FCC 47 CFR PART 15 SUBPART E

CERTIFICATION TEST REPORT

FOR

Intelligent Backhaul Radio UNII 5.3 Band

MODEL NUMBER: IBR-121x-38-NA

FCC ID: 2AAEH-106

REPORT NUMBER: 14U18830-3 Revision B

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Prepared for
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Revision History

Rev.	Issue Date	Revisions	Revised By
--	1/16/15	Initial Issue	F. deAnda
A	1/26/15	Updated Sections 8.2.4, 8.3.4, 8.4.4	F. de Anda
B	2/2/15	Separeted pages on sections 11 and 12; Updated DFS EUT Description in Section 11	F. de Anda

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: CBF NETWORKS, INC., DBA FASTBACK NETWORKS
2460 N. FIRST STREET, SUITE 200
SAN JOSE, CA 95131, USA

EUT DESCRIPTION: Intelligent Backhaul Radio UNII 5.3 GHz band

MODEL: IBR-121x-38-NA

SERIAL NUMBER: 40314380088 (conducted) 40314390023 (radiated)

DATE TESTED: December 05, 2014 – January 9, 2015

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

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

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

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UL VERIFICATION SERVICES INC.

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2. TEST METHODOLOGY

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

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 G
☐ Chamber B	☐ Chamber E	☒ Chamber H
☐ Chamber C	☒ Chamber F	

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://ts.nist.gov/standards/scopes/2000650.htm.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

36.5 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
Radiated Disturbance, 1 to 6 GHz	± 3.86 dB
Radiated Disturbance, 6 to 18 GHz	± 4.23 dB
Radiated Disturbance, 18 to 26 GHz	± 5.30 dB
Radiated Disturbance, 26 to 40 GHz	± 5.23 dB

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

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

Fixed Point-to-Point radio in 5.3GHz unlicensed bands with a proprietary communication management interface Intelligent Backhaul Radio.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

5.3 GHz BAND

Bandwidth (MHz)	Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5.3 GHz Band, 2Tx				
10	5250-5342	FDD	10.58	11.43
20	5250-5335	FDD	13.69	23.39
40	5250-5328	FDD	15.33	34.12

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a Dipole array antenna, with a maximum gain of 14.5 dBi.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was version: 1.6.1

The test utility software used during testing was Micro monitor 1.18.0

5.5. WORST-CASE CONFIGURATION AND MODE

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

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

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

10MHz bandwidth QAM 4
20MHz bandwidth QAM 4
40MHz bandwidth QAM 4
Data rate 30 Msamples/s for all bandwidths

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5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	Lenovo	Think Pad	R9-D497T 11/04	QDS-BRCM 1046
POE	PHIHONG	POE36U-1AT-R	P21601123D1	N/A
AC/DC Adapter	Lenovo	N/A	11S45N0113Z1ZH819P0FN	N/A

I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	Antenna	1	U.FL	Sheilded	0.3	N/A
2	AC	2	3 Prong	Un-Sheilded	1	N/A
3	POE/LAN	1	RJ45	Sheilded	1	N/A
4	USB	1	USB	Sheilded	0.3	N/A
5	Serial	1	9 Pin Sub D	Sheilded	1	N/A
6	AC	2	3 Prong	Un-Sheilded	1	N/A
7	DC	1	Barrel	Un-Sheilded	1	N/A

TEST SETUP

The EUT is a P-P outdoor radio used as a stand-alone device. Test software exercised the radio module

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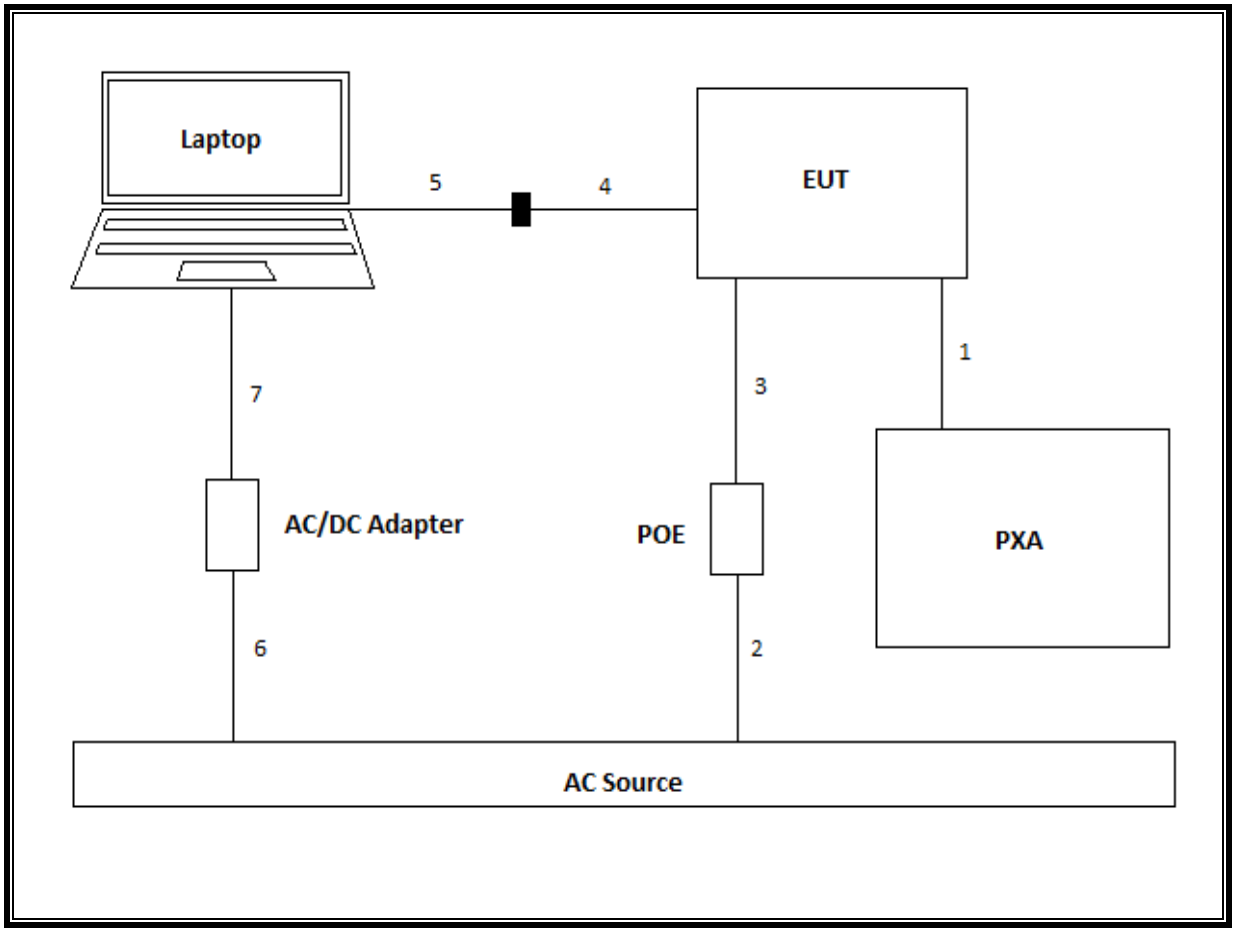
SETUP DIAGRAM FOR TESTS

CONDUCTED



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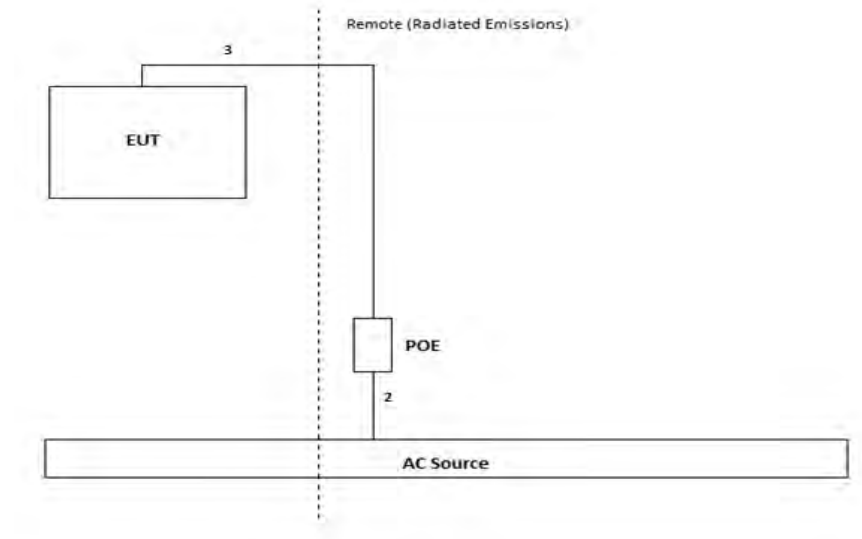
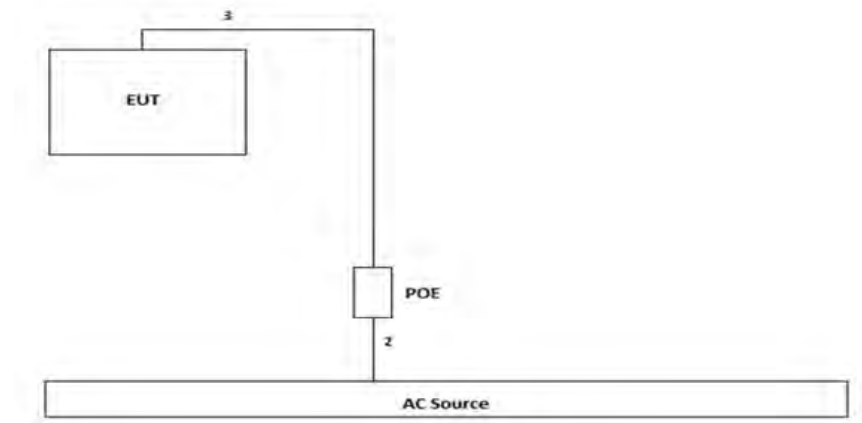
RADIATED



Per ANSI C63.10-2009

AC LINE CONDUCTD



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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**	**T No.**	**Cal Date**	**Cal Due**
Chamber F					
Antenna, Horn 18 GHz	ETS Lindgren	3117	120	03/20/14	03/20/15
Antenna, Biconolog, 30MHz-1GHz	Sunol Sciences	JB1	122	04/22/14	01/28/15
High Pass Filter, fc: 3.0GHz, 50 Ohms	Micro-Tronics	HPM17543	427	01/20/14	01/20/15
Low Pass Filter, fc: 5GHz, 50 Ohms	Micro-Tronics	LPS17541	421	01/20/14	01/20/15
High Pass Filter, fc: 6GHz, 50 Ohms	Micro-Tronics	HPS17542	425	01/20/14	01/20/15
RF PreAmplifier, 1-18GHz	Miteq	AFS42-00101800-25-S-42	742	01/20/14	01/20/15
Preamp, 1000MHz	Sonoma	310N	173	06/07/14	06/07/15
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent	N9030A	341	02/12/14	02/12/15
Chamber G					
Antenna, Horn 18 GHz	ETS Lindgren	3117	862	04/14/14	04/14/15
Antenna, Biconolog, 30MHz-1GHz	Sunol Sciences	JB3	899	05/14/14	04/27/15
High Pass Filter, fc: 3.0GHz, 50 Ohms	Micro-Tronics	HPM17543	898	05/13/14	05/13/15
Low Pass Filter, fc: 5GHz, 50 Ohms	Micro-Tronics	LPS17541	892	05/13/14	05/13/15
High Pass Filter, fc: 6GHz, 50 Ohms	Micro-Tronics	HPS17542	893	05/14/14	05/13/15
RF PreAmplifier, 1-18GHz	Miteq	AFS42-00101800-25-S-42	491	05/15/15	06/05/15
Preamp, 1000MHz	Sonoma	310N	834	05/16/15	06/05/15
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent	N9030A	905	05/17/15	05/17/15
Chamber H					
Antenna, Horn 18 GHz	ETS Lindgren	3117	863	04/14/14	04/14/15
Antenna, Biconolog, 30MHz-1GHz	Sunol Sciences	JB3	900	05/14/14	04/27/15
High Pass Filter, fc: 3.0GHz, 50 Ohms	Micro-Tronics	HPM17543	897	05/14/14	05/13/15
Low Pass Filter, fc: 5GHz, 50 Ohms	Micro-Tronics	LPS17541	891	05/13/14	05/13/15
High Pass Filter, fc: 6GHz, 50 Ohms	Micro-Tronics	HPS17542	894	05/13/14	05/13/15
RF PreAmplifier, 1-18GHz	Miteq	AFS42-00101800-25-S-42	495	06/05/14	06/05/15
Preamp, 1000MHz	Sonoma	310N	835	06/05/14	06/05/15
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent	N9030A	906	05/07/14	05/07/15
Conducted					
Spectrum Anaylyzer	Agilent	E4440A	189	05/09/14	05/09/15
Power Meter, P-series single channel	Agilent	N1911A	382	04/09/14	04/09/15
Power Sensor, Peak and average, 50 MHz to 6 GHz, 5 MHz BW	Agilent	E9323A	400	05/02/14	05/02/15
Power Meter, P-series single channel	Agilent	N1911A	385	04/30/14	04/30/15
Power Sensor, Peak and average, 50 MHz to 18 GHz, 5 MHz BW	Agilent	E9327A	117	05/15/14	05/15/15
LISN for Conducted Emissions CISPR-16	FCC	50/250-25-2	24	01/17/14	01/17/15
Rohde & Schwarz	ESCI 7	100773	212	08/14/14	08/14/15

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Test Equipment List (cont.)					
Description	Manufacturer	Model	T No.	Cal Date	Cal Due
Above 18GHz					
Antenna, Horn 18 to 26.5GHz	ARA	SWH-28	T125	05/09/14	05/09/15
Amp. 26GHz	Agilent	8449B	T404	03/25/14	03/25/15
Antenna, Horn 26 to 40GHz	ARA	MWh-2640	T90	07/15/14	07/15/15
Amp. 26 to 40GHz	Miteq	NSP4000-SP2	T88	09/03/14	09/03/15
Spectrum Analyzer, 40 GHz	HP	8564E	T106	08/06/14	08/06/15

7. MEASUREMENT METHODS

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

Conducted Output Power: KDB 789033 D02 v01, Section E.2.b (Method SA-1).

Conducted Band Edge:KDB 789033 D02 General UNII Test Procedures New Rules v01, Section II, G3

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

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

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

KDB 662911 D02 MIMO with Cross-Polarized Antennas v01

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8. ANTENNA PORT TEST RESULTS

8.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
802.11a 10MHz 2TX	3.963	4.030	0.983	98.34%	0.00	0.010
802.11n 20MHz 2TX	3.960	4.024	0.984	98.41%	0.00	0.010
802.11n 40MHz 2TX	3.947	4.024	0.981	98.09%	0.00	0.010

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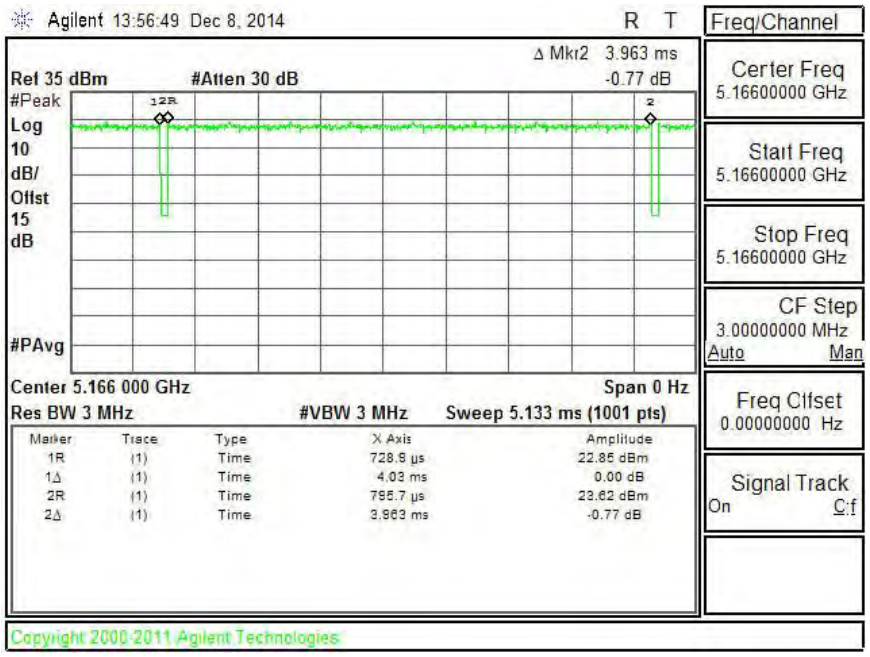
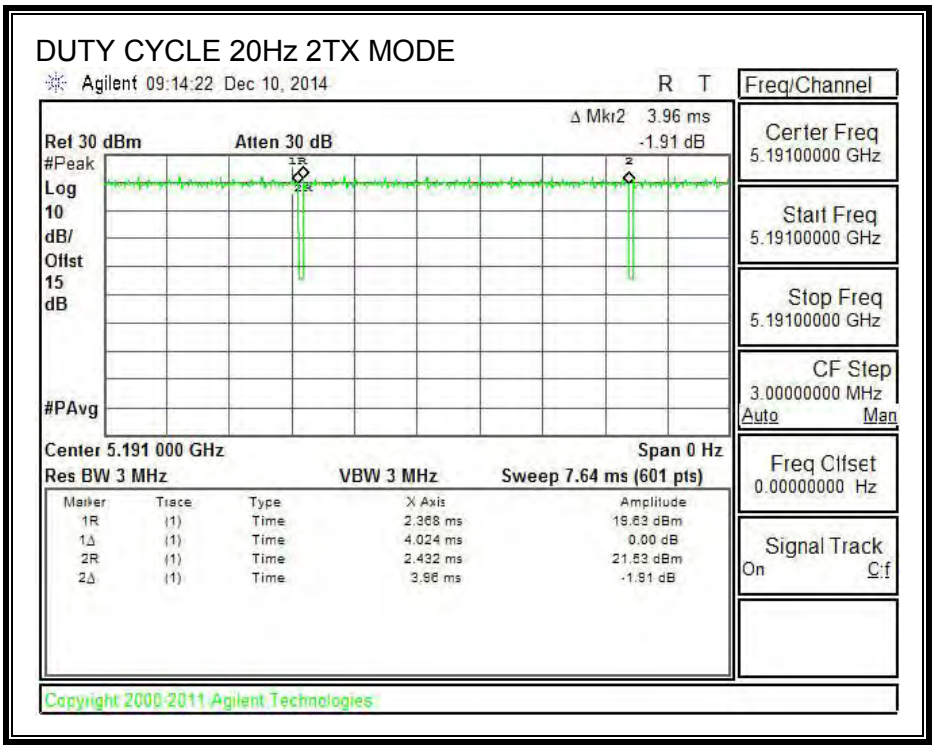
DUTY CYCLE PLOTS

DUTY CYCLE 10MHz 2TX MODE



DUTY CYCLE 20Hz 2TX MODE



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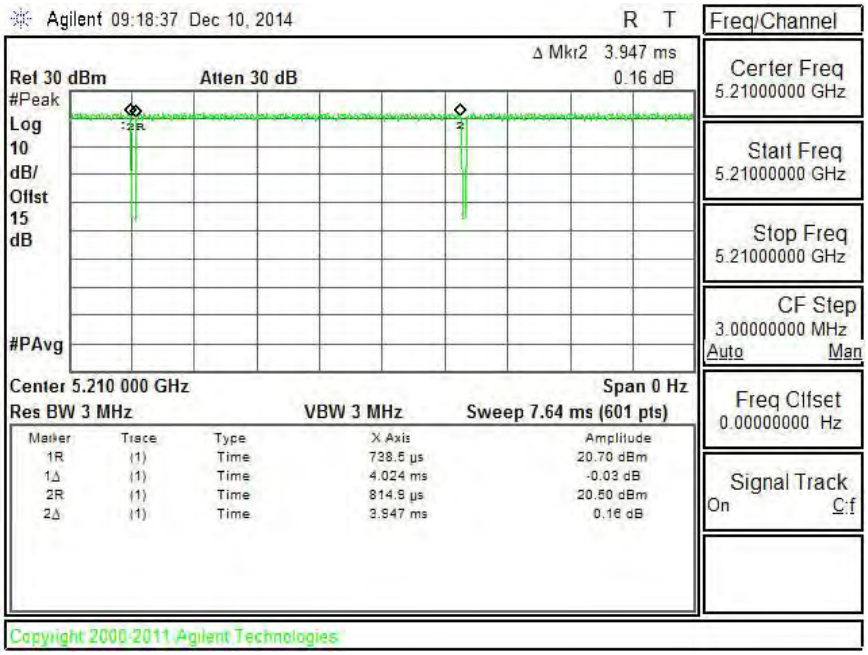
DUTY CYCLE 40MHz 2TX MODE



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8.2. 10MHz 2Tx MODE IN THE 5.3 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)
Straddle	5250	10.88	10.90
Low 2	5257	10.86	10.89
Mid	5300	10.86	10.89
High 1	5339	10.86	10.89
High 2	5342	10.67	10.70

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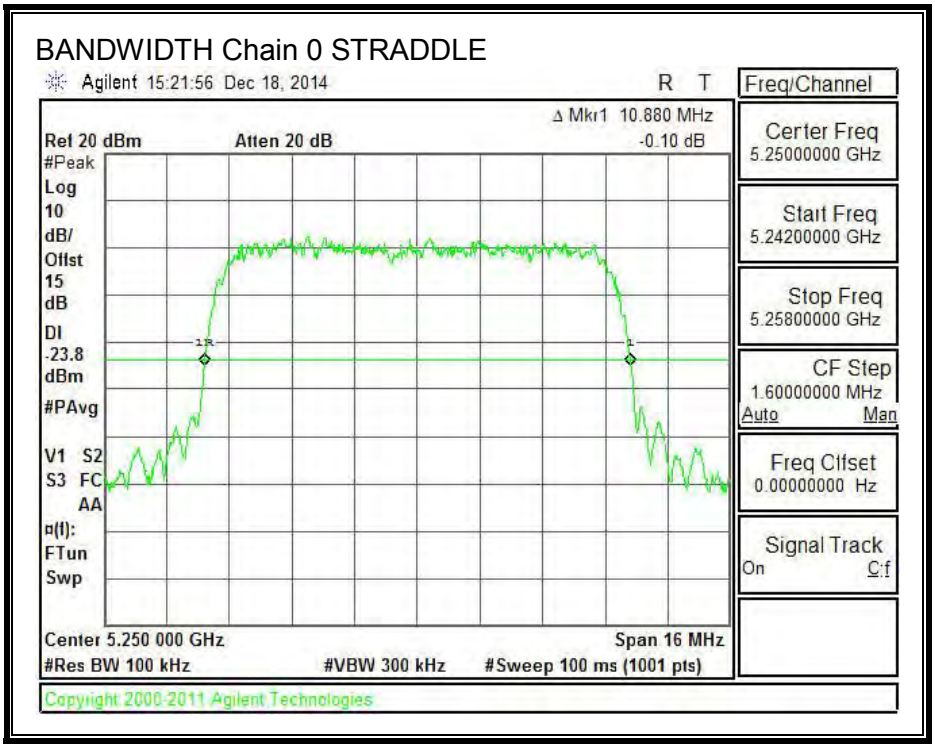
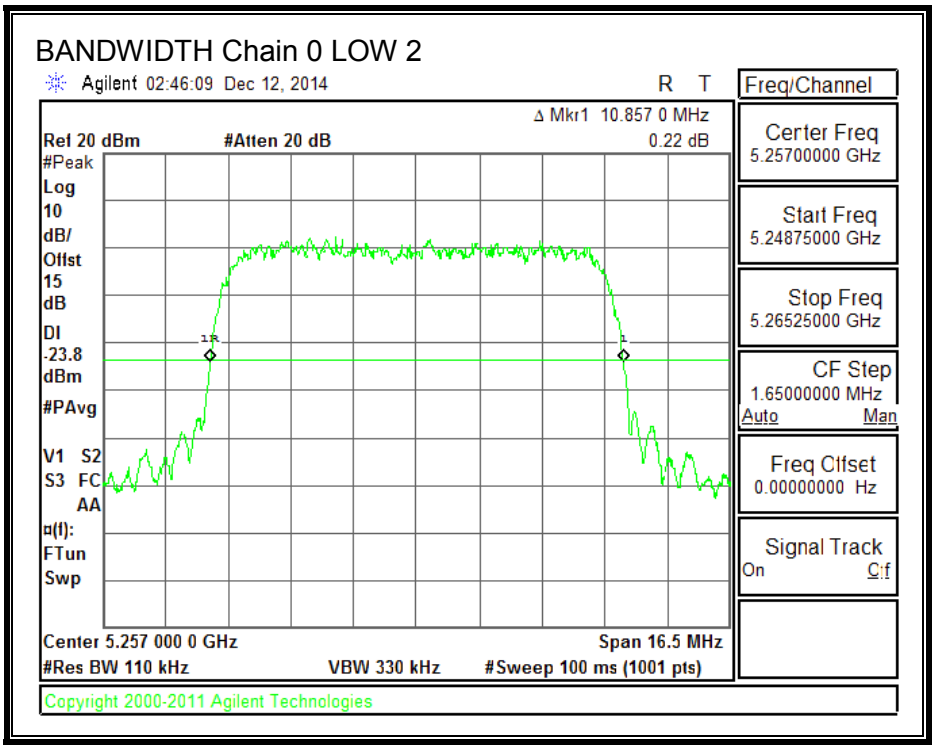
26 dB BANDWIDTH, Chain 0





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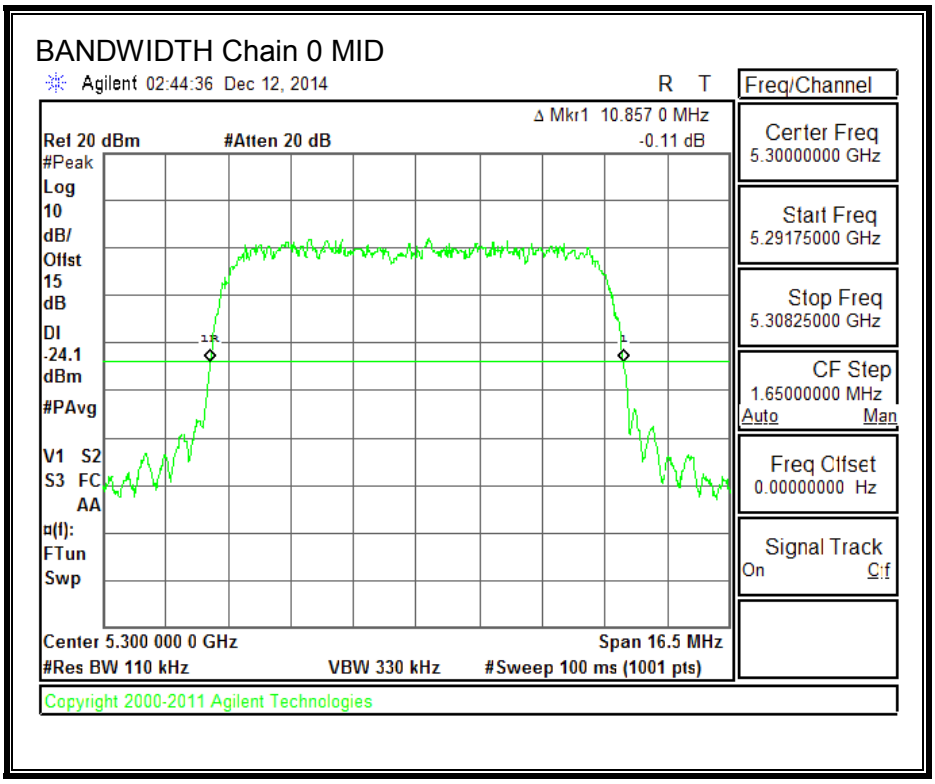

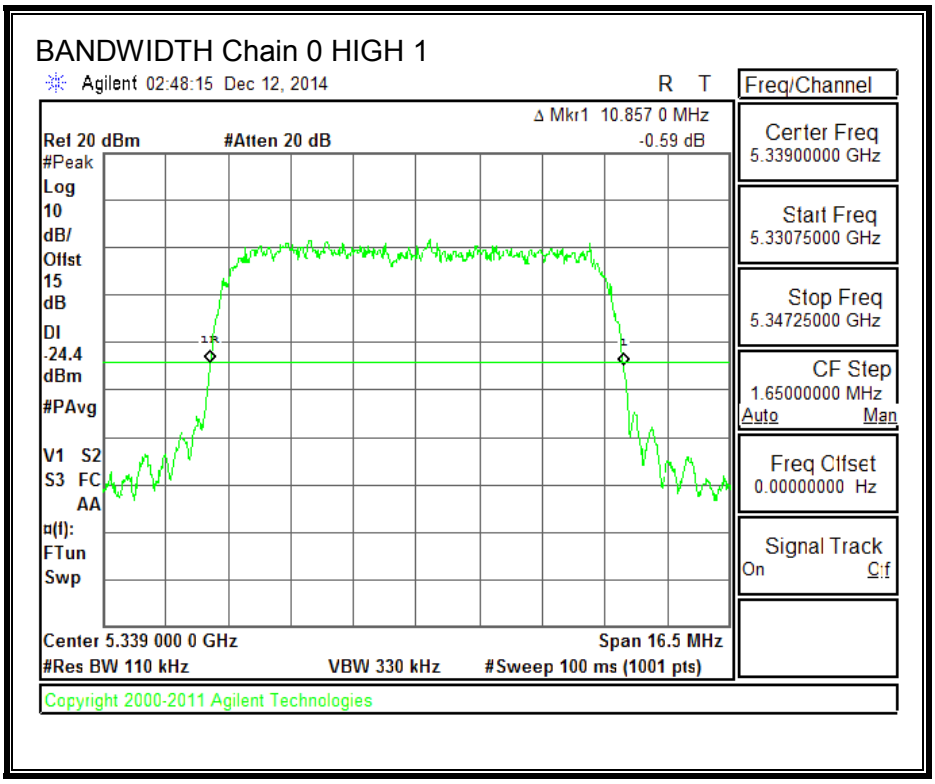

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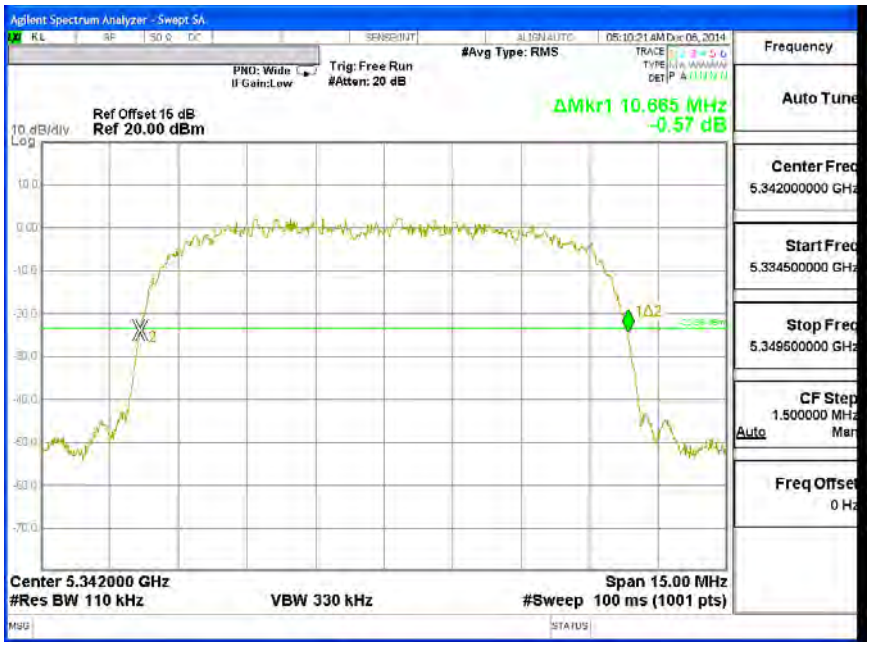
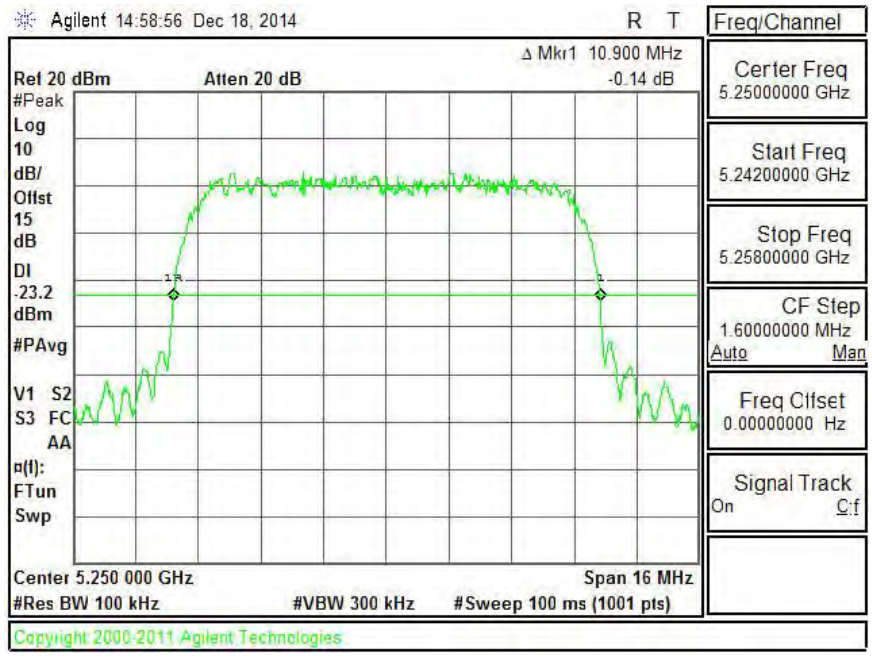
BANDWIDTH Chain 0 HIGH 2



26 dB BANDWIDTH, Chain 1

BANDWIDTH Chain 1 STRADDLE



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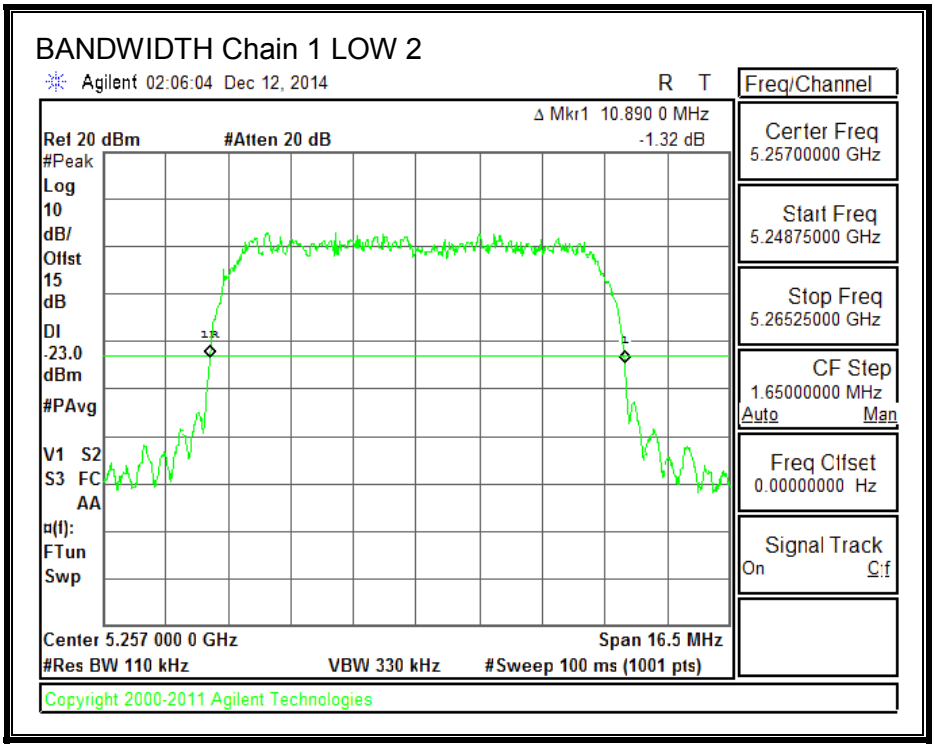

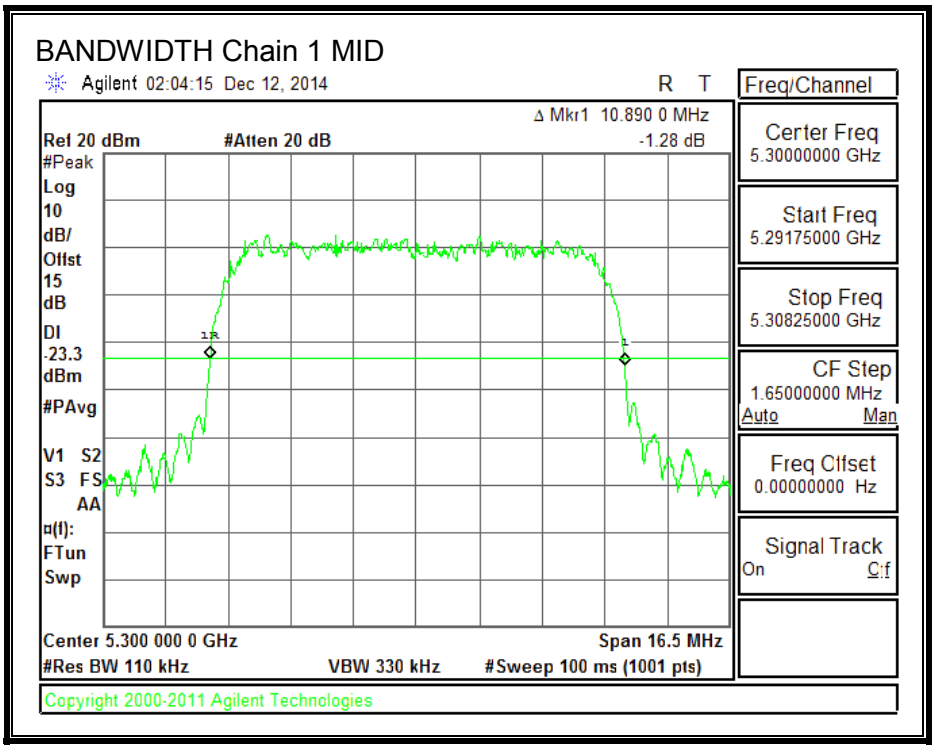

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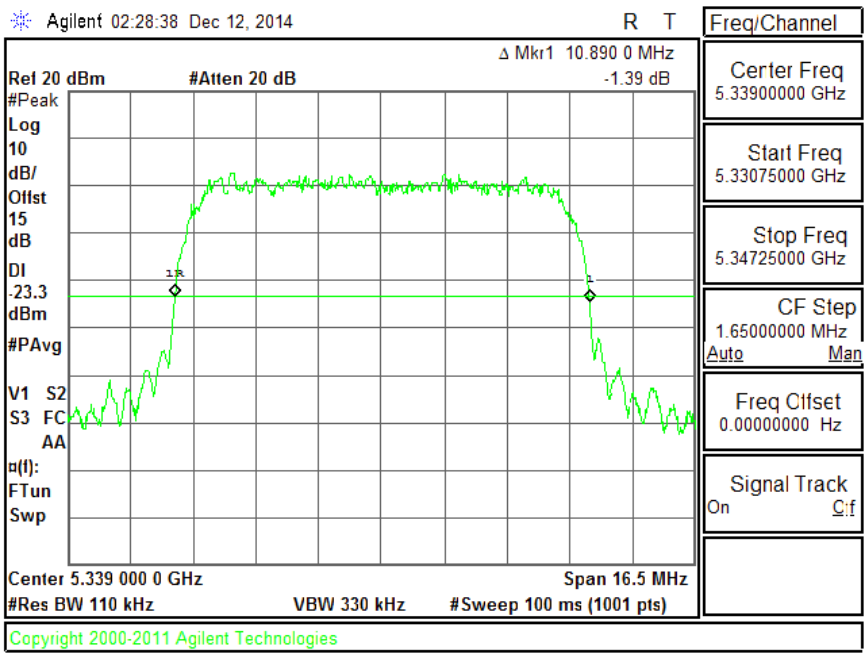
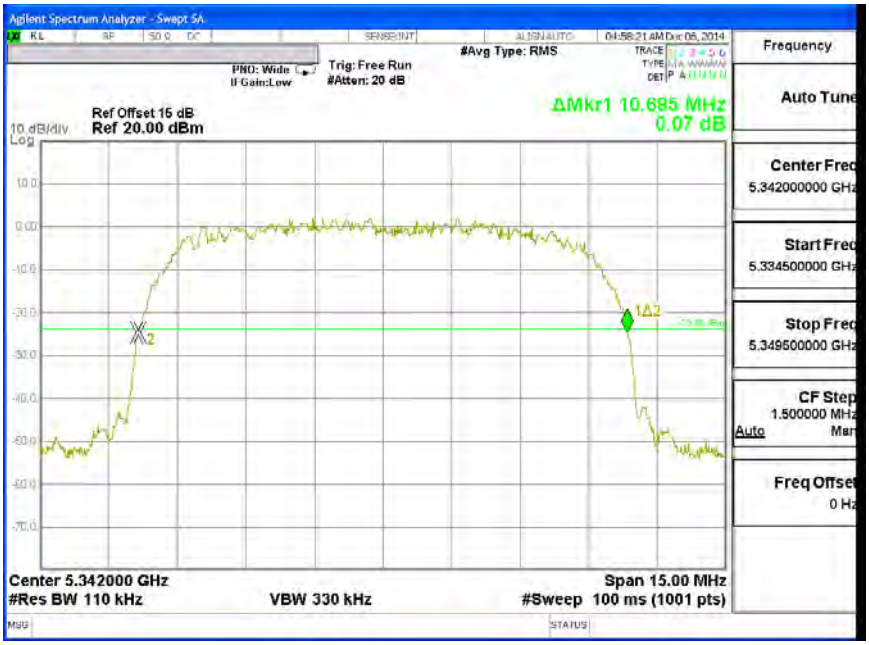
BANDWIDTH Chain 1 HIGH 1



BANDWIDTH Chain 1 HIGH 2



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8.2.2. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
14.50	14.50	14.50

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RESULTS

Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Straddle	5250	10.67	14.50	14.50	12.78	2.50
Low 2	5257	10.67	14.50	14.50	12.78	2.50
Mid	5300	10.67	14.50	14.50	12.78	2.50
High 1	5339	10.67	14.50	14.50	12.78	2.50
High 2	5342	10.67	14.50	14.50	12.78	2.50

