FCC 47 CFR PART 15 SUBPART E
INDUSTRY CANADA RSS-210 ISSUE 8

CERTIFICATION TEST REPORT

FOR

802.11a/b/g/n WIRELESS ACCESS POINT

MODEL NUMBER: APIN0103

FCC ID: Q9DAPIN0103
IC: 4675A-APIN0103

REPORT NUMBER: 14U17032-1 Revision G

ISSUE DATE: DECEMBER 19, 2014

Prepared for
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	04/01/14	Initial Issue	F. Ibrahim
A	07/14/14	Added Straddle Channels	D. Vu
B	08/04/14	Revised Power Table on Page 9	C.S.OOI
C	08/18/14	Revised Section 7.3	C.S.OOI
D	11/12/14	Revised Section 5.2	C.S.OOI
E	12/2/14	Added Sections 8.1.4, 8.1.5, 8.3.4, 8.3.5, 8.5.4, 8.5.5, and Change DTS to UNII-3 in Sections 5.2 and 8.1, 8.3, 8.4 Add Additional Statement on Page 10. Revised Section 7.3	J. Gomez
F	12/19/14	Revised Section 8.5.3, 8.7.3, 8.9.3 for UNII Band 3	C.S.OOI
G	12/19/14	Revised Section 8.5.3, 8.7.3, 8.9.3 for Limit	C.S.OOI

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Aruba Networks Inc.

EUT DESCRIPTION: 802.11a/b/g/n WIRELESS ACCESS POINT

MODEL: APIN0103

SERIAL NUMBER: CU0001141

DATE TESTED: March 3, 2014 – Jun 17, 2014

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E	Pass
INDUSTRY CANADA RSS-210 Issue 8 Annex 9	Pass
INDUSTRY CANADA RSS-GEN Issue 3	Pass

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

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

Approved & Released For
UL Verification Services Inc. By:

Frank Ibrahim
WiSE Program Manager
UL Verification Services Inc.

Tested By:

Joey Gomez
WiSE Lab Engineer
UL Verification Services Inc.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC 06-96, FCC KDB 789033, ANSI C63.10-2009, RSS-GEN Issue 3, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

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

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

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

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	±3.52 dB
Radiated Disturbance, 30 to 1000 MHz	±4.94 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an 802.11a/b/g/n Wireless Access Point

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)	EIRP (dBm)	EIRP (mW)
5260 - 5320	802.11a 2Tx	21.250	133.352	25.350	342.768
5260 - 5320	802.11n HT20 2Tx	22.444	175.550	26.544	451.232
5270 - 5310	802.11n HT40 2Tx	21.670	146.893	25.770	377.572
5500 - 5700	802.11a 2Tx	20.870	122.180	24.970	314.051
5500 - 5700	802.11n HT20 2Tx	21.382	137.467	25.482	353.346
5510 - 5670	802.11n HT40 2Tx	20.580	114.288	24.680	293.765

Frequency Range (MHz)	Mode	Power, Chain 0 (dBm)	Power, Chain 1 (dBm)	Output Power (dBm)	Output Power (mW)
5.6 GHz band, 2TX (Channels overlapping UNII-2 and UNII-3 bands)					
5710 (UNII-2 portion)	802.11a CDD	14.92	14.76	17.991	62.97
5710 (UNII-3 portion)	802.11a CDD	9.70	8.34	12.223	16.69
5720 (Whole signal)	802.11a CDD	16.06	15.65	**19.092**	81.13
5710 (UNII-2 portion)	802.11n HT20 STBC	17.46	18.40	21.136	129.89
5710 (UNII-3 portion)	802.11n HT20 STBC	12.44	12.59	15.696	37.12
5720 (Whole signal)	802.11n HT20 STBC	18.65	19.41	**22.267**	168.55
5710 (UNII-2 portion)	802.11n HT40 STBC	18.32	18.74	21.775	150.50
5710 (UNII-3 portion)	802.11n HT40 STBC	8.28	7.37	11.089	12.85
5710 (Whole signal)	802.11n HT40 STBC	18.73	19.05	**22.371**	172.63

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes antennas, with a maximum gain of **4.1 dBi** in 5150-5350 MHz band & **4.3** dBi in 5470-5725 MHz band.

5.4. SOFTWARE AND FIRMWARE

The EUT driver software installed during testing was Art2, rev. 2.27.3.

The test utility software used during testing was Putty, rev 0.62.0.

5.5. WORST-CASE CONFIGURATION AND MODE

The EUT can be oriented in either X orientation or Y orientation, the EUT was investigated in both of these orientations and Y orientation was found to be worst-case orientation. All final radiated testing was done with EUT laid out in the Y orientation.

Power line conducted emission was performed with POE and AC/DC adapter configurations.

Radiated emission below 1 GHz and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

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

802.11a mode: 6 Mbps
802.11n HT20mode: MCS0
802.11n HT40mode: MCS0

Radiated emissions protocol was EUT with antenna.

These devices are only for indoor use.

TPC is not required since the maximum EIRP is less than 500mW for all channels, including the straddle channels, which operate in the 5250-5350MHz and 5470-5725MHz bands

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	IBM	T41 Thinkpad	99-BB577	DoC
Laptop AC/DC Adapter	IBM	92P1020	11s92p1020z9rm7644rs	NA
POE AC/ DC Adapter	Microsemi Corp.	PD-9001GR/AC	C13016561000002026	NA
AC/DC Adapter	Sunny	SYS1357-1812	NA	NA

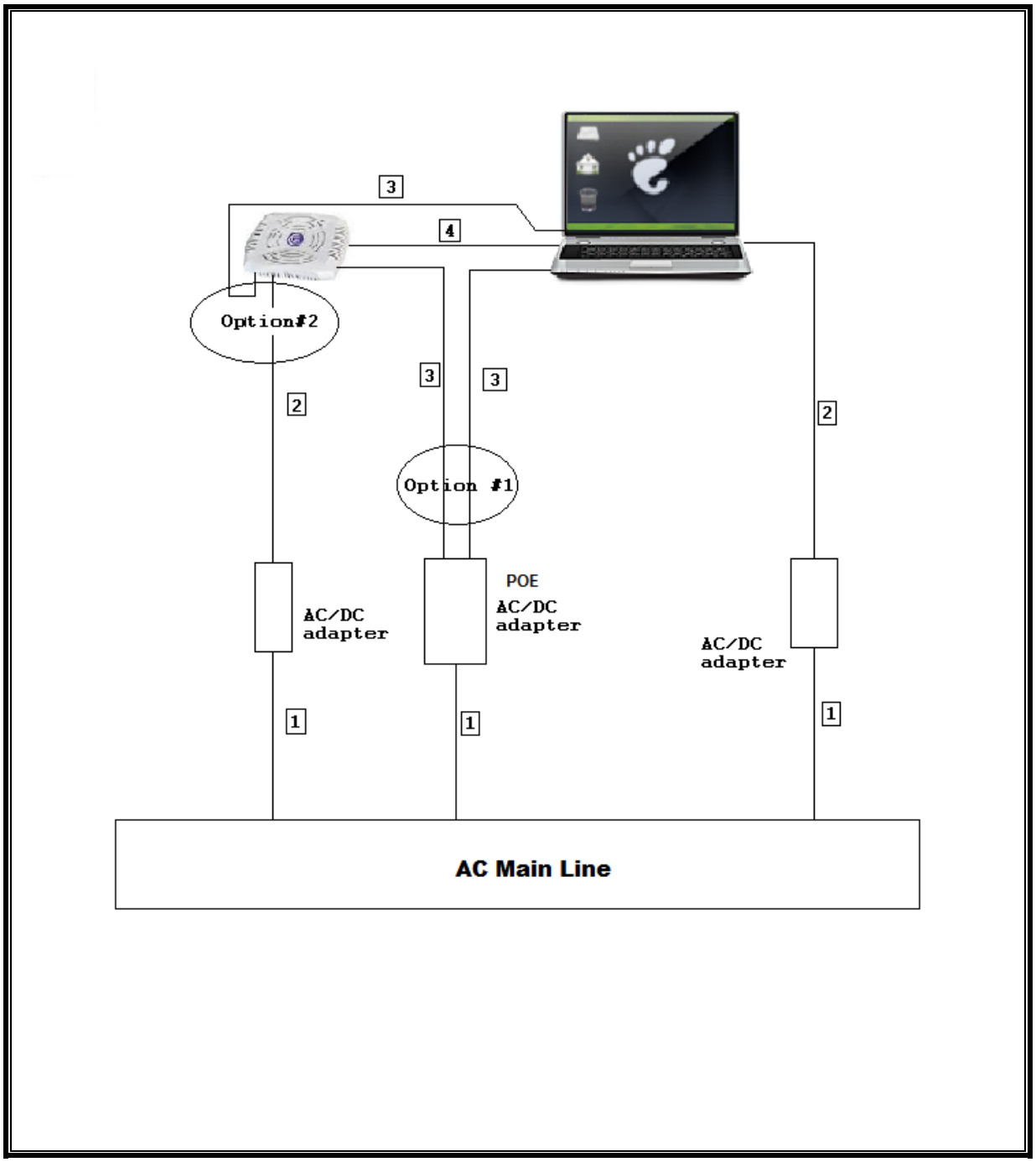
I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	3	AC Adapter	Un-Shielded	1m	NA
2	DC	2	DC	Un-Shielded	0.5m	NA
3	Ethernet	3	RJ45	Un-Shielded	0.8m	NA
4	USB/Serial	1	USB-A / RJ45	Un-Shielded	0.5m	NA

TEST SETUP

The EUT is connected to a test computer via serial port during the tests. Test software exercised the radio card.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List					
Description	**Manufacturer**	**Model**	**Asset**	**Cal Date**	**Cal Due**
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	10/09/13	10/09/14
Spectrum Analyzer, 40 GHz	Agilent	E4446A	T99	05/22/13	05/22/14
PXA Signal Analyzer	Agilent	N9030A	T339	12/10/13	12/10/14
Horn Antenna, 1GHz-18GHz	ETS Lindgren	3117	T119	01/06/14	01/06/15
Antenna, Horn, 18 GHz	EMCO	3115	C01218	01/18/14	01/18/15
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00980	11/14/13	11/14/14
Antenna, Horn, 40 GHz	ARA	MWH-2640/B	C00981	06/28/13	06/28/14
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	C01016	08/22/13	08/22/14
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C00749	10/19/13	10/19/14
Preamplifier, 40 GHz	Miteq	NSP4000-SP2	C00990	08/20/13	08/20/14
Peak Power Meter	Agilent / HP	N1911A	F00024	03/07/14	03/07/15
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00885	01/16/14	01/16/15
5GHz Low Pass Filter	Micro-Tronics	LPS17541	F00219	06/26/13	06/26/14
3GHz High Pass Filter	Micro-Tronics	HPS17542	F00222	06/26/13	06/26/14
6GHz High Pass Filter	Micro-Tronics	HPM17543	F00224	06/26/13	06/26/14

7. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

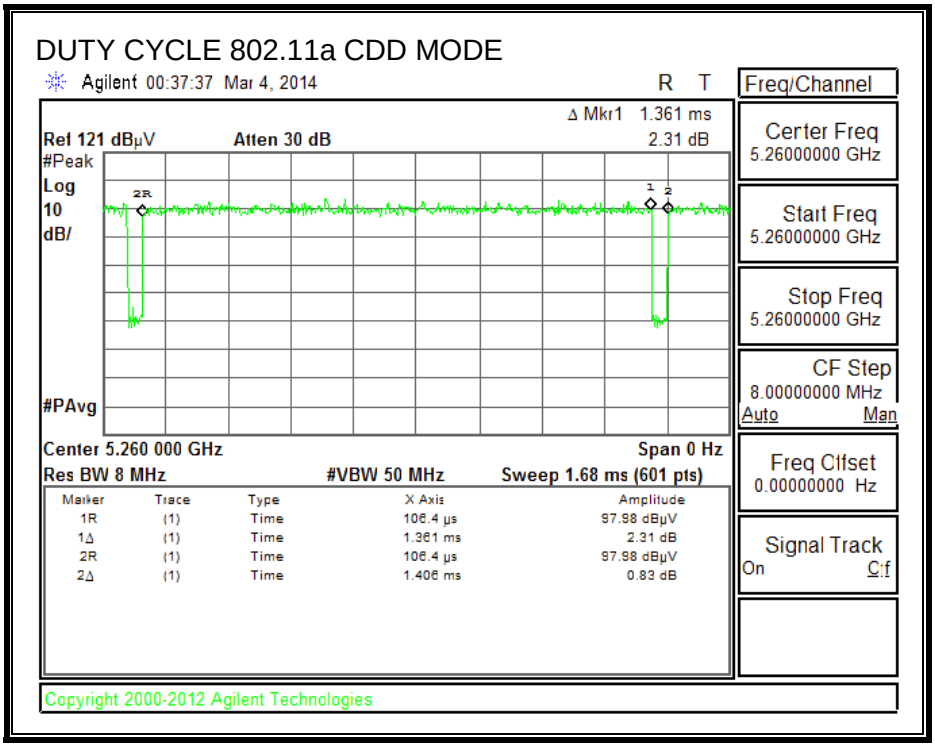
PROCEDURE

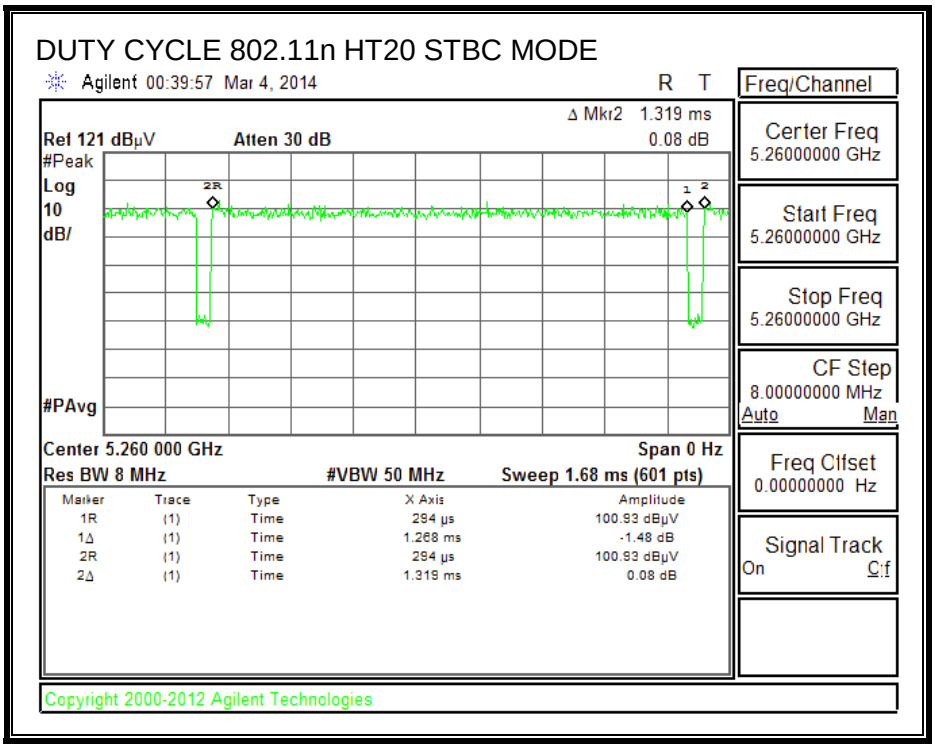
KDB 789033 Zero-Span Spectrum Analyzer Method.

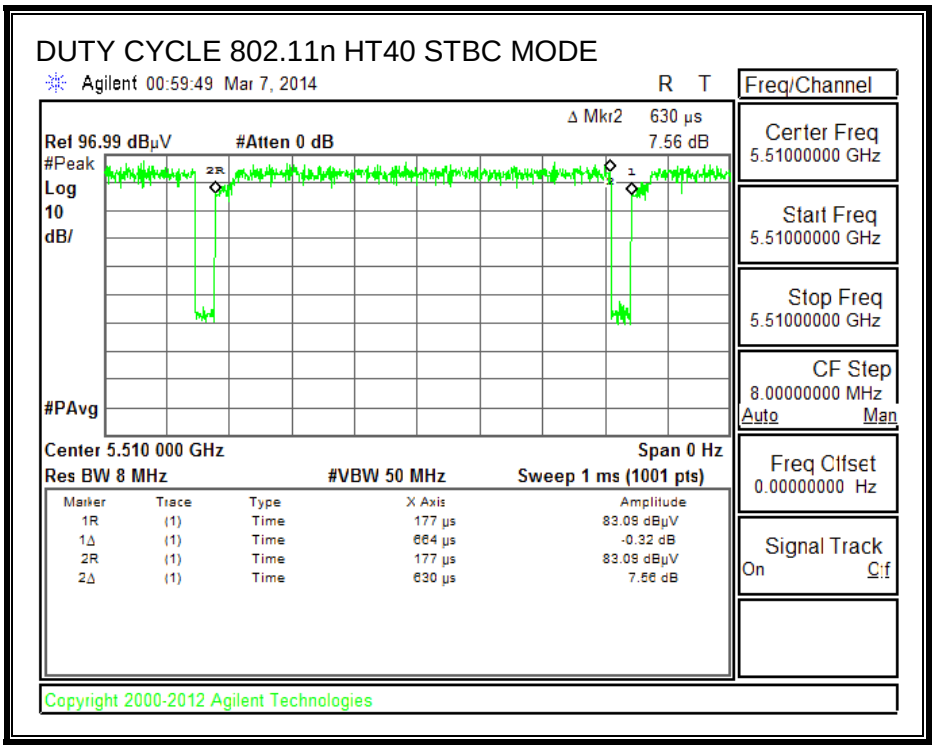
7.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
802.11a CDD	1.361	1.406	0.968	96.80%	0.14	0.735
802.11n HT20 STBC	1.268	1.319	0.961	96.13%	0.17	0.789
802.11n HT40 STBC	0.630	0.664	0.949	94.88%	0.23	1.587

7.2. DUTY CYCLE PLOTS







7.3. MEASUREMENT METHODS

26 dB Emission BW: KDB 789033 D01 v01r04, Section C.

99% Occupied BW: KDB 789033 D01 v01r04, Section D.

Conducted Output Power: KDB 789033 D01 v01r04, Section E.2.b (Method SA-1).

Power Spectral Density: KDB 789033 D01 v01r04, Section F.

Peak Excursion: KDB 789033 D01 v01r04, Section G.

Unwanted emissions in restricted bands: KDB 789033 D01 v01r04, Sections H.3, H.4, H.5, and H.6.

Unwanted emissions in non-restricted bands: KDB 789033 D01 v01r04, Sections H.3, H.4, and H.5.

Straddle Channels: KDB 644545 D01 v01r02

MIMO Device: KDB 662911 v02r01

8. ANTENNA PORT TEST RESULTS

8.1. 802.11a CDD 2TX MODE IN THE 5.3 GHz BAND

8.1.1. 26 dB BANDWIDTH

LIMITS

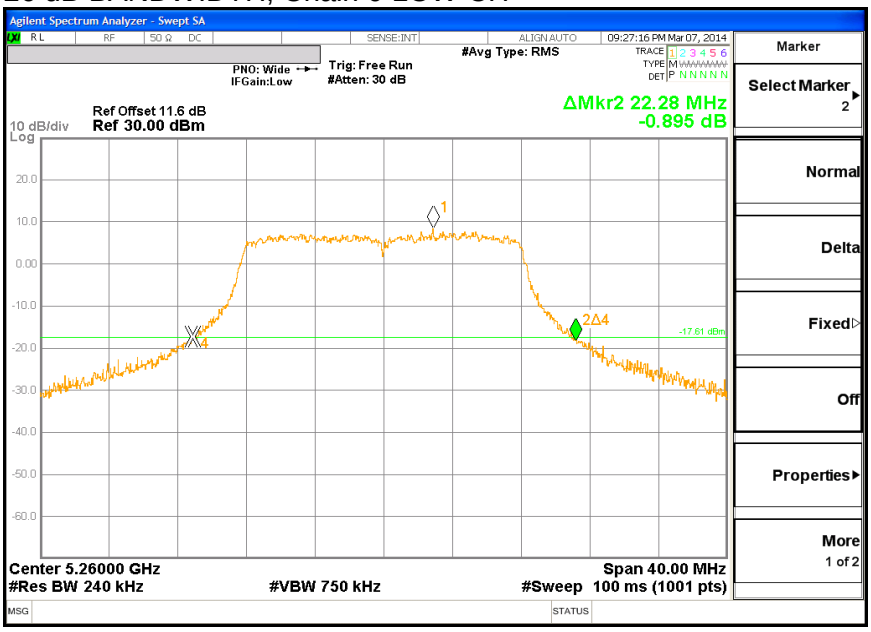
None; for reporting purposes only.

RESULTS

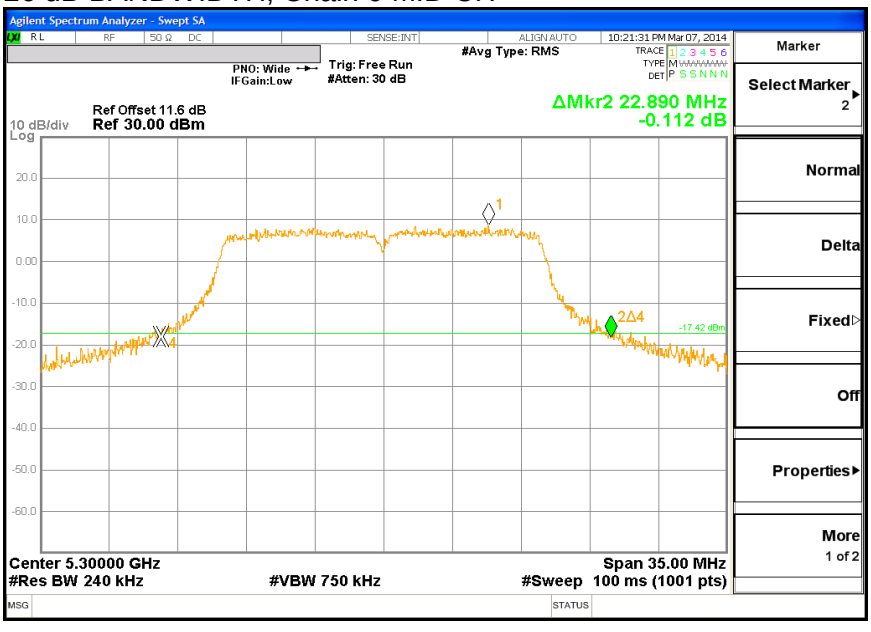
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5260	22.280	22.360
Mid	5300	22.890	22.295
High	5320	22.750	21.870

26 dB BANDWIDTH, Chain 0

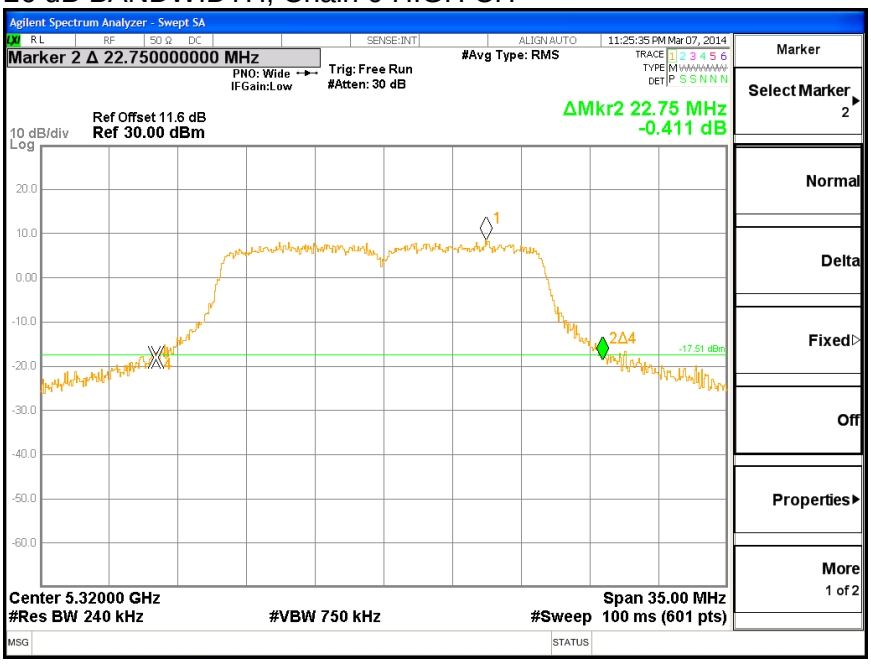
26 dB BANDWIDTH, Chain 0 LOW CH



26 dB BANDWIDTH, Chain 0 MID CH

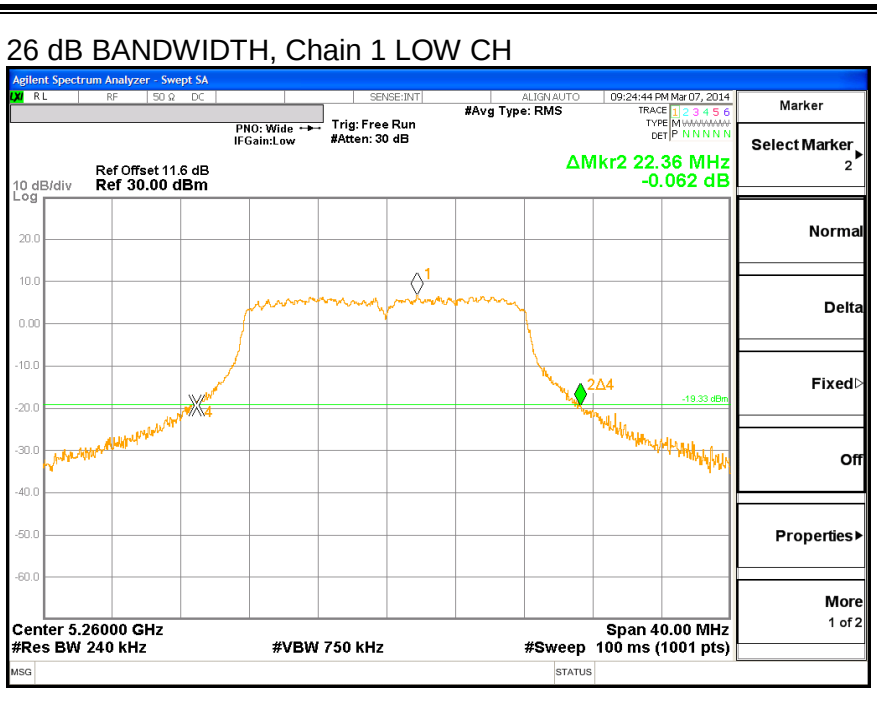


26 dB BANDWIDTH, Chain 0 HIGH CH

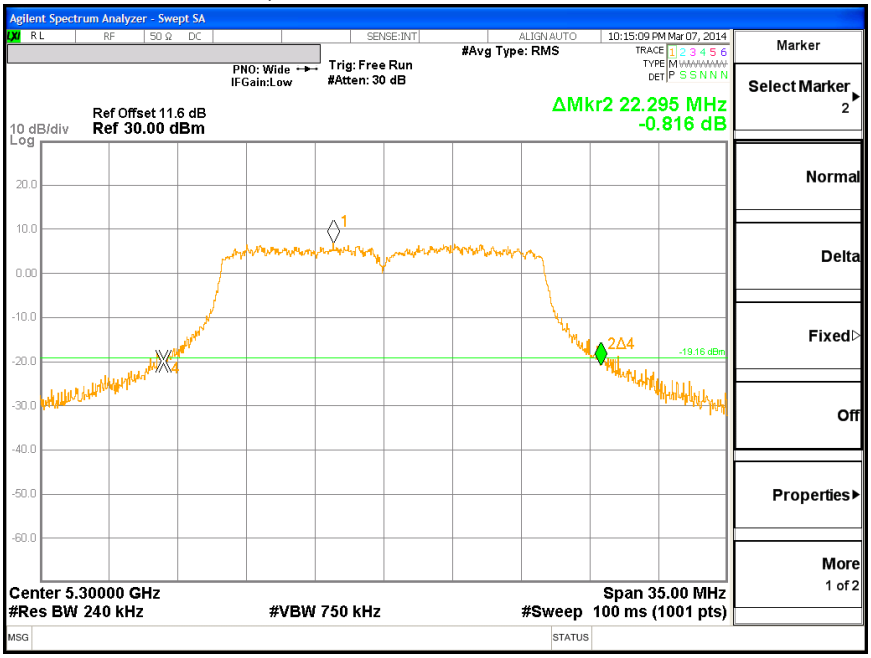


26 dB BANDWIDTH, Chain 1

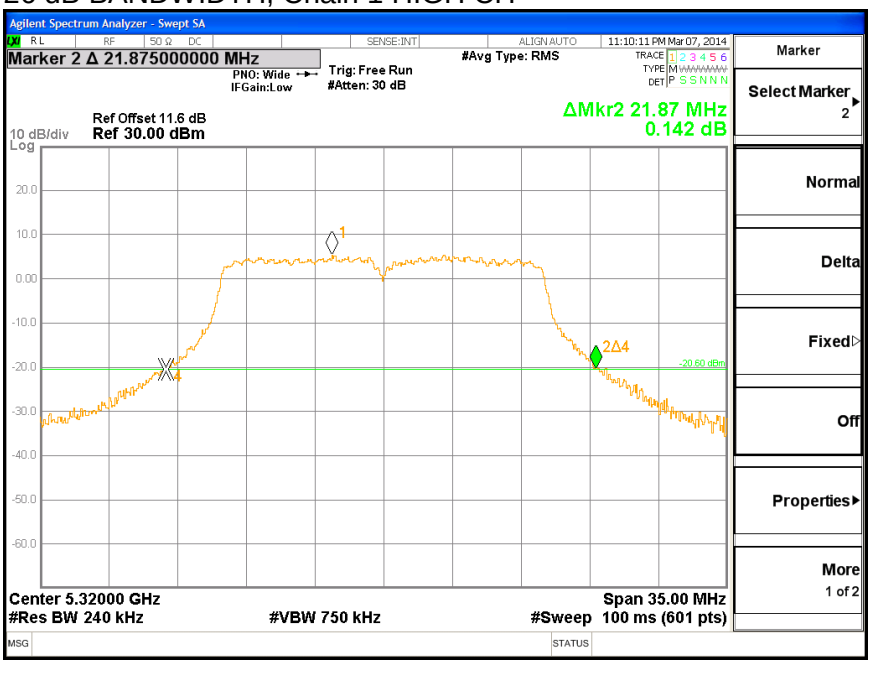
26 dB BANDWIDTH, Chain 1 LOW CH



26 dB BANDWIDTH, Chain 1 MID CH



26 dB BANDWIDTH, Chain 1 HIGH CH



8.1.2. 99% BANDWIDTH

LIMITS

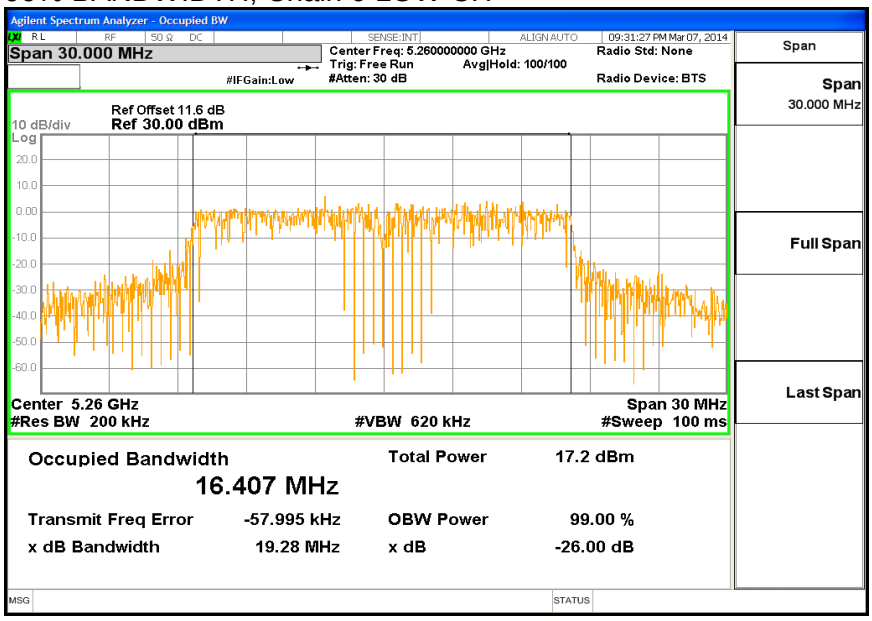
None; for reporting purposes only.

