FCC CFR47 PART 15 SUBPART C
INDUSTRY CANADA RSS-247 ISSUE 1

CERTIFICATION TEST REPORT

FOR

WLAN 2X2 MIMO 802.11a/b/g/n/ac with BLUETOOTH

MODEL NUMBER: P2180

FCC ID: VOB-P2180
IC: 7361A-P2180

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	10/23/15	Initial Issue	
V2	11/02/15	Updated Section 7	D. Coronia

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: NVIDIA Corp.

EUT DESCRIPTION: WLAN 2x2 MIMO 802.11a/b/g/n/ac with Bluetooth

MODEL: P2180

SERIAL NUMBER: 333715030009, 333615050430, 333715030024, 333815010589

DATE TESTED: OCTOBER 9-OCTOBER 16, 2015

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-247 Issue 1	Pass
INDUSTRY CANADA RSS-GEN Issue 3	Pass

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

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

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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 C63.4-2013, RSS-GEN Issue 3, and RSS-247 Issue 1.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☒ Chamber A(IC: 2324B-1)	☐ Chamber D(IC: 2324B-4)
☒ Chamber B(IC: 2324B-2)	☐ Chamber E(IC: 2324B-5)
☒ Chamber C(IC: 2324B-3)	☐ Chamber F(IC: 2324B-6)
	☐ Chamber G(IC: 2324B-7)
	☐ Chamber H(IC: 2324B-8)

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://ts.nist.gov/standards/scopes/2000650.htm.

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. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 18000 MHz	4.94 dB

Uncertainty figures are valid to a confidence level of 95%.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

WLAN 2X2 MIMO 802.11a/b/g/n/ac with BLUETOOTH

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum total conducted output power as follows:

Frequency Range (MHz)	Mode	Total Output Power (dBm)	Total Output Power (mW)
2412 - 2462	802.11b	17.8	60.26
2412 - 2462	802.11g	16.5	44.67
2412 - 2462	802.11n HT20	17.04	50.58
2412 - 2462	802.11n HT40	17.84	60.81

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a dual band dipole antenna, with a maximum gain of 2.86 dBi.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was Nvidia Rev. 7.10.RC 0.0

The EUT driver software installed during testing Nvidia Rev 7.35 2200 <r532988 wltest>

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5.5. WORST-CASE CONFIGURATION AND MODE

Radiated emission and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

The fundamental of the EUT was investigated in three transmitting antenna degrees: 0, 45, and 90. It was determined that 90 degrees was the worst case antenna position; therefore all final radiated testing was performed with the antenna position at 90 degrees.

Based on the baseline scan, the worst-case data rates were:

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20mode: MCS0
802.11n HT40mode: MCS0

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5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Base board	NVIDIA	P2597	333715040297	DoC
AC Adapter	Mean Well	GST90A19	EB58E32121	N/A
Laptop	Lenovo	T430	PFB1R5R	N/A

I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	US115V	Unshielded	0.5	
2	DC	1	19 Vdc	Unshielded	1	Ferrite Attached
3	USB	1	USB	Shielded	1.5	

TEST SETUP

The EUT is a stand-alone unit during the tests. Test software exercised the radio card.

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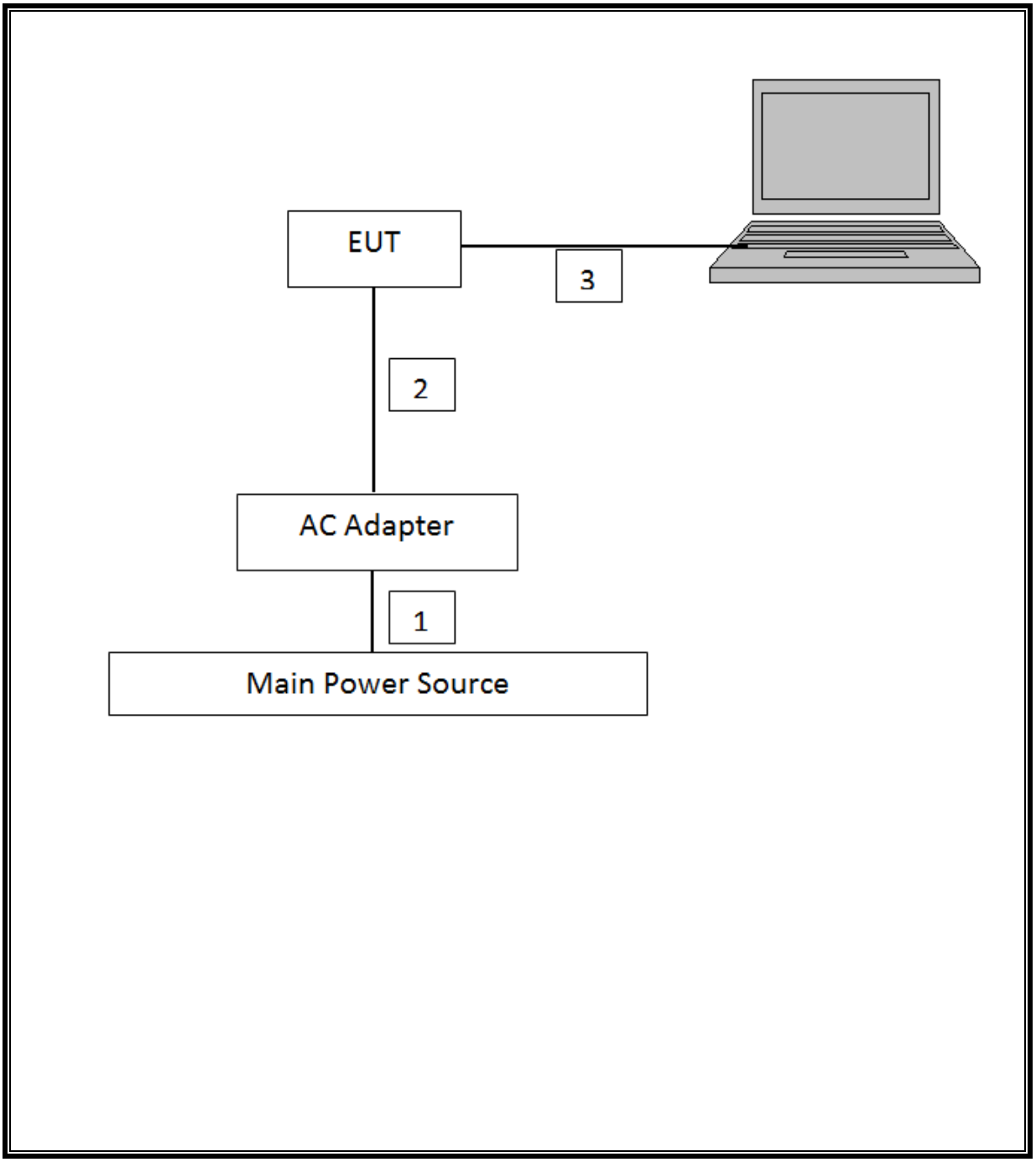
SETUP DIAGRAM FOR TESTS



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6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/15
Spectrum Analyzer,9KHz-40GHz	HP	8564E	C00986	04/01/16
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	08/13/16
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/18/16
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/15
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/15
Antenna, Horn, 1-18 GHz	ETS	3117	C01022	02/21/16
Antenna, Horn,18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/15
Antenna, Horn, 26-40 GHz	ARA	MWH-2640	C00891	06/28/16
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/16
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/16
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/16
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	T404	06/29/16
AC Power Supply, 2,500VA 45-500Hz	Elgar-Ametek	CW2501M	F00013	CNR
RF Preamplifier, 1GHz - 40GHz	Miteq	NSP4000-SP2	C00990	08/20/16
Attenuator / Switch driver	HP	11713A	F00204	CNR
Low Pass Filter 3GHz	Micro-Tronics	LPS17541	F00219	05/23/16
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/16
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/16

Test Software List			
Description	**Manufacturer**	**Model**	**Version**
Radiated Software	UL	UL EMC	Ver 9.5, July 22, 2014
Conducted Software	UL	UL EMC	Ver 9.5, May 17 2012
CLT Software	UL	UL RF	Ver 1.0, Feb 2 2015
Antenna Port Software	UL	UL RF	Ver 2.1.1.1, Jan 20 2015

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7. MEASUREMENT METHODS

On Time and Duty Cycle: KDB 558074 D01 v03r03, Section 6.0.

6 dB BW: KDB 558074 D01 v03r03, Section 8.1.

99% BW: ANSI C63.10-2013, Section 6.9.3.

Output Power: KDB 558074 D01 v03r03, Section 9.2.3.2, and KDB 662911 D01 v02r01.

Power Spectral Density: KDB 558074 D01 v03r03, Section 10.3 and 10.5 and KDB 662911 D01 v02r01

Out-of-band emissions in non-restricted bands: KDB 558074 D01 v03r03, Section 11.0.

Out-of-band emissions in restricted bands: KDB 558074 D01 v03r03, Section 12.1.

AC Power Line Conducted Emissions: ANSI C63.10-2009 and ANSI C63.10-2013, Section 6.2.

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8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

8.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
802.11b	8.600	8.695	0.989	98.91%	0.00	0.010
802.11g	1.425	1.536	0.928	92.77%	0.33	0.702
802.11n HT20 CDD 2TX	0.692	0.793	0.872	87.23%	0.59	1.446
802.11n HT40 CDD 2TX	0.356	0.457	0.780	77.99%	1.08	2.807

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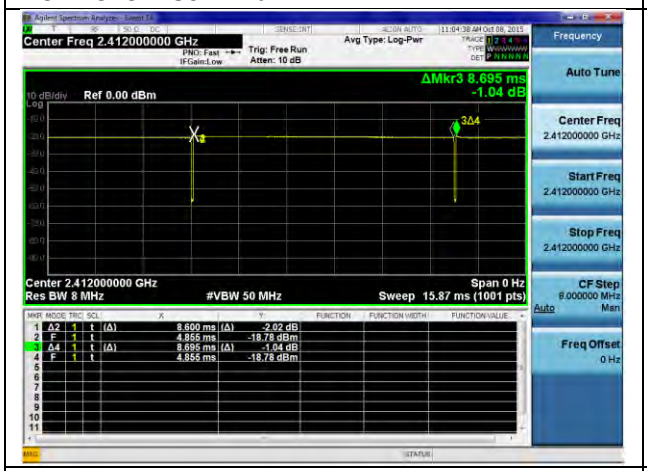
8.2. DUTY CYCLE PLOTS

DUTY CYCLE 802.11b



DUTY CYCLE 802.11g

DUTY CYCLE 802.11n HT20

DUTY CYCLE 802.11n HT24

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9. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)(2)	RSS-247 5.2.1	Occupied Band width (6dB)	>500KHz	Conducted	Pass	8.554 MHz
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-30dBc		Pass	-27.63 dBm
15.247	RSS-247 5.4.4	TX conducted output power	<30dBm		Pass	17.84dBm
15.247	RSS-247 5.2.2	PSD	<8dBm		Pass	-3.782dBm
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10	Radiated	Pass	36.85 dBuV
15.205, 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	< 54dBuV/m		Pass	51.88 dBuV/m

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10. ANTENNA PORT TEST RESULTS

10.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-247 5.2.1

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

TEST PROCEDURE

Reference to KDB 558074 D01 DTS Meas Guidance v03r03: The transmitter output is connected to a spectrum analyzer with the RBW set to100KHz, the VBW >= 3 x RBW, peak detector and max hold.

RESULTS

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10.1.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	2412	9.058	9.086	0.5
Mid	2437	9.086	9.016	0.5
High	2462	8.554	8.580	0.5

10.1.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	2412	16.350	16.325	0.5
Mid	2437	16.325	16.350	0.5
High	2462	16.400	16.375	0.5

10.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	2412	17.334	17.604	0.5
Mid	2437	17.550	17.631	0.5
High	2462	17.631	17.604	0.5

10.1.1. 802.11n HT40 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	2422	36.080	35.964	0.5
Mid	2437	36.300	36.355	0.5
High	2452	36.355	36.300	0.5

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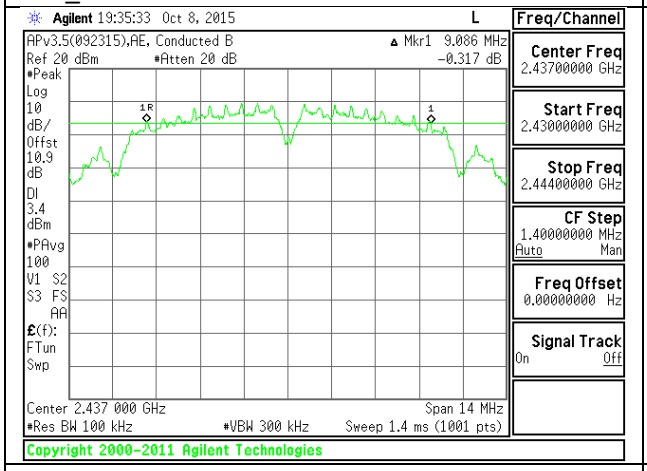
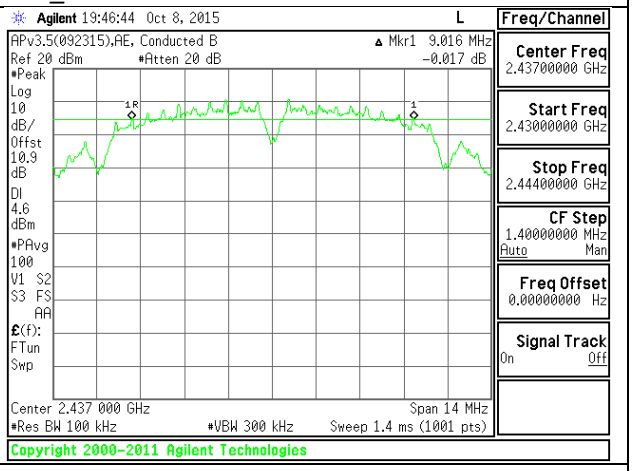
10.1.1. 6 dB BANDWIDTH MID CH PLOTS

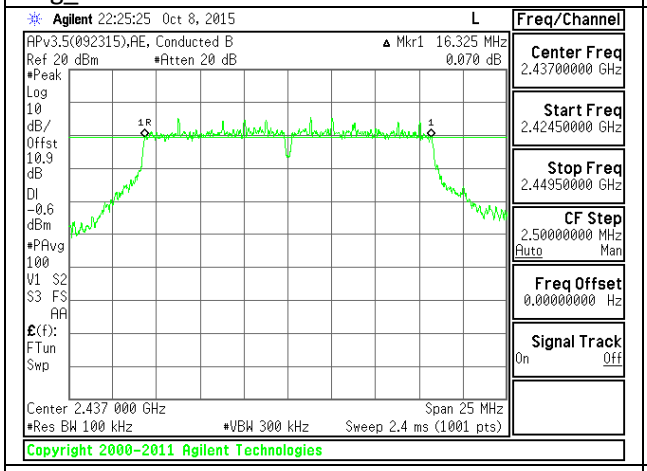
11b_2.4 Chain 0 Mid Ch



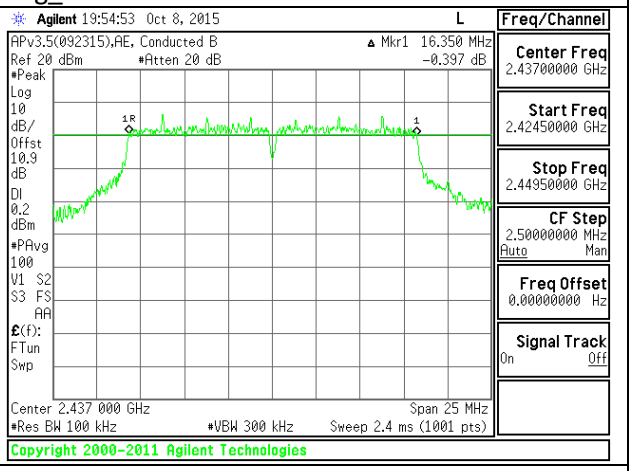
11b_2.4 Chain 1 Mid Ch



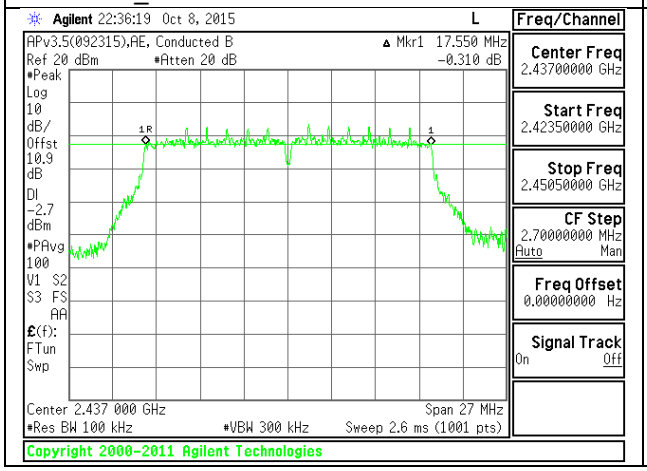
11g_2.4 Chain 0 Mid Ch



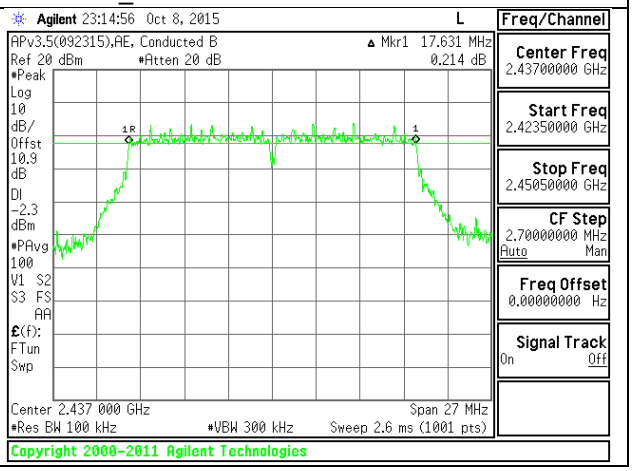
11g_2.4 Chain 1 Mid Ch



11n HT20_2.4 Chain 0 Mid Ch



11n HT20_2.4 Chain 1 Mid Ch



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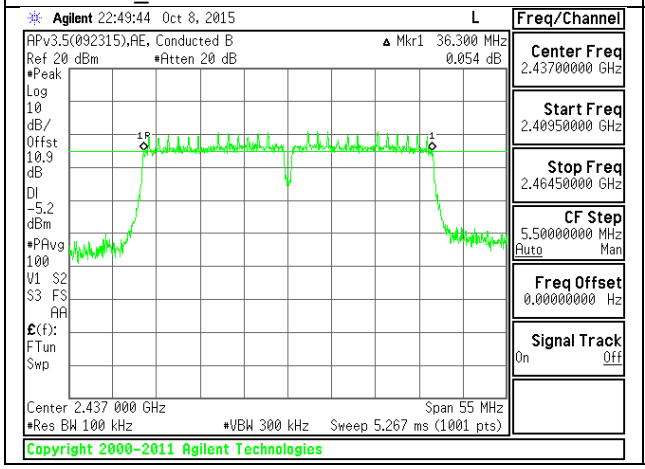
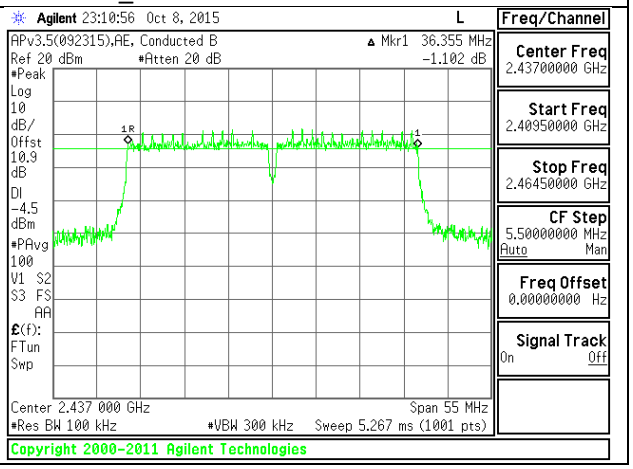
11n HT40_2.4 Chain 0 Mid Ch



11n HT20_2.4 Chain 1 Mid Ch



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10.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

10.2.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	2412	11.9797	11.9345
Mid	2437	11.9138	11.8043
High	2462	11.9675	11.9109

10.2.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	2412	16.6198	16.5840
Mid	2437	16.6169	16.5971
High	2462	16.5968	16.5804

10.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	2412	17.7425	17.7212
Mid	2437	17.7540	17.7578
High	2462	17.7597	17.7601

10.2.1. 802.11n HT40 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	2422	36.3115	36.2610
Mid	2437	36.2804	36.3118
High	2452	36.3552	36.2108

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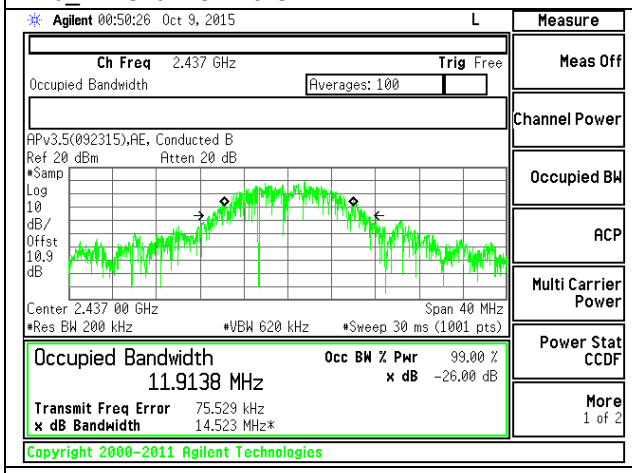
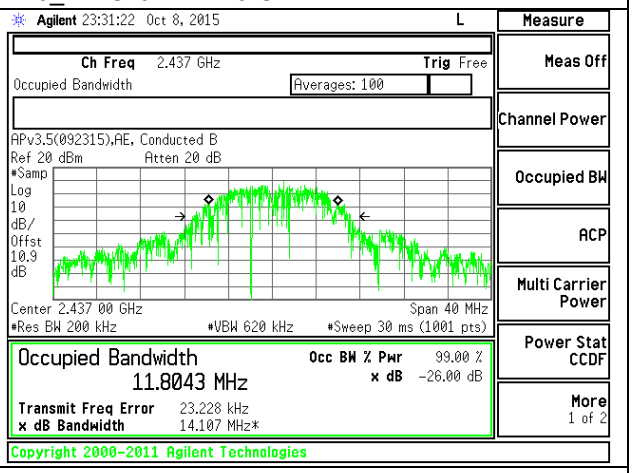
10.2.1. 99% BANDWIDTH MID CH PLOTS

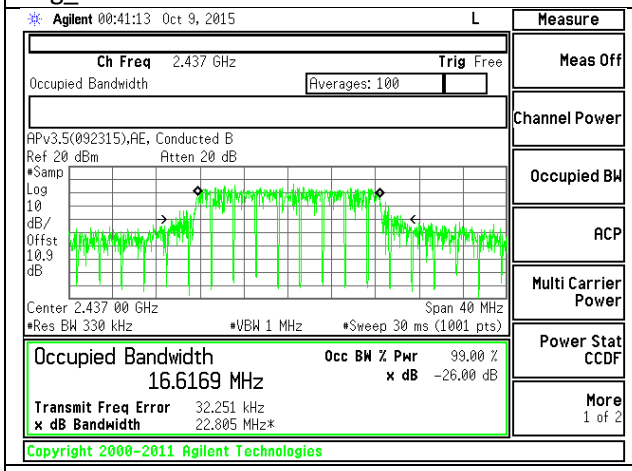
11b_2.4 Chain 0 Mid Ch



11b_2.4 Chain 1 Mid Ch



11g_2.4 Chain 0 Mid Ch



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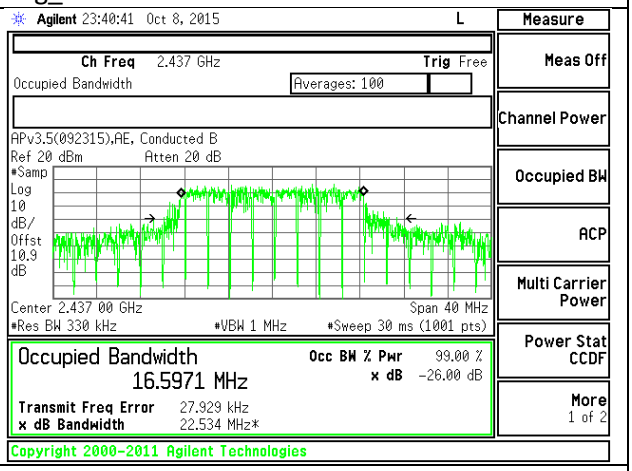
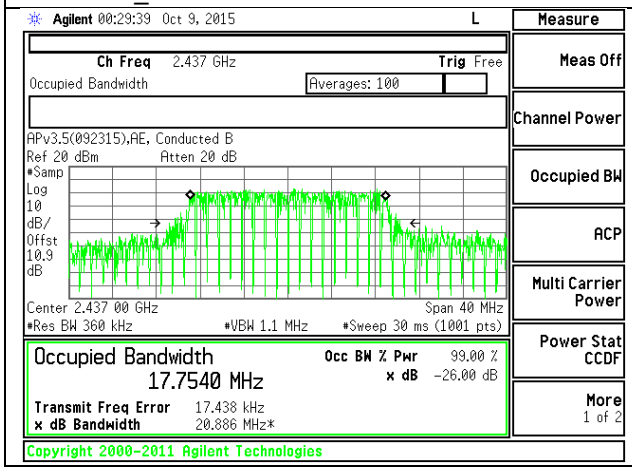
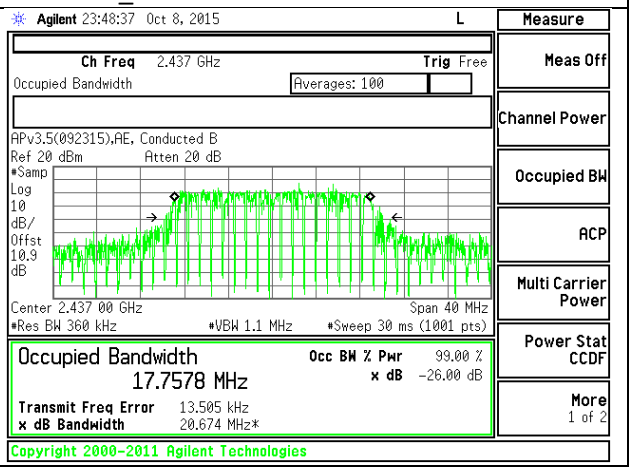


11n HT20_2.4 Chain 0 Mid Ch



11n HT20_2.4 Chain 1 Mid Ch



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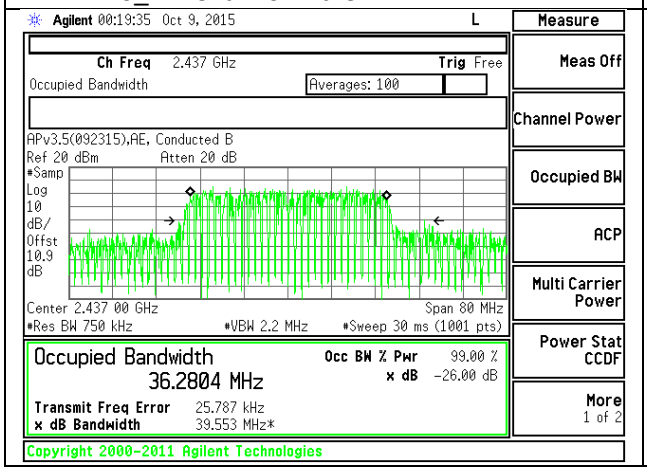
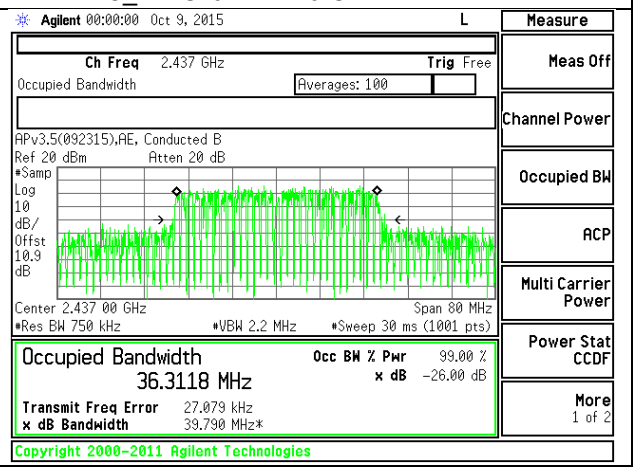
11n HT40_2.4 Chain 0 Mid Ch



11n HT20_2.4 Chain 1 Mid Ch



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10.3. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-247 5.4.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

RESULTS

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10.3.1. 802.11b MODE IN THE 2.4 GHz BAND

Chain 0

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	2.86	30.00	30	36	30.00
Mid	2437	2.86	30.00	30	36	30.00
High	2462	2.86	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	17.4	17.4	30.00	-12.60
Mid	2437	17.7	17.7	30.00	-12.30
High	2462	17.3	17.3	30.00	-12.70
Worst			17.7		

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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Chain 1

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	2.86	30.00	30	36	30.00
Mid	2437	2.86	30.00	30	36	30.00
High	2462	2.86	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	17.1	17.1	30.00	-12.88
Mid	2437	17.1	17.1	30.00	-12.90
High	2462	17.8	17.8	30.00	-12.20
Worst			17.8		

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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10.3.2. 802.11g MODE IN THE 2.4 GHz BAND

Chain 0

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	2.86	30.00	30	36	30.00
Mid	2437	2.86	30.00	30	36	30.00
High	2462	2.86	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	15.4	15.4	30.00	-14.60
Mid	2437	16.0	16.0	30.00	-14.00
High	2462	12.7	12.7	30.00	-17.30
Worst			16.0		

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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Chain 1

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	2.86	30.00	30	36	30.00
Mid	2437	2.86	30.00	30	36	30.00
High	2462	2.86	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	13.9	13.9	30.00	-16.10
Mid	2437	16.5	16.5	30.00	-13.50
High	2462	13.1	13.1	30.00	-16.94
Worst			16.5		

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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10.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	2.86	30.00	30	36	30.00
Mid	2437	2.86	30.00	30	36	30.00
High	2462	2.86	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low	2412	13.0	13.8	16.43	30.00	-13.57
Mid	2437	13.5	14.5	17.04	30.00	-12.96
High	2462	11.4	12.1	14.77	30.00	-15.23

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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10.3.1. 802.11n HT40 MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	2.86	30.00	30	36	30.00
Mid	2437	2.86	30.00	30	36	30.00
High	2462	2.86	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low	2412	13.0	13.8	16.43	30.00	-13.57
Mid	2437	14.3	15.3	17.84	30.00	-12.16
High	2462	10.8	11.9	14.40	30.00	-15.60

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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10.4. PSD

LIMITS

FCC §15.247

IC RSS-247 5.4.4

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

10.4.1. 802.11b MODE IN THE 2.4 GHz BAND

Chain 0

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-4.12	8.0	-12.1
Mid	2437	-3.87	8.0	-11.9
High	2462	-4.15	8.0	-12.2

Chain 1

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-4.96	8.0	-13.0
Mid	2437	-4.58	8.0	-12.6
High	2462	-4.41	8.0	-12.4

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10.4.2. 802.11g MODE IN THE 2.4 GHz BAND

Chain 0

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-8.03	8.0	-16.0
Mid	2437	-7.78	8.0	-15.8
High	2462	-10.89	8.0	-18.9

Chain 1

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-7.76	8.0	-15.8
Mid	2437	-7.51	8.0	-15.5
High	2462	-10.81	8.0	-18.8

10.4.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-11.63	-10.49	-8.01	8.0	-16.0
Mid	2437	-11.40	-10.48	-7.90	8.0	-15.9
High	2462	-13.67	-12.06	-9.78	8.0	-17.8

10.4.1. 802.11n HT40 MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2422	-14.22	-12.53	-10.29	8.0	-18.3
Mid	2437	-13.28	-11.00	-8.98	8.0	-17.0
High	2452	-15.81	-15.09	-12.42	8.0	-20.4

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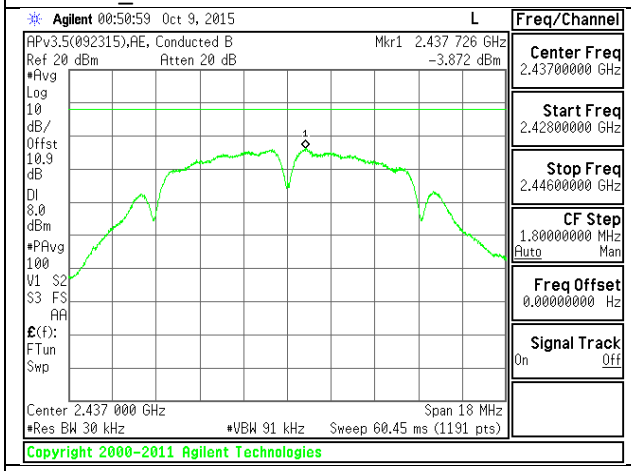
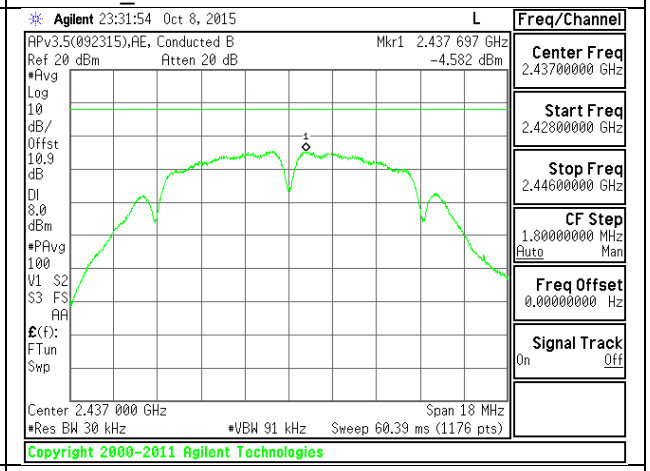
10.4.1. PSD MID CH PLOTS

PSD 11b_2.4 Chain 0 Mid Ch



PSD 11b_2.4 Chain 1 Mid Ch



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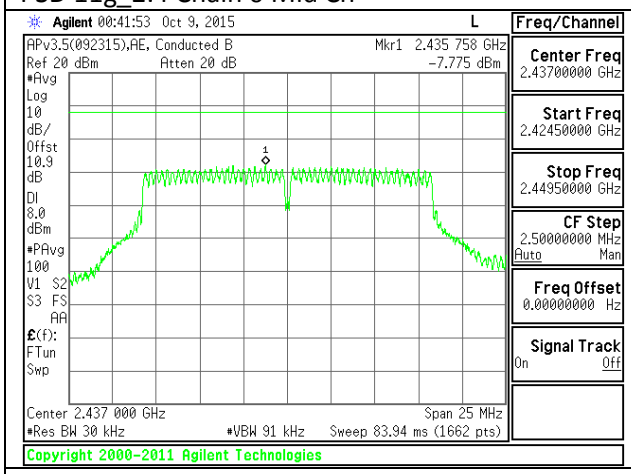

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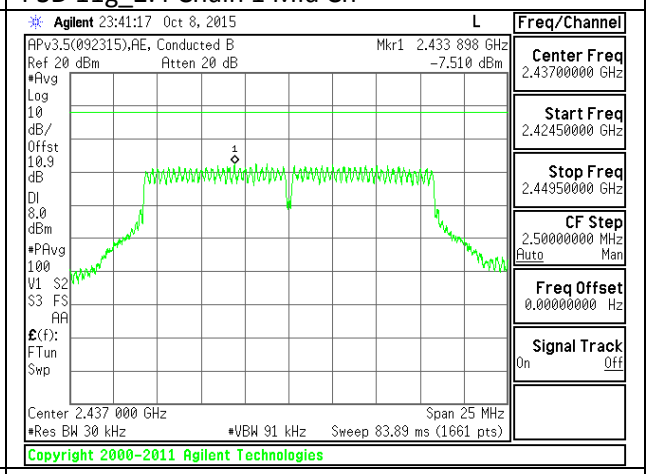

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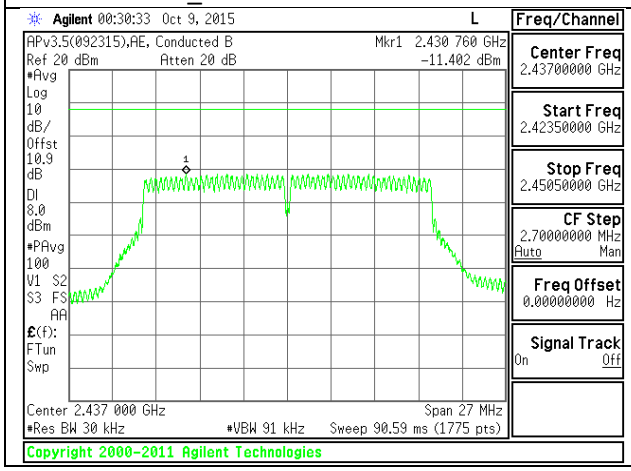

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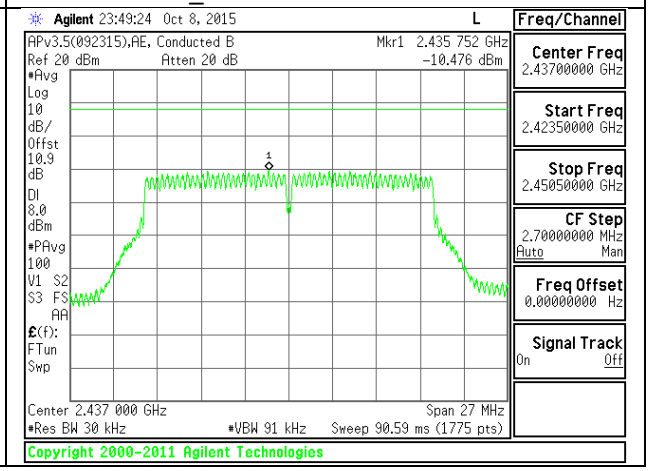

