

# FCC 15.407 2015

## DUT Information

### Frequencies

WLAN CH 36 (5180 MHz)  
WLAN CH 149 (5745 MHz)

WLAN CH 40 (5200 MHz)  
WLAN CH 157 (5785 MHz)

WLAN CH 48 (5240 MHz)  
WLAN CH 165 (5825 MHz)

### Bandwidths

20 MHz (20 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\Copy of demoTS8997

### Spectrum Analyzer:

SA FSV 40 (SA FSV 40) @ VISA (ADR  
TCPIP::192.168.48.149::INST0::INSTR), SN 1307.9002K40/101076,  
FW 3.40

### Vector Generator:

VG SMBV100A3 (VG SMBV100B) @ VISA (ADR  
TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33

### Generator:

SMB100A 40G (SMB100A) @ VISA (ADR  
TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev  
2.21.0, 07/2016, CVI 2015

### OSP:

OSP (OSP) @ VISA (ADR TCPIP::192.168.48.148::INST0::INSTR),  
SN OSP120 V02, 101189, FW 2.63.180410

### Power Meter:

OSP-B157 Power Meter (OSP-B157 Power Meter) @ USB (ADR 20)

## Summary

| Test                 | Frequency<br>(MHz) | Nominal<br>Power<br>(dBm) | Nominal<br>Bandwidth<br>(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.

### Result

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

### Final measurements

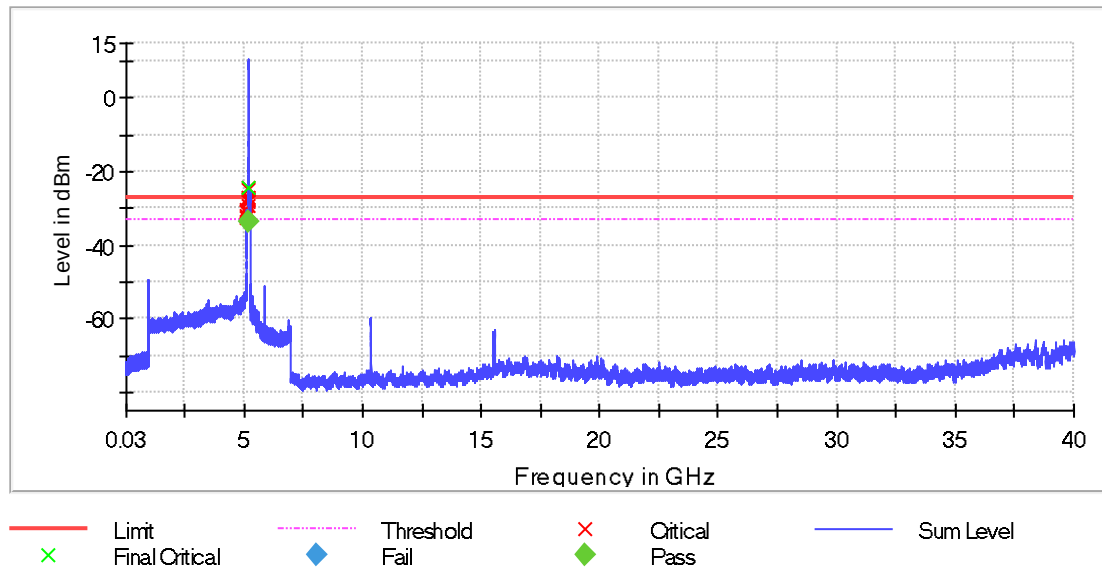
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| 5149.500000     | -24.3                       | -33.5       | -27.0       | 6.5         | PASS   |

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5149.500000     | -24.3       | -2.7        | -27.0       |
| 5148.500000     | -24.9       | -2.1        | -27.0       |
| 5144.500000     | -27.2       | 0.2         | -27.0       |
| 5143.500000     | -27.3       | 0.3         | -27.0       |
| 5147.500000     | -27.4       | 0.4         | -27.0       |
| 5146.500000     | -28.0       | 1.0         | -27.0       |
| 5145.500000     | -29.2       | 2.2         | -27.0       |
| 5139.500000     | -30.5       | 3.5         | -27.0       |
| 5141.500000     | -30.6       | 3.6         | -27.0       |
| 5142.500000     | -30.7       | 3.7         | -27.0       |
| 5138.500000     | -30.8       | 3.8         | -27.0       |
| 5140.500000     | -31.7       | 4.7         | -27.0       |
| 5137.500000     | -32.6       | 5.6         | -27.0       |
| 5136.500000     | -33.1       | 6.1         | -27.0       |
| 5135.500000     | -35.2       | 8.2         | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ kHz |
| SweepPoints           | 9700             | ~ 9700             |
| SweepTime             | 9.700 ms         | AUTO               |
| Reference Level       | -10.000 dBm      | -30.000 dBm        |
| Attenuation           | 20.000 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                   | 38 / max. 150    | max. 150           |
| Stable                | 3 / 3            | 3                  |
| Max Stable Difference | 0.33 dB          | 0.50 dB            |

## Pre Measurement 2

| Setting               | Instrument Value | Target Value     |
|-----------------------|------------------|------------------|
| RBW                   | 1.000 MHz        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ MHz |
| SweepPoints           | 4150             | ~ 4150           |
| SweepTime             | 4.150 ms         | AUTO             |
| Reference Level       | -10.000 dBm      | -30.000 dBm      |
| Attenuation           | 20.000 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                   | 10 / 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.

### Result

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

### Final measurements

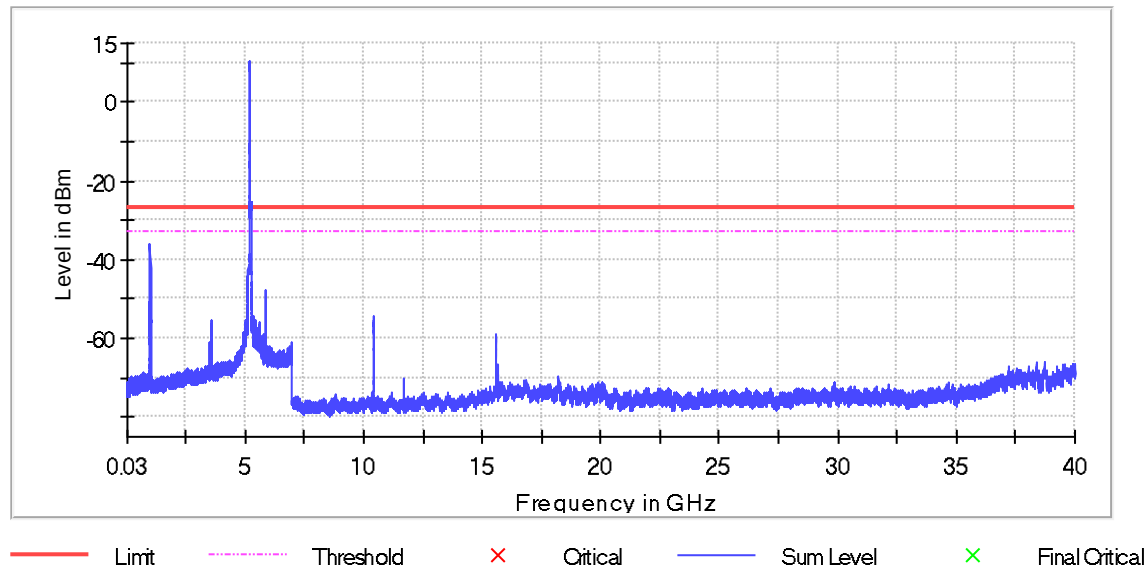
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 1000.500000     | -36.2       | 9.2         | -27.0       |
| 1000.000000     | -36.2       | 9.2         | -27.0       |
| 5149.500000     | -36.9       | 9.9         | -27.0       |
| 1001.500000     | -37.2       | 10.2        | -27.0       |
| 5146.500000     | -38.7       | 11.7        | -27.0       |
| 5145.500000     | -39.4       | 12.4        | -27.0       |
| 5147.500000     | -40.3       | 13.3        | -27.0       |
| 5148.500000     | -40.5       | 13.5        | -27.0       |
| 5144.500000     | -41.0       | 14.0        | -27.0       |
| 5142.500000     | -41.2       | 14.2        | -27.0       |
| 1002.500000     | -42.1       | 15.1        | -27.0       |
| 5141.500000     | -42.7       | 15.7        | -27.0       |
| 5143.500000     | -43.5       | 16.5        | -27.0       |
| 5139.500000     | -44.2       | 17.2        | -27.0       |
| 5135.500000     | -44.4       | 17.4        | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ kHz |
| SweepPoints           | 9700             | ~ 9700             |
| SweepTime             | 9.700 ms         | AUTO               |
| Reference Level       | -10.000 dBm      | -30.000 dBm        |
| Attenuation           | 20.000 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                   | 44 / max. 150    | max. 150           |
| Stable                | 3 / 3            | 3                  |
| Max Stable Difference | 0.18 dB          | 0.50 dB            |

