# FCC 15.407 2015

## DUT Information

Frequencies

| | | |
|---|---|---|
| WLAN CH 36 (5180 MHz) | WLAN CH 40 (5200 MHz) | WLAN CH 48 (5240 MHz) |
| WLAN CH 149 (5745 MHz) | WLAN CH 157 (5785 MHz) | WLAN CH 165 (5825 MHz) |
| WLAN CH 52 (5260 MHz) | WLAN CH 56 (5280 MHz) | WLAN CH 64 (5320 MHz) |
| WLAN CH 100 (5500 MHz) | WLAN CH 120 (5600 MHz) | WLAN CH 140 (5700 MHz) |
| WLAN CH 116 (5580 MHz) | WLAN CH 151 (5755 MHz) | WLAN CH 159 (5795 MHz) |
| WLAN CH 155 (5775 MHz) | | |

Bandwidths

| | | |
|---|---|---|
| 20 MHz (20 MHz) | 40 MHz (40 MHz) | 80 MHz (80 MHz) |

Power

20.000 dBm (20 dBm)

Beamforming Gain

| | |
|---|---|
| 20.000 dBm (20 dBm) | 0 dB |

Gain Tables

| | |
|---|---|
| 20.000 dBm (20 dBm) | Port 1: 0dBi; |

DUT Settings

| | |
|---|---|
| No. of transmission chains | 1 |
| DFS capability | Yes |
| DFS Mode | Master |
| Equipment Type | Portable |
| TPC | No |

## Hardware Setup: WMS Measurements\TS8997

| | |
|---|---|
| Spectrum Analyzer: | SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40 |
| Vector Generator: | VG SMBV100A (VG SMBV100A) @ VISA (ADR TCPIP::192.168.48.25::INST0::INSTR), SN 260451, FW 4.15.125.49 |
| Generator: | SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015 |
| OSP: | OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2 |

## Summary

| Test | Frequency (MHz) | Nominal Power (dBm) | Nominal Bandwidth (MHz) | Result |
|---|---|---|---|---|
| Emission Bandwidth 26 dB | 5180.000 | 20.0 | 20.000000 | PASS |
| RF output power | 5180.000 | 20.0 | 20.000000 | PASS |
| Power Spectral Density | 5180.000 | 20.0 | 20.000000 | PASS |
| Minimum Emission Bandwidth 6 dB | 5180.000 | 20.0 | 20.000000 | PASS |
| Occupied Channel Bandwidth 99% | 5180.000 | 20.0 | 20.000000 | PASS |
| Band Edge low | 5180.000 | 20.0 | 20.000000 | PASS |
| Emission Bandwidth 26 dB | 5200.000 | 20.0 | 20.000000 | PASS |
| RF output power | 5200.000 | 20.0 | 20.000000 | PASS |
| Power Spectral Density | 5200.000 | 20.0 | 20.000000 | PASS |
| Minimum Emission Bandwidth 6 dB | 5200.000 | 20.0 | 20.000000 | PASS |
| Occupied Channel Bandwidth 99% | 5200.000 | 20.0 | 20.000000 | PASS |
| Emission Bandwidth 26 dB | 5240.000 | 20.0 | 20.000000 | PASS |
| RF output power | 5240.000 | 20.0 | 20.000000 | PASS |
| Power Spectral Density | 5240.000 | 20.0 | 20.000000 | PASS |
| Minimum Emission Bandwidth 6 dB | 5240.000 | 20.0 | 20.000000 | PASS |
| Occupied Channel Bandwidth 99% | 5240.000 | 20.0 | 20.000000 | PASS |
| Band Edge high | 5240.000 | 20.0 | 20.000000 | PASS |

# Emission Bandwidth 26 dB (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

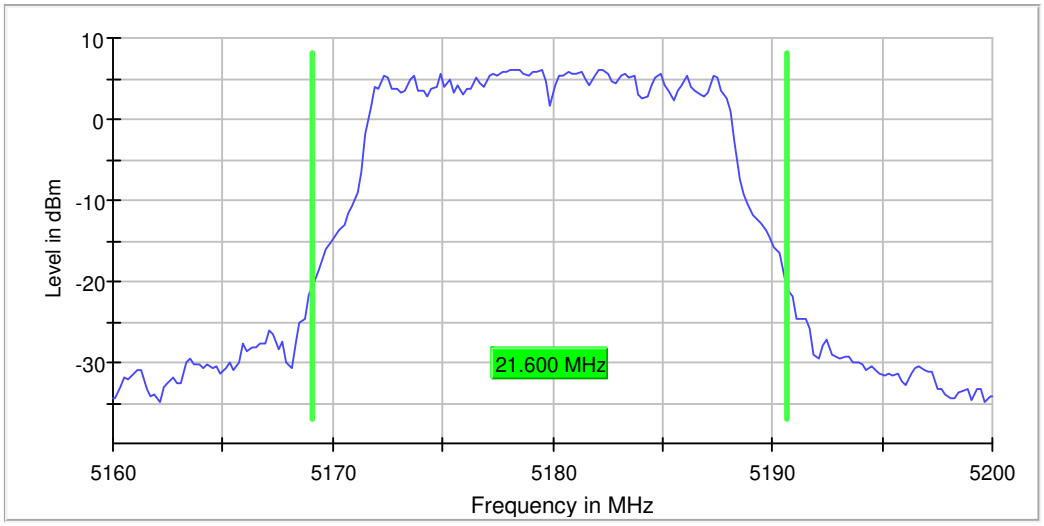
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

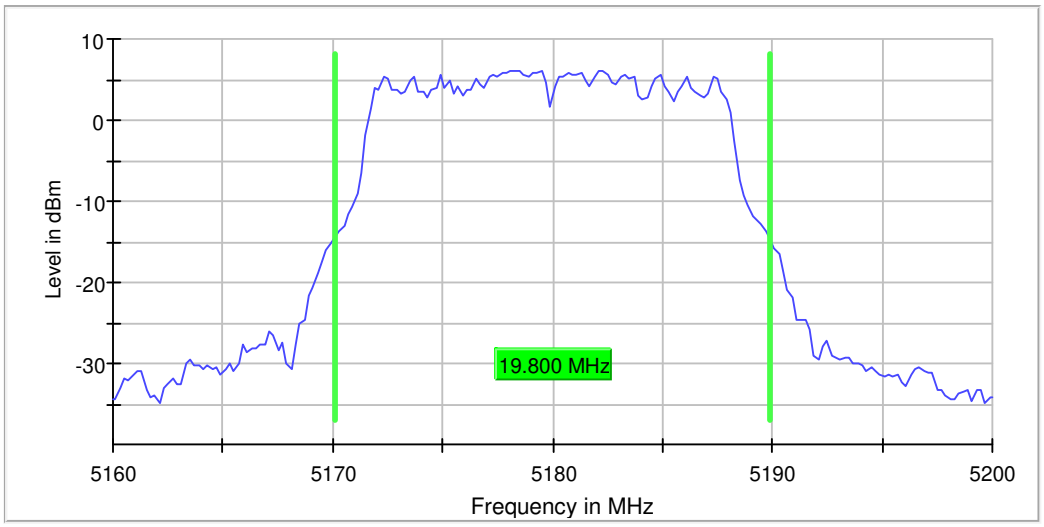
## 26 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5180.000000 | 21.600000 | --- | --- | 5169.100000 | 5190.700000 |

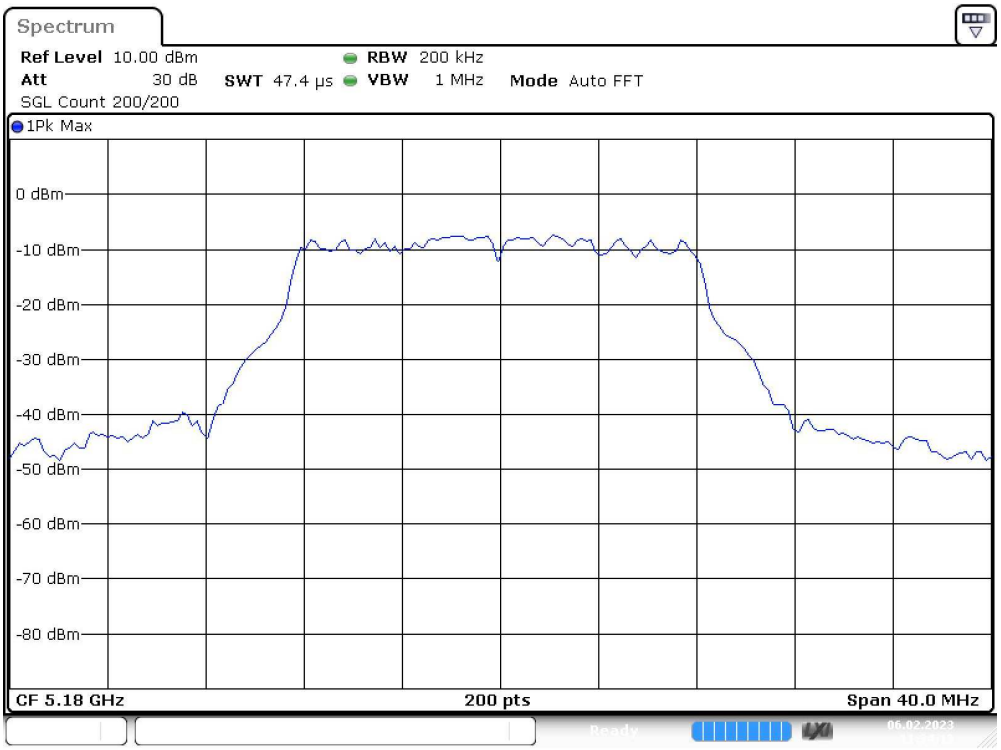
**(continuation of the "26 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5180.000000 | 6.2 | PASS |




10
0
-10
-20
-30
Level in dBm
19.800 MHz
5160
5170
5180
5190
5200
Frequency in MHz

Bandwidth

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## Measurement

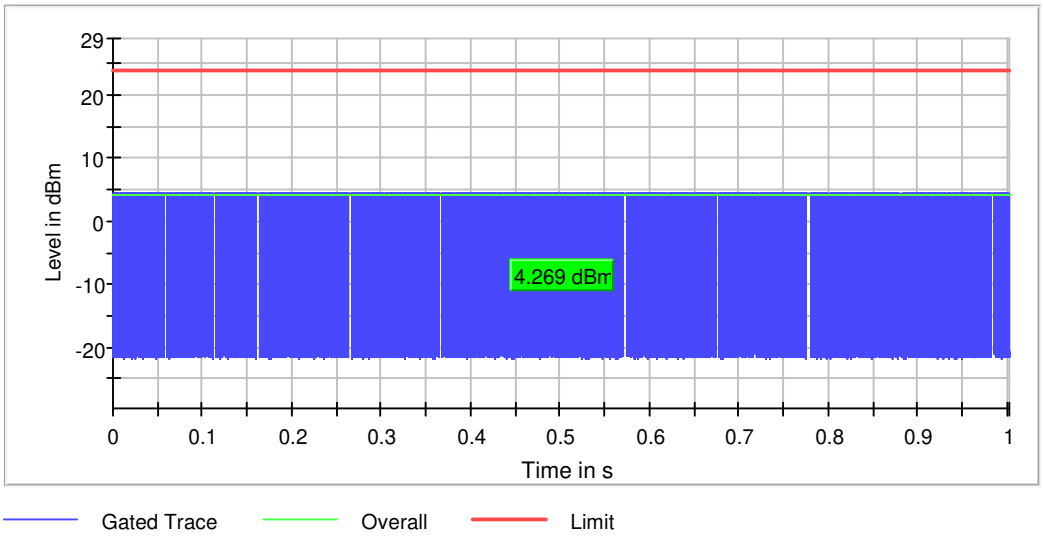
| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.16000 GHz | 5.16000 GHz |
| Stop Frequency | 5.20000 GHz | 5.20000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | ~ 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 1.00 dB | 1.00 dB |
| Run | 6 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.71 dB | 1.00 dB |

# RF output power (5180 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---|---|---|---|---|---|
| 5180.000000 | 4.3 | 24.0 | 4.3 | 99.860 | PASS |



# Power Spectral Density (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

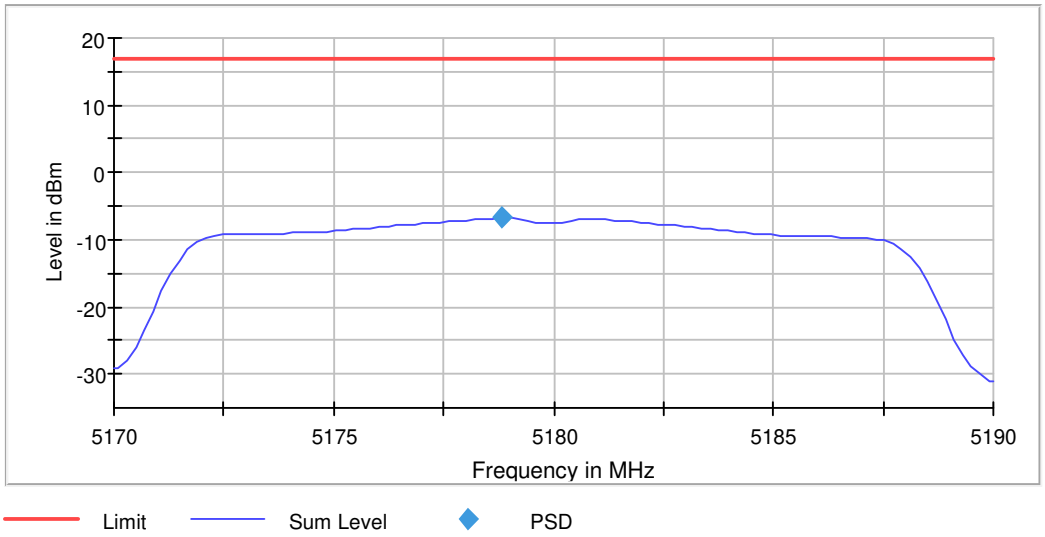
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---|---|---|---|---|
| 5180.000000 | 5178.811881 | -6.763 | 17.0 | PASS |

## Ports

| Port | Duty Cycle (%) |
|---|---|
| 1 | 97.232 |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.17000 GHz | 5.17000 GHz |
| Stop Frequency | 5.19000 GHz | 5.19000 GHz |
| Span | 20.000 MHz | 20.000 MHz |
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 101 | ~ 40 |
| Sweeptime | 2.020 s | 2.020 s |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |

| | | |
|---|---|---|
| **Run** | **2 / max. 15** | **max. 15** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.02 dB** | **0.30 dB** |

# Minimum Emission Bandwidth 6 dB (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

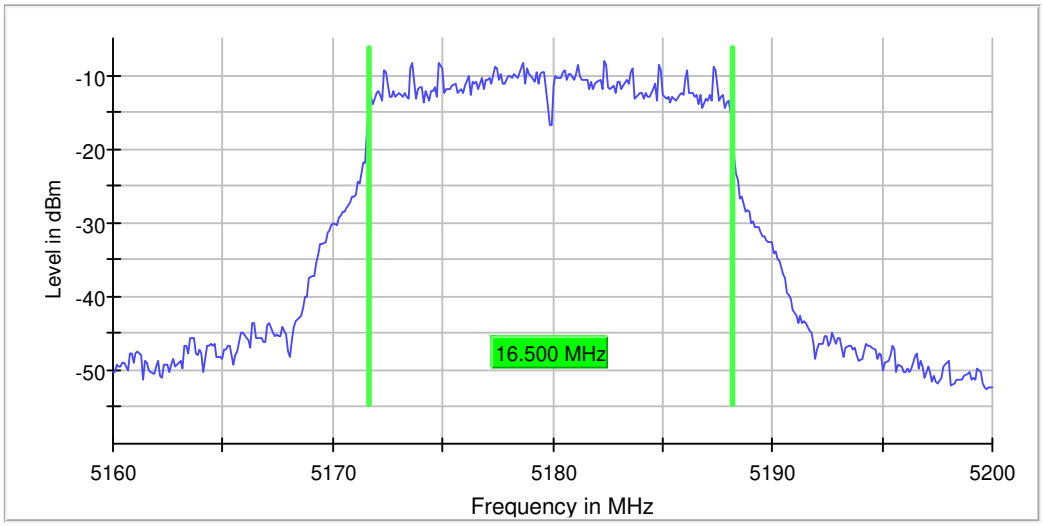
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5180.000000 | 16.500000 | --- | --- | 5171.650000 | 5188.150000 |

**(continuation of the "6 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5180.000000 | -8.2 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.16000 GHz | 5.16000 GHz |
| Stop Frequency | 5.20000 GHz | 5.20000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 100.000 kHz | ~ 100.000 kHz |
| VBW | 300.000 kHz | ~ 300.000 kHz |
| SweepPoints | 400 | ~ 400 |
| Sweeptime | 94.810 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |

| | | |
|---|---|---|
| **Stablevalue** | **0.30 dB** | **0.30 dB** |
| **Run** | **9 / max. 150** | **max. 150** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.13 dB** | **0.30 dB** |

# Occupied Channel Bandwidth 99% (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

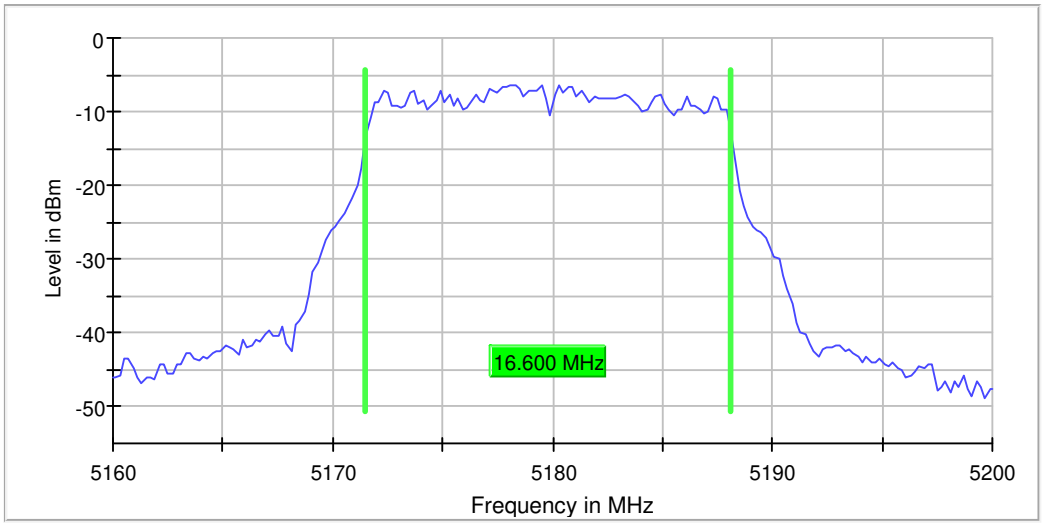
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5180.000000 | 16.600000 | --- | --- | 5171.500000 | 5188.100000 |

**(continuation of the "99 % Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Result |
|---|---|
| 5180.000000 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.16000 GHz | 5.16000 GHz |
| Stop Frequency | 5.20000 GHz | 5.20000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | <= 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 8 / max. 150 | max. 150 |

| | | |
|---|---|---|
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.14 dB** | **0.30 dB** |

# Band Edge low (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

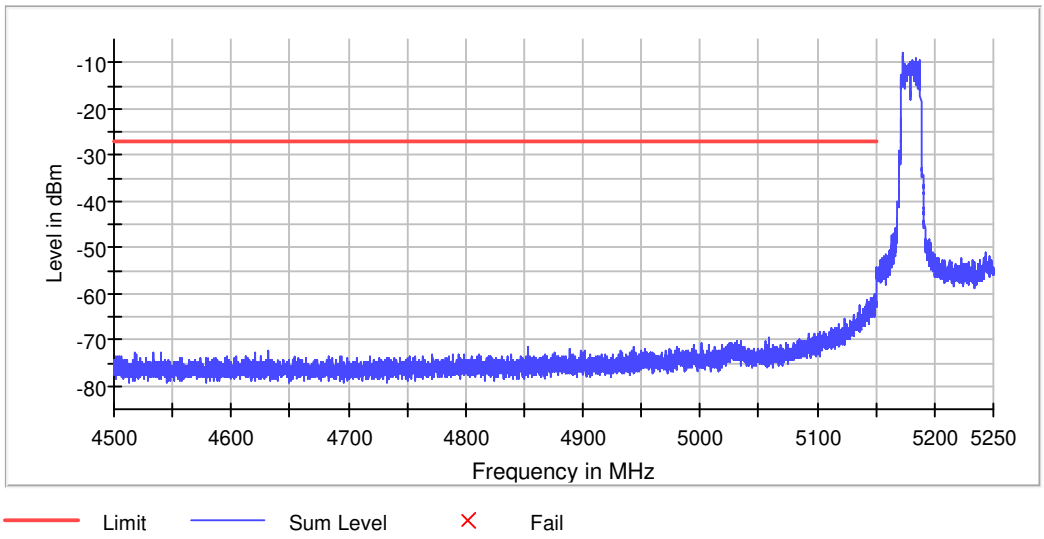
| DUT Frequency (MHz) | Result |
|---|---|
| 5180.000000 | PASS |

## Inband Peak

| Frequency (MHz) | Level (dBm) |
|---|---|
| 5173.625000 | -8.0 |

## Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|---|---|---|---|---|
| 5149.225000 | -60.1 | 33.1 | -27.0 | PASS |
| 5149.175000 | -60.2 | 33.2 | -27.0 | PASS |
| 5149.375000 | -60.5 | 33.5 | -27.0 | PASS |
| 5149.625000 | -60.8 | 33.8 | -27.0 | PASS |
| 5147.725000 | -60.8 | 33.8 | -27.0 | PASS |
| 5149.325000 | -60.8 | 33.8 | -27.0 | PASS |
| 5149.575000 | -60.9 | 33.9 | -27.0 | PASS |
| 5145.675000 | -61.0 | 34.0 | -27.0 | PASS |
| 5148.225000 | -61.2 | 34.2 | -27.0 | PASS |
| 5142.675000 | -61.3 | 34.3 | -27.0 | PASS |
| 5149.275000 | -61.3 | 34.3 | -27.0 | PASS |
| 5145.725000 | -61.4 | 34.4 | -27.0 | PASS |
| 5148.075000 | -61.5 | 34.5 | -27.0 | PASS |
| 5148.275000 | -61.5 | 34.5 | -27.0 | PASS |
| 5149.975000 | -61.5 | 34.5 | -27.0 | PASS |




## Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 100.000 MHz | 100.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 2000 | ~ 2000 |
| Sweeptime | 227.813 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 1 / max. 1 | max. 1 |
| Stable | 0 / 1 | 1 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 4.50000 GHz | 4.50000 GHz |
| Stop Frequency | 5.15000 GHz | 5.15000 GHz |
| Span | 650.000 MHz | 650.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 13000 | ~ 13000 |
| Sweeptime | 13.000 ms | AUTO |
| Reference Level | -20.000 dBm | -20.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 1 / max. 1 | max. 1 |
| Stable | 0 / 1 | 1 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

# Emission Bandwidth 26 dB (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

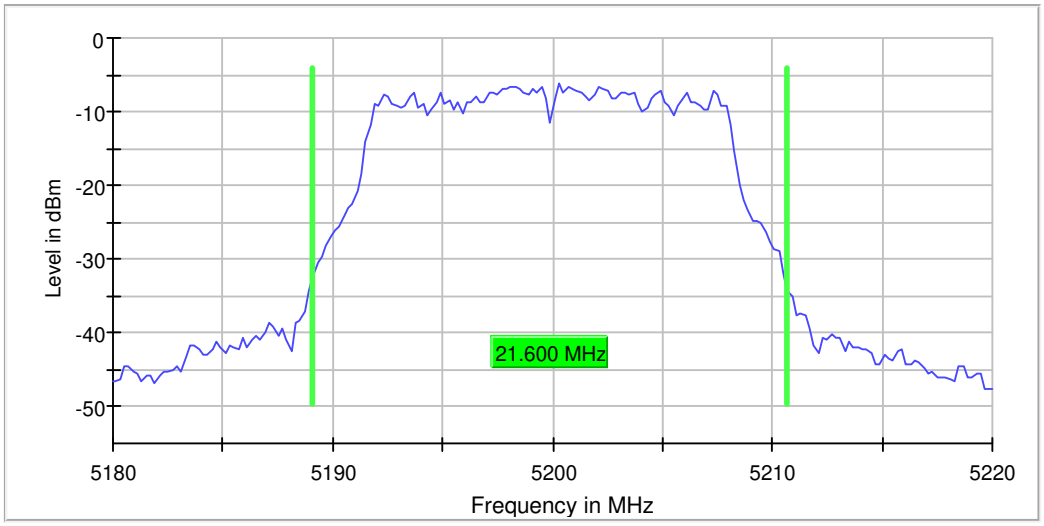
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

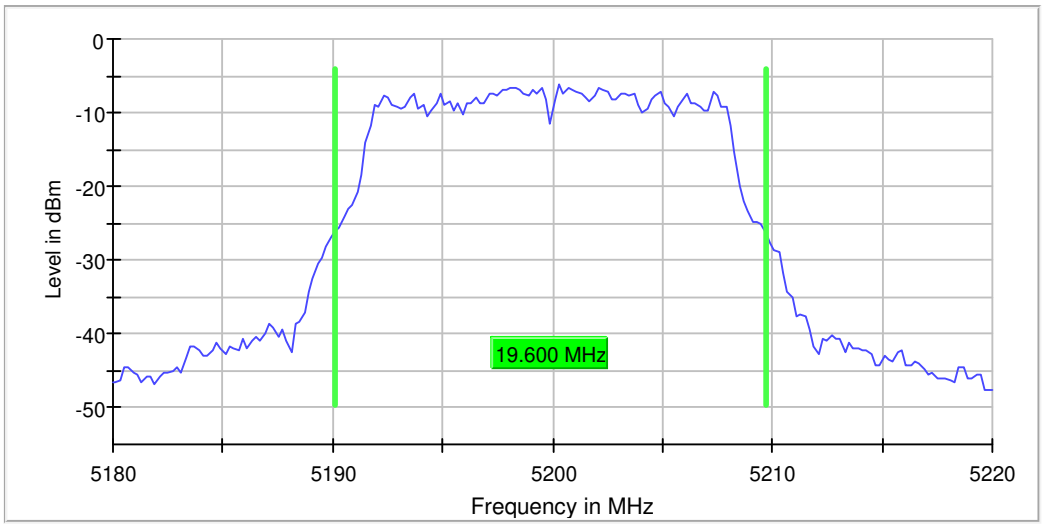
## 26 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5200.000000 | 21.600000 | --- | --- | 5189.100000 | 5210.700000 |

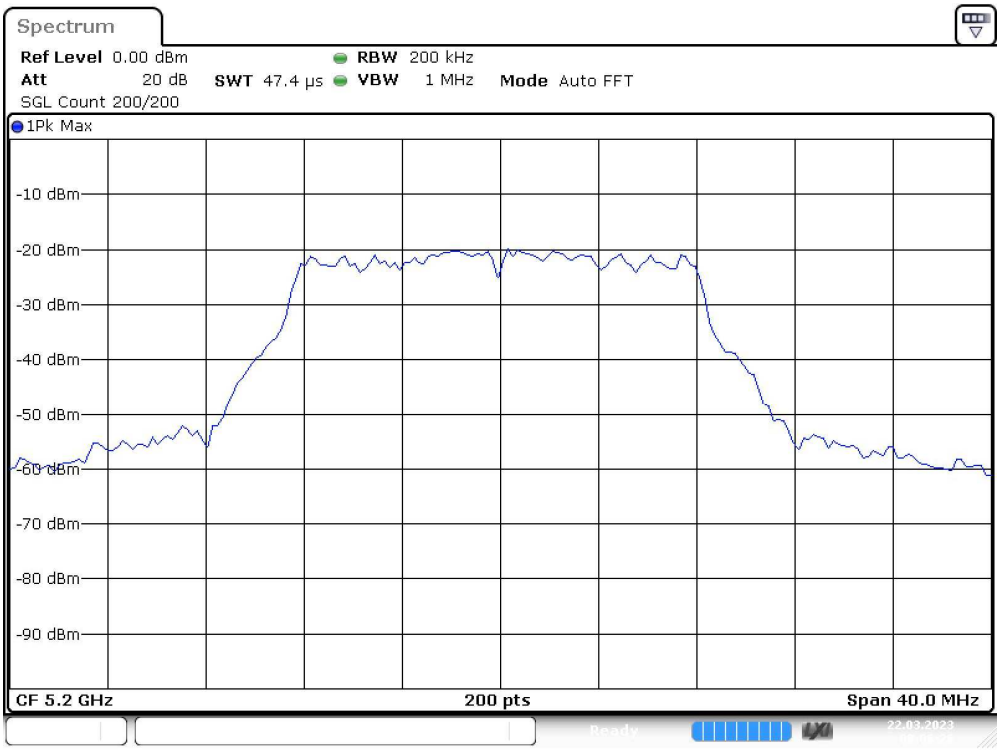
**(continuation of the "26 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5200.000000 | -6.2 | PASS |




0
-10
-20
-30
-40
-50
Level in dBm
19.600 MHz
5180
5190
5200
5210
5220
Frequency in MHz

Bandwidth

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## Measurement

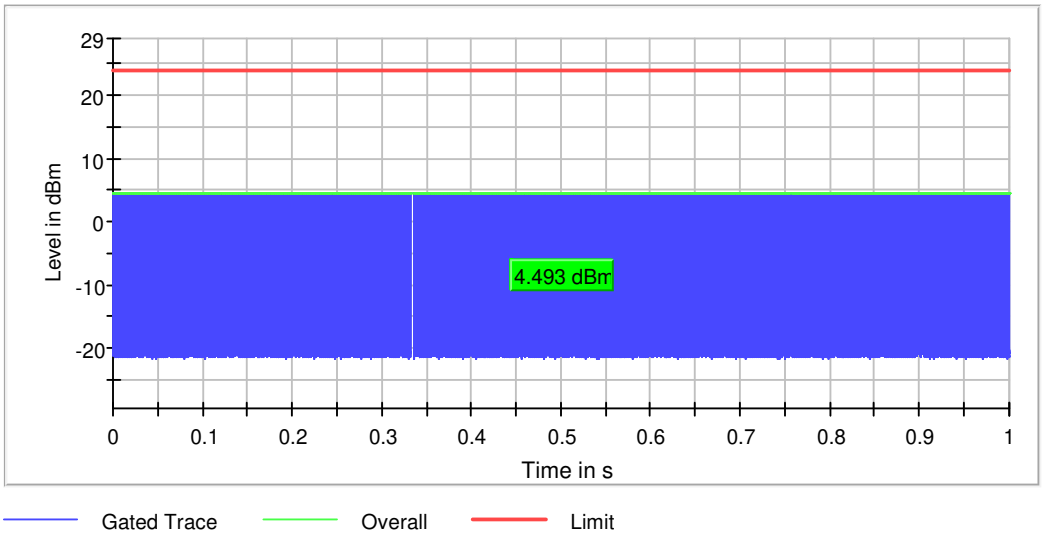
| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.18000 GHz | 5.18000 GHz |
| Stop Frequency | 5.22000 GHz | 5.22000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | ~ 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 9 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.24 dB | 0.30 dB |

# RF output power (5200 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---|---|---|---|---|---|
| 5200.000000 | 4.5 | 24.0 | 4.5 | 99.664 | PASS |



# Power Spectral Density (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

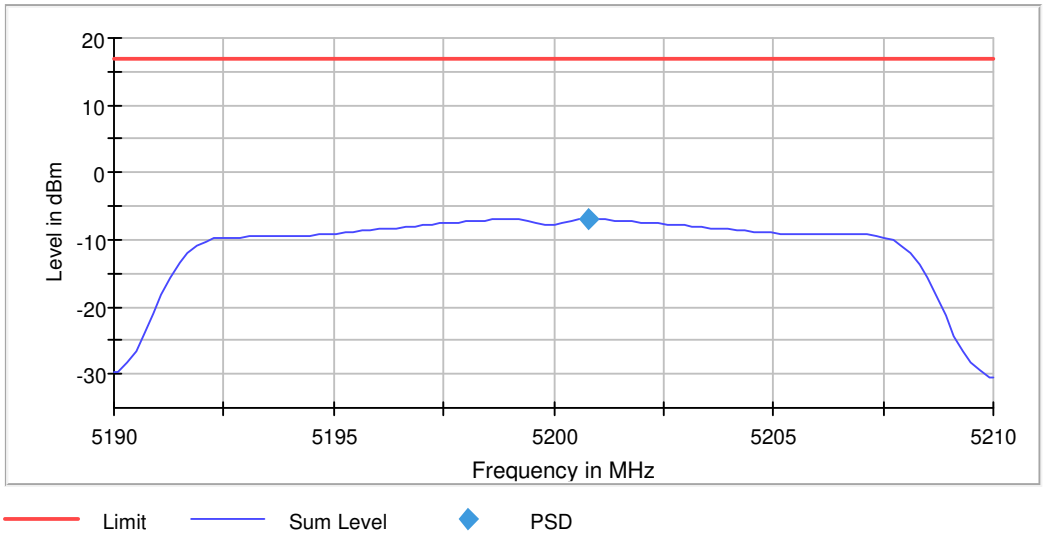
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---|---|---|---|---|
| 5200.000000 | 5200.792079 | -6.921 | 17.0 | PASS |

## Ports

| Port | Duty Cycle (%) |
|---|---|
| 1 | 97.233 |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.19000 GHz | 5.19000 GHz |
| Stop Frequency | 5.21000 GHz | 5.21000 GHz |
| Span | 20.000 MHz | 20.000 MHz |
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 101 | ~ 40 |
| Sweeptime | 2.020 s | 2.020 s |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |

| | | |
|---|---|---|
| **Run** | **2 / max. 15** | **max. 15** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.01 dB** | **0.30 dB** |

# Minimum Emission Bandwidth 6 dB (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

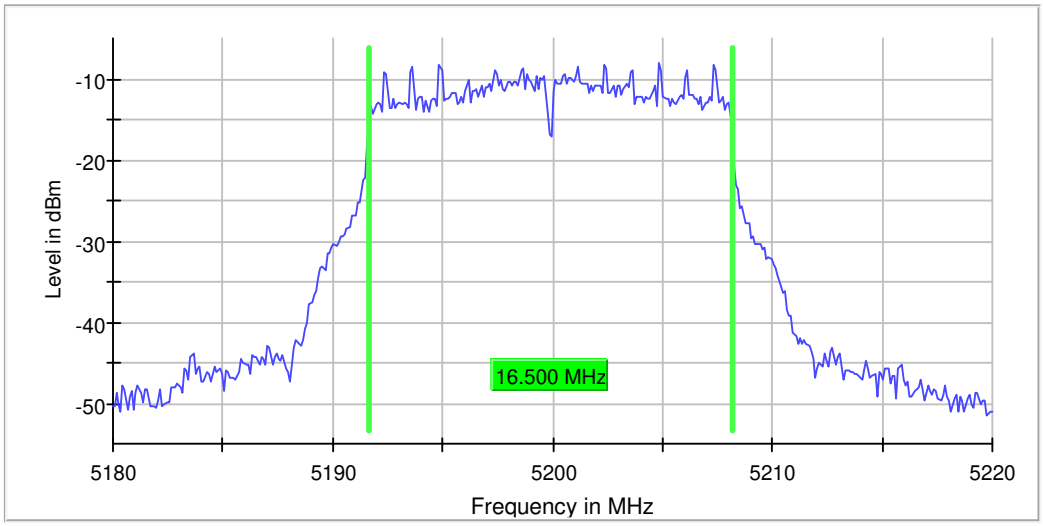
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5200.000000 | 16.500000 | --- | --- | 5191.650000 | 5208.150000 |

**(continuation of the "6 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5200.000000 | -8.1 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.18000 GHz | 5.18000 GHz |
| Stop Frequency | 5.22000 GHz | 5.22000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 100.000 kHz | ~ 100.000 kHz |
| VBW | 300.000 kHz | ~ 300.000 kHz |
| SweepPoints | 400 | ~ 400 |
| Sweeptime | 94.810 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |

| | | |
|---|---|---|
| **Stablevalue** | **0.30 dB** | **0.30 dB** |
| **Run** | **10 / max. 150** | **max. 150** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.17 dB** | **0.30 dB** |

# Occupied Channel Bandwidth 99% (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

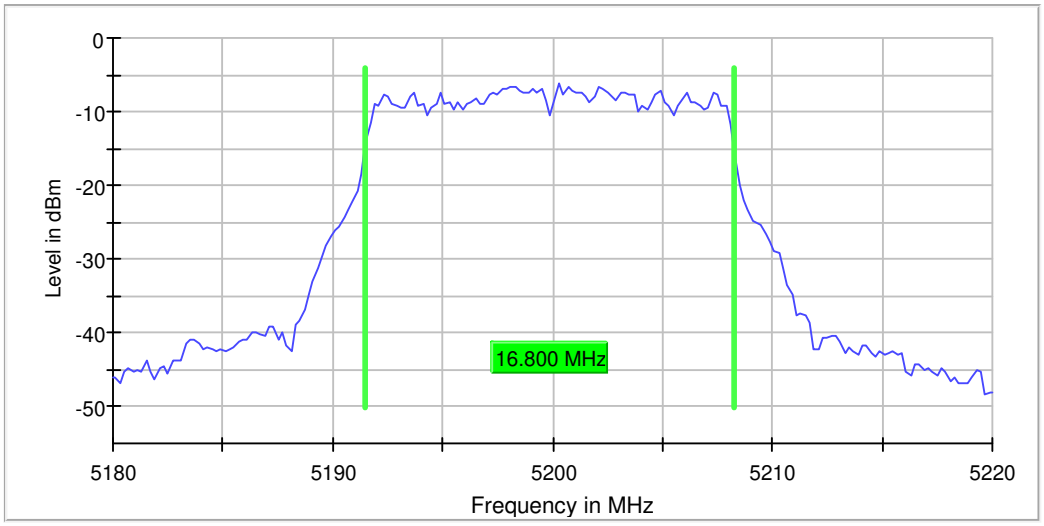
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5200.000000 | 16.800000 | --- | --- | 5191.500000 | 5208.300000 |

**(continuation of the "99 % Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Result |
|---|---|
| 5200.000000 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.18000 GHz | 5.18000 GHz |
| Stop Frequency | 5.22000 GHz | 5.22000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | <= 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 11 / max. 150 | max. 150 |

| | | |
|---|---|---|
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.27 dB** | **0.30 dB** |

# Emission Bandwidth 26 dB (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

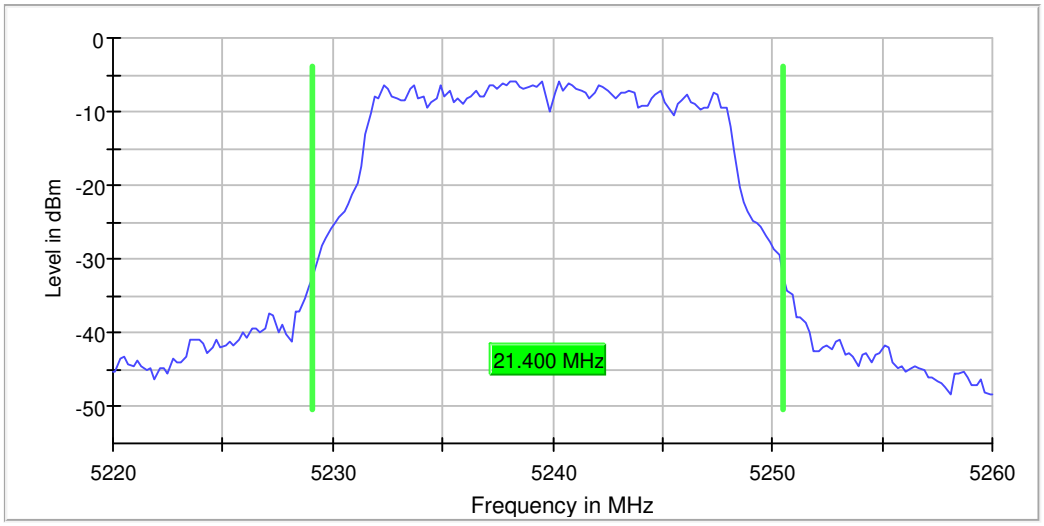
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

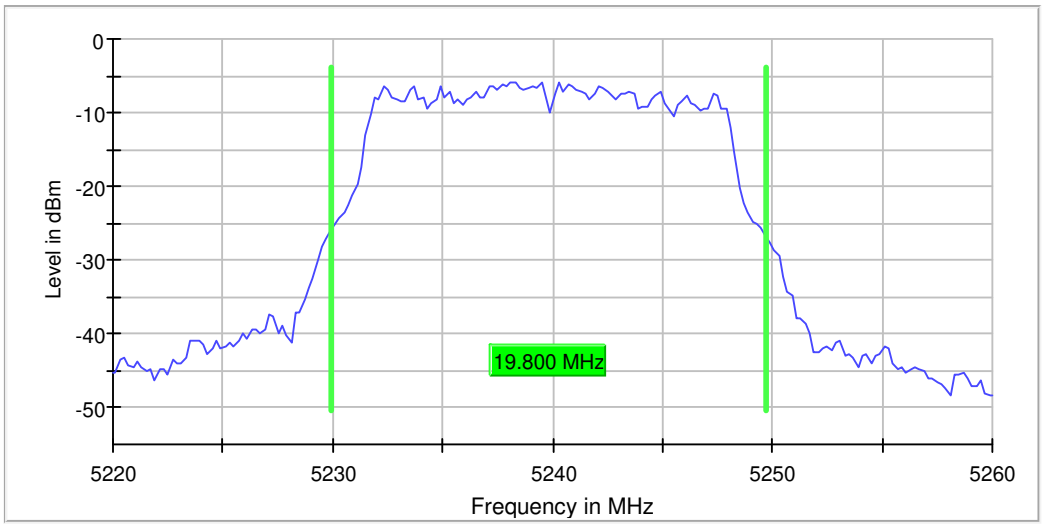
## 26 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5240.000000 | 21.400000 | --- | --- | 5229.100000 | 5250.500000 |

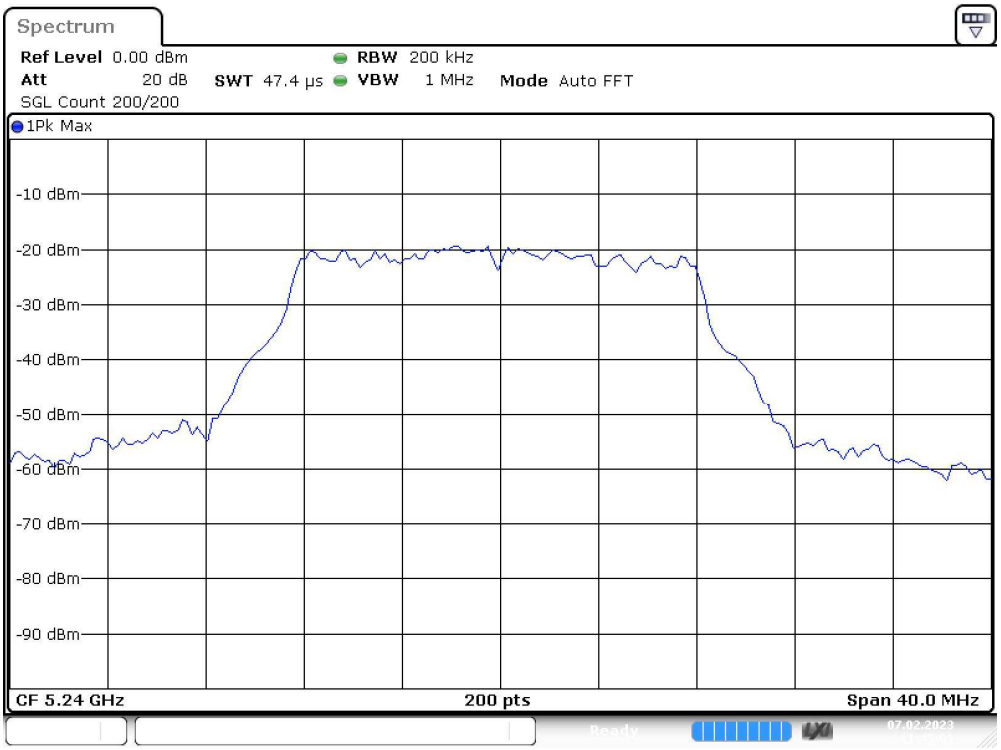
**(continuation of the "26 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5240.000000 | -5.8 | PASS |




