FCC 47 CFR PART 15 SUBPART E
FCC 47 CFR PART 15.407
INDUSTRY CANADA RSS-247 ISSUE 1

CERTIFICATION TEST REPORT

FOR

5.8 GHz Wireless CPE

MODEL NUMBER: TPWLR58C1

FCC ID: ZJ3-TPWLR58C1
IC ID: 9698A-TPWLR58C1

REPORT NUMBER: 15U21533–E1V2

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Revision History

Rev.	Issue Date	Revisions	Revised By
V1	9/28/15	Initial Issue	P. Zhang
V2	9/30/15	Update equipment list and power PSD limit	P. Zhang

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Truepath Wireless LLC

EUT DESCRIPTION: 5.8 GHz Wireless CPE

MODEL: TPWLR58C1

SERIAL NUMBER: 300000140

DATE TESTED: AUGUST 17 – SEPTEMBER 28, 2015

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E	Pass
CFR 47 Part 15.407	Pass
INDUSTRY CANADA RSS-247 Issue 1	Pass
INDUSTRY CANADA RSS-GEN Issue 4	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 C63.10-2013, RSS-247 Issue 1 and RSS-GEN Issue 4.

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.

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%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a 5.8 GHz Wireless CPE

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)
5745-5835	OFDM	20.33	107.89

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes 4 cross-polarized patch strip antennas, with 2 antennas on each polarization. Each individual antenna has an antenna gain of 15 dBi

5.4. 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.

For SISO mode, chain 2 was the worst case determined during pre-scan. So all SISO radiated and conducted measurement were based on chain 2.

Case 1 is the worst case mode for correlated MIMO antennas
Case 2 is the worst case mode for fully-uncorrelated MIMO antennas
Case 3 is the worst case mode for fully-uncorrelated single transmit antennas

The worst-case data rate is:
OFDM mode: MCS24

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	Dell	D510	N/A	N/A
Router	MicroTik	Routerboard	N/A	N/A

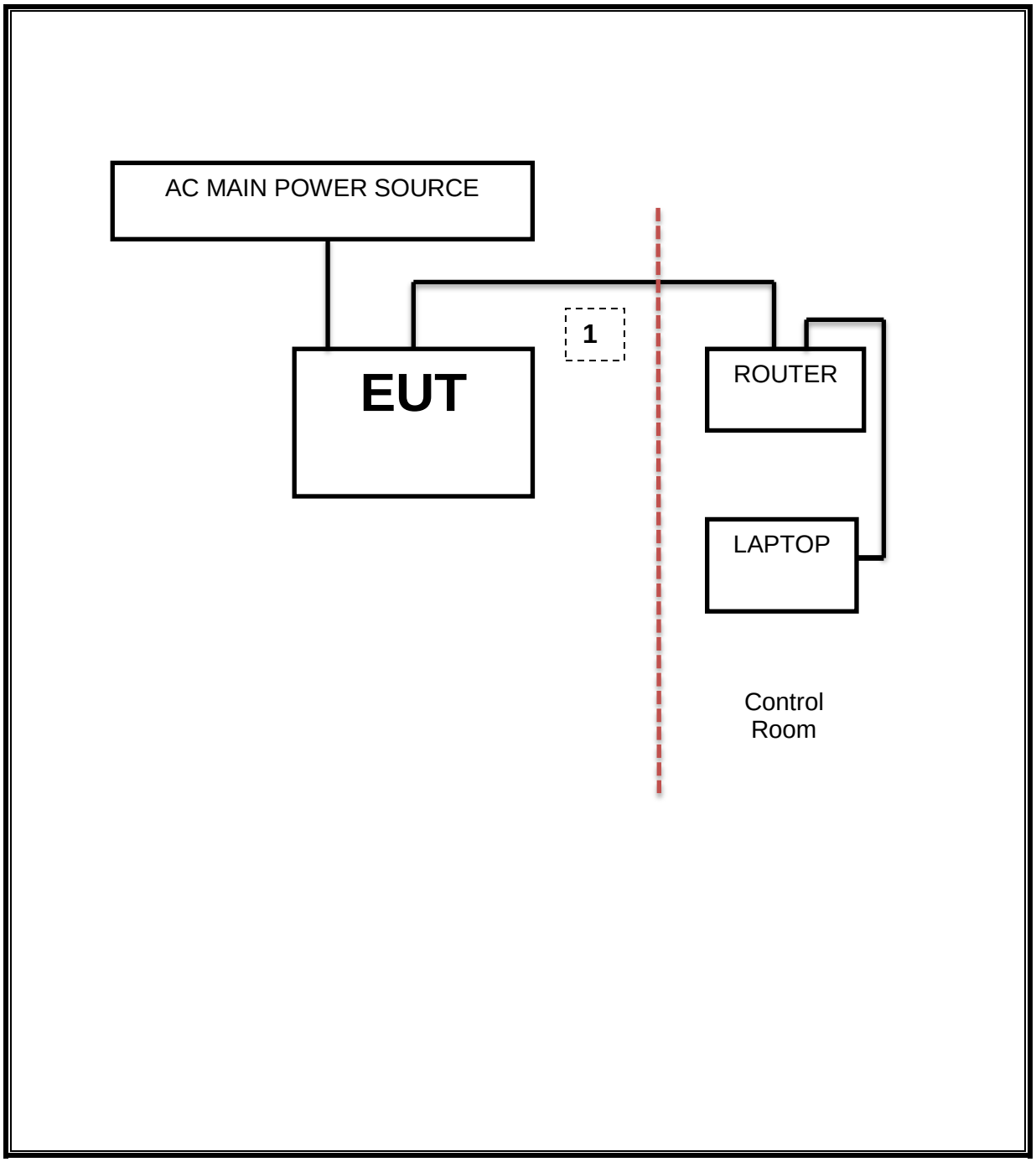
I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	ethernet	1	RJ-45	shielded	5	N/A

TEST SETUP

The EUT is setup as a stand-alone device.

SETUP DIAGRAM FOR TESTS



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
Radiated Software	UL	UL EMC	Ver 9.5, July 24, 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	

7. SUMMARY TABLE

FCC Part Section	RSS Section	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.407 (a)	RSS-247	Occupied Band width (26dB)	N/A	Conducted	Pass	21.25 MHz
15.407	RSS-247 6.2.4	6dB Band width (5.8Ghz)	500KHz		Pass	15.74 MHz
15.407 (a)(3)	RSS-247 6.2.4	TX Cond. Power 5.745-5.835			Pass	20.33 dBm
15.407 (a)(5)	RSS-247 6.2.4	PSD (5.8GHz)	30dBm per 500kHz		Pass	6.14dBm
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10	Radiated	Pass	56.42 dBuV/m
15.407 (b) & 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	< 54dBuV/m		Pass	43.68 dBuV/m

8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

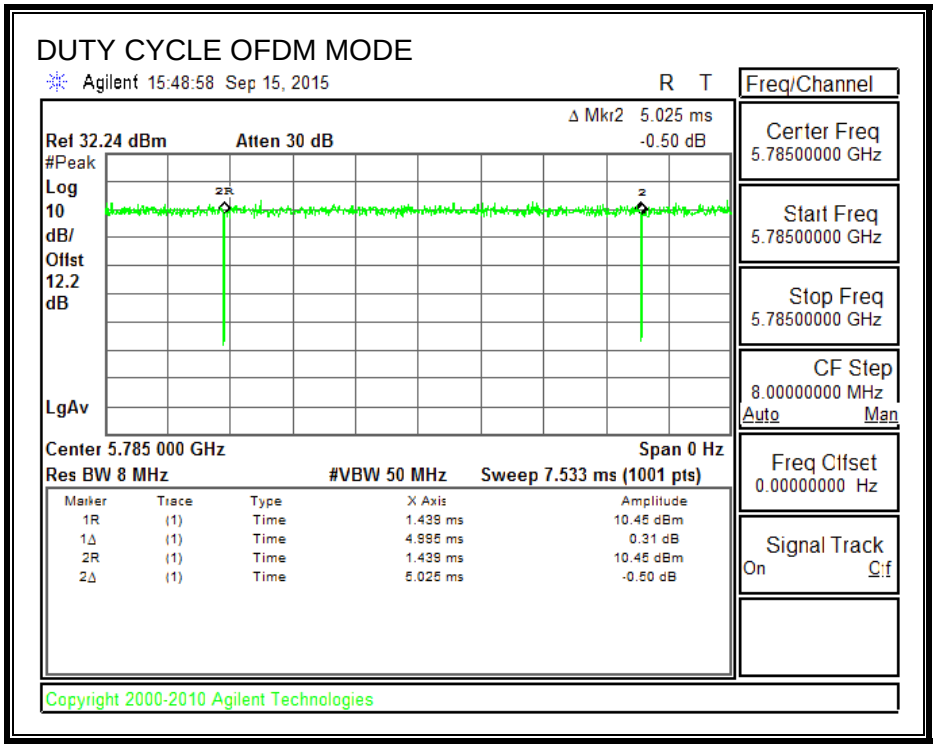
PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

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/T Minimum VBW (kHz)
802.11a	5.00	5.03	0.994	99.4%	0.00	0.010

8.2. DUTY CYCLE PLOTS



9. MEASUREMENT METHOD

789033 D02 General UNII Test Procedures New Rules v01

The Duty Cycle is greater than 98% and consistent therefore KDB 789033 Method SA-1 is used for .power and PPSD

10. ANTENNA PORT TEST RESULTS CASE 1 (20 MHz BW; Correlated)

10.1. 6 dB BANDWIDTH

LIMITS

FCC §15.407

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

TEST PROCEDURE

Reference to 789033 D02 General UNII Test Procedures New Rules v01: 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

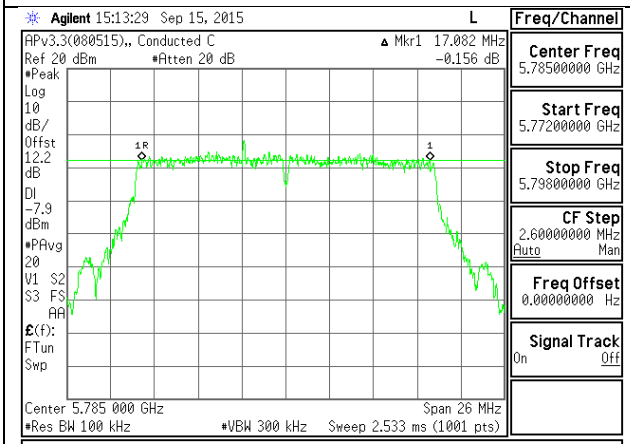
10.1.1. OFDM MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	6 dB BW Chain 3 (MHz)	Minimum Limit (MHz)
Low	5745	17.6310	17.5500	16.6500	17.5770	0.5
Mid	5785	17.0820	17.6850	16.9000	17.0820	0.5
High	5835	17.3160	17.6310	17.0040	16.3000	0.5

10.1.2. 6 dB BANDWIDTH MID CH PLOTS

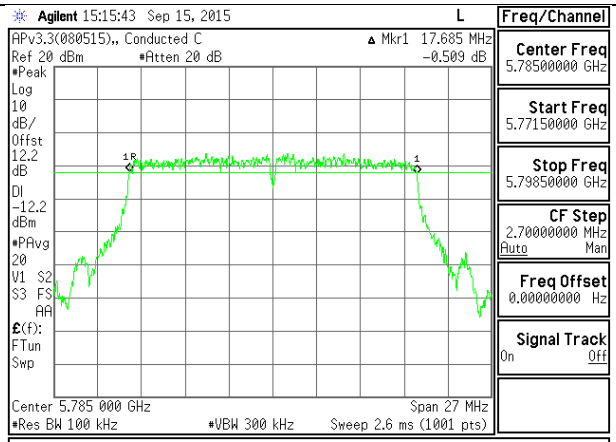
CHAIN 0

OFDM 5.8 Mid Ch



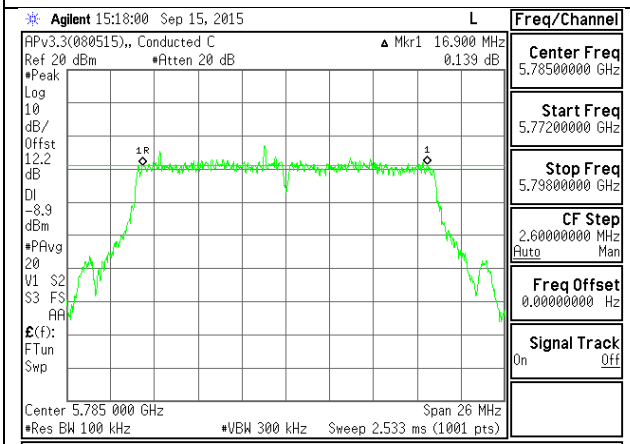
CHAIN 1

OFDM 5.8 Mid Ch



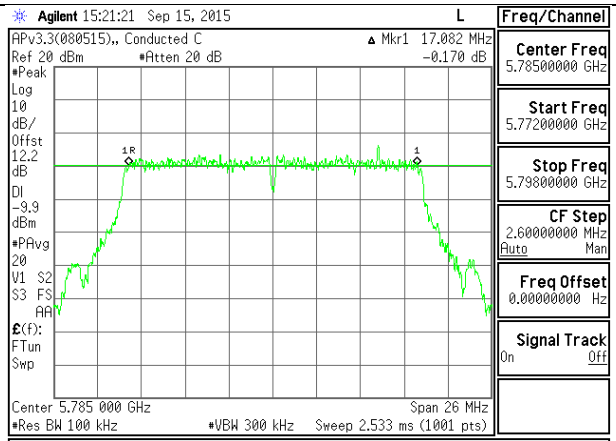
CHAIN 2

OFDM 5.8 Mid Ch



CHAIN 3

OFDM 5.8 Mid Ch



10.2. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

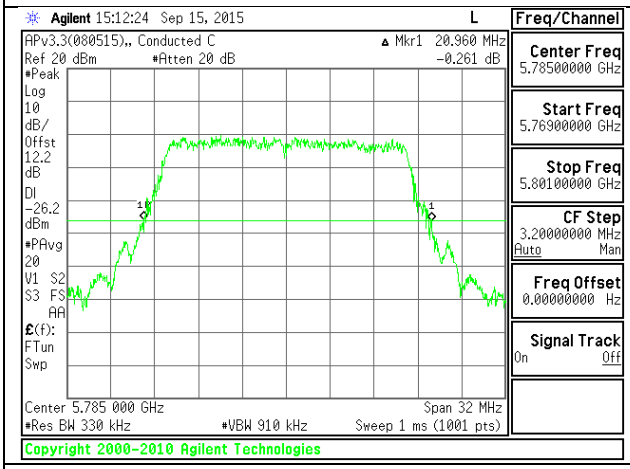
RESULTS

10.2.1. OFDM MODE IN THE 5.8 GHz BAND

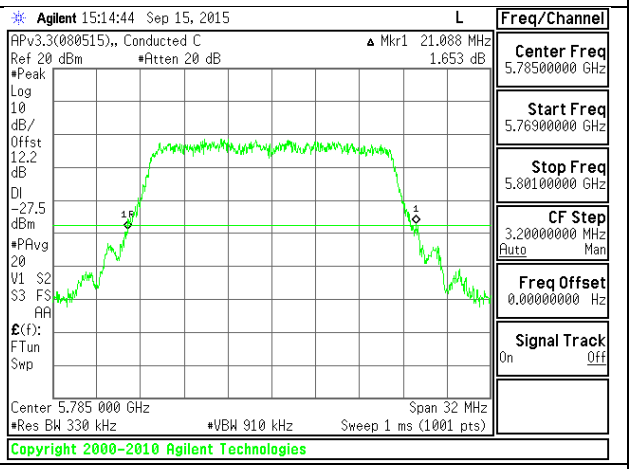
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)	26 dB BW Chain 3 (MHz)
Low	5745	20.83	20.80	20.77	19.83
Mid	5785	20.96	21.09	21.06	20.83
High	5835	20.70	20.83	20.46	20.43

10.2.2. 26 dB BANDWIDTH MID CH PLOTS

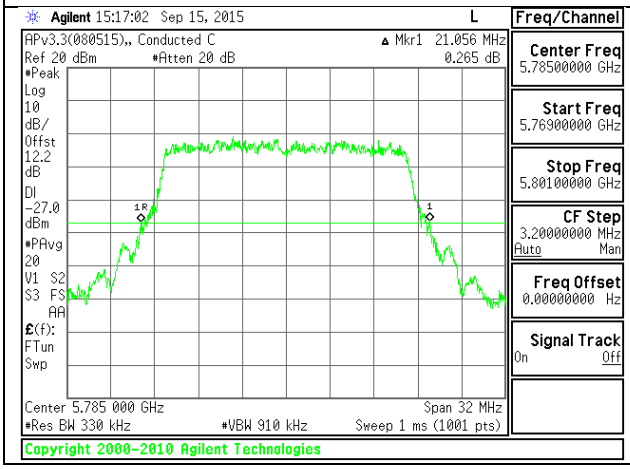
OFDM 5.8 Mid Channel Chain 0



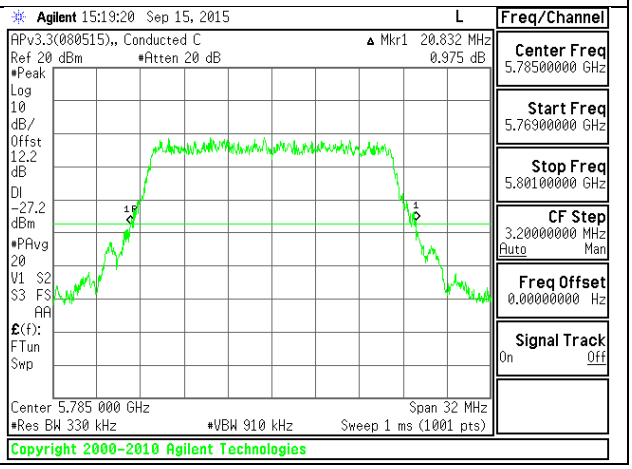
OFDM 5.8 Mid Channel Chain 1



OFDM 5.8 Mid Channel Chain 2



OFDM 5.8 Mid Channel Chain 3



10.3. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

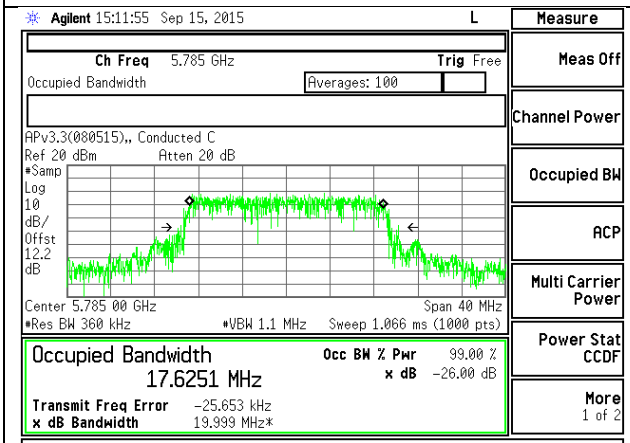
RESULTS

10.3.1. OFDM MODE IN THE 5.8 GHz BAND

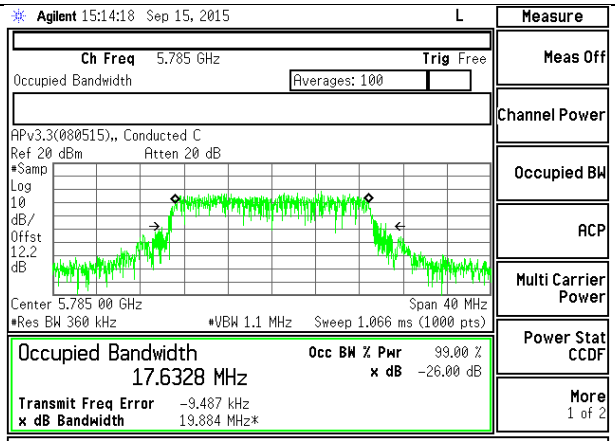
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)	99% BW Chain 3 (MHz)
Low	5745	17.666	17.629	17.643	17.615
Mid	5785	17.625	17.633	17.605	17.656
High	5835	17.647	17.610	17.585	17.640

10.3.2. 99% BANDWIDTH MID CH PLOTS

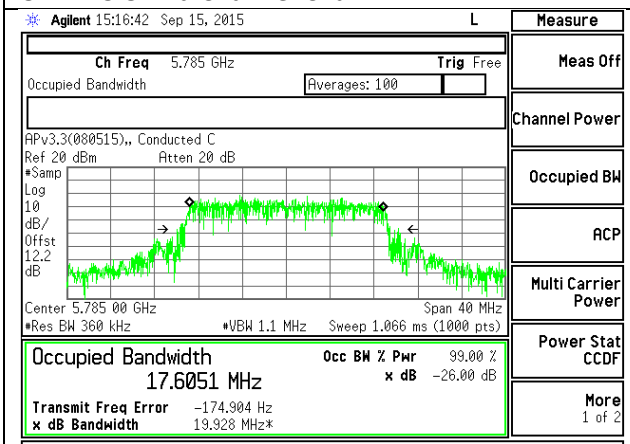
OFDM 5.8 Mid Channel Chain 0



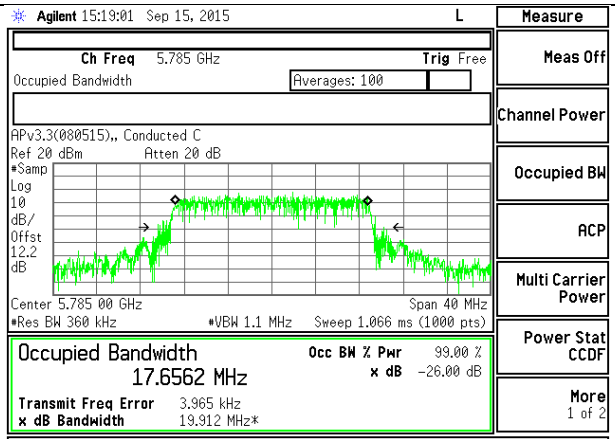
OFDM 5.8 Mid Channel Chain 1



OFDM 5.8 Mid Channel Chain 2



OFDM 5.8 Mid Channel Chain 3



10.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (3)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RSS-247
Band 5725-5850 MHz:
The maximum conducted output power shall not exceed 1 W. The power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBiare used, both the maximum conducted output power and the power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixedpoint-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint[Footnote3] systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

DIRECTIONAL ANTENNA GAIN

The TX chains are correlated and the antenna gain is the same for each chain. Since the devices uses cross polarized antennas, only 2 are on the same polarization at any given time. Therefore the directional gain is:

Antenna Gain (dBi)	10 * Log (2 chains) (dB)	Correlated Chains Directional Gain (dBi)
15.00	3.01	18.01

RESULTS

10.4.1. OFDM MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5745	19.83	17.6150	18.01	18.01
Mid	5785	20.83	17.6050	18.01	18.01
High	5835	20.43	17.5850	18.01	18.01

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5745	17.99	17.99	36.00	17.99	17.99	17.99	17.99
Mid	5785	17.99	17.99	36.00	17.99	17.99	17.99	17.99
High	5835	17.99	17.99	36.00	17.99	17.99	17.99	17.99

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Chain 3 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	10.03	9.72	10.07	7.08	15.41	17.99	-2.58
Mid	5785	11.93	9.88	12.30	10.06	17.20	17.99	-0.79
High	5835	7.50	7.50	10.36	7.11	14.35	17.99	-3.64

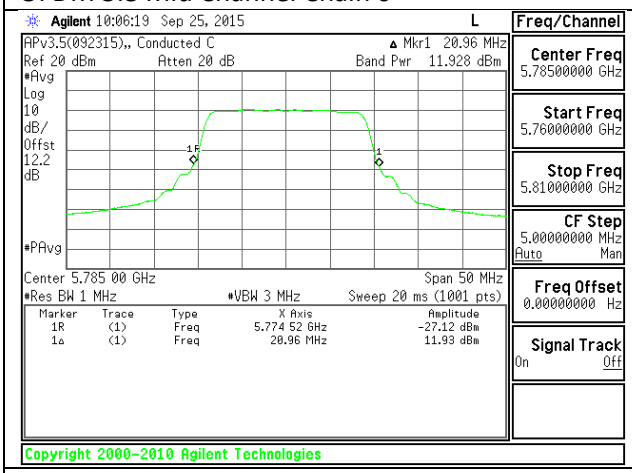
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Chain 3 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	-5.77	-5.88	-6.25	-1.93	1.46	17.99	-16.53
Mid	5785	-2.27	-4.18	-1.90	-4.05	3.04	17.99	-14.95
High	5835	-7.43	-7.61	-7.28	-7.56	-1.45	17.99	-19.44

