



FCC RF Test Report

APPLICANT : A2Z Development Center, Inc. dba
EQUIPMENT : Tablet
MODEL NAME : K29A5E
FCC ID : 2ATNY-8330
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was completed on Jun. 12, 2019. We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

Jason Jia

Reviewed by: Jason Jia / Supervisor

James Huang

Approved by: James Huang / Manager



Sporton International (Kunshan) Inc.

***No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China***



TABLE OF CONTENTS

REVISION HISTORY.....	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Applicant	5
1.2 Product Feature of Equipment Under Test.....	5
1.3 Product Specification of Equipment Under Test.....	5
1.4 Modification of EUT	5
1.5 Testing Location	6
1.6 Applicable Standards.....	6
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	7
2.1 Carrier Frequency and Channel	7
2.2 Test Mode.....	8
2.3 Connection Diagram of Test System.....	9
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.....	14
3.3 Power Spectral Density Measurement	16
3.4 Conducted Band Edges and Spurious Emission Measurement	18
3.5 Radiated Band Edges and Spurious Emission Measurement	34
3.6 AC Conducted Emission Measurement.....	38
3.7 Antenna Requirements.....	40
4 LIST OF MEASURING EQUIPMENT	41
5 UNCERTAINTY OF EVALUATION	42
APPENDIX A. CONDUCTED TEST RESULTS	
APPENDIX B. AC CONDUCTED EMISSION TEST RESULT	
APPENDIX C. RADIATED SPURIOUS EMISSION	
APPENDIX D. RADIATED SPURIOUS EMISSION PLOTS	
APPENDIX E. DUTY CYCLE PLOTS	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR932118-02C	Rev. 01	Initial issue of report	Jul. 15, 2019

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result
3.1	15.247(a)(2)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass
3.1	-	99% Bandwidth	-	Pass
3.2	15.247(b)	Power Output Measurement	$\leq 30\text{dBm}$	Pass
3.3	15.247(e)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$	Pass
3.4	15.247(d)	Conducted Band Edges	$\leq 20\text{dBc}$	Pass
		Conducted Spurious Emission		Pass
3.5	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass
3.6	15.207	AC Conducted Emission	15.207(a)	Pass
3.7	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass



1 General Description

1.1 Applicant

A2Z Development Center, Inc. dba
1100 Enterprise way , Sunnyvale, CA, USA

1.2 Product Feature of Equipment Under Test

Product Feature	
Equipment	Tablet
Model Name	K29A5E
FCC ID	2ATNY-8330
EUT supports Radios application	WLAN 2.4GHz 802.11b/g/n HT20 WLAN 5GHz 802.11a/n HT20/HT40 Bluetooth BR/EDR/LE
SW Version	userdebug 6.0 NS6 100 1854

Note: There are three types of EUT, sample 1/3 are the 1st source, the difference between the two types are just for flash memory, the sample 2 is the 2nd source, the difference between 1st source and 2nd source are for speakerBox1/2. According to the difference, we only choose sample 3 to perform full tests

1.3 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Channel Frequency Range	2412 MHz ~ 2472 MHz
Maximum (Peak) Output Power to antenna	802.11b : 17.21 dBm (0.0526 W) 802.11g : 22.59 dBm (0.1816 W) 802.11n HT20 : 22.83 dBm (0.1919 W)
99% Occupied Bandwidth	802.11b : 12.34MHz 802.11g : 17.83MHz 802.11n HT20 : 18.53MHz
Antenna Type / Gain	Fixed internal Antenna with gain 0.10 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.4 Modification of EUT

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



1.5 Testing Location

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International (Kunshan) Inc.		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CO01-KS 03CH06-KS TH01-KS	CN1257	314309

1.6 Applicable Standards

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

- ♦ 47 CFR Part 15 Subpart C §15.247
- ♦ FCC KDB 558074 D01 15.247 Meas Guidance v05r02
- ♦ ANSI C63.10-2013

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2 Test Configuration of Equipment Under Test

- 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, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane) were recorded in this report.
- b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	8	2447
	2	2417	9	2452
	3	2422	10	2457
	4	2427	11	2462
	5	2432	12	2467
	6	2437	13	2472
	7	2442		



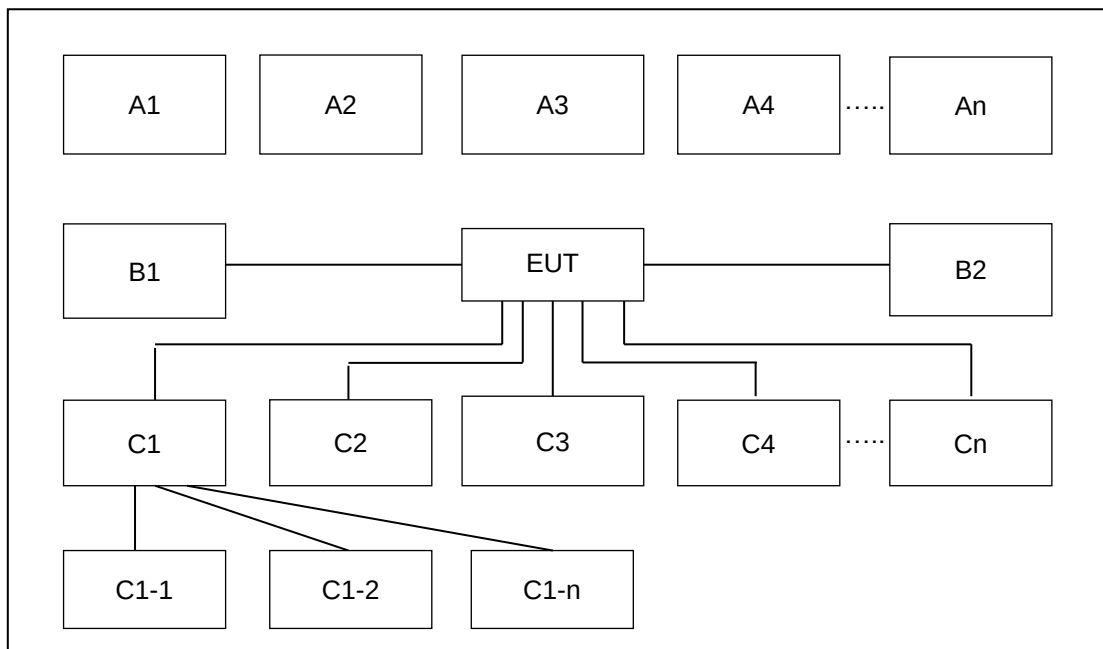
2.2 Test Mode

Final test modes are considering the modulation and worse data rates as below table.

Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20	MCS0

Test Cases	
AC Conducted Emission	Mode 1 :Bluetooth Link + WLAN Link (2.4G) + USB Cable (Charging from Adapter) + Earphone for Sample 3
Remark: For Radiated Test Cases, The tests were performed with Adapter, Earphone and USB Cable.	

2.3 Connection Diagram of Test System



Radiation Test Setup										
No.	Wireless Station	Connection Type	Test Mode(b/g/n(HT20))							
			1	2	3	4	5	6	7	8
A1	Bluetooth speaker	Bluetooth	-	-	-	-	-			
A2	WLAN AP	WiFi	-	-	-	-	-			
A3	Bluetooth Base Station	Bluetooth	-	-	-	-	-			
No.	Power Source	Connection Type	1	2	3	4	5	6	7	8
B1	AC :120V/60Hz	AC Power Cable	X	X	X	X	X			
No.	Setup Peripherals	Connection Type	1	2	3	4	5	6	7	8
C1	Notebook	USB Cable	-	-	-					
C1-1	USB HD	USB Cable to C1	-	-	-					
C1-2	WLAN AP	RJ-45 Cable to C1	-	-	-					
C2	Earphone	Earphone jack	X	X	X	X	X			
C3	SD card	SD I/O interface without Cable	-	-	-					

Note: Mode 1/2/3/4/5 means test channel 01/06/11/12/13

Conduction Test Setup											
No.	Wireless Station	Connection Type	Test Mode								
			1	2	3	4	5	6	7	8	9
A1	Bluetooth speaker	Bluetooth	X								
A2	WLAN AP	WiFi	X								
A3	Notebook	WiFi	X								
No.	Power Source	Connection Type	1	2	3	4	5	6	7		
B1	AC :120V/60Hz	AC Power Cable	X								
No.	Setup Peripherals	Connection Type	1	2	3	4	5	6	7		
C1	Notebook	USB Cable	-								
C1-1	USB HD	USB Cable to C1	-								
C1-2	WLAN AP	RJ-45 Cable to C1	-								
C2	Earphone	Earphone jack	X								
C3	SD card	SD I/O interface without Cable	-								

2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Speaker	JAWBONE	JAMBOX	N/A	N/A	N/A
2.	Notebook	Lenovo	G480	N/A	N/A	shielded cable DC O/P 1.8m , Unshielded AC I/P cable 1.8m
3.	WLAN AP	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded,1.8m
4.	Earphone	Lenovo	SH100	N/A	Unshielded,1.2m	N/A
5.	Adapter	N/A	FANA7R	N/A	N/A	N/A
6.	USB cable	Lenovo	N/A	N/A	Shielded,1.0m	N/A



2.5 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuous transmit/receive.

For AC power line conducted emissions, the EUT was set to connect with the WLAN AP under large package sizes transmission.

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 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.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 5.50 dB.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} . \\ &= 5.50 \text{ (dB)}\end{aligned}$$

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.

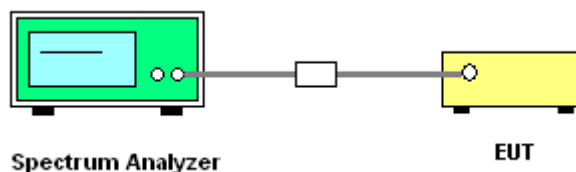
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

1. The testing follows ANSI C63.10-2013 clause 11.8
2. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT 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 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) = 1MHz and set the Video bandwidth (VBW) = 3MHz.
6. Measure and record the results in the test report.

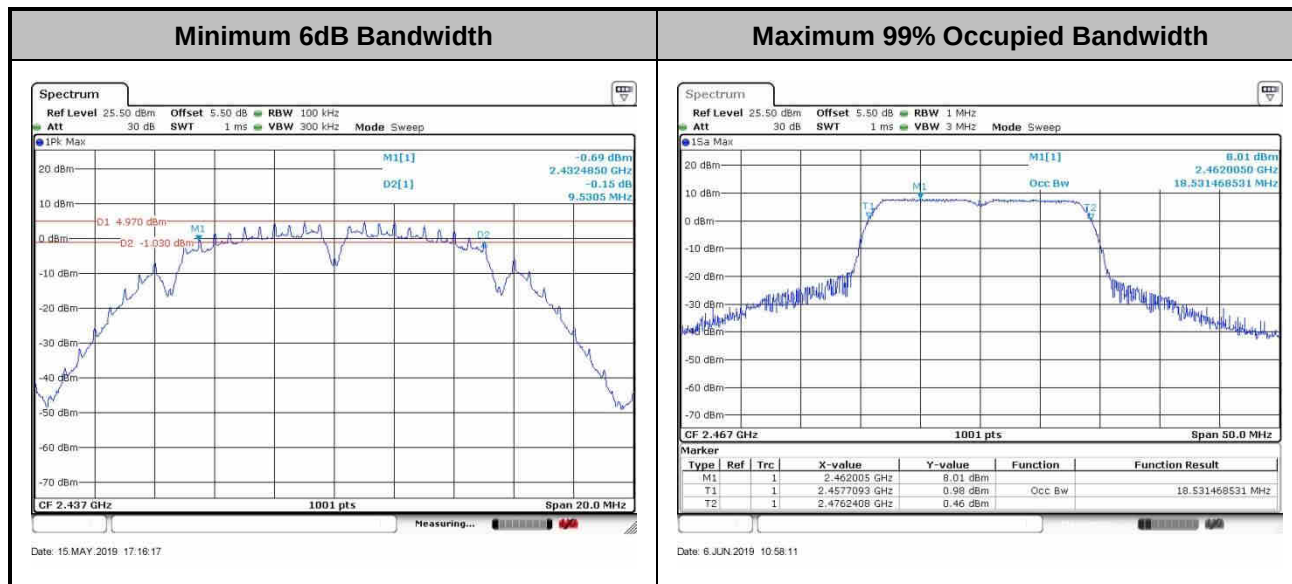
3.1.4 Test Setup





3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.



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

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna with directional gain greater than 6dBi 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 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

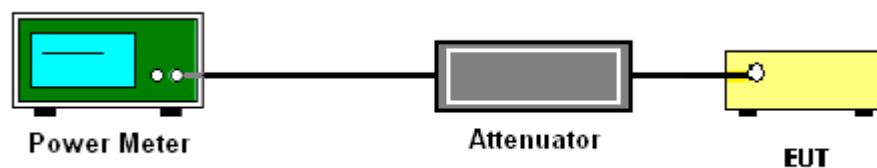
3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of ANSI C63.10-2013 clause 11.9.1.3 PKPM1 Peak power meter or ANSI C63.10-2013 clause 11.9.2.3.2 Method AVGPM-G method.
2. The RF output of EUT was connected to the power meter by RF cable. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

Average power meter method

1. The testing follows the Measurement Procedure of ANSI C63.10-2013 clause 11.9.2.3.1 Method AVGPM.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
5. Adjust the measurement in dBm by adding $10\log(1/x)$, where x is the duty cycle to the measurement result.
6. Measure the conducted output power and record the results in the test report

3.2.4 Test Setup



3.2.5 Test Result of Peak Output Power

Please refer to Appendix A.

3.2.6 Test Result of Average output Power (Reporting Only)

Please refer to Appendix A.



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

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

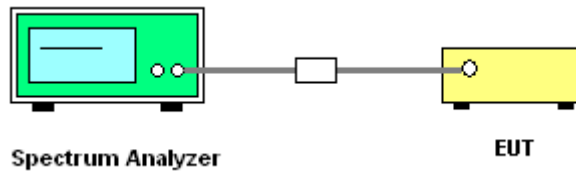
3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

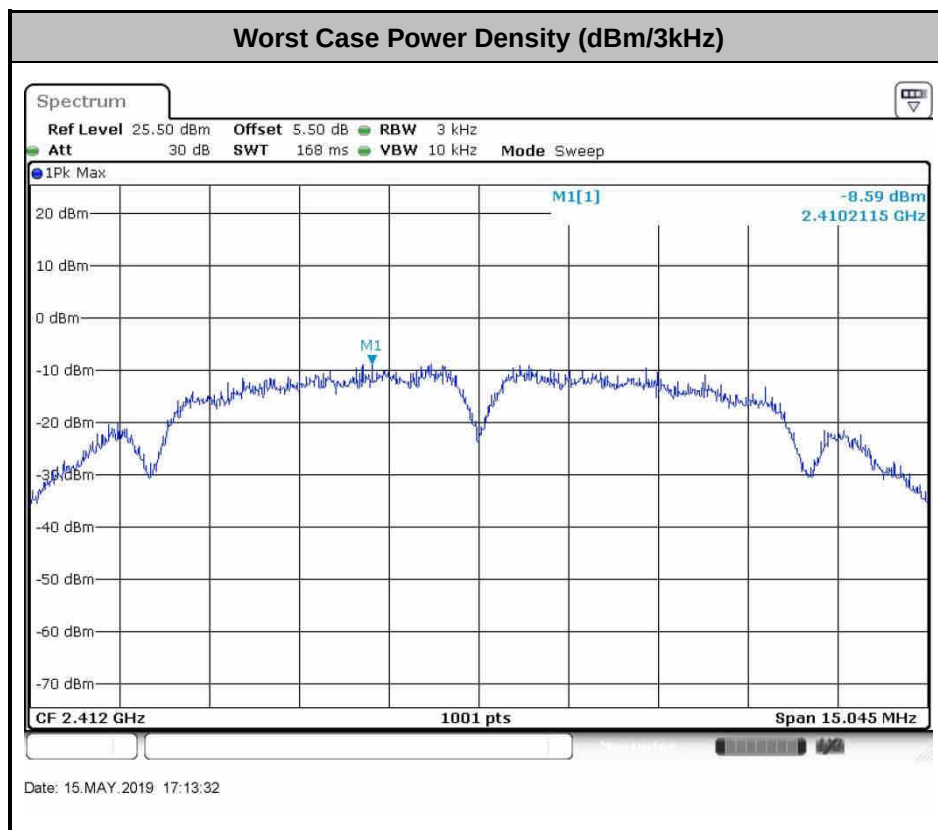
1. The testing follows Measurement Procedure of ANSI C63.10-2013 clause 11.10.2 Method PKPSD.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement.

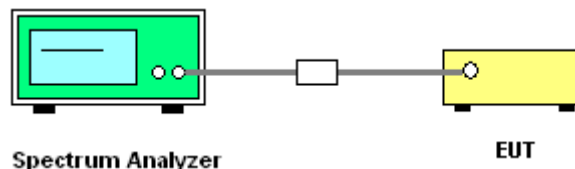
3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

1. The testing follows ANSI C63.10-2013 clause 11.13
2. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT 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 per 15.247(d).
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

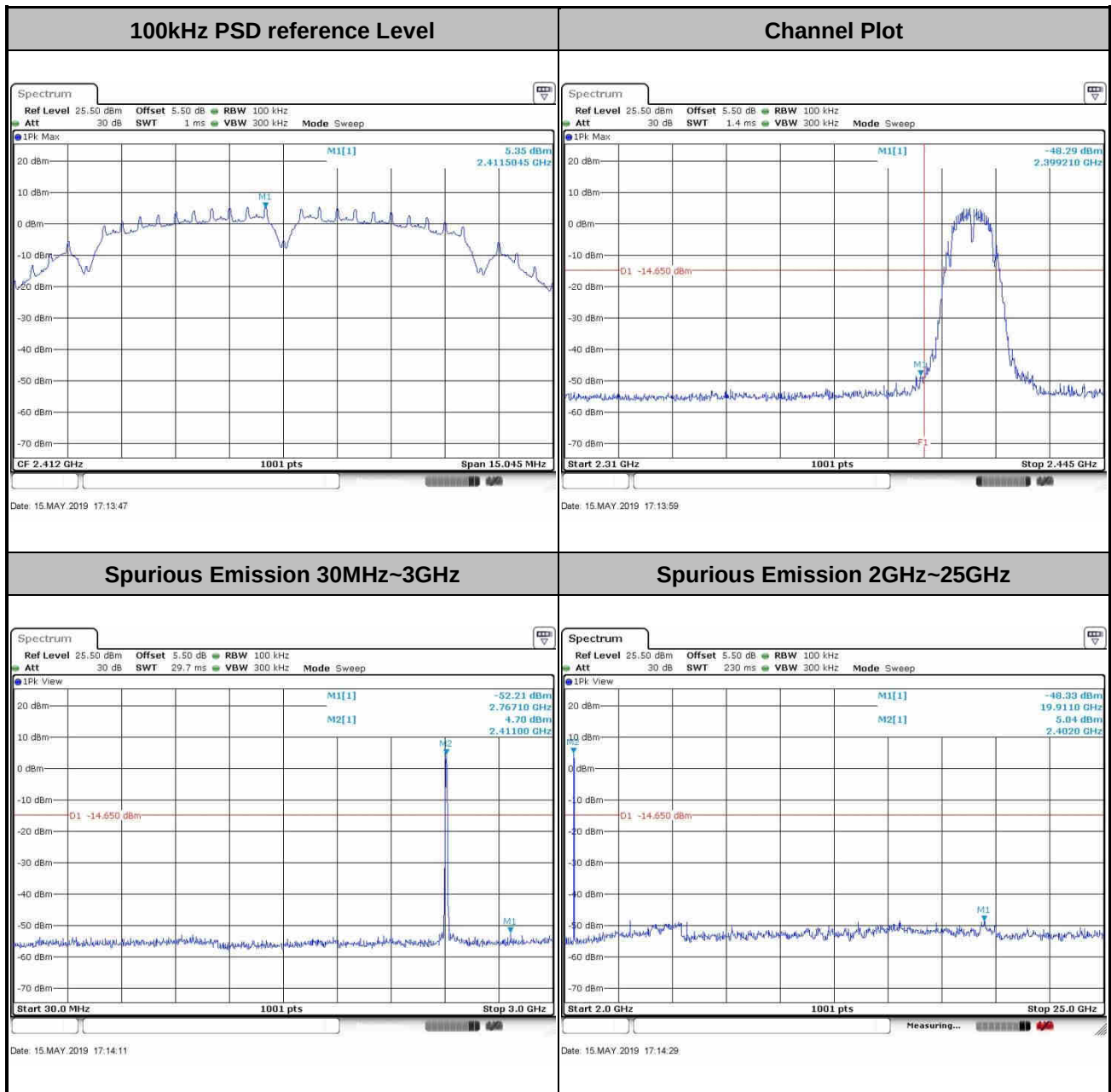




3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Test Engineer :	Lex Wu	Temperature :	21~25°C
		Relative Humidity :	51~54%

