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Test Report AIR-CAP1532E-A-K9

FCC ID: LDK102089P IC: 2461B-102089P

Also Covers:

AIR-CAP1532E-D-K9

AIR-CAP1532E-N-K9

AIR-CAP1532E-T-K9

AIR-CAP1532E-Z-K9

5725-5850 MHz

Antenna Gain = 7 dBi

Against the following Specifications: CFR47 Part 15.247 RSS210 LP0002

> **Cisco Systems** 170 West Tasman Drive San Jose, CA 95134

Test Engineer Brd Alla Date 11 /21/13

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Section 1: Overview

1.1 Test Summary

The samples were assessed against the tests detailed in section 3 under the requirements of the following specifications:

| Emission | Immunity |
|-----------------------------|----------|
| CFR47 Part 15.247 RSS210 | N/A |

The specifications listed above represent actual tests performed to demonstrate compliance against the specifications

and basic standards listed on the front cover of this report. This list is not a one to one match to the front cover for one or more of the following reasons.

or more of the following reasons.

- 1. Basic standards call up many different test phenomena specifications such as the 61000-4-X series. The basic standards define which elements and levels shall be applied from these specifications and as such it is not appropriate to list the individual specifications on the front cover.
- 2. A Standard listed on the front cover may be required in a particular country but is not appropriate for the particular technologies included in the equipment under test. E.g. You cannot test a DC product to the mains Harmonics requirements in EN61000-3-2. See section 3.2.
- 3. Test results against a particular standard or specification may be included in a different test report. See section 3.2 for an EDCS reference of this data.
- 4. Where appropriate, Cisco may have substituted a later revision of a basic standard to those referenced in the specification on the front sheet of this test report. This decision was based upon improved test methodology and repeatability and/or where the newer revision represented a more stringent test.
- 5. Where relevant, testing has been carried out to the requirements of both EN and IEC Specifications. This was possible because of the similarities of the test methods involved and the Cisco EMC test procedures.
- 6. Testing may have been performed to an equivalent test that satisfies the requirements of the standards and specifications listed on the front cover of the report. See section 3.2.
- Where radiated emissions testing has been performed to EN55022/CISPR22 the additional requirements of VCCI: V- 3/2006.04, EN55022: 1994 +A1/2 and CAN/CSA- CISPR 22-02 have also been evaluated unless otherwise stated.
- Testing to the requirements of CFR47 Part 15 was performed against the CISPR22 limits. The results are therefore deemed satisfactory evidence of compliance with Industry Canada Interference Causing Equipment Standard ICES-003.
- 9. Where assessment has been performed to CISPR24, all the applicable test requirements may have not been covered. Refer to the results section for the tests performed.

Notes:

- 1) Where a specification listed on the front cover of this report has deviations from the basic standards listed above, the additional technical requirements of the specification were also assessed.
- 2) Where appropriate, Cisco may have substituted a later revision of a basic standard to those referenced in the specification on the front sheet of this test report. This decision was based upon improved test methodology and repeatability and/or where the newer revision represented a more stringent test.
- 3) Where relevant, testing has been carried out to the requirements of both EN and IEC Specifications. This was possible because of the similarities of the test methods involved and the Cisco EMC test procedures.

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Section 2: Assessment Information

2.1 General

This report contains an assessment of an apparatus against Electromagnetic Compatibility Standards based upon tests carried out on the samples submitted. The testing was performed by and for the use of Cisco systems Inc:

With regard to this assessment, the following points should be noted:

- a) The results contained in this report relate only to the items tested and were obtained in the period between the date of the initial assessment and the date of issue of the report. Manufactured products will not necessarily give identical results due to production and measurement tolerances.
- b) The apparatus was set up and exercised using the configuration and modes of operation defined in this report only.
- c) Where relevant, the apparatus was only assessed using the susceptibility criteria defined in this report and the Test Assessment Plan (TAP).
- d) All testing was performed under the following environmental conditions:

Temperature15°C to 35°C (54°F to 95°F)

 Atmospheric Pressure
 860mbar to 1060mbar (25.4" to 31.3")

 Humidity
 10% to 75*%

*[Where applicable] For ESD testing the humidity limits used were 30% to 60% and for EFT/B tests the humidity limits used were 25% to 75%.

- e) All AC testing was performed at one or more of the following supply voltages:
 - 110V 60 Hz (+/-20%) 220V 50 Hz (+/-20%)

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2.2 Date of testing

31-October-2013

2.3 Report Issue Date

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2.4 Testing facilities

This assessment was performed by:

Testing Laboratory

Cisco Systems, Inc., 4125 Highlander Parkway Richfield, OH 44286 USA Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134 USA

Test Engineers

Bud Chiller

2.5 Equipment Assessed (EUT) AIR-CAP1532E-A-K9

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2.6 EUT Description

The AIR-CAP1530 Series Cisco Aironet 802.11ac Radio Modules support the following modes of operation. The modes are further defined in the radio Theory of Operation. The modes included in this report represent the worst case data for all modes.

Non HT/VHT-20, One Antenna, 6 to 54 Mbps Non HT/VHT-20, Two Antennas, 6 to 54 Mbps

HT/VHT-20, One Antenna, M0 to M7 HT/VHT-20, Two Antennas, M0 to M15

HT/VHT-20 STBC, Two Antennas, M0 to M7

Non HT/VHT-40 Duplicate, One Antenna, 6-54 Mbps Non HT/VHT-40 Duplicate, Two Antennas, 6-54 Mbps

HT/VHT-40, One Antenna, M0 to M7 HT/VHT-40, Two Antennas, M0 to M15

HT/VHT-40 STBC, Two Antennas, M0 to M7

The following antennas are supported by this product series.

The data included in this report represent the worst case data for 7 dBi antennas.

| Frequency | Part Number | Antenna Type | Antenna Gain (dBi) |
|--------------|-------------------|---------------------------------------------|--------------------------|
| 5 GHz | AIR-ANT5180V-N | Single Band Omni | 8 |
| 3 GHZ | AIR-ANT5114P2M-N | Single Band, Directional Patch | 14 |
| | AIR-ANT2547V-N= | Dual-band Omni | 4/7 |
| 2.4/5 GHz | AIR-ANT2547VG-N= | Dual-band Omni, Gray | 4/7 |
| | AIR-ANT2588P3M-N= | Dual-band/Dual Polarized Directional, Patch | 8/8 |



Section 4: Sample Details

Note: Each sample was evaluated to ensure that its condition was suitable to be used as a test sample prior to the commencement of testing. Please also refer to the "Justification for worst Case test Configuration" section of this report for further details on the selection of EUT samples.

4.1 Sample Details (Photographs of the test samples, where appropriate can be found in appendix H)

| Sample No. | Equipment Details | Part Number | Manufacturer | Hardware Rev. | Firmware Rev. | Software Rev. | Serial Number |
|---------------|-------------------|----------------|---------------|------------------|------------------|------------------|------------------|
| S01 | AIR-CAP1532E-A-K9 | | Cisco Systems | NA | NA | NA | |
| S02 | AIR-PWR-B | 341-0306-01 | Cisco Systems | NA | NA | NA | |
| | | | | | | | |

4.2 System Details

| System # | Description | Samples |
|----------|-------------|----------|
| 1 | EUT | S01, S02 |

4.3 Mode of Operation Details

| Mode# | Description | Comments |
|-------|-------------------------|-------------------------|
| 1 | Continuous Transmitting | Continuous Transmitting |

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Appendix A: Emission Test Results

Testing Laboratory: Cisco Systems, Inc., 4125 Highlander Parkway, Richfield, OH, USA

Target Maximum Channel Power

The following table details the maximum supported Total Channel Power for all operating modes.

| | Maximum Channel Power (dBm) | | |
|-------------------------|-----------------------------|--------------|------|
| | Fi | requency (MH | lz) |
| Operating Mode | 5745 | 5785 | 5825 |
| Non HT-20, 6 to 54 Mbps | 27 | 28 | 27 |
| HT-20, M0 to M15 | 27 | 28 | 27 |
| HT-20 STBC, M0 to M7 | 27 | 28 | 27 |
| | 5755 | 5795 | |
| Non HT-40, 6 to 54 Mbps | 26 | 28 | |
| HT-40, M0 to M15 | 27 | 27 | |
| HT-40 STBC, M0 to M7 | 27 | 27 | |

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6dB Bandwidth

15.247: Systems using digital modulation techniques may operate in the 2400-2483.5MHz band. The minimum 6 dB bandwidth shall be at least 500 kHz.

Connect the antenna port(s) to the spectrum analyzer input. Using the spectrum analyzer Channel Bandwidth mode, configure the spectrum analyzer as shown below (enter all losses between the transmitter output and the spectrum analyzer).

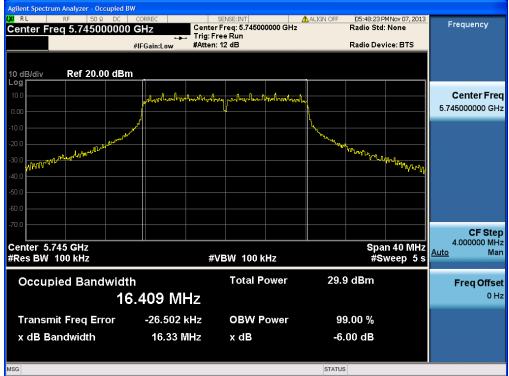
| Center Frequency: | Frequency from table below |
|-----------------------|--------------------------------------------------------|
| Span: | 2 x Nominal Bandwidth (e.g. 40MHz for a 20MHz channel) |
| Reference Level: | 20 dBm |
| Attenuation: | 10 dB |
| Sweep Time: | 5 s |
| Resolution Bandwidth: | 100 kHz |
| Video Bandwidth: | 100 kHz |
| X dB Bandwidth: | 6 dB |
| Detector: | Peak |
| Trace: | Single |

Place the radio in continuous transmit mode. View the transmitter waveform on the spectrum analyzer, and record the pertinent measurements:

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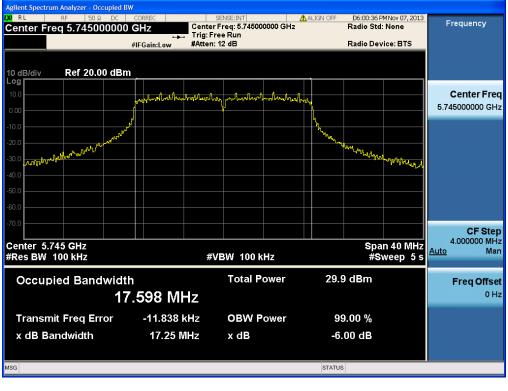
| Frequency (MHz) | Mode | Data Rate (Mbps) | 6dB BW (MHz) | Limit (kHz) | Margin (MHz) |
|--------------------|-------------------------|---------------------|-----------------|----------------|-----------------|
| 5745 | Non HT-20, 6 to 54 Mbps | 6 | 16.3 | >500 | 15.8 |
| 5745 | HT-20, M0 to M15 | m0 | 17.3 | >500 | 16.8 |
| | | | | | |
| | Non HT-40, 6 to 54 Mbps | 6 | 36.3 | >500 | 35.8 |
| 5755 | HT-40, M0 to M23 | m0 | 36 | >500 | 35.5 |
| | | | | | |
| 5705 | Non HT-20, 6 to 54 Mbps | 6 | 16.3 | >500 | 15.8 |
| 5785 | HT-20, M0 to M15 | m0 | 17.3 | >500 | 16.8 |
| | - | | | | _ |
| 5705 | Non HT-40, 6 to 54 Mbps | 6 | 35.8 | >500 | 35.3 |
| 5795 | HT-40, M0 to M23 | m0 | 35.8 | >500 | 35.3 |
| | | | | | |
| F 9 2 F | Non HT-20, 6 to 54 Mbps | 6 | 16.3 | >500 | 15.8 |
| 5825 | HT-20, M0 to M15 | m0 | 17.3 | >500 | 16.8 |

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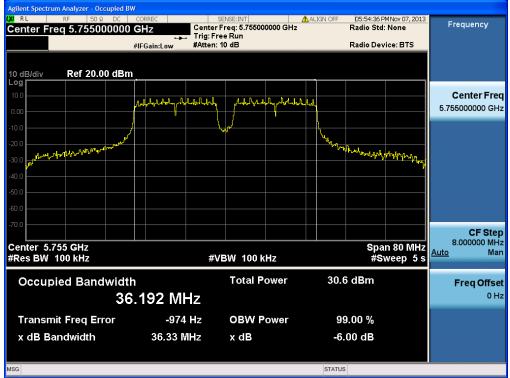


6dB Bandwidth, 5745 MHz, Non HT-20, 6 to 54 Mbps

6dB Bandwidth, 5745 MHz, HT-20, M0 to M15

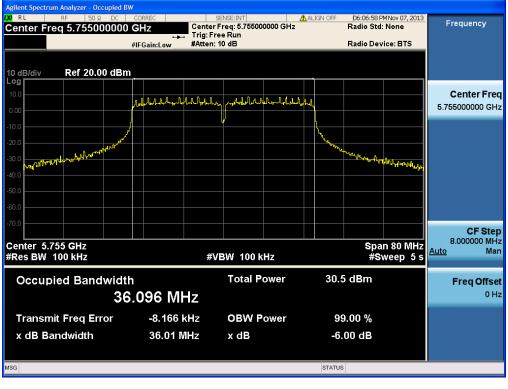


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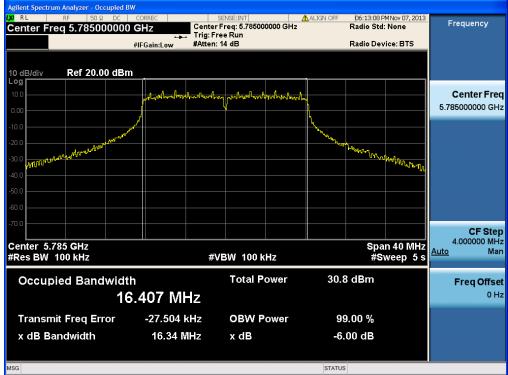