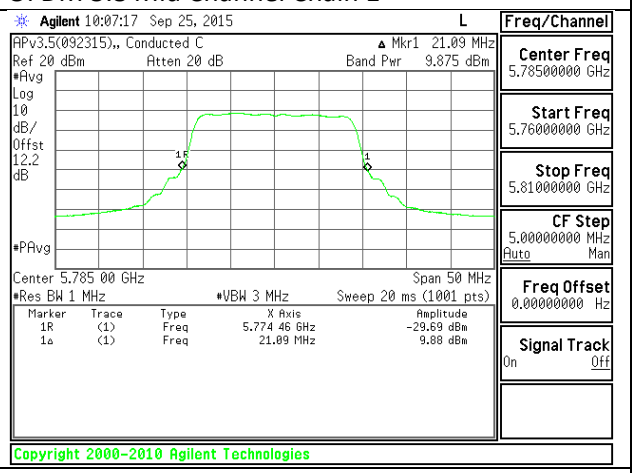
10.4.1. OUTPUT POWER AND PPSD PLOTS

OUTPUT POWER

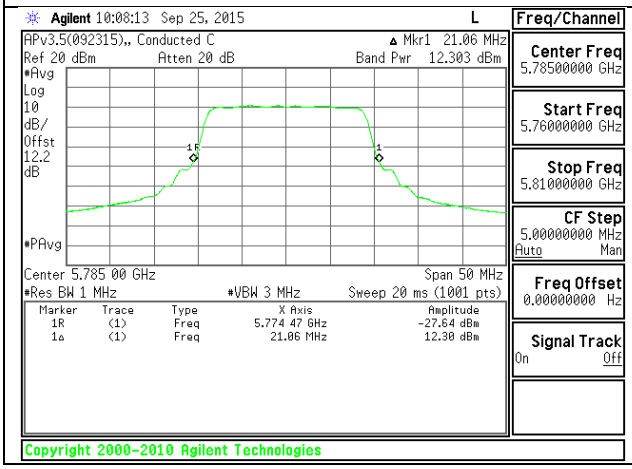
OFDM 5.8 Mid Channel Chain 0



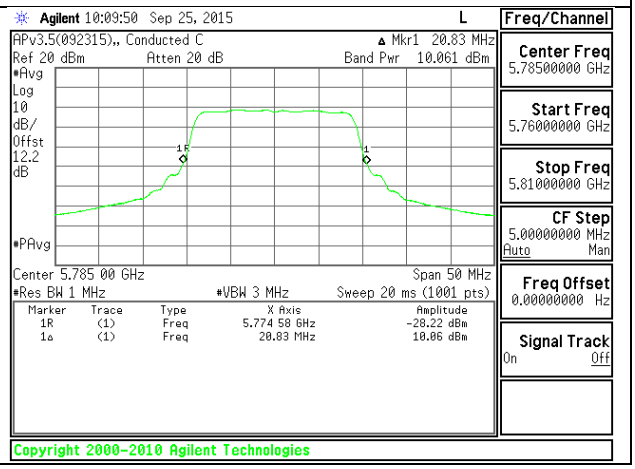
OFDM 5.8 Mid Channel Chain 1



OFDM 5.8 Mid Channel Chain 2

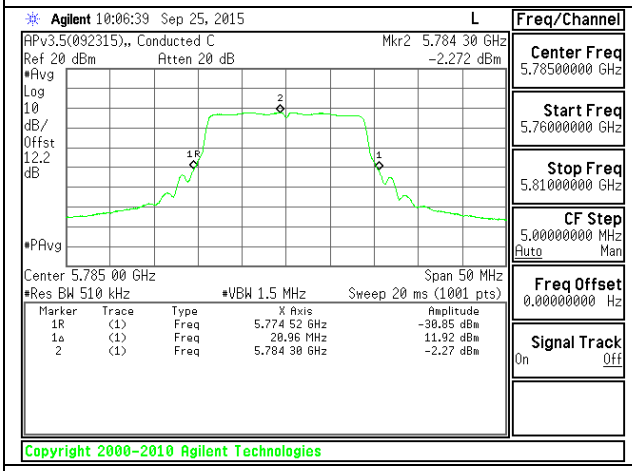


OFDM 5.8 Mid Channel Chain 3

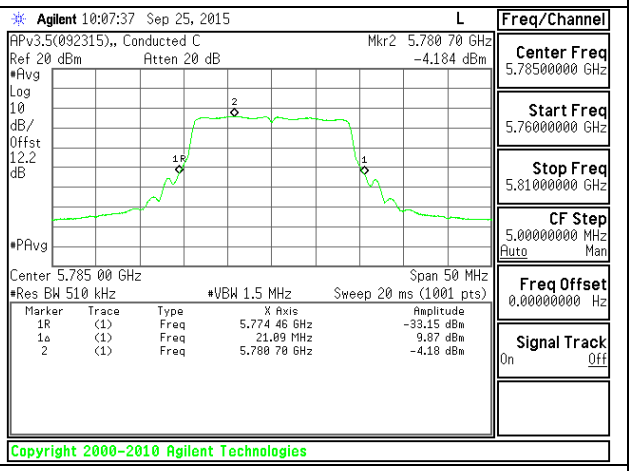


PPSD

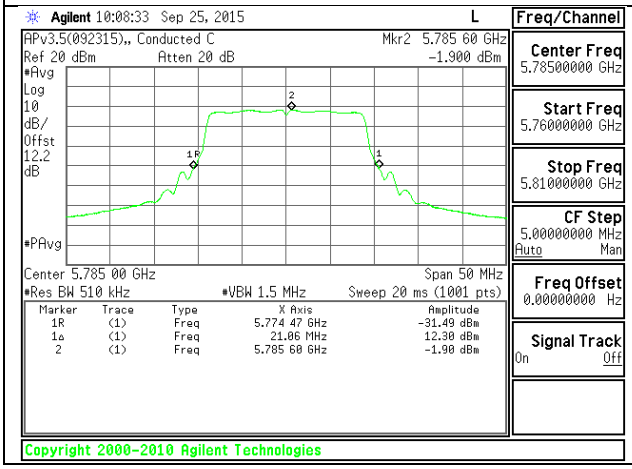
OFDM 5.8 Mid Channel Chain 0



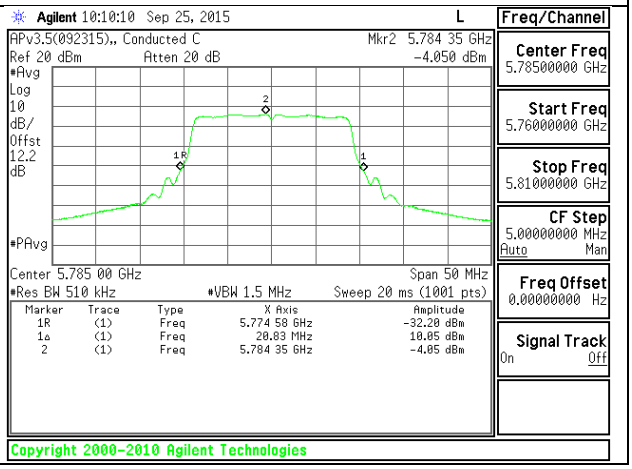
OFDM 5.8 Mid Channel Chain 1



OFDM 5.8 Mid Channel Chain 2



OFDM 5.8 Mid Channel Chain 3



10.5. BAND EDGE

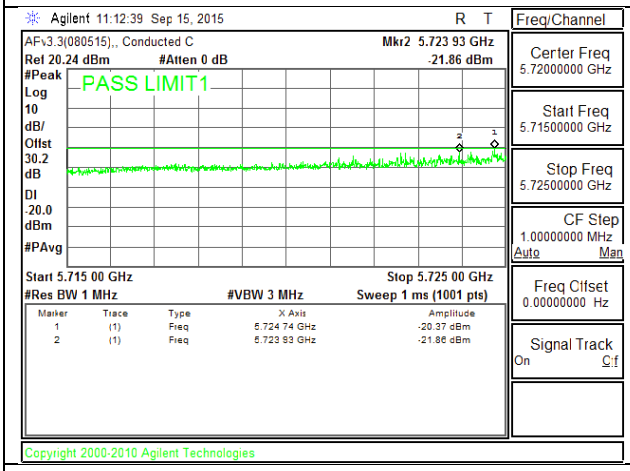
See section 13.1 of this report for band edge results for the frequencies lower than 5715 and higher than 5860.

The reference level offset of 30.2 is calculated by adding the attenuator 10dB/cable loss 2.2dB, individual antenna gain 15dBi, and the correlation gain 3dB.

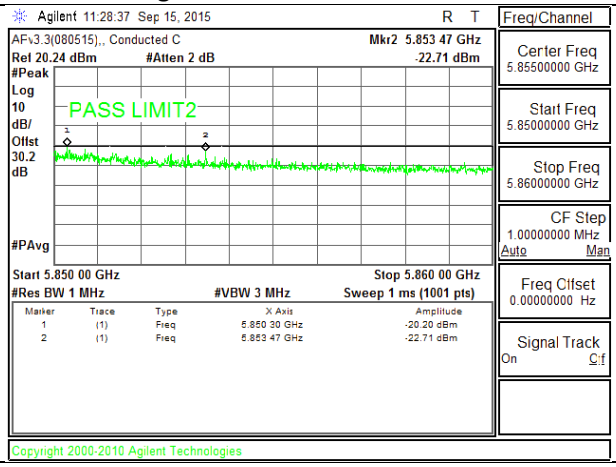
10 + 2.2 + 15 + 3 = 30.2

RESULTS

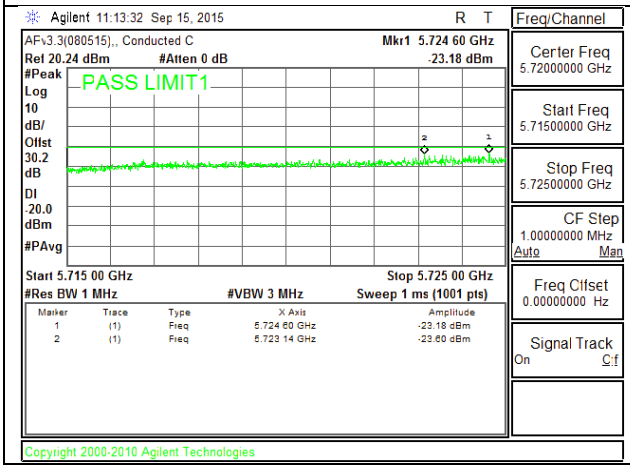
OFDM 5.8 Low Channel Chain 0



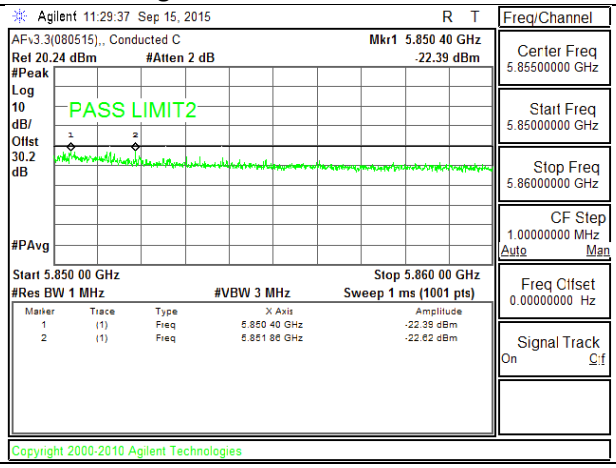
OFDM 5.8 High Channel Chain 0



OFDM 5.8 Low Channel Chain 1

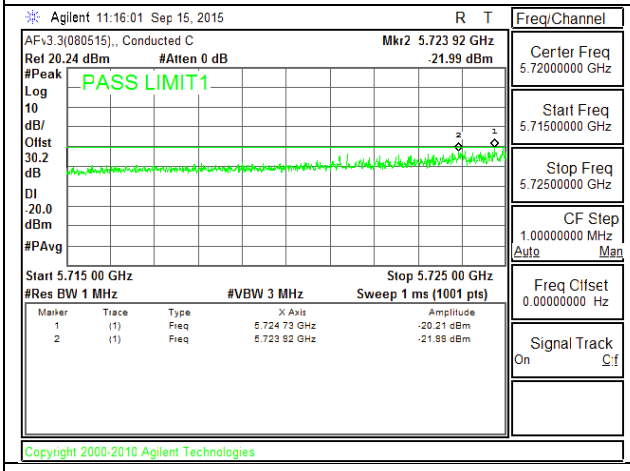


OFDM 5.8 High Channel Chain 1

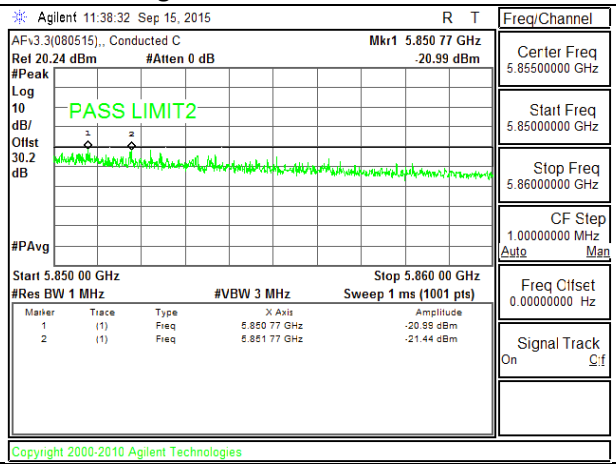


Note: Two antennas on the same polarization. So the EIRP limit for band edge is -20dBm/MHz and -30dBm/MHz

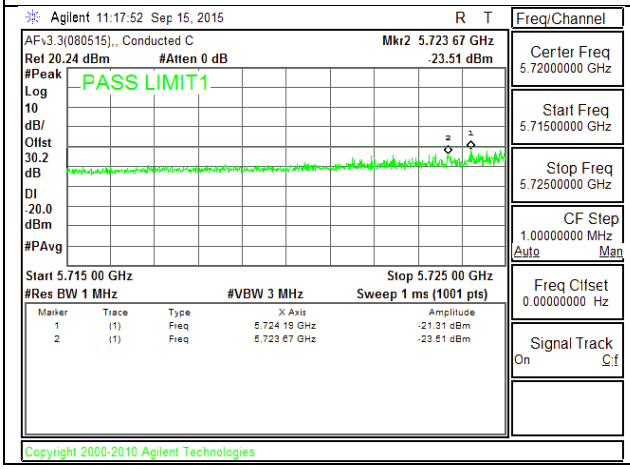
OFDM 5.8 Low Channel Chain 2



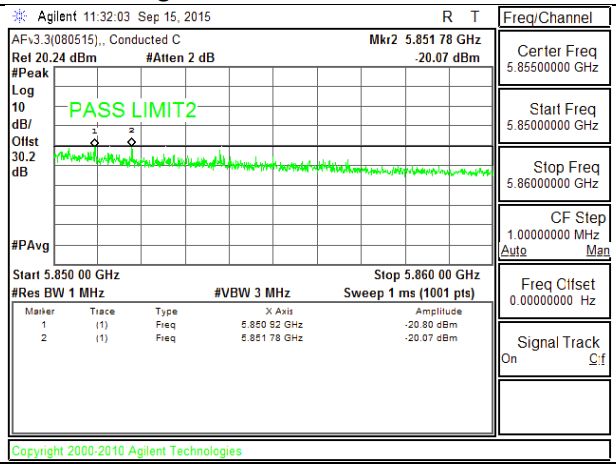
OFDM 5.8 High Channel Chain 2



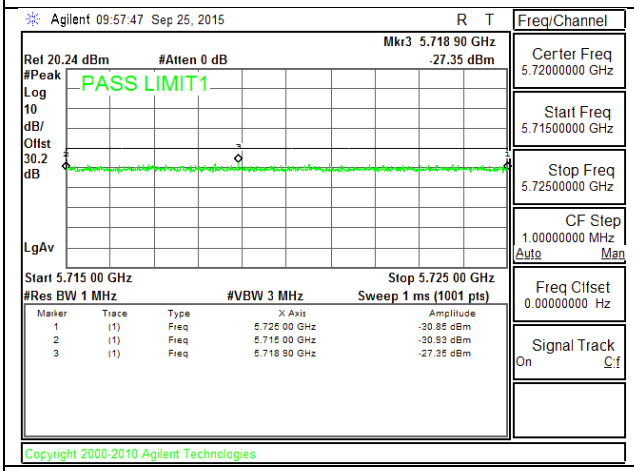
OFDM 5.8 Low Channel Chain 3



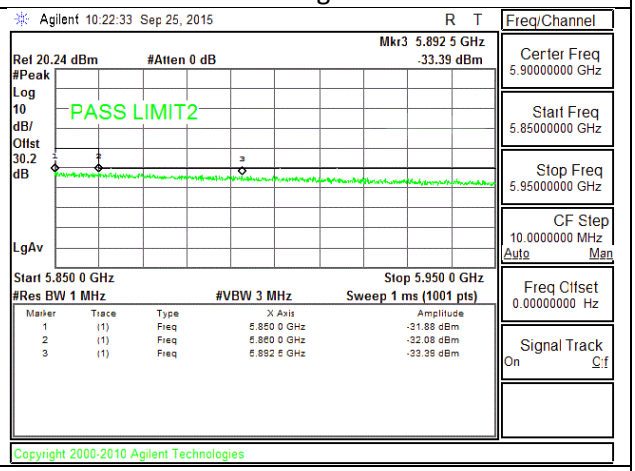
OFDM 5.8 High Channel Chain 3



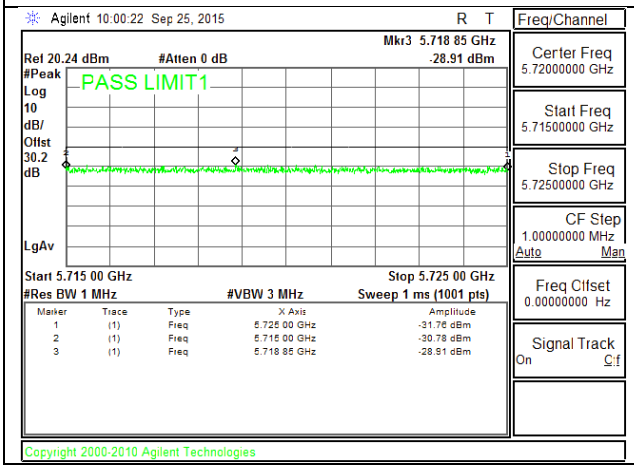
OFDM 5.8 Mid Channel Low BE Chain 0



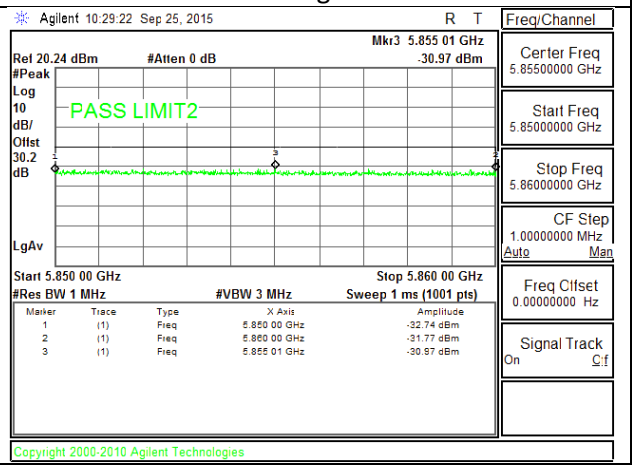
OFDM 5.8 Mid Channel High BE Chain 0



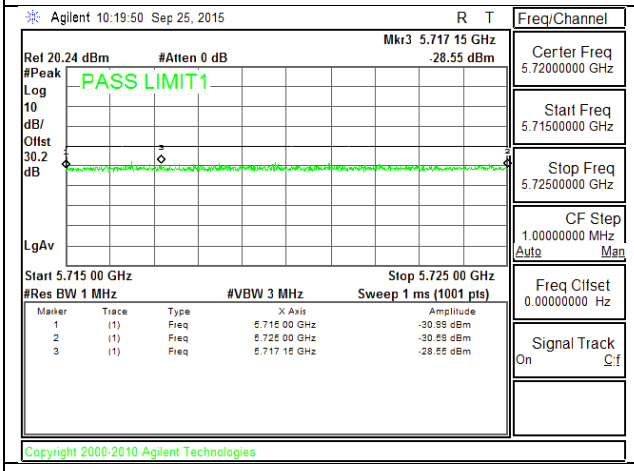
OFDM 5.8 Mid Channel Low BE Chain 1



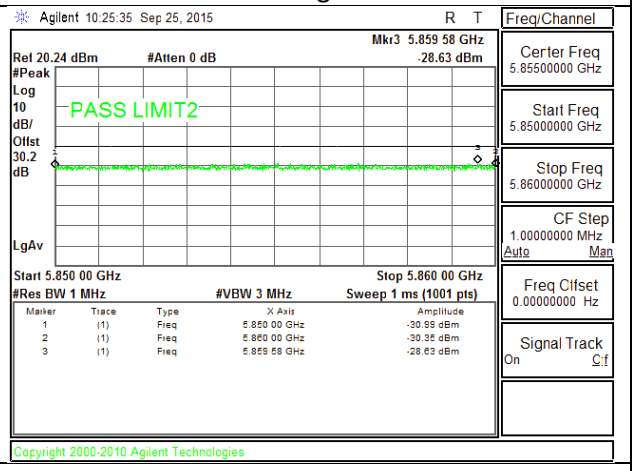
OFDM 5.8 Mid Channel High BE Chain 1



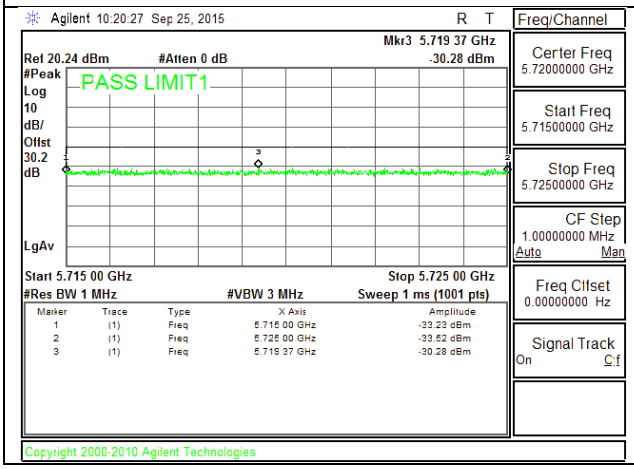
OFDM 5.8 Mid Channel Low BE Chain 2



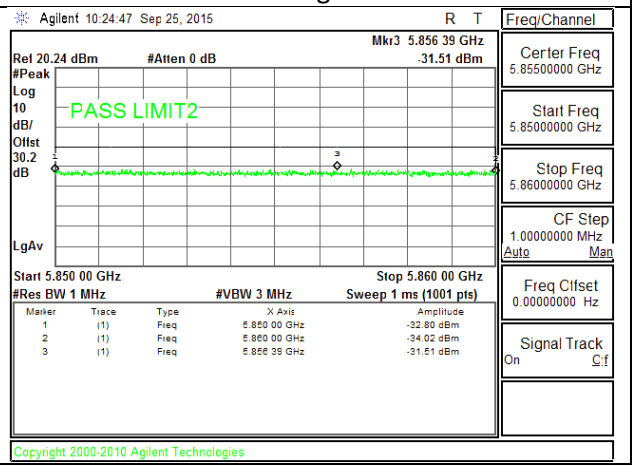
OFDM 5.8 Mid Channel High BE Chain 2



OFDM 5.8 Mid Channel Low BE Chain 3



OFDM 5.8 Mid Channel High BE Chain 3



11. ANTENNA PORT TEST RESULTS CASE 2 (20+20 MHz BW; Fully-Uncorrelated)

11.1. 6 dB BANDWIDTH

LIMITS

FCC §15.407

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

TEST PROCEDURE

Reference to 789033 D02 General UNII Test Procedures New Rules v01: 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

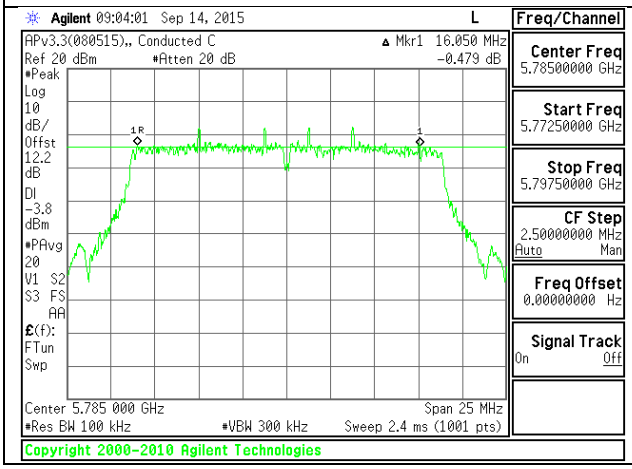
11.1.1. OFDM MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	6 dB BW Chain 3 (MHz)	Minimum Limit (MHz)
Low	5745	17.0040	16.6920	17.1250	16.1000	0.5
Mid	5785	16.0500	15.8880	16.9260	16.8480	0.5
High	5835	16.2750	16.0500	16.5250	15.7440	0.5

11.1.2. 6 dB BANDWIDTH MID CH PLOTS

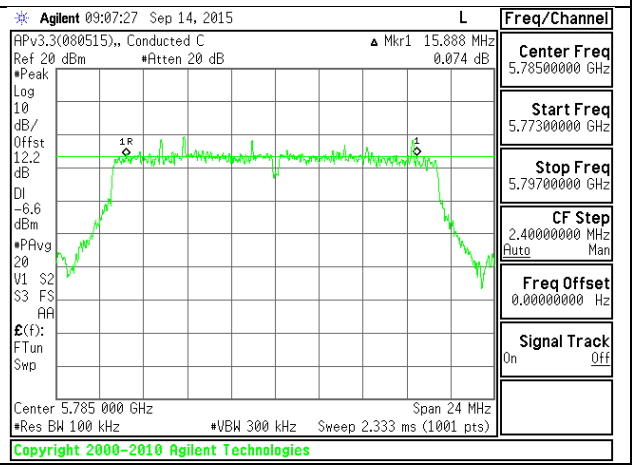
CHAIN 0

OFDM 5.8 Mid Ch



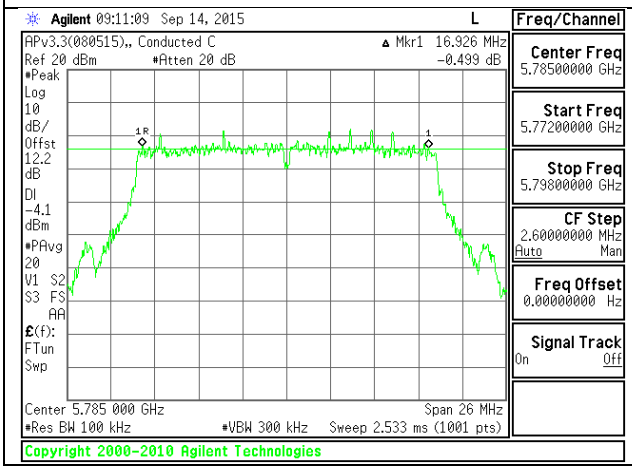
CHAIN 1

OFDM 5.8 Mid Ch



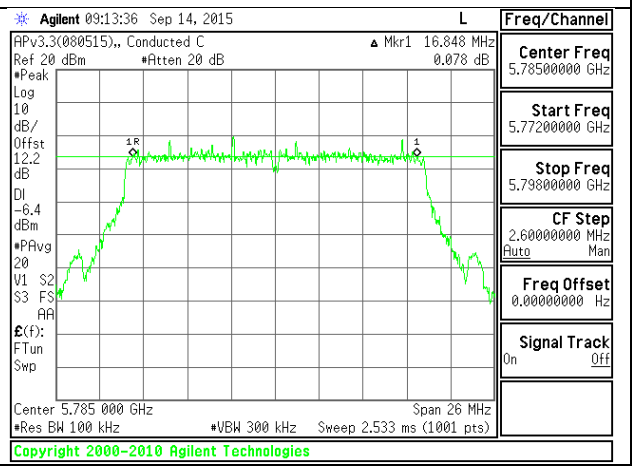
CHAIN 2

OFDM 5.8 Mid Ch



CHAIN 3

OFDM 5.8 Mid Ch



11.2. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

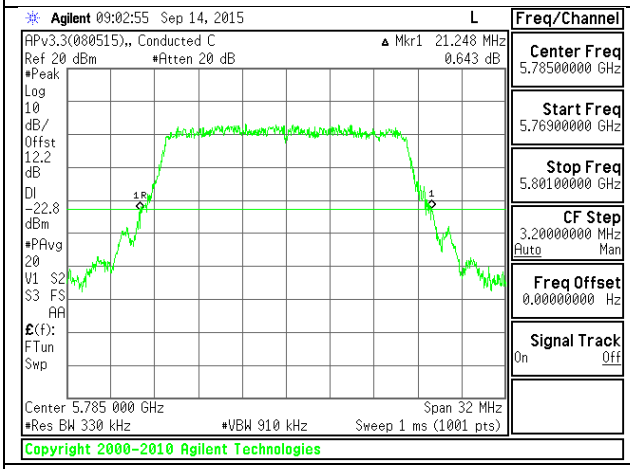
RESULTS

11.2.1. OFDM MODE IN THE 5.8 GHz BAND

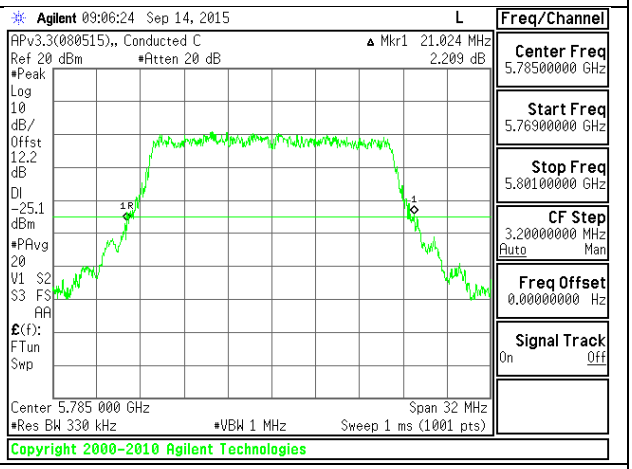
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)	26 dB BW Chain 3 (MHz)
Low	5745	20.93	21.12	20.34	20.83
Mid	5785	21.25	21.02	20.77	20.96
High	5835	20.74	21.06	20.31	20.43

