FCC 47 CFR PART 15 SUBPART E

CERTIFICATION TEST REPORT

FOR

WIRELESS INPUT DEVICE

MODEL NUMBER: 1698

FCC ID: C3K1698

REPORT NUMBER: R10778321-E2A

ISSUE DATE: 2015-07-02

Prepared for
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Revision History

Rev.	Issue Date	Revisions	Revised By
--	2015-06-04	Initial Issue	Jeff Moser
1	2015-07-02	Revised unit designations on Radiated plots.	Jeff Moser

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: MICROSOFT CORPORATION
ONE MICROSOFT WAY
REDMOND, WA 98052, U.S.A.

EUT DESCRIPTION: WIRELESS INPUT DEVICE

MODEL: 1698

SERIAL NUMBER: Conducted 1, Radiated 1

DATE TESTED: 2015-05-15 to 2015-05-22

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E	PASS

UL LLC 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 LLC 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 LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC 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.

Approved & Released
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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, FCC 06-96, FCC KDB 789033, ANSI C63.10-2009.

Note – Radiated testing above 1GHz was performed on a 1.5m table height, per ANSI C63.10: 2013. All other testing was performed per ANSI C63.10: 2009.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 12 Laboratory Dr., Research Triangle Park, NC 27709, USA.

12 Laboratory Dr., RTP, NC 27709
☐ Chamber A
☒ Chamber C

UL LLC (RTP) is accredited by NVLAP, Laboratory Code 200246-0. The full scope of accreditation can be viewed at http://ts.nist.gov/standards/scopes/2002460.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

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4.3. MEASUREMENT UNCERTAINTY

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

Test	Uncertainty
Total RF power, conducted	+/- 0.45 dB
RF power density, conducted	+/- 1.5 dB
Spurious emissions, conducted	+/- 1.46 dB
Radiated Emissions (30-1000 MHz)	+/- 6.04 dB (3m)
Radiated Emissions (1-6 GHz)	+/- 5.96 dB
Radiated Emissions (6-18 GHz)	+/- 6.10 dB
Radiated Emissions (18-26 GHz)	+/- 6.81 dB

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

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an 802.11a/g/n transceiver, model 1698.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5180 - 5240	802.11a	8.50	7.08
5180 - 5240	802.11n HT20	8.48	7.05
5260 - 5320	802.11a	8.22	6.64
5260 - 5320	802.11n HT20	8.50	7.08
5500 - 5700	802.11a	8.39	6.90
5500 - 5700	802.11n HT20	8.50	7.08
5725-5850	802.11a	8.38	6.89
5725-5850	802.11n HT20	8.26	6.70

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an integral antenna, with a maximum antenna gain as follows:

Frequency Band (GHz)	5.2	5.3	5.6	5.8
Antenna Gain (dBi)	1.8	1.7	2.9	3.0

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was R74.

The test utility software used during testing was Atheros ART2 ver 2.3.

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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 orthogonal orientations X,Y,Z, it was determined that Y orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Y orientation.

Worst-case data rates as provided by the client and checked by UL were:

- 802.11a mode: 6 Mbps
- 802.11n HT20mode: MCS0

Radiated emissions for EUT with antenna was performed and passed; therefore, antenna port spurious was not performed.

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5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	Lenovo	T440		TP00050A
AC/DC adapter	Lenovo	DCWP MMC 170W 20V	-	-
External DC Source	Circuit Specialist	CS13005X5	-	-

I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	AC - 3 Prong	Unshielded	<3	None.
2	DC	1	DC - Barrel	Shielded	<3	None.
3	USB	1	USB	Shielded	<3	None.
4	DC	1	NA	Unshielded	<3	External DC source during conducted testing.

TEST SETUP

The EUT is configured as table top equipment during the tests. During Conducted Emissions testing, the EUT was connected to a laptop to change modes and channels. The EUT was powered by an external power source. During Radiated testing, the EUT was tested as a stand alone device. The EUT was set for the proper channel/mode, then the laptop was removed from the test site. Test software exercised the radio card.

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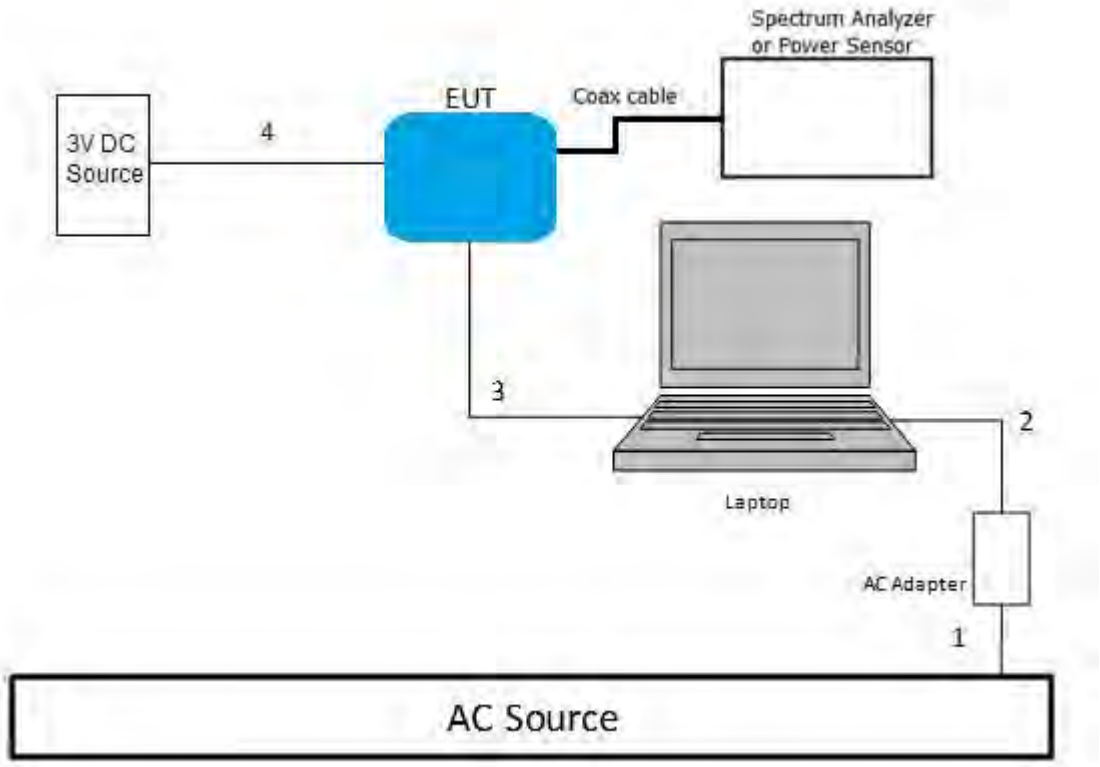
SETUP DIAGRAM FOR TESTS

Conducted



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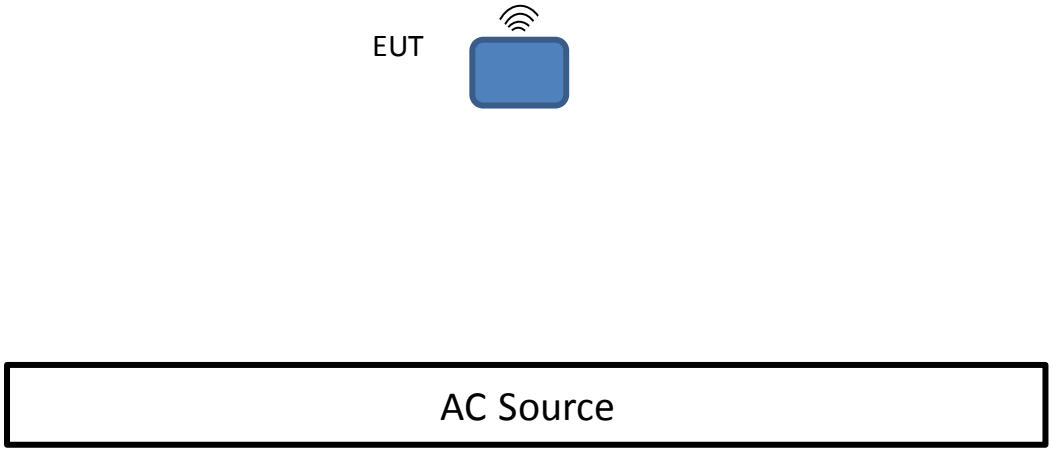
Radiated



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6. TEST AND MEASUREMENT EQUIPMENT

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

Radiated Disturbance Emissions (E-field) – Chamber C

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	30-1000 MHz Range				
AT0066	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB1	2014-07-10	2015-07-31
	1-18 GHz				
AT0062	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2014-07-22	2015-07-31
	18-40 GHz (calibrated as set)				
AT0063	Horn Antenna, 18-26.5GHz	ARA	MWH-1826/B	2014-07-23	2015-07-31
AT0061	Horn Antenna, 25.5-40GHz	ARA	MWH-2640/B	2014-07-23	2015-07-31
	Gain-Loss Chains				
SAC_G (Hybrid) 30-1000MHz	Gain-Loss string for Hyrbid antenna at 3m	Various	Various	2015-01-26	2016-01-31
SAC_G (BOM) 1-18GHz	Gain-Loss string for Hyrbid antenna at 3m	Various	Various	2015-01-26	2016-01-31
SAC_G (BOM) 18-40GHz	Gain-Loss string for Hyrbid antenna at 3m	Various	Various	2015-01-26	2016-01-31
	Receiver & Software				
SA0018	Spectrum Analyzer	Agilent	N9030A	2014-06-24	2015-06-30
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
	Additional Equipment used				
HI0034	Temp/Humid/Pressure Meter	Cole-Parmer	99760-00	2015-03-23	2016-03-31
HPF009	1GHz High-pass Filter	Micro-Tronics	HPM17672	2015-01-28	2016-01-31

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Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	Common Equipment				
SA0020	Spectrum Analyzer	Agilent Technologies	E4446	2014-06-12	2015-06-30
PSENSOR001	RF Power Meter Sensor Head	Rohde & Schwartz	NRP-Z81 (w/ NRP-Z3 USB adapter)	2014-09-03	2015-09-30
MM0143	Digital Multimeter	Fluke	175	2014-09-04	2016-09-30
HI0034	Temp/Humid/Pressure Meter	Cole-Parmer	99760-00	2015-03-23	2016-03-31

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7. MEASUREMENT METHODS

26 dB Emission BW: KDB 789033 D02 v01r, Section C.

99% Occupied BW: KDB 789033 D02 v01, Section D.

Conducted Output Power: KDB 789033 D02 v01, Section E.3.a (Method PM).

Power Spectral Density: KDB 789033 D02 v01, Section F.

Unwanted emissions in restricted bands: KDB 789033 D02 v01, Sections G.3, G.4, G.5, and G.6.

Unwanted emissions in non-restricted bands: KDB 789033 D02 v01, Sections G.3, G.4, and G.5.

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8. ANTENNA PORT TEST RESULTS

8.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

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)
802.11a 1TX	1.000	1.000	1.000	100.00%	0.00	0.010
802.11n HT20 1TX	1.000	1.000	1.000	100.00%	0.00	0.010

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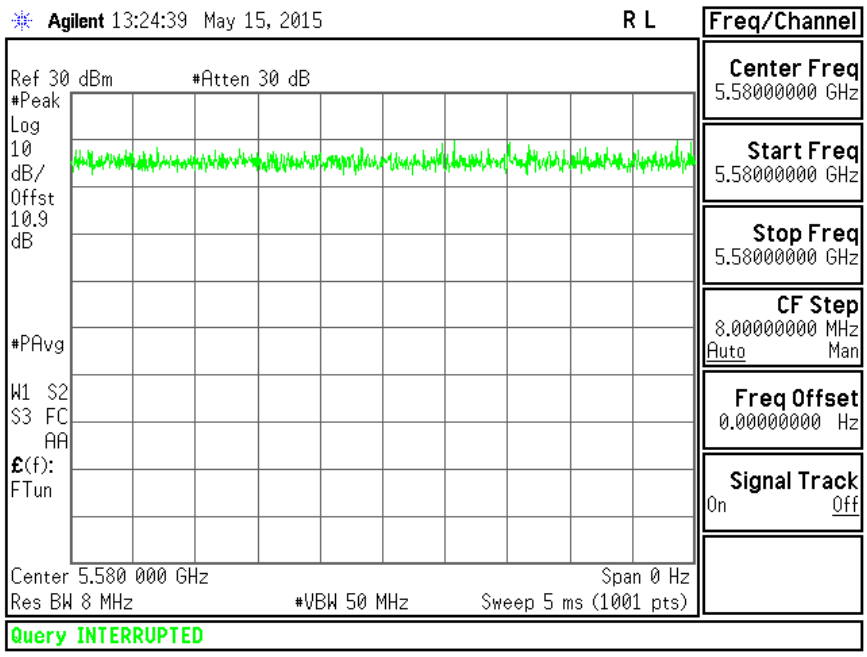
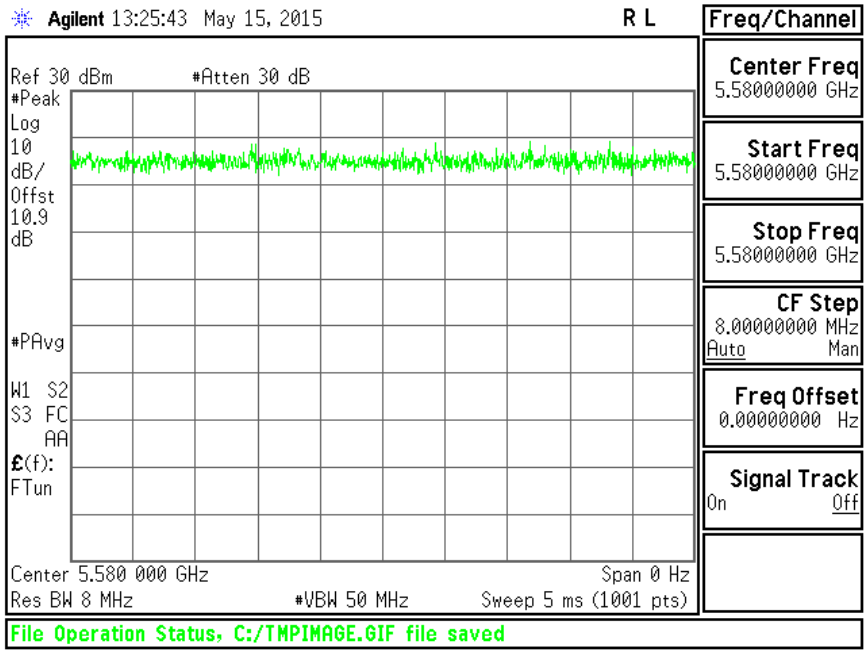
DUTY CYCLE PLOTS

DUTY CYCLE 802.11a 1TX MODE



DUTY CYCLE 802.11n HT20 1TX MODE



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8.2. 802.11a MODE IN THE 5.2 GHz BAND

8.2.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	23.63
Mid	5200	23.66
High	5240	23.04

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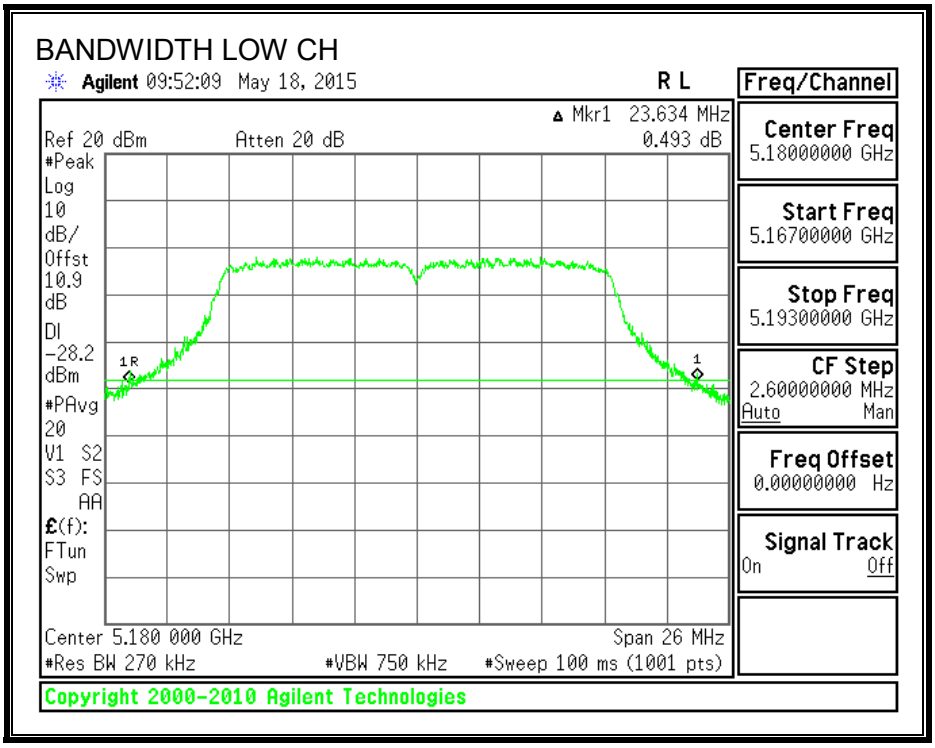
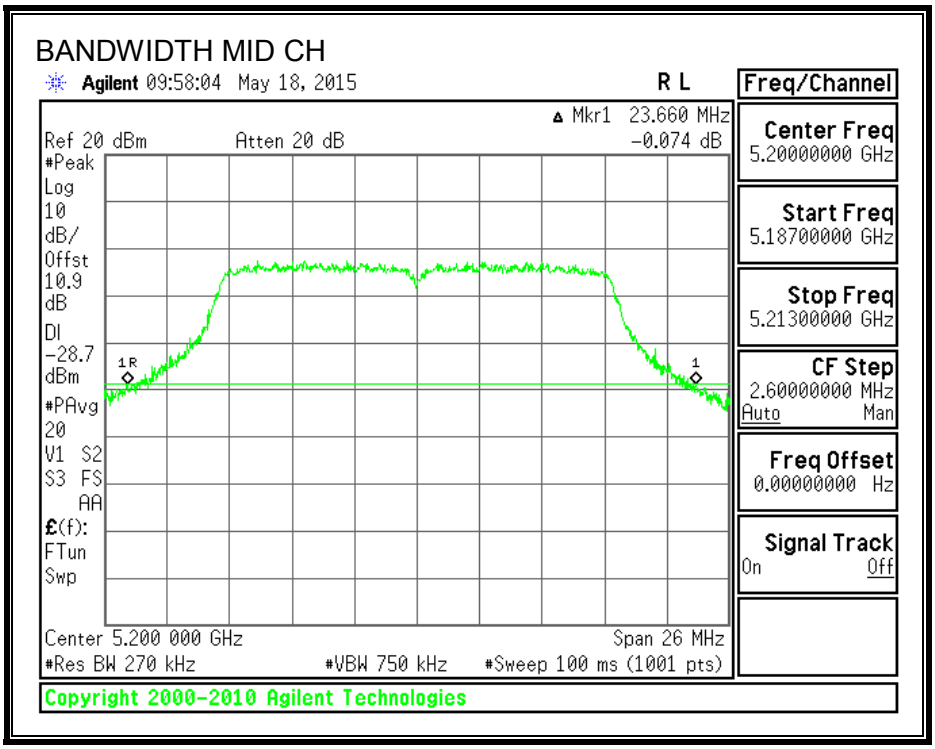
26 dB BANDWIDTH





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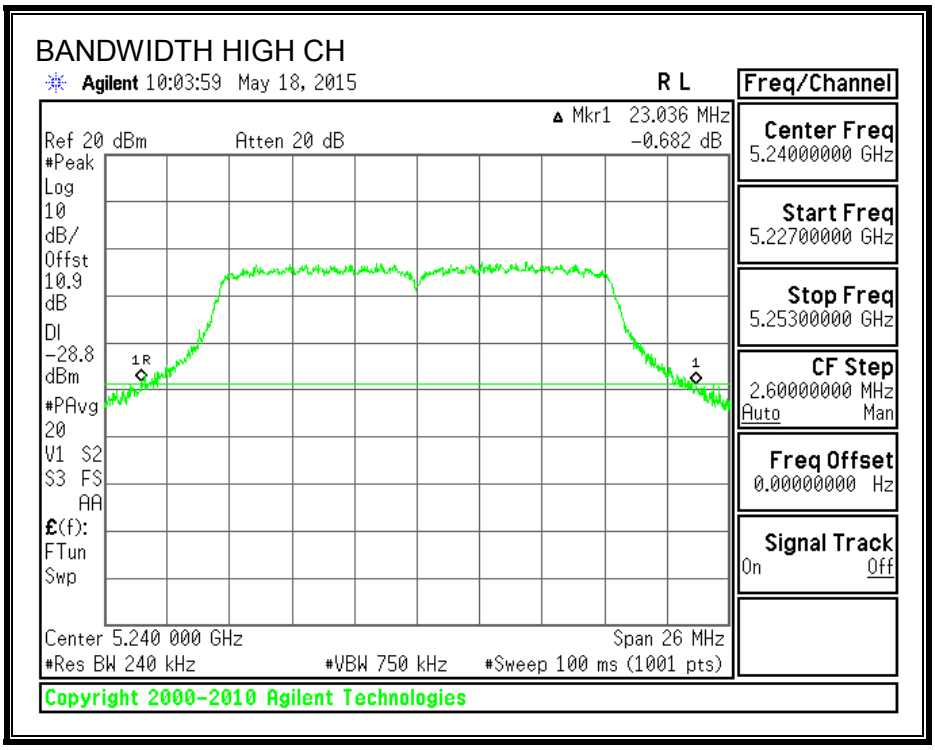
BANDWIDTH HIGH CH



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8.2.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	16.9562
Mid	5200	16.9666
High	5240	16.9505

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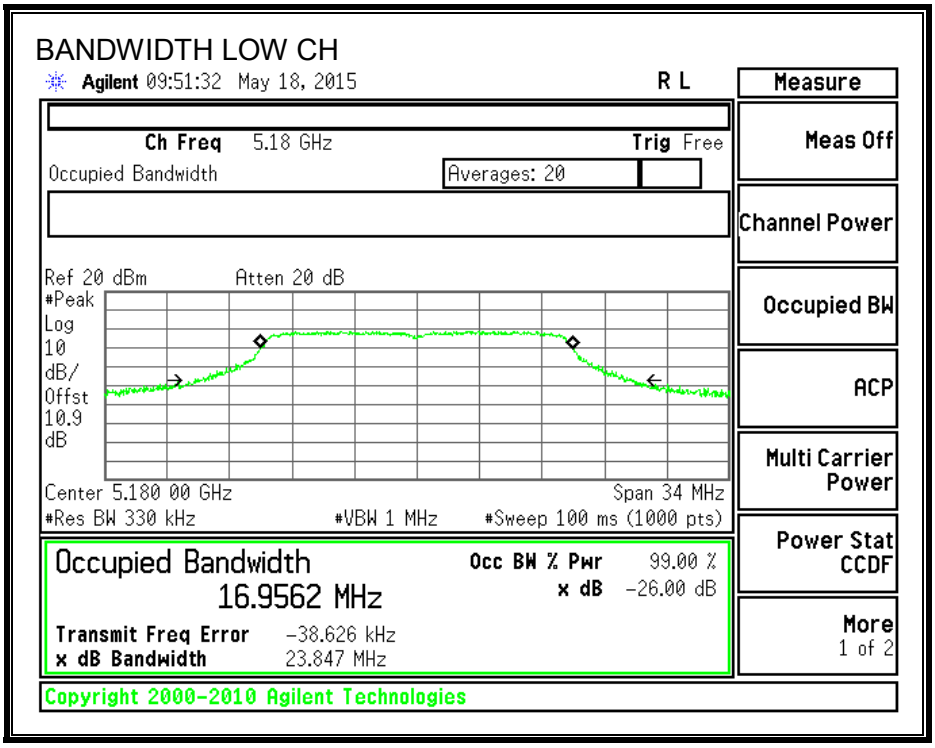
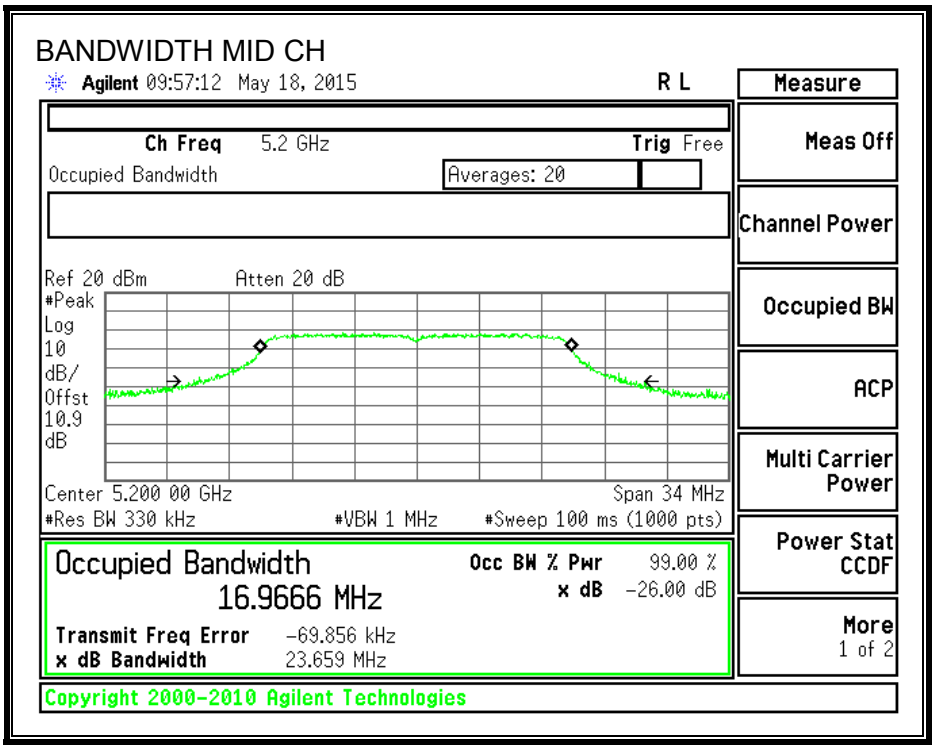
99% BANDWIDTH





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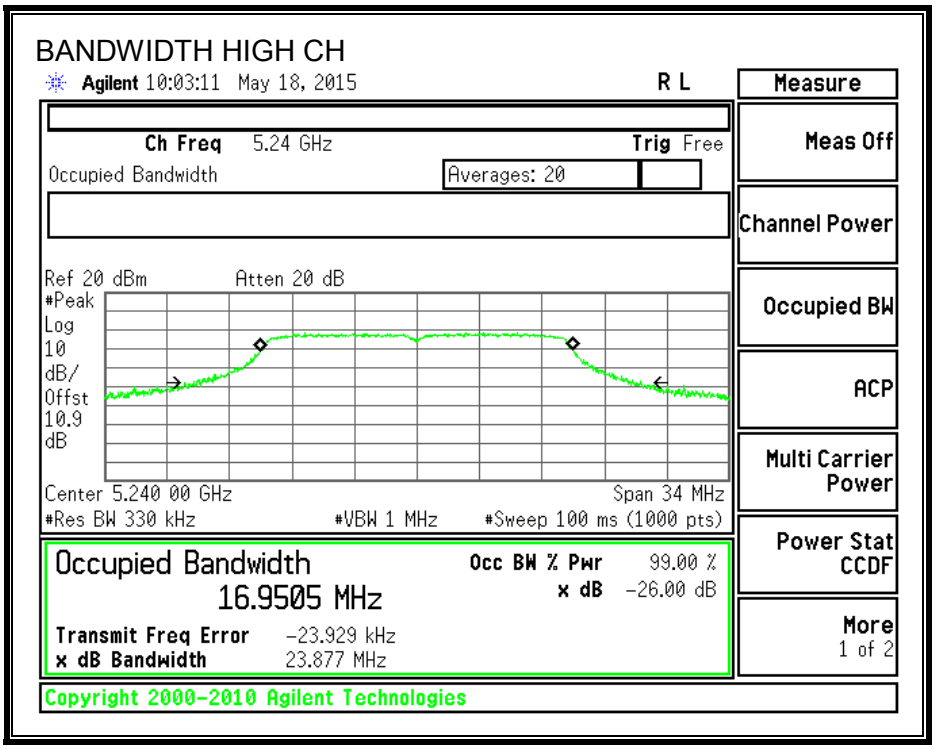

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8.2.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5180	8.03
Mid	5200	8.50
High	5240	8.50

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8.2.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz 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.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz 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.

DIRECTIONAL ANTENNA GAIN

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

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RESULTS

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5180	1.80	1.80	24.00	11.00
Mid	5200	1.80	1.80	24.00	11.00
High	5240	1.80	1.80	24.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	8.03	8.03	24.00	-15.97
Mid	5200	8.50	8.50	24.00	-15.50
High	5240	8.50	8.50	24.00	-15.50

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	-4.77	-4.77	11.00	-15.77
Mid	5200	-4.77	-4.77	11.00	-15.77
High	5240	-4.33	-4.33	11.00	-15.33

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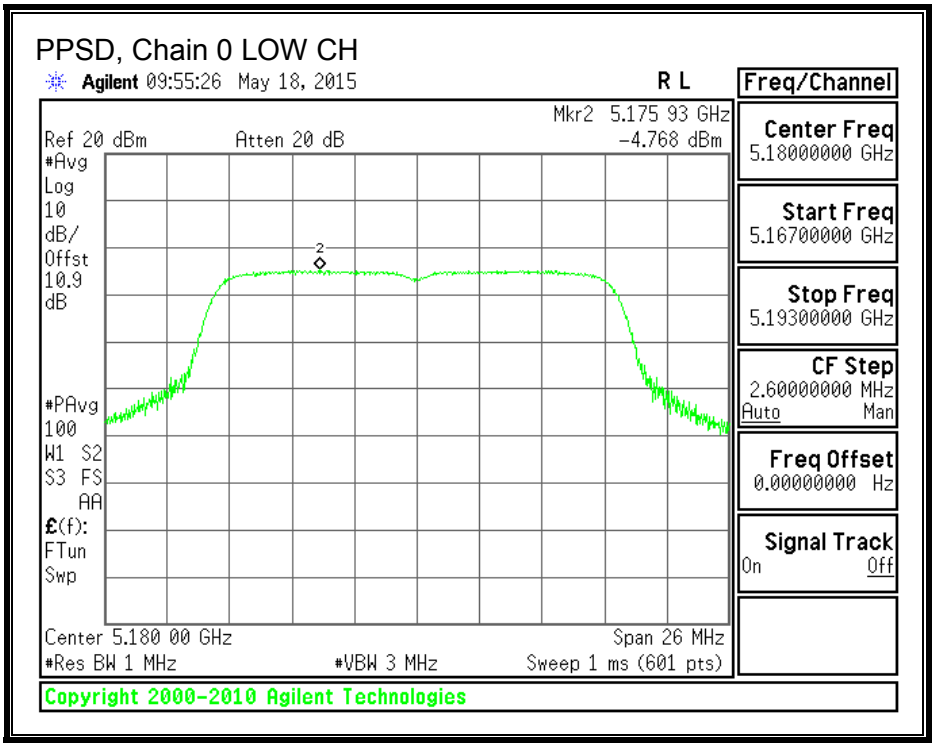
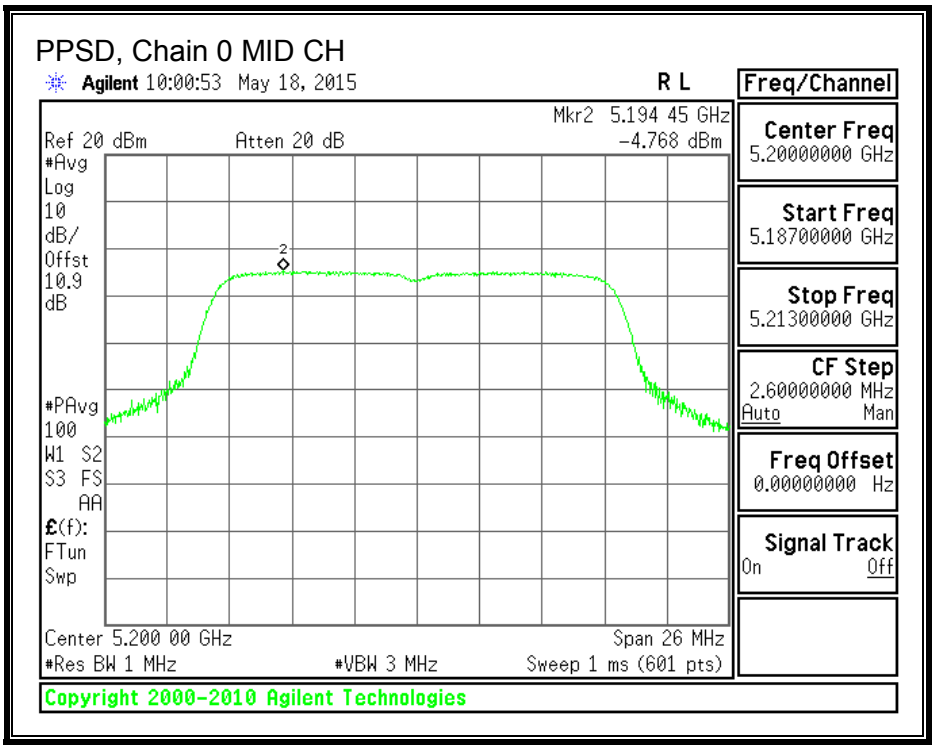
PPSD, Chain 0





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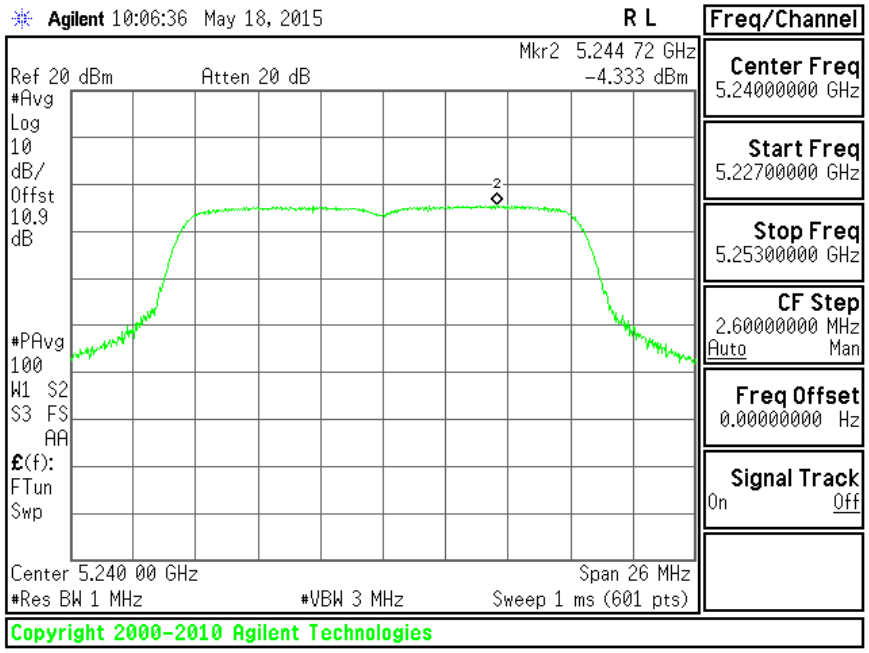
PPSD, Chain 0 HIGH CH



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8.3. 802.11n HT20 MODE IN THE 5.2 GHz BAND

8.3.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	23.75
Mid	5200	23.44
High	5240	23.79

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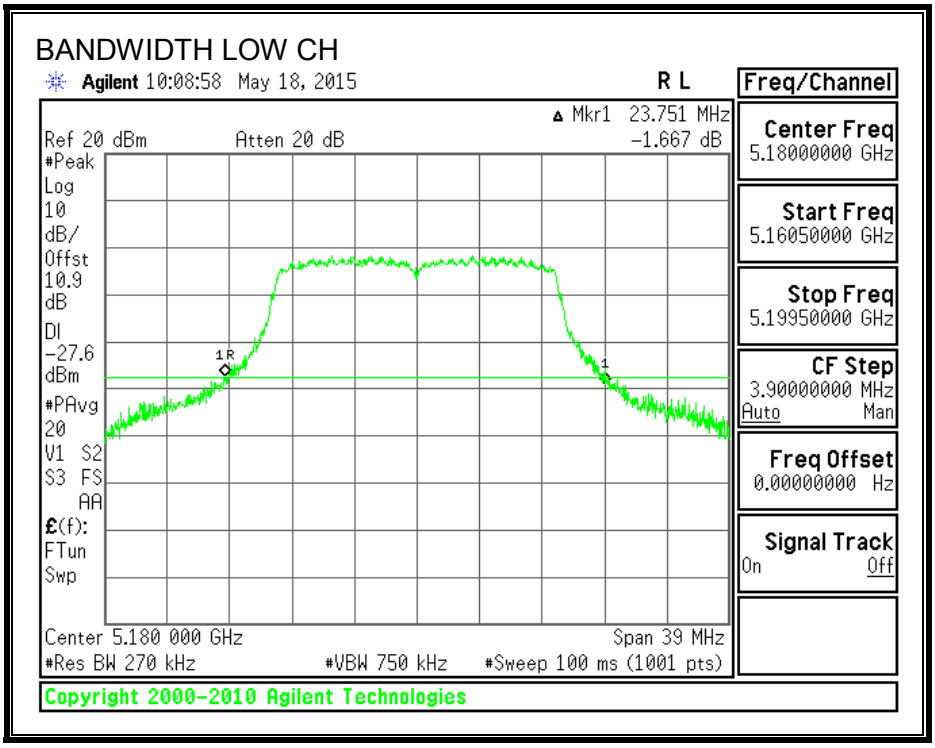
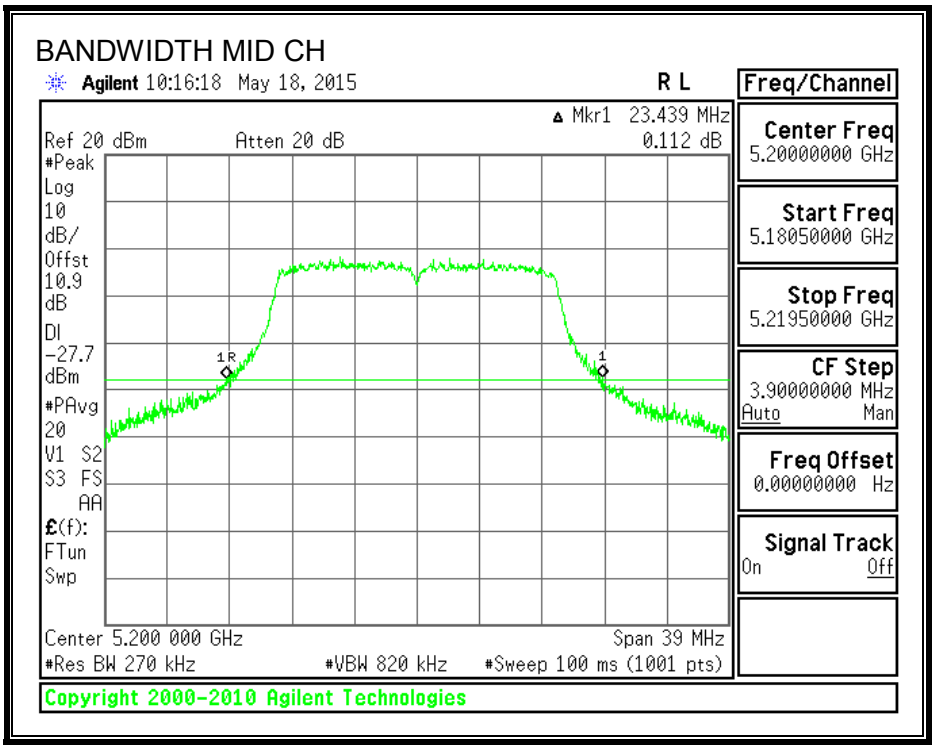
26 dB BANDWIDTH





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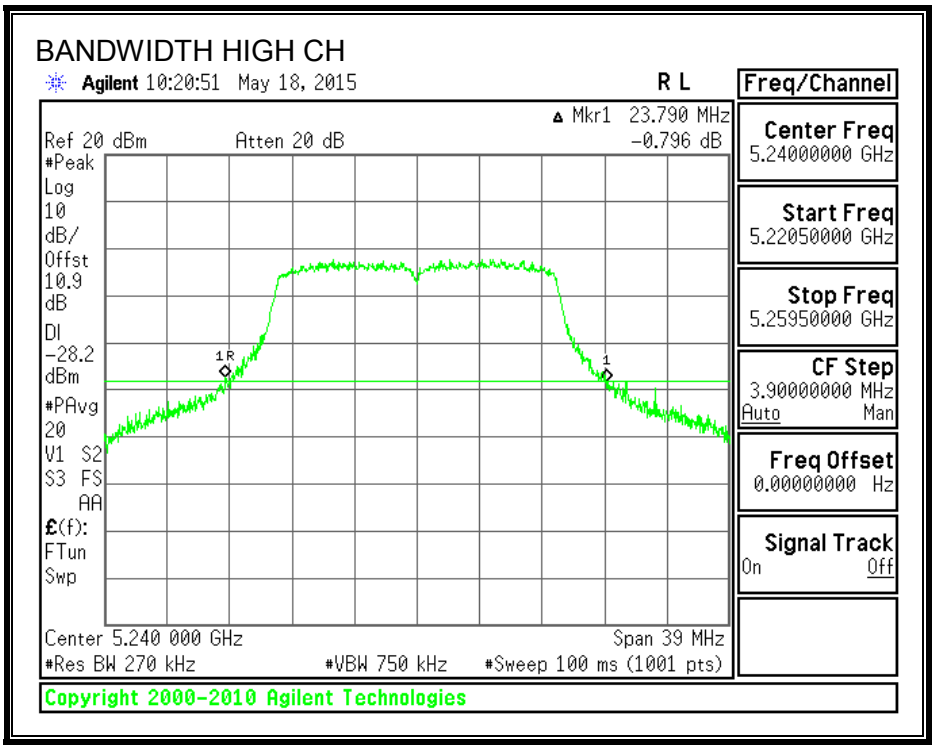
BANDWIDTH HIGH CH



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8.3.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	18.0653
Mid	5200	18.0970
High	5240	18.1041

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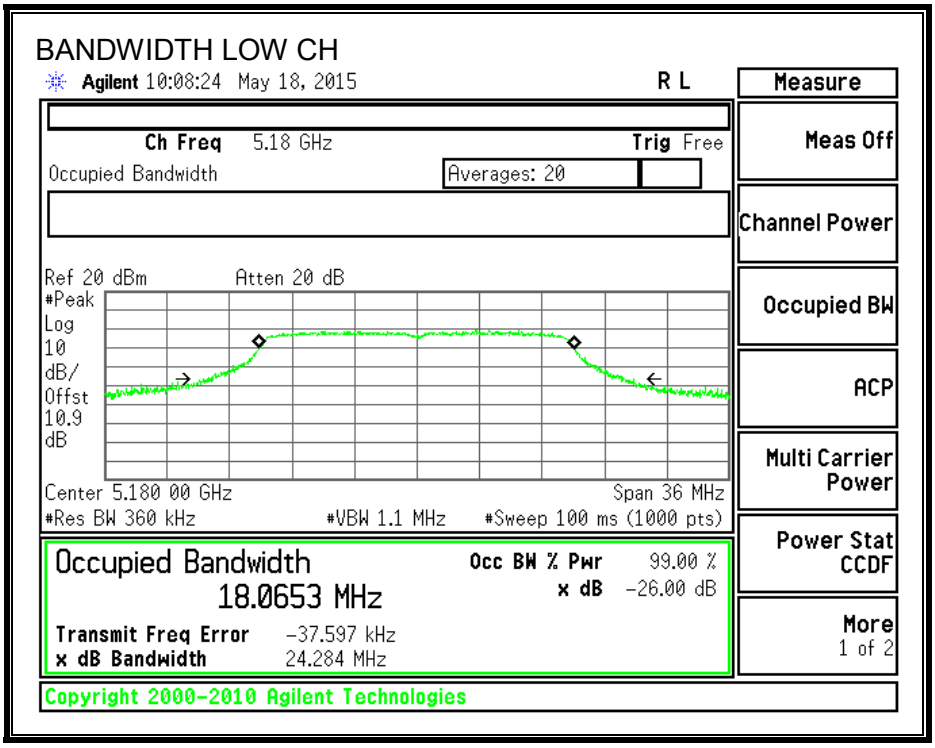
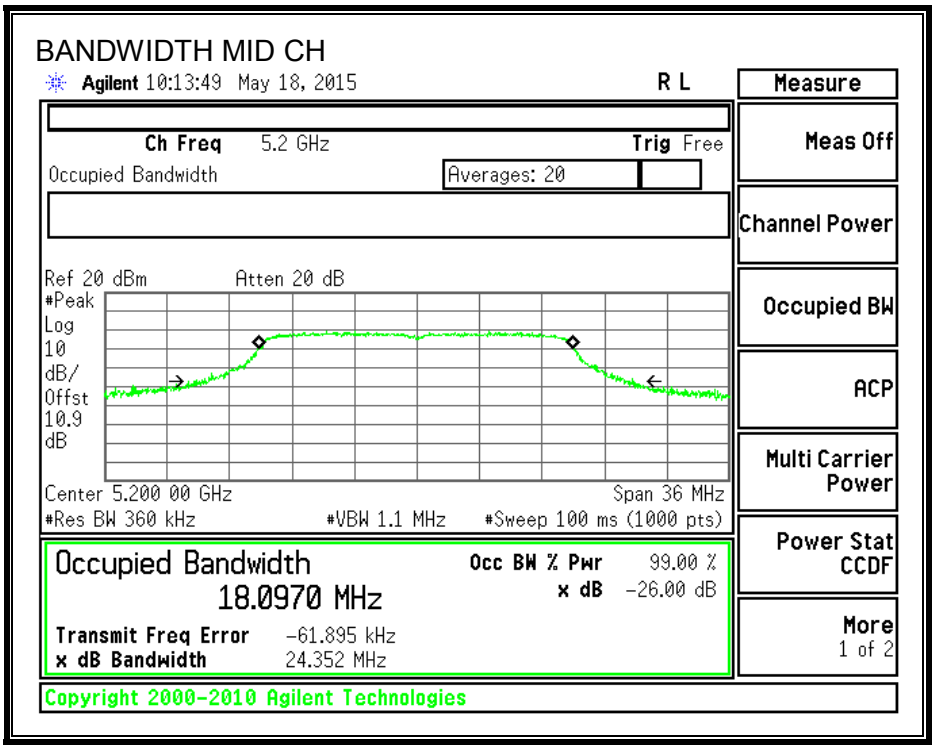
99% BANDWIDTH





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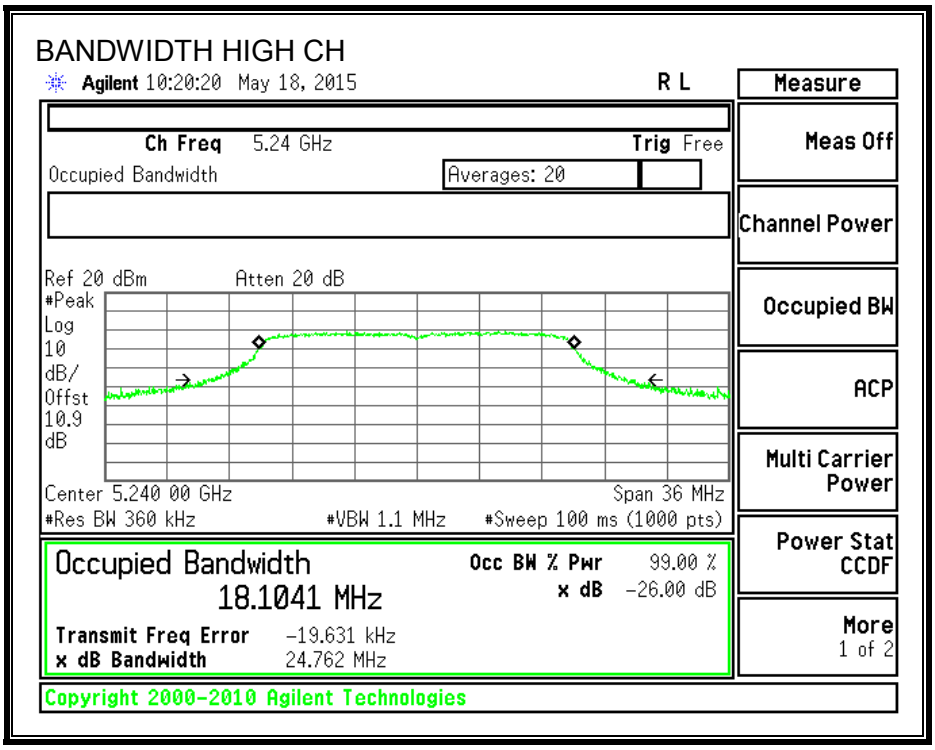

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8.3.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5180	8.04
Mid	5200	8.48
High	5240	8.42

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8.3.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz 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.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz 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.