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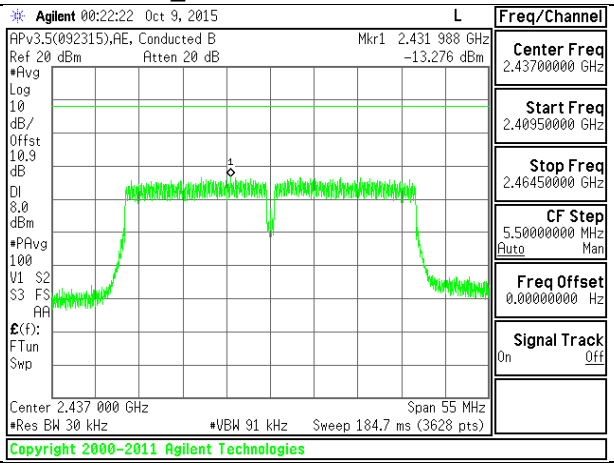
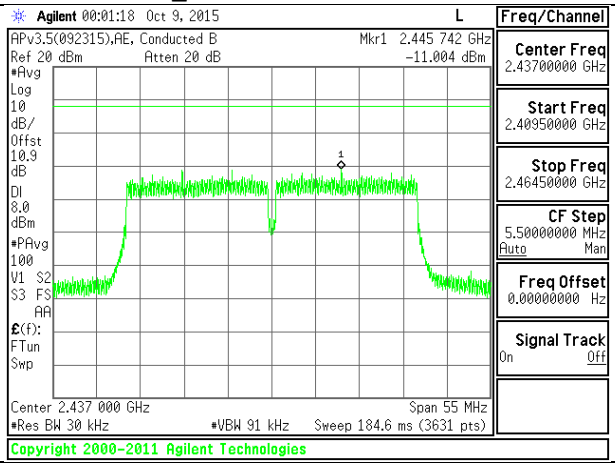


PSD 11n HT20_2.4 Chain 1 Mid Ch



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10.5. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-247 5.4.4

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

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

RESULTS

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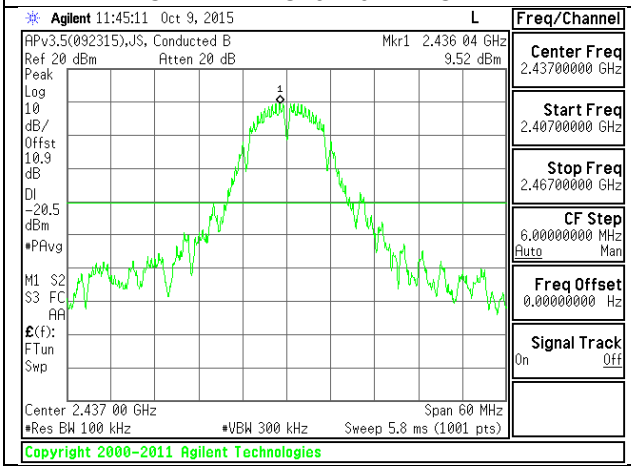
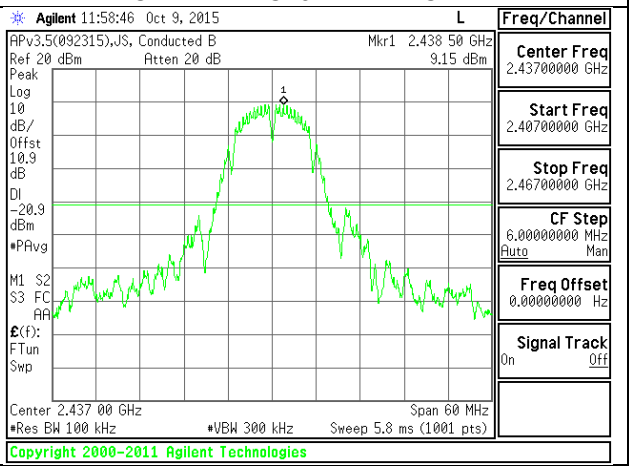
10.5.1. 802.11b MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

REFERENCE LEVEL Chain 0 MID CH

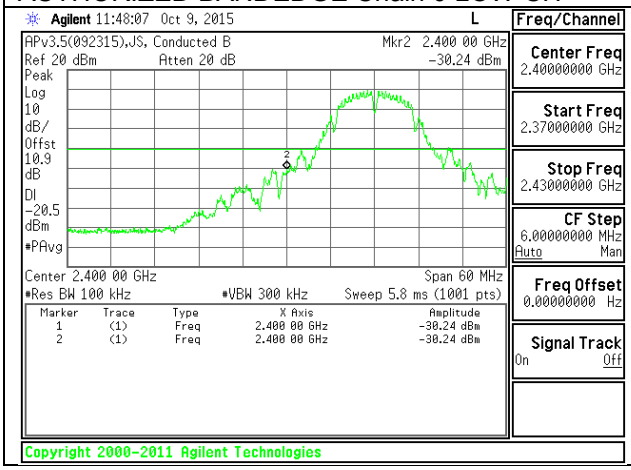


REFERENCE LEVEL Chain 1 MID CH

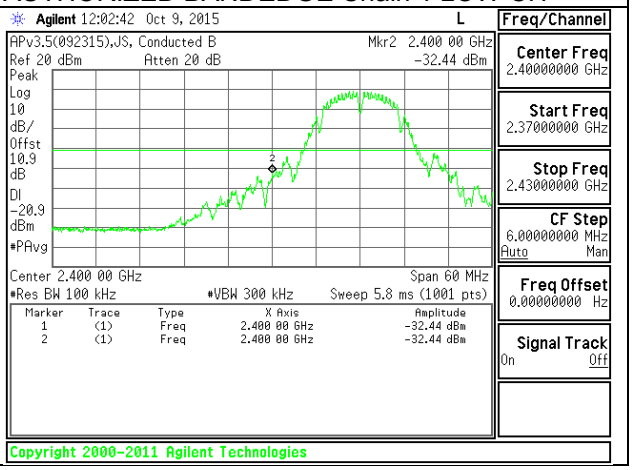


LOW CHANNEL BAND EDGE

AUTHORIZED BANDEDGE Chain 0 LOW CH



AUTHORIZED BANDEDGE Chain 1 LOW CH



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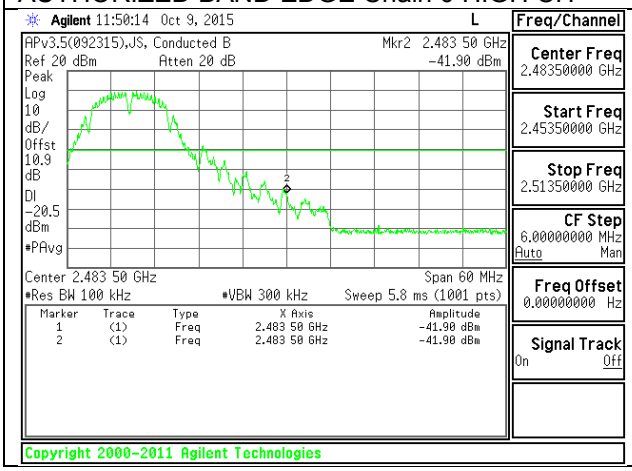
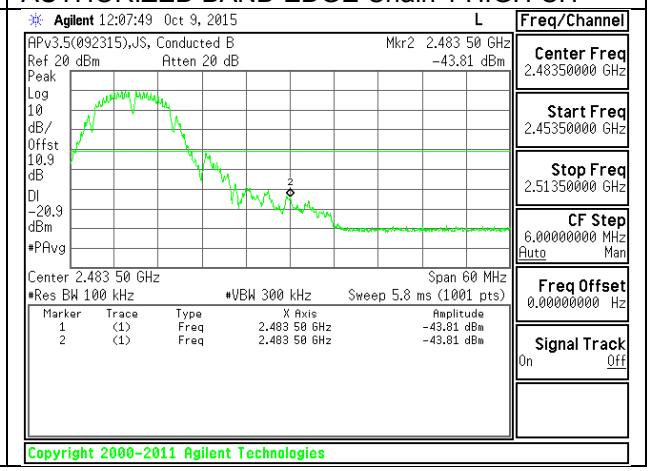
HIGH CHANNEL BAND EDGE

AUTHORIZED BAND EDGE Chain 0 HIGH CH

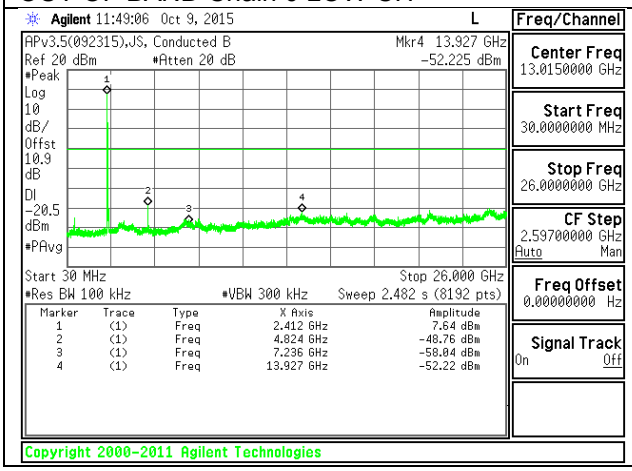


AUTHORIZED BAND EDGE Chain 1 HIGH CH

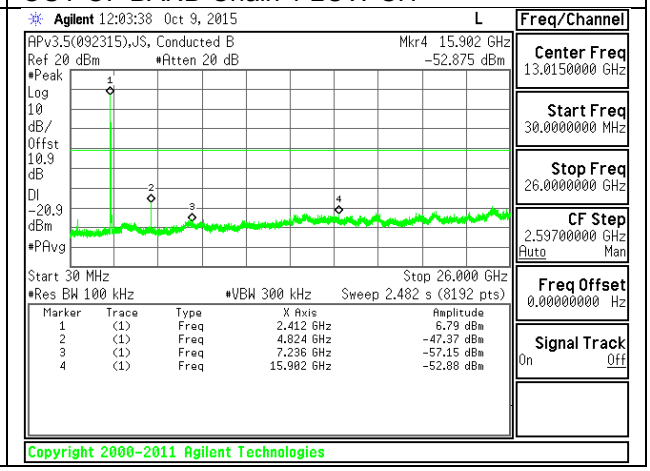


OUT-OF-BAND EMISSIONS

OUT OF BAND Chain 0 LOW CH



OUT OF BAND Chain 1 LOW CH



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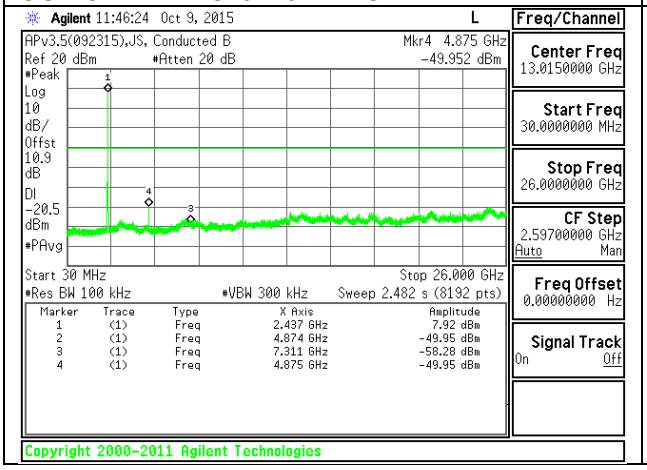
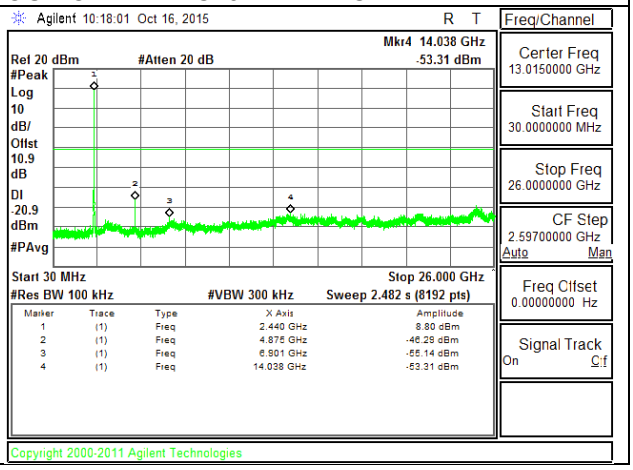
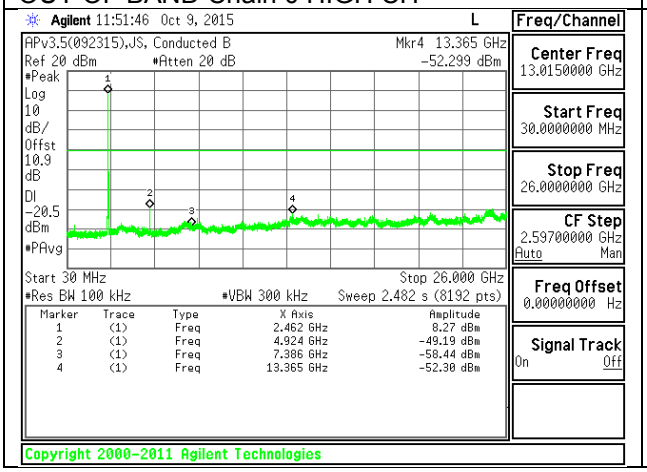
OUT OF BAND Chain 0 MID CH



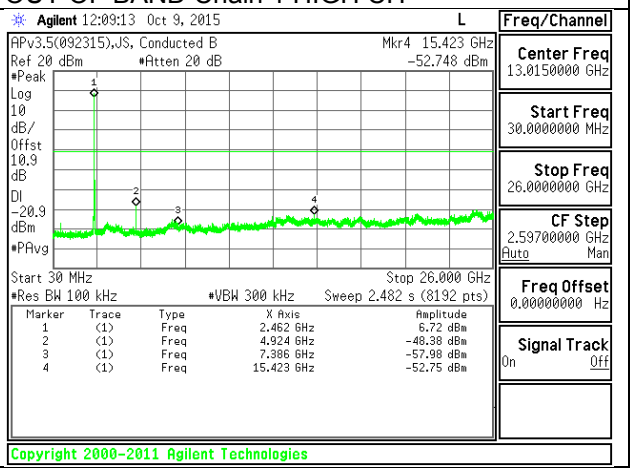
OUT OF BAND Chain 1 MID CH



OUT OF BAND Chain 0 HIGH CH



OUT OF BAND Chain 1 HIGH CH



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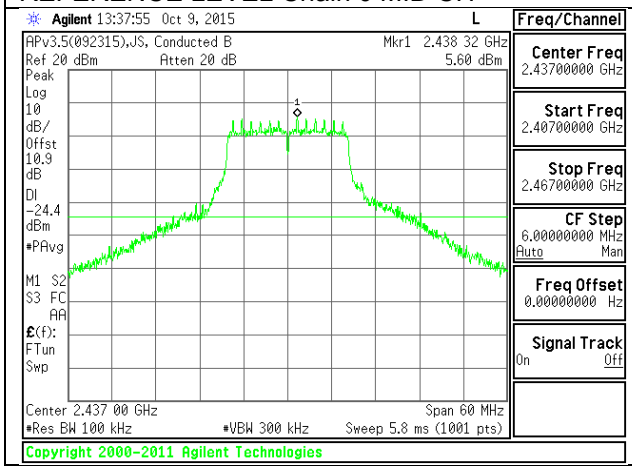
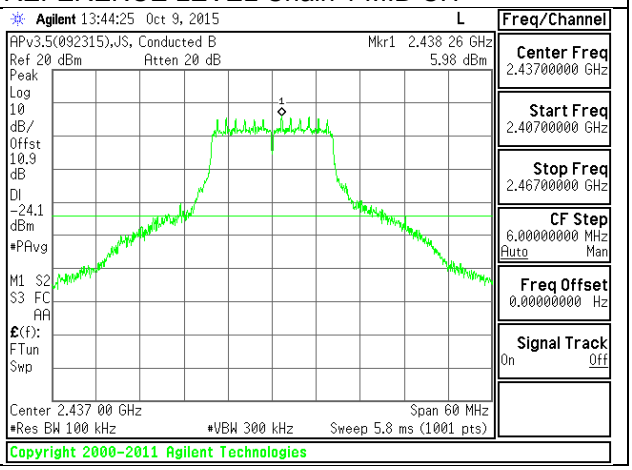
10.5.2. 802.11g MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

REFERENCE LEVEL Chain 0 MID CH

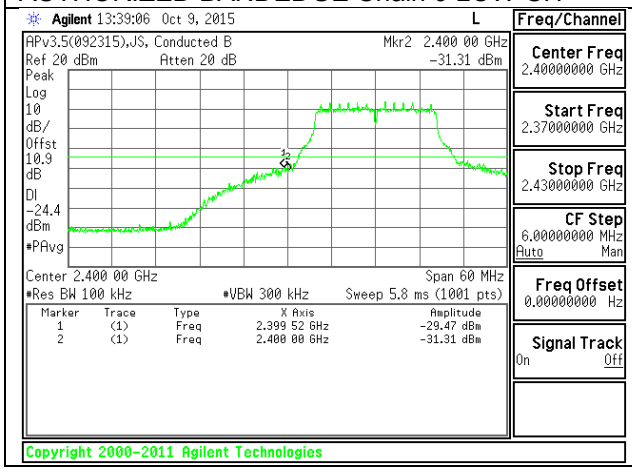


REFERENCE LEVEL Chain 1 MID CH

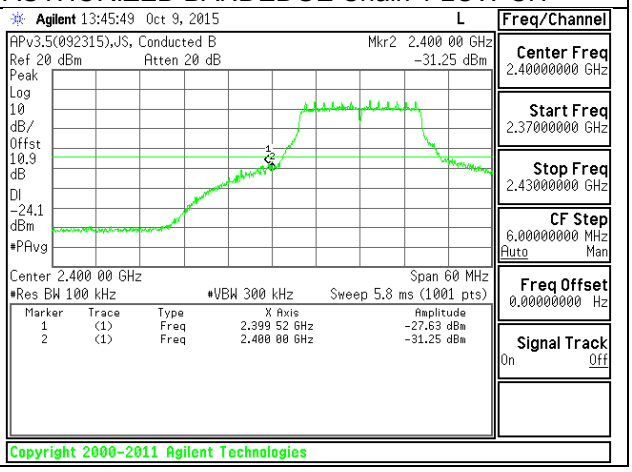


LOW CHANNEL BAND EDGE

AUTHORIZED BANDEDGE Chain 0 LOW CH



AUTHORIZED BANDEDGE Chain 1 LOW CH



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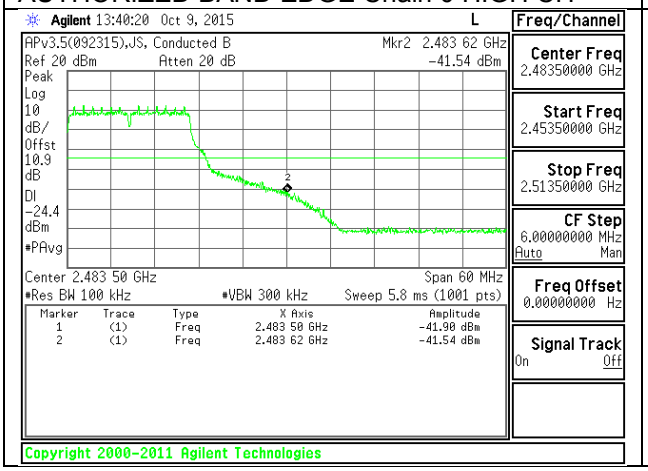
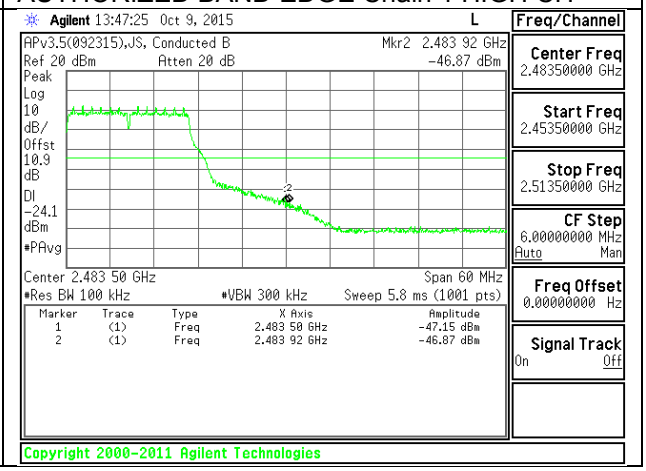
HIGH CHANNEL BAND EDGE

AUTHORIZED BAND EDGE Chain 0 HIGH CH

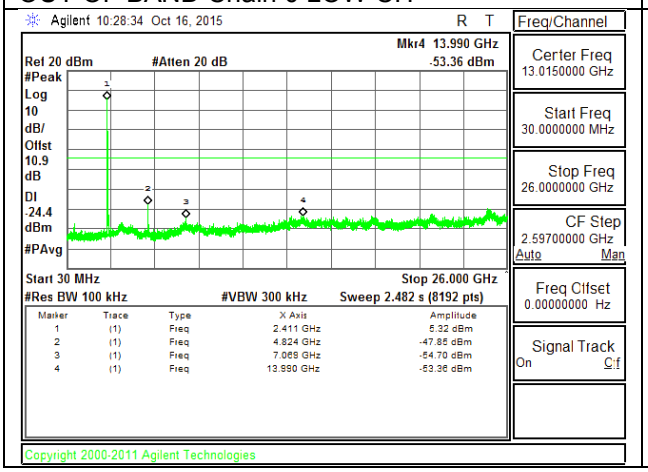


AUTHORIZED BAND EDGE Chain 1 HIGH CH

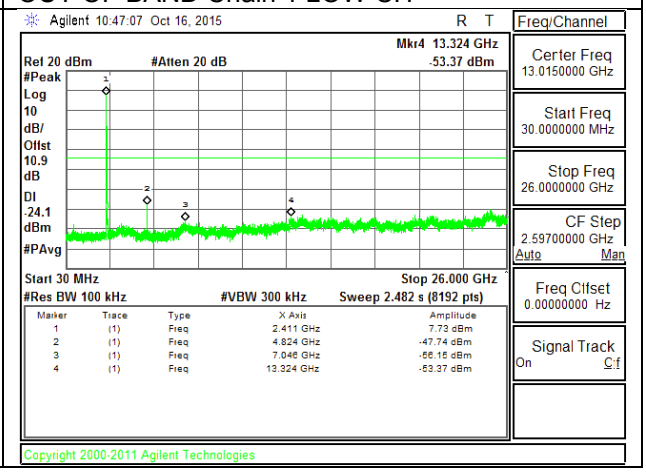


OUT-OF-BAND EMISSIONS

OUT OF BAND Chain 0 LOW CH



OUT OF BAND Chain 1 LOW CH



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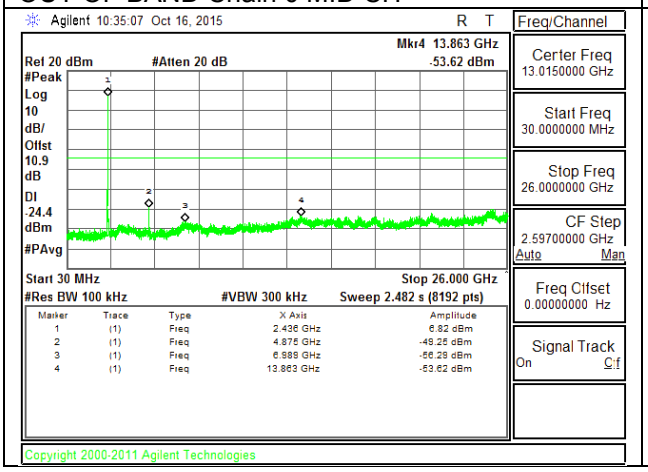
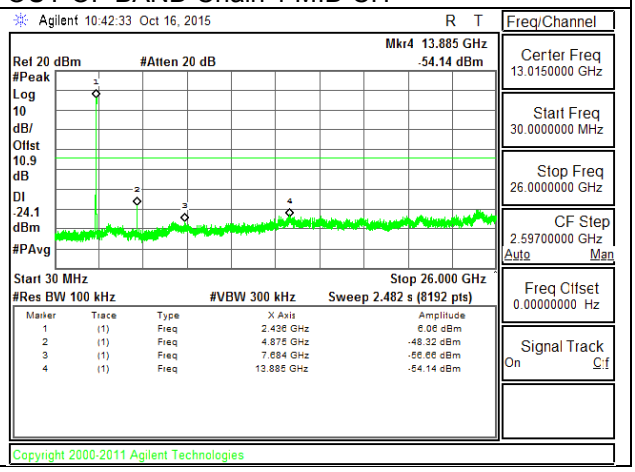
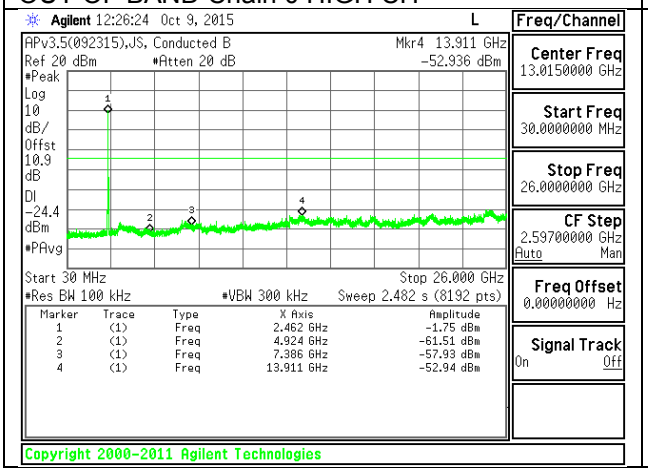
OUT OF BAND Chain 0 MID CH



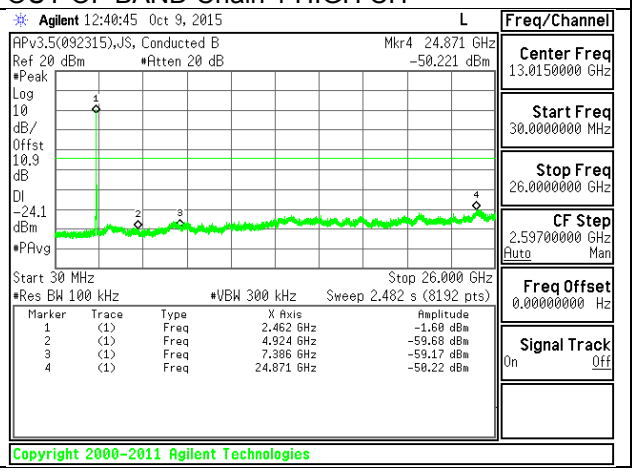
OUT OF BAND Chain 1 MID CH



OUT OF BAND Chain 0 HIGH CH



OUT OF BAND Chain 1 HIGH CH



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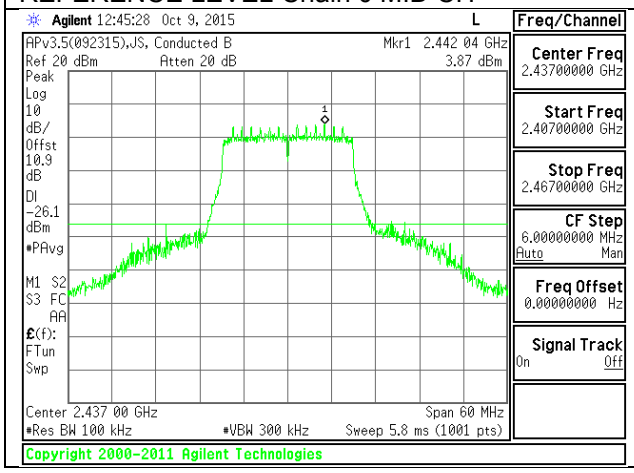
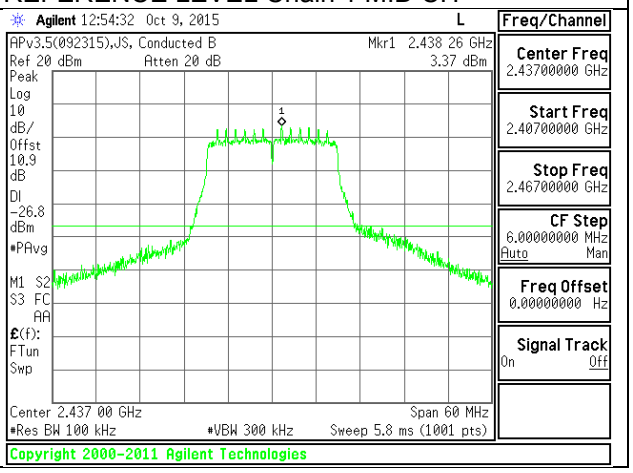
10.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

REFERENCE LEVEL Chain 0 MID CH

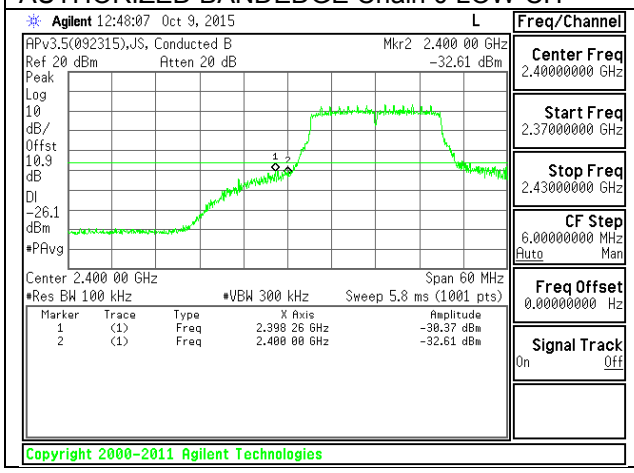


REFERENCE LEVEL Chain 1 MID CH

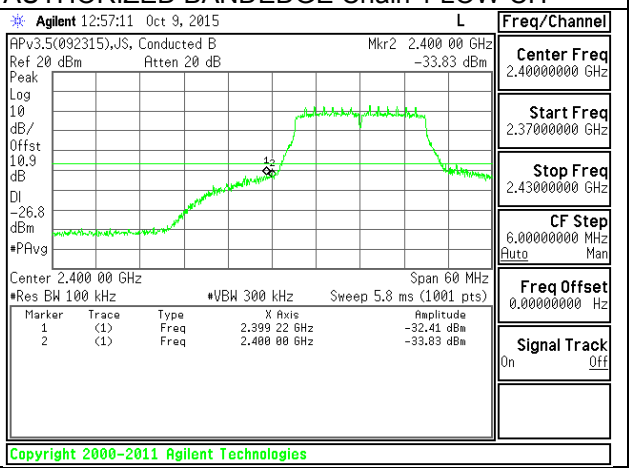


LOW CHANNEL BAND EDGE

AUTHORIZED BANDEDGE Chain 0 LOW CH



AUTHORIZED BANDEDGE Chain 1 LOW CH



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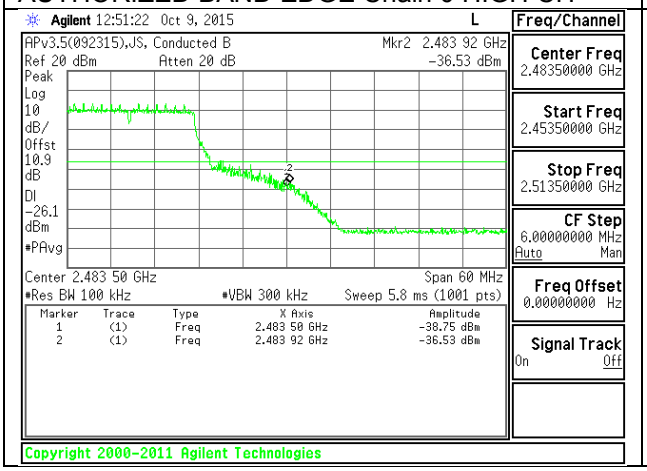
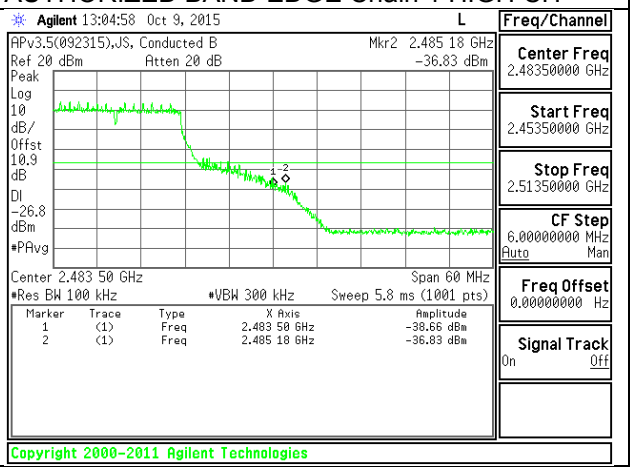
HIGH CHANNEL BAND EDGE

AUTHORIZED BAND EDGE Chain 0 HIGH CH

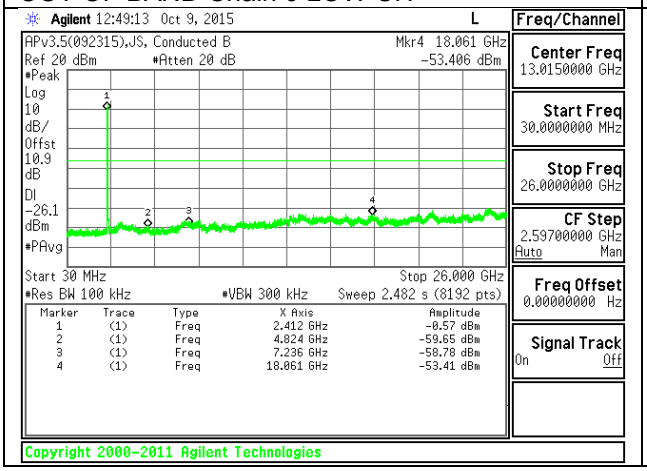


AUTHORIZED BAND EDGE Chain 1 HIGH CH

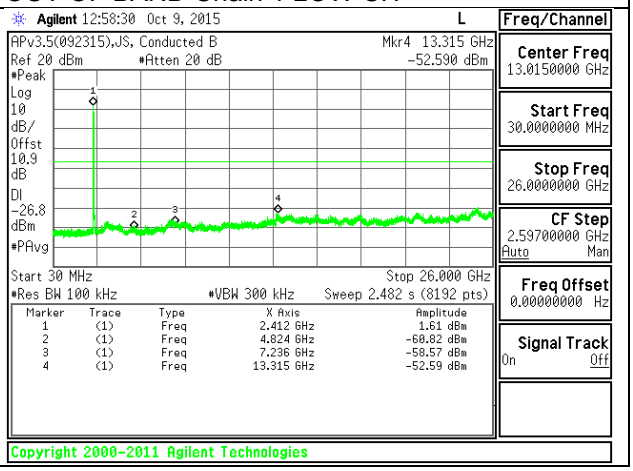


OUT-OF-BAND EMISSIONS

OUT OF BAND Chain 0 LOW CH



OUT OF BAND Chain 1 LOW CH



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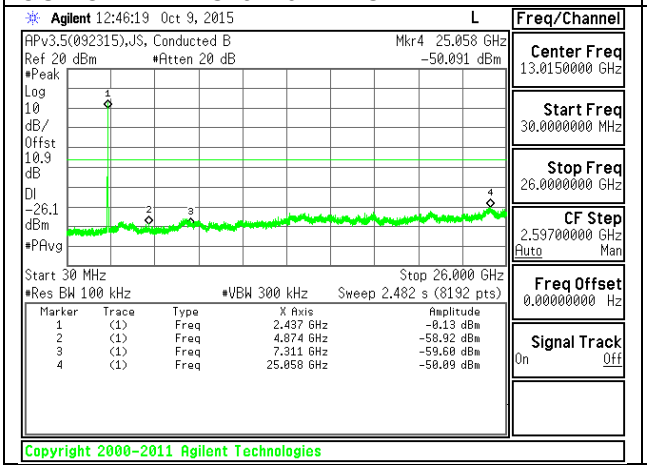
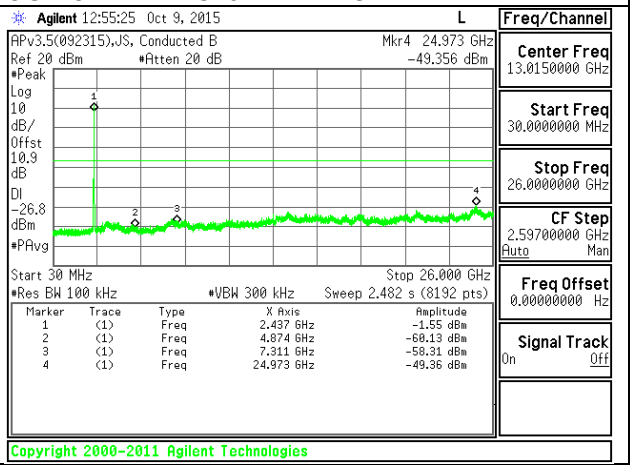
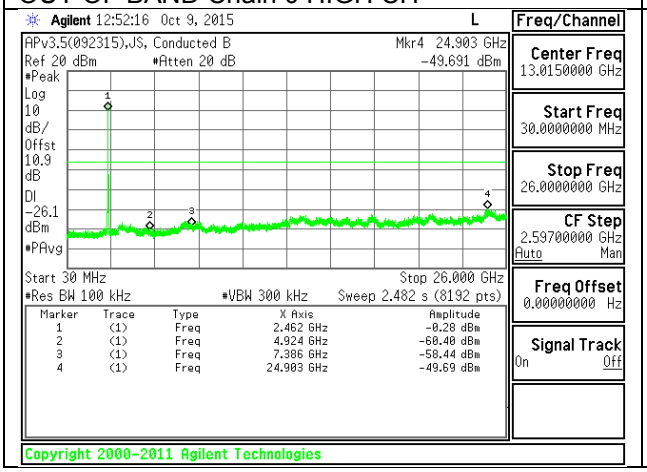
OUT OF BAND Chain 0 MID CH