6dB Bandwidth, 5755 MHz, Non HT-40, 6 to 54 Mbps

6dB Bandwidth, 5755 MHz, HT-40, M0 to M23

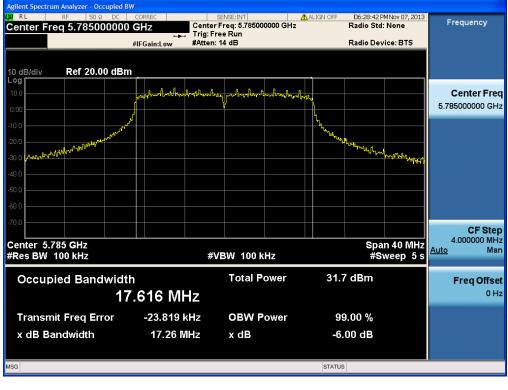


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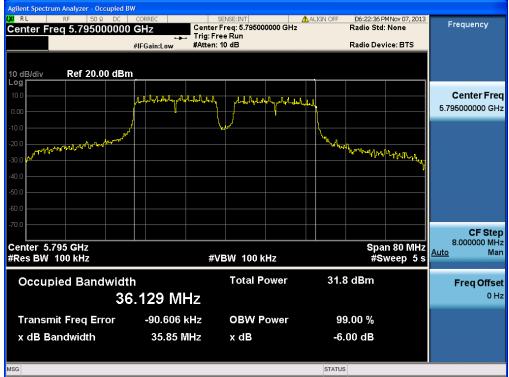


6dB Bandwidth, 5785 MHz, Non HT-20, 6 to 54 Mbps

6dB Bandwidth, 5785 MHz, HT-20, M0 to M15

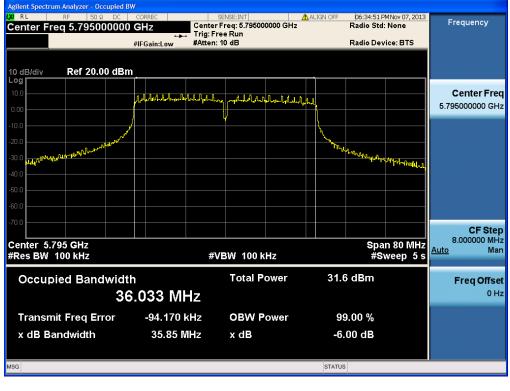


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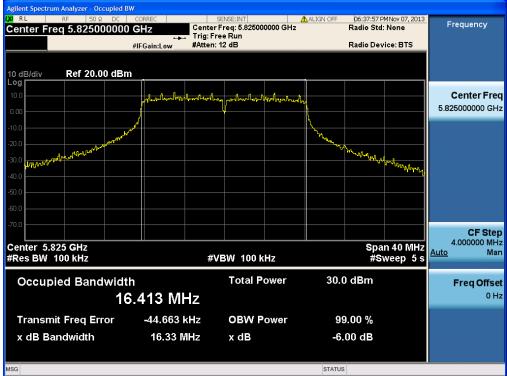


6dB Bandwidth, 5795 MHz, Non HT-40, 6 to 54 Mbps

6dB Bandwidth, 5795 MHz, HT-40, M0 to M23

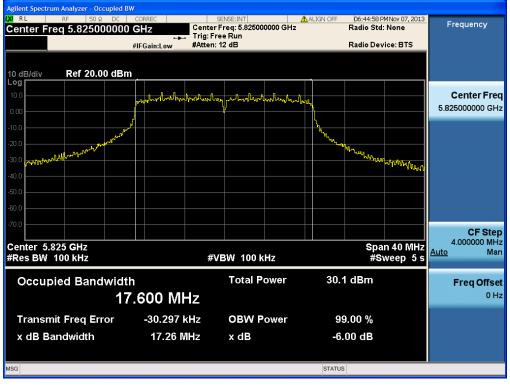


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6dB Bandwidth, 5825 MHz, Non HT-20, 6 to 54 Mbps

6dB Bandwidth, 5825 MHz, HT-20, M0 to M15



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99% and 26dB Bandwidth

Connect the antenna port(s) to the spectrum analyzer input. Using the spectrum analyzer Channel Bandwidth mode, configure the spectrum analyzer as shown below (enter all losses between the transmitter output and the spectrum analyzer).

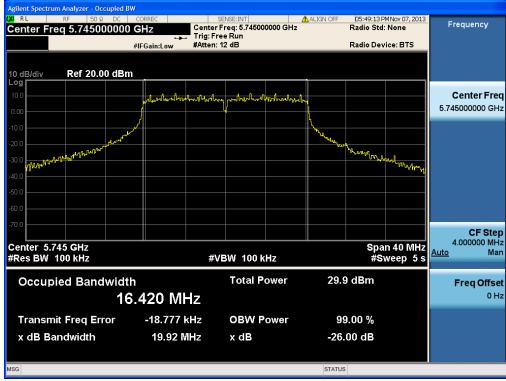
| Center Frequency: | Frequency from table be.low |
|-----------------------|--------------------------------------------------------|
| Span: | 2 x Nominal Bandwidth (e.g. 40MHz for a 20MHz channel) |
| Reference Level: | 20 dBm |
| Attenuation: | 10 dB |
| Sweep Time: | 5 s |
| Resolution Bandwidth: | 1%-3% of 26 dB Bandwidth |
| Video Bandwidth: | ≥Resolution Bandwidth |
| X dB Bandwidth: | 26 dB |
| Detector: | Peak |
| Trace: | Single |

Place the radio in continuous transmit mode. View the transmitter waveform on the spectrum analyzer, and record the pertinent measurements:

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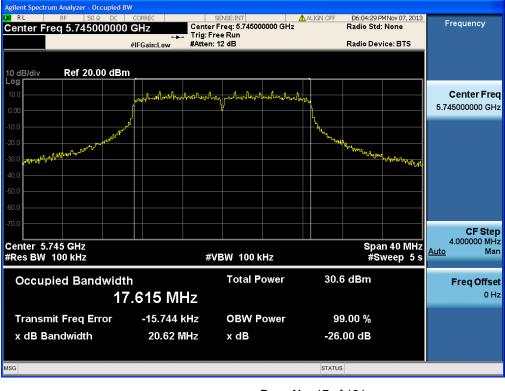
| Frequency (MHz) | Mode | Data Rate (Mbps) | 26dB BW (MHz) | 99% BW (MHz) |
|--------------------|-------------------------|---------------------|------------------|-----------------|
| 5745 | Non HT-20, 6 to 54 Mbps | 6 | 19.6 | 16.4 |
| 5745 | HT-20, M0 to M15 | m0 | 20.6 | 17.6 |
| | | | | |
| 5755 | Non HT-40, 6 to 54 Mbps | 6 | 40.3 | 36.2 |
| 5755 | HT-40, M0 to M23 | m0 | 40.1 | 36.1 |
| | | | | |
| F 70F | Non HT-20, 6 to 54 Mbps | 6 | 19.6 | 16.4 |
| 5785 | HT-20, M0 to M15 | m0 | 20.6 | 17.6 |
| | - | | | |
| F 70F | Non HT-40, 6 to 54 Mbps | 6 | 39.6 | 36.1 |
| 5795 | HT-40, M0 to M23 | m0 | 39.7 | 36 |
| | | | | |
| FROF | Non HT-20, 6 to 54 Mbps | 6 | 19.5 | 16.4 |
| 5825 | HT-20, M0 to M15 | m0 | 20.4 | 17.6 |

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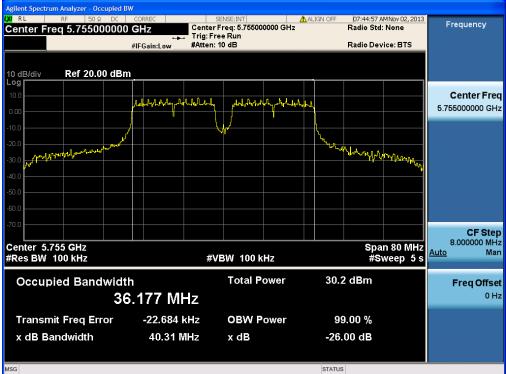


26dB / 99% Bandwidth, 5745 MHz, Non HT-20, 6 to 54 Mbps

26dB / 99% Bandwidth, 5745 MHz, HT-20, M0 to M15

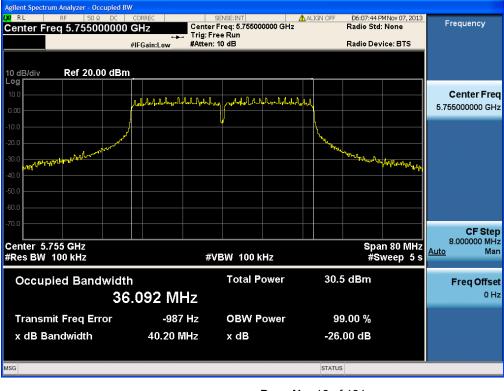


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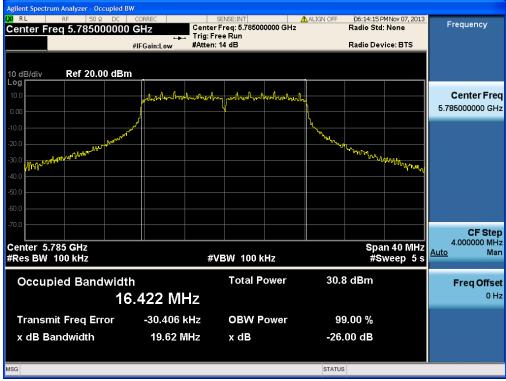


26dB / 99% Bandwidth, 5755 MHz, Non HT-40, 6 to 54 Mbps

26dB / 99% Bandwidth, 5755 MHz, HT-40, M0 to M23

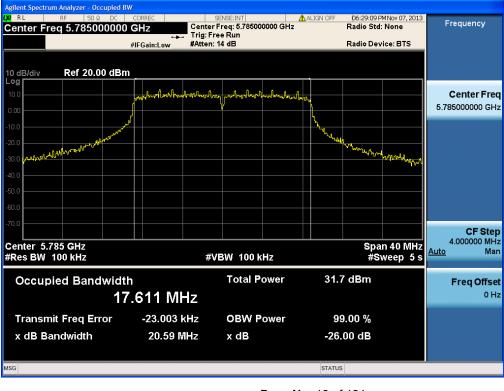


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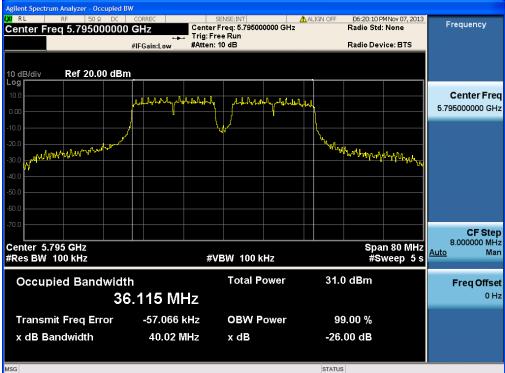


26dB / 99% Bandwidth, 5785 MHz, Non HT-20, 6 to 54 Mbps

26dB / 99% Bandwidth, 5785 MHz, HT-20, M0 to M15

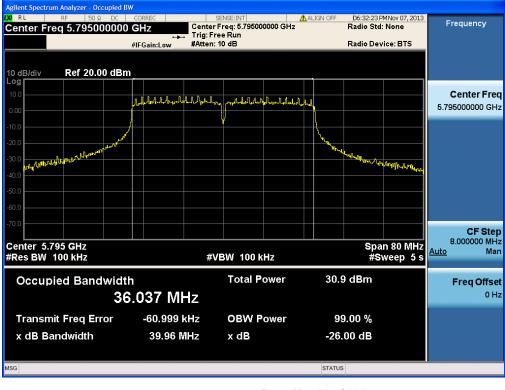


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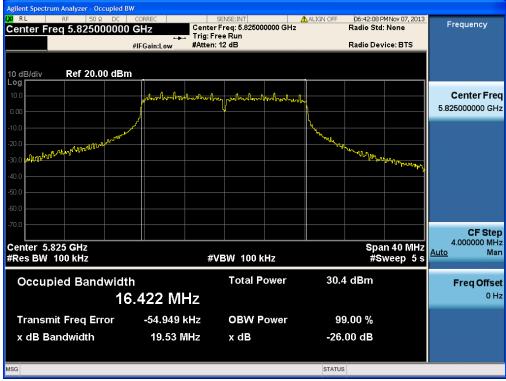


26dB / 99% Bandwidth, 5795 MHz, Non HT-40, 6 to 54 Mbps

26dB / 99% Bandwidth, 5795 MHz, HT-40, M0 to M23

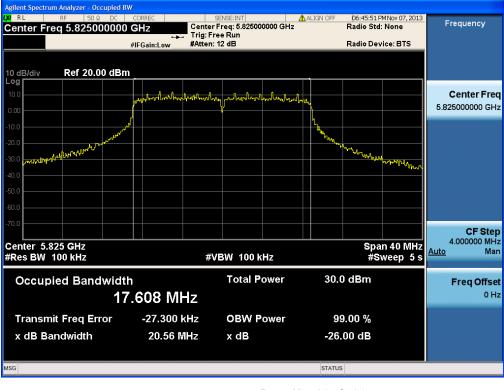


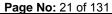
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26dB / 99% Bandwidth, 5825 MHz, Non HT-20, 6 to 54 Mbps

26dB / 99% Bandwidth, 5825 MHz, HT-20, M0 to M15





Peak Output Power

15.247: The maximum conducted output power of the intentional radiator for systems using digital modulation in the 2400-2483.5 MHz band shall not exceed 1 Watt (30dBm). If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

The supported antenna gain for this report is 7dBi. The peak correlated gain for each mode is listed in the table below. See the Theory of Operation for details on the correlated gain for each mode.