DIRECTIONAL ANTENNA GAIN

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

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RESULTS

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5180	1.80	1.80	24.00	11.00
Mid	5200	1.80	1.80	24.00	11.00
High	5240	1.80	1.80	24.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	8.04	8.04	24.00	-15.96
Mid	5200	8.48	8.48	24.00	-15.52
High	5240	8.42	8.42	24.00	-15.58

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	-4.47	-4.47	11.00	-15.47
Mid	5200	-4.24	-4.24	11.00	-15.24
High	5240	-4.52	-4.52	11.00	-15.52

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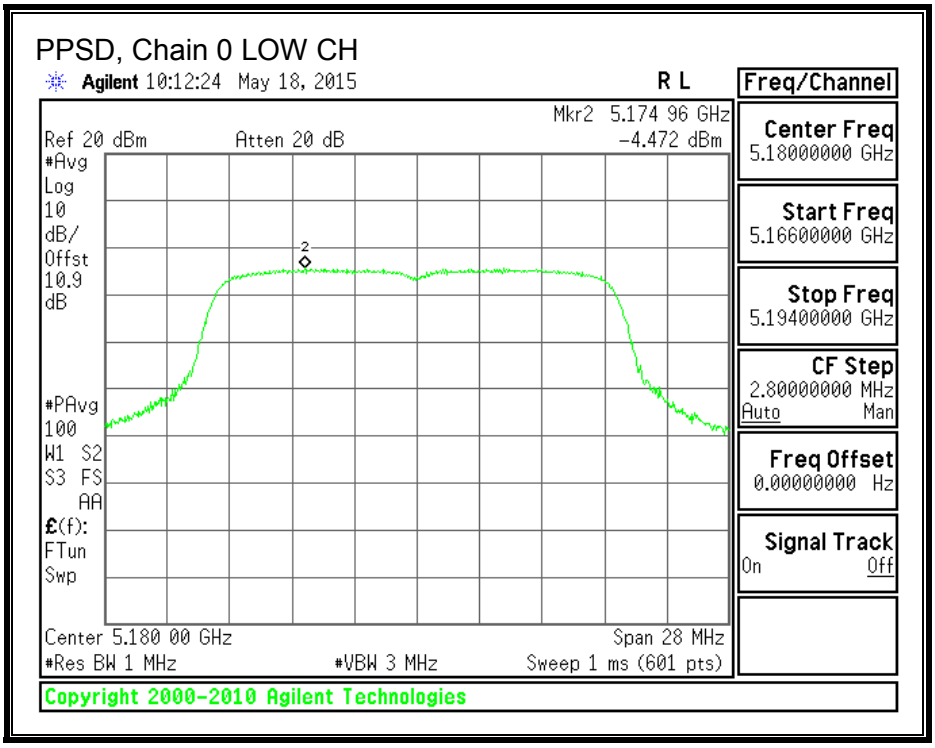
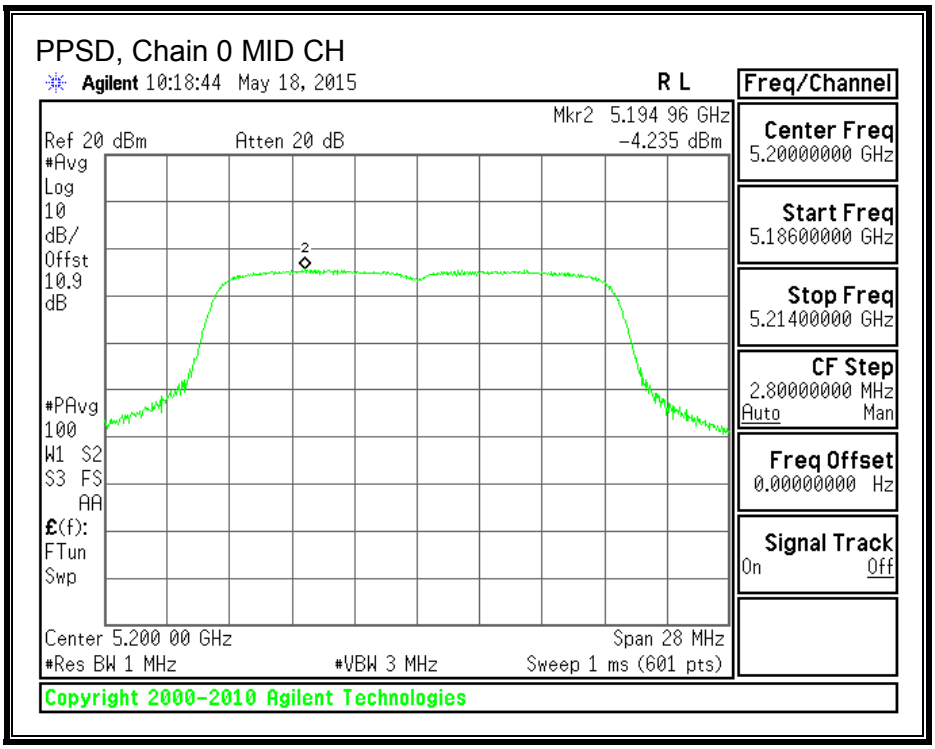
PPSD, Chain 0





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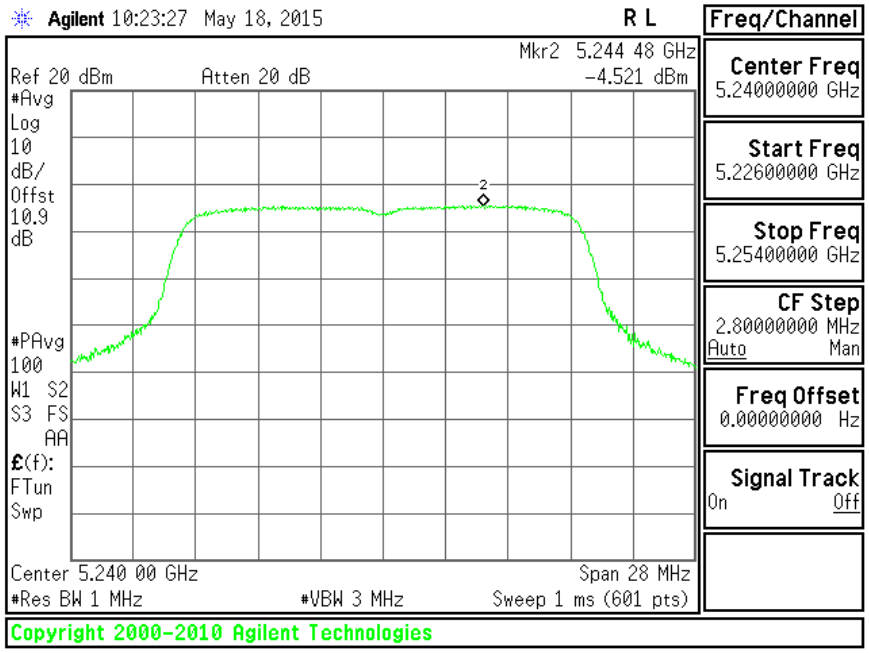
PPSD, Chain 0 HIGH CH



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8.4. 802.11a MODE IN THE 5.3 GHz BAND

8.4.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	23.30
Mid	5300	23.43
High	5320	23.87

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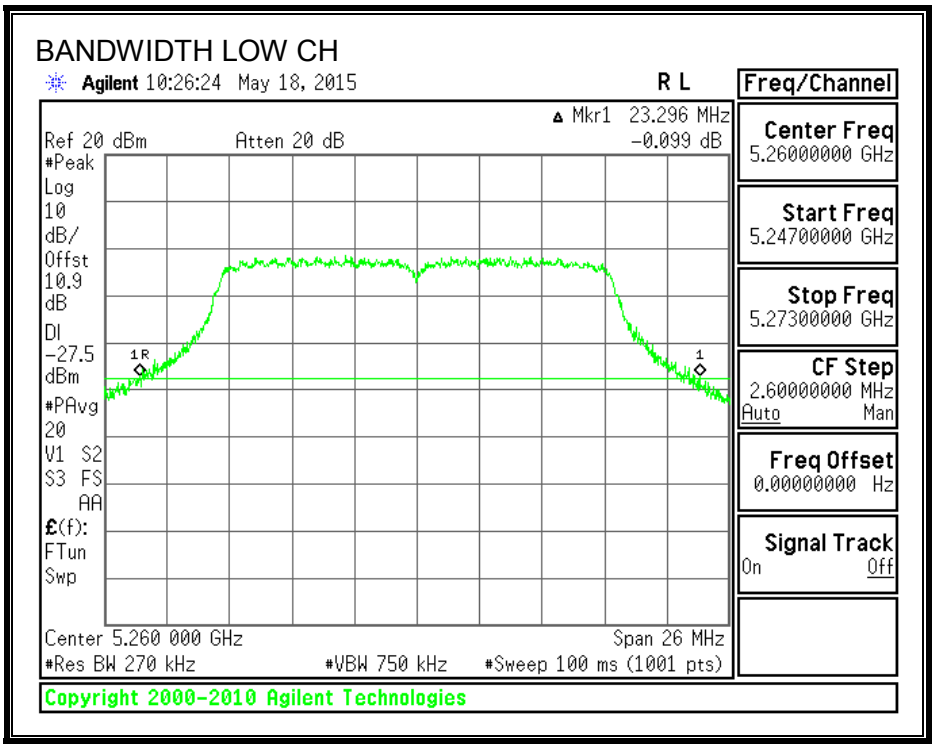
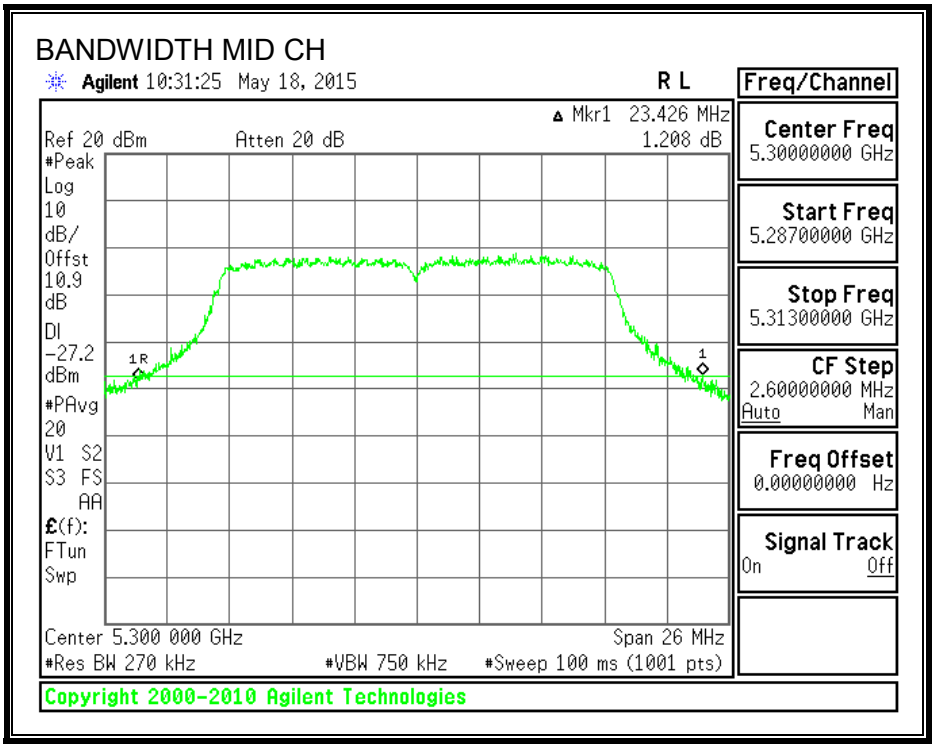
26 dB BANDWIDTH





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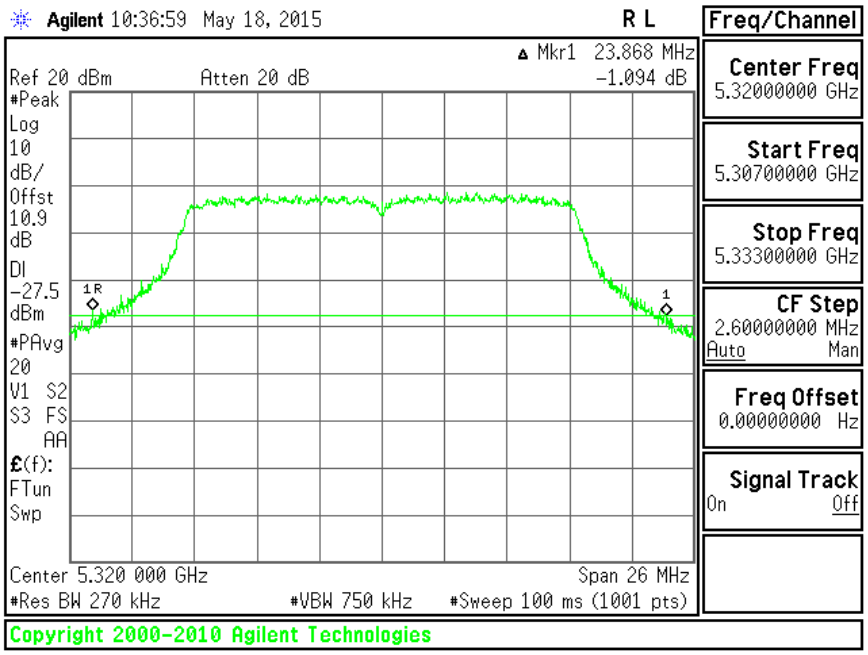
BANDWIDTH HIGH CH



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8.4.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	16.9665
Mid	5300	16.9616
High	5320	16.9611

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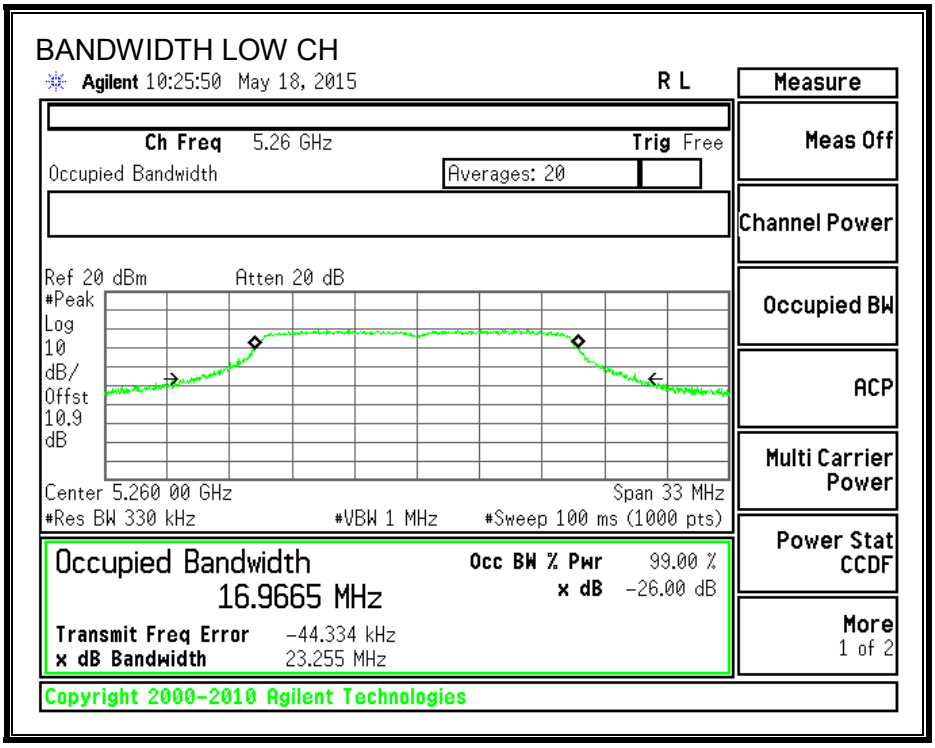
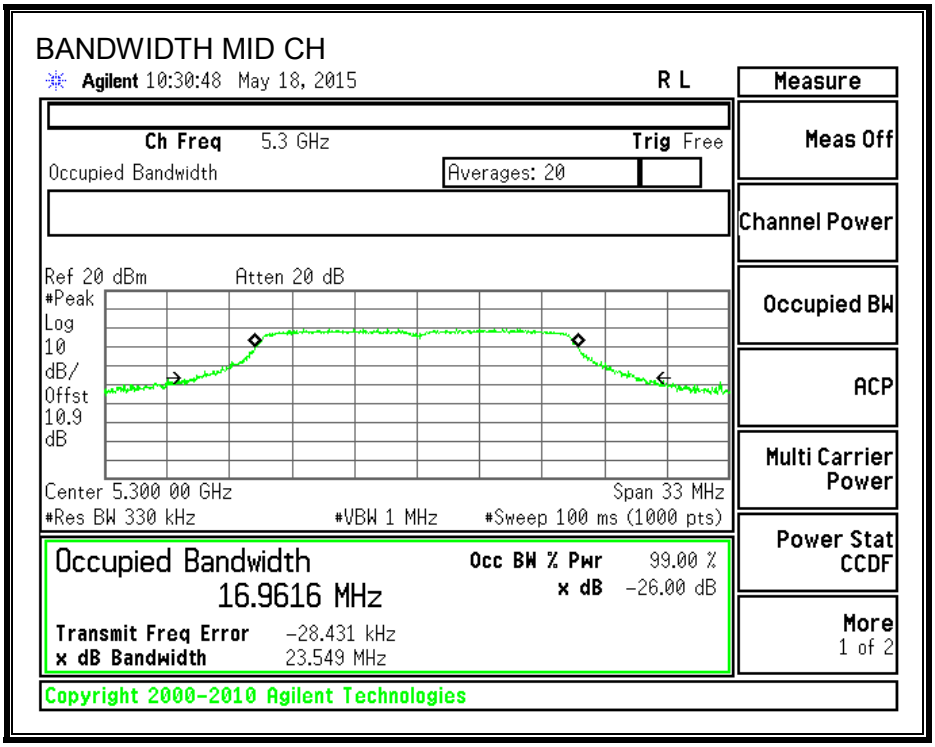
99% BANDWIDTH





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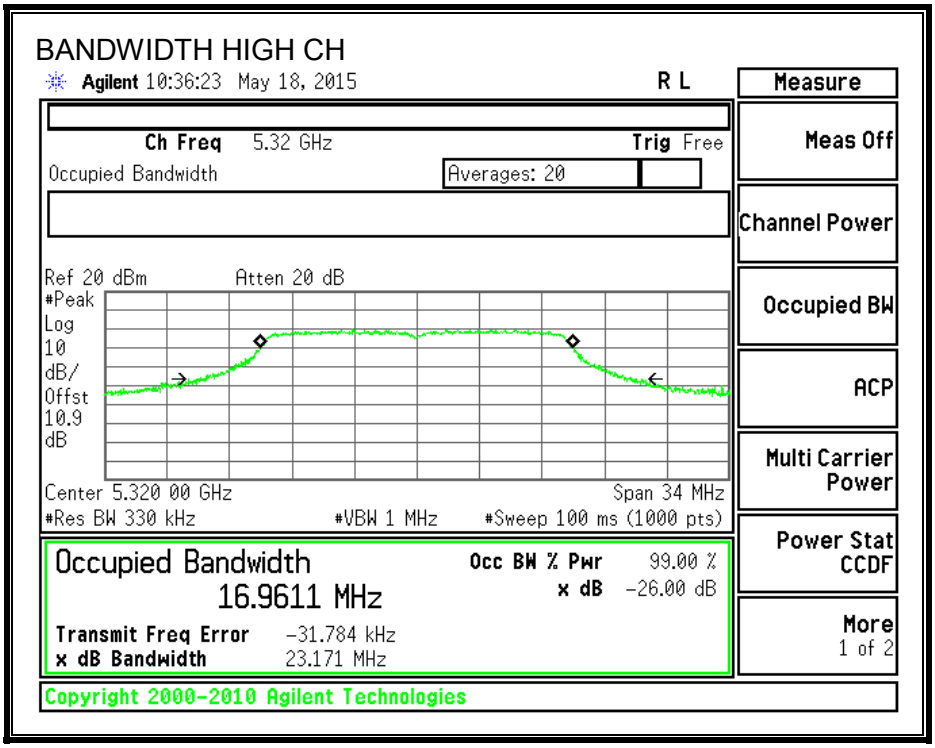
BANDWIDTH HIGH CH



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8.4.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5260	8.22
Mid	5300	8.10
High	5320	8.07

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8.4.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.25–5.35 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

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

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RESULTS

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5260	23.30	1.70	24.00	11.00
Mid	5300	23.43	1.70	24.00	11.00
High	5320	23.87	1.70	24.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	8.22	8.22	24.00	-15.78
Mid	5300	8.10	8.10	24.00	-15.90
High	5320	8.07	8.07	24.00	-15.93

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5260	-3.55	-3.55	11.00	-14.55
Mid	5300	-3.80	-3.80	11.00	-14.80
High	5320	-4.10	-4.10	11.00	-15.10

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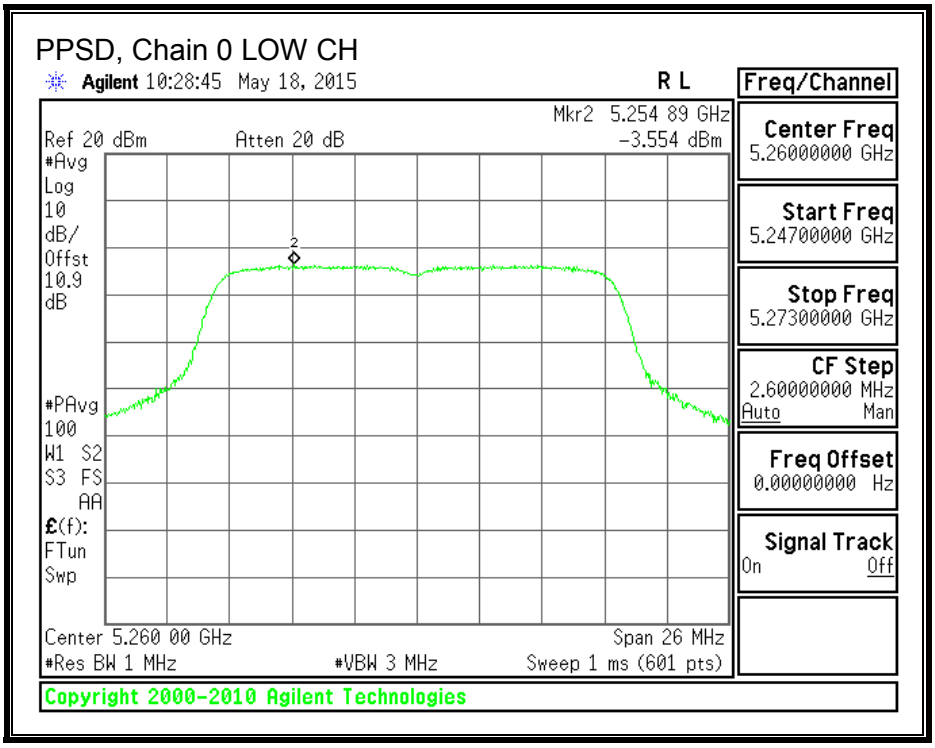
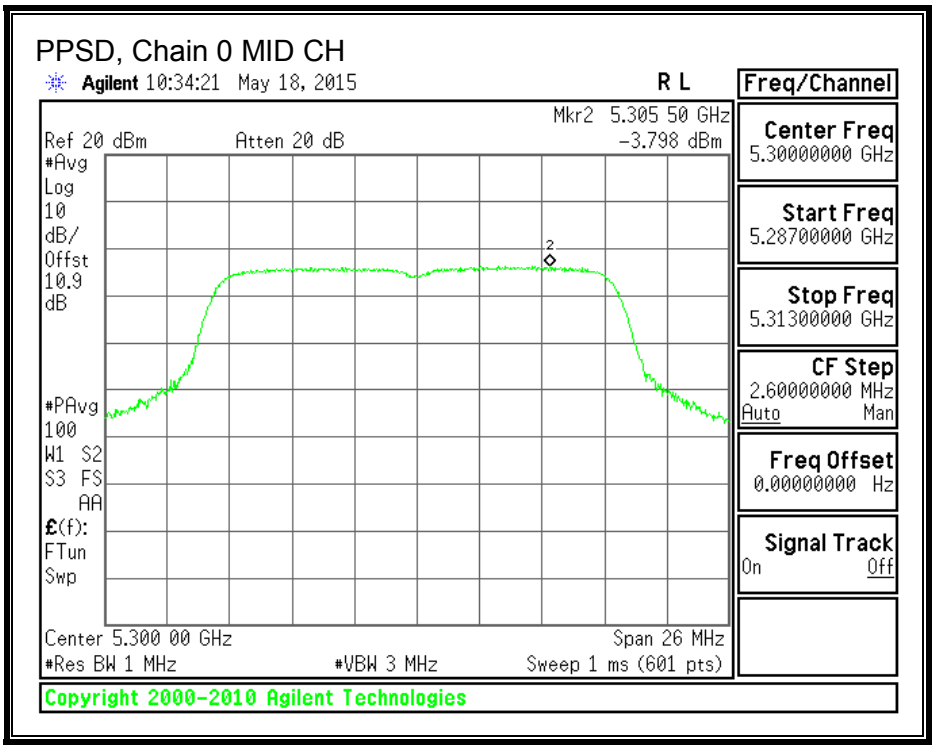
PPSD, Chain 0





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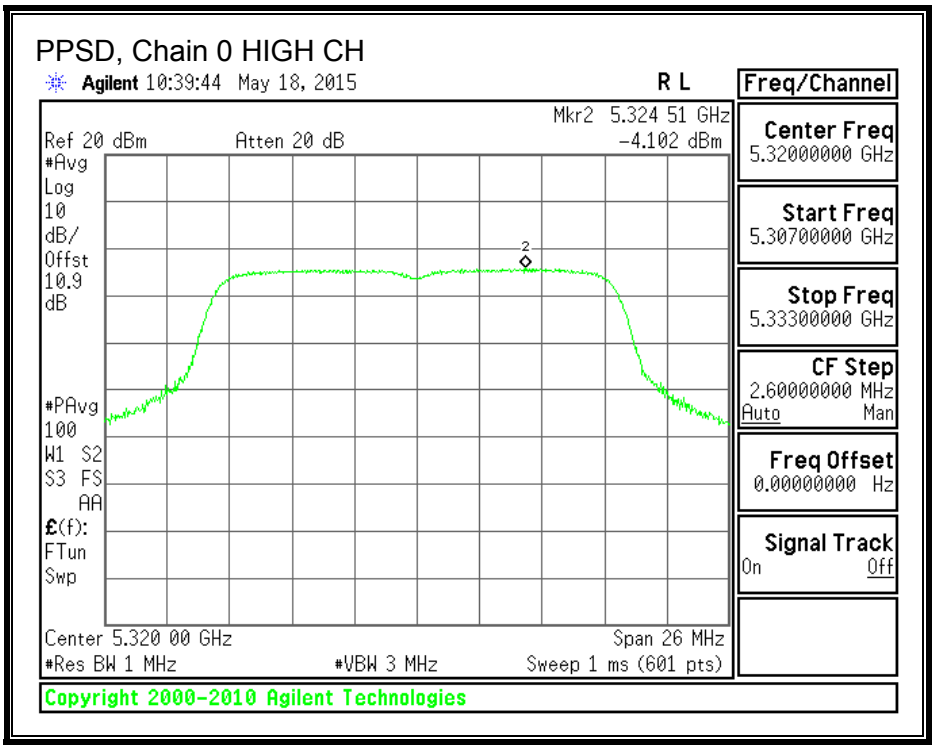

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8.4.5. TPC POWER

LIMITS

FCC §15.407 (h) (1)

Transmit power control (TPC). U-NII devices operating in the 5.25–5.35 GHz band and the 5.47–5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

TPC Limits

Channel	Frequency (MHz)	Limit EIRP (dBm)	Directional Gain (dBi)	Limit Cond (dBm)
Low	5260	24	1.70	22.30
Mid	5300	24	1.70	22.30
High	5320	24	1.70	22.30

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

TPC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)	Corr'd Power (dBm)	Cond Limit (dBm)	Margin (dB)
Low	5260	8.22	8.22	22.30	-14.08
Mid	5300	8.10	8.10	22.30	-14.20
High	5320	8.07	8.07	22.30	-14.23

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8.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

8.5.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	23.79
Mid	5300	24.61
High	5320	23.99

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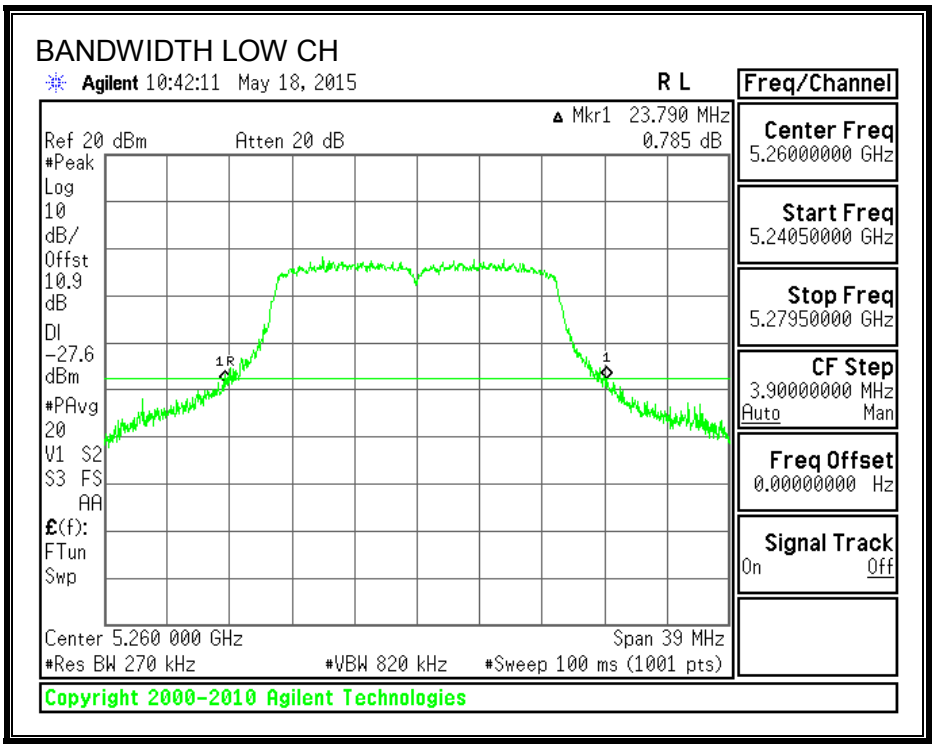
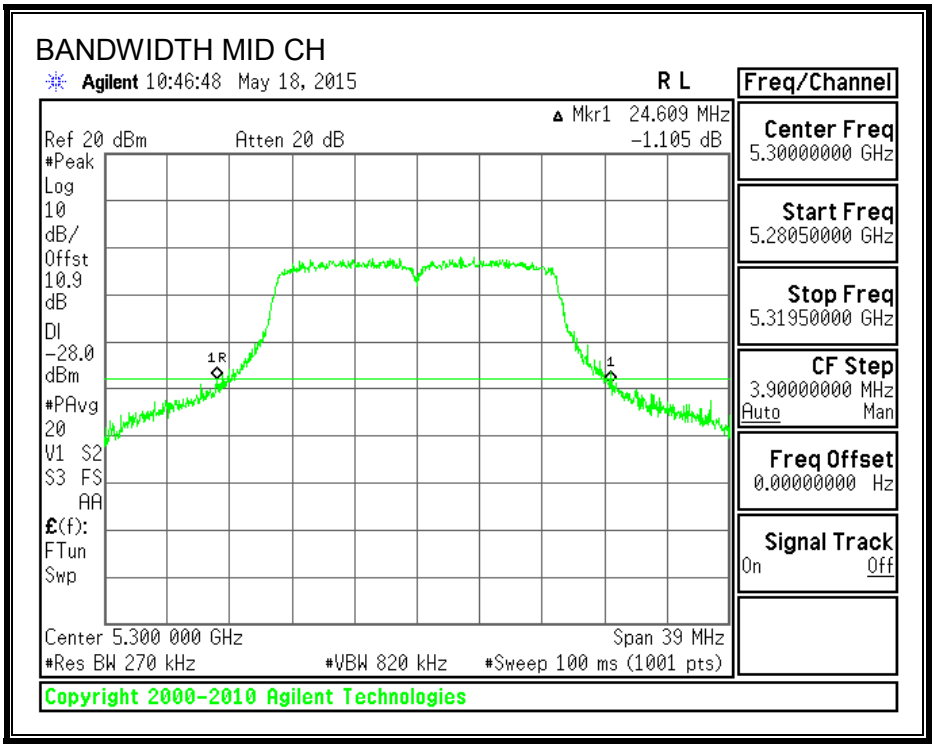
26 dB BANDWIDTH





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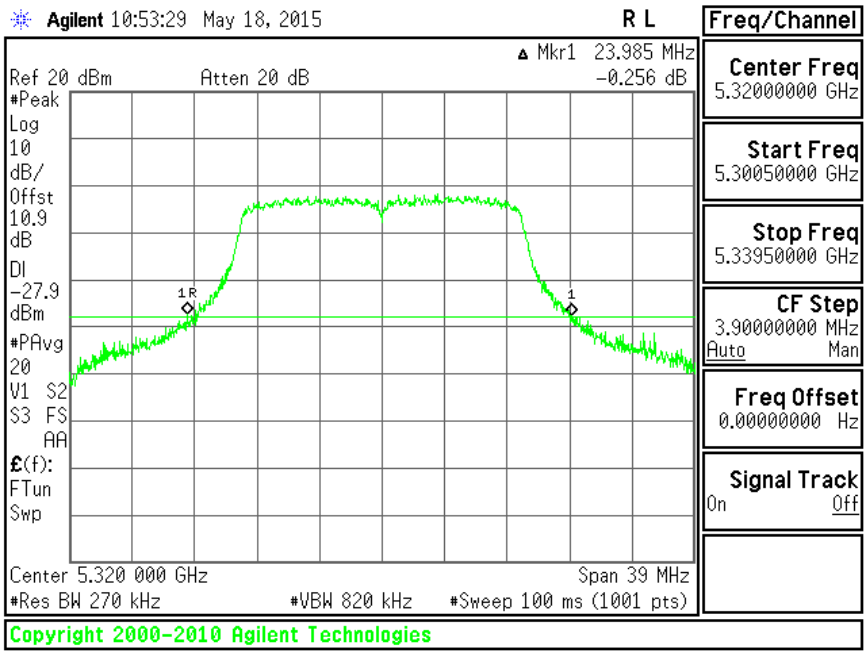
BANDWIDTH HIGH CH



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8.5.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	18.0860
Mid	5300	18.1125
High	5320	18.0856

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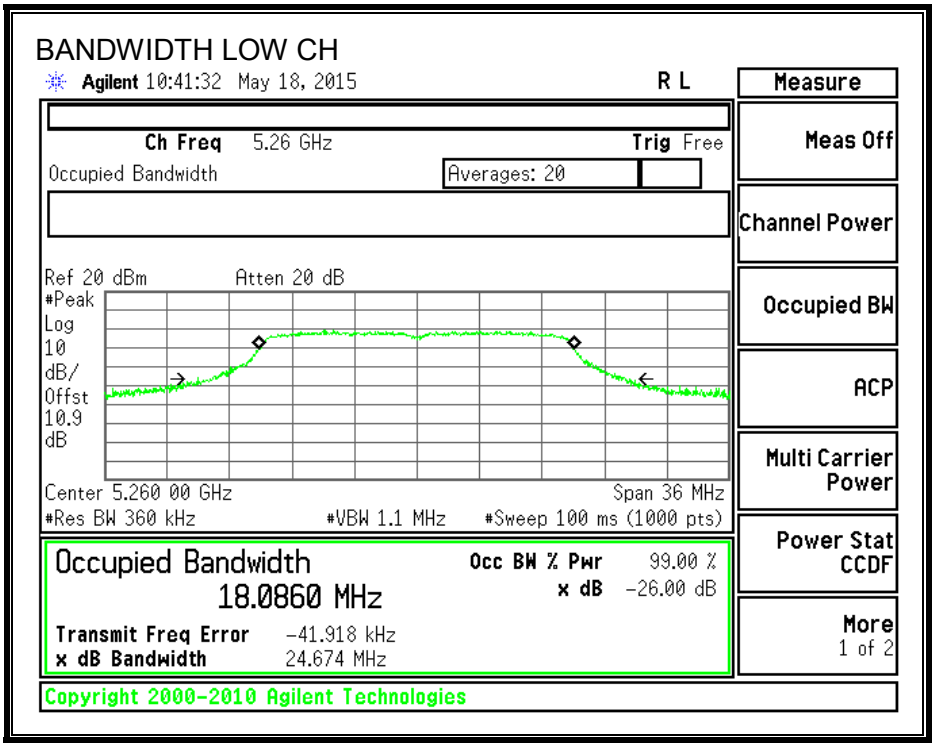
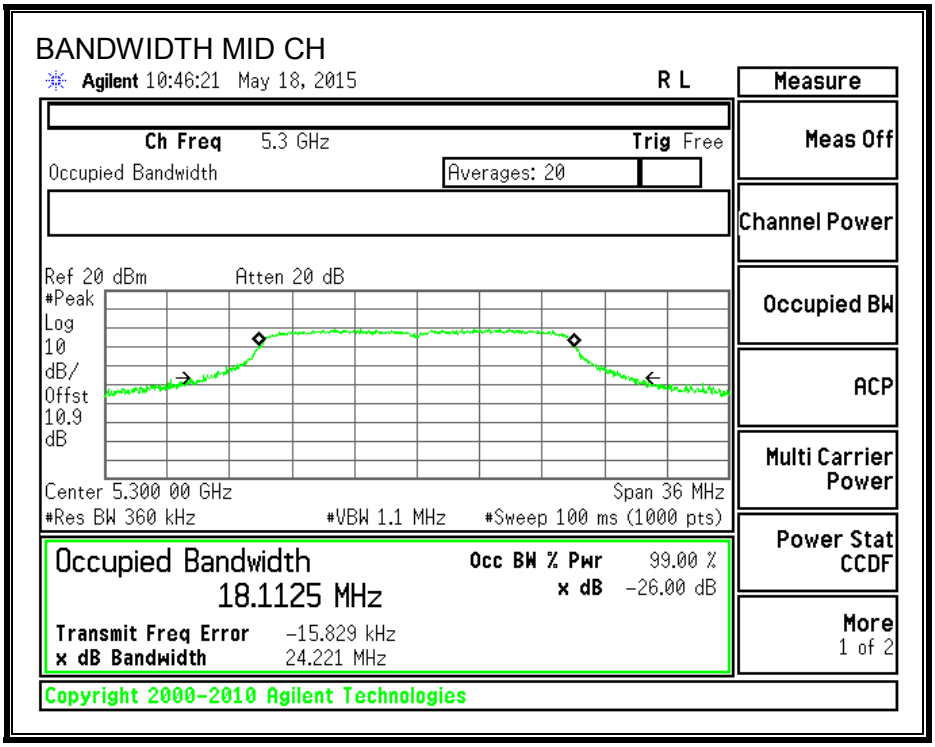
99% BANDWIDTH





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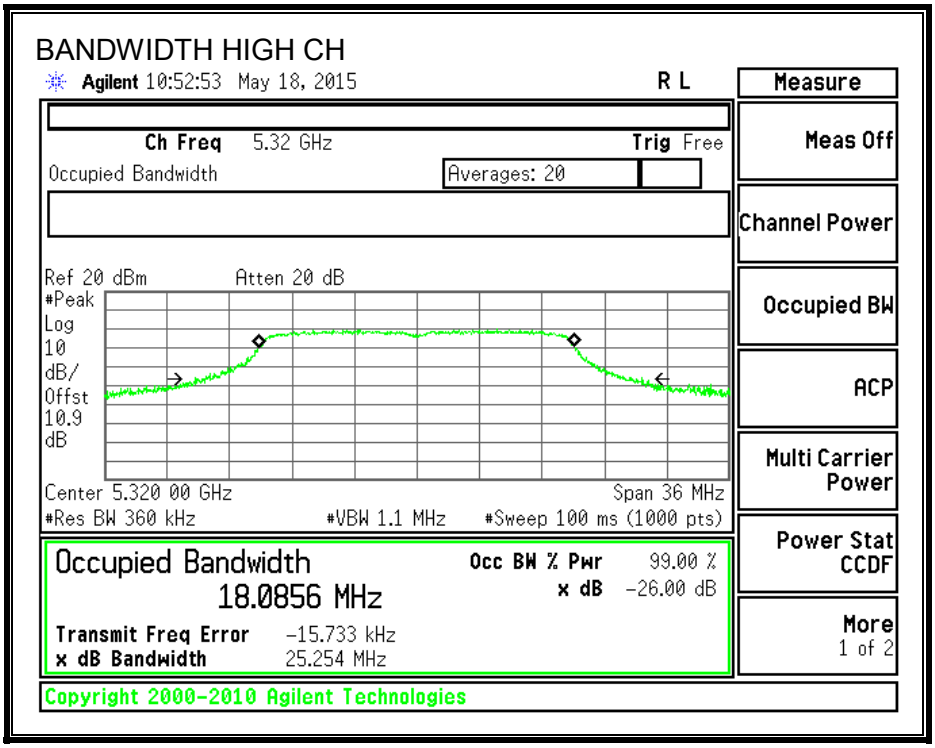

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8.5.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5260	8.09
Mid	5300	8.41
High	5320	8.50

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8.5.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.25–5.35 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

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

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RESULTS

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5260	23.79	1.70	24.00	11.00
Mid	5300	24.61	1.70	24.00	11.00
High	5320	23.99	1.70	24.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	8.09	8.09	24.00	-15.91
Mid	5300	8.41	8.41	24.00	-15.59
High	5320	8.50	8.50	24.00	-15.50

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5260	-4.47	-4.47	11.00	-15.47
Mid	5300	-4.07	-4.07	11.00	-15.07
High	5320	-4.32	-4.32	11.00	-15.32

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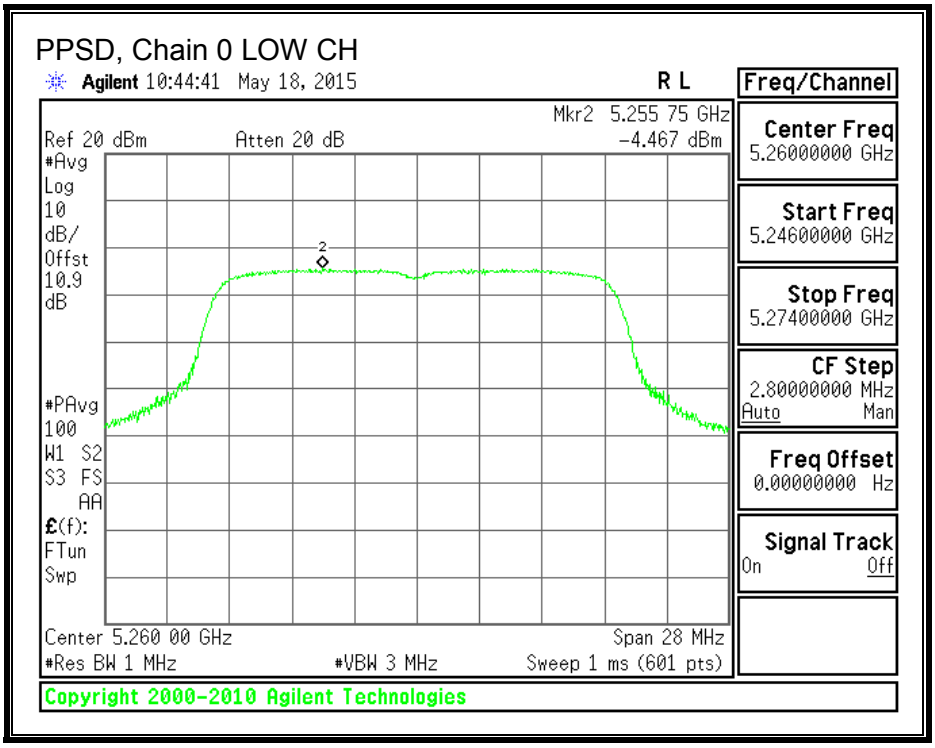
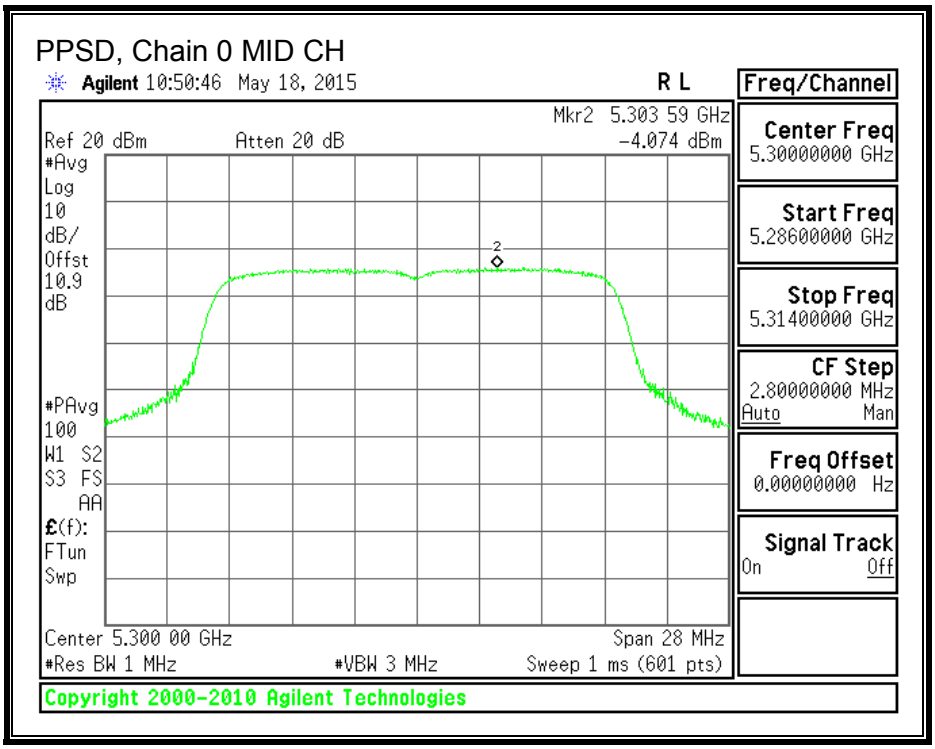
PPSD, Chain 0





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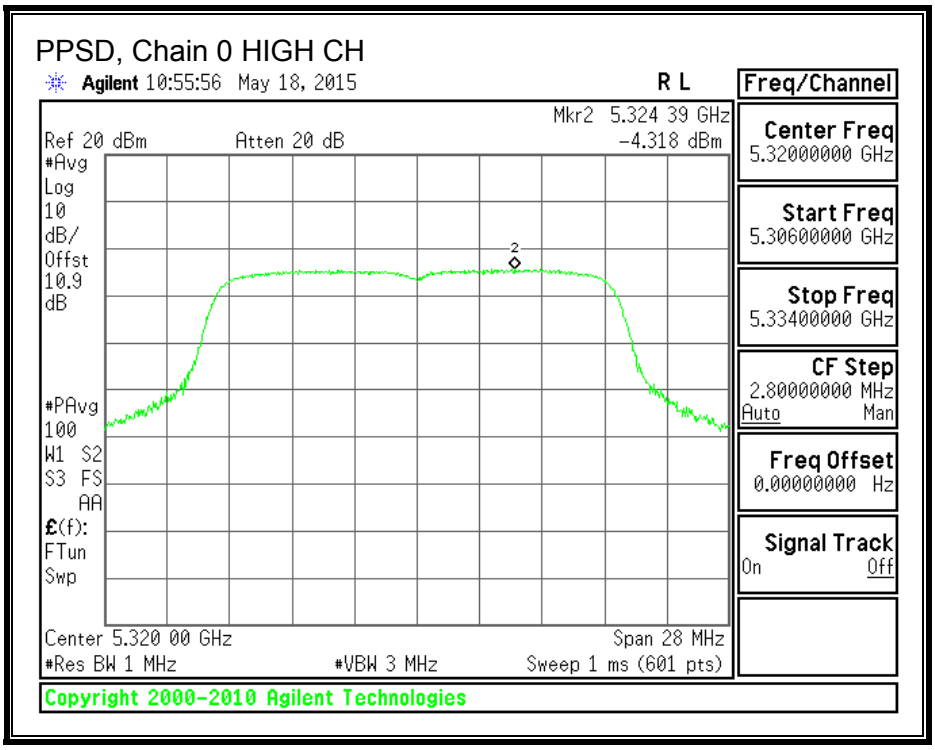

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8.5.5. TPC POWER

LIMITS

FCC §15.407 (h) (1)

Transmit power control (TPC). U-NII devices operating in the 5.25–5.35 GHz band and the 5.47–5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

TPC Limits

Channel	Frequency (MHz)	Limit EIRP (dBm)	Directional Gain (dBi)	Limit Cond (dBm)
Low	5260	24	1.70	22.30
Mid	5300	24	1.70	22.30
High	5320	24	1.70	22.30

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

TPC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)	Corr'd Power (dBm)	Cond Limit (dBm)	Margin (dB)
Low	5260	8.09	8.09	22.30	-14.21
Mid	5300	8.41	8.41	22.30	-13.89
High	5320	8.50	8.50	22.30	-13.80

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8.6. 802.11a MODE IN THE 5.6 GHz BAND

8.6.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	23.75
Mid	5580	23.79
High	5700	23.63

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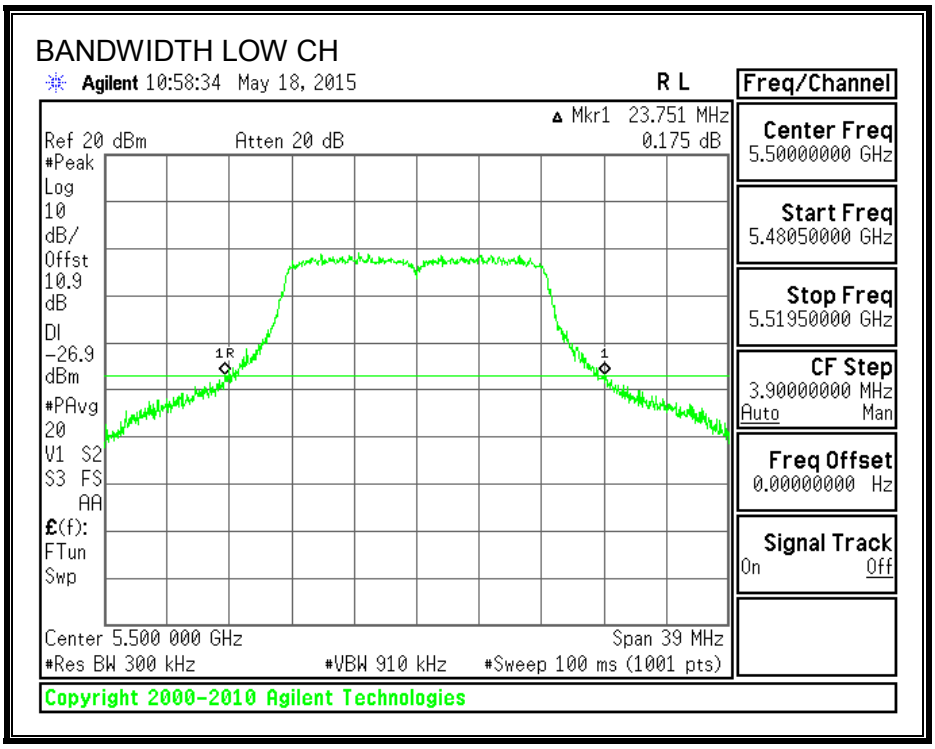
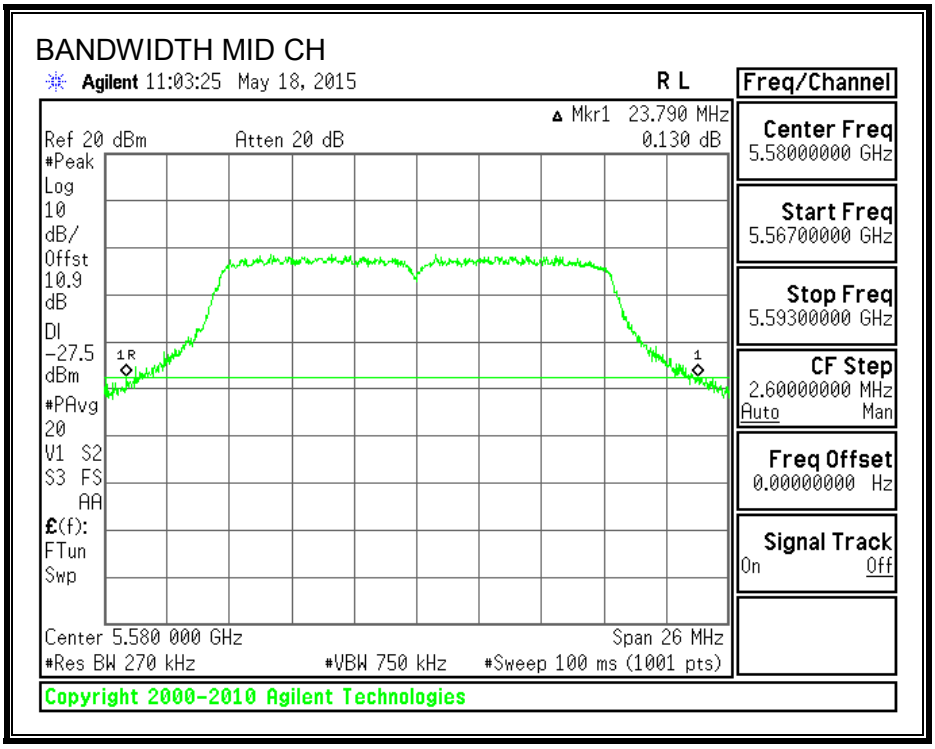
26 dB BANDWIDTH





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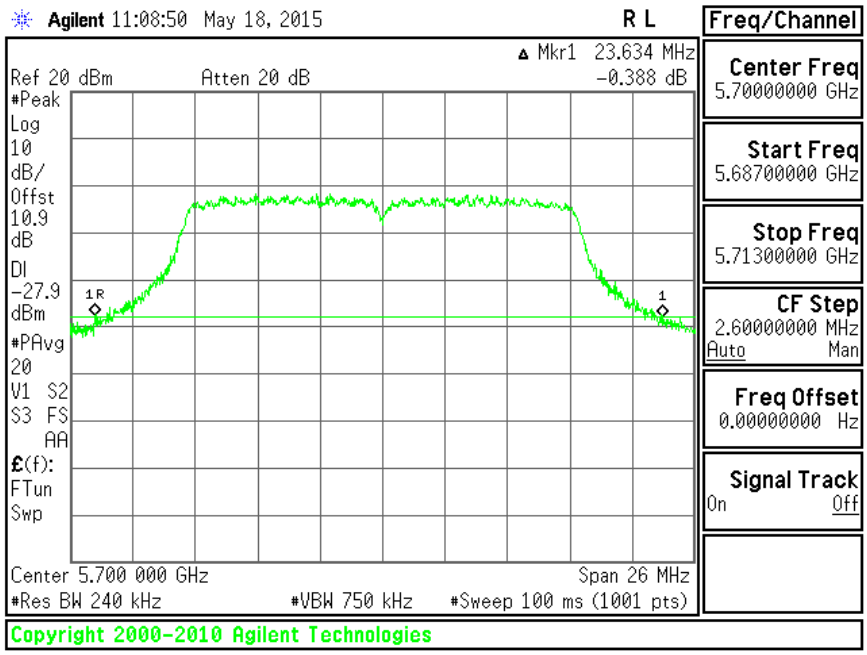
BANDWIDTH HIGH CH



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8.6.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	16.9520
Mid	5580	17.0002
High	5700	16.9603

