FCC 47 CFR PART 15 SUBPART E

CERTIFICATION TEST REPORT

FOR

802.11 a/b/g/n WLAN, BT 2.1 and RF4CE SATELLITE SETTOP BOX

MODEL NUMBER: ID:075

FCC ID: DKNCB1138

REPORT NUMBER: 13U16072-4 Revision A

ISSUE DATE: OCTOBER 23, 2013

Prepared for

ECHOSTAR
90 INVERNESS CIRCLE EAST
ENGLEWOOD, CO 80112, U.S.A.

Prepared by
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	10/14/13	Initial Issue	T. Chan
A	10/23/13	Update to KDB version reference	T. Chan

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: ECHOSTAR CORPORATION
90 INVERNESS CIRCLE EAST
ENGLEWOOD, CO 80112, U.S.A.

EUT DESCRIPTION: 802.11 a/b/g/n WLAN, BT 2.1 and RF4CE Satellite SetTop Box

MODELNUMBER: ID:075

SERIAL NUMBER: 200101R01292Y00107H (Conducted), 200101R01292Y0110H (Radiated)

DATE TESTED: SEPTEMBER 26 – OCTOBER 14, 2013

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.

Approved & Released For
UL Verification Services Inc. By:

THU CHAN
WiSE Operations Manager
UL Verification Services Inc.

Tested By:

OLIVER SU
WiSE ENGINEER
UL Verification Services Inc..

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC 06-96, FCC KDB 789033, and ANSI C63.10-2009.

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://www.UL.com.

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 1000 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 an 802.11 a/b/g/n WLAN, BT 2.1 and RF4CE Satellite SetTop Box operates in the 2400-2483.5MHz, 5150-5250MHz and 5725-5825 bands.

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 SISO	12.37	17.26
5180 - 5240	802.11a 2TX CDD	12.86	19.32
5180 - 5240	802.11n HT20 SISO	13.84	24.21
5180 - 5240	802.11n HT20 2TX CDD	13.51	22.44
5190 - 5230	802.11n HT40 SISO	10.54	11.32
5190 - 5230	802.11n HT40 2TX CDD	13.90	24.55

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

Frequency Band (GHz)	Antenna Gain		Uncorrelated Gain	Correlated Gain
	Tx1	Tx2		
5.2	3.20	1.80	**2.56**	**5.54**

5.4. SOFTWARE AND FIRMWARE

The test utility software used during testing was SW0906 v.1

5.5. WORST-CASE CONFIGURATION AND MODE

The EUT supports only one orientation; therefore, X orientation (Lay down) was investigated and is considered the worst case.

Based on the baseline investigation,the worst-case were as followed:

802.11a SISO mode: 6 Mbps
802.11a 2TX CDD mode, MCS0
802.11n HT20 SISO mode, MCS0
802.11n HT20 2TX CDD mode: MCS0
802.11n HT40 SISO mode, MCS0
802.11n HT40 2TX CDD mode: MCS0

Worst-case mode and channel used for 30-1000 MHz radiated and power line conducted emissions was the mode and channel with the highest output power.

For all modes with two chains, CDD was selected per the software provided by the client. Based on the testing of the two chains, chain 1 was found to be worst-case for the antenna port. The radiated emissions test was based on the port with the higher antenna gain.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	HP	8570W	NA	DoC
AC Adapter	HP	HSTNN-DA25	WBXYE0AAR3A168	DoC
Remote Control	Echostar	21.0 IR/UHF PRO	158925	DKNFSK03

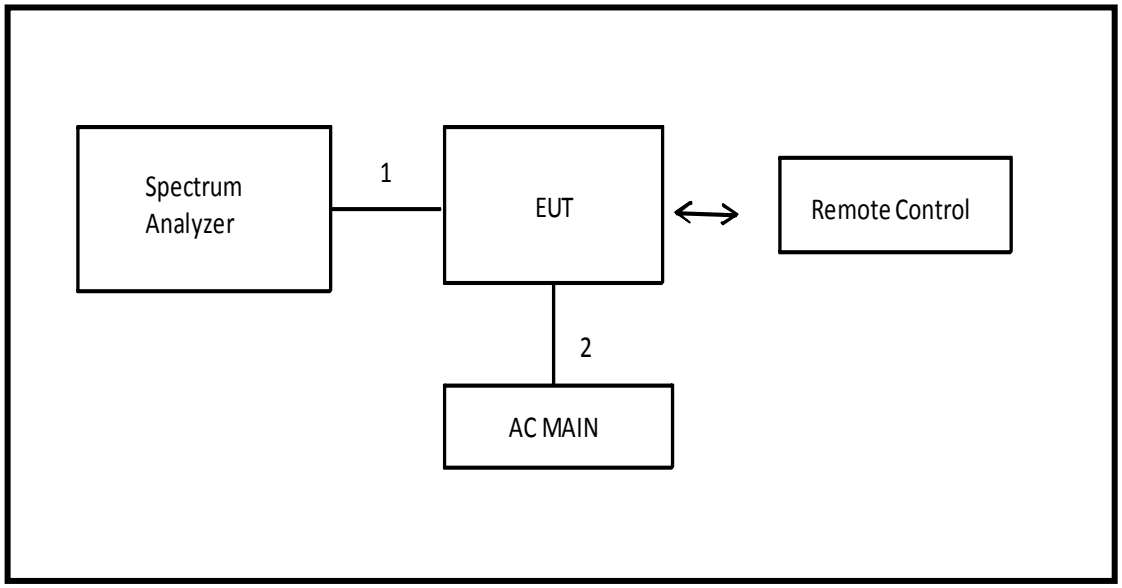
I/O CABLES (CONDUCTED TEST)

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	Antenna	1	SMA	Un-Shielded	0.1m	To Spectrum Analyzer
2	AC	1	US115V	Un-Shielded	1.2m	NA

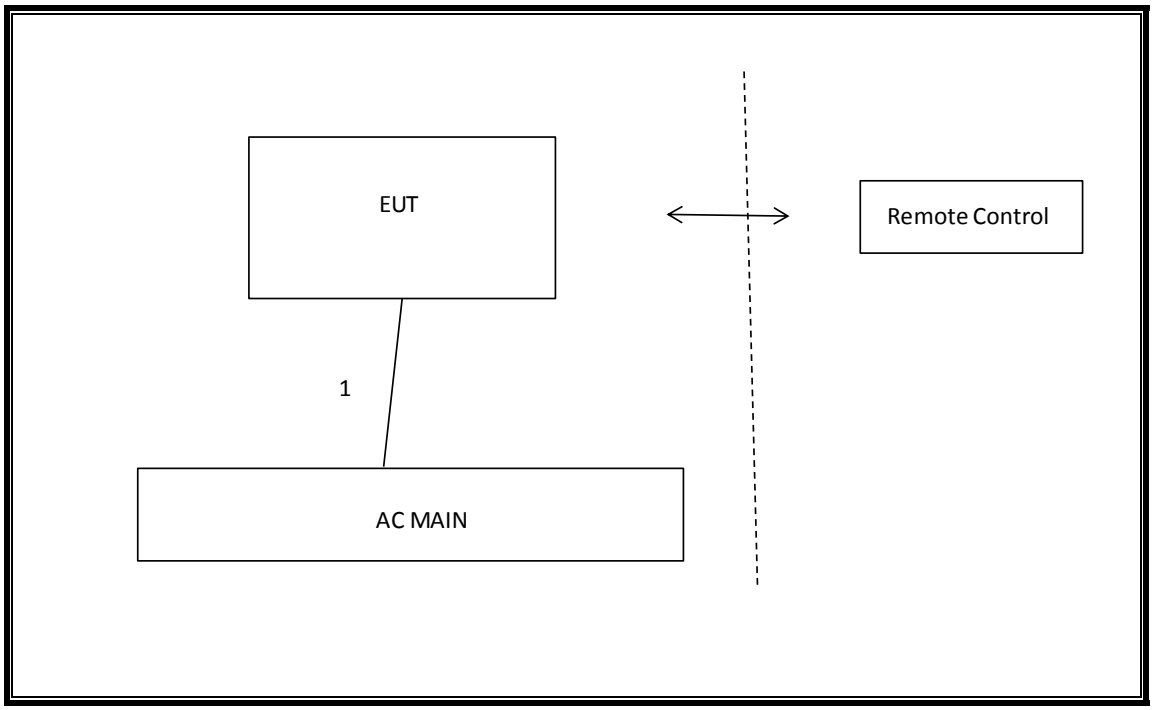
CABLES (RADIATED TEST)

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	Audio	1	Jack	Un-Shielded	0.5m	NA

SETUP DIAGRAM FOR CONDUCTED TEST



SETUP DIAGRAM FOR RADIATED TEST



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**
Horn Antenna 1-18GHz	ETS Lindgren	3117	F00131	02/19/14
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00580	01/28/14
Antenna, Horn, 26.5 GHz	ARA	SWH-28	C01015	05/06/14
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB3	F00027	03/07/14
Peak / Average Power Sensor	Agilent / HP	E9323A	F00163	04/03/14
P-Series single channel Power Meter	Agilent / HP	N1911A	F00164	04/03/14
Spectrum Analyzer, 3Hz-44GHz	Agilent	N9030A	F00127	02/22/14
Spectrum Analyzer, 40 GHz	Agilent / HP	8564E	C00951	07/29/14
PreApmplifier, 1-26.5GHz	Agilent	8449B	C01052	10/22/13
Antenna, Horn, 40 GHz	ARA	MWH-2640/B	F00194	05/14/14
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/15/14
Preamplifier, 40 GHz	Miteq	NSP4000-SP2	C00990	08/20/14

7. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

7.1.1. MEASUREMENT METHOD FOR POWER AND PPSD

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

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

The Duty Cycle is less than 98% and not consistent therefore KDB 789033 Method SA-3 Alternative with Power RMS Averaging is used.

7.1.2. MEASUREMENT METHOD FOR AVERAGE SPURIOUS EMISSIONS ABOVE 1 GHz

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

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

The Duty Cycle is less than 98% and not consistent therefore KDB 789033 Method VB with Power RMS Averaging is used.

7.1.3. ON TIME AND DUTY CYCLE RESULTS

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

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 SISO	2.064	2.167	0.952	95.2%	0.21	0.484
802.11a 2TX CDD	2.064	2.169	0.952	95.2%	0.22	0.484
802.11n HT20 SISO	1.908	2.007	0.951	95.1%	0.22	0.524
802.11n HT20 2TX CDD	1.899	1.999	0.950	95.0%	0.22	0.527
802.11n HT40 SISO	0.928	1.032	0.899	89.9%	0.46	1.078
802.11n HT40 2TX CDD	0.922	1.029	0.896	89.6%	0.48	1.084

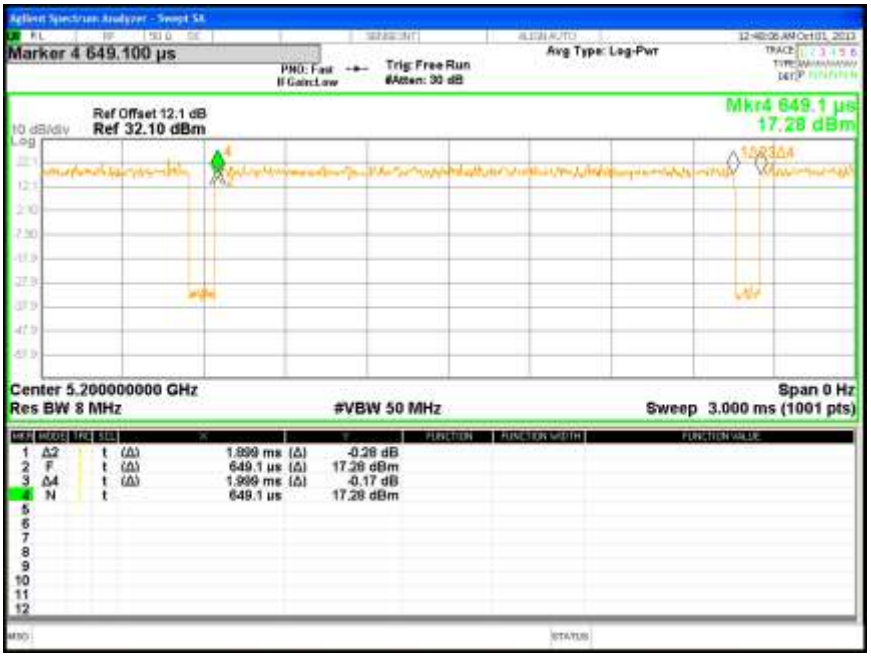
7.2. DUTY CYCLE PLOTS

DUTY CYCLE 802.11a SISO MODE

DUTY CYCLE 802.11a 2TX CDD MODE

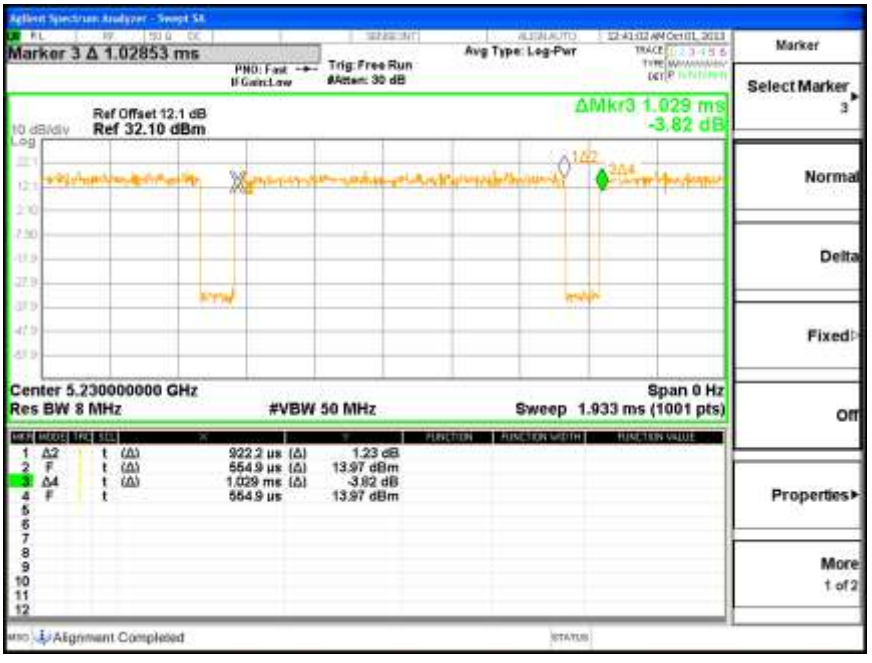
DUTY CYCLE 802.11n HT20 SISO MODE

DUTY CYCLE 802.11n HT20 2TX CDD MODE



DUTY CYCLE 802.11n HT40 SISO MODE

DUTY CYCLE 802.11n HT40 2TX CDD MODE



8. ANTENNA PORT TEST RESULTS

8.1. 802.11a SISO MODE IN THE 5.2 GHz BAND

8.1.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	19.200
Mid	5200	19.035
High	5240	19.200

26 dB BANDWIDTH

BANDWIDTH LOW CH

BANDWIDTH MID CH

BANDWIDTH HIGH CH

8.1.2. 99% BANDWIDTH

LIMITS

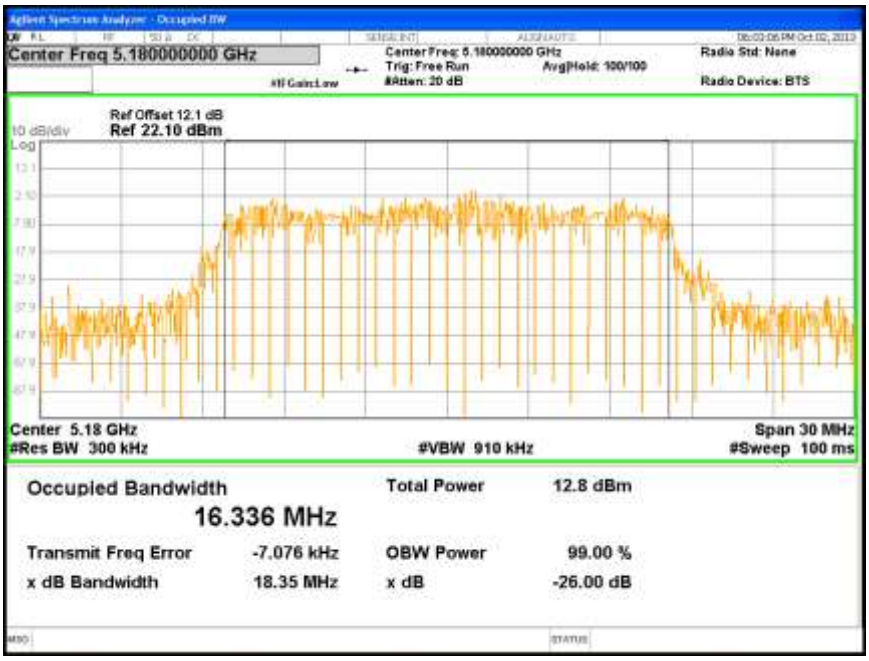
None; for reporting purposes only.

RESULTS

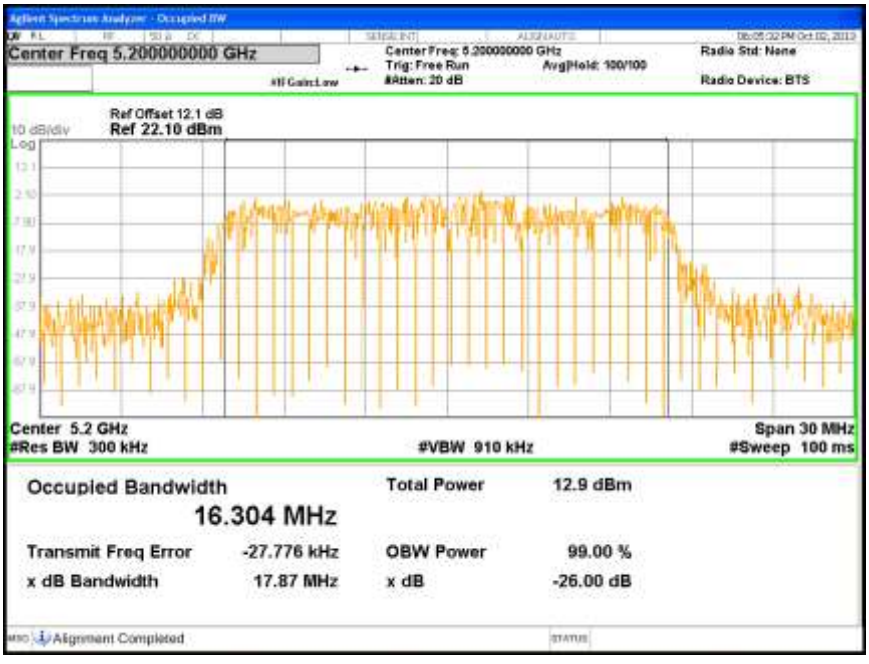
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	16.336
Mid	5200	16.304
High	5240	16.406

99% BANDWIDTH

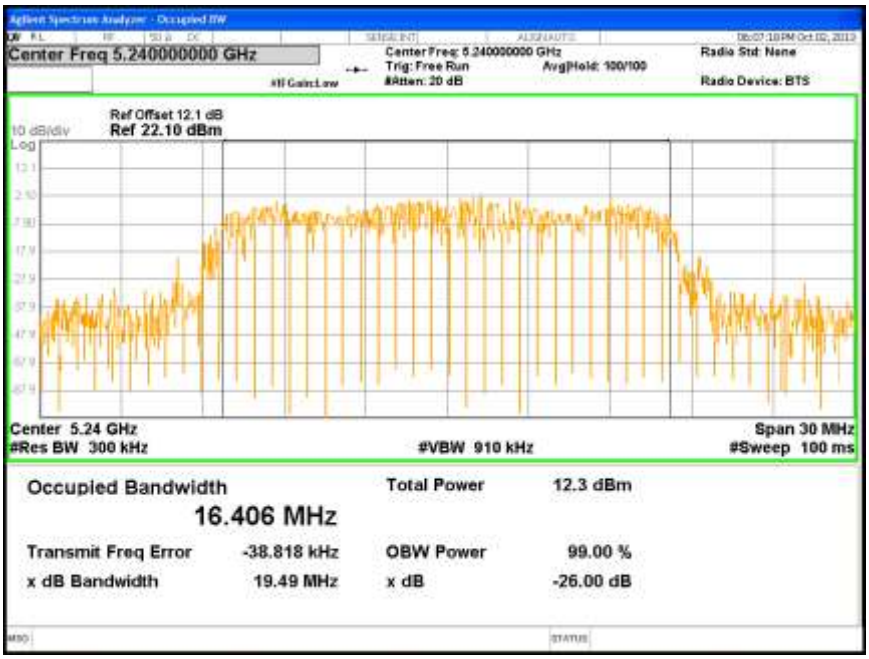
BANDWIDTH LOW CH



BANDWIDTH MID CH



BANDWIDTH HIGH CH



8.1.3. 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 12.1 dB (including 10 dB pad and 2.1dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5180	11.95
Mid	5200	12.04
High	5240	11.97

8.1.4. OUTPUT POWER AND PSD

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 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.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	19.200	16.340	3.20
Mid	5200	19.040	16.300	3.20
High	5240	19.200	16.410	3.20

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm)	IC eirp PSD Limit (dBm)	PSD Limit (dBm)
Low	5180	16.83	22.13	18.93	16.83	4.00	10.00	4.00
Mid	5200	16.80	22.12	18.92	16.80	4.00	10.00	4.00
High	5240	16.83	22.15	18.95	16.83	4.00	10.00	4.00

Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	11.983	12.19	16.83	-4.64
Mid	5200	12.164	12.37	16.80	-4.42
High	5240	12.123	12.33	16.83	-4.50

PSD Results

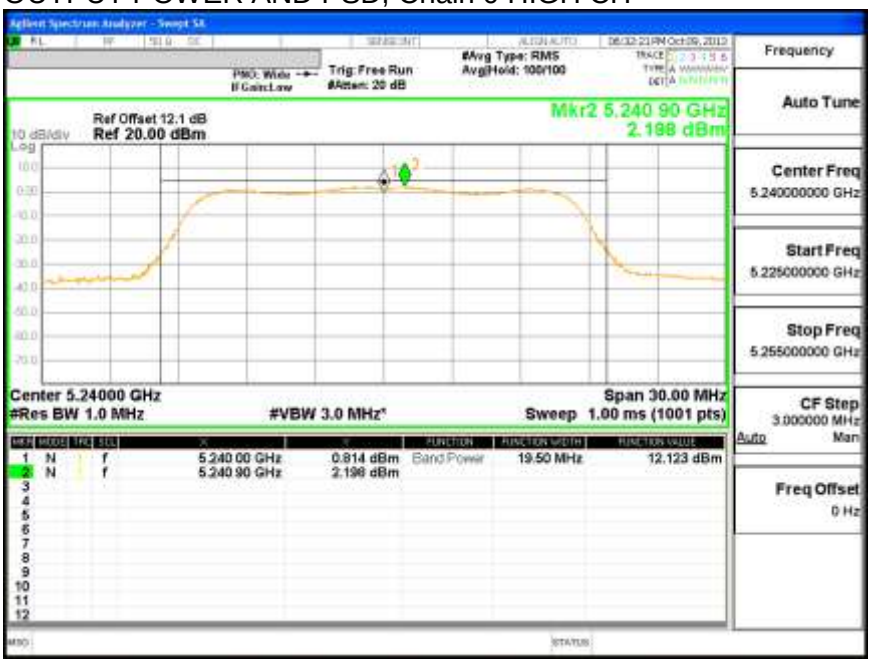
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	1.980	2.19	4.00	-1.81
Mid	5200	2.559	2.77	4.00	-1.23
High	5240	2.198	2.41	4.00	-1.59

OUTPUT POWER AND PSD, Chain 0

OUTPUT POWER AND PSD, Chain 0 LOW CH

OUTPUT POWER AND PSD, Chain 0 MID CH

OUTPUT POWER AND PSD, Chain 0 HIGH CH



8.1.5. 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

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	10.93	2.56	0.21	8.16	13	-4.84

PEAK EXCURSION

PEAK EXCURSION MID CH

8.2. 802.11n 2TX CDD MODE IN THE 5.2 GHz BAND

8.2.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5180	19.320	19.650
Mid	5200	19.185	19.050
High	5240	19.170	19.250

26 dB BANDWIDTH, Chain 0

BANDWIDTH Chain 0 LOW CH

BANDWIDTH Chain 0 MID CH

BANDWIDTH Chain 0 HIGH CH

26 dB BANDWIDTH, Chain 1

BANDWIDTH Chain 1 LOW CH

BANDWIDTH Chain 1 MID CH

BANDWIDTH Chain 1 HIGH CH

8.2.2. 99% BANDWIDTH

LIMITS

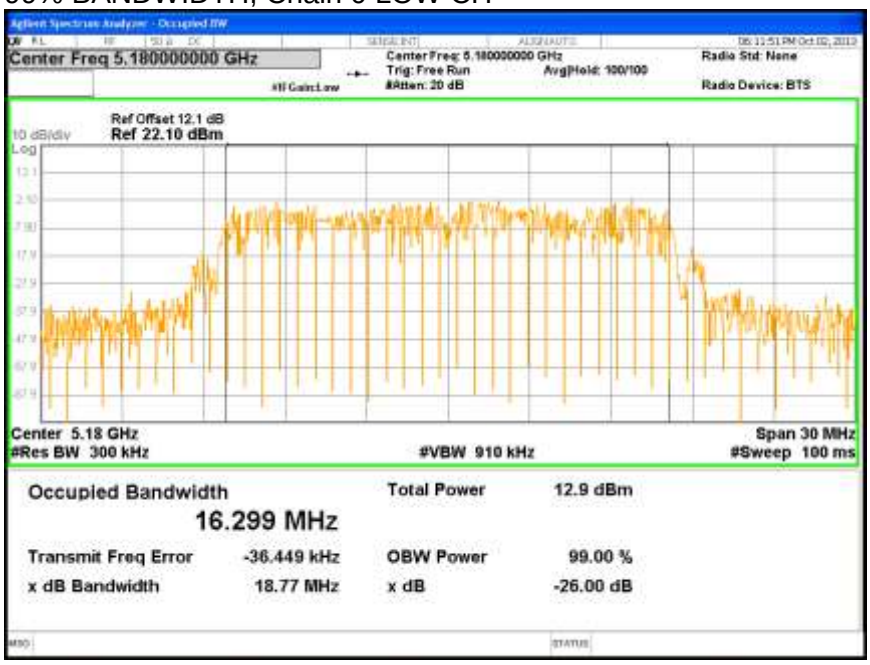
None; for reporting purposes only.

RESULTS

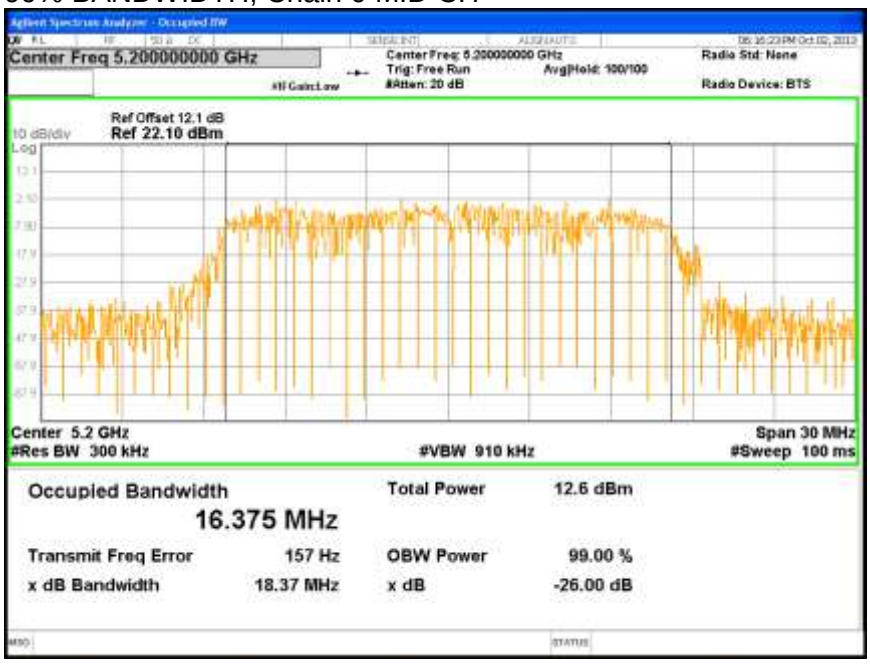
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5180	16.299	16.398
Mid	5200	16.335	16.375
High	5240	16.424	16.337

99% BANDWIDTH, Chain 0

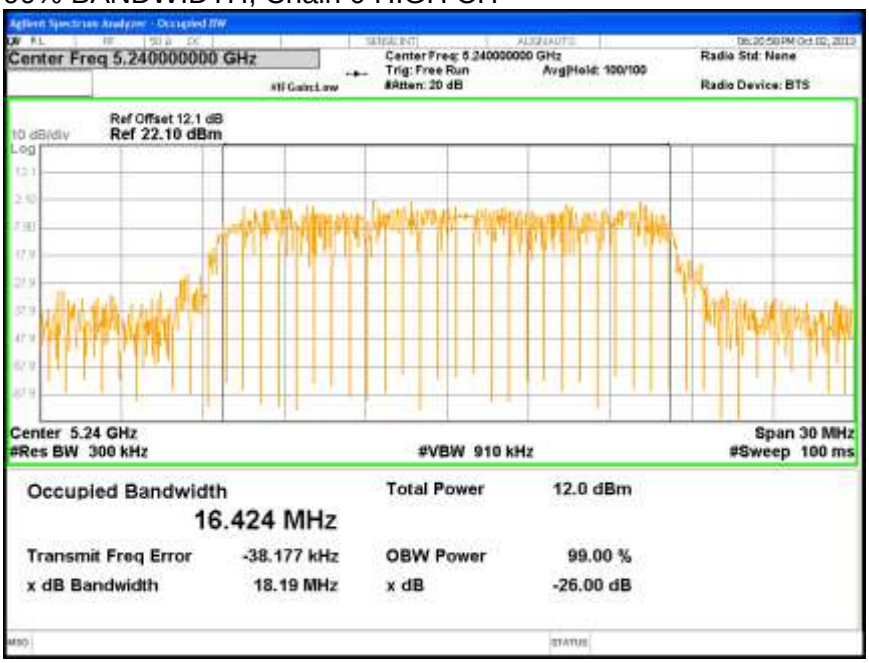
99% BANDWIDTH, Chain 0 LOW CH



99% BANDWIDTH, Chain 0 MID CH

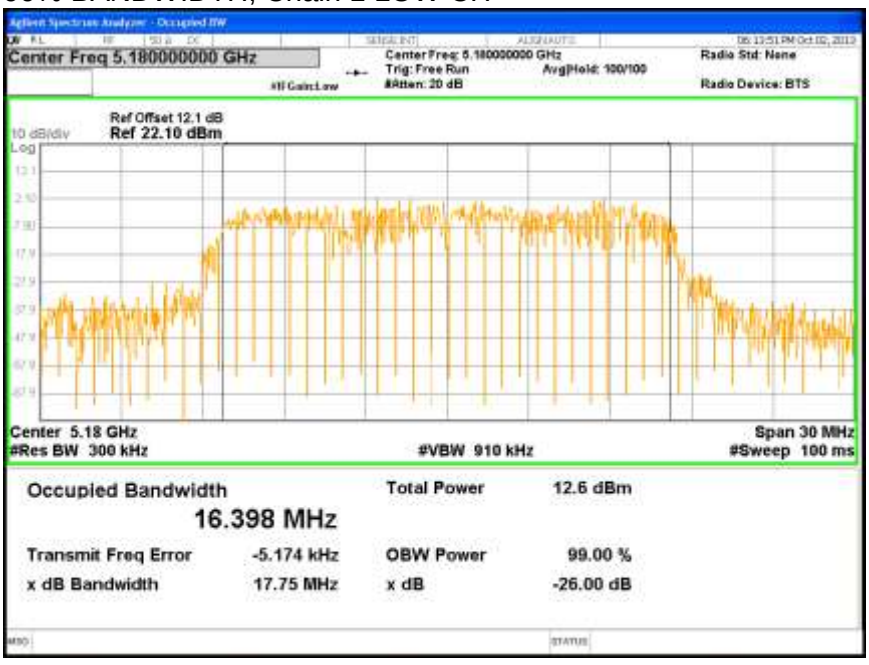


99% BANDWIDTH, Chain 0 HIGH CH

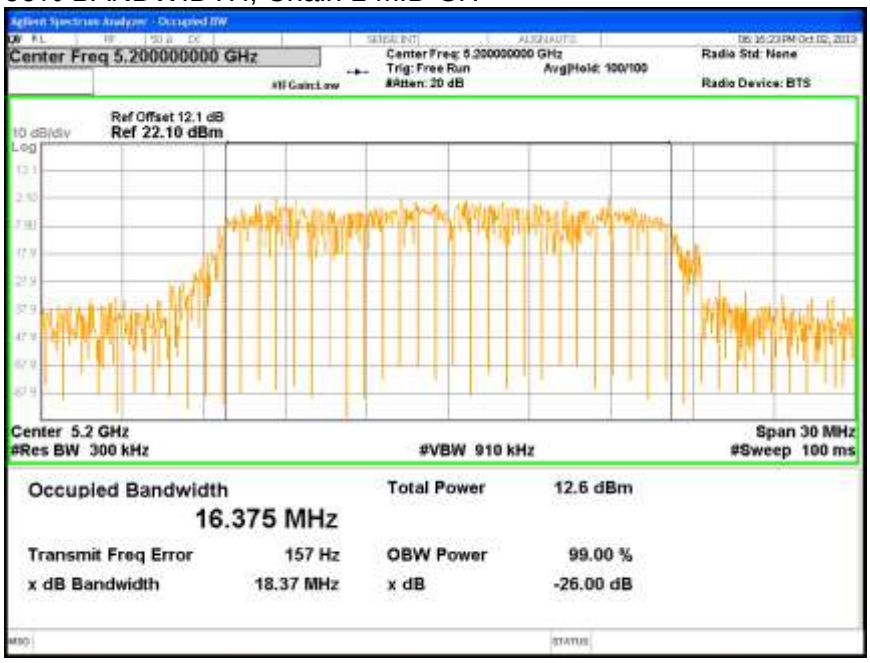


99% BANDWIDTH, Chain 1

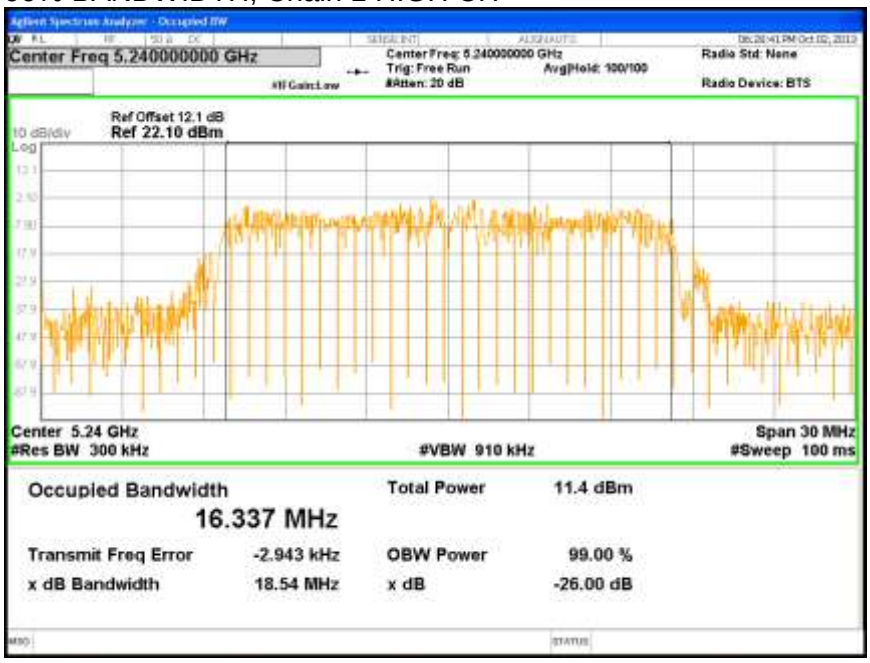
99% BANDWIDTH, Chain 1 LOW CH



99% BANDWIDTH, Chain 1 MID CH



99% BANDWIDTH, Chain 1 HIGH CH



8.2.3. 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 12.1 dB (including 10 dB pad and 2.1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5180	9.15	9.73	12.46
Mid	5200	9.13	9.08	12.12
High	5240	9.10	9.23	12.18

8.2.4. 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 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.