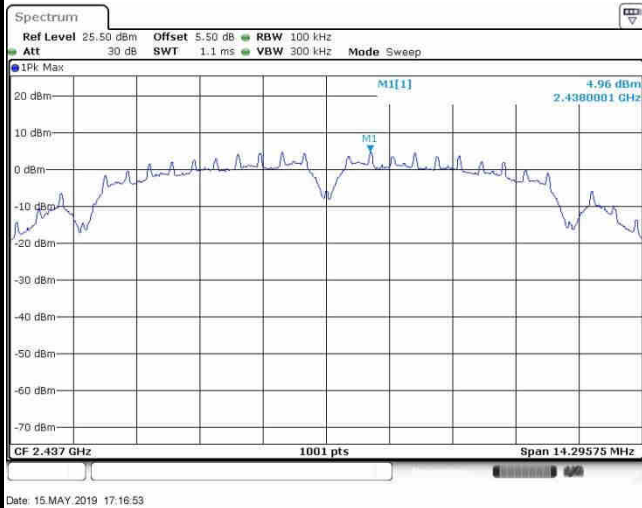
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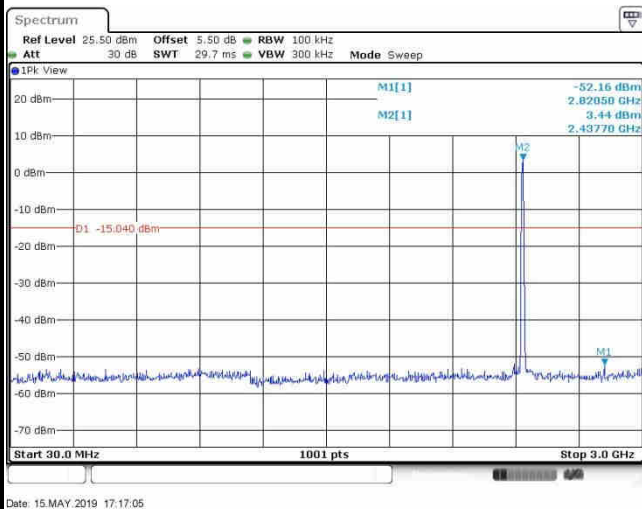


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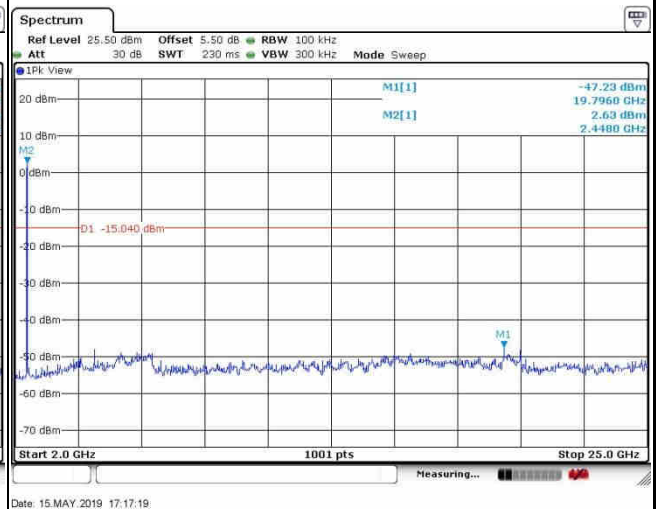
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz

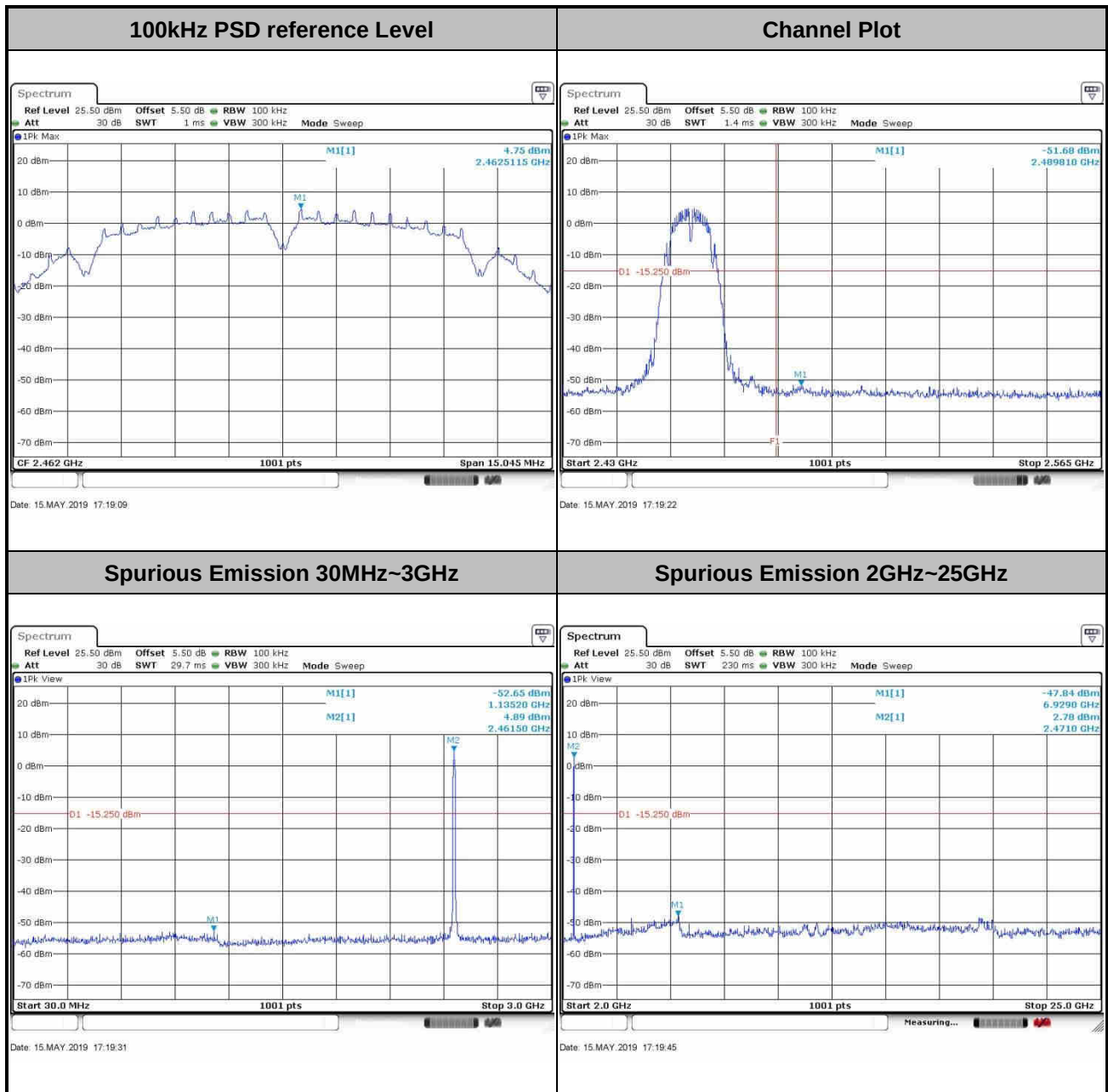


Spurious Emission 2GHz~25GHz





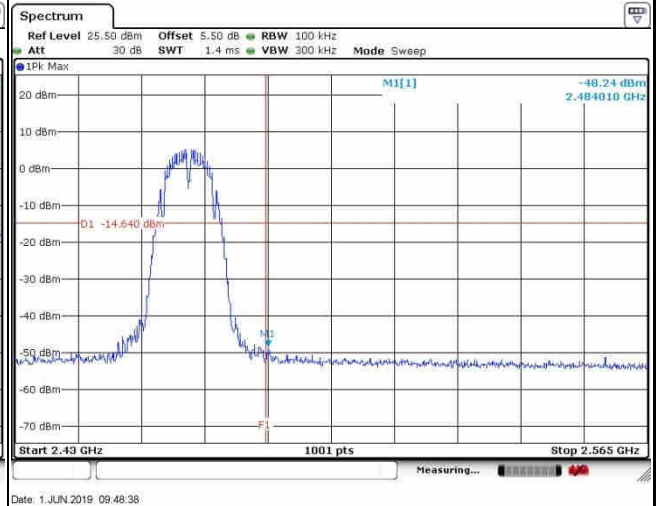
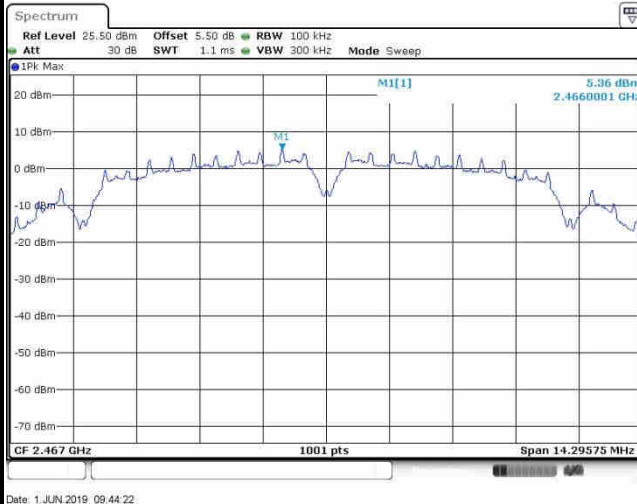
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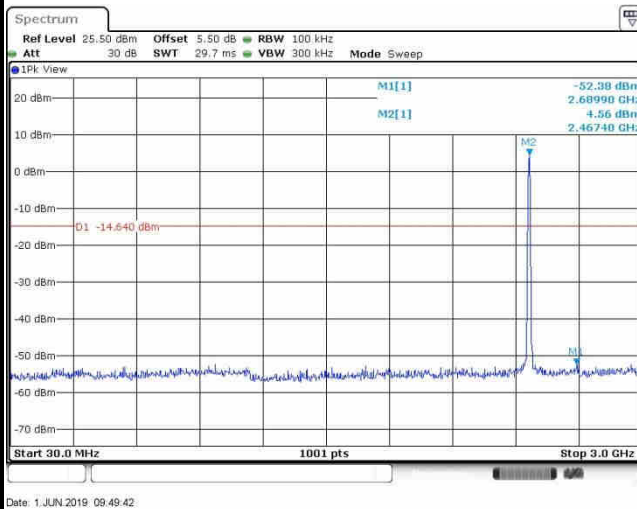


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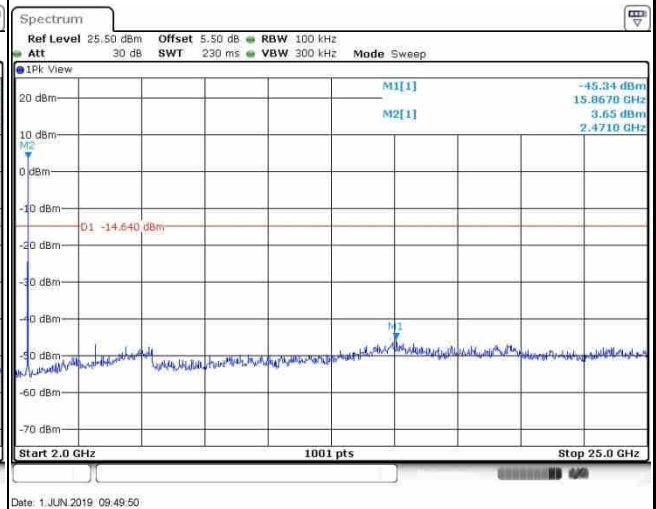
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz

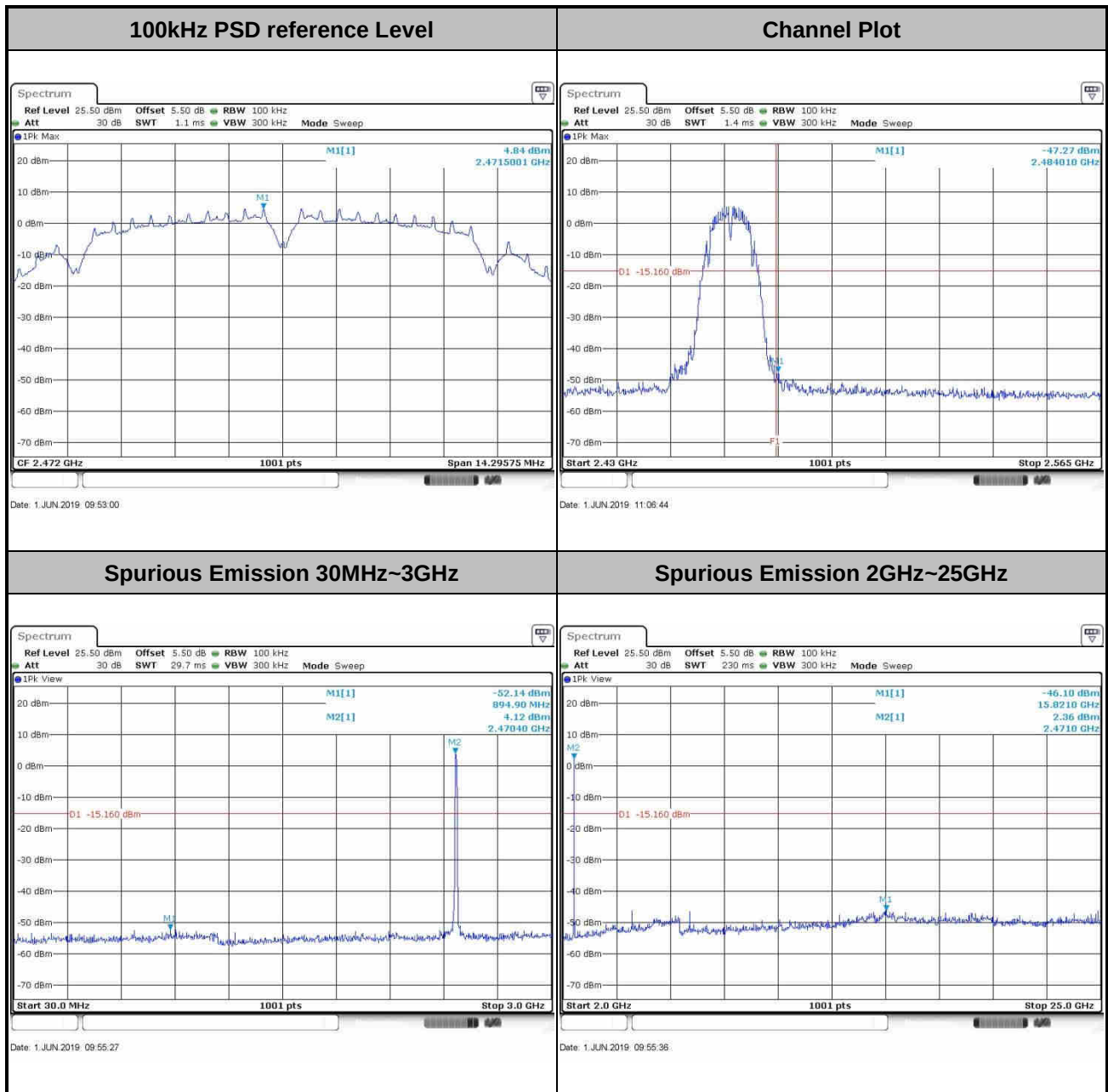


Spurious Emission 2GHz~25GHz



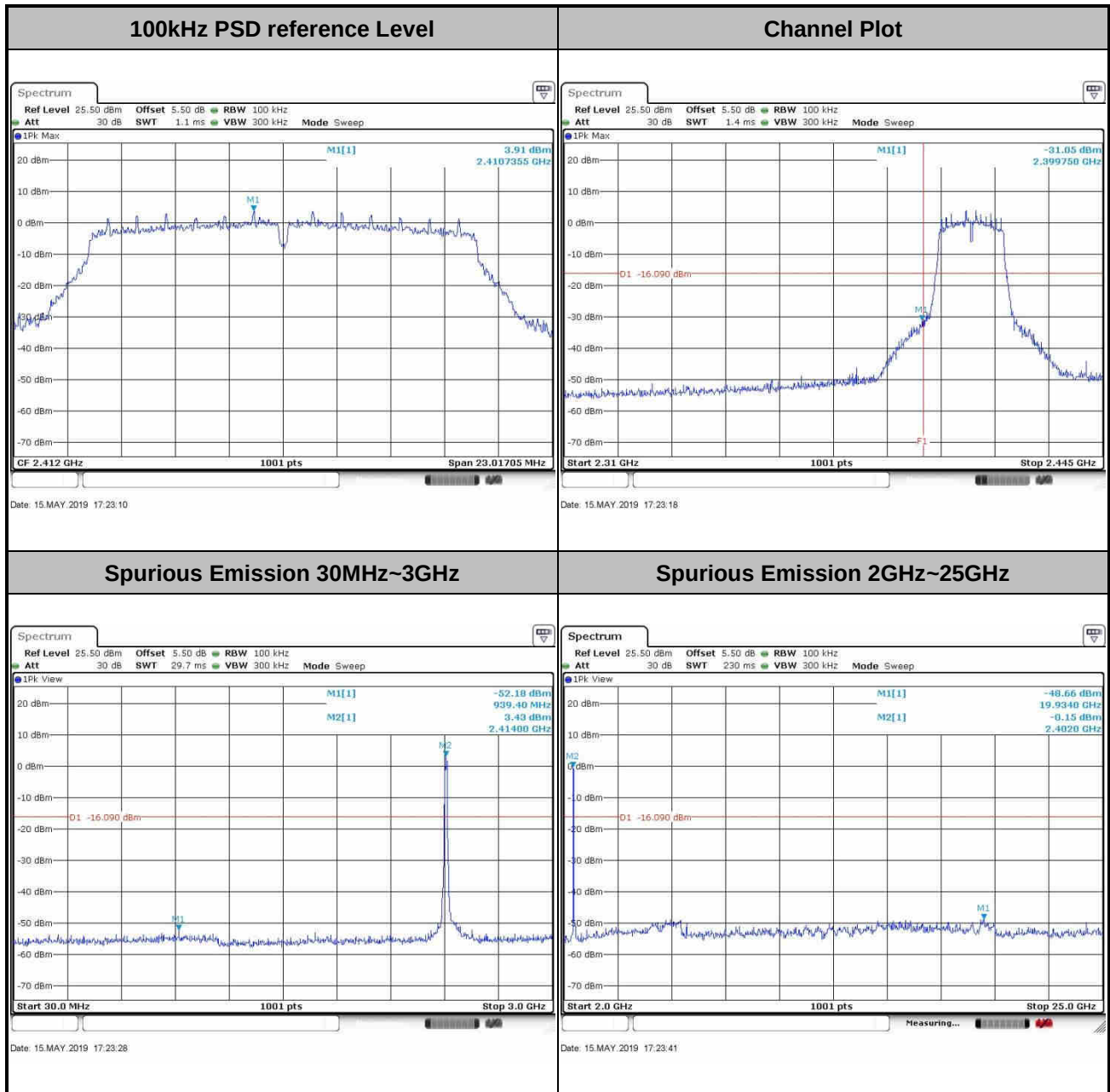


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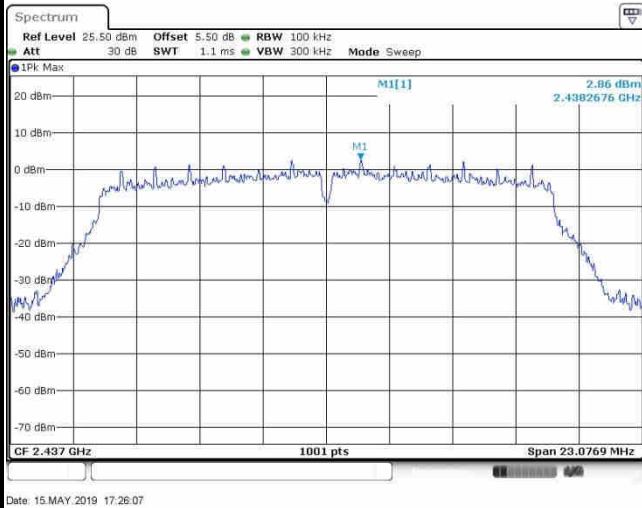
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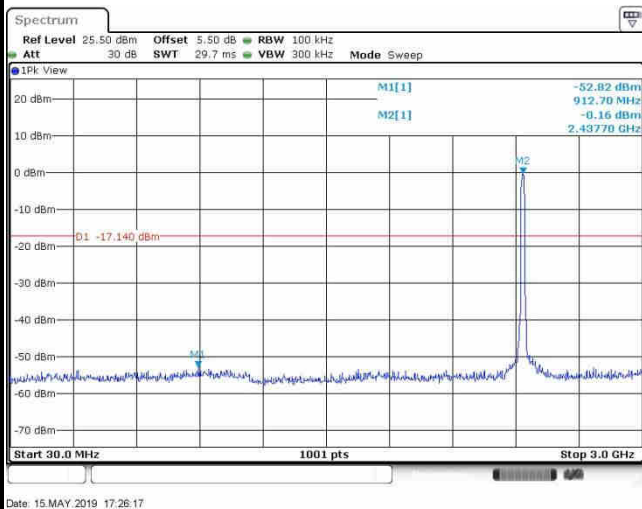