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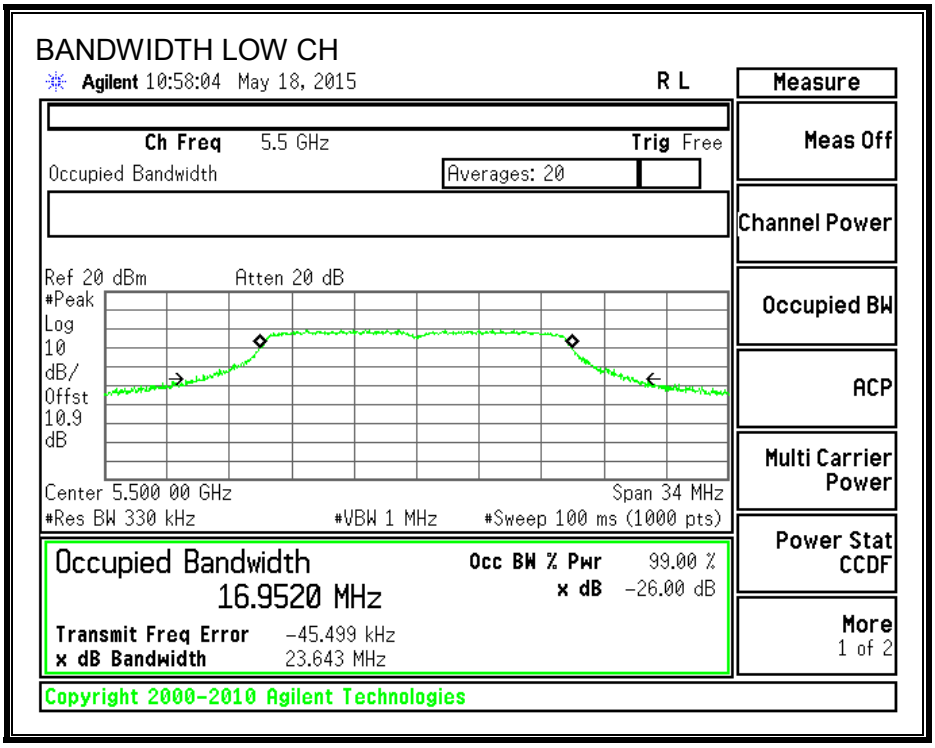
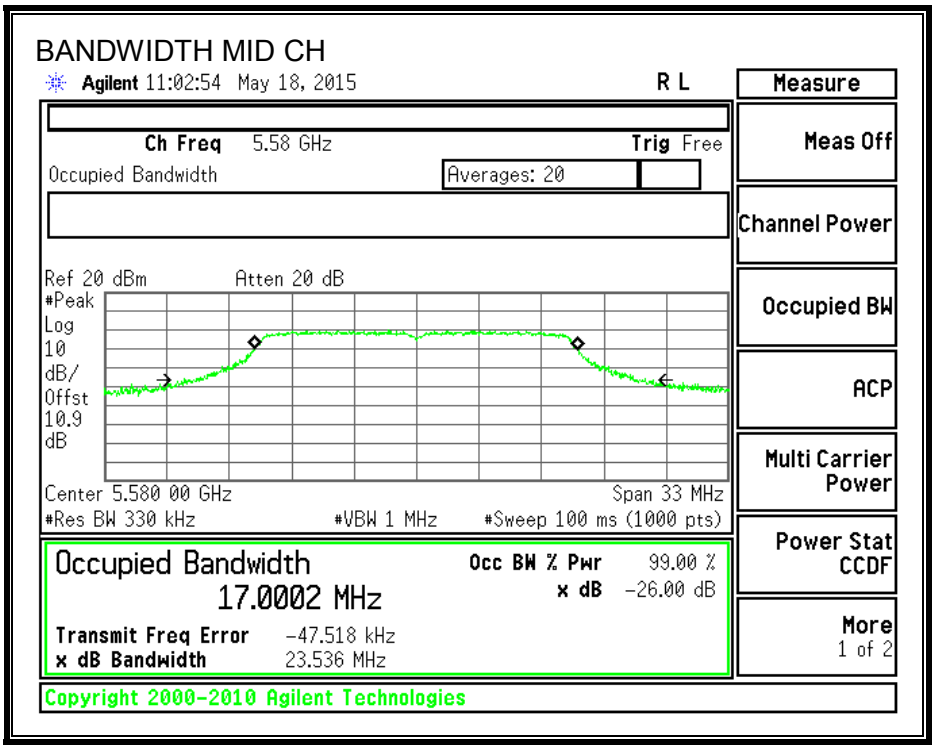
99% BANDWIDTH





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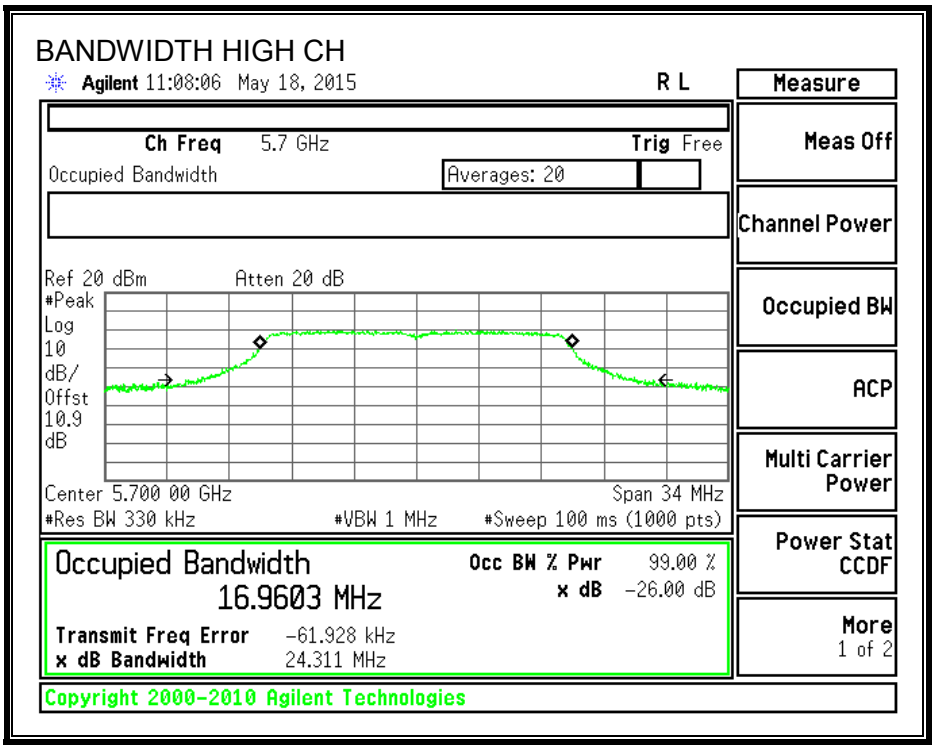

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8.6.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5500	8.39
Mid	5580	8.04
High	5700	8.21

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8.6.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

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

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RESULTS

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5500	23.75	2.90	24.00	11.00
Mid	5580	23.79	2.90	24.00	11.00
High	5700	23.63	2.90	24.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	8.39	8.39	24.00	-15.61
Mid	5580	8.04	8.04	24.00	-15.96
High	5700	8.21	8.21	24.00	-15.79

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5500	-3.74	-3.74	11.00	-14.74
Mid	5580	-3.46	-3.46	11.00	-14.46
High	5700	-3.54	-3.54	11.00	-14.54

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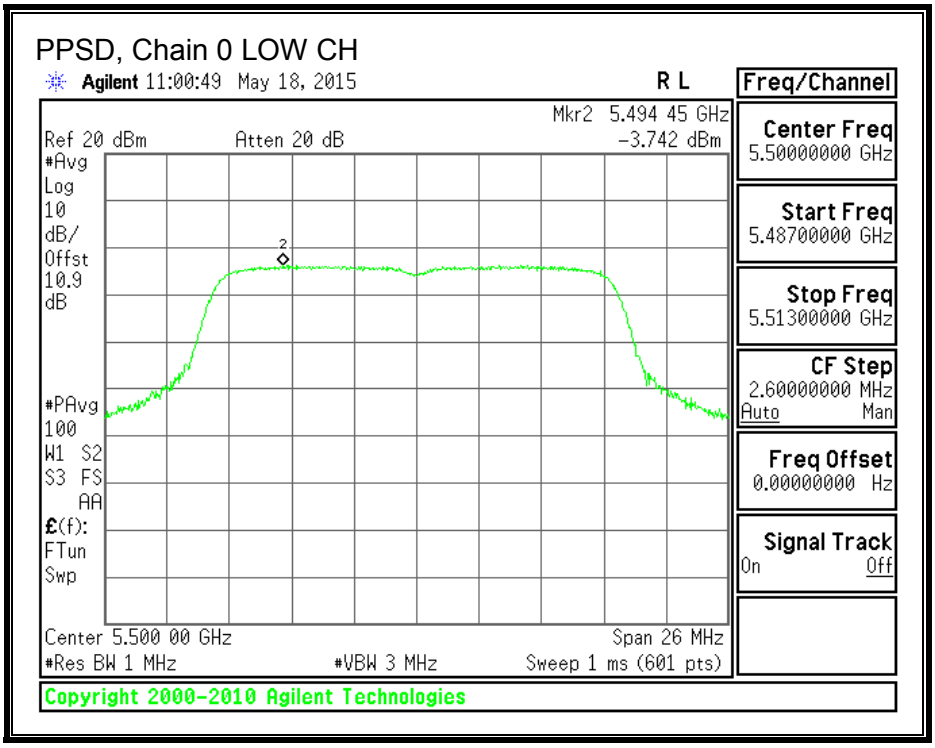
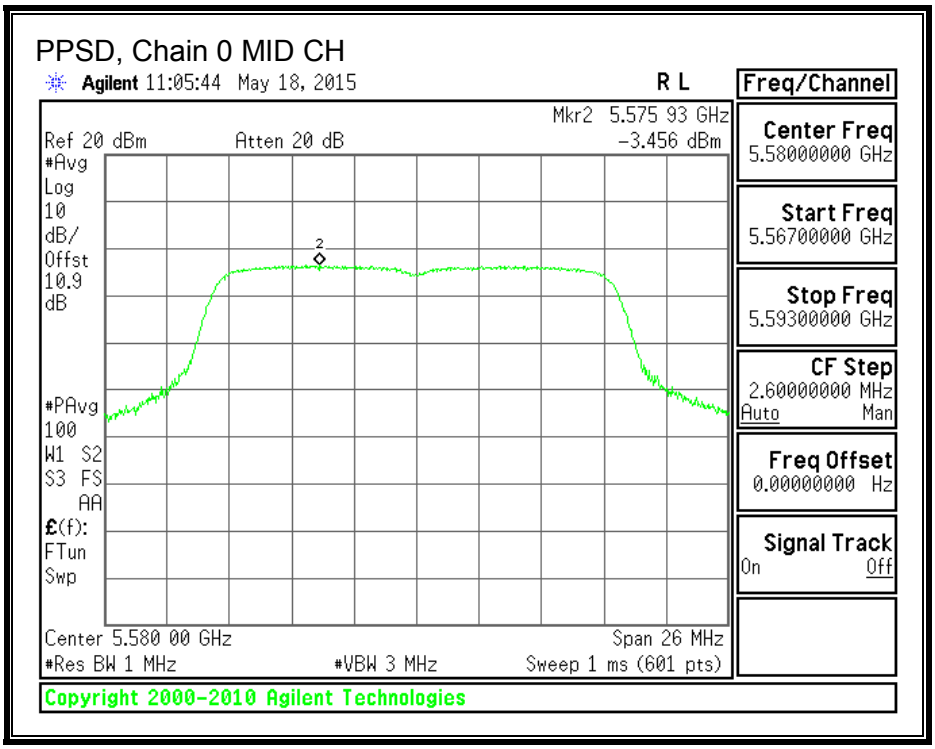
PPSD, Chain 0





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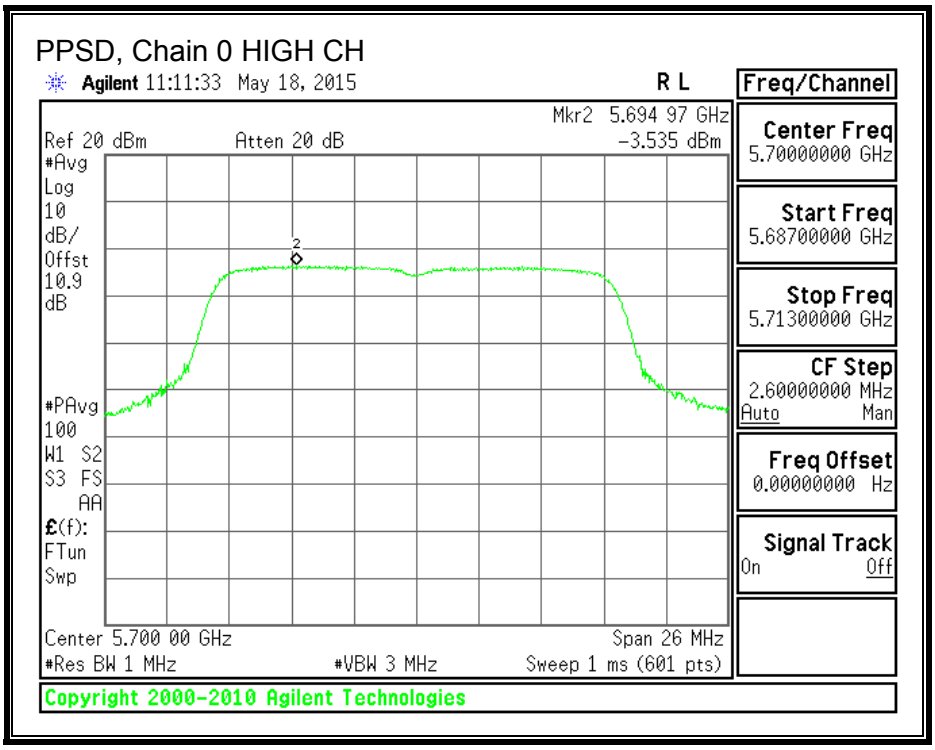

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8.6.5. TPC POWER

LIMITS

FCC §15.407 (h) (1)

Transmit power control (TPC). U-NII devices operating in the 5.25–5.35 GHz band and the 5.47–5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

TPC Limits

Channel	Frequency (MHz)	Limit EIRP (dBm)	Directional Gain (dBi)	Limit Cond (dBm)
Low	5500	24	2.90	21.10
Mid	5580	24	2.90	21.10
High	5700	24	2.90	21.10

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

TPC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)	Corr'd Power (dBm)	Cond Limit (dBm)	Margin (dB)
Low	5500	8.39	8.39	21.10	-12.71
Mid	5580	8.04	8.04	21.10	-13.06
High	5700	8.21	8.21	21.10	-12.89

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8.7. 802.11n HT20 MODE IN THE 5.6 GHz BAND

8.7.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	24.61
Mid	5580	24.49
High	5700	25.47

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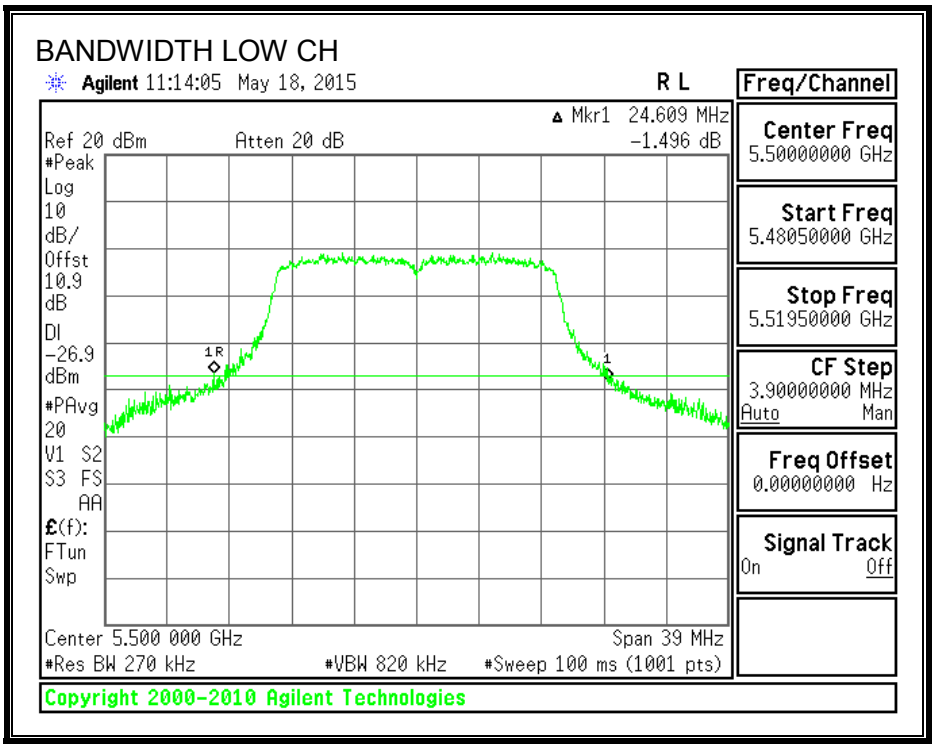
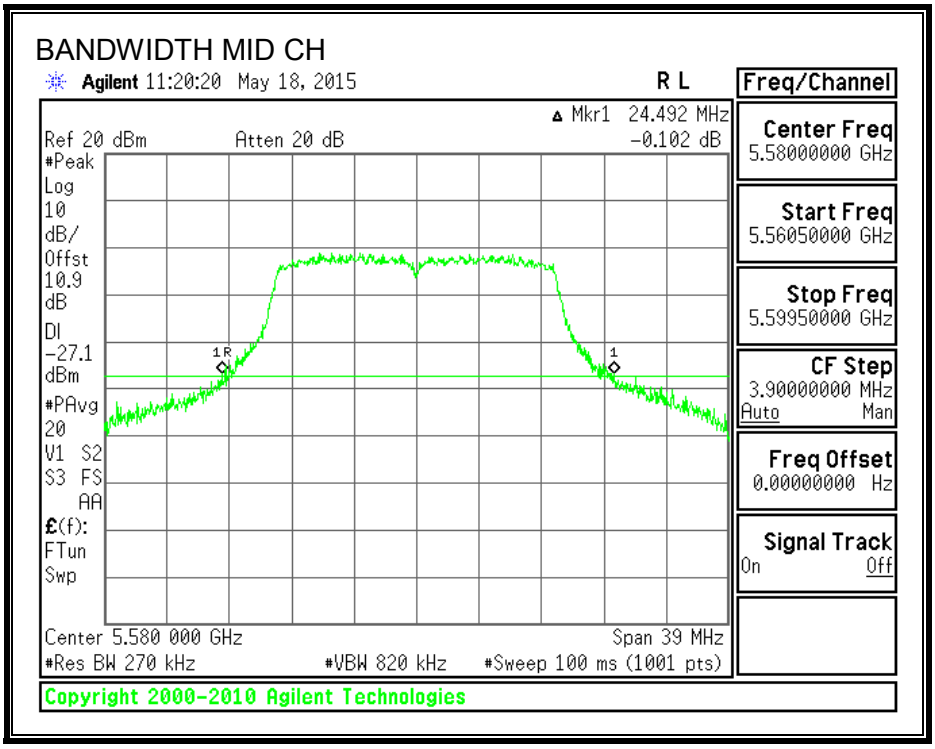
26 dB BANDWIDTH





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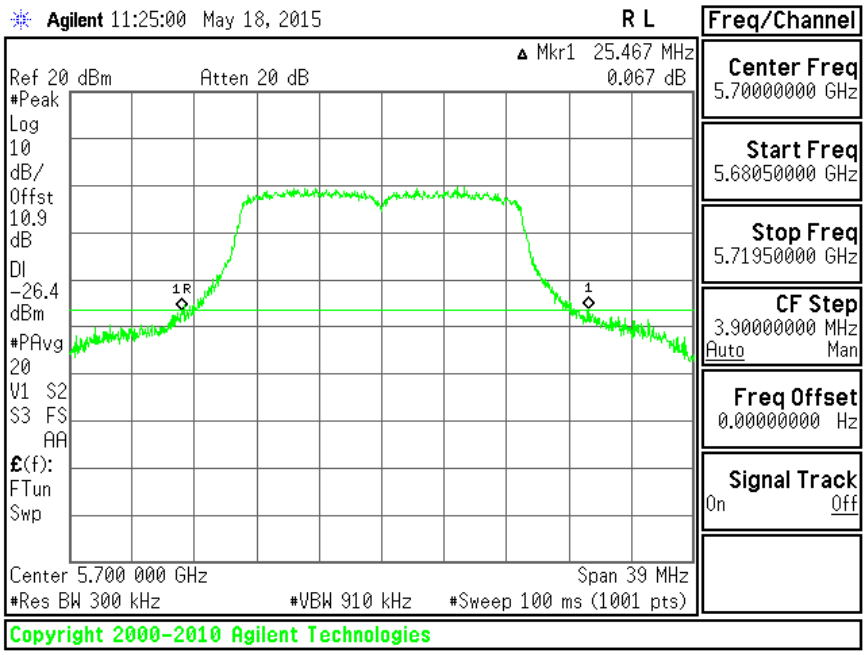
BANDWIDTH HIGH CH



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8.7.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	18.0994
Mid	5580	18.1250
High	5700	18.1388

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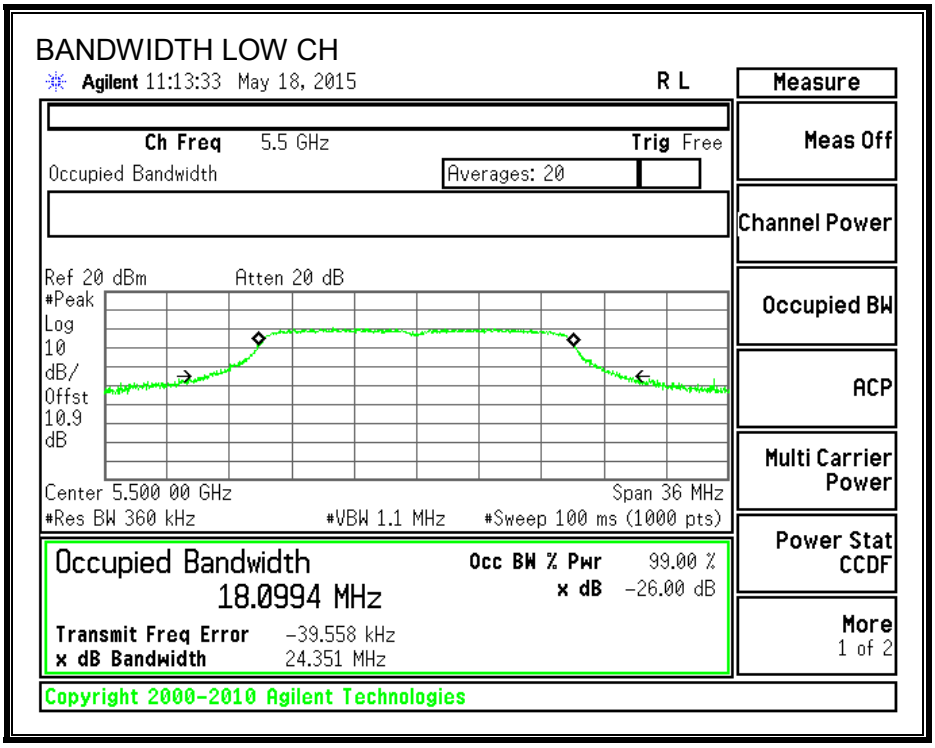
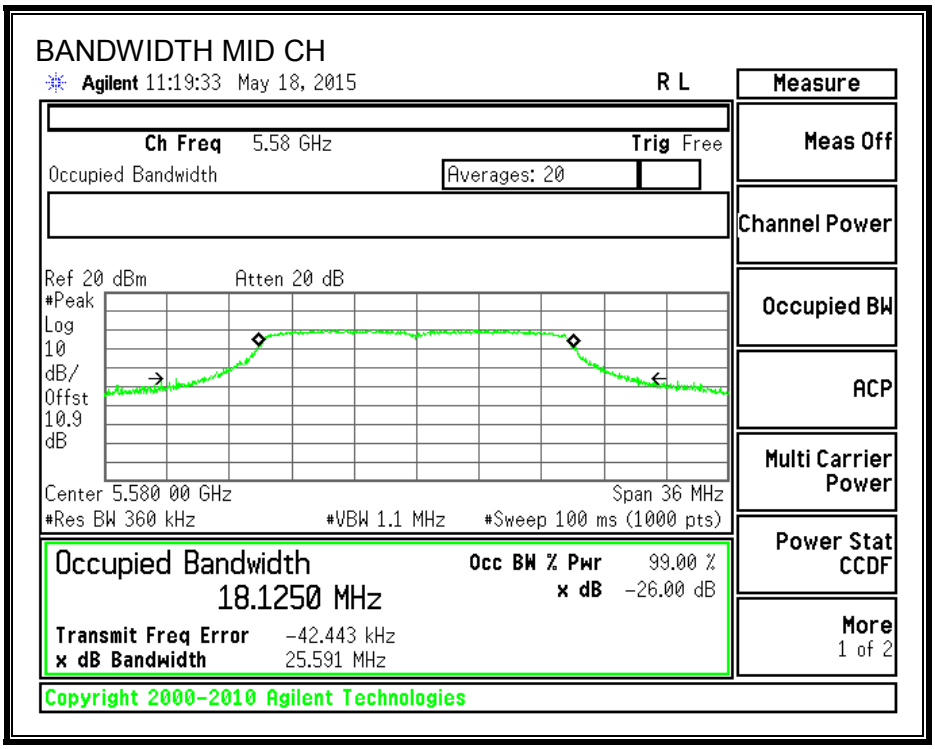
99% BANDWIDTH





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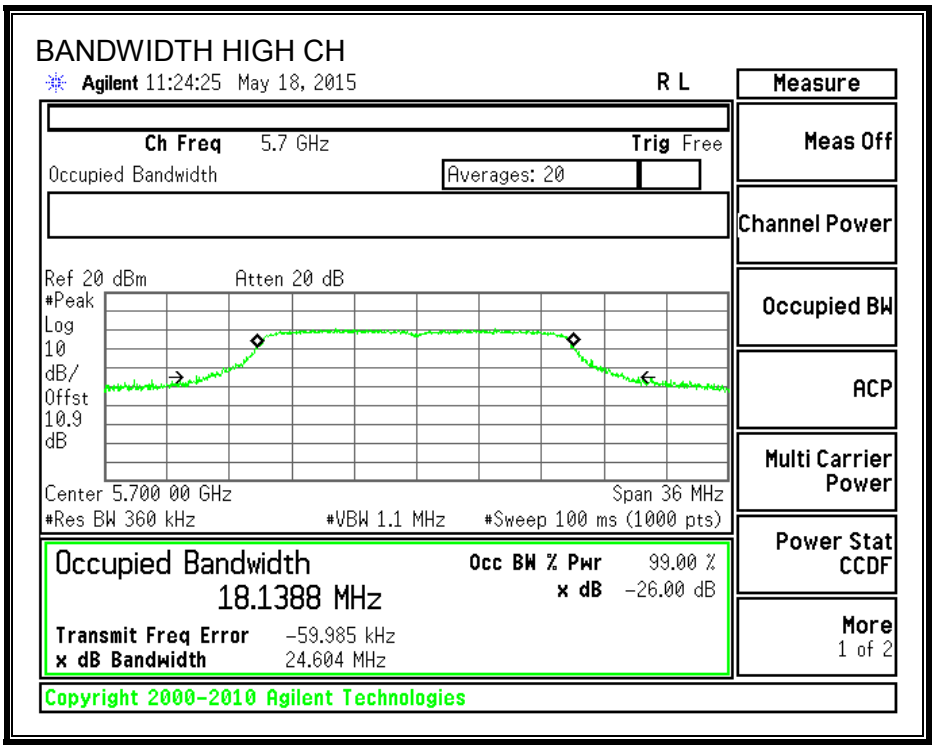

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8.7.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5500	8.31
Mid	5580	8.50
High	5700	8.12

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8.7.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

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

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RESULTS

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5500	24.61	2.90	24.00	11.00
Mid	5580	24.49	2.90	24.00	11.00
High	5700	25.47	2.90	24.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	8.31	8.31	24.00	-15.69
Mid	5580	8.50	8.50	24.00	-15.50
High	5700	8.12	8.12	24.00	-15.88

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5500	-3.22	-3.22	11.00	-14.22
Mid	5580	-3.42	-3.42	11.00	-14.42
High	5700	-3.13	-3.13	11.00	-14.13

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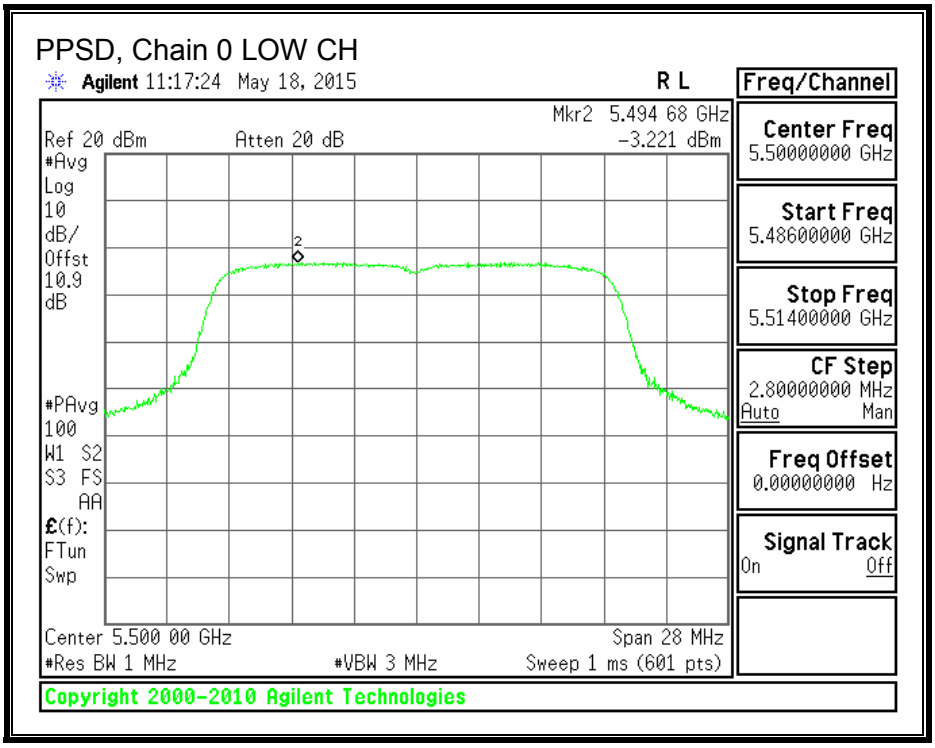
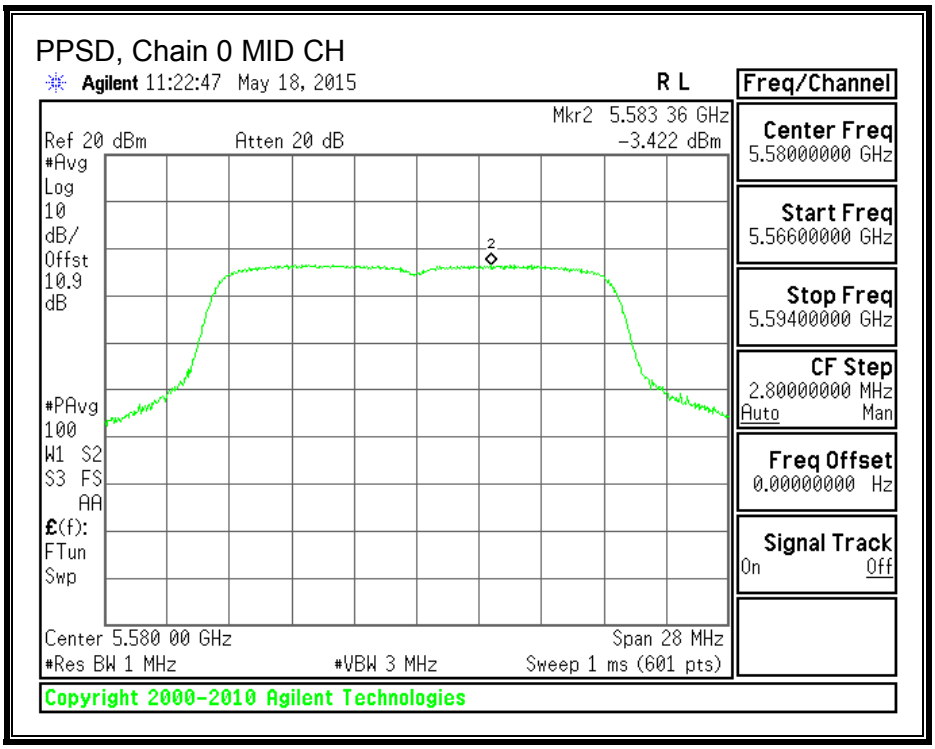
PPSD, Chain 0





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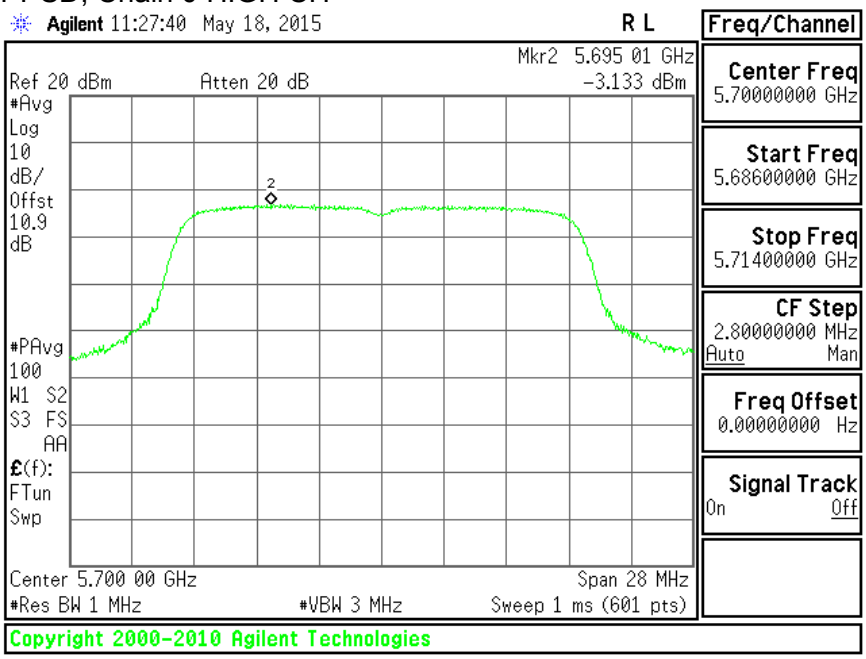
PPSD, Chain 0 HIGH CH



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8.7.5. TPC POWER

LIMITS

FCC §15.407 (h) (1)

Transmit power control (TPC). U-NII devices operating in the 5.25–5.35 GHz band and the 5.47–5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

TPC Limits

Channel	Frequency (MHz)	Limit EIRP (dBm)	Directional Gain (dBi)	Limit Cond (dBm)
Low	5500	24	2.90	21.10
Mid	5580	24	2.90	21.10
High	5700	24	2.90	21.10

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

TPC Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)	Corr'd Power (dBm)	Cond Limit (dBm)	Margin (dB)
Low	5500	8.31	8.31	21.10	-12.79
Mid	5580	8.50	8.50	21.10	-12.60
High	5700	8.12	8.12	21.10	-12.98

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8.8. 802.11a MODE IN THE 5.8 GHz BAND

8.8.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	23.53
Mid	5785	23.52
High	5825	23.52

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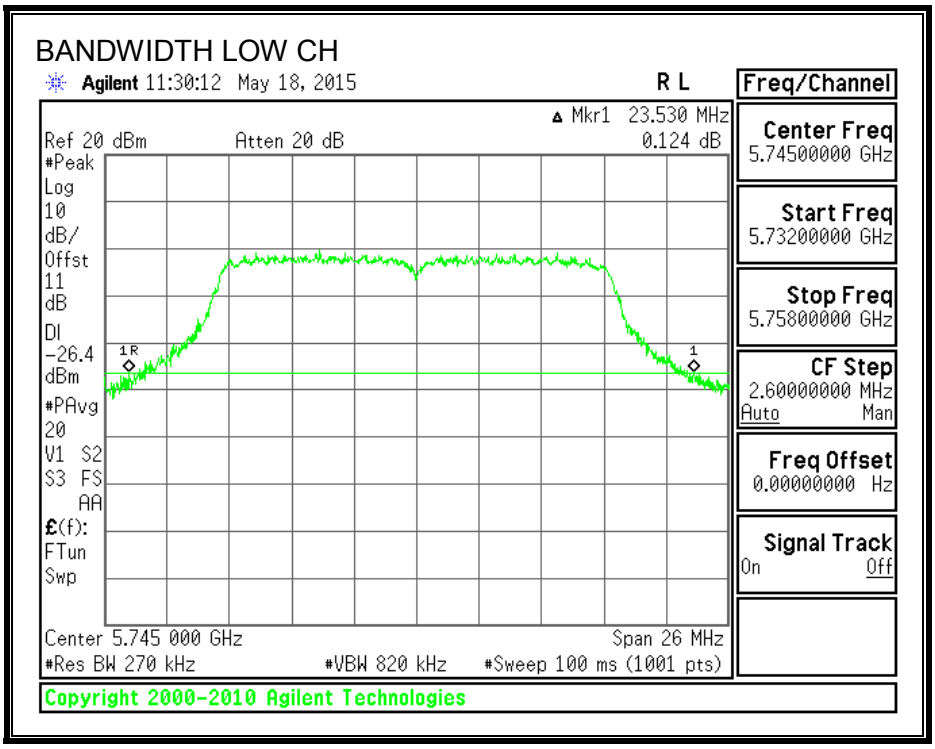
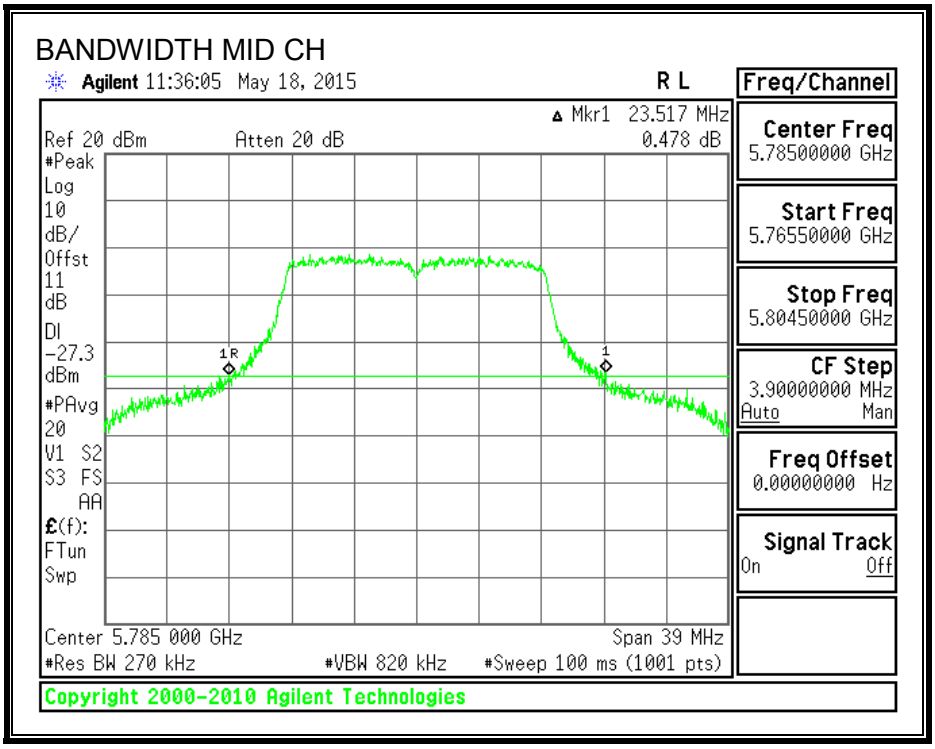
26 dB BANDWIDTH





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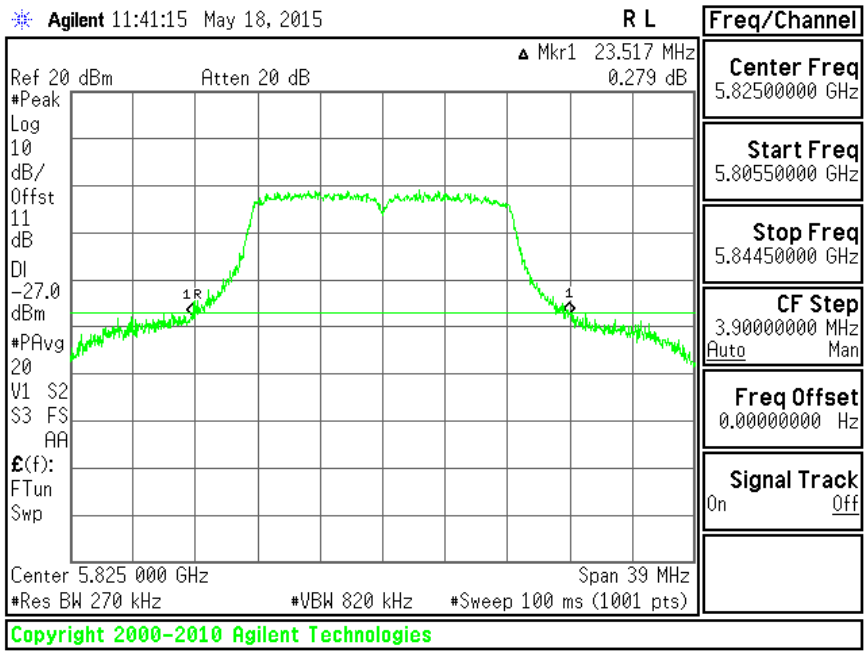
BANDWIDTH HIGH CH



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8.8.2. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

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

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	16.5000	0.5
Mid	5785	16.4750	0.5
High	5825	16.5250	0.5

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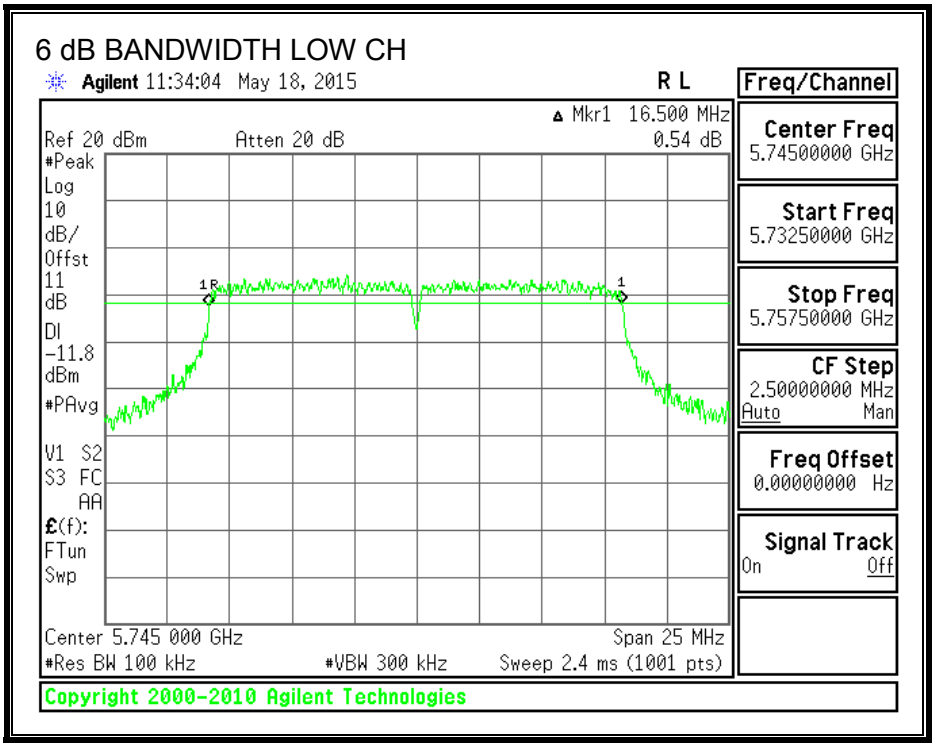
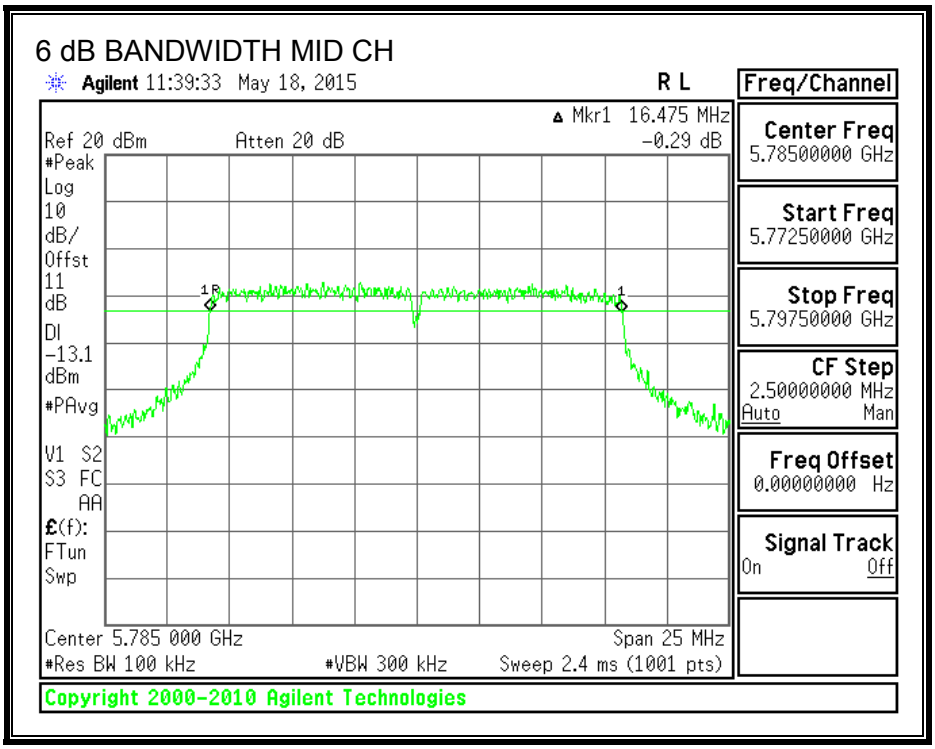
6 dB BANDWIDTH





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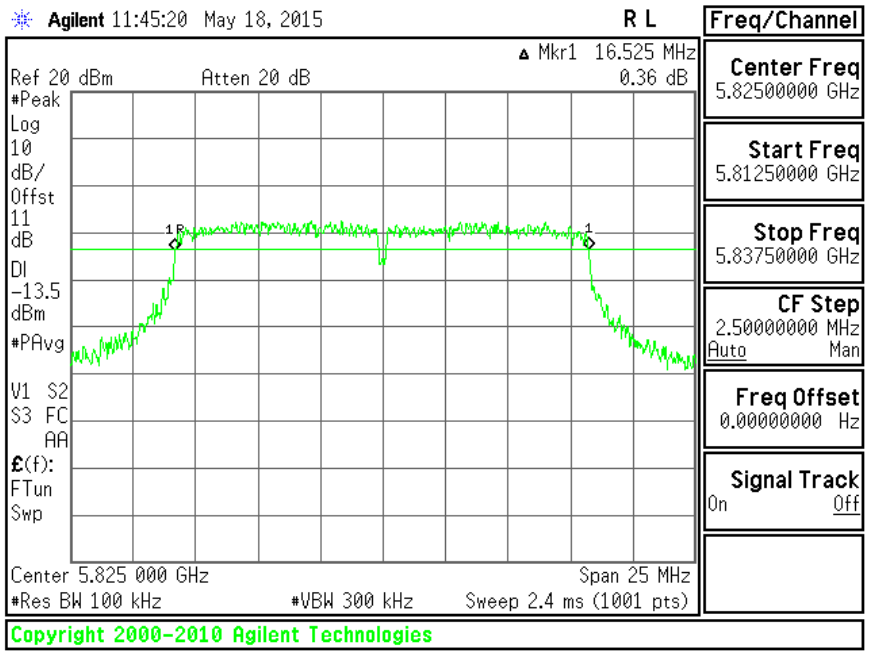
6 dB BANDWIDTH HIGH CH



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8.8.3. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	16.9673
Mid	5785	17.0027
High	5825	16.9925

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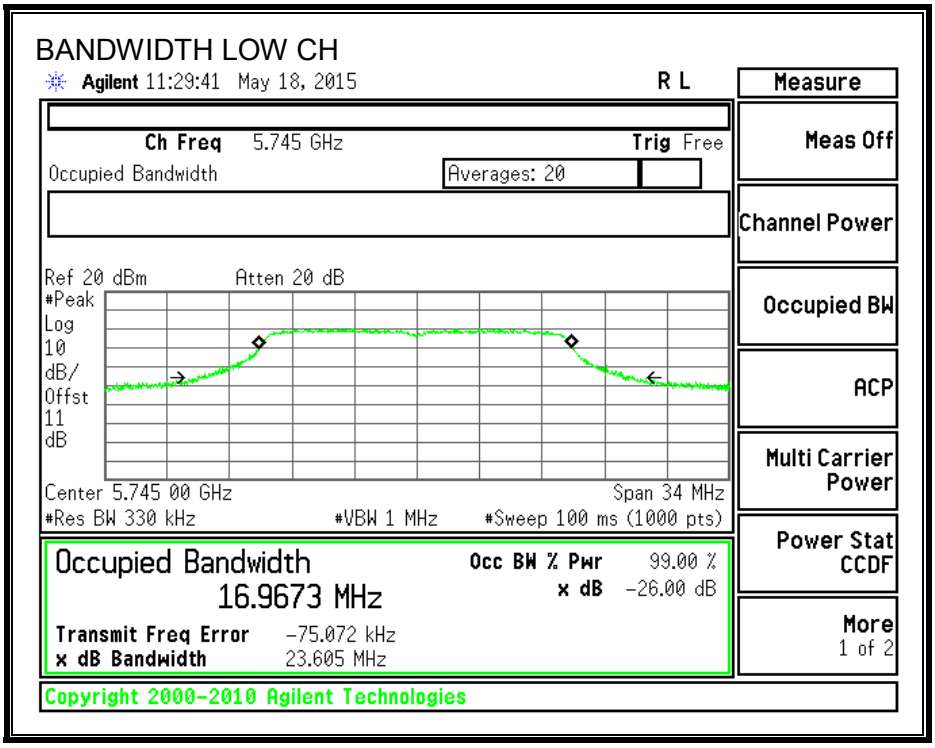
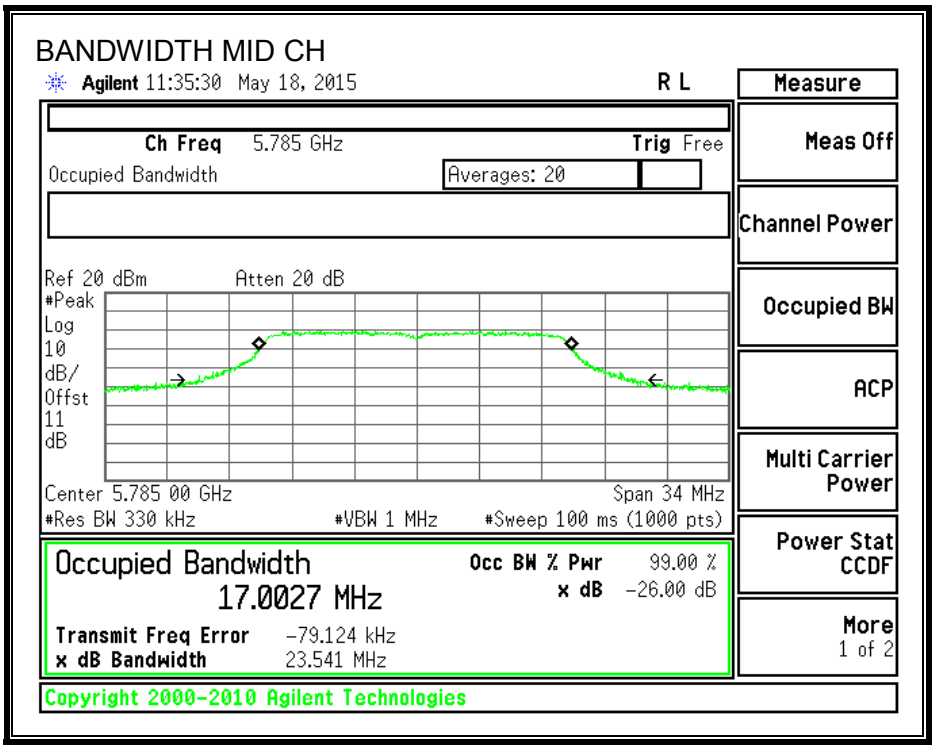
99% BANDWIDTH





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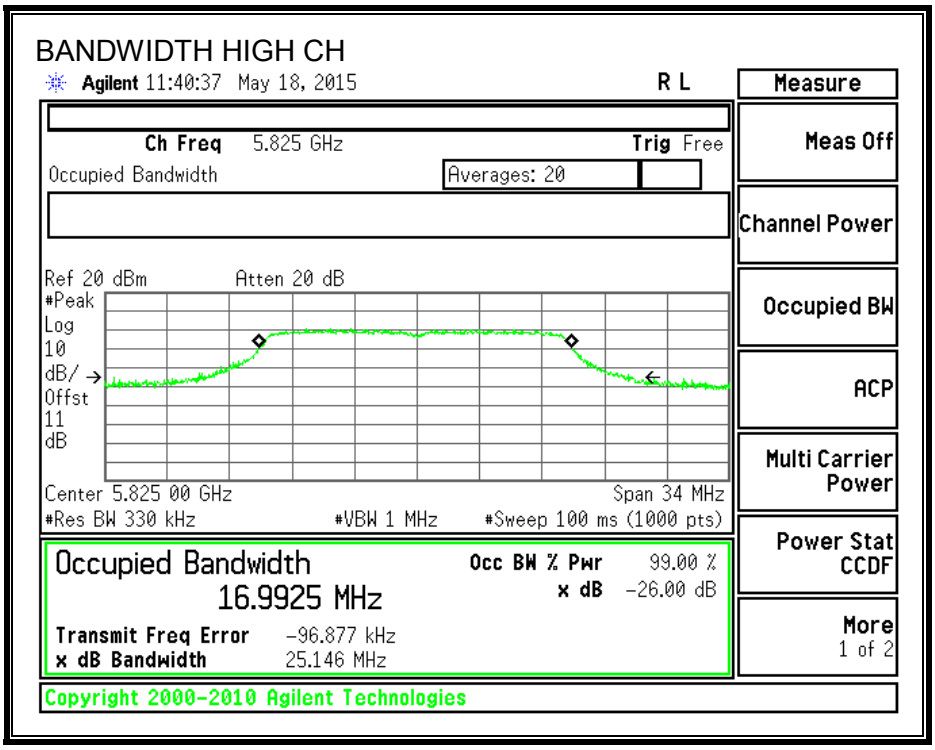
BANDWIDTH HIGH CH



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8.8.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5745	8.37
Mid	5785	8.38
High	5825	8.16

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8.8.5. OUTPUT POWER

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.