## Pre Measurement 2

| Setting               | Instrument Value | Target Value     |
|-----------------------|------------------|------------------|
| RBW                   | 1.000 MHz        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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                   | 12 / 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.

### Result

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

### Final measurements

| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| 1035.500000     | -31.4                       | -41.5       | -27.0       | 14.5        | PASS   |

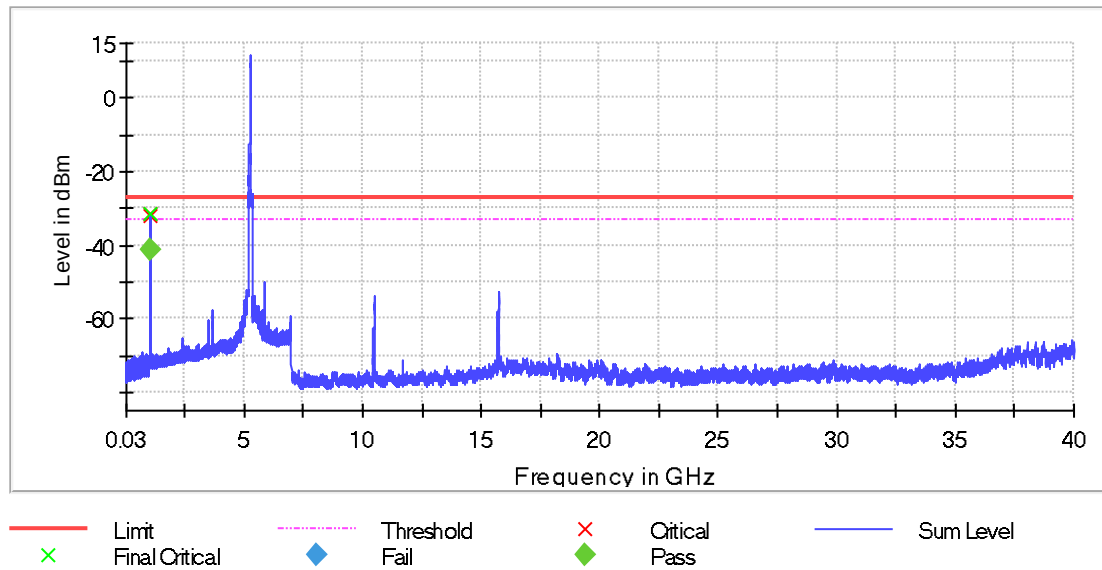
### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 1035.500000     | -31.4       | 4.4         | -27.0       |
| 1034.500000     | -32.1       | 5.1         | -27.0       |
| 1037.500000     | -34.0       | 7.0         | -27.0       |
| 1033.500000     | -34.1       | 7.1         | -27.0       |
| 1036.500000     | -34.4       | 7.4         | -27.0       |
| 1040.500000     | -34.7       | 7.7         | -27.0       |
| 1038.500000     | -34.7       | 7.7         | -27.0       |
| 1032.500000     | -35.0       | 8.0         | -27.0       |
| 1039.500000     | -36.1       | 9.1         | -27.0       |
| 1030.500000     | -36.4       | 9.4         | -27.0       |
| 1031.500000     | -36.5       | 9.5         | -27.0       |
| 1041.500000     | -36.6       | 9.6         | -27.0       |
| 1029.500000     | -39.6       | 12.6        | -27.0       |
| 1028.500000     | -40.5       | 13.5        | -27.0       |
| 1042.500000     | -41.8       | 14.8        | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ kHz |
| SweepPoints           | 9700             | ~ 9700             |
| SweepTime             | 9.700 ms         | AUTO               |
| Reference Level       | -10.000 dBm      | -30.000 dBm        |
| Attenuation           | 20.000 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        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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                   | 17 / 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) |                        |                        |

### Bandwidths

20 MHz (20 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<br>TCPIP::192.168.48.149::INST0::INSTR), SN 1321.3008K39/101229,<br>FW 3.40              |
| Vector Generator:  | VG SMBV100A (VG SMBV100A) @ VISA (ADR<br>TCPIP::192.168.48.25::INST0::INSTR), SN 260451, FW 4.15.125.49                    |
| Generator:         | SMB100A (SMB100A) @ VISA (ADR<br>TCPIP::192.168.48.30::INST0::INSTR), SN 178361, FW / Drv:Rev<br>2.21.0, 07/2016, CVI 2015 |
| OSP:               | OSP-B157W (OSP-B157W) @ VISA (ADR<br>TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. / , FW<br>1.23.0.2                |

## Summary

| Test                 | Frequency<br>(MHz) | Nominal<br>Power<br>(dBm) | Nominal<br>Bandwidth<br>(MHz) | Result |
|----------------------|--------------------|---------------------------|-------------------------------|--------|
| Tx Spurious Emission | 5260.000           | 20.0                      | 20.000000                     | PASS   |
| Tx Spurious Emission | 5280.000           | 20.0                      | 20.000000                     | PASS   |
| Tx Spurious Emission | 5320.000           | 20.0                      | 20.000000                     | PASS   |

## Tx Spurious Emission (5260 MHz; 20.000 dBm; 20 MHz)

Customized settings.

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5260.000000         | PASS   |

### Final measurements

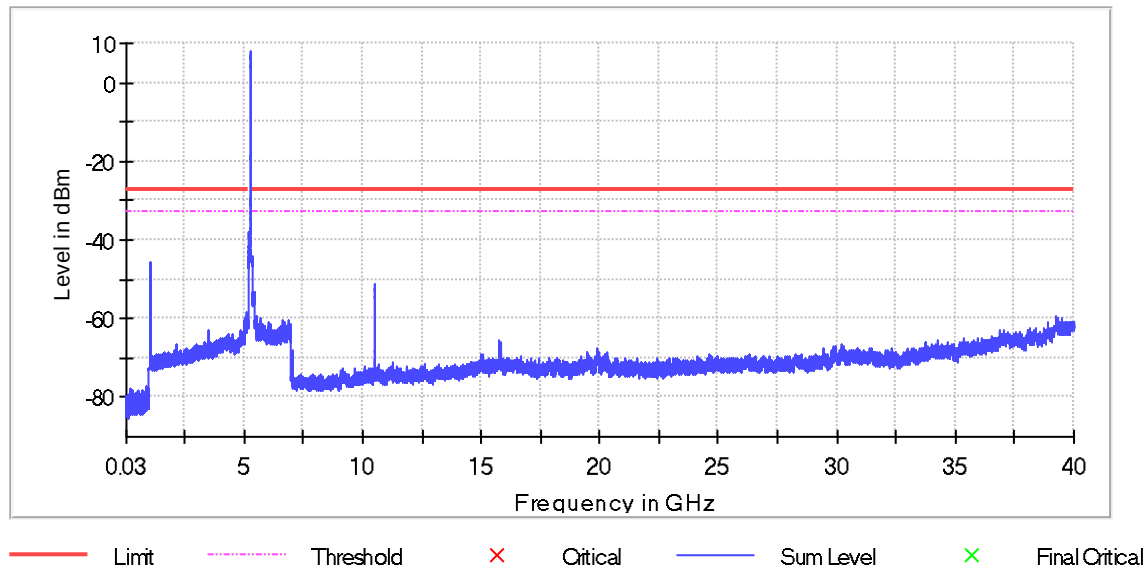
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 1057.500000     | -45.6       | 18.6        | -27.0       |
| 1056.500000     | -47.0       | 20.0        | -27.0       |
| 1055.500000     | -47.3       | 20.3        | -27.0       |
| 1054.500000     | -47.9       | 20.9        | -27.0       |
| 1058.500000     | -48.1       | 21.1        | -27.0       |
| 1053.500000     | -48.1       | 21.1        | -27.0       |
| 1059.500000     | -48.4       | 21.4        | -27.0       |
| 1050.500000     | -48.8       | 21.8        | -27.0       |
| 1051.500000     | -48.8       | 21.8        | -27.0       |
| 1052.500000     | -49.7       | 22.7        | -27.0       |
| 1060.500000     | -50.3       | 23.3        | -27.0       |
| 10523.500000    | -51.3       | 24.3        | -27.0       |
| 1061.500000     | -51.4       | 24.4        | -27.0       |
| 10522.500000    | -51.8       | 24.8        | -27.0       |
| 1062.500000     | -52.0       | 25.0        | -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                   | 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                   | 11 / max. 150    | max. 150     |
| Stable                | 3 / 3            | 3            |
| Max Stable Difference | 0.00 dB          | 0.50 dB      |

