



FCC 47 CFR PART 15 SUBPART E

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA Phone + Bluetooth, DTS/UNII a/b/g/n & ANT +

MODEL NUMBER: GT-I9158V

FCC ID: A3LGTI9158V

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.
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SUWON-CITY, GYEONGGI-DO 443-742, SOUTH KOREA

EUT DESCRIPTION: GSM/WCDMA Phone + Bluetooth, DTS/UNII a/b/g/n & ANT+

MODEL: GT-I9158V

SERIAL NUMBER: FL-189-D (Conducted); FL-189-B (Radiated)

DATE TESTED: MAY 14 – JUNE 9, 2014

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart E	Pass

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

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

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.4-2009, FCC 06-96, FCC KDB 789033

3. FACILITIES AND ACCREDITATION

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

47173 Benicia Street	47266 Benicia Street
☒ Chamber A	☐ Chamber D
☒ Chamber B	☐ Chamber E
☐ Chamber C	☒ Chamber F

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

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

4.3. MEASUREMENT UNCERTAINTY

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

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

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA Phone + Bluetooth, DTS/UNII a/b/g/n & ANT+

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	802.11n HT20	12.79	19.01
5260 - 5320	802.11n HT20	13.58	22.80
5500 - 5700	802.11n HT20	14.22	26.42
5190 - 5230	802.11n HT40	12.01	15.89
5270 - 5310	802.11n HT40	12.46	17.62
5510 - 5670	802.11n HT40	13.04	20.14
5180 - 5240	802.11a	12.84	19.23
5260 - 5320	802.11a	13.37	21.73
5500 - 5700	802.11a	14.14	25.94

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -2.47 dBi.

5.4. WORST-CASE CONFIGURATION AND MODE

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

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

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

802.11a mode: 6 Mbps

802.11n HT20mode: MCS0

802.11n HT40mode: MCS0

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

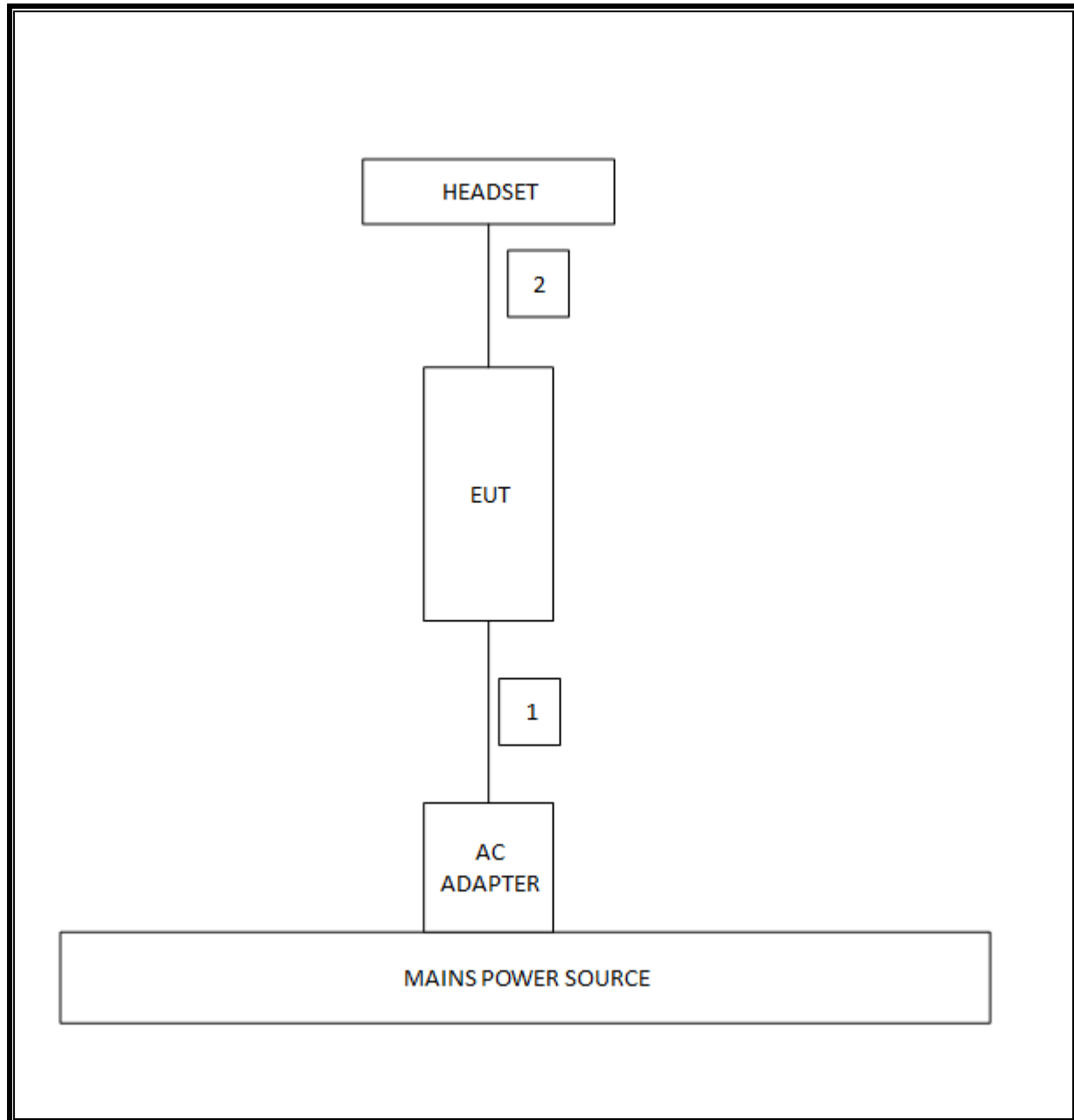
Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	SAMSUNG	ETA-U90CBC	N/A	N/A
Earphone	SAMSUNG	GH-59	N/A	N/A

I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	Mini-USB	Shielded	1.2m	N/A
2	Audio	1	Mini-Jack	Unshielded	1.0m	N/A

TEST SETUP

The EUT is setup as a stand-alone device.

SETUP DIAGRAM FOR TESTS

6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List				
Description	Manufacturer	Model	Asset	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/14
Spectrum Analyzer, 9KHz-40GHz	HP	8564E	C00986	04/01/15
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	08/13/14
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/18/14
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/14
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/14
Antenna, Horn, 1-18 GHz	ETS	3117	C01022	02/21/15
Antenna, Horn, 18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/14
Antenna, Horn, 26-40 GHz	ARA	MWH-2640	C00891	06/28/14
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/15
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/15
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/15
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	F00351	06/27/14
AC Power Supply, 2,500VA 45-500Hz	Elgar-Ametek	CW2501M	F00013	CNR
RF Preamplifier, 1GHz - 40GHz	Miteq	NSP4000-SP2	C00990	08/20/14
Attenuator / Switch driver	HP	11713A	F00204	CNR
Low Pass Filter 3GHz	Micro-Tronics	LPS17541	F00219	05/23/15
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/15
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/15

7. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)	Occupied Band width (26dB)	N/A	Conducted	Pass	47 MHz
15.407 (a)(1)	TX Cond. Power 5.15-2.25	<17dBm or 4+10Log(OBW)		Pass	12.84 dBm
15.407 (a)(2)	TX Cond. Power 5.25-5.35 & 5.47-5.725	<24dBm or 11+10Log(OBW)		Pass	14.22 dBm
15.407 (a)(5)	PSD	<4dBm for 5.2 <11dBm for 5.3/5.5		Pass	3.13 dBm
15.407 (a)(6)	Peak Excursion Ratio	13dB		Pass	3.12 dB
15.207 (a)	AC Power Line conducted emissions	Section 10	Radiated	Pass	52.04 dBuV (AV)
15.407 (b) & 15.209	Radiated Spurious Emission	< 54dBuV/m		Pass	50.41 dBuV/m
15.407 (h)(2)	Dynamic Frequency Selection	N/A	Radiated / Conducted	Pass	N/A

8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

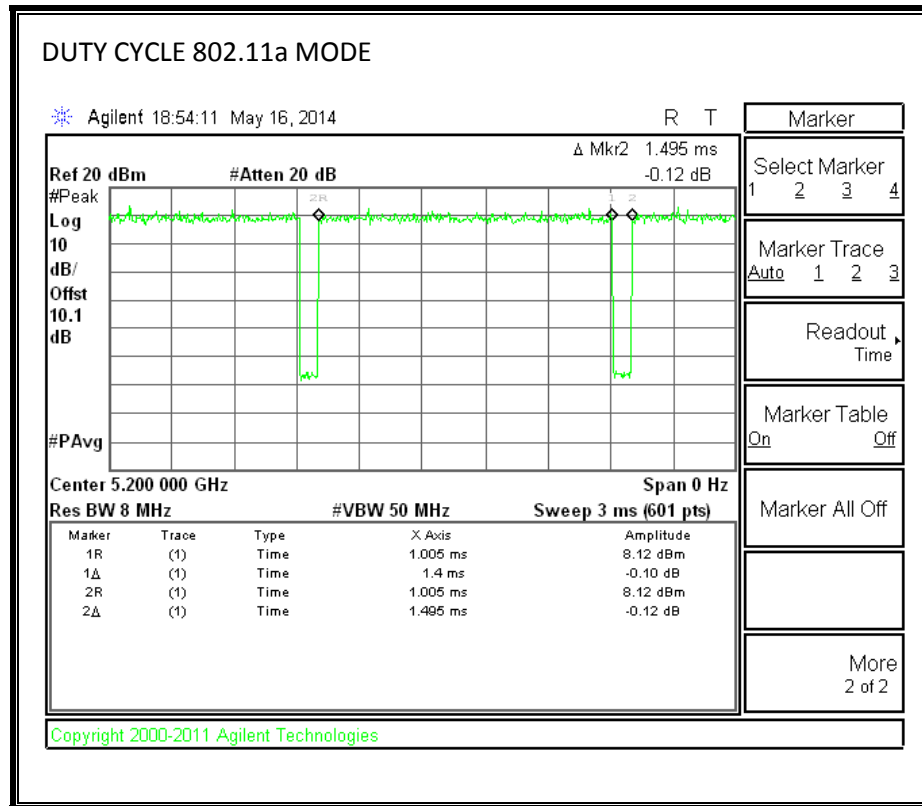
PROCEDURE

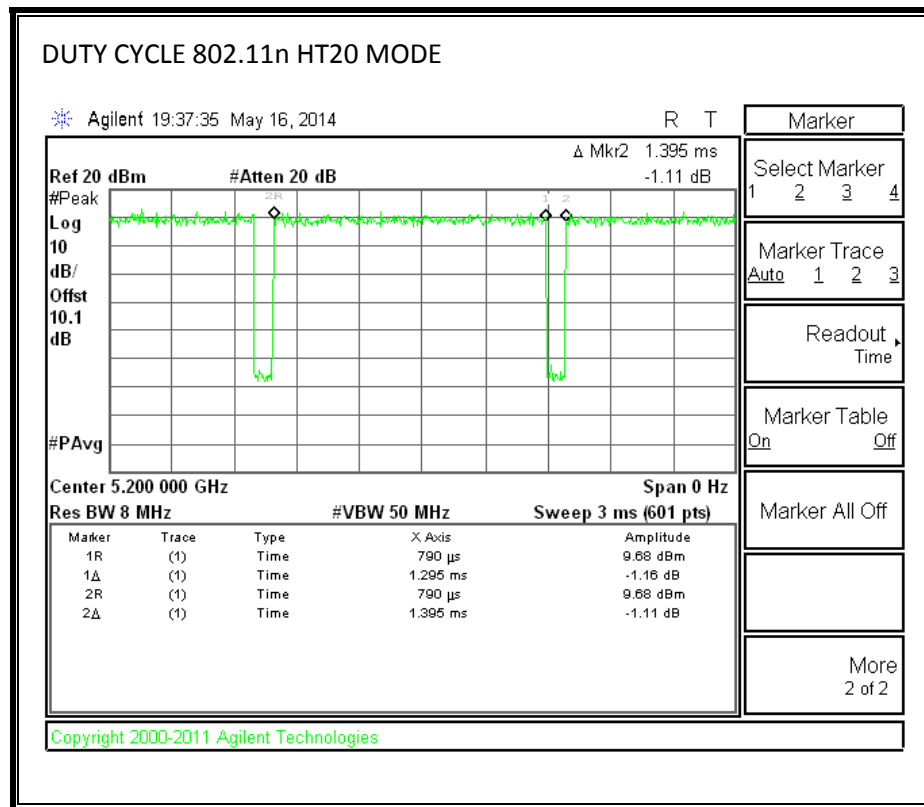
KDB 789033 Zero-Span Spectrum Analyzer Method.

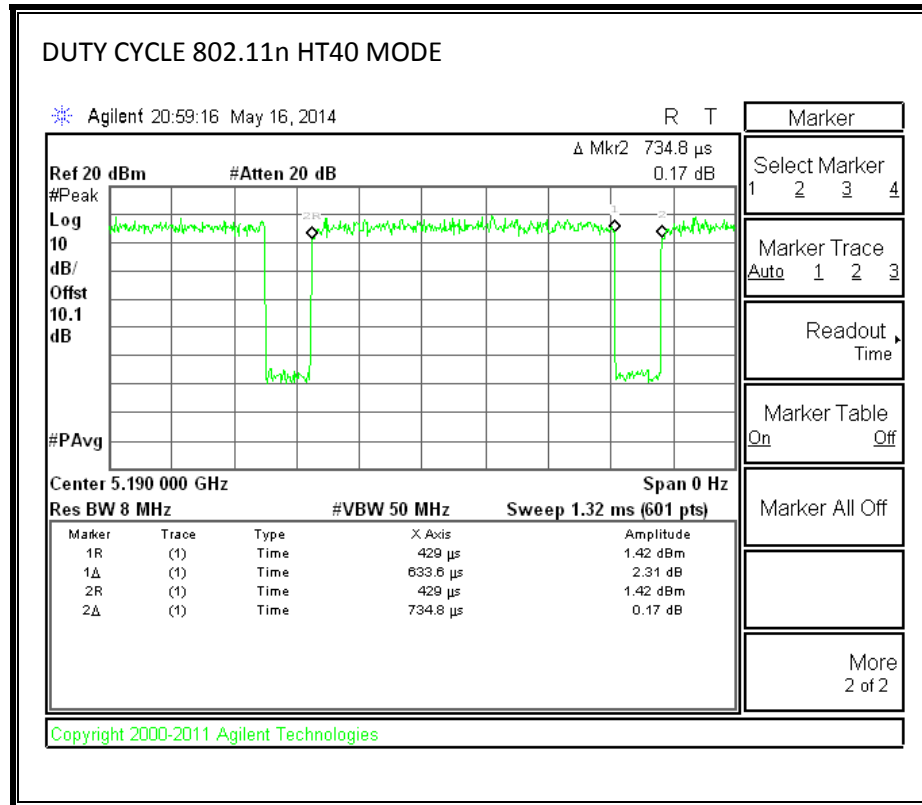
8.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
802.11a	1.40	1.50	0.936	93.6%	0.29	0.714
802.11n HT20	1.30	1.40	0.928	92.8%	0.32	0.772
802.11n HT40	0.63	0.73	0.862	86.2%	0.64	1.578

8.2. DUTY CYCLE PLOTS







9. MEASUREMENT METHOD

The Duty Cycle is less than 98% and consistent therefore KDB 789033 Method SA-2 is used for .power and PPSD

The Duty Cycle is less than 98% and consistent, KDB 789033 Method AD with Power RMS Averaging and duty cycle correction is used.

10. ANTENNA PORT TEST RESULTS

10.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

10.1.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	23.30
Mid	5200	23.20
High	5240	24.80
Worst		24.80

10.1.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	24.50
Mid	5200	24.15
High	5240	24.90
Worst		24.90

10.1.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5190	46.500
Mid	5230	46.600
Worst		46.600

10.1.1. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	23.80
Mid	5300	24.55
High	5320	23.00
Worst		24.55

10.1.1. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	24.25
Mid	5300	25.30
High	5320	24.05
Worst		25.30

10.1.2. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5270	47.0
High	5310	46.1
Worst		47.0

10.1.3. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	22.800
Mid	5580	22.850
High	5700	22.450
Worst		22.850

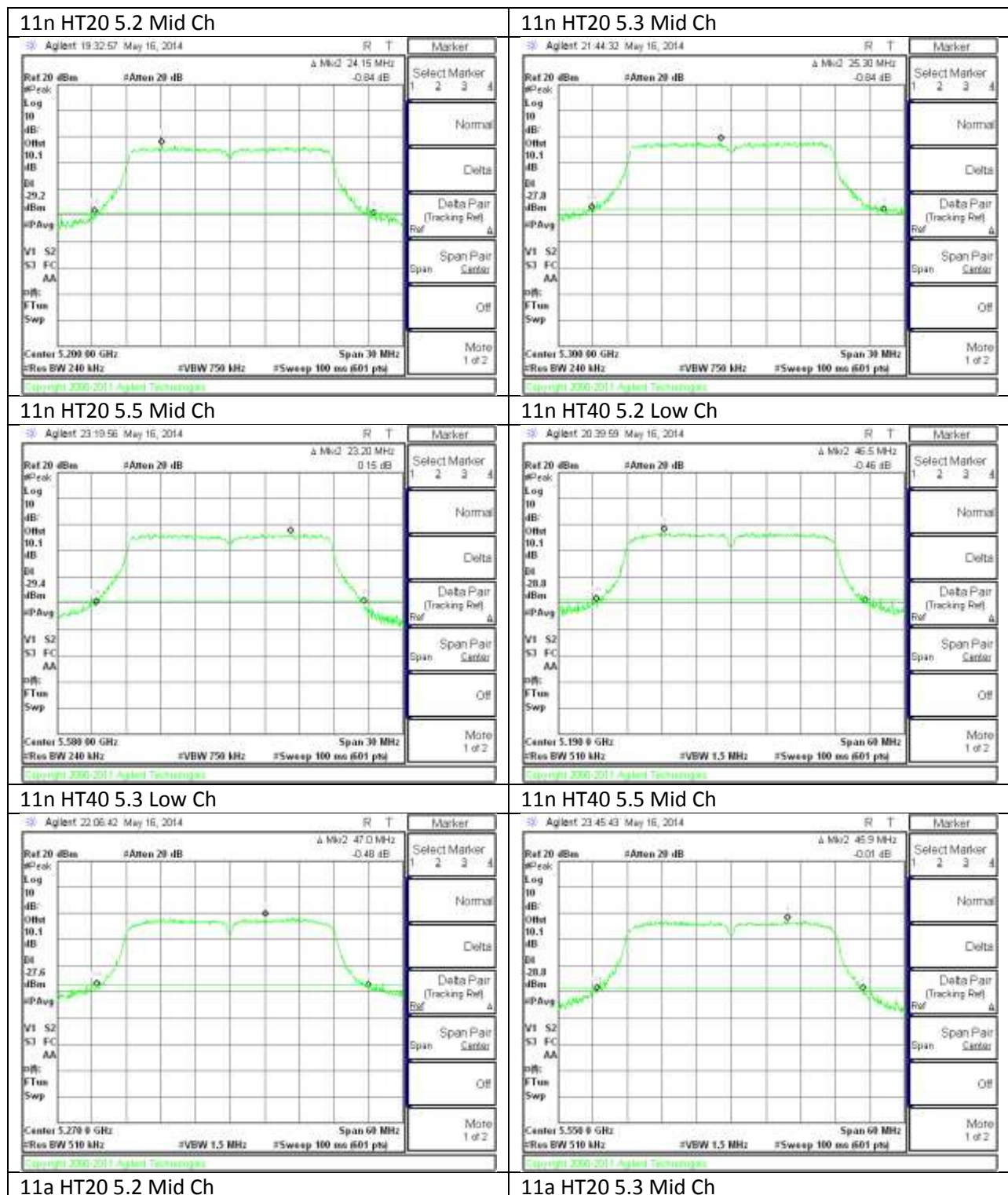
10.1.4. 802.11n HT20 MODE IN THE 5.5 GHz BAND

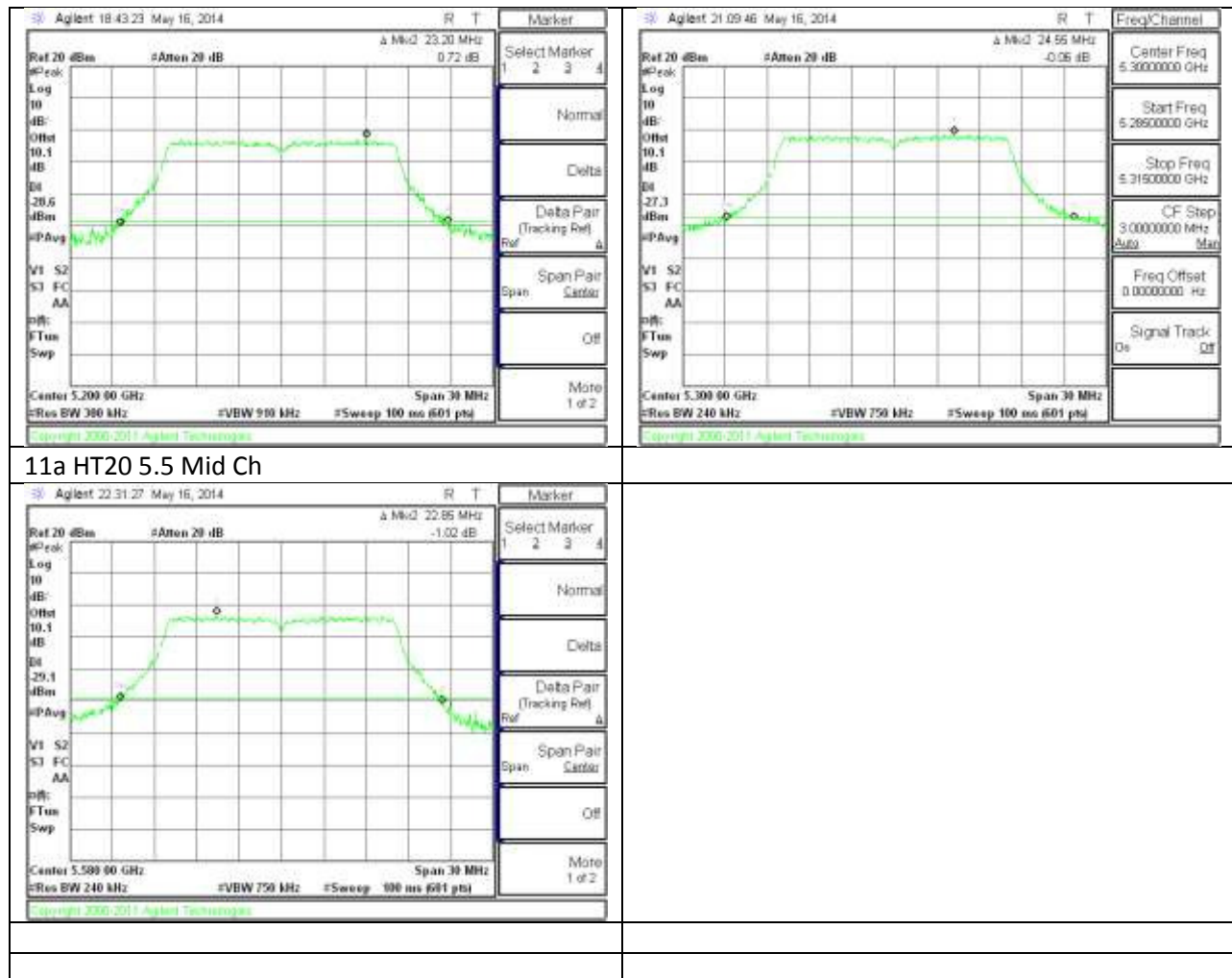
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	23.350
Mid	5580	23.200
High	5700	22.900
Worst		23.350

10.1.5. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5510	45.1
Mid	5550	45.9
High	5670	46.7
Worst		46.7

10.1.6. 26 dB BANDWIDTH PLOTS





10.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

10.2.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	16.49
Mid	5200	16.49
High	5240	16.49
Worst		16.49

10.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	17.68
Mid	5200	17.67
High	5240	17.68
Worst		17.68

10.2.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5190	35.970
Mid	5230	35.960
Worst		35.970

10.2.4. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	16.49
Mid	5300	16.51
High	5320	16.47
Worst		16.51

10.2.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	17.67
Mid	5300	17.68
High	5320	17.67
Worst		17.68

10.2.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5270	36.0
High	5310	37.0
Worst		37.0

10.2.7. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	16.470
Mid	5580	16.480
High	5700	16.470
Worst		16.480

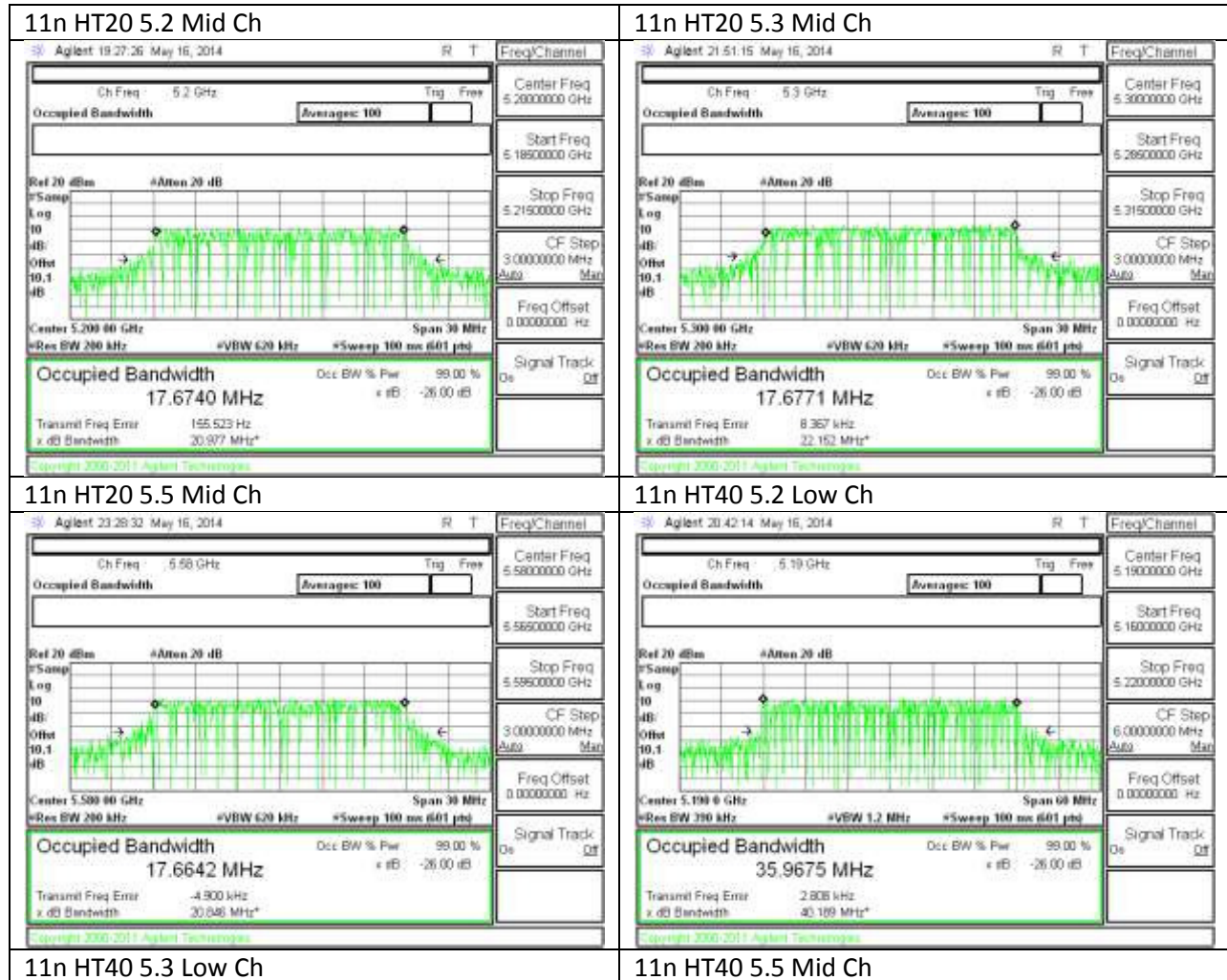
10.2.8. 802.11n HT20 MODE IN THE 5.5 GHz BAND

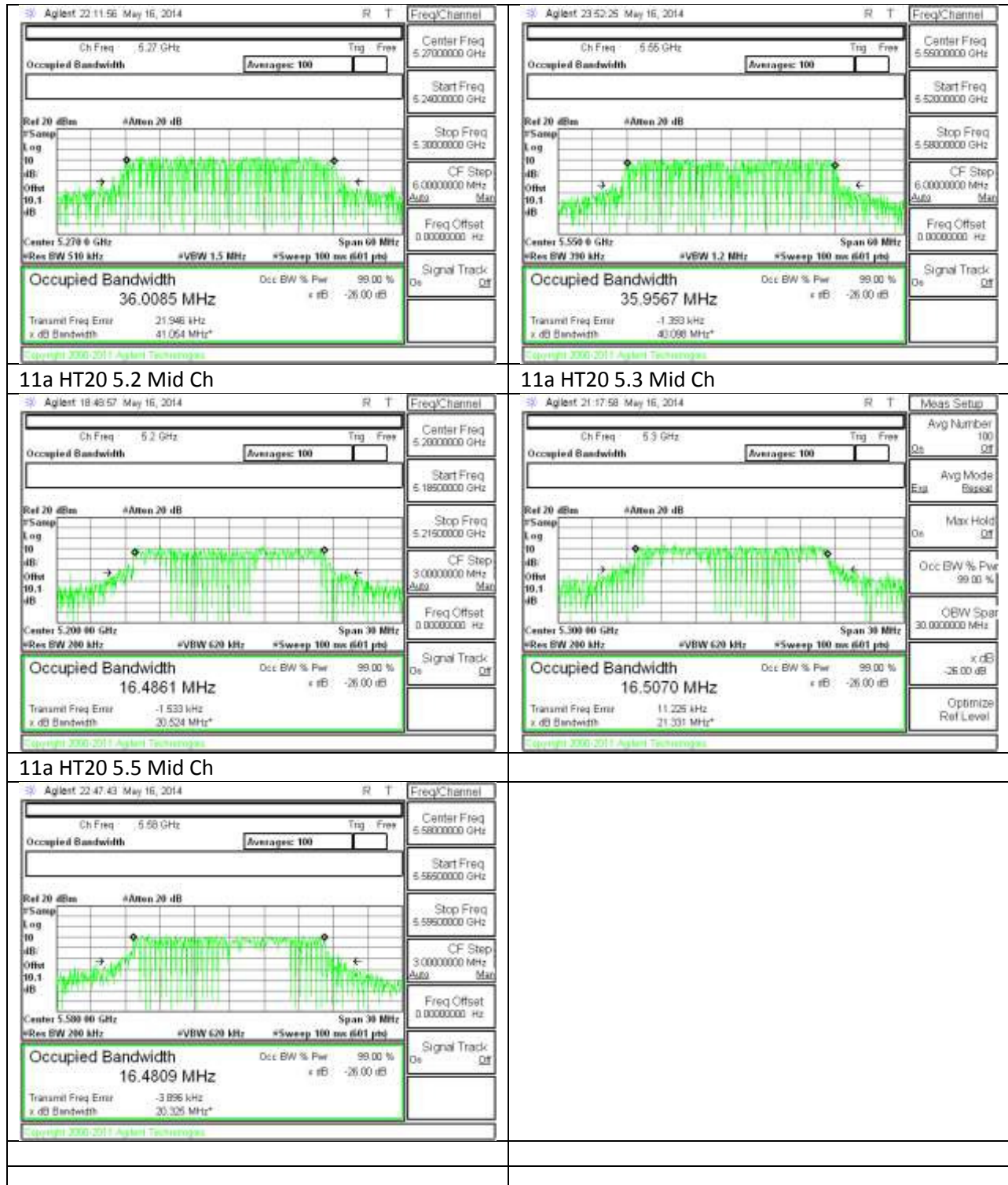
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	17.670
Mid	5580	17.660
High	5700	17.670
Worst		17.670