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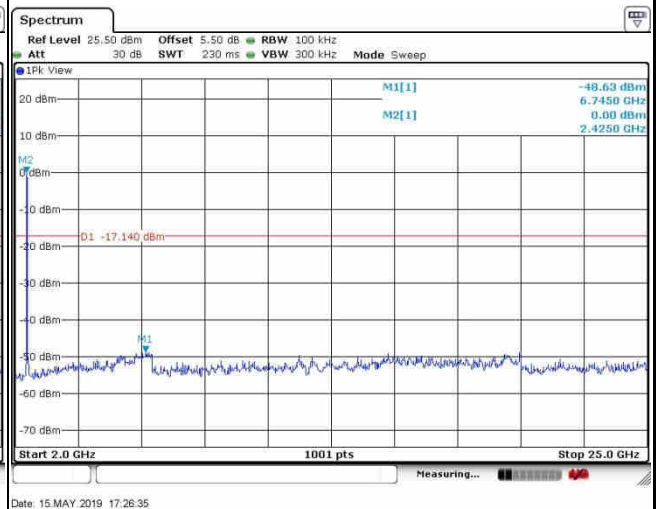
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz

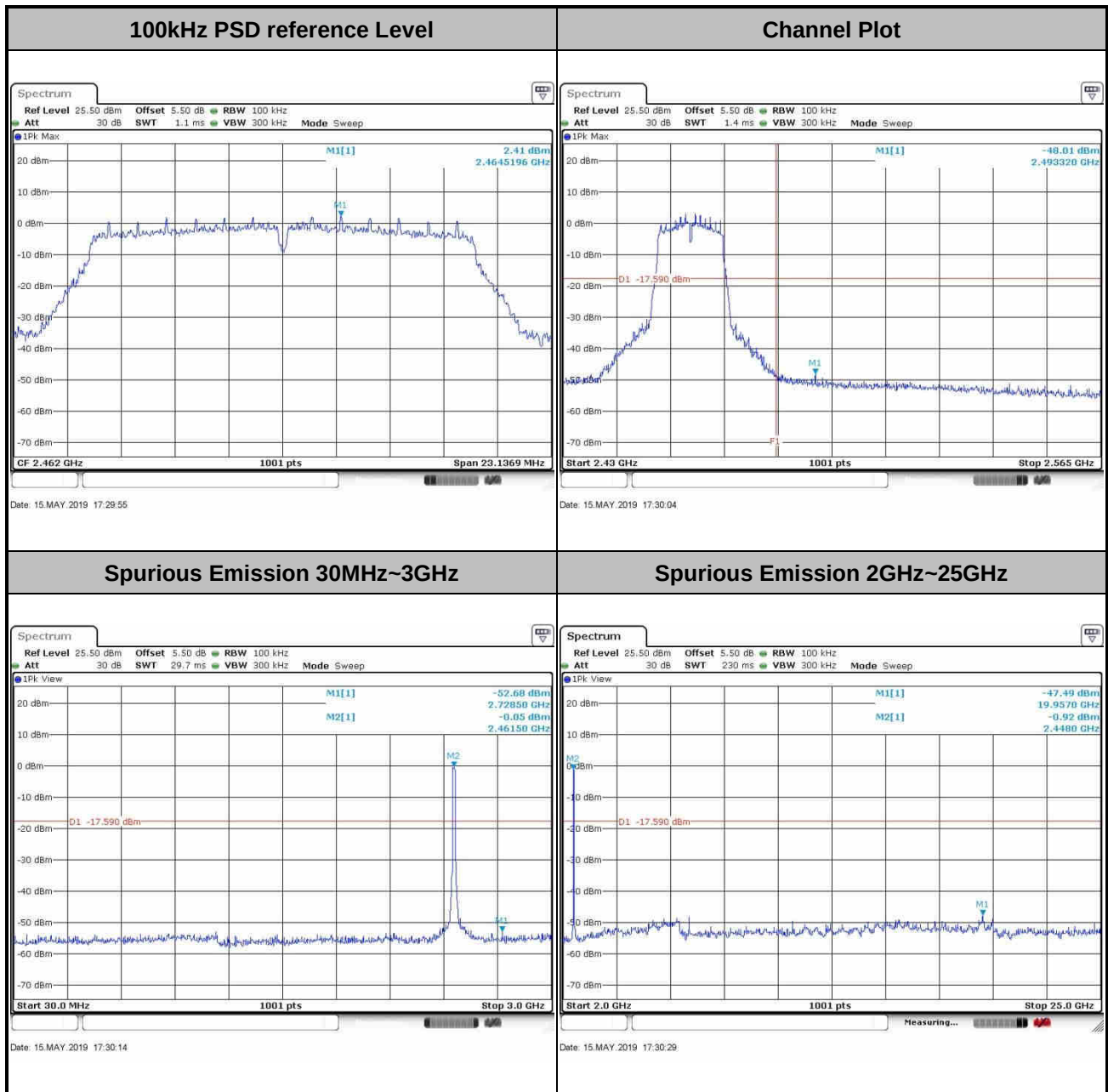


Spurious Emission 2GHz~25GHz





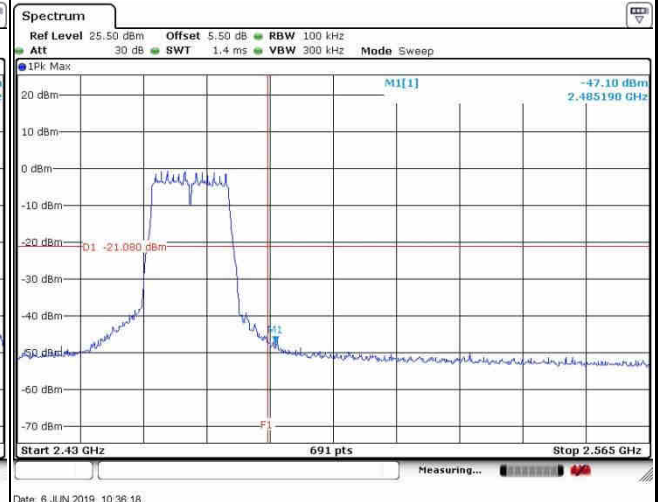
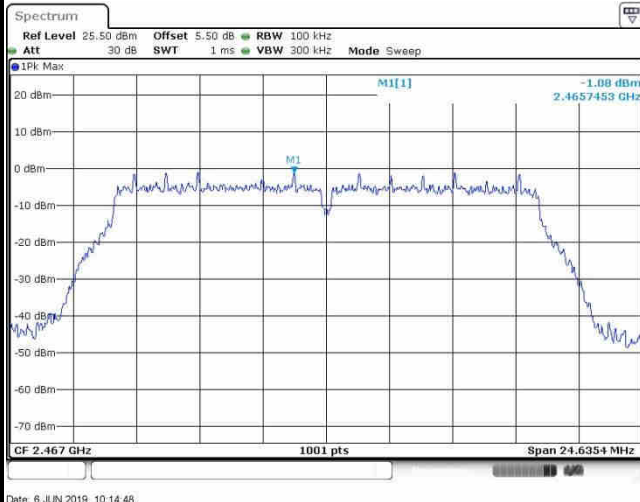
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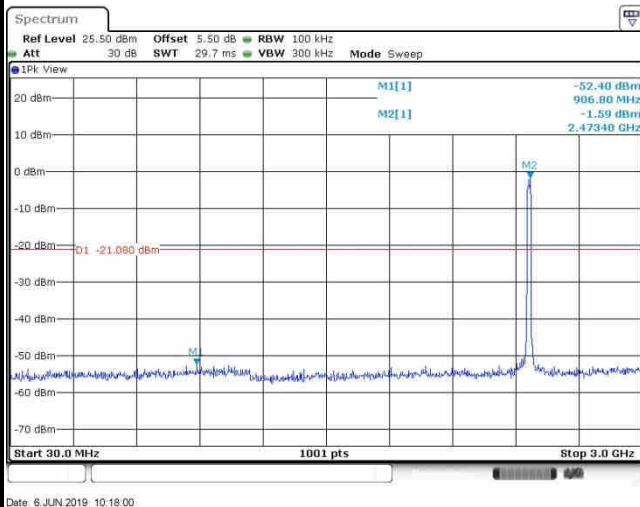


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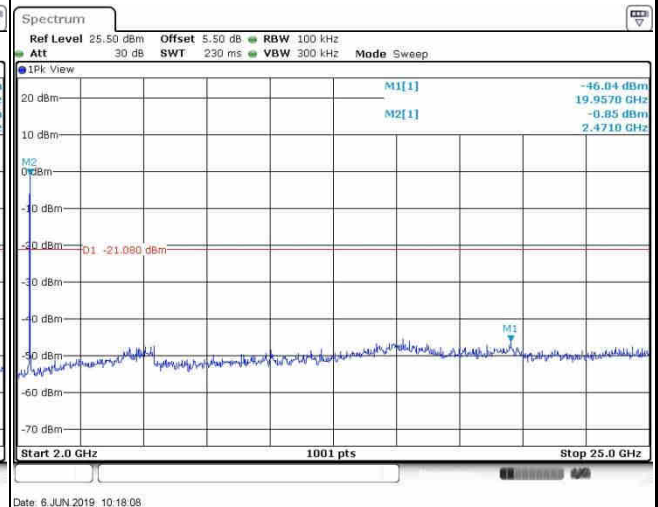
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz

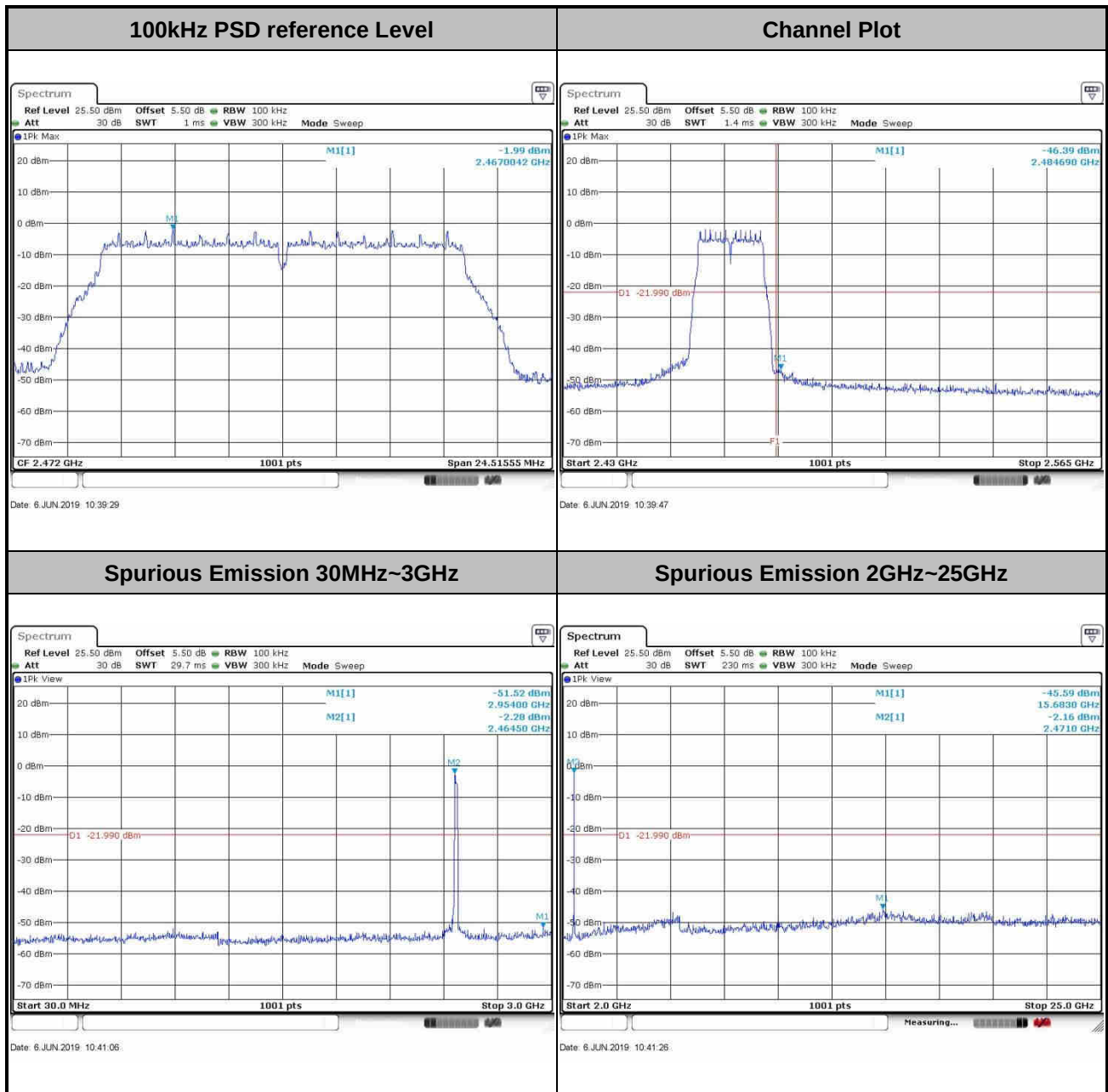


Spurious Emission 2GHz~25GHz



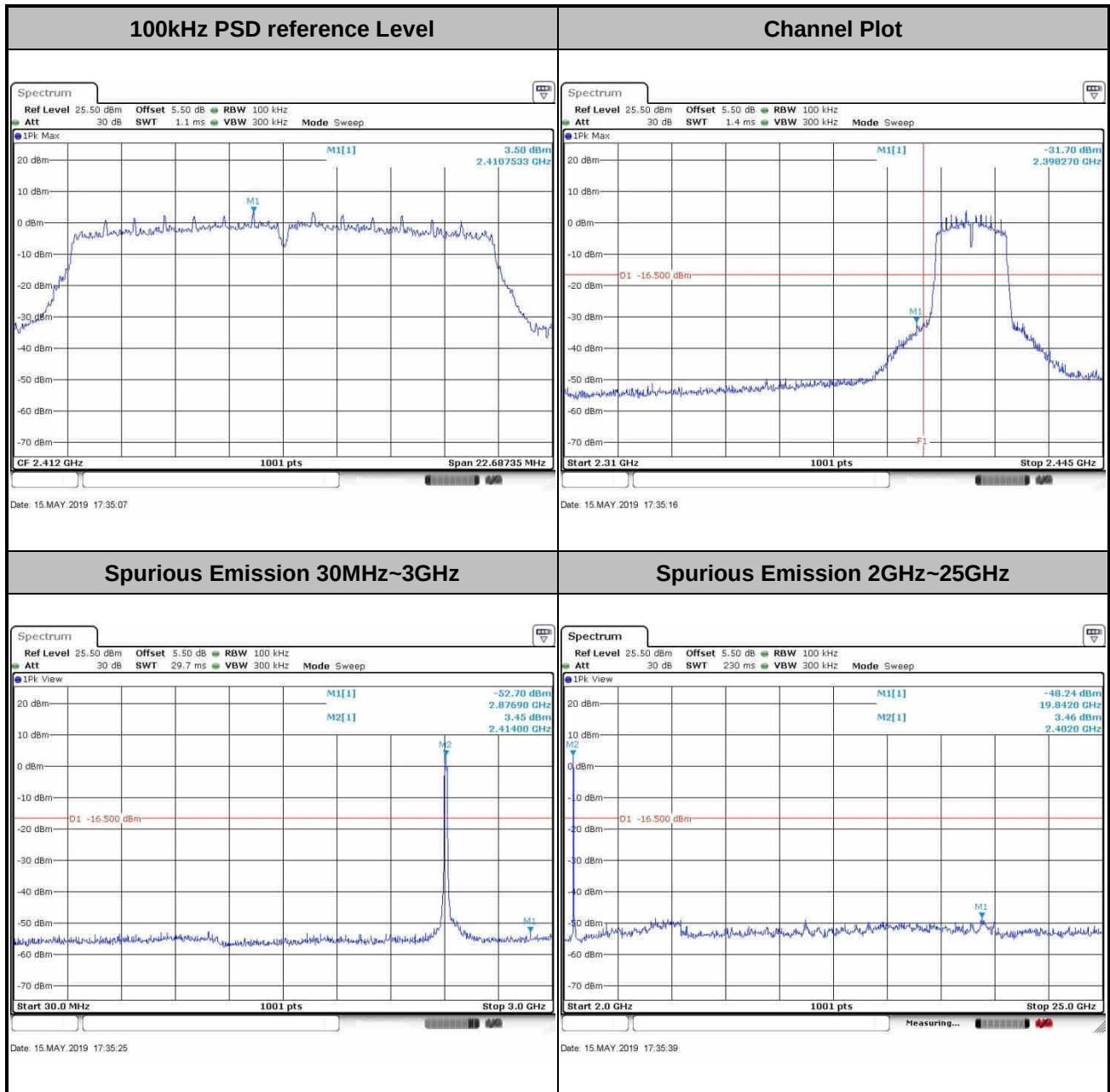


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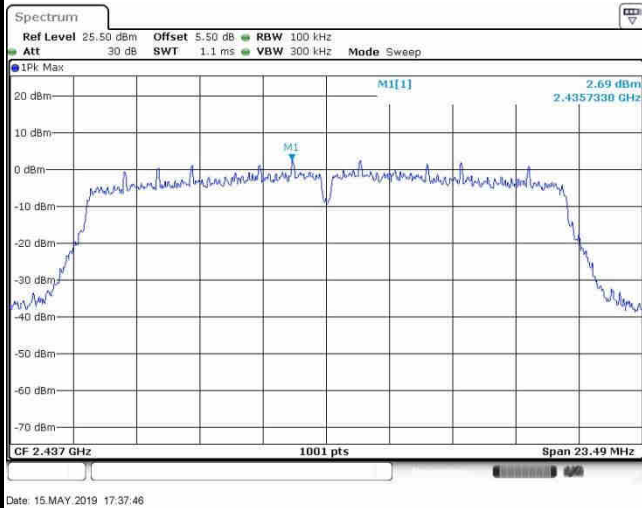
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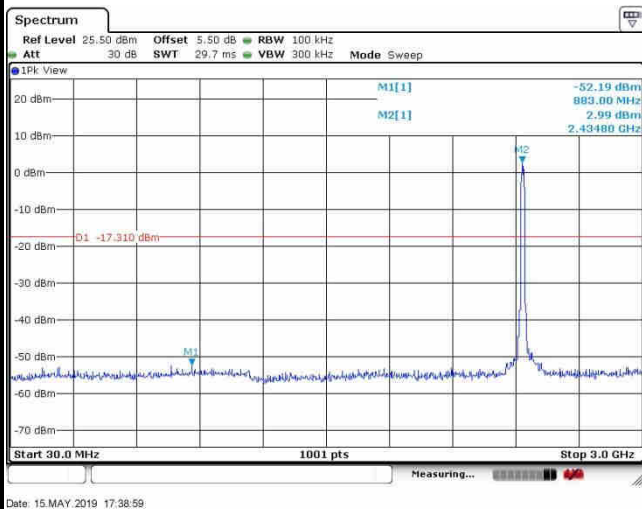