0
-10
-20
-30
-40
-50
Level in dBm
19.800 MHz
5220
5230
5240
5250
5260
Frequency in MHz

Bandwidth




Date: 7.FEB.2023 11:45:03

## Measurement

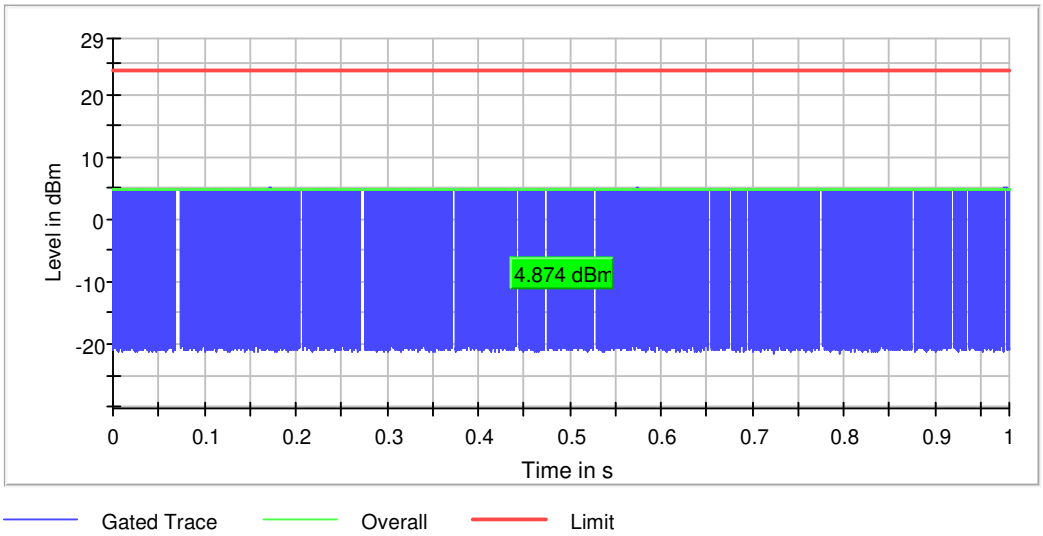
| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.22000 GHz | 5.22000 GHz |
| Stop Frequency | 5.26000 GHz | 5.26000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | ~ 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 8 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.13 dB | 0.30 dB |

# RF output power (5240 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---|---|---|---|---|---|
| 5240.000000 | 4.9 | 24.0 | 4.9 | 97.919 | PASS |



# Power Spectral Density (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

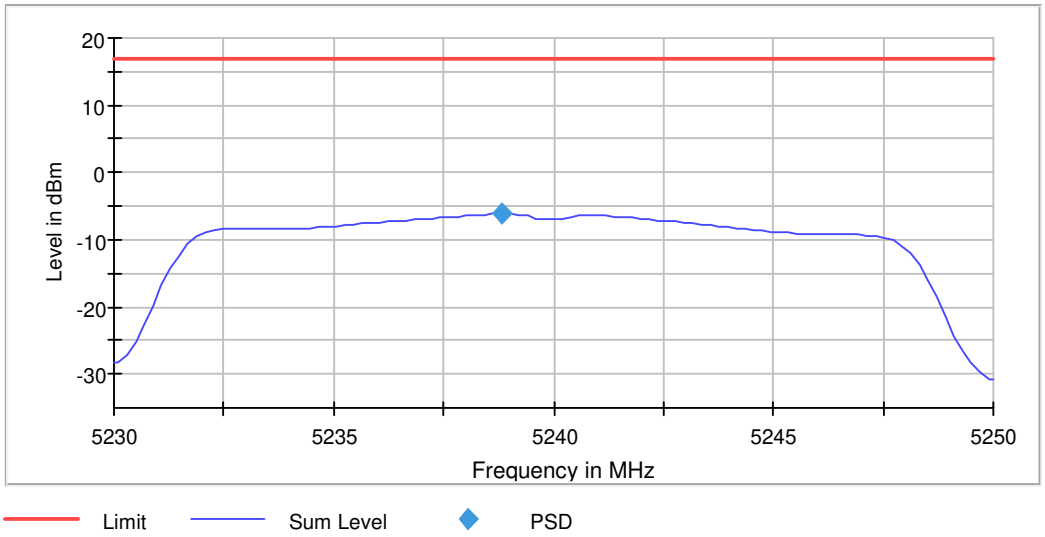
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---|---|---|---|---|
| 5240.000000 | 5238.811881 | -6.132 | 17.0 | PASS |

## Ports

| Port | Duty Cycle (%) |
|---|---|
| 1 | 97.234 |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.23000 GHz | 5.23000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 20.000 MHz | 20.000 MHz |
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 101 | ~ 40 |
| Sweeptime | 2.020 s | 2.020 s |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |

| | | |
|---|---|---|
| **Run** | **2 / max. 15** | **max. 15** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.03 dB** | **0.30 dB** |

# Minimum Emission Bandwidth 6 dB (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

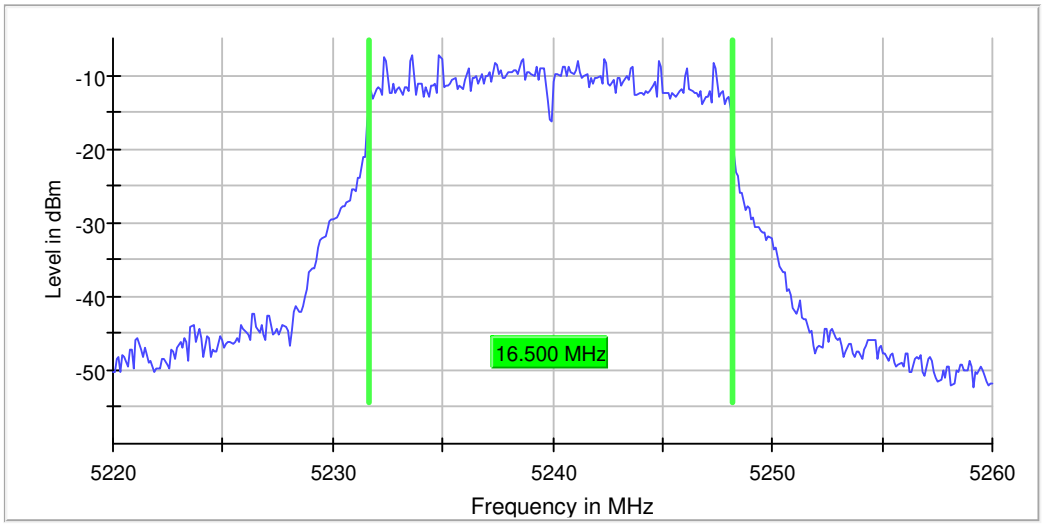
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5240.000000 | 16.500000 | --- | --- | 5231.650000 | 5248.150000 |

**(continuation of the "6 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5240.000000 | -7.2 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.22000 GHz | 5.22000 GHz |
| Stop Frequency | 5.26000 GHz | 5.26000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 100.000 kHz | ~ 100.000 kHz |
| VBW | 300.000 kHz | ~ 300.000 kHz |
| SweepPoints | 400 | ~ 400 |
| Sweeptime | 94.810 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |

| | | |
|---|---|---|
| **Stablevalue** | **0.30 dB** | **0.30 dB** |
| **Run** | **8 / max. 150** | **max. 150** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.19 dB** | **0.30 dB** |

# Occupied Channel Bandwidth 99% (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

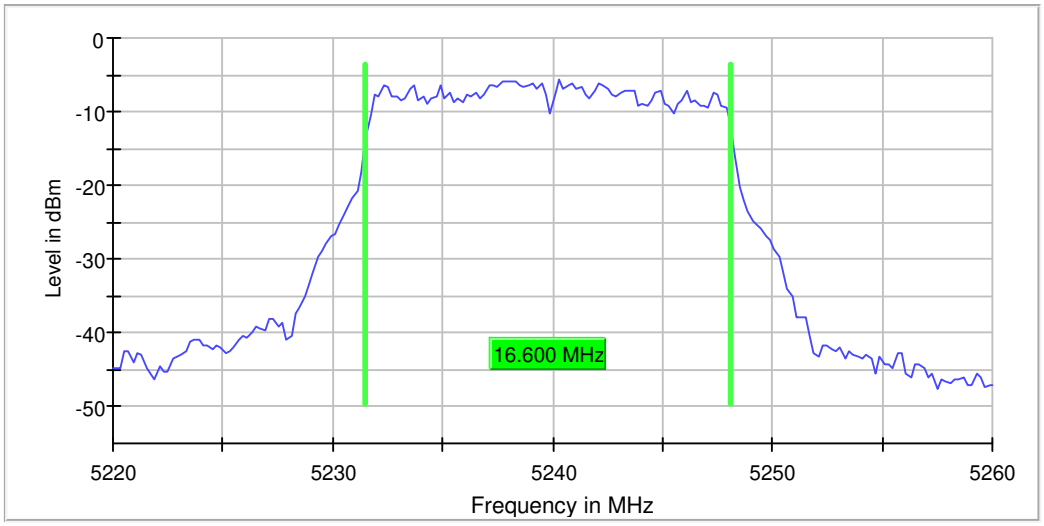
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5240.000000 | 16.600000 | --- | --- | 5231.500000 | 5248.100000 |

**(continuation of the "99 % Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Result |
|---|---|
| 5240.000000 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.22000 GHz | 5.22000 GHz |
| Stop Frequency | 5.26000 GHz | 5.26000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | <= 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 10 / max. 150 | max. 150 |

| | | |
|---|---|---|
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.19 dB** | **0.30 dB** |

# Band Edge high (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

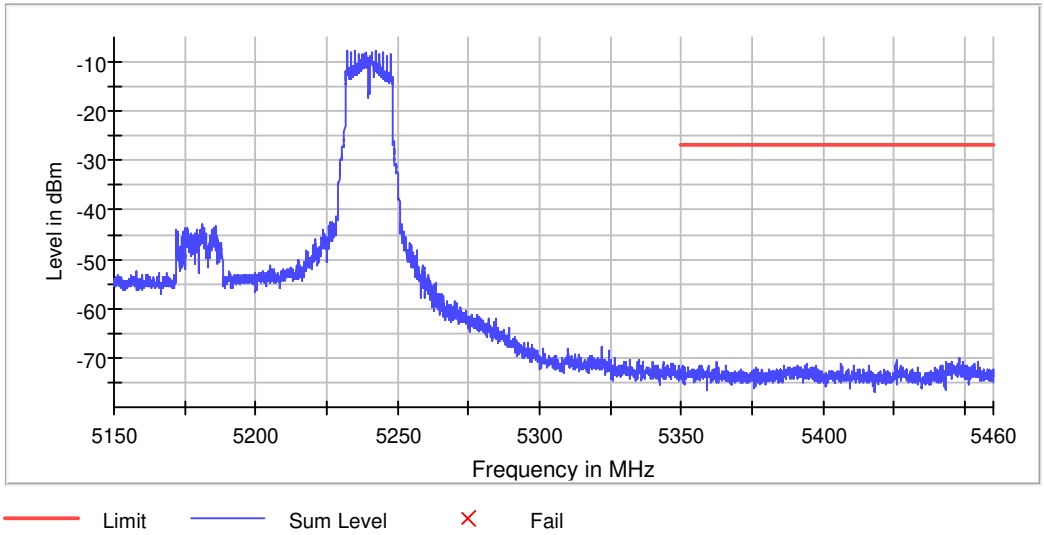
| DUT Frequency (MHz) | Result |
|---|---|
| 5240.000000 | PASS |

## Inband Peak

| Frequency (MHz) | Level (dBm) |
|---|---|
| 5234.875000 | -7.6 |

## Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|---|---|---|---|---|
| 5447.825000 | -70.2 | 43.2 | -27.0 | PASS |
| 5425.825000 | -70.6 | 43.6 | -27.0 | PASS |
| 5449.525000 | -70.6 | 43.6 | -27.0 | PASS |
| 5447.775000 | -70.6 | 43.6 | -27.0 | PASS |
| 5454.875000 | -70.8 | 43.8 | -27.0 | PASS |
| 5454.925000 | -70.8 | 43.8 | -27.0 | PASS |
| 5443.525000 | -70.9 | 43.9 | -27.0 | PASS |
| 5445.675000 | -70.9 | 43.9 | -27.0 | PASS |
| 5362.325000 | -70.9 | 43.9 | -27.0 | PASS |
| 5449.575000 | -71.0 | 44.0 | -27.0 | PASS |
| 5444.525000 | -71.1 | 44.1 | -27.0 | PASS |
| 5453.375000 | -71.1 | 44.1 | -27.0 | PASS |
| 5444.575000 | -71.1 | 44.1 | -27.0 | PASS |
| 5406.525000 | -71.2 | 44.2 | -27.0 | PASS |
| 5443.925000 | -71.2 | 44.2 | -27.0 | PASS |




## Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 100.000 MHz | 100.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 2000 | ~ 2000 |
| Sweeptime | 227.813 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 14 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.25 dB | 0.50 dB |

## Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.25000 GHz | 5.25000 GHz |
| Stop Frequency | 5.46000 GHz | 5.46000 GHz |
| Span | 210.000 MHz | 210.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 4200 | ~ 4200 |
| Sweeptime | 474.609 µs | AUTO |
| Reference Level | -20.000 dBm | -20.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 5 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.22 dB | 0.50 dB |

# FCC 15.407 2015

## DUT Information

Frequencies

| | | |
|---|---|---|
| WLAN CH 36 (5180 MHz) | WLAN CH 40 (5200 MHz) | WLAN CH 48 (5240 MHz) |
| WLAN CH 149 (5745 MHz) | WLAN CH 157 (5785 MHz) | WLAN CH 165 (5825 MHz) |
| WLAN CH 52 (5260 MHz) | WLAN CH 56 (5280 MHz) | WLAN CH 64 (5320 MHz) |
| WLAN CH 100 (5500 MHz) | WLAN CH 120 (5600 MHz) | WLAN CH 140 (5700 MHz) |
| WLAN CH 116 (5580 MHz) | WLAN CH 151 (5755 MHz) | WLAN CH 159 (5795 MHz) |
| WLAN CH 155 (5775 MHz) | | |

Bandwidths

| | | |
|---|---|---|
| 20 MHz (20 MHz) | 40 MHz (40 MHz) | 80 MHz (80 MHz) |

Power

20.000 dBm (20 dBm)

Beamforming Gain

| | |
|---|---|
| 20.000 dBm (20 dBm) | 0 dB |

Gain Tables

| | |
|---|---|
| 20.000 dBm (20 dBm) | Port 1: 0dBi; |

DUT Settings

| | |
|---|---|
| No. of transmission chains | 1 |
| DFS capability | Yes |
| DFS Mode | Master |
| Equipment Type | Portable |
| TPC | No |

## Hardware Setup: WMS Measurements\TS8997

| | |
|---|---|
| Spectrum Analyzer: | SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40 |
| Vector Generator: | VG SMBV100B (VG SMBV100B) @ VISA (ADR TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33 |
| Generator: | SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015 |
| OSP: | OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2 |

## Summary

| Test | Frequency (MHz) | Nominal Power (dBm) | Nominal Bandwidth (MHz) | Result |
|---|---|---|---|---|
| Emission Bandwidth 26 dB | 5180.000 | 20.0 | 20.000000 | PASS |
| RF output power | 5180.000 | 20.0 | 20.000000 | PASS |
| Power Spectral Density | 5180.000 | 20.0 | 20.000000 | PASS |
| Minimum Emission Bandwidth 6 dB | 5180.000 | 20.0 | 20.000000 | PASS |
| Occupied Channel Bandwidth 99% | 5180.000 | 20.0 | 20.000000 | PASS |
| Band Edge low | 5180.000 | 20.0 | 20.000000 | PASS |
| Emission Bandwidth 26 dB | 5200.000 | 20.0 | 20.000000 | PASS |
| RF output power | 5200.000 | 20.0 | 20.000000 | PASS |
| Power Spectral Density | 5200.000 | 20.0 | 20.000000 | PASS |
| Minimum Emission Bandwidth 6 dB | 5200.000 | 20.0 | 20.000000 | PASS |
| Occupied Channel Bandwidth 99% | 5200.000 | 20.0 | 20.000000 | PASS |
| Emission Bandwidth 26 dB | 5240.000 | 20.0 | 20.000000 | PASS |
| RF output power | 5240.000 | 20.0 | 20.000000 | PASS |
| Power Spectral Density | 5240.000 | 20.0 | 20.000000 | PASS |
| Minimum Emission Bandwidth 6 dB | 5240.000 | 20.0 | 20.000000 | PASS |
| Occupied Channel Bandwidth 99% | 5240.000 | 20.0 | 20.000000 | PASS |
| Band Edge high | 5240.000 | 20.0 | 20.000000 | PASS |

# Emission Bandwidth 26 dB (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

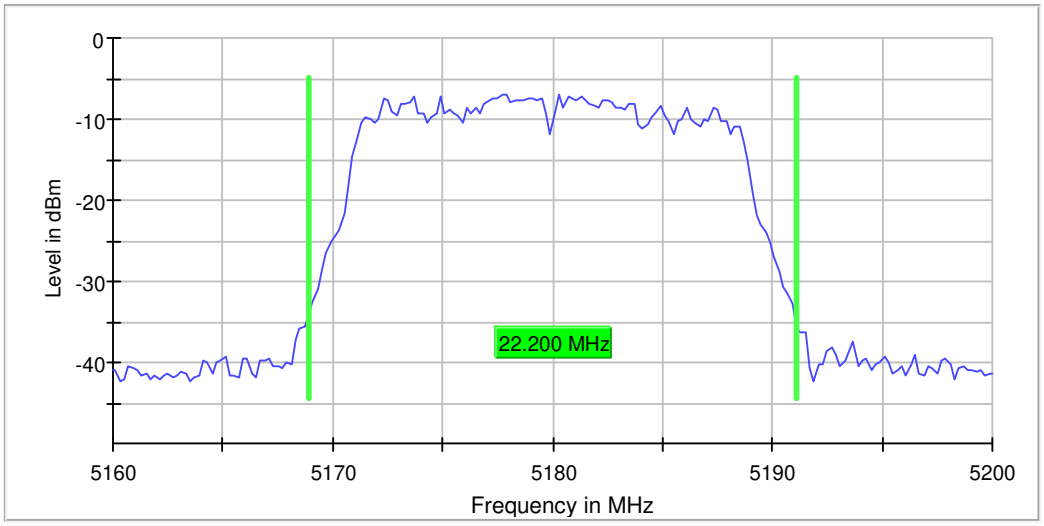
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

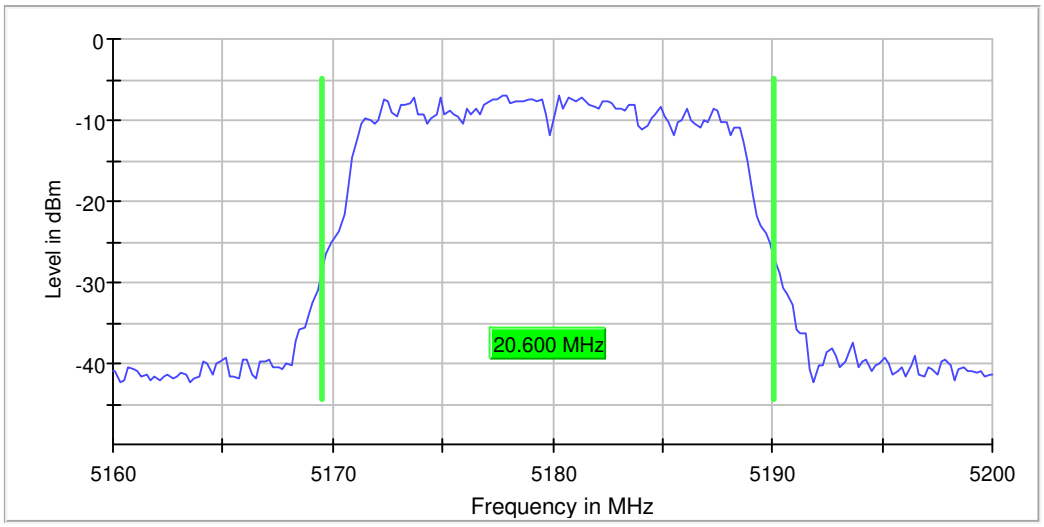
## 26 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5180.000000 | 22.200000 | --- | --- | 5168.900000 | 5191.100000 |

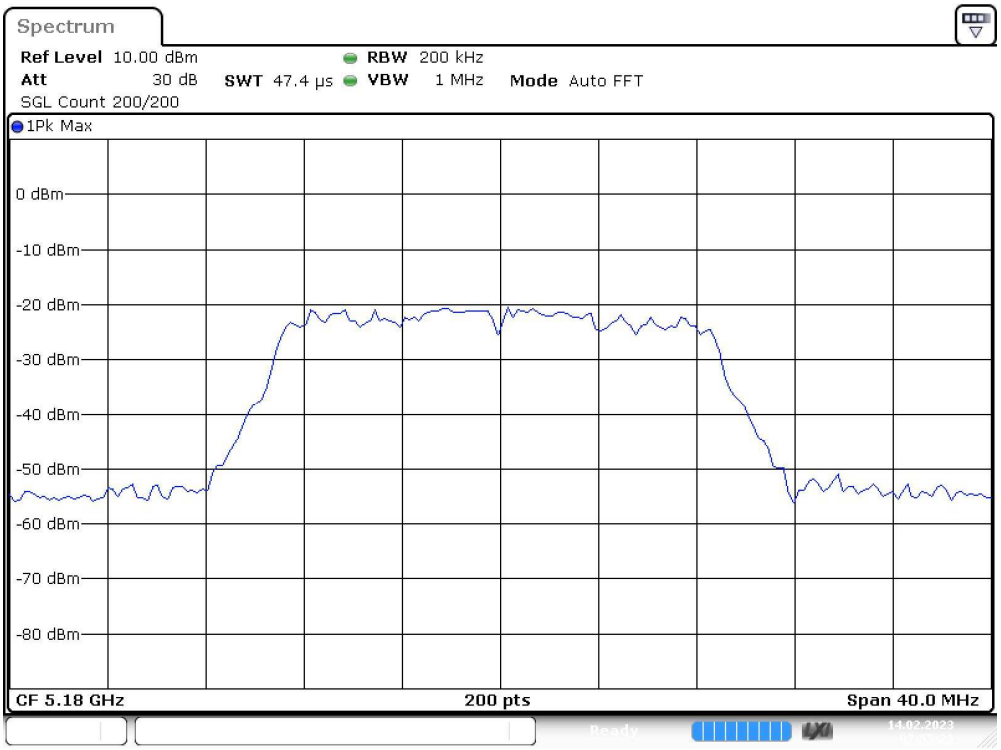
**(continuation of the "26 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5180.000000 | -6.9 | PASS |




0
-10
-20
-30
-40
Level in dBm
20.600 MHz
5160
5170
5180
5190
5200
Frequency in MHz

Bandwidth




Date: 14.FEB.2023 07:55:24

## Measurement

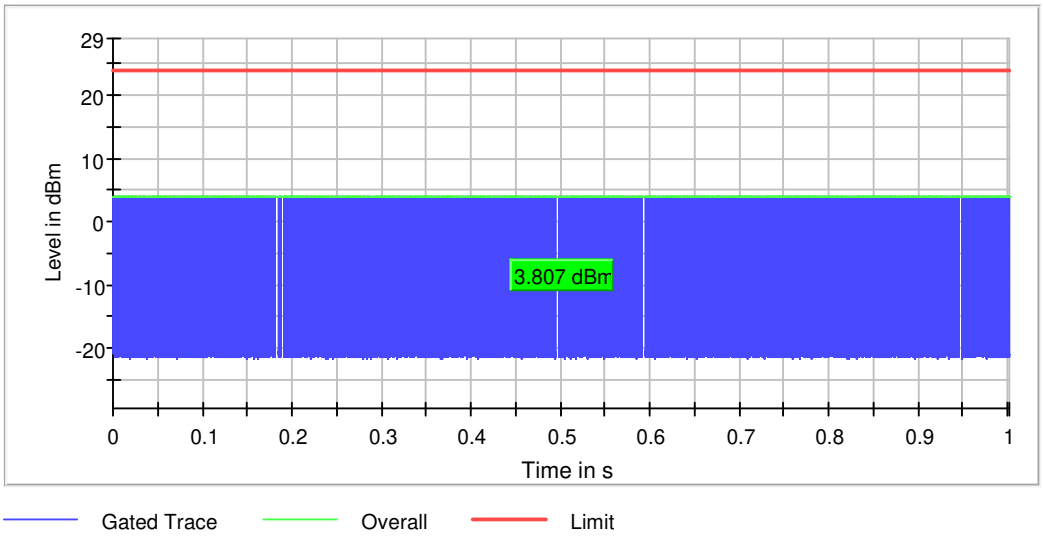
| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.16000 GHz | 5.16000 GHz |
| Stop Frequency | 5.20000 GHz | 5.20000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | ~ 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 1.00 dB | 1.00 dB |
| Run | 6 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.89 dB | 1.00 dB |

# RF output power (5180 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---|---|---|---|---|---|
| 5180.000000 | 3.8 | 24.0 | 3.8 | 99.661 | PASS |



# Power Spectral Density (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

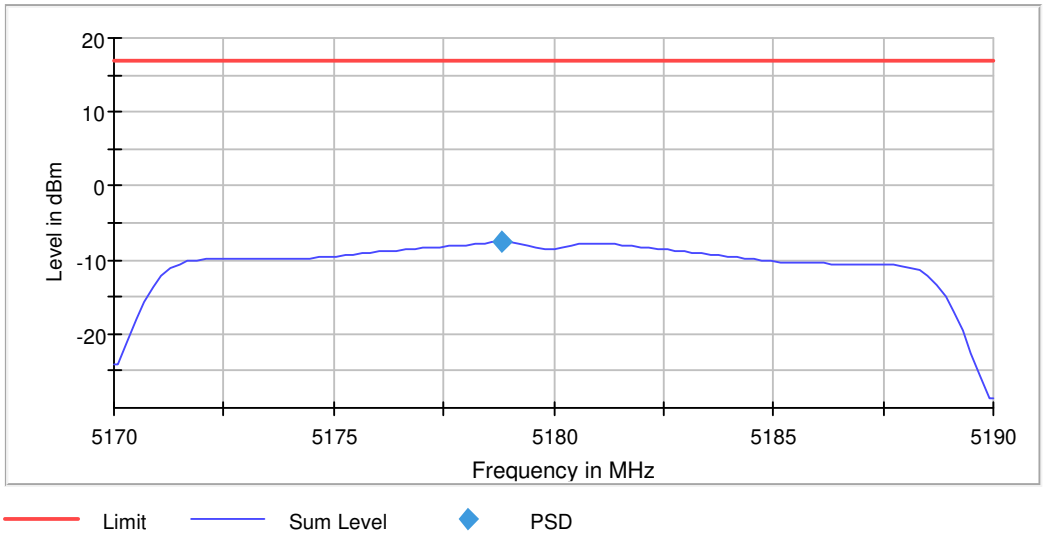
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---|---|---|---|---|
| 5180.000000 | 5178.811881 | -7.600 | 17.0 | PASS |

## Ports

| Port | Duty Cycle (%) |
|---|---|
| 1 | 97.072 |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.17000 GHz | 5.17000 GHz |
| Stop Frequency | 5.19000 GHz | 5.19000 GHz |
| Span | 20.000 MHz | 20.000 MHz |
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 101 | ~ 40 |
| Sweeptime | 2.020 s | 2.020 s |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |

| | | |
|---|---|---|
| **Run** | **2 / max. 15** | **max. 15** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.05 dB** | **0.30 dB** |

# Minimum Emission Bandwidth 6 dB (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

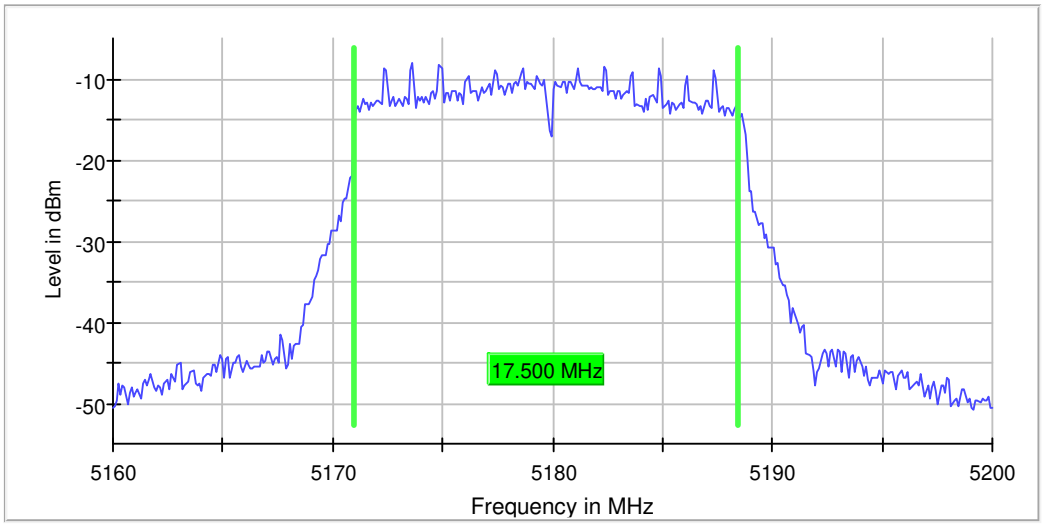
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5180.000000 | 17.500000 | --- | --- | 5170.950000 | 5188.450000 |

**(continuation of the "6 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5180.000000 | -8.1 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.16000 GHz | 5.16000 GHz |
| Stop Frequency | 5.20000 GHz | 5.20000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 100.000 kHz | ~ 100.000 kHz |
| VBW | 300.000 kHz | ~ 300.000 kHz |
| SweepPoints | 400 | ~ 400 |
| Sweeptime | 94.810 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |

| | | |
|---|---|---|
| **Stablevalue** | **0.30 dB** | **0.30 dB** |
| **Run** | **20 / max. 150** | **max. 150** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.29 dB** | **0.30 dB** |

# Occupied Channel Bandwidth 99% (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

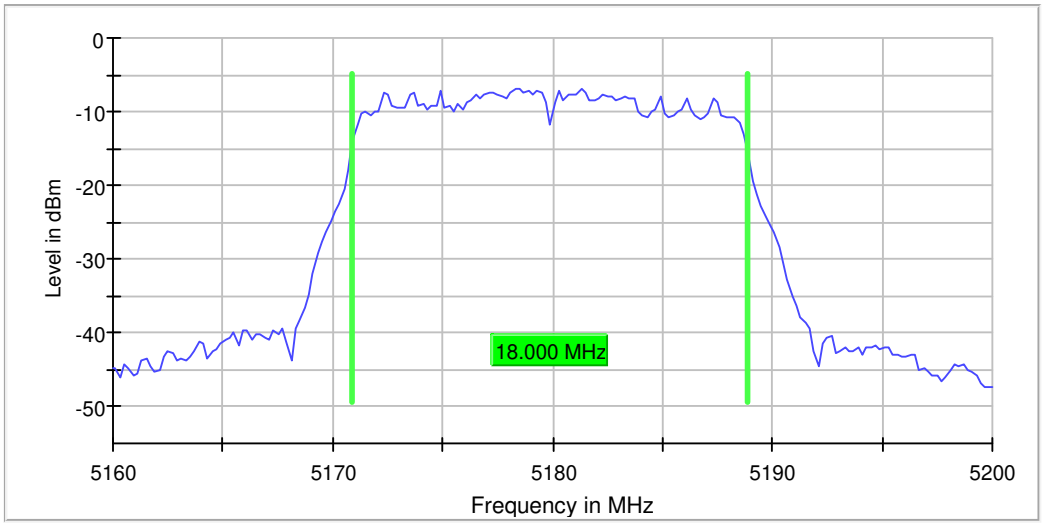
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5180.000000 | 18.000000 | --- | --- | 5170.900000 | 5188.900000 |

**(continuation of the "99 % Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Result |
|---|---|
| 5180.000000 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.16000 GHz | 5.16000 GHz |
| Stop Frequency | 5.20000 GHz | 5.20000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | <= 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 9 / max. 150 | max. 150 |

| | | |
|---|---|---|
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.26 dB** | **0.30 dB** |

# Band Edge low (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

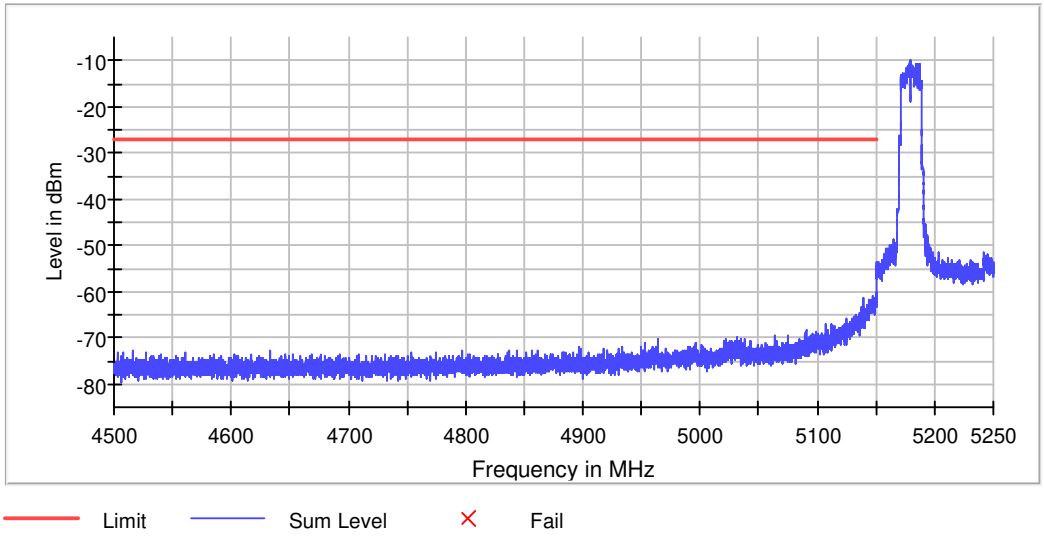
| DUT Frequency (MHz) | Result |
|---|---|
| 5180.000000 | PASS |

## Inband Peak

| Frequency (MHz) | Level (dBm) |
|---|---|
| 5178.575000 | -9.9 |

## Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|---|---|---|---|---|
| 5149.925000 | -60.0 | 33.0 | -27.0 | PASS |
| 5149.875000 | -60.5 | 33.5 | -27.0 | PASS |
| 5147.425000 | -61.0 | 34.0 | -27.0 | PASS |
| 5147.375000 | -61.1 | 34.1 | -27.0 | PASS |
| 5149.475000 | -61.1 | 34.1 | -27.0 | PASS |
| 5149.675000 | -61.3 | 34.3 | -27.0 | PASS |
| 5138.575000 | -61.4 | 34.4 | -27.0 | PASS |
| 5149.525000 | -61.4 | 34.4 | -27.0 | PASS |
| 5145.175000 | -61.5 | 34.5 | -27.0 | PASS |
| 5147.925000 | -61.6 | 34.6 | -27.0 | PASS |
| 5144.275000 | -61.6 | 34.6 | -27.0 | PASS |
| 5144.225000 | -61.6 | 34.6 | -27.0 | PASS |
| 5149.725000 | -61.6 | 34.6 | -27.0 | PASS |
| 5149.625000 | -61.7 | 34.7 | -27.0 | PASS |
| 5145.225000 | -61.8 | 34.8 | -27.0 | PASS |




## Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 100.000 MHz | 100.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 2000 | ~ 2000 |
| Sweeptime | 227.813 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 1 / max. 1 | max. 1 |
| Stable | 0 / 1 | 1 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 4.50000 GHz | 4.50000 GHz |
| Stop Frequency | 5.15000 GHz | 5.15000 GHz |
| Span | 650.000 MHz | 650.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 13000 | ~ 13000 |
| Sweeptime | 13.000 ms | AUTO |
| Reference Level | -20.000 dBm | -20.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 1 / max. 1 | max. 1 |
| Stable | 0 / 1 | 1 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

# Emission Bandwidth 26 dB (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

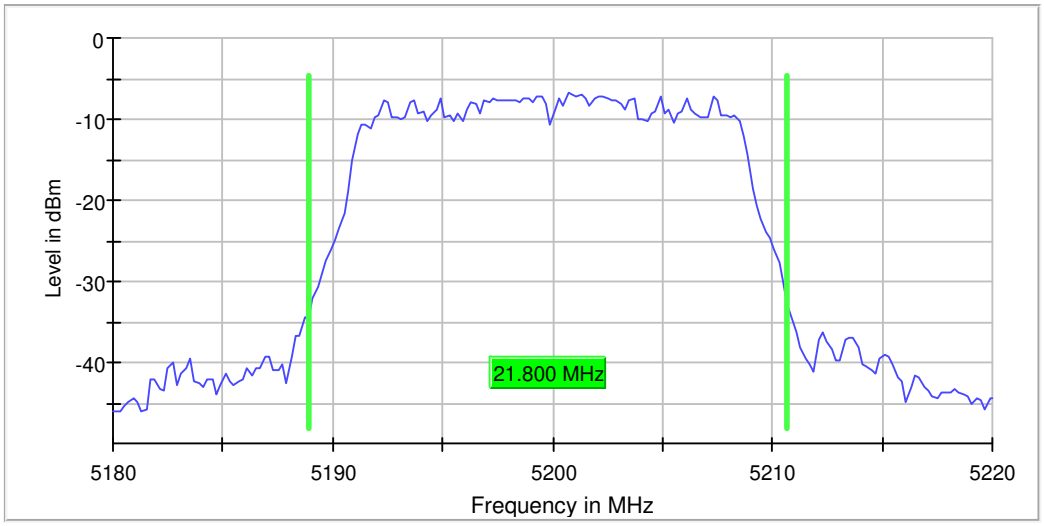
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

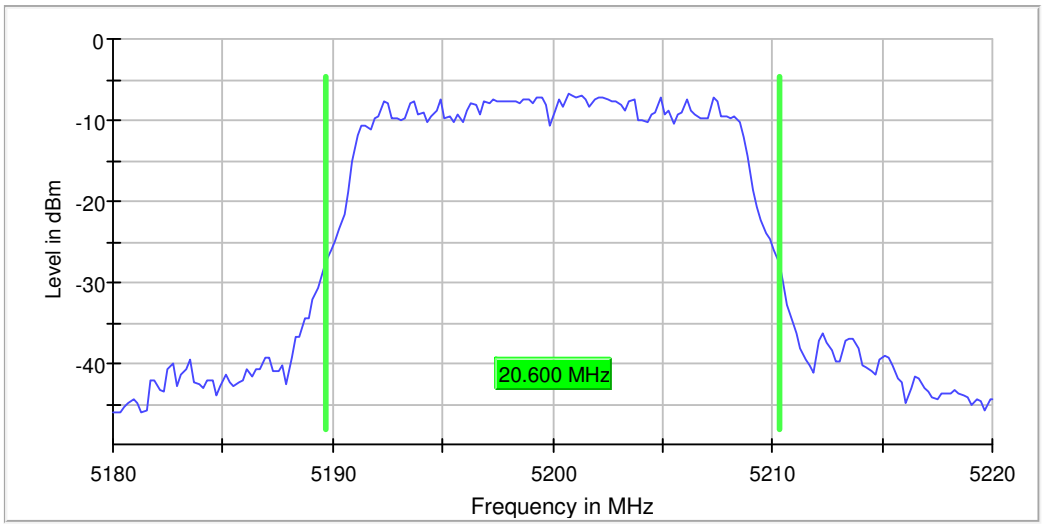
## 26 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5200.000000 | 21.800000 | --- | --- | 5188.900000 | 5210.700000 |

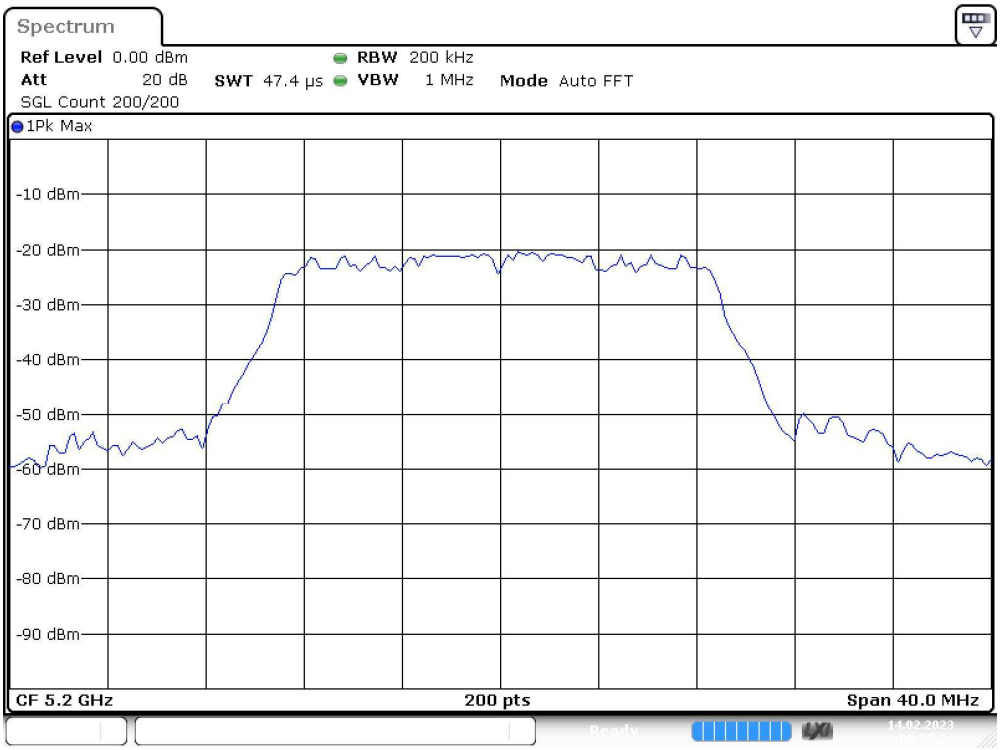
**(continuation of the "26 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5200.000000 | -6.7 | PASS |




0
-10
-20
-30
-40
Level in dBm
20.600 MHz
5180
5190
5200
5210
5220
Frequency in MHz