RESULTS

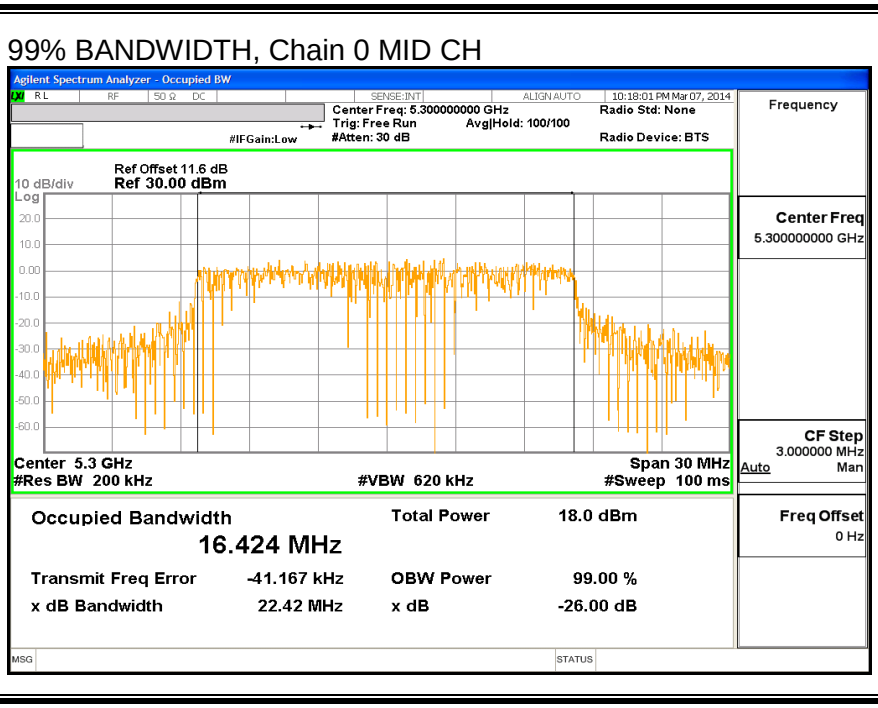
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5260	16.407	16.370
Mid	5300	16.424	16.458
High	5320	16.453	16.474

99% BANDWIDTH, Chain 0

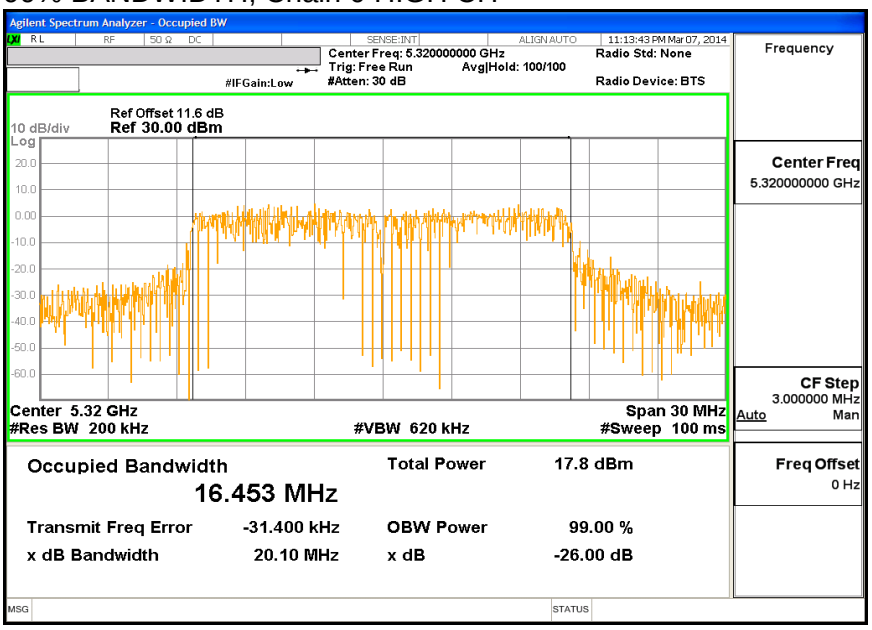
99% BANDWIDTH, Chain 0 LOW CH



99% BANDWIDTH, Chain 0 MID CH

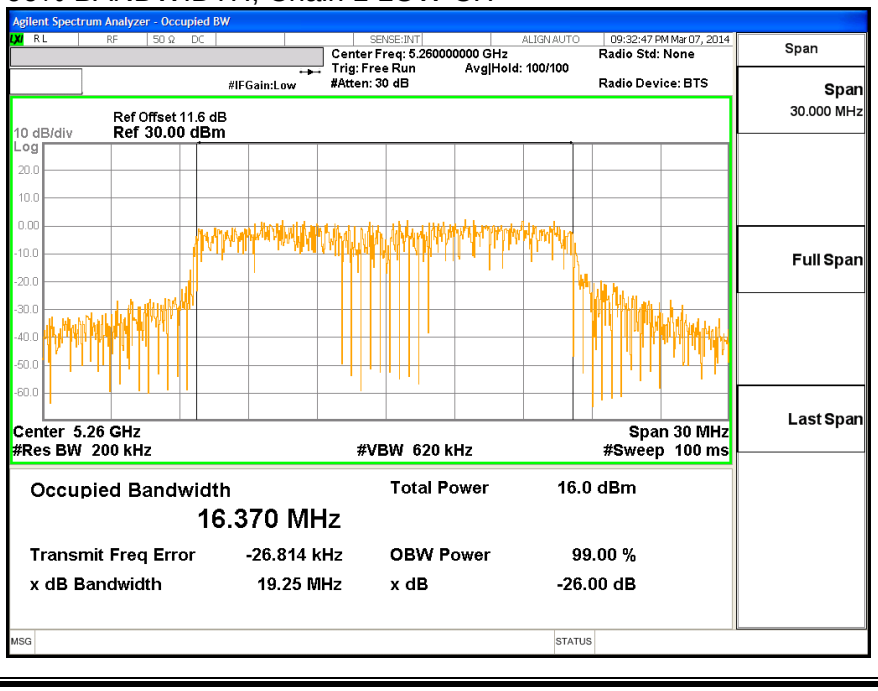


99% BANDWIDTH, Chain 0 HIGH CH

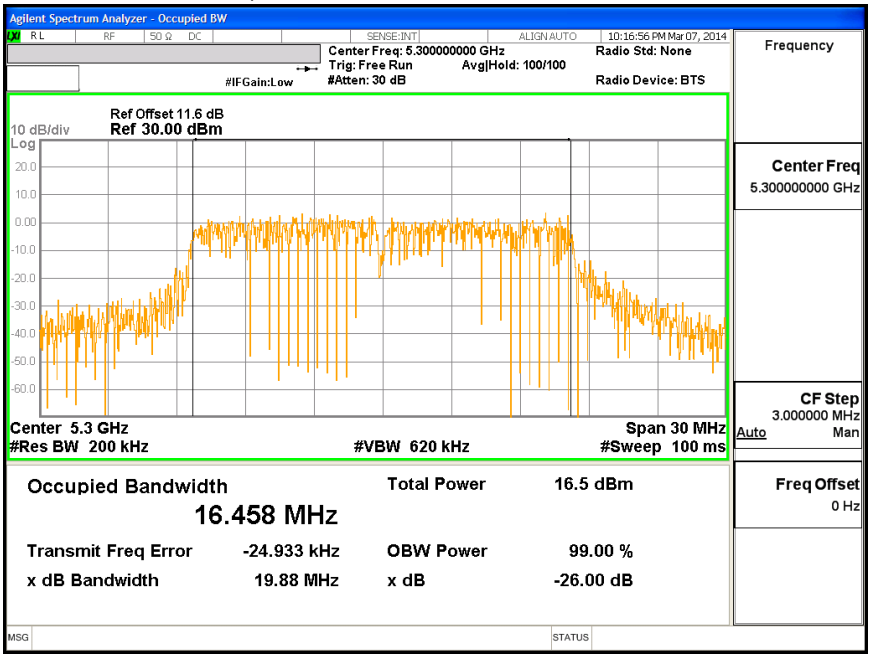


99% BANDWIDTH, Chain 1

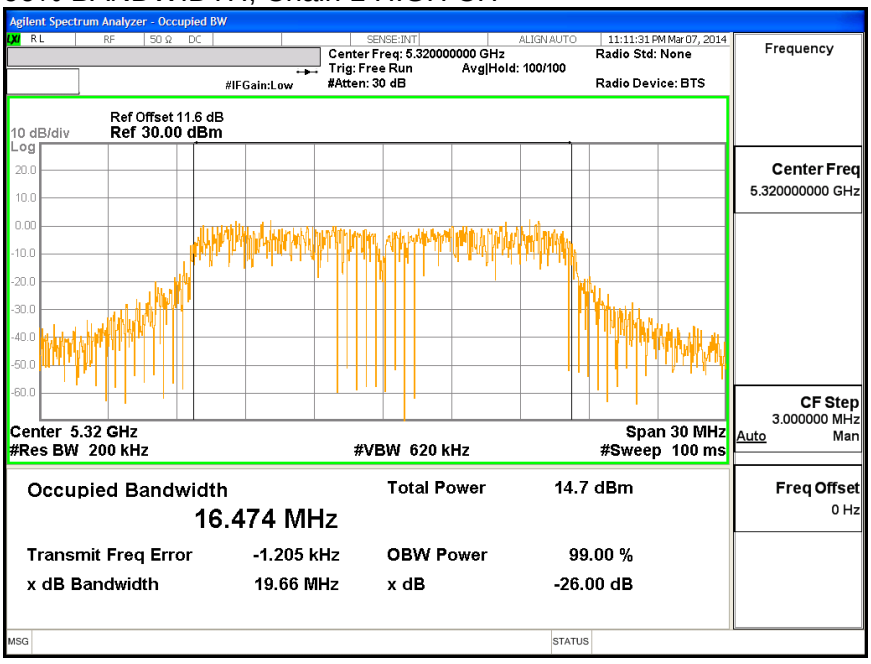
99% BANDWIDTH, Chain 1 LOW CH



99% BANDWIDTH, Chain 1 MID CH



99% BANDWIDTH, Chain 1 HIGH CH



8.1.3. OUTPUT POWER AND PPSD

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 peak 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.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
4.10	4.10	4.10

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
4.10	4.10	7.11

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5260	22.280	16.370	4.10	7.11
Mid	5300	22.295	16.424	4.10	7.11
High	5320	21.870	16.453	4.10	7.11

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5260	24.00	23.14	29.14	23.14	9.89	11.00	9.89
Mid	5300	24.00	23.15	29.15	23.15	9.89	11.00	9.89
High	5320	24.00	23.16	29.16	23.16	9.89	11.00	9.89

Duty Cycle CF (dB)	0.14	Included in Calculations of Corr'd Power & PPSD

Output Power Results

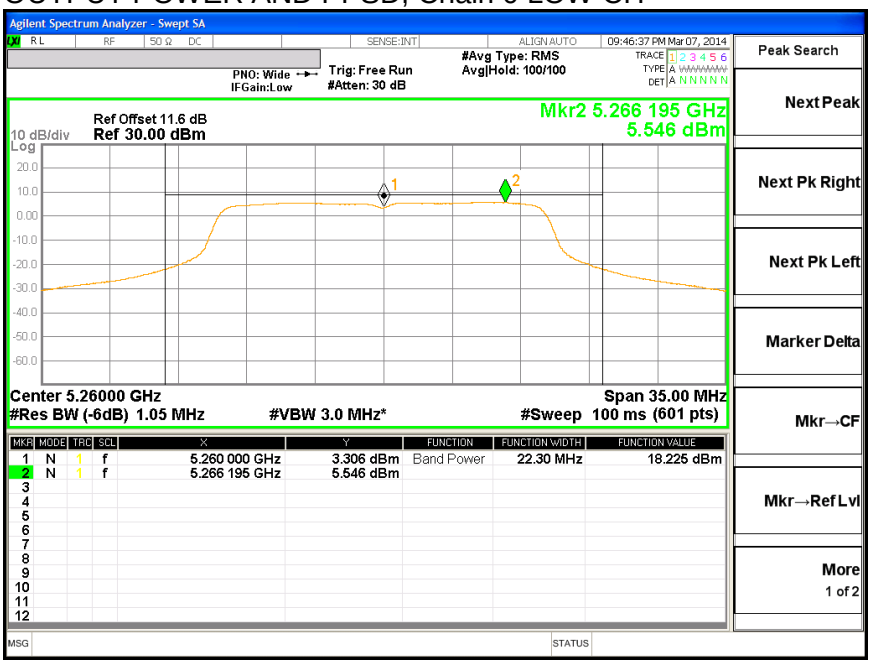
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	18.225	18.249	21.39	23.14	-1.75
Mid	5300	18.087	17.928	21.02	23.15	-2.14
High	5320	17.739	17.793	20.78	23.16	-2.39

PPSD Results

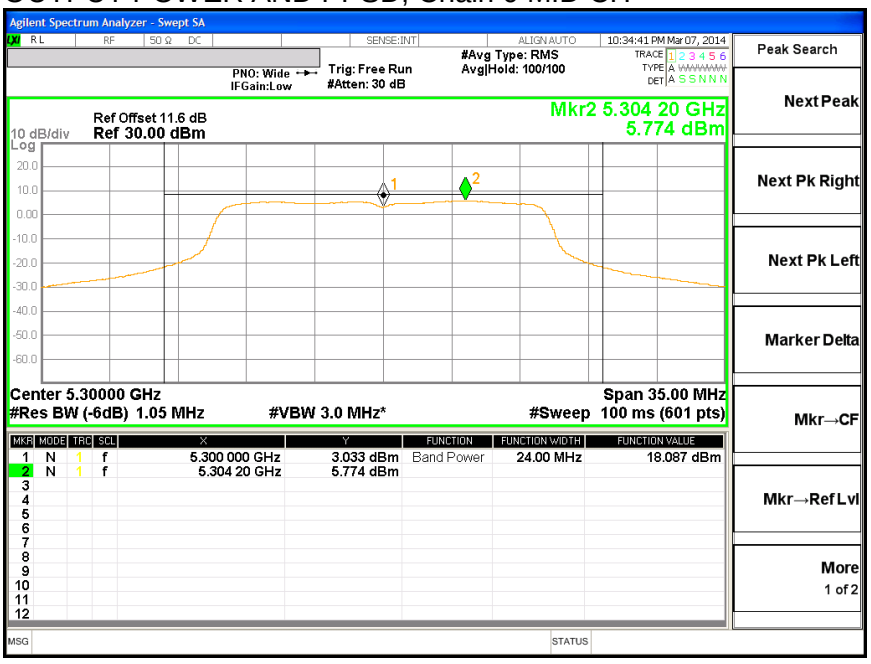
Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	5.546	5.787	8.82	9.89	-1.07
Mid	5300	5.774	5.528	8.80	9.89	-1.09
High	5320	4.998	5.056	8.18	9.89	-1.71

OUTPUT POWER AND PPSD, Chain 0

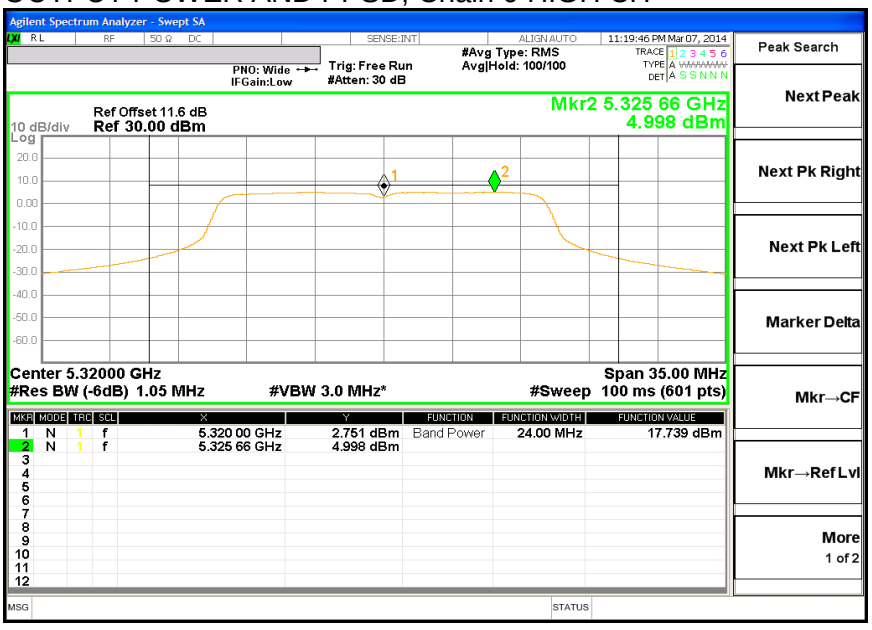
OUTPUT POWER AND PPSD, Chain 0 LOW CH



OUTPUT POWER AND PPSD, Chain 0 MID CH

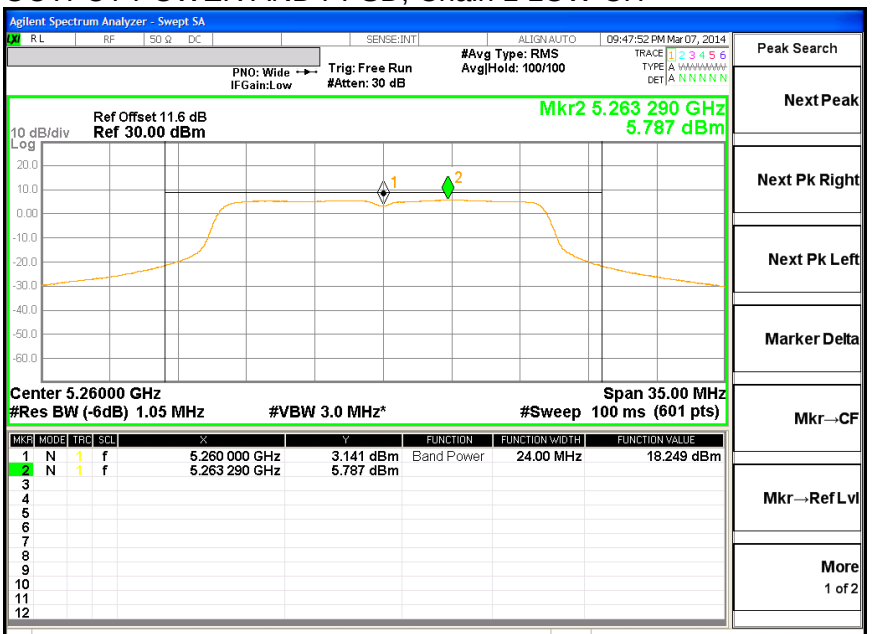


OUTPUT POWER AND PPSD, Chain 0 HIGH CH

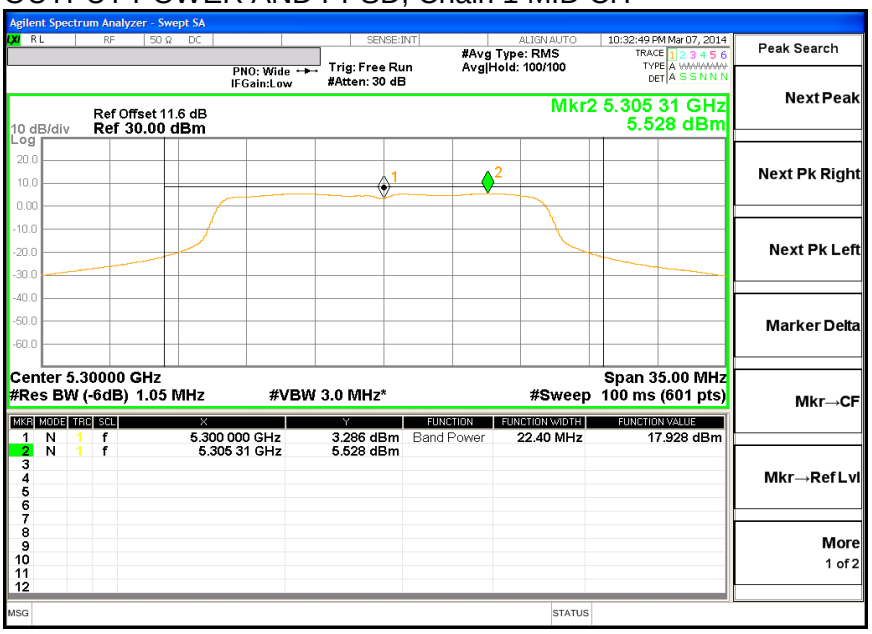


OUTPUT POWER AND PPSD, Chain 1

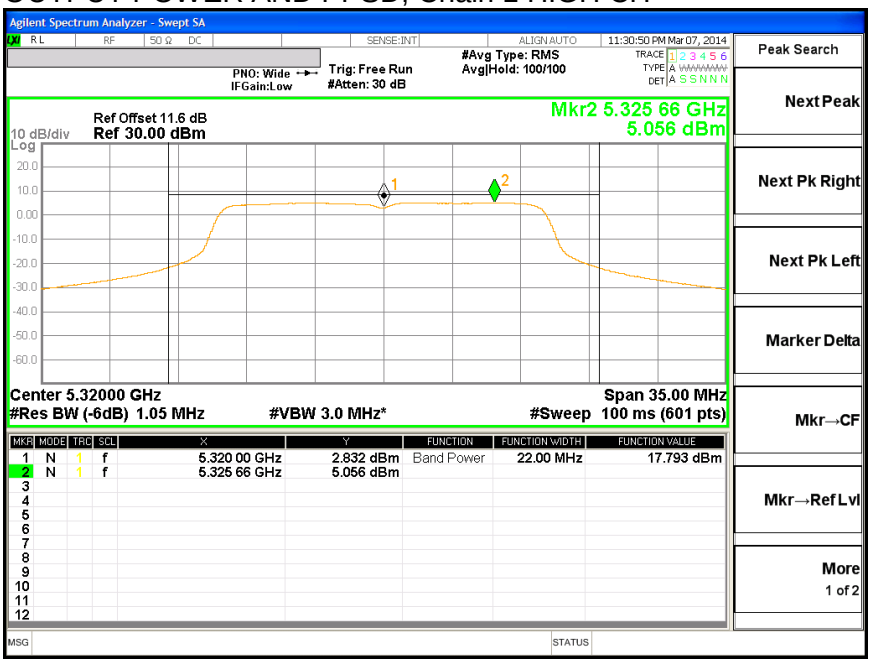
OUTPUT POWER AND PPSD, Chain 1 LOW CH



OUTPUT POWER AND PPSD, Chain 1 MID CH



OUTPUT POWER AND PPSD, Chain 1 HIGH CH



8.2. 802.11n HT20 STBC 2TX MODE IN THE 5.3 GHz BAND

8.2.1. 26 dB BANDWIDTH

LIMITS

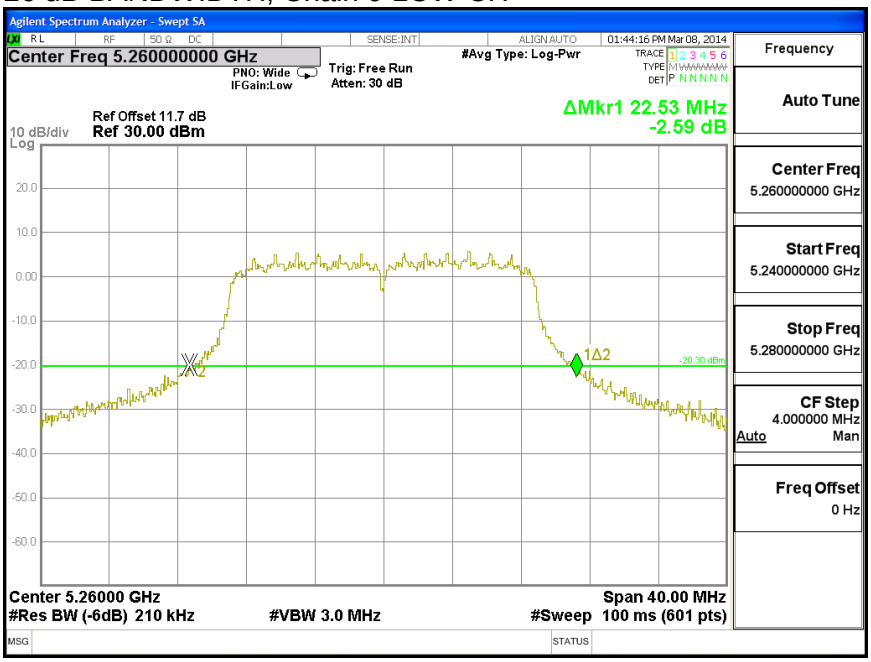
None; for reporting purposes only.