11.2.2. 26 dB BANDWIDTH MID CH PLOTS

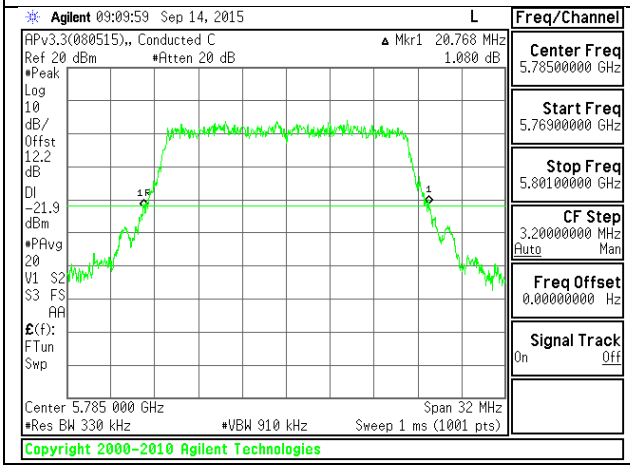
OFDM 5.8 Mid Channel Chain 0



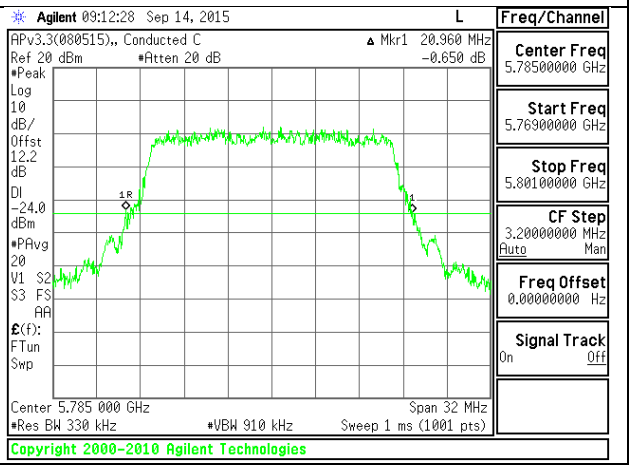
OFDM 5.8 Mid Channel Chain 1



OFDM 5.8 Mid Channel Chain 2



OFDM 5.8 Mid Channel Chain 3



11.3. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

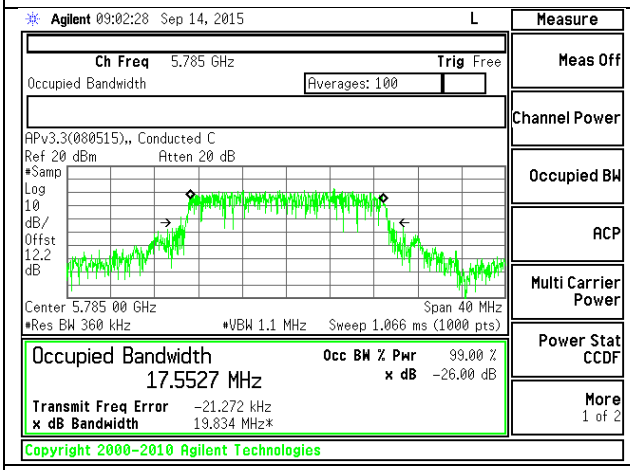
RESULTS

11.3.1. OFDM MODE IN THE 5.8 GHz BAND

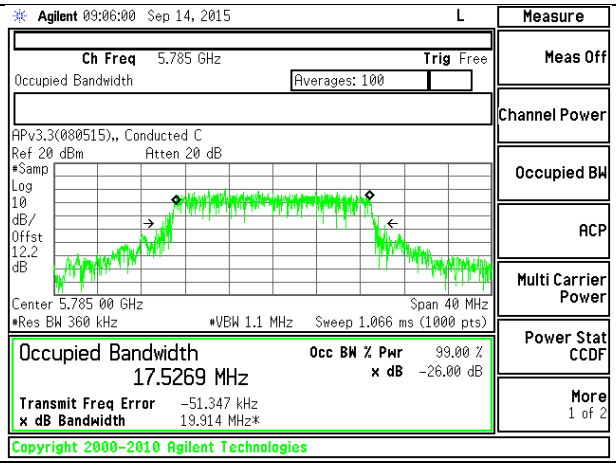
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)	99% BW Chain 3 (MHz)
Low	5745	17.582	17.552	17.541	17.552
Mid	5785	17.553	17.527	17.575	17.557
High	5835	17.612	17.542	17.561	17.543

11.3.2. 99% BANDWIDTH MID CH PLOTS

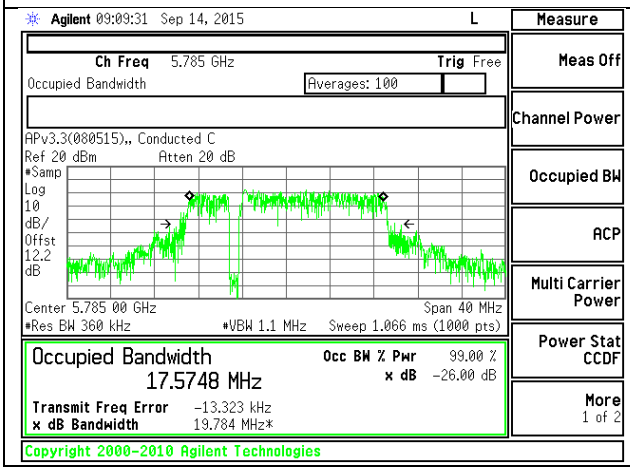
OFDM 5.8 Mid Channel Chain 0



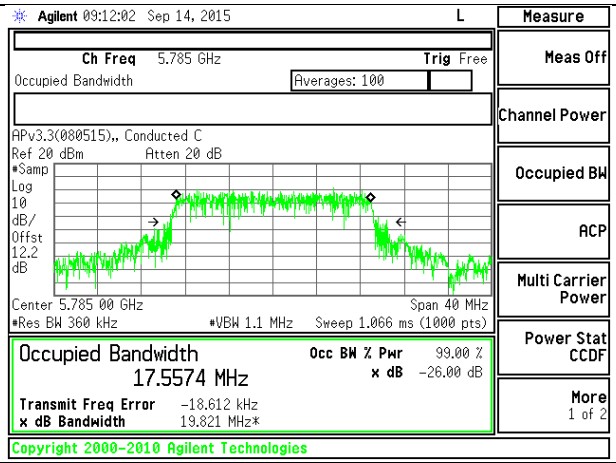
OFDM 5.8 Mid Channel Chain 1



OFDM 5.8 Mid Channel Chain 2



OFDM 5.8 Mid Channel Chain 3



11.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (3)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RSS-247
Band 5725-5850 MHz:
The maximum conducted output power shall not exceed 1 W. The power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBiare used, both the maximum conducted output power and the power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixedpoint-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint[Footnote3] systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

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

11.4.1. OFDM MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5745	20.34	17.5410	15.00	15.00
Mid	5785	20.77	17.5270	15.00	15.00
High	5835	20.31	17.5420	15.00	15.00

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5745	21.00	21.00	36.00	21.00	21.00	21.00	21.00
Mid	5785	21.00	21.00	36.00	21.00	21.00	21.00	21.00
High	5835	21.00	21.00	36.00	21.00	21.00	21.00	21.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Chain 3 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	10.33	10.18	11.41	8.28	16.21	21.00	-4.79
Mid	5785	14.84	12.99	15.35	13.66	20.33	21.00	-0.67
High	5835	7.55	7.52	11.34	7.86	14.92	21.00	-6.08

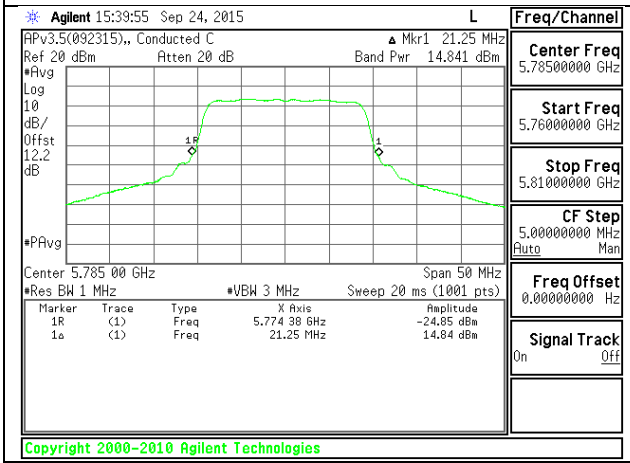
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Chain 2 Meas PPSD (dBm)	Chain 3 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	-1.07	-3.83	-1.96	-4.43	3.41	21.00	-17.59
Mid	5785	0.75	-1.23	1.14	-0.61	6.14	21.00	-14.86
High	5835	-6.25	-7.19	-2.91	-5.63	0.84	21.00	-20.16

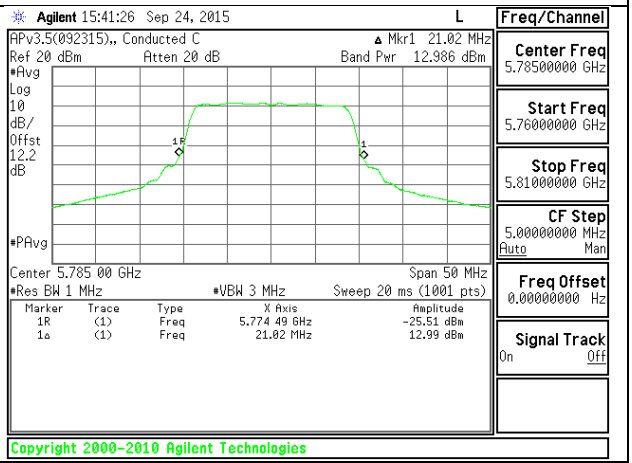
11.4.2. OUTPUT POWER AND PPSD PLOTS

OUTPUT POWER

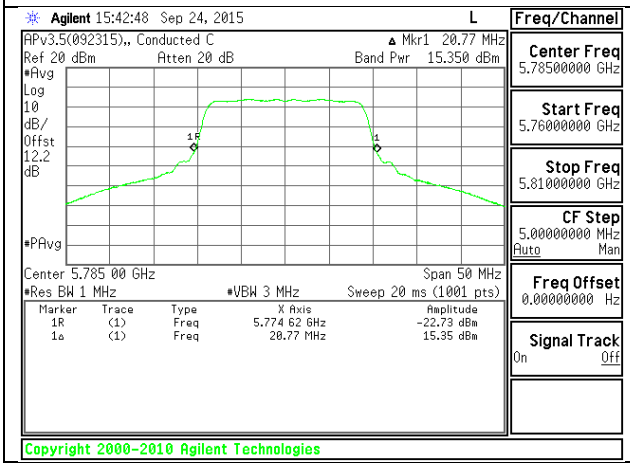
OFDM 5.8 Mid Channel Chain 0



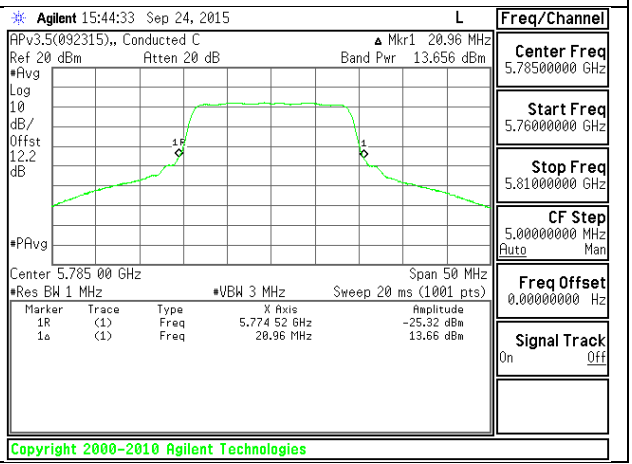
OFDM 5.8 Mid Channel Chain 1



OFDM 5.8 Mid Channel Chain 2

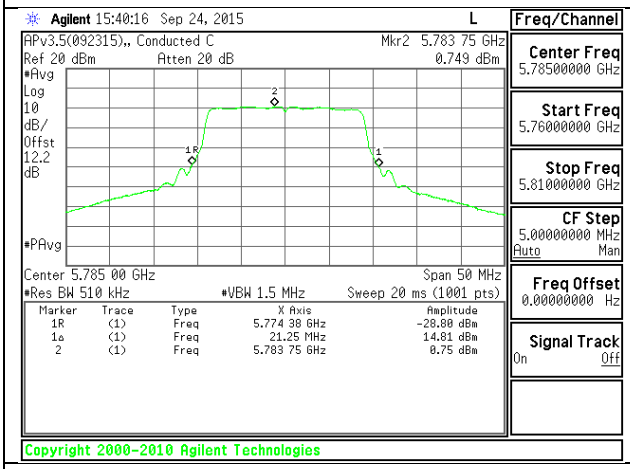


OFDM 5.8 Mid Channel Chain 3

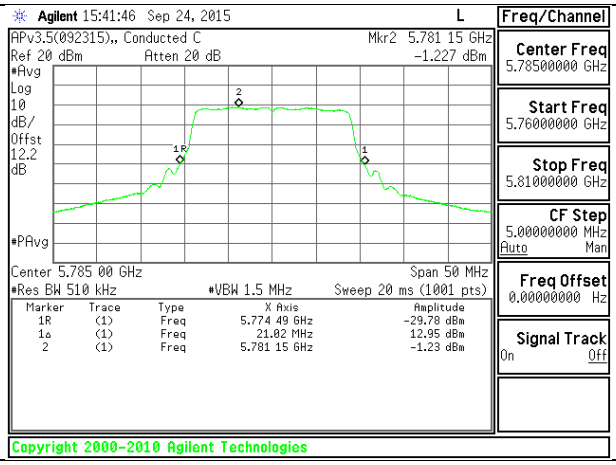


PPSD

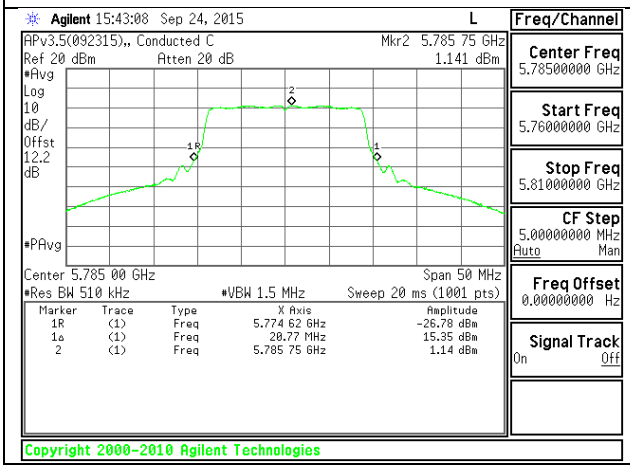
OFDM 5.8 Mid Channel Chain 0



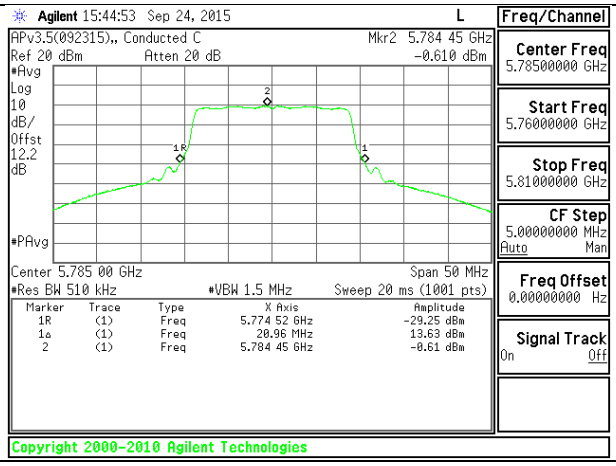
OFDM 5.8 Mid Channel Chain 1



OFDM 5.8 Mid Channel Chain 2



OFDM 5.8 Mid Channel Chain 3



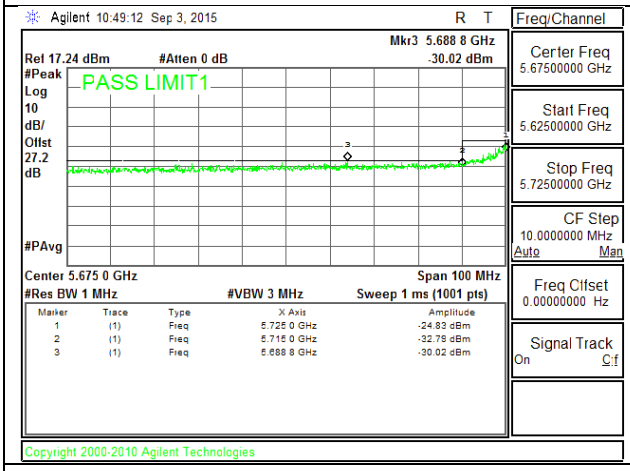
11.5. BAND EDGE

The reference level offset of 27.2 is calculated by adding the attenuator 10 dB/cable loss 2.2dB and the individual antenna gain 15dB.

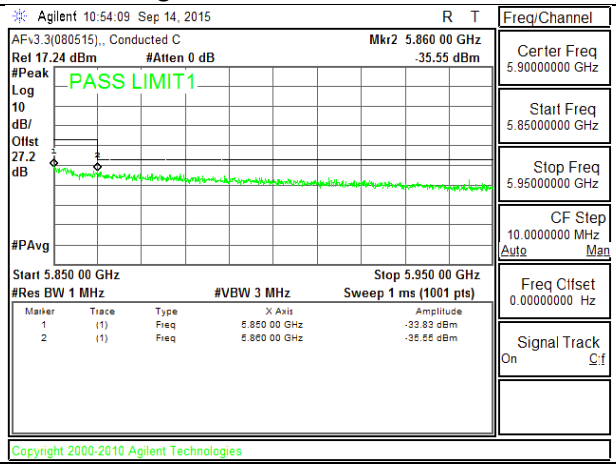
10 + 2.2 + 15 = 27.2

RESULTS

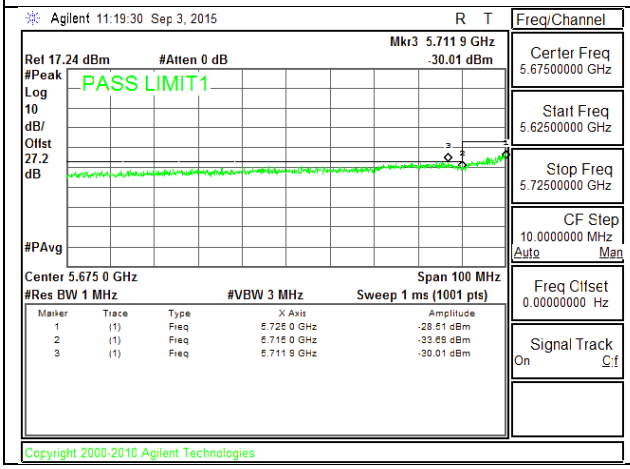
OFDM 5.8 Low Channel Chain 0



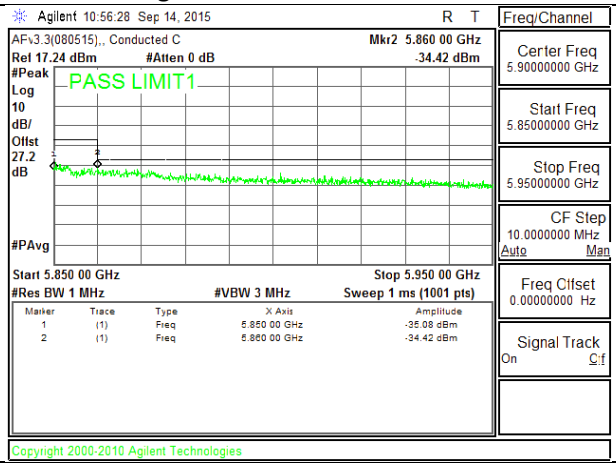
OFDM 5.8 High Channel Chain 0



OFDM 5.8 Low Channel Chain 1

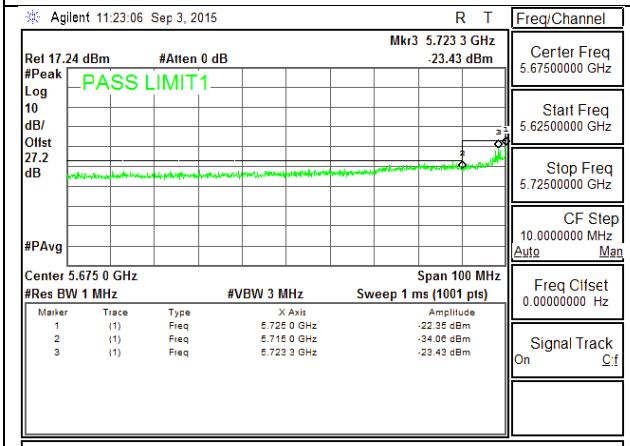


OFDM 5.8 High Channel Chain 1

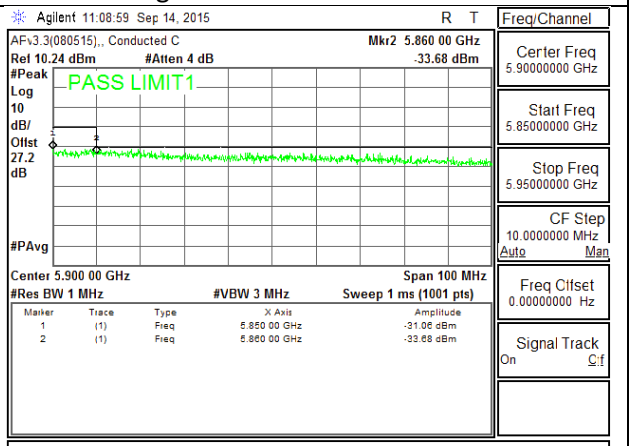


Note: Two antennas on the same polarization. So the EIRP limit for band edge is -20dBm/MHz and -30dBm/MHz

