



FCC 47 CFR PART 15 SUBPART E

CERTIFICATION TEST REPORT

FOR

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

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A	8/14/14	Updated antenna information	P. Zhang
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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.
EUT DESCRIPTION: GSM/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n/ac, ANT+ & NFC
MODEL: SM-G8508S
SERIAL NUMBER: FL-280-D (Conducted); FL-280-B (Radiated)
DATE TESTED: JULY 17 –AUG 1, 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 and 644545 D01 Guidance for IEEE 802.11ac v01r01, 644545 D02 Alternative Guidance for 802.11ac v01.

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
☐ Chamber G	☒ Chamber H

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 40000 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/LTE Phone + Bluetooth, DTS/UNII a/b/g/n/ac & 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	802.11a	16.38	43.45
5180 - 5240	802.11n HT20	16.2	41.69
5190 - 5230	802.11n HT40	15.8	38.02
5210	802.11ac HT80	14.47	27.99
5260 - 5320	802.11a	16.5	44.67
5260 - 5320	802.11n HT20	16.44	44.06
5270 - 5310	802.11n HT40	16.14	41.11
5290	802.11ac HT80	14.16	26.06
5500 - 5700	802.11a	16.08	40.55
5500 - 5700	802.11n HT20	16.34	43.05
5510 - 5670	802.11n HT40	16.31	42.76
5530	802.11ac HT80	14.92	31.05
5745 - 5825	802.11a	16.74	47.21
5745 - 5825	802.11n HT20	16.58	45.50
5755 - 5795	802.11n HT40	16.1	40.74
5775	802.11ac HT80	13.98	25.00

The transmitter has average conducted output power as follows:

Band (GHz)	Mode	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Avg Pwr (dBm)	
						Chain 0	Chain 1
5.2 (UNII)	802.11a	6 Mbps	1 Tx	36	5180	12.0	11.8
				40	5200	12.0	11.8
				44	5220	12.0	11.9
				48	5240	12.1	12.0
			2 Tx	36	5180	12.0	11.8
				40	5200	12.0	11.8
				44	5220	12.0	11.9
				48	5240	12.1	12.0
	802.11n (HT20)	MCS0	1 Tx	36	5180	11.7	12.5
				40	5200	11.8	12.5
				48	5240	11.8	11.9
			2 Tx	36	5180	12.4	12.5
				40	5200	12.5	12.5
				48	5240	12.5	11.9
	802.11n (HT40)	MCS0	1 Tx	38	5190	12.1	12.0
				46	5230	12.1	12.1
			2 Tx	38	5190	12.5	12.0
				46	5230	12.5	12.1
	802.11ac (20MHz)	MCS0	1 Tx	36	5180	10.0	9.7
				40	5200	10.1	9.7
				48	5240	10.1	9.8
			2 Tx	36	5180	10.0	9.7
				40	5200	10.1	9.7
				48	5240	10.1	9.8
	802.11ac (40MHz)	MCS0	1 Tx	38	5190	10.3	9.9
				46	5230	10.3	10.0
			2 Tx	38	5190	10.1	9.9
				46	5230	10.2	10.0
	802.11ac (80MHz)	MCS0	1 Tx	42	5210	10.0	9.9
			2 Tx	42	5210	10.2	9.9
5.3 (UNII)	802.11a	6 Mbps	1 Tx	52	5260	12.0	12.4
				56	5280	11.9	12.2
				60	5300	11.9	12.2
				64	5320	11.9	12.3

			2 Tx	52	5260	12.0	12.4
				56	5280	11.9	12.2
				60	5300	11.9	12.2
				64	5320	11.9	12.3
	802.11n (HT20)	MCS0	1 Tx	52	5260	11.9	12.2
				60	5300	11.8	12.2
				64	5320	11.8	12.2
			2 Tx	52	5260	12.5	12.2
				60	5300	12.4	12.2
				64	5320	12.4	12.2
	802.11n (HT40)	MCS0	1 Tx	54	5270	12.1	12.5
				62	5310	12.2	12.5
			2 Tx	54	5270	12.1	12.5
				62	5310	12.2	12.5
	802.11ac (20MHz)	MCS0	1 Tx	52	5260	9.8	10.5
				60	5300	9.8	10.4
				64	5320	9.7	10.4
			2 Tx	52	5260	9.8	10.5
				60	5300	9.7	10.4
				64	5320	9.7	10.4
	802.11ac (40MHz)	MCS0	1 Tx	54	5270	10.0	10.5
				62	5310	10.0	10.5
			2 Tx	54	5270	10.0	10.5
				62	5310	10.0	10.5
	802.11ac (80MHz)	MCS0	1 Tx	58	5290	9.9	10.2
			2 Tx	58	5290	10.2	10.2
5.5 (UNII)	802.11a	6 Mbps	1 Tx	100	5500	12.0	11.9
				104	5520	11.9	11.9
				108	5540	11.9	11.8
				112	5560	11.8	11.7
				116	5580	11.8	11.7
				132	5660	12.5	12.5
				136	5680	12.2	12.3
				140	5700	12.0	12.1
			2 Tx	100	5500	12.0	12.0
				104	5520	11.8	11.8
				108	5540	11.7	11.7
				112	5560	11.7	11.6

				116	5580	11.7	11.6
				132	5660	12.5	12.4
				136	5680	12.2	12.2
				140	5700	12.0	12.2
	802.11n (HT20)	MCS0	1 Tx	100	5500	11.9	11.8
				116	5580	12.5	12.5
				140	5700	12.0	12.1
			2 Tx	100	5500	11.9	11.8
				116	5580	12.5	12.5
				140	5700	12.0	12.1
	802.11n (HT40)	MCS0	1 Tx	102	5510	12.2	12.2
				110	5550	12.1	12.0
				134	5670	12.5	12.5
			2 Tx	102	5510	12.2	12.2
				110	5550	12.1	12.0
				134	5670	12.5	12.5
	802.11ac (20MHz)	MCS0	1 Tx	100	5500	9.8	10.0
				116	5580	9.8	9.7
				144	5720	10.0	10.1
			2 Tx	100	5500	9.8	10.0
				116	5580	9.8	9.7
				144	5720	10.0	10.2
	802.11ac (40MHz)	MCS0	1 Tx	102	5510	10.3	10.2
				110	5550	10.1	10.1
				142	5710	10.2	10.5
			2 Tx	102	5510	10.1	10.2
				110	5550	10.1	10.0
				142	5710	10.1	10.3
	802.11ac (80MHz)	MCS0	1 Tx	106	5530	10.0	9.8
				138	5690	10.2	10.2
			2 Tx	106	5530	10.3	10.2
				138	5690	10.4	10.5
5.8 (UNII-3)	802.11a	6 Mbps	1 Tx	149	5745	12.5	12.3
				153	5765	12.3	12.1
				157	5785	12.1	12.0
				161	5805	11.9	12.0
				165	5825	11.7	11.8
			2 Tx	149	5745	12.5	12.2
				153	5765	12.3	12.1
				157	5785	12.1	12.0

				161	5805	11.9	11.9
				165	5825	11.7	11.8
	802.11n (HT20)	MCS0	1 Tx	149	5745	12.4	12.0
				157	5785	12.0	12.0
				161	5805	11.8	11.8
				149	5745	12.4	12.0
			2 Tx	157	5785	12.0	12.0
				161	5805	11.8	11.8
	802.11n (HT40)	MCS0	1 Tx	151	5755	11.7	12.4
				159	5795	12.4	12.3
			2 Tx	151	5755	11.7	12.4
				159	5795	12.4	12.3
	802.11ac (20MHz)	MCS0	1 Tx	149	5745	10.4	10.2
				157	5785	10.1	10.0
				165	5825	9.8	9.9
			2 Tx	149	5745	10.4	10.1
				157	5785	10.1	10.0
				165	5825	9.8	9.8
	802.11ac (40MHz)	MCS0	1 Tx	151	5755	9.7	10.5
				159	5795	10.4	10.3
			2 Tx	151	5755	9.7	10.5
				159	5795	10.4	10.3
	802.11ac (80MHz)	MCS0	1 Tx	155	5775	10.4	10.1
			2 Tx	155	5775	10.4	10.3

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes two FPCB antennas, with maximum gain of -5.56dBi and 1.02dBi for 5GHz band

List of test reduction and modes covering other modes:

Authorized Frequency Band (Antenna port & Radiated Testing)		
Frequency Range (MHz)	Mode	Covered by
5180 - 5240	802.11a legacy 1TX	802.11a 2TX CDD
5180 - 5240	802.11HT20 1TX	802.11n HT20 2TX CDD
5180 - 5240	802.11HT20 2TX STBC	802.11n HT20 2TX CDD
5180 - 5240	802.11ac VHT20 1TX	802.11n HT20 2TX CDD
5180 - 5240	802.11ac VHT20 2TX STBC	802.11n HT20 2TX CDD
5180 - 5240	802.11ac VHT20 2TX CDD	802.11n HT20 2TX CDD
5190 - 5230	802.11n HT40 1TX	802.11n HT40 2TX CDD
5190 - 5230	802.11n HT40 2TX STBC	802.11n HT40 2TX CDD
5190 - 5230	802.11ac VHT40 1TX	802.11n HT40 2TX CDD
5190 - 5230	802.11ac VHT40 2TX STBC	802.11n HT40 2TX CDD
5190 - 5230	802.11ac VHT40 2TX CDD	802.11n HT40 2TX CDD
5210	802.11ac VHT80 1TX	802.11ac VHT80 2TX CDD
5210	802.11ac VHT80 2TX STBC	802.11ac VHT80 2TX CDD

Authorized Frequency Band (Antenna port & Radiated Testing)		
Frequency Range (MHz)	Mode	Covered by
5260 - 5320	802.11a legacy 1TX	802.11a 2TX CDD
5260 - 5320	802.11HT20 1TX	802.11n HT20 2TX CDD
5260 - 5320	802.11HT20 2TX STBC	802.11n HT20 2TX CDD
5260 - 5320	802.11ac VHT20 1TX	802.11n HT20 2TX CDD
5260 - 5320	802.11ac VHT20 2TX STBC	802.11n HT20 2TX CDD
5260 - 5320	802.11ac VHT20 2TX CDD	802.11n HT20 2TX CDD
5270 - 5310	802.11n HT40 1TX	802.11n HT40 2TX CDD
5270 - 5310	802.11n HT40 2TX STBC	802.11n HT40 2TX CDD
5270 - 5310	802.11ac VHT40 1TX	802.11n HT40 2TX CDD
5270 - 5310	802.11ac VHT40 2TX STBC	802.11n HT40 2TX CDD
5270 - 5310	802.11ac VHT40 2TX CDD	802.11n HT40 2TX CDD
5290	802.11ac VHT80 1TX	802.11ac VHT80 2TX CDD
5290	802.11ac VHT80 2TX STBC	802.11ac VHT80 2TX CDD

Authorized Frequency Band (Antenna port & Radiated Testing)		
Frequency Range (MHz)	Mode	Covered by
5500 - 5720	802.11a legacy 1TX	802.11a 2TX CDD
5500 - 5720	802.11HT20 1TX	802.11n HT20 2TX CDD
5500 - 5720	802.11HT20 2TX STBC	802.11n HT20 2TX CDD
5500 - 5720	802.11ac VHT20 1TX	802.11n HT20 2TX CDD
5500 - 5720	802.11ac VHT20 2TX STBC	802.11n HT20 2TX CDD
5500 - 5720	802.11ac VHT20 2TX CDD	802.11n HT20 2TX CDD
5510 - 5710	802.11n HT40 1TX	802.11n HT40 2TX CDD
5510 - 5710	802.11n HT40 2TX STBC	802.11n HT40 2TX CDD
5510 - 5710	802.11ac VHT40 1TX	802.11n HT40 2TX CDD
5510 - 5710	802.11ac VHT40 2TX STBC	802.11n HT40 2TX CDD
5510 - 5710	802.11ac VHT40 2TX CDD	802.11n HT40 2TX CDD
5530-5690	802.11ac VHT80 1TX	802.11ac VHT80 2TX CDD
5530-5690	802.11ac VHT80 2TX STBC	802.11ac VHT80 2TX CDD

Authorized Frequency Band (Antenna port & Radiated Testing)		
Frequency Range (MHz)	Mode	Covered by
5745 - 5825	802.11a legacy 1TX	802.11a 2TX CDD
5745 - 5825	802.11HT20 1TX	802.11n HT20 2TX CDD
5745 - 5825	802.11HT20 2TX STBC	802.11n HT20 2TX CDD
5745 - 5825	802.11ac VHT20 1TX	802.11n HT20 2TX CDD
5745 - 5825	802.11ac VHT20 2TX STBC	802.11n HT20 2TX CDD
5745 - 5825	802.11ac VHT20 2TX CDD	802.11n HT20 2TX CDD
5755 - 5795	802.11n HT40 1TX	802.11n HT40 2TX CDD
5755 - 5795	802.11n HT40 2TX STBC	802.11n HT40 2TX CDD
5755 - 5795	802.11ac VHT40 1TX	802.11n HT40 2TX CDD
5755 - 5795	802.11ac VHT40 2TX STBC	802.11n HT40 2TX CDD
5755 - 5795	802.11ac VHT40 2TX CDD	802.11n HT40 2TX CDD
5775	802.11ac VHT80 1TX	802.11ac VHT80 2TX CDD
5775	802.11ac VHT80 2TX STBC	802.11ac VHT80 2TX CDD

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

802.11ac VHT80mode: MCS0

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	SAMSUNG	EP-TA50CWC	N/A	N/A
Earphone	SAMSUNG	EO-EG900BW	N/A	N/A

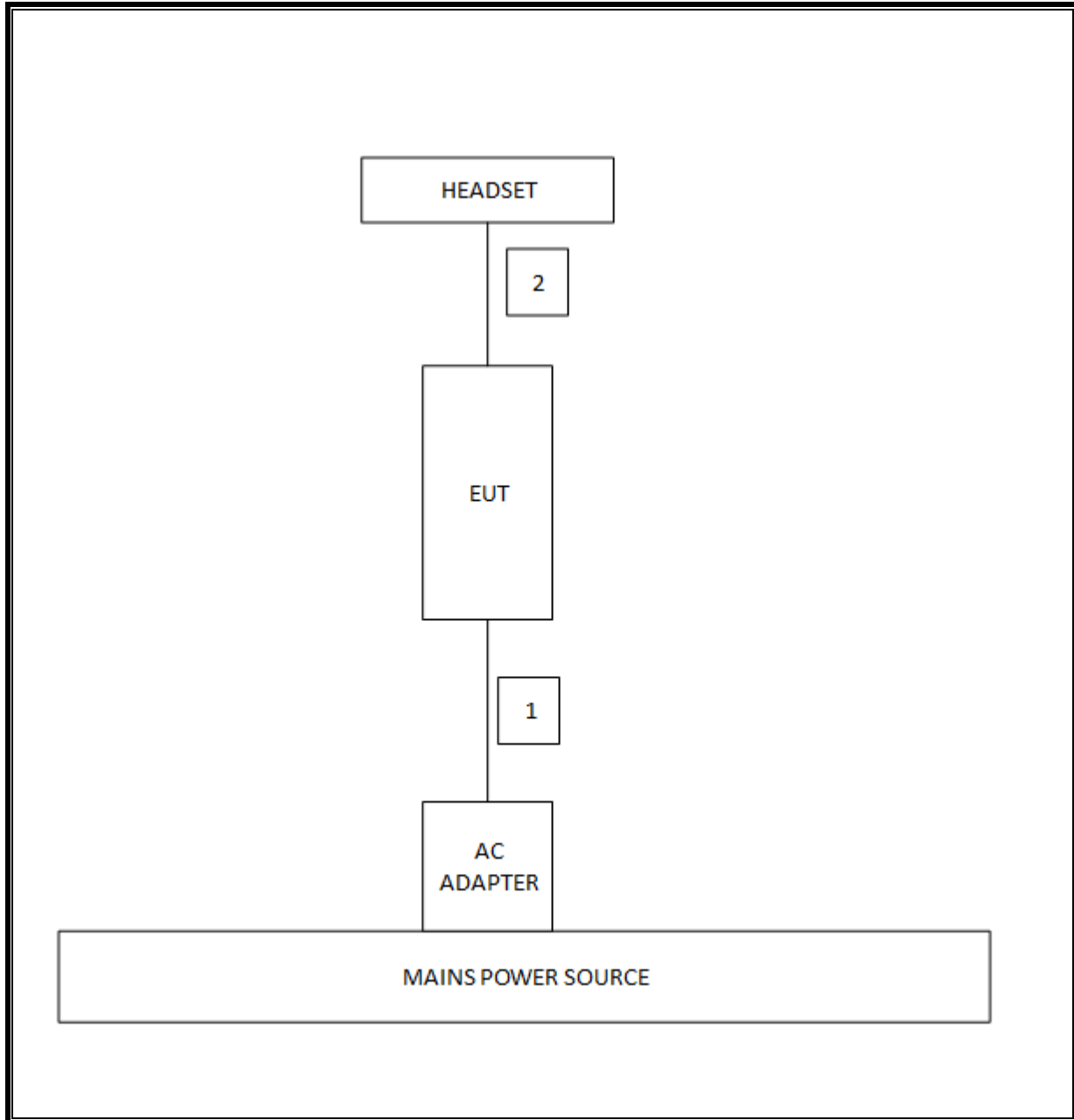
I/O CABLES

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	06/28/15
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	06/27/15
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	82.80MHz
15.407 (a)(1)	TX Cond. Power 5.15-2.25	<17dBm or 4+10Log(OBW)		Pass	16.38dBm
15.407 (a)(2)(3)	TX Cond. Power 5.25-5.35 & 5.47-5.725 & 5.725-5.825	<24dBm or 11+10Log(OBW)		Pass	16.74dBm
15.407 (a)(5)	PSD	<4 for 5.2 and 11dBm for other 5G		Pass	5.94dBm
15.207 (a)	AC Power Line conducted emissions	Section 10	Radiated	Pass	38.18dBuV(AV)
15.407 (b) & 15.209	Radiated Spurious Emission	< 54dBuV/m		Pass	52.97dBuV/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.

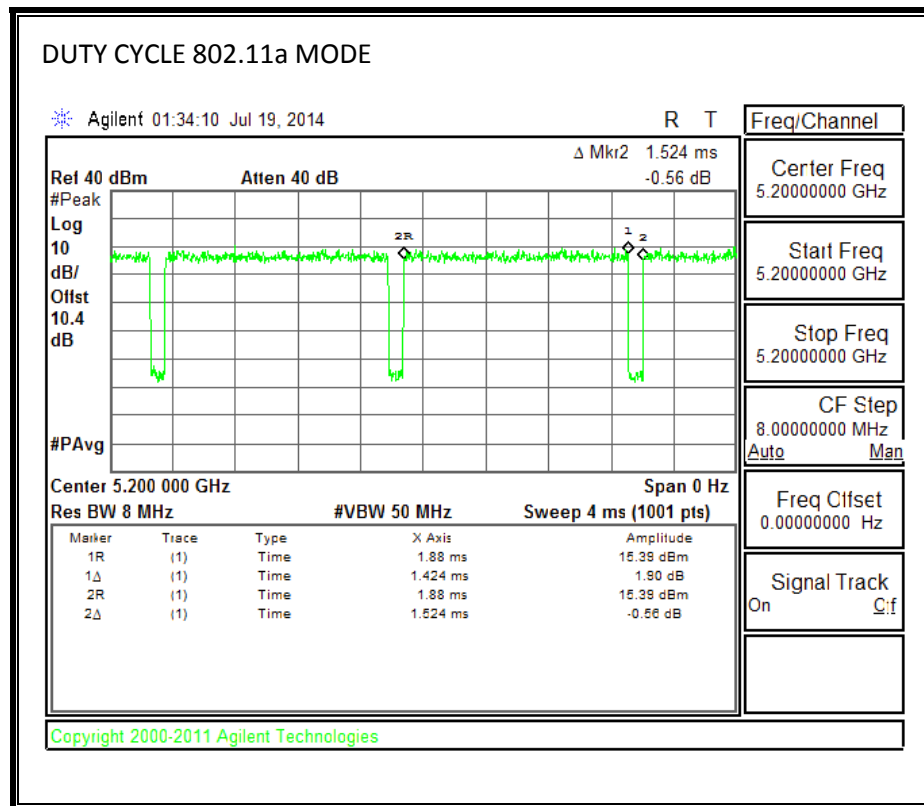
PROCEDURE

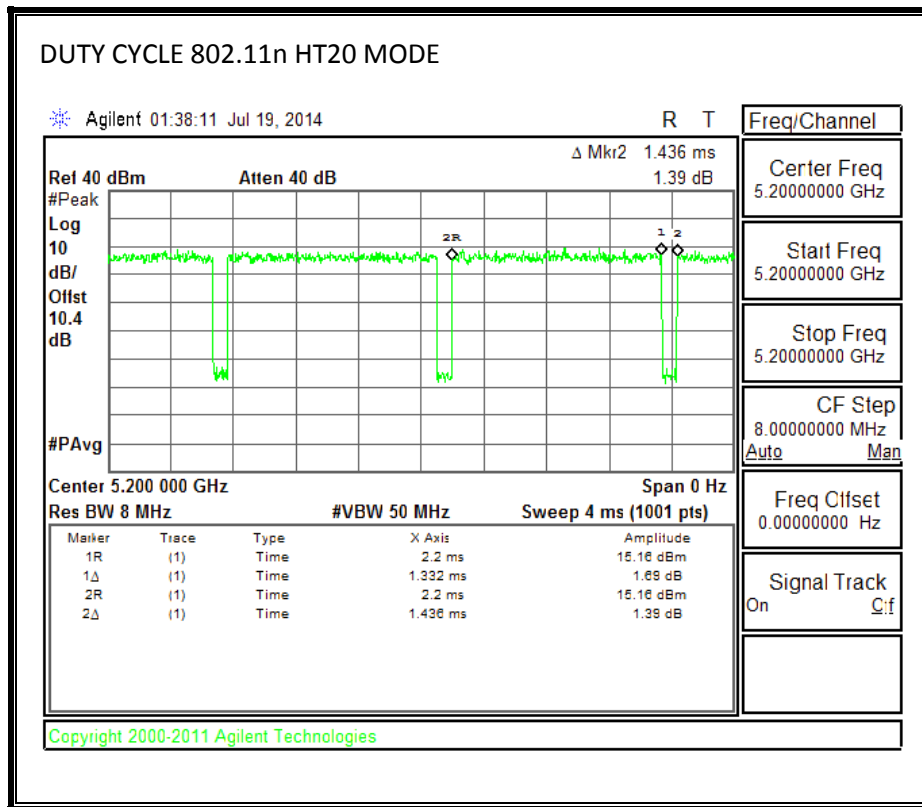
KDB 789033 Zero-Span Spectrum Analyzer Method.

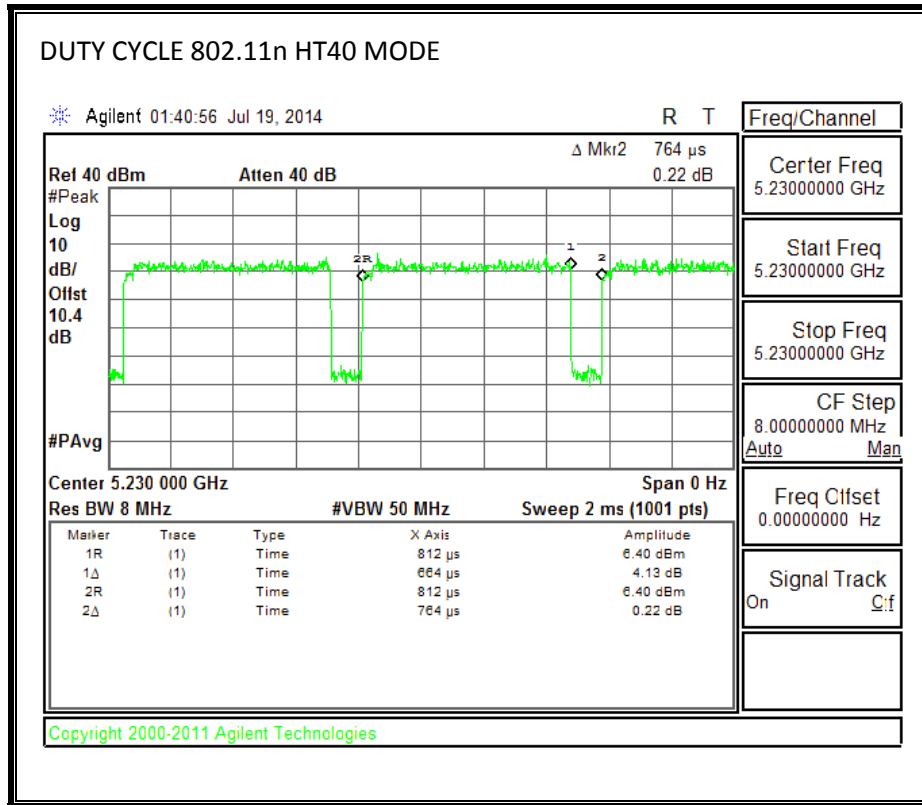
8.1. ON TIME AND DUTY CYCLE RESULTS

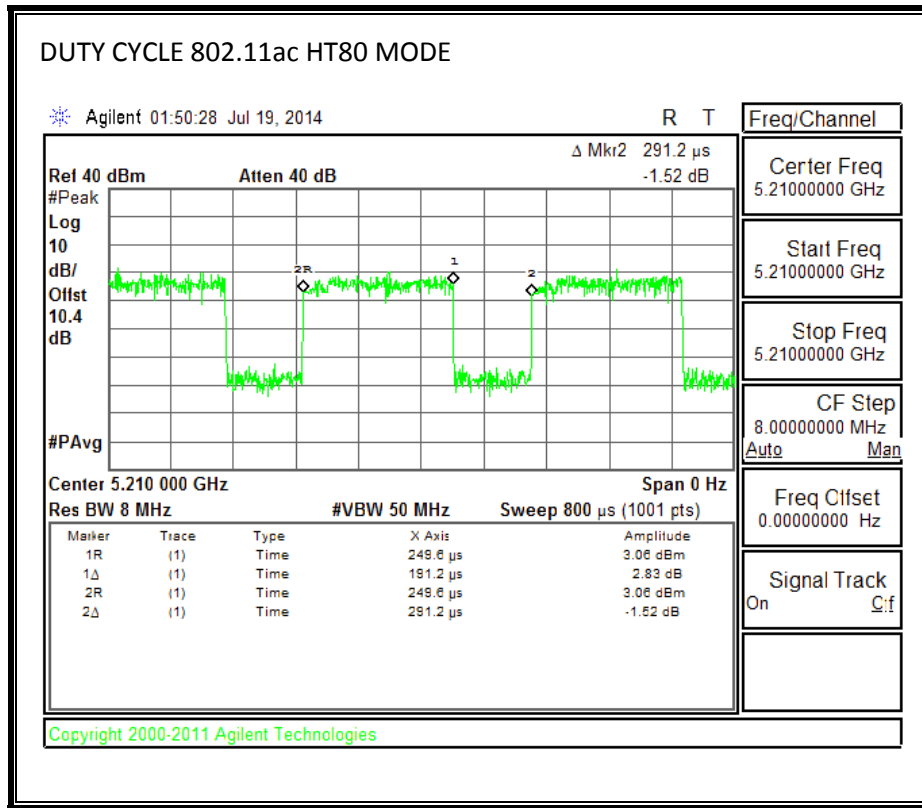
Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
802.11a	1.42	1.52	0.934	93.4%	0.29	0.702
802.11n HT20	1.33	1.44	0.928	92.8%	0.33	0.751
802.11n HT40	0.66	0.76	0.869	86.9%	0.61	1.506
802.11ac HT80	0.19	0.29	0.657	65.7%	1.83	5.230

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 CHAIN 0 (MHz)	26 dB Bandwidth CHAIN 1 (MHz)
Low	5180	21.75	21.90
Mid	5200	21.65	21.90
High	5240	18.70	18.95

10.1.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth CHAIN 0 (MHz)	26 dB Bandwidth CHAIN 1 (MHz)
Low	5180	21.95	22.30
Mid	5200	21.95	22.10
High	5240	19.15	19.20

10.1.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26dB Bandwidth CHAIN 0 (MHz)	26dB Bandwidth CHAIN 1 (MHz)
Low	5190	40.33	40.08
Mid	5230	40.42	40.08

10.1.4. 802.11ac HT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth CHAIN 0 (MHz)	26 dB Bandwidth CHAIN 1 (MHz)
Low	5210	82.17	82.00

10.1.1. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth CHAIN 0 (MHz)	26 dB Bandwidth CHAIN 0 (MHz)
Low	5260	18.65	19.05
Mid	5300	21.65	21.85
High	5320	21.60	22.00

10.1.1. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth CHAIN 0 (MHz)	26 dB Bandwidth CHAIN 0 (MHz)
Low	5260	19.20	19.20
Mid	5300	22.05	22.05
High	5320	22.15	21.95

10.1.2. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	26 dB Bandwidth (MHz)
Low	5270	40.50	40.33
High	5310	40.33	40.17

10.1.3. 802.11ac HT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth CHAIN 0 (MHz)	26 dB Bandwidth CHAIN 1 (MHz)
Low	5290	82.33	82.17

10.1.4. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth CHAIN 0 (MHz)	26 dB Bandwidth CHAIN 1 (MHz)
Low	5500	21.76	21.99
Mid	5580	18.78	18.84
High	5700	21.88	21.88

10.1.5. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth CHAIN 0 (MHz)	26 dB Bandwidth CHAIN 1 (MHz)
Low	5500	22.05	22.17
Mid	5580	19.25	19.31
High	5700	22.05	22.17

10.1.6. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth CHAIN 0 (MHz)	26 dB Bandwidth CHAIN 1 (MHz)
Low	5510	40.60	40.60
Mid	5550	40.60	40.60
High	5670	40.60	40.60

10.1.7. 802.11ac HT80 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth CHAIN 0 (MHz)	26 dB Bandwidth CHAIN 1 (MHz)
Low	5530	82.60	82.40
High	5690	82.80	82.80

10.1.8. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth CHAIN 0 (MHz)	26 dB Bandwidth CHAIN 1 (MHz)
Low	5745	21.42	21.32
Mid	5785	21.42	21.36
High	5825	21.39	21.44

10.1.9. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth CHAIN 0 (MHz)	26 dB Bandwidth CHAIN 0 (MHz)
Low	5745	21.75	21.64
Mid	5785	21.84	21.68
High	5825	21.66	21.60

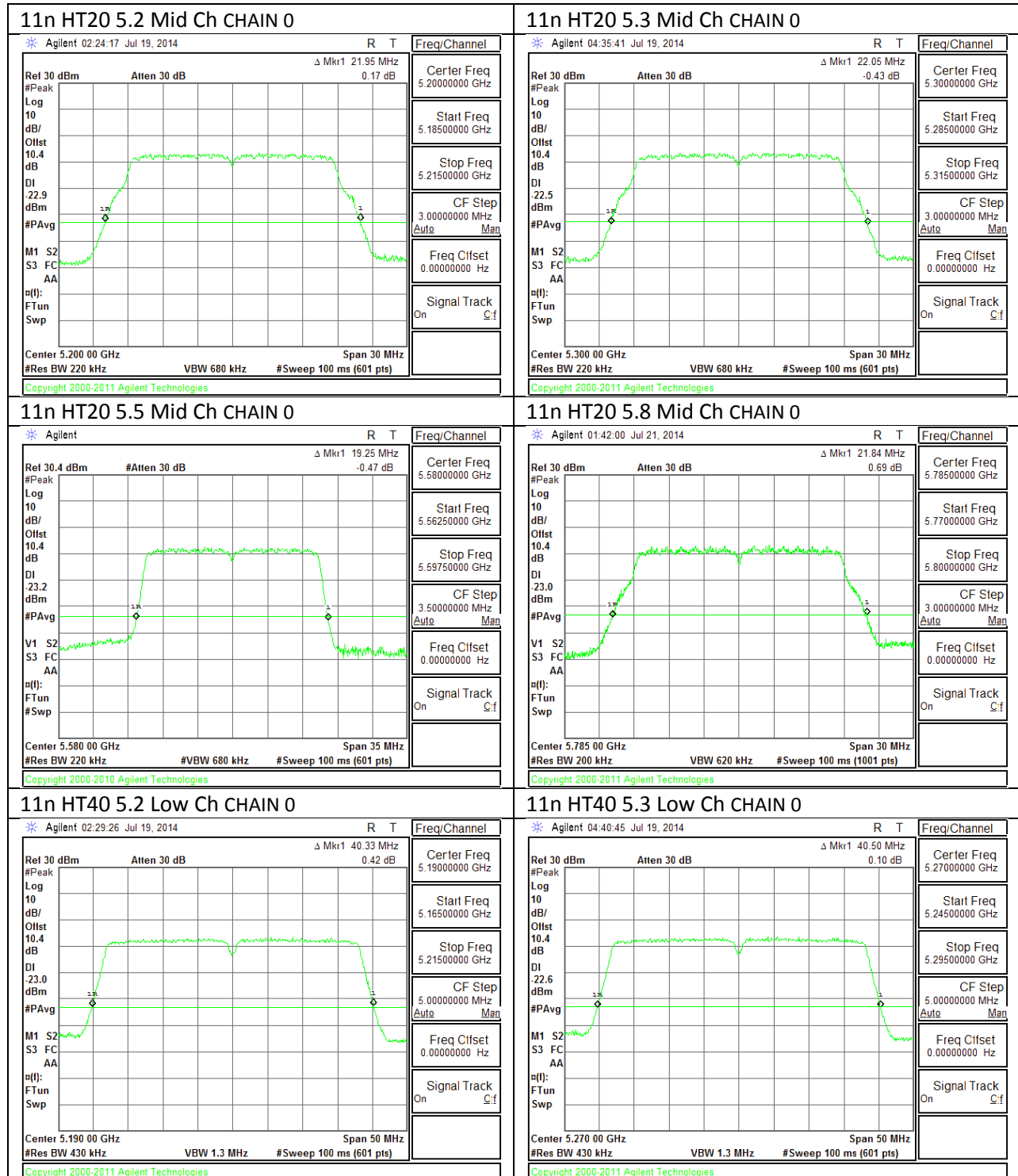
10.1.10. 802.11n HT40 MODE IN THE 5.8 GHz BAND