Test Mode :	802.11n HT20	Test Channel :	06
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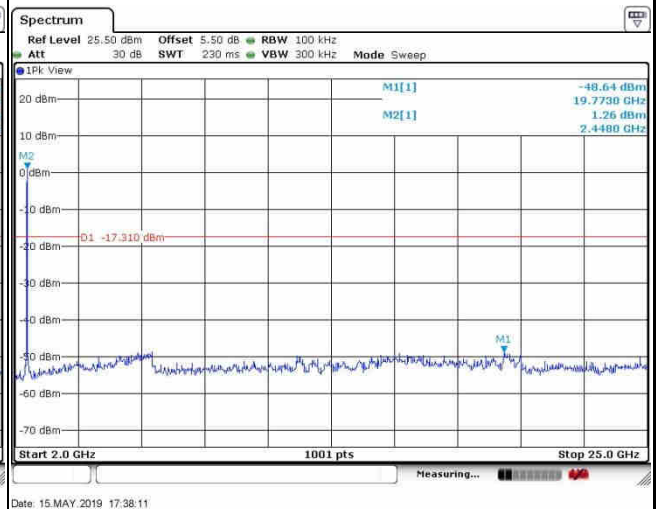
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz

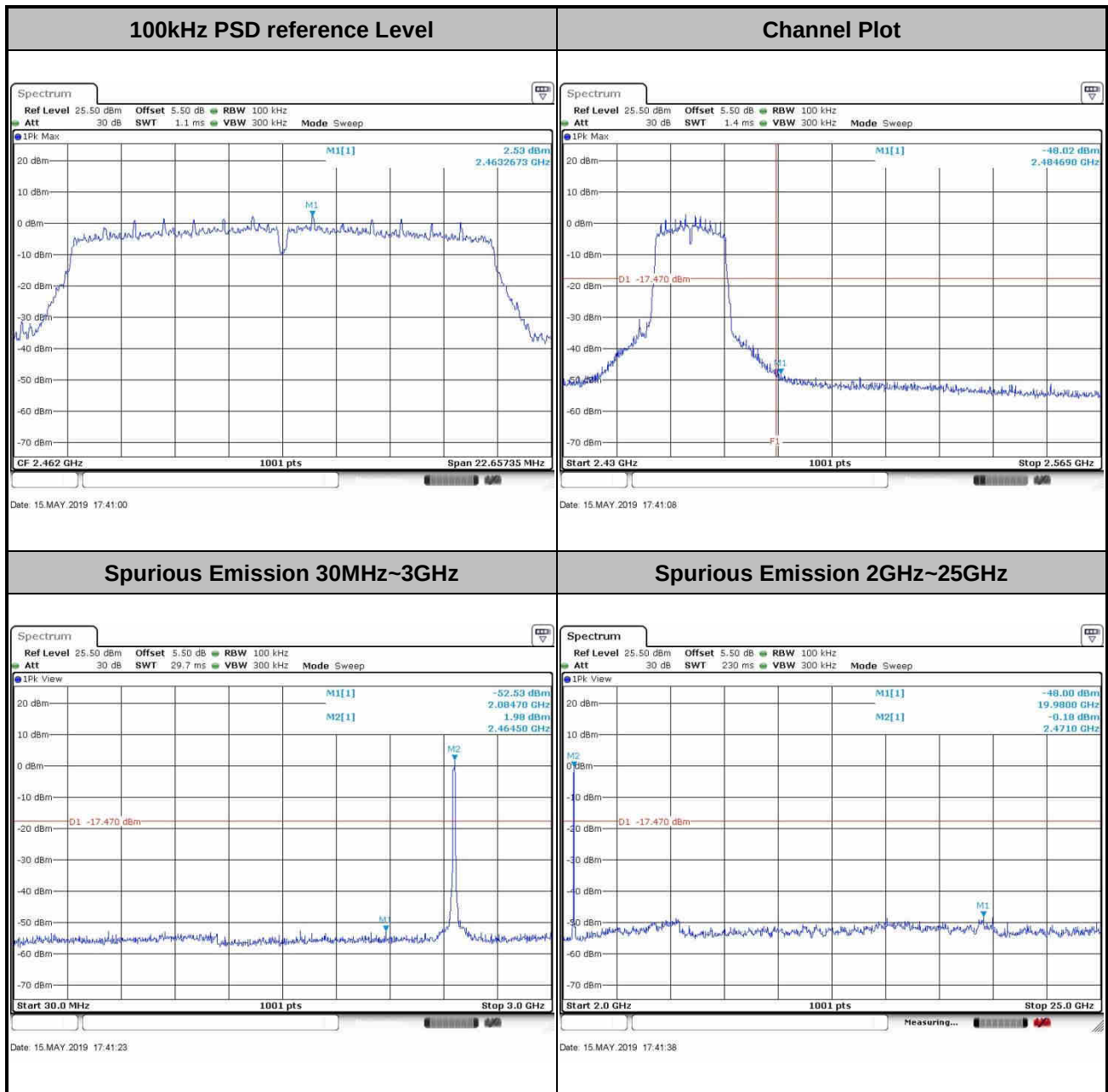


Spurious Emission 2GHz~25GHz





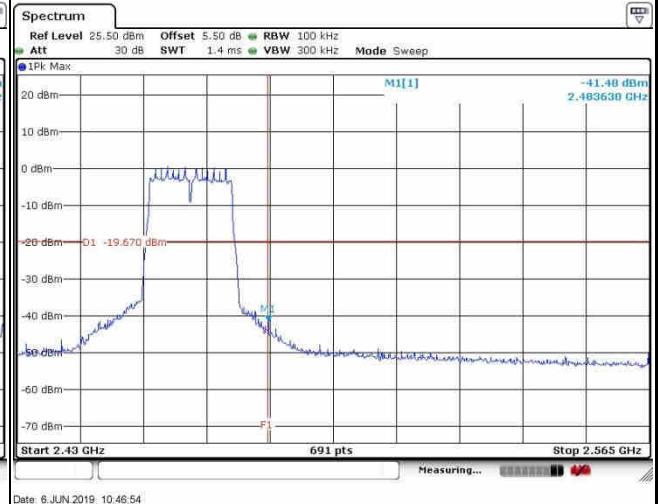
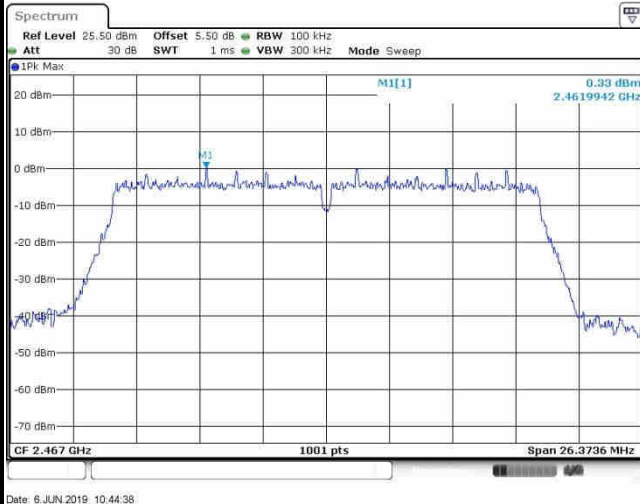
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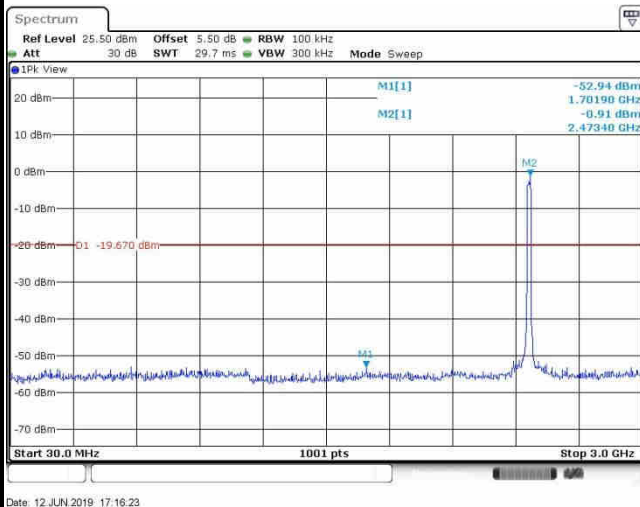


Test Mode :	802.11n HT20	Test Channel :	12
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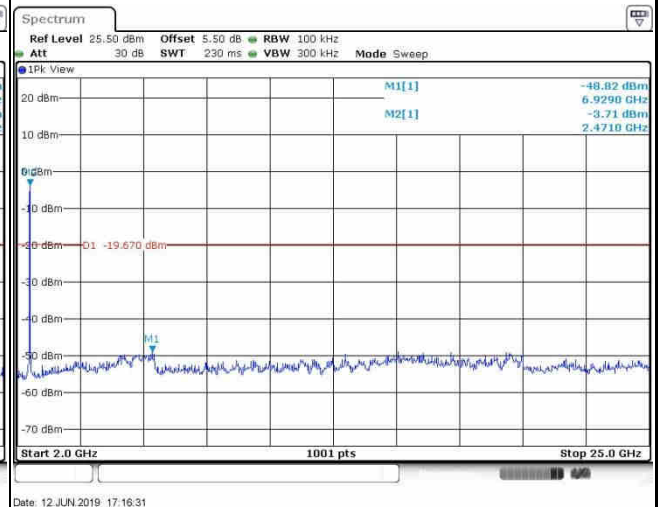
100kHz PSD reference Level



Spurious Emission 30MHz~3GHz

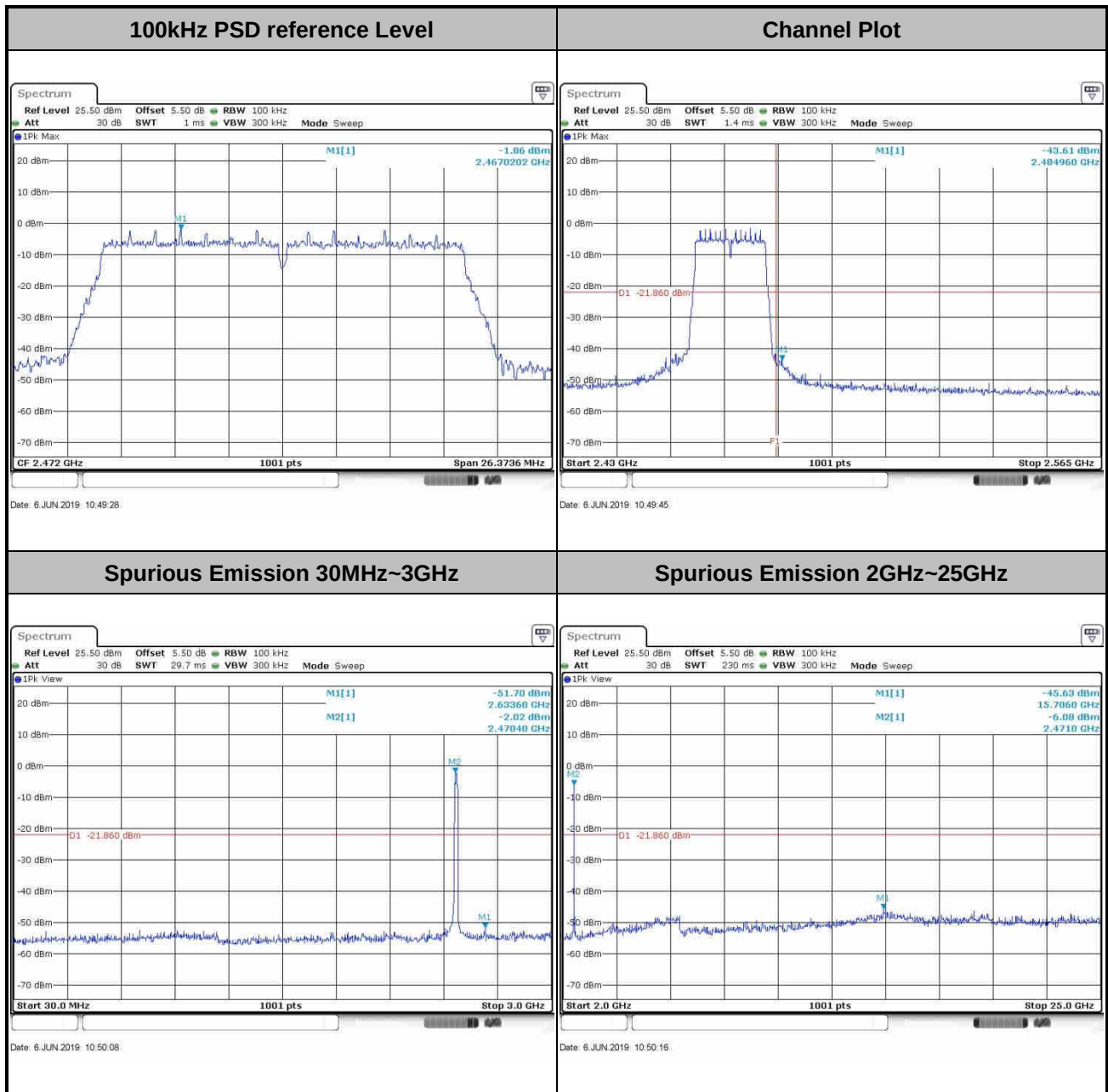


Spurious Emission 2GHz~25GHz





Test Mode :	802.11n HT20	Test Channel :	13
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3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

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

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

3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

1. The testing follows ANSI C63.10-2013 clause 11.11 & 11.12
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.

For average measurement:

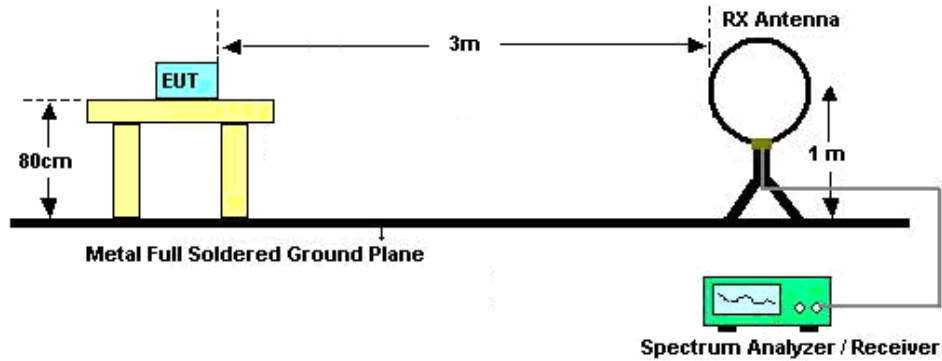
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.

Detector = power averaging (rms).
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

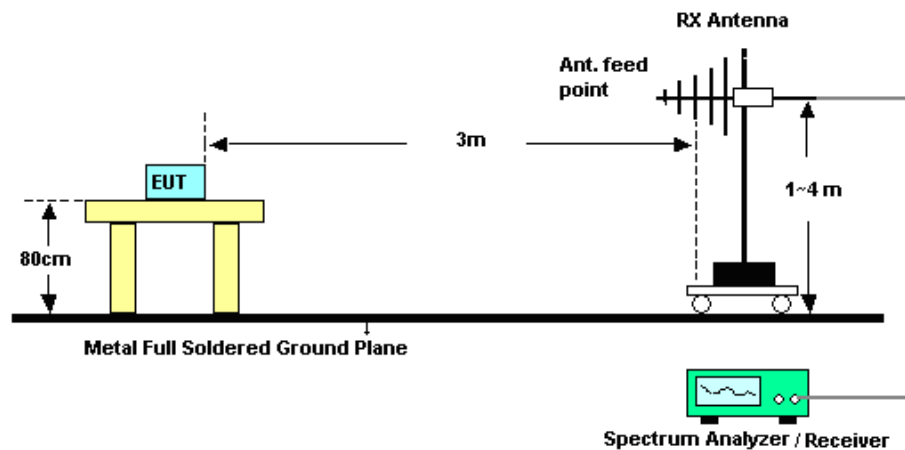
Detector = peak.

3.5.4 Test Setup

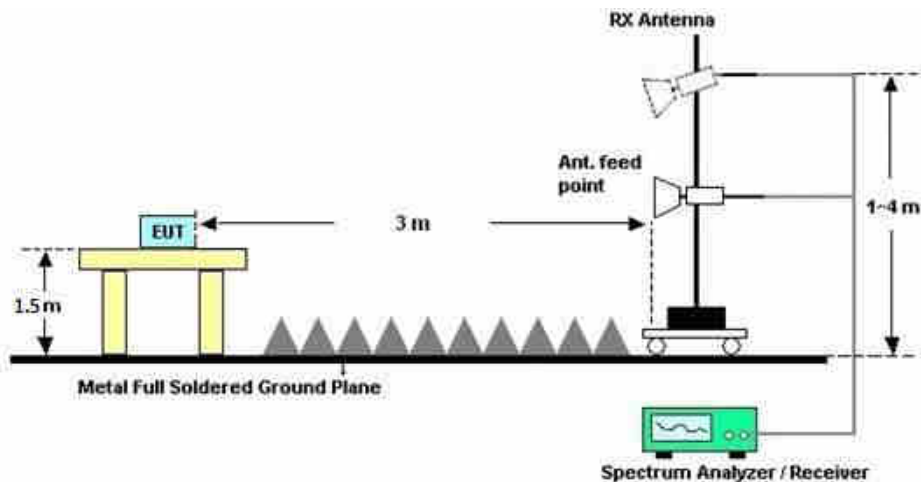
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





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

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

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.5.7 Duty Cycle

Please refer to Appendix E.

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

Please refer to Appendix C and D.