Bandwidth

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## Measurement

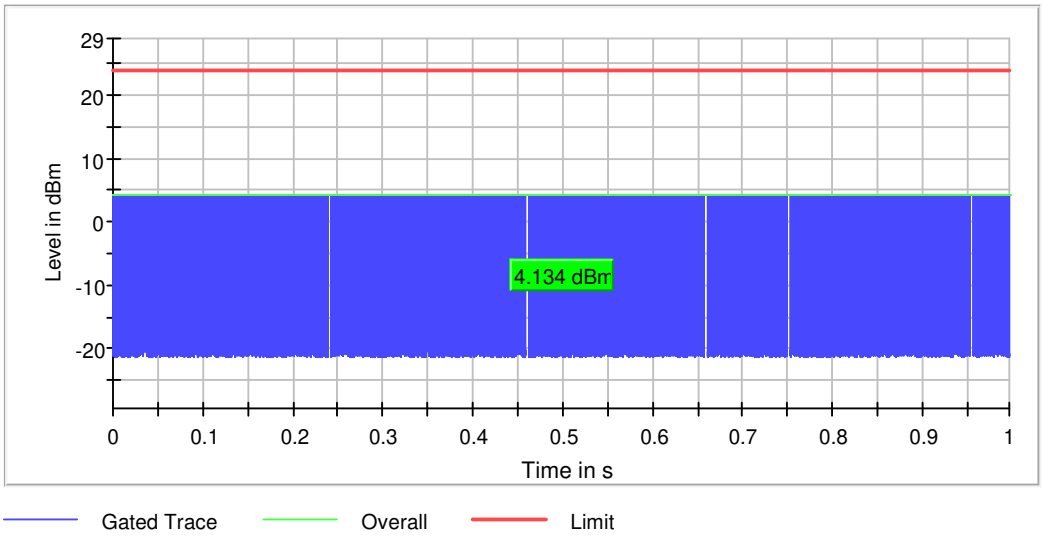
| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.18000 GHz | 5.18000 GHz |
| Stop Frequency | 5.22000 GHz | 5.22000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | ~ 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 12 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.17 dB | 0.30 dB |

# RF output power (5200 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---|---|---|---|---|---|
| 5200.000000 | 4.1 | 24.0 | 4.1 | 99.007 | PASS |



# Power Spectral Density (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

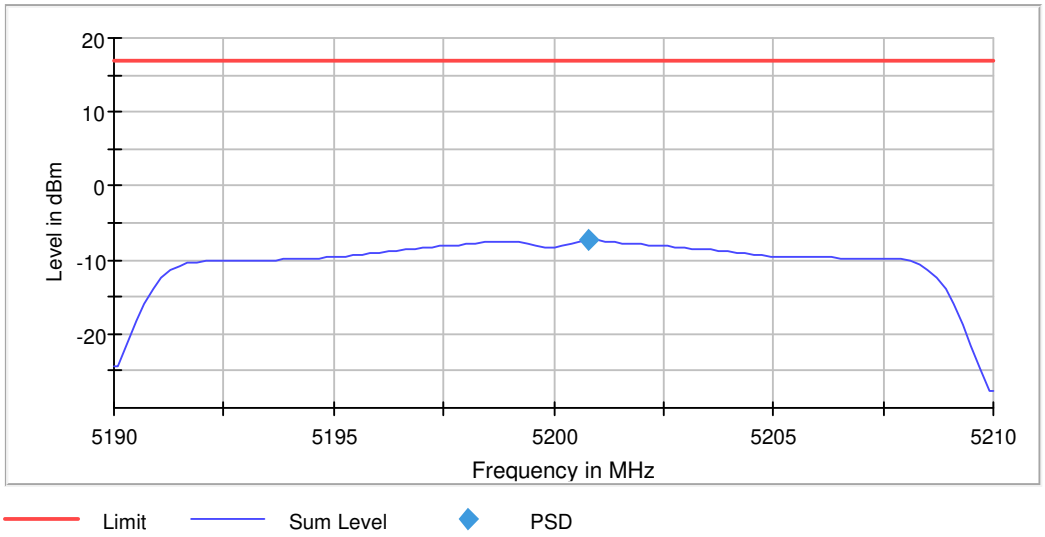
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---|---|---|---|---|
| 5200.000000 | 5200.792079 | -7.406 | 17.0 | PASS |

## Ports

| Port | Duty Cycle (%) |
|---|---|
| 1 | 97.068 |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.19000 GHz | 5.19000 GHz |
| Stop Frequency | 5.21000 GHz | 5.21000 GHz |
| Span | 20.000 MHz | 20.000 MHz |
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 101 | ~ 40 |
| Sweeptime | 2.020 s | 2.020 s |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |

| | | |
|---|---|---|
| **Run** | **2 / max. 15** | **max. 15** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.03 dB** | **0.30 dB** |

# Minimum Emission Bandwidth 6 dB (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

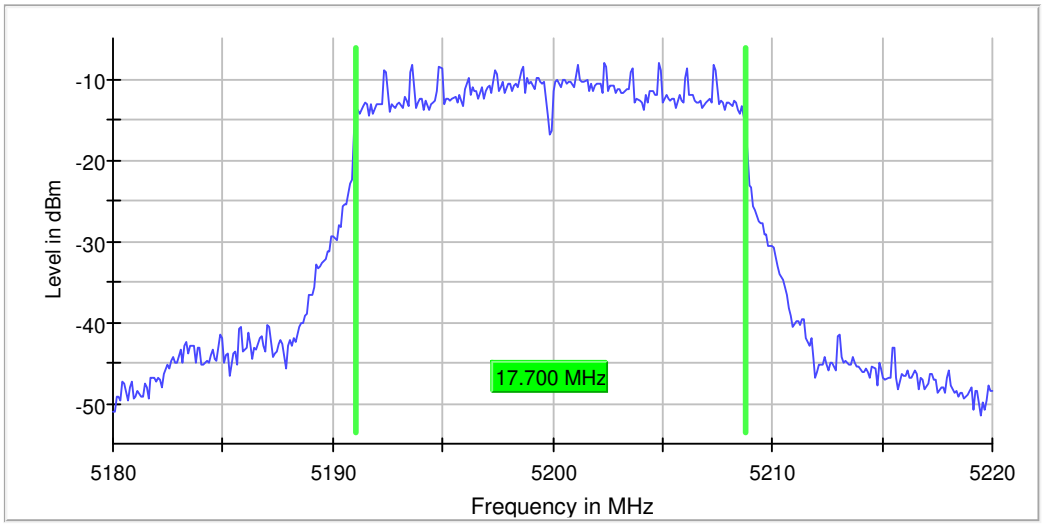
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5200.000000 | 17.700000 | --- | --- | 5191.050000 | 5208.750000 |

**(continuation of the "6 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5200.000000 | -8.1 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.18000 GHz | 5.18000 GHz |
| Stop Frequency | 5.22000 GHz | 5.22000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 100.000 kHz | ~ 100.000 kHz |
| VBW | 300.000 kHz | ~ 300.000 kHz |
| SweepPoints | 400 | ~ 400 |
| Sweeptime | 94.810 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |

| | | |
|---|---|---|
| **Stablevalue** | **0.30 dB** | **0.30 dB** |
| **Run** | **15 / max. 150** | **max. 150** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.21 dB** | **0.30 dB** |

# Occupied Channel Bandwidth 99% (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

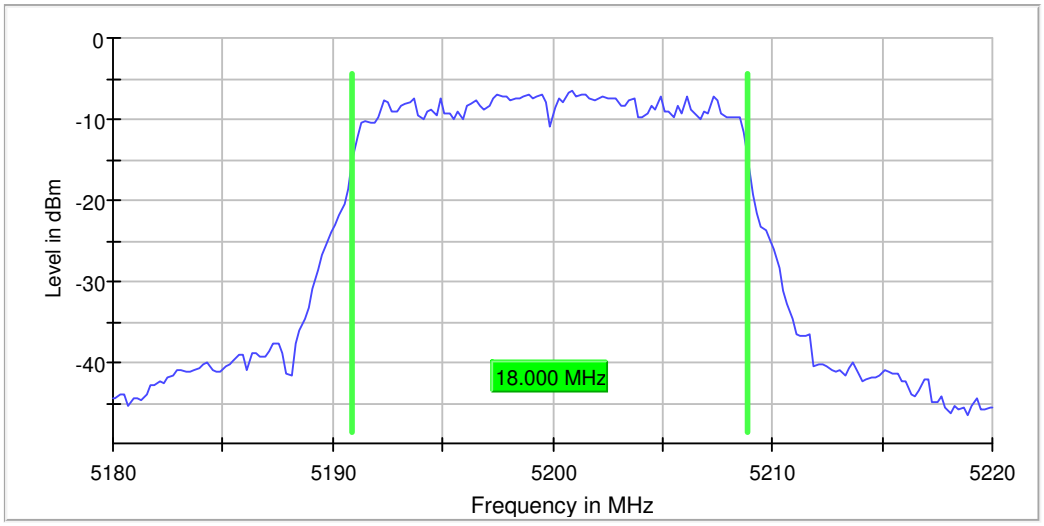
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5200.000000 | 18.000000 | --- | --- | 5190.900000 | 5208.900000 |

**(continuation of the "99 % Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Result |
|---|---|
| 5200.000000 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.18000 GHz | 5.18000 GHz |
| Stop Frequency | 5.22000 GHz | 5.22000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | <= 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 18 / max. 150 | max. 150 |

| | | |
|---|---|---|
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.04 dB** | **0.30 dB** |

# Emission Bandwidth 26 dB (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

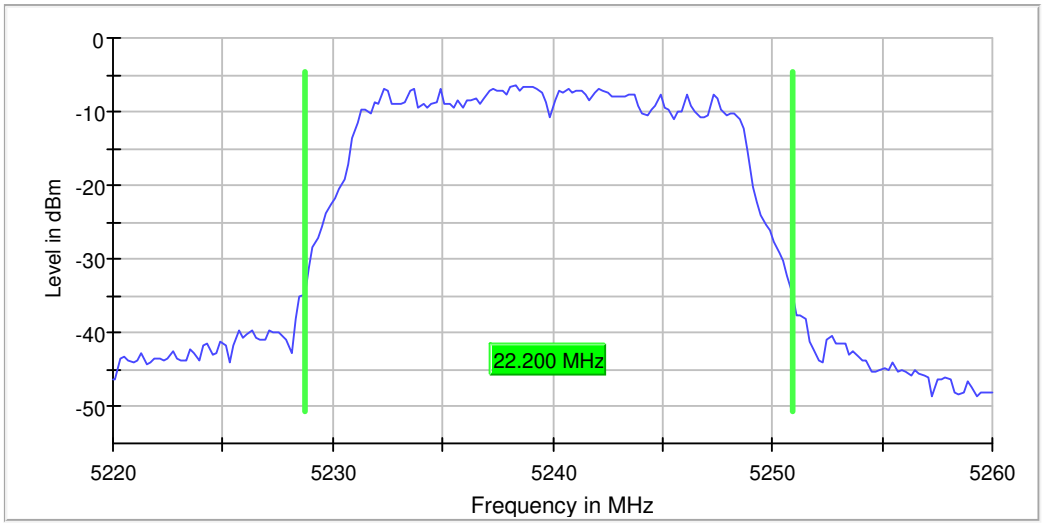
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

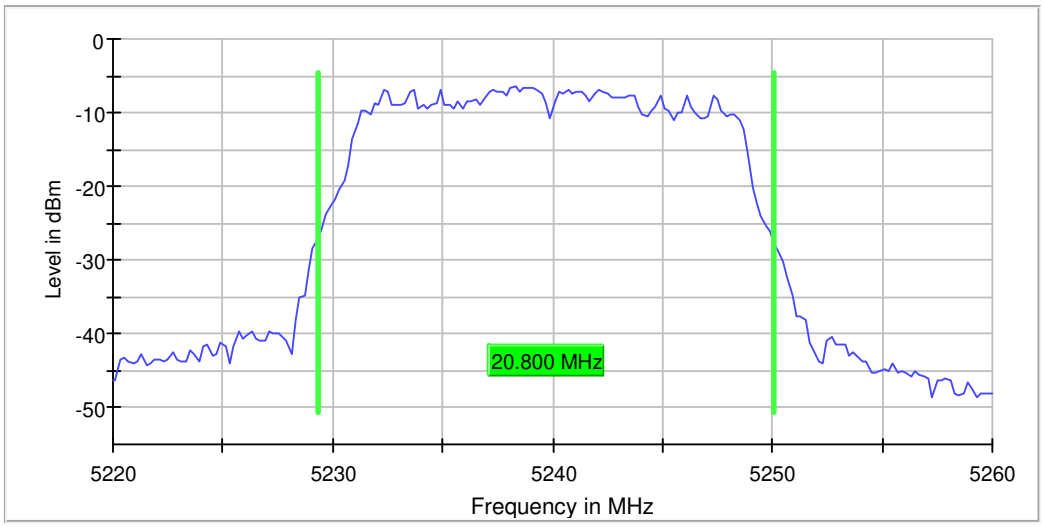
## 26 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5240.000000 | 22.200000 | --- | --- | 5228.700000 | 5250.900000 |

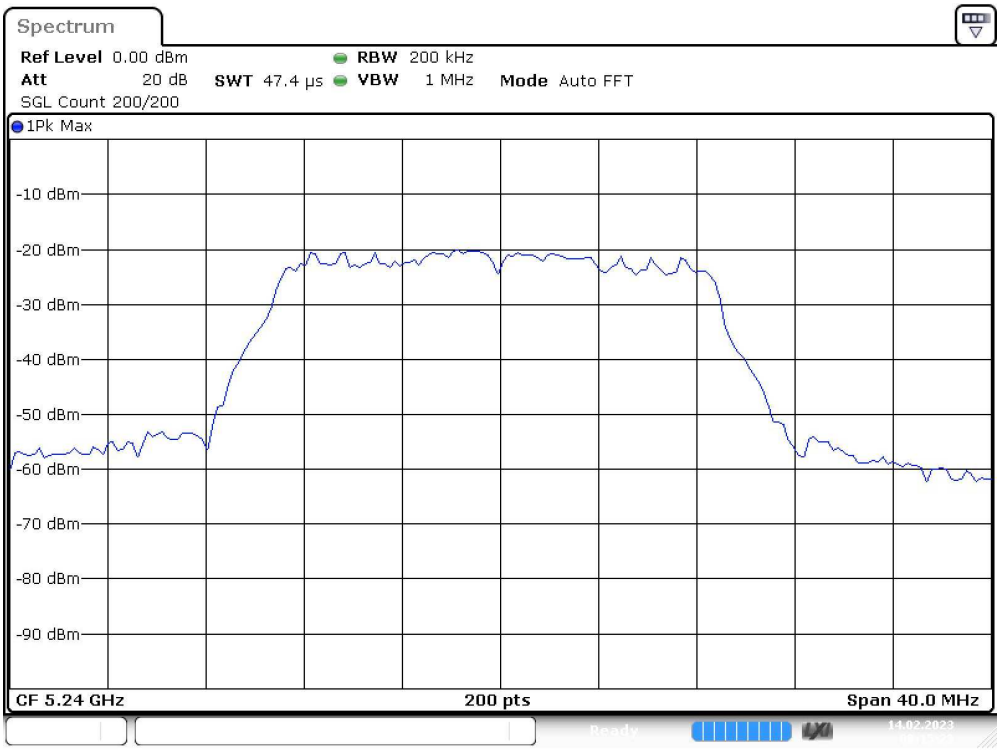
**(continuation of the "26 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5240.000000 | -6.5 | PASS |




0
-10
-20
-30
-40
-50
Level in dBm
20.800 MHz
5220
5230
5240
5250
5260
Frequency in MHz

Bandwidth

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## Measurement

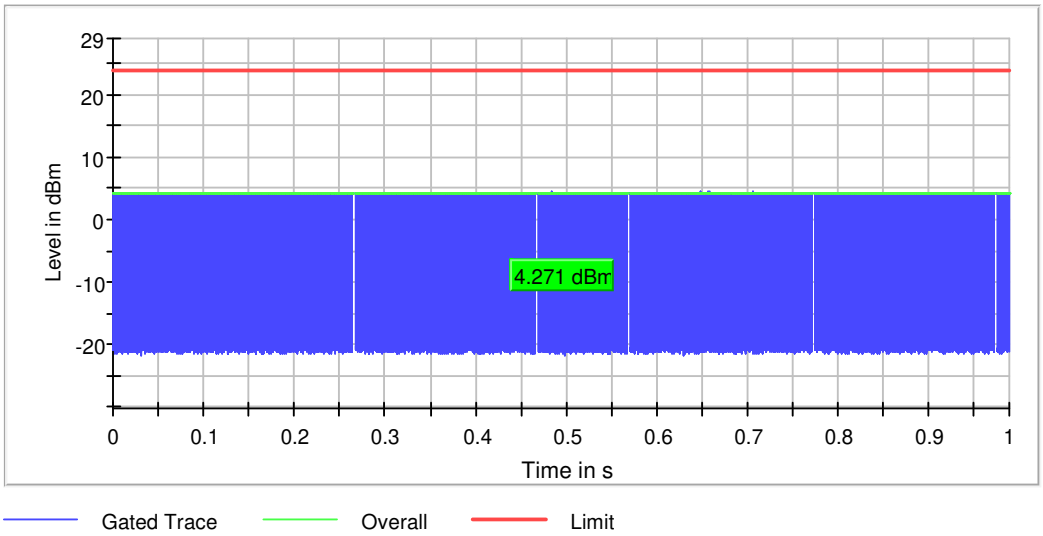
| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.22000 GHz | 5.22000 GHz |
| Stop Frequency | 5.26000 GHz | 5.26000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | ~ 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 9 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.26 dB | 0.30 dB |

# RF output power (5240 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---|---|---|---|---|---|
| 5240.000000 | 4.3 | 24.0 | 4.3 | 98.404 | PASS |



# Power Spectral Density (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

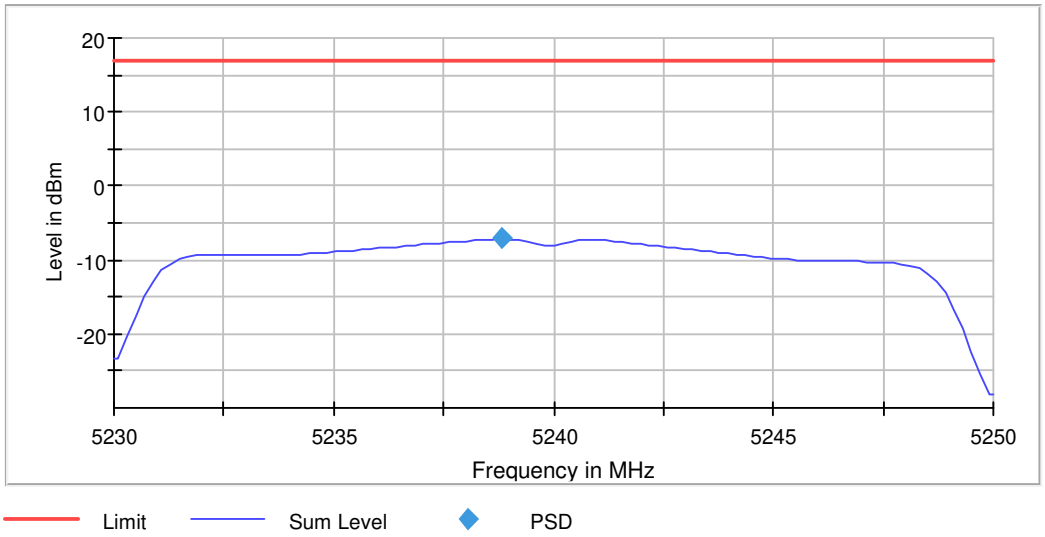
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---|---|---|---|---|
| 5240.000000 | 5238.811881 | -7.148 | 17.0 | PASS |

## Ports

| Port | Duty Cycle (%) |
|---|---|
| 1 | 97.068 |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.23000 GHz | 5.23000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 20.000 MHz | 20.000 MHz |
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 101 | ~ 40 |
| Sweeptime | 2.020 s | 2.020 s |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |

| | | |
|---|---|---|
| **Run** | **2 / max. 15** | **max. 15** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.03 dB** | **0.30 dB** |

# Minimum Emission Bandwidth 6 dB (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

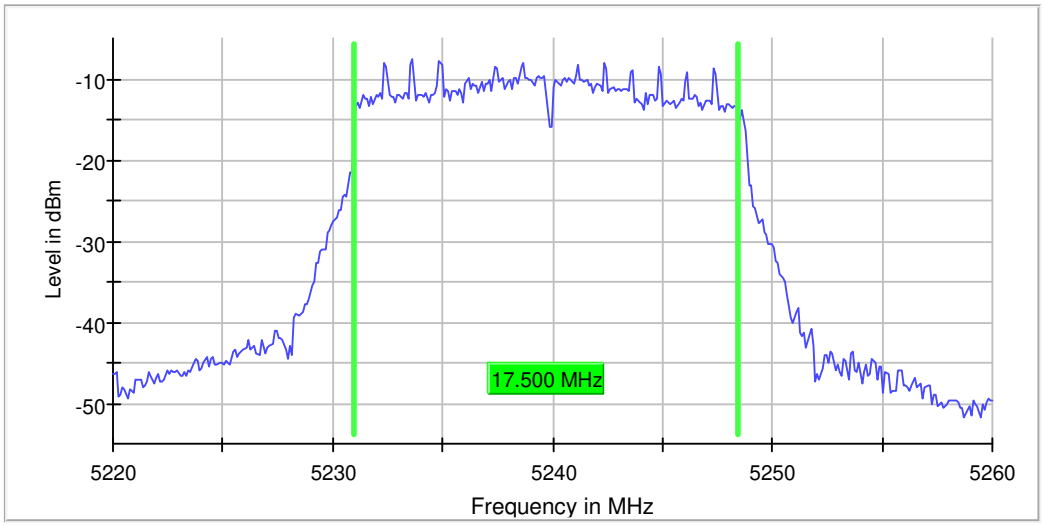
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5240.000000 | 17.500000 | --- | --- | 5230.950000 | 5248.450000 |

**(continuation of the "6 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5240.000000 | -7.6 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.22000 GHz | 5.22000 GHz |
| Stop Frequency | 5.26000 GHz | 5.26000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 100.000 kHz | ~ 100.000 kHz |
| VBW | 300.000 kHz | ~ 300.000 kHz |
| SweepPoints | 400 | ~ 400 |
| Sweeptime | 94.810 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |

| | | |
|---|---|---|
| **Stablevalue** | **0.30 dB** | **0.30 dB** |
| **Run** | **23 / max. 150** | **max. 150** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.06 dB** | **0.30 dB** |

# Occupied Channel Bandwidth 99% (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

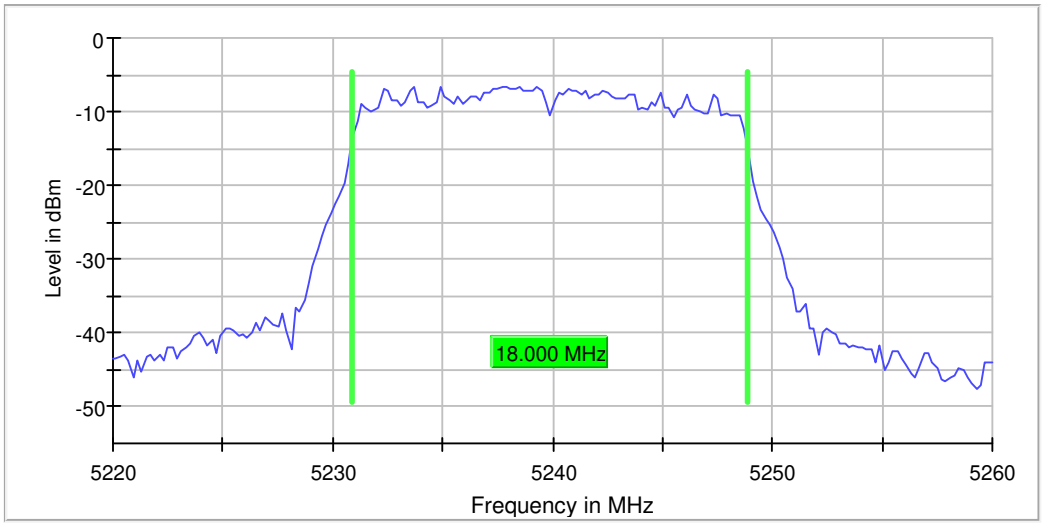
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5240.000000 | 18.000000 | --- | --- | 5230.900000 | 5248.900000 |

**(continuation of the "99 % Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Result |
|---|---|
| 5240.000000 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.22000 GHz | 5.22000 GHz |
| Stop Frequency | 5.26000 GHz | 5.26000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | <= 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 15 / max. 150 | max. 150 |

| | | |
|---|---|---|
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.09 dB** | **0.30 dB** |

# Band Edge high (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

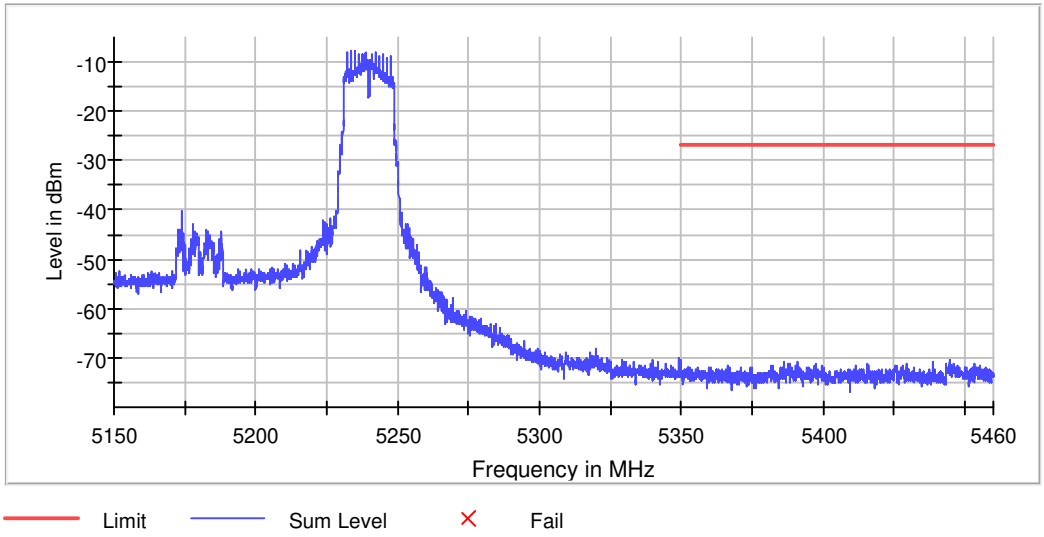
| DUT Frequency (MHz) | Result |
|---|---|
| 5240.000000 | PASS |

## Inband Peak

| Frequency (MHz) | Level (dBm) |
|---|---|
| 5234.875000 | -7.7 |

## Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|---|---|---|---|---|
| 5444.475000 | -70.4 | 43.4 | -27.0 | PASS |
| 5444.425000 | -70.7 | 43.7 | -27.0 | PASS |
| 5438.725000 | -70.8 | 43.8 | -27.0 | PASS |
| 5386.125000 | -70.8 | 43.8 | -27.0 | PASS |
| 5391.025000 | -70.9 | 43.9 | -27.0 | PASS |
| 5444.925000 | -70.9 | 43.9 | -27.0 | PASS |
| 5444.875000 | -70.9 | 43.9 | -27.0 | PASS |
| 5444.825000 | -70.9 | 43.9 | -27.0 | PASS |
| 5444.525000 | -70.9 | 43.9 | -27.0 | PASS |
| 5438.775000 | -71.0 | 44.0 | -27.0 | PASS |
| 5386.175000 | -71.0 | 44.0 | -27.0 | PASS |
| 5387.675000 | -71.1 | 44.1 | -27.0 | PASS |
| 5444.975000 | -71.1 | 44.1 | -27.0 | PASS |
| 5415.825000 | -71.2 | 44.2 | -27.0 | PASS |
| 5388.125000 | -71.2 | 44.2 | -27.0 | PASS |




## Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 100.000 MHz | 100.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 2000 | ~ 2000 |
| Sweeptime | 227.813 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 23 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.37 dB | 0.50 dB |

## Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.25000 GHz | 5.25000 GHz |
| Stop Frequency | 5.46000 GHz | 5.46000 GHz |
| Span | 210.000 MHz | 210.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 4200 | ~ 4200 |
| Sweeptime | 474.609 µs | AUTO |
| Reference Level | -20.000 dBm | -20.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 5 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.17 dB | 0.50 dB |

# FCC 15.407 2015

## DUT Information

Frequencies

| | | |
|---|---|---|
| WLAN CH 38 (5190 MHz) | WLAN CH 46 (5230 MHz) | WLAN CH 151 (5755 MHz) |
| WLAN CH 159 (5795 MHz) | WLAN CH 54 (5270 MHz) | WLAN CH 62 (5310 MHz) |
| WLAN CH 102 (5510 MHz) | WLAN CH 110 (5550 MHz) | WLAN CH 118 (5590 MHz) |
| WLAN CH 134 (5670 MHz) | | |

Bandwidths

40 MHz (40 MHz)

Power

20.000 dBm (20 dBm)

Beamforming Gain

| | |
|---|---|
| 20.000 dBm (20 dBm) | 0 dB |

Gain Tables

| | |
|---|---|
| 20.000 dBm (20 dBm) | Port 1: 0dBi; |

DUT Settings

| | |
|---|---|
| No. of transmission chains | 1 |
| DFS capability | Yes |
| DFS Mode | Master |
| Equipment Type | Portable |
| TPC | No |

## Hardware Setup: WMS Measurements\Hardware Setup

| | |
|---|---|
| Spectrum Analyzer: | SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40 |
| Vector Generator: | VG SMBV100B (VG SMBV100B) @ VISA (ADR TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33 |
| Generator: | SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015 |
| OSP: | OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2 |

## Summary

| Test | Frequency (MHz) | Nominal Power (dBm) | Nominal Bandwidth (MHz) | Result |
|---|---|---|---|---|
| Emission Bandwidth 26 dB | 5190.000 | 20.0 | 40.000000 | PASS |
| RF output power | 5190.000 | 20.0 | 40.000000 | PASS |
| Power Spectral Density | 5190.000 | 20.0 | 40.000000 | PASS |
| Minimum Emission Bandwidth 6 dB | 5190.000 | 20.0 | 40.000000 | PASS |
| Occupied Channel Bandwidth 99% | 5190.000 | 20.0 | 40.000000 | PASS |
| Band Edge low | 5190.000 | 20.0 | 40.000000 | PASS |
| Emission Bandwidth 26 dB | 5230.000 | 20.0 | 40.000000 | PASS |
| RF output power | 5230.000 | 20.0 | 40.000000 | PASS |
| Power Spectral Density | 5230.000 | 20.0 | 40.000000 | PASS |
| Minimum Emission Bandwidth 6 dB | 5230.000 | 20.0 | 40.000000 | PASS |
| Occupied Channel Bandwidth 99% | 5230.000 | 20.0 | 40.000000 | PASS |
| Band Edge high | 5230.000 | 20.0 | 40.000000 | PASS |

# Emission Bandwidth 26 dB (5190 MHz; 20.000 dBm; 40 MHz)

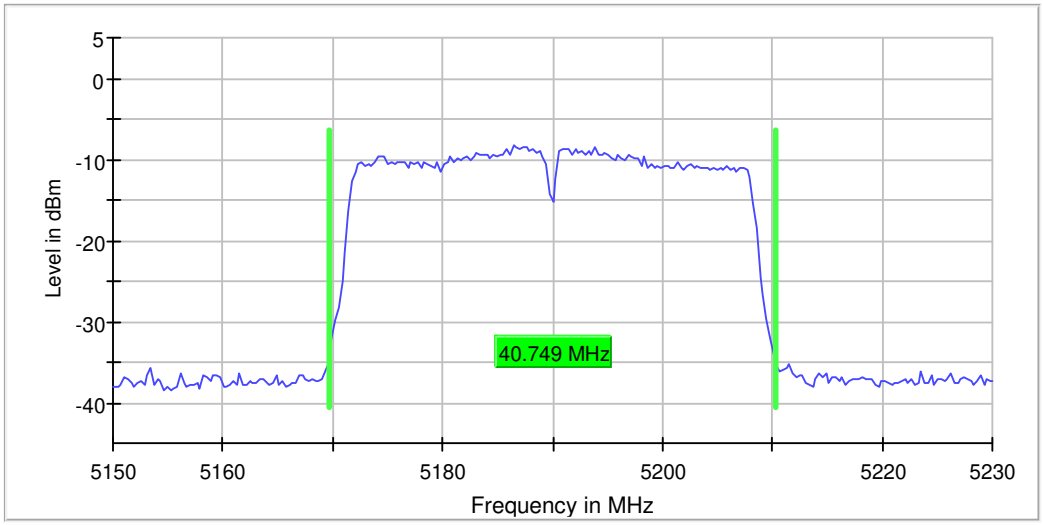
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 26 dB Bandwidth

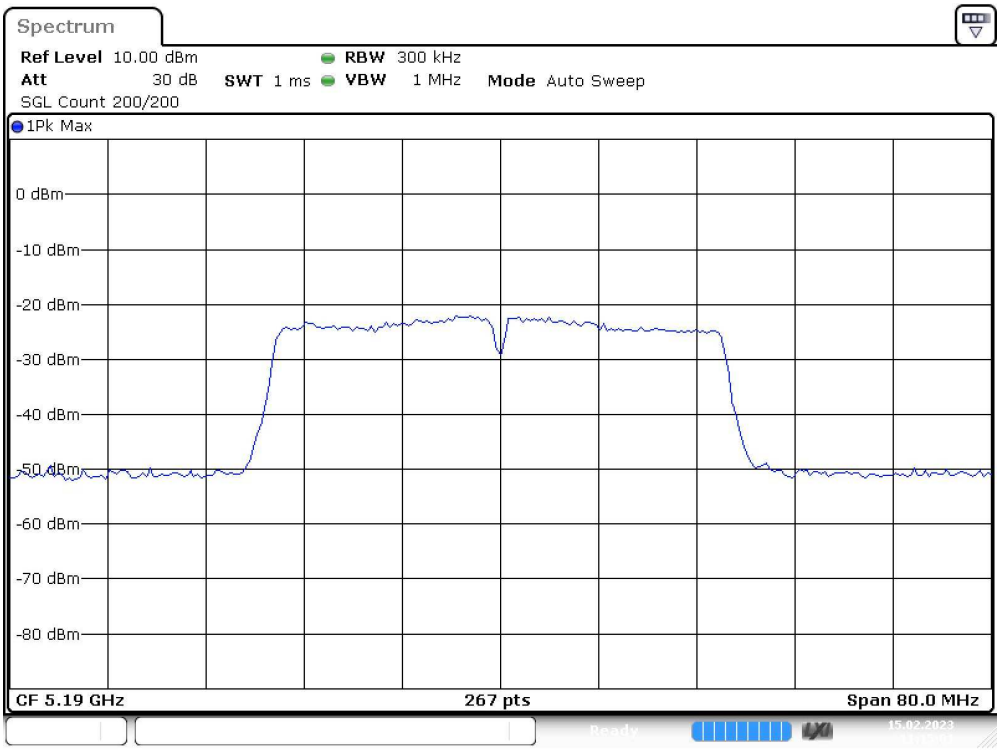
| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5190.000000 | 40.749064 | --- | --- | 5169.625468 | 5210.374532 |

**(continuation of the "26 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5190.000000 | -8.3 | PASS |




Bandwidth

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## Measurement

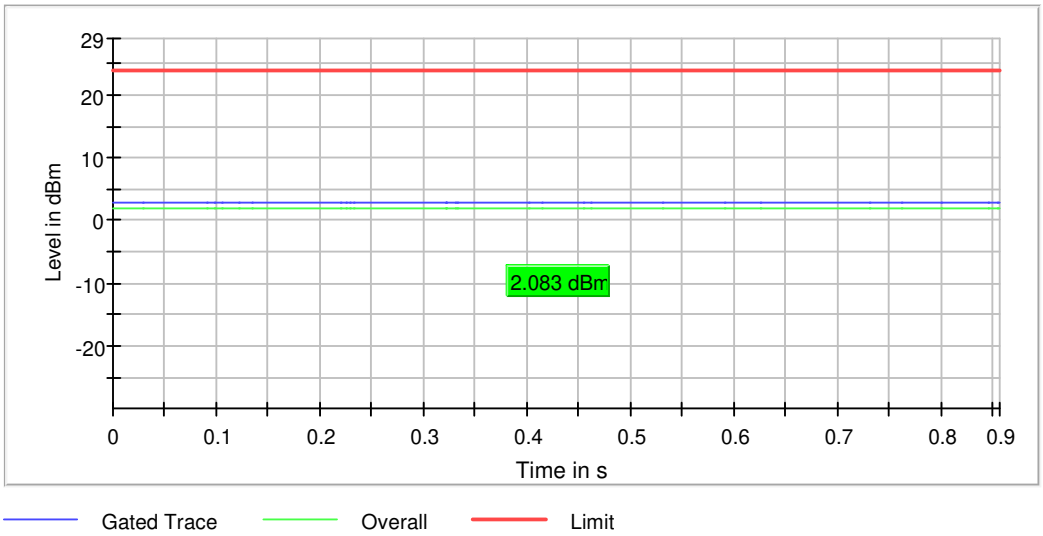
| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.23000 GHz | 5.23000 GHz |
| Span | 80.000 MHz | 80.000 MHz |
| RBW | 300.000 kHz | ~ 400.000 kHz |
| VBW | 1.000 MHz | >= 900.000 kHz |
| SweepPoints | 267 | ~ 267 |
| Sweeptime | 1.000 ms | AUTO |
| Reference Level | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 83 / max. 150 | max. 150 |
| Stable | 5 / 5 | 5 |
| Max Stable Difference | 0.00 dB | 0.30 dB |

# RF output power (5190 MHz; 20.000 dBm; 40 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---|---|---|---|---|---|
| 5190.000000 | 2.1 | 24.0 | 2.1 | 100.000 | PASS |



# Power Spectral Density (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Max level of analyzer (-11.4 dBm) more than 31.0 dB below the nominal power level.