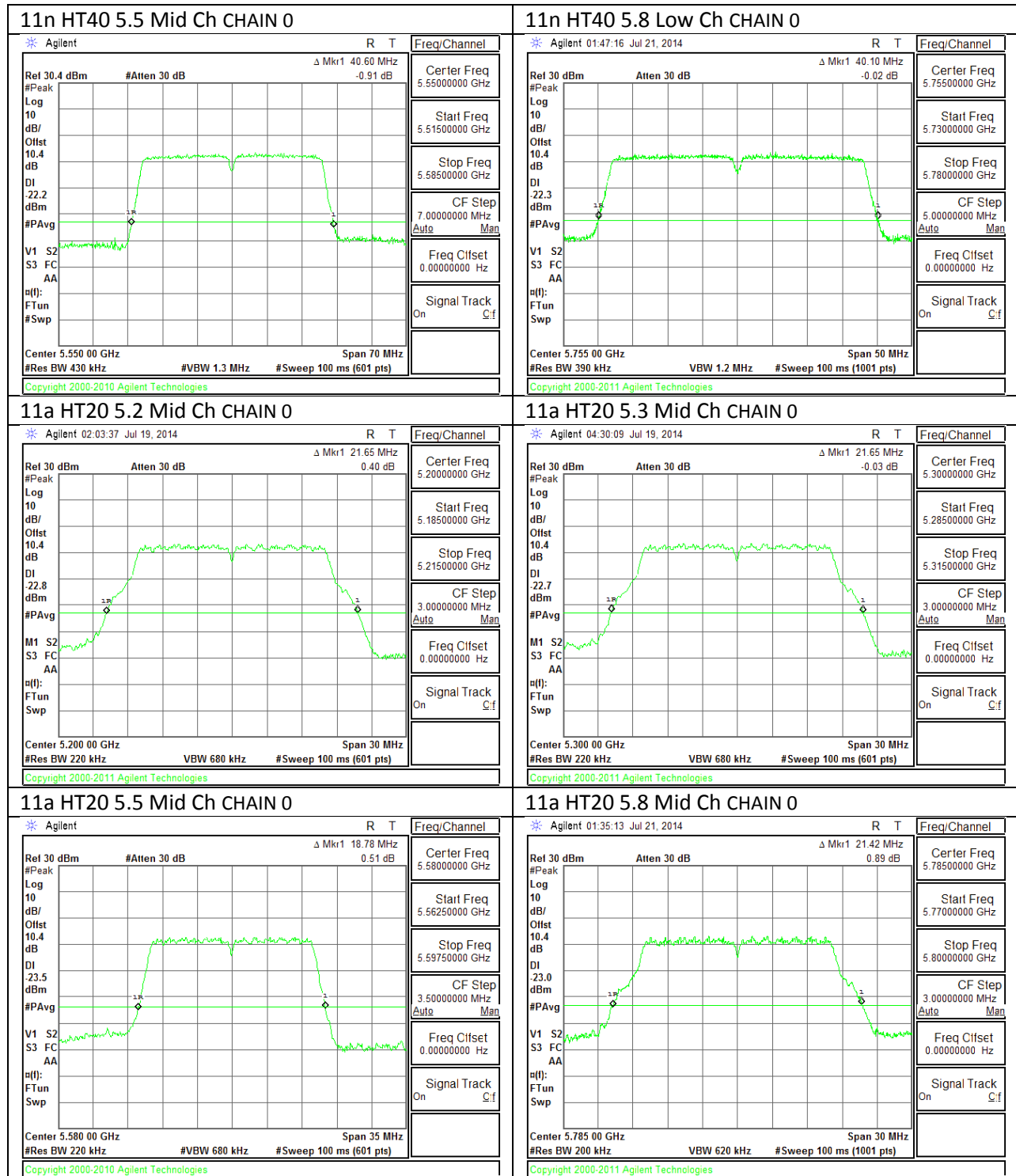
Channel	Frequency (MHz)	26 dB Bandwidth CHAIN 0 (MHz)	26 dB Bandwidth CHAIN 1 (MHz)
Low	5755	40.10	39.76
High	5795	39.95	39.56

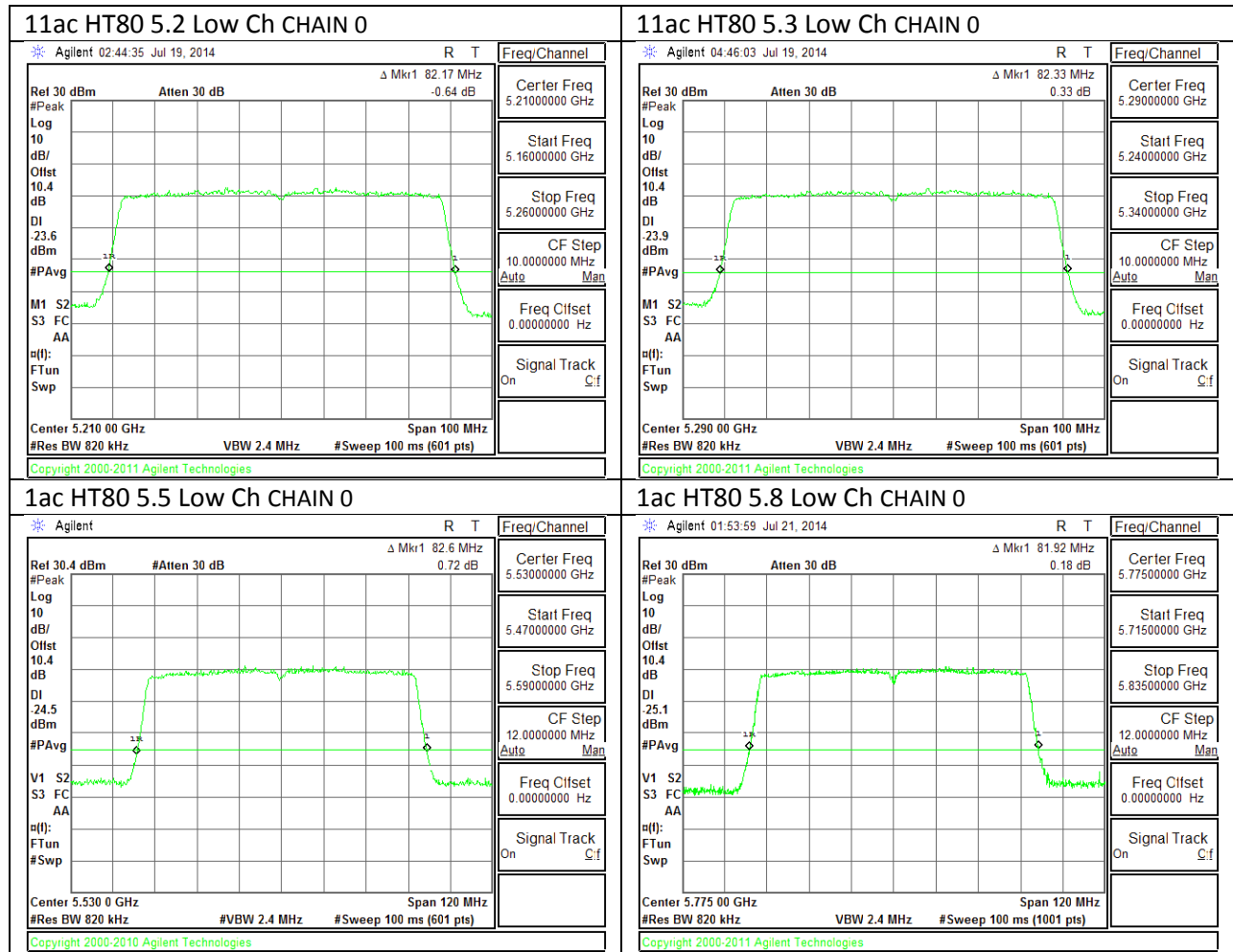
10.1.11. 802.11ac HT80 MODE IN THE 5.8 GHz BAND

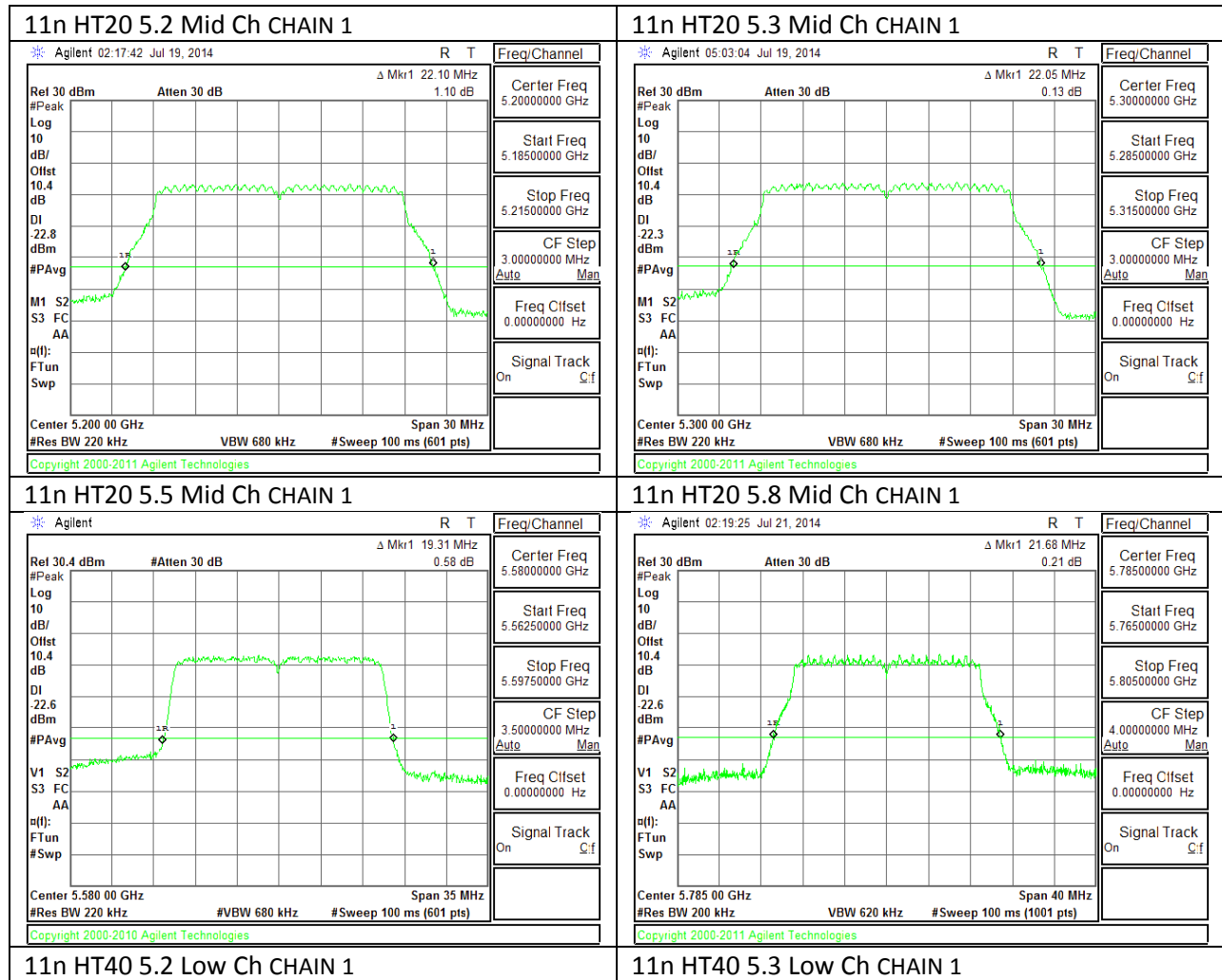
Channel	Frequency (MHz)	26 dB Bandwidth CHAIN 0 (MHz)	26 dB Bandwidth CHAIN 1 (MHz)
Low	5775	81.92	81.48

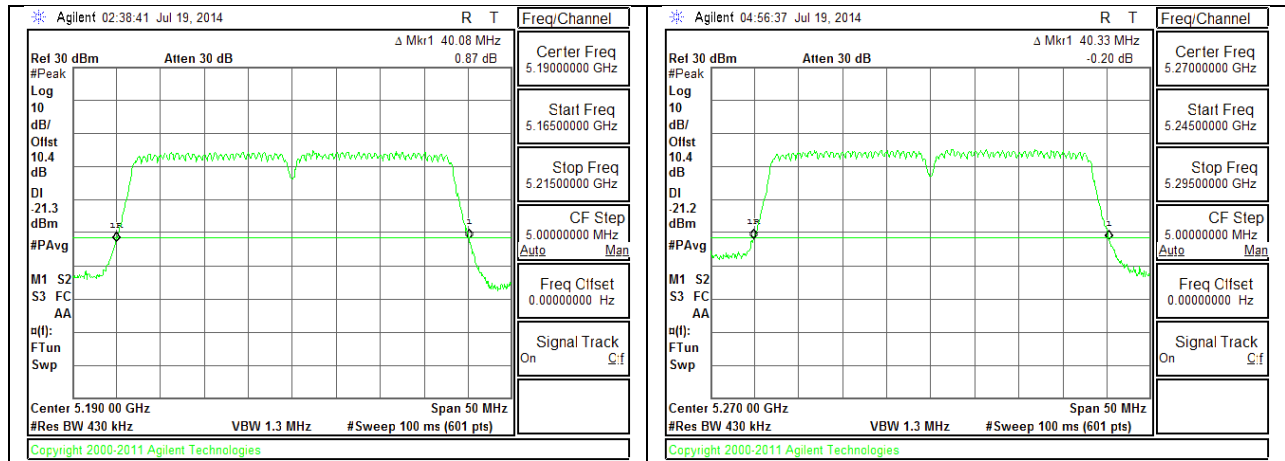
10.1.12. 26 dB BANDWIDTH PLOTS

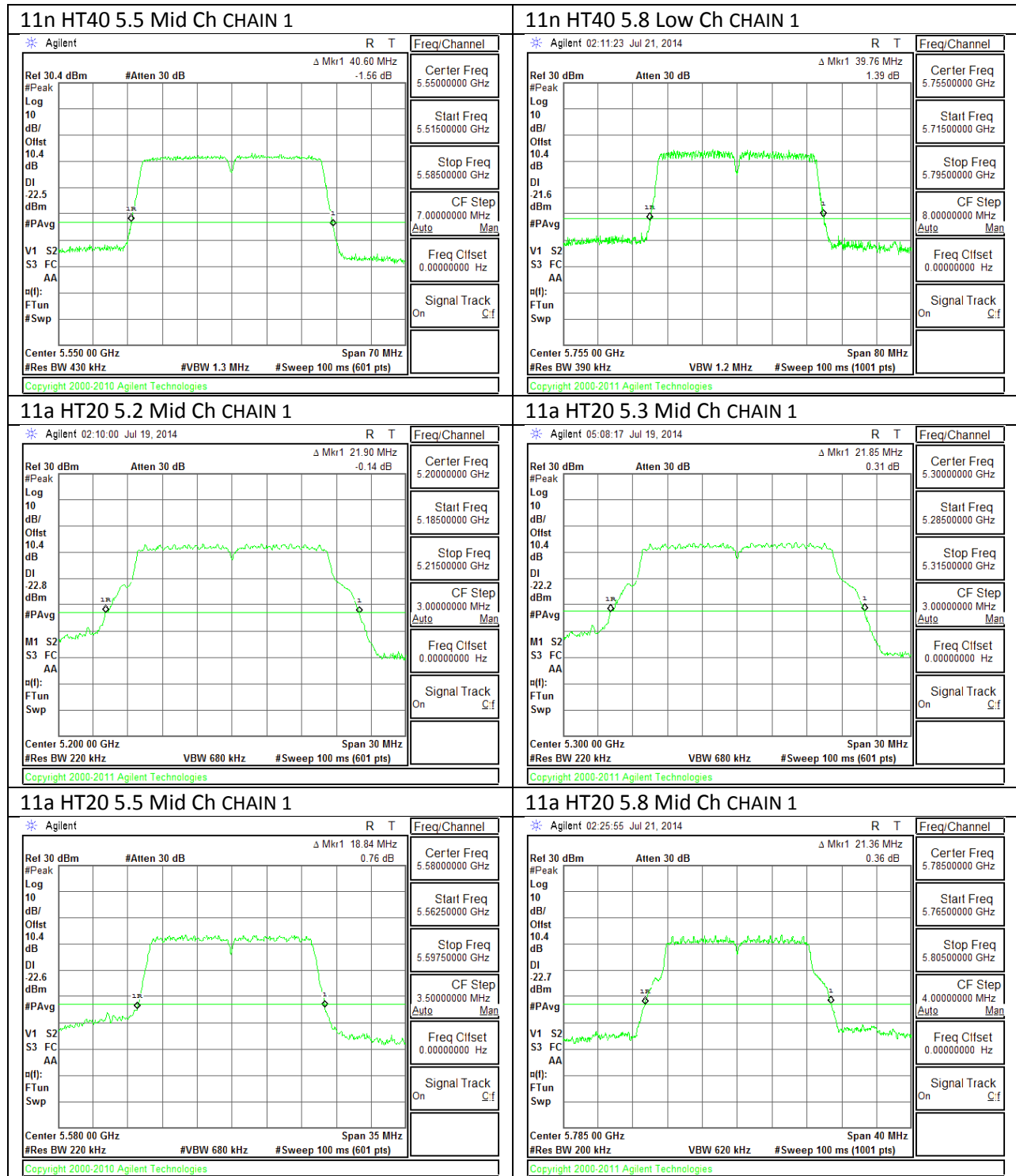


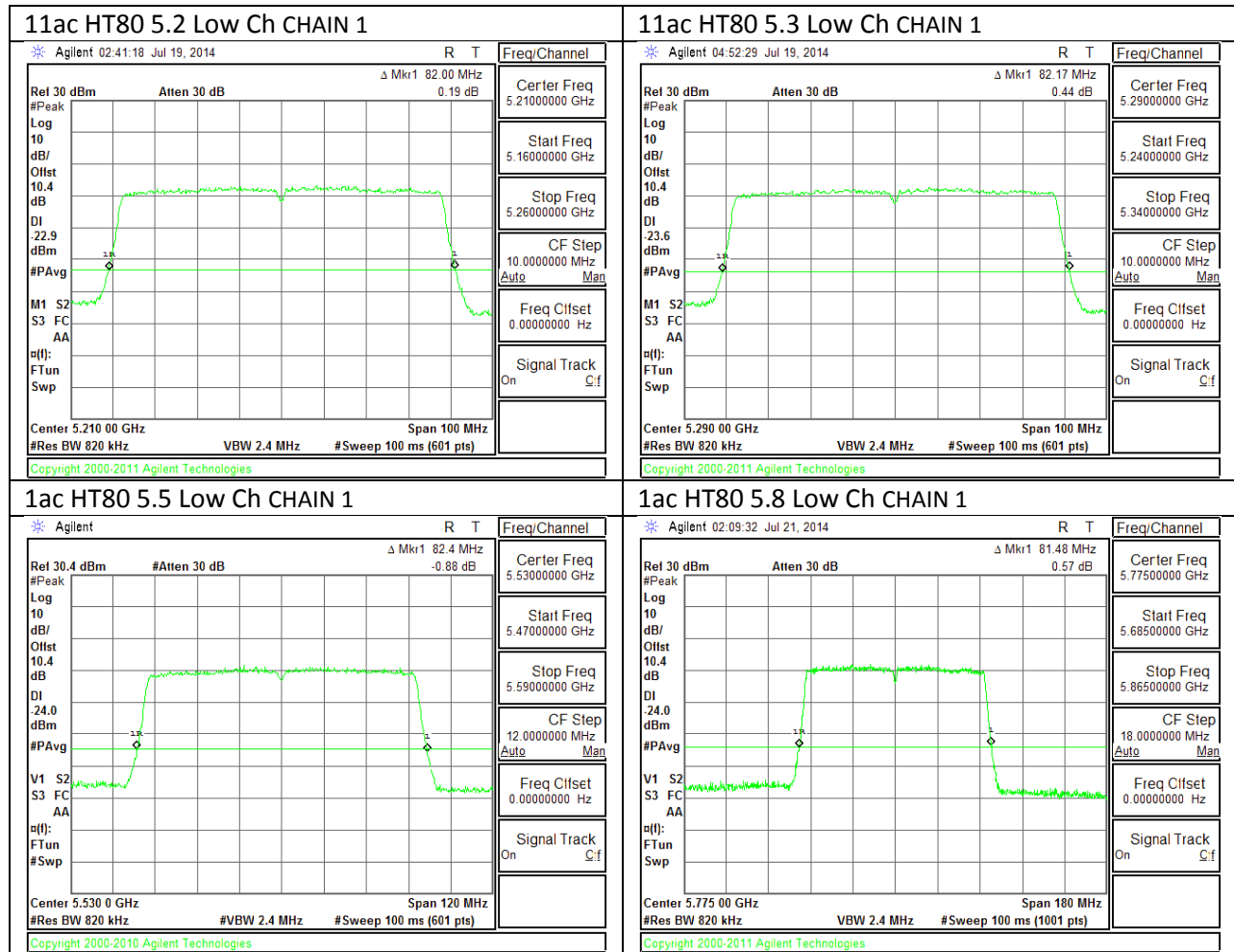












10.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

10.2.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth CHAIN 0 (MHz)	99% Bandwidth CHAIN 1 (MHz)
Low	5180	16.49	16.49
Mid	5200	16.48	16.49
High	5240	16.41	16.42

10.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth CHAIN 0 (MHz)	99% Bandwidth CHAIN 1 (MHz)
Low	5180	17.68	17.68
Mid	5200	17.67	17.68
High	5240	17.41	17.41

10.2.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth CHAIN 0 (MHz)	99% Bandwidth CHAIN 1 (MHz)
Low	5190	36.12	36.13
Mid	5230	36.15	36.13

10.2.4. 802.11ac HT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth CHAIN 0 (MHz)	99% Bandwidth CHAIN 1 (MHz)
Low	5210	75.448	75.430

10.2.5. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth CHAIN 0 (MHz)	99% Bandwidth CHAIN 1 (MHz)
Low	5260	16.41	16.41
Mid	5300	16.49	16.48
High	5320	16.48	16.48

10.2.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth CHAIN 0 (MHz)	99% Bandwidth CHAIN 1 (MHz)
Low	5260	17.41	17.42
Mid	5300	17.67	17.67
High	5320	17.68	17.69

10.2.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth CHAIN 0 (MHz)	99% Bandwidth CHAIN 1 (MHz)
Low	5270	36.12	36.13
High	5310	36.14	36.16

10.2.8. 802.11ac HT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth CHAIN 0 (MHz)	99% Bandwidth CHAIN 1 (MHz)
Low	5290	75.445	75.410

10.2.9. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth CHAIN 0 (MHz)	99% Bandwidth CHAIN 1 (MHz)
Low	5500	16.49	16.49
Mid	5580	16.44	16.42
High	5700	16.48	16.49

10.2.10. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth CHAIN 0 (MHz)	99% Bandwidth CHAIN 1 (MHz)
Low	5500	17.67	17.67
Mid	5580	17.40	17.42
High	5700	17.68	17.69

10.2.11. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth CHAIN 0 (MHz)	99% Bandwidth CHAIN 1 (MHz)
Low	5510	36.17	36.14
Mid	5550	36.16	36.15
High	5670	36.17	36.17

10.2.12. 802.11ac HT80 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth CHAIN 0 (MHz)	99% Bandwidth CHAIN 1 (MHz)
Low	5530	75.48	75.56
High	5690	75.53	75.51

10.2.13. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth CHAIN 0 (MHz)	99% Bandwidth CHAIN 1 (MHz)
Low	5745	16.50	16.50
Mid	5785	16.50	16.50
High	5825	16.52	16.50

10.2.14. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth CHAIN 0 (MHz)	99% Bandwidth CHAIN 1 (MHz)
Low	5745	17.70	17.70
Mid	5785	17.70	17.70
High	5825	17.71	17.70

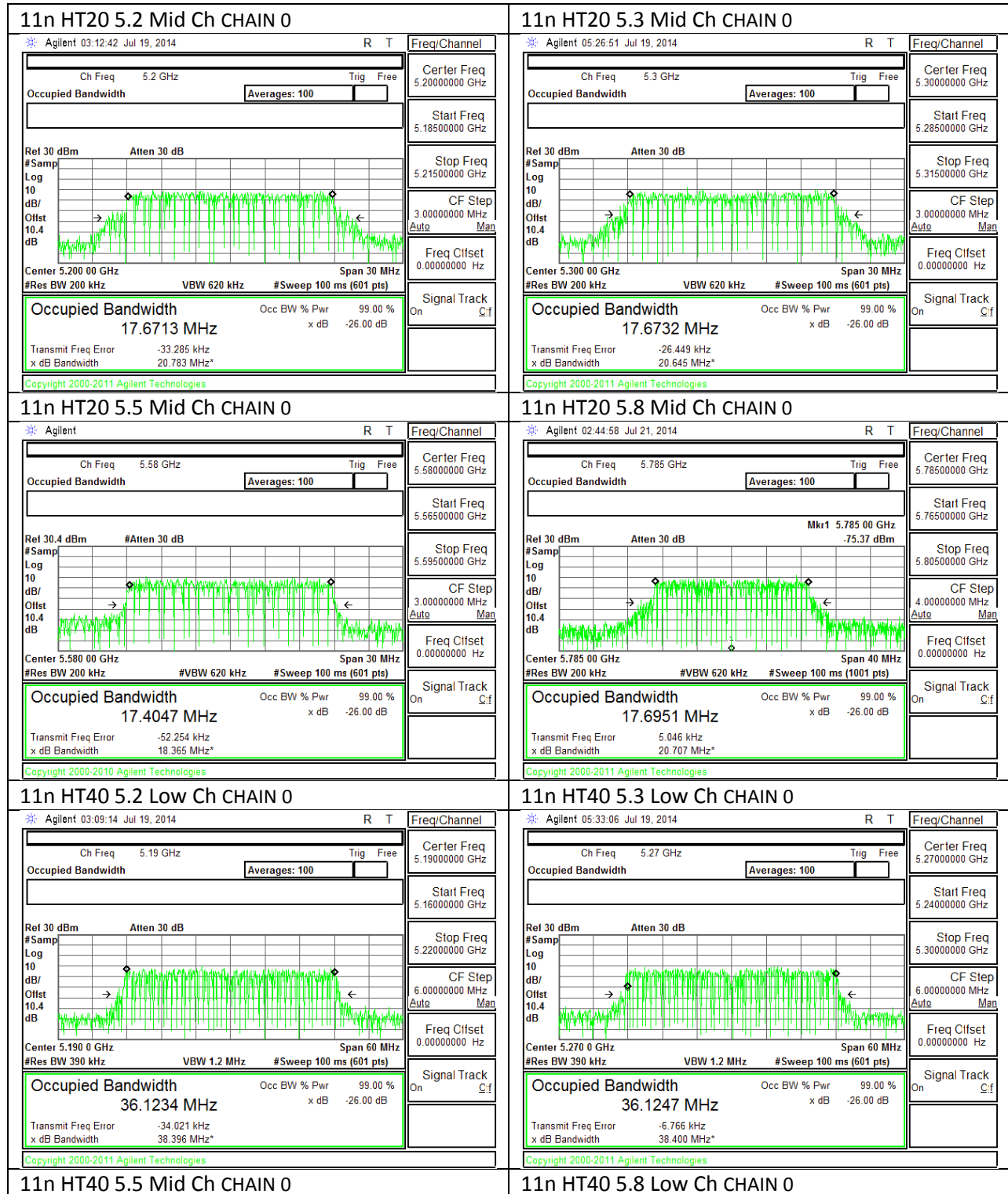
10.2.15. 802.11n HT40 MODE IN THE 5.8 GHz BAND

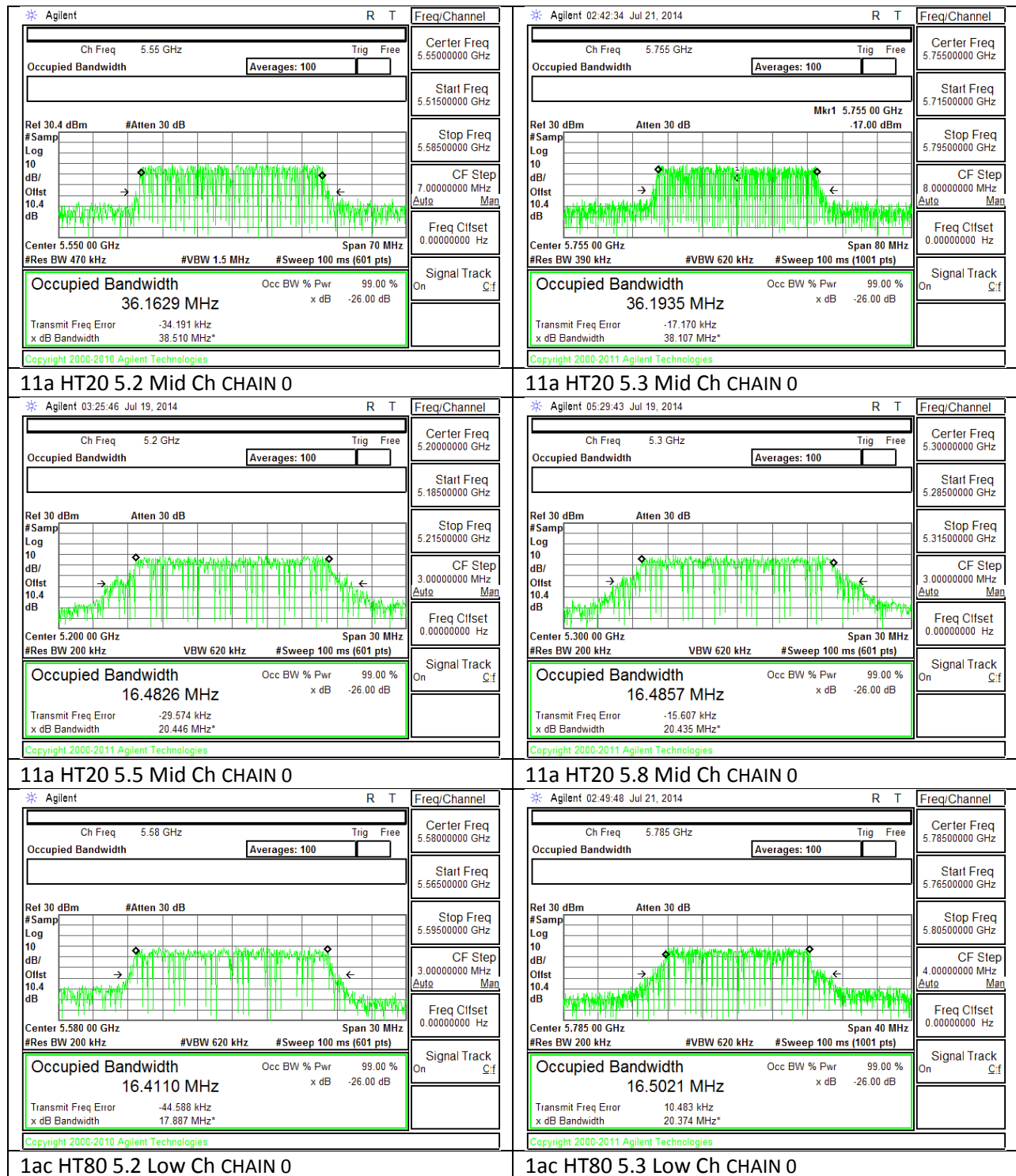
Channel	Frequency (MHz)	99% Bandwidth CHAIN 0 (MHz)	99% Bandwidth CHAIN 1 (MHz)
Low	5755	36.19	36.17
High	5795	36.21	36.19