DIRECTIONAL ANTENNA GAIN

For output power, the TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
3.20	1.80	2.56

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
3.20	1.80	**5.54**

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Uncorrelated Directional Gain (dBi)	Correlated Directional Gain (dBi)
Low	5180	19.320	16.299	2.56	5.54
Mid	5200	19.050	16.335	2.56	5.54
High	5240	19.170	16.337	2.56	5.54

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	16.86	22.12	19.56	16.86	4.00	10.00	4.00
Mid	5200	16.80	22.13	19.57	16.80	4.00	10.00	4.00
High	5240	16.83	22.13	19.57	16.83	4.00	10.00	4.00

Duty Cycle CF (dB)	0.22	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	5180	9.284	9.959	12.86	16.86	-4.00
Mid	5200	9.377	9.183	12.51	16.80	-4.29
High	5240	9.300	9.308	12.53	16.83	-4.29

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	-0.636	0.330	3.10	4.00	-0.90
Mid	5200	-0.603	-0.650	2.60	4.00	-1.40
High	5240	-0.445	-0.674	2.67	4.00	-1.33

OUTPUT POWER AND PPSD, Chain 0

OUTPUT POWER AND PPSD, Chain 0 LOW CH

OUTPUT POWER AND PPSD, Chain 0 MID CH

OUTPUT POWER AND PPSD, Chain 0 HIGH CH

OUTPUT POWER AND PPSD, Chain 1

OUTPUT POWER AND PPSD, Chain 1 LOW CH

OUTPUT POWER AND PPSD, Chain 1 MID CH

OUTPUT POWER AND PPSD, Chain 1 HIGH CH

8.2.5. 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

Chain 0

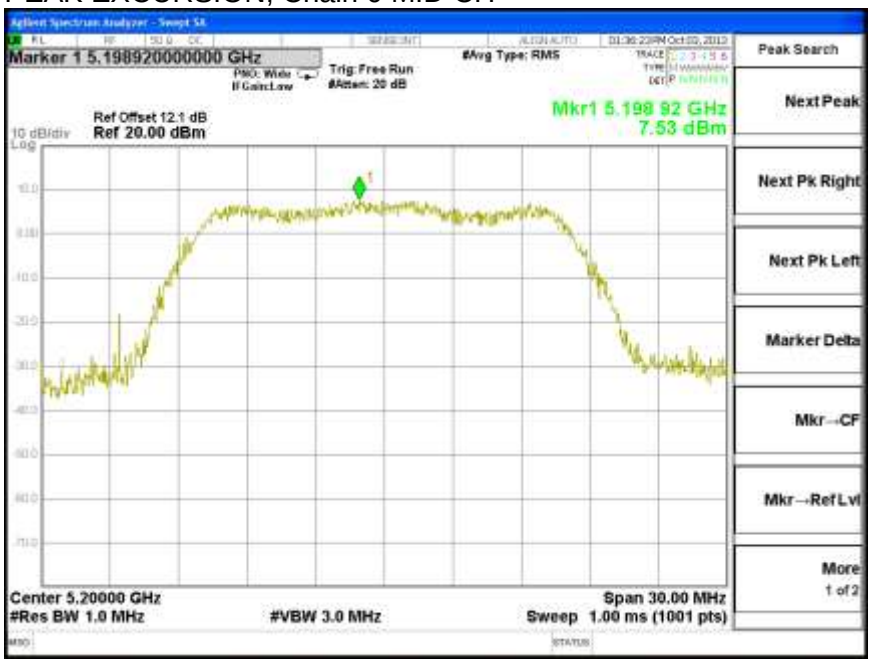
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	7.53	-0.60	0.22	7.91	13	-5.09

Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	7.35	-0.65	0.22	7.78	13	-5.22

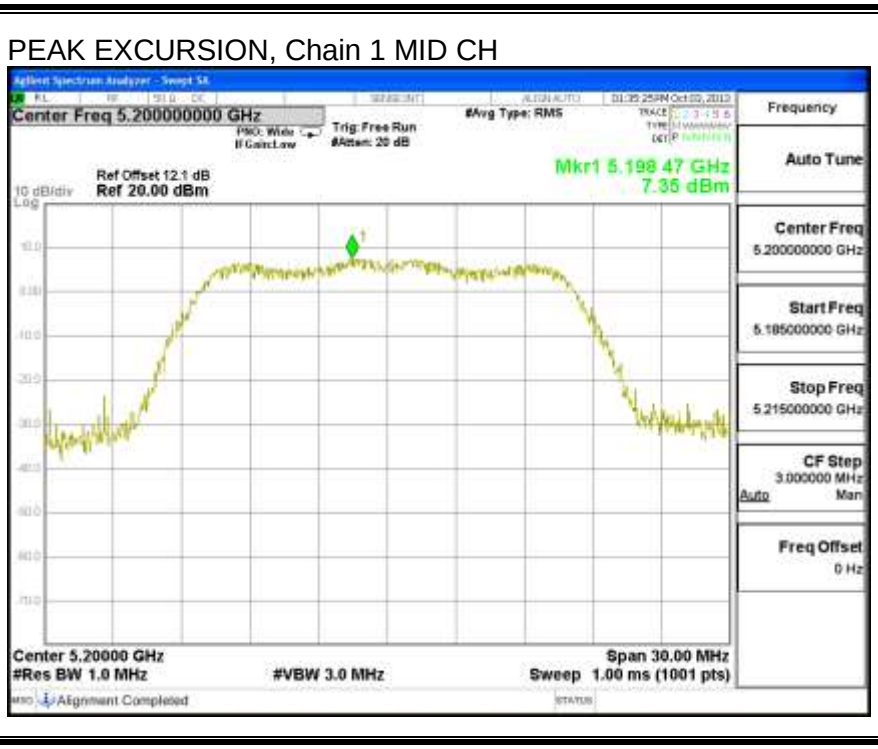
PEAK EXCURSION, Chain 0

PEAK EXCURSION, Chain 0 MID CH



PEAK EXCURSION, Chain 1

PEAK EXCURSION, Chain 1 MID CH



8.3. 802.11n HT20 SISO MODE IN THE 5.2 GHz BAND

8.3.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	19.530
Mid	5200	19.455
High	5240	19.410

26 dB BANDWIDTH

BANDWIDTH LOW CH

BANDWIDTH MID CH

BANDWIDTH HIGH CH

8.3.2. 99% BANDWIDTH

LIMITS

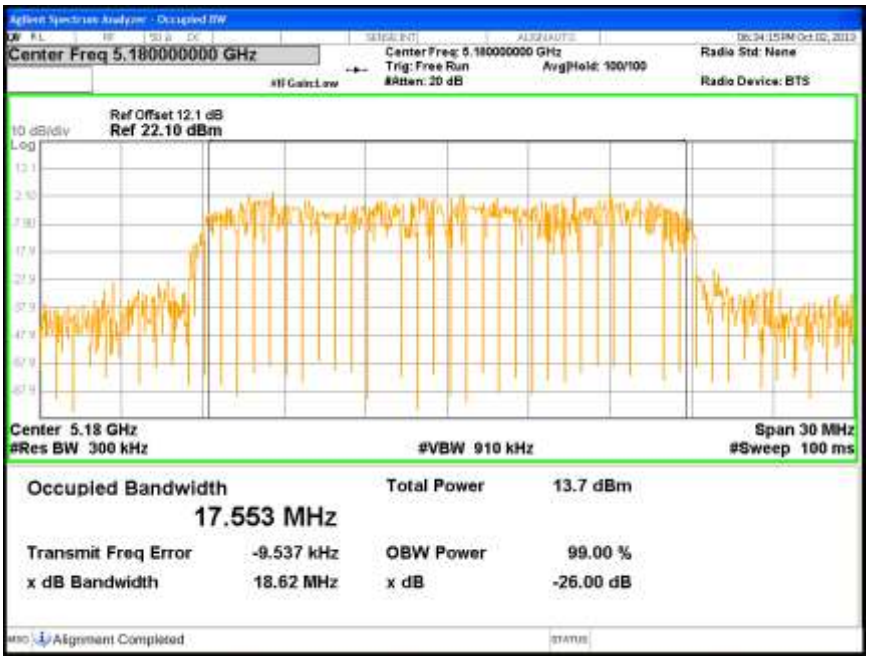
None; for reporting purposes only.

RESULTS

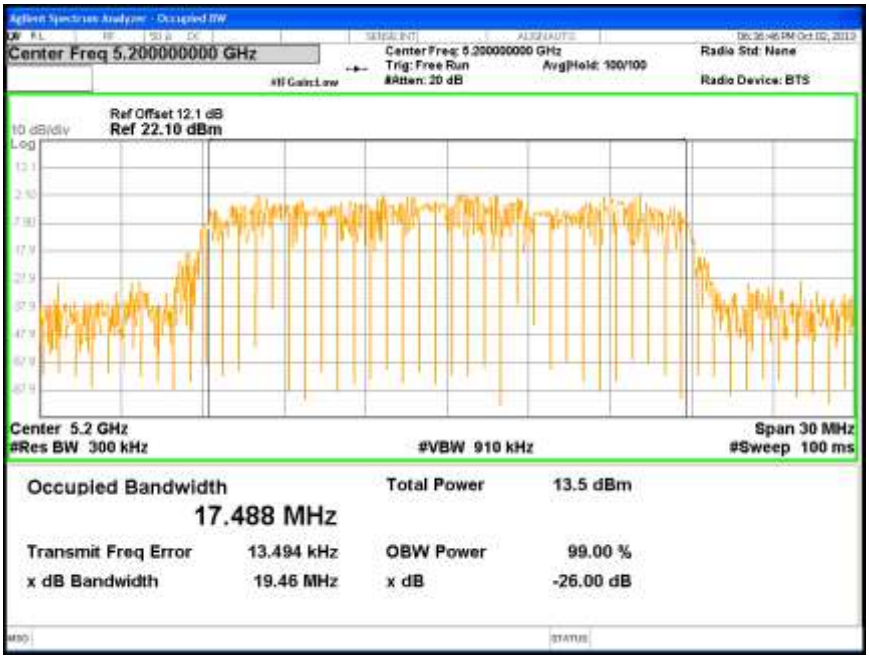
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	17.553
Mid	5200	17.488
High	5240	17.508

99% BANDWIDTH

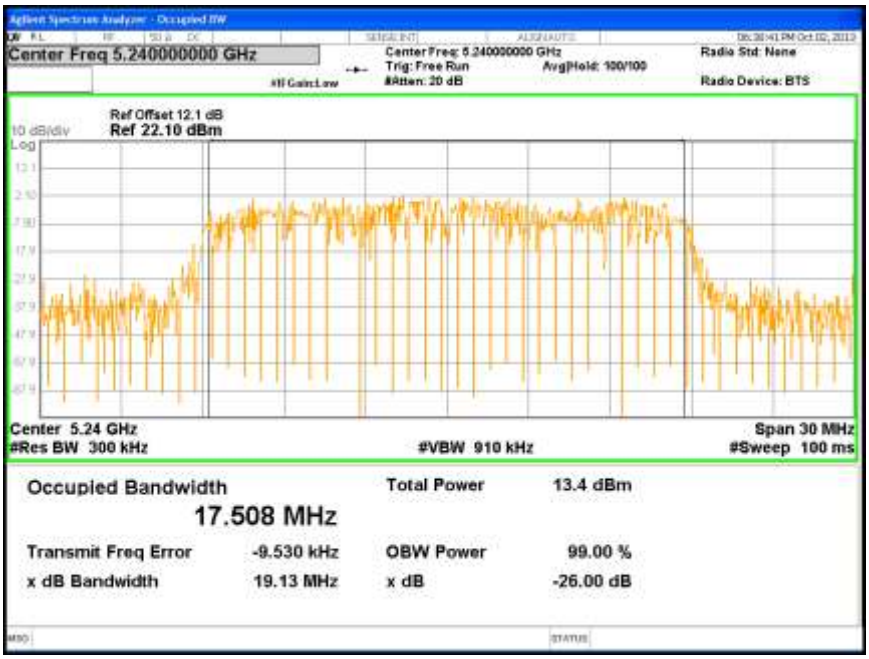
BANDWIDTH LOW CH



BANDWIDTH MID CH



BANDWIDTH HIGH CH



8.3.3. 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 12.1 dB (including 10 dB pad and 2.1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5180	12.84
Mid	5200	12.91
High	5240	12.78

8.3.4. OUTPUT POWER AND PSD

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 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.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	19.530	17.550	3.20
Mid	5200	19.460	17.488	3.20
High	5240	19.410	17.510	3.20

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm)	IC eirp PSD Limit (dBm)	PSD Limit (dBm)
Low	5180	16.91	22.44	19.24	16.91	4.00	10.00	4.00
Mid	5200	16.89	22.43	19.23	16.89	4.00	10.00	4.00
High	5240	16.88	22.43	19.23	16.88	4.00	10.00	4.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PSD

Output Power Results

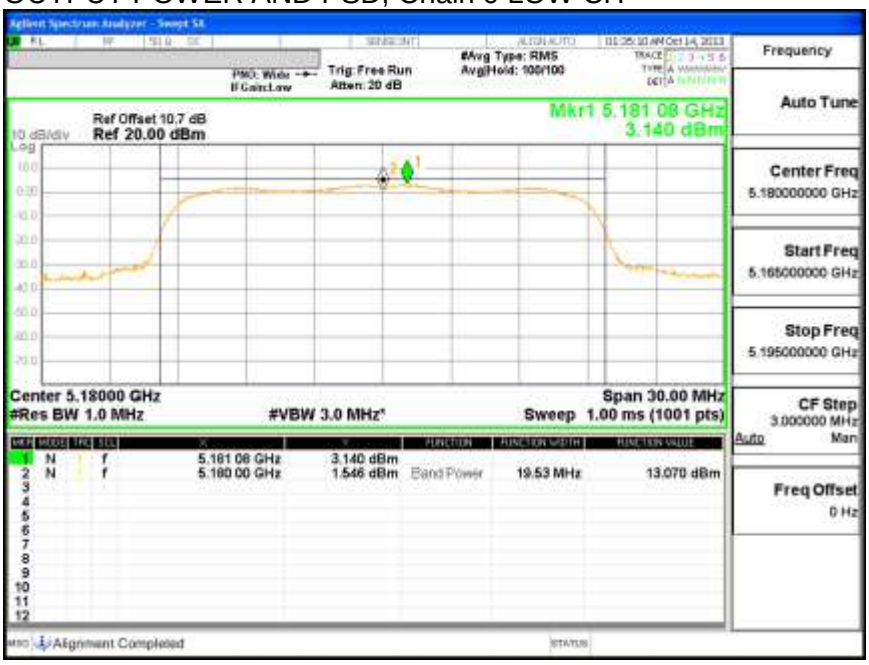
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	13.070	13.29	16.91	-3.62
Mid	5200	13.294	13.51	16.89	-3.38
High	5240	12.977	13.20	16.88	-3.68

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	3.140	3.36	4.00	-0.64
Mid	5200	3.370	3.59	4.00	-0.41
High	5240	2.933	3.15	4.00	-0.85

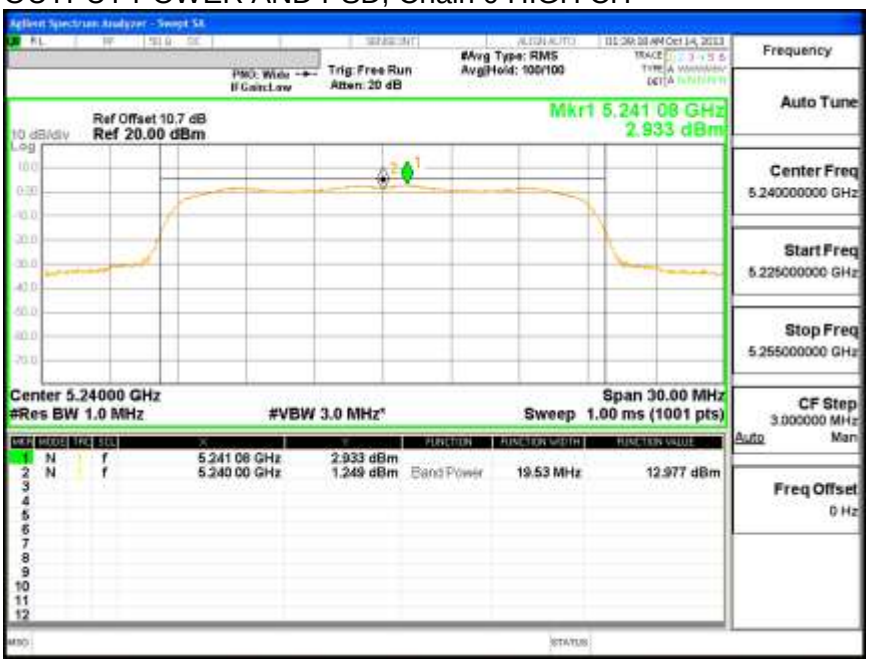
OUTPUT POWER AND PSD, Chain 0

OUTPUT POWER AND PSD, Chain 0 LOW CH



OUTPUT POWER AND PSD, Chain 0 MID CH

OUTPUT POWER AND PSD, Chain 0 HIGH CH



8.3.5. 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

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	11.39	3.53	0.22	7.64	13	-5.36

PEAK EXCURSION

PEAK EXCURSION MID CH

8.4. 802.11n HT20 2TX CDD MODE IN THE 5.2 GHz BAND

8.4.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5180	19.440	19.560
Mid	5200	19.395	19.335
High	5240	19.350	19.290

26 dB BANDWIDTH, Chain 0

BANDWIDTH Chain 0 LOW CH

BANDWIDTH Chain 0 MID CH

BANDWIDTH Chain 0 HIGH CH

26 dB BANDWIDTH, Chain 1

BANDWIDTH Chain 1 LOW CH

BANDWIDTH Chain 1 MID CH

BANDWIDTH Chain 1 HIGH CH

8.4.2. 99% BANDWIDTH

LIMITS

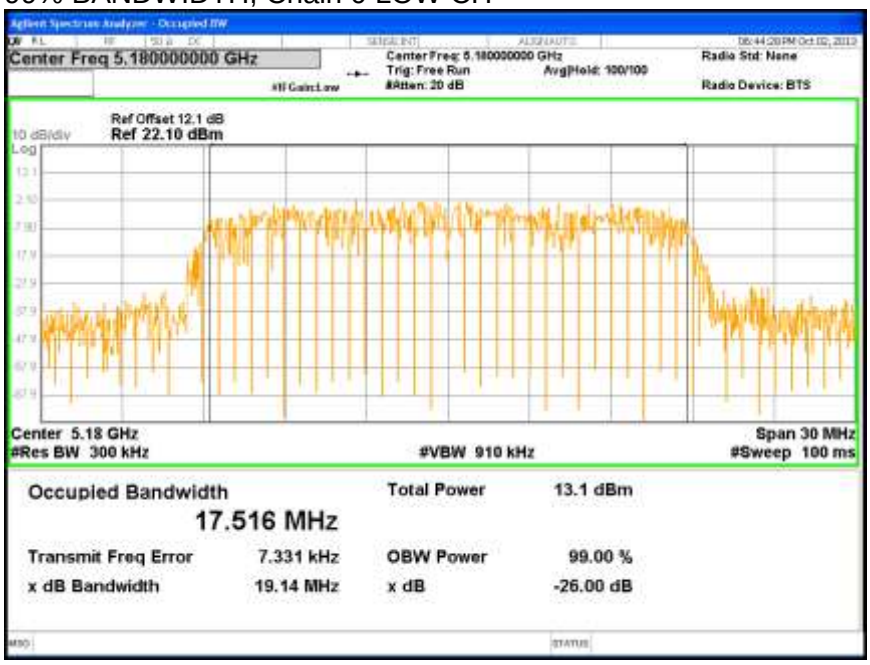
None; for reporting purposes only.

RESULTS

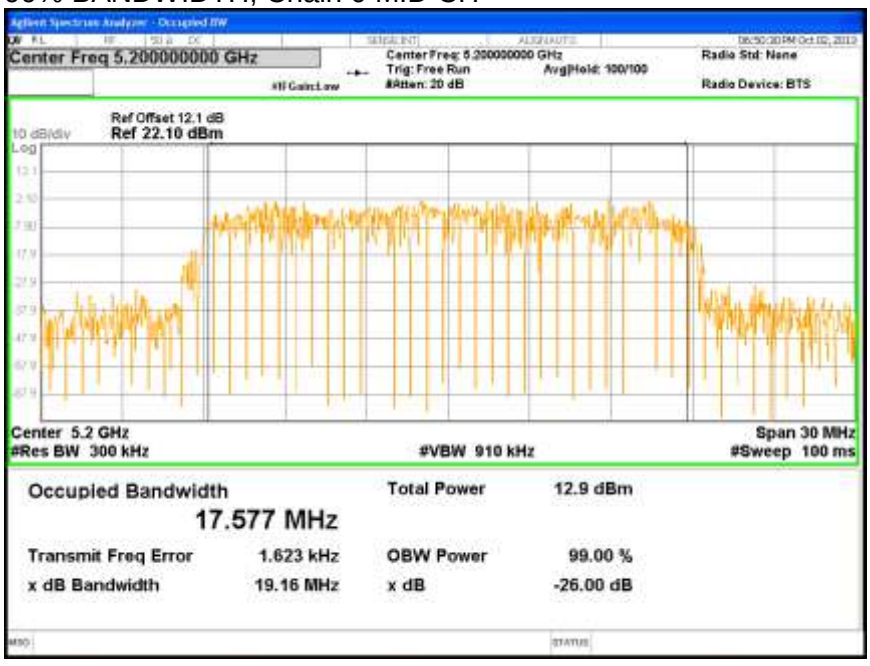
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5180	17.516	17.618
Mid	5200	17.577	17.596
High	5240	17.700	17.575

99% BANDWIDTH, Chain 0

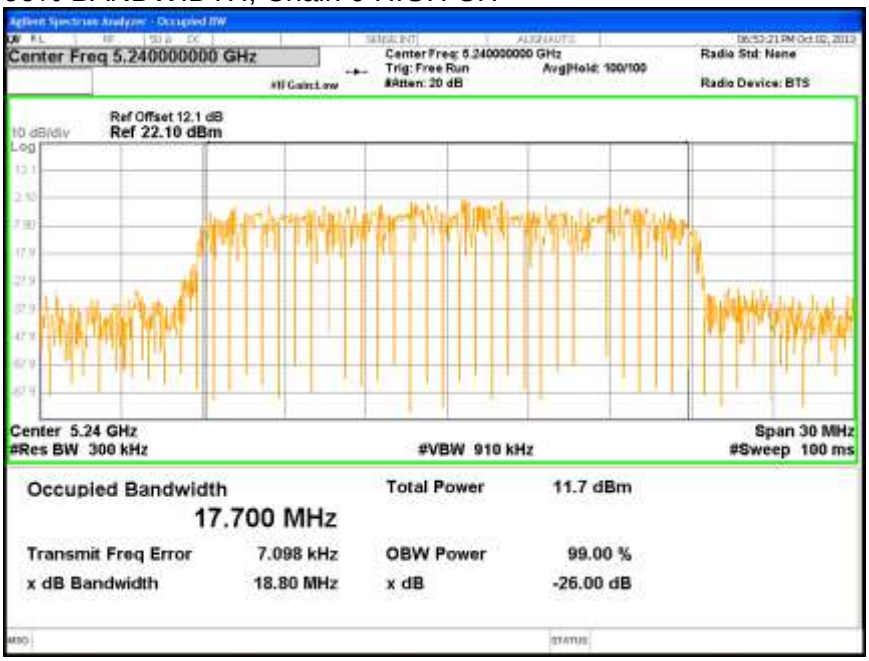
99% BANDWIDTH, Chain 0 LOW CH



99% BANDWIDTH, Chain 0 MID CH

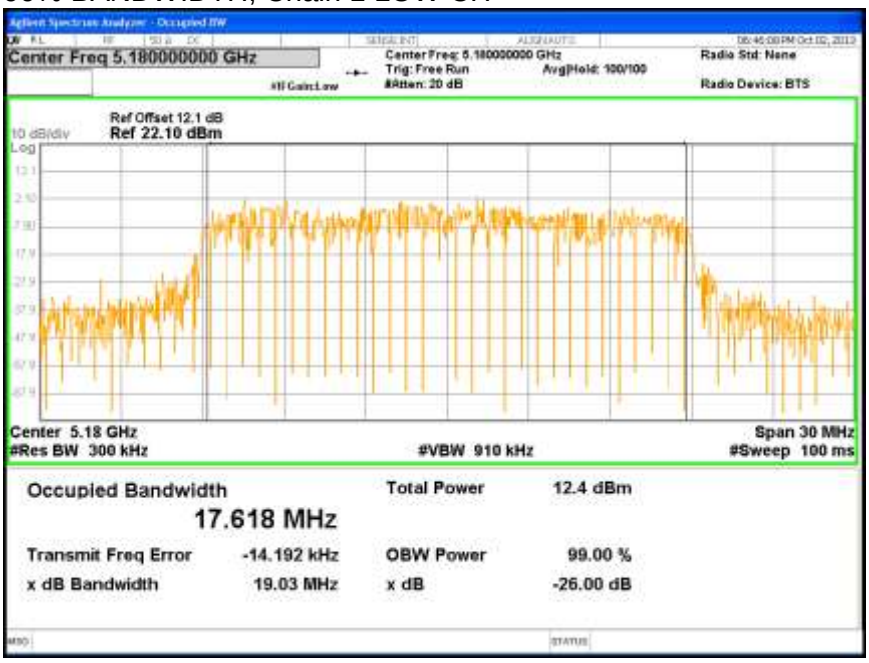


99% BANDWIDTH, Chain 0 HIGH CH

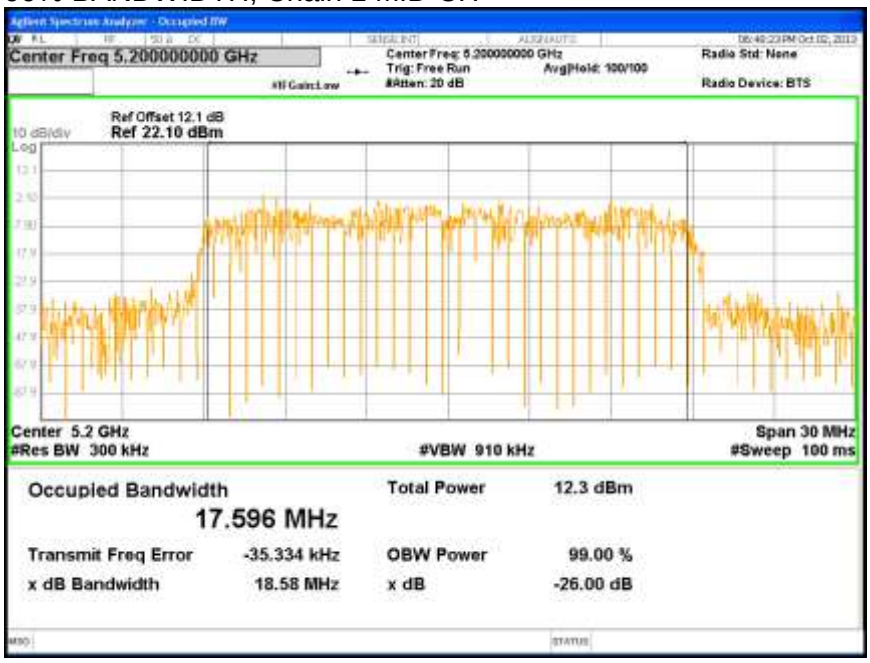


99% BANDWIDTH, Chain 1

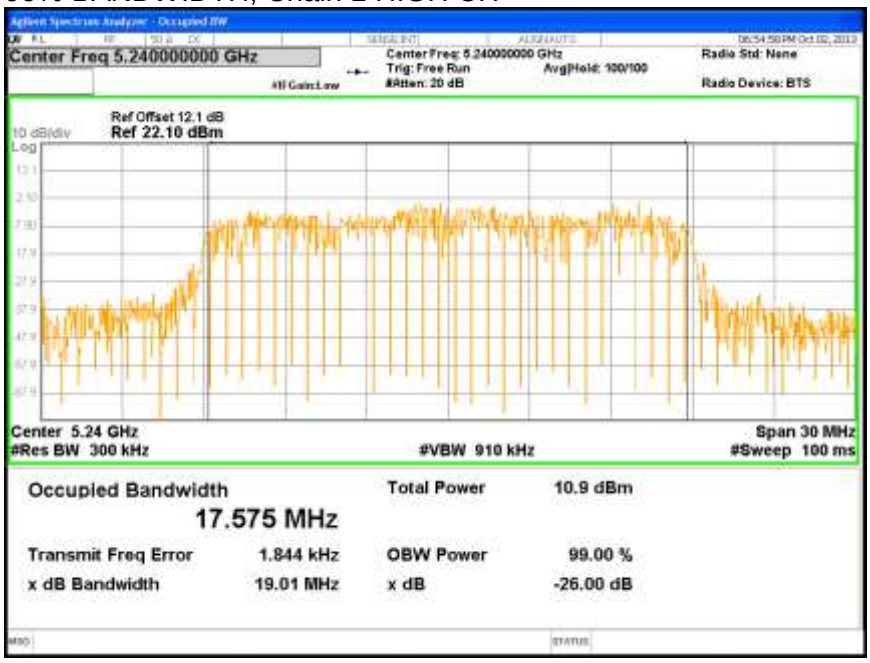
99% BANDWIDTH, Chain 1 LOW CH



99% BANDWIDTH, Chain 1 MID CH



99% BANDWIDTH, Chain 1 HIGH CH



8.4.3. 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 12.1 dB (including 10 dB pad and 2.1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5180	10.15	10.05	13.11
Mid	5200	10.35	10.33	13.35
High	5240	10.05	10.11	13.09

8.4.4. 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 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.