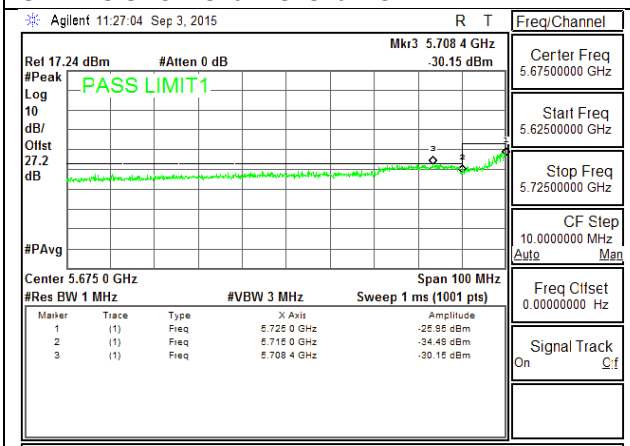
OFDM 5.8 Low Channel Chain 2



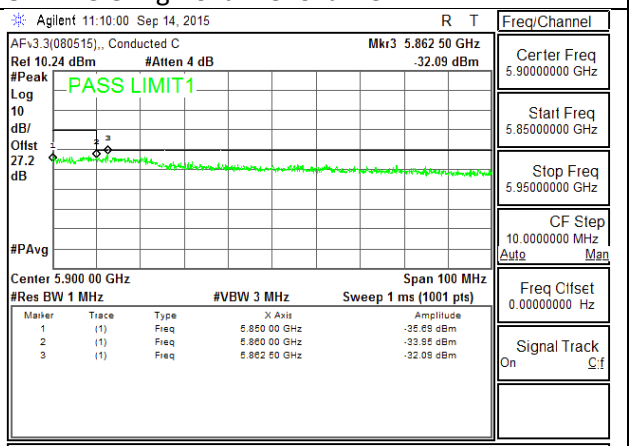
OFDM 5.8 High Channel Chain 2



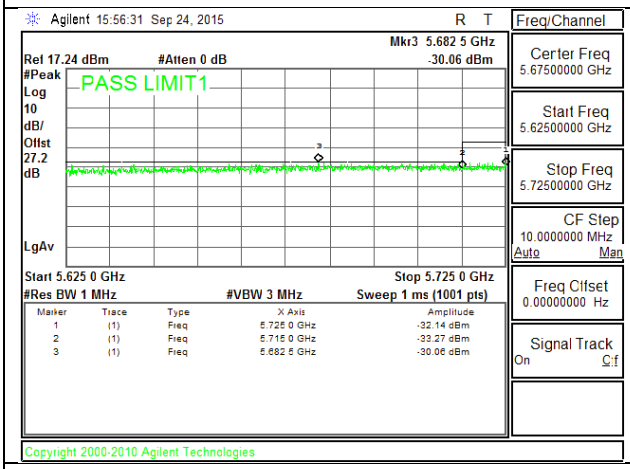
OFDM 5.8 Low Channel Chain 3



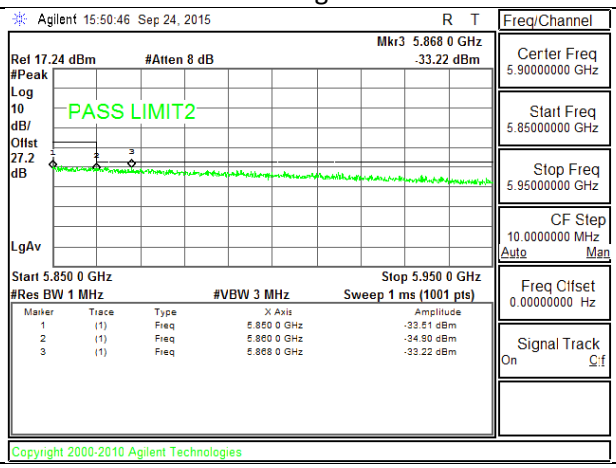
OFDM 5.8 High Channel Chain 3



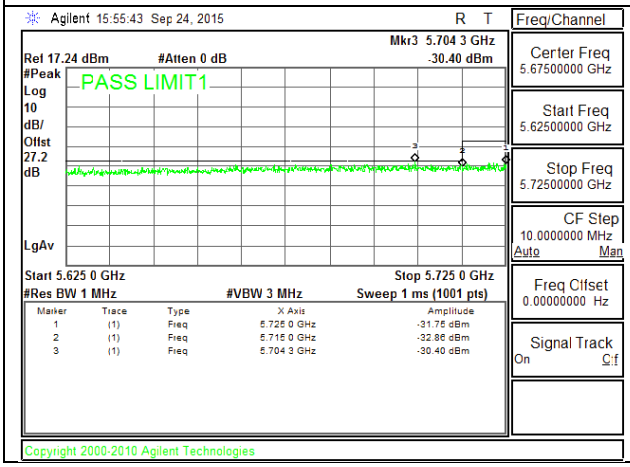
OFDM 5.8 Mid Channel Low BE Chain 0



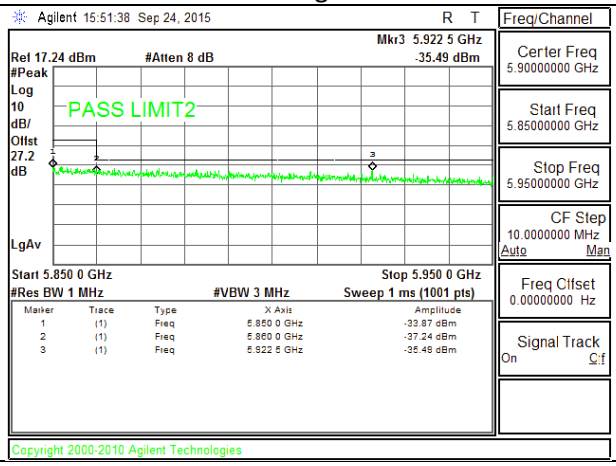
OFDM 5.8 Mid Channel High BE Chain 0



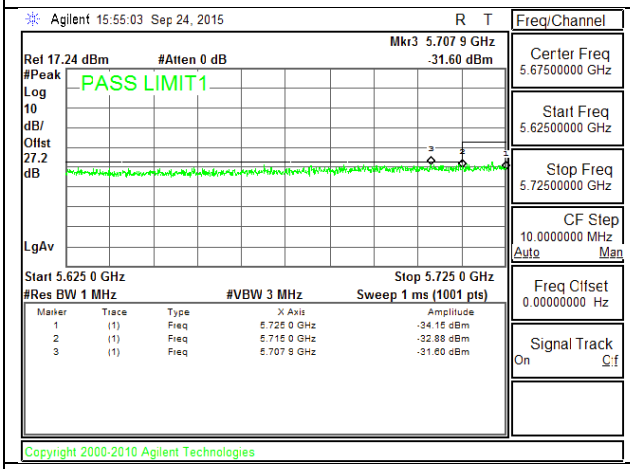
OFDM 5.8 Mid Channel Low BE Chain 1



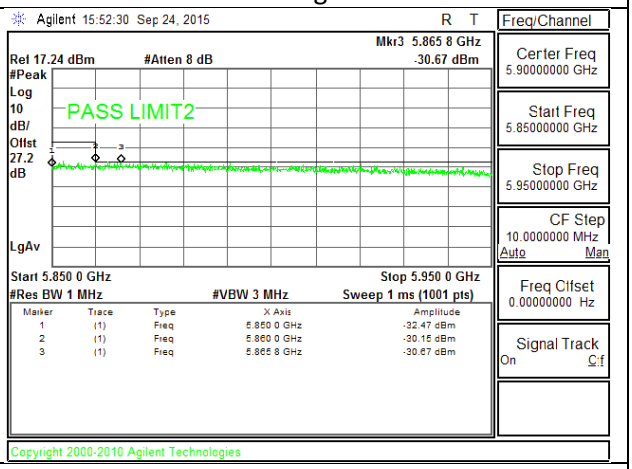
OFDM 5.8 Mid Channel High BE Chain 1



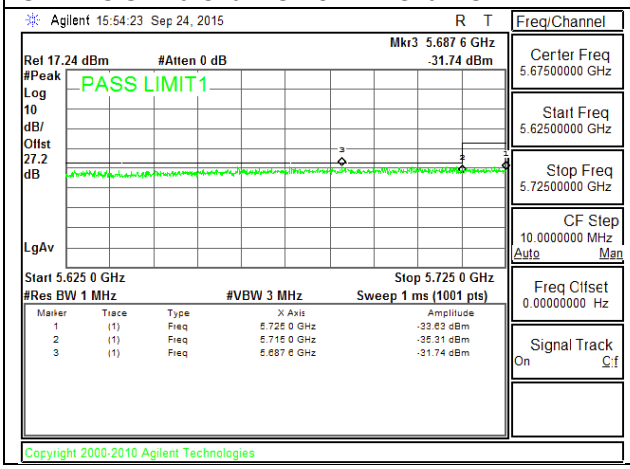
OFDM 5.8 Mid Channel Low BE Chain 2



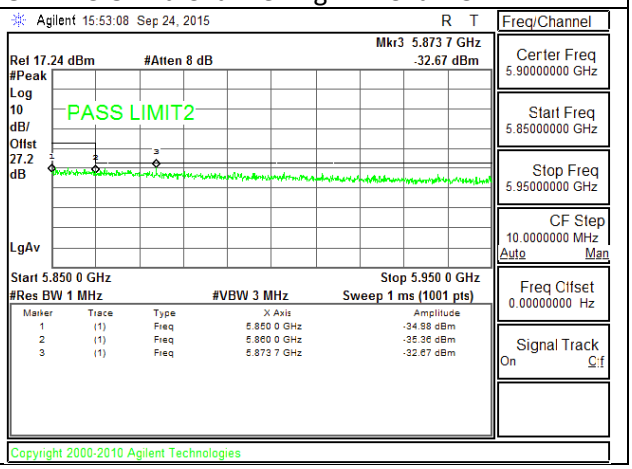
OFDM 5.8 Mid Channel High BE Chain 2



OFDM 5.8 Mid Channel Low BE Chain 3



OFDM 5.8 Mid Channel High BE Chain 3



12. ANTENNA PORT TEST RESULTS CASE 3 SISO (20 MHz BW; Full-Uncorrelated)

12.1. 6 dB BANDWIDTH

LIMITS

FCC §15.407

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

TEST PROCEDURE

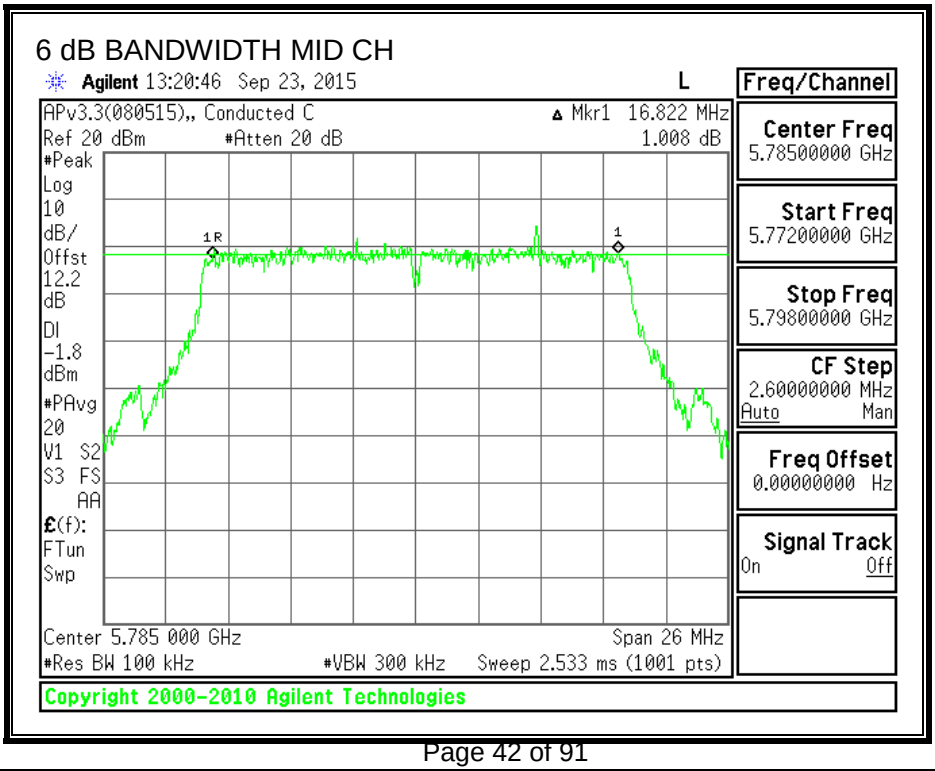
Reference to 789033 D02 General UNII Test Procedures New Rules v01: The transmitter output is connected to a spectrum analyzer with the RBW set to100KHz, the VBW >= 3 x RBW, peak detector and max hold.

RESULTS

12.1.1. OFDM MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	16.7180	0.5
Mid	5785	16.8220	0.5
High	5835	16.9520	0.5

12.1.2. 6 dB BANDWIDTH MID CH PLOT



12.2. 26 dB BANDWIDTH

LIMITS

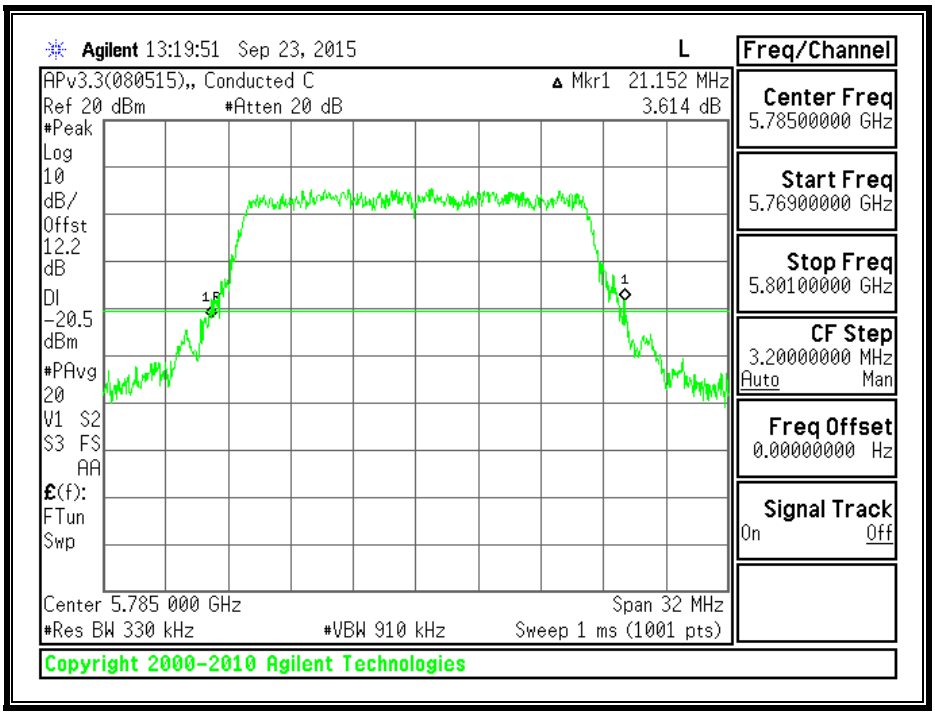
None; for reporting purposes only.

RESULTS

12.2.1. OFDM MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	21.02
Mid	5785	21.15
High	5835	20.80

12.2.2. 26 dB BANDWIDTH MID CH PLOT



12.3. 99% BANDWIDTH

LIMITS

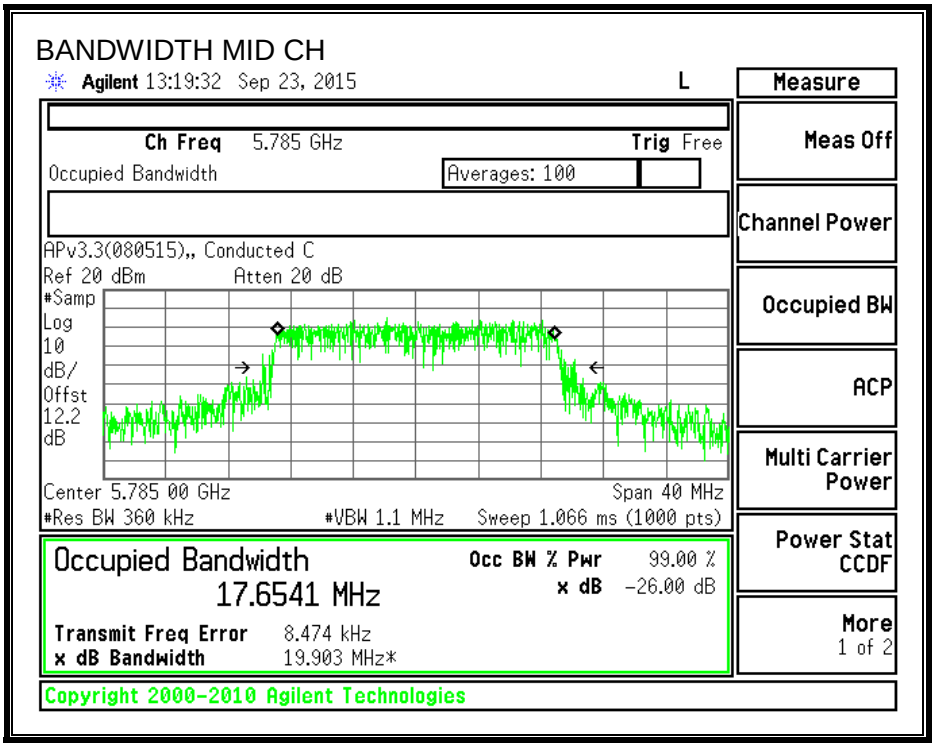
None; for reporting purposes only.

RESULTS

12.3.1. OFDM MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	17.626
Mid	5785	17.654
High	5835	17.650

12.3.2. 99% BANDWIDTH MID CH PLOT



12.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (3)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RSS-247
Band 5725-5850 MHz:
The maximum conducted output power shall not exceed 1 W. The power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBiare used, both the maximum conducted output power and the power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixedpoint-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint[Footnote3] systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

12.4.1. OFDM MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5745	21.0	17.6	15.00
Mid	5785	21.2	17.7	15.00
High	5835	20.8	17.6	15.00

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5745	21.00	21.00	36.00	21.00	21.00	21.00	21.00
Mid	5785	21.00	21.00	36.00	21.00	21.00	21.00	21.00
High	5835	21.00	21.00	36.00	21.00	21.00	21.00	21.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PPSD

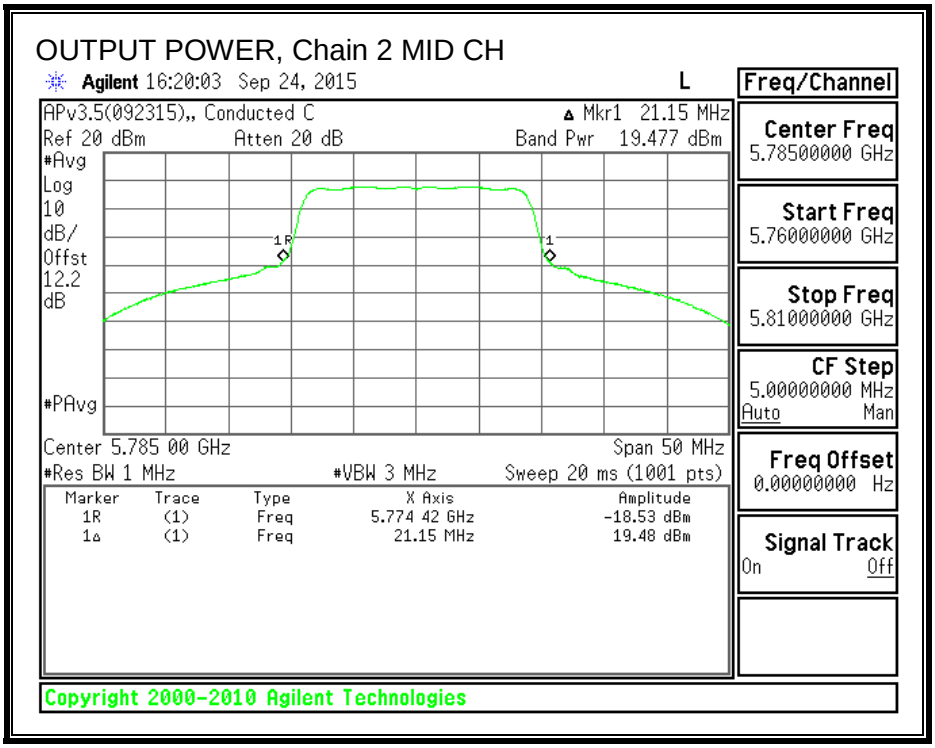
Output Power Results

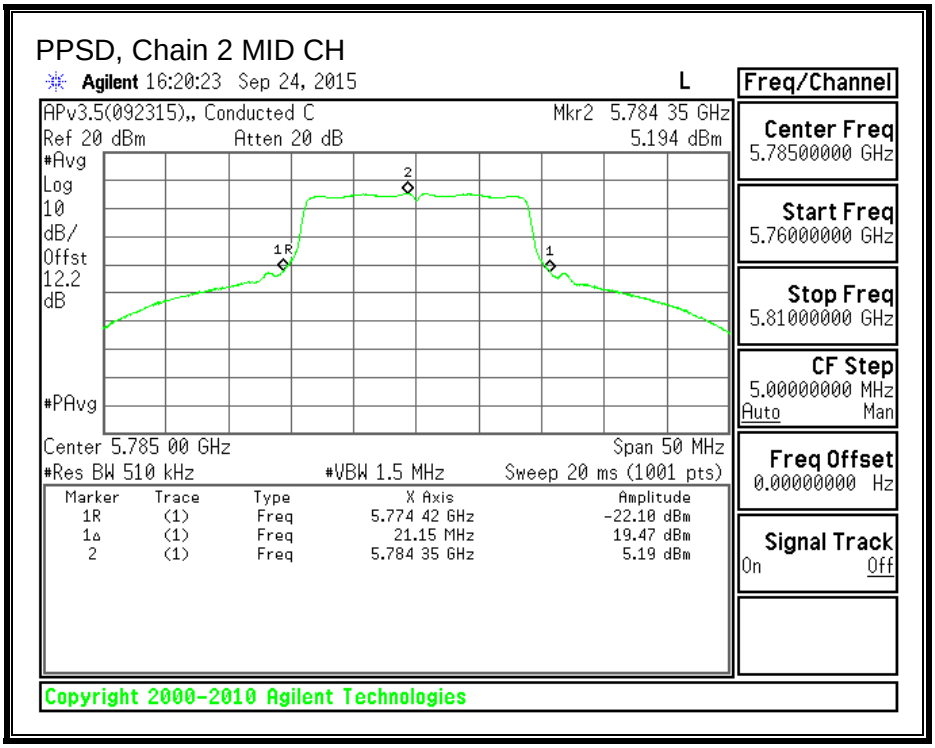
Channel	Frequency (MHz)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	14.39	14.39	21.00	-6.61
Mid	5785	19.48	19.48	21.00	-1.52
High	5835	14.61	14.61	21.00	-6.39

PPSD Results

Channel	Frequency (MHz)	Chain 2 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	0.13	0.13	21.00	-20.87
Mid	5785	5.19	5.19	21.00	-15.81
High	5835	0.34	0.34	21.00	-20.66

OUTPUT POWER AND PPSD, Chain 2





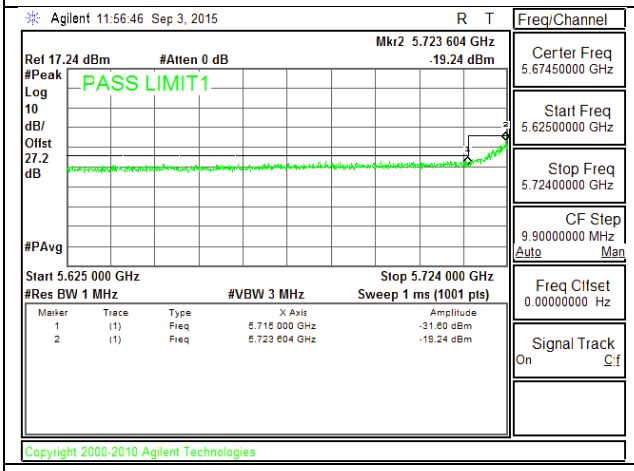
12.5. BAND EDGE

The reference level offset of 27.2 is calculated by adding the attenuator 10 dB/cable loss 2.2dB and the individual antenna gain 15dB.