RESULTS

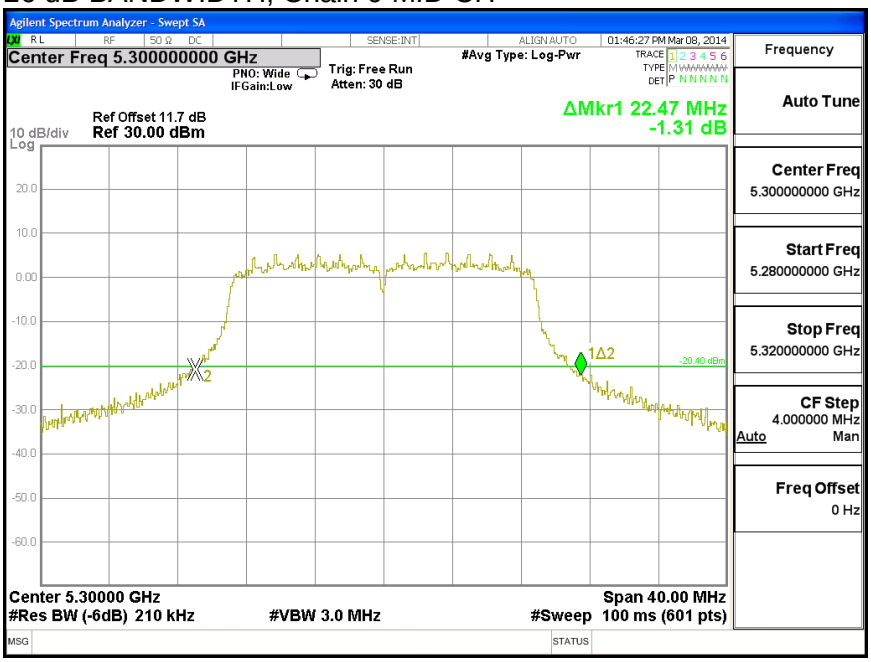
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5260	22.53	21.47
Mid	5300	22.47	21.40
High	5320	22.53	23.20

26 dB BANDWIDTH, Chain 0

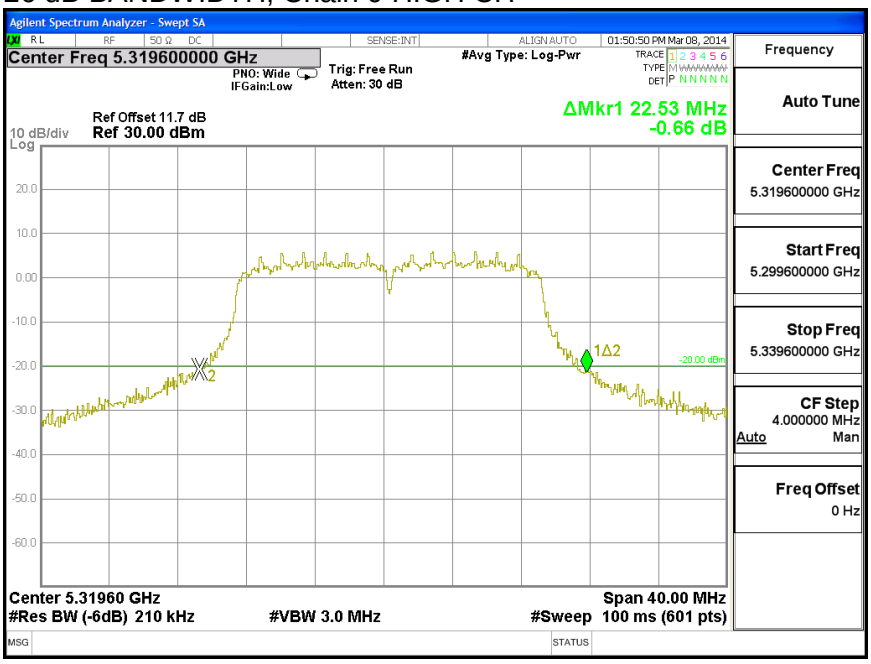
26 dB BANDWIDTH, Chain 0 LOW CH



26 dB BANDWIDTH, Chain 0 MID CH

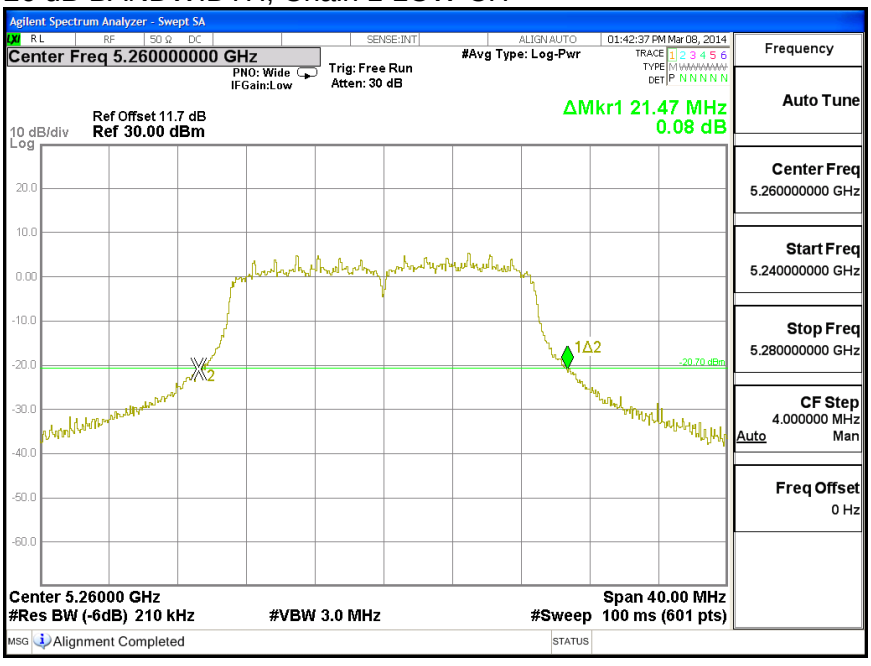


26 dB BANDWIDTH, Chain 0 HIGH CH

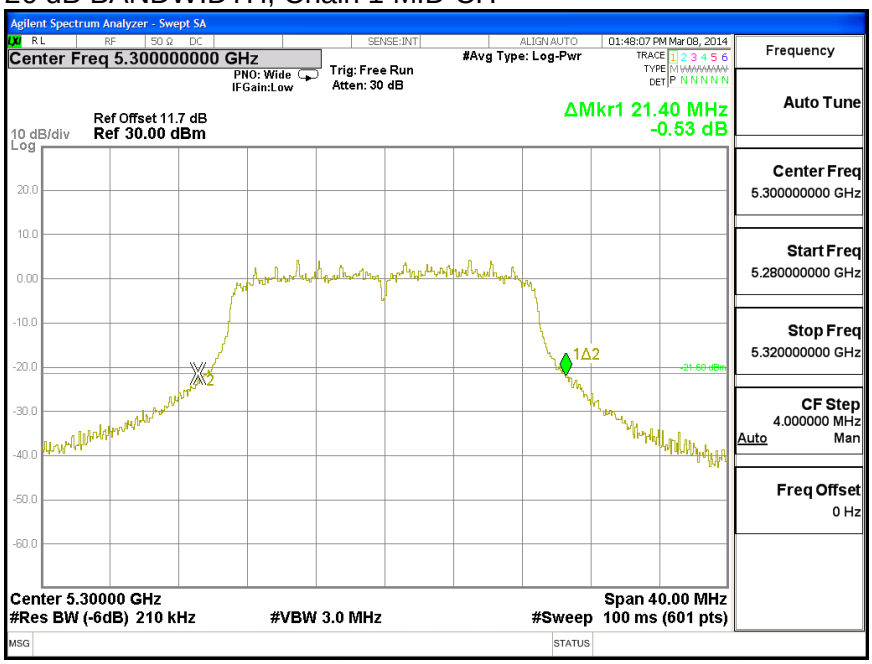


26 dB BANDWIDTH, Chain 1

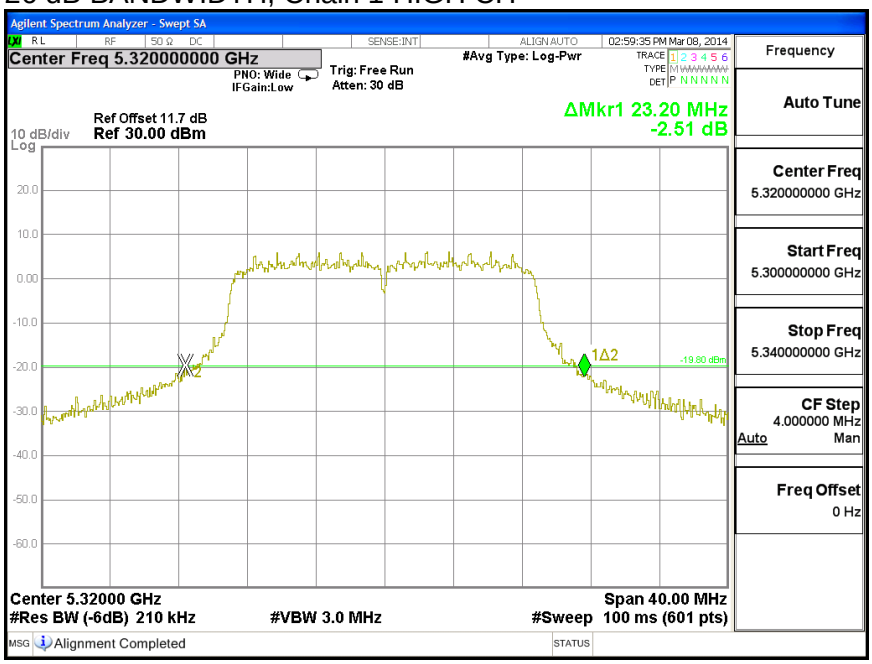
26 dB BANDWIDTH, Chain 1 LOW CH



26 dB BANDWIDTH, Chain 1 MID CH



26 dB BANDWIDTH, Chain 1 HIGH CH



8.2.2. 99% BANDWIDTH

LIMITS

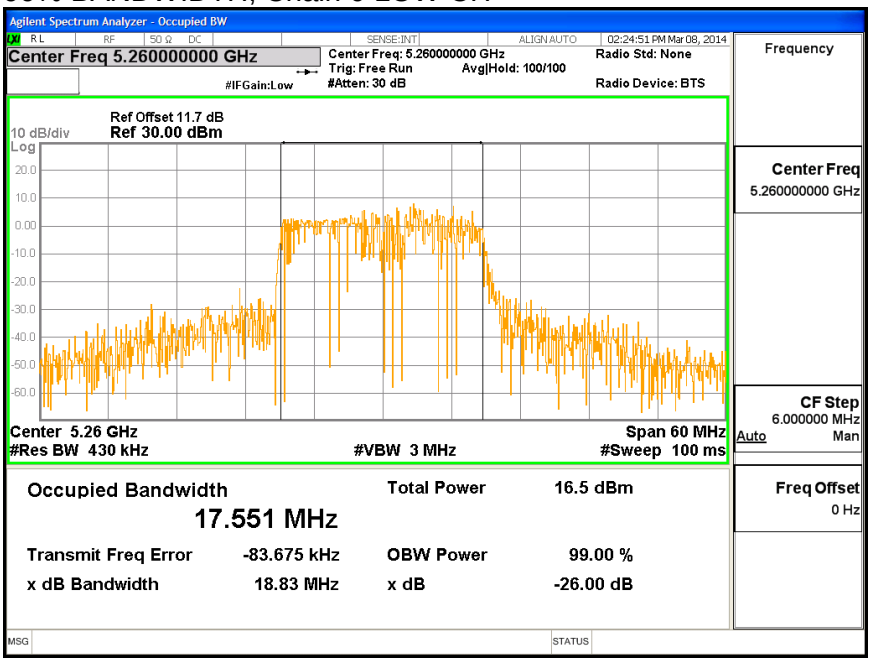
None; for reporting purposes only.

RESULTS

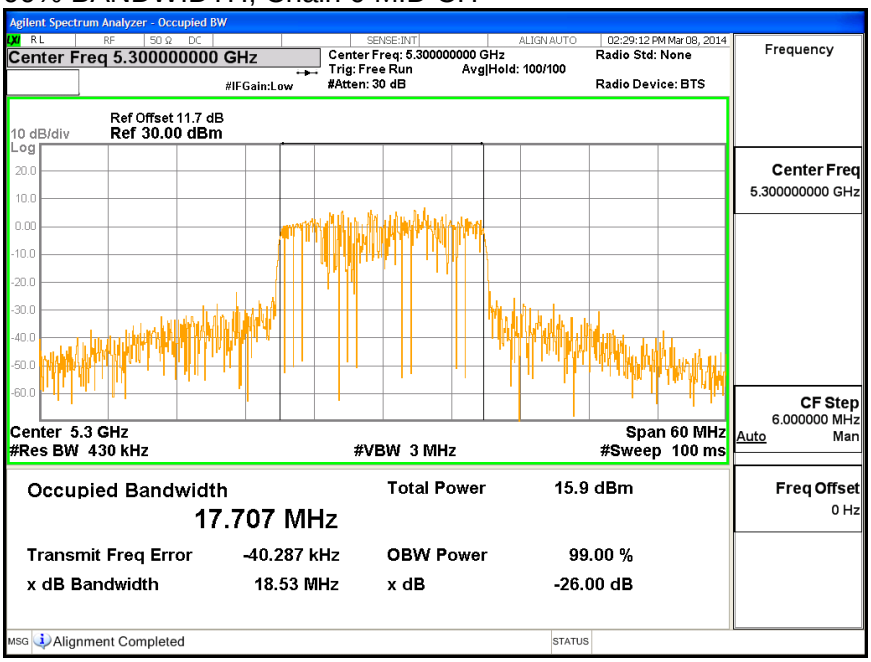
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5260	17.551	17.513
Mid	5300	17.707	17.674
High	5320	17.515	17.934

99% BANDWIDTH, Chain 0

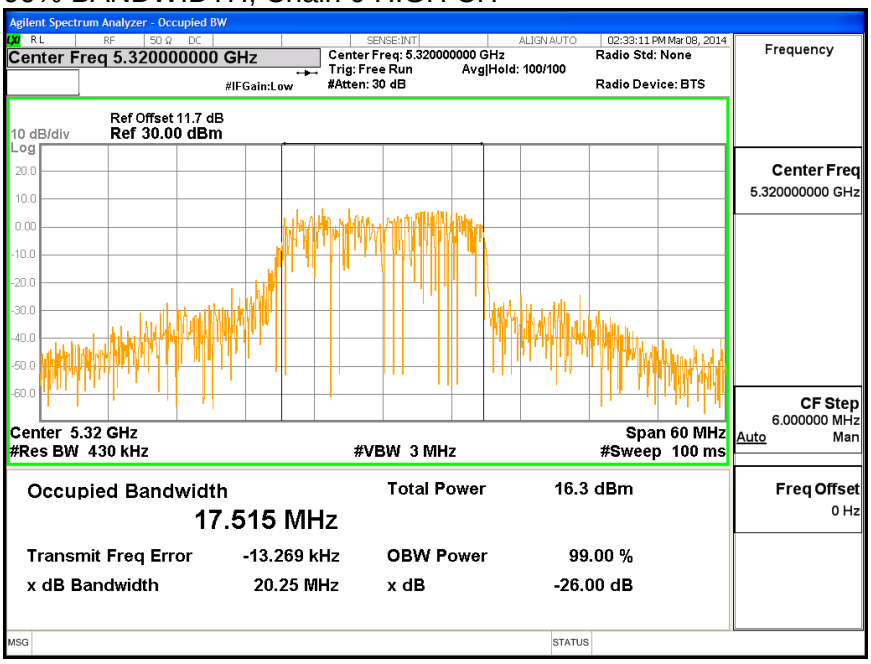
99% BANDWIDTH, Chain 0 LOW CH



99% BANDWIDTH, Chain 0 MID CH

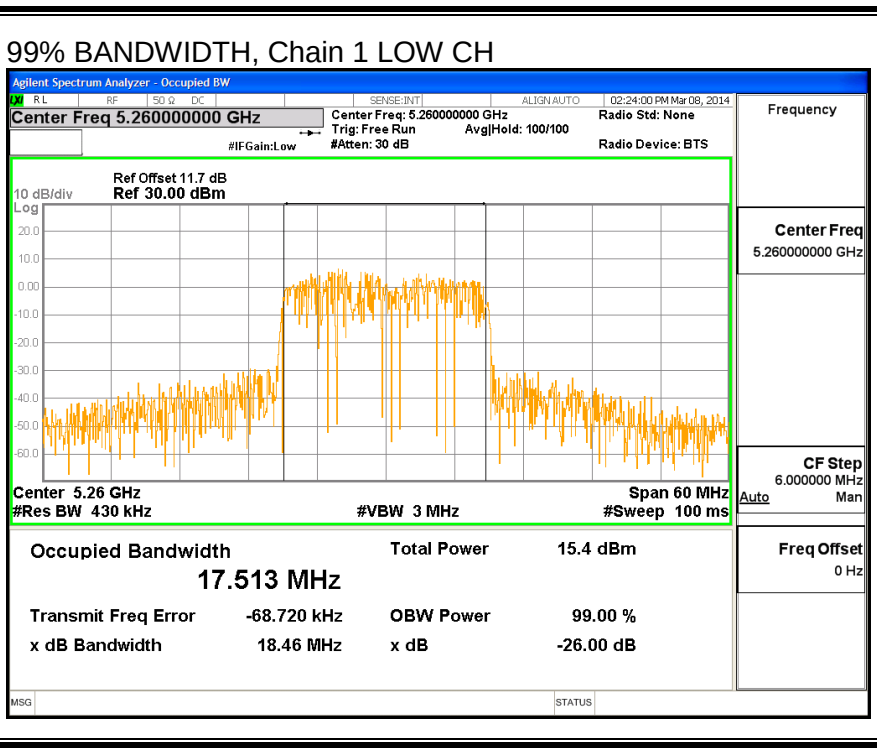


99% BANDWIDTH, Chain 0 HIGH CH

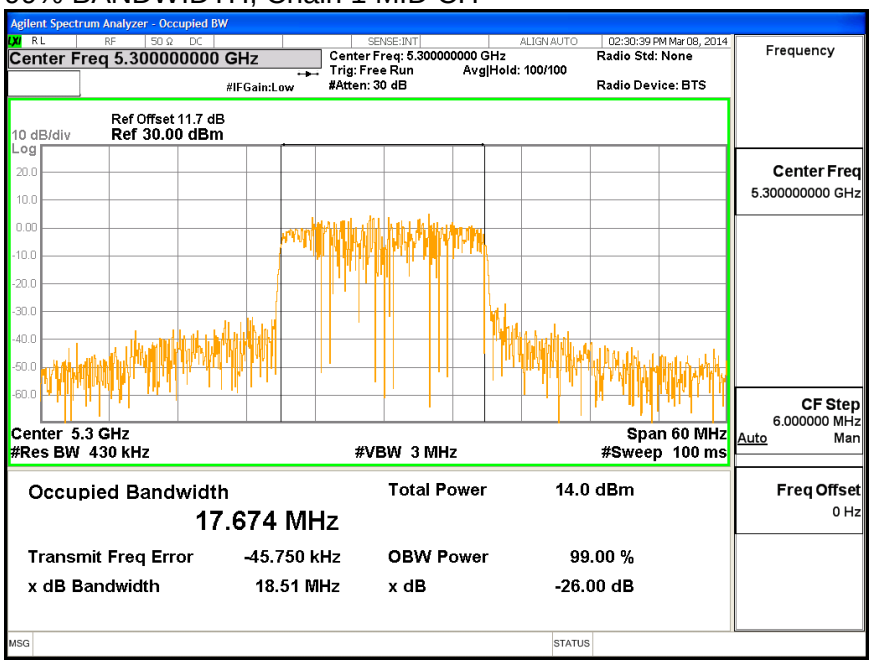


99% BANDWIDTH, Chain 1

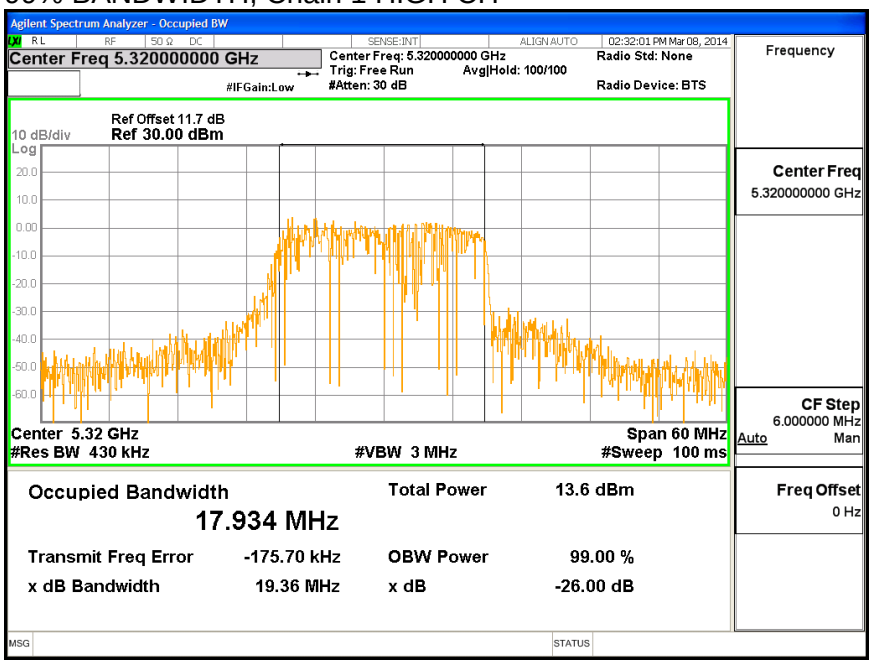
99% BANDWIDTH, Chain 1 LOW CH



99% BANDWIDTH, Chain 1 MID CH



99% BANDWIDTH, Chain 1 HIGH CH



8.2.3. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

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 peak 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.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is 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)
4.10	4.10	4.10

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5260	21.47	17.513	4.10
Mid	5300	21.40	17.674	4.10
High	5320	22.53	17.515	4.10

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5260	24.00	23.43	29.43	23.43	11.00	11.00	11.00
Mid	5300	24.00	23.47	29.47	23.47	11.00	11.00	11.00
High	5320	24.00	23.43	29.43	23.43	11.00	11.00	11.00

Duty Cycle CF (dB)	0.17	Included in Calculations of Corr'd Power & PPSD

Output Power Results

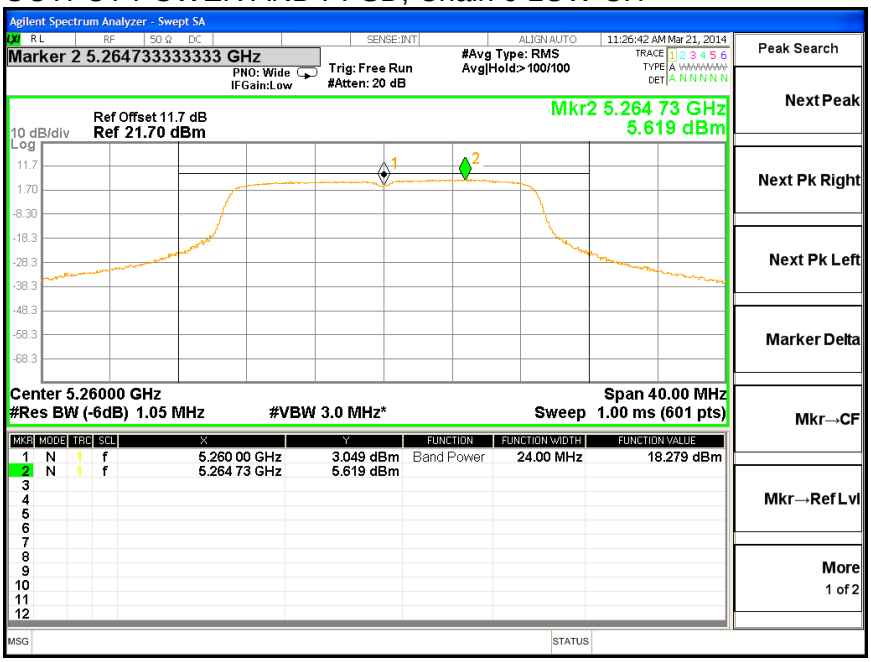
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	18.279	18.609	21.627	23.43	-1.806
Mid	5300	19.465	19.053	22.444	23.47	-1.029
High	5320	19.043	18.065	21.762	23.43	-1.672

PPSD Results

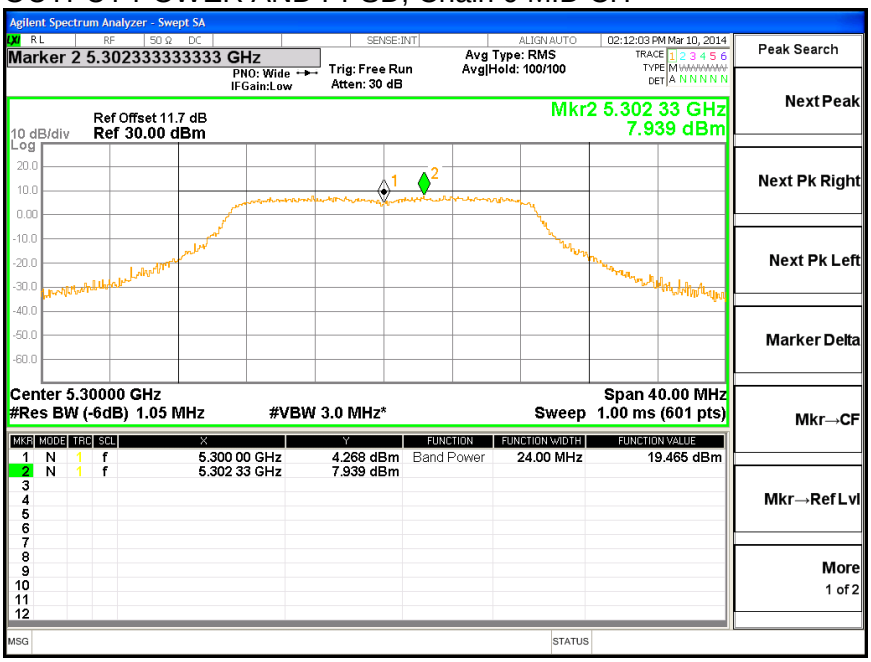
Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	5.619	5.835	8.909	11.00	-2.091
Mid	5300	7.939	6.577	10.491	11.00	-0.509
High	5320	6.413	5.788	9.292	11.00	-1.708