DIRECTIONAL ANTENNA GAIN

For output power, the TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
3.20	1.80	2.56

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
3.20	1.80	5.54

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Uncorrelated Directional Gain (dBi)	Correlated Directional Gain (dBi)
Low	5180	19.44	17.52	2.56	5.54
Mid	5200	19.34	17.58	2.56	5.54
High	5240	19.29	17.58	2.56	5.54

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	16.89	22.43	19.87	16.89	4.00	10.00	4.00
Mid	5200	16.86	22.45	19.89	16.86	4.00	10.00	4.00
High	5240	16.85	22.45	19.89	16.85	4.00	10.00	4.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PPSD

Output Power Results

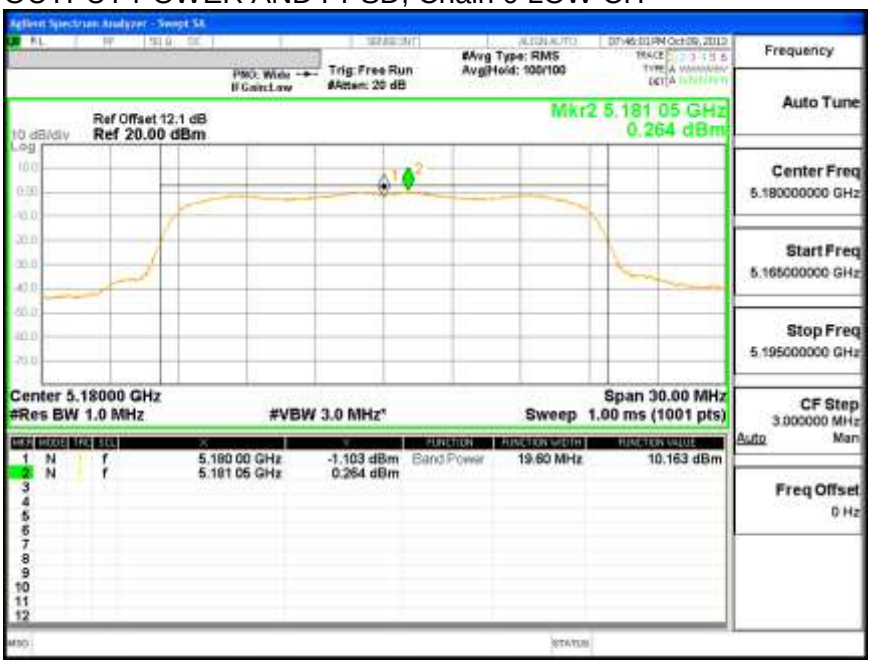
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	10.163	10.291	13.46	16.89	-3.43
Mid	5200	10.417	10.338	13.61	16.86	-3.26
High	5240	10.190	10.269	13.46	16.85	-3.39

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	0.264	0.589	3.66	4.00	-0.34
Mid	5200	0.536	0.363	3.68	4.00	-0.32
High	5240	0.436	0.371	3.63	4.00	-0.37

OUTPUT POWER AND PPSD, Chain 0

OUTPUT POWER AND PPSD, Chain 0 LOW CH



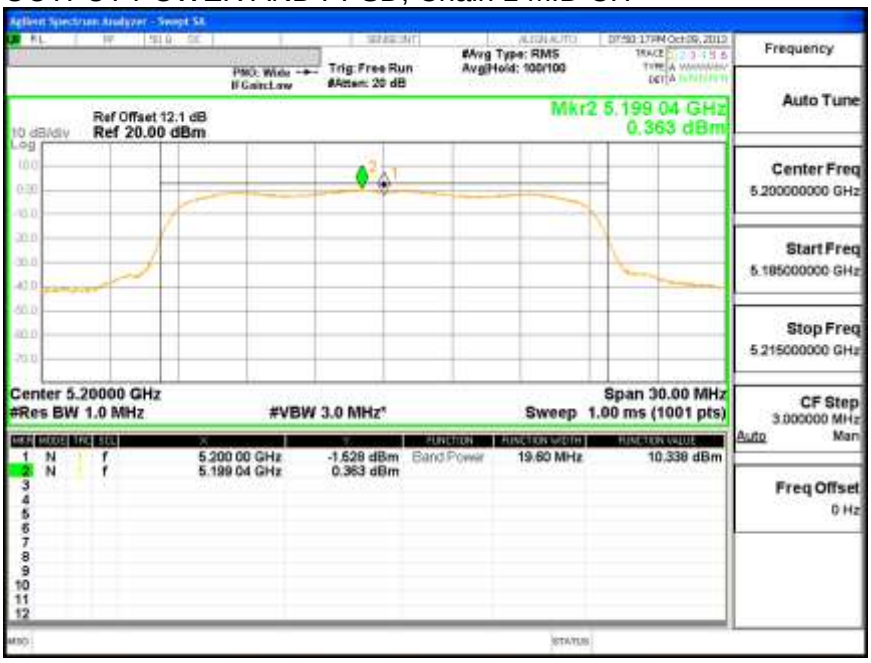
OUTPUT POWER AND PPSD, Chain 0 MID CH

OUTPUT POWER AND PPSD, Chain 0 HIGH CH

OUTPUT POWER AND PPSD, Chain 1

OUTPUT POWER AND PPSD, Chain 1 LOW CH

OUTPUT POWER AND PPSD, Chain 1 MID CH



OUTPUT POWER AND PPSD, Chain 1 HIGH CH

8.4.5. 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

Chain 0

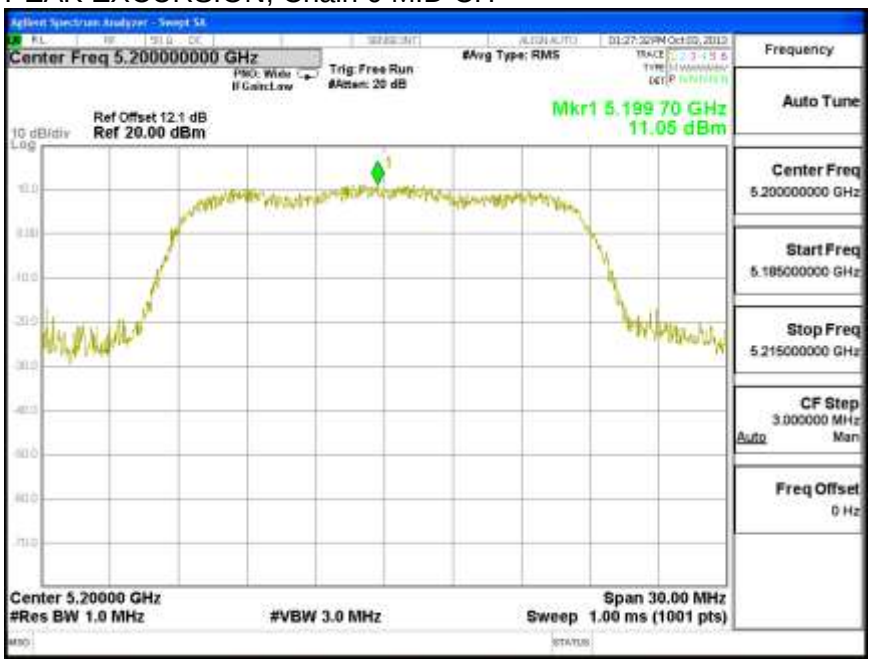
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	11.05	0.54	0.22	10.29	13	-2.71

Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	10.30	0.36	0.22	9.72	13	-3.28

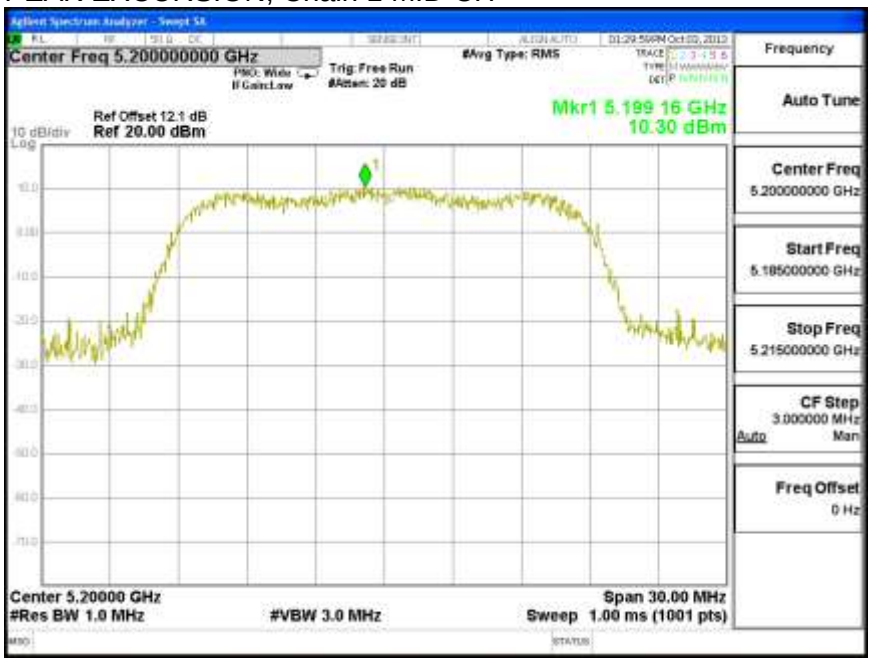
PEAK EXCURSION, Chain 0

PEAK EXCURSION, Chain 0 MID CH



PEAK EXCURSION, Chain 1

PEAK EXCURSION, Chain 1 MID CH



8.5. 802.11n HT40 SISO MODE IN THE 5.2 GHz BAND

8.5.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5190	39.92
High	5230	40.08

26 dB BANDWIDTH

BANDWIDTH LOW CH

BANDWIDTH HIGH CH

8.5.2. 99% BANDWIDTH

LIMITS

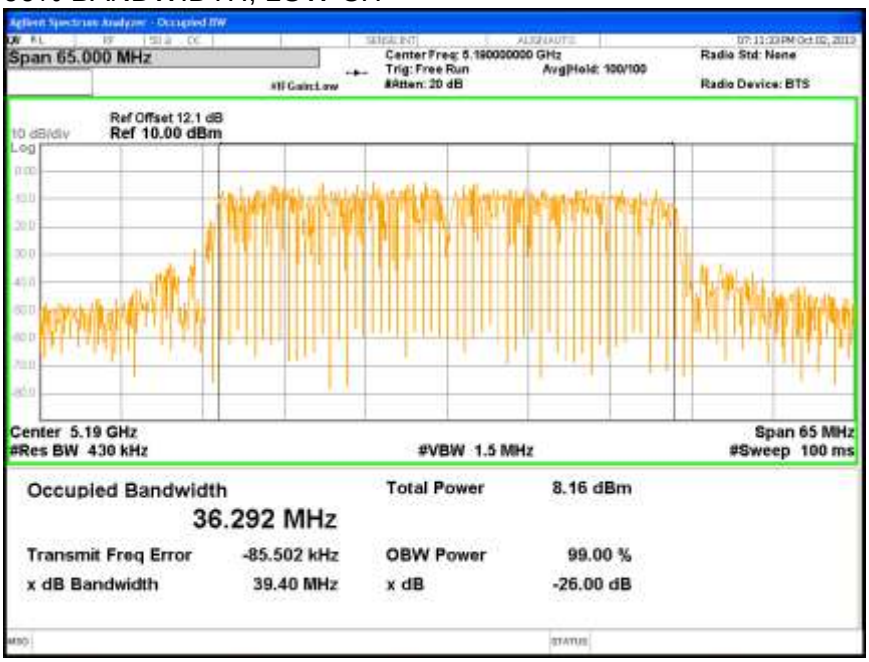
None; for reporting purposes only.

RESULTS

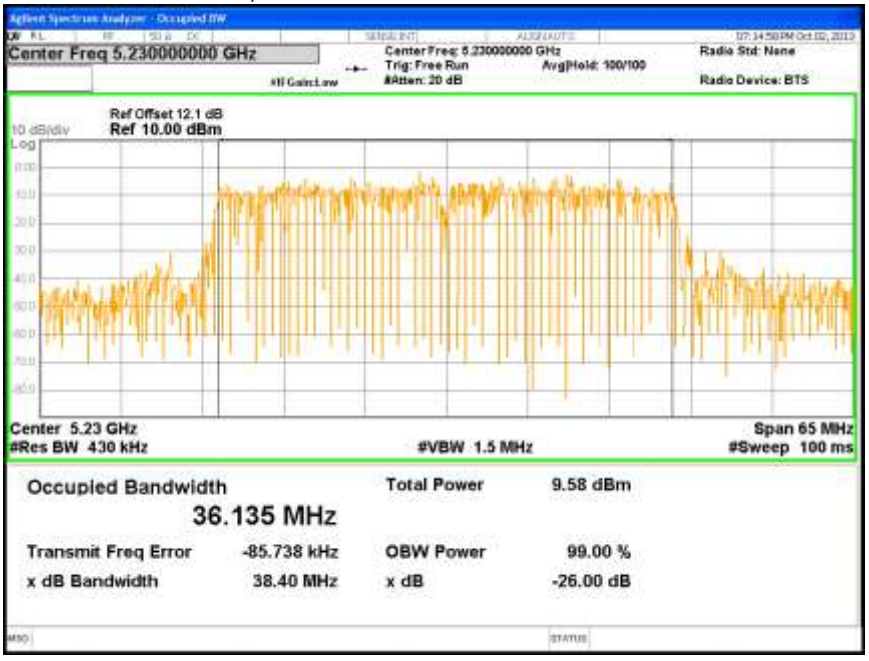
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5190	36.292
High	5230	36.135

99% BANDWIDTH

99% BANDWIDTH, LOW CH



99% BANDWIDTH, HIGH CH



8.5.3. 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 12.1 dB (including 10 dB pad and 2.1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5190	8.43
High	5230	9.85

8.5.4. 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 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.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5190	39.92	36.29	3.20
High	5230	40.08	36.14	3.20

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	19.80	17.00	4.00	10.00	4.00
High	5230	17.00	23.00	19.80	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	0.46	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	8.66	9.12	17.00	-7.88
High	5230	10.08	10.54	17.00	-6.46

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5190	-4.88	-4.42	4.00	-8.42
High	5230	-2.96	-2.50	4.00	-6.50

OUTPUT POWER AND PPSD, Chain 0

OUTPUT POWER AND PPSD, Chain 0 LOW CH

OUTPUT POWER AND PPSD, Chain 0 HIGH CH

8.5.5. PEAK EXCURSION

LIMITS

FCC §15.407 (a) (6)

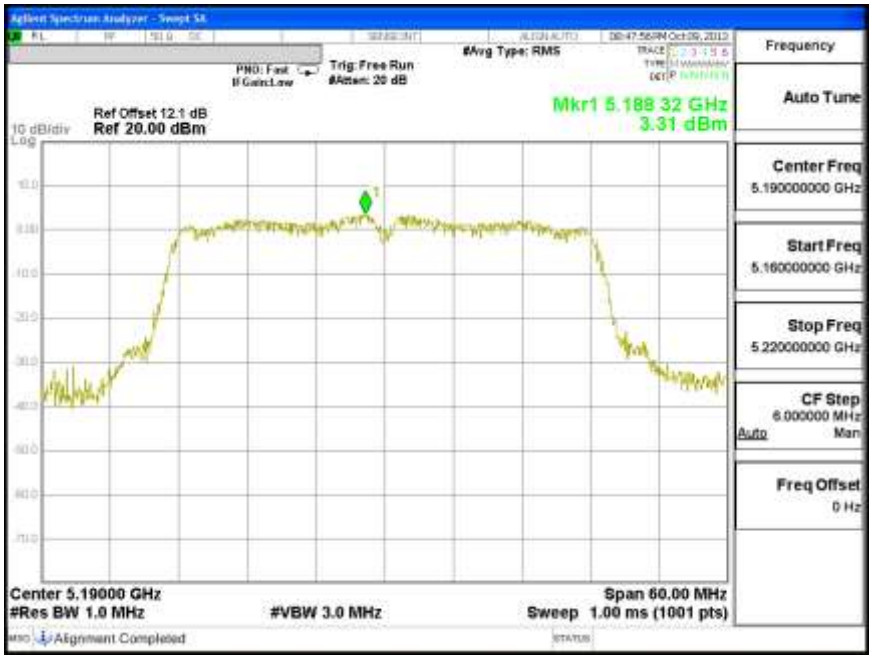
The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Low	5190	3.31	-4.88	0.46	7.73	13	-5.27

PEAK EXCURSION

PEAK EXCURSION LOW CH



8.6. 802.11n HT40 2TX CDD MODE IN THE 5.2 GHz BAND

8.6.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5190	40.320	39.800
High	5230	40.200	39.400

26 dB BANDWIDTH, Chain 0

26 dB BANDWIDTH, Chain 0 LOW CH

26 dB BANDWIDTH, Chain 0 HIGH CH

26 dB BANDWIDTH, Chain 1

26 dB BANDWIDTH, Chain 1 LOW CH

26 dB BANDWIDTH, Chain 1 HIGH CH

8.6.2. 99% BANDWIDTH

LIMITS

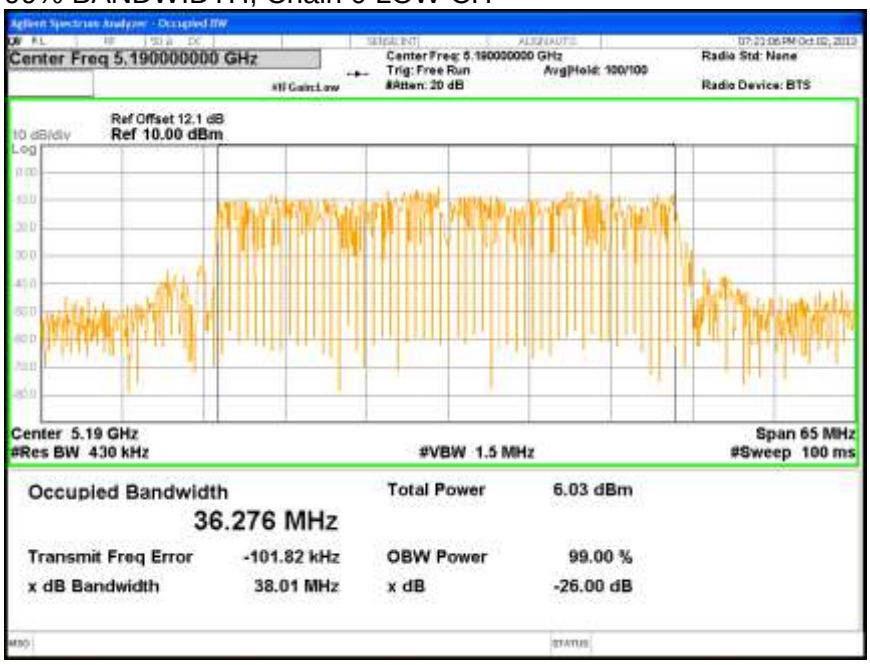
None; for reporting purposes only.

RESULTS

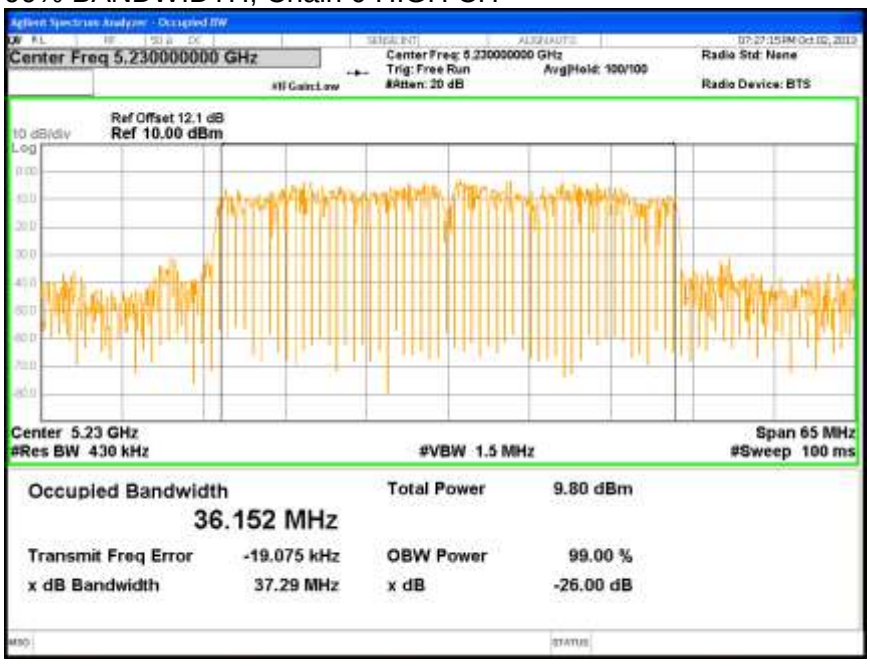
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5190	36.276	36.346
High	5230	36.152	36.413

99% BANDWIDTH, Chain 0

99% BANDWIDTH, Chain 0 LOW CH

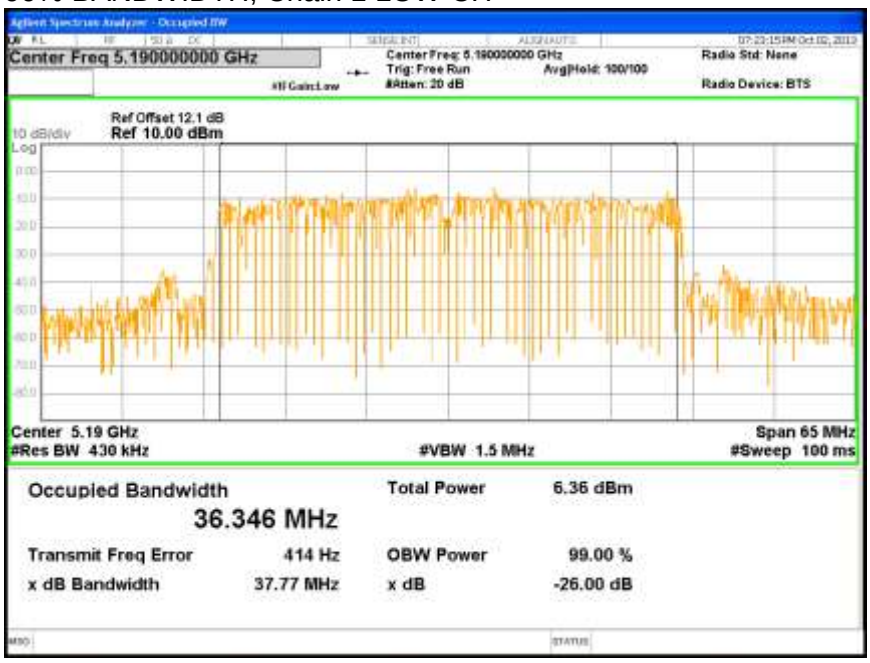


99% BANDWIDTH, Chain 0 HIGH CH

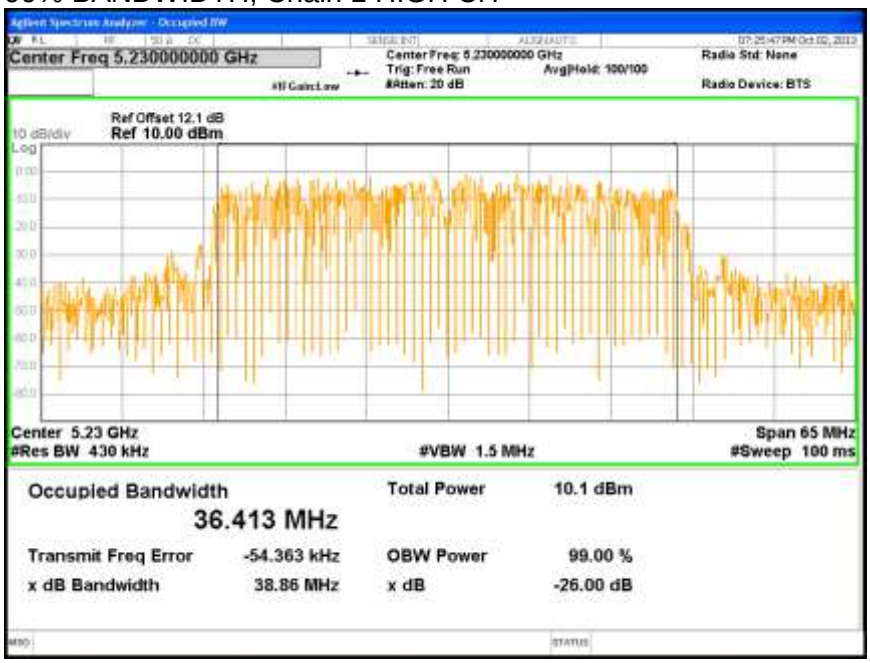


99% BANDWIDTH, Chain 1

99% BANDWIDTH, Chain 1 LOW CH



99% BANDWIDTH, Chain 1 HIGH CH



8.6.3. 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 12.1 dB (including 10 dB pad and 2.1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5190	6.33	7.13	9.76
High	5230	10.09	10.12	13.12

8.6.4. 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 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.

DIRECTIONAL ANTENNA GAIN

For output power, the TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
3.20	1.80	2.56

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
3.20	1.80	5.54

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Uncorrelat Directional Gain (dBi)	Correlat Directional Gain (dBi)
Low	5190	39.80	36.28	2.56	5.54
High	5230	39.40	36.15	2.56	5.54

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	20.44	17.00	4.00	10.00	4.00
High	5230	17.00	23.00	20.44	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	0.48	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	5190	6.56	7.27	10.42	17.00	-6.58
High	5230	10.30	10.53	13.90	17.00	-3.10

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	-6.65	-5.65	-2.63	4.00	-6.63
High	5230	-2.47	-3.03	0.75	4.00	-3.25

OUTPUT POWER AND PPSD, Chain 0

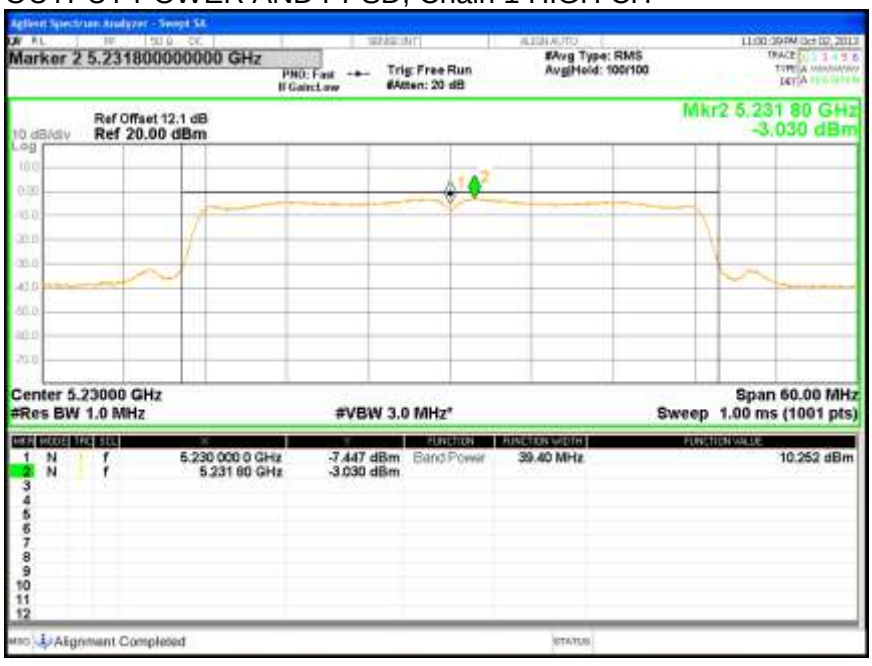
OUTPUT POWER AND PPSD, Chain 0 LOW CH

OUTPUT POWER AND PPSD, Chain 0 HIGH CH

OUTPUT POWER AND PPSD, Chain 1

OUTPUT POWER AND PPSD, Chain 1 LOW CH

OUTPUT POWER AND PPSD, Chain 1 HIGH CH



8.6.5. 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

Chain 0

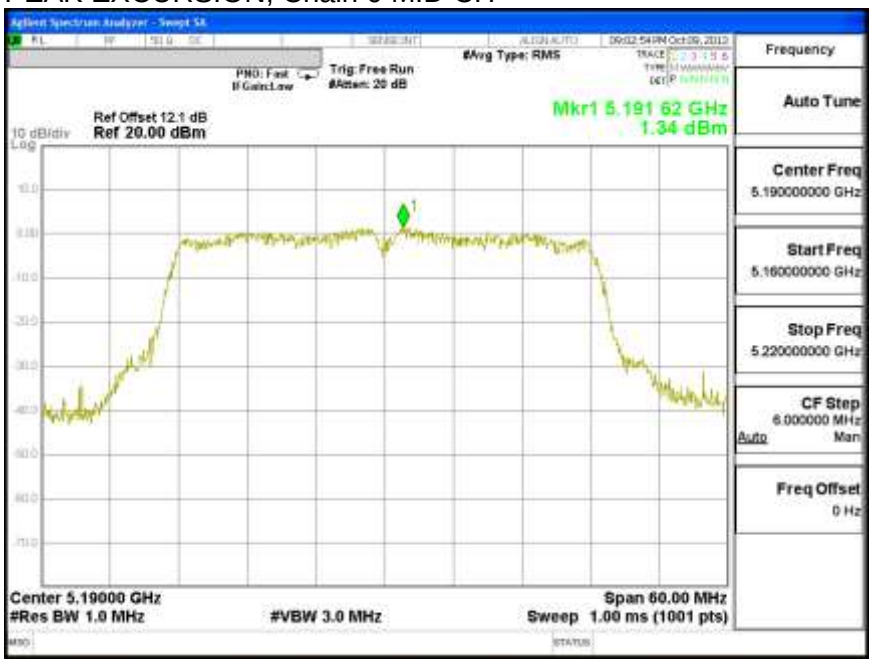
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Low	5190	1.34	-6.65	0.48	7.51	13	-5.49

Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Low	5190	2.86	-5.65	0.48	8.03	13	-4.97

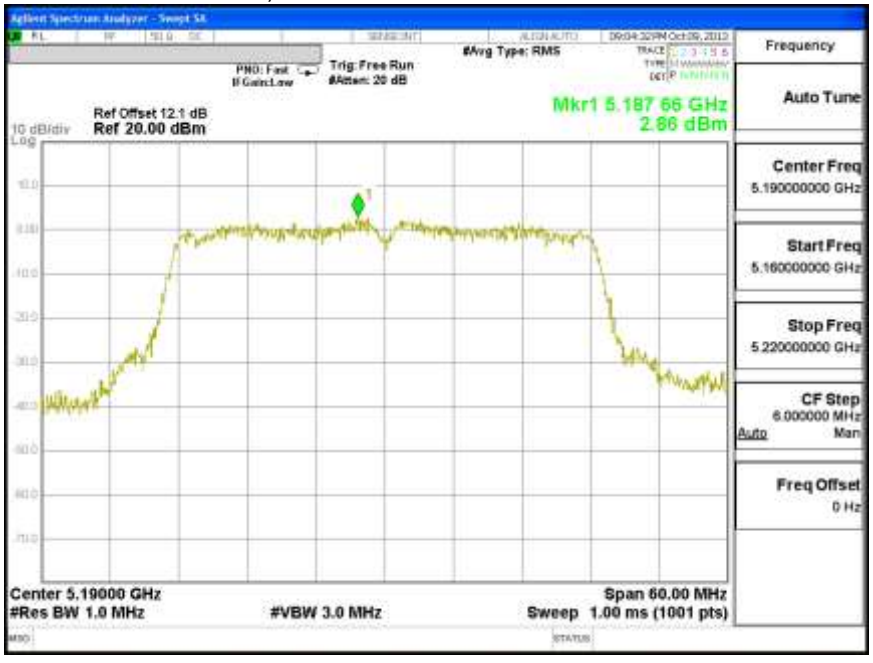
PEAK EXCURSION, Chain 0

PEAK EXCURSION, Chain 0 MID CH



PEAK EXCURSION, Chain 1

PEAK EXCURSION, Chain 1 MID CH



9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

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

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. 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 1 MHz for peak measurements and as applicable for average measurements.