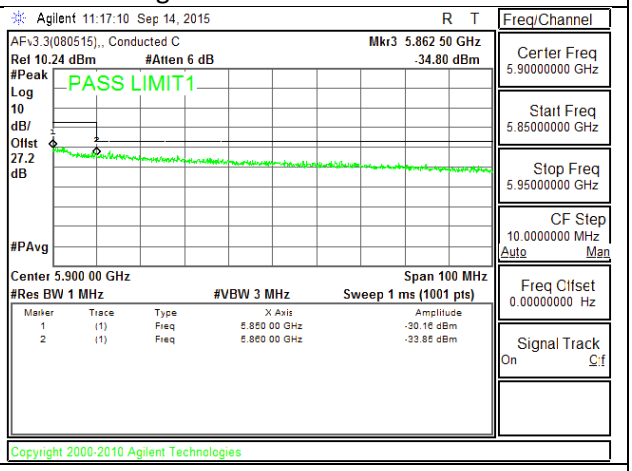
10 + 2.2 + 15 = 27.2

RESULTS

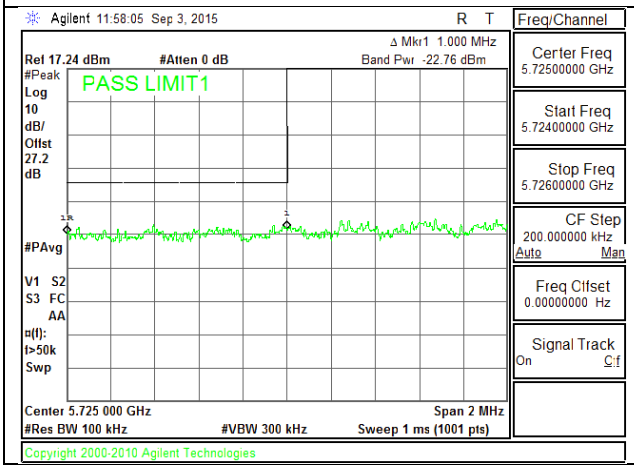
OFDM 5.8 Low Channel Chain 0



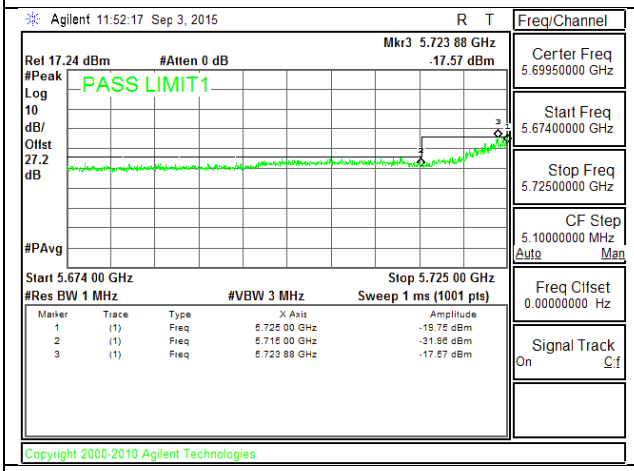
OFDM 5.8 High Channel Chain 0



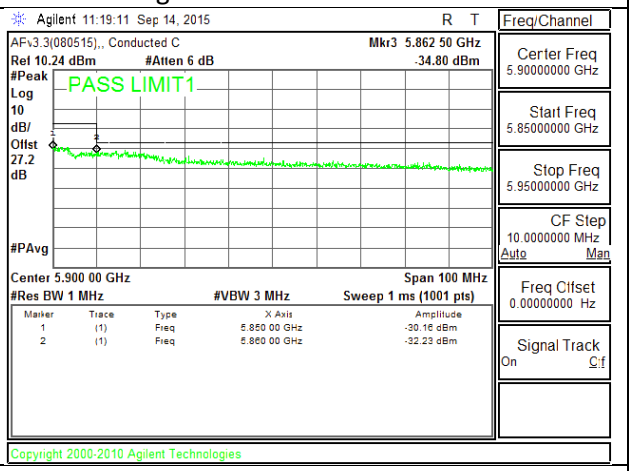
OFDM 5.8 Low Channel Chain 0 Integration Method



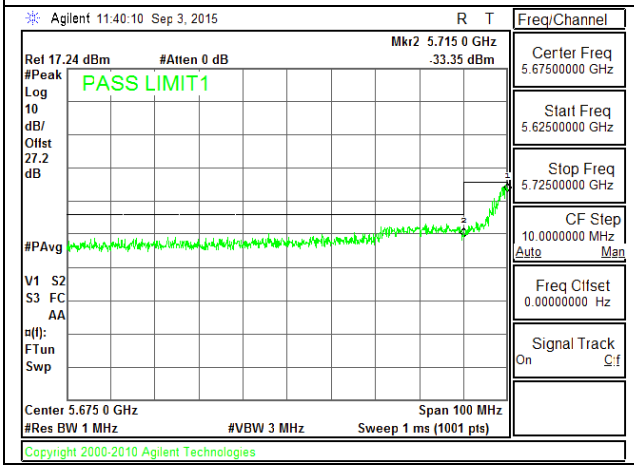
OFDM 5.8 Low Channel Chain 1



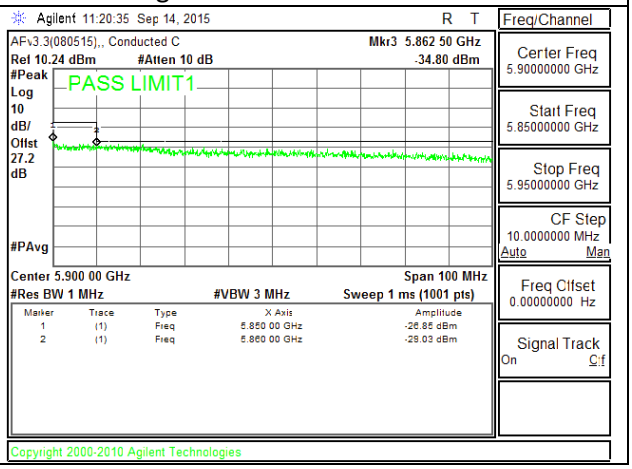
OFDM 5.8 High Channel Chain 1



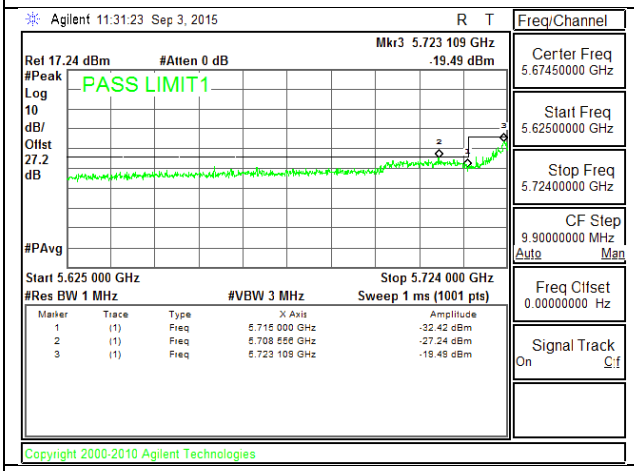
OFDM 5.8 Low Channel Chain 2



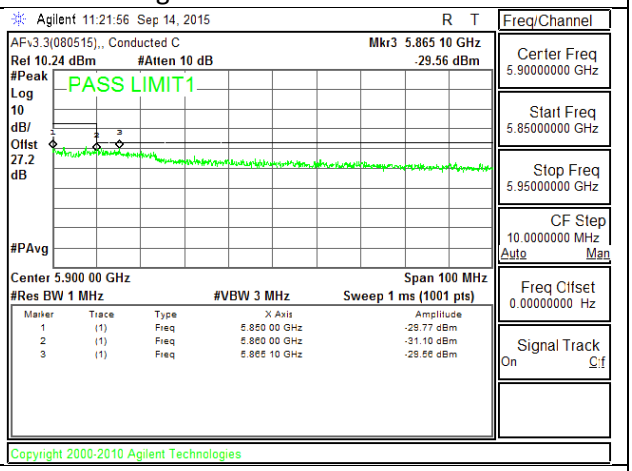
OFDM 5.8 High Channel Chain 2



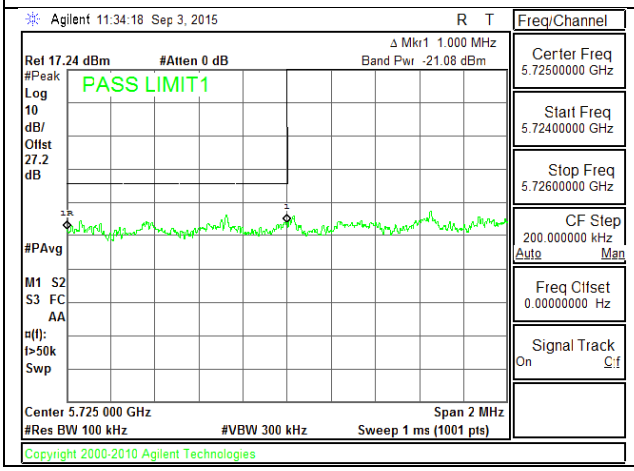
OFDM 5.8 Low Channel Chain 3



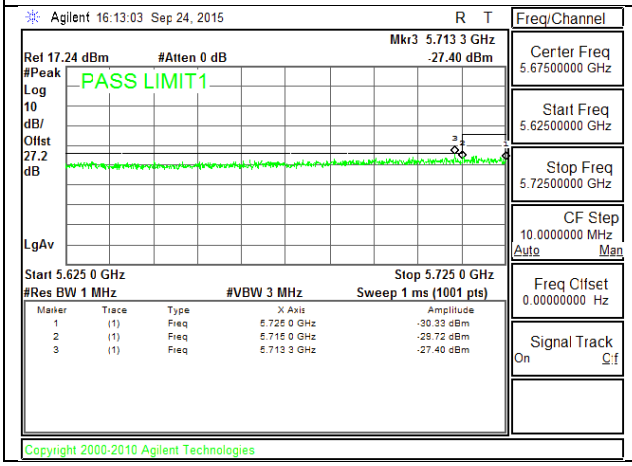
OFDM 5.8 High Channel Chain 3



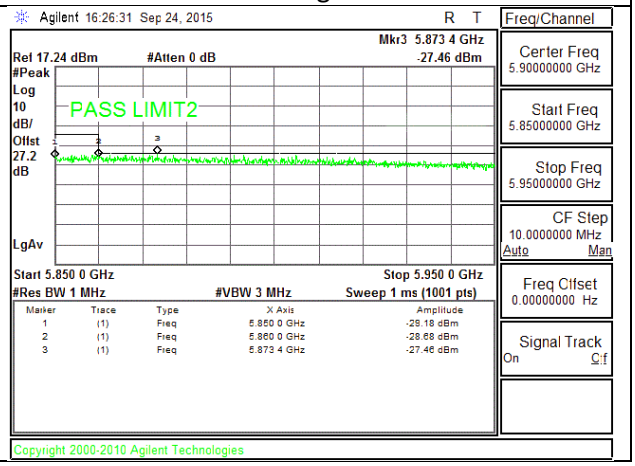
OFDM 5.8 Low Channel Chain 3 Integration Method



OFDM 5.8 Mid Channel Low BE Chain 2



OFDM 5.8 Mid Channel High BE Chain 2



13. TRANSMITTER ABOVE 1 GHz CASE 1

LIMITS

FCC §15.205 and §15.209

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 for below 1GHz and 150cm for above 1GHz. 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.

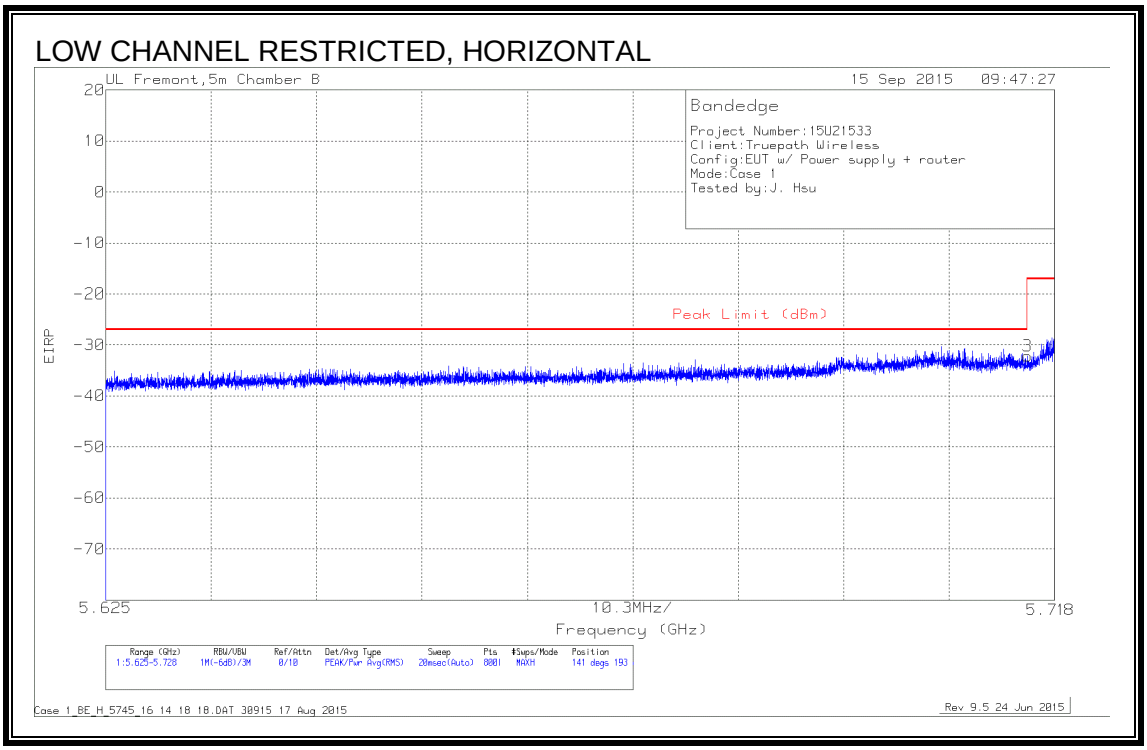
Reference to KDB 789033 UNII part H) 6) d) Method VB:
For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor to the reading offset for average measurements.

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.

13.1. TX ABOVE 1 GHz OFDM MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

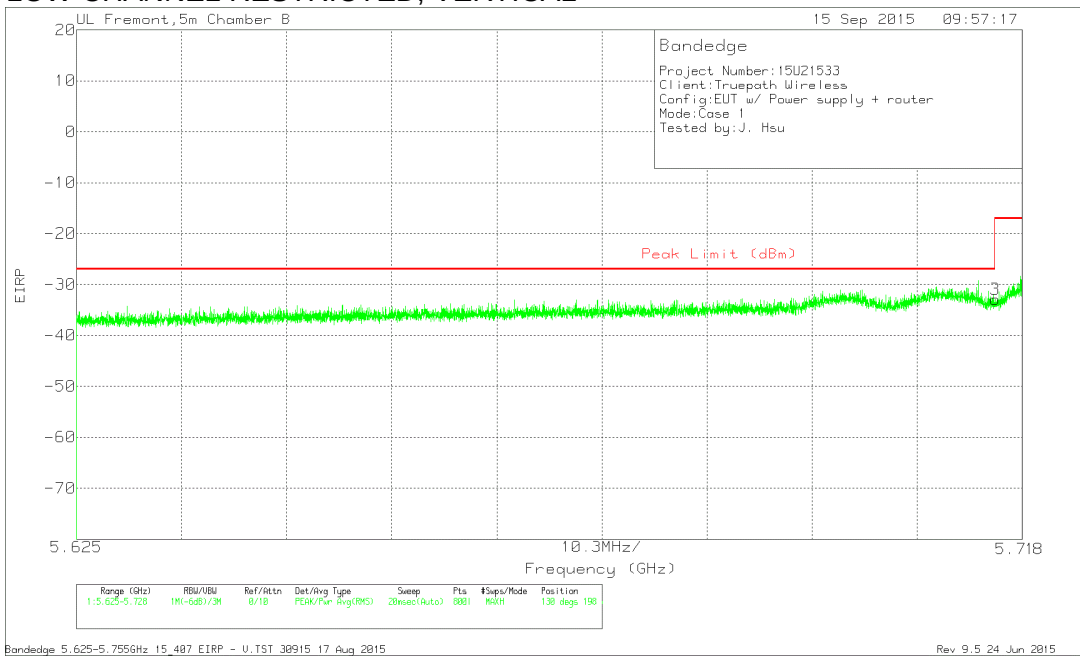


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	5.715	-57.29	Pk	35	-21.7	11.8	-32.19	-17	-15.19	141	193	H

Pk - Peak detector

LOW CHANNEL RESTRICTED, VERTICAL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	5.715	-57.98	Pk	35	-21.7	11.8	-32.88	-17	-15.88	130	198	V

Pk - Peak detector

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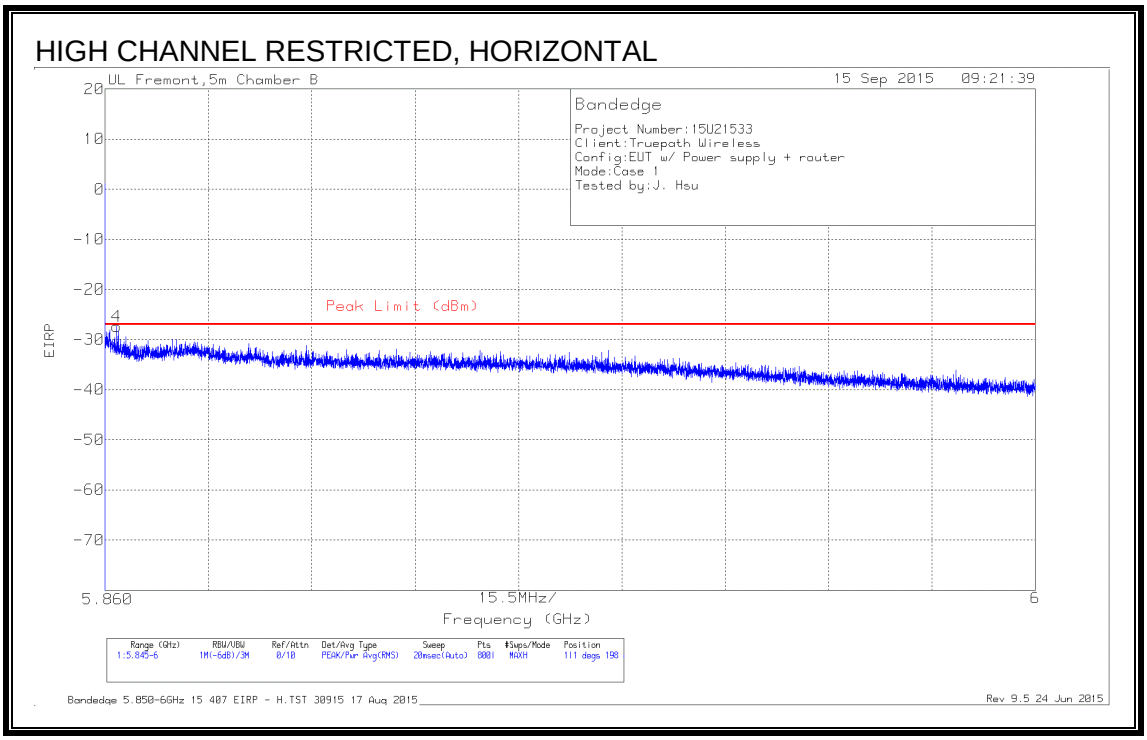
AUTHORIZED BANDEDGE (HIGH CHANNEL)



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	5.862	-52.99	Pk	35.4	-21.6	11.8	-27.39	-27	-.39	111	198	H

Pk - Peak detector

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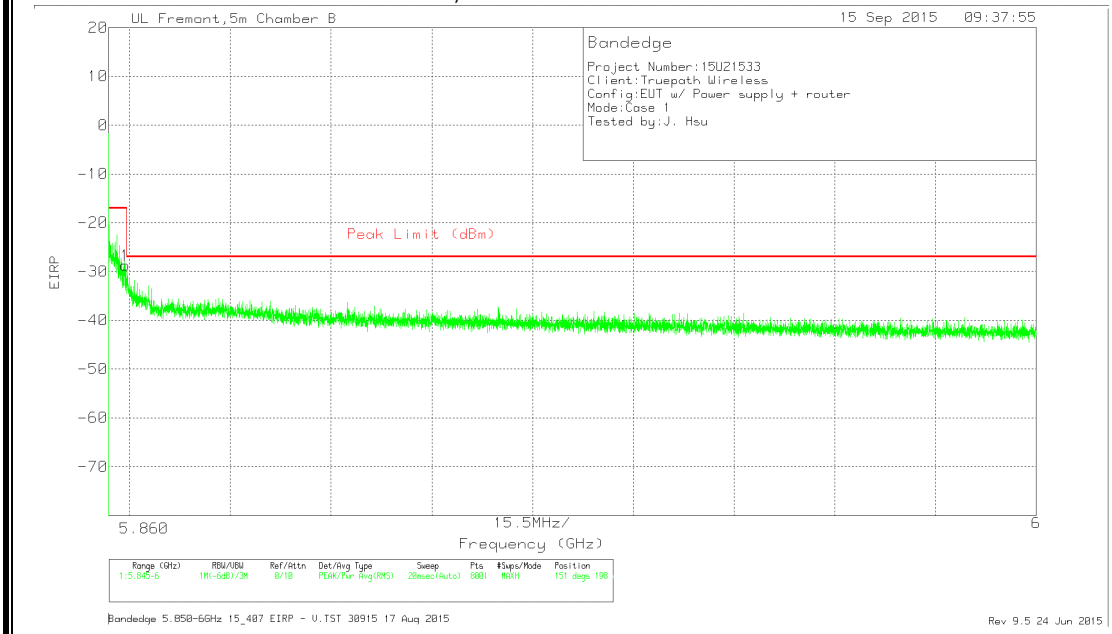
HIGH CHANNEL RESTRICTED, VERTICAL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.86	-54.31	Pk	35.4	-21.6	11.8	-28.71	-17	-11.71	151	198	V

Pk - Peak detector

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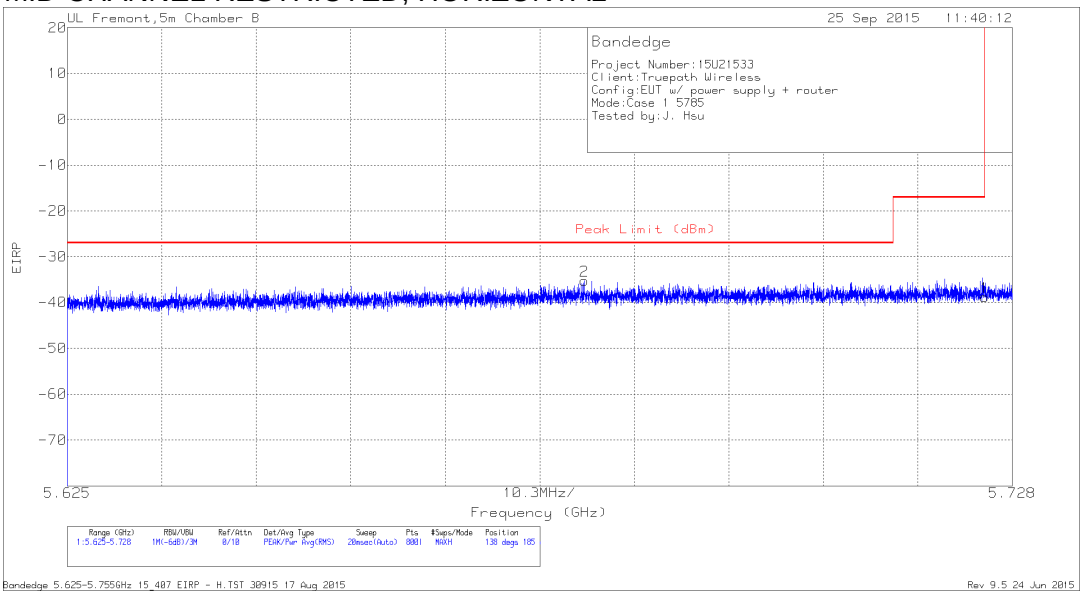
RESTRICTED LOW BANDEDGE (MID CHANNEL)

MID CHANNEL RESTRICTED, HORIZONTAL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.681	-60.13	Pk	34.9	-21.8	11.8	-35.23	-27	-8.23	138	185	H
1	5.725	-63.9	Pk	35	-21.7	11.8	-38.8	-17	-21.8	138	185	H

Pk - Peak detector

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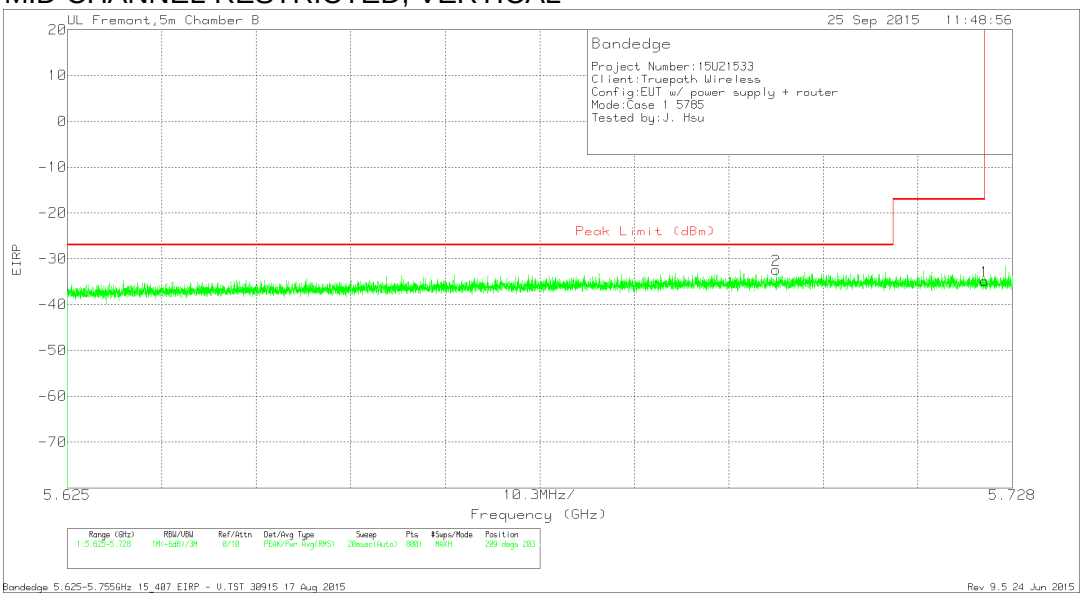
MID CHANNEL RESTRICTED, VERTICAL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.702	-57.41	Pk	35	-21.8	11.8	-32.41	-27	-5.41	209	203	V
1	5.725	-59.91	Pk	35	-21.7	11.8	-34.81	-17	-17.81	209	203	V

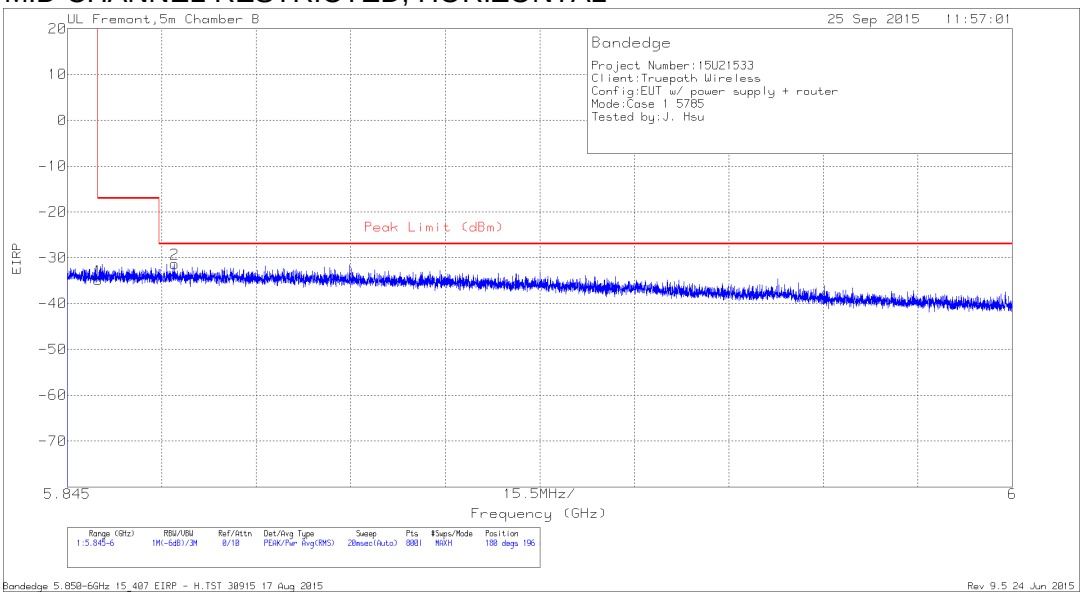
Pk - Peak detector

Bandedge 5.625-5.755GHz 15_407 EIRP - V.TST 30915 17 Aug 2015

Rev 9.5 24 Jun 2015

AUTHORIZED HIGH BANDEDGE (MID CHANNEL)