Connect the antenna port(s) to the spectrum analyzer input. Place the radio in continuous transmit mode. Configure the spectrum analyzer as shown below.

| Enable "Channel Power" function of analyzer | | | | |
|--------------------------------------------------------|--|--|--|--|
| Frequency from table below | | | | |
| 20 MHz (must be greater than 26dB bandwidth, adjust as | | | | |
| | | | | |
| Correct for attenuator and cable loss. | | | | |
| 20 dBm | | | | |
| 20 dB | | | | |
| 100ms, Single sweep | | | | |
| 1 MHz | | | | |
| 3 MHz | | | | |
| Sample | | | | |
| Trace Average 100 traces in Power Averaging Mode | | | | |
| =26 dB BW from 26 dB Bandwidth Data | | | | |
| | | | | |

After averaging 100 traces of the transmitter waveform on the spectrum analyzer, record the spectrum analyzer Channel Power.

The "measure-and-sum technique" is used for measuring in-band transmit power of a device. In the measure-and-sum approach, the conducted emission level is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in linear power units.

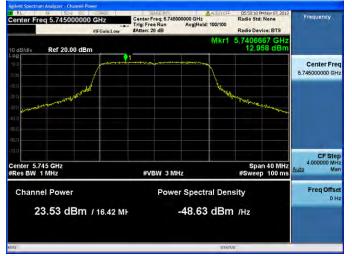
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| Frequency (MHz) | Mode | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Max Power (dBm) | Tx 2 Max Power (dBm) | Total Tx Channel Power (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|----------|-------------------------------------|-------------------------|-------------------------|------------------------------------|-------------|-------------|
| 5745 | Non HT-20, 6 to 54 Mbps | 1 | 7 | 23.5 | | 23.5 | 29 | 5.5 |
| | Non HT-20, 6 to 54 Mbps | 2 | 7 | 23.5 | 24.3 | 26.9 | 29 | 2.1 |
| | HT-20, M0 to M7 | 1 | 7 | 23.4 | | 23.4 | 29 | 5.6 |
| | HT-20, M0 to M7 | 2 | 7 | 23.4 | 24.2 | 26.8 | 29 | 2.2 |
| | HT-20, M8 to M15 | 2 | 7 | 23.4 | 24.2 | 26.8 | 29 | 2.2 |
| | HT-20 STBC, M0 to M7 | 2 | 7 | 23.4 | 24.2 | 26.8 | 29 | 2.2 |
| | | | | | | | | |
| 5755 | Non HT-40, 6 to 54 Mbps | 1 | 7 | 24.0 | | 24.0 | 29 | 5.0 |
| | Non HT-40, 6 to 54 Mbps | 2 | 7 | 23.3 | 23.5 | 26.4 | 29 | 2.6 |
| | HT-40, M0 to M7 | 1 | 7 | 23.6 | | 23.6 | 29 | 5.4 |
| | HT-40, M0 to M7 | 2 | 7 | 23.6 | 24.4 | 27.0 | 29 | 2.0 |
| | HT-40, M8 to M15 | 2 | 7 | 23.6 | 24.4 | 27.0 | 29 | 2.0 |
| | HT-40 STBC, M0 to M7 | 2 | 7 | 23.6 | 24.4 | 27.0 | 29 | 2.0 |
| | | | | | | | | |
| 5785 | Non HT-20, 6 to 54 Mbps | 1 | 7 | 24.2 | | 24.2 | 29 | 4.8 |
| | Non HT-20, 6 to 54 Mbps | 2 | 7 | 24.2 | 25.2 | 27.7 | 29 | 1.3 |
| | HT-20, M0 to M7 | 1 | 7 | 24.0 | | 24.0 | 29 | 5.0 |
| | HT-20, M0 to M7 | 2 | 7 | 24.0 | 25.1 | 27.6 | 29 | 1.4 |
| | HT-20, M8 to M15 | 2 | 7 | 24.0 | 25.1 | 27.6 | 29 | 1.4 |
| | HT-20 STBC, M0 to M7 | 2 | 7 | 24.0 | 25.1 | 27.6 | 29 | 1.4 |
| | | | | | | | | |
| 5795 | Non HT-40, 6 to 54 Mbps | 1 | 7 | 24.3 | | 24.3 | 29 | 4.7 |
| | Non HT-40, 6 to 54 Mbps | 2 | 7 | 24.3 | 25.1 | 27.7 | 29 | 1.3 |
| | HT-40, M0 to M7 | 1 | 7 | 24.0 | | 24.0 | 29 | 5.0 |
| | HT-40, M0 to M7 | 2 | 7 | 24.0 | 24.8 | 27.4 | 29 | 1.6 |
| | HT-40, M8 to M15 | 2 | 7 | 24.0 | 24.8 | 27.4 | 29 | 1.6 |
| | HT-40 STBC, M0 to M7 | 2 | 7 | 24.0 | 24.8 | 27.4 | 29 | 1.6 |
| | | | | | | | | |
| 5825 | Non HT-20, 6 to 54 Mbps | 1 | 7 | 23.5 | | 23.5 | 29 | 5.5 |
| | Non HT-20, 6 to 54 Mbps | 2 | 7 | 23.5 | 24.0 | 26.8 | 29 | 2.2 |
| | HT-20, M0 to M7 | 1 | 7 | 23.4 | | 23.4 | 29 | 5.6 |
| | HT-20, M0 to M7 | 2 | 7 | 23.4 | 24.0 | 26.7 | 29 | 2.3 |
| | HT-20, M8 to M15 | 2 | 7 | 23.4 | 24.0 | 26.7 | 29 | 2.3 |
| | HT-20 STBC, M0 to M7 | 2 | 7 | 23.4 | 24.0 | 26.7 | 29 | 2.3 |

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Peak Output Power, 5745 MHz, Non HT-20, 6 to 54 Mbps

Antenna A

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D5:50:10 PMNov 0 Radio Std: None Frequency Center Freq: 5.745000000 GHz Trig: Free Run Avg|Hold: 100/100 D5:53:07 PMNov 0 Radio Std: None Frequency Center Freg 5.745000000 GH: Center Freg 5.74500 00000 GH Radio Device: BTS Radio Device: BTS 28 dB 5.7406667 GH 12.958 dB 5.7491333 G 13.902 dE Ref 20.00 dBm Ref 20.00 dBm Center Freq 5.745000000 GHz Center Freq 5.745000000 GHz CF Step CF Step Center 5.745 GHz #Res BW 1 MHz Span 40 MHz #Sweep 100 ms Center 5.745 GHz #Res BW 1 MHz Span 40 MHz #Sweep 100 ms #VBW 3 MHz #VBW 3 MHz Freq Offse Channel Power Power Spectral Density Channel Power Power Spectral Density Freq Offs 23.53 dBm / 16.42 MF -48.63 dBm /Hz 24.33 dBm / 16.42 MF -47.82 dBm /Hz

Peak Output Power, 5745 MHz, Non HT-20, 6 to 54 Mbps

Antenna A



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Peak Output Power, 5745 MHz, HT-20, M0 to M7



Antenna A

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Peak Output Power, 5745 MHz, HT-20, M0 to M7





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Antenna A



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Peak Output Power, 5745 MHz, HT-20, M8 to M15





Antenna A



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Peak Output Power, 5745 MHz, HT-20 STBC, M0 to M7



Antenna A



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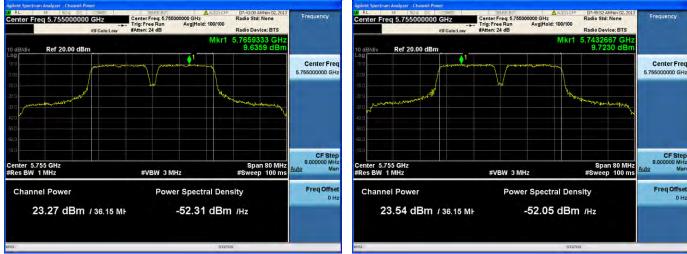
rijulu cisco



Peak Output Power, 5755 MHz, Non HT-40, 6 to 54 Mbps

Antenna A

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Peak Output Power, 5755 MHz, Non HT-40, 6 to 54 Mbps

Antenna A



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D5:08:40 PMNov 07 Radio Std: None Frequency Avg|Hold: 100/100 Center Freg 5.755000000 GH: Radio Device: BTS 5.7655333 GH 9.6572 dB Ref 20.00 dBm ١ Center Free 5.755000000 GHz CF Ste Center 5.755 GHz #Res BW 1 MHz Span 80 MHz #Sweep 100 ms #VBW 3 MHz Power Spectral Density Channel Power Freq Off 23.57 dBm / 36.09 MF -52.00 dBm /Hz

Peak Output Power, 5755 MHz, HT-40, M0 to M7

Antenna A

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Peak Output Power, 5755 MHz, HT-40, M0 to M7





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Antenna A



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Peak Output Power, 5755 MHz, HT-40, M8 to M15





Antenna A



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D5:08:40 PMNov 0 Radio Std: None Frequency Center Freg 5.755000000 GH: Radio Device: BTS 5.7655333 GH 9.6572 dB Ref 20.00 dBn Center Freq 5.755000000 GH CF Step 8.000000 ML Center 5.755 GHz #Res BW 1 MHz Span 80 MHz #Sweep 100 ms #VBW 3 MHz Freq Offse Channel Power Power Spectral Density 23.57 dBm / 36.09 MF -52.00 dBm /Hz



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Antenna A



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Peak Output Power, 5755 MHz, HT-40 STBC, M0 to M7

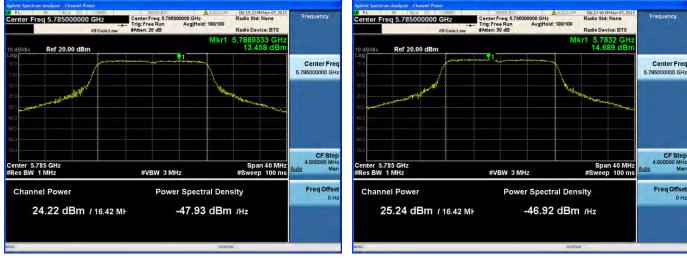
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Peak Output Power, 5785 MHz, Non HT-20, 6 to 54 Mbps

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Peak Output Power, 5785 MHz, Non HT-20, 6 to 54 Mbps

Antenna A



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Peak Output Power, 5785 MHz, HT-20, M0 to M7



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Peak Output Power, 5785 MHz, HT-20, M0 to M7





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Antenna A



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Peak Output Power, 5785 MHz, HT-20, M8 to M15





Antenna A



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D5:30:07 PMNov 0 Radio Std: None ALIGY CO Frequency Center Freq: 5.7850 Trig: Free Run Center Freg 5.7850 10 GH: 28 dB Radio Device: BTS kr1 5.781 GI 14.514 dB Ref 20.00 dBn Center Freq 5.785000000 GH CF Step Center 5.785 GHz #Res BW 1 MHz Span 40 MHz #Sweep 100 ms #VBW 3 MHz Channel Power Power Spectral Density Freq Offs 25.14 dBm / 17.61 MF -47.31 dBm /Hz

Antenna A



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Peak Output Power, 5795 MHz, Non HT-40, 6 to 54 Mbps

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Peak Output Power, 5795 MHz, Non HT-40, 6 to 54 Mbps

Antenna A



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D5:33:16 PMNov 07 Radio Std: None Frequency Center Freg 5.795000000 GH: Radio Device: BTS 5,7828667 GH 10.326 dB Ref 20.00 dBm Center Free 5.79500000 GHz CF Ste Center 5.795 GHz #Res BW 1 MHz Span 80 MHz #Sweep 100 ms #VBW 3 MHz Power Spectral Density Channel Power Freq Off 23.97 dBm / 36.04 MF -51.60 dBm /Hz

Peak Output Power, 5795 MHz, HT-40, M0 to M7

Antenna A

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Peak Output Power, 5795 MHz, HT-40, M0 to M7





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Antenna A



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Peak Output Power, 5795 MHz, HT-40, M8 to M15





Antenna A



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D5:33:16 PMNov 0 Radio Std: None Frequency Center Freg 5,7950 0000 GH: Radio Device: BTS 5.7828667 GH 10.326 dB Ref 20.00 dB Center Freq 5.795000000 GH CF Step 8.000000 ML Center 5.795 GHz #Res BW 1 MHz Span 80 MHz #Sweep 100 ms #VBW 3 MHz Freq Offse Channel Power Power Spectral Density 23.97 dBm / 36.04 MF -51.60 dBm /Hz