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

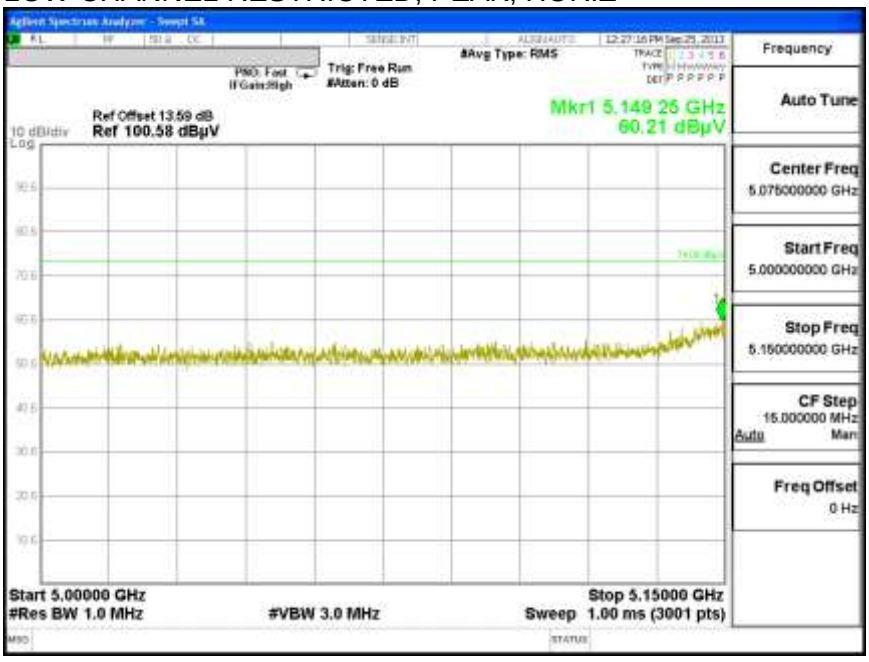
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

9.2. TRANSMITTER ABOVE 1 GHz

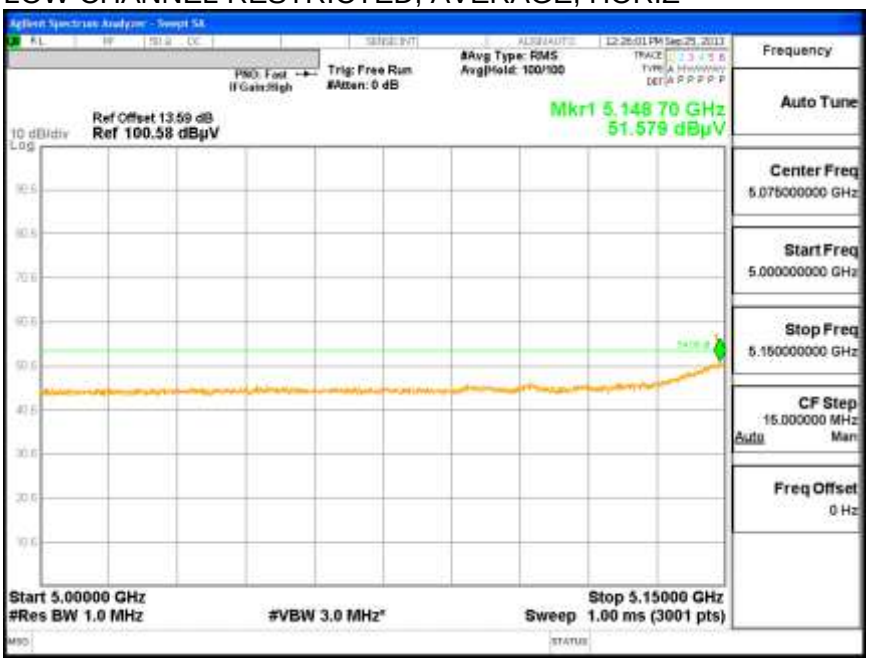
9.2.1. 802.11a SISO MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

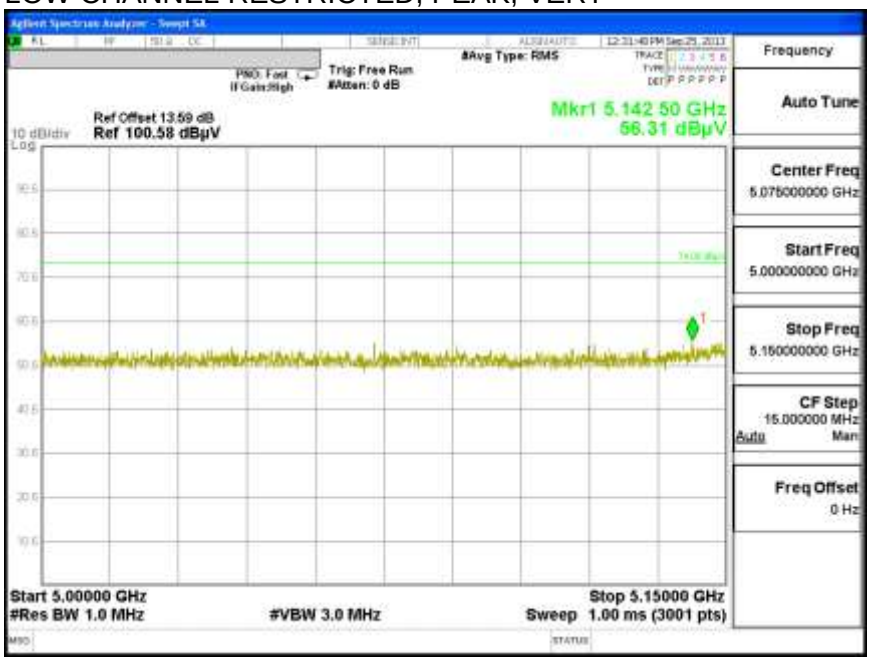
LOW CHANNEL RESTRICTED, PEAK, HORIZ



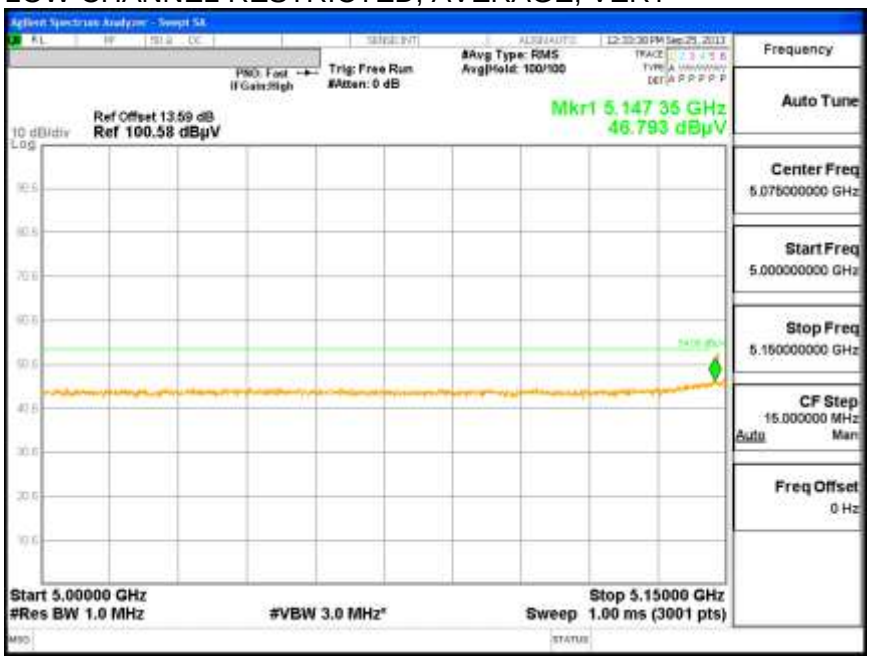
LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



LOW CHANNEL RESTRICTED, PEAK, VERT

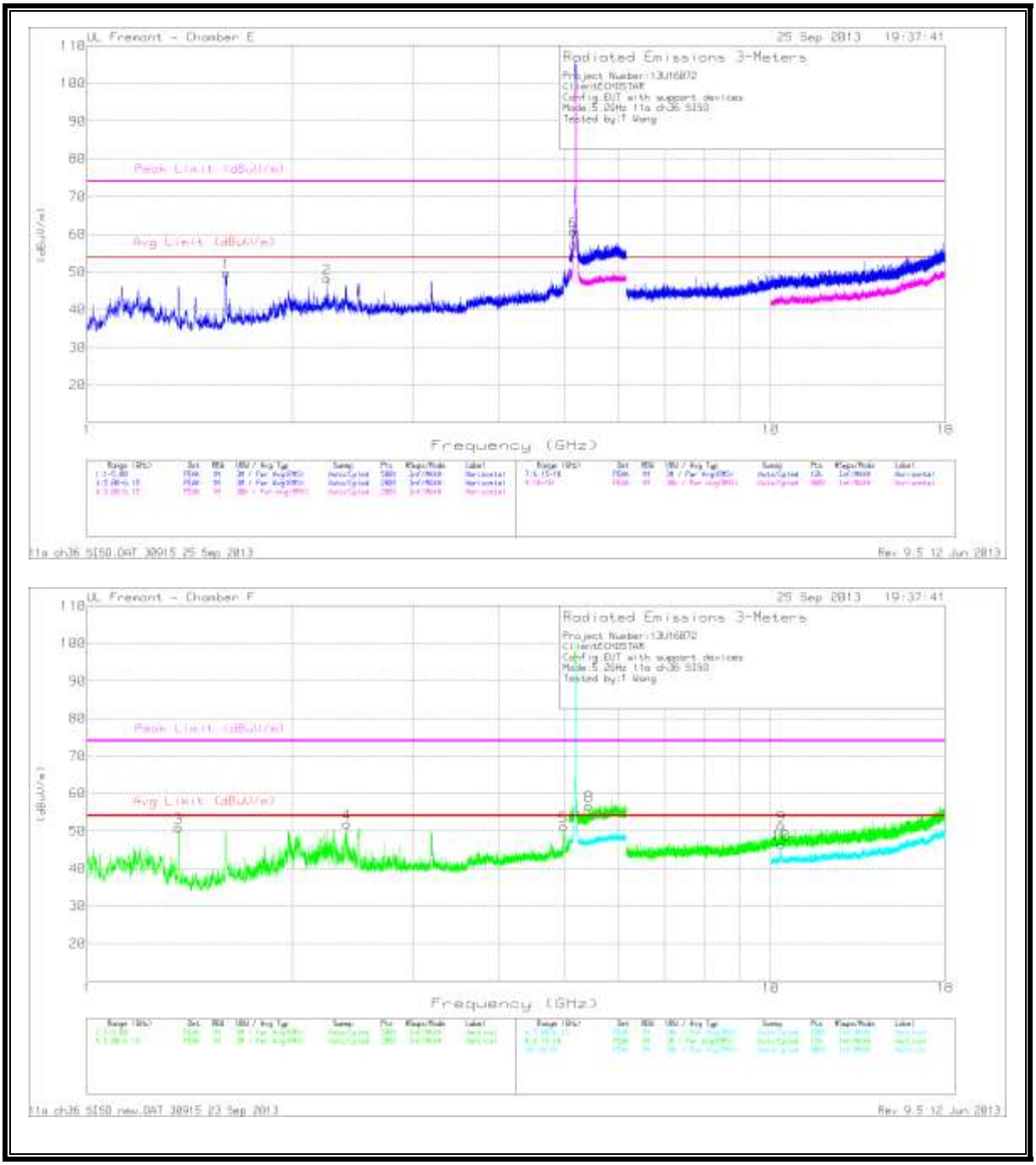


LOW CHANNEL RESTRICTED, AVERAGE, VERT



HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.599	54.23	PK	29.5	-34	49.73	53.97	-4.24	74	-24.27	0-360	199	H
2	2.244	48.4	PK	32.4	-32.5	48.3	-	-	74	-25.7	0-360	100	H
3	1.361	56.23	PK	29	-34.3	50.93	53.97	-3.04	74	-23.07	0-360	200	V
4	*2.399	52.71	PK	32.6	-33.4	51.91	-	-	68.2	-16.29	0-360	200	V
5	4.981	46.42	PK	34.4	-29.6	51.22	53.97	-2.75	74	-22.78	0-360	100	V
6	*5.151	47.65	PK	34.6	-21.5	60.75	-	-	68.2	-7.45	0-360	199	H
7	*5.153	43.98	PK	34.6	-21.5	57.08	-	-	68.2	-10.12	0-360	200	H
8	5.424	43.31	PK	34.8	-21.4	55.71	-	-	74	-18.29	0-360	100	V
9	*10.364	38.25	PK	38.3	-25	51.55	-	-	68.2	-16.65	0-360	100	V
10	*10.361	33.29	PK (VB)	38.3	-25.1	46.49	53.97	-7.48	-	-	0-360	200	V

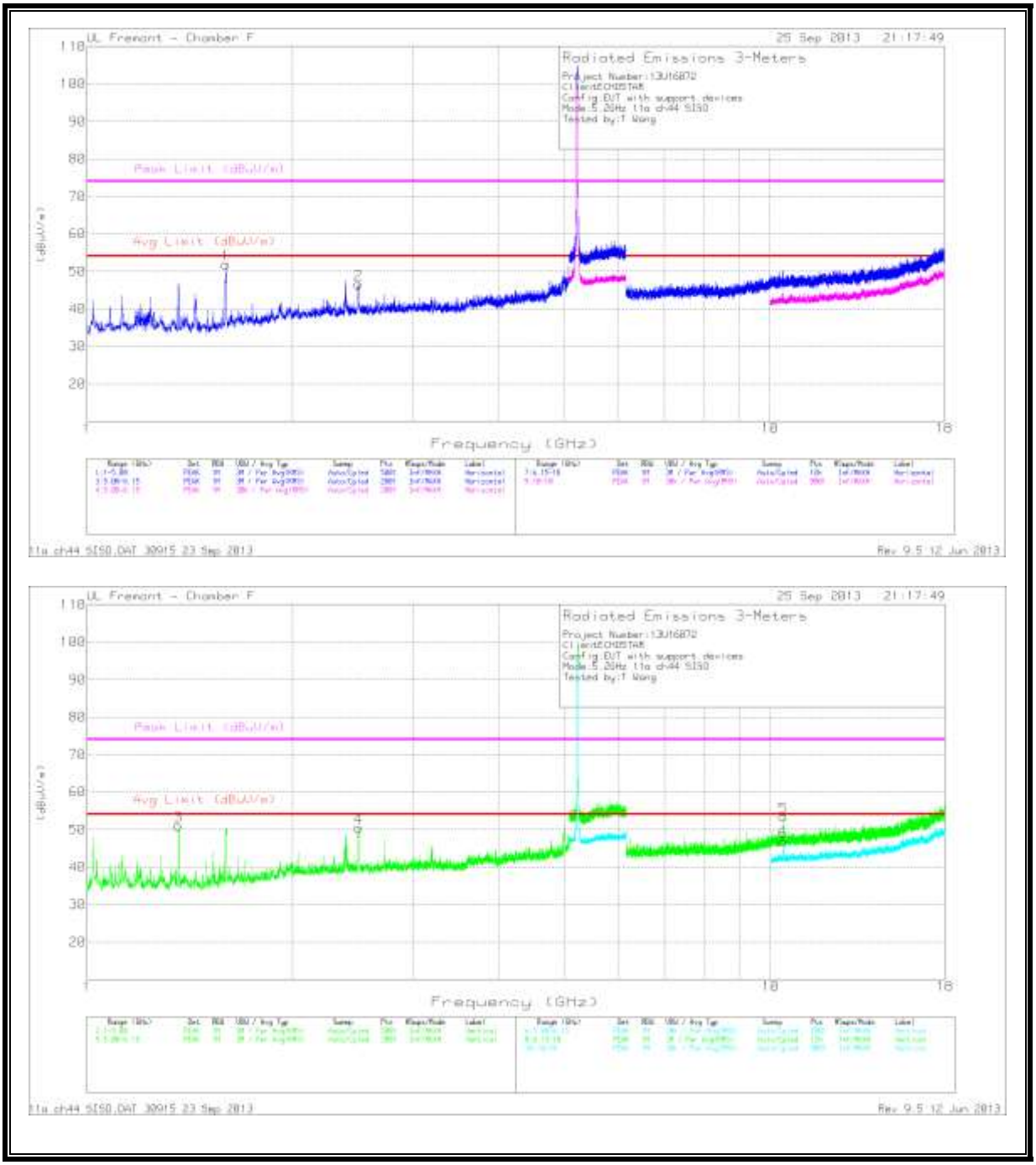
PK - Peak detector

*Not in Restricted Bands

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.596	44.91	AD1	29.5	-34	40.41	53.97	-13.56	-	-	43	193	H
1.36	53.73	AD1	29	-34.3	48.45	53.97	-5.52	-	-	329	196	V
4.989	31.89	AD1	34.4	-29.1	37.19	53.97	-16.78	-	-	261	308	V
5.431	35.91	AD1	34.8	-21.4	49.31	53.97	-4.66	-	-	272	303	V

AD1 - KDB 789033 V01r03 Method: AD Primary Power Average

MID CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.597	56.5	PK	29.5	-34.1	51.9	53.97	-2.07	74	-22.1	0-360	199	H
2	2.497	46.2	PK	32.7	-32.3	46.6	53.97	-7.37	74	-27.4	0-360	199	H
3	1.361	56.38	PK	29	-34.3	51.08	53.97	-2.89	74	-22.92	0-360	200	V
4	2.497	50.12	PK	32.7	-32.3	50.52	53.97	-3.45	74	-23.48	0-360	200	V
5	*10.445	39.25	PK	38.4	-24.2	53.45	-	-	68.2	-14.75	0-360	199	V
6	*10.439	32.82	PK (VB)	38.4	-24.4	46.82	53.97	-7.15	-	-	0-360	200	V

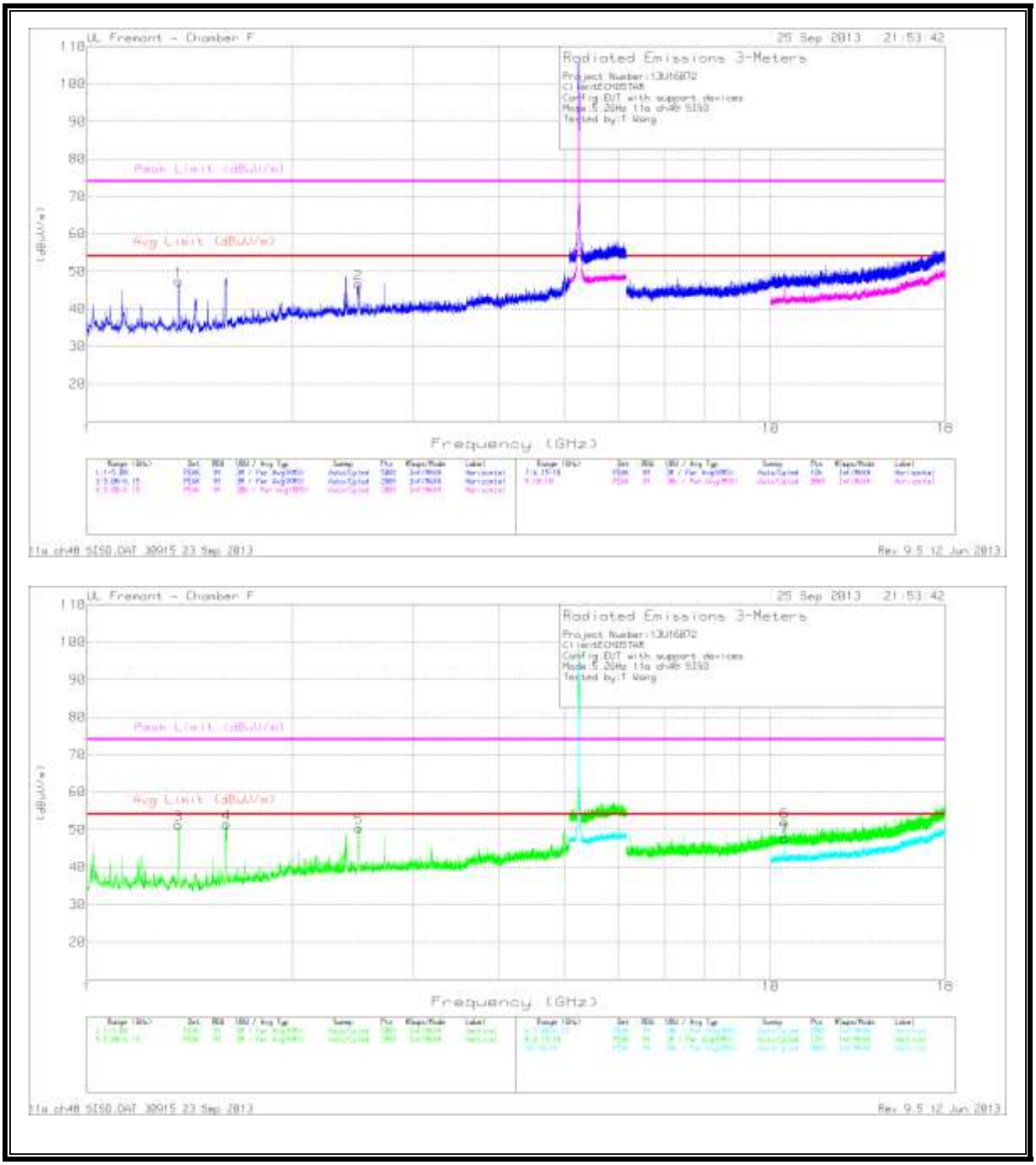
PK - Peak detector

*Not in Restricted Bands

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.596	41.90	AD1	29.5	-34	37.40	53.97	-10.57	-	-	43	193	H
1.36	52.75	AD1	29	-34.3	47.47	53.97	-6.50	-	-	329	196	V
2.499	46.91	AD1	32.6	-33.5	46.01	53.97	-7.96	-	-	355	307	V

AD1 - KDB 789033 V01r03 Method: AD Primary Power Average

HIGH CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.361	52.67	PK	29	-34.3	47.37	53.97	-6.6	74	-26.63	0-360	199	H
2	2.494	46.29	PK	32.7	-32.3	46.69	53.97	-7.28	74	-27.31	0-360	199	H
3	1.361	56.63	PK	29	-34.3	51.33	53.97	-2.64	74	-22.67	0-360	199	V
4	1.601	55.99	PK	29.5	-34	51.49	53.97	-2.48	74	-22.51	0-360	100	V
5	2.501	50.09	PK	32.7	-32.3	50.49	53.97	-3.48	74	-23.51	0-360	199	V
6	*10.477	38.58	PK	38.4	-24.9	52.08	-	-	68.2	-16.12	0-360	200	V
7	*10.478	34.38	PK (VB)	38.4	-24.9	47.88	53.97	-6.09	-	-	0-360	199	V

PK - Peak detector

*Not in Restricted Band

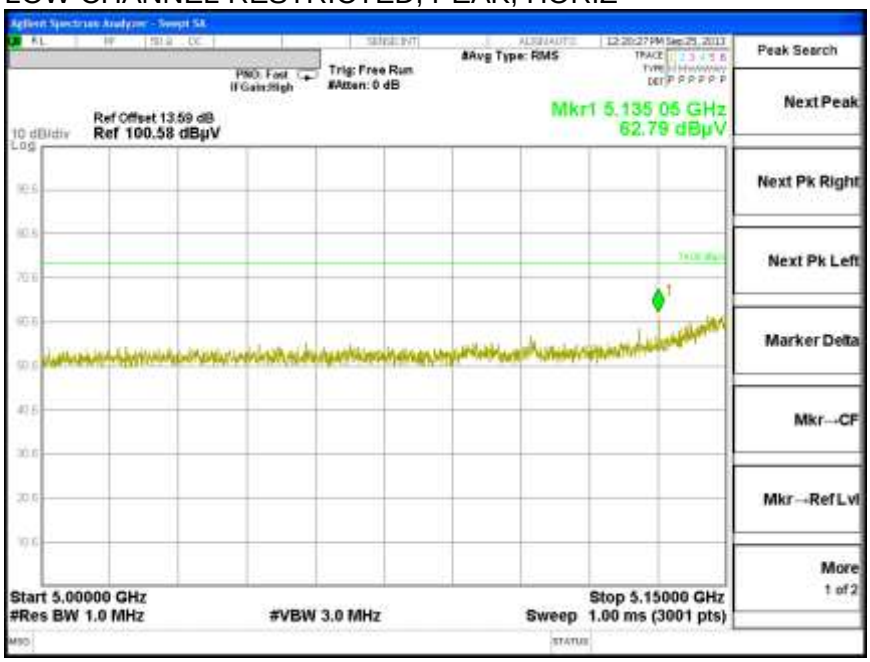
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.36	56.1	AD1	29	-34.3	50.8	53.97	-3.17	-	-	332	187	V
1.596	46.68	AD1	29.5	-34.1	42.08	53.97	-11.89	-	-	317	129	V
2.498	47.93	AD1	32.6	-33.5	47.03	53.97	-6.94	-	-	355	307	V

AD1 - KDB 789033 V01r03 Method: AD Primary Power Average

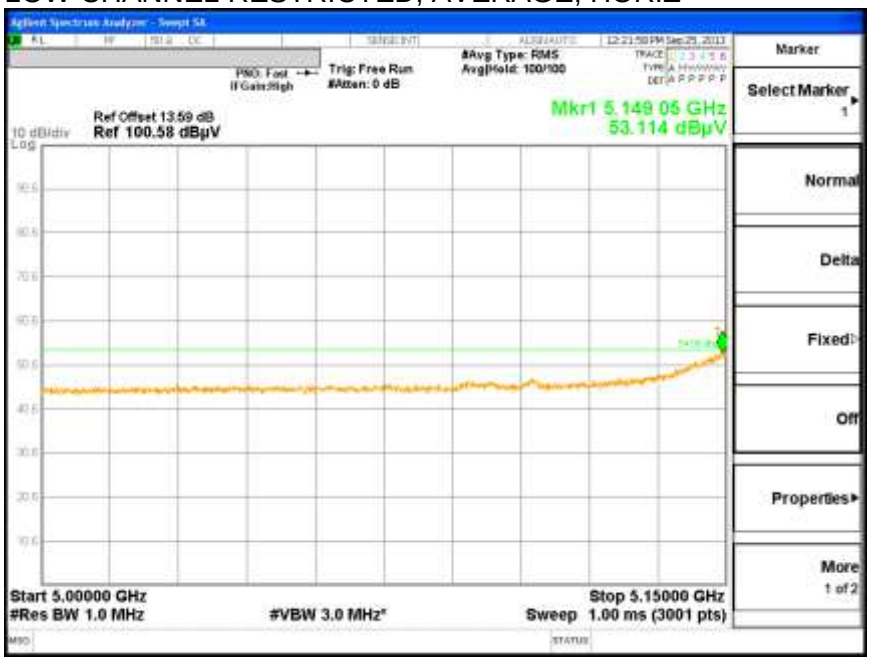
9.2.2. 802.11n 2TX CDD MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

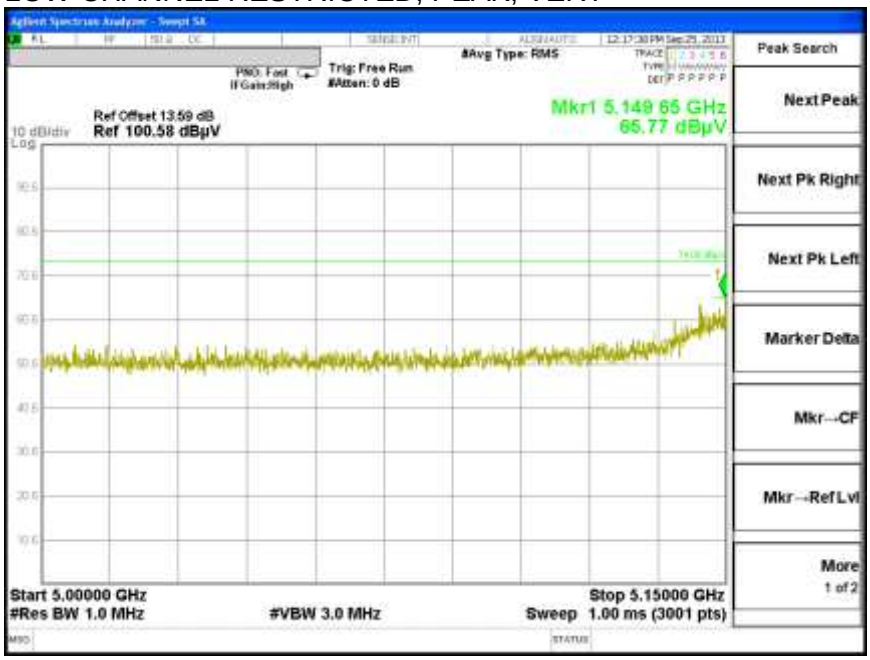
LOW CHANNEL RESTRICTED, PEAK, HORIZ



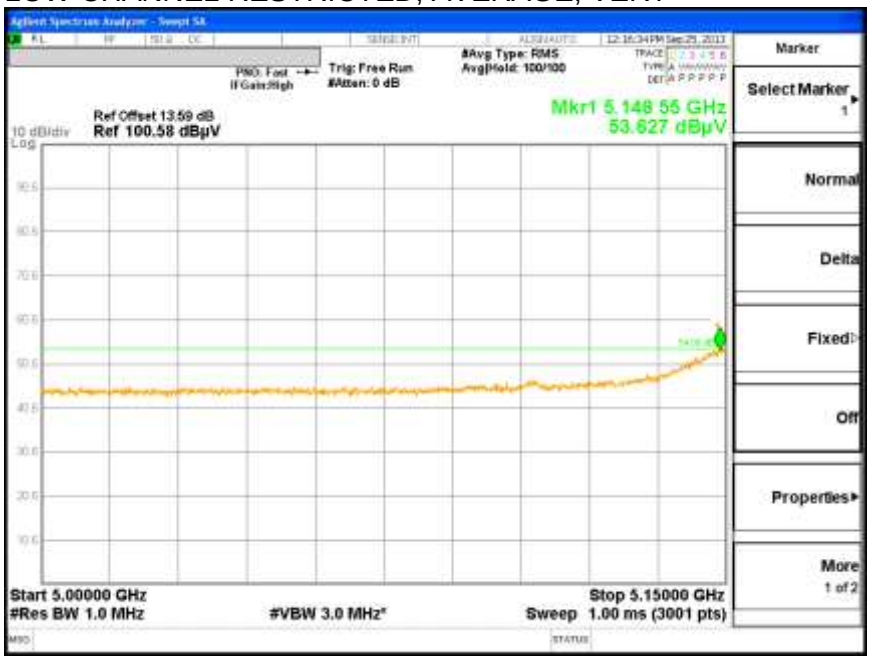
LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



LOW CHANNEL RESTRICTED, PEAK, VERT

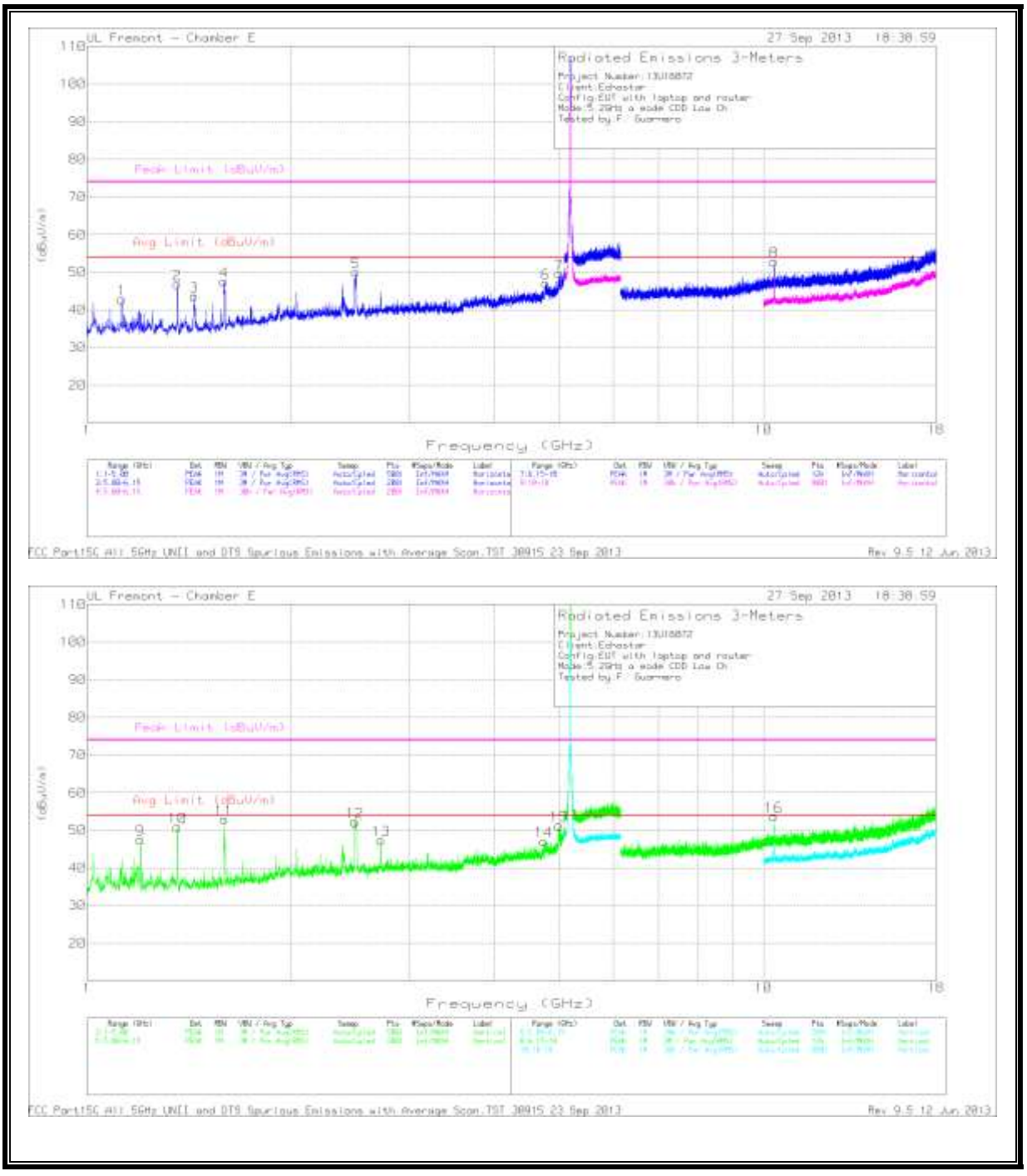


LOW CHANNEL RESTRICTED, AVERAGE, VERT



HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL



TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.126	49.16	PK	28.7	-35	42.86	53.97	-11.11	74	-31.14	0-360	100	H
2	1.361	52.2	PK	29	-34.3	46.9	53.97	-7.07	74	-27.1	0-360	100	H
3	1.441	49.36	PK	28.9	-34.6	43.66	53.97	-10.31	74	-30.34	0-360	100	H
4	1.594	52.28	PK	29.4	-34.1	47.58	53.97	-6.39	74	-26.42	0-360	199	H
5	2.498	49.63	PK	32.7	-32.3	50.03	53.97	-3.94	74	-23.97	0-360	100	H
6	4.767	42.72	PK	34.4	-30	47.12	53.97	-6.85	74	-26.88	0-360	199	H
7	4.989	44.6	PK	34.4	-29.4	49.6	53.97	-4.37	74	-24.4	0-360	199	H
9	1.199	53.64	PK	29	-35.1	47.54	53.97	-6.43	74	-26.46	0-360	100	V
10	1.361	56.21	PK	29	-34.3	50.91	53.97	-3.06	74	-23.09	0-360	100	V
11	1.595	57.69	PK	29.4	-34.1	52.99	53.97	-.98	74	-21.01	0-360	100	V
12	2.488	51.91	PK	32.7	-32.4	52.21	53.97	-1.76	74	-21.79	0-360	100	V
13	2.721	46.84	PK	33.1	-32.5	47.44	53.97	-6.53	74	-26.56	0-360	100	V
14	4.733	43.29	PK	34.4	-30.6	47.09	53.97	-6.88	74	-26.91	0-360	100	V
15	4.989	46.3	PK	34.4	-29.4	51.3	53.97	-2.67	74	-22.7	0-360	100	V
*8	10.362	39.62	PK	38.3	-25	52.92	-	-	68.2	-15.28	0-360	199	H
*16	10.358	40.35	PK	38.3	-25	53.65	-	-	68.2	-14.55	0-360	200	V

