



**CFCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS-247 ISSUE 2**

CERTIFICATION TEST REPORT

For

**August Doorbell Cam
MODEL NUMBER: AB-R2**

**FCC ID: 2AB6UABR2
IC: 12163A-ABR2**

REPORT NUMBER: 4788013564-3

ISSUE DATE: June 20, 2017

Prepared for

**August Home Inc
657 Bryant Street, San Francisco, 94107, USA**

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
--	06/20/17	Initial Issue	

Summary of Test Results			
Clause	Test Items	FCC/IC Rules	Test Results
1	6dB Bandwidth and 99% Bandwidth	FCC 15.247 (a) IC RSS-247 Clause 5.2	Complied
2	Peak Conducted Output Power	FCC 15.247 (b) IC RSS-247 Clause 5.4	Complied
3	Power Spectral Density	FCC 15.27 (e) IC RSS-247 Clause 5.1 (2)	Complied
4	Conducted Bandedge and Spurious	FCC 15.207 RSS-Gen Issue 4 clause 7.2	Complied
5	Radiated Bandedge and Spurious	FCC 15.247 (d) FCC 15.209 FCC 15.205 IC RSS-247 Clause 5.5 IC RSS-GEN Clause 8.9	Complied
6	Conducted Emission Test For AC Power Port	FCC 15.207 RSS-GEN Clause 8.8	Complied
7	Antenna Requirement	FCC 15.203 RSS-GEN Clause 8.3	Complied
Remark: N/A is an abbreviation for Not Applicable, and means this item is not applicable for this device.			

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	5
2. TEST METHODOLOGY	5
3. FACILITIES AND ACCREDITATION	6
4. CALIBRATION AND UNCERTAINTY	7
4.1. MEASURING INSTRUMENT CALIBRATION	7
4.2. MEASUREMENT UNCERTAINTY	7
5. EQUIPMENT UNDER TEST	8
5.1. DESCRIPTION OF EUT	8
5.2. MAXIMUM OUTPUT POWER	8
5.3. CHANNEL LIST	8
5.4. TEST CHANNEL CONFIGURATION	9
5.5. THE WORSE CASE CONFIGURATIONS	9
5.6. DESCRIPTION OF AVAILABLE ANTENNAS	10
5.7. DESCRIPTION OF TEST SETUP	11
5.8. MEASURING INSTRUMENT AND SOFTWARE USED	12
6. MEASUREMENT METHODS	13
7. ANTENNA PORT TEST RESULTS	14
7.1. 6 dB DTS BANDWIDTH AND 99% BANDWIDTH	14
7.2. PEAK CONDUCTED OUTPUT POWER	19
7.3. POWER SPECTRAL DENSITY	21
7.4. CONDUCTED BANDEDGE	26
8. RADIATED TEST RESULTS	45
8.1. LIMITS AND PROCEDURE	45
8.2. RESTRICTED BANDEDGE	49
9. AC POWER LINE CONDUCTED EMISSIONS	65
10. ANTENNA REQUIREMENTS	68

1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: August Home Inc
Address: 657 Bryant Street, San Francisco, 94107, USA

Manufacturer Information

Company Name: August Home Inc
Address: 657 Bryant Street, San Francisco, 94107, USA

EUT Name: August Doorbell Cam

Model: AB-R2

Sample Status: Normal

Sample ID: 1000221

Brand: August

Sample Received: May 27, 2017

Date of Tested: May 27, 2017 ~ June 14, 2017

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	PASS
INDUSTRY CANADA RSS-247 Issue 2	PASS
INDUSTRY CANADA RSS-GEN Issue 4	PASS

Tested By :



Leo Liu
Engineer

Check By:



Shawn Wen
Laboratory Leader

Approved By:



Stephen Guo
Laboratory Manager

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013, RSS-GEN Issue 4, and RSS-247 Issue 2.

3. FACILITIES AND ACCREDITATION

Test Location	Dongguan Dongdian Testing Service Co., Ltd
Address	No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Dongguan City, Guangdong Province, 523808, China
Accreditation Certificate	Dongguan Dongdian Testing Service Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until January 31, 2018. Dongguan Dongdian Testing Service Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 270092, Renewal date March 11, 2015, valid time is until March 11, 2018. The 3m Alternate Test Site of Dongguan Dongdian Testing Service Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 10288A on April 23, 2015, valid time is until April 23, 2018.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Bandwidth	1.1%
Peak Output Power(Conducted)(Spectrum analyzer)	0.86dB(10 MHz $\leq$ f < 3.6GHz);
	1.38dB(3.6GHz $\leq$ f < 8GHz)
Peak Output Power(Conducted)(Power Sensor)	0.74dB
Dwell Time	0.6%
Conducted spurious emissions	0.86dB(10 MHz $\leq$ f < 3.6GHz);
	1.40dB(3.6GHz $\leq$ f < 8GHz)
	1.66dB(8GHz $\leq$ f < 22GHz)
Uncertainty for radio frequency (RBW<20KHz)	3 $\times$ 10 ⁻⁸
Temperature	0.4℃
Humidity	2%
Uncertainty for Radiation Emission test (30MHz-1GHz)	4.70 dB (Antenna Polarize: V)
	4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1GHz-18GHz)	4.10dB(1-6GHz)
	4.40dB (6GHz-18Gz)
Uncertainty for Power line conduction emission test	3.32dB (150KHz-30MHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

Equipment	August Doorbell Cam
Model Name	AB-R2
Radio Technology	IEEE802.11b/g/n HT20
Operation frequency	IEEE 802.11b: 2412MHz—2462MHz IEEE 802.11g: 2412MHz—2462MHz IEEE 802.11n HT20: 2412MHz—2462MHz
Modulation	IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK)
Input	DC5V

5.2. MAXIMUM OUTPUT POWER

Frequency Range (MHz)	Number of Transmit Chains (NTX)	Bluetooth Mode	Frequency (MHz)	Channel Number	Max PK Conducted Power (dBm)
2400-2483.5	1	IEEE 802.11b	2412-2462	1-11[11]	11.33
2400-2483.5	1	IEEE 802.11g	2412-2462	1-11[11]	12.38
2400-2483.5	1	IEEE 802.11nHT20	2412-2462	1-11[11]	13.62

5.3. CHANNEL LIST

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	4	2425	7	2442	10	2457
2	2417	5	2432	8	2447	11	2462
3	2422	6	2437	9	2452	N/A	N/A

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel (MHz)
IEEE 802.11b	LCH :CH01 2412
	MCH: CH06 2437
	HCH: CH11 2462
IEEE 802.11g	LCH :CH01 2412
	MCH: CH06 2437
	HCH: CH11 2462
IEEE 802.11n HT20	LCH :CH01 2412
	MCH: CH06 2437
	HCH: CH11 2462

5.5. THE WORSE CASE CONFIGURATIONS

Test Software Version	Tera Term	
Test Mode	Channel (MHz)	Setting data rate (Mbps)
IEEE 802.11b	LCH :CH01 2412	1Mbps
	MCH: CH06 2437	1Mbps
	HCH: CH11 2462	1Mbps
IEEE 802.11g	LCH :CH01 2412	6Mbps
	MCH: CH06 2437	6Mbps
	HCH: CH11 2462	6Mbps
IEEE 802.11n HT20	LCH :CH01 2412	MCS0
	MCH: CH06 2437	MCS0
	HCH: CH11 2462	MCS0

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
3	2402-2480	PCB Antenna	1.48

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	☒ 1TX, 1RX	Chain 1 can be used as transmitting/receiving antenna.
IEEE 802.11g	☒ 1TX, 1RX	Chain 1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT20	☒ 1TX, 1RX	Chain 1 can be used as transmitting/receiving antenna.

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	P/N
1	Laptop	ThinkPad	T460S	SL10K24796 JS

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB out	USB	Unshielded	0.5	N/A

ACCESSORY

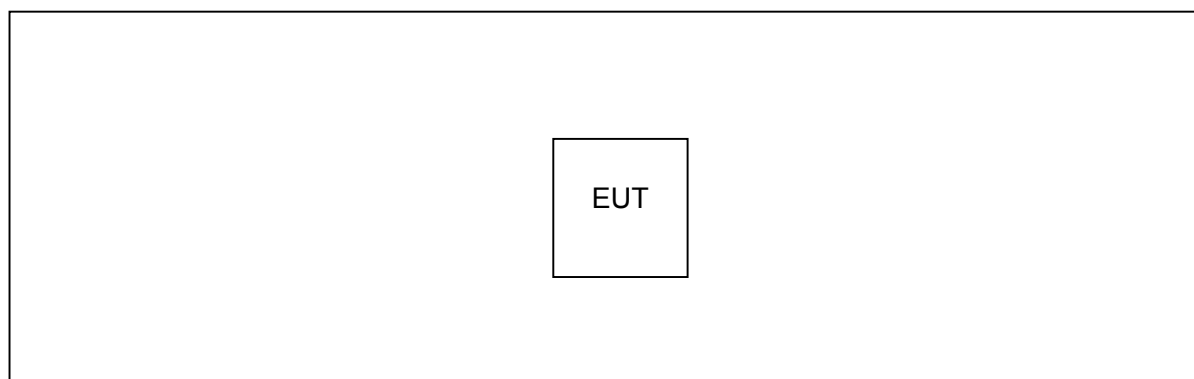
Item	Accessory	Brand Name	Model Name	Description
1	N/A	N/A	N/A	N/A

Note: The EUT has no accessory.

TEST SETUP

The EUT can work in an engineer mode with a software through a Laptop.

SETUP DIAGRAM FOR TESTS



5.8. MEASURING INSTRUMENT AND SOFTWARE USED

Instrument (Conducted for RF Port)						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
☒	Spectrum Analyzer	Agilent	E4447A	MY50180031	Jul.06, 2016	Jul.06, 2017
☒	Spectrum analyzer	R&S	FSU26	1166.1660.26	Oct.16, 2016	Oct.16, 2017
☒	Power Sensor	Agilent	U2021XA	MY55150010	Apr.04, 2017	Apr.04, 2018
☒	Power Sensor	Agilent	U2021XA	MY55150011	Apr.18, 2017	Apr.18, 2018
☒	Attenuator	Mini-Circuits	BW-S10W2	101109	Aug.18, 2016	Aug.18, 2017
☒	RF Cable	Micable	C10-01-01-1	100309	Aug.18, 2016	Aug.18, 2017
☒	Test Software	JS Tonscend	JS1120-2	Ver.2.5	N/A	N/A
☒	USB Data acquisition	Agilent	U2531A	TW55043503	N/A	N/A
☒	Auto control Unit	JS Tonscend	JS0806-2	158060010	N/A	N/A
Instrument (Radiated Tests)						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Expired date
☒	EMI Test Receiver	R&S	ESU8	100316	Oct.16, 2016	Oct.16, 2017
☒	Spectrum analyzer	R&S	FSU26	1166.1660.26	Oct.16, 2016	Oct.16, 2017
☒	Trilog Broadband Antenna	Schwarzbeck	VULB9163	9163-462	Oct.16, 2016	Oct.16, 2017
☒	Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Oct.27, 2016	Oct.27, 2017
☒	Double Ridged Horn Antenna	R&S	HF907	100276	Oct.12, 2016	Oct.12, 2017
☒	Pre-amplifier	A.H.	PAM-0118	360	Oct.16, 2016	Oct.16, 2017
☒	RF Cable	HUBSER	CP-X2	W11.03	Oct.16, 2016	Oct.16, 2017
☒	RF Cable	HUBSER	CP-X1	W12.02	Oct.16, 2016	Oct.16, 2017
☒	MI Cable	HUBSER	C10-01-01-1M	1091629	Oct.16, 2016	Oct.16, 2017
☒	Test software	Audix	E3	V 6.11111b	N/A	N/A
Instrument (Line Conducted Emission (AC Main))						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Expired date
☒	Test Receiver	R&S	ESU8	100316	Oct.16, 2016	Oct.16, 2017
☒	LISN 1	R&S	ENV216	101109	Oct.16, 2016	Oct.16, 2017
☒	LISN 2	R&S	ESH2-Z5	100309	Oct.16, 2016	Oct.16, 2017

☒	Pulse Limiter	R&S	ESH3-Z2	101242	Oct.16, 2016	Oct.16, 2017
☒	CE Cable 1	HUBSER	ESU8/RF2	W10.01	Oct.16, 2016	Oct.16, 2017
☒	Test software	Audix	E3	V 6.11111b	N/A	N/A

6. MEASUREMENT METHODS

No.	Test Items	FCC/IC Rules	Test Results
1	6 dB Bandwidth And 99% Bandwidth	FCC 15.247 (a) (2) IC RSS-247 Clause 5.1 (1)	Complied
2	Peak Output Power	FCC 15.247 (b) (3) IC RSS-247 Clause 5.4 (4)	Complied
3	Power Spectral Density	FCC 15.247 (3) IC RSS-247 Clause 5.2 (2)	Complied
4	Out-of-band emissions in non-restricted bands	FCC 15.247 (d) IC RSS-247 Clause 5.5	Complied
5	Out-of-band emissions in restricted bands	FCC 15.247 (d) FCC 15.209 FCC 15.205 IC RSS-247 Clause 5.5 IC RSS-GEN Clause 8.9	Complied
6	Band-edge	FCC 15.207 RSS-GEN Clause 8.8	N/A
7	Conducted Emission Test For AC Power Port	FCC 15.203 RSS-GEN Clause 8.3	Complied

7. ANTENNA PORT TEST RESULTS

7.1. 6 dB DTS BANDWIDTH AND 99% BANDWIDTH

LIMITS

FCC Part15 (15.247) , Subpart C IC RSS-247 ISSUE 1			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(a)(2) IC RSS-247 5.1 (1)	6 dB Bandwidth	$\geq 500\text{KHz}$	2400-2483.5
RSS-Gen Clause 6.6	99% Bandwidth	For reporting purposes only.	2400-2483.5

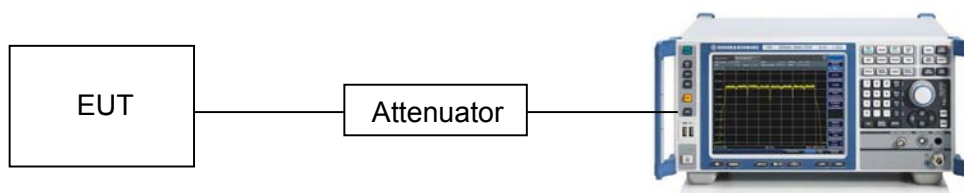
TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	100K
VBW	$\geq 3 \times \text{RBW}$
Trace	Max hold
Sweep	Auto couple

Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

TEST SETUP



Temperature: 26.6°C
Relative Humidity: 58%
Test Voltage: DC5V

Mode	Channel	6dB Bandwidth [MHz]	99% OBW [MHz]	Verdict
11B	LCH	7.640	12.080	PASS
11B	MCH	8.120	12.040	PASS
11B	HCH	7.600	12.080	PASS
11G	LCH	15.120	16.320	PASS
11G	MCH	13.840	16.320	PASS
11G	HCH	14.720	16.360	PASS
11N20SISO	LCH	16.400	17.520	PASS
11N20SISO	MCH	16.360	17.480	PASS
11N20SISO	HCH	16.320	17.480	PASS

Test Graphs

Graphs

11B/LCH

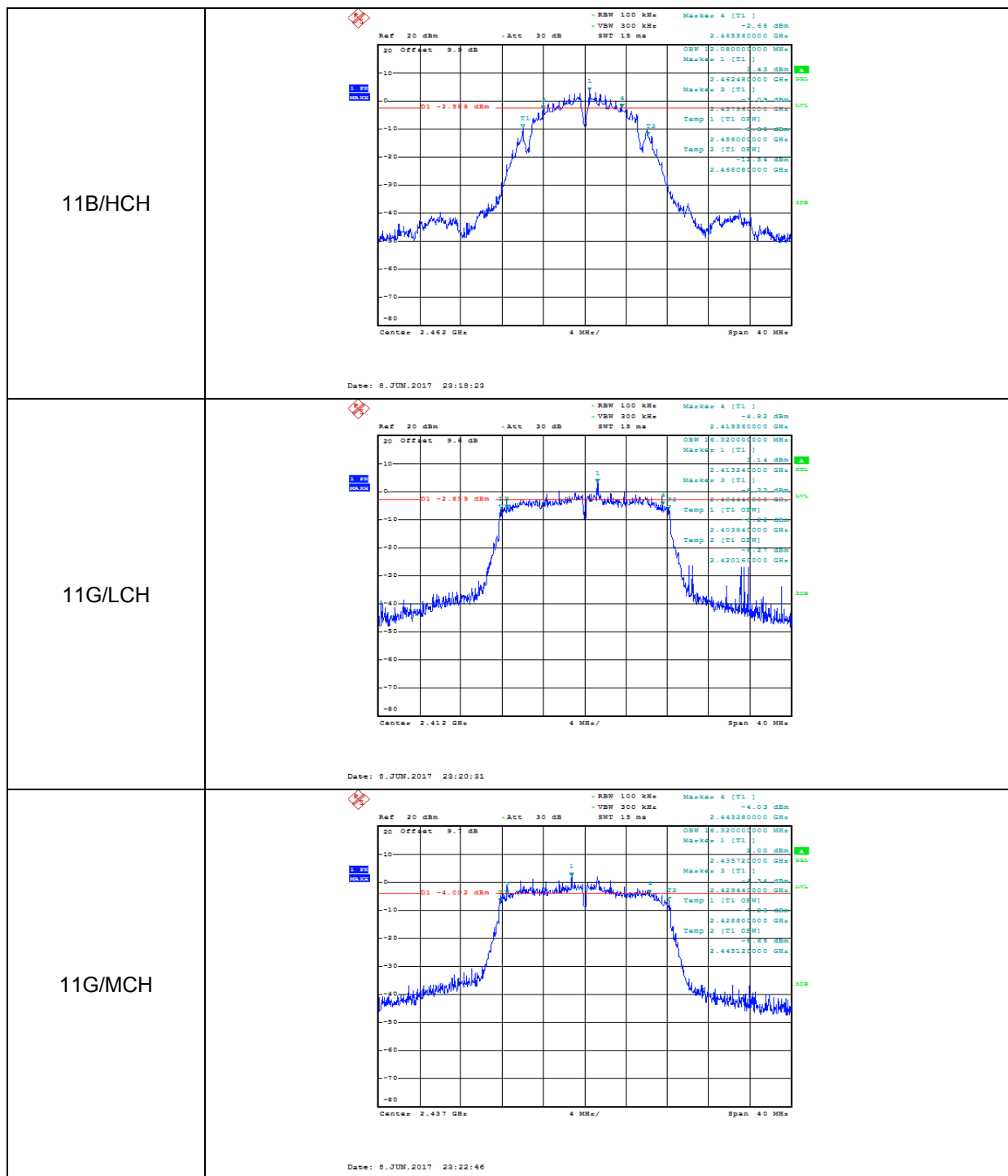
Ref 20 dBm - Att 30 dB SNT 15 ms 2.413360000 GHz
 20 Offset 9.4 dB
 Marker 4 (T1) -2.24 dBm
 Marker 1 (T1) -2.08 dBm
 Marker 3 (T1) -2.412820000 GHz
 Marker 2 (T1) -2.407340000 GHz
 Temp 1 (T1 ON) -2.406000000 GHz
 Temp 2 (T1 ON) -2.412000000 GHz
 Center 2.412 GHz 4 MHz/ Span 40 MHz