10.2.16. 802.11ac HT80 MODE IN THE 5.8 GHz BAND

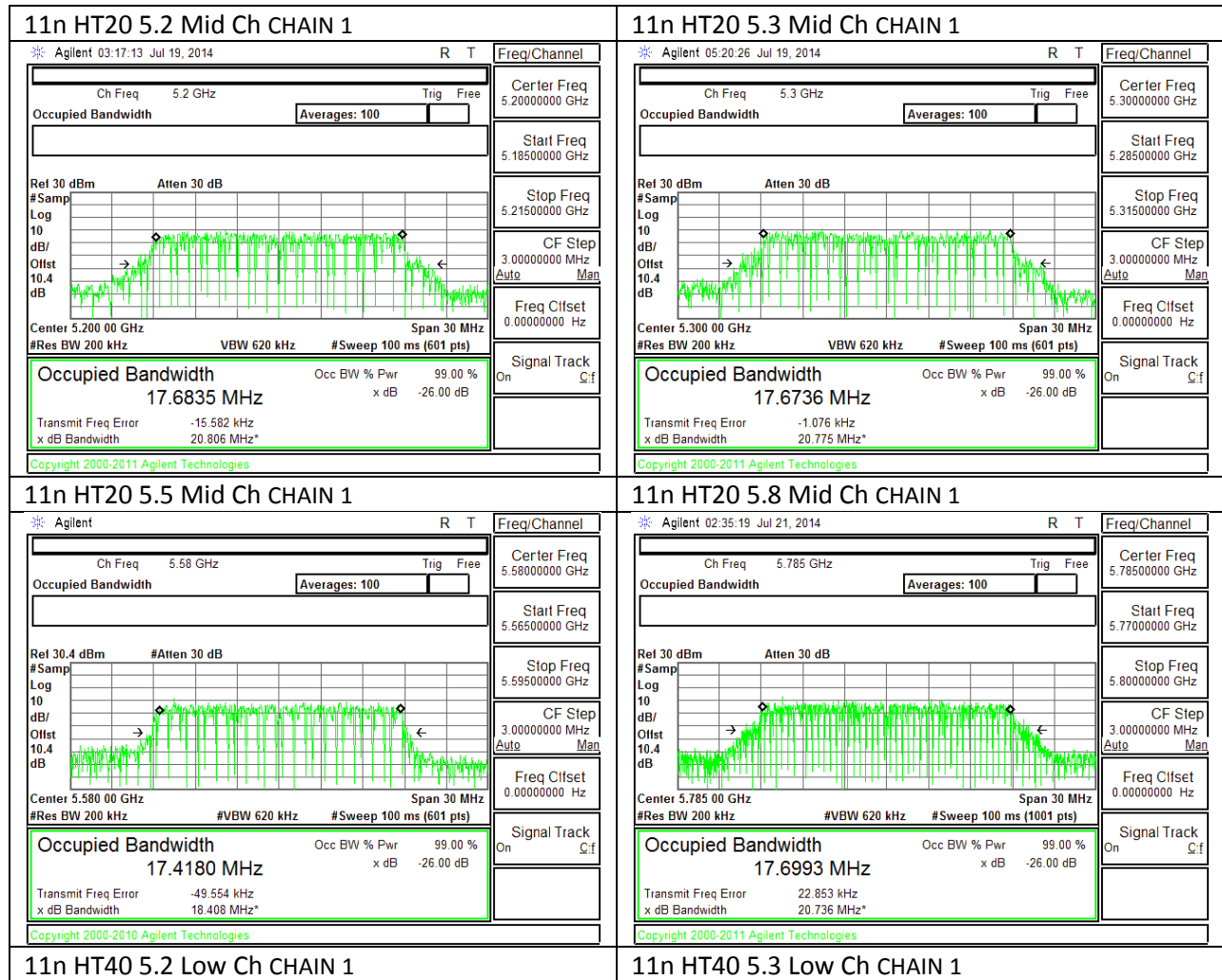
Channel	Frequency (MHz)	99% Bandwidth CHAIN 0 (MHz)	99% Bandwidth CHAIN 1 (MHz)
Low	5775	75.61	75.67

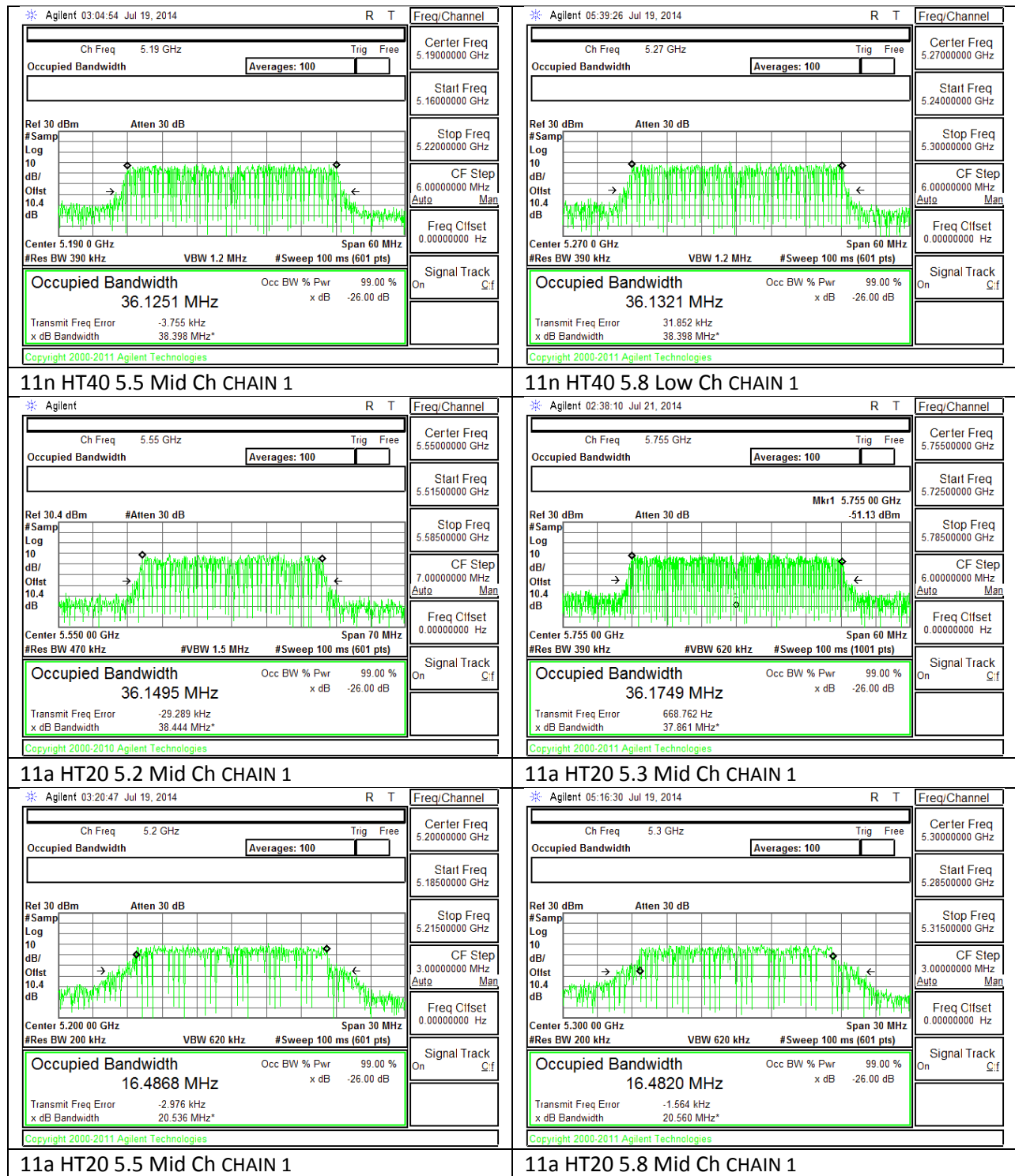
10.2.17. 99% BANDWIDTH PLOTS

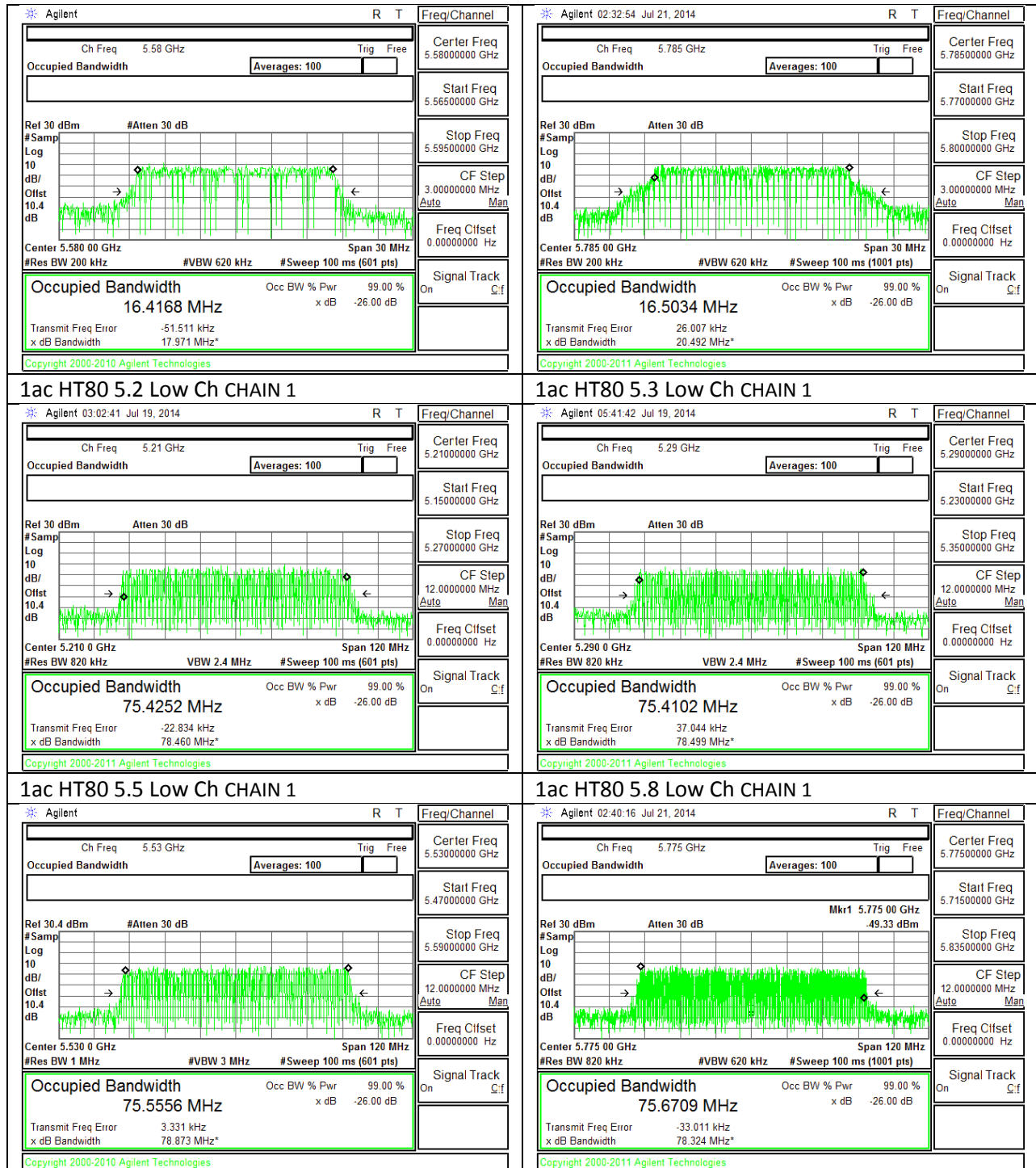












10.3. OUTPUT POWER AND PPSD

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

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Use this table for uncorrelated chains and unequal antenna gain

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
-5.56	1.02	-1.13

The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

Use this table for correlated chains and unequal antenna gain

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
-5.56	1.02	1.35

Test Methodology

RESULTS

10.3.1. 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5180	21.8	16.5	-1.13	1.35
Mid	5200	21.7	16.5	-1.13	1.35
High	5240	18.7	16.4	-1.13	1.35

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	23.30	17.00	4.00	10.00	4.00
Mid	5200	17.00	22.17	23.30	17.00	4.00	10.00	4.00
High	5240	17.00	22.15	23.28	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)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	11.79	11.31	14.86	17.00	-2.14
Mid	5200	11.97	12.01	15.29	17.00	-1.71
High	5240	12.08	11.50	15.10	17.00	-1.90

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	0.68	0.12	3.71	4.00	-0.29
Mid	5200	0.61	0.48	3.85	4.00	-0.15
High	5240	0.91	0.17	3.86	4.00	-0.14

10.3.2. 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5180	22.0	17.7	-1.13	1.35
Mid	5200	22.0	17.7	-1.13	1.35
High	5240	19.2	17.4	-1.13	1.35

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	23.60	17.00	4.00	10.00	4.00
Mid	5200	17.00	22.47	23.60	17.00	4.00	10.00	4.00
High	5240	17.00	22.48	23.61	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	0.33	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	11.94	11.11	14.88	17.00	-2.12
Mid	5200	11.72	12.03	15.22	17.00	-1.78
High	5240	12.03	12.23	15.47	17.00	-1.53

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	0.31	-0.49	3.27	4.00	-0.73
Mid	5200	0.18	0.44	3.65	4.00	-0.35
High	5240	0.14	0.52	3.67	4.00	-0.33

10.3.3. 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5190	40.3	36.1	-1.13	1.35
High	5230	40.4	36.2	-1.13	1.35

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	24.13	17.00	4.00	10.00	4.00
High	5230	17.00	23.00	24.13	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	0.61	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	12.10	12.25	15.80	17.00	-1.20
High	5230	12.16	12.17	15.79	17.00	-1.21

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5190	-2.61	-2.14	1.25	4.00	-2.75
High	5230	-2.06	-2.21	1.49	4.00	-2.51

10.3.4. 802.11ac HT80 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5210	82.2	75.5	-1.13	1.35

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	5210	17.00	23.00	24.13	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	1.83	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5210	9.53	9.73	14.47	17.00	-2.53

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5210	-7.47	-7.43	-2.61	4.00	-6.61

10.3.5. 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5260	18.7	16.4	-1.13	1.35
Mid	5300	21.7	16.5	-1.13	1.35
High	5320	21.6	16.5	-1.13	1.35

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	23.15	29.15	23.15	11.00	11.00	11.00
Mid	5300	24.00	23.17	29.17	23.17	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 & PPSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	12.92	12.67	16.10	23.15	-7.06
Mid	5300	12.81	13.56	16.50	23.17	-6.67
High	5320	12.91	13.44	16.48	23.17	-6.69

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	1.75	1.44	4.90	11.00	-6.10
Mid	5300	1.61	2.33	5.29	11.00	-5.71
High	5320	1.62	2.15	5.19	11.00	-5.81

10.3.6. 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5260	19.2	17.4	-1.13	1.35
Mid	5300	22.1	17.7	-1.13	1.35
High	5320	22.2	17.7	-1.13	1.35

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	23.41	29.41	23.41	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)	0.33	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	12.91	13.29	16.44	23.41	-6.96
Mid	5300	12.75	13.25	16.35	23.47	-7.12
High	5320	12.86	13.27	16.41	23.47	-7.06

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	1.74	1.93	5.18	11.00	-5.82
Mid	5300	1.24	1.62	4.77	11.00	-6.23
High	5320	1.30	1.67	4.83	11.00	-6.17

10.3.7. 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5270	40.5	36.1	-1.13	1.35
High	5310	40.3	36.1	-1.13	1.35

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)	0.61	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	12.16	12.71	16.06	24.00	-7.94
High	5310	12.21	12.81	16.14	24.00	-7.86

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5270	-2.51	-1.63	1.57	11.00	-9.43
High	5310	-2.19	-1.64	1.71	11.00	-9.29

10.3.8. 802.11ac HT80 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5290	82.3	75.5	-1.13	1.35

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	5290	24.00	24.00	30.00	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	1.83	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5290	9.58	9.05	14.16	24.00	-9.84

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5290	-7.65	-8.27	-3.11	11.00	-14.11

10.3.9. 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5500	21.8	16.5	-1.13	1.35
Mid	5580	18.8	16.4	-1.13	1.35
High	5700	21.9	16.5	-1.13	1.35

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	23.15	29.15	23.15	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 & PPSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	12.60	12.96	16.08	23.17	-7.09
Mid	5580	12.33	12.96	15.96	23.15	-7.19
High	5700	12.70	12.55	15.93	23.17	-7.24

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	1.37	1.57	4.77	11.00	-6.23
Mid	5580	1.19	1.73	4.77	11.00	-6.23
High	5700	1.59	1.40	4.80	11.00	-6.20

10.3.10. 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5500	22.1	17.7	-1.13	1.35
Mid	5580	19.3	17.4	-1.13	1.35
High	5700	22.1	17.7	-1.13	1.35

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	23.41	29.41	23.41	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)	0.33	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	12.70	12.76	16.07	23.47	-7.40
Mid	5580	13.22	12.77	16.34	23.41	-7.06
High	5700	12.66	12.45	15.90	23.47	-7.58

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	1.17	1.23	4.54	11.00	-6.46
Mid	5580	1.70	1.31	4.85	11.00	-6.15
High	5700	1.03	0.68	4.20	11.00	-6.80

10.3.11. 802.11n HT40 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5510	40.6	36.2	-1.13	1.35
Mid	5550	40.6	36.2	-1.13	1.35
High	5670	40.6	36.2	-1.13	1.35

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)	0.61	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	12.19	12.25	15.84	24.00	-8.16
Mid	5550	12.79	12.17	16.11	24.00	-7.89
High	5670	12.44	12.92	16.31	24.00	-7.69

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5510	-2.37	-2.17	1.35	11.00	-9.65
Mid	5550	-1.95	-2.26	1.52	11.00	-9.48
High	5670	-2.11	-1.65	1.75	11.00	-9.25

10.3.12. 802.11ac HT80 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5530	82.6	75.5	-1.13	1.35

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	5530	24.00	24.00	30.00	24.00	11.00	11.00	11.00
Duty Cycle CF (dB)		1.84	Included in Calculations of Corr'd Power & PPSD					

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	10.01	10.12	14.92	24.00	-9.08

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5530	-7.45	-7.47	-2.61	11.00	-13.61

10.3.13. 802.11a MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5745	21.42	16.50	-1.13	1.35
Mid	5785	21.42	16.50	-1.13	1.35
High	5825	21.39	16.52	-1.13	1.35

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5745	24.00	29.17	35.17	24.00	11.00	17.00	11.00
Mid	5785	24.00	29.17	35.17	24.00	11.00	17.00	11.00
High	5825	24.00	29.18	35.18	24.00	11.00	17.00	11.00

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

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	13.32	13.56	16.74	24.00	-7.26
Mid	5785	12.82	13.15	16.29	24.00	-7.71
High	5825	12.63	12.62	15.93	24.00	-8.07

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	2.39	2.87	5.94	11.00	-5.06
Mid	5785	1.98	2.38	5.48	11.00	-5.52
High	5825	1.97	2.10	5.34	11.00	-5.66

10.3.14. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5745	21.75	17.70	-1.13	1.35
Mid	5785	21.84	17.70	-1.13	1.35
High	5825	21.66	17.71	-1.13	1.35

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5745	24.00	29.48	35.48	24.00	11.00	17.00	11.00
Mid	5785	24.00	29.48	35.48	24.00	11.00	17.00	11.00
High	5825	24.00	29.48	35.48	24.00	11.00	17.00	11.00

Duty Cycle CF (dB)	0.33	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	13.33	13.14	16.58	24.00	-7.42
Mid	5785	12.70	12.75	16.07	24.00	-7.93
High	5825	12.60	12.62	15.95	24.00	-8.05

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	2.25	2.20	5.57	11.00	-5.43
Mid	5785	1.61	1.65	4.97	11.00	-6.03
High	5825	1.52	1.48	4.84	11.00	-6.16

10.3.15. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5755	40.1	36.2	-1.13	1.35
High	5795	40.0	36.2	-1.13	1.35

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	5755	24.00	30.00	36.00	24.00	11.00	17.00	11.00
High	5795	24.00	30.00	36.00	24.00	11.00	17.00	11.00

Duty Cycle CF (dB)	0.61	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5755	12.63	12.32	16.10	24.00	-7.90
High	5795	12.12	12.24	15.80	24.00	-8.20

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5755	-1.38	-1.23	2.32	11.00	-8.68
High	5795	-1.48	-1.62	2.07	11.00	-8.93

10.3.16. 802.11ac HT80 MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5775	81.92	75.61	-1.13	1.35

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	5775	24.00	30.00	36.00	24.00	11.00	17.00	11.00

Duty Cycle CF (dB)	1.83	Included in Calculations of Corr'd Power & PPSD
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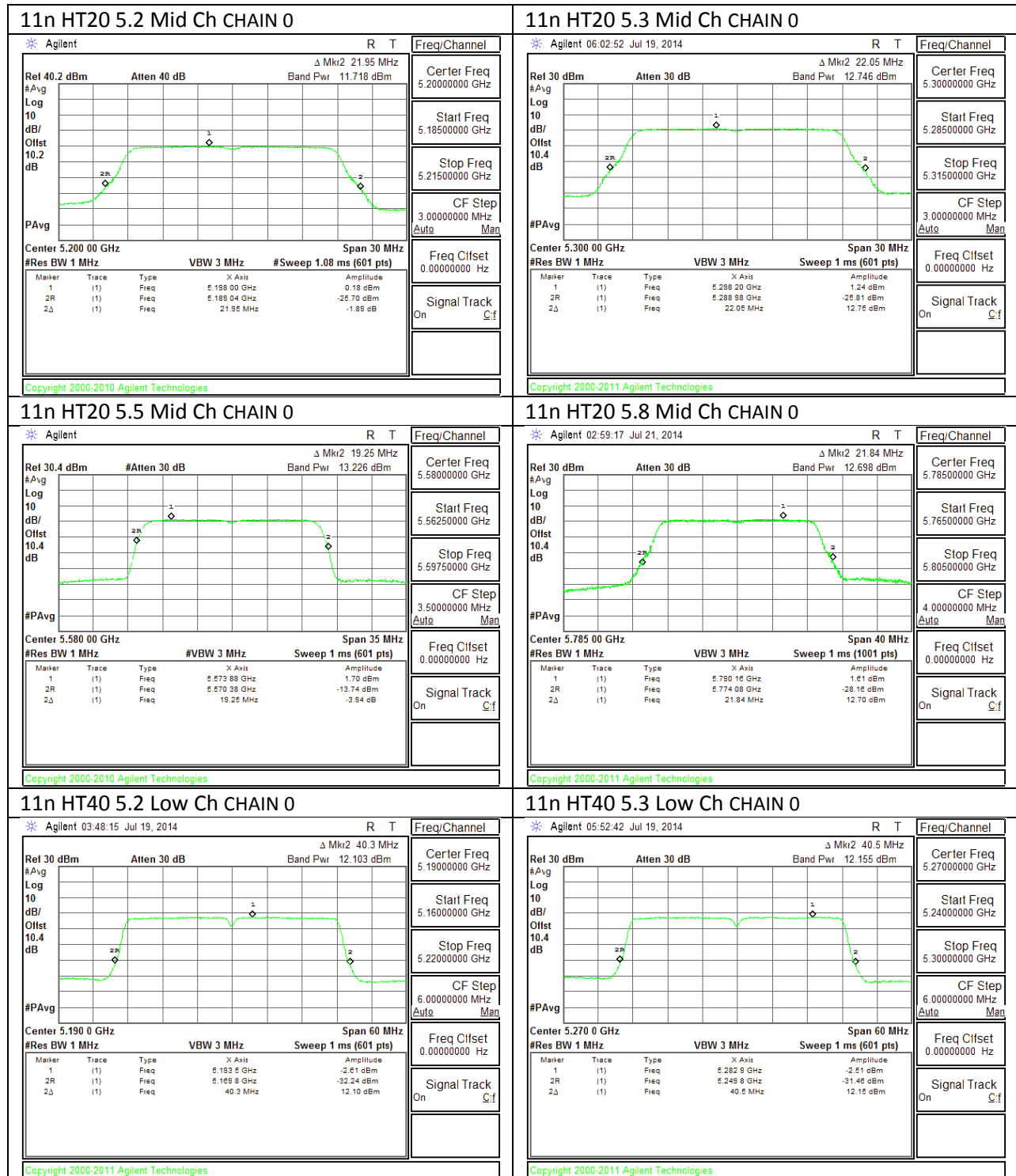
Output Power Results

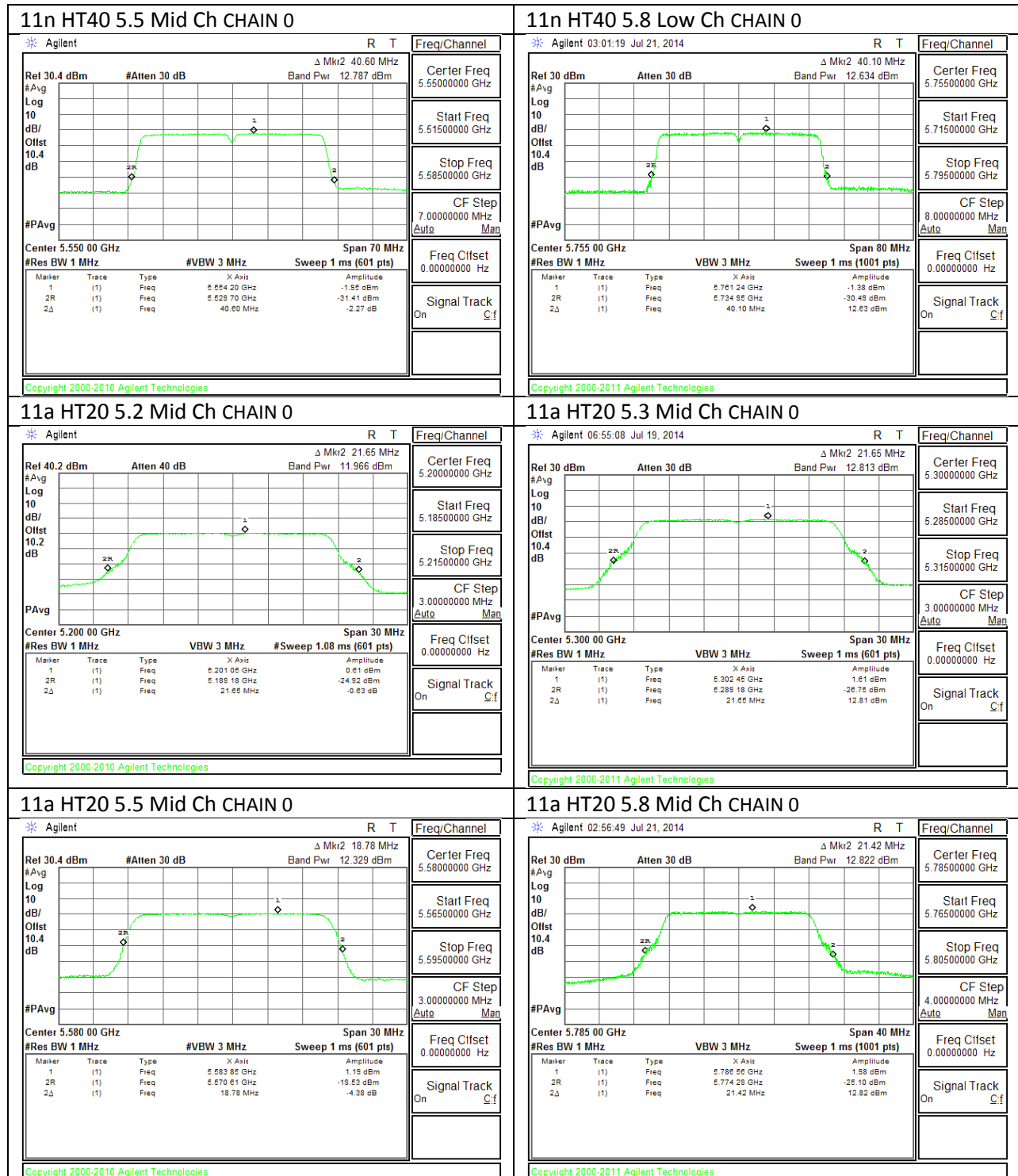
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5775	8.81	9.45	13.98	24.00	-10.02

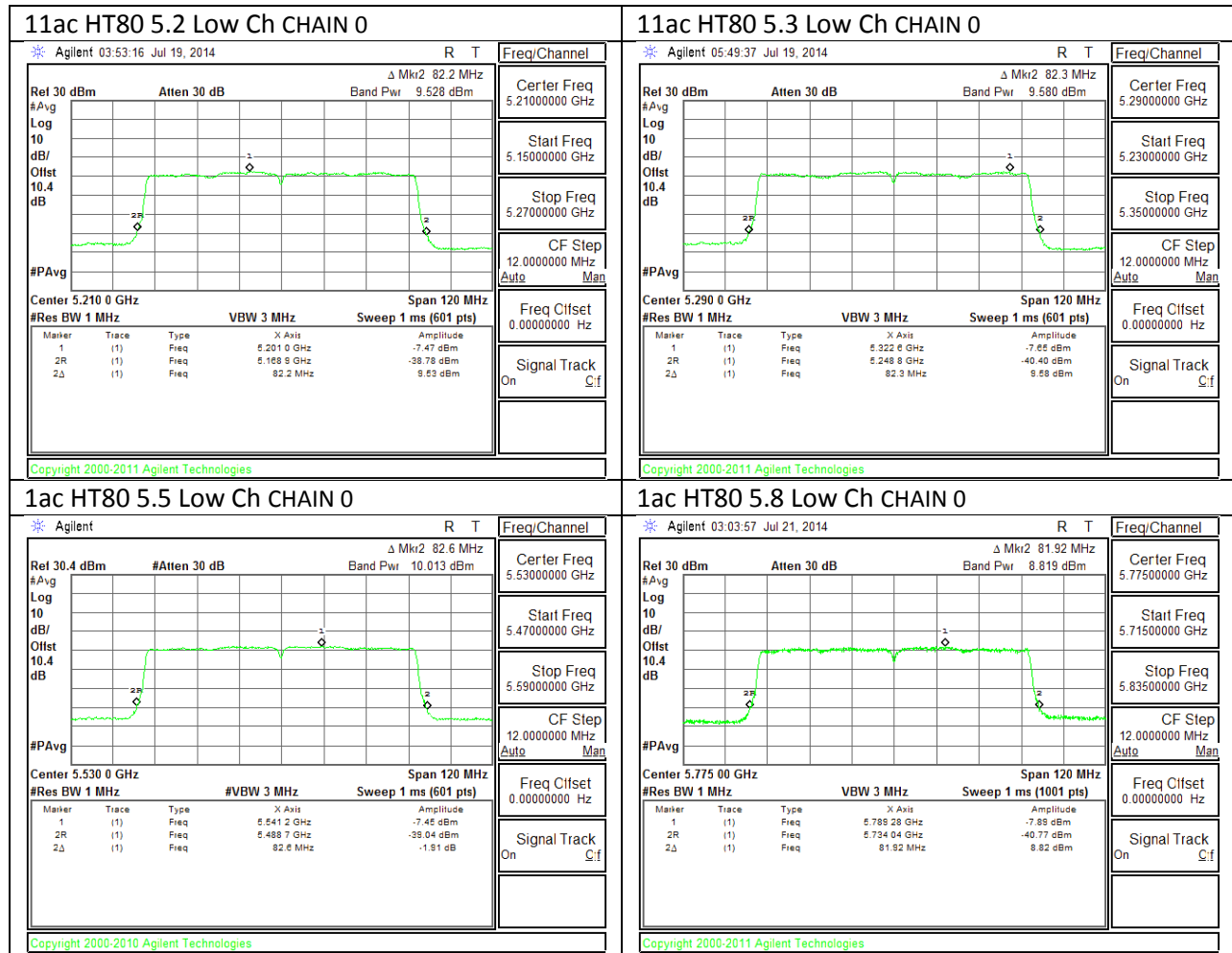
PPSD Results

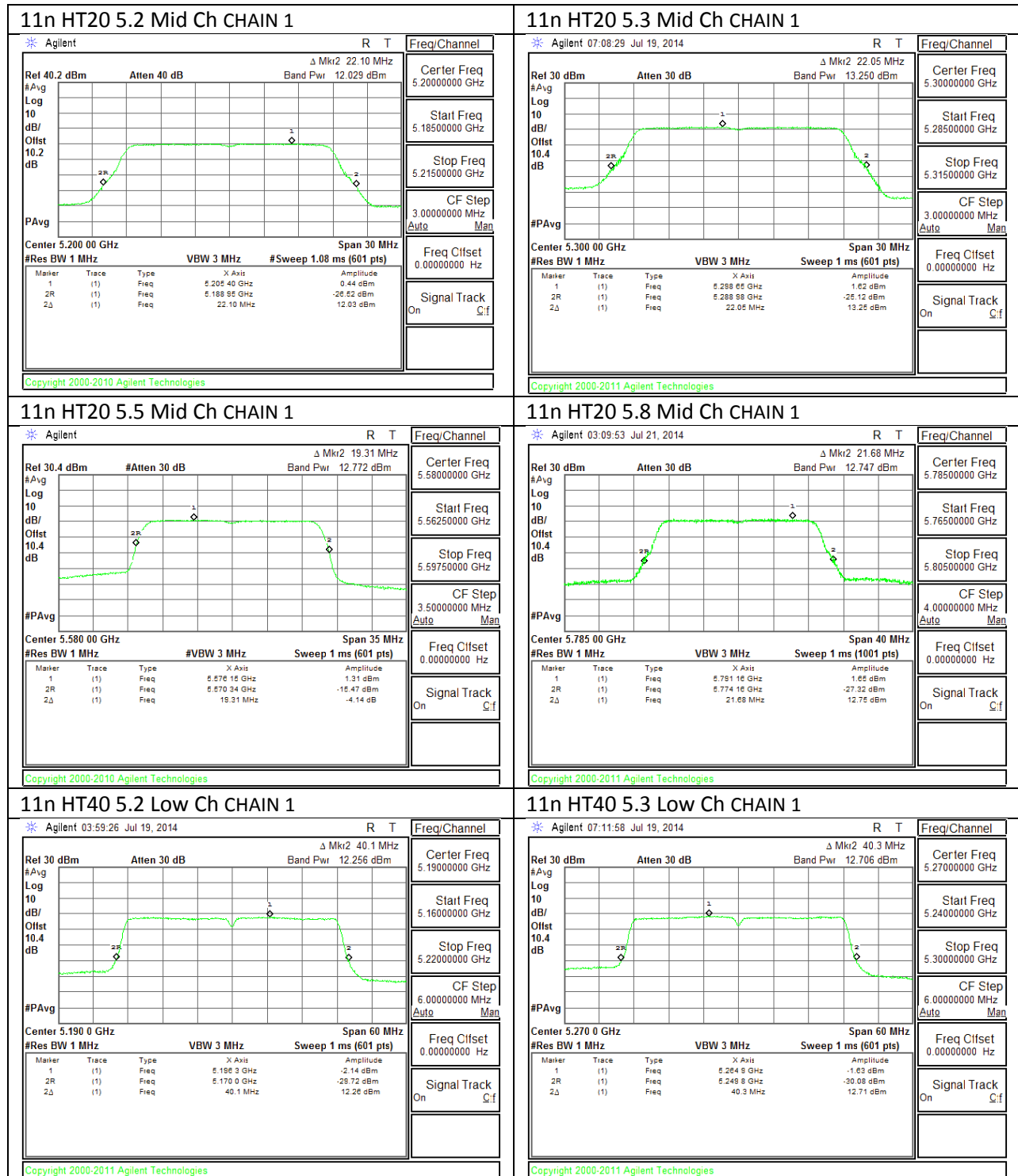
Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5775	-7.89	-7.31	-2.75	11.00	-13.75

