# FCC 47 CFR PART 15 SUBPART E

# CERTIFICATION TEST REPORT

**FOR**

**DSL**

**MODEL NUMBER: NVG599**

**FCC ID: GZ5NVG599**

**REPORT NUMBER: 14U17955-1, Revision B**

**ISSUE DATE: September 8, 2014**
**Revision Date: September 19, 2014**

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## Revision History

| Rev. | Issue Date | Revisions | Revised By |
|---|---|---|---|
| -- | 08/26/14 | Initial Issue | M. Ferrer |
| A | 09/08/14 | Added KDB reference | M. Ferrer |
| B | 09/19/14 | Updated Section 5.2 | M.Ferrer |


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# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** Arris Group Inc
46653 Fremont Blvd.
Fremont, CA 94538

**EUT DESCRIPTION:** DSL

**MODEL:** NVG599

**SERIAL NUMBER:** -

**DATE TESTED:** July 10, 2014 – August 26, 2014

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

UL LLC 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 LLC 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 LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC 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 LLC By:

Peng Zhang
EMC Project Lead
UL LLC

Tested By:

Michael Ferrer
EMC Program Manager
UL LLC


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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, FCC KDB 662911 DO1 v02r01, ANSI C63.10-2009.

# 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 333 Pfingsten Road, Northbrook, IL 60062 USA.

UL NBK is accredited by NVLAP, Laboratory Code 100414-0. The full scope of accreditation can be viewed at http://ts.nist.gov/Standards/scopes/1004140.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

Sample Calculations
Radiated Field Strength and Conducted Emissions data contained within this report is calculated on the following basis:
Field Strength (dBuV/m) = Meter Reading (dBuV) + AF (dB/m) - Gain (dB) + Cable Loss (dB)
Conducted Voltage (dBuV) = Meter Reading (dBuV) + Cable Loss (dB) + LISN IL (dB)
Conducted Current (dBuA) = Meter Reading (dBuV) + Cable Loss (dB) - Transducer Factor (dBohms)

## 4.3. MEASUREMENT UNCERTAINTY

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

| Test | Range | Equipment | Uncertainty k=2 |
|---|---|---|---|
| Conducted Ant Port | 30MHz-26GHz | Spectrum Analyzer | 2.94 |

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


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# 5. EQUIPMENT UNDER TEST

## 5.1. DESCRIPTION OF EUT

The EUT is an 802.11a/n/ac transceiver. This report is a C2PC to include additional frequencies.


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## 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) |
|---|---|---|---|
| 5260 - 5320 | 802.11a | 23.17 | 207.49 |
| 5260 - 5320 | 802.11n HT20 | 18.37 | 68.71 |
| 5270 - 5310 | 802.11n HT40 | 20.84 | 121.34 |
| 5270 - 5310 | 802.11n HT80 | 12.94 | 19.68 |
| 5500 - 5700 | 802.11a | 23.14 | 206.06 |
| 5500 - 5700 | 802.11n HT20 | 23.13 | 205.59 |
| 5510 - 5670 | 802.11n HT40 | 23.07 | 202.77 |
| 5510 - 5670 | 802.11n HT80 | 23.1 | 204.17 |


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## 5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an PIFA antenna, with a maximum gain of 2 dBi.

## 5.4. WORST-CASE CONFIGURATION AND MODE

Worst-case data rates as provided by the client were:
Based on the baseline scan, the worst-case data rates were:

802.11a mode: 6 Mbps
802.11n HT20mode: MCS0
802.11n HT40mode: MCS0
802.11n HT80mode: MCS0


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## 5.5. DESCRIPTION OF TEST SETUP

**SUPPORT EQUIPMENT**

| Support Equipment List | | | | |
|---|---|---|---|---|
| **Description** | **Manufacturer** | **Model** | **Serial Number** | **FCC ID** |
| EUT | Arris Group | NVG599 | - | GZ5NV599 |
| Power Supply | Arris Group | NBS42A120350M2 | - | DoC |
| Laptop | Lenovo | T410 | - | - |
| | | | | |
| | | | | |
| | | | | |

**I/O CABLES**

| I/O Cable List | | | | | | |
|---|---|---|---|---|---|---|
| **Cable No** | **Port** | **# of identical ports** | **Connector Type** | **Cable Type** | **Cable Length (m)** | **Remarks** |
| 1 | DC | 1 | IO | DC | 3 | |
| 2 | Ethernet | 4 | IO | 8 wire | 1 | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

**TEST SETUP**

The EUT is a standalone device with external power supply. A laptop was used to program device.


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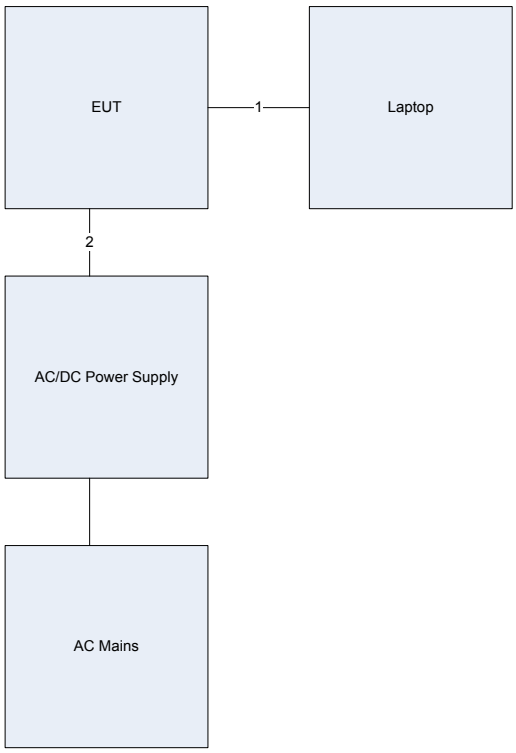
**SETUP DIAGRAM FOR TESTS**





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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** | **Asset** | **Cal Date** | **Cal Due** |
| EMI Test Receiver | Agilent | N9030A | EMC4360 | 20131221 | 20141221 |
| Power Meter | Agilent | N1912A | EMC4362 | 20130606 | 20150606 |
| Power Sensor | Agilent | 85481A | EMC4363 | 20131209 | 20141209 |


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# 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 1TX SISO | 2.060 | 2.170 | 0.949 | 94.93% | 0.23 | 0.485 |
| 802.11a 3TX CDD | 2.060 | 2.170 | 0.949 | 94.93% | 0.23 | 0.485 |
| 802.11n HT20 1TX SISO | 1.910 | 2.008 | 0.951 | 95.12% | 0.22 | 0.524 |
| 802.11n HT20 3TX CDD | 1.920 | 2.018 | 0.951 | 95.14% | 0.22 | 0.521 |
| 802.11n HT40 1TX SISO | 0.946 | 1.043 | 0.907 | 90.70% | 0.42 | 1.057 |
| 802.11n HT40 3TX CDD | 0.9400 | 1.0430 | 0.901 | 90.12% | 0.45 | 1.064 |
| 802.11ac HT80 1TX SISO | 0.4600 | 0.4880 | 0.943 | 94.26% | 0.26 | 2.174 |
| 802.11ac HT80 3TX CDD | 0.4600 | 0.4900 | 0.939 | 93.88% | 0.27 | 2.174 |


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## 7.1. MEASUREMENT METHODS

26 dB Emission BW: KDB 789033 D01 v01r03, Section C.

99% Occupied BW: KDB 789033 D01 v01r03, Section D.

Conducted Output Power: KDB 789033 D01 v01r03, Section E.2.b (Method SA-1).

Power Spectral Density: KDB 789033 D01 v01r03, Section F.

Peak Excursion: KDB 789033 D01 v01r03, Section G.

Unwanted emissions in restricted bands: KDB 789033 D01 v01r03, Sections H.3, H.4, H.5, and H.6.

Unwanted emissions in non-restricted bands: KDB 789033 D01 v01r03, Sections H.3, H.4, and H.5.

Straddling channel: 644545 D01 Guidance for IEEE 802.11ac v01r01 1


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## 7.2. DUTY CYCLE PLOTS

DUTY CYCLE 802.11a 1TX MODE

DUTY CYCLE 802.11a CDD MODE

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DUTY CYCLE 802.11n HT20 1TX MODE

DUTY CYCLE 802.11n HT20 CDD MODE

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DUTY CYCLE 802.11n HT40 1TX MODE

DUTY CYCLE 802.11n HT40 CDD MODE

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DUTY CYCLE 802.11ac VHT80 1TX MODE

DUTY CYCLE 802.11ac VHT80 CDD MODE

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# 8. ANTENNA PORT TEST RESULTS

## 8.1. 802.11a 1TX SISO 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 Bandwidth (MHz) |
|---|---|---|
| Low | 5260 | 20.35 |
| Mid | 5300 | 20.26 |
| High | 5320 | 20.23 |


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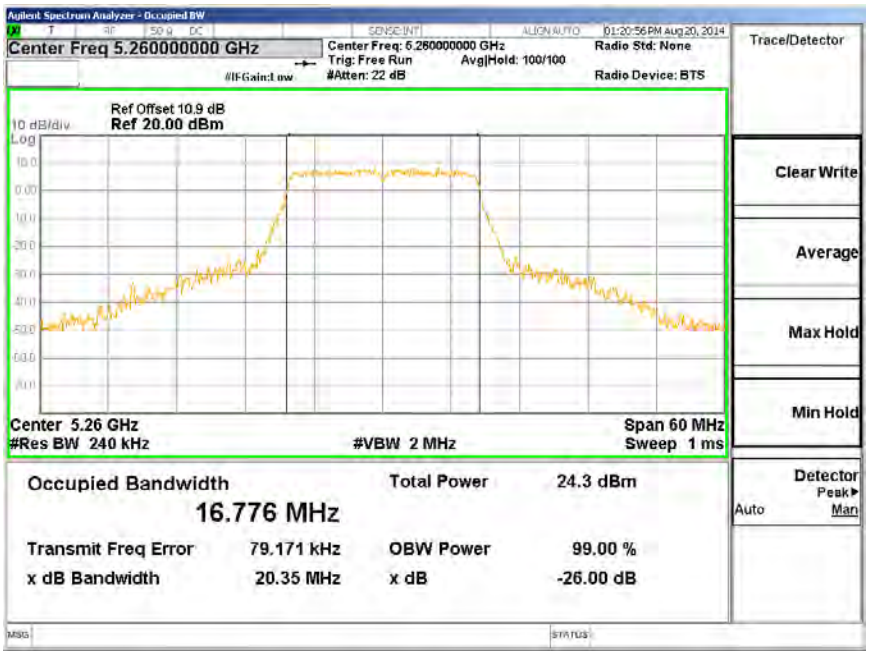
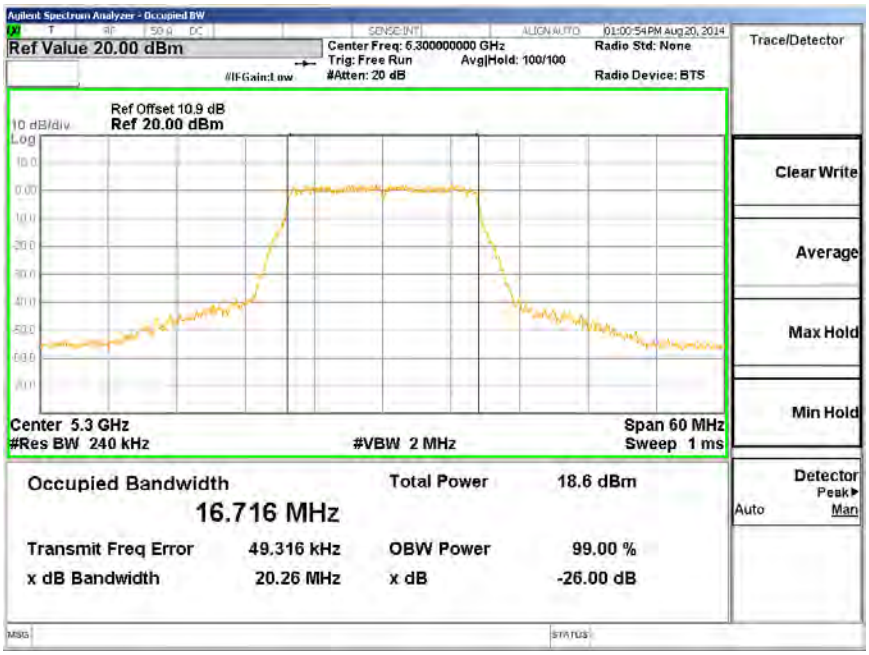
**26 dB BANDWIDTH**

BANDWIDTH LOW CH




BANDWIDTH MID CH





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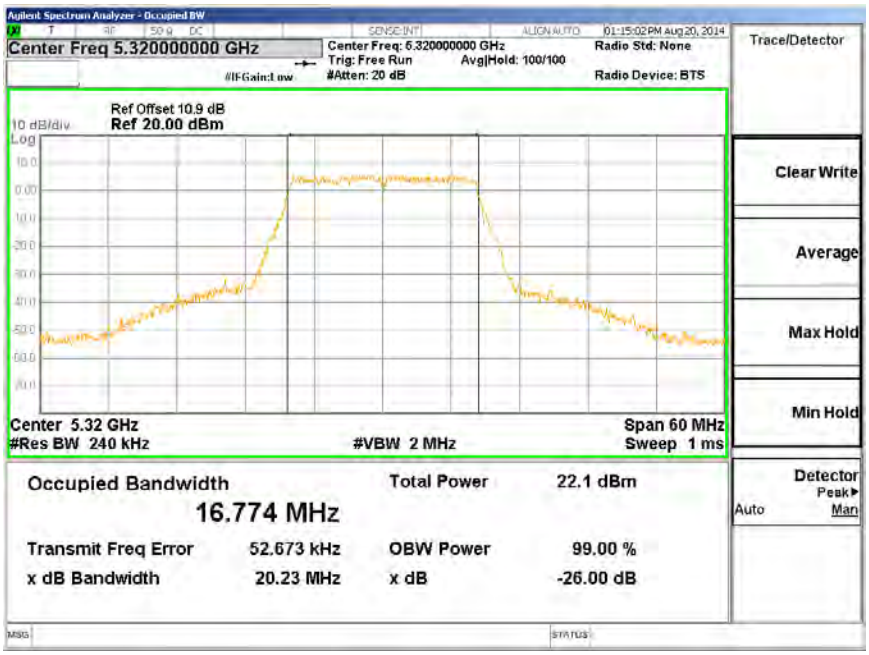
BANDWIDTH HIGH CH





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### 8.1.2. 99% BANDWIDTH

**LIMITS**

None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | 99% Bandwidth (MHz) |
|---|---|---|
| Low | 5260 | 16.6930 |
| Mid | 5300 | 16.7020 |
| High | 5320 | 16.6940 |


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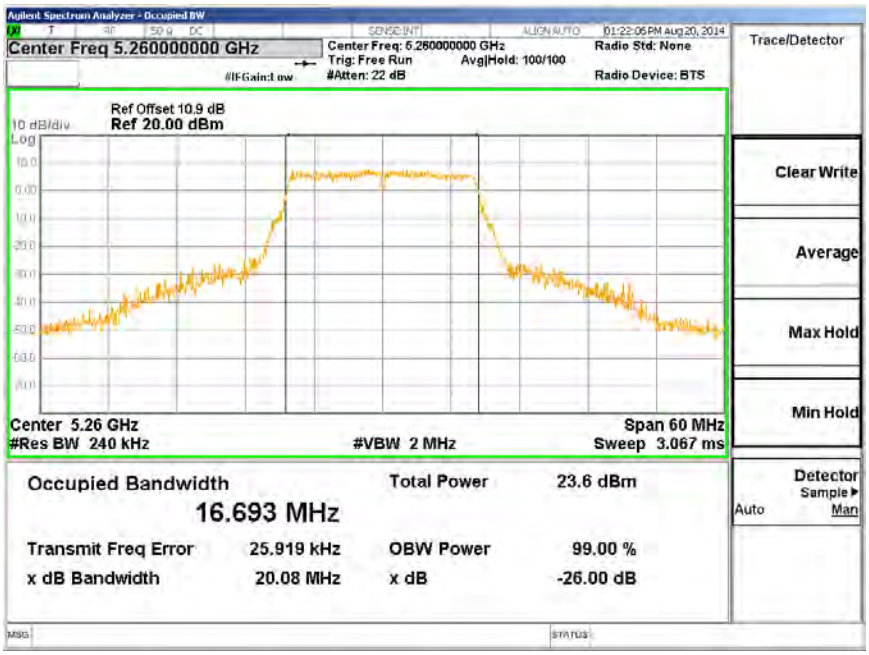
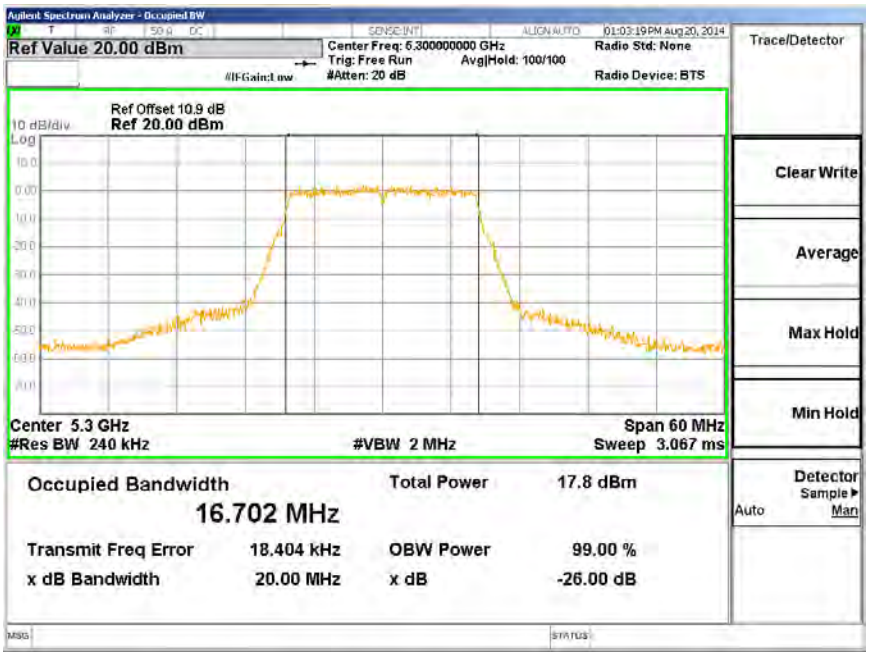
**99% BANDWIDTH**

BANDWIDTH LOW CH




BANDWIDTH MID CH





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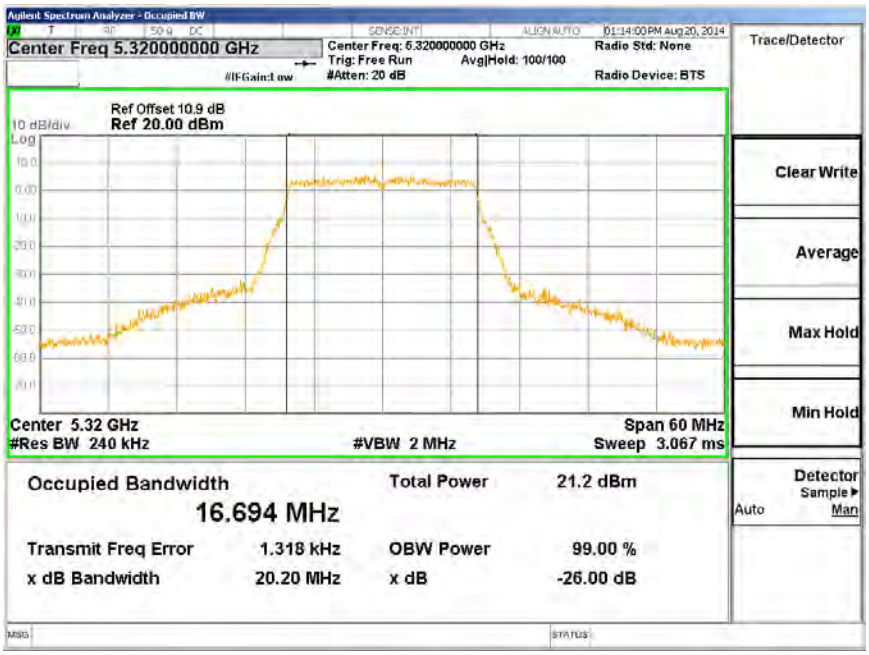
BANDWIDTH HIGH CH





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### 8.1.3. AVERAGE POWER

**LIMITS**

None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | Power (dBm) |
|---|---|---|
| Low | 5260 | 18.08 |
| Mid | 5300 | 12.26 |
| High | 5320 | 15.83 |


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### 8.1.4. 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**

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


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**RESULTS**

**Bandwidth, Antenna Gain, and Limits**

| Channel | Frequency (MHz) | Min 26 dB BW (MHz) | Directional Gain (dBi) | Power Limit (dBm) | PSD Limit (dBm) |
|---|---|---|---|---|---|
| Low | 5260 | 20.35 | 2.00 | 24.00 | 11.00 |
| Mid | 5300 | 20.26 | 2.00 | 24.00 | 11.00 |
| High | 5320 | 20.23 | 2.00 | 24.00 | 11.00 |

| | | |
|---|---|---|
| **Duty Cycle CF (dB)** | 0.23 | **Included in Calculations of Corr'd Power & PSD** |

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|
| Low | 5260 | 17.99 | 18.22 | 24.00 | -5.78 |
| Mid | 5300 | 12.06 | 12.29 | 24.00 | -11.71 |
| High | 5320 | 15.57 | 15.80 | 24.00 | -8.20 |

**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|
| Low | 5260 | 4.57 | 4.80 | 11.00 | -6.20 |
| Mid | 5300 | -1.27 | -1.04 | 11.00 | -12.04 |
| High | 5320 | 2.14 | 2.37 | 11.00 | -8.63 |


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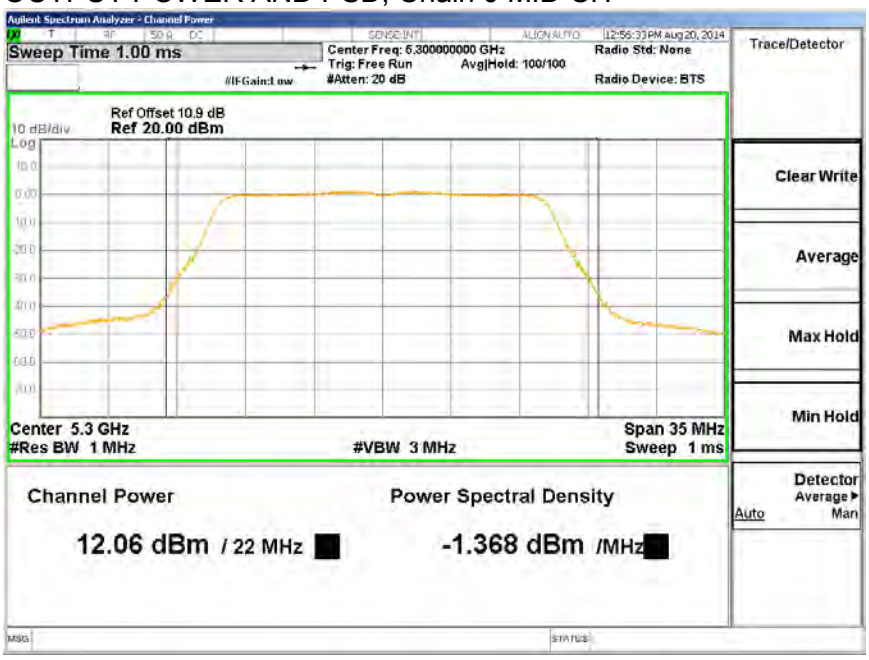
**OUTPUT POWER AND PSD, Chain 0**

OUTPUT POWER AND PSD, Chain 0 LOW CH

OUTPUT POWER AND PSD, Chain 0 MID CH





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OUTPUT POWER AND PSD, Chain 0 HIGH CH

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## 8.2. 802.11a 3TX CDD 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) | 26 dB BW Chain 2 (MHz) |
|---|---|---|---|---|
| Low | 5260 | 20.28 | 20.37 | 20.07 |
| Mid | 5300 | 20.27 | 20.00 | 20.03 |
| High | 5320 | 20.29 | 20.15 | 20.05 |


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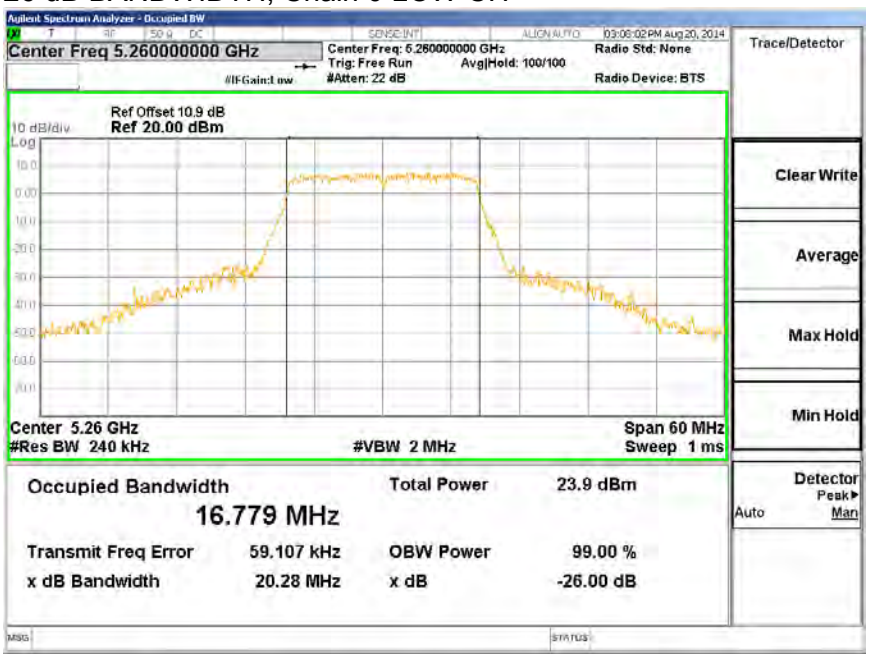
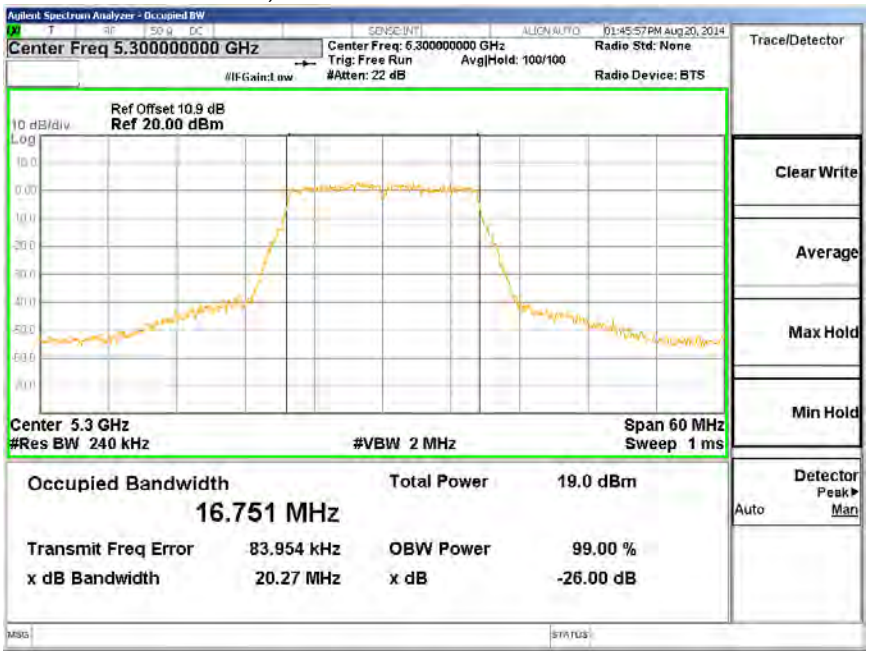
**26 dB BANDWIDTH, Chain 0**

26 dB BANDWIDTH, Chain 0 LOW CH




26 dB BANDWIDTH, Chain 0 MID CH





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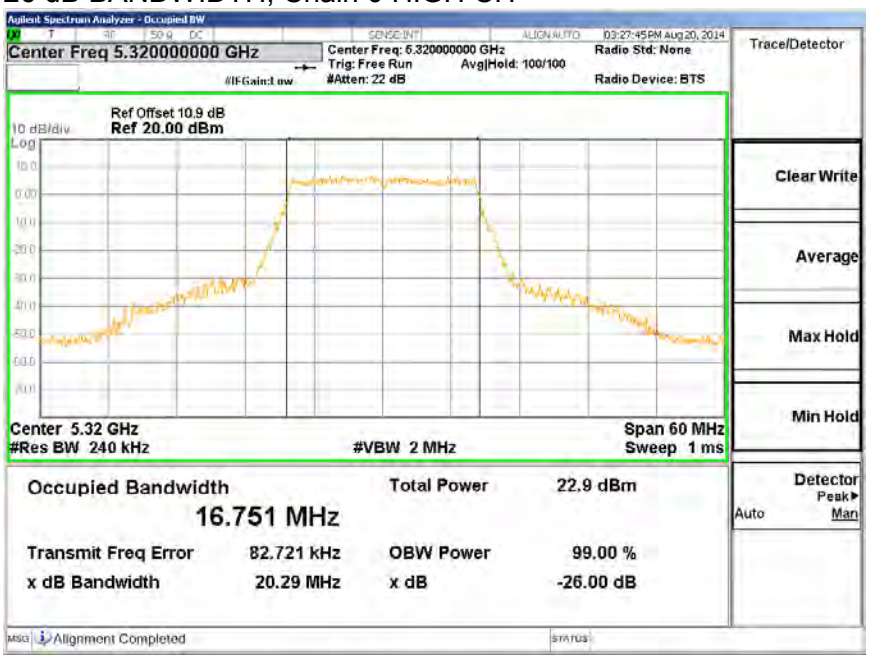
26 dB BANDWIDTH, Chain 0 HIGH CH




**26 dB BANDWIDTH, Chain 1**

26 dB BANDWIDTH, Chain 1 LOW CH

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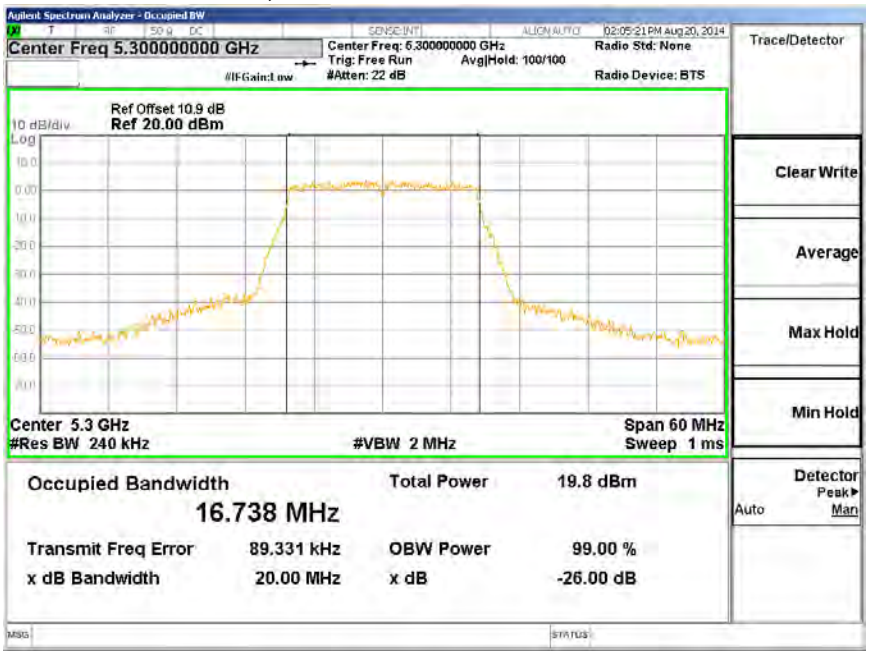
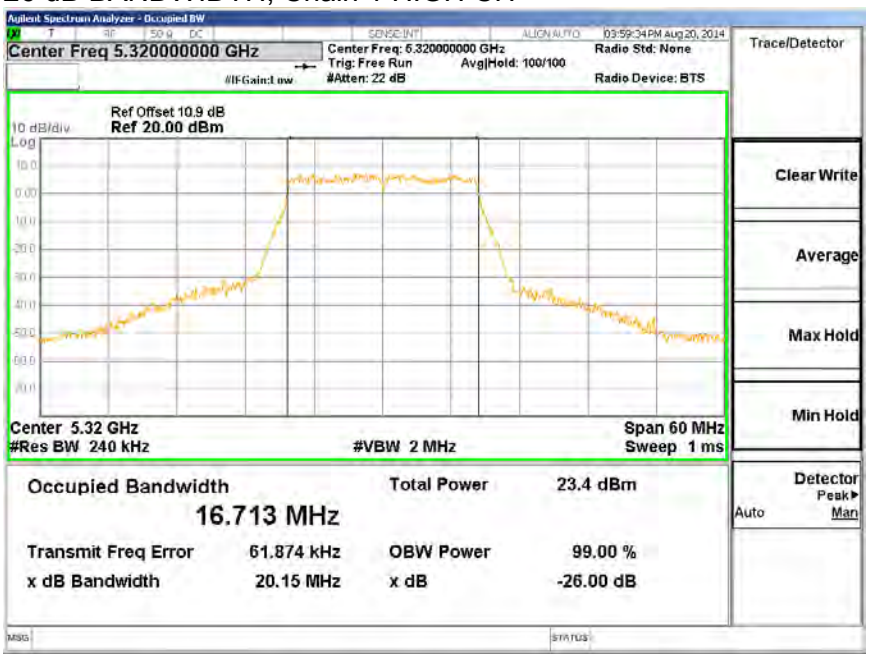
26 dB BANDWIDTH, Chain 1 MID CH




26 dB BANDWIDTH, Chain 1 HIGH CH





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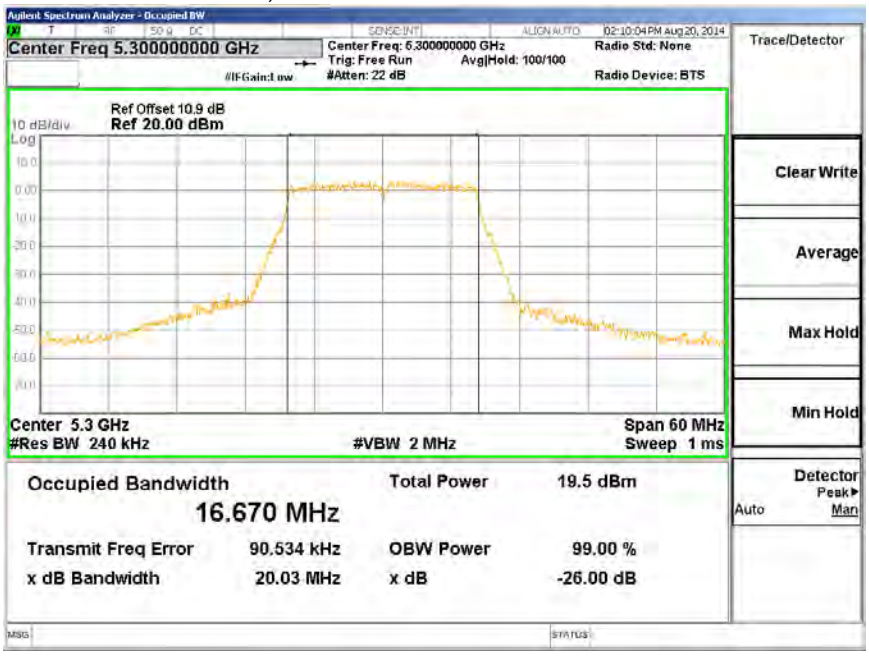
**26 dB BANDWIDTH, Chain 2**