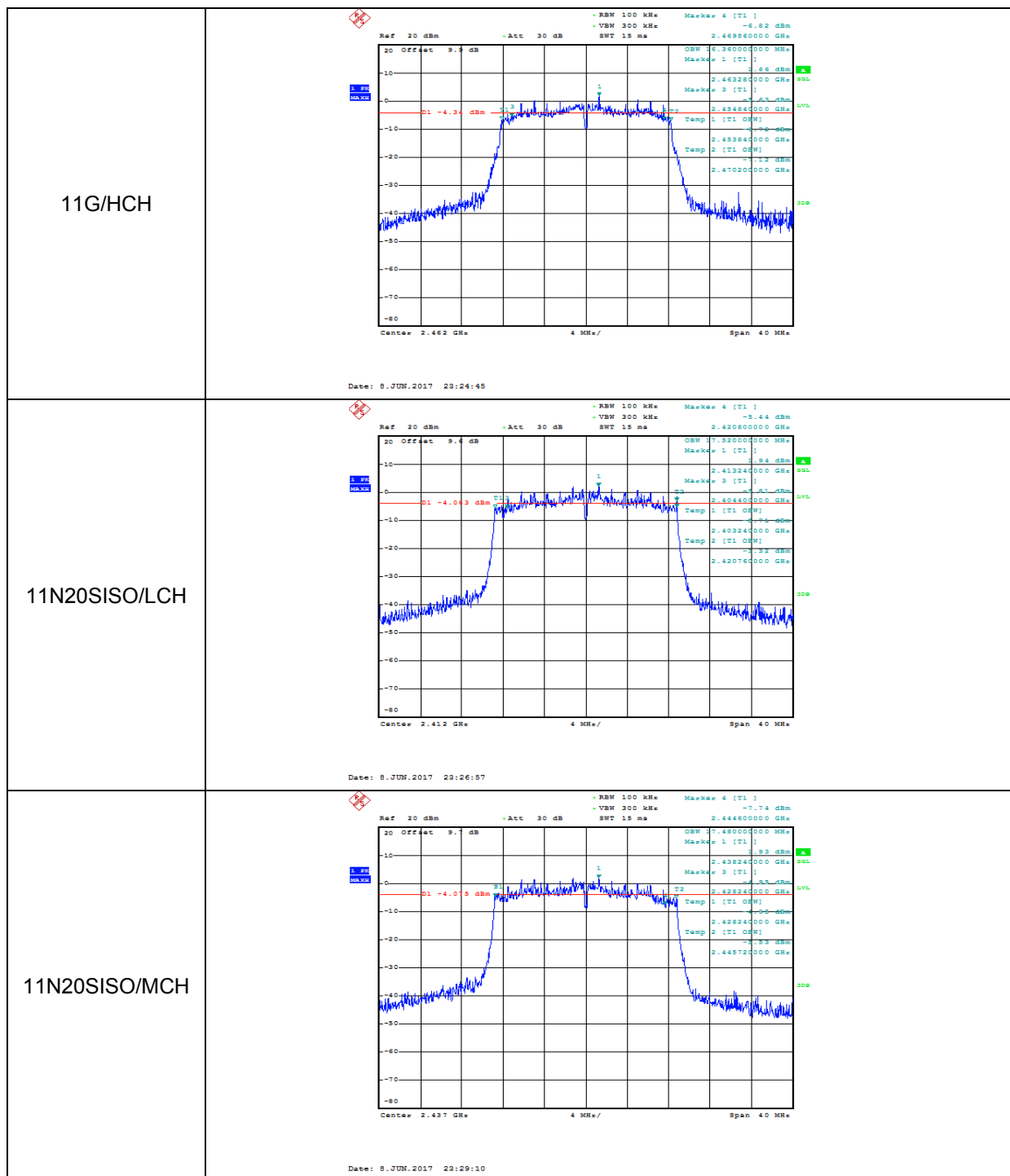
Date: 8 JUN. 2017 23:12:29

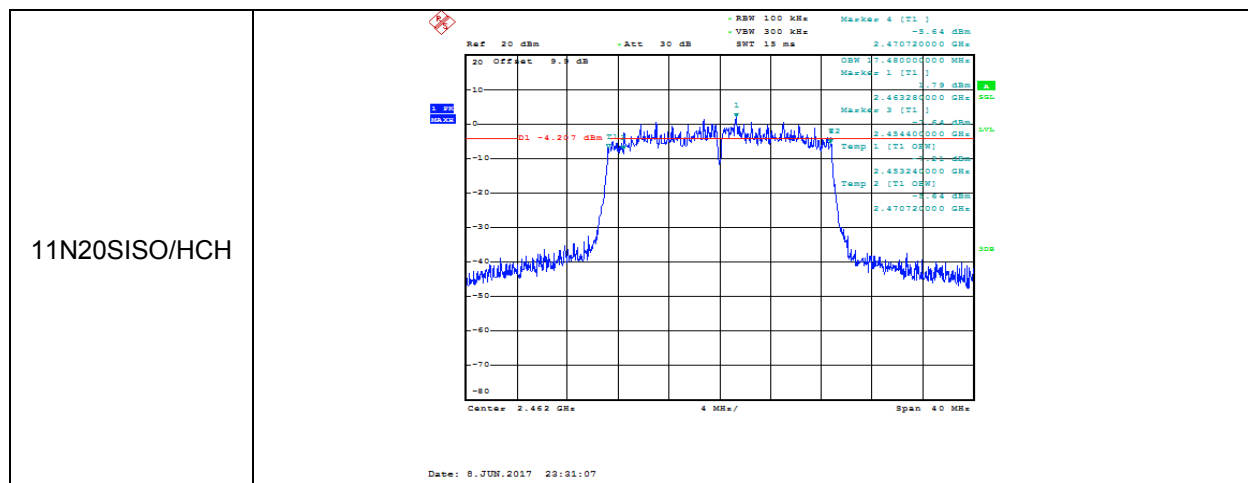
11B/MCH

Ref 20 dBm - Att 30 dB SNT 15 ms 2.441040000 GHz
 20 Offset 9.7 dB
 Marker 4 (T1) -2.47 dBm
 Marker 1 (T1) -2.47 dBm
 Marker 3 (T1) -2.432920000 GHz
 Marker 2 (T1) -2.430920000 GHz
 Temp 1 (T1 ON) -2.432960000 GHz
 Temp 2 (T1 ON) -2.430920000 GHz
 Center 2.437 GHz 4 MHz/ Span 40 MHz

Date: 8 JUN. 2017 23:16:15







7.2. PEAK CONDUCTED OUTPUT POWER

LIMITS

FCC Part15 (15.247) , Subpart C IC RSS-247 ISSUE 1			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(b)(3) IC RSS-247 5.4 (4)	Peak Output Power	1 watt or 30dBm	2400-2483.5

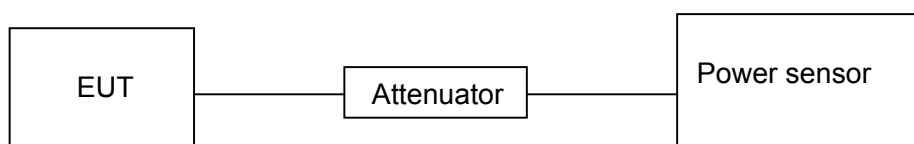
TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	$\geq$ DTS bandwidth(e.g. 1 MHz for BLE)
VBW	$\geq 3 \times$ RBW
Span	$3 \times$ RBW
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use peak marker function to determine the peak amplitude level.

TEST SETUP



TEST CONDITIONS

Temperature: 26.6°C
Relative Humidity: 58%
Test Voltage: DC5V

RESULTS

Mode	Channel	Peak.Power [dBm]	Verdict
11B	LCH	11.33	PASS
11B	MCH	11.31	PASS
11B	HCH	11.03	PASS
11G	LCH	12.28	PASS
11G	MCH	12.38	PASS
11G	HCH	12.08	PASS
11N20SISO	LCH	13.5	PASS
11N20SISO	MCH	13.62	PASS
11N20SISO	HCH	13.34	PASS

7.3. POWER SPECTRAL DENSITY

LIMITS

FCC Part15 (15.247) , Subpart C IC RSS-247 ISSUE 1			
Section	Test Item	Limit	Frequency Range (MHz)
FCC §15.247 (e) IC RSS-247 5.2 (2)	Power Spectral Density	8 dBm in any 3 kHz band	2400-2483.5

TEST PROCEDURE

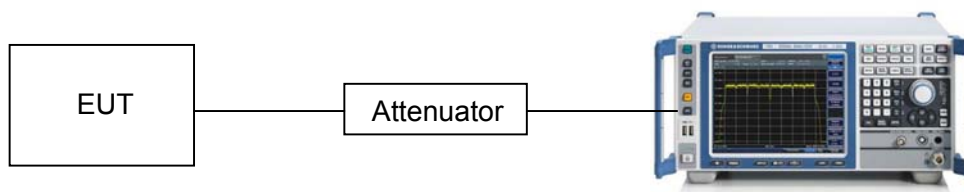
Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	$3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
VBW	$\geq 3 \times \text{RBW}$
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

TEST SETUP



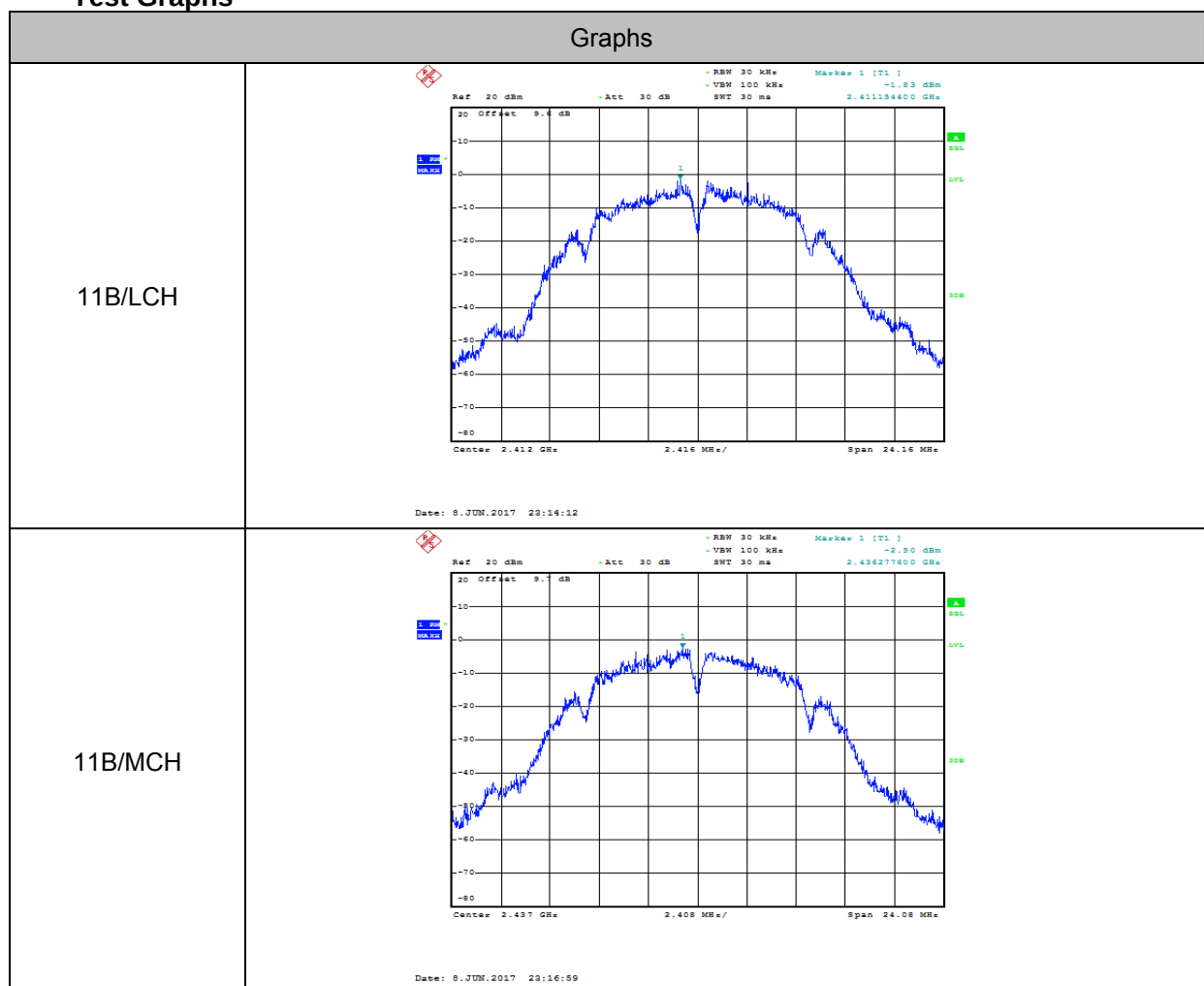
TEST CONDITIONS

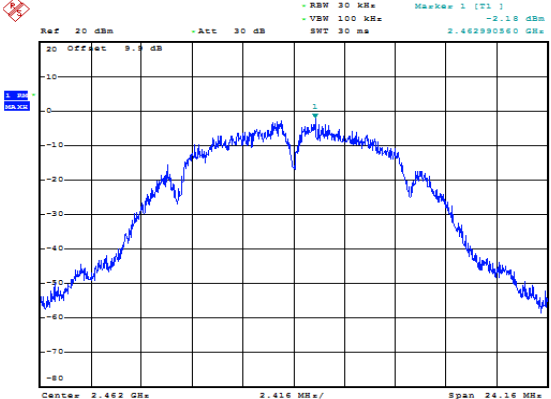
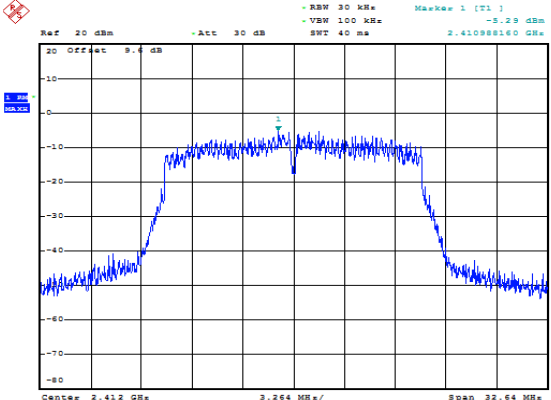
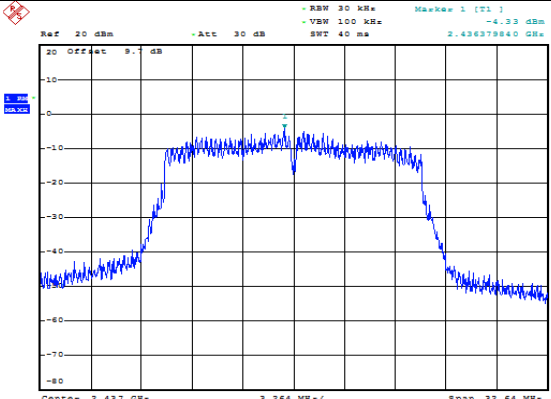
Temperature: 27°C
Relative Humidity: 60%
Test Voltage: DC5V

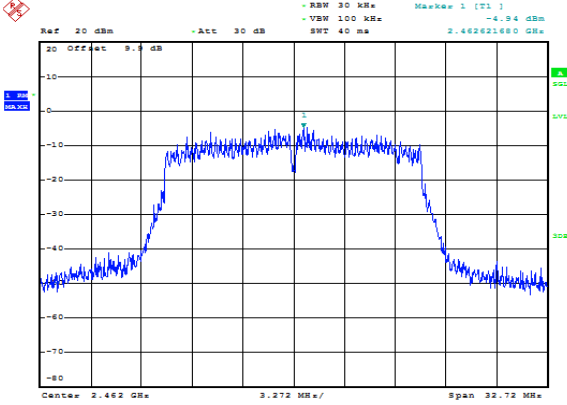
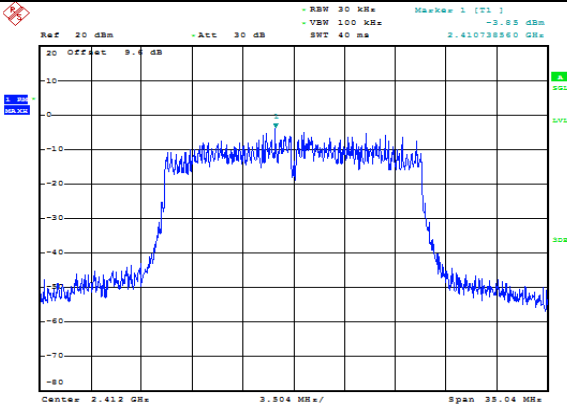
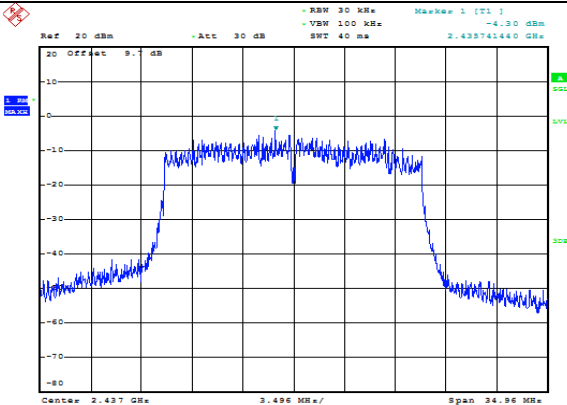
RESULTS