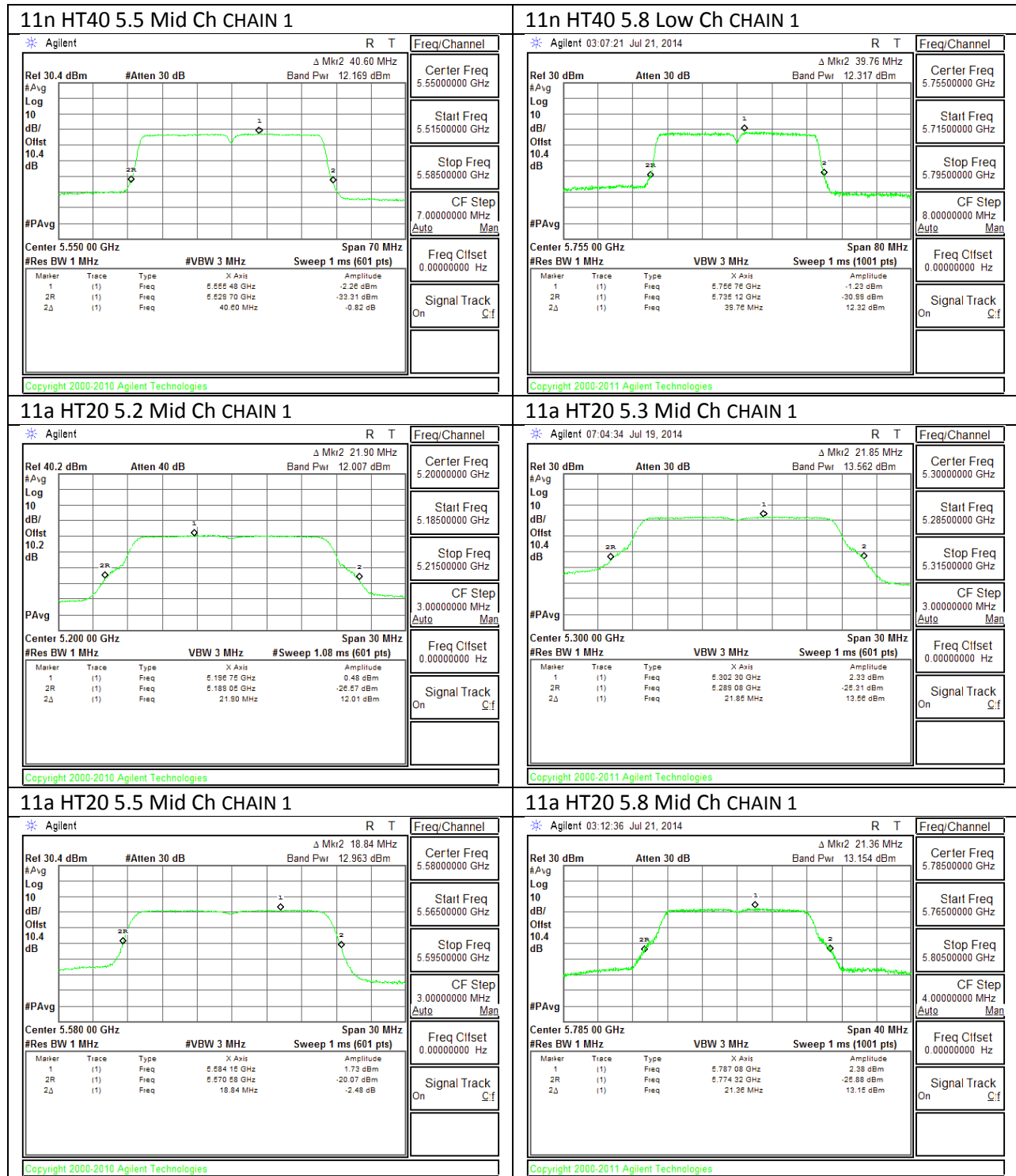
10.3.1. OUTPUT POWER AND PPSD PLOTS, Chain 0

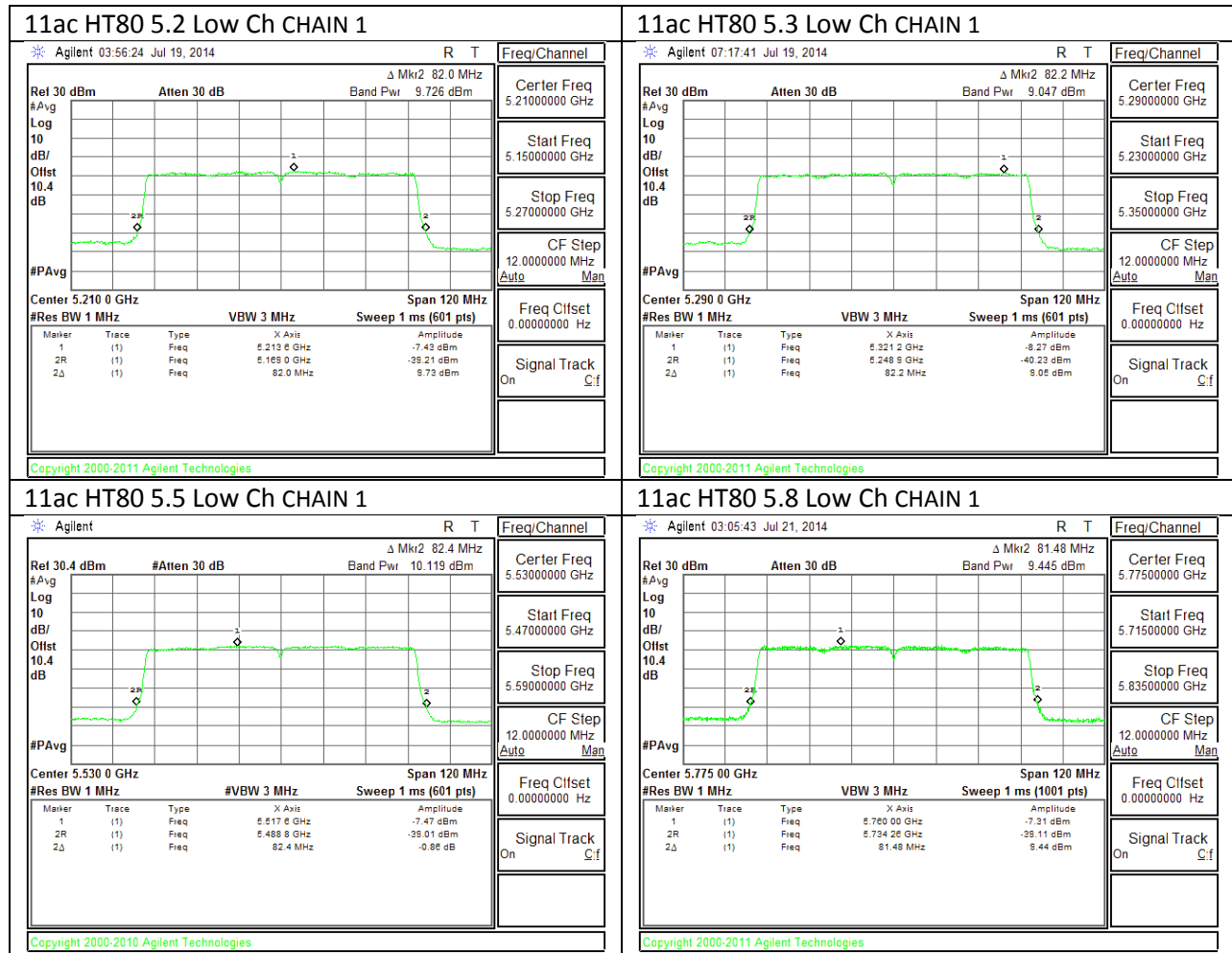












10.1. PEAK EXCURSION

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

10.1.1. 802.11a MODE IN THE 5.2 GHz BAND

Chain 0

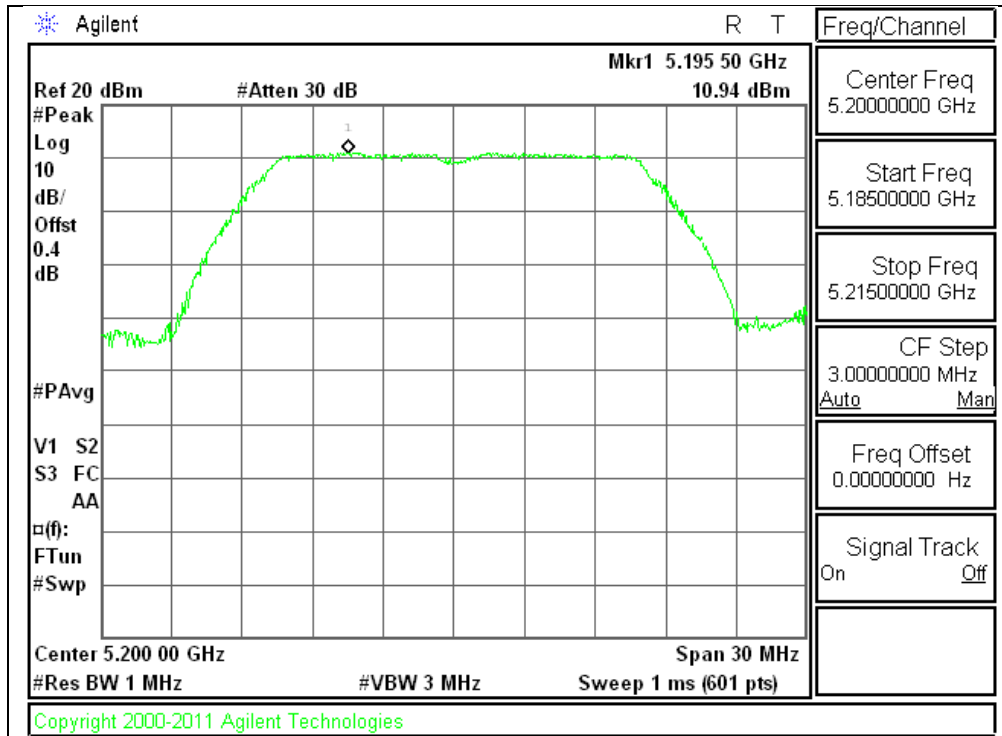
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	10.94	0.61	0.29	10.04	13	-2.96

Chain 1

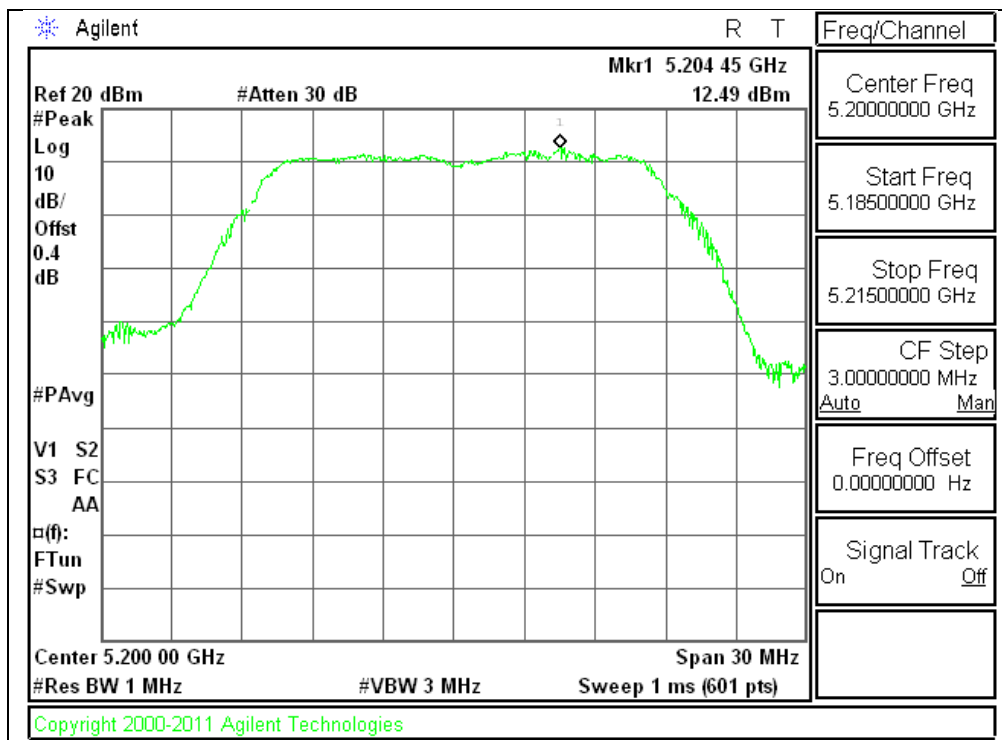
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	12.49	0.48	0.29	11.72	13	-1.28

PEAK EXCURSION

Chain 0



Chain 1



10.1.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Chain 0

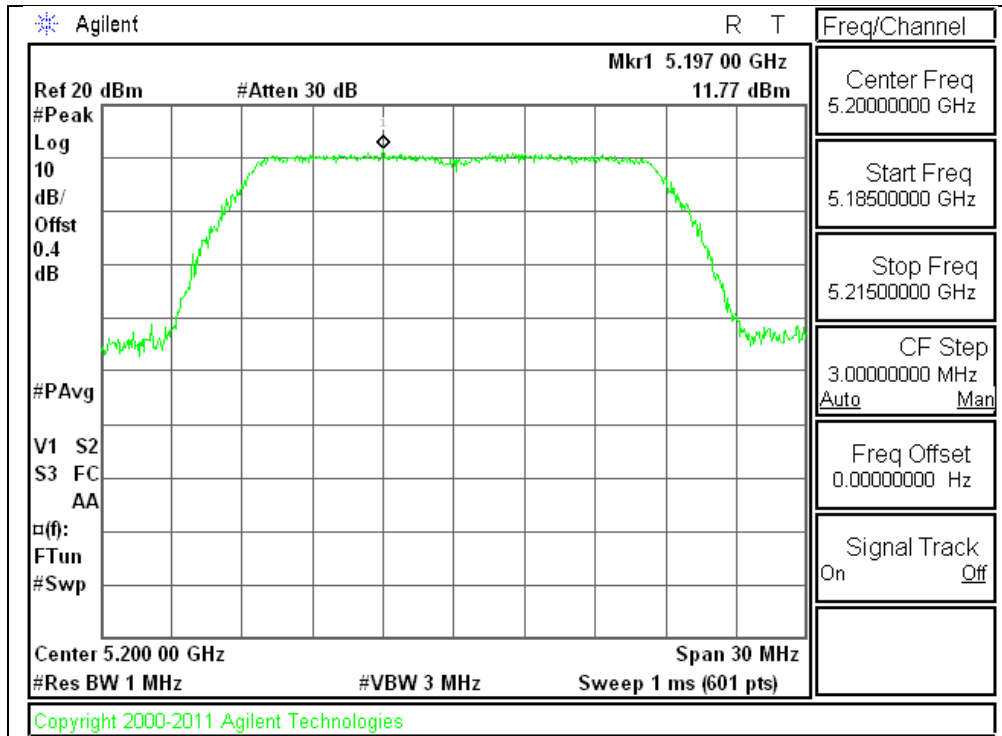
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	11.77	0.18	0.33	11.26	13	-1.74

Chain 1

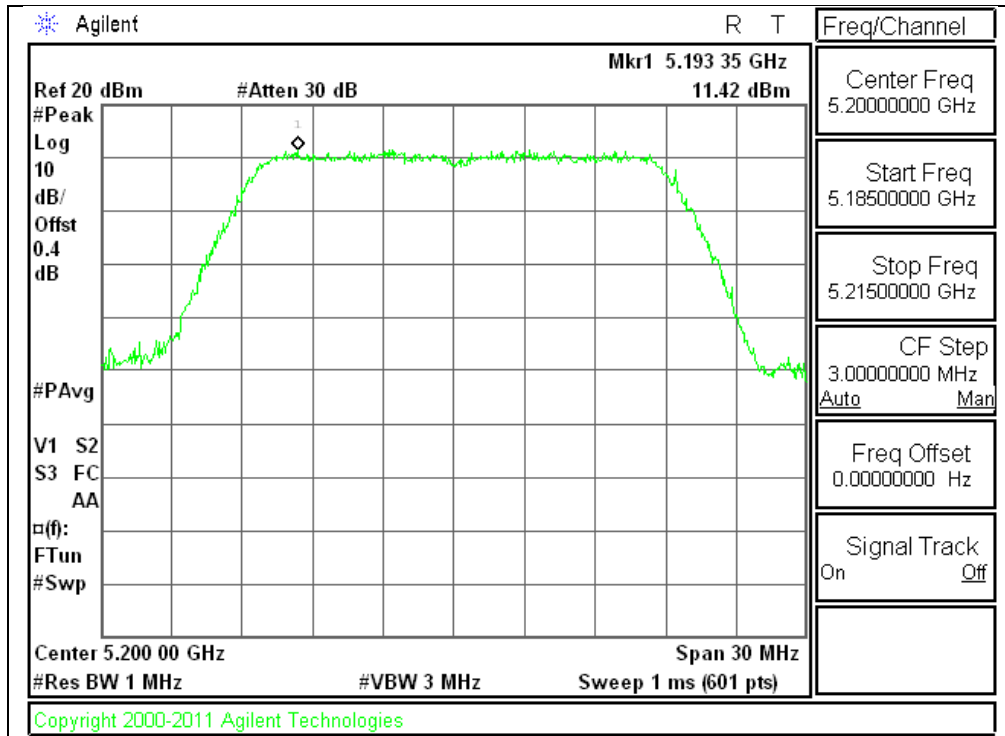
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	11.42	0.44	0.33	10.65	13	-2.35

PEAK EXCURSION

Chain 0



Chain 1



10.1.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Chain 0

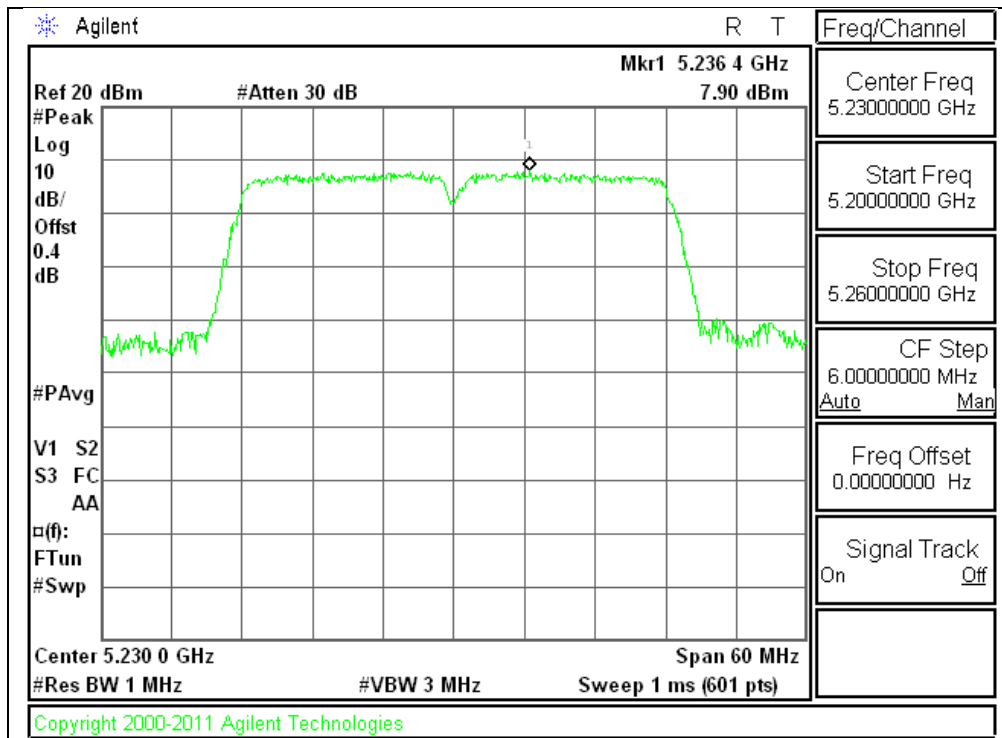
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5230	7.900	-2.06	0.61	9.35	13	-3.65

Chain 1

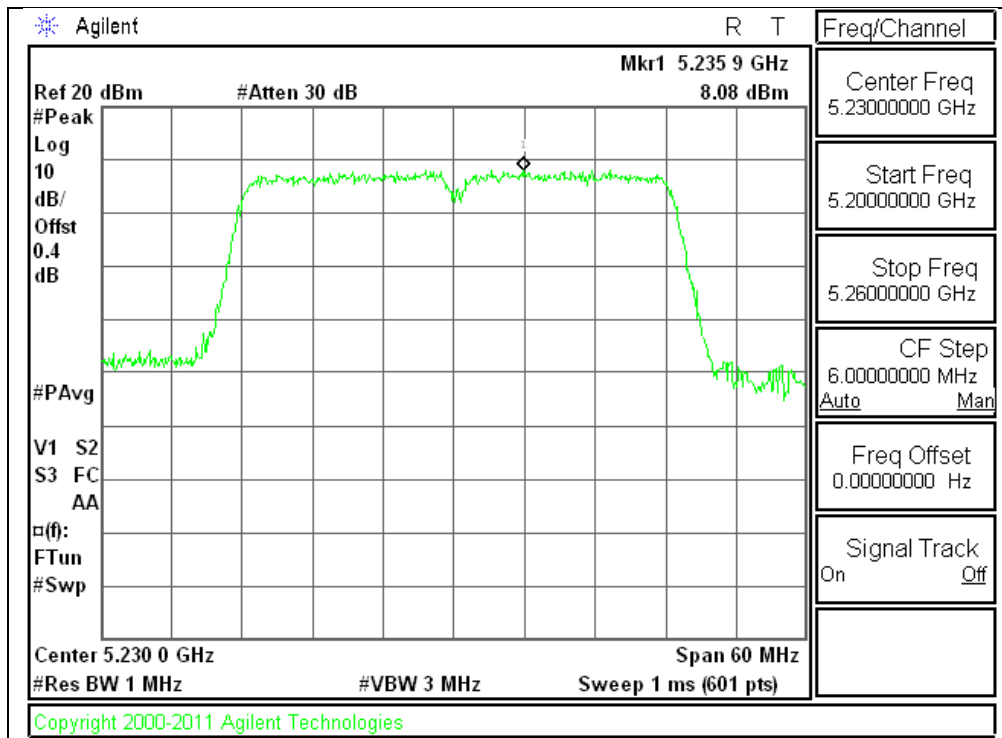
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5230	8.080	-2.21	0.61	9.68	13	-3.32

PEAK EXCURSION

Chain 0



Chain 1



10.1.4. 802.11ac HT80 MODE IN THE 5.2 GHz BAND

Chain 0

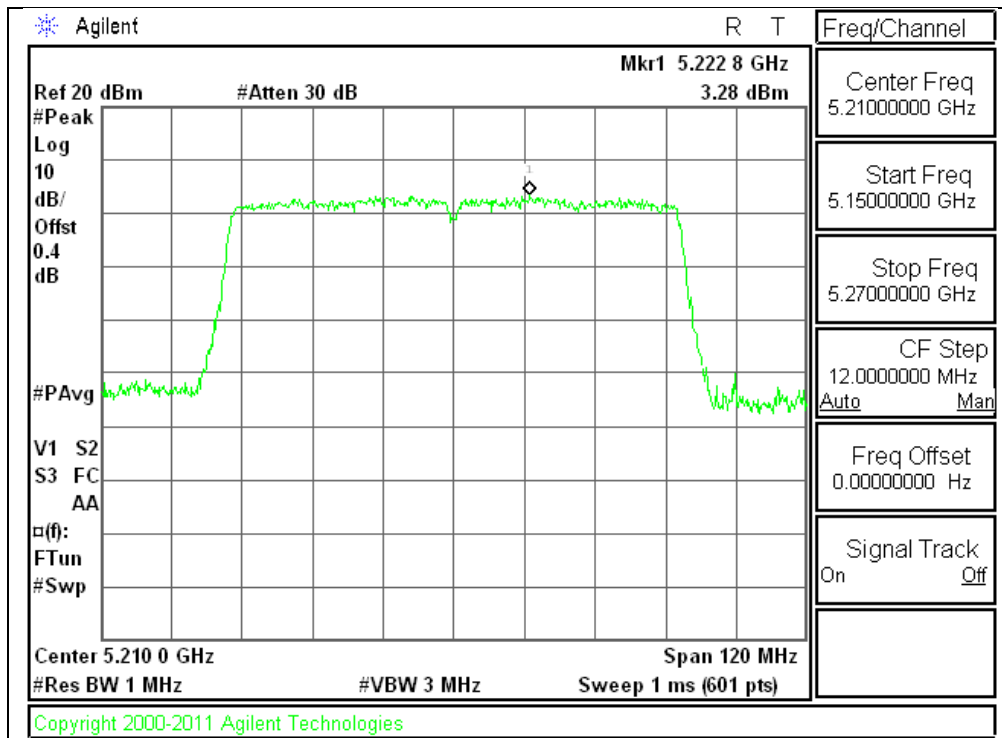
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5210	3.280	-7.47	1.83	8.92	13	-4.08

Chain 1

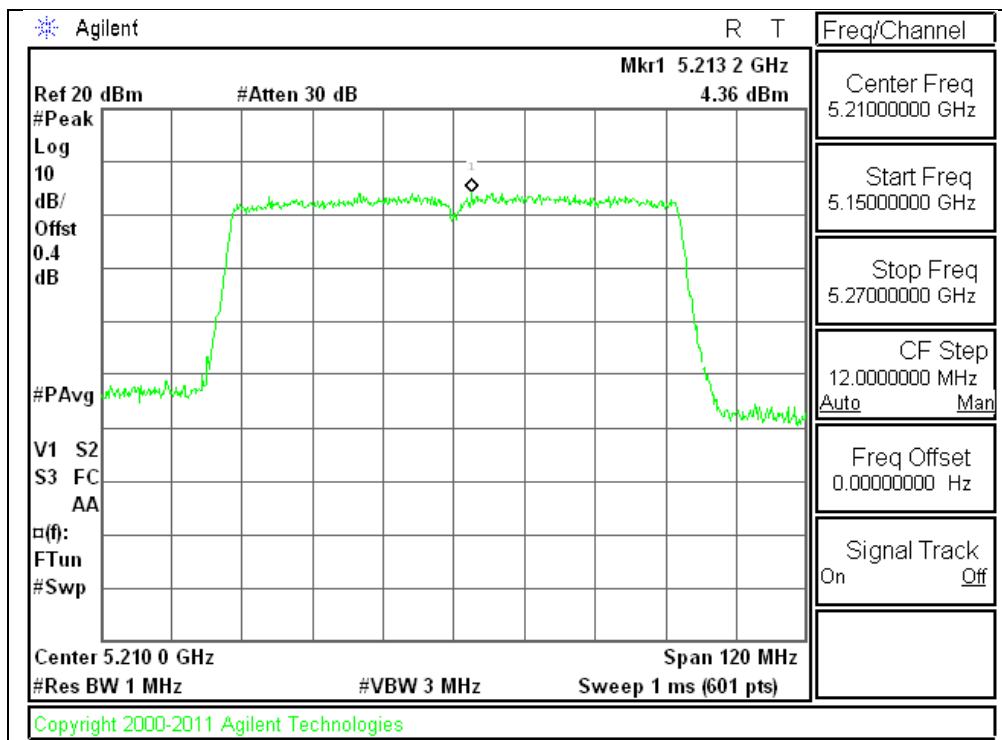
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5210	4.360	-7.43	1.83	9.96	13	-3.04

PEAK EXCURSION

Chain 0



Chain 1



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.

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.