26 dB BANDWIDTH, Chain 2 LOW CH

26 dB BANDWIDTH, Chain 2 MID CH





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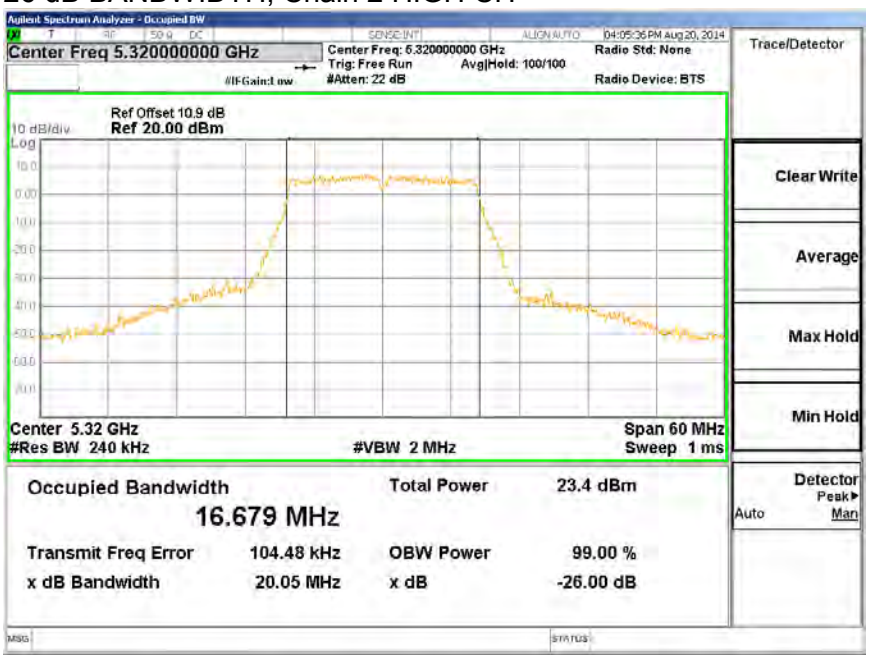
26 dB BANDWIDTH, Chain 2 HIGH CH





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### 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) | 99% BW Chain 2 (MHz) |
|---|---|---|---|---|
| Low | 5260 | 16.6960 | 16.6530 | 16.6680 |
| Mid | 5300 | 17.1620 | 16.6430 | 16.6440 |
| High | 5320 | 16.6920 | 16.6500 | 16.6220 |


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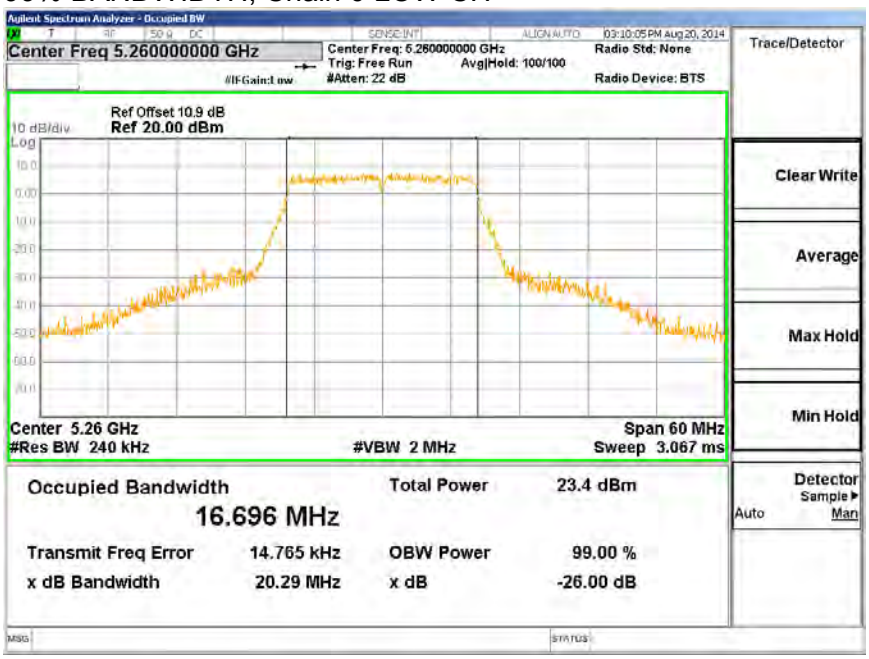
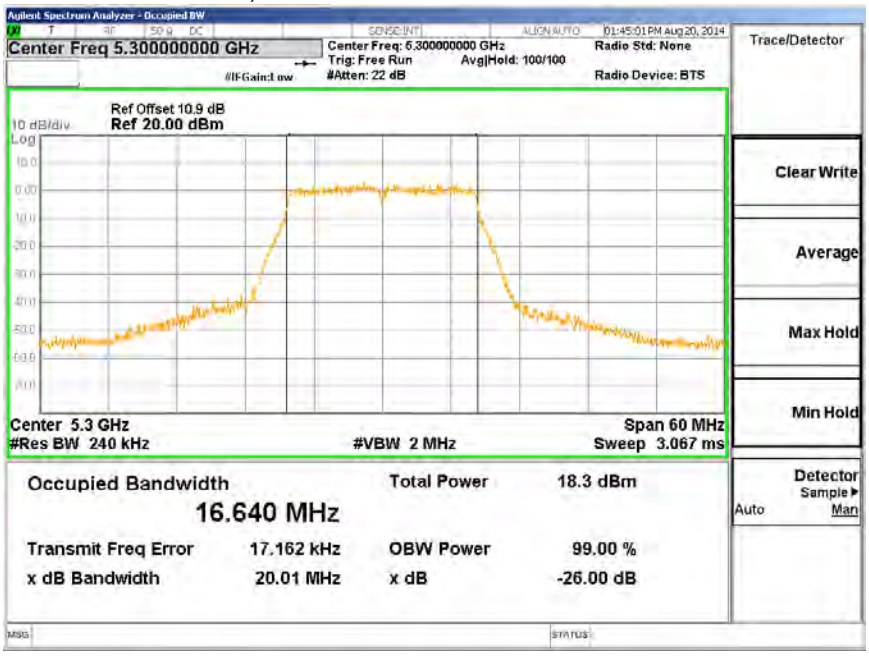
**99% BANDWIDTH, Chain 0**

99% BANDWIDTH, Chain 0 LOW CH




99% BANDWIDTH, Chain 0 MID CH





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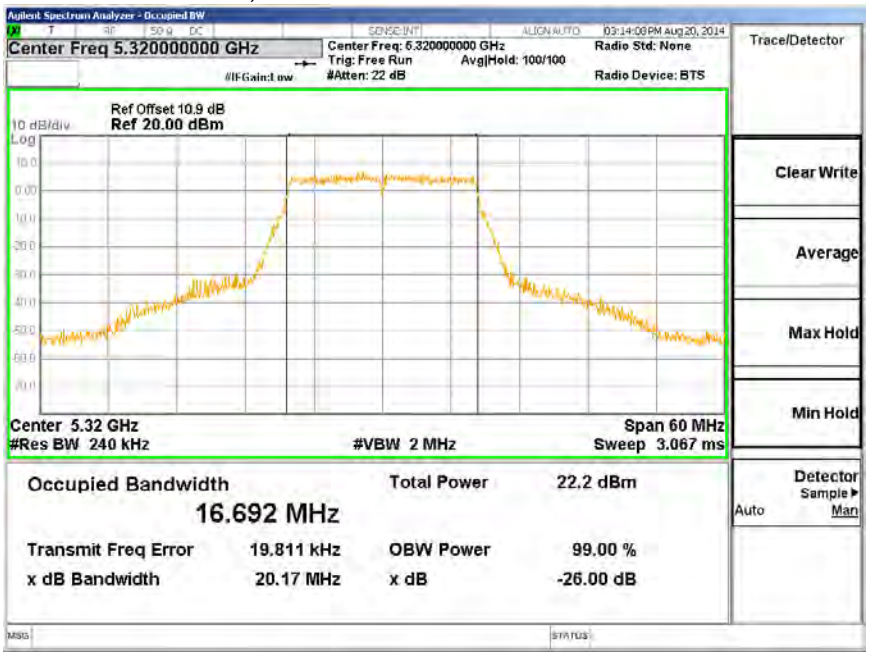
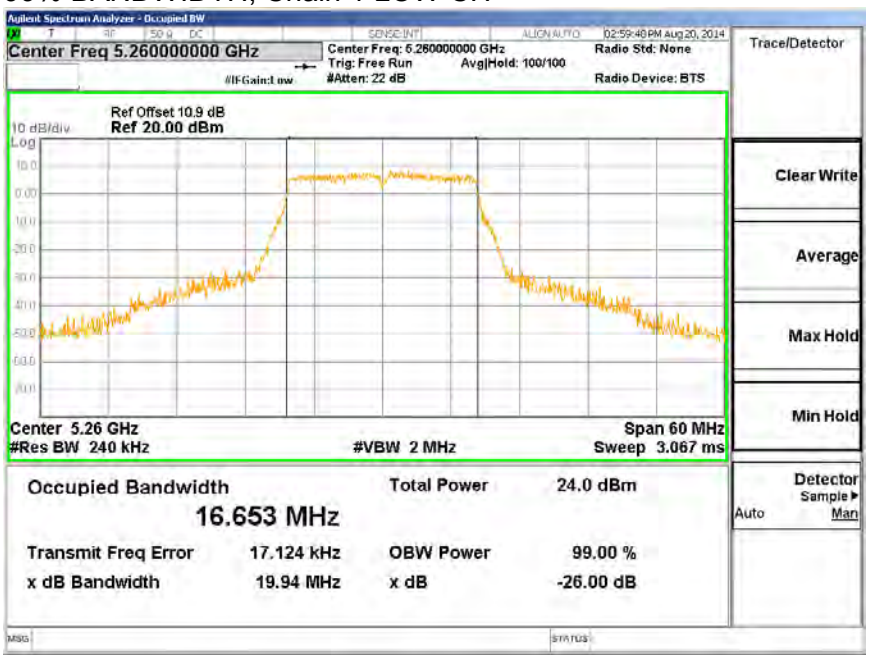
99% BANDWIDTH, Chain 0 HIGH CH




**99% BANDWIDTH, Chain 1**

99% BANDWIDTH, Chain 1 LOW CH





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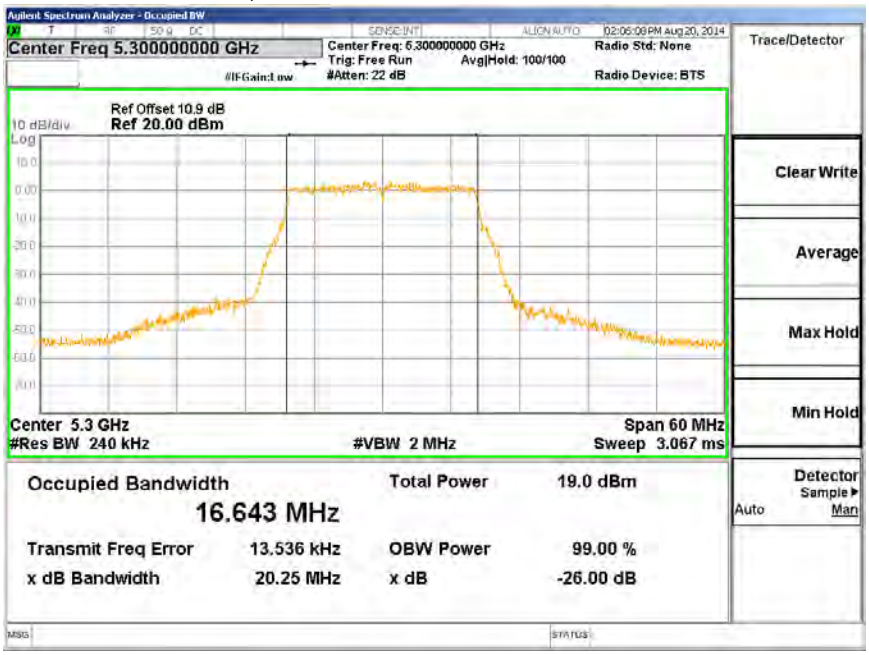
99% BANDWIDTH, Chain 1 MID CH




99% BANDWIDTH, Chain 1 HIGH CH

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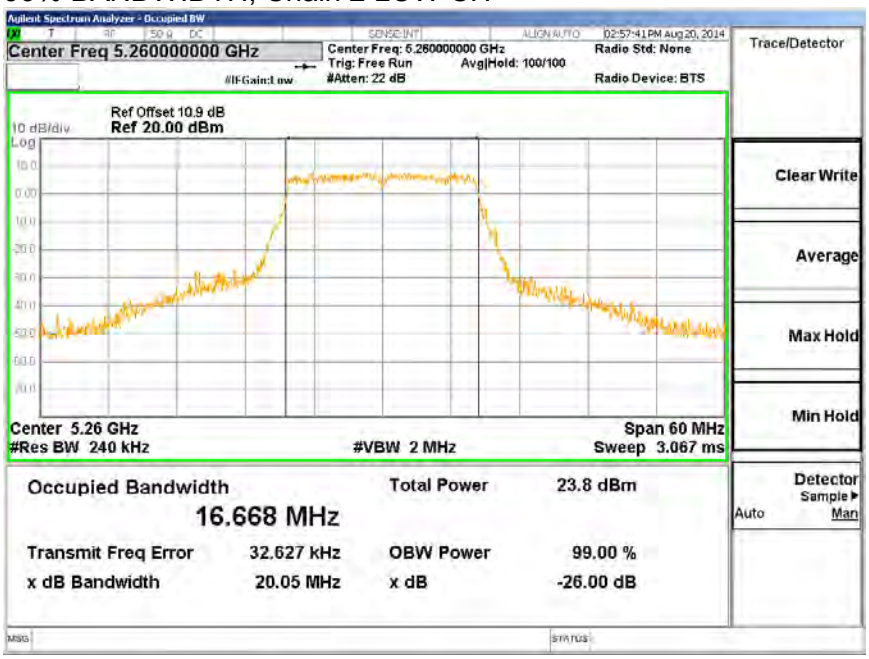
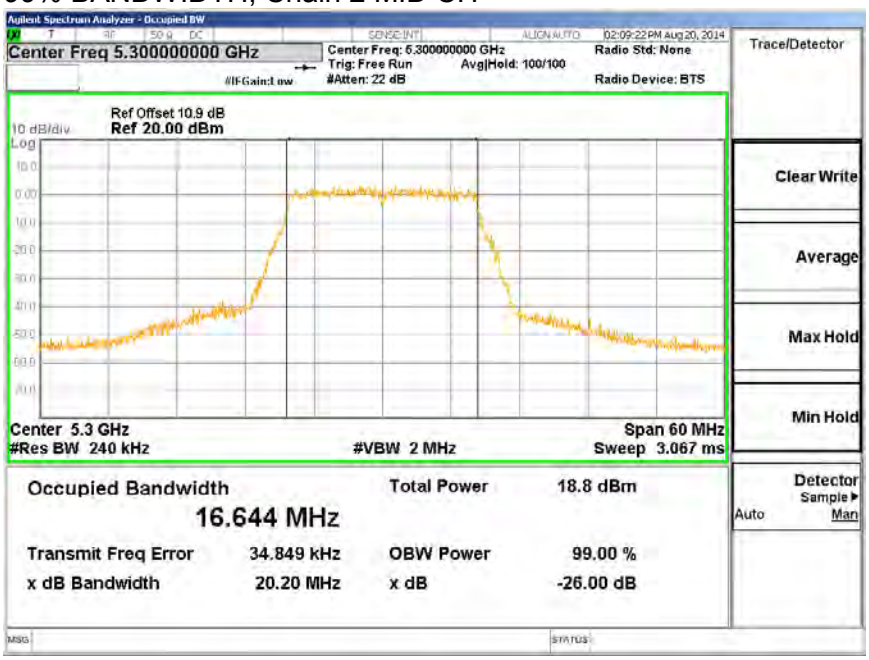
**99% BANDWIDTH, Chain 2**

99% BANDWIDTH, Chain 2 LOW CH




99% BANDWIDTH, Chain 2 MID CH





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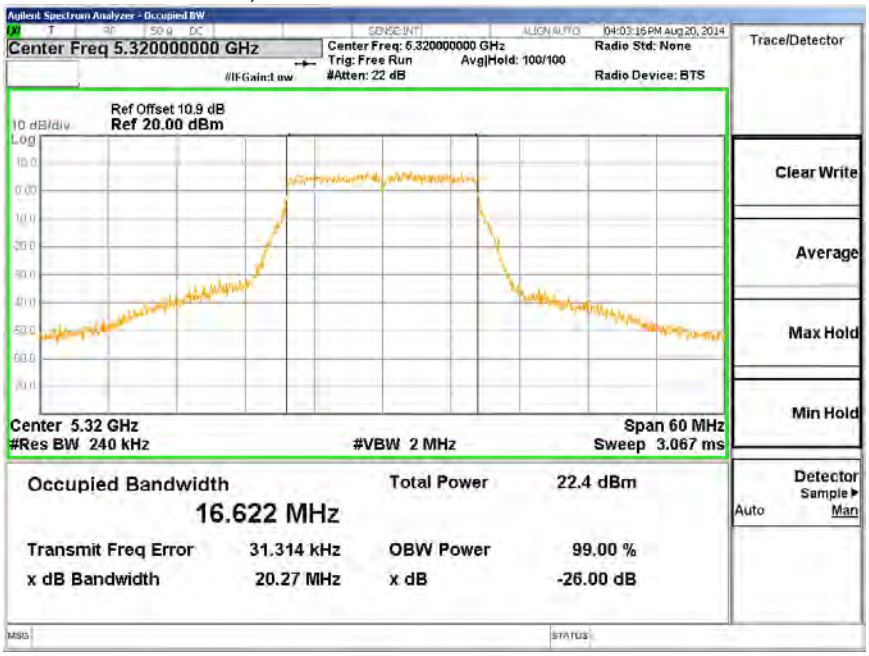
99% BANDWIDTH, Chain 2 HIGH CH





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### 8.2.3. AVERAGE POWER

**LIMITS**

None; for reporting purposes only.

**RESULTS**

**Average Power Results**

| Channel | Frequency (MHz) | Chain 0 Power (dBm) | Chain 1 Power (dBm) | Chain 2 Power (dBm) | Total Power (dBm) |
|---|---|---|---|---|---|
| Low | 5260 | 17.73 | 18.25 | 18.34 | 22.89 |
| Mid | 5300 | 12.94 | 13.30 | 13.16 | 17.91 |
| High | 5320 | 16.74 | 17.30 | 17.16 | 21.84 |


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### 8.2.4. 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 correlated and the antenna gain is the same for each chain. The directional gain is:

| Antenna Gain (dBi) | 10 * Log (3 chains) (dB) | Correlated Chains Directional Gain (dBi) |
|---|---|---|
| 2.00 | 4.77 | 6.77 |


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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) |
|---|---|---|---|---|---|---|
| Low | 5260 | 20.07 | 6.77 | 6.77 | 23.23 | 10.23 |
| Mid | 5300 | 20.00 | 6.77 | 6.77 | 23.23 | 10.23 |
| High | 5320 | 20.05 | 6.77 | 6.77 | 23.23 | 10.23 |

| | | |
|---|---|---|
| **Duty Cycle CF (dB)** | 0.23 | **Included in Calculations of Corr'd Power & PSD** |

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Chain 1 Meas Power (dBm) | Chain 2 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|---|---|
| Low | 5260 | 17.74 | 18.40 | 18.35 | 23.17 | 23.23 | -0.06 |
| Mid | 5300 | 12.83 | 13.42 | 13.15 | 18.14 | 23.23 | -5.09 |
| High | 5320 | 16.51 | 17.13 | 16.91 | 21.86 | 23.23 | -1.37 |

**PPSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Chain 1 Meas PSD (dBm) | Chain 2 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|---|---|
| Low | 5260 | 4.31 | 4.98 | 4.93 | 9.75 | 10.23 | -0.48 |
| Mid | 5300 | -0.59 | -0.01 | -0.28 | 4.71 | 10.23 | -5.52 |
| High | 5320 | 3.08 | 3.71 | 3.49 | 8.43 | 10.23 | -1.80 |


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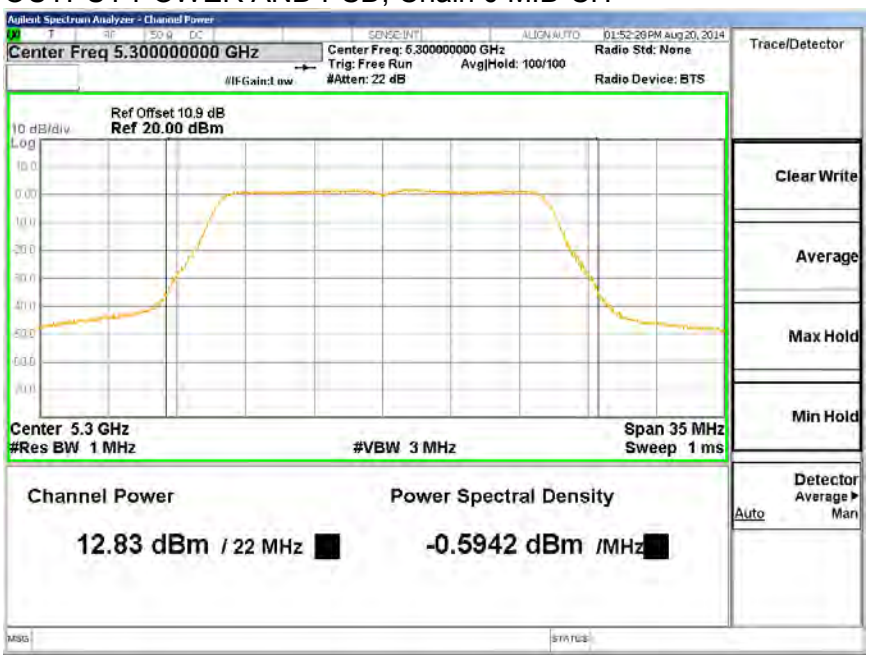
**OUTPUT POWER AND PSD, Chain 0**

OUTPUT POWER AND PSD, Chain 0 LOW CH

OUTPUT POWER AND PSD, Chain 0 MID CH





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OUTPUT POWER AND PSD, Chain 0 HIGH CH

**OUTPUT POWER AND PSD, Chain 1**

OUTPUT POWER AND PSD, Chain 1 LOW CH

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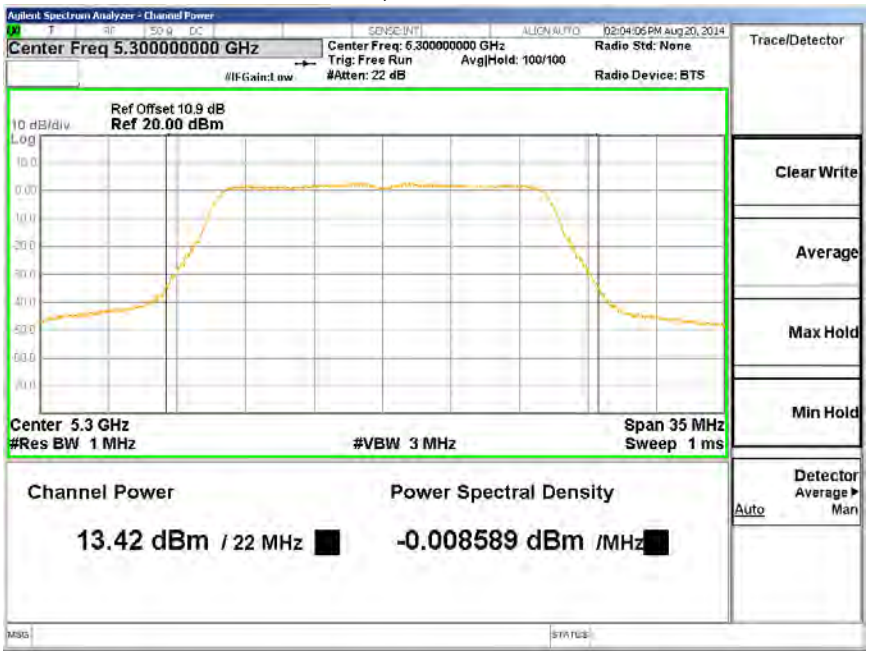
OUTPUT POWER AND PSD, Chain 1 MID CH




OUTPUT POWER AND PSD, Chain 1 HIGH CH

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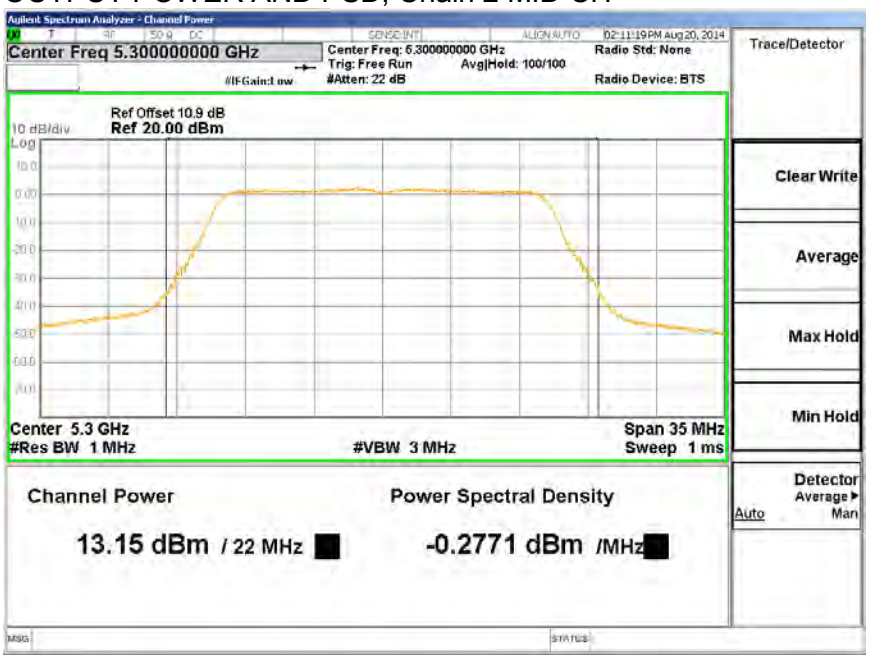
**OUTPUT POWER AND PSD, Chain 2**

OUTPUT POWER AND PSD, Chain 2 LOW CH

OUTPUT POWER AND PSD, Chain 2 MID CH





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OUTPUT POWER AND PSD, Chain 2 HIGH CH

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## 8.3. 802.11n HT20 1TX SISO 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 Bandwidth (MHz) |
|---|---|---|
| Low | 5260 | 20.64 |
| Mid | 5300 | 20.66 |
| High | 5320 | 20.74 |


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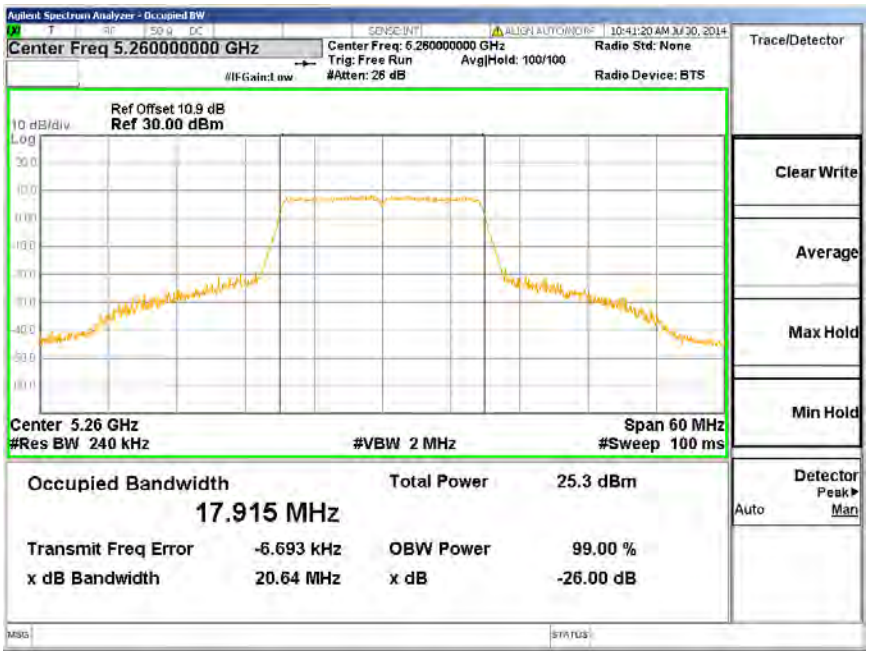
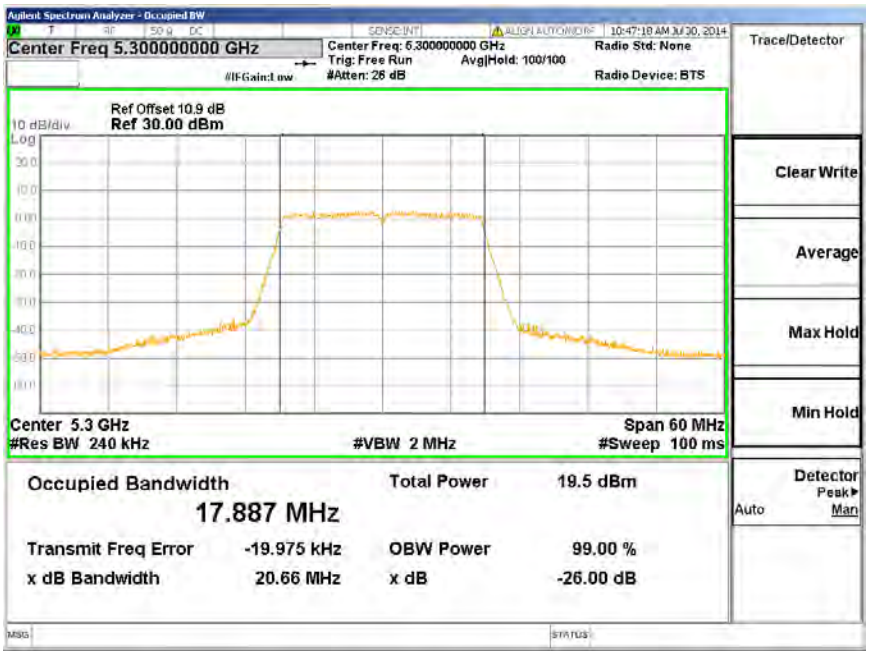
**26 dB BANDWIDTH**

BANDWIDTH LOW CH




BANDWIDTH MID CH





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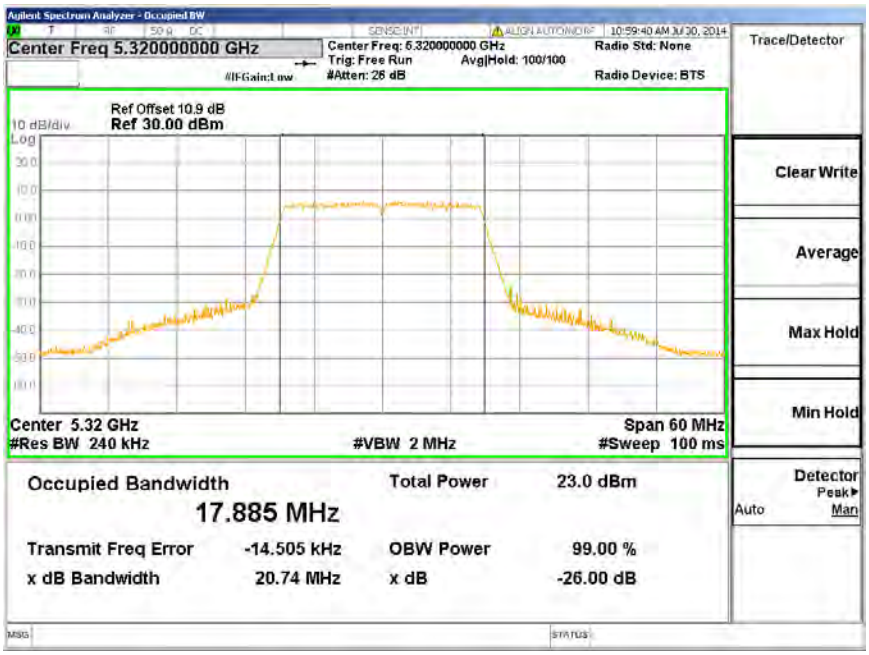
BANDWIDTH HIGH CH





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### 8.3.2. 99% BANDWIDTH

**LIMITS**

None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | 99% Bandwidth (MHz) |
|---|---|---|
| Low | 5260 | 17.7750 |
| Mid | 5300 | 17.8370 |
| High | 5320 | 17.7620 |


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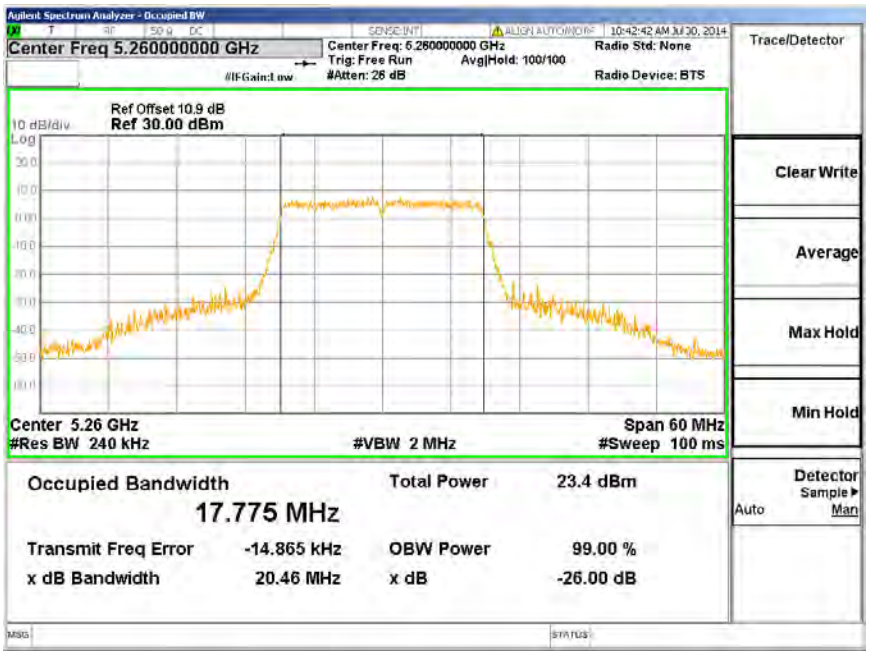
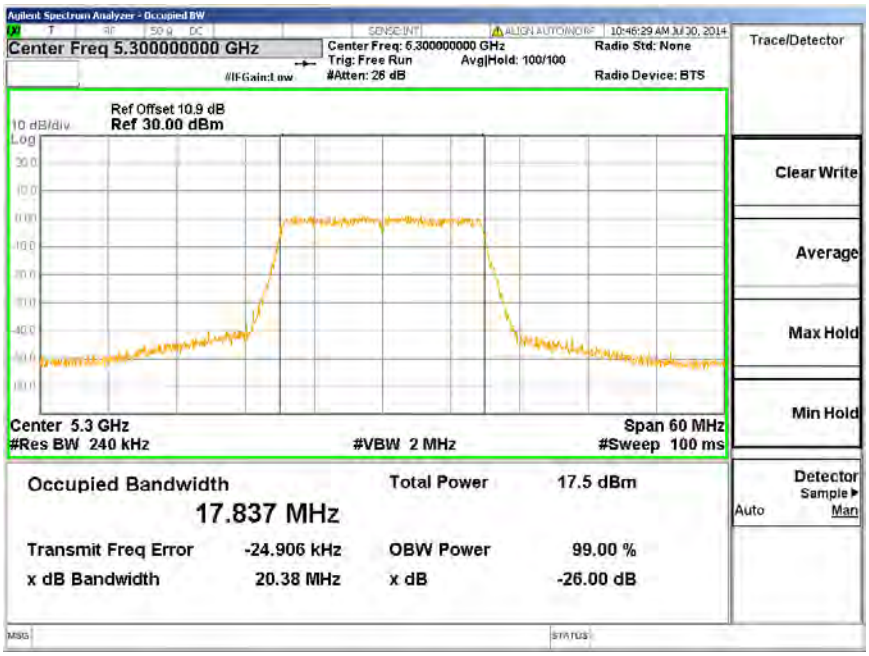
**99% BANDWIDTH**