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Straddle	5250	7.40	7.42	10.42	12.78	-2.37
Low 2	5257	7.31	7.59	10.46	12.78	-2.32
Mid	5300	7.60	7.53	10.58	12.78	-2.21
High 1	5339	7.36	7.77	10.58	12.78	-2.20
High 2	5342	6.96	6.94	9.96	12.78	-2.83

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low 2	5257	-0.82	-0.54	2.33	2.50	-0.17
Mid	5300	-0.49	-0.76	2.39	2.50	-0.11
High 1	5339	-0.67	-0.73	2.31	2.50	-0.19
High 2	5342	-0.68	-0.60	2.37	2.50	-0.13

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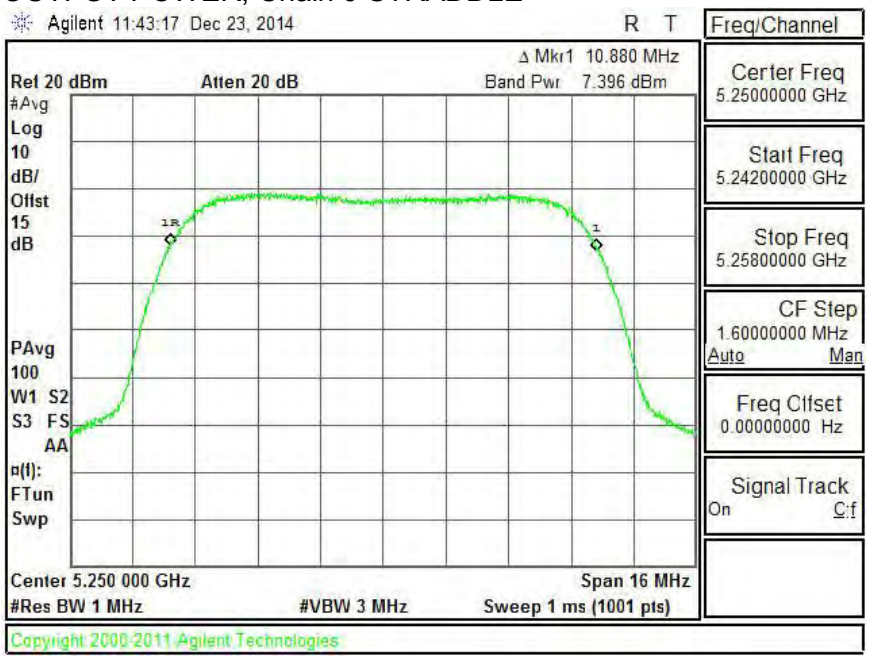
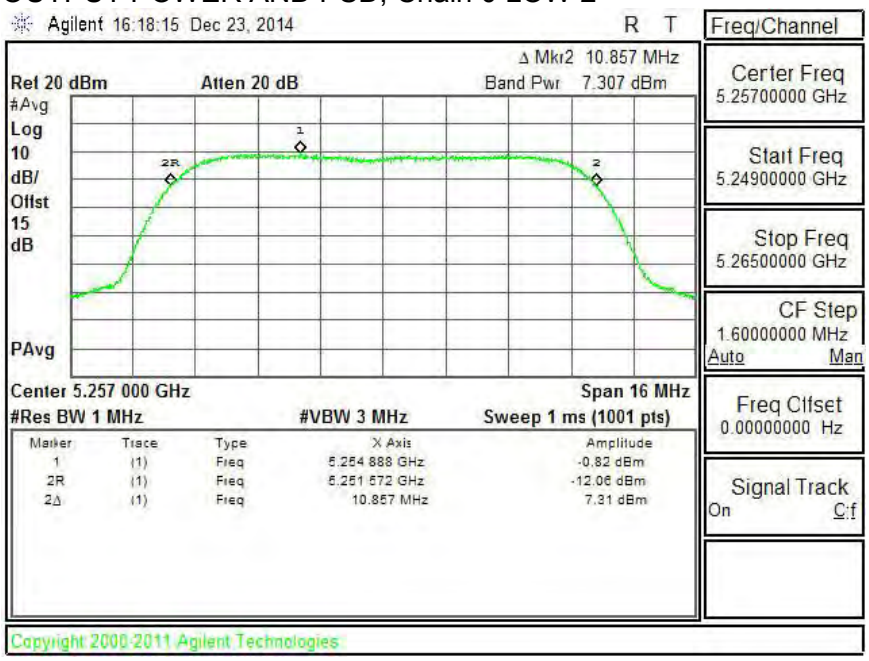
OUTPUT POWER AND PSD, Chain 0

OUTPUT POWER, Chain 0 STRADDLE



OUTPUT POWER AND PSD, Chain 0 LOW 2



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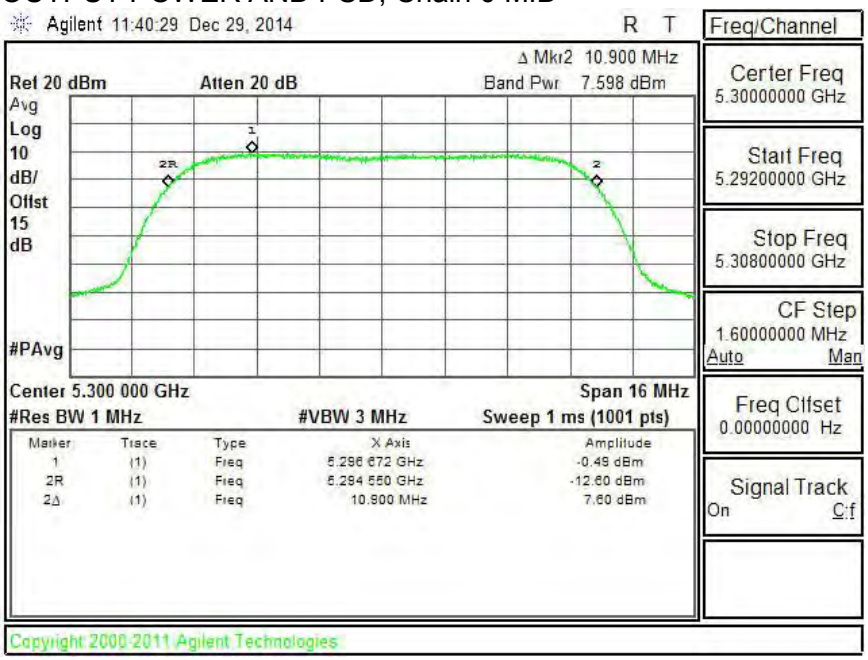
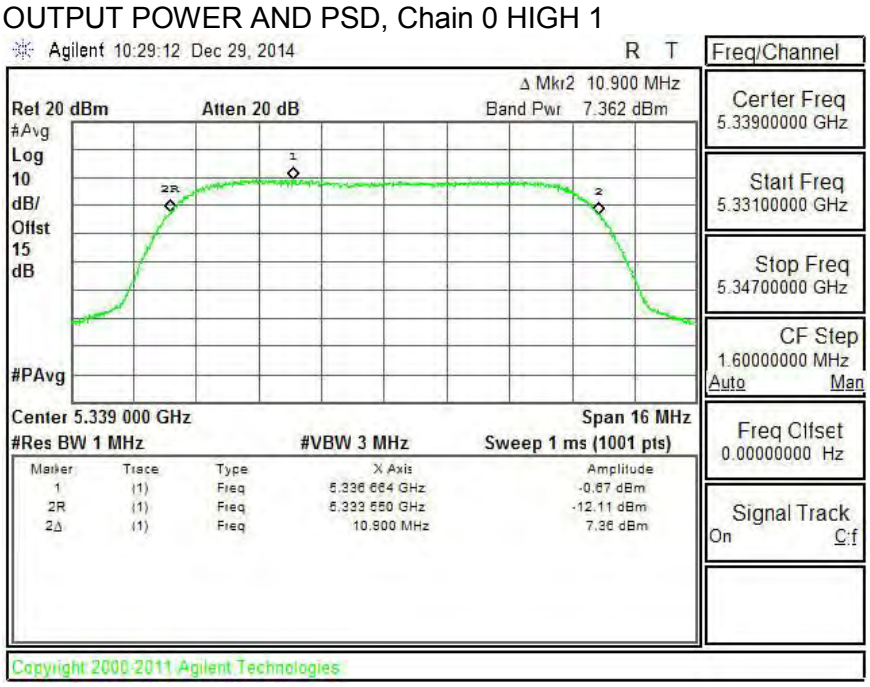
OUTPUT POWER AND PSD, Chain 0 MID



OUTPUT POWER AND PSD, Chain 0 HIGH 1



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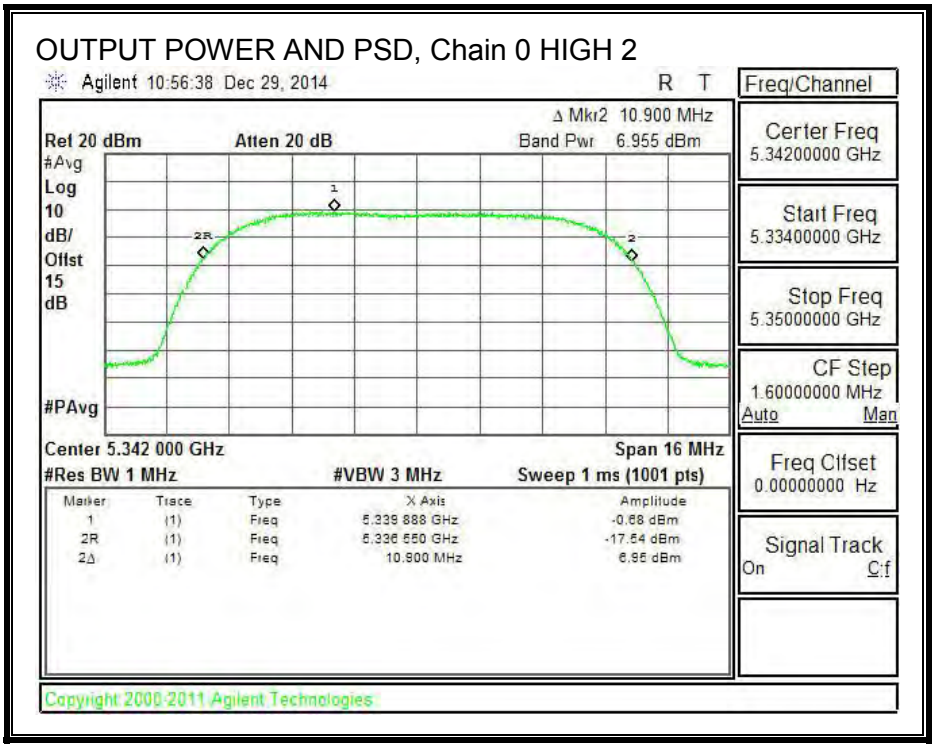
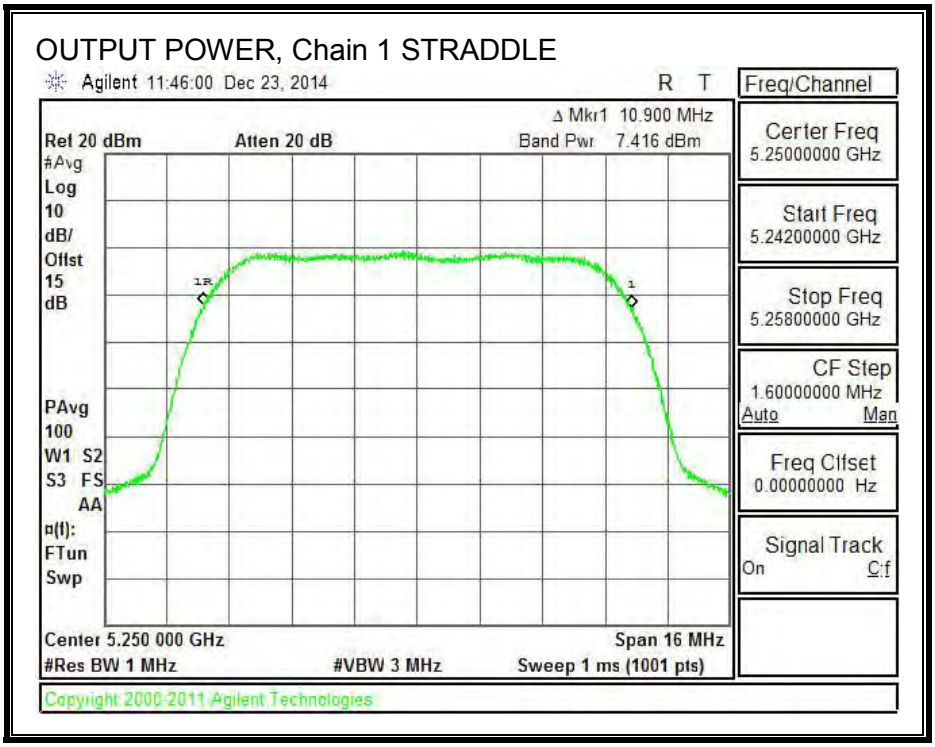


OUTPUT POWER AND PSD, Chain 1



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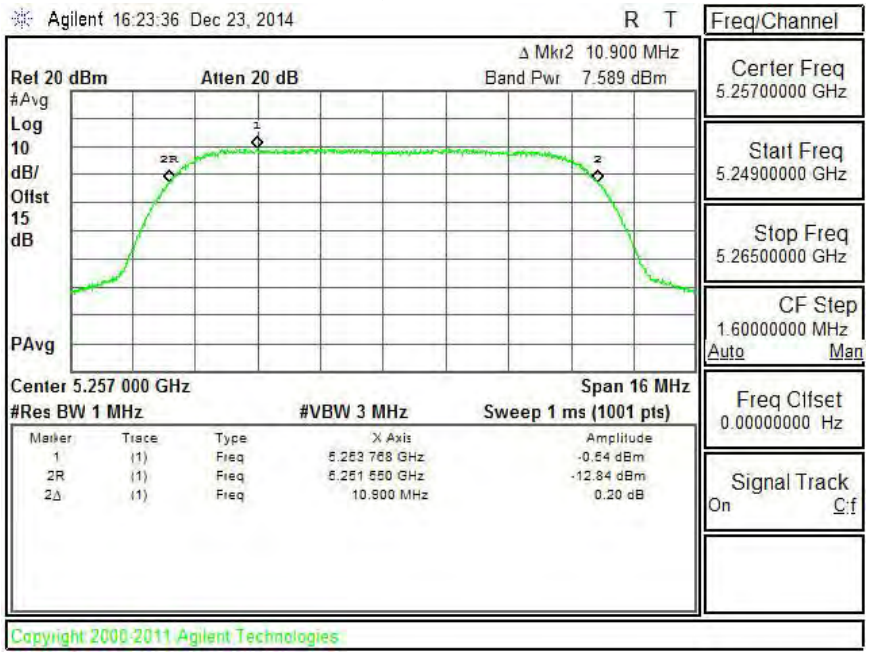
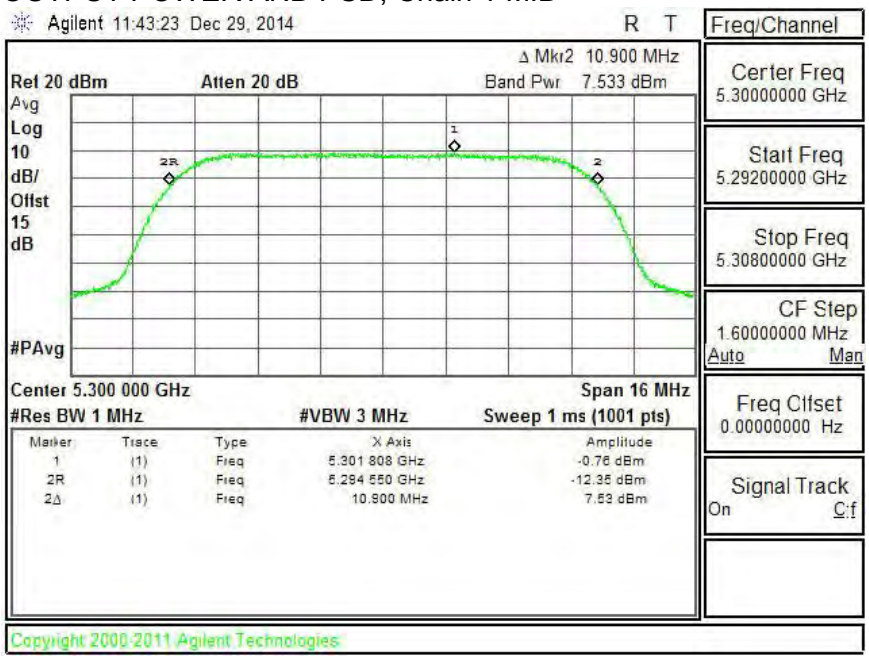
OUTPUT POWER AND PSD, Chain 1 LOW 2



OUTPUT POWER AND PSD, Chain 1 MID



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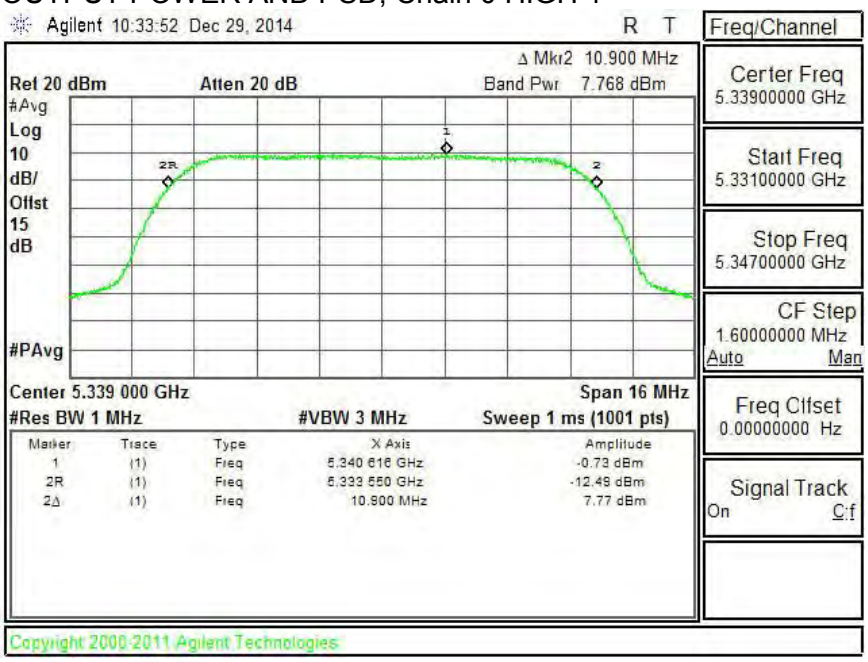
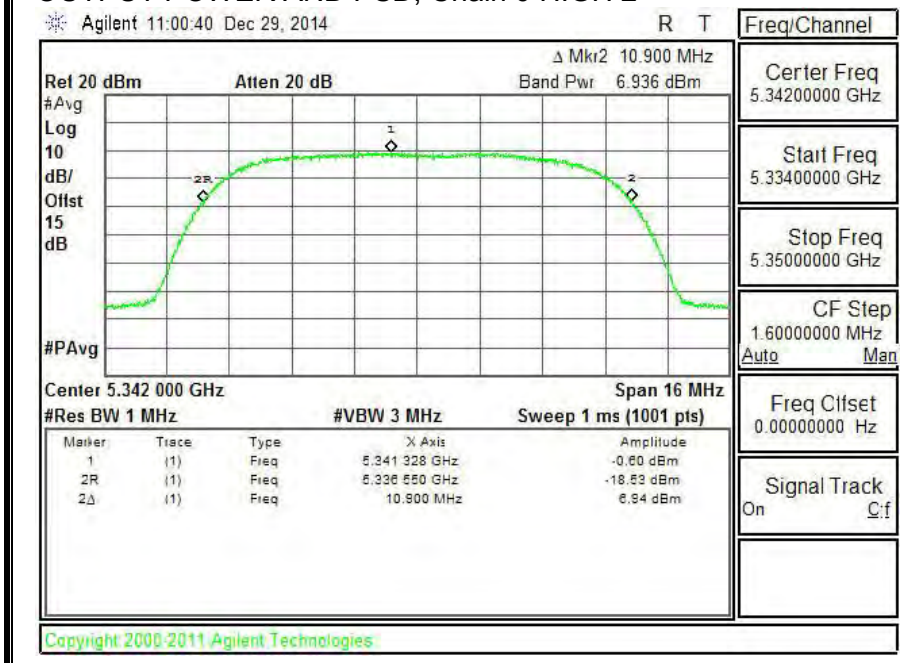
OUTPUT POWER AND PSD, Chain 0 HIGH 1



OUTPUT POWER AND PSD, Chain 0 HIGH 2



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8.2.3. STRADDLE CHANNEL RESULTS

UNII-1 BAND

Bandwidth and Antenna Gain

Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
5250	5.44	14.50	14.50

Limits

Frequency (MHz)	FCC Power Limit (dBm)	PPSD Limit (dBm)
5250	30.00	17.00

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

Output Power Results

Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
5250	4.55	4.76	7.67	30.00	-22.33

PPSD Results

Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
5250	-0.69	-0.73	2.30	17.00	-14.70

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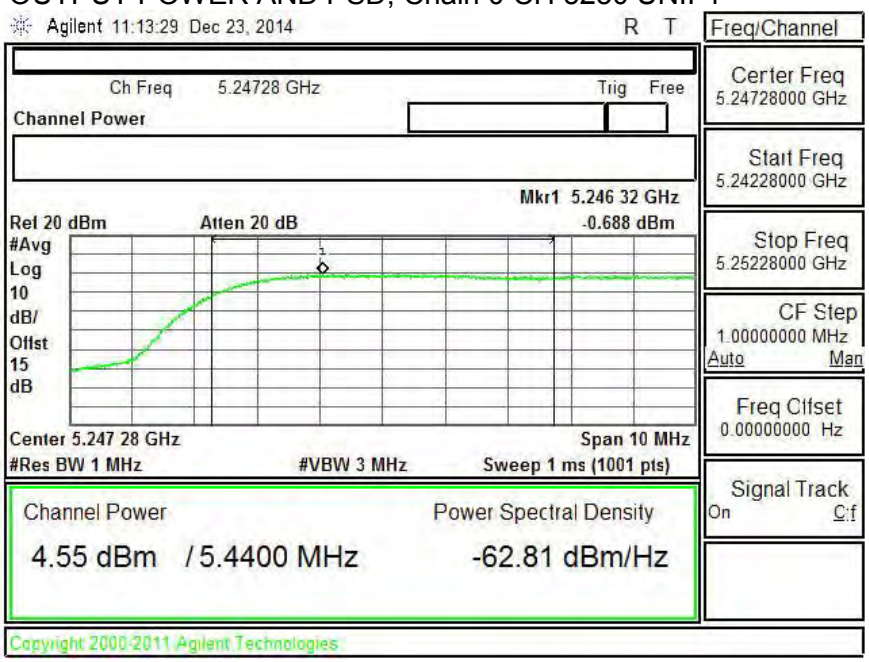
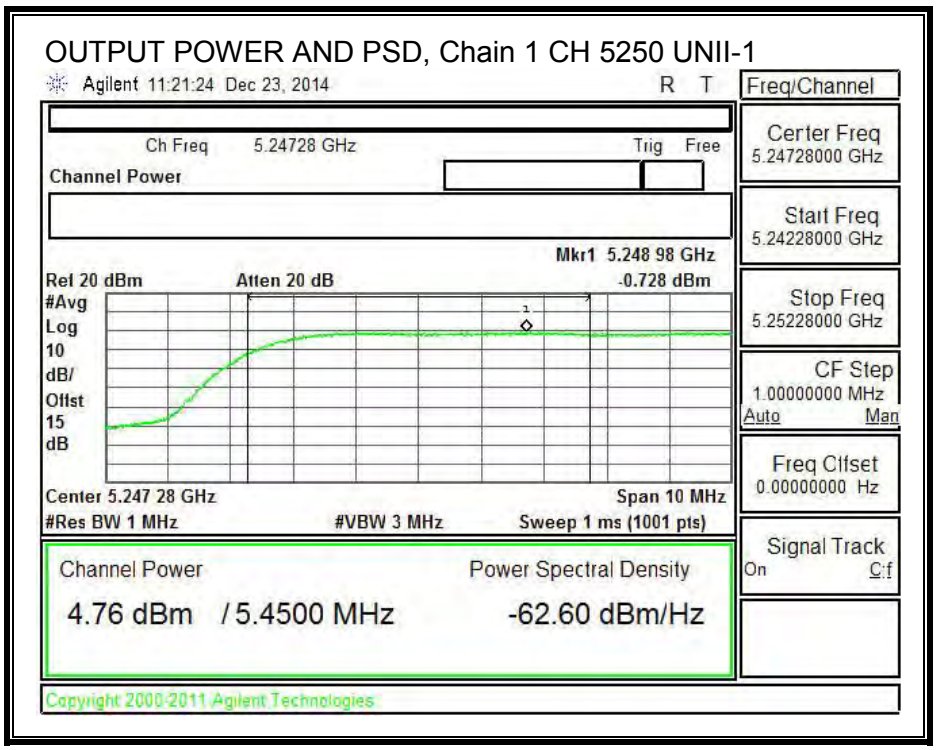
OUTPUT POWER AND PSD, Chain 0 CH 5250 UNII-1



OUTPUT POWER AND PSD, Chain 1 CH 5250 UNII-1



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UNII-2A BAND

Bandwidth and Antenna Gain

Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
5250	5.44	14.50	14.50

Limits

Frequency (MHz)	FCC Power Limit (dBm)	FCC PPSD Limit (dBm)
5250	9.86	2.50

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

Output Power Results

Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
5250	4.62	4.36	7.50	9.86	-2.35

PPSD Results

Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
5250	-0.73	-0.83	2.23	2.50	-0.27

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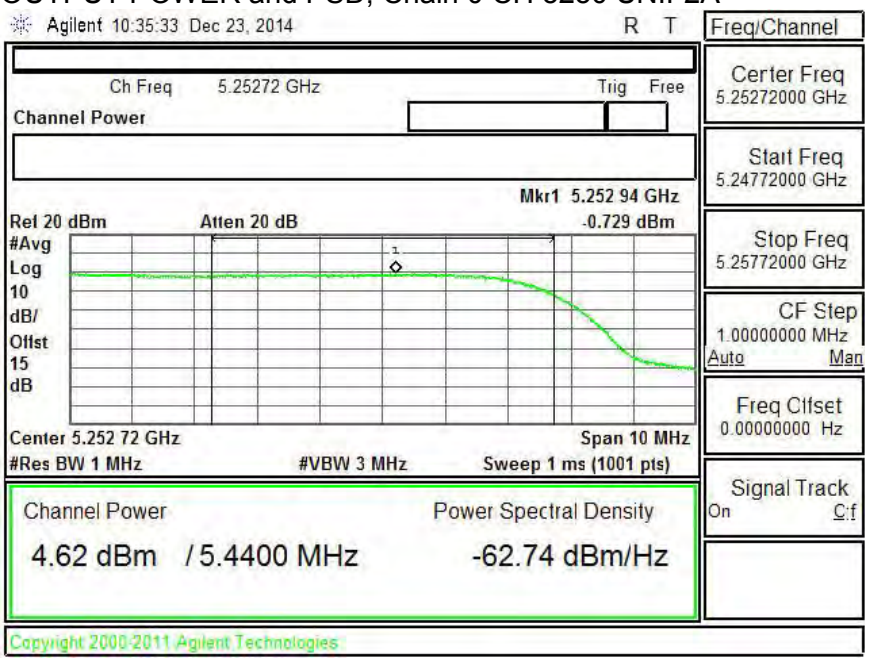
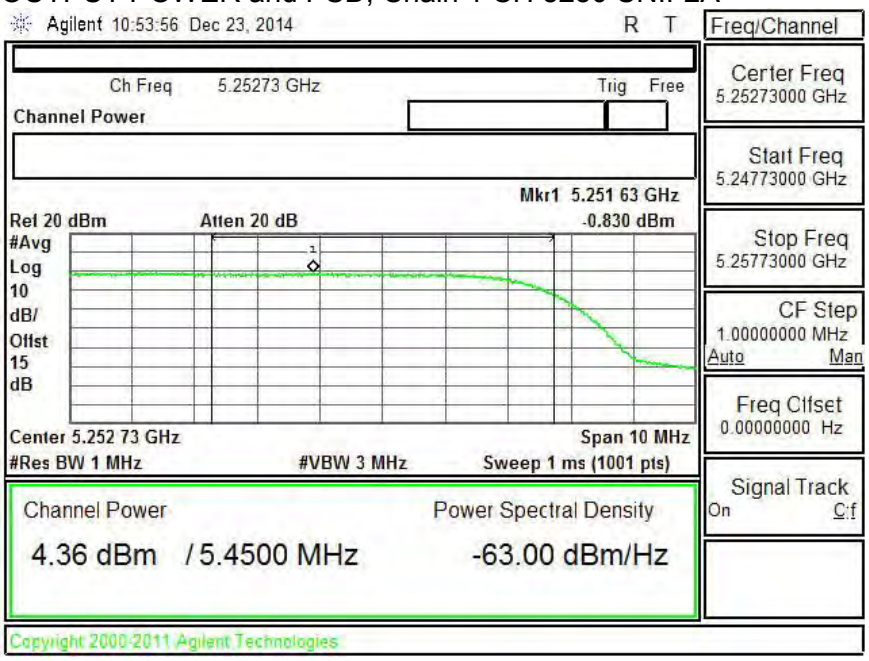
OUTPUT POWER and PSD, Chain 0 CH 5250 UNII-2A



OUTPUT POWER and PSD, Chain 1 CH 5250 UNII-2A



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8.2.4. CONDUCTED BANDEDGE

LIMITS

FCC §15.205 and §15.209

PART 15, SUBPART E

Radiated LIMIT:

(1) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

Procedure

KDB 789033 D02 General UNII Test Procedures New Rules v01, Section II, G5, G6

Conducted measurements are being used to demonstrate compliance with the spurious limits in the restricted band (all other spurious emissions are measured using the radiated test method with the antennas connected). The limits are 54dBuV/m average and 74dBuV/m peak, which are equivalent to eirp of -41.2 dBm and -21.2dBm respectively. The plots include an offset to account for the EUT antenna gain and external attenuation between EUT antenna port and spectrum analyzer. As the two antenna chains feed cross polarized antennas with un- correlated signals the two chains are treated independently and the emissions do not need to be summed.

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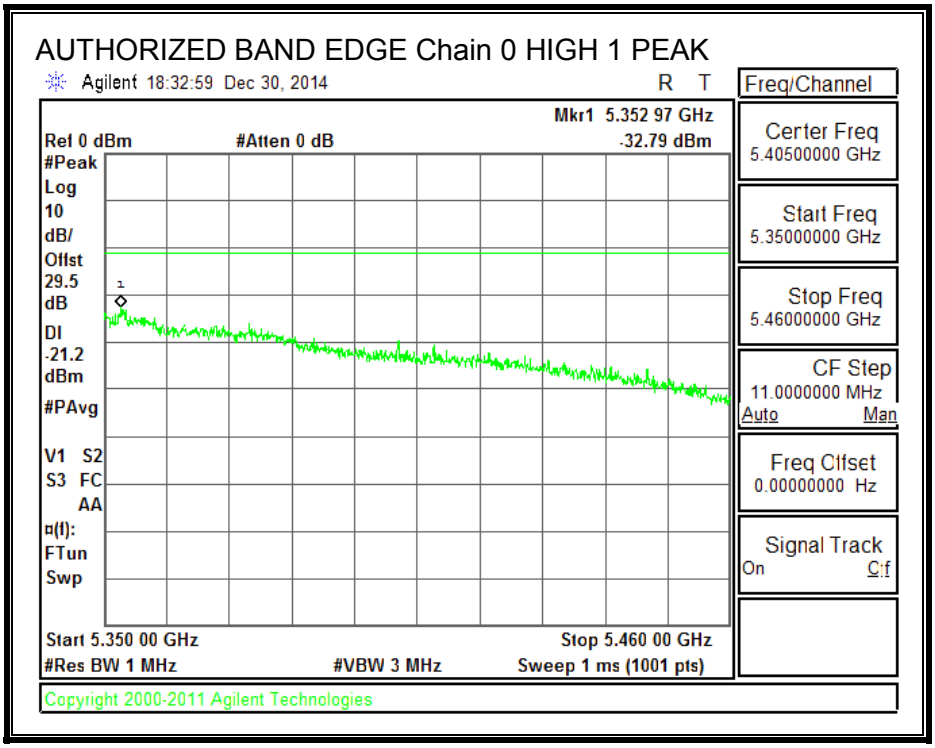
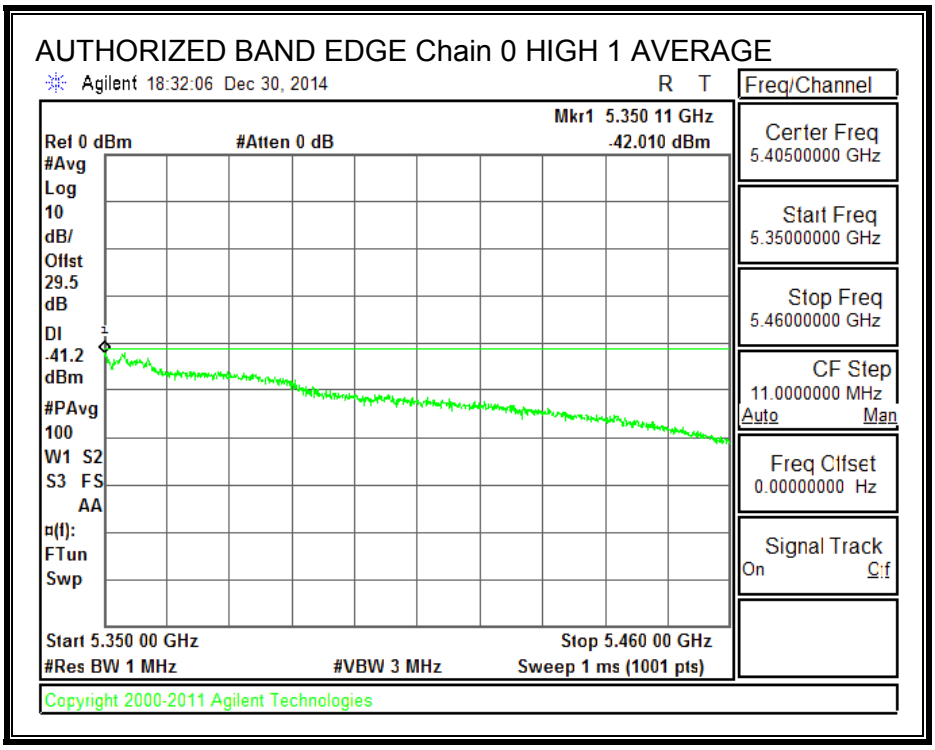
RESULTS

HIGH CHANNEL BANDEDGE, Chain 0





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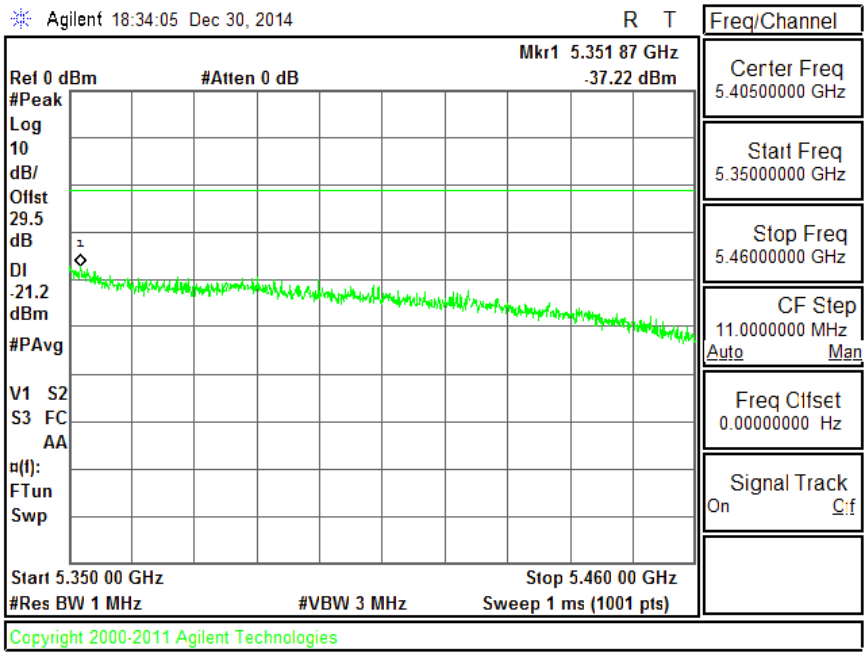
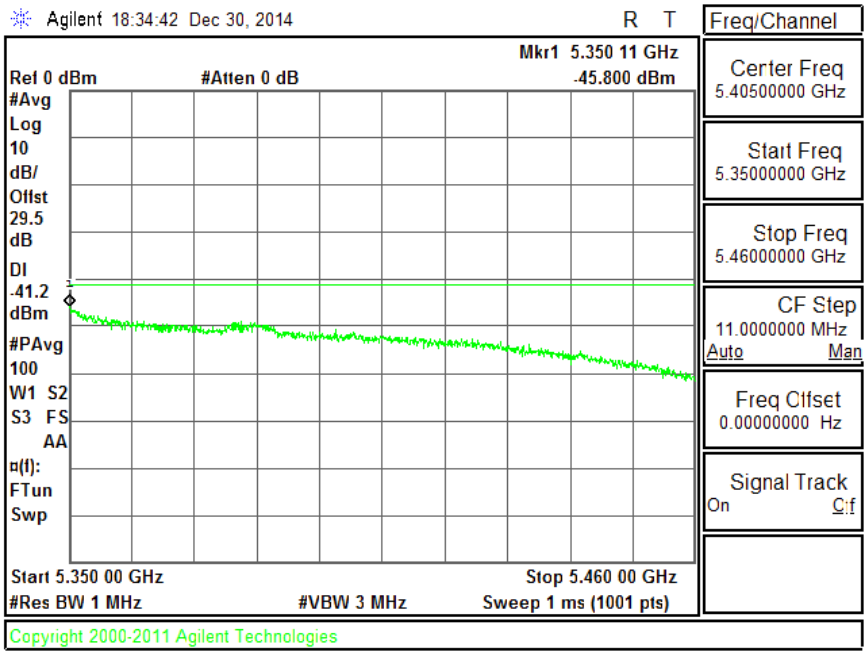
AUTHORIZED BAND EDGE Chain 0 HIGH 2 PEAK



AUTHORIZED BAND EDGE Chain 0 HIGH 2 AVERAGE



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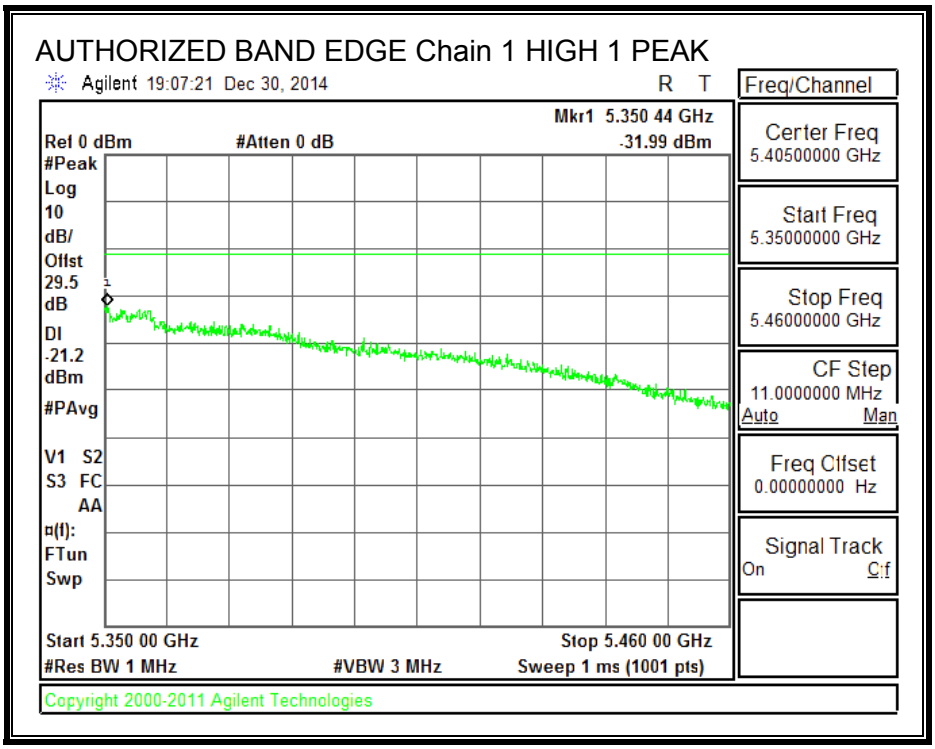
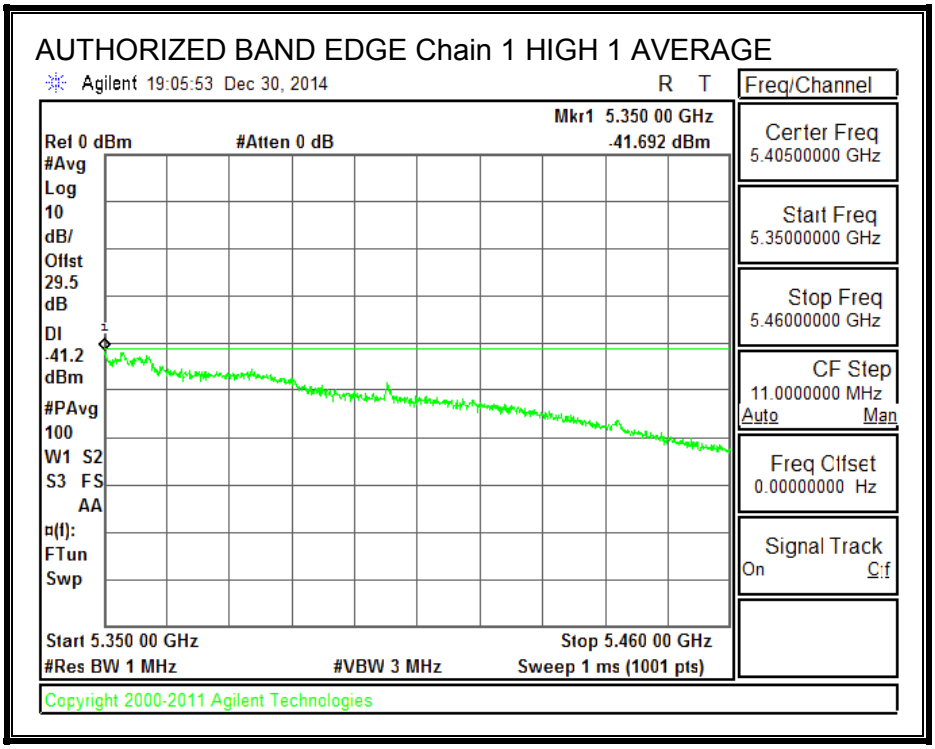
HIGH CHANNEL BANDEDGE, Chain 1