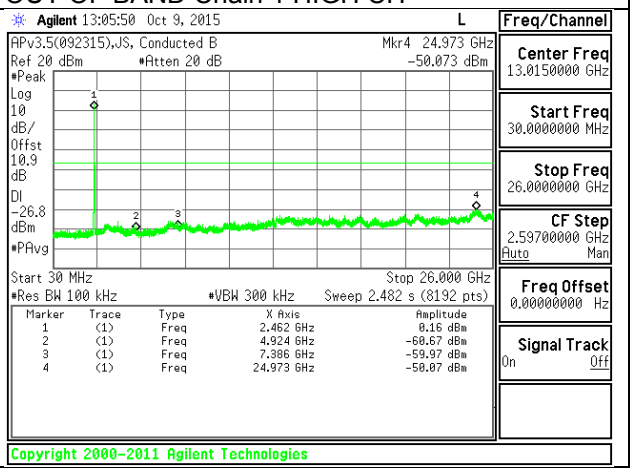
OUT OF BAND Chain 1 MID CH



OUT OF BAND Chain 0 HIGH CH



OUT OF BAND Chain 1 HIGH CH



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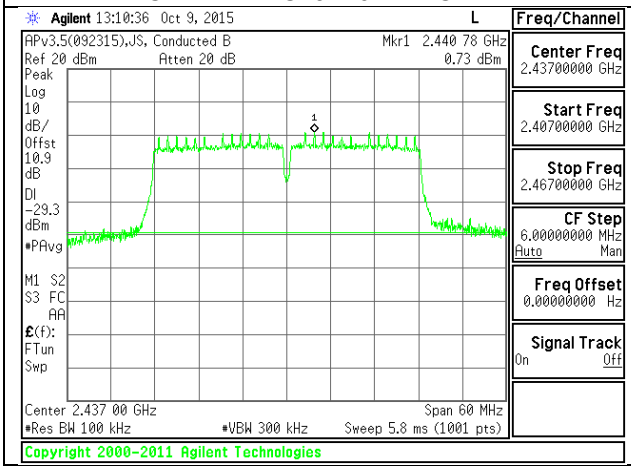
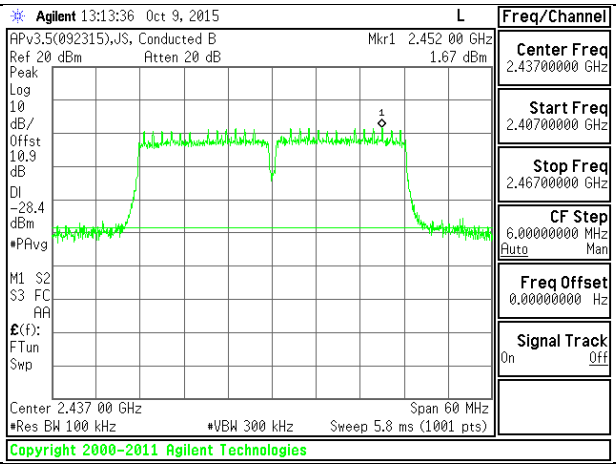
10.5.4. 802.11n HT40 MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

REFERENCE LEVEL Chain 0 MID CH

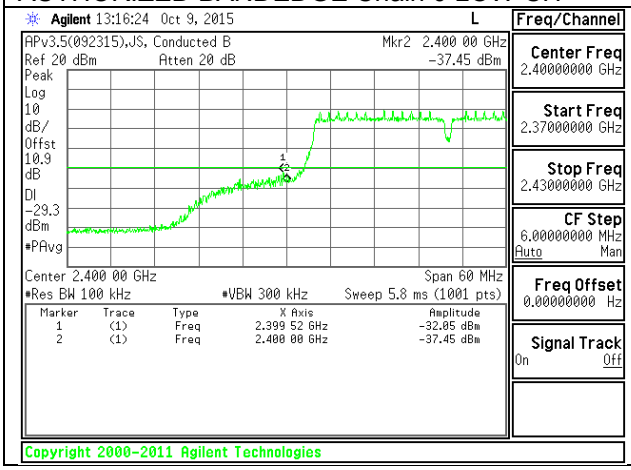


REFERENCE LEVEL Chain 1 MID CH

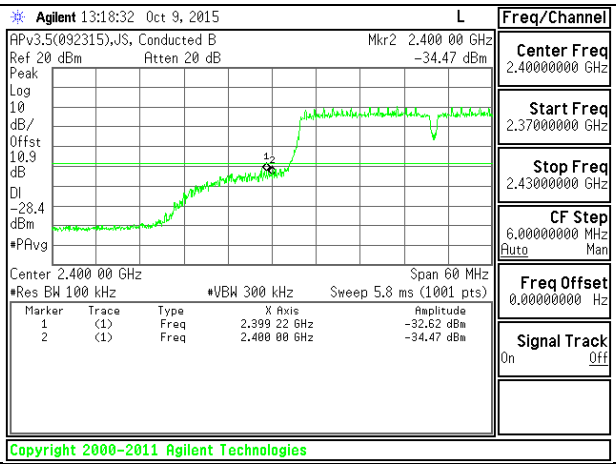


LOW CHANNEL BAND EDGE

AUTHORIZED BANDEDGE Chain 0 LOW CH



AUTHORIZED BANDEDGE Chain 1 LOW CH



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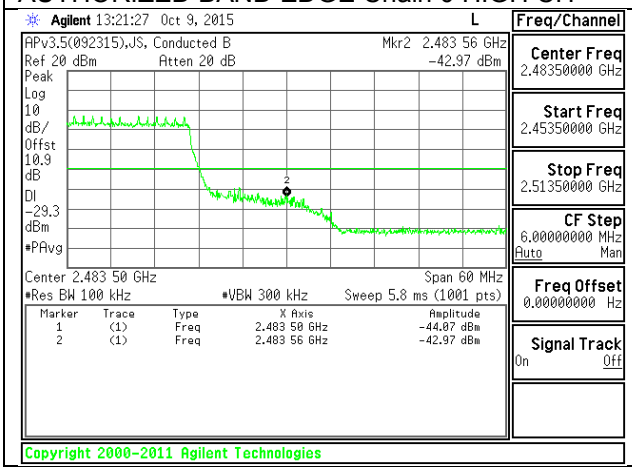
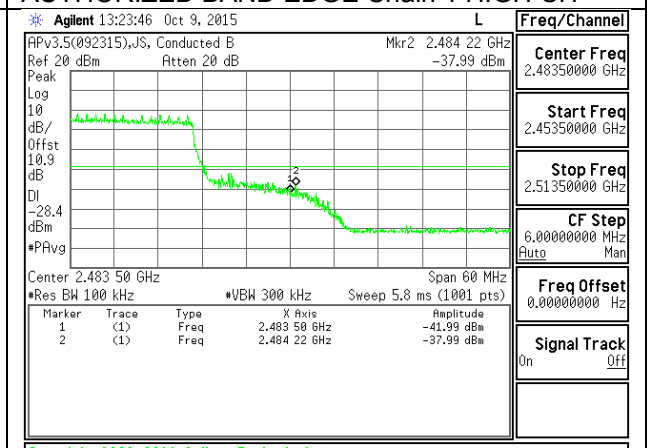
HIGH CHANNEL BAND EDGE

AUTHORIZED BAND EDGE Chain 0 HIGH CH

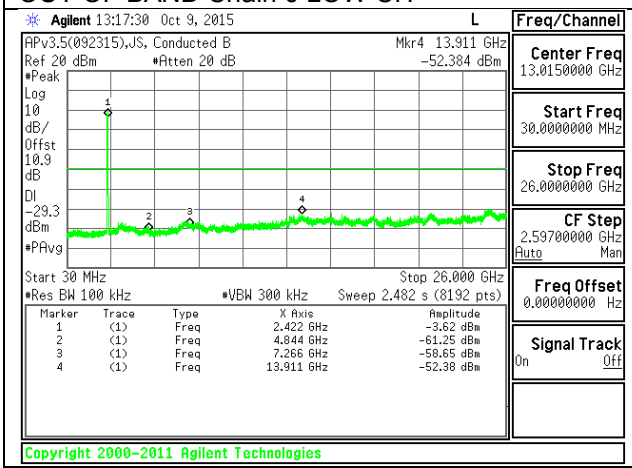


AUTHORIZED BAND EDGE Chain 1 HIGH CH

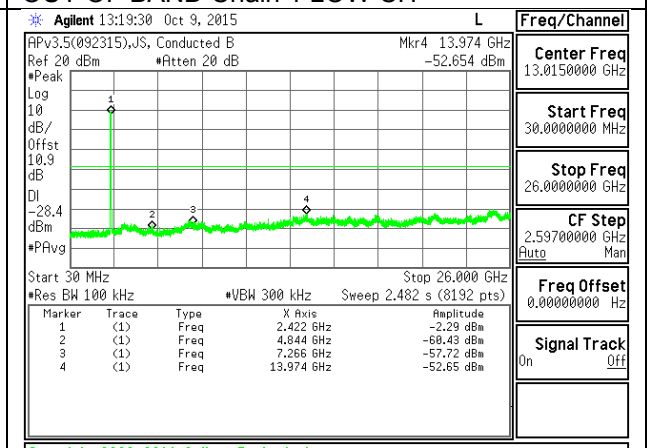


OUT-OF-BAND EMISSIONS

OUT OF BAND Chain 0 LOW CH



OUT OF BAND Chain 1 LOW CH



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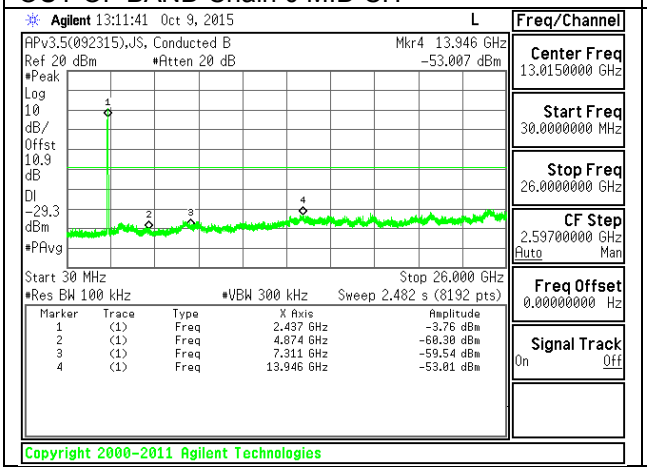
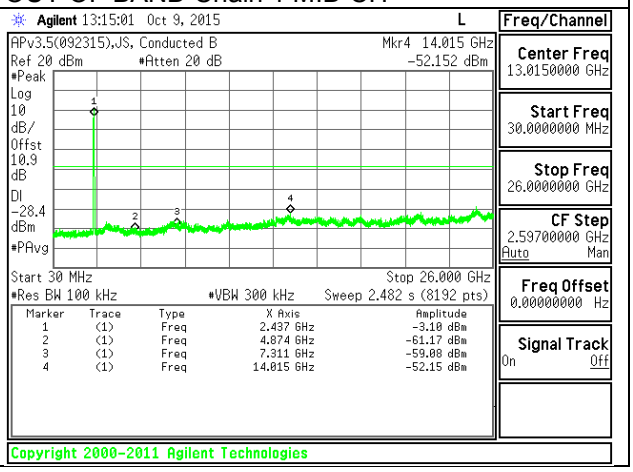
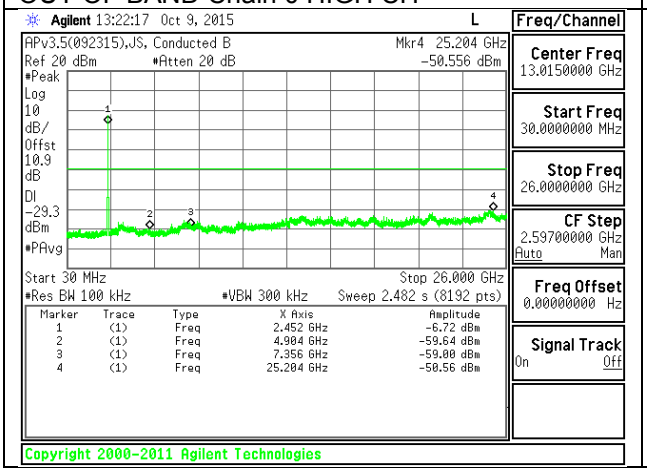
OUT OF BAND Chain 0 MID CH



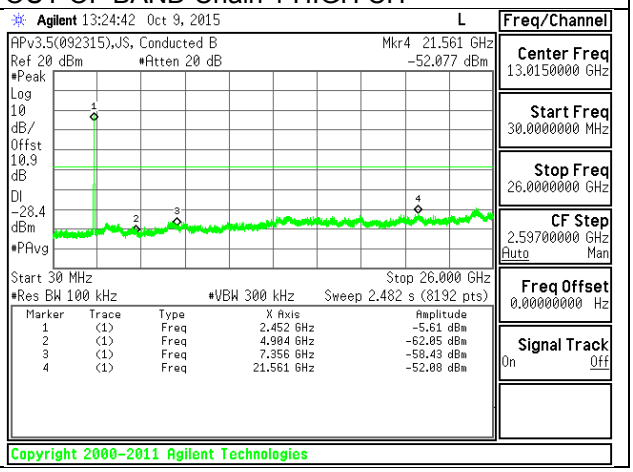
OUT OF BAND Chain 1 MID CH



OUT OF BAND Chain 0 HIGH CH



OUT OF BAND Chain 1 HIGH CH



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11. RADIATED TEST RESULTS

11.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-GEN Clause 8.9 (Transmitter)

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor for average measurements. Duty cycle factor= 10log (1/x) For this sample B mode = 0dB (duty cycle >98%); G mode = 0.33dB; N HT20 mode = 0.59dB; N HT40 1.08dB.

The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

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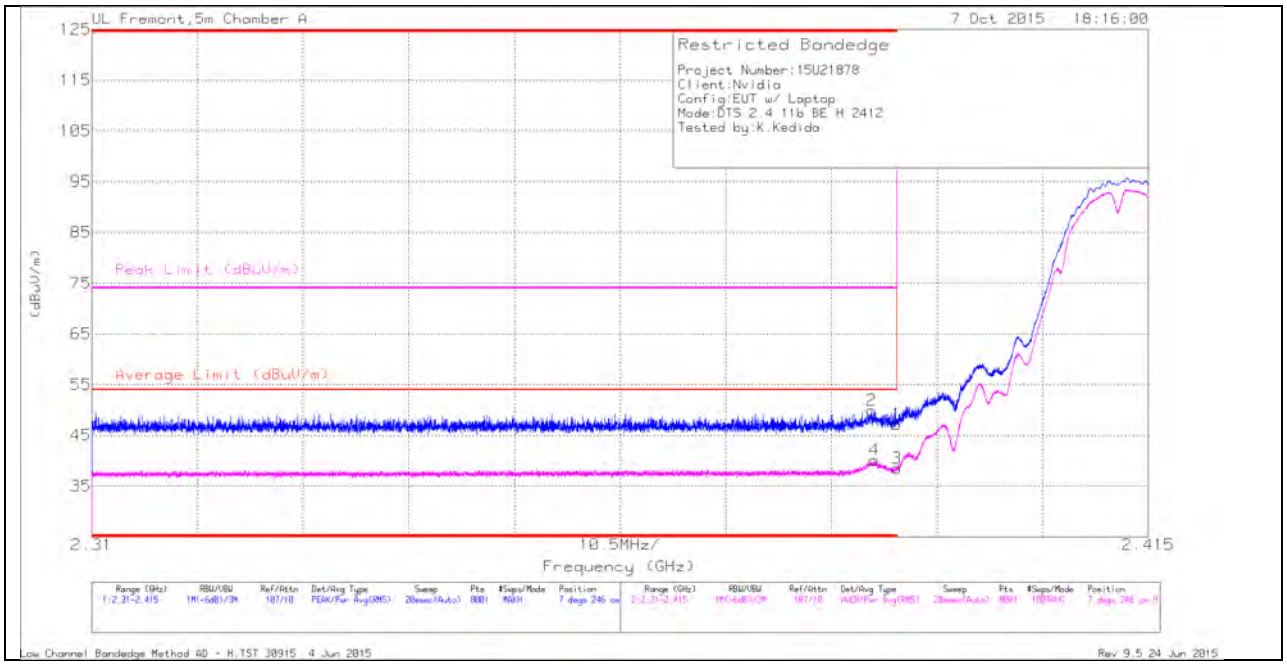
11.2. TRANSMITTER ABOVE 1 GHz

11.2.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND Chain 0

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.387	42.52	Pk	32	-24.6	49.92	-	-	74	-24.08	7	246	H
4	* 2.388	32.69	RMS	32	-24.6	40.09	54	-13.91	-	-	7	246	H
1	* 2.39	39.8	Pk	32	-24.6	47.2	-	-	74	-26.8	7	246	H
3	* 2.39	31.12	RMS	32	-24.6	38.52	54	-15.48	-	-	7	246	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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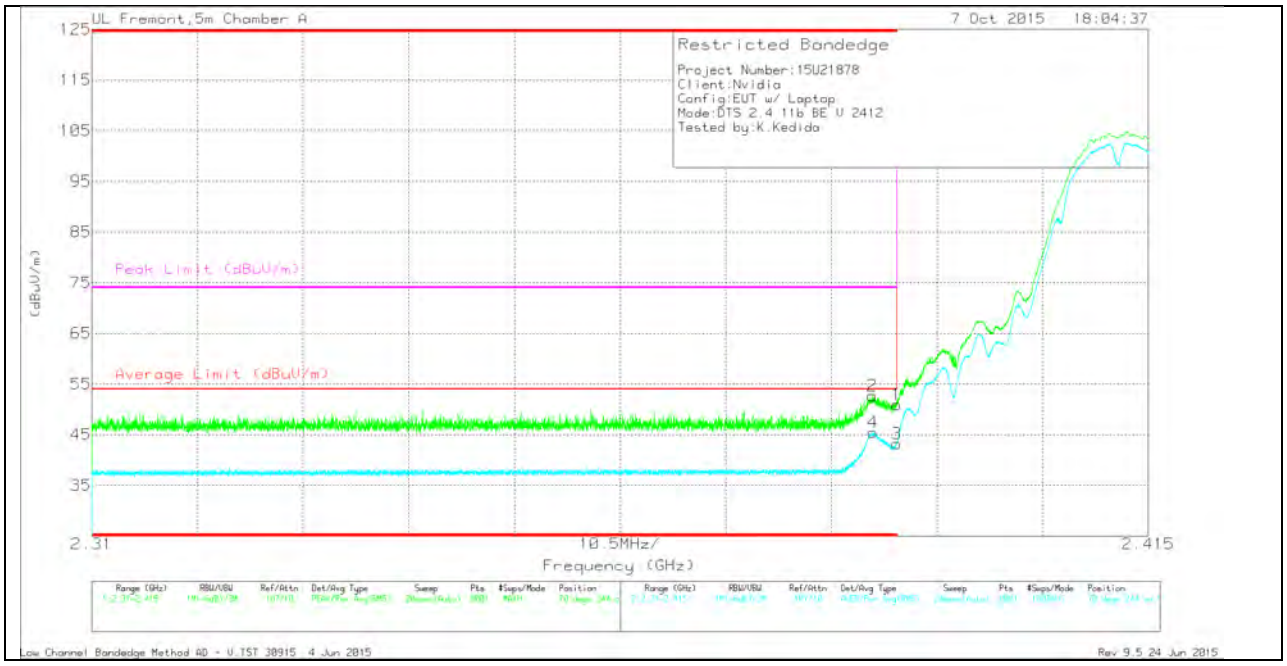
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.388	45.21	Pk	32	-24.6	52.61	-	-	74	-21.39	70	244	V
4	* 2.388	38.02	RMS	32	-24.6	45.42	54	-8.58	-	-	70	244	V
1	* 2.39	43.46	Pk	32	-24.6	50.86	-	-	74	-23.14	70	244	V
3	* 2.39	35.86	RMS	32	-24.6	43.26	54	-10.74	-	-	70	244	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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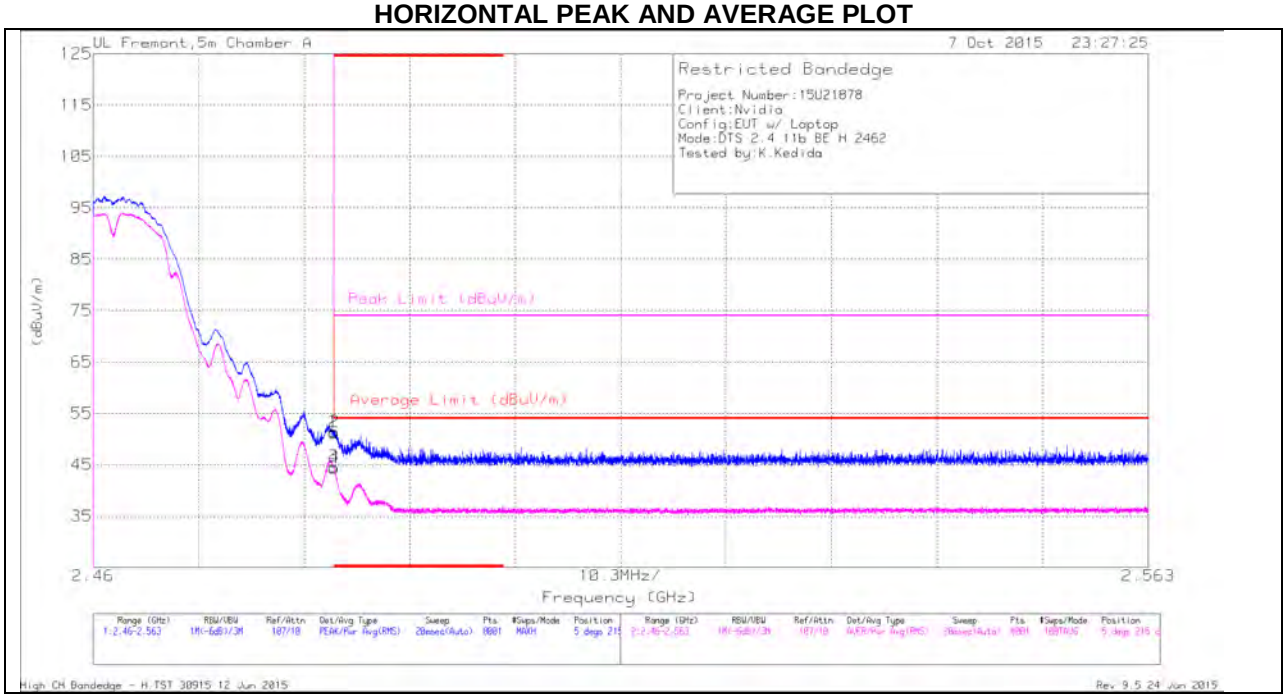
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	39.45	Pk	32.1	-20.3	51.25	-	-	74	-22.75	5	215	H
2	* 2.484	39.61	Pk	32.1	-20.3	51.41	-	-	74	-22.59	5	215	H
3	* 2.484	32.84	RMS	32.1	-20.3	44.64	54	-9.36	-	-	5	215	H
4	* 2.484	32.59	RMS	32.1	-20.3	44.39	54	-9.61	-	-	5	215	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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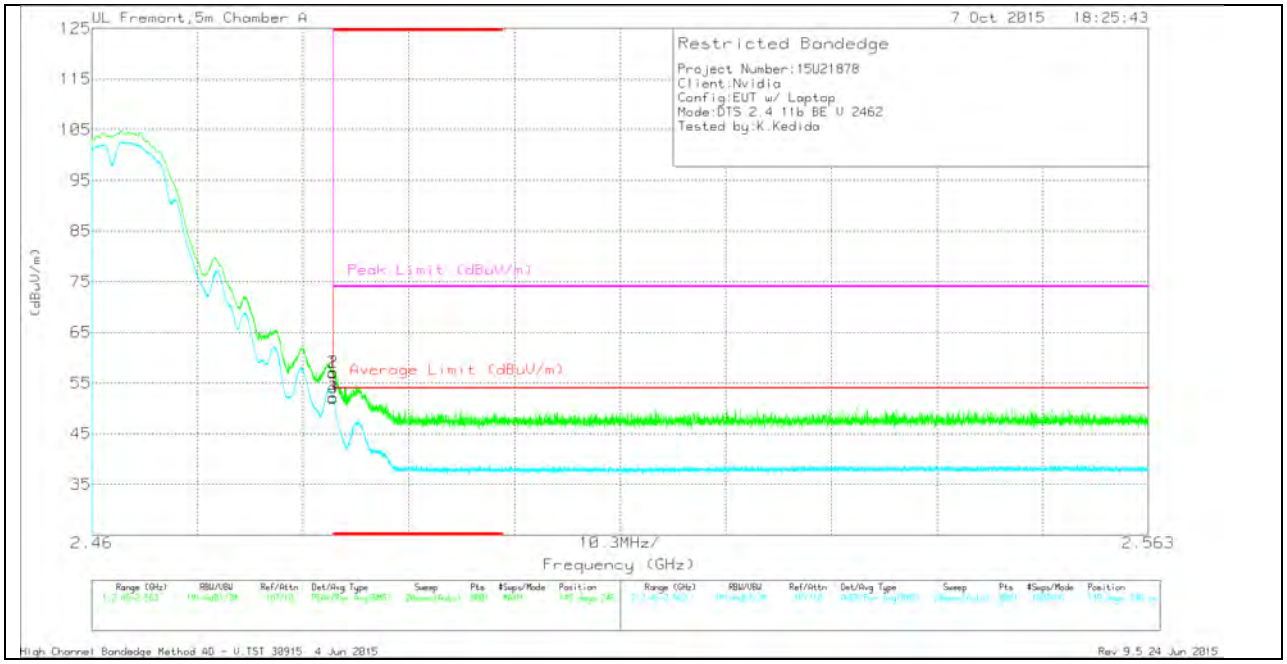
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	49.39	Pk	32.1	-24.5	56.99	-	-	74	-17.01	149	246	V
2	* 2.484	49.51	Pk	32.1	-24.5	57.11	-	-	74	-16.89	149	246	V
3	* 2.484	44.61	RMS	32.1	-24.5	52.21	54	-1.79	-	-	149	246	V
4	* 2.484	44.43	RMS	32.1	-24.5	52.03	54	-1.97	-	-	149	246	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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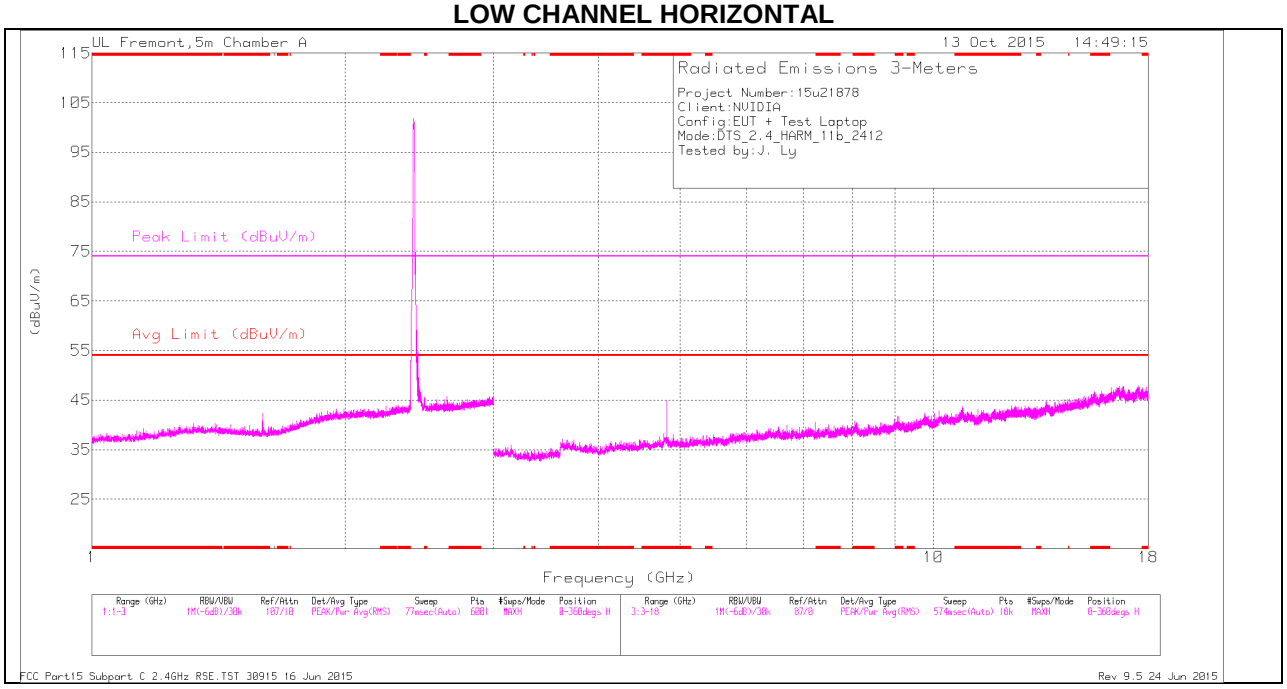
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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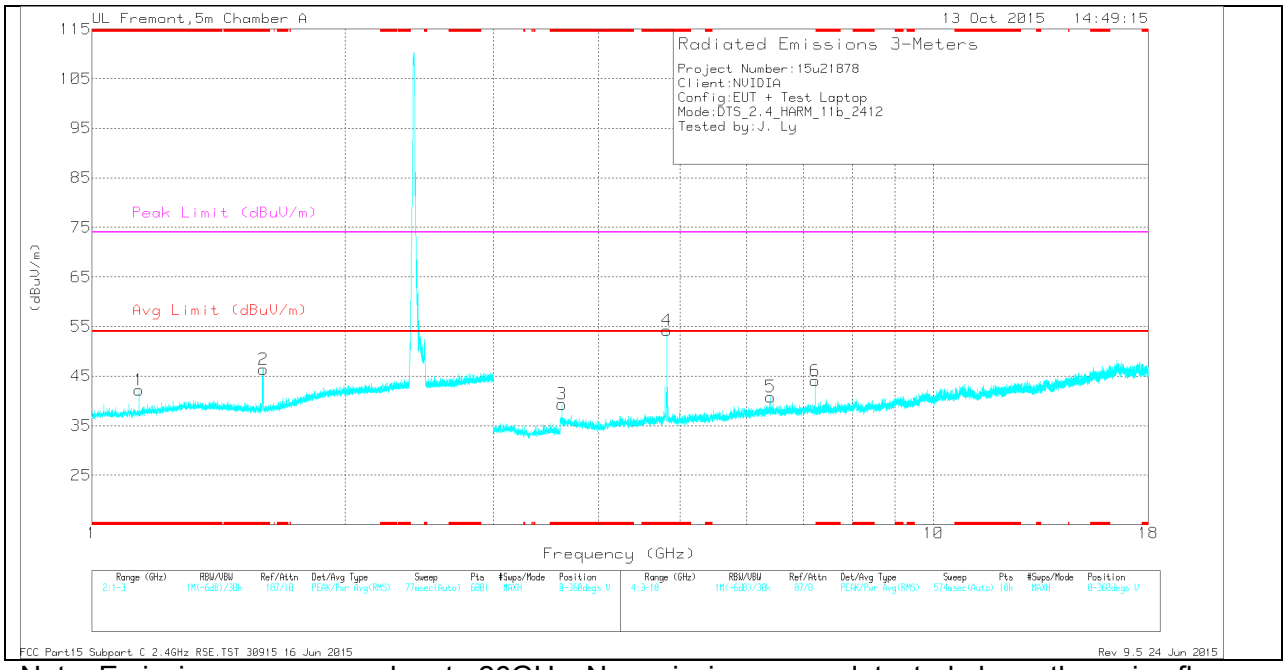
LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.137	40.76	Pk	27.5	-26.1	42.16	-	-	74	-31.84	0-360	200	V
2	* 1.599	44.05	Pk	27.9	-25.6	46.35	-	-	74	-27.65	0-360	100	V
3	* 3.617	38.42	Pk	33.1	-32.2	39.32	-	-	74	-34.68	0-360	200	V
4	* 4.824	49.97	Pk	33.9	-29.6	54.27	-	-	74	-19.73	0-360	100	V
5	6.399	32.54	Pk	35.5	-27.2	40.84	-	-	-	-	0-360	200	V
6	7.235	35.12	Pk	35.5	-26.5	44.12	-	-	-	-	0-360	200	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.137	44.98	PK-U	27.5	-26.1	46.38	-	-	74	-27.62	29	301	H
* 1.137	32.73	ADR	27.5	-26.1	34.13	54	-19.87	-	-	29	301	H
* 1.597	47.47	PK-U	27.9	-25.6	49.77	-	-	74	-24.23	316	391	H
* 1.598	32.76	ADR	27.9	-25.6	35.06	54	-18.94	-	-	316	391	H
* 4.824	44.04	PK-U	33.9	-29.6	48.34	-	-	74	-25.66	101	103	H
* 4.824	36.23	ADR	33.9	-29.6	40.53	54	-13.47	-	-	101	103	H
* 3.616	43.28	PK-U	33.1	-32.2	44.18	-	-	74	-29.82	273	373	H
* 3.616	30.78	ADR	33.1	-32.2	31.68	54	-22.32	-	-	273	373	H
6.399	39.4	PK-U	35.5	-27.2	47.7	-	-	-	-	236	200	H
7.234	40.44	PK-U	35.5	-26.5	49.44	-	-	-	-	314	325	H

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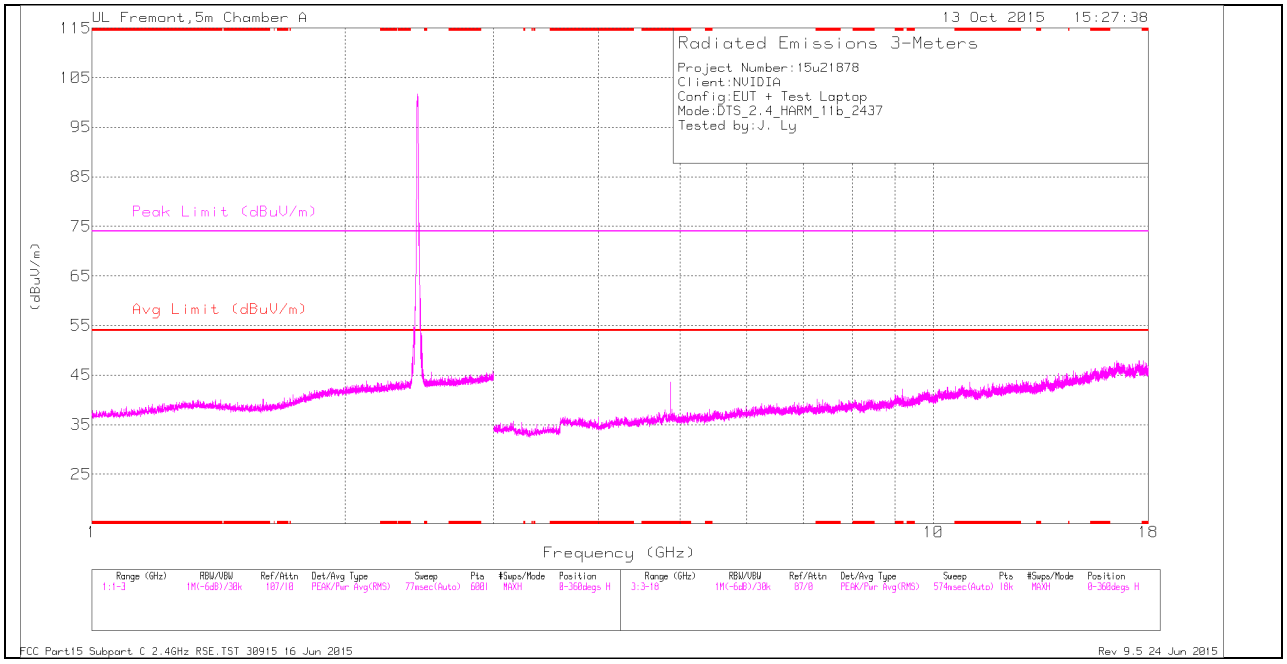
MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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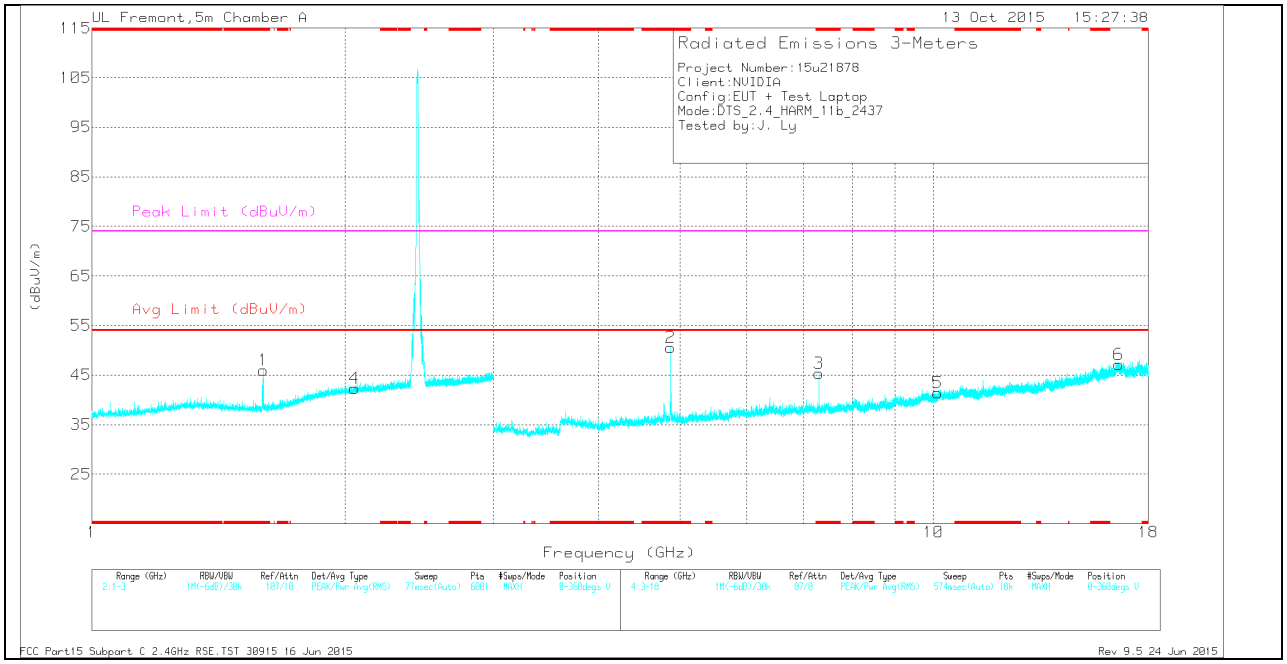
MID CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.599	43.67	Pk	27.9	-25.6	45.97	54	-8.03	74	-28.03	0-360	100	V
2	* 4.874	45.95	Pk	33.9	-29.3	50.55	54	-3.45	74	-23.45	0-360	200	V
3	* 7.31	36.46	Pk	35.5	-26.6	45.36	54	-8.64	74	-28.64	0-360	200	V
4	2.05	36.01	Pk	31.3	-25	42.31	-	-	-	-	0-360	200	V
5	10.117	26.92	Pk	37.2	-22.7	41.42	-	-	-	-	0-360	200	V
6	16.597	27.07	Pk	41.5	-21.5	47.07	-	-	-	-	0-360	200	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.598	45.59	PK-U	27.9	-25.6	47.89			74	-26.11	65	389	H
* 1.599	32.67	ADR	27.9	-25.6	34.97	54	-19.03	-	-	65	389	H
* 4.874	44.1	PK-U	33.9	-29.3	48.7			74	-25.3	215	171	H
* 4.874	38.02	ADR	33.9	-29.3	42.62	54	-11.38	-	-	215	171	H
* 7.31	39.92	PK-U	35.5	-26.6	48.82			74	-25.18	232	284	H
* 7.31	30.13	ADR	35.5	-26.6	39.03	54	-14.97	-	-	232	284	H
2.051	44.88	PK-U	31.3	-25	51.18	-	-	-	-	98	188	H
10.119	34.57	PK-U	37.2	-22.7	49.07	-	-	-	-	356	191	H
16.595	34.76	PK-U	41.5	-21.5	54.76	-	-	-	-	51	174	H