DIRECTIONAL ANTENNA GAIN

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

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RESULTS

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Power Limit (dBm)
Low	5745	3.00	30.00
Mid	5785	3.00	30.00
High	5825	3.00	30.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	8.37	8.37	30.00	-21.63
Mid	5785	8.38	8.38	30.00	-21.62
High	5825	8.16	8.16	30.00	-21.84

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8.8.6. Maximum Power Spectral Density (PSD)

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.

DIRECTIONAL ANTENNA GAIN

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

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RESULTS

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	PSD Limit (dBm)
Low	5745	3.00	30.00
Mid	5785	3.00	30.00
High	5825	3.00	30.00

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd PSD**

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5745	-5.44	-5.44	30.00	-35.44
Mid	5785	-5.83	-5.83	30.00	-35.83
High	5825	-5.94	-5.94	30.00	-35.94

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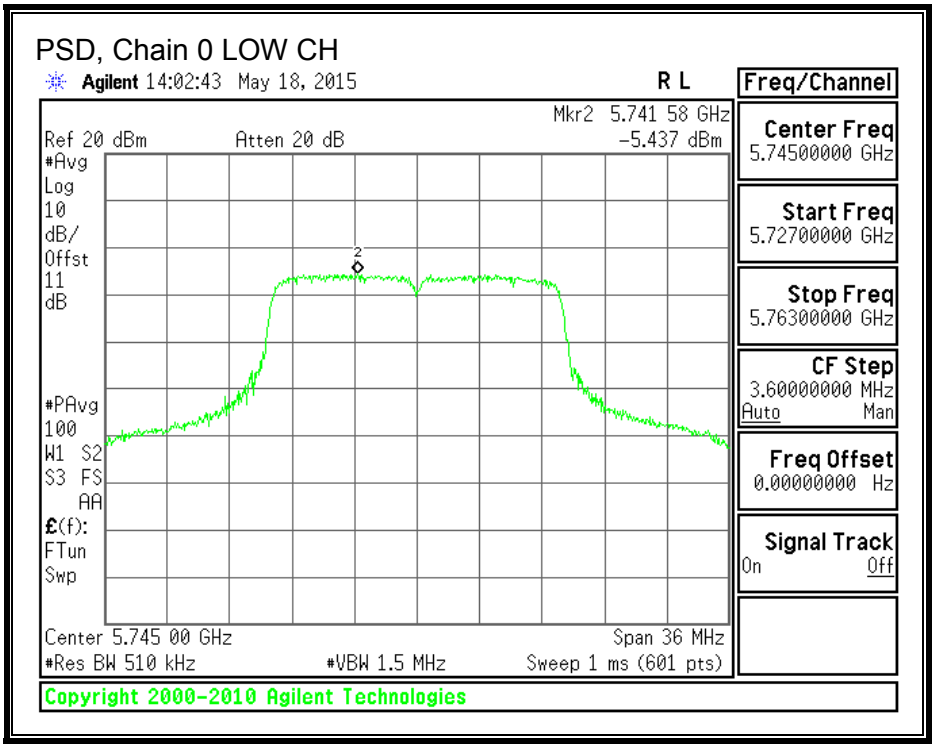
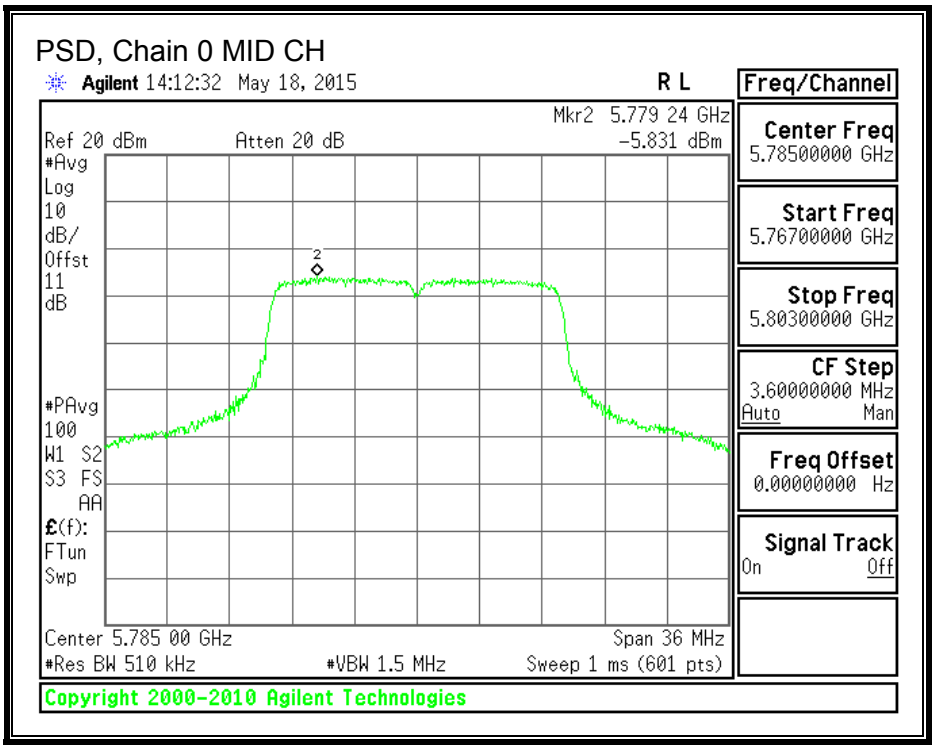
PSD, Chain 0





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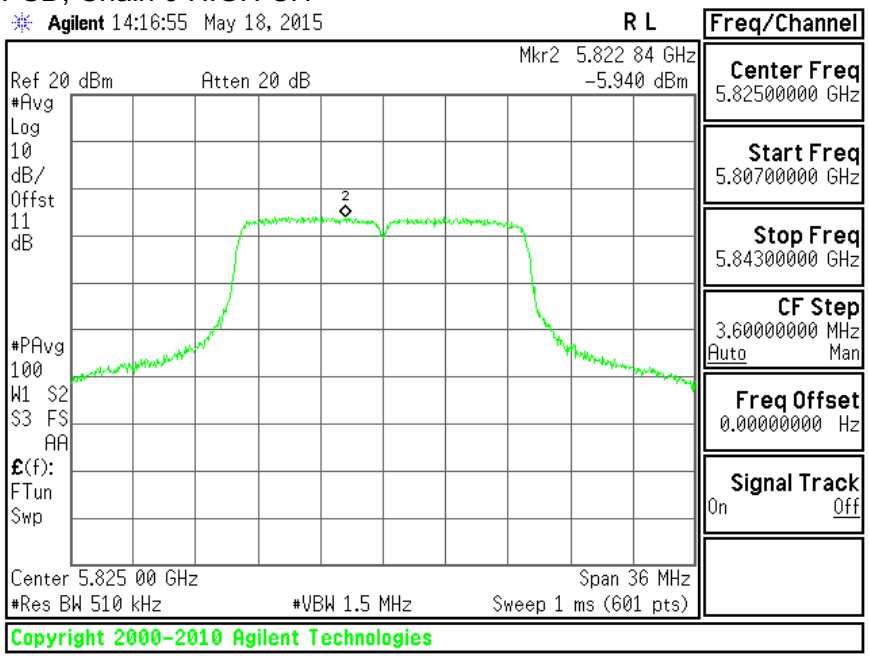
PSD, Chain 0 HIGH CH



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8.9. 802.11n HT20 MODE IN THE 5.8 GHz BAND

8.9.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	24.41
Mid	5785	25.58
High	5825	24.92

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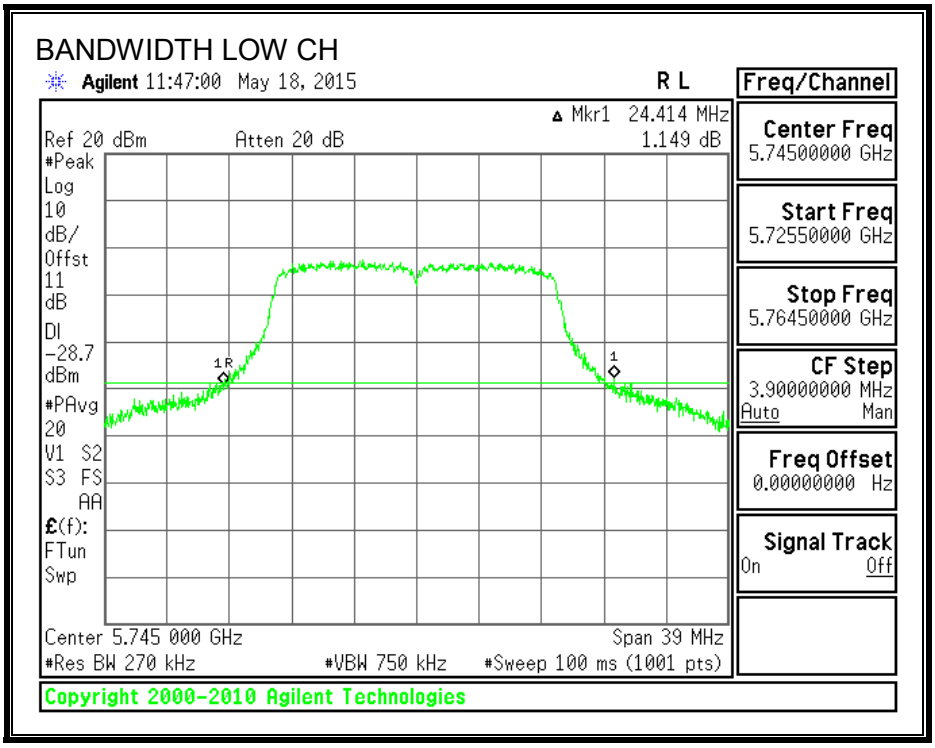
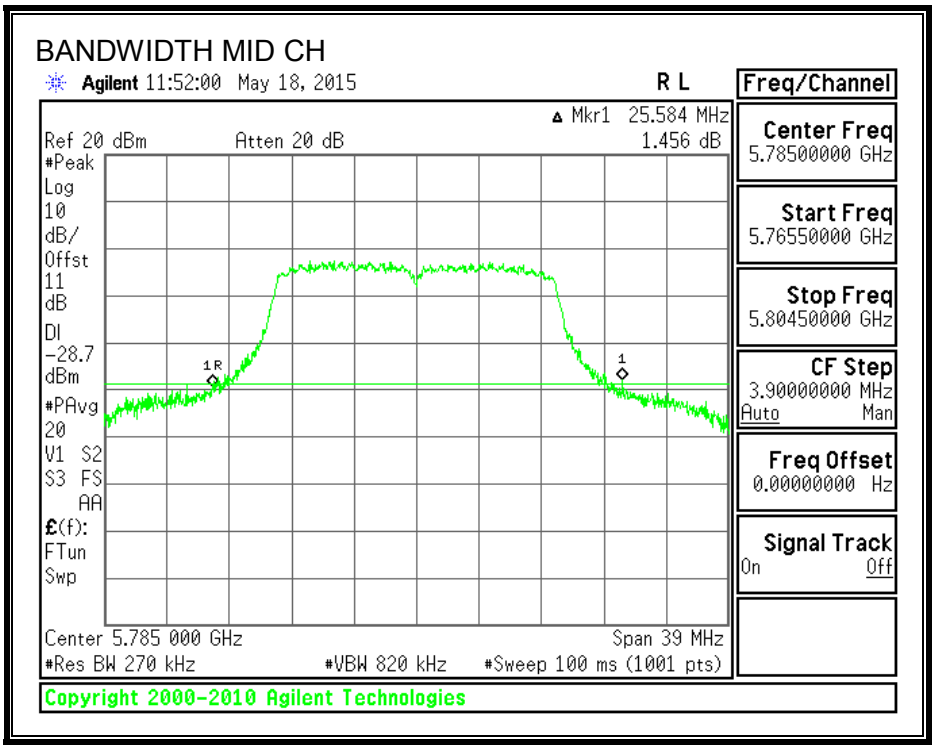
26 dB BANDWIDTH





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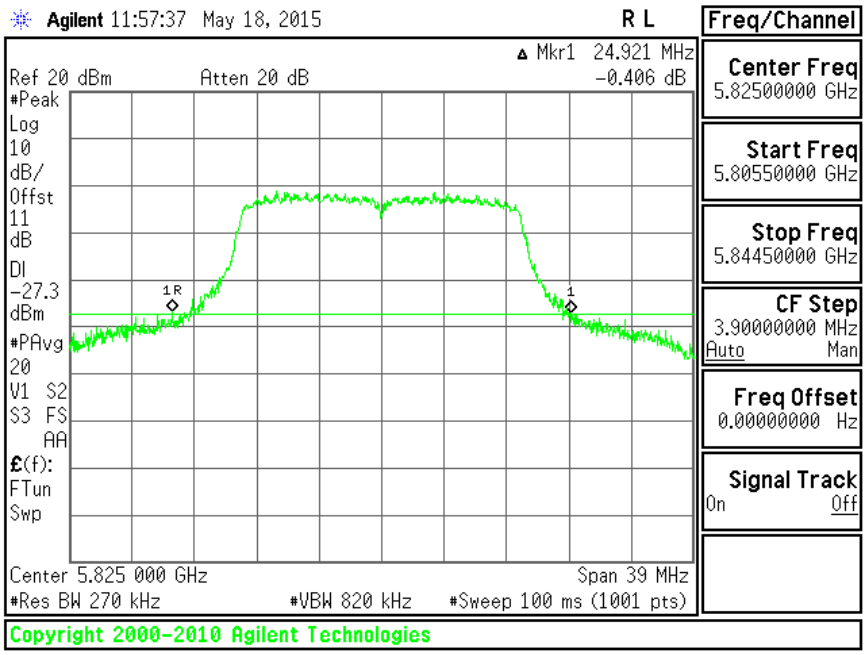
BANDWIDTH HIGH CH



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8.9.2. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

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

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	17.6850	0.5
Mid	5785	17.7120	0.5
High	5825	17.6850	0.5

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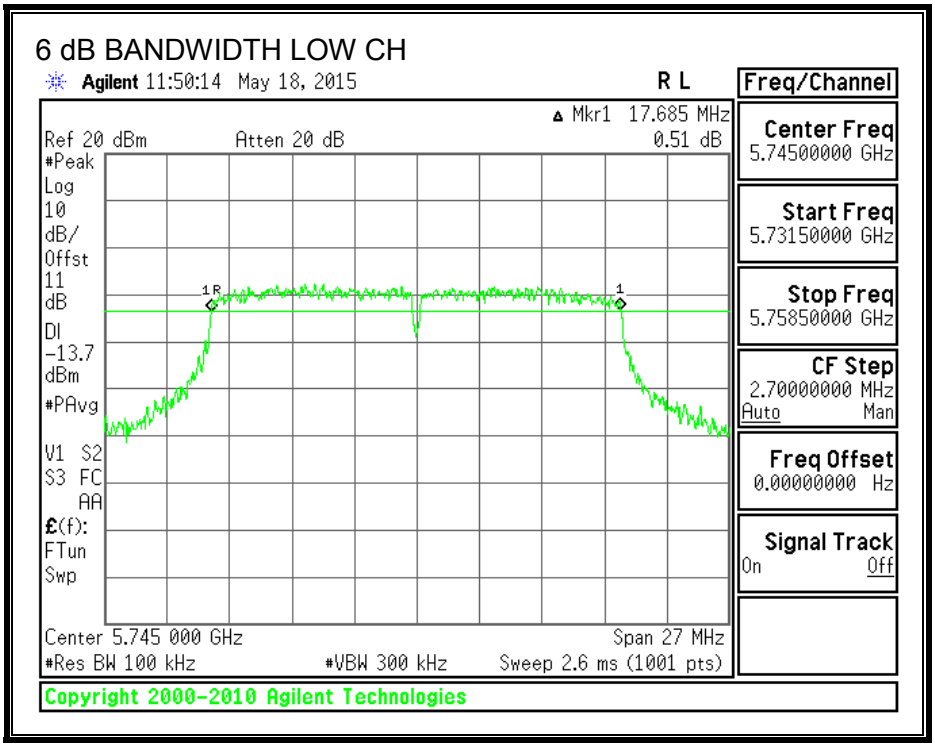
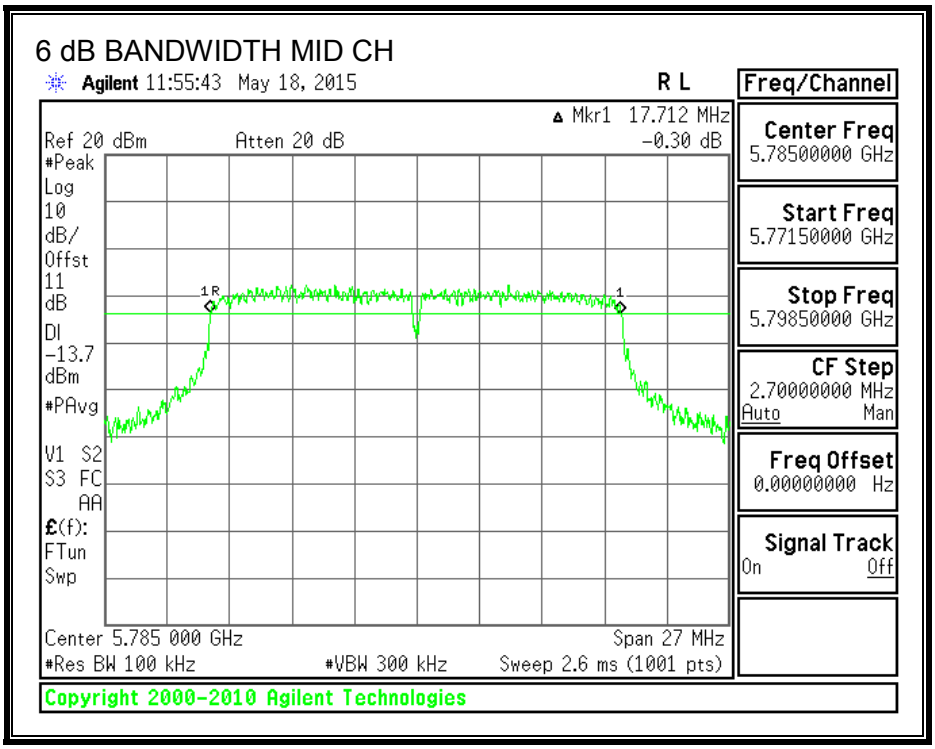
6 dB BANDWIDTH





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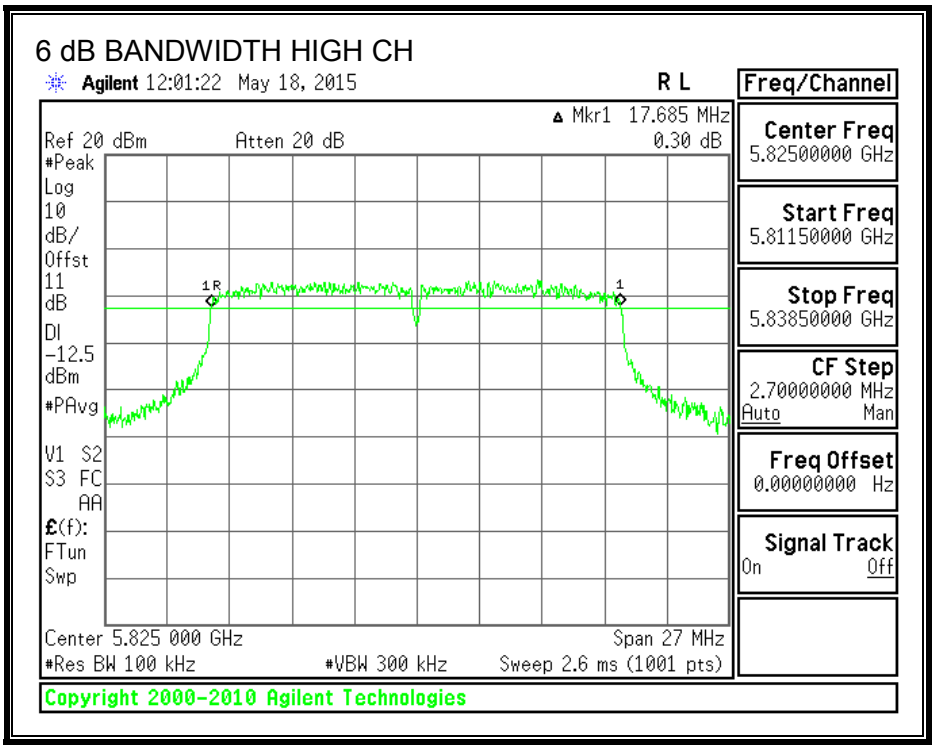
6 dB BANDWIDTH HIGH CH



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8.9.3. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	18.0899
Mid	5785	18.1477
High	5825	18.1562

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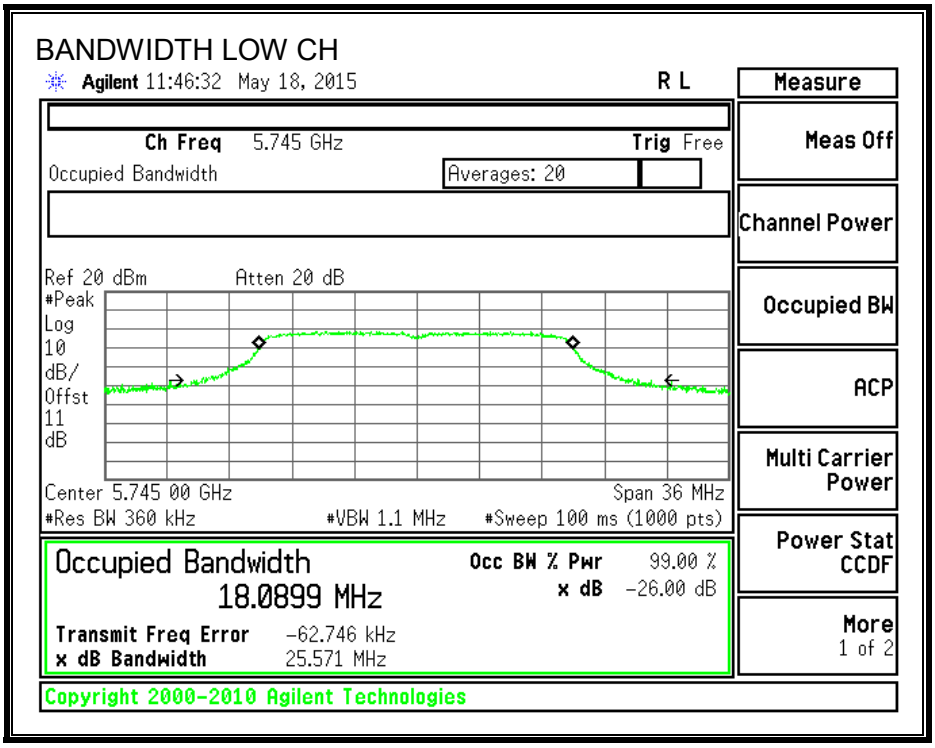
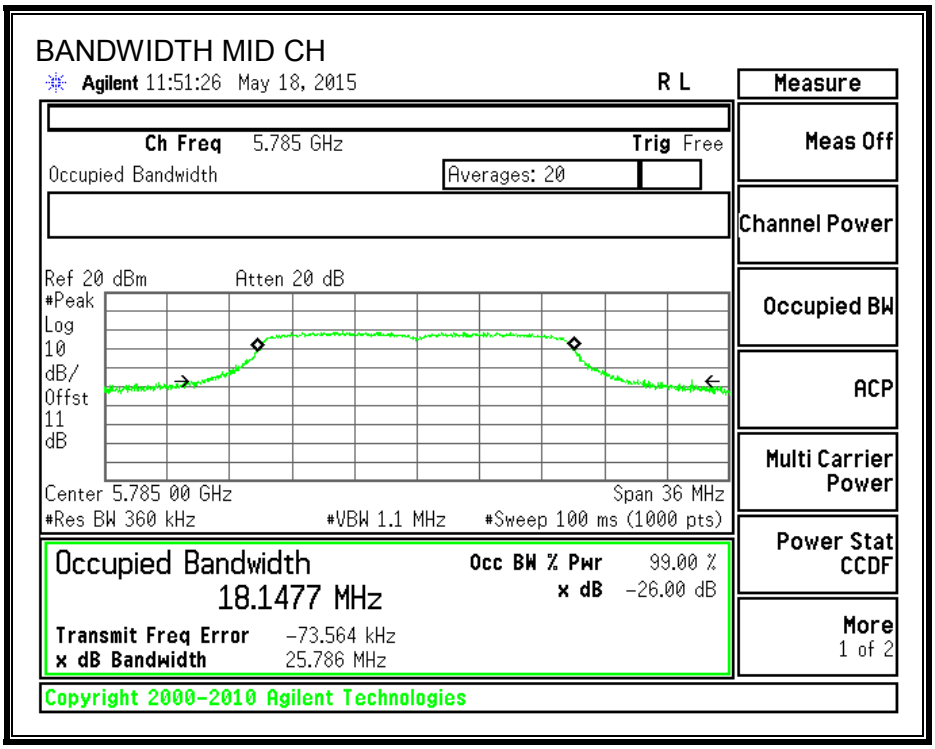
99% BANDWIDTH





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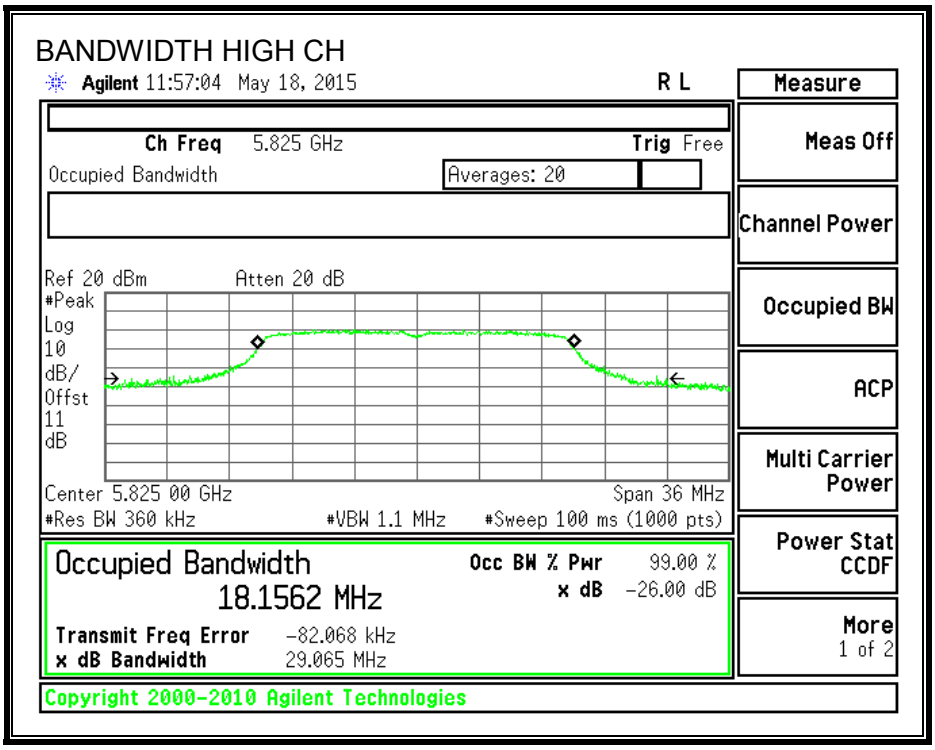

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8.9.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5745	8.23
Mid	5785	8.26
High	5825	8.05

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8.9.5. OUTPUT POWER

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.

DIRECTIONAL ANTENNA GAIN

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

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RESULTS

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Power Limit (dBm)
Low	5745	3.00	30.00
Mid	5785	3.00	30.00
High	5825	3.00	30.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	8.23	8.23	30.00	-21.77
Mid	5785	8.26	8.26	30.00	-21.74
High	5825	8.05	8.05	30.00	-21.95

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8.9.6. Maximum Power Spectral Density (PSD)

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.

DIRECTIONAL ANTENNA GAIN

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

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RESULTS

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	PSD Limit (dBm)
Low	5745	3.00	30.00
Mid	5785	3.00	30.00
High	5825	3.00	30.00

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd PSD**

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5745	-6.59	-6.59	30.00	-36.59
Mid	5785	-6.60	-6.60	30.00	-36.60
High	5825	-6.03	-6.03	30.00	-36.03

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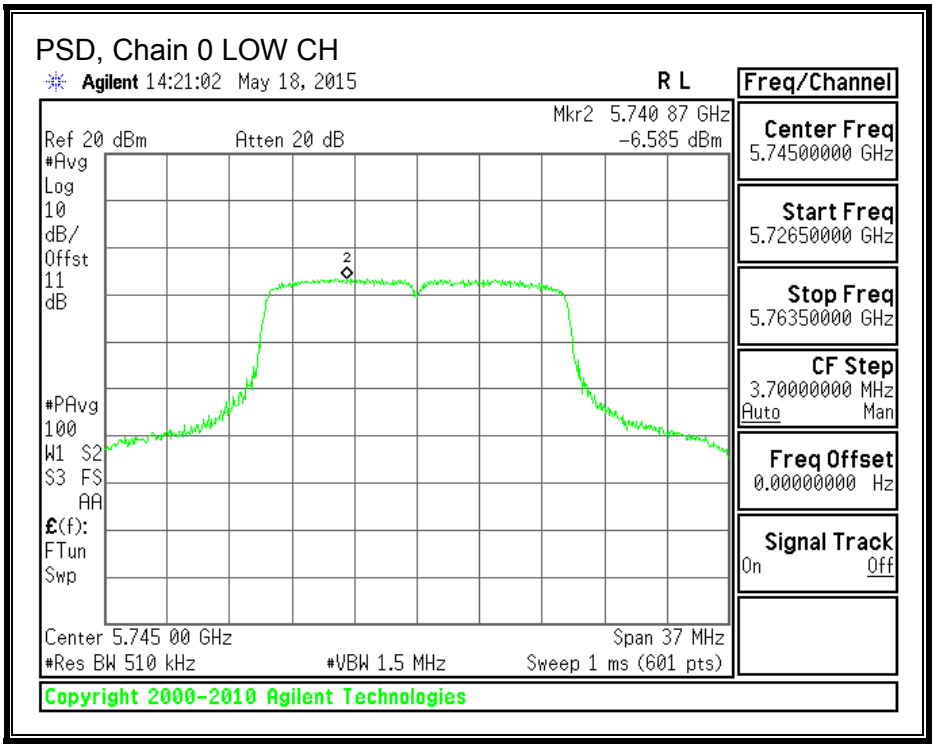
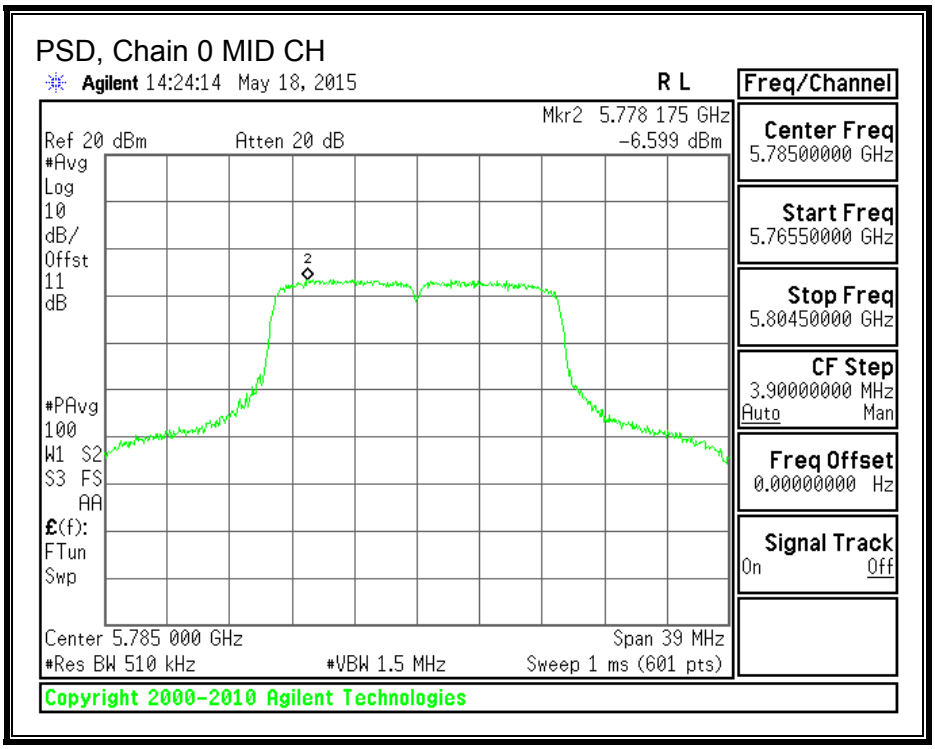
PSD, Chain 0





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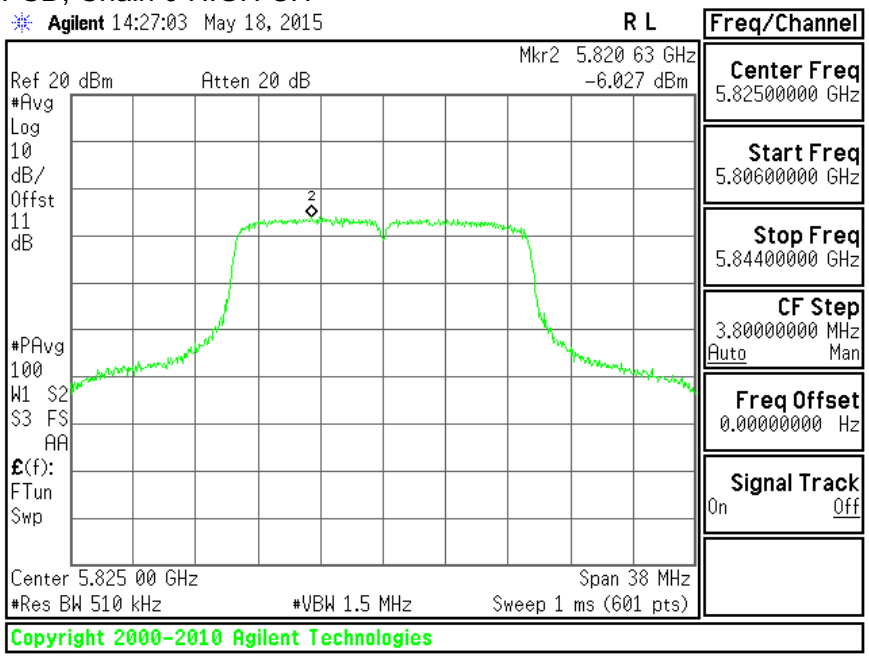
PSD, Chain 0 HIGH CH



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9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

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 measurements and 1.5 m above the ground plane for above 1GHz measurements. The antenna to EUT distance is 3 meters.

For measurements below 1 GHz the resolution bandwidth is set to 120 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 1 MHz for peak measurements and as applicable 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.

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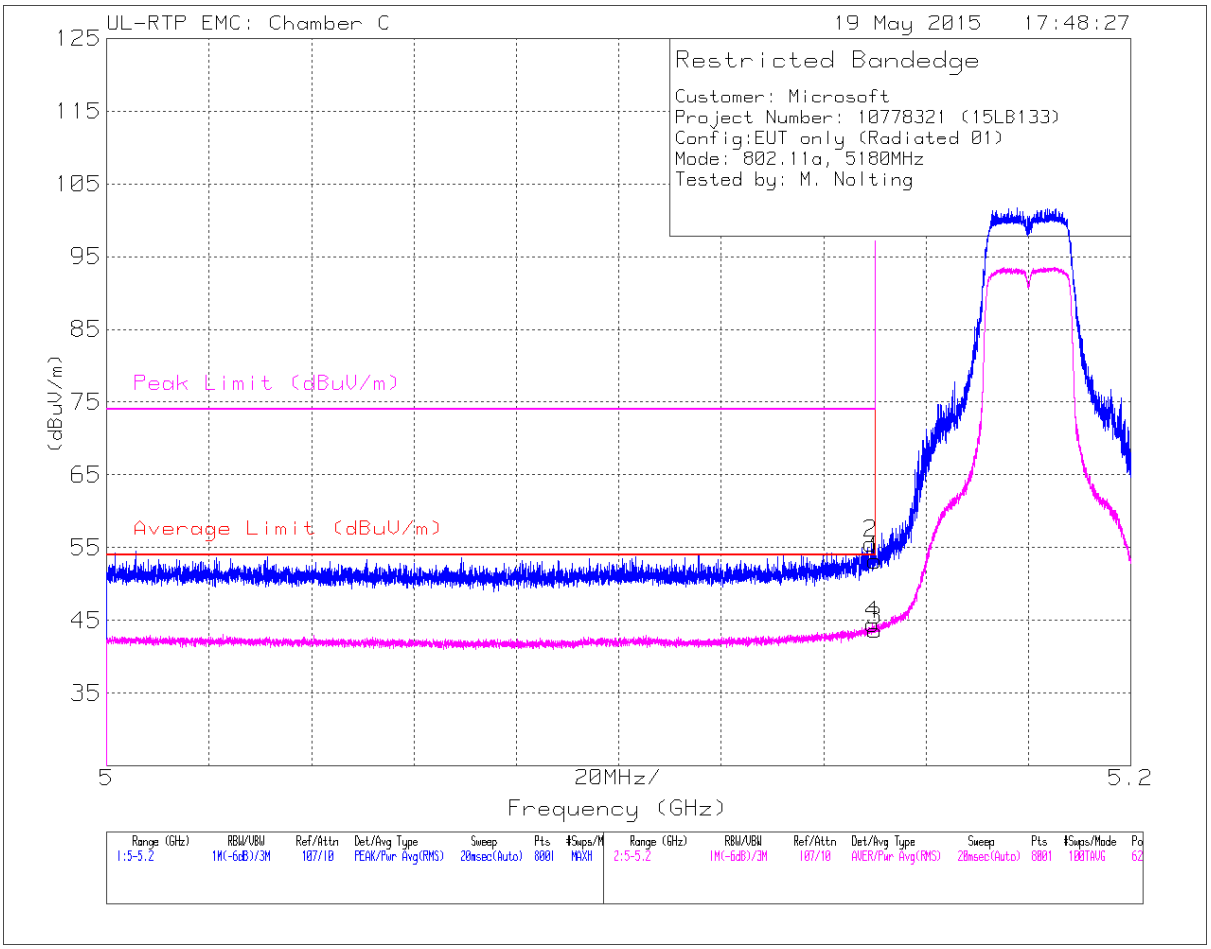
9.2. TRANSMITTER ABOVE 1 GHz

9.3. TX ABOVE 1 GHz 802.11a MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	42.24	Pk	34.2	-23.2	53.24	-	-	74	-20.76	62	288	H
2	* 5.149	44.67	Pk	34.2	-23.3	55.57	-	-	74	-18.43	62	288	H
3	* 5.15	32.64	RMS	34.2	-23.2	43.64	54	-10.36	-	-	62	288	H
4	* 5.15	33.56	RMS	34.2	-23.3	44.46	54	-9.54	-	-	62	288	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
RMS - RMS detection

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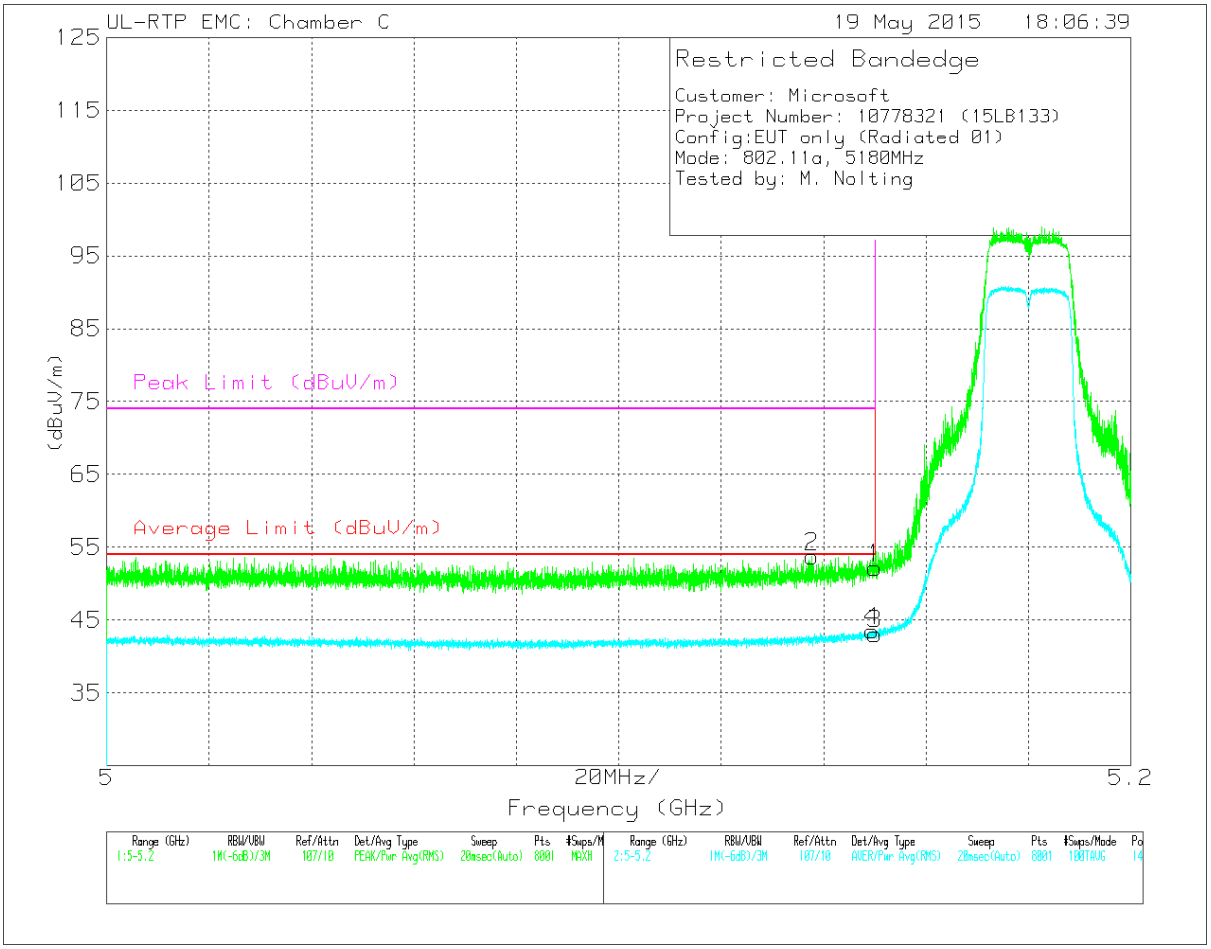
VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 5.138	42.8	Pk	34.2	-23.3	53.7	-	-	74	-20.3	140	232	V
1	* 5.15	41.16	Pk	34.2	-23.2	52.16	-	-	74	-21.84	140	232	V
3	* 5.15	32.08	RMS	34.2	-23.2	43.08	54	-10.92	-	-	140	232	V
4	* 5.15	32.64	RMS	34.2	-23.3	43.54	54	-10.46	-	-	140	232	V