BANDWIDTH LOW CH




BANDWIDTH MID CH





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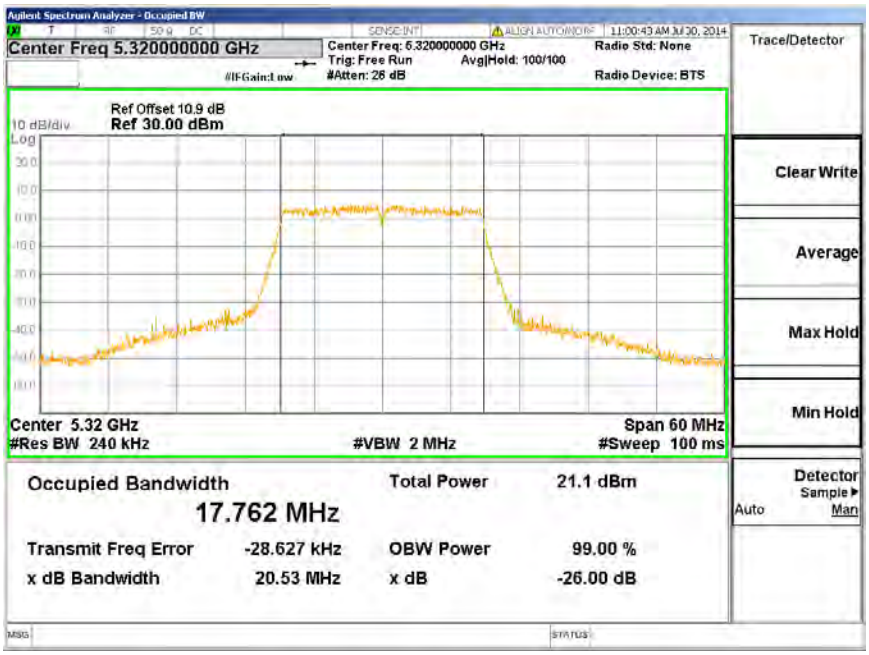
BANDWIDTH HIGH CH





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### 8.3.3. AVERAGE POWER

**LIMITS**

None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | Power (dBm) |
|---|---|---|
| Low | 5260 | 17.95 |
| Mid | 5300 | 12.36 |
| High | 5320 | 15.77 |


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### 8.3.4. 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**

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


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**RESULTS**

**Bandwidth, Antenna Gain, and Limits**

| Channel | Frequency (MHz) | Min 26 dB BW (MHz) | Directional Gain (dBi) | Power Limit (dBm) | PSD Limit (dBm) |
|---|---|---|---|---|---|
| Low | 5260 | 20.64 | 6.77 | 23.23 | 10.23 |
| Mid | 5300 | 20.66 | 6.77 | 23.23 | 10.23 |
| High | 5320 | 20.74 | 6.77 | 23.23 | 10.23 |

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

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|
| Low | 5260 | 18.01 | 18.23 | 23.23 | -5.00 |
| Mid | 5300 | 12.08 | 12.30 | 23.23 | -10.93 |
| High | 5320 | 15.56 | 15.78 | 23.23 | -7.45 |

**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|
| Low | 5260 | 4.59 | 4.81 | 10.23 | -5.42 |
| Mid | 5300 | -1.34 | -1.12 | 10.23 | -11.35 |
| High | 5320 | 2.13 | 2.35 | 10.23 | -7.88 |


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**OUTPUT POWER AND PSD, Chain 0**

OUTPUT POWER AND PSD, Chain 0 LOW CH

OUTPUT POWER AND PSD, Chain 0 MID CH

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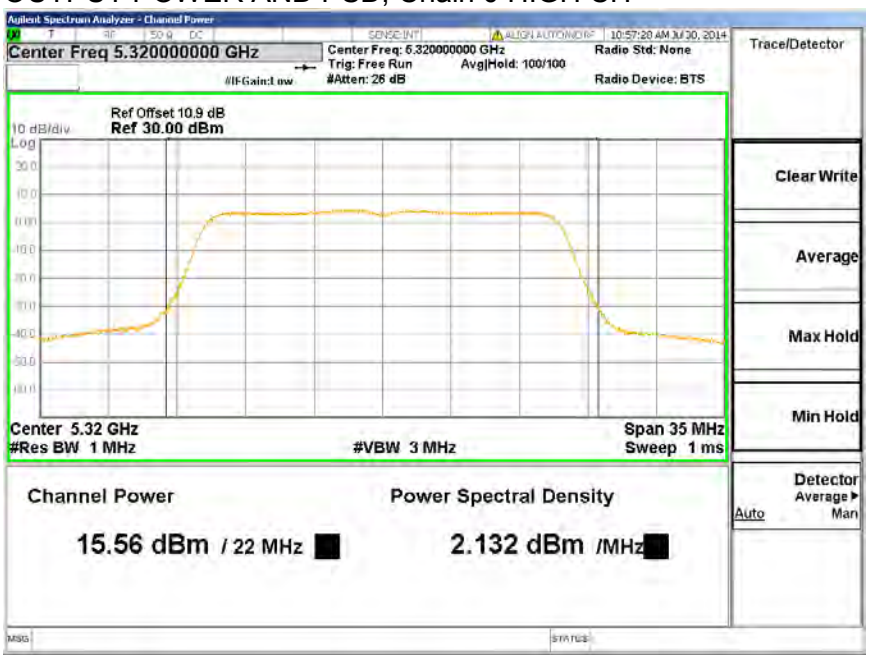
OUTPUT POWER AND PSD, Chain 0 HIGH CH





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## 8.4. 802.11n HT20 3TX CDD 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) | 26 dB BW Chain 2 (MHz) |
|---|---|---|---|---|
| Low | 5260 | 20.68 | 20.61 | 20.65 |
| Mid | 5300 | 20.65 | 20.42 | 20.48 |
| High | 5320 | 20.84 | 20.57 | 20.59 |


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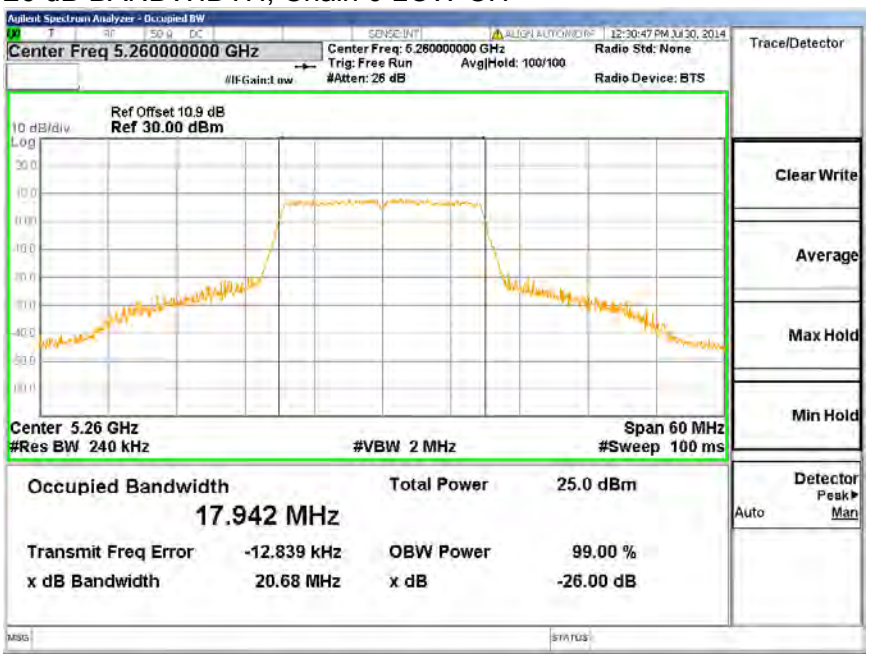
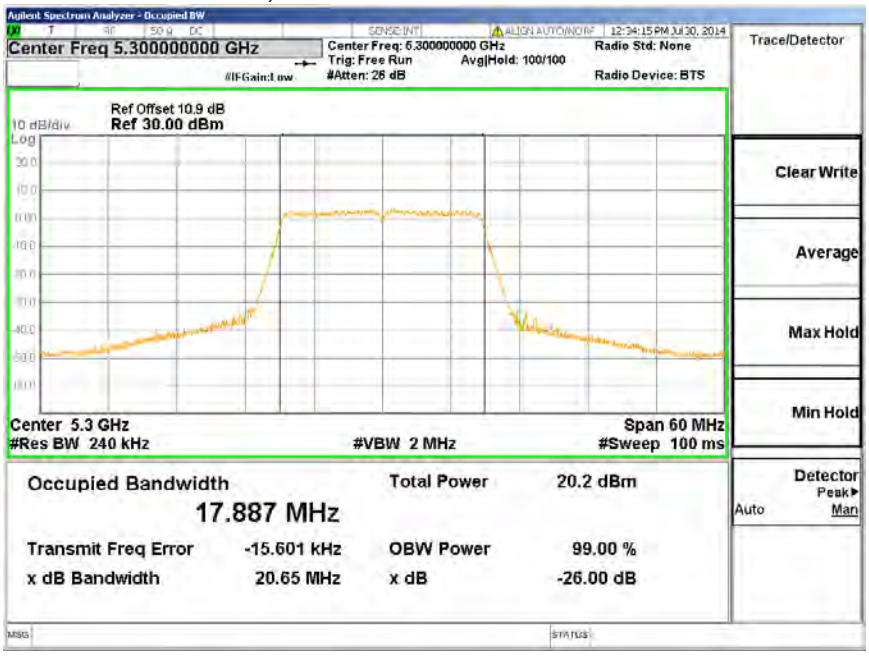
**26 dB BANDWIDTH, Chain 0**

26 dB BANDWIDTH, Chain 0 LOW CH




26 dB BANDWIDTH, Chain 0 MID CH





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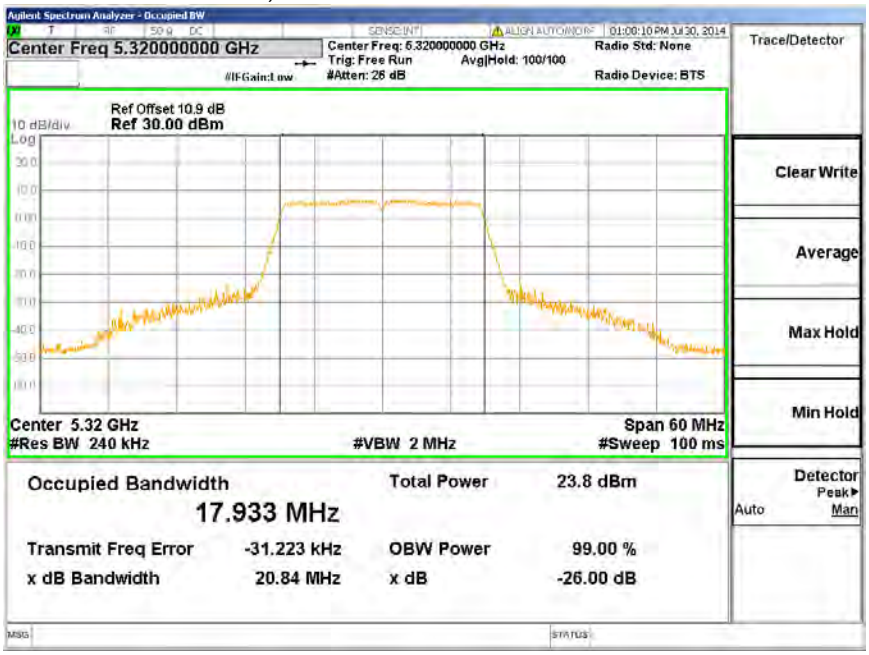
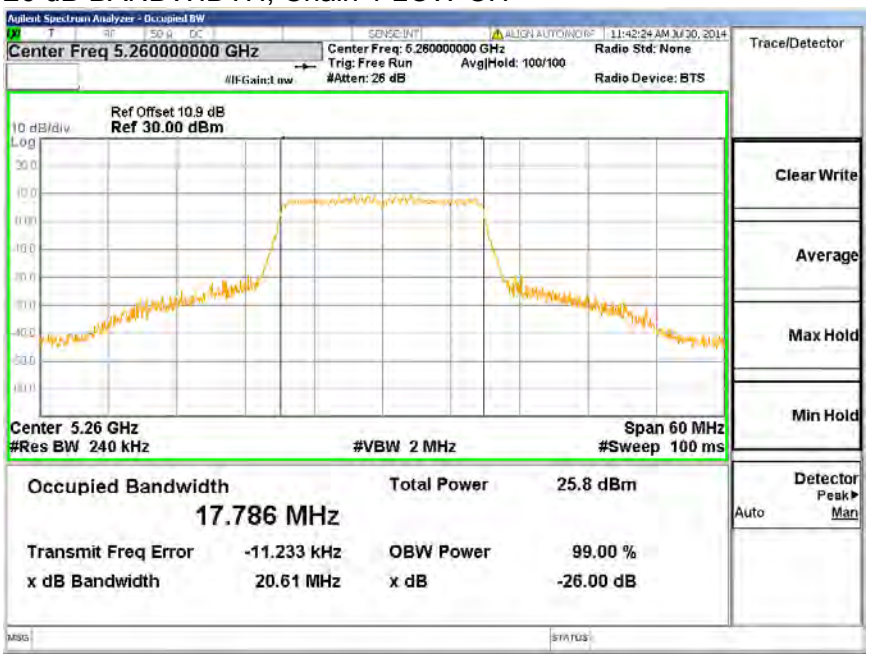
26 dB BANDWIDTH, Chain 0 HIGH CH




**26 dB BANDWIDTH, Chain 1**

26 dB BANDWIDTH, Chain 1 LOW CH





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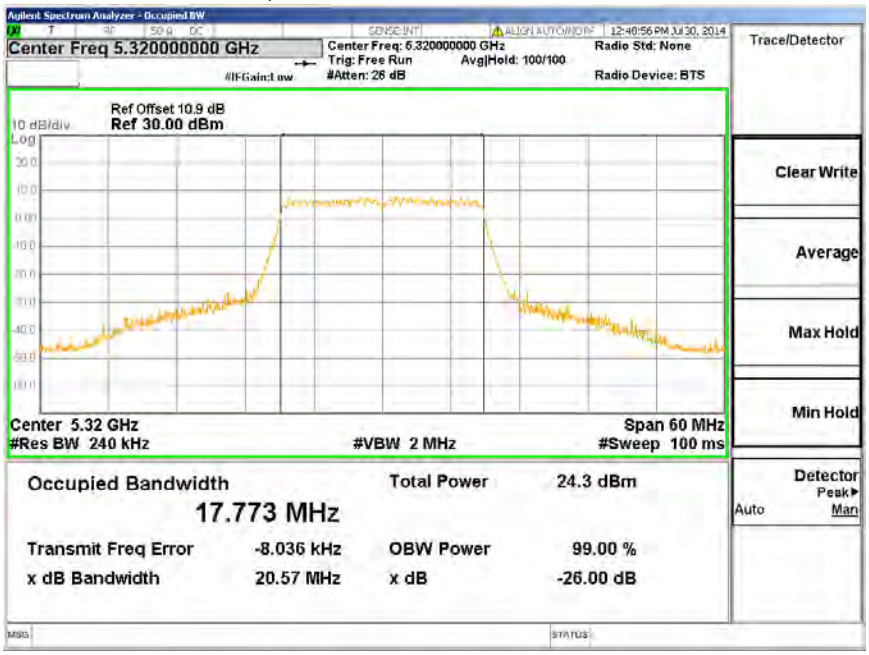
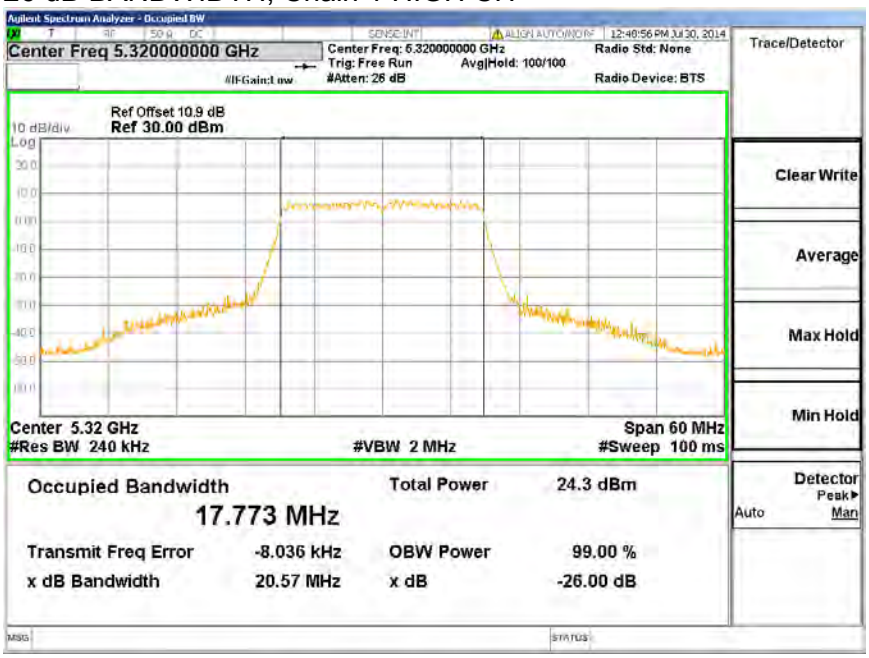
26 dB BANDWIDTH, Chain 1 MID CH




26 dB BANDWIDTH, Chain 1 HIGH CH





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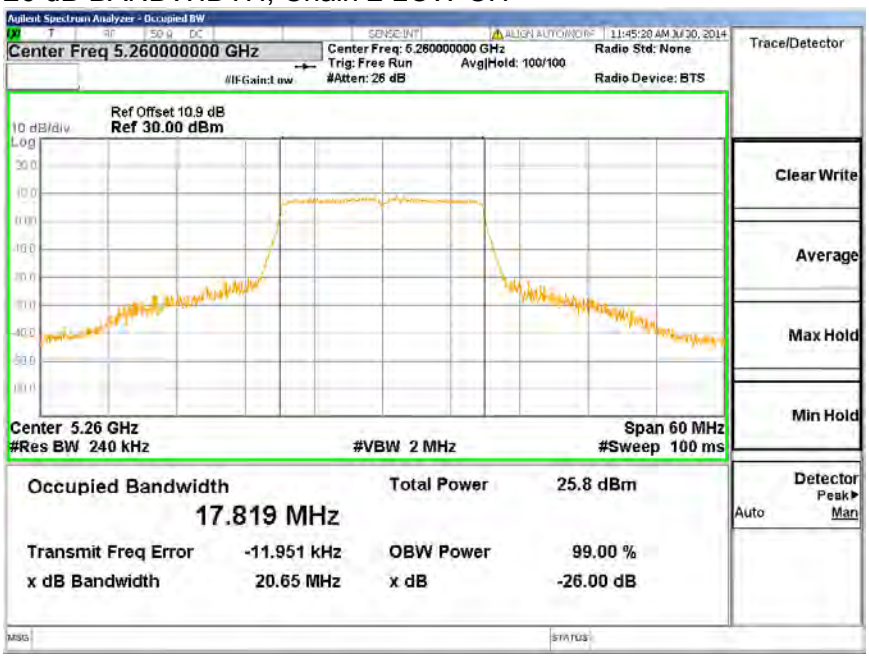
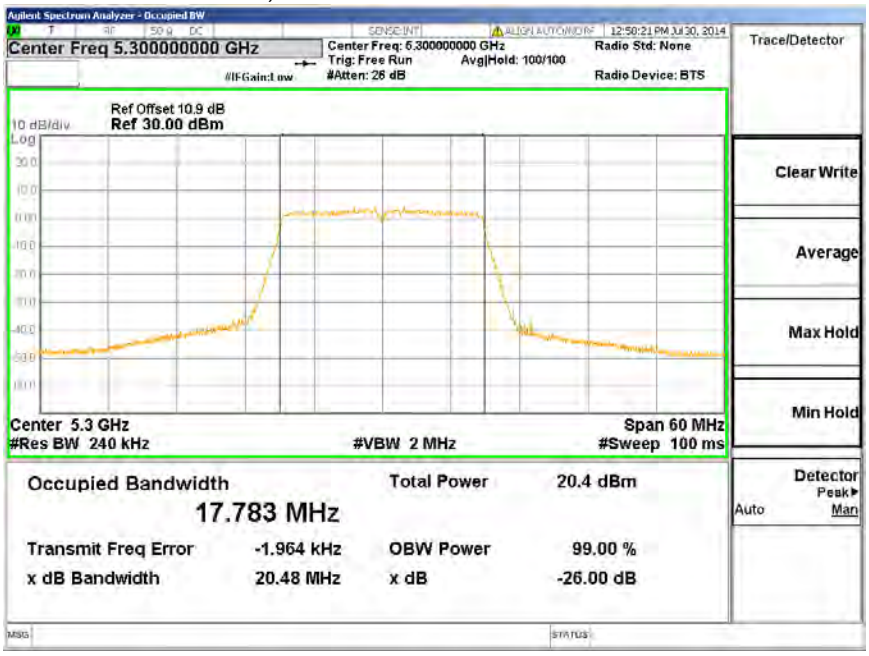
**26 dB BANDWIDTH, Chain 2**

26 dB BANDWIDTH, Chain 2 LOW CH




26 dB BANDWIDTH, Chain 2 MID CH





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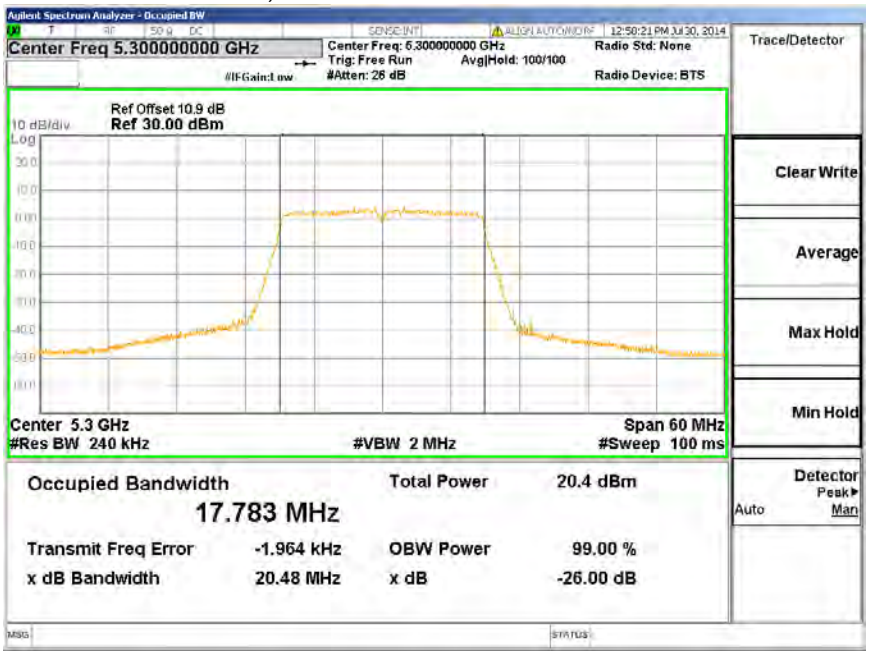
26 dB BANDWIDTH, Chain 2 HIGH CH





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### 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) | 99% BW Chain 2 (MHz) |
|---|---|---|---|---|
| Low | 5260 | 17.8020 | 17.7290 | 17.7480 |
| Mid | 5300 | 17.7730 | 17.7340 | 17.7270 |
| High | 5320 | 17.7830 | 17.7360 | 17.7970 |


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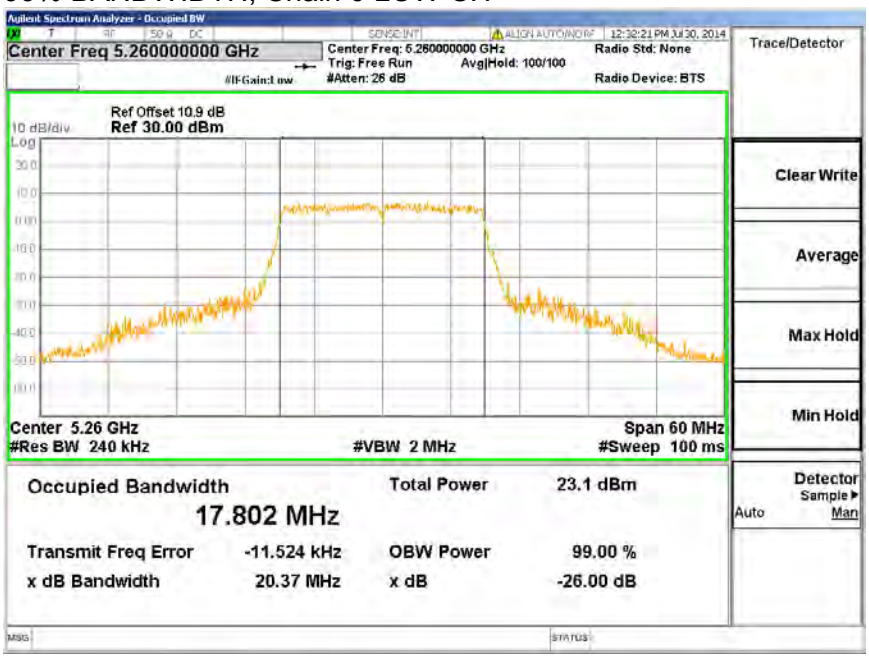
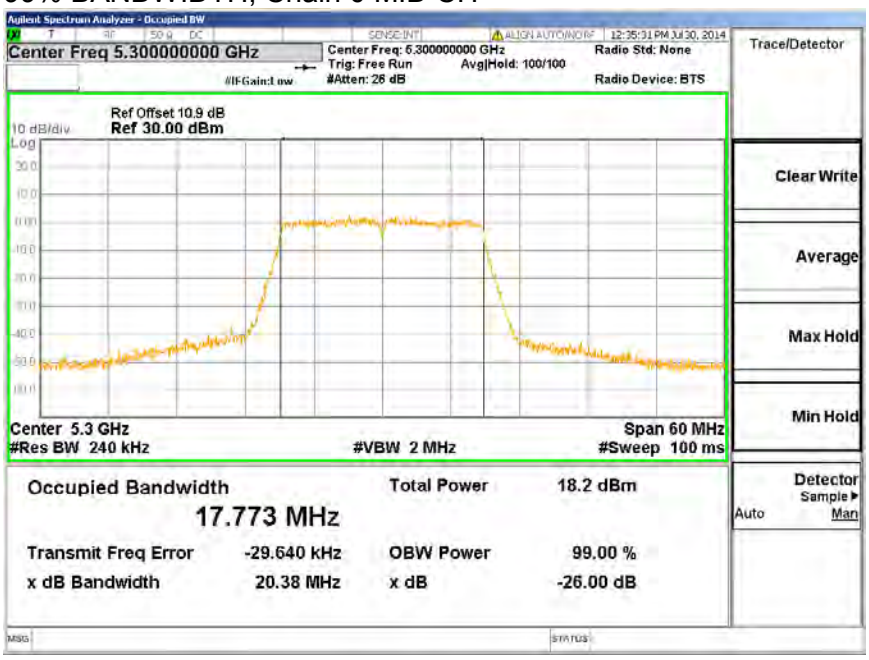
**99% BANDWIDTH, Chain 0**

99% BANDWIDTH, Chain 0 LOW CH




99% BANDWIDTH, Chain 0 MID CH





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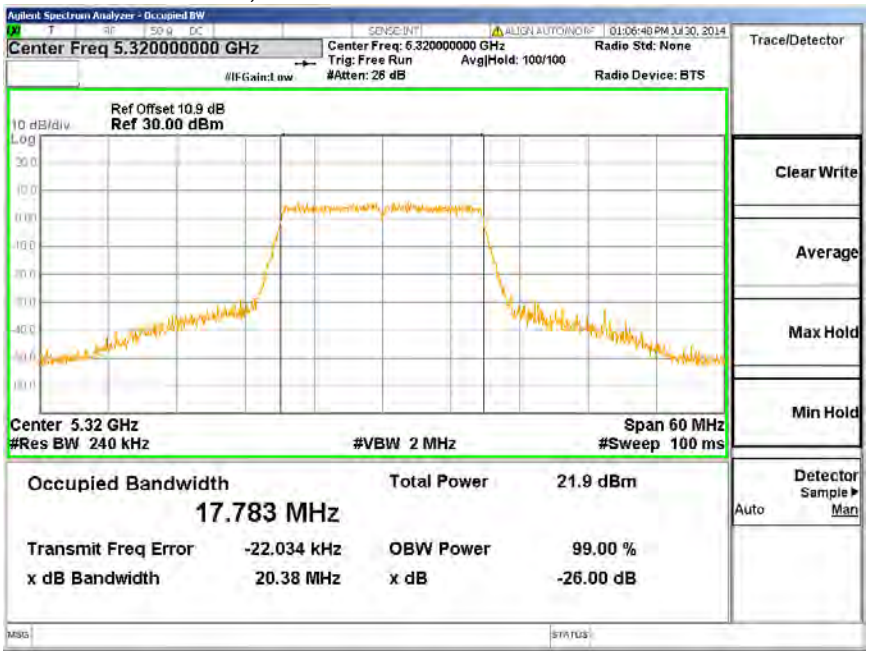
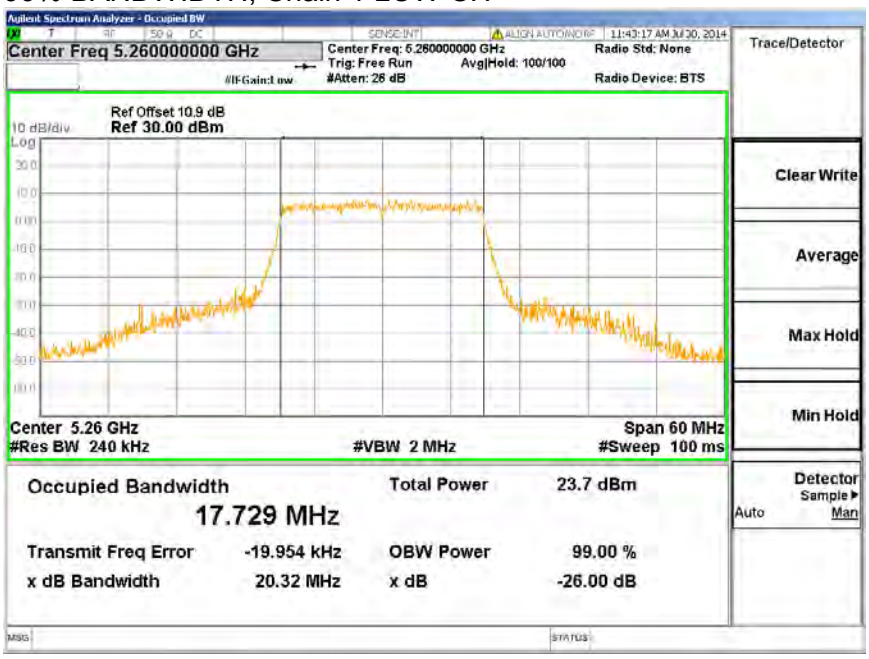
99% BANDWIDTH, Chain 0 HIGH CH




**99% BANDWIDTH, Chain 1**

99% BANDWIDTH, Chain 1 LOW CH





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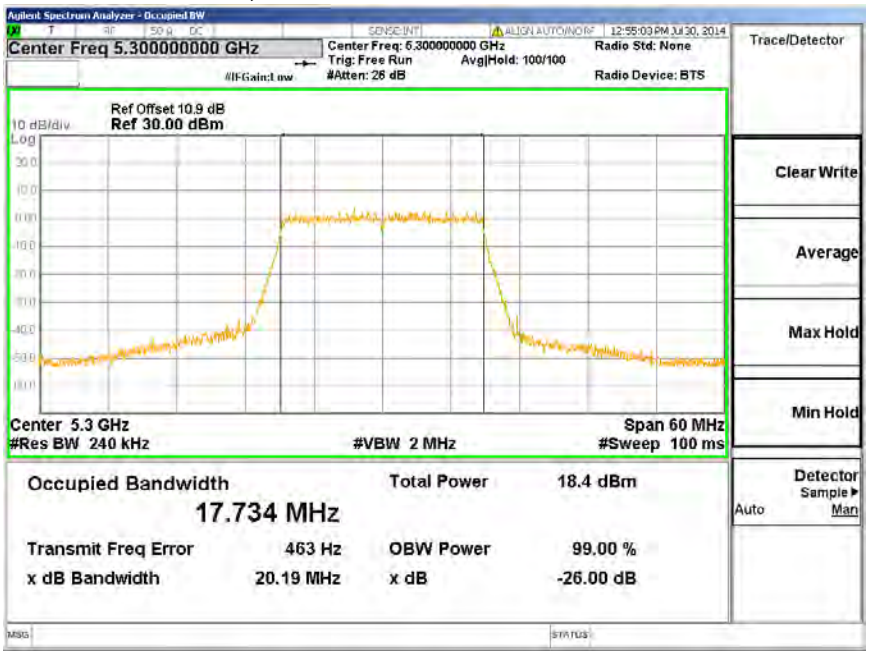
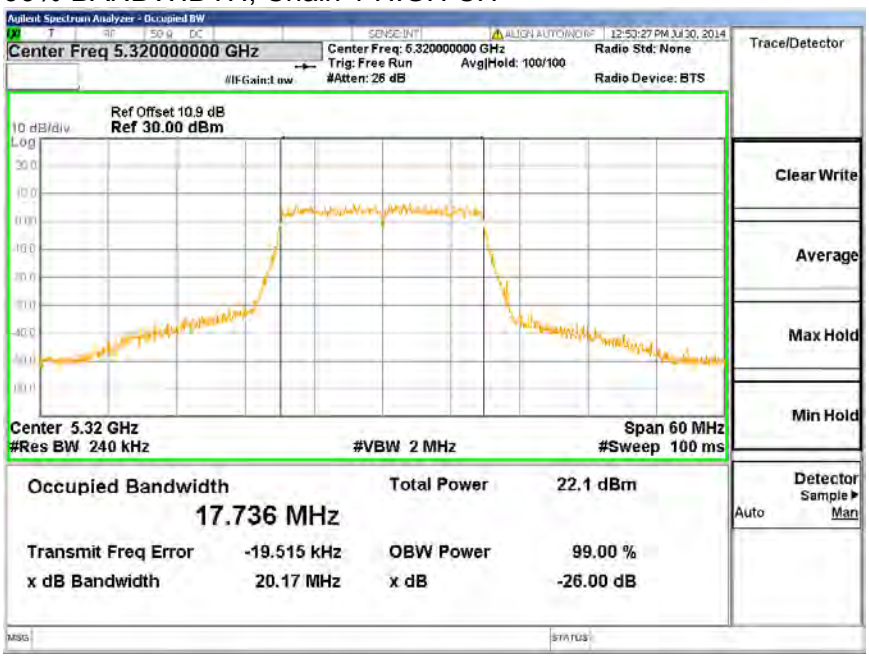
99% BANDWIDTH, Chain 1 MID CH




