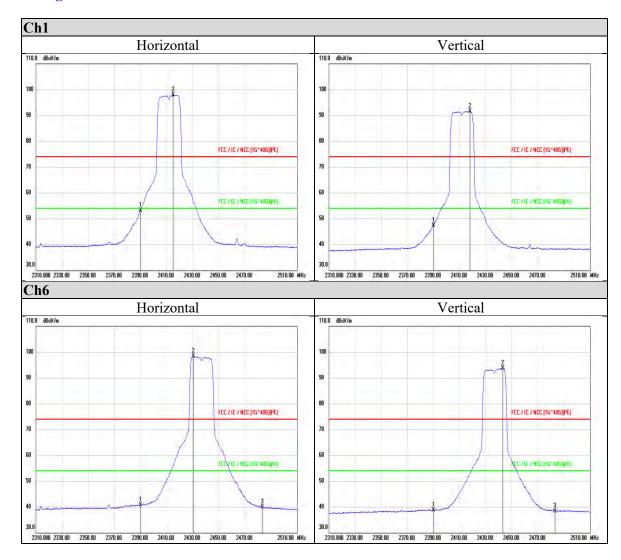


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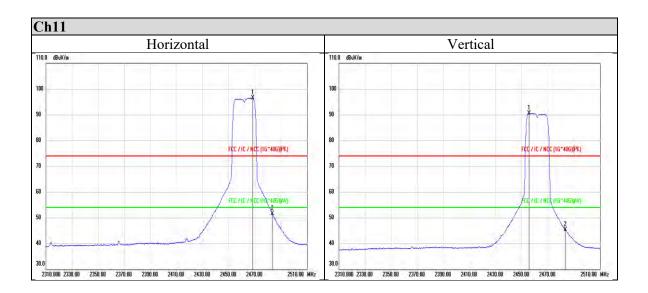
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Average





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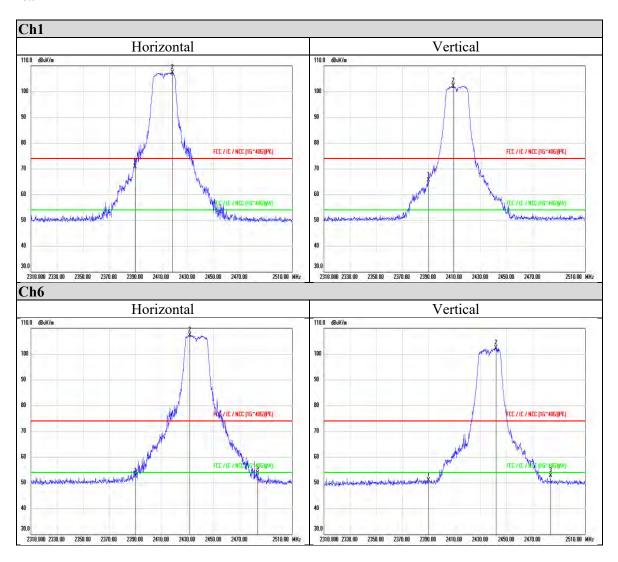
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802.11n (HT-20)

Peak



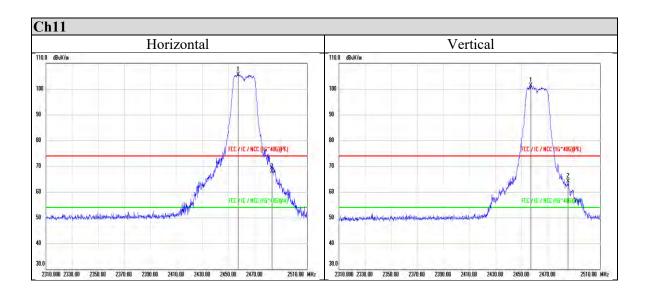
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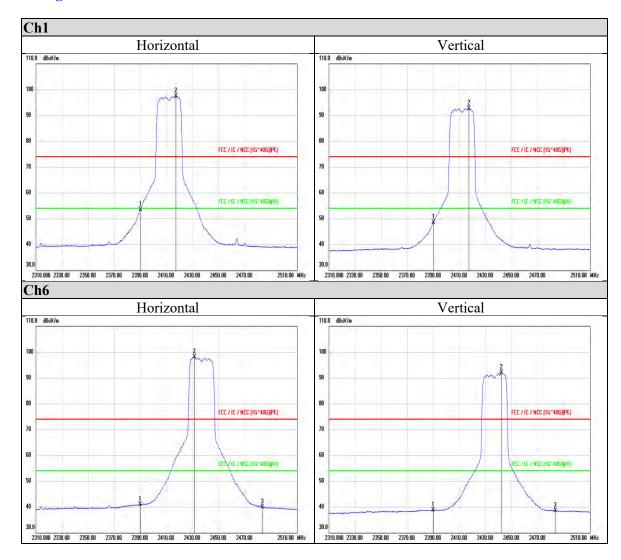


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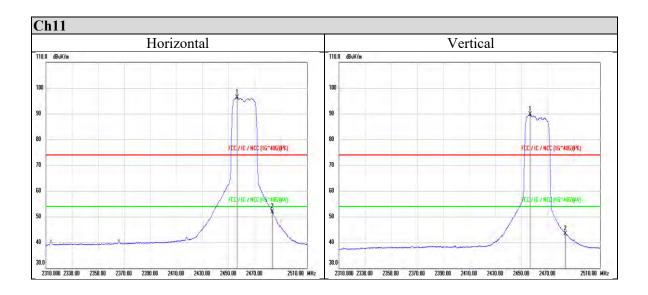
Average