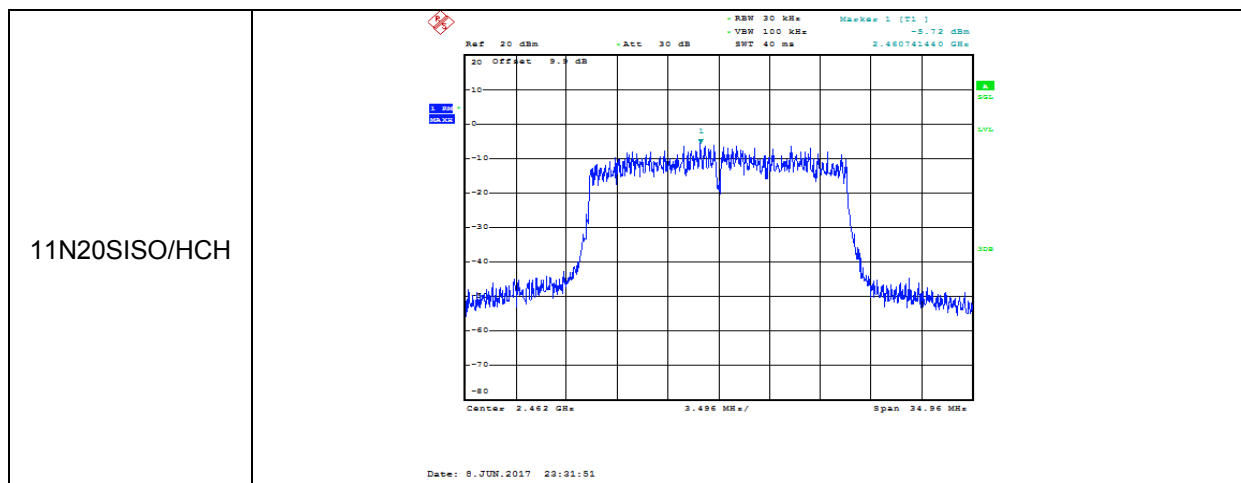
Mode	Channel	Meas.Level [dBm]	Verdict
11B	LCH	-1.830	PASS
11B	MCH	-2.500	PASS
11B	HCH	-2.180	PASS
11G	LCH	-5.290	PASS
11G	MCH	-4.330	PASS
11G	HCH	-4.940	PASS
11N20SISO	LCH	-3.850	PASS
11N20SISO	MCH	-4.300	PASS
11N20SISO	HCH	-5.720	PASS

Test Graphs



11B/HCH	 Date: 8 JUN 2017 23:19:07
11G/LCH	 Date: 8 JUN 2017 23:21:15
11G/MCH	 Date: 8 JUN 2017 23:23:30

11G/HCH	 Date: 8 JUN 2017 23:25:29
11N20SISO/LCH	 Date: 8 JUN 2017 23:27:41
11N20SISO/MCH	 Date: 8 JUN 2017 23:29:54



7.4. CONDUCTED BANDEGE

LIMITS

FCC Part15 (15.247) , Subpart C IC RSS-247 ISSUE 1		
Section	Test Item	Limit
FCC §15.247 (d) IC RSS-247 5.5	Conducted Bandedge and Spurious Emissions	at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

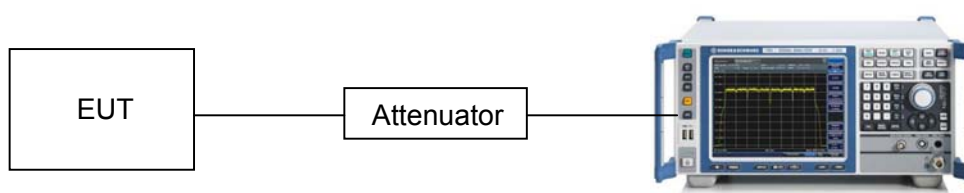
Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	100K
VBW	$\geq 3 \times \text{RBW}$
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Use the peak marker function to determine the maximum PSD level.

Span	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100K
VBW	$\geq 3 \times \text{RBW}$
measurement points	$\geq \text{span}/\text{RBW}$
Trace	Max hold
Sweep time	Auto couple.

Use the peak marker function to determine the maximum amplitude level.

TEST SETUP

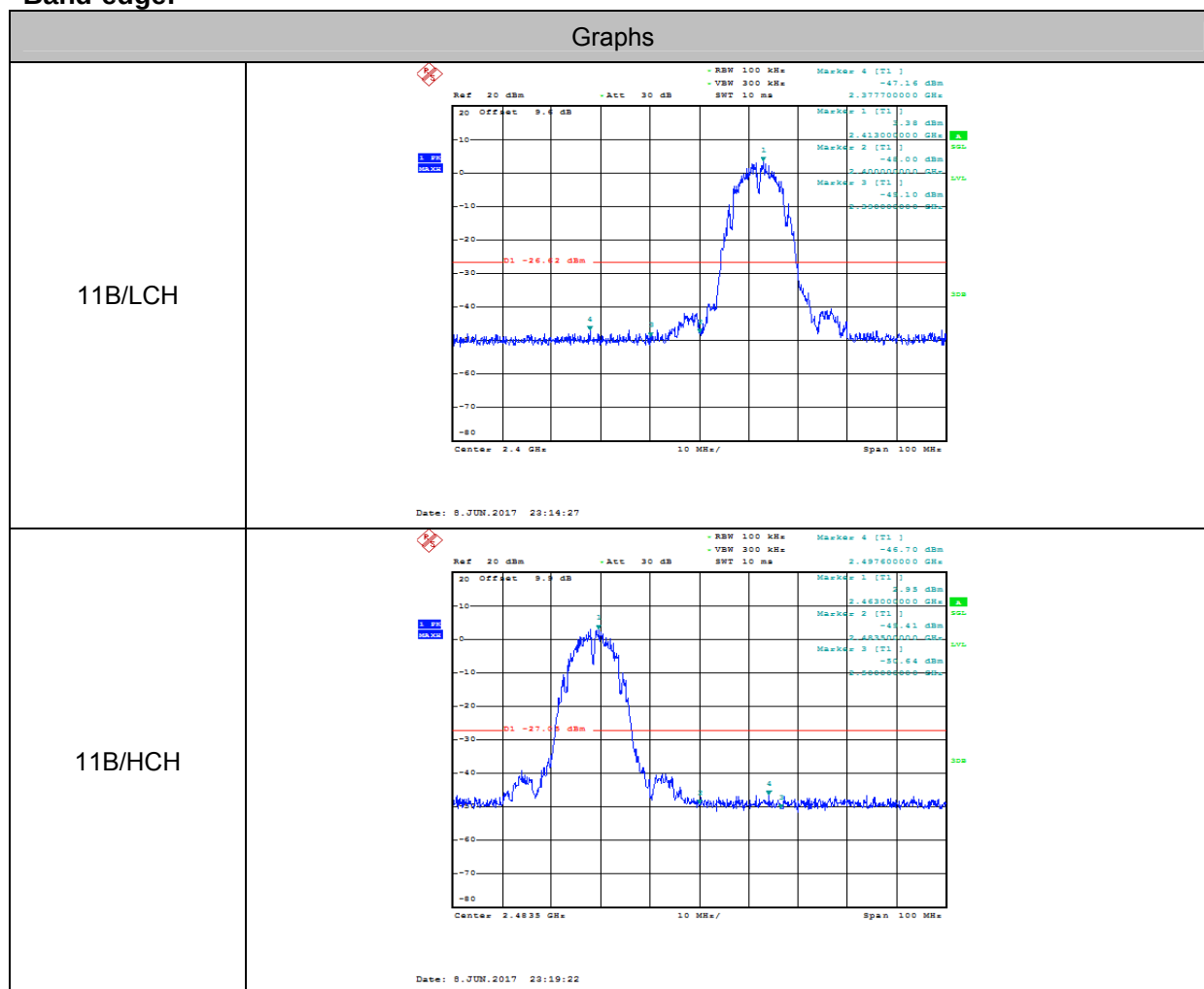


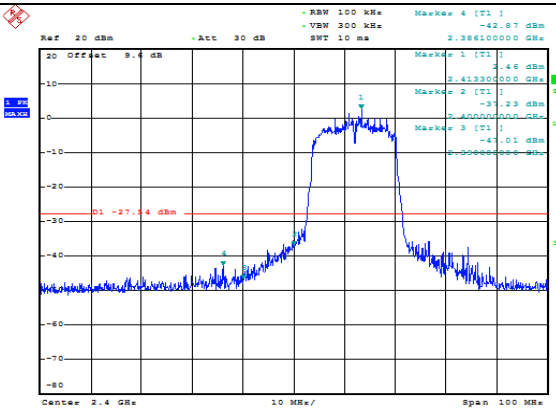
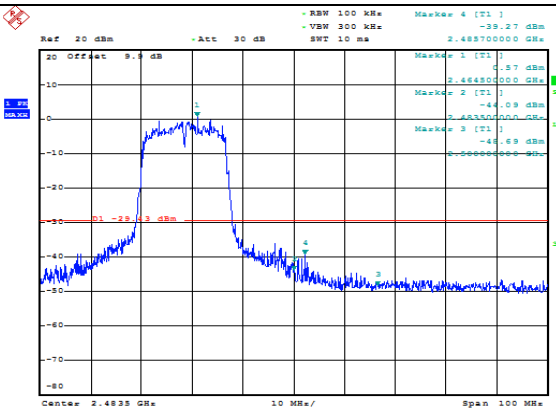
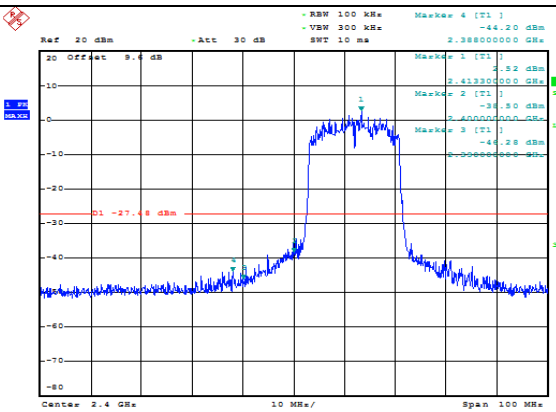
TEST CONDITIONS

Temperature: 27°C
Relative Humidity: 60%
Test Voltage: DC5V

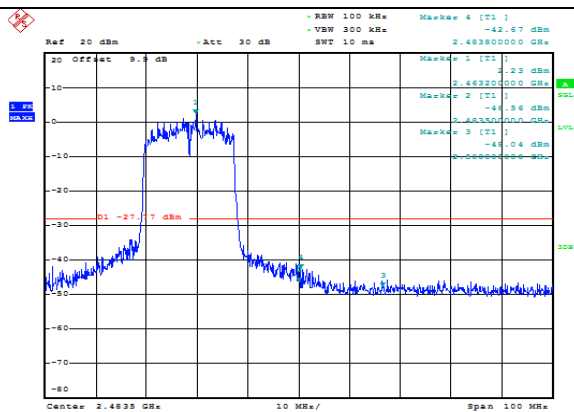
RESULTS

Band-edge:

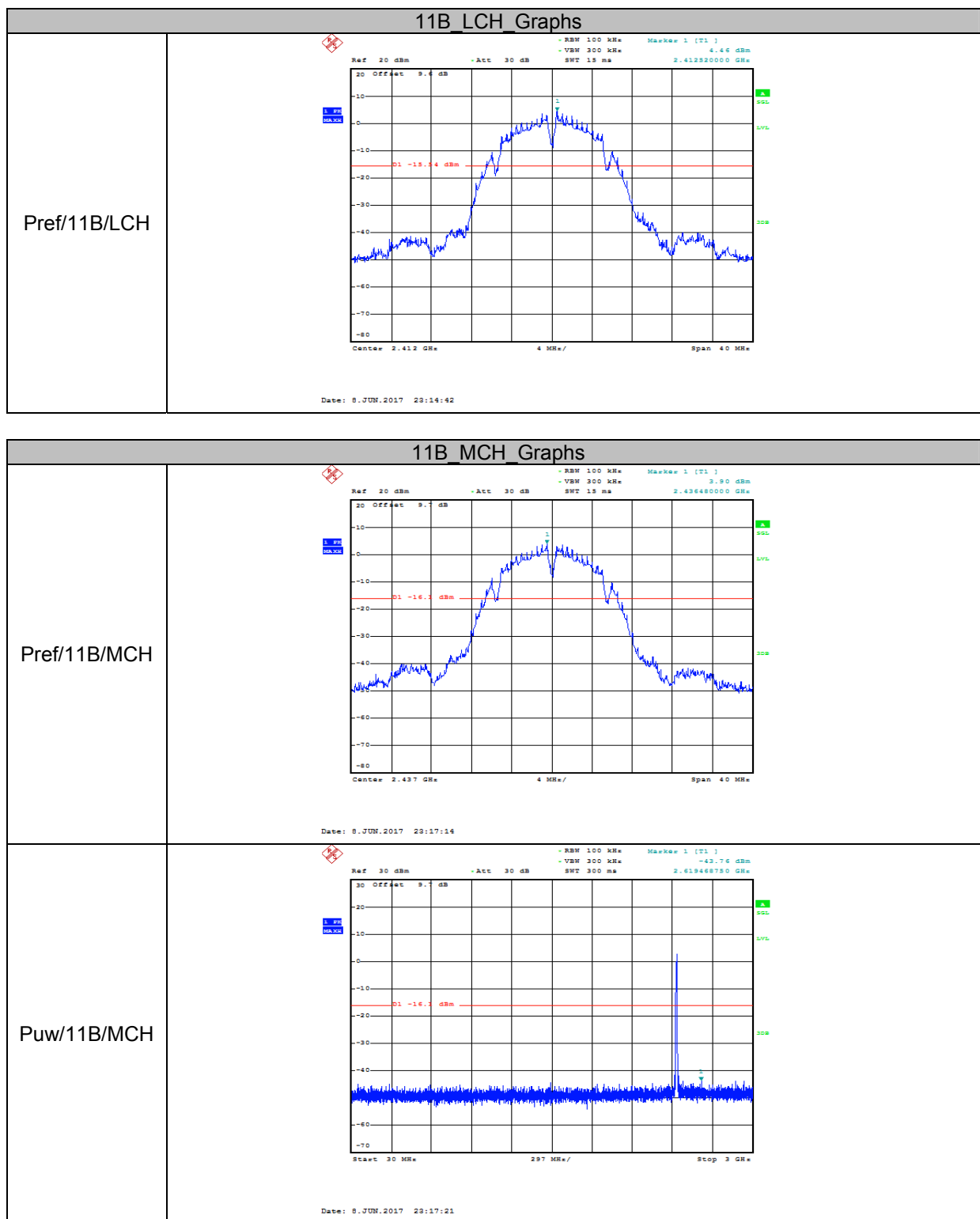


11G/LCH	 Date: 8 JUN 2017 23:21:30
11G/HCH	 Date: 8 JUN 2017 23:25:44
11N20SISO/LCH	 Date: 8 JUN 2017 23:27:56

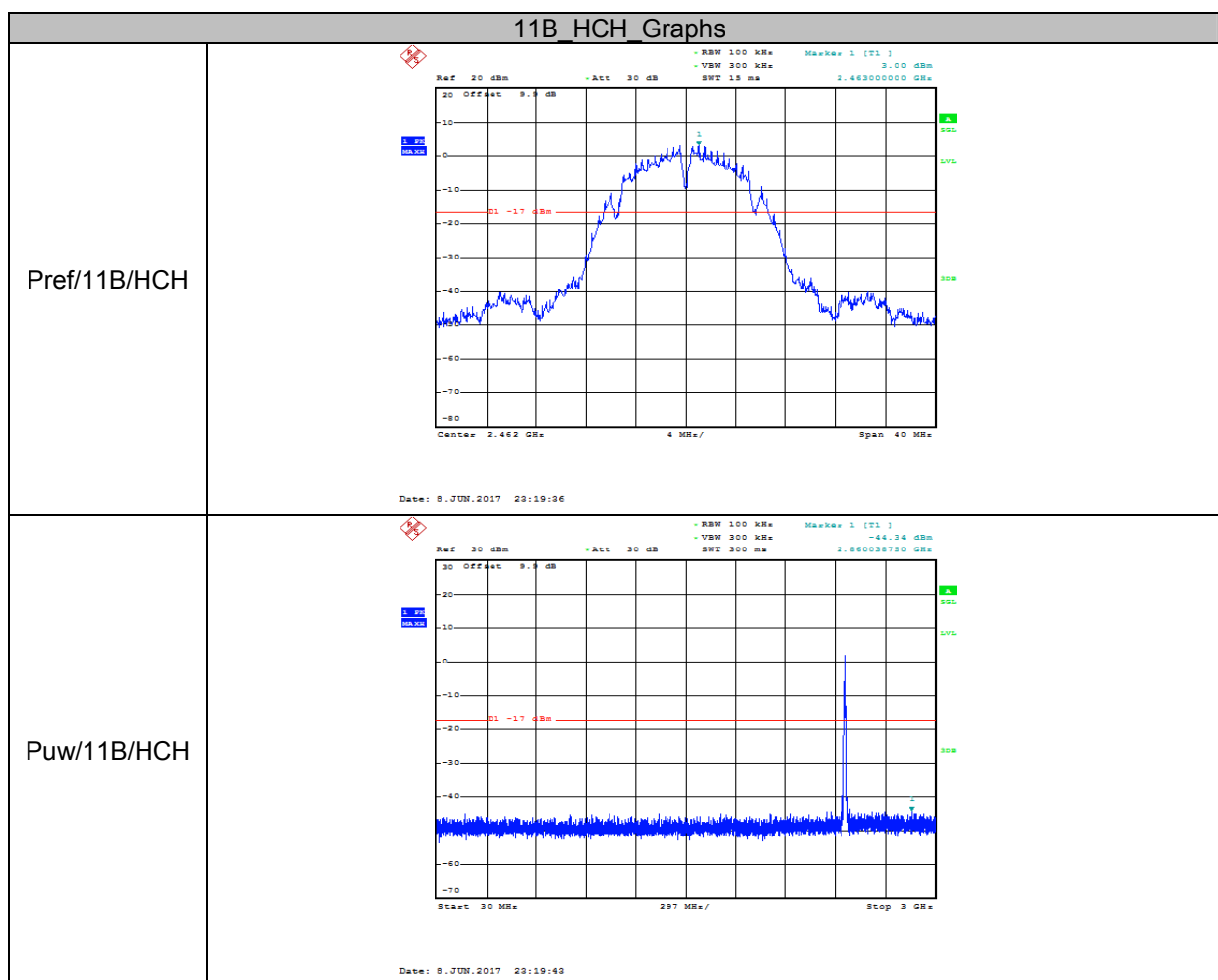
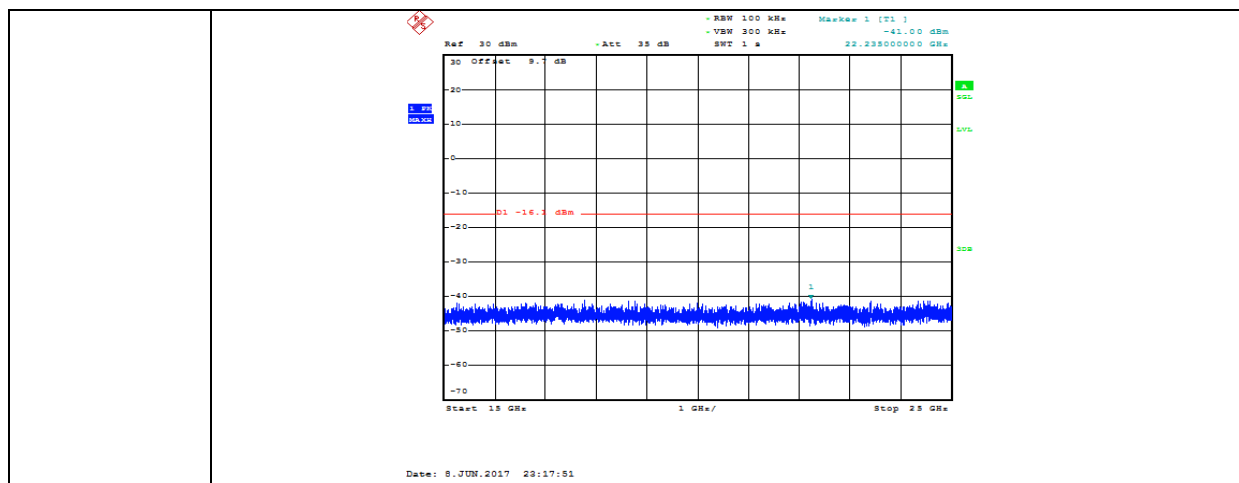
11N20SISO/HCH