## Tx Spurious Emission (5280 MHz; 20.000 dBm; 20 MHz)

Customized settings.

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5280.000000         | PASS   |

### Final measurements

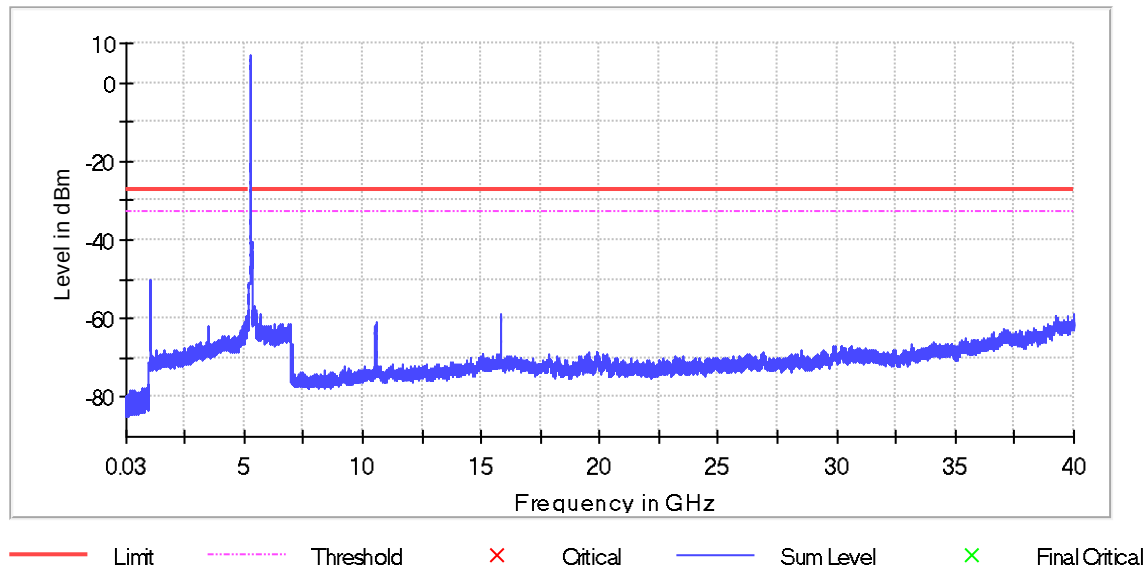
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 1076.500000     | -50.1       | 23.1        | -27.0       |
| 1074.500000     | -50.1       | 23.1        | -27.0       |
| 1077.500000     | -50.3       | 23.3        | -27.0       |
| 1078.500000     | -50.7       | 23.7        | -27.0       |
| 1075.500000     | -50.9       | 23.9        | -27.0       |
| 1071.500000     | -51.6       | 24.6        | -27.0       |
| 1072.500000     | -51.6       | 24.6        | -27.0       |
| 1073.500000     | -51.7       | 24.7        | -27.0       |
| 1079.500000     | -52.6       | 25.6        | -27.0       |
| 1070.500000     | -52.8       | 25.8        | -27.0       |
| 1080.500000     | -55.1       | 28.1        | -27.0       |
| 1069.500000     | -55.1       | 28.1        | -27.0       |
| 5427.500000     | -57.1       | 30.1        | -27.0       |
| 5468.500000     | -57.4       | 30.4        | -27.0       |
| 1068.500000     | -57.5       | 30.5        | -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       | -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                   | 10 / max. 150    | max. 150     |
| Stable                | 3 / 3            | 3            |
| Max Stable Difference | 0.00 dB          | 0.50 dB      |



## Tx Spurious Emission (5320 MHz; 20.000 dBm; 20 MHz)

Customized settings.

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5320.000000         | PASS   |

### Final measurements

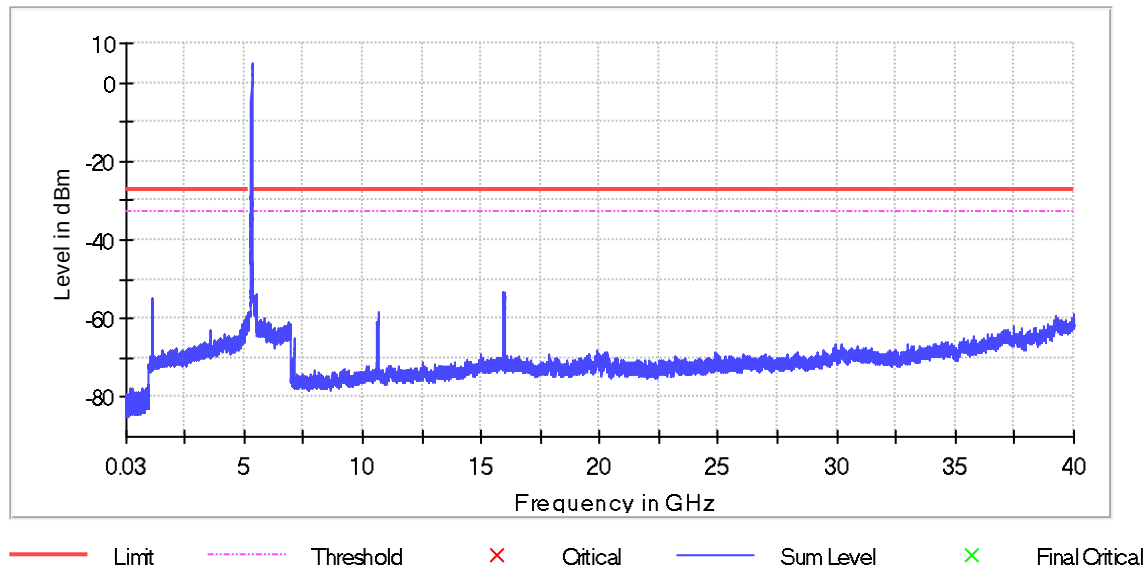
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5350.500000     | -42.5       | 15.5        | -27.0       |
| 5351.500000     | -43.4       | 16.4        | -27.0       |
| 5352.500000     | -43.6       | 16.6        | -27.0       |
| 5353.500000     | -44.1       | 17.1        | -27.0       |
| 5354.500000     | -45.5       | 18.5        | -27.0       |
| 5355.500000     | -45.5       | 18.5        | -27.0       |
| 5359.500000     | -45.7       | 18.7        | -27.0       |
| 5356.500000     | -45.9       | 18.9        | -27.0       |
| 5358.500000     | -46.3       | 19.3        | -27.0       |
| 5357.500000     | -46.5       | 19.5        | -27.0       |
| 5363.500000     | -46.6       | 19.6        | -27.0       |
| 5362.500000     | -47.7       | 20.7        | -27.0       |
| 5364.500000     | -47.7       | 20.7        | -27.0       |
| 5360.500000     | -47.9       | 20.9        | -27.0       |
| 5361.500000     | -48.5       | 21.5        | -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       | -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                   | 11 / 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) |                        |                        |