10.2.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	35.9
Mid	5550	36.0
High	5670	36.0
Worst		36.0

10.2.10. 99% BANDWIDTH PLOTS





10.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

10.3.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5180	11.40
Mid	5200	11.20
High	5240	11.60
Worst		11.60

10.3.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5180	11.50
Mid	5200	11.20
High	5240	11.80
Worst		11.80

10.3.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5190	10.600
Mid	5230	10.800
Worst		10.800

10.3.4. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5260	11.30
Mid	5300	11.80
High	5320	11.50
Worst		11.80

10.3.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5260	11.50
Mid	5300	12.00
High	5320	11.70
Worst		12.00

10.3.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5270	11.0
High	5310	10.0
Worst		11.0

10.3.7. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5500	11.300
Mid	5580	11.500
High	5700	12.300
Worst		12.300

10.3.8. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5500	11.600
Mid	5580	11.400
High	5700	12.400
Worst		12.400

10.3.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5510	10.3
Mid	5550	10.8
High	5670	10.4
Worst		10.8

10.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or $4 \text{ dBm} + 10 \log B$, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 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.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

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

Test Methodology

RESULTS

10.4.1. 802.11a MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	23.300	16.490	-2.47
Mid	5200	23.200	16.490	-2.47
High	5240	24.800	16.490	-2.47

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC eirp PSD Limit (dBm)	PPSD Limit (dBm)
Low	5180	17.00	22.17	24.64	17.00	4.00	10.00	4.00
Mid	5200	17.00	22.17	24.64	17.00	4.00	10.00	4.00
High	5240	17.00	22.17	24.64	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	0.29	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	11.940	12.23	17.00	-4.77
Mid	5200	11.890	12.18	17.00	-4.82
High	5240	12.553	12.84	17.00	-4.16

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	0.730	1.02	4.00	-2.98
Mid	5200	0.400	0.69	4.00	-3.31
High	5240	1.260	1.55	4.00	-2.45

10.4.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	24.500	17.680	-2.47
Mid	5200	24.150	17.670	-2.47
High	5240	24.900	17.680	-2.47

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC eirp PSD Limit (dBm)	PPSD Limit (dBm)
Low	5180	17.00	22.47	24.94	17.00	4.00	10.00	4.00
Mid	5200	17.00	22.47	24.94	17.00	4.00	10.00	4.00
High	5240	17.00	22.47	24.94	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	0.32	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	12.150	12.47	17.00	-4.53
Mid	5200	11.860	12.18	17.00	-4.82
High	5240	12.470	12.79	17.00	-4.21

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	0.740	1.06	4.00	-2.94
Mid	5200	0.620	0.94	4.00	-3.06
High	5240	1.240	1.56	4.00	-2.44

10.4.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5190	46.5	35.970	-2.47
Mid	5230	46.6	35.960	-2.47

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC eirp PSD Limit (dBm)	PPSD Limit (dBm)
Low	5190	17.00	23.00	25.47	17.00	4.00	10.00	4.00
Mid	5230	17.00	23.00	25.47	17.00	4.00	10.00	4.00
Duty Cycle CF (dB)		0.64	Included in Calculations of Corr'd Power & PPSPD					

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	11.090	11.73	17.00	-5.27
Mid	5230	11.370	12.01	17.00	-4.99

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5190	-3.240	-2.60	4.00	-6.60
Mid	5230	-3.010	-2.37	4.00	-6.37

10.4.4. 802.11a MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5260	23.80	16.490	-2.47
Mid	5300	24.55	16.510	-2.47
High	5320	23.00	16.470	-2.47

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5260	24.00	23.17	29.17	23.17	11.00	11.00	11.00
Mid	5300	24.00	23.18	29.18	23.18	11.00	11.00	11.00
High	5320	24.00	23.17	29.17	23.17	11.00	11.00	11.00

Duty Cycle CF (dB)	0.29	Included in Calculations of Corr'd Power & PPST
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	12.399	12.69	23.17	-10.48
Mid	5300	13.078	13.37	23.18	-9.81
High	5320	12.583	12.87	23.17	-10.29

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	1.300	1.59	11.00	-9.41
Mid	5300	1.730	2.02	11.00	-8.98
High	5320	1.320	1.61	11.00	-9.39

10.4.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5260	24.25	17.670	-2.47
Mid	5300	25.30	17.680	-2.47
High	5320	24.05	17.670	-2.47

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5260	24.00	23.47	29.47	23.47	11.00	11.00	11.00
Mid	5300	24.00	23.47	29.47	23.47	11.00	11.00	11.00
High	5320	24.00	23.47	29.47	23.47	11.00	11.00	11.00

Duty Cycle CF (dB)	0.32	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	12.533	12.85	23.47	-10.62
Mid	5300	13.261	13.58	23.47	-9.89
High	5320	12.572	12.89	23.47	-10.58

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	1.050	1.37	11.00	-9.63
Mid	5300	1.690	2.01	11.00	-8.99
High	5320	1.100	1.42	11.00	-9.58

10.4.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5270	47.0	36.0	-2.47
High	5310	46.1	37.0	-2.47

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5270	24.00	24.00	30.00	24.00	11.00	11.00	11.00
High	5310	24.00	24.00	30.00	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	0.64	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	11.52	12.16	24.00	-11.84
High	5310	11.82	12.46	24.00	-11.54

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5270	-2.86	-2.22	11.00	-13.22
High	5310	-2.77	-2.13	11.00	-13.13

10.4.7. 802.11a MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	22.80	16.470	-2.47
Mid	5580	22.85	16.480	-2.47
High	5700	22.45	16.470	-2.47

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5500	24.00	23.17	29.17	23.17	11.00	11.00	11.00
Mid	5580	24.00	23.17	29.17	23.17	11.00	11.00	11.00
High	5700	24.00	23.17	29.17	23.17	11.00	11.00	11.00

Duty Cycle CF (dB)	0.29	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	12.504	12.79	23.17	-10.37
Mid	5580	12.896	13.19	23.17	-9.98
High	5700	13.851	14.14	23.17	-9.03

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	1.310	1.60	11.00	-9.40
Mid	5580	1.490	1.78	11.00	-9.22
High	5700	2.510	2.80	11.00	-8.20

10.4.8. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	23.35	17.670	-2.47
Mid	5580	23.20	17.660	-2.47
High	5700	22.90	17.670	-2.47

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5500	24.00	23.47	29.47	23.47	11.00	11.00	11.00
Mid	5580	24.00	23.47	29.47	23.47	11.00	11.00	11.00
High	5700	24.00	23.47	29.47	23.47	11.00	11.00	11.00

Duty Cycle CF (dB)	0.32	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	12.609	12.93	23.47	-10.54
Mid	5580	12.820	13.14	23.47	-10.33
High	5700	13.900	14.22	23.47	-9.25

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	1.350	1.67	11.00	-9.33
Mid	5580	1.540	1.86	11.00	-9.14
High	5700	2.810	3.13	11.00	-7.87

10.4.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5510	45.1	35.900	-2.47
Mid	5550	45.9	36.000	-2.47
High	5670	45.7	36.000	-2.47

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5510	24.00	24.00	30.00	24.00	11.00	11.00	11.00
Mid	5550	24.00	24.00	30.00	24.00	11.00	11.00	11.00
High	5670	24.00	24.00	30.00	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	0.64	Included in Calculations of Corr'd Power & PPSP
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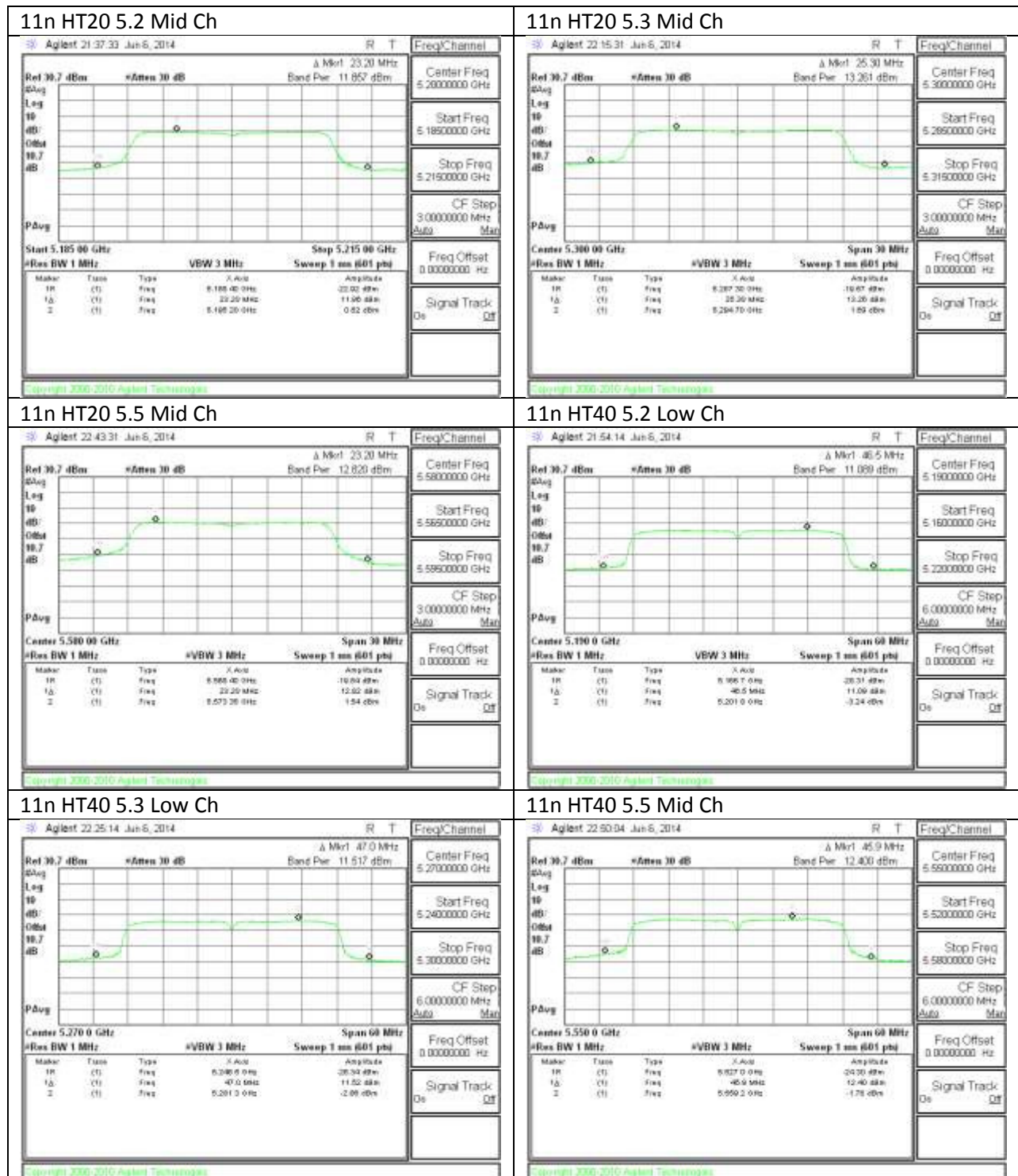
Output Power Results

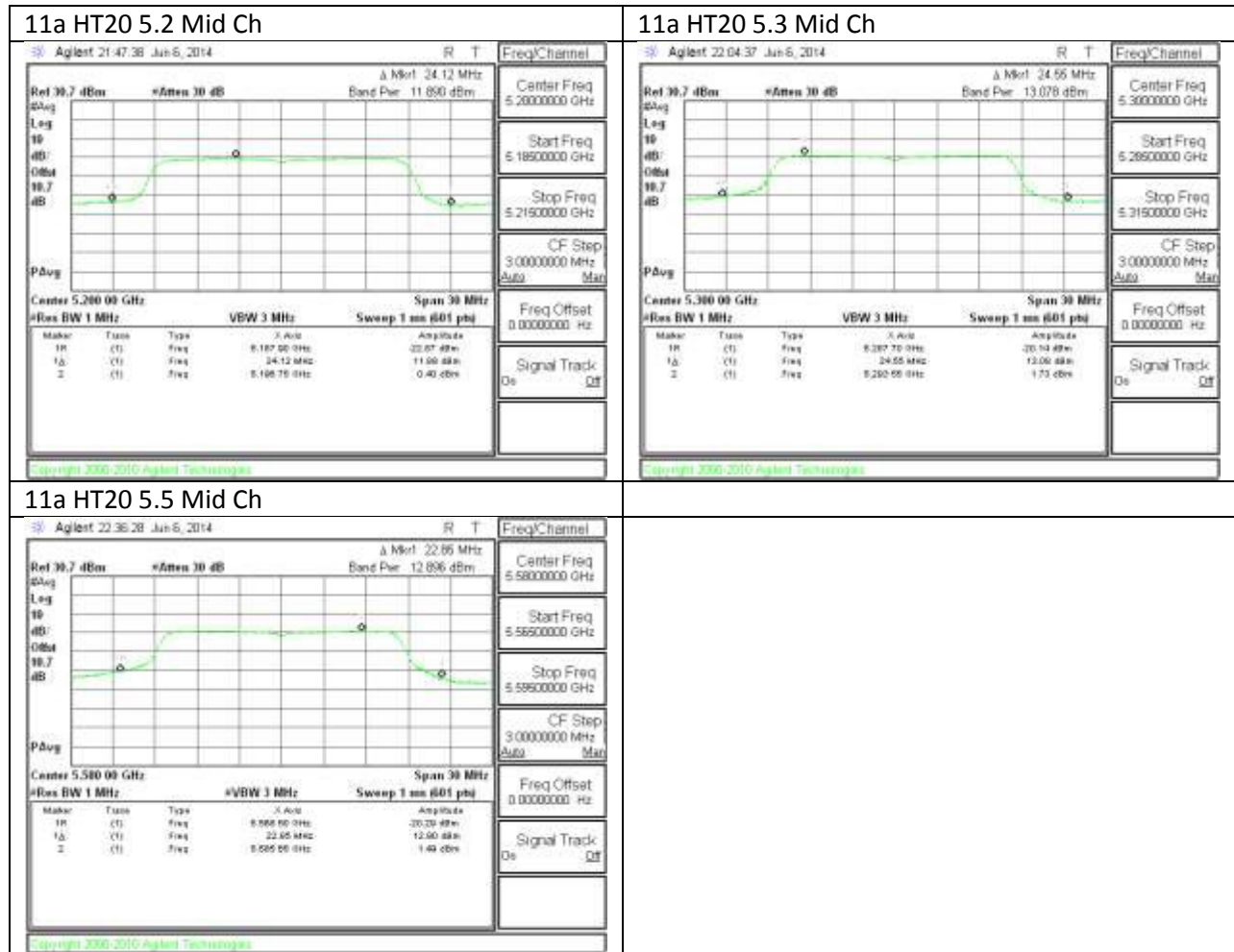
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	11.328	11.97	24.00	-12.03
Mid	5550	12.400	13.04	24.00	-10.96
High	5670	12.183	12.82	24.00	-11.18

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5510	-3.110	-2.47	11.00	-13.47
Mid	5550	-1.780	-1.14	11.00	-12.14
High	5670	-2.330	-1.69	11.00	-12.69

10.4.10. OUTPUT POWER AND PPSD PLOTS, Chain 0





10.5. PEAK EXCURSION

LIMITS

FCC §15.407 (a) (6)

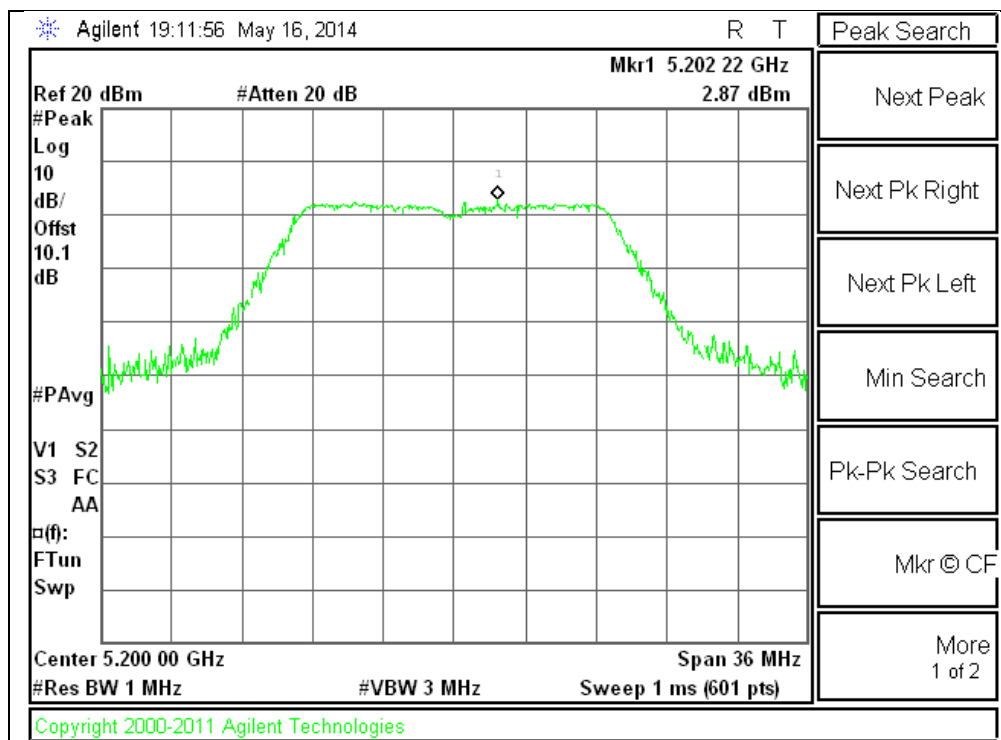
The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS

10.5.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	2.870	0.69	0.29	1.89	13	-11.11

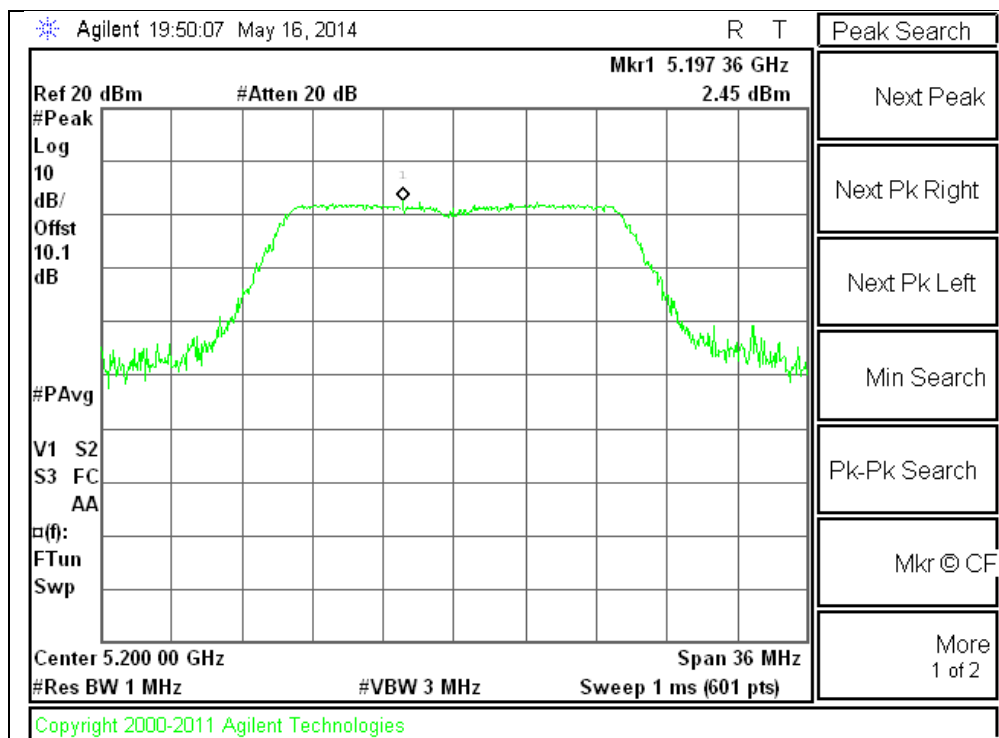
PEAK EXCURSION



10.5.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	2.450	0.62	0.32	1.51	13	-11.49

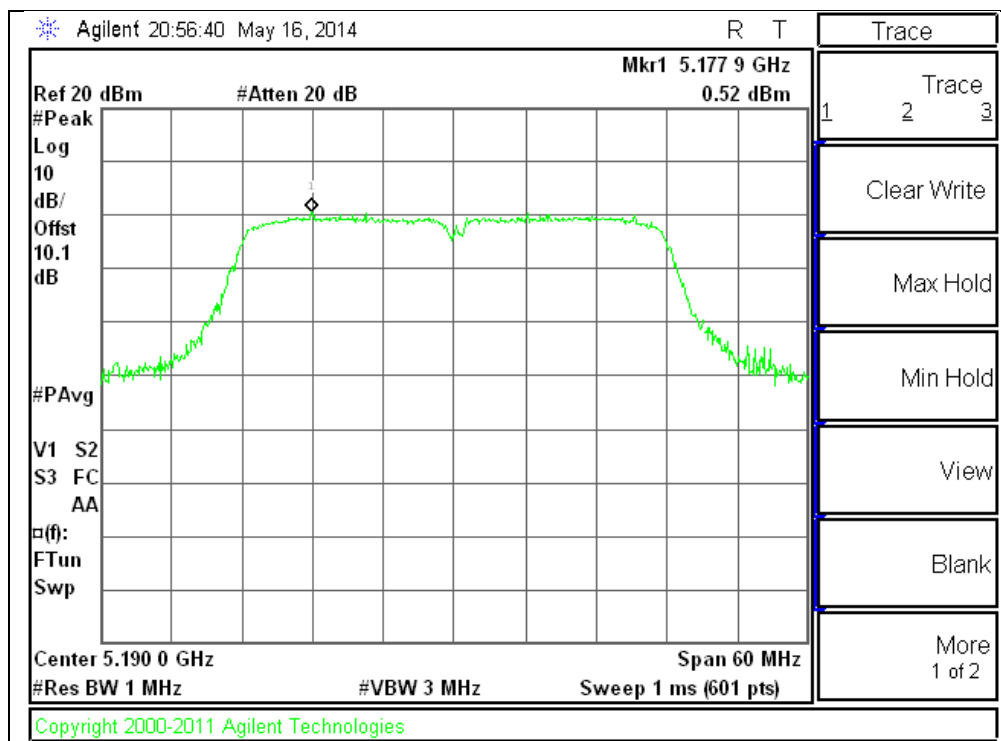
PEAK EXCURSION



10.5.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5230	0.520	-3.24	0.64	3.12	13	-9.88

PEAK EXCURSION



11. TRANSMITTER ABOVE 1 GHz

LIMITS

FCC §15.205 and §15.209

Frequency Range (MHz)	Field Strength Limit ($\mu\text{V/m}$) at 3 m	Field Strength Limit (dB $\mu\text{V/m}$) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

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

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

Reference to KDB 789033 UNII part H) 6) d) Method VB:

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor to the reading offset for average measurements.

The spectrum from 1GHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

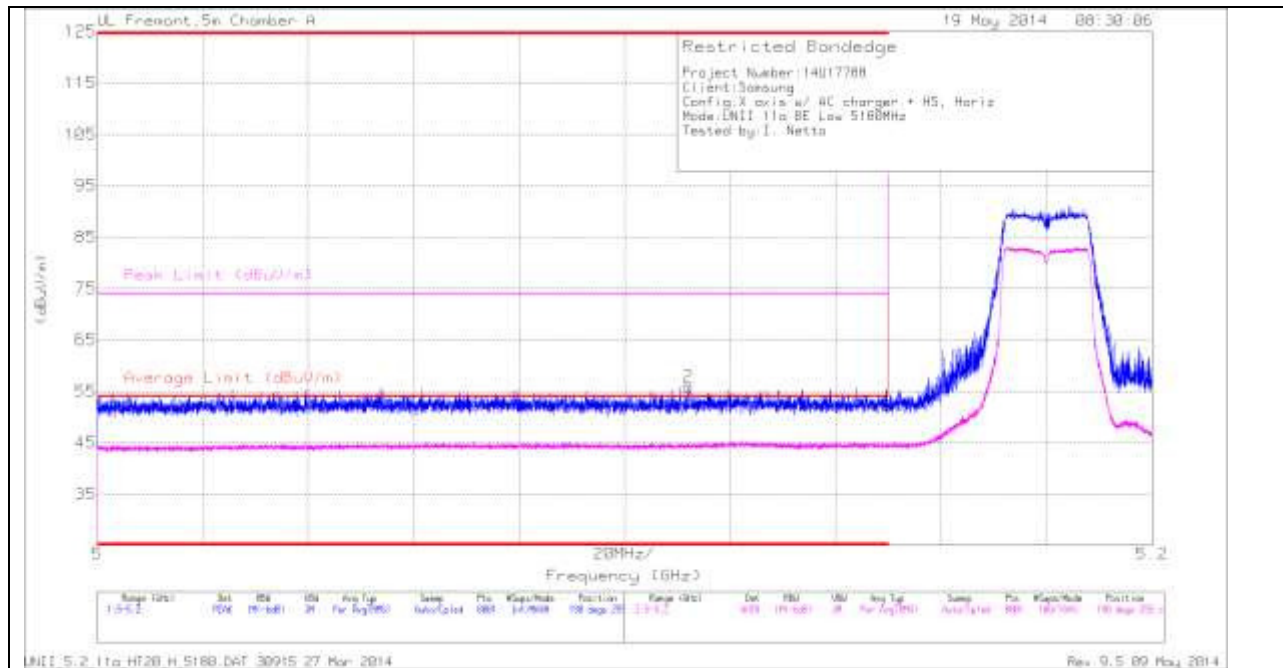
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

11.1. 5.2 GHz

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

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	37.04	PK	34.4	-19.3	0	52.14	-	-	74	-21.86	190	255	H
2	* 5.112	41.21	PK	34.3	-19.6	0	55.91	-	-	74	-18.09	190	255	H
3	* 5.15	28.89	RMS	34.4	-19.3	.3	44.19	54	-9.81	-	-	190	255	H
4	* 5.122	30.18	RMS	34.4	-19.3	.3	45.48	54	-8.52	-	-	190	255	H

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

PK - Peak detector

RMS - RMS detection

UL Frequent, 5m Chamber A

19 May 2014 08:37:54

Restricted Band Edge

Project Number 14017788

Client Samsung

Config X axis w/ AC charger + HS, Vert

Mode DNI 11a BE Low 518MHz

Tested by I. Netto

Peak Limit (dBu/Hz)

Average Limit (dBu/Hz)

20MHz/

Frequency (GHz)

Run ID	Set	RF	RA	Ant Type	Temp	Pin	Power/Mod	Position	Range (dB)	Det	RFU	US	Ant Type	Temp	Pin	Power/Mod	Position
14017788	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

DNI 5.2 11a HT20 V 5180.DAT 30015 27 May 2014

Rev 0.5 09 May 2014

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cb/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	36.69	PK	34.4	-19.3	0	51.79	-	-	74	-22.21	254	366	V
2	* 5.013	41.96	PK	34.2	-20.3	0	55.86	-	-	74	-18.14	254	366	V
3	* 5.15	29.26	RMS	34.4	-19.3	.3	44.56	54	-9.44	-	-	254	366	V
4	* 5.123	30.13	RMS	34.4	-19.3	.3	45.43	54	-8.57	-	-	254	366	V

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.459	37.75	PK	28.2	-34.5	31.45	-	-	74	-42.55	-	-	0-360	99	H
2	* 1.536	35.29	PK	28.1	-34.2	29.19	-	-	74	-44.81	-	-	0-360	99	H
4	* 1.459	35.25	PK	28.2	-34.5	28.95	-	-	74	-45.05	-	-	0-360	99	V
3	1.846	32.13	PK	30.6	-33.6	29.13	-	-	-	-	68.2	-39.07	0-360	202	H
6	10.359	33.95	PK	37.2	-22.7	48.45	-	-	-	-	68.2	-19.75	0-360	202	V
5	10.36	29.1	PK	37.2	-22.7	43.6	-	-	-	-	68.2	-24.6	0-360	201	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC factor	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
* 1.459	44.5	PK1	28.2	-34.5		38.2	-	-	74	-35.8	-	-	360	100	H
* 1.459	34.88	AD1	28.2	-34.5	0.3	28.58	54	-25.42	-	-	-	-	360	100	H
* 1.536	43.89	PK1	28.1	-34.2		37.79	-	-	74	-36.21	-	-	360	100	H
* 1.536	33.67	AD1	28.1	-34.2	0.3	27.57	54	-26.43	-	-	-	-	360	100	H
* 1.536	43.62	PK1	28.1	-34.2		37.52	-	-	74	-36.48	-	-	360	100	H
* 1.459	32.32	AD1	28.2	-34.5	0.3	26.02	54	-27.98	-	-	-	-	360	100	V
10.36	35.98	PK1	37.2	-22.7		50.48	-	-	-	-	68.2	-17.72	360	203	H
10.36	38.85	PK1	37.2	-22.7		53.35	-	-	-	-	68.2	-14.85	360	203	V
10.36	31.51	AD1	37.2	-22.7	0.3	46.01	-	-	-	-	-	-	360	203	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL

Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.056	36.38	PK	27.2	-34.4	29.18	-	-	74	-44.82	-	-	0-360	202	H
2	* 1.459	39.06	PK	28.2	-34.5	32.76	-	-	74	-41.24	-	-	0-360	99	H
3	* 1.536	36.17	PK	28.1	-34.2	30.07	-	-	74	-43.93	-	-	0-360	202	H
4	* 1.459	36.26	PK	28.2	-34.5	29.96	-	-	74	-44.04	-	-	0-360	202	V
6	10.399	33.68	PK	37.3	-23	47.98	-	-	-	-	68.2	-20.22	0-360	99	V
5	10.4	28.88	PK	37.3	-23	43.18	-	-	-	-	68.2	-25.02	0-360	202	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC factor	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
* 1.056	35.87	AD1	27.2	-34.4	0.3	28.67	54	-25.33	-	-	-	-	360	204	H
* 1.459	32.64	AD1	28.2	-34.5	0.3	26.34	54	-27.66	-	-	-	-	360	100	H
* 1.536	31.49	AD1	28.1	-34.2	0.3	25.39	54	-28.61	-	-	-	-	360	204	H
* 1.46	31.64	AD1	28.2	-34.5	0.3	25.34	54	-28.66	-	-	-	-	360	204	V
10.4	26.49	AD1	37.3	-23	0.3	40.79	-	-	-	-	-	-	360	204	H
10.4	33.78	AD1	37.3	-23	0.3	48.08	-	-	-	-	-	-	3	255	V

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

AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.056	36.92	PK	27.2	-34.4	29.72	-	-	74	-44.28	-	-	0-360	201	H
2	* 1.459	38.16	PK	28.2	-34.5	31.86	-	-	74	-42.14	-	-	0-360	99	H
3	* 1.536	35.97	PK	28.1	-34.2	29.87	-	-	74	-44.13	-	-	0-360	99	H
4	* 1.056	36.11	PK	27.2	-34.4	28.91	-	-	74	-45.09	-	-	0-360	202	V
6	10.479	33.49	PK	37.4	-23.3	47.59	-	-	-	-	68.2	-20.61	0-360	99	V
5	10.501	26.96	PK	37.5	-23.4	41.06	-	-	-	-	68.2	-27.14	0-360	202	H

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

PK - Peak detector

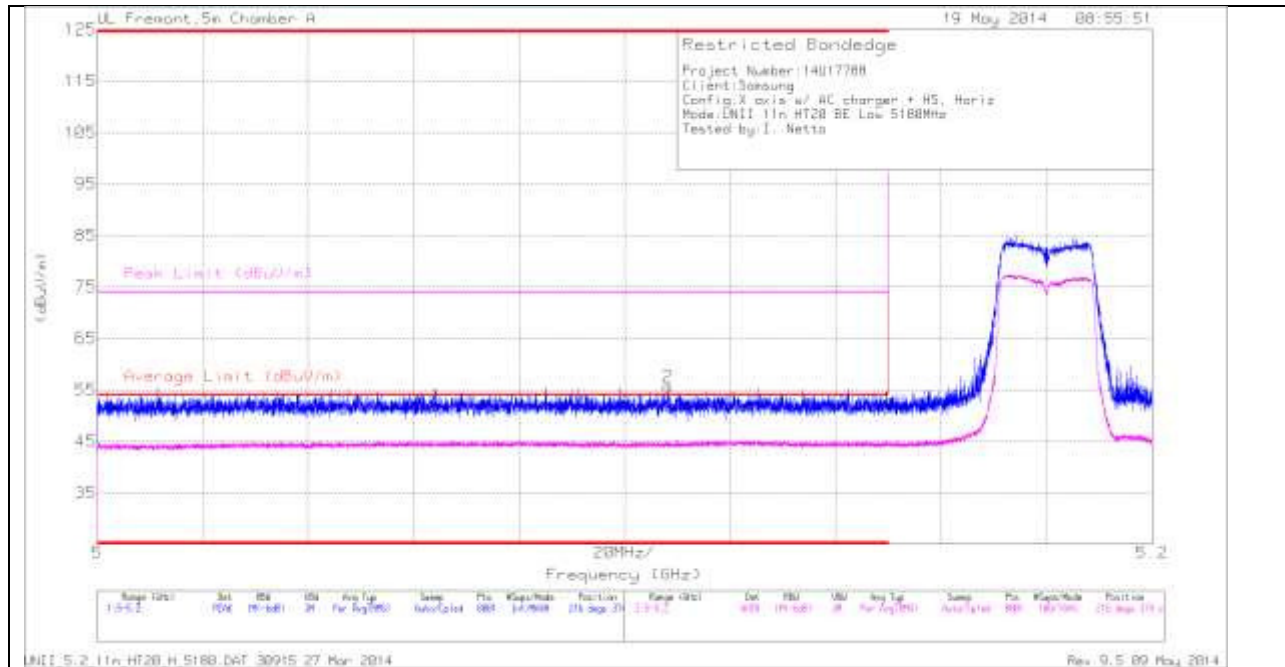
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC factor	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
* 1.056	35.74	AD1	27.2	-34.4	0.3	28.54	54	-25.46	-	-	-	-	1	203	H
* 1.459	32.34	AD1	28.2	-34.5	0.3	26.04	54	-27.96	-	-	-	-	1	100	H
* 1.536	30.89	AD1	28.1	-34.2	0.3	24.79	54	-29.21	-	-	-	-	1	100	H
* 1.056	30.32	Avg	27.2	-34.4	0.3	23.12	54	-30.88	-	-	-	-	1	204	V
10.481	27.73	Avg	37.4	-23.3	0.3	41.83	-	-	-	-	-	-	1	100	V
10.502	23.81	AD1	37.5	-23.4	0.3	37.91	-	-	-	-	-	-	1	204	H

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

11.1.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

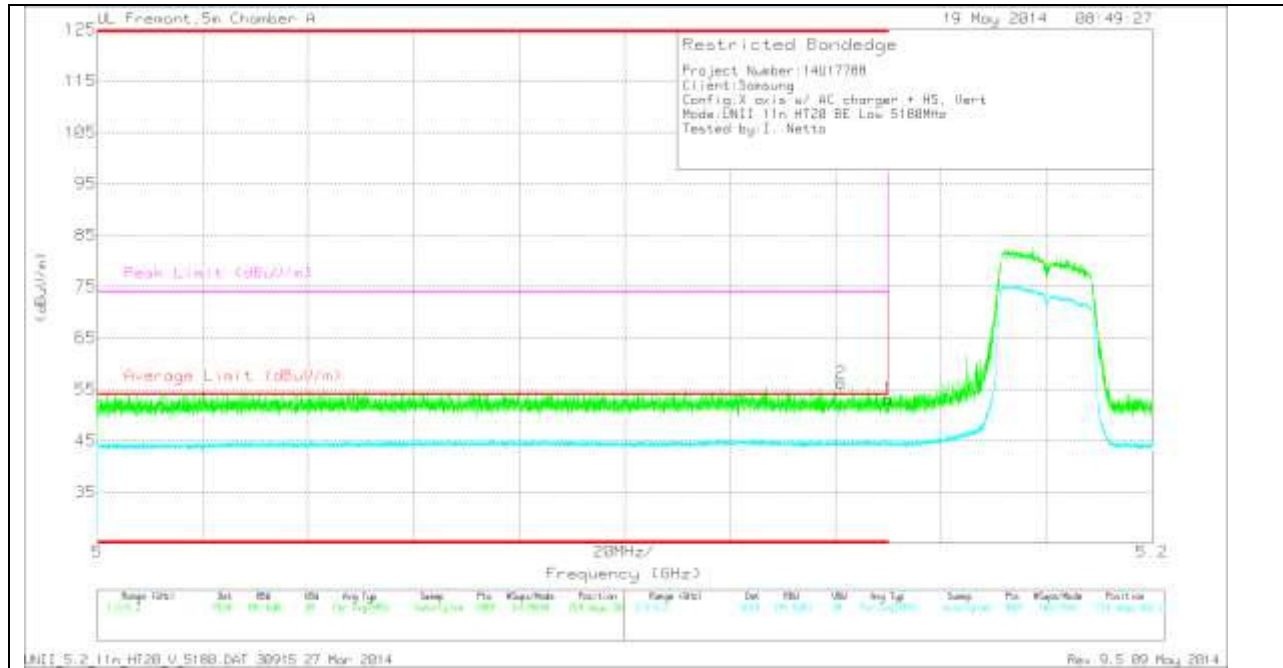
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT120 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	36.42	PK	34.4	-19.3	0	51.52	-	-	74	-22.48	216	374	H
2	* 5.108	40.89	PK	34.3	-19.6	0	55.59	-	-	74	-18.41	216	374	H
3	* 5.15	29.2	RMS	34.4	-19.3	0.3	44.5	54	-9.5	-	-	216	374	H
4	* 5.123	30.37	RMS	34.4	-19.3	0.3	45.67	54	-8.33	-	-	216	374	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	38.04	PK	34.4	-19.3	0	53.14	-	-	74	-20.86	254	366	V
2	* 5.141	41.19	PK	34.4	-19.3	0	56.29	-	-	74	-17.71	254	366	V
3	* 5.15	29.36	RMS	34.4	-19.3	0.3	44.66	54	-9.34	-	-	254	366	V
4	* 5.119	30.1	RMS	34.4	-19.4	0.3	45.3	54	-8.7	-	-	254	366	V

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

PK - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.056	37.39	PK	27.2	-34.4	30.19	-	-	74	-43.81	-	-	0-360	201	H
2	* 1.459	38.44	PK	28.2	-34.5	32.14	-	-	74	-41.86	-	-	0-360	99	H
3	* 1.537	37.6	PK	28.1	-34.2	31.5	-	-	74	-42.5	-	-	0-360	99	H
4	9.877	30.11	PK	37	-24.1	43.01	-	-	-	-	68.2	-25.19	0-360	99	H
5	10.359	30.09	PK	37.2	-22.7	44.59	-	-	-	-	68.2	-23.61	0-360	202	H
6	10.359	33.72	PK	37.2	-22.7	48.22	-	-	-	-	68.2	-19.98	0-360	99	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC factor	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
* 1.056	35.62	AD1	27.2	-34.4	0.3	28.42	54	-25.58	-	-	-	-	1	203	H
* 1.459	32.31	AD1	28.2	-34.5	0.3	26.01	54	-27.99	-	-	-	-	1	100	H
* 1.536	31.01	AD1	28.1	-34.2	0.3	24.91	54	-29.09	-	-	-	-	1	100	H
9.875	38.66	PK1	37	-24.1		51.56	-	-	-	-	68.2	-16.64	1	100	H
10.36	36.51	PK1	37.2	-22.7		51.01	-	-	-	-	68.2	-17.19	1	204	H
10.36	38.85	PK1	37.2	-22.7		53.35	-	-	-	-	68.2	-14.85	1	100	V
10.36	31.81	AD1	37.2	-22.7	0.3	46.31	-	-	-	-	-	-	1	100	V

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

PK1 - KDB789033 Method: Peak

MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL

Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.056	36.69	PK	27.2	-34.4	29.49	-	-	74	-44.51	-	-	0-360	202	H
2	* 1.46	37.54	PK	28.2	-34.5	31.24	-	-	74	-42.76	-	-	0-360	99	H
3	* 1.536	37.13	PK	28.1	-34.2	31.03	-	-	74	-42.97	-	-	0-360	202	H
4	9.92	30.64	PK	37	-24	43.64	-	-	-	-	68.2	-24.56	0-360	202	H
5	10.399	28.37	PK	37.3	-23	42.67	-	-	-	-	68.2	-25.53	0-360	202	H
6	10.399	33.66	PK	37.3	-23	47.96	-	-	-	-	68.2	-20.24	0-360	99	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC factor	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
* 1.056	35.09	AD1	27.2	-34.4	0.3	27.89	54	-26.11	-	-	-	-	1	204	H
* 1.056	32.4	RMS	27.2	-34.4	0.3	25.2	-	-	-	-	-	-	1	204	H
* 1.459	32.08	AD1	28.2	-34.5	0.3	25.78	54	-28.22	-	-	-	-	1	100	H
* 1.536	30.47	Avg	28.1	-34.2	0.3	24.37	54	-29.63	-	-	-	-	1	204	H
9.921	27.87	AD1	37	-24	0.3	40.87	-	-	-	-	-	-	1	204	H
10.4	26.29	AD1	37.3	-23	0.3	40.59	-	-	-	-	-	-	1	204	H
10.4	32.47	AD1	37.3	-23	0.3	46.77	-	-	-	-	-	-	1	100	V

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

Avg - Video bandwidth < Resolution bandwidth

RMS - RMS detection

AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL

Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.056	35.84	PK	27.2	-34.4	28.64	-	-	74	-45.36	-	-	0-360	99	H
2	* 1.459	38.58	PK	28.2	-34.5	32.28	-	-	74	-41.72	-	-	0-360	99	H
3	* 1.537	36.57	PK	28.1	-34.2	30.47	-	-	74	-43.53	-	-	0-360	99	H
4	9.959	30.03	PK	37	-24.1	42.93	-	-	-	-	68.2	-25.27	0-360	202	H
5	10.479	28.24	PK	37.4	-23.3	42.34	-	-	-	-	68.2	-25.86	0-360	202	H
6	10.479	33.94	PK	37.4	-23.3	48.04	-	-	-	-	68.2	-20.16	0-360	99	V

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

PK - Peak detector

Radiated Emissions

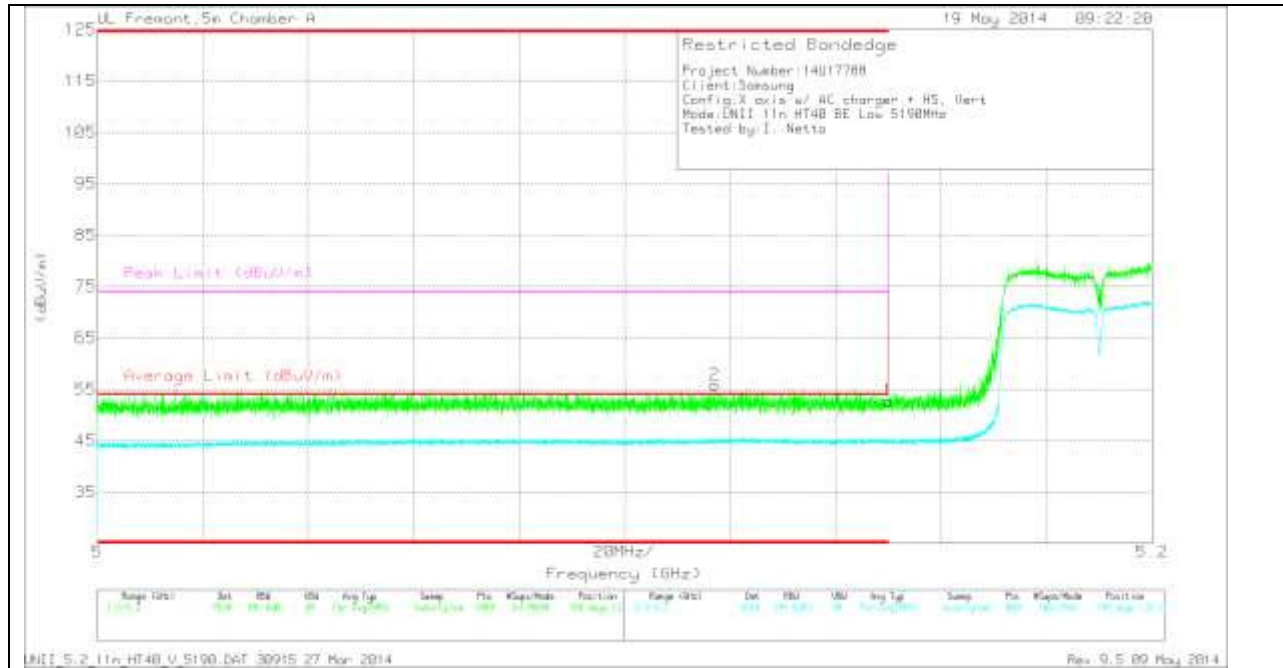
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC factor	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.056	34.83	AD1	27.2	-34.4	0.3	27.63	54	-26.37	-	-	-	-	1	100	H
* 1.459	32.27	AD1	28.2	-34.5	0.3	25.97	54	-28.03	-	-	-	-	1	100	H
* 1.536	31.05	AD1	28.1	-34.2	0.3	24.95	54	-29.05	-	-	-	-	1	100	H
9.959	38.61	PK1	37	-24.1		51.51	-	-	-	-	68.2	-16.69	1	204	H
10.479	35.79	PK1	37.4	-23.3		49.89	-	-	-	-	68.2	-18.31	1	204	H
10.479	24.71	Avg	37.4	-23.3	0.3	38.81	-	-	-	-	-	-	1	100	V
10.48	38.65	PK1	37.4	-23.3		52.75	-	-	-	-	68.2	-15.45	1	100	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Ftr r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	37.69	PK	34.4	-19.3	0	52.79	-	-	74	-21.21	188	133	V
2	* 5.117	40.98	PK	34.3	-19.4	0	55.88	-	-	74	-18.12	188	133	V
3	* 5.15	29.78	RMS	34.4	-19.3	.6	45.38	54	-8.62	-	-	188	133	V
4	* 5.124	30.1	RMS	34.4	-19.3	.6	45.7	54	-8.3	-	-	188	133	V

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

PK - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.056	37.06	PK	27.2	-34.4	29.86	-	-	74	-44.14	-	-	0-360	202	H
2	* 1.133	35.12	PK	27.6	-34.6	28.12	-	-	74	-45.88	-	-	0-360	202	H
3	* 1.459	36.92	PK	28.2	-34.5	30.62	-	-	74	-43.38	-	-	0-360	99	H
4	* 1.536	35.85	PK	28.1	-34.2	29.75	-	-	74	-44.25	-	-	0-360	202	H
5	10.379	29.2	PK	37.3	-22.7	43.8	-	-	-	-	68.2	-24.4	0-360	201	H
6	10.379	34.79	PK	37.3	-22.7	49.39	-	-	-	-	68.2	-18.81	0-360	99	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC factor	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
* 1.056	34.93	AD1	27.2	-34.4	.6	27.73	54	-26.27	-	-	-	-	1	204	H
* 1.133	31.77	AD1	27.6	-34.6	.6	24.77	54	-29.23	-	-	-	-	1	204	H
* 1.46	31.61	AD1	28.2	-34.5	.6	25.31	54	-28.69	-	-	-	-	1	100	H
* 1.537	28.72	Avg	28.1	-34.2	.6	22.62	54	-31.38	-	-	-	-	1	204	H
10.38	25.95	AD1	37.3	-22.7	.6	40.55	-	-	-	-	-	-	1	201	H
10.38	30.61	Avg	37.3	-22.7	.6	45.21	-	-	-	-	-	-	1	100	V

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

AD1 - KDB789033 Method: AD Primary Power Average

MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL

Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.056	36.31	PK	27.2	-34.4	29.11	-	-	74	-44.89	-	-	0-360	202	H
2	* 1.459	37.63	PK	28.2	-34.5	31.33	-	-	74	-42.67	-	-	0-360	99	H
3	* 1.536	37.66	PK	28.1	-34.2	31.56	-	-	74	-42.44	-	-	0-360	202	H
4	* 1.459	34.76	PK	28.2	-34.5	28.46	-	-	74	-45.54	-	-	0-360	99	V
5	10.003	29.8	PK	37	-23.3	43.5	-	-	-	-	68.2	-24.7	0-360	99	H
6	10.459	34.7	PK	37.4	-23.4	48.7	-	-	-	-	68.2	-19.5	0-360	99	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC factor	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
* 1.056	34.84	AD1	27.2	-34.4	.6	27.64	54	-26.36	-	-	-	-	1	204	H
* 1.46	31.7	AD1	28.2	-34.5	.6	25.4	54	-28.6	-	-	-	-	1	100	H
* 1.536	32.93	AD1	28.1	-34.2	.6	26.83	54	-27.17	-	-	-	-	1	204	H
10.46	32.42	AD1	37.4	-23.4	.6	46.42	-	-	-	-	-	-	1	100	V

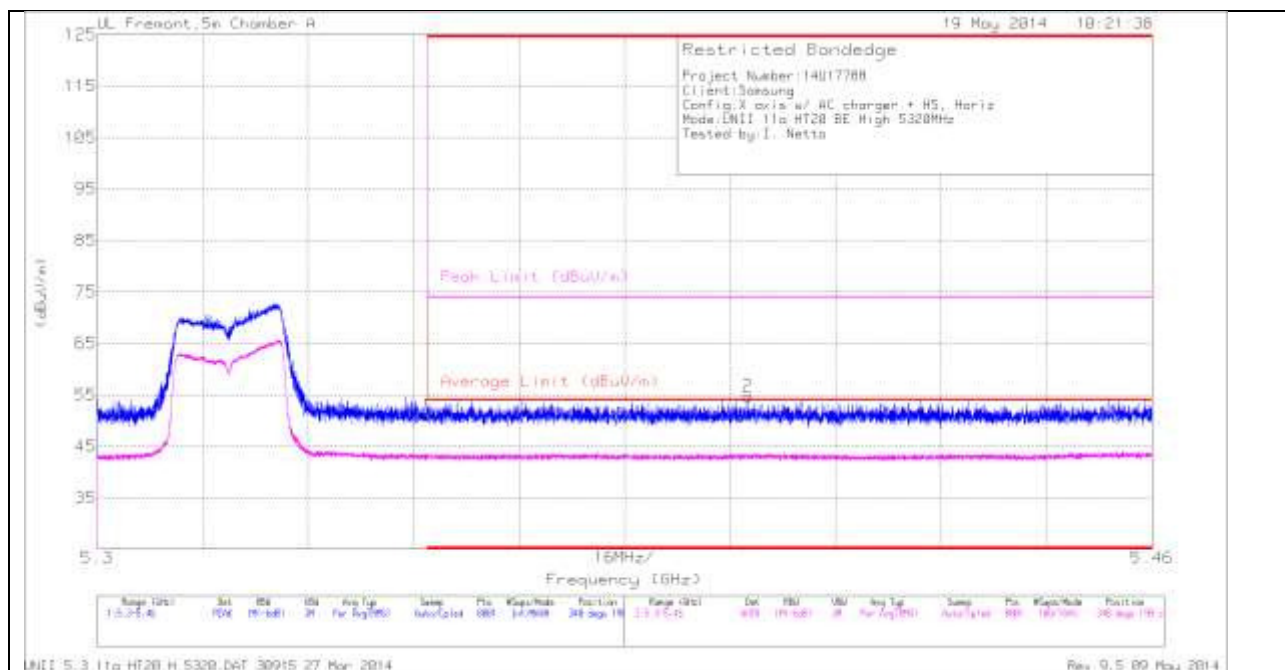
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

AD1 - KDB789033 Method: AD Primary Power Average

11.2. 5.3 GHz

11.2.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

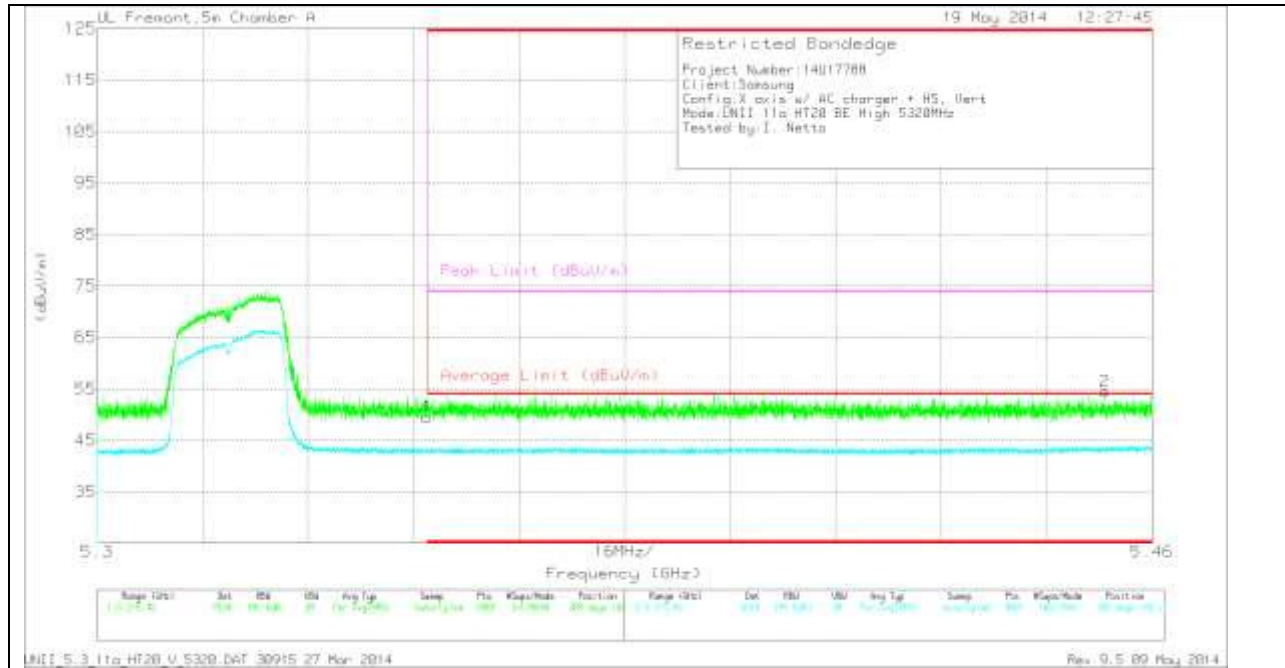
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cb/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	35.73	PK	34.5	-19.2	0	51.03	-	-	74	-22.97	340	190	H
2	* 5.399	39.57	PK	34.6	-19.4	0	54.77	-	-	74	-19.23	340	190	H
3	* 5.35	27.18	RMS	34.5	-19.2	.3	42.68	54	-11.32	-	-	340	190	H
4	* 5.454	29.15	RMS	34.6	-19.9	.3	44.05	54	-9.95	-	-	340	190	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	34.25	PK	34.5	-19.2	0	49.55	-	-	74	-24.45	309	160	V
2	* 5.453	39.76	PK	34.6	-19.9	0	54.46	-	-	74	-19.54	309	160	V
3	* 5.35	27.02	RMS	34.5	-19.2	.3	42.52	54	-11.48	-	-	309	160	V
4	* 5.459	29.17	RMS	34.6	-19.9	.3	44.07	54	-9.93	-	-	309	160	V

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

PK - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS**LOW CHANNEL HORIZONTAL**

Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.056	36.85	PK	27.2	-34.4	0	29.65	-	-	74	-44.35	-	-	0-360	99	H
2	* 1.459	37.14	PK	28.2	-34.5	0	30.84	-	-	74	-43.16	-	-	0-360	99	H
3	* 1.537	37.05	PK	28.1	-34.2	0	30.95	-	-	74	-43.05	-	-	0-360	202	H
4	2.391	33.05	PK	32.1	-32.7	0	32.45	-	-	-	-	68.2	-35.75	0-360	99	V
5	9.912	30.48	PK	37	-24.2	0	43.28	-	-	-	-	68.2	-24.92	0-360	99	V
7	9.931	30.86	PK	37	-23.9	0	43.96	-	-	-	-	68.2	-24.24	0-360	99	H
6	10.519	33.56	PK	37.5	-23.1	0	47.96	-	-	-	-	68.2	-20.24	0-360	99	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (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
* 1.056	44.18	PK1	27.2	-34.4	0	36.98	-	-	74	-37.02	-	-	190	100	H
* 1.056	33.39	AD1	27.2	-34.4	.3	26.49	54	-27.51	-	-	-	-	190	100	H
* 1.459	44.04	PK1	28.2	-34.5	0	37.74	-	-	74	-36.26	-	-	190	100	H
* 1.459	33.31	AD1	28.2	-34.5	.3	27.31	54	-26.69	-	-	-	-	190	100	H
10.52	24.06	AD1	37.5	-23.1	.3	38.76	-	-	-	-	-	-	190	100	V
10.521	35.59	PK1	37.5	-23.1	0	49.99	-	-	-	-	68.2	-18.21	190	100	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.056	36.45	PK	27.2	-34.4	29.25	-	-	74	-44.75	-	-	0-360	202	H
2	* 1.459	37.28	PK	28.2	-34.5	30.98	-	-	74	-43.02	-	-	0-360	99	H
3	* 1.537	37.38	PK	28.1	-34.2	31.28	-	-	74	-42.72	-	-	0-360	99	H
4	1.919	32.71	PK	31.1	-32.9	30.91	-	-	-	-	68.2	-37.29	0-360	99	V
5	9.935	30.03	PK	37	-23.9	43.13	-	-	-	-	68.2	-25.07	0-360	202	V
6	10.599	34.26	PK	37.7	-22.7	49.26	-	-	-	-	68.2	-18.94	0-360	202	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC factor	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
* 1.056	45.09	PK1	27.2	-34.4		37.89	-	-	74	-36.11	-	-	360	204	H
* 1.056	35.42	AD1	27.2	-34.4	.3	28.22	54	-25.78	-	-	-	-	360	204	H
* 1.459	43.57	PK1	28.2	-34.5		37.27	-	-	74	-36.73	-	-	360	100	H
* 1.461	31.81	AD1	28.2	-34.5	.3	25.51	54	-28.49	-	-	-	-	360	100	H
* 1.536	42.57	PK1	28.1	-34.2		36.47	-	-	74	-37.53	-	-	360	100	H
* 1.536	32.08	AD1	28.1	-34.2	.3	25.98	54	-28.02	-	-	-	-	360	100	H
10.6	38.55	PK1	37.7	-22.7		53.55	-	-	-	-	68.2	-14.65	15	200	V
10.6	30.45	AD1	37.7	-22.7	.3	45.45	-	-	-	-	-	-	15	200	V