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

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

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

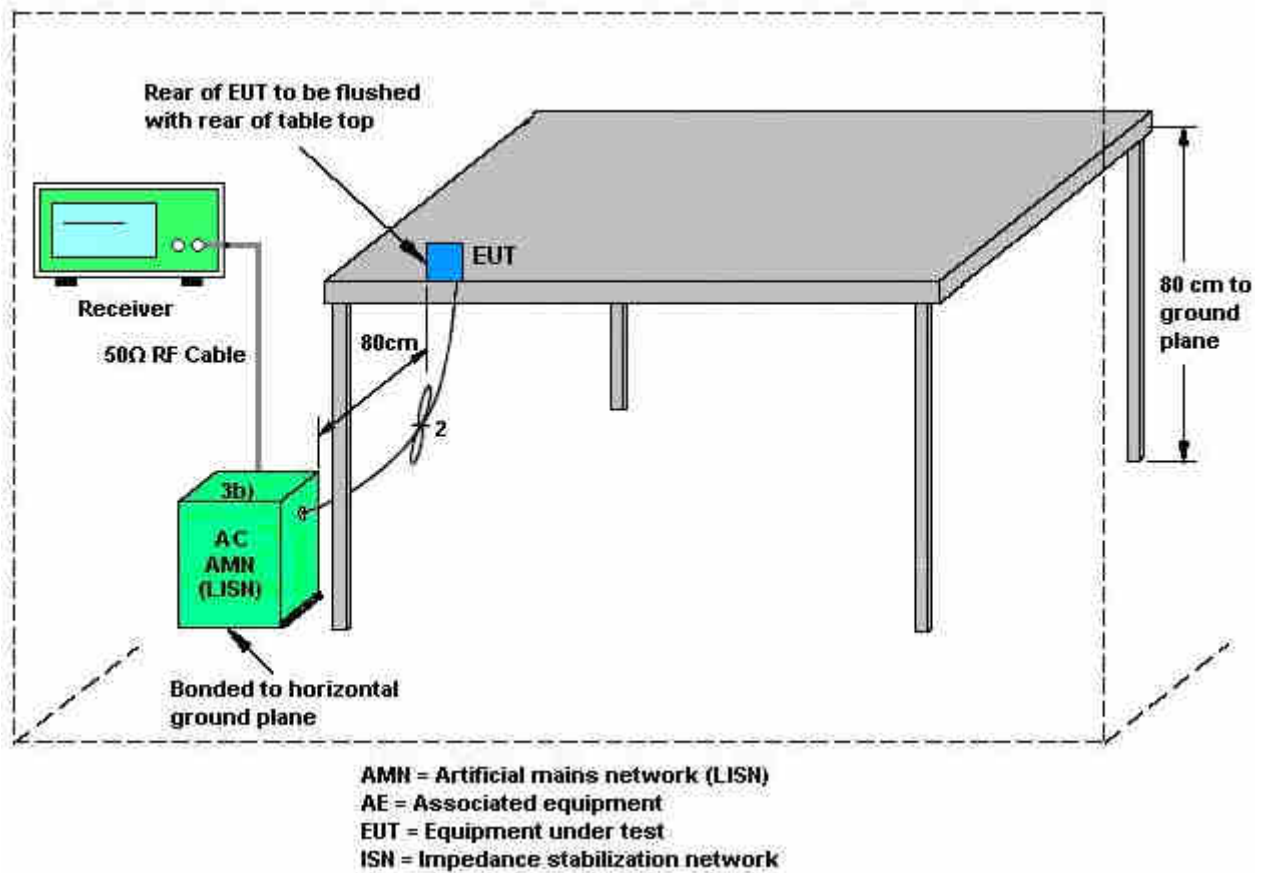
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.7 Antenna Requirements

3.7.1 Standard Applicable

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

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

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



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Aug. 07, 2018	May 09, 2019~ Jun. 12, 2019	Aug. 06, 2019	Conducted (TH01-KS)
Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 14, 2019	May 09, 2019~ Jun. 12, 2019	Jan. 13, 2020	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 14, 2019	May 09, 2019~ Jun. 12, 2019	Jan. 13, 2020	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY564000 23	3Hz~8.5GHz;Max 30dBm	Oct. 12, 2018	Jun. 06, 2019	Oct. 11, 2019	Radiation (03CH06-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY574710 84	10Hz~44GHz	Jun. 25, 2018	Jun. 06, 2019	Jun. 24, 2019	Radiation (03CH06-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 19, 2018	Jun. 06, 2019	Oct. 18, 2019	Radiation (03CH06-KS)
Bilog Antenna	TeseQ	CBL6111D	44483	30MHz~1GHz	Dec. 28, 2018	Jun. 06, 2019	Dec. 27, 2019	Radiation (03CH06-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct. 20, 2018	Jun. 06, 2019	Oct. 19, 2019	Radiation (03CH06-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2019	Jun. 06, 2019	Jan. 04, 2020	Radiation (03CH06-KS)
Amplifier	SONOMA	310N	187289	9KHz ~1GHZ	Aug. 06, 2018	Jun. 06, 2019	Aug. 05, 2019	Radiation (03CH06-KS)
Amplifier	MITEQ	TTA1840-35-HG	2014749	18~40GHz	Jan. 14, 2019	Jun. 06, 2019	Jan. 13, 2020	Radiation (03CH06-KS)
high gain Amplifier	MITEQ	AMF-7D-001018 00-30-10P	2025788	1Ghz-18Ghz	Apr. 17, 2019	Jun. 06, 2019	Apr. 16, 2020	Radiation (03CH06-KS)
Amplifier	Keysight	83017A	MY532702 03	500MHz~26.5GHz	Apr. 15, 2019	Jun. 06, 2019	Apr. 14, 2020	Radiation (03CH06-KS)
AC Power Source	Chroma	61601	F1040900 04	N/A	NCR	Jun. 06, 2019	NCR	Radiation (03CH06-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jun. 06, 2019	NCR	Radiation (03CH06-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jun. 06, 2019	NCR	Radiation (03CH06-KS)
EMI Receiver	R&S	ESCi7	100768	9kHz~7GHz;	Apr. 16, 2019	Jun. 10, 2019	Apr. 15, 2020	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 12, 2018	Jun. 10, 2019	Oct. 11, 2019	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Nov. 19, 2018	Jun. 10, 2019	Nov. 18, 2019	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP00000 0811	AC 0V~300V, 45Hz~1000Hz	Oct. 12, 2018	Jun. 10, 2019	Oct. 11, 2019	Conduction (CO01-KS)

NCR: No Calibration Required

5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage $K=2$ to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.9dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
---	-------

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
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Appendix A. Conducted test results

A1 - DTS Part

Test Engineer:	Lex Wu	Temperature:	21~25	°C
Test Date:	2019/05/09~2019/06/12	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band								
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
11b	1Mbps	1	1	2412	12.34	10.03	0.50	Pass
11b	1Mbps	1	6	2437	12.29	9.53	0.50	Pass
11b	1Mbps	1	11	2462	12.34	10.03	0.50	Pass
11b	1Mbps	1	12	2467	12.34	9.53	0.50	Pass
11b	1Mbps	1	13	2472	12.34	9.53	0.50	Pass
11g	6Mbps	1	1	2412	17.53	15.34	0.50	Pass
11g	6Mbps	1	6	2437	17.53	15.38	0.50	Pass
11g	6Mbps	1	11	2462	17.58	15.42	0.50	Pass
11g	6Mbps	1	12	2467	17.83	16.42	0.50	Pass
11g	6Mbps	1	13	2472	17.83	16.34	0.50	Pass
HT20	MCS0	1	1	2412	18.23	15.12	0.50	Pass
HT20	MCS0	1	6	2437	18.18	15.66	0.50	Pass
HT20	MCS0	1	11	2462	18.23	15.10	0.50	Pass
HT20	MCS0	1	12	2467	18.53	17.58	0.50	Pass
HT20	MCS0	1	13	2472	18.43	17.58	0.50	Pass

TEST RESULTS DATA
Peak Power Table

2.4GHz Band										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Peak Conducted Power (dBm)	Conducted Power Limit (dBm)	DG (dBi)	EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail
11b	1Mbps	1	1	2412	16.75	30.00	0.10	16.85	36.00	Pass
11b	1Mbps	1	6	2437	17.11	30.00	0.10	17.21	36.00	Pass
11b	1Mbps	1	11	2462	17.21	30.00	0.10	17.31	36.00	Pass
11b	1Mbps	1	12	2467	14.88	30.00	0.10	14.98	36.00	Pass
11b	1Mbps	1	13	2472	14.64	30.00	0.10	14.74	36.00	Pass
11g	6Mbps	1	1	2412	22.48	30.00	0.10	22.58	36.00	Pass
11g	6Mbps	1	6	2437	22.54	30.00	0.10	22.64	36.00	Pass
11g	6Mbps	1	11	2462	22.59	30.00	0.10	22.69	36.00	Pass
11g	6Mbps	1	12	2467	20.30	30.00	0.10	20.40	36.00	Pass
11g	6Mbps	1	13	2472	18.41	30.00	0.10	18.51	36.00	Pass
HT20	MCS0	1	1	2412	22.57	30.00	0.10	22.67	36.00	Pass
HT20	MCS0	1	6	2437	21.73	30.00	0.10	21.83	36.00	Pass
HT20	MCS0	1	11	2462	22.83	30.00	0.10	22.93	36.00	Pass
HT20	MCS0	1	12	2467	20.74	30.00	0.10	20.84	36.00	Pass
HT20	MCS0	1	13	2472	18.59	30.00	0.10	18.69	36.00	Pass

TEST RESULTS DATA
Average Power Table
(Reporting Only)

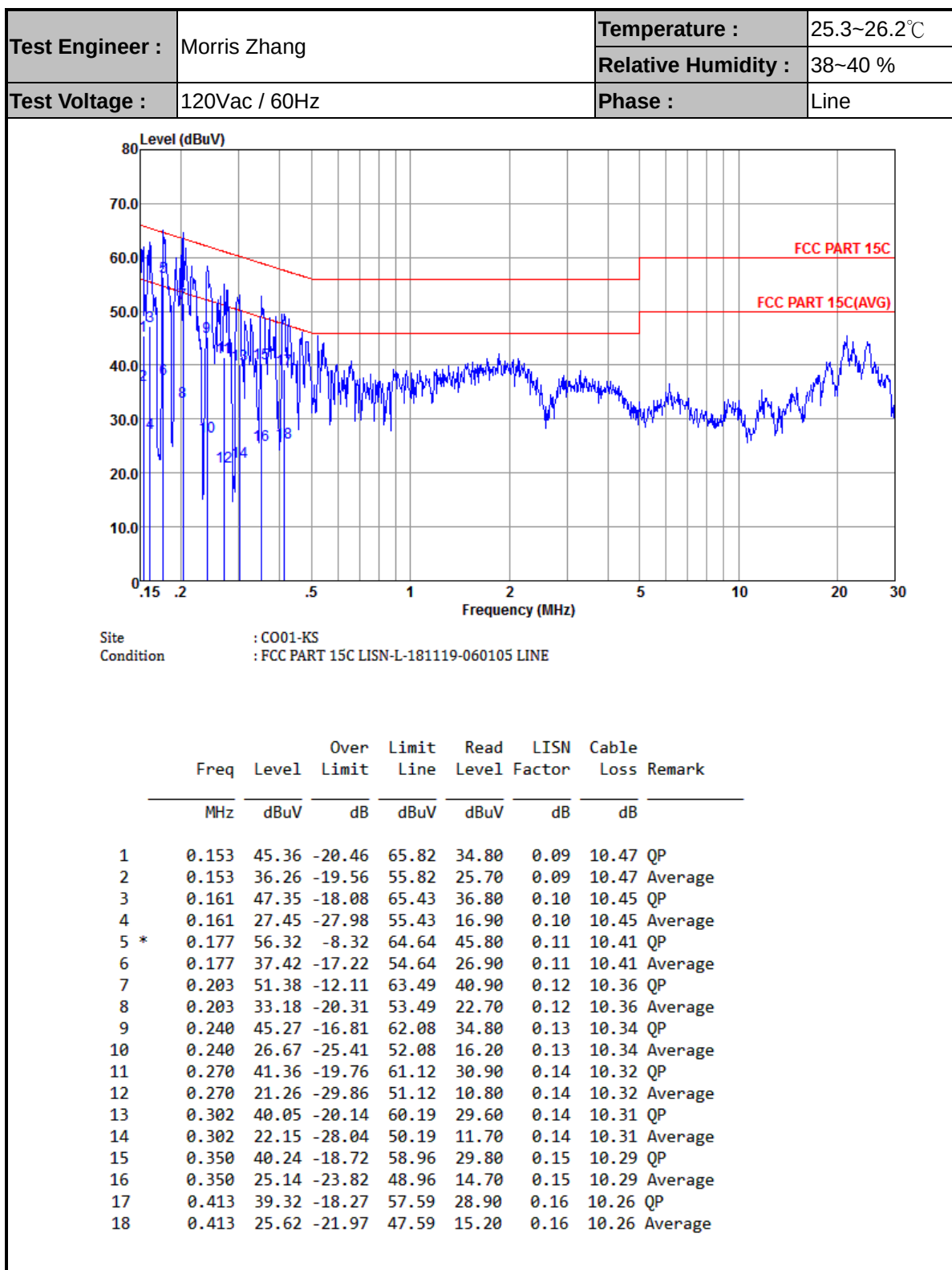
2.4GHz Band						
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)
11b	1Mbps	1	1	2412	0.00	13.92
11b	1Mbps	1	6	2437	0.00	13.57
11b	1Mbps	1	11	2462	0.00	13.62
11b	1Mbps	1	12	2467	0.00	12.90
11b	1Mbps	1	13	2472	0.00	12.63
11g	6Mbps	1	1	2412	0.00	13.95
11g	6Mbps	1	6	2437	0.00	13.35
11g	6Mbps	1	11	2462	0.00	13.45
11g	6Mbps	1	12	2467	0.00	10.71
11g	6Mbps	1	13	2472	0.00	9.10
HT20	MCS0	1	1	2412	0.00	13.95
HT20	MCS0	1	6	2437	0.00	13.06
HT20	MCS0	1	11	2462	0.00	13.36
HT20	MCS0	1	12	2467	0.00	11.88
HT20	MCS0	1	13	2472	0.00	9.81

TEST RESULTS DATA
Peak Power Density

2.4GHz Band								
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
11b	1Mbps	1	1	2412	-8.59	0.10	8.00	Pass
11b	1Mbps	1	6	2437	-9.53	0.10	8.00	Pass
11b	1Mbps	1	11	2462	-9.12	0.10	8.00	Pass
11b	1Mbps	1	12	2467	-9.48	0.10	8.00	Pass
11b	1Mbps	1	13	2472	-9.13	0.10	8.00	Pass
11g	6Mbps	1	1	2412	-10.25	0.10	8.00	Pass
11g	6Mbps	1	6	2437	-11.49	0.10	8.00	Pass
11g	6Mbps	1	11	2462	-10.99	0.10	8.00	Pass
11g	6Mbps	1	12	2467	-14.24	0.10	8.00	Pass
11g	6Mbps	1	13	2472	-16.02	0.10	8.00	Pass
HT20	MCS0	1	1	2412	-11.31	0.10	8.00	Pass
HT20	MCS0	1	6	2437	-10.81	0.10	8.00	Pass
HT20	MCS0	1	11	2462	-12.22	0.10	8.00	Pass
HT20	MCS0	1	12	2467	-14.33	0.10	8.00	Pass
HT20	MCS0	1	13	2472	-15.46	0.10	8.00	Pass

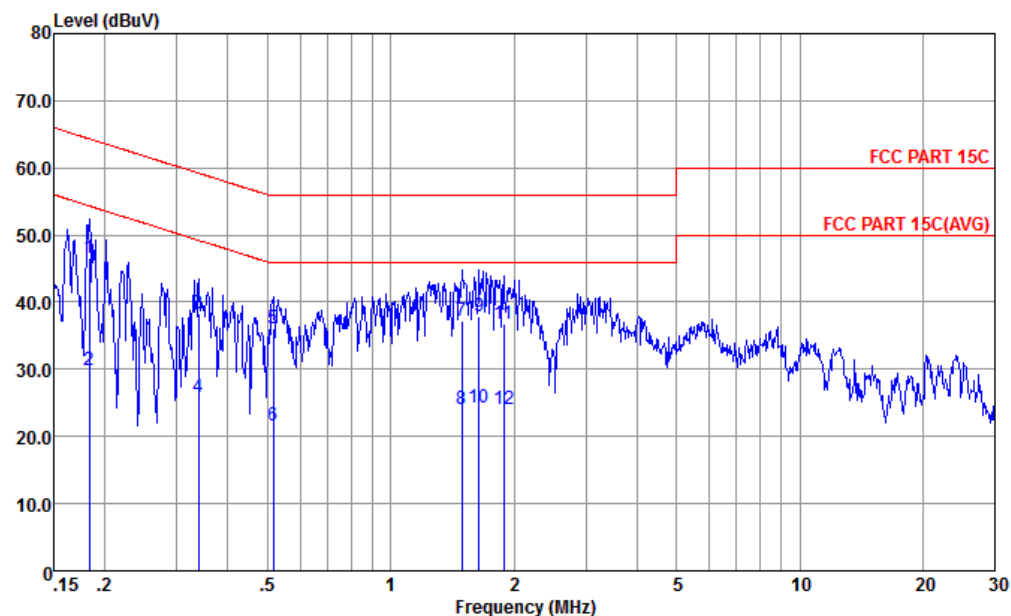


Appendix B. AC Conducted Emission Test Results





Test Engineer :	Morris Zhang	Temperature :	25.3~26.2℃
		Relative Humidity :	38~40 %
Test Voltage :	120Vac / 60Hz	Phase :	Neutral



Site : CO01-KS
Condition : FCC PART 15C LISN-N-181119-060105 NEUTRAL

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 *	0.183	46.47	-17.86	64.33	35.90	0.17	10.40	QP
2	0.183	29.77	-24.56	54.33	19.20	0.17	10.40	Average
3	0.339	38.35	-20.87	59.22	27.90	0.16	10.29	QP
4	0.339	25.95	-23.27	49.22	15.50	0.16	10.29	Average
5	0.516	36.18	-19.82	56.00	25.79	0.15	10.24	QP
6	0.516	21.68	-24.32	46.00	11.29	0.15	10.24	Average
7	1.495	37.27	-18.73	56.00	26.90	0.14	10.23	QP
8	1.495	24.07	-21.93	46.00	13.70	0.14	10.23	Average
9	1.645	37.77	-18.23	56.00	27.40	0.14	10.23	QP
10	1.645	24.27	-21.73	46.00	13.90	0.14	10.23	Average
11	1.888	36.88	-19.12	56.00	26.50	0.15	10.23	QP
12	1.888	24.18	-21.82	46.00	13.80	0.15	10.23	Average



Appendix C. Radiated Spurious Emission

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamplifier Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2376.82	54.67	-19.33	74	48.7	32.03	5.36	31.42	100	267	P	H
		2364.21	44.13	-9.87	54	38.13	32.07	5.36	31.43	100	267	A	H
	*	2412	103.95	-	-	97.82	32.13	5.41	31.41	100	267	P	H
	*	2410	100.84	-	-	94.71	32.13	5.41	31.41	100	267	A	H
		2382.67	54.95	-19.05	74	48.98	32.03	5.36	31.42	351	267	P	V
		2385.27	43.99	-10.01	54	37.97	32.03	5.41	31.42	351	267	A	V
	*	2412	103.93	-	-	97.8	32.13	5.41	31.41	351	267	P	V
	*	2410	100.66	-	-	94.53	32.13	5.41	31.41	351	267	A	V
802.11b CH 11 2462MHz		2488.12	55.06	-18.94	74	48.8	32.2	5.45	31.39	112	271	P	H
		2483.98	43.83	-10.17	54	37.5	32.27	5.45	31.39	112	271	A	H
	*	2462	101.78	-	-	95.42	32.33	5.43	31.4	112	271	P	H
	*	2460	98.64	-	-	92.28	32.33	5.43	31.4	112	271	A	H
		2486.2	54.9	-19.1	74	48.57	32.27	5.45	31.39	386	260	P	V
		2484.04	43.36	-10.64	54	37.03	32.27	5.45	31.39	386	260	A	V
	*	2462	101.34	-	-	94.98	32.33	5.43	31.4	386	260	P	V
	*	2460	97.27	-	-	90.91	32.33	5.43	31.4	386	260	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 12 2467MHz		2484.46	55.15	-18.85	74	48.82	32.27	5.45	31.39	138	257	P	H
		2483.86	44.72	-9.28	54	38.39	32.27	5.45	31.39	138	257	A	H
	*	2466	99.94	-	-	93.56	32.33	5.45	31.4	138	257	P	H
	*	2468	96.85	-	-	90.46	32.33	5.45	31.39	138	257	A	H
		2484.46	55.73	-18.27	74	49.4	32.27	5.45	31.39	376	266	P	V
		2483.92	45.54	-8.46	54	39.21	32.27	5.45	31.39	376	266	A	V
	*	2466	99.95	-	-	93.57	32.33	5.45	31.4	376	266	P	V
	*	2468	96.92	-	-	90.53	32.33	5.45	31.39	376	266	A	V
802.11b CH 13 2472MHz		2484.52	55.31	-18.69	74	48.98	32.27	5.45	31.39	140	261	P	H
		2483.5	46.96	-7.04	54	40.63	32.27	5.45	31.39	140	261	A	H
		2474	99.27	-	-	92.94	32.27	5.45	31.39	140	261	P	H
		2474	96.28	-	-	89.95	32.27	5.45	31.39	140	261	A	H
		2485.78	55.32	-18.68	74	48.99	32.27	5.45	31.39	375	266	P	V
		2483.5	48.17	-5.83	54	41.84	32.27	5.45	31.39	375	266	A	V
		2472	99.69	-	-	93.36	32.27	5.45	31.39	375	266	P	V
		2470	96.6	-	-	90.21	32.33	5.45	31.39	375	266	A	V