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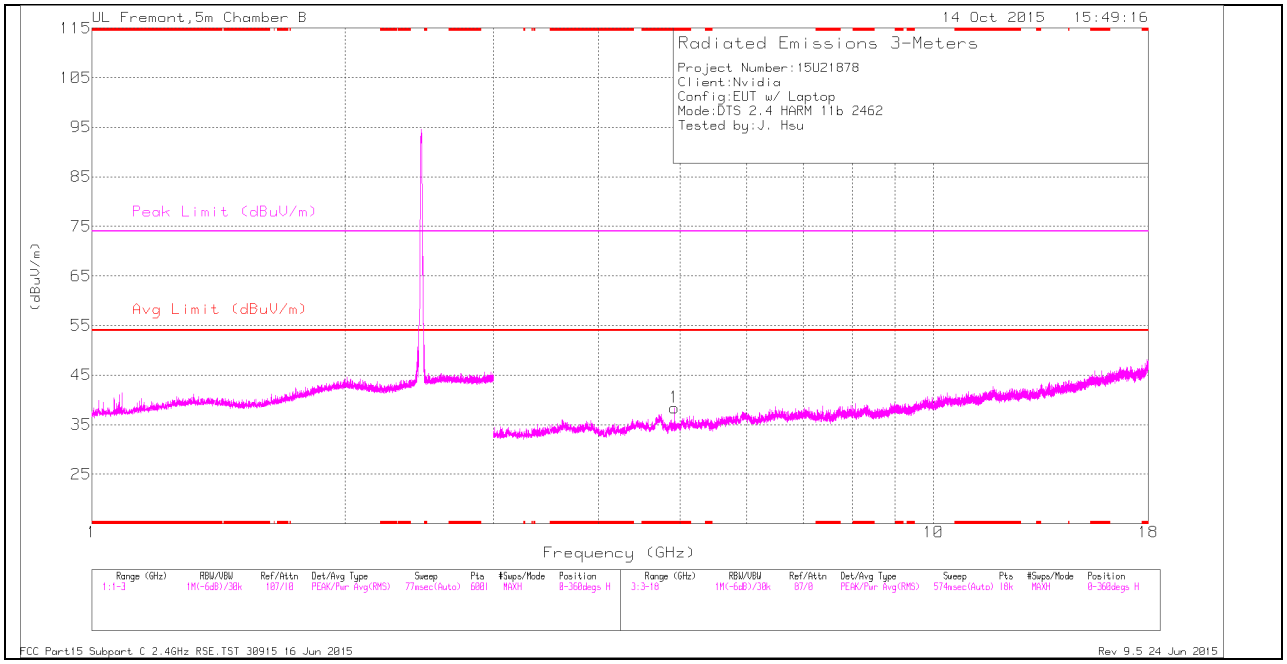
HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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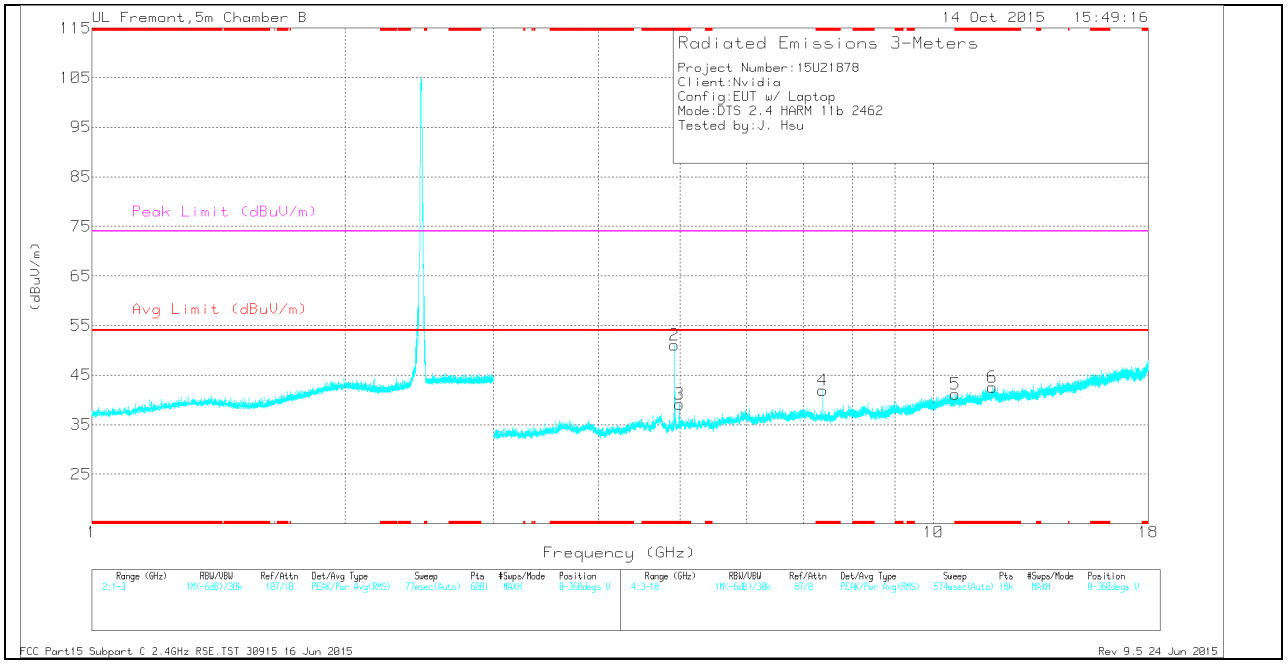
HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.924	36.83	Pk	34.1	-32.5	38.43	-	-	74	-35.57	0-360	199	H
2	* 4.924	49.46	Pk	34.1	-32.5	51.06	-	-	74	-22.94	0-360	199	V
3	* 4.987	36.7	Pk	34	-31.6	39.1	-	-	74	-34.9	0-360	101	V
4	* 7.385	35.72	Pk	35.4	-29.2	41.92	-	-	74	-32.08	0-360	199	V
5	* 10.621	28.62	Pk	37.6	-25.1	41.12	-	-	74	-32.88	0-360	199	V
6	* 11.741	28.68	Pk	38.5	-24.6	42.58	-	-	74	-31.42	0-360	199	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.924	45.12	PK2	34.1	-32.5	46.72	-	-	74	-27.28	178	264	H
* 4.924	38.15	MAv1	34.1	-32.5	39.75	54	-14.25	-	-	178	264	H
* 4.924	53.15	PK2	34.1	-32.5	54.75	-	-	74	-19.25	113	231	V
* 4.924	50.28	MAv1	34.1	-32.5	51.88	54	-2.12	-	-	113	231	V
* 4.987	49.37	PK2	34	-31.6	51.77	-	-	74	-22.23	253	339	V
* 4.986	29.57	MAv1	34	-31.6	31.97	54	-22.03	-	-	253	339	V
* 7.385	39.77	PK2	35.4	-29.2	45.97	-	-	74	-28.03	253	339	V
* 7.384	28.87	MAv1	35.4	-29.2	35.07	54	-18.93	-	-	253	339	V
* 10.622	36.15	PK2	37.6	-25.1	48.65	-	-	74	-25.35	253	339	V
* 10.622	25.08	MAv1	37.6	-25.1	37.58	54	-16.42	-	-	253	339	V
* 11.74	37.2	PK2	38.5	-24.6	51.1	-	-	74	-22.9	253	339	V
* 11.741	24.86	MAv1	38.5	-24.6	38.76	54	-15.24	-	-	253	339	V

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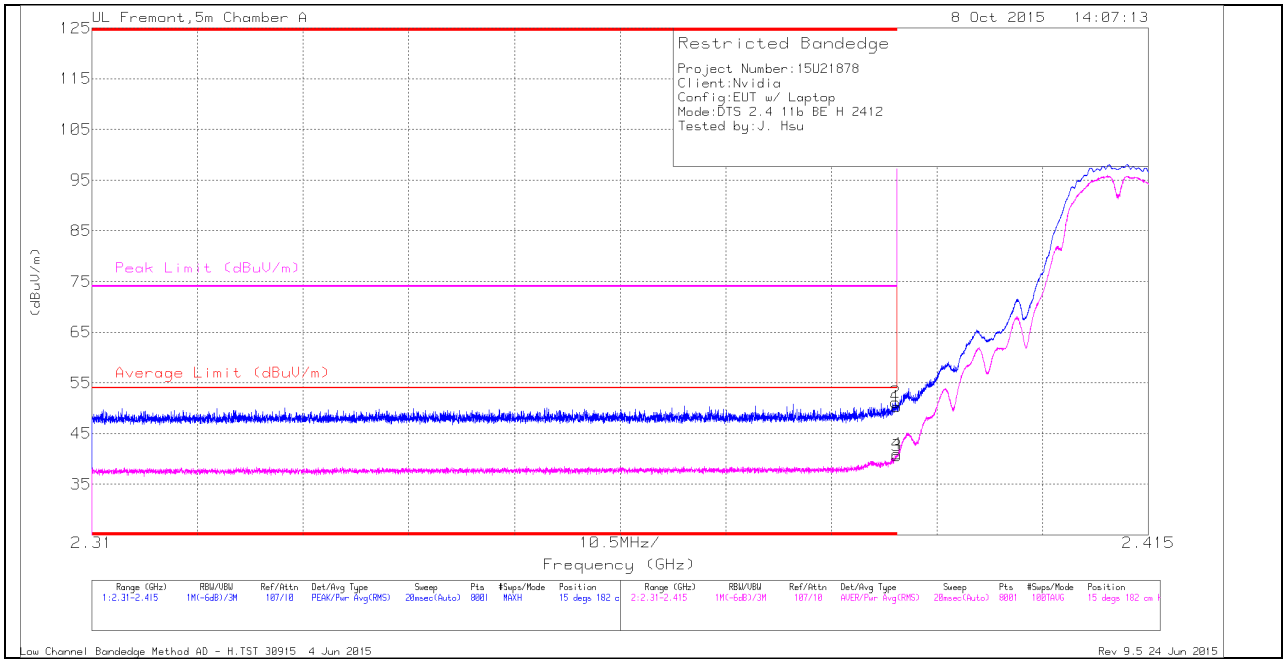
11.2.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND Chain 1

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	42.9	Pk	32	-24.6	50.3	-	-	74	-23.7	15	182	H
2	* 2.39	43.78	Pk	32	-24.6	51.18	-	-	74	-22.82	15	182	H
3	* 2.39	33.16	RMS	32	-24.6	40.56	54	-13.44	-	-	15	182	H
4	* 2.39	33.53	RMS	32	-24.6	40.93	54	-13.07	-	-	15	182	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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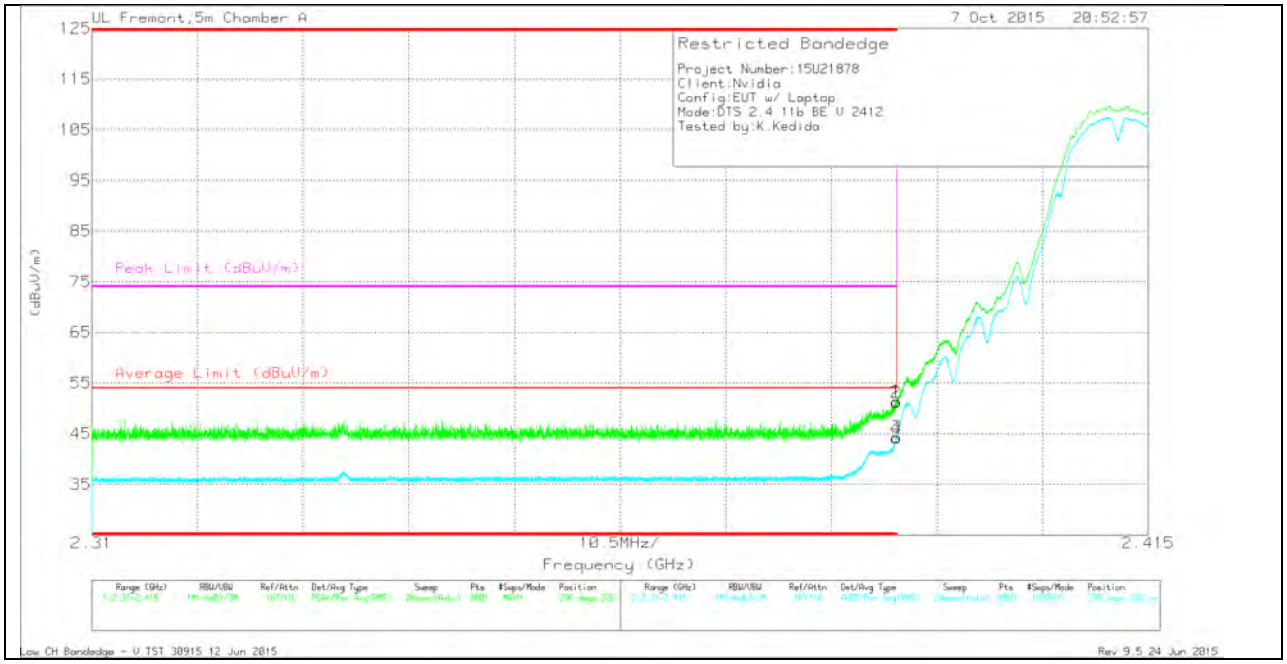
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.57	Pk	32	-20.2	51.37	-	-	74	-22.63	298	226	V
2	* 2.39	39.35	Pk	32	-20.2	51.15	-	-	74	-22.85	298	226	V
3	* 2.39	32.57	RMS	32	-20.2	44.37	54	-9.63	-	-	298	226	V
4	* 2.39	32.29	RMS	32	-20.2	44.09	54	-9.91	-	-	298	226	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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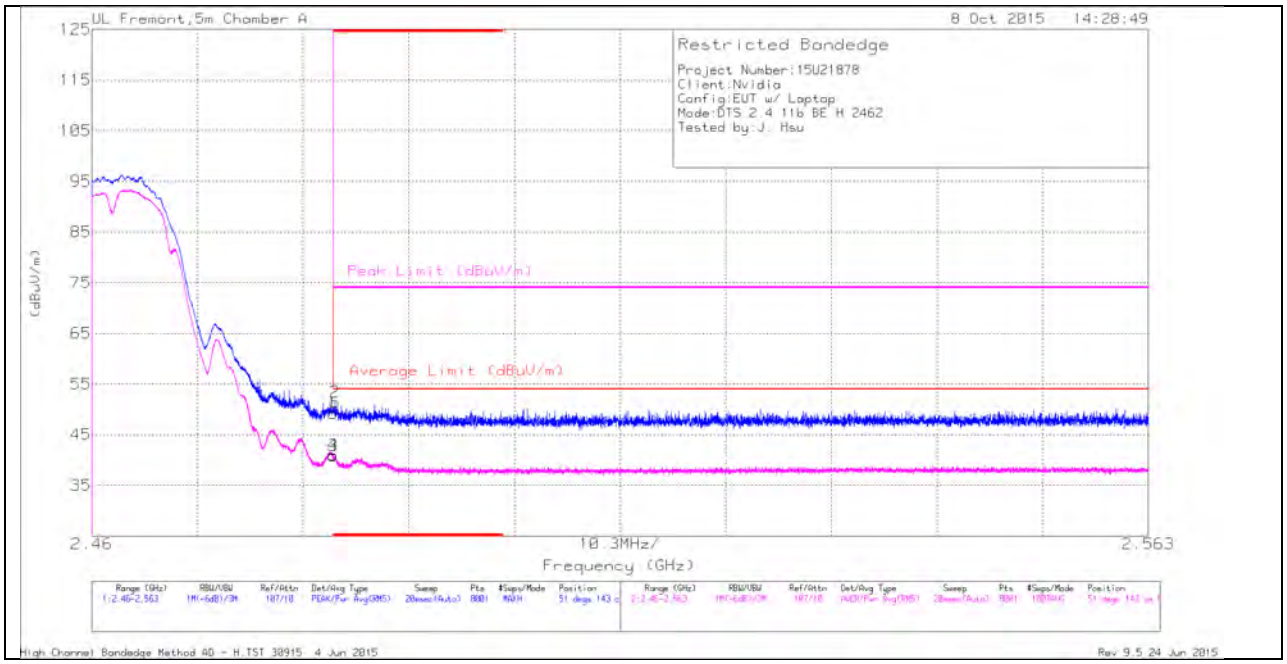
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	41.57	Pk	32.1	-24.5	49.17	-	-	74	-24.83	51	143	H
2	* 2.484	43.85	Pk	32.1	-24.5	51.45	-	-	74	-22.55	51	143	H
3	* 2.484	33.2	RMS	32.1	-24.5	40.8	54	-13.2	-	-	51	143	H
4	* 2.484	33.33	RMS	32.1	-24.5	40.93	54	-13.07	-	-	51	143	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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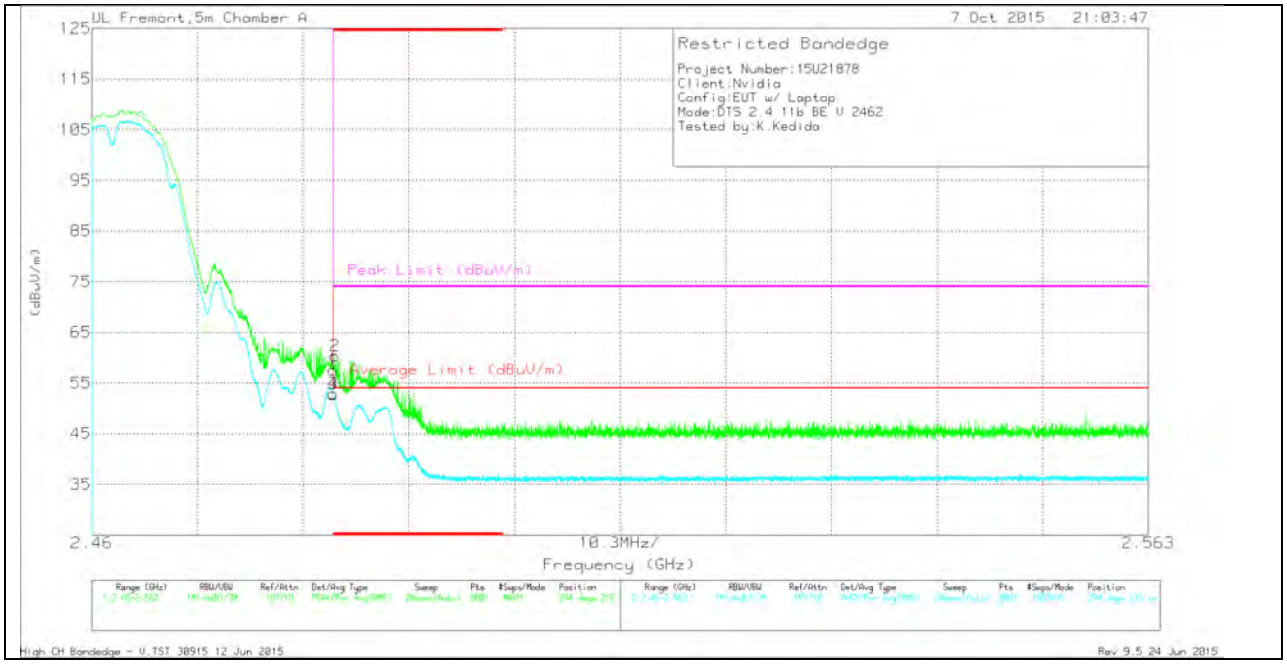
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	45.85	Pk	32.1	-20.3	57.65	-	-	74	-16.35	294	216	V
2	* 2.484	48.52	Pk	32.1	-20.3	60.32	-	-	74	-13.68	294	216	V
3	* 2.484	41.04	RMS	32.1	-20.3	52.84	54	-1.16	-	-	294	216	V
4	* 2.484	41.05	RMS	32.1	-20.3	52.85	54	-1.15	-	-	294	216	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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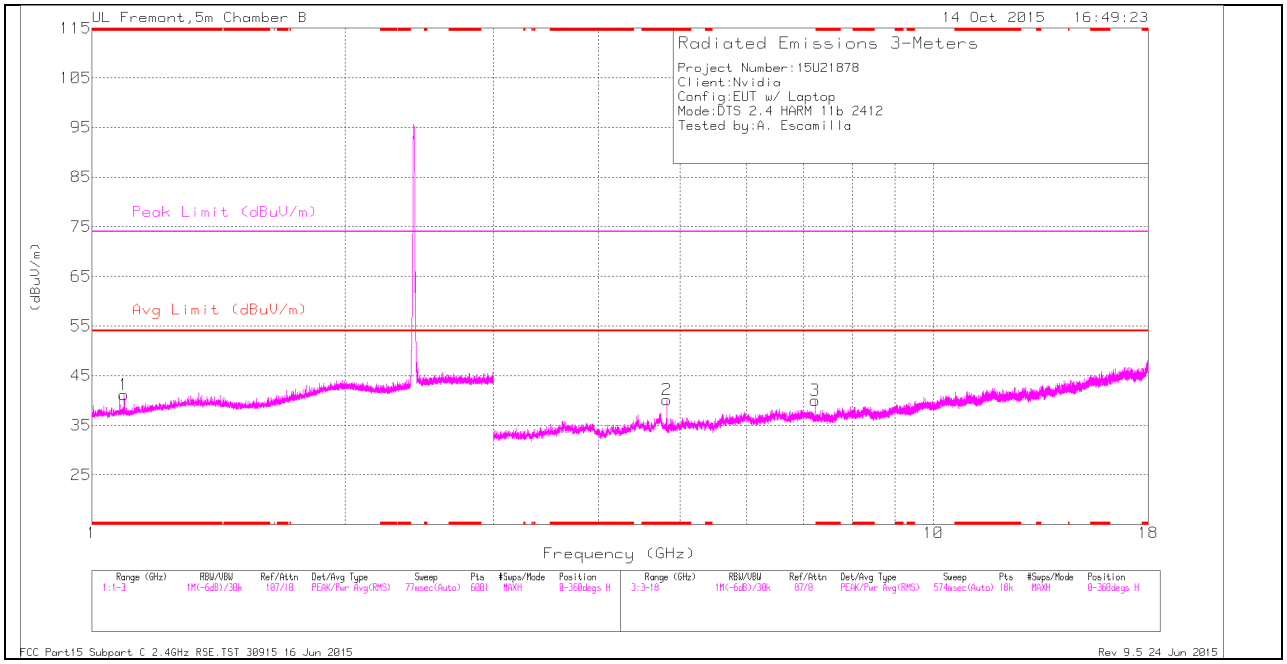
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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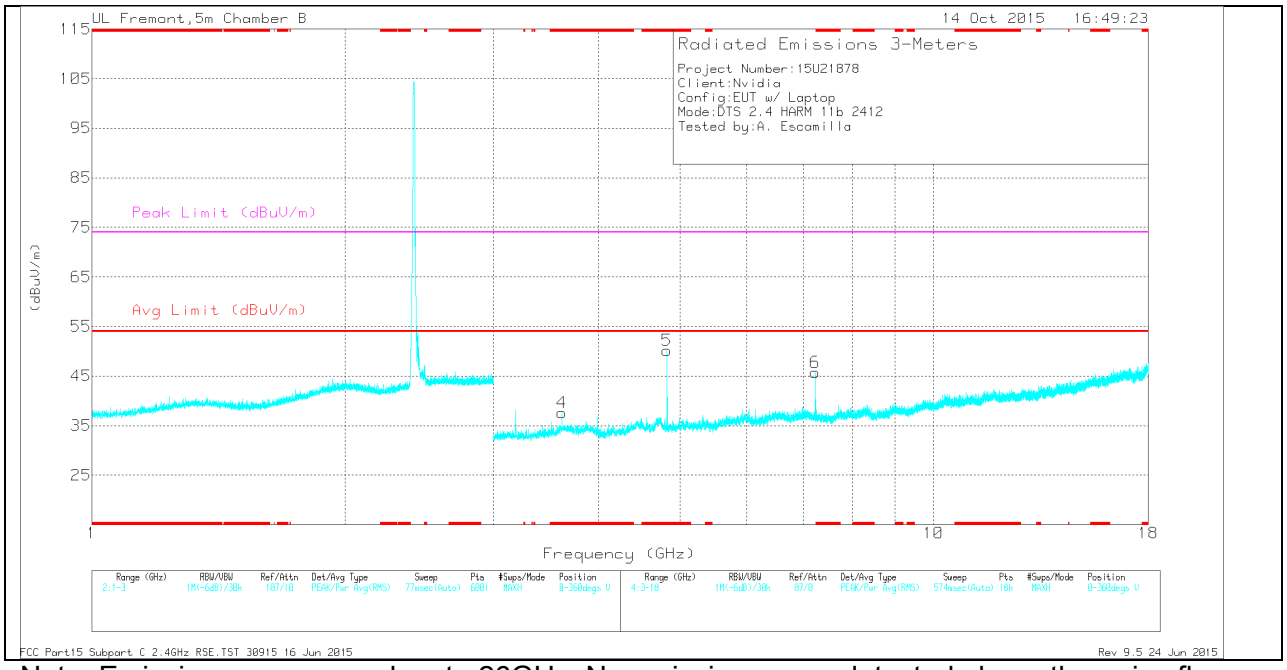
LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.092	39.23	Pk	27.6	-25.7	41.13	-	-	74	-32.87	0-360	101	H
2	* 4.824	37.39	Pk	34.3	-31.6	40.09	-	-	74	-33.91	0-360	199	H
4	* 3.618	36.73	Pk	33.8	-32.9	37.63	-	-	74	-36.37	0-360	199	V
5	* 4.824	47.48	Pk	34.3	-31.6	50.18	-	-	74	-23.82	0-360	199	V
3	7.236	34.65	Pk	35.3	-29.9	40.05	-	-	-	-	0-360	199	H
6	7.236	40.36	Pk	35.3	-29.9	45.76	-	-	-	-	0-360	199	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.092	48.45	PK2	27.6	-25.7	50.35	-	-	74	-23.65	347	118	H
* 1.094	32.96	MAv1	27.6	-25.7	34.86	54	-19.14	-	-	347	118	H
* 4.824	43.41	PK2	34.3	-31.6	46.11	-	-	74	-27.89	332	173	H
* 4.824	35.62	MAv1	34.3	-31.6	38.32	54	-15.68	-	-	332	173	H
* 3.618	43.67	PK2	33.8	-32.9	44.57	-	-	74	-29.43	319	391	V
* 3.618	34.25	MAv1	33.8	-32.9	35.15	54	-18.85	-	-	319	391	V
* 4.824	51.64	PK2	34.3	-31.6	54.34	-	-	74	-19.66	347	229	V
* 4.824	48.95	MAv1	34.3	-31.6	51.65	54	-2.35	-	-	347	229	V
7.235	41.62	PK2	35.3	-29.8	47.12	-	-	-	-	28	205	H
7.235	30.66	MAv1	35.3	-29.8	36.16	-	-	-	-	28	205	H
7.235	40.59	MAv1	35.3	-29.8	46.09	-	-	-	-	40	220	V
7.236	46.82	PK2	35.3	-29.8	52.32	-	-	-	-	40	220	V

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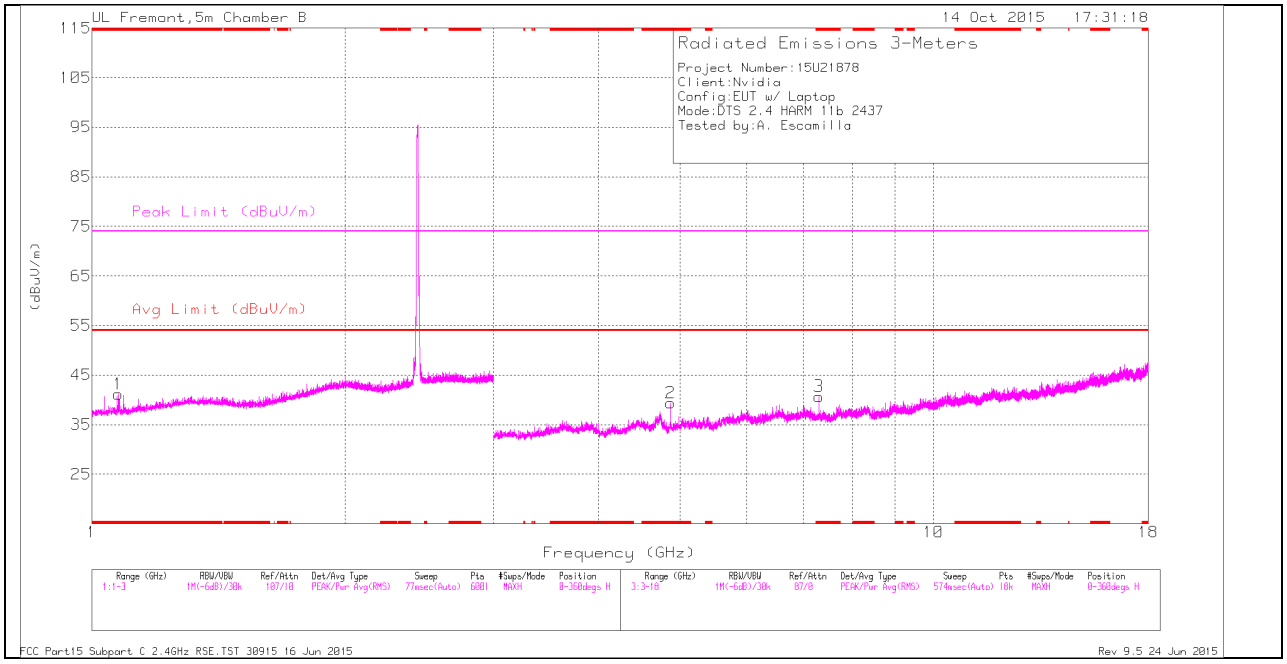
MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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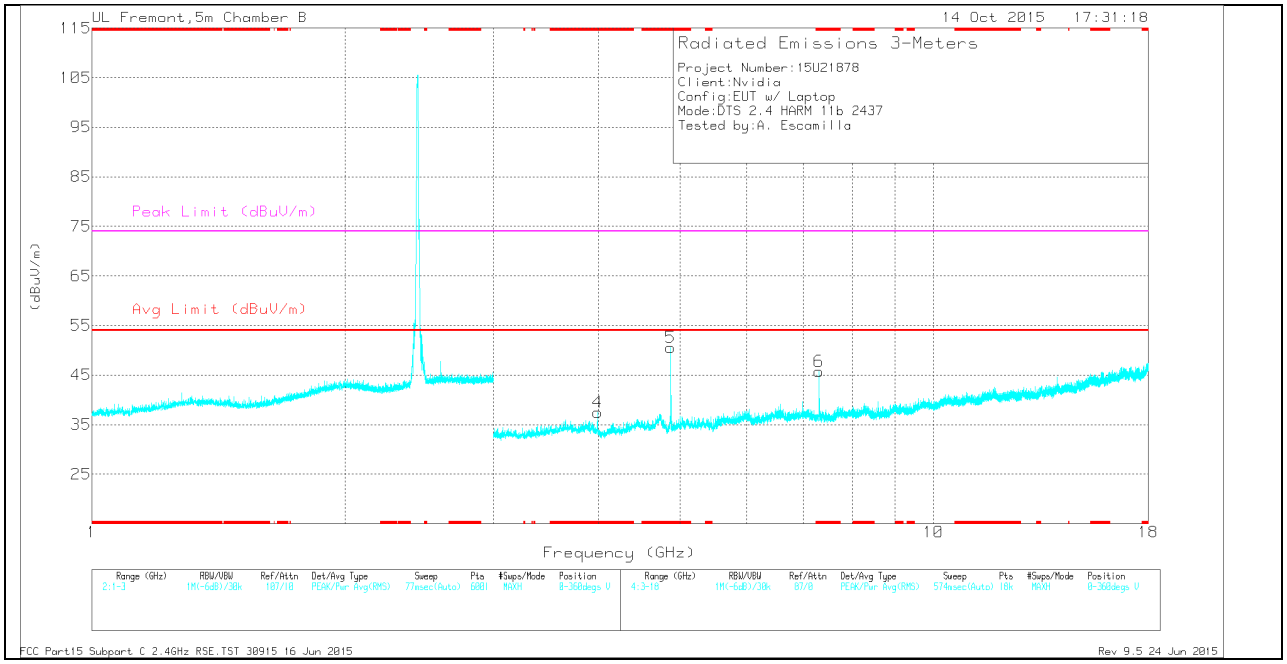
MID CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.075	39.4	Pk	27.5	-25.7	41.2	-	-	74	-32.8	0-360	199	H
2	* 4.874	37.58	Pk	34.2	-32.4	39.38	-	-	74	-34.62	0-360	199	H
3	* 7.31	35.61	Pk	35.3	-30.2	40.71	-	-	74	-33.29	0-360	199	H
4	* 3.988	36.83	Pk	33.3	-32.6	37.53	-	-	74	-36.47	0-360	199	V
5	* 4.874	48.71	Pk	34.2	-32.4	50.51	-	-	74	-23.49	0-360	199	V
6	* 7.312	40.61	Pk	35.3	-30.2	45.71	-	-	74	-28.29	0-360	199	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.075	49.44	PK2	27.5	-25.7	51.24	-	-	74	-22.76	34	170	H
* 1.075	33.03	MAv1	27.5	-25.7	34.83	54	-19.17	-	-	34	170	H
* 4.874	44.2	PK2	34.2	-32.4	46	-	-	74	-28	333	182	H
* 4.874	37.23	MAv1	34.2	-32.4	39.03	54	-14.97	-	-	333	182	H
* 7.308	42.03	PK2	35.3	-30.3	47.03	-	-	74	-26.97	33	190	H
* 7.31	31.49	MAv1	35.3	-30.2	36.59	54	-17.41	-	-	33	190	H
* 3.989	44.9	PK2	33.3	-32.7	45.5	-	-	74	-28.5	278	202	V
* 3.988	31.11	MAv1	33.3	-32.6	31.81	54	-22.19	-	-	278	202	V
* 4.874	50.62	PK2	34.2	-32.4	52.42	-	-	74	-21.58	331	180	V
* 4.874	47.5	MAv1	34.2	-32.4	49.3	54	-4.7	-	-	331	180	V
* 7.312	47	PK2	35.3	-30.2	52.1	-	-	74	-21.9	50	201	V
* 7.312	40.58	MAv1	35.3	-30.2	45.68	54	-8.32	-	-	50	201	V

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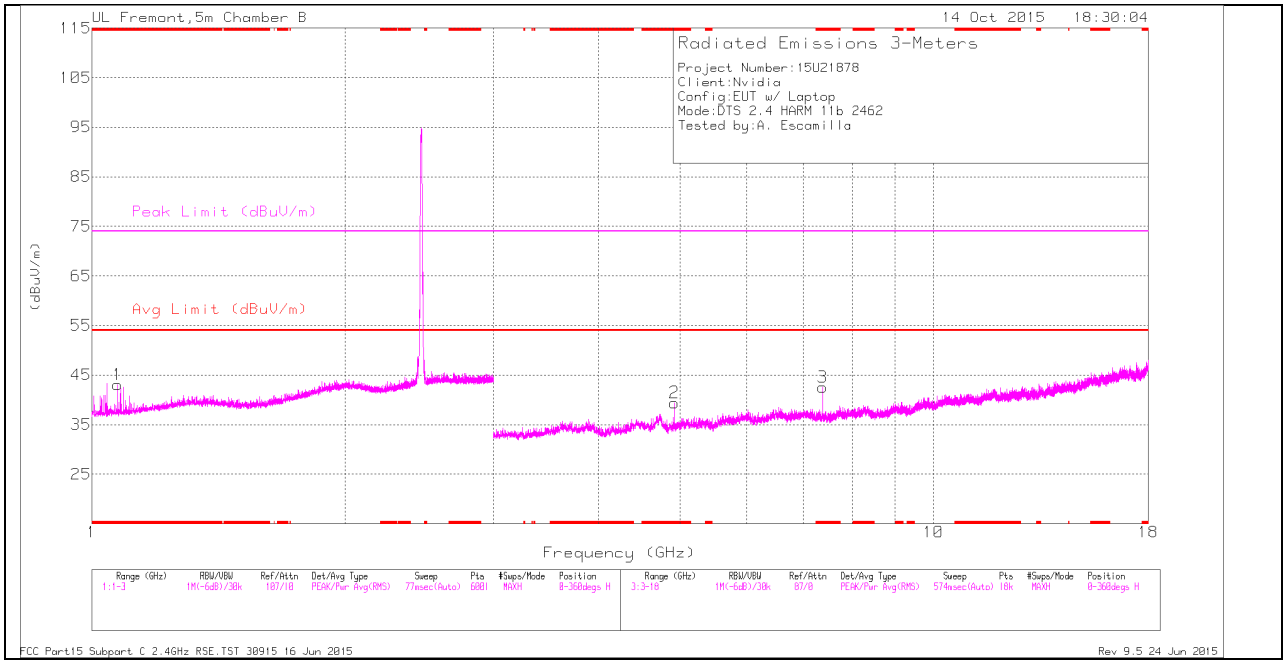
HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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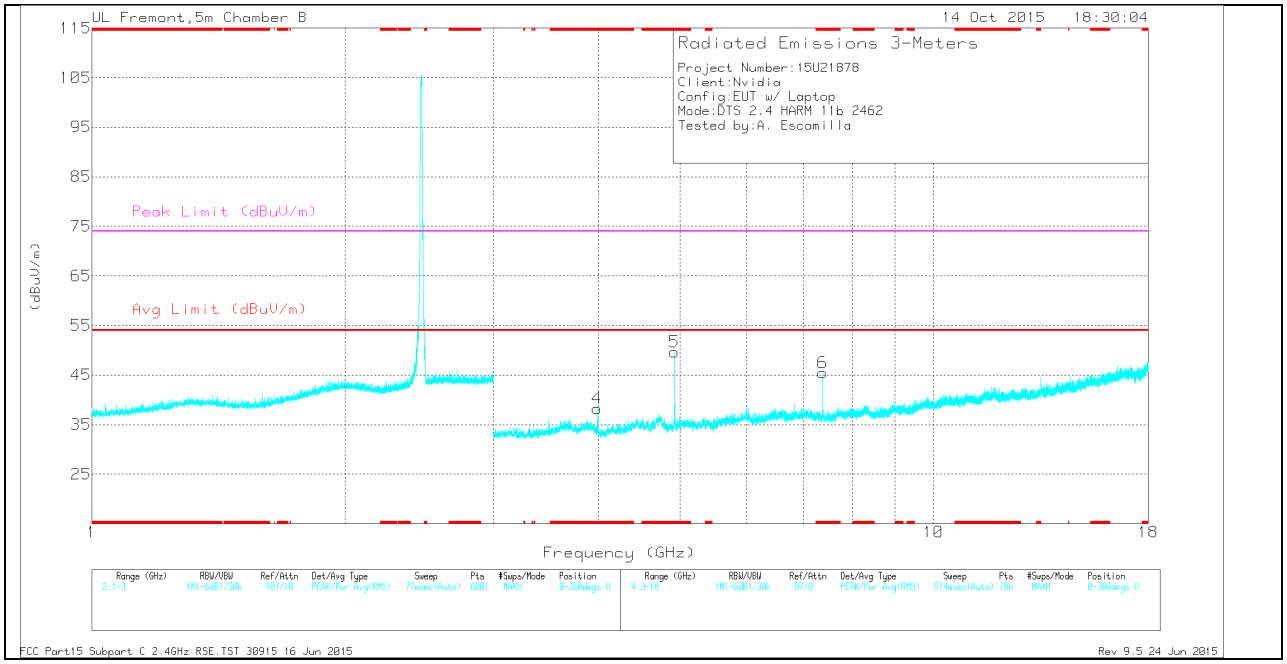
HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.073	41.24	Pk	27.5	-25.7	43.04	-	-	74	-30.96	0-360	200	H
2	* 4.924	37.84	Pk	34.1	-32.5	39.44	-	-	74	-34.56	0-360	200	H
3	* 7.387	36.31	Pk	35.4	-29.1	42.61	-	-	74	-31.39	0-360	200	H
4	* 3.986	37.53	Pk	33.3	-32.6	38.23	-	-	74	-35.77	0-360	101	V
5	* 4.924	48.06	Pk	34.1	-32.5	49.66	-	-	74	-24.34	0-360	200	V
6	* 7.386	39.28	Pk	35.4	-29.2	45.48	-	-	74	-28.52	0-360	200	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.072	53.48	PK2	27.5	-25.7	55.28	-	-	74	-18.72	22	157	H
* 1.075	33.27	MAv1	27.5	-25.7	35.07	54	-18.93	-	-	22	157	H
* 4.924	44.39	PK2	34.1	-32.5	45.99	-	-	74	-28.01	304	218	H
* 4.924	36.86	MAv1	34.1	-32.5	38.46	54	-15.54	-	-	304	218	H
* 7.387	43.52	PK2	35.4	-29.1	49.82	-	-	74	-24.18	3	220	H
* 7.387	35.58	MAv1	35.4	-29.1	41.88	54	-12.12	-	-	3	220	H
* 4.924	51.7	PK2	34.1	-32.5	53.3	-	-	74	-20.7	334	234	V
* 4.924	48.51	MAv1	34.1	-32.5	50.11	54	-3.89	-	-	334	234	V
* 7.387	45.52	PK2	35.4	-29.2	51.72	-	-	74	-22.28	58	188	V
* 7.385	39.06	MAv1	35.4	-29.2	45.26	54	-8.74	-	-	58	188	V
* 3.988	47.25	PK2	33.3	-32.6	47.95	-	-	74	-26.05	3	205	V
* 3.988	31.21	MAv1	33.3	-32.6	31.91	54	-22.09	-	-	3	205	V