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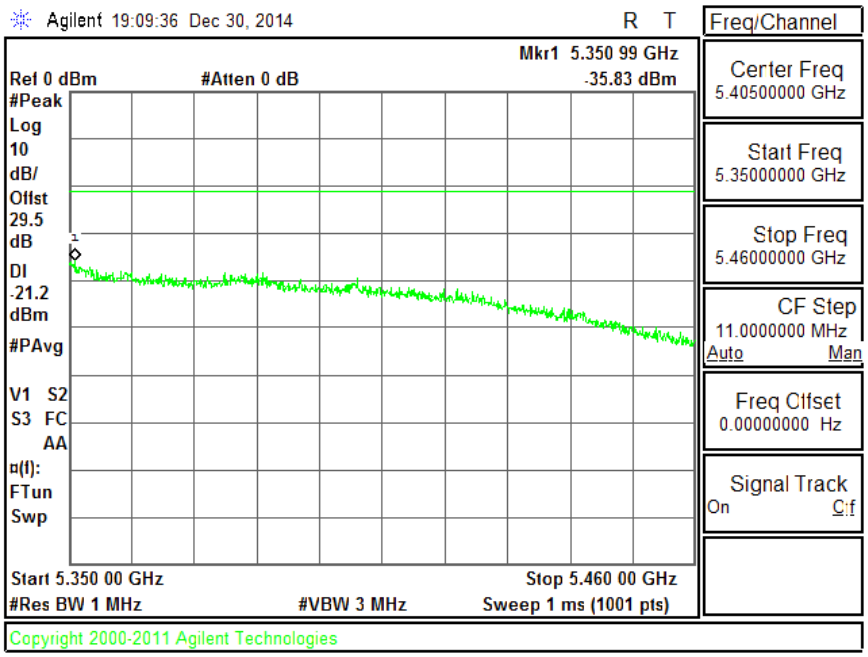
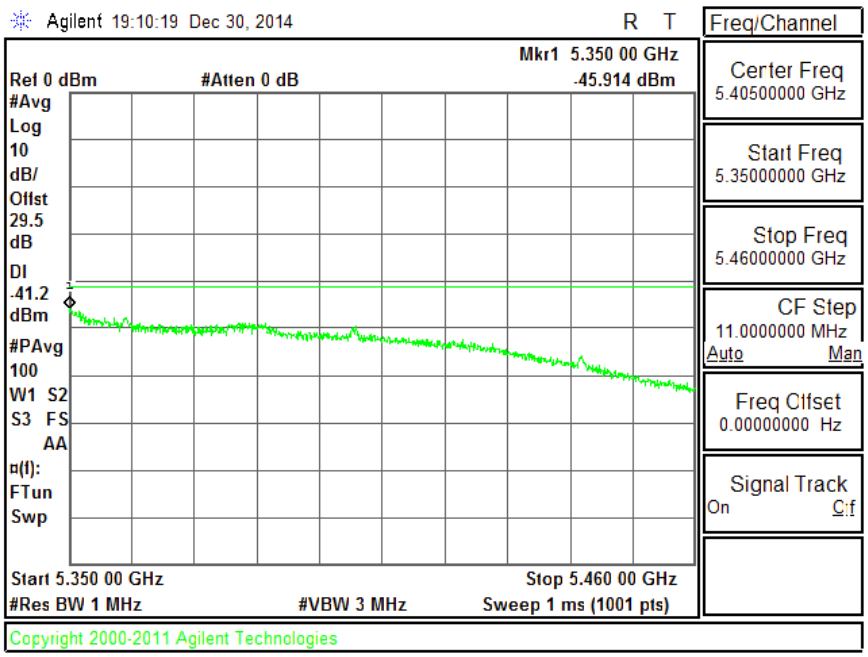
AUTHORIZED BAND EDGE Chain 1 HIGH 2 PEAK



AUTHORIZED BAND EDGE Chain 1 HIGH 2 AVERAGE



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8.3. 20MHz 2Tx MODE IN THE 5.3 GHz BAND

8.3.1. 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)
Straddle	5250	21.66	21.66
Low 2	5261	21.65	21.62
Mid	5300	21.65	21.62
High 1	5330	21.65	21.62
High 2	5335	21.19	21.15

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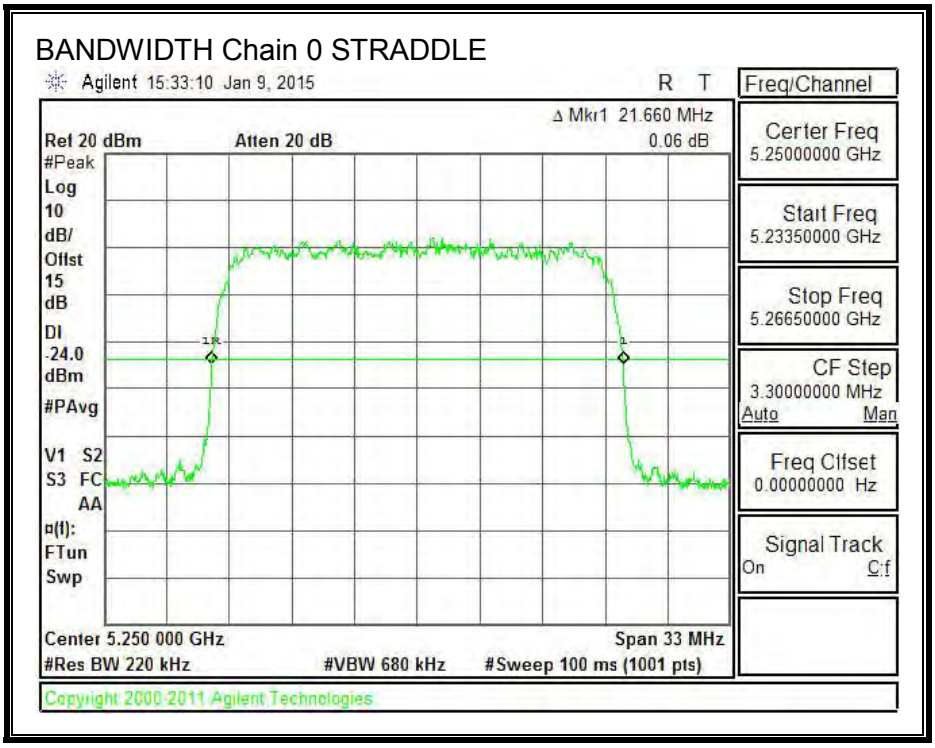
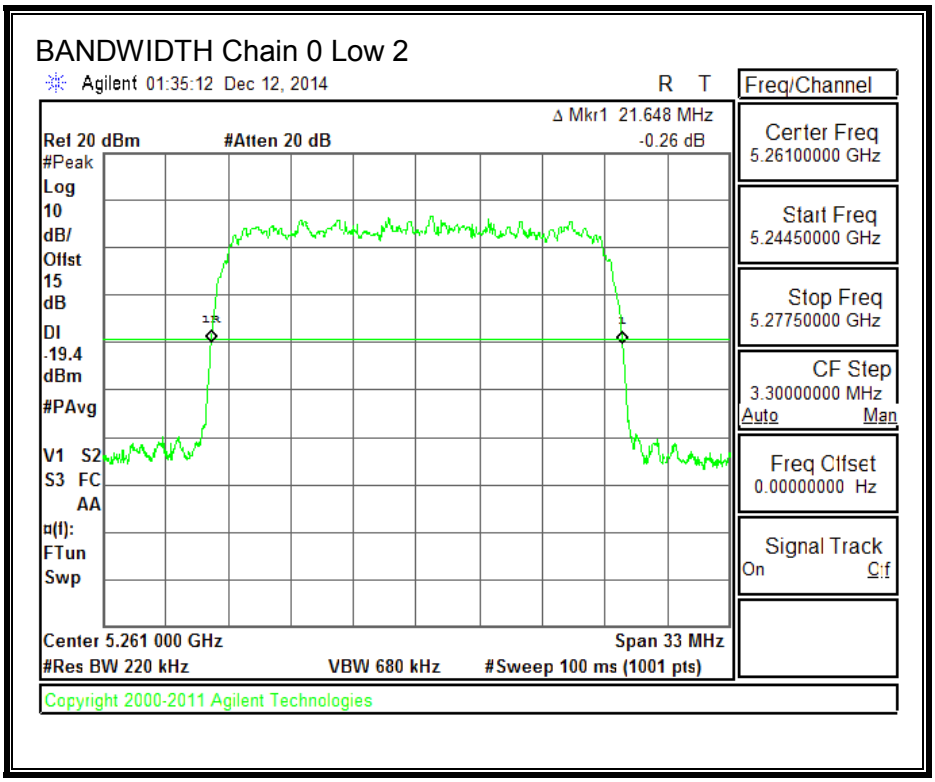
26 dB BANDWIDTH, Chain 0





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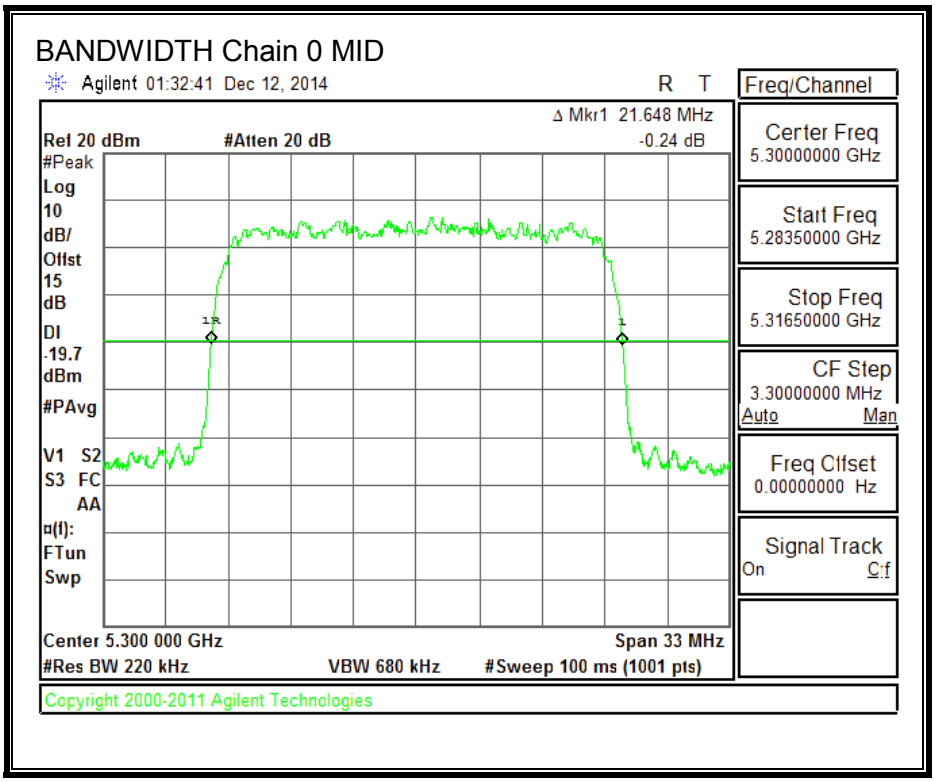

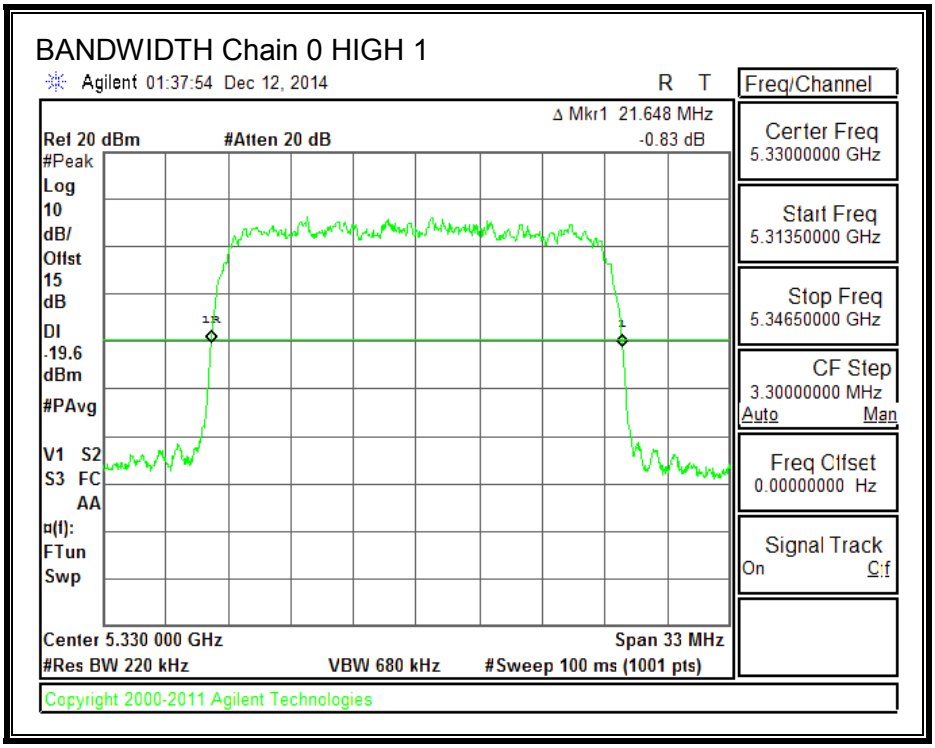

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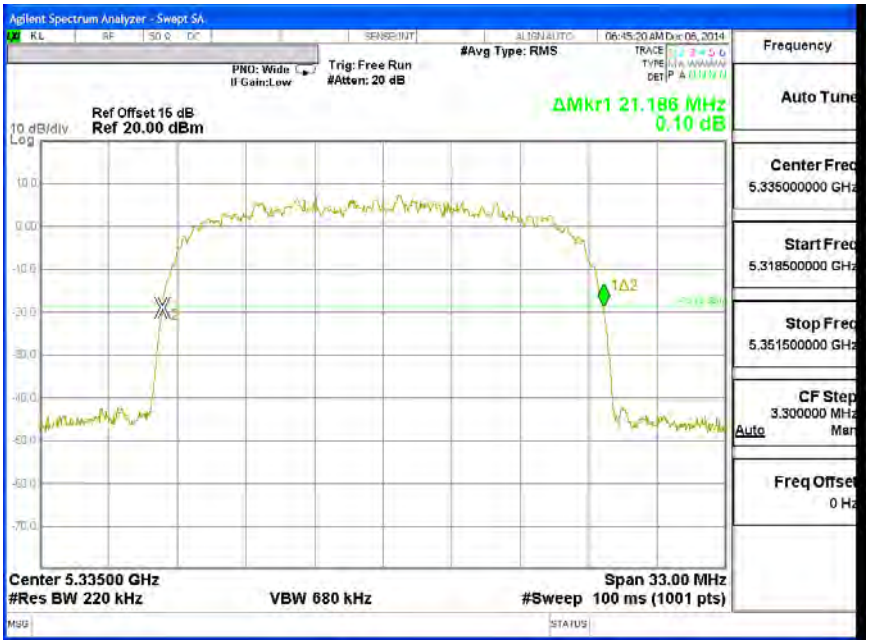
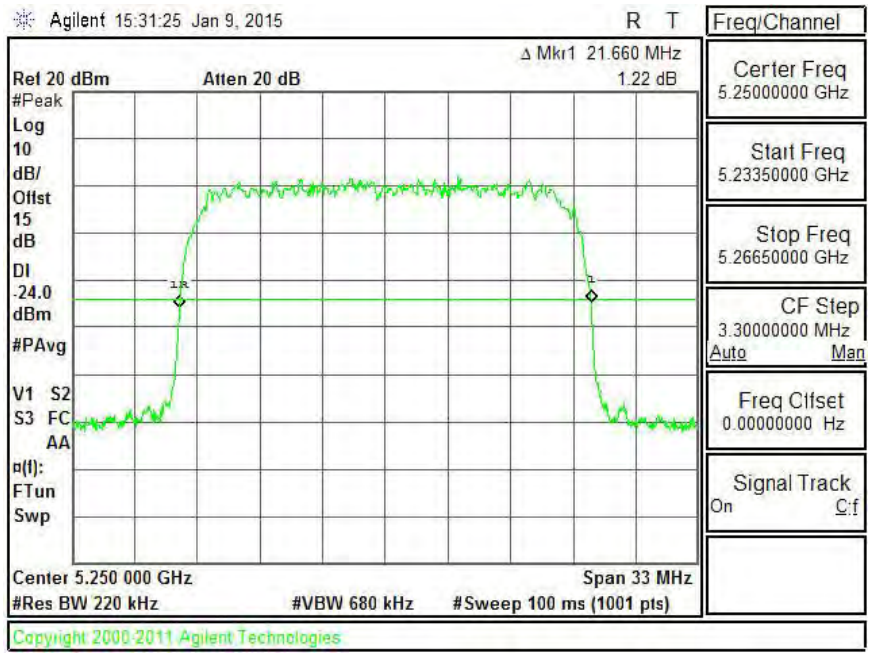
BANDWIDTH Chain 0 HIGH 2



26 dB BANDWIDTH, Chain 1

BANDWIDTH Chain 1 STRADDLE



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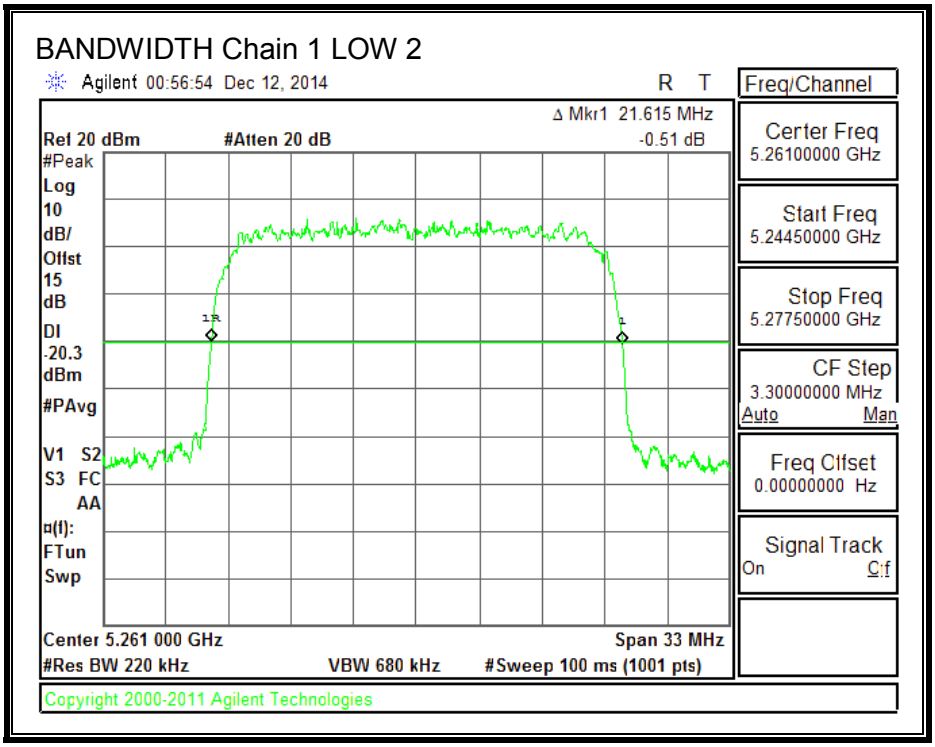

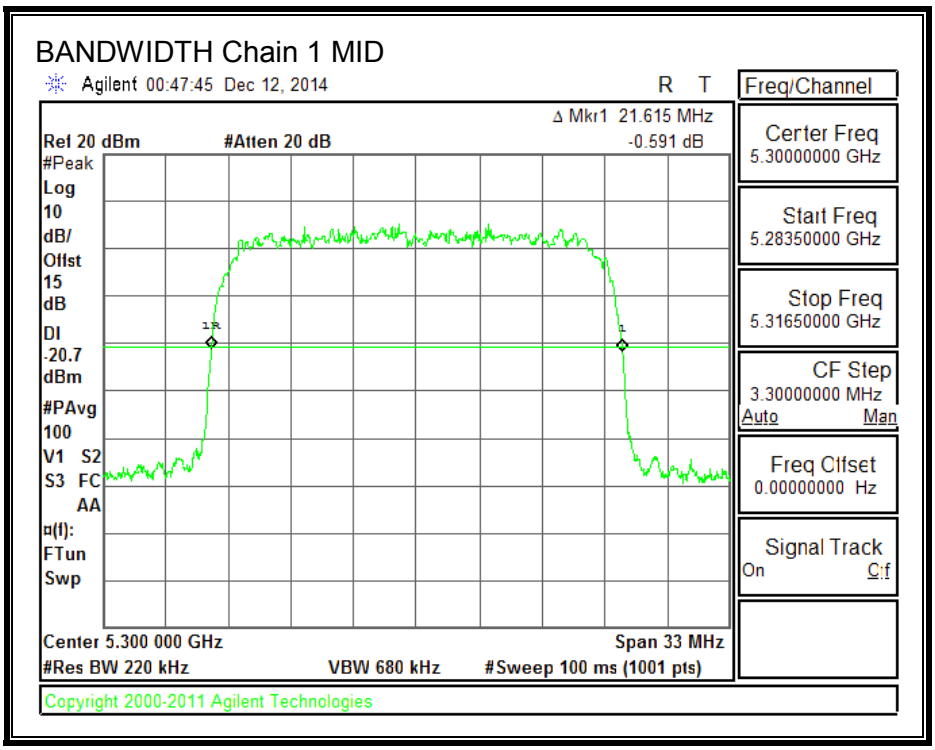

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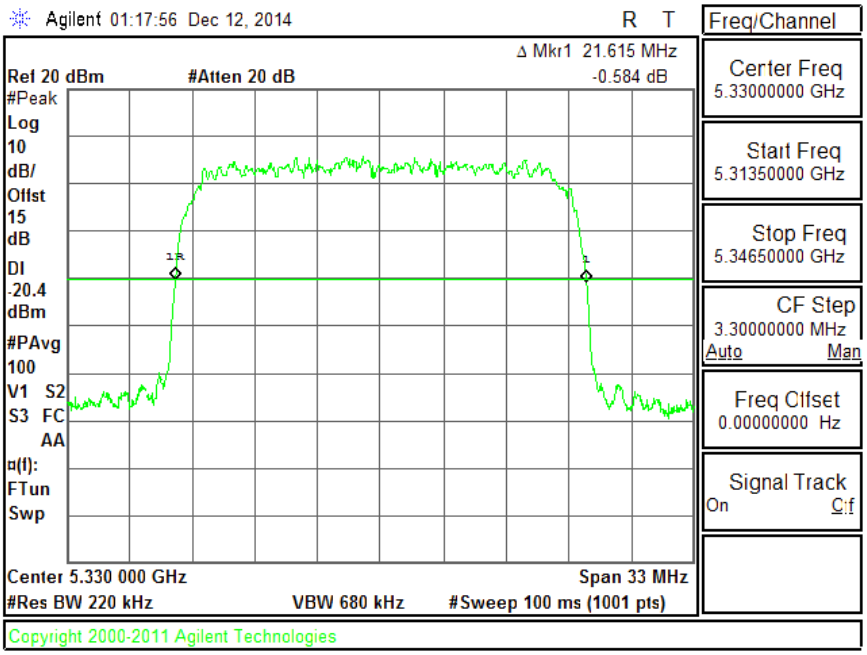
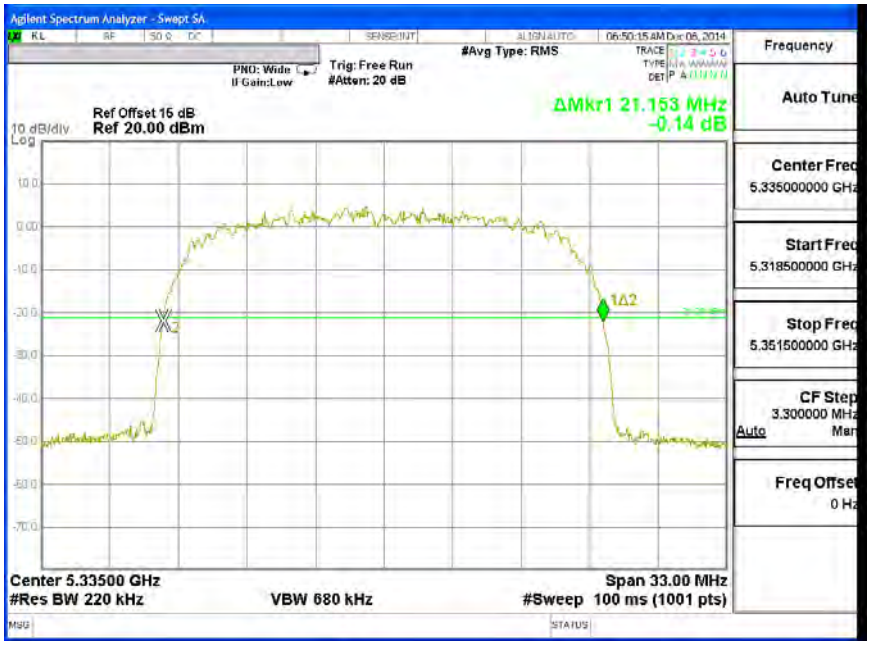
BANDWIDTH Chain 1 HIGH 1



BANDWIDTH Chain 1 HIGH 2



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8.3.2. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
14.50	14.50	14.50

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RESULTS

Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Straddle	5250	21.19	14.50	14.50	15.50	2.50
Low 2	5261	21.19	14.50	14.50	15.50	2.50
Mid	5300	21.19	14.50	14.50	15.50	2.50
High 1	5330	21.19	14.50	14.50	15.50	2.50
High 2	5335	21.19	14.50	14.50	15.50	2.50

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Straddle	5250	10.35	10.50	13.44	15.50	-2.06
Low 2	5261	10.56	10.74	13.66	15.50	-1.84
Mid	5300	10.37	10.83	13.61	15.50	-1.89
High 1	5330	10.48	10.87	13.69	15.50	-1.81
High 2	5335	9.39	9.83	12.63	15.50	-2.87

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low 2	5261	-0.76	-0.56	2.35	2.50	-0.15
Mid	5300	-0.72	-0.51	2.40	2.50	-0.10
High 1	5330	-0.64	-0.65	2.37	2.50	-0.13
High 2	5335	-0.61	-0.73	2.34	2.50	-0.16

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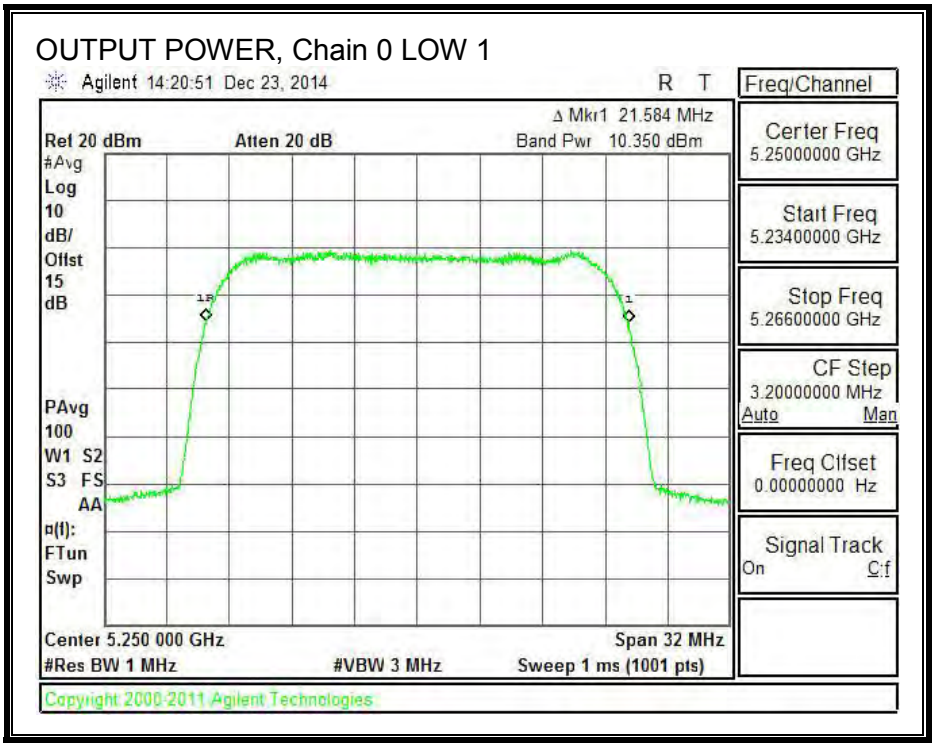
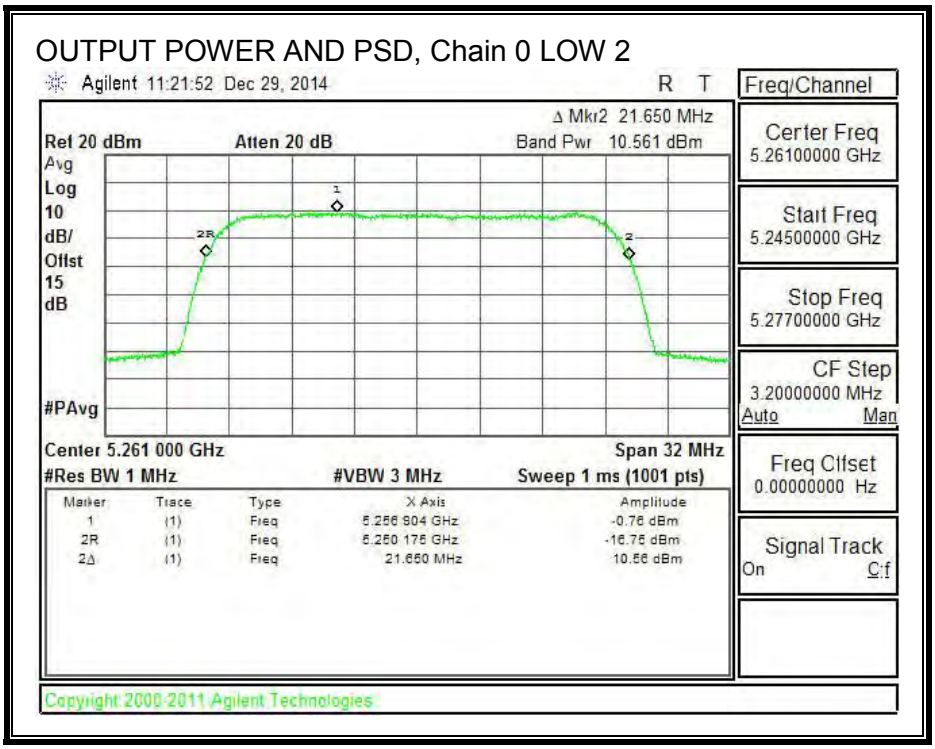
OUTPUT POWER AND PSD, Chain 0





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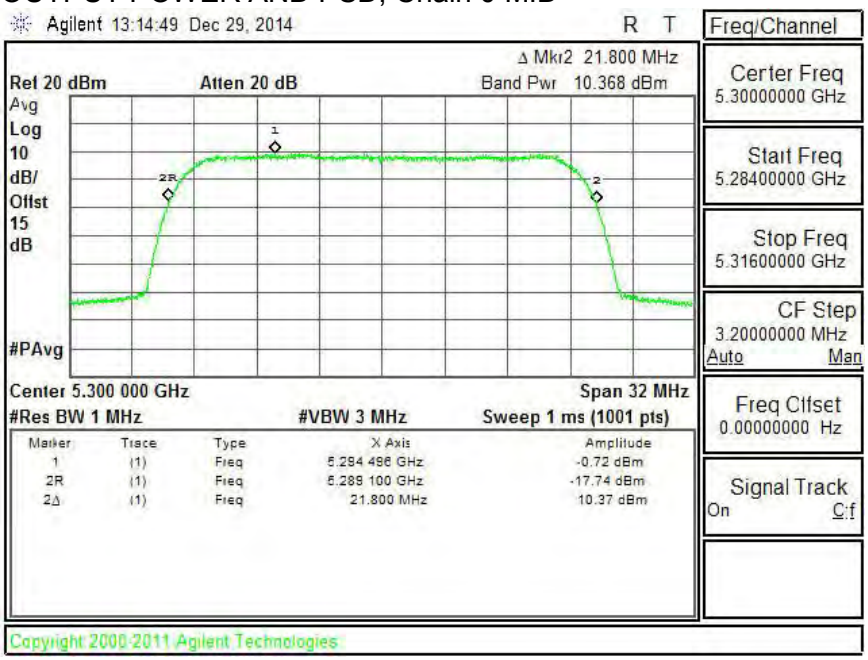
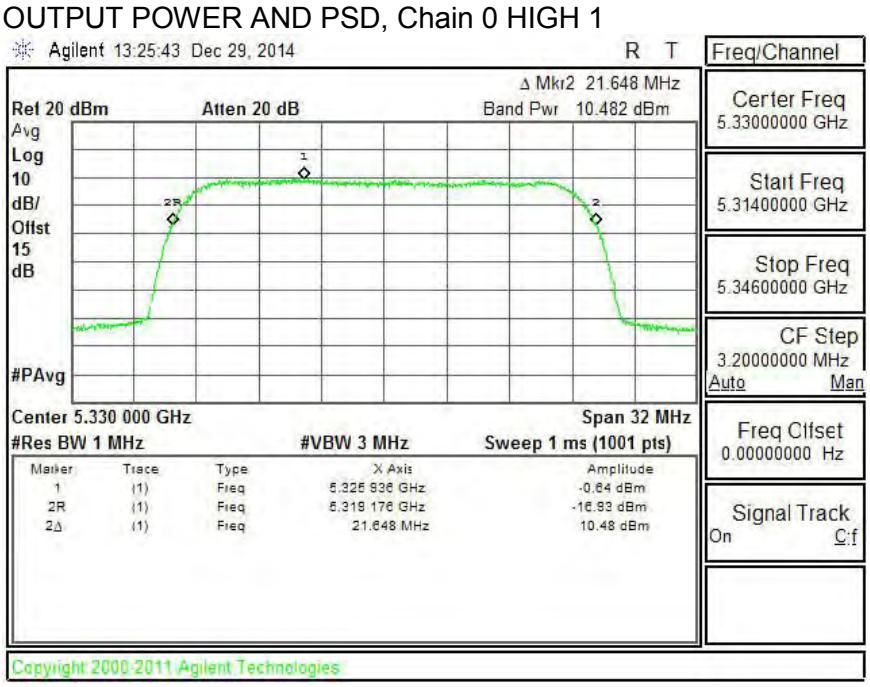
OUTPUT POWER AND PSD, Chain 0 MID



OUTPUT POWER AND PSD, Chain 0 HIGH 1



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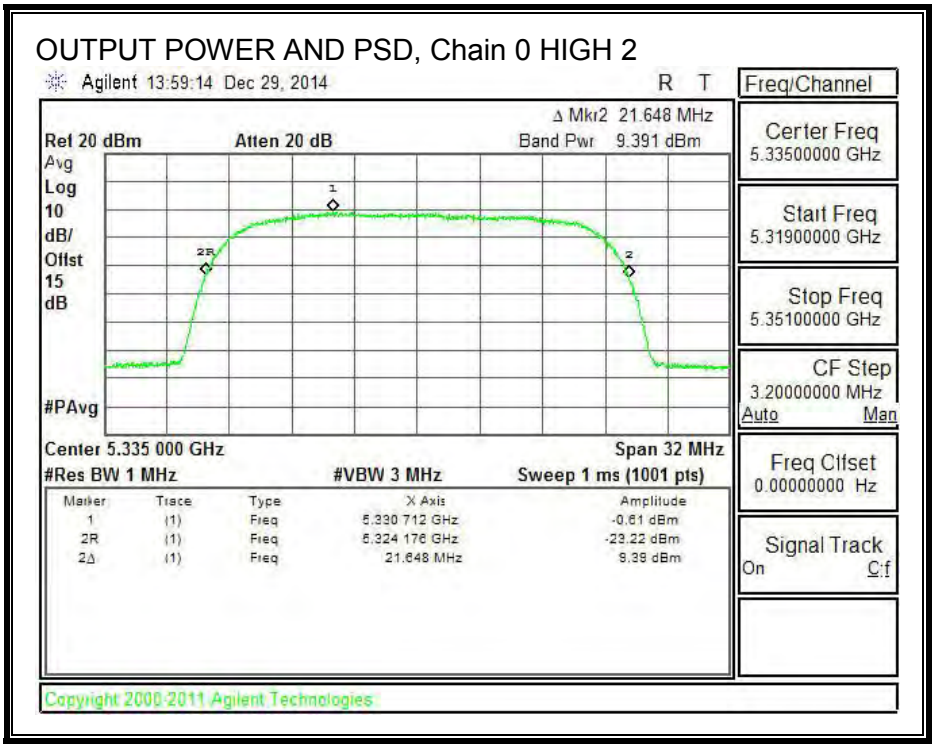
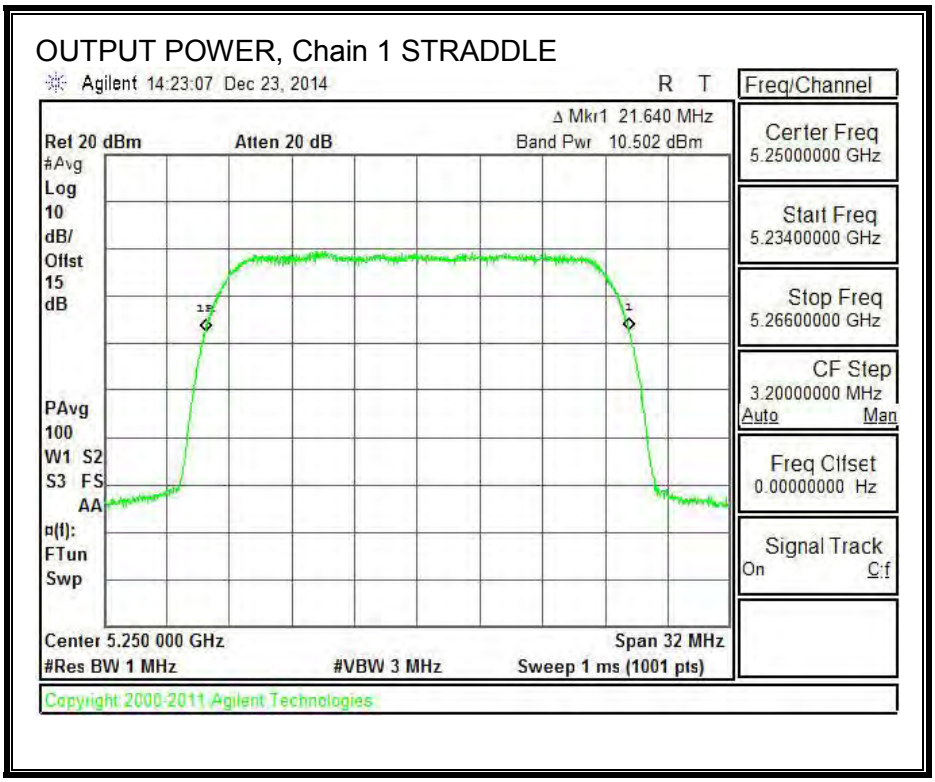


OUTPUT POWER AND PSD, Chain 1



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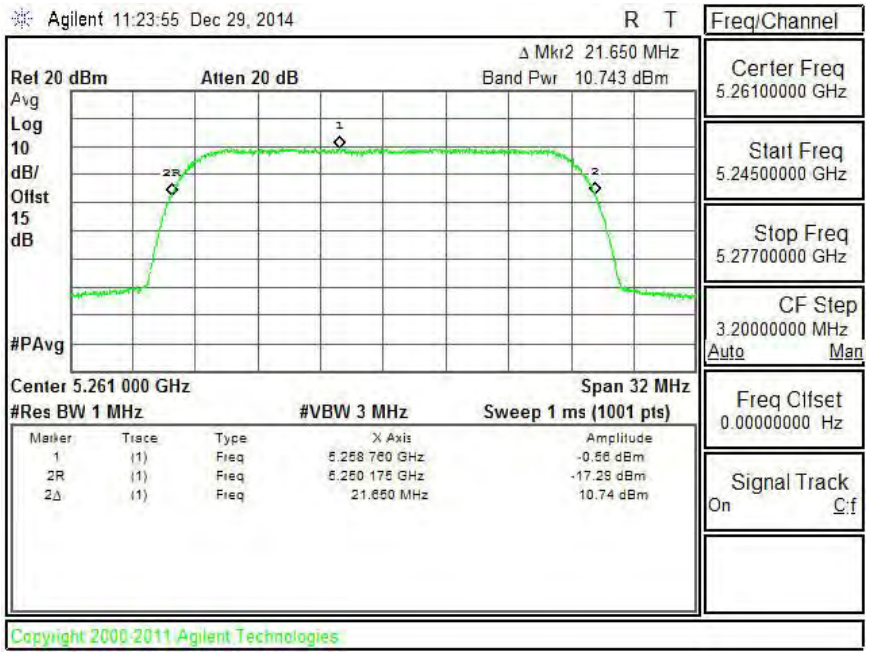
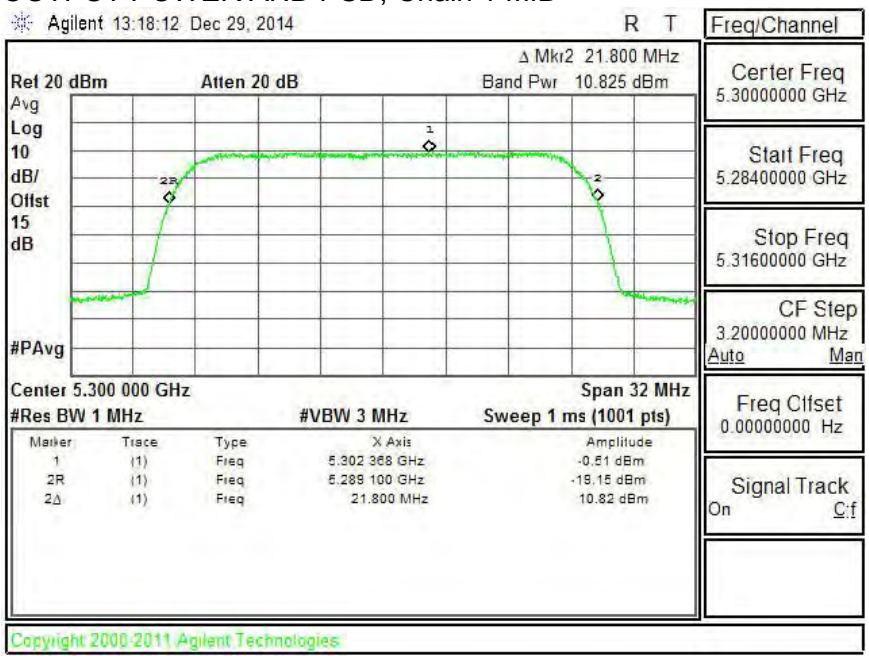
OUTPUT POWER AND PSD, Chain 1 LOW 2