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

Pk - Peak detector

RMS - RMS detection

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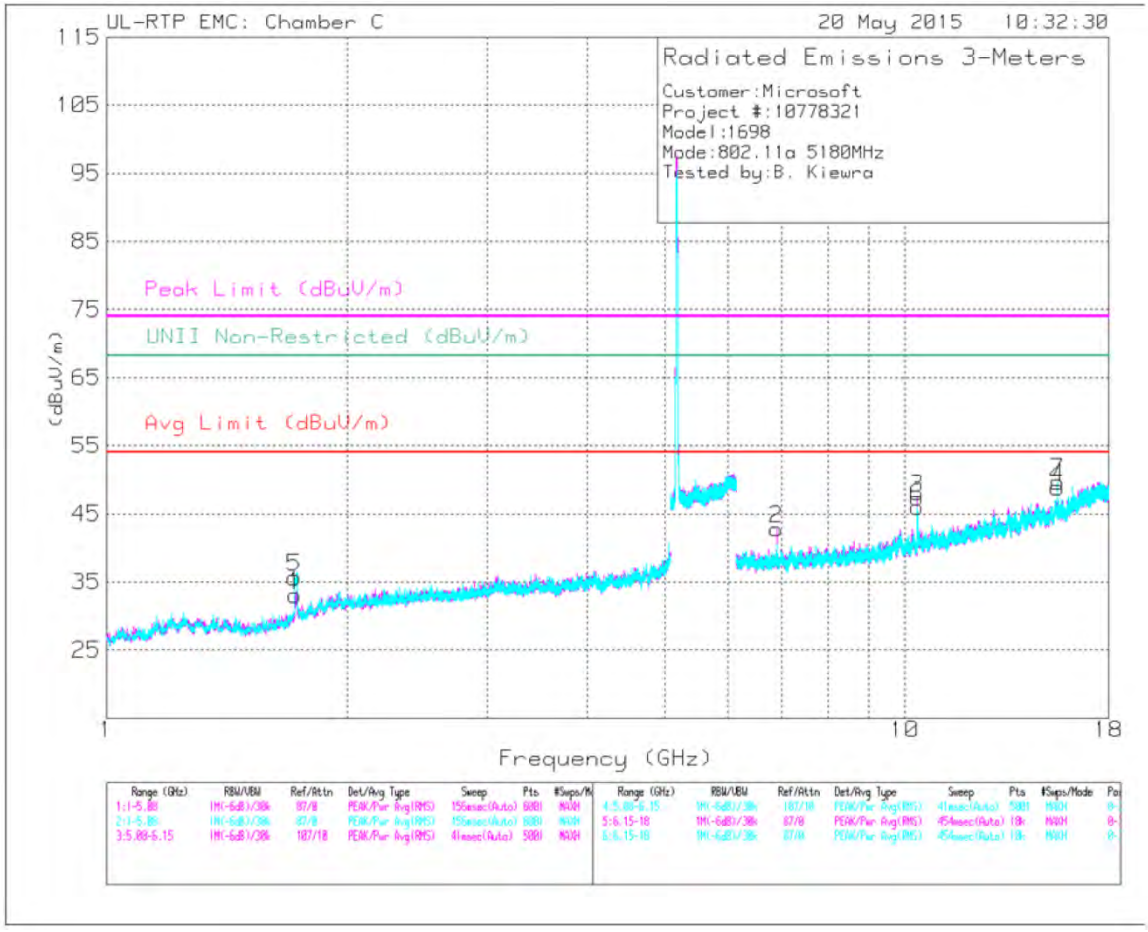
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/ Fltr/Pad	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	* 1.719	50.99	PK3	29.4	-37.9	42.49	-	-	74	-31.51	68.2	-25.71	220	179	H
	* 1.72	39.65	ADR	29.4	-37.9	31.15	54	-22.85	-	-	-	-	220	179	H
2	6.907	43.98	PK3	35.6	-28.3	51.28	-	-	74	-22.72	68.2	-16.92	45	249	H
3	10.36	33.2	ADR	37.3	-25.6	44.9	54	-9.1	-	-	-	-	168	254	H
	10.362	46.84	PK3	37.3	-25.5	58.64	-	-	74	-15.36	68.2	-9.56	168	254	H
4	* 15.544	42.6	PK3	40.4	-24.2	58.8	-	-	74	-15.2	68.2	-9.4	192	307	H
	* 15.538	29.11	ADR	40.4	-24.2	45.31	54	-8.69	-	-	-	-	192	307	H
5	* 1.719	53.04	PK3	29.4	-37.9	44.54	-	-	74	-29.46	68.2	-23.66	54	248	V
	* 1.722	42.24	ADR	29.4	-37.9	33.74	54	-20.26	-	-	-	-	54	248	V
6	10.359	43.3	PK3	37.3	-25.7	54.9	-	-	74	-19.1	68.2	-13.3	64	127	V
	10.359	31.08	ADR	37.3	-25.7	42.68	54	-11.32	-	-	-	-	64	127	V
7	* 15.54	45.83	PK3	40.4	-24.2	62.03	-	-	74	-11.97	68.2	-6.17	191	154	V
	* 15.54	31.54	ADR	40.4	-24.2	47.74	54	-6.26	-	-	-	-	191	154	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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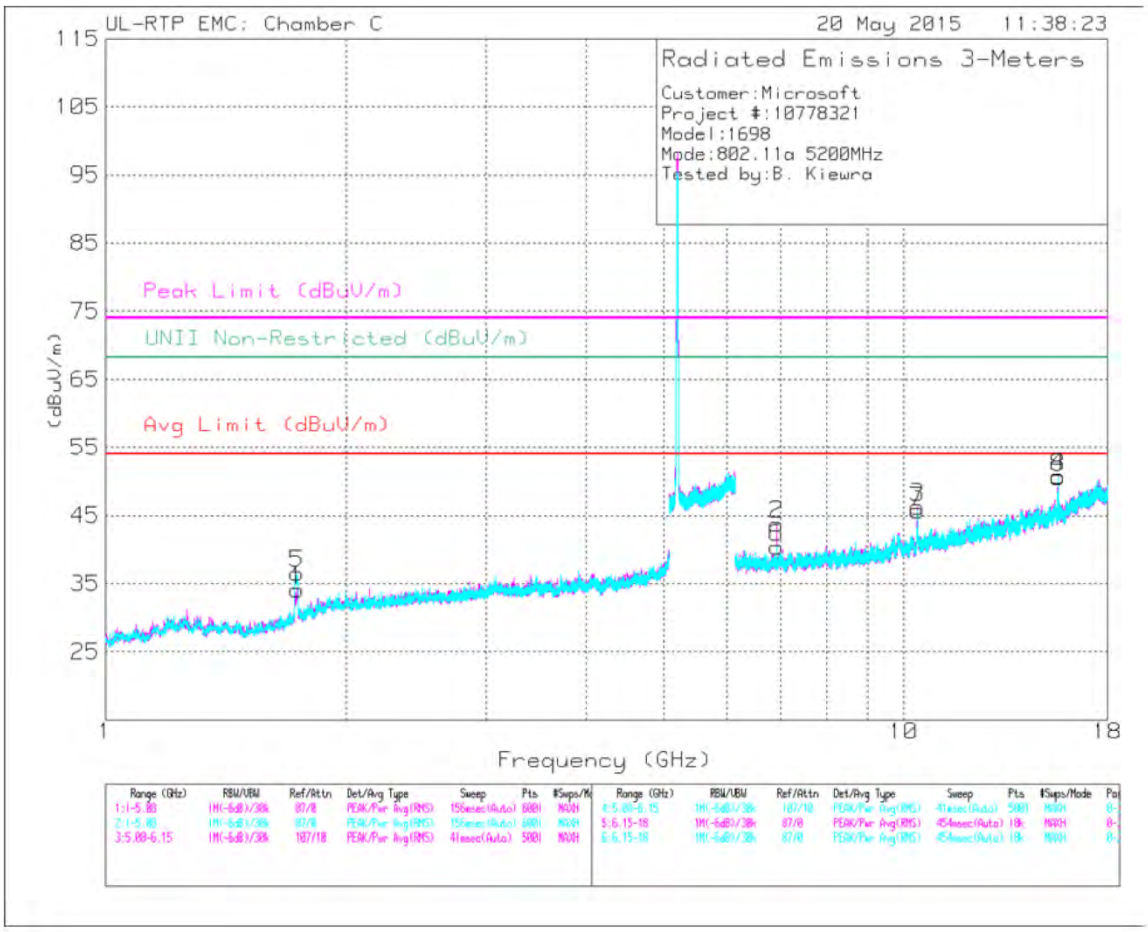
MID CHANNELPLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl /Fltr/Pad	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	1.737	51.28	PK3	29.6	-37.9	42.98	-	-	74	-31.02	68.2	-25.22	153	156	H
2	6.933	45.45	PK3	35.6	-28.8	52.25	-	-	74	-21.75	68.2	-15.95	46	230	H
3	10.399	44.41	PK3	37.4	-24.4	57.41	-	-	74	-16.59	68.2	-10.79	168	216	H
	10.399	31.59	ADR	37.4	-24.4	44.59	54	-9.41	-	-	-	-	168	216	H
4	* 15.595	43.4	PK3	40.4	-23.6	60.2	-	-	74	-13.8	68.2	-8	192	253	H
	* 15.602	30.63	ADR	40.4	-23.6	47.43	54	-6.57	-	-	-	-	192	253	H
5	1.737	55.23	PK3	29.6	-37.9	46.93	-	-	74	-27.07	68.2	-21.27	47	235	V
6	6.933	41.29	PK3	35.6	-28.8	48.09	-	-	74	-25.91	68.2	-20.11	19	108	V
7	10.397	42.56	PK3	37.4	-24.4	55.56	-	-	74	-18.44	68.2	-12.64	77	102	V
	10.4	30.15	ADR	37.4	-24.4	43.15	54	-10.85	-	-	-	-	77	102	V
8	* 15.599	43.88	PK3	40.4	-23.6	60.68	-	-	74	-13.32	68.2	-7.52	209	162	V
	* 15.6	30.5	ADR	40.4	-23.6	47.3	54	-6.7	-	-	-	-	209	162	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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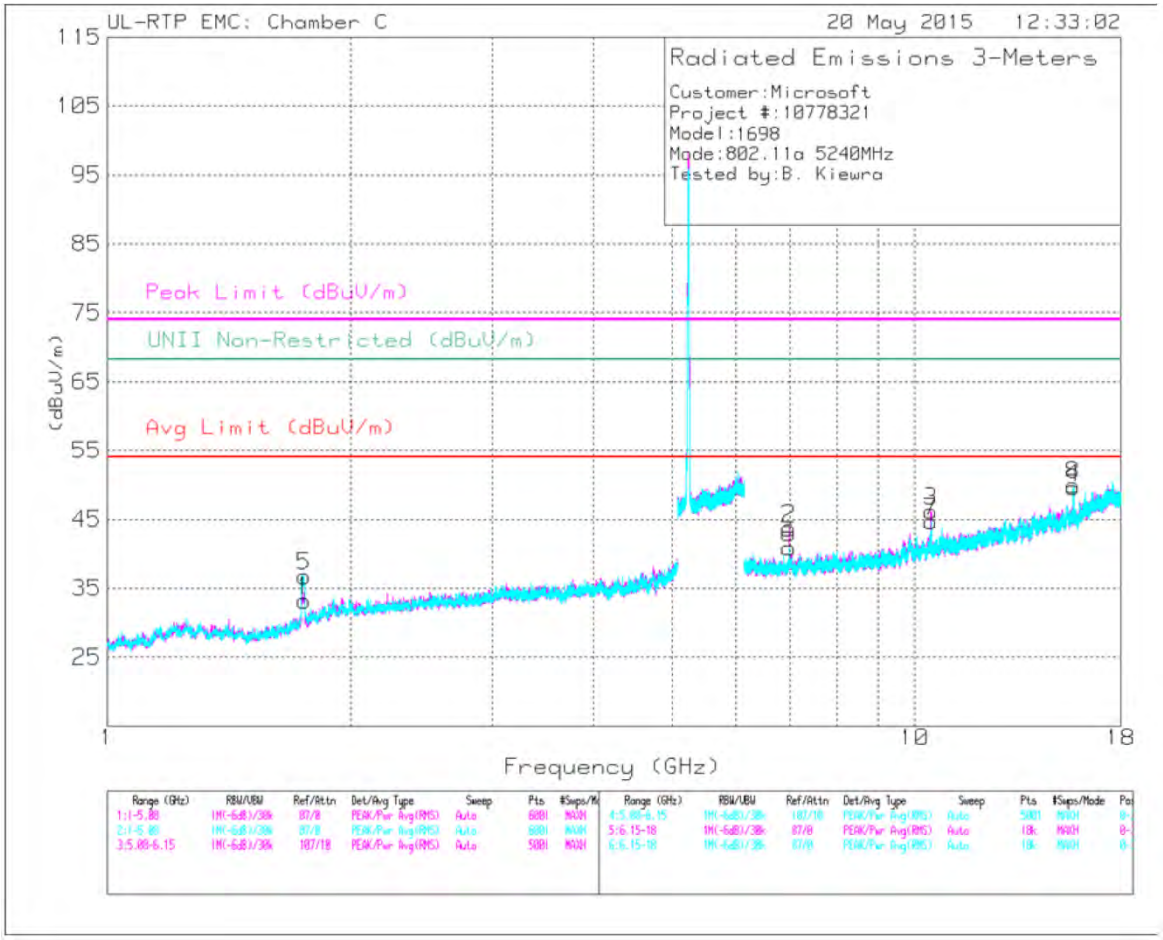
HIGH CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl /Fltr/Pad	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	1.751	52.46	PK3	29.8	-37.8	44.46	-	-	74	-29.54	68.2	-23.74	156	124	H
2	6.987	43.5	PK3	35.7	-27.8	51.4	-	-	74	-22.6	68.2	-16.8	38	304	H
3	10.48	29.77	ADR	37.5	-25.2	42.07	54	-11.93	-	-	-	-	206	236	H
	10.482	42.07	PK3	37.5	-25.2	54.37	-	-	74	-19.63	68.2	-13.83	206	236	H
4	* 15.711	45.29	PK3	40.4	-24	61.69	-	-	74	-12.31	68.2	-6.51	191	264	H
	* 15.723	31.35	ADR	40.4	-24	47.75	54	-6.25	-	-	-	-	191	264	H
5	1.746	54.32	PK3	29.7	-37.9	46.12	-	-	74	-27.88	68.2	-22.08	53	260	V
6	6.987	41.55	PK3	35.7	-27.8	49.45	-	-	74	-24.55	68.2	-18.75	71	252	V
7	10.481	42.87	PK3	37.5	-25.2	55.17	-	-	74	-18.83	68.2	-13.03	77	119	V
	10.481	30.59	ADR	37.5	-25.2	42.89	54	-11.11	-	-	-	-	77	119	V
8	* 15.715	42.21	PK3	40.4	-24	58.61	-	-	74	-15.39	68.2	-9.59	178	351	V
	* 15.721	29.65	ADR	40.4	-24	46.05	54	-7.95	-	-	-	-	178	351	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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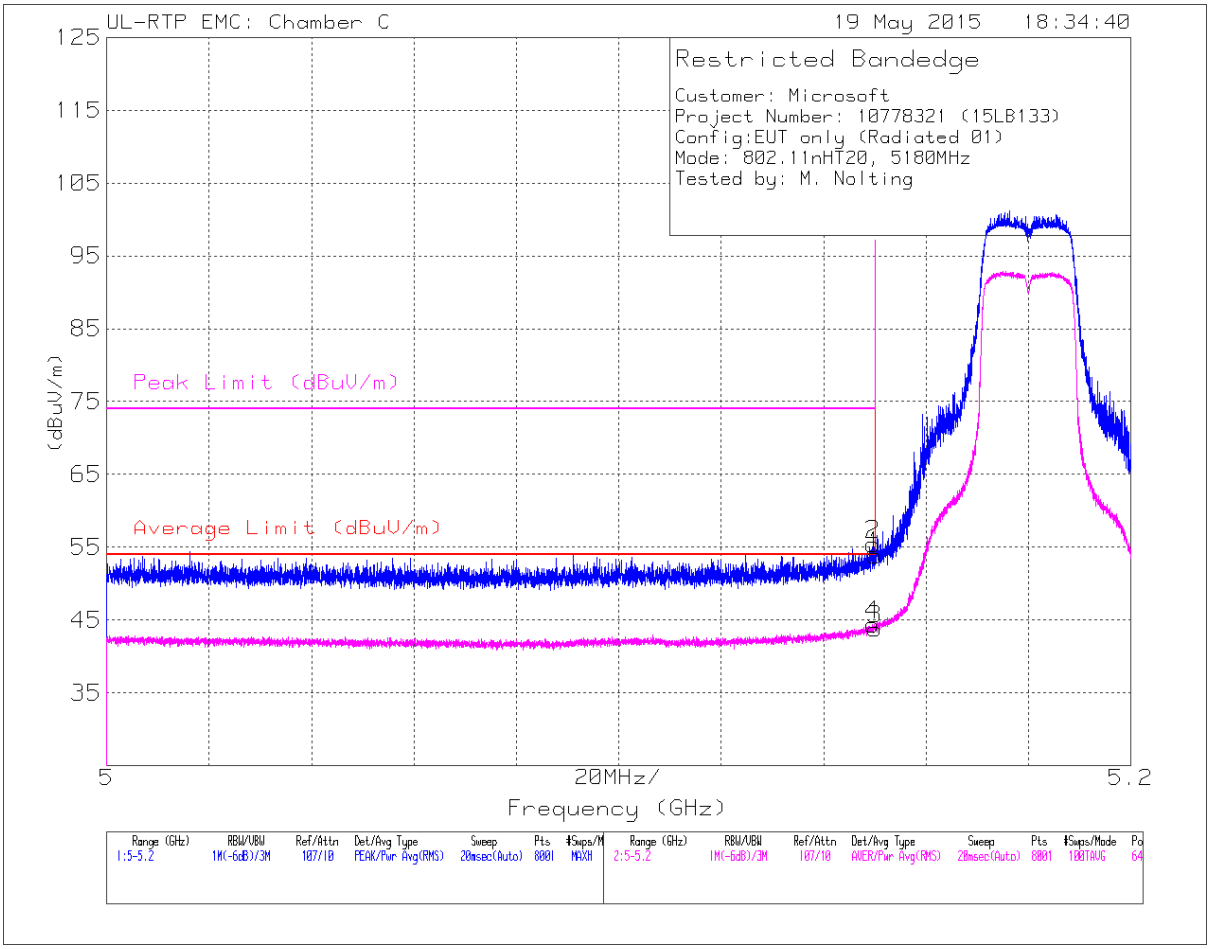
9.4. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	42.83	Pk	34.2	-23.2	53.83	-	-	74	-20.17	64	270	H
2	* 5.15	44.51	Pk	34.2	-23.3	55.41	-	-	74	-18.59	64	270	H
3	* 5.15	32.79	RMS	34.2	-23.2	43.79	54	-10.21	-	-	64	270	H
4	* 5.15	33.45	RMS	34.2	-23.3	44.35	54	-9.65	-	-	64	270	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
RMS - RMS detection

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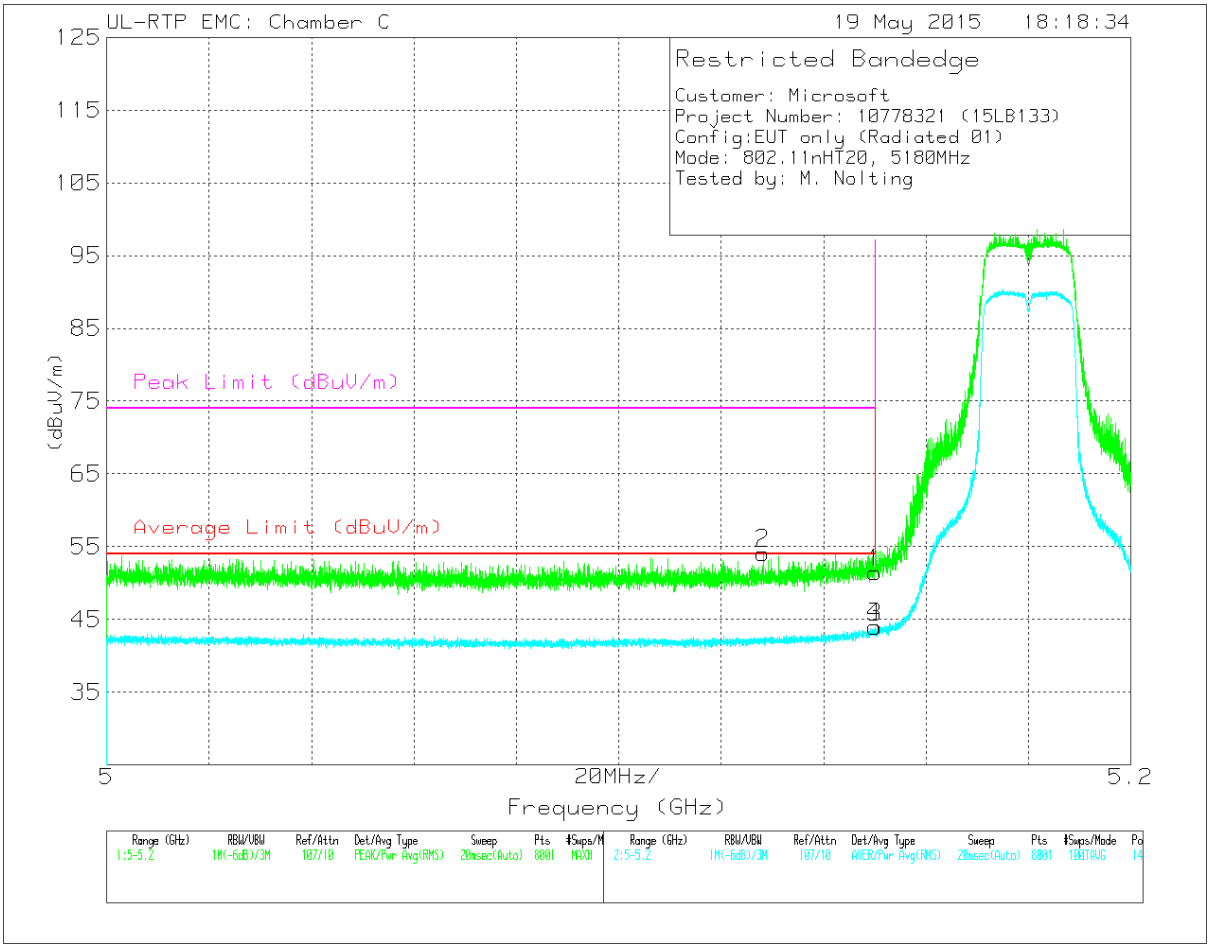
VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	40.47	Pk	34.2	-23.2	51.47	-	-	74	-22.53	140	231	V
2	* 5.128	43.18	Pk	34.2	-23.3	54.08	-	-	74	-19.92	140	231	V
3	* 5.15	32.95	RMS	34.2	-23.2	43.95	54	-10.05	-	-	140	231	V
4	* 5.15	33.02	RMS	34.2	-23.2	44.02	54	-9.98	-	-	140	231	V

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

Pk - Peak detector

RMS - RMS detection

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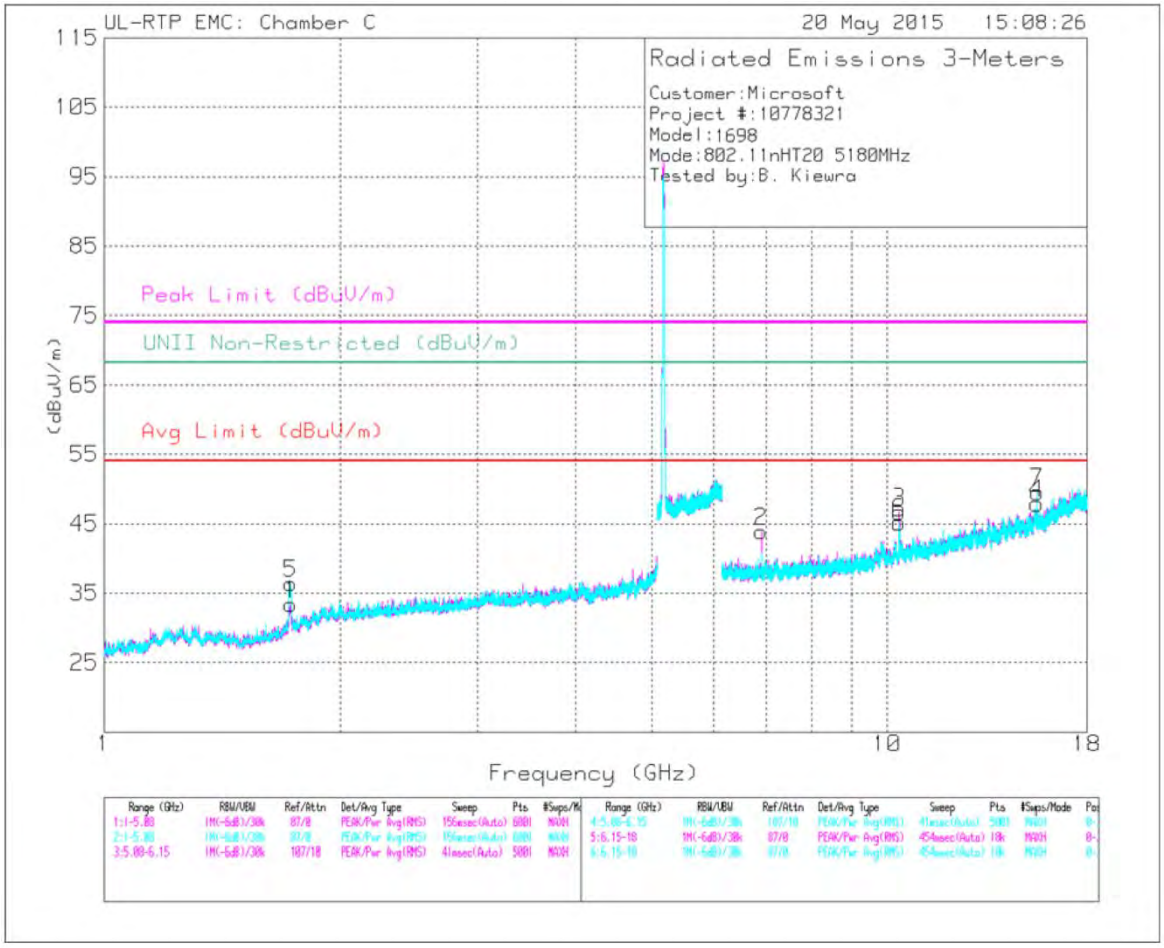
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/ Fltr/Pad	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	1.725	51.91	PK3	29.5	-37.9	43.51	-	-	74	-30.49	68.2	-24.69	159	131	H
2	6.906	44.29	PK3	35.6	-28.3	51.59	-	-	74	-22.41	68.2	-16.61	43	198	H
3	10.36	46.46	PK3	37.3	-25.6	58.16	-	-	74	-15.84	68.2	-10.04	167	225	H
	10.36	33.13	ADR	37.3	-25.6	44.83	54	-9.17	-	-	-	-	167	225	H
4	* 15.537	41.46	PK3	40.4	-24.2	57.66	-	-	74	-16.34	68.2	-10.54	242	101	H
	* 15.538	28.15	ADR	40.4	-24.2	44.35	54	-9.65	-	-	-	-	242	101	H
5	1.732	54.28	PK3	29.6	-37.9	45.98	-	-	74	-28.02	68.2	-22.22	39	186	V
6	10.359	44.1	PK3	37.3	-25.6	55.8	-	-	74	-18.2	68.2	-12.4	65	112	V
	10.359	31.11	ADR	37.3	-25.6	42.81	54	-11.19	-	-	-	-	65	112	V
7	* 15.546	43.73	PK3	40.4	-24.2	59.93	-	-	74	-14.07	68.2	-8.27	186	148	V
	* 15.54	30.02	ADR	40.4	-24.2	46.22	54	-7.78	-	-	-	-	186	148	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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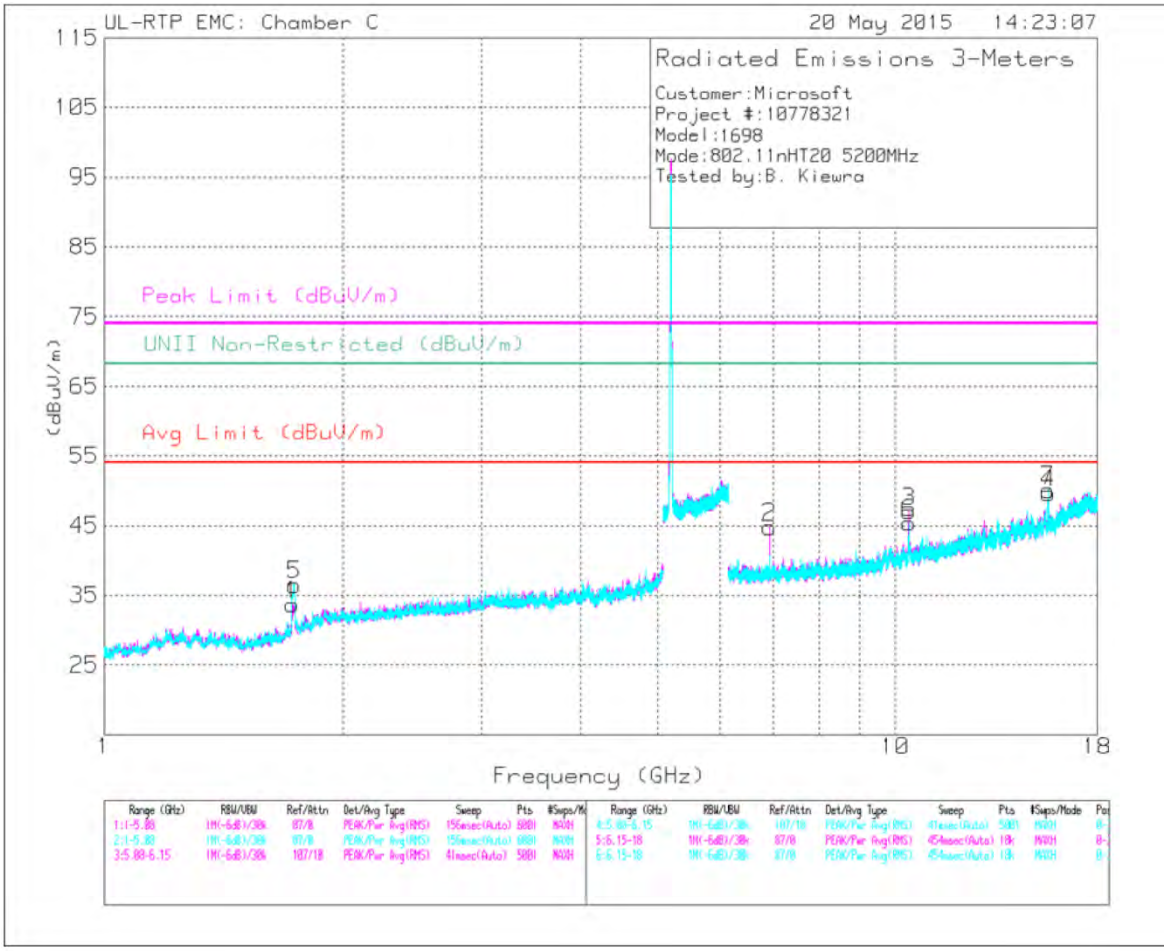
MID CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/ Fltr/Pad	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	1.735	53.4	PK3	29.6	-37.9	45.1	-	-	74	-28.9	68.2	-23.1	158	154	H
2	6.933	45.01	PK3	35.6	-28.8	51.81	-	-	74	-22.19	68.2	-16.39	38	291	H
3	10.394	43.38	PK3	37.4	-24.5	56.28	-	-	74	-17.72	68.2	-11.92	144	148	H
	10.399	30.53	ADR	37.4	-24.4	43.53	54	-10.47	-	-	-	-	144	148	H
4	* 15.592	44.55	PK3	40.4	-23.7	61.25	-	-	74	-12.75	68.2	-6.95	191	269	H
	* 15.6	30.77	ADR	40.4	-23.6	47.57	54	-6.43	-	-	-	-	191	269	H
5	1.735	54.74	PK3	29.6	-37.9	46.44	-	-	74	-27.56	68.2	-21.76	57	231	V
6	10.397	40.11	PK3	37.4	-24.4	53.11	-	-	74	-20.89	68.2	-15.09	163	142	V
	10.4	28.2	ADR	37.4	-24.4	41.2	54	-12.8	-	-	-	-	163	142	V
7	* 15.594	45.15	PK3	40.4	-23.7	61.85	-	-	74	-12.15	68.2	-6.35	191	163	V
	*** 15.603**	**31.1**	**ADR**	**40.4**	**-23.6**	**47.9**	**54**	**-6.1**	**-**	**-**	**-**	**-**	**191**	**163**	**V**

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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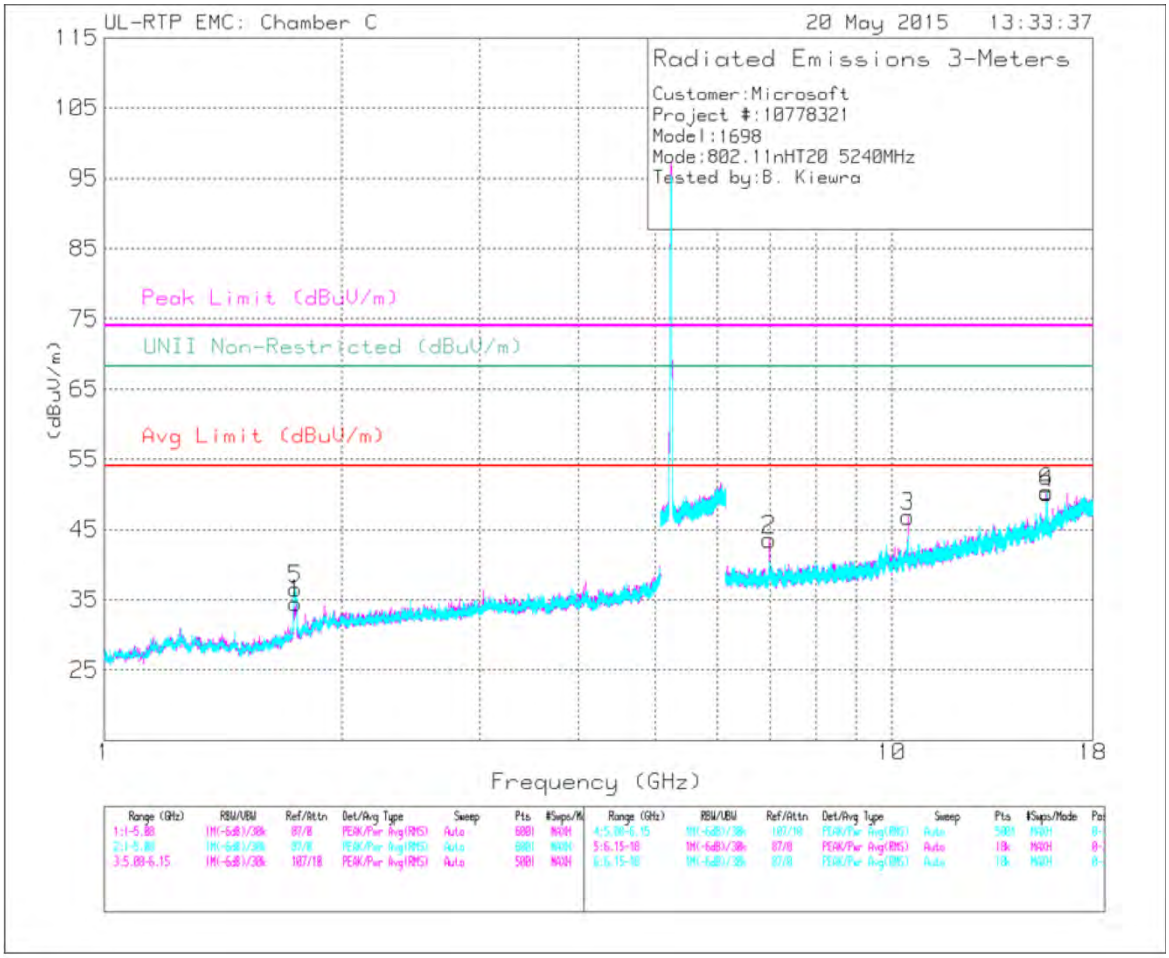
HIGH CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl /Fltr/Pad	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	1.751	50.96	PK3	29.8	-37.8	42.96	-	-	74	-31.04	68.2	-25.24	344	134	H
2	6.987	43.04	PK3	35.7	-27.8	50.94	-	-	74	-23.06	68.2	-17.26	28	312	H
3	10.479	41.3	PK3	37.5	-25.1	53.7	-	-	74	-20.3	68.2	-14.5	118	104	H
	10.48	29.16	ADR	37.5	-25.2	41.46	54	-12.54	-	-	-	-	118	104	H
4	* 15.727	44.03	PK3	40.4	-24	60.43	-	-	74	-13.57	68.2	-7.77	201	227	H
	* 15.721	30.82	ADR	40.4	-24	47.22	54	-6.78	-	-	-	-	201	227	H
5	1.753	54.38	PK3	29.8	-37.8	46.38	-	-	74	-27.62	68.2	-21.82	199	192	V
6	* 15.721	44.09	PK3	40.4	-24	60.49	-	-	74	-13.51	68.2	-7.71	178	154	V
	* 15.722	30.64	ADR	40.4	-24	47.04	54	-6.96	-	-	-	-	178	154	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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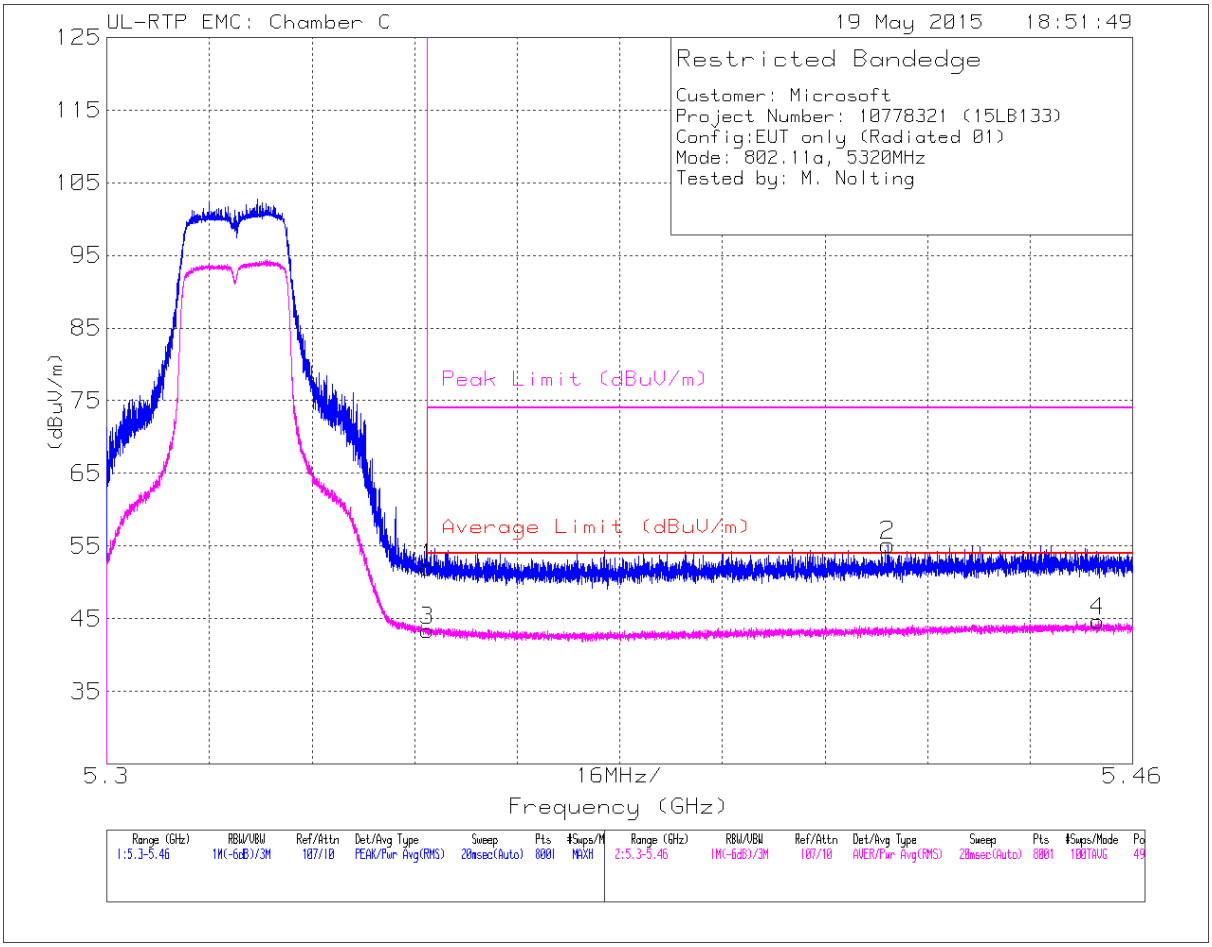
9.5. TX ABOVE 1 GHz 802.11a MODE IN THE 5.3 GHz BAND

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	40.36	Pk	34.5	-22.8	52.06	-	-	74	-21.94	49	214	H
2	* 5.422	43.05	Pk	34.5	-22.4	55.15	-	-	74	-18.85	49	214	H
3	* 5.35	31.71	RMS	34.5	-22.8	43.41	54	-10.59	-	-	49	214	H
4	* 5.455	32.3	RMS	34.5	-22.1	44.7	54	-9.3	-	-	49	214	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
RMS - RMS detection

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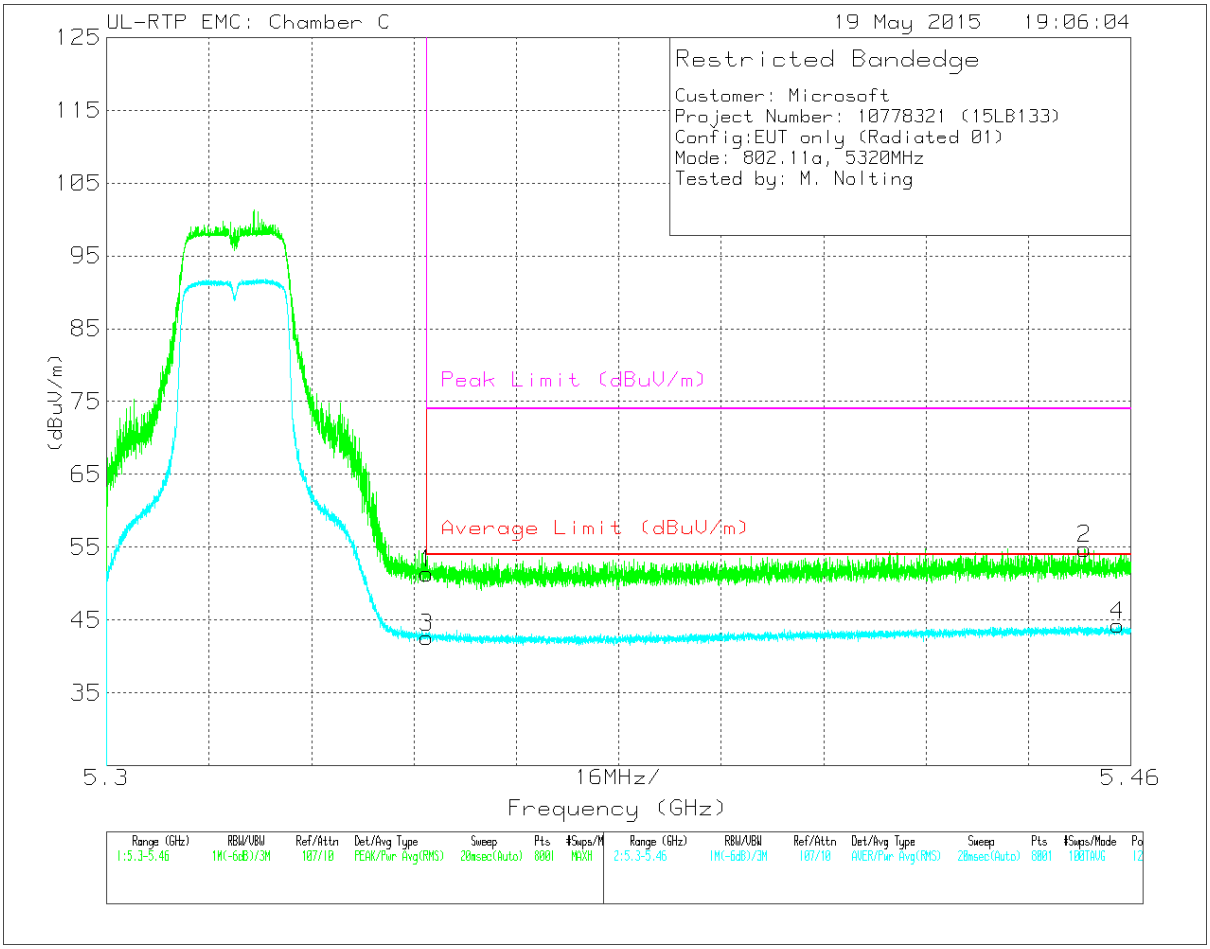
VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Filtr/Pad	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	39.7	Pk	34.5	-22.8	51.4	-	-	74	-22.6	127	220	V
2	* 5.453	42.39	Pk	34.5	-22.1	54.79	-	-	74	-19.21	127	220	V
3	* 5.35	30.93	RMS	34.5	-22.8	42.63	54	-11.37	-	-	127	220	V
4	* 5.458	31.9	RMS	34.5	-22.1	44.3	54	-9.7	-	-	127	220	V

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

Pk - Peak detector

RMS - RMS detection

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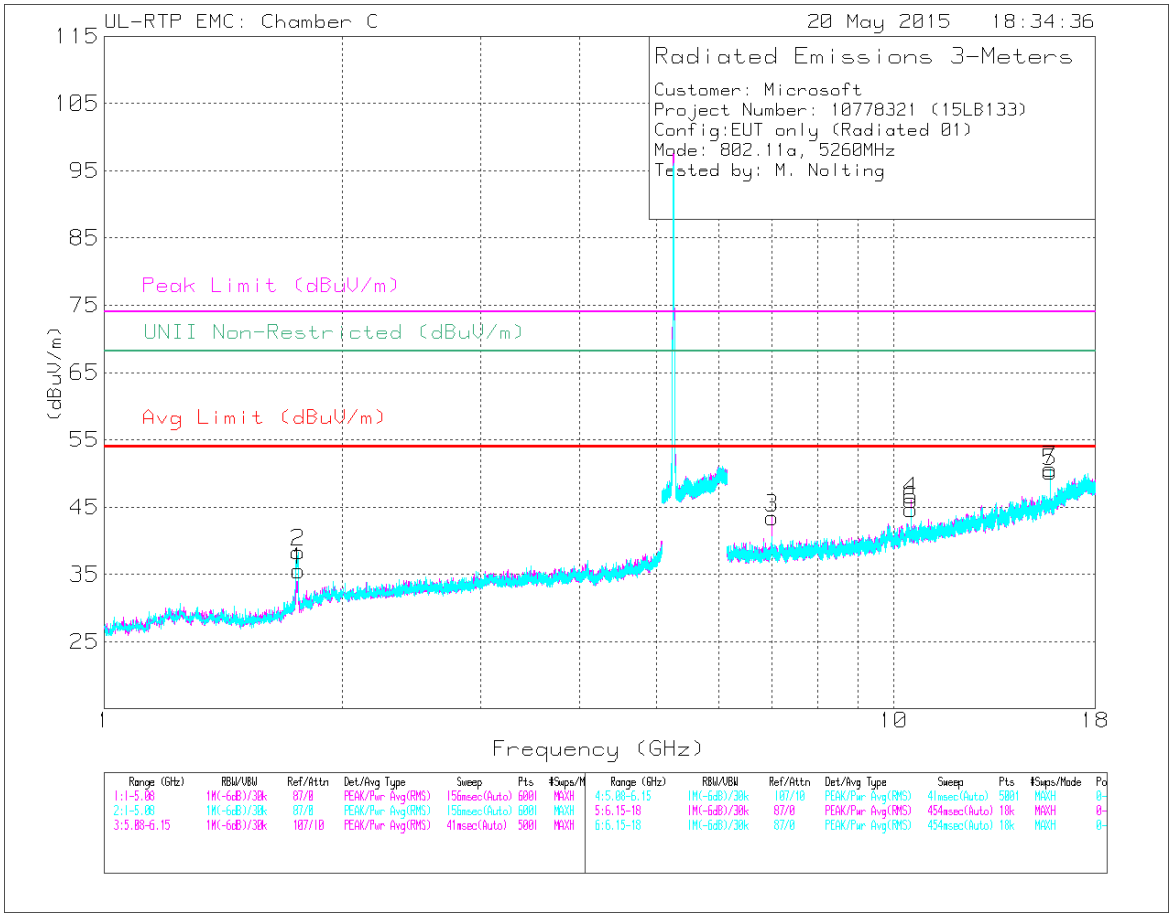
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	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	* 15.778	46.47	PK3	40.5	-23.5	63.47	-	-	74	-10.53	-	-	193	275	H
	* 15.78	32.93	ADR	40.5	-23.5	49.93	54	-4.07	-	-	-	-	193	275	H
7	* 15.785	46.44	PK3	40.5	-23.5	63.44	-	-	74	-10.56	-	-	211	174	V
	* 15.778	32.05	ADR	40.5	-23.5	49.05	54	-4.95	-	-	-	-	211	174	V
2	1.749	55.21	PK3	29.7	-37.9	47.01	-	-	-	-	68.2	-21.19	55	262	V
1	1.756	52.54	PK3	29.8	-37.8	44.54	-	-	-	-	68.2	-23.66	305	110	H
3	7.014	42.57	PK3	35.7	-27.3	50.97	-	-	-	-	68.2	-17.23	40	252	H
4	10.523	44.99	PK3	37.5	-25.8	56.69	-	-	-	-	68.2	-11.51	168	187	H
6	10.519	44.04	PK3	37.5	-25.7	55.84	-	-	-	-	68.2	-12.36	78	111	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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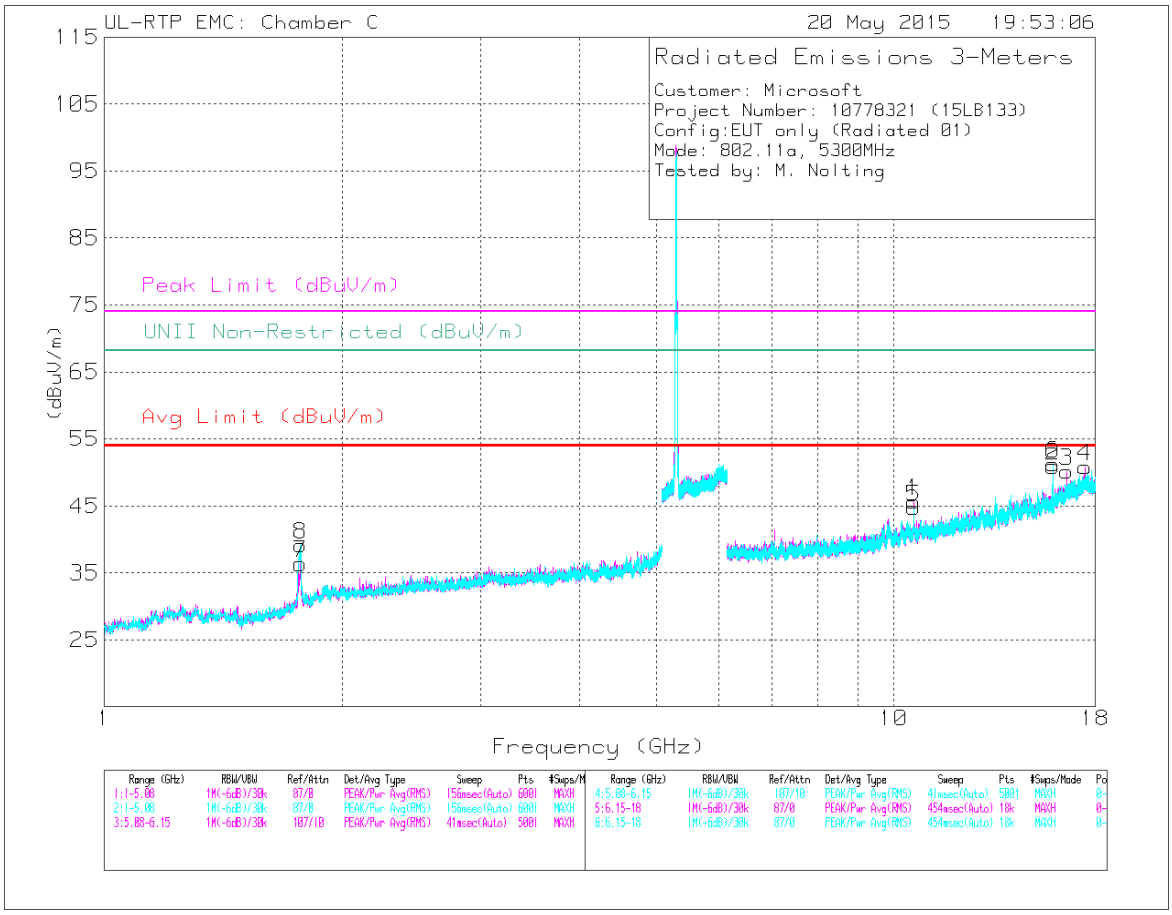
MID CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	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	* 15.9	46.05	PK3	40.6	-23.9	62.75	-	-	74	-11.25	-	-	192	281	H
	* 15.901	32.73	ADR	40.6	-23.9	49.43	54	-4.57	-	-	-	-	192	281	H
6	* 15.893	45.86	PK3	40.6	-23.8	62.66	-	-	74	-11.34	-	-	208	136	V
	* 15.9	31.94	ADR	40.6	-23.9	48.64	54	-5.36	-	-	-	-	208	136	V
1	* 10.6	44.04	PK3	37.6	-25.5	56.14	-	-	74	-17.86	-	-	168	181	H
	* 10.6	32.38	ADR	37.6	-25.5	44.48	54	-9.52	-	-	-	-	168	181	H
5	* 10.6	42.36	PK3	37.6	-25.5	54.46	-	-	74	-19.54	-	-	74	105	V
	* 10.601	30.56	ADR	37.6	-25.5	42.66	54	-11.34	-	-	-	-	74	105	V
7	1.761	53.21	PK3	29.9	-37.8	45.31	-	-	-	-	68.2	-22.89	304	111	H
8	1.772	56.79	PK3	30	-37.8	48.99	-	-	-	-	68.2	-19.21	200	248	V
3	16.568	36.66	PK3	41.6	-21.5	56.76	-	-	-	-	68.2	-11.44	0	134	H
4	17.466	35.48	PK3	41.6	-19.9	57.18	-	-	-	-	68.2	-11.02	2	353	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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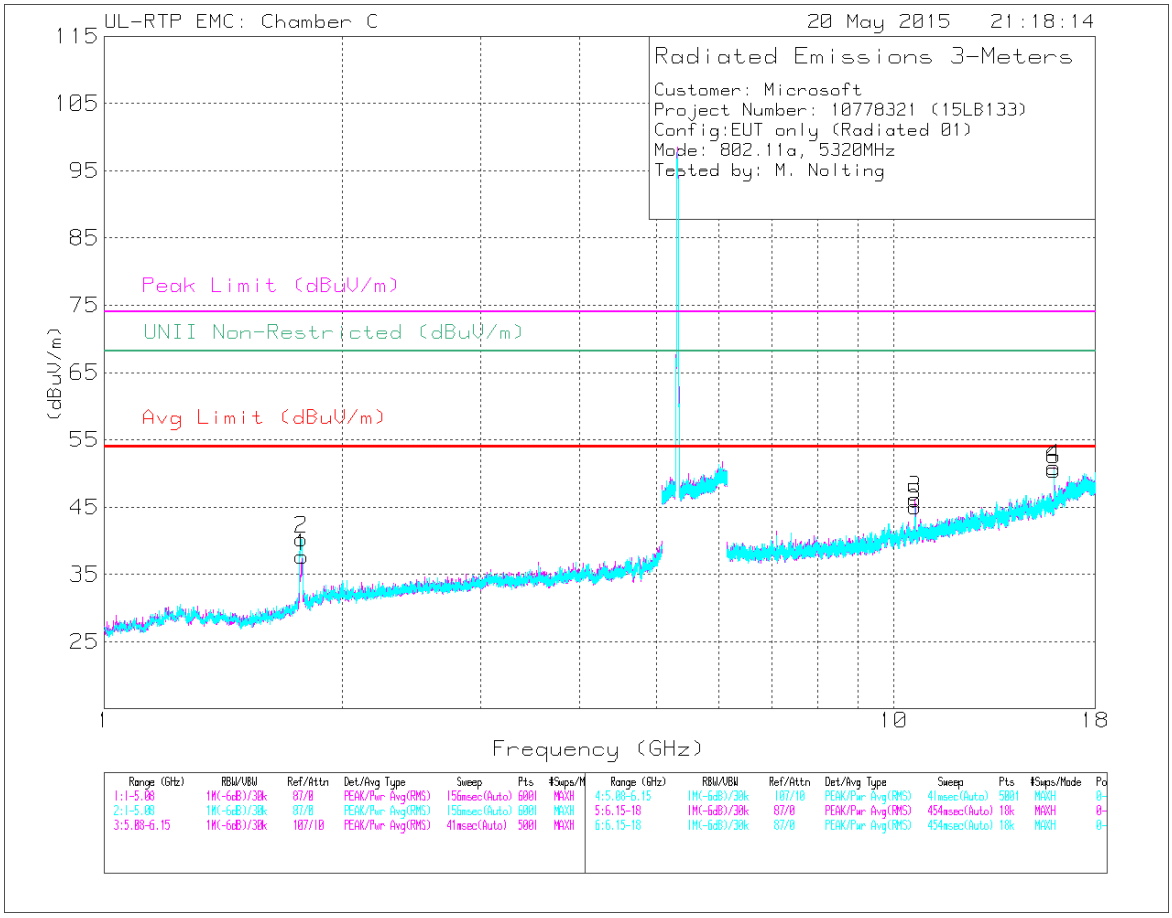
HIGH CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	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	* 10.645	45.03	PK3	37.7	-25.6	57.13	-	-	74	-16.87	-	-	167	186	H
	* 10.64	32.8	ADR	37.7	-25.5	45	54	-9	-	-	-	-	167	186	H
4	* 15.952	45.97	PK3	40.7	-23.9	62.77	-	-	74	-11.23	-	-	192	284	H
	* 15.958	31.81	ADR	40.7	-23.8	48.71	54	-5.29	-	-	-	-	192	284	H
5	* 10.636	42.01	PK3	37.7	-25.5	54.21	-	-	74	-19.79	-	-	75	103	V
	* 10.641	30.45	ADR	37.7	-25.5	42.65	54	-11.35	-	-	-	-	75	103	V
6	* 15.96	44.54	PK3	40.7	-23.7	61.54	-	-	74	-12.46	-	-	208	141	V
	* 15.959	30.96	ADR	40.7	-23.8	47.86	54	-6.14	-	-	-	-	208	141	V
2	1.777	58.04	PK3	30	-37.8	50.24	-	-	-	-	68.2	-17.96	207	248	V
1	1.779	54.04	PK3	30	-37.7	46.34	-	-	-	-	68.2	-21.86	302	101	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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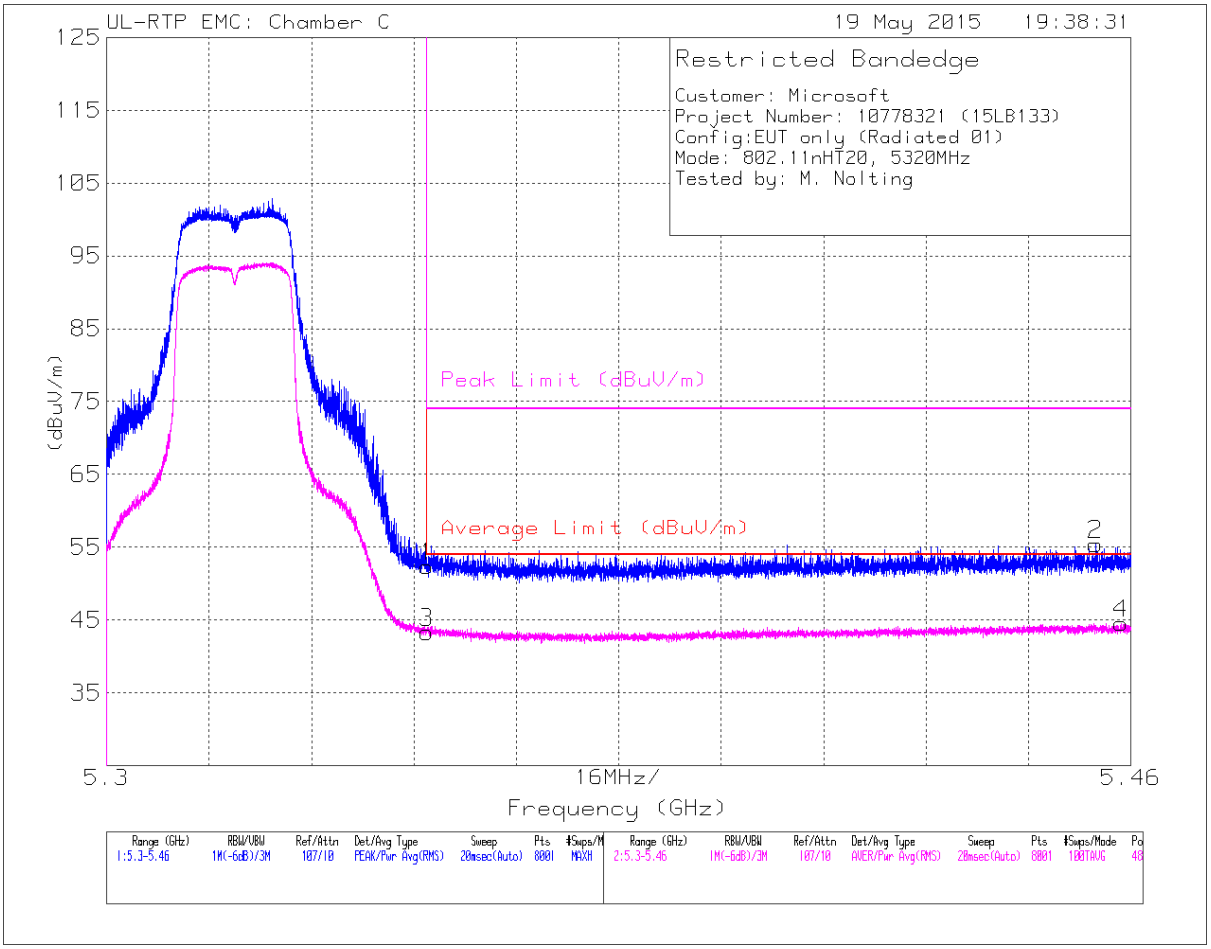
9.6. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.3 GHz BAND