2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamplifier Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		4824	46.25	-27.75	74	65.7	34.2	7.95	61.6	200	0	P	H
		4824	45.35	-28.65	74	64.8	34.2	7.95	61.6	100	360	P	V
802.11b CH 06 2437MHz		4872	50.57	-23.43	74	70.06	34.13	7.99	61.61	300	360	P	H
		4872	49.89	-4.11	54	69.38	34.13	7.99	61.61	100	245	A	H
		7308	41.64	-32.36	74	57.52	36.6	9.85	62.33	200	360	P	H
		4872	45.26	-28.74	74	64.75	34.13	7.99	61.61	100	360	P	V
		7308	41.86	-32.14	74	57.74	36.6	9.85	62.33	100	360	P	V
802.11b CH 11 2462MHz		4926	52.29	-21.71	74	71.76	34.1	8.06	61.63	105	257	P	H
		4926	49.57	-4.43	54	69.04	34.1	8.06	61.63	105	257	A	H
		7386	41.32	-32.68	74	57.16	36.5	10.03	62.37	100	360	P	H
		4926	46.63	-27.37	74	66.1	34.1	8.06	61.63	100	0	P	V
		7386	40.07	-33.93	74	55.91	36.5	10.03	62.37	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 12 2467MHz		4932	52.06	-21.94	74	71.53	34.1	8.06	61.63	100	257	P	H
		4932	49.98	-4.02	54	69.45	34.1	8.06	61.63	100	257	A	H
		7404	41.34	-32.66	74	57.22	36.47	10.03	62.38	100	257	P	H
		4932	46.39	-27.61	74	65.86	34.1	8.06	61.63	100	360	P	V
		7404	40.87	-33.13	74	56.75	36.47	10.03	62.38	100	360	P	V
802.11b CH 13 2472MHz		4944	51.63	-22.37	74	71.1	34.1	8.06	61.63	100	264	P	H
		4944	49.84	-4.16	54	69.31	34.1	8.06	61.63	100	264	A	H
		7416	40.98	-33.02	74	56.89	36.47	10	62.38	100	264	P	H
		4944	46.14	-27.86	74	65.61	34.1	8.06	61.63	100	360	P	V
		7416	40.7	-33.3	74	56.61	36.47	10	62.38	100	360	P	V



2.4GHz 2400~2483.5MHz

WIFI 802.11g (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		2389.95	57.66	-16.34	74	51.66	32	5.41	31.41	130	251	P	H
		2389.95	46.52	-7.48	54	40.52	32	5.41	31.41	130	251	A	H
	*	2412	103.87	-	-	97.74	32.13	5.41	31.41	130	251	P	H
	*	2412	96.21	-	-	90.08	32.13	5.41	31.41	130	251	A	H
		2389.82	56.97	-17.03	74	50.97	32	5.41	31.41	400	272	P	V
		2389.95	46.05	-7.95	54	40.05	32	5.41	31.41	400	272	A	V
	*	2412	101.89	-	-	95.76	32.13	5.41	31.41	400	272	P	V
	*	2412	94.23	-	-	88.1	32.13	5.41	31.41	400	272	A	V
802.11g CH 11 2462MHz		2483.5	58.81	-15.19	74	52.48	32.27	5.45	31.39	112	232	P	H
		2483.5	46.9	-7.1	54	40.57	32.27	5.45	31.39	112	232	A	H
	*	2464	104.33	-	-	97.95	32.33	5.45	31.4	112	232	P	H
	*	2460	96.67	-	-	90.31	32.33	5.43	31.4	112	232	A	H
		2483.62	59.73	-14.27	74	53.4	32.27	5.45	31.39	386	275	P	V
		2483.5	46.26	-7.74	54	39.93	32.27	5.45	31.39	386	275	A	V
	*	2464	102.69	-	-	96.31	32.33	5.45	31.4	386	275	P	V
	*	2460	94.97	-	-	88.61	32.33	5.43	31.4	386	275	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11g (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 12 2467MHz		2484.46	62.32	-11.68	74	55.99	32.27	5.45	31.39	138	261	P	H
		2483.5	48.53	-5.47	54	42.2	32.27	5.45	31.39	138	261	A	H
	*	2474	101.25	-	-	94.92	32.27	5.45	31.39	138	261	P	H
	*	2474	93.37	-	-	87.04	32.27	5.45	31.39	138	261	A	H
		2483.62	60.03	-13.97	74	53.7	32.27	5.45	31.39	384	264	P	V
		2483.5	46.33	-7.67	54	40	32.27	5.45	31.39	384	264	A	V
	*	2464	99.97	-	-	93.59	32.33	5.45	31.4	384	264	P	V
	*	2460	92.33	-	-	85.97	32.33	5.43	31.4	384	264	A	V
802.11g CH13 2472MHz		2483.56	62.93	-11.07	74	56.6	32.27	5.45	31.39	142	266	P	H
		2483.5	48.64	-5.36	54	42.31	32.27	5.45	31.39	142	266	A	H
	*	2476	99.5	-	-	93.17	32.27	5.45	31.39	142	266	P	H
	*	2474	91.73	-	-	85.4	32.27	5.45	31.39	142	266	A	H
		2483.8	58.01	-15.99	74	51.68	32.27	5.45	31.39	303	292	P	V
		2483.5	45.55	-8.45	54	39.22	32.27	5.45	31.39	303	292	A	V
	*	2470	95.59	-	-	89.2	32.33	5.45	31.39	303	292	P	V
	*	2470	87.76	-	-	81.37	32.33	5.45	31.39	303	292	A	V
Remark	3. No other spurious found. 4. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		4824	44.25	-29.75	74	63.7	34.2	7.95	61.6	100	360	P	H
		4824	40.39	-33.61	74	59.84	34.2	7.95	61.6	100	0	P	V
802.11g CH 06 2437MHz		4872	47.71	-26.29	74	67.2	34.13	7.99	61.61	100	360	P	H
		7308	42.44	-31.56	74	58.32	36.6	9.85	62.33	100	360	P	H
		4872	42.46	-31.54	74	61.95	34.13	7.99	61.61	100	0	P	V
		7308	41.76	-32.24	74	57.64	36.6	9.85	62.33	100	0	P	V
802.11g CH 11 2462MHz		4926	51.04	-22.96	74	70.51	34.1	8.06	61.63	100	251	P	H
		4926	41.57	-12.43	54	61.04	34.1	8.06	61.63	100	251	A	H
		7386	42.71	-31.29	74	58.55	36.5	10.03	62.37	100	360	P	H
		4926	46.84	-27.16	74	66.31	34.1	8.06	61.63	100	0	P	V
		7386	41.69	-32.31	74	57.53	36.5	10.03	62.37	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 12 2467MHz		4938	47.07	-26.93	74	66.54	34.1	8.06	61.63	100	0	P	H
		7404	40.85	-33.15	74	56.73	36.47	10.03	62.38	100	0	P	H
		4938	45.12	-28.88	74	64.59	34.1	8.06	61.63	100	360	P	V
		7404	40.95	-33.05	74	56.83	36.47	10.03	62.38	100	360	P	V
802.11g CH 13 2472MHz		4944	45.36	-28.64	74	64.83	34.1	8.06	61.63	100	360	P	H
		7416	40.23	-33.77	74	56.14	36.47	10	62.38	100	360	P	H
		4944	41.66	-32.34	74	61.13	34.1	8.06	61.63	100	0	P	V
		7416	40.4	-33.6	74	56.31	36.47	10	62.38	100	0	P	V
Remark	3. No other spurious found. 4. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		2389.82	66.77	-7.23	74	60.77	32	5.41	31.41	101	273	P	H
		2389.95	48.94	-5.06	54	42.94	32	5.41	31.41	101	273	A	H
	*	2412	103.74	-	-	97.61	32.13	5.41	31.41	101	273	P	H
	*	2412	95.85	-	-	89.72	32.13	5.41	31.41	101	273	A	H
		2389.95	66.16	-7.84	74	60.16	32	5.41	31.41	353	262	P	V
		2389.95	48.64	-5.36	54	42.64	32	5.41	31.41	353	262	A	V
	*	2412	102.91	-	-	96.78	32.13	5.41	31.41	353	262	P	V
	*	2412	95.08	-	-	88.95	32.13	5.41	31.41	353	262	A	V
802.11n HT20 CH 11 2462MHz		2484.64	59.78	-14.22	74	53.45	32.27	5.45	31.39	113	273	P	H
		2483.5	46.87	-7.13	54	40.54	32.27	5.45	31.39	113	273	A	H
	*	2462	103.29	-	-	96.93	32.33	5.43	31.4	113	273	P	H
	*	2464	95.68	-	-	89.3	32.33	5.45	31.4	113	273	A	H
		2483.56	60.29	-13.71	74	53.96	32.27	5.45	31.39	363	270	P	V
		2483.5	46.7	-7.3	54	40.37	32.27	5.45	31.39	363	270	A	V
	*	2464	102.6	-	-	96.22	32.33	5.45	31.4	363	270	P	V
	*	2464	94.93	-	-	88.55	32.33	5.45	31.4	363	270	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 12 2467MHz		2484.94	63.63	-10.37	74	57.3	32.27	5.45	31.39	113	274	P	H
		2483.5	49.93	-4.07	54	43.6	32.27	5.45	31.39	113	274	A	H
	*	2464	101.31	-	-	94.93	32.33	5.45	31.4	113	274	P	H
	*	2464	93.41	-	-	87.03	32.33	5.45	31.4	113	274	A	H
		2484.64	63.21	-10.79	74	56.88	32.27	5.45	31.39	376	269	P	V
		2483.5	49.55	-4.45	54	43.22	32.27	5.45	31.39	376	269	A	V
	*	2464	100.24	-	-	93.86	32.33	5.45	31.4	376	269	P	V
802.11n HT20 CH 13 2472MHz	*	2464	92.49	-	-	86.11	32.33	5.45	31.4	376	269	A	V
		2483.86	62.33	-11.67	74	56	32.27	5.45	31.39	100	272	P	H
		2483.5	49.48	-4.52	54	43.15	32.27	5.45	31.39	100	272	A	H
	*	2476	97.53	-	-	91.2	32.27	5.45	31.39	100	272	P	H
	*	2476	89.39	-	-	83.06	32.27	5.45	31.39	100	272	A	H
		2483.68	63.04	-10.96	74	56.71	32.27	5.45	31.39	376	271	P	V
		2483.5	49.51	-4.49	54	43.18	32.27	5.45	31.39	376	271	A	V
Remark	*	2470	98.48	-	-	92.09	32.33	5.45	31.39	376	271	P	V
	*	2468	90.58	-	-	84.19	32.33	5.45	31.39	376	271	A	V
1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		4824	44.54	-29.46	74	63.99	34.2	7.95	61.6	100	0	P	H
		4824	40.33	-33.67	74	59.78	34.2	7.95	61.6	100	360	P	V
802.11n HT20 CH 06 2437MHz		4872	48.36	-25.64	74	67.85	34.13	7.99	61.61	100	360	P	H
		7308	42.51	-31.49	74	58.39	36.6	9.85	62.33	100	360	P	H
		4872	44.61	-29.39	74	64.1	34.13	7.99	61.61	100	0	P	V
		7308	40.87	-33.13	74	56.75	36.6	9.85	62.33	100	0	P	V
802.11n HT20 CH 11 2462MHz		4926	50.9	-23.1	74	70.37	34.1	8.06	61.63	100	0	P	H
		4926	42.83	-11.17	54	62.3	34.1	8.06	61.63	103	153	A	H
		7386	41.93	-32.07	74	57.77	36.5	10.03	62.37	100	0	P	H
		4926	46.58	-27.42	74	66.05	34.1	8.06	61.63	100	360	P	V
		7386	42.12	-31.88	74	57.96	36.5	10.03	62.37	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 12 2467MHz		4932	47.79	-26.21	74	67.26	34.1	8.06	61.63	100	360	P	H
		7404	40.96	-33.04	74	56.84	36.47	10.03	62.38	100	360	P	H
		4932	43.17	-30.83	74	62.64	34.1	8.06	61.63	100	0	P	V
		7404	39.87	-34.13	74	55.75	36.47	10.03	62.38	100	0	P	V
802.11n HT20 CH 13 2472MHz		4944	48.79	-25.21	74	68.26	34.1	8.06	61.63	100	0	P	H
		7416	41.19	-32.81	74	57.1	36.47	10	62.38	100	0	P	H
		4944	43.01	-30.99	74	62.48	34.1	8.06	61.63	100	360	P	V
		7416	41.35	-32.65	74	57.26	36.47	10	62.38	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

Emission below 1GHz

2.4GHz WIFI 802.11b (LF)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
2.4GHz 802.11b LF		89.17	20.98	-22.52	43.5	38.36	14.59	0.95	32.92			P	H
		195.87	21.94	-21.56	43.5	37.8	15.54	1.51	32.91			P	H
		352.04	18.62	-27.38	46	29.23	20.51	1.97	33.09			P	H
		588.72	22.83	-23.17	46	29.13	24.47	2.57	33.34			P	H
		743.92	25.41	-20.59	46	30.19	25.42	2.93	33.13			P	H
		889.42	25.48	-20.52	46	28.19	26.46	3.21	32.38	100	360	P	H
		55.22	31.4	-8.6	40	50.39	13.2	0.77	32.96	100	0	P	V
		89.17	22.73	-20.77	43.5	40.11	14.59	0.95	32.92			P	V
		185.2	19.13	-24.37	43.5	35.24	15.38	1.43	32.92			P	V
		316.15	19.46	-26.54	46	31.01	19.61	1.88	33.04			P	V
		634.31	23.45	-22.55	46	29.38	24.7	2.69	33.32			P	V
		780.78	25.51	-20.49	46	29.65	25.87	3.03	33.04			P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

**Note symbol**

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



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

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

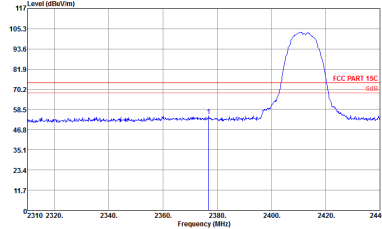
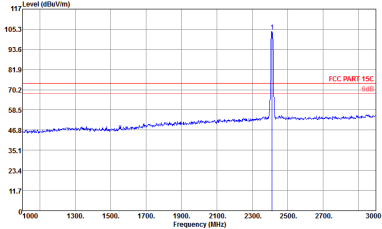
Both peak and average measured complies with the limit line, so test result is “PASS”.

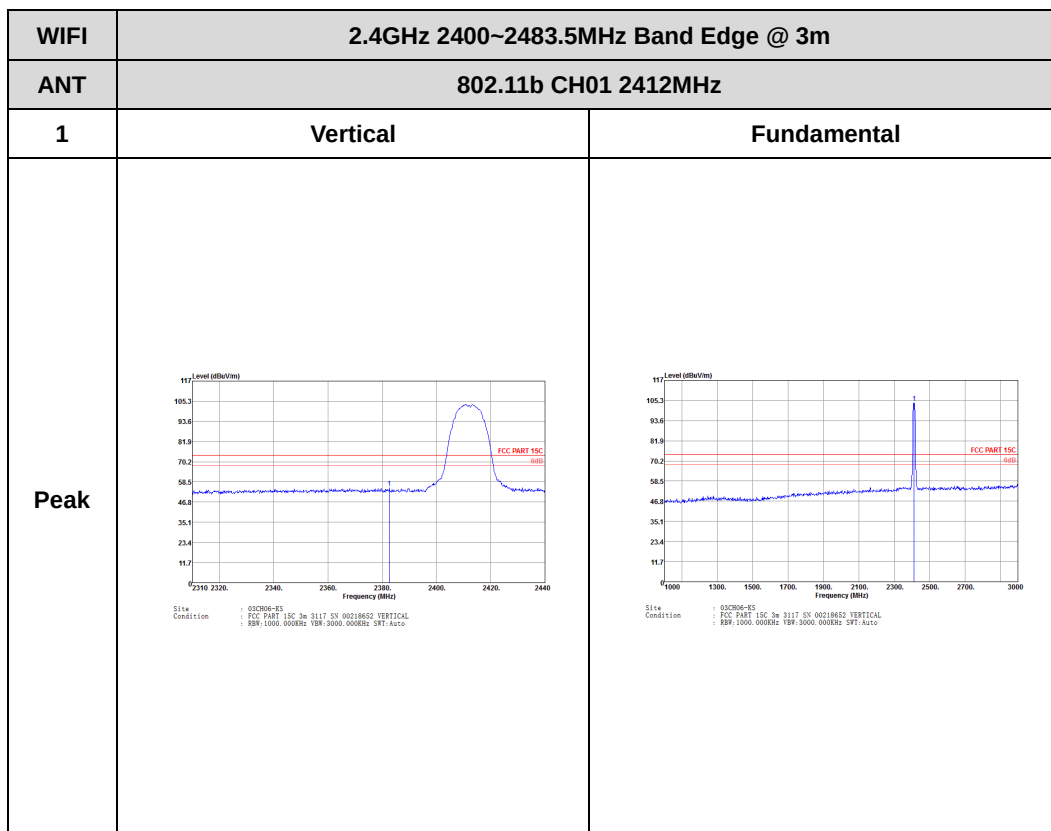
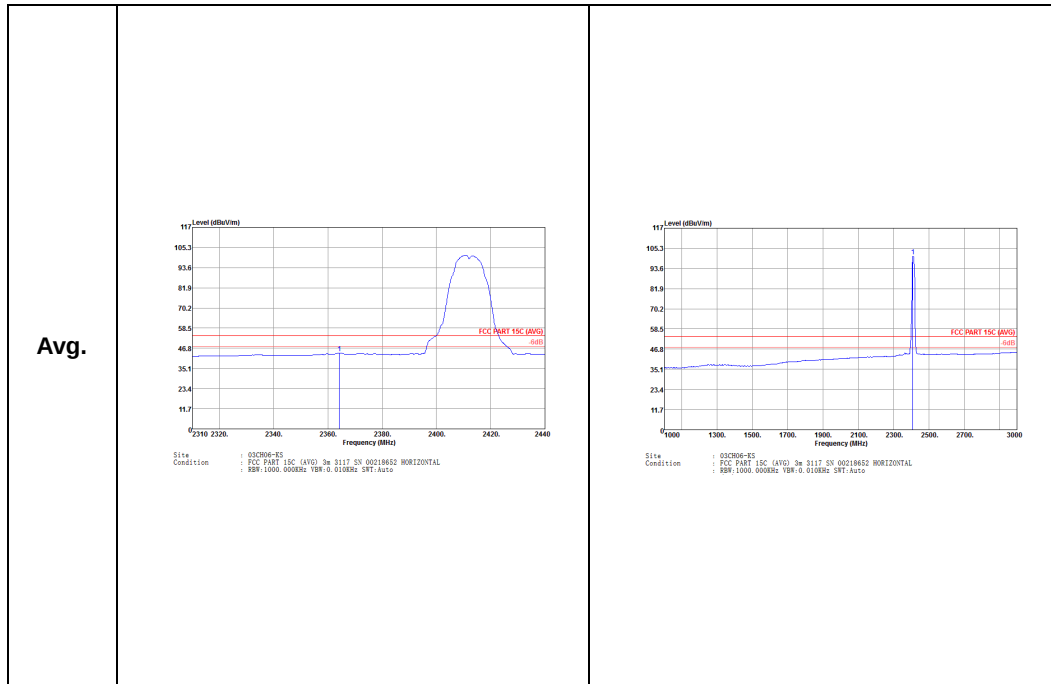