MID CHANNEL RESTRICTED, HORIZONTAL



Trace Markers

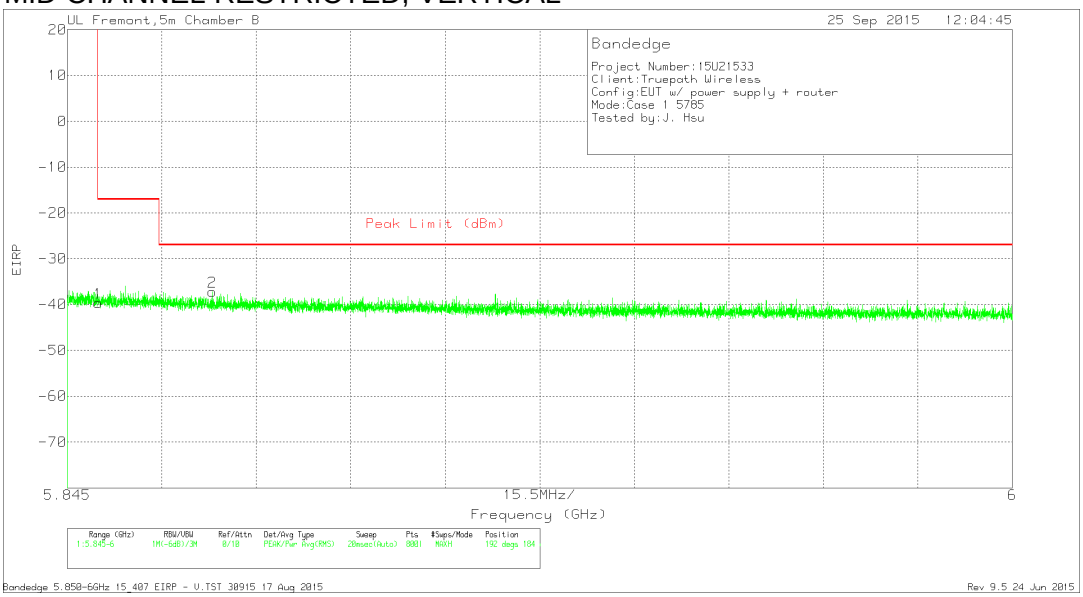
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-60.43	Pk	35.4	-21.6	11.8	-34.83	-17	-17.83	180	196	H
2	5.863	-56.96	Pk	35.4	-21.6	11.8	-31.36	-27	-4.36	180	196	H

Pk - Peak detector

Bandedge 5.850-6GHz 15_407 EIRP - H.TST 30915 17 Aug 2015

Rev 9.5 24 Jun 2015

MID CHANNEL RESTRICTED, VERTICAL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-65.28	Pk	35.4	-21.6	11.8	-39.68	-17	-22.68	192	184	V
2	5.869	-62.78	Pk	35.4	-21.6	11.8	-37.18	-27	-10.18	192	184	V

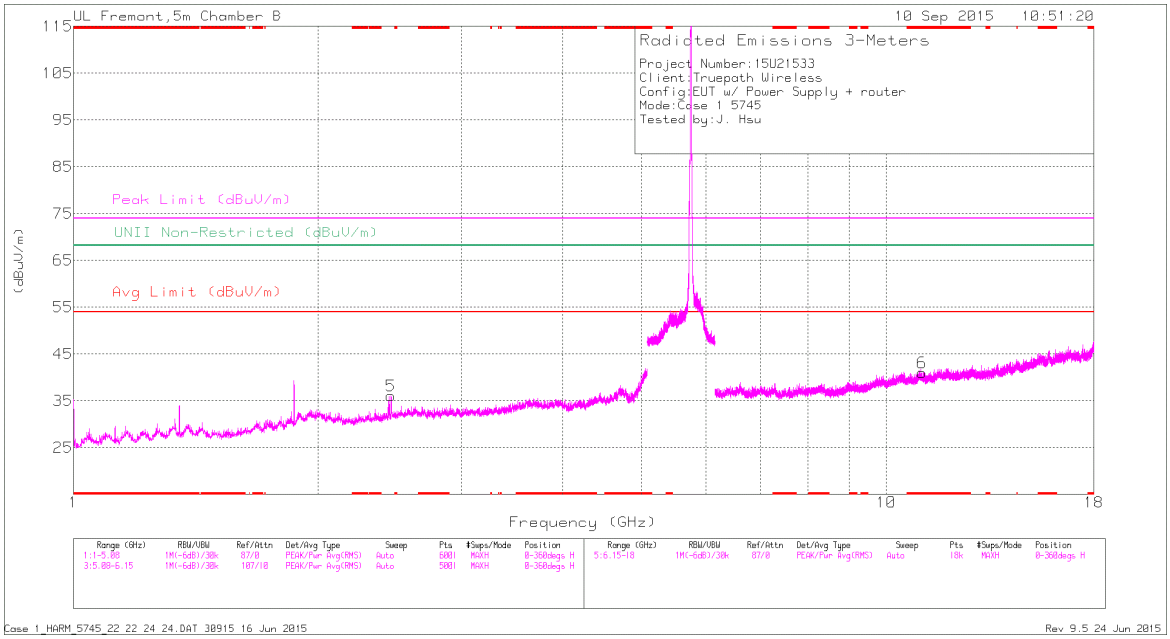
Pk - Peak detector

Bandedge 5.850-6GHz 15_407 EIRP - V.TST 30915 17 Aug 2015

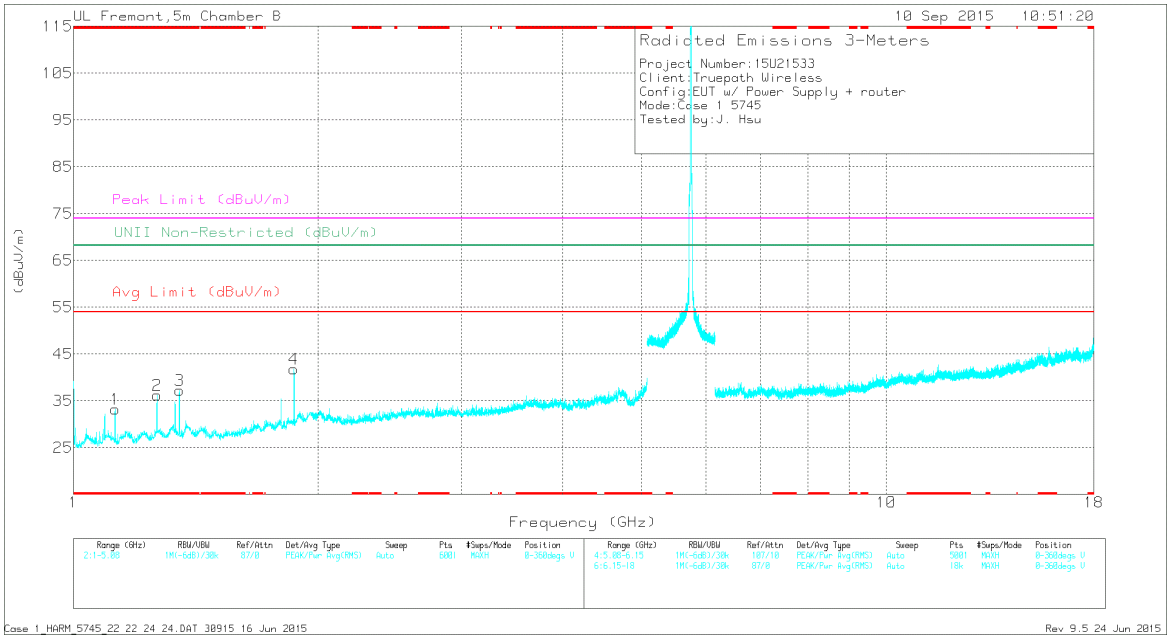
Rev 9.5 24 Jun 2015

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.125	40.79	Pk	27.8	-35.4	33.19	-	-	74	-40.81	-	-	0-360	101	V
2	* 1.267	43.05	Pk	29.1	-35.9	36.25	-	-	74	-37.75	-	-	0-360	101	V
3	* 1.35	42.85	Pk	29.4	-35	37.25	-	-	74	-36.75	-	-	0-360	199	V
6	* 11.064	28.49	Pk	37.8	-25.3	40.99	-	-	74	-33.01	-	-	0-360	101	H
4	1.868	45.16	Pk	31.5	-34.9	41.76	-	-	-	-	68.2	-26.44	0-360	199	V
5	2.459	38.13	Pk	32.3	-34.3	36.13	-	-	-	-	68.2	-32.07	0-360	199	H

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

Pk - Peak detector

Radiated Emissions

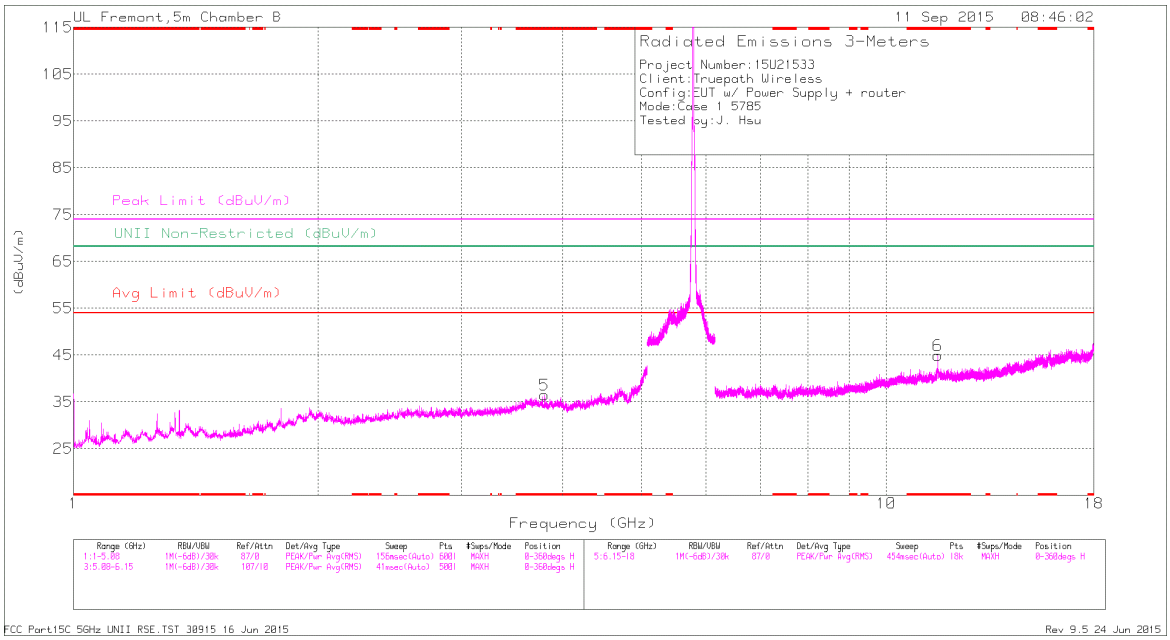
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.125	43.36	PK-U	27.8	-35.4	35.76	-	-	74	-38.24	-	-	1	101	V
* 1.125	32.3	ADR	27.8	-35.4	24.7	54	-29.3	-	-	-	-	1	101	V
* 1.266	45.18	PK-U	29.1	-35.9	38.38	-	-	74	-35.62	-	-	1	101	V
* 1.267	34.61	ADR	29.1	-35.9	27.81	54	-26.19	-	-	-	-	1	101	V
* 1.35	45.07	PK-U	29.4	-35	39.47	-	-	74	-34.53	-	-	7	145	V
* 1.35	36.91	ADR	29.4	-35	31.31	54	-22.69	-	-	-	-	7	145	V
* 11.063	37.04	PK-U	37.8	-25.3	49.54	-	-	74	-24.46	-	-	7	145	H
* 11.062	25.33	ADR	37.8	-25.3	37.83	54	-16.17	-	-	-	-	7	145	H
1.867	31.05	ADR	31.5	-34.9	27.65	-	-	-	-	-	-	7	145	V
1.869	42.99	PK-U	31.5	-34.9	39.59	-	-	-	-	68.2	-28.61	7	145	V
2.46	31.33	ADR	32.3	-34.3	29.33	-	-	-	-	-	-	1	101	H
2.461	42.72	PK-U	32.3	-34.3	40.72	-	-	-	-	68.2	-27.48	1	101	H

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

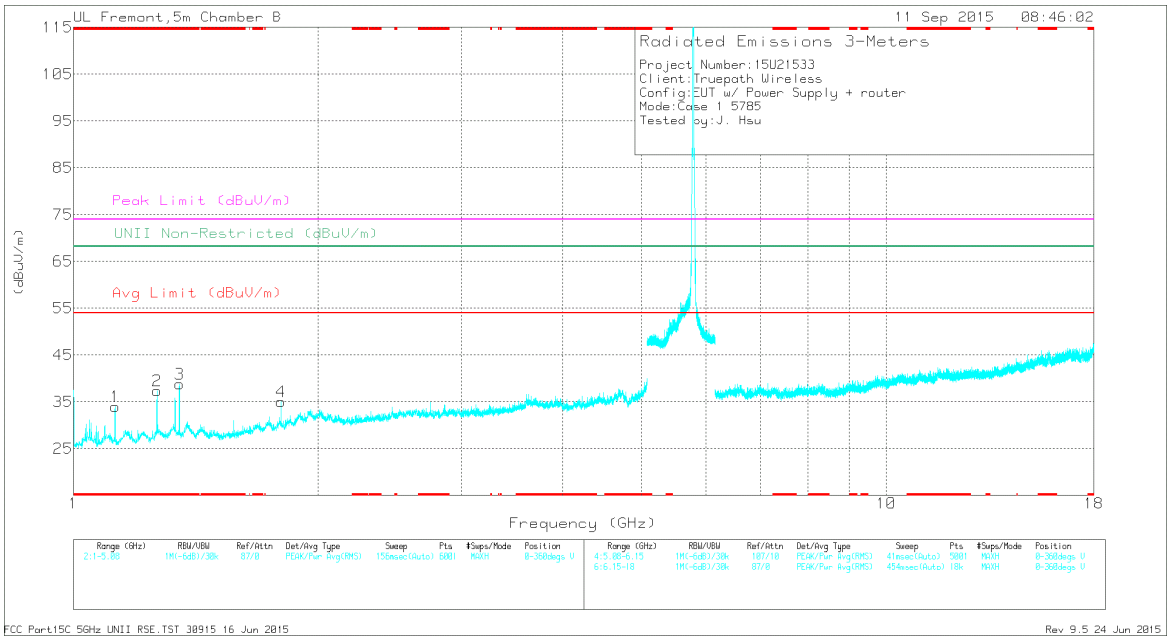
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



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)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 3.794	36.08	Pk	33.3	-32.9	36.48	-	-	74	-37.52	-	-	0-360	199	H
1	* 1.125	41.65	Pk	27.8	-35.4	34.05	-	-	74	-39.95	-	-	0-360	199	V
2	* 1.267	44.17	Pk	29.1	-35.9	37.37	-	-	74	-36.63	-	-	0-360	101	V
3	* 1.35	44.44	Pk	29.4	-35	38.84	-	-	74	-35.16	-	-	0-360	199	V
6	* 11.566	31.15	Pk	38.4	-24.6	44.95	-	-	74	-29.05	-	-	0-360	200	H
4	1.8	39.49	Pk	30.7	-35.1	35.09	-	-	-	-	68.2	-33.11	0-360	199	V

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

Pk - Peak detector

Radiated Emissions

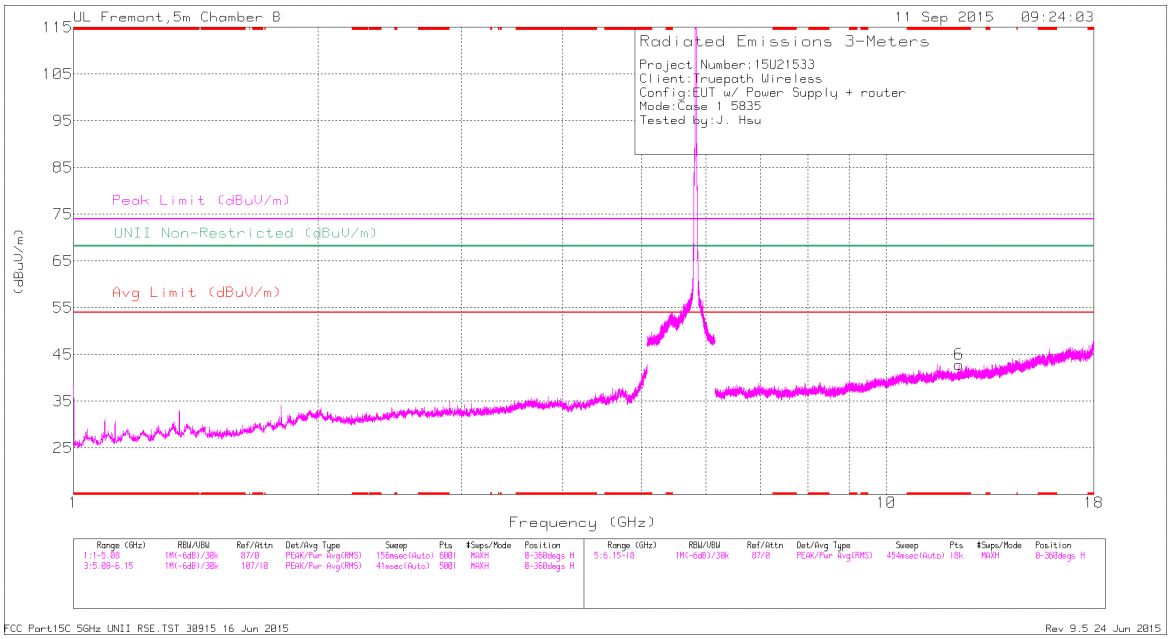
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.795	42.31	PK-U	33.3	-32.9	42.71	-	-	74	-31.29	-	-	1	101	H
* 3.796	31.1	ADR	33.3	-33	31.4	54	-22.6	-	-	-	-	1	101	H
* 1.125	44.01	PK-U	27.8	-35.4	36.41	-	-	74	-37.59	-	-	1	101	V
* 1.125	32.7	ADR	27.8	-35.4	25.1	54	-28.9	-	-	-	-	1	101	V
* 1.267	49.83	PK-U	29.1	-35.9	43.03	-	-	74	-30.97	-	-	212	118	V
* 1.267	44.46	ADR	29.1	-35.9	37.66	54	-16.34	-	-	-	-	212	118	V
* 1.35	46.6	PK-U	29.4	-35	41	-	-	74	-33	-	-	337	295	V
* 1.35	40.93	ADR	29.4	-35	35.33	54	-18.67	-	-	-	-	337	295	V
* 11.567	35.52	PK-U	38.4	-24.6	49.32	-	-	74	-24.68	-	-	337	295	H
* 11.565	24.67	ADR	38.4	-24.6	38.47	54	-15.53	-	-	-	-	337	295	H
1.8	45.28	PK-U	30.7	-35.1	40.88	-	-	-	-	68.2	-27.32	337	295	V
1.8	34.92	ADR	30.7	-35.1	30.52	-	-	-	-	-	-	337	295	V

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

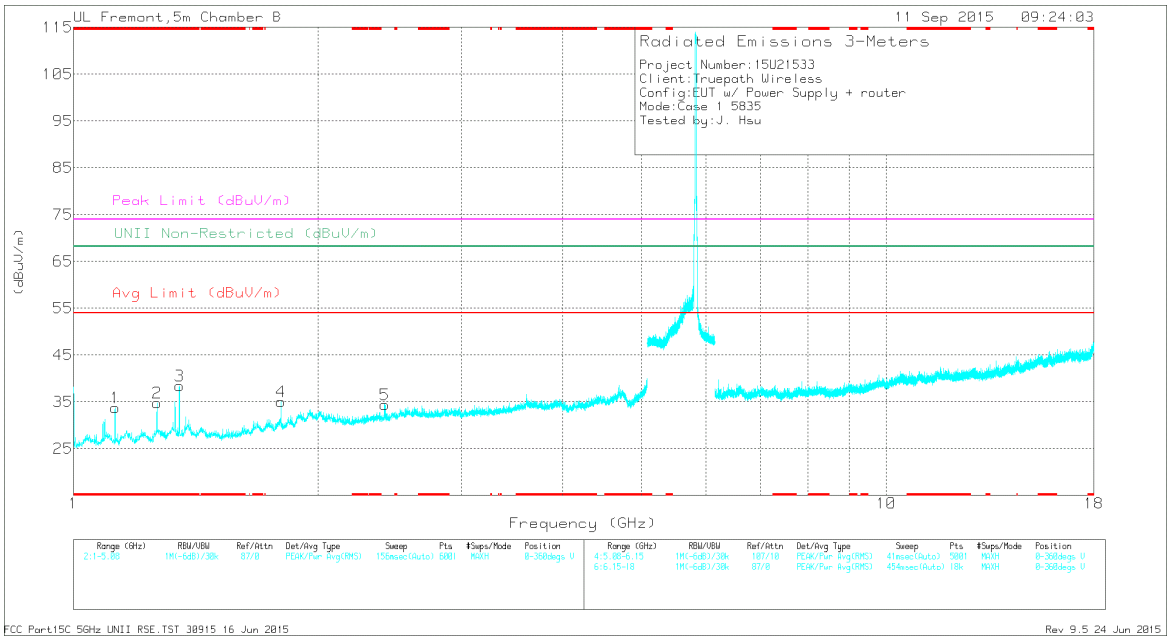
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.125	41.4	Pk	27.8	-35.4	33.8	-	-	74	-40.2	-	-	0-360	200	V
2	* 1.267	41.62	Pk	29.1	-35.9	34.82	-	-	74	-39.18	-	-	0-360	101	V
3	* 1.35	44	Pk	29.4	-35	38.4	-	-	74	-35.6	-	-	0-360	200	V
6	* 12.288	29.61	Pk	38.6	-25.3	42.91	-	-	74	-31.09	-	-	0-360	101	H
4	1.8	39.45	Pk	30.7	-35.1	35.05	-	-	-	-	68.2	-33.15	0-360	200	V
5	2.417	36.82	Pk	32.1	-34.5	34.42	-	-	-	-	68.2	-33.78	0-360	101	V

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

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)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.125	43.54	PK-U	27.8	-35.4	35.94	-	-	74	-38.06	-	-	359	101	V
* 1.125	31.72	ADR	27.8	-35.4	24.12	54	-29.88	-	-	-	-	359	101	V
* 1.267	45.75	PK-U	29.1	-35.9	38.95	-	-	74	-35.05	-	-	359	101	V
* 1.267	35.52	ADR	29.1	-35.9	28.72	54	-25.28	-	-	-	-	359	101	V
* 1.35	48.61	PK-U	29.4	-35	43.01	-	-	74	-30.99	-	-	316	212	V
* 1.35	44.45	ADR	29.4	-35	38.85	54	-15.15	-	-	-	-	316	212	V
* 12.288	36	PK-U	38.6	-25.3	49.3	-	-	74	-24.7	-	-	316	212	H
* 12.289	24.81	ADR	38.6	-25.3	38.11	54	-15.89	-	-	-	-	316	212	H
1.8	44.68	PK-U	30.7	-35.1	40.28	-	-	-	-	68.2	-27.92	316	212	V
1.8	34.86	ADR	30.7	-35.1	30.46	-	-	-	-	-	-	316	212	V
2.415	43.17	PK-U	32.1	-34.5	40.77	-	-	-	-	68.2	-27.43	316	212	V
2.417	31.48	ADR	32.1	-34.5	29.08	-	-	-	-	-	-	316	212	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

14. TRANSMITTER ABOVE 1 GHz CASE 2

LIMITS

FCC §15.205 and §15.209

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 for below 1GHz and 150cm for above 1GHz. 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.

Reference to KDB 789033 UNII part H) 6) d) Method VB:
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 to the reading offset for average measurements.

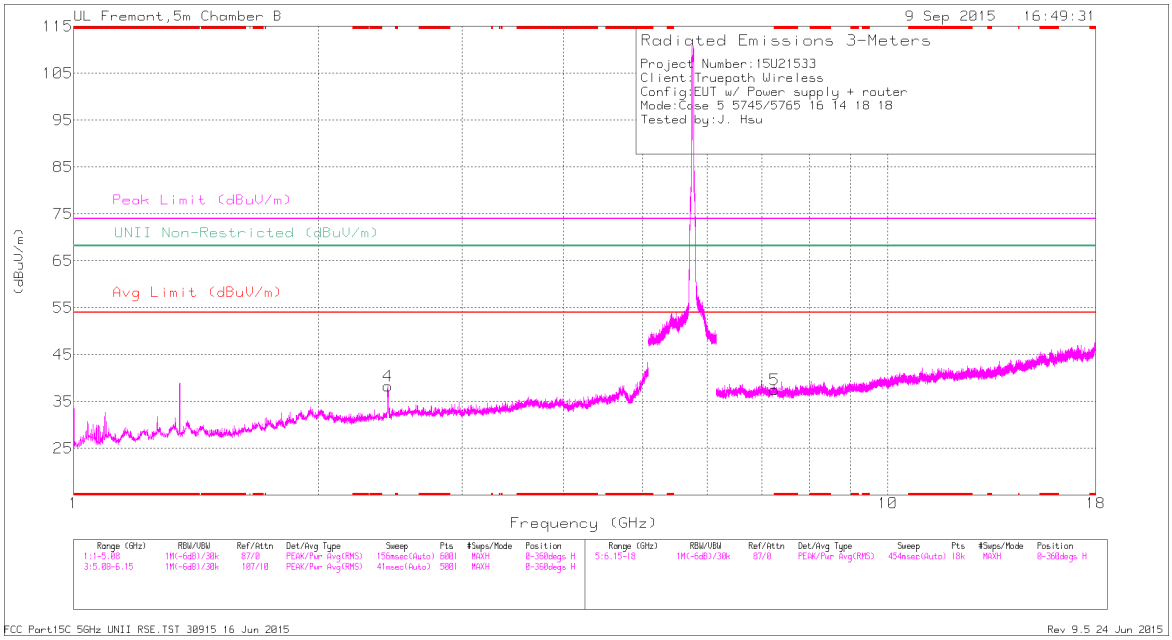
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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.