99% BANDWIDTH, Chain 1 HIGH CH





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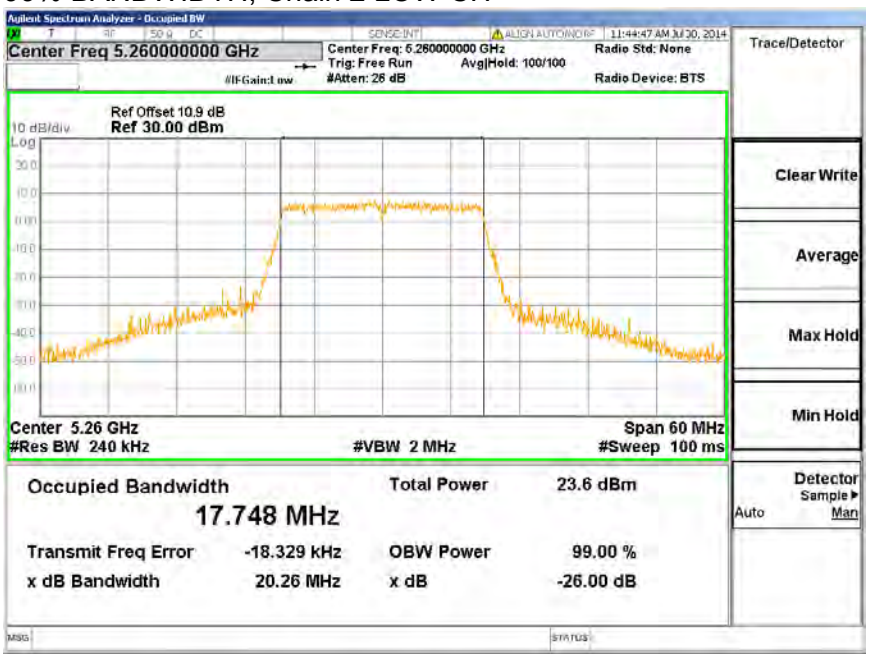
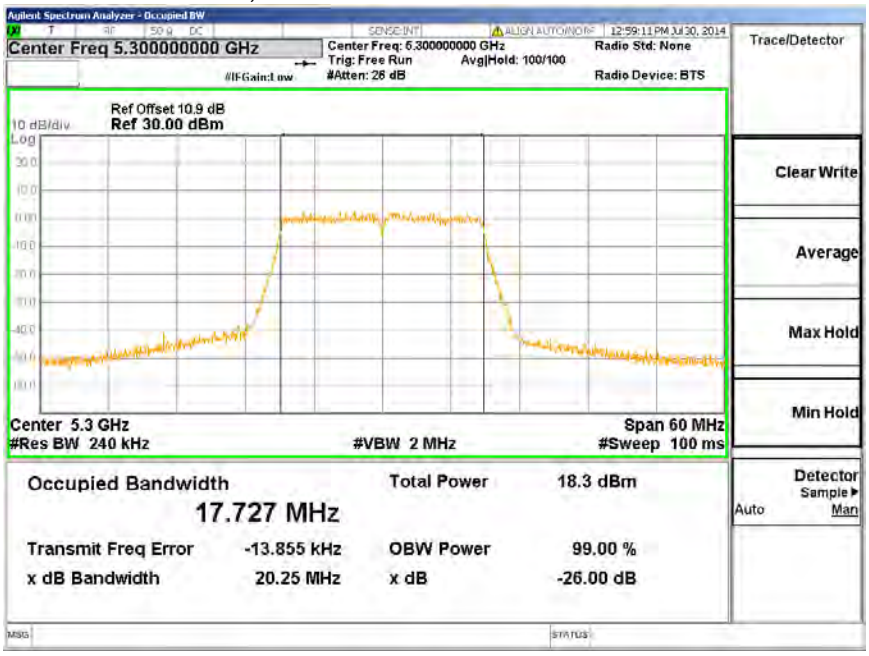
**99% BANDWIDTH, Chain 2**

99% BANDWIDTH, Chain 2 LOW CH




99% BANDWIDTH, Chain 2 MID CH





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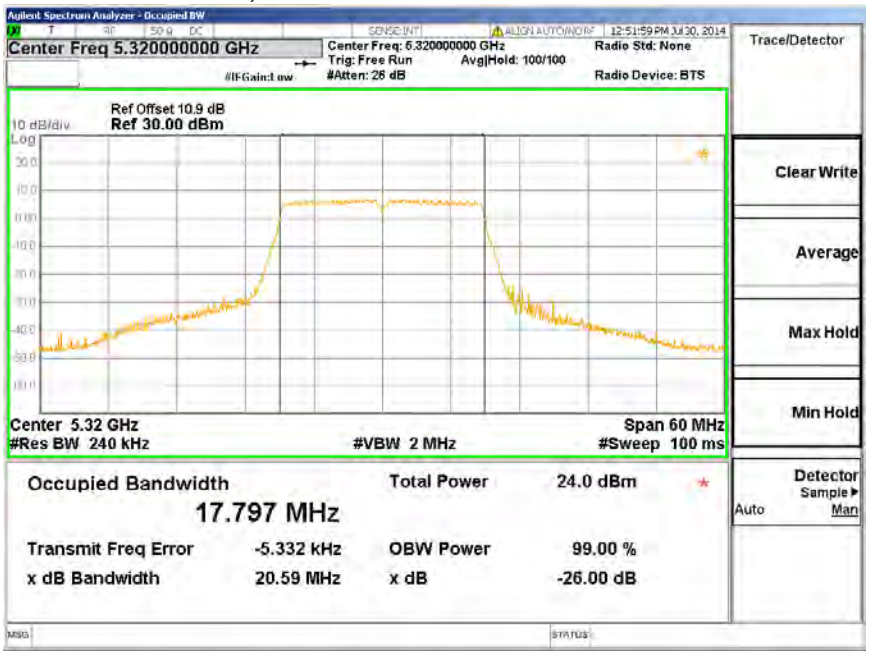
99% BANDWIDTH, Chain 2 HIGH CH





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### 8.4.3. AVERAGE POWER

**LIMITS**

None; for reporting purposes only.

**RESULTS**

**Average Power Results**

| Channel | Frequency (MHz) | Chain 0 Power (dBm) | Chain 1 Power (dBm) | Chain 2 Power (dBm) | Total Power (dBm) |
|---|---|---|---|---|---|
| Low | 5260 | 17.75 | 18.35 | 18.23 | 22.89 |
| Mid | 5300 | 12.80 | 13.31 | 13.08 | 17.84 |
| High | 5320 | 16.65 | 17.12 | 17.07 | 21.72 |


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### 8.4.4. 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 correlated and the antenna gain is the same for each chain. The directional gain is:

| Antenna Gain (dBi) | 10 * Log (3 chains) (dB) | Correlated Chains Directional Gain (dBi) |
|---|---|---|
| 2.00 | 4.77 | 6.77 |


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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) |
|---|---|---|---|---|---|---|
| Low | 5260 | 20.61 | 6.77 | 6.77 | 23.23 | 10.23 |
| Mid | 5300 | 20.42 | 6.77 | 6.77 | 23.23 | 10.23 |
| High | 5320 | 20.57 | 6.77 | 6.77 | 23.23 | 10.23 |

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

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Chain 1 Meas Power (dBm) | Chain 2 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|---|---|
| Low | 5260 | 17.63 | 18.32 | 18.37 | 23.11 | 23.23 | -0.12 |
| Mid | 5300 | 12.77 | 13.36 | 13.12 | 18.08 | 23.23 | -5.15 |
| High | 5320 | 16.60 | 16.96 | 16.94 | 21.83 | 23.23 | -1.40 |

**PPSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Chain 1 Meas PSD (dBm) | Chain 2 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|---|---|
| Low | 5260 | 4.21 | 4.90 | 4.95 | 9.69 | 10.23 | -0.54 |
| Mid | 5300 | -1.21 | -0.62 | -0.86 | 4.10 | 10.23 | -6.13 |
| High | 5320 | 2.62 | 2.98 | 2.96 | 7.85 | 10.23 | -2.38 |


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**OUTPUT POWER AND PSD, Chain 0**

OUTPUT POWER AND PSD, Chain 0 LOW CH

OUTPUT POWER AND PSD, Chain 0 MID CH

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OUTPUT POWER AND PSD, Chain 0 HIGH CH

**OUTPUT POWER AND PSD, Chain 1**

OUTPUT POWER AND PSD, Chain 1 LOW CH

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OUTPUT POWER AND PSD, Chain 1 MID CH

OUTPUT POWER AND PSD, Chain 1 HIGH CH

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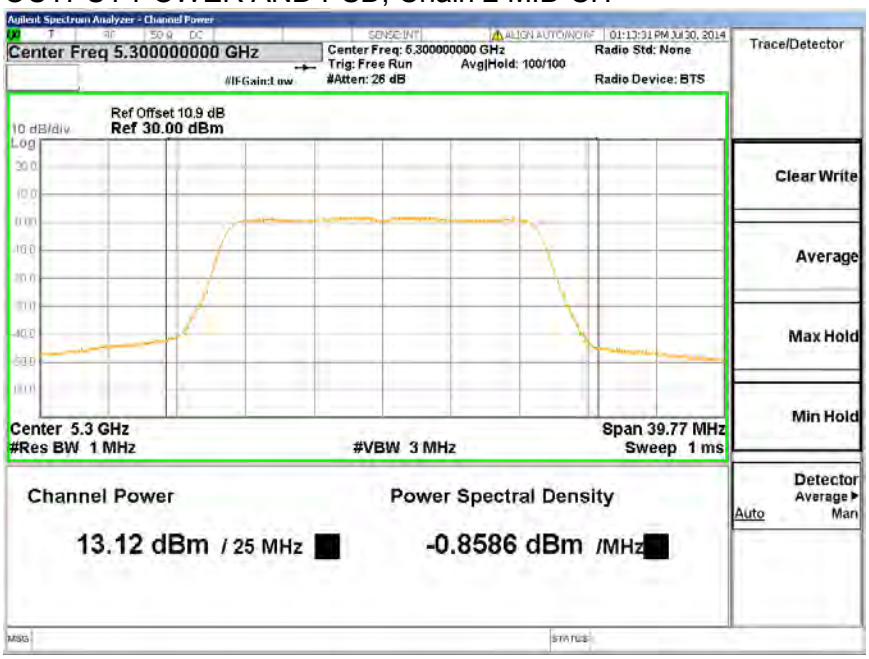
**OUTPUT POWER AND PSD, Chain 2**

OUTPUT POWER AND PSD, Chain 2 LOW CH

OUTPUT POWER AND PSD, Chain 2 MID CH





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OUTPUT POWER AND PSD, Chain 2 HIGH CH

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## 8.5. 802.11n HT40 1TX SISO MODE IN THE 5.3 GHz BAND

### 8.5.1. 26 dB BANDWIDTH

**LIMITS**

None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | 26 dB Bandwidth (MHz) |
|---|---|---|
| Low | 5270 | 43.36 |
| High | 5310 | 40.24 |


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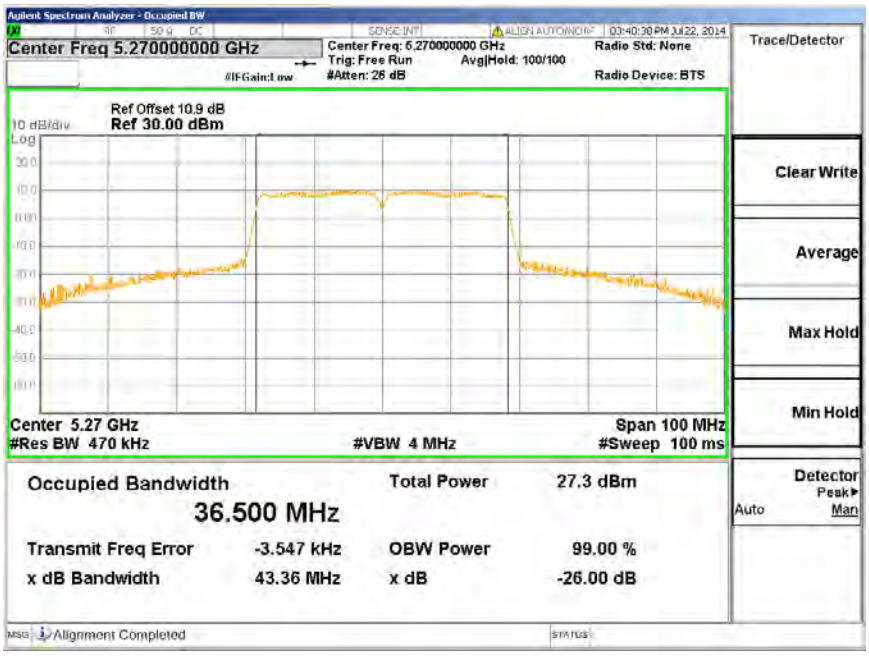
**26 dB BANDWIDTH**

BANDWIDTH LOW CH




BANDWIDTH HIGH CH

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### 8.5.2. 99% BANDWIDTH

**LIMITS**

None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | 99% Bandwidth (MHz) |
|---|---|---|
| Low | 5270 | 36.3280 |
| High | 5310 | 36.3400 |


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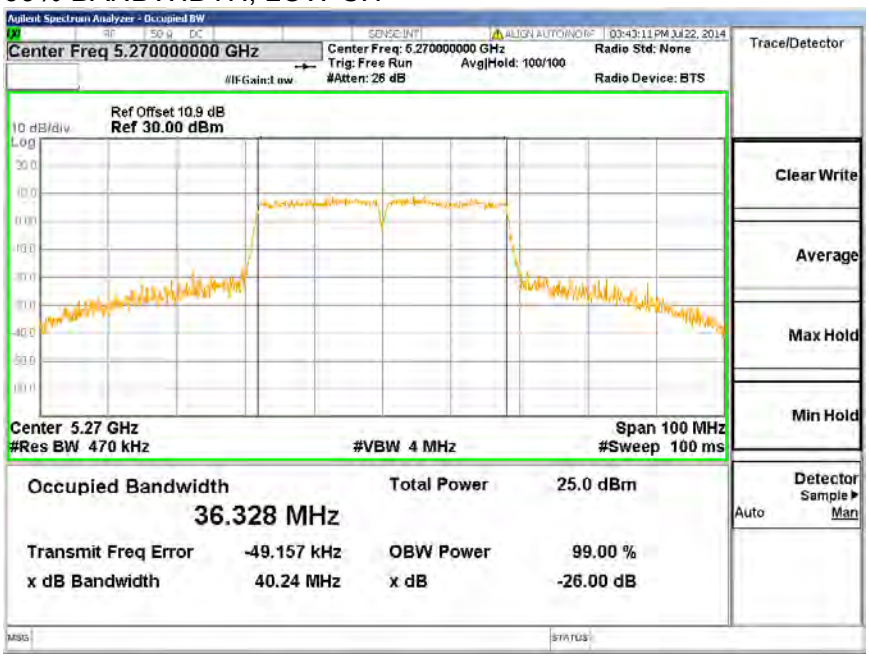
**99% BANDWIDTH**

99% BANDWIDTH, LOW CH

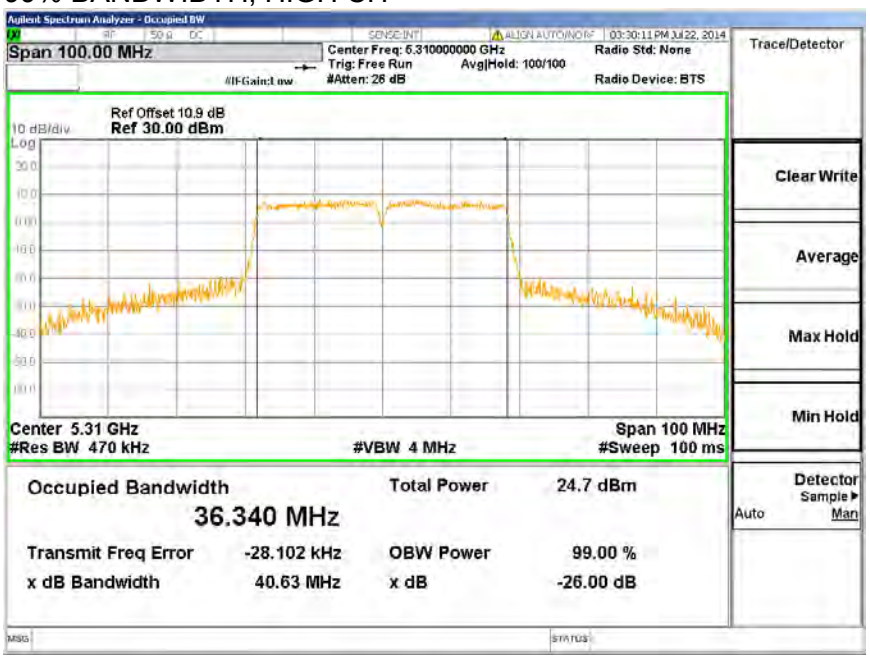



## 8.5.3. AVERAGE POWER

**LIMITS**

None; for reporting purposes only.

99% BANDWIDTH, HIGH CH



**RESULTS**

| Channel | Frequency (MHz) | Power (dBm) |
|---|---|---|
| Low | 5270 | 14.95 |
| High | 5310 | 10.03 |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### 8.5.4. 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**

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


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**RESULTS**

**Bandwidth, Antenna Gain, and Limits**

| Channel | Frequency (MHz) | Min 26 dB BW (MHz) | Directional Gain (dBi) | Power Limit (dBm) | PSD Limit (dBm) |
|---|---|---|---|---|---|
| Low | 5270 | 43.36 | 2.00 | 24.00 | 11.00 |
| High | 5310 | 40.24 | 2.00 | 24.00 | 11.00 |

| | | |
|---|---|---|
| Duty Cycle CF (dB) | 0.42 | Included in Calculations of Corr'd Power & PSD |

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|
| Low | 5270 | 14.77 | 15.19 | 24.00 | -8.81 |
| High | 5310 | 9.53 | 9.95 | 24.00 | -14.05 |

**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|
| Low | 5270 | -1.77 | -1.35 | 11.00 | -12.35 |
| High | 5310 | -7.00 | -6.58 | 11.00 | -17.58 |


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**OUTPUT POWER AND PSD, Chain 0**

OUTPUT POWER AND PSD, Chain 0 LOW CH

OUTPUT POWER AND PSD, Chain 0 HIGH CH

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## 8.6. 802.11n HT40 3TX CDD MODE IN THE 5.3 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) | 26 dB BW Chain 2 (MHz) |
|---|---|---|---|---|
| Low | 5270 | 40.55 | 39.51 | 39.58 |
| High | 5310 | 40.43 | 39.39 | 39.59 |


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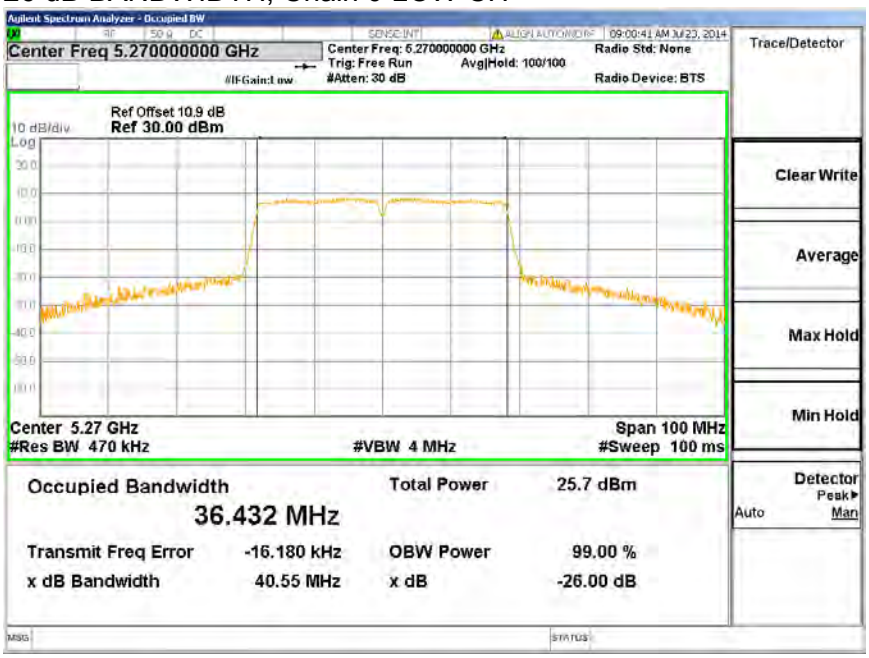
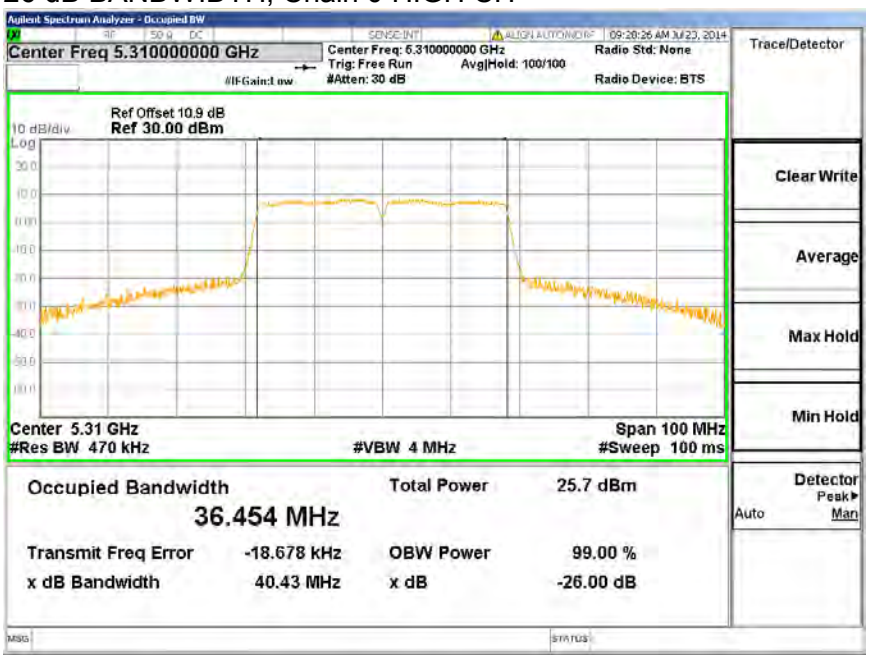
**26 dB BANDWIDTH, Chain 0**

26 dB BANDWIDTH, Chain 0 LOW CH




26 dB BANDWIDTH, Chain 0 HIGH CH





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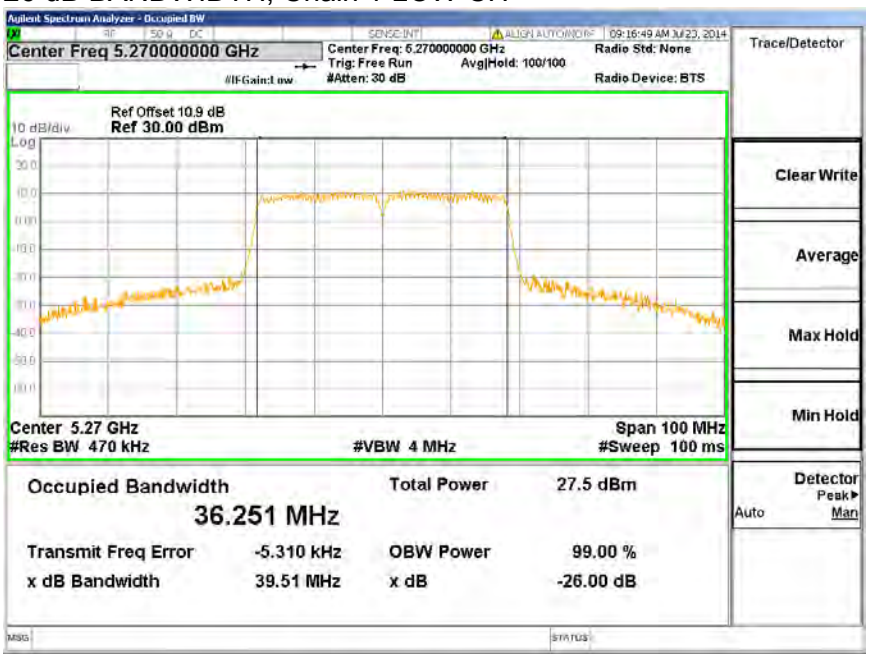
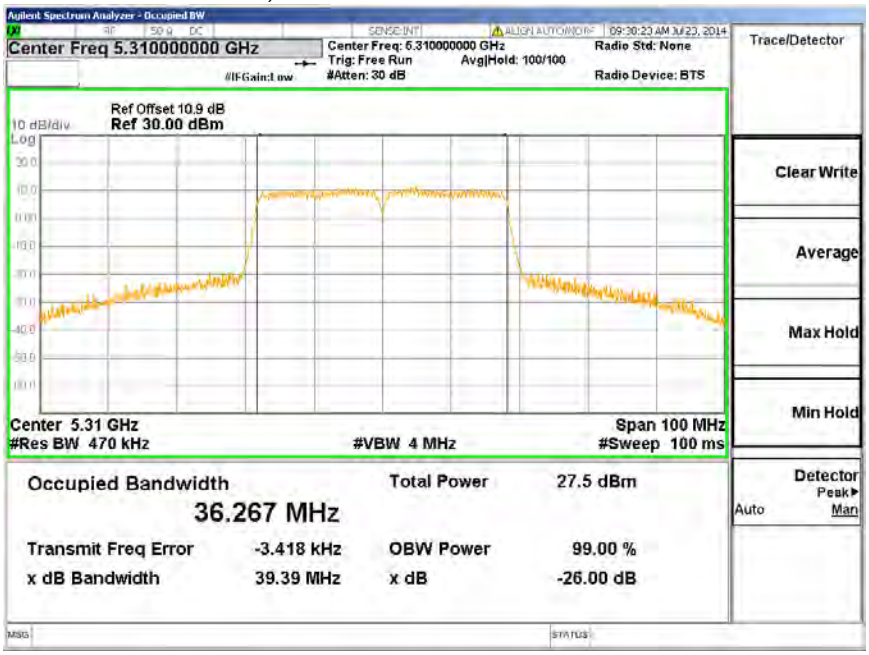
**26 dB BANDWIDTH, Chain 1**

26 dB BANDWIDTH, Chain 1 LOW CH




26 dB BANDWIDTH, Chain 1 HIGH CH





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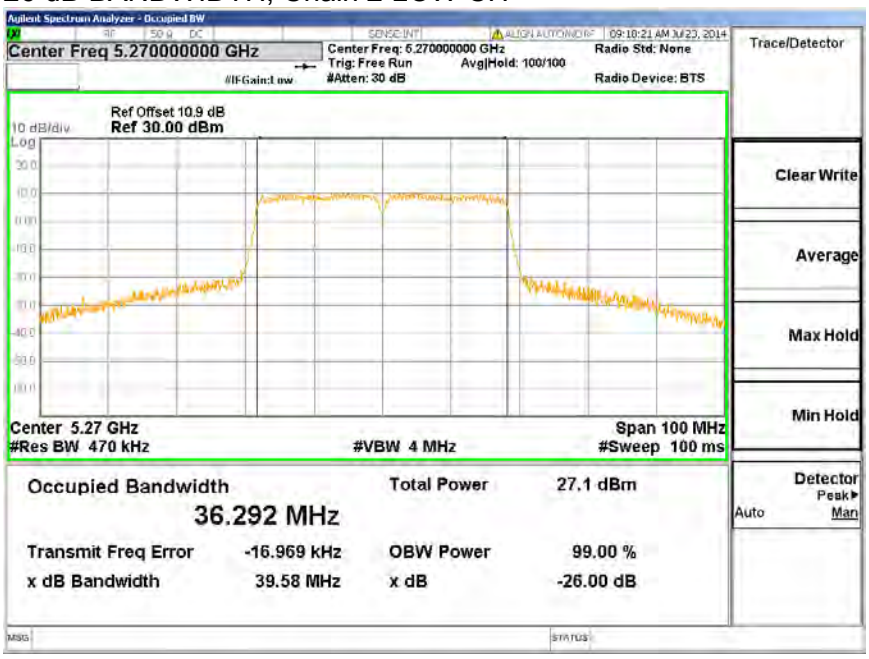
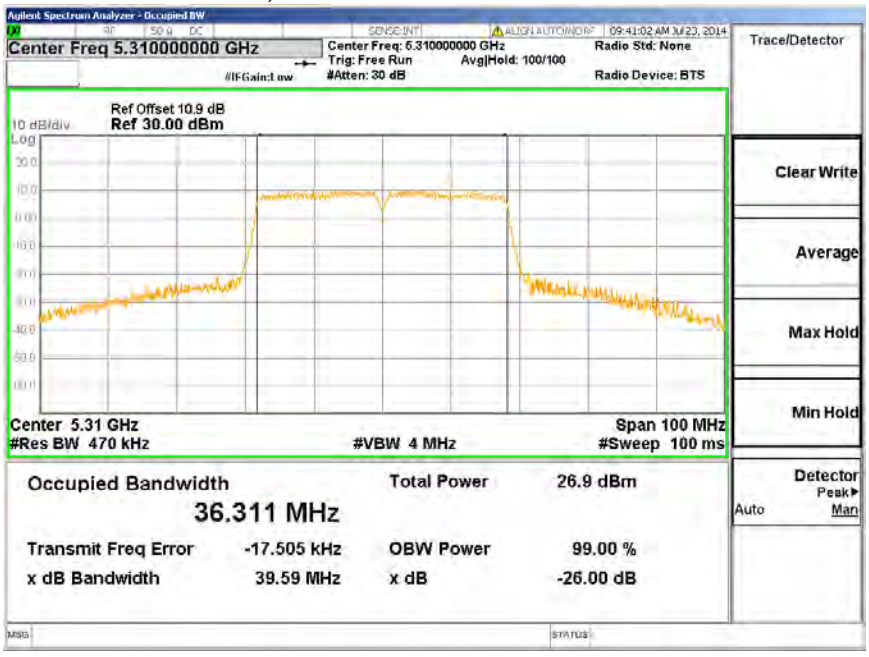
**26 dB BANDWIDTH, Chain 2**

26 dB BANDWIDTH, Chain 2 LOW CH




26 dB BANDWIDTH, Chain 2 HIGH CH





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### 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) | 99% BW Chain 2 (MHz) |
|---|---|---|---|---|
| Low | 5270 | 36.3070 | 36.1910 | 36.3200 |
| High | 5310 | 36.2950 | 36.2710 | 36.3680 |


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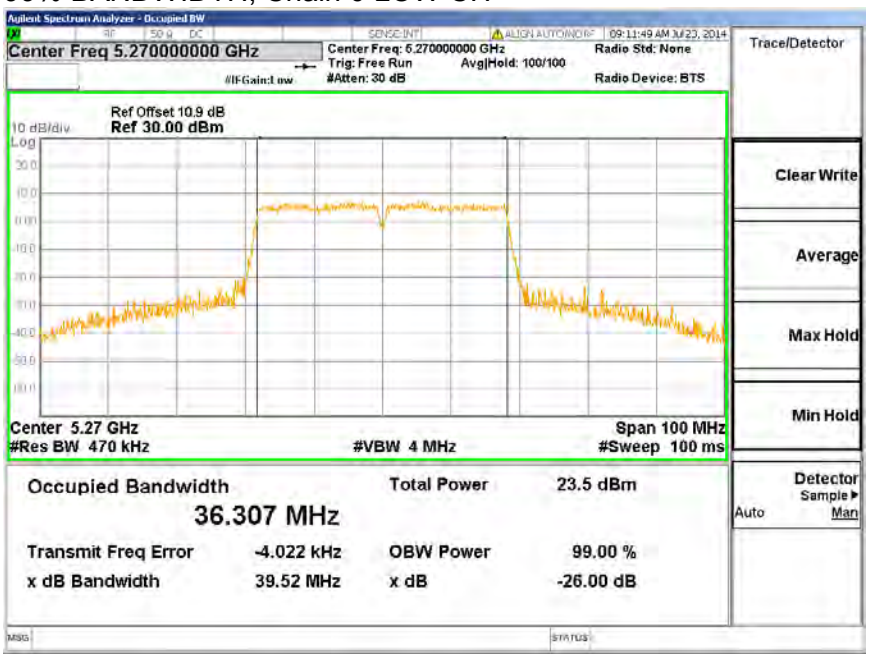
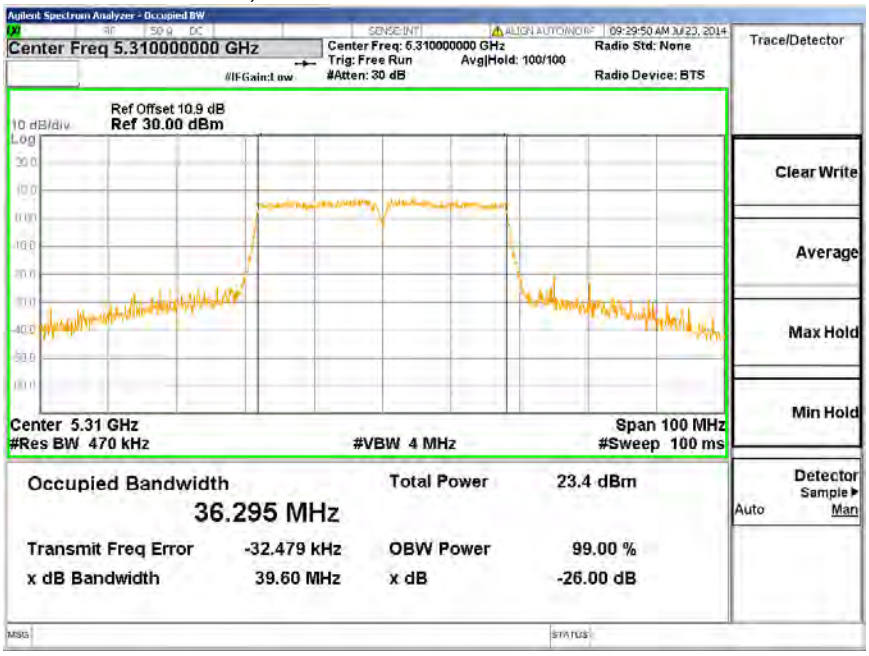
**99% BANDWIDTH, Chain 0**

99% BANDWIDTH, Chain 0 LOW CH




99% BANDWIDTH, Chain 0 HIGH CH





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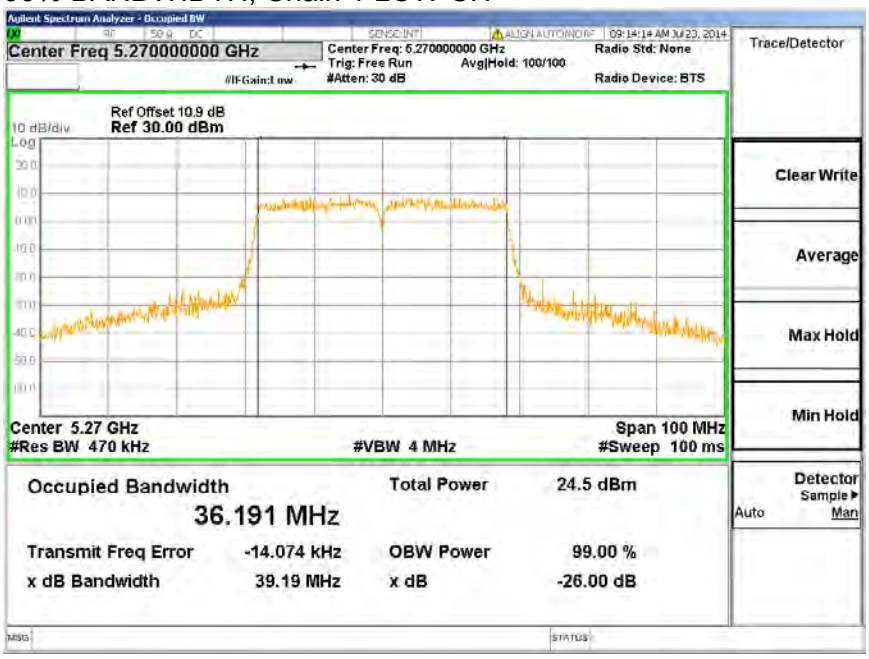
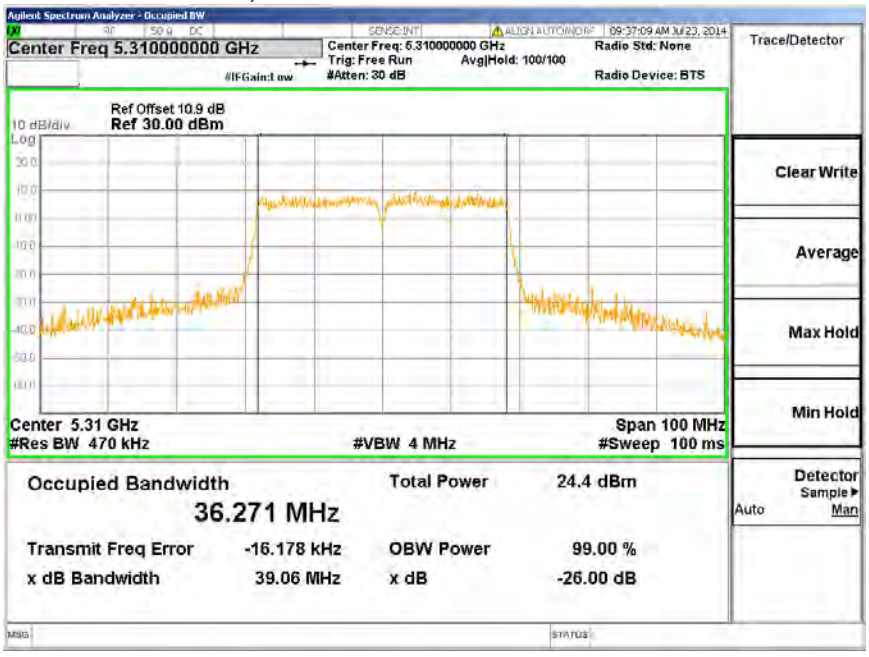
**99% BANDWIDTH, Chain 1**

99% BANDWIDTH, Chain 1 LOW CH




99% BANDWIDTH, Chain 1 HIGH CH





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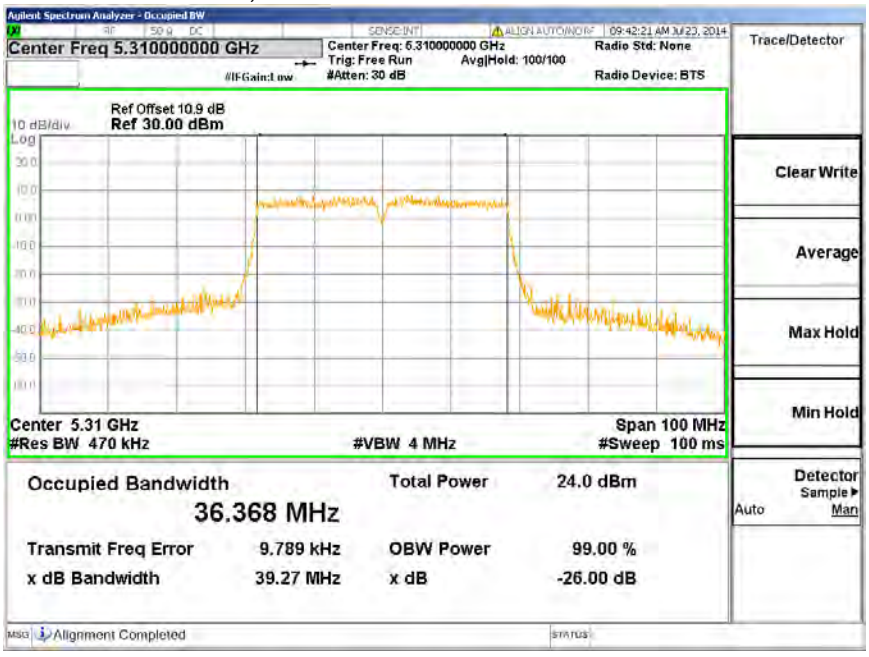
**99% BANDWIDTH, Chain 2**

99% BANDWIDTH, Chain 2 LOW CH

99% BANDWIDTH, Chain 2 HIGH CH





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### 8.6.3. AVERAGE POWER

**LIMITS**

None; for reporting purposes only.