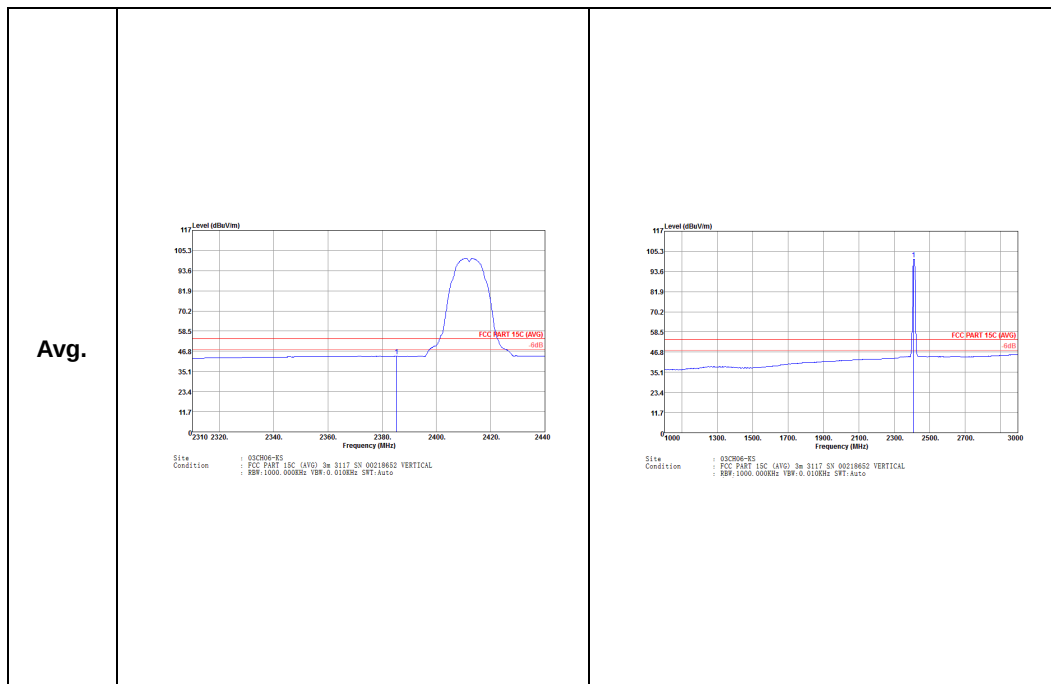
Appendix D. Radiated Spurious Emission Plots

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Fundamental
Peak	 Site : 05C006-ES Condition : FCC PART 15C 3m 3117 SV 00018652 HORIZONTAL FSF:1000.0000Hz FSR:3000.0000Hz SFT:auto	 Site : 05C006-ES Condition : FCC PART 15C 3m 3117 SV 00018652 HORIZONTAL FSF:1000.0000Hz FSR:3000.0000Hz SFT:auto





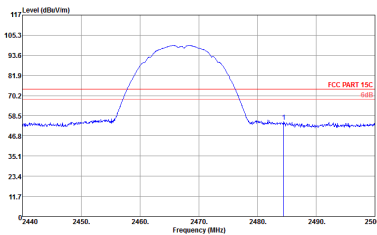
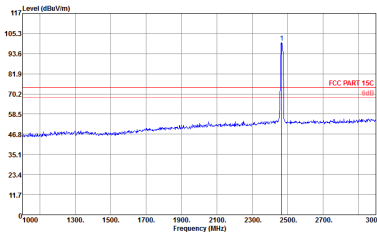
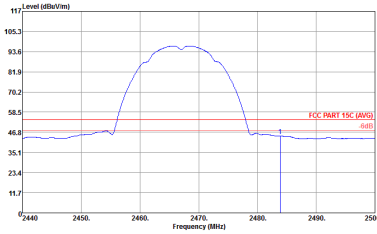
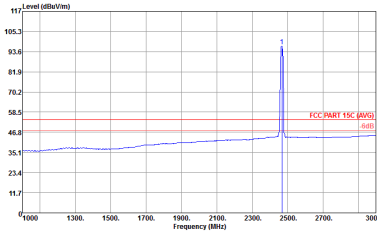


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

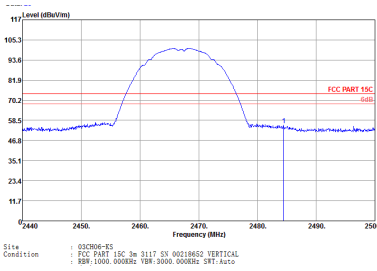
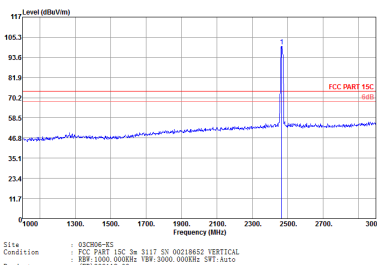
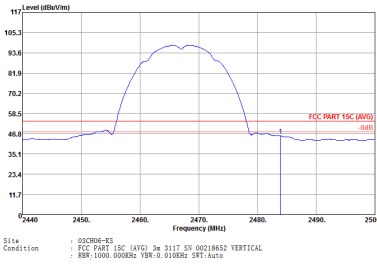
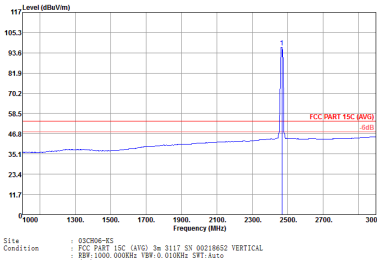


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Vertical	Fundamental
Peak	Site Condition : 03C906-E5 : FCC PART 15C 3m 3117 SX 00218652 VERTICAL : RBW:1000.0000Hz YBW:3000.0000Hz SFT:Auto	Site Condition : 03C906-E5 : FCC PART 15C 3m 3117 SX 00218652 VERTICAL : RBW:1000.0000Hz YBW:3000.0000Hz SFT:Auto
Avg.	Site Condition : 03C906-E5 : FCC PART 15C (AVG) 3m 3117 SX 00218652 VERTICAL : RBW:1000.0000Hz YBW:0.0100Hz SFT:Auto	Site Condition : 03C906-E5 : FCC PART 15C (AVG) 3m 3117 SX 00218652 VERTICAL : RBW:1000.0000Hz YBW:0.0100Hz SFT:Auto



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH12 2467MHz	
1	Horizontal	Fundamental
Peak	 Site Condition : 02C906-ES : FCC PART 15C 3m 3117 SV 00218652 HORIZONTAL : RBW:1000.0000Hz YBW:3000.0000Hz SFT:Auto	 Site Condition : 02C906-ES : FCC PART 15C 3m 3117 SV 00218652 HORIZONTAL : RBW:1000.0000Hz YBW:3000.0000Hz SFT:Auto
Avg.	 Site Condition : 02C906-ES : FCC PART 15C (AVG) 3m 3117 SV 00218652 HORIZONTAL : RBW:1000.0000Hz YBW:0.0100Hz SFT:Auto	 Site Condition : 02C906-ES : FCC PART 15C (AVG) 3m 3117 SV 00218652 HORIZONTAL : RBW:1000.0000Hz YBW:0.0100Hz SFT:Auto



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH12 2467MHz	
1	Vertical	Fundamental
Peak		
Avg.		



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH13 2472MHz	
1	Horizontal	Fundamental
Peak	Site Condition : 03C806-E5 : FCC PART 15C 3m 3117.5N 00218652 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SFT:Auto	Site Condition : 03C806-E5 : FCC PART 15C 3m 3117.5N 00218652 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SFT:Auto
Avg.	Site Condition : 03C806-E5 : FCC PART 15C (AVG) 3m 3117.5N 00218652 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SFT:Auto	Site Condition : 03C806-E5 : FCC PART 15C (AVG) 3m 3117.5N 00218652 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SFT:Auto



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH13 2472MHz	
1	Vertical	Fundamental
Peak	Site Condition : 02C906-ES : FCC PART 15C 3m 3117 SV 00218652 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SFT:Auto	Site Condition : 02C906-ES : FCC PART 15C 3m 3117 SV 00218652 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SFT:Auto
Avg.	Site Condition : 02C906-ES : FCC PART 15C (AVG) 3m 3117 SV 00218652 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SFT:Auto	Site Condition : 02C906-ES : FCC PART 15C (AVG) 3m 3117 SV 00218652 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SFT:Auto

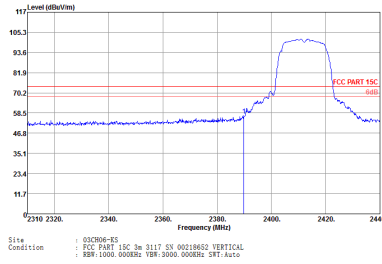
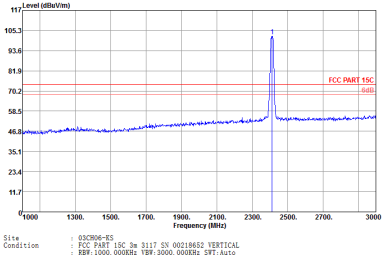
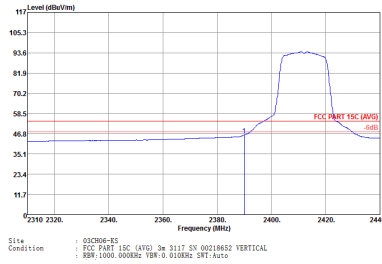
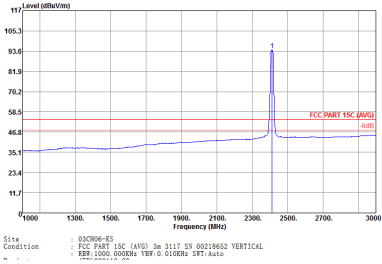


2.4GHz 2400~2483.5MHz

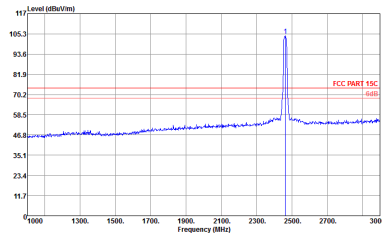
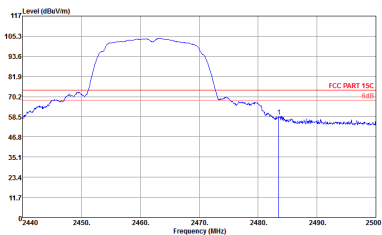
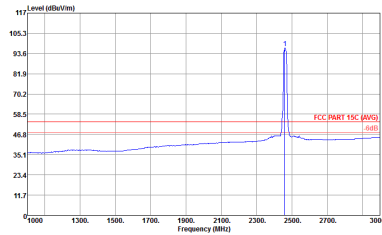
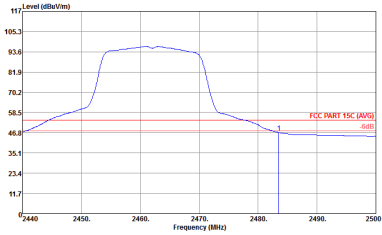
WIFI 802.11g (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Fundamental
Peak	Site Condition : OSCROW-ES : FCC PART 15C 3m 3117 SV 00218652 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SFT:Auto	Site Condition : OSCROW-ES : FCC PART 15C 3m 3117 SV 00218652 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SFT:Auto
Avg.	Site Condition : OSCROW-ES : FCC PART 15C (AVG) 3m 3117 SV 00218652 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SFT:Auto	Site Condition : OSCROW-ES : FCC PART 15C (AVG) 3m 3117 SV 00218652 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SFT:Auto



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Vertical	Fundamental
Peak	 Site Condition : 02CROW-ES : FCC PART 15C 3m 0117 SV 00218652 VERTICAL : RBW:1000.0000Hz YBW:3000.0000Hz SFT:Auto	 Site Condition : 02CROW-ES : FCC PART 15C 3m 0117 SV 00218652 VERTICAL : RBW:1000.0000Hz YBW:3000.0000Hz SFT:Auto
Avg.	 Site Condition : 02CROW-ES : FCC PART 15C (AVG) 3m 0117 SV 00218652 VERTICAL : RBW:1000.0000Hz YBW:0.0100Hz SFT:Auto	 Site Condition : 02CROW-ES : FCC PART 15C (AVG) 3m 0117 SV 00218652 VERTICAL : RBW:1000.0000Hz YBW:0.0100Hz SFT:Auto



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Fundamental	Horizontal
Peak		
Avg.		

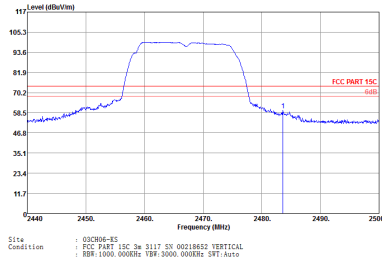
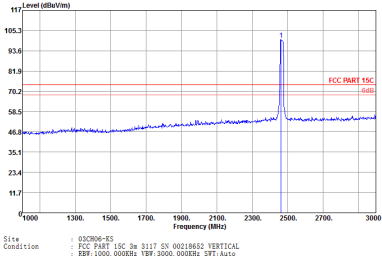
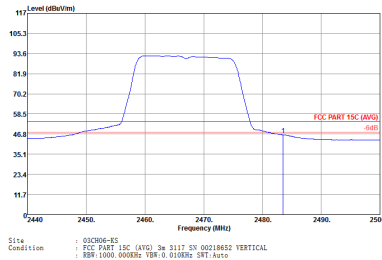
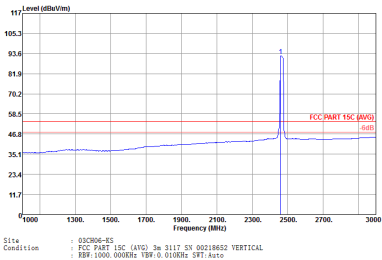


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Fundamental	Vertical
Peak	Site: 03C906-ES Condition: FCC PART 15C 3m 3117 SV 00218652 VERTICAL RBW: 1000.0000Hz VBW: 0.0100Hz SFT: Auto	Site: 03C906-ES Condition: FCC PART 15C 3m 3117 SV 00218652 VERTICAL RBW: 1000.0000Hz VBW: 0.0100Hz SFT: Auto
Avg.	Site: 03C906-ES Condition: FCC PART 15C (AVG) 3m 3117 SV 00218652 VERTICAL RBW: 1000.0000Hz VBW: 0.0100Hz SFT: Auto	Site: 03C906-ES Condition: FCC PART 15C (AVG) 3m 3117 SV 00218652 VERTICAL RBW: 1000.0000Hz VBW: 0.0100Hz SFT: Auto

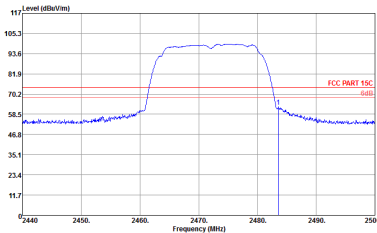
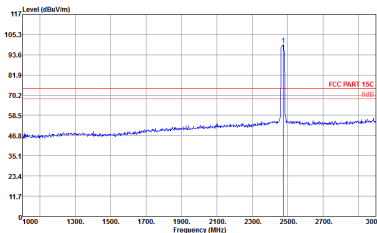
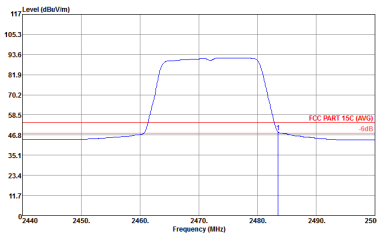
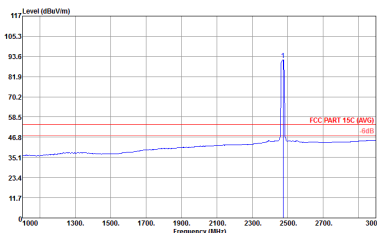


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH12 2467MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

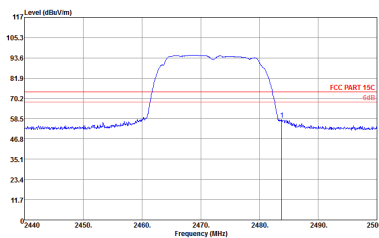
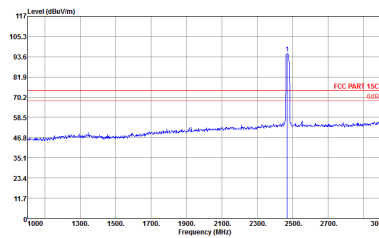
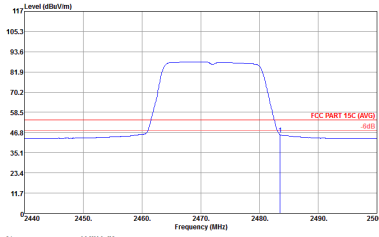
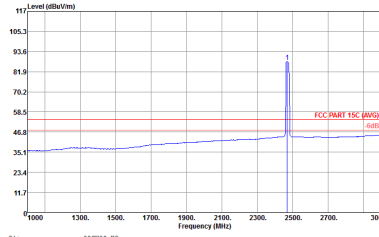


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH12 2467MHz	
1	Vertical	Fundamental
Peak		
Avg.		