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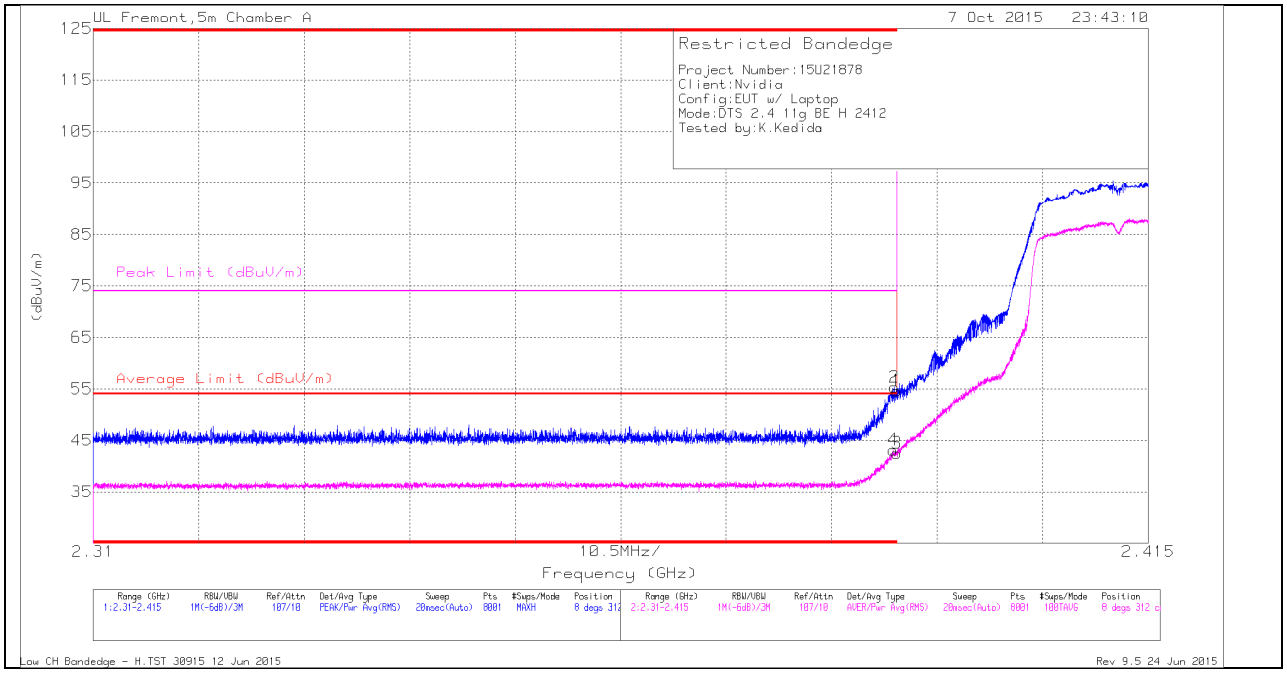
11.2.1. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND Chain 0

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	42.83	Pk	32	-20.2	0	54.63	-	-	74	-19.37	8	312	H
2	* 2.39	43.54	Pk	32	-20.2	0	55.34	-	-	74	-18.66	8	312	H
3	* 2.39	30.4	RMS	32	-20.2	.33	42.53	54	-11.47	-	-	8	312	H
4	* 2.39	30.91	RMS	32	-20.1	.33	43.14	54	-10.86	-	-	8	312	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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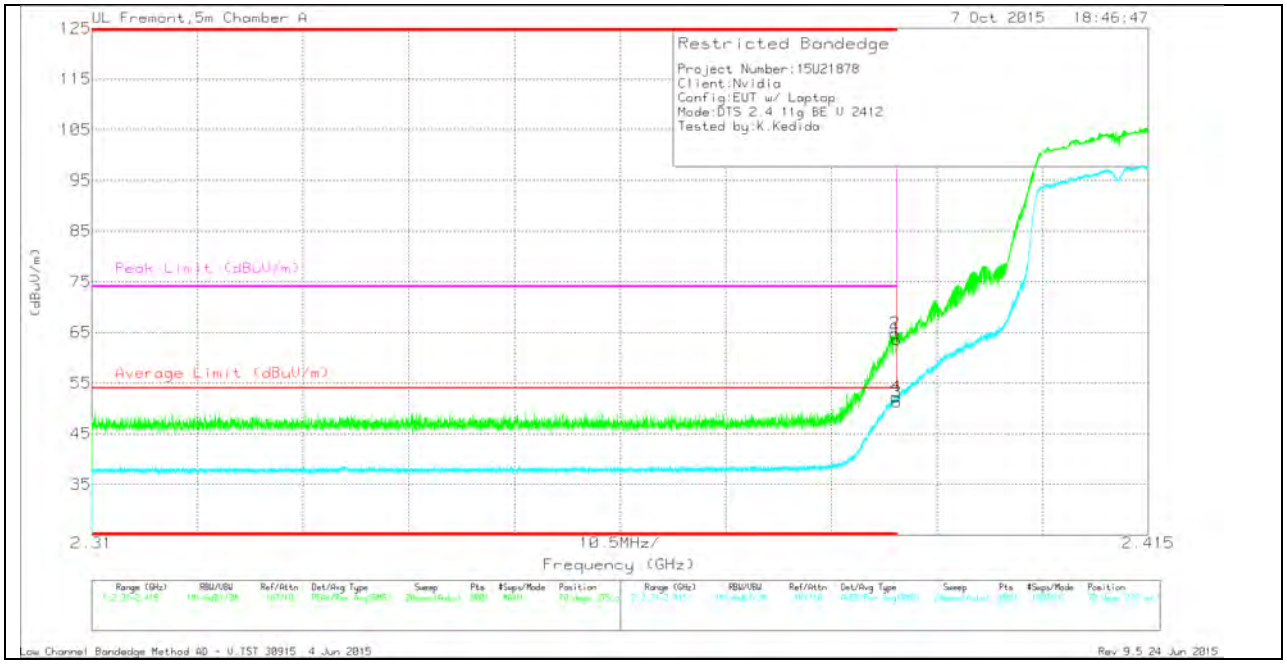
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	56.16	Pk	32	-24.6	0	63.56	-	-	74	-10.44	70	275	V
2	* 2.39	57.44	Pk	32	-24.6	0	64.84	-	-	74	-9.16	70	275	V
3	* 2.39	43.57	RMS	32	-24.6	.33	51.3	54	-2.7	-	-	70	275	V
4	* 2.39	44.56	RMS	32	-24.6	.33	52.29	54	-1.71	-	-	70	275	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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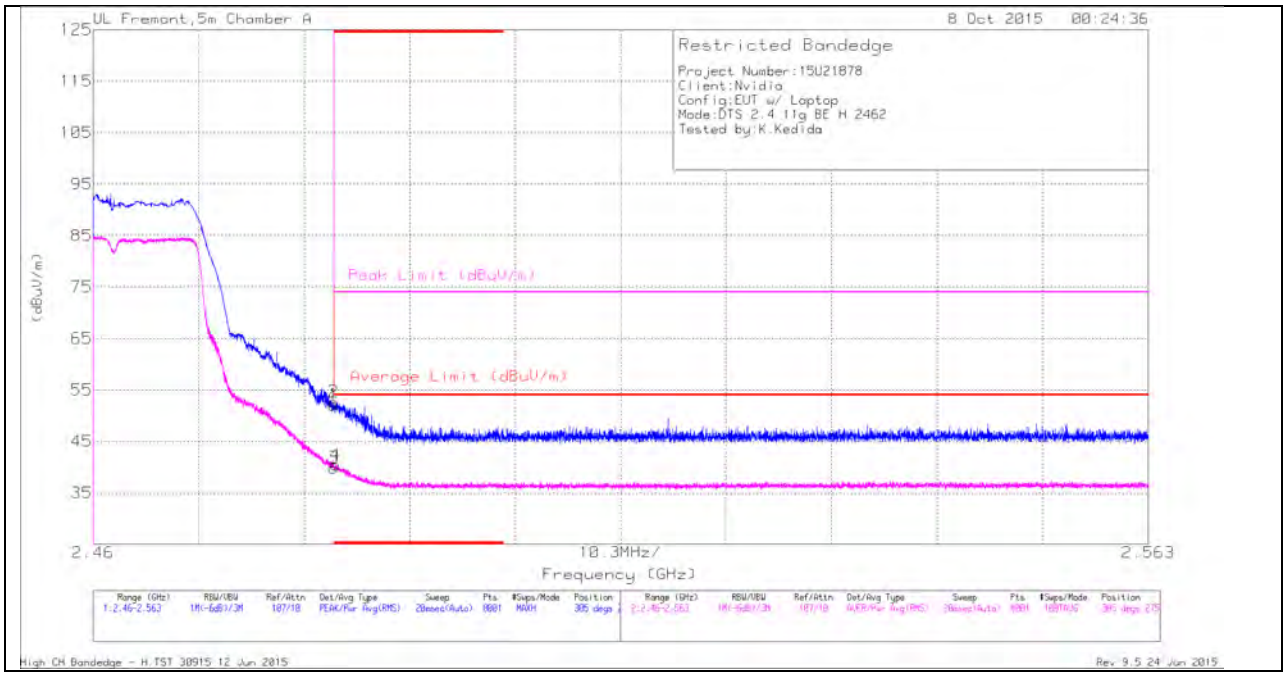
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.31	Pk	32.1	-20.3	0	52.11	-	-	74	-21.89	305	275	H
2	* 2.484	40.87	Pk	32.1	-20.3	0	52.67	-	-	74	-21.33	305	275	H
3	* 2.484	27.73	RMS	32.1	-20.3	.33	39.86	54	-14.14	-	-	305	275	H
4	* 2.484	28.28	RMS	32.1	-20.3	.33	40.41	54	-13.59	-	-	305	275	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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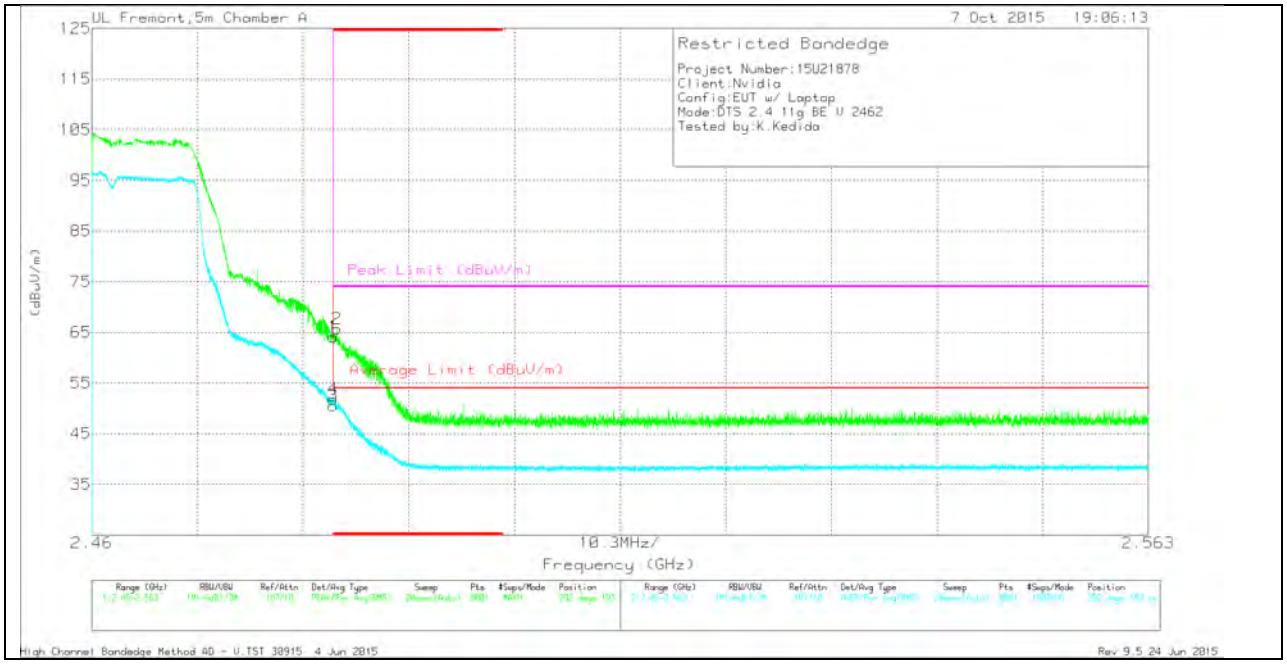
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	56.46	Pk	32.1	-24.5	0	64.06	-	-	74	-9.94	292	193	V
2	* 2.484	58.1	Pk	32.1	-24.5	0	65.7	-	-	74	-8.3	292	193	V
3	* 2.484	42.65	RMS	32.1	-24.5	.33	50.58	54	-3.42	-	-	292	193	V
4	* 2.484	43.91	RMS	32.1	-24.5	.33	51.84	54	-2.16	-	-	292	193	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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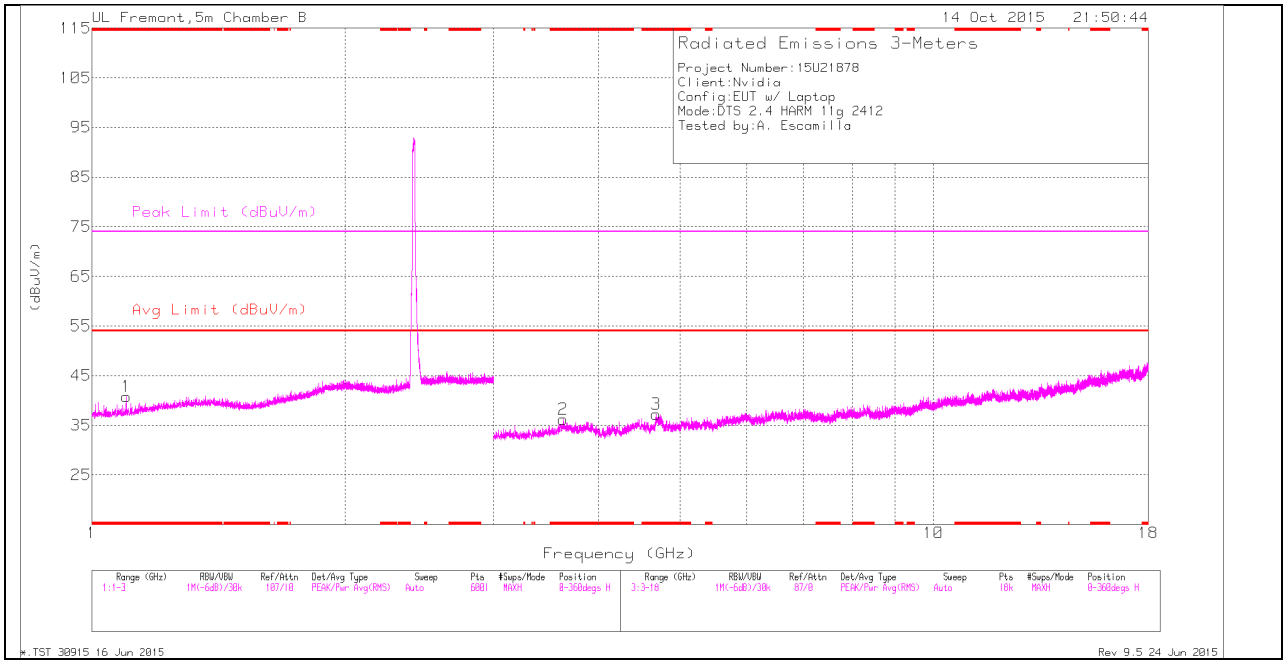
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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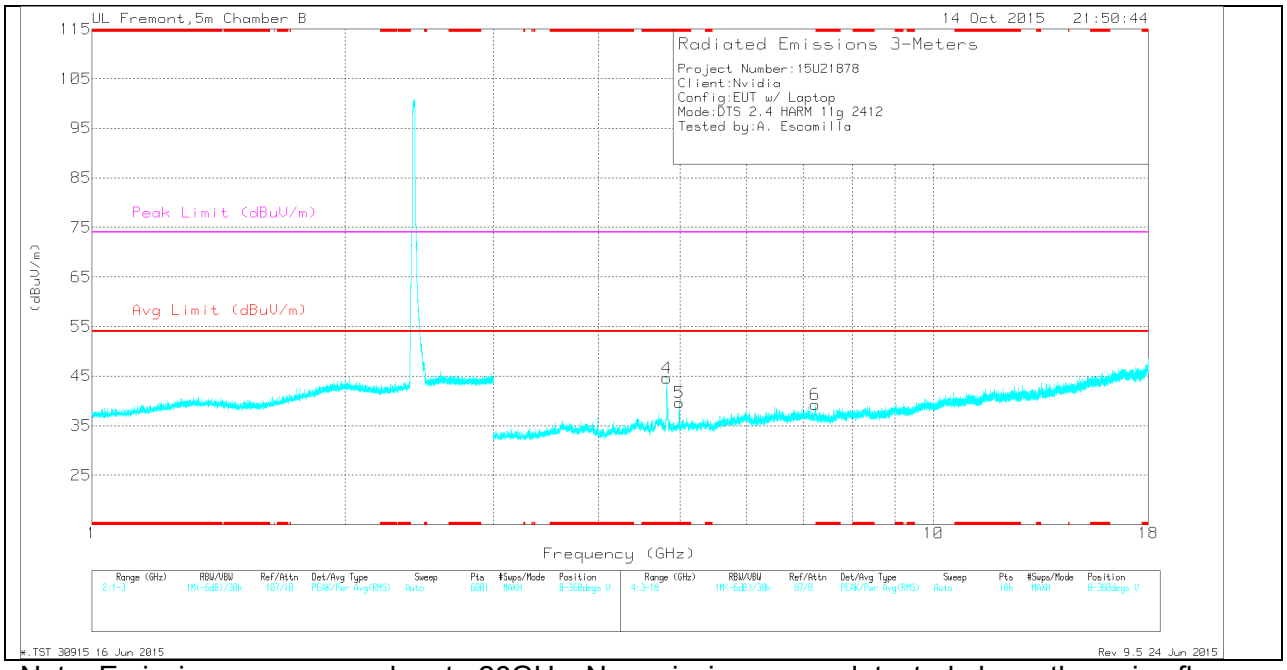
LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.098	38.86	Pk	27.6	-25.7	0	40.76	-	-	74	-33.24	0-360	101	H
2	* 3.632	35.19	Pk	33.8	-32.8	0	36.19	-	-	74	-37.81	0-360	101	H
3	* 4.679	34.95	Pk	34.2	-31.9	0	37.25	-	-	74	-36.75	0-360	199	H
4	* 4.822	41.94	Pk	34.3	-31.6	0	44.64	-	-	74	-29.36	0-360	199	V
5	* 4.989	37.29	Pk	34	-31.6	0	39.69	-	-	74	-34.31	0-360	199	V
6	7.23	33.62	Pk	35.3	-29.7	0	39.22	-	-	-	-	0-360	199	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.097	46.44	PK2	27.6	-25.7	0	48.34	-	-	74	-25.66	325	168	H
* 1.1	32.85	MAv1	27.6	-25.7	.33	35.08	54	-18.92	-	-	325	168	H
* 3.633	42.8	PK2	33.8	-32.8	0	43.8	-	-	74	-30.2	282	161	H
* 3.631	30.89	MAv1	33.8	-32.8	.33	32.22	54	-21.78	-	-	282	161	H
* 4.678	41.91	PK2	34.2	-31.9	0	44.21	-	-	74	-29.79	57	190	H
* 4.677	31.05	MAv1	34.2	-31.9	.33	33.68	54	-20.32	-	-	57	190	H
* 4.822	50.51	PK2	34.3	-31.6	0	53.21	-	-	74	-20.79	128	224	V
* 4.821	38.26	MAv1	34.3	-31.5	.33	41.39	54	-12.61	-	-	128	224	V
* 4.987	47.29	PK2	34	-31.6	0	49.69	-	-	74	-24.31	203	236	V
* 4.988	29.48	MAv1	34	-31.6	.33	32.21	54	-21.79	-	-	203	236	V
7.229	29.04	MAv1	35.3	-29.7	.33	34.97	-	-	-	-	230	215	V
7.23	41.17	PK2	35.3	-29.7	0	46.77	-	-	-	-	230	215	V

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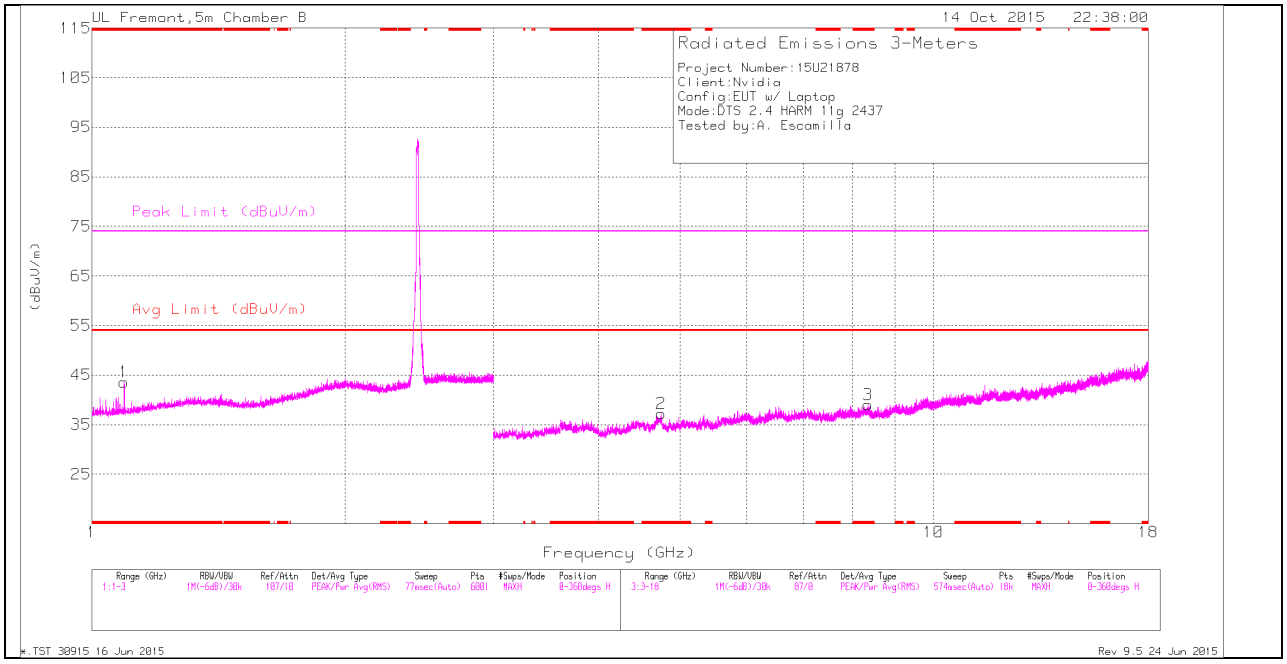
MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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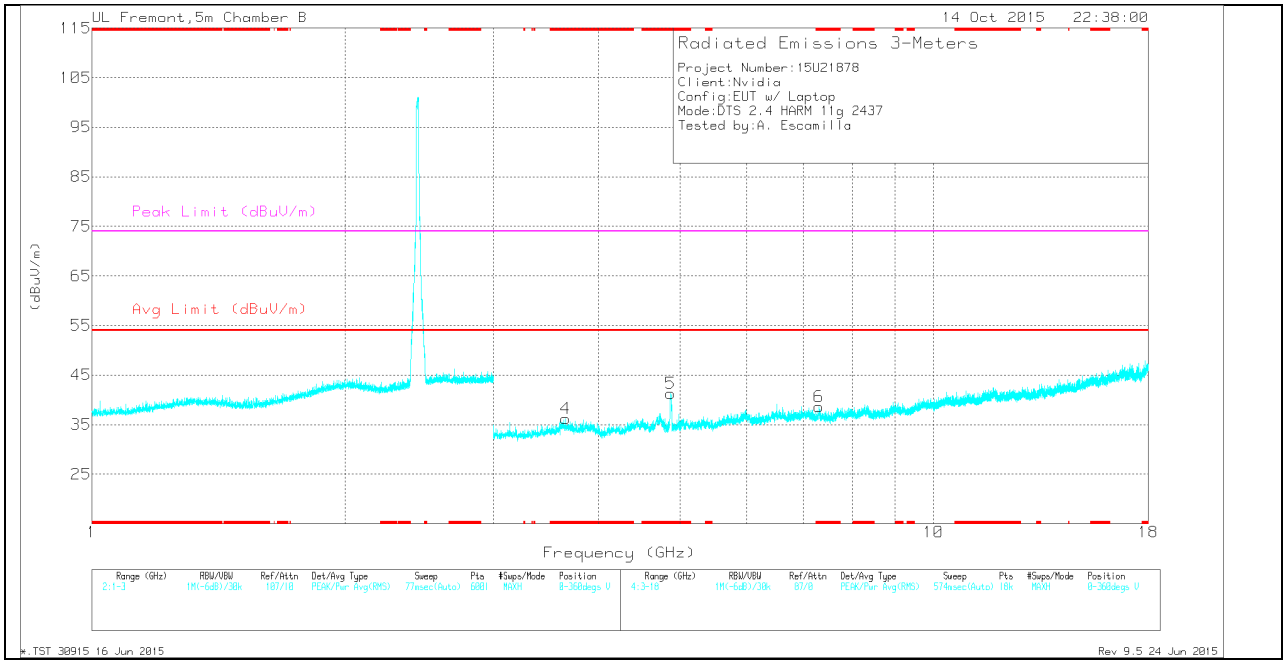
MID CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.091	41.63	Pk	27.6	-25.7	0	43.53	-	-	74	-30.47	0-360	200	H
2	* 4.748	33.66	Pk	34.3	-30.7	0	37.26	-	-	74	-36.74	0-360	200	H
3	* 8.356	30.55	Pk	35.7	-27.3	0	38.95	-	-	74	-35.05	0-360	200	H
4	* 3.655	35.13	Pk	33.7	-32.6	0	36.23	-	-	74	-37.77	0-360	200	V
5	* 4.87	39.44	Pk	34.2	-32.4	0	41.24	-	-	74	-32.76	0-360	200	V
6	* 7.311	33.47	Pk	35.3	-30.2	0	38.57	-	-	74	-35.43	0-360	200	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.09	46.16	PK2	27.6	-25.7	0	48.06	-	-	74	-25.94	65	201	H
* 1.092	33.03	MAv1	27.6	-25.7	.33	35.26	54	-18.74	-	-	65	201	H
* 4.75	41.43	PK2	34.3	-30.7	0	45.03	-	-	74	-28.97	119	182	H
* 4.747	30.58	MAv1	34.3	-30.7	.33	34.51	54	-19.49	-	-	119	182	H
* 8.355	38.36	PK2	35.7	-27.2	0	46.86	-	-	74	-27.14	119	218	H
* 8.356	27.26	MAv1	35.7	-27.3	.33	35.99	54	-18.01	-	-	119	218	H
* 4.87	48.48	PK2	34.2	-32.4	0	50.28	-	-	74	-23.72	120	227	V
* 4.87	37.32	MAv1	34.2	-32.4	.33	39.45	54	-14.55	-	-	120	227	V
* 7.31	42.31	PK2	35.3	-30.2	0	47.41	-	-	74	-26.59	93	212	V
* 7.312	30.96	MAv1	35.3	-30.2	.33	36.39	54	-17.61	-	-	93	212	V
* 3.655	42.18	PK2	33.7	-32.6	0	43.28	-	-	74	-30.72	43	185	V
* 3.656	30.68	MAv1	33.7	-32.6	.33	32.11	54	-21.89	-	-	43	185	V

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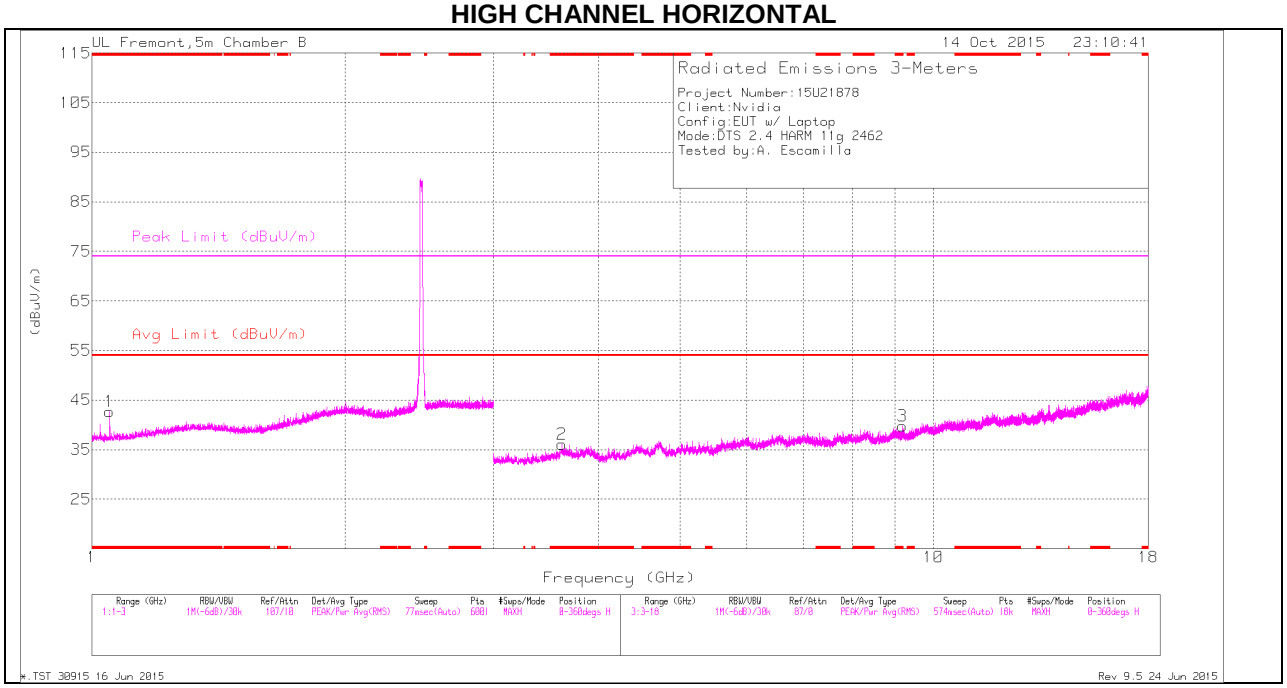
HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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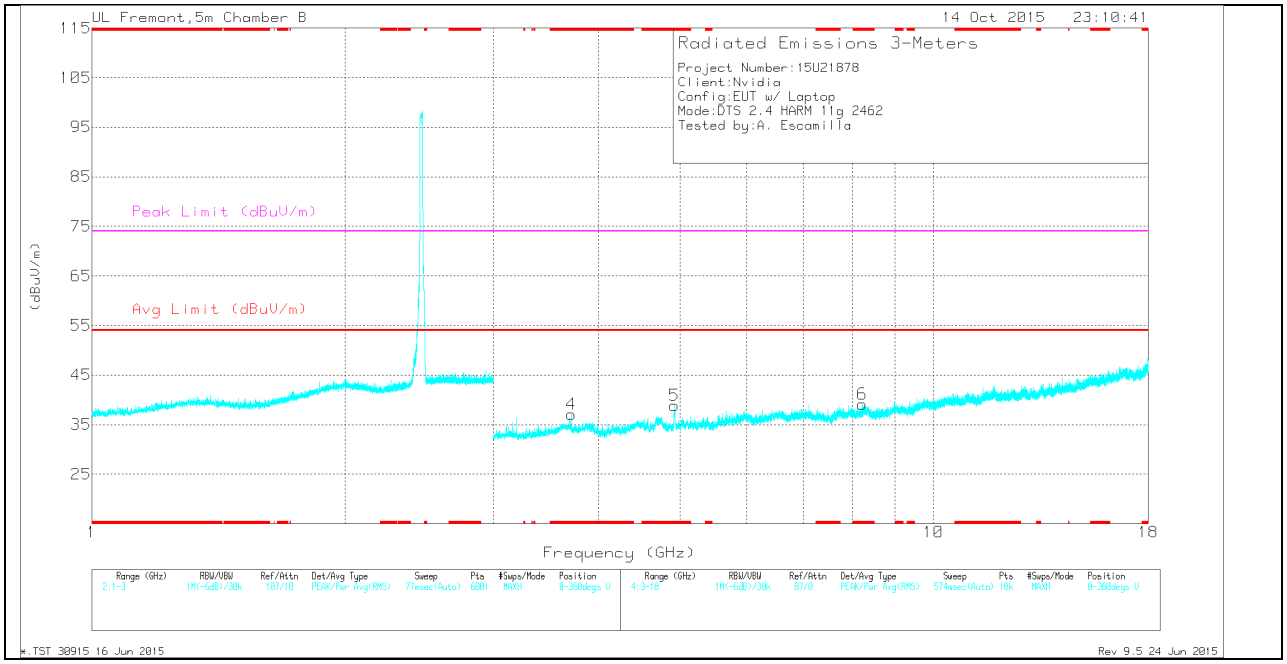
HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.05	41.03	Pk	27.5	-25.8	0	42.73	-	-	74	-31.27	0-360	199	H
2	* 3.618	35.13	Pk	33.8	-32.9	0	36.03	-	-	74	-37.97	0-360	199	H
3	* 9.193	30.22	Pk	36.1	-26.6	0	39.72	-	-	74	-34.28	0-360	199	H
4	* 3.713	36.22	Pk	33.6	-32.7	0	37.12	-	-	74	-36.88	0-360	101	V
5	* 4.925	37.28	Pk	34.1	-32.5	0	38.88	-	-	74	-35.12	0-360	199	V
6	* 8.236	31.97	Pk	35.7	-28.5	0	39.17	-	-	74	-34.83	0-360	199	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.049	52.85	PK2	27.5	-25.8	0	54.55	-	-	74	-19.45	36	139	H
* 1.052	32.96	MAv1	27.5	-25.8	.33	34.99	54	-19.01	-	-	36	139	H
* 3.617	42.21	PK2	33.8	-32.9	0	43.11	-	-	74	-30.89	94	176	H
* 3.618	30.87	MAv1	33.8	-32.9	.33	32.1	54	-21.9	-	-	94	176	H
* 9.194	37.19	PK2	36.1	-26.6	0	46.69	-	-	74	-27.31	177	215	H
* 9.192	26.11	MAv1	36.1	-26.6	.33	35.94	54	-18.06	-	-	177	215	H
* 3.715	42.17	PK2	33.6	-32.7	0	43.07	-	-	74	-30.93	338	192	V
* 3.713	31.01	MAv1	33.6	-32.7	.33	32.24	54	-21.76	-	-	338	192	V
* 4.923	46.26	PK2	34.1	-32.5	0	47.86	-	-	74	-26.14	115	208	V
* 4.924	33.87	MAv1	34.1	-32.5	.33	35.8	54	-18.2	-	-	115	208	V
* 8.237	38.84	PK2	35.7	-28.5	0	46.04	-	-	74	-27.96	102	190	V
* 8.237	28.14	MAv1	35.7	-28.5	.33	35.67	54	-18.33	-	-	102	190	V