OUTPUT POWER AND PPSD, Chain 0

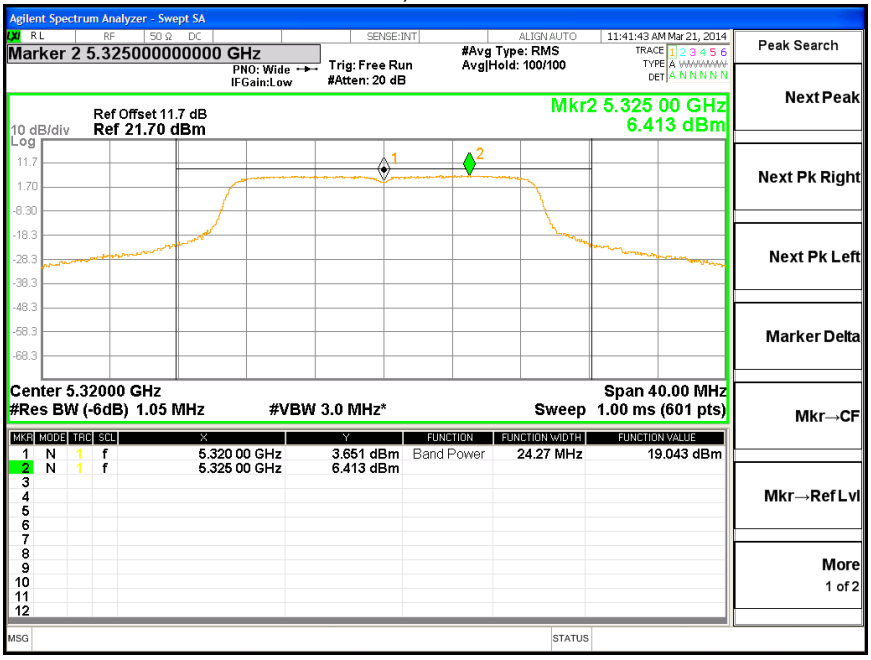
OUTPUT POWER AND PPSD, Chain 0 LOW CH



OUTPUT POWER AND PPSD, Chain 0 MID CH

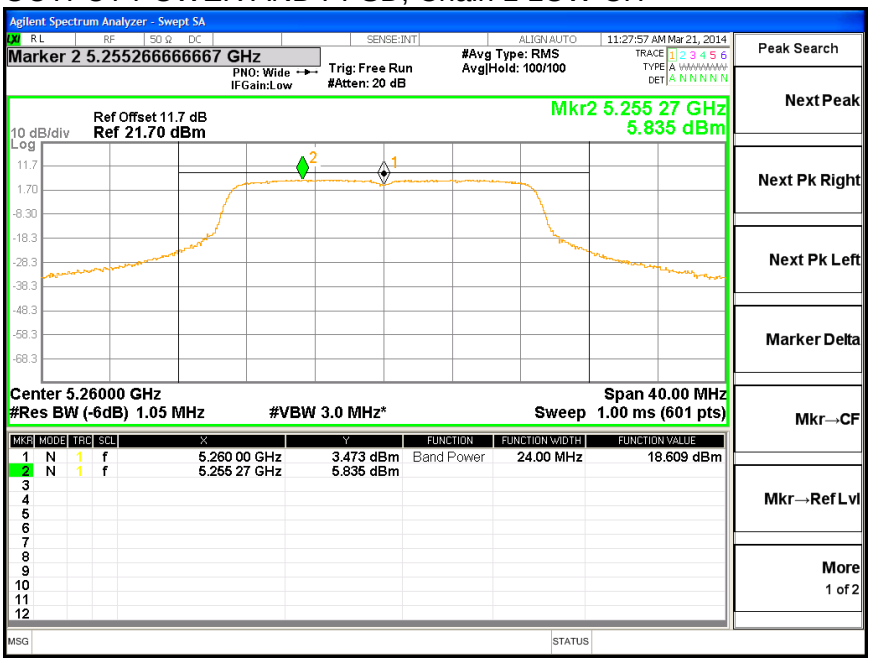


OUTPUT POWER AND PPSD, Chain 0 HIGH CH

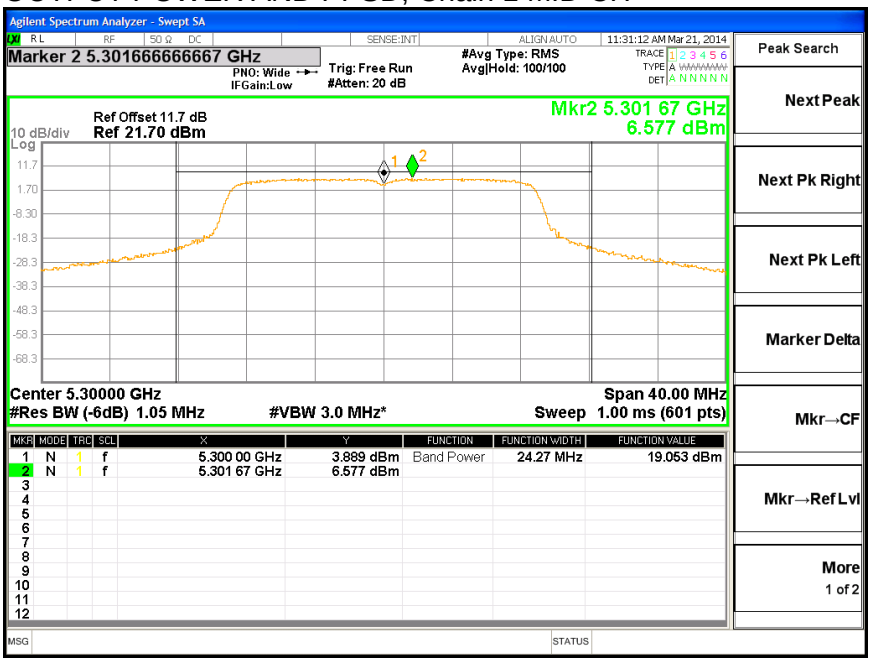


OUTPUT POWER AND PPSD, Chain 1

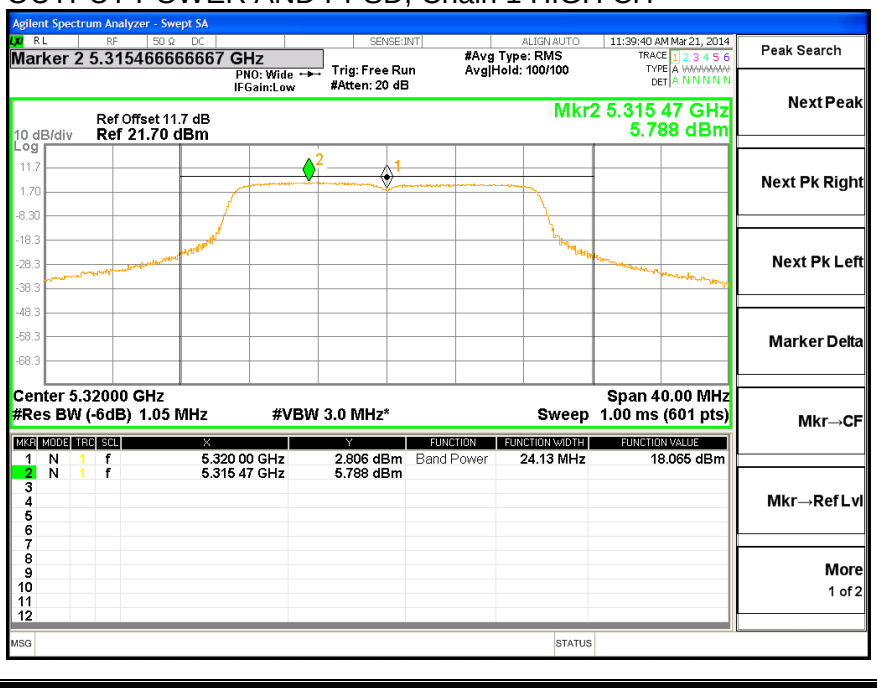
OUTPUT POWER AND PPSD, Chain 1 LOW CH



OUTPUT POWER AND PPSD, Chain 1 MID CH



OUTPUT POWER AND PPSD, Chain 1 HIGH CH



8.3. 802.11n HT40 STBC 2TX MODE IN THE 5.3 GHz BAND

8.3.1. 26 dB BANDWIDTH

LIMITS

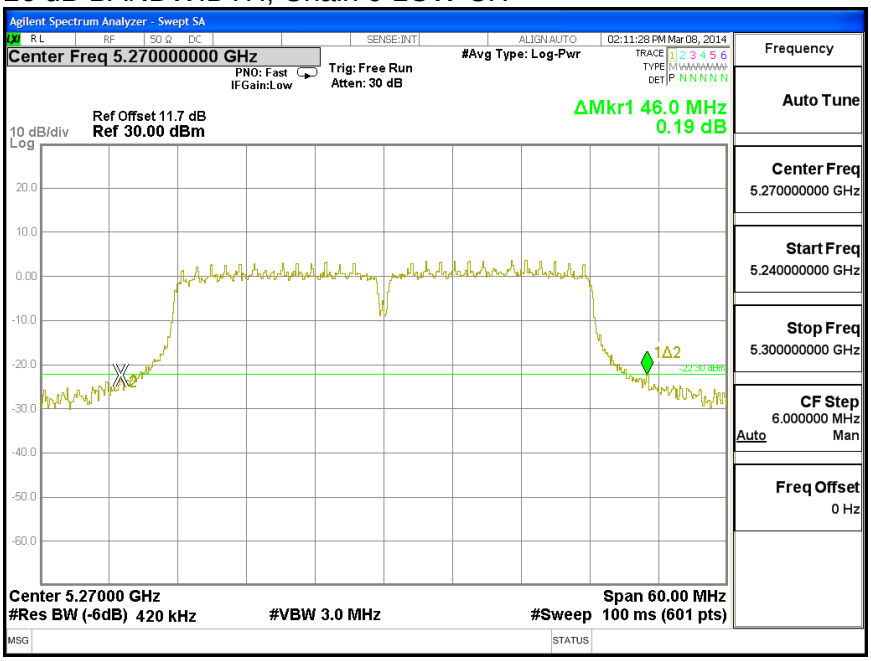
None; for reporting purposes only.

RESULTS

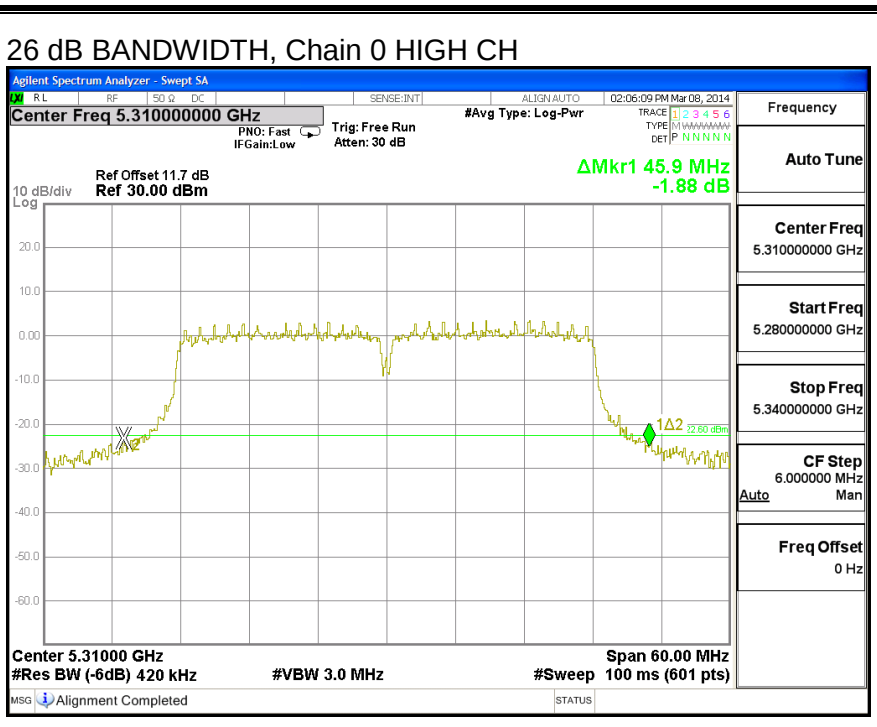
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5270	46.00	42.80
High	5310	45.90	41.60

26 dB BANDWIDTH, Chain 0

26 dB BANDWIDTH, Chain 0 LOW CH

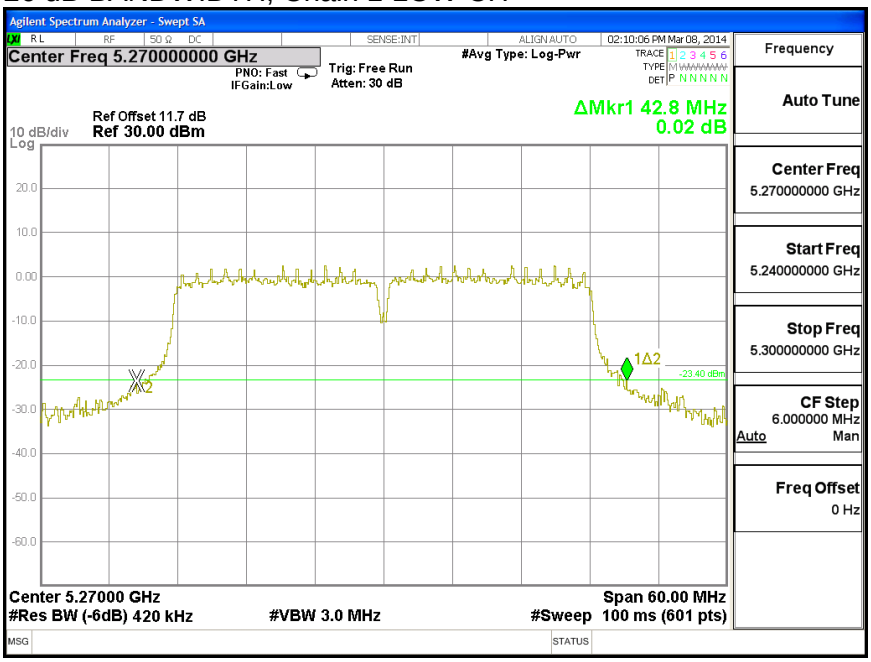


26 dB BANDWIDTH, Chain 0 HIGH CH

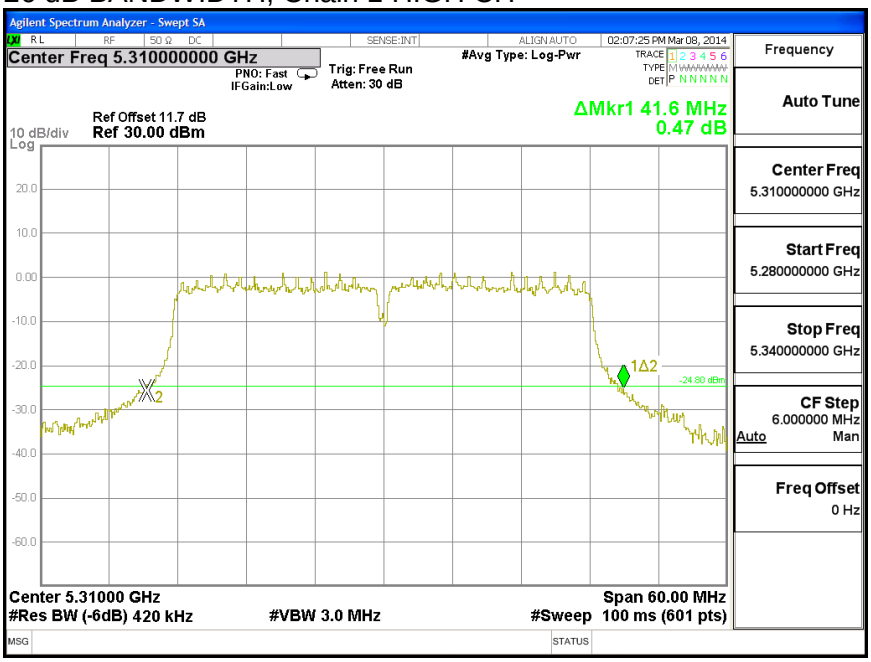


26 dB BANDWIDTH, Chain 1

26 dB BANDWIDTH, Chain 1 LOW CH



26 dB BANDWIDTH, Chain 1 HIGH CH



8.3.2. 99% BANDWIDTH

LIMITS

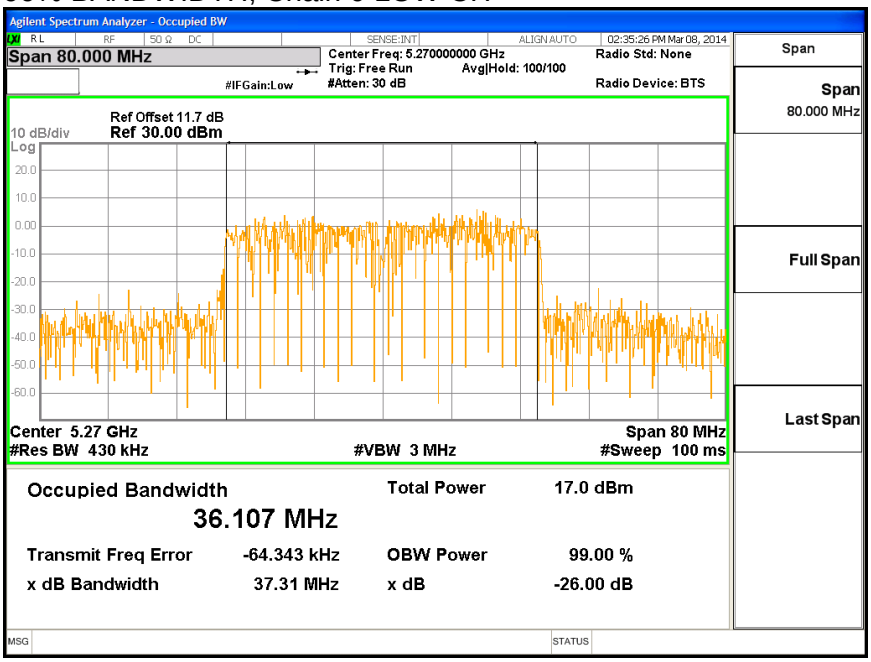
None; for reporting purposes only.

RESULTS

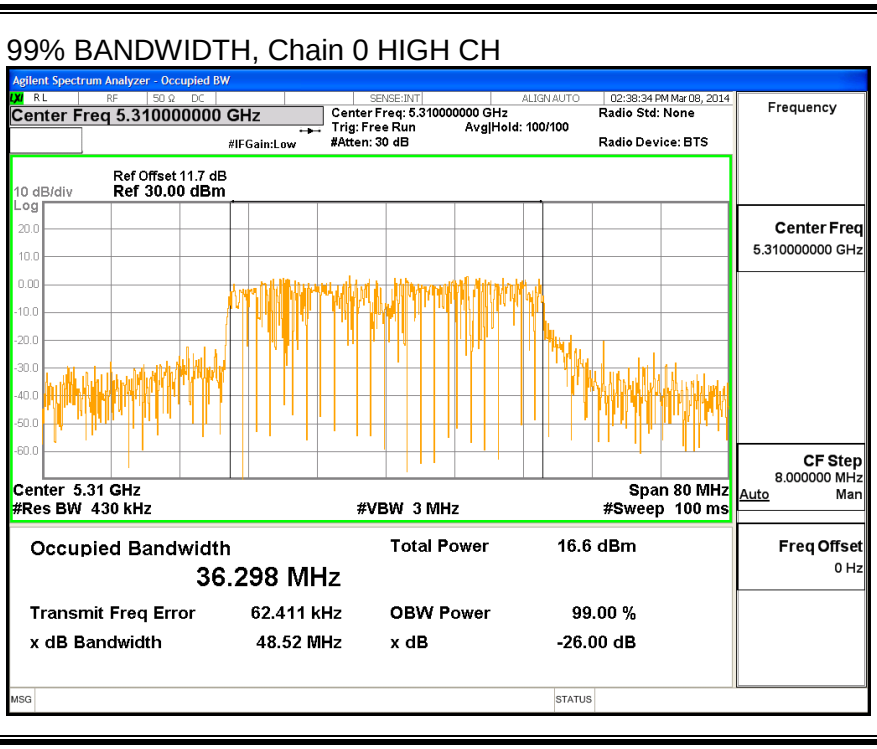
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5270	36.107	36.026
High	5310	36.298	35.871

99% BANDWIDTH, Chain 0

99% BANDWIDTH, Chain 0 LOW CH

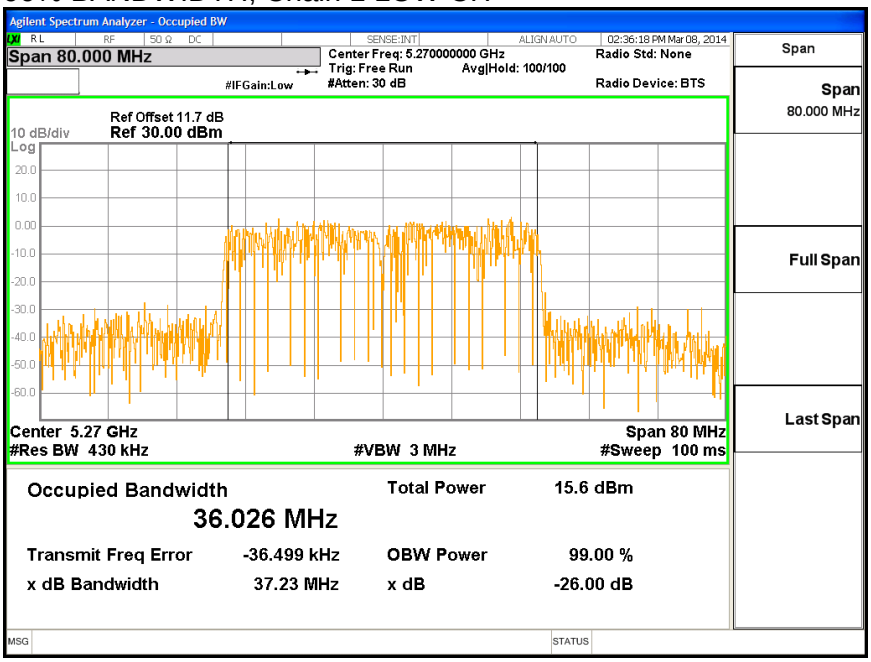


99% BANDWIDTH, Chain 0 HIGH CH

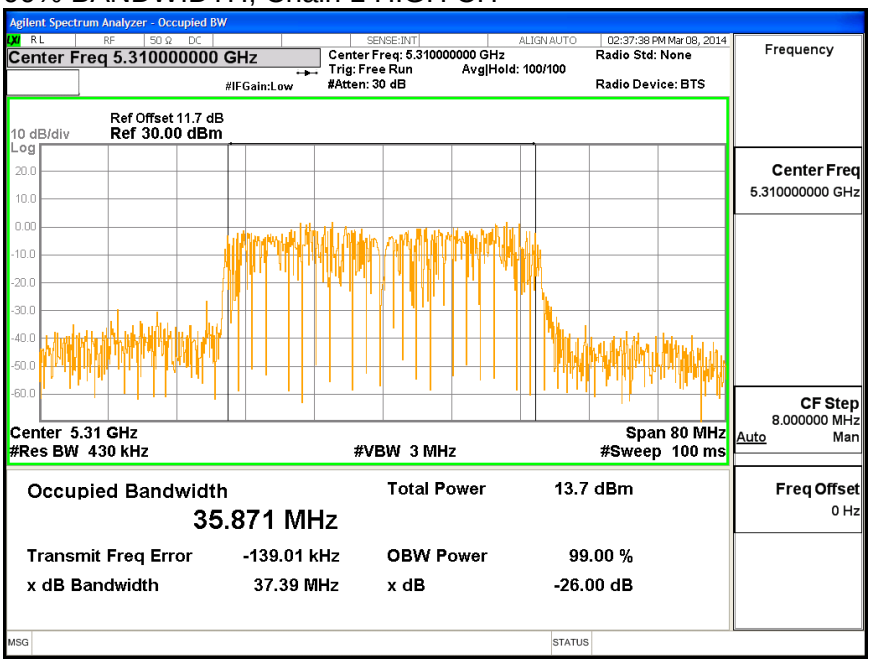


99% BANDWIDTH, Chain 1

99% BANDWIDTH, Chain 1 LOW CH



99% BANDWIDTH, Chain 1 HIGH CH



8.3.3. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

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 peak 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.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is 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)
4.10	4.10	4.10

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5270	42.8	36.026	4.10
High	5310	41.6	35.871	4.10

Limits

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

Duty Cycle CF (dB)	0.23	Included in Calculations of Corr'd Power & PPSD

Output Power Results

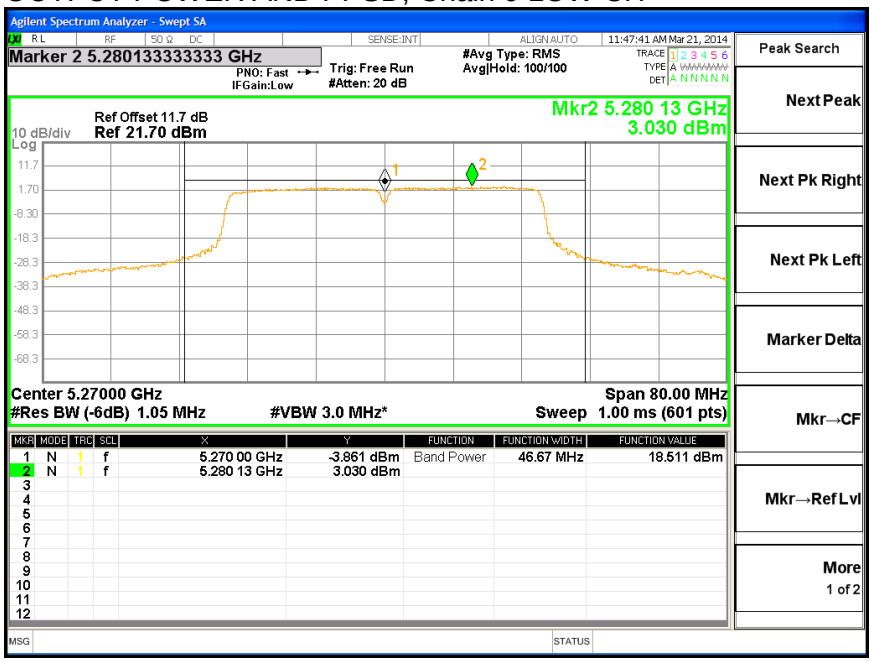
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	18.511	17.143	21.12	24.00	-2.879
High	5310	19.435	17.129	21.67	24.00	-2.326

PPSD Results

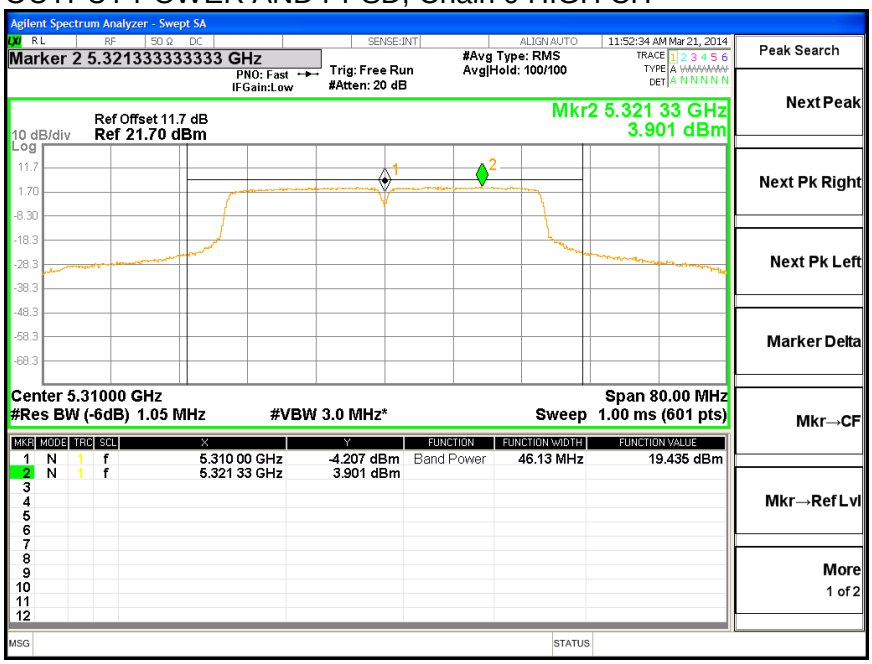
Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5270	3.030	1.726	5.67	11.00	-5.33
High	5310	3.901	1.726	6.19	11.00	-4.81

OUTPUT POWER AND PPSD, Chain 0

OUTPUT POWER AND PPSD, Chain 0 LOW CH

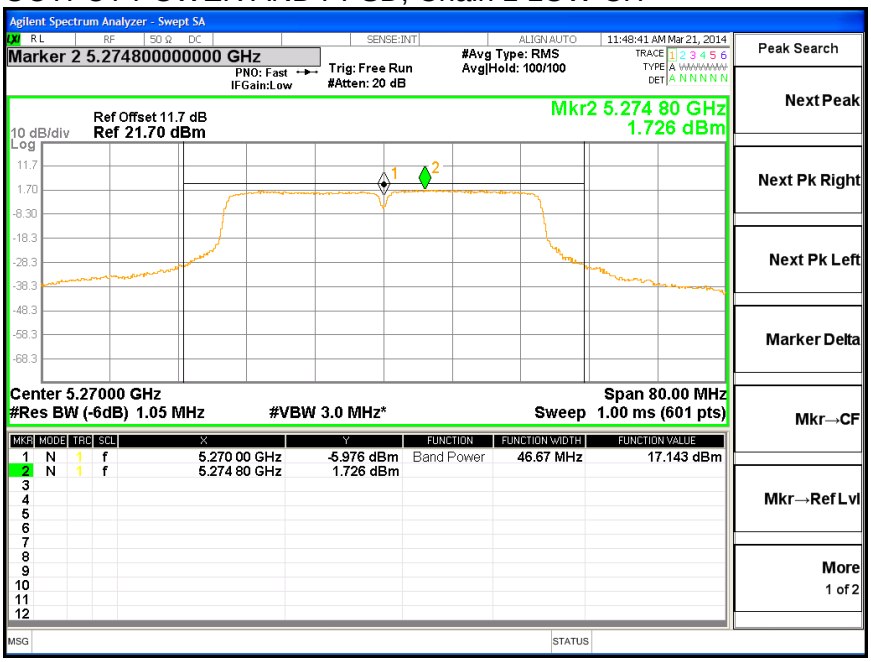


OUTPUT POWER AND PPSD, Chain 0 HIGH CH

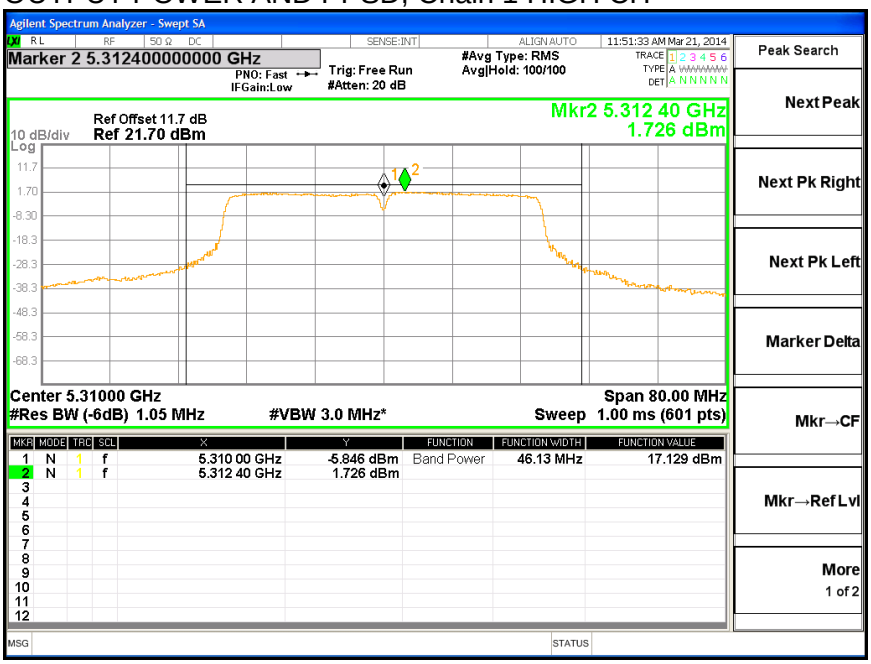


OUTPUT POWER AND PPSD, Chain 1

OUTPUT POWER AND PPSD, Chain 1 LOW CH



OUTPUT POWER AND PPSD, Chain 1 HIGH CH



8.4. 802.11a CDD 2TX MODE IN THE 5.6 GHz BAND

8.4.1. 26 dB BANDWIDTH

LIMITS

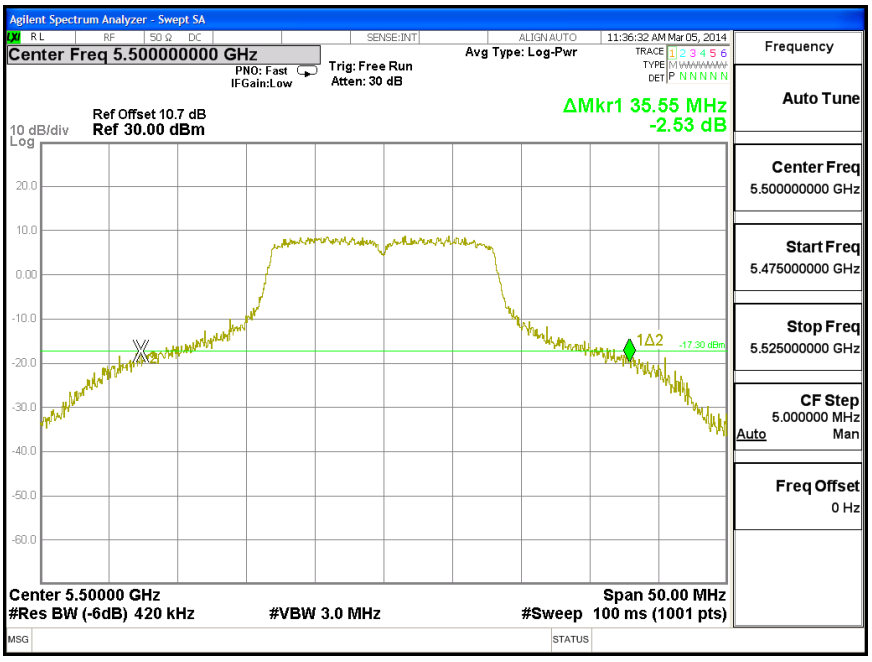
None; for reporting purposes only.