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Antenna A



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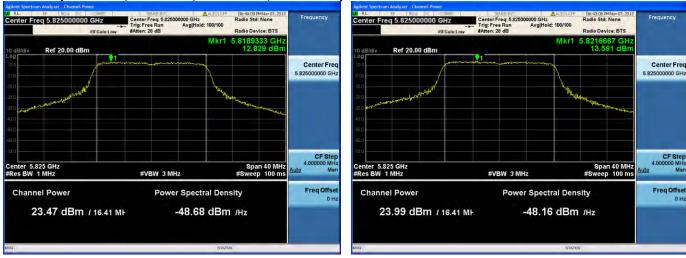
Peak Output Power, 5795 MHz, HT-40 STBC, M0 to M7



Peak Output Power, 5825 MHz, Non HT-20, 6 to 54 Mbps

Antenna A

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Peak Output Power, 5825 MHz, Non HT-20, 6 to 54 Mbps

Antenna A



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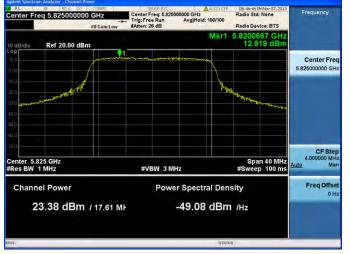
Peak Output Power, 5825 MHz, HT-20, M0 to M7



Antenna A

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Peak Output Power, 5825 MHz, HT-20, M0 to M7





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Antenna A



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Peak Output Power, 5825 MHz, HT-20, M8 to M15





Antenna A



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Antenna A



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Power Spectral Density

15.247: For digitally modulated systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Connect the antenna port(s) to the spectrum analyzer input. Place the radio in continuous transmit mode. Configure the spectrum analyzer as shown below.

| Center Frequency: | Frequency from table below |
|-----------------------|----------------------------------------|
| Span: | 20 MHz |
| Ref Level Offset: | Correct for attenuator and cable loss. |
| Reference Level: | 20 dBm |
| Attenuation: | 20 dB |
| Sweep Time: | 10s |
| Resolution Bandwidth: | 3 kHz |
| Video Bandwidth: | 10 kHz |
| Detector: | Peak |
| Trace: | Single |
| Marker: | Peak Search |

Record the Marker value.

The "Measure and add 10 log(N) dB technique", where N is the number of outputs, is used for measuring in-band Power Spectral Density. With this technique, spectrum measurements are performed at each output of the device, and the quantity 10 log(4) (or 6dB) is added to the worst case spectrum value before comparing to the emission limit.

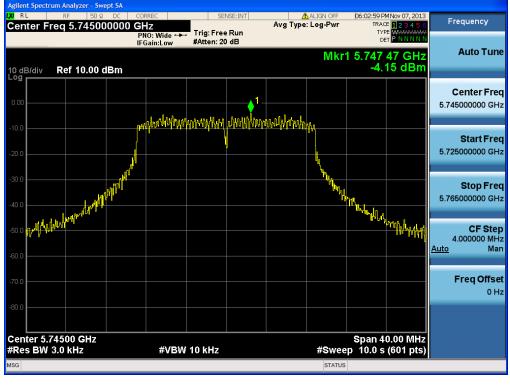
| Frequency (MHz) | Mode | Data Rate (Mbps) | PSD / Antenna (dBm/3kHz) | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) | Margin (dB) |
|--------------------|-------------------------|------------------------|--------------------------------|-------------------------|---------------------|----------------|
| 5745 | Non HT-20, 6 to 54 Mbps | 6 | -3.6 | -0.6 | 8.0 | 8.6 |
| 5745 | HT-20, M0 to M15 | m0 | -4.1 | -1.1 | 8.0 | 9.1 |
| | | | | | | |
| | Non HT-40, 6 to 54 Mbps | 6 | -6.1 | -3.1 | 8.0 | 11.1 |
| 5755 | HT-40, M0 to M23 | m0 | -6.5 | -3.5 | 8.0 | 11.5 |
| | _ | | | | | |
| 5705 | Non HT-20, 6 to 54 Mbps | 6 | -3.2 | -0.2 | 8.0 | 8.2 |
| 5785 | HT-20, M0 to M15 | m0 | -4.4 | -1.4 | 8.0 | 9.4 |
| | | | | | <u>-</u> | _ |
| 5705 | Non HT-40, 6 to 54 Mbps | 6 | -5.4 | -2.4 | 8.0 | 10.4 |
| 5795 | HT-40, M0 to M23 | m0 | -5.1 | -2.1 | 8.0 | 10.1 |
| | | | | | | |
| FOR | Non HT-20, 6 to 54 Mbps | 6 | -3.9 | -0.9 | 8.0 | 8.9 |
| 5825 | HT-20, M0 to M15 | m0 | -4.2 | -1.2 | 8.0 | 9.2 |

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Power Spectral Density, 5745 MHz, Non HT-20, 6 to 54 Mbps

Power Spectral Density, 5745 MHz, HT-20, M0 to M15

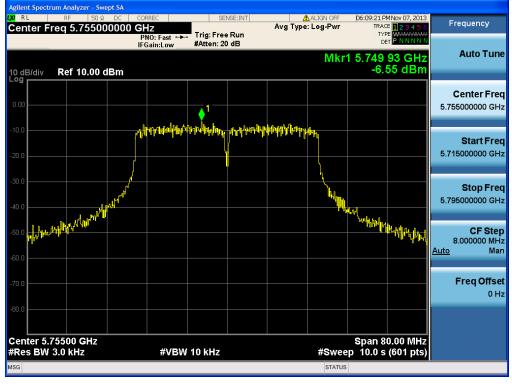


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Power Spectral Density, 5755 MHz, Non HT-40, 6 to 54 Mbps

Power Spectral Density, 5755 MHz, HT-40, M0 to M23



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Power Spectral Density, 5785 MHz, Non HT-20, 6 to 54 Mbps

Power Spectral Density, 5785 MHz, HT-20, M0 to M15



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Power Spectral Density, 5795 MHz, Non HT-40, 6 to 54 Mbps

Power Spectral Density, 5795 MHz, HT-40, M0 to M23



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Power Spectral Density, 5825 MHz, Non HT-20, 6 to 54 Mbps

Power Spectral Density, 5825 MHz, HT-20, M0 to M15



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Conducted Spurious Emission

15.247: In any 100 kHz bandwidth outside the frequency band in which the digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

Connect the antenna port(s) to the spectrum analyzer input. Place the radio in continuous transmit mode. Configure the spectrum analyzer as shown below (be sure to enter all losses between the transmitter output and the spectrum analyzer).

| Span: | 30 MHz-26 GHz |
|-----------------------|---------------|
| Reference Level: | 20 dBm |
| Attenuation: | 10 dB |
| Sweep Time: | 5s |
| Resolution Bandwidth: | 100 kHz |
| Video Bandwidth: | 300 kHz |
| Detector: | Peak |
| Trace: | Single |
| Marker: | Peak |

Record the marker waveform peak to spur difference

Out-of-band and spurious emissions tests are performed on each output individually without summing or adding 10 log(N) since the measurements are made relative to the in-band emissions on the individual outputs. The worst case output is recorded.

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| Frequency (MHz) | Mode | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Spur Power (dBm) | Tx 2 Spur Power (dBm) | Total Conducted Spur (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|----------|----------------------------------|--------------------------|--------------------------|-------------------------------|----------------|----------------|
| | Non HT-20, 6 to 54 Mbps | 1 | 7 | -69.4 | | -62.4 | -41.25 | 21.2 |
| | Non HT-20, 6 to 54 Mbps | 2 | 7 | -69.4 | -71.7 | -60.4 | -41.25 | 19.1 |
| 5745 | HT-20, M0 to M7 | 1 | 7 | -69.2 | | -62.2 | -41.25 | 21.0 |
| 57 | HT-20, M0 to M7 | 2 | 7 | -69.2 | -72.2 | -60.4 | -41.25 | 19.2 |
| | HT-20, M8 to M15 | 2 | 7 | -69.2 | -72.2 | -60.4 | -41.25 | 19.2 |
| | HT-20 STBC, M0 to M7 | 2 | 7 | -69.2 | -72.2 | -60.4 | -41.25 | 19.2 |
| | | | | - | | | | |
| | Non HT-40, 6 to 54 Mbps | 1 | 7 | -72.1 | | -65.1 | -41.25 | 23.9 |
| | Non HT-40, 6 to 54 Mbps | 2 | 7 | -73.7 | -74.6 | -64.1 | -41.25 | 22.9 |
| 5755 | HT-40, M0 to M7 | 1 | 7 | -73.4 | | -66.4 | -41.25 | 25.2 |
| 57 | HT-40, M0 to M7 | 2 | 7 | -73.4 | -74.3 | -63.8 | -41.25 | 22.6 |
| | HT-40, M8 to M15 | 2 | 7 | -73.4 | -74.3 | -63.8 | -41.25 | 22.6 |
| | HT-40 STBC, M0 to M7 | 2 | 7 | -73.4 | -74.3 | -63.8 | -41.25 | 22.6 |
| | | | | | | | | |
| | Non HT-20, 6 to 54 Mbps | 1 | 7 | -70.9 | | -63.9 | -41.25 | 22.7 |
| | Non HT-20, 6 to 54 Mbps | 2 | 7 | -70.9 | -72.2 | -61.5 | -41.25 | 20.2 |
| 5785 | HT-20, M0 to M7 | 1 | 7 | -71.6 | | -64.6 | -41.25 | 23.4 |
| 57 | HT-20, M0 to M7 | 2 | 7 | -71.6 | -72.6 | -62.1 | -41.25 | 20.8 |
| | HT-20, M8 to M15 | 2 | 7 | -71.6 | -72.6 | -62.1 | -41.25 | 20.8 |
| | HT-20 STBC, M0 to M7 | 2 | 7 | -71.6 | -72.6 | -62.1 | -41.25 | 20.8 |
| | | | | | | | | |
| | Non HT-40, 6 to 54 Mbps | 1 | 7 | -72.9 | | -65.9 | -41.25 | 24.7 |
| | Non HT-40, 6 to 54 Mbps | 2 | 7 | -72.9 | -74.3 | -63.5 | -41.25 | 22.3 |
| 95 | HT-40, M0 to M7 | 1 | 7 | -74.3 | | -67.3 | -41.25 | 26.1 |
| 579 | HT-40, M0 to M7 | 2 | 7 | -74.3 | -74.8 | -64.5 | -41.25 | 23.3 |
| | HT-40, M8 to M15 | 2 | 7 | -74.3 | -74.8 | -64.5 | -41.25 | 23.3 |
| | HT-40 STBC, M0 to M7 | 2 | 7 | -74.3 | -74.8 | -64.5 | -41.25 | 23.3 |
| | | _ | | - | | _ | | |
| | Non HT-20, 6 to 54 Mbps | 1 | 7 | -74.7 | | -67.7 | -41.25 | 26.5 |
| | Non HT-20, 6 to 54 Mbps | 2 | 7 | -74.7 | -74.2 | -64.4 | -41.25 | 23.2 |
| 25 | HT-20, M0 to M7 | 1 | 7 | -74.9 | | -67.9 | -41.25 | 26.7 |
| 5825 | HT-20, M0 to M7 | 2 | 7 | -74.9 | -74.6 | -64.7 | -41.25 | 23.5 |
| | HT-20, M8 to M15 | 2 | 7 | -74.9 | -74.6 | -64.7 | -41.25 | 23.5 |
| | HT-20 STBC, M0 to M7 | 2 | 7 | -74.9 | -74.6 | -64.7 | -41.25 | 23.5 |