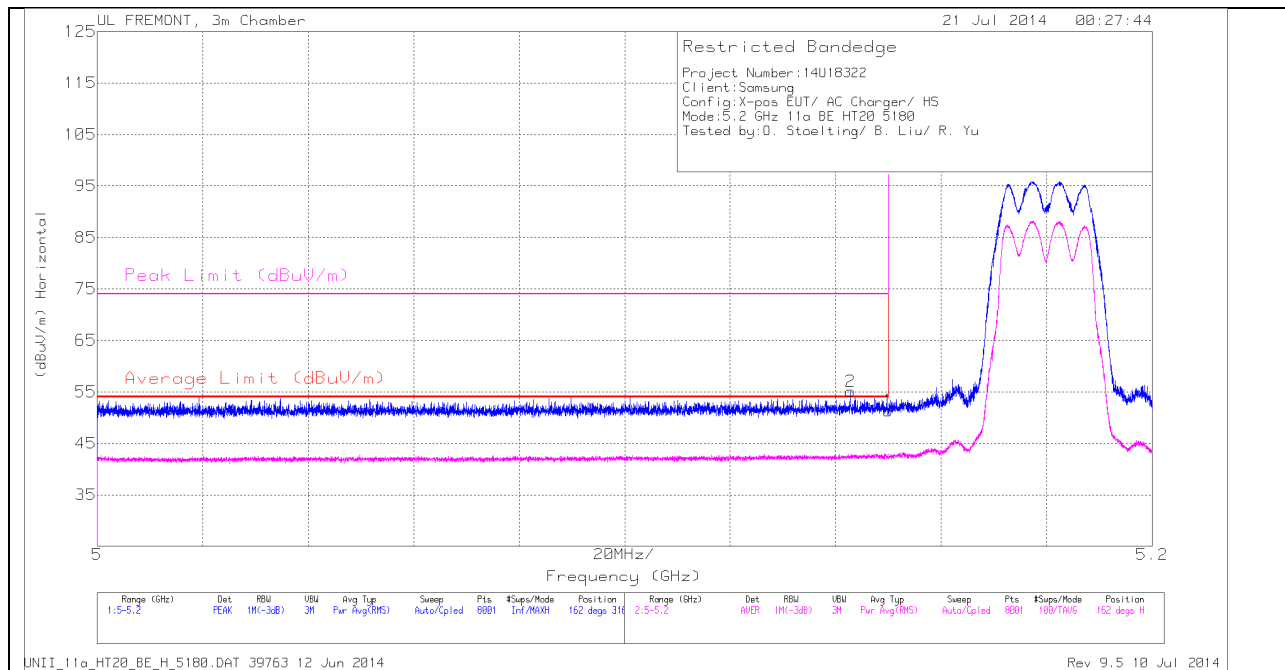
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

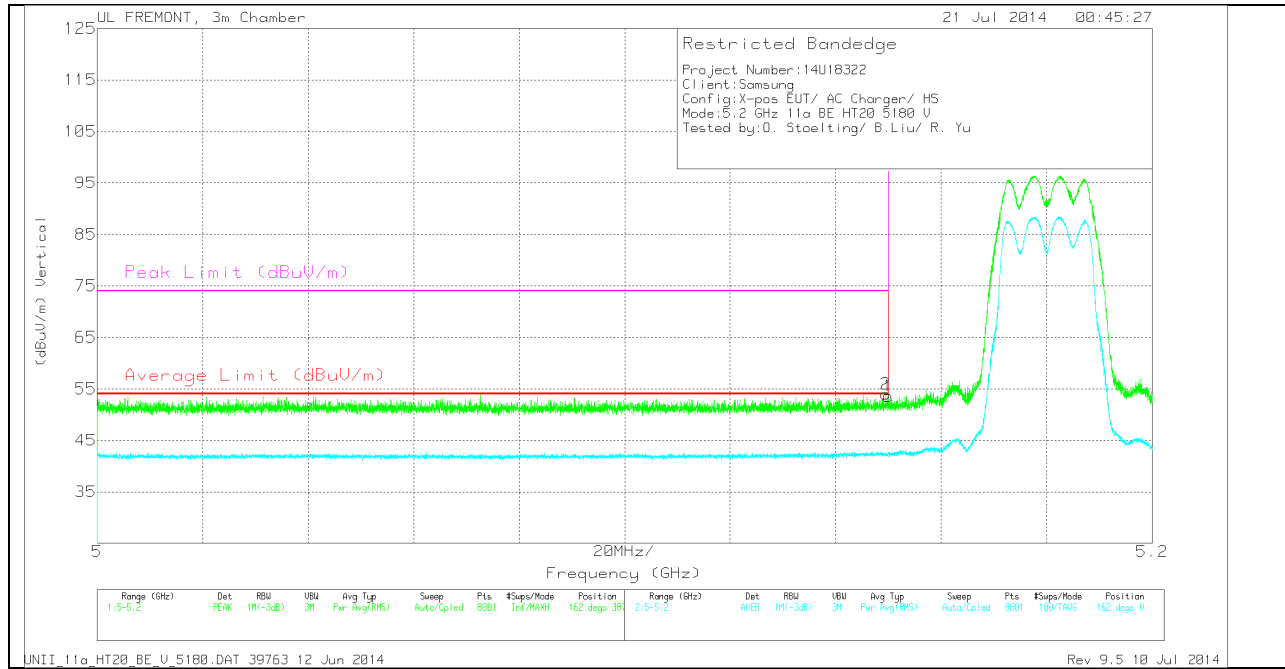
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
2	5.143	42.47	PK	34.2	-21.6	0	55.07	-	-	74	-18.93	162	316	H
4	5.149	30.07	RMS	34.2	-21.6	.29	42.96	54	-11.04	-	-	162	316	H
1	5.15	38.76	PK	34.2	-21.6	0	51.36	-	-	74	-22.64	162	316	H
3	5.15	29.54	RMS	34.2	-21.6	.29	42.43	54	-11.57	-	-	162	316	H

VERTICAL PEAK AND AVERAGE PLOT

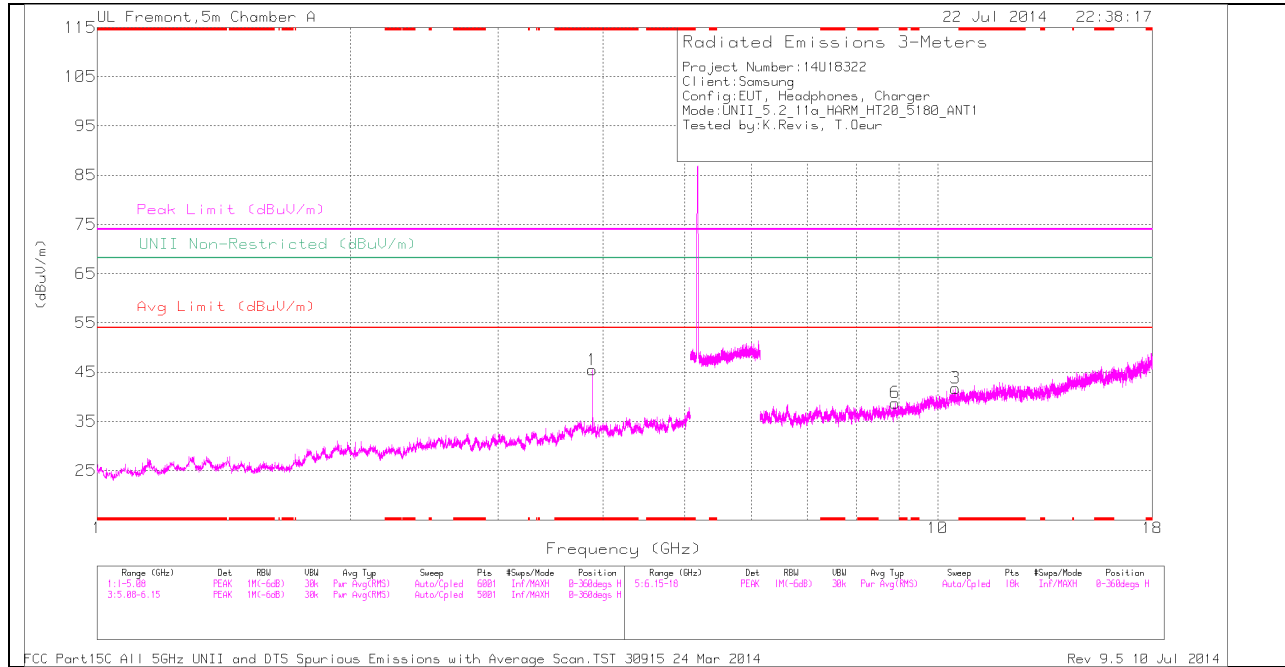


VERTICAL DATA

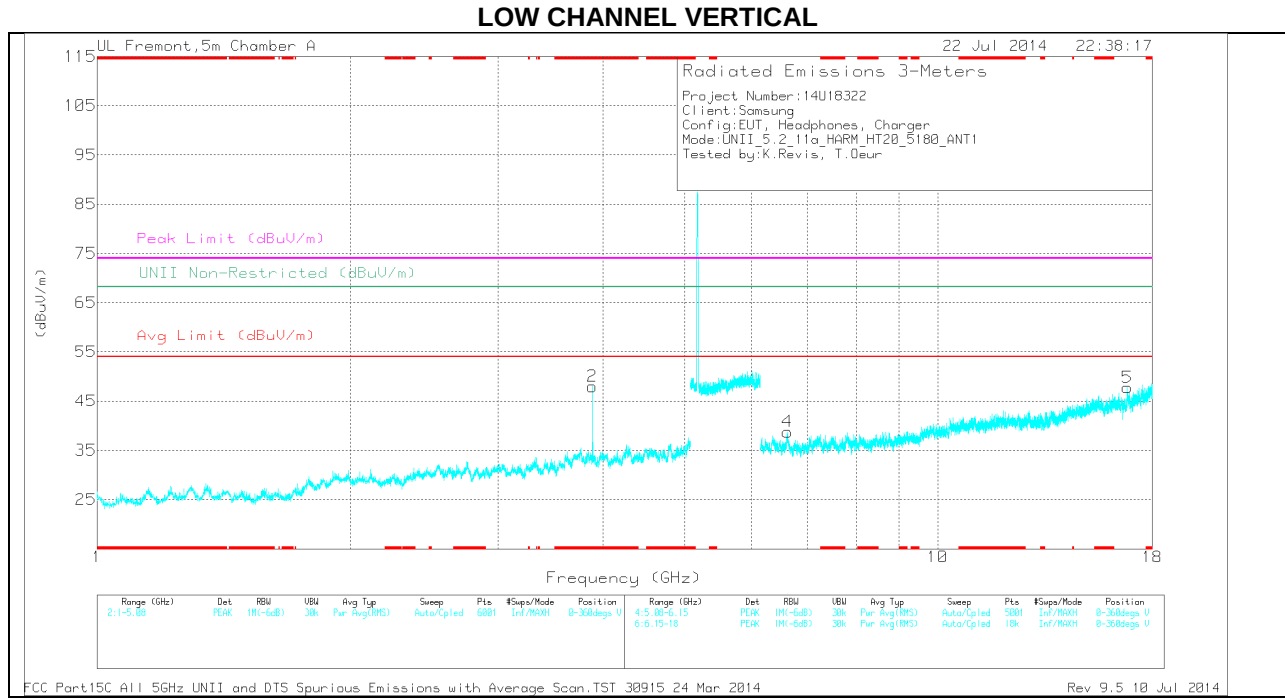
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	5.144	29.87	RMS	34.2	-21.6	.29	42.76	54	-11.24	-	-	162	387	V
1	5.15	40.98	PK	34.2	-21.6	0	53.58	-	-	74	-20.42	162	387	V
2	5.15	41.38	PK	34.2	-21.6	0	53.98	-	-	74	-20.02	162	387	V
3	5.15	29.77	RMS	34.2	-21.6	.29	42.66	54	-11.34	-	-	162	387	V

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.



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 T136 (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	* 3.885	43.05	PK	33.8	-31.4	0	45.45	-	-	74	-28.55	-	-	0-360	100	H
2	* 3.885	45.58	PK	33.8	-31.4	0	47.98	-	-	74	-26.02	-	-	0-360	201	V
4	6.627	29.17	PK	35.4	-25.8	0	38.77	-	-	-	-	68.2	-29.43	0-360	100	V
6	8.905	28.66	PK	35.8	-25.7	0	38.76	-	-	-	-	68.2	-29.44	0-360	100	H
3	10.502	27.01	PK	37.5	-22.8	0	41.71	-	-	-	-	68.2	-26.49	0-360	100	H
5	16.812	26.47	PK	40.4	-19.1	0	47.77	-	-	-	-	68.2	-20.43	0-360	201	V

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

PK - Peak detector

Radiated Emissions

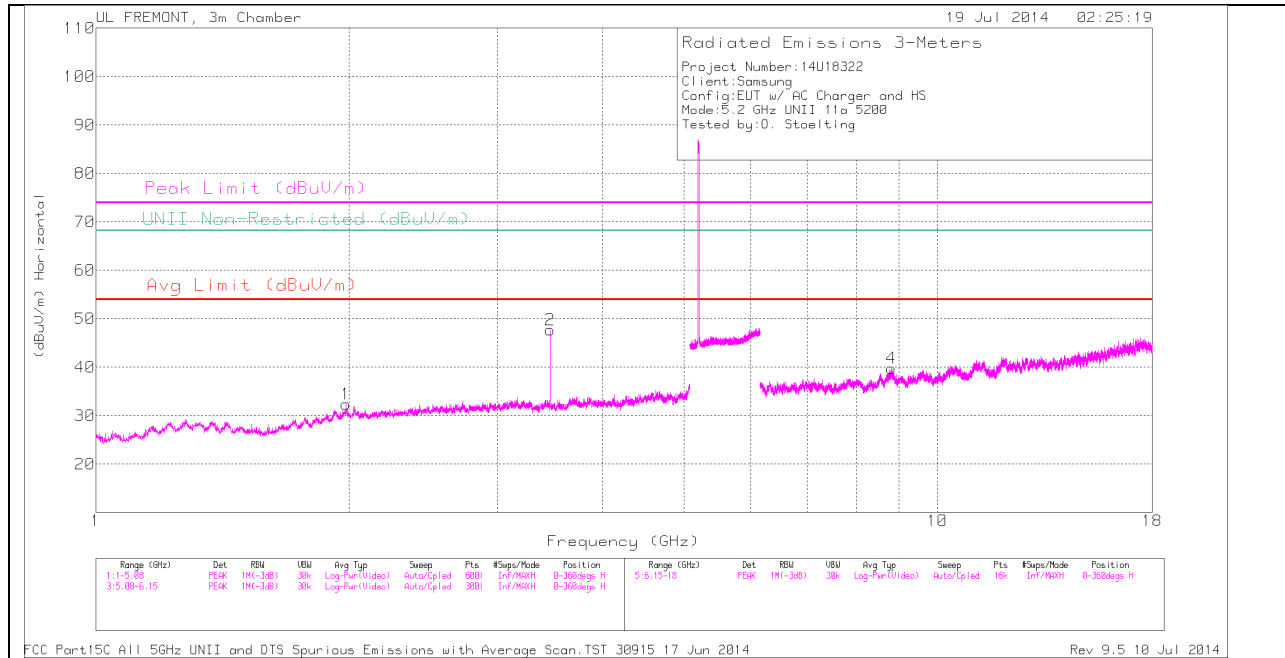
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.885	48.1	PK1	33.8	-31.4	0	50.5	-	-	74	-23.5	-	-	101	327	H
* 3.885	42.99	AD1	33.8	-31.4	.3	45.69	54	-8.31	-	-	-	-	101	327	H
* 3.885	49.88	PK1	33.8	-31.4	0	52.28	-	-	74	-21.72	-	-	45	303	V
* 3.885	47.14	AD1	33.8	-31.4	.3	49.84	54	-4.16	-	-	-	-	45	303	V

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

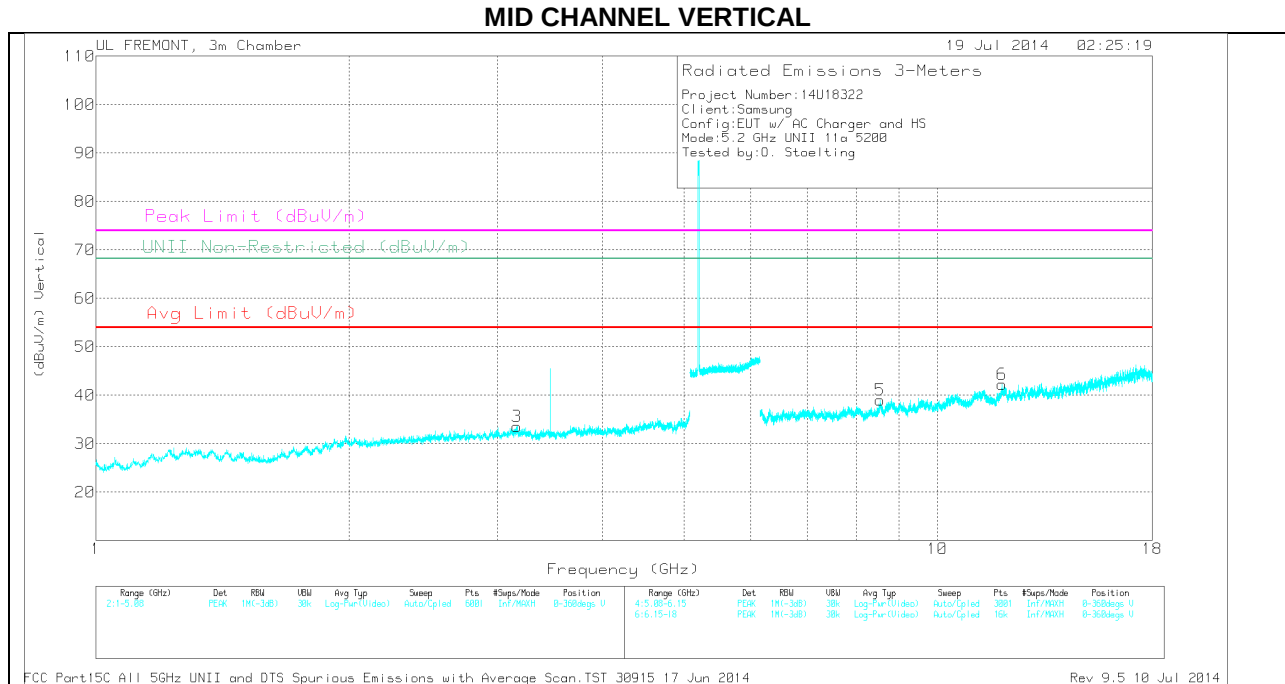
PK1 - KDB789033 Method: Peak

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.



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

TRACE MARKERS

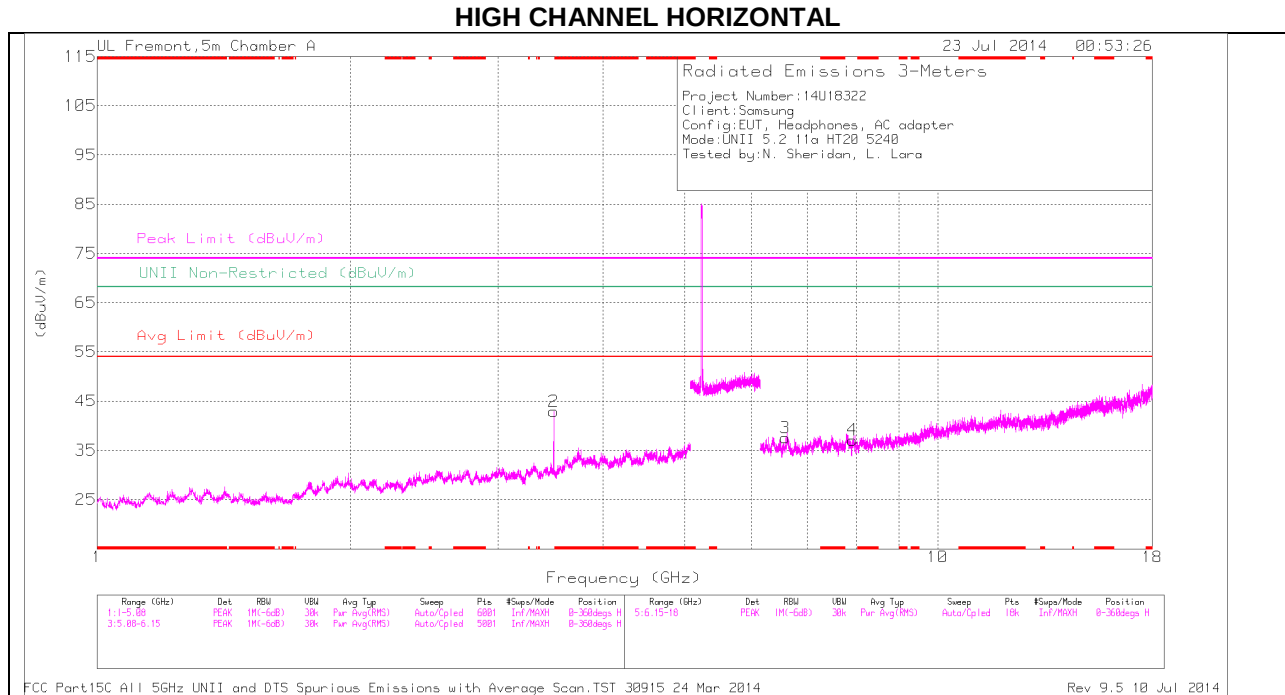
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.983	32.9	PK	31.5	-32	0	32.4	-	-	-	-	68.2	-35.8	0-360	100	H
3	3.162	32.1	PK	33	-31.5	0	33.6	-	-	-	-	68.2	-34.6	0-360	200	V
2	3.466	45.87	PK	33	-31.2	0	47.67	-	-	-	-	68.2	-20.53	0-360	200	H
5	8.547	29.21	PK	35.8	-26	0	39.01	-	-	-	-	68.2	-29.19	0-360	100	V
4	8.809	29.49	PK	36	-25.7	0	39.79	-	-	-	-	68.2	-28.41	0-360	100	H
6	11.935	29.55	PK	39	-26.3	0	42.25	-	-	74	-31.75	-	-	0-360	100	V

PK - Peak detector

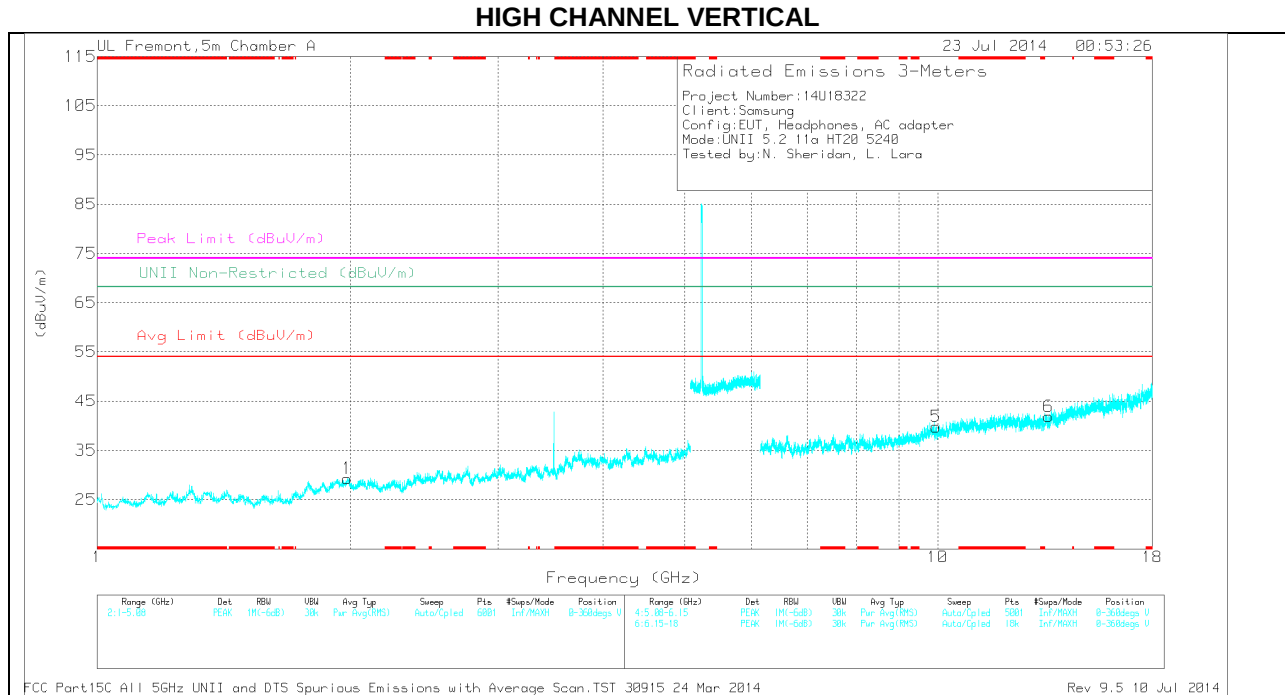
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
3.467	48.08	PK1	33	-31.3	0	49.78	-	-	-	-	68.2	-18.42	339	233	H
3.467	42.54	AD1	33	-31.3	.29	44.53	-	-	-	-	-	-	339	233	H

FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013



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



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

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	1.984	31.89	PK	32	-34.6	0	29.29	-	-	-	-	68.2	-38.91	0-360	201	V
2	3.494	41.51	PK	33	-31.6	0	42.91	-	-	-	-	68.2	-25.29	0-360	100	H
3	6.584	28.63	PK	35.5	-26.6	0	37.53	-	-	-	-	68.2	-30.67	0-360	201	H
4	7.916	28.38	PK	35.5	-26.8	0	37.08	-	-	-	-	68.2	-31.12	0-360	100	H
5	9.959	26	PK	37.1	-23.3	0	39.8	-	-	-	-	68.2	-28.4	0-360	100	V
6	13.555	26.29	PK	38.9	-23.3	0	41.89	-	-	-	-	68.2	-26.31	0-360	201	V

PK - Peak detector

Radiated Emissions

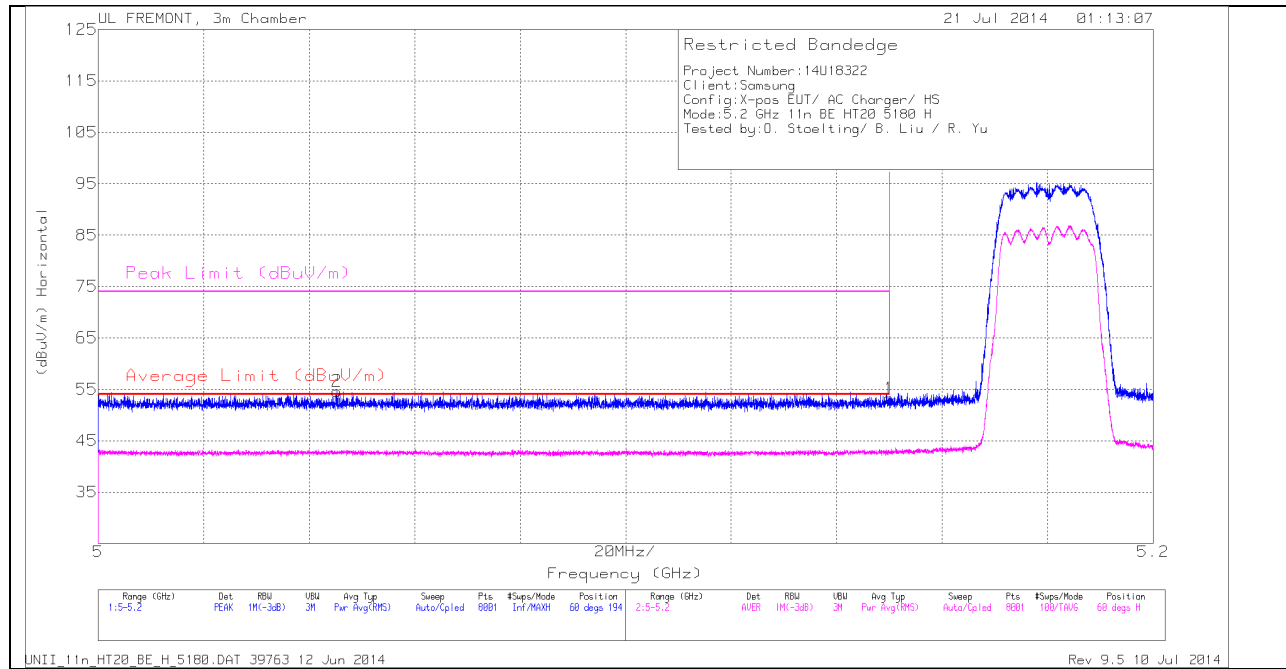
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3.493	46.02	PK1	33	-31.6	0	47.42	-	-	-	-	68.2	-20.78	318	224	H
3.493	41.81	AD1	33	-31.6	.29	43.5	-	-	-	-	-	-	318	224	H

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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

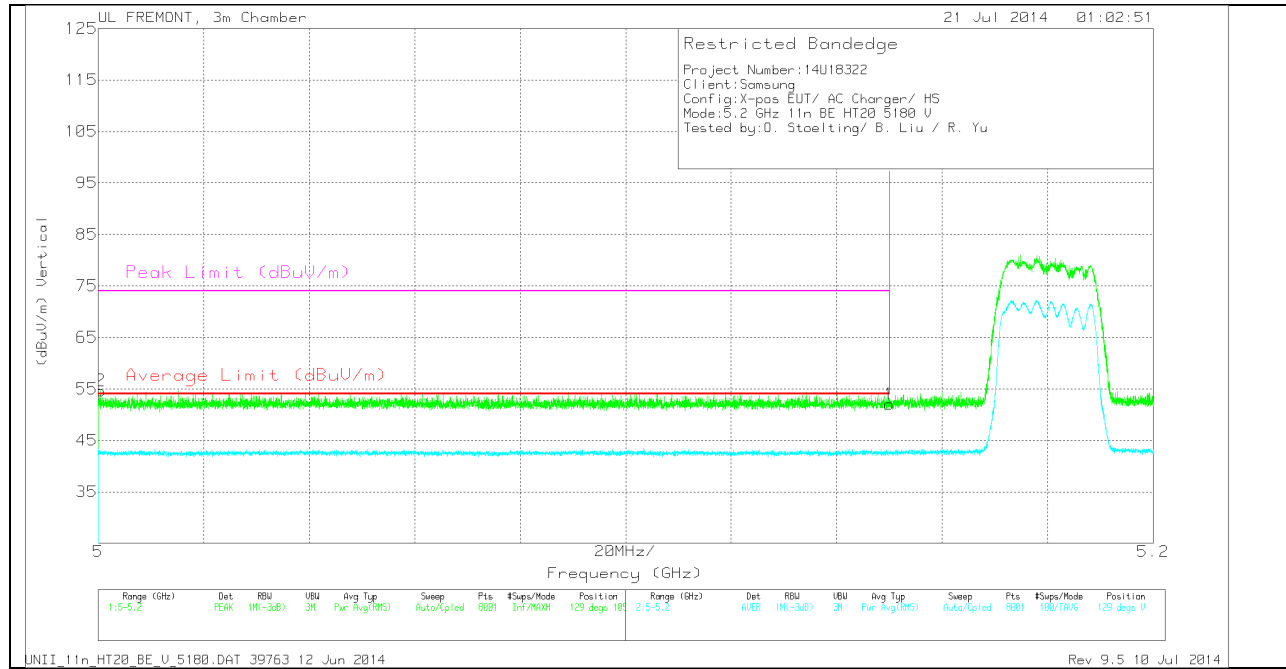
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
2	5.045	42.04	PK	34.1	-21.5	0	54.64	-	-	74	-19.36	60	194	H
4	5.142	30.38	RMS	34.2	-21.6	.33	43.31	54	-10.69	-	-	60	194	H
1	5.15	40.67	PK	34.2	-21.6	0	53.27	-	-	74	-20.73	60	194	H
3	5.15	29.96	RMS	34.2	-21.6	.33	42.89	54	-11.11	-	-	60	194	H

VERTICAL PEAK AND AVERAGE PLOT

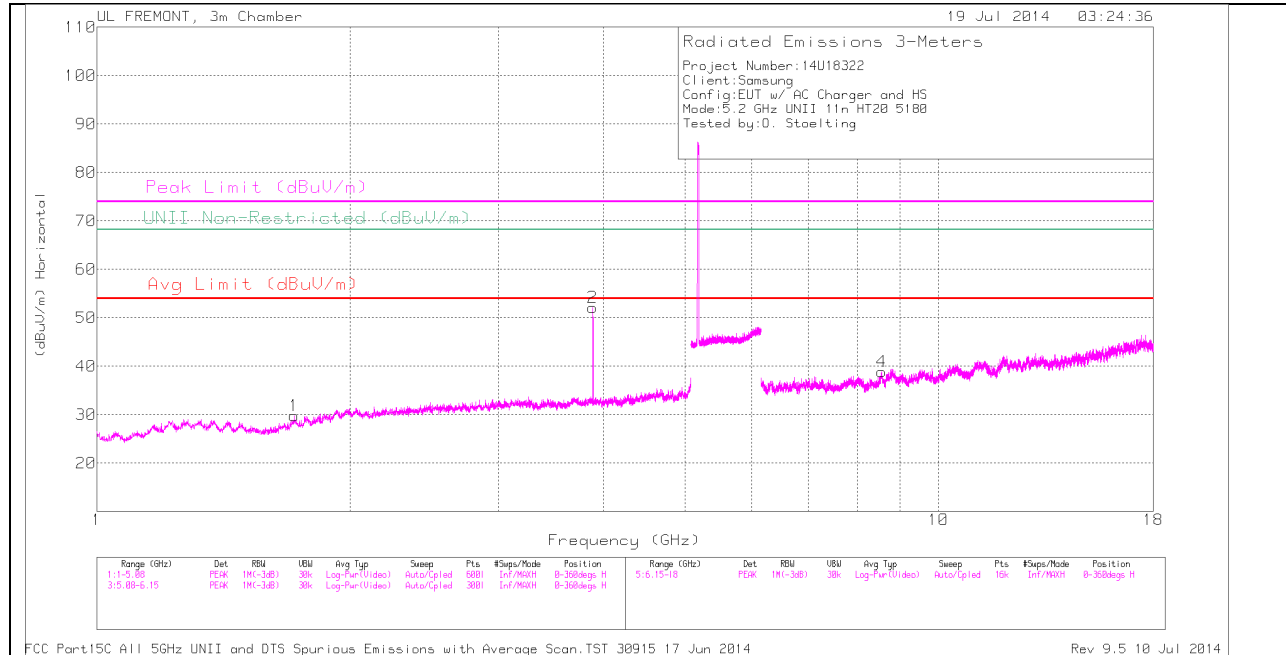


VERTICAL DATA

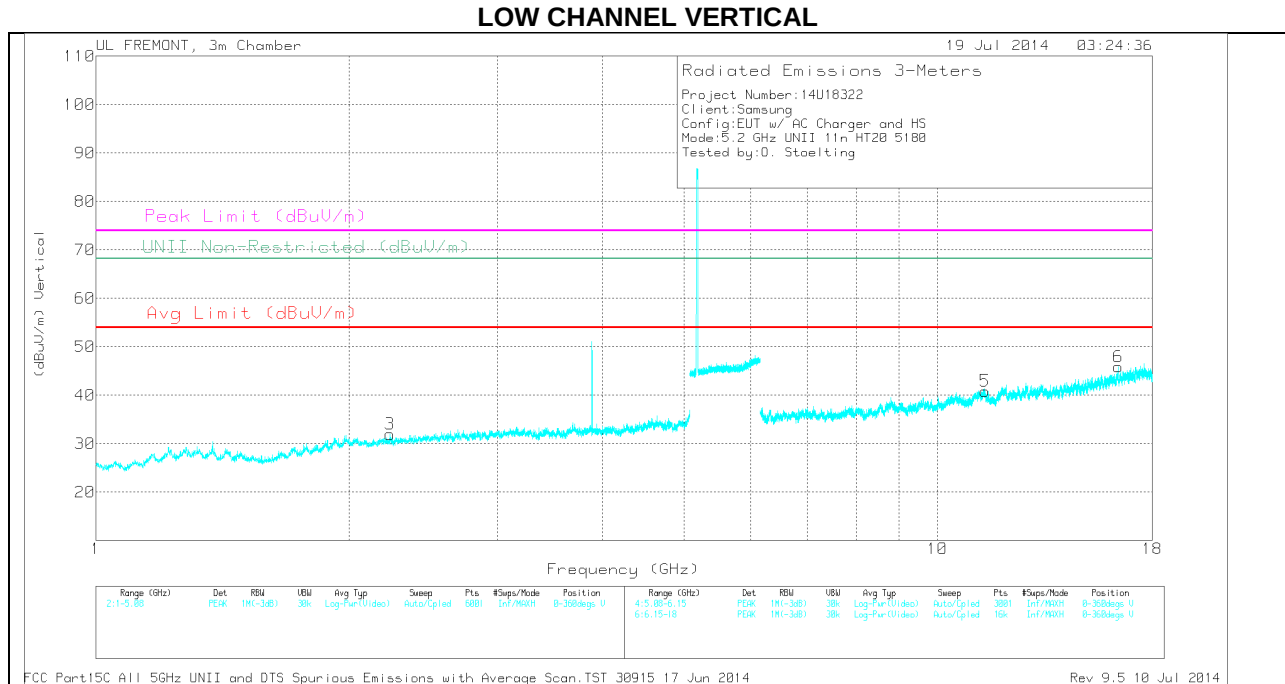
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.001	42.04	PK	34	-21.4	0	54.64	-	-	74	-19.36	129	105	V
4	5.103	30.51	RMS	34.2	-21.6	.33	43.44	54	-10.56	-	-	129	105	V
1	5.15	39.41	PK	34.2	-21.6	0	52.01	-	-	74	-21.99	129	105	V
3	5.15	29.8	RMS	34.2	-21.6	.33	42.73	54	-11.27	-	-	129	105	V

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.