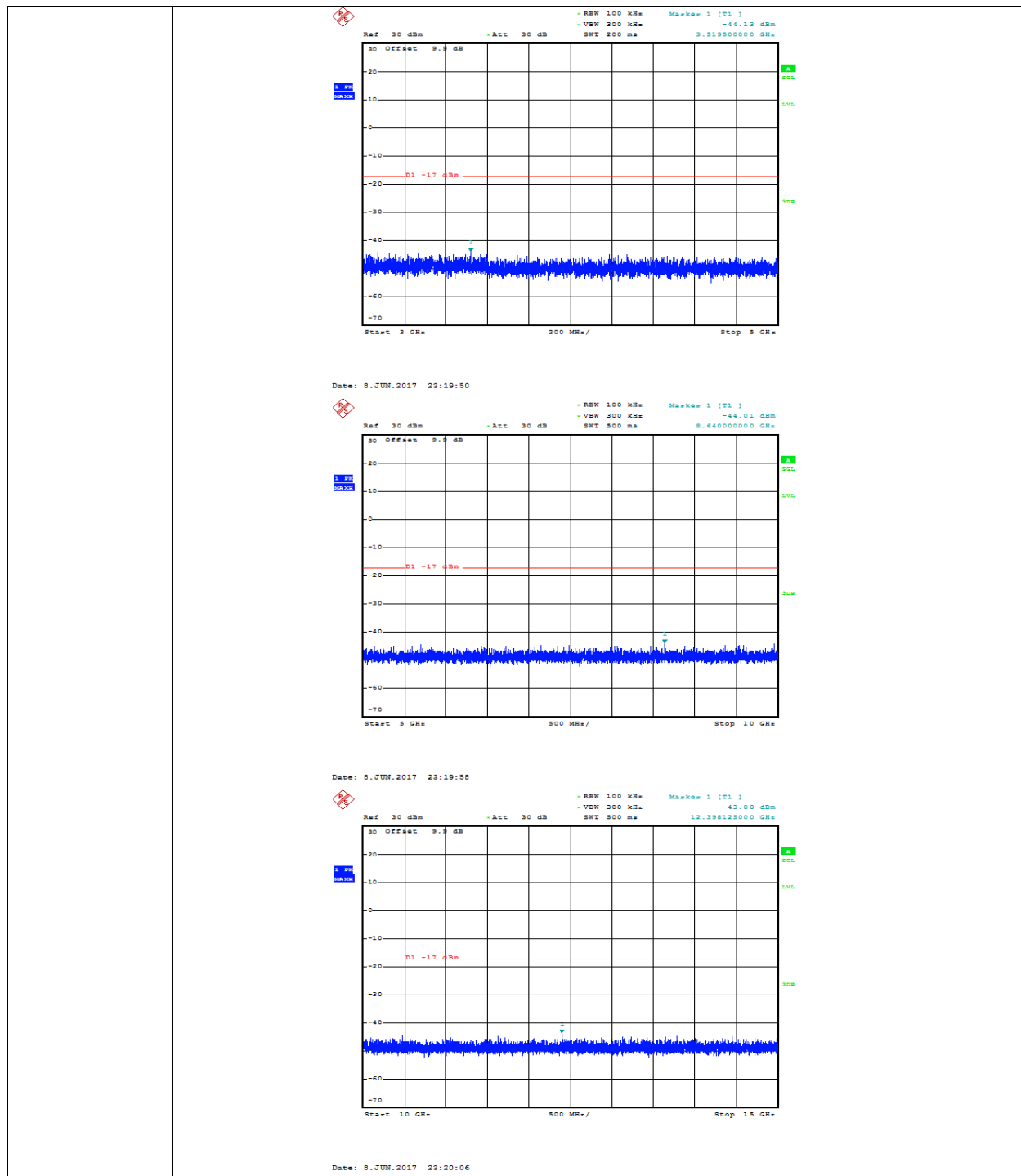


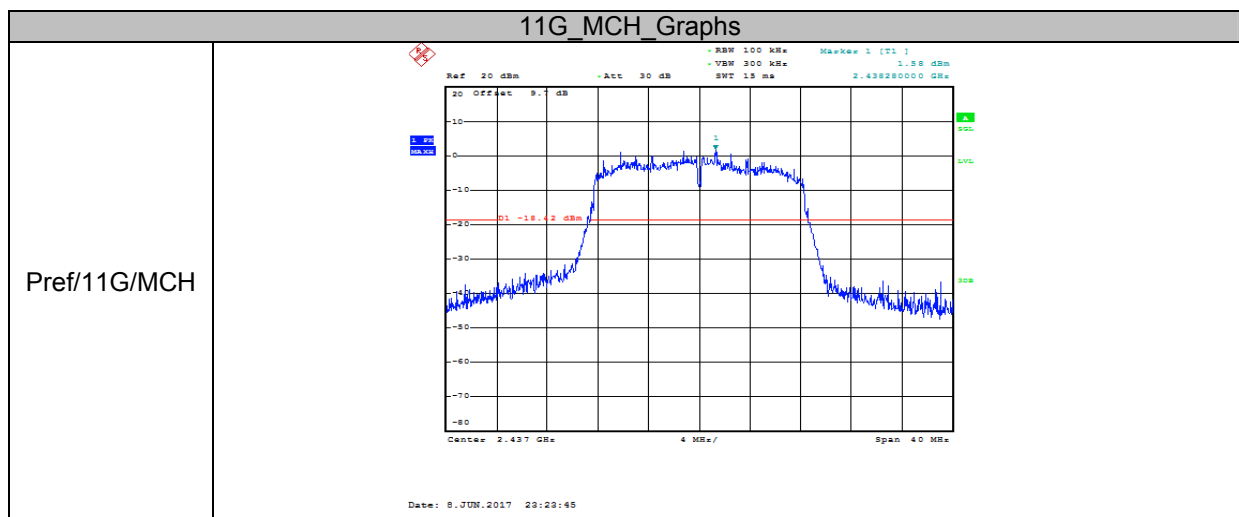
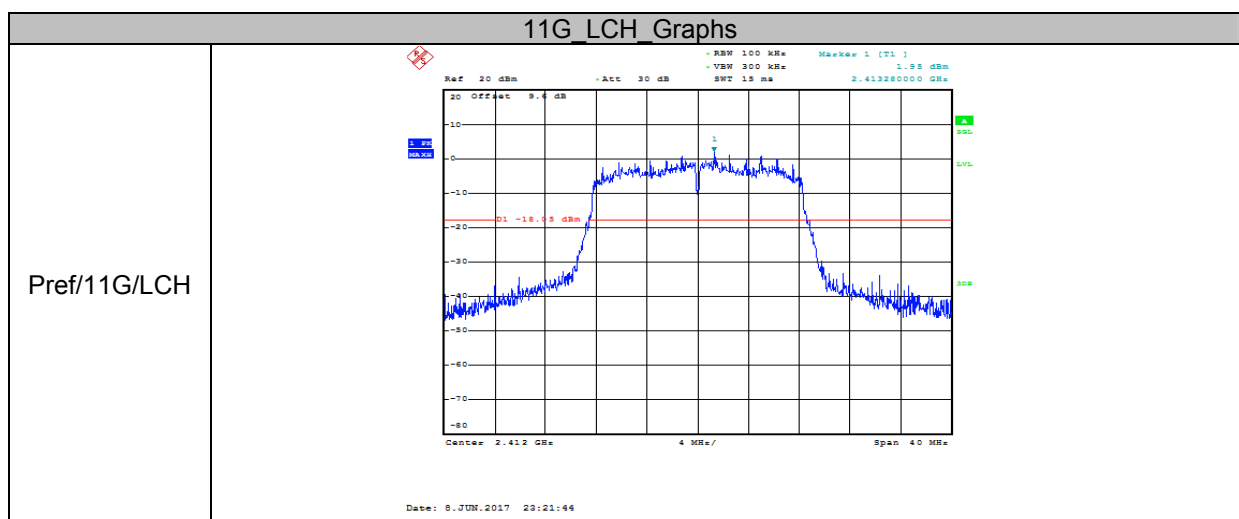
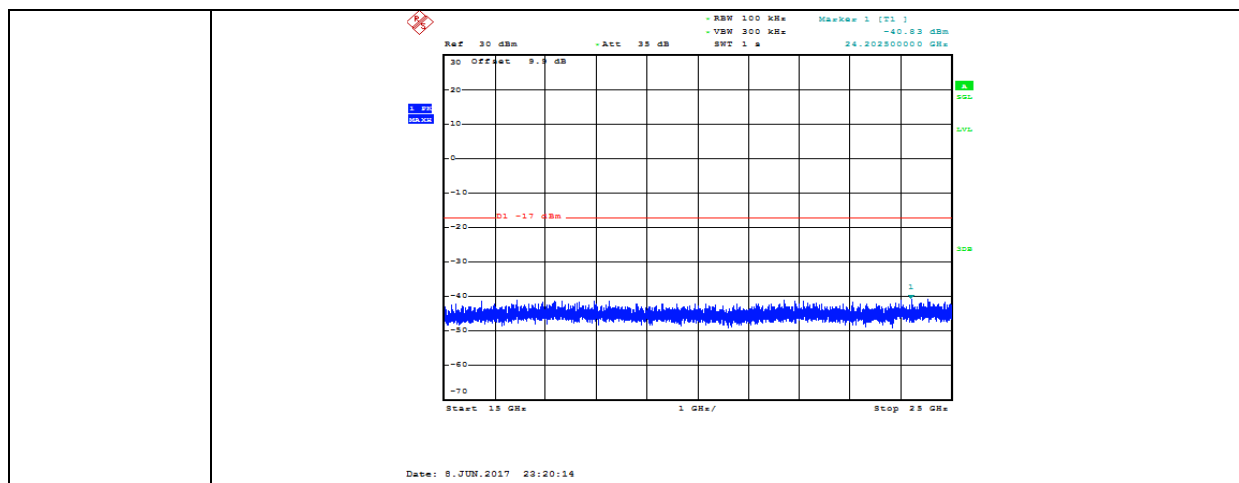
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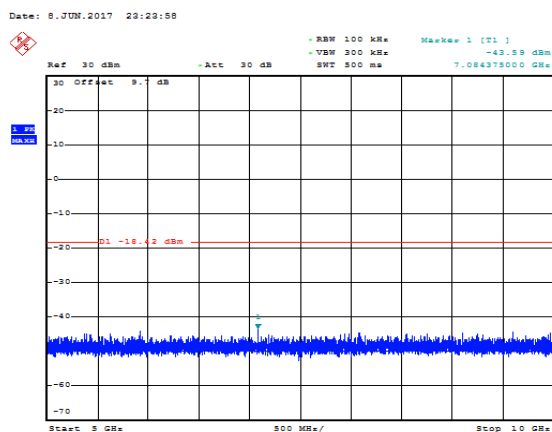
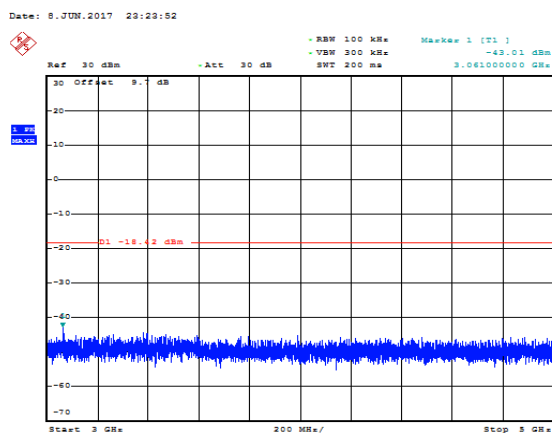
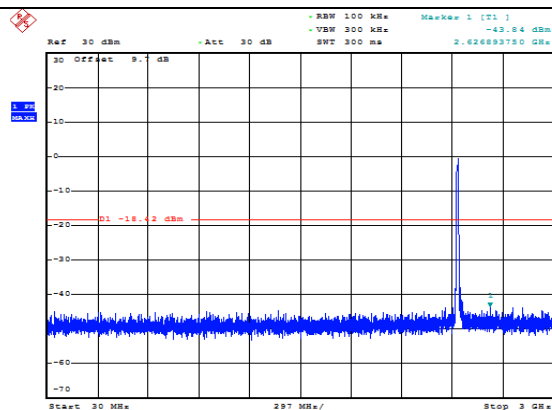




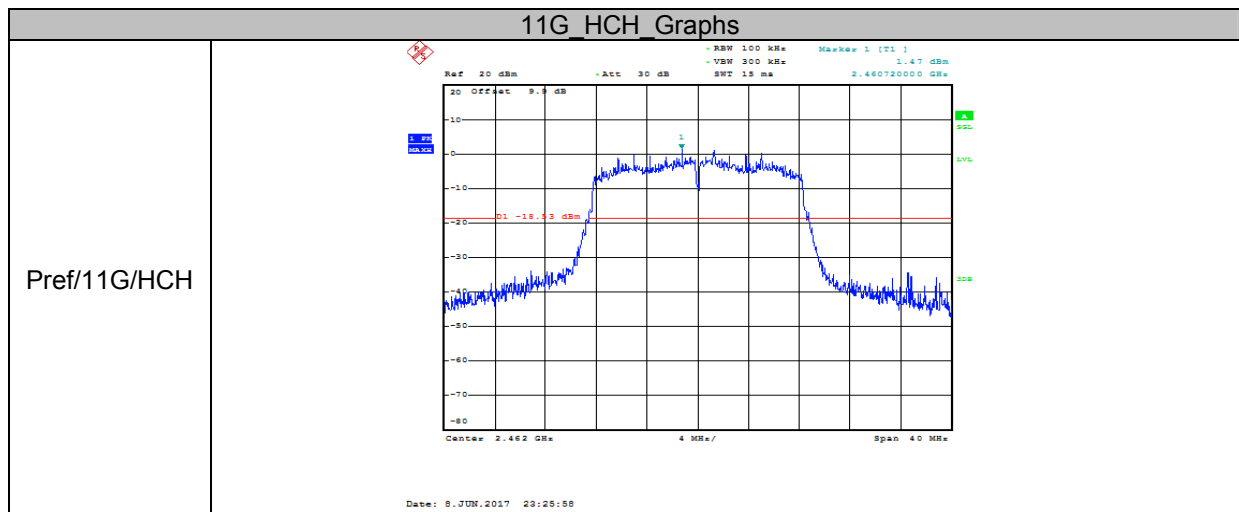
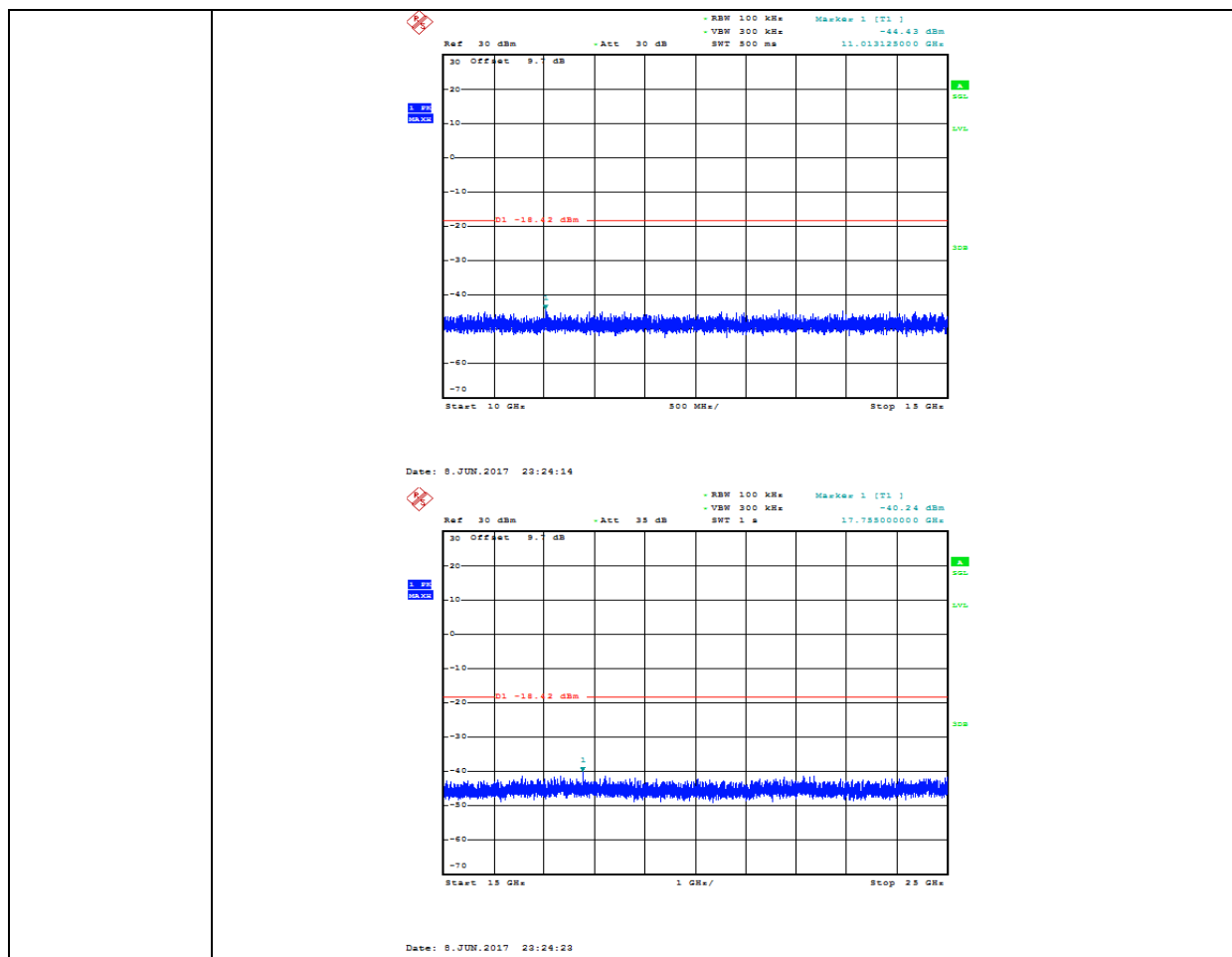