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	40.68	Pk	34.5	-22.8	52.38	-	-	74	-21.62	48	216	H
2	* 5.454	42.98	Pk	34.5	-22.1	55.38	-	-	74	-18.62	48	216	H
3	* 5.35	31.61	RMS	34.5	-22.8	43.31	54	-10.69	-	-	48	216	H
4	* 5.458	32.18	RMS	34.5	-22.1	44.58	54	-9.42	-	-	48	216	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
RMS - RMS detection

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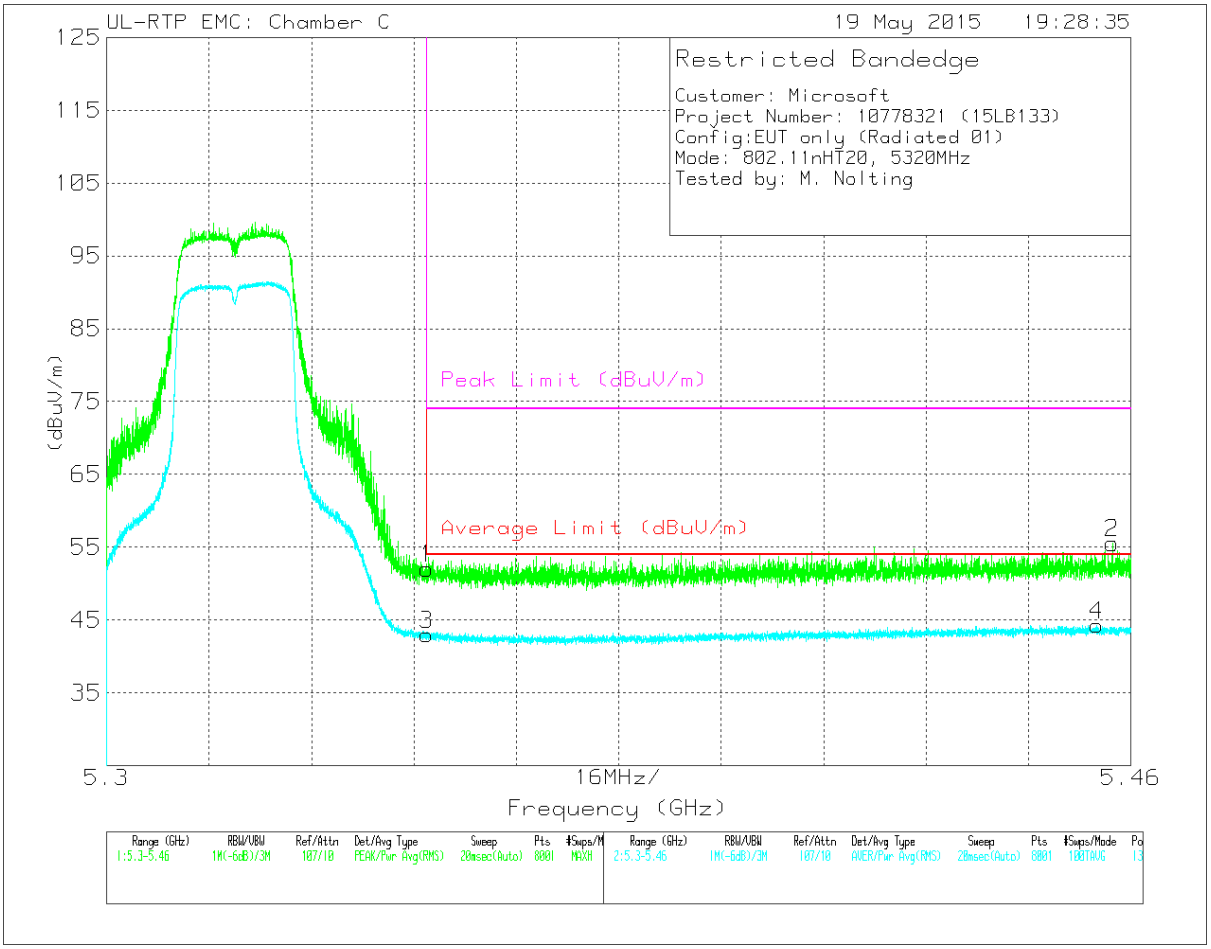
VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	40.36	Pk	34.5	-22.8	52.06	-	-	74	-21.94	134	171	V
2	* 5.457	43.16	Pk	34.5	-22.1	55.56	-	-	74	-18.44	134	171	V
3	* 5.35	31.3	RMS	34.5	-22.8	43	54	-11	-	-	134	171	V
4	* 5.455	31.91	RMS	34.5	-22.1	44.31	54	-9.69	-	-	134	171	V

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

Pk - Peak detector

RMS - RMS detection

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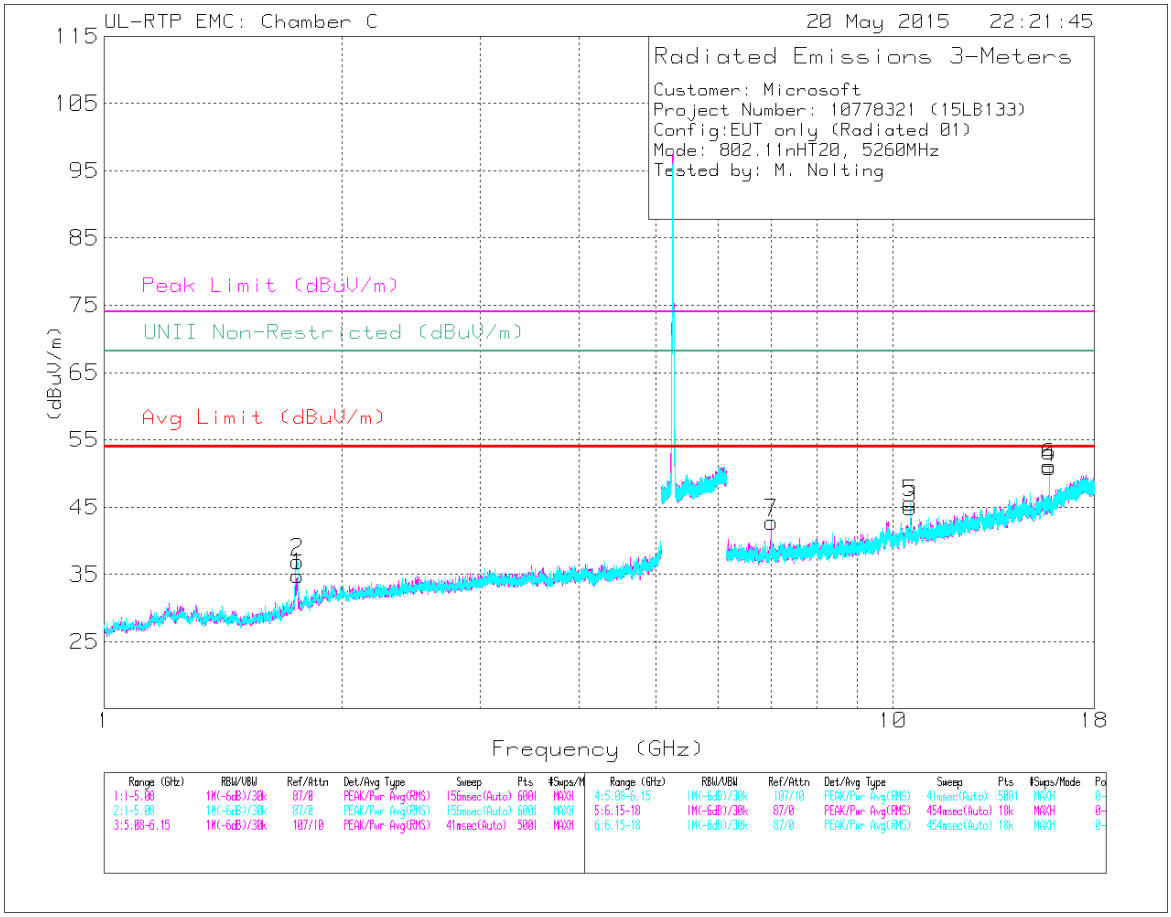
HARMONICS AND SPURIOUS EMISSIONS (1-18GHz)

LOW CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	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	* 15.779	46.22	PK3	40.5	-23.5	63.22	-	-	74	-10.78	-	-	193	278	H
	* 15.78	32.93	ADR	40.5	-23.5	49.93	54	-4.07	-	-	-	-	193	278	H
6	* 15.777	46.63	PK3	40.5	-23.5	63.63	-	-	74	-10.37	-	-	182	140	V
	* 15.778	32.12	ADR	40.5	-23.5	49.12	54	-4.88	-	-	-	-	182	140	V
2	1.759	55.3	PK3	29.8	-37.8	47.3	-	-	-	-	68.2	-20.9	201	255	V
1	1.755	52.68	PK3	29.8	-37.8	44.68	-	-	-	-	68.2	-23.52	303	109	H
7	7.013	42.71	PK3	35.7	-27.3	51.11	-	-	-	-	68.2	-17.09	38	252	H
5	10.52	43.9	PK3	37.5	-25.7	55.7	-	-	-	-	68.2	-12.5	79	110	V
3	10.52	45.07	PK3	37.5	-25.7	56.87	-	-	-	-	68.2	-11.33	167	184	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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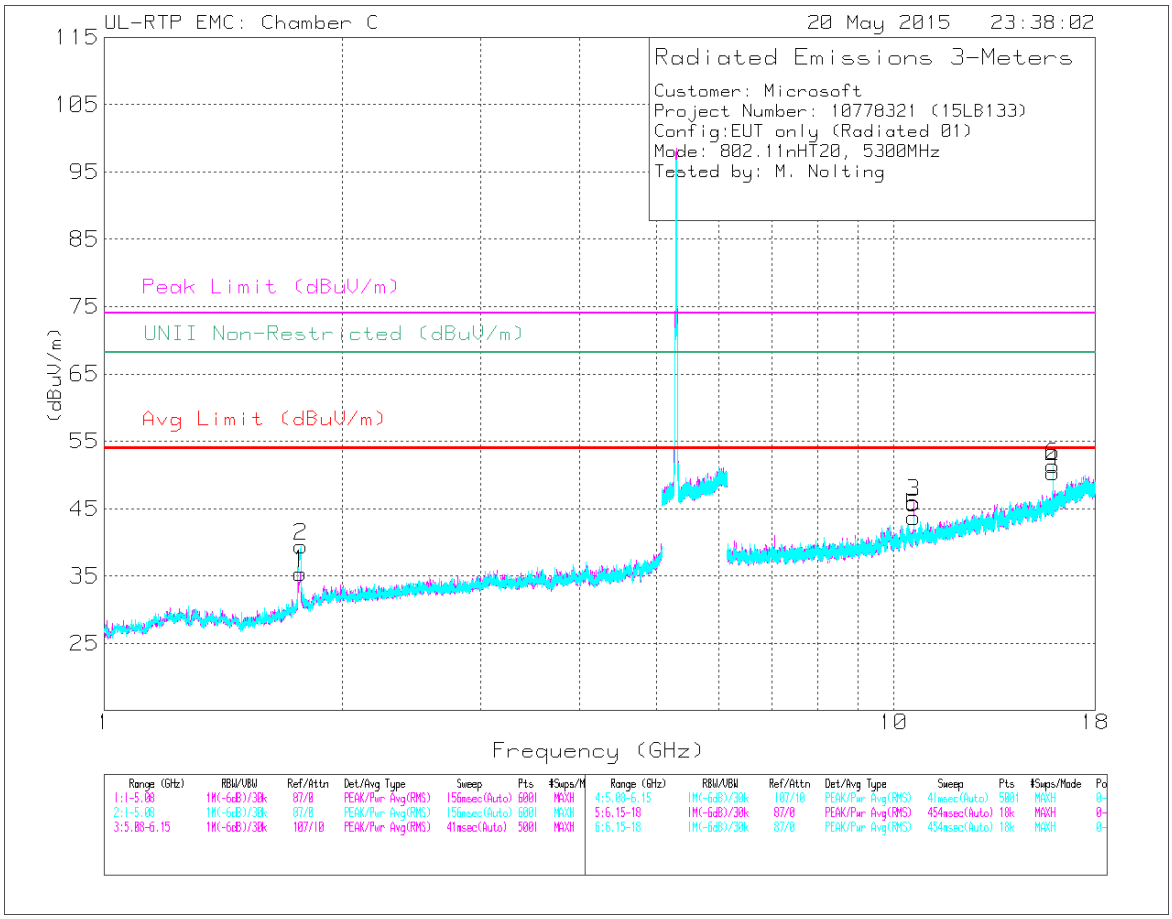
MID CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	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	* 10.6	42.9	PK3	37.6	-25.5	55	-	-	74	-19	-	-	169	207	H
	* 10.6	31.9	ADR	37.6	-25.5	44	54	-10	-	-	-	-	169	207	H
4	* 15.902	46.58	PK3	40.6	-23.9	63.28	-	-	74	-10.72	-	-	192	281	H
	* 15.902	32.46	ADR	40.6	-23.9	49.16	54	-4.84	-	-	-	-	192	281	H
5	* 10.605	42.43	PK3	37.6	-25.4	54.63	-	-	74	-19.37	-	-	69	101	V
	* 10.6	30.26	ADR	37.6	-25.5	42.36	54	-11.64	-	-	-	-	69	101	V
6	* 15.891	45.3	PK3	40.6	-23.8	62.1	-	-	74	-11.9	-	-	207	134	V
	* 15.9	31.33	ADR	40.6	-23.9	48.03	54	-5.97	-	-	-	-	207	134	V
1	1.775	54.17	PK3	30	-37.8	46.37	-	-	-	-	68.2	-21.83	302	101	H
2	1.772	56.58	PK3	30	-37.8	48.78	-	-	-	-	68.2	-19.42	204	248	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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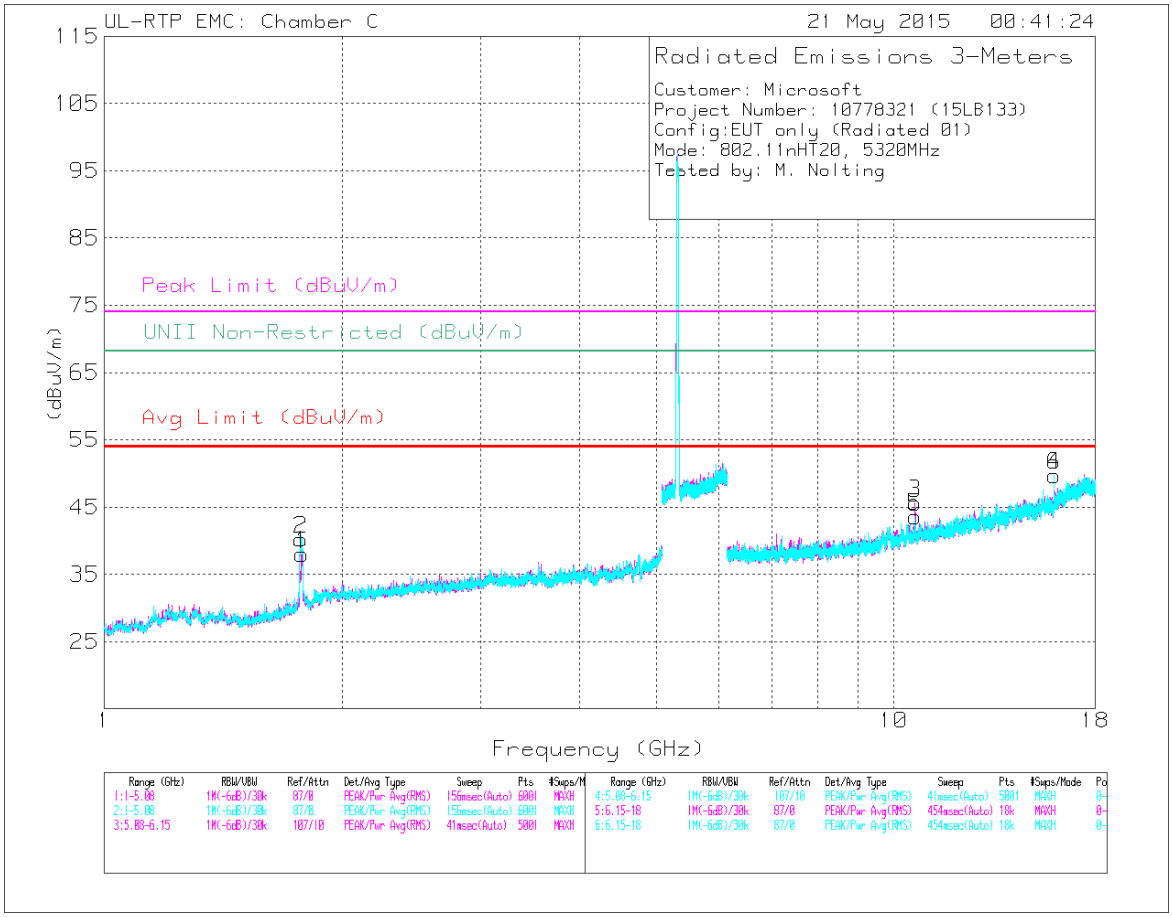
HIGH CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	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	* 10.636	44.7	PK3	37.7	-25.5	56.9	-	-	74	-17.1	-	-	167	187	H
	* 10.639	32.03	ADR	37.7	-25.5	44.23	54	-9.77	-	-	-	-	167	187	H
4	* 15.956	45.62	PK3	40.7	-23.8	62.52	-	-	74	-11.48	-	-	191	277	H
	* 15.957	31.33	ADR	40.7	-23.8	48.23	54	-5.77	-	-	-	-	191	277	H
5	* 10.644	42.05	PK3	37.7	-25.6	54.15	-	-	74	-19.85	-	-	75	108	V
	* 10.64	29.99	ADR	37.7	-25.5	42.19	54	-11.81	-	-	-	-	75	108	V
6	* 15.951	43.66	PK3	40.7	-23.9	60.46	-	-	74	-13.54	-	-	207	129	V
	* 15.958	30.52	ADR	40.7	-23.8	47.42	54	-6.58	-	-	-	-	207	129	V
2	1.776	57.51	PK3	30	-37.8	49.71	-	-	-	-	68.2	-18.49	203	248	V
1	1.778	54.5	PK3	30	-37.8	46.7	-	-	-	-	68.2	-21.5	302	102	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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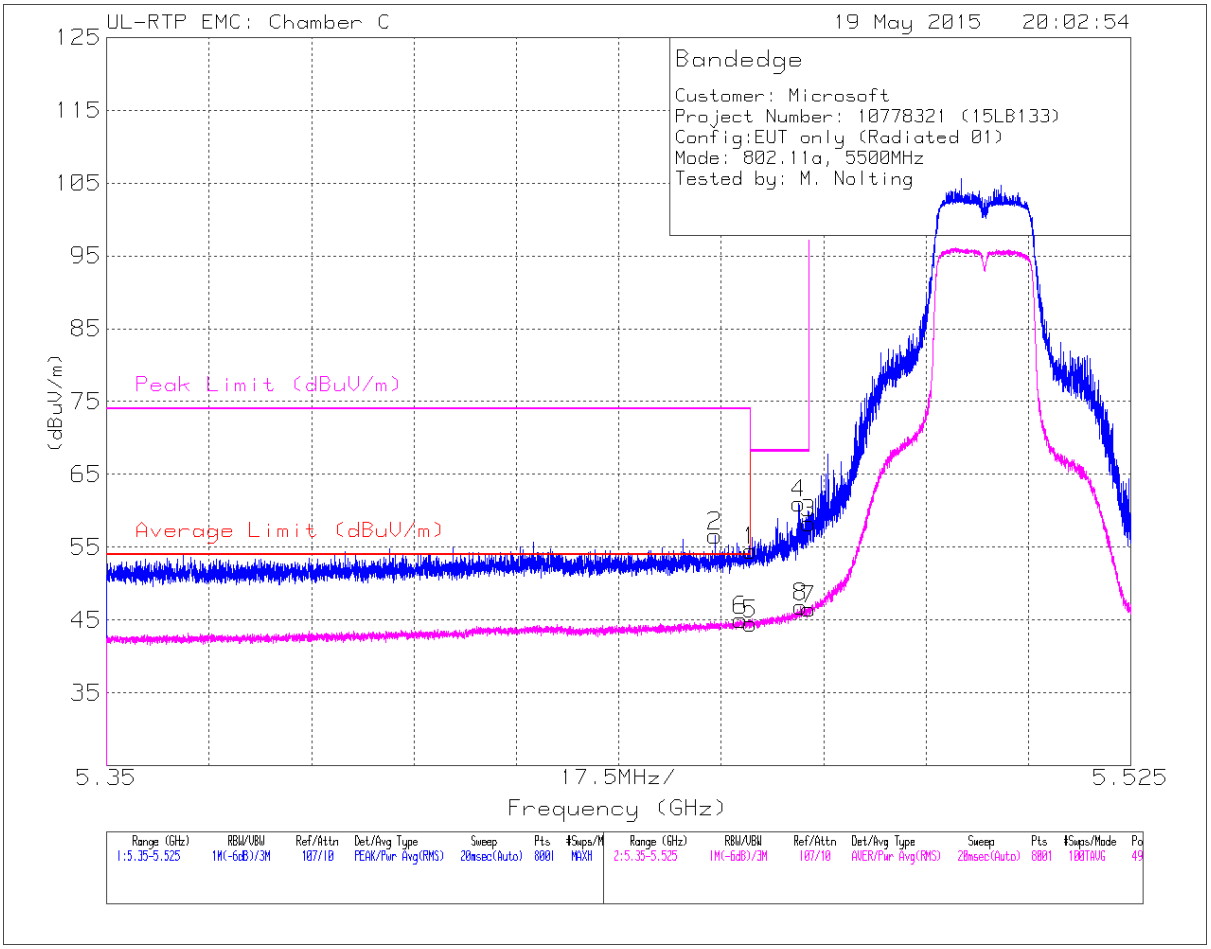
9.7. TX ABOVE 1 GHz 802.11a MODE IN THE 5.6 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 5.454	44.16	Pk	34.5	-22.1	56.56	-	-	74	-17.44	49	220	H
6	* 5.458	32.59	RMS	34.5	-22.1	44.99	54	-9.01	-	-	49	220	H
1	* 5.46	42.12	Pk	34.5	-22.1	54.52	-	-	74	-19.48	49	220	H
5	* 5.46	32.09	RMS	34.5	-22.1	44.49	54	-9.51	-	-	49	220	H
4	5.468	48.61	Pk	34.5	-22.1	61.01	-	-	68.2	-7.19	49	220	H
8	5.469	34.41	RMS	34.5	-22.1	46.81	-	-	-	-	49	220	H
3	5.47	45.9	Pk	34.5	-22.1	58.3	-	-	68.2	-9.9	49	220	H
7	5.47	34.1	RMS	34.5	-22.1	46.5	-	-	-	-	49	220	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
RMS - RMS detection

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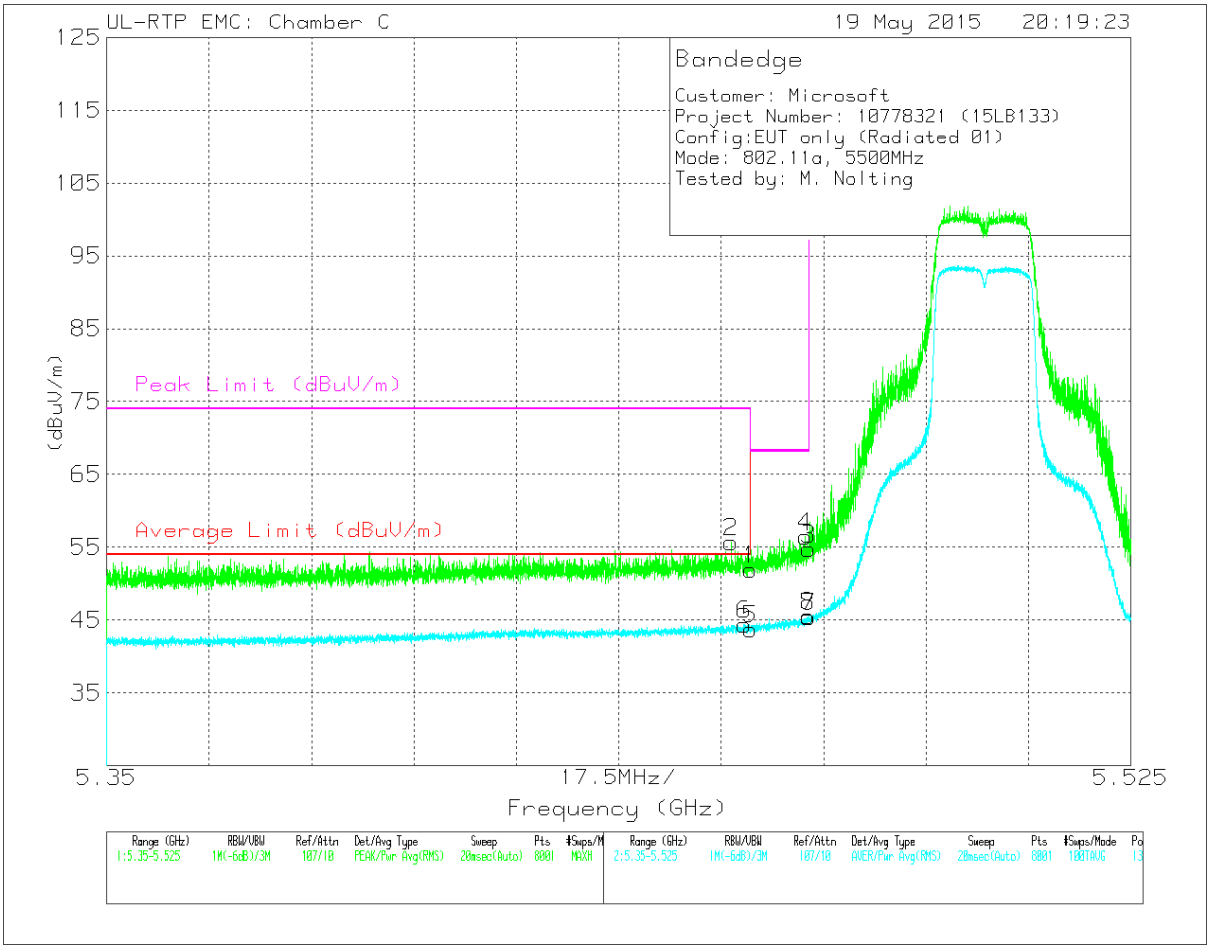
VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 5.457	43.29	Pk	34.5	-22.1	55.69	-	-	74	-18.31	138	172	V
6	* 5.459	32	RMS	34.5	-22.1	44.4	54	-9.6	-	-	138	172	V
1	* 5.46	39.51	Pk	34.5	-22.1	51.91	-	-	74	-22.09	138	172	V
5	* 5.46	31.36	RMS	34.5	-22.1	43.76	54	-10.24	-	-	138	172	V
4	5.469	44.03	Pk	34.5	-22.1	56.43	-	-	68.2	-11.77	138	172	V
3	5.47	42.34	Pk	34.5	-22.1	54.74	-	-	68.2	-13.46	138	172	V
7	5.47	33.04	RMS	34.5	-22.1	45.44	-	-	-	-	138	172	V
8	5.47	33.13	RMS	34.5	-22.1	45.53	-	-	-	-	138	172	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
RMS - RMS detection

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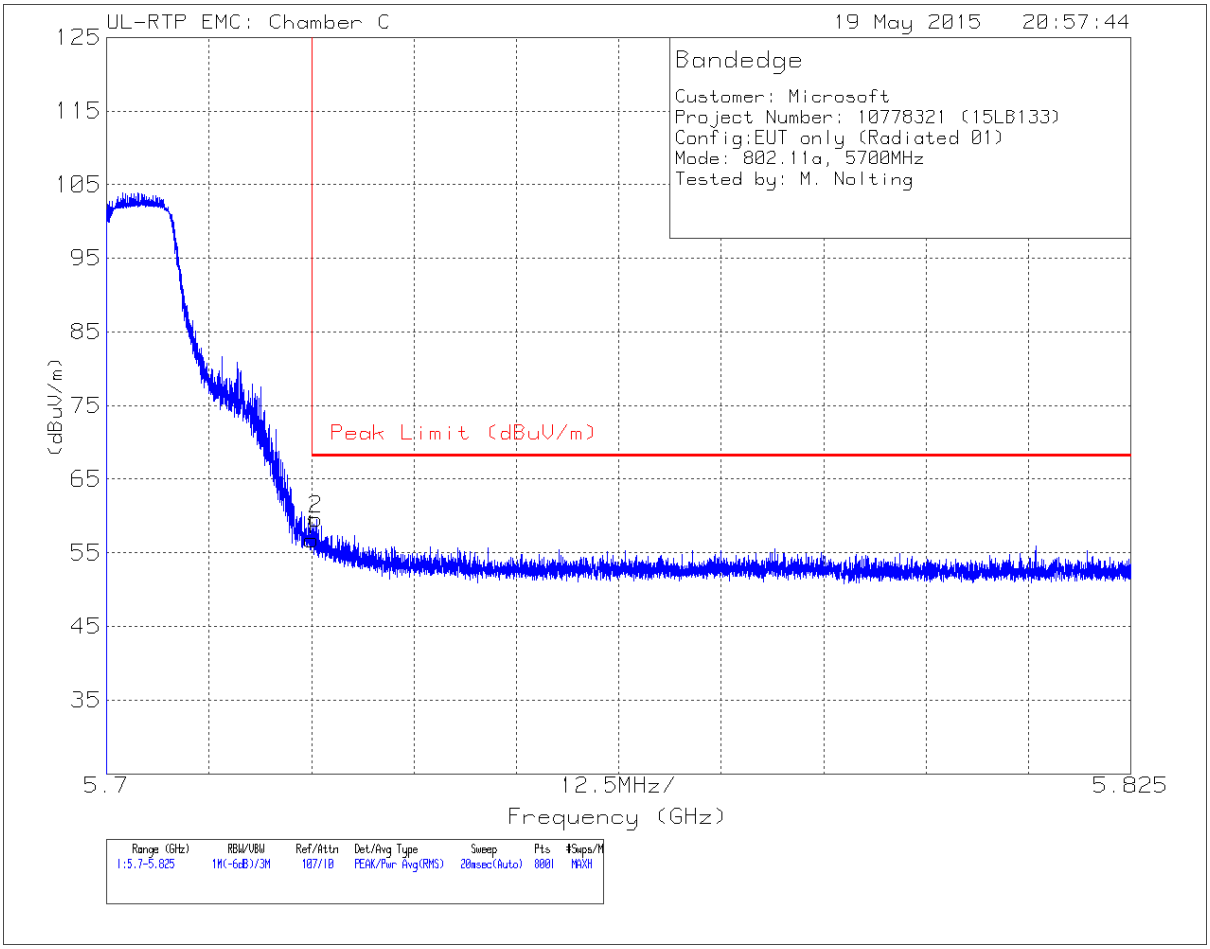
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	43.98	Pk	34.6	-21.8	56.78	68.2	-11.42	45	222	H
2	5.726	46.79	Pk	34.6	-21.8	59.59	68.2	-8.61	45	222	H

Pk - Peak detector

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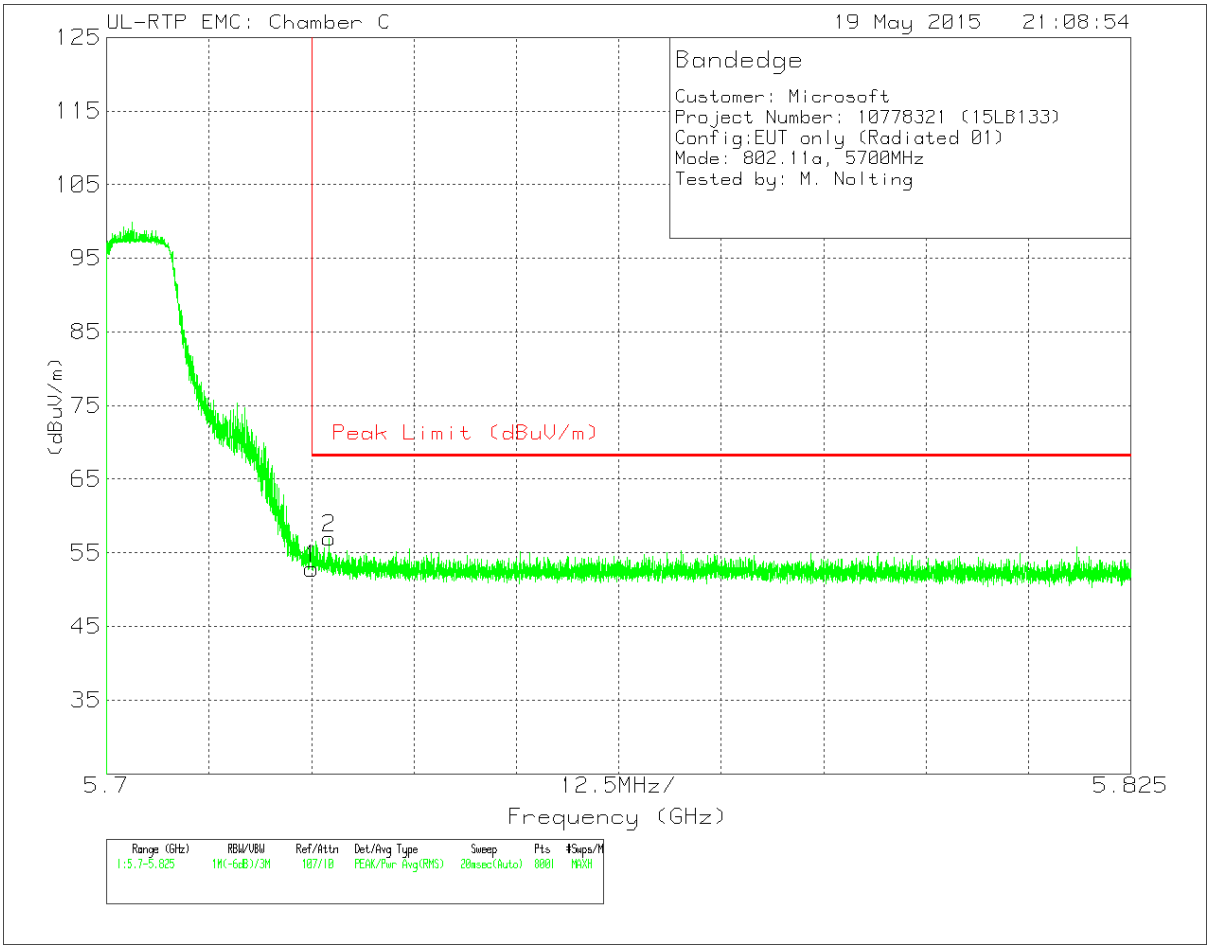
VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	40.03	Pk	34.6	-21.8	52.83	68.2	-15.37	138	171	V
2	5.727	44.19	Pk	34.6	-21.8	56.99	68.2	-11.21	138	171	V

Pk - Peak detector

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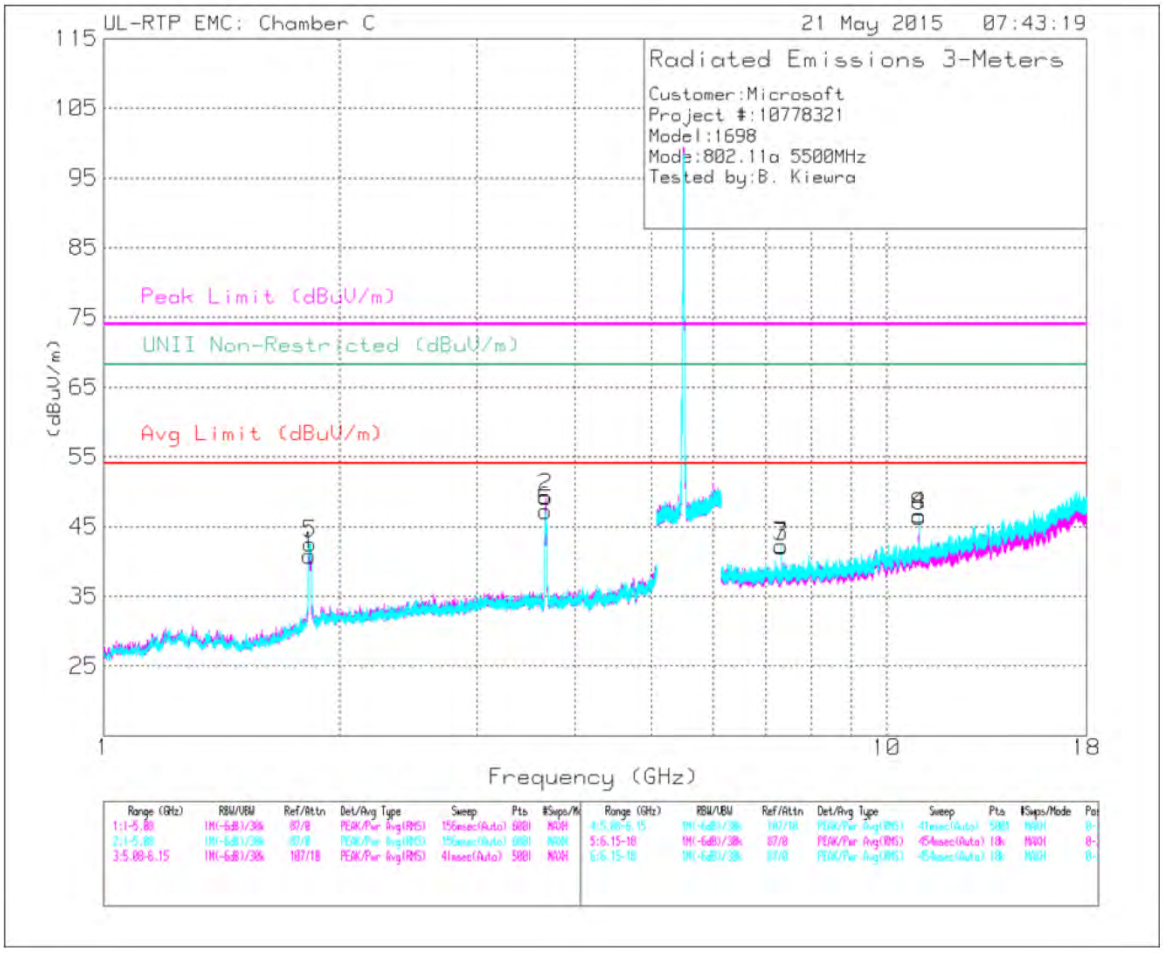
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl /Fltr/Pad	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	1.84	57.07	PK3	30.8	-37.6	50.27	-	-	74	-23.73	68.2	-17.93	167	174	H
2	* 3.666	59.83	PK3	33.2	-34.9	58.13	-	-	74	-15.87	68.2	-10.07	223	164	H
	* 3.667	47.7	ADR	33.2	-34.9	46	54	-8	-	-	-	-	223	164	H
3	* 7.333	42.74	PK3	35.7	-28.4	50.04	-	-	74	-23.96	68.2	-18.16	53	277	H
	* 7.333	34.1	ADR	35.7	-28.4	41.4	54	-12.6	-	-	-	-	53	277	H
4	* 11.003	41.36	PK3	37.7	-24.7	54.36	-	-	74	-19.64	68.2	-13.84	204	205	H
	* 10.999	29.82	ADR	37.7	-24.7	42.82	54	-11.18	-	-	-	-	204	205	H
5	1.827	58.45	PK3	30.6	-37.6	51.45	-	-	74	-22.55	68.2	-16.75	21	249	V
6	* 3.672	58.2	PK3	33.2	-34.8	56.6	-	-	74	-17.4	68.2	-11.6	136	231	V
	* 3.667	46.48	ADR	33.2	-34.9	44.78	54	-9.22	-	-	-	-	136	231	V
7	* 7.333	42.74	PK3	35.7	-28.4	50.04	-	-	74	-23.96	68.2	-18.16	32	194	V
	* 7.333	34.21	ADR	35.7	-28.4	41.51	54	-12.49	-	-	-	-	32	194	V
8	* 10.999	42.17	PK3	37.7	-24.6	55.27	-	-	74	-18.73	68.2	-12.93	76	121	V
	* 11	29.83	ADR	37.7	-24.7	42.83	54	-11.17	-	-	-	-	76	121	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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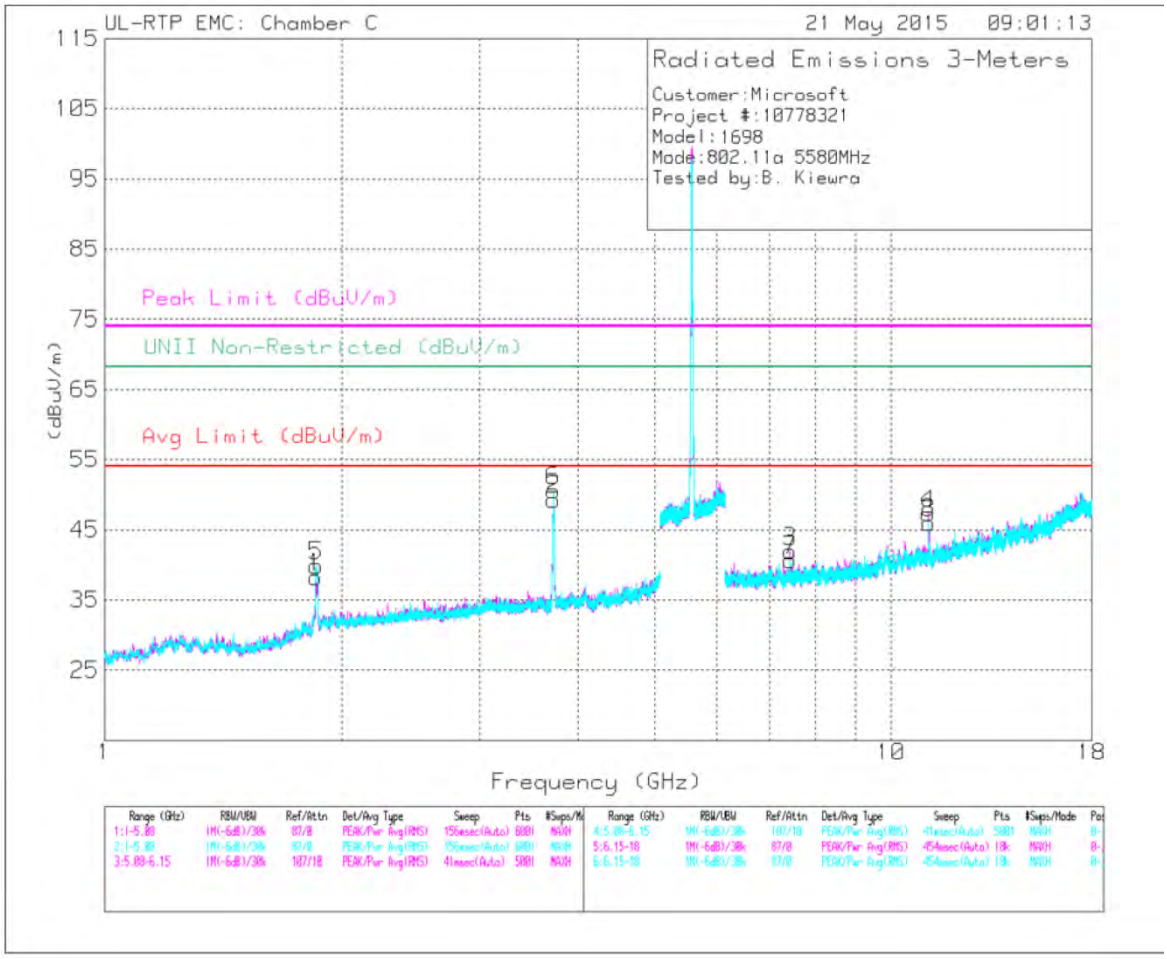
MID CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	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	1.857	54.88	PK3	31	-37.6	48.28	-	-	74	-25.72	68.2	-19.92	103	335	H
2	* 3.72	61.22	PK3	33.3	-34.3	60.22	-	-	74	-13.78	68.2	-7.98	221	187	H
	* 3.72	49.45	ADR	33.3	-34.3	48.45	54	-5.55	-	-	-	-	221	187	H
3	* 7.44	41.72	PK3	35.7	-27.7	49.72	-	-	74	-24.28	68.2	-18.48	64	204	H
	* 7.44	32.85	ADR	35.7	-27.7	40.85	54	-13.15	-	-	-	-	64	204	H
4	* 11.159	44.81	PK3	37.8	-25.1	57.51	-	-	74	-16.49	68.2	-10.69	172	172	H
	* 11.16	31.65	ADR	37.8	-25.1	44.35	54	-9.65	-	-	-	-	172	172	H
5	1.858	57.86	PK3	31	-37.6	51.26	-	-	74	-22.74	68.2	-16.94	18	285	V
6	* 3.72	61.21	PK3	33.3	-34.3	60.21	-	-	74	-13.79	68.2	-7.99	141	233	V
	* 3.72	48.53	ADR	33.3	-34.3	47.53	54	-6.47	-	-	-	-	141	233	V
7	* 7.44	41.43	PK3	35.7	-27.7	49.43	-	-	74	-24.57	68.2	-18.77	29	170	V
	* 7.44	31.72	ADR	35.7	-27.7	39.72	54	-14.28	-	-	-	-	29	170	V
8	* 11.158	43.12	PK3	37.8	-25.1	55.82	-	-	74	-18.18	68.2	-12.38	72	102	V
	* 11.16	30.96	ADR	37.8	-25.1	43.66	54	-10.34	-	-	-	-	72	102	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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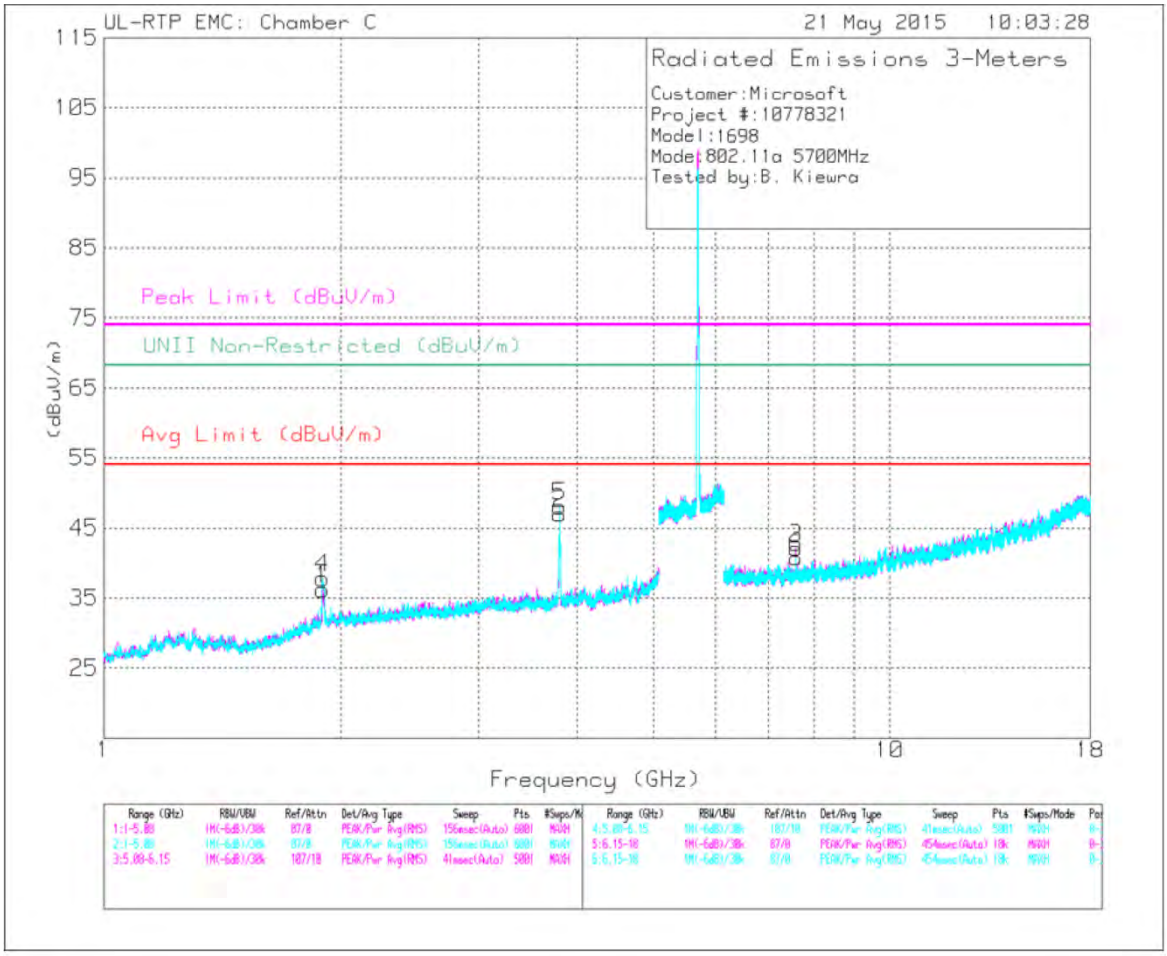
HIGH CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl /Fltr/Pad	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	1.896	51.29	PK3	31.5	-37.6	45.19	-	-	74	-28.81	68.2	-23.01	170	197	H
2	* 3.8	57.63	PK3	33.4	-33.9	57.13	-	-	74	-16.87	68.2	-11.07	226	156	H
	* 3.8	47.29	ADR	33.4	-33.9	46.79	54	-7.21	-	-	-	-	226	156	H
3	* 7.6	42.01	PK3	35.8	-27	50.81	-	-	74	-23.19	68.2	-17.39	54	184	H
	* 7.6	32.91	ADR	35.8	-27	41.71	54	-12.29	-	-	-	-	54	184	H
4	1.896	53.19	PK3	31.5	-37.6	47.09	-	-	74	-26.91	68.2	-21.11	16	243	V
5	* 3.8	57.47	PK3	33.4	-33.9	56.97	-	-	74	-17.03	68.2	-11.23	154	251	V
	* 3.8	46.68	ADR	33.4	-33.9	46.18	54	-7.82	-	-	-	-	154	251	V
6	* 7.6	40.3	PK3	35.8	-27	49.1	-	-	74	-24.9	68.2	-19.1	255	253	V
	* 7.6	30.12	ADR	35.8	-27	38.92	54	-15.08	-	-	-	-	255	253	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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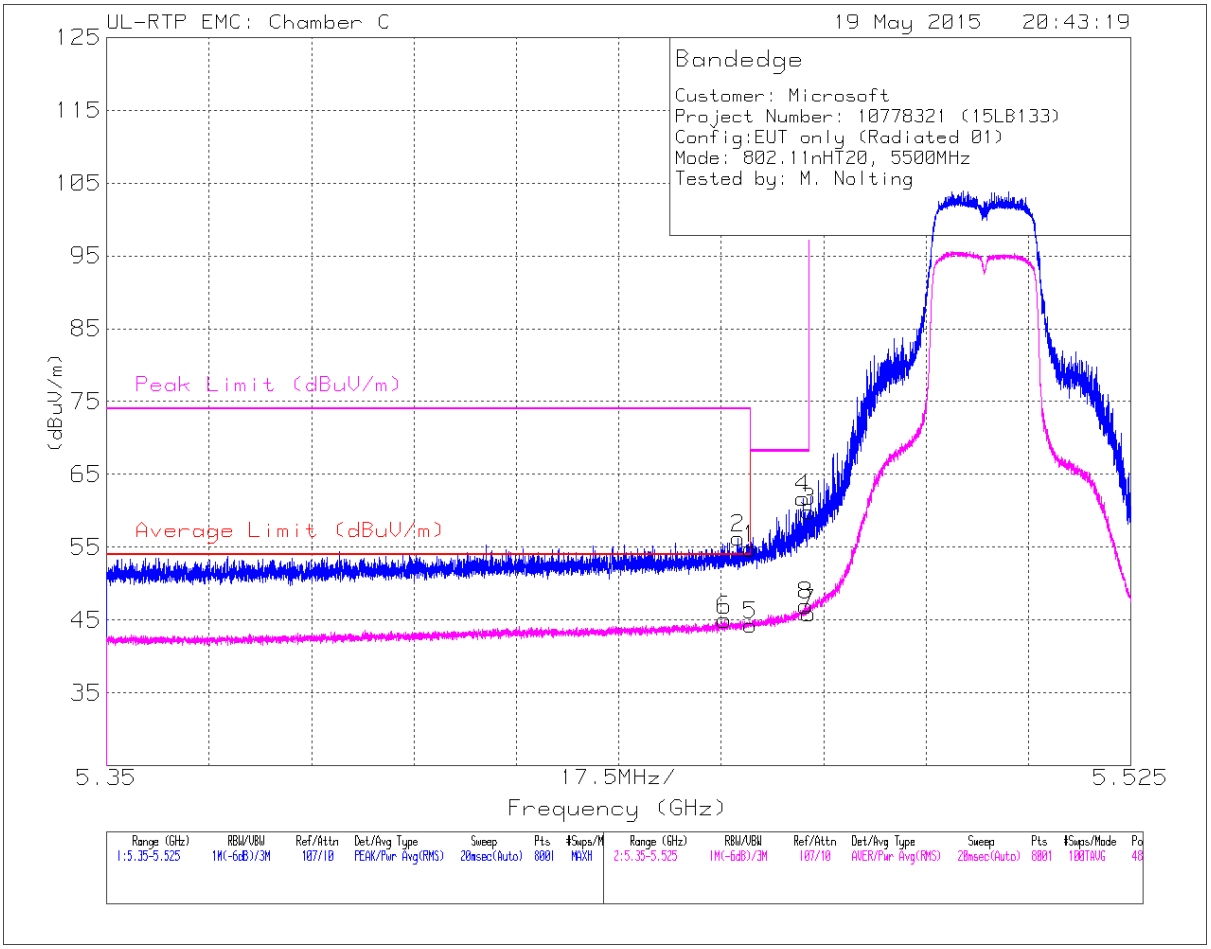
9.8. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.6 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	* 5.456	32.6	RMS	34.5	-22.1	45	54	-9	-	-	48	221	H
2	* 5.458	43.86	Pk	34.5	-22.1	56.26	-	-	74	-17.74	48	221	H
1	* 5.46	42.39	Pk	34.5	-22.1	54.79	-	-	74	-19.21	48	221	H
5	* 5.46	31.91	RMS	34.5	-22.1	44.31	54	-9.69	-	-	48	221	H
4	5.469	49.3	Pk	34.5	-22.1	61.7	-	-	68.2	-6.5	48	221	H
8	5.469	34.59	RMS	34.5	-22.1	46.99	-	-	-	-	48	221	H
3	5.47	47.49	Pk	34.5	-22.1	59.89	-	-	68.2	-8.31	48	221	H
7	5.47	33.5	RMS	34.5	-22.1	45.9	-	-	-	-	48	221	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
RMS - RMS detection