**RESULTS**

**Average Power Results**

| Channel | Frequency (MHz) | Chain 0 Power (dBm) | Chain 1 Power (dBm) | Chain 2 Power (dBm) | Total Power (dBm) |
|---|---|---|---|---|---|
| Low | 5270 | 15.36 | 15.58 | 15.60 | 20.29 |
| High | 5310 | 9.03 | 9.06 | 8.94 | 13.78 |


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### 8.6.4. 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 correlated and the antenna gain is the same for each chain. The directional gain is:

| Antenna Gain (dBi) | 10 * Log (3 chains) (dB) | Correlated Chains Directional Gain (dBi) |
|---|---|---|
| 2.00 | 4.77 | 6.77 |


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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) |
|---|---|---|---|---|---|---|
| Low | 5270 | 39.51 | 6.77 | 6.77 | 23.23 | 10.23 |
| High | 5310 | 39.39 | 6.77 | 6.77 | 23.23 | 10.23 |

| | | |
|---|---|---|
| **Duty Cycle CF (dB)** | 0.45 | **Included in Calculations of Corr'd Power & PSD** |

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Chain 1 Meas Power (dBm) | Chain 2 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|---|---|
| Low | 5270 | 15.28 | 15.86 | 15.70 | 20.84 | 23.23 | -2.39 |
| High | 5310 | 8.87 | 9.05 | 8.78 | 14.12 | 23.23 | -9.11 |

**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Chain 1 Meas PSD (dBm) | Chain 2 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|---|---|
| Low | 5270 | -1.25 | -0.68 | -0.83 | 4.31 | 10.23 | -5.92 |
| High | 5310 | -7.66 | -7.48 | -7.75 | -2.41 | 10.23 | -12.64 |


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**OUTPUT POWER AND PSD, Chain 0**

OUTPUT POWER AND PSD, Chain 0 LOW CH

OUTPUT POWER AND PSD, Chain 0 HIGH CH

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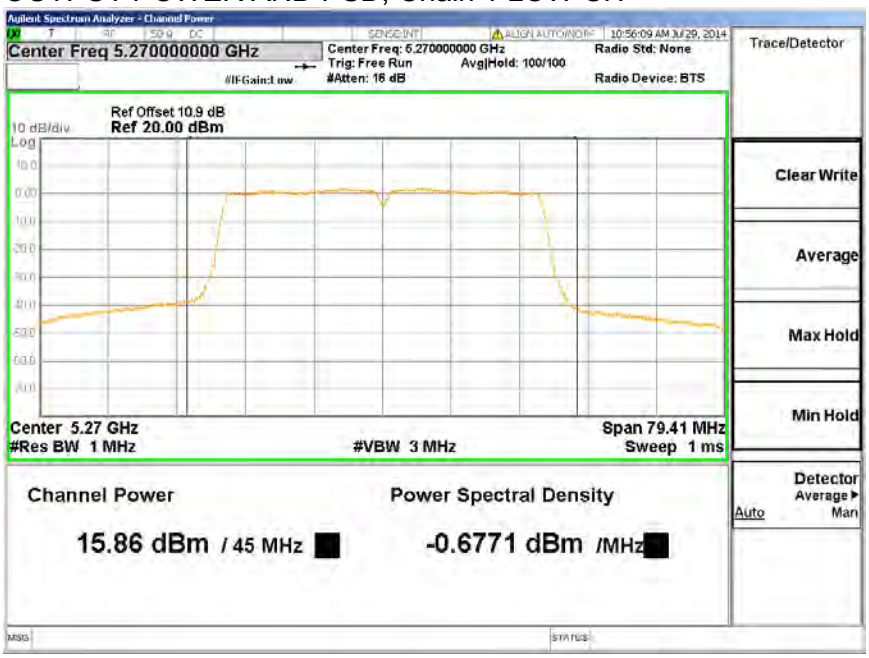
**OUTPUT POWER AND PSD, Chain 1**

OUTPUT POWER AND PSD, Chain 1 LOW CH




OUTPUT POWER AND PSD, Chain 1 HIGH CH

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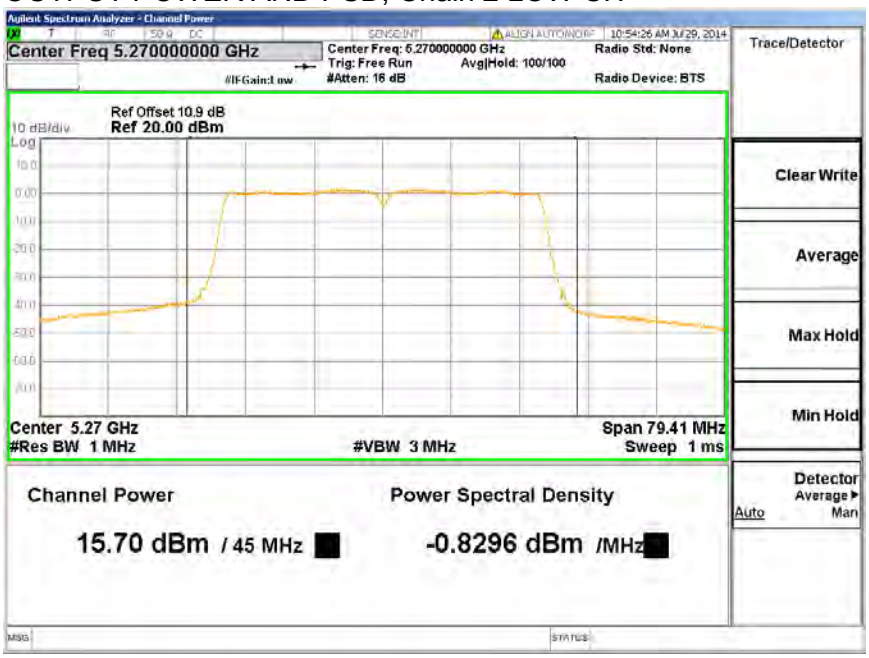
**OUTPUT POWER AND PSD, Chain 2**

OUTPUT POWER AND PSD, Chain 2 LOW CH




OUTPUT POWER AND PSD, Chain 2 HIGH CH

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## 8.7. 802.11ac HT80 1TX SISO MODE IN THE 5.3 GHz BAND

### 8.7.1. 26 dB BANDWIDTH

**LIMITS**

None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | 26 dB Bandwidth (MHz) |
|---|---|---|
| Mid | 5290 | 82.36 |


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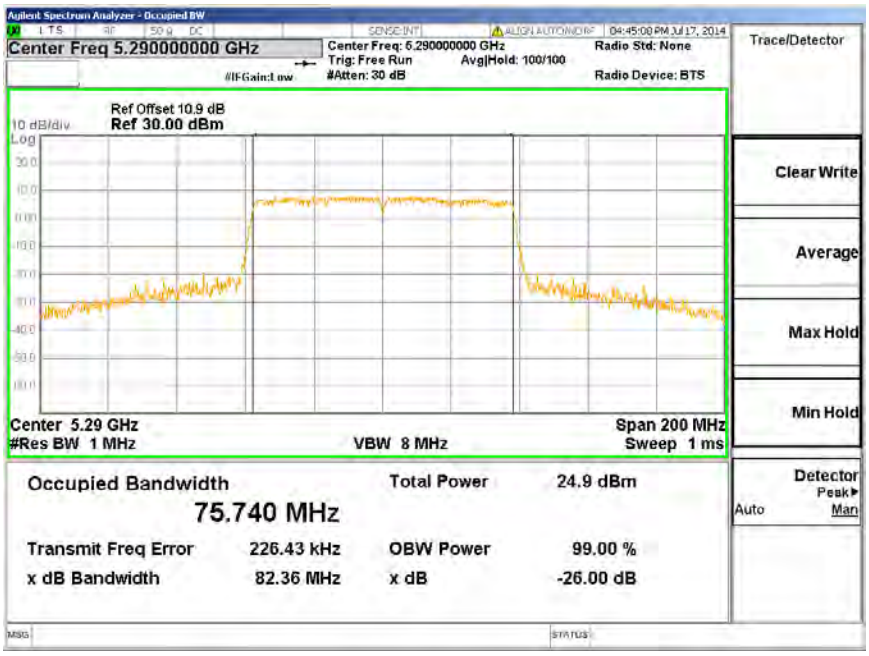
**26 dB BANDWIDTH**

BANDWIDTH MID CH





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### 8.7.2. 99% BANDWIDTH

**LIMITS**

None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | 99% Bandwidth (MHz) |
|---|---|---|
| Mid | 5290 | 75.7970 |


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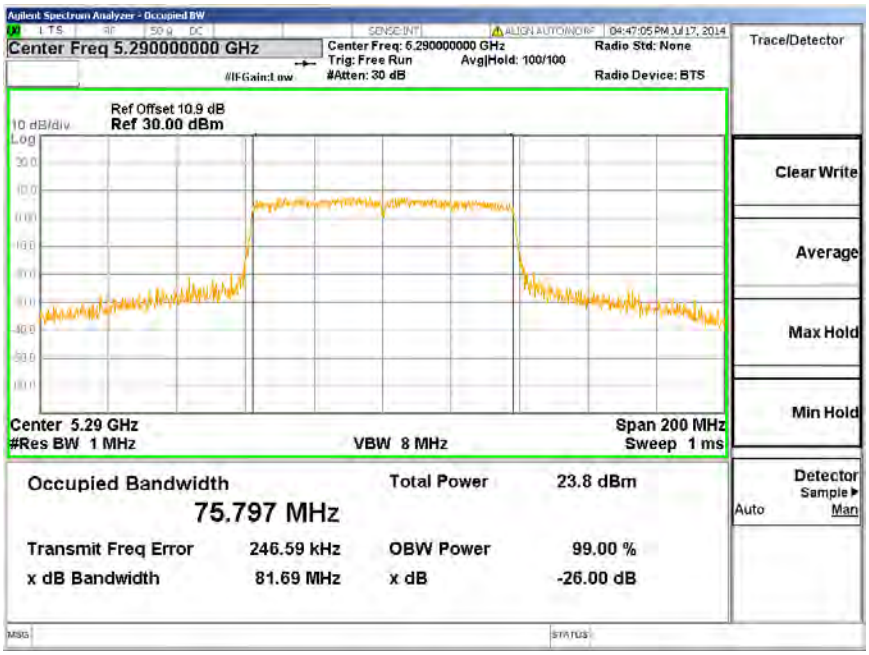
**99% BANDWIDTH**

BANDWIDTH MID CH





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### 8.7.3. AVERAGE POWER

**LIMITS**

None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | Power (dBm) |
|---|---|---|
| Mid | 5290 | 10.03 |


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### 8.7.4. 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**

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


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**RESULTS**

**Bandwidth, Antenna Gain, and Limits**

| Channel | Frequency (MHz) | Min 26 dB BW (MHz) | Directional Gain (dBi) | Power Limit (dBm) | PSD Limit (dBm) |
|---|---|---|---|---|---|
| Mid | 5290 | 82.98 | 2.00 | 24.00 | 11.00 |

| Duty Cycle CF (dB) | 0.26 | Included in Calculations of Corr'd Power & PSD |
|---|---|---|

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|
| Mid | 5290 | 10.10 | 10.36 | 24.00 | -13.64 |

**PPSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|
| Mid | 5290 | -9.19 | -8.93 | 11.00 | -19.93 |


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**OUTPUT POWER AND PSD, Chain 0**

OUTPUT POWER AND PSD, Chain 0 MID CH

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# 8.8. 802.11ac HT80 3TX CDD MODE IN THE 5.3 GHz BAND

## 8.8.1. 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) | 26 dB BW Chain 2 (MHz) |
|---|---|---|---|---|
| Mid | 5290 | 83.09 | 82.65 | 82.26 |


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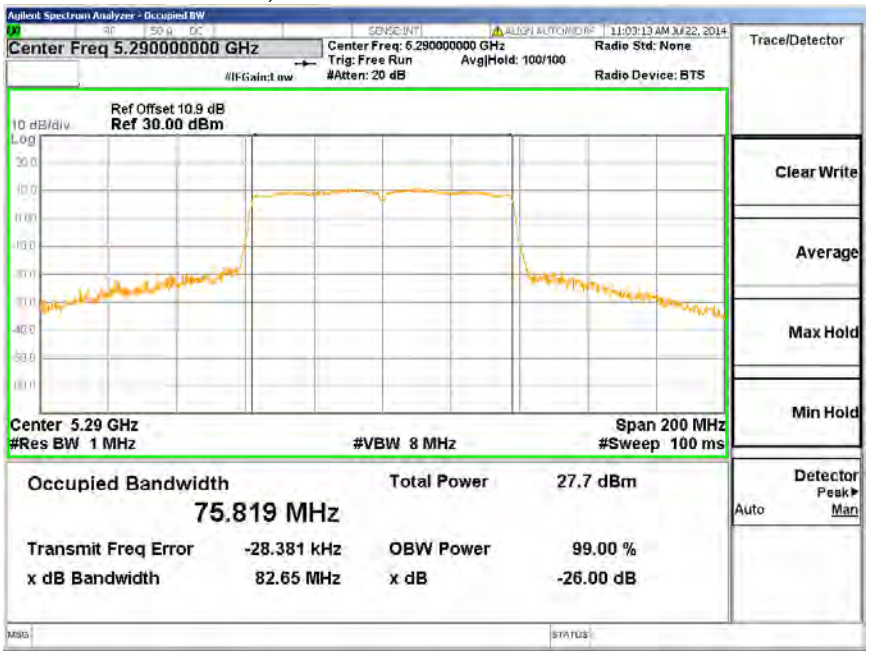
**26 dB BANDWIDTH, Chain 0**

26 dB BANDWIDTH, Chain 0 MID CH

**26 dB BANDWIDTH, Chain 1**

26 dB BANDWIDTH, Chain 1 MID CH





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**26 dB BANDWIDTH, Chain 2**

26 dB BANDWIDTH, Chain 2 MID CH

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### 8.8.2. 99% BANDWIDTH

**LIMITS**

None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | 99% BW Chain 0 (MHz) | 99% BW Chain 1 (MHz) | 99% BW Chain 2 (MHz) |
|---|---|---|---|---|
| Mid | 5290 | 75.7430 | 75.7290 | 75.6960 |


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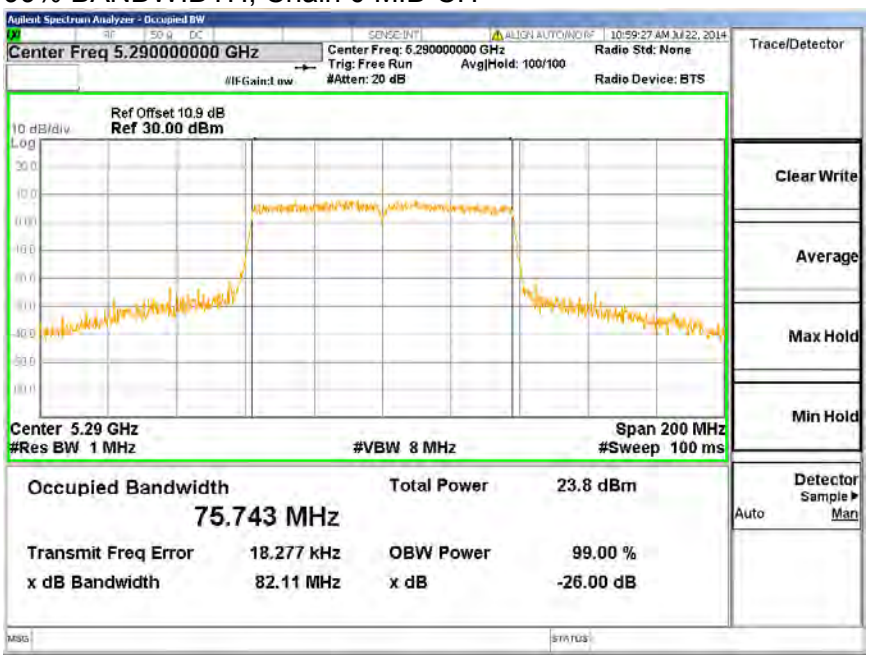
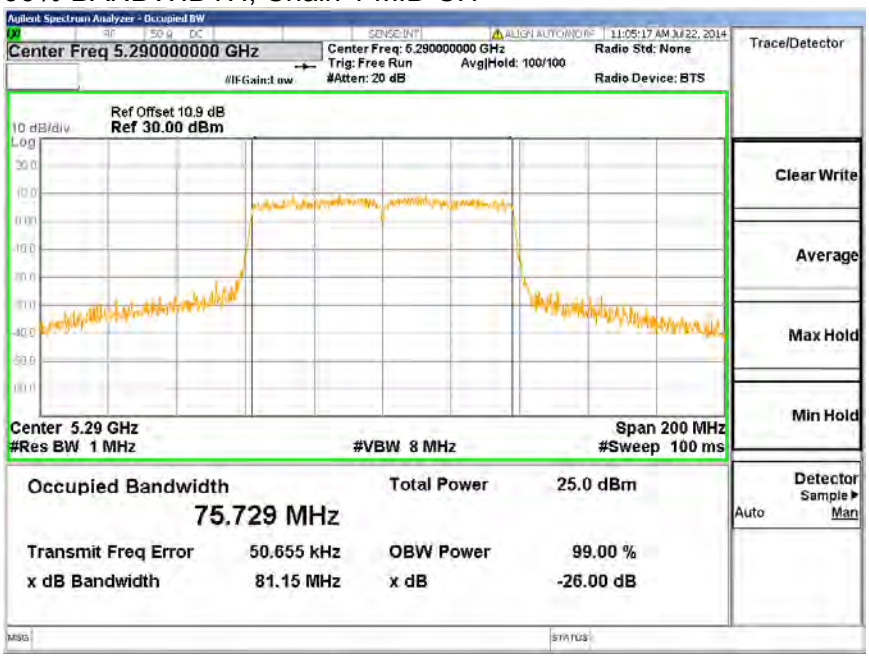
**99% BANDWIDTH, Chain 0**

99% BANDWIDTH, Chain 0 MID CH




**99% BANDWIDTH, Chain 1**

99% BANDWIDTH, Chain 1 MID CH





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**99% BANDWIDTH, Chain 2**

99% BANDWIDTH, Chain 2 MID CH

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### 8.8.3. AVERAGE POWER

**LIMITS**

None; for reporting purposes only.

**RESULTS**

**Average Power Results**

| Channel | Frequency (MHz) | Chain 0 Power (dBm) | Chain 1 Power (dBm) | Chain 2 Power (dBm) | Total Power (dBm) |
|---|---|---|---|---|---|
| Mid | 5290 | 7.48 | 8.13 | 8.23 | 12.73 |


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### 8.8.4. 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 correlated and the antenna gain is the same for each chain. The directional gain is:

| Antenna Gain (dBi) | 10 * Log (3 chains) (dB) | Correlated Chains Directional Gain (dBi) |
|---|---|---|
| 2.00 | 4.77 | 6.77 |


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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) |
|---|---|---|---|---|---|---|
| Mid | 5290 | 82.26 | 6.77 | 6.77 | 23.23 | 10.23 |

| | | |
|---|---|---|
| Duty Cycle CF (dB) | 0.27 | Included in Calculations of Corr'd Power & PSD |

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Chain 1 Meas Power (dBm) | Chain 2 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|---|---|
| Mid | 5290 | 7.35 | 8.06 | 8.25 | 12.94 | 23.23 | -10.29 |

**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Chain 1 Meas PSD (dBm) | Chain 2 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|---|---|
| Mid | 5290 | -11.95 | -11.24 | -11.04 | -6.35 | 10.23 | -16.58 |


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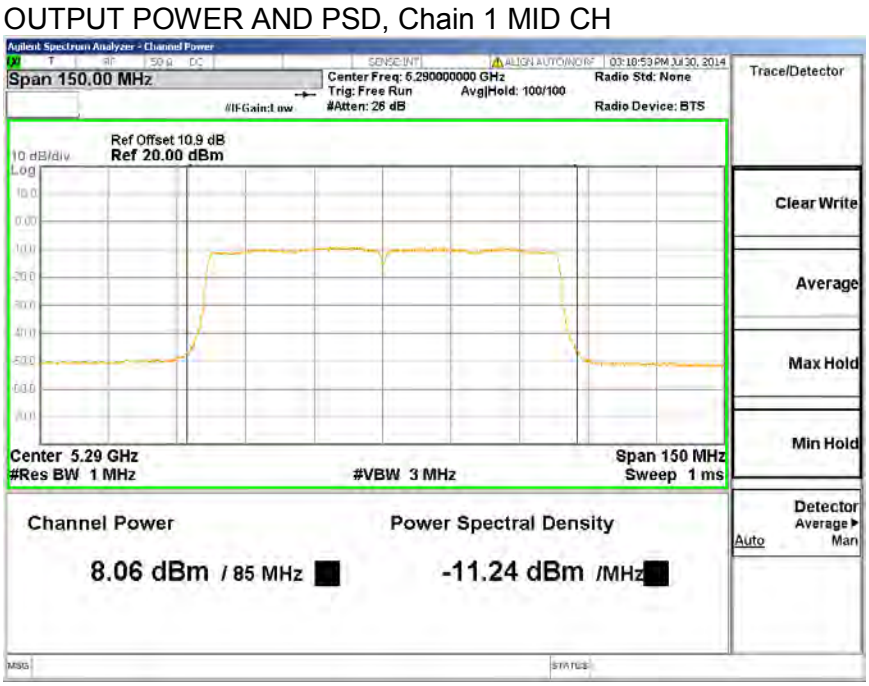
**OUTPUT POWER AND PSD, Chain 0**

OUTPUT POWER AND PSD, Chain 0 MID CH

**OUTPUT POWER AND PSD, Chain 1**

OUTPUT POWER AND PSD, Chain 1 MID CH





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**OUTPUT POWER AND PSD, Chain 2**

OUTPUT POWER AND PSD, Chain 2 MID CH

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# 8.9. 802.11a 1TX SISO MODE IN THE 5.6 GHz BAND

## 8.9.1. 26 dB BANDWIDTH

**LIMITS**

None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | 26 dB BW Chain 0 (MHz) |
|---|---|---|
| Low | 5500 | 20.13 |
| Mid | 5580 | 20.50 |
| High | 5700 | 20.26 |
| 144 | 5720 | 20.46 |


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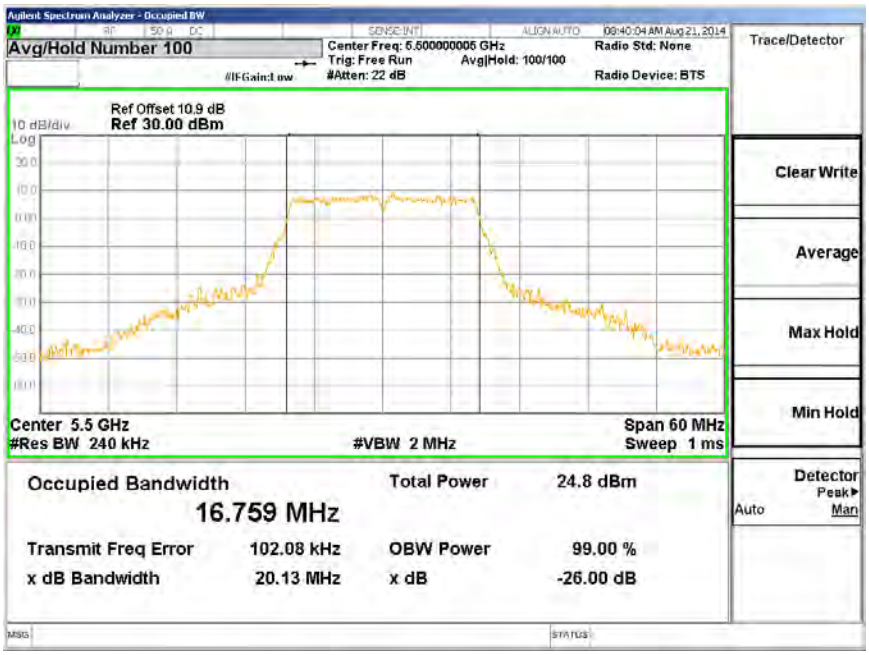
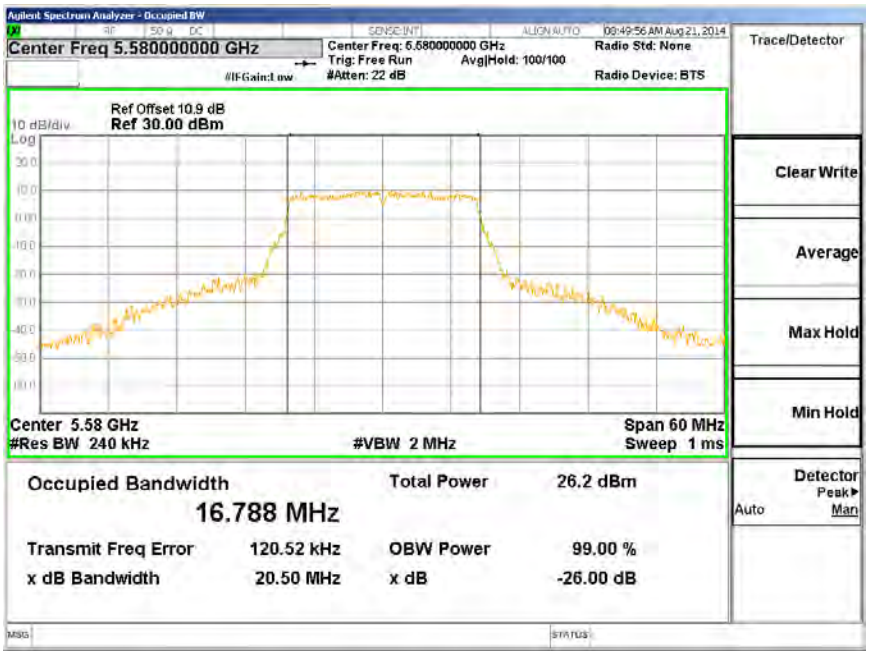
**26 dB BANDWIDTH, Chain 0**

BANDWIDTH Chain 0 LOW CH




BANDWIDTH Chain 0 MID CH





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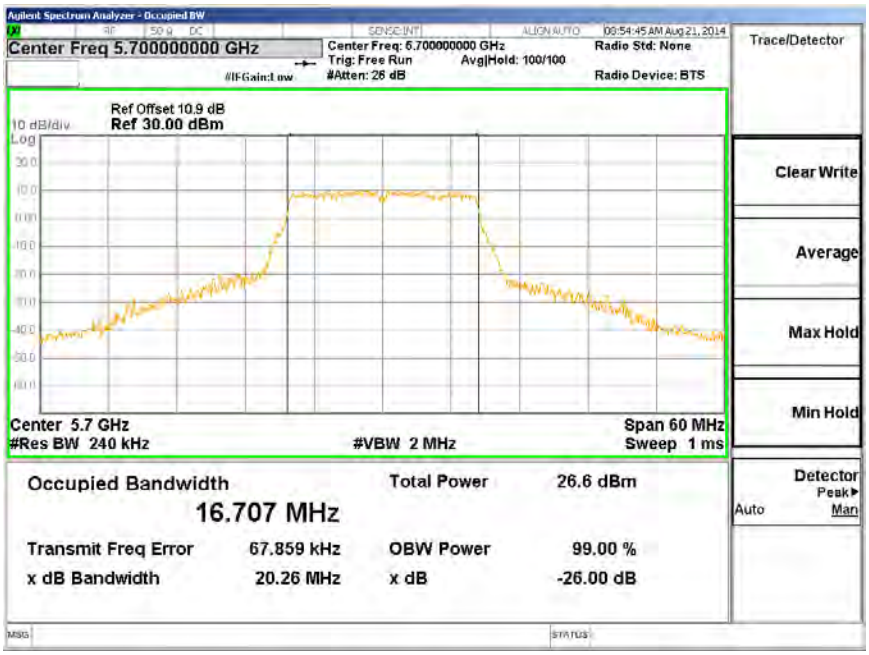
BANDWIDTH Chain 0 HIGH CH




BANDWIDTH Chain 0 STRADDLE CH 144

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### 8.9.2. 99% BANDWIDTH

**LIMITS**

None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | 99% BW Chain 0 (MHz) |
|---|---|---|
| Low | 5500 | 16.7200 |
| Mid | 5580 | 16.7040 |
| High | 5700 | 16.7580 |
| 144 | 5720 | 16.6880 |


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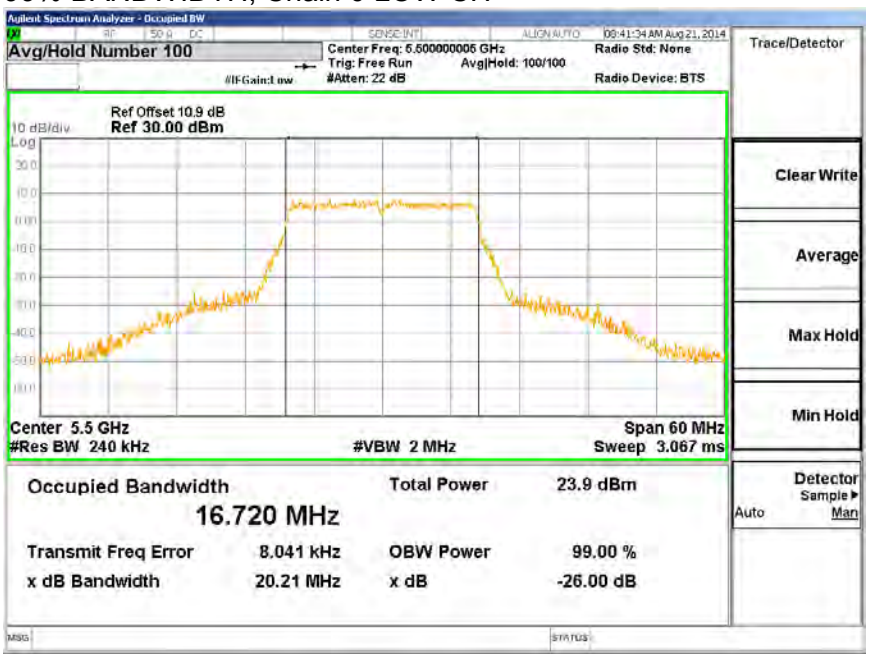
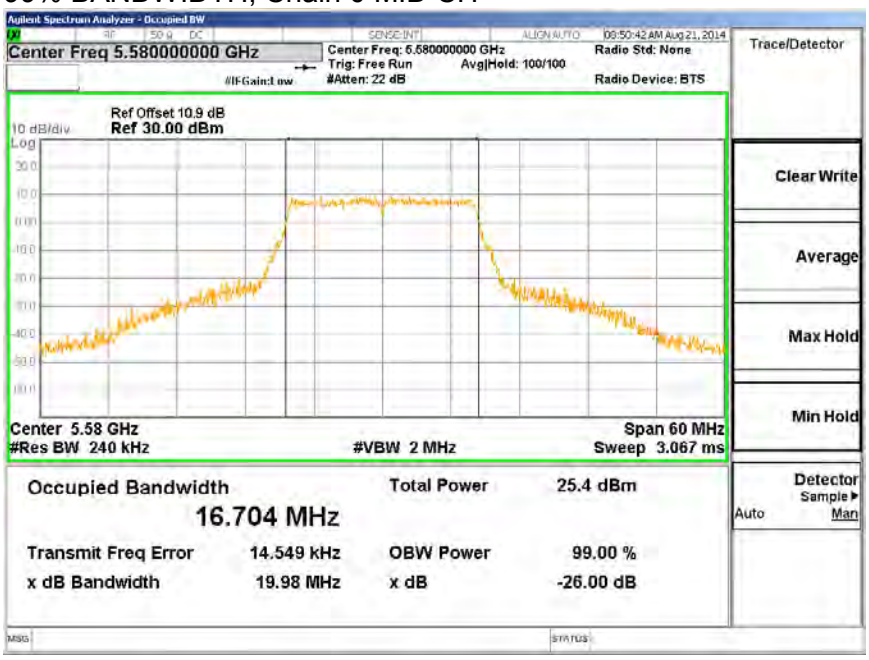
**99% BANDWIDTH, Chain 0**

99% BANDWIDTH, Chain 0 LOW CH




99% BANDWIDTH, Chain 0 MID CH





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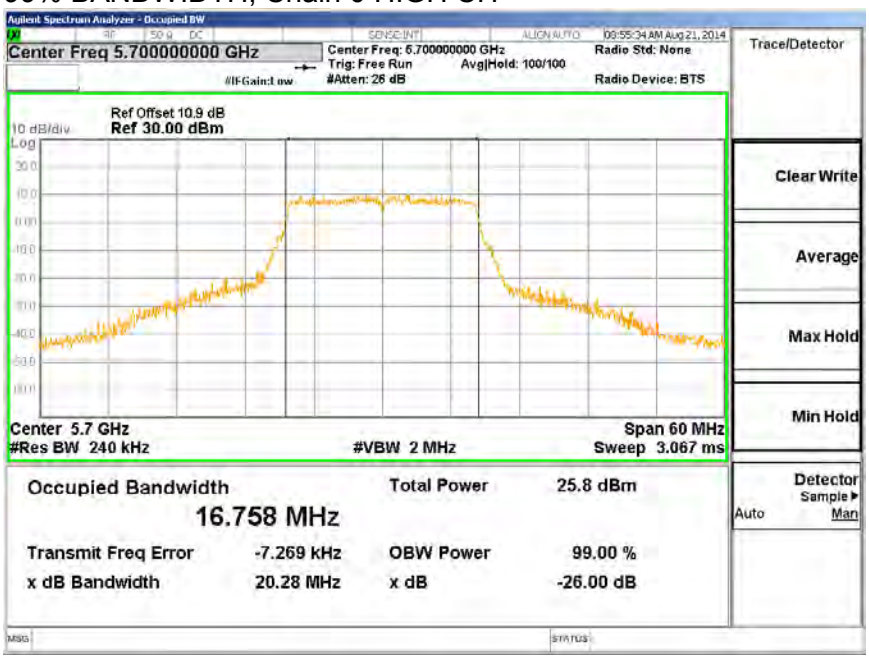
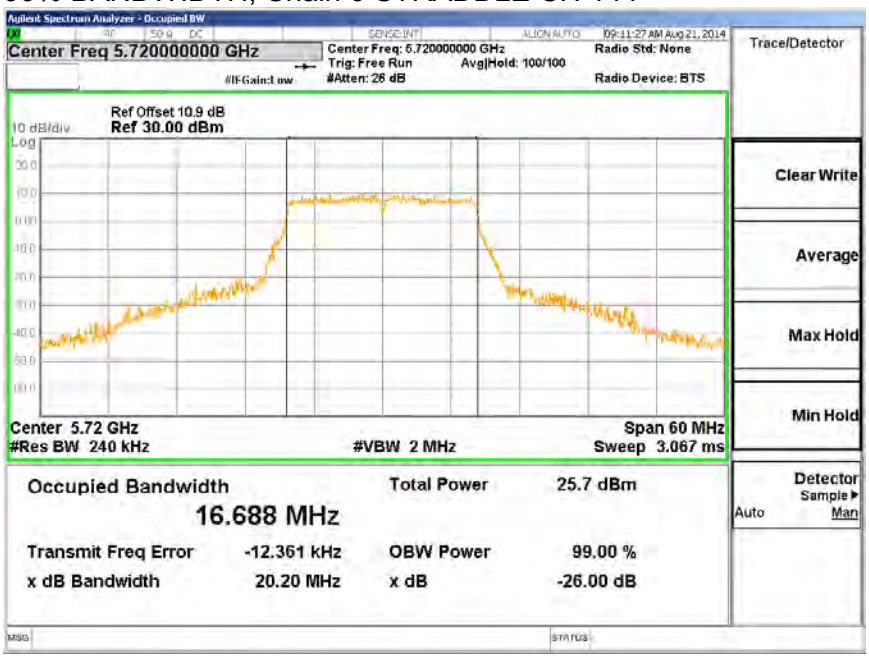
99% BANDWIDTH, Chain 0 HIGH CH




99% BANDWIDTH, Chain 0 STRADDLE CH 144



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### 8.9.3. AVERAGE POWER

**LIMITS**

None; for reporting purposes only.