RESULTS

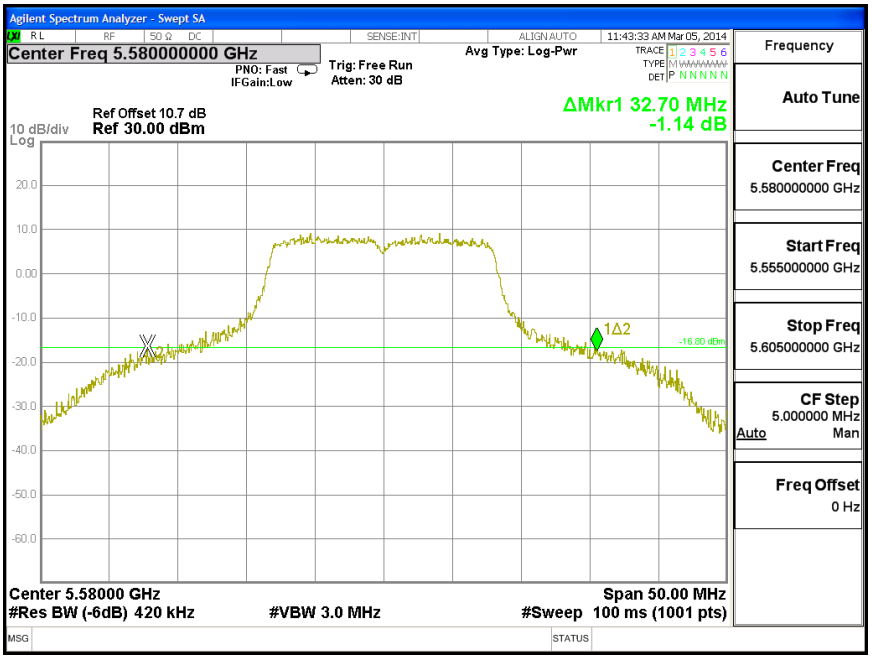
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5500	35.55	26.60
Mid	5580	32.70	24.65
High	5700	25.00	23.00

26 dB BANDWIDTH, Chain 0

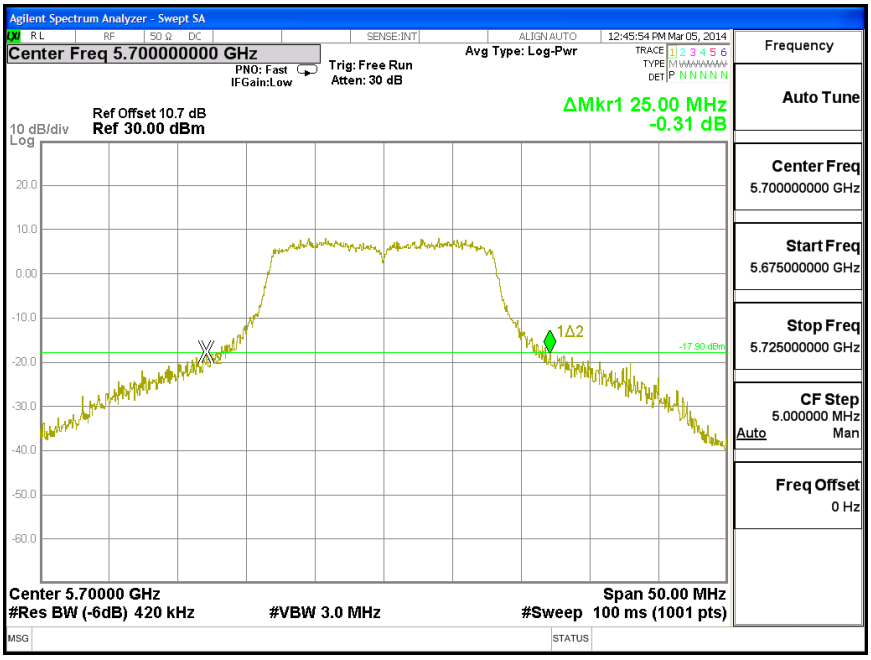
BANDWIDTH Chain 0 LOW CH



BANDWIDTH Chain 0 MID CH

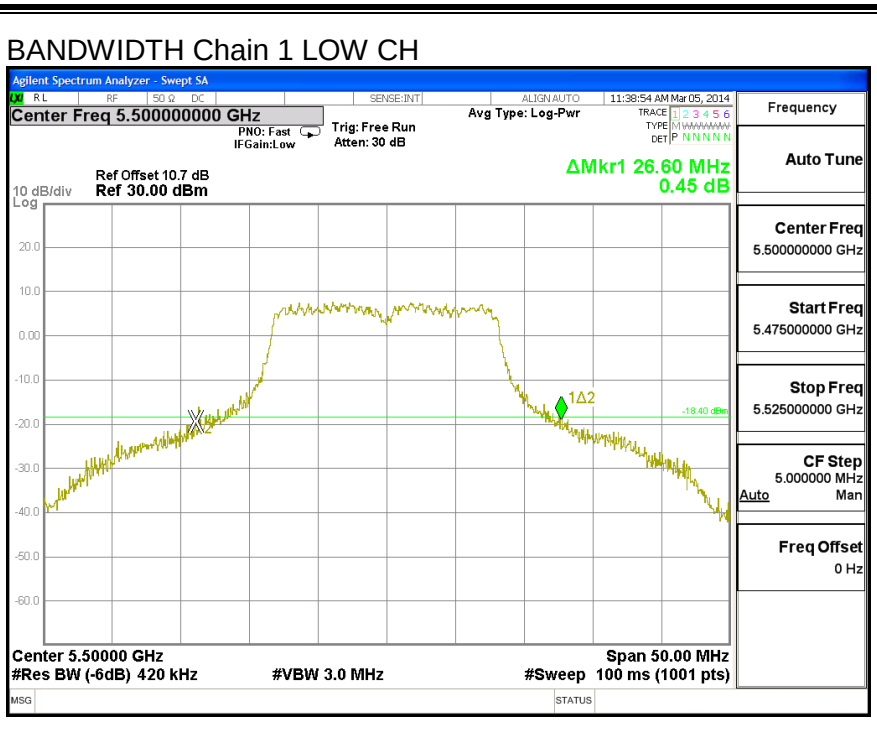


BANDWIDTH Chain 0 HIGH CH

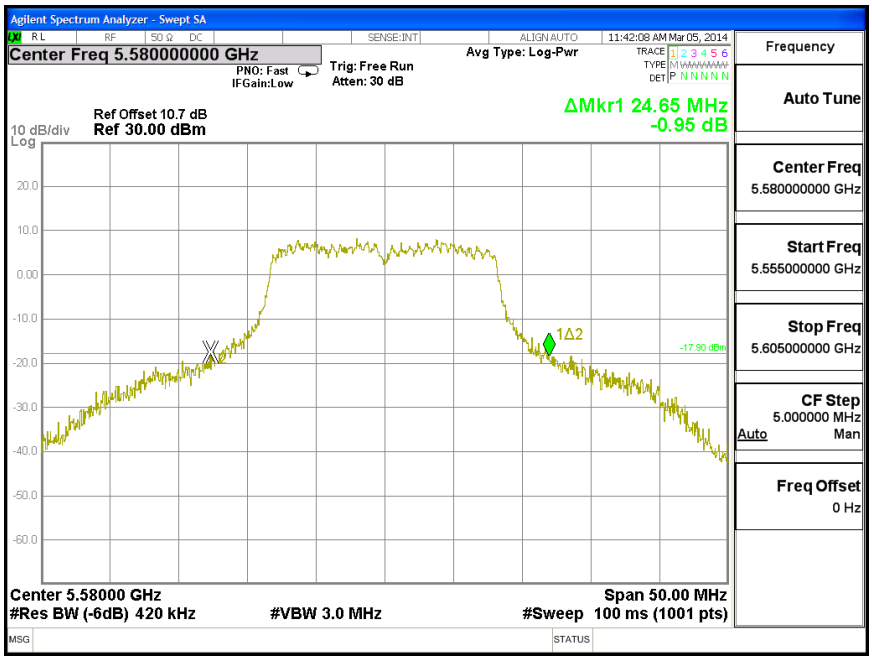


26 dB BANDWIDTH, Chain 1

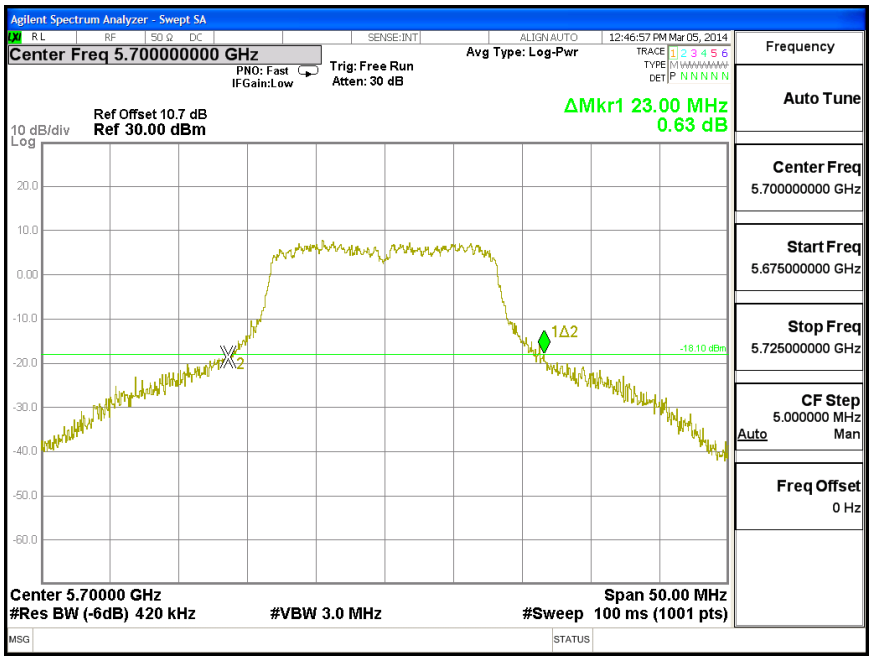
BANDWIDTH Chain 1 LOW CH



BANDWIDTH Chain 1 MID CH



BANDWIDTH Chain 1 HIGH CH



8.4.2. 99% BANDWIDTH

LIMITS

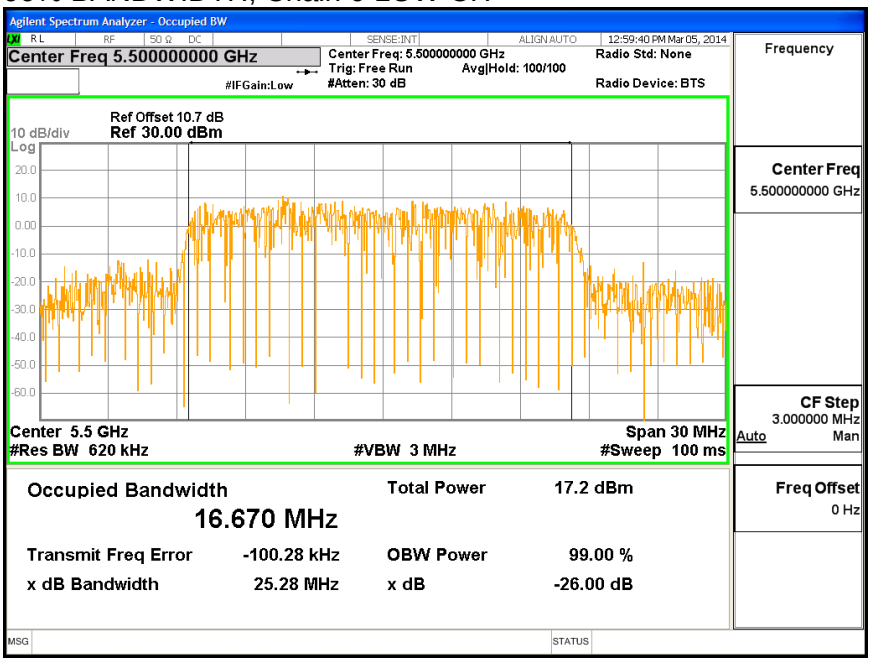
None; for reporting purposes only.

RESULTS

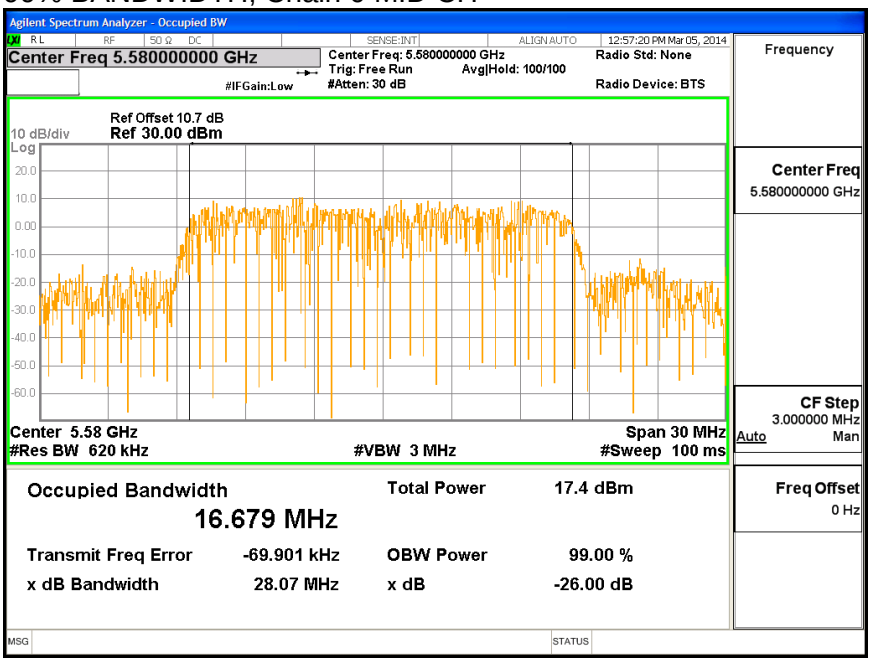
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5500	16.670	16.964
Mid	5580	16.679	16.653
High	5700	16.508	16.550

99% BANDWIDTH, Chain 0

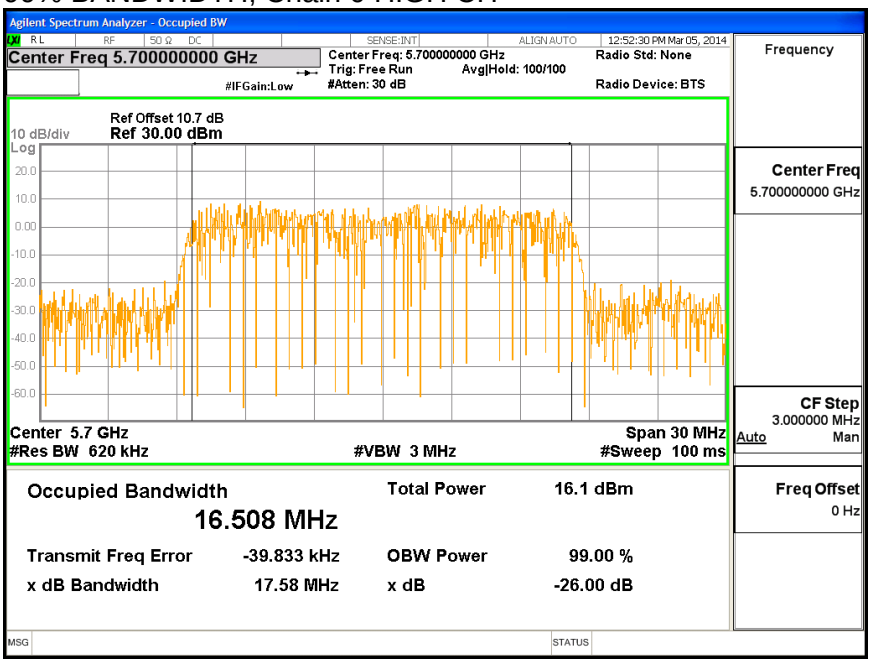
99% BANDWIDTH, Chain 0 LOW CH



99% BANDWIDTH, Chain 0 MID CH

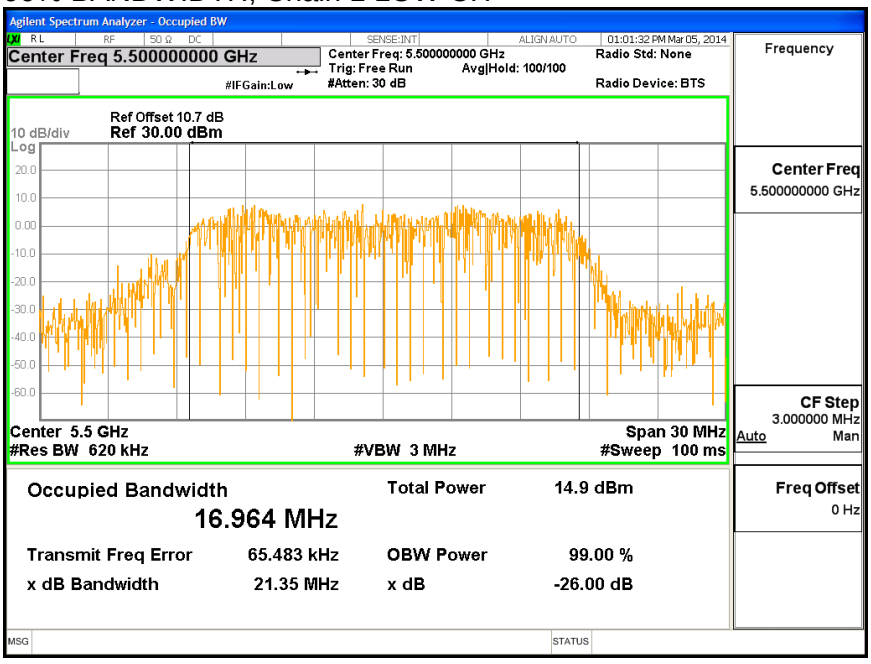


99% BANDWIDTH, Chain 0 HIGH CH

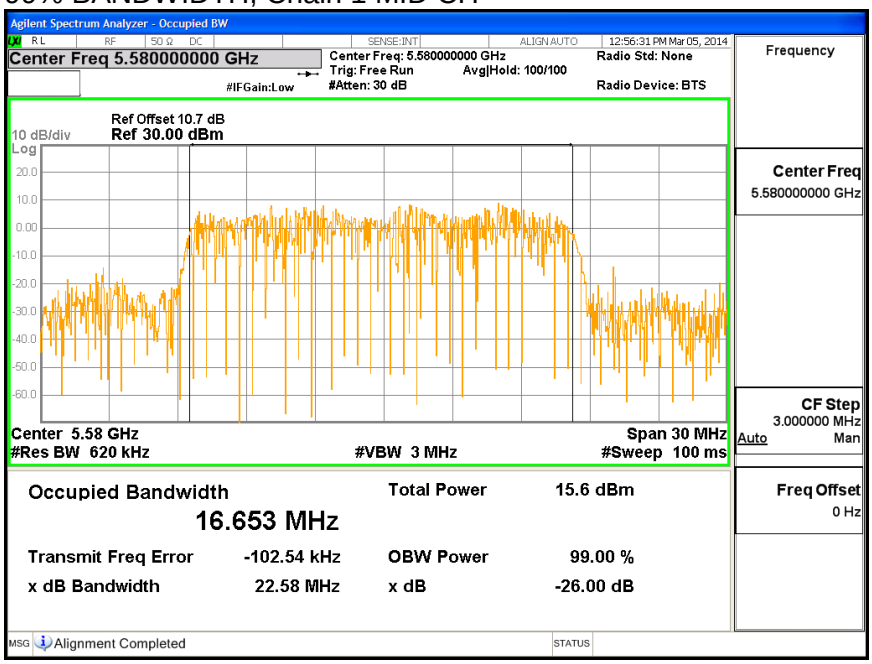


99% BANDWIDTH, Chain 1

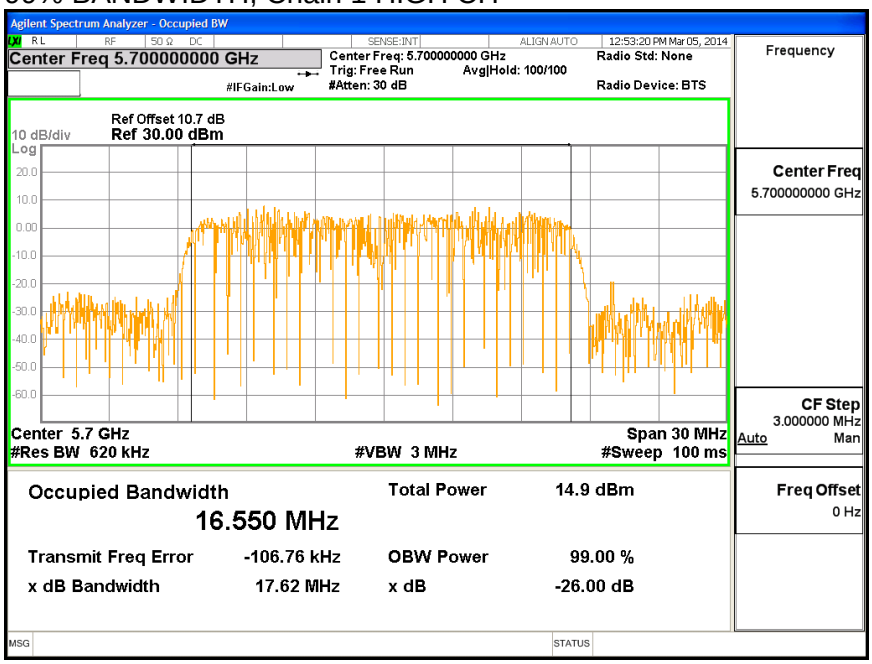
99% BANDWIDTH, Chain 1 LOW CH



99% BANDWIDTH, Chain 1 MID CH



99% BANDWIDTH, Chain 1 HIGH CH



8.4.3. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.5–5.7 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 peak 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.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

For output power, 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)
4.30	4.30	4.30

For PPSD, the TX chains are correlated and the antenna gain is the same for each chain. The directional gain is:

Antenna Gain (dBi)	10 * Log (2 chains) (dB)	Correlated Chains Directional Gain (dBi)
4.30	4.30	8.60

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Uncorrelated Directional Gain (dBi)	Correlated Directional Gain (dBi)
Low	5500	26.60	16.670	4.30	8.60
Mid	5580	24.65	16.653	4.30	8.60
High	5700	23.00	16.508	4.30	8.60

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5500	24.00	23.22	29.22	23.22	8.40	11.00	8.40
Mid	5580	24.00	23.21	29.21	23.21	8.40	11.00	8.40
High	5700	24.00	23.18	29.18	23.18	8.40	11.00	8.40

Duty Cycle CF (dB)	0.14	Included in Calculations of Corr'd Power & PPSD

Output Power Results

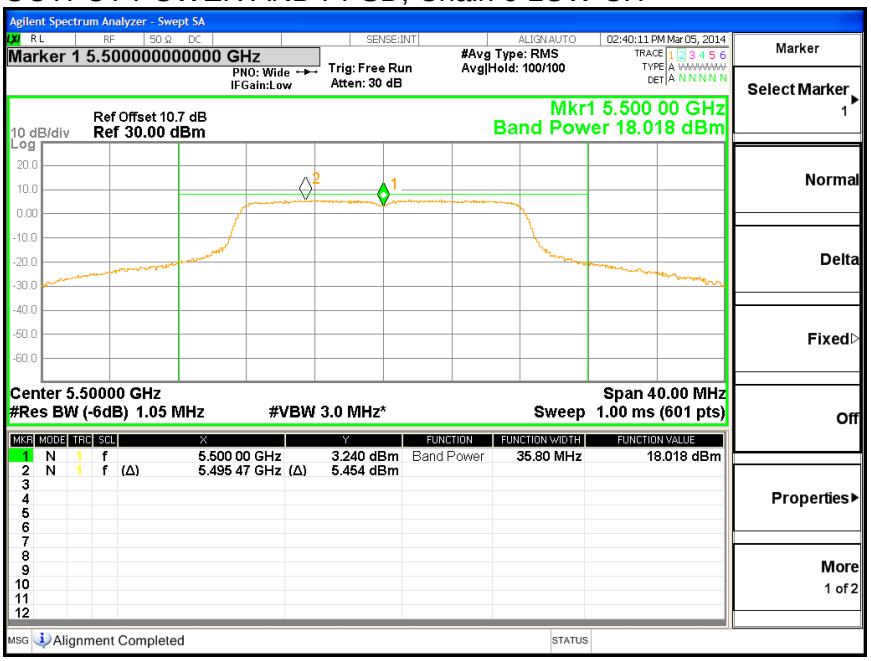
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	18.018	16.100	20.314	23.22	-2.905
Mid	5580	18.396	16.918	20.870	23.21	-2.345
High	5700	18.032	16.991	20.693	23.18	-2.484