OUTPUT POWER AND PSD, Chain 1 MID



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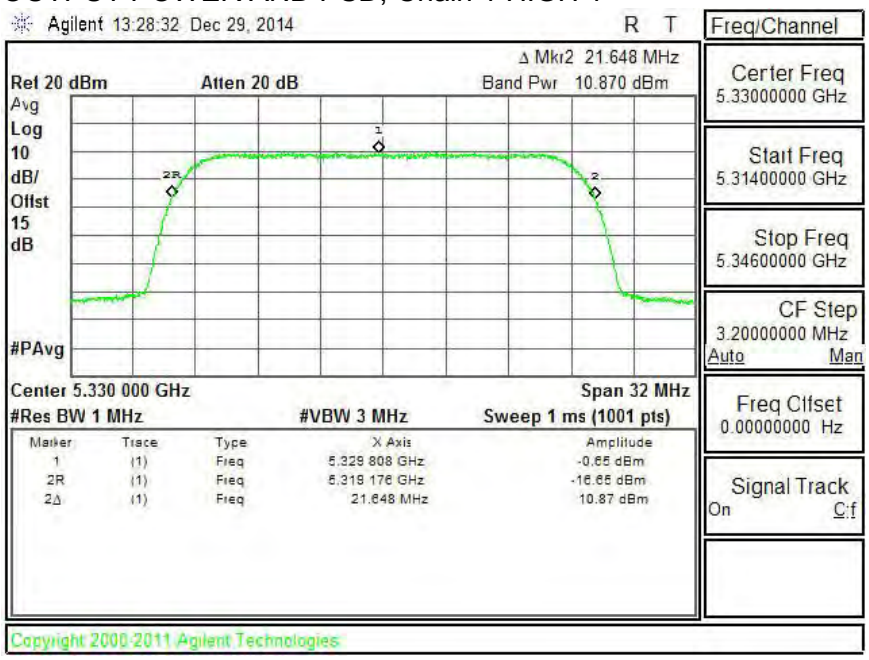
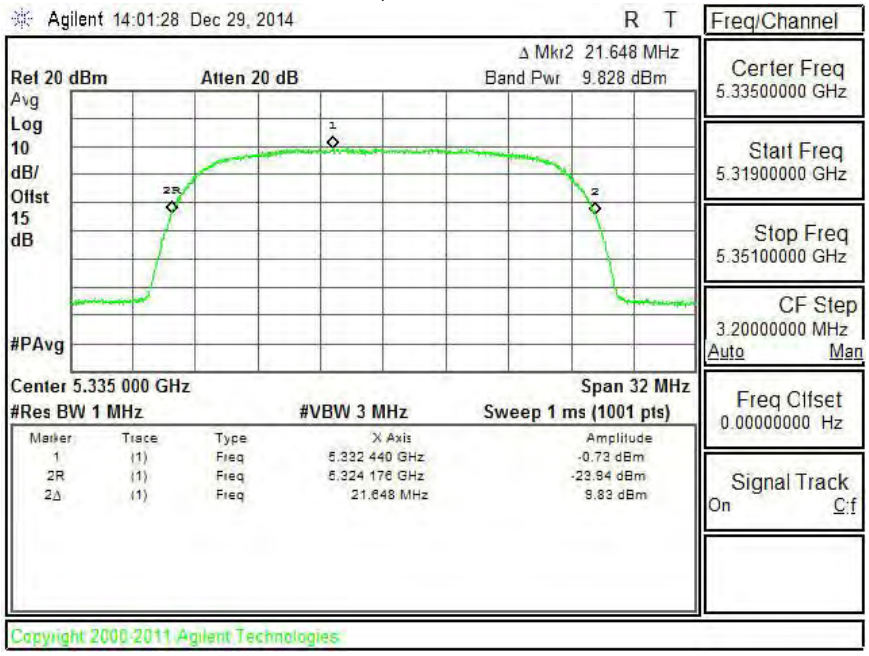
OUTPUT POWER AND PSD, Chain 1 HIGH 1



OUTPUT POWER AND PSD, Chain 1 HIGH 2



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8.3.3. STRADDLE CHANNEL RESULTS

UNII-1 BAND

Bandwidth and Antenna Gain

Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
5250	10.83	14.50	14.50

Limits

Frequency (MHz)	FCC Power Limit (dBm)	PPSD Limit (dBm)
5250	30.00	17.00

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

Output Power Results

Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
5250	7.58	7.29	10.45	30.00	-19.55

PPSD Results

Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
5250	-0.51	-1.04	2.24	17.00	-14.76

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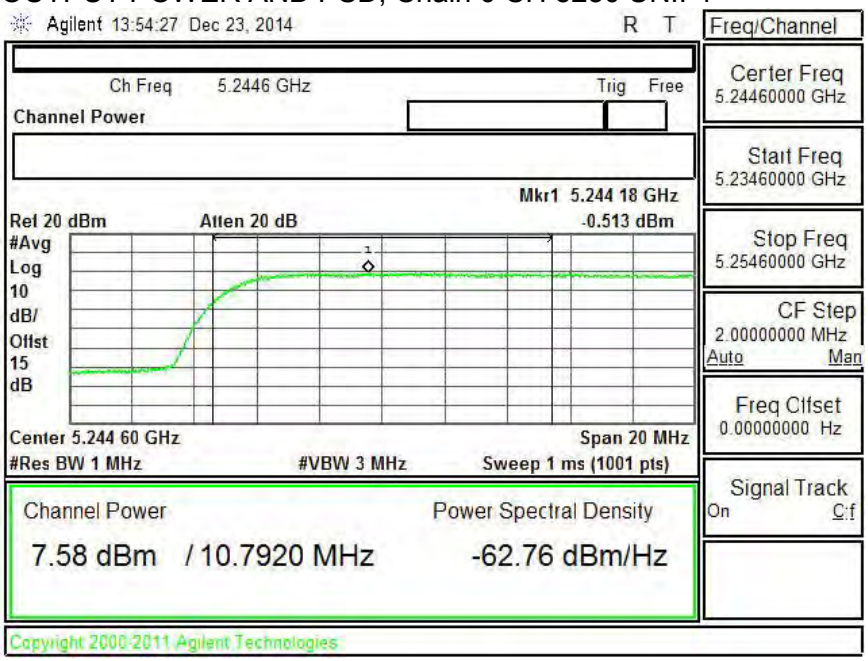
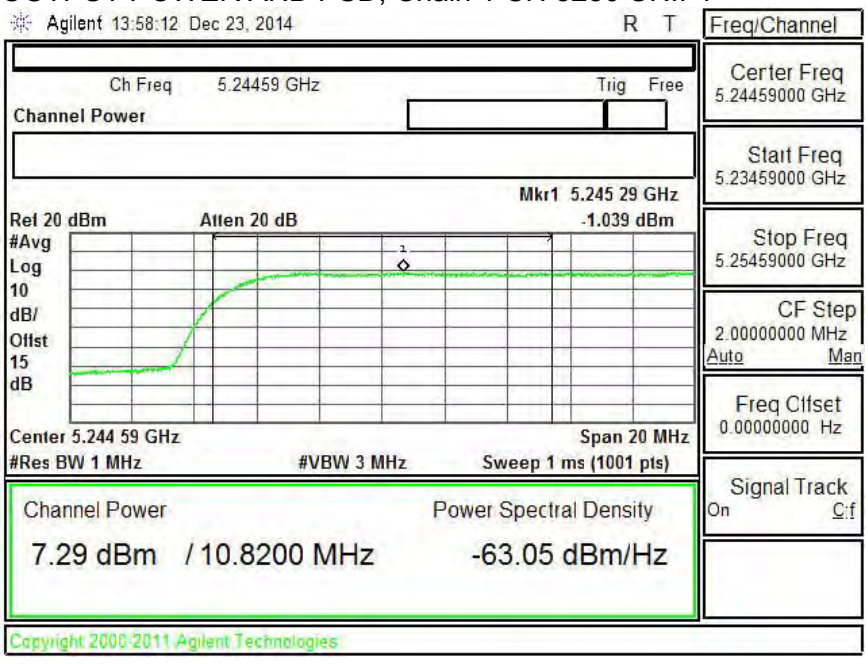
OUTPUT POWER AND PSD, Chain 0 CH 5250 UNII-1



OUTPUT POWER AND PSD, Chain 1 CH 5250 UNII-1



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UNII-2A BAND

Bandwidth and Antenna Gain

Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
5250	10.83	14.50	14.50

Limits

Frequency (MHz)	FCC Power Limit (dBm)	FCC PPSD Limit (dBm)
5250	12.85	2.50

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

Output Power Results

Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
5250	8.06	7.85	10.97	12.85	-1.88

PPSD Results

Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
5250	-0.53	-0.71	2.39	2.50	-0.11

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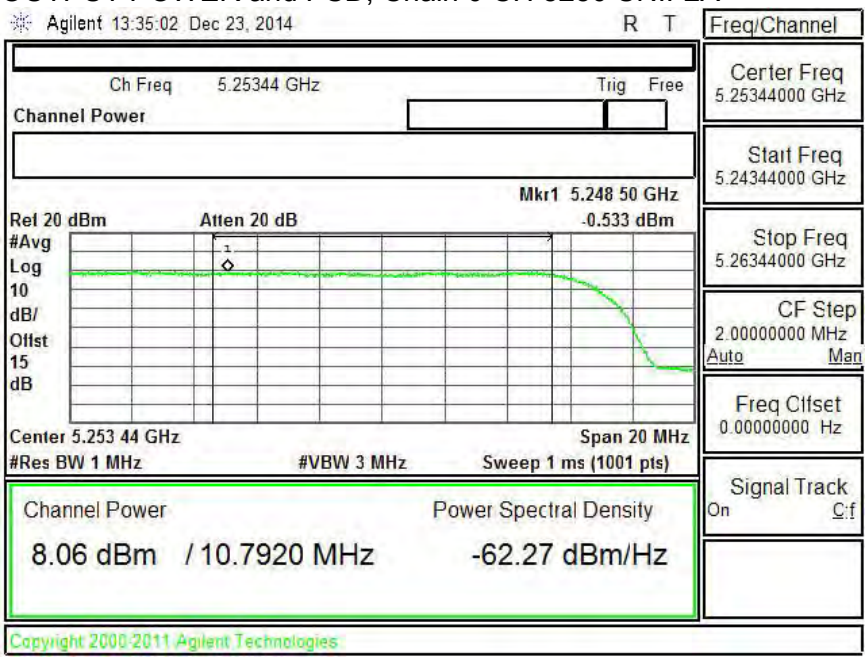
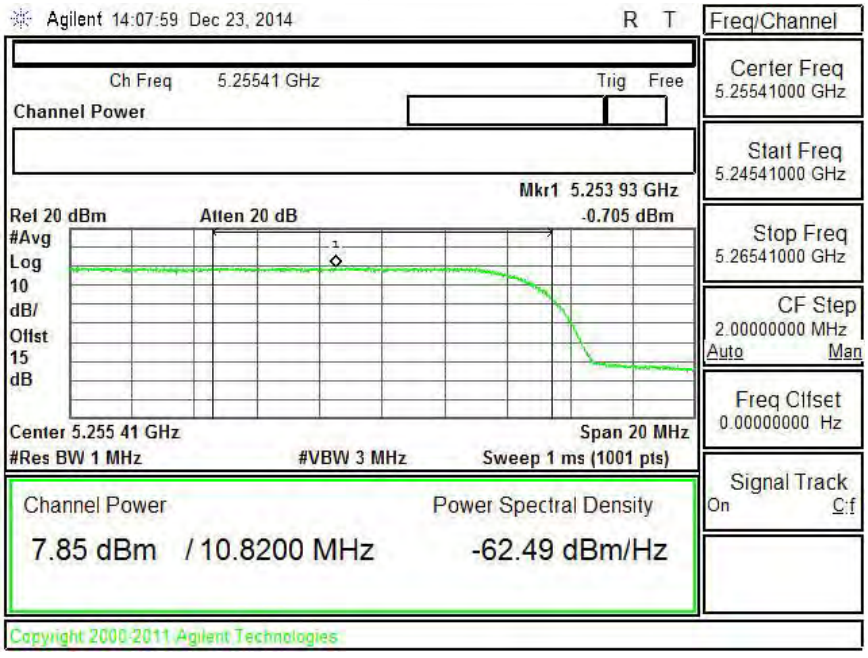
OUTPUT POWER and PSD, Chain 0 CH 5250 UNII-2A



OUTPUT POWER and PSD, Chain 1 CH 5250 UNII-2A



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8.3.4. CONDUCTED BANDEDGE

LIMITS

FCC §15.205 and §15.209

PART 15, SUBPART E

Radiated LIMIT:

(1) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

Procedure

KDB 789033 D02 General UNII Test Procedures New Rules v01, Section II, G5, G6

Conducted measurements are being used to demonstrate compliance with the spurious limits in the restricted band (all other spurious emissions are measured using the radiated test method with the antennas connected). The limits are 54dBuV/m average and 74dBuV/m peak, which are equivalent to eirp of -41.2 dBm and -21.2dBm respectively. The plots include an offset to account for the EUT antenna gain and external attenuation between EUT antenna port and spectrum analyzer. As the two antenna chains feed cross polarized antennas with un- correlated signals the two chains are treated independently and the emissions do not need to be summed.

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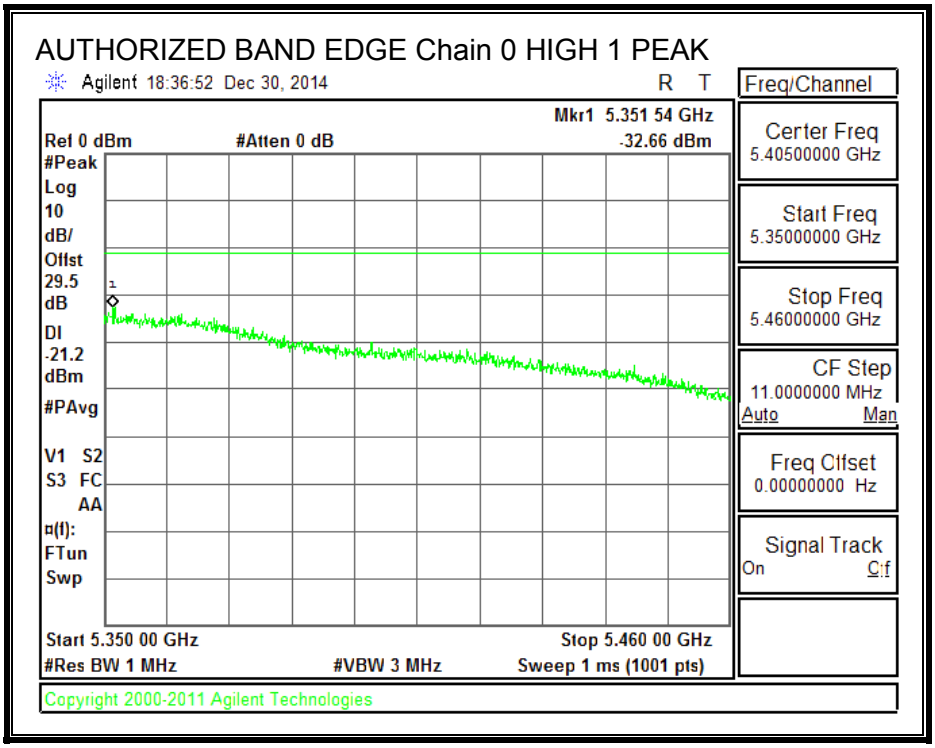
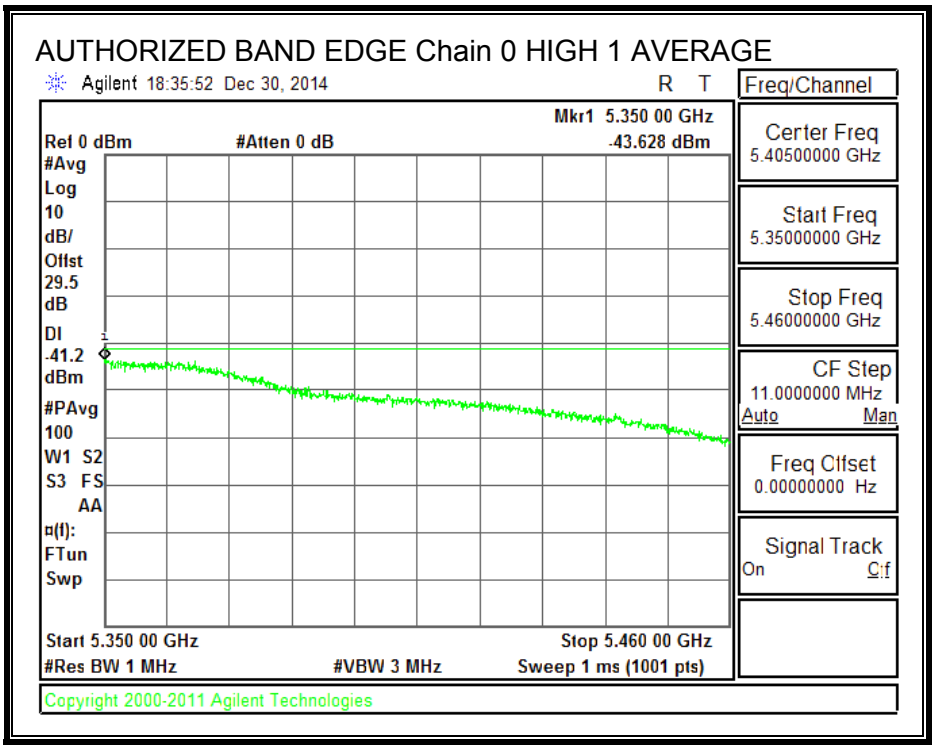
RESULTS

HIGH CHANNEL BANDEDGE, Chain 0





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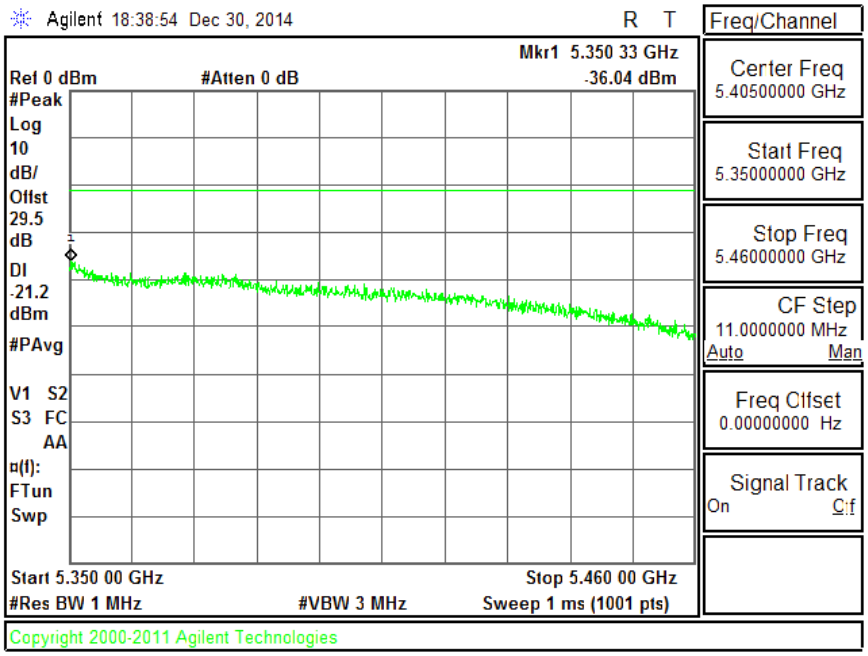
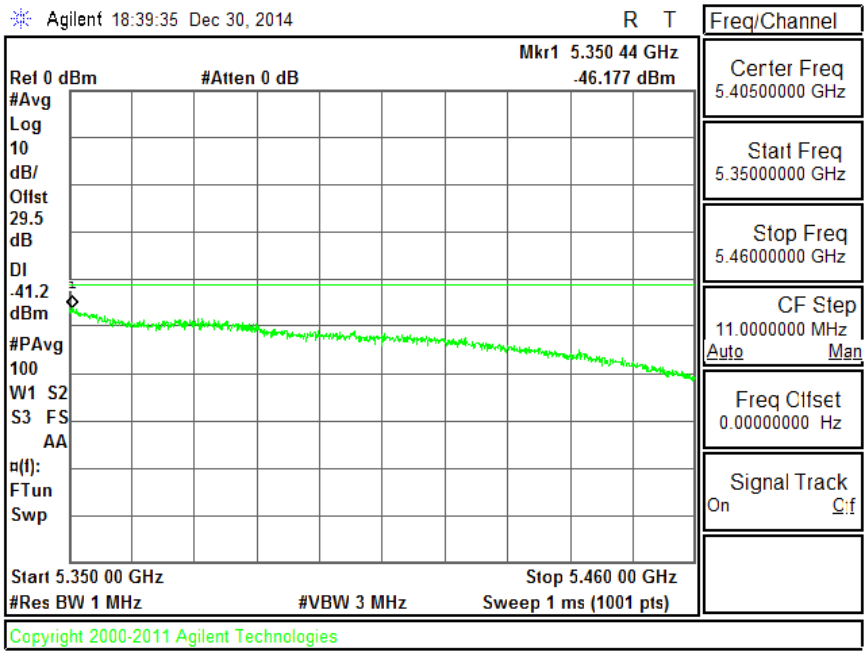
AUTHORIZED BAND EDGE Chain 0 HIGH 2 PEAK



AUTHORIZED BAND EDGE Chain 0 HIGH 2 AVERAGE



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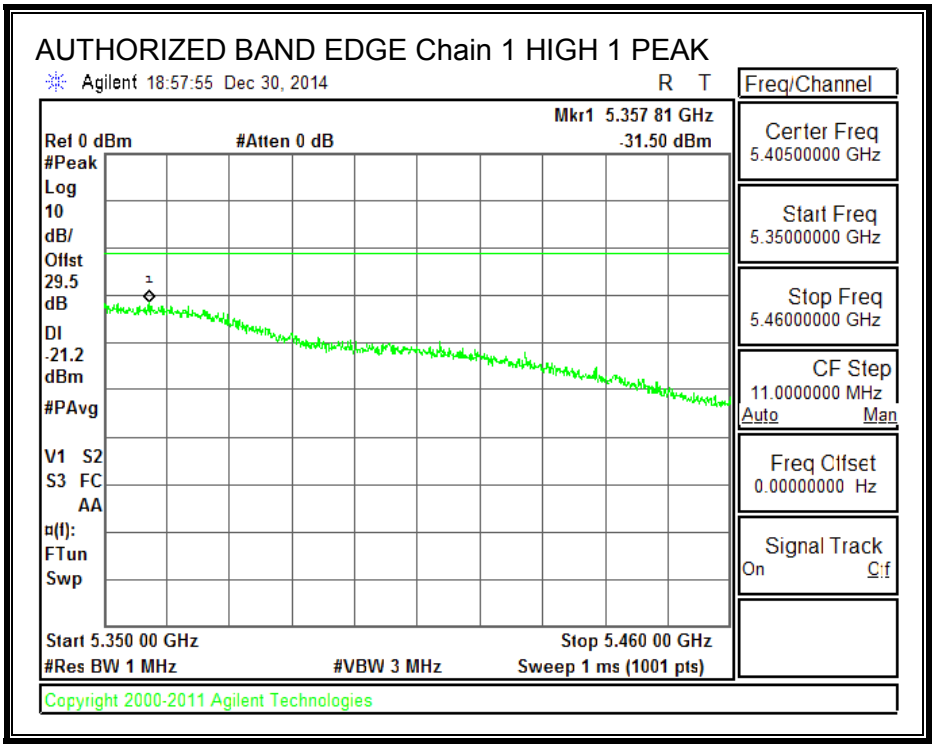
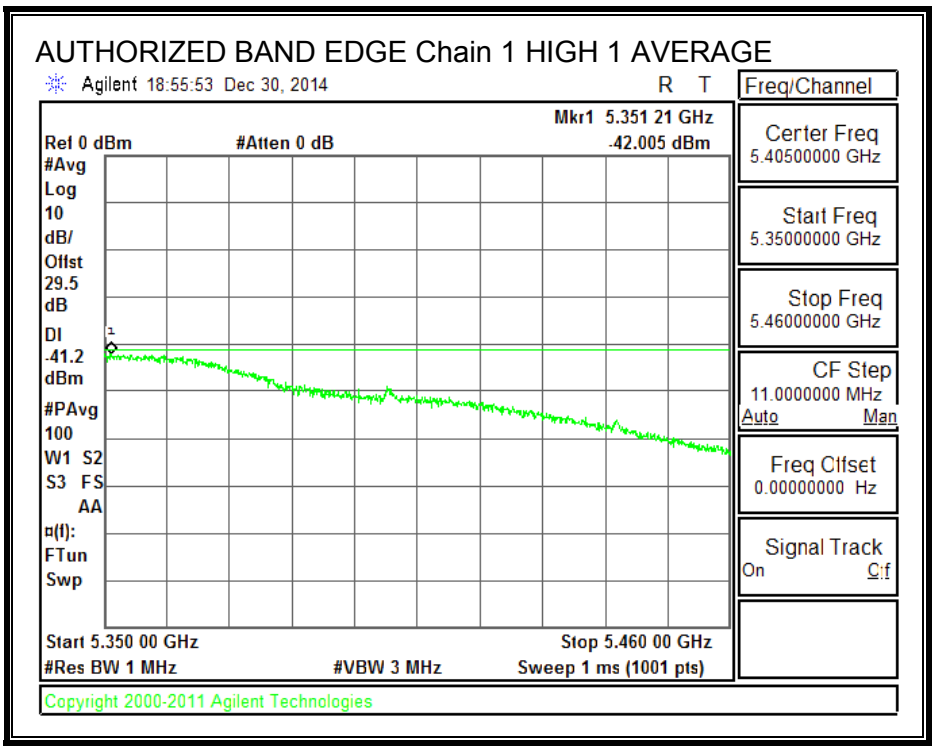
HIGH CHANNEL BANDEDGE, Chain 1





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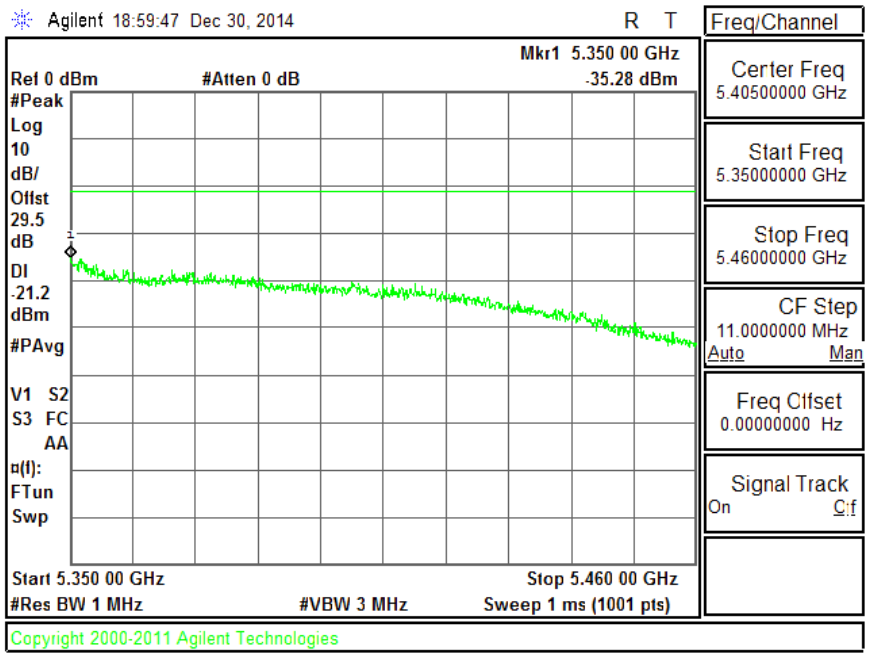
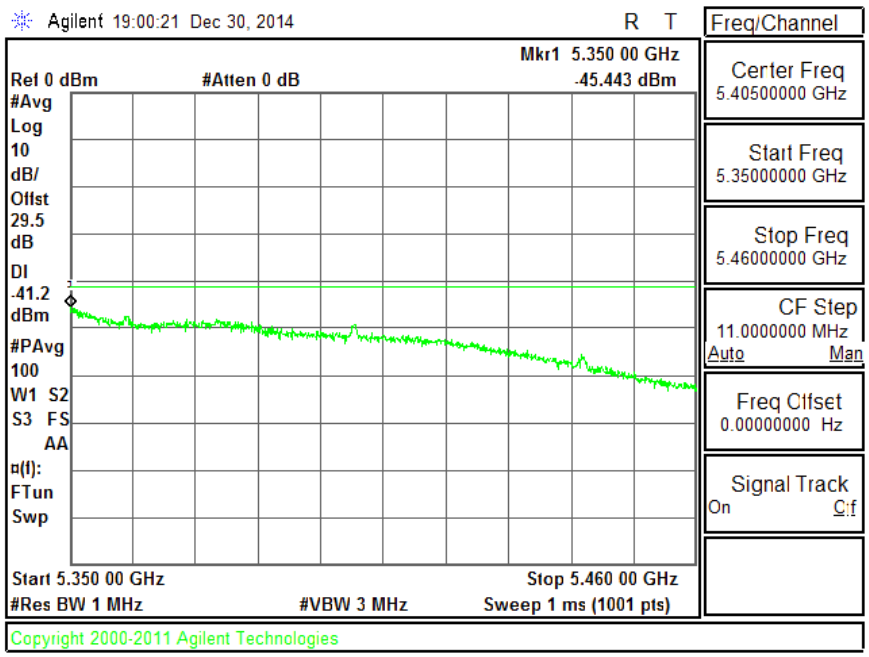
AUTHORIZED BAND EDGE Chain 1 HIGH 2 PEAK



AUTHORIZED BAND EDGE Chain 1 HIGH 2 AVERAGE



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8.4. 40MHz 2TX MODE IN THE 5.3 GHz BAND

8.4.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Straddle	5250	41.04	40.98
Low 2	5270	41.04	41.02
Mid	5300	41.04	41.02
High 1	5308	41.04	41.02
High 2	5328	40.56	40.38

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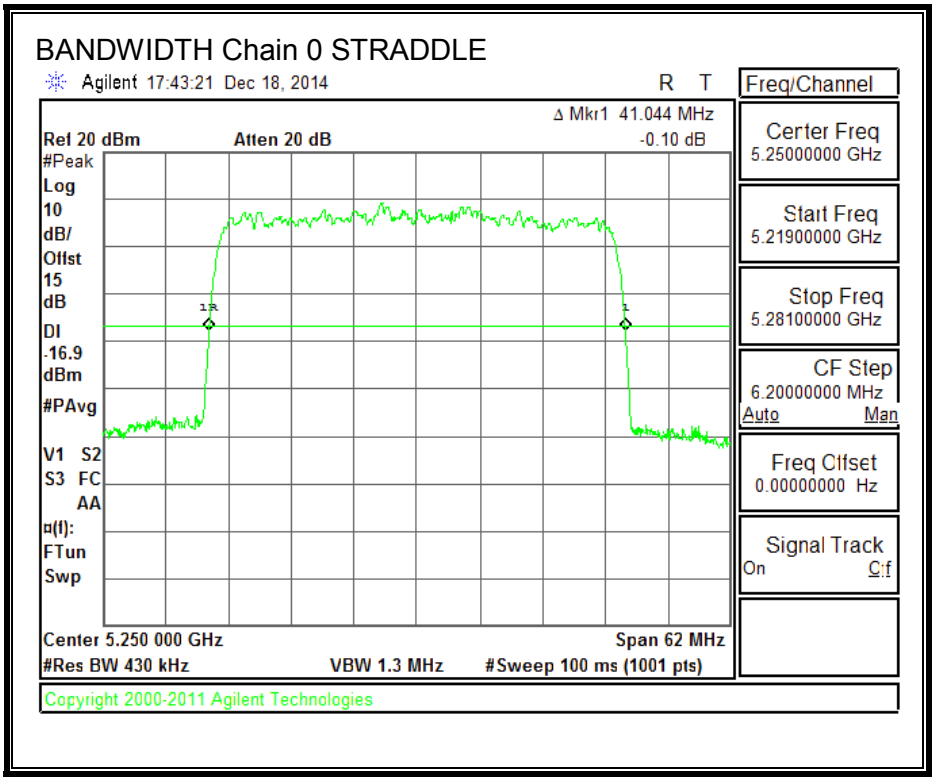
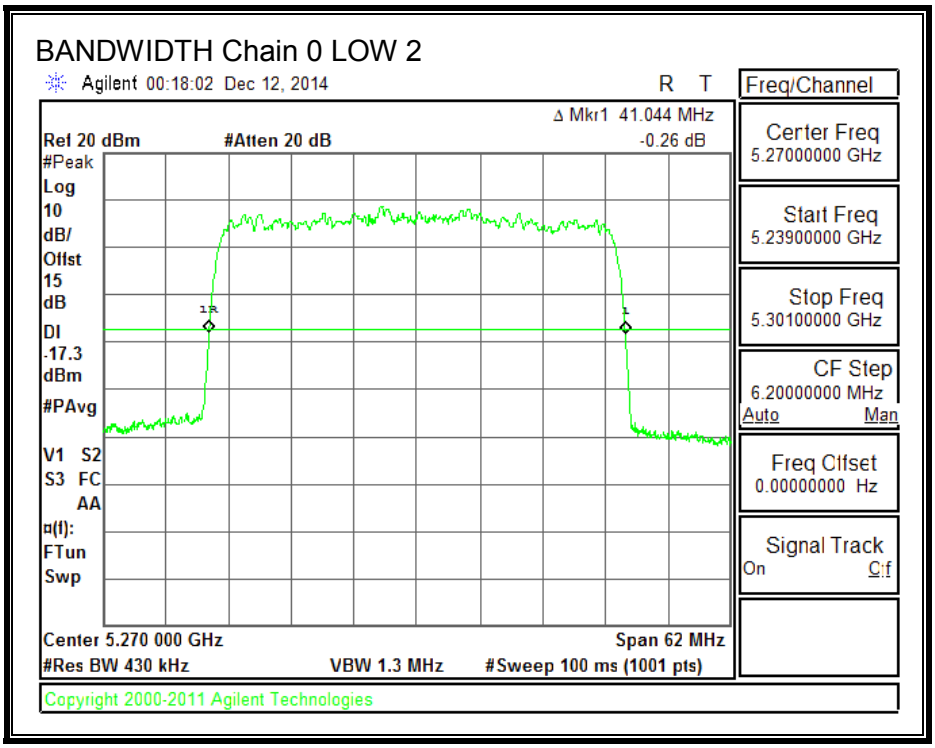
26 dB BANDWIDTH, Chain 0





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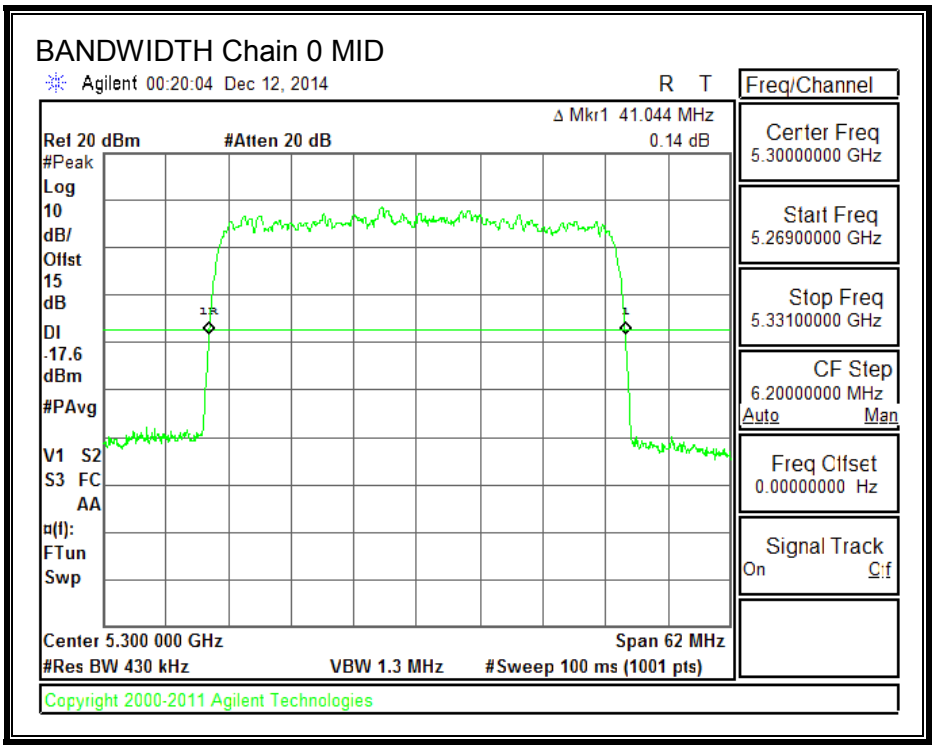

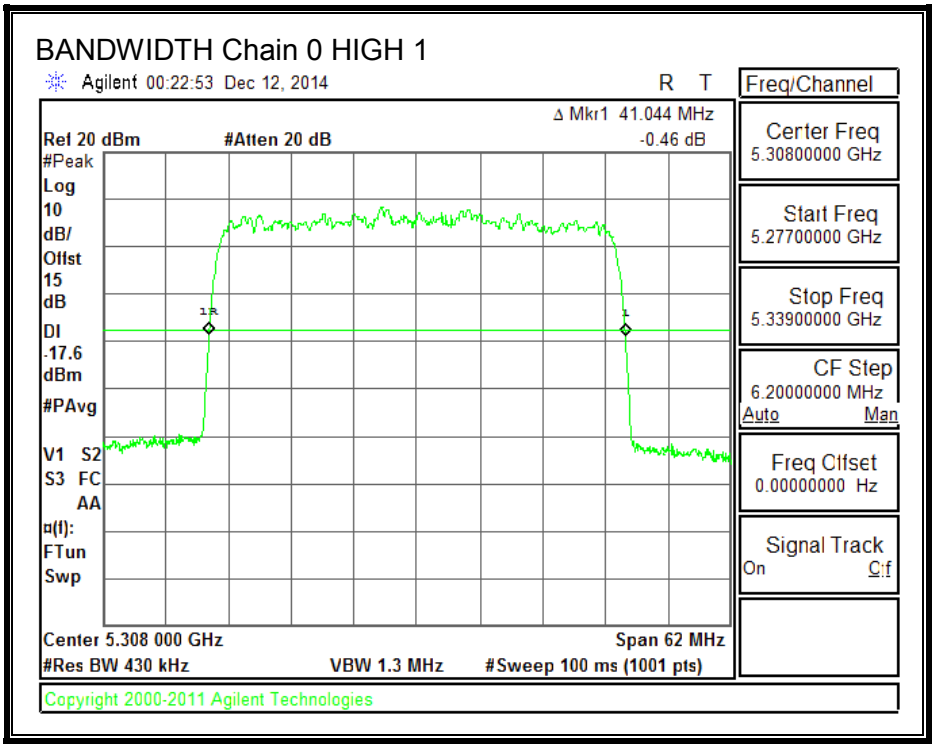

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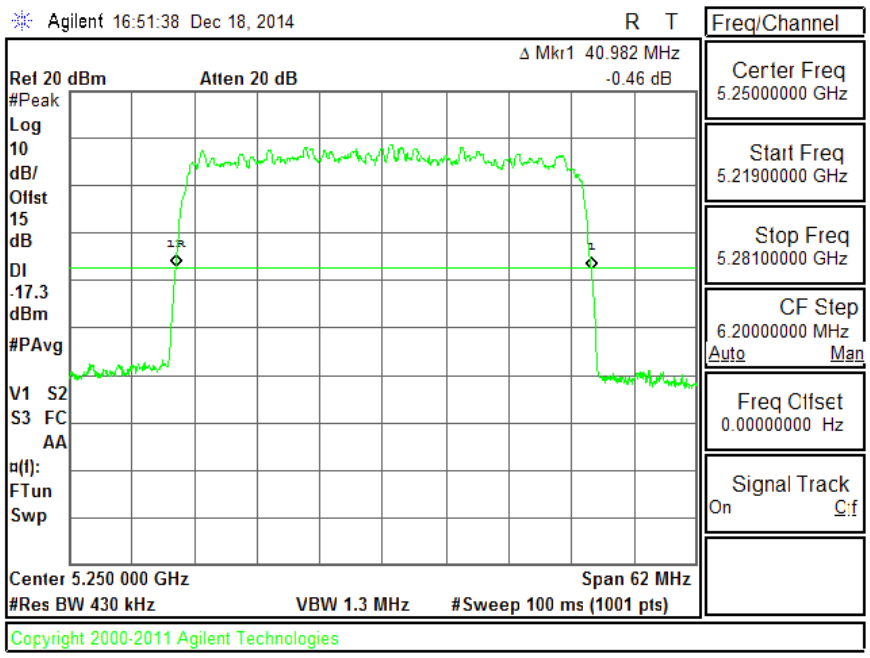
BANDWIDTH Chain 0 HIGH 2

26 dB BANDWIDTH, Chain 1

BANDWIDTH Chain 1 LOW 1



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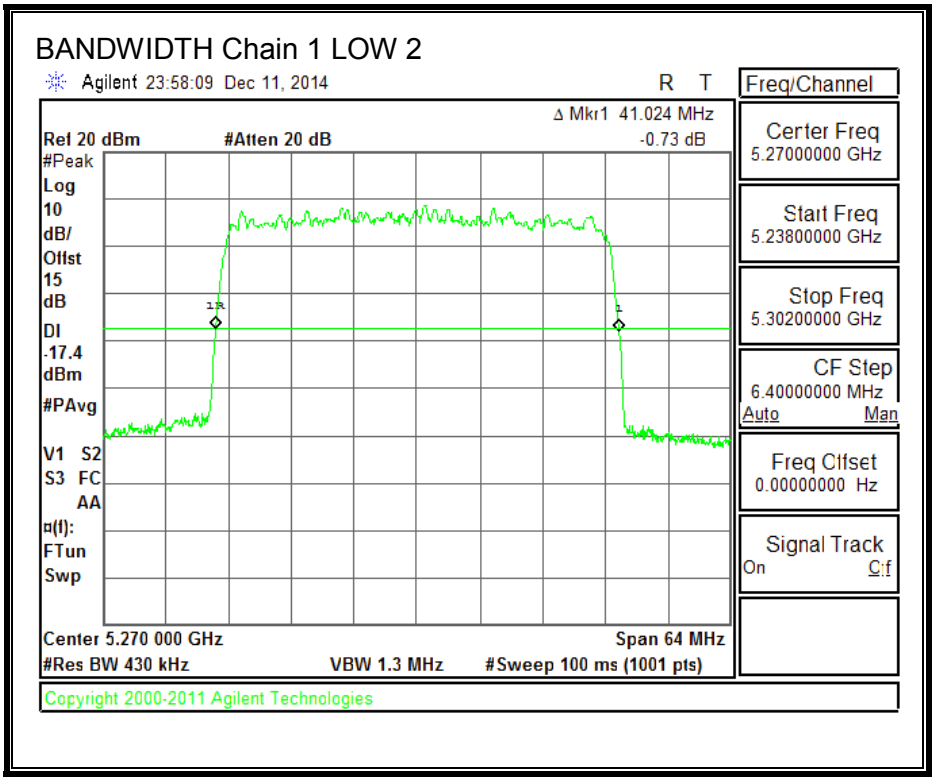