### Bandwidths

20 MHz (20 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<br>TCPIP::192.168.48.149::INST0::INSTR), SN 1321.3008K39/101229,<br>FW 3.40              |
| Vector Generator:  | VG SMBV100A (VG SMBV100A) @ VISA (ADR<br>TCPIP::192.168.48.25::INST0::INSTR), SN 260451, FW 4.15.125.49                    |
| Generator:         | SMB100A (SMB100A) @ VISA (ADR<br>TCPIP::192.168.48.30::INST0::INSTR), SN 178361, FW / Drv:Rev<br>2.21.0, 07/2016, CVI 2015 |
| OSP:               | OSP-B157W (OSP-B157W) @ VISA (ADR<br>TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. / , FW<br>1.23.0.2                |

## Summary

| Test                 | Frequency<br>(MHz) | Nominal<br>Power<br>(dBm) | Nominal<br>Bandwidth<br>(MHz) | Result |
|----------------------|--------------------|---------------------------|-------------------------------|--------|
| Tx Spurious Emission | 5500.000           | 20.0                      | 20.000000                     | PASS   |
| Tx Spurious Emission | 5600.000           | 20.0                      | 20.000000                     | PASS   |
| Tx Spurious Emission | 5700.000           | 20.0                      | 20.000000                     | PASS   |

## Tx Spurious Emission (5500 MHz; 20.000 dBm; 20 MHz)

Customized settings.

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5500.000000         | PASS   |

### Final measurements

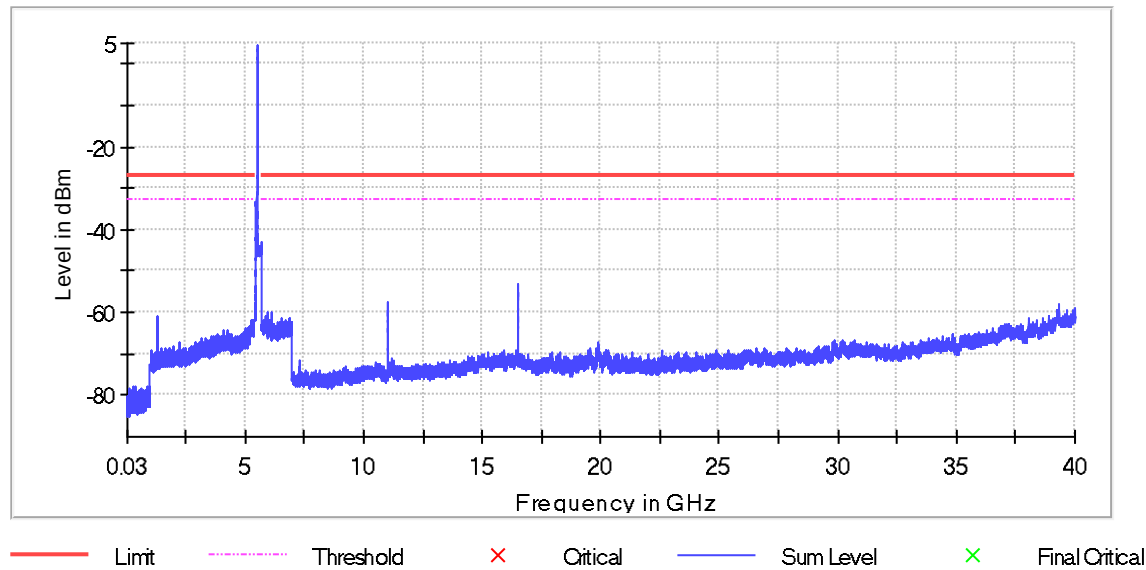
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5469.500000     | -39.5       | 12.5        | -27.0       |
| 5468.500000     | -40.3       | 13.3        | -27.0       |
| 5467.500000     | -41.2       | 14.2        | -27.0       |
| 5465.500000     | -42.1       | 15.1        | -27.0       |
| 5462.500000     | -42.2       | 15.2        | -27.0       |
| 5463.500000     | -42.4       | 15.4        | -27.0       |
| 5466.500000     | -42.6       | 15.6        | -27.0       |
| 5464.500000     | -42.7       | 15.7        | -27.0       |
| 5461.500000     | -43.1       | 16.1        | -27.0       |
| 5460.500000     | -45.3       | 18.3        | -27.0       |
| 5459.500000     | -45.4       | 18.4        | -27.0       |
| 5458.500000     | -45.6       | 18.6        | -27.0       |
| 5457.500000     | -46.0       | 19.0        | -27.0       |
| 5456.500000     | -46.3       | 19.3        | -27.0       |
| 5455.500000     | -46.8       | 19.8        | -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      |

## Tx Spurious Emission (5600 MHz; 20.000 dBm; 20 MHz)

Customized settings.

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5600.000000         | PASS   |

### Final measurements

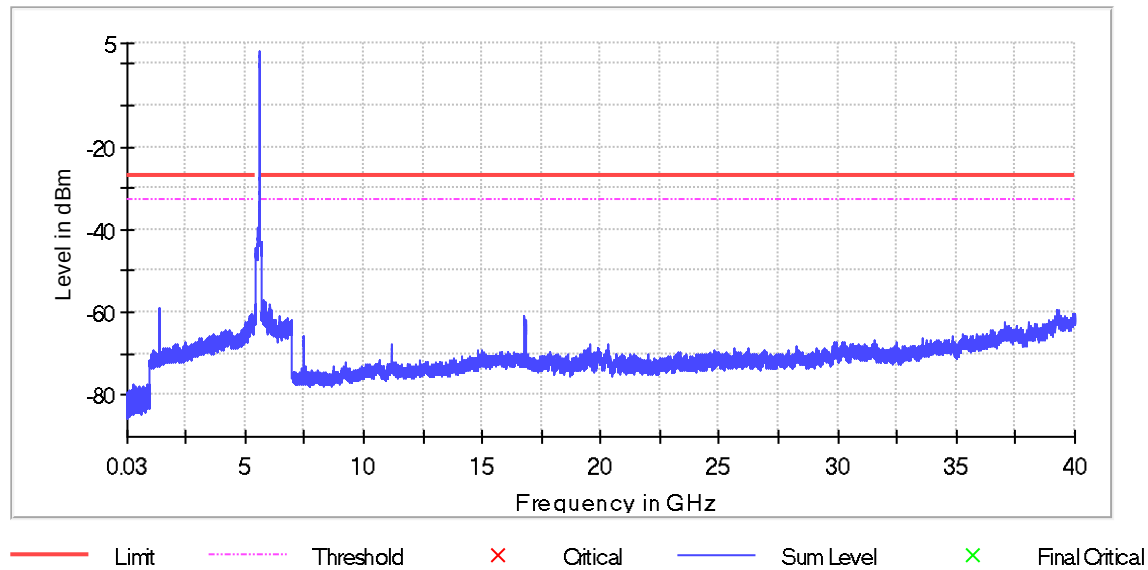
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5801.500000     | -57.2       | 30.2        | -27.0       |
| 5822.500000     | -57.6       | 30.6        | -27.0       |
| 5800.500000     | -57.8       | 30.8        | -27.0       |
| 5457.500000     | -57.8       | 30.8        | -27.0       |
| 6071.500000     | -57.8       | 30.8        | -27.0       |
| 5814.500000     | -57.9       | 30.9        | -27.0       |
| 5824.500000     | -57.9       | 30.9        | -27.0       |
| 5811.500000     | -57.9       | 30.9        | -27.0       |
| 5799.500000     | -58.0       | 31.0        | -27.0       |
| 5823.500000     | -58.1       | 31.1        | -27.0       |
| 5841.500000     | -58.1       | 31.1        | -27.0       |
| 5828.500000     | -58.1       | 31.1        | -27.0       |
| 5467.500000     | -58.3       | 31.3        | -27.0       |
| 5813.500000     | -58.4       | 31.4        | -27.0       |
| 5803.500000     | -58.4       | 31.4        | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ 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        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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                   | 10 / max. 150    | max. 150         |
| Stable                | 3 / 3            | 3                |
| Max Stable Difference | 0.00 dB          | 0.50 dB          |



## Tx Spurious Emission (5700 MHz; 20.000 dBm; 20 MHz)

Customized settings.