PPSD Results

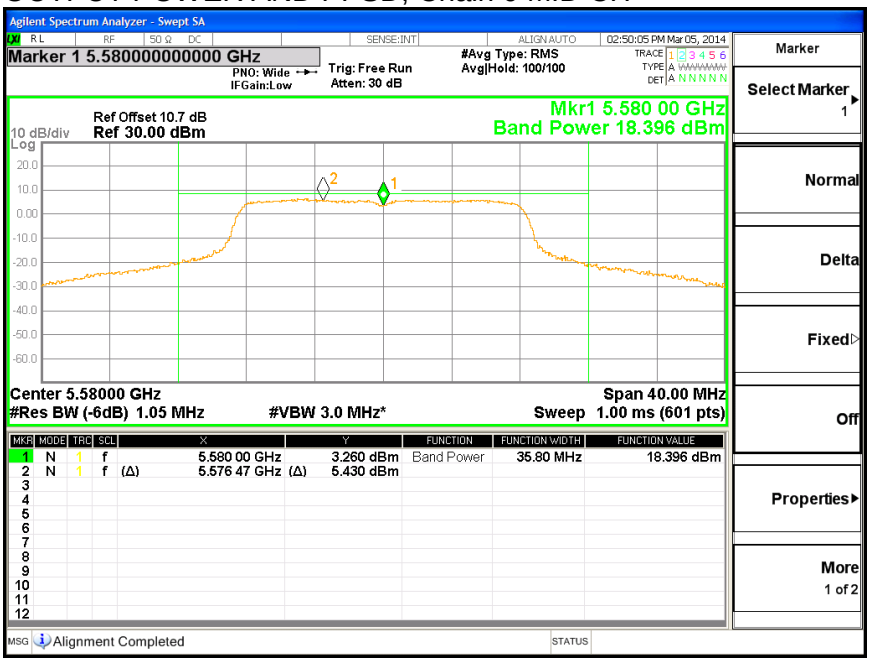
Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	5.454	4.154	8.00	8.40	-0.40
Mid	5580	5.430	4.932	8.34	8.40	-0.06
High	5700	5.508	4.960	8.39	8.40	-0.01

OUTPUT POWER AND PPSD, Chain 0

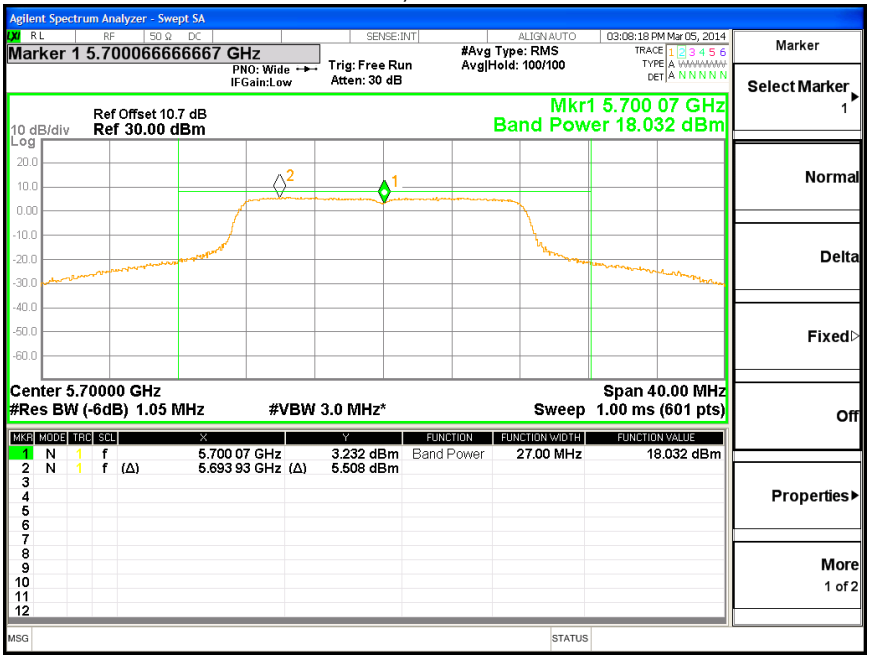
OUTPUT POWER AND PPSD, Chain 0 LOW CH



OUTPUT POWER AND PPSD, Chain 0 MID CH

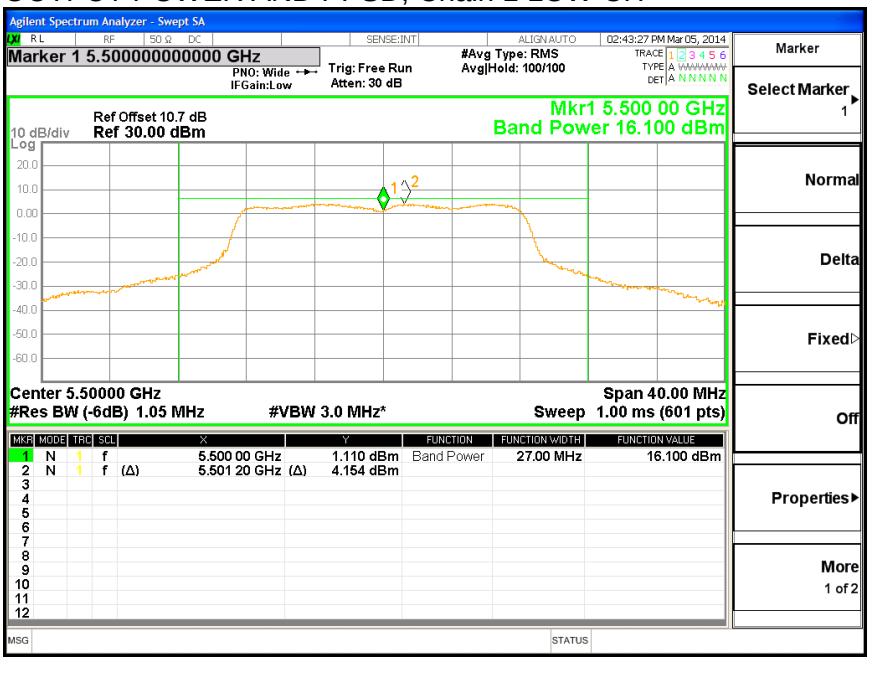


OUTPUT POWER AND PPSD, Chain 0 HIGH CH

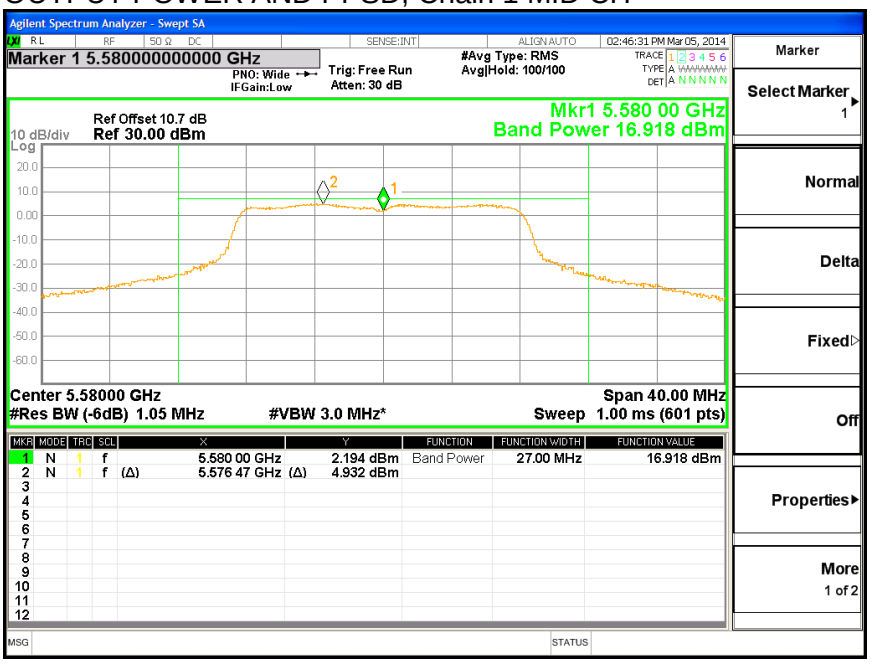


OUTPUT POWER AND PPSD, Chain 1

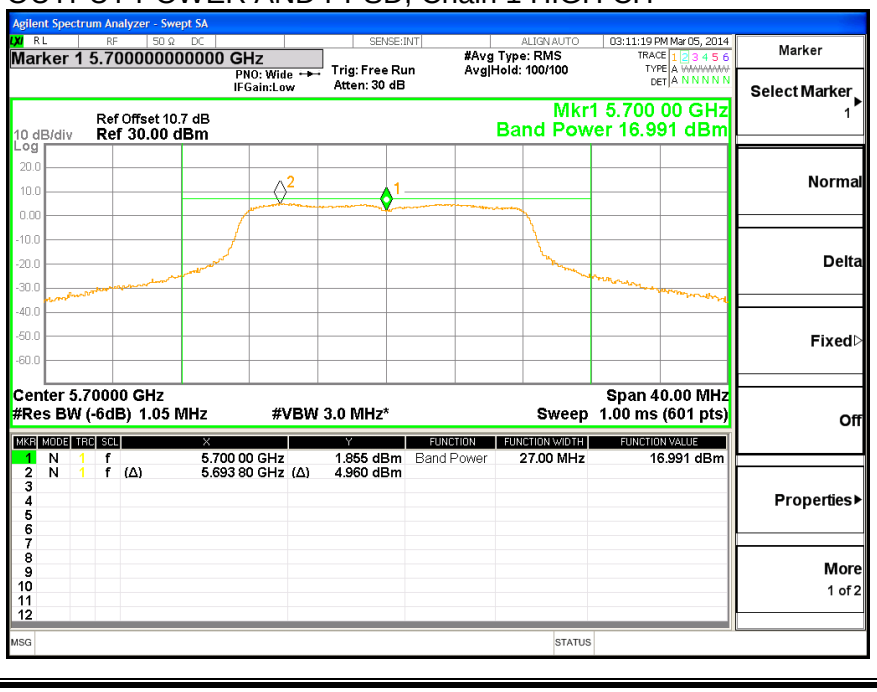
OUTPUT POWER AND PPSD, Chain 1 LOW CH



OUTPUT POWER AND PPSD, Chain 1 MID CH



OUTPUT POWER AND PPSD, Chain 1 HIGH CH



8.4.4. PEAK EXCURSION

LIMITS

FCC §15.407 (a) (6)

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

RESULTS

Chain 0

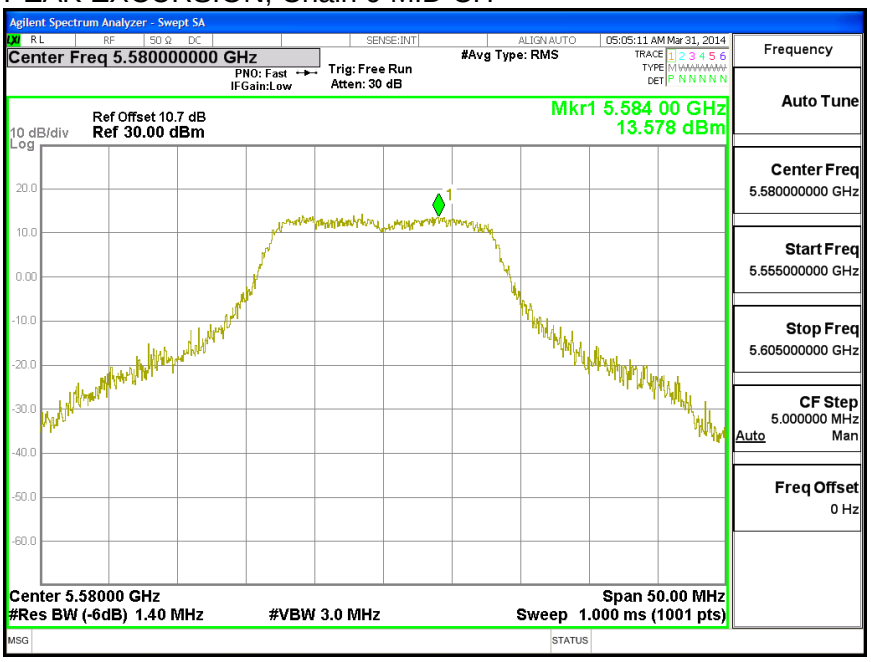
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5580	13.578	5.430	0.14	8.01	13	-4.99

Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5580	12.614	4.932	0.14	7.54	13	-5.46

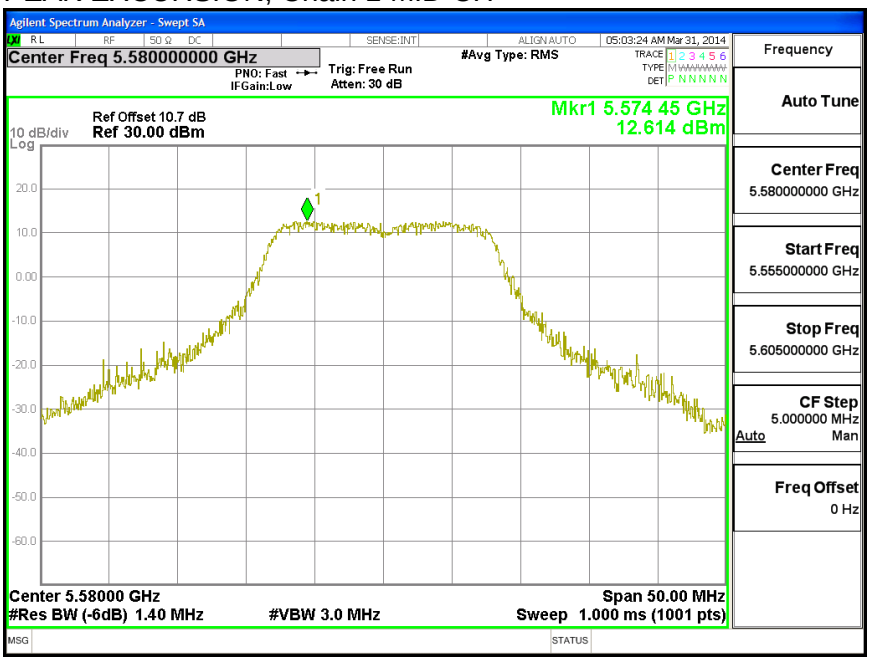
PEAK EXCURSION, Chain 0

PEAK EXCURSION, Chain 0 MID CH



PEAK EXCURSION, Chain 1

PEAK EXCURSION, Chain 1 MID CH



8.4.5. CONDUCTED NOTCH BAND 5.6-5.65GHz EMISSIONS

LIMITS

Within 5600 – 5650 MHz band, -20 dBc relative to highest fundamental output power density per 100 kHz.

TEST PROCEDURE

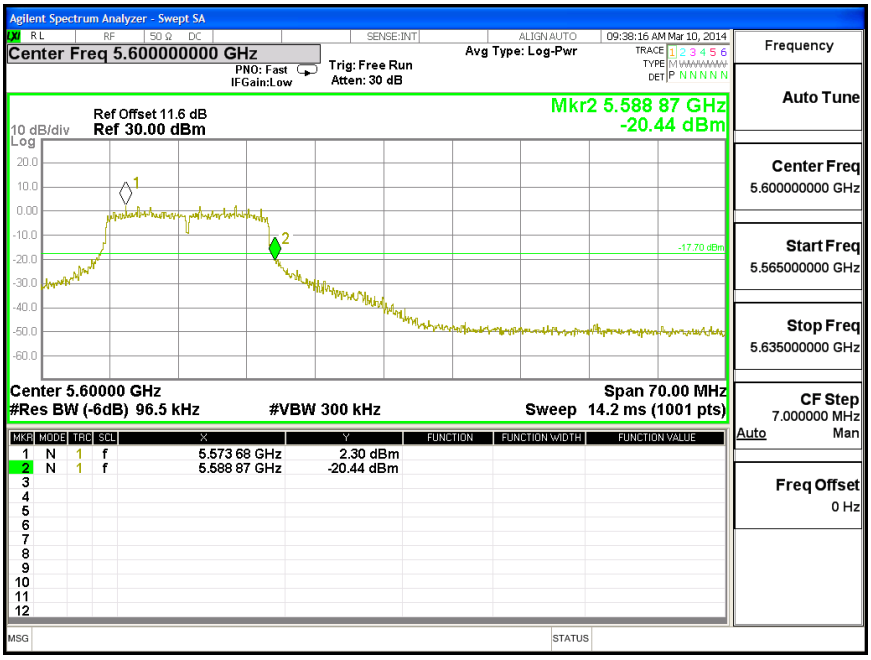
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

The authorized channel nearest to and less than 5600 MHz is measured.

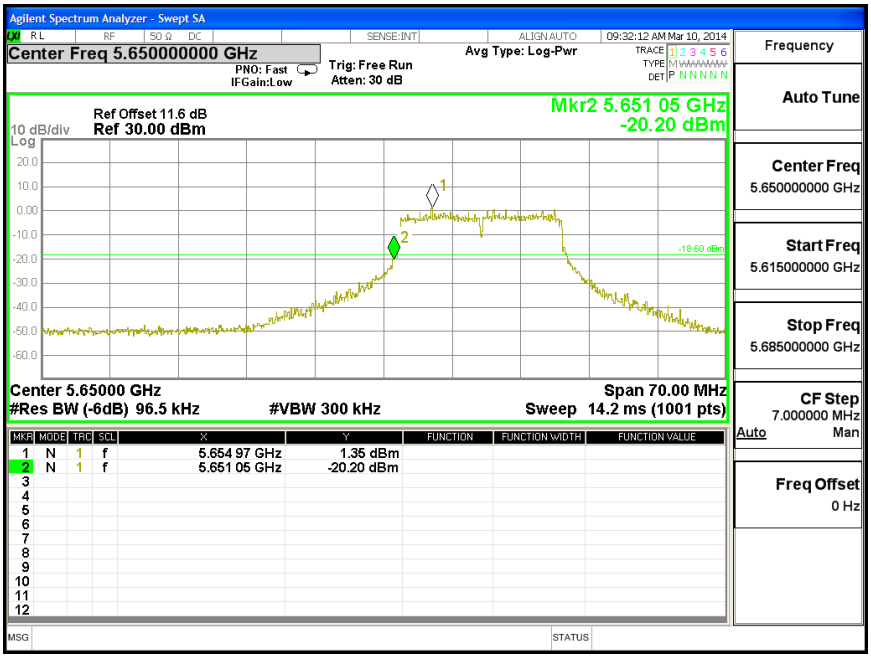
The authorized channel nearest to and greater than 5650 MHz is measured.

SPURIOUS EMISSIONS IN WEATHER RADAR BAND 5600 - 5650 MHz

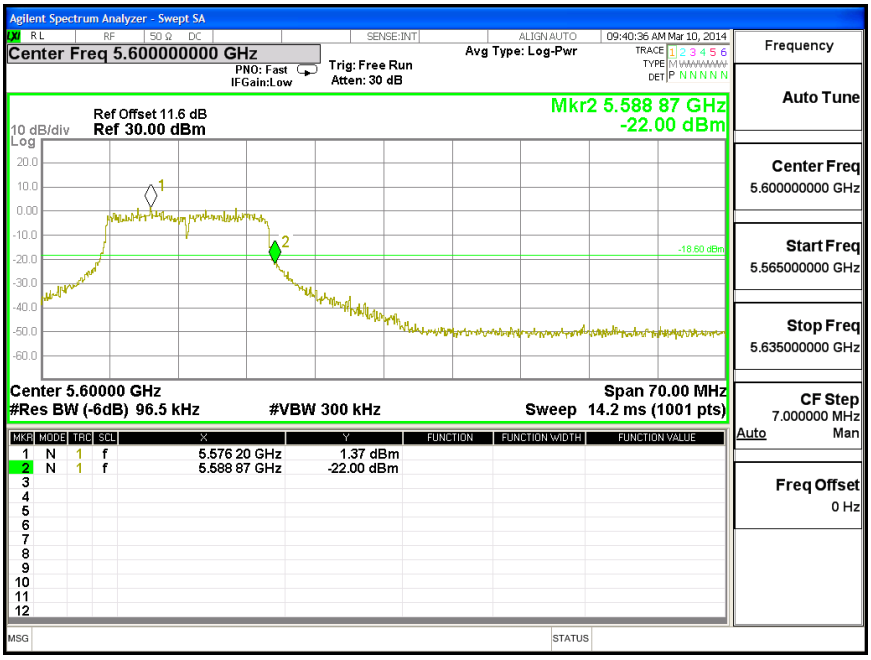
LOWER CHANNEL CHAIN 0 SPURIOUS



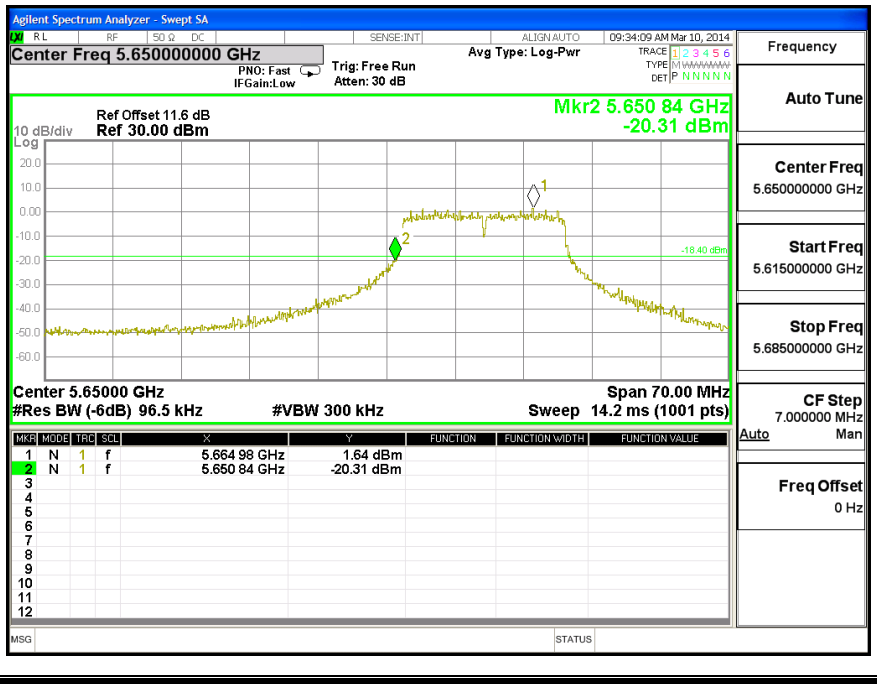
UPPER CHANNEL CHAIN 0 SPURIOUS



LOWER CHANNEL CHAIN 1 SPURIOUS



UPPER CHANNEL CHAIN 1 SPURIOUS



8.5. 802.11a CDD 2TX MODE, CHANNEL 144, 5.6 GHz BAND

8.5.1. 26 dB BANDWIDTH

LIMITS

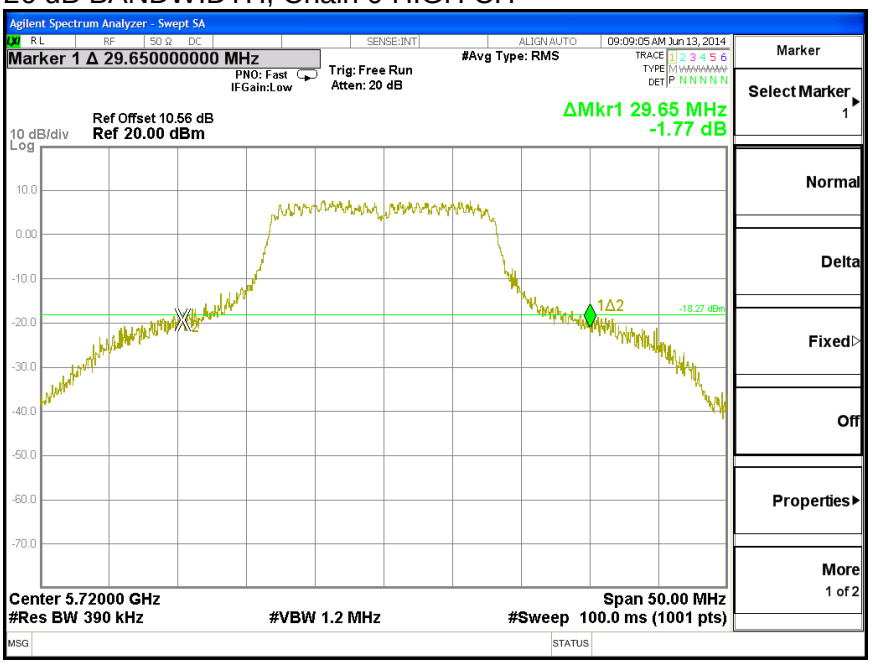
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
High	5720	29.65	34.85

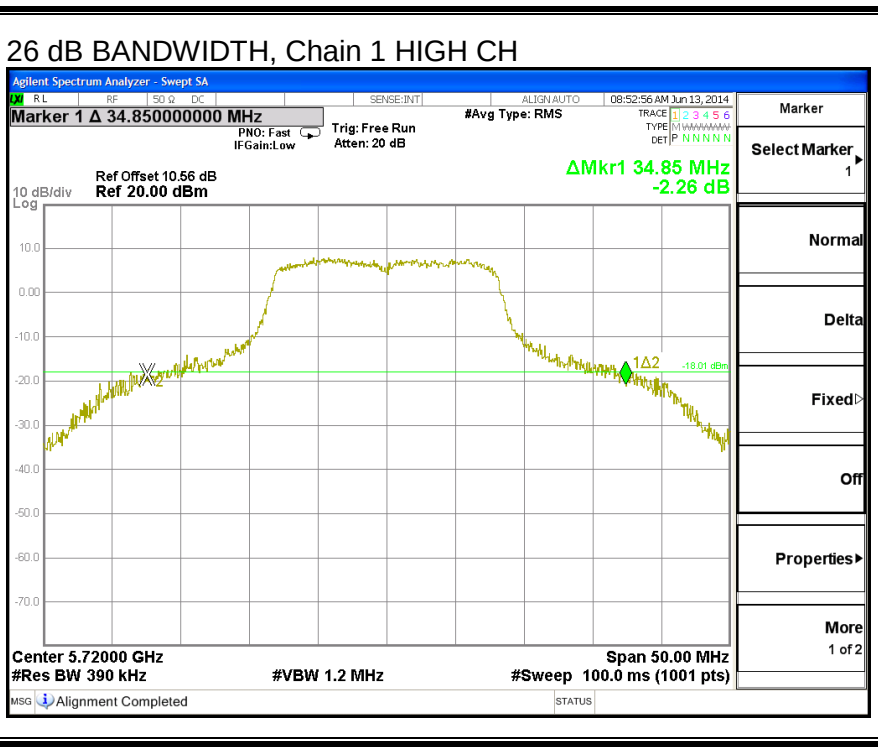
26 dB BANDWIDTH, Chain 0

26 dB BANDWIDTH, Chain 0 HIGH CH



26 dB BANDWIDTH, Chain 1

26 dB BANDWIDTH, Chain 1 HIGH CH



8.5.2. 99% BANDWIDTH

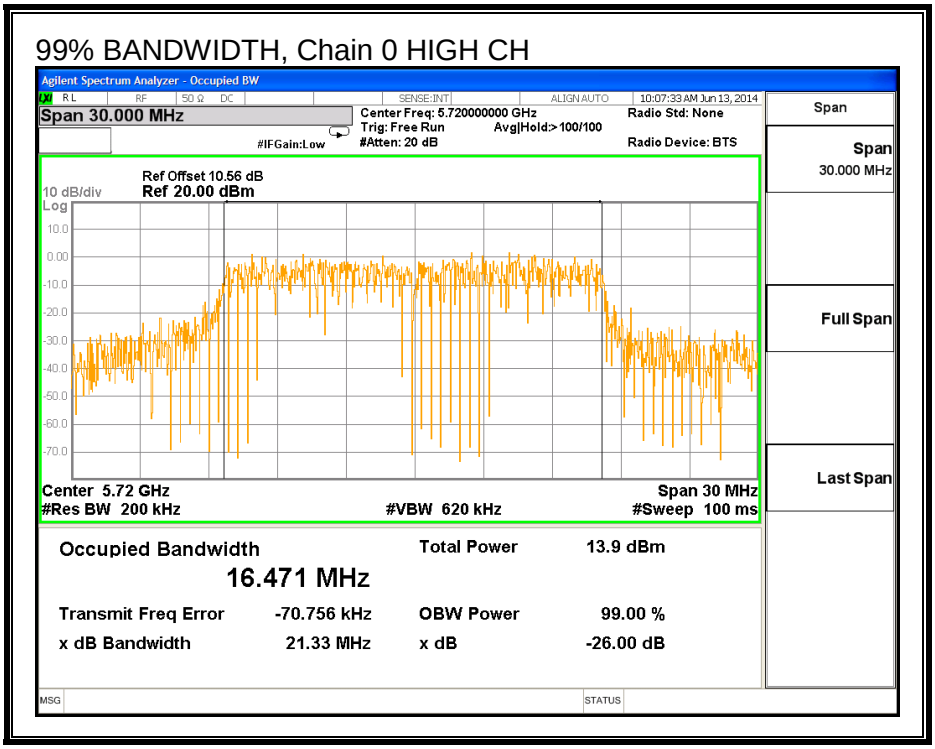
LIMITS

None; for reporting purposes only.