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

PK1 - KDB789033 Method: Peak

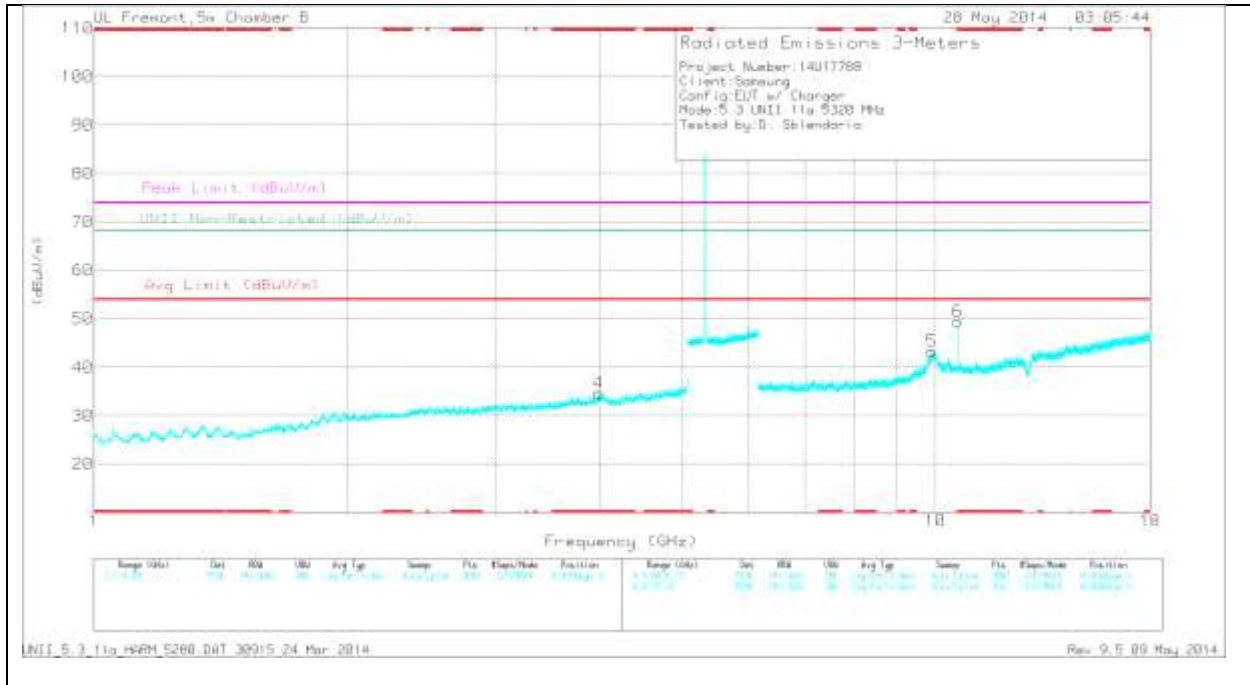
AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Chl/ Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.056	37.56	PK	27.2	-34.4	0	30.36	-	-	74	-43.64	-	-	0-360	201	H
2	* 1.459	36.86	PK	28.2	-34.5	0	30.56	-	-	74	-43.44	-	-	0-360	99	H
3	* 1.537	36.9	PK	28.1	-34.2	0	30.8	-	-	74	-43.2	-	-	0-360	201	H
4	* 3.98	31.1	PK	33.6	-30	0	34.7	-	-	74	-39.3	-	-	0-360	99	V
6	* 10.639	34.05	PK	37.7	-22.2	0	49.55	-	-	74	-24.45	-	-	0-360	202	V
7	7.178	29.77	PK	35.6	-26.6	0	38.77	-	-	-	-	68.2	-29.43	0-360	202	H
5	9.894	30.25	PK	37	-24	0	43.25	-	-	-	-	68.2	-24.95	0-360	99	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Chl/ Ftr/Pad (dB)	DC Corr (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
* 1.056	44.11	PK1	27.2	-34.4	0	36.91	-	-	74	-37.09	-	-	0	203	H
* 1.056	35.36	AD1	27.2	-34.4	.3	28.46	54	-25.54	-	-	-	-	0	203	H
* 1.461	42.98	PK1	28.1	-34.5	0	36.58	-	-	74	-37.42	-	-	0	100	H
* 1.46	31.66	AD1	28.2	-34.5	.3	25.66	54	-28.34	-	-	-	-	0	100	H
* 1.536	43.82	PK1	28.1	-34.2	0	37.72	-	-	74	-36.28	-	-	0	203	H
* 1.536	32.26	AD1	28.1	-34.2	.3	26.46	54	-27.54	-	-	-	-	0	203	H
* 10.64	39.31	PK1	37.7	-22.2	0	54.81	-	-	74	-19.19	-	-	358	246	V
* 10.64	33.58	AD1	37.7	-22.2	.3	49.38	54	-4.62	-	-	-	-	358	246	V

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

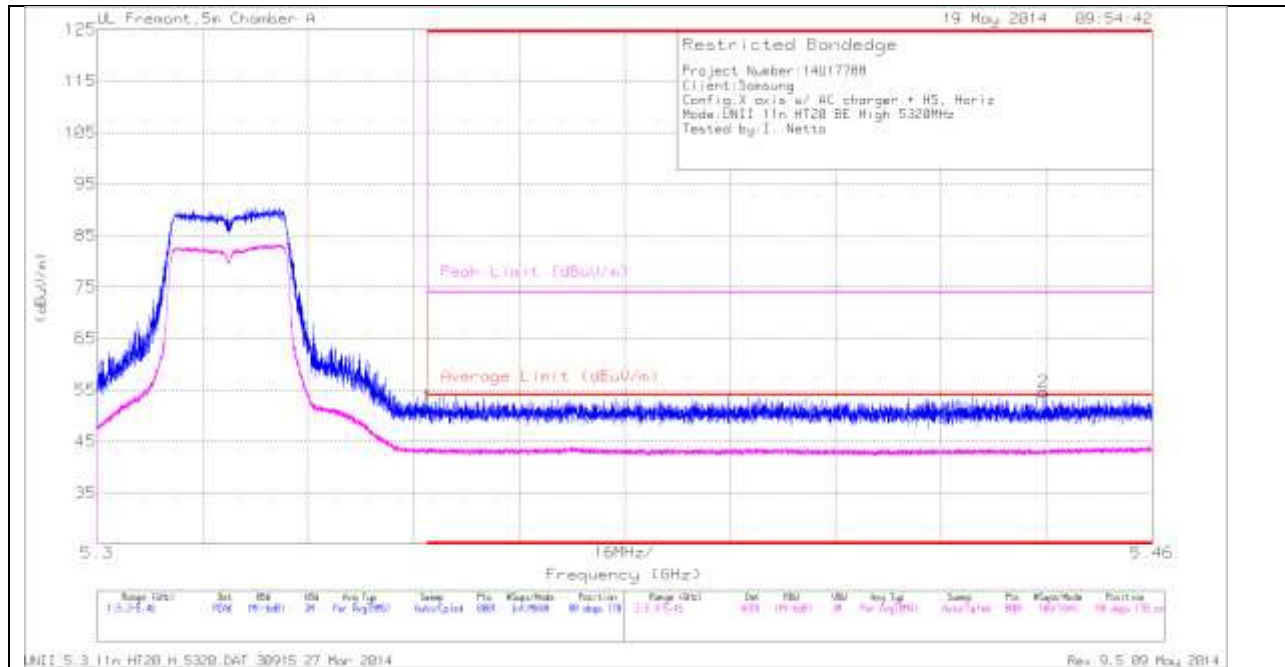
PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

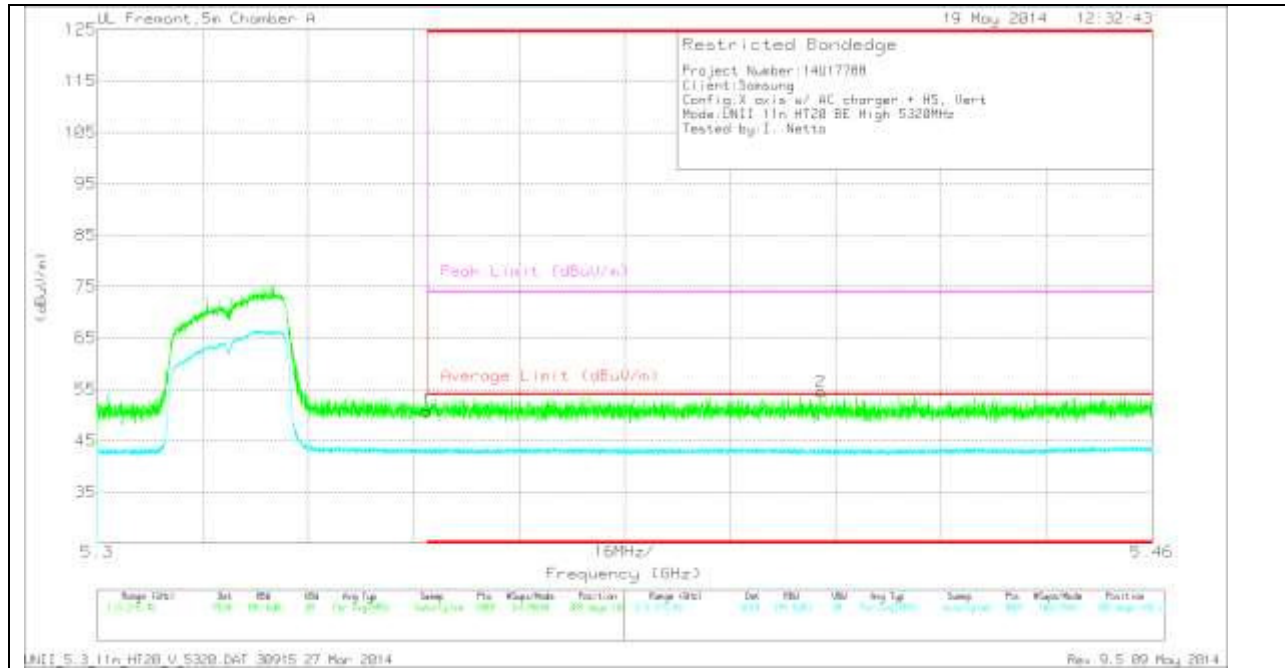
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cb/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	36.36	PK	34.5	-19.2	0	51.66	-	-	74	-22.34	88	170	H
2	* 5.443	40.09	PK	34.6	-20.1	0	54.59	-	-	74	-19.41	88	170	H
3	* 5.35	27.98	RMS	34.5	-19.2	.3	43.48	54	-10.52	-	-	88	170	H
4	* 5.407	28.84	RMS	34.6	-19.6	.3	44.04	54	-9.96	-	-	88	170	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	35.53	PK	34.5	-19.2	0	50.83	-	-	74	-23.17	309	160	V
2	* 5.41	39.58	PK	34.6	-19.7	0	54.48	-	-	74	-19.52	309	160	V
3	* 5.35	27.11	RMS	34.5	-19.2	.3	42.61	54	-11.39	-	-	309	160	V
4	* 5.451	29.08	RMS	34.6	-19.9	.3	43.98	54	-10.02	-	-	309	160	V

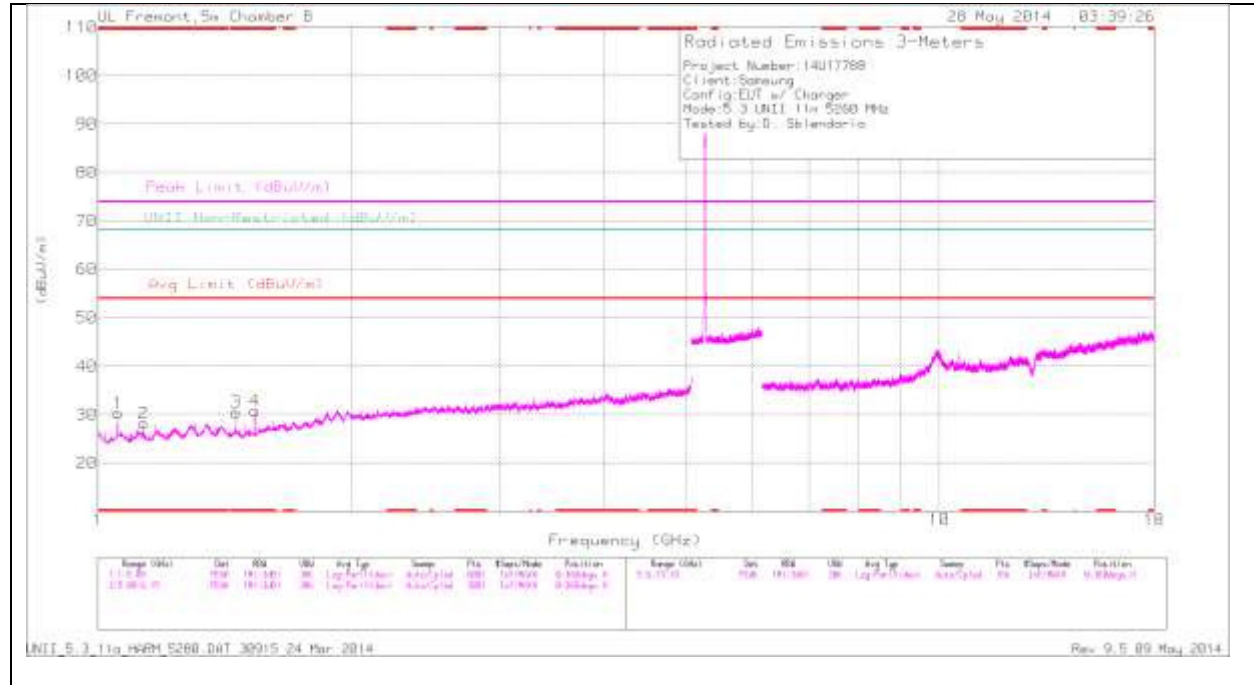
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

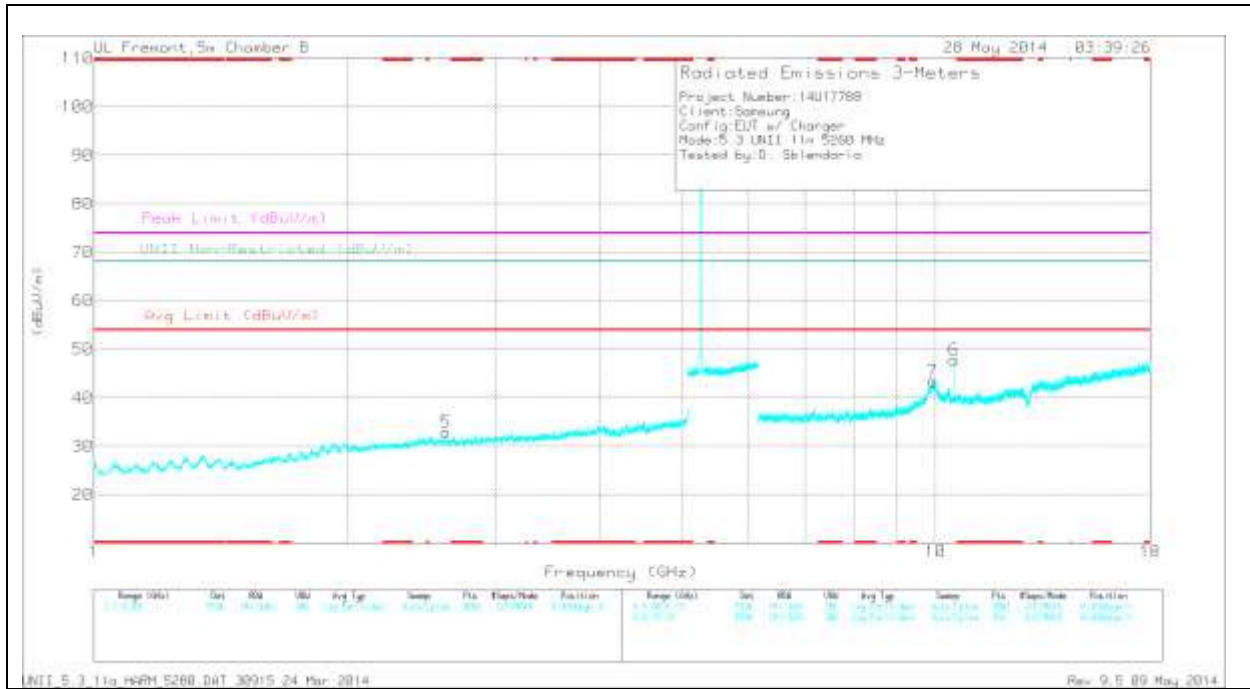
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Chl/ Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.056	37.57	PK	27.2	-34.4	0	30.37	-	-	74	-43.63	-	-	0-360	201	H
2	* 1.133	35.29	PK	27.6	-34.6	0	28.29	-	-	74	-45.71	-	-	0-360	99	H
3	* 1.46	36.82	PK	28.2	-34.5	0	30.52	-	-	74	-43.48	-	-	0-360	99	H
4	* 1.536	36.98	PK	28.1	-34.2	0	30.88	-	-	74	-43.12	-	-	0-360	99	H
5	2.618	33.16	PK	32.4	-32.6	0	32.96	-	-	-	-	68.2	-35.24	0-360	99	V
7	9.928	30.31	PK	37	-23.9	0	43.41	-	-	-	-	68.2	-24.79	0-360	202	V
6	10.519	33.39	PK	37.5	-23.1	0	47.79	-	-	-	-	68.2	-20.41	0-360	99	V

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

PK - Peak detector

Radiated Emissions

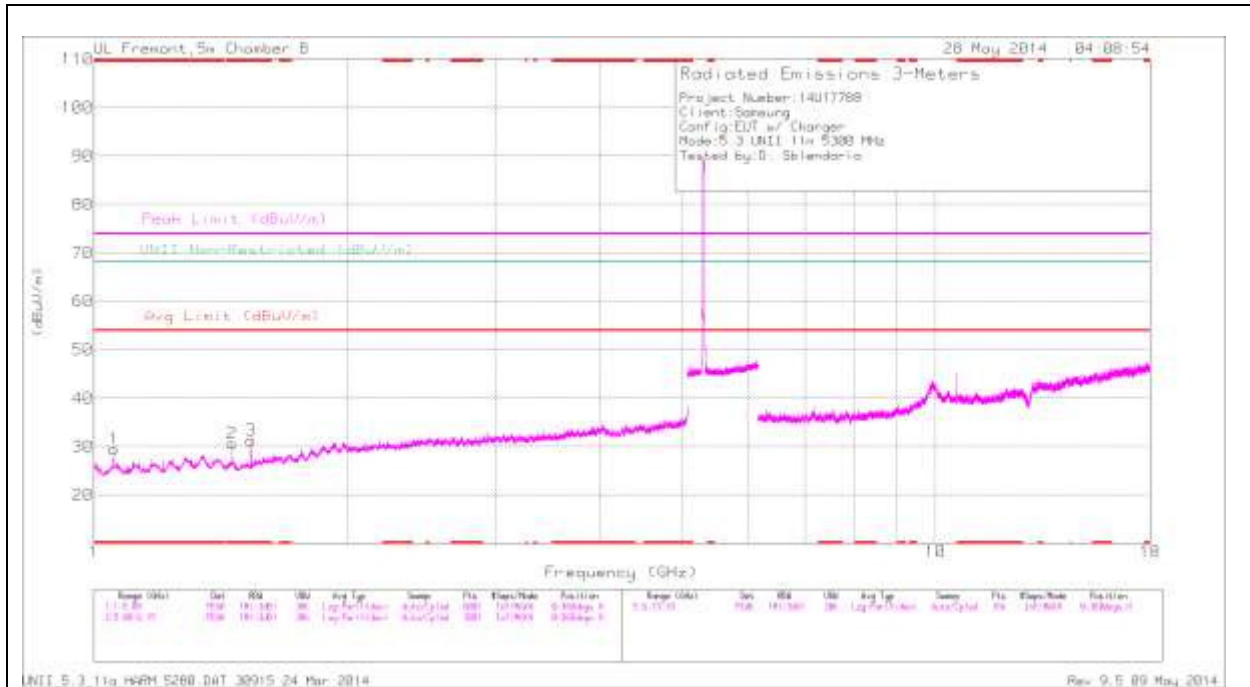
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* 1.056	45.03	PK1	27.2	-34.4	0	37.83	-	-	74	-36.17	-	-	360	203	H
* 1.056	35.88	AD1	27.2	-34.4	.3	28.98	54	-25.02	-	-	-	-	360	203	H
* 1.131	43.26	PK1	27.6	-34.6	0	36.26	-	-	74	-37.74	-	-	360	100	H
* 1.133	31.98	AD1	27.6	-34.6	.3	25.28	54	-28.72	-	-	-	-	360	100	H
* 1.46	43.04	PK1	28.2	-34.5	0	36.74	-	-	74	-37.26	-	-	360	100	H
* 1.46	32.07	AD1	28.2	-34.5	.3	26.07	54	-27.93	-	-	-	-	360	100	H
* 1.535	42.41	PK1	28.1	-34.2	0	36.31	-	-	74	-37.69	-	-	360	100	H
* 1.536	31.87	AD1	28.1	-34.2	.3	26.07	54	-27.93	-	-	-	-	360	100	H
10.52	39.5	PK1	37.5	-23.1	0	53.9	-	-	-	-	68.2	-14.3	356	250	V
10.52	33.62	AD1	37.5	-23.1	.3	48.32	-	-	-	-	-	-	356	250	V

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

PK1 - KDB789033 Method: Peak

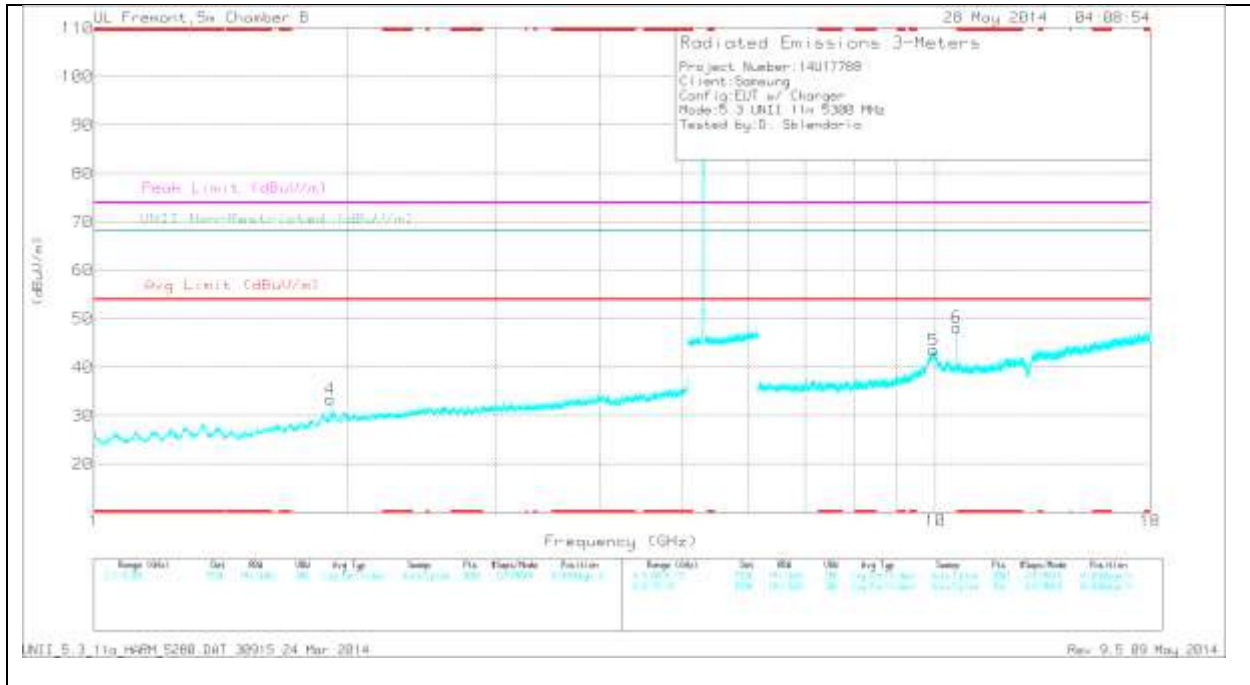
AD1 - KDB789033 Method: AD Primary Power Average

MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.056	36.73	PK	27.2	-34.4	0	29.53	-	-	74	-44.47	-	-	0-360	203	H
2	* 1.459	37.04	PK	28.2	-34.5	0	30.74	-	-	74	-43.26	-	-	0-360	99	H
3	* 1.536	37.51	PK	28.1	-34.2	0	31.41	-	-	74	-42.59	-	-	0-360	203	H
4	1.908	35.22	PK	31.1	-32.9	0	33.42	-	-	-	-	68.2	-34.78	0-360	203	V
5	9.936	30.42	PK	37	-23.9	0	43.52	-	-	-	-	68.2	-24.68	0-360	202	V
6	10.6	33.27	PK	37.7	-22.7	0	48.27	-	-	-	-	68.2	-19.93	0-360	202	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (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
* 1.056	44.02	PK1	27.2	-34.4	0	36.82	-	-	74	-37.18	-	-	360	205	H
* 1.056	35.18	AD1	27.2	-34.4	.3	28.28	54	-25.72	-	-	-	-	360	205	H
* 1.536	43.28	PK1	28.1	-34.2	0	37.18	-	-	74	-36.82	-	-	360	205	H
* 1.536	32.62	AD1	28.1	-34.2	.3	26.82	54	-27.18	-	-	-	-	360	205	H
10.6	39.02	PK1	37.7	-22.7	0	54.02	-	-	-	-	68.2	-14.18	358	272	V
10.6	33.06	AD1	37.7	-22.7	.3	48.36	-	-	-	-	-	-	358	272	V

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

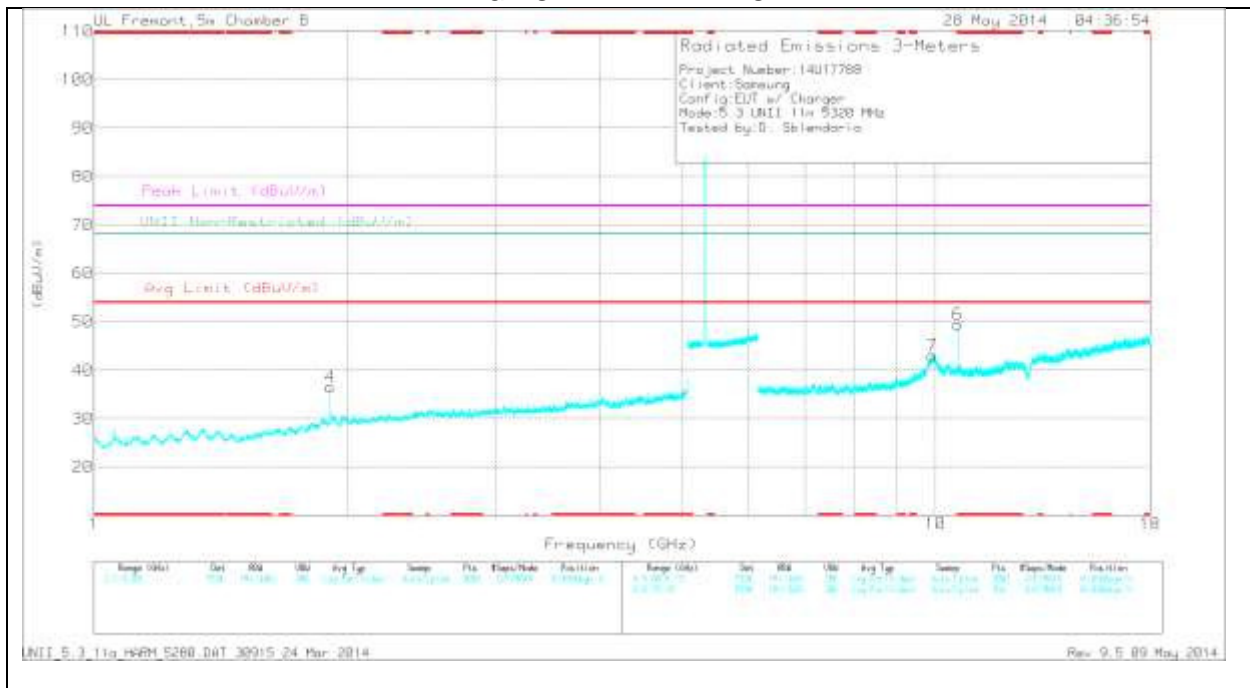
PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL HORIZONTAL

Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Chl/ Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.056	37.36	PK	27.2	-34.4	0	30.16	-	-	74	-43.84	-	-	0-360	201	H
2	* 1.459	37.57	PK	28.2	-34.5	0	31.27	-	-	74	-42.73	-	-	0-360	99	H
3	* 1.536	37.3	PK	28.1	-34.2	0	31.2	-	-	74	-42.8	-	-	0-360	99	H
6	* 10.639	34.05	PK	37.7	-22.2	0	49.55	-	-	74	-24.45	-	-	0-360	202	V
4	1.909	38.31	PK	31.1	-32.9	0	36.51	-	-	-	-	68.2	-31.69	0-360	99	V
7	9.905	30.08	PK	37	-24.1	0	42.98	-	-	-	-	68.2	-25.22	0-360	99	V
5	14.288	26.46	PK	39	-20	0	45.46	-	-	-	-	68.2	-22.74	0-360	202	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Chl/ Ftr/Pad (dB)	DC Corr (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
* 1.056	44.57	PK1	27.2	-34.4	0	37.37	-	-	74	-36.63	-	-	359	203	H
* 1.056	35.6	AD1	27.2	-34.4	.3	28.7	54	-25.3	-	-	-	-	359	203	H
* 1.458	43.46	PK1	28.2	-34.5	0	37.16	-	-	74	-36.84	-	-	359	100	H
* 1.459	31.99	AD1	28.2	-34.5	.3	25.99	54	-28.01	-	-	-	-	359	100	H
* 1.536	42.55	PK1	28.1	-34.2	0	36.45	-	-	74	-37.55	-	-	359	100	H
* 1.536	31.99	AD1	28.1	-34.2	.3	26.19	54	-27.81	-	-	-	-	359	100	H
* 10.64	39.07	PK1	37.7	-22.2	0	54.57	-	-	74	-19.43	-	-	357	246	V
* 10.64	33.02	AD1	37.7	-22.2	.3	48.82	54	-5.18	-	-	-	-	357	246	V
1.91	42.04	PK1	31.1	-32.9	0	40.24	-	-	-	-	68.2	-27.96	311	254	V
1.91	29.69	AD1	31.1	-32.9	.3	28.19	-	-	-	-	-	-	311	254	V

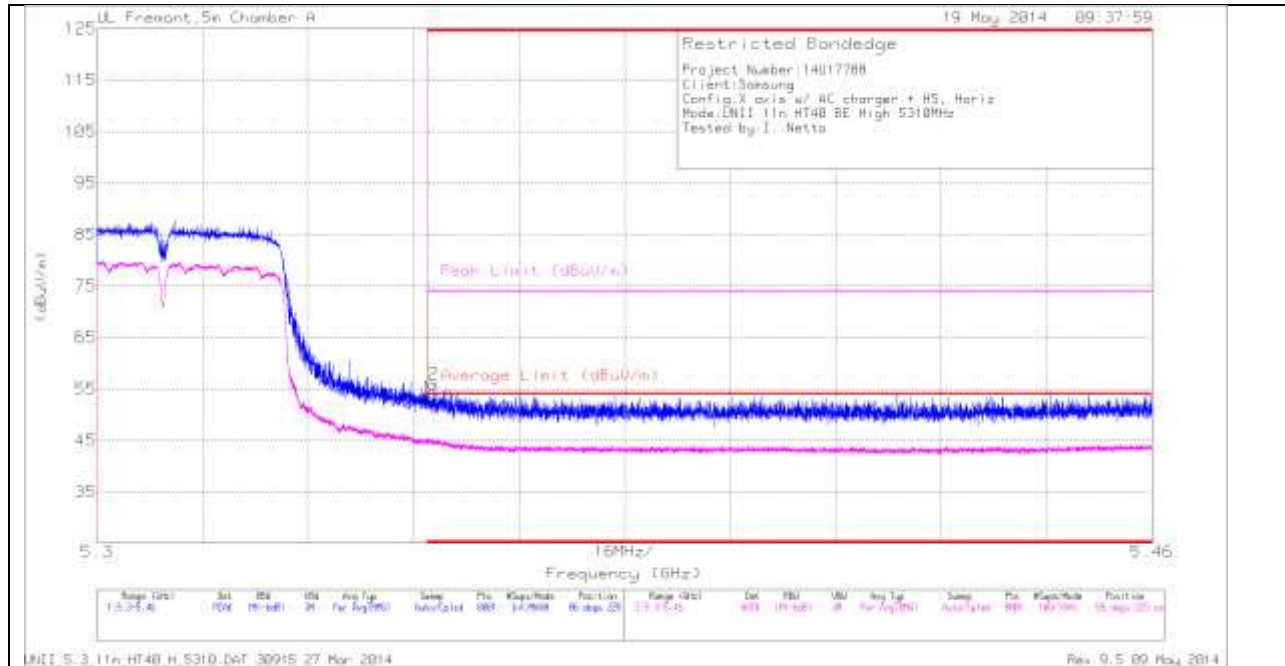
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