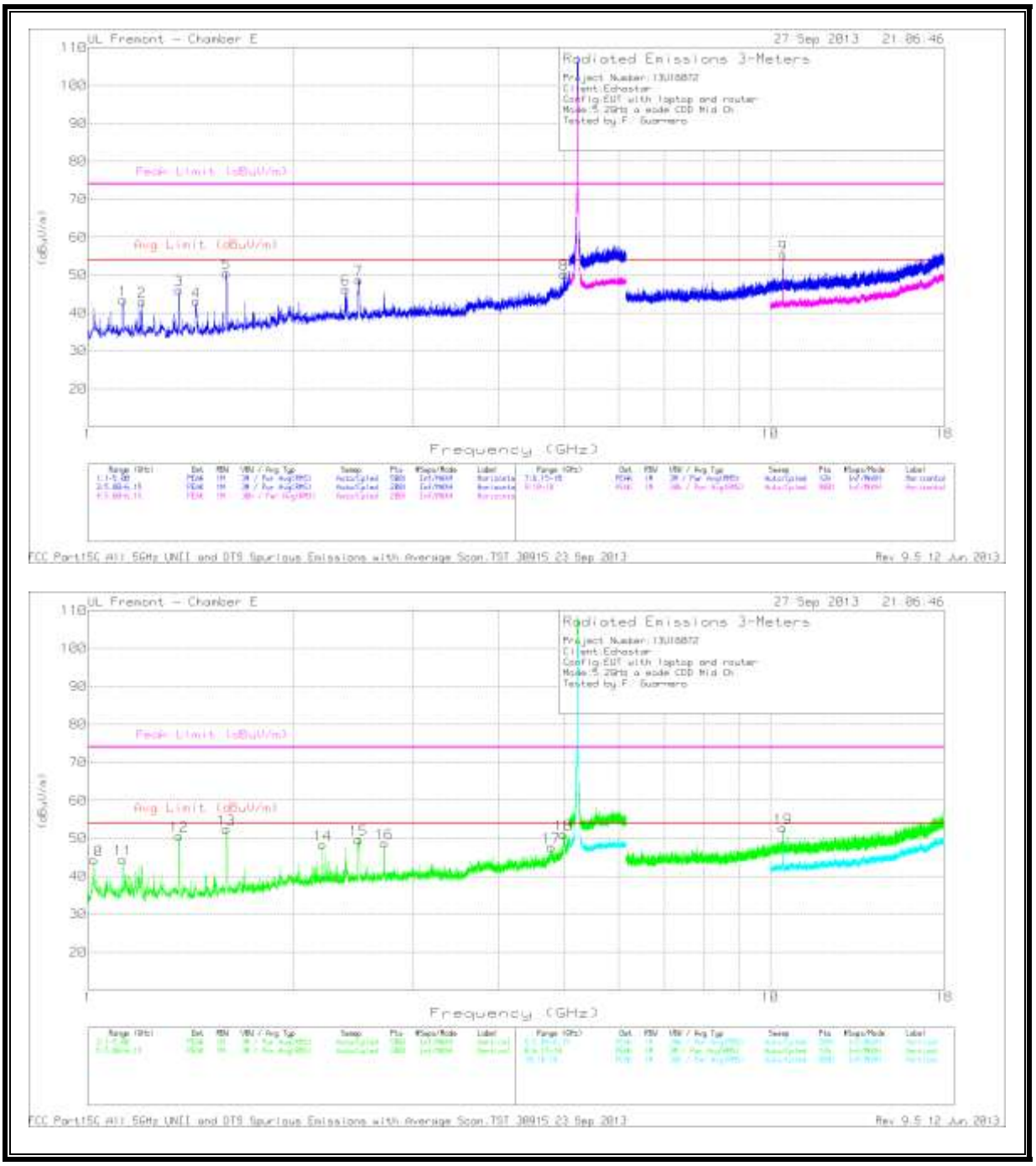
PK - Peak detector

*Not in Restricted Band

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.499	39.05	MAv1	32.7	-32.3	39.45	53.97	-14.52	-	-	53	115	H
4.99	34.14	MAv1	34.4	-29.3	39.24	53.97	-14.73	-	-	65	305	H
1.36	54.06	MAv1	29	-34.3	48.76	53.97	-5.21	-	-	254	296	V
1.597	50.86	MAv1	29.5	-34.1	46.26	53.97	-7.71	-	-	126	334	V
2.493	38.32	MAv1	32.7	-32.3	38.72	53.97	-15.25	-	-	17	342	V
4.993	34.54	MAv1	34.4	-29.2	39.74	53.97	-14.23	-	-	260	234	V

MAv1 - KDB558074 v02 10.2.3.2/8.2.1 Option 1 Maximum RMS Average

MID CHANNEL



TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.126	49.73	PK	28.7	-35	43.43	53.97	-10.54	74	-30.57	0-360	101	H
2	1.201	49.06	PK	29	-35.1	42.96	53.97	-11.01	74	-31.04	0-360	199	H
3	1.361	51.32	PK	29	-34.3	46.02	53.97	-7.95	74	-27.98	0-360	101	H
4	1.441	48.66	PK	28.9	-34.6	42.96	53.97	-11.01	74	-31.04	0-360	101	H
5	1.596	55.11	PK	29.5	-34.1	50.51	53.97	-3.46	74	-23.49	0-360	199	H
6	2.389	47.17	PK	32.6	-33.5	46.27	53.97	-7.7	74	-27.73	0-360	101	H
7	2.495	48.28	PK	32.7	-32.3	48.68	53.97	-5.29	74	-25.32	0-360	101	H
8	4.989	45.15	PK	34.4	-29.3	50.25	53.97	-3.72	74	-23.75	0-360	199	H
10	1.02	51.17	PK	28.2	-35.1	44.27	53.97	-9.7	74	-29.73	0-360	199	V
11	1.126	50.71	PK	28.7	-35	44.41	53.97	-9.56	74	-29.59	0-360	199	V
12	1.361	55.88	PK	29	-34.3	50.58	53.97	-3.39	74	-23.42	0-360	100	V
13	1.596	57	PK	29.5	-34.1	52.4	53.97	-1.57	74	-21.6	0-360	100	V
14	2.208	48.81	PK	32.4	-32.9	48.31	53.97	-5.66	74	-25.69	0-360	199	V
15	2.492	49.25	PK	32.7	-32.3	49.65	53.97	-4.32	74	-24.35	0-360	199	V
16	2.721	48.09	PK	33.1	-32.5	48.69	53.97	-5.28	74	-25.31	0-360	100	V
17	4.776	43.35	PK	34.4	-30.1	47.65	53.97	-6.32	74	-26.35	0-360	100	V
18	4.977	46.37	PK	34.4	-29.8	50.97	53.97	-3	74	-23.03	0-360	100	V
*9	10.448	41.09	PK	38.4	-24.2	55.29	-	-	68.2	-12.91	0-360	199	H
*19	10.444	38.6	PK	38.4	-24.3	52.7	-	-	68.2	-15.5	0-360	100	V

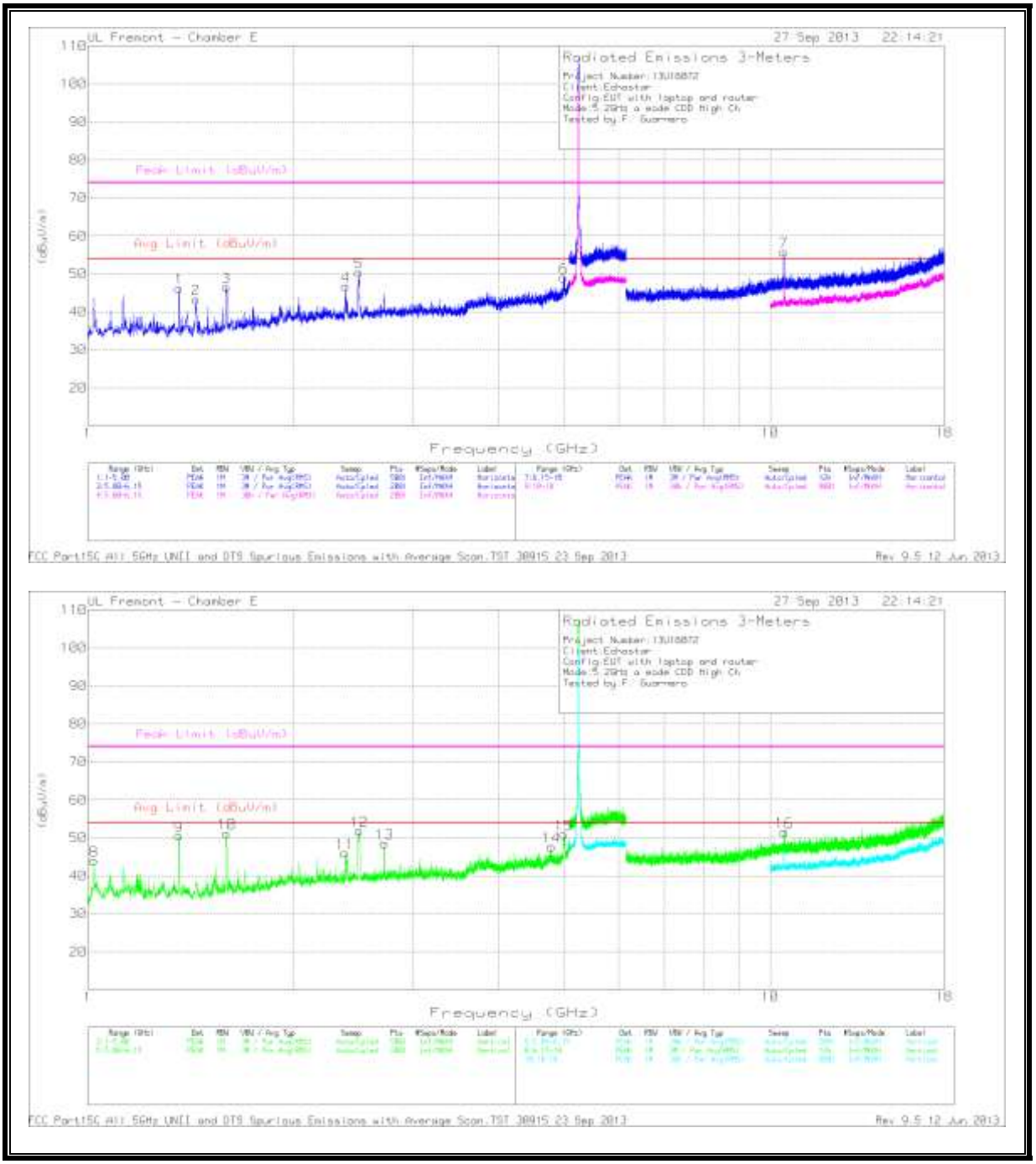
PK - Peak detector

*Not in Restricted Band

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.595	38.71	MAv1	29.4	-34.1	34.01	53.97	-19.96	-	-	346	140	H
2.499	38.43	MAv1	32.7	-32.3	38.83	53.97	-15.14	-	-	211	187	H
4.991	34.43	MAv1	34.4	-29.3	39.53	53.97	-14.44	-	-	34	117	H
1.36	56.3	MAv1	29	-34.3	51	53.97	-2.97	-	-	354	120	V
1.593	45.46	MAv1	29.4	-34.1	40.76	53.97	-13.21	-	-	317	143	V
2.192	31.96	MAv1	32.3	-33.2	31.06	53.97	-22.91	-	-	307	390	V
2.498	40.63	MAv1	32.7	-32.3	41.03	53.97	-12.94	-	-	360	104	V
2.72	44.2	MAv1	33.1	-32.5	44.8	53.97	-9.17	-	-	47	365	V
4.982	35.66	MAv1	34.4	-29.6	40.46	53.97	-13.51	-	-	269	313	V

MAv1 - KDB558074 v02 10.2.3.2/8.2.1 Option 1 Maximum RMS Average

HIGH CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.361	51.58	PK	29	-34.3	46.28	53.97	-7.69	74	-27.72	0-360	100	H
2	1.441	49.03	PK	28.9	-34.6	43.33	53.97	-10.64	74	-30.67	0-360	100	H
3	1.597	51.13	PK	29.5	-34.1	46.53	53.97	-7.44	74	-27.47	0-360	199	H
4	2.389	47.69	PK	32.6	-33.5	46.79	53.97	-7.18	74	-27.21	0-360	100	H
5	2.497	50.04	PK	32.7	-32.3	50.44	53.97	-3.53	74	-23.56	0-360	100	H
6	4.984	44.11	PK	34.4	-29.5	49.01	53.97	-4.96	74	-24.99	0-360	100	H
8	1.02	50.9	PK	28.2	-35.1	44	53.97	-9.97	74	-30	0-360	200	V
9	1.361	55.85	PK	29	-34.3	50.55	53.97	-3.42	74	-23.45	0-360	100	V
10	1.597	55.85	PK	29.5	-34.1	51.25	53.97	-2.72	74	-22.75	0-360	100	V
11	2.381	46.99	PK	32.6	-33.6	45.99	53.97	-7.98	74	-28.01	0-360	200	V
12	2.5	51.44	PK	32.7	-32.3	51.84	53.97	-2.13	74	-22.16	0-360	100	V
13	2.721	47.97	PK	33.1	-32.5	48.57	53.97	-5.4	74	-25.43	0-360	100	V
14	4.777	43.39	PK	34.4	-30.1	47.69	53.97	-6.28	74	-26.31	0-360	200	V
15	4.985	46.01	PK	34.4	-29.5	50.91	53.97	-3.06	74	-23.09	0-360	100	V
*7	10.47	42.18	PK	38.4	-24.8	55.78	-	-	68.2	-12.42	0-360	199	H
*16	10.492	38.03	PK	38.4	-24.9	51.53	-	-	68.2	-16.67	0-360	100	V

PK - Peak detector

*Not in Restricted Band

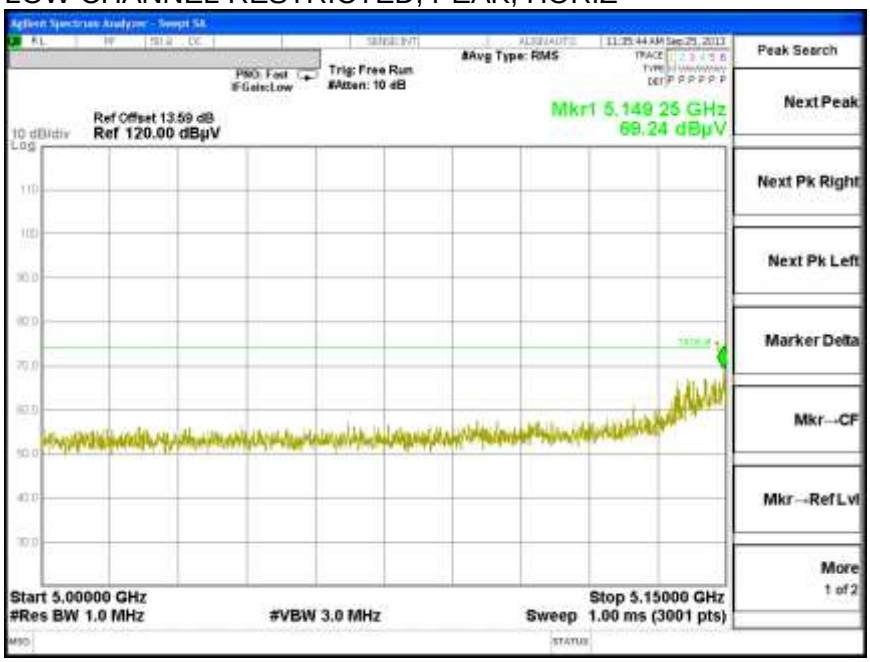
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.499	40.38	MAv1	32.7	-32.3	40.78	53.97	-13.19	-	-	55	107	H
4.992	34.31	MAv1	34.4	-29.3	39.41	53.97	-14.56	-	-	38	106	H
1.36	56.46	MAv1	29	-34.3	51.16	53.97	-2.81	-	-	352	123	V
1.594	44.87	MAv1	29.4	-34.1	40.17	53.97	-13.8	-	-	312	120	V
2.499	44.1	MAv1	32.7	-32.3	44.5	53.97	-9.47	-	-	309	140	V
2.72	45.63	MAv1	33.1	-32.5	46.23	53.97	-7.74	-	-	75	198	V
4.989	34.61	MAv1	34.4	-29.3	39.71	53.97	-14.26	-	-	244	232	V

MAv1 - KDB558074 v02 10.2.3.2/8.2.1 Option 1 Maximum RMS Average

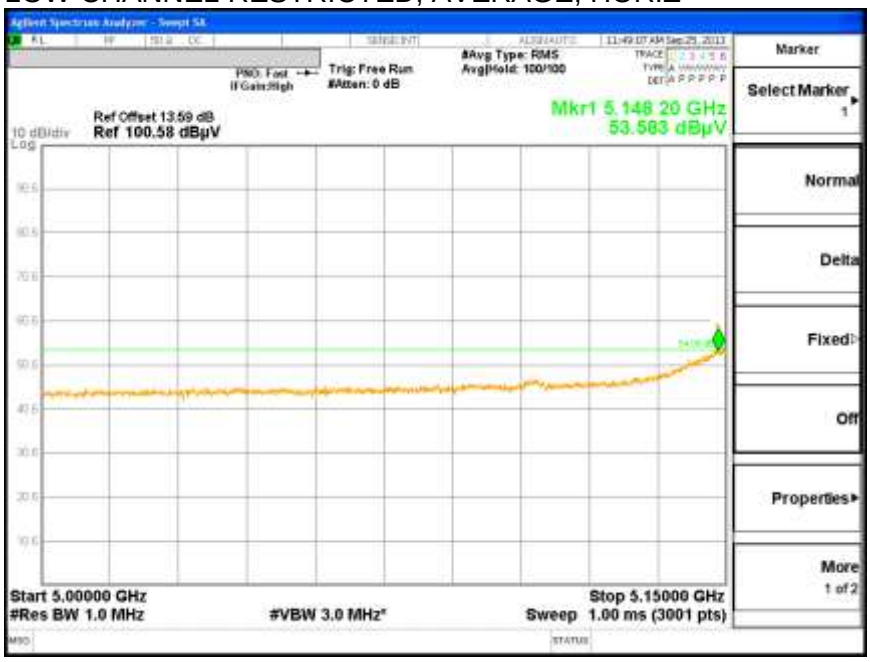
9.2.3. 802.11n HT20 SISO MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

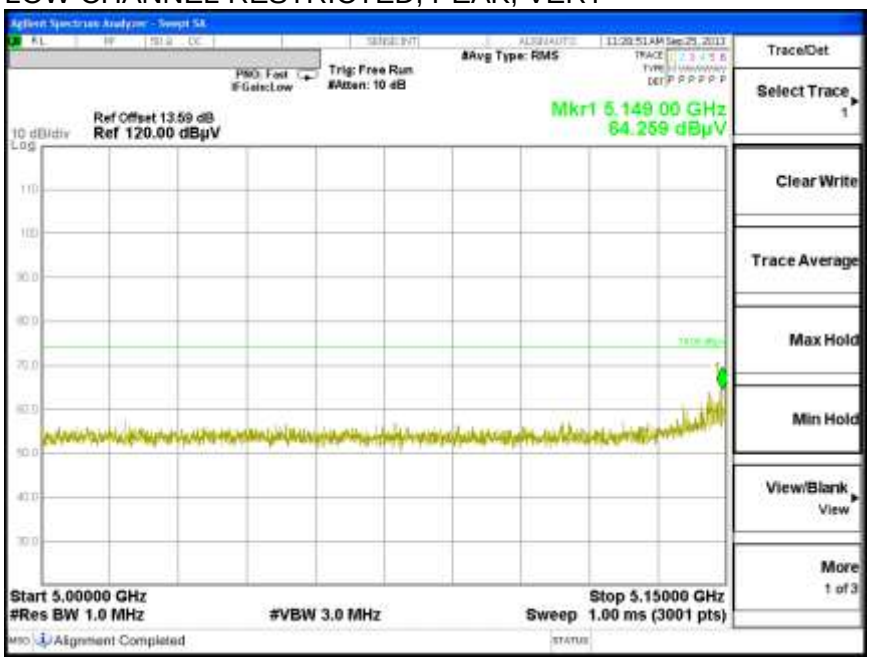
LOW CHANNEL RESTRICTED, PEAK, HORIZ



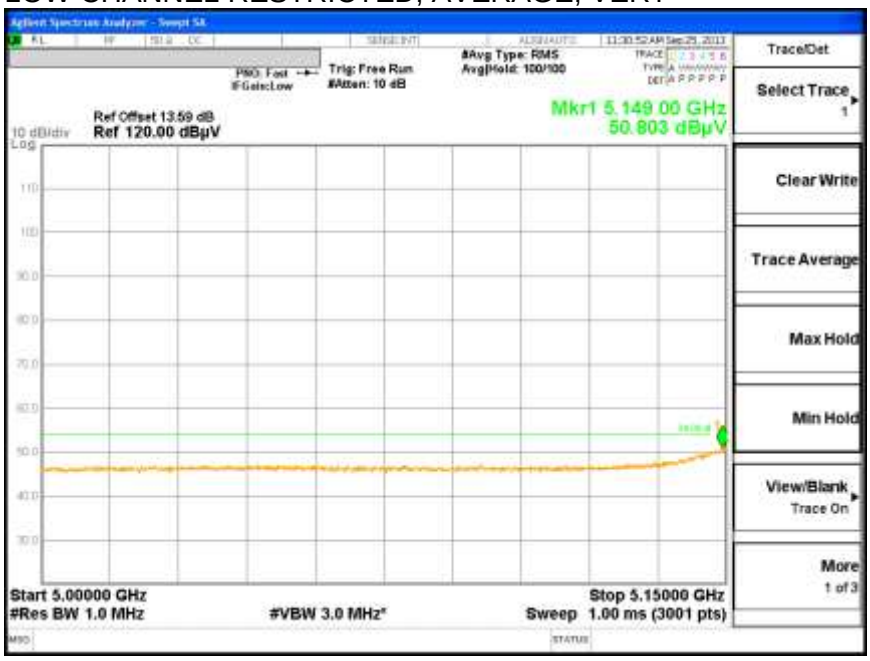
LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



LOW CHANNEL RESTRICTED, PEAK, VERT

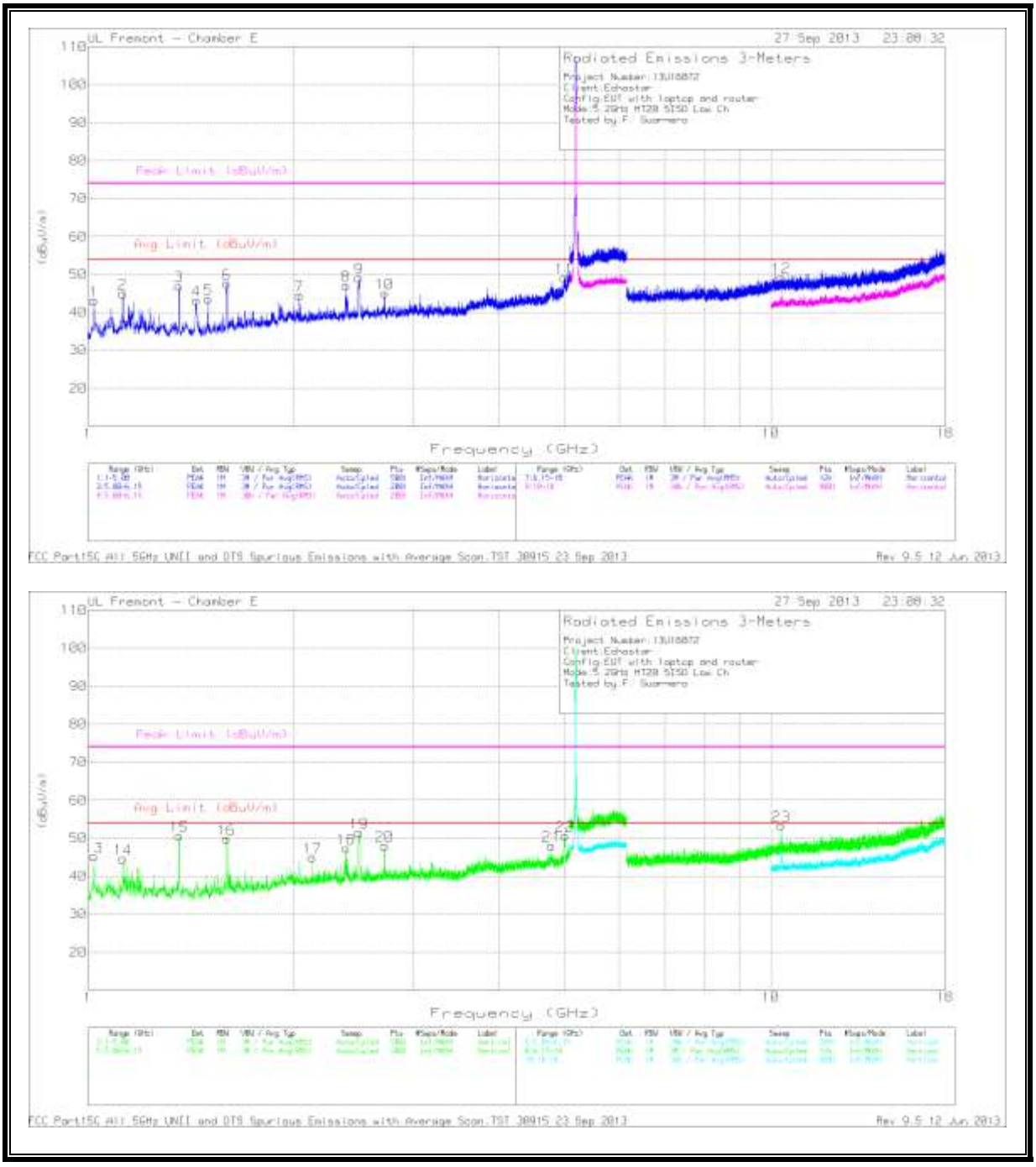


LOW CHANNEL RESTRICTED, AVERAGE, VERT



HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.02	50.06	PK	28.2	-35.1	43.16	53.97	-10.81	74	-30.84	0-360	199	H
2	1.126	51.31	PK	28.7	-35	45.01	53.97	-8.96	74	-28.99	0-360	100	H
3	1.361	52.27	PK	29	-34.3	46.97	53.97	-7	74	-27.03	0-360	100	H
4	1.441	48.91	PK	28.9	-34.6	43.21	53.97	-10.76	74	-30.79	0-360	100	H
5	1.501	49.47	PK	28.8	-34.7	43.57	53.97	-10.4	74	-30.43	0-360	100	H
6	1.598	52.16	PK	29.5	-34	47.66	53.97	-6.31	74	-26.34	0-360	199	H
7	2.04	46.06	PK	32.1	-33.7	44.46	53.97	-9.51	74	-29.54	0-360	100	H
8	2.389	48.05	PK	32.6	-33.5	47.15	53.97	-6.82	74	-26.85	0-360	100	H
9	2.494	48.77	PK	32.7	-32.3	49.17	53.97	-4.8	74	-24.83	0-360	100	H
10	2.721	44.47	PK	33.1	-32.5	45.07	53.97	-8.9	74	-28.93	0-360	199	H
11	4.986	44.12	PK	34.4	-29.4	49.12	53.97	-4.85	74	-24.88	0-360	199	H
13	1.02	52.09	PK	28.2	-35.1	45.19	53.97	-8.78	74	-28.81	0-360	200	V
14	1.126	50.91	PK	28.7	-35	44.61	53.97	-9.36	74	-29.39	0-360	200	V
15	1.361	55.86	PK	29	-34.3	50.56	53.97	-3.41	74	-23.44	0-360	100	V
16	1.596	54.47	PK	29.5	-34.1	49.87	53.97	-4.1	74	-24.13	0-360	100	V
17	2.133	46.58	PK	32.3	-33.9	44.98	53.97	-8.99	74	-29.02	0-360	200	V
18	2.39	48.12	PK	32.6	-33.4	47.32	53.97	-6.65	74	-26.68	0-360	200	V
19	2.494	51.02	PK	32.7	-32.3	51.42	53.97	-2.55	74	-22.58	0-360	100	V
20	2.721	47.47	PK	33.1	-32.5	48.07	53.97	-5.9	74	-25.93	0-360	100	V
21	4.776	43.79	PK	34.4	-30.1	48.09	53.97	-5.88	74	-25.91	0-360	100	V
22	4.996	45.38	PK	34.4	-29.1	50.68	53.97	-3.29	74	-23.32	0-360	200	V
*12	10.358	36.02	PK	38.3	-25	49.32	-	-	68.2	-18.88	0-360	199	H
*23	10.358	40.04	PK	38.3	-25	53.34	-	-	68.2	-14.86	0-360	200	V

PK - Peak detector

*Not in Restricted Band

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /6GHz HPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
*12	10.358	36.02	PK	38.3	-25	49.32	-	-	68.2	-18.88	0-360	199	H
*23	10.358	40.04	PK	38.3	-25	53.34	-	-	68.2	-14.86	0-360	200	V

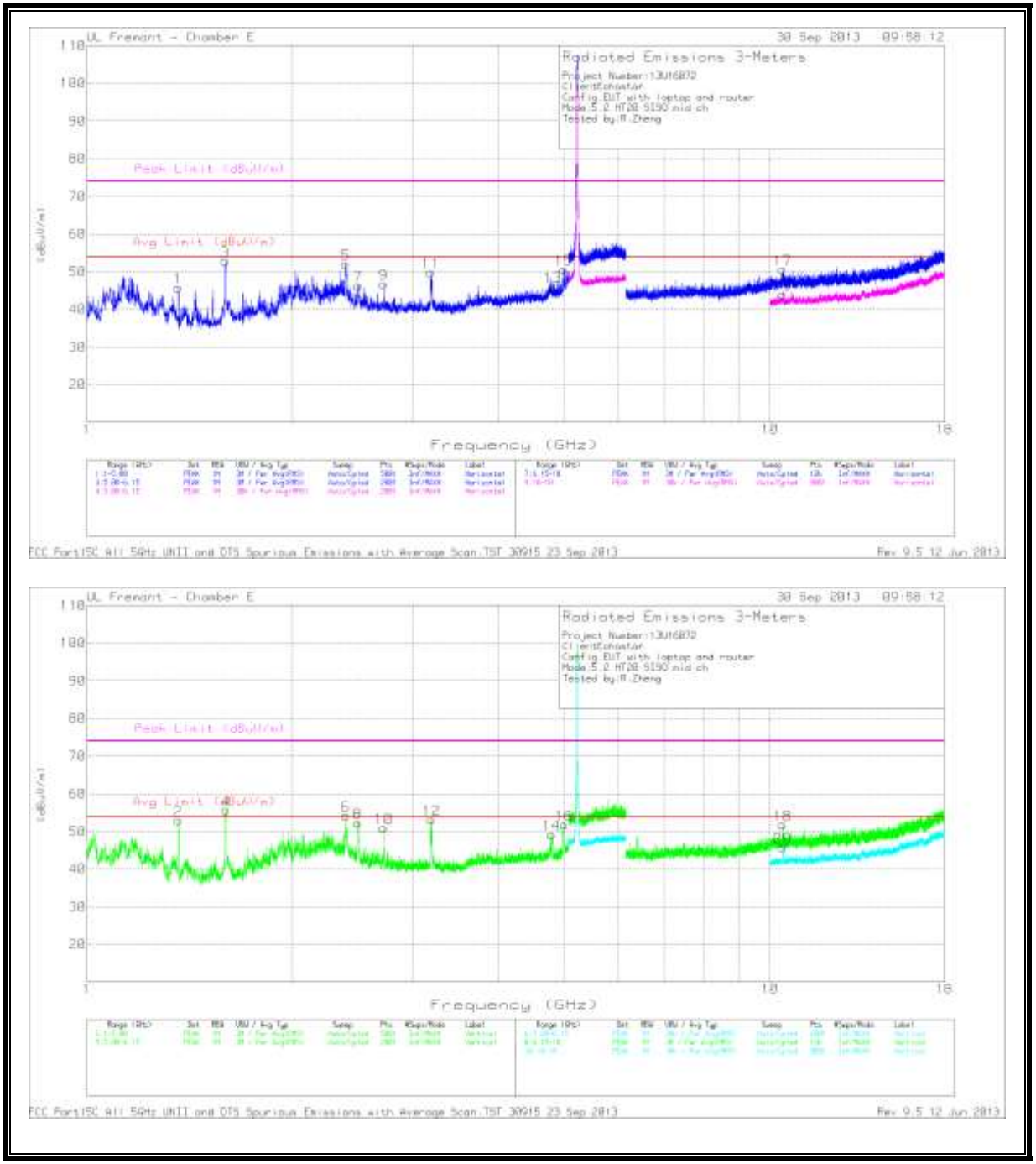
PK - Peak detector

*Not in Restricted Band

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.499	38.85	MAv1	32.7	-32.3	39.25	53.97	-14.72	-	-	47	110	H
4.995	35.65	MAv1	34.4	-29.2	40.85	53.97	-13.12	-	-	61	182	H
1.36	56.11	MAv1	29	-34.3	50.81	53.97	-3.16	-	-	356	124	V
1.595	45.33	MAv1	29.4	-34.1	40.63	53.97	-13.34	-	-	318	122	V
2.499	43.05	MAv1	32.7	-32.3	43.45	53.97	-10.52	-	-	313	117	V
2.72	43.92	MAv1	33.1	-32.5	44.52	53.97	-9.45	-	-	46	135	V
4.776	35.97	MAv1	34.4	-30.1	40.27	53.97	-13.7	-	-	306	212	V
4.995	34.32	MAv1	34.4	-29.2	39.52	53.97	-14.45	-	-	231	198	V

MAv1 - KDB558074 v02 10.2.3.2/8.2.1 Option 1 Maximum RMS Average

MID CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.361	51.09	PK	29	-34.3	45.79	53.97	-8.18	74	-28.21	0-360	199	H
3	1.595	57.6	PK	29.4	-34.1	52.9	53.97	-1.07	74	-21.1	0-360	199	H
5	2.392	52.84	PK	32.6	-33.4	52.04	53.97	-1.93	74	-21.96	0-360	199	H
7	2.497	45.93	PK	32.7	-32.3	46.33	53.97	-7.64	74	-27.67	0-360	199	H
9	2.721	46.21	PK	33.1	-32.5	46.81	53.97	-7.16	74	-27.19	0-360	199	H
11	*3.189	49.09	PK	33.4	-32.6	49.89	-	-	68.2	-18.31	0-360	100	H
13	4.807	42.1	PK	34.4	-30.4	46.1	53.97	-7.87	74	-27.9	0-360	199	H
15	4.994	45.42	PK	34.4	-29.2	50.62	53.97	-3.35	74	-23.38	0-360	100	H
2	1.361	58.3	PK	29	-34.3	53	53.97	-.97	74	-21	0-360	100	V
4	1.599	60.2	PK	29.5	-34	55.7	-	-	74	-18.3	0-360	100	V
6	2.395	55.02	PK	32.6	-33.4	54.22	-	-	74	-19.78	0-360	199	V
8	2.492	51.89	PK	32.7	-32.3	52.29	53.97	-1.68	74	-21.71	0-360	100	V
10	2.72	50.39	PK	33.1	-32.5	50.99	53.97	-2.98	74	-23.01	0-360	100	V
12	*3.195	52.4	PK	33.4	-32.6	53.2	-	-	68.2	-15.0	0-360	100	V
14	4.784	45.02	PK	34.4	-30.2	49.22	53.97	-4.75	74	-24.78	0-360	100	V
16	4.998	46.55	PK	34.4	-29.1	51.85	53.97	-2.12	74	-22.15	0-360	100	V
17	*10.439	36.65	PK	38.4	-24.4	50.65	-	-	68.2	-17.55	0-360	199	H
18	*10.439	37.8	PK	38.4	-24.4	51.8	-	-	68.2	-16.4	0-360	199	V
19	*10.444	29.96	PK	38.4	-24.3	44.06	-	-	68.2	-24.14	0-360	199	H
20	*10.444	31.79	PK	38.4	-24.3	45.89	-	-	68.2	-22.31	0-360	100	V