Puw/11G/MCH

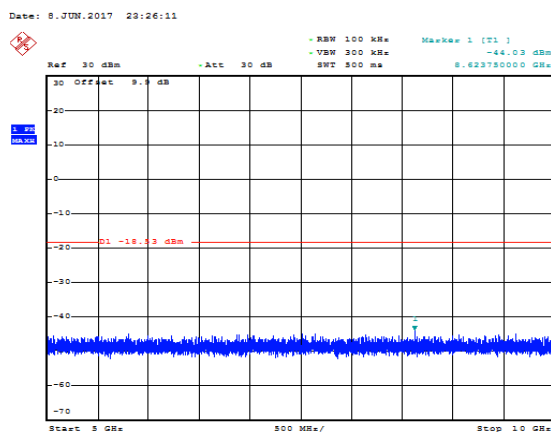
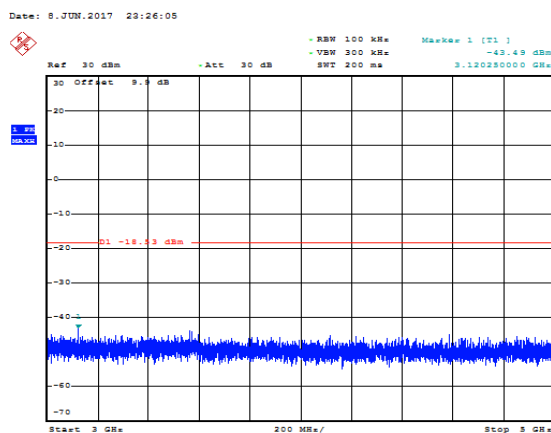
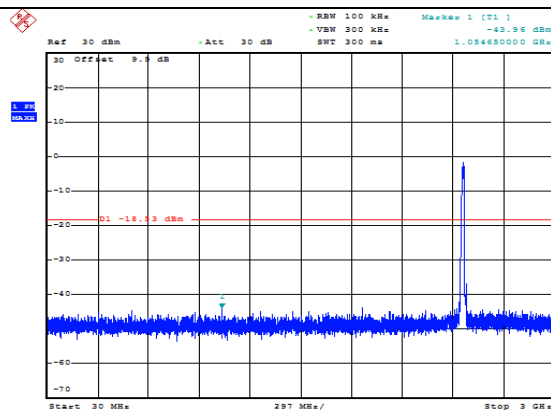


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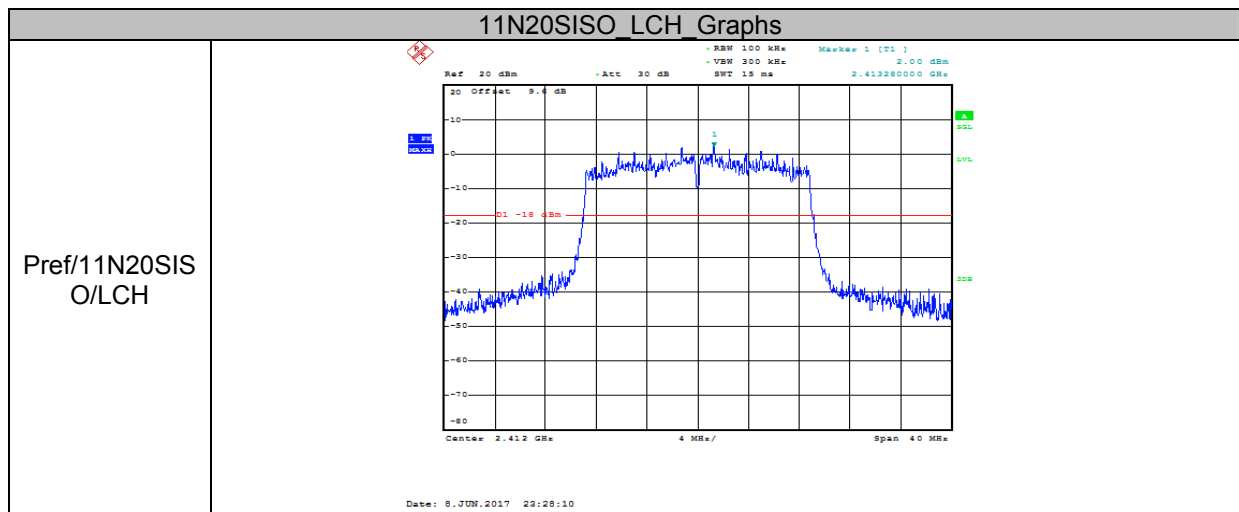


Pref/11G/HCH

Puw/11G/HCH

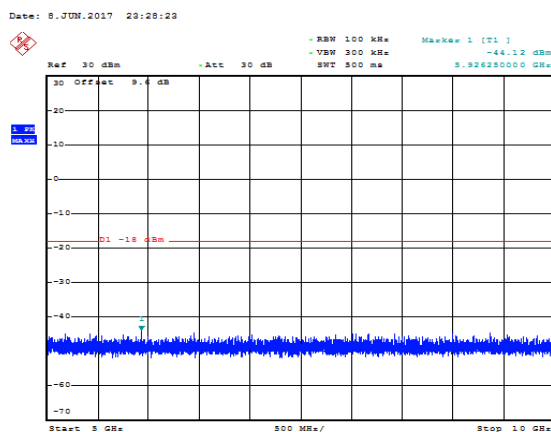
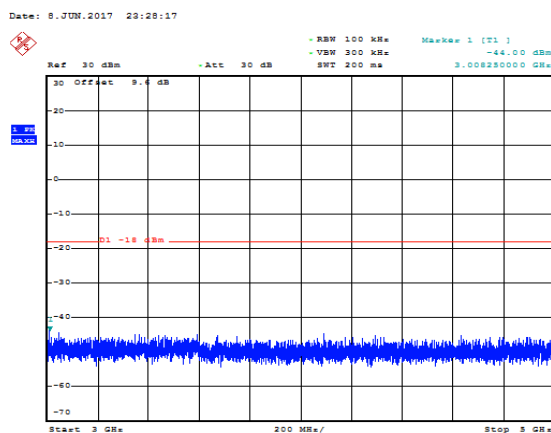
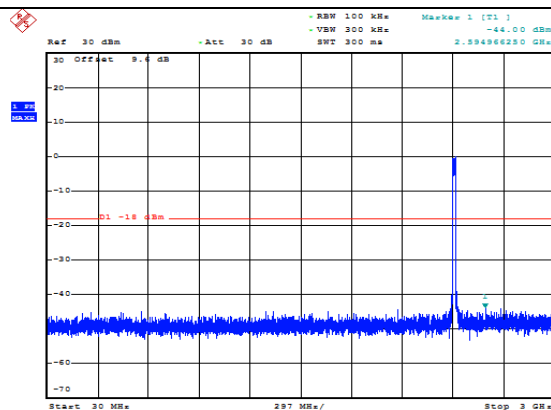


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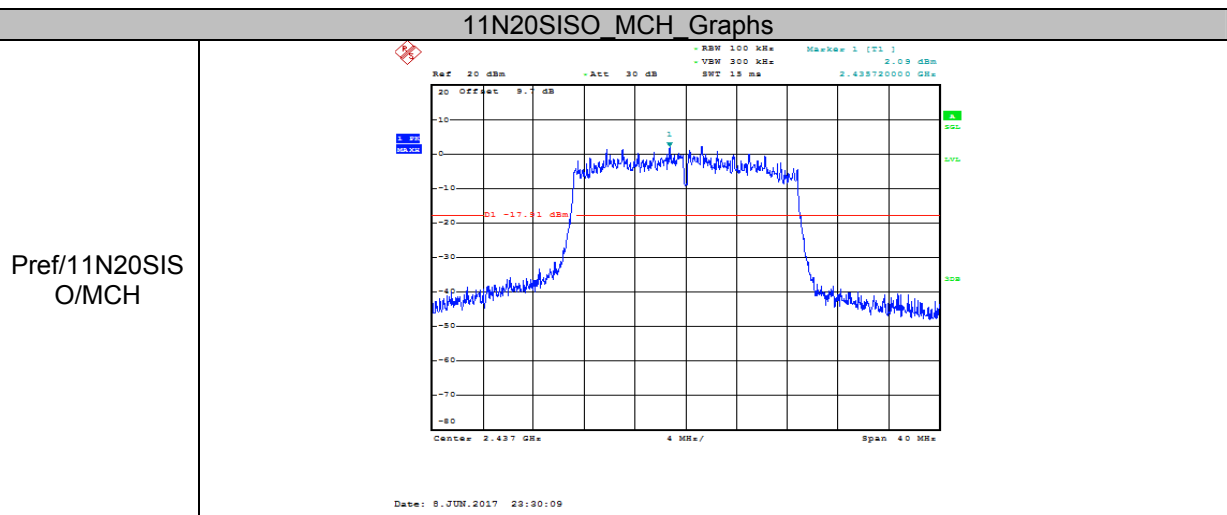


Pref/11N20SIS
O/LCH

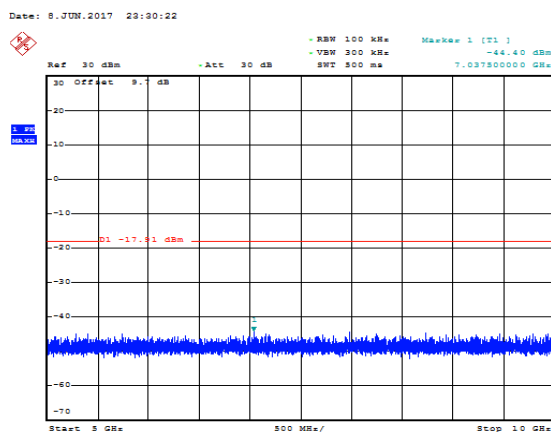
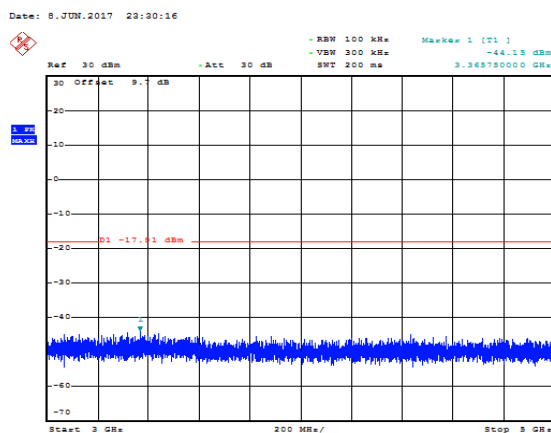
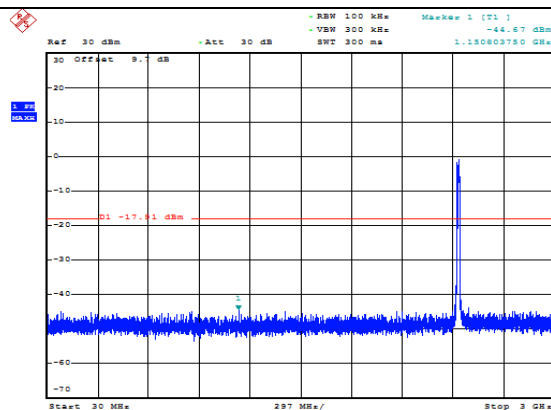
/11N20SISO/L
CH



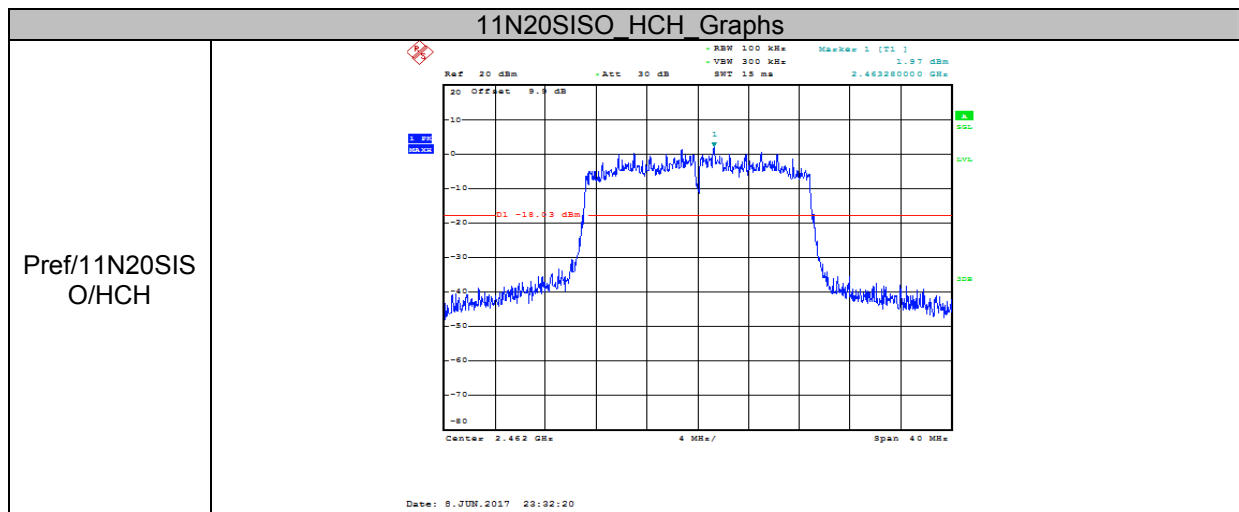
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Puw/11N20SI
SO/MCH

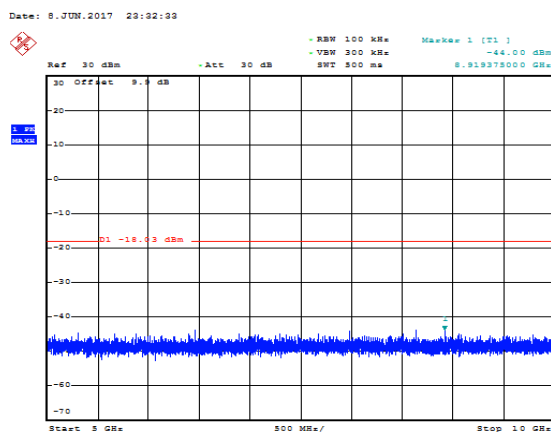
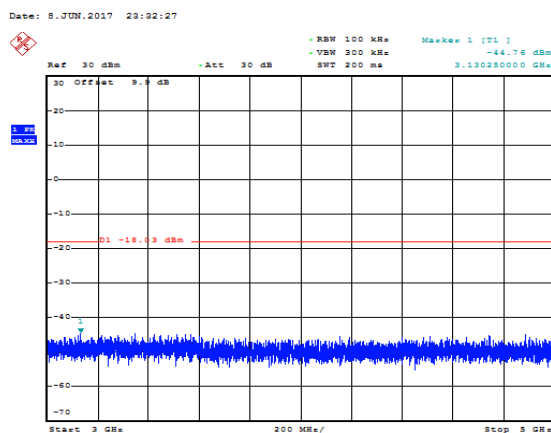
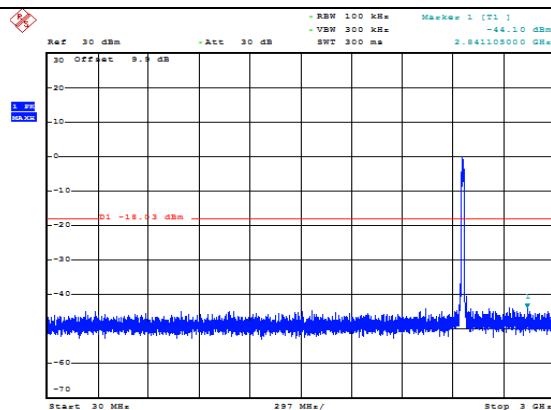


Date: 8.JUN.2017 23:30:30



Pref/11N20SIS
O/HCH

Puw/11N20SI
SO/HCH



Date: 8.JUN.2017 23:32:41



8. RADIATED TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMITS

Please refer to FCC §15.205 and §15.209

Please refer to IC RSS-GEN Clause 8.9 (Transmitter)

Radiation Disturbance Test Limit for FCC (Class B)(9KHz-1GHz)

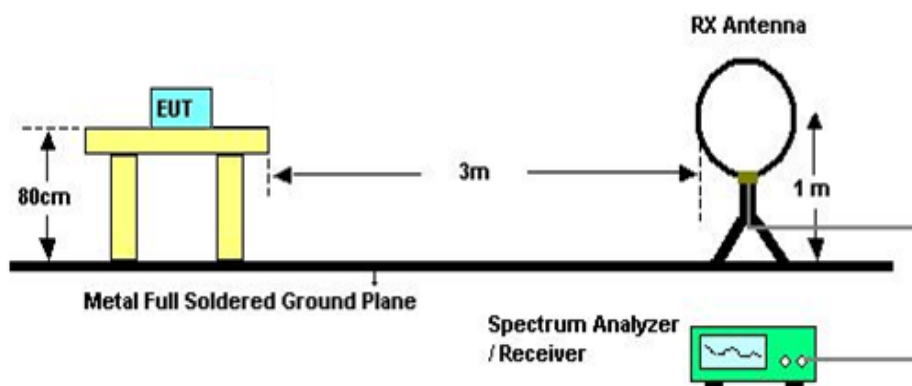
Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