11.2.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

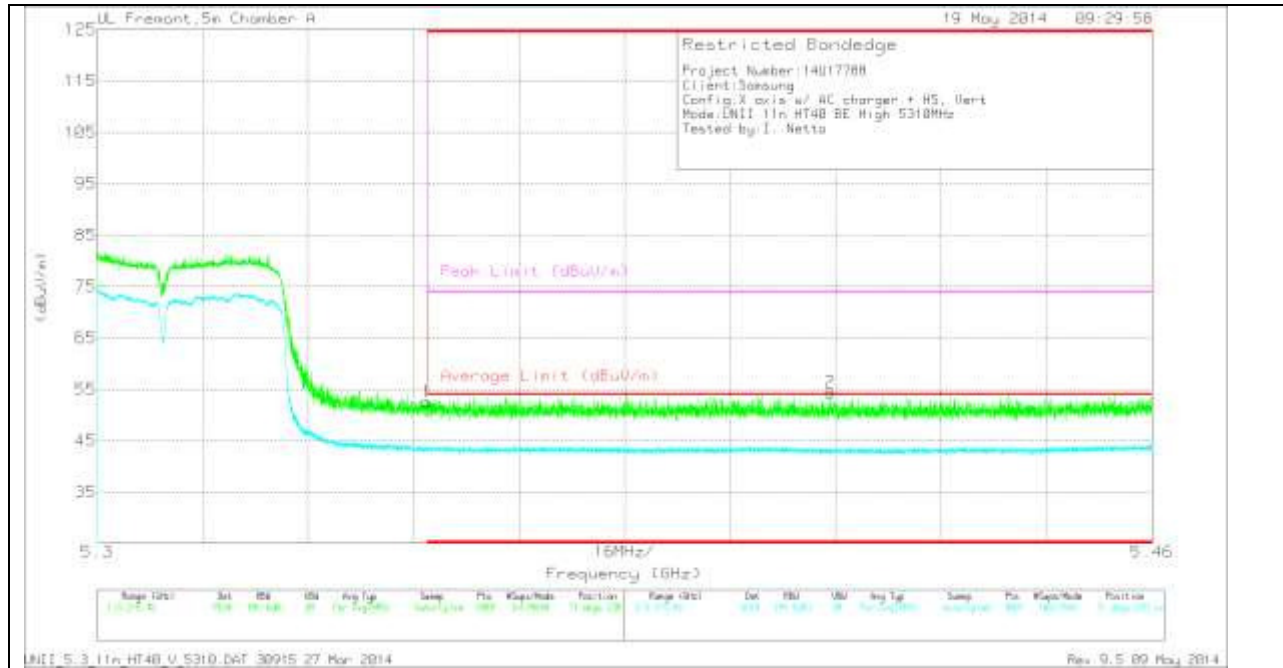
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	38.03	PK	34.5	-19.2	0	53.33	-	-	74	-20.67	86	225	H
2	* 5.351	40.63	PK	34.5	-19.2	0	55.93	-	-	74	-18.07	86	225	H
3	* 5.35	29.72	RMS	34.5	-19.2	.6	45.52	54	-8.48	-	-	86	225	H
4	* 5.35	29.65	RMS	34.5	-19.2	.6	45.45	54	-8.55	-	-	86	225	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	37.21	PK	34.5	-19.2	0	52.51	-	-	74	-21.49	71	238	V
2	* 5.411	39.61	PK	34.6	-19.8	0	54.41	-	-	74	-19.59	71	238	V
3	* 5.35	27.62	RMS	34.5	-19.2	.6	43.42	54	-10.58	-	-	71	238	V
4	* 5.46	29.08	RMS	34.6	-19.8	.6	44.38	54	-9.62	-	-	71	238	V

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

PK - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.056	36.77	PK	27.2	-34.4	29.57	-	-	74	-44.43	-	-	0-360	99	H
2	* 1.459	36.4	PK	28.2	-34.5	30.1	-	-	74	-43.9	-	-	0-360	99	H
3	* 1.536	35.93	PK	28.1	-34.2	29.83	-	-	74	-44.17	-	-	0-360	99	H
4	2.471	32.34	PK	32.4	-32.3	32.44	-	-	-	-	68.2	-35.76	0-360	99	V
6	9.936	30.29	PK	37	-23.9	43.39	-	-	-	-	68.2	-24.81	0-360	202	V
5	10.539	32.73	PK	37.5	-22.9	47.33	-	-	-	-	68.2	-20.87	0-360	99	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC factor	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
* 1.056	44.29	PK1	27.2	-34.4		37.09	-	-	74	-36.91	-	-	360	100	H
* 1.056	33.96	AD1	27.2	-34.4	.6	26.76	54	-27.24	-	-	-	-	360	100	H
* 1.461	43.88	PK1	28.1	-34.5		37.48	-	-	74	-36.52	-	-	360	100	H
* 1.459	32.13	AD1	28.2	-34.5	.6	25.83	54	-28.17	-	-	-	-	360	100	H
* 1.536	42.99	PK1	28.1	-34.2		36.89	-	-	74	-37.11	-	-	360	100	H
* 1.536	32.59	AD1	28.1	-34.2	.6	26.49	54	-27.51	-	-	-	-	360	100	H
10.54	38.91	PK1	37.5	-22.9		53.51	-	-	-	-	68.2	-14.69	7	250	V
10.54	32.1	AD1	37.5	-22.9	.6	46.7	-	-	-	-	-	-	7	250	V

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

PK1 - KDB789033 Method: Peak

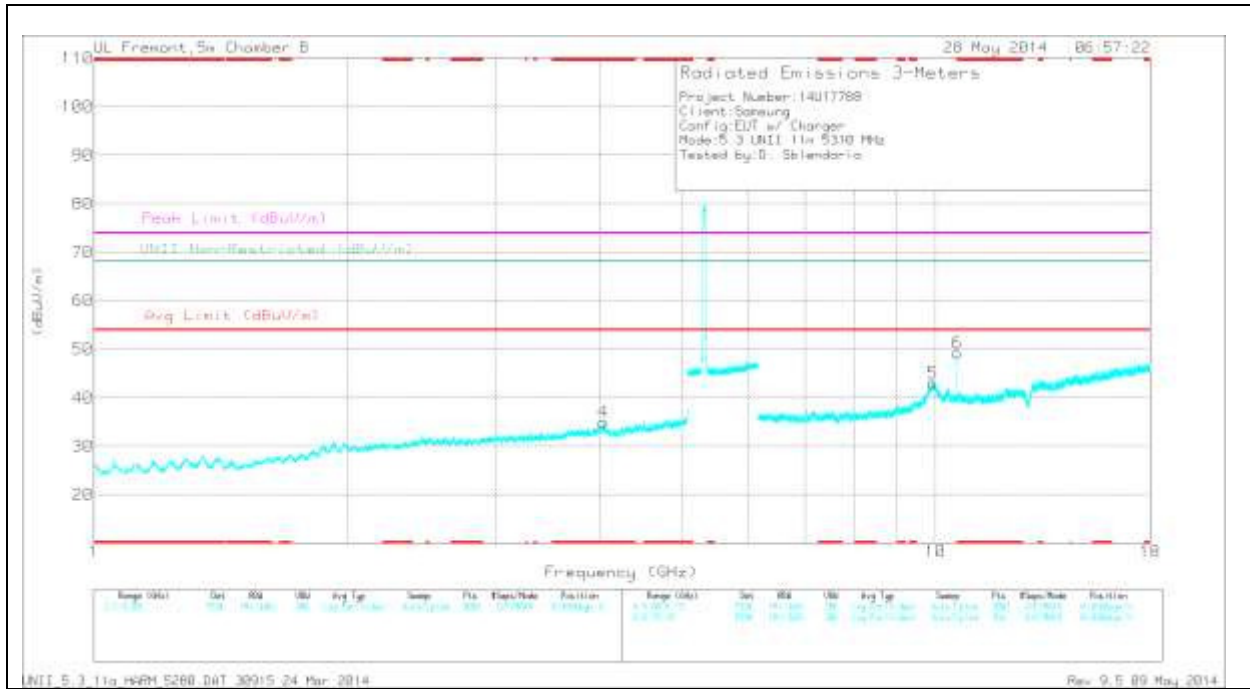
AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.056	37.26	PK	27.2	-34.4	30.06	-	-	74	-43.94	-	-	0-360	202	H
2	* 1.459	38.47	PK	28.2	-34.5	32.17	-	-	74	-41.83	-	-	0-360	99	H
3	* 1.536	36.89	PK	28.1	-34.2	30.79	-	-	74	-43.21	-	-	0-360	202	H
4	* 4.034	30.89	PK	33.6	-29.5	34.99	-	-	74	-39.01	-	-	0-360	99	V
6	* 10.619	33.82	PK	37.7	-22.2	49.32	-	-	74	-24.68	-	-	0-360	99	V
5	9.931	29.99	PK	37	-23.9	43.09	-	-	-	-	68.2	-25.11	0-360	99	V

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

PK - Peak detector

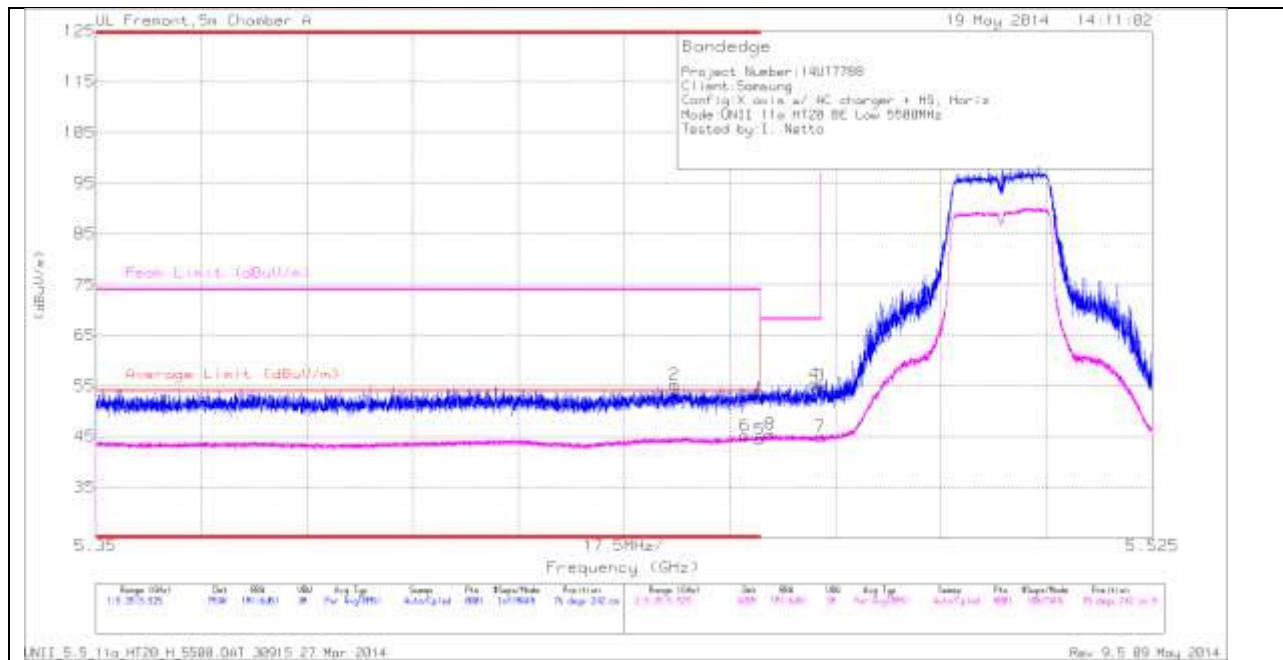
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC factor	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
* 1.056	43.83	PK1	27.2	-34.4		36.63	-	-	74	-37.37	-	-	0	204	H
* 1.056	33.37	AD1	27.2	-34.4	.6	26.17	54	-27.83	-	-	-	-	0	204	H
* 1.46	43.62	PK1	28.2	-34.5		37.32	-	-	74	-36.68	-	-	0	100	H
* 1.459	32.27	AD1	28.2	-34.5	.6	25.97	54	-28.03	-	-	-	-	0	100	H
* 1.536	42.92	PK1	28.1	-34.2		36.82	-	-	74	-37.18	-	-	0	204	H
* 1.536	31.7	AD1	28.1	-34.2	.6	25.6	54	-28.4	-	-	-	-	0	204	H
* 4.034	40.81	PK1	33.6	-29.5		44.91	-	-	74	-29.09	-	-	0	100	V
* 4.032	28.54	AD1	33.6	-29.5	.6	32.64	54	-21.36	-	-	-	-	0	100	V
* 10.62	39.02	PK1	37.7	-22.2		54.52	-	-	74	-19.48	-	-	358	223	V
* 10.62	33.6	AD1	37.7	-22.2	.6	49.1	54	-4.9	-	-	-	-	358	223	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

11.3. 5.5-5.6 GHz**11.3.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.5 GHz BAND****RESTRICTED BANDEDGE (LOW CHANNEL)
HORIZONTAL PEAK AND AVERAGE PLOT****HORIZONTAL DATA**

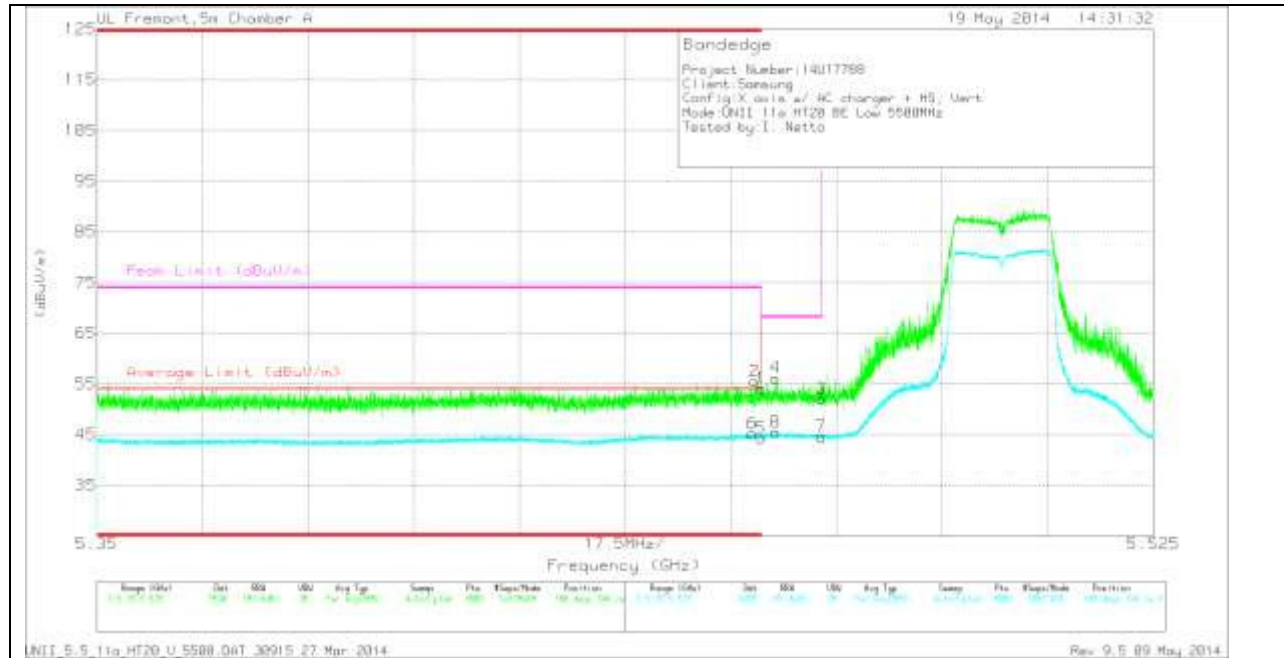
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	37.91	PK	34.4	-19.8	0	52.51	-	-	74	-21.49	76	242	H
2	* 5.446	40.8	PK	34.4	-20	0	55.2	-	-	74	-18.8	76	242	H
5	* 5.46	29.8	RMS	34.4	-19.8	0.3	44.4	54	-9.6	-	-	76	242	H
6	* 5.457	30.66	RMS	34.4	-19.9	0.3	45.16	54	-8.84	-	-	76	242	H
8	5.462	30.79	RMS	34.4	-19.7	0.3	45.49	-	-	-	-	76	242	H
4	5.469	41.19	PK	34.4	-20.2	0	55.39	-	-	68.2	-12.81	76	242	H
3	5.47	40.86	PK	34.4	-20.3	0	54.96	-	-	68.2	-13.24	76	242	H
7	5.47	30.88	RMS	34.4	-20.3	0.3	44.98	-	-	-	-	76	242	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	39.54	PK	34.4	-19.8	0	54.14	-	-	74	-19.86	106	344	V
2	* 5.459	40.95	PK	34.4	-19.8	0	55.55	-	-	74	-18.45	106	344	V
5	* 5.46	29.59	RMS	34.4	-19.8	0.3	44.39	54	-9.61	-	-	106	344	V
6	* 5.459	30.43	RMS	34.4	-19.8	0.3	45.23	54	-8.77	-	-	106	344	V
4	5.462	41.49	PK	34.4	-19.7	0	56.19	-	-	68.2	-12.01	106	344	V
8	5.462	30.6	RMS	34.4	-19.7	0.3	45.5	-	-	-	-	106	344	V
3	5.47	37.89	PK	34.4	-20.3	0	51.99	-	-	68.2	-16.21	106	344	V
7	5.47	30.25	RMS	34.4	-20.3	0.3	44.55	-	-	-	-	106	344	V

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

PK - Peak detector

RMS - RMS detection

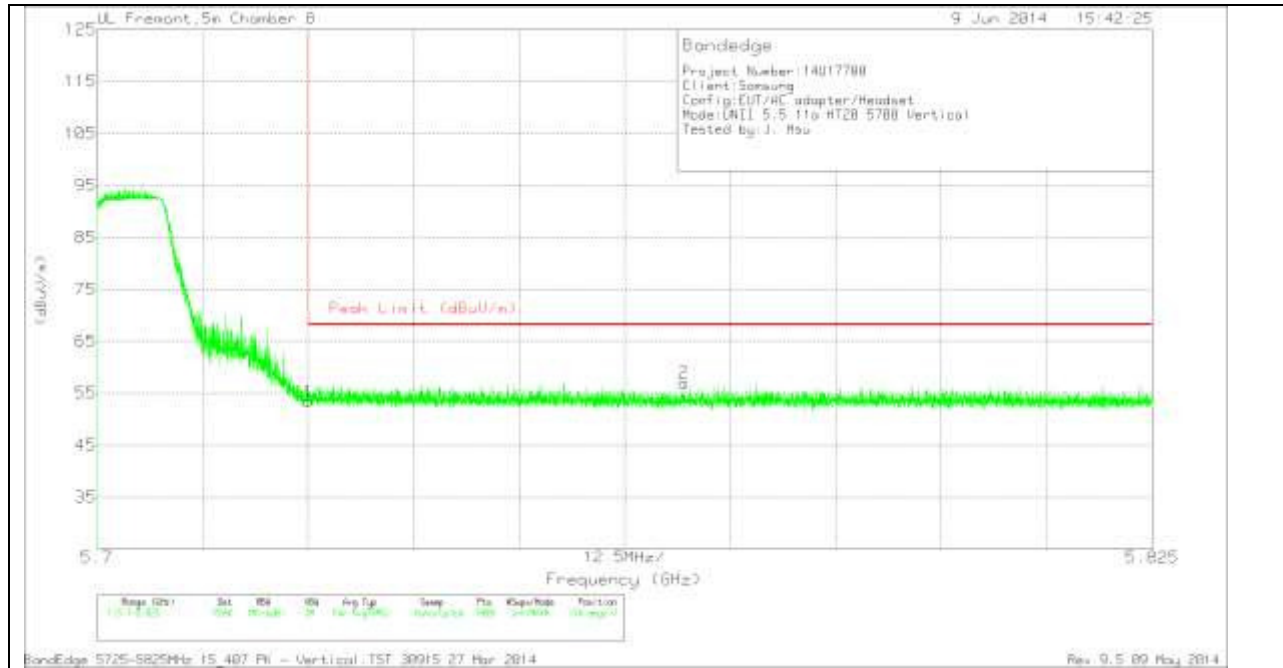
HORIZONTAL PEAK AND AVERAGE PLOT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	39.99	PK	34.6	-19.9	0	54.69	68.2	-13.51	227	225	H
2	5.729	42.92	PK	34.6	-19.8	0	57.72	68.2	-10.48	227	225	H

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VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

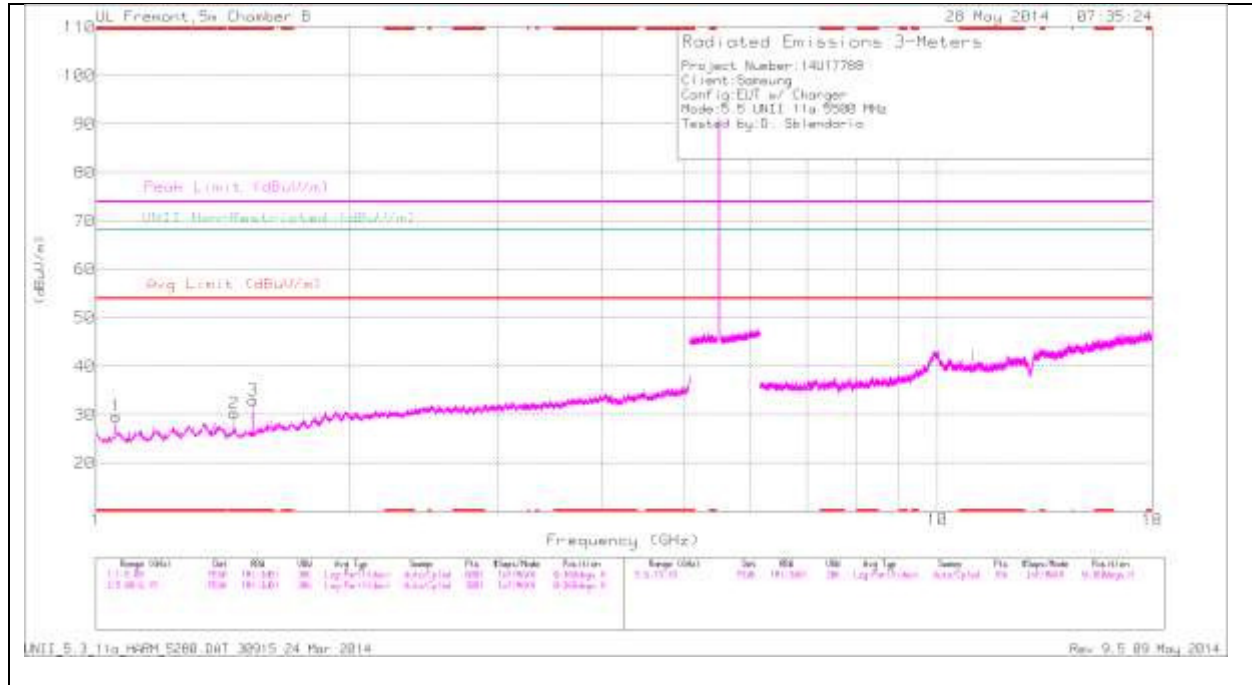
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	38.74	PK	34.6	-19.9	0	53.44	68.2	-14.76	176	299	V
2	5.77	42.18	PK	34.6	-19.8	0	56.98	68.2	-11.22	176	299	V

PK - Peak detector

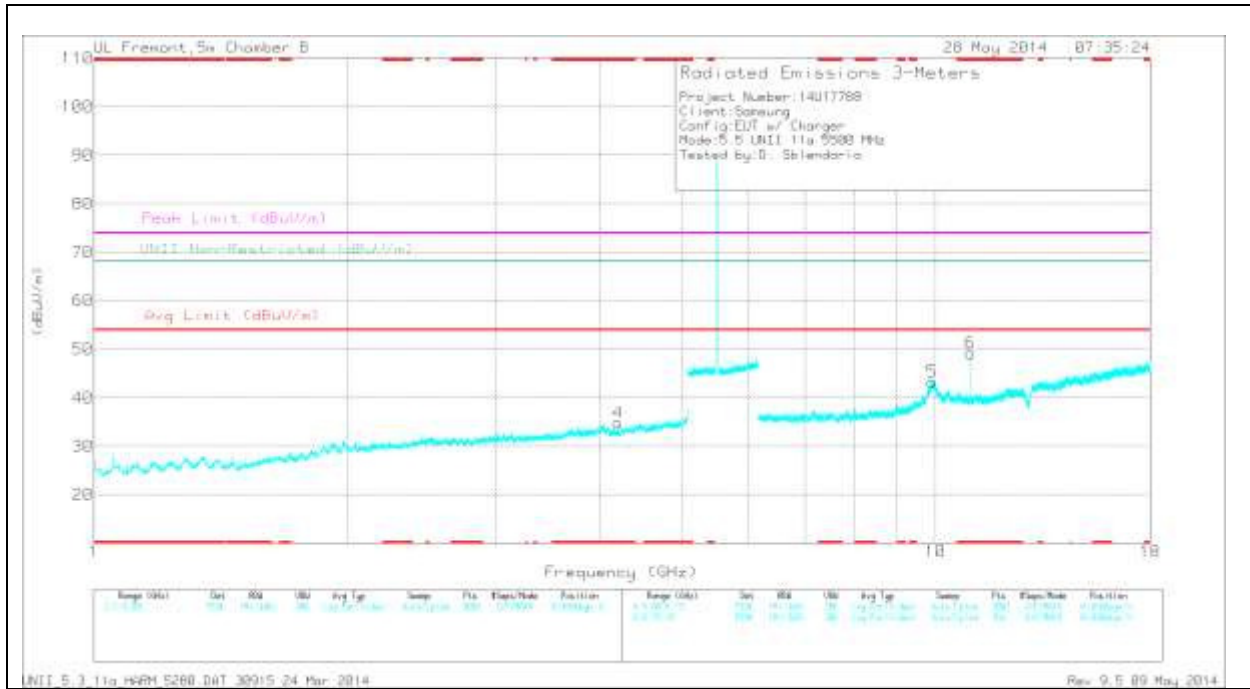
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.056	36.87	PK	27.2	-34.4	0	29.67	-	-	74	-44.33	-	-	0-360	99	H
2	* 1.46	36.58	PK	28.2	-34.5	0	30.28	-	-	74	-43.72	-	-	0-360	99	H
3	* 1.536	39.16	PK	28.1	-34.2	0	33.06	-	-	74	-40.94	-	-	0-360	99	H
4	* 4.192	32.3	PK	33.6	-31	0	34.9	-	-	74	-39.1	-	-	0-360	202	V
6	* 11	33.81	PK	37.8	-22.4	0	49.21	-	-	74	-24.79	-	-	0-360	202	V
5	9.905	30.37	PK	37	-24.1	0	43.27	-	-	-	-	68.2	-24.93	0-360	99	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (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
* 1.058	44	PK1	27.2	-34.4	0	36.8	-	-	74	-37.2	-	-	359	100	H
* 1.056	33.18	AD1	27.2	-34.4	.3	26.28	54	-27.72	-	-	-	-	359	100	H
* 1.461	43.66	PK1	28.1	-34.5	0	37.26	-	-	74	-36.74	-	-	359	100	H
* 1.459	32.14	AD1	28.2	-34.5	.3	26.14	54	-27.86	-	-	-	-	359	100	H
* 1.536	44.02	PK1	28.1	-34.2	0	37.92	-	-	74	-36.08	-	-	359	100	H
* 1.536	32.42	AD1	28.1	-34.2	.3	26.62	54	-27.38	-	-	-	-	359	100	H
* 4.191	40.72	PK1	33.6	-31	0	43.32	-	-	74	-30.68	-	-	359	204	V
* 4.19	29.25	AD1	33.6	-31	.3	32.15	54	-21.85	-	-	-	-	359	204	V
* 11	39.24	PK1	37.8	-22.4	0	54.64	-	-	74	-19.36	-	-	356	234	V
* 11	33.36	AD1	37.8	-22.4	.3	49.06	54	-4.94	-	-	-	-	356	234	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 11.16	28.31	PK	37.9	-22.2	0	44.01	-	-	74	-29.99	-	-	0-360	201	H
6	* 11.159	32.79	PK	37.9	-22.2	0	48.49	-	-	74	-25.51	-	-	0-360	202	V
2	3.411	31.77	PK	32.8	-31.4	0	33.17	-	-	-	-	68.2	-35.03	0-360	99	V
1	3.419	30.99	PK	32.8	-31.2	0	32.59	-	-	-	-	68.2	-35.61	0-360	202	H
3	9.955	29.98	PK	37	-24.2	0	42.78	-	-	-	-	68.2	-25.42	0-360	201	H
5	9.964	30.48	PK	37	-24.1	0	43.38	-	-	-	-	68.2	-24.82	0-360	202	V