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| Frequency (MHz) | Mode | Tx Paths | Correlated Antenna Gain (dBi) | Tx 1 Spur Power (dBm) | Tx 2 Spur Power (dBm) | Total Conducted Spur (dBm) | Limit (dBm) | Margin (dB) |
|--------------------|-------------------------|----------|----------------------------------|--------------------------|--------------------------|-------------------------------|----------------|----------------|
| | Non HT-20, 6 to 54 Mbps | 1 | 7 | -73.7 | | -66.7 | -27 | 39.7 |
| | Non HT-20, 6 to 54 Mbps | 2 | 7 | -73.7 | -77.3 | -65.1 | -27 | 38.1 |
| 5745 | HT-20, M0 to M7 | 1 | 7 | -72.0 | | -65.0 | -27 | 38.0 |
| 57 | HT-20, M0 to M7 | 2 | 7 | -72.0 | -76.0 | -63.5 | -27 | 36.5 |
| | HT-20, M8 to M15 | 2 | 7 | -72.0 | -76.0 | -63.5 | -27 | 36.5 |
| | HT-20 STBC, M0 to M7 | 2 | 7 | -72.0 | -76.0 | -63.5 | -27 | 36.5 |
| | | | | | | | | |
| | Non HT-40, 6 to 54 Mbps | 1 | 7 | -77.6 | | -70.6 | -27 | 43.6 |
| | Non HT-40, 6 to 54 Mbps | 2 | 7 | -78.0 | -77.0 | -67.5 | -27 | 40.5 |
| 5755 | HT-40, M0 to M7 | 1 | 7 | -76.3 | | -69.3 | -27 | 42.3 |
| 57 | HT-40, M0 to M7 | 2 | 7 | -76.3 | -79.1 | -67.5 | -27 | 40.5 |
| | HT-40, M8 to M15 | 2 | 7 | -76.3 | -79.1 | -67.5 | -27 | 40.5 |
| | HT-40 STBC, M0 to M7 | 2 | 7 | -76.3 | -79.1 | -67.5 | -27 | 40.5 |
| | | | | | | | | |
| | Non HT-20, 6 to 54 Mbps | 1 | 7 | -74.1 | | -67.1 | -27 | 40.1 |
| | Non HT-20, 6 to 54 Mbps | 2 | 7 | -74.1 | -75.9 | -64.9 | -27 | 37.9 |
| 5785 | HT-20, M0 to M7 | 1 | 7 | -76.5 | | -69.5 | -27 | 42.5 |
| 57 | HT-20, M0 to M7 | 2 | 7 | -76.5 | -77.2 | -66.8 | -27 | 39.8 |
| | HT-20, M8 to M15 | 2 | 7 | -76.5 | -77.2 | -66.8 | -27 | 39.8 |
| | HT-20 STBC, M0 to M7 | 2 | 7 | -76.5 | -77.2 | -66.8 | -27 | 39.8 |
| | | | | | | | | |
| | Non HT-40, 6 to 54 Mbps | 1 | 7 | -77.0 | | -70.0 | -27 | 43.0 |
| | Non HT-40, 6 to 54 Mbps | 2 | 7 | -77.0 | -76.3 | -66.6 | -27 | 39.6 |
| 5795 | HT-40, M0 to M7 | 1 | 7 | -79.6 | | -72.6 | -27 | 45.6 |
| 57 | HT-40, M0 to M7 | 2 | 7 | -79.6 | -80.0 | -69.8 | -27 | 42.8 |
| | HT-40, M8 to M15 | 2 | 7 | -79.6 | -80.0 | -69.8 | -27 | 42.8 |
| | HT-40 STBC, M0 to M7 | 2 | 7 | -79.6 | -80.0 | -69.8 | -27 | 42.8 |
| | | | | | | | | |
| | Non HT-20, 6 to 54 Mbps | 1 | 7 | -76.2 | | -69.2 | -27 | 42.2 |
| | Non HT-20, 6 to 54 Mbps | 2 | 7 | -76.2 | -79.2 | -67.4 | -27 | 40.4 |
| 5825 | HT-20, M0 to M7 | 1 | 7 | -76.9 | | -69.9 | -27 | 42.9 |
| 58 | HT-20, M0 to M7 | 2 | 7 | -76.9 | -79.5 | -68.0 | -27 | 41.0 |
| | HT-20, M8 to M15 | 2 | 7 | -76.9 | -79.5 | -68.0 | -27 | 41.0 |
| | HT-20 STBC, M0 to M7 | 2 | 7 | -76.9 | -79.5 | -68.0 | -27 | 41.0 |

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| | Spectre | | alyzer - S | | | | | | | | | | | | |
|----------------|-------------|----------|------------------------------------------|----------------|------------|------------|-----------|------------------------|------------------|------------|---------|----------------------------|-----------------------------|------------------------------|---------------------------|
| LXI RL Cent | or Er | RF | 50 29.000 | Ω DC | | | | SE | VSE:INT | | | ALIGN OFF | TRA | MNov 19, 2013 | Frequency |
| Certi | GIII | eq 2 | .3.000 | 0000 | 19 | 10: Fast | +- | Trig: Fre #Atten: 0 | | | | | TY | PE WWWWWWW ET P N N N N N | |
| | | | | | IFG | iain:High | | #Attent o | uD | | | | | | Auto Tune |
| 10 dB | (dia | Dof | -20.00 | dBm | | | | | | | | | | | |
| | aiv | Rei | -20.00 | ивп | | | | | | | | | | | |
| -30.0 | | | | | | | | | | | | | | | Center Freq |
| -40.0 | | | | | | | | | | | | | | | 29.00000000 GHz |
| -50.0 | | | | | | | | | | | | | | -58.00 dBm | |
| -60.0 | | | arymani ter | ents suffic to | - Praklant | m. Ballana | vin hy la | MM Lunde | - up of the last | the set | musaufr | may and provide the second | all main transferration for | houd a signification | Start Freq |
| -70.0 | trifil a la | - Andrew | a di | - "NYPI" VF | | | | | | | | | | | 18.00000000 GHz |
| -80.0 | | | | | | | | | | | | | | | |
| -90.0 | | | | | | | | | | | | | | | |
| -100 | | | | | | | | | | | | | | | Stop Freq |
| -110 | | | | | | | | | | | | | | | 40.00000000 GHz |
| Start | 18.0 | | 7 | | | | | | | | | | Stop / | 0.00 GHz | |
| #Res | | | | | | #V | BW | 3.0 MHz | | | | Sweep | 36.7 ms (| (1001 pts) | CF Step 2.20000000 GHz |
| MKB M | ODE TR | d sal | | X | | | | Y | 6 | FUNCTION | N EII | INCTION WIDTH | | IN VALUE | Auto Man |
| 1 | | | | | | | | | | - ontornor | | | | | |
| 2 | | | | | | | | | | | | | | | Freq Offset |
| 4 | | | | | | | | | | | | | | | 0 Hz |
| 6 | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | |
| 9 10 | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | |
| MSG | | | | | | | | | | | | STATU | S | | |

Conducted Spurs, All Antennas

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Conducted Spurs Average, 5745 MHz, Non HT-20, 6 to 54 Mbps

Antenna A

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Conducted Spurs Average, 5745 MHz, Non HT-20, 6 to 54 Mbps



| RL RF 55.0 DC enter Freq 9.015000000 | CORREC GHZ PNO: Fast ~ IFGain:High | Trig: Free Run #Atten: 0 dB | | ALIGN OFF | TRAC | Nov 08, 2013 | Frequency |
|-----------------------------------------|---------------------------------------------|--------------------------------|--------------|---------------|-----------------------|-----------------------|--------------------------------|
| g dB/div Ref -20.00 dBm | | | | MI | (r2 11.4 -71.7 | 90 GHz 71 dBm | Auto Tune |
| 99 00 00 | ∏≬¹ | | | | | -30 00 0000 | Center Fred 9.015000000 GH: |
| | MA | | ² | | | | Start Free 30.000000 MHa |
| 10 0 10 0 11 0 11 0 | | | | | | | Stop Free 18.00000000 GH |
| tart 30 MHz Res BW 1.0 MHz | #VB | W 1.0 kHz | | Sweep | Stop 18. 14.0 s (* | .000 GHz 1001 pts) | CF Step 1,797000000 GH |
| KR MODE TRC SCL X | 5.745 GHz | -49.48 dBm | FUNCTION F | UNCTION WIDTH | FUNCTIO | N VALUE | Auto Mar |
| 3 N 1 F 1 4 5 | 1.490 GHz 7.235 GHz | -71.71 dBm -73.16 dBm | | | | | Freq Offse |
| | | | | | | | |
| 6 7 9 9 0 | | | | | | | |

Antenna A

Antenna B

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Avg Type: Log-P quency eq 9.015 00 GHz Trig: Free Run Auto Tun 69 23 Ref -20.00 dBm Center Free 9.015000000 GH Start Fre Stop Fre Stop 18.000 GHz Sweep 14.0 s (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 1.0 kHz CFSt 1.79700 5.745 GHz 11.490 GHz 17.235 GHz -50.31 dBm -73.46 dBm -69.23 dBm Freq Offs

Conducted Spurs Average, 5745 MHz, HT-20, M0 to M7

Antenna A

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Conducted Spurs Average, 5745 MHz, HT-20, M0 to M7



| RL RF 500 DC Center Freq 9.015000000 | GHZ PNO: Fast ~4 IFGain:High | Trig: Free Run #Atten: 0 dB | Avg Ty | ALIGN OF | TYPE | IOV 06, 2013 | Frequency |
|-----------------------------------------|------------------------------------|--------------------------------|--------------|----------------|-------------------------|----------------|--------------------------------|
| 10 dB/div Ref -20.00 dBm | | _ | | MI | kr2 11.49 -72.18 | 0 GHz 3 dBm | Auto Tune |
| | ∏o¹ | | | | | -50 00 stime | Center Free 9.015000000 GH: |
| eo 0 70.0 en 0 | M | | ² | | | 3 | Start Free 30.000000 MH |
| 150 110 | | | | | | | Stop Fre 18.00000000 GH |
| Start 30 MHz ≉Res BW 1.0 MHz | #VB | N 1.0 kHz | | Sweep | Stop 18.0 14.0 s (10 | | CF Step 1.797000000 GH |
| NKR MODE TRC SCL X | 5.745 GHz | -49.35 dBm | FUNCTION F | FUNCTION WIDTH | FUNCTION | VALUE | Auto Mar |
| 3 N 1 7 17 4 5 6 7 7 8 | 1.490 GHz 7.235 GHz | -72.18 dBm -73.69 dBm | | | | | Freq Offse a Hi |
| 9 | | | | | | | |

Antenna B

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Auto Tur

72 18 dF

Conducted Spurs Average, 5745 MHz, HT-20, M8 to M15 Avg Type: Lo equency a 9.015 0 GHz Trig: Free Run Auto Tun -69.23 dt Ref -20.00 dBm Center Fred 9.015000000 GHa Start Free Stop Fre CF Ster Stop 18.000 GHz Sweep 14.0 s (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 1.0 kHz 1.797000 5.745 GHz 11.490 GHz 17.235 GHz -50.31 dBm -73.46 dBm -69.23 dBm Freq Offse

Ref -20.00 dBm Center Fre 9.015000000 GH Start Fre Stop Fre Stop 18.000 GHz Sweep 14.0 s (1001 pts) tart 30 MHz Res BW 1.0 MH CF Ste 00000 GH Mi #VBW 1.0 kHz 1.79700 5.745 GHz 11.490 GHz 17.235 GHz -49.35 dBn -72.18 dBn -73.69 dBn Freq Offse

: Fast --- Trig: Free Run

Avg Type: Log-Pw

Antenna A

Antenna B

enter Freq 9.015000000 GHz

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Conducted Spurs Average, 5745 MHz, HT-20 STBC, M0 to M7



| RL RF 500 DC enter Freq 9.015000000 | ORHEC OGHZ PN0: Fast → IFGain:High | Trig: Free Run #Atten: 0 dB | | ALIGN OF | TRACE | Nov 08, 2013 | Frequency |
|----------------------------------------|---------------------------------------------|--------------------------------|----------|----------------|--------------------|------------------|--------------------------------|
| dB/div Ref -20.00 dBm | i duningi | | | M | (r2 11.4) -72.1 | 90 GHz 18 dBm | Auto Tune |
| | Πǫ¹ | | | | | -30.00 (800) | Center Freq 9.015000000 GHz |
| | MA | | | | | <u></u> 3 | Start Free 30.000000 MH: |
| 10 | | | | | | | Stop Free 18.00000000 GH |
| tart 30 MHz Res BW 1.0 MHz | #VBV | V 1.0 kHz | | Sweep | 14.0 s (1 | | CF Step 1.797000000 GH |
| KR MODE TRC SCL X | 5.745 GHz | -49.35 dBm | FUNCTION | FUNCTION WIDTH | FUNCTION | N VALUE. | Auto Mar |
| | 7.236 GHz | -73.69 dBm | | | | | Freq Offse 0 Hi |
| 8 9 0 1 | | | | | | | |
| a | | | | STATUS | | | |

Antenna B

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Conducted Spurs Average, 5755 MHz, Non HT-40, 6 to 54 Mbps



Antenna A

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Conducted Spurs Average, 5755 MHz, Non HT-40, 6 to 54 Mbps





Antenna A

Antenna B

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Avg Type: Log-P equency eq 9.015 00 GHz Trig: Free Run Auto Tun -73.39 Ref -20.00 dBm Center Free 9.015000000 GH Start Fre Stop Fre Stop 18.000 GHz Sweep 14.0 s (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 1.0 kHz CF Ste 1.79700 5.755 GHz 11.490 GHz 17.235 GHz -58.01 dBm -75.18 dBm -73.39 dBm Freq Offs

Conducted Spurs Average, 5755 MHz, HT-40, M0 to M7

Antenna A

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Avg Type: Log-Pw equency enter Freq 9.0150 0000 GHz Trig: Free Run Fast Auto Tun -73.39 di Ref -20.00 dBm Center Fred 9.015000000 GHz Start Free 30.000000 MH Stop Fre CF Ster 000000 GH Me Stop 18.000 GHz Sweep 14.0 s (1001 pts) Start 30 MHz #Res BW 1.0 MH Stop 18.000 GHz Sweep 14.0 s (1001 pts) #VBW 1.0 kHz 1.797000 5.755 GHz 11.490 GHz 17.235 GHz -57.37 dBn -74.81 dBn -74.26 dBn Freq Offse