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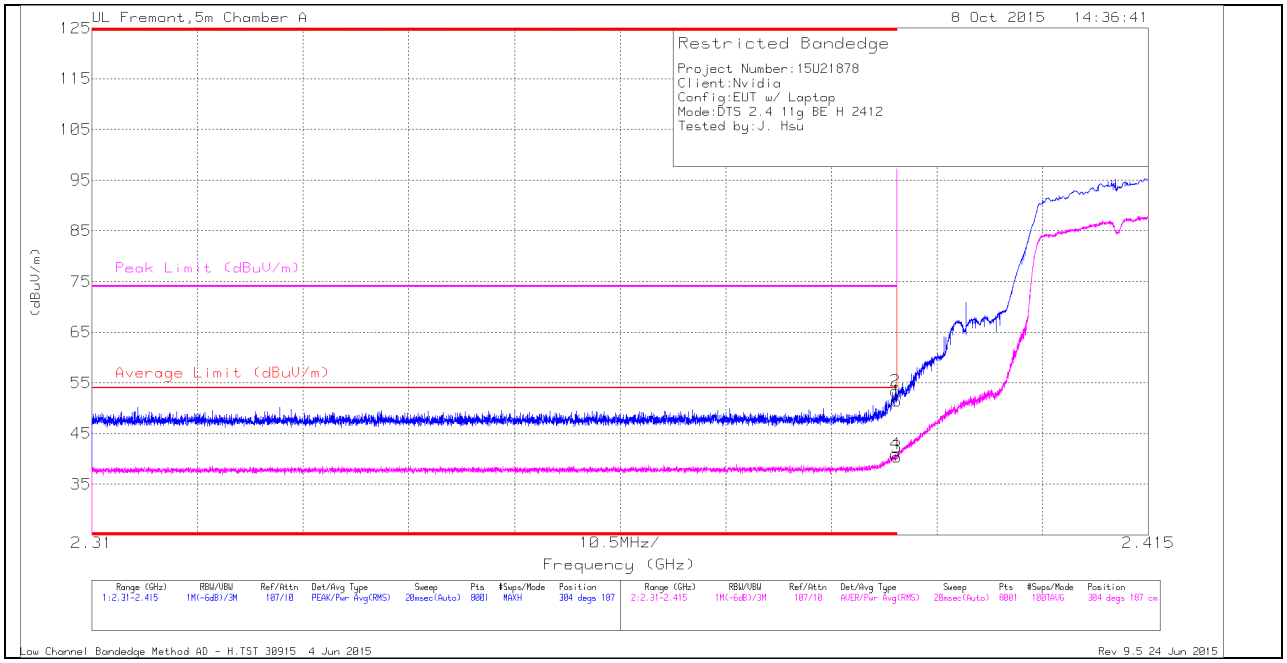
11.2.1. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND Chain 1

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	43.97	Pk	32	-24.6	0	51.37	-	-	74	-22.63	304	187	H
2	* 2.39	46.02	Pk	32	-24.6	0	53.42	-	-	74	-20.58	304	187	H
3	* 2.39	32.61	RMS	32	-24.6	.33	40.34	54	-13.66	-	-	304	187	H
4	* 2.39	33.21	RMS	32	-24.6	.33	40.94	54	-13.06	-	-	304	187	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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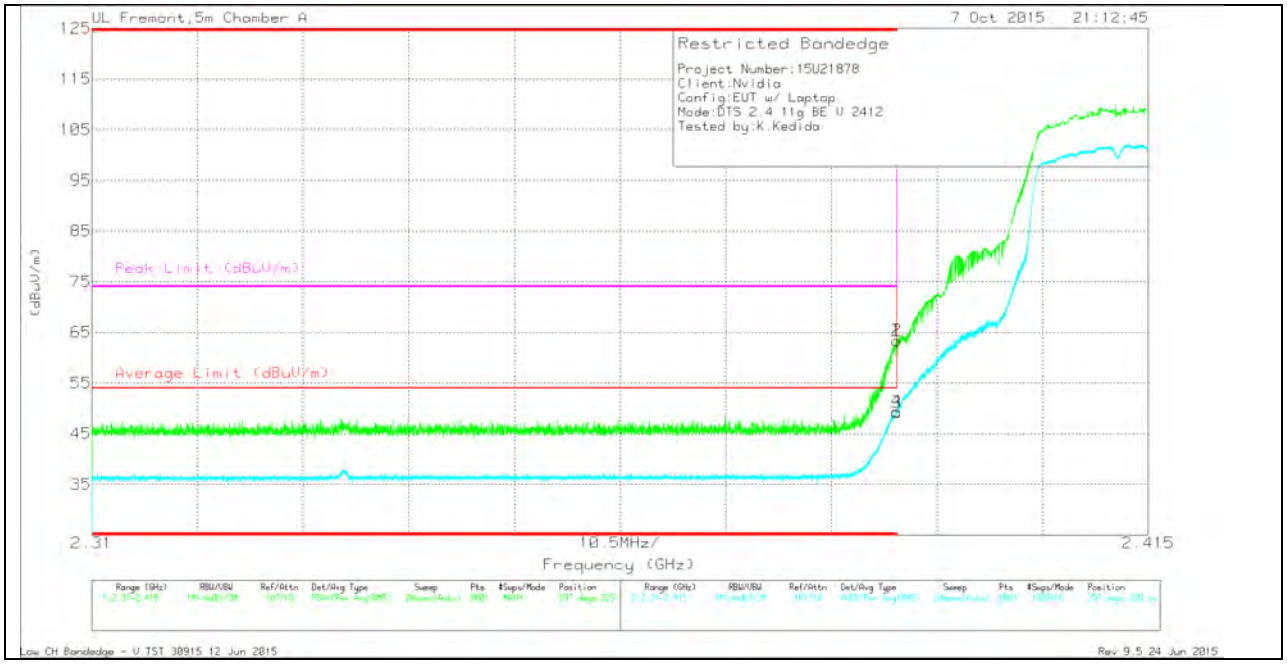
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	51.55	Pk	32	-20.2	0	63.35	-	-	74	-10.65	297	229	V
2	* 2.39	51.59	Pk	32	-20.2	0	63.39	-	-	74	-10.61	297	229	V
3	* 2.39	37	RMS	32	-20.2	.33	49.13	54	-4.87	-	-	297	229	V
4	* 2.39	37.32	RMS	32	-20.2	.33	49.45	54	-4.55	-	-	297	229	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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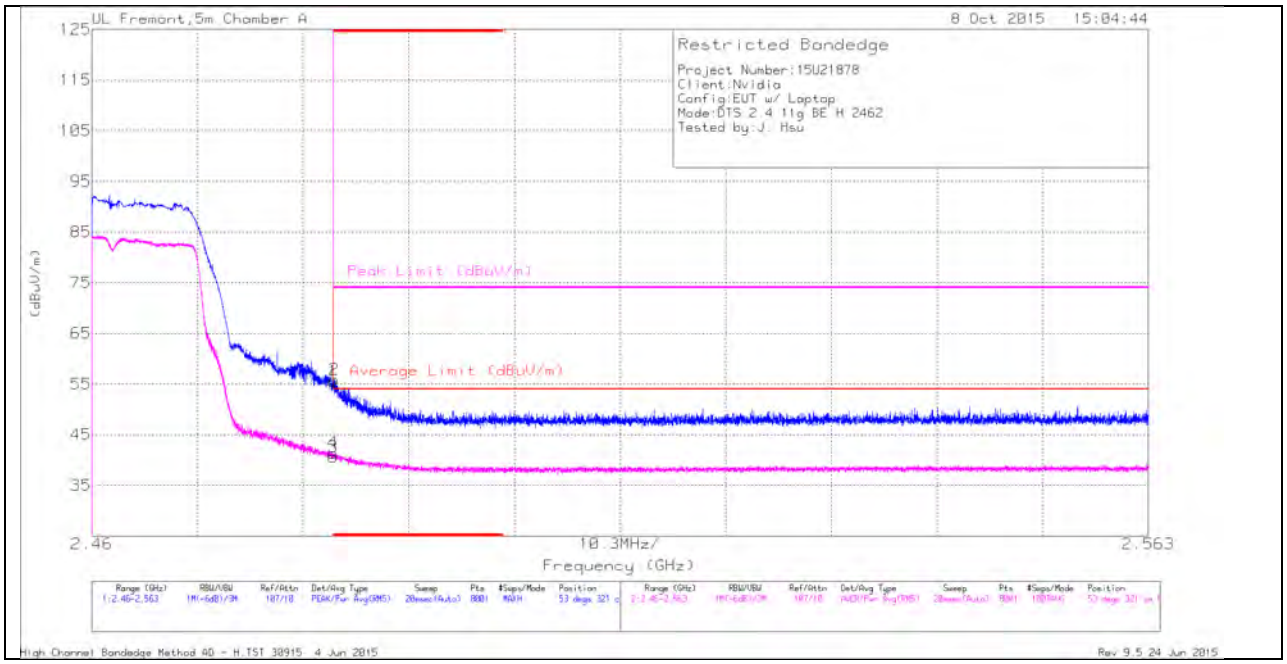
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	47.89	Pk	32.1	-24.5	0	55.49	-	-	74	-18.51	53	321	H
2	* 2.484	48.29	Pk	32.1	-24.5	0	55.89	-	-	74	-18.11	53	321	H
3	* 2.484	32.73	RMS	32.1	-24.5	.33	40.66	54	-13.34	-	-	53	321	H
4	* 2.484	33.48	RMS	32.1	-24.5	.33	41.41	54	-12.59	-	-	53	321	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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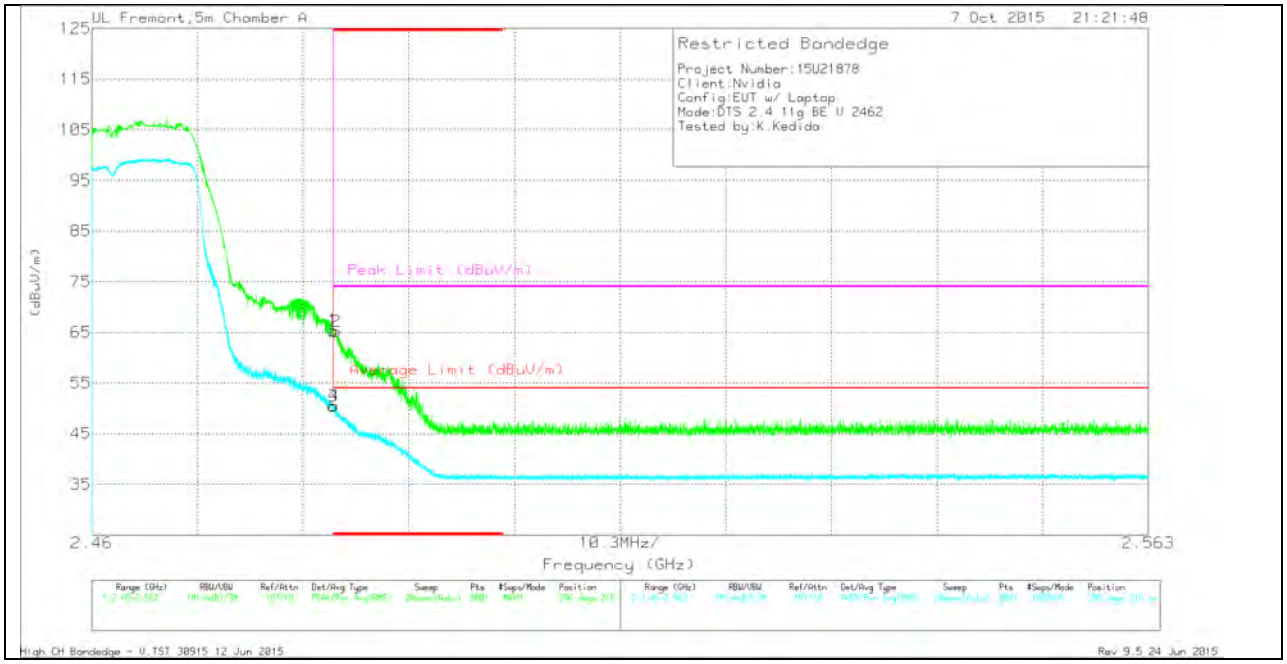
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	53.58	Pk	32.1	-20.3	0	65.38	-	-	74	-8.62	296	216	V
2	* 2.484	53.44	Pk	32.1	-20.3	0	65.24	-	-	74	-8.76	296	216	V
3	* 2.484	38.24	RMS	32.1	-20.3	.33	50.37	54	-3.63	-	-	296	216	V
4	* 2.484	38.45	RMS	32.1	-20.3	.33	50.58	54	-3.42	-	-	296	216	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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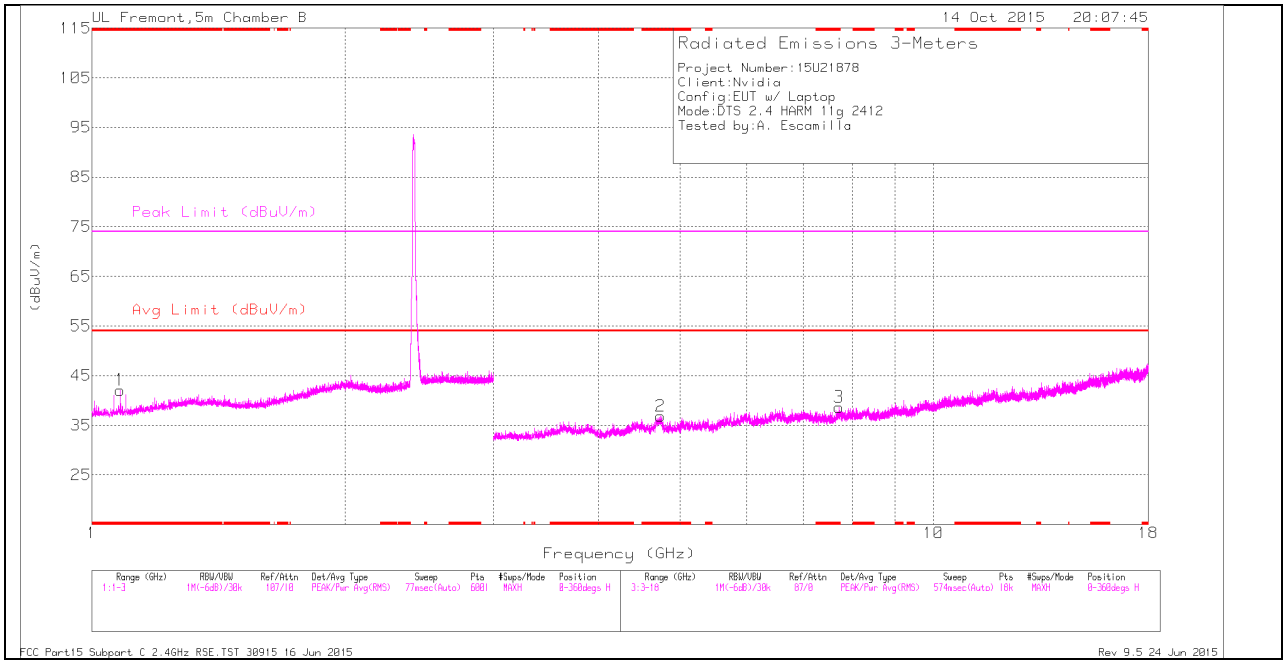
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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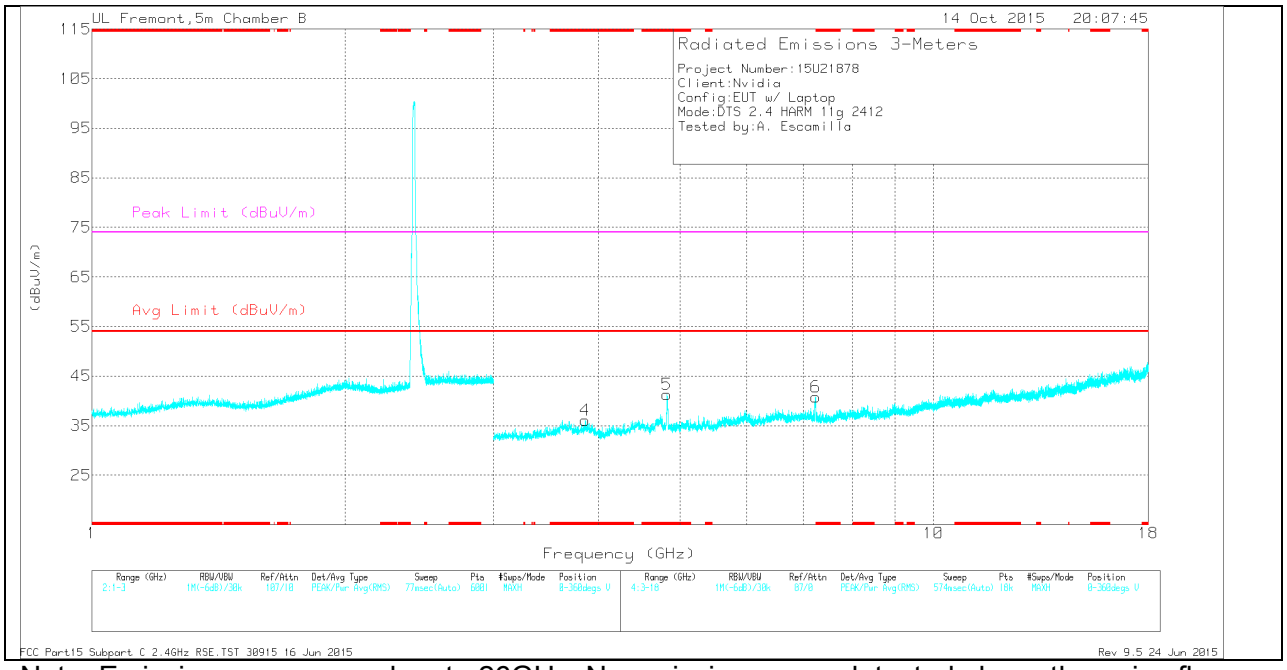
LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.08	40.21	Pk	27.6	-25.7	0	42.11	-	-	74	-31.89	0-360	199	H
2	* 4.742	33.21	Pk	34.3	-30.7	0	36.81	-	-	74	-37.19	0-360	199	H
3	* 7.727	31.38	Pk	35.5	-28.2	0	38.68	-	-	74	-35.32	0-360	101	H
4	* 3.856	34.6	Pk	33.4	-31.9	0	36.1	-	-	74	-37.9	0-360	101	V
5	* 4.823	38.6	Pk	34.3	-31.6	0	41.3	-	-	74	-32.7	0-360	101	V
6	7.242	35.4	Pk	35.3	-29.9	0	40.8	-	-	-	-	0-360	199	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.082	48.03	PK2	27.6	-25.7	0	49.93	-	-	74	-24.07	259	238	H
* 1.082	32.87	MAv1	27.6	-25.7	.33	35.1	54	-18.9	-	-	259	238	H
* 4.742	41.24	PK2	34.3	-30.7	0	44.84	-	-	74	-29.16	348	266	H
* 4.744	30.89	MAv1	34.3	-30.7	.33	34.82	54	-19.18	-	-	348	266	H
* 7.727	39.62	PK2	35.5	-28.2	0	46.92	-	-	74	-27.08	181	176	H
* 7.729	27.73	MAv1	35.5	-28.2	.33	35.36	54	-18.64	-	-	181	176	H
* 4.823	48.65	PK2	34.3	-31.6	0	51.35	-	-	74	-22.65	321	264	V
* 4.825	36.81	MAv1	34.3	-31.6	.33	39.84	54	-14.16	-	-	321	264	V
* 3.856	41.65	PK2	33.4	-31.9	0	43.15	-	-	74	-30.85	57	191	V
* 3.856	30.84	MAv1	33.4	-32	.33	32.57	54	-21.43	-	-	57	191	V
7.244	39.45	PK2	35.3	-30	0	44.75	-	-	-	-	17	169	V
7.244	28.65	MAv1	35.3	-30	.33	34.28	-	-	-	-	17	169	V

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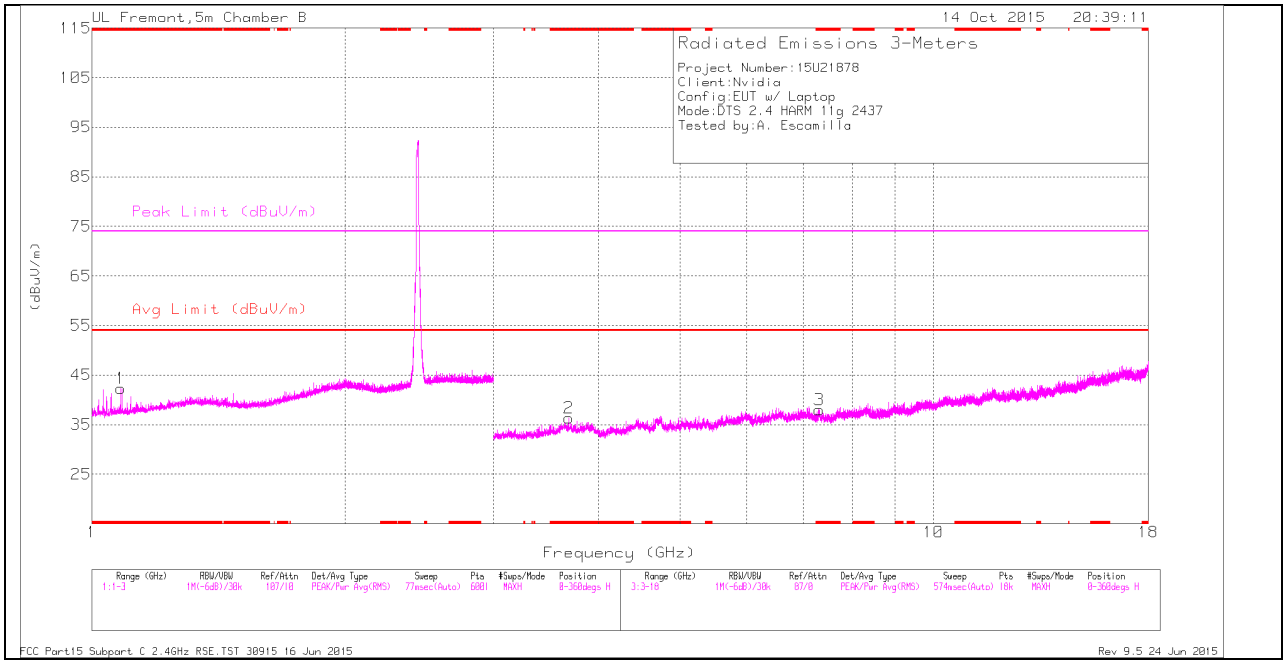
MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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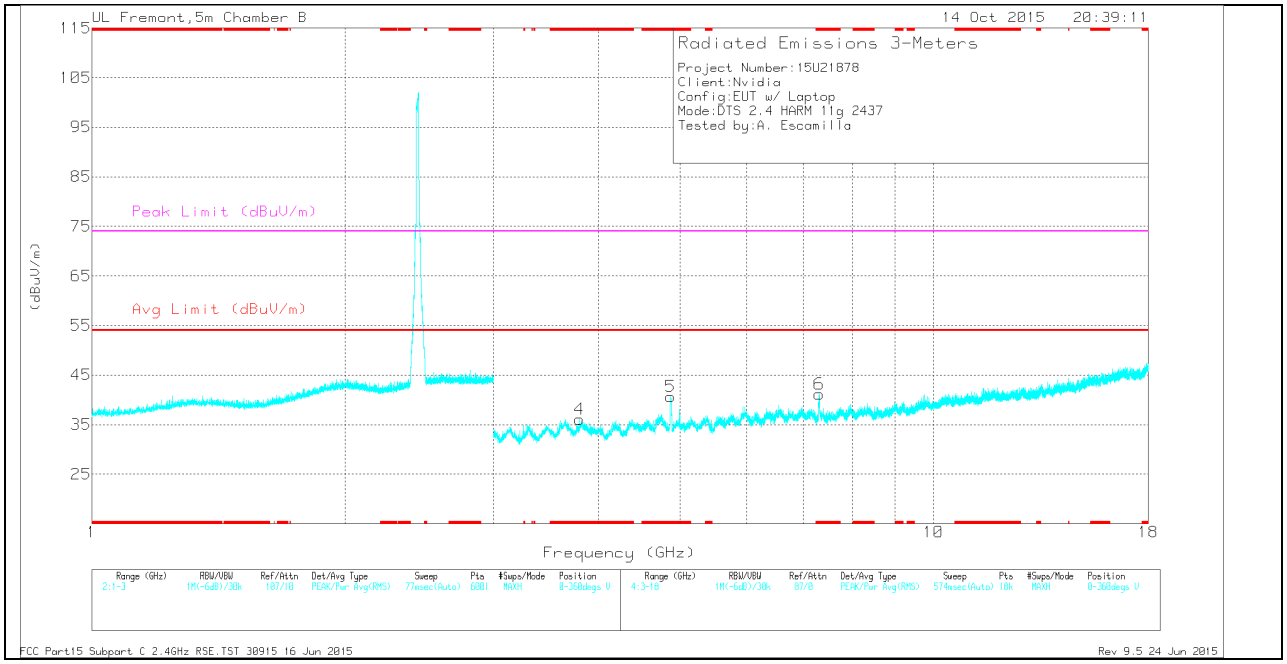
MID CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.082	40.39	Pk	27.6	-25.7	0	42.29	-	-	74	-31.71	0-360	101	H
2	* 3.685	35.59	Pk	33.6	-32.8	0	36.39	-	-	74	-37.61	0-360	101	H
3	* 7.316	32.77	Pk	35.3	-30.1	0	37.97	-	-	74	-36.03	0-360	200	H
4	* 3.797	35.48	Pk	33.3	-32.7	0	36.08	-	-	74	-37.92	0-360	200	V
5	* 4.872	38.88	Pk	34.2	-32.4	0	40.68	-	-	74	-33.32	0-360	200	V
6	* 7.316	35.99	Pk	35.3	-30.1	0	41.19	-	-	74	-32.81	0-360	200	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.082	44.73	PK2	27.6	-25.7	0	46.63	-	-	74	-27.37	81	162	H
* 1.082	32.8	MAv1	27.6	-25.7	.33	35.03	54	-18.97	-	-	81	162	H
* 3.685	42.16	PK2	33.6	-32.8	0	42.96	-	-	74	-31.04	113	207	H
* 3.686	31.18	MAv1	33.6	-32.8	.33	32.31	54	-21.69	-	-	113	207	H
* 7.316	41.92	PK2	35.3	-30.1	0	47.12	-	-	74	-26.88	54	193	H
* 7.315	30.22	MAv1	35.3	-30.1	.33	35.75	54	-18.25	-	-	54	193	H
* 3.798	42.79	PK2	33.3	-32.7	0	43.39	-	-	74	-30.61	129	244	V
* 3.799	30.94	MAv1	33.3	-32.7	.33	31.87	54	-22.13	-	-	129	244	V
* 4.873	49.19	PK2	34.2	-32.4	0	50.99	-	-	74	-23.01	336	247	V
* 4.872	36.88	MAv1	34.2	-32.4	.33	39.01	54	-14.99	-	-	336	247	V
* 7.315	47.31	PK2	35.3	-30.1	0	52.51	-	-	74	-21.49	68	198	V
* 7.314	33.22	MAv1	35.3	-30.1	.33	38.75	54	-15.25	-	-	68	198	V

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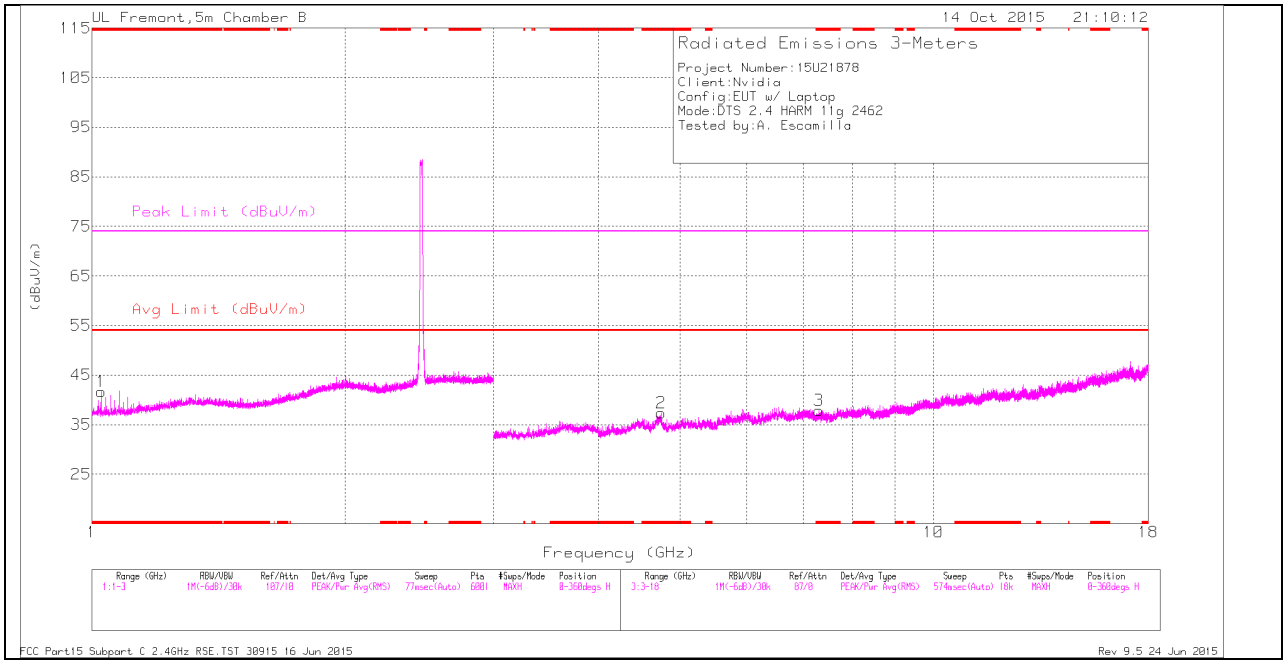
HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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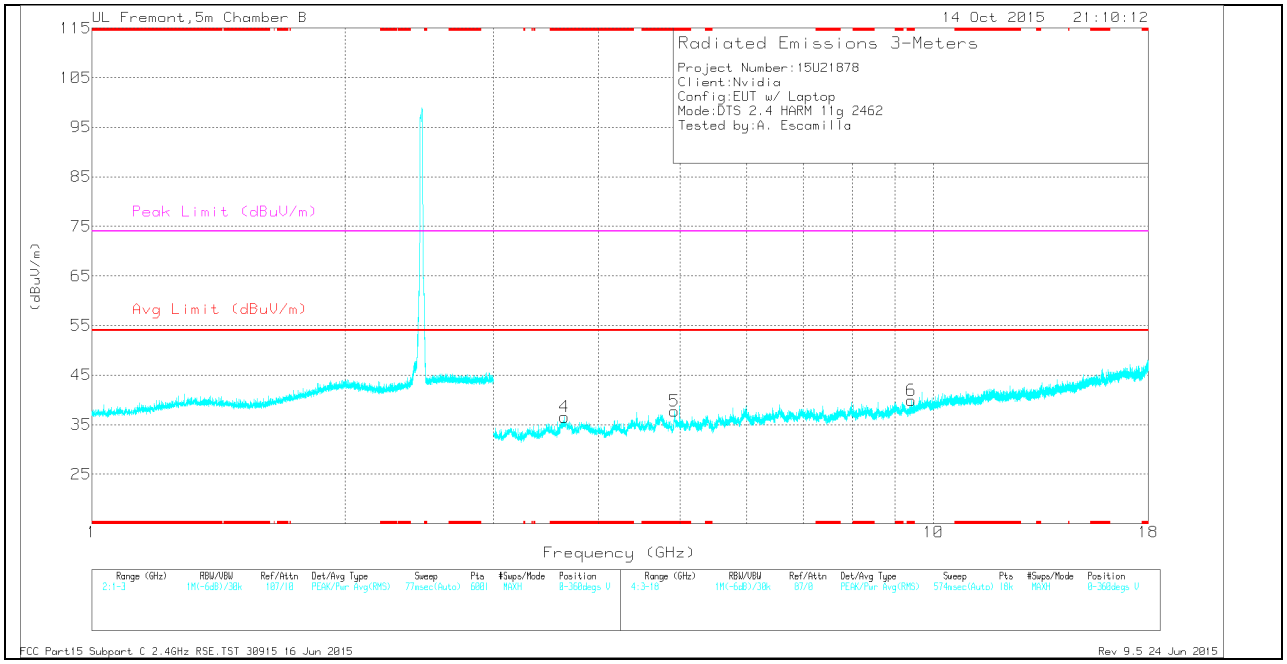
HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.025	40.07	Pk	27.4	-25.8	0	41.67	-	-	74	-32.33	0-360	199	H
2	* 4.744	33.8	Pk	34.3	-30.7	0	37.4	-	-	74	-36.6	0-360	101	H
3	* 7.314	32.66	Pk	35.3	-30.1	0	37.86	-	-	74	-36.14	0-360	101	H
4	* 3.642	35.53	Pk	33.7	-32.7	0	36.53	-	-	74	-37.47	0-360	101	V
5	* 4.922	36.18	Pk	34.1	-32.5	0	37.78	-	-	74	-36.22	0-360	200	V
6	* 9.41	30.47	Pk	36.4	-27	0	39.87	-	-	74	-34.13	0-360	200	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.024	52	PK2	27.4	-25.8	0	53.6	-	-	74	-20.4	30	156	H
* 1.027	32.97	MAv1	27.4	-25.8	.33	34.9	54	-19.1	-	-	30	156	H
* 4.743	41.93	PK2	34.3	-30.7	0	45.53	-	-	74	-28.47	83	200	H
* 4.744	30.61	MAv1	34.3	-30.7	.33	34.54	54	-19.46	-	-	83	200	H
* 7.313	40.47	PK2	35.3	-30.2	0	45.57	-	-	74	-28.43	64	186	H
* 7.314	29.21	MAv1	35.3	-30.2	.33	34.64	54	-19.36	-	-	64	186	H
* 3.642	41.69	PK2	33.7	-32.7	0	42.69	-	-	74	-31.31	21	193	V
* 3.642	30.8	MAv1	33.7	-32.7	.33	32.13	54	-21.87	-	-	21	193	V
* 4.922	42	PK2	34.1	-32.5	0	43.6	-	-	74	-30.4	107	213	V
* 4.921	30.89	MAv1	34.1	-32.6	.33	32.72	54	-21.28	-	-	107	213	V
* 9.409	37.73	PK2	36.4	-27	0	47.13	-	-	74	-26.87	57	190	V
* 9.408	26.09	MAv1	36.4	-27	.33	35.82	54	-18.18	-	-	57	190	V