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

PK - Peak detector

Radiated Emissions

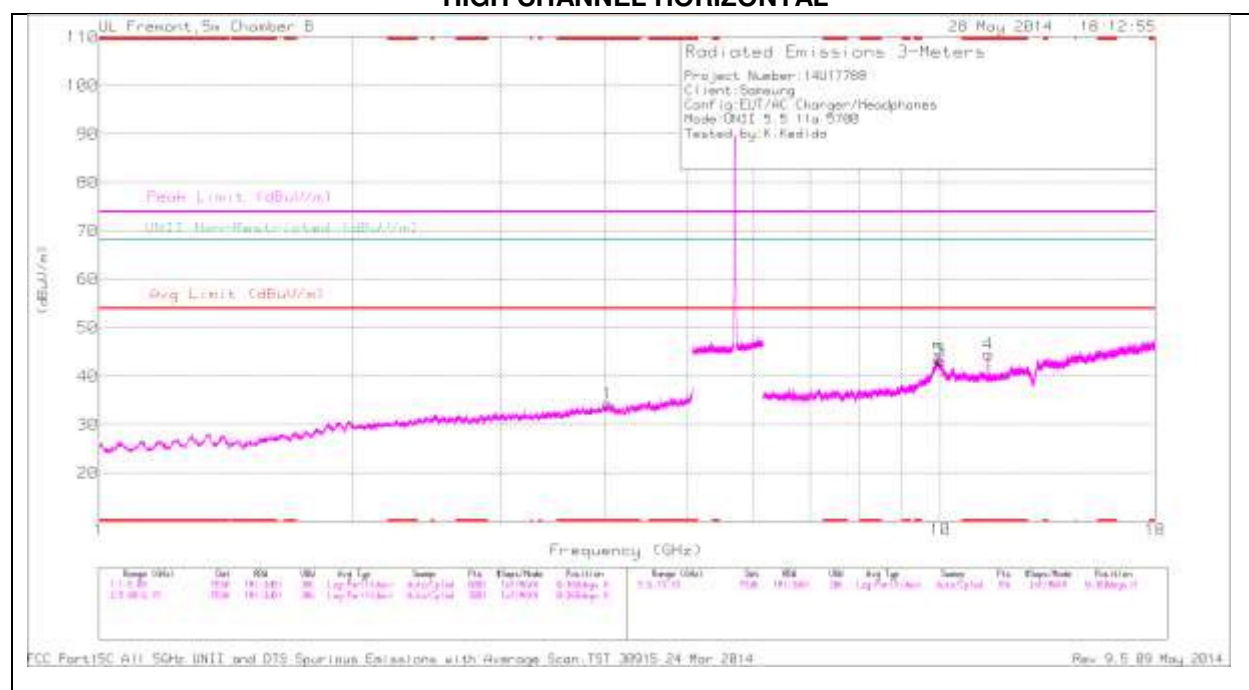
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 11.16	36.98	PK1	37.9	-22.2	0	52.68	-	-	74	-21.32	-	-	297	224	H
* 11.16	29.68	AD1	37.9	-22.2	.3	45.68	54	-8.32	-	-	-	-	297	224	H
* 11.16	39.24	PK1	37.9	-22.2	0	54.94	-	-	74	-19.06	-	-	137	153	V
* 11.16	32.6	AD1	37.9	-22.2	.3	48.6	54	-5.4	-	-	-	-	137	153	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.027	30.27	PK	33.6	-29.5	34.37	-	-	74	-39.63	-	-	0-360	202	H
2	* 4.021	30.19	PK	33.6	-29.5	34.29	-	-	74	-39.71	-	-	0-360	202	V
4	* 11.4	28.98	PK	38	-22.4	44.58	-	-	74	-29.42	-	-	0-360	202	H
6	* 11.399	32.95	PK	38	-22.4	48.55	-	-	74	-25.45	-	-	0-360	99	V
5	9.936	30.46	PK	37	-23.9	43.56	-	-	-	-	68.2	-24.64	0-360	99	H
3	10.003	29.43	PK	37	-23.3	43.13	-	-	-	-	68.2	-25.07	0-360	99	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC factor	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
* 4.026	40.27	PK1	33.6	-29.5		44.37	-	-	74	-29.63	-	-	1	204	H
* 11.4	35.99	PK1	38	-22.4		51.59	-	-	74	-22.41	-	-	221	211	H
* 11.4	27.11	AD1	38	-22.4	.6	42.71	54	-11.29	-	-	-	-	221	211	H
* 11.4	40.42	PK1	38	-22.4		56.02	-	-	74	-17.98	-	-	304	136	V
* 11.4	34.81	AD1	38	-22.4	.6	50.41	54	-3.59	-	-	-	-	304	136	V

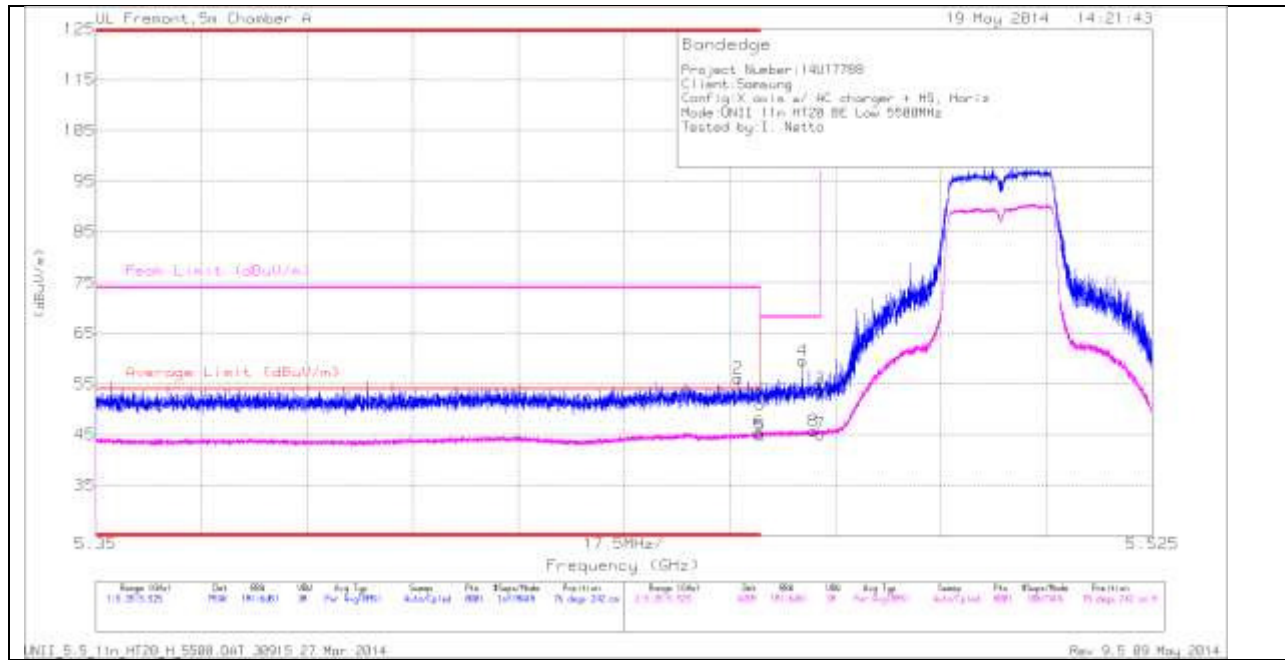
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

11.3.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.5 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

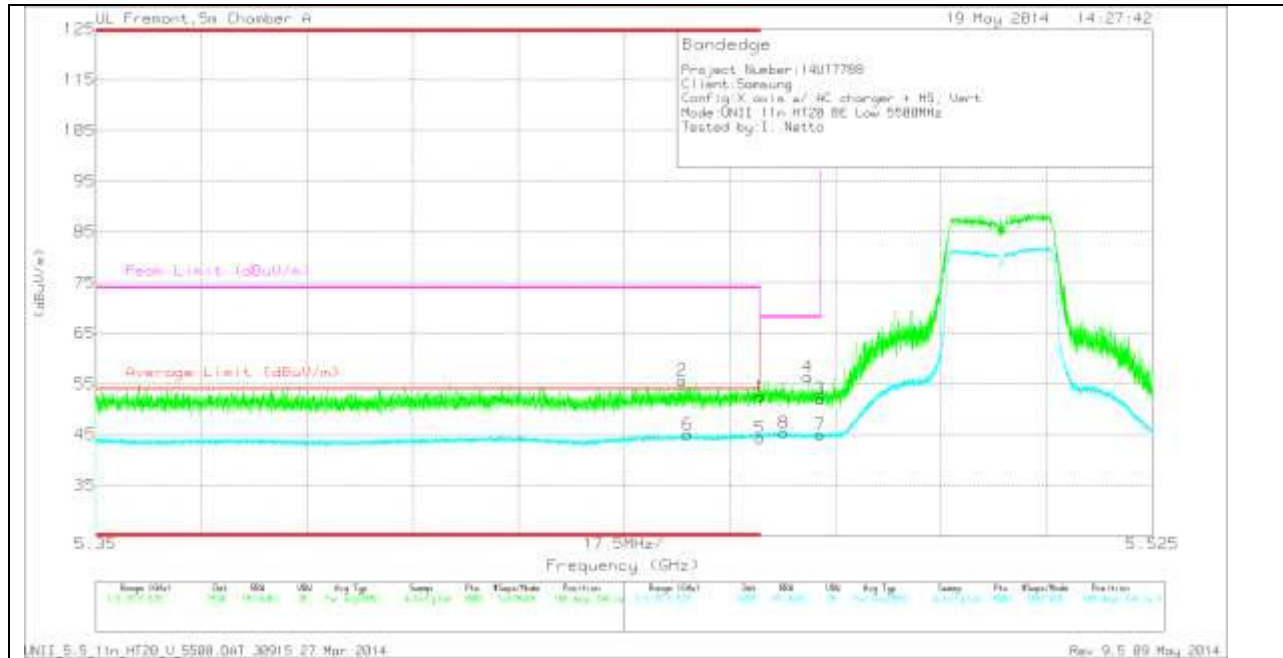
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	36.48	PK	34.4	-19.8	0	51.08	-	-	74	-22.92	76	242	H
2	* 5.456	41.59	PK	34.4	-19.9	0	56.09	-	-	74	-17.91	76	242	H
5	* 5.46	30.21	RMS	34.4	-19.8	.3	45.01	54	-8.99	-	-	76	242	H
6	* 5.46	30.81	RMS	34.4	-19.8	.3	45.61	54	-8.39	-	-	76	242	H
4	5.467	45.34	PK	34.4	-20.1	0	59.64	-	-	68.2	-8.56	76	242	H
8	5.469	31.53	RMS	34.4	-20.2	.3	45.93	-	-	-	-	76	242	H
3	5.47	39.94	PK	34.4	-20.3	0	54.04	-	-	68.2	-14.16	76	242	H
7	5.47	31	RMS	34.4	-20.3	.3	45.3	-	-	-	-	76	242	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	37.96	PK	34.4	-19.8	0	52.56	-	-	74	-21.44	106	344	V
2	* 5.447	41.18	PK	34.4	-20	0	55.58	-	-	74	-18.42	106	344	V
5	* 5.46	29.72	RMS	34.4	-19.8	.3	44.52	54	-9.48	-	-	106	344	V
6	* 5.448	30.69	RMS	34.4	-20	.3	45.29	54	-8.71	-	-	106	344	V
8	5.464	30.77	RMS	34.4	-19.8	.3	45.57	-	-	-	-	106	344	V
4	5.468	42.12	PK	34.4	-20.2	0	56.32	-	-	68.2	-11.88	106	344	V
3	5.47	37.97	PK	34.4	-20.3	0	52.07	-	-	68.2	-16.13	106	344	V
7	5.47	30.82	RMS	34.4	-20.3	.3	45.12	-	-	-	-	106	344	V

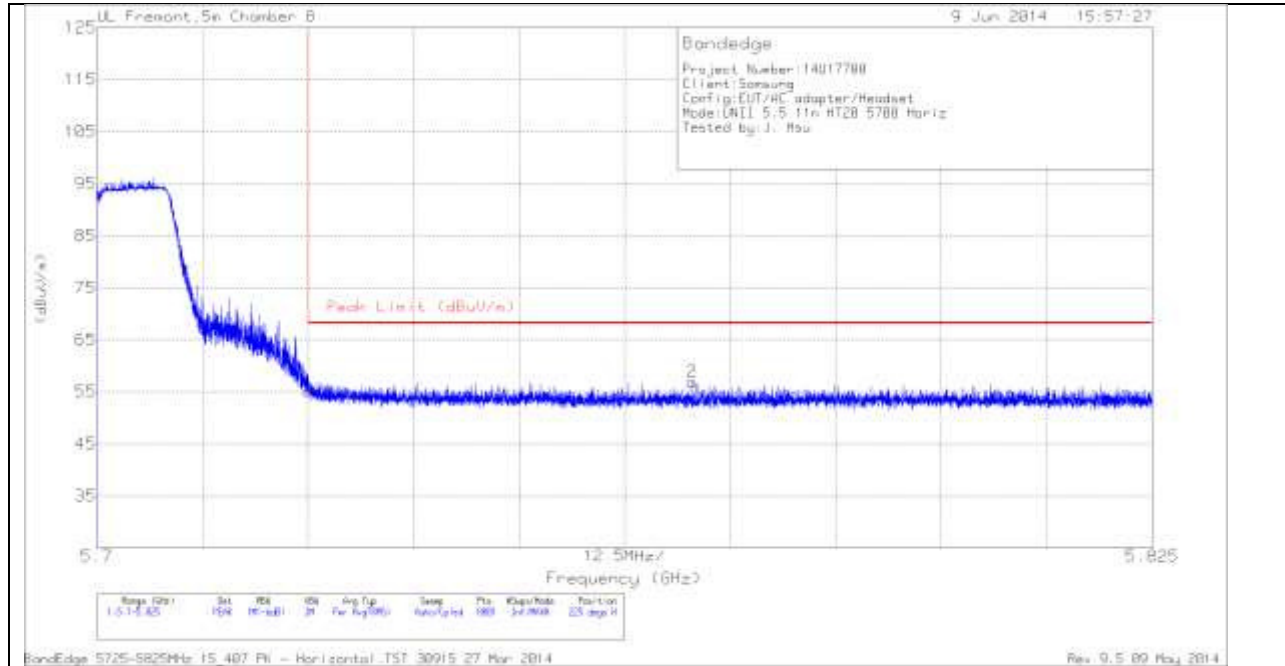
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



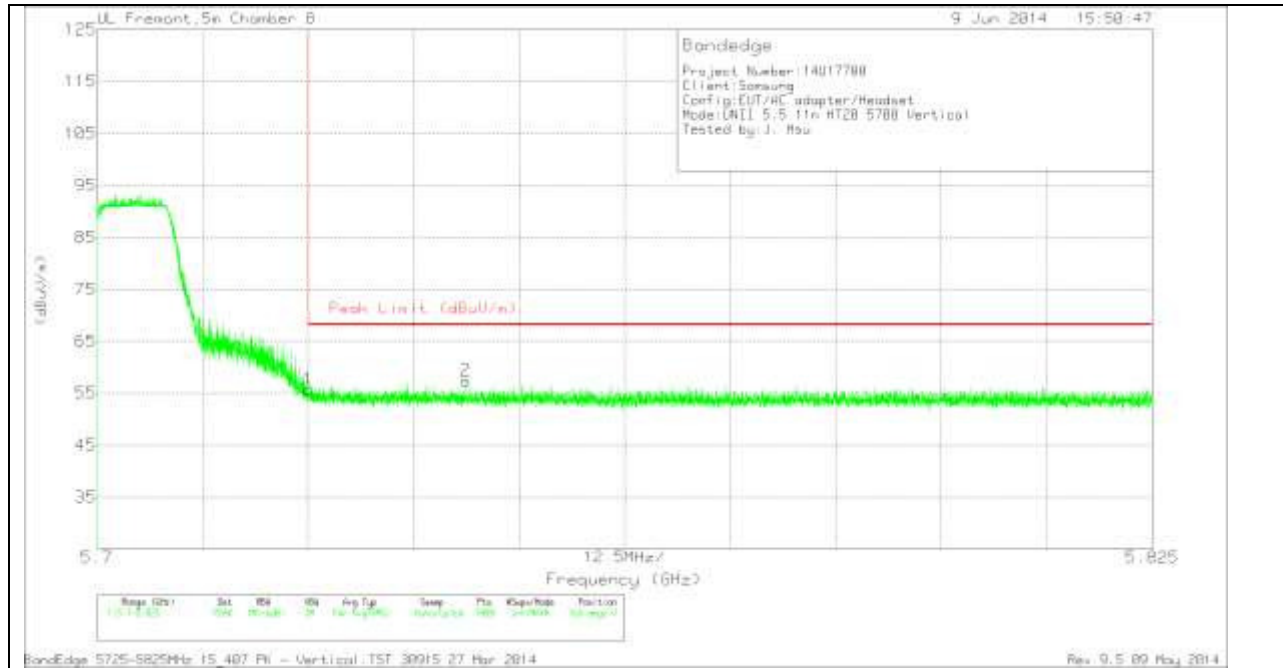
HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	40.39	PK	34.6	-19.9	0	55.09	68.2	-13.11	225	222	H
2	5.771	42.08	PK	34.6	-19.8	0	56.88	68.2	-11.32	225	222	H

PK - Peak detector

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	41.04	PK	34.6	-19.9	0	55.74	68.2	-12.46	166	323	V
2	5.744	42.66	PK	34.6	-19.8	0	57.46	68.2	-10.74	166	323	V

PK - Peak detector

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (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	* 3.66	31.17	PK	33.2	-31.2	0	33.17	-	-	74	-40.83	-	-	0-360	202	H
2	* 3.644	31.84	PK	33.2	-31.2	0	33.84	-	-	74	-40.16	-	-	0-360	202	V
4	* 10.999	30.54	PK	37.8	-22.4	0	45.94	-	-	74	-28.06	-	-	0-360	201	H
6	* 11	33.51	PK	37.8	-22.4	0	48.91	-	-	74	-25.09	-	-	0-360	99	V
5	9.911	30.66	PK	37	-24.1	0	43.56	-	-	-	-	68.2	-24.64	0-360	99	V
3	9.931	30.52	PK	37	-23.9	0	43.62	-	-	-	-	68.2	-24.58	0-360	201	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (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
* 3.661	40.92	PK1	33.3	-31.2	0	43.02	-	-	74	-30.98	-	-	360	204	H
* 11	37.16	PK1	37.8	-22.4	0	52.56	-	-	74	-21.44	-	-	124	379	H
* 11	29.94	AD1	37.8	-22.4	.3	45.64	54	-8.36	-	-	-	-	124	379	H
* 11	39.66	PK1	37.8	-22.4	0	55.06	-	-	74	-18.94	-	-	271	171	V
* 11	34.25	AD1	37.8	-22.4	.3	49.95	54	-4.05	-	-	-	-	271	171	V

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

PK1 - KDB789033 Method: Peak

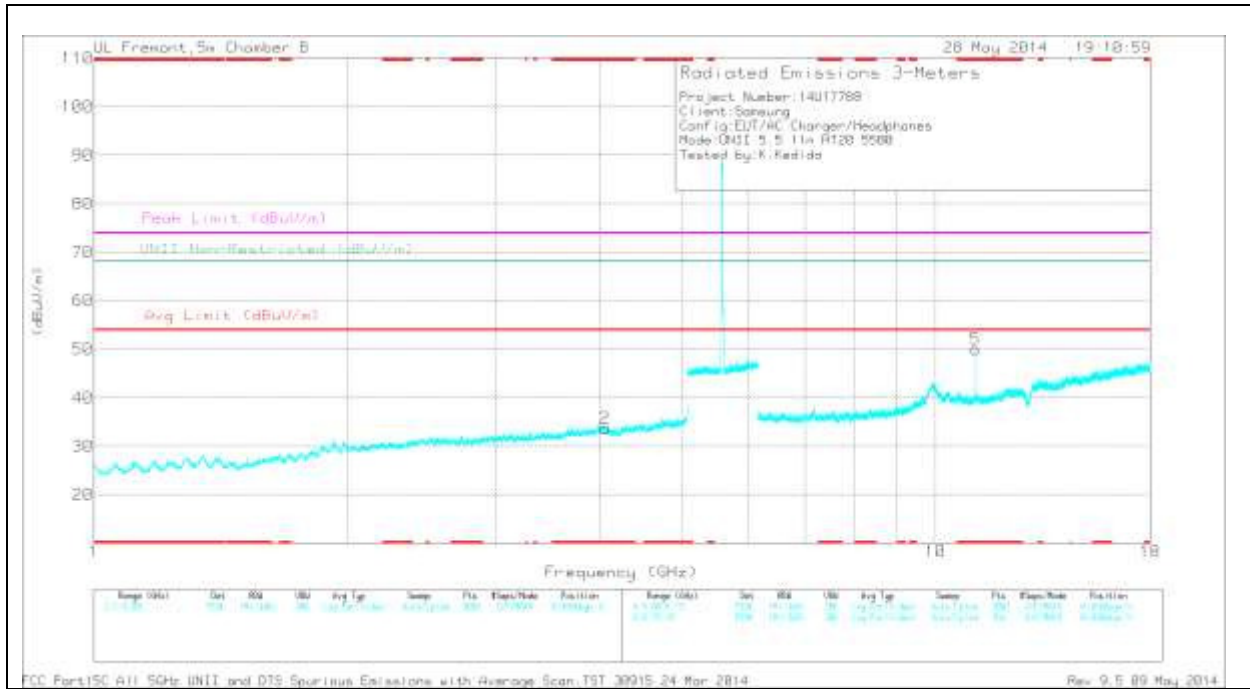
AD1 - KDB789033 Method: AD Primary Power Average

MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (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	* 4.041	29.98	PK	33.6	-29.5	0	34.08	-	-	74	-39.92	-	-	0-360	201	H
2	* 4.049	29.8	PK	33.6	-29.7	0	33.7	-	-	74	-40.3	-	-	0-360	99	V
4	* 11.16	30.55	PK	37.9	-22.2	0	46.25	-	-	74	-27.75	-	-	0-360	202	H
5	* 11.16	34.36	PK	37.9	-22.2	0	50.06	-	-	74	-23.94	-	-	0-360	202	V
3	9.963	30.25	PK	37	-24.1	0	43.15	-	-	-	-	68.2	-25.05	0-360	202	H

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

PK - Peak detector

Radiated Emissions

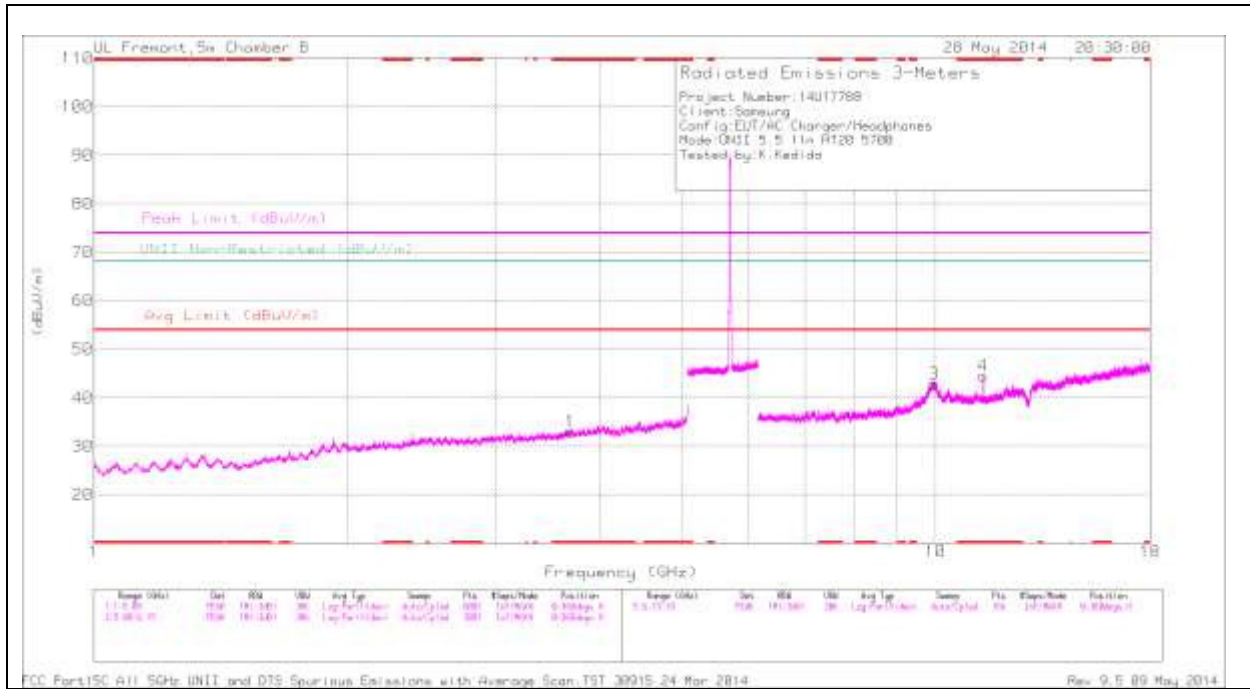
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 11.16	36.88	PK1	37.9	-22.2	0	52.58	-	-	74	-21.42	-	-	148	195	H
* 11.16	28.38	AD1	37.9	-22.2	.3	44.38	54	-9.62	-	-	-	-	148	195	H
* 11.16	39.77	PK1	37.9	-22.2	0	55.47	-	-	74	-18.53	-	-	268	204	V
* 11.16	34.48	AD1	37.9	-22.2	.3	50.48	54	-3.52	-	-	-	-	268	204	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (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	* 3.682	31	PK	33.3	-31.3	0	33	-	-	74	-41	-	-	0-360	202	H
2	* 3.68	31.91	PK	33.3	-31.3	0	33.91	-	-	74	-40.09	-	-	0-360	99	V
4	* 11.399	28.94	PK	38	-22.4	0	44.54	-	-	74	-29.46	-	-	0-360	202	H
6	* 11.399	32.68	PK	38	-22.4	0	48.28	-	-	74	-25.72	-	-	0-360	99	V
5	9.96	29.87	PK	37	-24.1	0	42.77	-	-	-	-	68.2	-25.43	0-360	202	V
3	9.965	29.87	PK	37	-24	0	42.87	-	-	-	-	68.2	-25.33	0-360	202	H

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

PK - Peak detector

Radiated Emissions

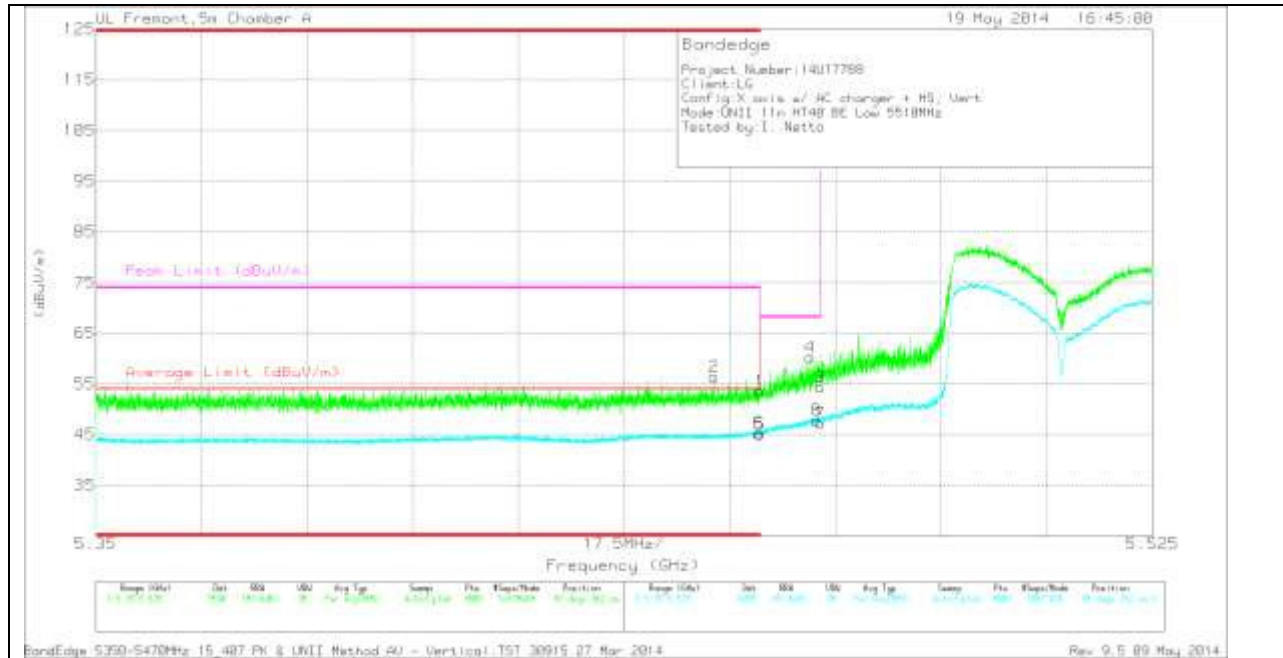
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 11.4	37.79	PK1	38	-22.4	0	53.39	-	-	74	-20.61	-	-	121	383	H
* 11.4	30.55	AD1	38	-22.4	.3	46.45	54	-7.55	-	-	-	-	121	383	H
* 11.4	39.67	PK1	38	-22.4	0	55.27	-	-	74	-18.73	-	-	302	143	V
* 11.4	34.13	AD1	38	-22.4	.3	50.03	54	-3.97	-	-	-	-	302	143	H

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

VERTICAL PEAK AND AVERAGE PLOT



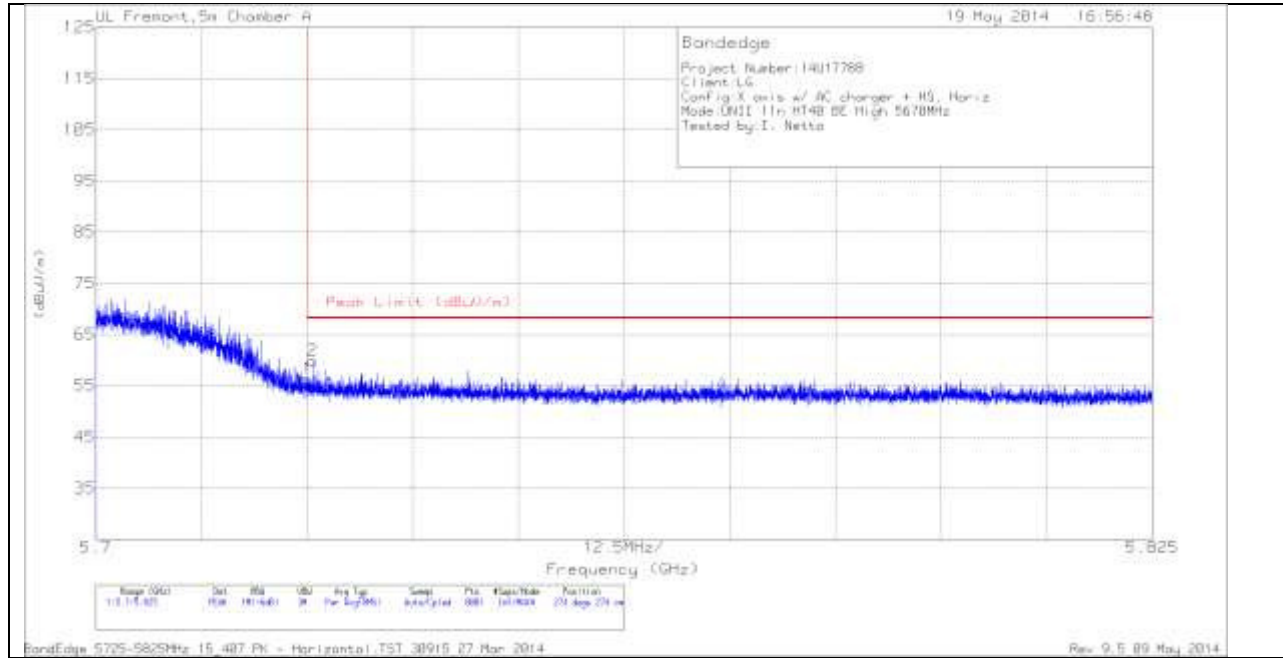
VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT136 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	38.88	PK	34.4	-19.8	0	53.48	-	-	74	-20.52	81	362	V
2	* 5.452	42.09	PK	34.4	-20.1	0	56.39	-	-	74	-17.61	81	362	V
5	* 5.46	30.47	RMS	34.4	-19.8	.6	45.57	54	-8.43	-	-	81	362	V
6	* 5.46	30.66	RMS	34.4	-19.8	.6	45.76	54	-8.24	-	-	81	362	V
4	5.468	46.04	PK	34.4	-20.2	0	60.24	-	-	68.2	-7.96	81	362	V
8	5.469	33.71	RMS	34.4	-20.3	.6	48.31	-	-	-	-	81	362	V
3	5.47	40.32	PK	34.4	-20.3	0	54.42	-	-	68.2	-13.78	81	362	V
7	5.47	33.08	RMS	34.4	-20.3	.6	47.68	-	-	-	-	81	362	V