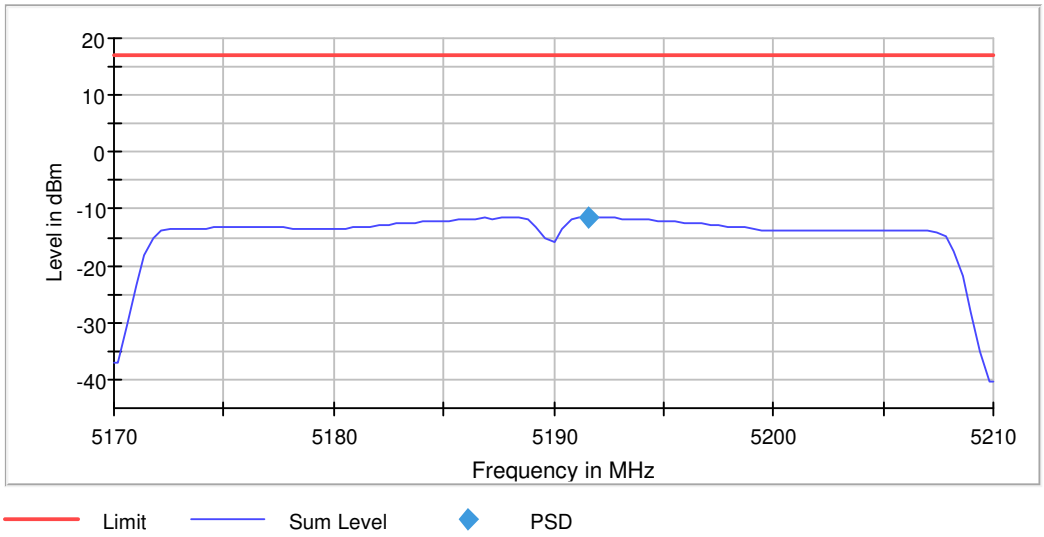
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---|---|---|---|---|
| 5190.000000 | 5191.584158 | -11.411 | 17.0 | PASS |

## Ports

| Port | Duty Cycle (%) |
|---|---|
| 1 | 94.308 |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.17000 GHz | 5.17000 GHz |
| Stop Frequency | 5.21000 GHz | 5.21000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 101 | ~ 80 |
| Sweeptime | 2.020 s | 2.020 s |
| Reference Level | -10.000 dBm | -10.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |

| | | |
|---|---|---|
| **Preamp** | **off** | **off** |
| **Stablemode** | **Trace** | **Trace** |
| **Stablevalue** | **0.30 dB** | **0.30 dB** |
| **Run** | **2 / max. 15** | **max. 15** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.14 dB** | **0.30 dB** |

# Minimum Emission Bandwidth 6 dB (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

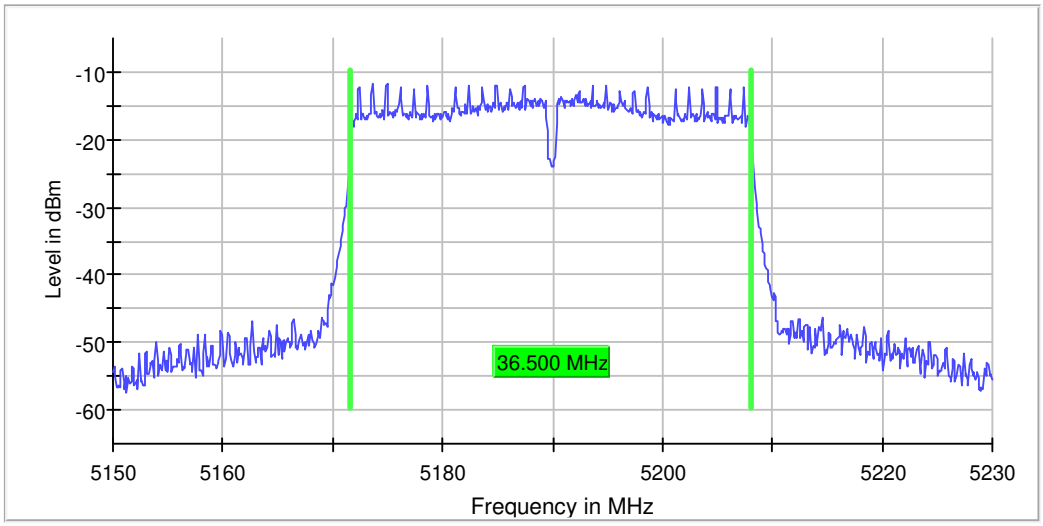
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5190.000000 | 36.500000 | --- | --- | 5171.650000 | 5208.150000 |

**(continuation of the "6 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5190.000000 | -11.7 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.23000 GHz | 5.23000 GHz |
| Span | 80.000 MHz | 80.000 MHz |
| RBW | 100.000 kHz | ~ 100.000 kHz |
| VBW | 300.000 kHz | ~ 300.000 kHz |
| SweepPoints | 800 | ~ 800 |
| Sweeptime | 1.070 ms | AUTO |
| Reference Level | -10.000 dBm | -10.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |

| | | |
|---|---|---|
| **Stablevalue** | **0.30 dB** | **0.30 dB** |
| **Run** | **28 / max. 150** | **max. 150** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.14 dB** | **0.30 dB** |

# Occupied Channel Bandwidth 99% (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

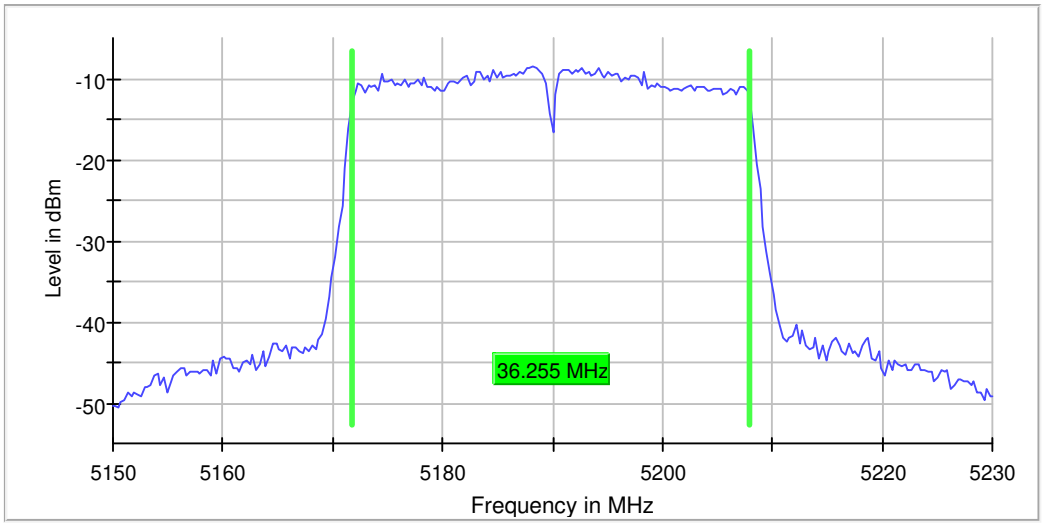
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5190.000000 | 36.254682 | --- | --- | 5171.722846 | 5207.977528 |

**(continuation of the "99 % Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Result |
|---|---|
| 5190.000000 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.23000 GHz | 5.23000 GHz |
| Span | 80.000 MHz | 80.000 MHz |
| RBW | 300.000 kHz | <= 400.000 kHz |
| VBW | 1.000 MHz | >= 900.000 kHz |
| SweepPoints | 267 | ~ 267 |
| Sweeptime | 1.000 ms | AUTO |
| Reference Level | -10.000 dBm | -10.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 21 / max. 150 | max. 150 |

| | | |
|---|---|---|
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.30 dB** | **0.30 dB** |

# Band Edge low (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

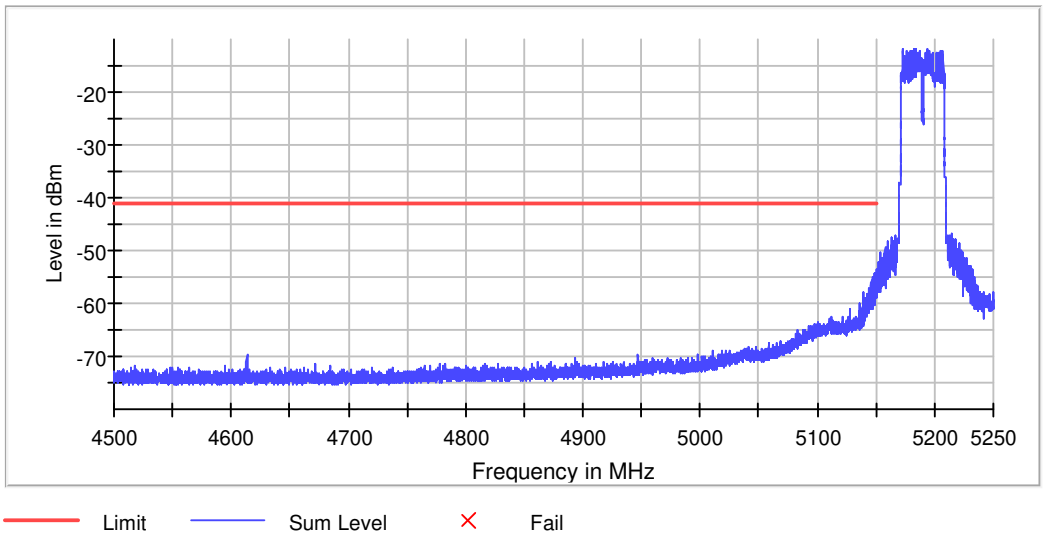
| DUT Frequency (MHz) | Result |
|---|---|
| 5190.000000 | PASS |

## Inband Peak

| Frequency (MHz) | Level (dBm) |
|---|---|
| 5182.375000 | -11.7 |

## Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|---|---|---|---|---|
| 5148.625000 | -54.1 | 12.9 | -41.2 | PASS |
| 5149.625000 | -54.3 | 13.1 | -41.2 | PASS |
| 5148.675000 | -54.4 | 13.2 | -41.2 | PASS |
| 5149.575000 | -54.6 | 13.4 | -41.2 | PASS |
| 5149.675000 | -54.8 | 13.5 | -41.2 | PASS |
| 5147.425000 | -54.9 | 13.6 | -41.2 | PASS |
| 5147.375000 | -55.0 | 13.8 | -41.2 | PASS |
| 5146.425000 | -55.5 | 14.3 | -41.2 | PASS |
| 5146.475000 | -55.6 | 14.4 | -41.2 | PASS |
| 5148.425000 | -55.7 | 14.5 | -41.2 | PASS |
| 5148.725000 | -55.9 | 14.7 | -41.2 | PASS |
| 5149.175000 | -56.1 | 14.9 | -41.2 | PASS |
| 5149.225000 | -56.1 | 14.9 | -41.2 | PASS |
| 5148.575000 | -56.1 | 14.9 | -41.2 | PASS |
| 5146.375000 | -56.2 | 15.0 | -41.2 | PASS |




## Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 100.000 MHz | 100.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 2000 | ~ 2000 |
| Sweeptime | 227.813 µs | AUTO |
| Reference Level | -10.000 dBm | -10.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 42 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.29 dB | 0.50 dB |

## Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 4.50000 GHz | 4.50000 GHz |
| Stop Frequency | 5.15000 GHz | 5.15000 GHz |
| Span | 650.000 MHz | 650.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 13000 | ~ 13000 |
| Sweeptime | 13.000 ms | AUTO |
| Reference Level | -20.000 dBm | -20.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 51 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

# Emission Bandwidth 26 dB (5230 MHz; 20.000 dBm; 40 MHz)

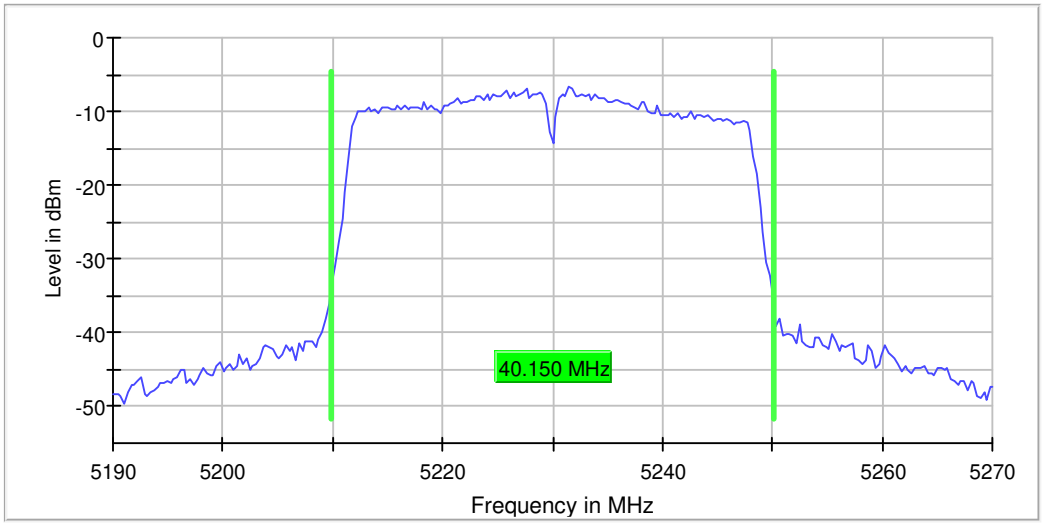
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 26 dB Bandwidth

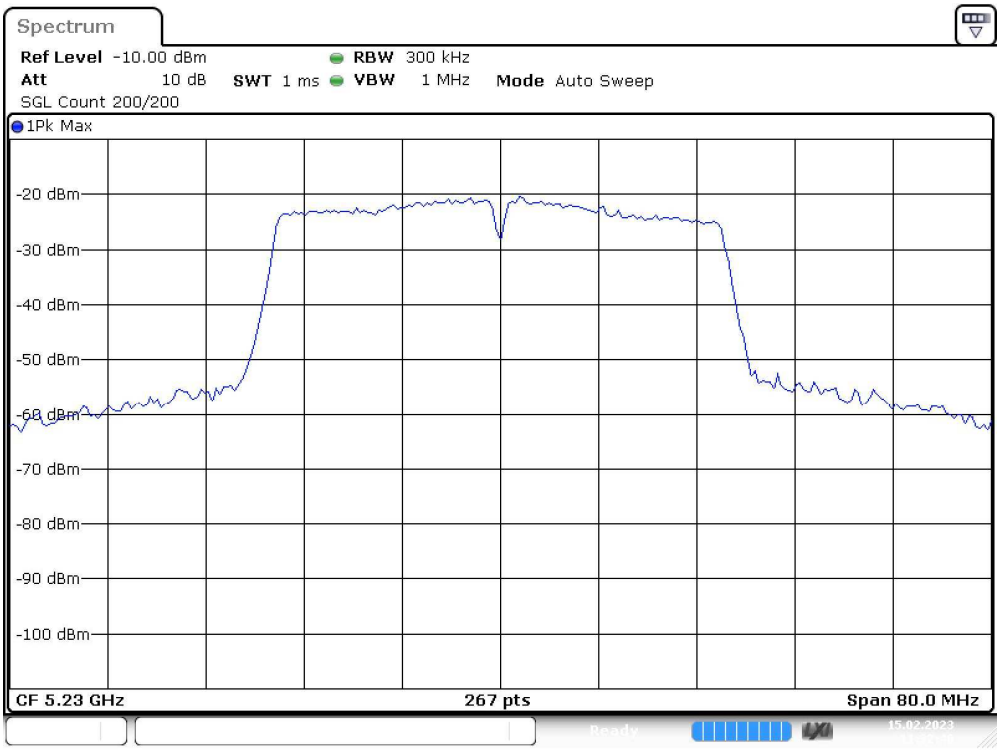
| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5230.000000 | 40.149812 | --- | --- | 5209.925094 | 5250.074906 |

**(continuation of the "26 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5230.000000 | -6.6 | PASS |




Bandwidth

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## Measurement

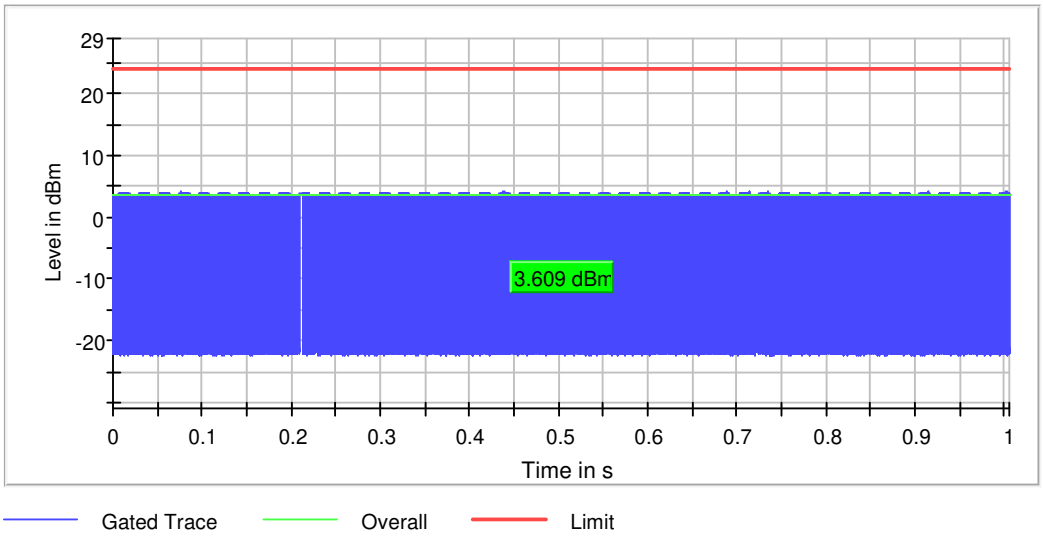
| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.19000 GHz | 5.19000 GHz |
| Stop Frequency | 5.27000 GHz | 5.27000 GHz |
| Span | 80.000 MHz | 80.000 MHz |
| RBW | 300.000 kHz | ~ 400.000 kHz |
| VBW | 1.000 MHz | >= 900.000 kHz |
| SweepPoints | 267 | ~ 267 |
| Sweeptime | 1.000 ms | AUTO |
| Reference Level | -10.000 dBm | -10.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 100 / max. 150 | max. 150 |
| Stable | 5 / 5 | 5 |
| Max Stable Difference | 0.12 dB | 0.30 dB |

# RF output power (5230 MHz; 20.000 dBm; 40 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---|---|---|---|---|---|
| 5230.000000 | 3.6 | 24.0 | 3.6 | 99.860 | PASS |



# Power Spectral Density (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

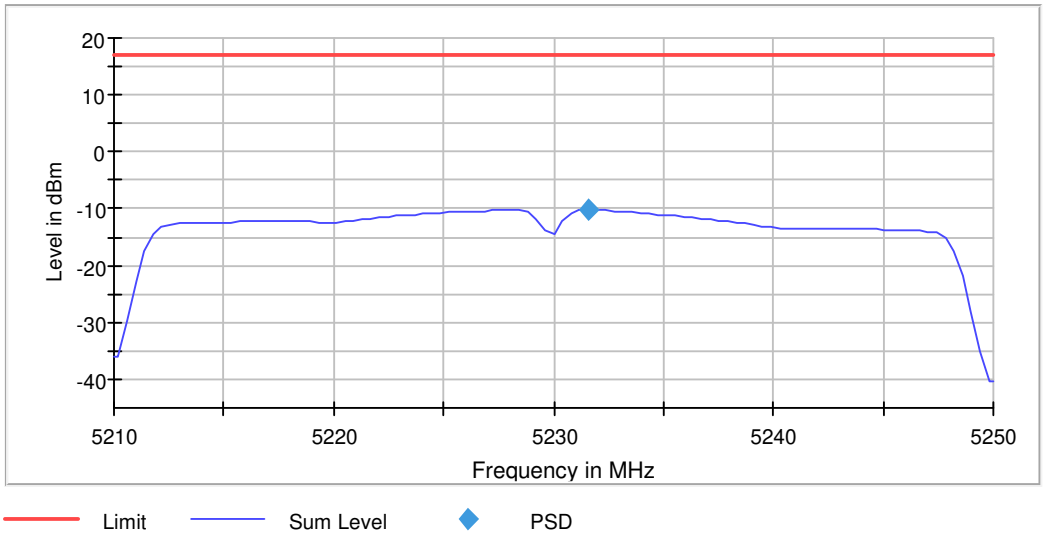
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---|---|---|---|---|
| 5230.000000 | 5231.584158 | -10.220 | 17.0 | PASS |

## Ports

| Port | Duty Cycle (%) |
|---|---|
| 1 | 94.294 |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.21000 GHz | 5.21000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 101 | ~ 80 |
| Sweeptime | 2.020 s | 2.020 s |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |

| | | |
|---|---|---|
| **Run** | **2 / max. 15** | **max. 15** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.03 dB** | **0.30 dB** |

# Minimum Emission Bandwidth 6 dB (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

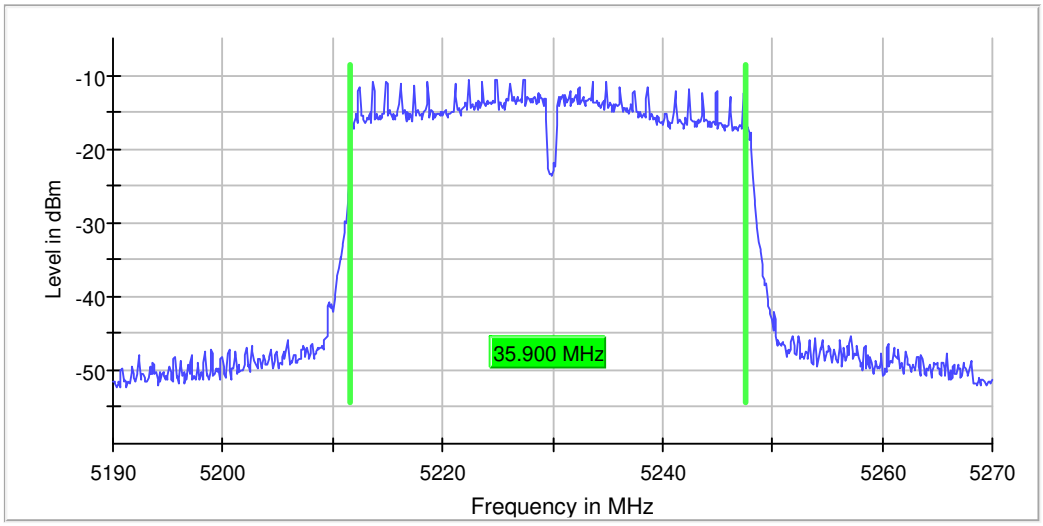
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5230.000000 | 35.900000 | --- | --- | 5211.650000 | 5247.550000 |

**(continuation of the "6 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5230.000000 | -10.5 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.19000 GHz | 5.19000 GHz |
| Stop Frequency | 5.27000 GHz | 5.27000 GHz |
| Span | 80.000 MHz | 80.000 MHz |
| RBW | 100.000 kHz | ~ 100.000 kHz |
| VBW | 300.000 kHz | ~ 300.000 kHz |
| SweepPoints | 800 | ~ 800 |
| Sweeptime | 1.070 ms | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |

| | | |
|---|---|---|
| **Stablevalue** | **0.30 dB** | **0.30 dB** |
| **Run** | **26 / max. 150** | **max. 150** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.25 dB** | **0.30 dB** |

# Occupied Channel Bandwidth 99% (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

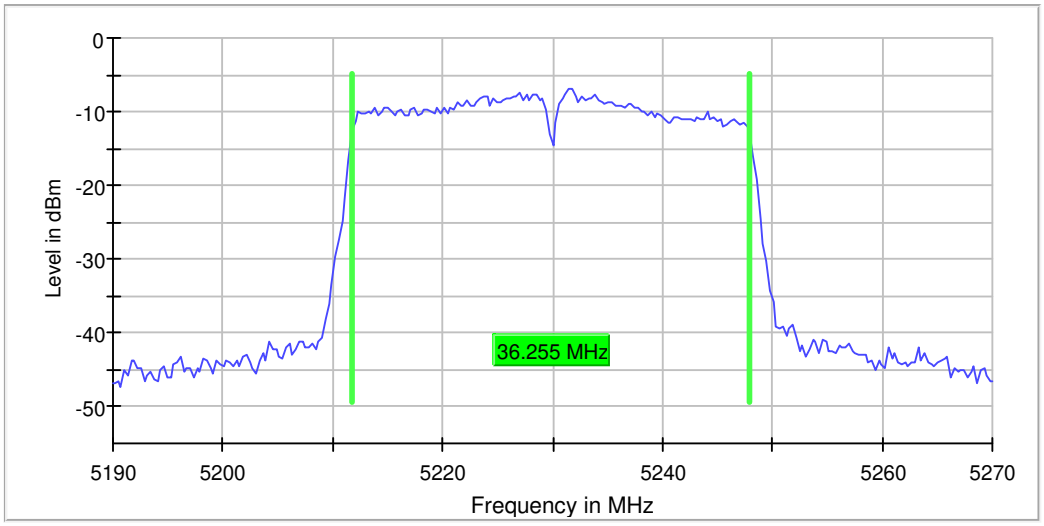
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5230.000000 | 36.254682 | --- | --- | 5211.722846 | 5247.977528 |

**(continuation of the "99 % Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Result |
|---|---|
| 5230.000000 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.19000 GHz | 5.19000 GHz |
| Stop Frequency | 5.27000 GHz | 5.27000 GHz |
| Span | 80.000 MHz | 80.000 MHz |
| RBW | 300.000 kHz | <= 400.000 kHz |
| VBW | 1.000 MHz | >= 900.000 kHz |
| SweepPoints | 267 | ~ 267 |
| Sweeptime | 1.000 ms | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 17 / max. 150 | max. 150 |

| | | |
|---|---|---|
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.25 dB** | **0.30 dB** |

# Band Edge high (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

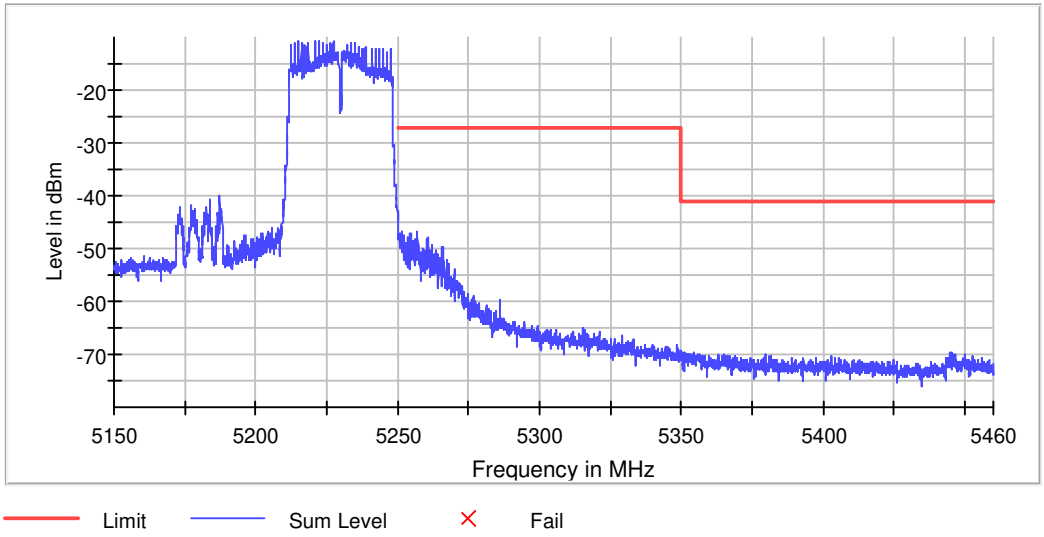
| DUT Frequency (MHz) | Result |
|---|---|
| 5230.000000 | PASS |

## Inband Peak

| Frequency (MHz) | Level (dBm) |
|---|---|
| 5222.375000 | -10.6 |

## Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|---|---|---|---|---|
| 5250.125000 | -42.7 | 15.7 | -27.0 | PASS |
| 5250.175000 | -43.1 | 16.1 | -27.0 | PASS |
| 5250.075000 | -43.5 | 16.5 | -27.0 | PASS |
| 5250.025000 | -44.7 | 17.7 | -27.0 | PASS |
| 5250.225000 | -45.7 | 18.7 | -27.0 | PASS |
| 5257.125000 | -46.8 | 19.8 | -27.0 | PASS |
| 5250.275000 | -46.8 | 19.8 | -27.0 | PASS |
| 5257.075000 | -46.8 | 19.8 | -27.0 | PASS |
| 5251.825000 | -46.9 | 19.9 | -27.0 | PASS |
| 5251.075000 | -47.1 | 20.1 | -27.0 | PASS |
| 5251.125000 | -47.1 | 20.1 | -27.0 | PASS |
| 5251.775000 | -47.1 | 20.1 | -27.0 | PASS |
| 5251.025000 | -47.1 | 20.1 | -27.0 | PASS |
| 5251.725000 | -47.2 | 20.2 | -27.0 | PASS |
| 5251.675000 | -47.2 | 20.2 | -27.0 | PASS |




## Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 100.000 MHz | 100.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 2000 | ~ 2000 |
| Sweeptime | 227.813 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 68 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.49 dB | 0.50 dB |

## Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.25000 GHz | 5.25000 GHz |
| Stop Frequency | 5.46000 GHz | 5.46000 GHz |
| Span | 210.000 MHz | 210.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 4200 | ~ 4200 |
| Sweeptime | 474.609 µs | AUTO |
| Reference Level | -20.000 dBm | -20.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 17 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

# FCC 15.407 2015

## DUT Information

Frequencies

| | | |
|---|---|---|
| WLAN CH 42 (5210 MHz) | WLAN CH 155 (5775 MHz) | WLAN CH 58 (5290 MHz) |
| WLAN CH 106 (5530 MHz) | WLAN CH 122 (5610 MHz) | |

Bandwidths

80 MHz (80 MHz)

Power

20.000 dBm (20 dBm)

Beamforming Gain

| | |
|---|---|
| 20.000 dBm (20 dBm) | 0 dB |

Gain Tables

| | |
|---|---|
| 20.000 dBm (20 dBm) | Port 1: 0dBi; |

DUT Settings

| | |
|---|---|
| No. of transmission chains | 1 |
| DFS capability | Yes |
| DFS Mode | Master |
| Equipment Type | Portable |
| TPC | No |

## Hardware Setup: WMS Measurements\TS8997

| | |
|---|---|
| Spectrum Analyzer: | SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40 |
| Vector Generator: | VG SMBV100B (VG SMBV100B) @ VISA (ADR TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33 |
| Generator: | SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015 |
| OSP: | OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2 |

## Summary

| Test | Frequency (MHz) | Nominal Power (dBm) | Nominal Bandwidth (MHz) | Result |
|---|---|---|---|---|
| Emission Bandwidth 26 dB | 5210.000 | 20.0 | 80.000000 | PASS |
| RF output power | 5210.000 | 20.0 | 80.000000 | PASS |
| Power Spectral Density | 5210.000 | 20.0 | 80.000000 | PASS |
| Minimum Emission Bandwidth 6 dB | 5210.000 | 20.0 | 80.000000 | PASS |
| Occupied Channel Bandwidth 99% | 5210.000 | 20.0 | 80.000000 | PASS |
| Band Edge low | 5210.000 | 20.0 | 80.000000 | PASS |
| Band Edge high | 5210.000 | 20.0 | 80.000000 | PASS |

# Emission Bandwidth 26 dB (5210 MHz; 20.000 dBm; 80 MHz)

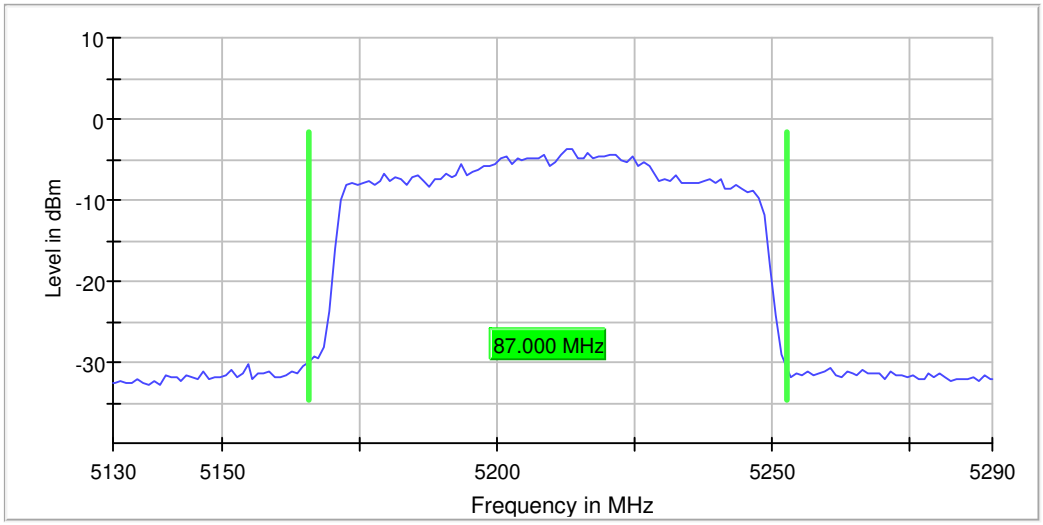
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 26 dB Bandwidth

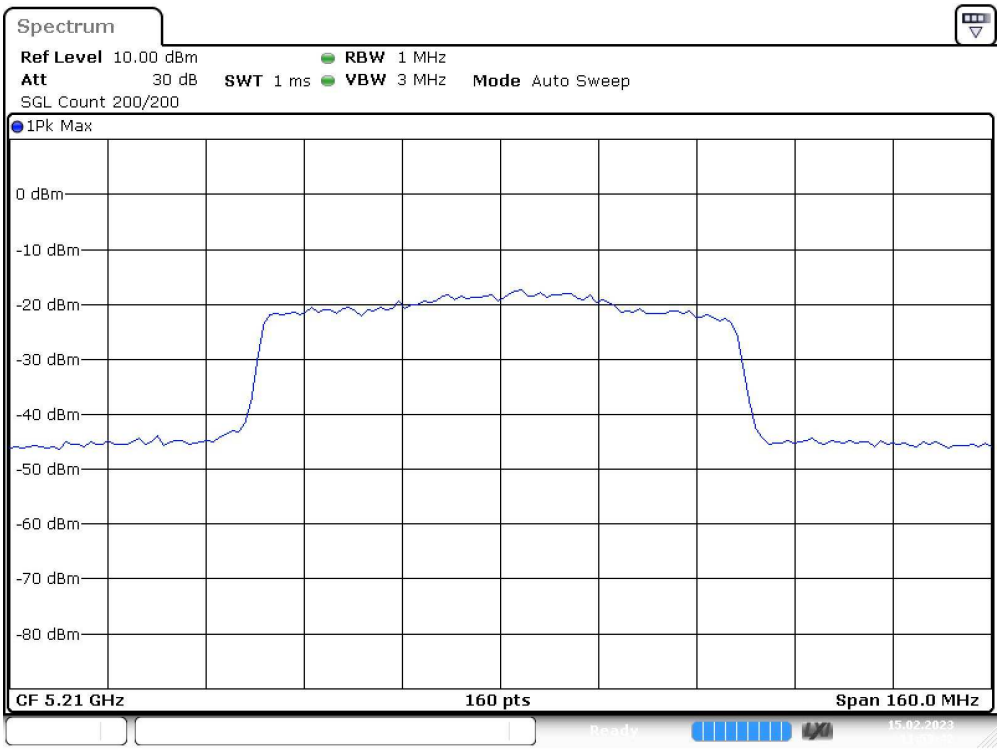
| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5210.000000 | 87.000000 | --- | --- | 5165.500000 | 5252.500000 |

**(continuation of the "26 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5210.000000 | -3.6 | PASS |




Bandwidth

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## Measurement

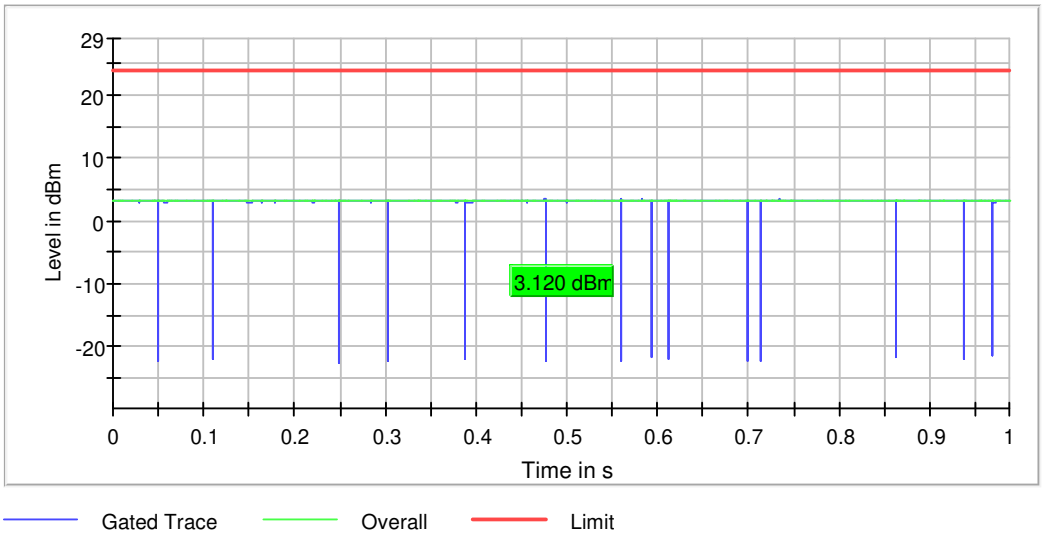
| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.13000 GHz | 5.13000 GHz |
| Stop Frequency | 5.29000 GHz | 5.29000 GHz |
| Span | 160.000 MHz | 160.000 MHz |
| RBW | 1.000 MHz | ~ 800.000 kHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 160 | ~ 160 |
| Sweeptime | 1.000 ms | AUTO |
| Reference Level | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 68 / max. 150 | max. 150 |
| Stable | 5 / 5 | 5 |
| Max Stable Difference | 0.11 dB | 0.30 dB |

# RF output power (5210 MHz; 20.000 dBm; 80 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---|---|---|---|---|---|
| 5210.000000 | 3.1 | 24.0 | 3.1 | 100.000 | PASS |



# Power Spectral Density (5210 MHz; 20.000 dBm; 80 MHz)

Customized settings.

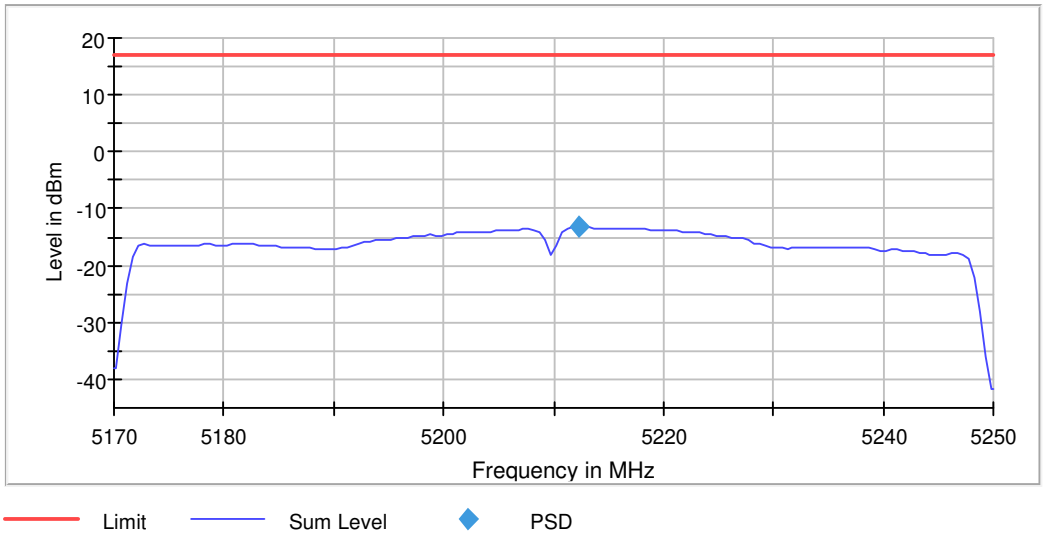
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---|---|---|---|---|
| 5210.000000 | 5212.250000 | -13.142 | 17.0 | PASS |

## Ports

| Port | Duty Cycle (%) |
|---|---|
| 1 | 89.175 |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.17000 GHz | 5.17000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 80.000 MHz | 80.000 MHz |
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 160 | ~ 160 |
| Sweeptime | 3.200 s | 3.200 s |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |

| | | |
|---|---|---|
| **Run** | **2 / max. 15** | **max. 15** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.02 dB** | **0.30 dB** |

# Minimum Emission Bandwidth 6 dB (5210 MHz; 20.000 dBm; 80 MHz)

Customized settings.

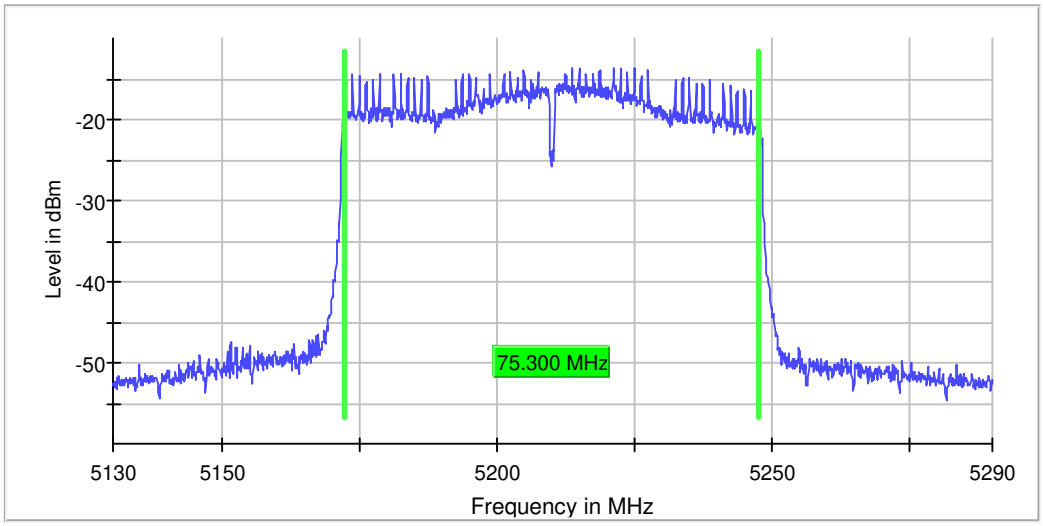
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5210.000000 | 75.300000 | --- | --- | 5172.250000 | 5247.550000 |

**(continuation of the "6 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5210.000000 | -13.6 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.13000 GHz | 5.13000 GHz |
| Stop Frequency | 5.29000 GHz | 5.29000 GHz |
| Span | 160.000 MHz | 160.000 MHz |
| RBW | 100.000 kHz | ~ 100.000 kHz |
| VBW | 300.000 kHz | ~ 300.000 kHz |
| SweepPoints | 1600 | ~ 1600 |
| Sweeptime | 360.278 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |

| | | |
|---|---|---|
| **Stablevalue** | **0.30 dB** | **0.30 dB** |
| **Run** | **43 / max. 150** | **max. 150** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.15 dB** | **0.30 dB** |

# Occupied Channel Bandwidth 99% (5210 MHz; 20.000 dBm; 80 MHz)

Customized settings.