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 T119 (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	1.715	32.71	PK	29.2	-32.1	0	29.81	-	-	-	-	68.2	-38.39	0-360	100	H
3	2.236	32.64	PK	31.7	-32.4	0	31.94	-	-	74	-42.06	-	-	0-360	100	V
2	3.885	49.77	PK	33.2	-30.8	0	52.17	-	-	74	-21.83	-	-	0-360	200	H
4	8.568	29.33	PK	35.8	-26.2	0	38.93	-	-	-	-	68.2	-29.27	0-360	100	H
5	11.39	28.69	PK	38.1	-25.9	0	40.89	-	-	74	-33.11	-	-	0-360	100	V
6	16.396	28.97	PK	41	-24.1	0	45.87	-	-	-	-	68.2	-22.33	0-360	200	V

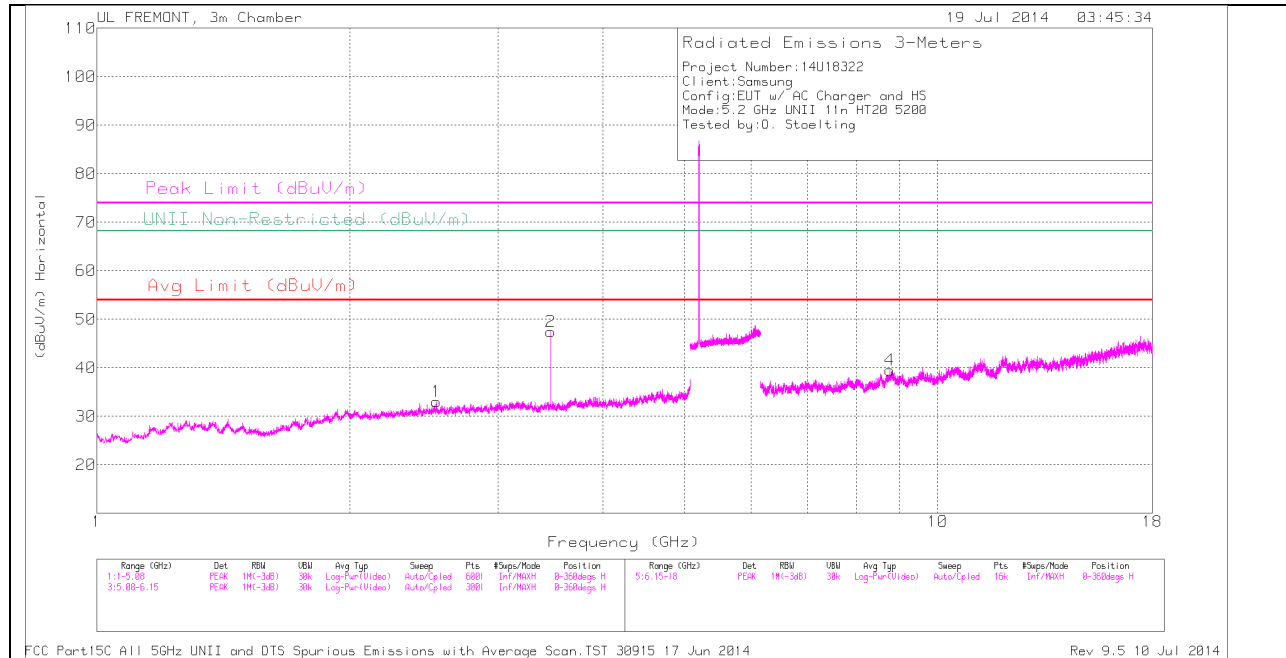
PK - Peak detector

RADIATED EMISSIONS

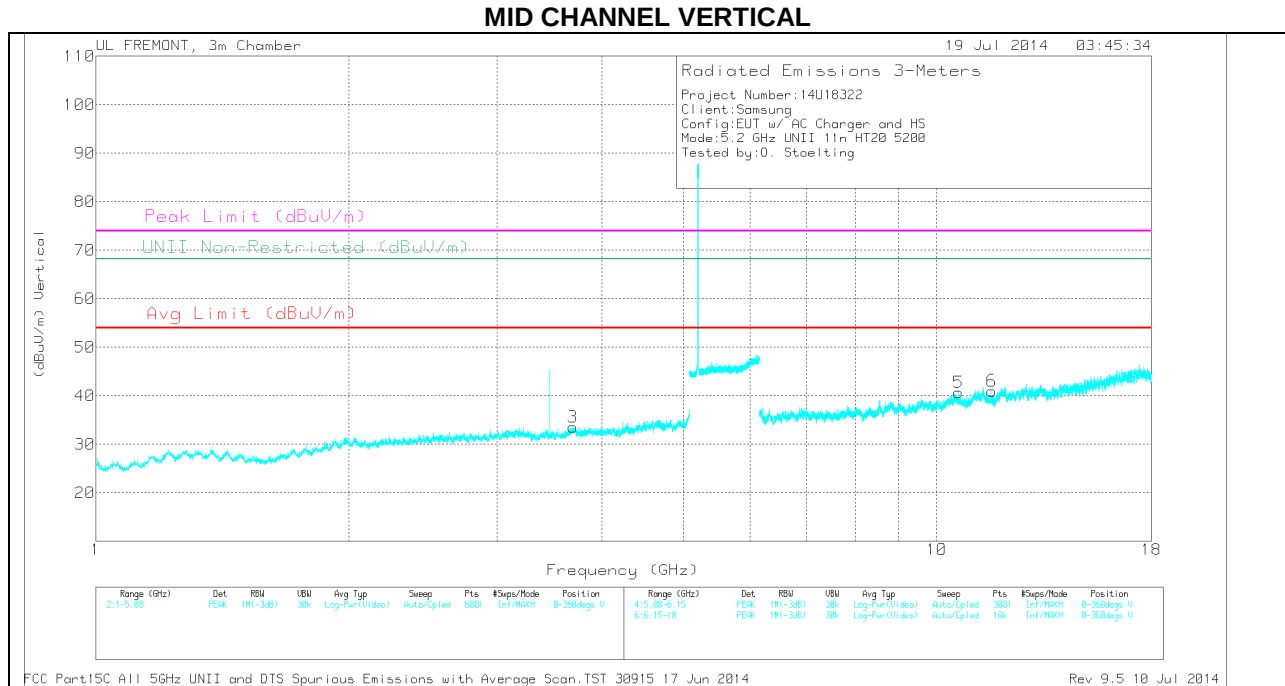
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3.885	51.71	PK1	33.2	-30.7	0	54.21	-	-	74	-19.79	-	-	84	231	H
3.885	49.72	AD1	33.2	-30.7	.33	52.55	54	-1.45	-	-	-	-	84	231	H

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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.



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

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	2.534	32.83	PK	32.4	-32.2	0	33.03	-	-	-	-	68.2	-35.17	0-360	100	H
2	3.467	45.8	PK	33	-31.3	0	47.5	-	-	-	-	68.2	-20.7	0-360	100	H
3	3.693	31	PK	33.2	-30.6	0	33.6	-	-	74	-40.4	-	-	0-360	100	V
4	8.766	29.6	PK	35.9	-26	0	39.5	-	-	-	-	68.2	-28.7	0-360	100	H
5	10.618	28.05	PK	37.7	-25.1	0	40.65	-	-	74	-33.35	-	-	0-360	200	V
6	11.624	28.62	PK	38.5	-26.1	0	41.02	-	-	74	-32.98	-	-	0-360	200	V

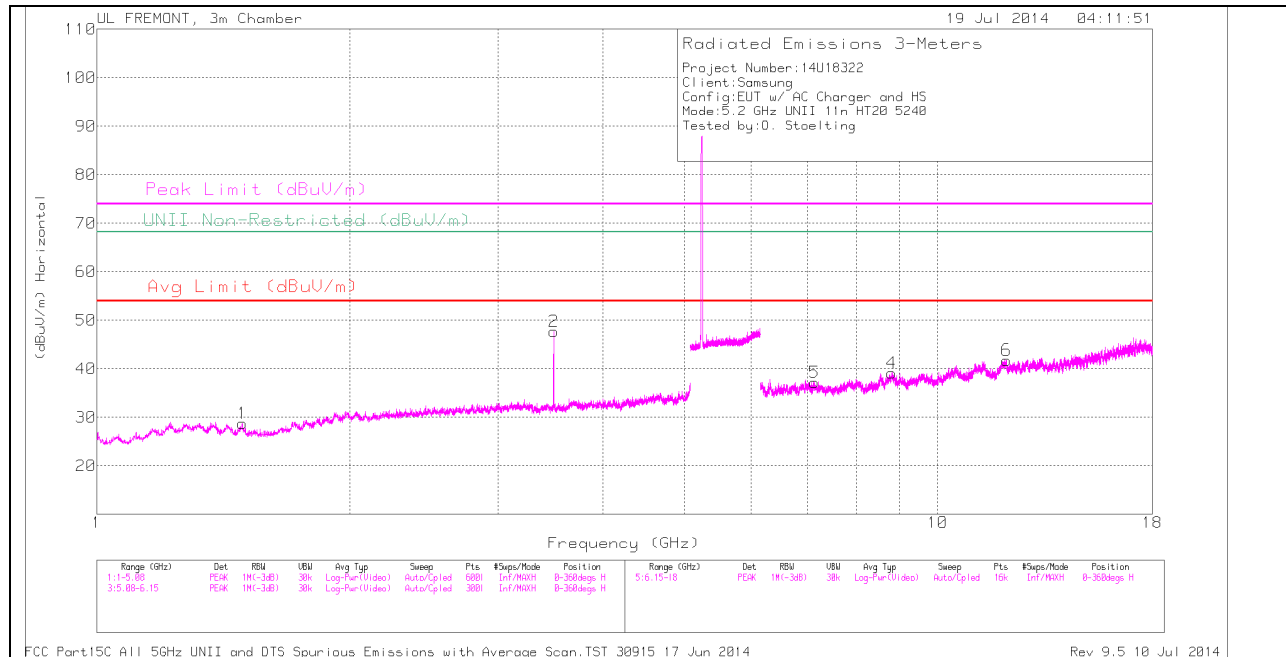
PK - Peak detector

RADIATED EMISSIONS

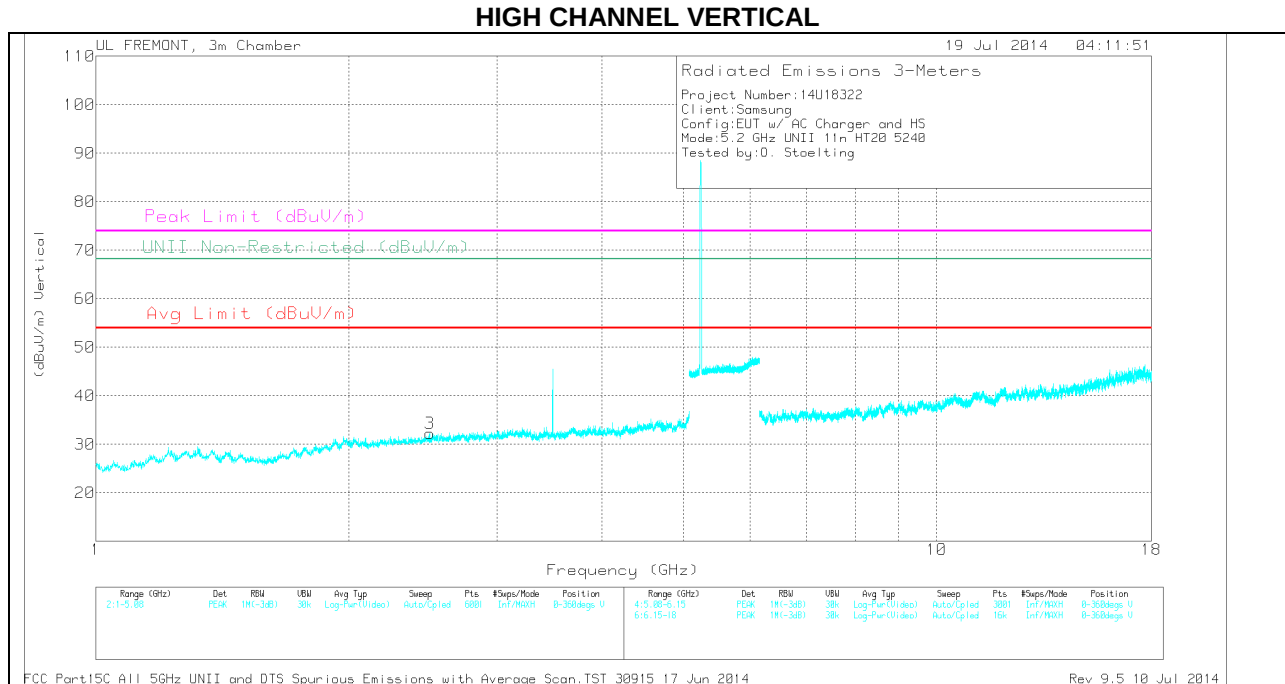
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3.467	49.03	PK1	33	-31.3	0	50.73	-	-	-	-	68.2	-17.47	289	100	H
3.467	45.85	AD1	33	-31.3	.33	47.88	-	-	-	-	-	-	289	100	H

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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.



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

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	1.489	32.95	PK	28.6	-32.8	0	28.75	-	-	74	-45.25	-	-	0-360	100	H
3	2.494	32.09	PK	32.3	-32.1	0	32.29	-	-	74	-41.71	-	-	0-360	200	V
2	3.494	46.16	PK	33	-31.5	0	47.66	-	-	-	-	68.2	-20.54	0-360	200	H
5	7.135	30.59	PK	35.6	-29	0	37.19	-	-	-	-	68.2	-31.01	0-360	100	H
4	8.81	28.7	PK	36	-25.6	0	39.1	-	-	-	-	68.2	-29.1	0-360	100	H
6	12.07	29.1	PK	39.1	-26.4	0	41.8	-	-	74	-32.2	-	-	0-360	200	H

PK - Peak detector

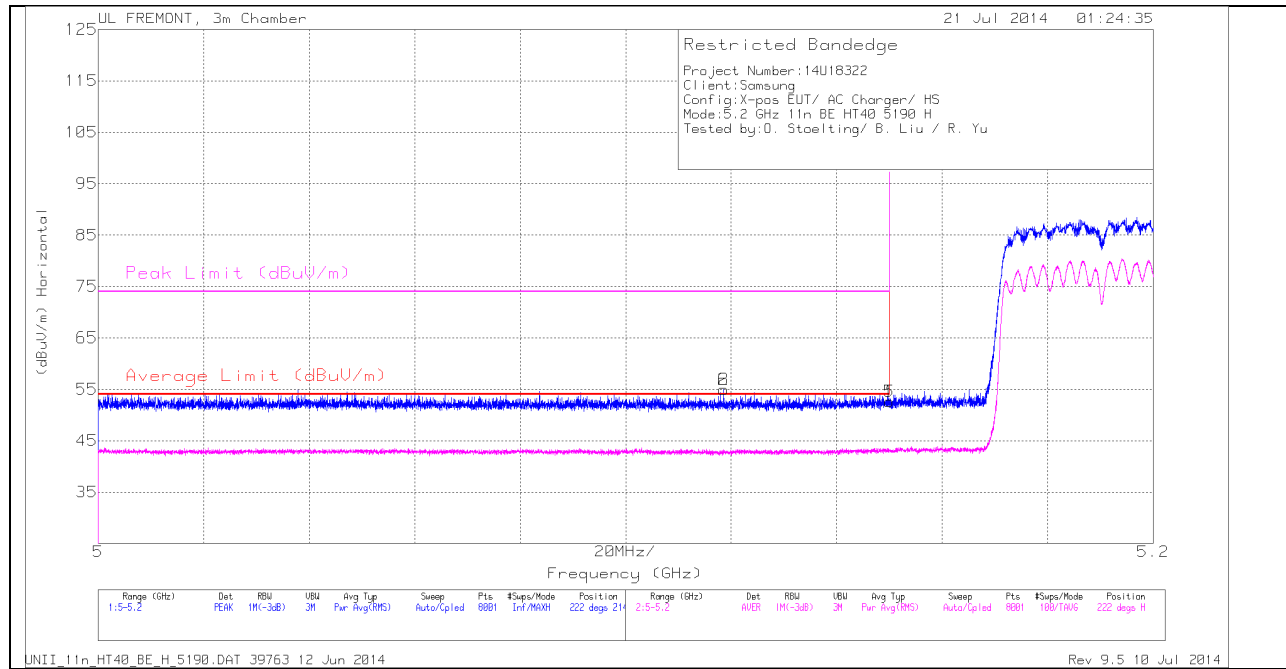
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
3.493	48.81	PK1	33	-31.5	0	50.31	-	-	-	-	68.2	-17.89	96	199	H
3.493	45.66	AD1	33	-31.5	.33	47.49	-	-	-	-	-	-	96	199	H

FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013

11.1.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

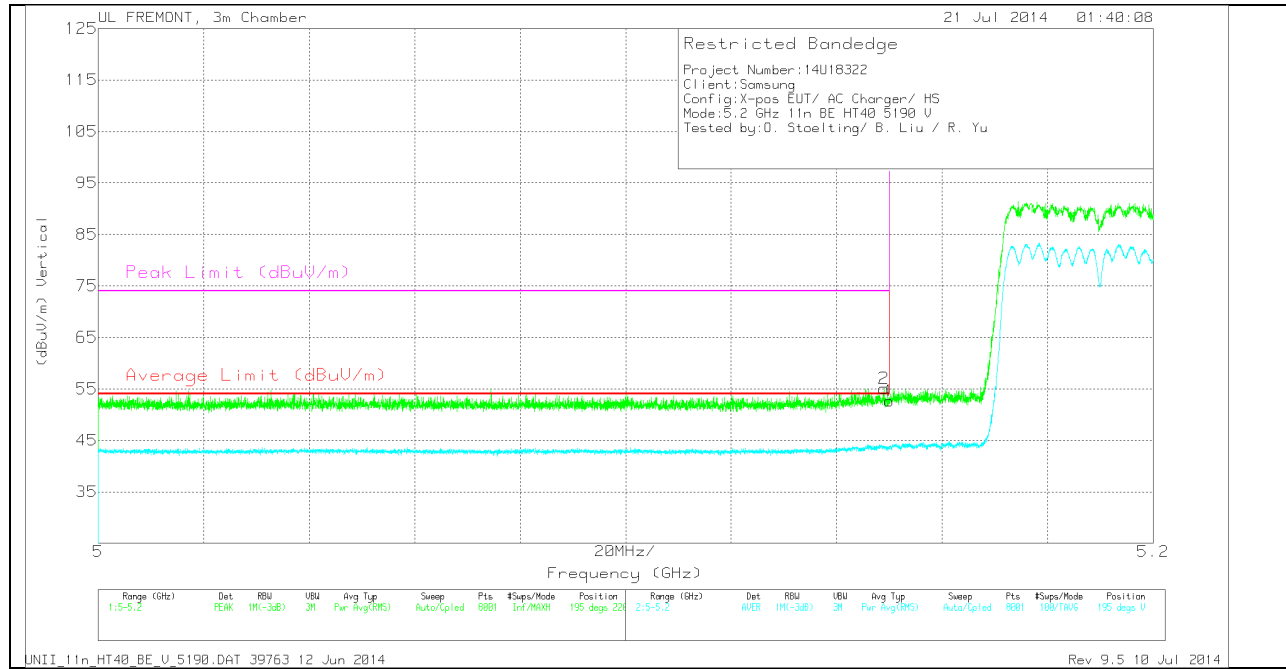
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
4	5.001	30.44	RMS	34	-21.4	.61	43.65	54	-10.35	-	-	222	214	H
8	5.001	30.44	RMS	34	-21.4	.61	43.65	54	-10.35	-	-	222	214	H
2	5.119	42.35	PK	34.2	-21.6	0	54.95	-	-	74	-19.05	222	214	H
6	5.119	42.35	PK	34.2	-21.6	0	54.95	-	-	74	-19.05	222	214	H
1	5.15	40.03	PK	34.2	-21.6	0	52.63	-	-	74	-21.37	222	214	H
5	5.15	40.03	PK	34.2	-21.6	0	52.63	-	-	74	-21.37	222	214	H
3	5.15	29.93	RMS	34.2	-21.6	.61	43.14	54	-10.86	-	-	222	214	H
7	5.15	29.93	RMS	34.2	-21.6	.61	43.14	54	-10.86	-	-	222	214	H

VERTICAL PEAK AND AVERAGE PLOT

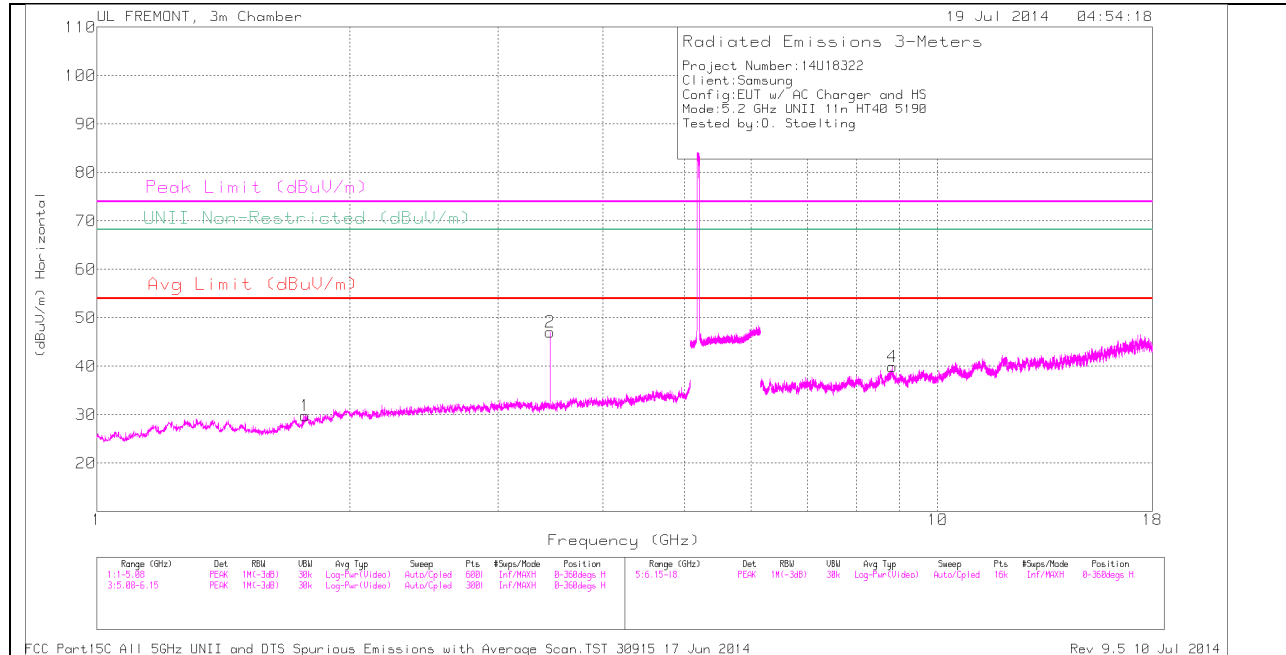


VERTICAL DATA

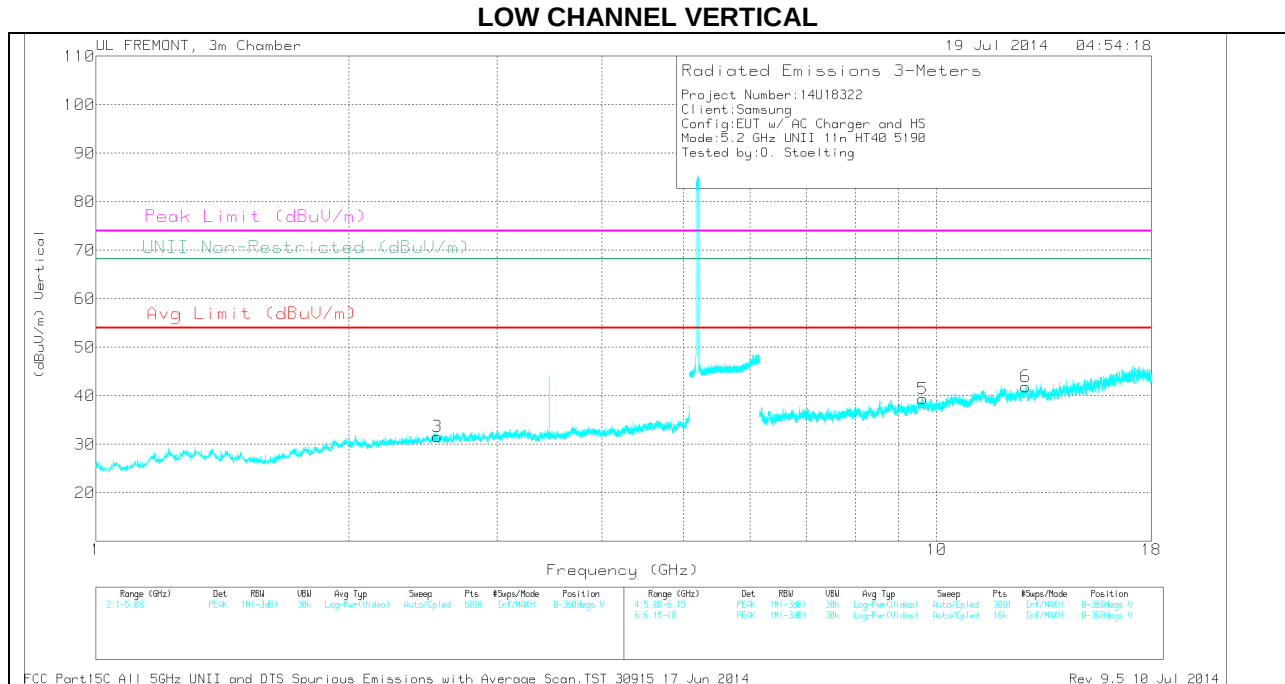
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	5.146	30.99	RMS	34.2	-21.6	.61	44.2	54	-9.8	-	-	195	220	V
2	5.149	42.5	PK	34.2	-21.6	0	55.1	-	-	74	-18.9	195	220	V
1	5.15	40.03	PK	34.2	-21.6	0	52.63	-	-	74	-21.37	195	220	V
3	5.15	30.39	RMS	34.2	-21.6	.61	43.6	54	-10.4	-	-	195	220	V

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.