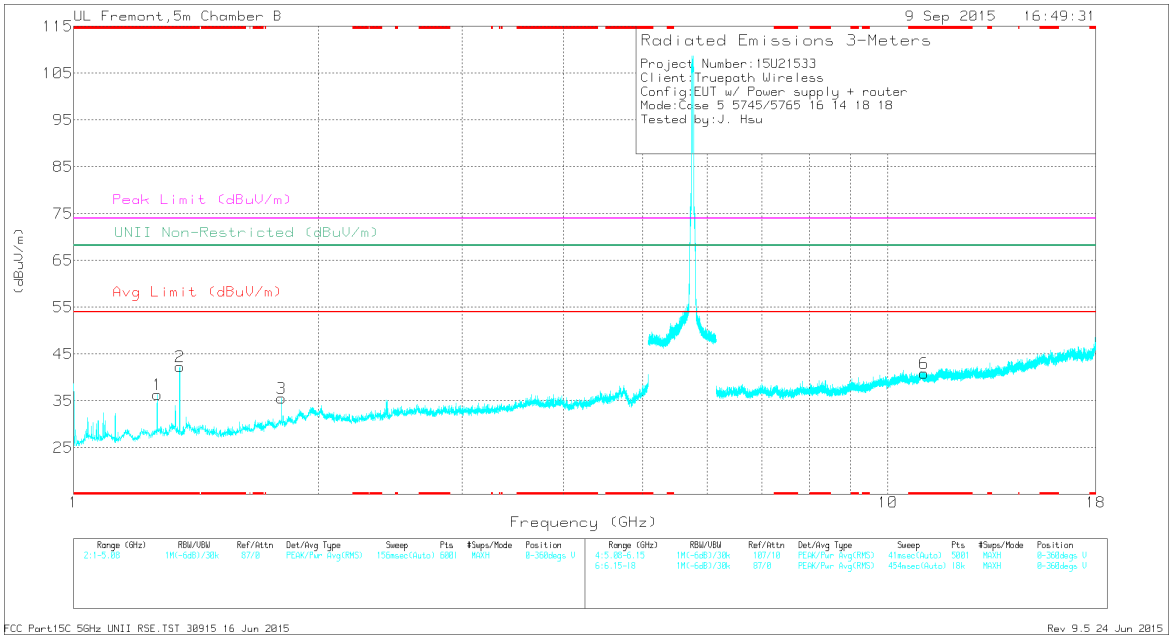
14.1. TX ABOVE 1 GHz OFDM MODE IN THE 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.267	43.14	Pk	29.1	-35.9	36.34	-	-	74	-37.66	-	-	0-360	102	V
2	* 1.35	47.88	Pk	29.4	-35	42.28	-	-	74	-31.72	-	-	0-360	200	V
5	* 7.261	30.45	Pk	35.3	-28.2	37.55	-	-	74	-36.45	-	-	0-360	199	H
6	* 11.078	28.53	Pk	37.8	-25.4	40.93	-	-	74	-33.07	-	-	0-360	101	V
3	1.8	39.97	Pk	30.7	-35.1	35.57	-	-	-	-	68.2	-32.63	0-360	200	V
4	2.431	40.51	Pk	32.2	-34.4	38.31	-	-	-	-	68.2	-29.89	0-360	200	H

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

Pk - Peak detector

Radiated Emissions

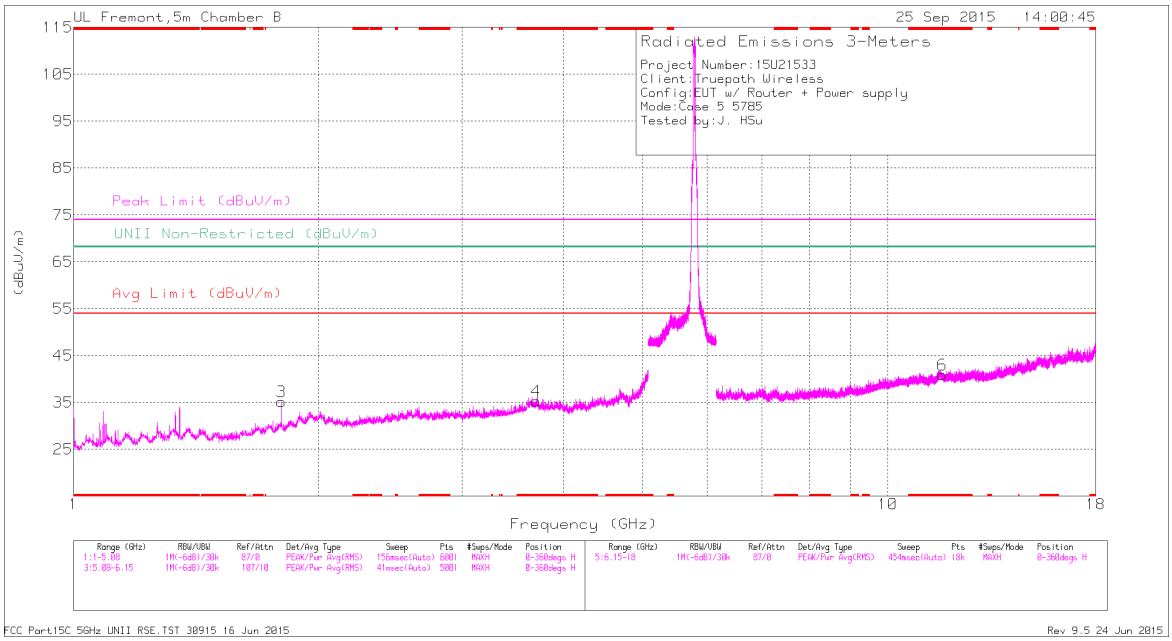
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.266	45.45	PK-U	29.1	-35.9	38.65	-	-	74	-35.35	-	-	360	101	V
* 1.267	35.2	ADR	29.1	-35.9	28.4	54	-25.6	-	-	-	-	360	101	V
* 1.35	52.16	PK-U	29.4	-35	46.56	-	-	74	-27.44	-	-	281	193	V
* 1.35	49.28	ADR	29.4	-35	43.68	54	-10.32	-	-	-	-	281	193	V
* 7.261	39	PK-U	35.3	-28.1	46.2	-	-	74	-27.8	-	-	281	193	H
* 7.263	27.65	ADR	35.3	-28.2	34.75	54	-19.25	-	-	-	-	281	193	H
* 11.077	36.51	PK-U	37.8	-25.4	48.91	-	-	74	-25.09	-	-	281	193	V
* 11.078	25.26	ADR	37.8	-25.4	37.66	54	-16.34	-	-	-	-	281	193	V
1.8	43.79	PK-U	30.7	-35.1	39.39	-	-	-	-	68.2	-28.81	281	193	V
1.8	32.58	ADR	30.7	-35.1	28.18	-	-	-	-	-	-	281	193	V
2.43	43.47	PK-U	32.2	-34.4	41.27	-	-	-	-	68.2	-26.93	360	101	H
2.43	31.41	ADR	32.2	-34.4	29.21	-	-	-	-	-	-	360	101	H

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

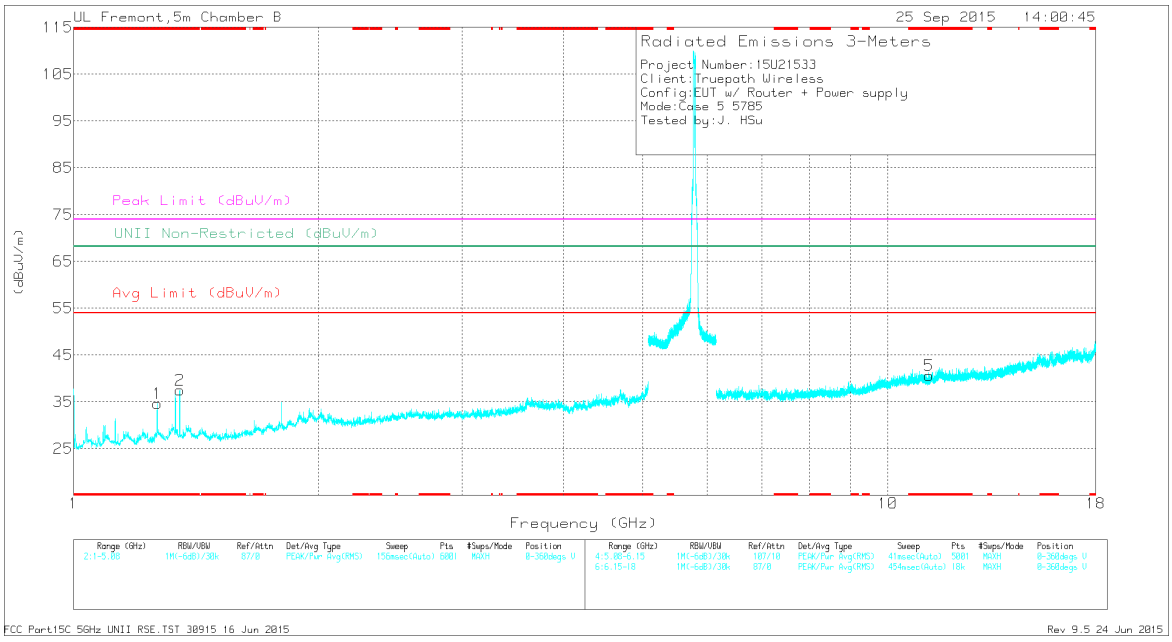
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



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)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 3.702	34.57	Pk	33.6	-32.8	35.37	-	-	74	-38.63	-	-	0-360	101	H
1	* 1.267	41.47	Pk	29.1	-35.9	34.67	-	-	74	-39.33	-	-	0-360	101	V
2	* 1.35	43.16	Pk	29.4	-35	37.56	-	-	74	-36.44	-	-	0-360	199	V
6	* 11.671	27.44	Pk	38.5	-25.1	40.84	-	-	74	-33.16	-	-	0-360	200	H
5	* 11.237	28.06	Pk	37.9	-25.3	40.66	-	-	74	-33.34	-	-	0-360	101	V
3	1.8	39.55	Pk	30.7	-35.1	35.15	-	-	-	-	68.2	-33.05	0-360	199	H

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

Pk - Peak detector

Radiated Emissions

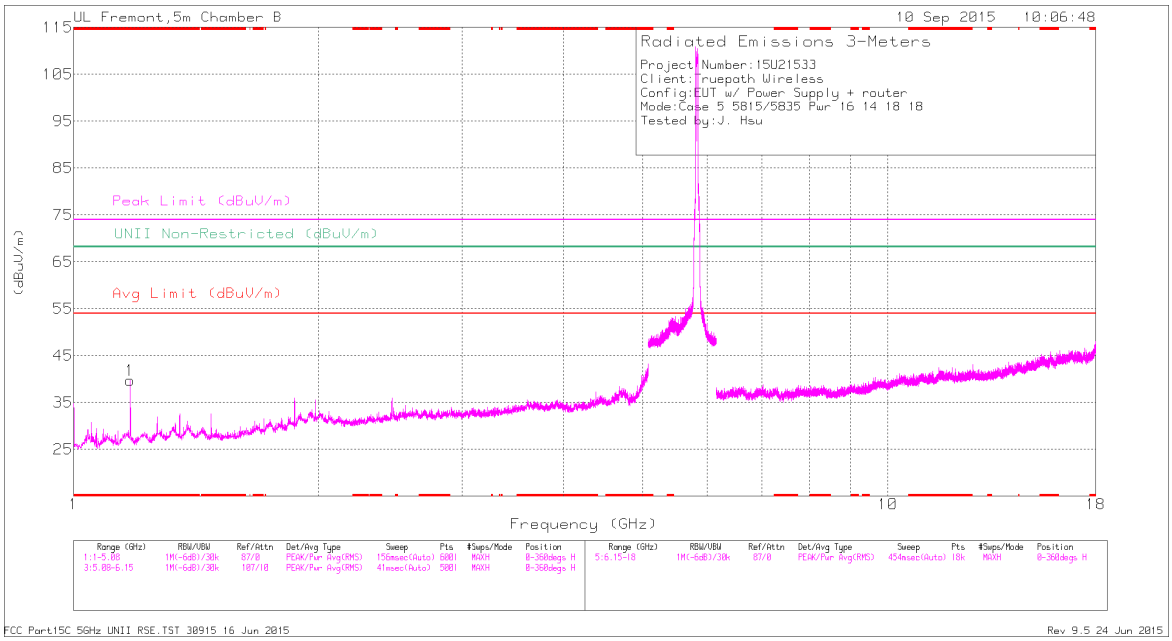
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.267	45.63	PK-U	29.1	-35.9	38.83	-	-	74	-35.17	-	-	0	101	V
* 1.267	36.46	ADR	29.1	-35.9	29.66	54	-24.34	-	-	-	-	0	101	V
* 1.35	46.65	PK-U	29.4	-35	41.05	-	-	74	-32.95	-	-	101	164	V
* 1.35	40.37	ADR	29.4	-35	34.77	54	-19.23	-	-	-	-	101	164	V
* 11.672	35.52	PK-U	38.5	-25.1	48.92	-	-	74	-25.08	-	-	101	164	H
* 11.671	24.62	ADR	38.5	-25.1	38.02	54	-15.98	-	-	-	-	101	164	H
* 11.237	35.86	PK-U	37.9	-25.3	48.46	-	-	74	-25.54	-	-	101	164	V
* 11.235	24.63	ADR	37.9	-25.3	37.23	54	-16.77	-	-	-	-	101	164	V
1.799	43.64	PK-U	30.7	-35.1	39.24	-	-	-	-	68.2	-28.96	0	101	H
1.8	32.27	ADR	30.7	-35.1	27.87	-	-	-	-	-	-	0	101	H

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

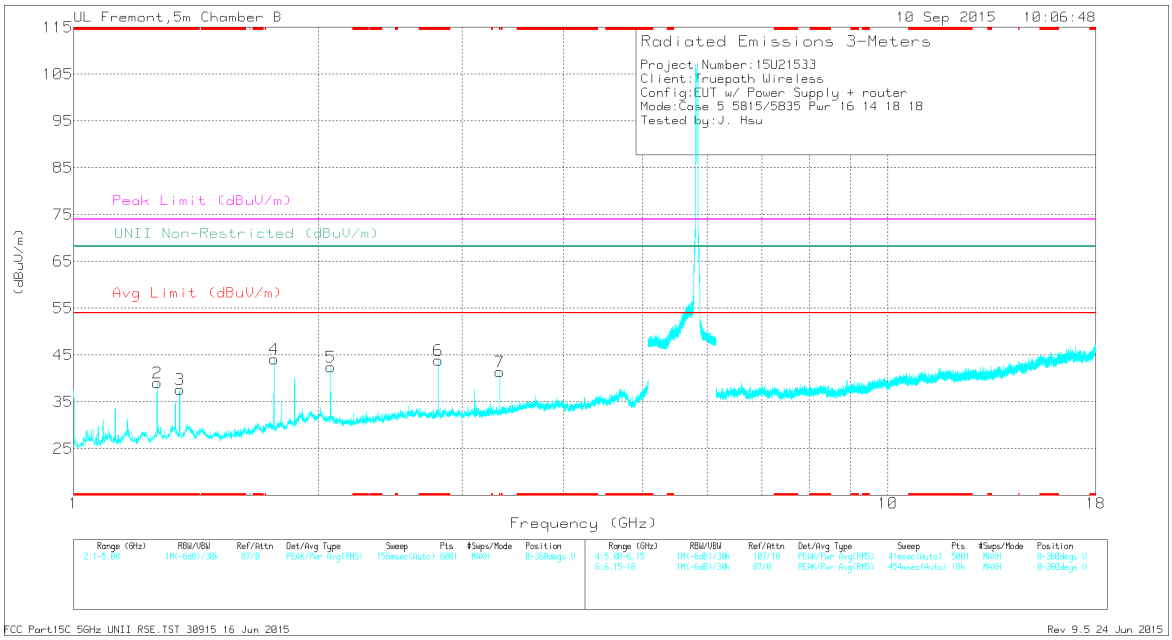
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.174	46.8	Pk	28.3	-35.4	39.7	-	-	74	-34.3	-	-	0-360	101	H
2	* 1.267	45.82	Pk	29.1	-35.9	39.02	-	-	74	-34.98	-	-	0-360	101	V
3	* 1.35	43.27	Pk	29.4	-35	37.67	-	-	74	-36.33	-	-	0-360	199	V
6	* 2.803	45.25	Pk	32.6	-34	43.85	-	-	74	-30.15	-	-	0-360	199	V
7	* 3.339	41.53	Pk	32.9	-33	41.43	-	-	74	-32.57	-	-	0-360	199	V
4	1.762	48.56	Pk	30.4	-34.8	44.16	-	-	-	-	68.2	-24.04	0-360	199	V
5	2.068	45.19	Pk	32	-34.7	42.49	-	-	-	-	68.2	-25.71	0-360	199	V

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

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)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.175	43.95	PK-U	28.3	-35.4	36.85	-	-	74	-37.15	-	-	21	391	H
* 1.172	31.67	ADR	28.2	-35.4	24.47	54	-29.53	-	-	-	-	21	391	H
* 1.267	44.19	PK-U	29.1	-35.9	37.39	-	-	74	-36.61	-	-	21	391	V
* 1.267	33.15	ADR	29.1	-35.9	26.35	54	-27.65	-	-	-	-	21	391	V
* 1.35	45.29	PK-U	29.4	-35	39.69	-	-	74	-34.31	-	-	112	257	V
* 1.35	36.82	ADR	29.4	-35	31.22	54	-22.78	-	-	-	-	112	257	V
* 2.803	43.25	PK-U	32.6	-34	41.85	-	-	74	-32.15	-	-	112	257	V
* 2.803	31.2	ADR	32.6	-34	29.8	54	-24.2	-	-	-	-	112	257	V
* 3.338	42.56	PK-U	32.9	-33	42.46	-	-	74	-31.54	-	-	112	257	V
* 3.338	30.34	ADR	32.9	-33	30.24	54	-23.76	-	-	-	-	112	257	V
1.761	42.86	PK-U	30.3	-34.8	38.36	-	-	-	-	68.2	-29.84	112	257	V
1.761	31.16	ADR	30.4	-34.8	26.76	-	-	-	-	-	-	112	257	V
2.066	44.64	PK-U	32	-34.7	41.94	-	-	-	-	68.2	-26.26	112	257	V
2.069	31.69	ADR	32	-34.7	28.99	-	-	-	-	-	-	112	257	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

15. TRANSMITTER ABOVE 1 GHz CASE 3 SISO

LIMITS

FCC §15.205 and §15.209

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 for below 1GHz and 150cm for above 1GHz. 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.

Reference to KDB 789033 UNII part H) 6) d) Method VB:
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 to the reading offset for average measurements.

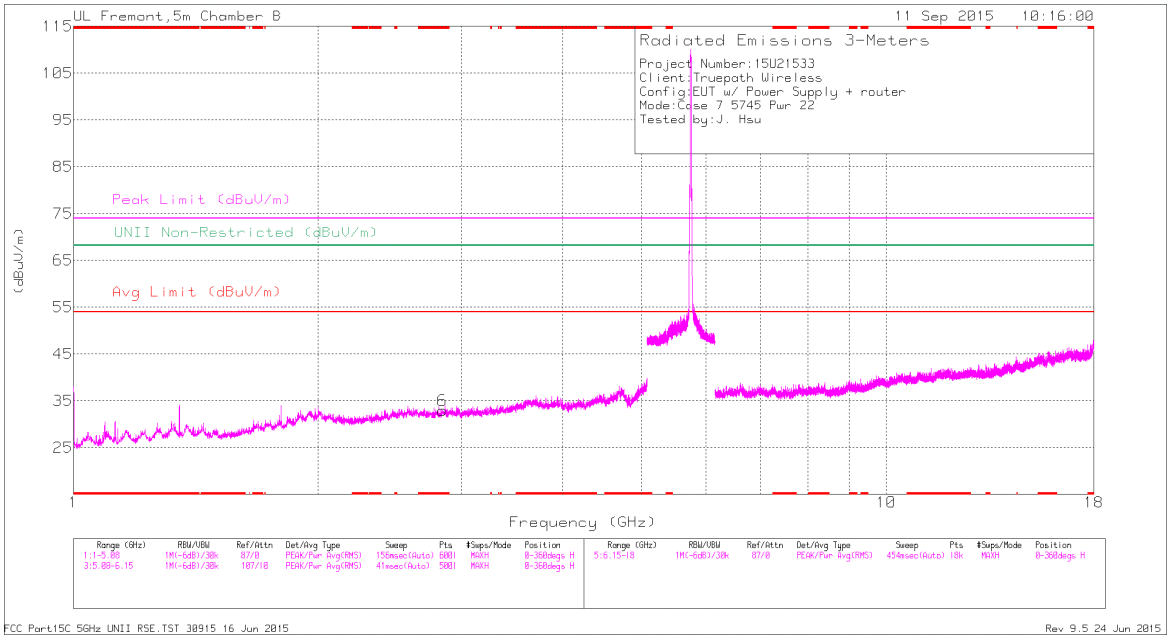
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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.

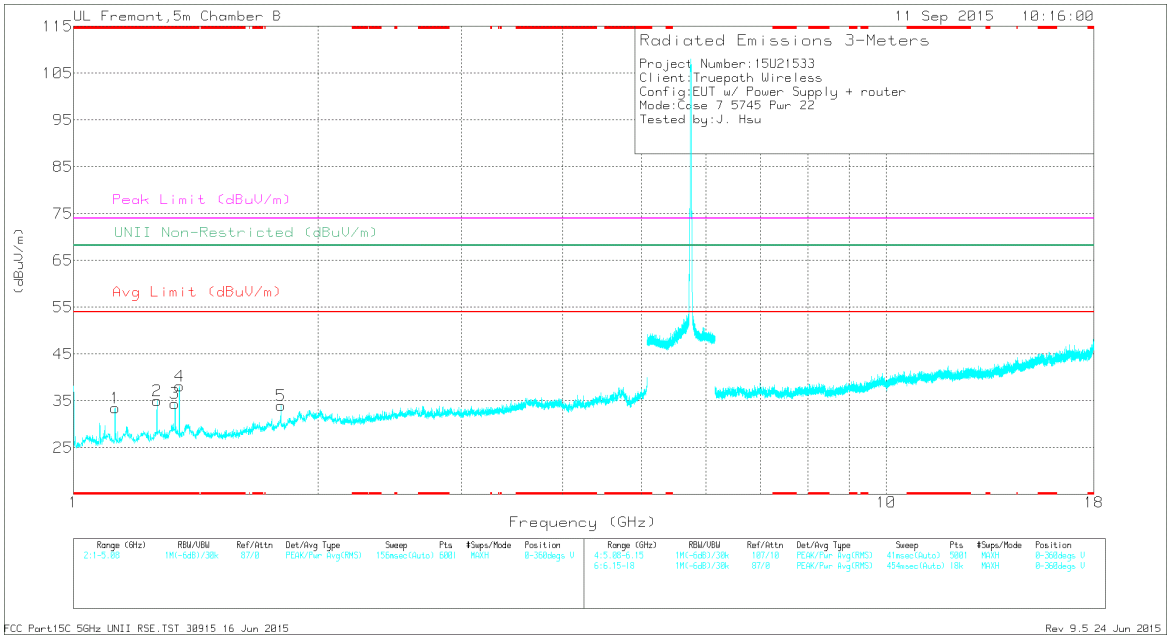
15.1. TX ABOVE 1 GHz OFDM MODE IN THE 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	* 2.846	34.1	Pk	32.6	-33.7	33	-	-	74	-41	-	-	0-360	101	H
1	* 1.125	41.12	Pk	27.8	-35.4	33.52	-	-	74	-40.48	-	-	0-360	200	V
2	* 1.267	41.89	Pk	29.1	-35.9	35.09	-	-	74	-38.91	-	-	0-360	101	V
3	* 1.333	40.27	Pk	29.4	-35.2	34.47	-	-	74	-39.53	-	-	0-360	101	V
4	* 1.35	43.77	Pk	29.4	-35	38.17	-	-	74	-35.83	-	-	0-360	101	V
5	1.8	38.39	Pk	30.7	-35.1	33.99	-	-	-	-	68.2	-34.21	0-360	101	V

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

Pk - Peak detector

Radiated Emissions

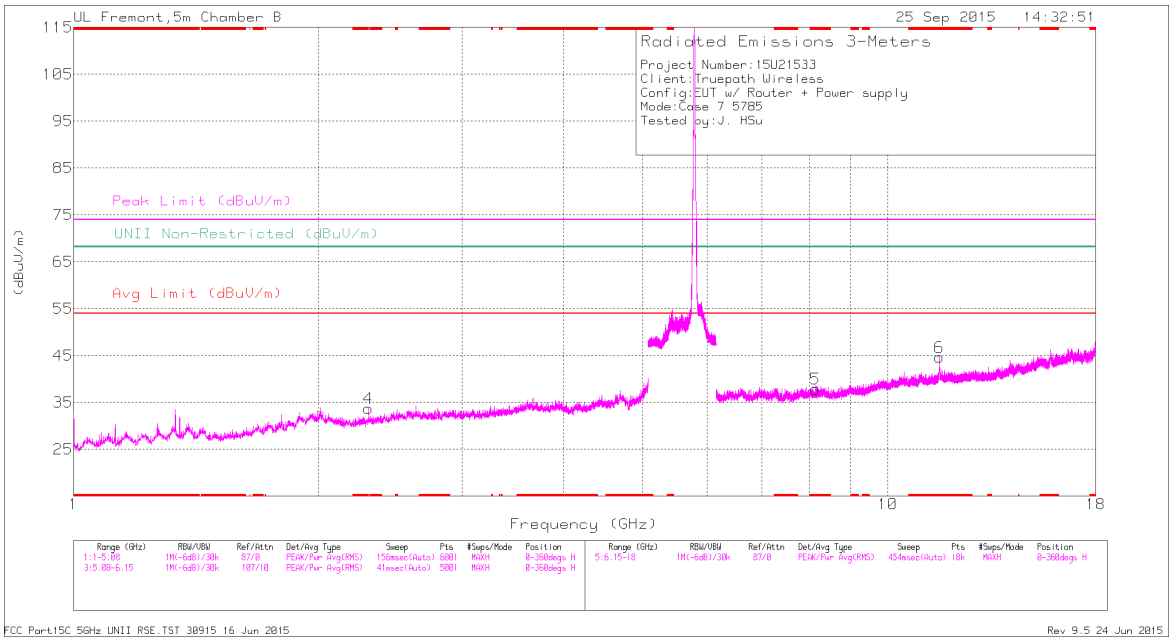
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 2.847	42.58	PK-U	32.6	-33.7	41.48	-	-	74	-32.52	-	-	360	101	H
* 2.847	30.98	ADR	32.6	-33.7	29.88	54	-24.12	-	-	-	-	360	101	H
* 1.125	46.05	PK-U	27.8	-35.4	38.45	-	-	74	-35.55	-	-	140	213	V
* 1.125	38.16	ADR	27.8	-35.4	30.56	54	-23.44	-	-	-	-	140	213	V
* 1.267	47.71	PK-U	29.1	-35.9	40.91	-	-	74	-33.09	-	-	217	118	V
* 1.267	40.9	ADR	29.1	-35.9	34.1	54	-19.9	-	-	-	-	217	118	V
* 1.333	46.96	PK-U	29.4	-35.2	41.16	-	-	74	-32.84	-	-	222	103	V
* 1.333	39.57	ADR	29.4	-35.2	33.77	54	-20.23	-	-	-	-	222	103	V
* 1.333	46.41	PK-U	29.4	-35.2	40.61	-	-	74	-33.39	-	-	220	108	V
* 1.333	39.34	ADR	29.4	-35.2	33.54	54	-20.46	-	-	-	-	220	108	V
1.8	44.13	PK-U	30.7	-35.1	39.73	-	-	-	-	68.2	-28.47	220	108	V
1.8	33.1	ADR	30.7	-35.1	28.7	-	-	-	-	-	-	220	108	V