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Auto Tur

Center Fre 9.015000000 GH

Start Fre

Stop Fre

CF Ste 00000 GH Mi

Freq Offse

1.79700

74.26

Conducted Spurs Average, 5755 MHz, HT-40, M0 to M7

Trig: Free Run

#VBW 1.0 kHz

-75.18 dBm -73.39 dBm

5.755 GHz 11.490 GHz 17.235 GHz

Avg Type: L

0 GHz

a 9.015

Ref -20.00 dBm

Antenna A

tart 30 MHz Res BW 1.0 MHz

Antenna B

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Avg Type: L quency q 9.015 00 GHz Trig: Free Run Auto Tun -73.39 Ref -20.00 dBm Center Fre 9.015000000 GH Start Fre Stop Fri Stop 18.000 GHz Sweep 14.0 s (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 1.0 kHz CFS 1.79700 5.755 GHz 11.490 GHz 17.235 GHz -75.18 dBm -73.39 dBm Freq Offs

| RL 18 500 00 enter Freq 9.015000000 | GHZ PNO: Fast | Trig: Free Run #Atten: 0 dB | Aug Type: Log-Pwr | 05(31:00 AMINOV 08, 2013 TRACE 1234 E TYPE WANNIN N DET PINN NINN | Frequency |
|----------------------------------------|-------------------------------------|----------------------------------------|-----------------------|----------------------------------------------------------------------------|--------------------------------------|
| Bidiv Ref -20.00 dBm | | - | N | lkr3 17.235 GHz -74.26 dBm | Auto Tune |
| | ∏_₀1 | ĥĒIĒ | | -50.00 (899 | Center Fred 9.015000000 GH: |
| | MA | | 2 | 3 | Start Free 30.000000 MH |
| 00 | | | | | Stop Fre 18.00000000 GH |
| tart 30 MHz Res BW 1.0 MHz | #VBV | V 1.0 kHz | Swee | | CF Step 1.797000000 GH Auto Ma |
| 2 N 1 1 | 5.755 GHz 1.490 GHz 7.235 GHz | -57.37 dBm -74.81 dBm -74.26 dBm | UNCTION FUNCTION WIDT | H HUNCHUN VALUE | Auto Ma Freq Offse 0 H |
| 7 8 9 0 1 | | | | | |
| d | _ | | stati | lis. | |

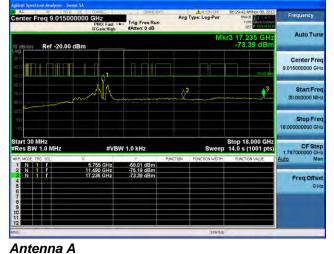
Antenna A

Antenna B

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Conducted Spurs Average, 5755 MHz, HT-40, M8 to M15

Conducted Spurs Average, 5755 MHz, HT-40 STBC, M0 to M7



| RL RF 500 DC CORREC Center Freq 9.015000000 GHz PNO: IFGain | ast Trig: Free Run | Avg Type: Log-Pwr | D5:31:00 AMINOV 05, 2013 TRACE | Frequency |
|--------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------|--------------------------------------|---------------------------------|
| 0 dB/div Ref -20.00 dBm | | М | kr3 17.235 GHz -74.26 dBm | Auto Tune |
| | | | -50.00 (1996 | Center Freq 9.015000000 GHz |
| 10 0 72 0 en u | Lummun | ~~~^2~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | 3 | Start Freq 30.000000 MHz |
| 100 100 | | | | Stop Free 18.00000000 GHz |
| tart 30 MHz Res BW 1.0 MHz | #VBW 1.0 kHz | Sweep | Stop 18.000 GHz 14.0 s (1001 pts) | CF Step 1.797000000 GH |
| MR MODE TRO SQL X 1 N 1 7 5.765 G 2 N 1 7 11.480 G 3 N 1 7 11.480 G 4 1 7 17.235 G 6 6 7 8 | -74.81 dBm | FUNCTION FUNCTION WIDTH | FUNCTION VALUE | Auto Mar Freq Offset 0 Hz |
| | | STATE | | |

Antenna B

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Conducted Spurs Average, 5785 MHz, Non HT-20, 6 to 54 Mbps



Antenna A

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Conducted Spurs Average, 5785 MHz, Non HT-20, 6 to 54 Mbps



Avg Type: Log-Pw enter Freq 9.0150 0000 GHz Fast --- Trig: Free Run #Atten: 0 dB Auto Tur Ref -20.00 dBm Center Fre 9.015000000 GH Start Fre Stop Fre tart 30 MHz Res BW 1.0 MH Stop 18.000 GHz Sweep 14.0 s (1001 pts) CF Ste #VBW 1.0 kHz 1.79700 5.785 GHz 11.570 GHz 17.355 GHz -56.65 dBn -72.21 dBn -72.55 dBn Freq Offse

Antenna A

Antenna B

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Avg Type: Log-P eq 9.0150 quency 000 GHz Trig: Free Run Auto Tun 71.63 Ref -20.00 dBm Center Free 9.015000000 GH Start Fre Stop Fre Stop 18.000 GHz Sweep 14.0 s (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 1.0 kHz CF Ste 1.79700 5.785 GHz 11.570 GHz 17.355 GHz -58.37 dBm -75.02 dBm -71.63 dBm Freq Offs

Conducted Spurs Average, 5785 MHz, HT-20, M0 to M7

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CISCO Avg Type: Log-Pw Trig: Free Run Fast Auto Tur Center Fre 9.015000000 GH Start Fre

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Conducted Spurs Average, 5785 MHz, HT-20, M0 to M7





Antenna B

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Avg Type: Log-P g 9.015 00 GHz Trig: Free Run Auto Tun 71.63 Ref -20.00 dBm Center Fre 9.015000000 GH Start Fre Stop Fre Stop 18.000 GHz Sweep 14.0 s (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 1.0 kHz CFS 1.79700 5.785 GHz 11.570 GHz 17.355 GHz -58.37 dBm -75.02 dBm -71.63 dBm Freq Offs

| enter Freq 9.01500000 | | Trig: Free Run | Avg Type | Log-Pwr | TRAC | Nov 08, 2013 | Frequency |
|--------------------------------------------|------------------------|--------------------------|--------------|-------------|----------------------|---------------------|--------------------------------|
| | IFGain:High | #Atten: 0 dB | | M | cr2 11.5 | 70 GHz | Auto Tune |
| dB/div Ref -20.00 dBm | | | | | -72.5 | 7 dBm | - |
| | | ппп | | | | -50.00 cmm | Center Freq 9.015000000 GHz |
| | MA | | ~~^2 | | | 2 ³ | Start Freq 30.000000 MHz |
| 10 | | | | | | | Stop Free 18.00000000 GH2 |
| tart 30 MHz Res BW 1.0 MHz | #VBV | 1.0 kHz | | Sweep | Stop 18 14.0 s (* | 000 GHz 001 pts) | CF Step 1.797000000 GH |
| KR MODE TRC SCL X | 5.785 GHz | -57.56 dBm | PUNCTION FUN | CTION WIDTH | FUNCTIO | N VALUE. | <u>Auto</u> Man |
| 2 N 1 F 1 3 N 1 F 1 4 5 6 7 | 1.570 GHz 7.355 GHz | -72.57 dBm -73.04 dBm | | | | | Freq Offset 0 Hz |
| 8 9 0 | | | | | | | |
| a | | | | STATUS | | _ | |

Antenna A

Antenna B

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Conducted Spurs Average, 5785 MHz, HT-20, M8 to M15

Conducted Spurs Average, 5785 MHz, HT-20 STBC, M0 to M7



| RL RF 500 EC enter Freq 9.01500000 | OGRAEC O GHZ PNO: Fast ~1 IFGain:High | Trig: Free Run #Atten: 0 dB | | ALIGN OFF | TRAC | MNDV 06, 2013 REEDED | Frequency |
|----------------------------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------|------------------|----------------|---------------------|-------------------------|--------------------------------|
| 0 dB/div Ref -20.00 dBm | | | | MI | (r2 11.5 -72.5 | 70 GHz 57 dBm | Auto Tune |
| | | | | | | -50.00 cmm | Center Freq 9.015000000 GHz |
| 60 0 70 0 60 0 | MA | | ~~~ ² | | | 2 ³ | Start Free 30.000000 MH: |
| מניס ביין אומ | | | | | | | Stop Free 18.00000000 GH: |
| start 30 MHz Res BW 1.0 MHz | #VB | N 1.0 kHz | | Sweep | Stop 18 14.0 s (| .000 GHz 1001 pts) | CF Step 1,797000000 GH |
| 1 N 1 7 | × 5.785 GHz | | FUNCTION | FUNCTION WIDTH | FUNCTIO | IN VALUE. | <u>Auto</u> Mar |
| 2 N 1 F 3 N 1 F 4 5 6 7 | 11.570 GHz 17.355 GHz | -72.57 dBm -73.04 dBm | | | | | Freq Offse 0 Hz |
| 7 8 9 9 10 11 12 2 12 12 12 12 12 12 12 12 12 12 1 | | | | | | | |
| SG SG | | | _ | STATUS | | | 1 |

Antenna B

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Avg Type: Log-P quency eq 9.0150 000 GHz Trig: Free Run Auto Tun -72.90 dE Ref -20.00 dBm Center Fre 9.015000000 GH Start Fre Stop Fre Stop 18.000 GHz Sweep 14.0 s (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 1.0 kHz CFSt 1.79700 5.795 GHz 11.570 GHz 17.355 GHz -61.02 dBm -76.03 dBm -72.90 dBm Freq Offs

Conducted Spurs Average, 5795 MHz, Non HT-40, 6 to 54 Mbps

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Conducted Spurs Average, 5795 MHz, Non HT-40, 6 to 54 Mbps



| | | Ň | | kr3 17.3 -74.3 | 55 GHz 31 dBm | Auto Tune Center Freq 9.015000000 GHz |
|---------|--------------------|------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| nr_ | | | 2 | | -50.00 min | 9.015000000 GHz |
| Mr | | ¢ | 2 | | . 3 | - |
| | | | | | | Start Free 30.000000 MH |
| | | | | | | Stop Fre 18.00000000 GH |
| #VBV | W 1.0 kHz | | Sweep | | | CF Ste 1.797000000 GH |
| 795 GHz | -59.67 dBm | FUNCTION | FUNCTION WIDTH | FUNCTIO | IN VALUE | Auto Mar |
| 355 GHz | -74.31 dBm | | | | | Freq Offse 0 H |
| ļ | 795 GHz 570 GHz | 795 GHz -59.67 dBm 570 GHz -74.90 dBm | 795 GHz -59.67 dBm 570 GHz -74.90 dBm | 795 GH2 59 FUNCTION FUNCTION WD1+ 795 GH2 49 GBm 796 GH2 - 743 GBm 886 GH2 - 74.31 dBm | #VBW 1.0 kHz Sweep 14.0 s (Y FUNCTION FUNCTION WIDTH FUNCTION 795 GHz -59 57 dBm -54 90 dBm | 795 GH2 9 FUNCTION FUNCTION WD1+ FUNCTION WULE 795 GH2 - 409 GPm 796 GH2 - 440 GPm 888 GH2 - 74.31 dBm |

Antenna A

Antenna B

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Avg Type: Log-P equency eq 9.0150 000 GHz Trig: Free Run Auto Tun -74.27 dE Ref -20.00 dBm Center Free 9.015000000 GH Start Fre Stop Fre Stop 18.000 GHz Sweep 14.0 s (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 1.0 kHz CFSt 1.79700 5.795 GHz 11.570 GHz 17.355 GHz -61.44 dBm -75.85 dBm -74.27 dBm Freq Offs

Conducted Spurs Average, 5795 MHz, HT-40, M0 to M7

Antenna A

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Avg Type: Log equency a 9.015 00 GHz Trig: Free Run Auto Tune -74.27 dE Ref -20.00 dBm Center Fred 9.015000000 GHa Start Free Stop Fre CF Ster 000000 GH Me Stop 18.000 GHz Sweep 14.0 s (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 1.0 kHz 1.797000 5.795 GHz 11.570 GHz 17.355 GHz -61.44 dBm -75.85 dBm -74.27 dBm Freq Offse



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Antenna A

Antenna B

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Conducted Spurs Average, 5795 MHz, HT-40, M0 to M7

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Start Fre

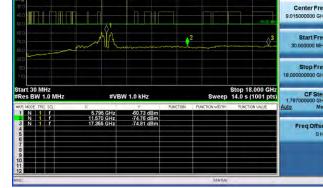
Stop Fre

CF Ste

Freq Offse



Conducted Spurs Average, 5795 MHz, HT-40, M8 to M15



Fast --- Trig: Free Run #Atten: 0 dB

Avg Type: Log-Pw

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Antenna A

Antenna B

enter Freq 9.015000000 GHz

Ref -20.00 dBm

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Conducted Spurs Average, 5795 MHz, HT-40 STBC, M0 to M7



| enter Freq 9.01500000 | | Trig: Free Run #Atten: 0 dB | | ALIGNOF Type: Log-Pwr | TRAC | MNov 08, 2013 18 1 2 3 4 5 19 1 2 3 4 5 19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | Frequency | | | | | | | | | |
|---------------------------------|--------------------------|--------------------------------|----------|--------------------------|---------------------|-----------------------------------------------------------------------------------------|--------------------------------|----------|----------|----------|----------|----------|----------------|---------|----------|---------|
| 0 dB/div Ref -20.00 dBm | | | | MI | kr2 11.5 -74.3 | 70 GHz 76 dBm | Auto Tune | | | | | | | | | |
| | | | | | | -50.00 days | Center Fred 9.015000000 GHz | | | | | | | | | |
| 20 0 72 0 20 0 | MA | | m | 2 | | 3 | Start Free 30.000000 MH: | | | | | | | | | |
| 19.0 1930 | | | | | | | Stop Free 18.00000000 GH: | | | | | | | | | |
| tart 30 MHz Res BW 1.0 MHz | #VB | W 1.0 kHz | | Sweep | Stop 18 14.0 s (| .000 GHz 1001 pts) | CF Step 1.797000000 GH | | | | | | | | | |
| KR MODE TRC SCL X | 5.795 GHz | -60.73 dBm | FUNCTION | FUNCTION | FUNCTION | FUNCTION | FUNCTION | FUNCTION | FUNCTION | FUNCTION | FUNCTION | FUNCTION | FUNCTION WIDTH | FUNCTIO | IN VALUE | Auto Ma |
| 3 N 1 7 1 | 11.570 GHz 17.355 GHz | -74.76 dBm -74.81 dBm | | | | | Freq Offse | | | | | | | | | |
| 7 8 9 9 9 0 1 | | | | | | | | | | | | | | | | |
| | | | | stàtus | | | | | | | | | | | | |