**RESULTS**

**Average Power Results**

| Channel | Frequency (MHz) | Chain 0 Power (dBm) |
|---|---|---|
| Low | 5500 | 18.43 |
| Mid | 5580 | 19.53 |
| High | 5700 | 20.08 |
| 144 | 5720 | 20.13 |


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### 8.9.4. OUTPUT POWER AND PSD

**LIMITS**

FCC §15.407 (a) (2)

For the band 5.47–5.725 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.


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**RESULTS**

**Bandwidth, Antenna Gain, and Limits**

| Channel | Frequency (MHz) | Min 26 dB BW (MHz) | Direction Gain for Power (dBi) | Directional Gain for PSD (dBi) | Power Limit (dBm) | PSD Limit (dBm) |
|---|---|---|---|---|---|---|
| Low | 5500 | 20.13 | 2.00 | 2.00 | 24.00 | 11.00 |
| Mid | 5580 | 20.50 | 2.00 | 2.00 | 24.00 | 11.00 |
| High | 5700 | 20.26 | 2.00 | 2.00 | 24.00 | 11.00 |

| | | |
|---|---|---|
| **Duty Cycle CF (dB)** | 0.23 | **Included in Calculations of Corr'd Power & PSD** |

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|
| Low | 5500 | 18.34 | 18.57 | 24.00 | -5.43 |
| Mid | 5580 | 19.90 | 20.13 | 24.00 | -3.87 |
| High | 5700 | 20.26 | 20.49 | 24.00 | -3.51 |

**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|
| Low | 5500 | 4.36 | 4.59 | 11.00 | -6.41 |
| Mid | 5580 | 5.92 | 6.15 | 11.00 | -4.85 |
| High | 5700 | 6.28 | 6.51 | 11.00 | -4.49 |


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**OUTPUT POWER AND PSD, Chain 0**

OUTPUT POWER AND PSD, Chain 0 LOW CH

OUTPUT POWER AND PSD, Chain 0 MID CH

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OUTPUT POWER AND PSD, Chain 0 HIGH CH

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**STRADDLE CHANNEL 144 RESULTS**

**UNII-2C BAND**

**Bandwidth, Antenna Gain, and Limits**

| Channel | Frequency (MHz) | Min 26 dB BW (MHz) | Directional Gain (dBi) | Power Limit (dBm) | PSD Limit (dBm) |
|---|---|---|---|---|---|
| 144 | 5720 | 15.30 | 2.00 | 22.85 | 11.00 |

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

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|
| 144 | 5720 | 20.21 | 20.44 | 22.85 | -2.41 |

**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|
| 144 | 5720 | 6.23 | 6.46 | 11.00 | -4.54 |

*Note total output power across 2 bands was found to be compliant incorporating the single band 26dB BW within the limit, therefore a measured output power within the single band 26dBBW would also comply.


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OUTPUT POWER AND PSD, Chain 0 CH 144 UNII

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**UNII-3 BAND**

**Bandwidth, Antenna Gain, and Limits**

| Channel | Frequency (MHz) | Min 26 dB BW (MHz) | Directional Gain (dBi) | Power Limit (dBm) | PSD Limit (dBm) |
|---|---|---|---|---|---|
| 144 | 5720 | 5.16 | 2.00 | 24.00 | 17.00 |

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

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|
| 144 | 5720 | 20.21 | 20.44 | 24.00 | -3.56 |

**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|
| 144 | 5720 | 6.23 | 6.46 | 17.00 | -10.54 |

*Note total output power across 2 bands was found to be compliant incorporating the single band 26dB BW within the limit, therefore a measured output power within the single band 26dBBW would also comply.


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OUTPUT POWER, Chain 0 CH 144 UNII-3

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### 8.9.5. PEAK EXCURSION

**LIMITS**

FCC §15.407 (a) (6)

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

**RESULTS**

| Channel | Frequency (MHz) | PK Level (dBm) | PSD (dBm) | DCCF (dB) | Peak Excursion (dB) | Limit (dB) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| Mid | 5580 | 17.00 | 5.92 | 0.23 | 10.85 | 13 | -2.16 |


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**PEAK EXCURSION**

PEAK EXCURSION MID CH

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## 8.10. 802.11a 3TX CDD MODE IN THE 5.6 GHz BAND

### 8.10.1. 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) | 26 dB BW Chain 2 (MHz) |
|---|---|---|---|---|
| Low | 5500 | 20.33 | 20.37 | 20.11 |
| Mid | 5580 | 20.11 | 20.27 | 20.06 |
| High | 5700 | 20.12 | 20.09 | 20.32 |
| 144 | 5720 | 20.40 | 20.30 | 20.18 |


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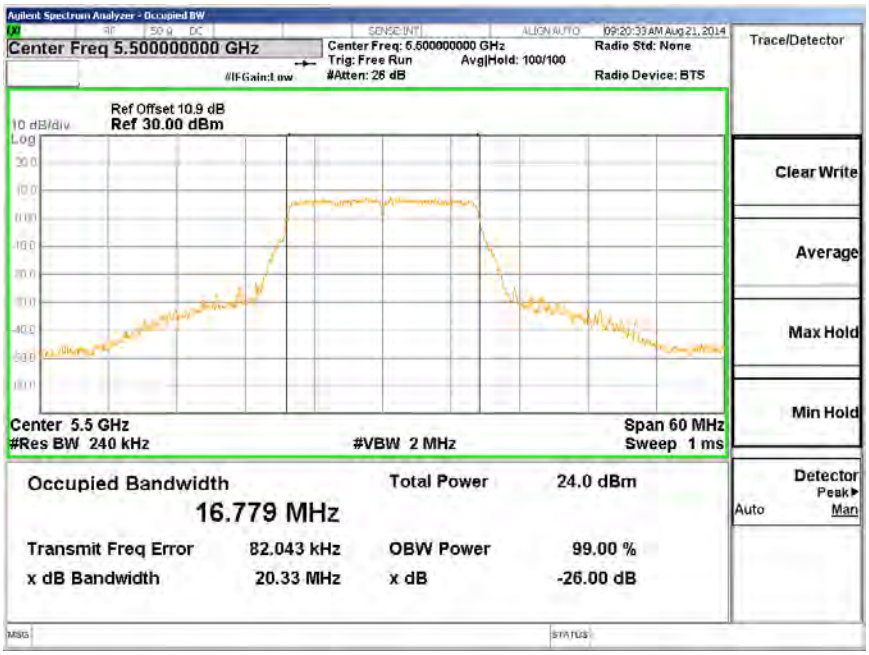
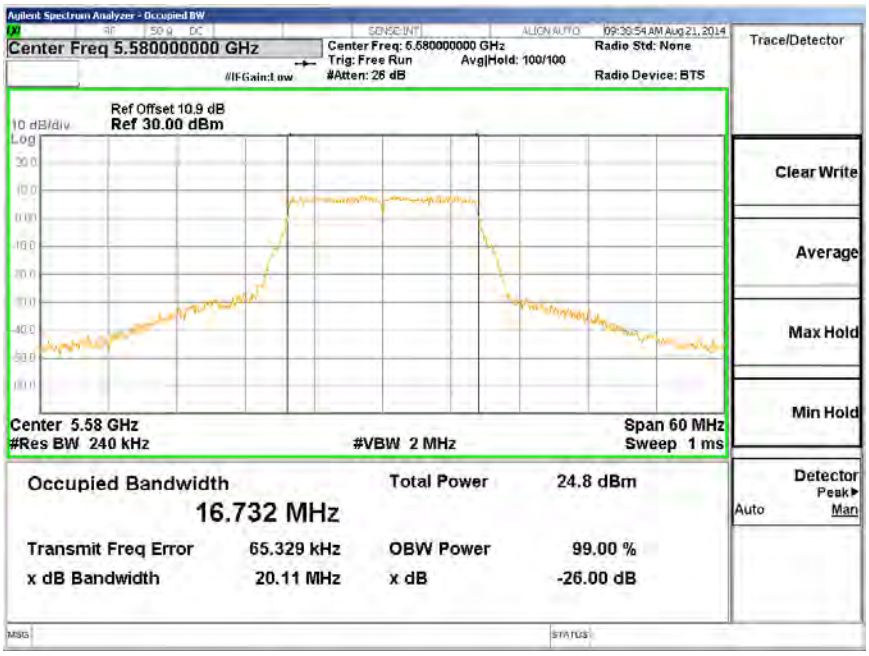
**26 dB BANDWIDTH, Chain 0**

BANDWIDTH Chain 0 LOW CH




BANDWIDTH Chain 0 MID CH





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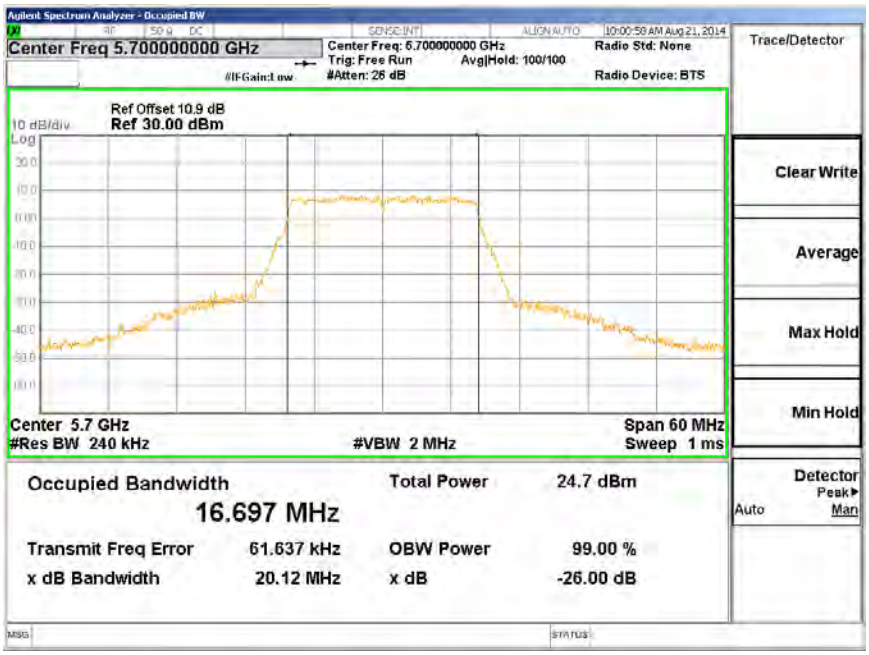
BANDWIDTH Chain 0 HIGH CH




BANDWIDTH Chain 0 STRADDLE CH 144

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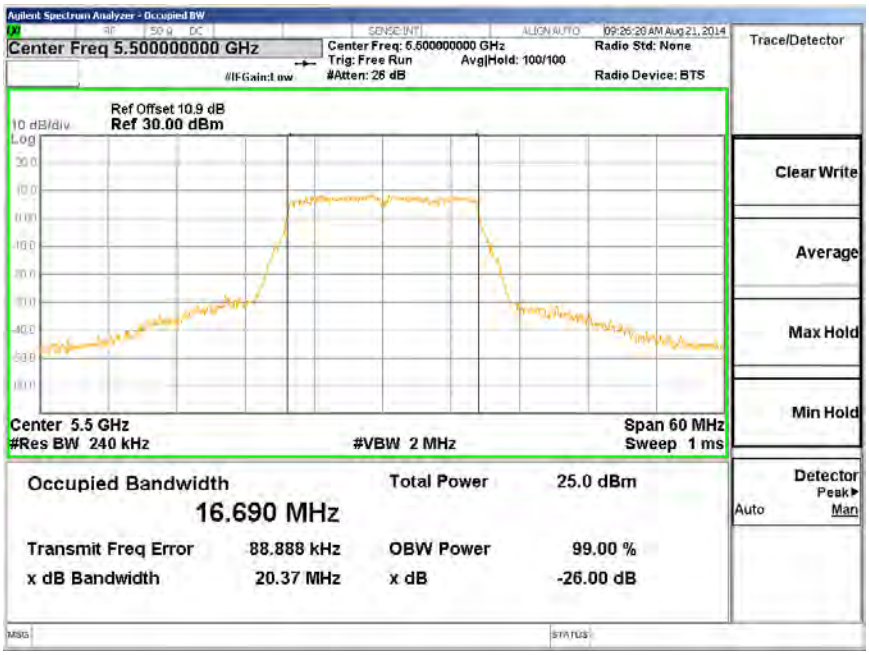
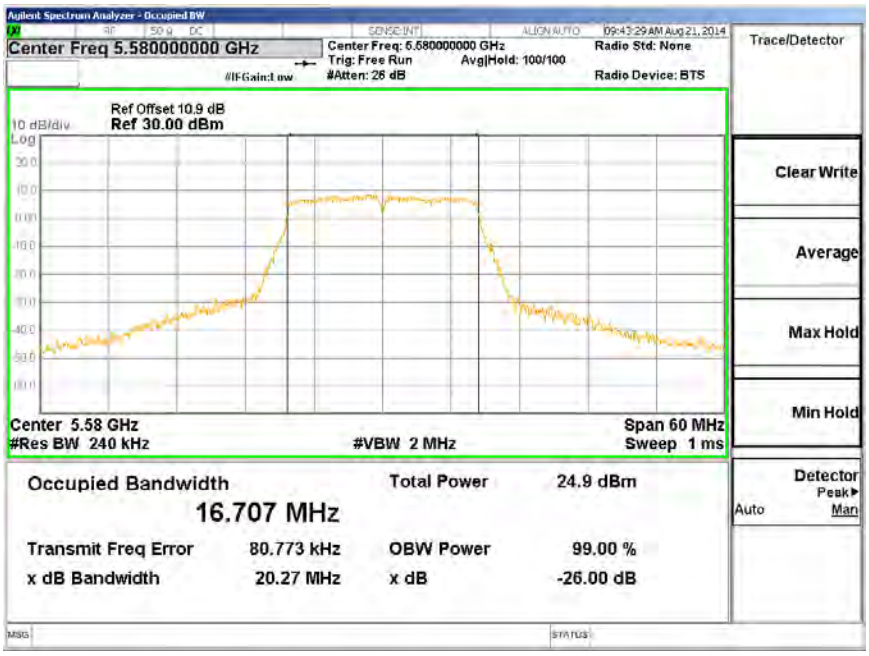
**26 dB BANDWIDTH, Chain 1**

BANDWIDTH Chain 1 LOW CH




BANDWIDTH Chain 1 MID CH





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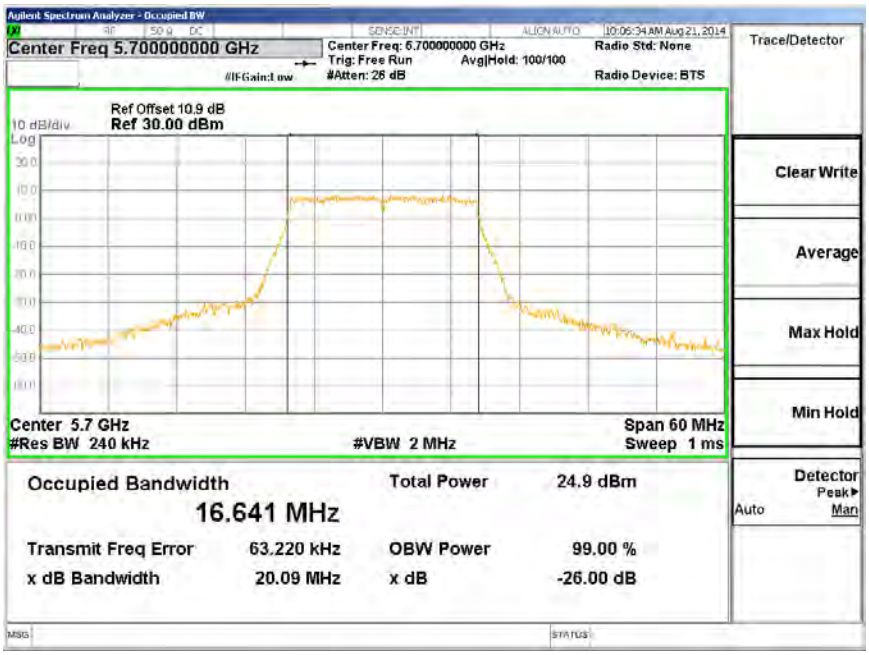
BANDWIDTH Chain 1 HIGH CH




BANDWIDTH Chain 1 STRADDLE CH 144

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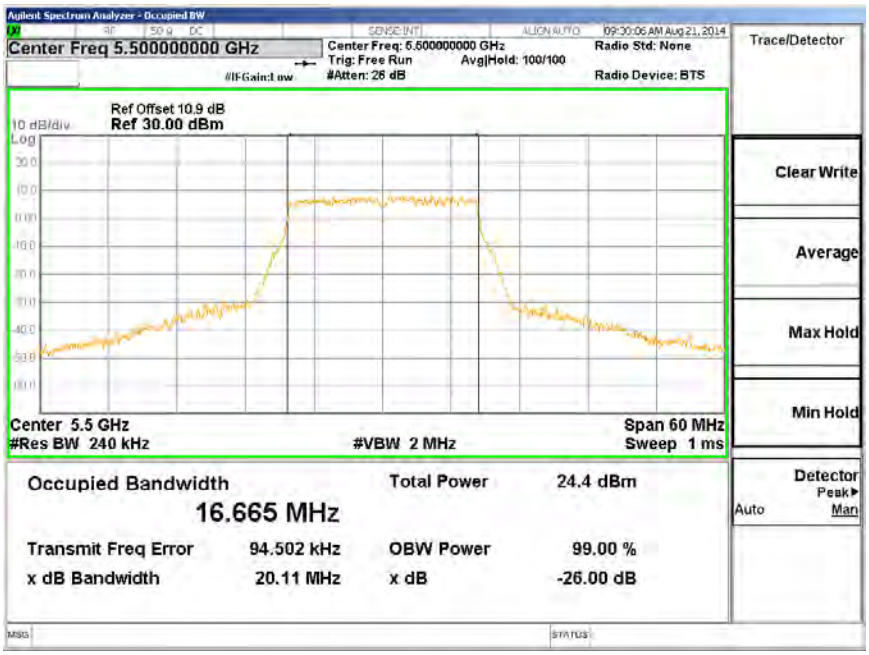
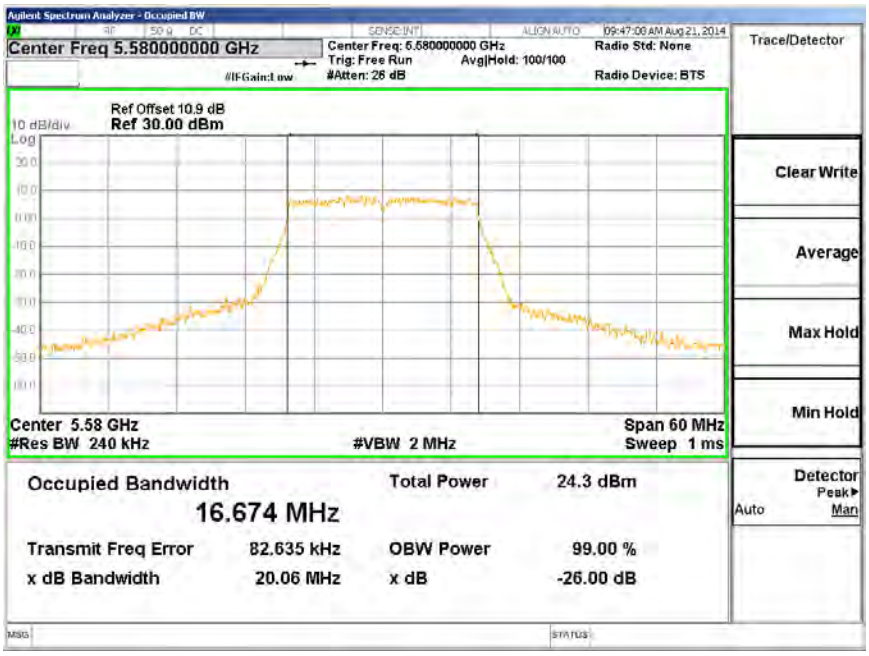
**26 dB BANDWIDTH, Chain 2**

BANDWIDTH Chain 2 LOW CH




BANDWIDTH Chain 2 MID CH





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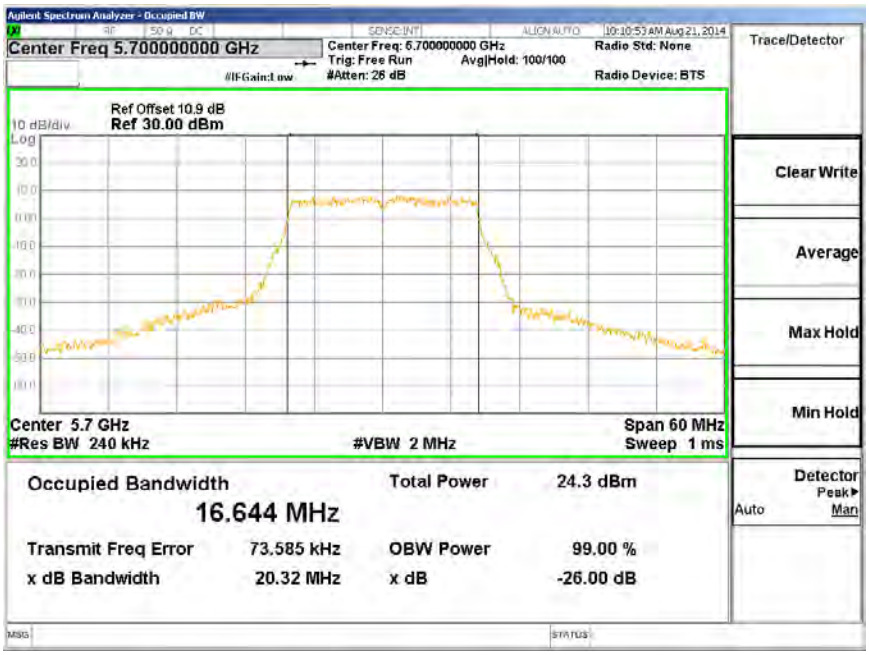
BANDWIDTH Chain 2 HIGH CH




BANDWIDTH Chain 2 STRADDLE CH 144

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### 8.10.2. 99% BANDWIDTH

**LIMITS**

None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | 99% BW Chain 0 (MHz) | 99% BW Chain 1 (MHz) | 99% BW Chain 2 (MHz) |
|---|---|---|---|---|
| Low | 5500 | 16.7190 | 16.6710 | 16.6280 |
| Mid | 5580 | 16.6840 | 16.7070 | 16.5980 |
| High | 5700 | 16.6850 | 16.6280 | 16.6260 |
| 144 | 5720 | 16.7550 | 16.6270 | 16.6670 |


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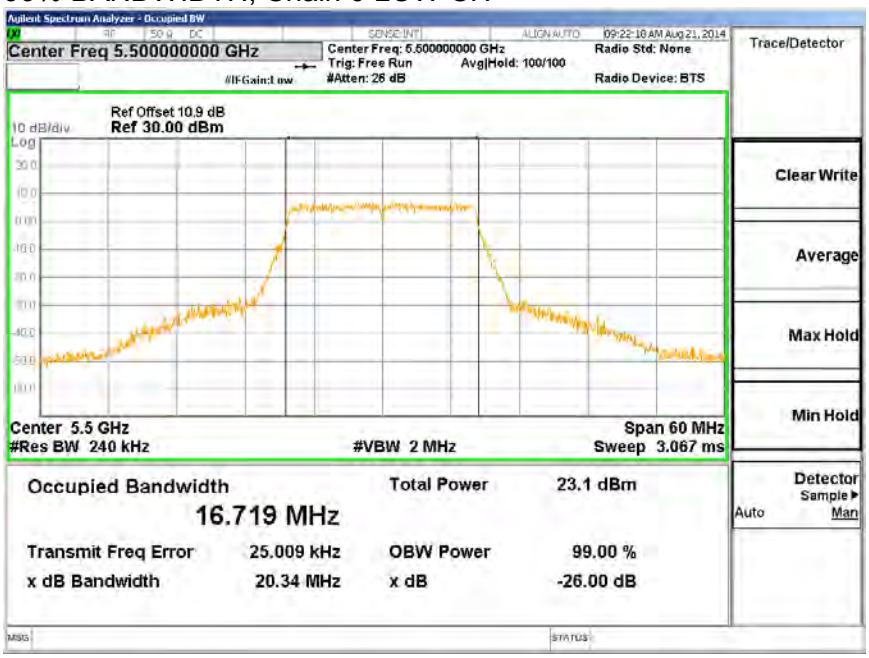
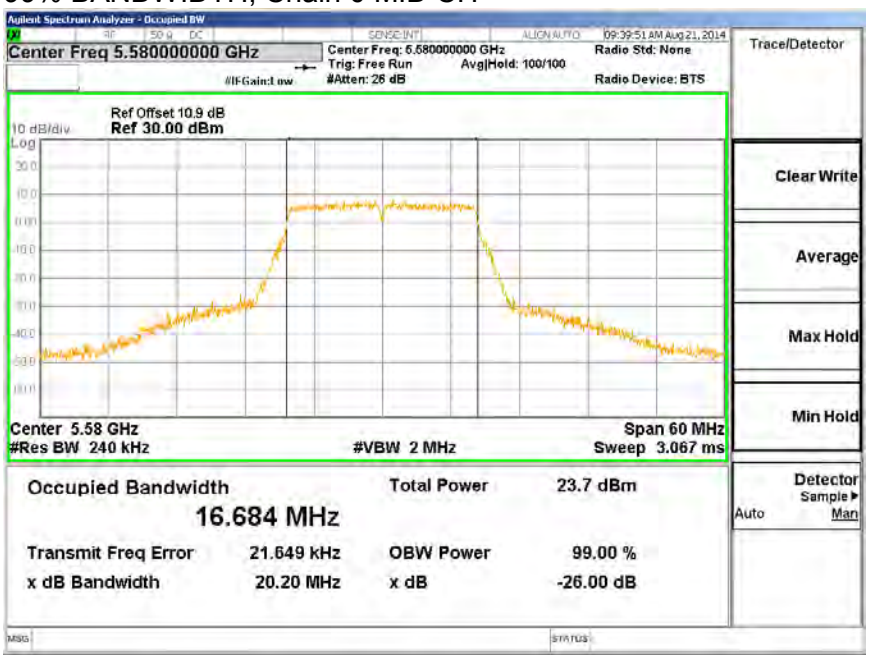
**99% BANDWIDTH, Chain 0**

99% BANDWIDTH, Chain 0 LOW CH




99% BANDWIDTH, Chain 0 MID CH





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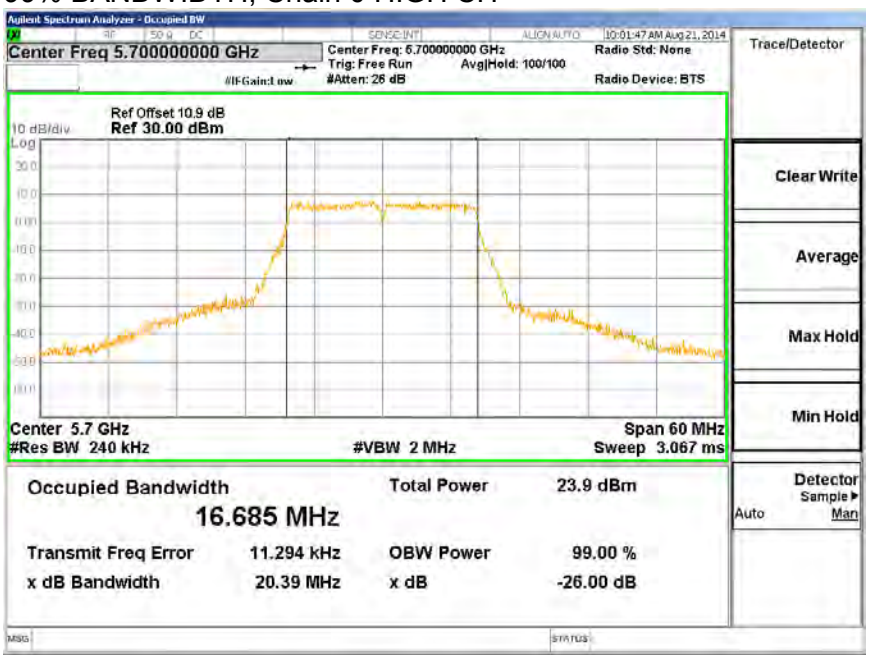
99% BANDWIDTH, Chain 0 HIGH CH




99% BANDWIDTH, Chain 0 STRADDLE CH 144

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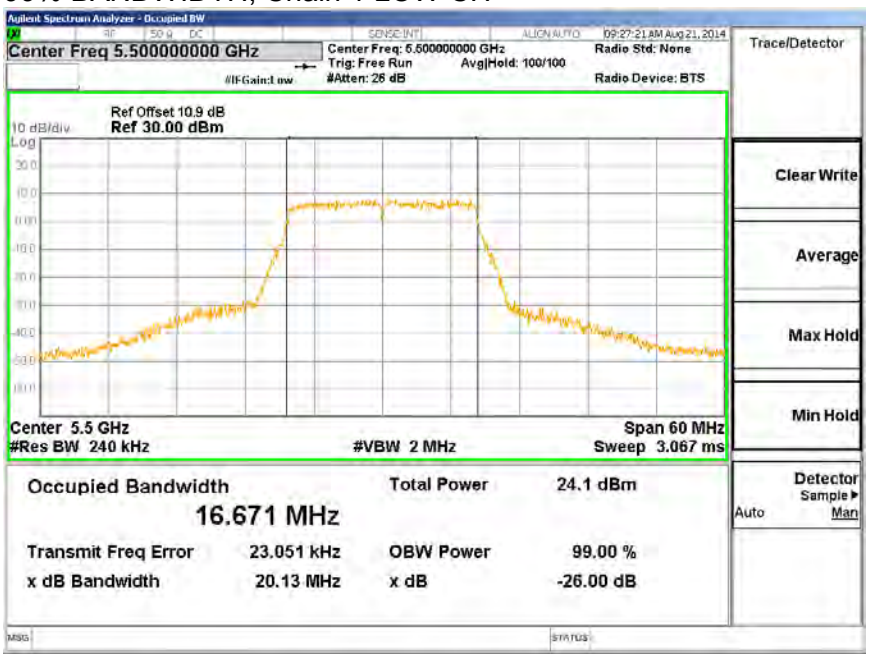
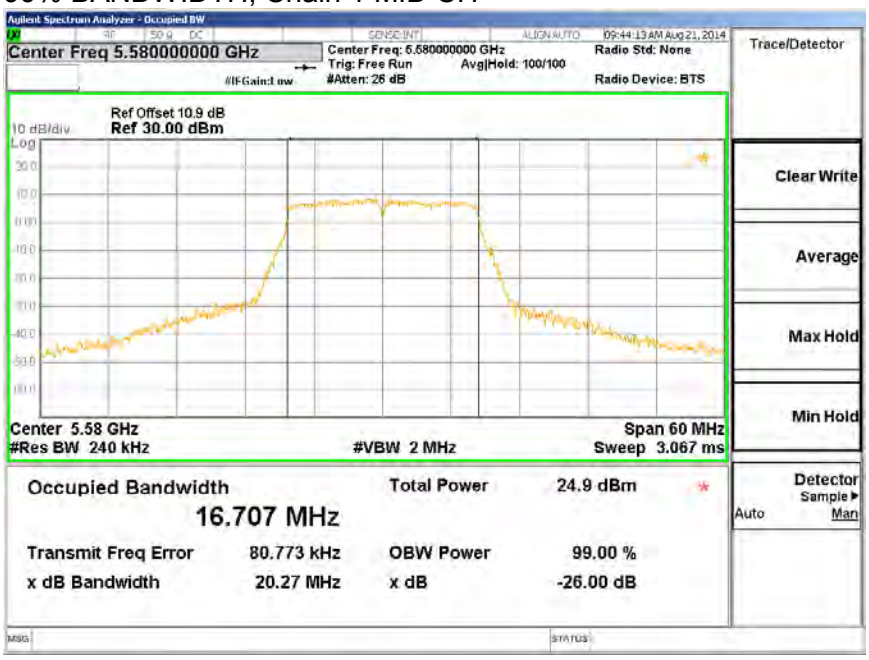
**99% BANDWIDTH, Chain 1**