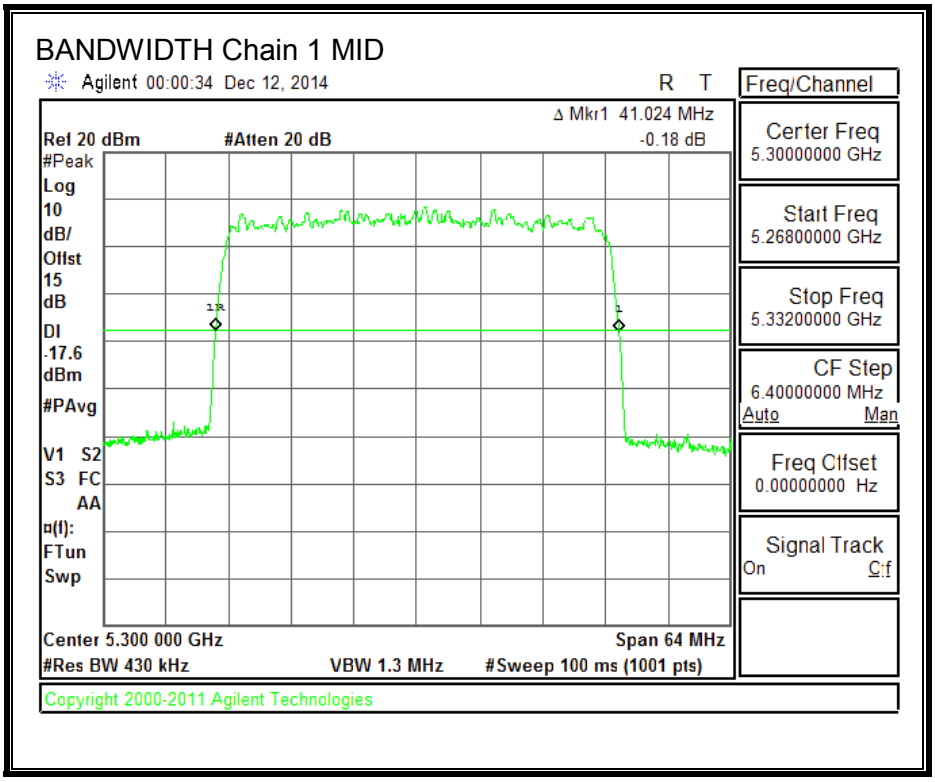

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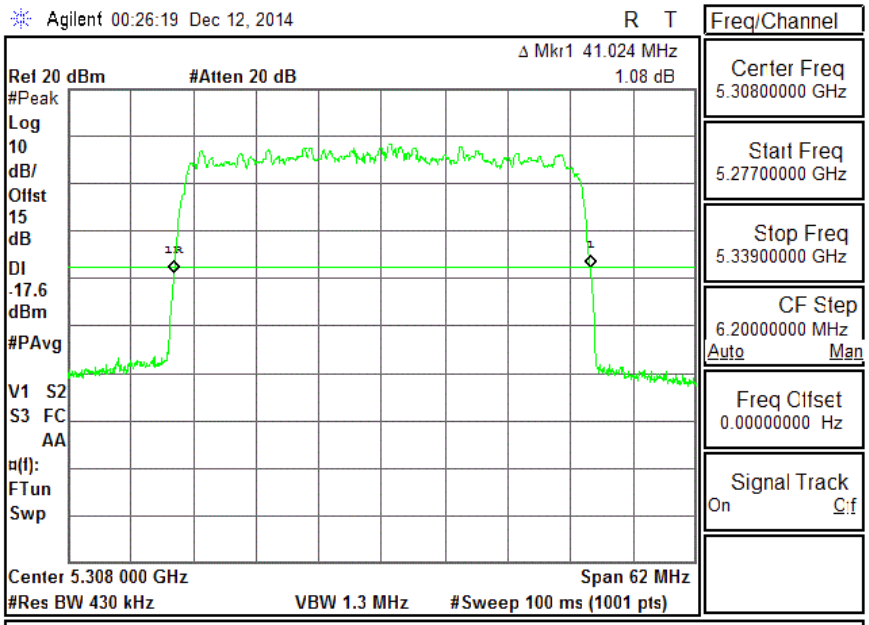
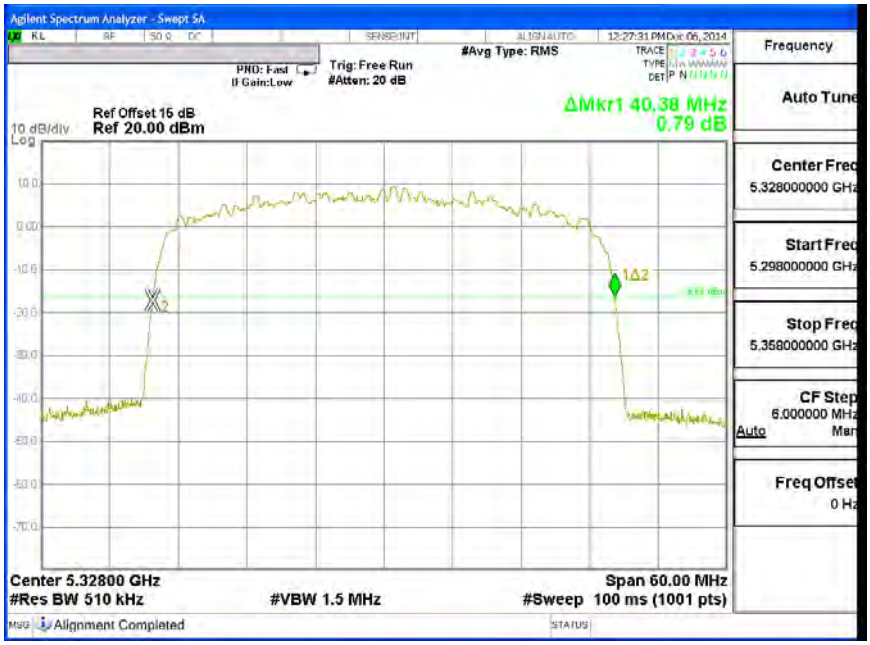
BANDWIDTH Chain 1 HIGH 1



BANDWIDTH Chain 1 HIGH 2



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8.4.2. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
14.50	14.50	14.50

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RESULTS

Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Straddle	5250	40.38	14.50	14.50	15.50	2.50
Low 2	5270	40.38	14.50	14.50	15.50	2.50
Mid	5300	40.38	14.50	14.50	15.50	2.50
High 1	5308	40.38	14.50	14.50	15.50	2.50
High 2	5328	40.38	14.50	14.50	15.50	2.50

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Straddle	5250	12.15	12.48	15.33	15.50	-0.17
Low 2	5270	12.38	12.15	15.28	15.50	-0.22
Mid	5300	12.13	12.23	15.19	15.50	-0.31
High 1	5308	12.28	12.19	15.25	15.50	-0.25
High 2	5328	12.21	12.13	15.18	15.50	-0.32

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low 2	5270	-0.53	-0.61	2.44	2.50	-0.06
Mid	5300	-0.60	-0.51	2.46	2.50	-0.04
High 1	5308	-0.68	-0.56	2.39	2.50	-0.11
High 2	5328	-0.70	-0.56	2.38	2.50	-0.12

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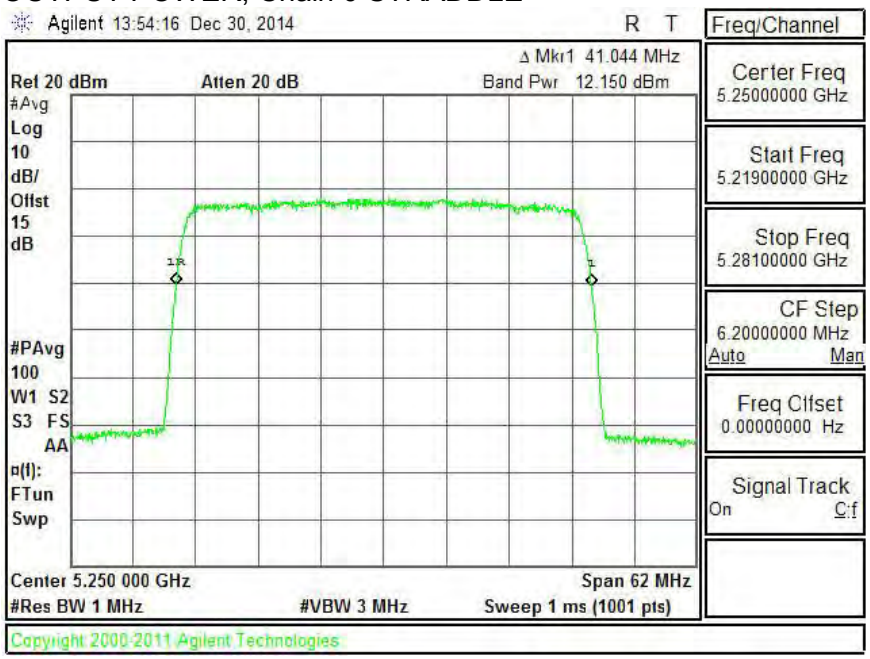
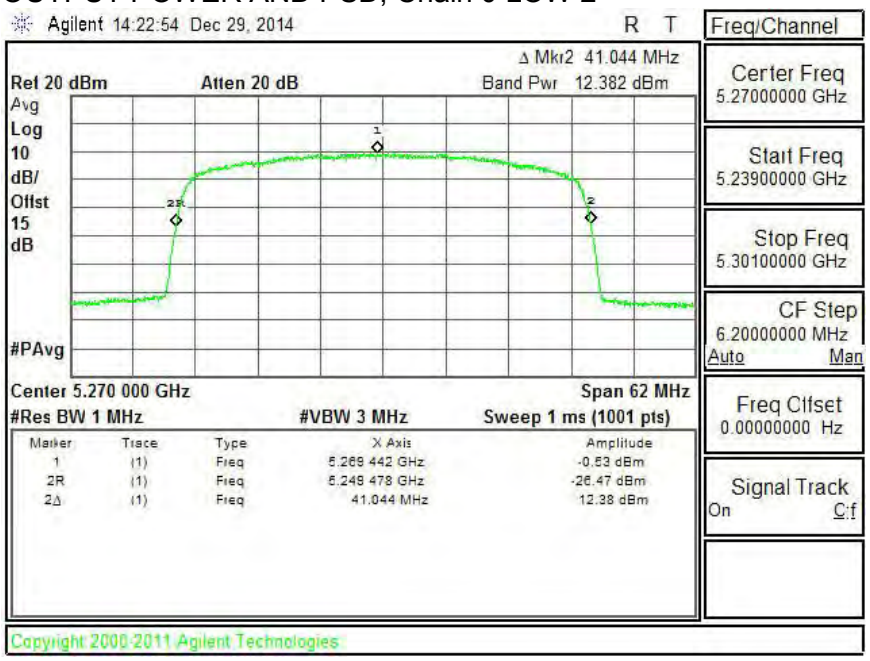
OUTPUT POWER AND PSD, Chain 0

OUTPUT POWER, Chain 0 STRADDLE



OUTPUT POWER AND PSD, Chain 0 LOW 2



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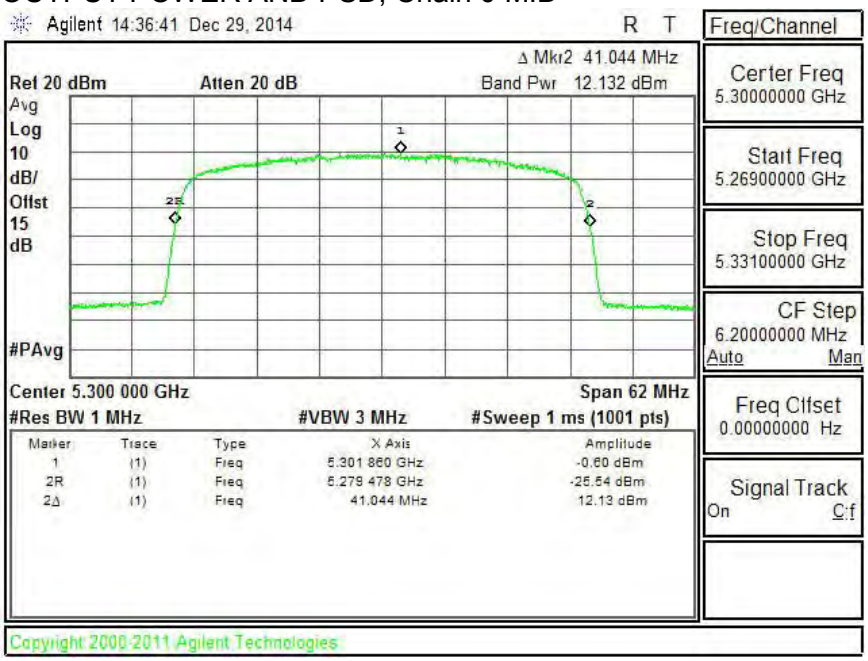
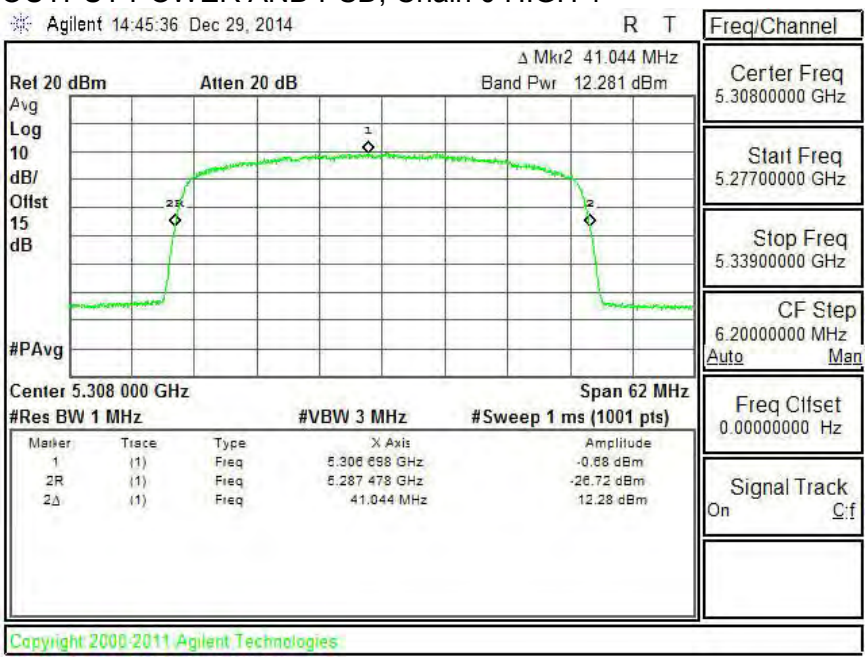
OUTPUT POWER AND PSD, Chain 0 MID



OUTPUT POWER AND PSD, Chain 0 HIGH 1



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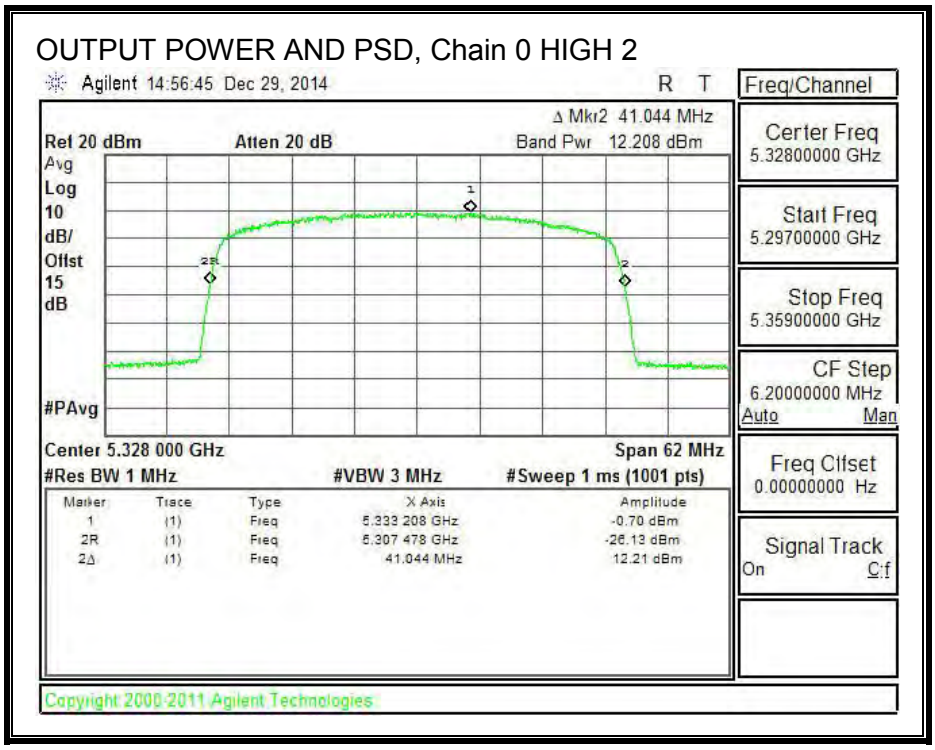
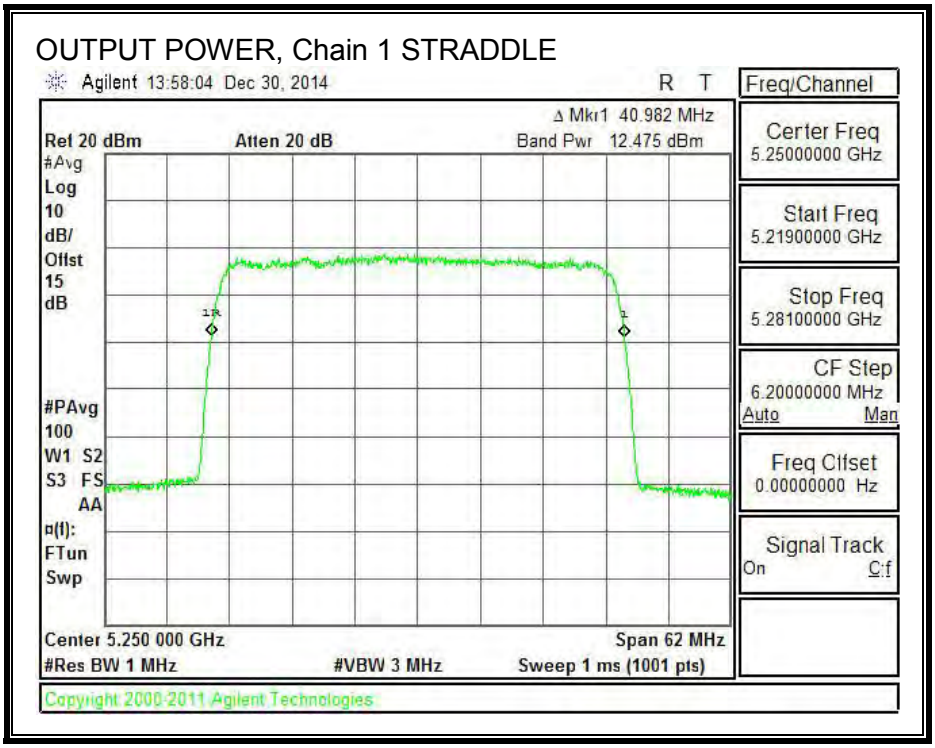


OUTPUT POWER AND PSD, Chain 1



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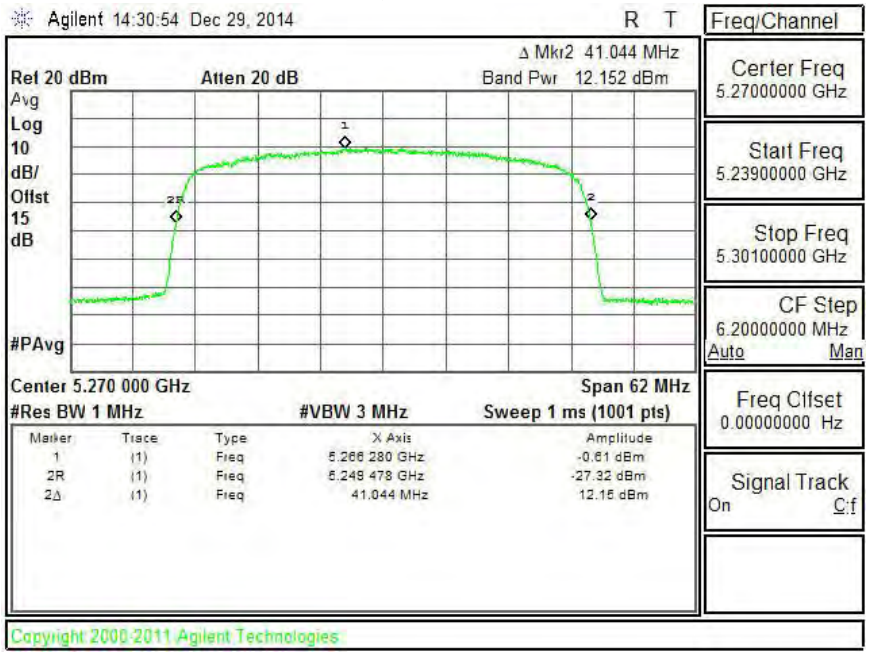
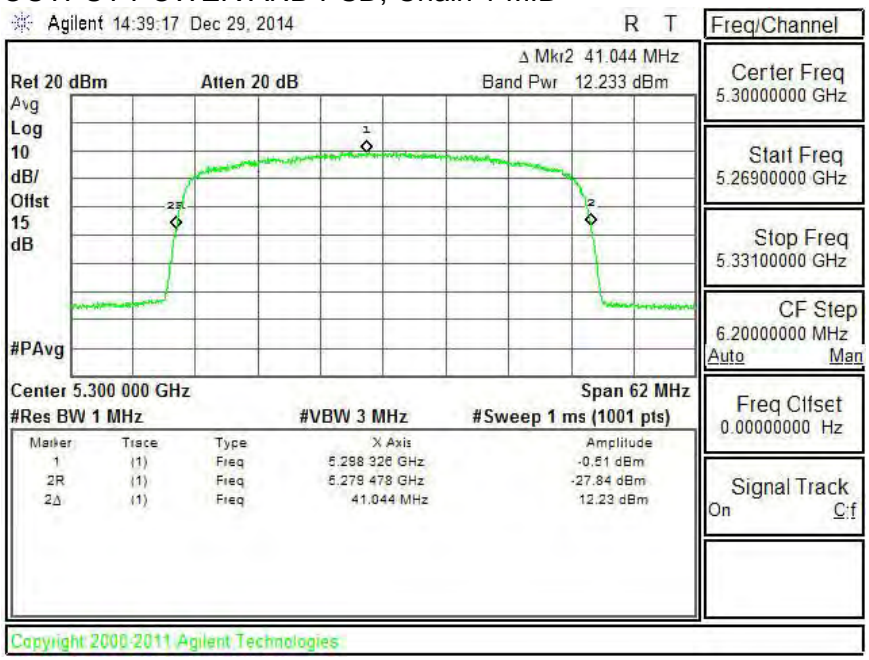
OUTPUT POWER AND PSD, Chain 1 LOW 2



OUTPUT POWER AND PSD, Chain 1 MID



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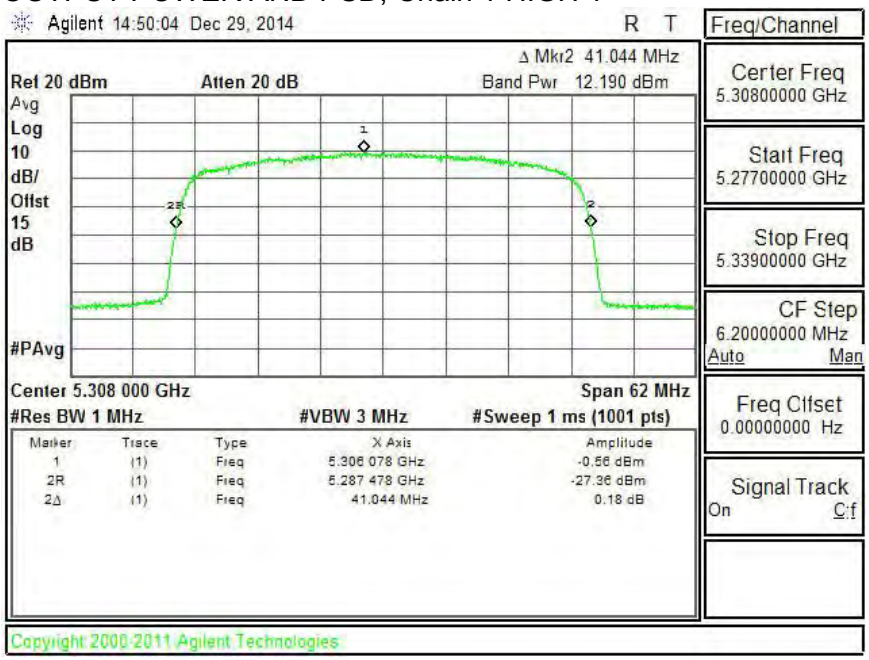
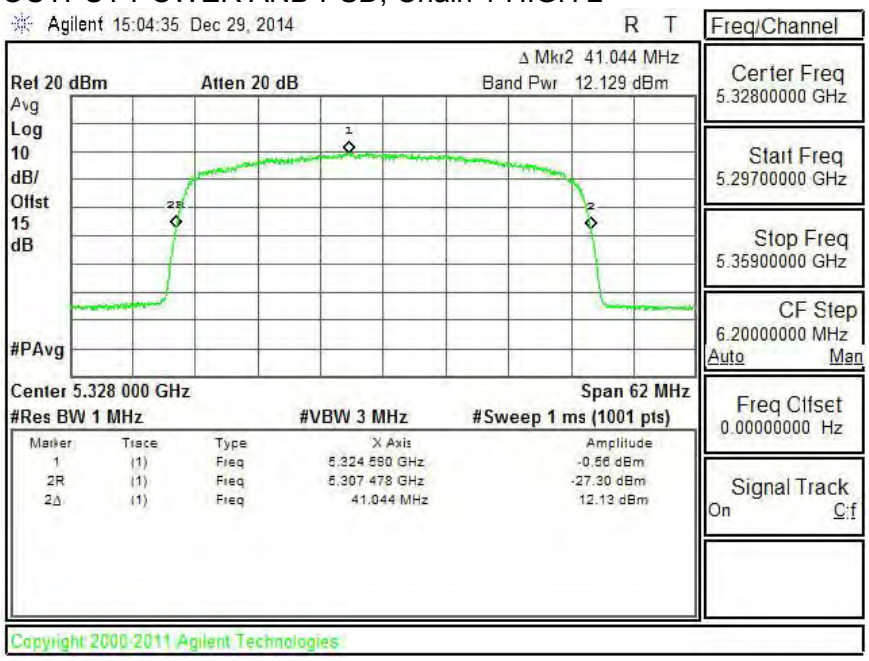
OUTPUT POWER AND PSD, Chain 1 HIGH 1



OUTPUT POWER AND PSD, Chain 1 HIGH 2



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8.4.3. STRADDLE CHANNEL RESULTS

UNII-1 BAND

Bandwidth and Antenna Gain

Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
5250	20.49	14.50	14.50

Limits

Frequency (MHz)	FCC Power Limit (dBm)	PPSD Limit (dBm)
5250	30.00	17.00

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

Output Power Results

Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
5250	10.13	10.11	13.13	30.00	-16.87

PPSD Results

Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
5250	-0.93	-0.95	2.07	17.00	-14.93

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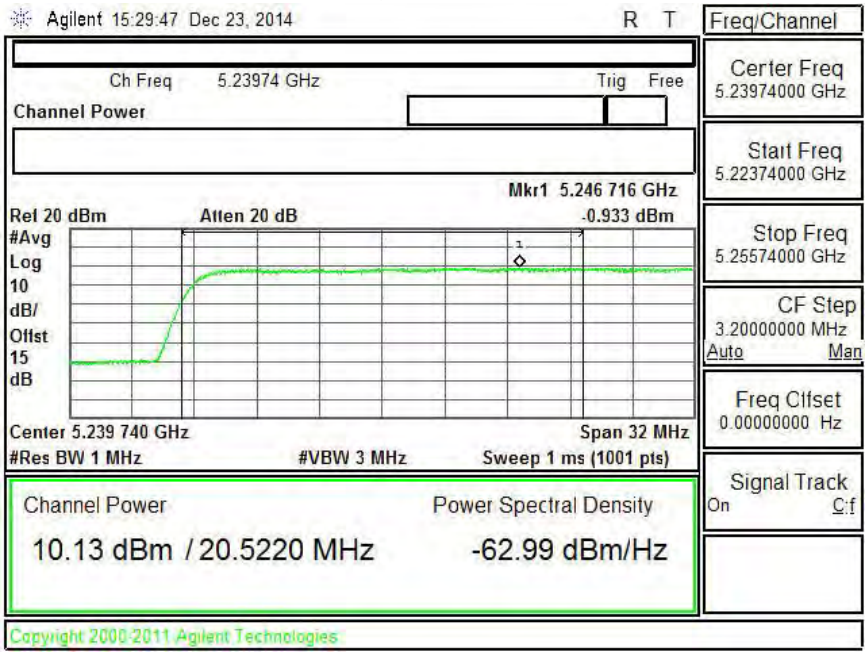
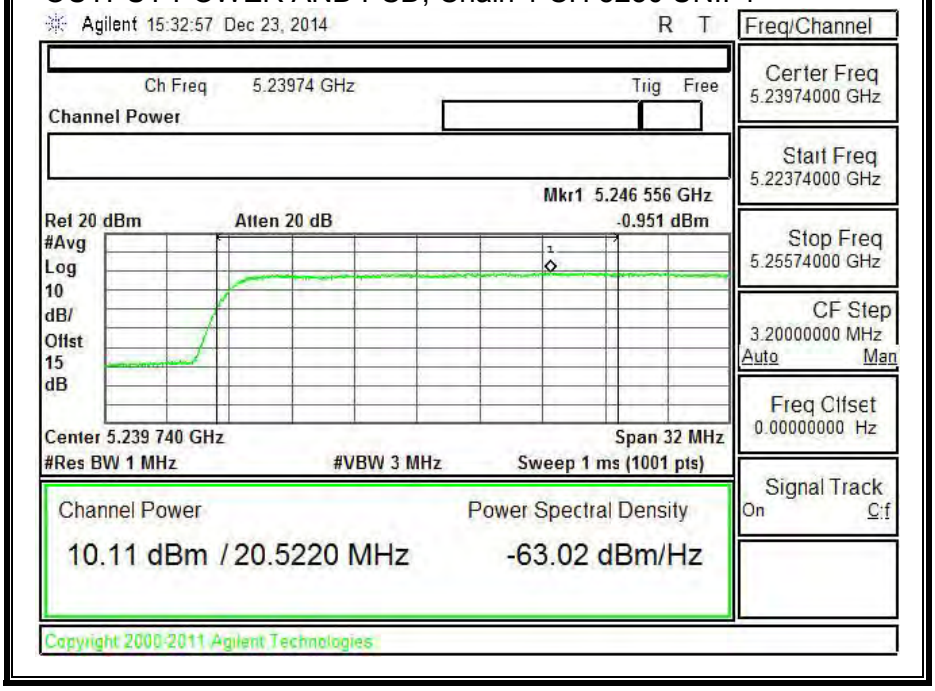
OUTPUT POWER AND PSD, Chain 0 CH 5250 UNII-1



OUTPUT POWER AND PSD, Chain 1 CH 5250 UNII-1



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UNII-2A BAND

Bandwidth and Antenna Gain

Frequency (MHz)	Min 26 dB BW (MHz)	Directio Gain for Power (dBi)	Directio Gain for PPSD (dBi)
5250	20.49	14.50	14.50

Limits

Frequency (MHz)	FCC Power Limit (dBm)	FCC PPSD Limit (dBm)
5250	15.50	2.50

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

Output Power Results

Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
5250	9.13	9.91	12.55	15.50	-2.95

PPSD Results

Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
5250	-0.90	-0.86	2.13	2.50	-0.37

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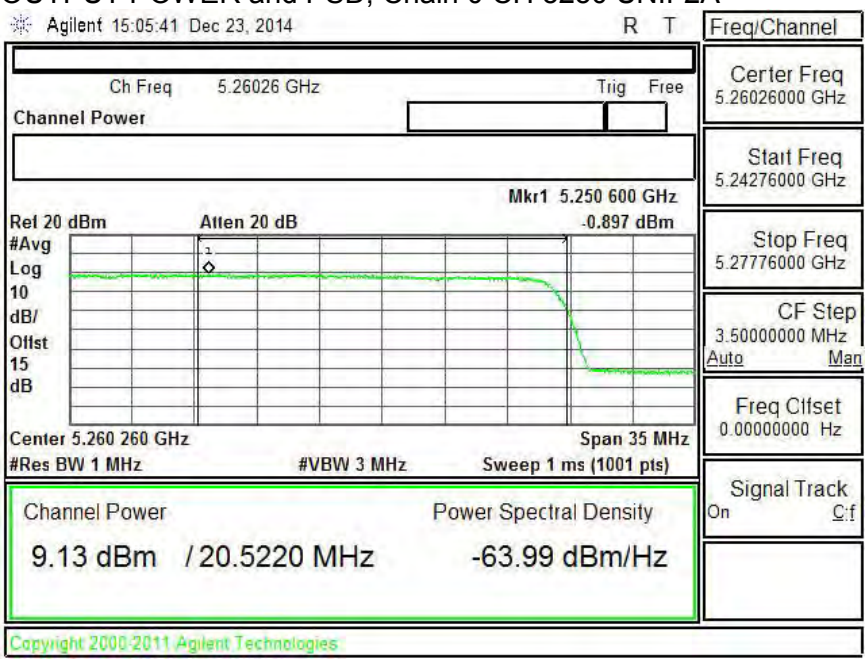
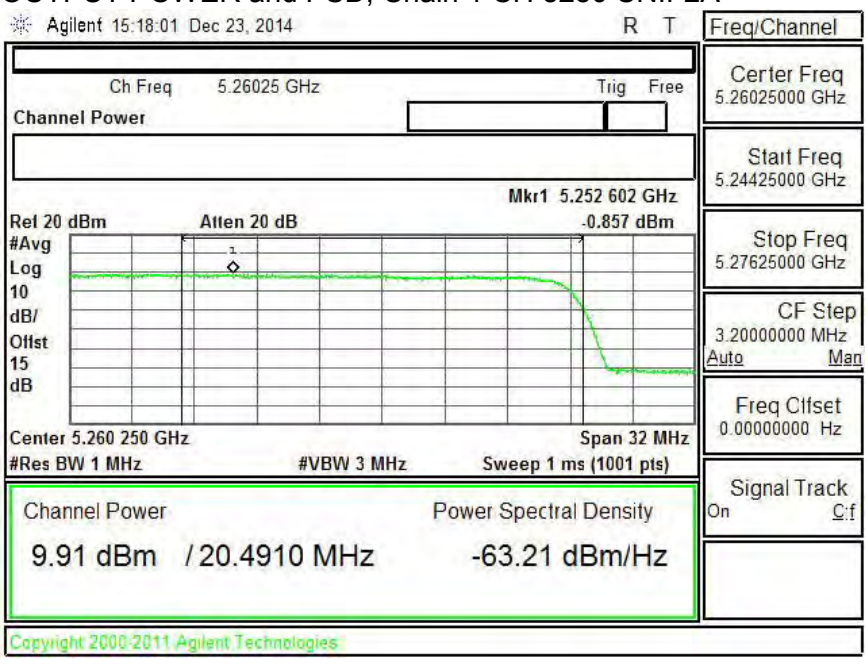
OUTPUT POWER and PSD, Chain 0 CH 5250 UNII-2A



OUTPUT POWER and PSD, Chain 1 CH 5250 UNII-2A



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8.4.4. CONDUCTED BANDEDGE

LIMITS

FCC §15.205 and §15.209

PART 15, SUBPART E

Radiated LIMIT:

(1) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

Procedure

KDB 789033 D02 General UNII Test Procedures New Rules v01, Section II, G5, G6

Conducted measurements are being used to demonstrate compliance with the spurious limits in the restricted band (all other spurious emissions are measured using the radiated test method with the antennas connected). The limits are 54dBuV/m average and 74dBuV/m peak, which are equivalent to eirp of -41.2 dBm and -21.2dBm respectively. The plots include an offset to account for the EUT antenna gain and external attenuation between EUT antenna port and spectrum analyzer. As the two antenna chains feed cross polarized antennas with un- correlated signals the two chains are treated independently and the emissions do not need to be summed.