Antenna B

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Conducted Spurs Average, 5825 MHz, Non HT-20, 6 to 54 Mbps



Antenna A

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Conducted Spurs Average, 5825 MHz, Non HT-20, 6 to 54 Mbps



| RL RF 500 EC | GHZ PN0: Fast | Trig: Free Run | | Type: Log-Pwr | TRACE | Nov 08, 2013 | Frequency |
|-------------------------------|----------------------------------|----------------------------------------|----------|----------------|----------|-----------------|--------------------------------|
| dB/div Ref -20.00 dBm | IFGain:High | #Atten: 0 dB | | M | (r2 11.6 | _ | Auto Tune |
| | | | | | | -50.00 mm | Center Free 9.015000000 GH: |
| | ~MA_ | | | 2 | | () ³ | Start Free 30.000000 MH: |
| 10 10 | | | | | | | Stop Free 18.00000000 GH |
| tart 30 MHz Res BW 1.0 MHz | #VBV | / 1.0 kHz | | Sweep | | 001 pts) | CF Ste 1.797000000 GH |
| 2 N 1 F 11 3 N 1 F 17 5 | .825 GHz .650 GHz .475 GHz | -54.02 dBm -74.17 dBm -74.99 dBm | FUNCTION | FUNCTION WIDTH | FUNCTION | N VALUE | Auto Mar Freq Offse |
| | | | | | | | |
| | | | | STATUS | | | · |

Antenna A

Antenna B

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Avg Type: Log-P equency g 9.015 00 GHz Trig: Free Run Auto Tun 17.475 G -74.89 di Ref -20.00 dBm Center Free 9.015000000 GH Start Fre Stop Fre Stop 18.000 GHz Sweep 14.0 s (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 1.0 kHz CFSt 1.79700 5.825 GHz 11.650 GHz 17.475 GHz -55.35 dBm -75.16 dBm -74.89 dBm Freq Offs

Conducted Spurs Average, 5825 MHz, HT-20, M0 to M7

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Conducted Spurs Average, 5825 MHz, HT-20, M0 to M7 Avg Type: equency a 9.015 0 GHz Trig: Free Run Auto Tun -74.89 dl Ref -20.00 dBm Center Fred 9.015000000 GHa Start Free 30.000000 MH Stop Fre CF Ster 000000 GH Me Stop 18.000 GHz Sweep 14.0 s (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 1.0 kHz 1.797000 5.825 GHz 11.650 GHz 17.475 GHz -55.35 dBm -75.16 dBm -74.89 dBm Freq Offse



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Antenna B

Antenna A

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Avg Type: Log quency a 9.015 00 GHz Trig: Free Run Auto Tun -74.89 d Ref -20.00 dBm Center Fre 9.015000000 GH Start Fre Stop Fre Stop 18.000 GHz Sweep 14.0 s (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 1.0 kHz CFSt 1.79700 5.825 GHz 11.650 GHz 17.475 GHz -55.35 dBm -75.16 dBm -74.89 dBm Freq Offs

| RL RF SD0 DC | | Trig: Free Run | | Log-Pwr | TRAC | MNov 08, 2013 | Frequency |
|--------------------------------|------------------------|--------------------------|-------------|--------------|---------------------|-----------------------|--------------------------------|
| | Auto Tune | | | | | | |
| 0 dB/div Ref -20.00 dBm | Auto Tune | | | | | | |
| | 0 ¹ | | | | | -50.00 days | Center Fred 9.015000000 GHz |
| | MA_ | | 2 | | | Q ³ | Start Free 30.000000 MHa |
| גם ס ישמי ווומ | | | | | | | Stop Free 18.00000000 GH: |
| Start 30 MHz Res BW 1.0 MHz | #VBV | V 1.0 kHz | | Sweep | Stop 18 14.0 s (| .000 GHz 1001 pts) | CF Step 1.797000000 GH |
| | 5.825 GHz | -64.70 dBm | PUNCTION FU | NCTION WIDTH | FUNCTIO | IN VALUE | <u>Auto</u> Mar |
| 3 N 1 1 1 11 4 5 6 | 1.650 GHz 7.475 GHz | -74.63 dBm -75.02 dBm | | | | | Freq Offse 0 Ha |
| 7 8 9 10 11 | | | | | | | |
| 12 | | | | | | | |

Antenna A

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Conducted Spurs Average, 5825 MHz, HT-20, M8 to M15

Conducted Spurs Average, 5825 MHz, HT-20 STBC, M0 to M7

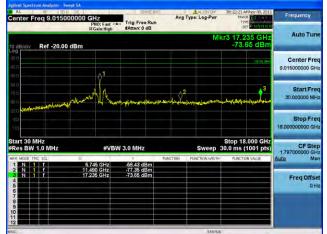


| | Trig: Free Run #Atten: 0 dB | Avg Type: Log-Pw | TRACE | 12345 | Frequency |
|---------------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | _ | | Vikr2 11.65 -74.6 | 0 GHz 3 dBm | Auto Tune |
| ∏ ₀ 1 | | | | -50.00 cmm | Center Fred 9.015000000 GHz |
| MA | | 2 | | ³ | Start Free 30.000000 MH: |
| | | | | | Stop Free 18.00000000 GH: |
| #VB | | | ep 14.0 s (1 | 001 pts) | CF Step 1.797000000 GH |
| 5.825 GHz 11.650 GHz 17.475 GHz | -54,70 dBm -74,63 dBm -75,02 dBm | FUNCTION FUNCTION WID | TH HUNCTUN | WILDE | <u>Auto</u> Mar Freq Offse 0 Ha |
| | 9 GHz PRO: End FCain:High 1 | 10 CHz Trig Free Run IFGaintligh Trig Free Run Attact: 0 aB #VBW 1.0 kHz #VBW 1.0 kHz #VBW 1.0 kHz \$42.53 dBm | 2 CHz Trig: Free Run IFG-ini:Tight Trig: Free Run #Atter: 0 dB Avg Type: Log-PW 4 Trig: Free Run #Atter: 0 dB Image: State St | 10 CHz PRD: Fast + IF-Gain:High Trig: Free Run Acter: 0 dB Avg Type: Log-Pvr Type: Certification Thuc: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Type: Typ | O CHZ IPG0 Fau Trig Free Run Addre: 0 dB Avg Type: Log-Pur IPG Thuc Bit Addression (cf) Thuc Bit Addression (cf) <ththuc addression<="" bit="" td=""></ththuc> |

Antenna B

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Conducted Spurs Peak, 5745 MHz, Non HT-20, 6 to 54 Mbps

Antenna A

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Conducted Spurs Peak, 5745 MHz, Non HT-20, 6 to 54 Mbps





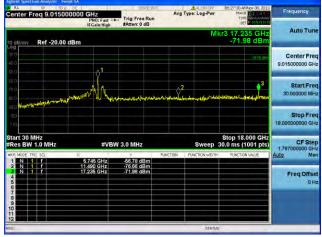
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Conducted Spurs Peak, 5745 MHz, HT-20, M0 to M7



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Avg Type: Lo eg 9.015 Trig: Free Run Auto Tun Ref -20.00 dBm Center Fred 9.015000000 GHa Start Free Stop Fre CF Ster 000000 GH Ma Stop 18.000 GHz Sweep 30.0 ms (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 3.0 MHz 1.797000 5.745 GHz 11.490 GHz 17.235 GHz -56.78 dBm -76.66 dBm -71.98 dBm Freq Offse

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Antenna B

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Conducted Spurs Peak, 5745 MHz, HT-20, M0 to M7

Avg Type: Log eg 9.015 Trig: Free Run Auto Tun Ref -20.00 dBm Center Fred 9.015000000 GHa Start Free Stop Fre CF Ster 000000 GH Ma Stop 18.000 GHz Sweep 30.0 ms (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 3.0 MHz 1.797000 5.745 GHz 11.490 GHz 17.235 GHz -56.78 dBm -76.66 dBm -71.98 dBm Freq Offse

Antenna A



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Antenna B

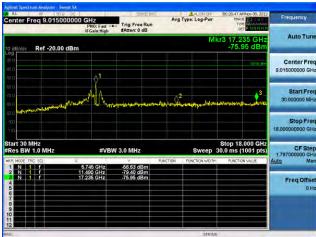
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Conducted Spurs Peak, 5745 MHz, HT-20, M8 to M15

Conducted Spurs Peak, 5745 MHz, HT-20 STBC, M0 to M7





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Conducted Spurs Peak, 5755 MHz, Non HT-40, 6 to 54 Mbps



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Conducted Spurs Peak, 5755 MHz, Non HT-40, 6 to 54 Mbps





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Conducted Spurs Peak, 5755 MHz, HT-40, M0 to M7



Antenna A

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er Freg 9.0150 0000 GHz Avg Type: Lo Trig: Free Run Auto Tun Ref -20.00 dBm Center Fred 9.015000000 GHa Start Free Stop Fre CF Ster Stop 18.000 GHz Sweep 30.0 ms (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 3.0 MHz 1.797000 5.755 GHz 11.490 GHz 17.235 GHz -65.01 dBm -79.89 dBm -76.26 dBm Freq Offse

Antenna A



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Antenna B

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Conducted Spurs Peak, 5755 MHz, HT-40, M0 to M7

Avg Type: Log er Freg 9.0150 0000 GHz Trig: Free Run Auto Tun Ref -20.00 dBm Center Fred 9.015000000 GHa Start Free Stop Fre CF Ster Stop 18.000 GHz Sweep 30.0 ms (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 3.0 MHz 1.797000 5.755 GHz 11.490 GHz 17.235 GHz -65.01 dBm -79.89 dBm -76.26 dBm Freq Offse

Antenna A



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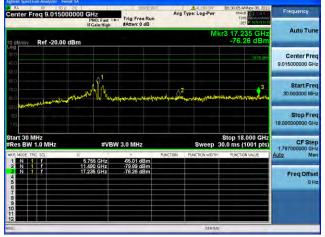
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Conducted Spurs Peak, 5755 MHz, HT-40, M8 to M15

Conducted Spurs Peak, 5755 MHz, HT-40 STBC, M0 to M7





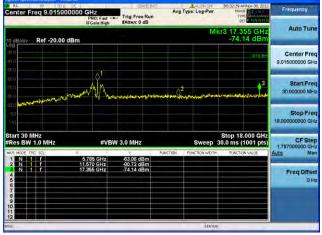
Antenna A

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Conducted Spurs Peak, 5785 MHz, Non HT-20, 6 to 54 Mbps

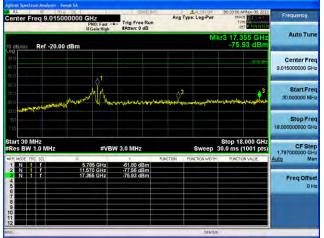


Antenna A

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Conducted Spurs Peak, 5785 MHz, Non HT-20, 6 to 54 Mbps



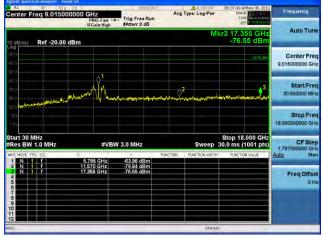


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Conducted Spurs Peak, 5785 MHz, HT-20, M0 to M7



Antenna A

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Avg Type: Lo ter Freq 9.015 Trig: Free Run Auto Tun Ref -20.00 dBm Center Fred 9.015000000 GHa Start Free Stop Fre CF Ster 000000 GH Ma Stop 18.000 GHz Sweep 30.0 ms (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 3.0 MHz 1.797000 5.785 GHz 11.570 GHz 17.355 GHz -63 96 dBm -78 94 dBm -76 55 dBm Freq Offse

Antenna A



Antenna B

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Conducted Spurs Peak, 5785 MHz, HT-20, M0 to M7

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Avg Type: Log ter Freq 9.0150 000 GHz Trig: Free Run Auto Tun 76 Ref -20.00 dBm Center Fred 9.015000000 GHa Start Free Stop Fre CF Ster 000000 GH Ma Stop 18.000 GHz Sweep 30.0 ms (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 3.0 MHz 1.797000 5.785 GHz 11.570 GHz 17.355 GHz -63 96 dBm -78 94 dBm -76 55 dBm Freq Offse

Antenna A



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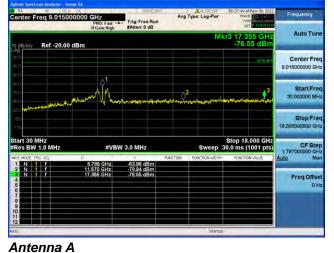
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Conducted Spurs Peak, 5785 MHz, HT-20, M8 to M15

Conducted Spurs Peak, 5785 MHz, HT-20 STBC, M0 to M7



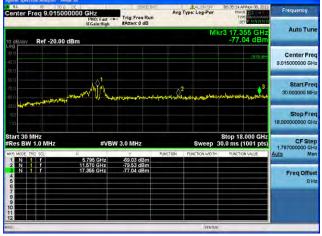


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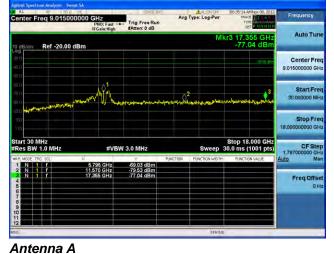
Conducted Spurs Peak, 5795 MHz, Non HT-40, 6 to 54 Mbps