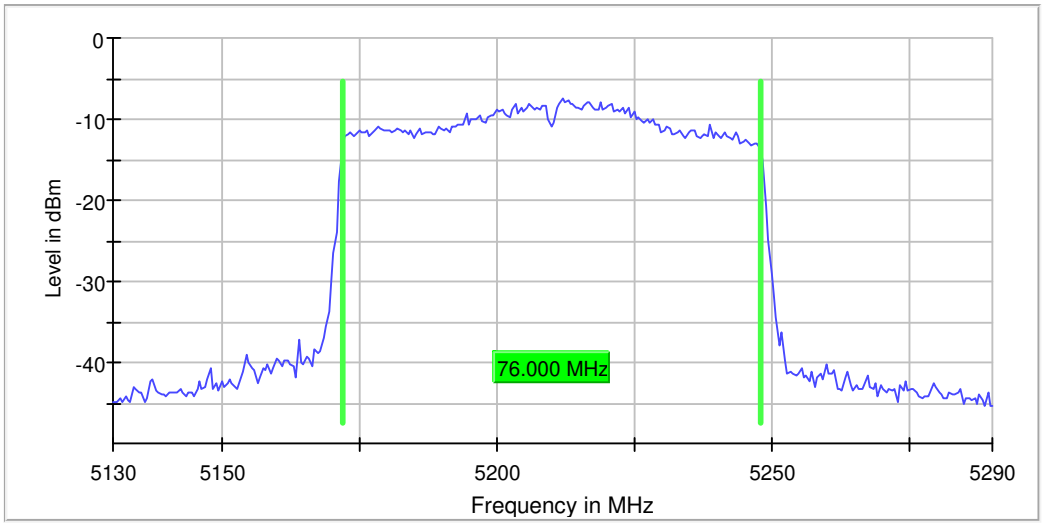
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5210.000000 | 76.000000 | --- | --- | 5171.750000 | 5247.750000 |

**(continuation of the "99 % Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Result |
|---|---|
| 5210.000000 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.13000 GHz | 5.13000 GHz |
| Stop Frequency | 5.29000 GHz | 5.29000 GHz |
| Span | 160.000 MHz | 160.000 MHz |
| RBW | 500.000 kHz | <= 800.000 kHz |
| VBW | 2.000 MHz | >= 1.500 MHz |
| SweepPoints | 320 | ~ 320 |
| Sweeptime | 1.000 ms | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 34 / max. 150 | max. 150 |

| | | |
|---|---|---|
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.28 dB** | **0.30 dB** |

# Band Edge low (5210 MHz; 20.000 dBm; 80 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

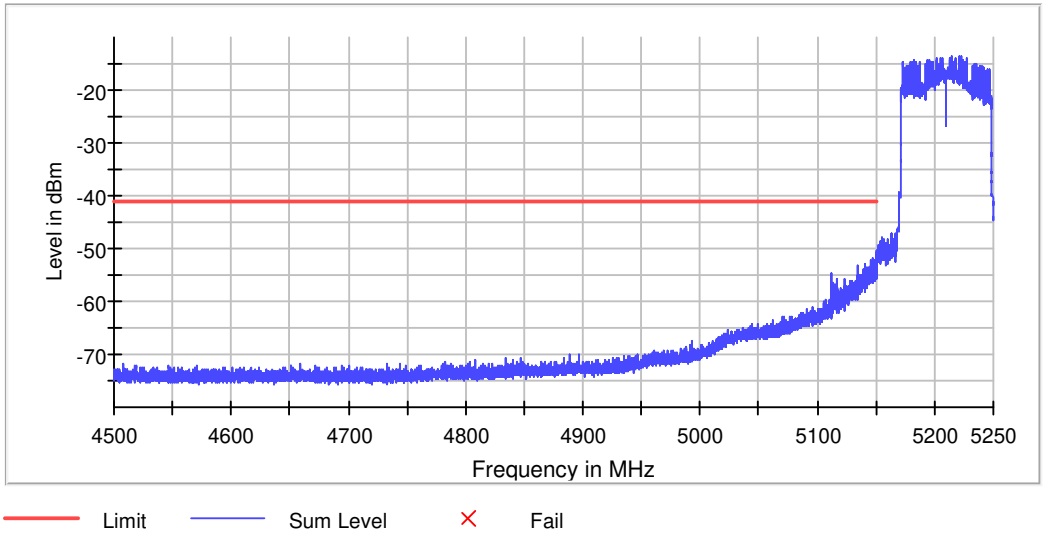
| DUT Frequency (MHz) | Result |
|---|---|
| 5210.000000 | PASS |

## Inband Peak

| Frequency (MHz) | Level (dBm) |
|---|---|
| 5222.375000 | -13.5 |

## Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|---|---|---|---|---|
| 5147.375000 | -51.8 | 10.6 | -41.2 | PASS |
| 5146.175000 | -52.2 | 11.0 | -41.2 | PASS |
| 5149.575000 | -52.2 | 11.0 | -41.2 | PASS |
| 5149.525000 | -52.2 | 11.0 | -41.2 | PASS |
| 5146.475000 | -52.3 | 11.1 | -41.2 | PASS |
| 5146.425000 | -52.4 | 11.2 | -41.2 | PASS |
| 5147.425000 | -52.5 | 11.3 | -41.2 | PASS |
| 5146.125000 | -52.6 | 11.4 | -41.2 | PASS |
| 5149.275000 | -52.7 | 11.4 | -41.2 | PASS |
| 5149.225000 | -52.7 | 11.5 | -41.2 | PASS |
| 5147.325000 | -52.7 | 11.5 | -41.2 | PASS |
| 5141.525000 | -52.9 | 11.7 | -41.2 | PASS |
| 5149.875000 | -52.9 | 11.7 | -41.2 | PASS |
| 5147.975000 | -53.0 | 11.7 | -41.2 | PASS |
| 5148.025000 | -53.0 | 11.8 | -41.2 | PASS |




## Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 100.000 MHz | 100.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 2000 | ~ 2000 |
| Sweeptime | 227.813 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 27 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.41 dB | 0.50 dB |

## Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 4.50000 GHz | 4.50000 GHz |
| Stop Frequency | 5.15000 GHz | 5.15000 GHz |
| Span | 650.000 MHz | 650.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 13000 | ~ 13000 |
| Sweeptime | 13.000 ms | AUTO |
| Reference Level | -20.000 dBm | -20.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 40 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.35 dB | 0.50 dB |

# Band Edge high (5210 MHz; 20.000 dBm; 80 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

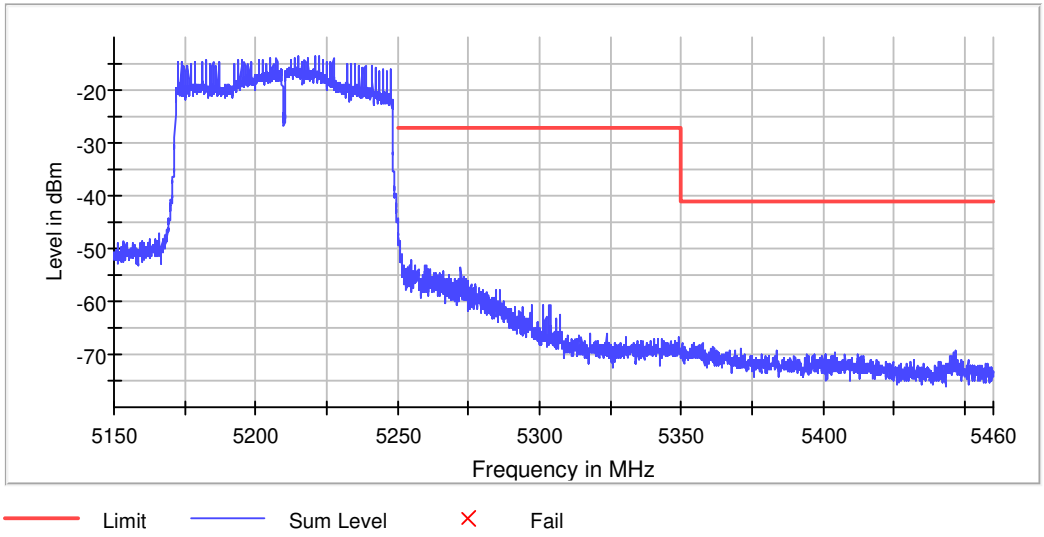
| DUT Frequency (MHz) | Result |
|---|---|
| 5210.000000 | PASS |

## Inband Peak

| Frequency (MHz) | Level (dBm) |
|---|---|
| 5222.375000 | -13.5 |

## Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|---|---|---|---|---|
| 5250.275000 | -47.0 | 20.0 | -27.0 | PASS |
| 5250.225000 | -47.0 | 20.0 | -27.0 | PASS |
| 5250.025000 | -47.1 | 20.1 | -27.0 | PASS |
| 5250.125000 | -47.1 | 20.1 | -27.0 | PASS |
| 5250.075000 | -47.5 | 20.5 | -27.0 | PASS |
| 5250.175000 | -47.5 | 20.5 | -27.0 | PASS |
| 5250.475000 | -47.9 | 20.9 | -27.0 | PASS |
| 5250.525000 | -47.9 | 20.9 | -27.0 | PASS |
| 5250.325000 | -48.5 | 21.5 | -27.0 | PASS |
| 5250.775000 | -48.5 | 21.5 | -27.0 | PASS |
| 5250.725000 | -48.6 | 21.6 | -27.0 | PASS |
| 5250.425000 | -49.4 | 22.4 | -27.0 | PASS |
| 5250.375000 | -49.4 | 22.4 | -27.0 | PASS |
| 5250.575000 | -49.9 | 22.9 | -27.0 | PASS |
| 5250.825000 | -50.1 | 23.1 | -27.0 | PASS |




## Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 100.000 MHz | 100.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 2000 | ~ 2000 |
| Sweeptime | 227.813 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 29 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.48 dB | 0.50 dB |

## Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.25000 GHz | 5.25000 GHz |
| Stop Frequency | 5.46000 GHz | 5.46000 GHz |
| Span | 210.000 MHz | 210.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 4200 | ~ 4200 |
| Sweeptime | 474.609 µs | AUTO |
| Reference Level | -20.000 dBm | -20.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 2 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

# FCC 15.407 2015

## DUT Information

Frequencies

| | | |
|---|---|---|
| WLAN CH 36 (5180 MHz) | WLAN CH 40 (5200 MHz) | WLAN CH 48 (5240 MHz) |
| WLAN CH 149 (5745 MHz) | WLAN CH 157 (5785 MHz) | WLAN CH 165 (5825 MHz) |
| WLAN CH 52 (5260 MHz) | WLAN CH 56 (5280 MHz) | WLAN CH 64 (5320 MHz) |
| WLAN CH 100 (5500 MHz) | WLAN CH 120 (5600 MHz) | WLAN CH 140 (5700 MHz) |
| WLAN CH 116 (5580 MHz) | WLAN CH 151 (5755 MHz) | WLAN CH 159 (5795 MHz) |
| WLAN CH 155 (5775 MHz) | | |

Bandwidths

| | | |
|---|---|---|
| 20 MHz (20 MHz) | 40 MHz (40 MHz) | 80 MHz (80 MHz) |

Power

20.000 dBm (20 dBm)

Beamforming Gain

| | |
|---|---|
| 20.000 dBm (20 dBm) | 0 dB |

Gain Tables

| | |
|---|---|
| 20.000 dBm (20 dBm) | Port 1: 0dBi; |

DUT Settings

| | |
|---|---|
| No. of transmission chains | 1 |
| DFS capability | Yes |
| DFS Mode | Master |
| Equipment Type | Portable |
| TPC | No |

## Hardware Setup: WMS Measurements\TS8997

| | |
|---|---|
| Spectrum Analyzer: | SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40 |
| Vector Generator: | VG SMBV100B (VG SMBV100B) @ VISA (ADR TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33 |
| Generator: | SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015 |
| OSP: | OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2 |

## Summary

| Test | Frequency (MHz) | Nominal Power (dBm) | Nominal Bandwidth (MHz) | Result |
|---|---|---|---|---|
| Emission Bandwidth 26 dB | 5180.000 | 20.0 | 20.000000 | PASS |
| RF output power | 5180.000 | 20.0 | 20.000000 | PASS |
| Power Spectral Density | 5180.000 | 20.0 | 20.000000 | PASS |
| Minimum Emission Bandwidth 6 dB | 5180.000 | 20.0 | 20.000000 | PASS |
| Occupied Channel Bandwidth 99% | 5180.000 | 20.0 | 20.000000 | PASS |
| Band Edge low | 5180.000 | 20.0 | 20.000000 | PASS |
| Emission Bandwidth 26 dB | 5200.000 | 20.0 | 20.000000 | PASS |
| RF output power | 5200.000 | 20.0 | 20.000000 | PASS |
| Power Spectral Density | 5200.000 | 20.0 | 20.000000 | PASS |
| Minimum Emission Bandwidth 6 dB | 5200.000 | 20.0 | 20.000000 | PASS |
| Occupied Channel Bandwidth 99% | 5200.000 | 20.0 | 20.000000 | PASS |
| Emission Bandwidth 26 dB | 5240.000 | 20.0 | 20.000000 | PASS |
| RF output power | 5240.000 | 20.0 | 20.000000 | PASS |
| Power Spectral Density | 5240.000 | 20.0 | 20.000000 | PASS |
| Minimum Emission Bandwidth 6 dB | 5240.000 | 20.0 | 20.000000 | PASS |
| Occupied Channel Bandwidth 99% | 5240.000 | 20.0 | 20.000000 | PASS |
| Band Edge high | 5240.000 | 20.0 | 20.000000 | PASS |

# Emission Bandwidth 26 dB (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

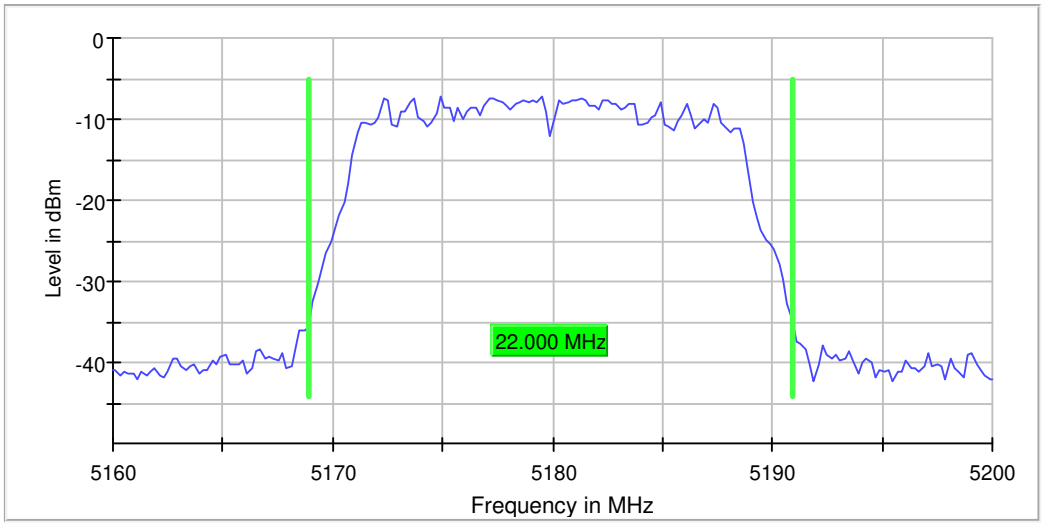
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

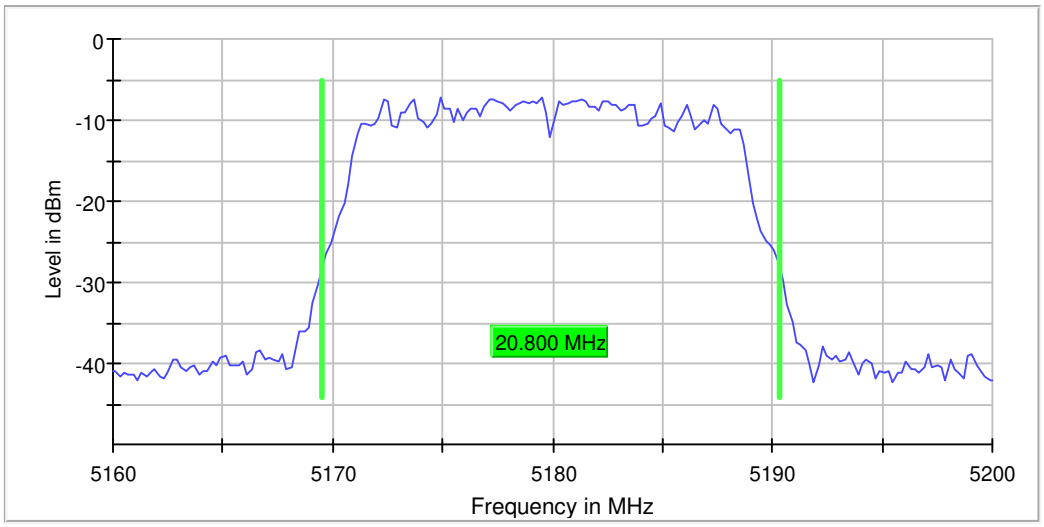
## 26 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5180.000000 | 22.000000 | --- | --- | 5168.900000 | 5190.900000 |

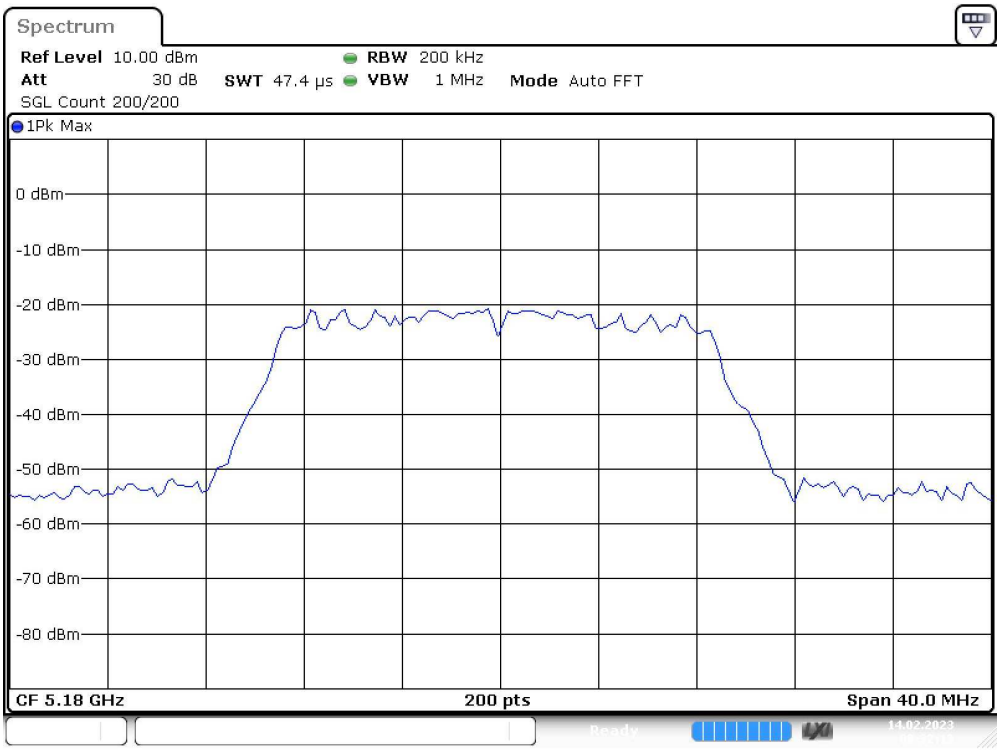
**(continuation of the "26 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5180.000000 | -7.2 | PASS |




0
-10
-20
-30
-40
Level in dBm
20.800 MHz
5160
5170
5180
5190
5200
Frequency in MHz

Bandwidth

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## Measurement

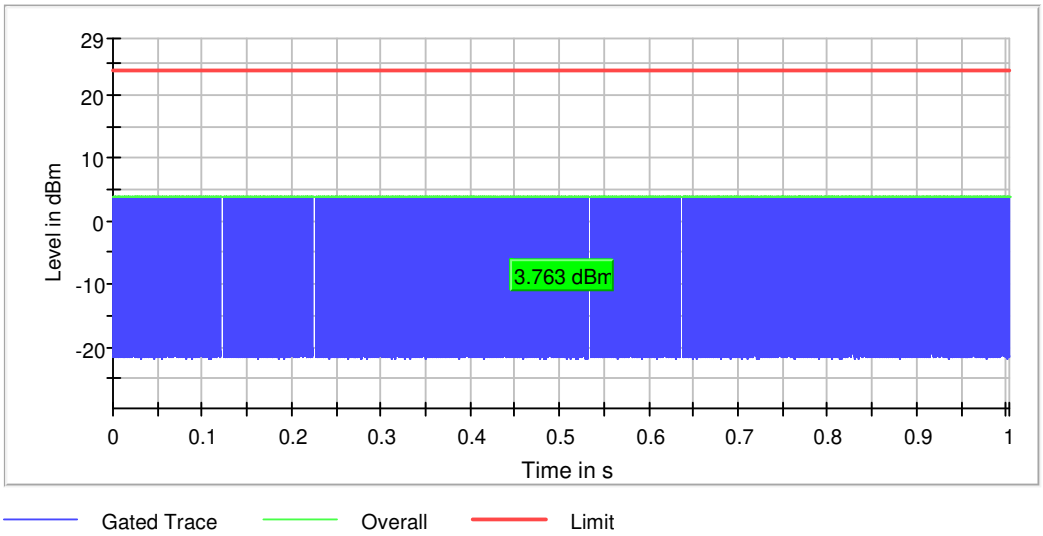
| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.16000 GHz | 5.16000 GHz |
| Stop Frequency | 5.20000 GHz | 5.20000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | ~ 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 1.00 dB | 1.00 dB |
| Run | 4 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.76 dB | 1.00 dB |

# RF output power (5180 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---|---|---|---|---|---|
| 5180.000000 | 3.8 | 24.0 | 3.8 | 99.861 | PASS |



# Power Spectral Density (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

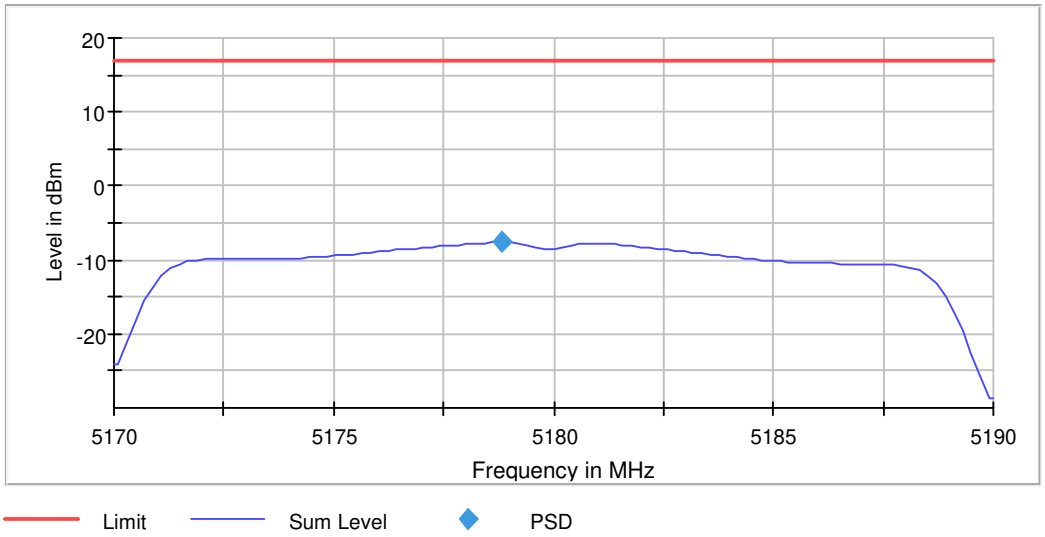
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---|---|---|---|---|
| 5180.000000 | 5178.811881 | -7.577 | 17.0 | PASS |

## Ports

| Port | Duty Cycle (%) |
|---|---|
| 1 | 97.050 |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.17000 GHz | 5.17000 GHz |
| Stop Frequency | 5.19000 GHz | 5.19000 GHz |
| Span | 20.000 MHz | 20.000 MHz |
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 101 | ~ 40 |
| Sweeptime | 2.020 s | 2.020 s |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |

| | | |
|---|---|---|
| **Run** | **2 / max. 15** | **max. 15** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.03 dB** | **0.30 dB** |

# Minimum Emission Bandwidth 6 dB (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

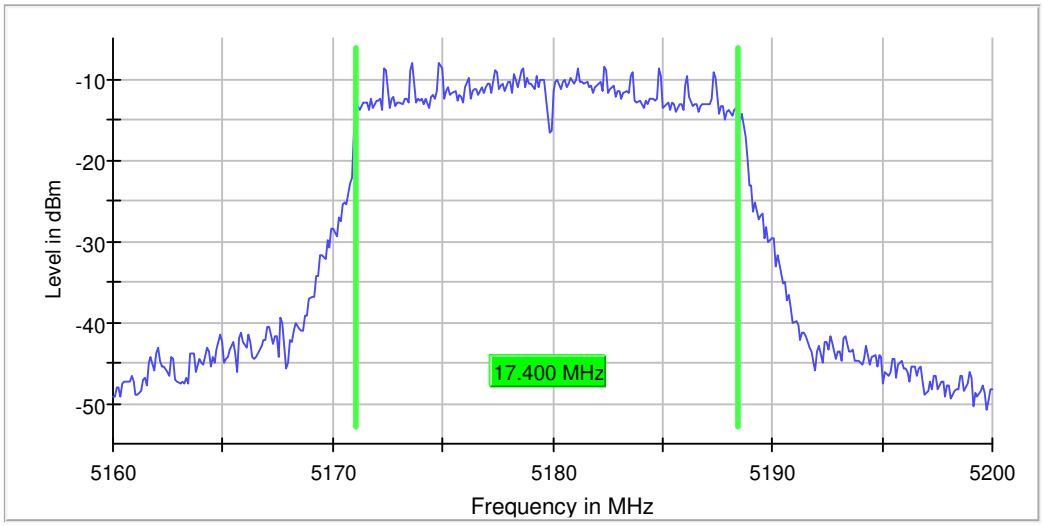
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5180.000000 | 17.400000 | --- | --- | 5171.050000 | 5188.450000 |

**(continuation of the "6 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5180.000000 | -8.1 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.16000 GHz | 5.16000 GHz |
| Stop Frequency | 5.20000 GHz | 5.20000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 100.000 kHz | ~ 100.000 kHz |
| VBW | 300.000 kHz | ~ 300.000 kHz |
| SweepPoints | 400 | ~ 400 |
| Sweeptime | 94.810 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |

| | | |
|---|---|---|
| **Stablevalue** | **0.30 dB** | **0.30 dB** |
| **Run** | **29 / max. 150** | **max. 150** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.21 dB** | **0.30 dB** |

# Occupied Channel Bandwidth 99% (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

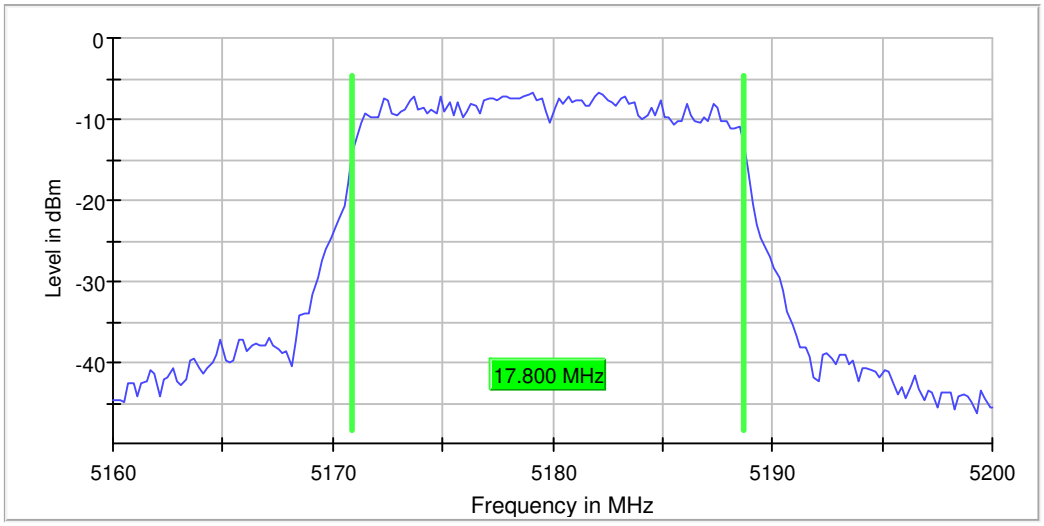
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5180.000000 | 17.800000 | --- | --- | 5170.900000 | 5188.700000 |

**(continuation of the "99 % Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Result |
|---|---|
| 5180.000000 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.16000 GHz | 5.16000 GHz |
| Stop Frequency | 5.20000 GHz | 5.20000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | <= 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 17 / max. 150 | max. 150 |

| | | |
|---|---|---|
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.04 dB** | **0.30 dB** |

# Band Edge low (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

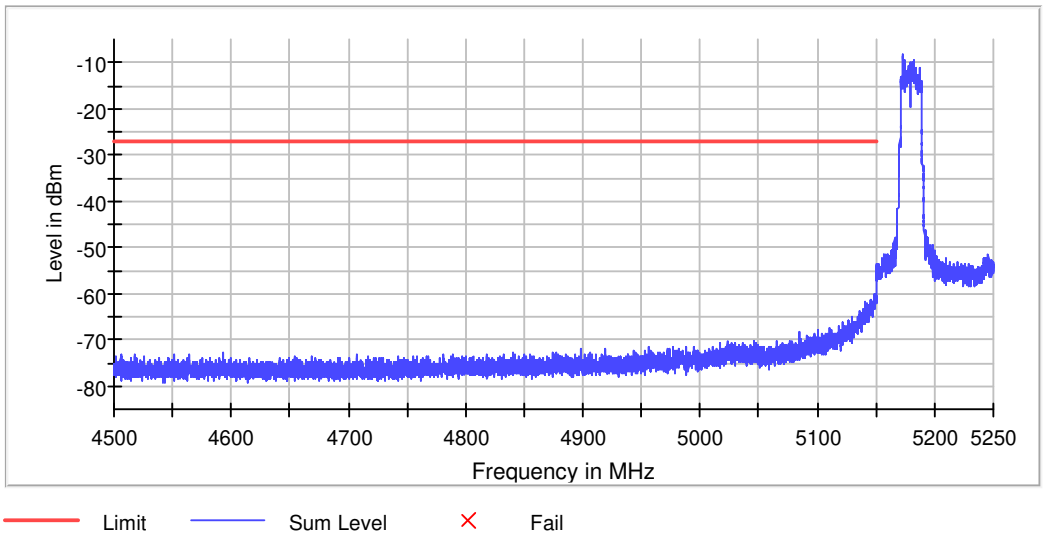
| DUT Frequency (MHz) | Result |
|---|---|
| 5180.000000 | PASS |

## Inband Peak

| Frequency (MHz) | Level (dBm) |
|---|---|
| 5173.625000 | -8.2 |

## Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|---|---|---|---|---|
| 5149.025000 | -60.0 | 33.0 | -27.0 | PASS |
| 5148.325000 | -60.1 | 33.1 | -27.0 | PASS |
| 5148.625000 | -60.3 | 33.3 | -27.0 | PASS |
| 5148.975000 | -60.3 | 33.3 | -27.0 | PASS |
| 5148.375000 | -60.3 | 33.3 | -27.0 | PASS |
| 5148.725000 | -60.4 | 33.4 | -27.0 | PASS |
| 5148.675000 | -60.5 | 33.5 | -27.0 | PASS |
| 5149.875000 | -60.5 | 33.5 | -27.0 | PASS |
| 5148.275000 | -60.6 | 33.6 | -27.0 | PASS |
| 5149.825000 | -60.8 | 33.8 | -27.0 | PASS |
| 5149.775000 | -60.8 | 33.8 | -27.0 | PASS |
| 5149.275000 | -61.0 | 34.0 | -27.0 | PASS |
| 5149.325000 | -61.0 | 34.0 | -27.0 | PASS |
| 5149.725000 | -61.1 | 34.1 | -27.0 | PASS |
| 5149.225000 | -61.3 | 34.3 | -27.0 | PASS |




## Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 100.000 MHz | 100.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 2000 | ~ 2000 |
| Sweeptime | 227.813 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 1 / max. 1 | max. 1 |
| Stable | 0 / 1 | 1 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 4.50000 GHz | 4.50000 GHz |
| Stop Frequency | 5.15000 GHz | 5.15000 GHz |
| Span | 650.000 MHz | 650.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 13000 | ~ 13000 |
| Sweeptime | 13.000 ms | AUTO |
| Reference Level | -20.000 dBm | -20.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 1 / max. 1 | max. 1 |
| Stable | 0 / 1 | 1 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

# Emission Bandwidth 26 dB (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

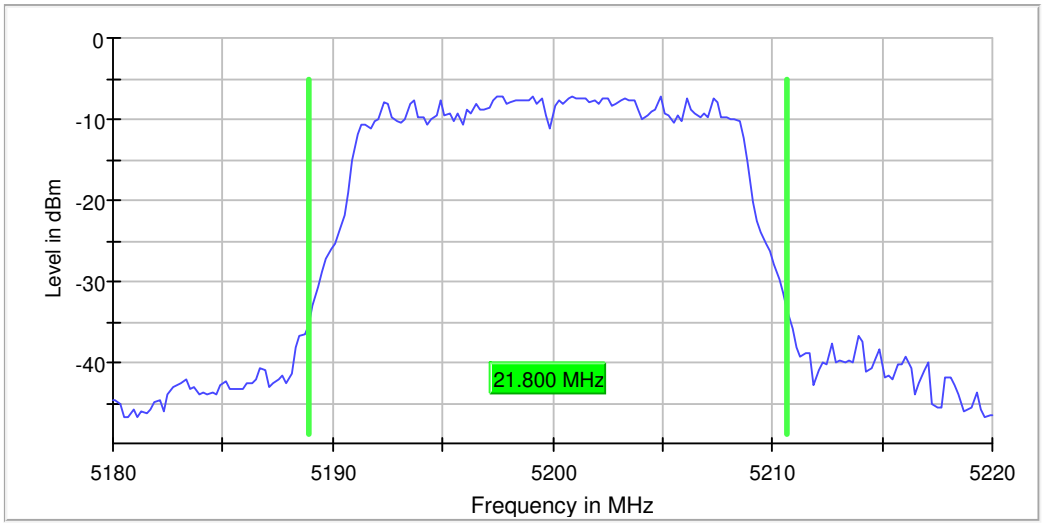
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

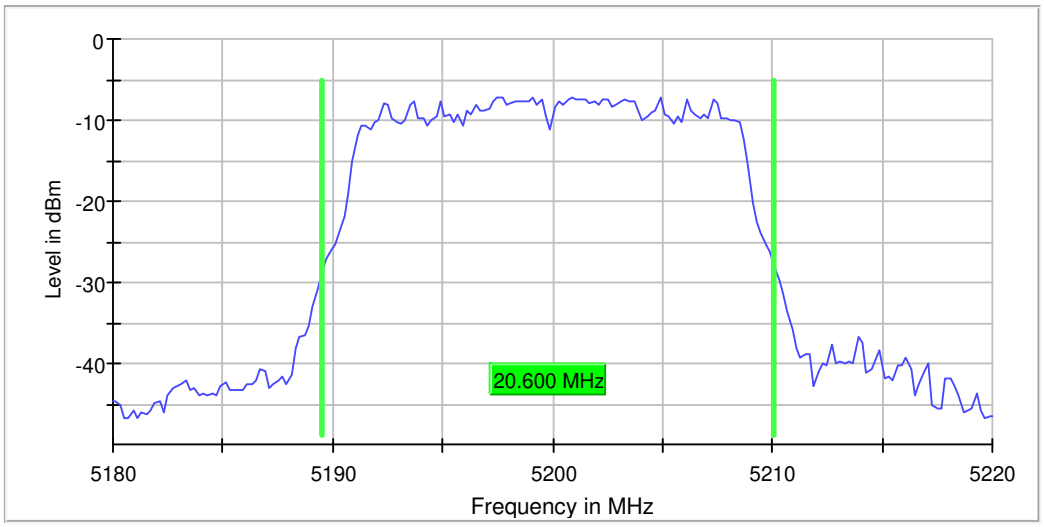
## 26 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5200.000000 | 21.800000 | --- | --- | 5188.900000 | 5210.700000 |

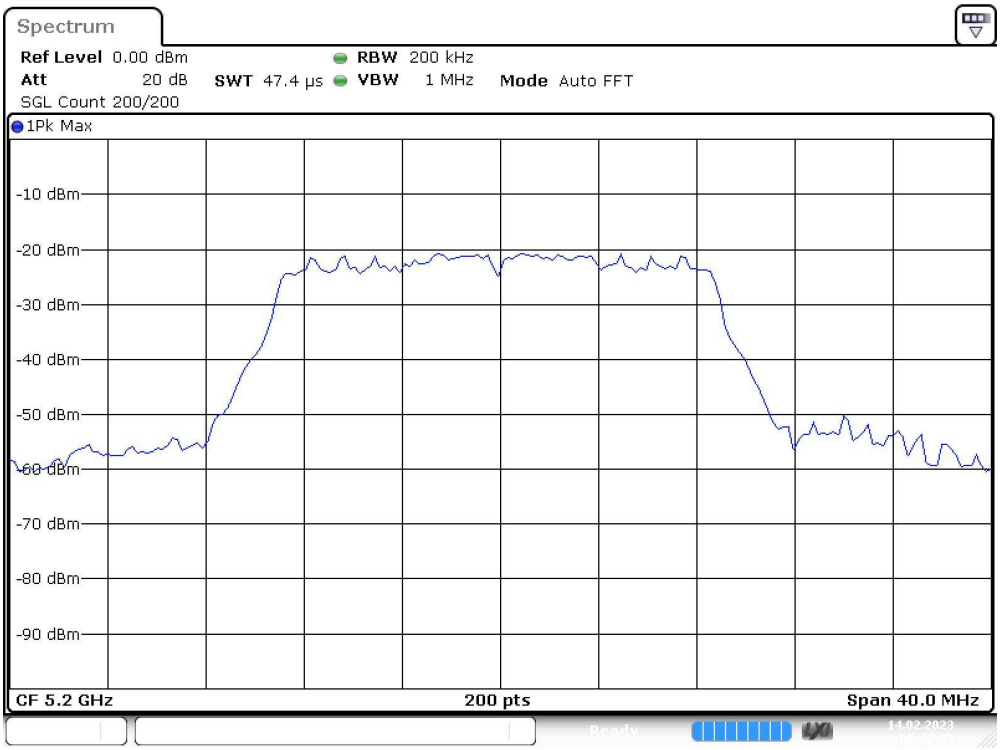
**(continuation of the "26 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5200.000000 | -7.2 | PASS |




0
-10
-20
-30
-40
Level in dBm
20.600 MHz
5180
5190
5200
5210
5220
Frequency in MHz

Bandwidth

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## Measurement

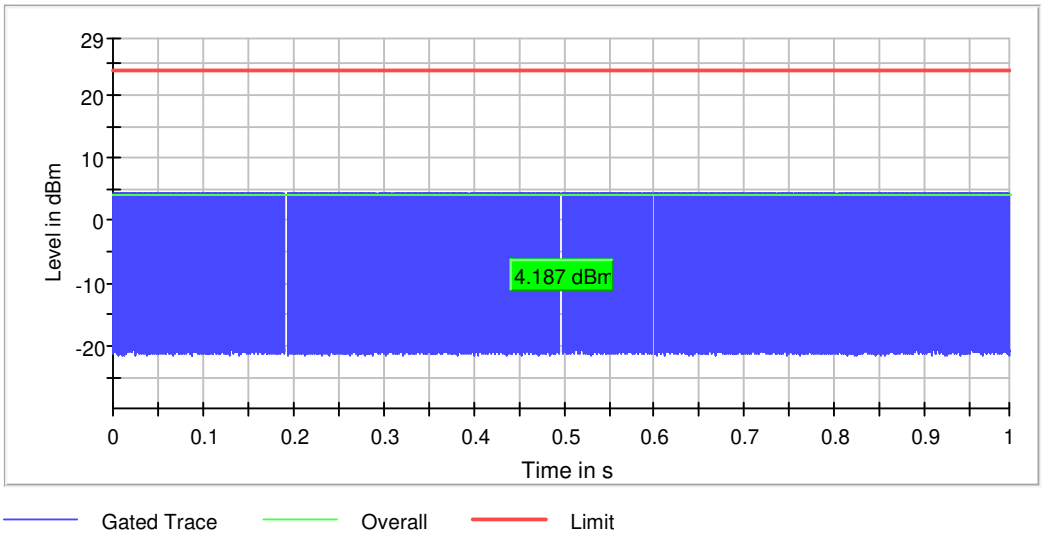
| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.18000 GHz | 5.18000 GHz |
| Stop Frequency | 5.22000 GHz | 5.22000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | ~ 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 12 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.17 dB | 0.30 dB |

# RF output power (5200 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---|---|---|---|---|---|
| 5200.000000 | 4.2 | 24.0 | 4.2 | 98.816 | PASS |



# Power Spectral Density (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

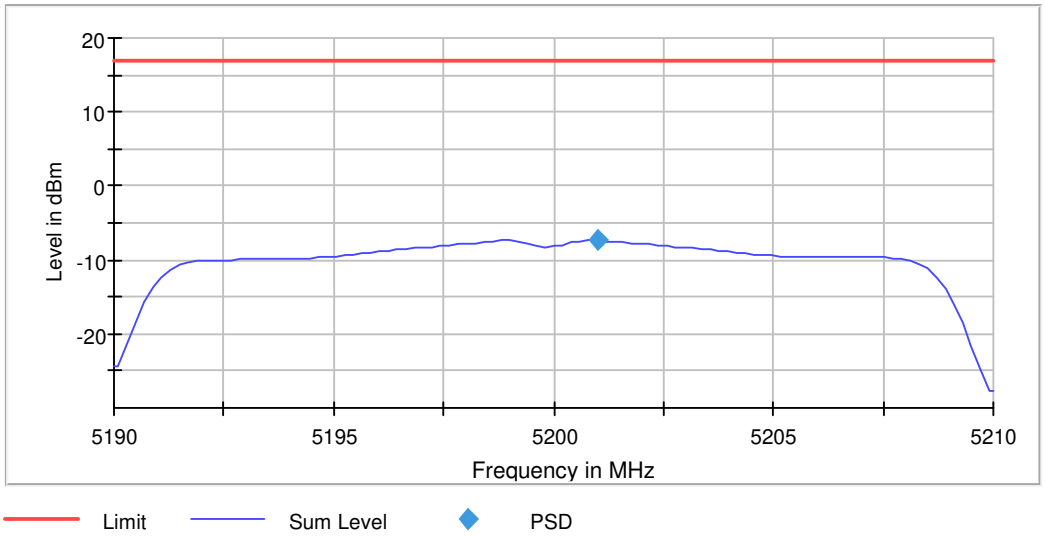
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---|---|---|---|---|
| 5200.000000 | 5200.990099 | -7.354 | 17.0 | PASS |

## Ports

| Port | Duty Cycle (%) |
|---|---|
| 1 | 97.049 |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.19000 GHz | 5.19000 GHz |
| Stop Frequency | 5.21000 GHz | 5.21000 GHz |
| Span | 20.000 MHz | 20.000 MHz |
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 101 | ~ 40 |
| Sweeptime | 2.020 s | 2.020 s |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |

| | | |
|---|---|---|
| **Run** | **2 / max. 15** | **max. 15** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.03 dB** | **0.30 dB** |

# Minimum Emission Bandwidth 6 dB (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

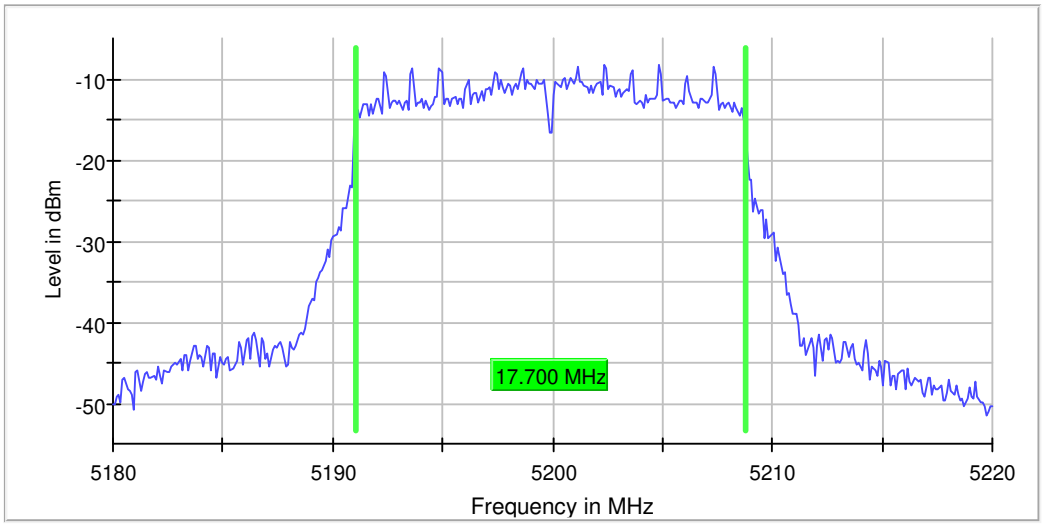
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5200.000000 | 17.700000 | --- | --- | 5191.050000 | 5208.750000 |

**(continuation of the "6 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5200.000000 | -8.2 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.18000 GHz | 5.18000 GHz |
| Stop Frequency | 5.22000 GHz | 5.22000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 100.000 kHz | ~ 100.000 kHz |
| VBW | 300.000 kHz | ~ 300.000 kHz |
| SweepPoints | 400 | ~ 400 |
| Sweeptime | 94.810 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |

| | | |
|---|---|---|
| **Stablevalue** | **0.30 dB** | **0.30 dB** |
| **Run** | **17 / max. 150** | **max. 150** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.30 dB** | **0.30 dB** |

# Occupied Channel Bandwidth 99% (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

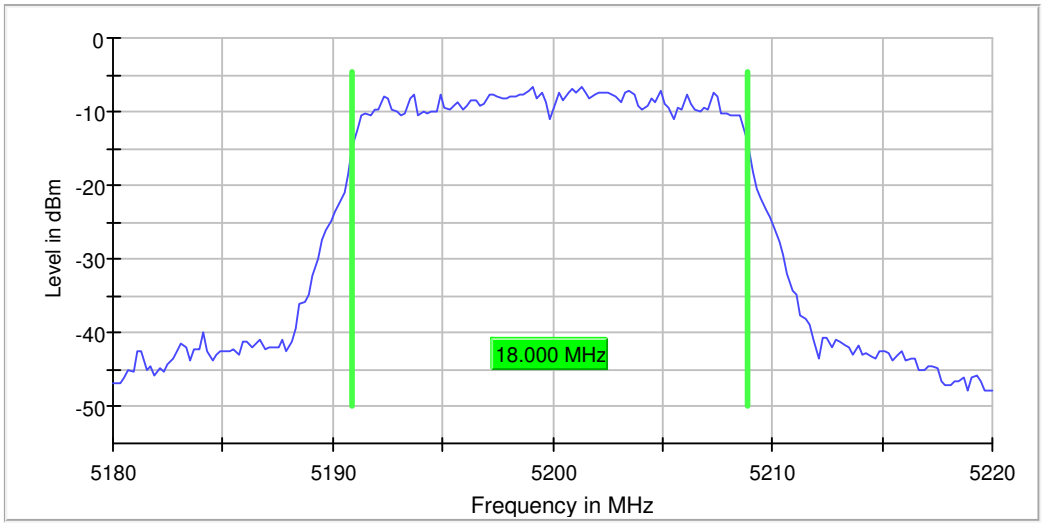
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5200.000000 | 18.000000 | --- | --- | 5190.900000 | 5208.900000 |

**(continuation of the "99 % Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Result |
|---|---|
| 5200.000000 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.18000 GHz | 5.18000 GHz |
| Stop Frequency | 5.22000 GHz | 5.22000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | <= 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 12 / max. 150 | max. 150 |

| | | |
|---|---|---|
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.30 dB** | **0.30 dB** |