PK - Peak detector

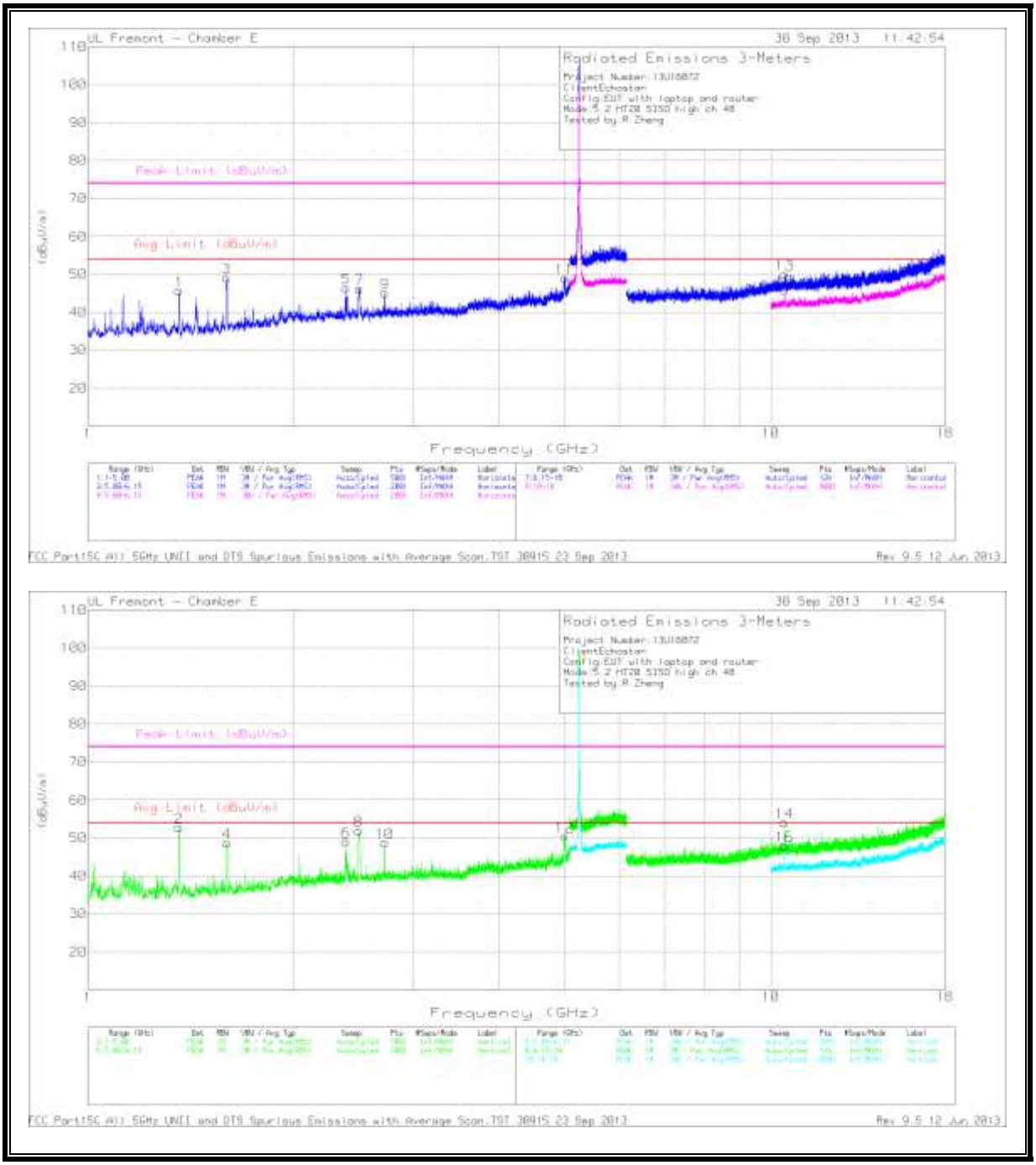
*Not in Restricted Bands

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5 GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.599	43.36	AD1	29.5	-34	38.86	53.97	-15.11	-	-	12	106	H
2.388	37.02	AD1	32.6	-33.5	36.12	53.97	-17.85	-	-	58	178	H
4.991	34.32	AD1	34.4	-29.3	39.42	53.97	-14.55	-	-	80	281	H
1.36	55.57	AD1	29	-34.3	50.27	53.97	-3.7	-	-	257	201	V
1.598	48.05	AD1	29.5	-34	43.55	53.97	-10.42	-	-	349	255	V
2.388	40.28	AD1	32.6	-33.5	39.38	53.97	-14.59	-	-	272	188	V
2.499	42.98	AD1	32.7	-32.3	43.38	53.97	-10.59	-	-	57	277	V
2.72	46.78	AD1	33.1	-32.5	47.38	53.97	-6.59	-	-	60	181	V
4.781	32.05	AD1	34.4	-30.2	36.25	53.97	-17.72	-	-	180	238	V
4.995	33.79	AD1	34.4	-29.2	38.99	53.97	-14.98	-	-	228	191	V

AD1 - KDB 789033 V01r03 Method: AD Primary Power Average

HIGH CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.361	50.99	PK	29	-34.3	0	45.69	53.97	-8.28	74	-28.31	0-360	199	H
3	1.598	53.62	PK	29.5	-34	0	49.12	53.97	-4.85	74	-24.88	0-360	199	H
5	2.388	47.38	PK	32.6	-33.5	0	46.48	53.97	-7.49	74	-27.52	0-360	100	H
7	2.499	45.83	PK	32.7	-32.3	0	46.23	53.97	-7.74	74	-27.77	0-360	199	H
9	2.721	44.51	PK	33.1	-32.5	0	45.11	53.97	-8.86	74	-28.89	0-360	199	H
11	4.992	43.96	PK	34.4	-29.3	0	49.06	53.97	-4.91	74	-24.94	0-360	199	H
2	1.361	58.05	PK	29	-34.3	0	52.75	53.97	-1.22	74	-21.25	0-360	199	V
4	1.6	53.26	PK	29.5	-34	0	48.76	53.97	-5.21	74	-25.24	0-360	101	V
6	2.389	49.97	PK	32.6	-33.5	0	49.07	53.97	-4.9	74	-24.93	0-360	101	V
8	2.492	51.67	PK	32.7	-32.4	0	51.97	53.97	-2	74	-22.03	0-360	101	V
10	2.721	48.13	PK	33.1	-32.5	0	48.73	53.97	-5.24	74	-25.27	0-360	199	V
12	4.993	45.2	PK	34.4	-29.2	0	50.4	53.97	-3.57	74	-23.6	0-360	101	V
13	*10.482	36.5	PK	38.4	-24.9	0	50	-	-	68.2	-24	0-360	199	H
14	*10.477	40.56	PK	38.4	-24.9	0	54.06	-	-	68.2	-14.14	0-360	100	V
15	*10.484	32.57	PK	38.4	-25	0	45.97	-	-	68.2	-28.03	0-360	199	H
16	*10.477	34.41	PK	38.4	-24.9	0	47.91	-	-	68.2	-26.09	0-360	200	V

PK - Peak detector

*Not in Restricted Bands

Radiated Emissions

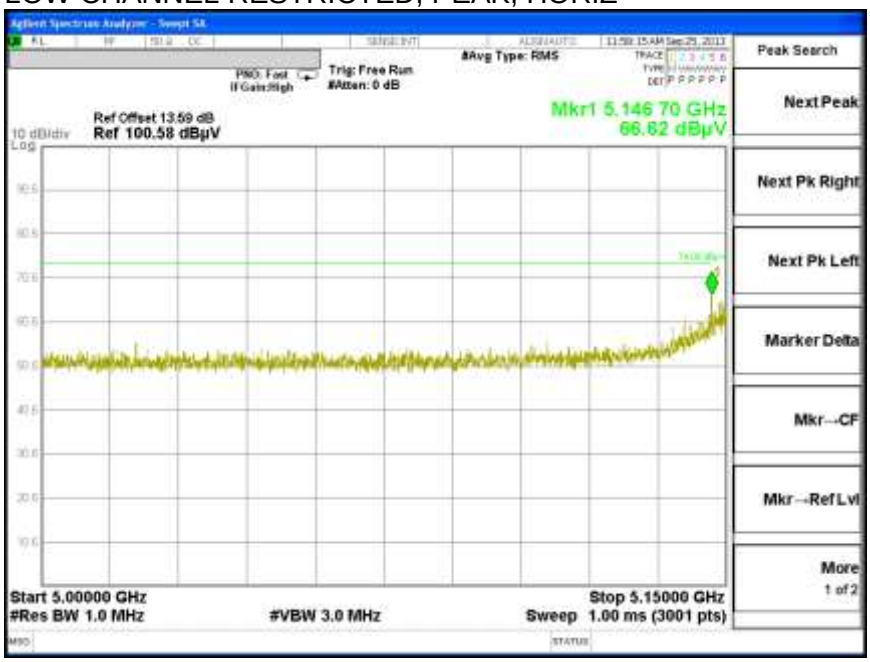
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.596	44.96	AD1	29.5	-34.1	.2	40.56	53.97	-13.41	-	-	298	187	H
4.991	33.2	AD1	34.4	-29.3	.2	38.5	53.97	-15.47	-	-	348	120	H
1.36	57.86	AD1	29	-34.3	.2	52.76	53.97	-1.21	-	-	333	195	V
1.598	42.07	AD1	29.5	-34	.2	37.77	53.97	-16.2	-	-	101	321	V
2.388	48.05	AD1	32.6	-33.5	.2	47.35	53.97	-6.62	-	-	3	314	V
2.499	39.05	AD1	32.7	-32.3	.2	39.65	53.97	-14.32	-	-	349	365	V
2.72	44.12	AD1	33.1	-32.5	.2	44.92	53.97	-9.05	-	-	34	134	V
4.998	34.65	AD1	34.4	-29.1	.2	40.15	53.97	-13.82	-	-	262	251	V

AD1 - KDB 789033 V01r03 Method: AD Primary Power Average

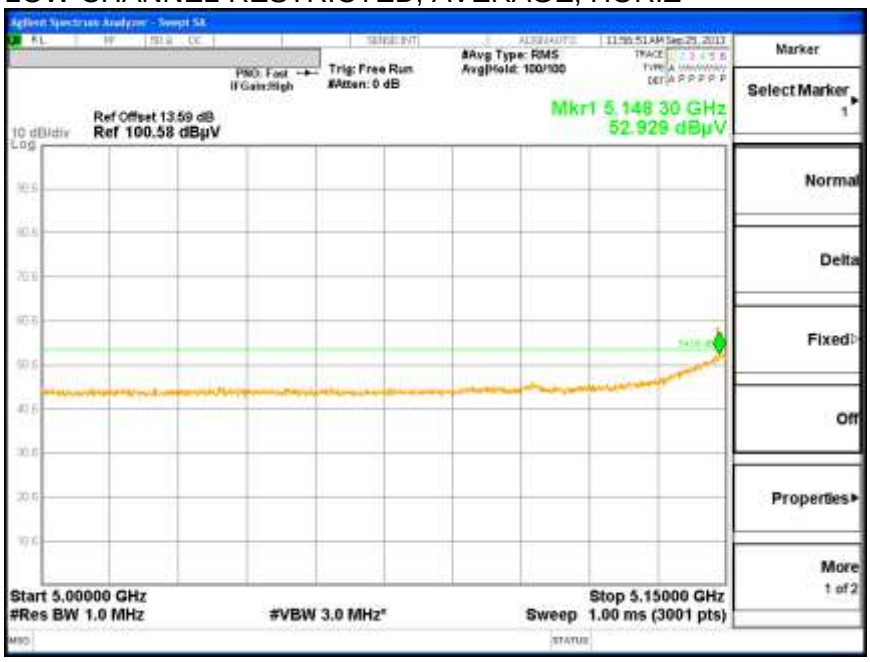
9.2.4. 802.11n HT20 2TX CDD MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

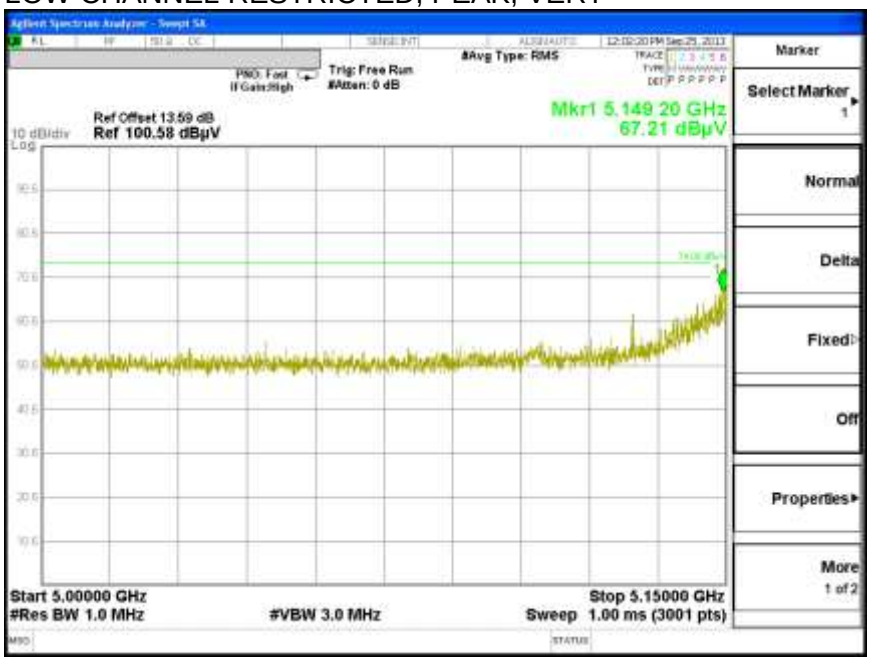
LOW CHANNEL RESTRICTED, PEAK, HORIZ



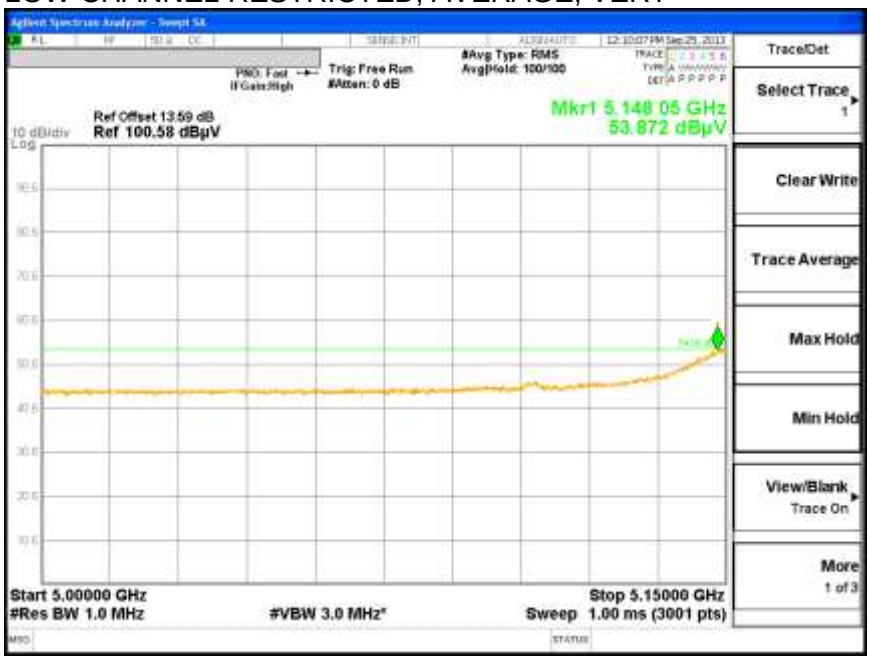
LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



LOW CHANNEL RESTRICTED, PEAK, VERT

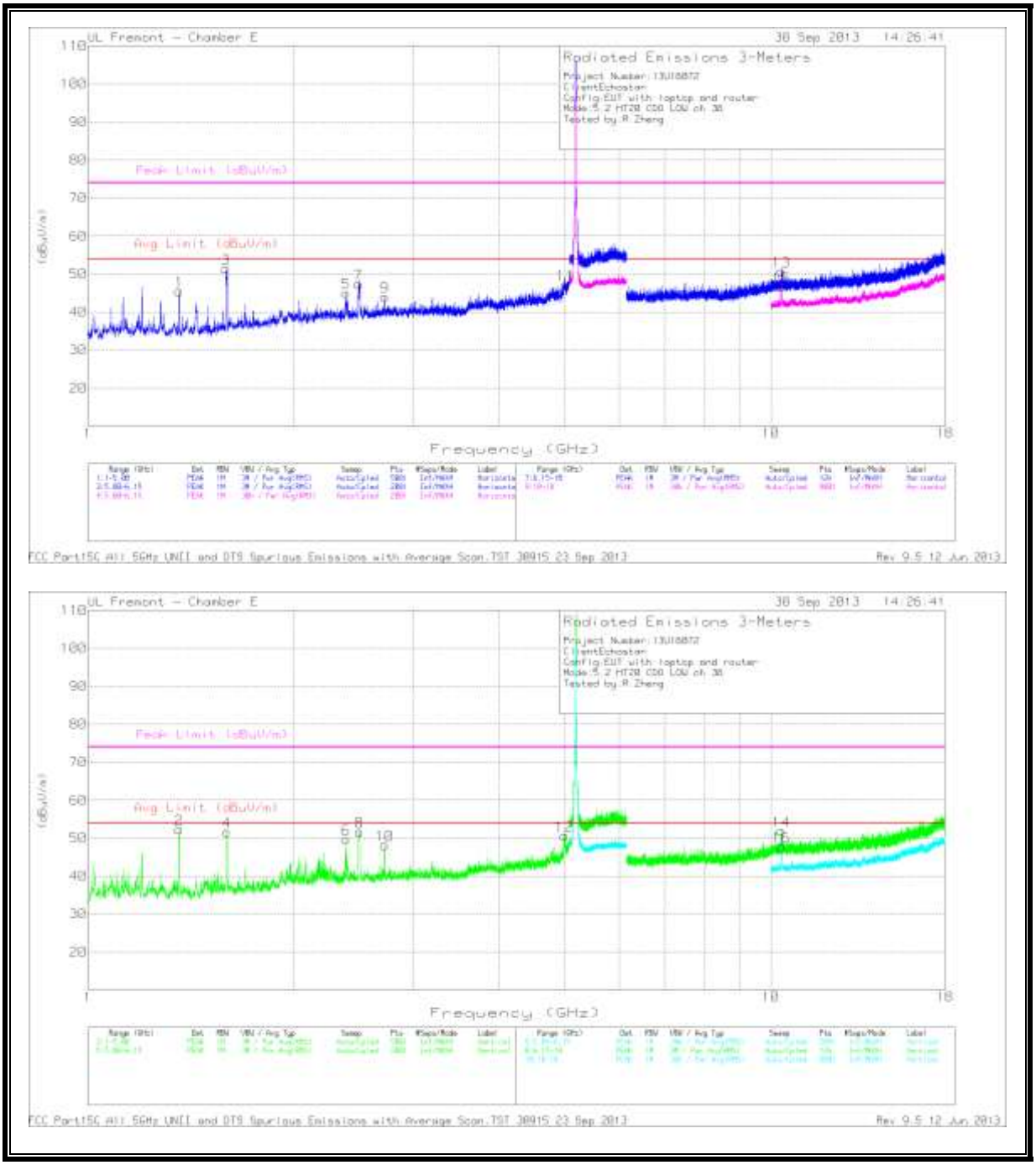


LOW CHANNEL RESTRICTED, AVERAGE, VERT



HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.361	50.87	PK	29	-34.3	0	45.57	53.97	-8.4	74	-28.43	0-360	100	H
3	1.594	56.1	PK	29.4	-34.1	0	51.4	53.97	-2.57	74	-22.6	0-360	199	H
5	2.389	45.97	PK	32.6	-33.5	0	45.07	53.97	-8.9	74	-28.93	0-360	100	H
7	2.489	47.13	PK	32.7	-32.4	0	47.43	53.97	-6.54	74	-26.57	0-360	199	H
9	2.721	43.43	PK	33.1	-32.5	0	44.03	53.97	-9.94	74	-29.97	0-360	199	H
11	5.007	41.92	PK	34.4	-29	0	47.32	53.97	-6.65	74	-26.68	0-360	100	H
2	1.361	57.68	PK	29	-34.3	0	52.38	53.97	-1.59	74	-21.62	0-360	200	V
4	1.597	56.33	PK	29.5	-34.1	0	51.73	53.97	-2.24	74	-22.27	0-360	200	V
6	2.389	50.65	PK	32.6	-33.5	0	49.75	53.97	-4.22	74	-24.25	0-360	200	V
8	2.499	51.31	PK	32.7	-32.3	0	51.71	53.97	-2.26	74	-22.29	0-360	100	V
10	2.721	47.58	PK	33.1	-32.5	0	48.18	53.97	-5.79	74	-25.82	0-360	100	V
12	4.987	45.63	PK	34.4	-29.4	0	50.63	53.97	-3.34	74	-23.37	0-360	100	V
13	*10.366	37.48	PK	38.3	-25	0	50.78	-	-	68.2	-17.42	0-360	199	H
14	*10.368	38.49	PK	38.3	-24.9	0	51.89	-	-	68.2	-16.31	0-360	200	V
15	*10.367	33.31	PK	38.3	-25	0	46.61	-	-	68.2	-21.59	0-360	199	H
16	*10.367	34.48	PK	38.3	-25	0	47.78	-	-	68.2	-20.42	0-360	100	V

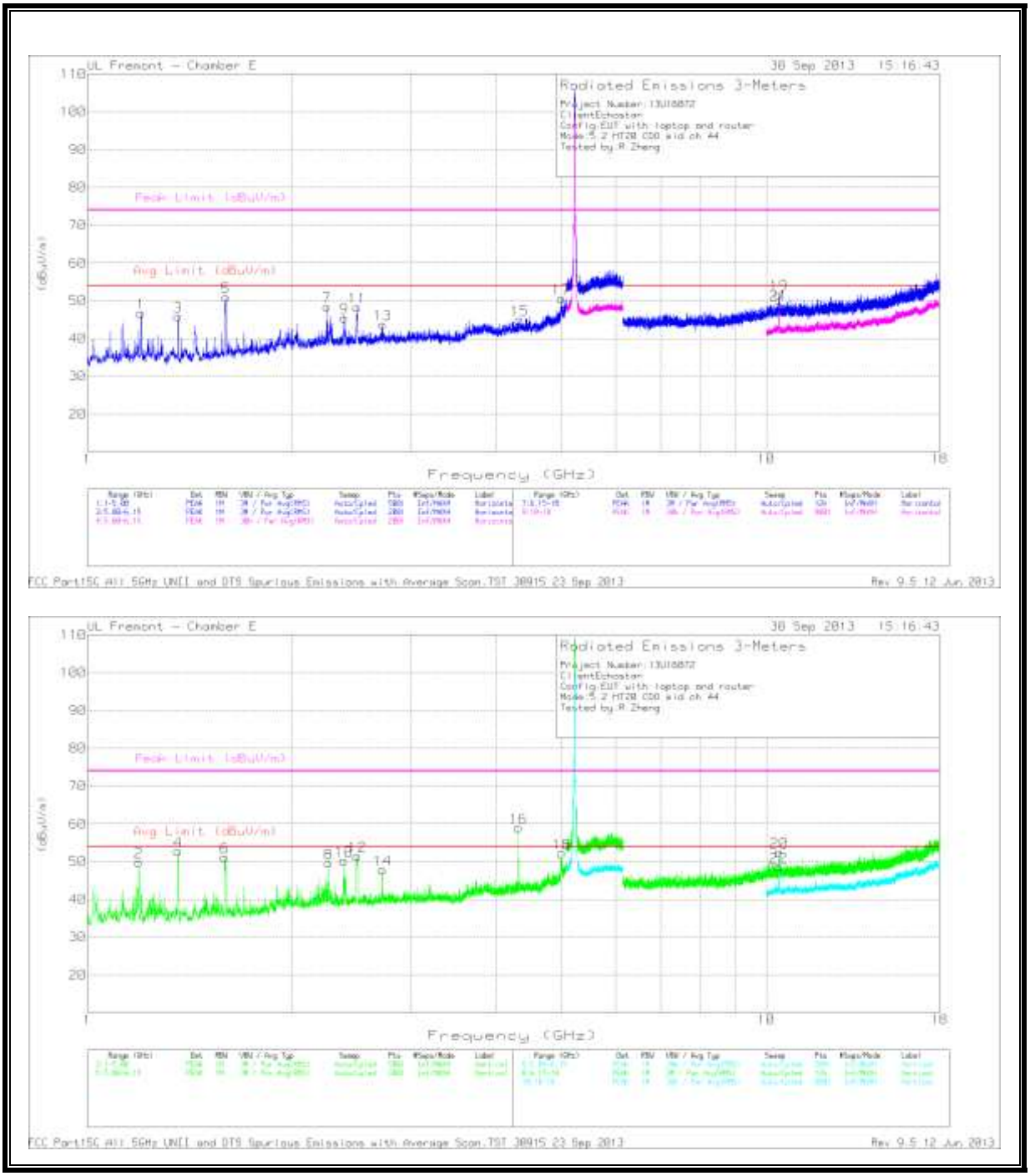
PK - Peak detector

*Not in Restricted Band

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.595	45.04	AD1	29.4	-34.1	.2	40.54	53.97	-13.43	-	-	301	145	H
1.36	58.52	AD1	29	-34.3	.2	53.42	53.97	-.55	-	-	337	183	V
1.597	41.81	AD1	29.5	-34.1	.2	37.41	53.97	-16.56	-	-	28	298	V
2.388	48.19	AD1	32.6	-33.5	.2	47.49	53.97	-6.48	-	-	3	107	V
2.499	42.97	AD1	32.7	-32.3	.2	43.57	53.97	-10.4	-	-	19	111	V
2.72	46	AD1	33.1	-32.5	.2	46.8	53.97	-7.17	-	-	70	127	V
4.994	34.29	AD1	34.4	-29.2	.2	39.69	53.97	-14.28	-	-	344	210	V

AD1 - KDB 789033 V01r03 Method: AD Primary Power Average

MID CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.2	52.84	PK	29	-35.1	0	46.74	53.97	-7.23	74	-27.26	0-360	199	H
3	1.361	51.18	PK	29	-34.3	0	45.88	53.97	-8.09	74	-28.12	0-360	100	H
5	1.6	55.46	PK	29.5	-34	0	50.96	53.97	-3.01	74	-23.04	0-360	199	H
7	2.254	48.63	PK	32.4	-32.6	0	48.43	53.97	-5.54	74	-25.57	0-360	199	H
9	2.39	46.26	PK	32.6	-33.4	0	45.46	53.97	-8.51	74	-28.54	0-360	100	H
11	2.497	47.91	PK	32.7	-32.3	0	48.31	53.97	-5.66	74	-25.69	0-360	199	H
13	2.721	43.13	PK	33.1	-32.5	0	43.73	53.97	-10.24	74	-30.27	0-360	100	H
15	4.332	41.89	PK	34.1	-31	0	44.99	53.97	-8.98	74	-29.01	0-360	199	H
17	4.992	45.54	PK	34.4	-29.3	0	50.64	53.97	-3.33	74	-23.36	0-360	199	H
2	1.191	56.21	PK	28.9	-35.2	0	49.91	53.97	-4.06	74	-24.09	0-360	200	V
4	1.361	58.04	PK	29	-34.3	0	52.74	53.97	-1.23	74	-21.26	0-360	200	V
6	1.594	55.93	PK	29.4	-34.1	0	51.23	53.97	-2.74	74	-22.77	0-360	200	V
8	2.266	50.01	PK	32.4	-32.8	0	49.61	53.97	-4.36	74	-24.39	0-360	200	V
10	2.389	51.09	PK	32.6	-33.5	0	50.19	53.97	-3.78	74	-23.81	0-360	200	V
12	2.498	51.03	PK	32.7	-32.3	0	51.43	53.97	-2.54	74	-22.57	0-360	101	V
14	2.721	47.27	PK	33.1	-32.5	0	47.87	53.97	-6.1	74	-26.13	0-360	101	V
16	4.315	55.95	PK	34.1	-31.1	0	58.95	-	-	74	-15.05	0-360	101	V
18	4.998	46.94	PK	34.4	-29.1	0	52.24	53.97	-1.73	74	-21.76	0-360	101	V
19	*10.441	37.6	PK	38.4	-24.3	0	51.7	-	-	68.2	-16.5	0-360	199	H
20	*10.445	38.32	PK	38.4	-24.2	0	52.52	-	-	68.2	-15.68	0-360	200	V
21	*10.442	34.86	PK	38.4	-24.3	0	48.96	-	-	68.2	-19.24	0-360	199	H
22	*10.44	34.57	PK	38.4	-24.3	0	48.67	-	-	68.2	-19.53	0-360	199	V

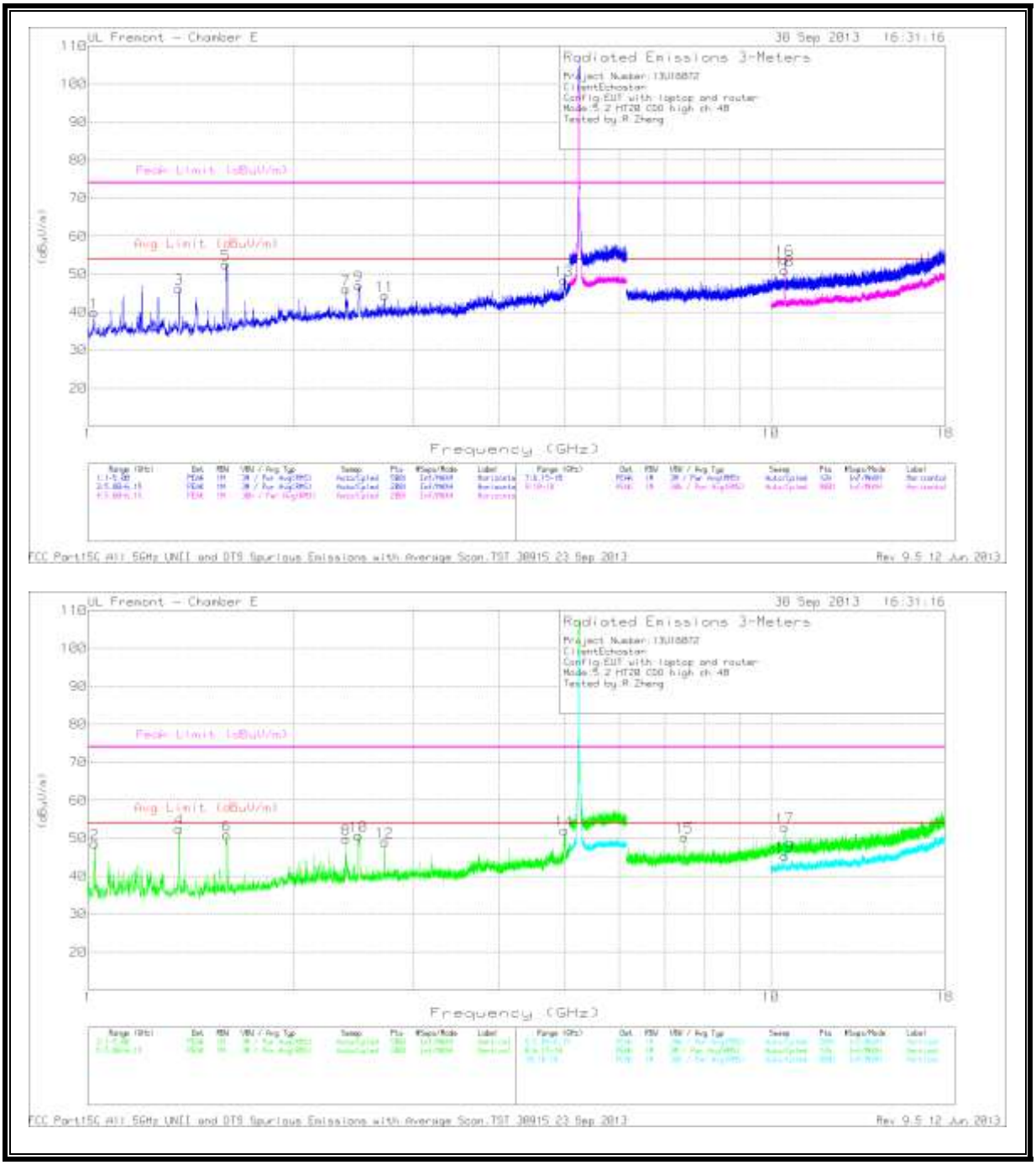
PK - Peak detector

*Not in Restricted Bands

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.599	42.77	AD1	29.5	-34	.2	38.47	53.97	-15.5	-	-	305	182	H
2.25	31.64	AD1	32.4	-32.6	.2	31.64	53.97	-22.33	-	-	22	128	H
2.38	40.2	AD1	32.6	-33.6	.2	39.4	53.97	-14.57	-	-	330	218	H
2.497	37.25	AD1	32.7	-32.3	.2	37.85	53.97	-16.12	-	-	244	395	H
4.991	34.04	AD1	34.4	-29.3	.2	39.34	53.97	-14.63	-	-	99	254	H
1.19	38.3	AD1	28.9	-35.2	.2	32.2	53.97	-21.77	-	-	275	388	V
1.36	57.93	AD1	29	-34.3	.2	52.83	53.97	-1.14	-	-	337	177	V
1.597	43.52	AD1	29.5	-34.1	.2	39.12	53.97	-14.85	-	-	263	311	V
2.388	45.65	AD1	32.6	-33.5	.2	44.95	53.97	-9.02	-	-	347	244	V
2.498	41.69	AD1	32.7	-32.3	.2	42.29	53.97	-11.68	-	-	29	198	V
4.323	31.62	AD1	34.1	-31	.2	34.92	53.97	-19.05	-	-	320	275	V
4.986	34.39	AD1	34.4	-29.4	.2	39.59	53.97	-14.38	-	-	345	210	V