99% BANDWIDTH, Chain 1 LOW CH




99% BANDWIDTH, Chain 1 MID CH





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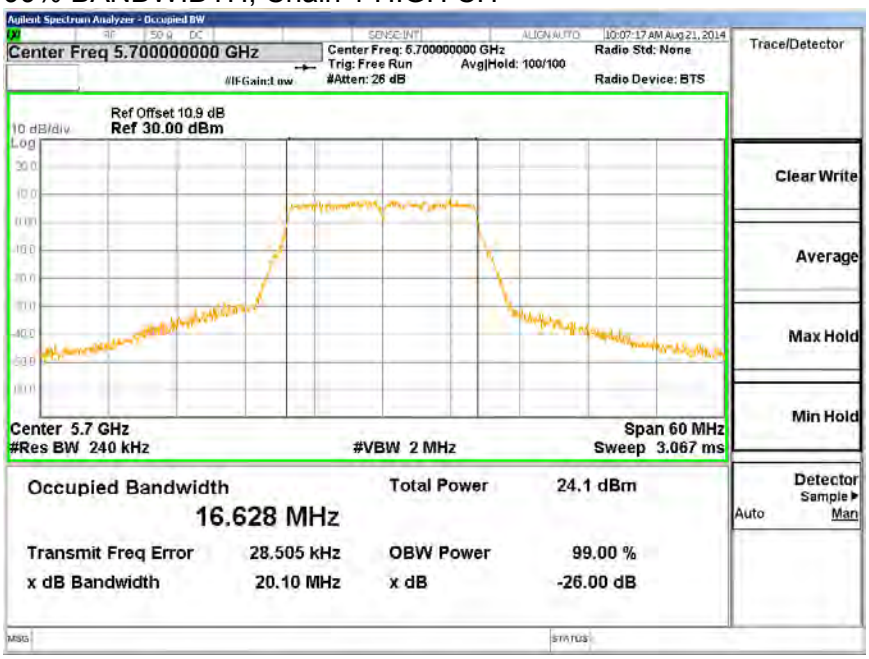
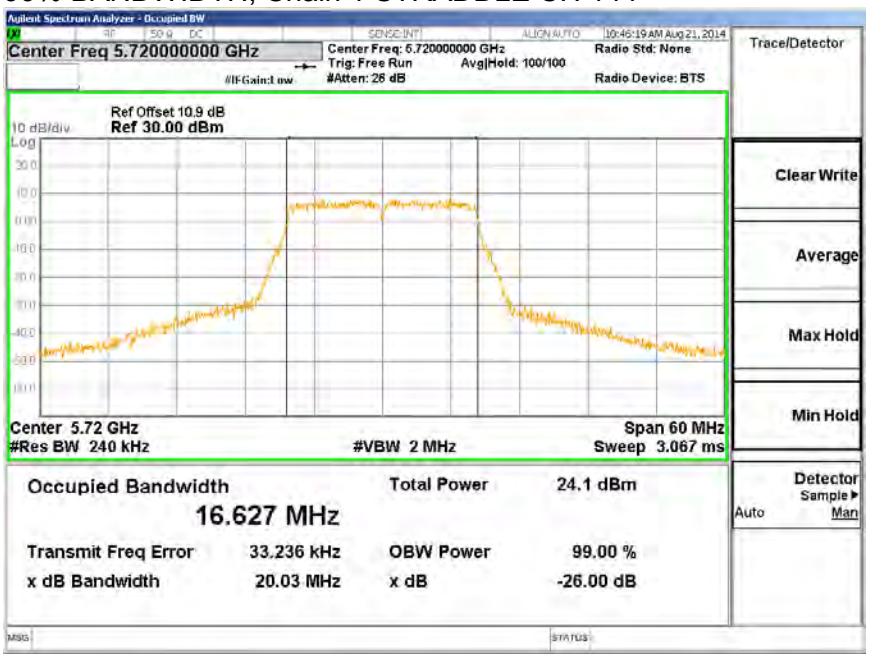
99% BANDWIDTH, Chain 1 HIGH CH




99% BANDWIDTH, Chain 1 STRADDLE CH 144





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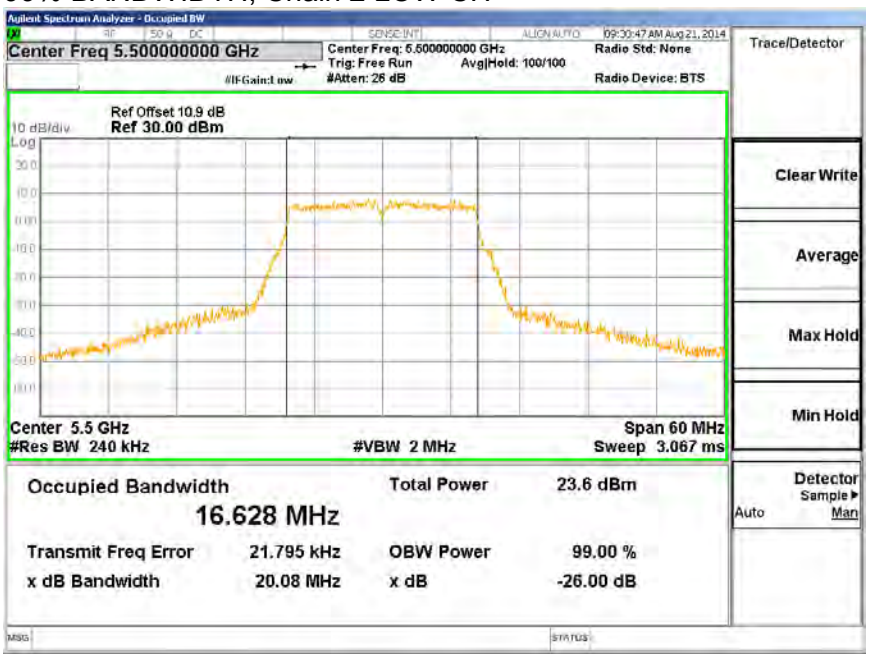
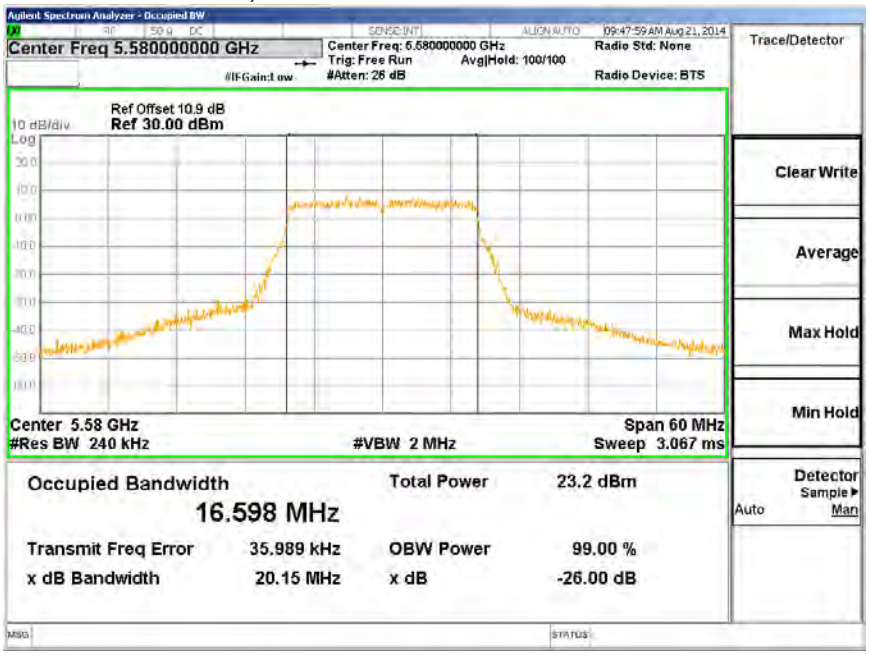
**99% BANDWIDTH, Chain 2**

99% BANDWIDTH, Chain 2 LOW CH




99% BANDWIDTH, Chain 2 MID CH





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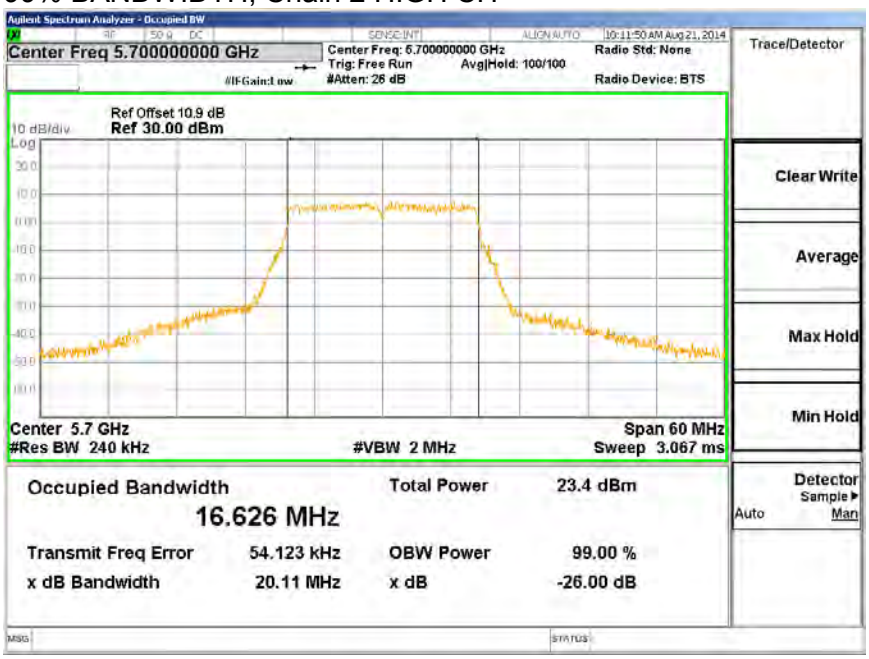
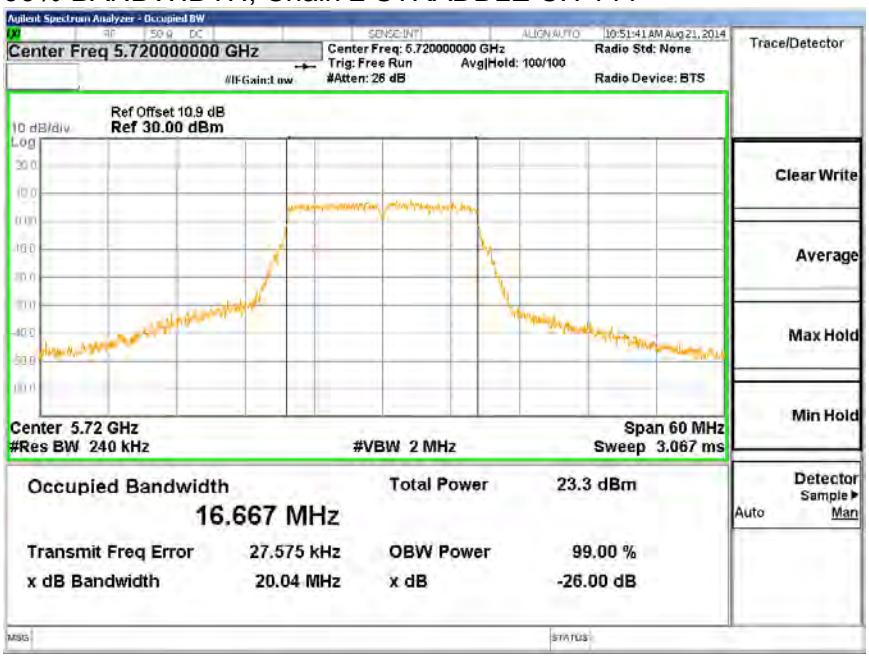
99% BANDWIDTH, Chain 2 HIGH CH




99% BANDWIDTH, Chain 2 STRADDLE CH 144





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### 8.10.3. AVERAGE POWER

**LIMITS**

None; for reporting purposes only.

**RESULTS**

**Average Power Results**

| Channel | Frequency (MHz) | Chain 0 Power (dBm) | Chain 1 Power (dBm) | Chain 2 Power (dBm) | Total Power (dBm) |
|---|---|---|---|---|---|
| Low | 5500 | 18.38 | 18.78 | 18.22 | 23.24 |
| Mid | 5580 | 18.45 | 18.53 | 17.86 | 23.06 |
| High | 5700 | 18.33 | 18.40 | 17.83 | 22.97 |
| 144 | 5720 | 18.53 | 18.58 | 17.84 | 23.10 |


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### 8.10.4. OUTPUT POWER AND PSD

**LIMITS**

FCC §15.407 (a) (2)

For the band 5.47–5.725 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 correlated and the antenna gain is the same for each chain. The directional gain is:

| Antenna Gain (dBi) | 10 * Log (3 chains) (dB) | Correlated Chains Directional Gain (dBi) |
|---|---|---|
| 2.00 | 4.77 | 6.77 |


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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) |
|---|---|---|---|---|---|---|
| Low | 5500 | 20.11 | 6.77 | 6.77 | 23.23 | 10.23 |
| Mid | 5580 | 20.06 | 6.77 | 6.77 | 23.23 | 10.23 |
| High | 5700 | 20.09 | 6.77 | 6.77 | 23.23 | 10.23 |

| | | |
|---|---|---|
| **Duty Cycle CF (dB)** | 0.23 | **Included in Calculations of Corr'd Power & PSD** |

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Chain 1 Meas Power (dBm) | Chain 2 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|---|---|
| Low | 5500 | 17.42 | 18.57 | 17.91 | 22.99 | 23.23 | -0.24 |
| Mid | 5580 | 18.16 | 18.31 | 17.73 | 23.07 | 23.23 | -0.16 |
| High | 5700 | 18.34 | 18.27 | 17.79 | 23.14 | 23.23 | -0.09 |

**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Chain 1 Meas PSD (dBm) | Chain 2 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|---|---|
| Low | 5500 | 3.44 | 4.59 | 3.94 | 9.02 | 10.23 | -1.21 |
| Mid | 5580 | 4.19 | 4.33 | 3.75 | 9.10 | 10.23 | -1.13 |
| High | 5700 | 4.36 | 4.29 | 3.81 | 9.16 | 10.23 | -1.07 |


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**OUTPUT POWER AND PSD, Chain 0**

OUTPUT POWER AND PSD, Chain 0 LOW CH

OUTPUT POWER AND PSD, Chain 0 MID CH

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OUTPUT POWER AND PSD, Chain 0 HIGH CH

**OUTPUT POWER AND PSD, Chain 1**

OUTPUT POWER AND PSD, Chain 1 LOW CH

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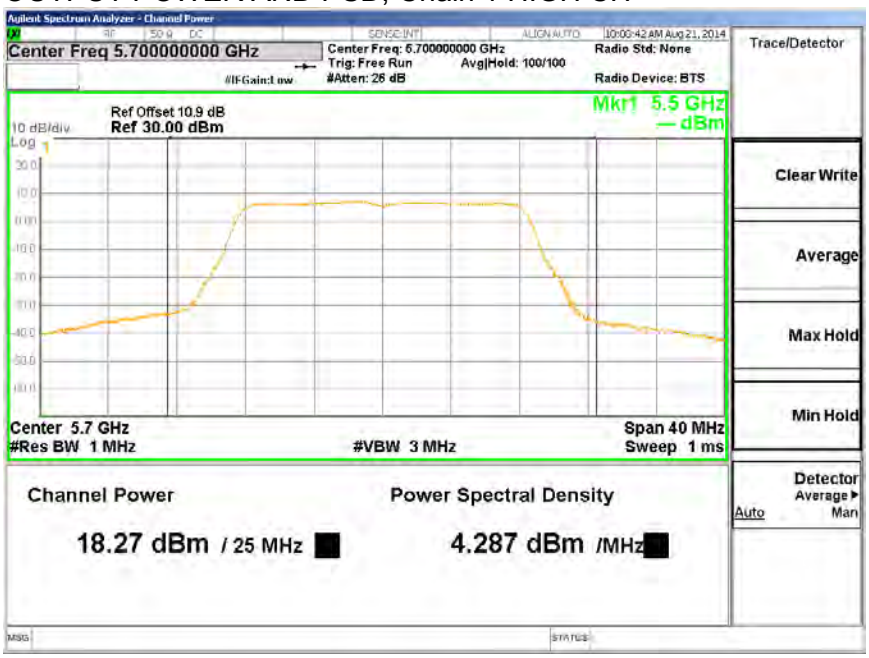
OUTPUT POWER AND PSD, Chain 1 MID CH

OUTPUT POWER AND PSD, Chain 1 HIGH CH





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**OUTPUT POWER AND PSD, Chain 2**

OUTPUT POWER AND PSD, Chain 2 LOW CH

OUTPUT POWER AND PSD, Chain 2 MID CH

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OUTPUT POWER AND PSD, Chain 2 HIGH CH

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**STRADDLE CHANNEL 144 RESULTS**

**UNII-2C BAND**

**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) |
|---|---|---|---|---|---|---|
| 144 | 5720 | 15.10 | 6.77 | 6.77 | 22.02 | 10.23 |

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

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Chain 1 Meas Power (dBm) | Chain 2 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|---|---|
| 144 | 5720 | 16.76 | 17.30 | 16.68 | 21.92 | 22.02 | -0.10 |

**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Chain 1 Meas PSD (dBm) | Chain 2 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|---|---|
| 144 | 5720 | 4.97 | 5.51 | 4.90 | 10.14 | 10.23 | -0.09 |


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OUTPUT POWER AND PSD, Chain 0 CH 144 UNII

OUTPUT POWER AND PSD, Chain 1 CH 144 UNII

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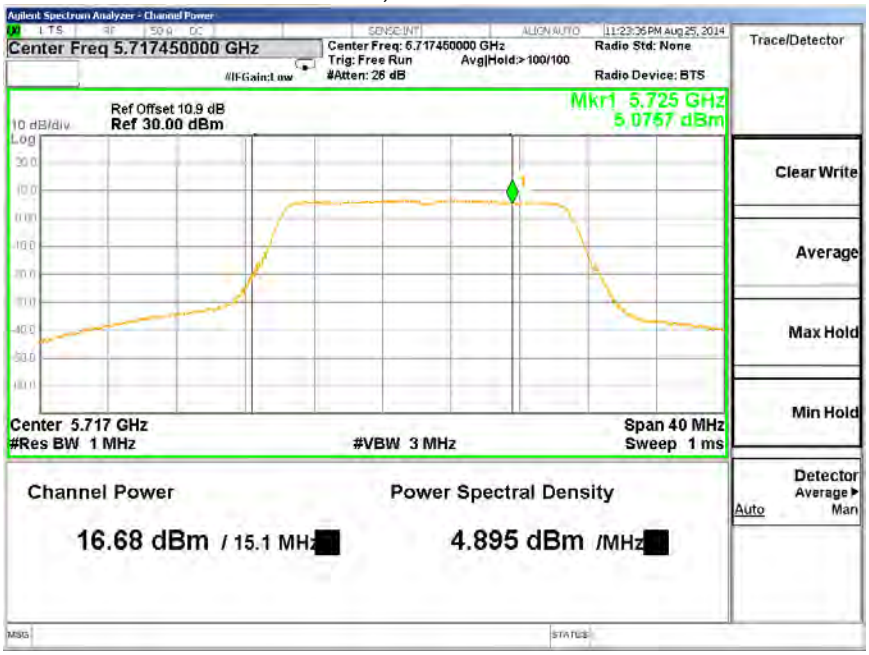
OUTPUT POWER AND PSD, Chain 2 CH 144 UNII





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**UNII-3 BAND**

**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) |
|---|---|---|---|---|---|---|
| 144 | 5720 | 5.08 | 6.77 | 6.77 | 23.23 | 16.23 |

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

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Chain 1 Meas Power (dBm) | Chain 2 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|---|---|
| 144 | 5720 | 10.97 | 11.07 | 10.37 | 15.82 | 23.23 | -7.41 |

**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Chain 1 Meas PSD (dBm) | Chain 2 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|---|---|
| 144 | 5720 | 3.91 | 4.01 | 3.31 | 8.75 | 16.23 | -7.48 |


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OUTPUT POWER, Chain 0 CH 144 UNII-3

OUTPUT POWER, Chain 1 CH 144 UNII-3

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OUTPUT POWER, Chain 2 CH 144 UNII-3

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## 8.10.5. PEAK EXCURSION

**LIMITS**

FCC §15.407 (a) (6)

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

**RESULTS**

Refer to the results of 802.11n HT20 mode in the 5.2 GHz band.

Chain 0

| Channel | Frequency (MHz) | PK Level (dBm) | PSD (dBm) | DCCF (dB) | Peak Excursion (dB) | Limit (dB) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| Mid | 5580 | 14.89 | 4.19 | 0.23 | 10.47 | 13 | -2.53 |

Chain 1

| Channel | Frequency (MHz) | PK Level (dBm) | PSD (dBm) | DCCF (dB) | Peak Excursion (dB) | Limit (dB) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| Mid | 5580 | 16.08 | 4.33 | 0.23 | 11.52 | 13 | -1.48 |

Chain 2

| Channel | Frequency (MHz) | PK Level (dBm) | PSD (dBm) | DCCF (dB) | Peak Excursion (dB) | Limit (dB) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| Mid | 5580 | 15.84 | 3.75 | 0.23 | 11.86 | 13 | -1.14 |


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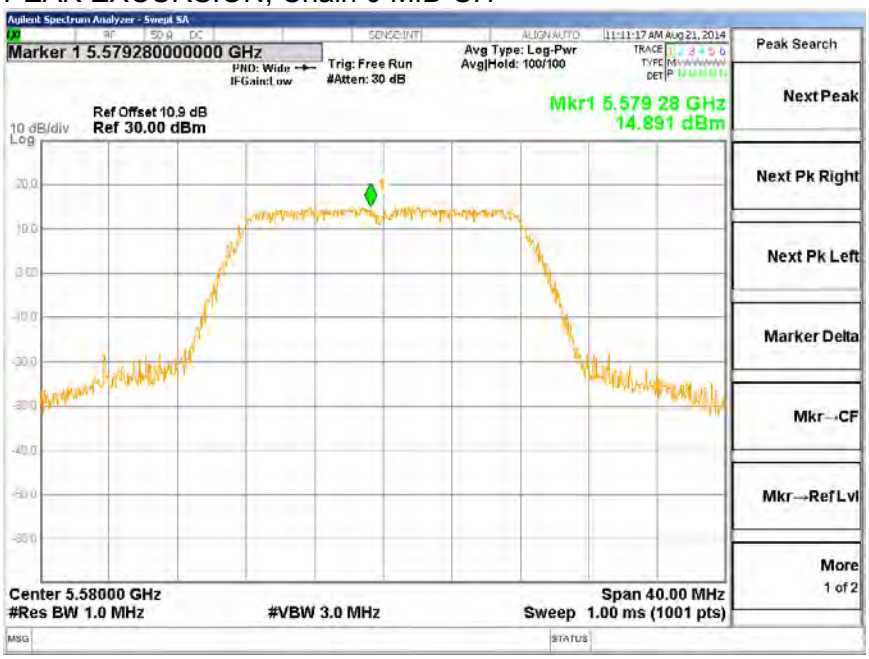
**PEAK EXCURSION, Chain 0**

PEAK EXCURSION, Chain 0 MID CH




**PEAK EXCURSION, Chain 1**

PEAK EXCURSION, Chain 1 MID CH

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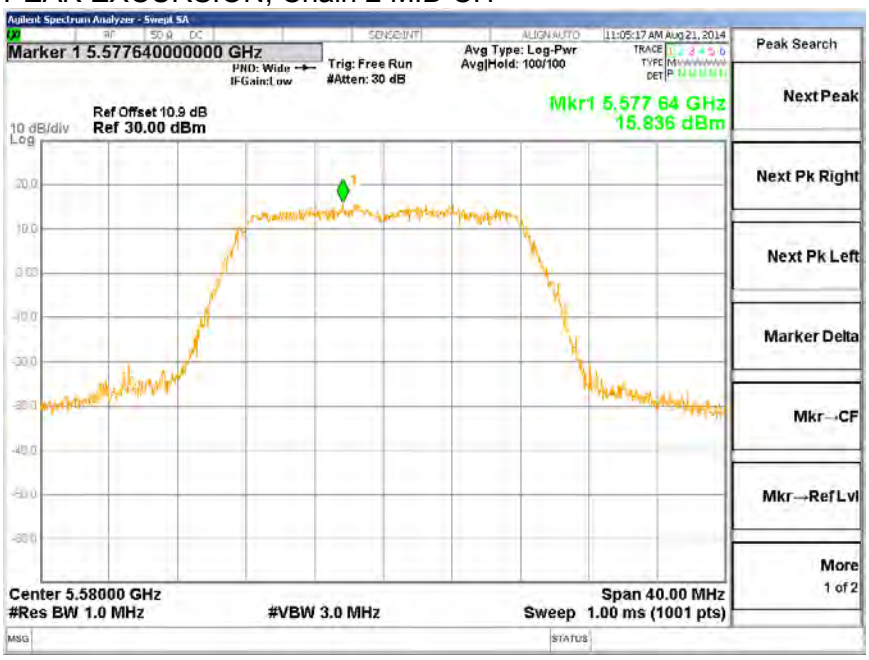
**PEAK EXCURSION, Chain 2**

PEAK EXCURSION, Chain 2 MID CH





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## 8.11. 802.11n HT20 1TX SISO MODE IN THE 5.6 GHz BAND

### 8.11.1. 26 dB BANDWIDTH

**LIMITS**

None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | 26 dB BW Chain 0 (MHz) |
|---|---|---|
| Low | 5500 | 20.77 |
| Mid | 5580 | 21.06 |
| High | 5700 | 21.76 |
| 144 | 5720 | 20.76 |


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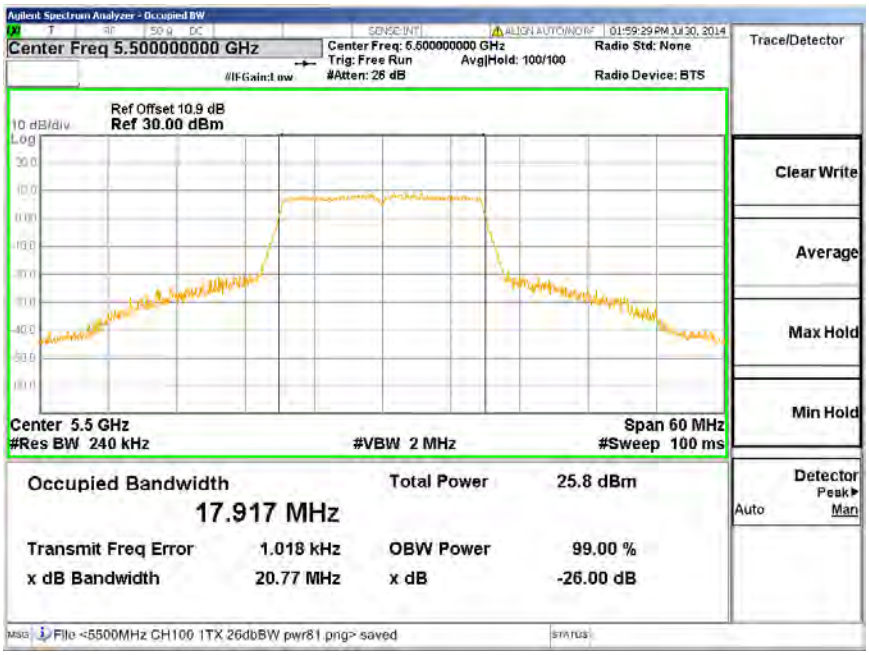
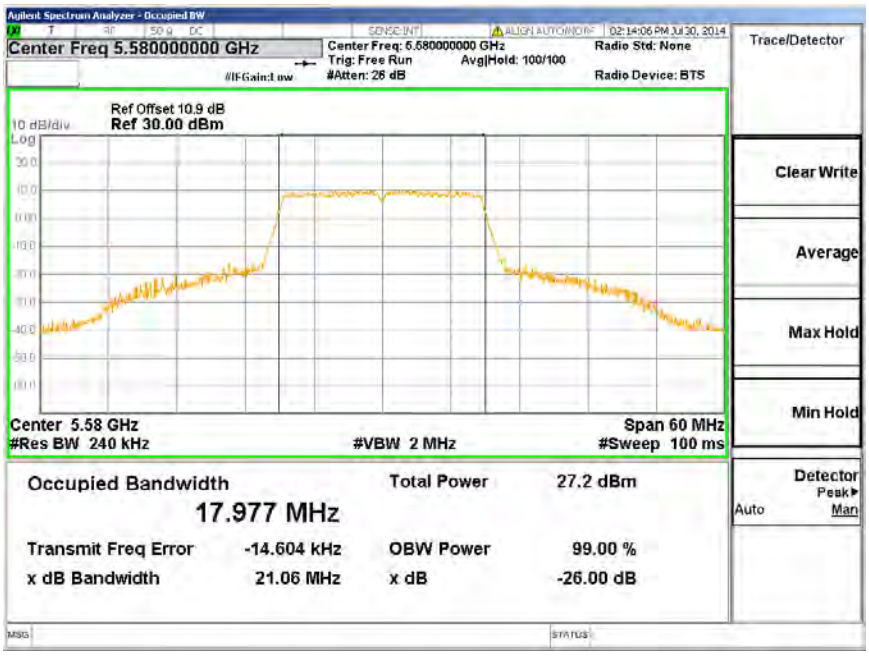
**26 dB BANDWIDTH, Chain 0**

BANDWIDTH Chain 0 LOW CH




BANDWIDTH Chain 0 MID CH





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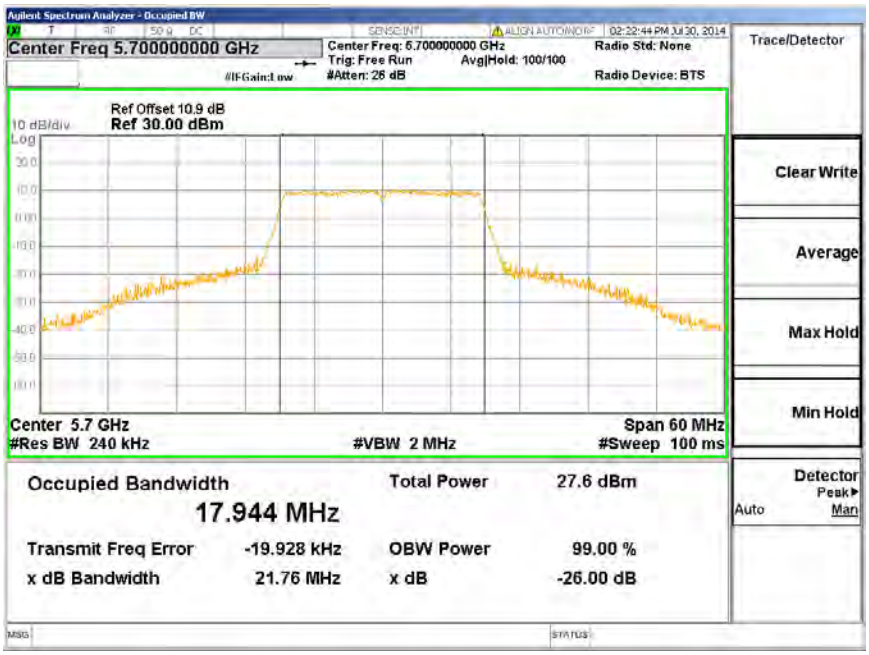
BANDWIDTH Chain 0 HIGH CH




BANDWIDTH Chain 0 STRADDLE CH 144

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### 8.11.2. 99% BANDWIDTH

**LIMITS**

None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | 99% BW Chain 0 (MHz) |
|---|---|---|
| Low | 5500 | 17.8350 |
| Mid | 5580 | 17.8410 |
| High | 5700 | 17.7930 |
| 144 | 5720 | 17.8040 |


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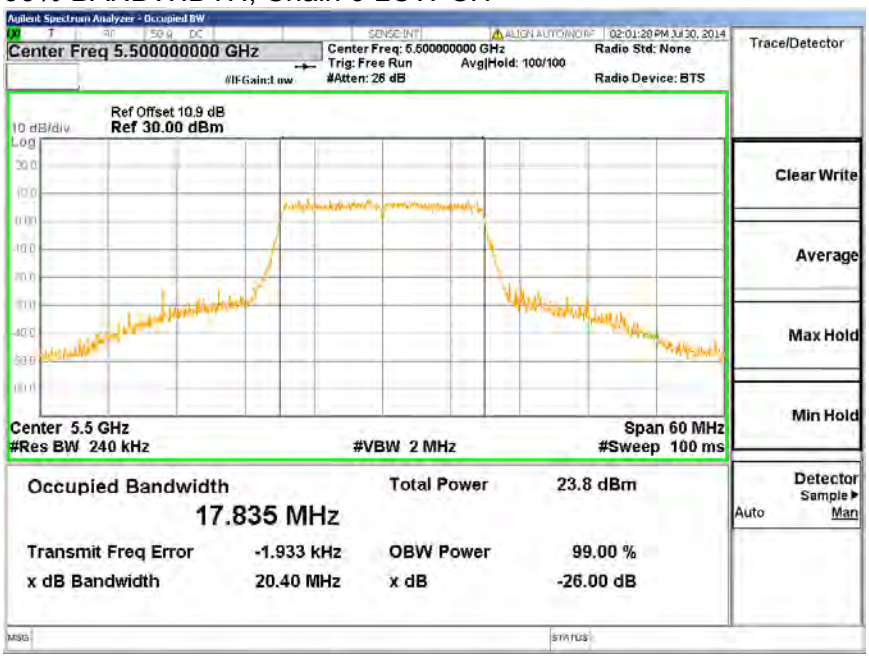
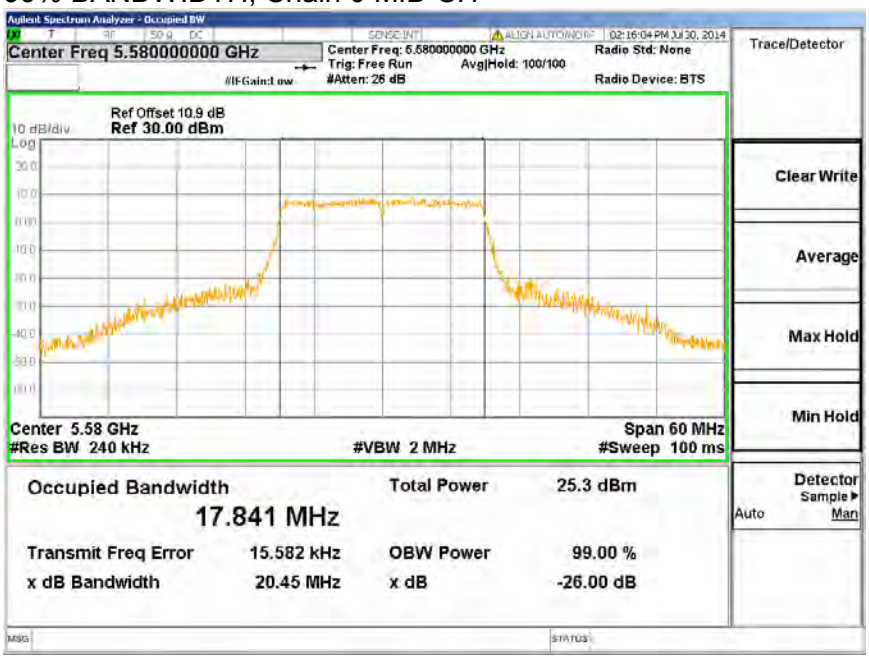
**99% BANDWIDTH, Chain 0**

99% BANDWIDTH, Chain 0 LOW CH




99% BANDWIDTH, Chain 0 MID CH





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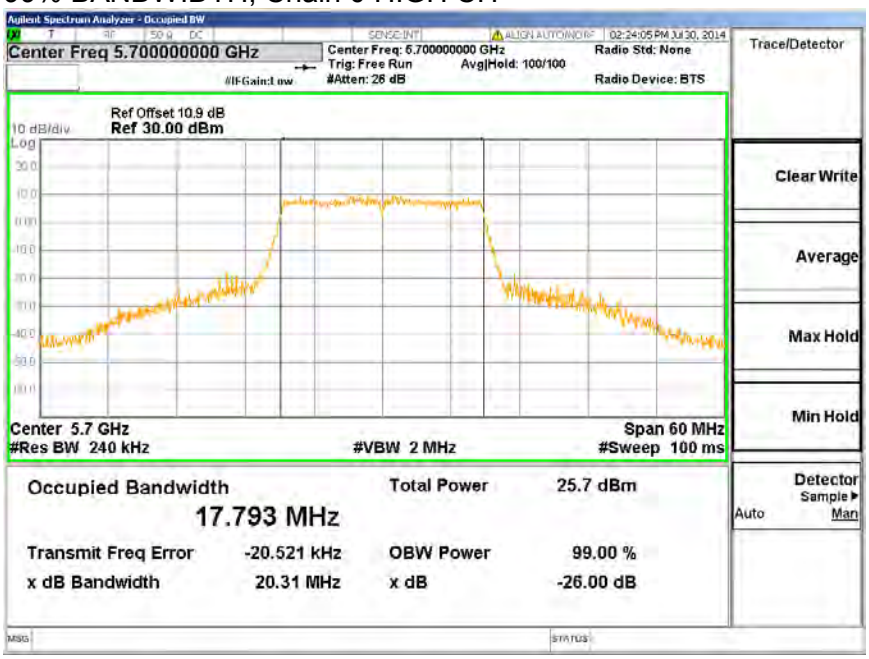
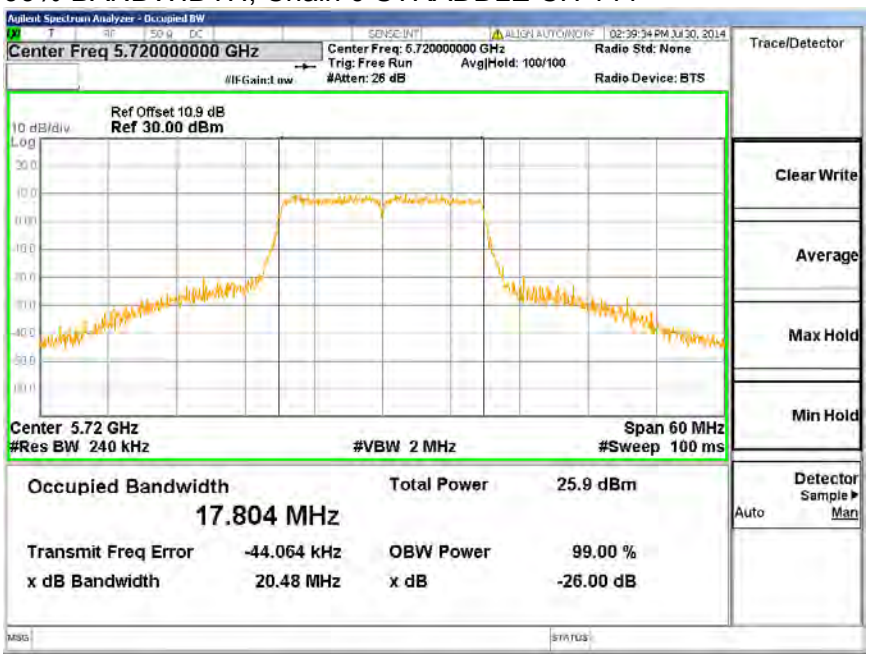
99% BANDWIDTH, Chain 0 HIGH CH




99% BANDWIDTH, Chain 0 STRADDLE CH 144





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### 8.11.3. AVERAGE POWER

**LIMITS**

None; for reporting purposes only.