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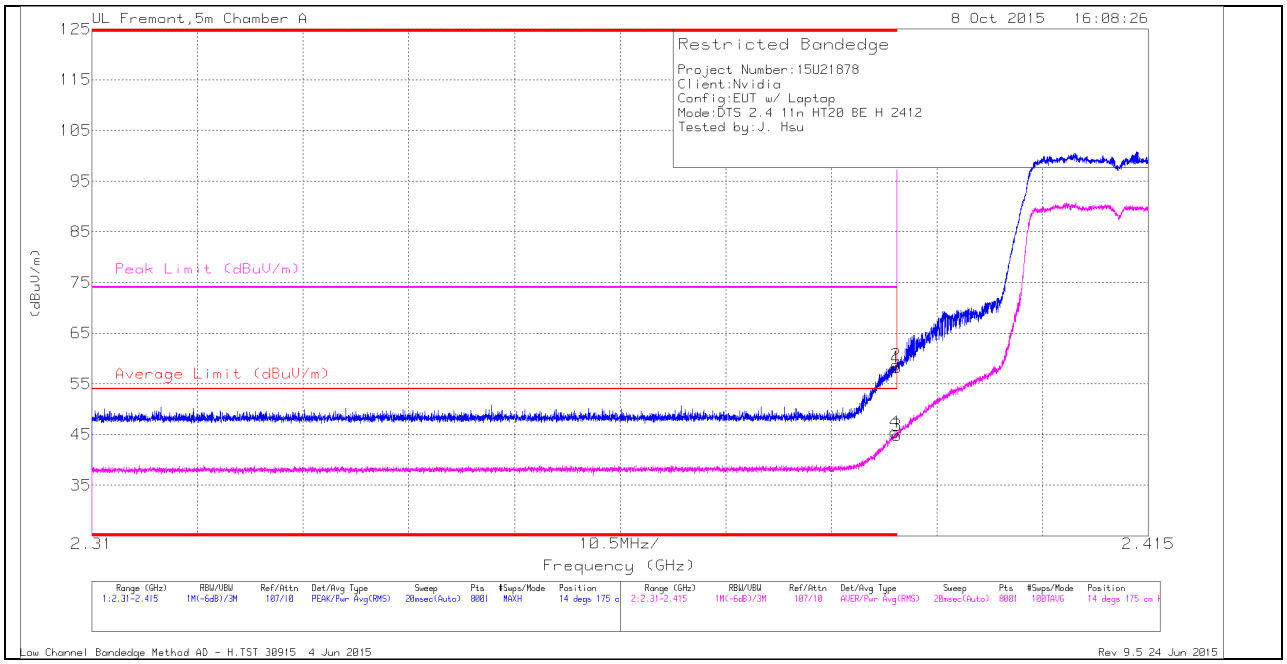
11.2.1. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	50.84	Pk	32	-24.6	0	58.24	-	-	74	-15.76	14	175	H
2	* 2.39	51.39	Pk	32	-24.6	0	58.79	-	-	74	-15.21	14	175	H
3	* 2.39	36.79	RMS	32	-24.6	.59	44.78	54	-9.22	-	-	14	175	H
4	* 2.39	37.46	RMS	32	-24.6	.59	45.45	54	-8.55	-	-	14	175	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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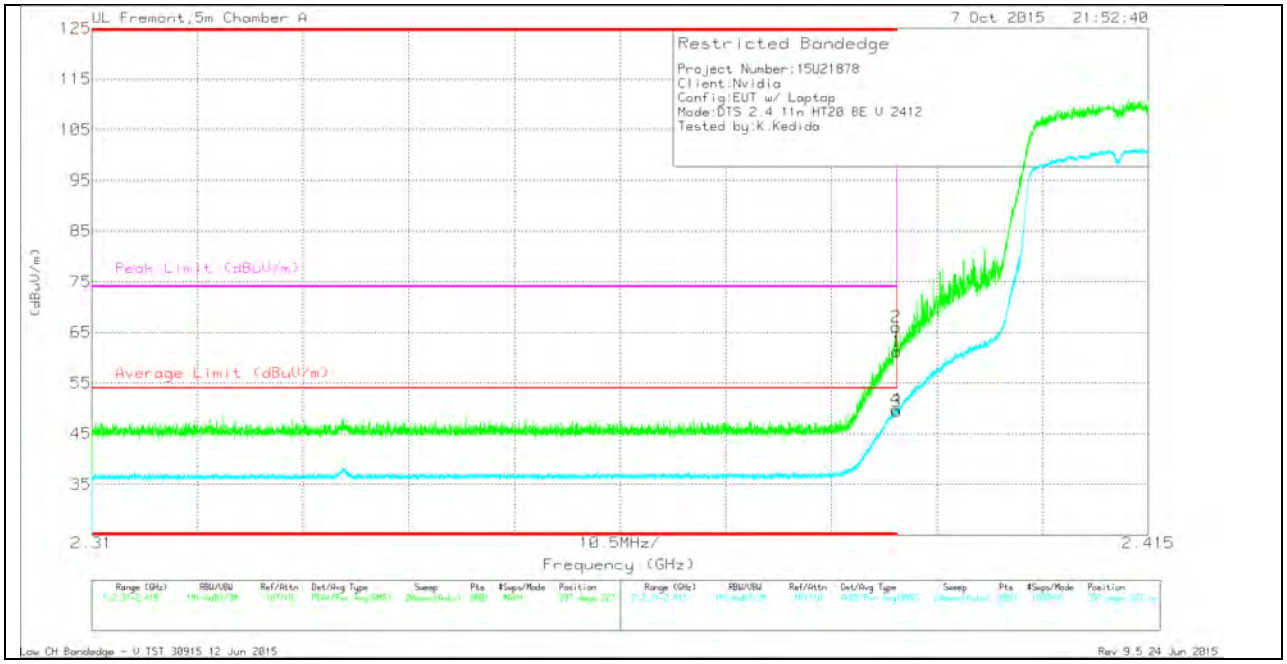
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	49.47	Pk	32	-20.2	0	61.27	-	-	74	-12.73	297	227	V
2	* 2.39	54.3	Pk	32	-20.2	0	66.1	-	-	74	-7.9	297	227	V
3	* 2.39	37.03	RMS	32	-20.2	.59	49.42	54	-4.58	-	-	297	227	V
4	* 2.39	37.46	RMS	32	-20.2	.59	49.85	54	-4.15	-	-	297	227	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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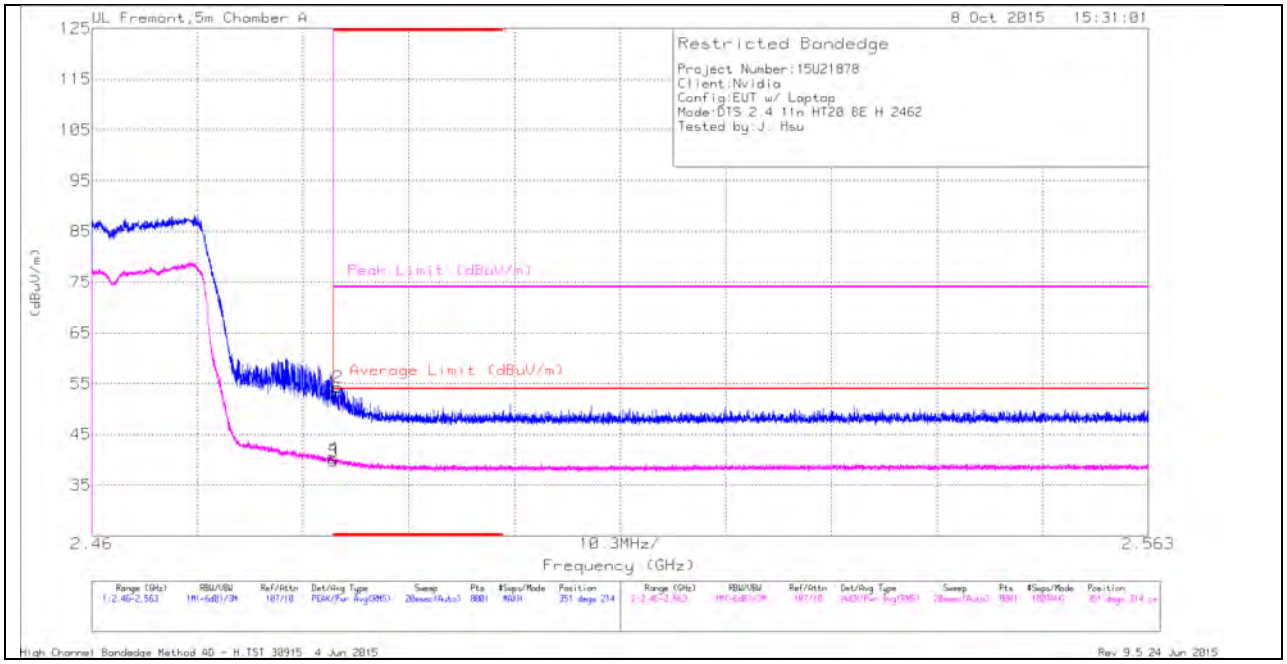
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	45.72	Pk	32.1	-24.5	0	53.32	-	-	74	-20.68	351	214	H
2	* 2.484	46.7	Pk	32.1	-24.5	0	54.3	-	-	74	-19.7	351	214	H
3	* 2.484	31.5	RMS	32.1	-24.5	.59	39.69	54	-14.31	-	-	351	214	H
4	* 2.484	32.04	RMS	32.1	-24.5	.59	40.23	54	-13.77	-	-	351	214	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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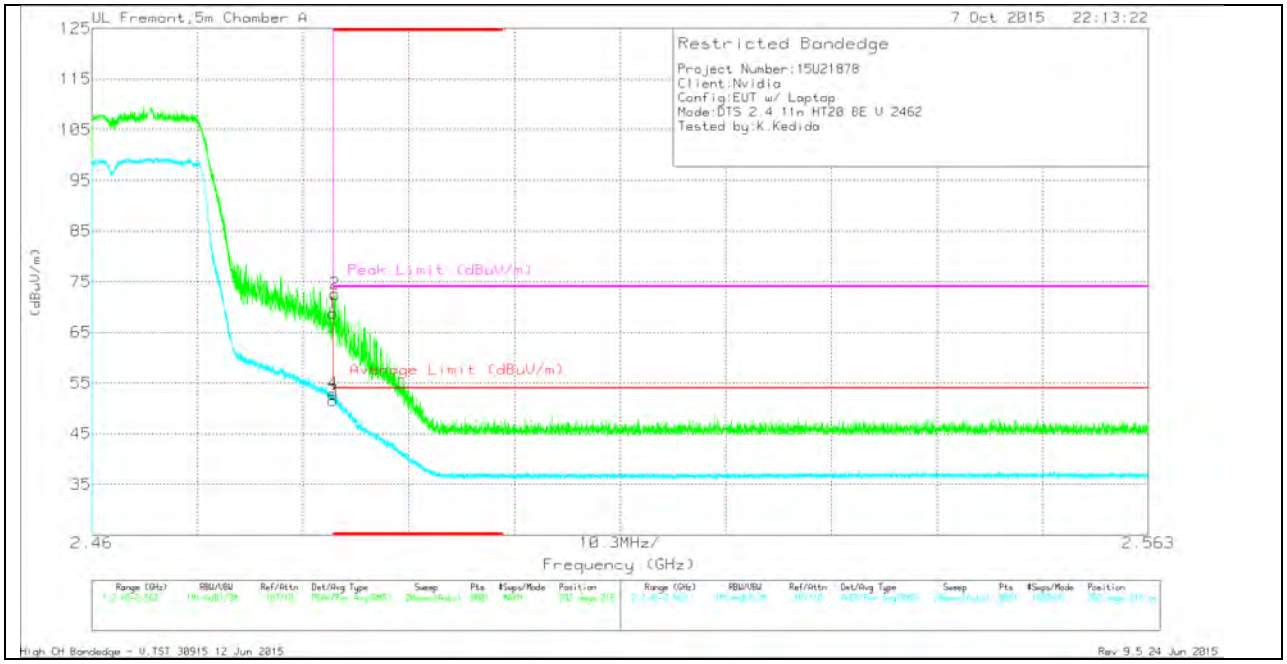
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	56.97	Pk	32.1	-20.3	0	68.77	-	-	74	-5.23	292	218	V
2	* 2.484	60.78	Pk	32.1	-20.3	0	72.58	-	-	74	-1.42	292	218	V
3	* 2.484	39.11	RMS	32.1	-20.3	.59	51.5	54	-2.5	-	-	292	218	V
4	* 2.484	40.47	RMS	32.1	-20.3	.59	52.86	54	-1.14	-	-	292	218	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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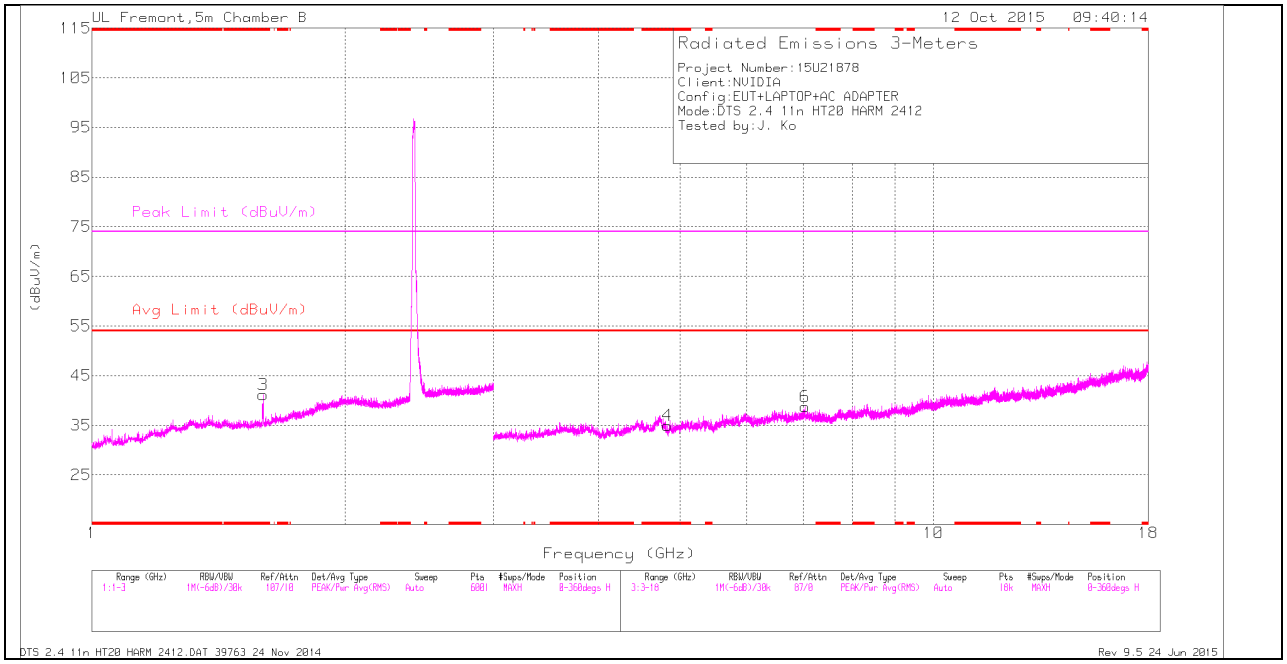
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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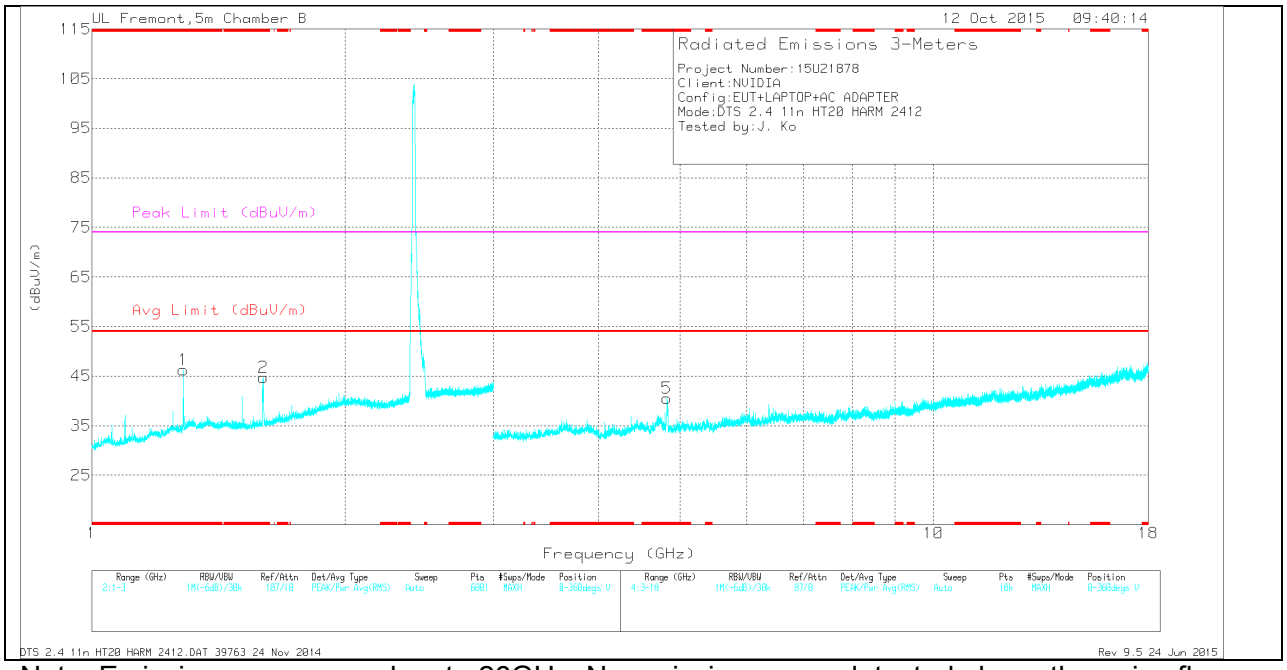
LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 1.597	34.26	Pk	28.8	-21.9	0	41.16	-	-	74	-32.84	0-360	199	H
1	* 1.284	39.68	Pk	29.3	-22.7	0	46.28	-	-	74	-27.72	0-360	199	V
2	* 1.598	37.79	Pk	28.8	-21.9	0	44.69	-	-	74	-29.31	0-360	101	V
4	* 4.832	32.49	Pk	34.3	-31.8	0	34.99	-	-	74	-39.01	0-360	101	H
5	* 4.825	37.84	Pk	34.3	-31.6	0	40.54	-	-	74	-33.46	0-360	199	V
6	7.041	33.12	Pk	35.9	-30.3	0	38.72	-	-	74	-35.28	0-360	101	H

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.599	43.16	PK2	28.8	-21.9	0	50.06	-	-	74	-23.94	61	247	H
* 1.598	25.43	MAv1	28.8	-21.9	.59	32.93	54	-21.07	-	-	61	247	H
* 1.286	36.61	PK2	29.3	-22.6	0	43.31	-	-	74	-30.69	225	298	V
* 1.286	25.01	MAv1	29.3	-22.6	.59	32.31	54	-21.69	-	-	225	298	V
* 1.596	45.95	PK2	28.8	-21.9	0	52.85	-	-	74	-21.15	10	122	V
* 1.596	25.94	MAv1	28.8	-21.9	.59	33.44	54	-20.56	-	-	10	122	V
* 4.832	40.4	PK2	34.3	-31.8	0	42.9	-	-	74	-31.1	307	106	H
* 4.831	28.47	MAv1	34.3	-31.8	.59	31.57	54	-22.43	-	-	307	106	H
* 4.827	46.55	PK2	34.3	-31.7	0	49.15	-	-	74	-24.85	180	208	V
* 4.823	34.97	MAv1	34.3	-31.6	.59	38.27	54	-15.73	-	-	180	208	V

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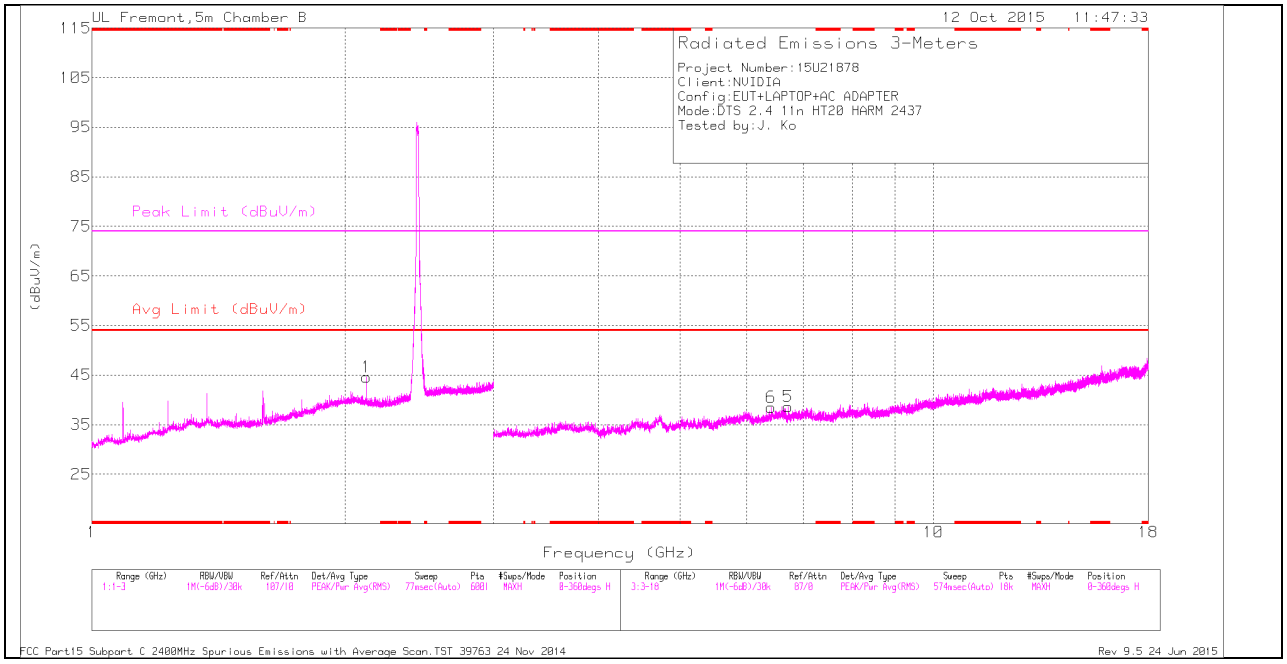
MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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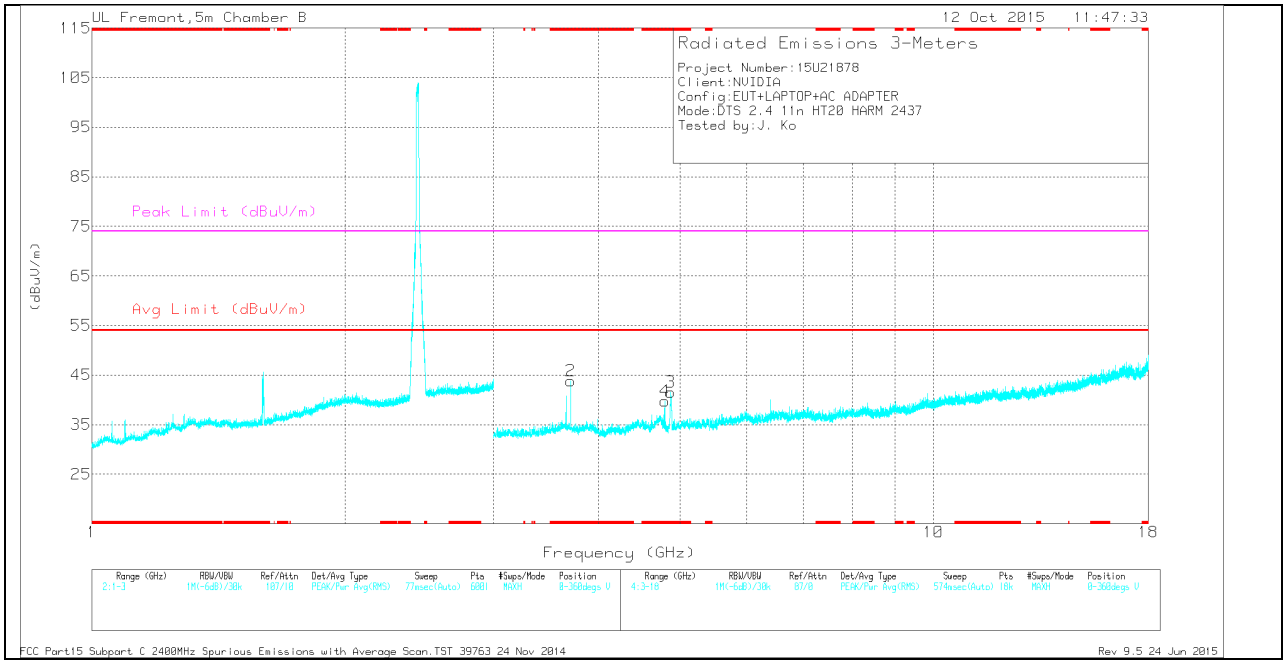
MID CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 3.708	42.95	Pk	33.6	-32.7	0	43.85	-	-	74	-30.15	0-360	101	V
3	* 4.873	39.74	Pk	34.2	-32.4	0	41.54	-	-	74	-32.46	0-360	199	V
4	* 4.798	36.41	Pk	34.3	-30.9	0	39.81	-	-	74	-34.19	0-360	199	V
1	2.119	34.67	Pk	31.7	-21.8	0	44.57	-	-	74	-29.43	0-360	200	H
6	6.419	34.07	Pk	35.7	-31.3	0	38.47	-	-	74	-35.53	0-360	101	H
5	6.724	33.87	Pk	35.9	-31.1	0	38.67	-	-	74	-35.33	0-360	101	H

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.707	42.04	PK2	33.6	-32.7	0	42.94	-	-	74	-31.06	202	266	V
* 3.708	30.37	MAv1	33.6	-32.7	.59	31.87	54	-22.13	-	-	202	266	V
* 4.871	47.78	PK2	34.2	-32.4	0	49.58	-	-	74	-24.42	161	163	V
* 4.873	35.33	MAv1	34.2	-32.4	.59	37.73	54	-16.27	-	-	161	157	V
* 4.797	43.78	PK2	34.3	-30.9	0	47.18	-	-	74	-26.82	322	225	V
* 4.796	28.45	MAv1	34.3	-30.9	.59	32.45	54	-21.55	-	-	322	225	V

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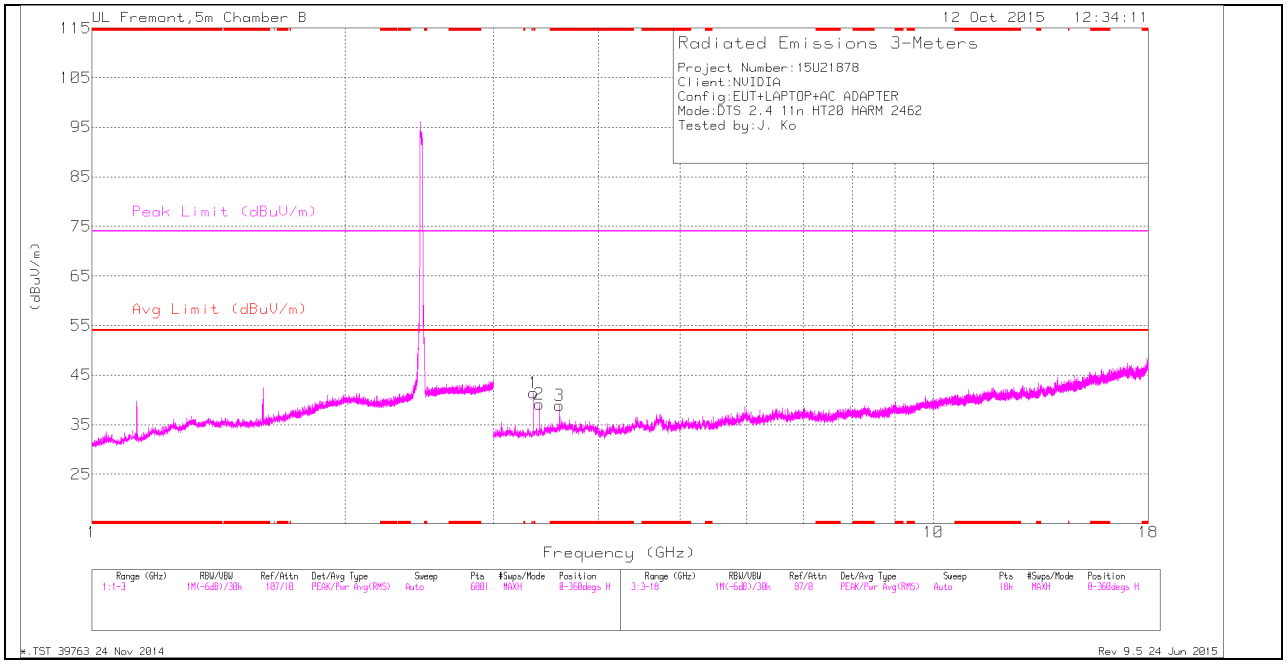
HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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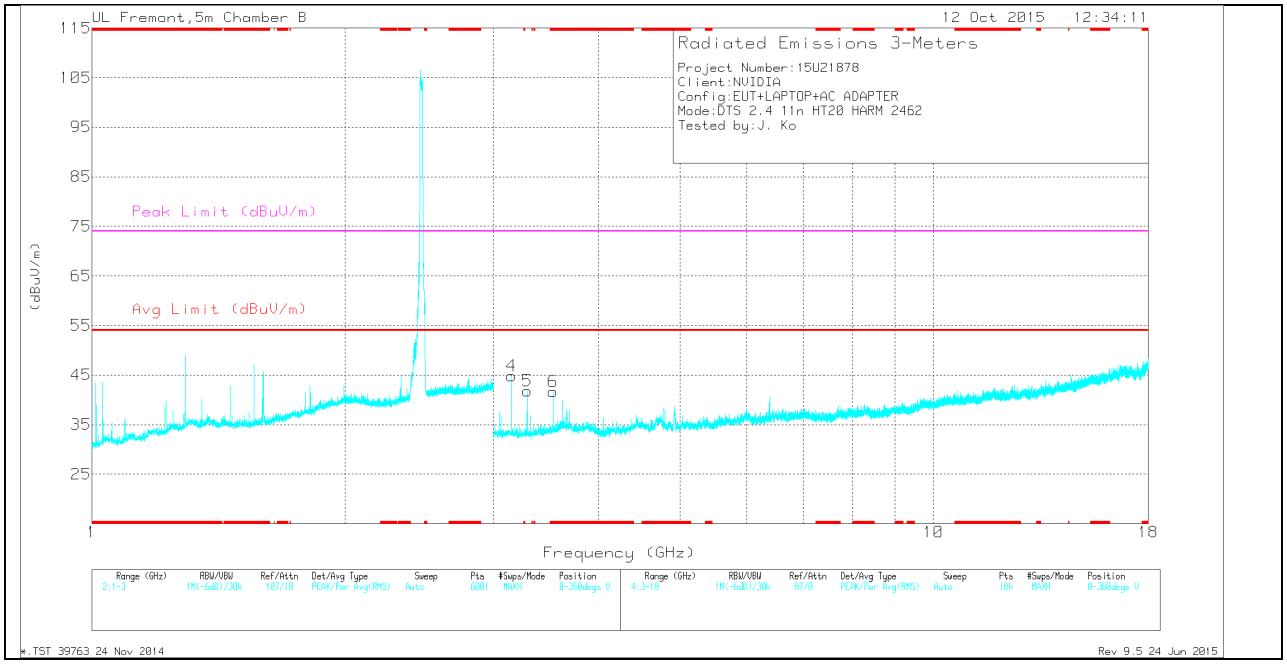
HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.348	41.24	Pk	32.9	-32.7	0	41.44	-	-	74	-32.56	0-360	199	H
3	* 3.596	37.88	Pk	33.8	-32.8	0	38.88	-	-	74	-35.12	0-360	199	H
6	* 3.532	40.91	Pk	33.7	-32.9	0	41.71	-	-	74	-32.29	0-360	101	V
4	3.152	44.67	Pk	32.5	-32.3	0	44.87	-	-	74	-29.13	0-360	101	V
5	3.289	41.84	Pk	32.7	-32.8	0	41.74	-	-	74	-32.26	0-360	101	V
2	3.399	39.12	Pk	33	-33	0	39.12	-	-	74	-34.88	0-360	199	H

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.35	45.38	PK2	32.9	-32.7	0	45.58	-	-	74	-28.42	195	150	H
* 3.347	30.21	MAv1	32.9	-32.8	.59	30.91	54	-23.09	-	-	195	150	H
* 3.595	54.18	PK2	33.8	-32.8	0	55.18	-	-	74	-18.82	236	280	H
* 3.595	30.11	MAv1	33.8	-32.8	.59	31.71	54	-22.29	-	-	236	280	H
* 3.531	42.28	PK2	33.7	-32.9	0	43.08	-	-	74	-30.92	39	162	V
* 3.531	30.22	MAv1	33.7	-32.9	.59	31.62	54	-22.38	-	-	39	162	V

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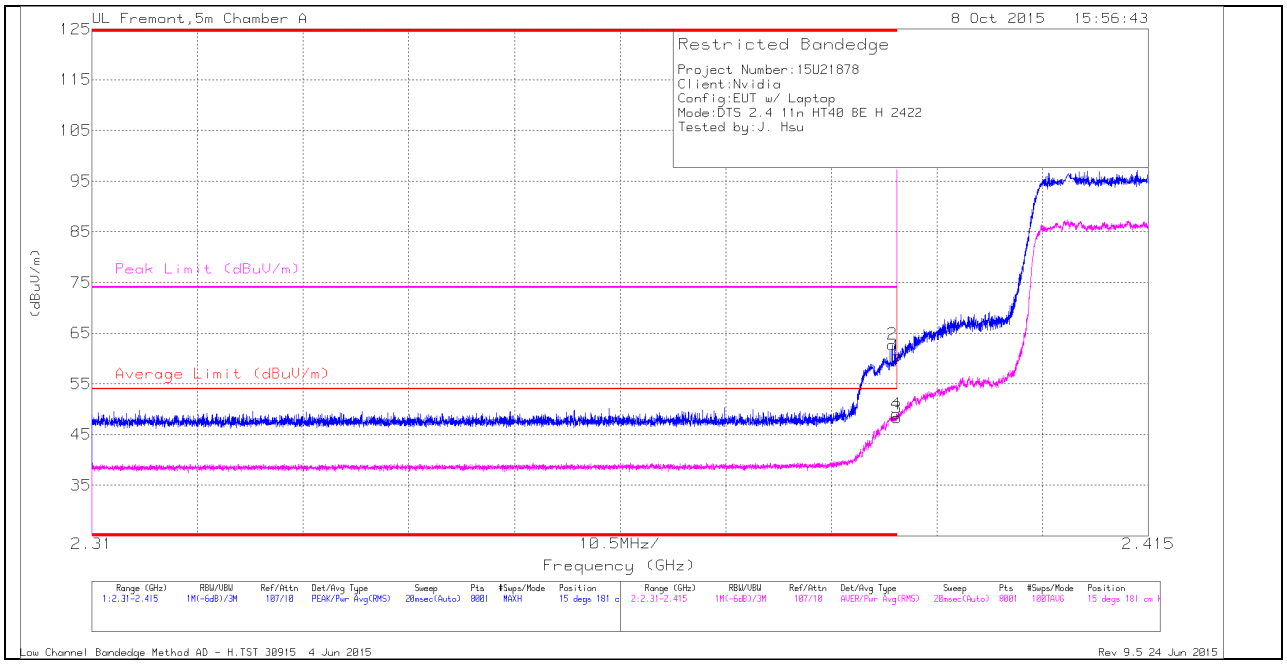
11.2.1. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	53.12	Pk	32	-24.6	0	60.52	-	-	74	-13.48	15	181	H
2	* 2.39	55.37	Pk	32	-24.6	0	62.77	-	-	74	-11.23	15	181	H
3	* 2.39	39.82	RMS	32	-24.6	1.08	48.3	54	-5.7	-	-	15	181	H
4	* 2.39	40.52	RMS	32	-24.6	1.08	49	54	-5	-	-	15	181	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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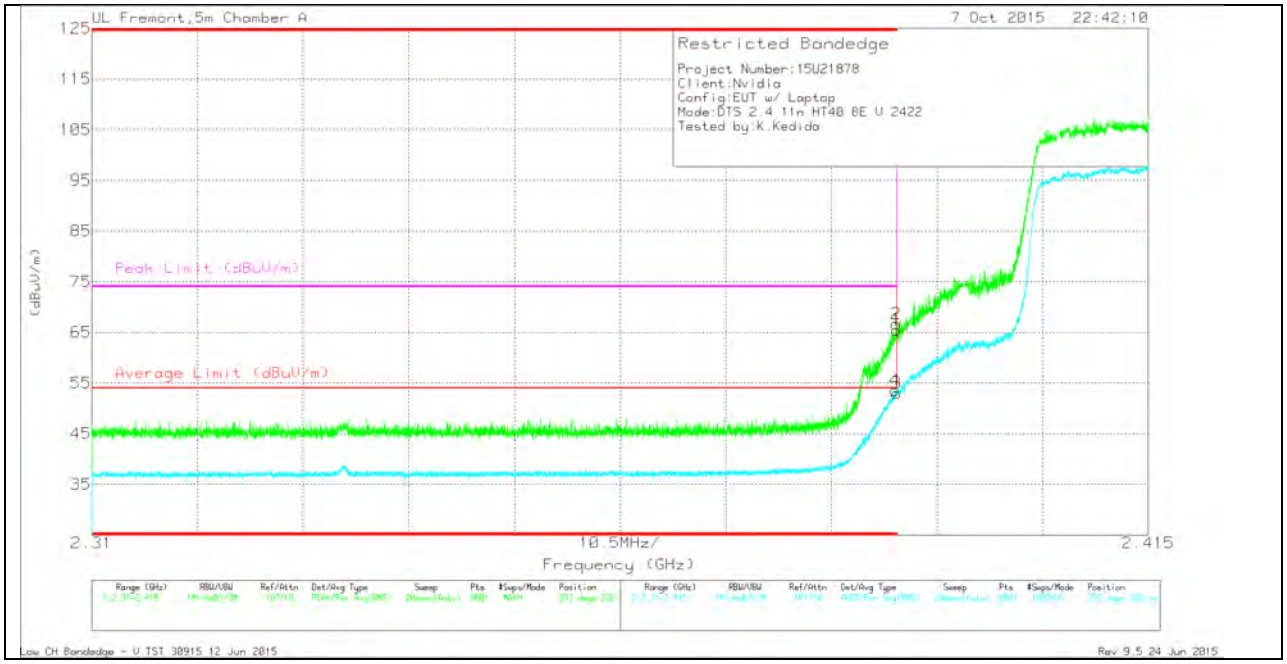
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	53.7	Pk	32	-20.2	0	65.5	-	-	74	-8.5	293	226	V
2	* 2.39	54.85	Pk	32	-20.2	0	66.65	-	-	74	-7.35	293	226	V
3	* 2.39	40.12	RMS	32	-20.2	1.08	53	54	-1	-	-	293	226	V
4	* 2.39	40.59	RMS	32	-20.2	1.08	53.47	54	-.53	-	-	293	226	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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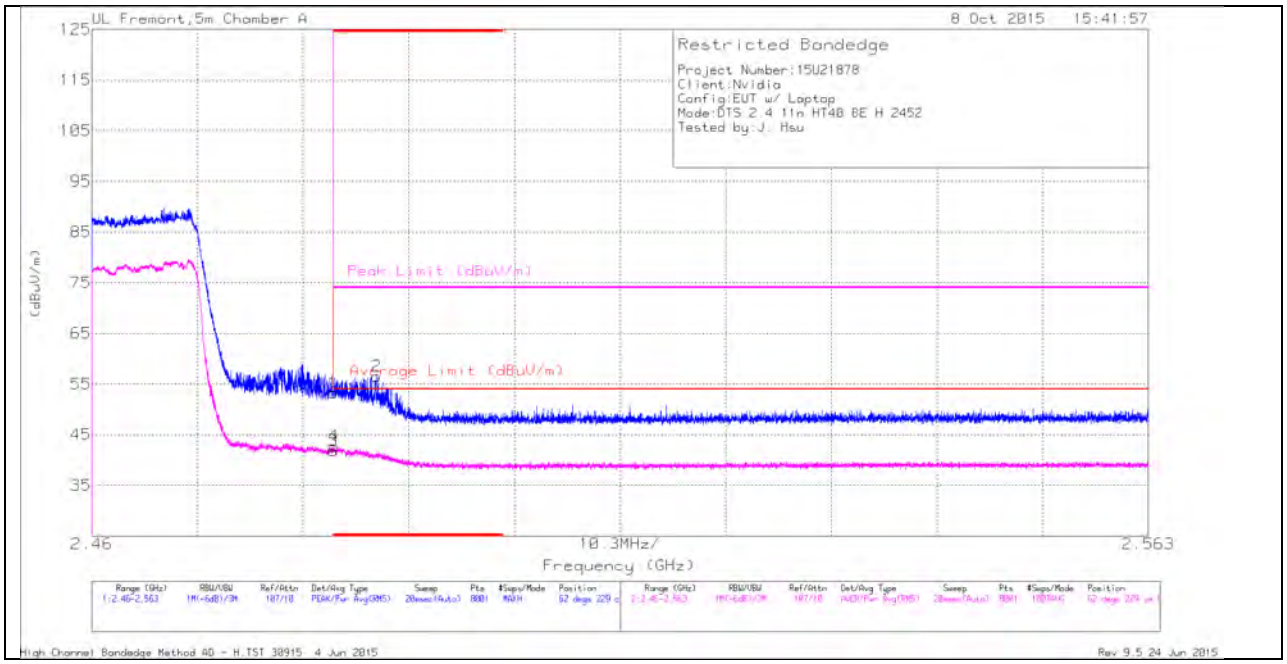
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	45.67	Pk	32.1	-24.5	0	53.27	-	-	74	-20.73	62	229	H
2	* 2.488	48.87	Pk	32.1	-24.5	0	56.47	-	-	74	-17.53	62	229	H
3	* 2.484	33.2	RMS	32.1	-24.5	1.08	41.88	54	-12.12	-	-	62	229	H
4	* 2.484	34.09	RMS	32.1	-24.5	1.08	42.77	54	-11.23	-	-	62	229	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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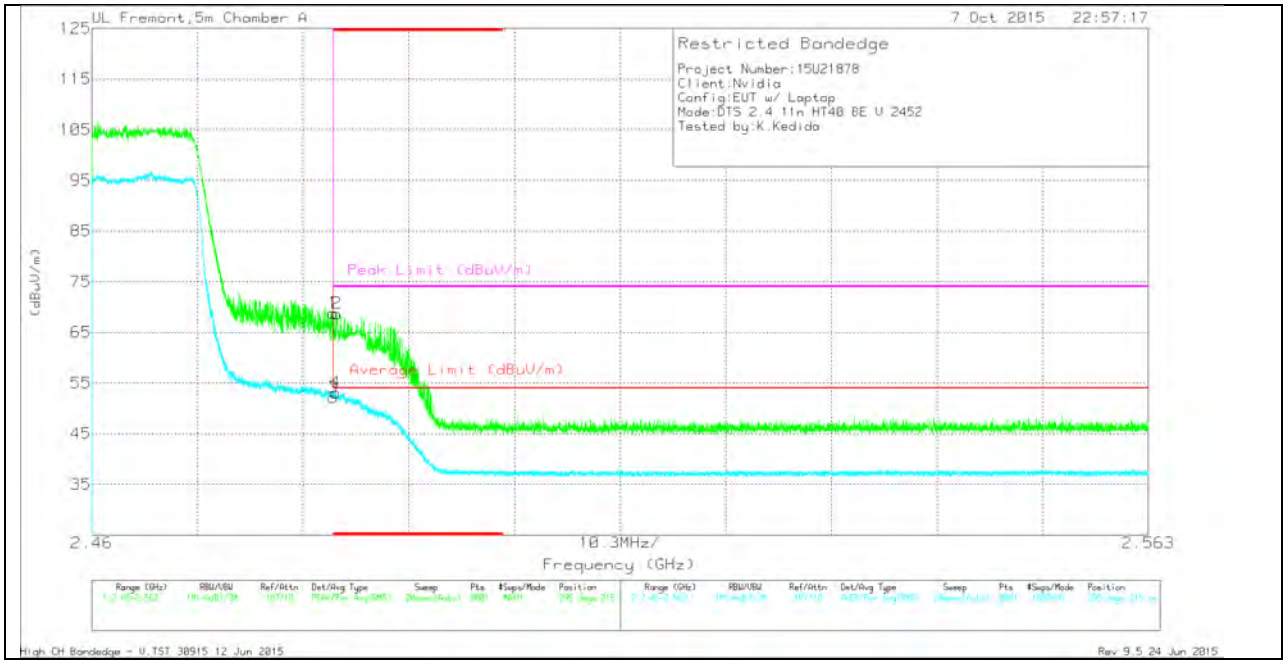
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	57.05	Pk	32.1	-20.3	0	68.85	-	-	74	-5.15	295	215	V
2	* 2.484	56.93	Pk	32.1	-20.3	0	68.73	-	-	74	-5.27	295	215	V
3	* 2.484	39.23	RMS	32.1	-20.3	1.08	52.11	54	-1.89	-	-	295	215	V
4	* 2.484	40.21	RMS	32.1	-20.3	1.08	53.09	54	-.91	-	-	295	215	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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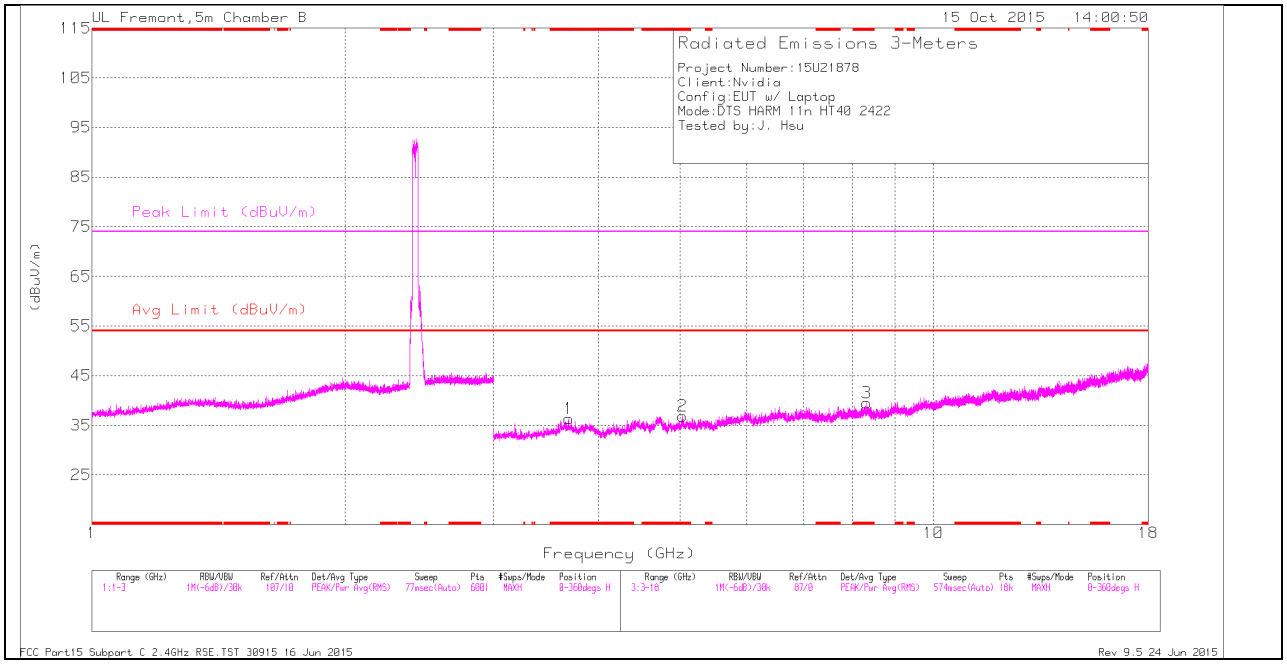
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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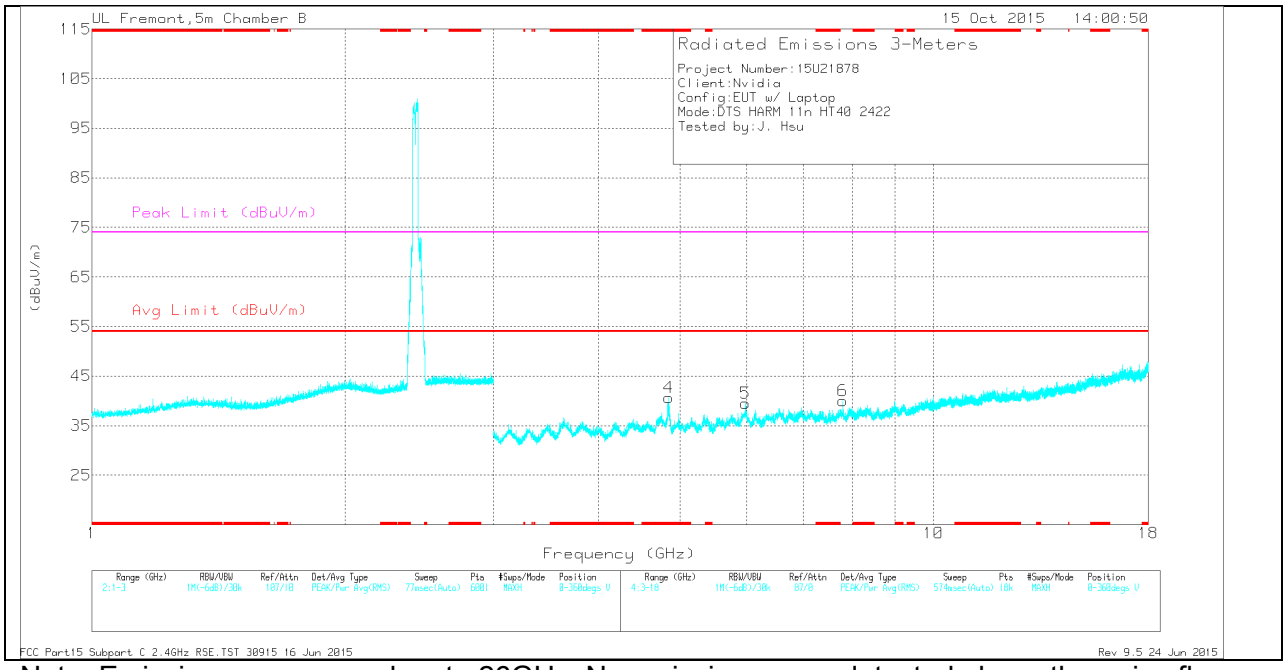
LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.686	35.52	Pk	33.6	-32.8	0	36.32	-	-	74	-37.68	0-360	199	H
2	* 5.032	33.41	Pk	34	-30.6	0	36.81	-	-	74	-37.19	0-360	199	H
3	* 8.334	31.41	Pk	35.7	-27.6	0	39.51	-	-	74	-34.49	0-360	101	H
4	* 4.842	38.49	Pk	34.2	-32	0	40.69	-	-	74	-33.31	0-360	199	V
5	5.973	34.57	Pk	35.6	-30.7	0	39.47	-	-	-	-	0-360	101	V
6	7.806	33.14	Pk	35.5	-28.6	0	40.04	-	-	-	-	0-360	199	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.685	42.48	PK2	33.6	-32.8	0	43.28	-	-	74	-30.72	1	101	H
* 3.687	31.11	MAv1	33.6	-32.8	1.08	32.99	54	-21.01	-	-	1	101	H
* 5.031	40.81	PK2	34	-30.6	0	44.21	-	-	74	-29.79	1	101	H
* 5.033	29.33	MAv1	34	-30.6	1.08	33.81	54	-20.19	-	-	1	101	H
* 8.333	38.98	PK2	35.7	-27.6	0	47.08	-	-	74	-26.92	1	101	H
* 8.333	27.4	MAv1	35.7	-27.6	1.08	36.58	54	-17.42	-	-	1	101	H
* 4.843	46.81	PK2	34.2	-32	0	49.01	-	-	74	-24.99	353	215	V
* 4.843	33.4	MAv1	34.2	-32	1.08	36.68	54	-17.32	-	-	353	215	V
5.972	29.43	MAv1	35.6	-30.7	1.08	35.41	-	-	-	-	353	215	V
5.973	41.42	PK2	35.6	-30.7	0	46.32	-	-	-	-	353	215	V
7.804	39.64	PK2	35.5	-28.6	0	46.54	-	-	-	-	353	215	V
7.808	28.02	MAv1	35.5	-28.6	1.08	36	-	-	-	-	353	215	V