AD1 - KDB 789033 V01r03 Method: AD Primary Power Average

HIGH CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.02	46.82	PK	28.2	-35.1	0	39.92	53.97	-14.05	74	-34.08	0-360	199	H
3	1.361	51.45	PK	29	-34.3	0	46.15	53.97	-7.82	74	-27.85	0-360	199	H
5	1.594	57.25	PK	29.4	-34.1	0	52.55	53.97	-1.42	74	-21.45	0-360	199	H
7	2.388	47	PK	32.6	-33.5	0	46.1	53.97	-7.87	74	-27.9	0-360	100	H
9	2.492	46.75	PK	32.7	-32.4	0	47.05	53.97	-6.92	74	-26.95	0-360	199	H
11	2.721	43.7	PK	33.1	-32.5	0	44.3	53.97	-9.67	74	-29.7	0-360	100	H
13	4.978	43.72	PK	34.4	-29.8	0	48.32	53.97	-5.65	74	-25.68	0-360	199	H
2	1.024	55.49	PK	28.2	-35.1	0	48.59	53.97	-5.38	74	-25.41	0-360	100	V
4	1.361	57.81	PK	29	-34.3	0	52.51	53.97	-1.46	74	-21.49	0-360	200	V
6	1.598	55.37	PK	29.5	-34	0	50.87	53.97	-3.1	74	-23.13	0-360	200	V
8	2.389	50.73	PK	32.6	-33.5	0	49.83	53.97	-4.14	74	-24.17	0-360	200	V
10	2.489	50.29	PK	32.7	-32.4	0	50.59	53.97	-3.38	74	-23.41	0-360	100	V
12	2.721	48.41	PK	33.1	-32.5	0	49.01	53.97	-4.96	74	-24.99	0-360	100	V
14	4.99	46.96	PK	34.4	-29.3	0	52.06	53.97	-1.91	74	-21.94	0-360	100	V
16	*10.481	40.27	PK	38.4	-24.9	0	53.77	-	-	68.2	-14.43	0-360	199	H
15	7.471	43.17	PK	36.1	-29	0	50.27	53.97	-3.7	74	-23.73	0-360	100	V
17	*10.486	39.45	PK	38.4	-25	0	52.85	-	-	68.2	-15.35	0-360	200	V
18	*10.482	37.49	PK	38.4	-24.9	0	50.99	-	-	68.2	-17.21	0-360	199	H
19	*10.492	31.84	PK	38.4	-24.9	0	45.34	-	-	68.2	-22.86	0-360	199	V

PK - Peak detector

*Not in Restricted bands

Radiated Emissions

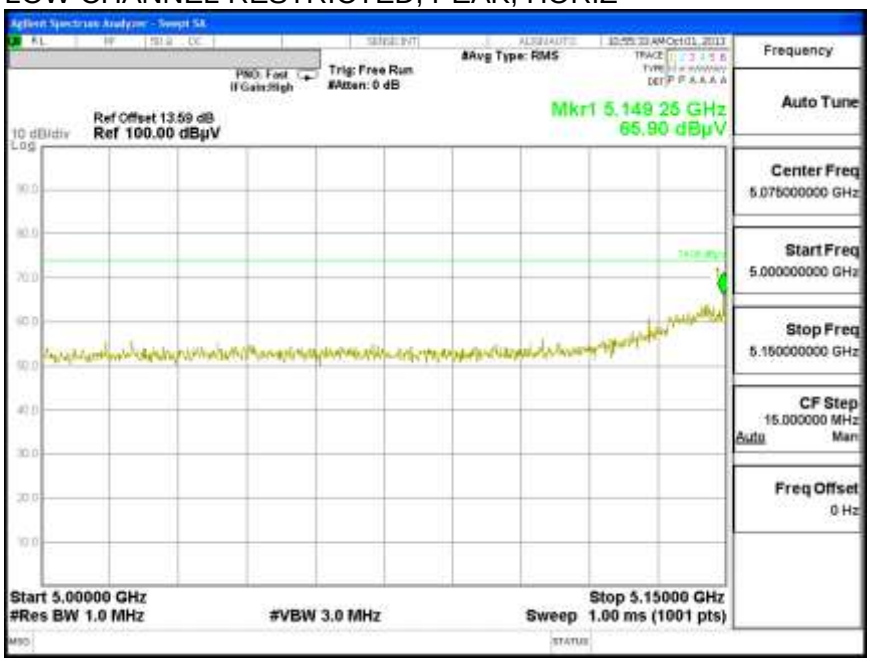
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.594	45.39	AD1	29.4	-34.1	.2	40.89	53.97	-13.08	-	-	294	190	H
4.991	32.26	AD1	34.4	-29.3	.2	37.56	53.97	-16.41	-	-	290	120	H
1.02	40.02	AD1	28.2	-35.1	.2	33.32	53.97	-20.65	-	-	16	283	V
1.36	55.54	AD1	29	-34.3	.2	50.44	53.97	-3.53	-	-	243	201	V
1.594	45.9	AD1	29.4	-34.1	.2	41.4	53.97	-12.57	-	-	88	312	V
2.388	46.99	AD1	32.6	-33.5	.2	46.29	53.97	-7.68	-	-	12	314	V
2.498	37.86	AD1	32.7	-32.3	.2	38.46	53.97	-15.51	-	-	345	378	V
2.72	42.5	AD1	33.1	-32.5	.2	43.3	53.97	-10.67	-	-	298	143	V
4.997	35.91	AD1	34.4	-29.1	.2	41.41	53.97	-12.56	-	-	30	115	V

AD1 - KDB 789033 V01r03 Method: AD Primary Power Average

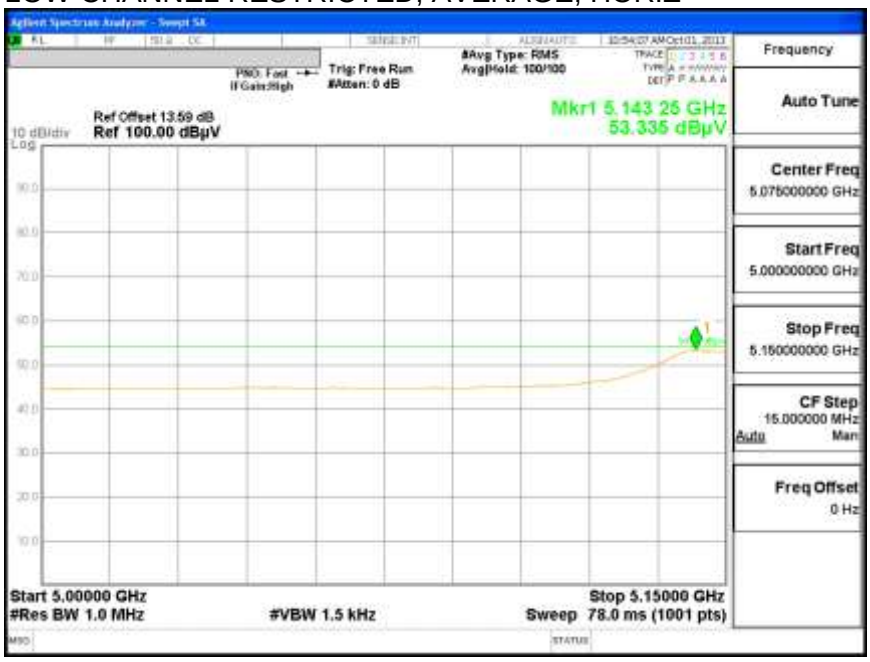
9.2.5. 802.11n HT40 SISO MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

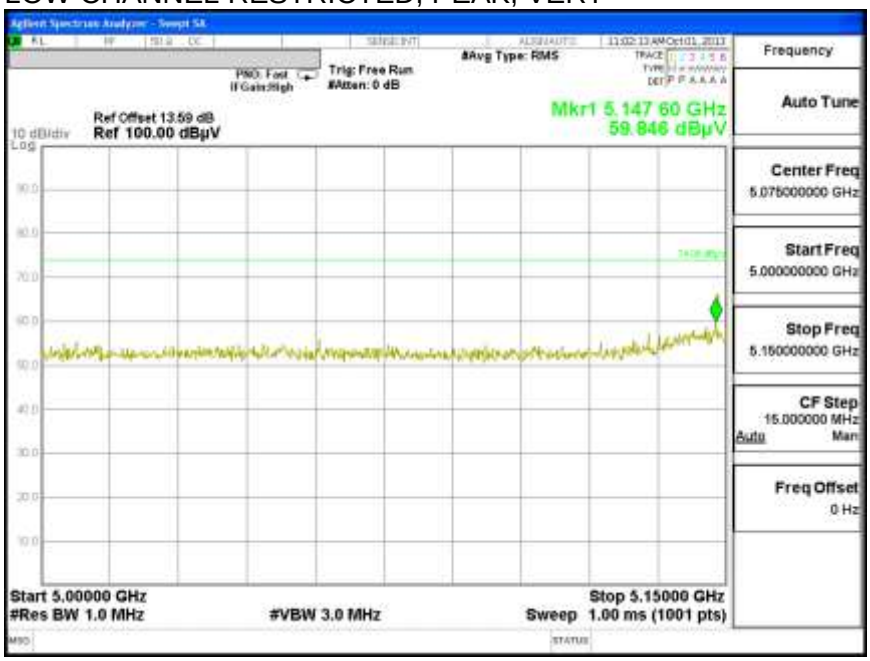
LOW CHANNEL RESTRICTED, PEAK, HORIZ



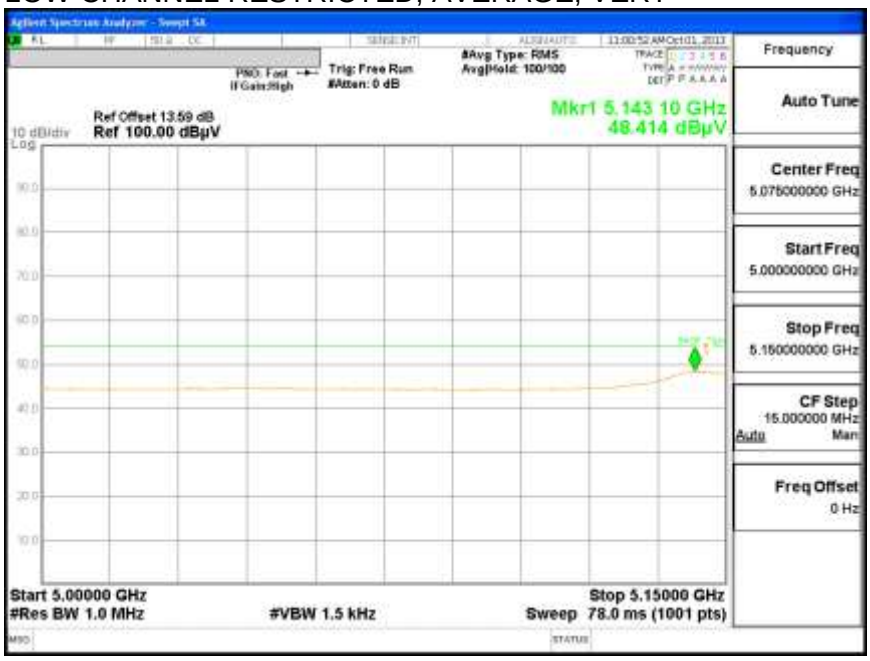
LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



LOW CHANNEL RESTRICTED, PEAK, VERT

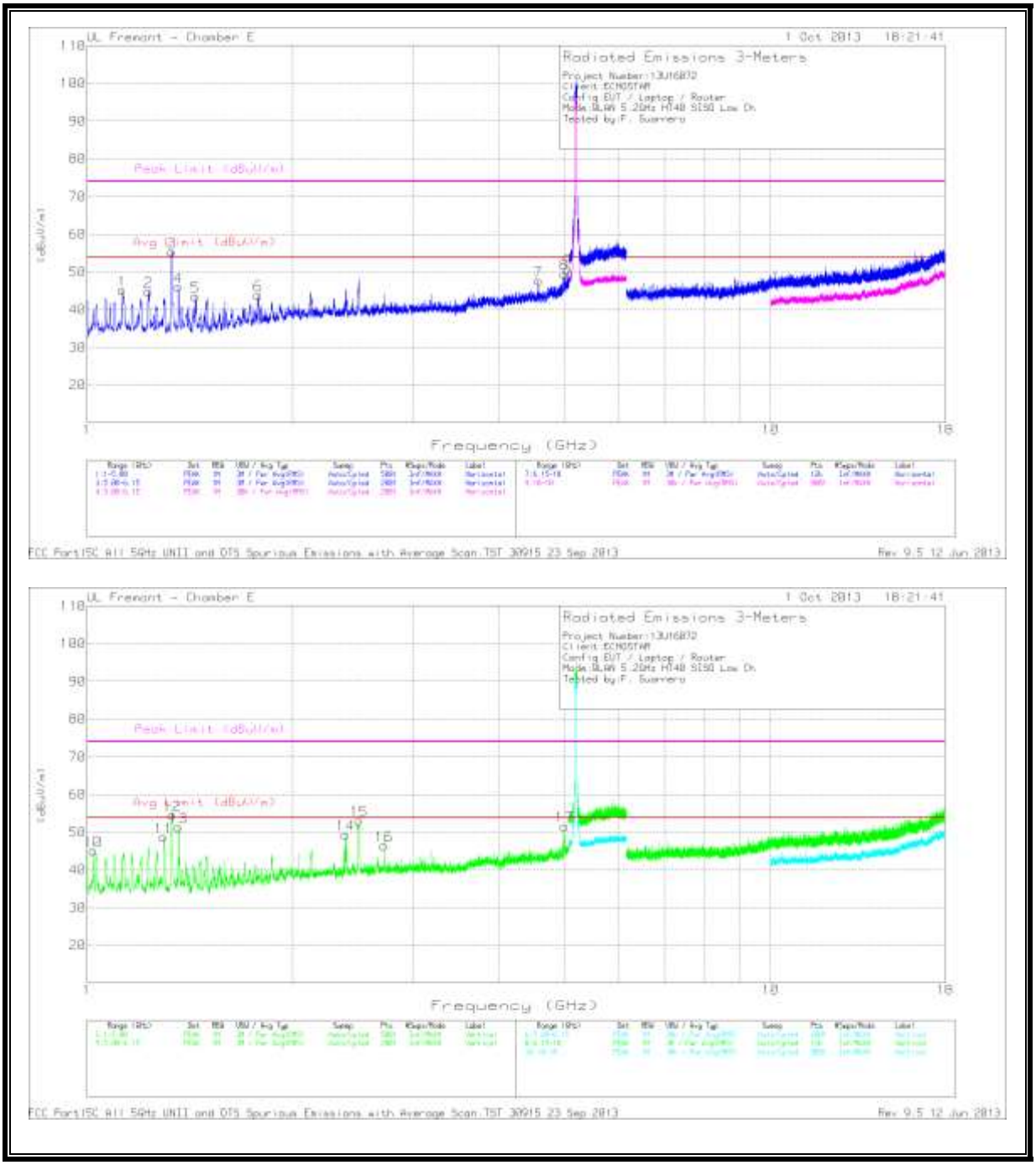


LOW CHANNEL RESTRICTED, AVERAGE, VERT



HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL



Trace Markers

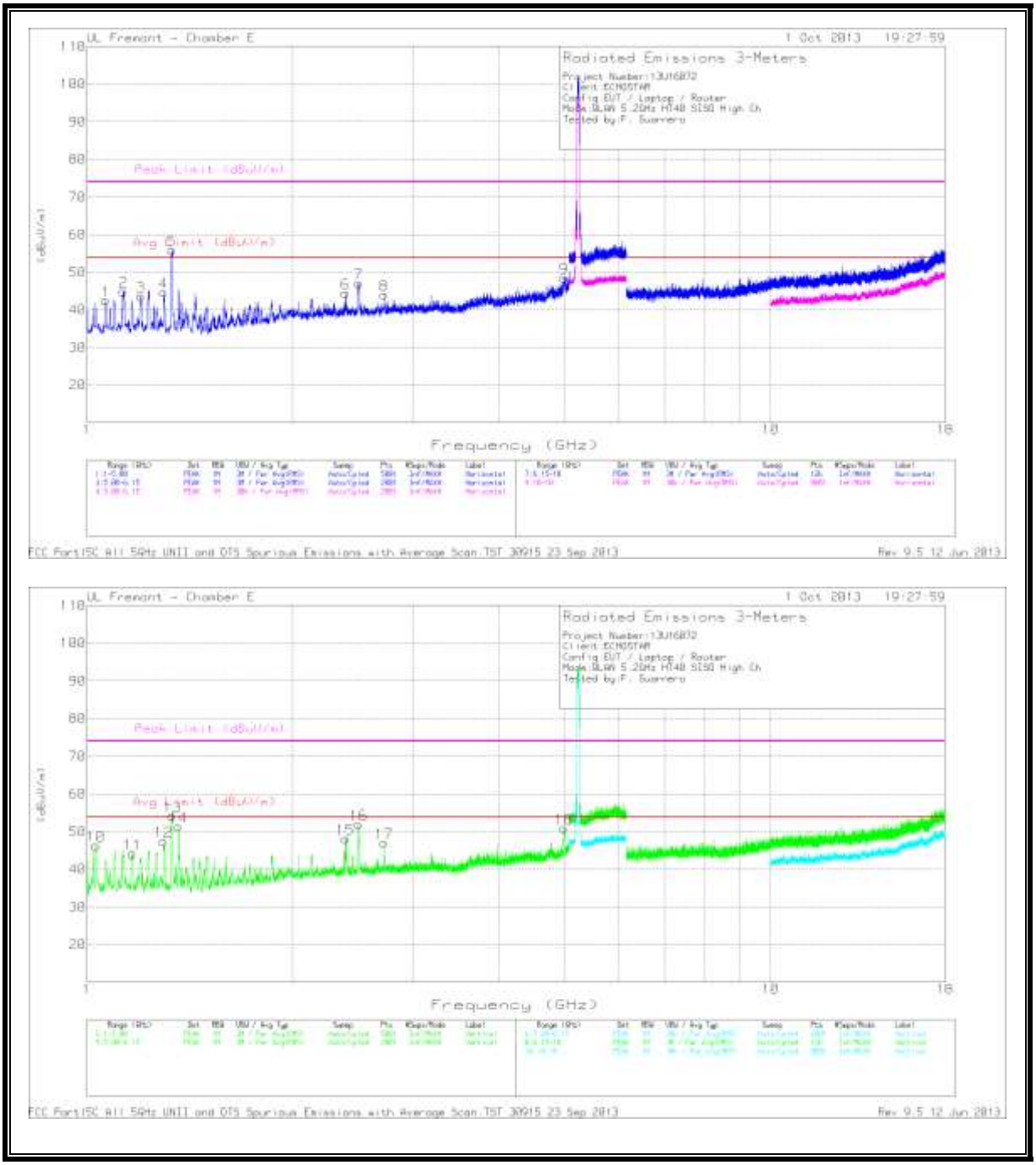
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.126	51.5	PK	28.7	-35	45.2	53.97	-8.77	74	-28.8	0-360	199	H
2	1.23	50.5	PK	29.1	-34.8	44.8	53.97	-9.17	74	-29.2	0-360	199	H
3	1.331	60.52	PK	29.1	-34.3	55.32	-	-	74	-18.68	0-360	199	H
4	1.361	51.36	PK	29	-34.3	46.06	53.97	-7.91	74	-27.94	0-360	199	H
5	1.441	49.2	PK	28.9	-34.6	43.5	53.97	-10.47	74	-30.5	0-360	100	H
6	1.78	47.45	PK	30.7	-34.3	43.85	53.97	-10.12	74	-30.15	0-360	100	H
7	4.575	44.63	PK	34.3	-31.2	47.73	53.97	-6.24	74	-26.27	0-360	199	H
8	4.991	44.44	PK	34.4	-29.3	49.54	53.97	-4.43	74	-24.46	0-360	199	H
9	5.057	44.48	PK	34.5	-28.2	50.78	53.97	-3.19	74	-23.22	0-360	199	H
10	1.021	51.99	PK	28.2	-35.1	45.09	53.97	-8.88	74	-28.91	0-360	199	V
11	1.295	54.2	PK	29.1	-34.6	48.7	53.97	-5.27	74	-25.3	0-360	100	V
12	1.333	59.74	PK	29.1	-34.3	54.54	-	-	74	-19.46	0-360	199	V
13	1.361	56.64	PK	29	-34.3	51.34	53.97	-2.63	74	-22.66	0-360	199	V
14	2.389	50.3	PK	32.6	-33.5	49.4	53.97	-4.57	74	-24.6	0-360	100	V
15	2.5	52.73	PK	32.7	-32.3	53.13	53.97	-.84	74	-20.87	0-360	100	V
16	2.72	45.85	PK	33.1	-32.5	46.45	53.97	-7.52	74	-27.55	0-360	100	V
17	4.996	46.33	PK	34.4	-29.1	51.63	53.97	-2.34	74	-22.37	0-360	100	V

PK - Peak detector

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.332	51.98	MAv1	29.1	-34.3	.4	47.18	53.97	-6.79	-	-	319	204	H
4.999	32.49	MAv1	34.4	-29.1	.4	38.19	53.97	-15.78	-	-	230	320	H
5.067	34.15	MAv1	34.5	-27.8	.4	41.25	53.97	-12.72	-	-	36	284	H
1.295	45.52	MAv1	29.1	-34.6	.4	40.42	53.97	-13.55	-	-	1	143	V
1.333	51.62	MAv1	29.1	-34.3	.4	46.82	53.97	-7.15	-	-	255	186	V
1.36	55.75	MAv1	29	-34.3	.4	50.85	53.97	-3.12	-	-	335	174	V
2.388	47.72	MAv1	32.6	-33.5	.4	47.22	53.97	-6.75	-	-	351	299	V
2.499	38.38	MAv1	32.7	-32.3	.4	39.18	53.97	-14.79	-	-	87	126	V
4.989	33.51	MAv1	34.4	-29.3	.4	39.01	53.97	-14.96	-	-	57	106	V

MAv1 - KDB558074 v02 10.2.3.2/8.2.1 Option 1 Maximum RMS Average

HIGH CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.065	48.89	PK	28.4	-34.8	0	42.49	53.97	-11.48	74	-31.51	0-360	199	H
2	1.131	51.37	PK	28.7	-35.1	0	44.97	53.97	-9	74	-29.03	0-360	199	H
3	1.199	49.75	PK	29	-35.1	0	43.65	53.97	-10.32	74	-30.35	0-360	199	H
4	1.295	50.21	PK	29.1	-34.6	0	44.71	53.97	-9.26	74	-29.29	0-360	199	H
5	1.333	61.15	PK	29.1	-34.3	0	55.95	-	-	74	-18.05	0-360	199	H
6	2.389	45.39	PK	32.6	-33.5	0	44.49	53.97	-9.48	74	-29.51	0-360	100	H
7	2.498	46.69	PK	32.7	-32.3	0	47.09	53.97	-6.88	74	-26.91	0-360	199	H
8	2.721	43.46	PK	33.1	-32.5	0	44.06	53.97	-9.91	74	-29.94	0-360	199	H
9	4.986	43.53	PK	34.4	-29.4	0	48.53	53.97	-5.44	74	-25.47	0-360	199	H
10	1.031	53.09	PK	28.2	-35	0	46.29	53.97	-7.68	74	-27.71	0-360	200	V
11	1.166	50.52	PK	28.8	-35.2	0	44.12	53.97	-9.85	74	-29.88	0-360	100	V
12	1.295	53	PK	29.1	-34.6	0	47.5	53.97	-6.47	74	-26.5	0-360	100	V
13	1.333	59.38	PK	29.1	-34.3	0	54.18	-	-	74	-19.82	0-360	200	V
14	1.361	56.68	PK	29	-34.3	0	51.38	53.97	-2.59	74	-22.62	0-360	200	V
15	2.388	49.02	PK	32.6	-33.5	0	48.12	53.97	-5.85	74	-25.88	0-360	100	V
16	2.496	51.53	PK	32.7	-32.3	0	51.93	53.97	-2.04	74	-22.07	0-360	100	V
17	2.721	46.42	PK	33.1	-32.5	0	47.02	53.97	-6.95	74	-26.98	0-360	100	V
18	4.981	46.03	PK	34.4	-29.6	0	50.83	53.97	-3.14	74	-23.17	0-360	100	V

PK - Peak detector

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.332	52.95	MAv1	29.1	-34.3	.4	48.15	53.97	-5.82	-	-	323	206	H
4.989	36.36	MAv1	34.4	-29.4	.4	41.76	53.97	-12.21	-	-	72	249	H
1.332	52.21	MAv1	29.1	-34.3	.4	47.41	53.97	-6.56	-	-	121	249	V
1.36	53.92	MAv1	29	-34.3	.4	49.02	53.97	-4.95	-	-	198	247	V
2.388	45.81	MAv1	32.6	-33.5	.4	45.31	53.97	-8.66	-	-	5	247	V
2.494	39.41	MAv1	32.7	-32.3	.4	40.21	53.97	-13.76	-	-	360	252	V
4.983	33.89	MAv1	34.4	-29.6	.4	39.09	53.97	-14.88	-	-	244	253	V

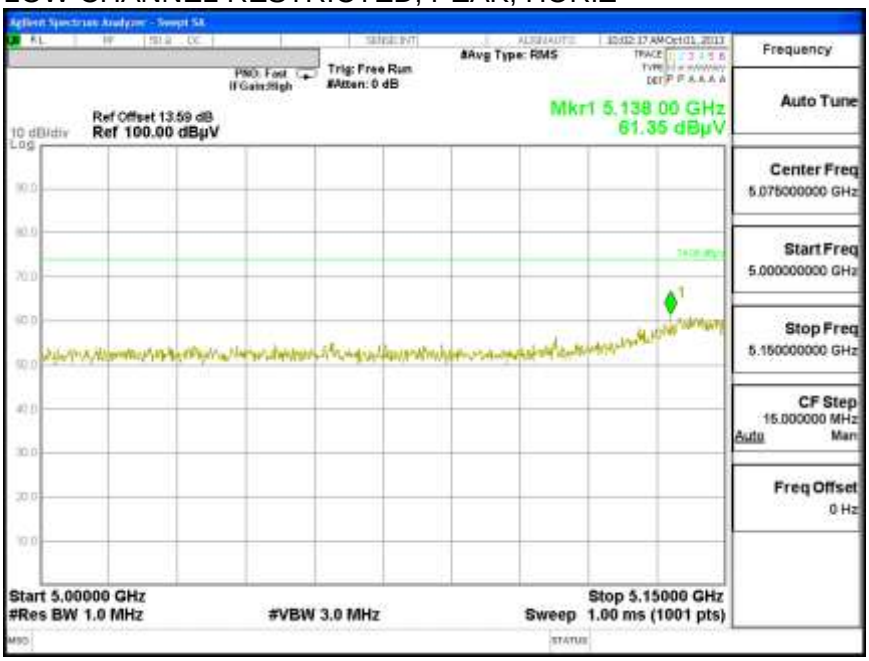
MAv1 - KDB558074 v02 10.2.3.2/8.2.1 Option 1 Maximum RMS Average

FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 23 Sep 2013 Rev 9.5 12 Jun 2013

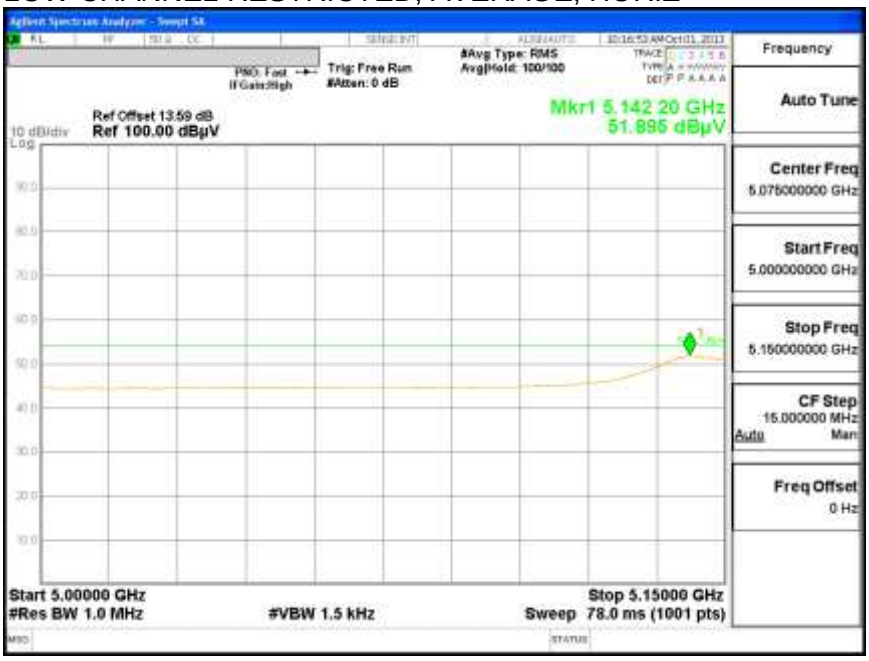
9.2.6. 802.11n HT40 2TX CDD MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

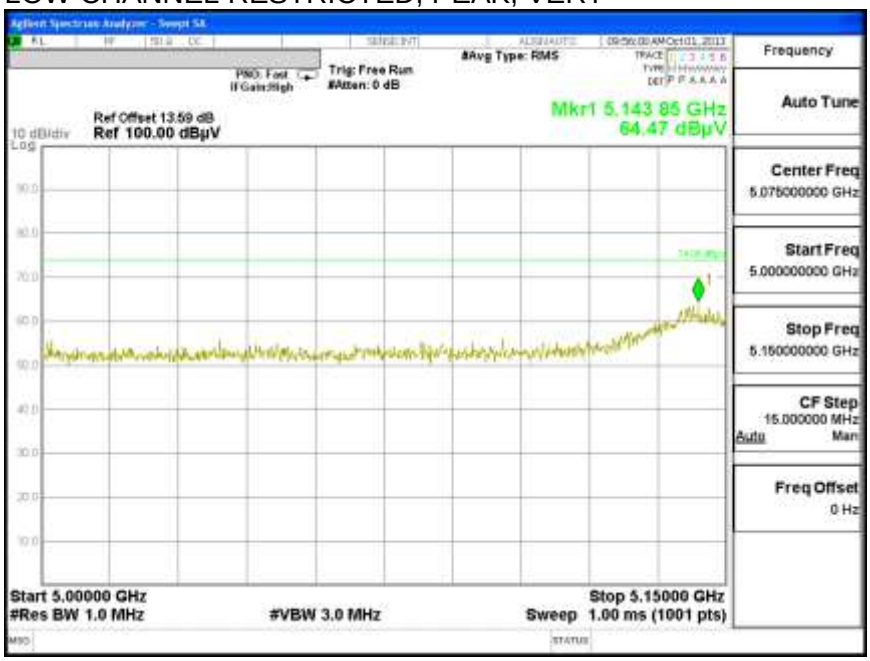
LOW CHANNEL RESTRICTED, PEAK, HORIZ



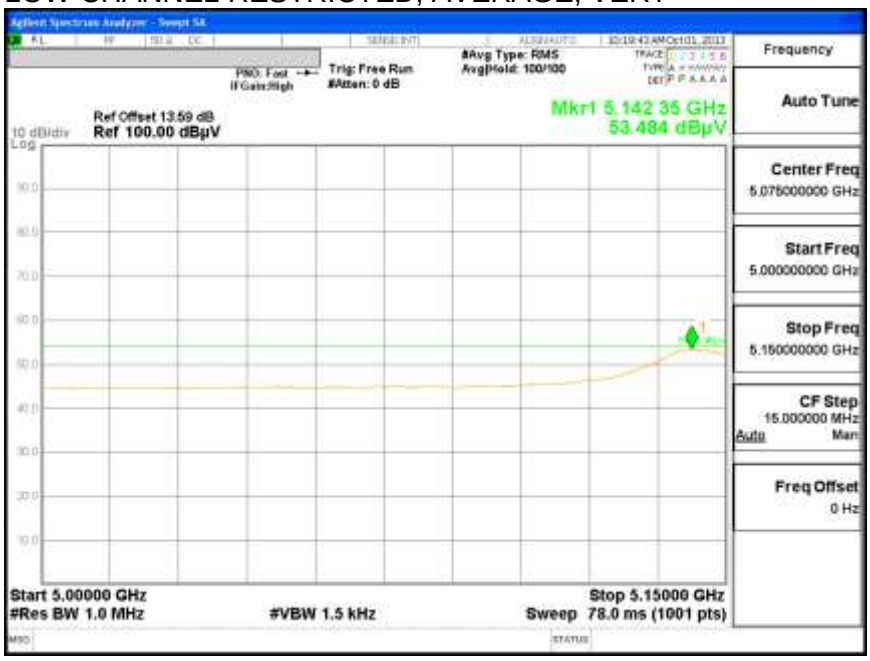
LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