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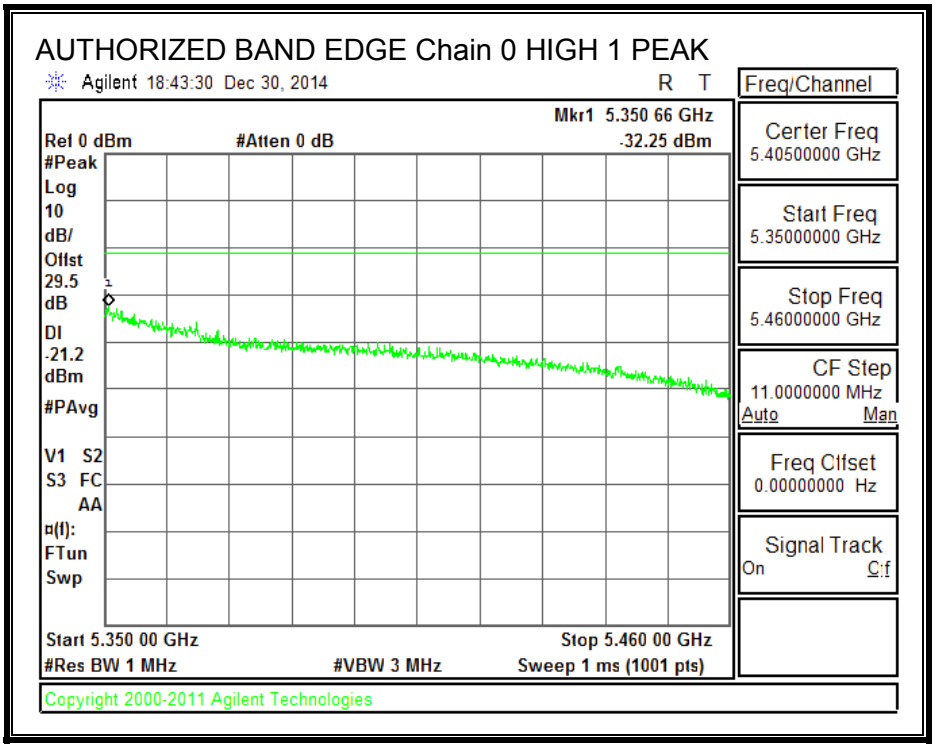
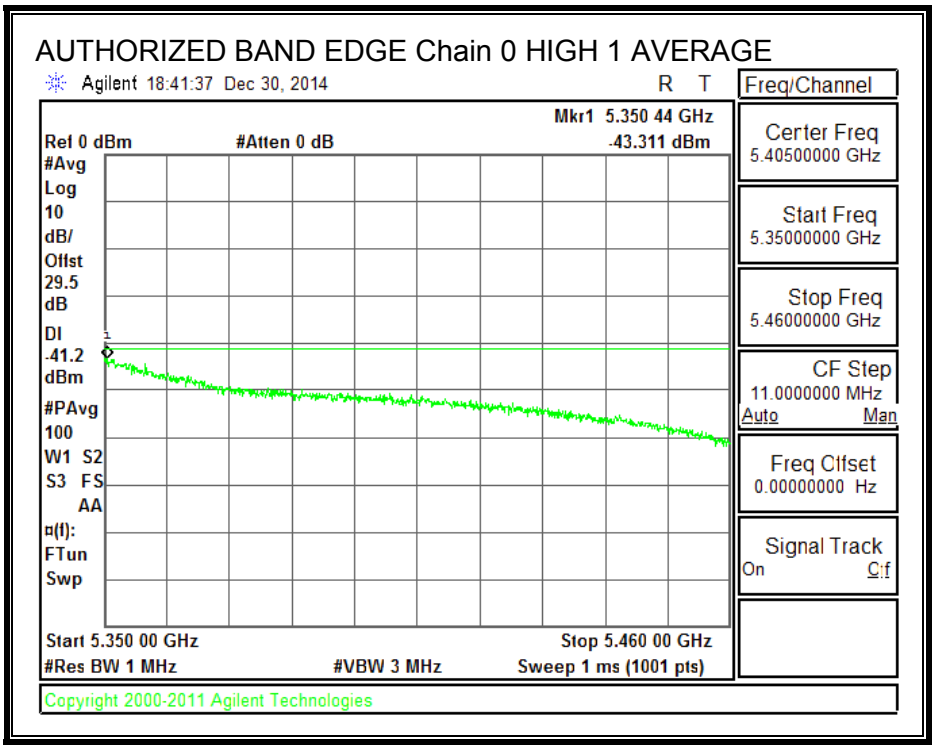
RESULTS

HIGH CHANNEL BANDEDGE, Chain 0





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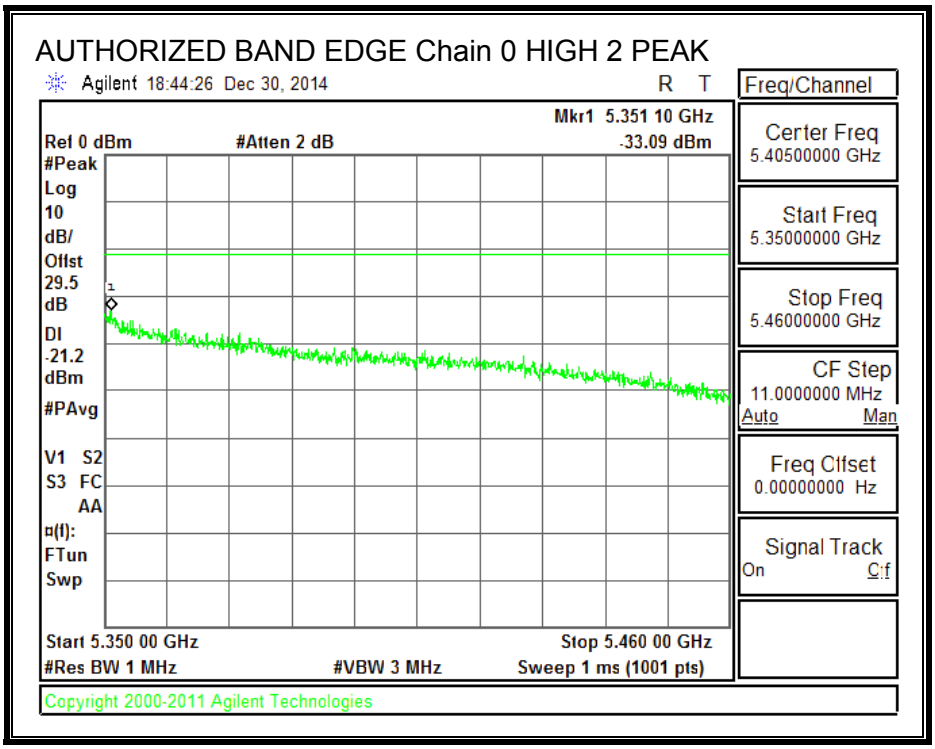

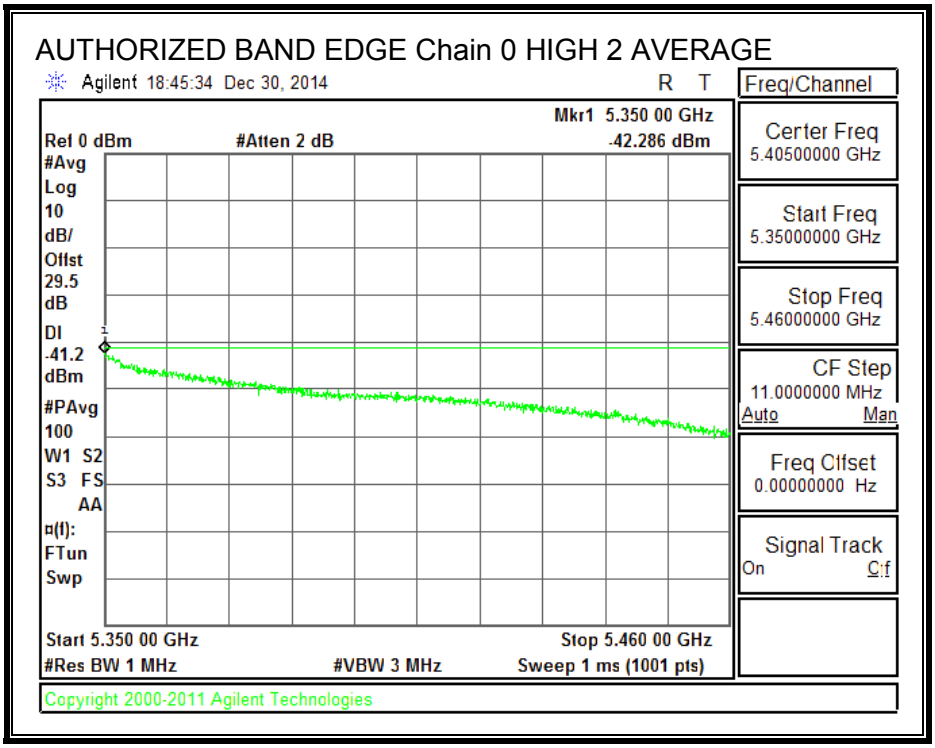

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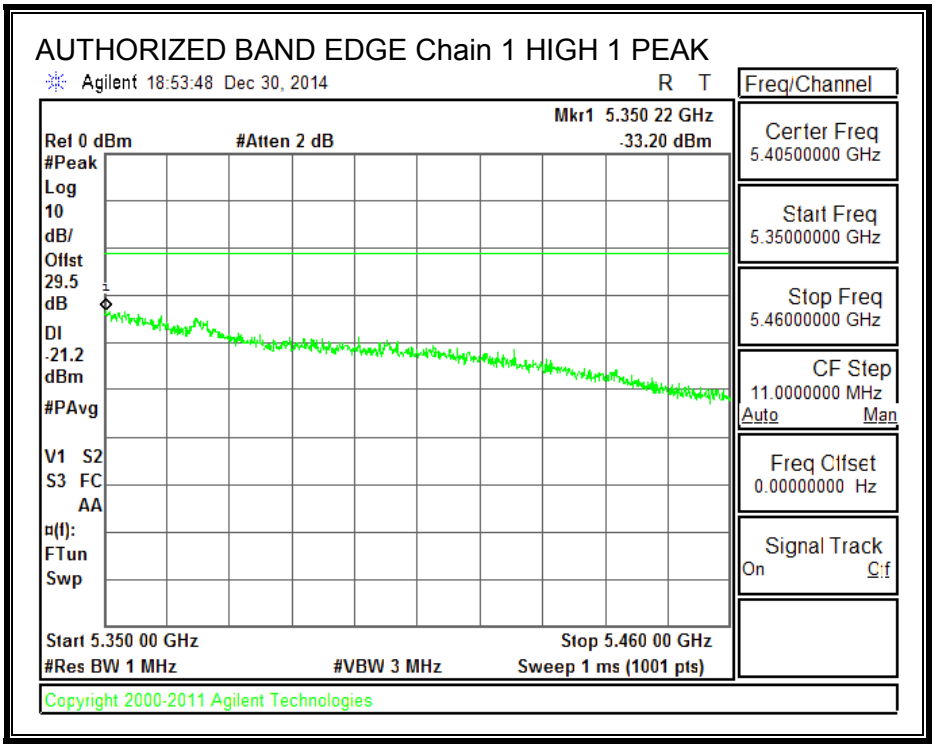
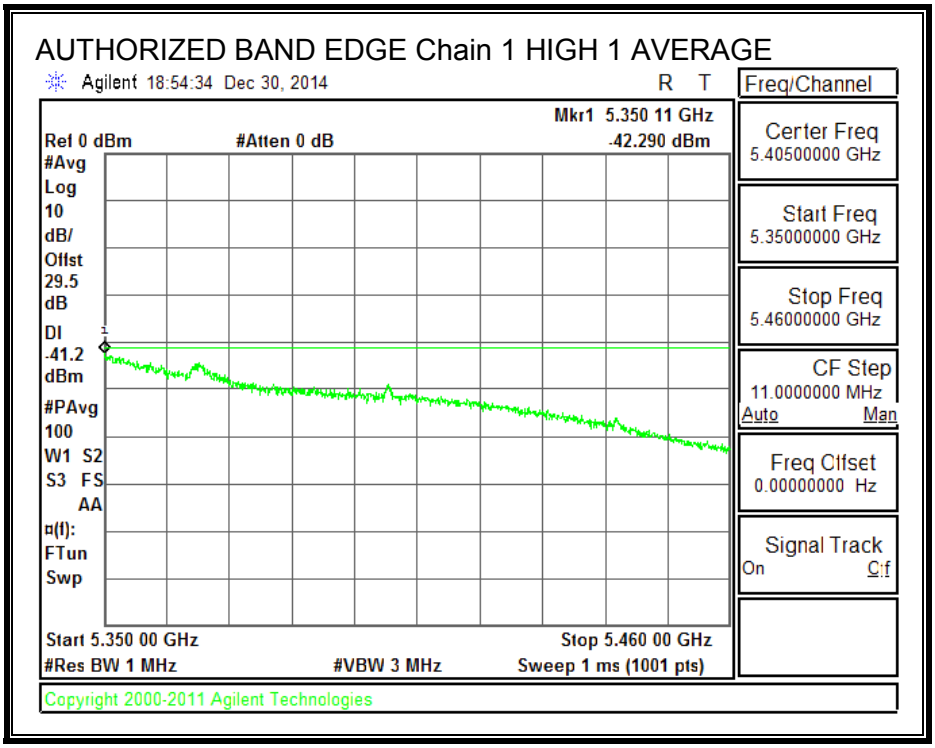
HIGH CHANNEL BANDEDGE, Chain 1





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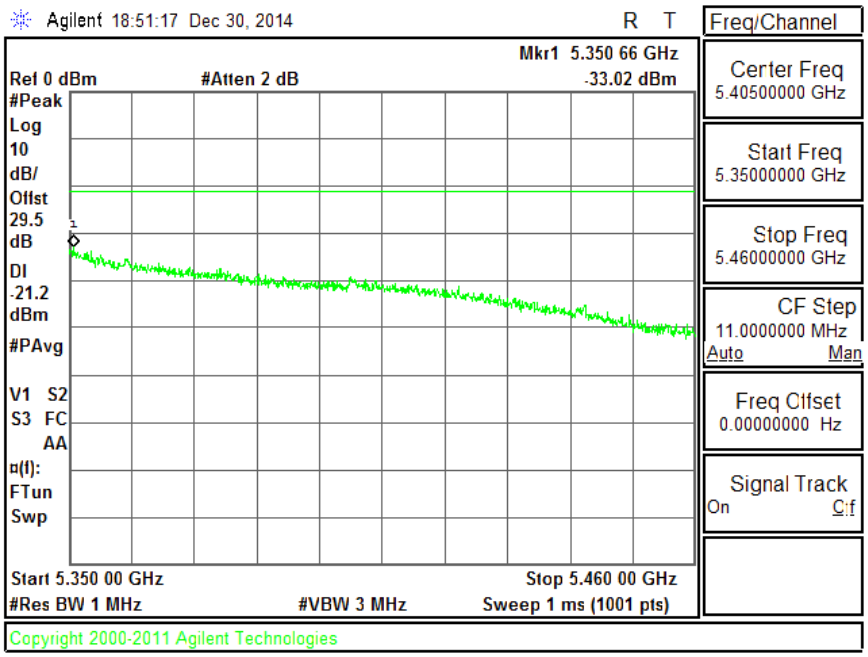
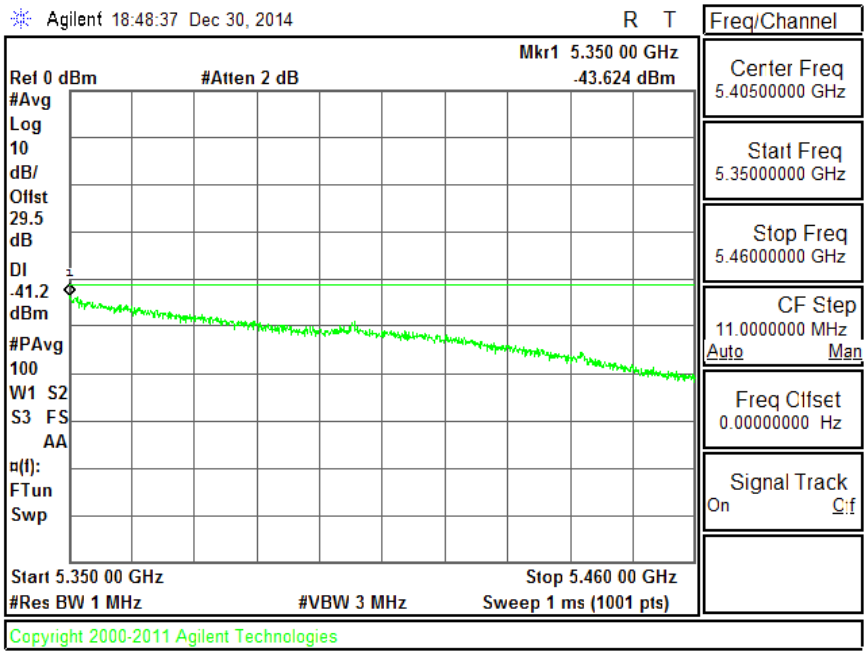
AUTHORIZED BAND EDGE Chain 1 HIGH 2 PEAK



AUTHORIZED BAND EDGE Chain 1 HIGH 2 AVERAGE



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9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

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

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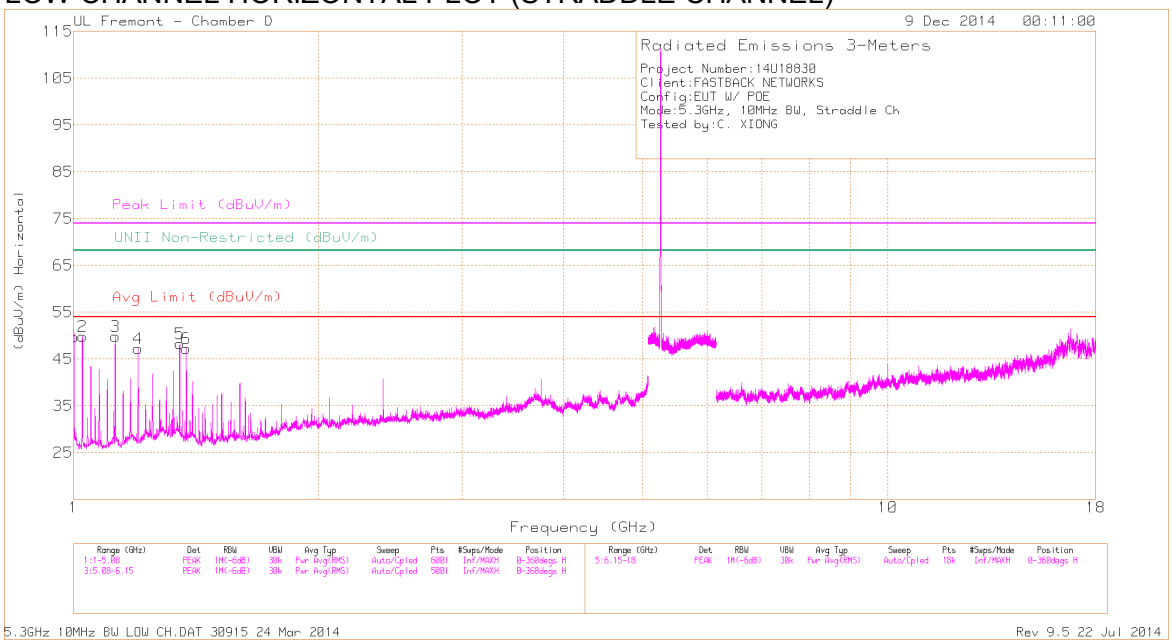
9.2. TRANSMITTER ABOVE 1 GHz

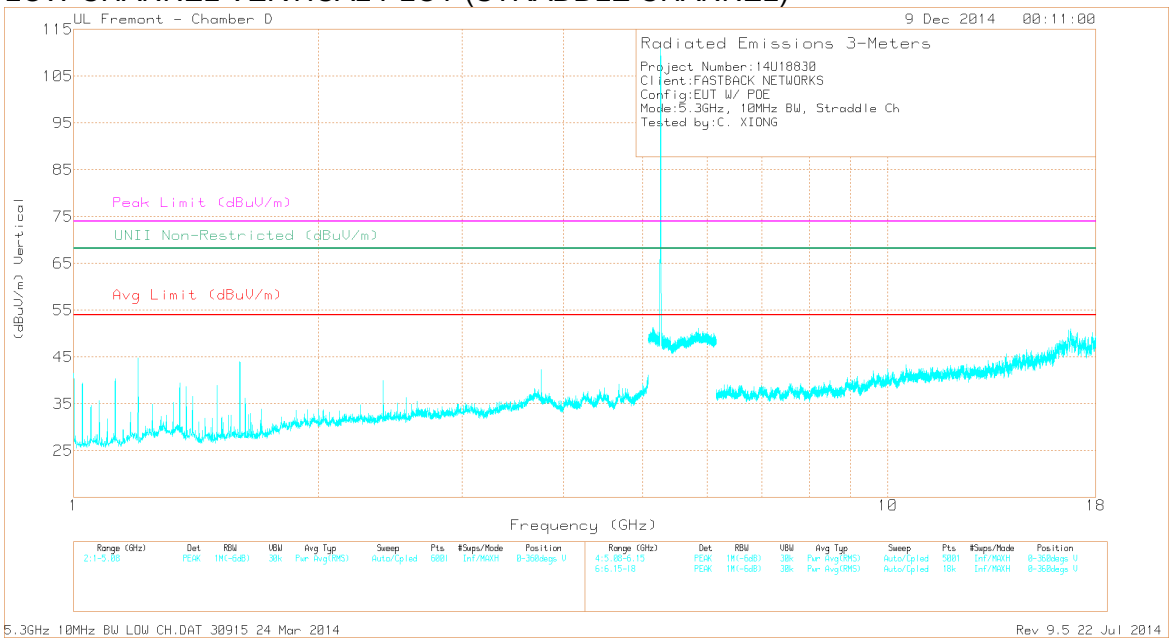
9.2.1. TX ABOVE 1 GHz 10MHz 2 TX MODE IN THE 5.3 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT (STRADDLE CHANNEL)



LOW CHANNEL VERTICAL PLOT (STRADDLE CHANNEL)



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1	60.06	PK1	27.6	-32.6	55.06	-	-	74	-18.94	-	-	351	122	H
1	* 1	56.42	AD1	27.6	-32.6	51.42	54	-2.58	-	-	-	-	351	122	H
2	* 1.025	56.03	PK1	27.6	-32.4	51.23	-	-	74	-22.77	-	-	342	111	H
2	* 1.025	52.35	AD1	27.6	-32.4	47.55	54	-6.45	-	-	-	-	342	111	H
3	* 1.125	53.88	PK1	27.9	-32.5	49.28	-	-	74	-24.72	-	-	76	111	H
3	* 1.125	50.63	AD1	27.9	-32.5	46.03	54	-7.97	-	-	-	-	76	111	H
4	* 1.2	54.27	PK1	29	-32.5	50.77	-	-	74	-23.23	-	-	100	286	H
4	* 1.2	51.19	AD1	29	-32.5	47.69	54	-6.31	-	-	-	-	100	286	H
5	* 1.35	52.32	PK1	29.6	-31.7	50.22	-	-	74	-23.78	-	-	68	104	H
5	* 1.35	46.52	AD1	29.6	-31.7	44.42	54	-9.58	-	-	-	-	68	104	H
6	* 1.375	51.53	PK1	29.4	-31.9	49.03	-	-	74	-24.97	-	-	72	104	H
6	* 1.375	47.96	AD1	29.4	-31.9	45.46	54	-8.54	-	-	-	-	72	104	H

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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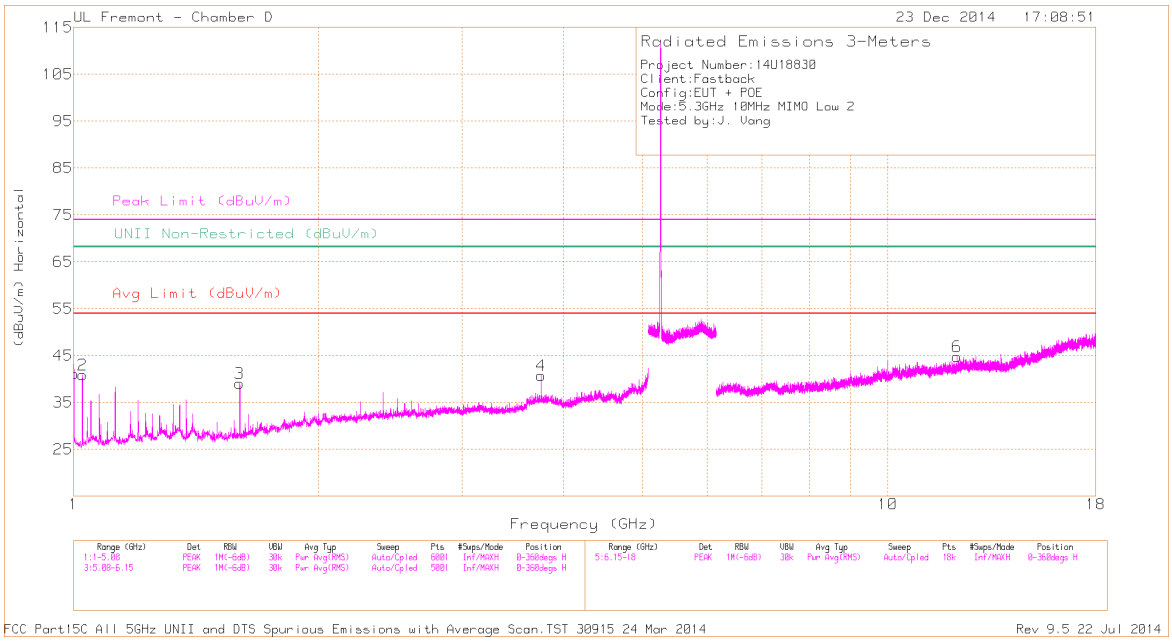
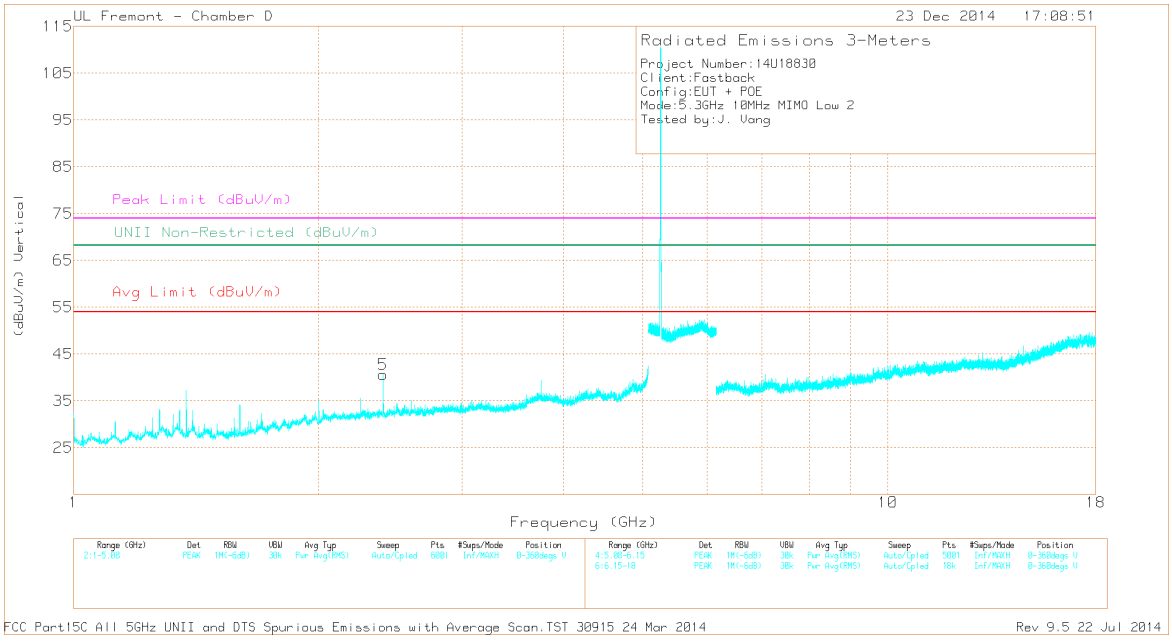
LOW CHANNEL 2 HORIZONTAL PLOT



LOW CHANNEL 2 VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1	52.79	PK1	27.1	-32.3	47.59	-	-	74	-26.41	-	-	347	123	H
1	* 1	46.37	AD1	27.1	-32.3	41.17	54	-12.83	-	-	-	-	347	123	H
2	* 1.025	49.21	PK1	27	-32.1	44.11	-	-	74	-29.89	-	-	352	126	H
2	* 1.025	43.81	AD1	27	-32.1	38.71	54	-15.29	-	-	-	-	352	126	H
3	* 1.6	47.26	PK1	28.2	-31.6	43.86	-	-	74	-30.14	-	-	54	110	H
3	* 1.6	41.85	AD1	28.2	-31.6	38.45	54	-15.55	-	-	-	-	54	110	H
4	* 3.75	40.67	PK1	33.3	-28.7	45.27	-	-	74	-28.73	-	-	62	233	H
4	* 3.75	33.53	AD1	33.3	-28.7	38.13	54	-15.87	-	-	-	-	62	233	H
6	* 12.167	34.66	PK1	39	-22.1	51.56	-	-	74	-22.44	-	-	246	203	H
6	* 12.166	22.67	AD1	39	-22.1	39.57	54	-14.43	-	-	-	-	246	203	H
5	2.4	44.21	PK1	32.1	-30.4	45.91	-	-	-	-	68.2	-22.29	46	104	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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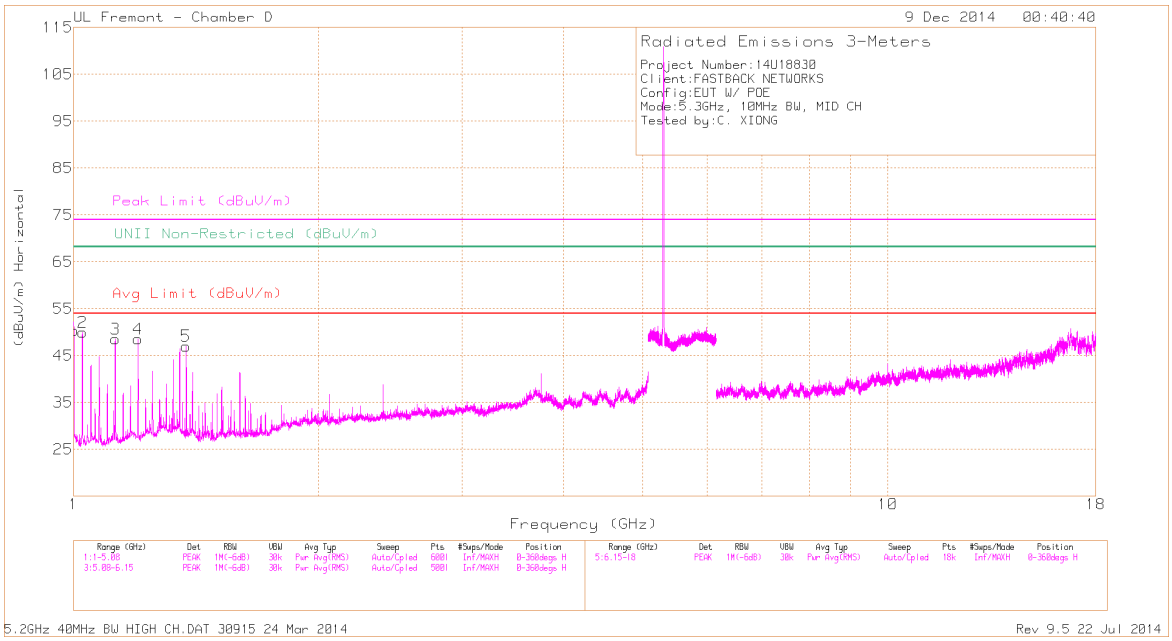
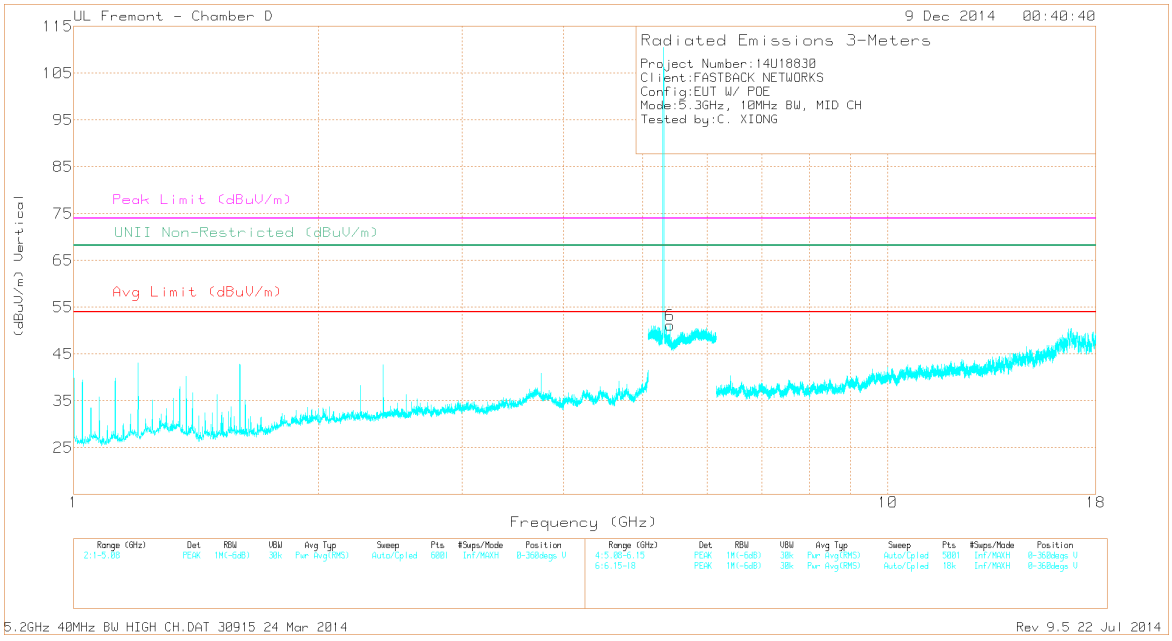
MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



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DATA
Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1	60.14	PK1	27.6	-32.6	55.14	-	-	74	-18.86	-	-	353	122	H
1	* 1	56.46	AD1	27.6	-32.6	51.46	54	-2.54	-	-	-	-	353	122	H
2	* 1.025	55.74	PK1	27.6	-32.4	50.94	-	-	74	-23.06	-	-	348	114	H
2	* 1.025	52.09	AD1	27.6	-32.4	47.29	54	-6.71	-	-	-	-	348	114	H
3	* 1.125	53.44	PK1	27.9	-32.5	48.84	-	-	74	-25.16	-	-	79	114	H
3	* 1.125	49.18	AD1	27.9	-32.5	44.58	54	-9.42	-	-	-	-	79	114	H
4	* 1.2	54.21	PK1	29	-32.5	50.71	-	-	74	-23.29	-	-	98	286	H
4	* 1.2	51.22	AD1	29	-32.5	47.72	54	-6.28	-	-	-	-	98	286	H
5	* 1.375	51.48	PK1	29.4	-31.9	48.98	-	-	74	-25.02	-	-	73	103	H
5	* 1.375	48.07	AD1	29.4	-31.9	45.57	54	-8.43	-	-	-	-	73	103	H
6	* 5.4	42.31	PK1	34.6	-19.5	57.41	-	-	74	-16.59	-	-	28	106	V
6	* 5.4	32.51	AD1	34.6	-19.5	47.61	54	-6.39	-	-	-	-	28	106	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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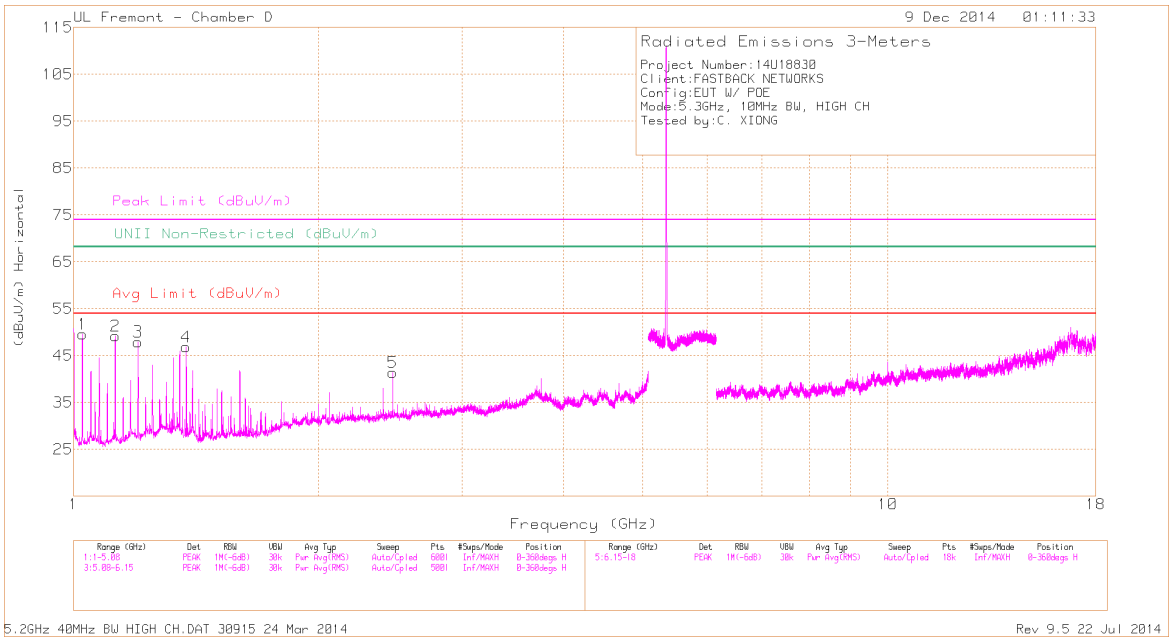
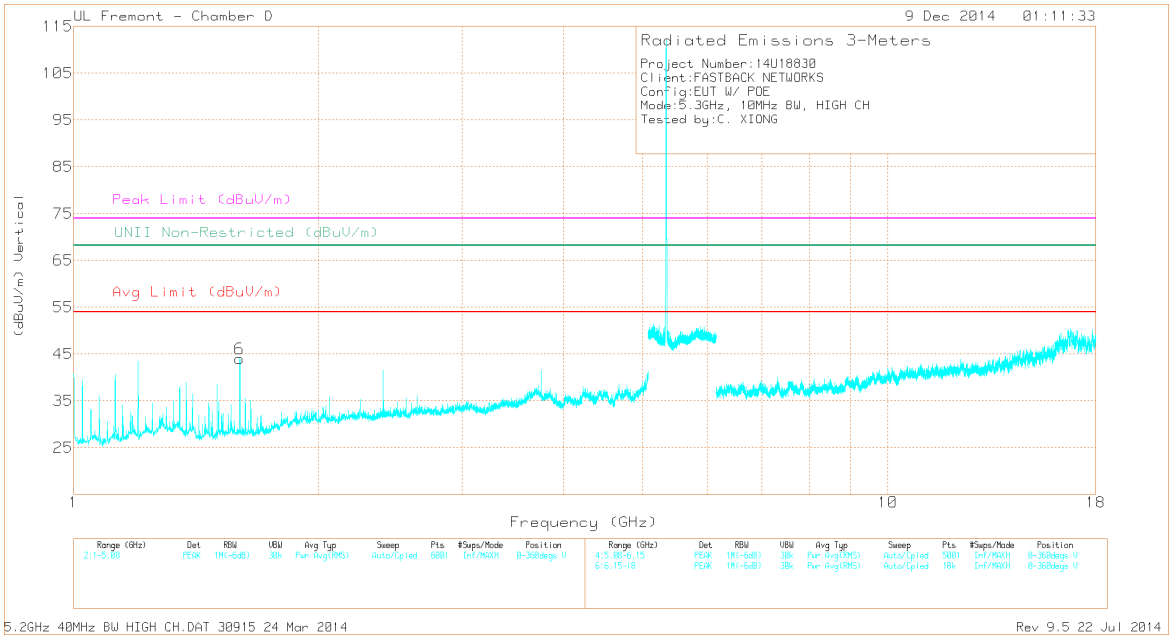
HIGH CHANNEL 1 HORIZONTAL PLOT



HIGH CHANNEL 1 VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.025	57.83	PK1	27.6	-32.4	53.03	-	-	74	-20.97	-	-	342	111	H
1	* 1.025	54.07	AD1	27.6	-32.4	49.27	54	-4.73	-	-	-	-	342	111	H
2	* 1.125	55.43	PK1	27.9	-32.5	50.83	-	-	74	-23.17	-	-	70	111	H
2	* 1.125	51.25	AD1	27.9	-32.5	46.65	54	-7.35	-	-	-	-	70	111	H
3	* 1.2	54.45	PK1	29	-32.5	50.95	-	-	74	-23.05	-	-	103	285	H
3	* 1.2	51.25	AD1	29	-32.5	47.75	54	-6.25	-	-	-	-	103	285	H
4	* 1.375	51.58	PK1	29.4	-31.9	49.08	-	-	74	-24.92	-	-	71	106	H
4	* 1.375	48.21	AD1	29.4	-31.9	45.71	54	-8.29	-	-	-	-	71	106	H
6	* 1.6	47.9	PK1	28.5	-31.7	44.7	-	-	74	-29.3	-	-	359	105	V
6	* 1.6	43.3	AD1	28.5	-31.7	40.1	54	-13.9	-	-	-	-	359	105	V
5	2.465	39.12	PK1	32.5	-30.7	40.92	-	-	-	-	68.2	-27.28	239	205	H

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701J
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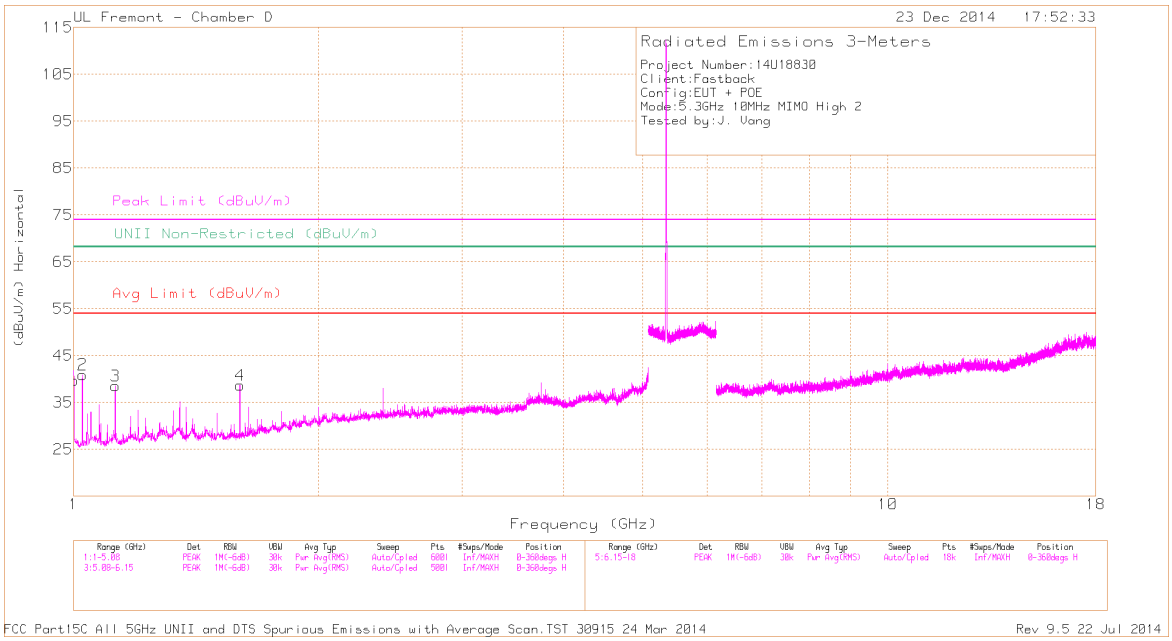
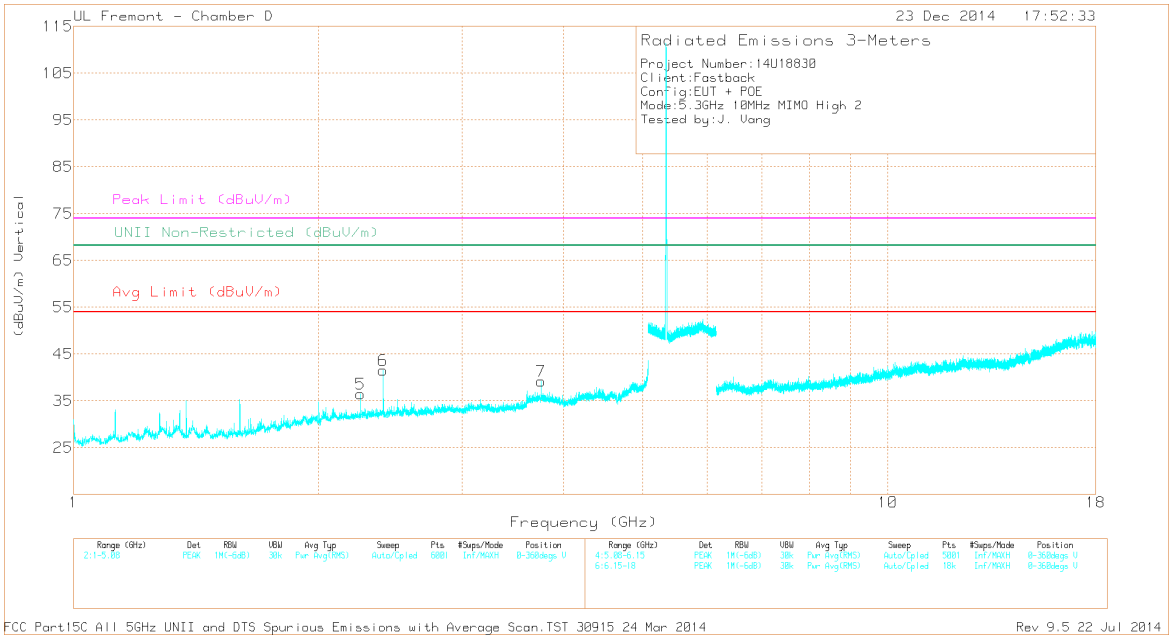
HIGH CHANNEL 2 HORIZONTAL PLOT