# Emission Bandwidth 26 dB (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

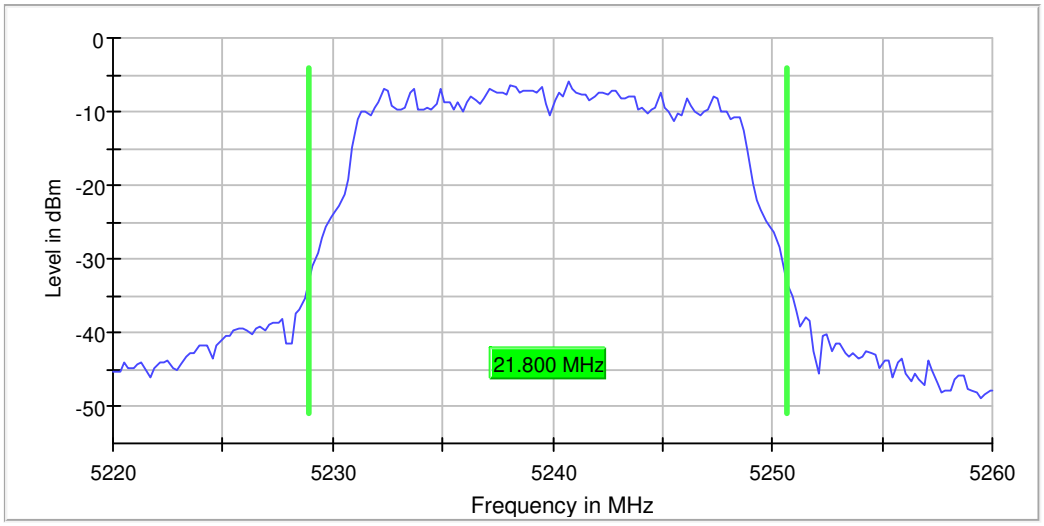
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

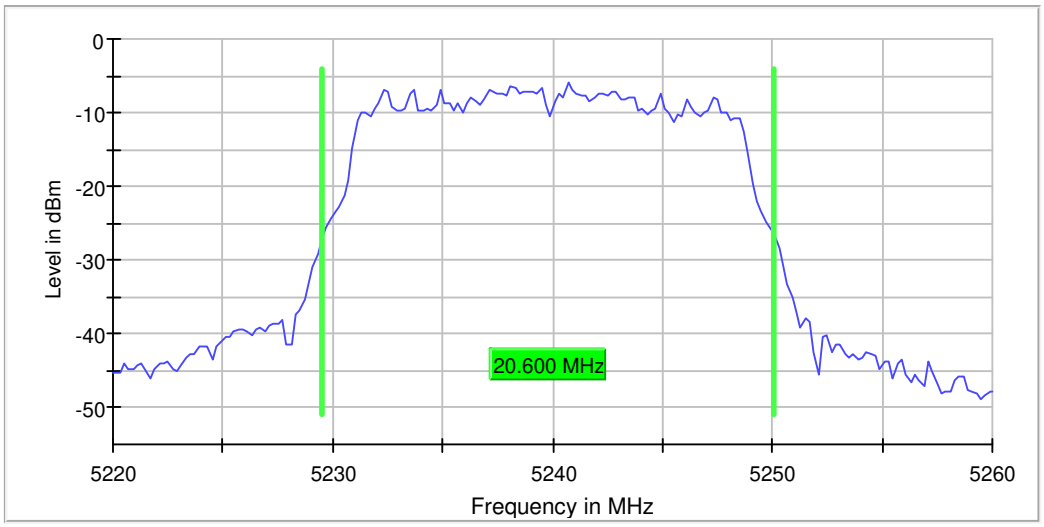
## 26 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5240.000000 | 21.800000 | --- | --- | 5228.900000 | 5250.700000 |

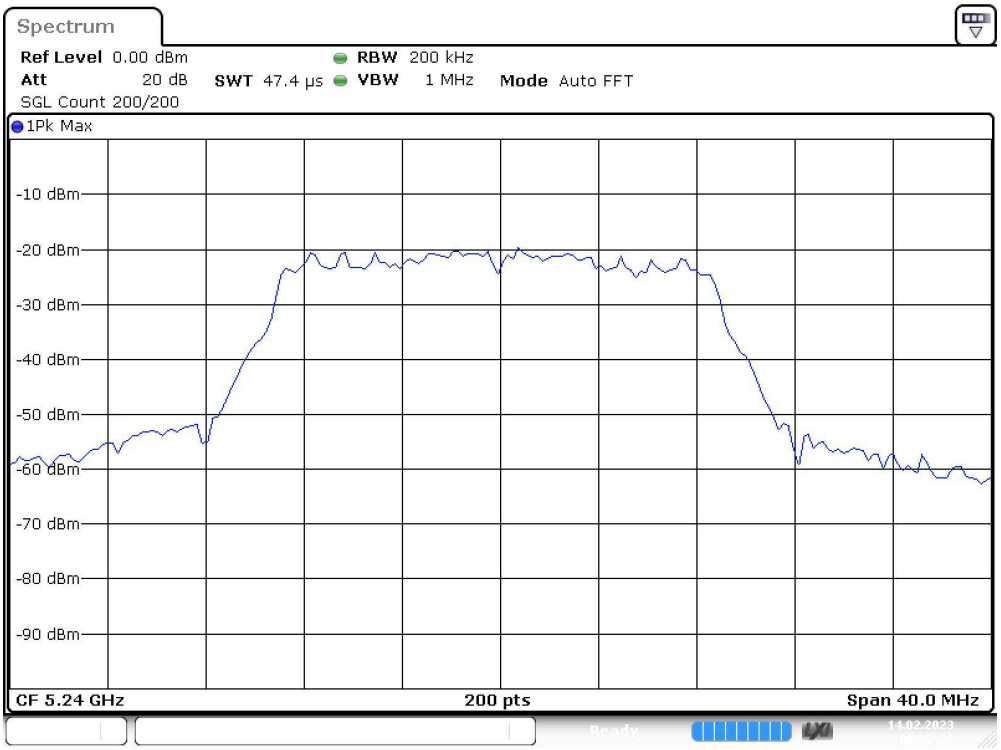
**(continuation of the "26 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5240.000000 | -6.0 | PASS |




0
-10
-20
-30
-40
-50
Level in dBm
20.600 MHz
5220
5230
5240
5250
5260
Frequency in MHz

Bandwidth

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## Measurement

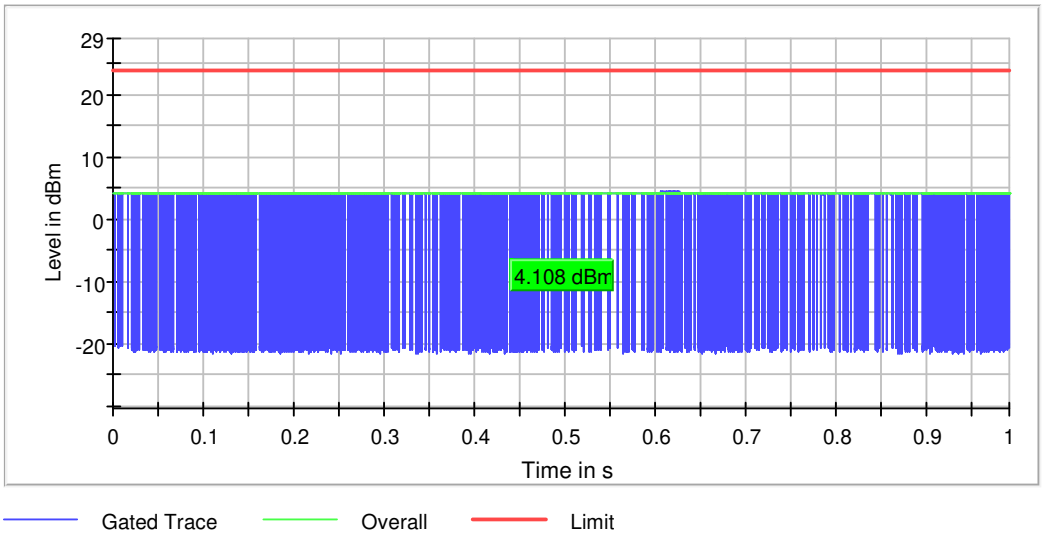
| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.22000 GHz | 5.22000 GHz |
| Stop Frequency | 5.26000 GHz | 5.26000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | ~ 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 8 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.09 dB | 0.30 dB |

# RF output power (5240 MHz; 20.000 dBm; 20 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---|---|---|---|---|---|
| 5240.000000 | 4.1 | 24.0 | 4.1 | 98.870 | PASS |



# Power Spectral Density (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

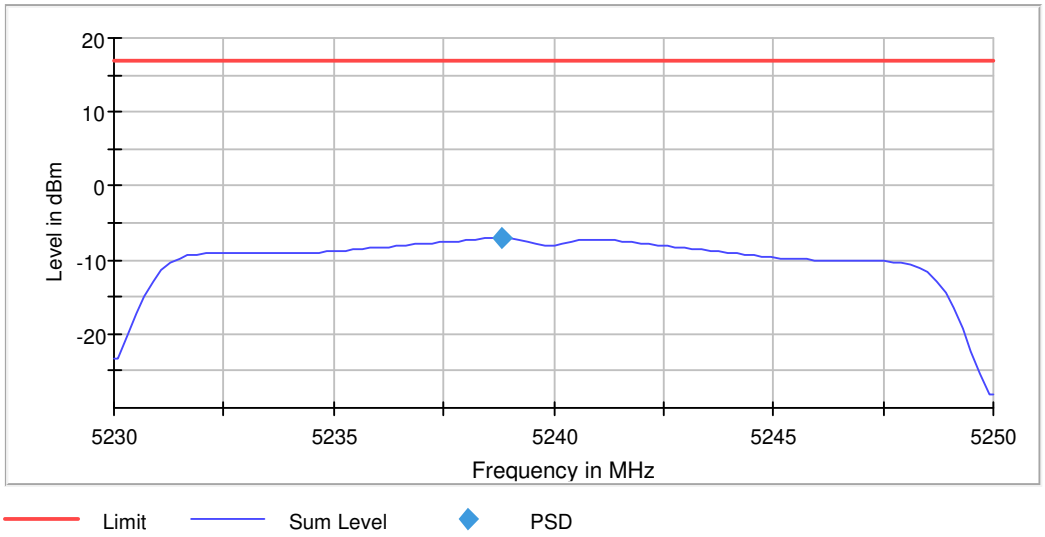
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---|---|---|---|---|
| 5240.000000 | 5238.811881 | -7.036 | 17.0 | PASS |

## Ports

| Port | Duty Cycle (%) |
|---|---|
| 1 | 97.049 |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.23000 GHz | 5.23000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 20.000 MHz | 20.000 MHz |
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 101 | ~ 40 |
| Sweeptime | 2.020 s | 2.020 s |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |

| | | |
|---|---|---|
| **Run** | **2 / max. 15** | **max. 15** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.02 dB** | **0.30 dB** |

# Minimum Emission Bandwidth 6 dB (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

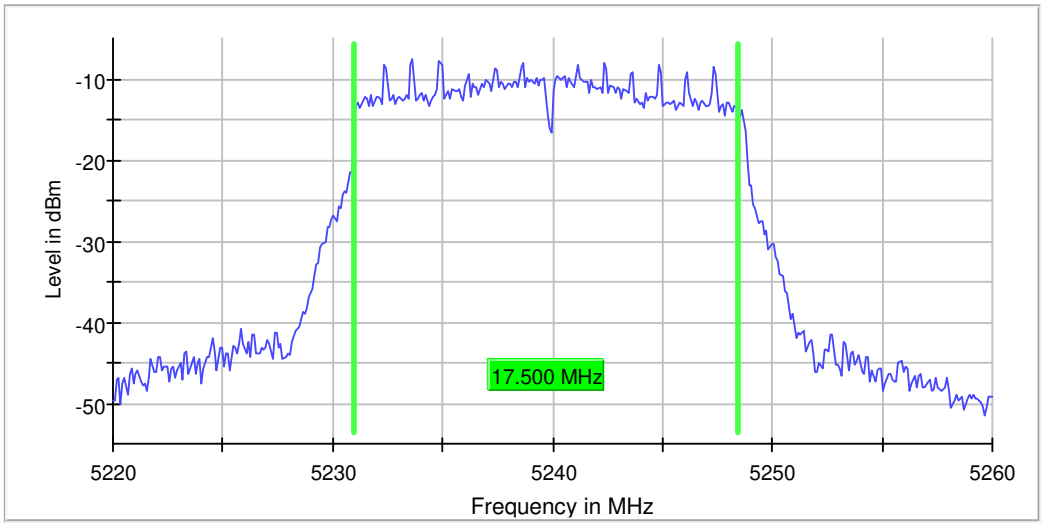
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5240.000000 | 17.500000 | --- | --- | 5230.950000 | 5248.450000 |

**(continuation of the "6 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5240.000000 | -7.6 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.22000 GHz | 5.22000 GHz |
| Stop Frequency | 5.26000 GHz | 5.26000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 100.000 kHz | ~ 100.000 kHz |
| VBW | 300.000 kHz | ~ 300.000 kHz |
| SweepPoints | 400 | ~ 400 |
| Sweeptime | 94.810 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |

| | | |
|---|---|---|
| **Stablevalue** | **0.30 dB** | **0.30 dB** |
| **Run** | **16 / max. 150** | **max. 150** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.00 dB** | **0.30 dB** |

# Occupied Channel Bandwidth 99% (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

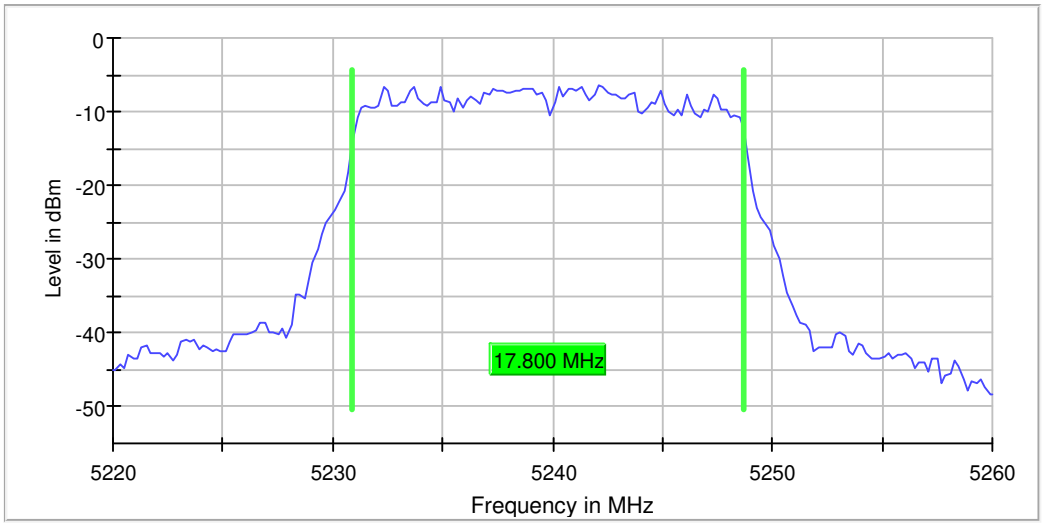
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5240.000000 | 17.800000 | --- | --- | 5230.900000 | 5248.700000 |

**(continuation of the "99 % Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Result |
|---|---|
| 5240.000000 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.22000 GHz | 5.22000 GHz |
| Stop Frequency | 5.26000 GHz | 5.26000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 200.000 kHz | <= 200.000 kHz |
| VBW | 1.000 MHz | >= 600.000 kHz |
| SweepPoints | 200 | ~ 200 |
| Sweeptime | 47.405 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 11 / max. 150 | max. 150 |

| | | |
|---|---|---|
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.28 dB** | **0.30 dB** |

# Band Edge high (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

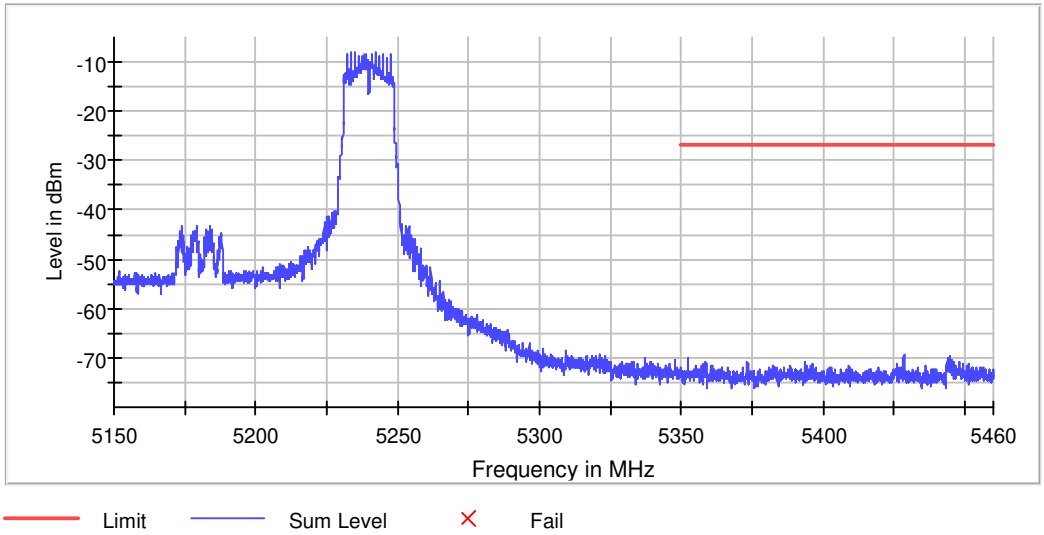
| DUT Frequency (MHz) | Result |
|---|---|
| 5240.000000 | PASS |

## Inband Peak

| Frequency (MHz) | Level (dBm) |
|---|---|
| 5234.875000 | -7.9 |

## Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|---|---|---|---|---|
| 5428.475000 | -69.5 | 42.5 | -27.0 | PASS |
| 5444.475000 | -69.8 | 42.8 | -27.0 | PASS |
| 5444.425000 | -69.9 | 42.9 | -27.0 | PASS |
| 5443.975000 | -70.0 | 43.0 | -27.0 | PASS |
| 5428.425000 | -70.0 | 43.0 | -27.0 | PASS |
| 5428.525000 | -70.1 | 43.1 | -27.0 | PASS |
| 5352.325000 | -70.1 | 43.1 | -27.0 | PASS |
| 5352.275000 | -70.2 | 43.2 | -27.0 | PASS |
| 5443.825000 | -70.3 | 43.3 | -27.0 | PASS |
| 5443.775000 | -70.3 | 43.3 | -27.0 | PASS |
| 5444.025000 | -70.5 | 43.5 | -27.0 | PASS |
| 5445.675000 | -70.5 | 43.5 | -27.0 | PASS |
| 5445.625000 | -70.7 | 43.7 | -27.0 | PASS |
| 5445.525000 | -70.7 | 43.7 | -27.0 | PASS |
| 5445.575000 | -70.7 | 43.7 | -27.0 | PASS |




## Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 100.000 MHz | 100.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 2000 | ~ 2000 |
| Sweeptime | 227.813 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 31 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.30 dB | 0.50 dB |

## Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.25000 GHz | 5.25000 GHz |
| Stop Frequency | 5.46000 GHz | 5.46000 GHz |
| Span | 210.000 MHz | 210.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 4200 | ~ 4200 |
| Sweeptime | 474.609 µs | AUTO |
| Reference Level | -20.000 dBm | -20.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 5 / max. 150 | max. 150 |
| Stable | 1 / 1 | 1 |
| Max Stable Difference | 0.45 dB | 0.50 dB |

# FCC 15.407 2015

## DUT Information

Frequencies

| | | |
|---|---|---|
| WLAN CH 38 (5190 MHz) | WLAN CH 46 (5230 MHz) | WLAN CH 151 (5755 MHz) |
| WLAN CH 159 (5795 MHz) | WLAN CH 54 (5270 MHz) | WLAN CH 62 (5310 MHz) |
| WLAN CH 102 (5510 MHz) | WLAN CH 110 (5550 MHz) | WLAN CH 118 (5590 MHz) |
| WLAN CH 134 (5670 MHz) | | |

Bandwidths

40 MHz (40 MHz)

Power

20.000 dBm (20 dBm)

Beamforming Gain

| | |
|---|---|
| 20.000 dBm (20 dBm) | 0 dB |

Gain Tables

| | |
|---|---|
| 20.000 dBm (20 dBm) | Port 1: 0dBi; |

DUT Settings

| | |
|---|---|
| No. of transmission chains | 1 |
| DFS capability | Yes |
| DFS Mode | Master |
| Equipment Type | Portable |
| TPC | No |

## Hardware Setup: WMS Measurements\Hardware Setup

| | |
|---|---|
| Spectrum Analyzer: | SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40 |
| Vector Generator: | VG SMBV100B (VG SMBV100B) @ VISA (ADR TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33 |
| Generator: | SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015 |
| OSP: | OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2 |

## Summary

| Test | Frequency (MHz) | Nominal Power (dBm) | Nominal Bandwidth (MHz) | Result |
|---|---|---|---|---|
| Emission Bandwidth 26 dB | 5190.000 | 20.0 | 40.000000 | PASS |
| RF output power | 5190.000 | 20.0 | 40.000000 | PASS |
| Power Spectral Density | 5190.000 | 20.0 | 40.000000 | PASS |
| Minimum Emission Bandwidth 6 dB | 5190.000 | 20.0 | 40.000000 | PASS |
| Occupied Channel Bandwidth 99% | 5190.000 | 20.0 | 40.000000 | PASS |
| Band Edge low | 5190.000 | 20.0 | 40.000000 | PASS |
| Emission Bandwidth 26 dB | 5230.000 | 20.0 | 40.000000 | PASS |
| RF output power | 5230.000 | 20.0 | 40.000000 | PASS |
| Power Spectral Density | 5230.000 | 20.0 | 40.000000 | PASS |
| Minimum Emission Bandwidth 6 dB | 5230.000 | 20.0 | 40.000000 | PASS |
| Occupied Channel Bandwidth 99% | 5230.000 | 20.0 | 40.000000 | PASS |
| Band Edge high | 5230.000 | 20.0 | 40.000000 | PASS |

# Emission Bandwidth 26 dB (5190 MHz; 20.000 dBm; 40 MHz)

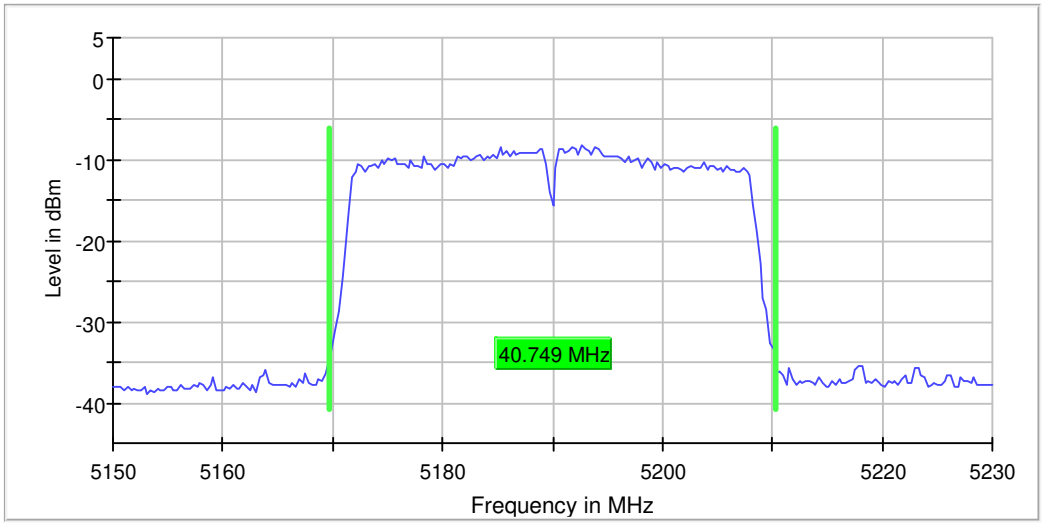
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 26 dB Bandwidth

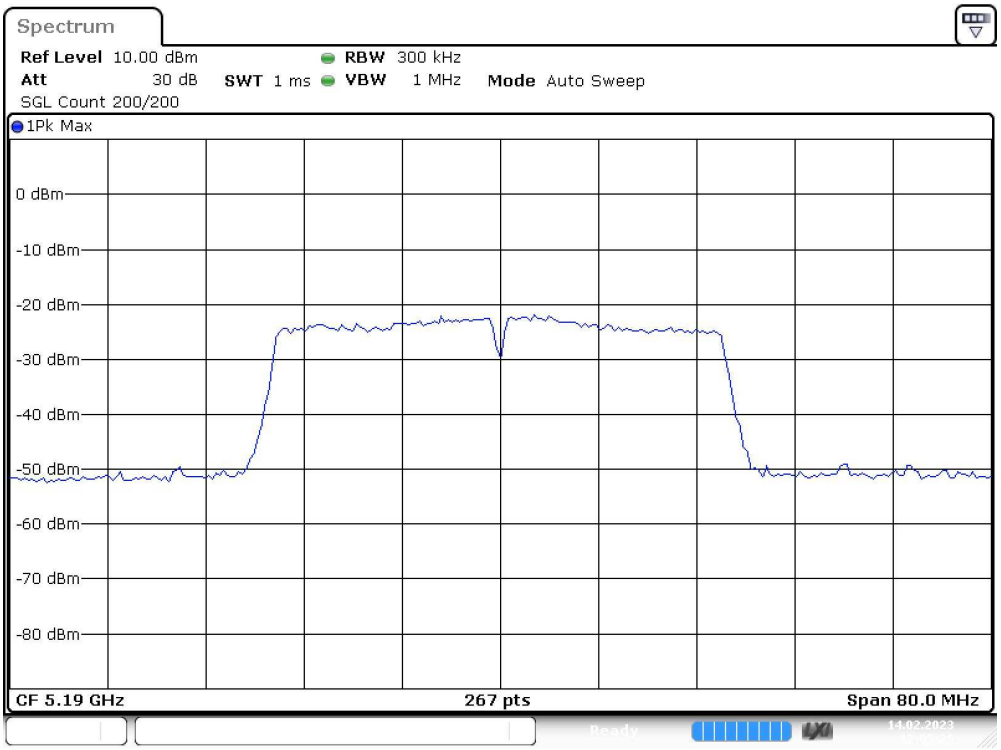
| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5190.000000 | 40.749064 | --- | --- | 5169.625468 | 5210.374532 |

**(continuation of the "26 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5190.000000 | -8.3 | PASS |




Bandwidth

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## Measurement

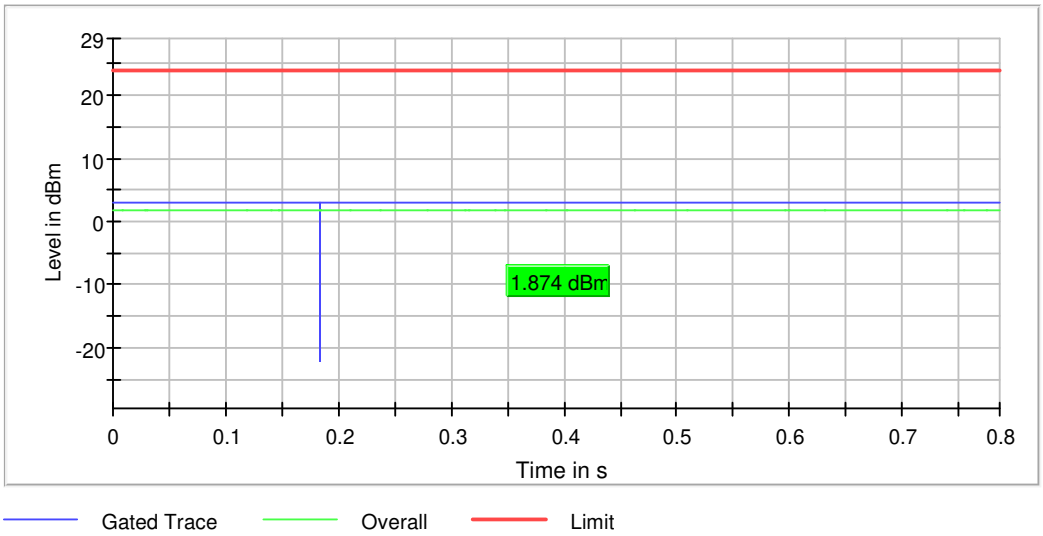
| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.23000 GHz | 5.23000 GHz |
| Span | 80.000 MHz | 80.000 MHz |
| RBW | 300.000 kHz | ~ 400.000 kHz |
| VBW | 1.000 MHz | >= 900.000 kHz |
| SweepPoints | 267 | ~ 267 |
| Sweeptime | 1.000 ms | AUTO |
| Reference Level | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 44 / max. 150 | max. 150 |
| Stable | 5 / 5 | 5 |
| Max Stable Difference | 0.29 dB | 0.30 dB |

# RF output power (5190 MHz; 20.000 dBm; 40 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---|---|---|---|---|---|
| 5190.000000 | 1.9 | 24.0 | 1.9 | 100.000 | PASS |



# Power Spectral Density (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Max level of analyzer (-11.3 dBm) more than 31.0 dB below the nominal power level.

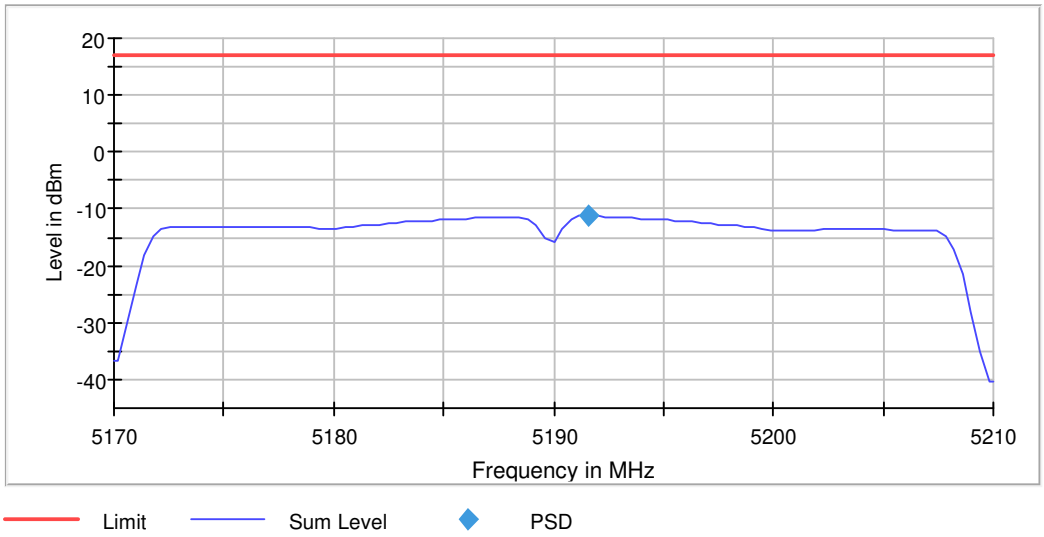
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---|---|---|---|---|
| 5190.000000 | 5191.584158 | -11.273 | 17.0 | PASS |

## Ports

| Port | Duty Cycle (%) |
|---|---|
| 1 | 94.261 |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.17000 GHz | 5.17000 GHz |
| Stop Frequency | 5.21000 GHz | 5.21000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 101 | ~ 80 |
| Sweeptime | 2.020 s | 2.020 s |
| Reference Level | -10.000 dBm | -10.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |

| | | |
|---|---|---|
| **Preamp** | **off** | **off** |
| **Stablemode** | **Trace** | **Trace** |
| **Stablevalue** | **0.30 dB** | **0.30 dB** |
| **Run** | **2 / max. 15** | **max. 15** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.02 dB** | **0.30 dB** |

# Minimum Emission Bandwidth 6 dB (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

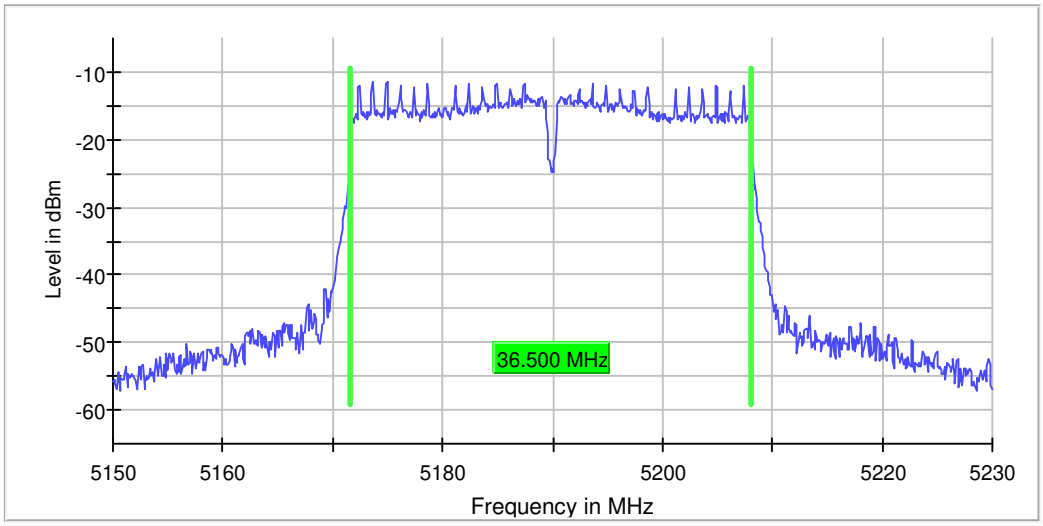
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5190.000000 | 36.500000 | --- | --- | 5171.650000 | 5208.150000 |

**(continuation of the "6 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5190.000000 | -11.5 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.23000 GHz | 5.23000 GHz |
| Span | 80.000 MHz | 80.000 MHz |
| RBW | 100.000 kHz | ~ 100.000 kHz |
| VBW | 300.000 kHz | ~ 300.000 kHz |
| SweepPoints | 800 | ~ 800 |
| Sweeptime | 1.070 ms | AUTO |
| Reference Level | -10.000 dBm | -10.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |

| | | |
|---|---|---|
| **Stablevalue** | **0.30 dB** | **0.30 dB** |
| **Run** | **20 / max. 150** | **max. 150** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.28 dB** | **0.30 dB** |

# Occupied Channel Bandwidth 99% (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

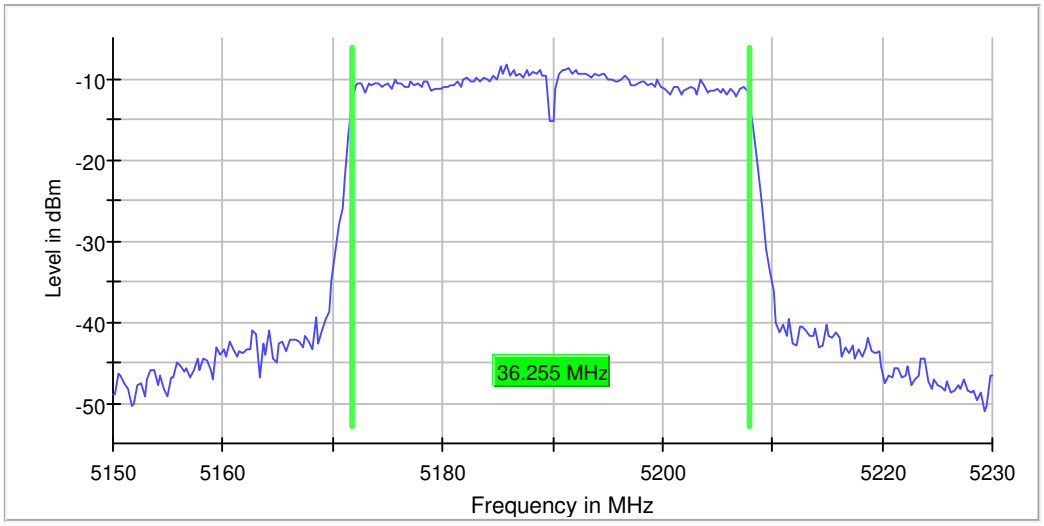
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5190.000000 | 36.254682 | --- | --- | 5171.722846 | 5207.977528 |

**(continuation of the "99 % Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Result |
|---|---|
| 5190.000000 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.23000 GHz | 5.23000 GHz |
| Span | 80.000 MHz | 80.000 MHz |
| RBW | 300.000 kHz | <= 400.000 kHz |
| VBW | 1.000 MHz | >= 900.000 kHz |
| SweepPoints | 267 | ~ 267 |
| Sweeptime | 1.000 ms | AUTO |
| Reference Level | -10.000 dBm | -10.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 10 / max. 150 | max. 150 |

| | | |
|---|---|---|
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.26 dB** | **0.30 dB** |

# Band Edge low (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

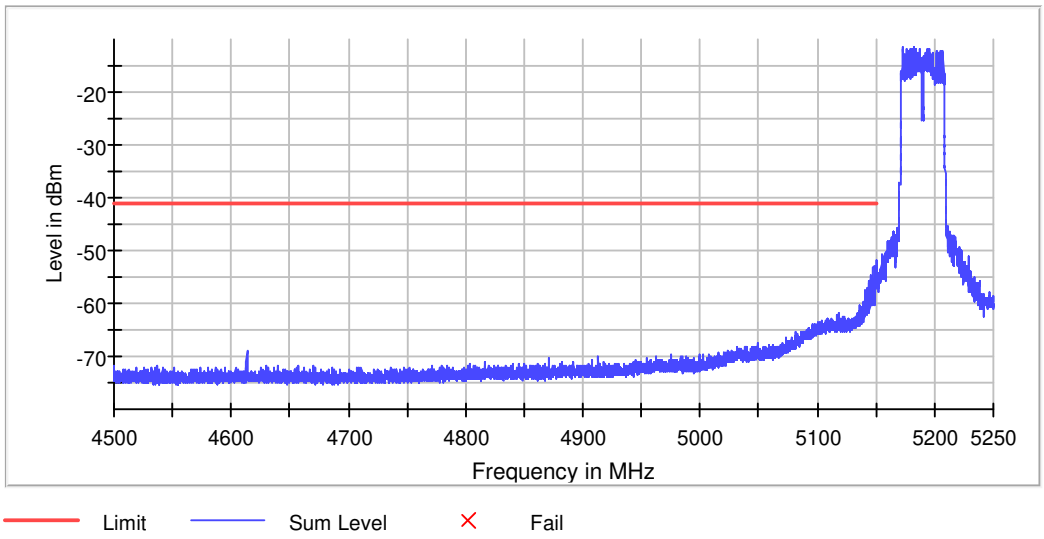
| DUT Frequency (MHz) | Result |
|---|---|
| 5190.000000 | PASS |

## Inband Peak

| Frequency (MHz) | Level (dBm) |
|---|---|
| 5173.625000 | -11.5 |

## Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|---|---|---|---|---|
| 5148.025000 | -52.9 | 11.7 | -41.2 | PASS |
| 5148.075000 | -53.2 | 12.0 | -41.2 | PASS |
| 5147.975000 | -53.3 | 12.1 | -41.2 | PASS |
| 5149.925000 | -53.6 | 12.4 | -41.2 | PASS |
| 5149.875000 | -53.6 | 12.4 | -41.2 | PASS |
| 5146.075000 | -54.7 | 13.5 | -41.2 | PASS |
| 5146.025000 | -55.2 | 13.9 | -41.2 | PASS |
| 5149.525000 | -55.3 | 14.1 | -41.2 | PASS |
| 5149.575000 | -55.3 | 14.1 | -41.2 | PASS |
| 5149.475000 | -55.3 | 14.1 | -41.2 | PASS |
| 5148.375000 | -55.4 | 14.1 | -41.2 | PASS |
| 5149.275000 | -55.4 | 14.2 | -41.2 | PASS |
| 5149.625000 | -55.5 | 14.3 | -41.2 | PASS |
| 5148.625000 | -55.5 | 14.3 | -41.2 | PASS |
| 5146.175000 | -55.5 | 14.3 | -41.2 | PASS |




## Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 100.000 MHz | 100.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 2000 | ~ 2000 |
| Sweeptime | 227.813 µs | AUTO |
| Reference Level | -10.000 dBm | -10.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 77 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.44 dB | 0.50 dB |

## Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 4.50000 GHz | 4.50000 GHz |
| Stop Frequency | 5.15000 GHz | 5.15000 GHz |
| Span | 650.000 MHz | 650.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 13000 | ~ 13000 |
| Sweeptime | 13.000 ms | AUTO |
| Reference Level | -20.000 dBm | -20.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 69 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

# Emission Bandwidth 26 dB (5230 MHz; 20.000 dBm; 40 MHz)

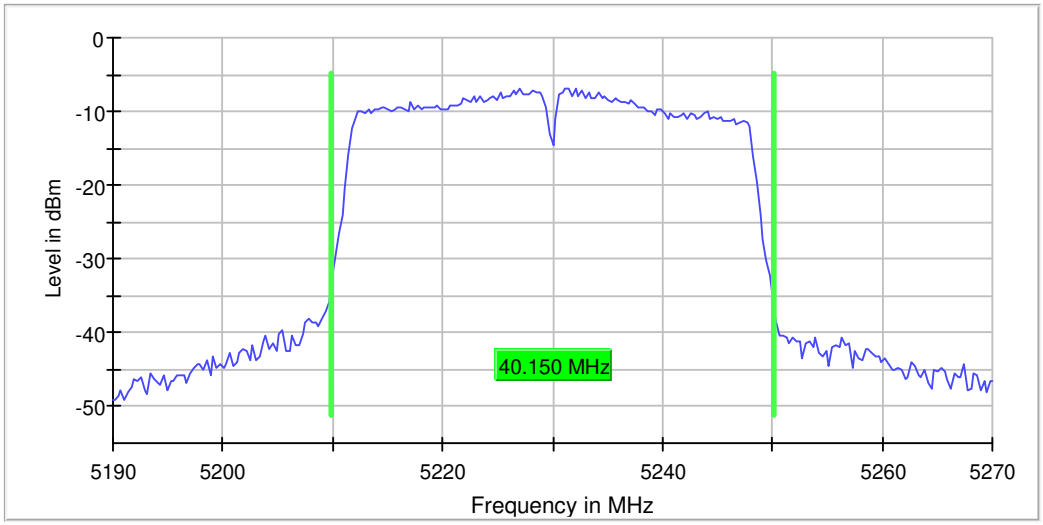
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 26 dB Bandwidth

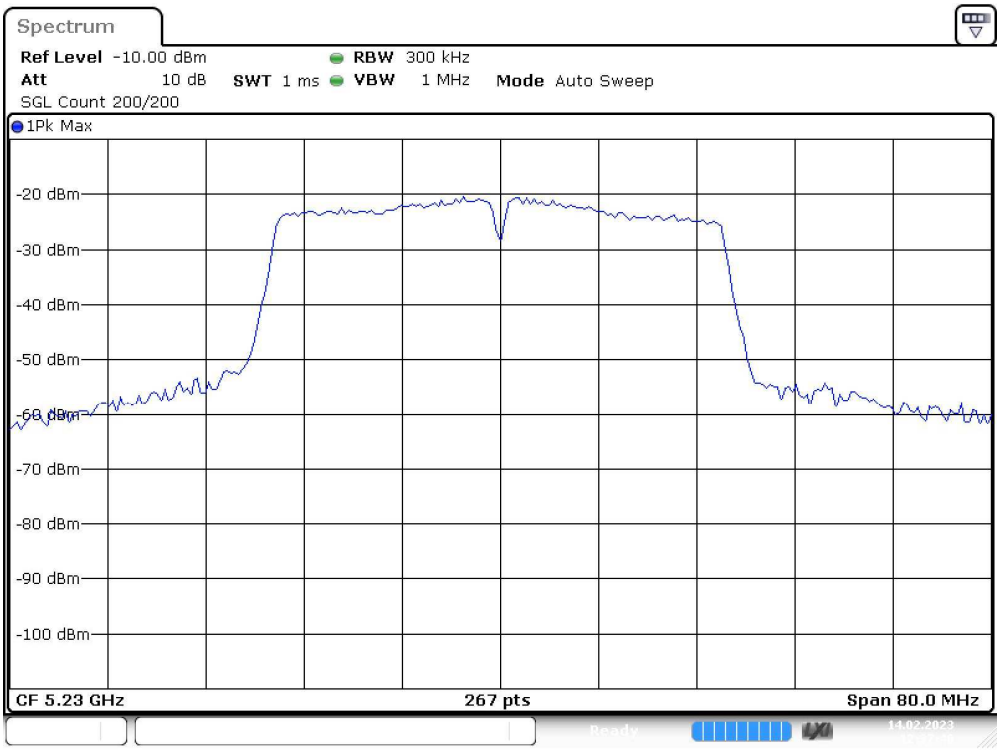
| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5230.000000 | 40.149812 | --- | --- | 5209.925094 | 5250.074906 |