Radiation Disturbance Test Limit for FCC (Above 1G)

Frequency (MHz)	dB(uV/m) (at 3 meters)	
	Peak	Average
Above 1000	74	54

TEST SETUP AND PROCEDURE

Below 30MHz

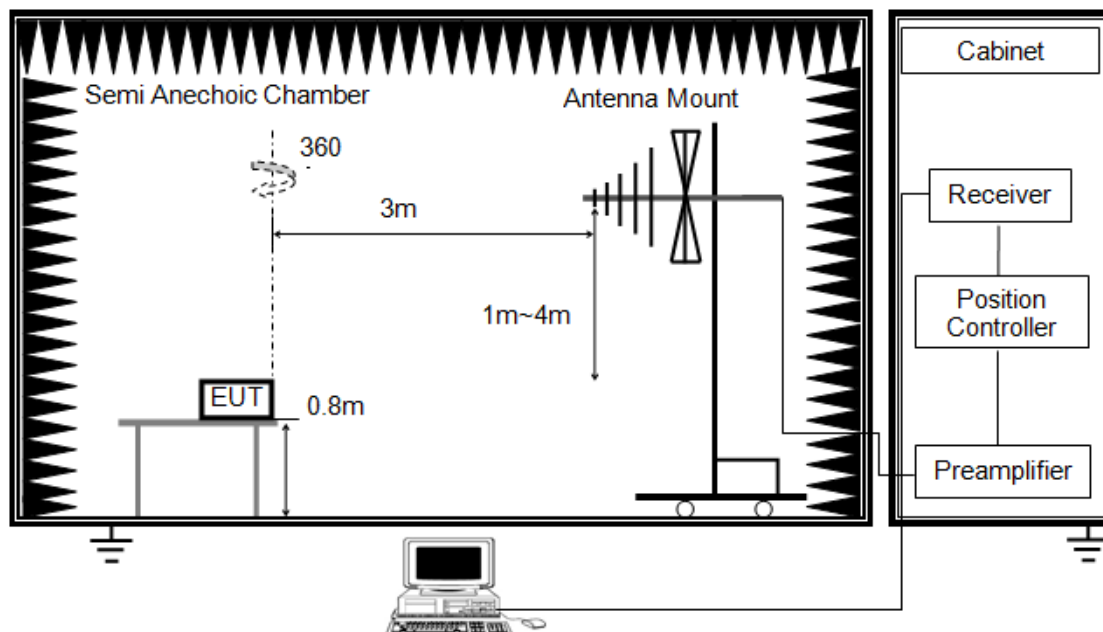


The setting of the spectrum analyser

RBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
VBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
Sweep	Auto
Detector	Peak/QP/ Average
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013
2. The EUT was arranged to its worst case and then 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. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 0.8 meter 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 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 3 dB 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.
7. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)

Below 1G

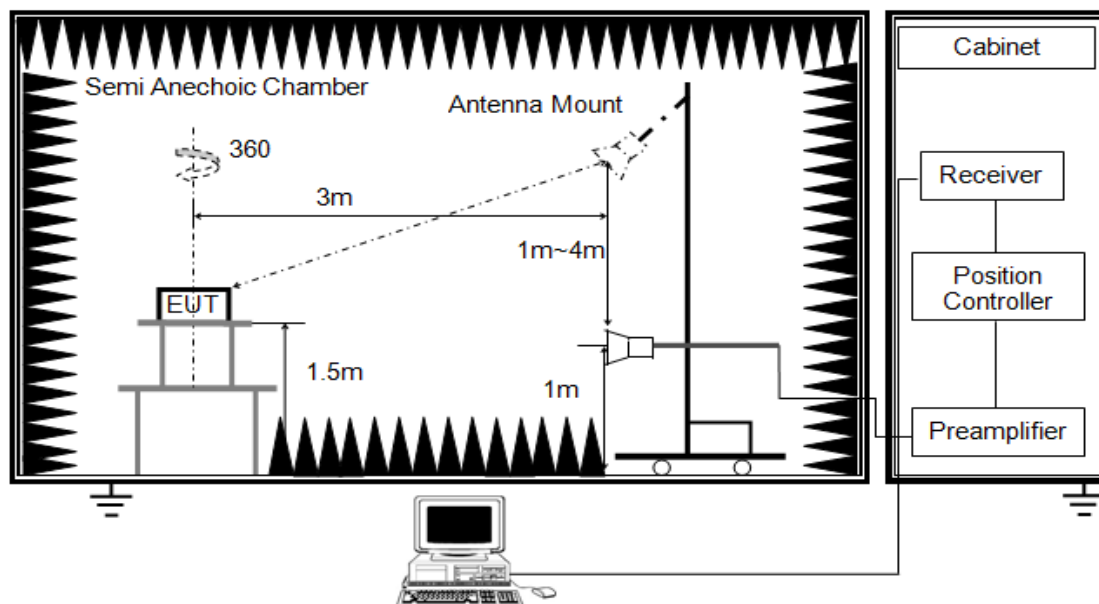


The setting of the spectrum analyser

RBW	120K
VBW	300K
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.
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. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 0.8 meter 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 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 3 dB 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.
7. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration)

ABOVE 1G



The setting of the spectrum analyser

RBW	1M
VBW	3M
Sweep	Auto
Detector	Peak and CISPR Average
Trace	Max hold

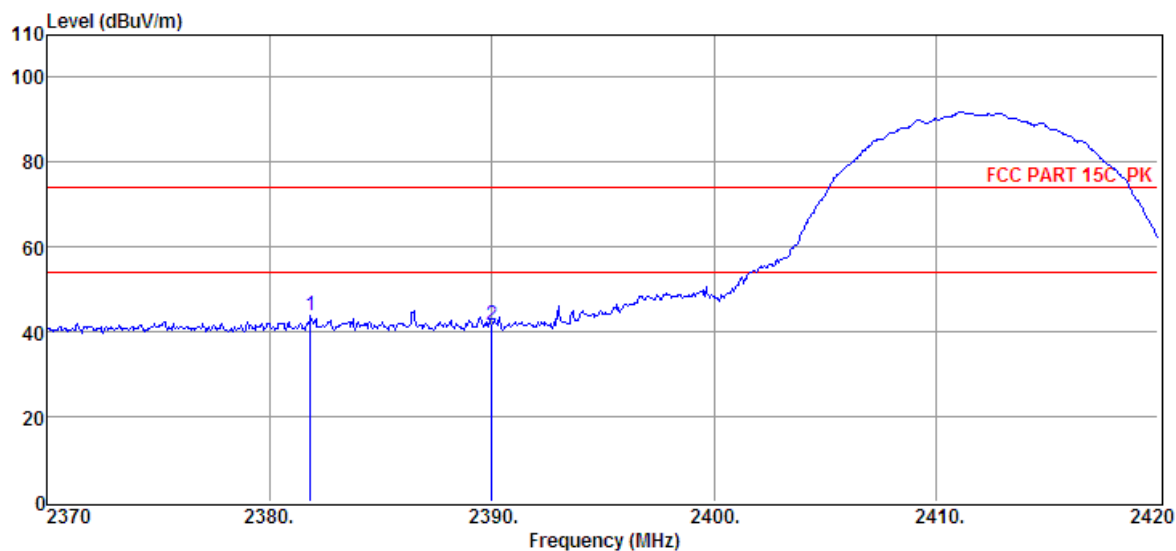
1. The testing follows the guidelines in ANSI C63.10-2013.
2. The EUT was arranged to its worst case and then tune the antenna tower (1.5 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 1.5 meter 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 measurement above 1GHz, the emission measurement will be measured by the peak detector and the AV detector.
7. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration)

TEST CONDITIONS

Temperature: 23.5°C
Relative Humidity: 59.2%
Test Voltage: DC5V

8.2. RESTRICTED BANDEDGE

RESTRICTED BANDEDGE (11b LOW CHANNEL, HORIZONTAL)

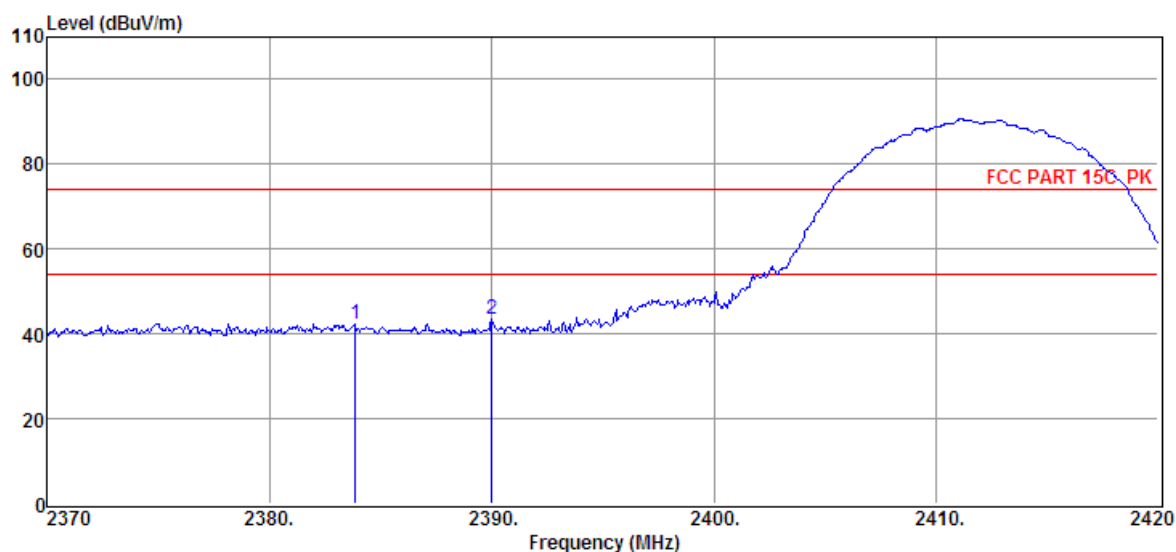


Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2381.85	37.48	29.74	29.41	6.01	43.82	74.00	-30.18	Peak	HORIZONTAL
2	2390.00	35.25	29.78	29.42	6.03	41.64	74.00	-32.36	Peak	HORIZONTAL

Note:

1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
4. EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report

RESTRICTED BANDEDGE (11b LOW CHANNEL, VERTICAL)

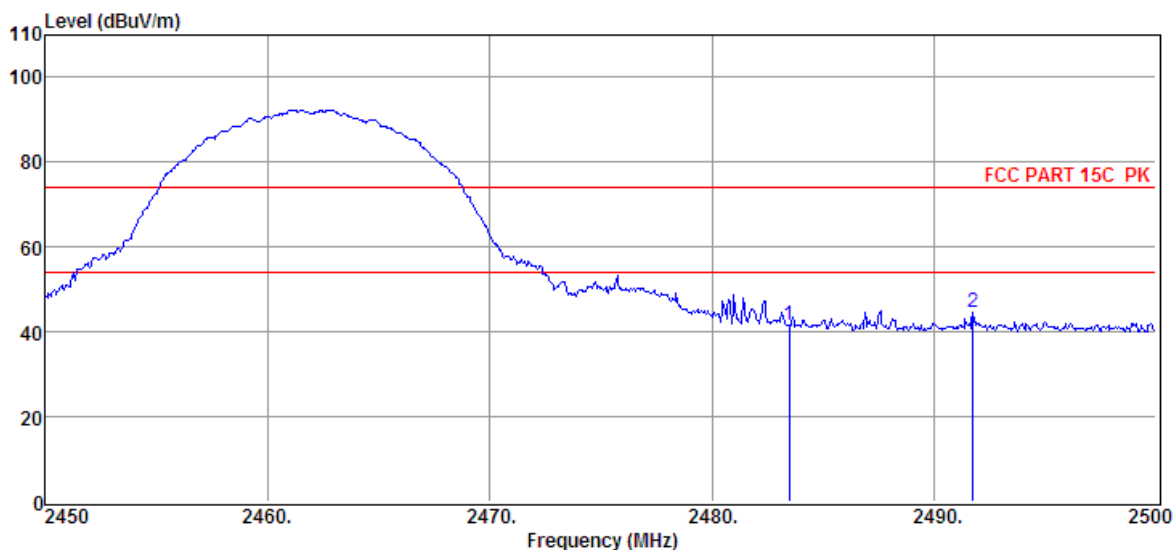


Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2383.85	36.11	29.75	29.41	6.01	42.46	74.00	-31.54	Peak	VERTICAL
2	2390.00	36.96	29.78	29.42	6.03	43.35	74.00	-30.65	Peak	VERTICAL

Note:

1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
4. EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report

RESTRICTED BANDEDGE (11b HIGH CHANNEL, HORIZONTAL)

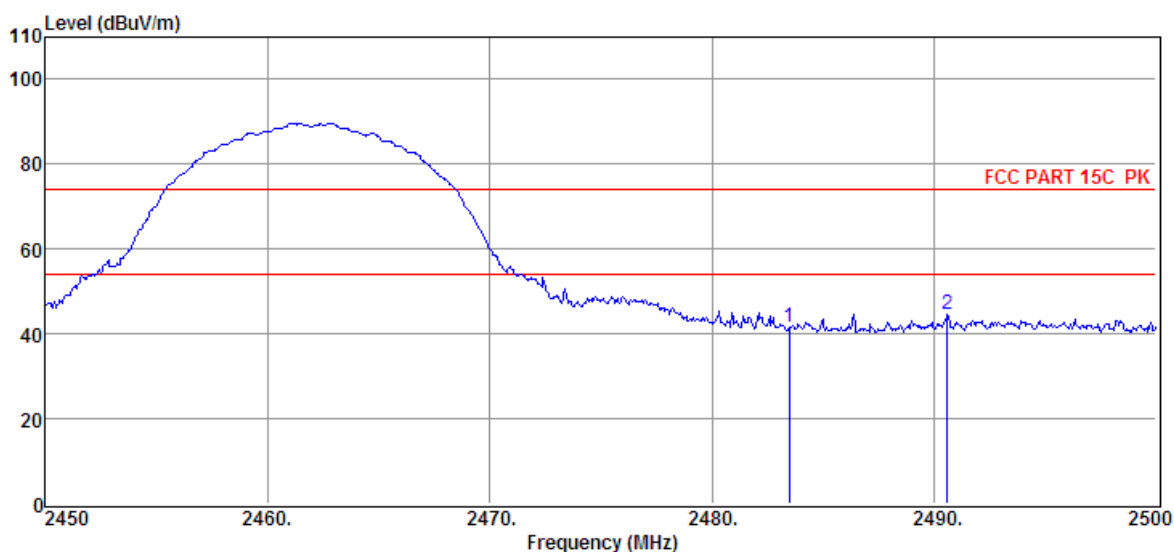


Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	35.02	30.14	29.71	6.13	41.58	74.00	-32.42	Peak	HORIZONTAL
2	2491.75	37.82	30.17	29.73	6.17	44.43	74.00	-29.57	Peak	HORIZONTAL

Note:

1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
4. EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report

RESTRICTED BANDEDGE (11b HIGH CHANNEL, VERTICAL)

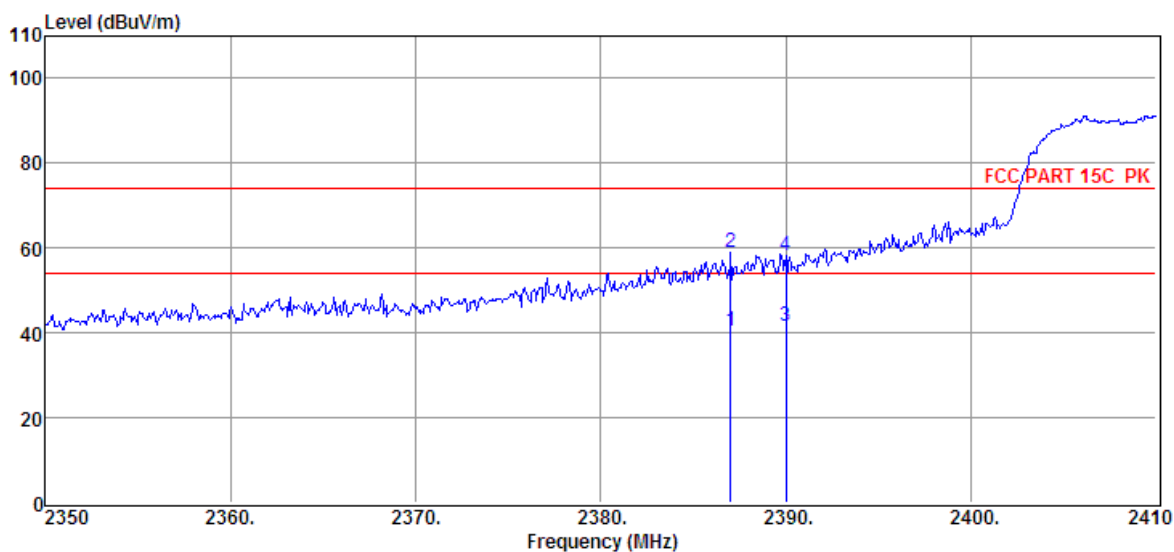


Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	34.84	30.14	29.71	6.13	41.40	74.00	-32.60	Peak	VERTICAL
2	2490.60	37.80	30.16	29.71	6.17	44.42	74.00	-29.58	Peak	VERTICAL

Note:

1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
4. EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report

RESTRICTED BANDEDGE (11g LOW CHANNEL, HORIZONTAL)