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

PK - Peak detector

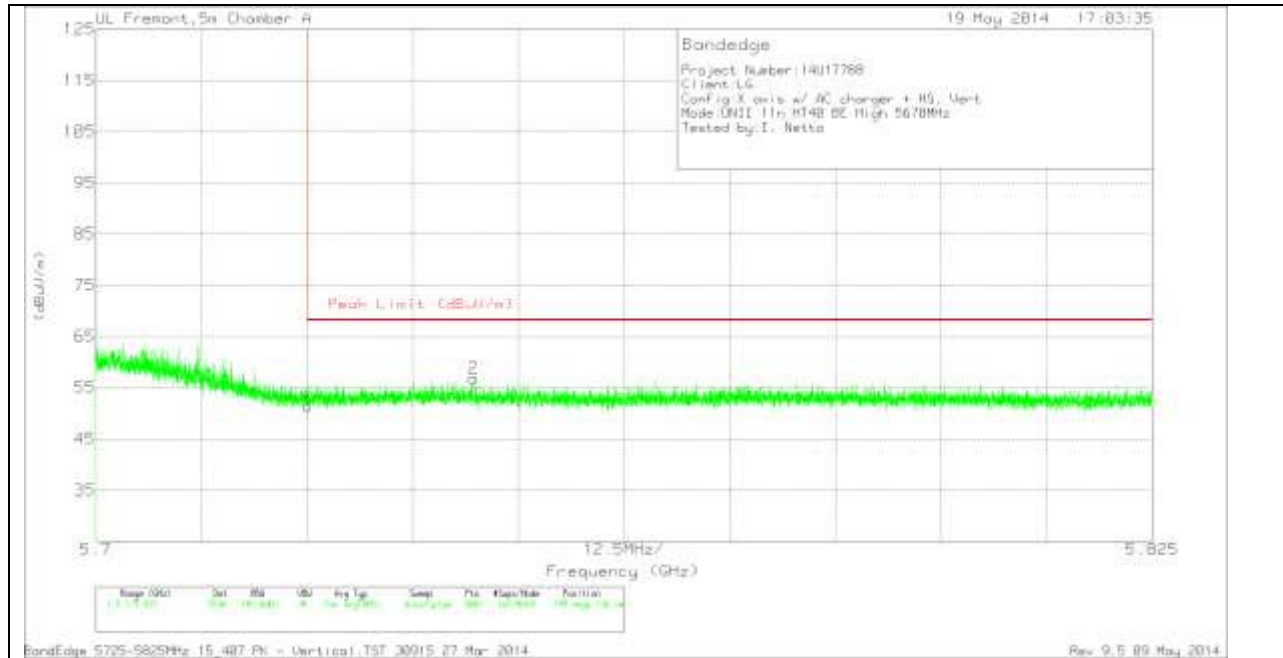
RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)**HORIZONTAL PEAK AND AVERAGE PLOT****HORIZONTAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	41.33	PK	34.6	-19.6	0	56.33	68.2	-11.87	274	274	H
2	5.726	44.98	PK	34.6	-19.7	0	59.88	68.2	-8.32	274	274	H

PK - Peak detector

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	36.46	PK	34.6	-19.6	0	51.46	68.2	-16.74	199	136	V
2	5.745	41.66	PK	34.6	-19.4	0	56.86	68.2	-11.34	199	136	V

PK - Peak detector

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 11.019	30	PK	37.8	-22.7	0	45.1	-	-	74	-28.9	-	-	0-360	202	H
6	* 11.02	31.93	PK	37.8	-22.7	0	47.03	-	-	74	-26.97	-	-	0-360	202	V
2	3.279	30.6	PK	32.8	-31.8	0	31.6	-	-	-	-	68.2	-36.6	0-360	99	V
1	3.281	31.15	PK	32.8	-31.8	0	32.15	-	-	-	-	68.2	-36.05	0-360	202	H
5	9.884	30.13	PK	37	-24.1	0	43.03	-	-	-	-	68.2	-25.17	0-360	99	V
3	9.933	29.8	PK	37	-23.9	0	42.9	-	-	-	-	68.2	-25.3	0-360	202	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (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
* 11.02	37.58	PK1	37.8	-22.7	0	52.68	-	-	74	-21.32	-	-	125	399	H
* 11.02	30.58	AD1	37.8	-22.7	.6	45.98	54	-8.02	-	-	-	-	125	399	H
* 11.02	39.25	PK1	37.8	-22.7	0	54.35	-	-	74	-19.65	-	-	276	199	V
* 11.02	33.81	AD1	37.8	-22.7	.6	49.21	54	-4.79	-	-	-	-	276	199	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (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	* 3.798	31.4	PK	33.6	-30.9	0	34.1	-	-	74	-39.9	-	-	0-360	201	H
2	* 3.778	30.2	PK	33.6	-30.9	0	32.9	-	-	74	-41.1	-	-	0-360	202	V
4	* 11.099	31.22	PK	37.8	-22.9	0	46.12	-	-	74	-27.88	-	-	0-360	201	H
6	* 11.1	31.71	PK	37.8	-22.9	0	46.61	-	-	74	-27.39	-	-	0-360	202	V
3	9.917	29.97	PK	37	-24.1	0	42.87	-	-	-	-	68.2	-25.33	0-360	201	H
5	9.996	29.78	PK	37	-23.5	0	43.28	-	-	-	-	68.2	-24.92	0-360	202	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (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
* 11.1	38	PK1	37.8	-22.9	0	52.9	-	-	74	-21.1	-	-	130	240	H
* 11.1	30.76	AD1	37.8	-22.9	.6	45.96	54	-8.04	-	-	-	-	130	240	H
* 11.1	39.5	PK1	37.8	-22.9	0	54.4	-	-	74	-19.6	-	-	308	261	V
* 11.1	33.66	AD1	37.8	-22.9	.6	48.86	54	-5.14	-	-	-	-	308	261	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (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	* 3.676	31.56	PK	33.3	-31.3	0	33.56	-	-	74	-40.44	-	-	0-360	99	H
2	* 3.676	32.4	PK	33.3	-31.3	0	34.4	-	-	74	-39.6	-	-	0-360	202	V
4	* 11.339	28.98	PK	38	-22.5	0	44.48	-	-	74	-29.52	-	-	0-360	201	H
6	* 11.339	32.16	PK	38	-22.5	0	47.66	-	-	74	-26.34	-	-	0-360	202	V
5	9.922	29.94	PK	37	-24	0	42.94	-	-	-	-	68.2	-25.26	0-360	99	V
3	9.973	29.59	PK	37	-24	0	42.59	-	-	-	-	68.2	-25.61	0-360	201	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (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
* 11.34	37.9	PK1	38	-22.5	0	53.4	-	-	74	-20.6	-	-	112	348	H
* 11.34	30.68	AD1	38	-22.5	.6	46.48	54	-7.52	-	-	-	-	112	348	H
* 11.34	39.15	PK1	38	-22.5	0	54.65	-	-	74	-19.35	-	-	307	145	V
* 11.34	33.4	AD1	38	-22.5	.6	49.2	54	-4.8	-	-	-	-	307	145	V

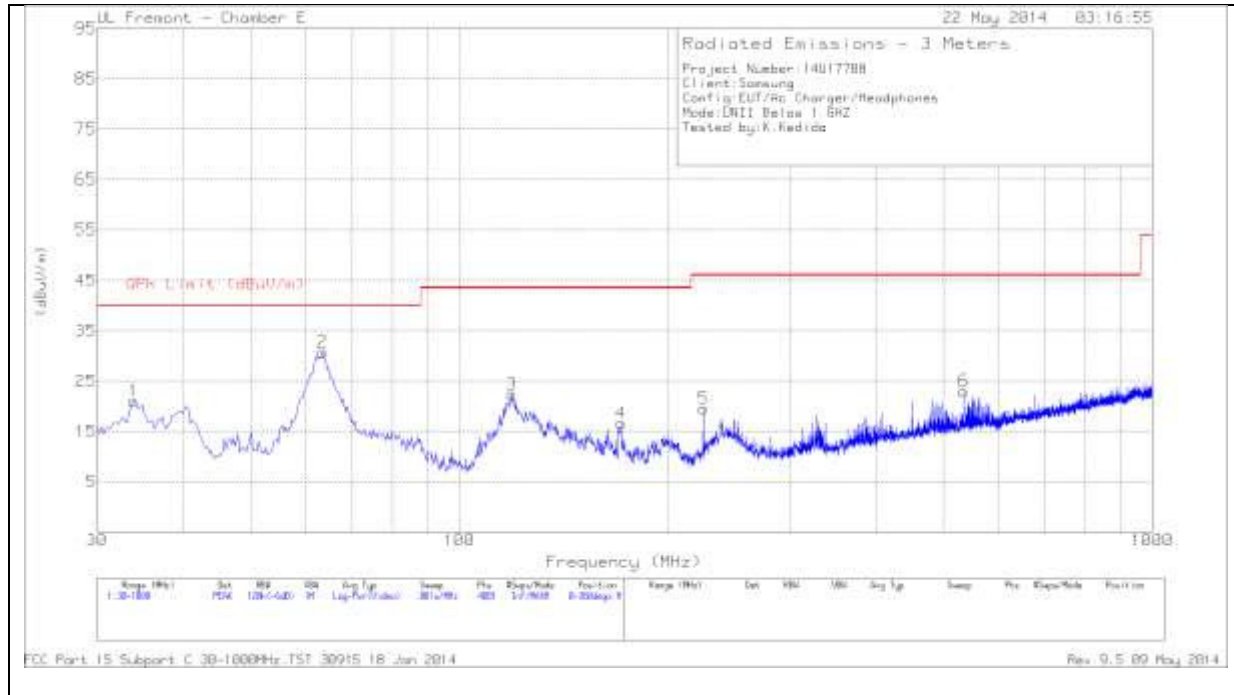
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

12. WORST-CASE BELOW 1 GHz (in the 5.3 GHz Band)

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



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

Below 1G Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Hybrid	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 118.9975	40	PK	13.6	-31.2	22.4	43.52	-21.12	0-360	301	H
4	* 171.135	35.87	PK	11.7	-30.9	16.67	43.52	-26.85	0-360	201	H
10	* 116.5725	35.42	PK	13.5	-31.2	17.72	43.52	-25.8	0-360	100	V
1	33.88	34.12	PK	18.7	-31.8	21.02	40	-18.98	0-360	301	H
7	34.85	44.9	PK	17.9	-31.7	31.1	40	-8.9	0-360	100	V
8	39.9425	47.52	PK	14.1	-31.8	29.82	40	-10.18	0-360	100	V
2	63.465	54.42	PK	7.8	-31.5	30.72	40	-9.28	0-360	201	H
9	63.7075	48.73	PK	7.9	-31.5	25.13	40	-14.87	0-360	100	V
5	224.97	39.32	PK	10.8	-30.6	19.52	46.02	-26.5	0-360	100	H
11	224.97	38.48	PK	10.8	-30.6	18.68	46.02	-27.34	0-360	100	V
6	534.4	34.58	PK	18	-29.6	22.98	46.02	-23.04	0-360	201	H

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

PK - Peak detector

13. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

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

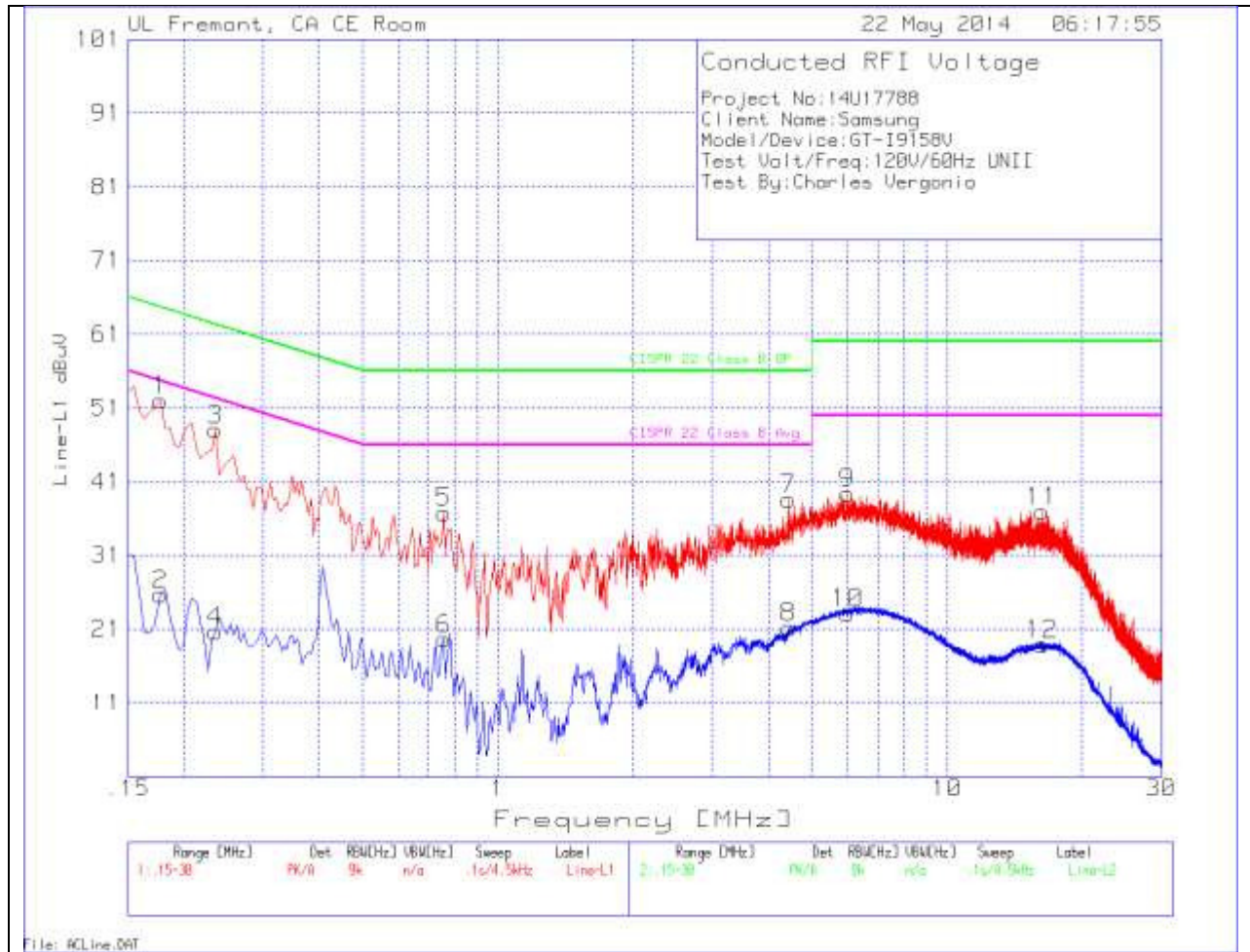
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT

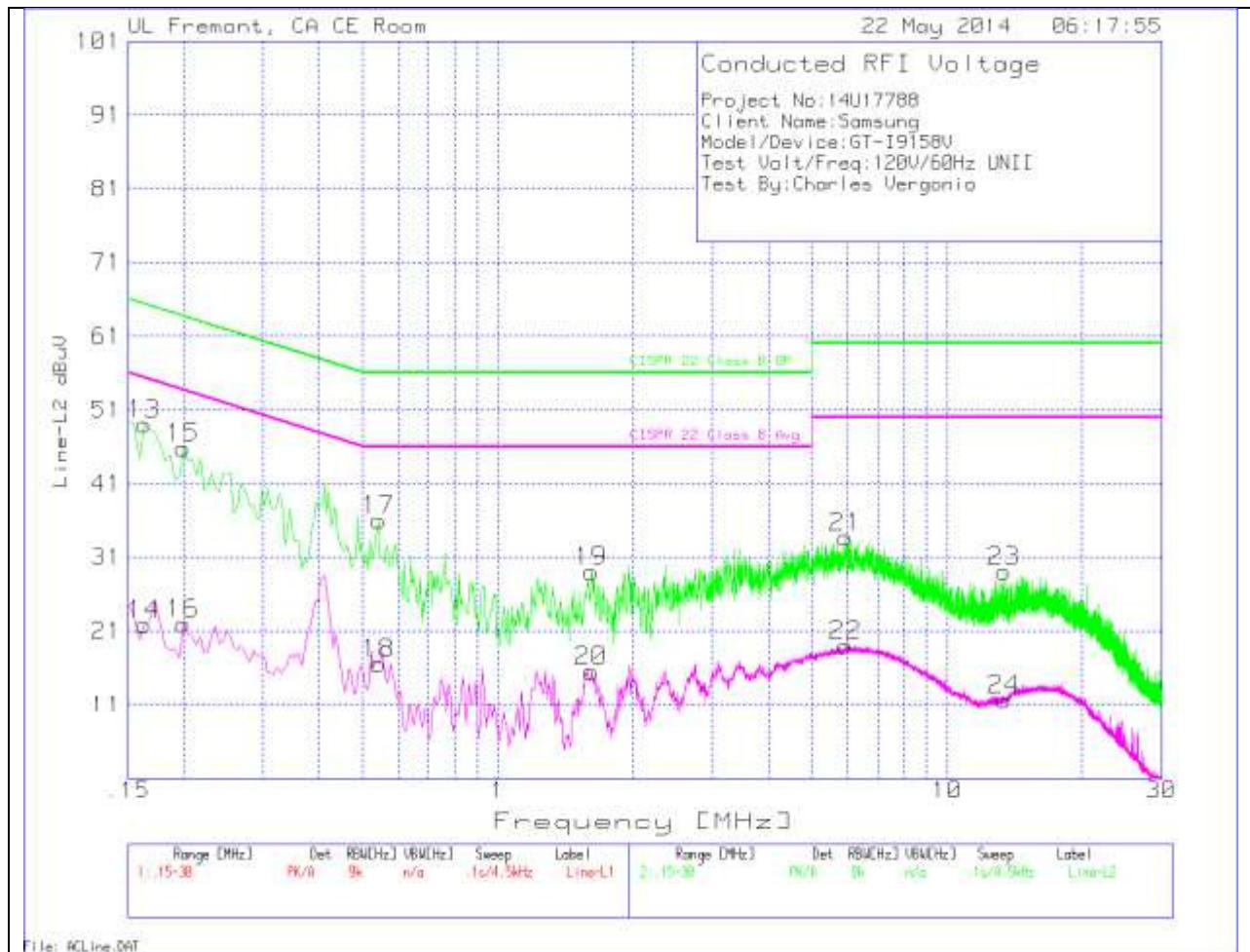


LINE 1 RESULTS

Line-L1 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
1	.177	50.94	PK	1.1	0	52.04	64.6	-12.56	-	-
2	.177	24.55	Av	1.1	0	25.65	-	-	54.6	-28.95
3	.2355	47.27	PK	.8	0	48.07	62.3	-14.23	-	-
4	.2355	19.92	Av	.8	0	20.72	-	-	52.3	-31.58
5	.7575	36.55	PK	.3	0	36.85	56	-19.15	-	-
6	.7575	19.29	Av	.3	0	19.59	-	-	46	-26.41
7	4.434	38.32	PK	.2	.1	38.62	56	-17.38	-	-
8	4.434	20.94	Av	.2	.1	21.24	-	-	46	-24.76
9	6.009	39.1	PK	.2	.1	39.4	60	-20.6	-	-
10	6.009	22.81	Av	.2	.1	23.11	-	-	50	-26.89
11	16.296	36.37	PK	.3	.2	36.87	60	-23.13	-	-
12	16.296	18.37	Av	.3	.2	18.87	-	-	50	-31.13

LINE 2 PLOT

LINE 2 RESULTS**Line-L2 .15 - 30MHz****Trace Markers**

Marker	Frequency (MHz)	Meter Reading (dBUV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dBUV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
13	.1635	47.77	PK	1.3	0	49.07	65.3	-16.23	-	-
14	.1635	20.51	Av	1.3	0	21.81	-	-	55.3	-33.49
15	.1995	44.78	PK	1	0	45.78	63.6	-17.82	-	-
16	.1995	21	Av	1	0	22	-	-	53.6	-31.6
17	.5415	35.73	PK	.3	0	36.03	56	-19.97	-	-
18	.5415	16.21	Av	.3	0	16.51	-	-	46	-29.49
19	1.617	28.77	PK	.2	.1	29.07	56	-26.93	-	-
20	1.617	15.25	Av	.2	.1	15.55	-	-	46	-30.45
21	5.946	33.37	PK	.2	.1	33.67	60	-26.33	-	-
22	5.946	18.75	Av	.2	.1	19.05	-	-	50	-30.95
25	6.36	28.99	PK	.2	.1	29.29	60	-30.71	-	-
26	6.36	15.93	Av	.2	.1	16.23	-	-	50	-33.77
23	13.38	28.57	PK	.3	.2	29.07	60	-30.93	-	-
24	13.38	11.17	Av	.3	.2	11.67	-	-	50	-38.33
27	16.359	25.54	PK	.3	.2	26.04	60	-33.96	-	-
28	16.359	9.78	Av	.3	.2	10.28	-	-	50	-39.72

PK - Peak detector

Av - average detection

14. DYNAMIC FREQUENCY SELECTION

14.1. OVERVIEW

14.1.1. LIMITS

INDUSTRY CANADA

IC RSS-210 is closely harmonized with FCC Part 15 DFS rules. The deviations are as follows:

RSS-210 Issue 7 A9.4 (b) (ii) **Channel Availability Check Time:** ...

Additional requirements for the band 5600-5650 MHz: Until further notice, devices subject to this Section shall not be capable of transmitting in the band 5600-5650 MHz, so that Environment Canada weather radars operating in this band are protected.

FCC

§15.407 (h) and FCC 06-96 APPENDIX "COMPLIANCE MEASUREMENT PROCEDURES FOR UNLICENSED-NATIONAL INFORMATION INFRASTRUCTURE DEVCIES OPERATING IN THE 5250-5350 MHz AND 5470-5725 MHz BANDS INCORPORATING DYNAMIC FREQUENCY SELECTION".

Table 1: Applicability of DFS requirements prior to use of a channel

Requirement	Operational Mode		
	Master	Client (without radar detection)	Client (with radar detection)
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
Uniform Spreading	Yes	Not required	Not required

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode		
	Master	Client (without DFS)	Client (with DFS)
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes

Table 3: Interference Threshold values, Master or Client incorporating In-Service Monitoring

Maximum Transmit Power	Value (see note)
≥ 200 milliwatt	-64 dBm
< 200 milliwatt	-62 dBm

Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna

Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.

Table 4: DFS Response requirement values

Parameter	Value
<i>Non-occupancy period</i>	30 minutes
<i>Channel Availability Check Time</i>	60 seconds
<i>Channel Move Time</i>	10 seconds
<i>Channel Closing Transmission Time</i>	200 milliseconds + approx. 60 milliseconds over remaining 10 second period
The instant that the <i>Channel Move Time</i> and the <i>Channel Closing Transmission Time</i> begins is as follows: For the Short pulse radar Test Signals this instant is the end of the <i>Burst</i>. For the Frequency Hopping radar Test Signal, this instant is the end of the last radar burst generated. For the Long Pulse radar Test Signal this instant is the end of the 12-second period defining the radar transmission. The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate channel changes (an aggregate of approximately 60 milliseconds) during the remainder of the 10-second period. The aggregate duration of control signals will not count quiet periods in between transmissions.	

Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (Microseconds)	PRI (Microseconds)	Pulses	Minimum Percentage of Successful Detection	Minimum Trials
1	1	1428	18	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30

Aggregate (Radar Types 1-4)	80%	120
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Table 6 – Long Pulse Radar Test Signal

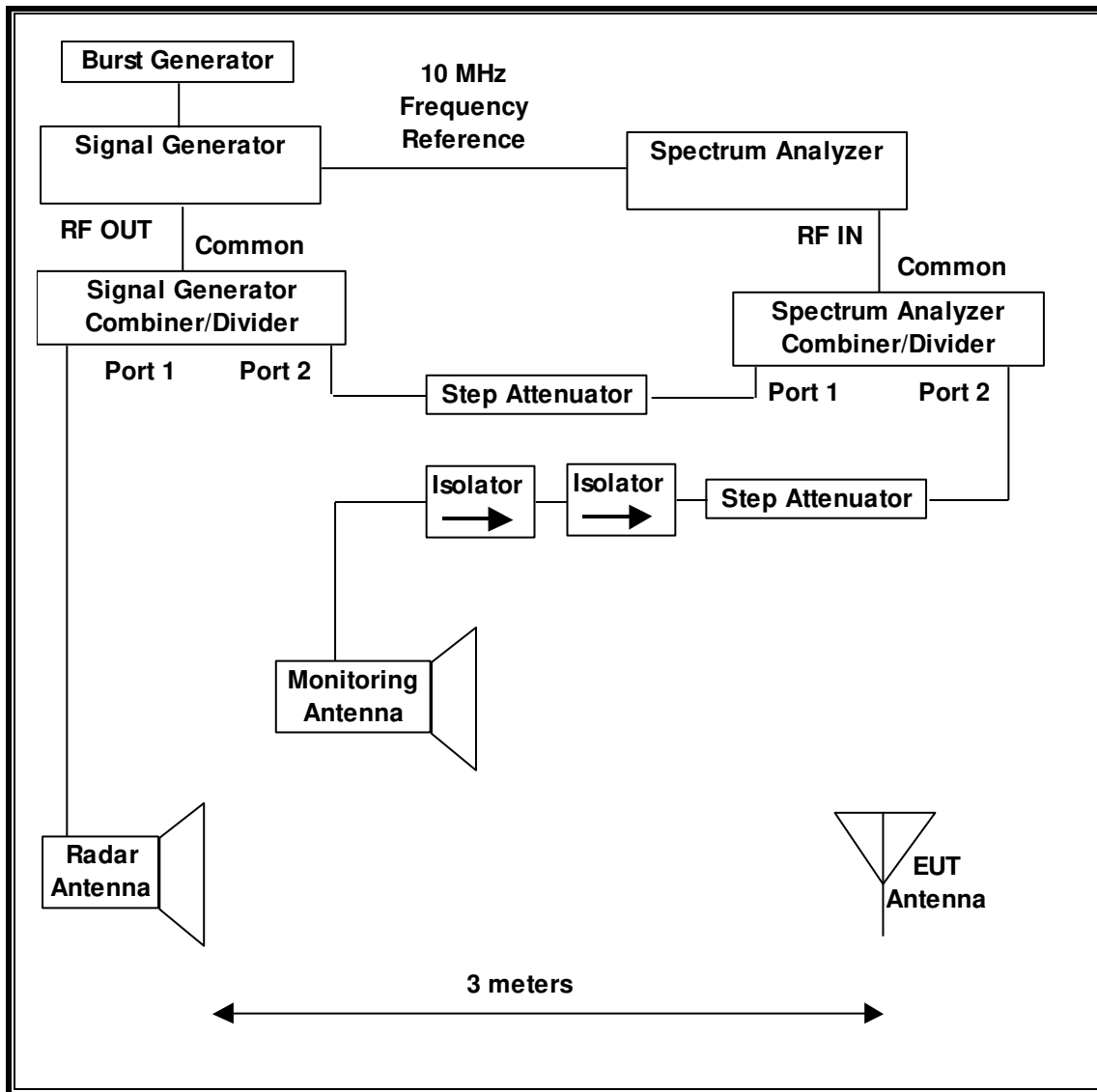
Radar Waveform	Bursts	Pulses per Burst	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Minimum Percentage of Successful Detection	Minimum Trials
5	8-20	1-3	50-100	5-20	1000-2000	80%	30

Table 7 – Frequency Hopping Radar Test Signal

Radar Waveform	Pulse Width (μsec)	PRI (μsec)	Burst Length (ms)	Pulses per Hop	Hopping Rate (kHz)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	300	9	.333	70%	30

14.1.2. TEST AND MEASUREMENT SYSTEM

RADIATED METHOD SYSTEM BLOCK DIAGRAM



SYSTEM OVERVIEW

The short pulse and long pulse signal generating system utilizes the NTIA software. The Vector Signal Generator has been validated by the NTIA. The hopping signal generating system utilizes the CCS simulated hopping method and system, which has been validated by the DoD, FCC and NTIA. The software selects waveform parameters from within the bounds of the signal type on a random basis using uniform distribution.

The short pulse types 2, 3 and 4, and the long pulse type 5 parameters are randomized at run-time.

The hopping type 6 pulse parameters are fixed while the hopping sequence is based on the August 2005 NTIA Hopping Frequency List. The initial starting point randomized at run-time and each subsequent starting point is incremented by 475. Each frequency in the 100-length segment is compared to the boundaries of the EUT Detection Bandwidth and the software creates a hopping burst pattern in accordance with Section 7.4.1.3 Method #2 Simulated Frequency Hopping Radar Waveform Generating Subsystem of FCC 06-96 APPENDIX. The frequency of the signal generator is incremented in 1 MHz steps from F_L to F_H for each successive trial. This incremental sequence is repeated as required to generate a minimum of 30 total trials and to maintain a uniform frequency distribution over the entire Detection Bandwidth.

The signal monitoring equipment consists of a spectrum analyzer. The aggregate ON time is calculated by multiplying the number of bins above a threshold during a particular observation period by the dwell time per bin, with the analyzer set to peak detection and max hold.

SYSTEM CALIBRATION

A 50-ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to a horn antenna via a coaxial cable, with the reference level offset set to (horn antenna gain – coaxial cable loss). The signal generator is set to CW mode. The amplitude of the signal generator is adjusted to yield a level of –64 dBm as measured on the spectrum analyzer.