**(continuation of the "26 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5230.000000 | -6.8 | PASS |




Bandwidth

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## Measurement

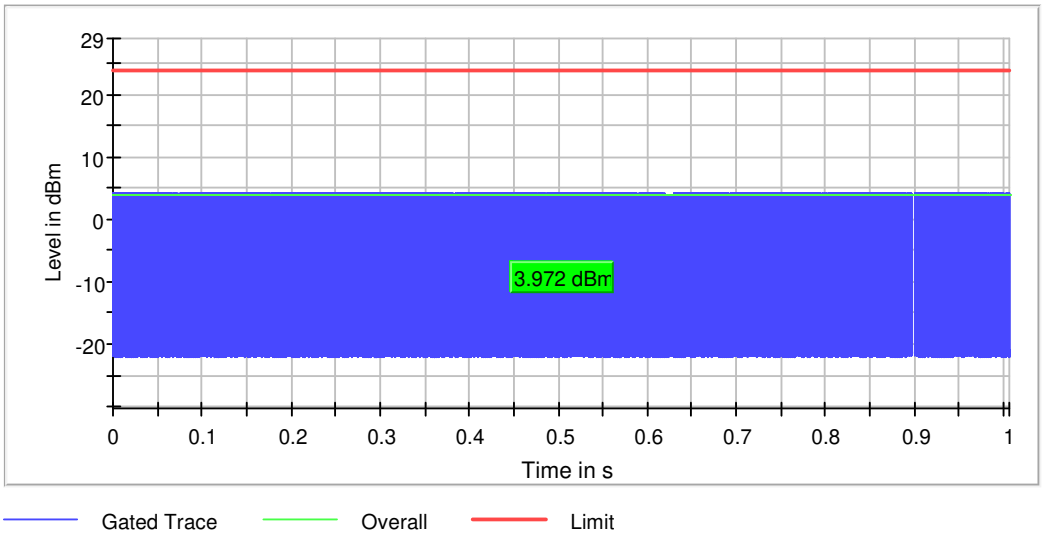
| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.19000 GHz | 5.19000 GHz |
| Stop Frequency | 5.27000 GHz | 5.27000 GHz |
| Span | 80.000 MHz | 80.000 MHz |
| RBW | 300.000 kHz | ~ 400.000 kHz |
| VBW | 1.000 MHz | >= 900.000 kHz |
| SweepPoints | 267 | ~ 267 |
| Sweeptime | 1.000 ms | AUTO |
| Reference Level | -10.000 dBm | -10.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 58 / max. 150 | max. 150 |
| Stable | 5 / 5 | 5 |
| Max Stable Difference | 0.16 dB | 0.30 dB |

# RF output power (5230 MHz; 20.000 dBm; 40 MHz)

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Gated RMS (dBm) | Limit Max (dBm) | Gated EIRP (dBm) | DutyCycle (%) | Result |
|---|---|---|---|---|---|
| 5230.000000 | 4.0 | 24.0 | 4.0 | 99.482 | PASS |



# Power Spectral Density (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

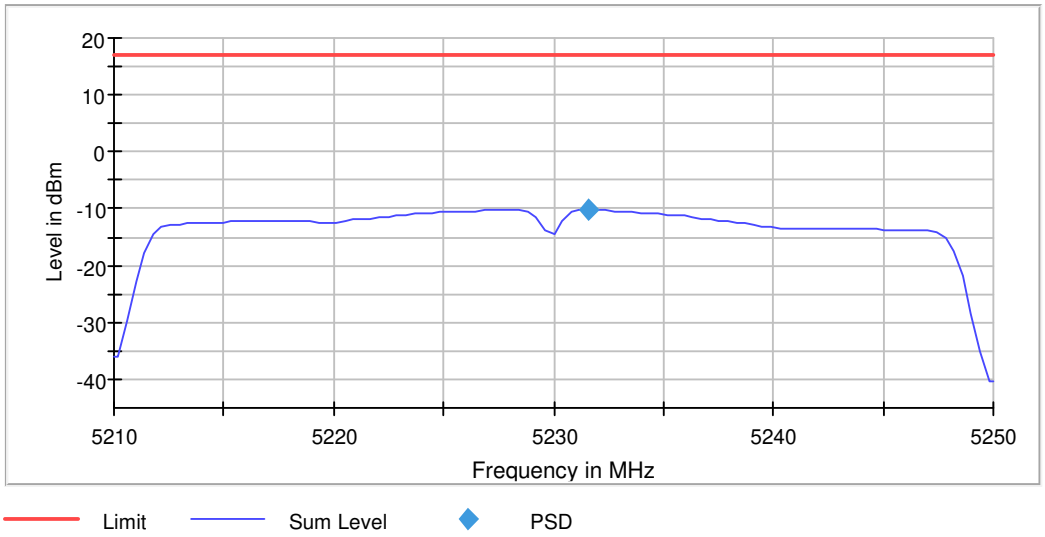
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Frequency (MHz) | PSD (dBm) | Limit Max (dBm) | Result |
|---|---|---|---|---|
| 5230.000000 | 5231.584158 | -10.150 | 17.0 | PASS |

## Ports

| Port | Duty Cycle (%) |
|---|---|
| 1 | 94.273 |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.21000 GHz | 5.21000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 40.000 MHz | 40.000 MHz |
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 101 | ~ 80 |
| Sweeptime | 2.020 s | 2.020 s |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |

| | | |
|---|---|---|
| **Run** | **2 / max. 15** | **max. 15** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.02 dB** | **0.30 dB** |

# Minimum Emission Bandwidth 6 dB (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

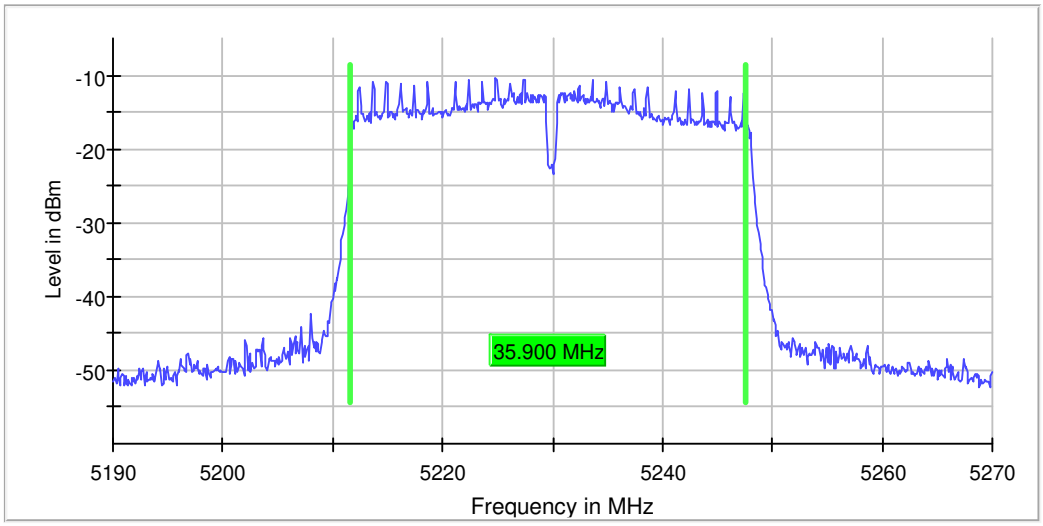
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 6 dB Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5230.000000 | 35.900000 | --- | --- | 5211.650000 | 5247.550000 |

**(continuation of the "6 dB Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Max Level (dBm) | Result |
|---|---|---|
| 5230.000000 | -10.5 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.19000 GHz | 5.19000 GHz |
| Stop Frequency | 5.27000 GHz | 5.27000 GHz |
| Span | 80.000 MHz | 80.000 MHz |
| RBW | 100.000 kHz | ~ 100.000 kHz |
| VBW | 300.000 kHz | ~ 300.000 kHz |
| SweepPoints | 800 | ~ 800 |
| Sweeptime | 1.070 ms | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |

| | | |
|---|---|---|
| **Stablevalue** | **0.30 dB** | **0.30 dB** |
| **Run** | **33 / max. 150** | **max. 150** |
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.25 dB** | **0.30 dB** |

# Occupied Channel Bandwidth 99% (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

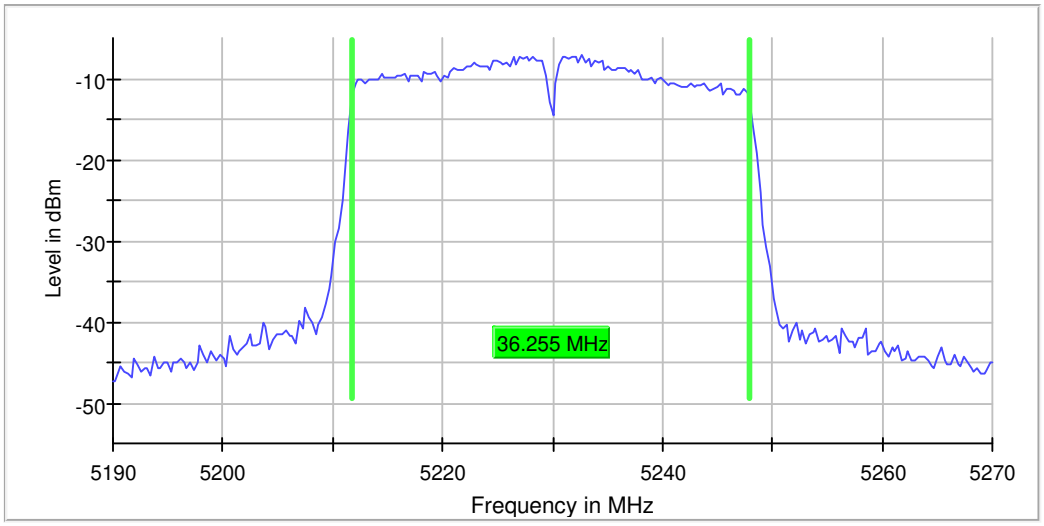
Test according to FCC title 47 part 15 §15.407(a),(e), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## 99 % Bandwidth

| DUT Frequency (MHz) | Bandwidth (MHz) | Limit Min (MHz) | Limit Max (MHz) | Band Edge Left (MHz) | Band Edge Right (MHz) |
|---|---|---|---|---|---|
| 5230.000000 | 36.254682 | --- | --- | 5211.722846 | 5247.977528 |

**(continuation of the "99 % Bandwidth" table from column 6 ...)**

| DUT Frequency (MHz) | Result |
|---|---|
| 5230.000000 | PASS |




## Measurement

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.19000 GHz | 5.19000 GHz |
| Stop Frequency | 5.27000 GHz | 5.27000 GHz |
| Span | 80.000 MHz | 80.000 MHz |
| RBW | 300.000 kHz | <= 400.000 kHz |
| VBW | 1.000 MHz | >= 900.000 kHz |
| SweepPoints | 267 | ~ 267 |
| Sweeptime | 1.000 ms | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 200 | 200 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB |
| Run | 27 / max. 150 | max. 150 |

| | | |
|---|---|---|
| **Stable** | **1 / 1** | **1** |
| **Max Stable Difference** | **0.12 dB** | **0.30 dB** |

# Band Edge high (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

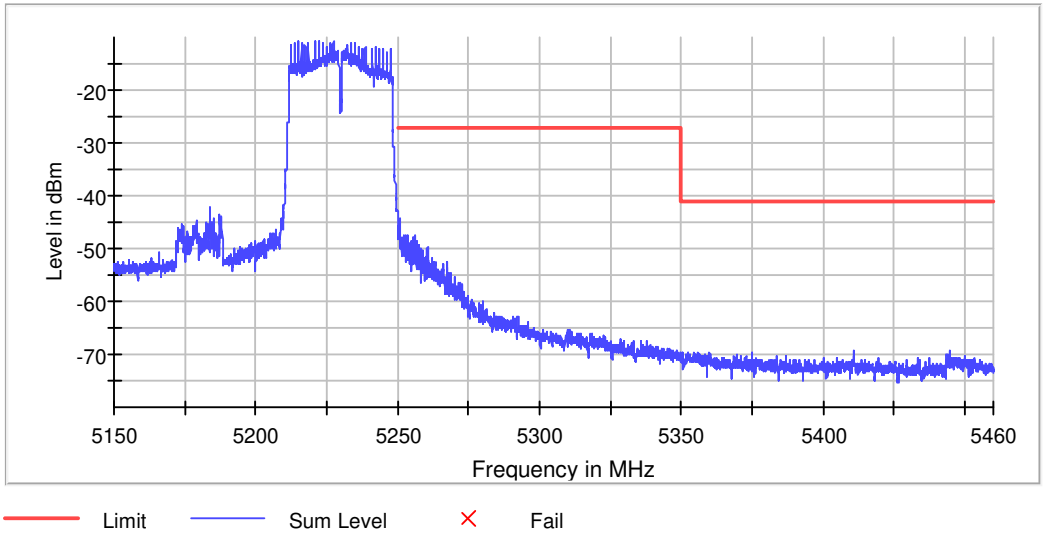
| DUT Frequency (MHz) | Result |
|---|---|
| 5230.000000 | PASS |

## Inband Peak

| Frequency (MHz) | Level (dBm) |
|---|---|
| 5222.375000 | -10.6 |

## Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) | Result |
|---|---|---|---|---|
| 5251.125000 | -44.2 | 17.2 | -27.0 | PASS |
| 5251.175000 | -44.7 | 17.7 | -27.0 | PASS |
| 5251.075000 | -44.8 | 17.8 | -27.0 | PASS |
| 5250.125000 | -45.6 | 18.6 | -27.0 | PASS |
| 5250.025000 | -45.8 | 18.8 | -27.0 | PASS |
| 5250.075000 | -46.0 | 19.0 | -27.0 | PASS |
| 5250.175000 | -46.0 | 19.0 | -27.0 | PASS |
| 5250.525000 | -46.1 | 19.1 | -27.0 | PASS |
| 5250.475000 | -46.2 | 19.2 | -27.0 | PASS |
| 5250.225000 | -46.2 | 19.2 | -27.0 | PASS |
| 5250.425000 | -46.6 | 19.6 | -27.0 | PASS |
| 5250.275000 | -47.4 | 20.4 | -27.0 | PASS |
| 5256.075000 | -47.5 | 20.5 | -27.0 | PASS |
| 5252.725000 | -47.5 | 20.5 | -27.0 | PASS |
| 5252.675000 | -47.5 | 20.5 | -27.0 | PASS |




## Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.15000 GHz | 5.15000 GHz |
| Stop Frequency | 5.25000 GHz | 5.25000 GHz |
| Span | 100.000 MHz | 100.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 2000 | ~ 2000 |
| Sweeptime | 227.813 µs | AUTO |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 55 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.43 dB | 0.50 dB |

## Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Start Frequency | 5.25000 GHz | 5.25000 GHz |
| Stop Frequency | 5.46000 GHz | 5.46000 GHz |
| Span | 210.000 MHz | 210.000 MHz |
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 4200 | ~ 4200 |
| Sweeptime | 474.609 µs | AUTO |
| Reference Level | -20.000 dBm | -20.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 19 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

# FCC 15.407 2015

## DUT Information

Frequencies

| | | |
|---|---|---|
| WLAN CH 36 (5180 MHz) | WLAN CH 40 (5200 MHz) | WLAN CH 48 (5240 MHz) |
| WLAN CH 149 (5745 MHz) | WLAN CH 157 (5785 MHz) | WLAN CH 165 (5825 MHz) |
| WLAN CH 52 (5260 MHz) | WLAN CH 56 (5280 MHz) | WLAN CH 64 (5320 MHz) |
| WLAN CH 100 (5500 MHz) | WLAN CH 120 (5600 MHz) | WLAN CH 140 (5700 MHz) |
| WLAN CH 116 (5580 MHz) | WLAN CH 151 (5755 MHz) | WLAN CH 159 (5795 MHz) |
| WLAN CH 155 (5775 MHz) | | |

Bandwidths

| | | |
|---|---|---|
| 20 MHz (20 MHz) | 40 MHz (40 MHz) | 80 MHz (80 MHz) |

Power

20.000 dBm (20 dBm)

Beamforming Gain

| | |
|---|---|
| 20.000 dBm (20 dBm) | 0 dB |

Gain Tables

| | |
|---|---|
| 20.000 dBm (20 dBm) | Port 1: 0dBi; |

DUT Settings

| | |
|---|---|
| No. of transmission chains | 1 |
| DFS capability | Yes |
| DFS Mode | Master |
| Equipment Type | Portable |
| TPC | No |

## Hardware Setup: WMS Measurements\Hardware Setup

| | |
|---|---|
| Spectrum Analyzer: | SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40 |
| Vector Generator: | VG SMBV100A (VG SMBV100A) @ VISA (ADR TCPIP::192.168.48.25::INST0::INSTR), SN 260451, FW 4.15.125.49 |
| Generator: | SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015 |
| OSP: | OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2 |

## Summary

| Test | Frequency (MHz) | Nominal Power (dBm) | Nominal Bandwidth (MHz) | Result |
|---|---|---|---|---|
| Tx Spurious Emission | 5180.000 | 20.0 | 20.000000 | PASS |
| Tx Spurious Emission | 5200.000 | 20.0 | 20.000000 | PASS |
| Tx Spurious Emission | 5240.000 | 20.0 | 20.000000 | PASS |

# Tx Spurious Emission (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Result |
|---|---|
| 5180.000000 | PASS |

## Final measurements

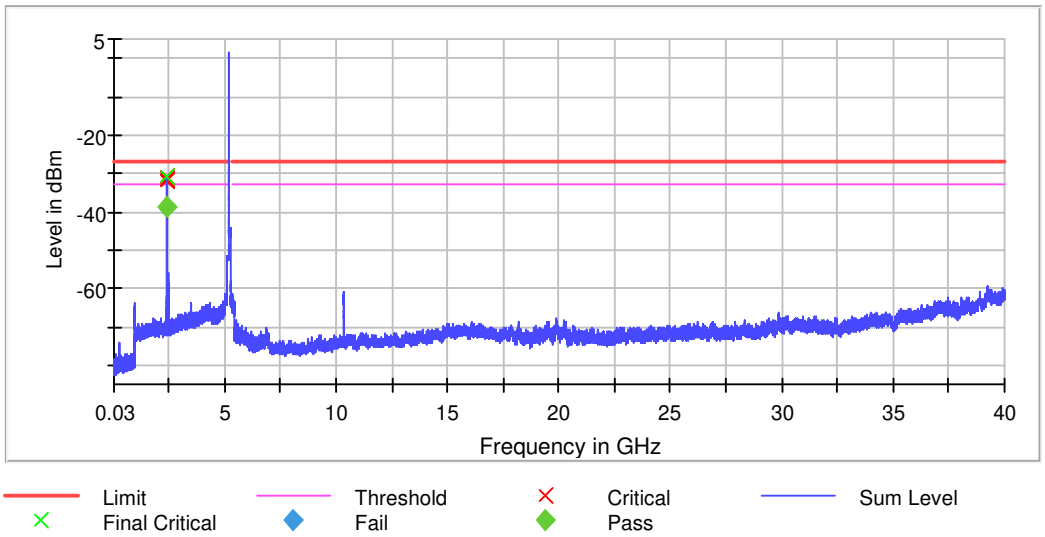
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|
| 2412.500000 | -31.1 | -38.9 | -27.0 | 11.9 | PASS |

## Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|---|---|---|---|
| 2412.500000 | -31.1 | 4.1 | -27.0 |
| 2411.500000 | -31.1 | 4.1 | -27.0 |
| 2413.500000 | -31.6 | 4.6 | -27.0 |
| 2414.500000 | -31.8 | 4.8 | -27.0 |
| 2410.500000 | -32.0 | 5.0 | -27.0 |
| 2409.500000 | -33.8 | 6.8 | -27.0 |
| 2415.500000 | -35.4 | 8.4 | -27.0 |
| 2416.500000 | -36.0 | 9.0 | -27.0 |
| 2408.500000 | -37.1 | 10.1 | -27.0 |
| 2417.500000 | -39.3 | 12.3 | -27.0 |
| 2407.500000 | -41.0 | 14.0 | -27.0 |
| 2418.500000 | -44.3 | 17.3 | -27.0 |
| 2406.500000 | -44.9 | 17.9 | -27.0 |
| 5149.500000 | -47.4 | 20.4 | -27.0 |
| 5147.500000 | -48.7 | 21.7 | -27.0 |

## Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|---|---|---|---|
| 30.000000 | 1000.000000 | 1 | 1 |
| 1000.000000 | 5150.000000 | 2 | 2 |
| 5150.000000 | 5250.000000 | 2 | 2 |
| 5250.000000 | 5350.000000 | 2 | 2 |
| 5350.000000 | 5470.000000 | 2 | 2 |
| 5470.000000 | 5725.000000 | 2 | 2 |
| 5725.000000 | 5850.000000 | 2 | 2 |
| 5850.000000 | 7000.000000 | 2 | 2 |
| 7000.000000 | 18000.000000 | 2 | 2 |
| 18000.000000 | 26000.000000 | 2 | 2 |
| 26000.000000 | 40000.000000 | 2 | 2 |




## Pre Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 9700 | ~ 9700 |
| Sweeptime | 9.700 ms | AUTO |
| Reference Level | -20.000 dBm | -30.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 52 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.36 dB | 0.50 dB |

## Pre Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 4150 | ~ 4150 |
| Sweeptime | 4.150 ms | AUTO |
| Reference Level | -20.000 dBm | -30.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 6 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Final Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Span | ZeroSpan | ZeroSpan |
| RBW | 1.000 MHz | ~ 1.000 MHz |
| VBW | 3.000 MHz | ~ 3.000 MHz |
| SweepPoints | 10001 | ~ 10001 |
| Sweeptime | 50.000 ms | 50.000 ms |
| Reference Level | 30.000 dBm | 30.000 dBm |
| Attenuation | 50.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 1 | 1 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Clear Write | Clear Write |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |

# Tx Spurious Emission (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Result |
|---|---|
| 5200.000000 | PASS |

## Final measurements

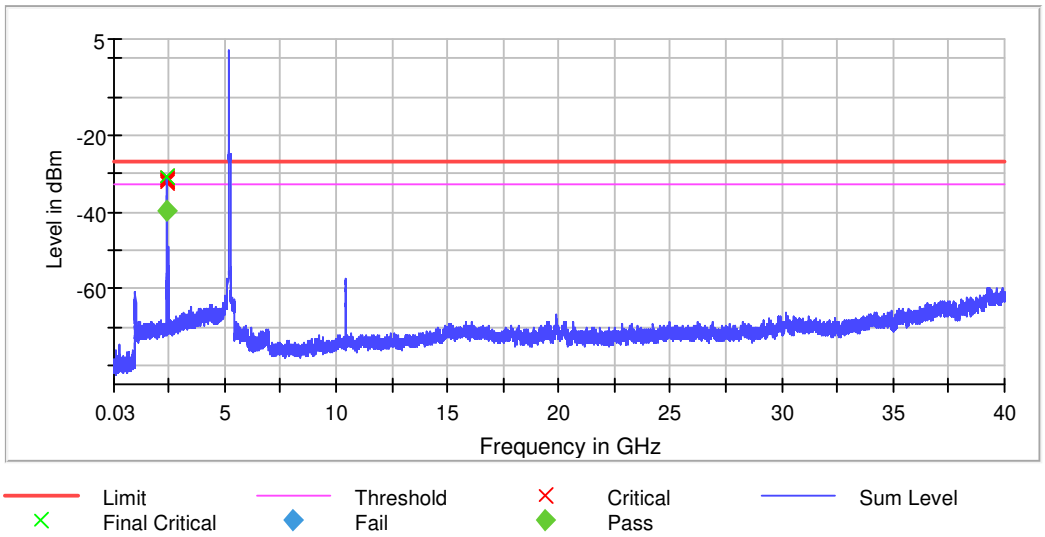
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|
| 2412.500000 | -30.7 | -39.5 | -27.0 | 12.5 | PASS |

## Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|---|---|---|---|
| 2412.500000 | -30.7 | 3.7 | -27.0 |
| 2413.500000 | -31.3 | 4.3 | -27.0 |
| 2410.500000 | -31.8 | 4.8 | -27.0 |
| 2414.500000 | -32.0 | 5.0 | -27.0 |
| 2411.500000 | -32.2 | 5.2 | -27.0 |
| 2409.500000 | -34.0 | 7.0 | -27.0 |
| 2416.500000 | -36.0 | 9.0 | -27.0 |
| 2415.500000 | -37.2 | 10.2 | -27.0 |
| 2408.500000 | -37.7 | 10.7 | -27.0 |
| 2417.500000 | -39.1 | 12.1 | -27.0 |
| 2407.500000 | -42.1 | 15.1 | -27.0 |
| 2418.500000 | -46.4 | 19.4 | -27.0 |
| 2406.500000 | -46.6 | 19.6 | -27.0 |
| 2419.500000 | -48.8 | 21.8 | -27.0 |
| 2459.500000 | -49.0 | 22.0 | -27.0 |

## Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|---|---|---|---|
| 30.000000 | 1000.000000 | 1 | 1 |
| 1000.000000 | 5150.000000 | 2 | 2 |
| 5150.000000 | 5250.000000 | 2 | 2 |
| 5250.000000 | 5350.000000 | 2 | 2 |
| 5350.000000 | 5470.000000 | 2 | 2 |
| 5470.000000 | 5725.000000 | 2 | 2 |
| 5725.000000 | 5850.000000 | 2 | 2 |
| 5850.000000 | 7000.000000 | 2 | 2 |
| 7000.000000 | 18000.000000 | 2 | 2 |
| 18000.000000 | 26000.000000 | 2 | 2 |
| 26000.000000 | 40000.000000 | 2 | 2 |




## Pre Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 9700 | ~ 9700 |
| Sweeptime | 9.700 ms | AUTO |
| Reference Level | -20.000 dBm | -30.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 49 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.36 dB | 0.50 dB |

## Pre Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 4150 | ~ 4150 |
| Sweeptime | 4.150 ms | AUTO |
| Reference Level | -20.000 dBm | -30.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 5 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Final Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Span | ZeroSpan | ZeroSpan |
| RBW | 1.000 MHz | ~ 1.000 MHz |
| VBW | 3.000 MHz | ~ 3.000 MHz |
| SweepPoints | 10001 | ~ 10001 |
| Sweeptime | 50.000 ms | 50.000 ms |
| Reference Level | 30.000 dBm | 30.000 dBm |
| Attenuation | 50.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 1 | 1 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Clear Write | Clear Write |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |

# Tx Spurious Emission (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Result |
|---|---|
| 5240.000000 | PASS |

## Final measurements

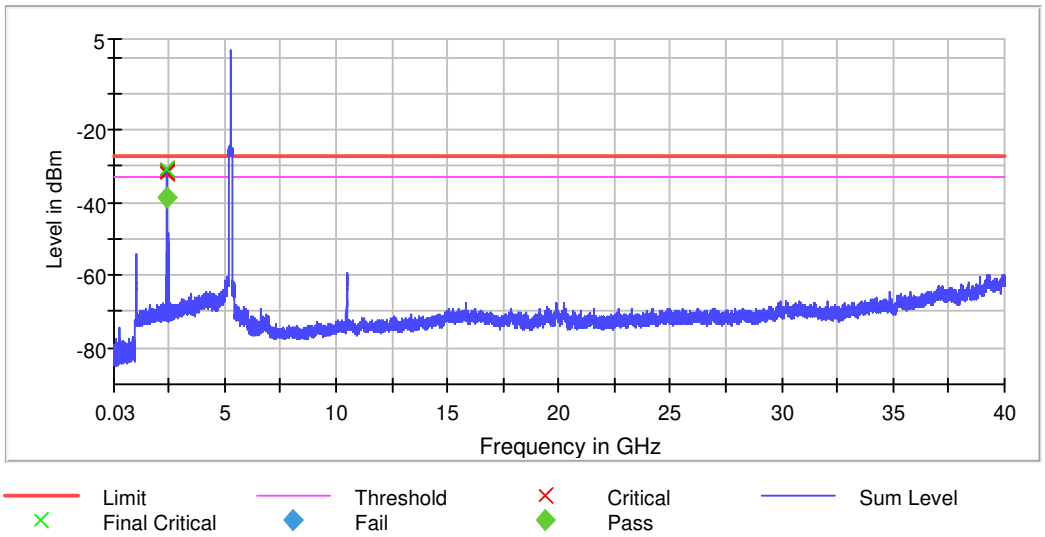
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|
| 2412.500000 | -30.7 | -38.9 | -27.0 | 11.9 | PASS |

## Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|---|---|---|---|
| 2412.500000 | -30.7 | 3.7 | -27.0 |
| 2411.500000 | -31.0 | 4.0 | -27.0 |
| 2413.500000 | -31.1 | 4.1 | -27.0 |
| 2414.500000 | -31.7 | 4.7 | -27.0 |
| 2410.500000 | -32.1 | 5.1 | -27.0 |
| 2415.500000 | -33.7 | 6.7 | -27.0 |
| 2409.500000 | -33.8 | 6.8 | -27.0 |
| 2408.500000 | -36.5 | 9.5 | -27.0 |
| 2416.500000 | -36.5 | 9.5 | -27.0 |
| 2417.500000 | -38.8 | 11.8 | -27.0 |
| 2407.500000 | -42.3 | 15.3 | -27.0 |
| 2418.500000 | -43.3 | 16.3 | -27.0 |
| 2445.500000 | -48.6 | 21.6 | -27.0 |
| 2419.500000 | -48.7 | 21.7 | -27.0 |
| 2406.500000 | -48.8 | 21.8 | -27.0 |

## Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|---|---|---|---|
| 30.000000 | 1000.000000 | 1 | 1 |
| 1000.000000 | 5150.000000 | 2 | 2 |
| 5150.000000 | 5250.000000 | 2 | 2 |
| 5250.000000 | 5350.000000 | 2 | 2 |
| 5350.000000 | 5470.000000 | 2 | 2 |
| 5470.000000 | 5725.000000 | 2 | 2 |
| 5725.000000 | 5850.000000 | 2 | 2 |
| 5850.000000 | 7000.000000 | 2 | 2 |
| 7000.000000 | 18000.000000 | 2 | 2 |
| 18000.000000 | 26000.000000 | 2 | 2 |
| 26000.000000 | 40000.000000 | 2 | 2 |




## Pre Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 9700 | ~ 9700 |
| Sweeptime | 9.700 ms | AUTO |
| Reference Level | -20.000 dBm | -30.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Pre Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 4150 | ~ 4150 |
| Sweeptime | 4.150 ms | AUTO |
| Reference Level | -20.000 dBm | -30.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Final Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Span | ZeroSpan | ZeroSpan |
| RBW | 1.000 MHz | ~ 1.000 MHz |
| VBW | 3.000 MHz | ~ 3.000 MHz |
| SweepPoints | 10001 | ~ 10001 |
| Sweeptime | 50.000 ms | 50.000 ms |
| Reference Level | 30.000 dBm | 30.000 dBm |
| Attenuation | 50.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 1 | 1 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Clear Write | Clear Write |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |

# FCC 15.407 2015

## DUT Information

Frequencies

| | | |
|---|---|---|
| WLAN CH 36 (5180 MHz) | WLAN CH 40 (5200 MHz) | WLAN CH 48 (5240 MHz) |
| WLAN CH 149 (5745 MHz) | WLAN CH 157 (5785 MHz) | WLAN CH 165 (5825 MHz) |
| WLAN CH 52 (5260 MHz) | WLAN CH 56 (5280 MHz) | WLAN CH 64 (5320 MHz) |
| WLAN CH 100 (5500 MHz) | WLAN CH 120 (5600 MHz) | WLAN CH 140 (5700 MHz) |
| WLAN CH 116 (5580 MHz) | WLAN CH 151 (5755 MHz) | WLAN CH 159 (5795 MHz) |
| WLAN CH 155 (5775 MHz) | | |

Bandwidths

| | | |
|---|---|---|
| 20 MHz (20 MHz) | 40 MHz (40 MHz) | 80 MHz (80 MHz) |

Power

20.000 dBm (20 dBm)

Beamforming Gain

| | |
|---|---|
| 20.000 dBm (20 dBm) | 0 dB |

Gain Tables

| | |
|---|---|
| 20.000 dBm (20 dBm) | Port 1: 0dBi; |

DUT Settings

| | |
|---|---|
| No. of transmission chains | 1 |
| DFS capability | Yes |
| DFS Mode | Master |
| Equipment Type | Portable |
| TPC | No |

## Hardware Setup: WMS Measurements\Hardware Setup

| | |
|---|---|
| Spectrum Analyzer: | SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40 |
| Vector Generator: | VG SMBV100B (VG SMBV100B) @ VISA (ADR TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33 |
| Generator: | SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015 |
| OSP: | OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2 |

## Summary

| Test | Frequency (MHz) | Nominal Power (dBm) | Nominal Bandwidth (MHz) | Result |
|---|---|---|---|---|
| Tx Spurious Emission | 5180.000 | 20.0 | 20.000000 | PASS |
| Tx Spurious Emission | 5200.000 | 20.0 | 20.000000 | PASS |
| Tx Spurious Emission | 5240.000 | 20.0 | 20.000000 | PASS |

# Tx Spurious Emission (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Result |
|---|---|
| 5180.000000 | PASS |

## Final measurements

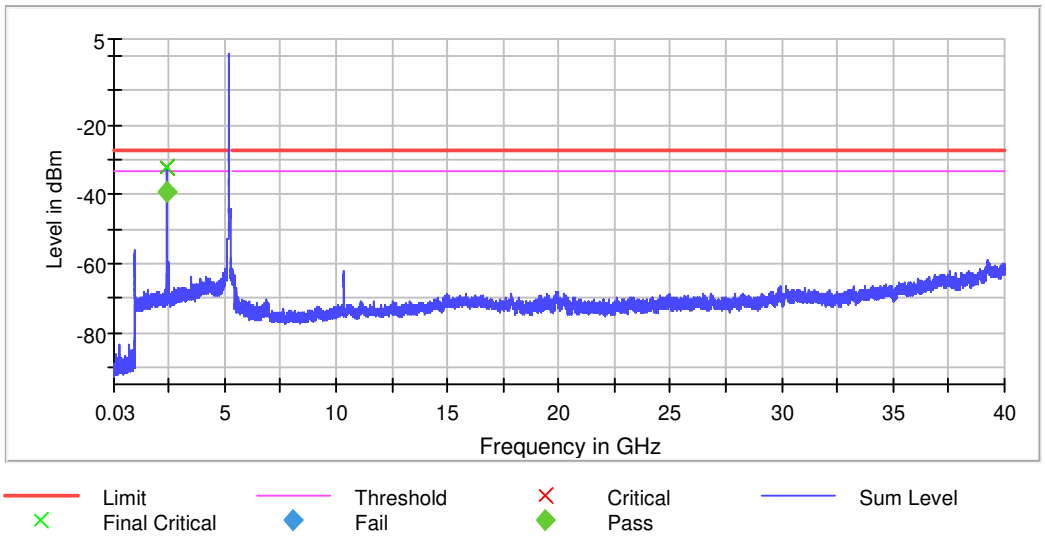
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|
| 2414.500000 | -32.2 | -39.5 | -27.0 | 12.5 | PASS |

## Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|---|---|---|---|
| 2414.500000 | -32.2 | 5.2 | -27.0 |
| 2413.500000 | -32.4 | 5.4 | -27.0 |
| 2412.500000 | -33.4 | 6.4 | -27.0 |
| 2416.500000 | -33.9 | 6.9 | -27.0 |
| 2415.500000 | -34.3 | 7.3 | -27.0 |
| 2411.500000 | -35.7 | 8.7 | -27.0 |
| 2410.500000 | -36.1 | 9.1 | -27.0 |
| 2417.500000 | -36.6 | 9.6 | -27.0 |
| 2409.500000 | -38.3 | 11.3 | -27.0 |
| 2418.500000 | -39.8 | 12.8 | -27.0 |
| 2408.500000 | -40.5 | 13.5 | -27.0 |
| 2419.500000 | -42.6 | 15.6 | -27.0 |
| 2407.500000 | -44.0 | 17.0 | -27.0 |
| 2406.500000 | -47.3 | 20.3 | -27.0 |
| 2420.500000 | -47.3 | 20.3 | -27.0 |

## Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|---|---|---|---|
| 30.000000 | 1000.000000 | 1 | 1 |
| 1000.000000 | 5150.000000 | 2 | 2 |
| 5150.000000 | 5250.000000 | 2 | 2 |
| 5250.000000 | 5350.000000 | 2 | 2 |
| 5350.000000 | 5470.000000 | 2 | 2 |
| 5470.000000 | 5725.000000 | 2 | 2 |
| 5725.000000 | 5850.000000 | 2 | 2 |
| 5850.000000 | 7000.000000 | 2 | 2 |
| 7000.000000 | 18000.000000 | 2 | 2 |
| 18000.000000 | 26000.000000 | 2 | 2 |
| 26000.000000 | 40000.000000 | 2 | 2 |




## Pre Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 9700 | ~ 9700 |
| Sweeptime | 9.700 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 55 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Pre Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 4150 | ~ 4150 |
| Sweeptime | 4.150 ms | AUTO |
| Reference Level | -20.000 dBm | -30.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 5 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Final Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Span | ZeroSpan | ZeroSpan |
| RBW | 1.000 MHz | ~ 1.000 MHz |
| VBW | 3.000 MHz | ~ 3.000 MHz |
| SweepPoints | 10001 | ~ 10001 |
| Sweeptime | 50.000 ms | 50.000 ms |
| Reference Level | 30.000 dBm | 30.000 dBm |
| Attenuation | 50.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 1 | 1 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Clear Write | Clear Write |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |

# Tx Spurious Emission (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Result |
|---|---|
| 5200.000000 | PASS |

## Final measurements

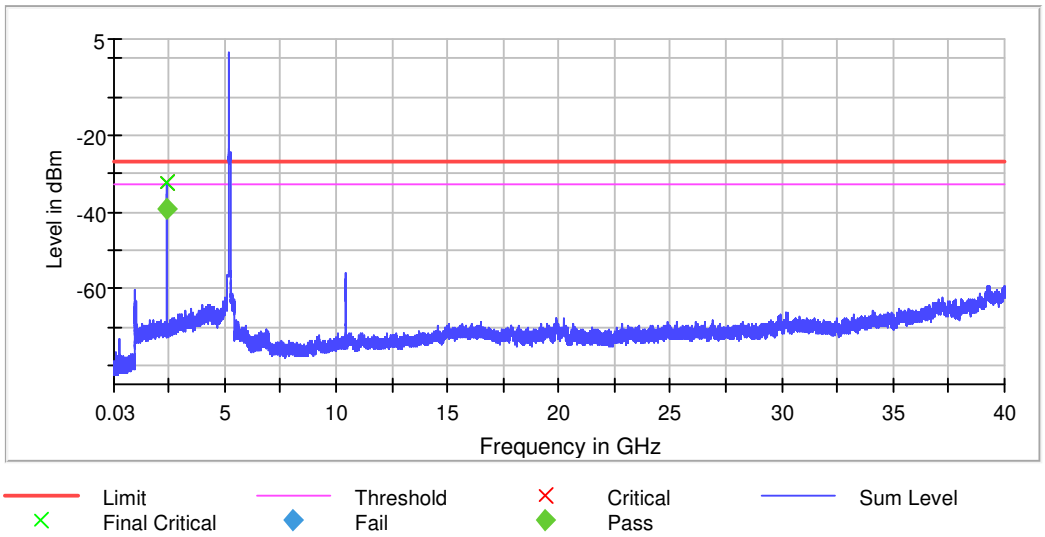
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|
| 2414.500000 | -32.5 | -39.2 | -27.0 | 12.2 | PASS |

## Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|---|---|---|---|
| 2414.500000 | -32.5 | 5.5 | -27.0 |
| 2415.500000 | -33.6 | 6.6 | -27.0 |
| 2416.500000 | -34.9 | 7.9 | -27.0 |
| 2411.500000 | -35.5 | 8.5 | -27.0 |
| 2413.500000 | -36.5 | 9.5 | -27.0 |
| 2412.500000 | -36.9 | 9.9 | -27.0 |
| 2410.500000 | -37.1 | 10.1 | -27.0 |
| 2417.500000 | -38.5 | 11.5 | -27.0 |
| 2418.500000 | -38.7 | 11.7 | -27.0 |
| 2408.500000 | -40.6 | 13.6 | -27.0 |
| 2409.500000 | -41.0 | 14.0 | -27.0 |
| 2419.500000 | -44.9 | 17.9 | -27.0 |
| 2407.500000 | -45.5 | 18.5 | -27.0 |
| 2406.500000 | -48.6 | 21.6 | -27.0 |
| 2405.500000 | -49.3 | 22.3 | -27.0 |

## Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|---|---|---|---|
| 30.000000 | 1000.000000 | 1 | 1 |
| 1000.000000 | 5150.000000 | 2 | 2 |
| 5150.000000 | 5250.000000 | 2 | 2 |
| 5250.000000 | 5350.000000 | 2 | 2 |
| 5350.000000 | 5470.000000 | 2 | 2 |
| 5470.000000 | 5725.000000 | 2 | 2 |
| 5725.000000 | 5850.000000 | 2 | 2 |
| 5850.000000 | 7000.000000 | 2 | 2 |
| 7000.000000 | 18000.000000 | 2 | 2 |
| 18000.000000 | 26000.000000 | 2 | 2 |
| 26000.000000 | 40000.000000 | 2 | 2 |




## Pre Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 9700 | ~ 9700 |
| Sweeptime | 9.700 ms | AUTO |
| Reference Level | -20.000 dBm | -30.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 33 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Pre Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 4150 | ~ 4150 |
| Sweeptime | 4.150 ms | AUTO |
| Reference Level | -20.000 dBm | -30.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Final Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| Span | ZeroSpan | ZeroSpan |
| RBW | 1.000 MHz | ~ 1.000 MHz |
| VBW | 3.000 MHz | ~ 3.000 MHz |
| SweepPoints | 10001 | ~ 10001 |
| Sweeptime | 50.000 ms | 50.000 ms |
| Reference Level | 30.000 dBm | 30.000 dBm |
| Attenuation | 50.000 dB | AUTO |
| Detector | RMS | RMS |
| SweepCount | 1 | 1 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Clear Write | Clear Write |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |

# Tx Spurious Emission (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Result |
|---|---|
| 5240.000000 | PASS |

## Final measurements

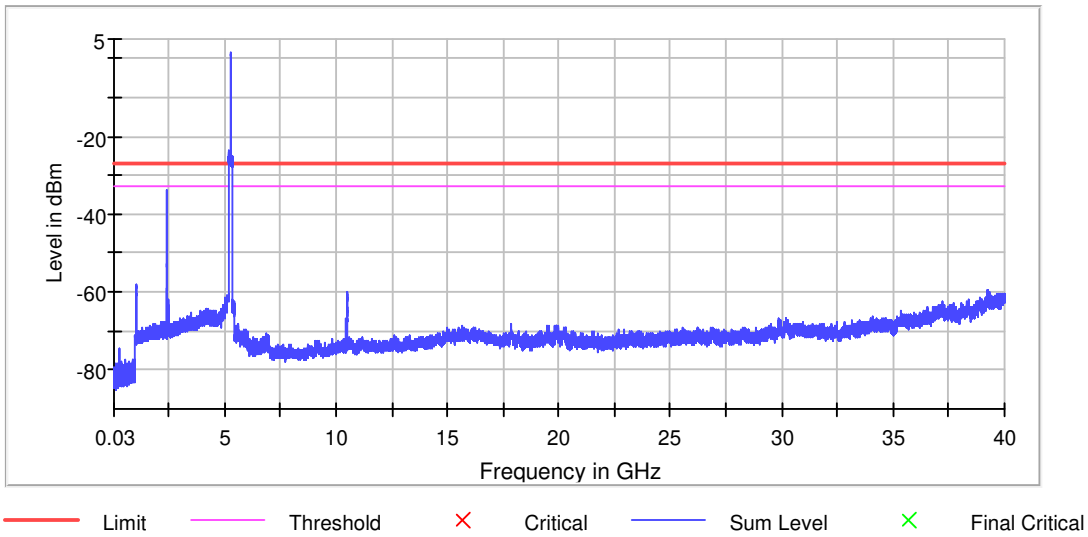
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|
| --- | --- | --- | --- | --- | --- |

## Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|---|---|---|---|
| 2413.500000 | -33.7 | 6.7 | -27.0 |
| 2415.500000 | -33.9 | 6.9 | -27.0 |
| 2414.500000 | -33.9 | 6.9 | -27.0 |
| 2416.500000 | -34.8 | 7.8 | -27.0 |
| 2412.500000 | -35.5 | 8.5 | -27.0 |
| 2417.500000 | -36.4 | 9.4 | -27.0 |
| 2418.500000 | -39.7 | 12.7 | -27.0 |
| 2411.500000 | -40.2 | 13.2 | -27.0 |
| 2410.500000 | -40.6 | 13.6 | -27.0 |
| 2419.500000 | -43.3 | 16.3 | -27.0 |
| 2409.500000 | -47.1 | 20.1 | -27.0 |
| 2420.500000 | -48.4 | 21.4 | -27.0 |
| 2407.500000 | -52.5 | 25.5 | -27.0 |
| 2406.500000 | -53.6 | 26.6 | -27.0 |
| 2408.500000 | -53.6 | 26.6 | -27.0 |

## Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|---|---|---|---|
| 30.000000 | 1000.000000 | 1 | 1 |
| 1000.000000 | 5150.000000 | 2 | 2 |
| 5150.000000 | 5250.000000 | 2 | 2 |
| 5250.000000 | 5350.000000 | 2 | 2 |
| 5350.000000 | 5470.000000 | 2 | 2 |
| 5470.000000 | 5725.000000 | 2 | 2 |
| 5725.000000 | 5850.000000 | 2 | 2 |
| 5850.000000 | 7000.000000 | 2 | 2 |
| 7000.000000 | 18000.000000 | 2 | 2 |
| 18000.000000 | 26000.000000 | 2 | 2 |
| 26000.000000 | 40000.000000 | 2 | 2 |




## Pre Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 9700 | ~ 9700 |
| Sweeptime | 9.700 ms | AUTO |
| Reference Level | -20.000 dBm | -30.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Pre Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 4150 | ~ 4150 |
| Sweeptime | 4.150 ms | AUTO |
| Reference Level | -20.000 dBm | -30.000 dBm |
| Attenuation | 10.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 9 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

# FCC 15.407 2015

## DUT Information

Frequencies

| | | |
|---|---|---|
| WLAN CH 38 (5190 MHz) | WLAN CH 46 (5230 MHz) | WLAN CH 151 (5755 MHz) |
| WLAN CH 159 (5795 MHz) | WLAN CH 54 (5270 MHz) | WLAN CH 62 (5310 MHz) |
| WLAN CH 102 (5510 MHz) | WLAN CH 110 (5550 MHz) | WLAN CH 118 (5590 MHz) |
| WLAN CH 134 (5670 MHz) | | |

Bandwidths

40 MHz (40 MHz)

Power

20.000 dBm (20 dBm)

Beamforming Gain

| | |
|---|---|
| 20.000 dBm (20 dBm) | 0 dB |

Gain Tables

| | |
|---|---|
| 20.000 dBm (20 dBm) | Port 1: 0dBi; |

DUT Settings

| | |
|---|---|
| No. of transmission chains | 1 |
| DFS capability | Yes |
| DFS Mode | Master |
| Equipment Type | Portable |
| TPC | No |

## Hardware Setup: WMS Measurements\Hardware Setup

| | |
|---|---|
| Spectrum Analyzer: | SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40 |
| Vector Generator: | VG SMBV100B (VG SMBV100B) @ VISA (ADR TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33 |
| Generator: | SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015 |
| OSP: | OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2 |

## Summary

| Test | Frequency (MHz) | Nominal Power (dBm) | Nominal Bandwidth (MHz) | Result |
|---|---|---|---|---|
| Tx Spurious Emission | 5190.000 | 20.0 | 40.000000 | PASS |
| Tx Spurious Emission | 5230.000 | 20.0 | 40.000000 | PASS |

# Tx Spurious Emission (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Result |
|---|---|
| 5190.000000 | PASS |

## Final measurements

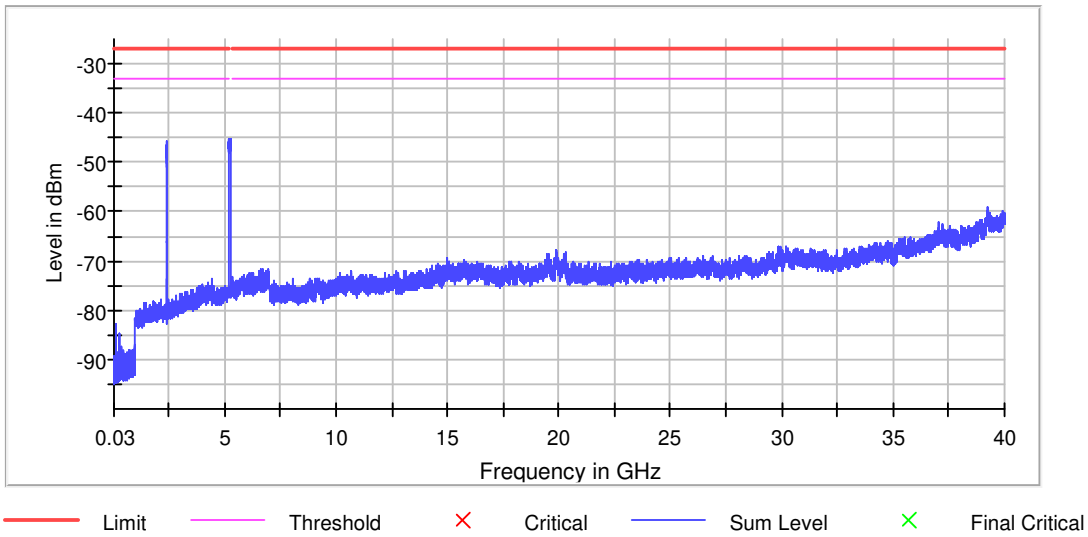
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|
| --- | --- | --- | --- | --- | --- |

## Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|---|---|---|---|
| 2406.500000 | -45.5 | 18.5 | -27.0 |
| 2405.500000 | -45.6 | 18.6 | -27.0 |
| 2410.500000 | -46.5 | 19.5 | -27.0 |
| 2416.500000 | -46.5 | 19.5 | -27.0 |
| 2419.500000 | -46.6 | 19.6 | -27.0 |
| 2411.500000 | -47.0 | 20.0 | -27.0 |
| 2415.500000 | -47.5 | 20.5 | -27.0 |
| 2414.500000 | -47.8 | 20.8 | -27.0 |
| 2404.500000 | -47.9 | 20.9 | -27.0 |
| 2413.500000 | -48.0 | 21.0 | -27.0 |
| 2407.500000 | -48.7 | 21.7 | -27.0 |
| 2412.500000 | -49.0 | 22.0 | -27.0 |
| 2409.500000 | -49.4 | 22.4 | -27.0 |
| 2417.500000 | -50.3 | 23.3 | -27.0 |
| 2408.500000 | -50.3 | 23.3 | -27.0 |

## Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|---|---|---|---|
| 30.000000 | 1000.000000 | 1 | 1 |
| 1000.000000 | 5150.000000 | 2 | 2 |
| 5150.000000 | 5250.000000 | 2 | 2 |
| 5250.000000 | 5350.000000 | 2 | 2 |
| 5350.000000 | 5470.000000 | 2 | 2 |
| 5470.000000 | 5725.000000 | 2 | 2 |
| 5725.000000 | 5850.000000 | 2 | 2 |
| 5850.000000 | 7000.000000 | 2 | 2 |
| 7000.000000 | 18000.000000 | 2 | 2 |
| 18000.000000 | 26000.000000 | 2 | 2 |
| 26000.000000 | 40000.000000 | 2 | 2 |




## Pre Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 9700 | ~ 9700 |
| Sweeptime | 9.700 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Pre Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 4150 | ~ 4150 |
| Sweeptime | 4.150 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 8 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

# Tx Spurious Emission (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Result |
|---|---|
| 5230.000000 | PASS |

## Final measurements

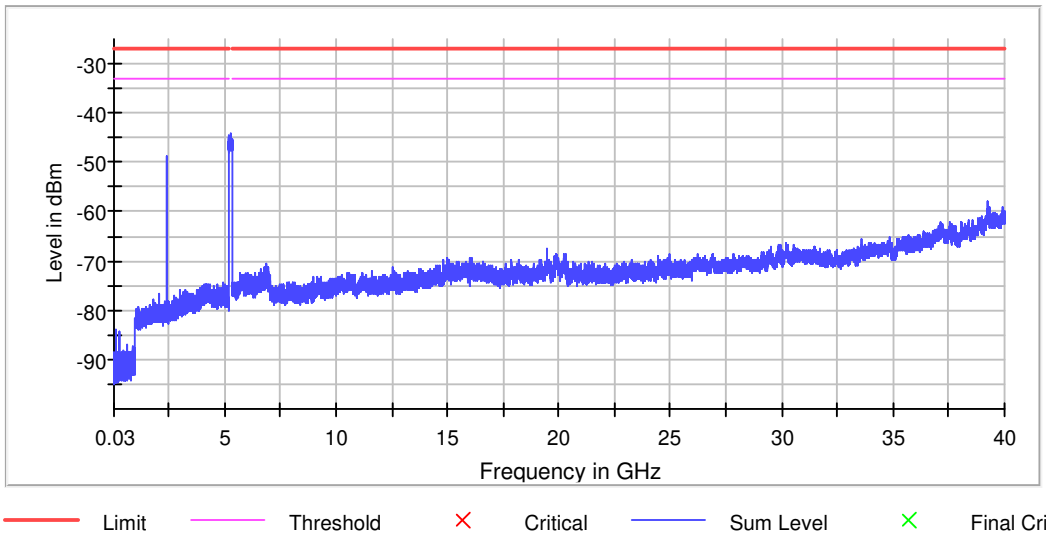
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|
| --- | --- | --- | --- | --- | --- |

## Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|---|---|---|---|
| 2411.500000 | -48.6 | 21.6 | -27.0 |
| 2410.500000 | -48.8 | 21.8 | -27.0 |
| 2412.500000 | -48.9 | 21.9 | -27.0 |
| 2409.500000 | -49.5 | 22.5 | -27.0 |
| 2413.500000 | -50.2 | 23.2 | -27.0 |
| 2408.500000 | -50.9 | 23.9 | -27.0 |
| 2414.500000 | -51.3 | 24.3 | -27.0 |
| 2415.500000 | -53.1 | 26.1 | -27.0 |
| 2407.500000 | -53.5 | 26.5 | -27.0 |
| 2416.500000 | -55.7 | 28.7 | -27.0 |
| 2406.500000 | -57.0 | 30.0 | -27.0 |
| 2417.500000 | -57.2 | 30.2 | -27.0 |
| 39244.500000 | -58.0 | 31.0 | -27.0 |
| 39945.500000 | -59.0 | 32.0 | -27.0 |
| 39284.500000 | -59.2 | 32.2 | -27.0 |

## Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|---|---|---|---|
| 30.000000 | 1000.000000 | 1 | 1 |
| 1000.000000 | 5150.000000 | 2 | 2 |
| 5150.000000 | 5250.000000 | 2 | 2 |
| 5250.000000 | 5350.000000 | 2 | 2 |
| 5350.000000 | 5470.000000 | 2 | 2 |
| 5470.000000 | 5725.000000 | 2 | 2 |
| 5725.000000 | 5850.000000 | 2 | 2 |
| 5850.000000 | 7000.000000 | 2 | 2 |
| 7000.000000 | 18000.000000 | 2 | 2 |
| 18000.000000 | 26000.000000 | 2 | 2 |
| 26000.000000 | 40000.000000 | 2 | 2 |




## Pre Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 9700 | ~ 9700 |
| Sweeptime | 9.700 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Pre Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 4150 | ~ 4150 |
| Sweeptime | 4.150 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 5 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

# FCC 15.407 2015

## DUT Information

Frequencies

| | | |
|---|---|---|
| WLAN CH 42 (5210 MHz) | WLAN CH 155 (5775 MHz) | WLAN CH 58 (5290 MHz) |
| WLAN CH 106 (5530 MHz) | WLAN CH 122 (5610 MHz) | |

Bandwidths

80 MHz (80 MHz)

Power

20.000 dBm (20 dBm)

Beamforming Gain

| | |
|---|---|
| 20.000 dBm (20 dBm) | 0 dB |

Gain Tables

| | |
|---|---|
| 20.000 dBm (20 dBm) | Port 1: 0dBi; |

DUT Settings

| | |
|---|---|
| No. of transmission chains | 1 |
| DFS capability | Yes |
| DFS Mode | Master |
| Equipment Type | Portable |
| TPC | No |

## Hardware Setup: WMS Measurements\Hardware Setup

| | |
|---|---|
| Spectrum Analyzer: | SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40 |
| Vector Generator: | VG SMBV100B (VG SMBV100B) @ VISA (ADR TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33 |
| Generator: | SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015 |
| OSP: | OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2 |

## Summary

| Test | Frequency (MHz) | Nominal Power (dBm) | Nominal Bandwidth (MHz) | Result |
|---|---|---|---|---|
| **Tx Spurious Emission** | **5210.000** | **20.0** | **80.000000** | **PASS** |

# Tx Spurious Emission (5210 MHz; 20.000 dBm; 80 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Result |
|---|---|
| 5210.000000 | PASS |

## Final measurements

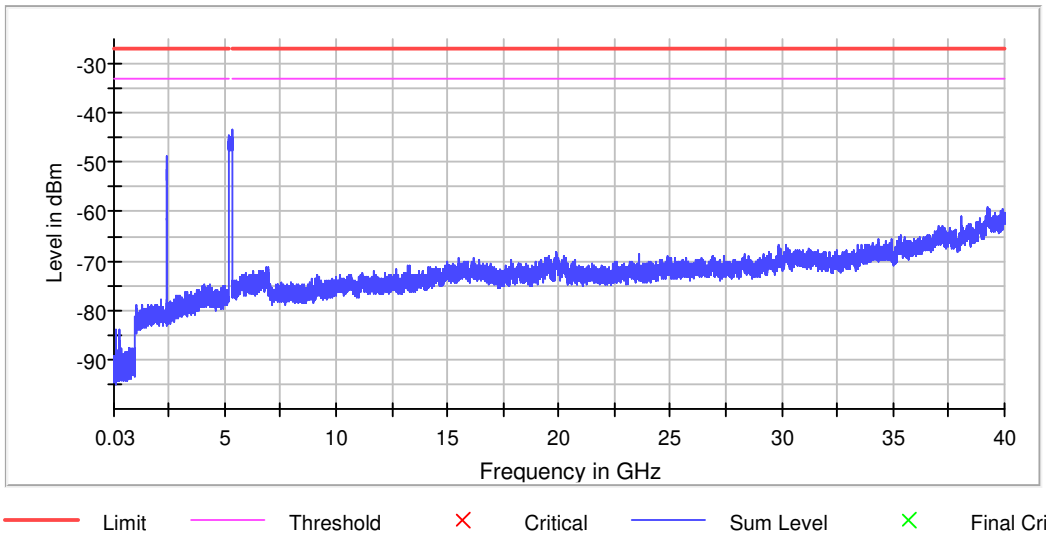
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|
| --- | --- | --- | --- | --- | --- |

## Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|---|---|---|---|
| 2411.500000 | -48.6 | 21.6 | -27.0 |
| 2410.500000 | -49.0 | 22.0 | -27.0 |
| 2409.500000 | -50.6 | 23.6 | -27.0 |
| 2408.500000 | -50.6 | 23.6 | -27.0 |
| 2413.500000 | -51.3 | 24.3 | -27.0 |
| 2414.500000 | -51.3 | 24.3 | -27.0 |
| 2407.500000 | -53.3 | 26.3 | -27.0 |
| 2415.500000 | -53.3 | 26.3 | -27.0 |
| 2412.500000 | -53.8 | 26.8 | -27.0 |
| 2416.500000 | -56.4 | 29.4 | -27.0 |
| 2406.500000 | -59.0 | 32.0 | -27.0 |
| 39244.500000 | -59.2 | 32.2 | -27.0 |
| 39929.500000 | -59.4 | 32.4 | -27.0 |
| 39250.500000 | -59.5 | 32.5 | -27.0 |
| 39285.500000 | -59.6 | 32.6 | -27.0 |

## Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|---|---|---|---|
| 30.000000 | 1000.000000 | 1 | 1 |
| 1000.000000 | 5150.000000 | 2 | 2 |
| 5150.000000 | 5250.000000 | 2 | 2 |
| 5250.000000 | 5350.000000 | 2 | 2 |
| 5350.000000 | 5470.000000 | 2 | 2 |
| 5470.000000 | 5725.000000 | 2 | 2 |
| 5725.000000 | 5850.000000 | 2 | 2 |
| 5850.000000 | 7000.000000 | 2 | 2 |
| 7000.000000 | 18000.000000 | 2 | 2 |
| 18000.000000 | 26000.000000 | 2 | 2 |
| 26000.000000 | 40000.000000 | 2 | 2 |




## Pre Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 9700 | ~ 9700 |
| Sweeptime | 9.700 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Pre Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 4150 | ~ 4150 |
| Sweeptime | 4.150 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.25 dB | 0.50 dB |

# FCC 15.407 2015

## DUT Information

Frequencies

| | | |
|---|---|---|
| WLAN CH 36 (5180 MHz) | WLAN CH 40 (5200 MHz) | WLAN CH 48 (5240 MHz) |
| WLAN CH 149 (5745 MHz) | WLAN CH 157 (5785 MHz) | WLAN CH 165 (5825 MHz) |
| WLAN CH 52 (5260 MHz) | WLAN CH 56 (5280 MHz) | WLAN CH 64 (5320 MHz) |
| WLAN CH 100 (5500 MHz) | WLAN CH 120 (5600 MHz) | WLAN CH 140 (5700 MHz) |
| WLAN CH 116 (5580 MHz) | WLAN CH 151 (5755 MHz) | WLAN CH 159 (5795 MHz) |
| WLAN CH 155 (5775 MHz) | | |

Bandwidths

| | | |
|---|---|---|
| 20 MHz (20 MHz) | 40 MHz (40 MHz) | 80 MHz (80 MHz) |

Power

20.000 dBm (20 dBm)

Beamforming Gain

| | |
|---|---|
| 20.000 dBm (20 dBm) | 0 dB |

Gain Tables

| | |
|---|---|
| 20.000 dBm (20 dBm) | Port 1: 0dBi; |

DUT Settings

| | |
|---|---|
| No. of transmission chains | 1 |
| DFS capability | Yes |
| DFS Mode | Master |
| Equipment Type | Portable |
| TPC | No |

## Hardware Setup: WMS Measurements\Hardware Setup

| | |
|---|---|
| Spectrum Analyzer: | SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40 |
| Vector Generator: | VG SMBV100B (VG SMBV100B) @ VISA (ADR TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33 |
| Generator: | SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015 |
| OSP: | OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2 |

## Summary

| Test | Frequency (MHz) | Nominal Power (dBm) | Nominal Bandwidth (MHz) | Result |
|---|---|---|---|---|
| Tx Spurious Emission | 5180.000 | 20.0 | 20.000000 | PASS |
| Tx Spurious Emission | 5200.000 | 20.0 | 20.000000 | PASS |
| Tx Spurious Emission | 5240.000 | 20.0 | 20.000000 | PASS |

# Tx Spurious Emission (5180 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Result |
|---|---|
| 5180.000000 | PASS |

## Final measurements

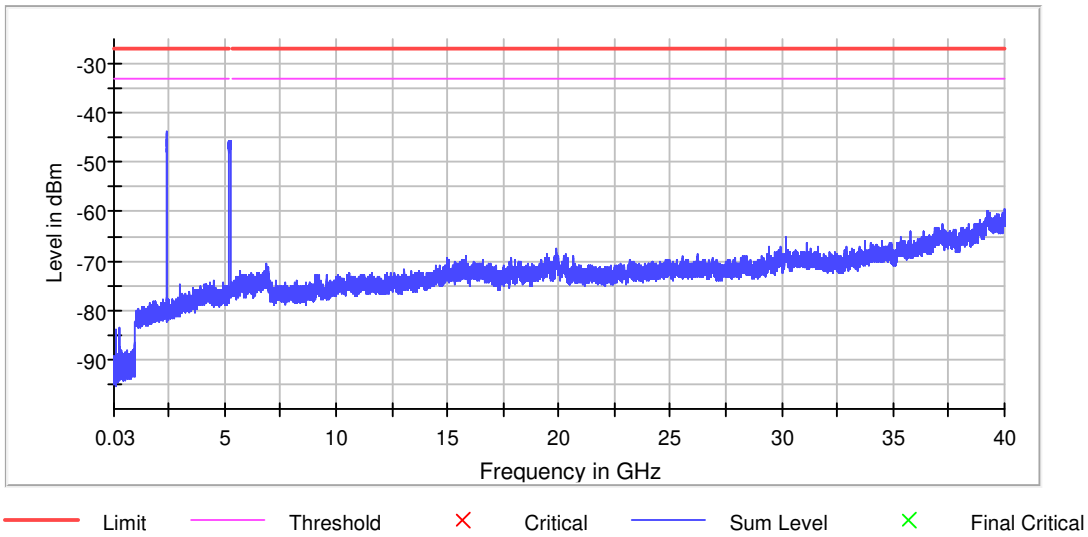
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|
| --- | --- | --- | --- | --- | --- |

## Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|---|---|---|---|
| 2410.500000 | -43.8 | 16.8 | -27.0 |
| 2411.500000 | -44.1 | 17.1 | -27.0 |
| 2416.500000 | -44.2 | 17.2 | -27.0 |
| 2405.500000 | -45.4 | 18.4 | -27.0 |
| 2406.500000 | -45.5 | 18.5 | -27.0 |
| 2414.500000 | -45.6 | 18.6 | -27.0 |
| 2415.500000 | -45.6 | 18.6 | -27.0 |
| 2407.500000 | -45.8 | 18.8 | -27.0 |
| 2412.500000 | -46.3 | 19.3 | -27.0 |
| 2404.500000 | -46.4 | 19.4 | -27.0 |
| 2408.500000 | -46.4 | 19.4 | -27.0 |
| 2417.500000 | -46.7 | 19.7 | -27.0 |
| 2409.500000 | -46.7 | 19.7 | -27.0 |
| 2420.500000 | -47.2 | 20.2 | -27.0 |
| 2419.500000 | -47.5 | 20.5 | -27.0 |

## Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|---|---|---|---|
| 30.000000 | 1000.000000 | 1 | 1 |
| 1000.000000 | 5150.000000 | 2 | 2 |
| 5150.000000 | 5250.000000 | 2 | 2 |
| 5250.000000 | 5350.000000 | 2 | 2 |
| 5350.000000 | 5470.000000 | 2 | 2 |
| 5470.000000 | 5725.000000 | 2 | 2 |
| 5725.000000 | 5850.000000 | 2 | 2 |
| 5850.000000 | 7000.000000 | 2 | 2 |
| 7000.000000 | 18000.000000 | 2 | 2 |
| 18000.000000 | 26000.000000 | 2 | 2 |
| 26000.000000 | 40000.000000 | 2 | 2 |




## Pre Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 9700 | ~ 9700 |
| Sweeptime | 9.700 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Pre Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 4150 | ~ 4150 |
| Sweeptime | 4.150 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 7 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

# Tx Spurious Emission (5200 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Result |
|---|---|
| 5200.000000 | PASS |

## Final measurements

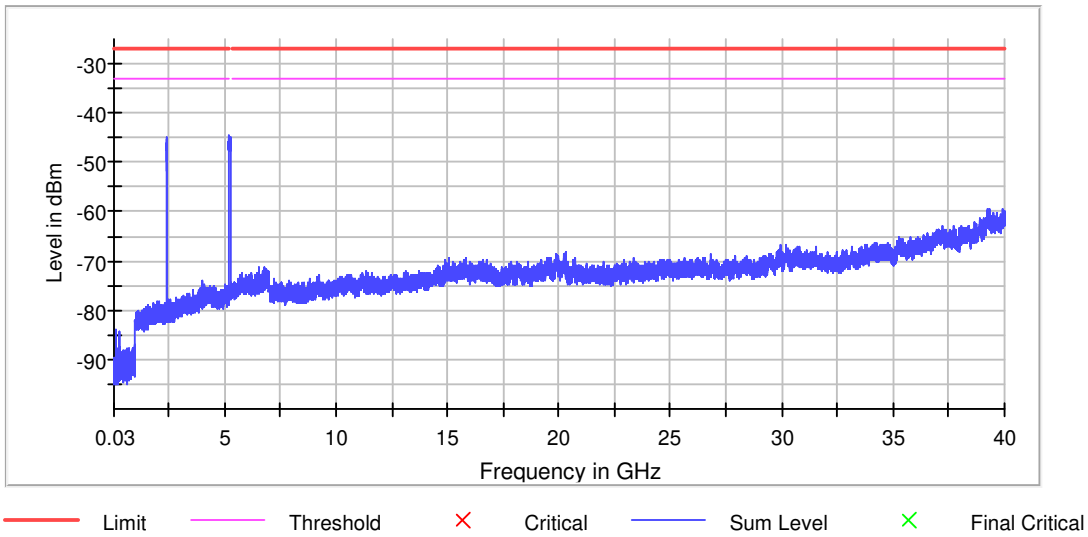
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|
| --- | --- | --- | --- | --- | --- |

## Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|---|---|---|---|
| 2414.500000 | -45.0 | 18.0 | -27.0 |
| 2406.500000 | -45.3 | 18.3 | -27.0 |
| 2405.500000 | -45.4 | 18.4 | -27.0 |
| 2415.500000 | -45.9 | 18.9 | -27.0 |
| 2420.500000 | -46.0 | 19.0 | -27.0 |
| 2409.500000 | -46.1 | 19.1 | -27.0 |
| 2410.500000 | -46.2 | 19.2 | -27.0 |
| 2416.500000 | -46.9 | 19.9 | -27.0 |
| 2413.500000 | -47.3 | 20.3 | -27.0 |
| 2412.500000 | -47.5 | 20.5 | -27.0 |
| 2411.500000 | -47.7 | 20.7 | -27.0 |
| 2404.500000 | -48.8 | 21.8 | -27.0 |
| 2419.500000 | -49.1 | 22.1 | -27.0 |
| 2407.500000 | -49.6 | 22.6 | -27.0 |
| 2408.500000 | -49.8 | 22.8 | -27.0 |

## Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|---|---|---|---|
| 30.000000 | 1000.000000 | 1 | 1 |
| 1000.000000 | 5150.000000 | 2 | 2 |
| 5150.000000 | 5250.000000 | 2 | 2 |
| 5250.000000 | 5350.000000 | 2 | 2 |
| 5350.000000 | 5470.000000 | 2 | 2 |
| 5470.000000 | 5725.000000 | 2 | 2 |
| 5725.000000 | 5850.000000 | 2 | 2 |
| 5850.000000 | 7000.000000 | 2 | 2 |
| 7000.000000 | 18000.000000 | 2 | 2 |
| 18000.000000 | 26000.000000 | 2 | 2 |
| 26000.000000 | 40000.000000 | 2 | 2 |




## Pre Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 9700 | ~ 9700 |
| Sweeptime | 9.700 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Pre Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 4150 | ~ 4150 |
| Sweeptime | 4.150 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

# Tx Spurious Emission (5240 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Result |
|---|---|
| 5240.000000 | PASS |

## Final measurements

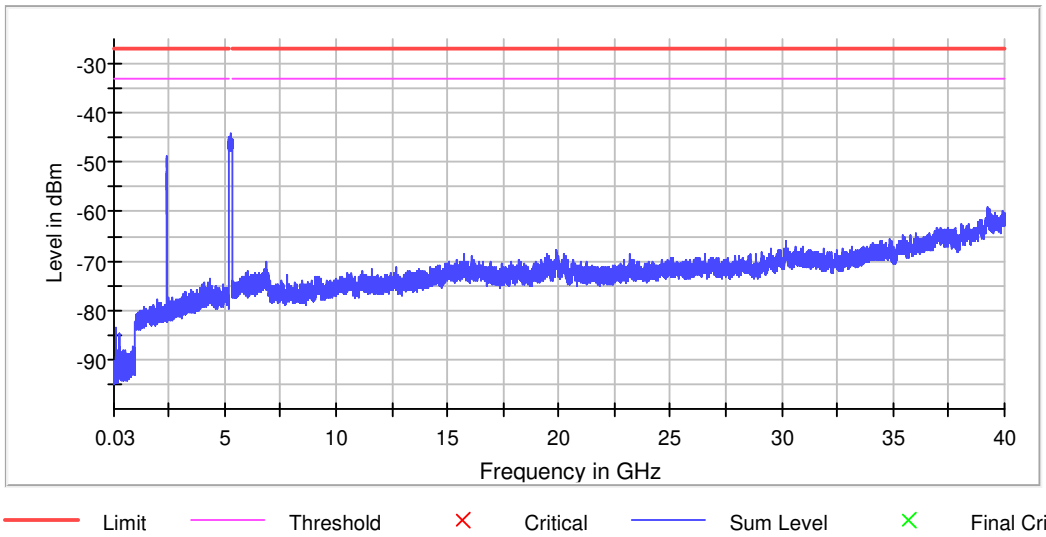
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|
| --- | --- | --- | --- | --- | --- |

## Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|---|---|---|---|
| 2411.500000 | -48.8 | 21.8 | -27.0 |
| 2410.500000 | -49.0 | 22.0 | -27.0 |
| 2406.500000 | -49.1 | 22.1 | -27.0 |
| 2412.500000 | -49.8 | 22.8 | -27.0 |
| 2409.500000 | -49.9 | 22.9 | -27.0 |
| 2413.500000 | -50.1 | 23.1 | -27.0 |
| 2408.500000 | -50.7 | 23.7 | -27.0 |
| 2407.500000 | -50.9 | 23.9 | -27.0 |
| 2414.500000 | -51.2 | 24.2 | -27.0 |
| 2417.500000 | -51.8 | 24.8 | -27.0 |
| 2419.500000 | -52.0 | 25.0 | -27.0 |
| 2405.500000 | -52.6 | 25.6 | -27.0 |
| 2415.500000 | -53.5 | 26.5 | -27.0 |
| 2420.500000 | -54.4 | 27.4 | -27.0 |
| 2421.500000 | -54.4 | 27.4 | -27.0 |

## Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|---|---|---|---|
| 30.000000 | 1000.000000 | 1 | 1 |
| 1000.000000 | 5150.000000 | 2 | 2 |
| 5150.000000 | 5250.000000 | 2 | 2 |
| 5250.000000 | 5350.000000 | 2 | 2 |
| 5350.000000 | 5470.000000 | 2 | 2 |
| 5470.000000 | 5725.000000 | 2 | 2 |
| 5725.000000 | 5850.000000 | 2 | 2 |
| 5850.000000 | 7000.000000 | 2 | 2 |
| 7000.000000 | 18000.000000 | 2 | 2 |
| 18000.000000 | 26000.000000 | 2 | 2 |
| 26000.000000 | 40000.000000 | 2 | 2 |




## Pre Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 9700 | ~ 9700 |
| Sweeptime | 9.700 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Pre Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 4150 | ~ 4150 |
| Sweeptime | 4.150 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 5 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

# FCC 15.407 2015

## DUT Information

Frequencies

| | | |
|---|---|---|
| WLAN CH 38 (5190 MHz) | WLAN CH 46 (5230 MHz) | WLAN CH 151 (5755 MHz) |
| WLAN CH 159 (5795 MHz) | WLAN CH 54 (5270 MHz) | WLAN CH 62 (5310 MHz) |
| WLAN CH 102 (5510 MHz) | WLAN CH 110 (5550 MHz) | WLAN CH 118 (5590 MHz) |
| WLAN CH 134 (5670 MHz) | | |

Bandwidths

40 MHz (40 MHz)

Power

20.000 dBm (20 dBm)

Beamforming Gain

| | |
|---|---|
| 20.000 dBm (20 dBm) | 0 dB |

Gain Tables

| | |
|---|---|
| 20.000 dBm (20 dBm) | Port 1: 0dBi; |

DUT Settings

| | |
|---|---|
| No. of transmission chains | 1 |
| DFS capability | Yes |
| DFS Mode | Master |
| Equipment Type | Portable |
| TPC | No |

## Hardware Setup: WMS Measurements\Hardware Setup

| | |
|---|---|
| Spectrum Analyzer: | SA FSV 40 (SA FSV 40) @ VISA (ADR TCPIP::192.168.48.111::INST0::INSTR), SN 1321.3008K39/101229, FW 3.40 |
| Vector Generator: | VG SMBV100B (VG SMBV100B) @ VISA (ADR TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33 |
| Generator: | SMB100Aa (SMB100A) @ VISA (ADR TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev 2.21.0, 07/2016, CVI 2015 |
| OSP: | OSP-B157W (OSP-B157W) @ VISA (ADR TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW 1.23.0.2 |

## Summary

| Test | Frequency (MHz) | Nominal Power (dBm) | Nominal Bandwidth (MHz) | Result |
|---|---|---|---|---|
| Tx Spurious Emission | 5190.000 | 20.0 | 40.000000 | PASS |
| Tx Spurious Emission | 5230.000 | 20.0 | 40.000000 | PASS |

# Tx Spurious Emission (5190 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Result |
|---|---|
| 5190.000000 | PASS |

## Final measurements

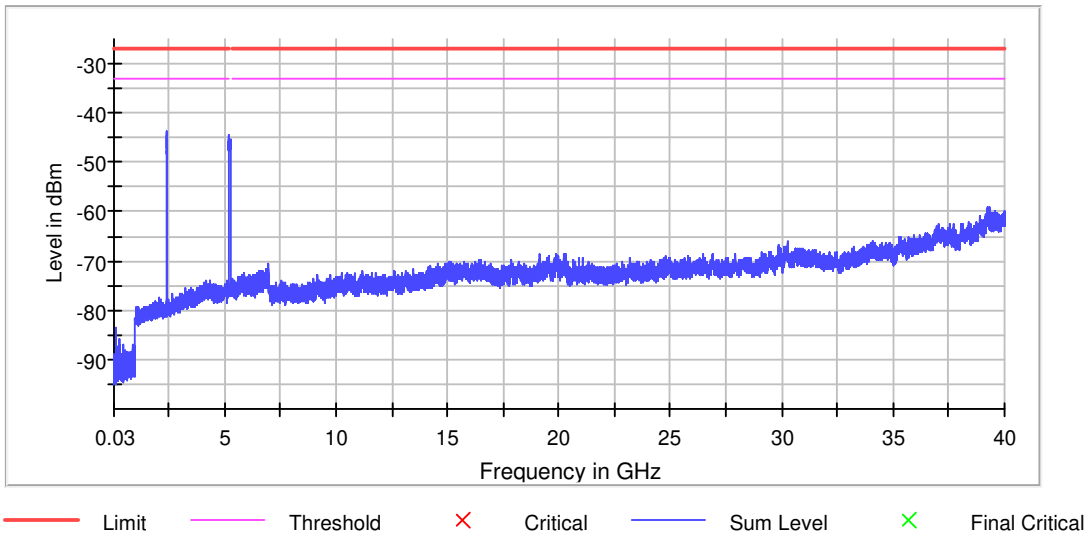
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|
| --- | --- | --- | --- | --- | --- |

## Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|---|---|---|---|
| 2410.500000 | -43.6 | 16.6 | -27.0 |
| 2415.500000 | -43.8 | 16.8 | -27.0 |
| 2411.500000 | -43.9 | 16.9 | -27.0 |
| 2405.500000 | -44.6 | 17.6 | -27.0 |
| 2409.500000 | -44.7 | 17.7 | -27.0 |
| 2407.500000 | -44.8 | 17.8 | -27.0 |
| 2406.500000 | -44.8 | 17.8 | -27.0 |
| 2412.500000 | -45.2 | 18.2 | -27.0 |
| 2416.500000 | -45.8 | 18.8 | -27.0 |
| 2404.500000 | -46.2 | 19.2 | -27.0 |
| 2414.500000 | -46.4 | 19.4 | -27.0 |
| 2408.500000 | -47.1 | 20.1 | -27.0 |
| 2417.500000 | -47.3 | 20.3 | -27.0 |
| 2420.500000 | -47.6 | 20.6 | -27.0 |
| 2419.500000 | -48.1 | 21.1 | -27.0 |

## Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|---|---|---|---|
| 30.000000 | 1000.000000 | 1 | 1 |
| 1000.000000 | 5150.000000 | 2 | 2 |
| 5150.000000 | 5250.000000 | 2 | 2 |
| 5250.000000 | 5350.000000 | 2 | 2 |
| 5350.000000 | 5470.000000 | 2 | 2 |
| 5470.000000 | 5725.000000 | 2 | 2 |
| 5725.000000 | 5850.000000 | 2 | 2 |
| 5850.000000 | 7000.000000 | 2 | 2 |
| 7000.000000 | 18000.000000 | 2 | 2 |
| 18000.000000 | 26000.000000 | 2 | 2 |
| 26000.000000 | 40000.000000 | 2 | 2 |




## Pre Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 9700 | ~ 9700 |
| Sweeptime | 9.700 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Pre Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 4150 | ~ 4150 |
| Sweeptime | 4.150 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 18 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

# Tx Spurious Emission (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b), KDB 789033 D02 General U-NII Test Procedures New Rules v01r03 and ANSI C63.10

## Result

| DUT Frequency (MHz) | Result |
|---|---|
| 5230.000000 | PASS |

## Final measurements

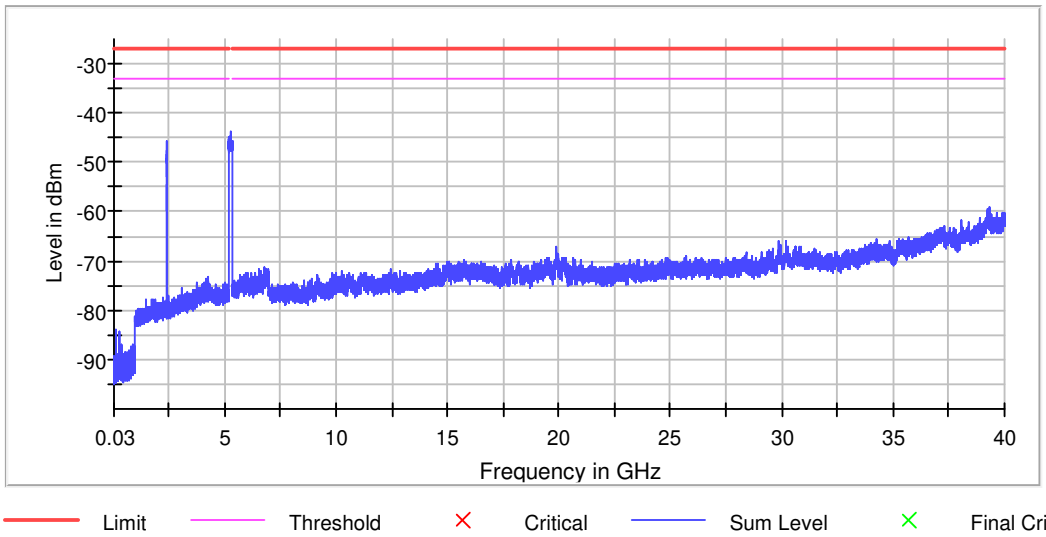
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|
| --- | --- | --- | --- | --- | --- |

## Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|---|---|---|---|
| 2407.500000 | -45.7 | 18.7 | -27.0 |
| 2406.500000 | -46.2 | 19.2 | -27.0 |
| 2409.500000 | -47.4 | 20.4 | -27.0 |
| 2411.500000 | -48.0 | 21.0 | -27.0 |
| 2410.500000 | -48.0 | 21.0 | -27.0 |
| 2414.500000 | -48.3 | 21.3 | -27.0 |
| 2416.500000 | -49.3 | 22.3 | -27.0 |
| 2412.500000 | -49.4 | 22.4 | -27.0 |
| 2408.500000 | -49.7 | 22.7 | -27.0 |
| 2405.500000 | -50.2 | 23.2 | -27.0 |
| 2413.500000 | -50.4 | 23.4 | -27.0 |
| 2404.500000 | -51.8 | 24.8 | -27.0 |
| 2415.500000 | -53.1 | 26.1 | -27.0 |
| 2417.500000 | -53.6 | 26.6 | -27.0 |
| 2420.500000 | -54.4 | 27.4 | -27.0 |

## Measurement Settings

| Start Frequency (MHz) | Stop Frequency (MHz) | Pre Measurement | Final Measurement |
|---|---|---|---|
| 30.000000 | 1000.000000 | 1 | 1 |
| 1000.000000 | 5150.000000 | 2 | 2 |
| 5150.000000 | 5250.000000 | 2 | 2 |
| 5250.000000 | 5350.000000 | 2 | 2 |
| 5350.000000 | 5470.000000 | 2 | 2 |
| 5470.000000 | 5725.000000 | 2 | 2 |
| 5725.000000 | 5850.000000 | 2 | 2 |
| 5850.000000 | 7000.000000 | 2 | 2 |
| 7000.000000 | 18000.000000 | 2 | 2 |
| 18000.000000 | 26000.000000 | 2 | 2 |
| 26000.000000 | 40000.000000 | 2 | 2 |




## Pre Measurement 1

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 100.000 kHz | <= 100.000 kHz |
| VBW | 300.000 kHz | >= 300.000 kHz |
| SweepPoints | 9700 | ~ 9700 |
| Sweeptime | 9.700 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |

## Pre Measurement 2

| Setting | Instrument Value | Target Value |
|---|---|---|
| RBW | 1.000 MHz | <= 1.000 MHz |
| VBW | 3.000 MHz | >= 3.000 MHz |
| SweepPoints | 4150 | ~ 4150 |
| Sweeptime | 4.150 ms | AUTO |
| Reference Level | -30.000 dBm | -30.000 dBm |
| Attenuation | 0.000 dB | AUTO |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 30 | 30 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | Sweep | AUTO |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 11 / max. 150 | max. 150 |
| Stable | 3 / 3 | 3 |
| Max Stable Difference | 0.00 dB | 0.50 dB |