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

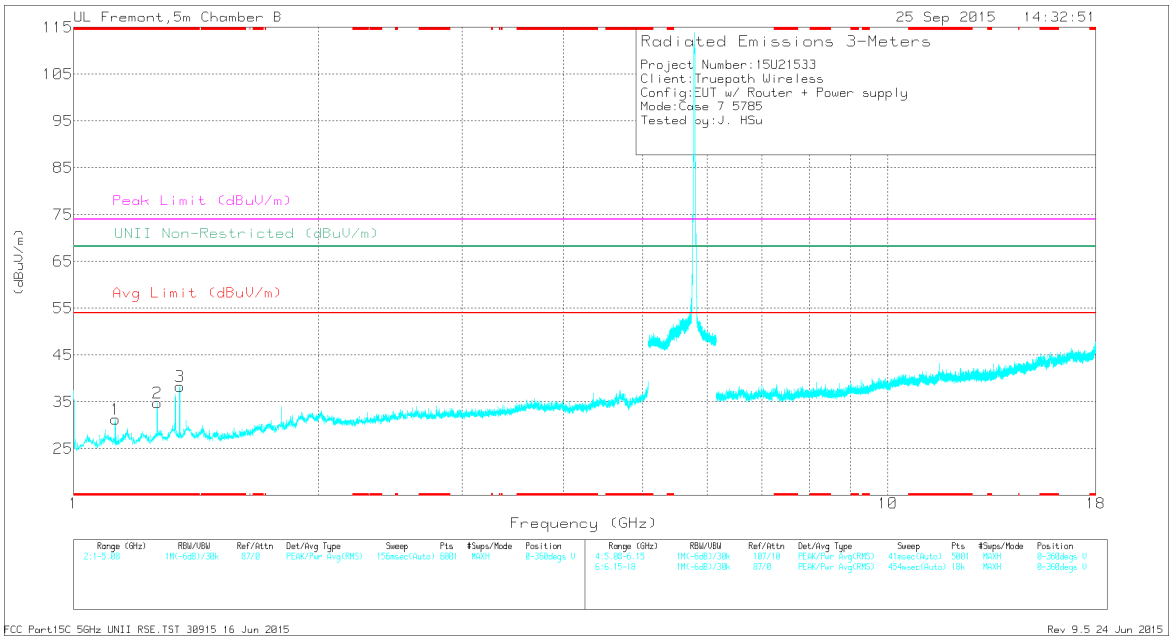
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



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)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.125	38.88	Pk	27.8	-35.4	31.28	-	-	74	-42.72	-	-	0-360	199	V
2	* 1.267	41.6	Pk	29.1	-35.9	34.8	-	-	74	-39.2	-	-	0-360	101	V
3	* 1.35	43.87	Pk	29.4	-35	38.27	-	-	74	-35.73	-	-	0-360	199	V
5	* 8.147	31.05	Pk	35.7	-28.9	37.85	-	-	74	-36.15	-	-	0-360	101	H
6	* 11.568	30.81	Pk	38.4	-24.6	44.61	-	-	74	-29.39	-	-	0-360	199	H
4	2.302	36	Pk	31.6	-33.9	33.7	-	-	-	-	68.2	-34.5	0-360	101	H

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

Pk - Peak detector

Radiated Emissions

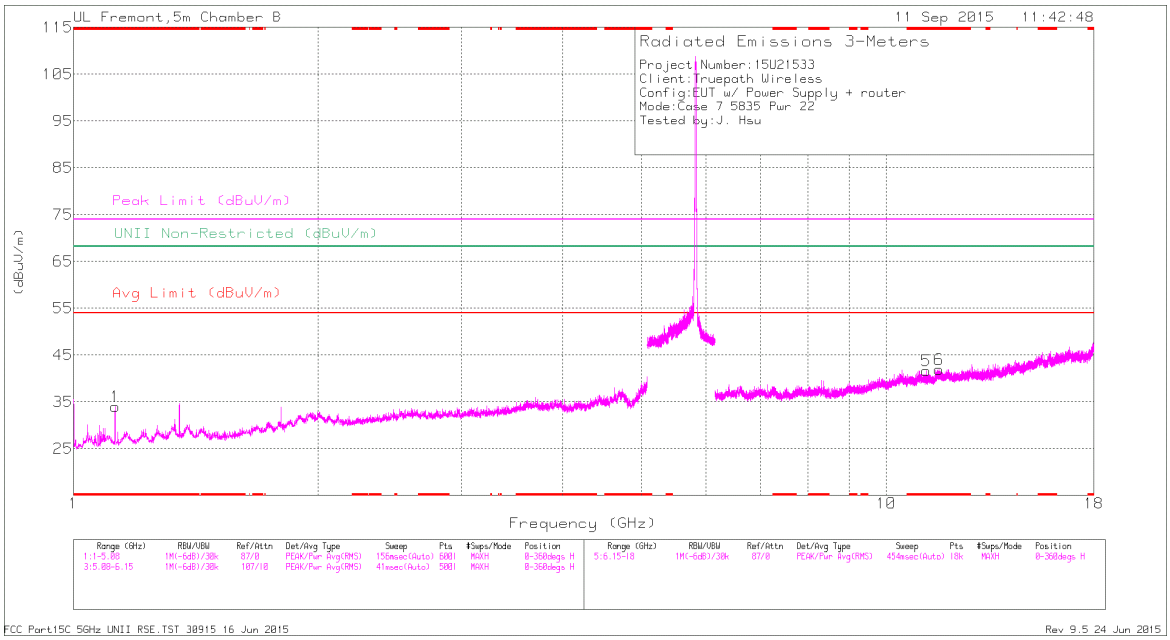
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.125	44.57	PK-U	27.8	-35.4	36.97	-	-	74	-37.03	-	-	1	101	V
* 1.125	34.16	ADR	27.8	-35.4	26.56	54	-27.44	-	-	-	-	1	101	V
* 1.266	47.49	PK-U	29.1	-35.9	40.69	-	-	74	-33.31	-	-	276	132	V
* 1.267	40.51	ADR	29.1	-35.9	33.71	54	-20.29	-	-	-	-	276	132	V
* 1.35	47.41	PK-U	29.4	-35	41.81	-	-	74	-32.19	-	-	103	161	V
* 1.35	42.1	ADR	29.4	-35	36.5	54	-17.5	-	-	-	-	103	161	V
* 8.148	39.64	PK-U	35.7	-28.9	46.44	-	-	74	-27.56	-	-	103	161	H
* 8.147	28.15	ADR	35.7	-28.9	34.95	54	-19.05	-	-	-	-	103	161	H
* 11.57	36.39	PK-U	38.4	-24.6	50.19	-	-	74	-23.81	-	-	103	161	H
* 11.569	25.39	ADR	38.4	-24.6	39.19	54	-14.81	-	-	-	-	103	161	H
2.301	42.58	PK-U	31.5	-33.9	40.18	-	-	-	-	68.2	-28.02	1	101	H
2.302	31.12	ADR	31.6	-33.9	28.82	-	-	-	-	-	-	1	101	H

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

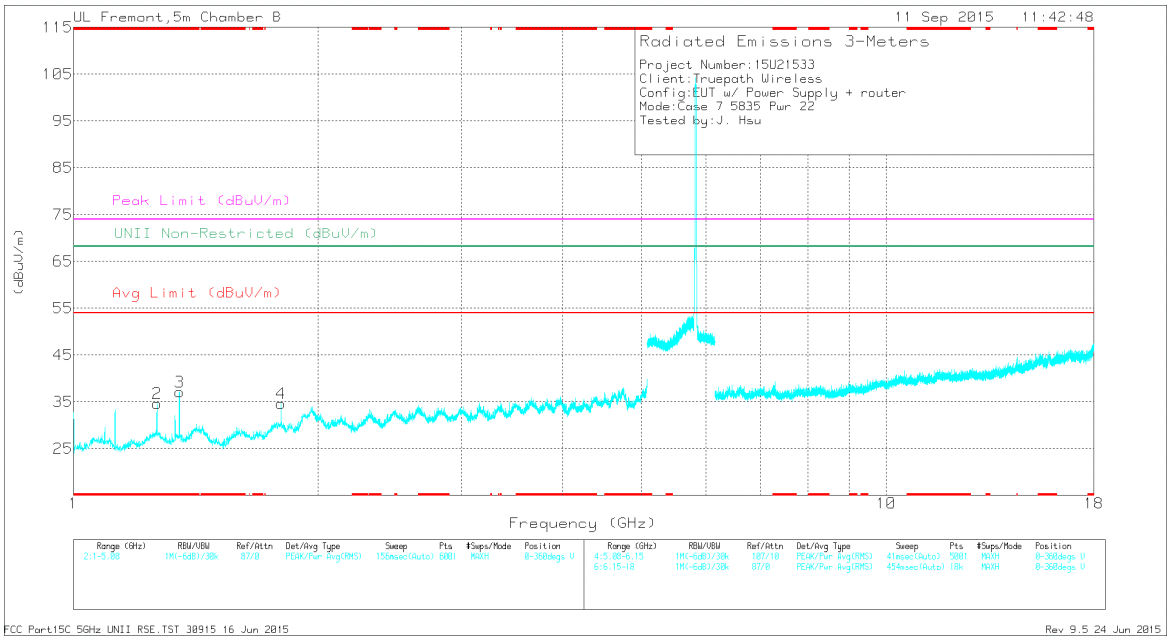
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.125	41.65	Pk	27.8	-35.4	34.05	-	-	74	-39.95	-	-	0-360	200	H
2	* 1.267	41.46	Pk	29.1	-35.9	34.66	-	-	74	-39.34	-	-	0-360	101	V
3	* 1.35	42.77	Pk	29.4	-35	37.17	-	-	74	-36.83	-	-	0-360	101	V
5	* 11.199	29.57	Pk	37.8	-25.7	41.67	-	-	74	-32.33	-	-	0-360	101	H
6	* 11.6	28.21	Pk	38.4	-24.7	41.91	-	-	74	-32.09	-	-	0-360	101	H
4	1.8	39.07	Pk	30.7	-35.1	34.67	-	-	-	-	68.2	-33.53	0-360	200	V

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

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)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.125	43.99	PK-U	27.8	-35.4	36.39	-	-	74	-37.61	-	-	198	362	H
* 1.125	34.52	ADR	27.8	-35.4	26.92	54	-27.08	-	-	-	-	198	362	H
* 1.267	48.04	PK-U	29.1	-35.9	41.24	-	-	74	-32.76	-	-	215	107	V
* 1.267	41.43	ADR	29.1	-35.9	34.63	54	-19.37	-	-	-	-	215	107	V
* 1.35	49.52	PK-U	29.4	-35	43.92	-	-	74	-30.08	-	-	315	176	V
* 1.35	45.7	ADR	29.4	-35	40.1	54	-13.9	-	-	-	-	315	176	V
* 11.2	35.88	PK-U	37.8	-25.6	48.08	-	-	74	-25.92	-	-	315	176	H
* 11.199	25	ADR	37.8	-25.7	37.1	54	-16.9	-	-	-	-	315	176	H
* 11.599	35.92	PK-U	38.4	-24.7	49.62	-	-	74	-24.38	-	-	315	176	H
* 11.598	24.54	ADR	38.4	-24.7	38.24	54	-15.76	-	-	-	-	315	176	H
1.8	45.24	PK-U	30.7	-35.1	40.84	-	-	-	-	68.2	-27.36	315	176	V
1.8	36.42	ADR	30.7	-35.1	32.02	-	-	-	-	-	-	315	176	V

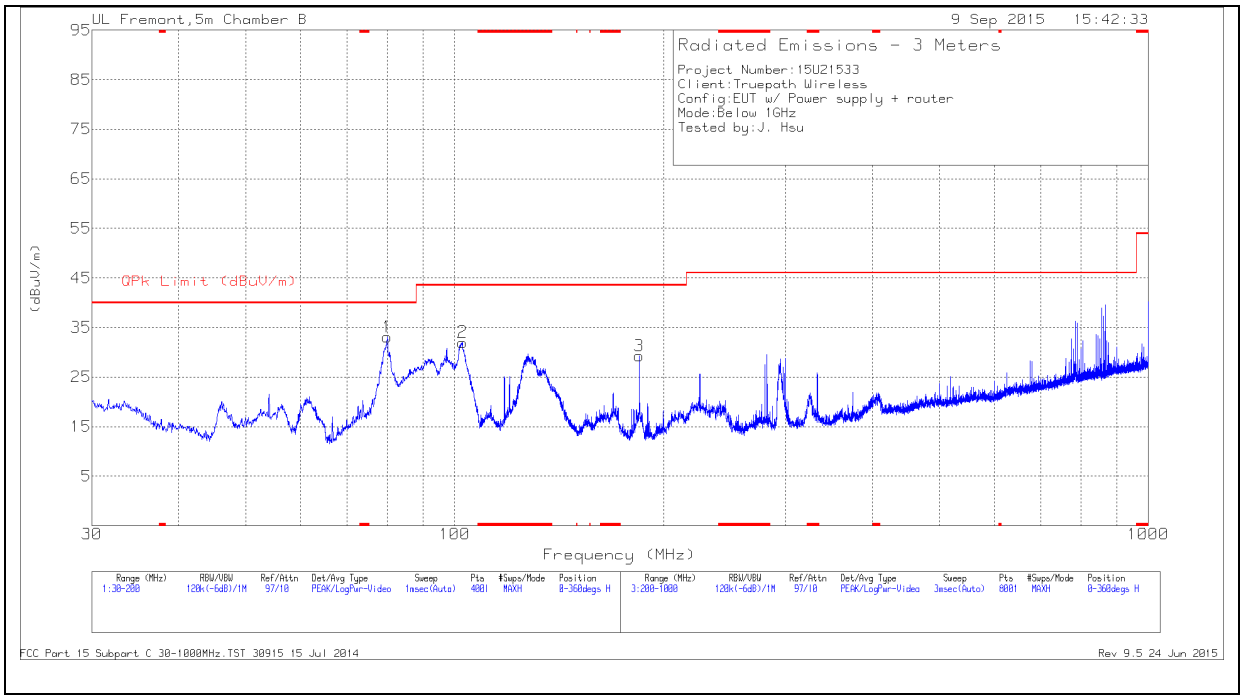
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK-U - U-NII: Maximum Peak

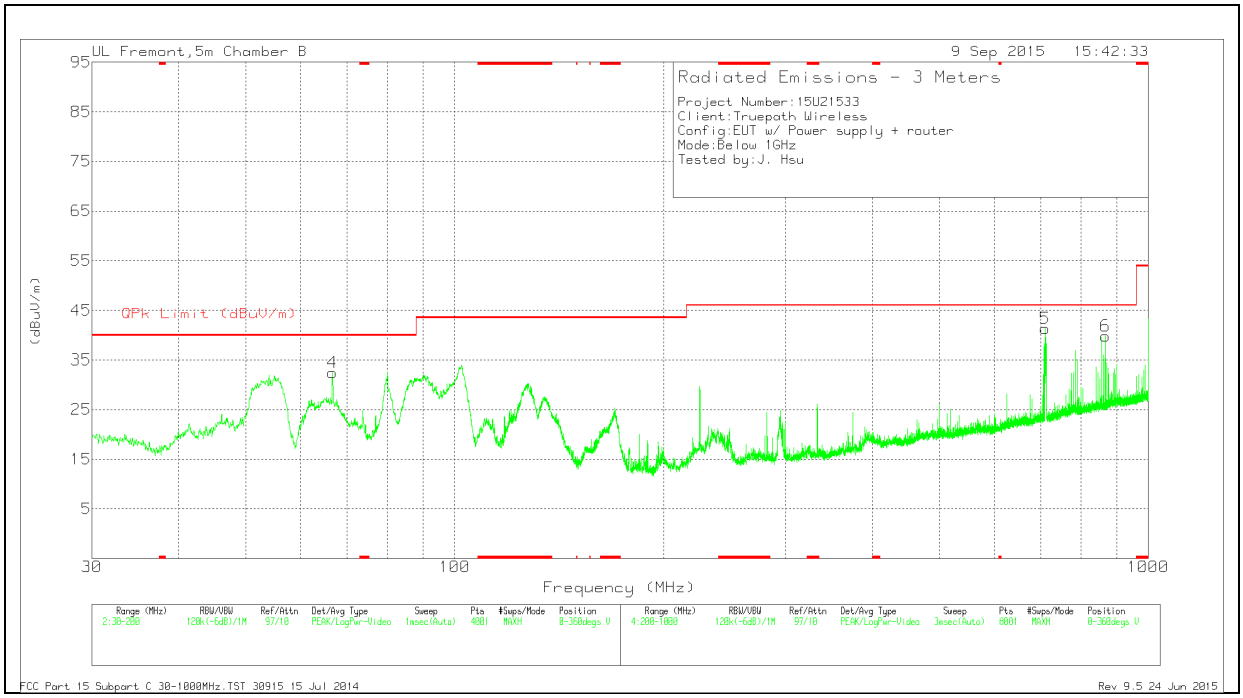
ADR - U-NII AD primary method, RMS average

16. WORST-CASE BELOW 1 GHz (in the 5.8 GHz Band)

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



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



Below 1G Data

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	66.635	53.03	Pk	7.9	-28.5	32.43	40	-7.57	0-360	101	V
1	79.98	54	Pk	7.5	-28.4	33.1	40	-6.9	0-360	199	H
2	102.59	49.11	Pk	11	-28.1	32.01	43.52	-11.51	0-360	299	H
3	184.615	45.3	Pk	11.2	-27.2	29.3	43.52	-14.22	0-360	199	H
5	710.5	46.12	Pk	20.4	-25.2	41.32	46.02	-4.7	0-360	101	V
6	866.6	42.07	Pk	21.9	-24.1	39.87	46.02	-6.15	0-360	101	V

Pk - Peak detector

Radiated Emissions

Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
711.0003	22.66	Qp	20.4	-25.3	17.76	46.02	-28.26	200	278	V

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

Qp - Quasi-Peak detector

17. 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 C63.10.

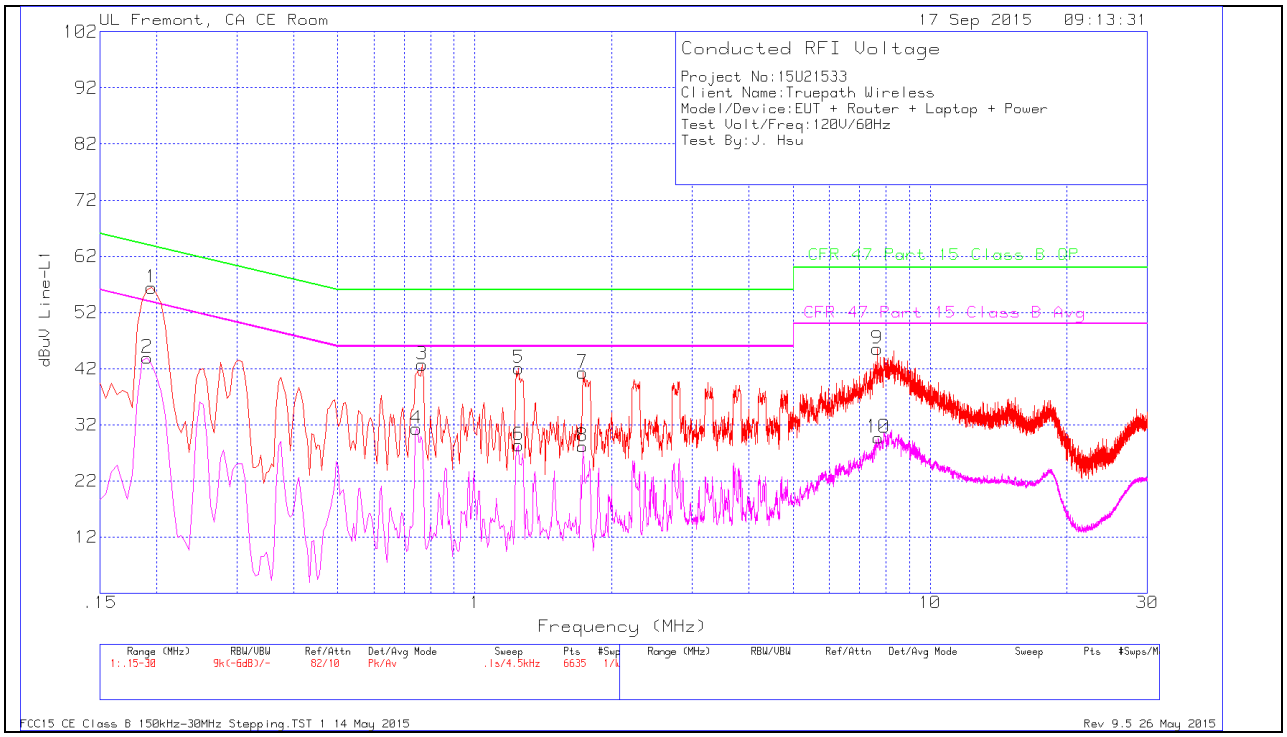
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT



LINE 1 RESULTS

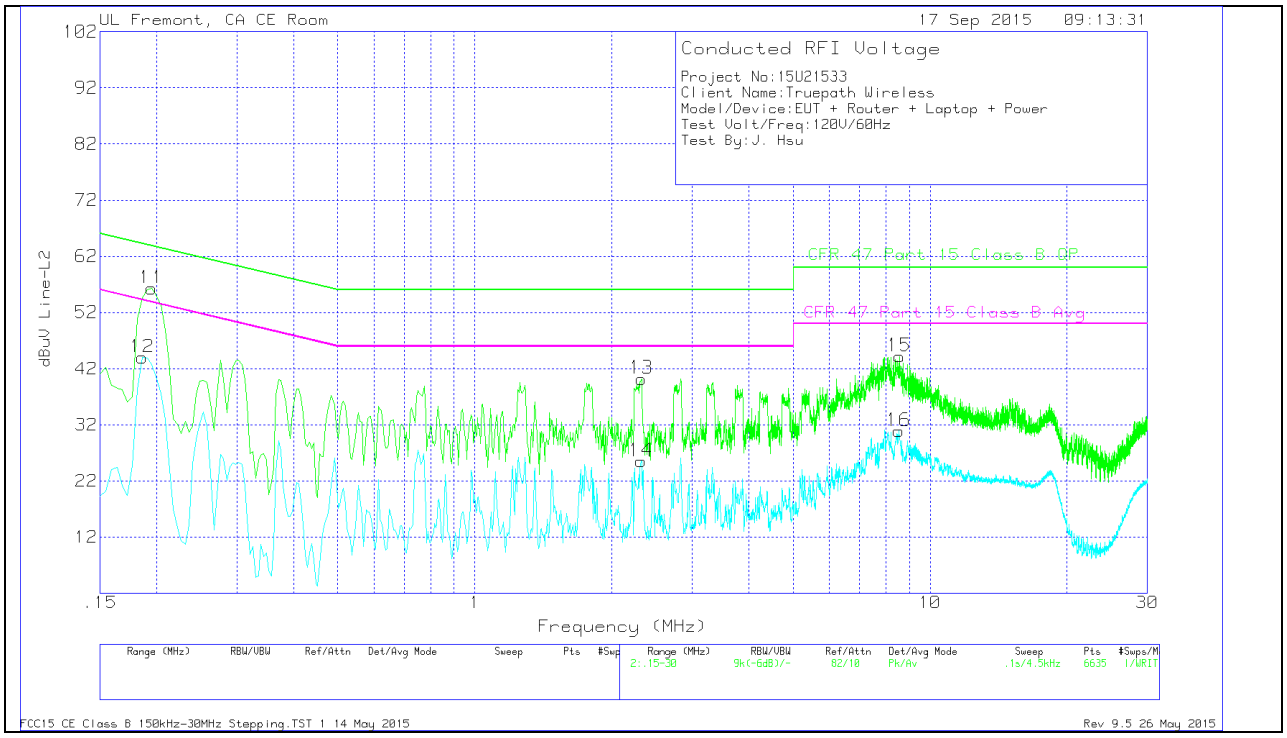
Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	Margin (dB)	CFR 47 Part 15 Class B Avg	Margin (dB)
1	.195	55.42	Pk	1	0	56.42	63.82	-7.4	-	-
2	.1905	42.94	Av	1	0	43.94	-	-	54.01	-10.07
3	.7665	42.44	Pk	.3	0	42.74	56	-13.26	-	-
4	.744	31.01	Av	.3	0	31.31	-	-	46	-14.69
5	1.248	41.9	Pk	.2	0	42.1	56	-13.9	-	-
6	1.248	28.22	Av	.2	0	28.42	-	-	46	-17.58
7	1.725	40.98	Pk	.2	.1	41.28	56	-14.72	-	-
8	1.725	27.88	Av	.2	.1	28.18	-	-	46	-17.82
9	7.665	45.26	Pk	.2	.1	45.56	60	-14.44	-	-
10	7.6965	29.42	Av	.2	.1	29.72	-	-	50	-20.28

Pk - Peak detector

Av - Average detection

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	CFR 47 Part 15 Class B QP	Margin (dB)	CFR 47 Part 15 Class B Avg	Margin (dB)
11	.195	55.3	Pk	1	0	56.3	63.82	-7.52	-	-
12	.186	42.9	Av	1.1	0	44	-	-	54.21	-10.21
13	2.3235	39.91	Pk	.2	.1	40.21	56	-15.79	-	-
14	2.319	25.22	Av	.2	.1	25.52	-	-	46	-20.48
15	8.5605	43.89	Pk	.2	.1	44.19	60	-15.81	-	-
16	8.5425	30.6	Av	.2	.1	30.9	-	-	50	-19.1

Pk - Peak detector

Av - Average detection

18. POWER SETTING TABLE

Setpoints used to test:

Case	Chain0	Chain1	Chain2	Chain3
1	16	14	16	16
1 (Mid)	20	18	20	20
2	16	14	18	18
2 (Mid)	26	24	28	28
3	22	22	24	24
3 (Mid)	34	34	36	36