Without changing any of the instrument settings, the spectrum analyzer is reconnected to the Common port of the Spectrum Analyzer Combiner/Divider. The Reference Level Offset of the spectrum analyzer is adjusted so that the displayed amplitude of the signal is -64 dBm.

The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of -64 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

ADJUSTMENT OF DISPLAYED TRAFFIC LEVEL

A link is established between the Master and Slave and the distance between the units is adjusted as needed to provide a suitable received level at the Master and Slave devices. The video test file is streamed to generate WLAN traffic. The monitoring antenna is adjusted so that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold.

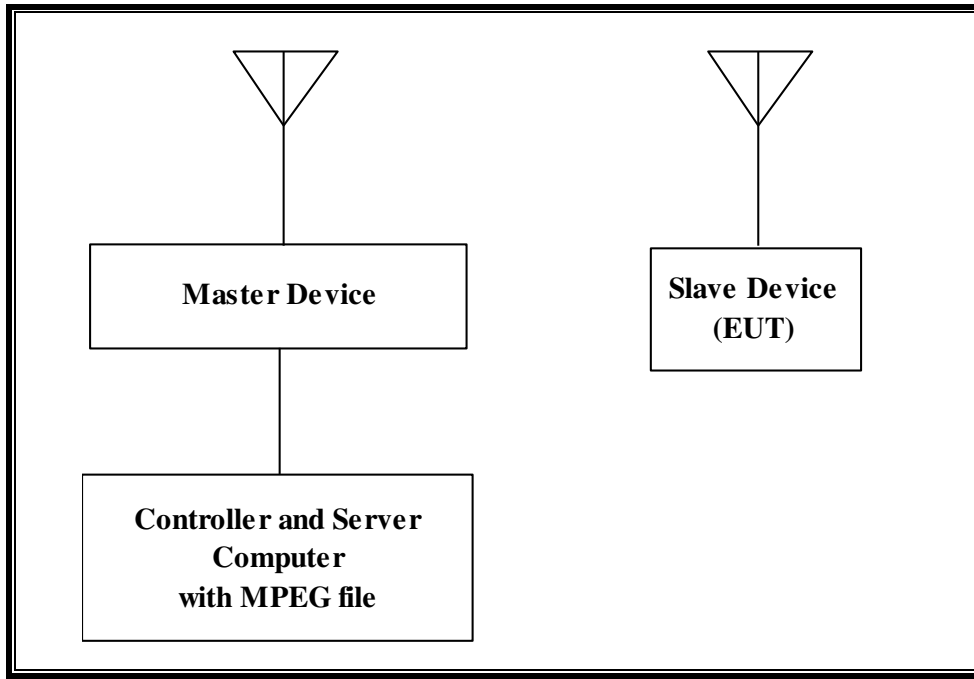
TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset Number	Cal Due
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	09/10/14
Vector Signal Generator, 20GHz	Agilent / HP	E8267C	C01066	09/12/14

14.1.3. SETUP OF EUT

RADIATED METHOD EUT TEST SETUP



SUPPORT EQUIPMENT

The following support equipment was utilized for the DFS tests documented in this report:

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
Wireless Access Point	Cisco	AIR-AP1252AG-A-K9	FTX120690N2	LDK102061
AC Adapter (AP)	Delta Electronics	EADP-45BB B	DTH112490BD	DoC
Notebook PC (Controller/Server)	Dell	PP18L	10657517725	DoC
AC Adapter (Controller/Server PC)	Dell	LA65SN0-00	CN-ODF263-71615-6AU-1019	DoC

14.1.4. DESCRIPTION OF EUT

The EUT operates over the 5250-5350 MHz and 5470-5725 MHz ranges excluding the 5600-5650 MHz range.

The EUT is a Slave Device without Radar Detection.

The highest power level within these bands is 13.58 dBm EIRP in the 5250-5350 MHz band and 14.22 dBm EIRP in the 5470-5725 MHz band.

The only antenna assembly utilized with the EUT has a gain of -2.47 dBi.

The rated output power of the Master unit is > 23dBm (EIRP). Therefore the required interference threshold level is -64 dBm. After correction for procedural adjustments, the required radiated threshold at the antenna port is $-64 + 1 = -63$ dBm.

The calibrated radiated DFS Detection Threshold level is set to -64 dBm. The tested level is lower than the required level hence it provides a margin to the limit.

The EUT uses one transmitter/receiver chain connected to an antenna to perform radiated tests.

WLAN traffic is generated by streaming the video file TestFile.mp2 "6 ½ Magic Hours" from the Master to the Slave in full motion video mode using MX Player version 1.7.22 media play.

TPC is not required since the maximum EIRP is less than 500 mW (27 dBm).

The EUT utilizes the 802.11a/n architecture. Two nominal channel bandwidths are implemented: 20 MHz and 40 MHz.

The software installed in the access point is 12.4(25d)JA1.

UNIFORM CHANNEL SPREADING

This requirement is not applicable to Slave radio devices.

OVERVIEW OF MASTER DEVICE WITH RESPECT TO §15.407 (h) REQUIREMENTS

The Master Device is a Cisco Access Point, FCC ID: LDK102061. The minimum antenna gain for the Master Device is 3.5 dBi.

The rated output power of the Master unit is $> 23\text{dBm}$ (EIRP). Therefore the required interference threshold level is -64 dBm . After correction for procedural adjustments, the required radiated threshold at the antenna port is $-64 + 1 = -63\text{ dBm}$.

The calibrated radiated DFS Detection Threshold level is set to -64 dBm . The tested level is lower than the required level hence it provides a margin to the limit.

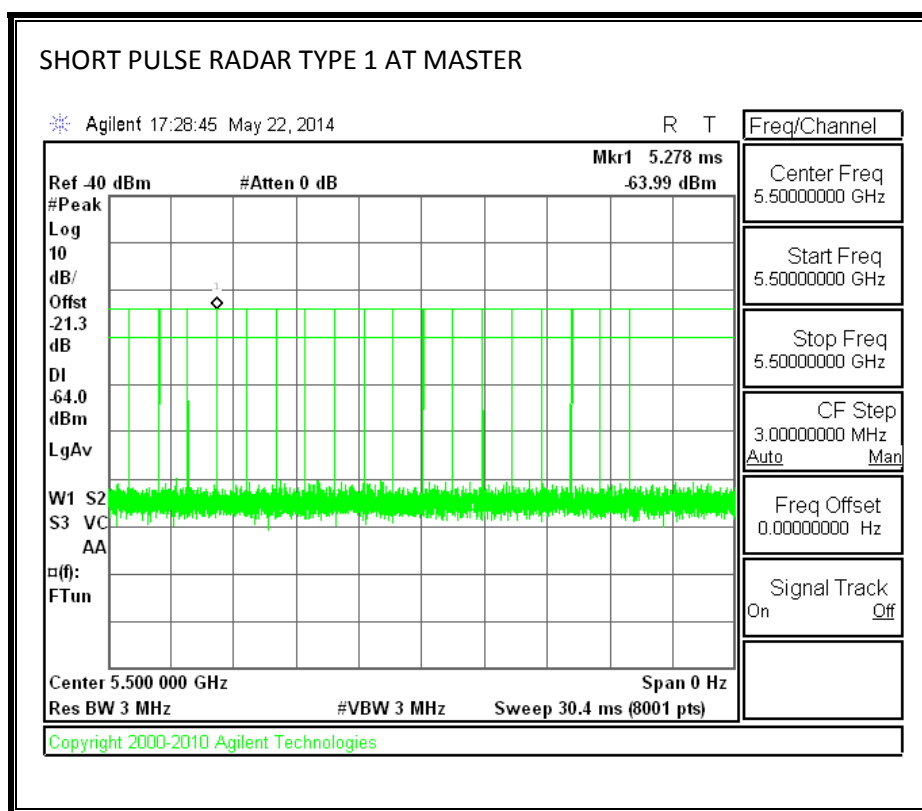
14.2. RESULTS FOR 20 MHz BANDWIDTH

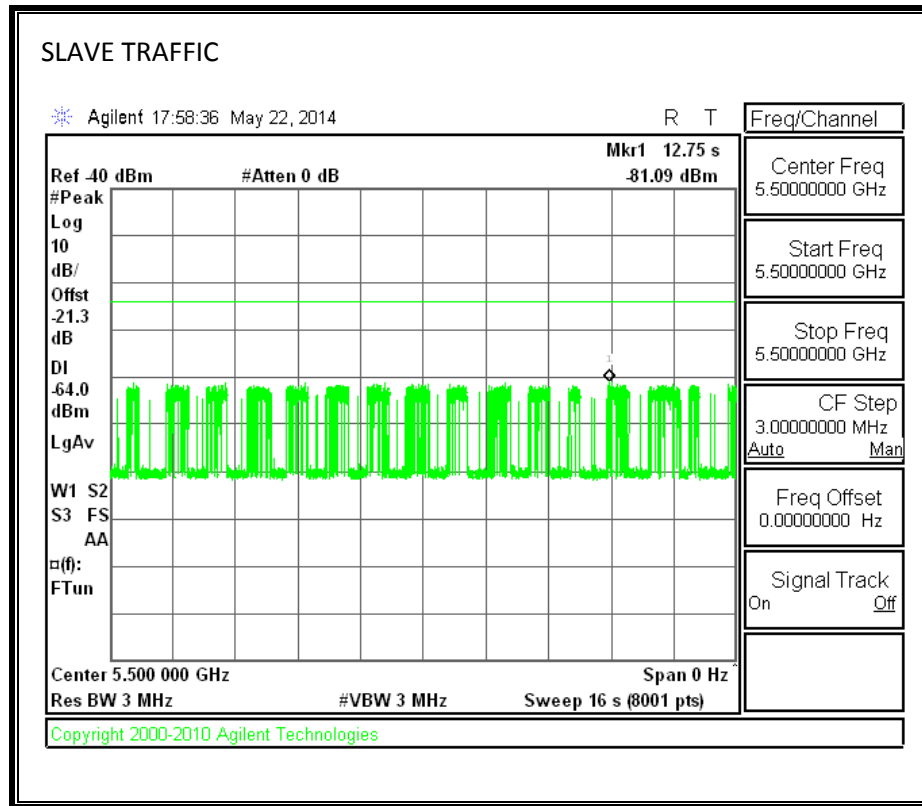
14.2.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5500 MHz.

14.2.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM



TRAFFIC

14.2.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

14.2.4. MOVE AND CLOSING TIME

REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =

(Number of analyzer bins showing transmission) * (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

Channel Move Time (sec)	Limit (sec)
0.116	10

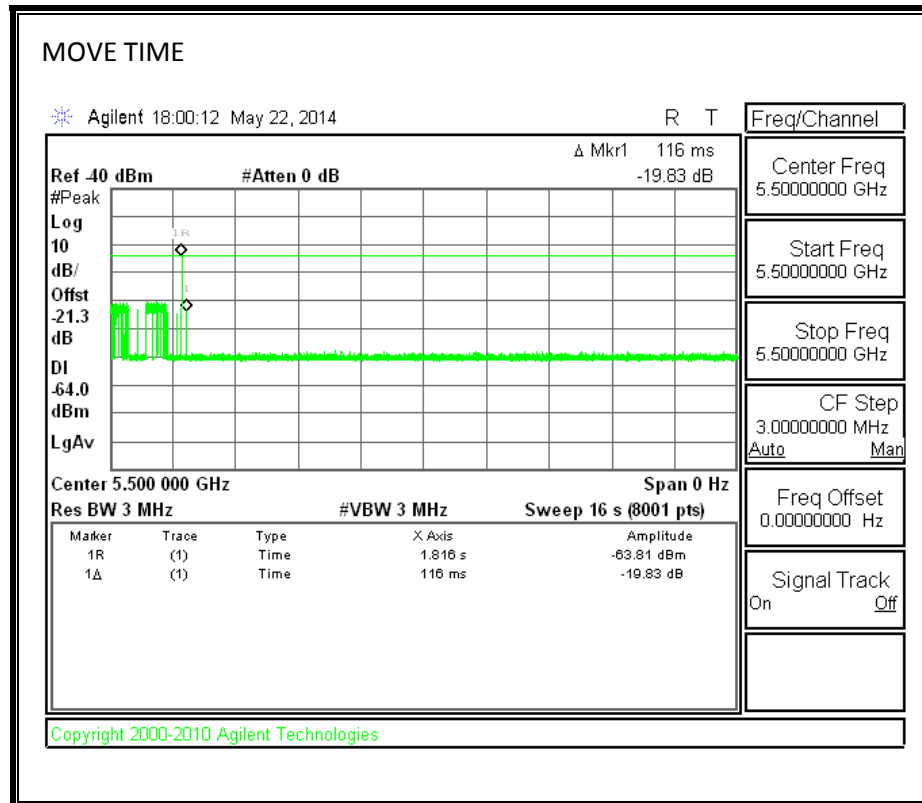
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Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0.0	60

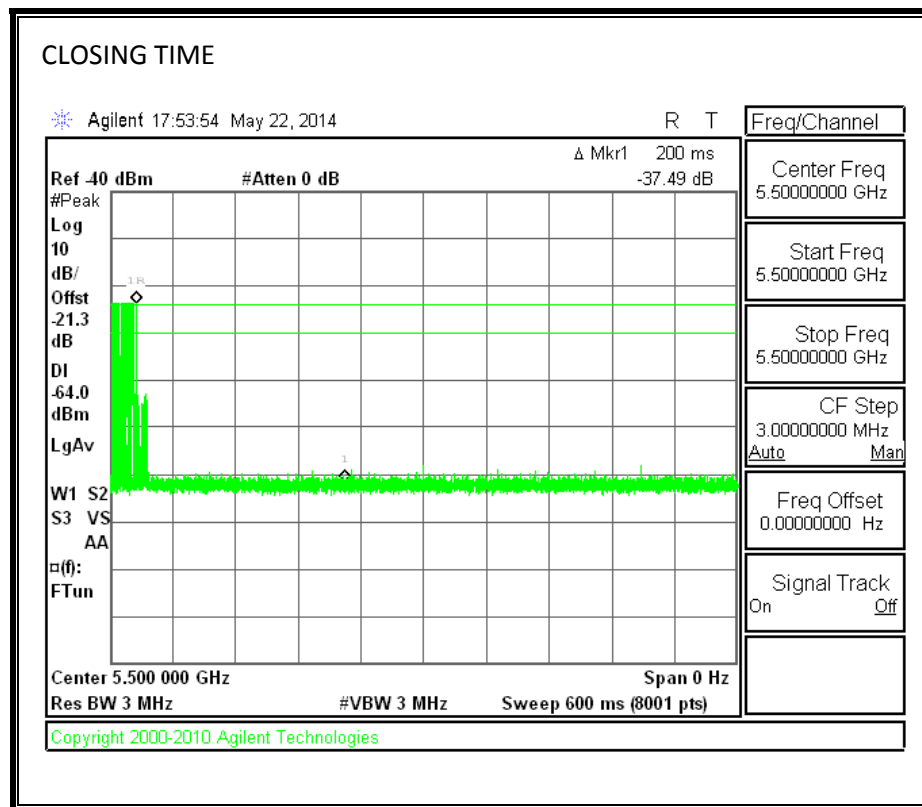
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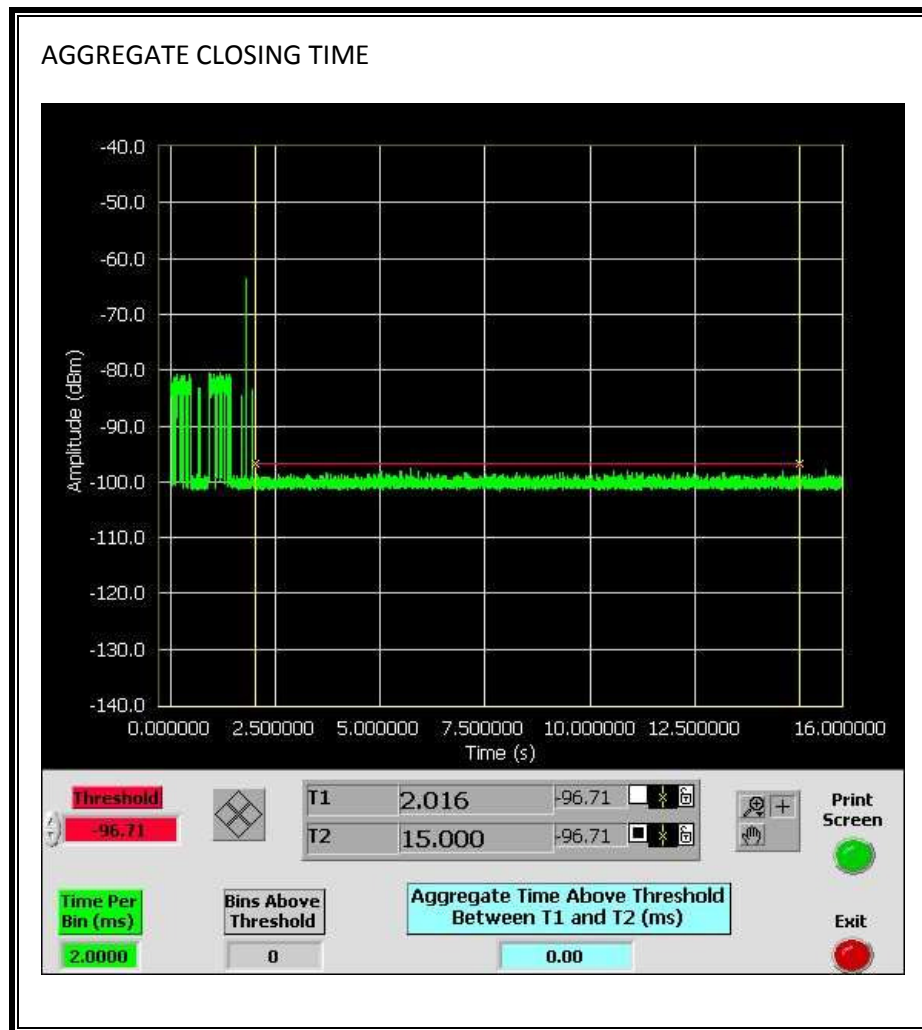
MOVE TIME

CHANNEL CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



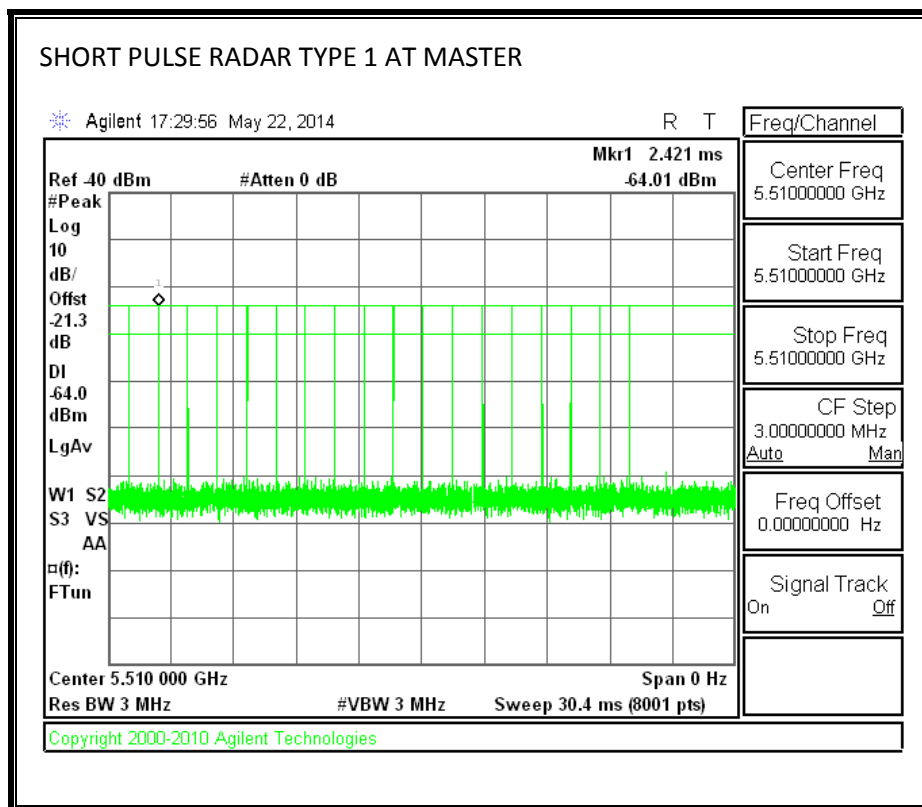
14.3. RESULTS FOR 40 MHz BANDWIDTH

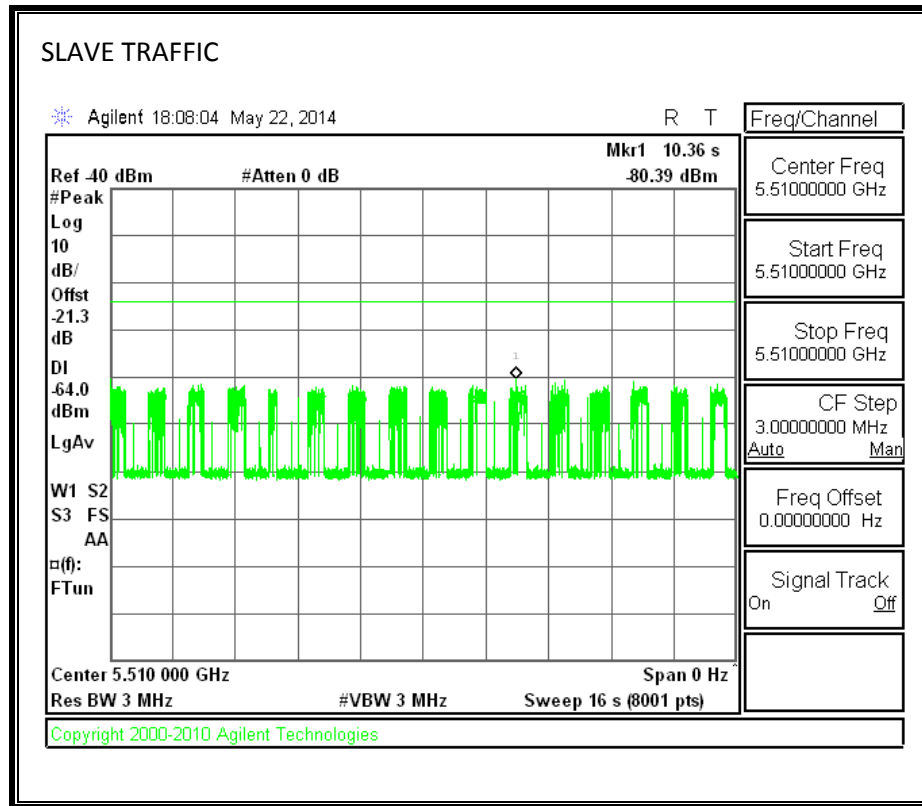
14.3.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5510 MHz.

14.3.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM



TRAFFIC

14.3.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

14.3.4. MOVE AND CLOSING TIME

REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =

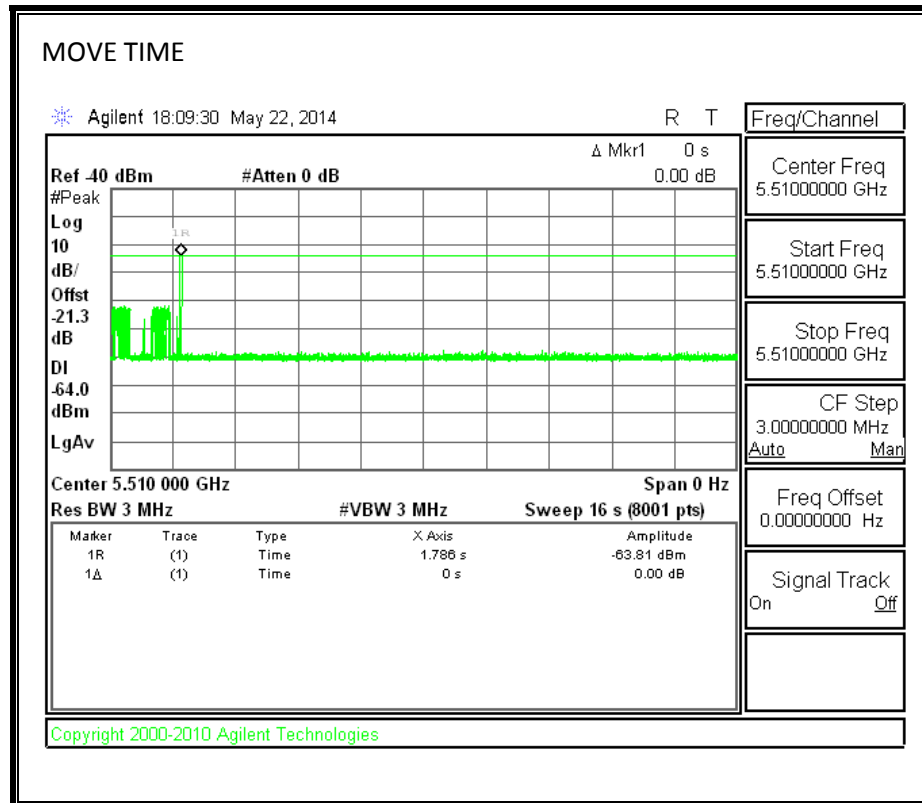
(Number of analyzer bins showing transmission) * (dwell time per bin)

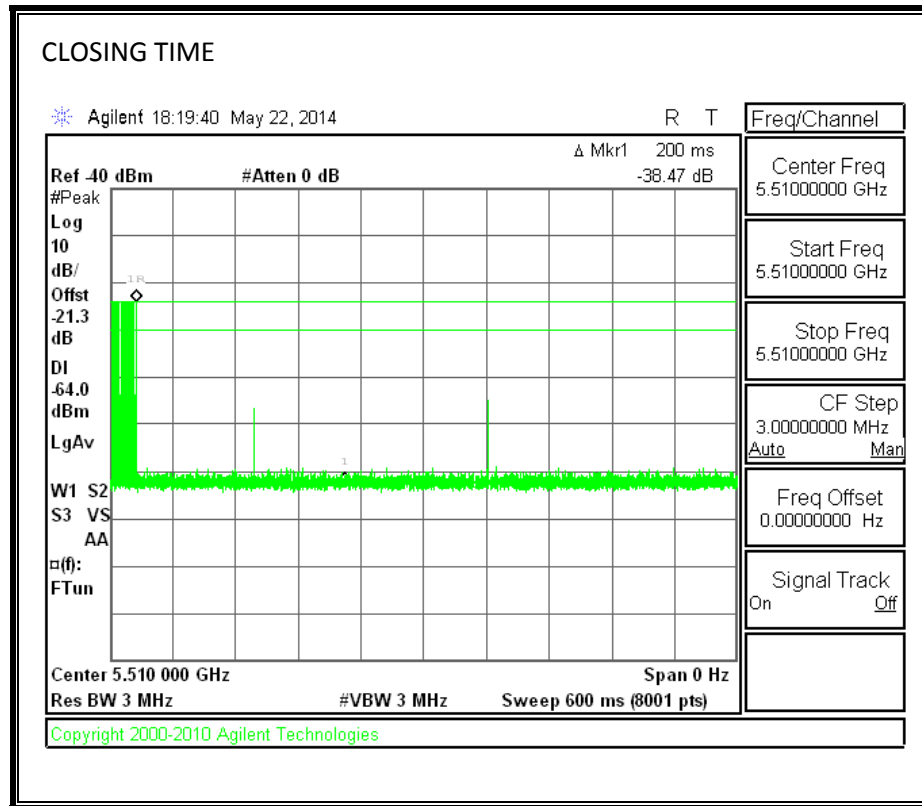
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

Channel Move Time (sec)	Limit (sec)
0.000	10

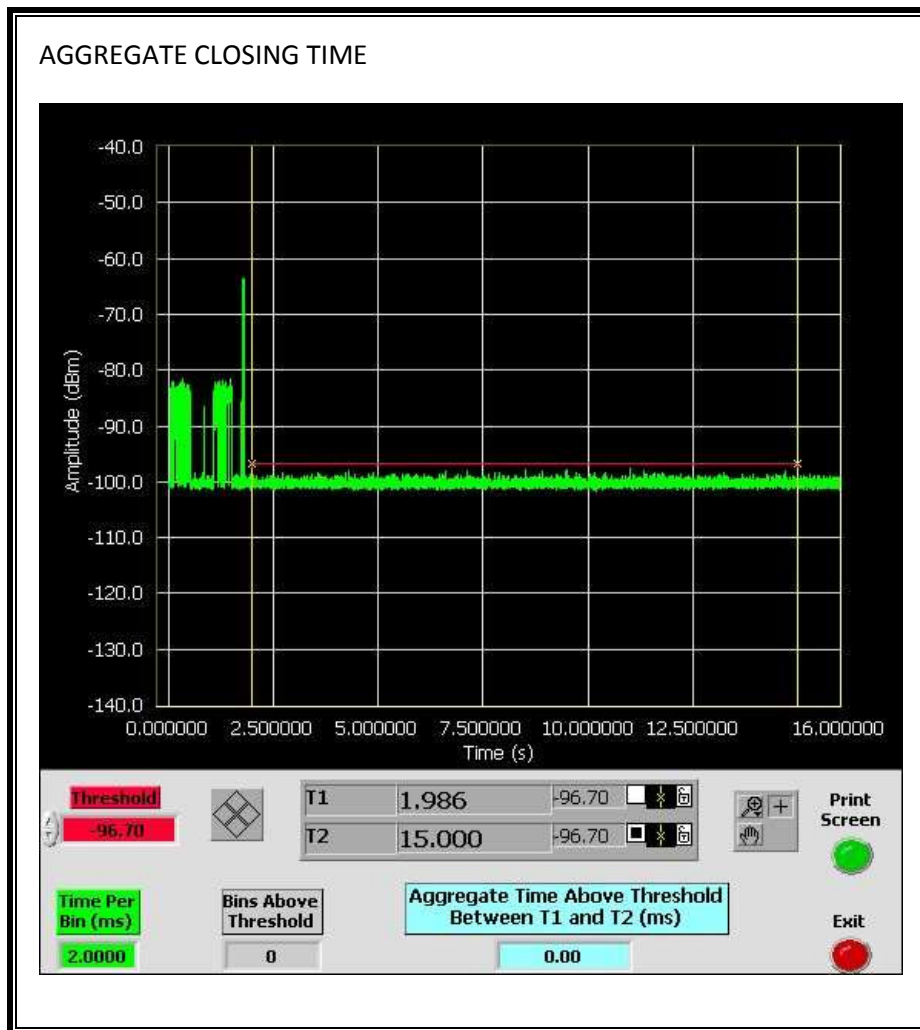
Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0.0	60

MOVE TIME

CHANNEL CLOSING TIME

AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



14.3.5. NON-OCCUPANCY PERIOD

RESULTS

No EUT transmissions were observed on the test channel during the 30-minute observation time.