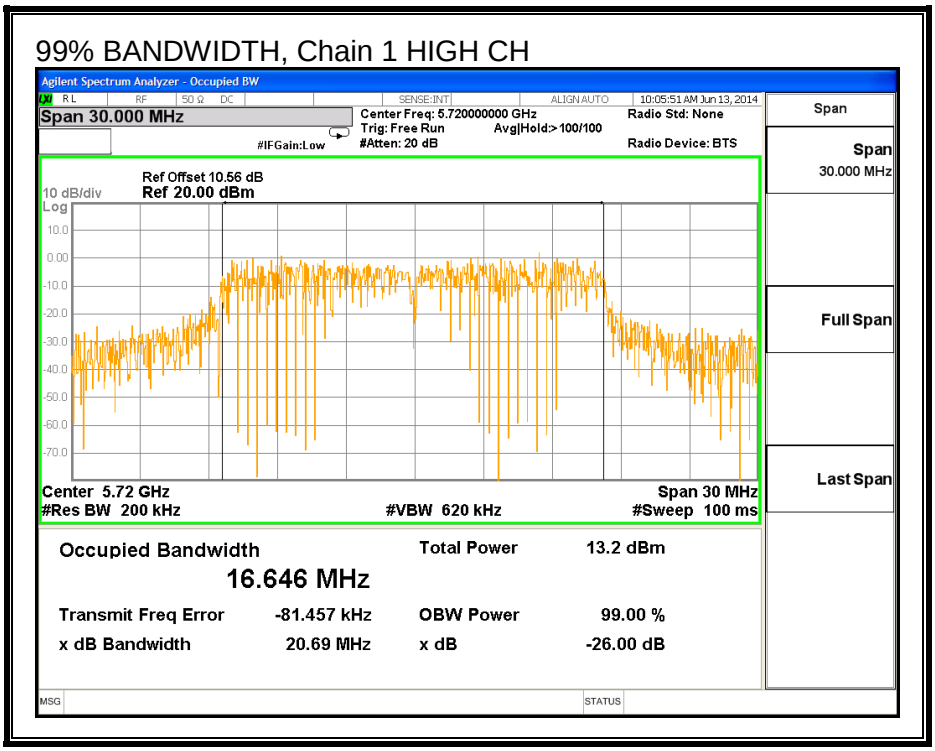
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
High	5720	16.471	16.646

99% BANDWIDTH, Chain 0



99% BANDWIDTH, Chain 1



8.5.3. OUTPUT POWER AND PSD

LIMITS

Bands 5470–5600 MHz and 5650–5725 MHz

The maximum conducted output power shall not exceed 250 mW or 11 + 10 $\log_{10}$ B, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 $\log_{10}$ B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz for IC and 26 dB emission bandwidth in MHz for FCC. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Bands 5725–5825 MHz

The maximum conducted output power shall not exceed 1.0 W or 17 + 10 $\log_{10}$ B, dBm, whichever power is less. The power spectral density shall not exceed 17 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 4.0 W or 23 + 10 $\log_{10}$ B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz for IC and 26 dB emission bandwidth in MHz for FCC.

DIRECTIONAL ANTENNA GAIN

For output power, 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)
4.30	4.30	4.30

For PPSD, the TX chains are correlated and the antenna gain is the same for each chain. The directional gain is:

Antenna Gain (dBi)	10 * Log (2 chains) (dB)	Correlated Chains Directional Gain (dBi)
4.30	4.30	8.60

RESULTS

Limits (FCC), portion in UNII 2 ext band

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Uncorrelated Directional Gain (dBi)	Correlated Directional Gain (dBi)
High	5720	19.825	13.2355	4.30	8.60

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
High	5720	23.97	22.22	28.22	22.22	8.40	11.00	8.40

Duty Cycle CF (dB)	0.14	Included in Calculations of Corr'd Power & PPSD

Output Power Results

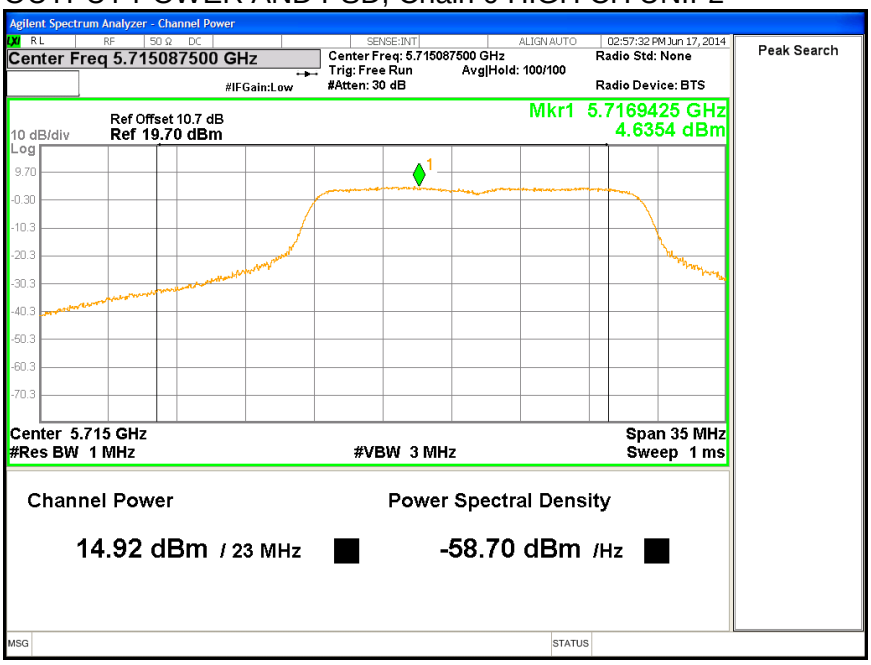
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
High	5720	14.920	14.760	17.991	22.22	-4.226

PPSD Results

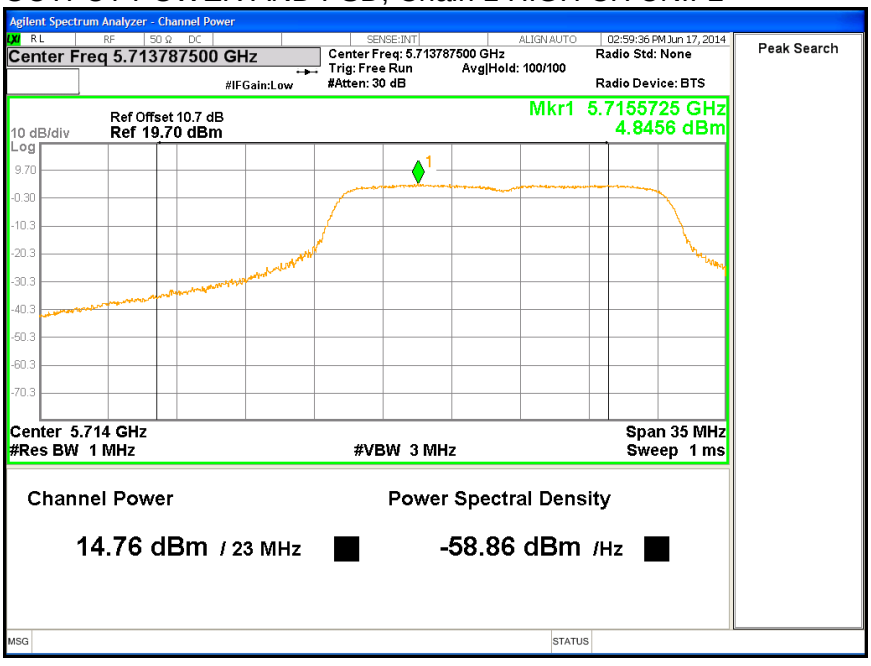
Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
High	5720	4.6354	4.846	7.89	8.40	-0.51

OUTPUT POWER AND PSD, UNII-2 PORTION

OUTPUT POWER AND PSD, Chain 0 HIGH CH UNII-2



OUTPUT POWER AND PSD, Chain 1 HIGH CH UNII-2



Limits (FCC), portion in 5.8GHz UNII-3 band

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Uncorrelated Directional Gain (dBi)	Correlated Directional Gain (dBi)
High	5720	9.825	3.2350	4.30	8.60

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
High	5720	26.92	22.10	28.10	22.10	8.40	11.00	8.40

Duty Cycle CF (dB)	0.14	Included in Calculations of Corr'd Power & PPSD

Output Power Results

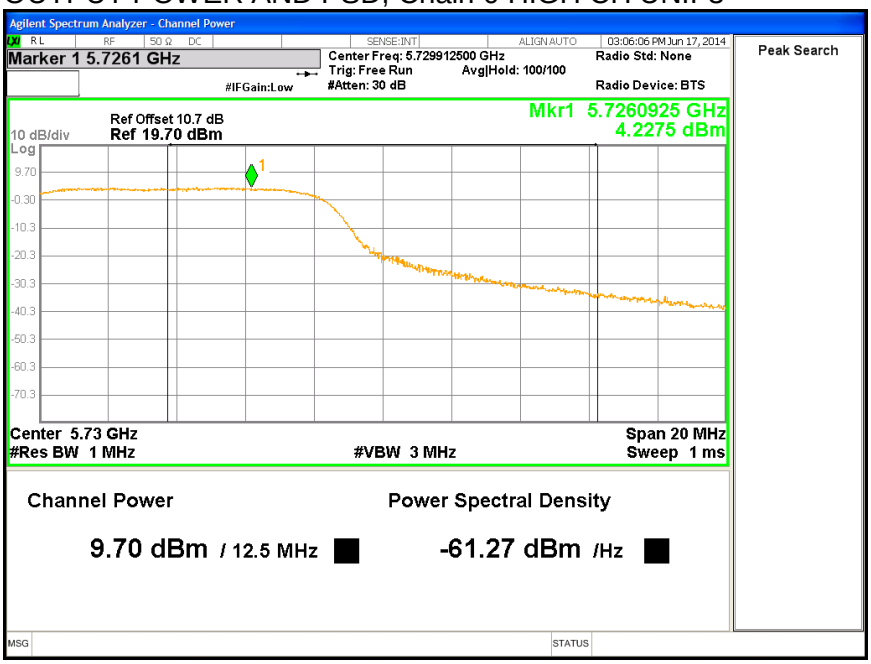
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
High	5720	9.700	8.340	12.223	22.10	-9.875

PPSD Results

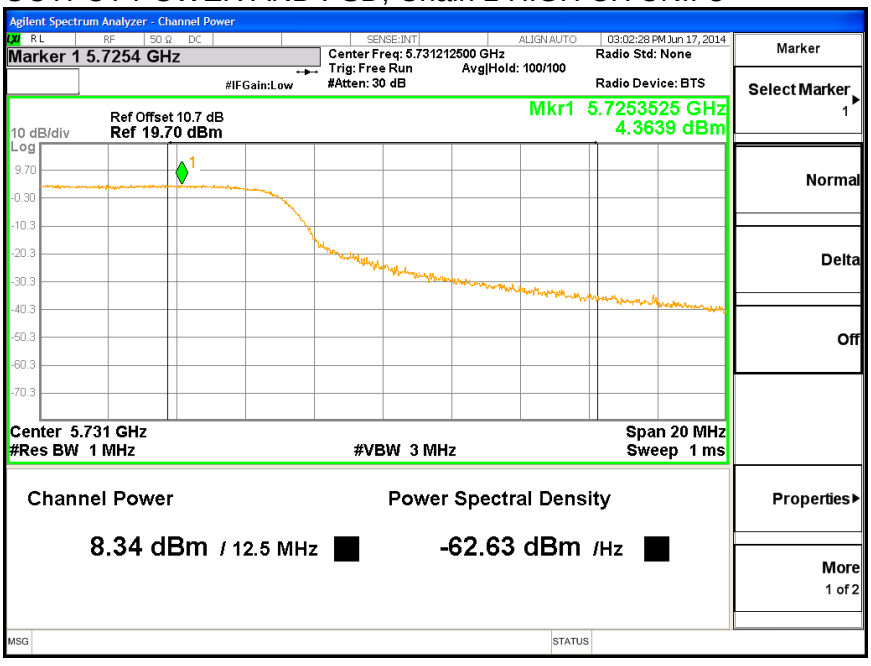
Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
High	5720	4.228	4.364	7.45	8.40	-0.95

OUTPUT POWER AND PSD, UNII-3 PORTION

OUTPUT POWER AND PSD, Chain 0 HIGH CH UNII-3

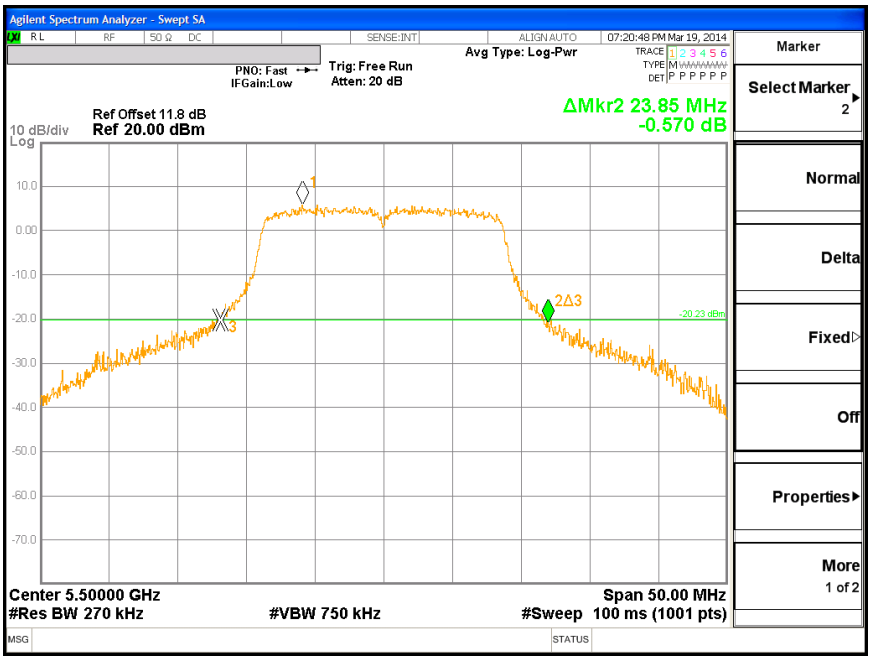


OUTPUT POWER AND PSD, Chain 1 HIGH CH UNII-3

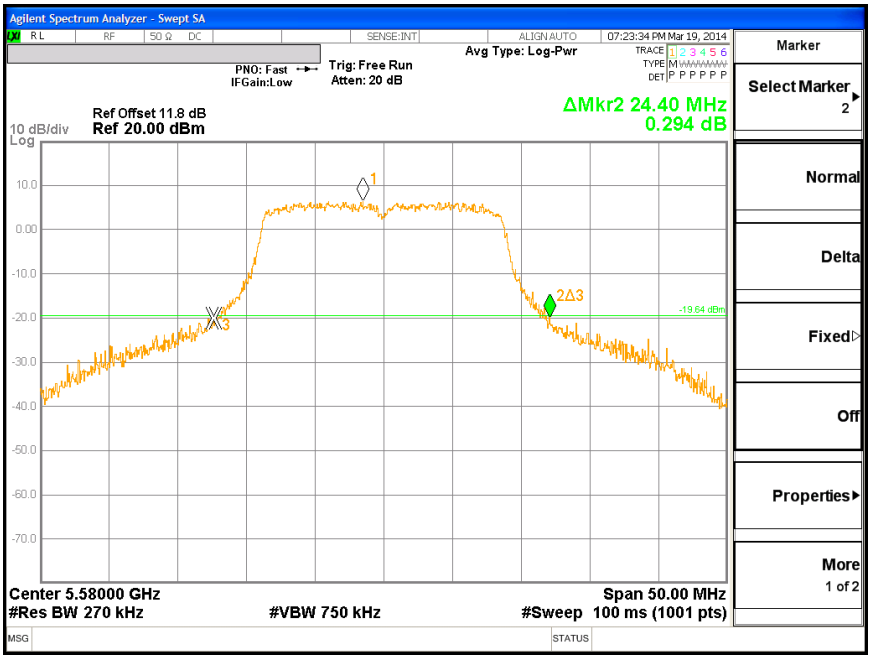


26 dB BANDWIDTH, Chain 0

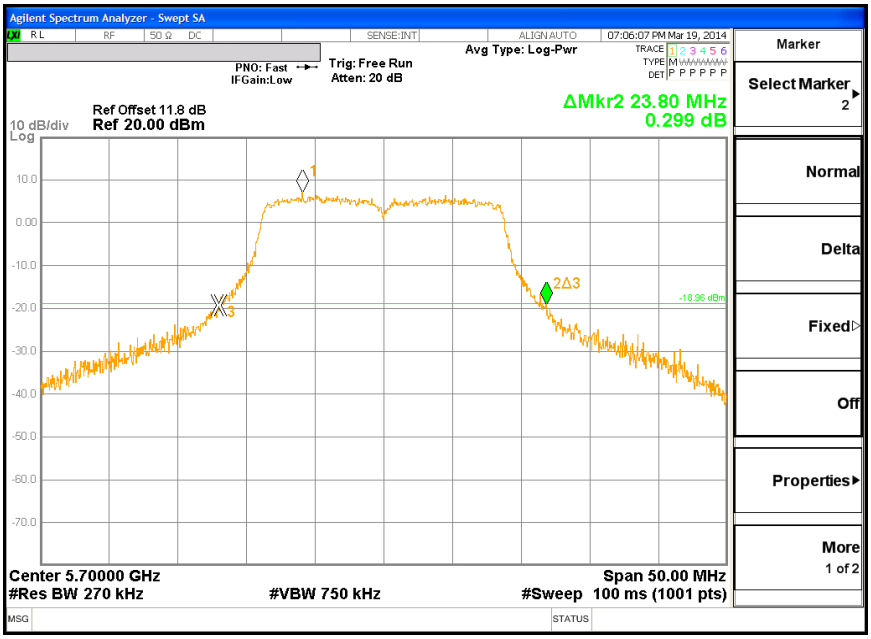
BANDWIDTH Chain 0 LOW CH



BANDWIDTH Chain 0 MID CH

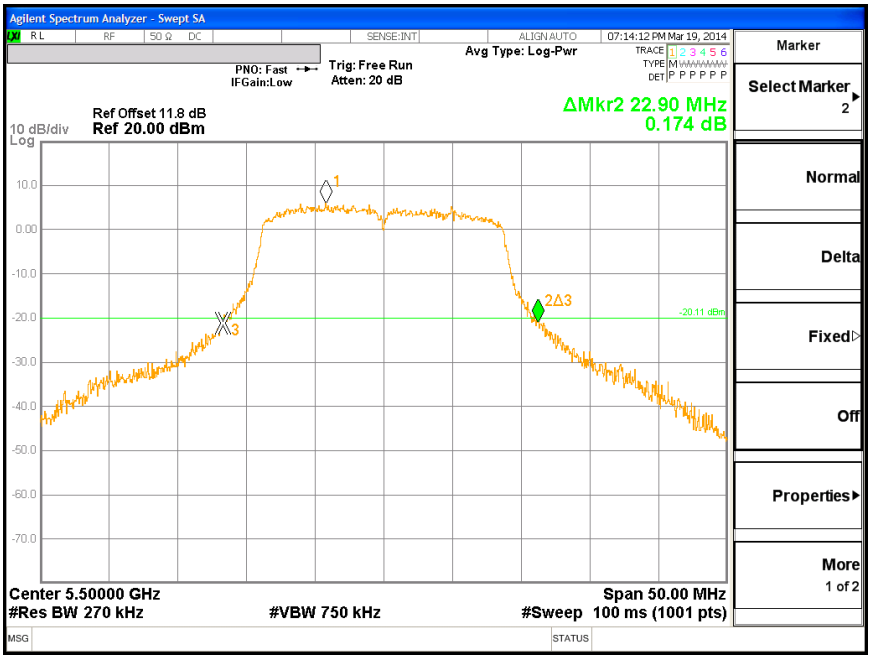


BANDWIDTH Chain 0 HIGH CH

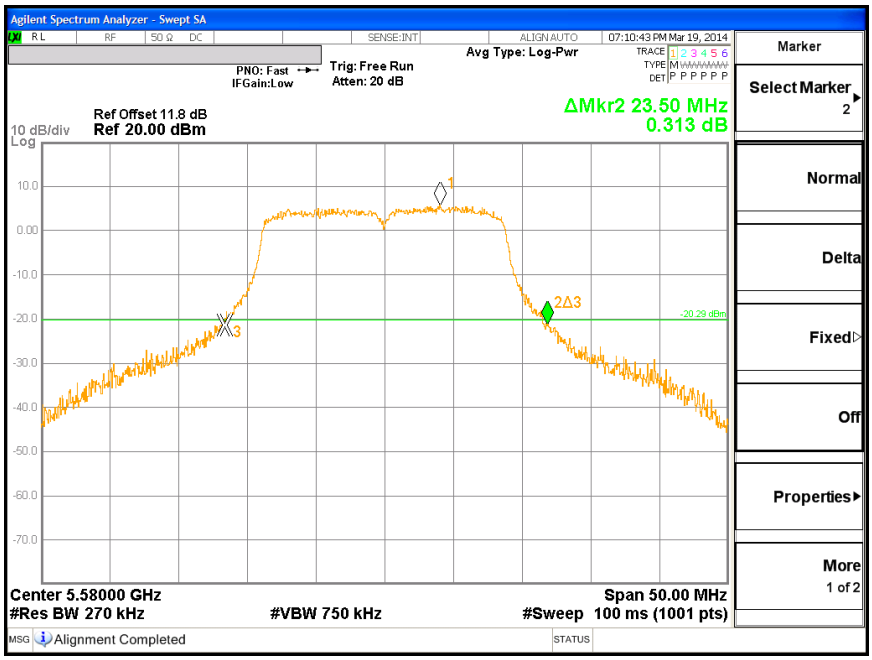


26 dB BANDWIDTH, Chain 1

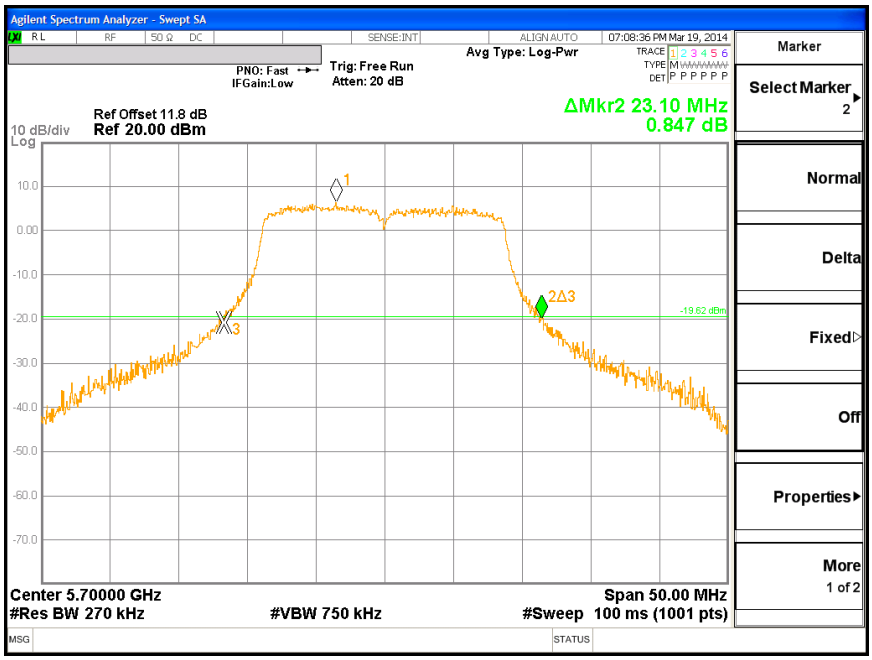
BANDWIDTH Chain 1 LOW CH



BANDWIDTH Chain 1 MID CH



BANDWIDTH Chain 1 HIGH CH



8.5.4. AVERAGE OUTPUT POWER (WHOLE FUNDAMENTAL)

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

RESULTS

Frequency	Power, Chain 0 (dBm)	Power, Chain 1 (dBm)	Output Power (dBm)	Output Power (mW)
5.6 GHz band, 2TX (Channels overlapping UNII-2 and UNII-3 bands)				
5720 (UNII portion)	14.92	14.76	17.991	62.97
5720 (DTS portion)	9.70	8.34	12.223	16.69
5720 (Whole signal)	16.06	15.65	19.092	81.13

8.5.5. EIRP IN THE UNII-2 BAND

LIMITS

None; for reporting purposes only.

RESULTS

Frequency	Power, Chain 0 (dBm)	Power, Chain 1 (dBm)	Output Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)
5.6 GHz band, 2TX (Channels overlapping UNII-2 and UNII-3 bands)					
5720 (UNII portion)	14.92	14.76	17.991	4.3	22.291

8.6. 802.11n HT20 STBC 2TX MODE IN THE 5.6 GHz BAND

8.6.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5500	23.85	22.90
Mid	5580	24.40	23.50
High	5700	23.80	23.10

8.6.2. 99% BANDWIDTH

LIMITS

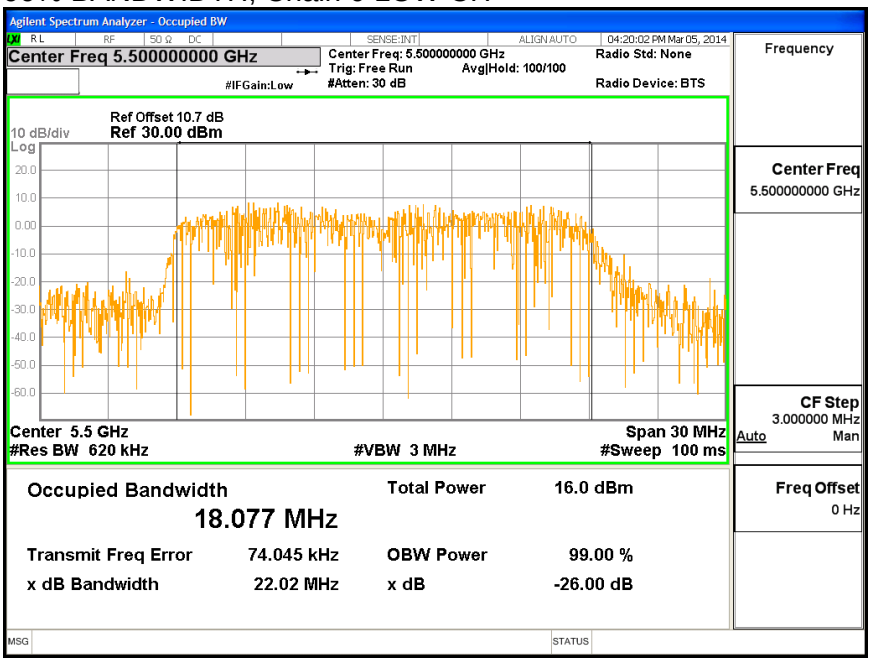
None; for reporting purposes only.