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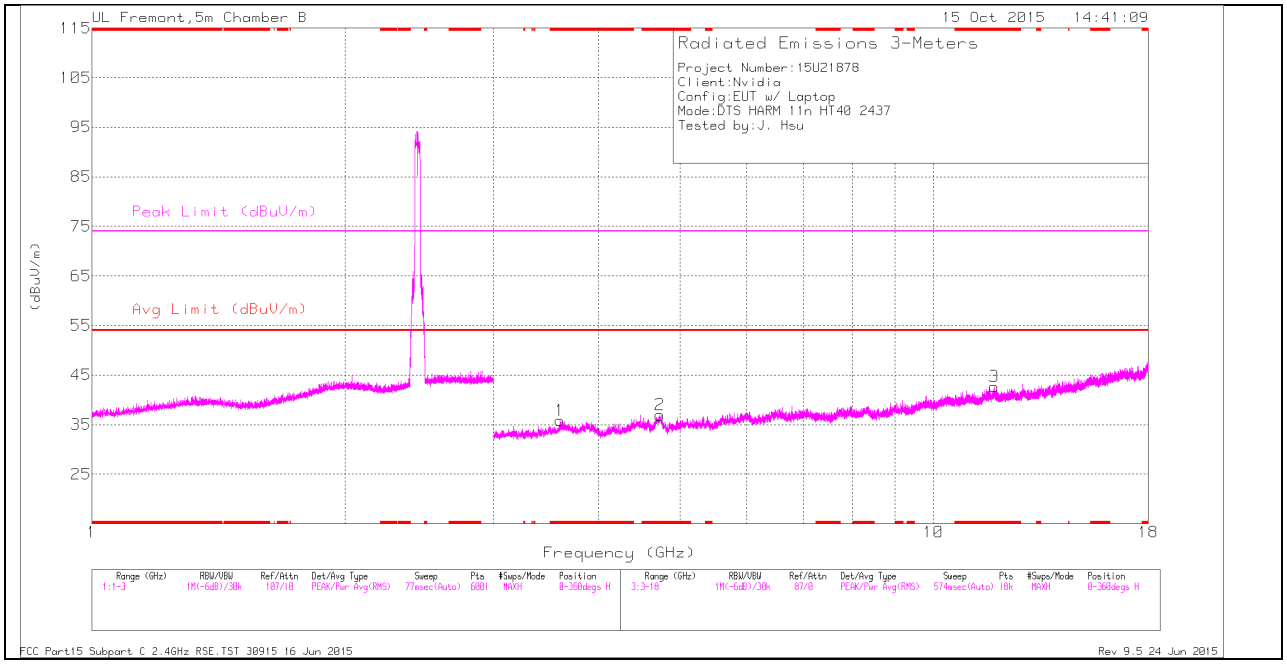
MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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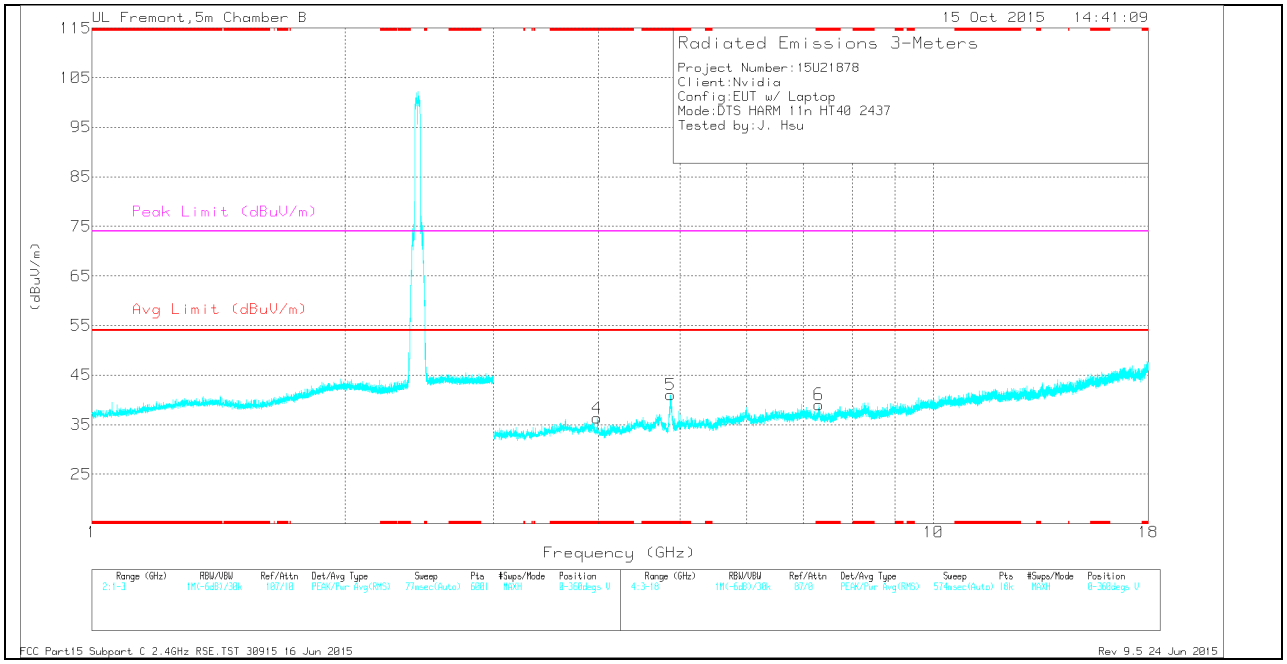
MID CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.6	34.83	Pk	33.8	-32.8	0	35.83	-	-	74	-38.17	0-360	199	H
2	* 4.733	33.31	Pk	34.3	-30.7	0	36.91	-	-	74	-37.09	0-360	101	H
3	* 11.805	28.14	Pk	38.6	-24.1	0	42.64	-	-	74	-31.36	0-360	101	H
4	* 3.987	35.59	Pk	33.3	-32.6	0	36.29	-	-	74	-37.71	0-360	199	V
5	* 4.868	39.16	Pk	34.2	-32.3	0	41.06	-	-	74	-32.94	0-360	101	V
6	* 7.307	34.06	Pk	35.3	-30.3	0	39.06	-	-	74	-34.94	0-360	199	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.601	41.8	PK2	33.8	-32.8	0	42.8	-	-	74	-31.2	360	101	H
* 3.599	30.81	MAv1	33.8	-32.8	1.08	32.89	54	-21.11	-	-	360	101	H
* 4.734	42.13	PK2	34.3	-30.7	0	45.73	-	-	74	-28.27	360	101	H
* 4.735	30.71	MAv1	34.3	-30.7	1.08	35.39	54	-18.61	-	-	360	101	H
* 11.805	35.01	PK2	38.6	-24.1	0	49.51	-	-	74	-24.49	360	101	H
* 11.806	24.6	MAv1	38.6	-24.1	1.08	40.18	54	-13.82	-	-	360	101	H
* 3.987	43.51	PK2	33.3	-32.6	0	44.21	-	-	74	-29.79	360	101	V
* 3.986	31.05	MAv1	33.3	-32.6	1.08	32.83	54	-21.17	-	-	360	101	V
* 4.867	43.63	PK2	34.2	-32.3	0	45.53	-	-	74	-28.47	96	215	V
* 4.866	31.56	MAv1	34.2	-32.3	1.08	34.54	54	-19.46	-	-	96	215	V
* 7.307	41.33	PK2	35.3	-30.3	0	46.33	-	-	74	-27.67	96	215	V
* 7.308	29.68	MAv1	35.3	-30.3	1.08	35.76	54	-18.24	-	-	96	215	V

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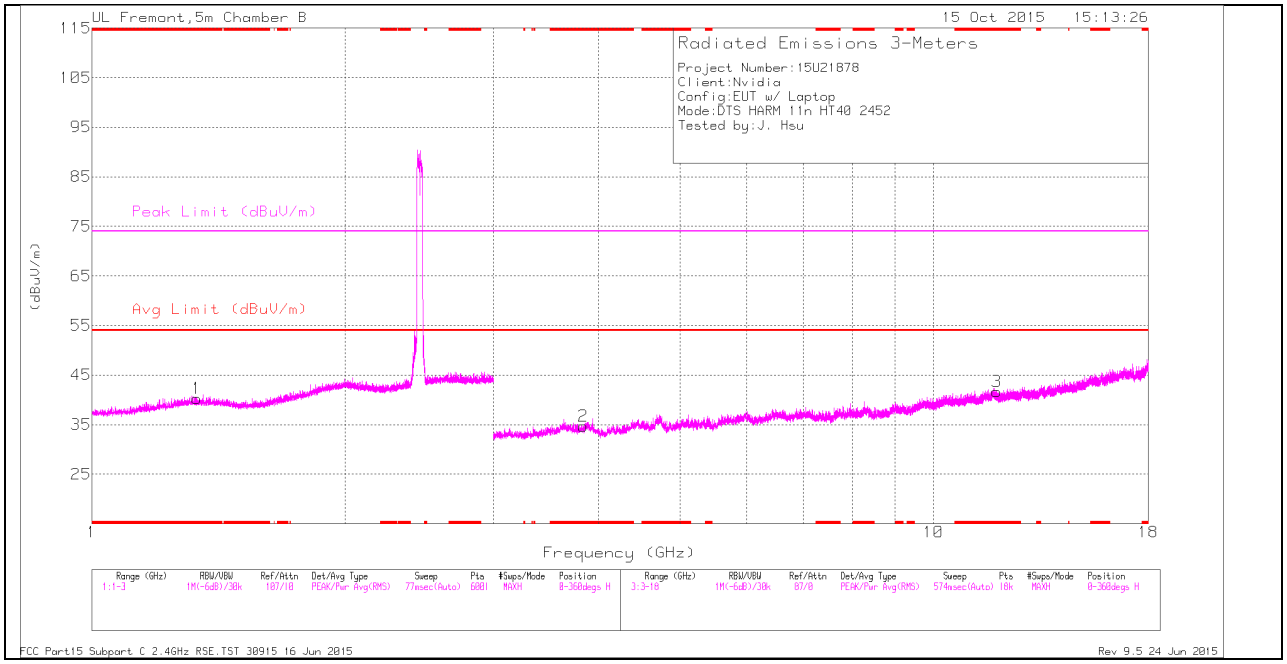
HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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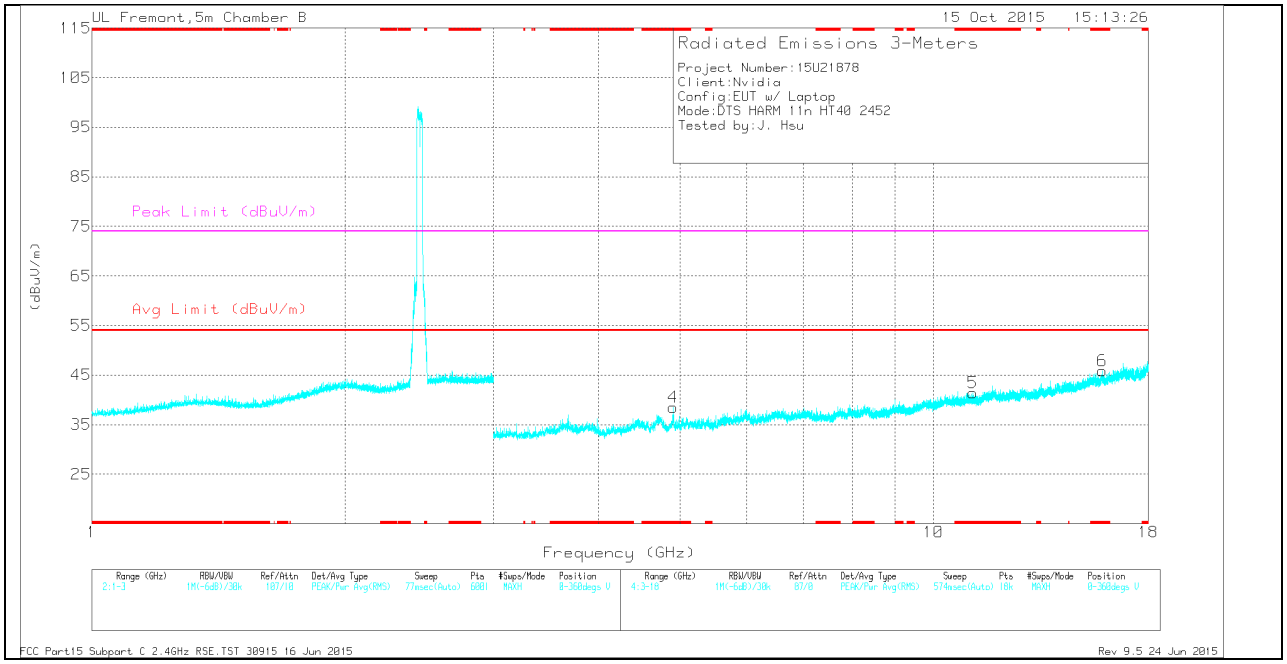
HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.333	36.24	Pk	29.4	-25.4	0	40.24	-	-	74	-33.76	0-360	199	H
2	* 3.833	33.36	Pk	33.4	-32.1	0	34.66	-	-	74	-39.34	0-360	200	H
3	* 11.892	27.95	Pk	38.6	-24.9	0	41.65	-	-	74	-32.35	0-360	101	H
4	* 4.902	36.95	Pk	34.2	-32.6	0	38.55	-	-	74	-35.45	0-360	200	V
5	* 11.138	28.57	Pk	37.8	-25	0	41.37	-	-	74	-32.63	0-360	200	V
6	* 15.86	26.21	Pk	40.6	-21	0	45.81	-	-	74	-28.19	0-360	200	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.332	44.15	PK2	29.4	-25.4	0	48.15	-	-	74	-25.85	1	101	H
* 1.335	32.71	MAv1	29.4	-25.4	1.08	37.79	54	-16.21	-	-	1	101	H
* 3.835	41.85	PK2	33.4	-32.1	0	43.15	-	-	74	-30.85	1	101	H
* 3.835	30.81	MAv1	33.4	-32.1	1.08	33.19	54	-20.81	-	-	1	101	H
* 11.893	35.91	PK2	38.6	-24.9	0	49.61	-	-	74	-24.39	1	101	H
* 11.89	24.51	MAv1	38.6	-24.9	1.08	39.29	54	-14.71	-	-	1	101	H
* 4.903	46.31	PK2	34.2	-32.6	0	47.91	-	-	74	-26.09	344	222	V
* 4.903	32.85	MAv1	34.2	-32.6	1.08	35.53	54	-18.47	-	-	344	222	V
* 11.139	36.12	PK2	37.8	-25	0	48.92	-	-	74	-25.08	344	222	V
* 11.136	25.08	MAv1	37.8	-25	1.08	38.96	54	-15.04	-	-	344	222	V
* 15.861	34.26	PK2	40.6	-21	0	53.86	-	-	74	-20.14	344	222	V
* 15.858	22.75	MAv1	40.6	-21	1.08	43.43	54	-10.57	-	-	344	222	V

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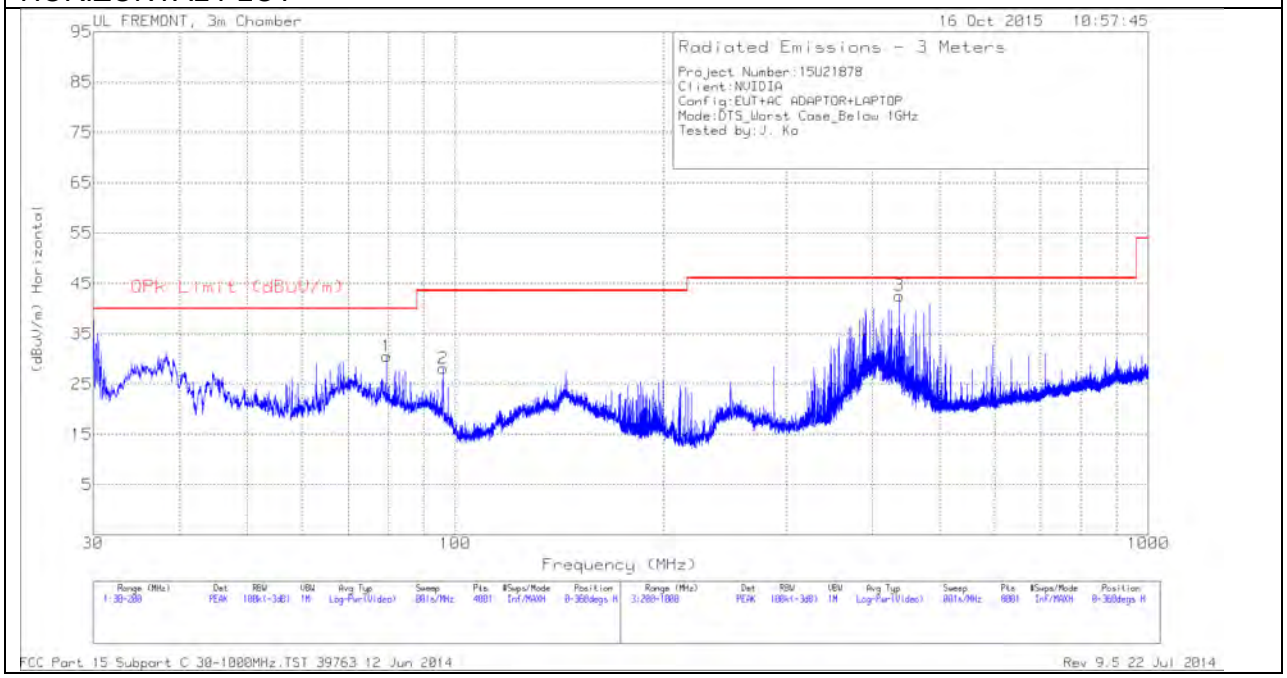
11.3. WORST-CASE BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



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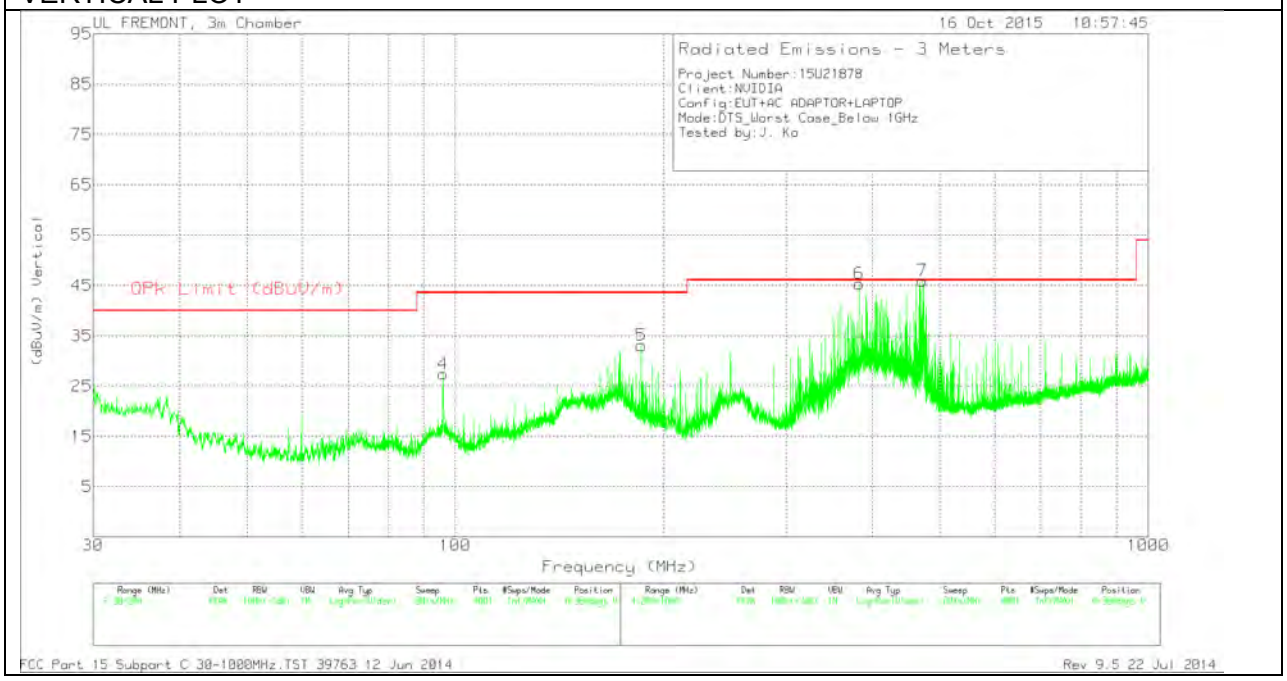
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT



Below 1G Data

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T185 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	79.5975	49.09	PK	8	-26.6	30.49	40	-9.51	0-360	100	H
2	96.0025	45.66	PK	8.8	-26.3	28.16	43.52	-15.36	0-360	200	H
4	96.0025	44.9	PK	8.8	-26.3	27.4	43.52	-16.12	0-360	100	V
5	185.55	47.39	PK	11	-25.3	33.09	43.52	-10.43	0-360	100	V
6	382.4	55.03	PK	15	-24.7	45.33	46.02	-.69	0-360	100	V
3	437.4	50.67	PK	16.8	-24.9	42.57	46.02	-3.45	0-360	100	H
7	472	53.72	PK	17.2	-25	45.92	46.02	-.1	0-360	200	V

PK - Peak detector

Radiated Emissions

Frequency (MHz)	Meter Reading (dBuV)	Det	AF T185 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
382.793	36.15	QP	15	-24.7	26.45	46.02	-19.57	1	110	V
437.594	29.5	QP	16.8	-24.9	21.4	46.02	-24.62	117	101	H
471.525	31.19	QP	17.2	-25	23.39	46.02	-22.63	130	188	V

QP - Quasi-Peak detector

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12. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	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.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4 2009.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

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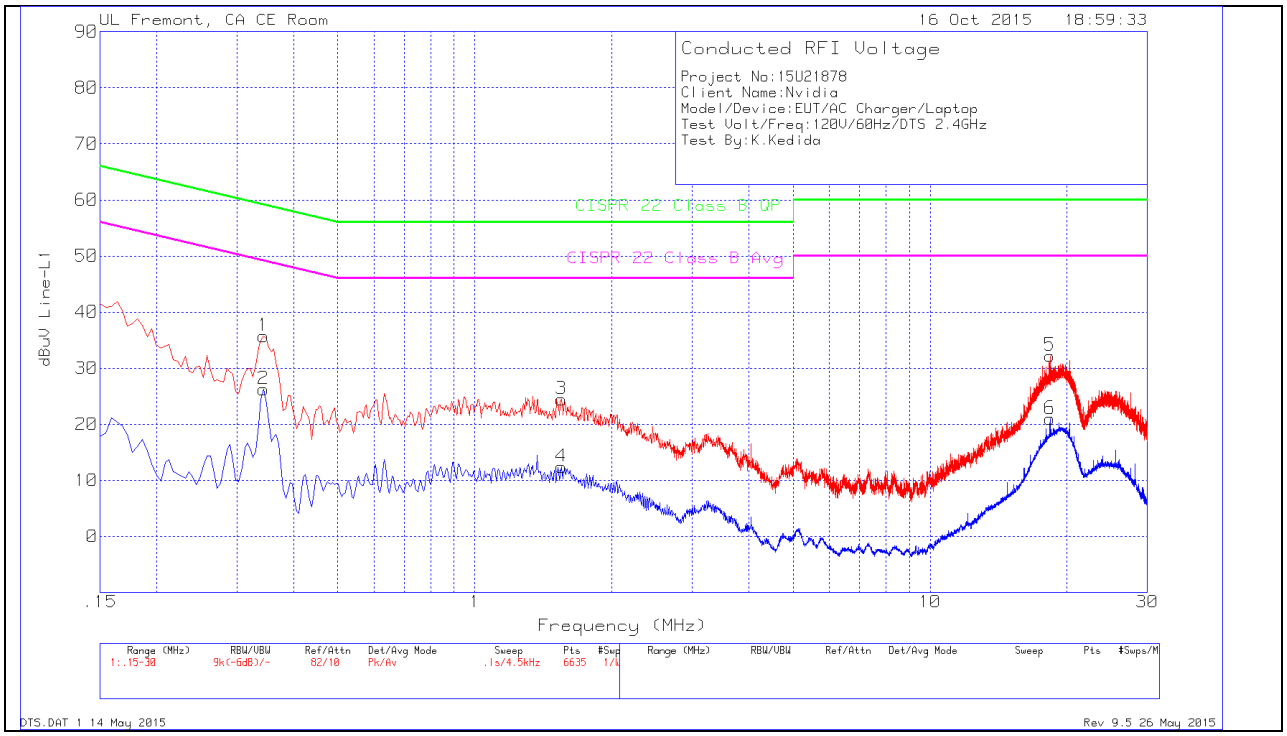
6 WORST EMISSIONS

LINE 1 PLOT



LINE 1 RESULTS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
1	.3435	35.25	Pk	.5	0	35.75	59.12	-23.37		
2	.3435	25.77	Av	.5	0	26.27	-	-	49.12	-22.85
3	1.5495	24.18	Pk	.2	.1	24.48	56	-31.52		
4	1.5495	12.1	Av	.2	.1	12.4	-	-	46	-33.6
5	18.339	31.7	Pk	.3	.2	32.2	60	-27.8		
6	18.339	20.46	Av	.3	.2	20.96	-	-	50	-29.04

Pk - Peak detector

Av - Average detection

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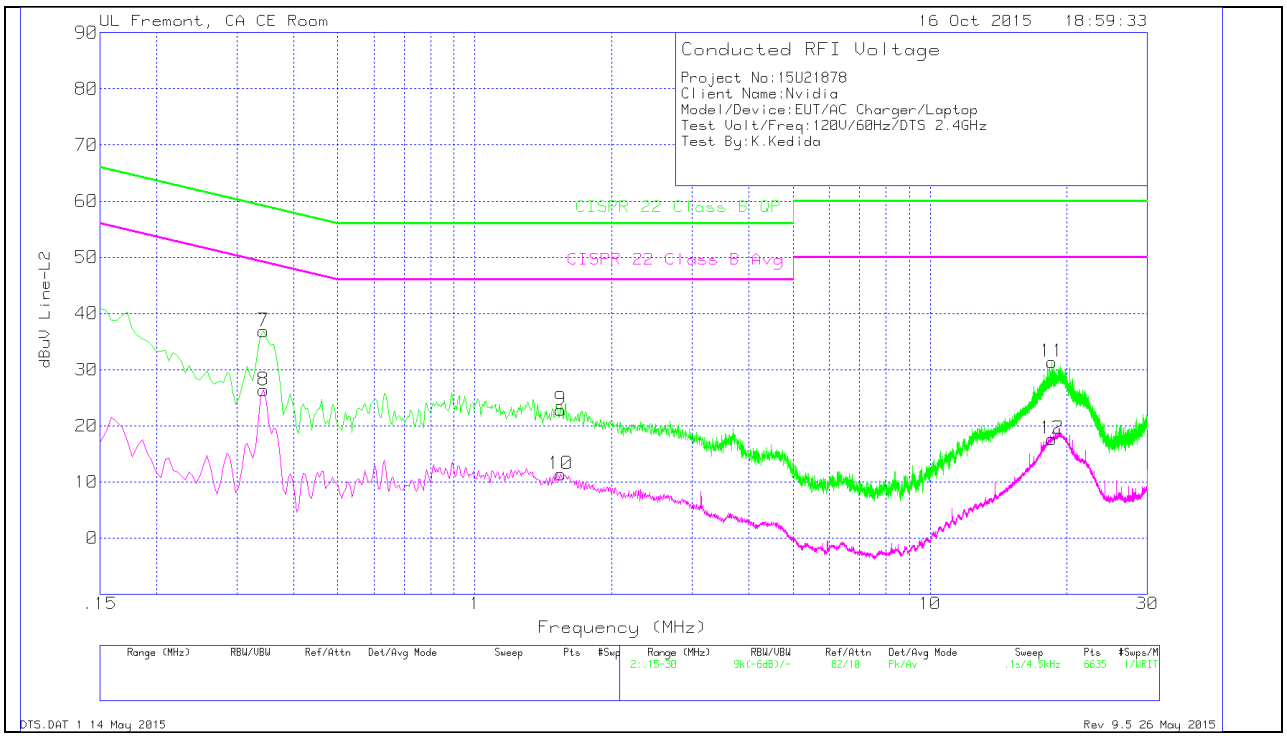
LINE 2 PLOT



LINE 2 RESULTS

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
7	.3435	36.35	Pk	.5	0	36.85	59.12	-22.27		
8	.3435	25.83	Av	.5	0	26.33	-	-	49.12	-22.79
9	1.545	22.54	Pk	.2	.1	22.84	56	-33.16		
10	1.545	11.07	Av	.2	.1	11.37	-	-	46	-34.63
11	18.5325	30.9	Pk	.3	.2	31.4	60	-28.6		
12	18.5325	17.2	Av	.3	.2	17.7	-	-	50	-32.3

Pk - Peak detector

Av - Average detection

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