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 T119 (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	1.768	32.41	PK	29.8	-32.4	0	29.81	-	-	-	-	68.2	-38.39	0-360	100	H
3	2.548	31.31	PK	32.4	-32.1	0	31.61	-	-	-	-	68.2	-36.59	0-360	100	V
2	3.46	45.33	PK	33	-31.3	0	47.03	-	-	-	-	68.2	-21.17	0-360	200	H
4	8.824	29.76	PK	36	-25.8	0	39.96	-	-	-	-	68.2	-28.24	0-360	100	H
5	9.619	27.89	PK	36.7	-25.2	0	39.39	-	-	-	-	68.2	-28.81	0-360	100	V
6	12.749	28.83	PK	39.2	-26.1	0	41.93	-	-	-	-	68.2	-26.27	0-360	100	V

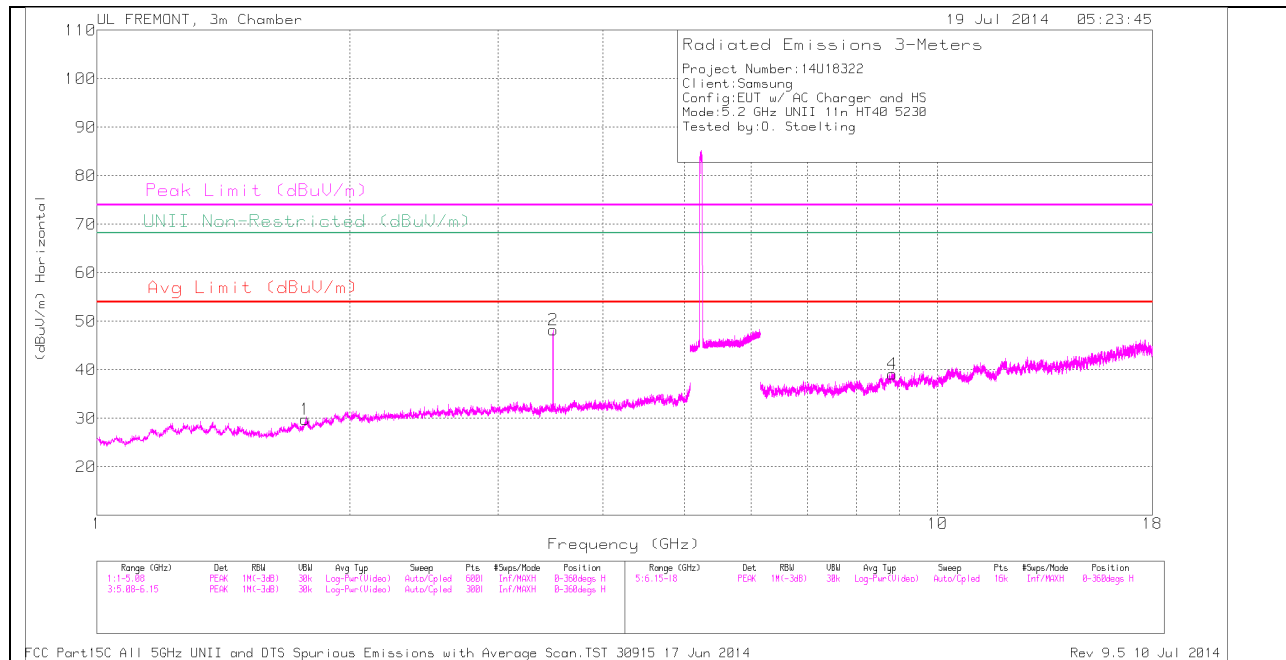
PK - Peak detector

RADIATED EMISSIONS

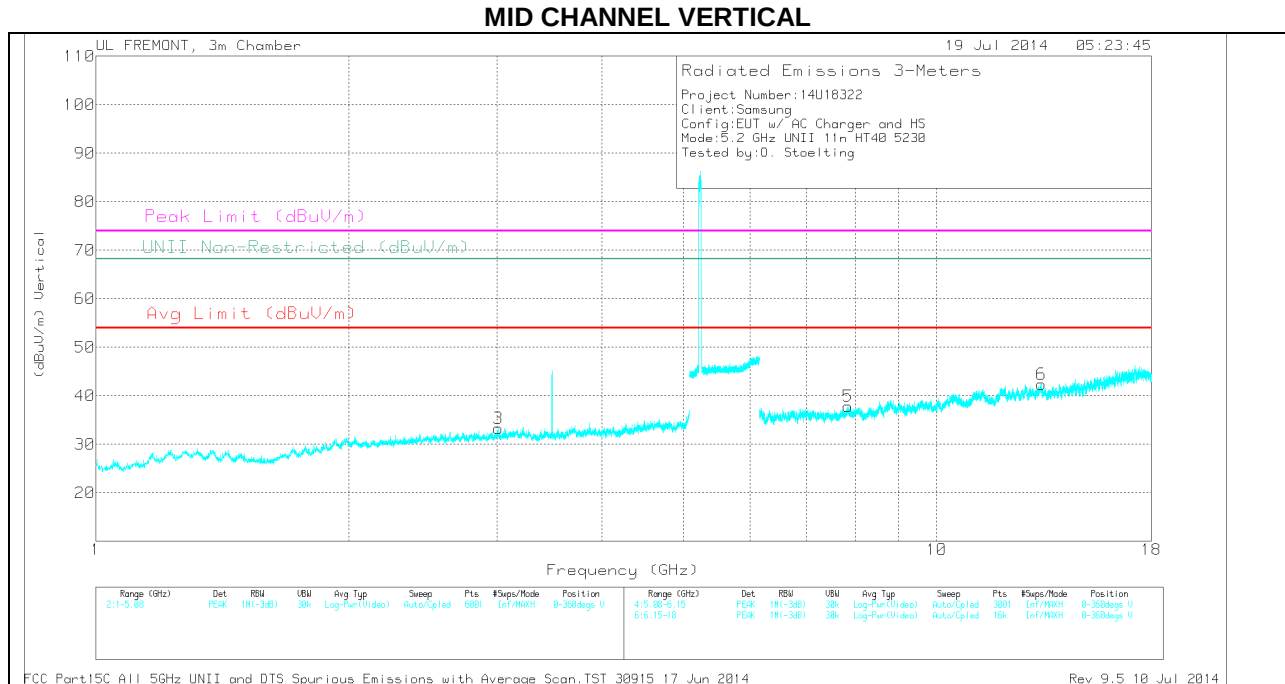
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3.46	48.28	PK1	33	-31.3	0	49.98	-	-	-	-	68.2	-18.22	95	204	H
3.46	44.5	AD1	33	-31.3	.61	46.81	-	-	-	-	-	-	95	204	H

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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.



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

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	1.769	32.37	PK	29.8	-32.4	0	29.77	-	-	-	-	68.2	-38.43	0-360	200	H
3	3.01	32.24	PK	33	-31.9	0	33.34	-	-	-	-	68.2	-34.86	0-360	100	V
2	3.487	46.72	PK	33	-31.5	0	48.22	-	-	-	-	68.2	-19.98	0-360	200	H
5	7.847	29.87	PK	35.8	-27.8	0	37.87	-	-	-	-	68.2	-30.33	0-360	100	V
4	8.825	28.99	PK	36	-25.8	0	39.19	-	-	-	-	68.2	-29.01	0-360	200	H
6	13.324	30.15	PK	39.2	-27	0	42.35	-	-	74	-31.65	-	-	0-360	200	V

PK - Peak detector

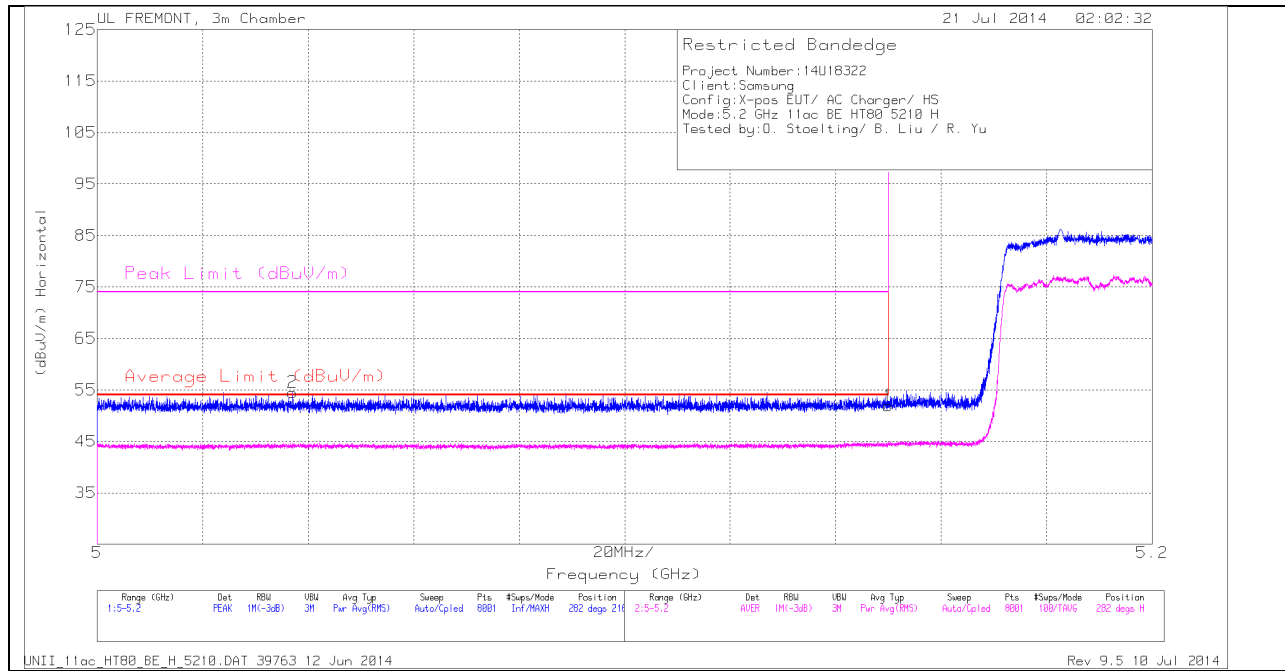
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
3.487	49.05	PK1	33	-31.5	0	50.55	-	-	-	-	68.2	-17.65	92	362	H
3.487	45.06	AD1	33	-31.5	.61	47.17	-	-	-	-	-	-	92	362	H

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11.1.4. TX ABOVE 1 GHz 802.11ac HT80 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

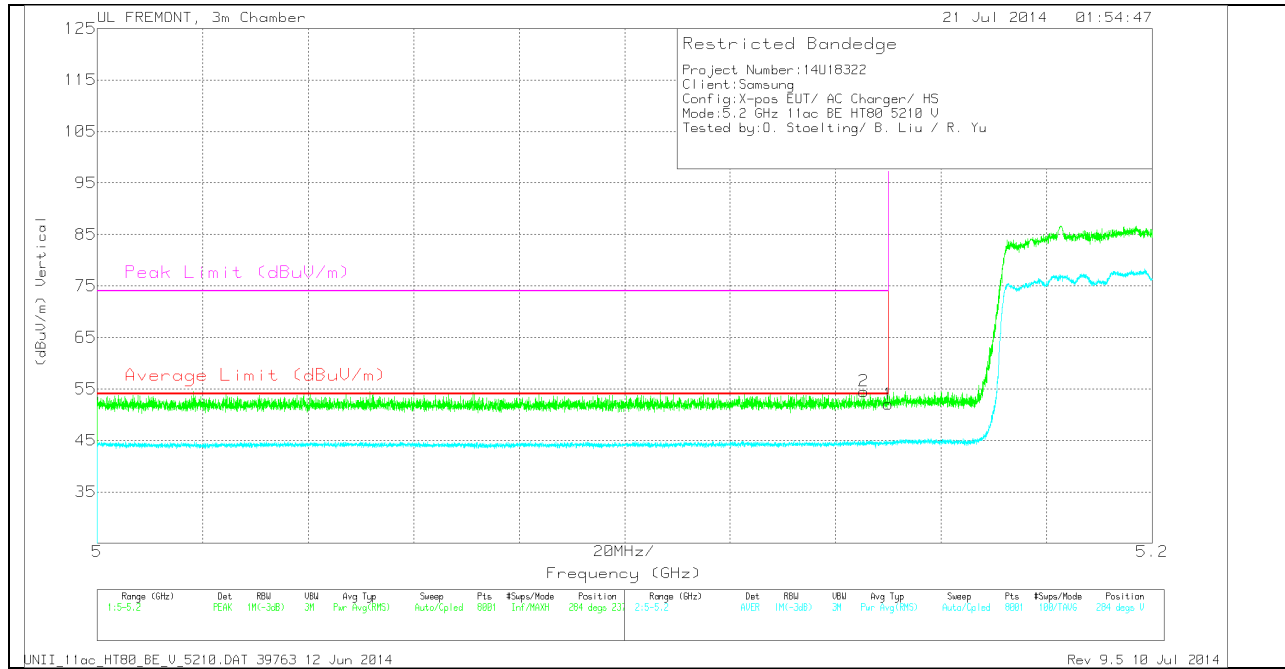
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
2	5.037	42.02	PK	34.1	-21.6	0	54.52	-	-	74	-19.48	282	216	H
4	5.148	30.35	RMS	34.2	-21.6	1.85	44.8	54	-9.2	-	-	282	216	H
1	5.15	39.33	PK	34.2	-21.6	0	51.93	-	-	74	-22.07	282	216	H
3	5.15	30.46	RMS	34.2	-21.6	1.85	44.91	54	-9.09	-	-	282	216	H

VERTICAL PEAK AND AVERAGE PLOT

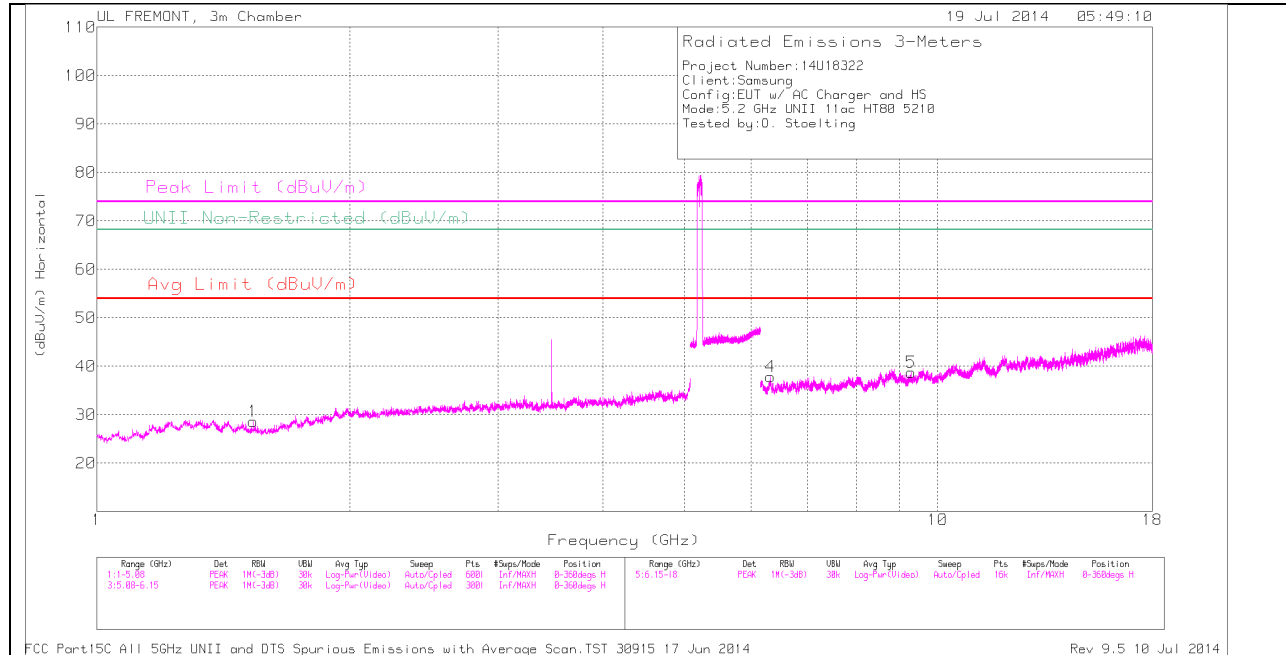


VERTICAL DATA

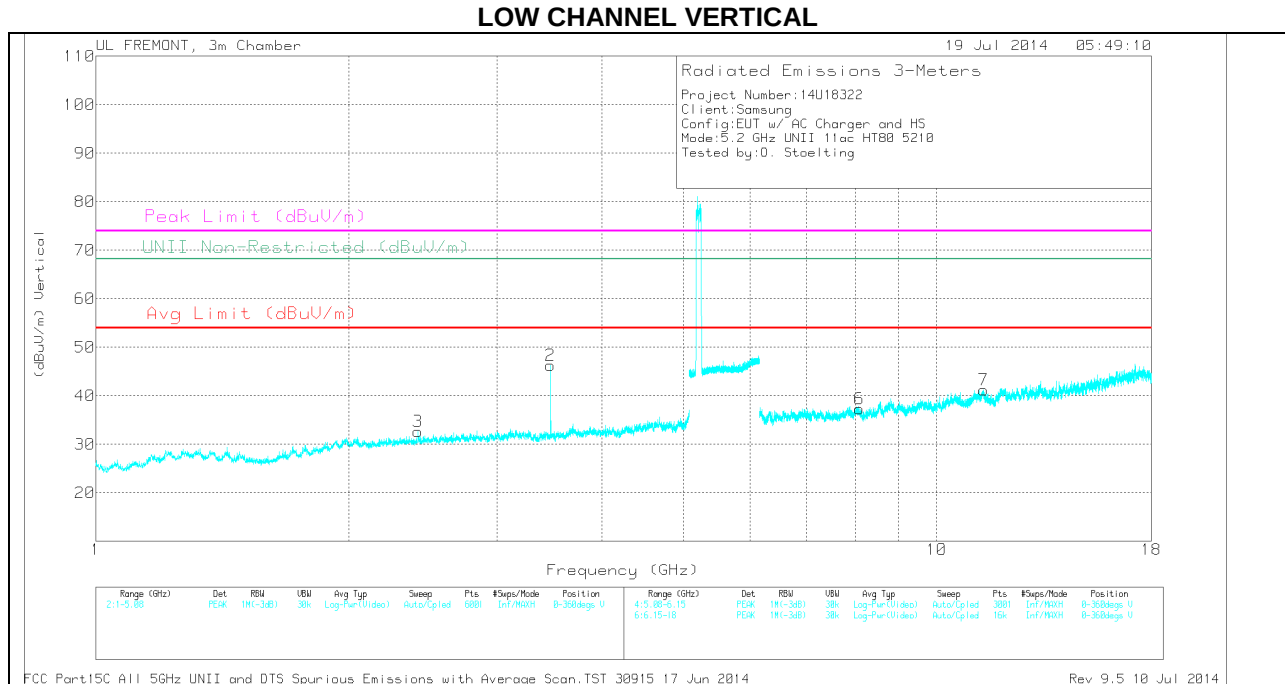
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	5.132	30.42	RMS	34.2	-21.5	1.85	44.97	54	-9.03	-	-	284	237	V
2	5.145	41.94	PK	34.2	-21.6	0	54.54	-	-	74	-19.46	284	237	V
1	5.15	39.42	PK	34.2	-21.6	0	52.02	-	-	74	-21.98	284	237	V
3	5.15	29.9	RMS	34.2	-21.6	1.85	44.35	54	-9.65	-	-	284	237	V

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.



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 T119 (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	1.534	33.38	PK	28.4	-33.2	0	28.58	-	-	74	-45.42	-	-	0-360	100	H
3	2.414	33.29	PK	32.1	-32.7	0	32.69	-	-	-	-	68.2	-35.51	0-360	100	V
2	3.473	44.68	PK	33	-31.4	0	46.28	-	-	-	-	68.2	-21.92	0-360	200	V
4	6.324	31.79	PK	35.4	-29.3	0	37.89	-	-	-	-	68.2	-30.31	0-360	100	H
6	8.087	28.92	PK	35.7	-27.3	0	37.32	-	-	74	-36.68	-	-	0-360	200	V
5	9.293	28.23	PK	36.3	-25.8	0	38.73	-	-	-	-	68.2	-29.47	0-360	100	H
7	11.367	29.16	PK	38.1	-26	0	41.26	-	-	74	-32.74	-	-	0-360	200	V

PK - Peak detector

RADIATED EMISSIONS

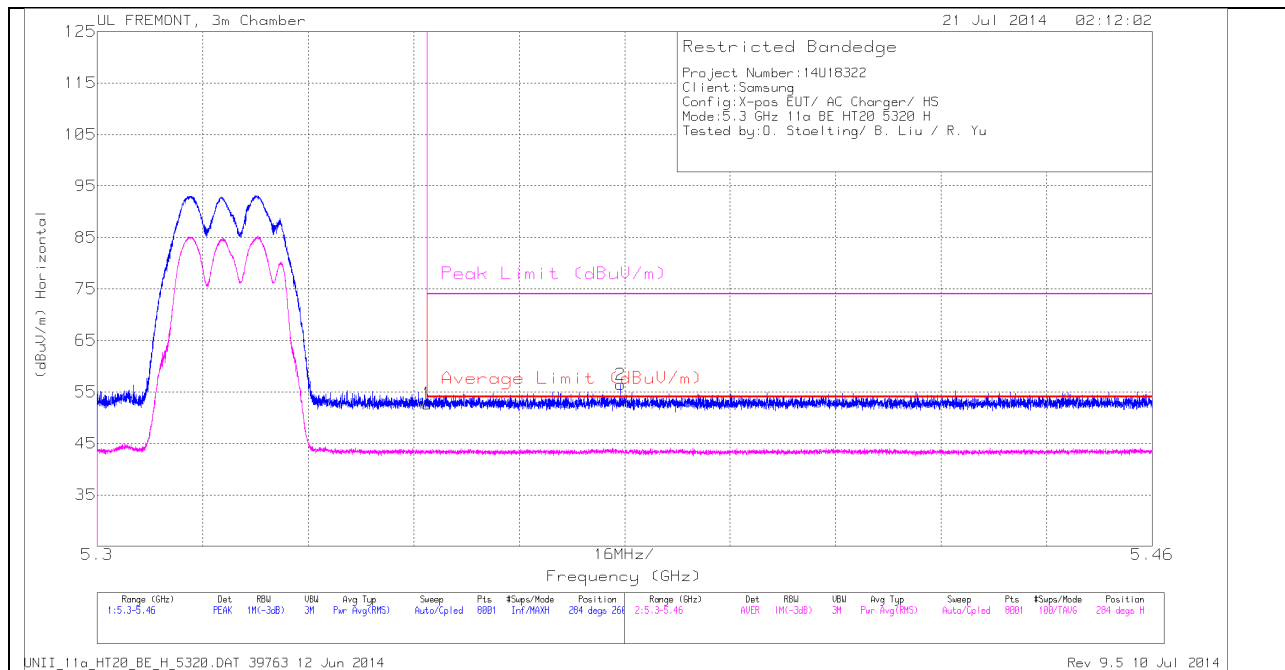
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3.473	43.96	PK1	33	-31.4	0	45.56	-	-	-	-	68.2	-22.64	0	200	V
3.473	37.89	AD1	33	-31.4	1.85	41.34	-	-	-	-	-	-	0	200	V

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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)

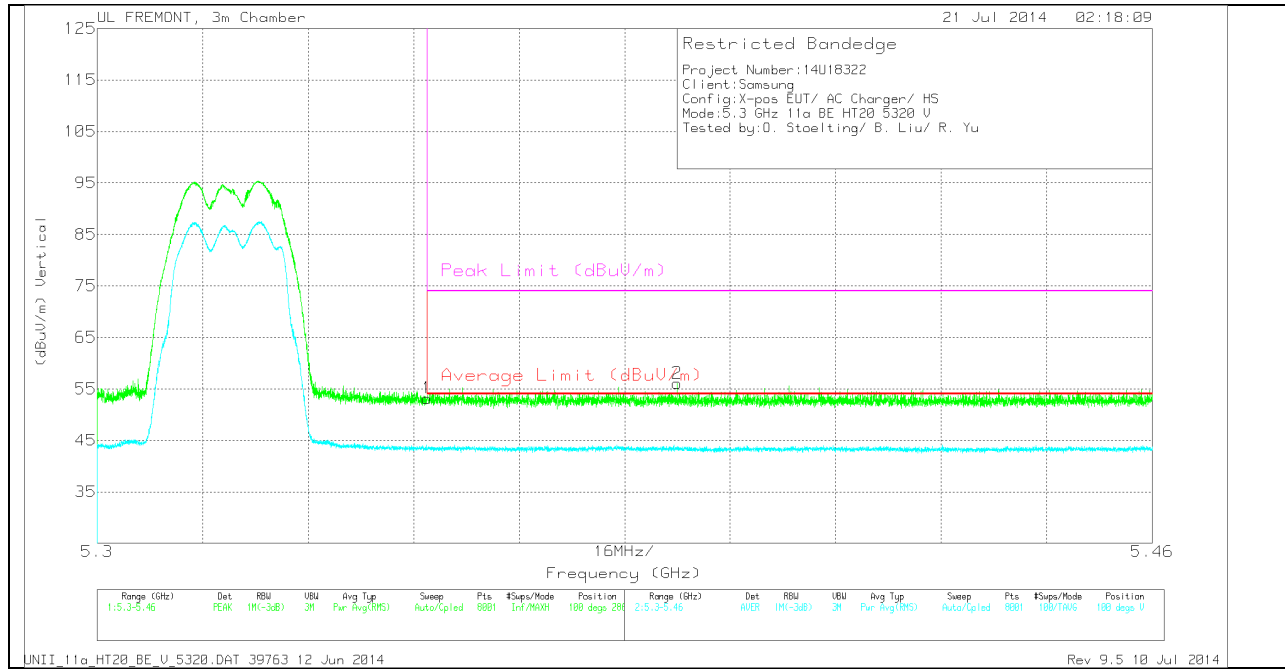
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	39.62	PK	34.5	-21.4	0	52.72	-	-	74	-21.28	284	260	H
3	5.35	30.18	RMS	34.5	-21.4	.29	43.57	54	-10.43	-	-	284	260	H
2	5.379	43.14	PK	34.6	-21.3	0	56.44	-	-	74	-17.56	284	260	H
4	5.387	30.58	RMS	34.6	-21.4	.29	44.07	54	-9.93	-	-	284	260	H

VERTICAL PEAK AND AVERAGE PLOT

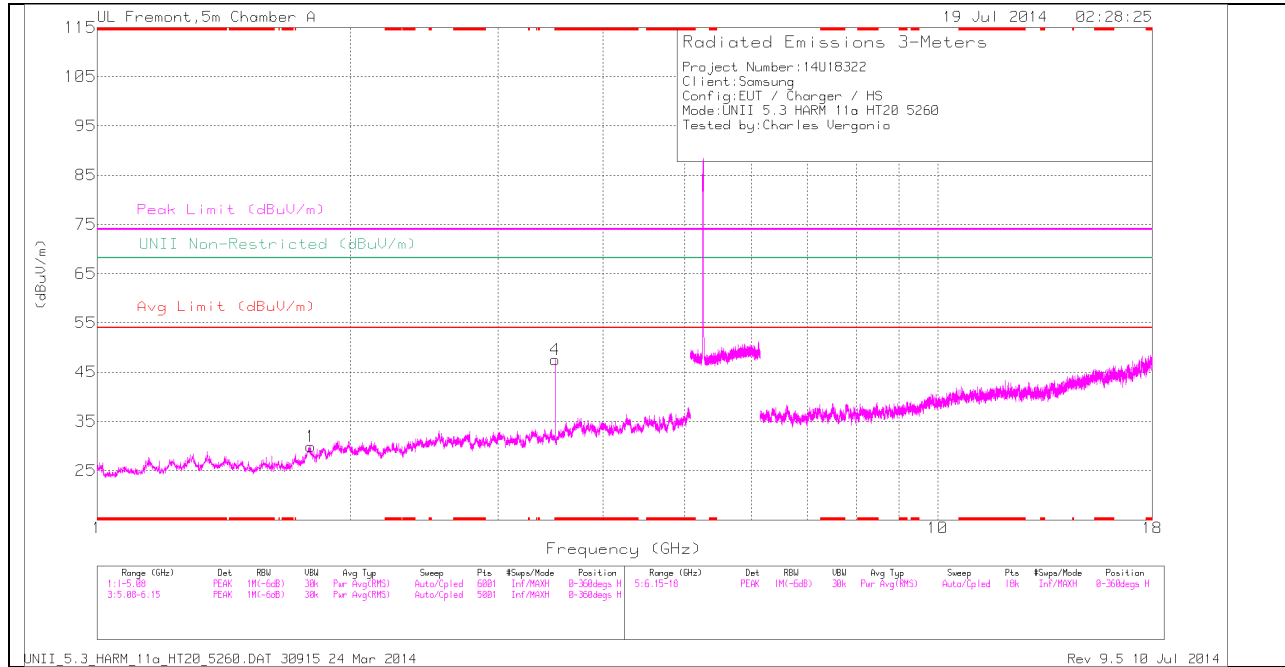


VERTICAL DATA

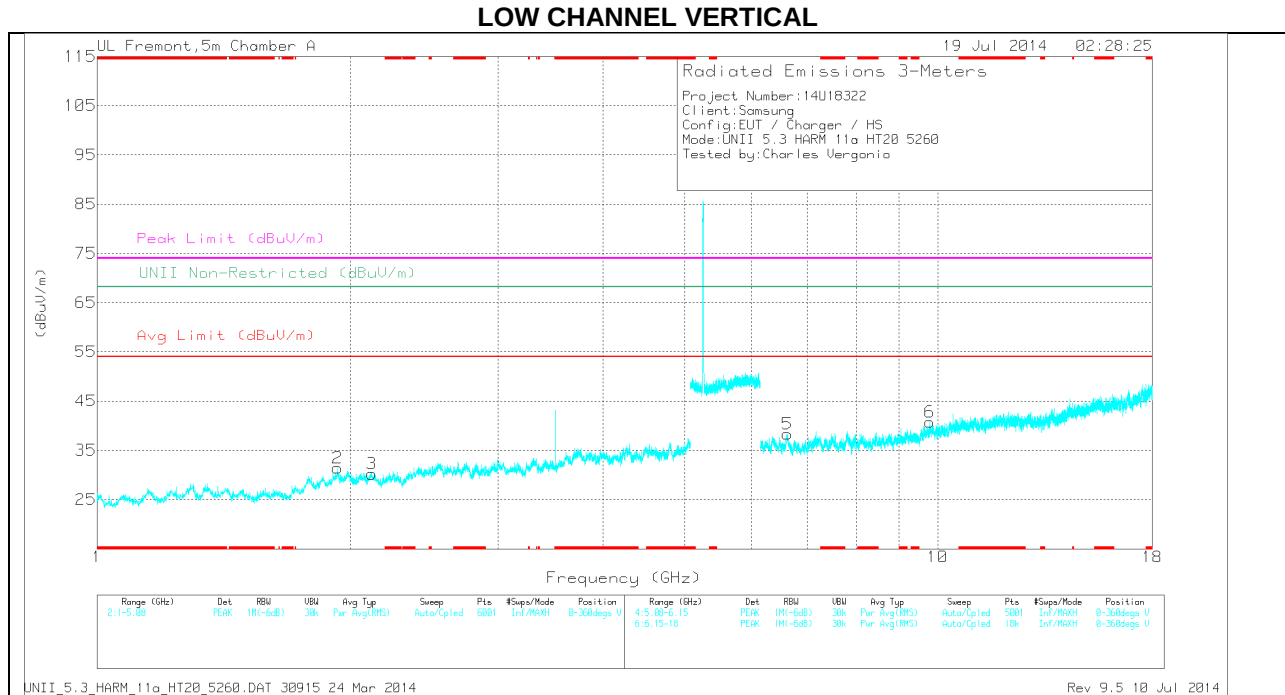
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.35	40.09	PK	34.5	-21.4	0	53.19	-	-	74	-20.81	100	286	V
3	5.35	29.9	RMS	34.5	-21.4	.29	43.29	54	-10.71	-	-	100	286	V
2	5.388	42.89	PK	34.6	-21.4	0	56.09	-	-	74	-17.91	100	286	V
4	5.388	30.63	RMS	34.6	-21.4	.29	44.12	54	-9.88	-	-	100	286	V

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.



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 T136 (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	* 3.506	46.18	PK	33.1	-31.8	0	47.48	-	-	74	-26.52	-	-	0-360	100	H
1	1.796	33.78	PK	30.5	-34.4	0	29.88	-	-	-	-	68.2	-38.32	0-360	100	H
2	1.932	34.22	PK	31.8	-34.6	0	31.42	-	-	-	-	68.2	-36.78	0-360	100	V
3	2.122	32.83	PK	31.6	-34.2	0	30.23	-	-	-	-	68.2	-37.97	0-360	100	V
5	6.625	28.72	PK	35.4	-25.8	0	38.32	-	-	-	-	68.2	-29.88	0-360	201	V
6	9.788	26.75	PK	36.9	-22.9	0	40.75	-	-	-	-	68.2	-27.45	0-360	201	V

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

PK - Peak detector

Radiated Emissions

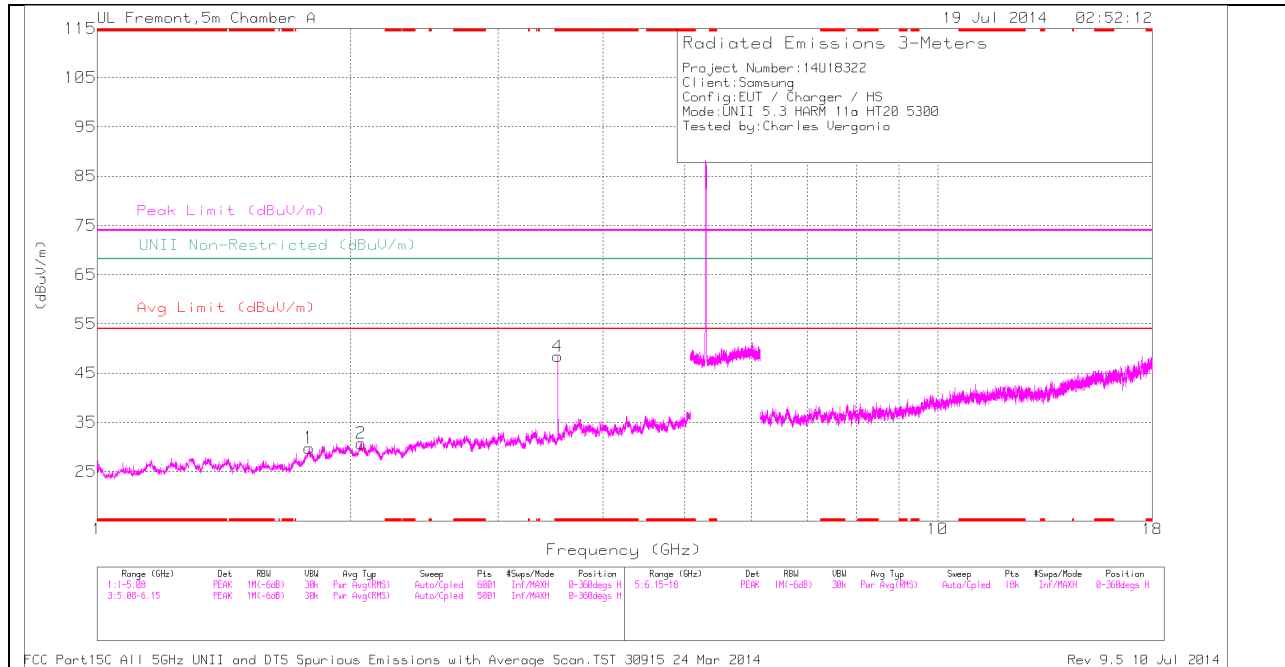
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.507	48.57	PK1	33.1	-31.8	0	49.87	-	-	74	-24.13	-	-	186	208	H
* 3.507	44.43	AD1	33.1	-31.8	.29	46.02	54	-7.98	-	-	-	-	186	208	H

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

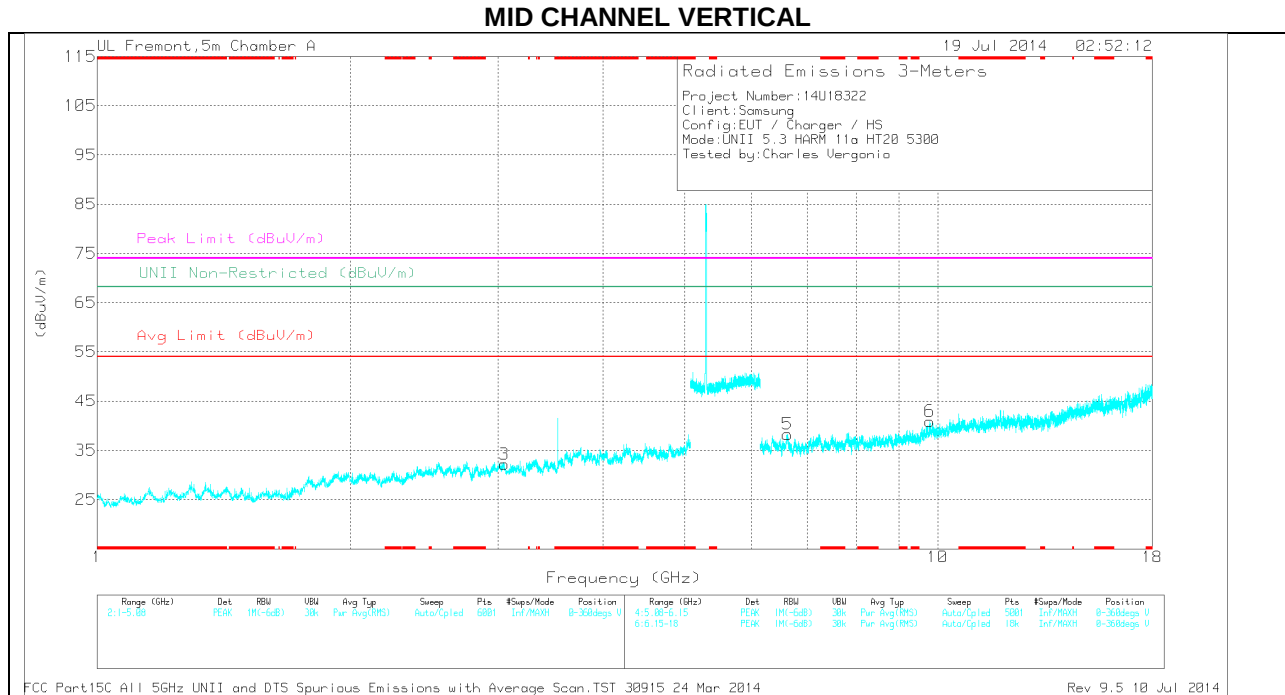
PK1 - KDB789033 Method: Peak

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.