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5700.000000         | PASS   |

### Final measurements

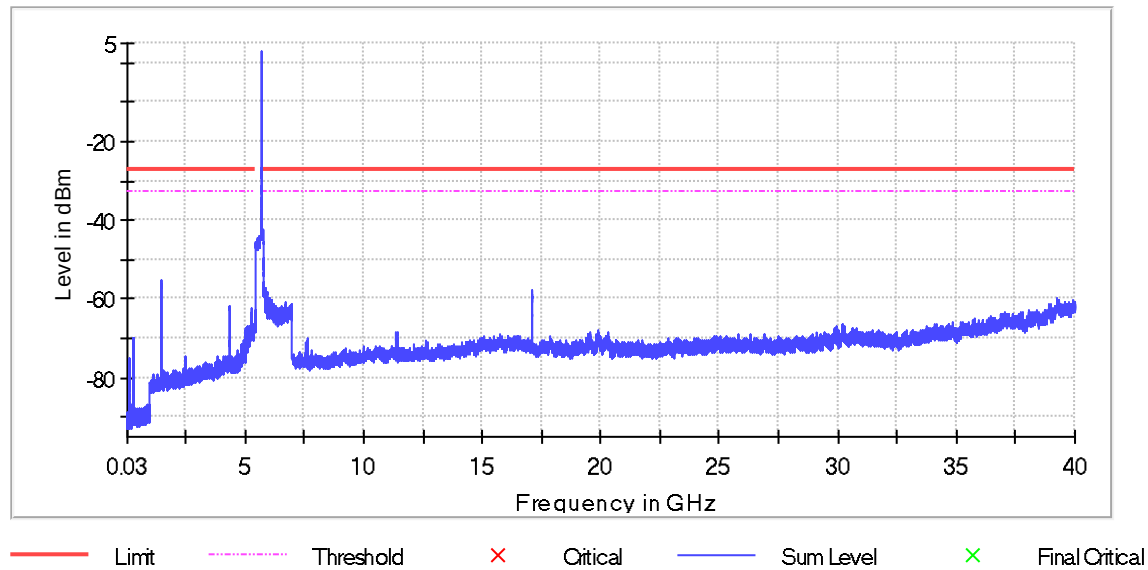
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5725.500000     | -40.0       | 13.0        | -27.0       |
| 5728.500000     | -40.4       | 13.4        | -27.0       |
| 5729.500000     | -41.0       | 14.0        | -27.0       |
| 5726.500000     | -41.7       | 14.7        | -27.0       |
| 5733.500000     | -41.9       | 14.9        | -27.0       |
| 5734.500000     | -42.4       | 15.4        | -27.0       |
| 5727.500000     | -42.6       | 15.6        | -27.0       |
| 5732.500000     | -43.2       | 16.2        | -27.0       |
| 5730.500000     | -43.4       | 16.4        | -27.0       |
| 5735.500000     | -44.2       | 17.2        | -27.0       |
| 5731.500000     | -45.1       | 18.1        | -27.0       |
| 5739.500000     | -45.5       | 18.5        | -27.0       |
| 5736.500000     | -45.8       | 18.8        | -27.0       |
| 5738.500000     | -45.9       | 18.9        | -27.0       |
| 5737.500000     | -45.9       | 18.9        | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ kHz |
| SweepPoints           | 9700             | ~ 9700             |
| Sweptime              | 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                   | 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        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ MHz |
| SweepPoints           | 4150             | ~ 4150           |
| Sweptime              | 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                   | 6 / max. 150     | max. 150         |
| Stable                | 3 / 3            | 3                |
| Max Stable Difference | 0.16 dB          | 0.50 dB          |

# FCC 15.407 2015

## DUT Information

### Frequencies

WLAN CH 36 (5180 MHz)  
WLAN CH 149 (5745 MHz)

WLAN CH 40 (5200 MHz)  
WLAN CH 157 (5785 MHz)

WLAN CH 48 (5240 MHz)  
WLAN CH 165 (5825 MHz)

### Bandwidths

20 MHz (20 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\Copy of demoTS8997

### Spectrum Analyzer:

SA FSV 40 (SA FSV 40) @ VISA (ADR  
TCPIP::192.168.48.149::INST0::INSTR), SN 1307.9002K40/101076,  
FW 3.40

### Vector Generator:

VG SMBV100A3 (VG SMBV100B) @ VISA (ADR  
TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33

### Generator:

SMB100A 40G (SMB100A) @ VISA (ADR  
TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev  
2.21.0, 07/2016, CVI 2015

### OSP:

OSP (OSP) @ VISA (ADR TCPIP::192.168.48.148::INST0::INSTR),  
SN OSP120 V02, 101189, FW 2.63.180410

### Power Meter:

OSP-B157 Power Meter (OSP-B157 Power Meter) @ USB (ADR 20)

## Summary

| Test                 | Frequency<br>(MHz) | Nominal<br>Power<br>(dBm) | Nominal<br>Bandwidth<br>(MHz) | Result |
|----------------------|--------------------|---------------------------|-------------------------------|--------|
| Tx Spurious Emission | 5745.000           | 20.0                      | 20.000000                     | PASS   |
| Tx Spurious Emission | 5785.000           | 20.0                      | 20.000000                     | PASS   |
| Tx Spurious Emission | 5825.000           | 20.0                      | 20.000000                     | PASS   |

## Tx Spurious Emission (5745 MHz; 20.000 dBm; 20 MHz)

Customized settings.

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5745.000000         | PASS   |

### Final measurements

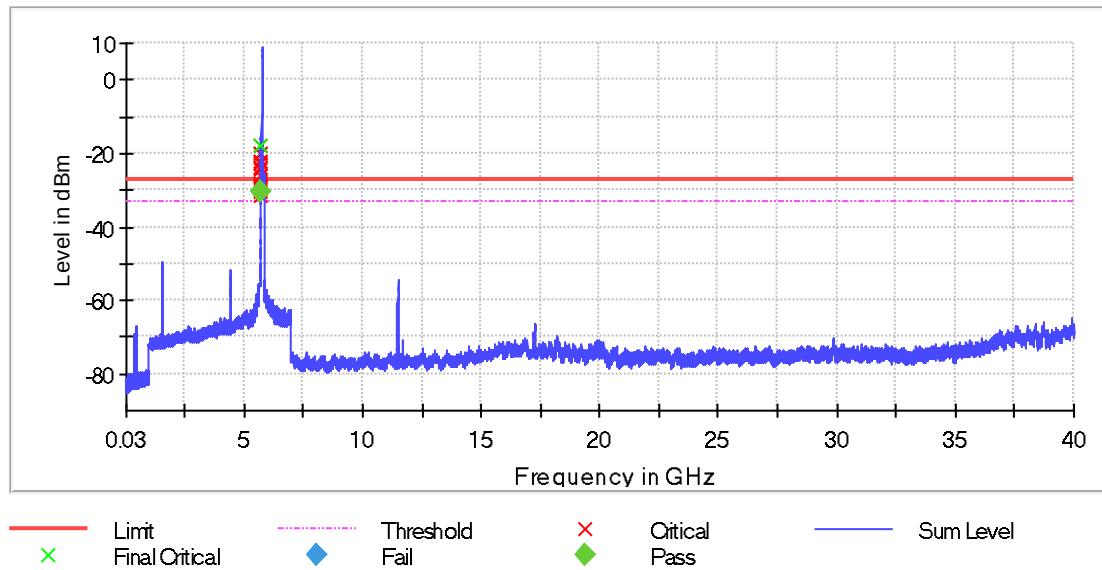
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| 5723.500000     | -17.6                       | -30.3       | -27.0       | 3.3         | PASS   |