RESULTS

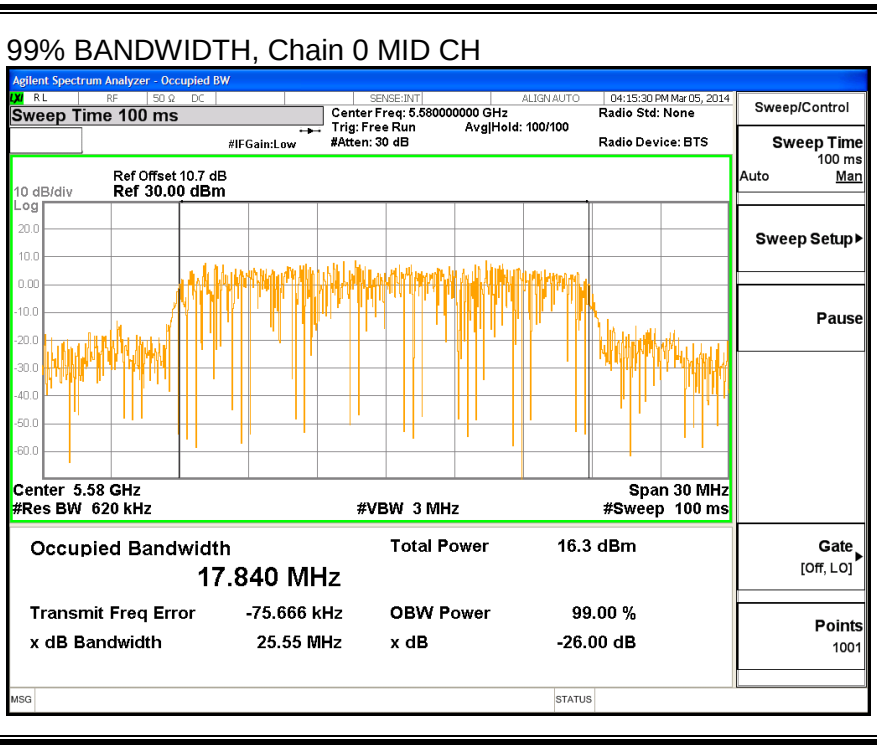
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5500	18.077	17.645
Mid	5580	17.840	17.796
High	5700	17.724	17.709

99% BANDWIDTH, Chain 0

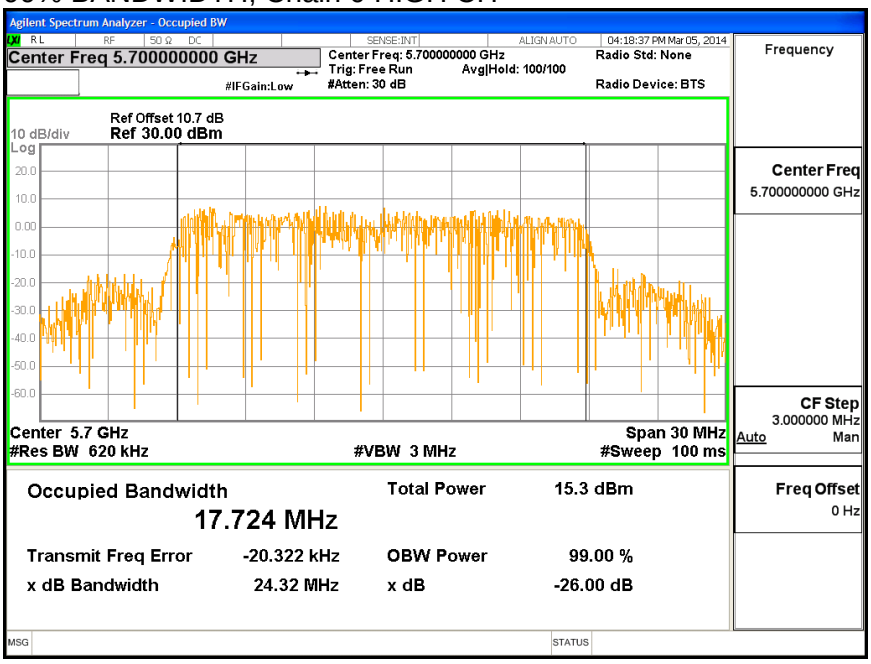
99% BANDWIDTH, Chain 0 LOW CH



99% BANDWIDTH, Chain 0 MID CH

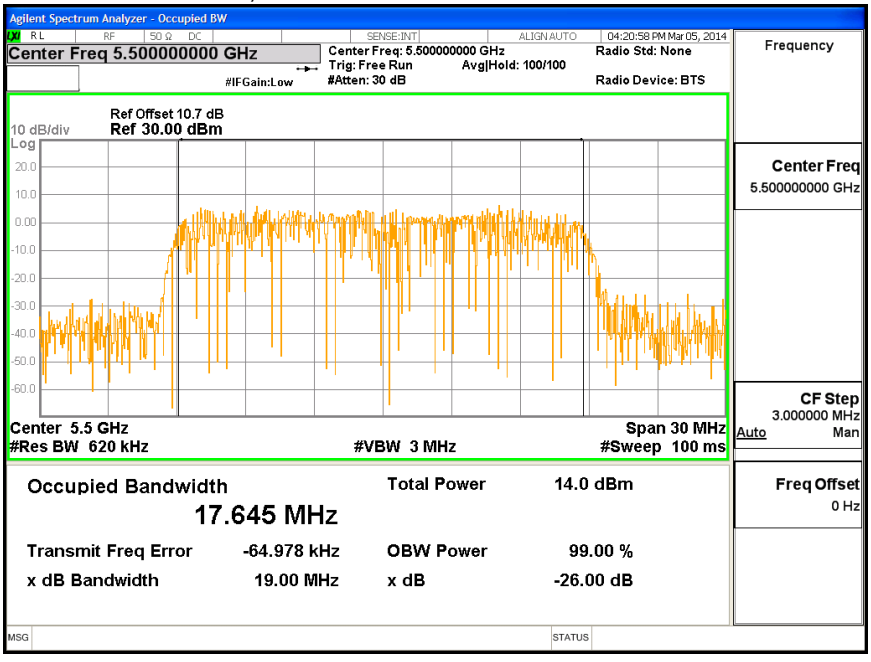


99% BANDWIDTH, Chain 0 HIGH CH

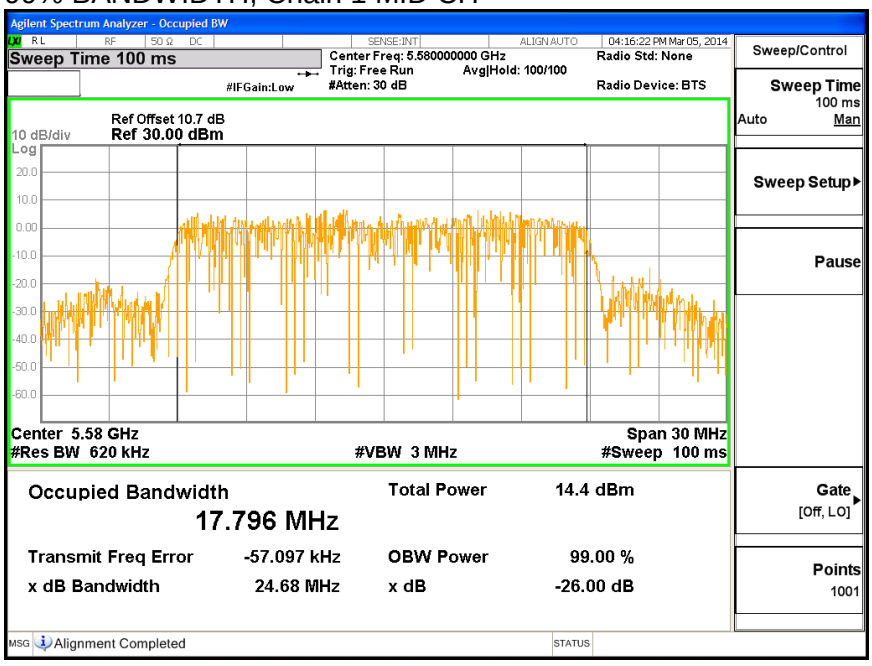


99% BANDWIDTH, Chain 1

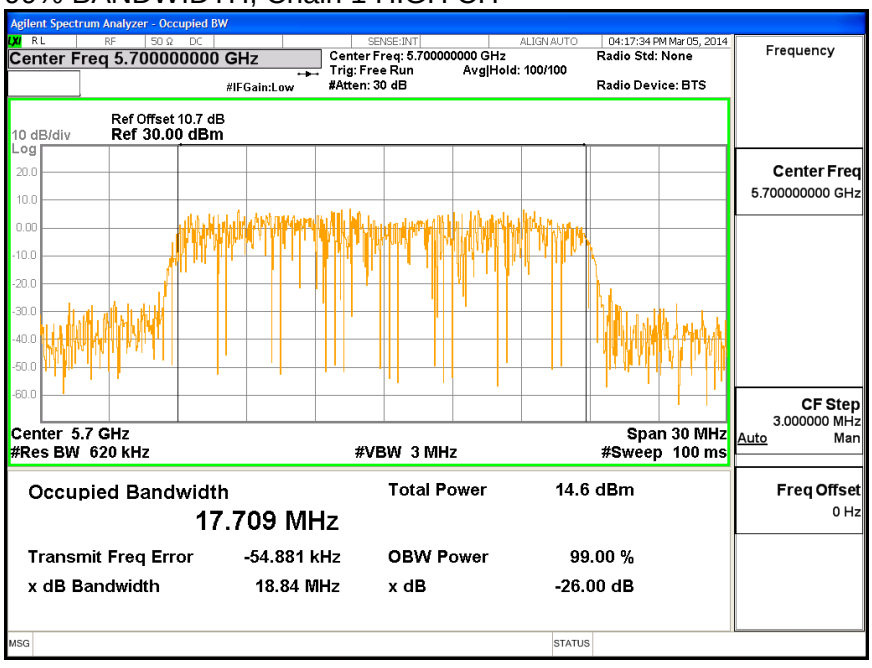
99% BANDWIDTH, Chain 1 LOW CH



99% BANDWIDTH, Chain 1 MID CH



99% BANDWIDTH, Chain 1 HIGH CH



8.6.3. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.5–5.7 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 peak 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.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	22.90	17.645	4.30
Mid	5580	23.50	17.796	4.30
High	5700	23.10	17.709	4.30

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5500	24.00	23.47	29.47	23.47	11.00	11.00	11.00
Mid	5580	24.00	23.50	29.50	23.50	11.00	11.00	11.00
High	5700	24.00	23.48	29.48	23.48	11.00	11.00	11.00

Duty Cycle CF (dB)	0.17	Included in Calculations of Corr'd Power & PPSD

Output Power Results

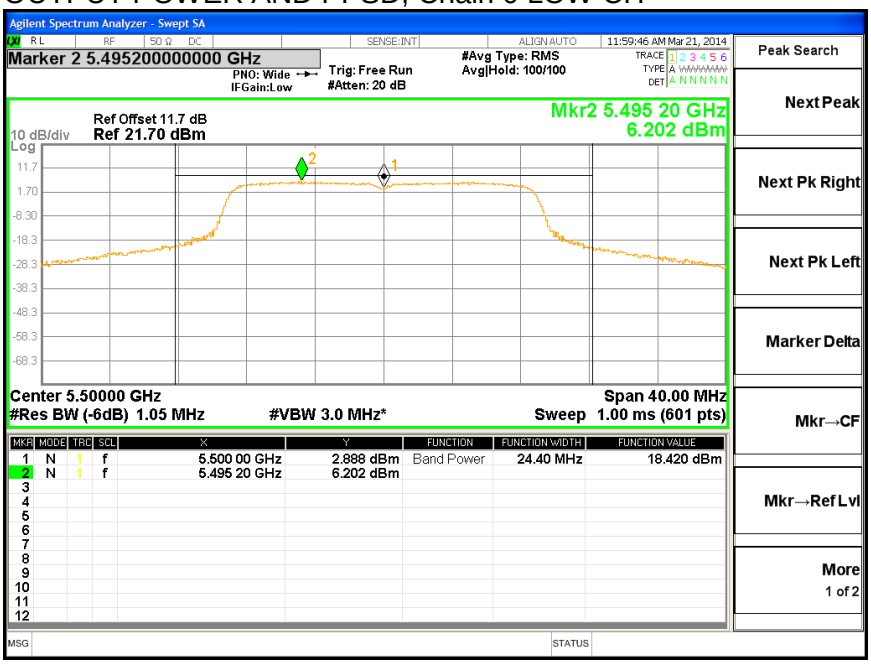
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	18.420	17.062	20.974	23.47	-2.492
Mid	5580	18.716	17.619	21.382	23.50	-2.121
High	5700	17.933	16.934	20.642	23.48	-2.839

PPSD Results

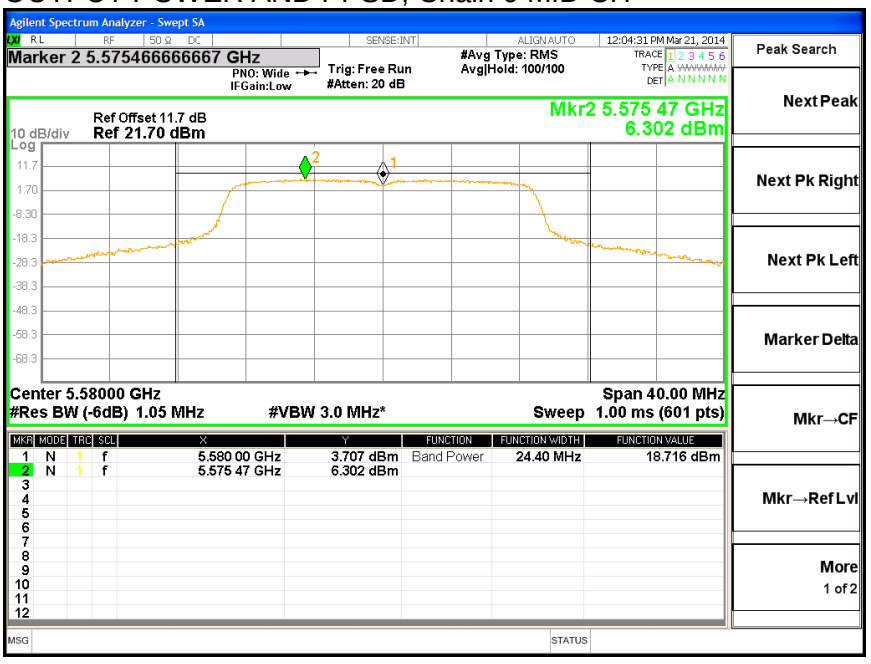
Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	6.202	4.895	8.78	11.00	-2.22
Mid	5580	6.302	5.228	8.98	11.00	-2.02
High	5700	6.344	4.410	8.66	11.00	-2.34

OUTPUT POWER AND PPSD, Chain 0

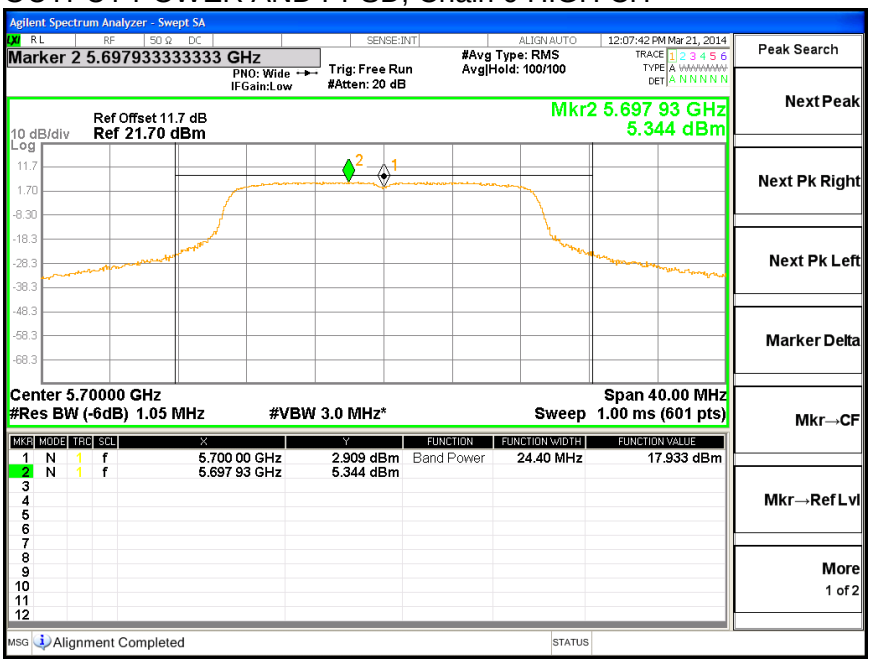
OUTPUT POWER AND PPSD, Chain 0 LOW CH



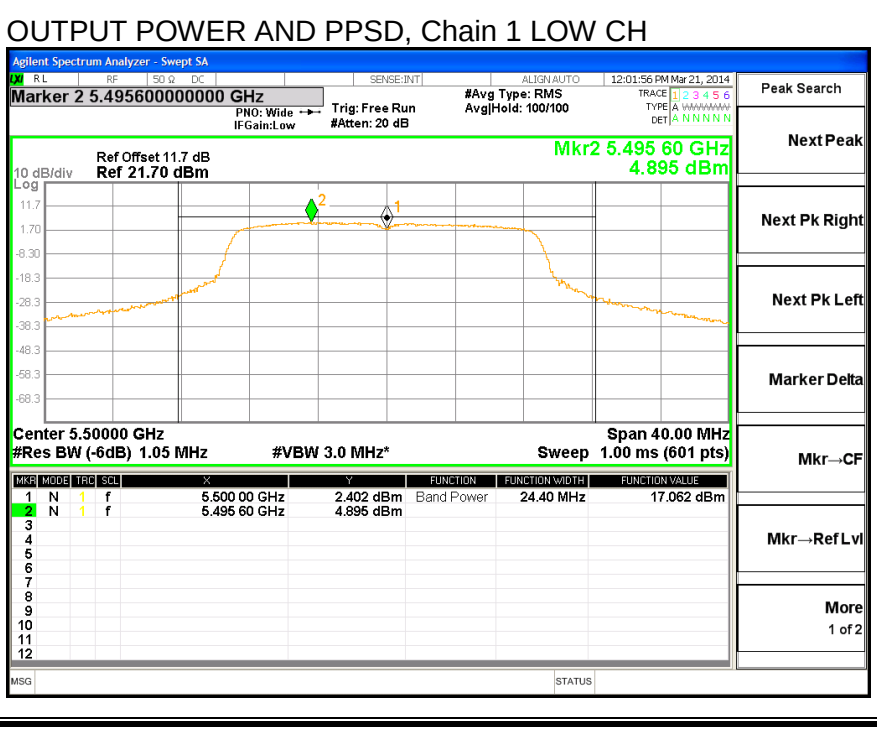
OUTPUT POWER AND PPSD, Chain 0 MID CH



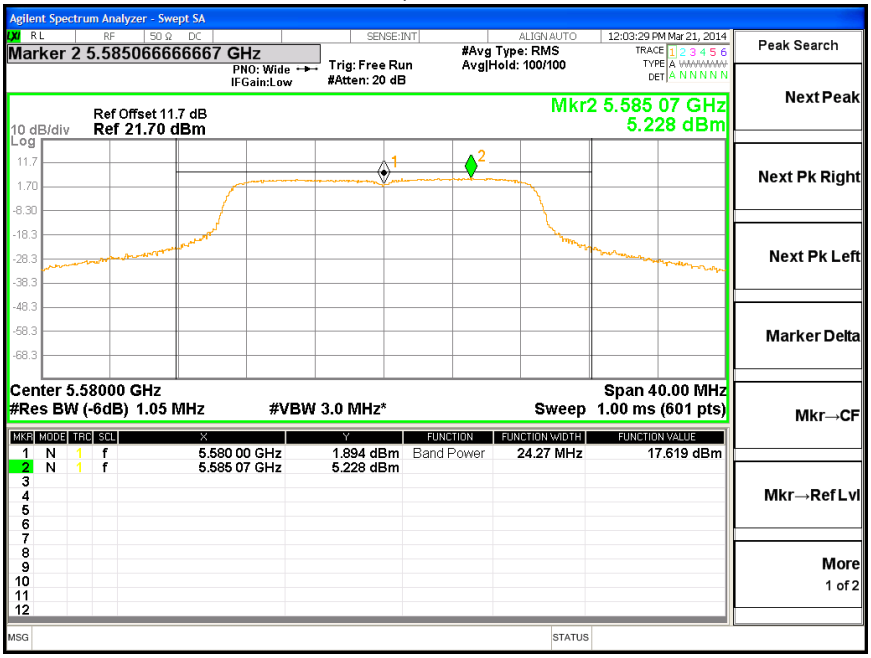
OUTPUT POWER AND PPSD, Chain 0 HIGH CH



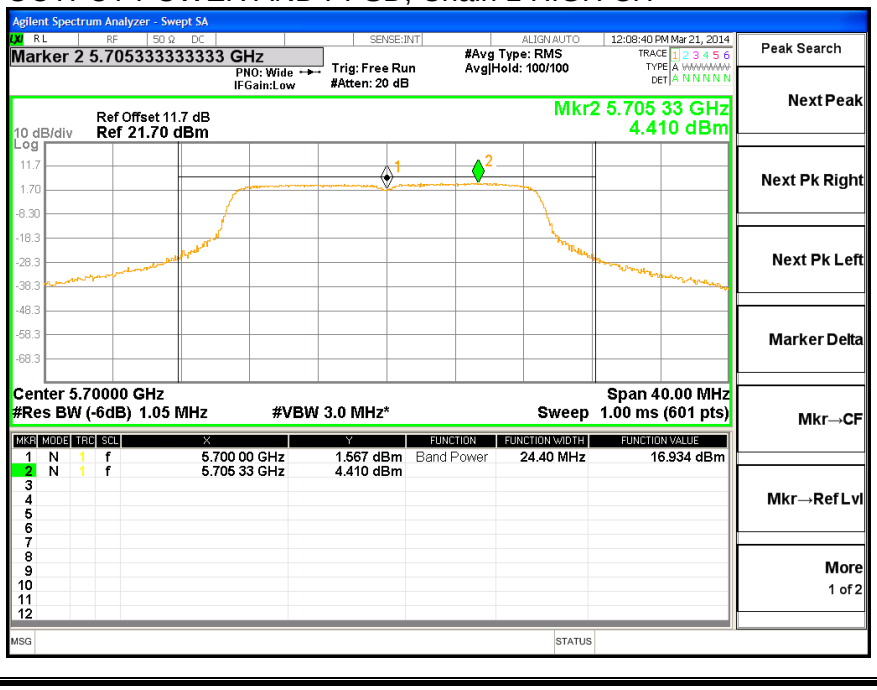
OUTPUT POWER AND PPSD, Chain 1



OUTPUT POWER AND PPSD, Chain 1 MID CH



OUTPUT POWER AND PPSD, Chain 1 HIGH CH



8.6.4. PEAK EXCURSION

LIMITS

FCC §15.407 (a) (6)

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

RESULTS

Chain 0

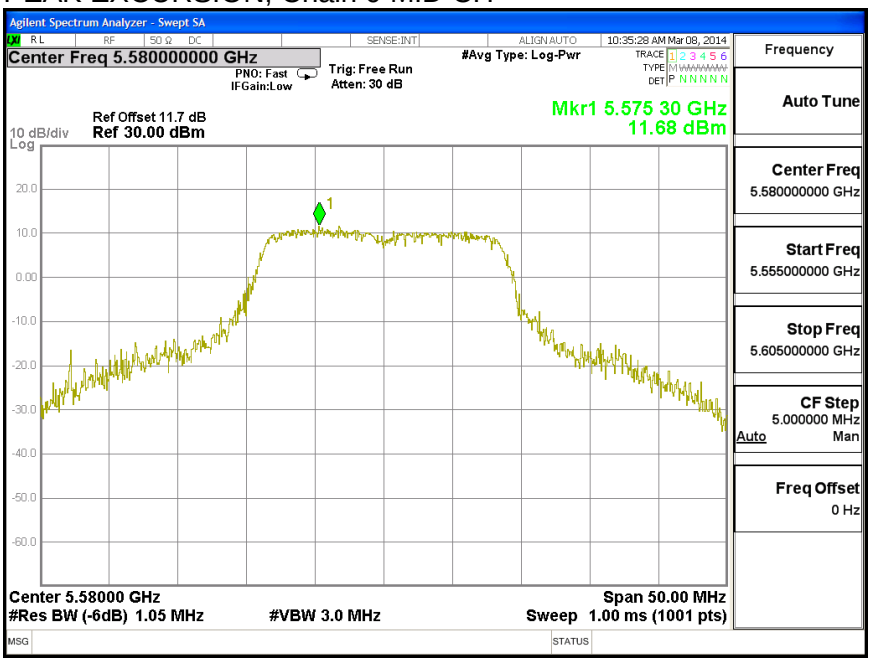
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5580	11.68	6.302	0.17	5.21	13	-7.79

Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5580	11.28	5.228	0.17	5.88	13	-7.12

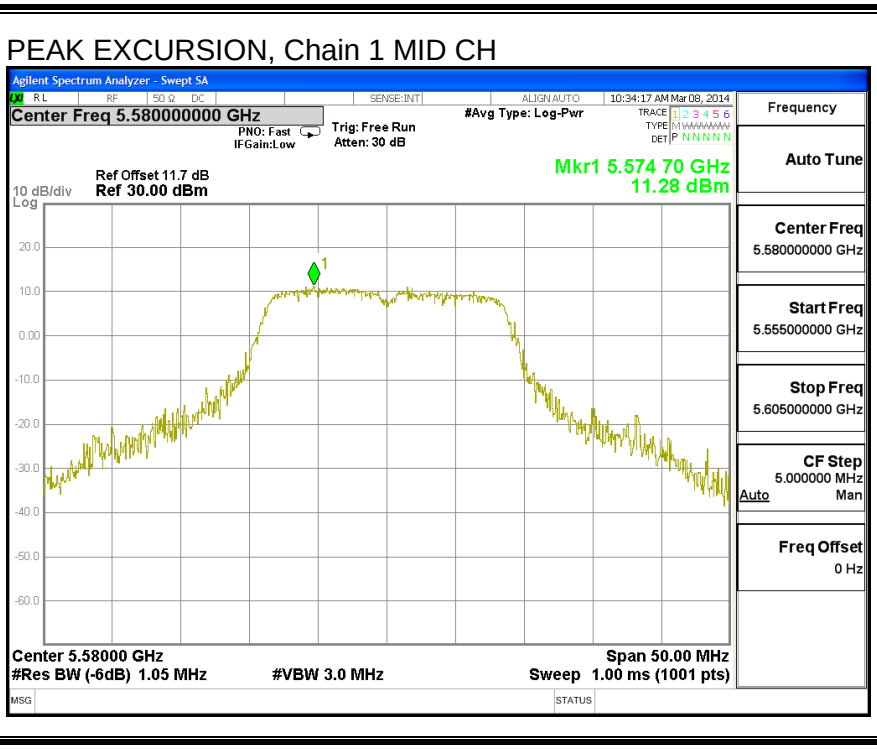
PEAK EXCURSION, Chain 0

PEAK EXCURSION, Chain 0 MID CH



PEAK EXCURSION, Chain 1

PEAK EXCURSION, Chain 1 MID CH



8.6.5. CONDUCTED NOTCH BAND 5.6-5.65GHz EMISSIONS

LIMITS

Within 5600 – 5650 MHz band, -20 dBc relative to highest fundamental output power density per 100 kHz.

TEST PROCEDURE

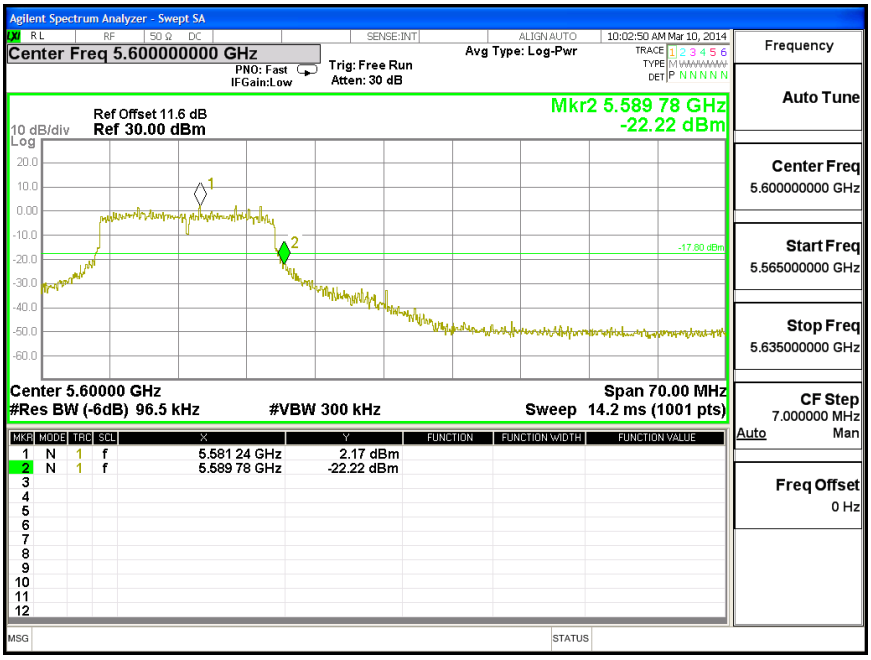
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

The authorized channel nearest to and less than 5600 MHz is measured.

The authorized channel nearest to and greater than 5650 MHz is measured.

SPURIOUS EMISSIONS IN WEATHER RADAR BAND 5600 - 5650 MHz

LOWER CHANNEL CHAIN 0 SPURIOUS



UPPER CHANNEL CHAIN 0 SPURIOUS