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH13 2472MHz	
1	Horizontal	Fundamental
Peak	 Site Condition : 03CH06-ES : FCC PART 15C 3m 3117 SN 00218652 HORIZONTAL : BBF:1000.0000Hz YBW:3000.0000Hz SFT:Auto	 Site Condition : 03CH06-ES : FCC PART 15C 3m 3117 SN 00218652 HORIZONTAL : BBF:1000.0000Hz YBW:3000.0000Hz SFT:Auto
Avg.	 Site Condition : 03CH06-ES : FCC PART 15C (AVG) 3m 3117 SN 00218652 HORIZONTAL : BBF:1000.0000Hz YBW:0.0100Hz SFT:Auto	 Site Condition : 03CH06-ES : FCC PART 15C (AVG) 3m 3117 SN 00218652 HORIZONTAL : BBF:1000.0000Hz YBW:0.0100Hz SFT:Auto



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH13 2472MHz	
1	Vertical	Fundamental
Peak	 Site Condition : 02CH06-ES : FCC PART 15C 3m 3117 SV 00218652 VERTICAL : RBW:1000.0000Hz YBW:1000.0000Hz SFT:Auto	 Site Condition : 02CH06-ES : FCC PART 15C 3m 3117 SV 00218652 VERTICAL : RBW:1000.0000Hz YBW:3000.0000Hz SFT:Auto
Avg.	 Site Condition : 02CH06-ES : FCC PART 15C (AVG) 3m 3117 SV 00218652 VERTICAL : RBW:1000.0000Hz YBW:0.0100Hz SFT:Auto	 Site Condition : 02CH06-ES : FCC PART 15C (AVG) 3m 3117 SV 00218652 VERTICAL : RBW:1000.0000Hz YBW:0.0100Hz SFT:Auto

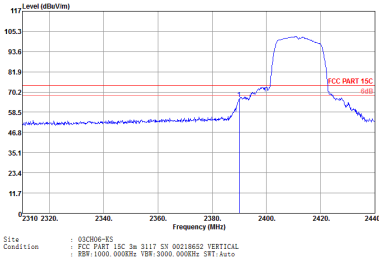
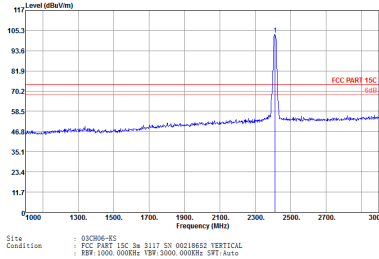
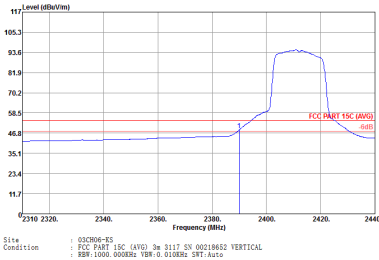
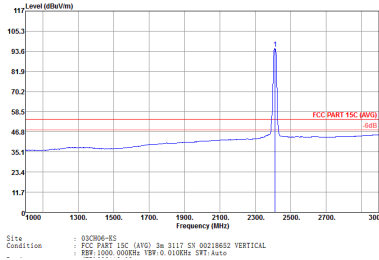


2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Fundamental
Peak	Site Condition : OSC904-ES : FCC PART 15C 3m 3117 SV 00218652 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SFT:Auto	Site Condition : OSC904-ES : FCC PART 15C 3m 3117 SV 00218652 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SFT:Auto
Avg.	Site Condition : OSC904-ES : FCC PART 15C (AVG) 3m 3117 SV 00218652 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SFT:Auto	Site Condition : OSC904-ES : FCC PART 15C (AVG) 3m 3117 SV 00218652 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SFT:Auto



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Vertical	Fundamental
Peak	 Site Condition : 03C906-ES FCC PART 15C 3m 3117 SV 00218652 VERTICAL RBW:1000.0000Hz YBW:3000.0000Hz SFT:Auto	 Site Condition : 03C906-ES FCC PART 15C 3m 3117 SV 00218652 VERTICAL RBW:1000.0000Hz YBW:3000.0000Hz SFT:Auto
Avg.	 Site Condition : 03C906-ES FCC PART 15C (AVG) 3m 3117 SV 00218652 VERTICAL RBW:1000.0000Hz YBW:0.0100Hz SFT:Auto	 Site Condition : 03C906-ES FCC PART 15C (AVG) 3m 3117 SV 00218652 VERTICAL RBW:1000.0000Hz YBW:0.0100Hz SFT:Auto



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Fundamental	Horizontal
Peak	Site Condition : OSC906-ES : FCC PART 15C 3m 3117 SN 00218652 HORIZONTAL : REF:1000.0000Hz YBW:3000.0000Hz SFT:Auto	Site Condition : OSC906-ES : FCC PART 15C 3m 3117 SN 00218652 HORIZONTAL : REF:1000.0000Hz YBW:3000.0000Hz SFT:Auto
Avg.	Site Condition : OSC906-ES : FCC PART 15C (AVG) 3m 3117 SN 00218652 HORIZONTAL : REF:1000.0000Hz YBW:0.0100Hz SFT:Auto	Site Condition : OSC906-ES : FCC PART 15C (AVG) 3m 3117 SN 00218652 HORIZONTAL : REF:1000.0000Hz YBW:0.0100Hz SFT:Auto



WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Fundamental	Vertical
Peak	Site Condition : 03C906-ES : FCC PART 15C 3m 0117 SV 00218652 VERTICAL : RBW:1000.0000Hz YBF:3000.0000Hz SFT:Auto	Site Condition : 03C906-ES : FCC PART 15C 3m 0117 SV 00218652 VERTICAL : RBW:1000.0000Hz YBF:3000.0000Hz SFT:Auto
Avg.	Site Condition : 03C906-ES : FCC PART 15C (AVG) 3m 0117 SV 00218652 VERTICAL : RBW:1000.0000Hz YBF:0.0100Hz SFT:Auto	Site Condition : 03C906-ES : FCC PART 15C (AVG) 3m 0117 SV 00218652 VERTICAL : RBW:1000.0000Hz YBF:0.0100Hz SFT:Auto



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH12 2467MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

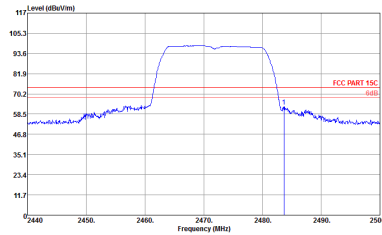
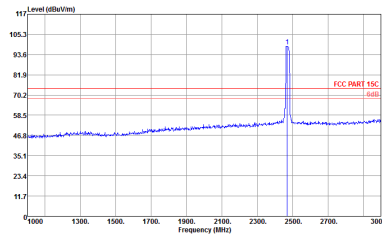
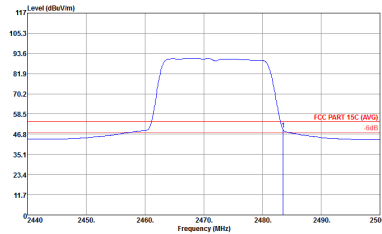
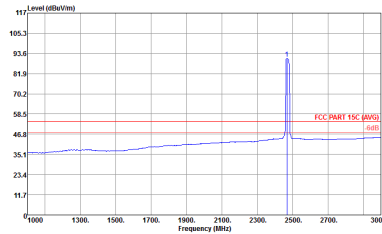


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH12 2467MHz	
1	Vertical	Fundamental
Peak		
Avg.		



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH13 2472MHz	
1	Horizontal	Fundamental
Peak	Site Condition : OSCROW-ES : FCC PART 15C 3m 3117 SV 00218652 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SFT:Auto	Site Condition : OSCROW-ES : FCC PART 15C 3m 3117 SV 00218652 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SFT:Auto
Avg.	Site Condition : OSCROW-ES : FCC PART 15C (AVG) 3m 3117 SV 00218652 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SFT:Auto	Site Condition : OSCROW-ES : FCC PART 15C (AVG) 3m 3117 SV 00218652 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SFT:Auto

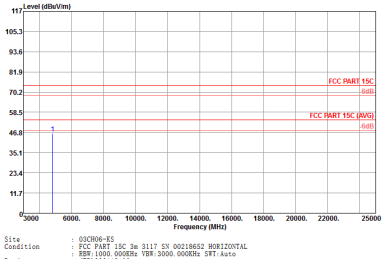
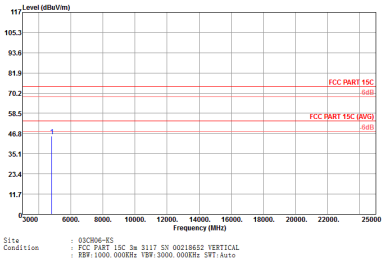


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH13 2472MHz	
1	Vertical	Fundamental
Peak	 Site Condition : : OSCROW-ES : FCC PART 15C 3m 3117 SN 00218652 VERTICAL : RBW:1000.0000Hz YBW:0.0100Hz SFT:Auto	 Site Condition : : OSCROW-ES : FCC PART 15C 3m 3117 SN 00218652 VERTICAL : RBW:1000.0000Hz YBW:0.0100Hz SFT:Auto
Avg.	 Site Condition : : OSCROW-ES : FCC PART 15C (AVG) 3m 3117 SN 00218652 VERTICAL : RBW:1000.0000Hz YBW:0.0100Hz SFT:Auto	 Site Condition : : OSCROW-ES : FCC PART 15C (AVG) 3m 3117 SN 00218652 VERTICAL : RBW:1000.0000Hz YBW:0.0100Hz SFT:Auto



2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

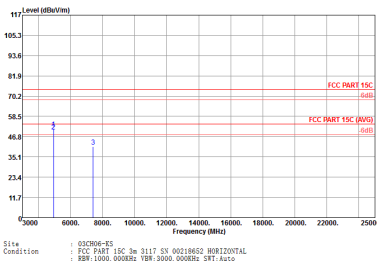
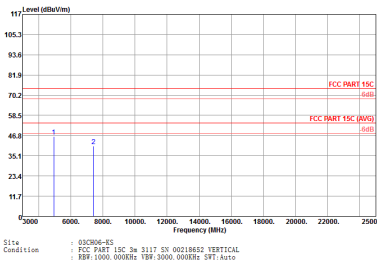


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		



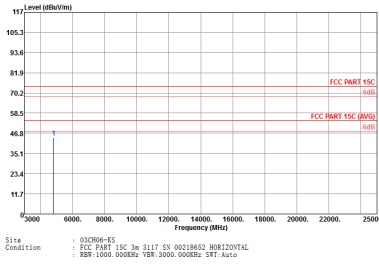
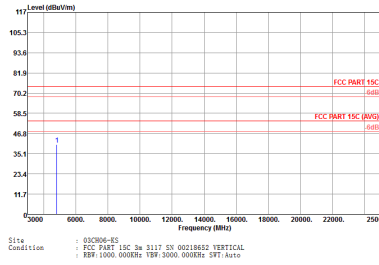
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH12 2467MHz	
1	Horizontal	Vertical
Peak Avg.		



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH1 2472MHz	
1	Horizontal	Vertical
Peak Avg.		



2.4GHz 2400~2483.5MHz
WIFI 802.11g (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.	 Site Condition : OSCROW-E3 : FCC PART 15C 3m 0117 SV 00218652 HORIZONTAL : 2500 1000 0000Hz 1200 3000 0000Hz SPT:Auto	 Site Condition : OSCROW-E3 : FCC PART 15C 3m 0117 SV 00218652 VERTICAL : 2500 1000 0000Hz 1200 3000 0000Hz SPT:Auto



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

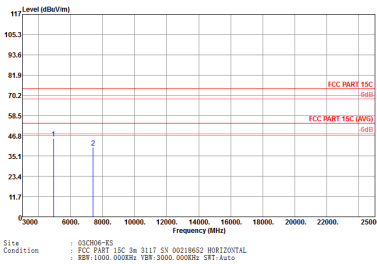
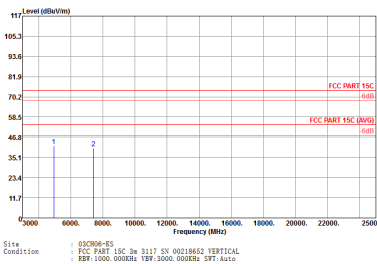


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		



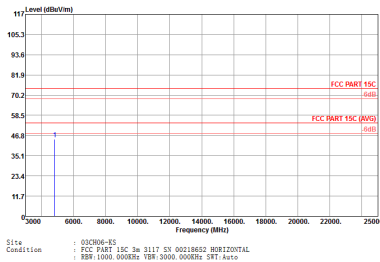
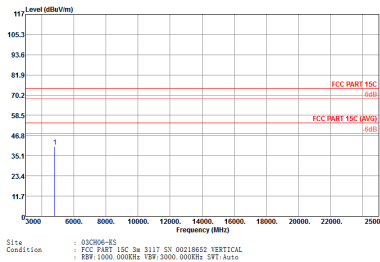
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH12 2467MHz	
1	Horizontal	Vertical
Peak Avg.	Site Condition - OSCH06-ES - FCC PART 15C 3m 0117 SN 00218652 HORIZONTAL - FSM 1000 0000Hz YBR 3000 0000Hz SRT Auto	Site Condition - OSCH06-ES - FCC PART 15C 3m 0117 SN 00218652 VERTICAL - FSM 1000 0000Hz YBR 3000 0000Hz SRT Auto



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH13 2472MHz	
1	Horizontal	Vertical
Peak Avg.	 Site Condition - OSCIROM-ES - FCC PART 15C 3m 0117 SN 00218652 HORIZONTAL - FSR: 1000.0000Hz YBR: 3000.0000Hz SFT: Auto	 Site Condition - OSCIROM-ES - FCC PART 15C 3m 0117 SN 00218652 VERTICAL - FSR: 1000.0000Hz YBR: 3000.0000Hz SFT: Auto



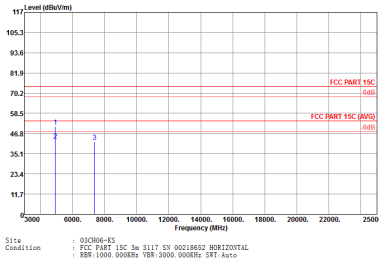
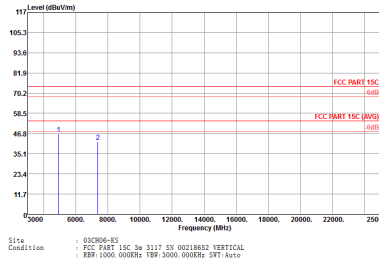
2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.	 Site Condition : OSC906-E2 : FCC PART 15C 3m 0117 5V 00018652 HORIZONTAL : ISM 1000 0000Hz 1000 3000 0000Hz SPT:auto	 Site Condition : OSC906-E2 : FCC PART 15C 3m 0117 5V 00018652 VERTICAL : ISM 1000 0000Hz 1000 3000 0000Hz SPT:auto

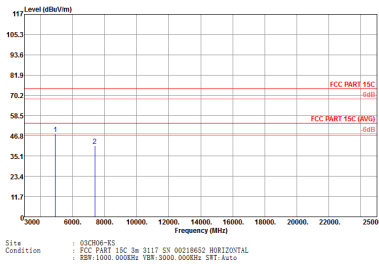
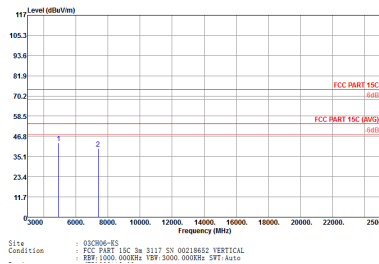


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.	Site Condition : 03CH06-E5 FCC PART 15C 3e 3117 5X 00218652 HORIZONTAL FSR1:1000 6000Hz TBR:2000 6000Hz SFT:Auto	Site Condition : 03CH06-E5 FCC PART 15C 3e 3117 5X 00218652 VERTICAL FSR1:1000 6000Hz TBR:2000 6000Hz SFT:Auto

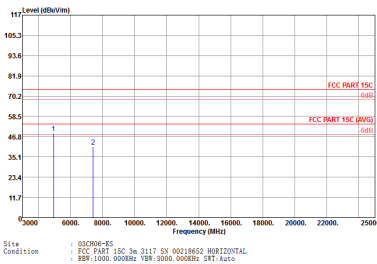
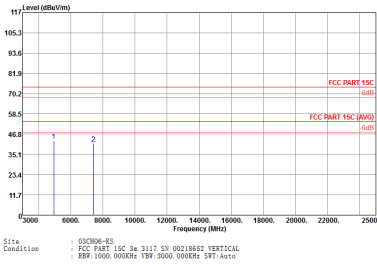


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.	 Site Condition : - OSCROW-ES - FCC PART 15C 3m 2117 5X 00218652 HORIZONTAL - TBR1 1000 0000Hz TBR 3000 0000Hz SPT Auto	 Site Condition : - OSCROW-ES - FCC PART 15C 3m 2117 5X 00218652 VERTICAL - TBR1 1000 0000Hz TBR 3000 0000Hz SPT Auto



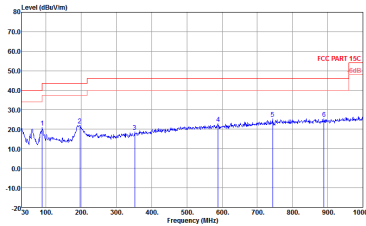
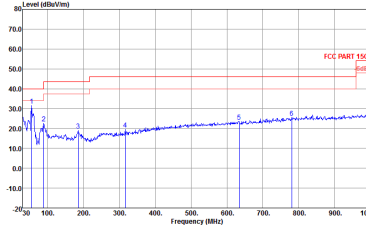
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH12 2467MHz	
1	Horizontal	Vertical
Peak Avg.	 Site Condition : OSCROW-ES : FCC PART 15C 3m 0117 SN 00218652 HORIZONTAL : ERM 1000 0000Hz YBR 3000 0000Hz SFT:Auto	 Site Condition : OSCROW-ES : FCC PART 15C 3m 0117 SN 00218652 VERTICAL : ERM 1000 0000Hz YBR 3000 0000Hz SFT:Auto



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH13 2472MHz	
1	Horizontal	Vertical
Peak Avg.	 Site Condition : OSCROW-ES : FCC PART 15C 3m 0117 SV 00218652 HORIZONTAL : RBW:1000:0000Hz YBR:3000:0000Hz SFT:auto	 Site Condition : OSCROW-ES : FCC PART 15C 3m 0117 SV 00218652 VERTICAL : RBW:1000:0000Hz YBR:3000:0000Hz SFT:auto



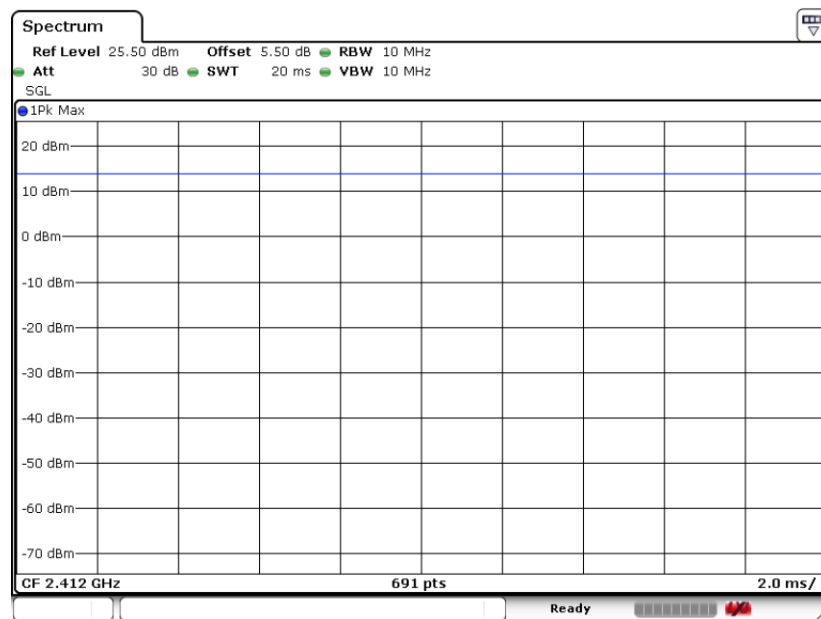
Emission below 1GHz
2.4GHz WIFI 802.11b (LF)

WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11b LF	
1	Horizontal	Vertical
Peak	 Site : 03C204-ES Condition : FCC PART 15C 3m CBEL11D SY 23188 HORIZONTAL FSF 100.000000Hz TSP 300.000000Hz SFT Auto	 Site : 03C204-ES Condition : FCC PART 15C 3m CBEL11D SY 23188 VERTICAL FSF 100.000000Hz TSP 300.000000Hz SFT Auto

Appendix E. Duty Cycle Plots

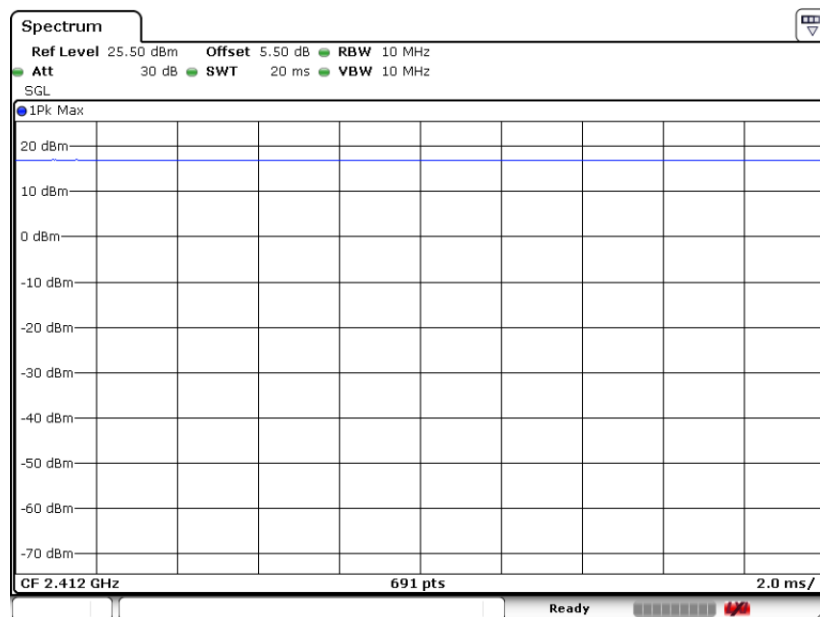
Band	Duty Cycle(%)	Duty factor(dB)	T(ms)	1/T(kHz)	VBW Setting
802.11b	100	0	-	-	10Hz
802.11g	100	0	-	-	10Hz
802.11n HT20	100	0	-	-	10Hz

802.11b





802.11g



802.11n HT20