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5723.500000     | -17.6       | -9.4        | -27.0       |
| 5722.500000     | -20.0       | -7.0        | -27.0       |
| 5724.500000     | -20.2       | -6.8        | -27.0       |
| 5720.500000     | -22.4       | -4.6        | -27.0       |
| 5718.500000     | -22.5       | -4.5        | -27.0       |
| 5719.500000     | -22.7       | -4.3        | -27.0       |
| 5721.500000     | -23.7       | -3.3        | -27.0       |
| 5717.500000     | -24.0       | -3.0        | -27.0       |
| 5716.500000     | -24.2       | -2.8        | -27.0       |
| 5715.500000     | -26.0       | -1.0        | -27.0       |
| 5714.500000     | -28.5       | 1.5         | -27.0       |
| 5713.500000     | -28.8       | 1.8         | -27.0       |
| 5711.500000     | -29.0       | 2.0         | -27.0       |
| 5710.500000     | -29.4       | 2.4         | -27.0       |
| 5708.500000     | -29.4       | 2.4         | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ 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                   | 59 / max. 150    | max. 150           |
| Stable                | 3 / 3            | 3                  |
| Max Stable Difference | 0.41 dB          | 0.50 dB            |

## Pre Measurement 2

| Setting               | Instrument Value | Target Value     |
|-----------------------|------------------|------------------|
| RBW                   | 1.000 MHz        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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                   | 24 / 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 (5785 MHz; 20.000 dBm; 20 MHz)

Customized settings.

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5785.000000         | PASS   |

### Final measurements

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

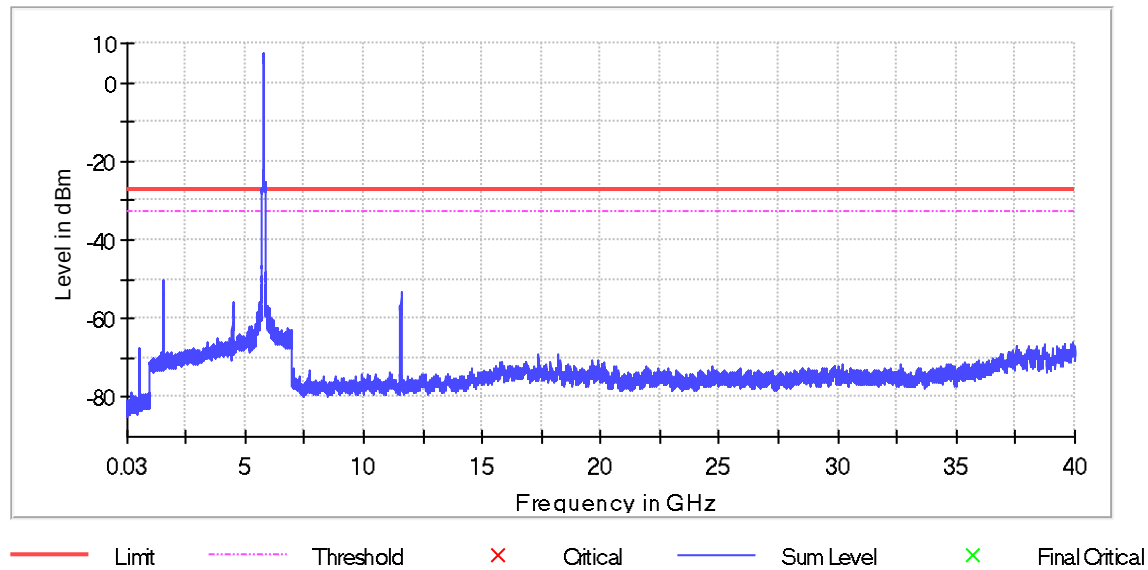
### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5720.500000     | -46.6       | 19.6        | -27.0       |
| 5719.500000     | -46.6       | 19.6        | -27.0       |
| 5723.500000     | -46.9       | 19.9        | -27.0       |
| 5721.500000     | -47.0       | 20.0        | -27.0       |
| 5722.500000     | -47.2       | 20.2        | -27.0       |
| 5724.500000     | -47.3       | 20.3        | -27.0       |
| 5718.500000     | -47.6       | 20.6        | -27.0       |
| 5717.500000     | -47.7       | 20.7        | -27.0       |
| 5853.500000     | -48.1       | 21.1        | -27.0       |
| 5854.500000     | -48.2       | 21.2        | -27.0       |
| 5852.500000     | -49.1       | 22.1        | -27.0       |
| 5713.500000     | -49.4       | 22.4        | -27.0       |
| 1580.500000     | -50.0       | 23.0        | -27.0       |
| 5716.500000     | -50.0       | 23.0        | -27.0       |
| 5711.500000     | -50.2       | 23.2        | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ 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                   | 79 / max. 150    | max. 150           |
| Stable                | 3 / 3            | 3                  |
| Max Stable Difference | 0.38 dB          | 0.50 dB            |

## Pre Measurement 2

| Setting               | Instrument Value | Target Value     |
|-----------------------|------------------|------------------|
| RBW                   | 1.000 MHz        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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                   | 19 / max. 150    | max. 150         |
| Stable                | 3 / 3            | 3                |
| Max Stable Difference | 0.00 dB          | 0.50 dB          |

## Tx Spurious Emission (5825 MHz; 20.000 dBm; 20 MHz)

Customized settings.

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5825.000000         | PASS   |

### Final measurements

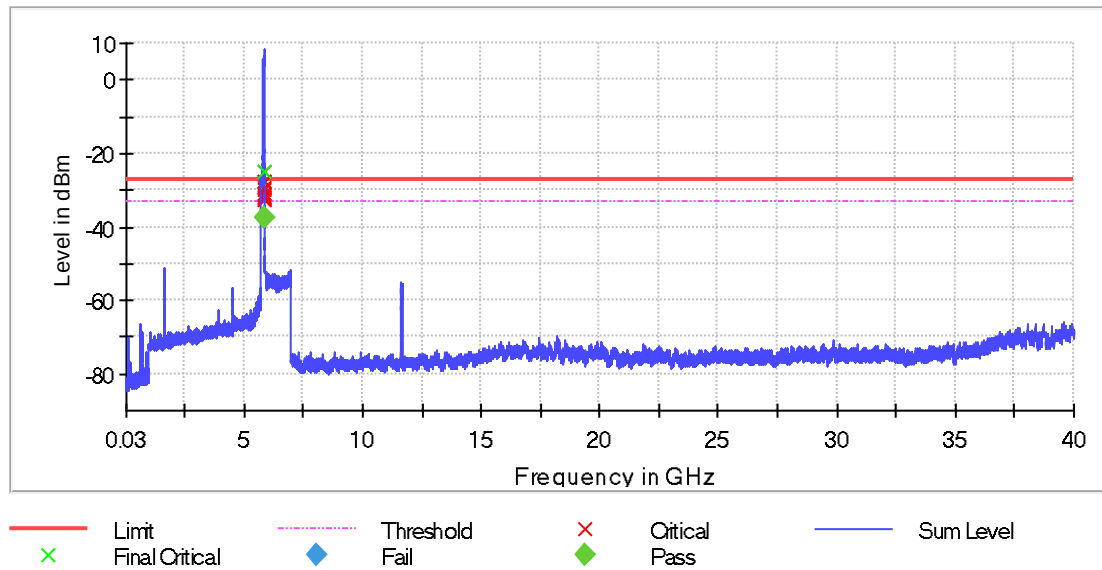
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| 5851.500000     | -25.2                       | -37.3       | -27.0       | 10.3        | PASS   |