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Conducted Spurs Peak, 5795 MHz, Non HT-40, 6 to 54 Mbps





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Conducted Spurs Peak, 5795 MHz, HT-40, M0 to M7



Antenna A

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Avg Type: Log ter Freq 9.0150 0000 GHz Trig: Free Run Auto Tun 79.62 Ref -20.00 dBm Center Fred 9.015000000 GHa Start Free Stop Fre Stop 18.000 GHz Sweep 30.0 ms (1001 pts) CF Ster tart 30 MHz Res BW 1.0 MHz #VBW 3.0 MHz 1.797000 5.795 GHz 11.570 GHz 17.355 GHz -69.04 dBm -80.17 dBm -79.62 dBm Freq Offse

Antenna A



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Antenna B

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Avg Type: Log ter Freq 9.0150 0000 GHz Trig: Free Run Auto Tun 79.62 Ref -20.00 dBm Center Fred 9.015000000 GHa Start Free Stop Fre Stop 18.000 GHz Sweep 30.0 ms (1001 pts) CF Ster tart 30 MHz Res BW 1.0 MHz #VBW 3.0 MHz 1.797000 5.795 GHz 11.570 GHz 17.355 GHz -69.04 dBm -80.17 dBm -79.62 dBm Freq Offse

Antenna A



Antenna B

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Conducted Spurs Peak, 5795 MHz, HT-40, M8 to M15

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Conducted Spurs Peak, 5795 MHz, HT-40 STBC, M0 to M7





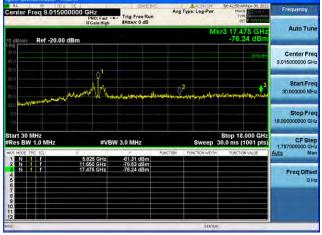
Antenna A

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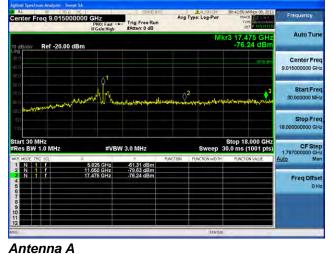
Conducted Spurs Peak, 5825 MHz, Non HT-20, 6 to 54 Mbps



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Conducted Spurs Peak, 5825 MHz, Non HT-20, 6 to 54 Mbps





Antenna B

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Conducted Spurs Peak, 5825 MHz, HT-20, M0 to M7



Antenna A

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er Freg 9.015 00 GHz Avg Type: L Trig: Free Run Auto Tun 76.86 Ref -20.00 dBm Center Fred 9.015000000 GHa Start Free Stop Fre CF Ster Stop 18.000 GHz Sweep 30.0 ms (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 3.0 MHz 1.797000 5.825 GHz 11.650 GHz 17.475 GHz -80.76 dBm -76.86 dBm Freq Offse

Antenna A



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Antenna B

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Conducted Spurs Peak, 5825 MHz, HT-20, M0 to M7

er Freg 9.015 00 GHz Avg Type: Lo Trig: Free Run Auto Tun 76.86 Ref -20.00 dBm Center Fred 9.015000000 GHa Start Free Stop Fre CF Ster Stop 18.000 GHz Sweep 30.0 ms (1001 pts) tart 30 MHz Res BW 1.0 MHz #VBW 3.0 MHz 1.797000 5.825 GHz 11.650 GHz 17.475 GHz -80.76 dBm -76.86 dBm Freq Offse

Antenna A



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Antenna B

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Conducted Spurs Peak, 5825 MHz, HT-20, M8 to M15

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Auto Tur

CF Ste

Center Fre 9.015000000 GH

Conducted Spurs Peak, 5825 MHz, HT-20 STBC, M0 to M7



Start Fre Stop Fre Start 30 MHz #Res BW 1.0 MHz Stop 18.000 GHz Sweep 30.0 ms (1001 pts) #VBW 3.0 MHz 1.797000 -62.41 dB -79.48 dB -90.99 dB 5.825 GHz 11.650 GHz 17.475 GHz Freq Offse

: Fast --- Trig: Free Run in:High #Atten: 0 dB

Avg Type: Log-Pw

Antenna A

Antenna B

enter Freq 9.015000000 GHz

Ref -20.00 dBm

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Conducted Bandedge

15.247: In any 100 kHz bandwidth outside the frequency band in which the digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

Connect the antenna port(s) to the spectrum analyzer input. Place the radio in continuous transmit mode. Configure the spectrum analyzer as shown below (be sure to enter all losses between the transmitter output and the spectrum analyzer).

Record the marker waveform peak to spur difference

Out-of-band and spurious emissions tests are performed on each output individually without summing or adding 10 log(N) since the measurements are made relative to the in-band emissions on the individual outputs. The worst case output is recorded.

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| Frequency (MHz) | Mode | Tx Paths | Conducted Bandedge Delta (dB) | Limit (dB c) | Margin (dB) |
|--------------------|-------------------------|-------------|-------------------------------------|-----------------|----------------|
| 5745 | Non HT-20, 6 to 54 Mbps | 6 | 43.4 | >30 | 13.4 |
| 5745 | HT-20, M0 to M15 | m0 | 41.5 | >30 | 11.5 |
| | | | | | |
| 5755 | Non HT-40, 6 to 54 Mbps | 6 | 34.1 | >30 | 4.1 |
| 5755 | HT-40, M0 to M23 | m0 | 36.3 | >30 | 6.3 |
| | - | | | | |
| 5795 | Non HT-40, 6 to 54 Mbps | 6 | 47.5 | >30 | 17.5 |
| 5795 | HT-40, M0 to M23 | m0 | 52.6 | >30 | 22.6 |
| | | | | _ | |
| 5825 | Non HT-20, 6 to 54 Mbps | 6 | 50 | >30 | 20.0 |
| | HT-20, M0 to M15 | m0 | 50.6 | >30 | 20.6 |

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| Agilent Spectrum Analyzer - Swept SA | | | | | | |
|--------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--|
| X RL RF 50 Ω DC Center Freq 5.547500000 | GHz | SENSE:INT Avg ree Run | ALIGN OFF | 05:51:19 PMNov 07, 2013 TRACE 1 2 3 4 5 6 | Frequency | |
| 10 dB/diy Ref 0.00 dBm | PNO: Fast 🆵 Trig: Fr IFGain:Low #Atten: | | Mkr3 | 5.739 865 GHz 10.57 dBm | Auto Tune | |
| -10.0 -20.0 -30.0 | | | | 1 | Center Freq 5.547500000 GHz | |
| | างแก่งไห้ใหญ่ประเทศ | iden and a contraction of the second | whether the state of the state of the | and and a start of the start of | Start Freq 5.350000000 GHz | |
| -70.0 | | | | -150.00 dBm | Stop Fred 5.745000000 GHz | |
| Start 5.3500 GHz #Res BW 100 kHz | art 5.3500 GHz Stop 5.7450 GHz | | | | | |
| 2 N 1 f 5.373 | 5 000 GHz -32.87 3 305 GHz -56.69 9 865 GHz 10.57 | dBm | FUNCTION WIDTH | FUNCTION VALUE | Auto Mar Freq Offset 0 Hz | |
| 6 7 8 9 10 11 12 | | | | | | |
| MSG | | | STATUS | | | |

Conducted Bandedge Average, 5745 MHz, Non HT-20, 6 to 54 Mbps

Conducted Bandedge Average, 5745 MHz, HT-20, M0 to M15



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| | rum Analyzer - Swep | | | | | | | |
|---------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------|-------------------------------------------|----------------------------------------------------|---------------------|---------------------------------------------|----------------------------------------------------------------|-------------------------------------|
| Center F | RF 50 Ω req 5.54750(| 0000 GHz PNO: Fast | Trig: Free Ru #Atten: 10 dB | Avg Type n | ALIGN OFF | 07:44:10 AMNo TRACE 1 TYPE 1 DET 2 | 02,2013 2 3 4 5 6 0000000 000000000000000000000000000 | Frequency |
| 10 dB/div | Ref 0.00 dB | IFGain:Low | #Atten: 10 db | | Mkr3 | 5.743 420 | | Auto Tune |
| -10.0 | | | | | | | 31 | Center Fred 5.547500000 GHz |
| -40.0 -50.0 -60.0 | wallow walked | Matthe la Santalanti | หนุปหาวอย่างการเกลย่ | lary dyeal a constant of the and the second states | depublik universite | | | Start Fred 5.350000000 GH2 |
| -70.0 -80.0 -90.0 | | | | | | | 150.00 dBm | Stop Fred 5.745000000 GH2 |
| #Res BW | art 5.3500 GHz Stop 5.7450 GHz Res BW 100 kHz #VBW 300 kHz Sweep 37.8 ms (1001 pts) | | | | | | | CF Step 39.500000 MH |
| MKR MODE T 1 N 2 3 N 2 4 5 6 7 8 9 | f f | × 5.725 000 GHz 5.690 490 GHz 5.743 420 GHz | ץ -28.13 dBm -43.53 dBm 6.00 dBm | FUNCTION FUN | NCTION WIDTH | FUNCTION V | ALUE | <u>Auto</u> Mai FreqOffse 0 H |
| 9 10 11 12 MSG | | | | | STATUS | 3 | | |

Conducted Bandedge Average, 5755 MHz, Non HT-40, 6 to 54 Mbps

Conducted Bandedge Average, 5755 MHz, HT-40, M0 to M23



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| Agilent Spectrum Analyzer - Swept SA | | | | | | | | |
|-------------------------------------------|--------------------------------------------------------------------------------------------------|----------------|------------------------------|--------------------------------------------------------|------------------------------------|--|--|--|
| X RL RF 50Ω DC Center Freq 6.777500000 | | | ALIGN OFF g Type: Log-Pwr | 06:22:13 PMNov 07, 2013 TRACE 1 2 3 4 5 6 | Frequency | | | |
| 10 dB/div Ref 0.00 dBm | PN0: Fast Trig: Free Run IPPE MUMUUA IFGain:Low #Atten: 10 dB DET PINNINN Mkr3 5.806 9 GHz | | | | | | | |
| Log 3 -10.0 -20.0 -30.0 4 | | | | | Center Fre 6.777500000 GH | | | |
| -40.0 -50.0 -60.0 | Manparatha Mann marca | | Notekan anthe total sugar | -40.72.dBm | Start Fre 5.805000000 GH | | | |
| 90.0 | | | | -150.00 dBm | Stop Fre 7.750000000 G⊦ | | | |
| Start 5.8050 GHz Res BW 100 kHz | #VBW 300 k | Hz FUNCTION | Sweep | Stop 7.7500 GHz 186 ms (1001 pts) FUNCTION VALUE | CF Ste 194.500000 MH Auto Ma | | | |
| 1 N 1 f 5 | 850 0 GHz -40.7 | 2 dBm | | | | | | |
| | 806 9 GHz 6.8 | 0 dBm | | | Freq Offso 0 ⊦ | | | |
| 7 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 | | | | | | | | |
| 12 | | | | | | | | |

Conducted Bandedge Average, 5795 MHz, Non HT-40, 6 to 54 Mbps

Conducted Bandedge Average, 5795 MHz, HT-40, M0 to M23

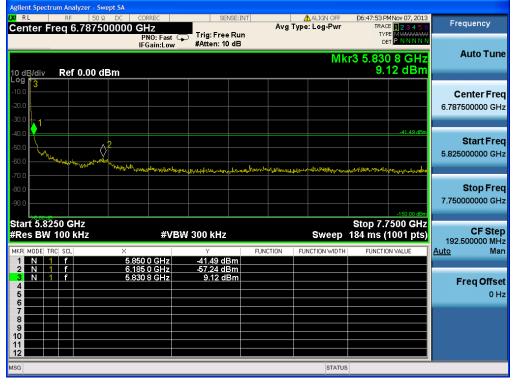


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| Agilent Spectrum Analyzer - Swept SA | | | | | |
|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------|---------------------------------------------------------|---------------------------------------|
| M RL RF 50 Ω DC Center Freq 6.787500000 | GHz | Avg Type | e: Log-Pwr TF | 7 PMNov 07, 2013 RACE 123456 TYPE MUNIMANN | Frequency |
| 10 dB/div Ref 0.00 dBm | PN0: Fast 🖵 Trig: Fre IFGain:Low #Atten: 1 | | Mkr3 5.8 | DET PNNNNN | Auto Tune |
| -10.0 3 -20.0 -30.0 - 1 | | | | | Center Freq 6.787500000 GHz |
| -40.0 -50.0 -60.0 | here a second | Kaling Januar and Maria and Maria | And Western and the statement | -39.99 dBm | Start Freq 5.825000000 GHz |
| -90.0 | | | | -150.00 dBm | Stop Freq 7.75000000 GHz |
| Start 5.8250 GHz #Res BW 100 kHz MKR MODE TRC SCL 1 N 1 F | #VBW 300 kHz | FUNCTION FU | Sweep 184 ms | | CF Step 192.500000 MHz Auto Man |
| | 194 6 GHz -56.72 d 328 9 GHz 10.04 d | Bm Bm | | | Freq Offset 0 Hz |
| 9 10 11 12 MSG | | | STATUS | | |

Conducted Bandedge Average, 5825 MHz, Non HT-20, 6 to 54 Mbps

Conducted Bandedge Average, 5825 MHz, HT-20, M0 to M15



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