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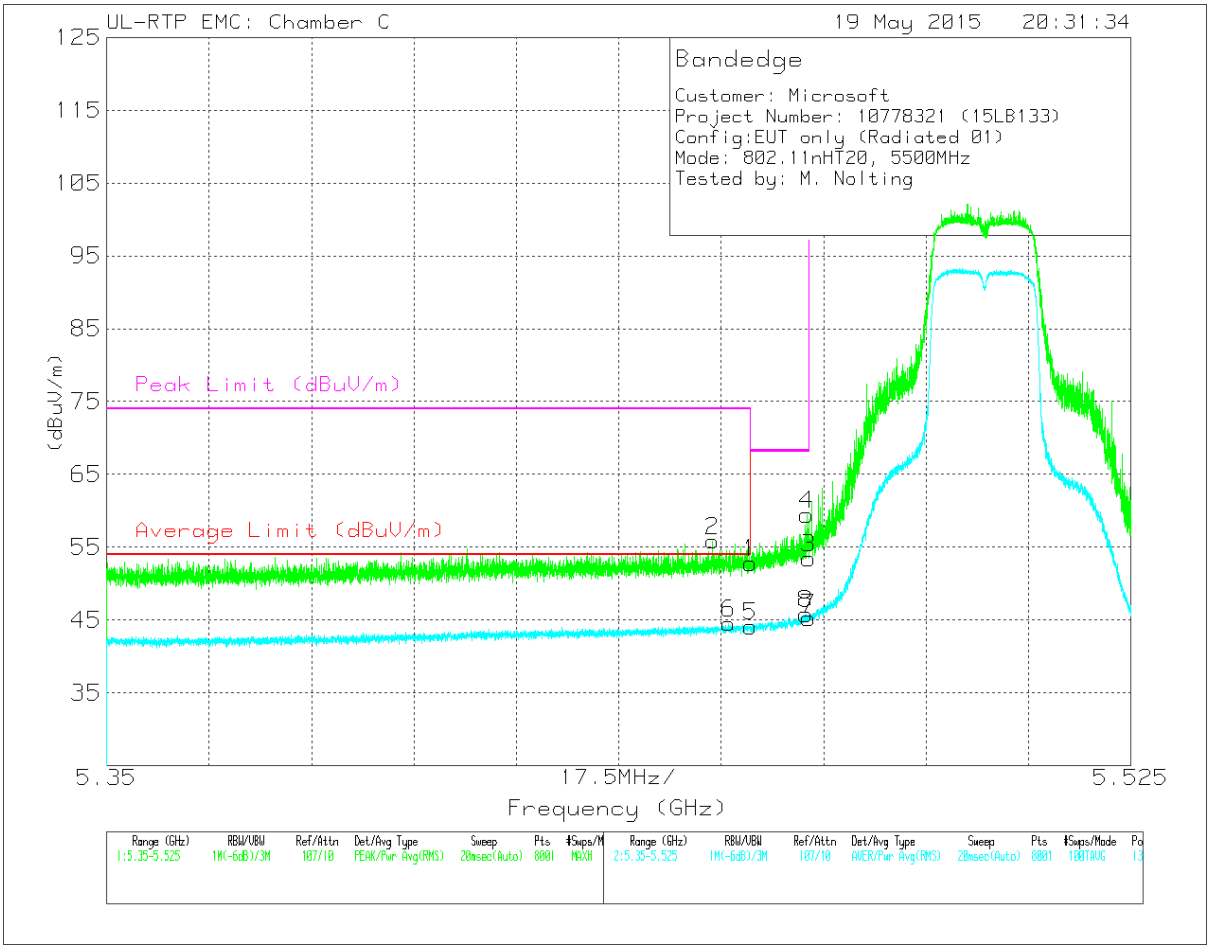
VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 5.454	43.48	Pk	34.5	-22.1	55.88	-	-	74	-18.12	138	172	V
6	* 5.456	32.15	RMS	34.5	-22.1	44.55	54	-9.45	-	-	138	172	V
1	* 5.46	40.46	Pk	34.5	-22.1	52.86	-	-	74	-21.14	138	172	V
5	* 5.46	31.74	RMS	34.5	-22.1	44.14	54	-9.86	-	-	138	172	V
8	5.469	33.44	RMS	34.5	-22.1	45.84	-	-	-	-	138	172	V
3	5.47	41.1	Pk	34.5	-22.1	53.5	-	-	68.2	-14.7	138	172	V
4	5.47	47.08	Pk	34.5	-22.1	59.48	-	-	68.2	-8.72	138	172	V
7	5.47	32.85	RMS	34.5	-22.1	45.25	-	-	-	-	138	172	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
RMS - RMS detection

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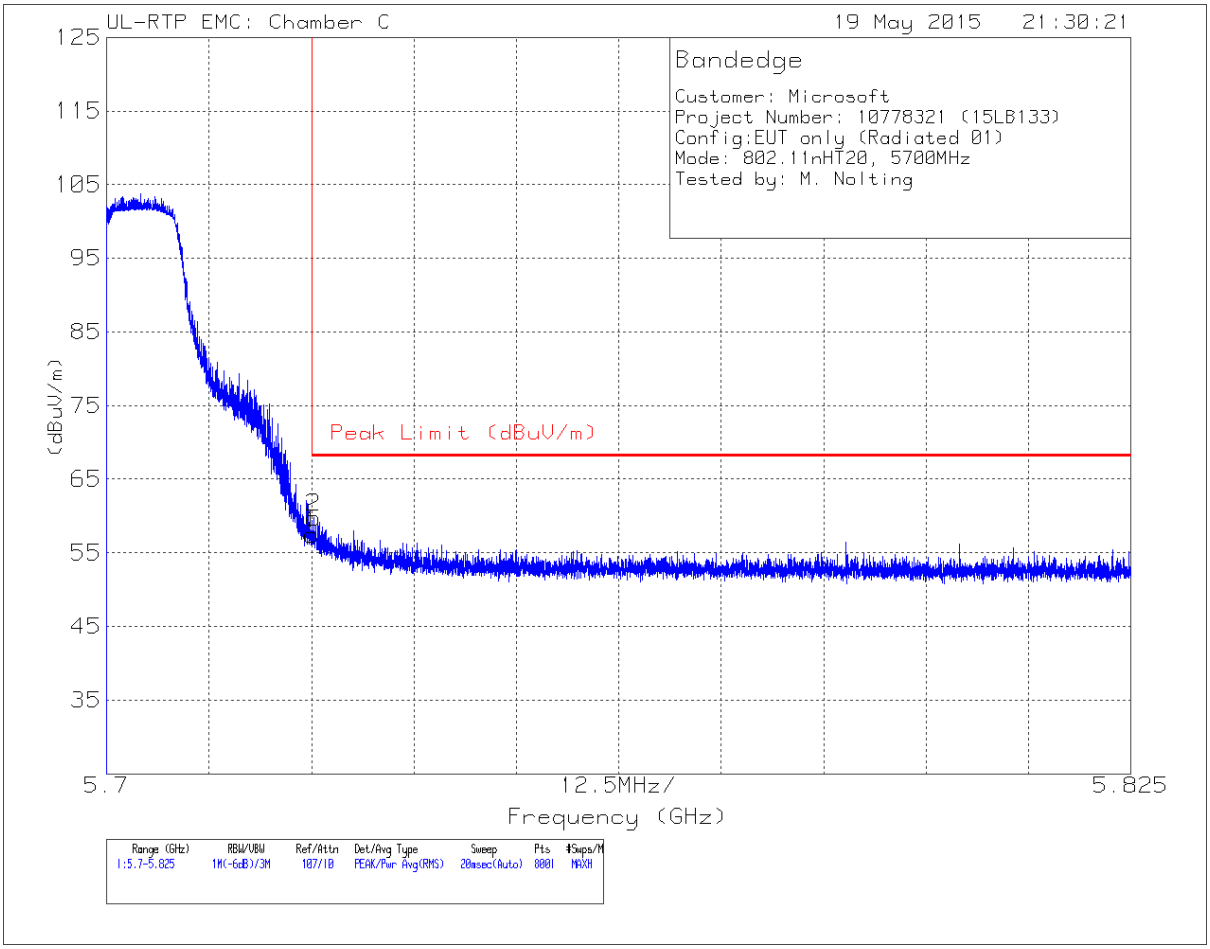
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Flt r/Pad	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	44.67	Pk	34.6	-21.8	57.47	68.2	-10.73	49	224	H
2	5.725	46.97	Pk	34.6	-21.8	59.77	68.2	-8.43	49	224	H

Pk - Peak detector

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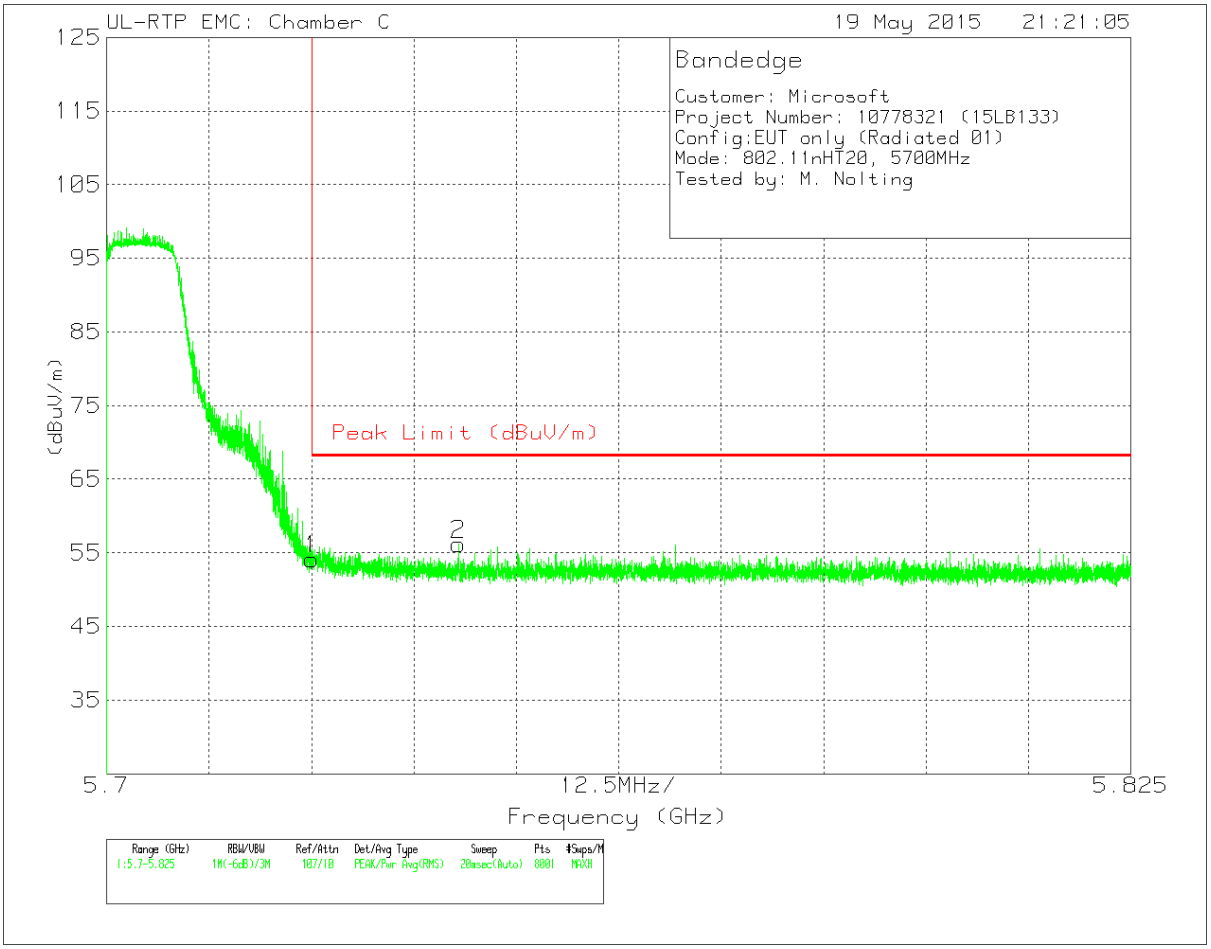
VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Flt r/Pad	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	41.35	Pk	34.6	-21.8	54.15	68.2	-14.05	140	170	V
2	5.743	43.25	Pk	34.6	-21.7	56.15	68.2	-12.05	140	170	V

Pk - Peak detector

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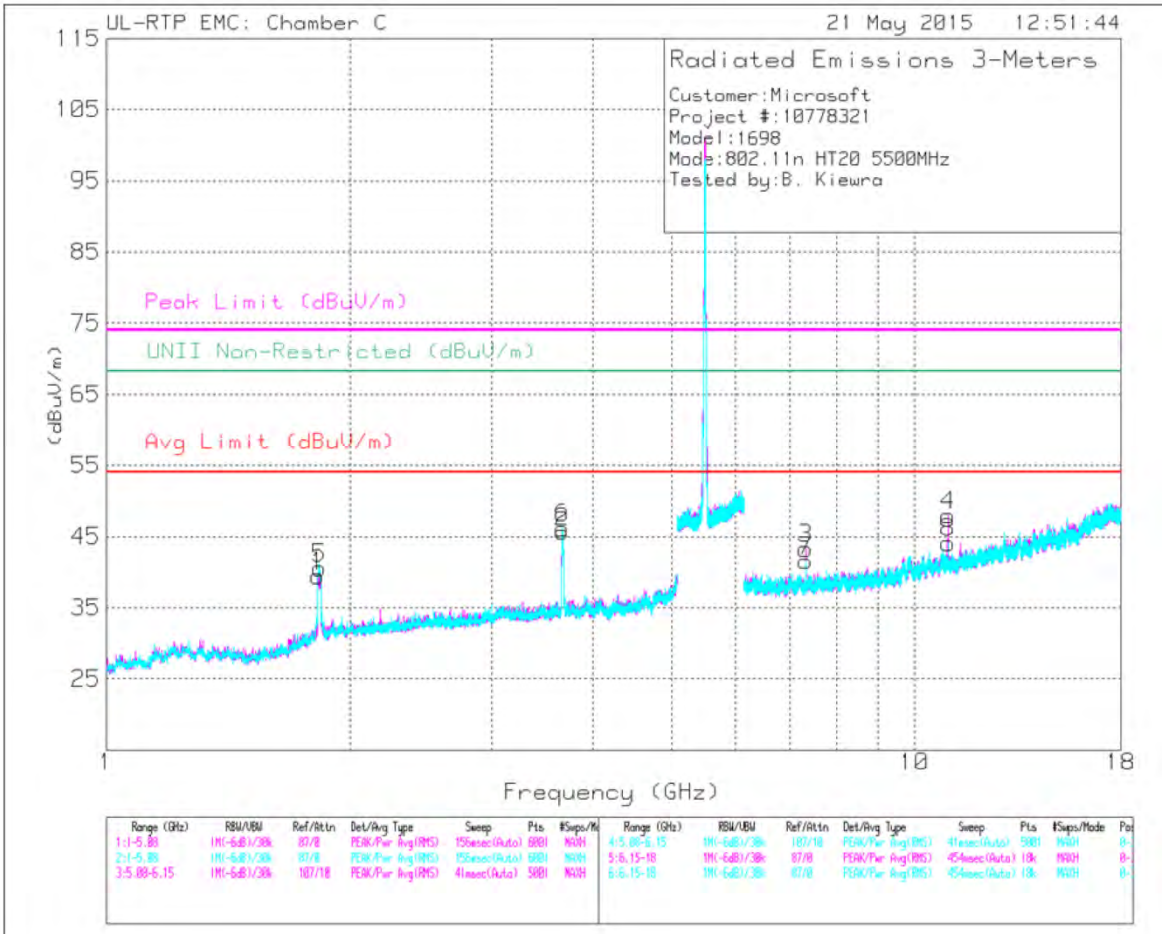
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/ Fltr/Pad	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	1.83	53.19	PK3	30.7	-37.6	46.29	-	-	74	-27.71	68.2	-21.91	0	149	H
2	* 3.67	58.47	PK3	33.2	-34.8	56.87	-	-	74	-17.13	68.2	-11.33	208	186	H
	* 3.67	46.08	ADR	33.2	-34.9	44.38	54	-9.62	-	-	-	-	208	186	H
3	* 7.33	43.49	PK3	35.7	-28.4	50.79	-	-	74	-23.21	68.2	-17.41	40	227	H
	* 7.33	34.79	ADR	35.7	-28.4	42.09	54	-11.91	-	-	-	-	40	227	H
4	* 11.00	44.78	PK3	37.7	-24.7	57.78	-	-	74	-16.22	68.2	-10.42	173	159	H
	* 11.00	32.76	ADR	37.7	-24.7	45.76	54	-8.24	-	-	-	-	173	159	H
5	1.83	57.24	PK3	30.6	-37.7	50.14	-	-	74	-23.86	68.2	-18.06	21	248	V
6	* 3.67	56.68	PK3	33.2	-34.9	54.98	-	-	74	-19.02	68.2	-13.22	149	226	V
	* 3.67	44.61	ADR	33.2	-34.9	42.91	54	-11.09	-	-	-	-	149	226	V
7	* 7.33	42.4	PK3	35.7	-28.4	49.70	-	-	74	-24.30	68.2	-18.50	34	102	V
	* 7.33	33.47	ADR	35.7	-28.4	40.77	54	-13.23	-	-	-	-	34	102	V
8	* 11.00	40.24	PK3	37.7	-24.7	53.24	-	-	74	-20.76	68.2	-14.96	71	127	V
	* 11.00	28.32	ADR	37.7	-24.7	41.32	54	-12.68	-	-	-	-	71	127	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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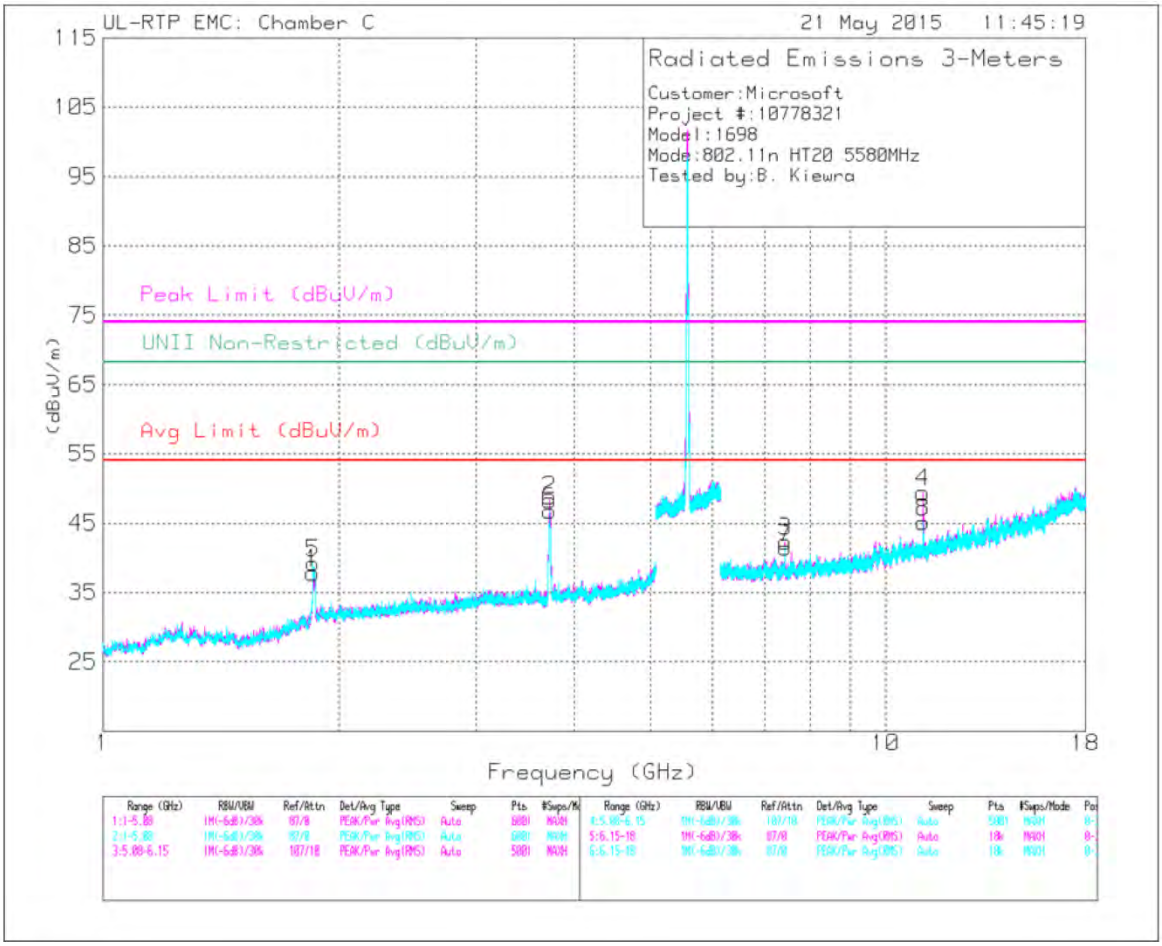
MID CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	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	* 3.72	60.71	PK3	33.3	-34.3	59.71	-	-	74	-14.29	68.2	-8.49	220	157	H
	* 3.72	48.21	ADR	33.3	-34.3	47.21	54	-6.79	-	-	-	-	220	157	H
6	* 3.72	58.68	PK3	33.3	-34.3	57.68	-	-	74	-16.32	68.2	-10.52	149	270	V
	* 3.72	46.68	ADR	33.3	-34.3	45.68	54	-8.32	-	-	-	-	149	270	V
3	* 7.44	42.62	PK3	35.7	-27.7	50.62	-	-	74	-23.38	68.2	-17.58	59	191	H
	* 7.44	34.08	ADR	35.7	-27.7	42.08	54	-11.92	-	-	-	-	59	191	H
4	* 11.156	44.91	PK3	37.8	-25.1	57.61	-	-	74	-16.39	68.2	-10.59	178	105	H
	* 11.16	33.68	ADR	37.8	-25.1	46.38	54	-7.62	-	-	-	-	178	105	H
7	* 7.44	41.79	PK3	35.7	-27.7	49.79	-	-	74	-24.21	68.2	-18.41	65	310	V
	* 7.44	31.55	ADR	35.7	-27.7	39.55	54	-14.45	-	-	-	-	65	310	V
8	* 11.16	41.87	PK3	37.8	-25.1	54.57	-	-	74	-19.43	68.2	-13.63	65	147	V
	* 11.161	29.33	ADR	37.8	-25.1	42.03	54	-11.97	-	-	-	-	65	147	V
1	1.855	53.78	PK3	31	-37.6	47.18	-	-	74	-26.82	68.2	-21.02	354	158	H
5	1.857	55.56	PK3	31	-37.6	48.96	-	-	74	-25.04	68.2	-19.24	214	195	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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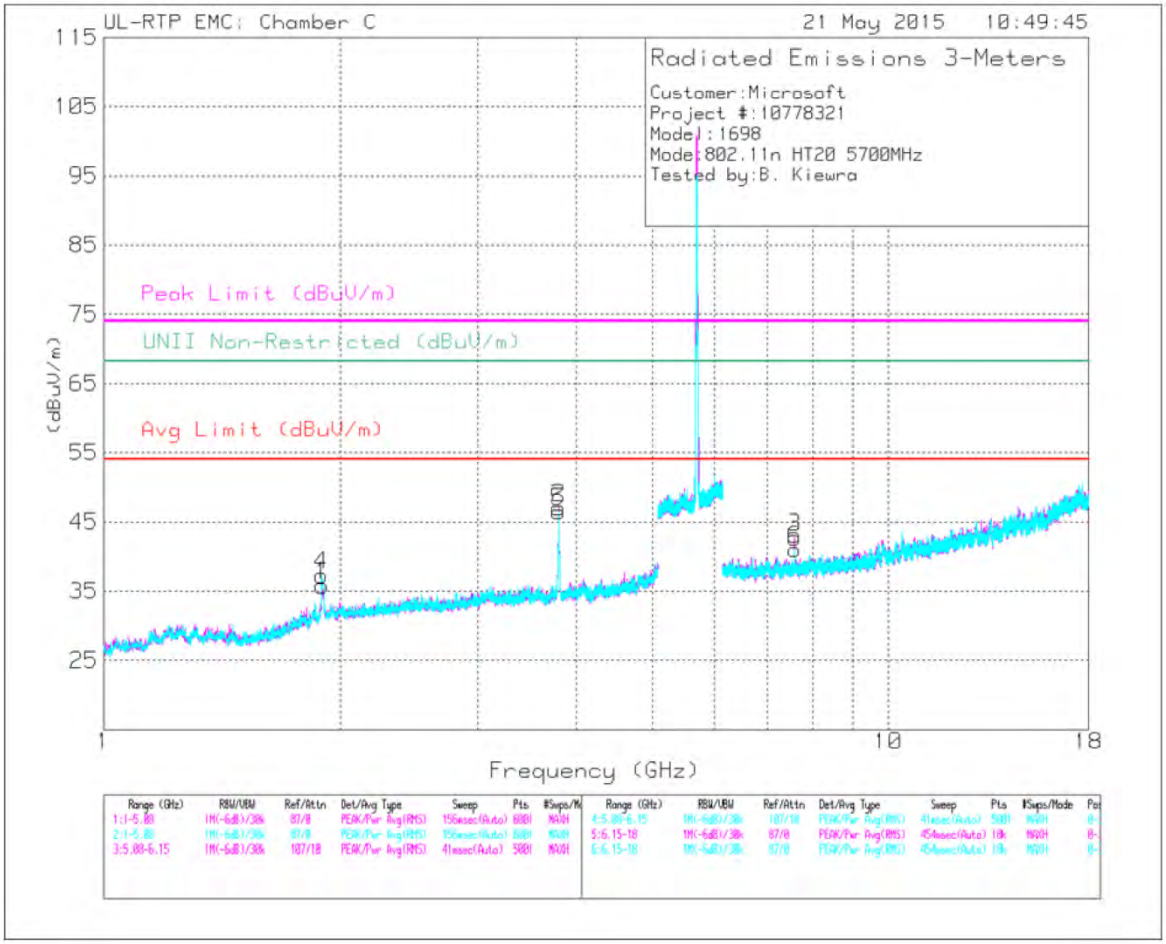
HIGH CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	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	1.894	52.04	PK3	31.5	-37.6	45.94	-	-	74	-28.06	68.2	-22.26	225	137	H
2	* 3.8	58.85	PK3	33.4	-33.9	58.35	-	-	74	-15.65	68.2	-9.85	222	178	H
	* 3.8	48.21	ADR	33.4	-33.9	47.71	54	-6.29	-	-	-	-	222	178	H
3	* 7.6	41.75	PK3	35.8	-27	50.55	-	-	74	-23.45	68.2	-17.65	53	211	H
	* 7.6	33.03	ADR	35.8	-27	41.83	54	-12.17	-	-	-	-	53	211	H
4	1.895	52.2	PK3	31.5	-37.6	46.1	-	-	74	-27.9	68.2	-22.1	22	277	V
5	* 3.8	56.54	PK3	33.4	-33.9	56.04	-	-	74	-17.96	68.2	-12.16	152	253	V
	* 3.8	46.13	ADR	33.4	-33.9	45.63	54	-8.37	-	-	-	-	152	253	V
6	* 7.6	40.61	PK3	35.8	-27	49.41	-	-	74	-24.59	68.2	-18.79	14	140	V
	* 7.6	30.03	ADR	35.8	-27	38.83	54	-15.17	-	-	-	-	14	140	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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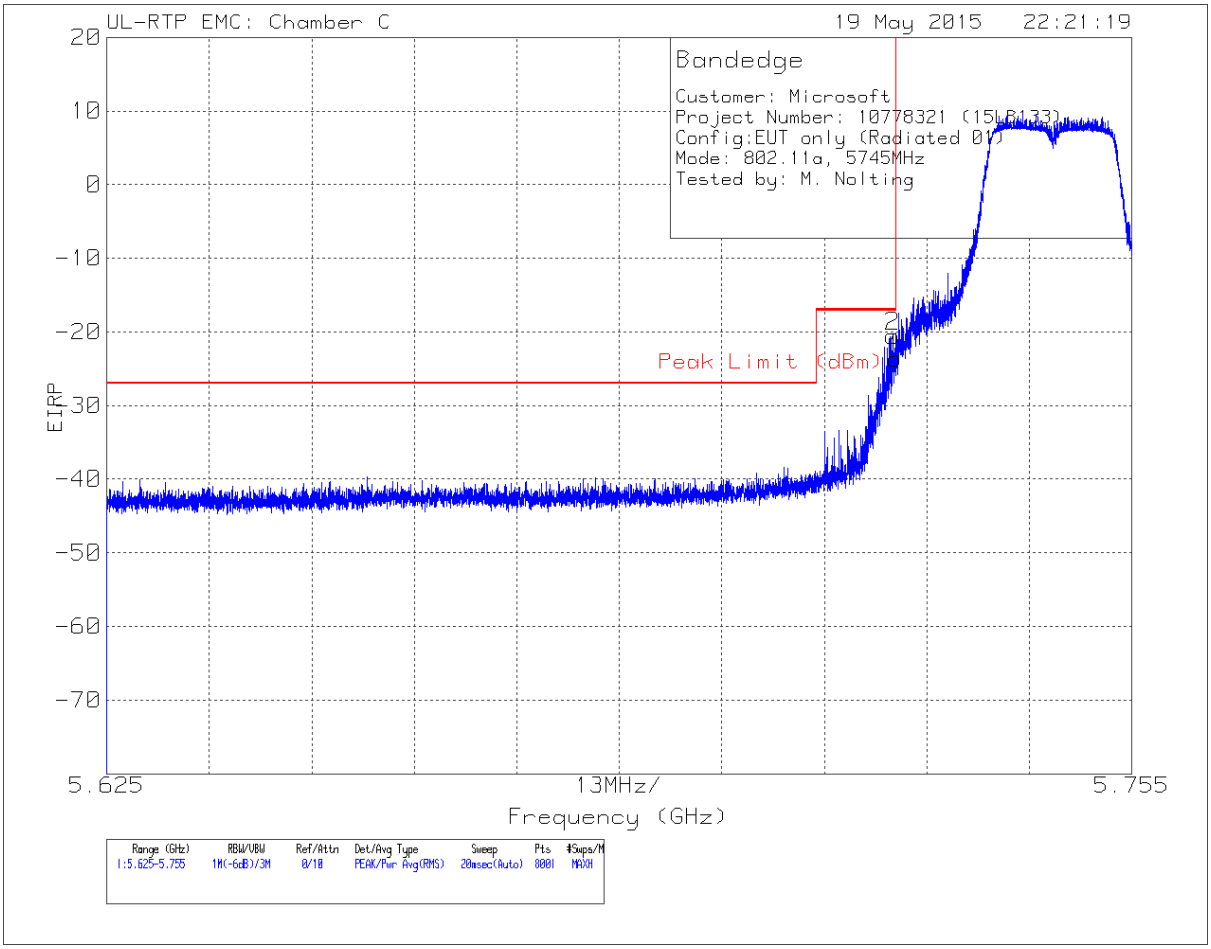
9.9. TX ABOVE 1 GHz 802.11a MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-48.22	Pk	34.6	-21.8	11.8	-23.62	-17	-6.62	47	232	H
2	5.725	-45.15	Pk	34.6	-21.8	11.8	-20.55	-17	-3.55	47	232	H

Pk - Peak detector

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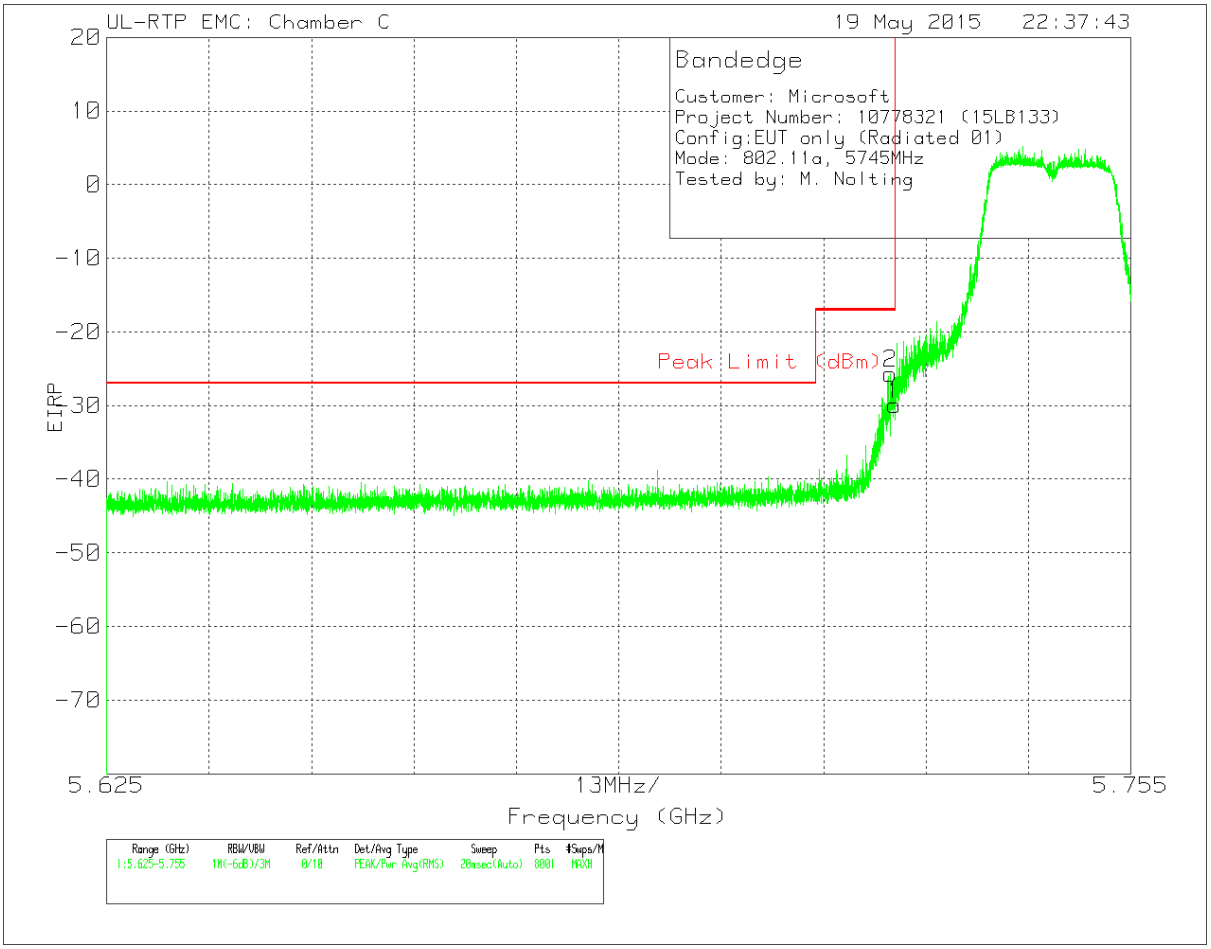
VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.724	-50.25	Pk	34.6	-21.8	11.8	-25.65	-17	-8.65	140	176	V
1	5.725	-54.52	Pk	34.6	-21.8	11.8	-29.92	-17	-12.92	140	176	V

Pk - Peak detector

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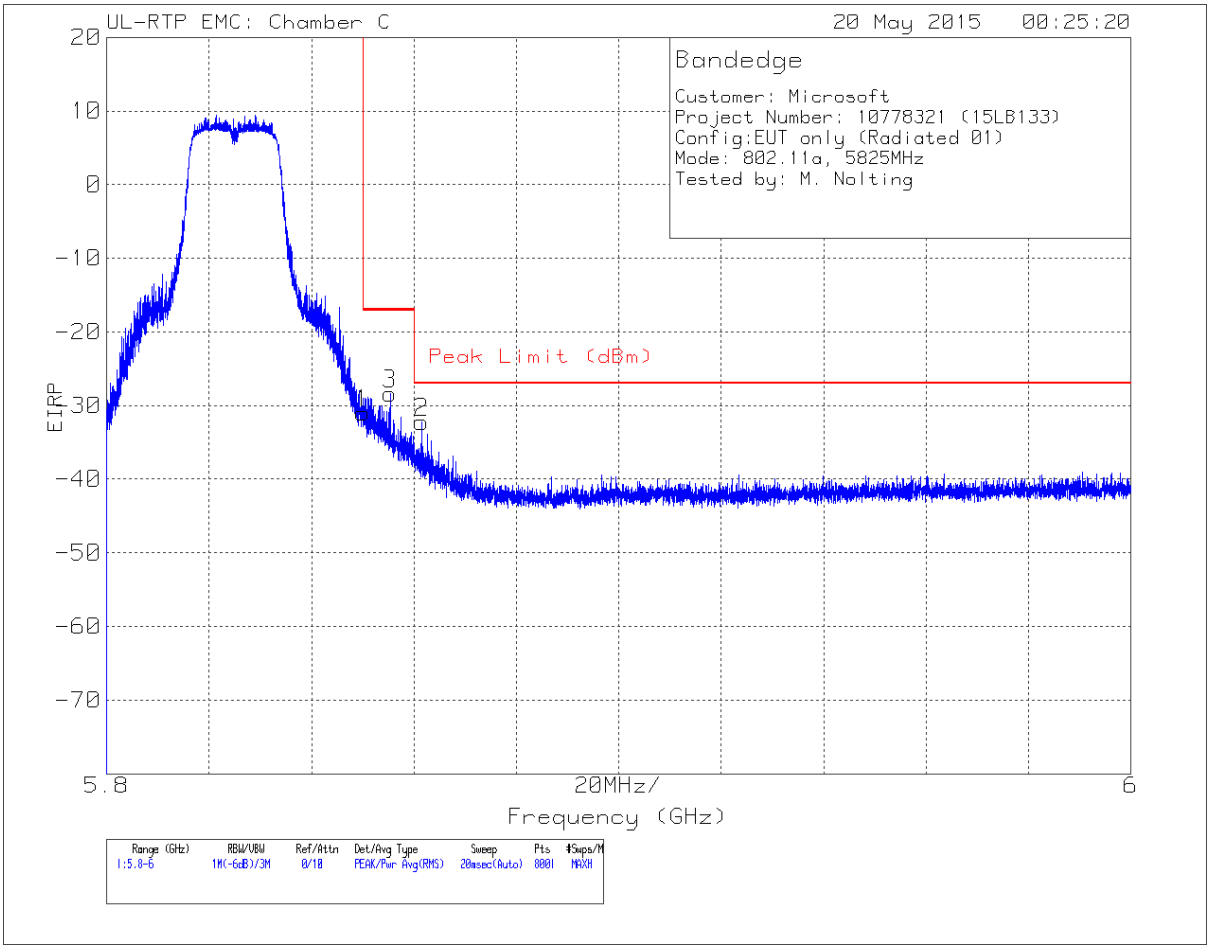
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-56.5	Pk	34.9	-21.2	11.8	-31	-17	-14	42	202	H
3	5.855	-53.92	Pk	34.9	-21.2	11.8	-28.42	-17	-11.42	42	202	H
2	5.861	-57.75	Pk	34.9	-21.2	11.8	-32.25	-27	-5.25	42	202	H

Pk - Peak detector

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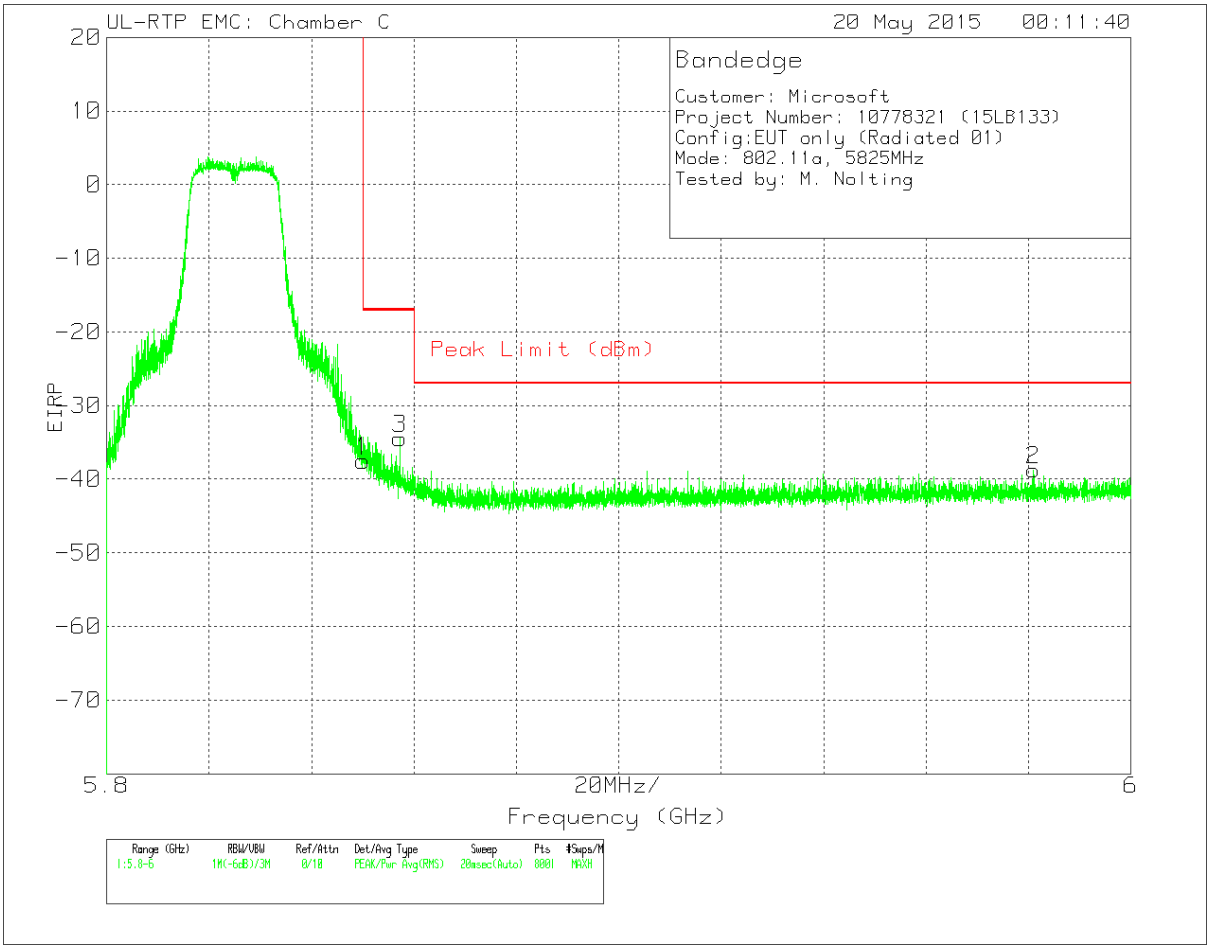
VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AT0062 (dB/m)	Amp/Cbl/Filtr/Pad	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-63.03	Pk	34.9	-21.2	11.8	-37.53	-17	-20.53	140	186	V
3	5.857	-59.97	Pk	34.9	-21.2	11.8	-34.47	-17	-17.47	140	186	V
2	5.981	-64.74	Pk	35.2	-21	11.8	-38.74	-27	-11.74	140	186	V

Pk - Peak detector

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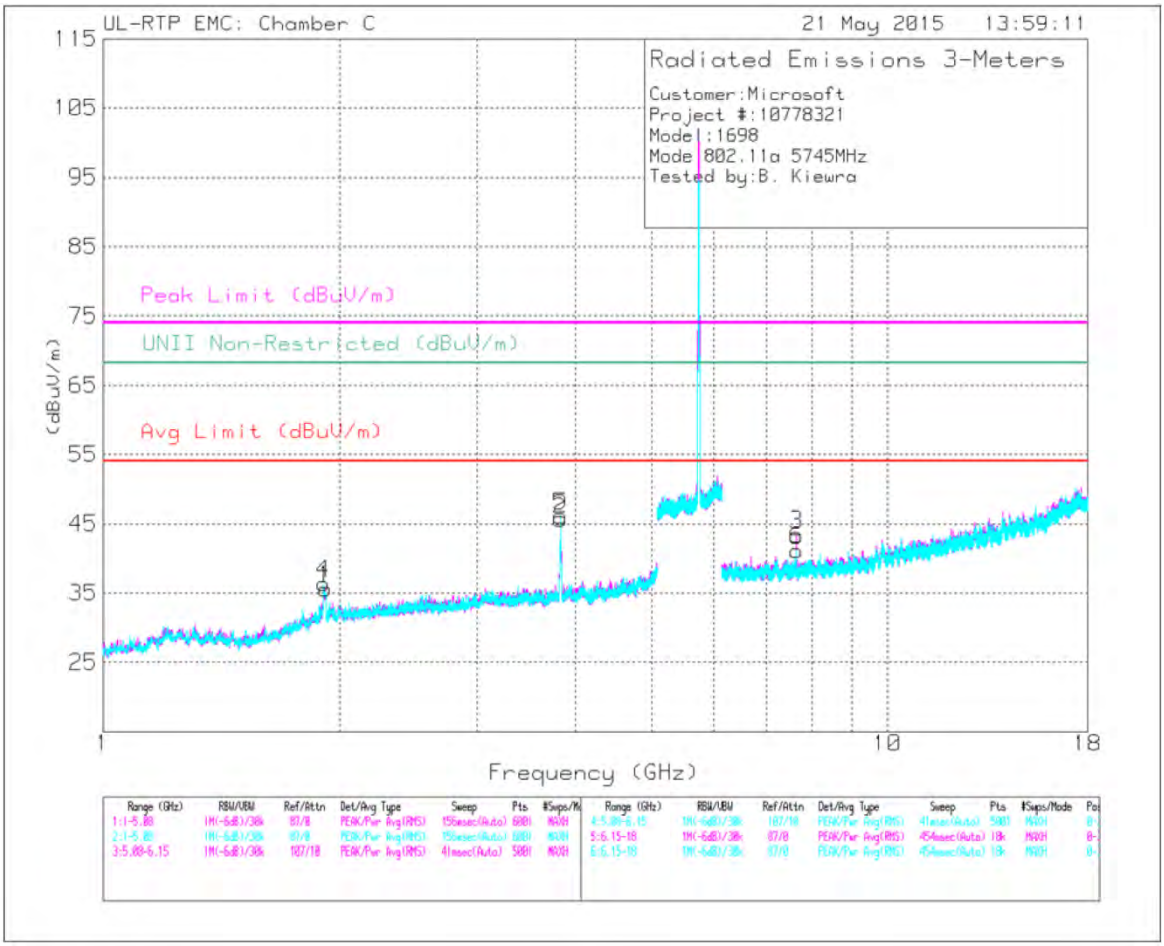
HARMONICS AND SPURIOUS EMISSIONS (1-18GHz)