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5851.500000     | -25.2       | -1.8        | -27.0       |
| 5850.500000     | -27.6       | 0.6         | -27.0       |
| 5852.500000     | -27.8       | 0.8         | -27.0       |
| 5853.500000     | -27.8       | 0.8         | -27.0       |
| 5854.500000     | -29.5       | 2.5         | -27.0       |
| 5855.500000     | -29.7       | 2.7         | -27.0       |
| 5859.500000     | -30.9       | 3.9         | -27.0       |
| 5858.500000     | -31.0       | 4.0         | -27.0       |
| 5857.500000     | -31.3       | 4.3         | -27.0       |
| 5860.500000     | -31.8       | 4.8         | -27.0       |
| 5856.500000     | -32.0       | 5.0         | -27.0       |
| 5863.500000     | -32.5       | 5.5         | -27.0       |
| 5861.500000     | -32.6       | 5.6         | -27.0       |
| 5862.500000     | -33.2       | 6.2         | -27.0       |
| 5865.500000     | -34.2       | 7.2         | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ 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                   | 98 / max. 150    | max. 150           |
| Stable                | 3 / 3            | 3                  |
| Max Stable Difference | 0.29 dB          | 0.50 dB            |

## Pre Measurement 2

| Setting               | Instrument Value | Target Value     |
|-----------------------|------------------|------------------|
| RBW                   | 1.000 MHz        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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                   | 17 / 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 | 20.000 dBm       | 20.000 dBm   |
| Attenuation     | 40.000 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 149 (5745 MHz)

WLAN CH 40 (5200 MHz)  
WLAN CH 157 (5785 MHz)

WLAN CH 48 (5240 MHz)  
WLAN CH 165 (5825 MHz)

### Bandwidths

20 MHz (20 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\Copy of demoTS8997

### Spectrum Analyzer:

SA FSV 40 (SA FSV 40) @ VISA (ADR  
TCPIP::192.168.48.149::INST0::INSTR), SN 1307.9002K40/101076,  
FW 3.40

### Vector Generator:

VG SMBV100A3 (VG SMBV100B) @ VISA (ADR  
TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33

### Generator:

SMB100A 40G (SMB100A) @ VISA (ADR  
TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev  
2.21.0, 07/2016, CVI 2015

### OSP:

OSP (OSP) @ VISA (ADR TCPIP::192.168.48.148::INST0::INSTR),  
SN OSP120 V02, 101189, FW 2.63.180410

### Power Meter:

OSP-B157 Power Meter (OSP-B157 Power Meter) @ USB (ADR 20)

## Summary

| Test                 | Frequency<br>(MHz) | Nominal<br>Power<br>(dBm) | Nominal<br>Bandwidth<br>(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.

### Result

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

### Final measurements

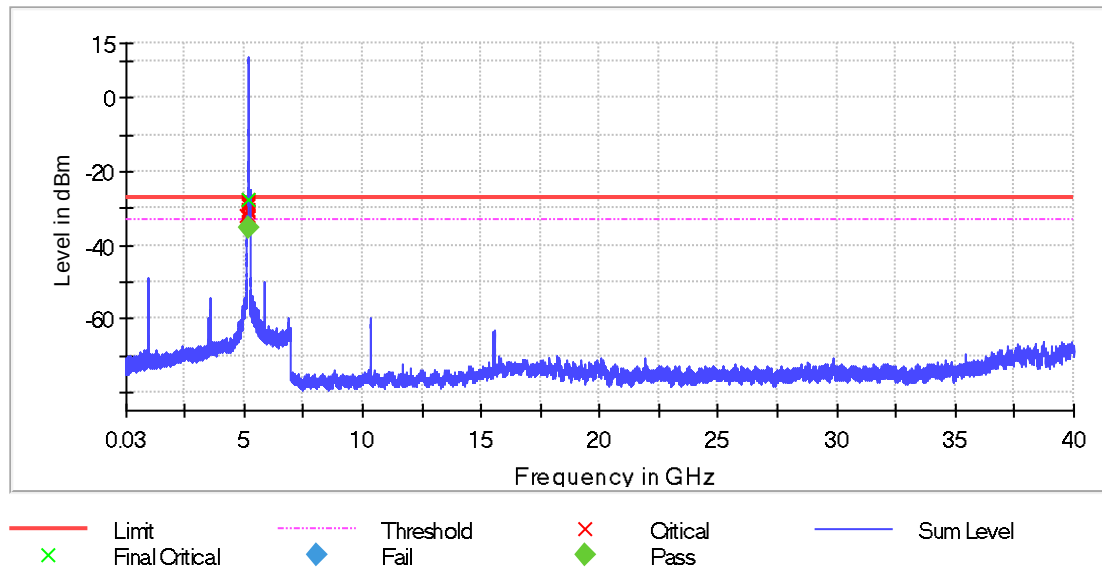
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| 5146.500000     | -27.5                       | -35.4       | -27.0       | 8.4         | PASS   |

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5146.500000     | -27.5       | 0.5         | -27.0       |
| 5147.500000     | -27.9       | 0.9         | -27.0       |
| 5149.500000     | -28.5       | 1.5         | -27.0       |
| 5148.500000     | -29.2       | 2.2         | -27.0       |
| 5145.500000     | -30.5       | 3.5         | -27.0       |
| 5144.500000     | -31.2       | 4.2         | -27.0       |
| 5141.500000     | -32.2       | 5.2         | -27.0       |
| 5142.500000     | -32.2       | 5.2         | -27.0       |
| 5143.500000     | -32.6       | 5.6         | -27.0       |
| 5139.500000     | -33.4       | 6.4         | -27.0       |
| 5137.500000     | -34.8       | 7.8         | -27.0       |
| 5140.500000     | -35.2       | 8.2         | -27.0       |
| 5138.500000     | -35.8       | 8.8         | -27.0       |
| 5135.500000     | -36.1       | 9.1         | -27.0       |
| 5136.500000     | -36.6       | 9.6         | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ kHz |
| SweepPoints           | 9700             | ~ 9700             |
| SweepTime             | 9.700 ms         | AUTO               |
| Reference Level       | -10.000 dBm      | -30.000 dBm        |
| Attenuation           | 20.000 dB        | AUTO               |
| Detector              | MaxPeak          | MaxPeak            |
| SweepCount            | 30               | 30                 |
| Filter                | 3 dB             | 3 dB               |
| Trace Mode            | Max Hold         | Max Hold           |
| SweepType             | Sweep            | AUTO               |
| Preamplifier          | off              | off                |
| Stablemode            | Trace            | Trace              |
| Stablevalue           | 0.50 dB          | 0.50 dB            |
| Run                   | 30 / max. 150    | max. 150           |
| Stable                | 3 / 3            | 3                  |
| Max Stable Difference | 0.16 dB          | 0.50 dB            |

## Pre Measurement 2

| Setting               | Instrument Value | Target Value     |
|-----------------------|------------------|------------------|
| RBW                   | 1.000 MHz        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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             |
| Preamplifier          | off              | off              |
| Stablemode            | Trace            | Trace            |
| Stablevalue           | 0.50 dB          | 0.50 dB          |
| Run                   | 16 / 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.