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

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 3.534	46.99	PK	33.1	-31.7	0	48.39	-	-	74	-25.61	-	-	0-360	201	H
1	1.788	33.7	PK	30.4	-34.3	0	29.8	-	-	-	-	68.2	-38.4	0-360	201	H
2	2.061	33.72	PK	31.9	-34.9	0	30.72	-	-	-	-	68.2	-37.48	0-360	201	H
3	3.05	31.29	PK	32.8	-31.9	0	32.19	-	-	-	-	68.2	-36.01	0-360	201	V
5	6.627	28.66	PK	35.4	-25.8	0	38.26	-	-	-	-	68.2	-29.94	0-360	201	V
6	9.786	26.91	PK	36.9	-22.9	0	40.91	-	-	-	-	68.2	-27.29	0-360	100	V

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

PK - Peak detector

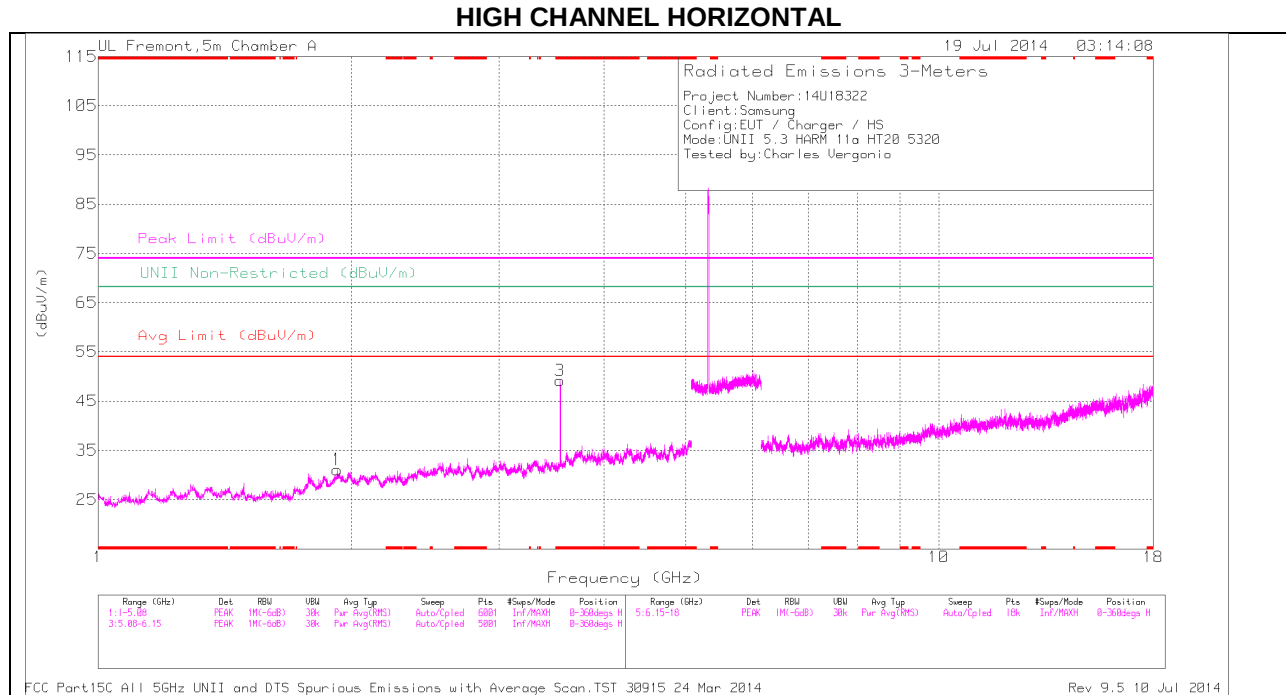
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
* 3.533	49.35	PK1	33.1	-31.7	0	50.75	-	-	74	-23.25	-	-	183	140	H
* 3.533	46.71	AD1	33.1	-31.7	.29	48.4	54	-5.6	-	-	-	-	183	140	H

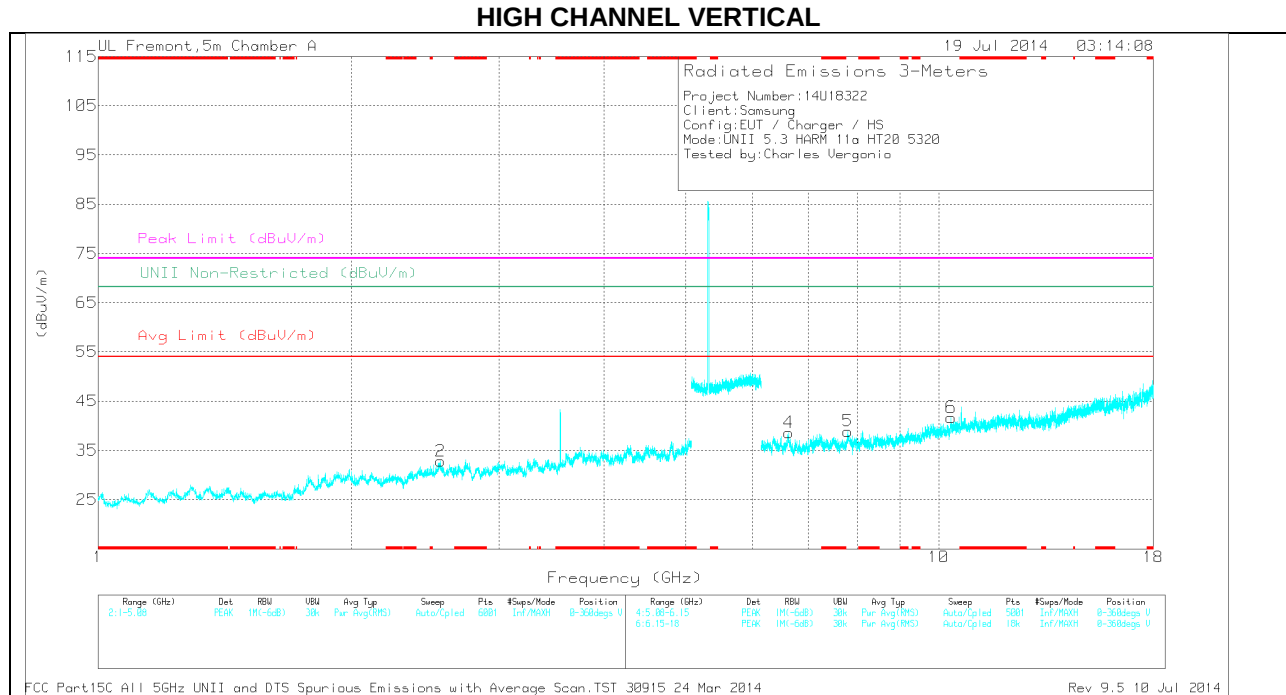
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average



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



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

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 3.547	47.34	PK	33.1	-31.3	0	49.14	-	-	74	-24.86	-	-	0-360	100	H
1	1.925	33.86	PK	31.8	-34.6	0	31.06	-	-	-	-	68.2	-37.14	0-360	100	H
2	2.554	32.73	PK	32.9	-32.8	0	32.83	-	-	-	-	68.2	-35.37	0-360	201	V
4	6.629	28.99	PK	35.4	-25.8	0	38.59	-	-	-	-	68.2	-29.61	0-360	100	V
5	7.797	28.59	PK	35.5	-25.2	0	38.89	-	-	-	-	68.2	-29.31	0-360	100	V
6	10.347	26.57	PK	37.3	-22.2	0	41.67	-	-	-	-	68.2	-26.53	0-360	100	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
* 3.547	49.43	PK1	33.1	-31.3	0	51.23	-	-	74	-22.77	-	-	184	170	H
* 3.547	47.04	AD1	33.1	-31.3	.29	49.13	54	-4.87	-	-	-	-	184	170	H

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

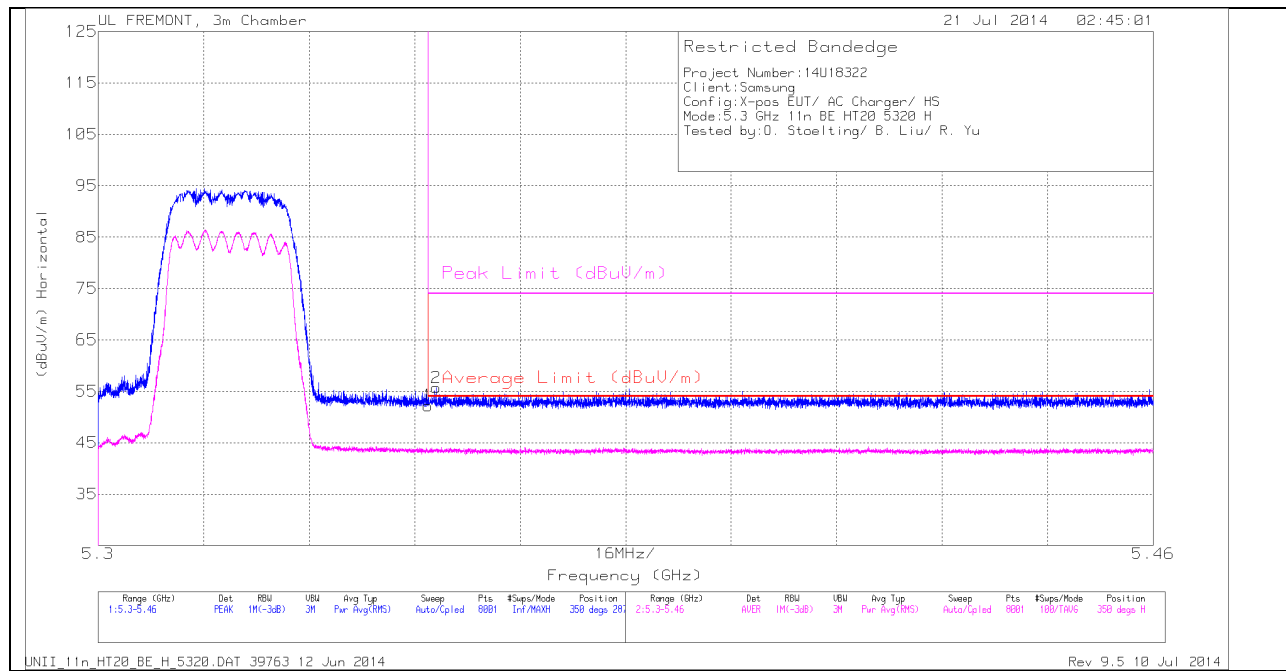
PK1 - KDB789033 Method: Peak

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)

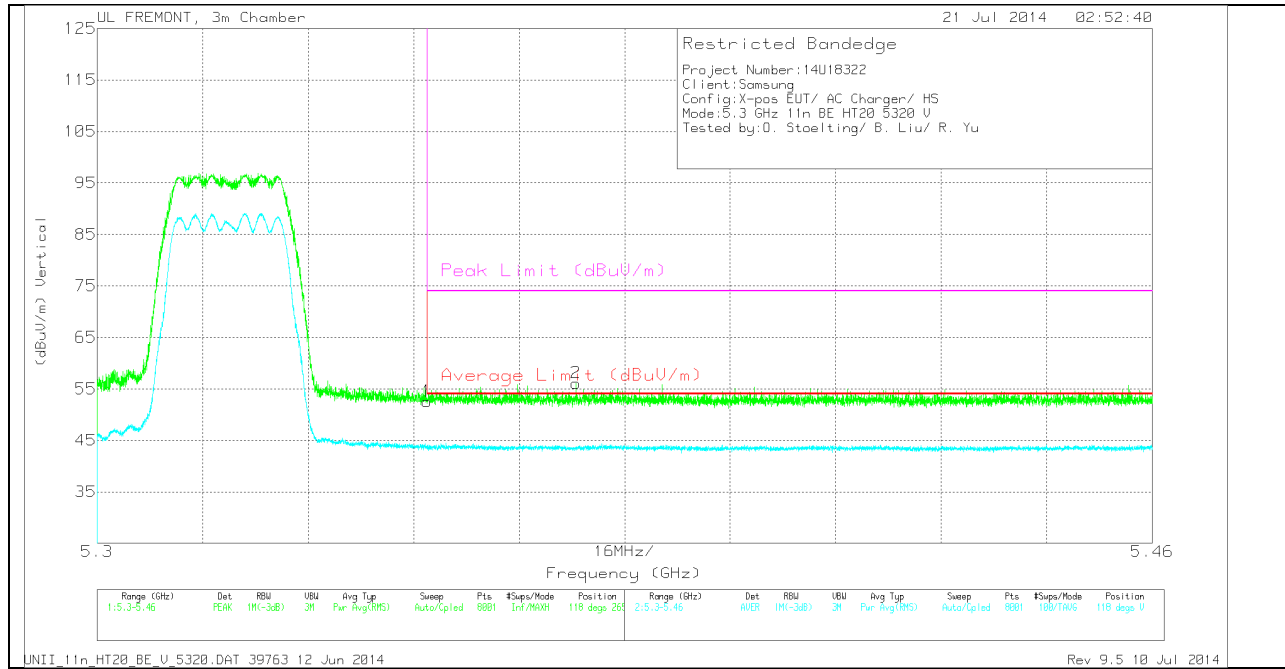
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	39.12	PK	34.5	-21.4	0	52.22	-	-	74	-21.78	350	287	H
3	5.35	29.85	RMS	34.5	-21.4	.33	43.28	54	-10.72	-	-	350	287	H
2	5.351	42.6	PK	34.5	-21.4	0	55.7	-	-	74	-18.3	350	287	H
4	5.417	30.55	RMS	34.7	-21.4	.33	44.18	54	-9.82	-	-	350	287	H

VERTICAL PEAK AND AVERAGE PLOT

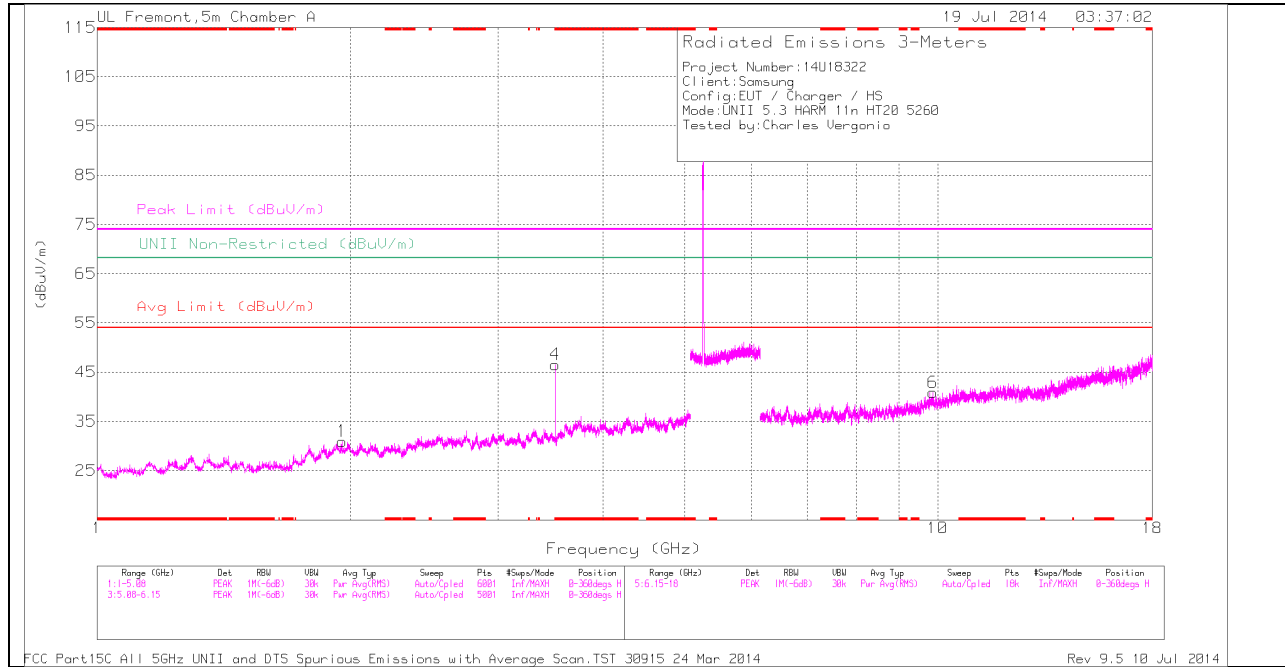


VERTICAL DATA

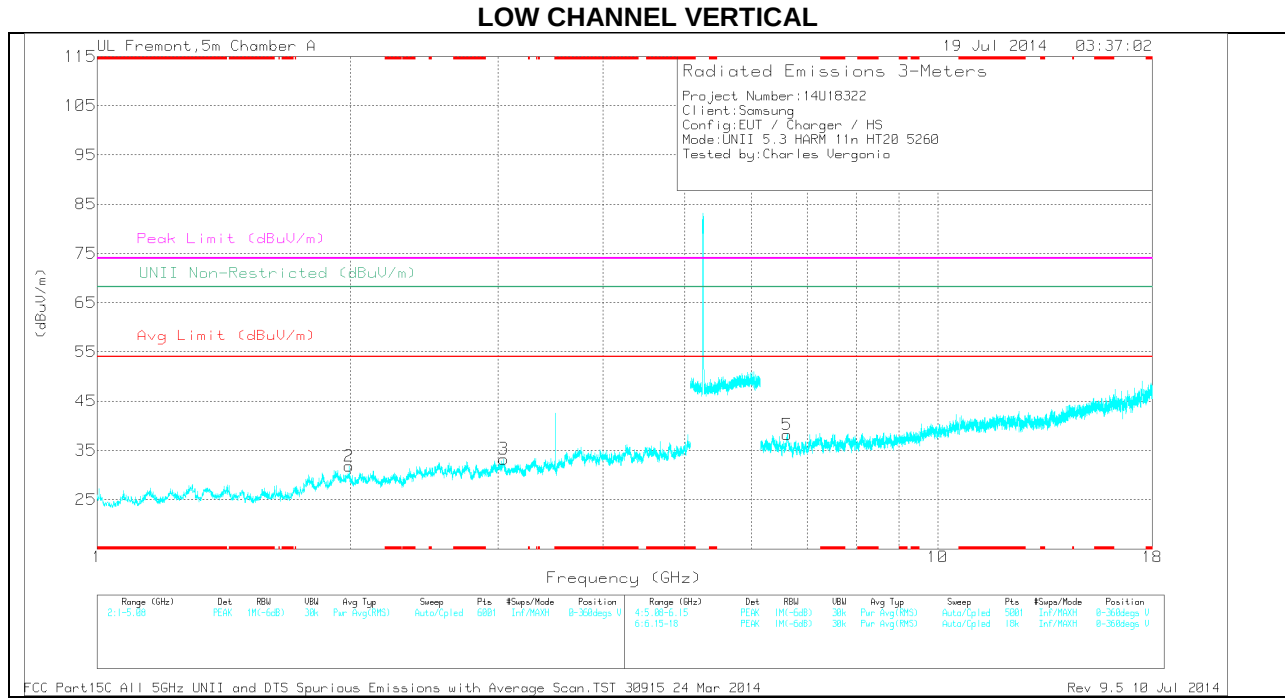
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.35	39.46	PK	34.5	-21.4	0	52.56	-	-	74	-21.44	118	265	V
3	5.35	30.27	RMS	34.5	-21.4	.33	43.7	54	-10.3	-	-	118	265	V
4	5.353	31.09	RMS	34.5	-21.4	.33	44.52	54	-9.48	-	-	118	265	V
2	5.373	43.03	PK	34.6	-21.5	0	56.13	-	-	74	-17.87	118	265	V

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.



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 T136 (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	* 3.506	46.18	PK	33.1	-31.8	0	47.48	-	-	74	-26.52	-	-	0-360	100	H
1	1.796	33.78	PK	30.5	-34.4	0	29.88	-	-	-	-	68.2	-38.32	0-360	100	H
2	1.932	34.22	PK	31.8	-34.6	0	31.42	-	-	-	-	68.2	-36.78	0-360	100	V
3	2.122	32.83	PK	31.6	-34.2	0	30.23	-	-	-	-	68.2	-37.97	0-360	100	V
5	6.625	28.72	PK	35.4	-25.8	0	38.32	-	-	-	-	68.2	-29.88	0-360	201	V
6	9.788	26.75	PK	36.9	-22.9	0	40.75	-	-	-	-	68.2	-27.45	0-360	201	V

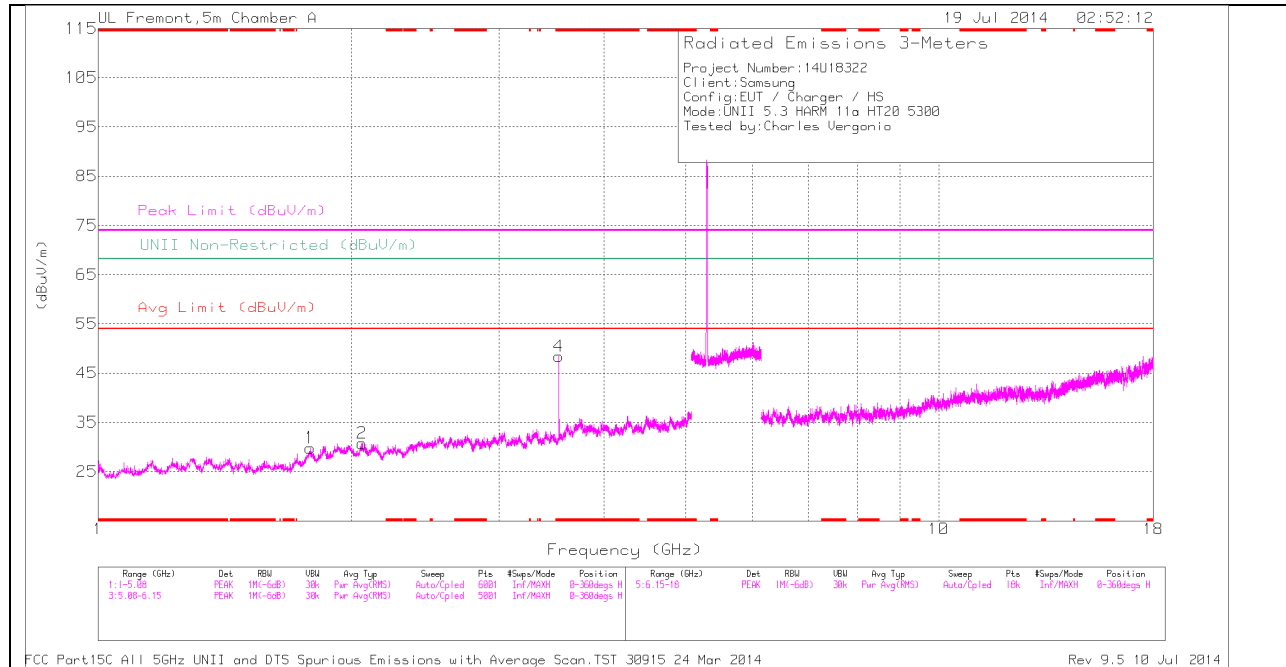
PK - Peak detector

RADIATED EMISSIONS

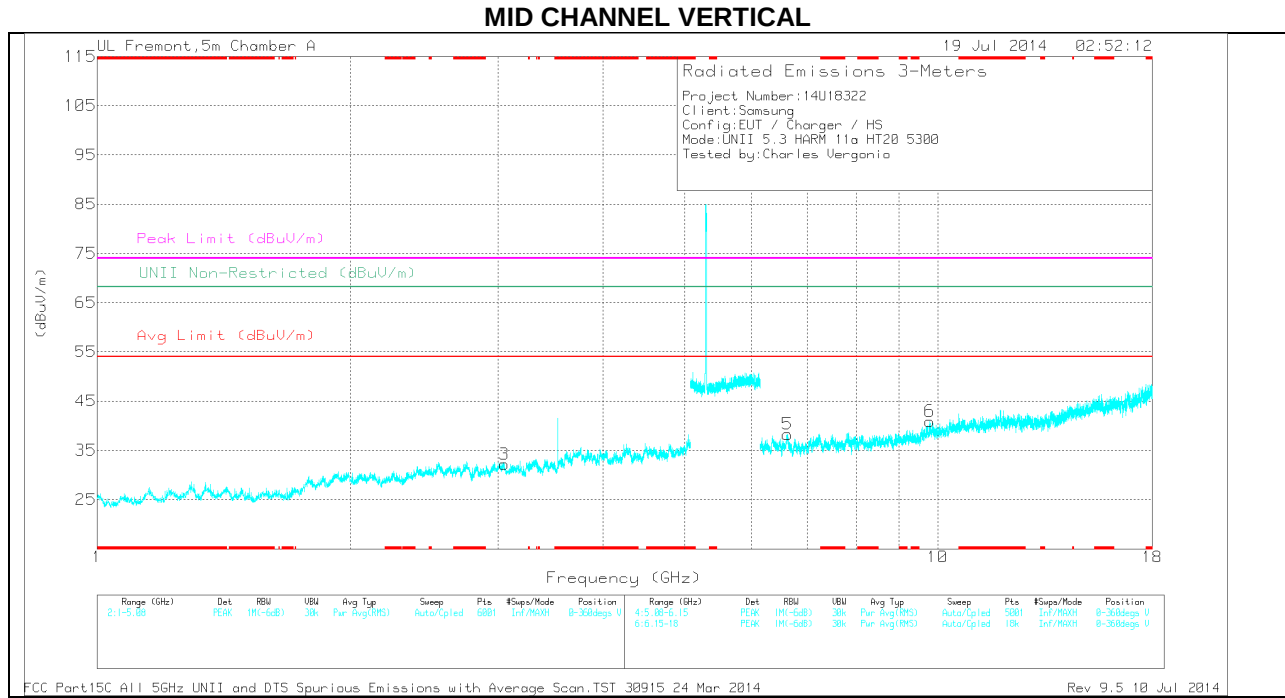
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.507	48.57	PK1	33.1	-31.8	0	49.87	-	-	74	-24.13	-	-	186	208	H
* 3.507	44.43	AD1	33.1	-31.8	.33	46.06	54	-7.94	-	-	-	-	186	208	H

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MID CHANNEL HORIZONTAL



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MID CHANNEL DATA

TRACE MARKERS

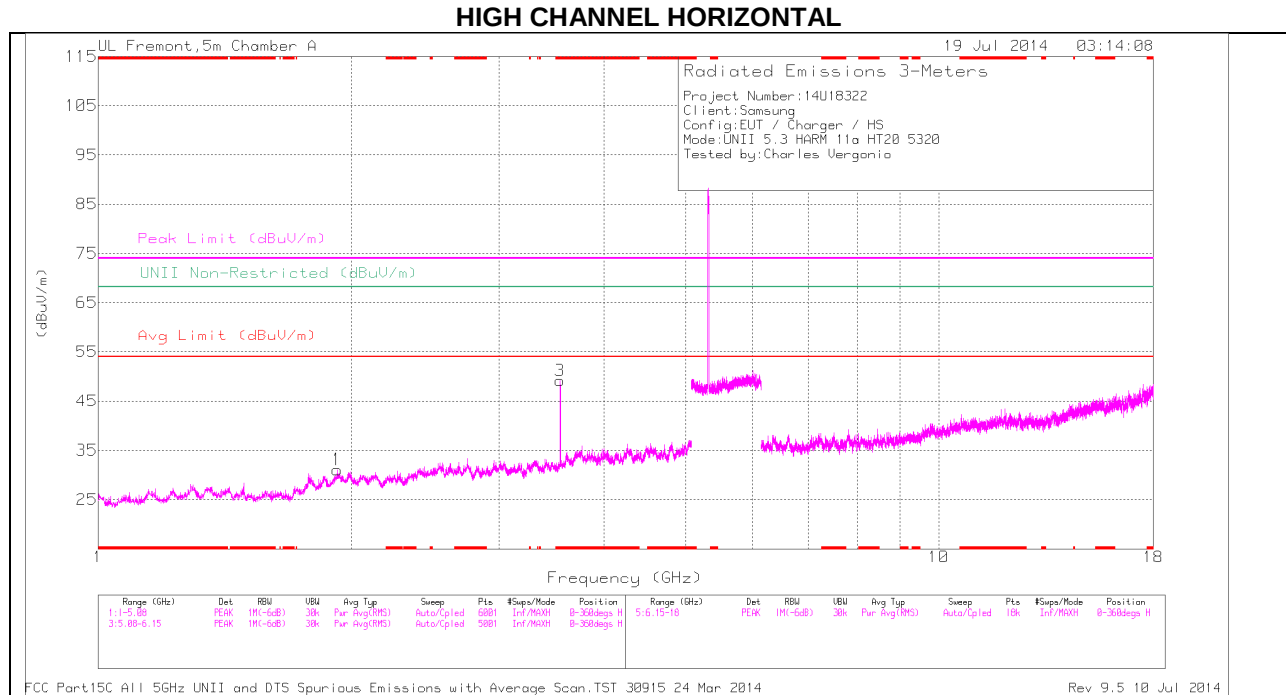
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 3.534	46.99	PK	33.1	-31.7	0	48.39	-	-	74	-25.61	-	-	0-360	201	H
1	1.788	33.7	PK	30.4	-34.3	0	29.8	-	-	-	-	68.2	-38.4	0-360	201	H
2	2.061	33.72	PK	31.9	-34.9	0	30.72	-	-	-	-	68.2	-37.48	0-360	201	H
3	3.05	31.29	PK	32.8	-31.9	0	32.19	-	-	-	-	68.2	-36.01	0-360	201	V
5	6.627	28.66	PK	35.4	-25.8	0	38.26	-	-	-	-	68.2	-29.94	0-360	201	V
6	9.786	26.91	PK	36.9	-22.9	0	40.91	-	-	-	-	68.2	-27.29	0-360	100	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
* 3.533	49.35	PK1	33.1	-31.7	0	50.75	-	-	74	-23.25	-	-	183	140	H
* 3.533	46.71	AD1	33.1	-31.7	.33	48.8	54	-5.2	-	-	-	-	183	140	H

FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013



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