LOW CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/ Fltr/Pad	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	1.913	50.38	PK3	31.5	-37.5	44.38	-	-	74	-29.62	68.2	-17.82	342	282	H
2	* 3.83	56.43	PK3	33.5	-34.4	55.53	-	-	74	-18.47	-	-	223	149	H
	* 3.83	46.75	ADR	33.5	-34.4	45.85	54	-8.15	-	-	-	-	223	149	H
3	* 7.66	42.67	PK3	35.8	-27.7	50.77	-	-	74	-23.23	-	-	57	185	H
	* 7.66	34.91	ADR	35.8	-27.7	43.01	54	-10.99	-	-	-	-	57	185	H
4	1.913	52.14	PK3	31.5	-37.5	46.14	-	-	74	-27.86	68.2	-22.06	26	179	V
5	* 3.83	55.77	PK3	33.5	-34.4	54.87	-	-	74	-19.13	-	-	151	289	V
	* 3.83	46.33	ADR	33.5	-34.4	45.43	54	-8.57	-	-	-	-	151	289	V
6	* 7.659	41.78	PK3	35.8	-27.7	49.88	-	-	74	-24.12	-	-	188	192	V
	* 7.66	32.23	ADR	35.8	-27.7	40.33	54	-13.67	-	-	-	-	188	192	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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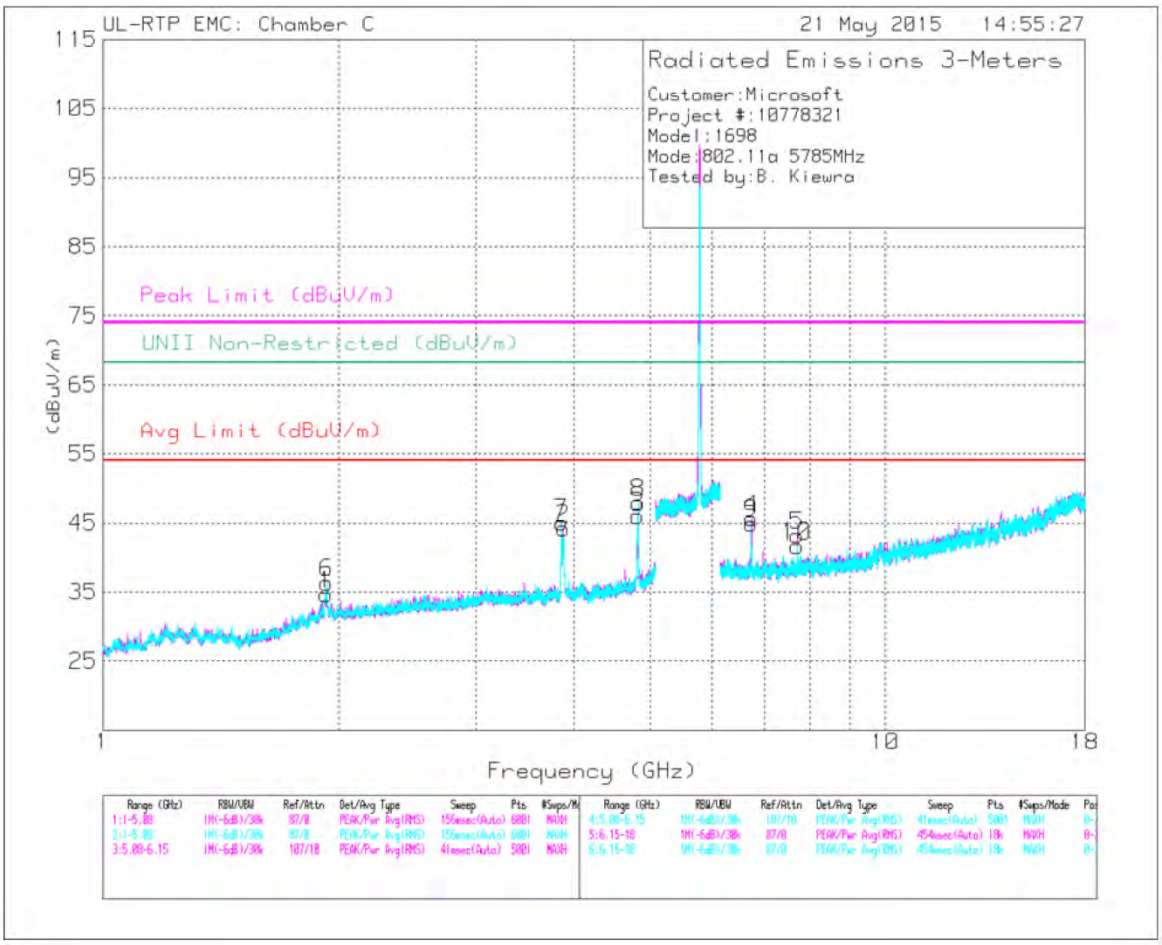
MID CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/ Fltr/Pad	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	1.93	49.92	PK3	31.5	-37.5	43.92	-	-	-	-	68.2	-24.28	349	288	H
2	* 3.877	60.89	PK3	33.6	-34.5	59.99	-	-	74	-14.01	-	-	0	235	H
	* 3.875	38.84	ADR	33.6	-34.6	37.84	54	-16.16	-	-	-	-	0	235	H
3	* 4.827	58.43	PK3	34.1	-32.2	60.33	-	-	74	-13.67	-	-	76	207	H
	* 4.825	37.63	ADR	34.1	-32.2	39.53	54	-14.47	-	-	-	-	76	207	H
4	6.736	54	PK3	35.7	-28.6	61.1	-	-	-	-	68.2	-7.1	47	277	H
5	* 7.713	42.69	PK3	35.8	-28	50.49	-	-	74	-23.51	-	-	43	206	H
	* 7.713	35.16	ADR	35.8	-28	42.96	54	-11.04	-	-	-	-	43	206	H
6	1.934	49.92	PK3	31.5	-37.5	43.92	-	-	-	-	68.2	-24.28	38	129	V
7	* 3.856	56.51	PK3	33.5	-34.7	55.31	-	-	74	-18.69	-	-	151	220	V
	* 3.857	45.85	ADR	33.5	-34.7	44.65	54	-9.35	-	-	-	-	151	220	V
8	* 4.828	60.11	PK3	34.1	-32.2	62.01	-	-	74	-11.99	-	-	105	140	V
	* 4.827	38.1	ADR	34.1	-32.2	40	54	-14	-	-	-	-	105	140	V
9	6.734	50.7	PK3	35.7	-28.6	57.8	-	-	-	-	68.2	-10.4	77	241	V
10	* 7.713	42.26	PK3	35.8	-28	50.06	-	-	74	-23.94	-	-	208	234	V
	* 7.713	33.39	ADR	35.8	-28	41.19	54	-12.81	-	-	-	-	208	234	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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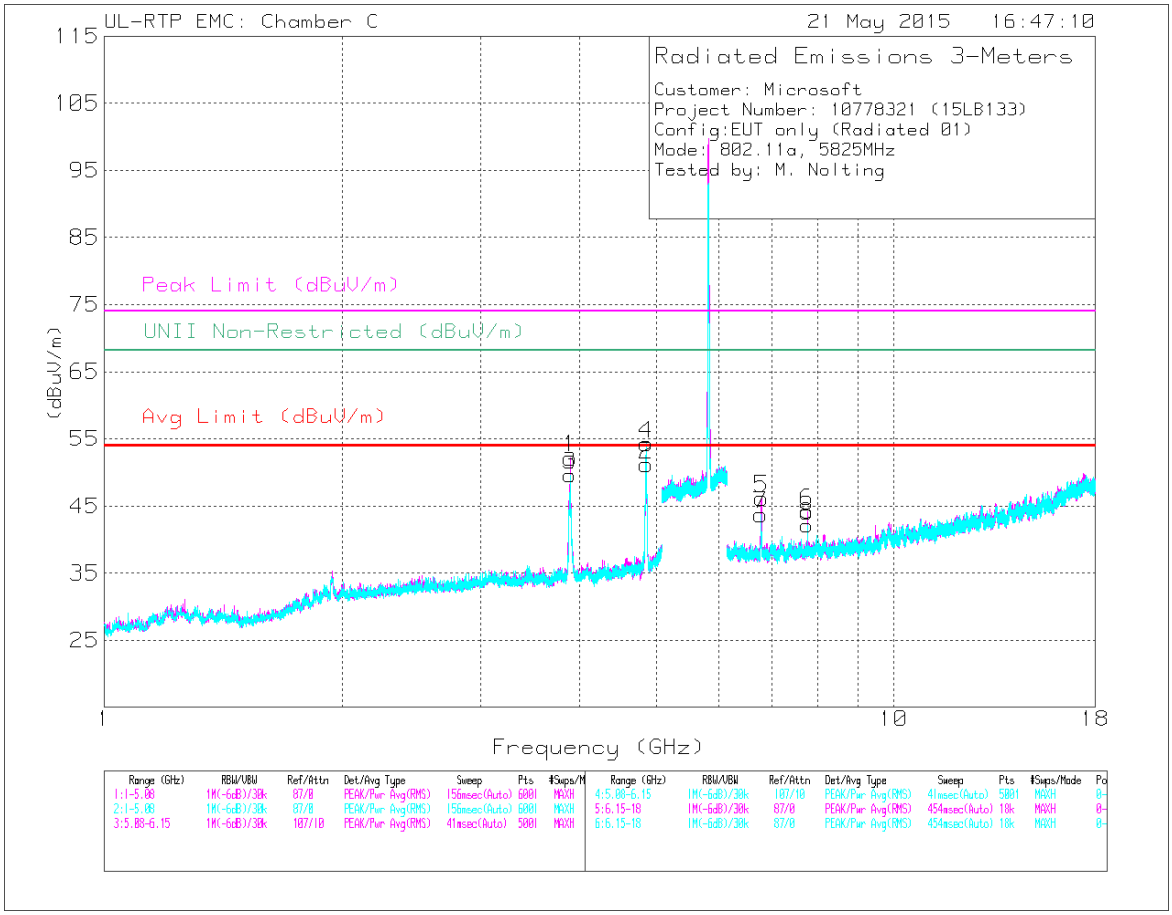
HIGH CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	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	* 3.891	64.51	PK3	33.6	-34.3	63.81	-	-	74	-10.19	-	-	218	196	H
	* 3.883	47.25	ADR	33.6	-34.5	46.35	54	-7.65	-	-	-	-	218	196	H
2	* 4.853	67.97	PK3	34.1	-32	70.07	-	-	74	-3.93	-	-	68	219	H
	* 4.857	43.74	ADR	34.1	-32	45.84	54	-8.16	-	-	-	-	68	219	H
3	* 3.887	63.56	PK3	33.6	-34.4	62.76	-	-	74	-11.24	-	-	165	236	V
	* 3.883	46.02	ADR	33.6	-34.5	45.12	54	-8.88	-	-	-	-	165	236	V
4	* 4.853	67.95	PK3	34.1	-32	70.05	-	-	74	-3.95	-	-	113	101	V
	* 4.855	44.01	ADR	34.1	-32	46.11	54	-7.89	-	-	-	-	113	101	V
7	6.784	52.54	PK3	35.6	-28.9	59.24	-	-	-	-	68.2	-8.96	214	261	V
5	6.785	54.53	PK3	35.6	-28.8	61.33	-	-	-	-	68.2	-6.87	56	203	H
6	7.766	42.59	PK3	35.8	-27	51.39	-	-	-	-	68.2	-16.81	44	199	H
8	7.766	42.01	PK3	35.8	-27	50.81	-	-	-	-	68.2	-17.39	212	329	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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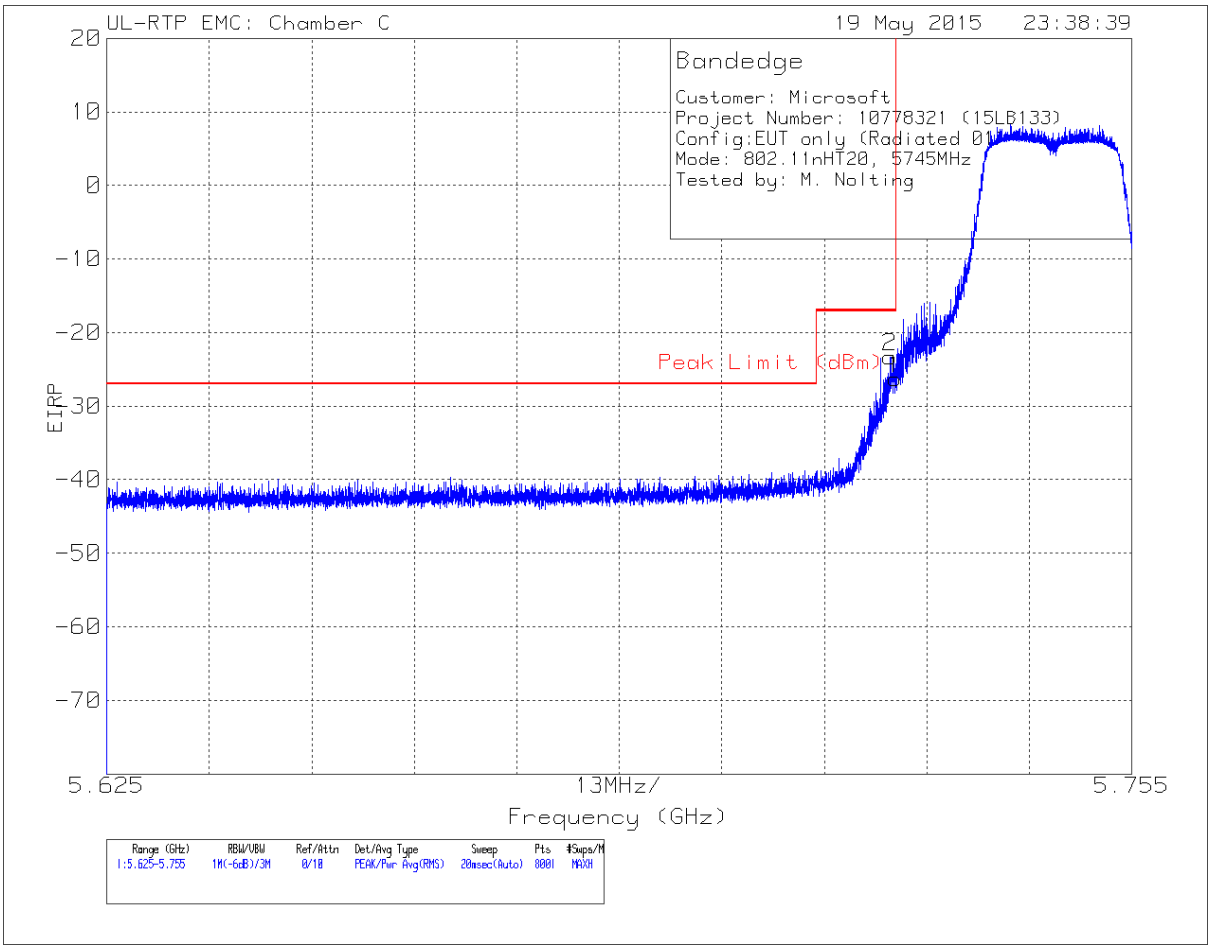
9.10. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AT0062 (dB/m)	Amp/Cbl/Filtr/Pad	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.724	-47.92	Pk	34.6	-21.8	11.8	-23.32	-17	-6.32	45	232	H
1	5.725	-50.85	Pk	34.6	-21.8	11.8	-26.25	-17	-9.25	45	232	H

Pk - Peak detector

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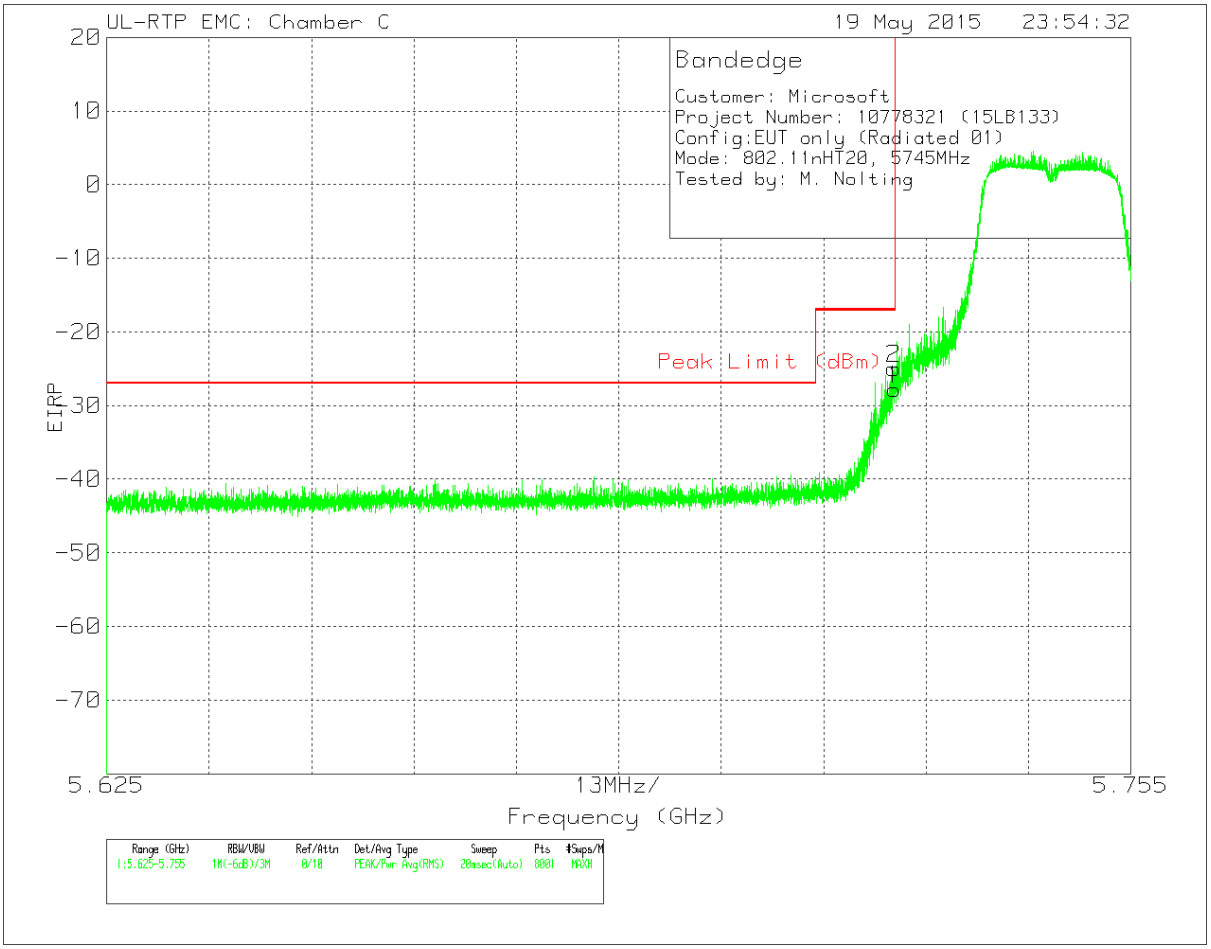
VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-52.39	Pk	34.6	-21.8	11.8	-27.79	-17	-10.79	138	177	V
2	5.725	-49.56	Pk	34.6	-21.8	11.8	-24.96	-17	-7.96	138	177	V

Pk - Peak detector

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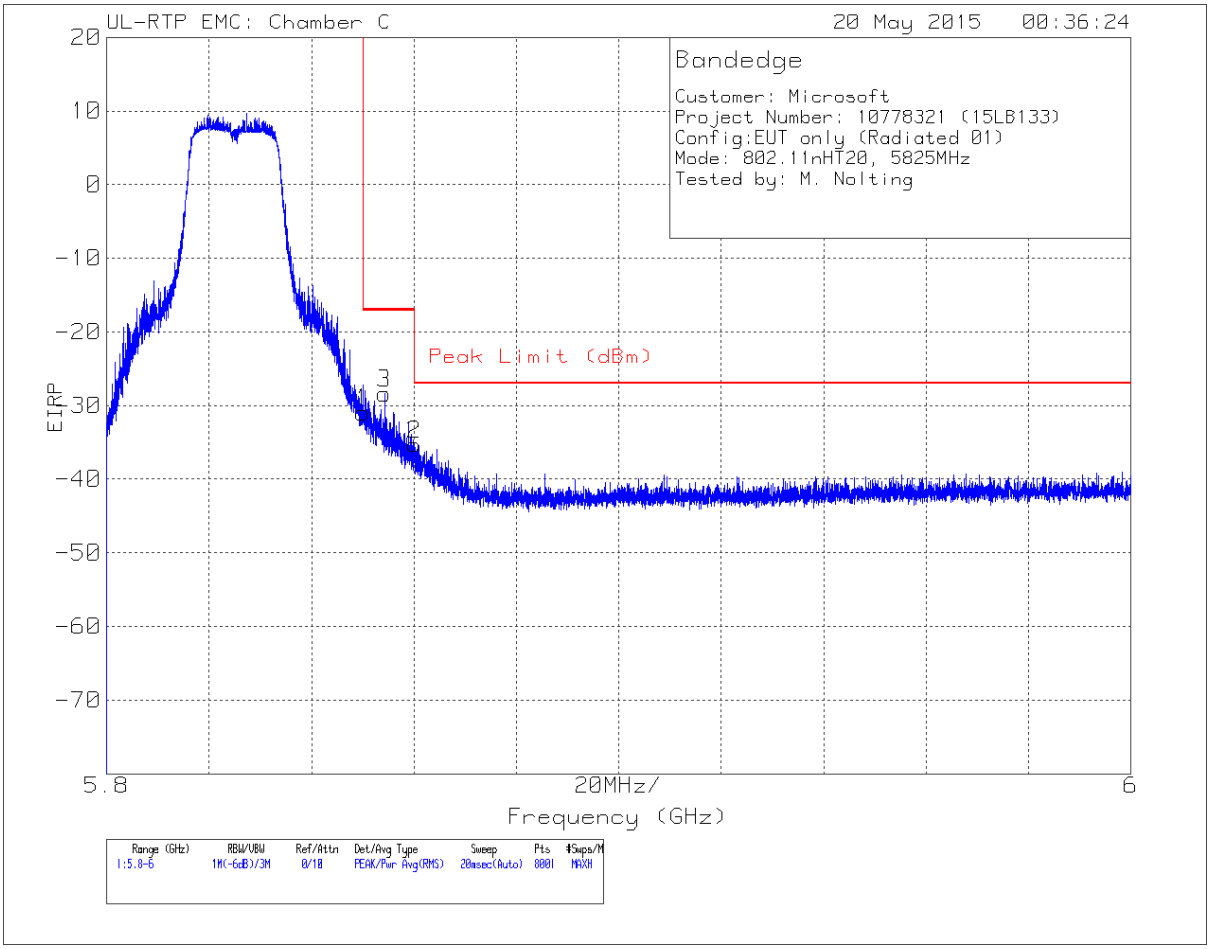
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-56.42	Pk	34.9	-21.2	11.8	-30.92	-17	-13.92	43	199	H
3	5.854	-53.89	Pk	34.9	-21.2	11.8	-28.39	-17	-11.39	43	199	H
2	5.86	-60.78	Pk	34.9	-21.2	11.8	-35.28	-27	-8.28	43	199	H

Pk - Peak detector

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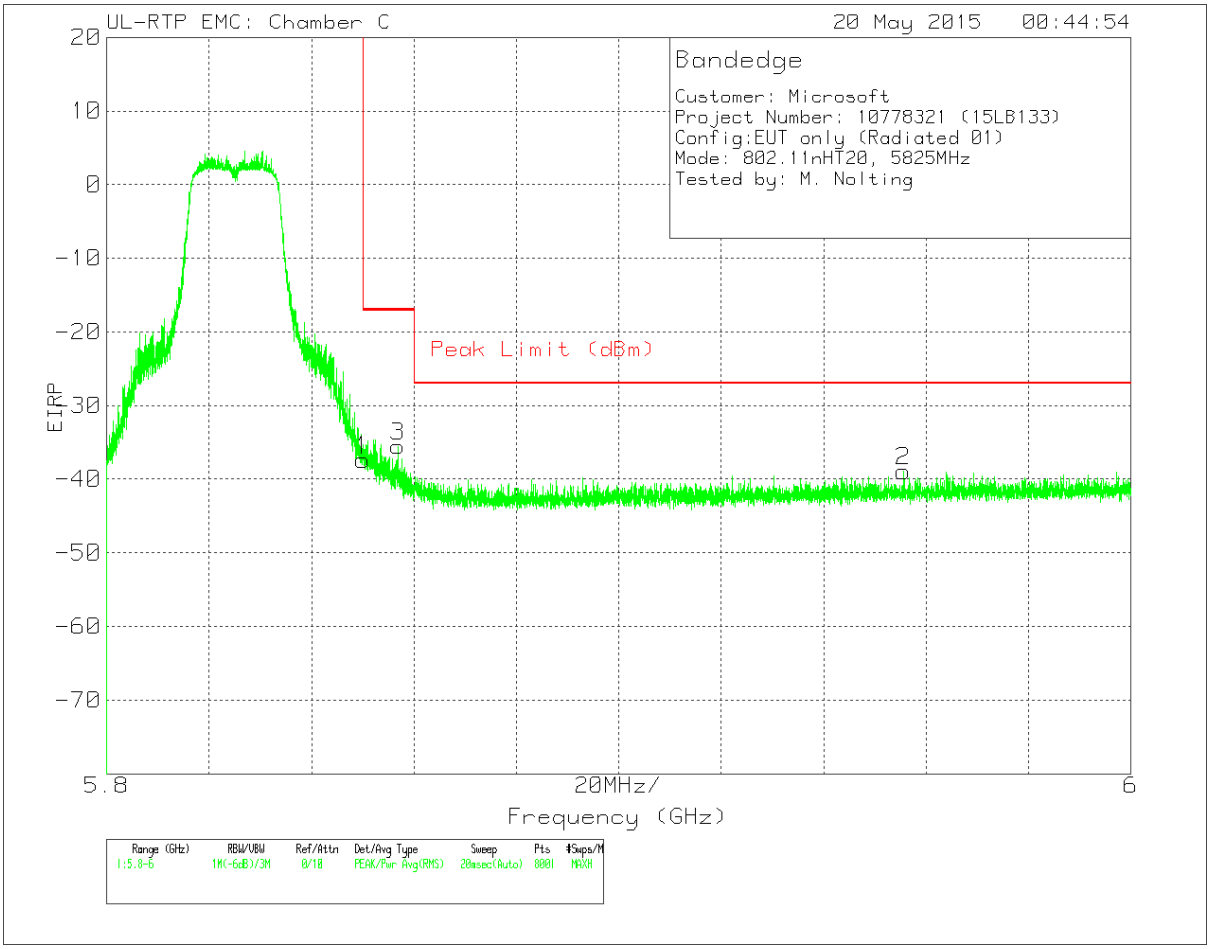
VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AT0062 (dB/m)	Amp/Cbl/Filtr/Pad	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-62.92	Pk	34.9	-21.2	11.8	-37.42	-17	-20.42	140	187	V
3	5.857	-61.01	Pk	34.9	-21.2	11.8	-35.51	-17	-18.51	140	187	V
2	5.956	-64.8	Pk	35.2	-21.1	11.8	-38.9	-27	-11.9	140	187	V

Pk - Peak detector

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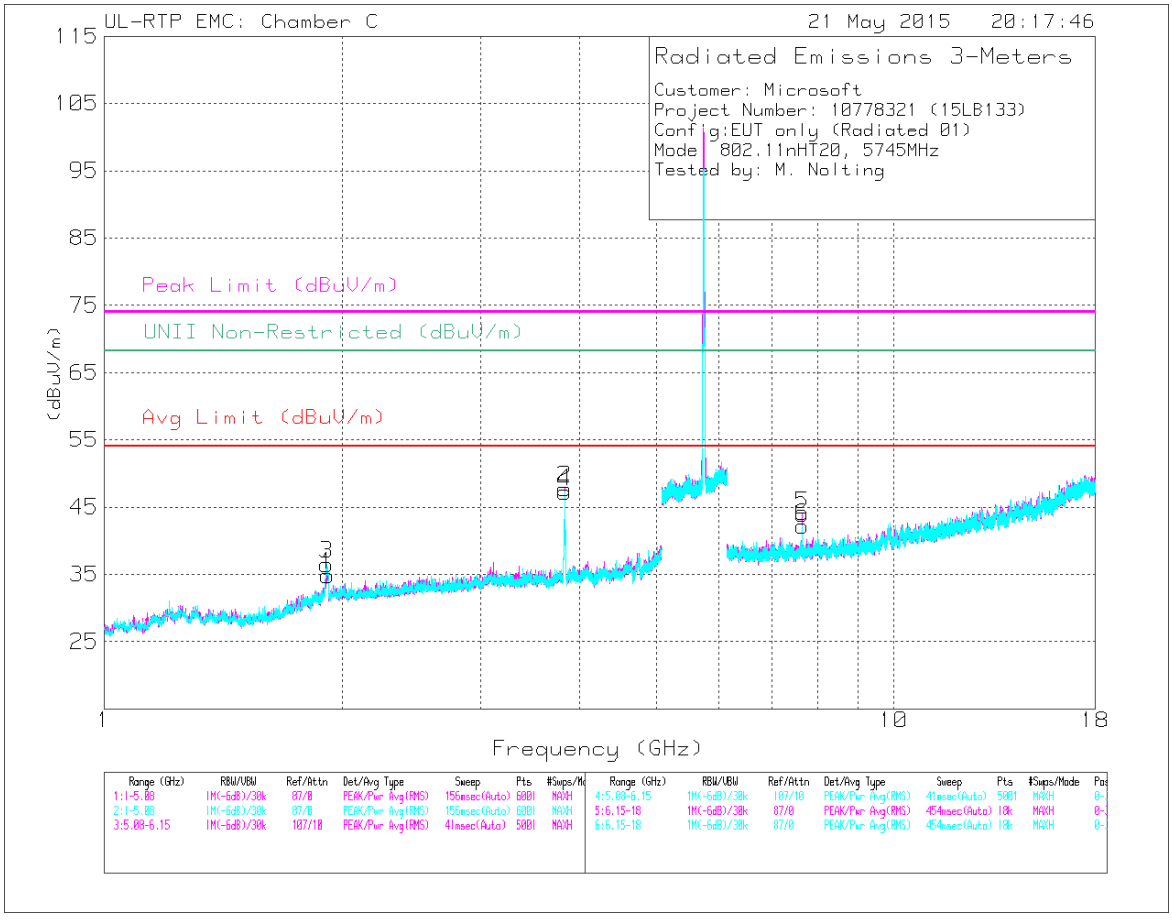
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	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	* 3.83	56.75	PK3	33.5	-34.4	55.85	-	-	74	-18.15	-	-	216	189	H
	* 3.83	48.14	ADR	33.5	-34.4	47.24	54	-6.76	-	-	-	-	216	189	H
4	* 3.83	54.6	PK3	33.5	-34.4	53.7	-	-	74	-20.3	-	-	142	248	V
	* 3.83	46.5	ADR	33.5	-34.4	45.6	54	-8.4	-	-	-	-	142	248	V
5	* 7.66	42.89	PK3	35.8	-27.7	50.99	-	-	74	-23.01	-	-	51	192	H
	* 7.66	35.16	ADR	35.8	-27.7	43.26	54	-10.74	-	-	-	-	51	192	H
6	* 7.66	41.45	PK3	35.8	-27.7	49.55	-	-	74	-24.45	-	-	184	168	V
	* 7.66	32.78	ADR	35.8	-27.7	40.88	54	-13.12	-	-	-	-	184	168	V
3	1.923	52.26	PK3	31.5	-37.5	46.26	-	-	-	-	68.2	-21.94	29	160	V
1	1.914	51.73	PK3	31.5	-37.5	45.73	-	-	-	-	68.2	-22.47	225	130	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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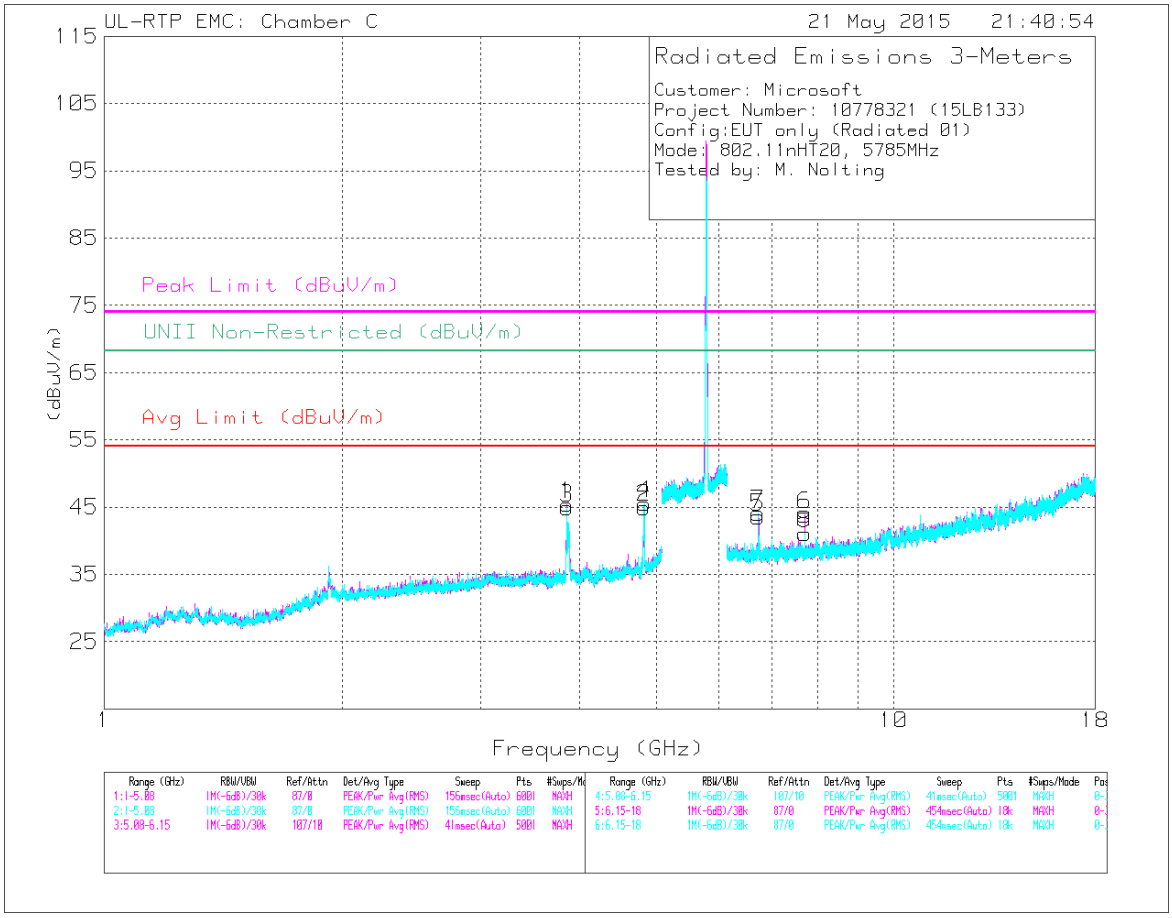
MID CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Filtr/Pad	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	* 3.863	57.03	PK3	33.5	-34.7	55.83	-	-	74	-18.17	-	-	215	184	H
	* 3.857	46.97	ADR	33.5	-34.7	45.77	54	-8.23	-	-	-	-	215	184	H
2	* 4.83	59.59	PK3	34.1	-32.1	61.59	-	-	74	-12.41	-	-	72	222	H
	* 4.827	35.72	ADR	34.1	-32.2	37.62	54	-16.38	-	-	-	-	72	222	H
3	* 3.866	56.6	PK3	33.5	-34.7	55.4	-	-	74	-18.6	-	-	161	223	V
	* 3.857	46.21	ADR	33.5	-34.7	45.01	54	-8.99	-	-	-	-	161	223	V
4	* 4.833	56.69	PK3	34.1	-32	58.79	-	-	74	-15.21	-	-	111	121	V
	* 4.825	34.77	ADR	34.1	-32.3	36.57	54	-17.43	-	-	-	-	111	121	V
6	* 7.713	42.95	PK3	35.8	-28	50.75	-	-	74	-23.25	-	-	48	189	H
	* 7.713	35.74	ADR	35.8	-28	43.54	54	-10.46	-	-	-	-	48	189	H
8	* 7.713	42.3	PK3	35.8	-28	50.1	-	-	74	-23.9	-	-	212	321	V
	* 7.713	33.72	ADR	35.8	-28	41.52	54	-12.48	-	-	-	-	212	321	V
5	6.742	53.7	PK3	35.7	-28.7	60.7	-	-	-	-	68.2	-7.5	57	193	H
7	6.744	51.18	PK3	35.7	-28.7	58.18	-	-	-	-	68.2	-10.02	223	271	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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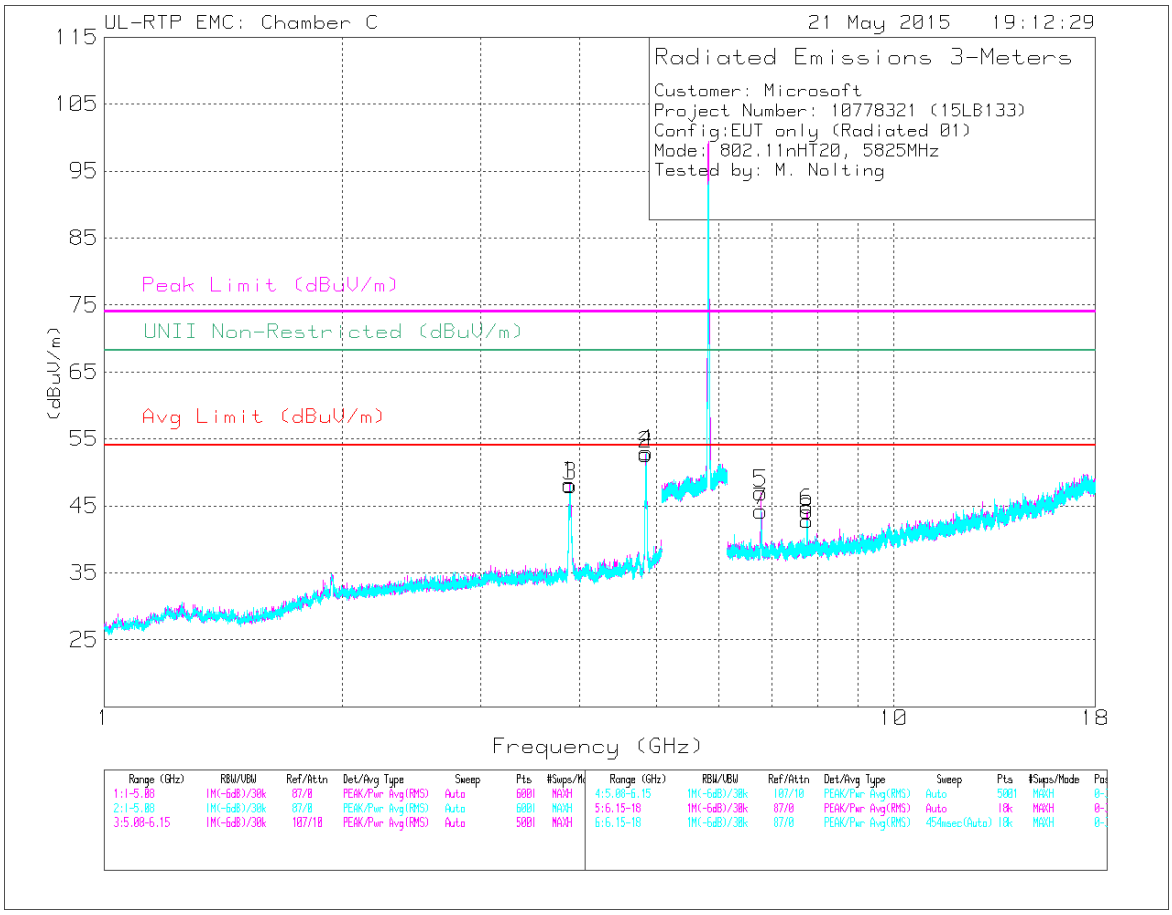
HIGH CHANNEL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0062 (dB/m)	Amp/Cbl/Fltr/Pad	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	* 3.889	65.05	PK3	33.6	-34.4	64.25	-	-	74	-9.75	-	-	217	196	H
	* 3.883	47.26	ADR	33.6	-34.5	46.36	54	-7.64	-	-	-	-	217	196	H
2	* 4.85	65.57	PK3	34.1	-31.9	67.77	-	-	74	-6.23	-	-	65	219	H
	* 4.856	42.75	ADR	34.1	-32	44.85	54	-9.15	-	-	-	-	65	219	H
3	* 3.892	64.9	PK3	33.6	-34.3	64.2	-	-	74	-9.8	-	-	165	236	V
	* 3.883	45.82	ADR	33.6	-34.5	44.92	54	-9.08	-	-	-	-	165	236	V
4	* 4.851	66.59	PK3	34.1	-31.9	68.79	-	-	74	-5.21	-	-	116	101	V
	* 4.853	42.61	ADR	34.1	-31.9	44.81	54	-9.19	-	-	-	-	116	101	V
7	6.785	50.07	PK3	35.6	-28.8	56.87	-	-	-	-	68.2	-11.33	215	261	V
5	6.794	55.14	PK3	35.6	-28.7	62.04	-	-	-	-	68.2	-6.16	55	203	H
6	7.767	42.41	PK3	35.8	-27	51.21	-	-	-	-	68.2	-16.99	45	194	H
8	7.767	41.35	PK3	35.8	-26.9	50.25	-	-	-	-	68.2	-17.95	212	329	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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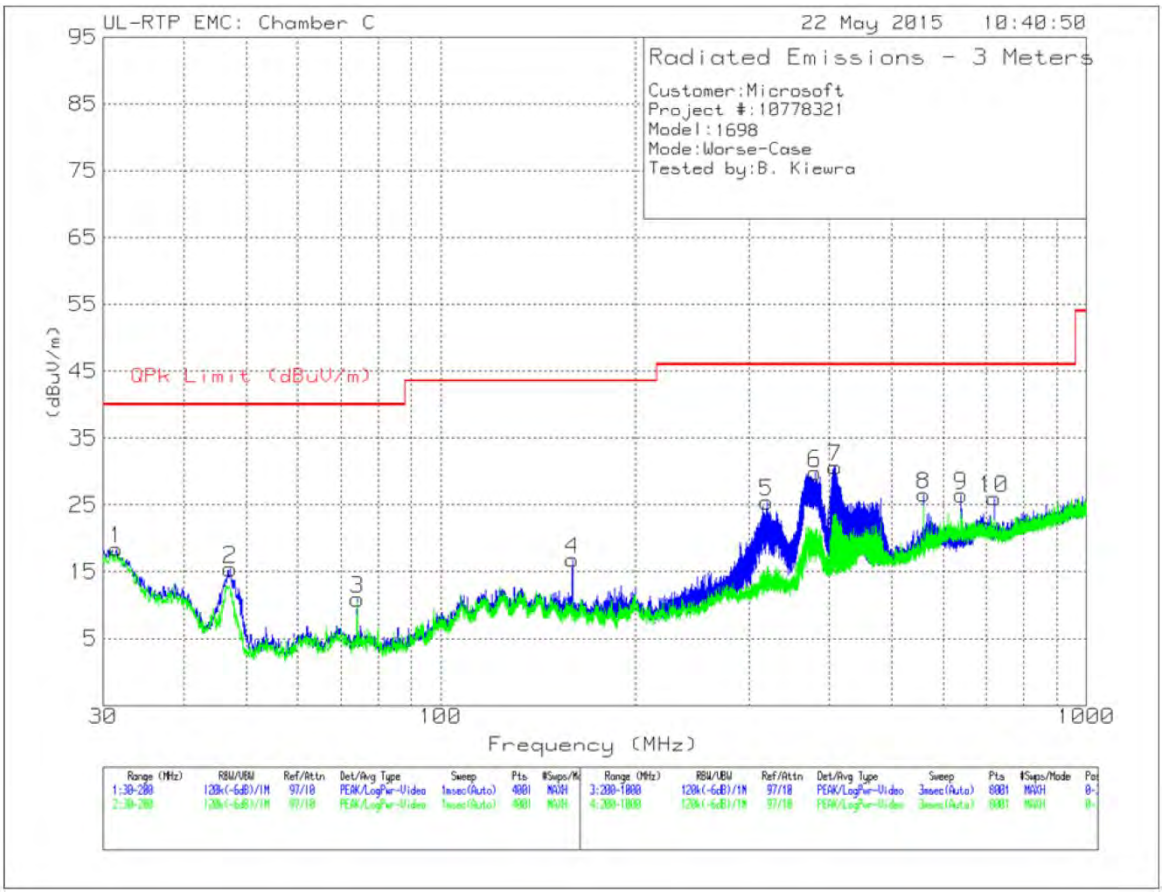
9.11. WORST-CASE BELOW 1 GHz

9.11.1. SPURIOUS EMISSIONS 30 TO 1000 MHz (5GHz WORST-CASE CONFIGURATION)

HORIZONTAL & VERTICAL PLOT:



DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0066 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 74.2425	33.93	Pk	8.1	-31.1	10.93	40	-29.07	0-360	100	H
7	* 408.7	44.07	Pk	16	-29.4	30.67	46.02	-15.35	0-360	101	H
1	31.445	29.32	Pk	20.7	-31.6	18.42	40	-21.58	0-360	200	H
2	47.2125	37.62	Pk	9.2	-31.4	15.42	40	-24.58	0-360	300	H
4	160.0075	35.12	Pk	12.1	-30.4	16.82	43.52	-26.7	0-360	300	H
5	320	41.16	Pk	14	-29.7	25.46	46.02	-20.56	0-360	101	H
6	380	44.19	Pk	15.1	-29.5	29.79	46.02	-16.23	0-360	101	H
8	560	36.86	Pk	18.5	-28.8	26.56	46.02	-19.46	0-360	200	H
9	640	35.49	Pk	19.7	-28.7	26.49	46.02	-19.53	0-360	101	H
10	720	34.23	Pk	20.5	-28.7	26.03	46.02	-19.99	0-360	101	H

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

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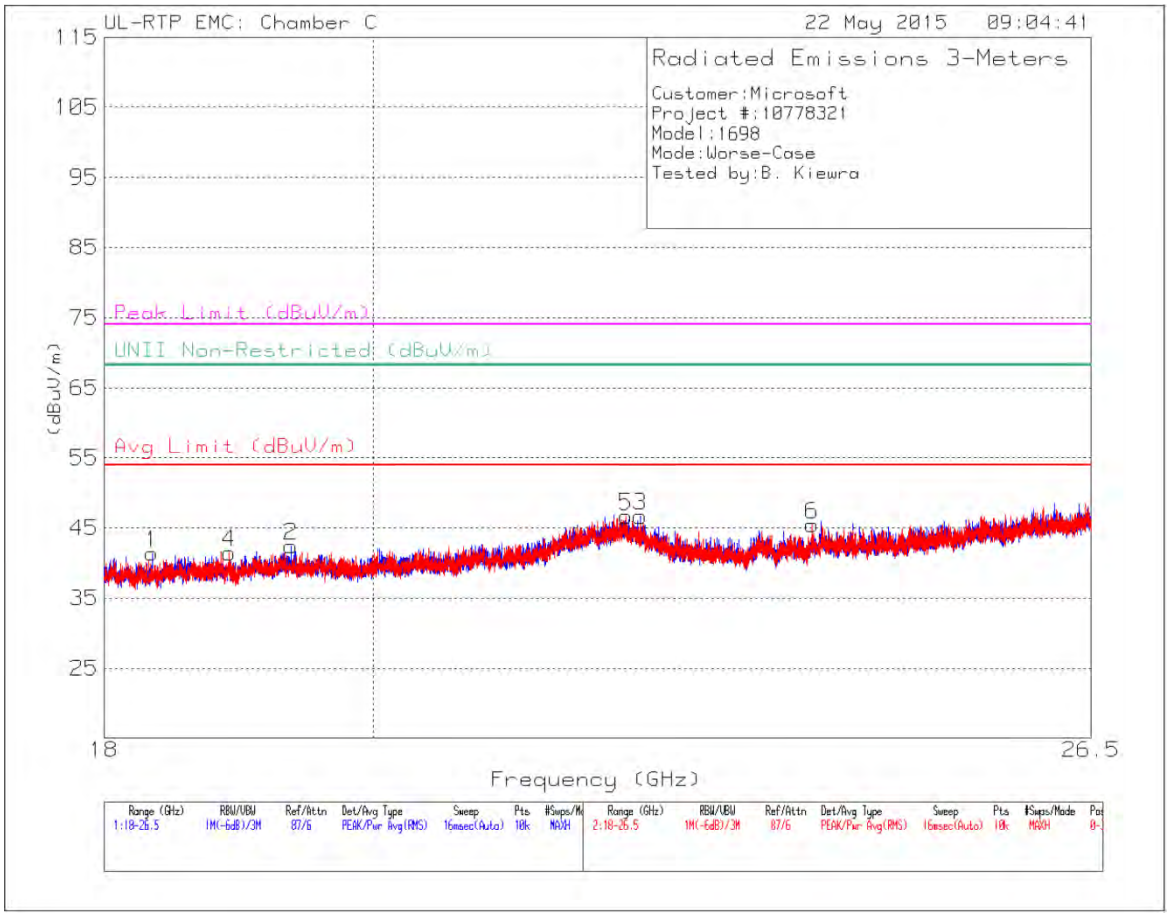
9.12. WORST-CASE ABOVE 18 GHz

9.12.1. SPURIOUS EMISSIONS 18 TO 26 GHz (5GHz WORST-CASE CONFIGURATION)

HORIZONTAL & VERTICAL PLOT:



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DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Horn AT0063 (dB/m)	Amp/Cbl (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	* 18.34	44.04	PK3	32.2	-33.2	43.04	-	-	74	-30.96	68.2	-25.16	91	190	H
	* 18.345	32.81	ADR	32.2	-33.2	31.81	54	-22.19	-	-	-	-	91	190	H
2	* 19.372	44.26	PK3	32.6	-32.9	43.96	-	-	74	-30.04	68.2	-24.24	63	188	H
	* 19.367	32.87	ADR	32.6	-32.9	32.57	54	-21.43	-	-	-	-	63	188	H
3	* 22.208	44.25	PK3	36.2	-32	48.45	-	-	74	-25.55	68.2	-19.75	174	166	H
	* 22.207	32.52	ADR	36.2	-32	36.72	54	-17.28	-	-	-	-	174	166	H
4	* 18.905	44.31	PK3	32.5	-33	43.81	-	-	74	-30.19	68.2	-24.39	350	181	V
	* 18.904	32.72	ADR	32.5	-33	32.22	54	-21.78	-	-	-	-	350	181	V
5	* 22.087	45.83	PK3	36.8	-32.1	50.53	-	-	74	-23.47	68.2	-17.67	205	160	V
	* 22.086	32.75	ADR	36.8	-32.1	37.45	54	-16.55	-	-	-	-	205	160	V
6	* 23.756	44.92	PK3	33.5	-30.5	47.92	-	-	74	-26.08	68.2	-20.28	265	180	V
	* 23.757	32.76	ADR	33.5	-30.5	35.76	54	-18.24	-	-	-	-	265	180	V

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

PK3 - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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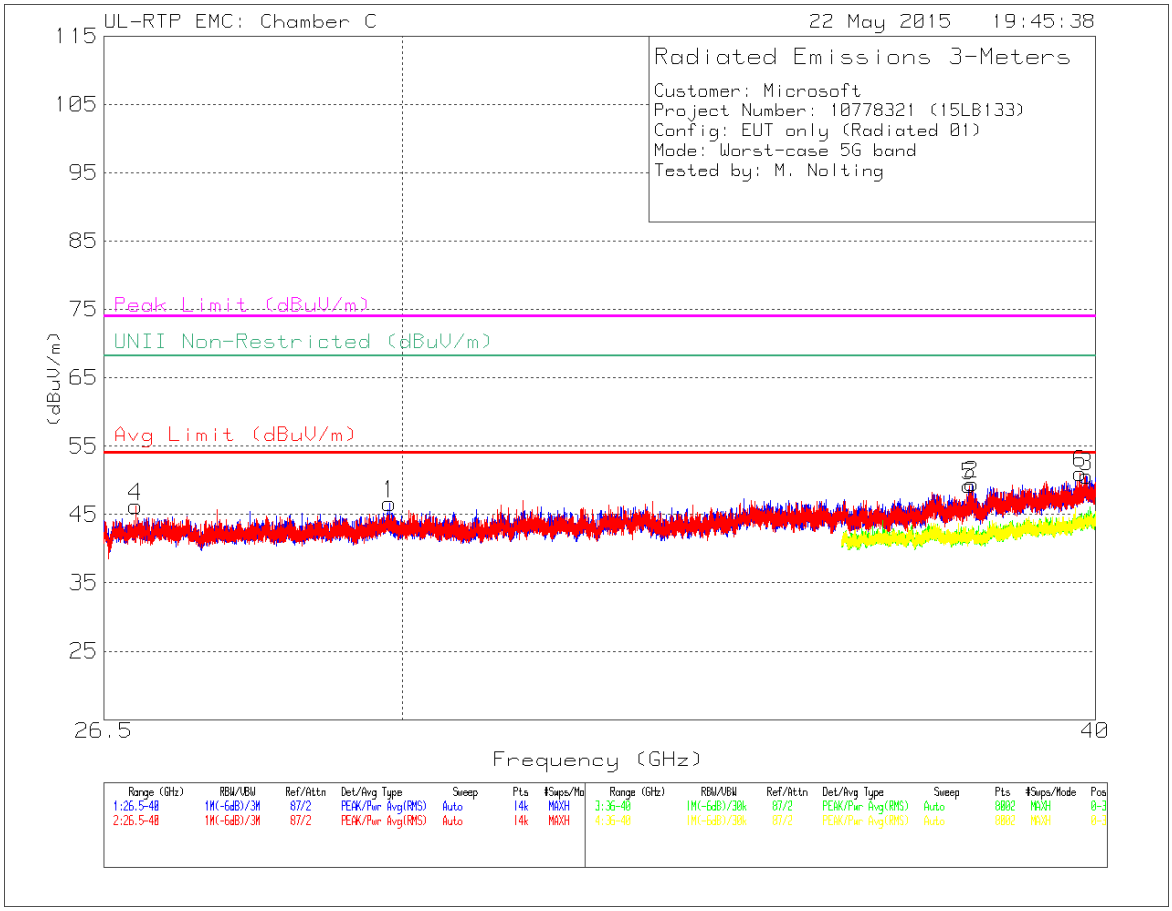
9.12.2. SPURIOUS EMISSIONS 26 TO 40 GHz (5GHz WORST-CASE CONFIGURATION)

HORIZONTAL & VERTICAL PLOT:



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DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Horn AT0061 (dB/m)	Amp/Cbl (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	* 39.854	45.68	PK3	38.3	-31.4	52.58	-	-	74	-21.42	-	-	326	176	H
	* 39.855	34.09	ADR	38.3	-31.4	40.99	54	-13.01	-	-	-	-	326	176	H
6	* 39.748	46.14	PK3	38.4	-31.7	52.84	-	-	74	-21.16	-	-	115	164	V
	* 39.747	34.28	ADR	38.4	-31.7	40.98	54	-13.02	-	-	-	-	115	164	V
4	26.855	47.41	Pk	35.7	-36.9	46.21	-	-	-	-	68.2	-21.99	0-360	150	V
1	29.837	45.91	Pk	36.2	-35.5	46.61	-	-	-	-	68.2	-21.59	0-360	150	H
5	37.964	46.32	Pk	37.8	-34.9	49.22	-	-	-	-	68.2	-18.98	0-360	175	V
2	38.005	46.6	Pk	37.7	-34.8	49.5	-	-	-	-	68.2	-18.7	0-360	175	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
Pk - Peak detector
PK3 - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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