LOW CHANNEL RESTRICTED, PEAK, VERT

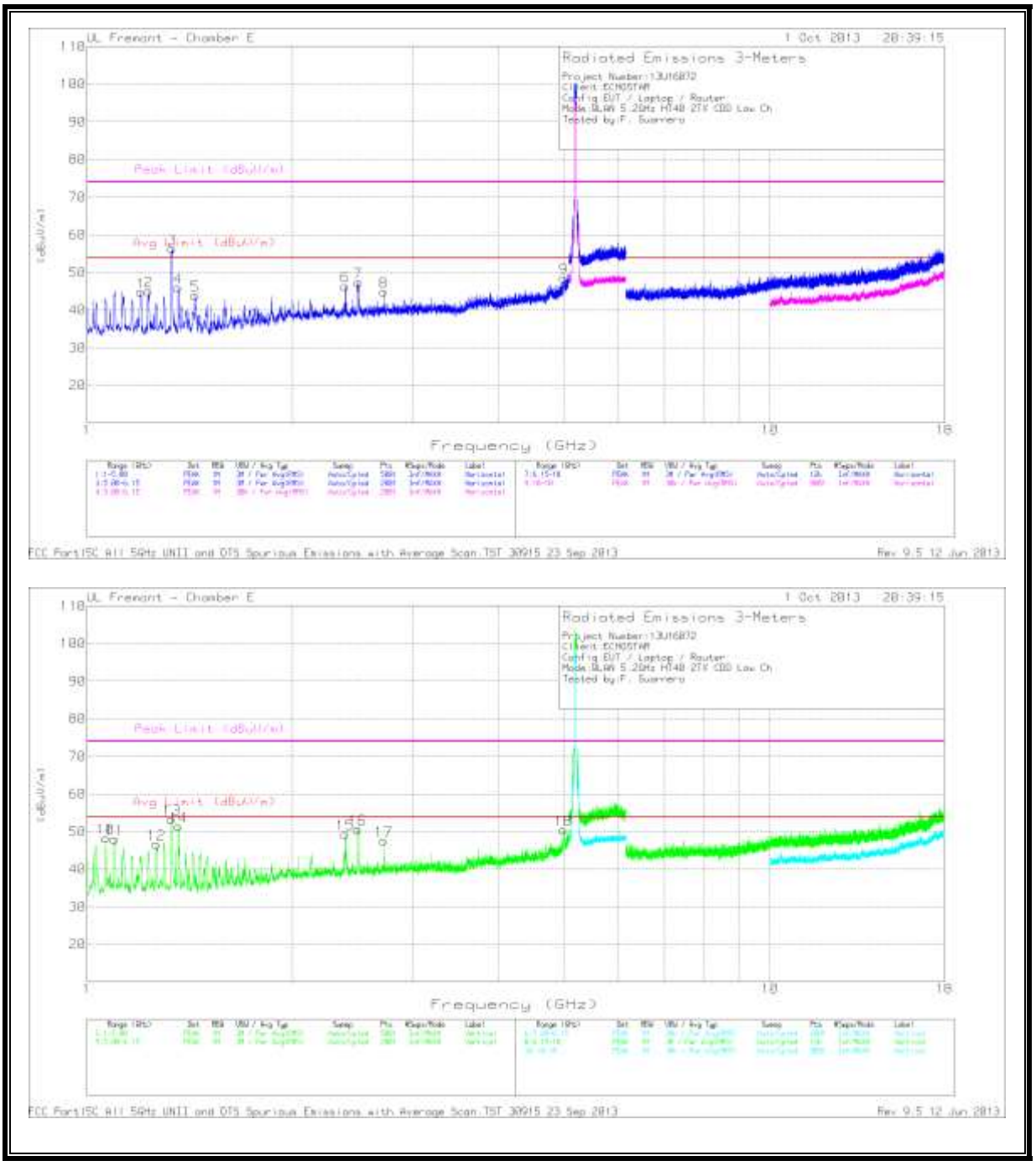


LOW CHANNEL RESTRICTED, AVERAGE, VERT



HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL



Trace Markers

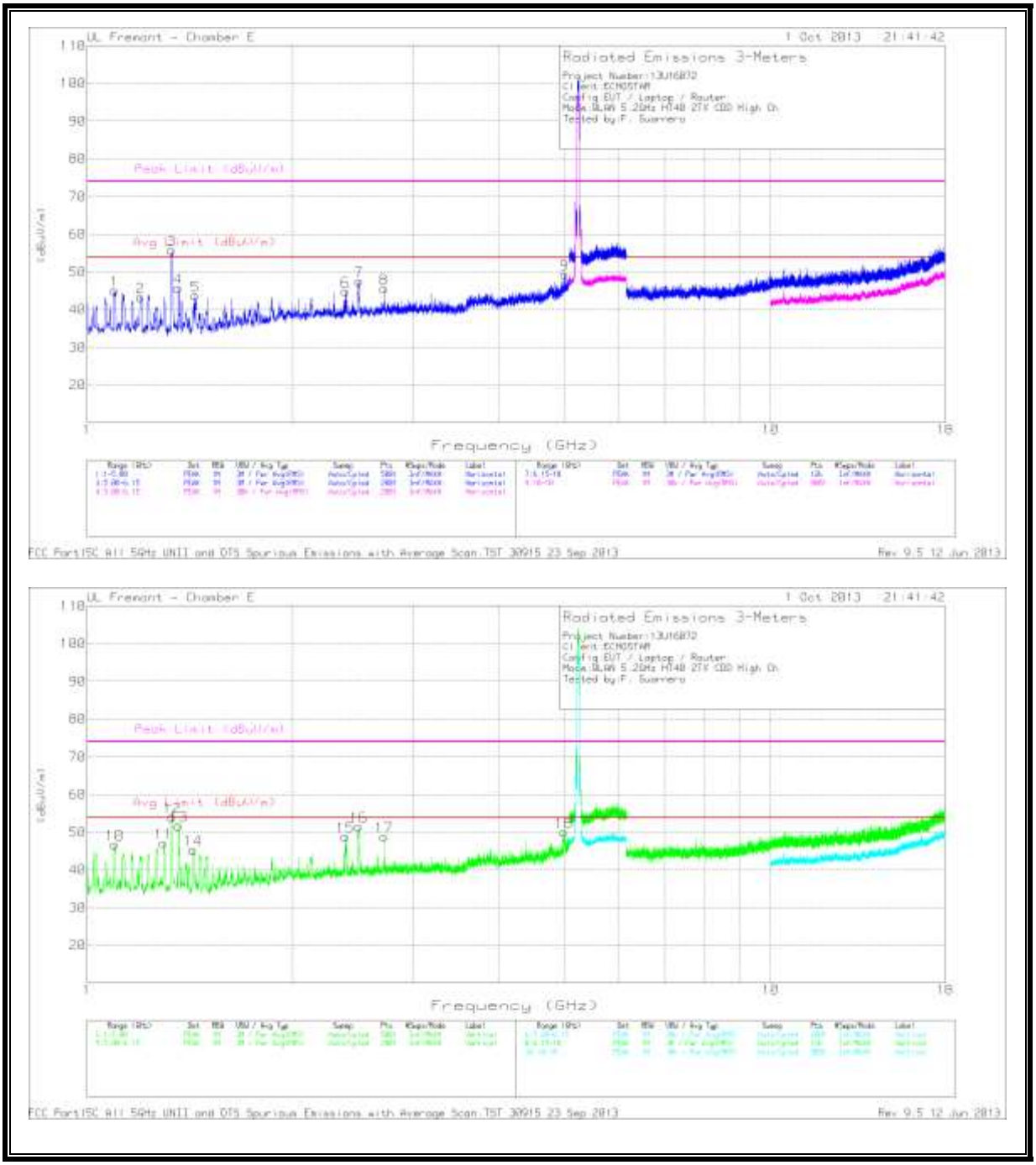
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.2	50.89	PK	29	-35.1	0	44.79	53.97	-9.18	74	-29.21	0-360	199	H
2	1.232	50.78	PK	29.1	-34.8	0	45.08	53.97	-8.89	74	-28.92	0-360	199	H
3	1.334	61.52	PK	29.1	-34.3	0	56.32	-	-	74	-17.68	0-360	199	H
4	1.361	51.26	PK	29	-34.3	0	45.96	53.97	-8.01	74	-28.04	0-360	100	H
5	1.441	49.59	PK	28.9	-34.6	0	43.89	53.97	-10.08	74	-30.11	0-360	100	H
6	2.389	47.31	PK	32.6	-33.5	0	46.41	53.97	-7.56	74	-27.59	0-360	199	H
7	2.495	47.01	PK	32.7	-32.3	0	47.41	53.97	-6.56	74	-26.59	0-360	199	H
8	2.721	44.32	PK	33.1	-32.5	0	44.92	53.97	-9.05	74	-29.08	0-360	199	H
9	4.989	43.48	PK	34.4	-29.3	0	48.58	53.97	-5.39	74	-25.42	0-360	199	H
10	1.065	54.72	PK	28.4	-34.8	0	48.32	53.97	-5.65	74	-25.68	0-360	199	V
11	1.098	54.52	PK	28.5	-35	0	48.02	53.97	-5.95	74	-25.98	0-360	199	V
12	1.264	52.05	PK	29.2	-34.6	0	46.65	53.97	-7.32	74	-27.35	0-360	100	V
13	1.33	58.58	PK	29.1	-34.3	0	53.38	53.97	-.59	74	-20.62	0-360	199	V
14	1.361	56.67	PK	29	-34.3	0	51.37	53.97	-2.6	74	-22.63	0-360	199	V
15	2.389	50.32	PK	32.6	-33.5	0	49.42	53.97	-4.55	74	-24.58	0-360	100	V
16	2.49	50.37	PK	32.7	-32.4	0	50.67	53.97	-3.3	74	-23.33	0-360	100	V
17	2.72	46.97	PK	33.1	-32.5	0	47.57	53.97	-6.4	74	-26.43	0-360	100	V
18	4.982	45.68	PK	34.4	-29.6	0	50.48	53.97	-3.49	74	-23.52	0-360	100	V

PK - Peak detector

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.332	53.67	MAv1	29.1	-34.3	.4	48.87	53.97	-5.1	-	-	317	184	H
4.989	34.26	MAv1	34.4	-29.3	.4	39.76	53.97	-14.21	-	-	84	316	H
1.066	41.07	MAv1	28.4	-34.8	.4	35.07	53.97	-18.9	-	-	278	364	V
1.097	43.75	MAv1	28.5	-35	.4	37.65	53.97	-16.32	-	-	360	336	V
1.332	54.57	MAv1	29.1	-34.3	.4	49.77	53.97	-4.2	-	-	275	306	V
1.36	53.98	MAv1	29	-34.3	.4	49.08	53.97	-4.89	-	-	214	214	V
2.388	49.52	MAv1	32.6	-33.5	.4	49.02	53.97	-4.95	-	-	354	298	V
2.499	44.12	MAv1	32.7	-32.3	.4	44.92	53.97	-9.05	-	-	42	108	V
4.986	33.55	MAv1	34.4	-29.5	.4	38.85	53.97	-15.12	-	-	0	107	V

MAv1 - KDB558074 v02 10.2.3.2/8.2.1 Option 1 Maximum RMS Average

HIGH CHANNEL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.097	51.6	PK	28.5	-35	0	45.1	53.97	-8.87	74	-28.9	0-360	199	H
2	1.198	49.43	PK	29	-35.1	0	43.33	53.97	-10.64	74	-30.67	0-360	199	H
3	1.33	61.01	PK	29.1	-34.3	0	55.81	-	-	74	-18.19	0-360	199	H
4	1.361	51.11	PK	29	-34.3	0	45.81	53.97	-8.16	74	-28.19	0-360	101	H
5	1.441	49.45	PK	28.9	-34.6	0	43.75	53.97	-10.22	74	-30.25	0-360	101	H
6	2.389	45.79	PK	32.6	-33.5	0	44.89	53.97	-9.08	74	-29.11	0-360	199	H
7	2.5	47.18	PK	32.7	-32.3	0	47.58	53.97	-6.39	74	-26.42	0-360	199	H
8	2.721	45.02	PK	33.1	-32.5	0	45.62	53.97	-8.35	74	-28.38	0-360	199	H
9	4.998	44.11	PK	34.4	-29.1	0	49.41	53.97	-4.56	74	-24.59	0-360	101	H
10	1.098	53.29	PK	28.5	-35	0	46.79	53.97	-7.18	74	-27.21	0-360	200	V
11	1.295	52.71	PK	29.1	-34.6	0	47.21	53.97	-6.76	74	-26.79	0-360	100	V
12	1.334	59.25	PK	29.1	-34.3	0	54.05	-	-	74	-19.95	0-360	200	V
13	1.361	57.04	PK	29	-34.3	0	51.74	53.97	-2.23	74	-22.26	0-360	200	V
14	1.428	50.97	PK	28.9	-34.5	0	45.37	53.97	-8.6	74	-28.63	0-360	200	V
15	2.39	49.64	PK	32.6	-33.4	0	48.84	53.97	-5.13	74	-25.16	0-360	200	V
16	2.496	51.13	PK	32.7	-32.3	0	51.53	53.97	-2.44	74	-22.47	0-360	200	V
17	2.721	48.25	PK	33.1	-32.5	0	48.85	53.97	-5.12	74	-25.15	0-360	100	V
18	4.983	45.26	PK	34.4	-29.6	0	50.06	53.97	-3.91	74	-23.94	0-360	100	V

PK - Peak detector

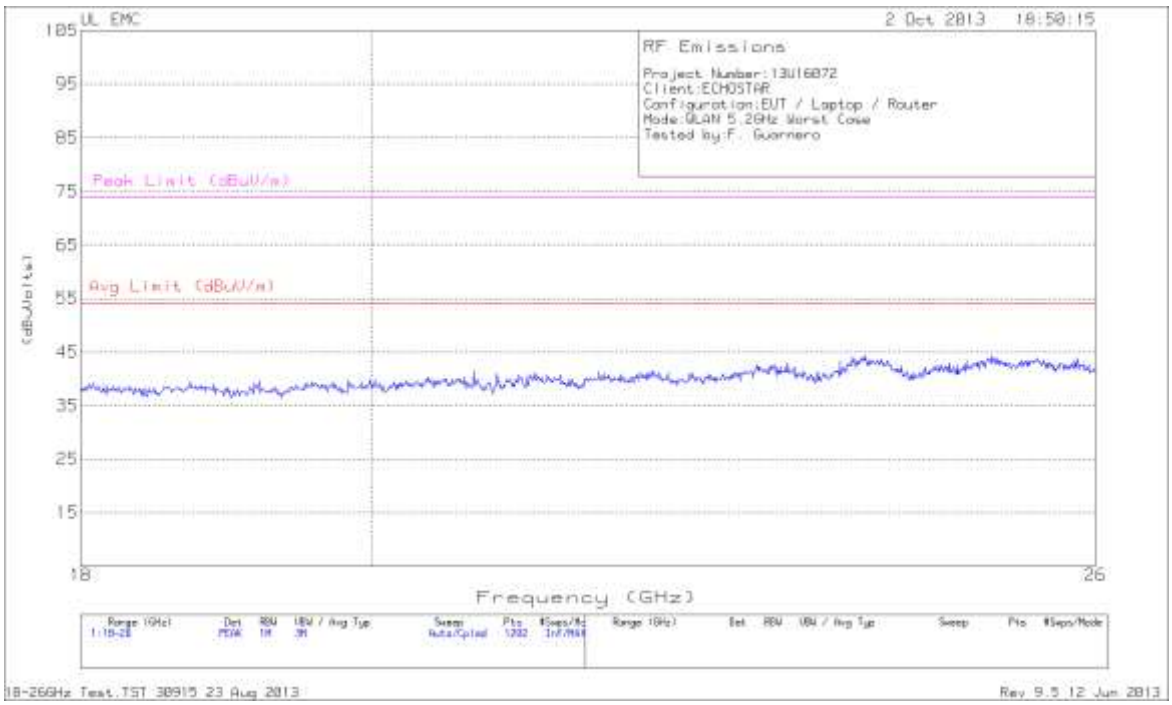
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.332	48.93	MAv1	29.1	-34.3	.4	44.13	53.97	-9.84	-	-	308	136	H
5	33.89	MAv1	34.4	-29.1	.4	39.59	53.97	-14.38	-	-	11	179	H
1.332	51.78	MAv1	29.1	-34.3	.4	46.98	53.97	-6.99	-	-	247	163	V
1.36	56.06	MAv1	29	-34.3	.4	51.16	53.97	-2.81	-	-	341	159	V
2.388	47.2	MAv1	32.6	-33.5	.4	46.7	53.97	-7.27	-	-	17	311	V
2.495	42.05	MAv1	32.7	-32.3	.4	42.85	53.97	-11.12	-	-	43	100	V
2.72	44.44	MAv1	33.1	-32.5	.4	45.44	53.97	-8.53	-	-	43	100	V
4.987	32.24	MAv1	34.4	-29.4	.4	37.64	53.97	-16.33	-	-	286	275	V

MAv1 - KDB558074 v02 10.2.3.2/8.2.1 Option 1 Maximum RMS Average

9.3. WORST-CASE ABOVE 18 GHz

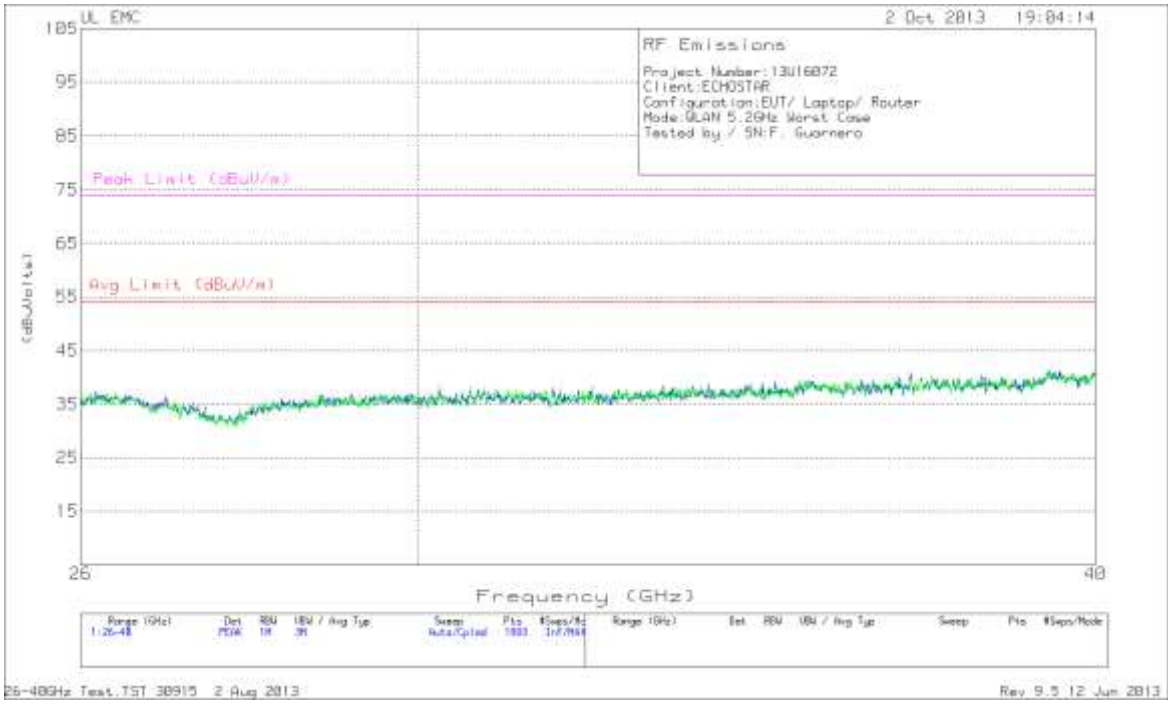
SPURIOUS EMISSIONS 18 TO 26 GHz (WORST-CASE CONFIGURATION, HORIZONTAL & VERTICAL)

5.2 GHz BAND



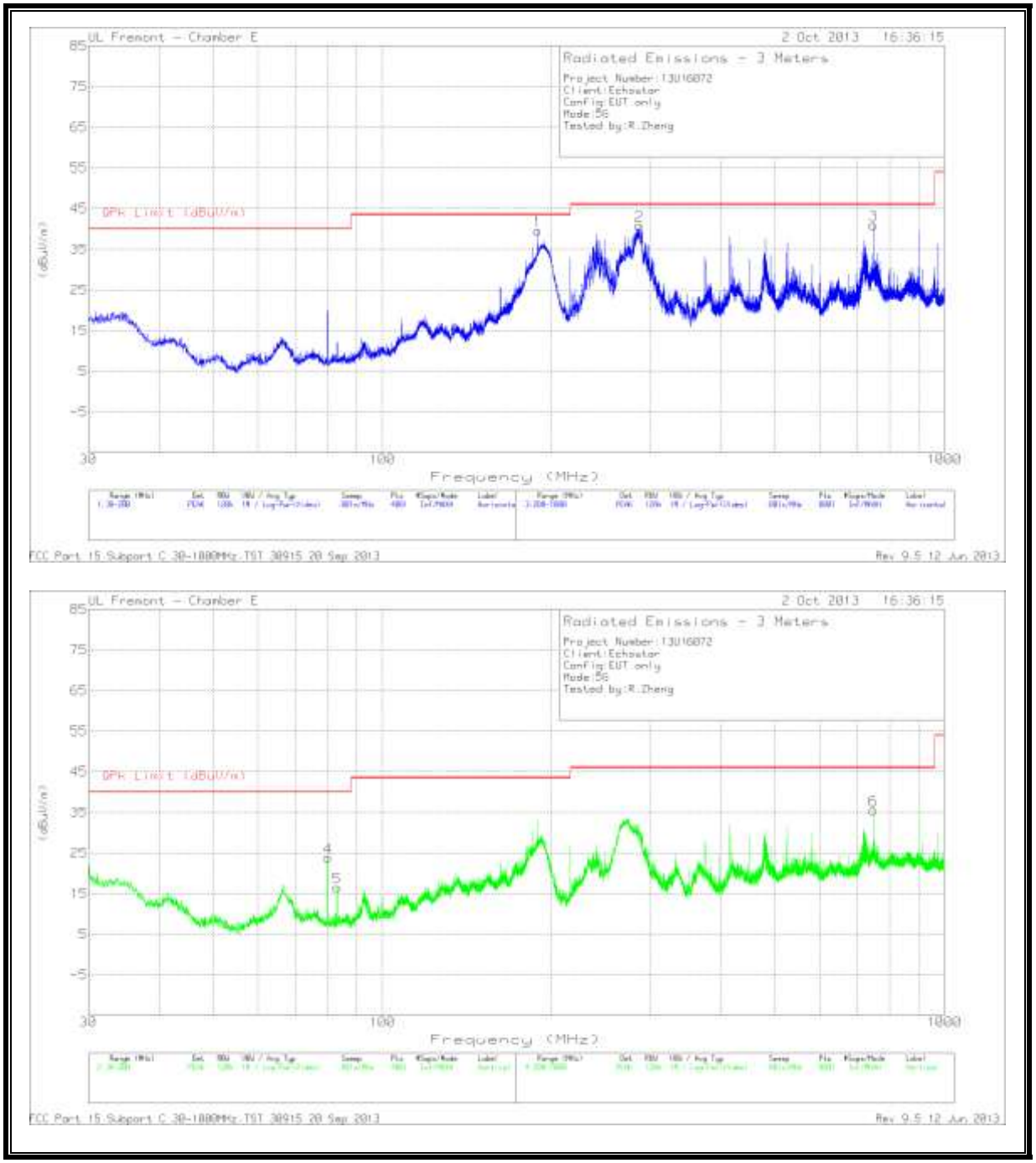
SPURIOUS EMISSIONS 26 TO 40 GHz (WORST-CASE CONFIGURATION, HORIZONTAL & VERTICAL)

5.2 GHz BAND



9.4. WORST-CASE BELOW 1 GHz

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



Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T408 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	188.9925	54.87	PK	11.3	-26.6	39.57	43.52	-3.95	0-360	200	H
4	79.98	43.91	PK	7.7	-27.7	23.91	40	-16.09	0-360	100	V
5	83.0825	36.75	PK	7.5	-27.7	16.55	40	-23.45	0-360	100	V
2	286.6	53.82	PK	13.5	-26.5	40.82	46.02	-5.2	0-360	99	H
3	747.7	46.39	PK	20.8	-26.2	40.99	46.02	-5.03	0-360	99	H
6	747.7	41.02	PK	20.8	-26.2	35.62	46.02	-10.4	0-360	200	V

PK - Peak detector

Radiated Emissions

Frequency (MHz)	Meter Reading (dBuV)	Det	AF T122 (dB/m)	Amp/Cbl (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
189.2108	54.43	QP	11.3	-31.1	.2	34.83	43.52	-8.69	65	179	H
286.1346	50.75	QP	13.3	-30.8	.2	33.45	46.02	-12.57	59	146	H
747.705	52.69	QP	20.7	-29.8	.2	43.79	46.02	-2.23	302	122	H

QP - Quasi-Peak detector

10. 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.

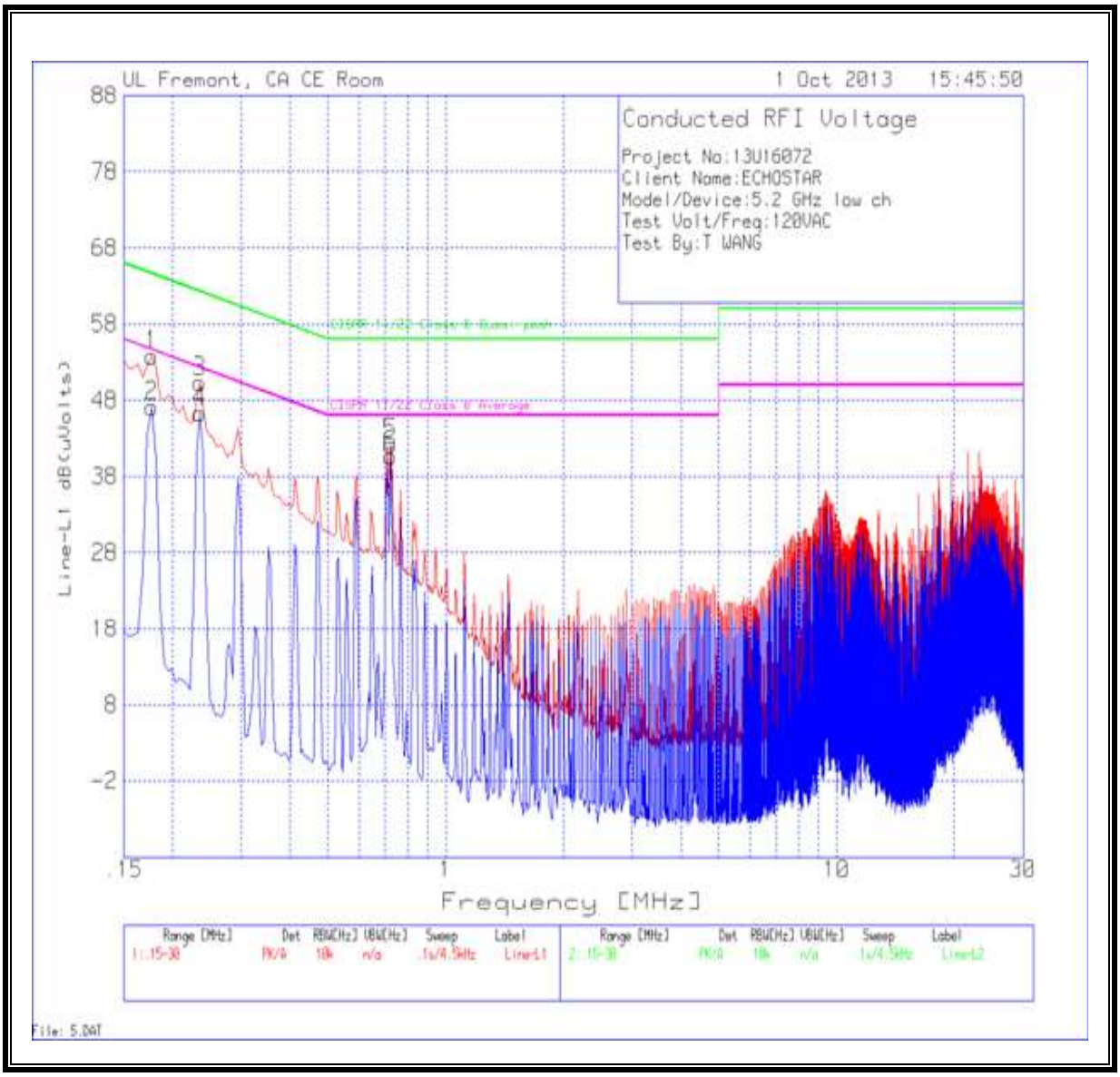
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

WORST EMISSIONS

LINE 1 RESULTS



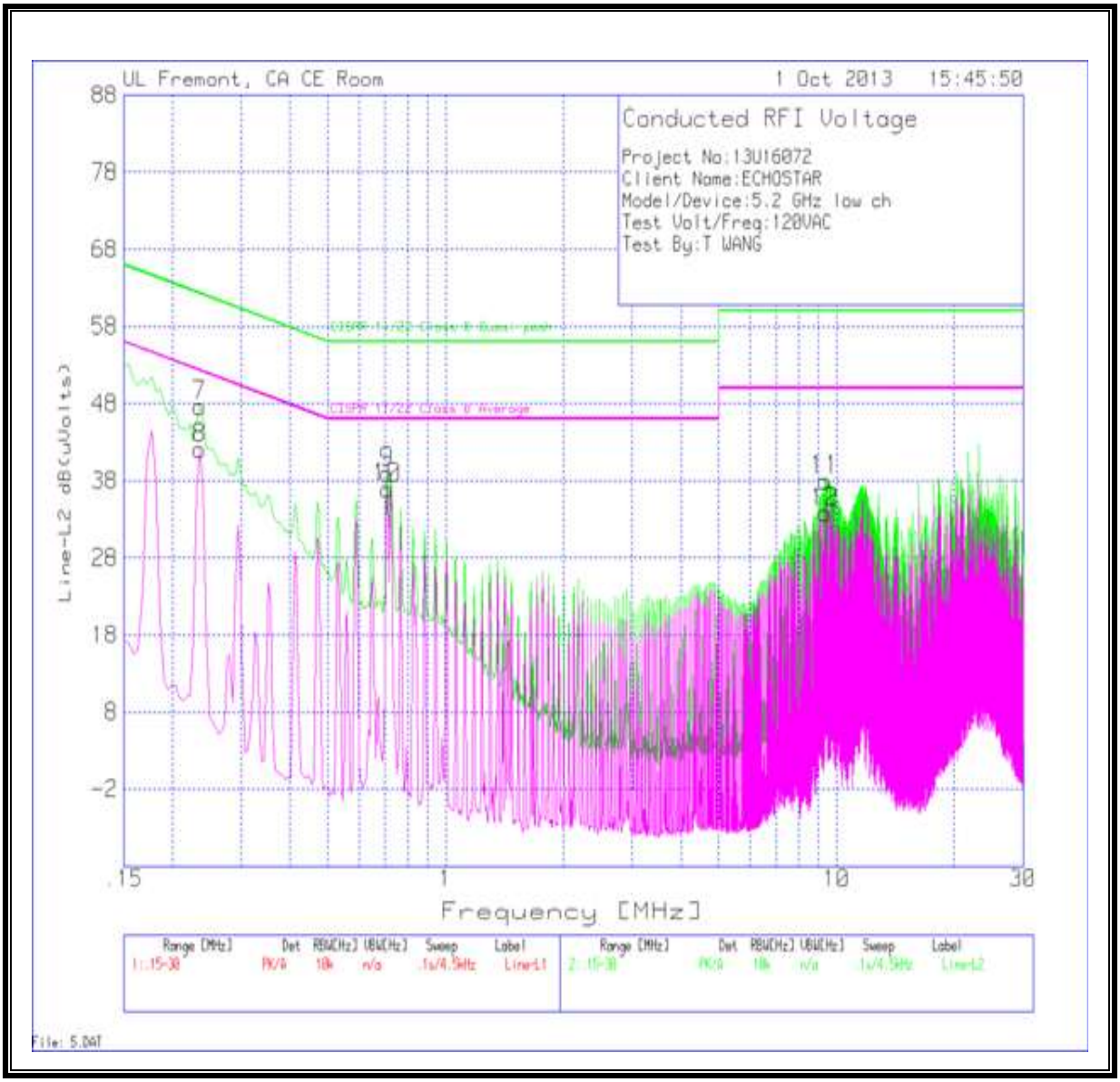
Line-L1 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dB(uVolts)	CISPR 11/22 Class B Quasi-peak	Margin to Limit (dB)	CISPR 11/22 Class B Average	Margin to Limit (dB)
1	.177	53.78	PK	.1	0	53.88	64.6	-10.72	-	-
2	.177	47.06	Av	.1	0	47.16	-	-	54.6	-7.44
3	.2355	50.21	PK	.1	0	50.31	62.3	-11.99	-	-
4	.2355	46.22	Av	.1	0	46.32	-	-	52.3	-5.98
5	.7215	42.16	PK	.1	0	42.26	56	-13.74	-	-
6	.7215	40.58	Av	.1	0	40.68	-	-	46	-5.32

PK - Peak detector
Av - average detection

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 dB(uVolts)	CISPR 11/22 Class B Quasi-peak	Margin to Limit (dB)	CISPR 11/22 Class B Average	Margin to Limit (dB)
7	.2355	47.58	PK	.1	0	47.68	62.3	-14.62	-	-
8	.2355	41.98	Av	.1	0	42.08	-	-	52.3	-10.22
9	.708	38.96	PK	.1	0	39.06	56	-16.94	-	-
10	.708	36.79	Av	.1	0	36.89	-	-	46	-9.11
11	9.3255	37.83	PK	.1	.1	38.03	60	-21.97	-	-
12	9.3255	33.59	Av	.1	.1	33.79	-	-	50	-16.21

PK - Peak detector
Av - average detection