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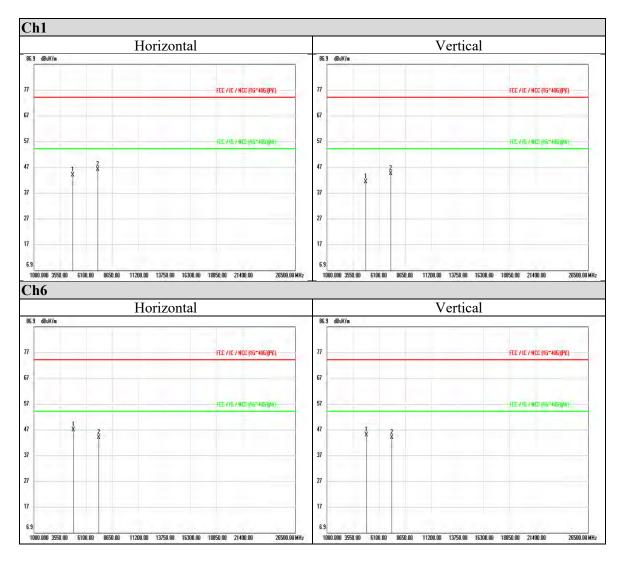
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Appendix II Radiated Spurious Emission Measurement

802.11b



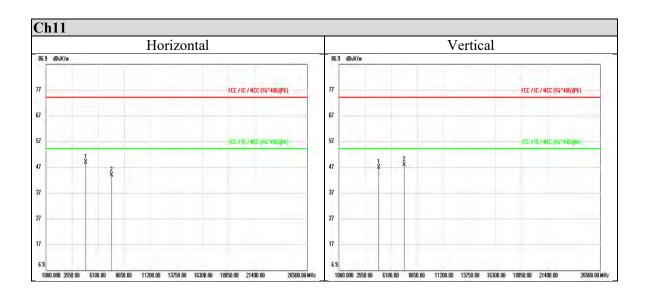
Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Telephone :+886-2-7737-3000 Facsimile (FAX) :+886-3-583-7948

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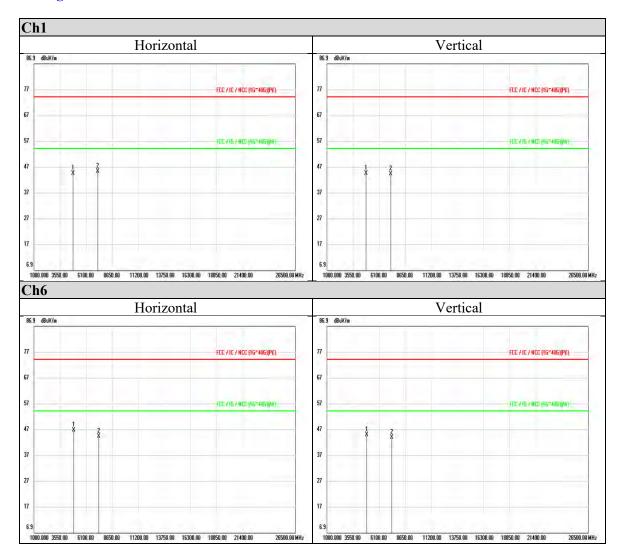


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802.11g

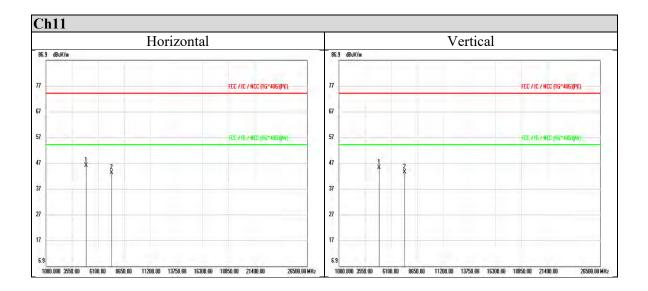


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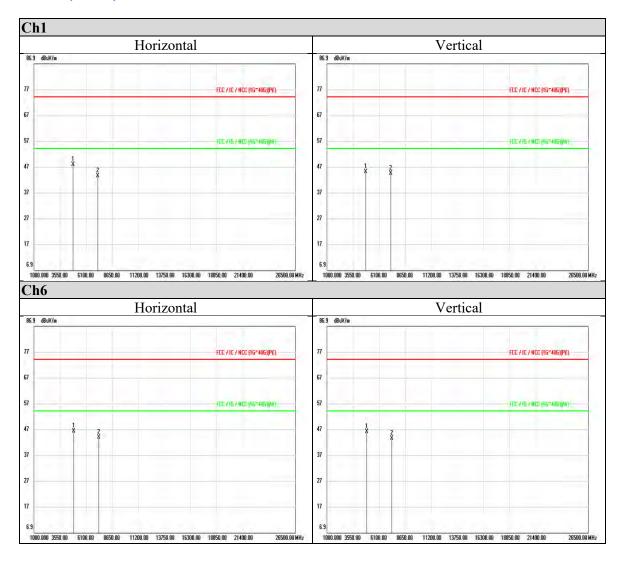


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802.11n (HT-20)



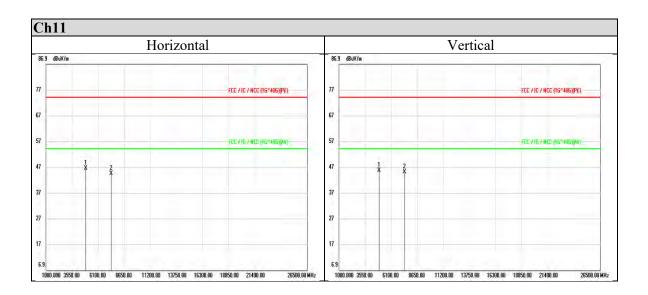
Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

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