HIGH CHANNEL 2 VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1	51.01	PK1	27.1	-32.3	45.81	-	-	74	-28.19	-	-	343	125	H
1	* 1	44.99	AD1	27.1	-32.3	39.79	54	-14.21	-	-	-	-	343	125	H
2	* 1.025	49.32	PK1	27	-32.1	44.22	-	-	74	-29.78	-	-	346	119	H
2	* 1.025	43.96	AD1	27	-32.1	38.86	54	-15.14	-	-	-	-	346	119	H
3	* 1.125	47.7	PK1	27.3	-31.8	43.2	-	-	74	-30.8	-	-	61	115	H
3	* 1.125	41.92	AD1	27.3	-31.8	37.42	54	-16.58	-	-	-	-	61	115	H
4	* 1.6	46.33	PK1	28.2	-31.6	42.93	-	-	74	-31.07	-	-	59	116	H
4	* 1.6	41.97	AD1	28.2	-31.6	38.57	54	-15.43	-	-	-	-	59	116	H
5	* 2.25	42.92	PK1	31.8	-30.7	44.02	-	-	74	-29.98	-	-	347	147	V
5	* 2.25	32.94	AD1	31.8	-30.7	34.04	54	-19.96	-	-	-	-	347	147	V
7	* 3.75	40.97	PK1	33.3	-28.7	45.57	-	-	74	-28.43	-	-	30	191	V
7	* 3.75	32.85	AD1	33.3	-28.7	37.45	54	-16.55	-	-	-	-	30	191	V
6	2.4	44.08	PK1	32.1	-30.4	45.78	-	-	-	-	68.2	-22.42	44	109	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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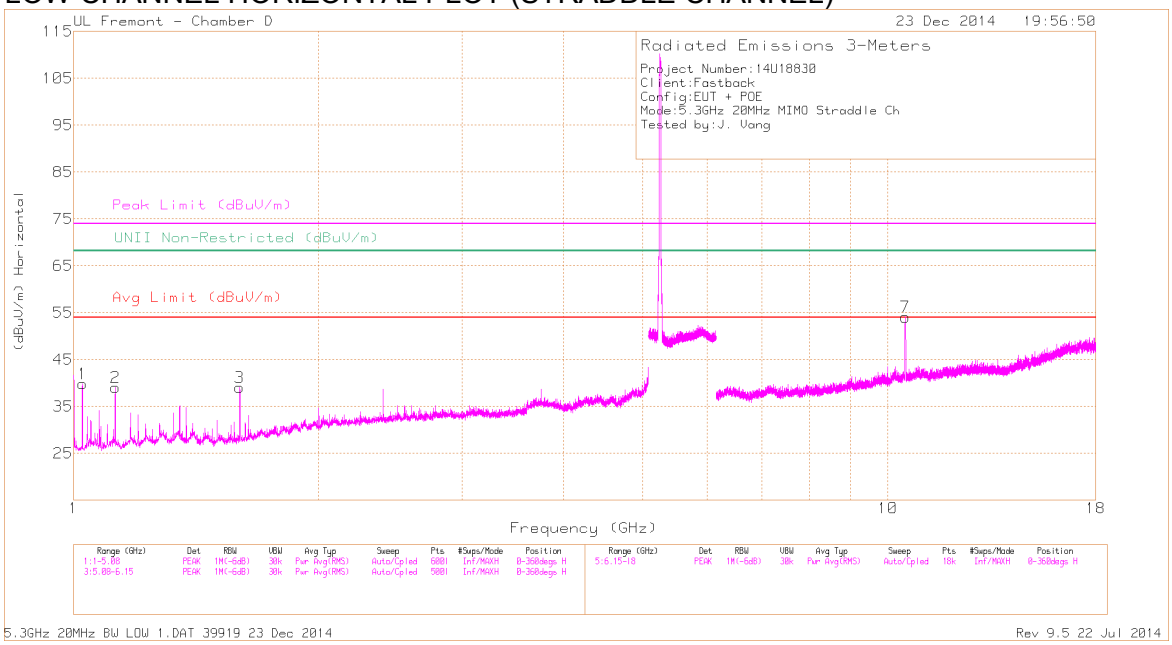
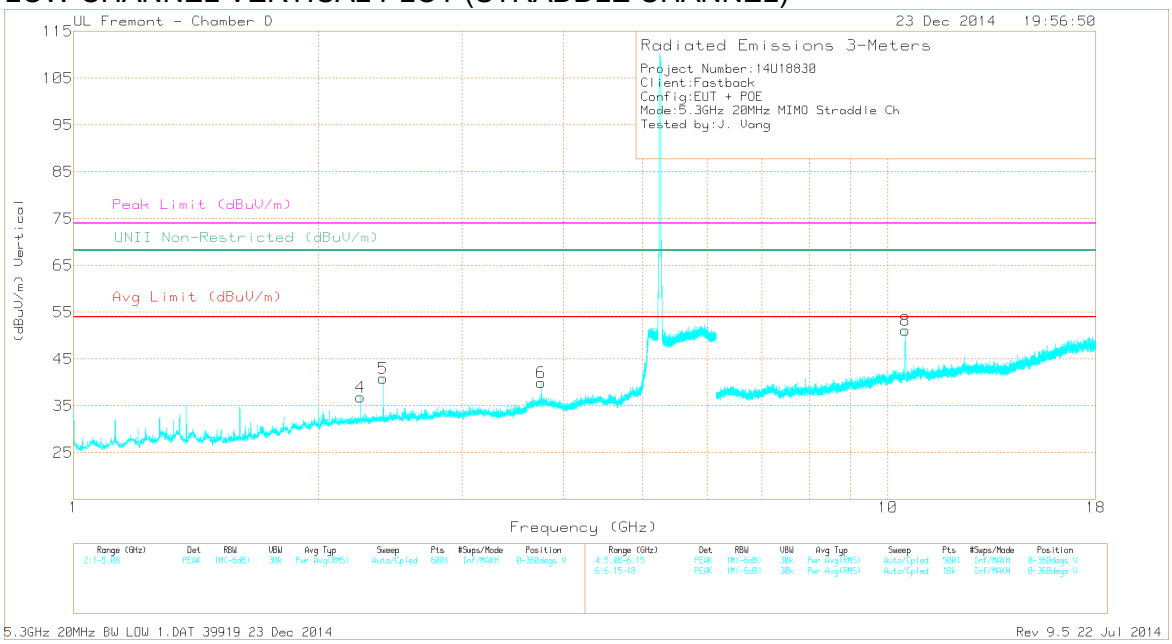
9.2.2. TX ABOVE 1 GHz 20MHz 2 TX MODE IN THE 5.3 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT (STRADDLE CHANNEL)



LOW CHANNEL VERTICAL PLOT (STRADDLE CHANNEL)



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.025	49.54	PK1	27	-32.1	44.44	-	-	74	-29.56	-	-	346	119	H
1	* 1.025	44.56	AD1	27	-32.1	39.46	54	-14.54	-	-	-	-	346	119	H
2	* 1.125	48.55	PK1	27.3	-31.8	44.05	-	-	74	-29.95	-	-	61	105	H
2	* 1.125	42.67	AD1	27.3	-31.8	38.17	54	-15.83	-	-	-	-	61	105	H
3	* 1.6	47.16	PK1	28.2	-31.6	43.76	-	-	74	-30.24	-	-	59	122	H
3	* 1.6	41.24	AD1	28.2	-31.6	37.84	54	-16.16	-	-	-	-	59	122	H
4	* 2.25	42.43	PK1	31.8	-30.7	43.53	-	-	74	-30.47	-	-	347	208	V
4	* 2.25	32.93	AD1	31.8	-30.7	34.03	54	-19.97	-	-	-	-	347	208	V
6	* 3.75	41.09	PK1	33.3	-28.7	45.69	-	-	74	-28.31	-	-	27	190	V
6	* 3.75	32.12	AD1	33.3	-28.7	36.72	54	-17.28	-	-	-	-	27	190	V
5	2.4	44.5	PK1	32.1	-30.4	46.2	-	-	-	-	68.2	-22	52	112	V
7	10.5	34.8	PK1	37.6	-21.5	50.9	-	-	-	-	68.2	-17.3	41	112	H
8	10.5	36.9	PK1	37.6	-21.5	53	-	-	-	-	68.2	-15.2	38	158	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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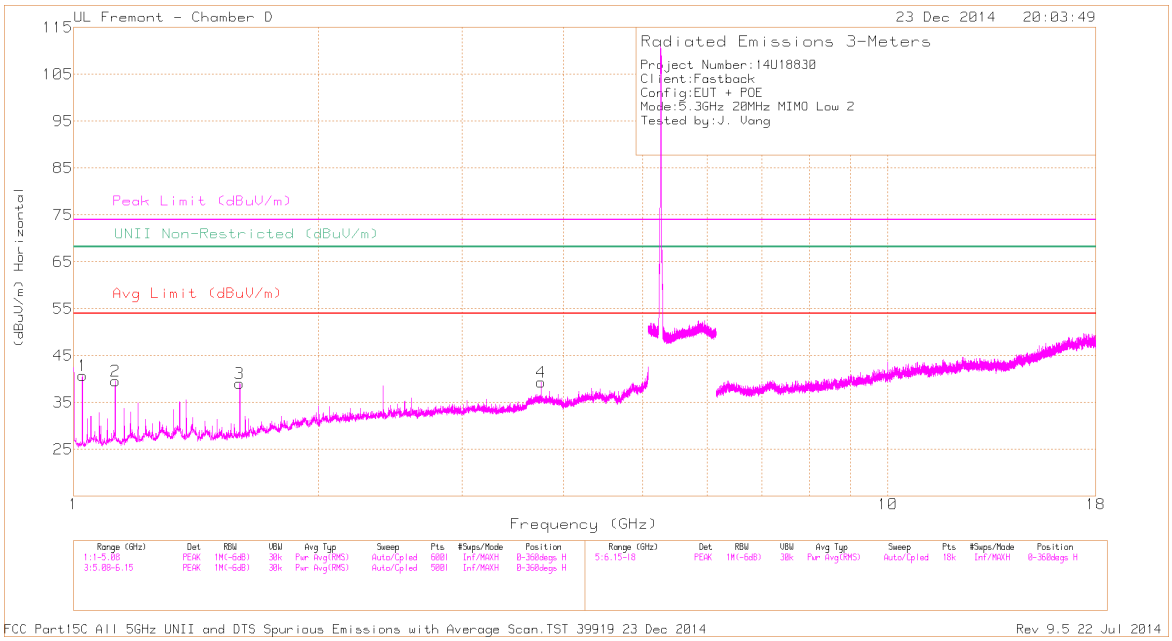
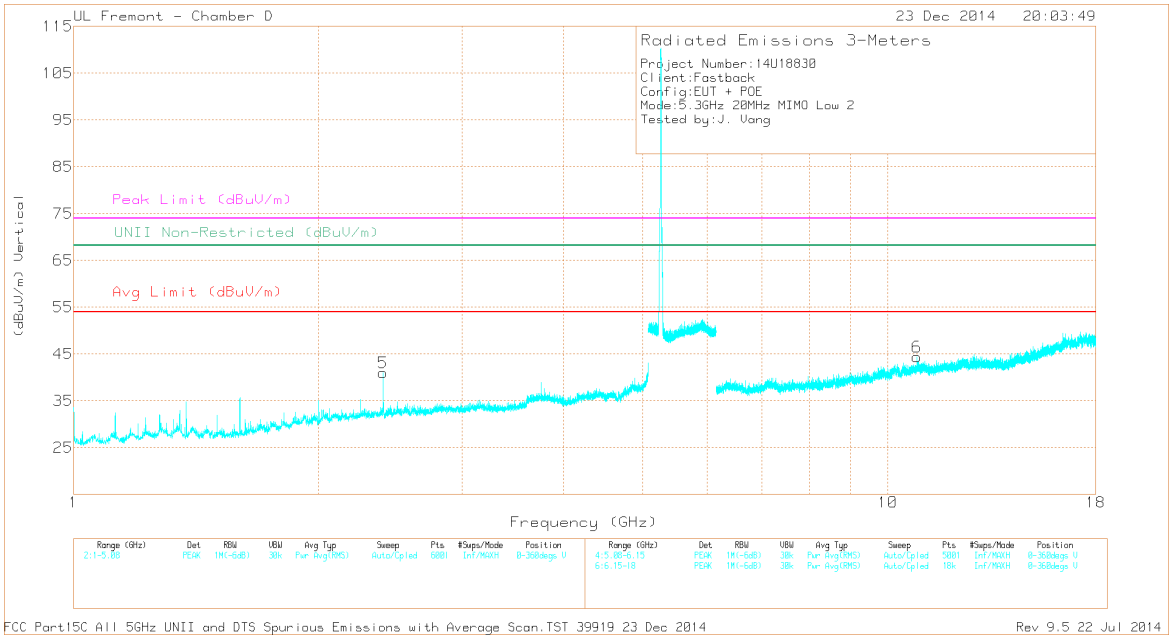
LOW 2 CHANNEL HORIZONTAL PLOT



LOW 2 CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.025	49.93	PK1	27	-32.1	44.83	-	-	74	-29.17	-	-	347	120	H
1	* 1.025	44.6	AD1	27	-32.1	39.5	54	-14.5	-	-	-	-	347	120	H
2	* 1.125	48.23	PK1	27.3	-31.8	43.73	-	-	74	-30.27	-	-	61	100	H
2	* 1.125	42.62	AD1	27.3	-31.8	38.12	54	-15.88	-	-	-	-	61	100	H
3	* 1.6	46.51	PK1	28.2	-31.6	43.11	-	-	74	-30.89	-	-	55	122	H
3	* 1.6	41.72	AD1	28.2	-31.6	38.32	54	-15.68	-	-	-	-	55	122	H
4	* 3.75	40.52	PK1	33.3	-28.7	45.12	-	-	74	-28.88	-	-	328	237	H
4	* 3.75	32.17	AD1	33.3	-28.7	36.77	54	-17.23	-	-	-	-	328	237	H
6	* 10.861	33.14	PK1	38.1	-21.2	50.04	-	-	74	-23.96	-	-	195	174	V
6	* 10.861	22.23	AD1	38.1	-21.2	39.13	54	-14.87	-	-	-	-	195	174	V
5	2.4	44.99	PK1	32.1	-30.4	46.69	-	-	-	-	68.2	-21.51	50	106	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Pimary Power Average

PK - Peak detector

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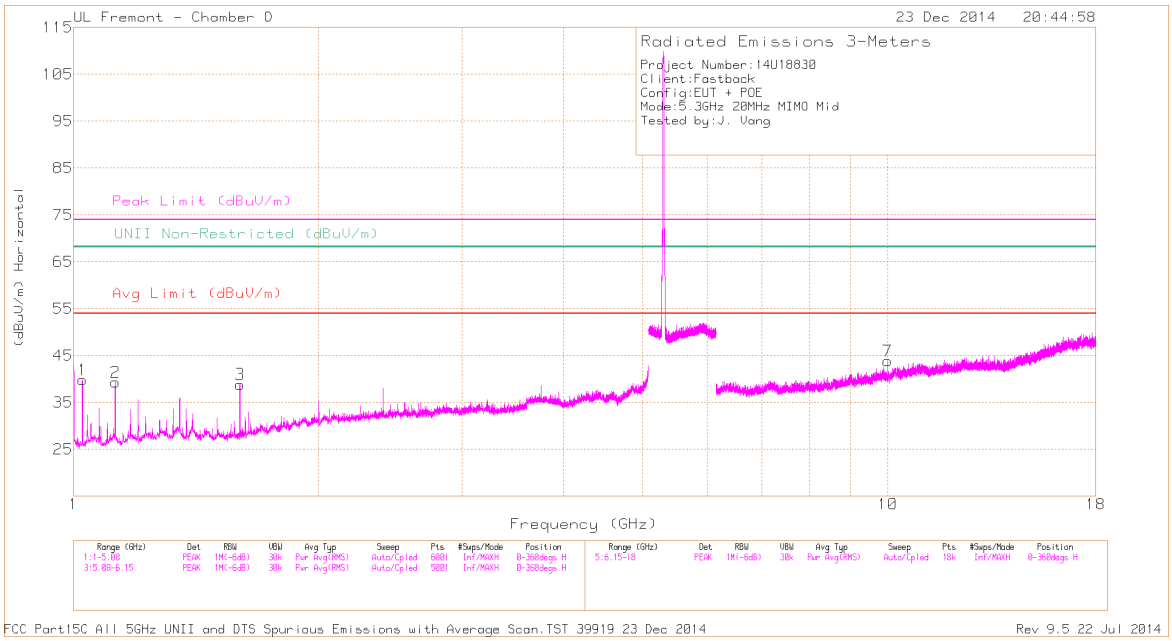
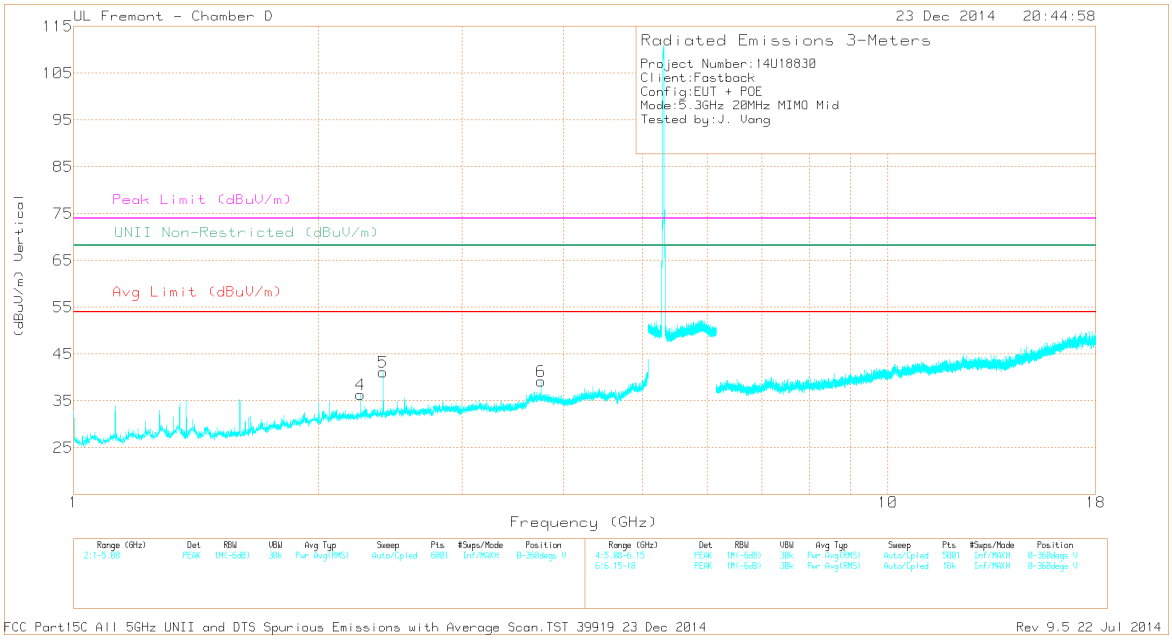
MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.025	49.3	PK1	27	-32.1	44.2	-	-	74	-29.8	-	-	349	117	H
1	* 1.025	44.33	AD1	27	-32.1	39.23	54	-14.77	-	-	-	-	349	117	H
2	* 1.125	48	PK1	27.3	-31.8	43.5	-	-	74	-30.5	-	-	55	103	H
2	* 1.125	42.42	AD1	27.3	-31.8	37.92	54	-16.08	-	-	-	-	55	103	H
3	* 1.6	46.86	PK1	28.2	-31.6	43.46	-	-	74	-30.54	-	-	52	125	H
3	* 1.6	41.74	AD1	28.2	-31.6	38.34	54	-15.66	-	-	-	-	52	125	H
4	* 2.25	42.73	PK1	31.8	-30.7	43.83	-	-	74	-30.17	-	-	345	160	V
4	* 2.25	33.25	AD1	31.8	-30.7	34.35	54	-19.65	-	-	-	-	345	160	V
6	* 3.75	41.7	PK1	33.3	-28.7	46.3	-	-	74	-27.7	-	-	30	192	V
6	* 3.75	33.48	AD1	33.3	-28.7	38.08	54	-15.92	-	-	-	-	30	192	V
5	2.4	43.77	PK1	32.1	-30.4	45.47	-	-	-	-	68.2	-22.73	43	283	V
7	10	36.98	PK1	37.1	-22.1	51.98	-	-	-	-	68.2	-16.22	209	163	H

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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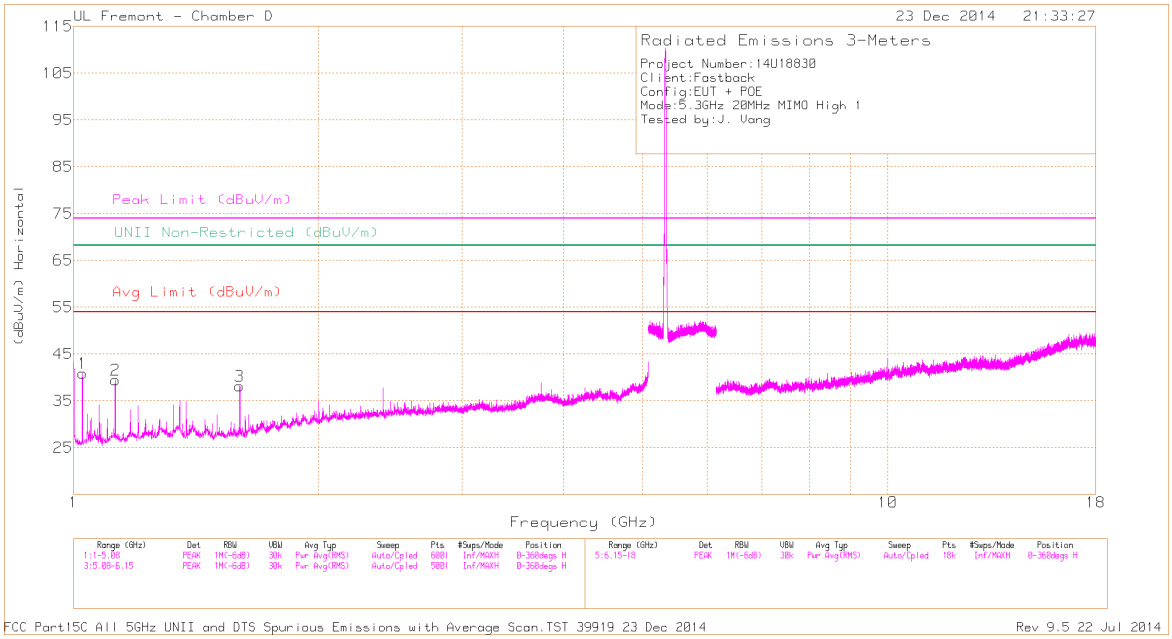
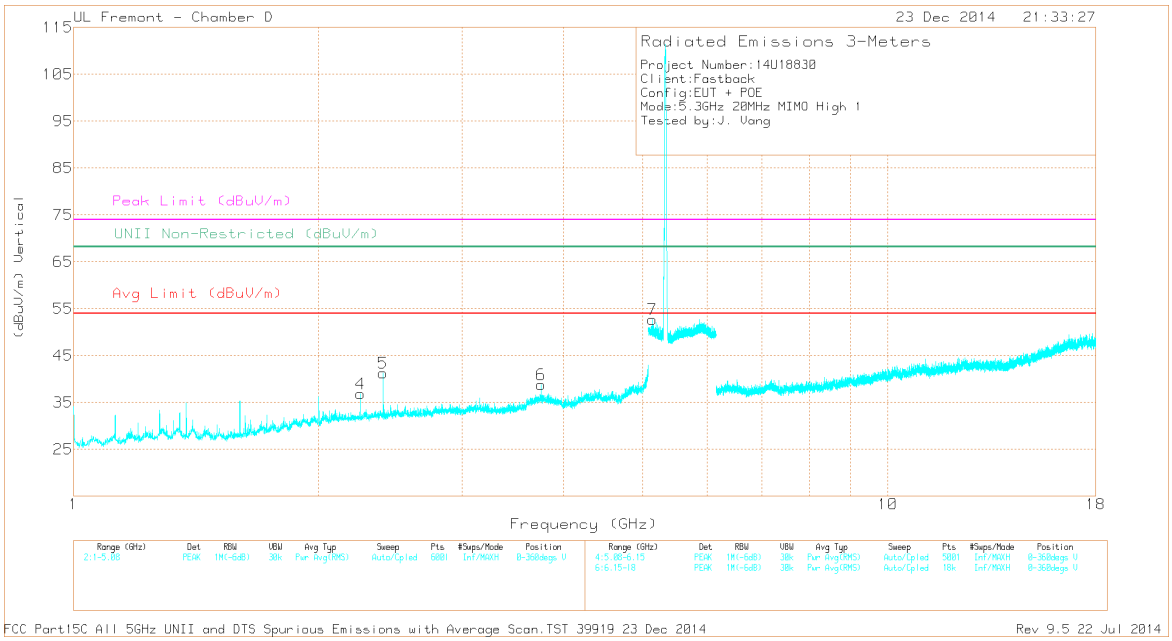
HIGH CHANNEL 1 HORIZONTAL PLOT



HIGH CHANNEL 1 VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.025	49.67	PK1	27	-32.1	44.57	-	-	74	-29.43	-	-	338	120	H
1	* 1.025	44.3	AD1	27	-32.1	39.2	54	-14.8	-	-	-	-	338	120	H
2	* 1.125	48.4	PK1	27.3	-31.8	43.9	-	-	74	-30.1	-	-	59	101	H
2	* 1.125	42.95	AD1	27.3	-31.8	38.45	54	-15.55	-	-	-	-	59	101	H
3	* 1.6	46.15	PK1	28.2	-31.6	42.75	-	-	74	-31.25	-	-	60	121	H
3	* 1.6	40.97	AD1	28.2	-31.6	37.57	54	-16.43	-	-	-	-	60	121	H
4	* 2.25	43.21	PK1	31.8	-30.7	44.31	-	-	74	-29.69	-	-	344	214	V
4	* 2.25	33.14	AD1	31.8	-30.7	34.24	54	-19.76	-	-	-	-	344	214	V
6	* 3.75	41.59	PK1	33.3	-28.7	46.19	-	-	74	-27.81	-	-	30	223	V
6	* 3.75	33.74	AD1	33.3	-28.7	38.34	54	-15.66	-	-	-	-	30	223	V
7	* 5.138	43.61	PK1	34.3	-18.3	59.61	-	-	74	-14.39	-	-	31	104	V
7	* 5.138	32.16	AD1	34.3	-18.3	48.16	54	-5.84	-	-	-	-	31	104	V
5	2.4	44.3	PK1	32.1	-30.4	46	-	-	-	-	68.2	-22.2	51	103	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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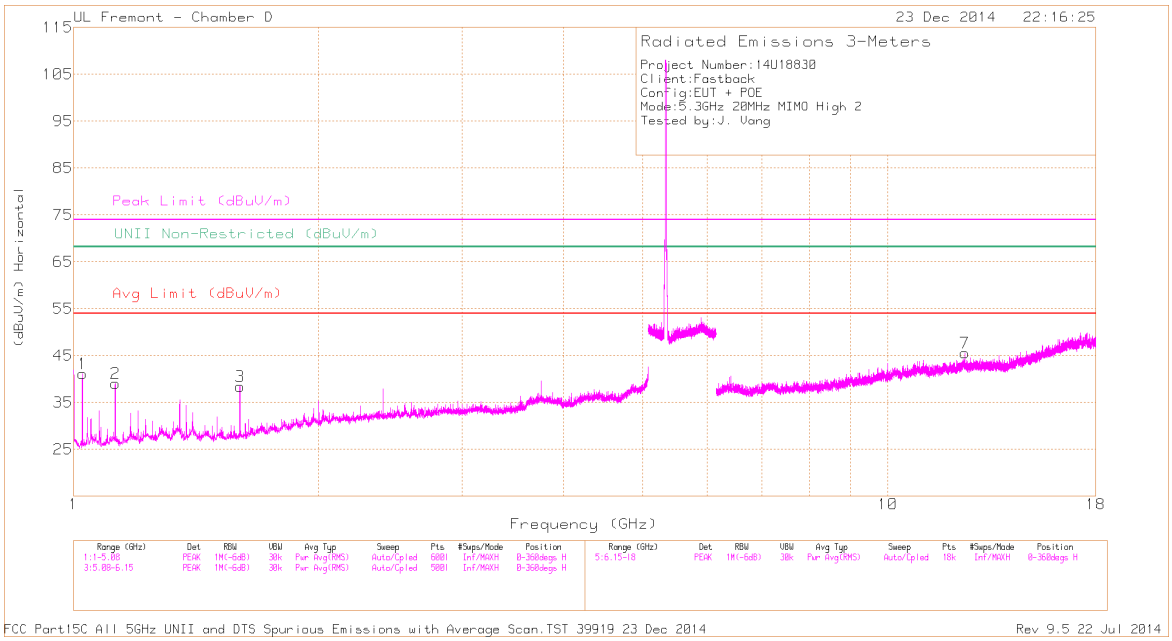
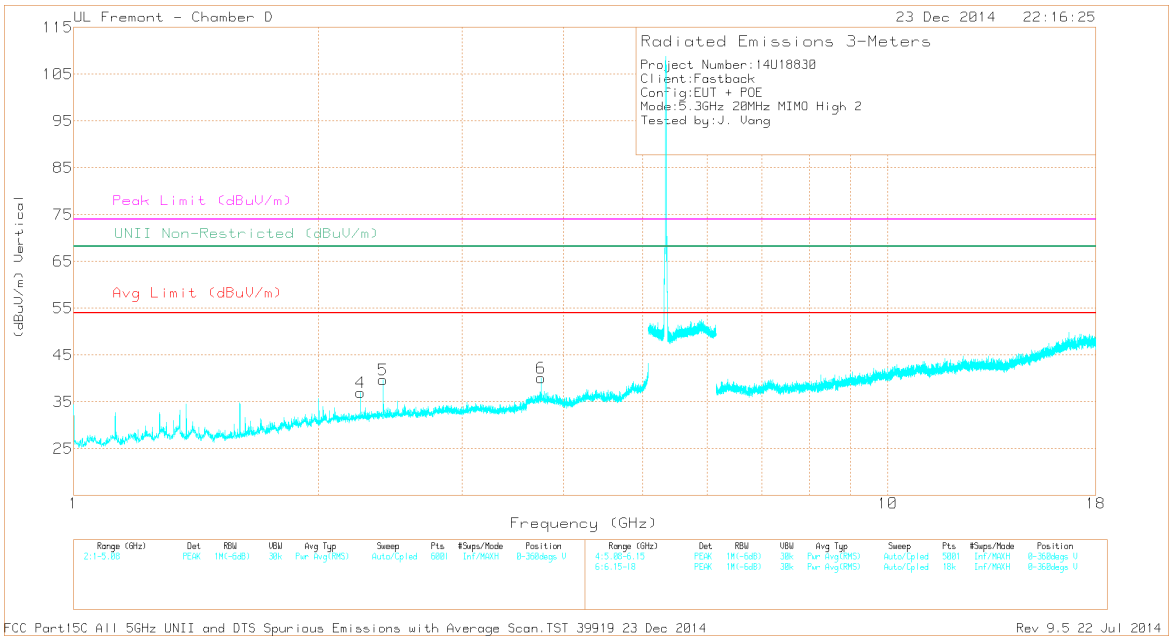
HIGH CHANNEL 2 HORIZONTAL PLOT



HIGH CHANNEL 2 VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.025	49.91	PK1	27	-32.1	44.81	-	-	74	-29.19	-	-	348	115	H
1	* 1.025	44.79	AD1	27	-32.1	39.69	54	-14.31	-	-	-	-	348	115	H
2	* 1.125	48.07	PK1	27.3	-31.8	43.57	-	-	74	-30.43	-	-	61	109	H
2	* 1.125	42.54	AD1	27.3	-31.8	38.04	54	-15.96	-	-	-	-	61	109	H
3	* 1.6	46.57	PK1	28.2	-31.6	43.17	-	-	74	-30.83	-	-	55	107	H
3	* 1.6	41.31	AD1	28.2	-31.6	37.91	54	-16.09	-	-	-	-	55	107	H
4	* 2.25	43.05	PK1	31.8	-30.7	44.15	-	-	74	-29.85	-	-	347	138	V
4	* 2.25	33.59	AD1	31.8	-30.7	34.69	54	-19.31	-	-	-	-	347	138	V
6	* 3.75	40.33	PK1	33.3	-28.7	44.93	-	-	74	-29.07	-	-	26	273	V
6	* 3.75	32.72	AD1	33.3	-28.7	37.32	54	-16.68	-	-	-	-	26	273	V
7	* 12.426	34.59	PK1	39.1	-21.7	51.99	-	-	74	-22.01	-	-	284	188	H
7	* 12.425	22.81	AD1	39.1	-21.7	40.21	54	-13.79	-	-	-	-	284	188	H
5	2.4	43.7	PK1	32.1	-30.4	45.4	-	-	-	-	68.2	-22.8	44	274	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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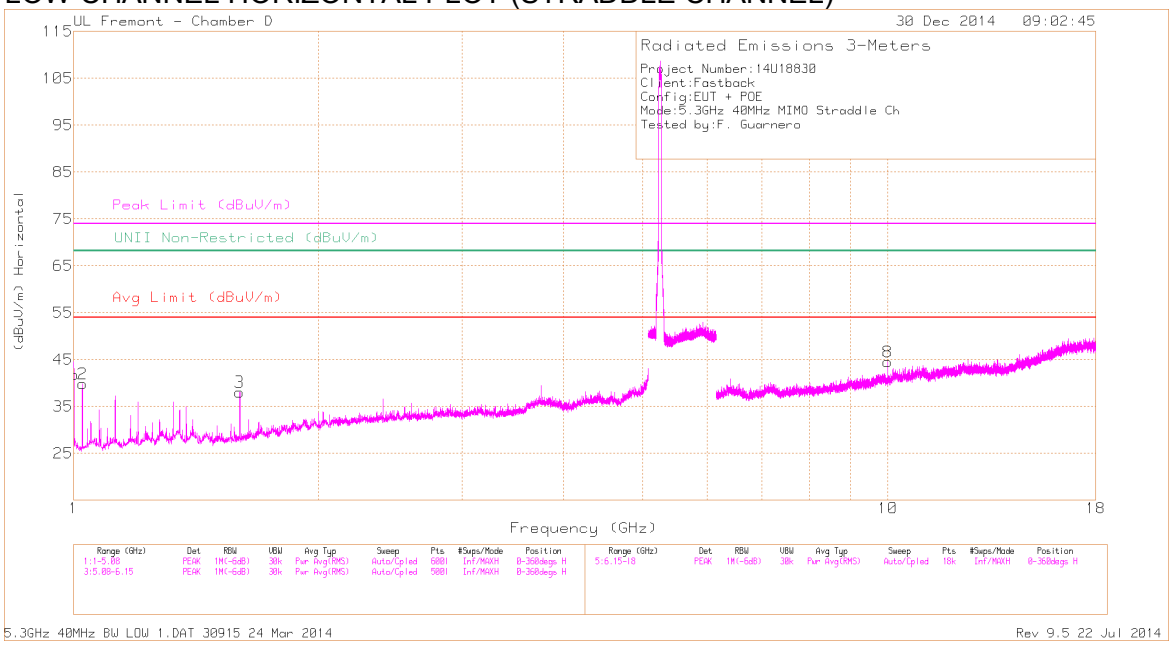
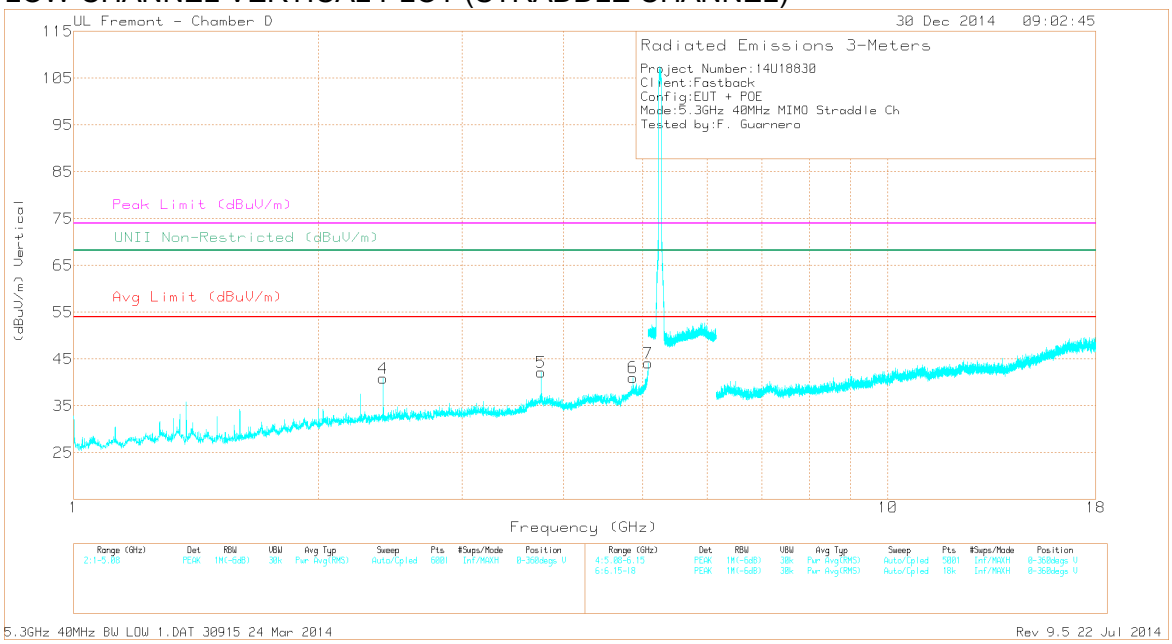
9.2.3. TX ABOVE 1 GHz 40MHz 2 TX MODE IN THE 5.3 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT (STRADDLE CHANNEL)



LOW CHANNEL VERTICAL PLOT (STRADDLE CHANNEL)



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1	51.34	PK1	27.1	-32.3	46.14	-	-	74	-27.86	-	-	353	113	H
1	* 1	45.14	AD1	27.1	-32.3	39.94	54	-14.06	-	-	-	-	353	113	H
2	* 1.025	48.68	PK1	27	-32.1	43.58	-	-	74	-30.42	-	-	350	114	H
2	* 1.025	43.12	AD1	27	-32.1	38.02	54	-15.98	-	-	-	-	350	114	H
3	* 1.6	46.57	PK1	28.2	-31.6	43.17	-	-	74	-30.83	-	-	54	115	H
3	* 1.6	41.69	AD1	28.2	-31.6	38.29	54	-15.71	-	-	-	-	54	115	H
5	* 3.75	41.59	PK1	33.3	-28.6	46.29	-	-	74	-27.71	-	-	31	197	V
5	* 3.75	33.42	AD1	33.3	-28.7	38.02	54	-15.98	-	-	-	-	31	197	V
6	* 4.866	36.76	PK1	34.2	-25.7	45.26	-	-	74	-28.74	-	-	27	197	V
6	* 4.864	25.48	AD1	34.2	-25.7	33.98	54	-20.02	-	-	-	-	27	197	V
7	* 5.074	41.87	PK1	34.3	-24.9	51.27	-	-	74	-22.73	-	-	31	103	V
7	* 5.078	30.22	AD1	34.3	-24.5	40.02	54	-13.98	-	-	-	-	31	103	V
4	2.4	45.32	PK1	32.1	-30.4	47.02	-	-	-	-	68.2	-21.18	15	240	V
4	2.4	39.59	AD1	32.1	-30.4	41.29	-	-	-	-	-	-	15	240	V
8	10	36.64	PK1	37.1	-22.1	51.64	-	-	-	-	68.2	-16.56	210	103	H

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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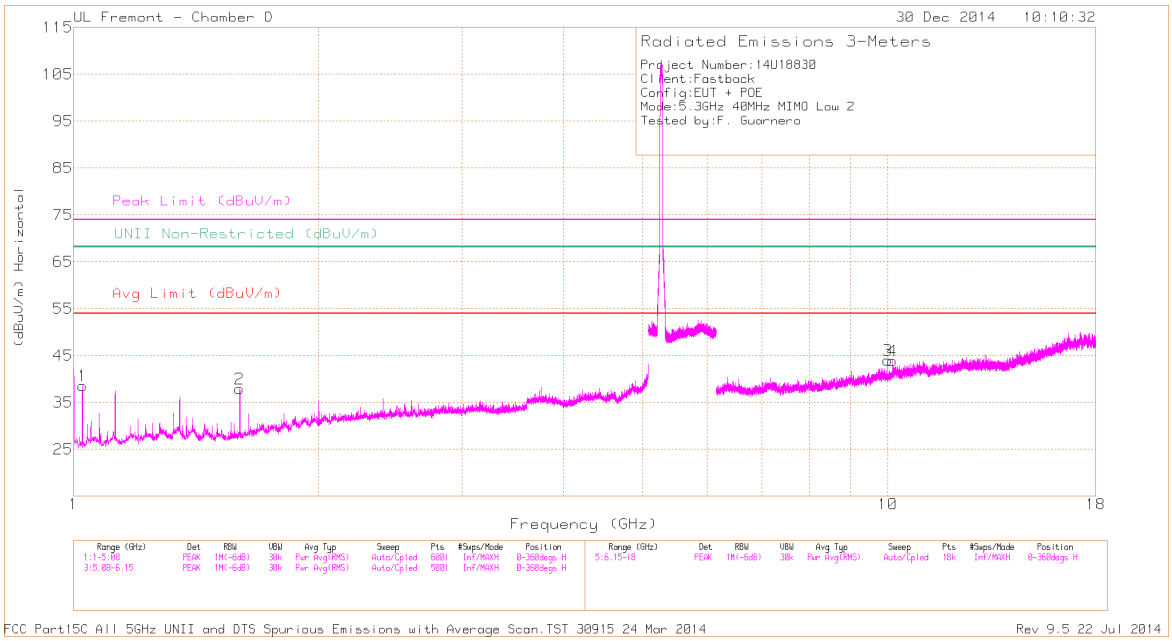
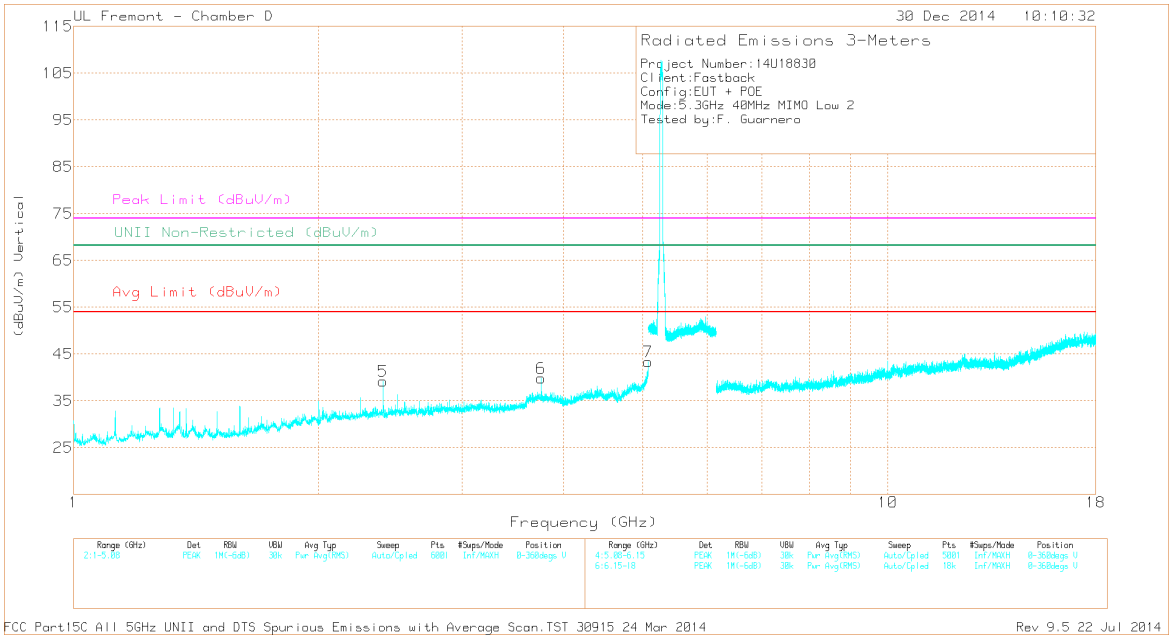
LOW 2 CHANNEL HORIZONTAL PLOT