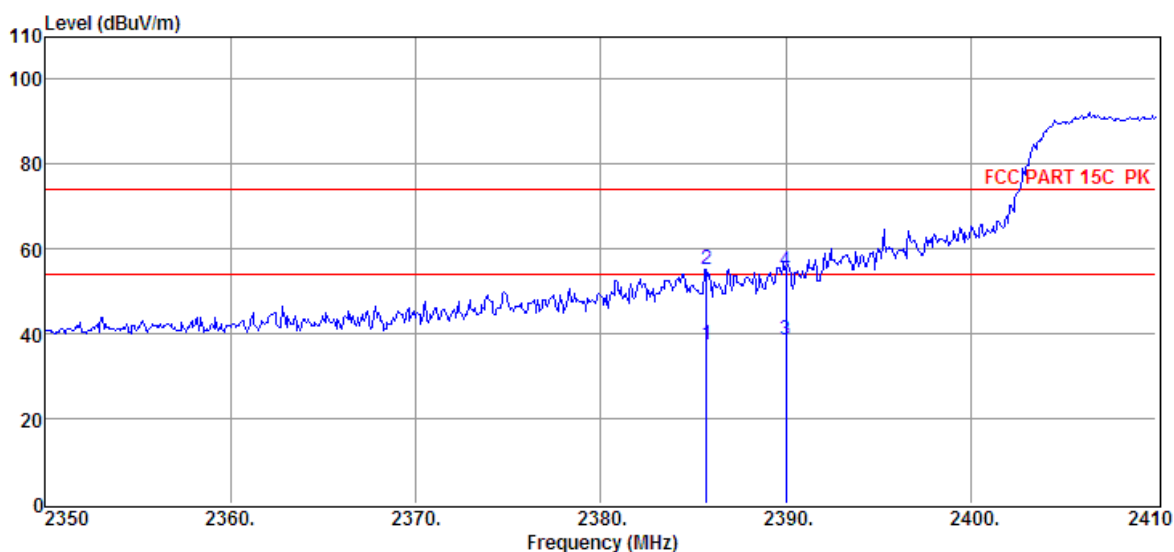


Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2387.02	34.00	29.76	29.41	6.01	40.36	54.00	-13.64	Average	HORIZONTAL
2	2387.02	52.49	29.76	29.41	6.01	58.85	74.00	-15.15	Peak	HORIZONTAL
3	2390.02	35.23	29.78	29.42	6.03	41.62	54.00	-12.38	Average	HORIZONTAL
4	2390.02	51.67	29.78	29.42	6.03	58.06	74.00	-15.94	Peak	HORIZONTAL

Note:

1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
4. EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report

RESTRICTED BANDEDGE (11g LOW CHANNEL, VERTICAL)

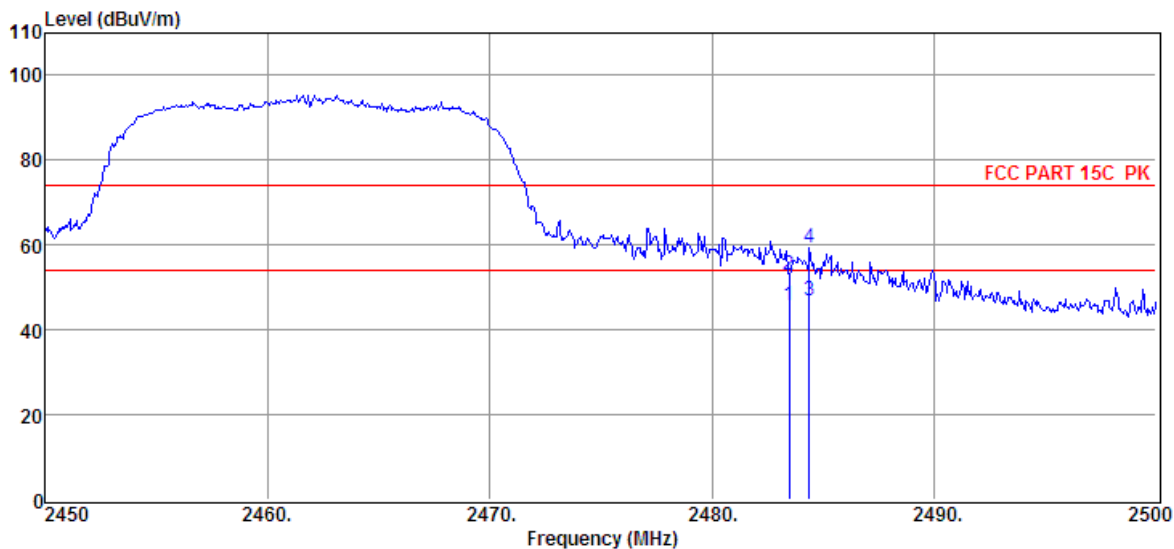


Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2385.70	31.01	29.76	29.41	6.01	37.37	54.00	-16.63	Average	VERTICAL
2	2385.70	48.92	29.76	29.41	6.01	55.28	74.00	-18.72	Peak	VERTICAL
3	2390.02	32.13	29.78	29.42	6.03	38.52	54.00	-15.48	Average	VERTICAL
4	2390.02	48.39	29.78	29.42	6.03	54.78	74.00	-19.22	Peak	VERTICAL

Note:

1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
4. EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report

RESTRICTED BANDEDGE (11g HIGH CHANNEL, HORIZONTAL)

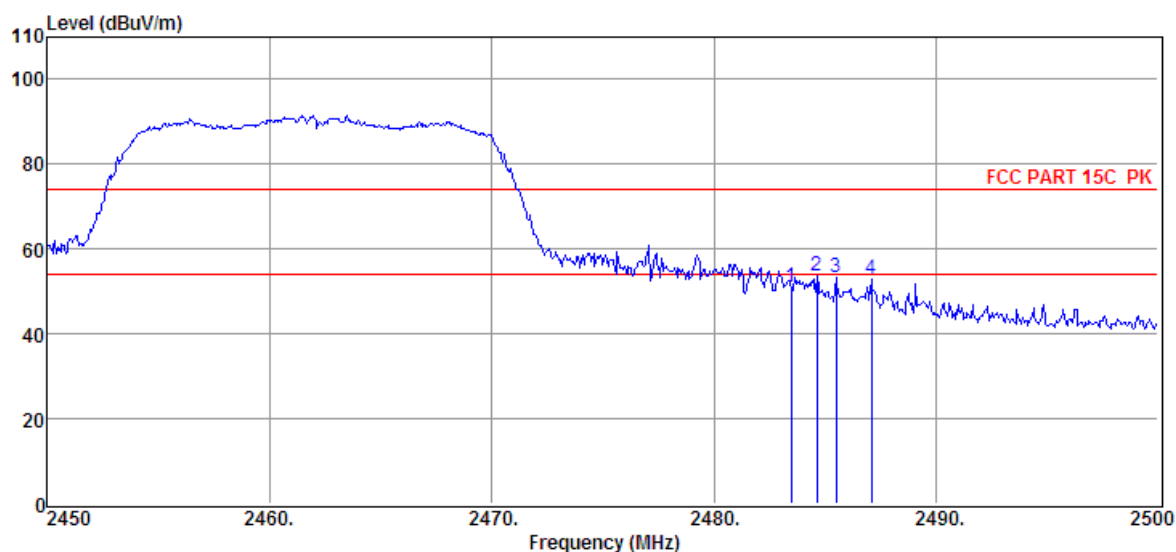


Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	39.23	30.14	29.71	6.13	45.79	54.00	-8.21	Average	HORIZONTAL
2	2483.50	46.45	30.14	29.71	6.13	53.01	74.00	-20.99	Peak	HORIZONTAL
3	2484.40	40.14	30.14	29.71	6.13	46.70	54.00	-7.30	Average	HORIZONTAL
4	2484.40	52.80	30.14	29.71	6.13	59.36	74.00	-14.64	Peak	HORIZONTAL

Note:

1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
4. EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report

RESTRICTED BANDEDGE (11g HIGH CHANNEL, VERTICAL)

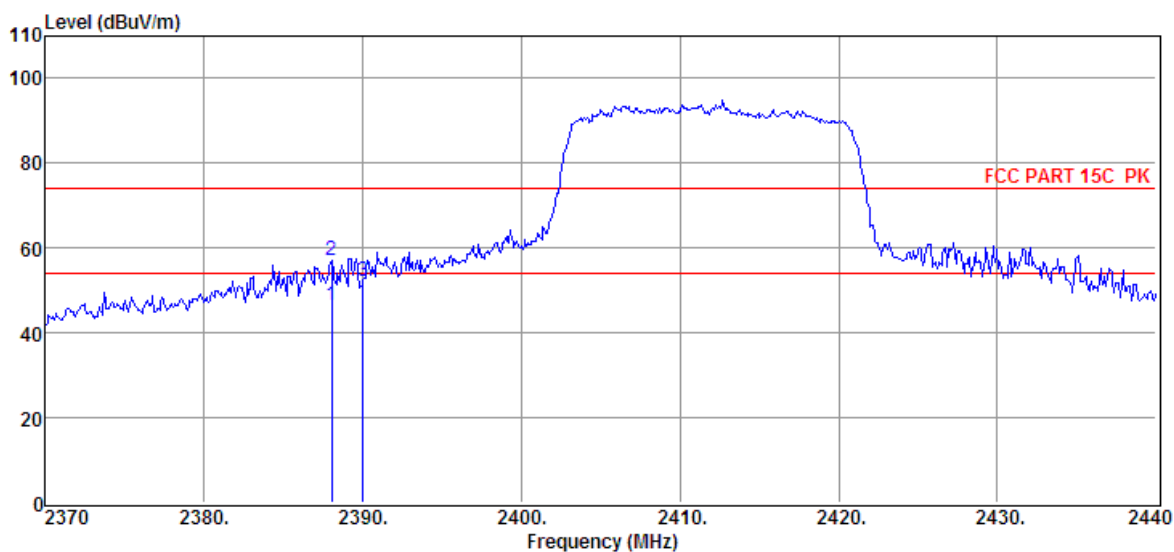


Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	44.58	30.14	29.71	6.13	51.14	74.00	-22.86	Peak	VERTICAL
2	2484.65	47.02	30.14	29.71	6.13	53.58	74.00	-20.42	Peak	VERTICAL
3	2485.50	46.72	30.15	29.71	6.13	53.29	74.00	-20.71	Peak	VERTICAL
4	2487.10	46.34	30.15	29.71	6.13	52.91	74.00	-21.09	Peak	VERTICAL

Note:

1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
4. EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report

RESTRICTED BANDEDGE (11n/20 LOW CHANNEL, HORIZONTAL)

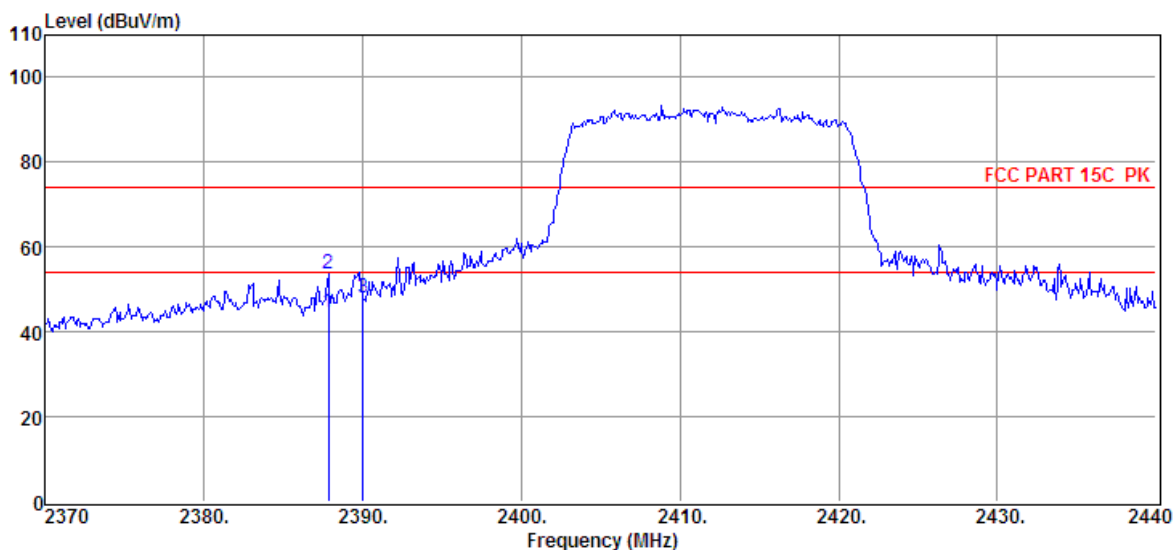


Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2388.06	40.12	29.77	29.41	6.01	46.49	54.00	-7.51	Average	HORIZONTAL
2	2388.06	50.68	29.77	29.41	6.01	57.05	74.00	-16.95	Peak	HORIZONTAL
3	2390.00	45.68	29.78	29.42	6.03	52.07	74.00	-21.93	Peak	HORIZONTAL

Note:

1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
4. EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report

RESTRICTED BANDEDGE (11n/20 LOW CHANNEL, VERTICAL)

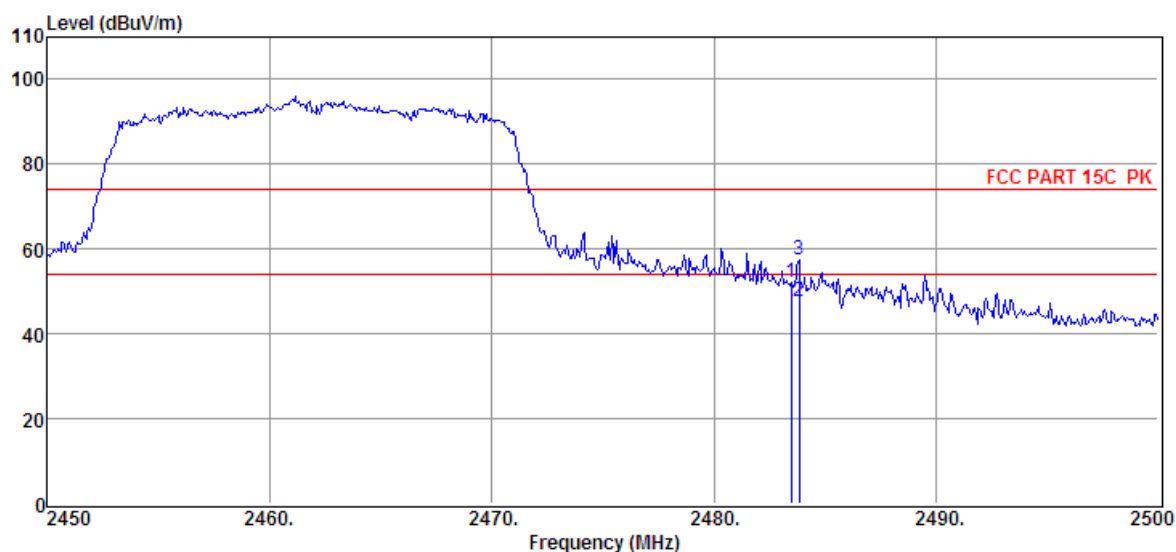


Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2387.85	38.12	29.77	29.41	6.01	44.49	54.00	-9.51	Average	VERTICAL
2	2387.85	47.16	29.77	29.41	6.01	53.53	74.00	-20.47	Peak	VERTICAL
3	2390.02	41.55	29.78	29.42	6.03	47.94	74.00	-26.06	Peak	VERTICAL

Note:

1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
4. EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report

RESTRICTED BANDEDGE (11n/20 HIGH CHANNEL, HORIZONTAL)

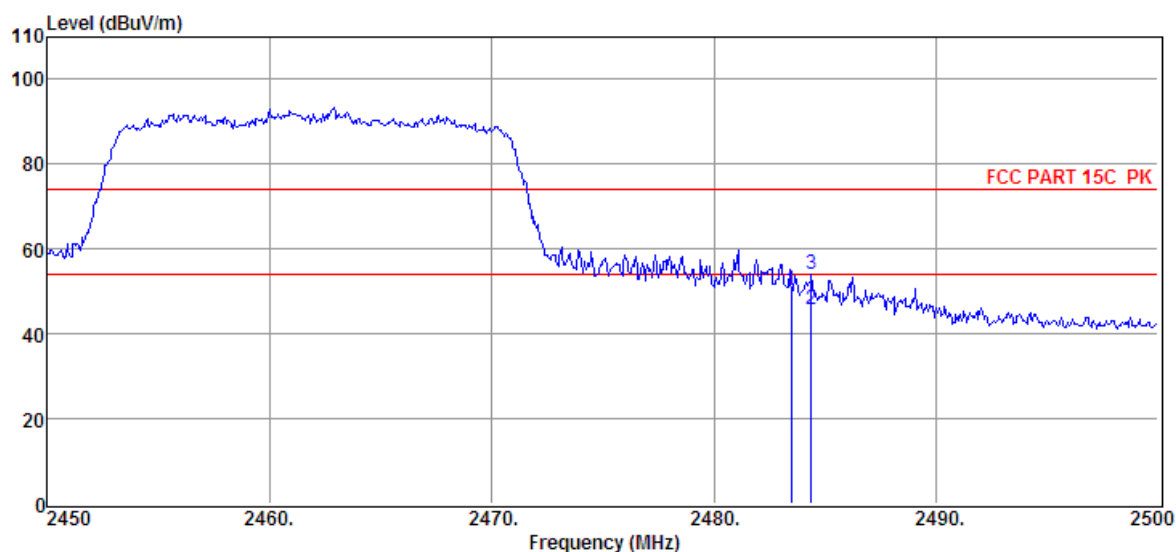


Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	45.45	30.14	29.71	6.13	52.01	74.00	-21.99	Peak	HORIZONTAL
2	2483.85	41.24	30.14	29.71	6.13	47.80	54.00	-6.20	Average	HORIZONTAL
3	2483.85	50.84	30.14	29.71	6.13	57.40	74.00	-16.60	Peak	HORIZONTAL

Note:

1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
4. EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report

RESTRICTED BANDEDGE (11n/20 HIGH CHANNEL, VERTICAL)



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	43.66	30.14	29.71	6.13	50.22	74.00	-23.78	Peak	VERTICAL
2	2484.40	39.09	30.14	29.71	6.13	45.65	54.00	-8.35	Average	VERTICAL
3	2484.40	47.47	30.14	29.71	6.13	54.03	74.00	-19.97	Peak	VERTICAL

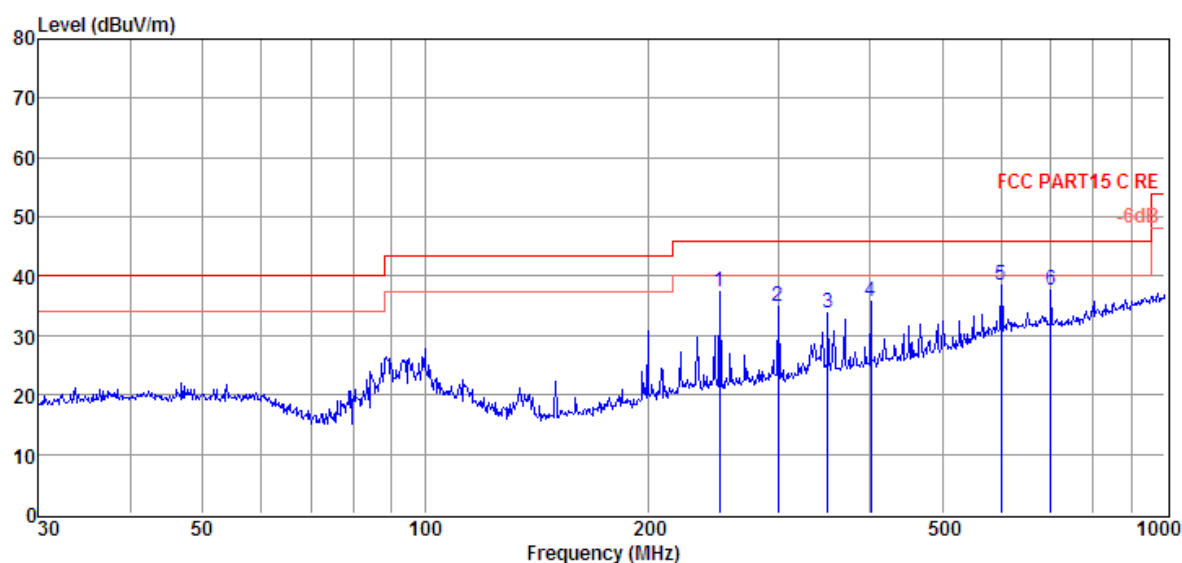
Note:

1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
4. EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report

SPURIOUS EMISSIONS (1~25GHz)

Freq (MHz)	Read level (dBμV)	Antenn a Factor (dB/m)	PRM Facto r(dB)	Cable Loss (dB)	Result Level (dBμV/m)	Limit (dBμ V/m)	Margin (dB)	Detector type	Polarization
11g LCH									
4825.00	39.51	33.73	29.32	8.50	52.42	74.00	-21.58	Peak	VERTICAL
7341.00	34.37	36.48	30.59	10.72	50.98	74.00	-23.02	Peak	VERTICAL
8004.00	34.96	36.69	31.13	11.13	51.65	74.00	-22.35	Peak	VERTICAL
9160.00	34.13	37.14	32.39	12.01	50.89	74.00	-23.11	Peak	VERTICAL
10554.00	34.04	36.55	33.31	12.77	50.05	74.00	-23.95	Peak	VERTICAL
12815.00	33.94	38.62	35.58	14.66	51.64	74.00	-22.36	Peak	VERTICAL
4825.00	38.34	33.73	29.32	8.50	51.25	74.00	-22.75	Peak	HORIZONTAL
6865.00	34.27	36.09	30.28	10.31	50.39	74.00	-23.61	Peak	HORIZONTAL
8055.00	34.75	36.54	31.18	11.18	51.29	74.00	-22.71	Peak	HORIZONTAL
9126.00	34.12	37.22	32.38	11.95	50.91	74.00	-23.09	Peak	HORIZONTAL
10809.00	33.50	37.27	33.64	13.19	50.32	74.00	-23.68	Peak	HORIZONTAL
13036.00	35.13	38.84	35.67	14.68	52.98	74.00	-21.02	Peak	HORIZONTAL
11g MCH									
4876.00	40.20	33.72	29.33	8.56	53.15	74.00	-20.85	Peak	HORIZONTAL
6899.00	34.37	36.12	30.31	10.33	50.51	74.00	-23.49	Peak	HORIZONTAL
7800.00	35.04	36.66	31.04	11.02	51.68	74.00	-22.32	Peak	HORIZONTAL
9024.00	34.12	37.45	32.33	11.83	51.07	74.00	-22.93	Peak	HORIZONTAL
12050.00	34.28	37.67	34.82	14.26	51.39	74.00	-22.61	Peak	HORIZONTAL
13461.00	34.20	39.26	35.22	14.79	53.03	74.00	-20.97	Peak	HORIZONTAL
4876.00	38.08	33.72	29.33	8.56	51.03	74.00	-22.97	Peak	VERTICAL
6916.00	34.25	36.13	30.33	10.37	50.42	74.00	-23.58	Peak	VERTICAL
7545.00	35.25	36.61	30.84	10.88	51.90	74.00	-22.10	Peak	VERTICAL
9024.00	34.08	37.45	32.33	11.83	51.03	74.00	-22.97	Peak	VERTICAL
11234.00	34.37	37.28	34.25	13.53	50.93	74.00	-23.07	Peak	VERTICAL
13070.00	34.49	38.87	35.64	14.68	52.40	74.00	-21.60	Peak	VERTICAL
11g HCH									
4944.00	35.45	33.71	29.34	8.63	48.45	54.00	-5.55	Average	HORIZONTAL
4944.00	42.12	33.71	29.34	8.63	55.12	74.00	-18.88	Peak	HORIZONTAL
6916.00	34.90	36.13	30.33	10.37	51.07	74.00	-22.93	Peak	HORIZONTAL
9075.00	34.23	37.33	32.35	11.89	51.10	74.00	-22.90	Peak	HORIZONTAL
11115.00	33.25	37.54	34.13	13.50	50.16	74.00	-23.84	Peak	HORIZONTAL
13376.00	34.73	39.18	35.38	14.76	53.29	74.00	-20.71	Peak	HORIZONTAL
4944.00	37.59	33.71	29.34	8.63	50.59	74.00	-23.41	Peak	VERTICAL
6950.00	34.67	36.16	30.34	10.39	50.88	74.00	-23.12	Peak	VERTICAL
7970.00	34.97	36.69	31.12	11.12	51.66	74.00	-22.34	Peak	VERTICAL
9160.00	34.29	37.14	32.39	12.01	51.05	74.00	-22.95	Peak	VERTICAL
10520.00	34.35	36.46	33.28	12.74	50.27	74.00	-23.73	Peak	VERTICAL
13240.00	34.85	39.04	35.50	14.73	53.12	74.00	-20.88	Peak	VERTICAL
Result: Pass									
Note :1.30MHz~18GHz: (Scan with 11b, 11g and 11n HT20, the worst case is 11g Mode)									
2. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.									
3. EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.									

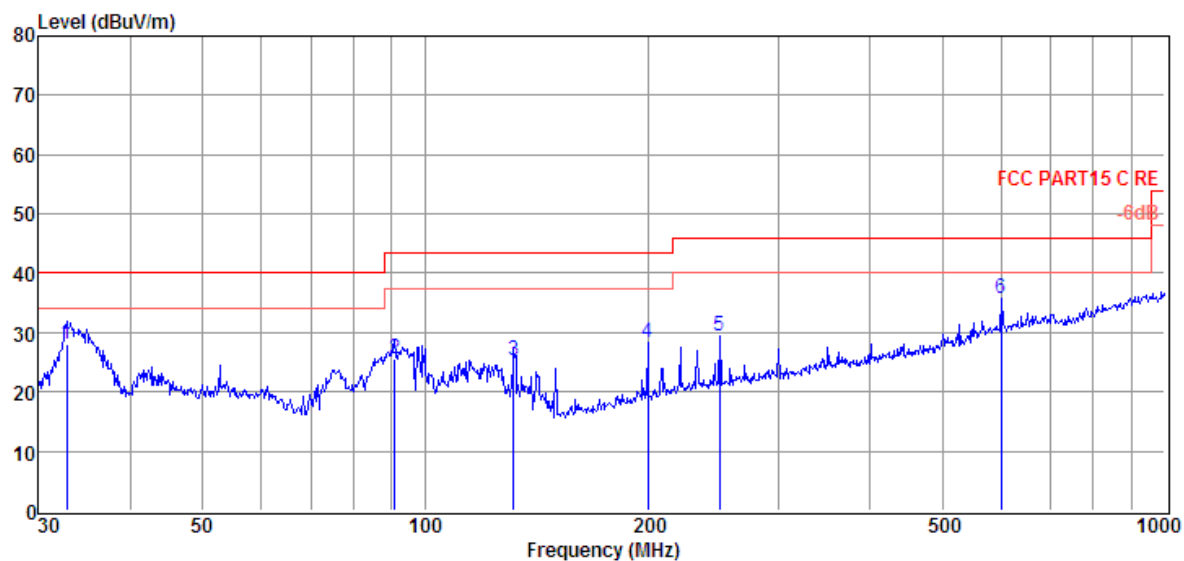
SPURIOUS EMISSIONS 30M ~ 1 GHz



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	250.30	19.90	12.30	5.14	37.34	46.00	-8.66	QP	HORIZONTAL
2	300.37	16.12	13.41	5.38	34.91	46.00	-11.09	QP	HORIZONTAL
3	350.48	13.57	14.71	5.59	33.87	46.00	-12.13	QP	HORIZONTAL
4	400.43	14.29	15.71	5.80	35.80	46.00	-10.20	QP	HORIZONTAL
5	601.43	12.64	19.27	6.51	38.42	46.00	-7.58	QP	HORIZONTAL
6	701.76	10.87	19.86	6.84	37.57	46.00	-8.43	QP	HORIZONTAL

Note:

1. Result Level = Read Level + Antenna Factor + Cable loss.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.
4. EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	32.75	12.76	11.48	3.71	27.95	40.00	-12.05	QP	VERTICAL
2	90.86	10.39	10.86	4.23	25.48	43.50	-18.02	QP	VERTICAL
3	131.76	13.01	7.83	4.49	25.33	43.50	-18.17	QP	VERTICAL
4	199.99	13.15	10.30	4.90	28.35	43.50	-15.15	QP	VERTICAL
5	250.30	11.96	12.30	5.14	29.40	46.00	-16.60	QP	VERTICAL
6	601.43	9.84	19.27	6.51	35.62	46.00	-10.38	QP	VERTICAL

Note:

1. Result Level = Read Level + Antenna Factor + Cable loss.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.
4. EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report

SPURIOUS EMISSIONS BELOW 30M

Note 1: The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

Note 2: EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

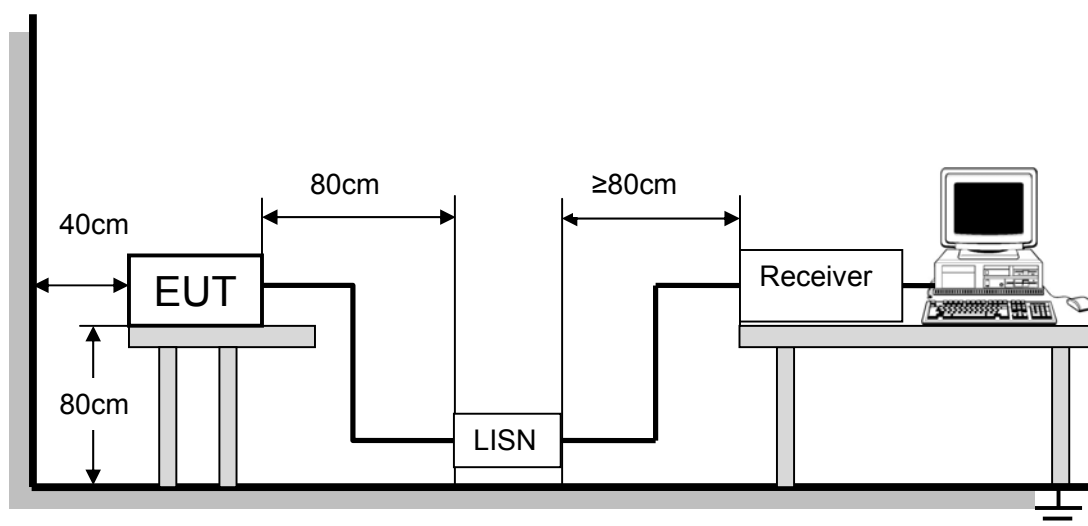
9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

Please refer to FCC §15.207 (a) and RSS-Gen Clause 8.8

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

TEST SETUP AND PROCEDURE

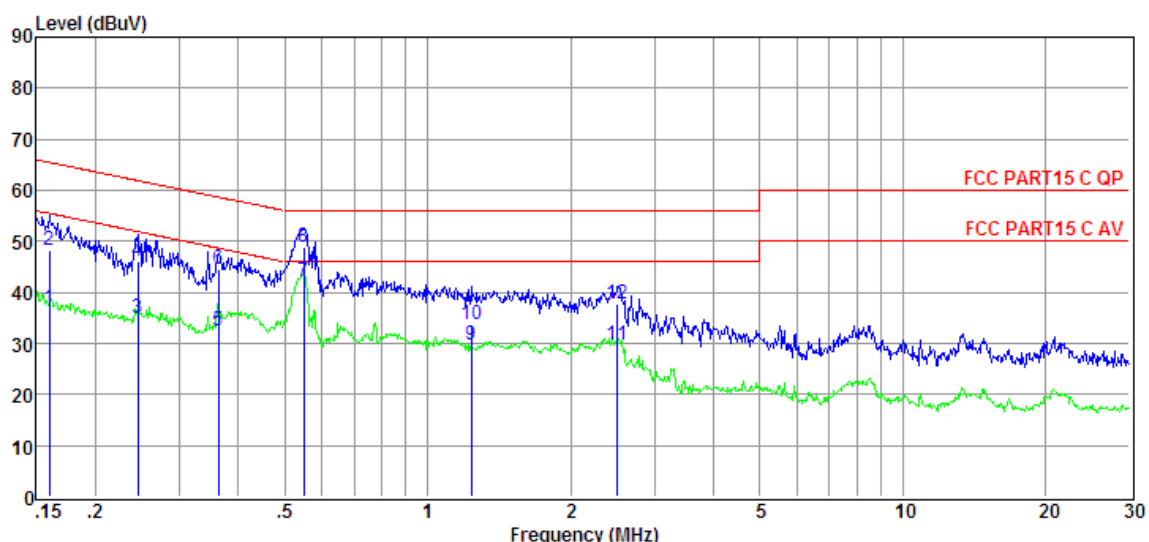


The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 7 and 13 of ANSI C63.4-2014. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

TEST RESULTS

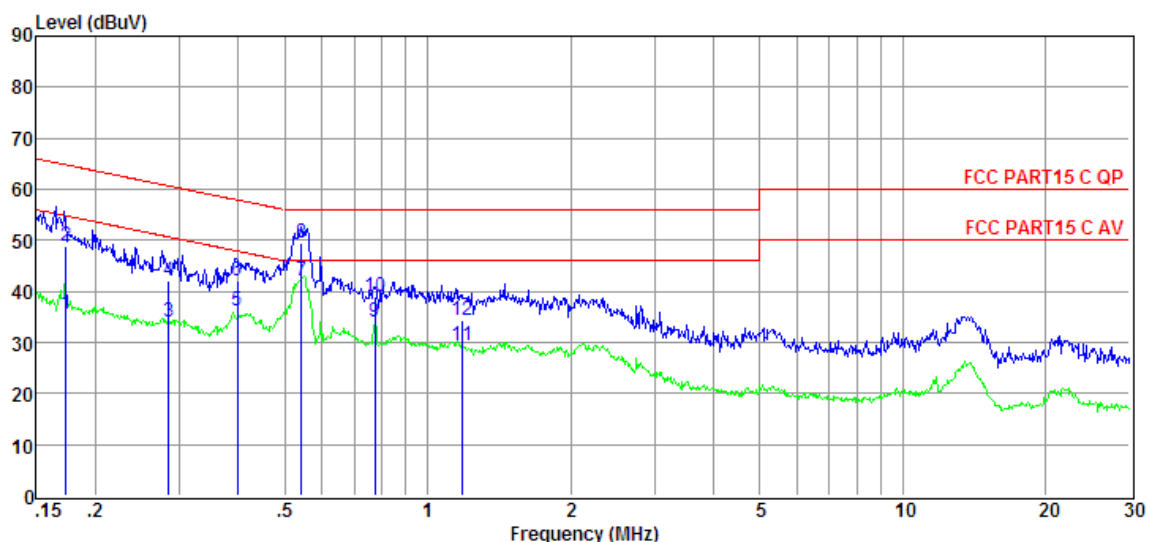
Temperature:	24.5°C	Relative Humidity:	55%
Pressure:	1012 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	Tx Mode	Phase :	L1
Remark:	N/A		



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Detector	Phase
1	0.16	17.35	9.61	0.02	9.86	36.84	55.47	-18.63	Average	LINE
2	0.16	28.77	9.61	0.02	9.86	48.26	65.47	-17.21	QP	LINE
3	0.25	15.37	9.61	0.02	9.86	34.86	51.91	-17.05	Average	LINE
4	0.25	26.61	9.61	0.02	9.86	46.10	61.91	-15.81	QP	LINE
5	0.36	12.97	9.61	0.02	9.86	32.46	48.65	-16.19	Average	LINE
6	0.36	25.13	9.61	0.02	9.86	44.62	58.65	-14.03	QP	LINE
7	0.55	22.66	9.61	0.03	9.86	42.16	46.00	-3.84	Average	LINE
8	0.55	29.46	9.61	0.03	9.86	48.96	56.00	-7.04	QP	LINE
9	1.24	10.26	9.62	0.03	9.86	29.77	46.00	-16.23	Average	LINE
10	1.24	14.35	9.62	0.03	9.86	33.86	56.00	-22.14	QP	LINE
11	2.51	10.09	9.64	0.05	9.87	29.65	46.00	-16.35	Average	LINE
12	2.51	18.18	9.64	0.05	9.87	37.74	56.00	-18.26	QP	LINE

Note: 1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

Temperature:	24.5°C	Relative Humidity:	55%
Pressure:	1012 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	Tx Mode	Phase :	N
Remark:	N/A		



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Detector	Phase
1	0.17	16.01	9.61	0.02	9.86	35.50	54.81	-19.31	Average	NEUTRAL
2	0.17	29.41	9.61	0.02	9.86	48.90	64.81	-15.91	QP	NEUTRAL
3	0.28	14.47	9.61	0.02	9.86	33.96	50.68	-16.72	Average	NEUTRAL
4	0.28	22.48	9.61	0.02	9.86	41.97	60.68	-18.71	QP	NEUTRAL
5	0.40	16.65	9.61	0.02	9.86	36.14	47.90	-11.76	Average	NEUTRAL
6	0.40	22.68	9.61	0.02	9.86	42.17	57.90	-15.73	QP	NEUTRAL
7	0.54	22.51	9.61	0.03	9.86	42.01	46.00	-3.99	Average	NEUTRAL
8	0.54	29.98	9.61	0.03	9.86	49.48	56.00	-6.52	QP	NEUTRAL
9	0.78	14.37	9.61	0.03	9.86	33.87	46.00	-12.13	Average	NEUTRAL
10	0.78	19.58	9.61	0.03	9.86	39.08	56.00	-16.92	QP	NEUTRAL
11	1.18	9.85	9.61	0.03	9.86	29.35	46.00	-16.65	Average	NEUTRAL
12	1.18	14.87	9.61	0.03	9.86	34.37	56.00	-21.63	QP	NEUTRAL

Note: 1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

10. ANTENNA REQUIREMENTS

APPLICABLE REQUIREMENTS

Please refer to FCC §15.203

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. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

ANTENNA CONNECTOR

EUT has a PCB antenna without antenna connector.

ANTENNA GAIN

The antenna gain of EUT is less than 6 dBi.

END OF REPORT

Page 68 of 68