**RESULTS**

**Average Power Results**

| Channel | Frequency (MHz) | Chain 0 Power (dBm) |
|---|---|---|
| Low | 5500 | 18.81 |
| Mid | 5580 | 20.14 |
| High | 5700 | 20.52 |
| 144 | 5720 | 20.32 |


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### 8.11.4. OUTPUT POWER AND PSD

**LIMITS**

FCC §15.407 (a) (2)

For the band 5.47–5.725 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.


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**RESULTS**

**Bandwidth, Antenna Gain, and Limits**

| Channel | Frequency (MHz) | Min 26 dB BW (MHz) | Direction Gain for Power (dBi) | Directional Gain for PSD (dBi) | Power Limit (dBm) | PSD Limit (dBm) |
|---|---|---|---|---|---|---|
| Low | 5500 | 20.77 | 2.00 | 2.00 | 24.00 | 11.00 |
| Mid | 5580 | 21.06 | 2.00 | 2.00 | 24.00 | 11.00 |
| High | 5700 | 21.76 | 2.00 | 2.00 | 24.00 | 11.00 |

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

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|
| Low | 5500 | 18.67 | 18.89 | 24.00 | -5.11 |
| Mid | 5580 | 20.38 | 20.60 | 24.00 | -3.40 |
| High | 5700 | 20.42 | 20.64 | 24.00 | -3.36 |

**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|
| Low | 5500 | 4.69 | 4.91 | 11.00 | -6.09 |
| Mid | 5580 | 6.40 | 6.62 | 11.00 | -4.38 |
| High | 5700 | 6.44 | 6.66 | 11.00 | -4.34 |


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**OUTPUT POWER AND PSD, Chain 0**

OUTPUT POWER AND PSD, Chain 0 LOW CH

OUTPUT POWER AND PSD, Chain 0 MID CH

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OUTPUT POWER AND PSD, Chain 0 HIGH CH

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**STRADDLE CHANNEL 144 RESULTS**

**UNII-2C BAND**

**Bandwidth, Antenna Gain, and Limits**

| Channel | Frequency (MHz) | Min 26 dB BW (MHz) | Directional Gain (dBi) | Power Limit (dBm) | PSD Limit (dBm) |
|---|---|---|---|---|---|
| 144 | 5720 | 15.42 | 2.00 | 22.88 | 11.00 |

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

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|
| 144 | 5720 | 20.47 | 20.69 | 22.88 | -2.19 |

**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|
| 144 | 5720 | 6.49 | 6.71 | 11.00 | -4.29 |

*Note total output power across 2 bands was found to be compliant incorporating the single band 26dB BW within the limit, therefore a measured output power within the single band 26dBBW would also comply.


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OUTPUT POWER AND PSD, Chain 0 CH 144 UNII

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**UNII-3 BAND**

**Bandwidth, Antenna Gain, and Limits**

| Channel | Frequency (MHz) | Min 26 dB BW (MHz) | Directional Gain (dBi) | Power Limit (dBm) | PSD Limit (dBm) |
|---|---|---|---|---|---|
| 144 | 5720 | 5.34 | 2.00 | 24.00 | 17.00 |

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

**Output Power Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Power Margin (dB) |
|---|---|---|---|---|---|
| 144 | 5720 | 20.47 | 20.69 | 24.00 | -3.31 |

**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas PSD (dBm) | Total Corr'd PSD (dBm) | PSD Limit (dBm) | PSD Margin (dB) |
|---|---|---|---|---|---|
| 144 | 5720 | 6.49 | 6.71 | 17.00 | -10.29 |

*Note total output power across 2 bands was found to be compliant incorporating the single band 26dB BW within the limit, therefore a measured output power within the single band 26dBBW would also comply.


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OUTPUT POWER, Chain 0 CH 144 UNII-3

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### 8.11.5. PEAK EXCURSION

**LIMITS**

FCC §15.407 (a) (6)

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

**RESULTS**

| Channel | Frequency (MHz) | PK Level (dBm) | PSD (dBm) | DCCF (dB) | Peak Excursion (dB) | Limit (dB) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| Mid | 5580 | 17.02 | 6.40 | 0.22 | 10.40 | 13 | -2.60 |


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**PEAK EXCURSION**

PEAK EXCURSION MID CH

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## 8.12. 802.11n HT20 3TX CDD MODE IN THE 5.6 GHz BAND

### 8.12.1. 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) | 26 dB BW Chain 2 (MHz) |
|---|---|---|---|---|
| Low | 5500 | 20.71 | 20.62 | 20.79 |
| Mid | 5580 | 20.74 | 20.52 | 20.64 |
| High | 5700 | 20.74 | 20.58 | 20.64 |
| 144 | 5720 | 15.35 | 15.22 | 15.28 |


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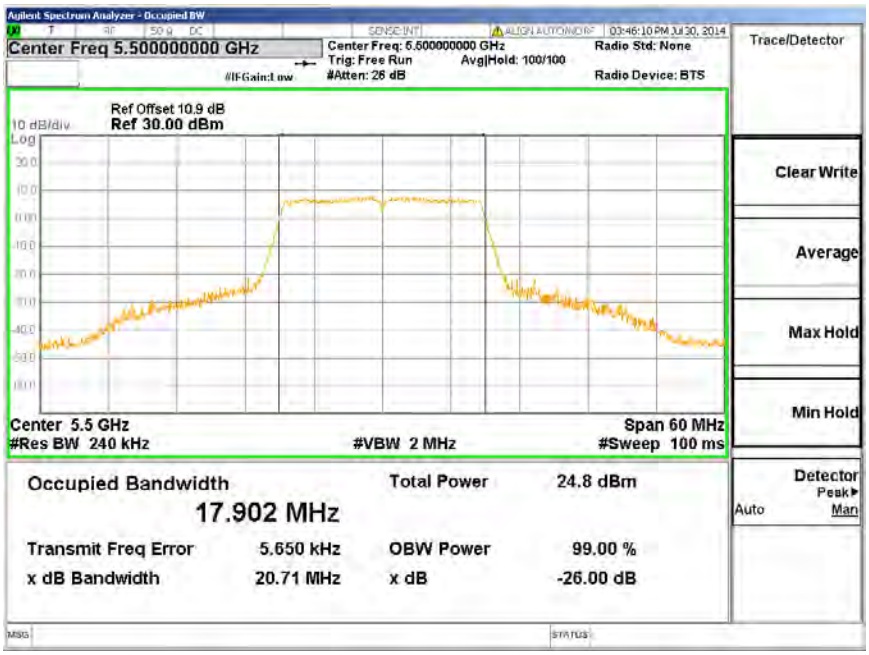
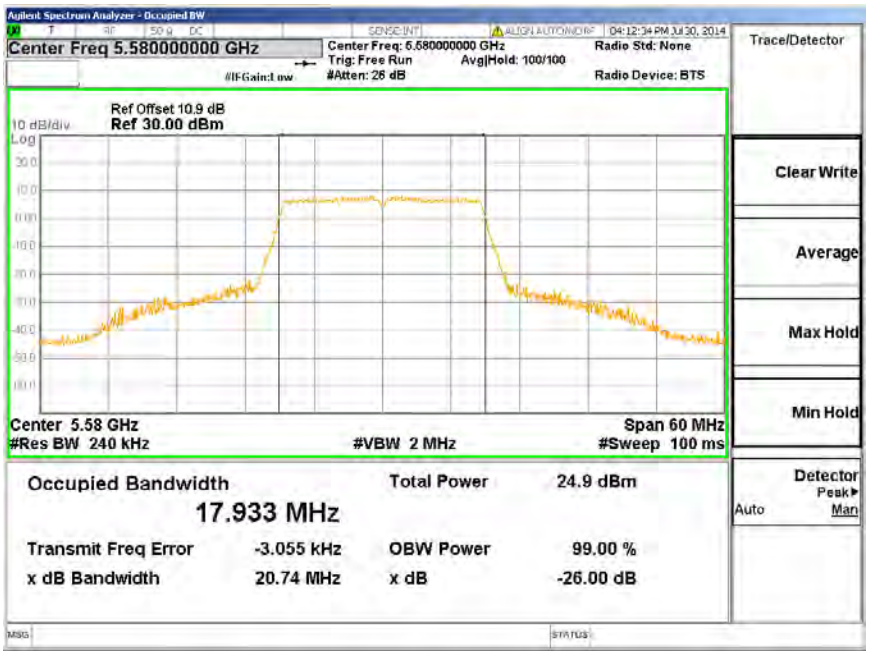
**26 dB BANDWIDTH, Chain 0**

BANDWIDTH Chain 0 LOW CH




BANDWIDTH Chain 0 MID CH





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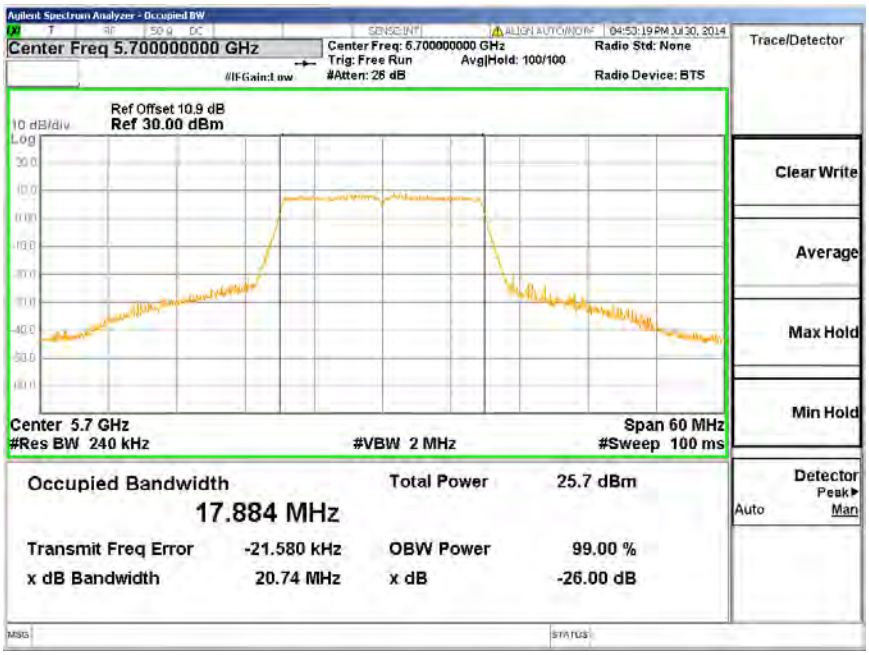
BANDWIDTH Chain 0 HIGH CH




BANDWIDTH Chain 0 STRADDLE CH 144

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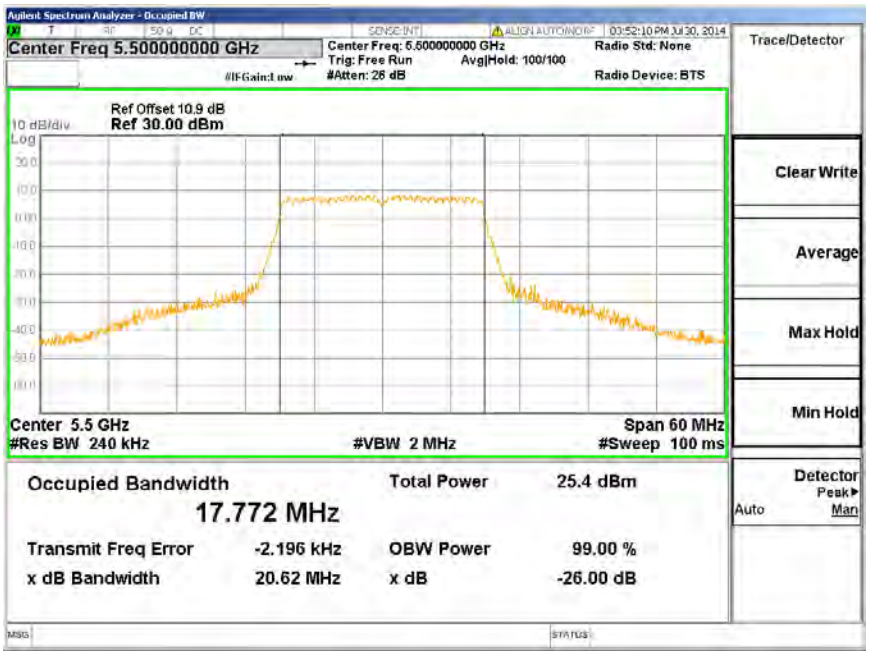
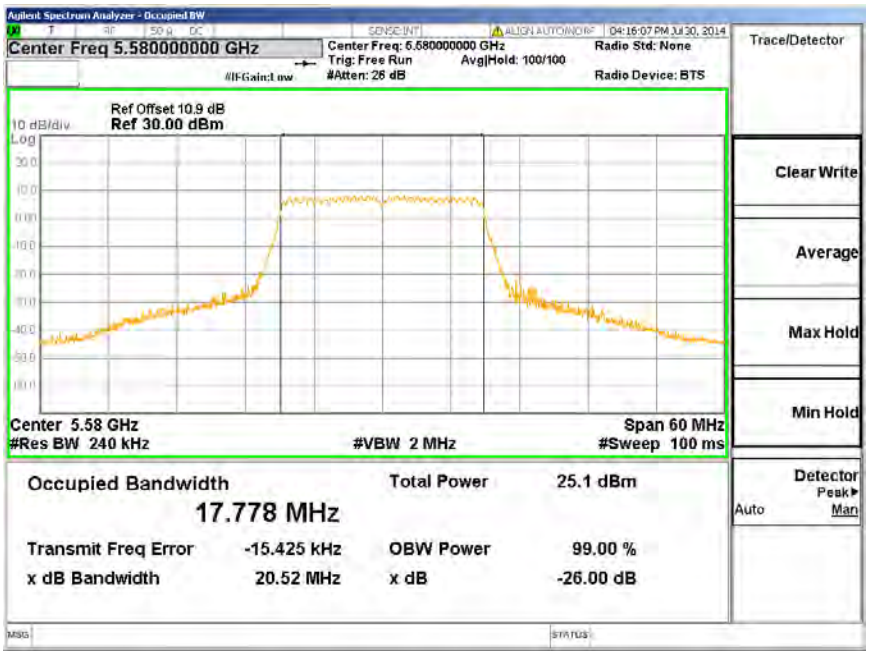
**26 dB BANDWIDTH, Chain 1**

BANDWIDTH Chain 1 LOW CH




BANDWIDTH Chain 1 MID CH





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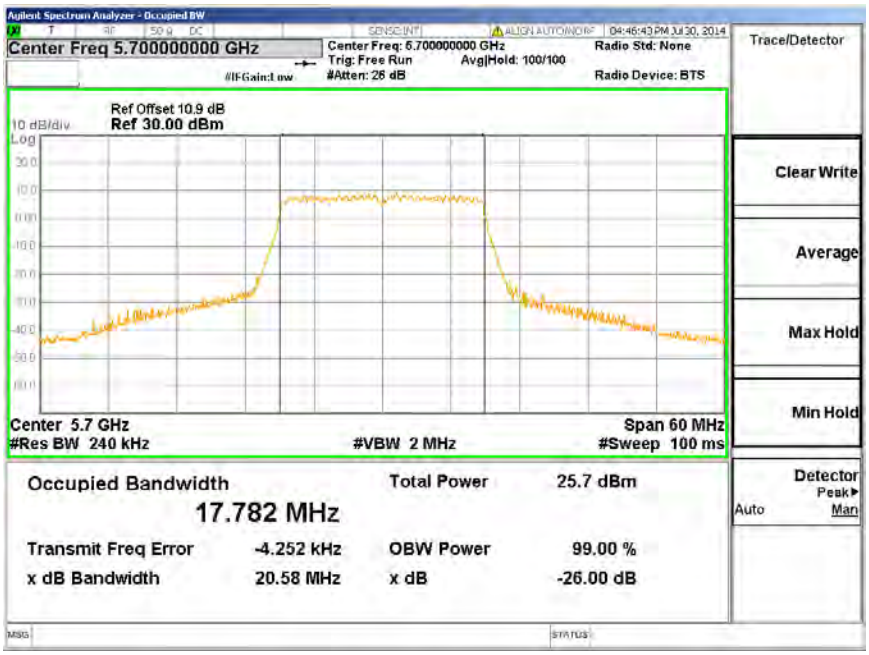
BANDWIDTH Chain 1 HIGH CH




BANDWIDTH Chain 1 STRADDLE CH 144

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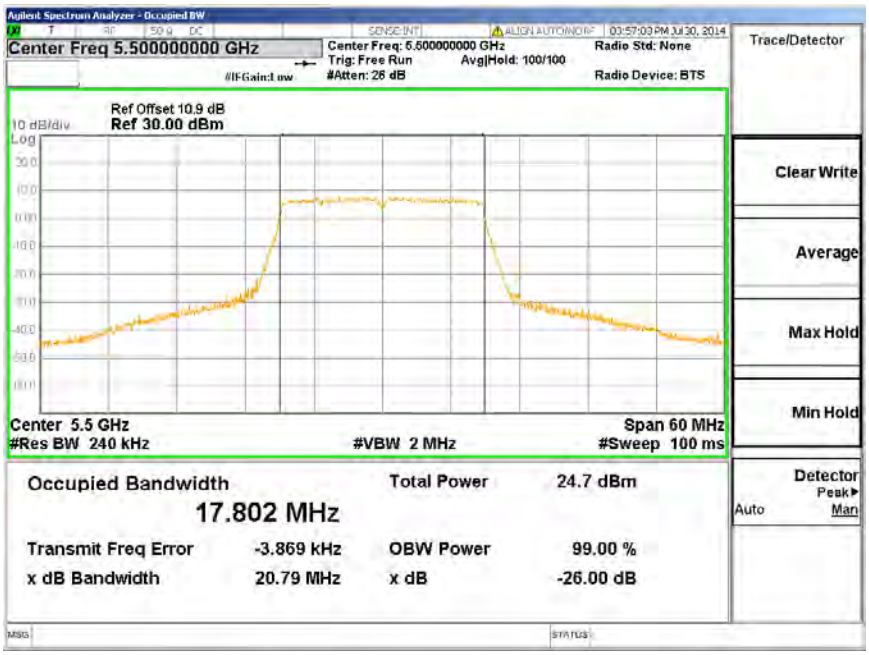
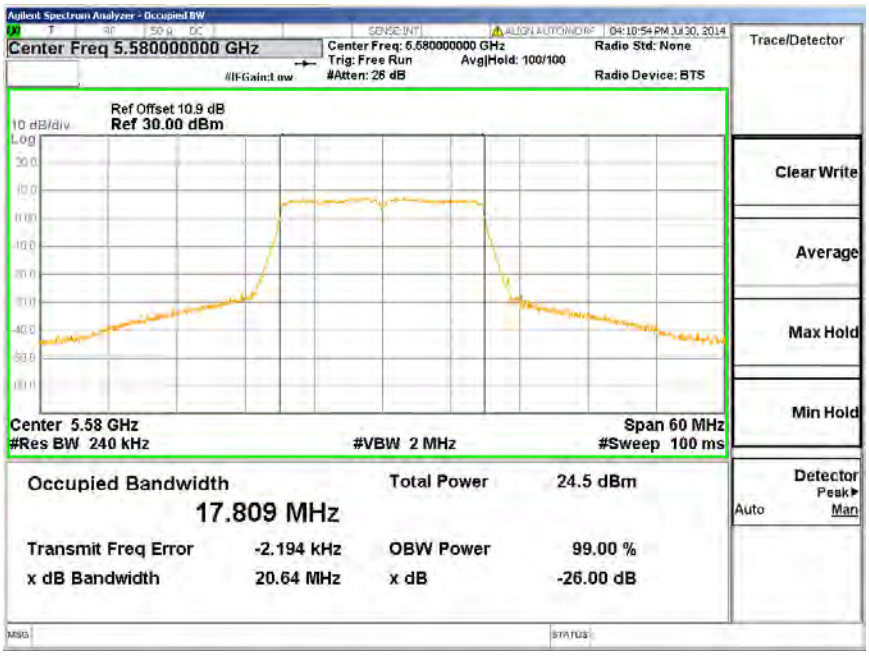
**26 dB BANDWIDTH, Chain 2**

BANDWIDTH Chain 2 LOW CH




BANDWIDTH Chain 2 MID CH





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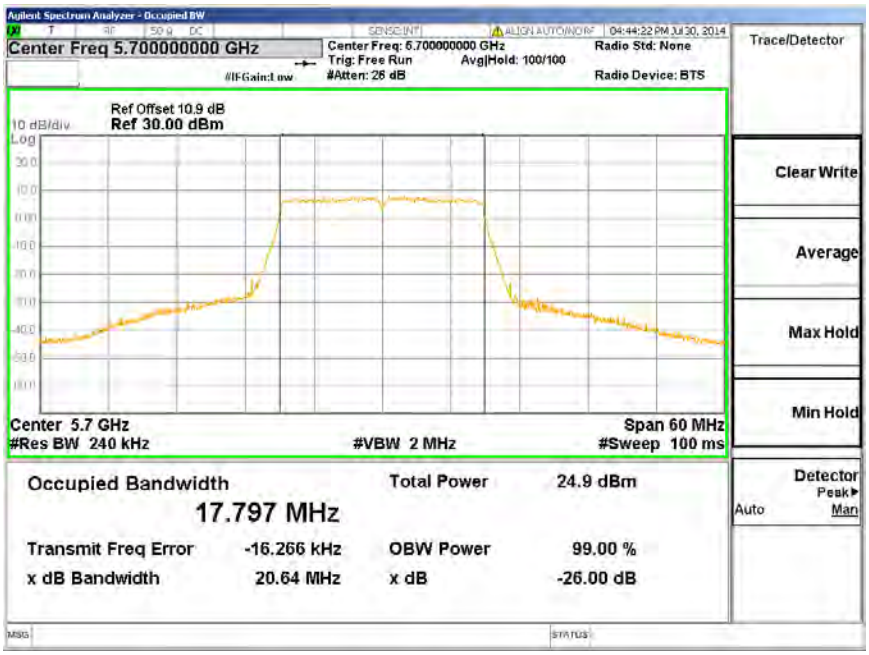
BANDWIDTH Chain 2 HIGH CH




BANDWIDTH Chain 2 STRADDLE CH 144

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### 8.12.2. 99% BANDWIDTH

**LIMITS**

None; for reporting purposes only.

**RESULTS**

| Channel | Frequency (MHz) | 99% BW Chain 0 (MHz) | 99% BW Chain 1 (MHz) | 99% BW Chain 2 (MHz) |
|---|---|---|---|---|
| Low | 5500 | 17.7930 | 17.7340 | 17.7640 |
| Mid | 5580 | 17.8400 | 17.7670 | 17.7220 |
| High | 5700 | 17.7740 | 17.7490 | 17.7490 |
| 144 | 5720 | 17.7910 | 17.7490 | 17.7280 |


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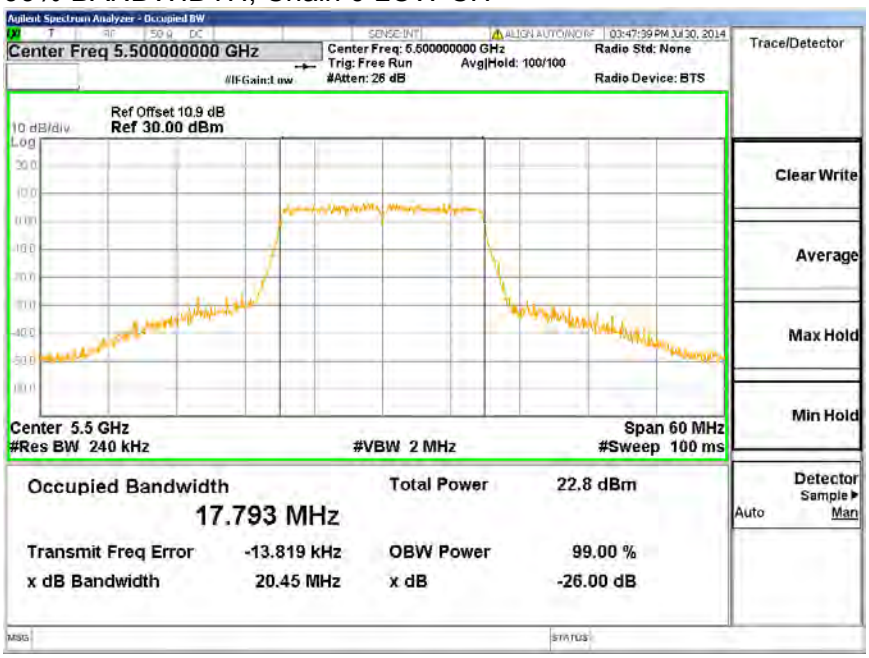
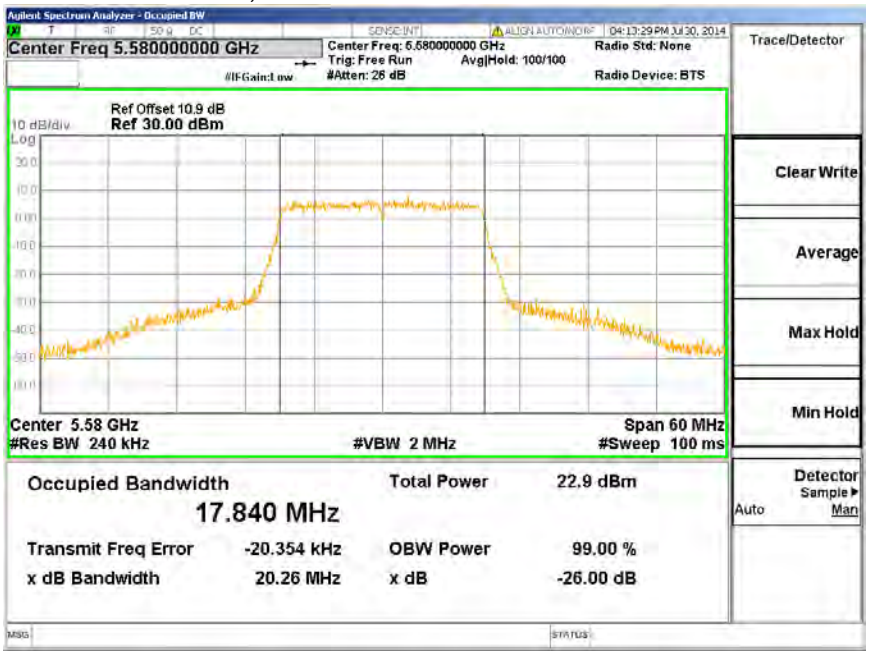
**99% BANDWIDTH, Chain 0**

99% BANDWIDTH, Chain 0 LOW CH




99% BANDWIDTH, Chain 0 MID CH





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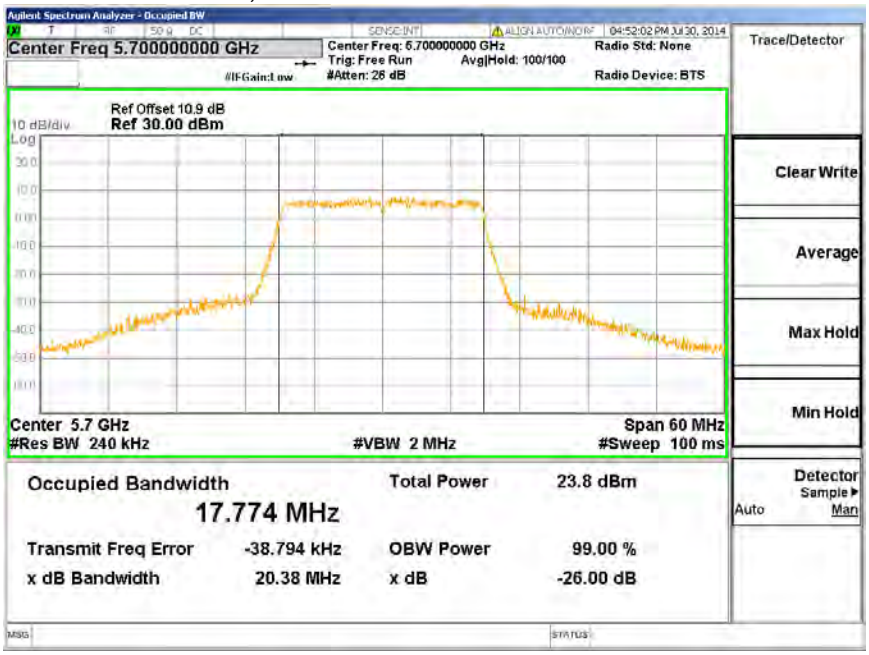
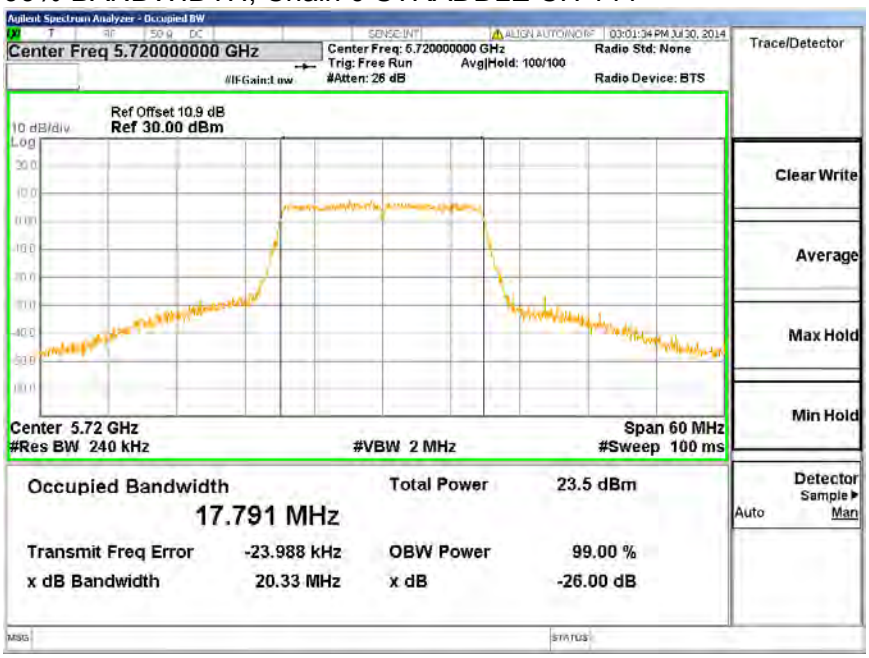
99% BANDWIDTH, Chain 0 HIGH CH




99% BANDWIDTH, Chain 0 STRADDLE CH 144





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