LOW 2 CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.025	48.85	PK1	27	-32.1	43.75	-	-	74	-30.25	-	-	349	117	H
1	* 1.025	43.12	AD1	27	-32.1	38.02	54	-15.98	-	-	-	-	349	117	H
2	* 1.6	46.43	PK1	28.2	-31.6	43.03	-	-	74	-30.97	-	-	56	116	H
2	* 1.6	41.36	AD1	28.2	-31.6	37.96	54	-16.04	-	-	-	-	56	116	H
6	* 3.75	41.46	PK1	33.3	-28.6	46.16	-	-	74	-27.84	-	-	32	196	V
6	* 3.75	32.87	AD1	33.3	-28.7	37.47	54	-16.53	-	-	-	-	32	196	V
7	* 5.08	42	PK1	34.3	-24.3	52	-	-	74	-22	-	-	23	100	V
7	* 5.08	31.18	AD1	34.3	-24.3	41.18	54	-12.82	-	-	-	-	23	100	V
5	2.4	43.95	PK1	32.1	-30.4	45.65	-	-	-	-	68.2	-22.55	19	191	V
3	10	37.3	PK1	37.1	-22.1	52.3	-	-	-	-	68.2	-15.9	206	110	H
4	10.136	34.13	PK1	37.2	-21.2	50.13	-	-	-	-	68.2	-18.07	274	237	H

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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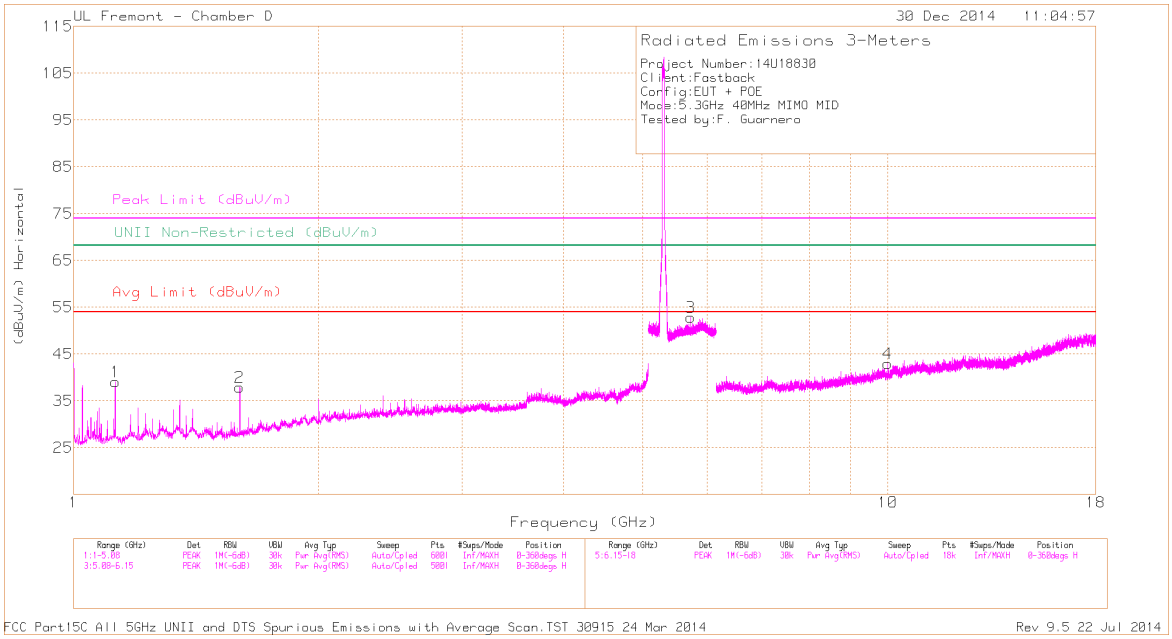
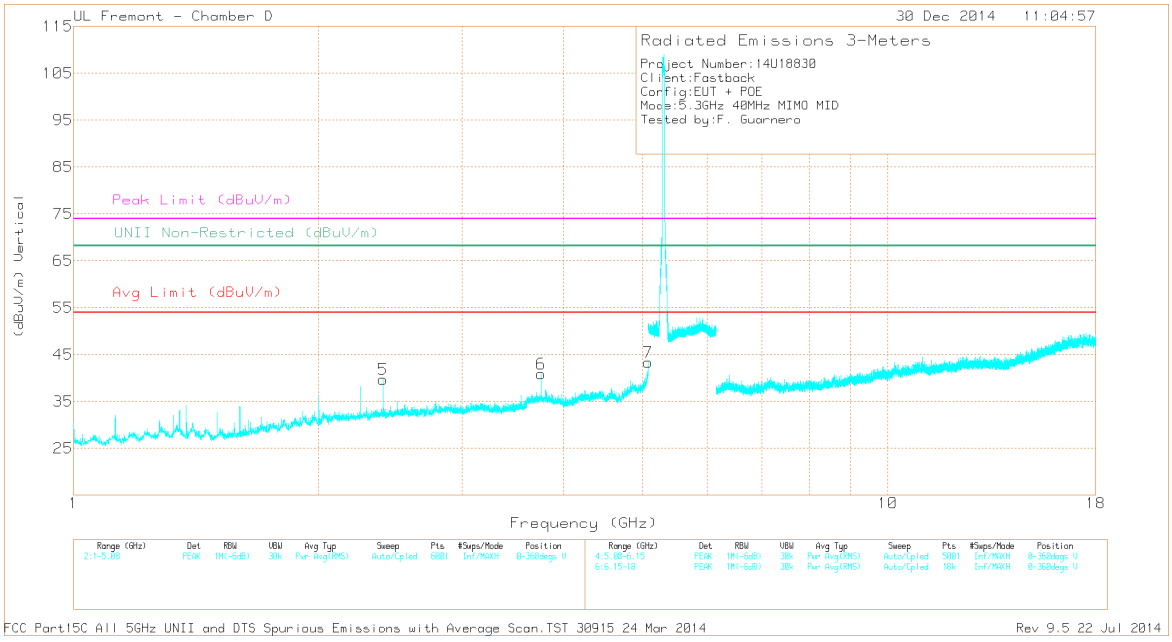
MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.125	48.43	PK1	27.3	-31.8	43.93	-	-	74	-30.07	-	-	65	100	H
1	* 1.125	42.27	AD1	27.3	-31.8	37.77	54	-16.23	-	-	-	-	65	100	H
2	* 1.6	46.77	PK1	28.2	-31.6	43.37	-	-	74	-30.63	-	-	50	127	H
2	* 1.6	41.46	AD1	28.2	-31.6	38.06	54	-15.94	-	-	-	-	50	127	H
6	* 3.75	41.5	PK1	33.3	-28.7	46.1	-	-	74	-27.9	-	-	31	197	V
6	* 3.75	32.93	AD1	33.3	-28.7	37.53	54	-16.47	-	-	-	-	31	197	V
7	* 5.08	42.69	PK1	34.3	-24.2	52.79	-	-	74	-21.21	-	-	24	101	V
7	* 5.08	31.3	AD1	34.3	-24.2	41.4	54	-12.6	-	-	-	-	24	101	V
5	2.4	43.79	PK1	32.1	-30.4	45.49	-	-	-	-	68.2	-22.71	45	106	V
3	5.725	41.43	PK1	34.7	-17.4	58.73	-	-	-	-	68.2	-9.47	194	344	H
4	10	37.72	PK1	37.1	-22.1	52.72	-	-	-	-	68.2	-15.48	206	109	H

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701J
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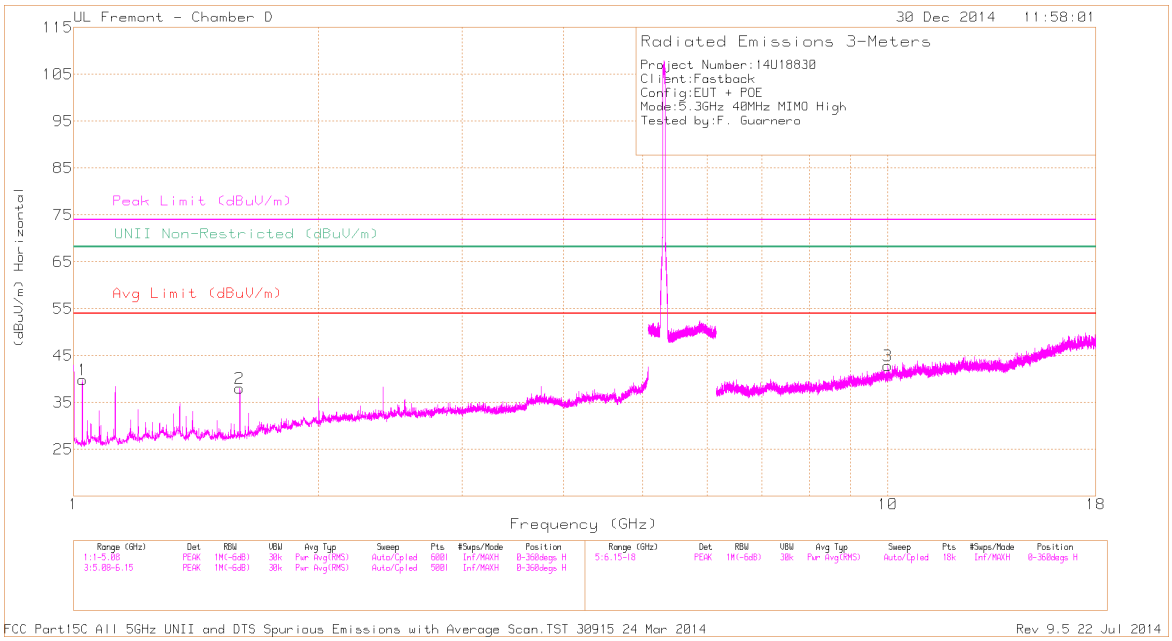
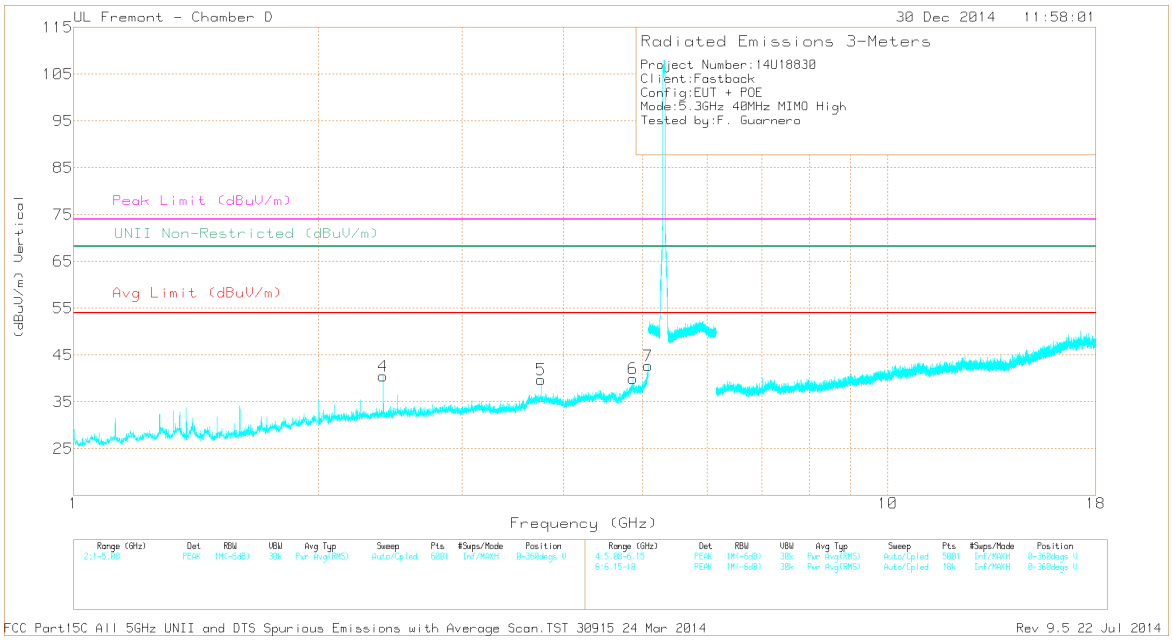
HIGH 1 CHANNEL HORIZONTAL PLOT



HIGH 1 CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.025	49.51	PK1	27	-32.1	44.41	-	-	74	-29.59	-	-	350	120	H
1	* 1.025	43.39	AD1	27	-32.1	38.29	54	-15.71	-	-	-	-	350	120	H
2	* 1.6	46.64	PK1	28.2	-31.6	43.24	-	-	74	-30.76	-	-	56	121	H
2	* 1.6	41.8	AD1	28.2	-31.6	38.4	54	-15.6	-	-	-	-	56	121	H
5	* 3.75	41.3	PK1	33.3	-28.7	45.9	-	-	74	-28.1	-	-	31	198	V
5	* 3.75	32.68	AD1	33.3	-28.7	37.28	54	-16.72	-	-	-	-	31	198	V
6	* 4.86	38.24	PK1	34.2	-25.7	46.74	-	-	74	-27.26	-	-	331	183	V
6	* 4.86	25.62	AD1	34.2	-25.7	34.12	54	-19.88	-	-	-	-	331	183	V
7	* 5.08	42.42	PK1	34.3	-24.2	52.52	-	-	74	-21.48	-	-	31	100	V
7	* 5.08	31.22	AD1	34.3	-24.2	41.32	54	-12.68	-	-	-	-	31	100	V
4	2.4	44.63	PK1	32.1	-30.4	46.33	-	-	-	-	68.2	-21.87	46	105	V
3	10	37.89	PK1	37.1	-22.1	52.89	-	-	-	-	68.2	-15.31	206	104	H

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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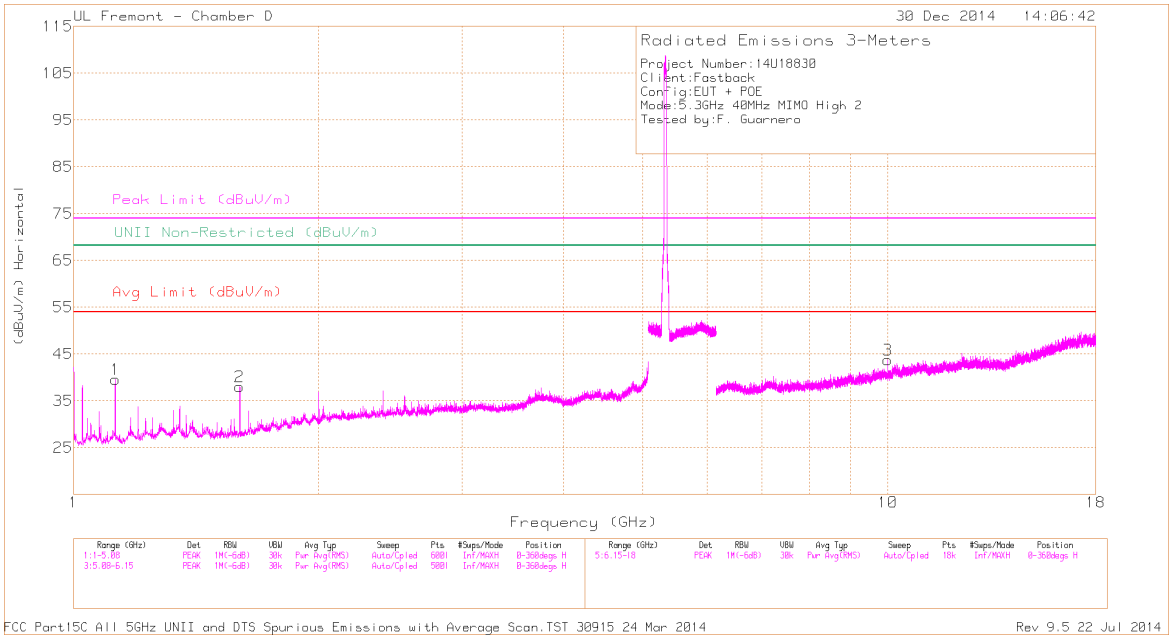
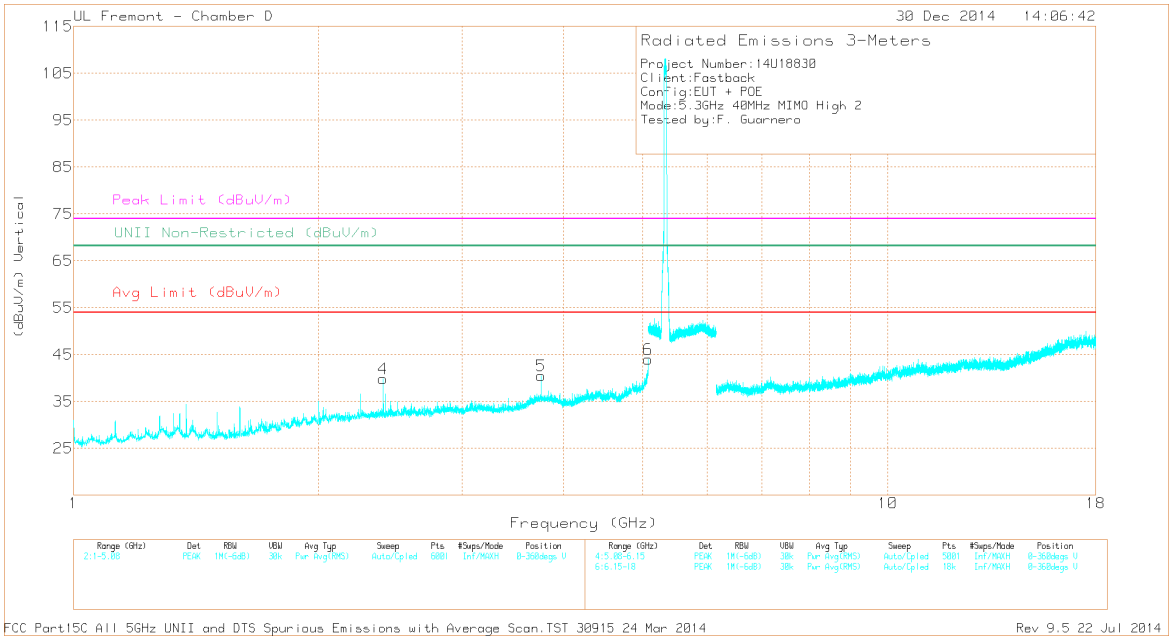
HIGH 2 CHANNEL HORIZONTAL PLOT



HIGH 2 CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.125	48.36	PK1	27.3	-31.8	43.86	-	-	74	-30.14	-	-	67	102	H
1	* 1.125	42.09	AD1	27.3	-31.8	37.59	54	-16.41	-	-	-	-	67	102	H
2	* 1.6	46.39	PK1	28.2	-31.6	42.99	-	-	74	-31.01	-	-	58	123	H
2	* 1.6	41.35	AD1	28.2	-31.6	37.95	54	-16.05	-	-	-	-	58	123	H
5	* 3.75	41.7	PK1	33.3	-28.6	46.4	-	-	74	-27.6	-	-	31	194	V
5	* 3.75	32.91	AD1	33.3	-28.7	37.51	54	-16.49	-	-	-	-	31	194	V
6	* 5.075	42.14	PK1	34.3	-24.8	51.64	-	-	74	-22.36	-	-	29	107	V
6	* 5.076	30.15	AD1	34.3	-24.7	39.75	54	-14.25	-	-	-	-	29	107	V
4	2.4	44.73	PK1	32.1	-30.4	46.43	-	-	-	-	68.2	-21.77	15	239	V
3	10	36.63	PK1	37.1	-22.1	51.63	-	-	-	-	68.2	-16.57	205	116	H

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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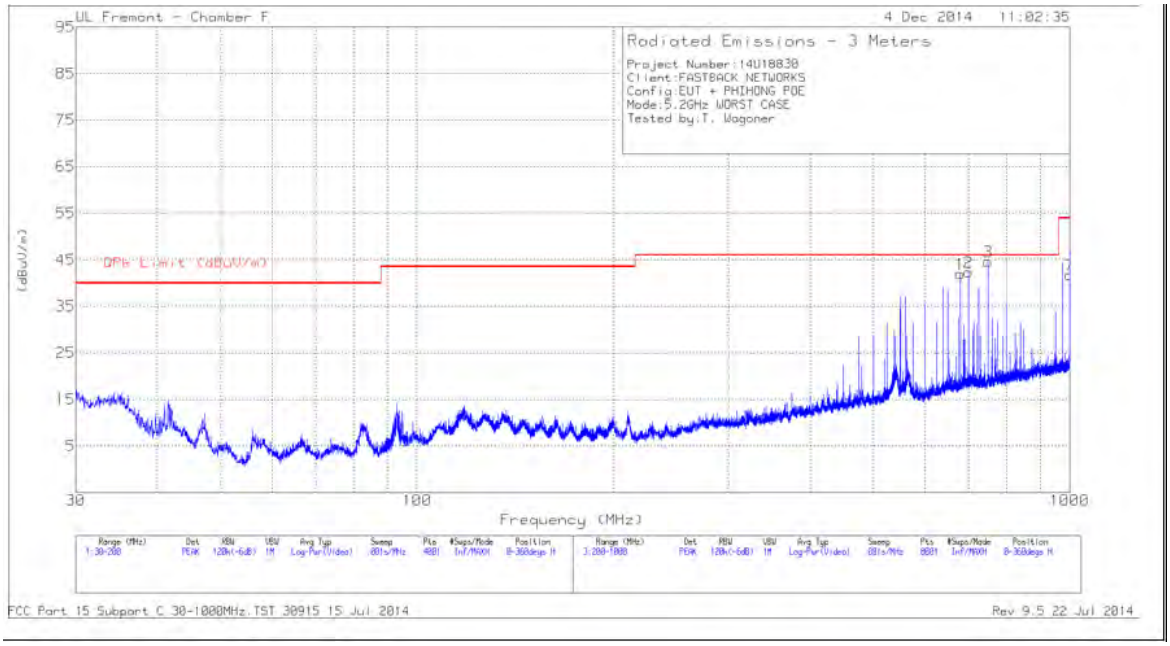
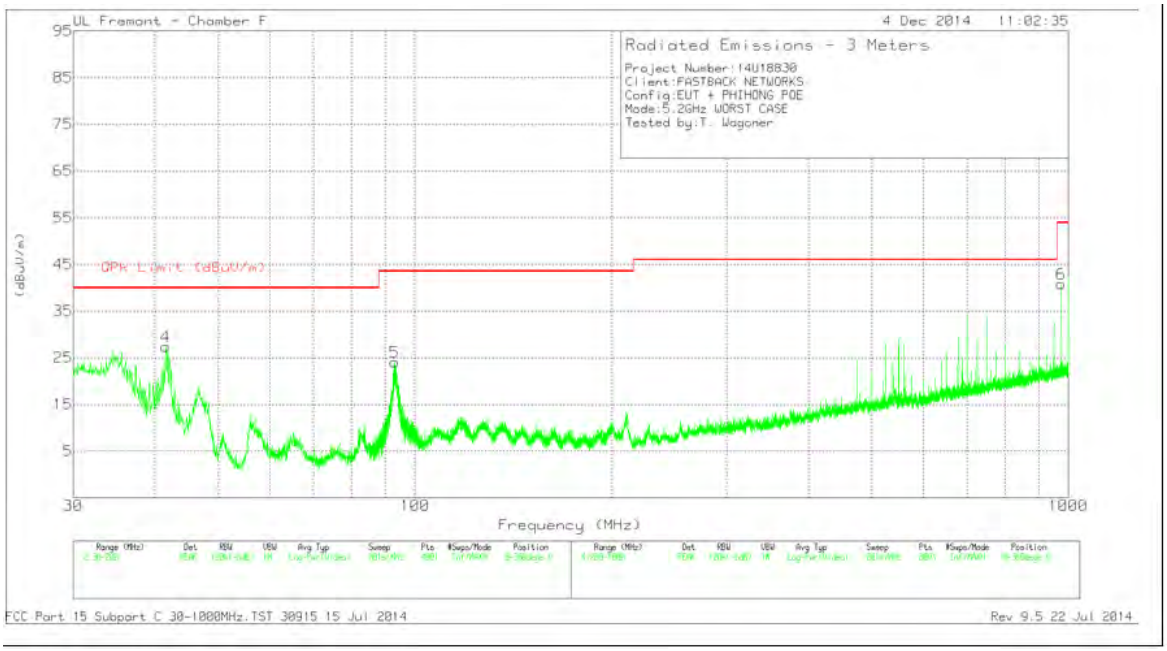
9.3. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



VERTICAL PLOT



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DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T122 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	41.56	46.71	PK	12.7	-32	27.41	40	-12.59	0-360	100	V
5	93.07	47.27	PK	8.4	-31.6	24.07	43.52	-19.45	0-360	100	V
1	680	51.71	PK	20	-29.7	42.01	46.02	-4.01	0-360	100	H
	679.999	51.94	QP	20	-29.7	42.24	46.02	-3.78	328	106	H
2	700	51.8	PK	20.3	-29.7	42.4	46.02	-3.62	0-360	100	H
	700.004	54.87	QP	20.3	-29.7	45.47	46.02	-.55	286	104	H
3	750	53.45	PK	20.8	-29.6	44.65	46.02	-1.37	0-360	100	H
	750.005	50.33	QP	20.8	-29.6	41.53	46.02	-4.49	268	101	H
7	* 999.9	45.85	PK	23.4	-27.5	41.75	53.97	-12.22	0-360	201	H
6	* 975	45.56	PK	23.1	-27.8	40.86	53.97	-13.11	0-360	100	V

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

PK - Peak detector

QP - Quasi-Peak detector

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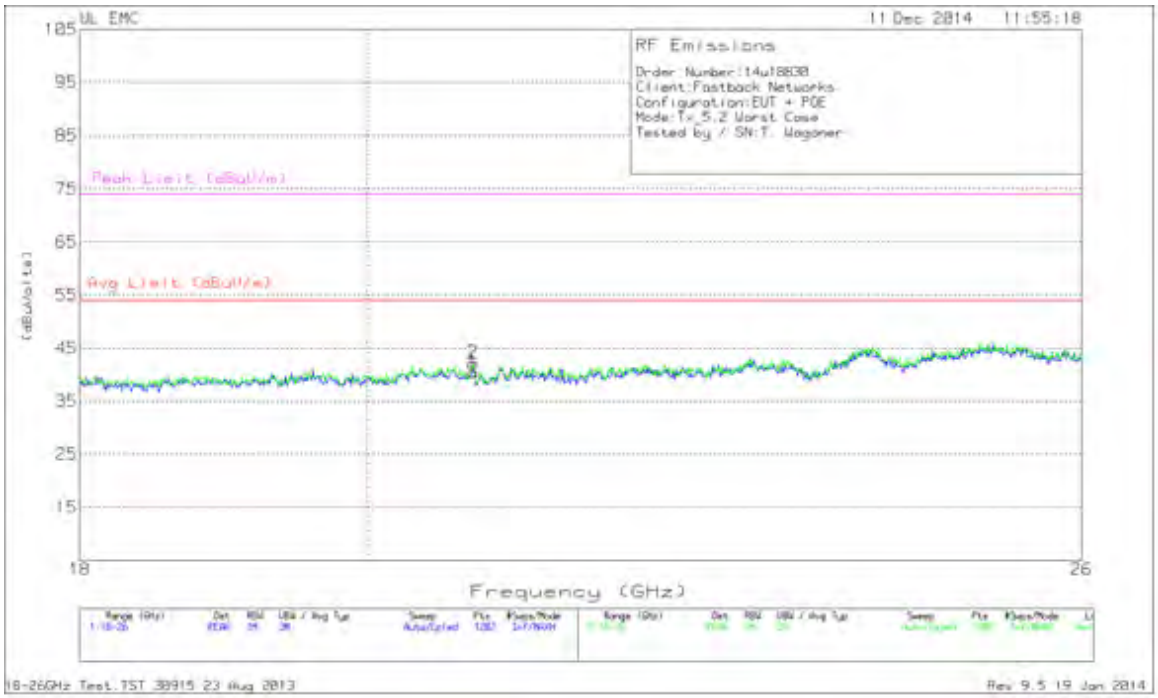
9.4. WORST-CASE 18 to 26 GHz

SPURIOUS EMISSIONS 18000 TO 26000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL & VERTICAL)

HORIZONTAL & VERTICAL PLOT



HORIZONTAL & VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T125 (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	20.798	41.3	PK	33.1	-24.4	-9.5	40.5	54	-13.5	74	-33.5
2	20.798	42.97	PK	33.1	-24.4	-9.5	42.167	54	-11.833	74	-31.833

PK - Peak detector

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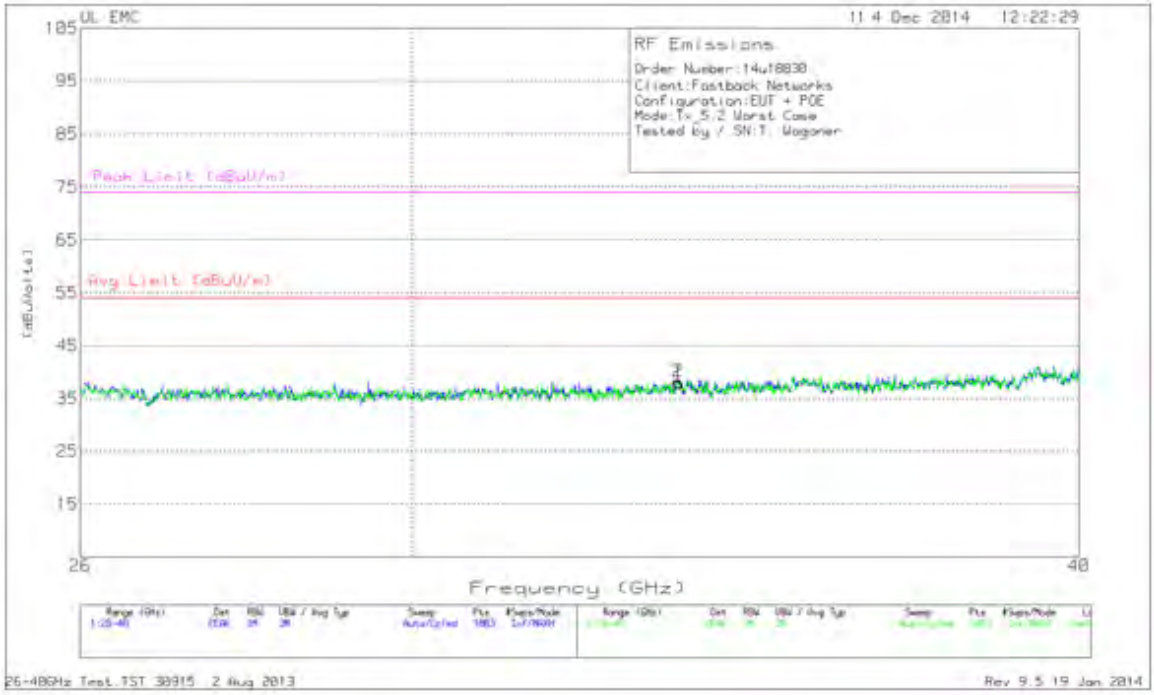
9.5. WORST-CASE 26 to 40 GHz

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

HORIZONTAL & VERTICAL PLOT



HORIZONTAL & VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T90 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	33.653	47.33	PK	36.9	-36.9	-9.5	37.833	54	-16.167	74	-36.167
2	33.645	47.57	PK	36.9	-36.8	-9.5	38.167	54	-15.833	74	-35.833

PK - Peak detector

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10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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.

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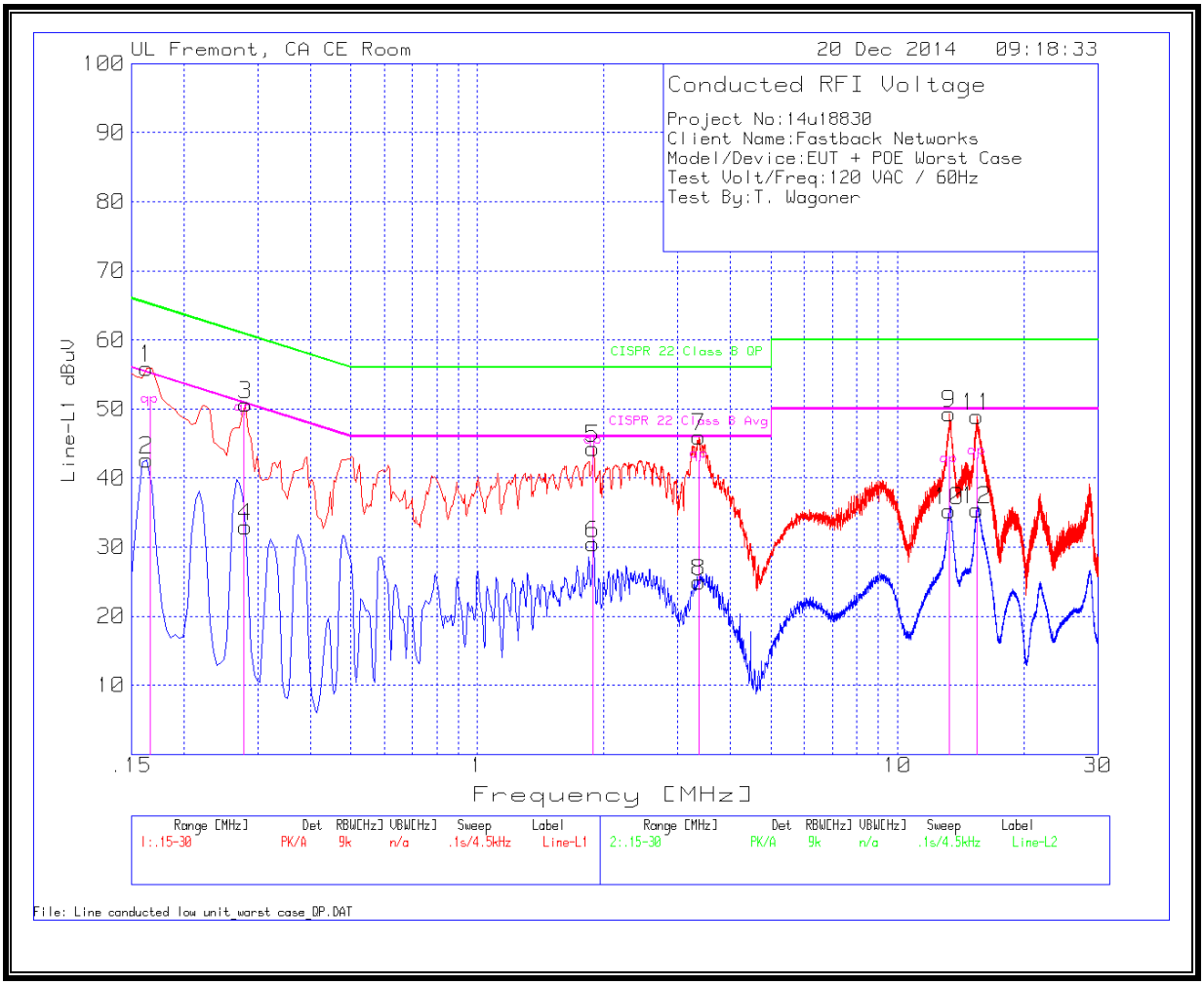
WORST CASE RESULTS

LINE 1 RESULTS



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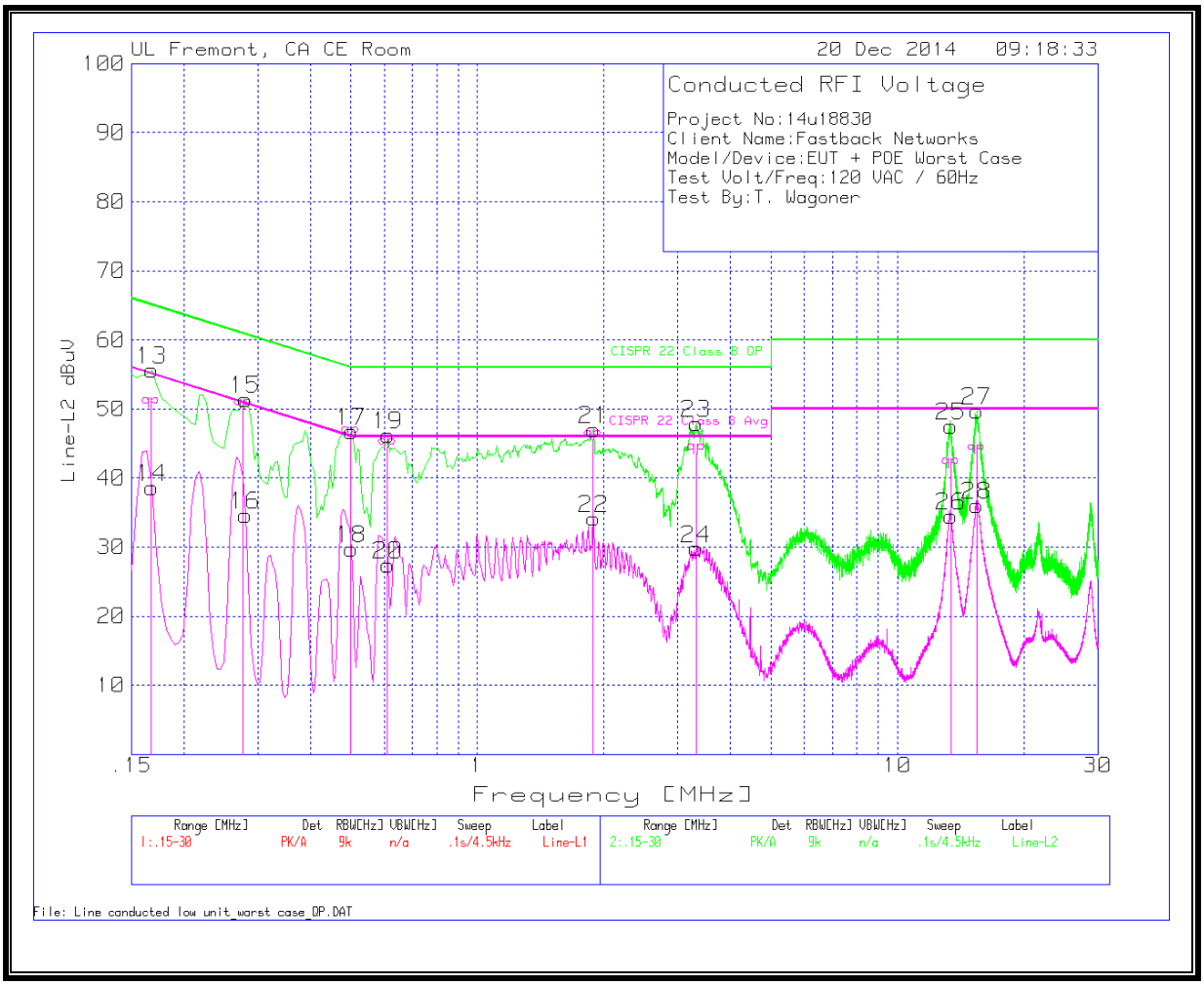
LINE 2 RESULTS



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DATA

Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
1	.1635	54.72	PK	1.2	0	55.92	65.3	-9.38	-	-
2	.1635	41.45	Av	1.2	0	42.65	-	-	55.3	-12.65
3	.2805	50.08	PK	.6	0	50.68	60.8	-10.12	-	-
4	.2805	32.33	Av	.6	0	32.93	-	-	50.8	-17.87
5	1.887	43.98	PK	.2	.1	44.28	56	-11.72	-	-
6	1.887	30.15	Av	.2	.1	30.45	-	-	46	-15.55
7	3.372	45.72	PK	.2	.1	46.02	56	-9.98	-	-
8	3.372	24.61	Av	.2	.1	24.91	-	-	46	-21.09
9	13.272	48.94	PK	.2	.2	49.34	60	-10.66	-	-
10	13.272	34.83	Av	.2	.2	35.23	-	-	50	-14.77
11	15.45	48.5	PK	.3	.2	49	60	-11	-	-
12	15.45	34.94	Av	.3	.2	35.44	-	-	50	-14.56

Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
13	.168	54.33	PK	1.3	0	55.63	65.1	-9.47	-	-
14	.168	37.38	Av	1.3	0	38.68	-	-	55.1	-16.42
15	.2805	50.79	PK	.6	0	51.39	60.8	-9.41	-	-
16	.2805	34.01	Av	.6	0	34.61	-	-	50.8	-16.19
17	.501	46.39	PK	.4	0	46.79	56	-9.21	-	-
18	.501	29.34	Av	.4	0	29.74	-	-	46	-16.26
19	.6135	45.97	PK	.3	0	46.27	56	-9.73	-	-
20	.6135	27.12	Av	.3	0	27.42	-	-	46	-18.58
21	1.8915	46.74	PK	.2	.1	47.04	56	-8.96	-	-
22	1.8915	33.88	Av	.2	.1	34.18	-	-	46	-11.82
23	3.3225	47.63	PK	.2	.1	47.93	56	-8.07	-	-
24	3.3225	29.5	Av	.2	.1	29.8	-	-	46	-16.2
25	13.3845	47	PK	.3	.2	47.5	60	-12.5	-	-
26	13.3845	34	Av	.3	.2	34.5	-	-	50	-15.5
27	15.432	49.19	PK	.3	.2	49.69	60	-10.31	-	-
28	15.432	35.61	Av	.3	.2	36.11	-	-	50	-13.89

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11. DYNAMIC FREQUENCY SELECTION

For DFS data on the U-NII-2C band, refer to report # 14U18829-2 FCC UNII 5.3GHz_WLAN.

Note: The DFS detection circuitry (include antenna) is independent from the EUT's transmitter per information provided by manufacturer.

The DFS detection mechanism, which uses a separate antenna and receiver circuitry to the transmitter, is common with that for FCC ID: 2AAEH-104. The DFS testing for the 2AAEH-104 is, therefore, representative for FCC IDs 2AAEH-106. Test report "14U18829-2 FCC UNII 5.3GHz_WLAN", which contains the DFS evaluation for 2AAEH-104, will be submitted with the filing for equipment authorization for 2AAEH-106. The detection threshold used in the DFS evaluation accounts for the highest eirp and eirp power spectral density across the 2AAEH-104 / 2AAEH-106 devices as appropriate.

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