### Result

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

### Final measurements

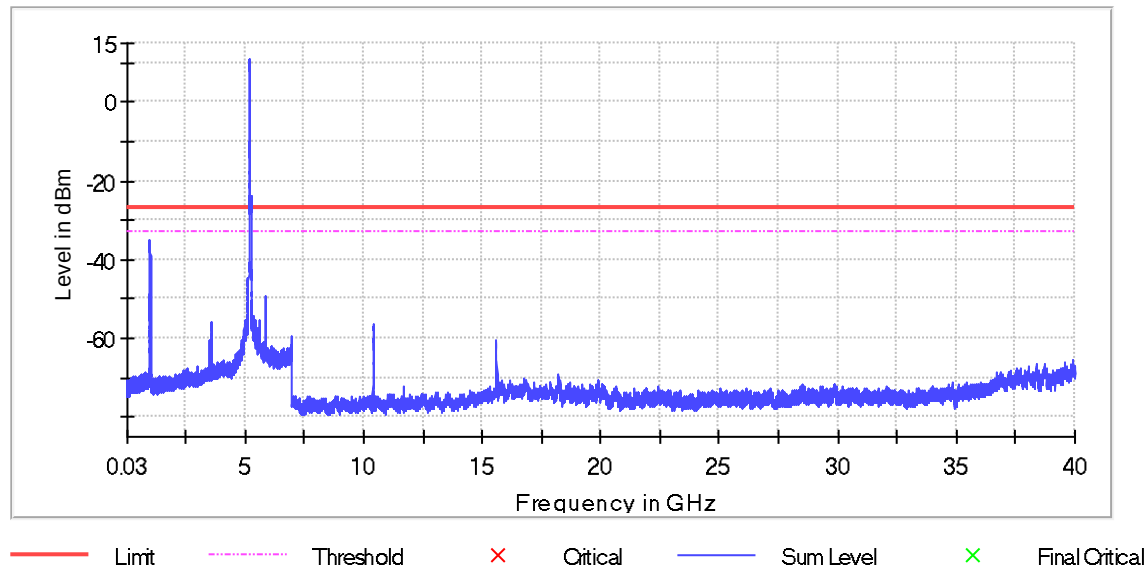
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 1000.500000     | -35.1       | 8.1         | -27.0       |
| 1000.000000     | -35.1       | 8.1         | -27.0       |
| 1001.500000     | -38.0       | 11.0        | -27.0       |
| 1002.500000     | -39.0       | 12.0        | -27.0       |
| 5144.500000     | -40.6       | 13.6        | -27.0       |
| 5149.500000     | -40.8       | 13.8        | -27.0       |
| 5148.500000     | -40.8       | 13.8        | -27.0       |
| 5145.500000     | -41.2       | 14.2        | -27.0       |
| 5146.500000     | -42.4       | 15.4        | -27.0       |
| 5143.500000     | -42.9       | 15.9        | -27.0       |
| 5147.500000     | -43.3       | 16.3        | -27.0       |
| 5142.500000     | -43.6       | 16.6        | -27.0       |
| 1003.500000     | -44.2       | 17.2        | -27.0       |
| 5138.500000     | -44.9       | 17.9        | -27.0       |
| 5136.500000     | -45.0       | 18.0        | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ kHz |
| SweepPoints           | 9700             | ~ 9700             |
| Sweeptime             | 9.700 ms         | AUTO               |
| Reference Level       | -10.000 dBm      | -30.000 dBm        |
| Attenuation           | 20.000 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                   | 61 / 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        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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                   | 8 / max. 150     | max. 150         |
| Stable                | 3 / 3            | 3                |
| Max Stable Difference | 0.17 dB          | 0.50 dB          |

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

Customized settings.

### Result

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

### Final measurements

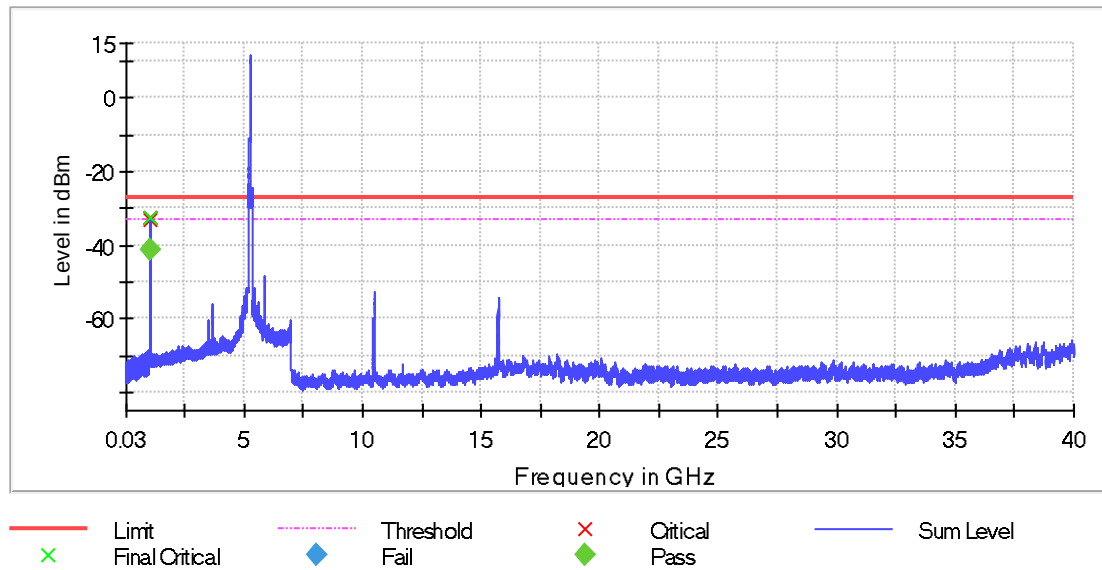
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| 1032.500000     | -32.3                       | -41.4       | -27.0       | 14.4        | PASS   |

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 1032.500000     | -32.3       | 5.3         | -27.0       |
| 1037.500000     | -32.7       | 5.7         | -27.0       |
| 1036.500000     | -33.0       | 6.0         | -27.0       |
| 1035.500000     | -33.3       | 6.3         | -27.0       |
| 1034.500000     | -33.5       | 6.5         | -27.0       |
| 1033.500000     | -33.7       | 6.7         | -27.0       |
| 1030.500000     | -34.3       | 7.3         | -27.0       |
| 1039.500000     | -34.6       | 7.6         | -27.0       |
| 1038.500000     | -34.7       | 7.7         | -27.0       |
| 1031.500000     | -35.8       | 8.8         | -27.0       |
| 1040.500000     | -36.7       | 9.7         | -27.0       |
| 1041.500000     | -37.7       | 10.7        | -27.0       |
| 1029.500000     | -38.5       | 11.5        | -27.0       |
| 1028.500000     | -39.2       | 12.2        | -27.0       |
| 1027.500000     | -41.1       | 14.1        | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ kHz |
| SweepPoints           | 9700             | ~ 9700             |
| SweepTime             | 9.700 ms         | AUTO               |
| Reference Level       | -10.000 dBm      | -30.000 dBm        |
| Attenuation           | 20.000 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        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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                   | 27 / 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) |                        |                        |

### Bandwidths

20 MHz (20 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<br>TCPIP::192.168.48.149::INST0::INSTR), SN 1321.3008K39/101229,<br>FW 3.40              |
| Vector Generator:  | VG SMBV100A (VG SMBV100A) @ VISA (ADR<br>TCPIP::192.168.48.25::INST0::INSTR), SN 260451, FW 4.15.125.49                    |
| Generator:         | SMB100A (SMB100A) @ VISA (ADR<br>TCPIP::192.168.48.30::INST0::INSTR), SN 178361, FW / Drv:Rev<br>2.21.0, 07/2016, CVI 2015 |
| OSP:               | OSP-B157W (OSP-B157W) @ VISA (ADR<br>TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. / , FW<br>1.23.0.2                |

## Summary

| Test                 | Frequency<br>(MHz) | Nominal<br>Power<br>(dBm) | Nominal<br>Bandwidth<br>(MHz) | Result |
|----------------------|--------------------|---------------------------|-------------------------------|--------|
| Tx Spurious Emission | 5260.000           | 20.0                      | 20.000000                     | PASS   |
| Tx Spurious Emission | 5280.000           | 20.0                      | 20.000000                     | PASS   |
| Tx Spurious Emission | 5320.000           | 20.0                      | 20.000000                     | PASS   |



## Tx Spurious Emission (5260 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b),

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5260.000000         | PASS   |

### Final measurements

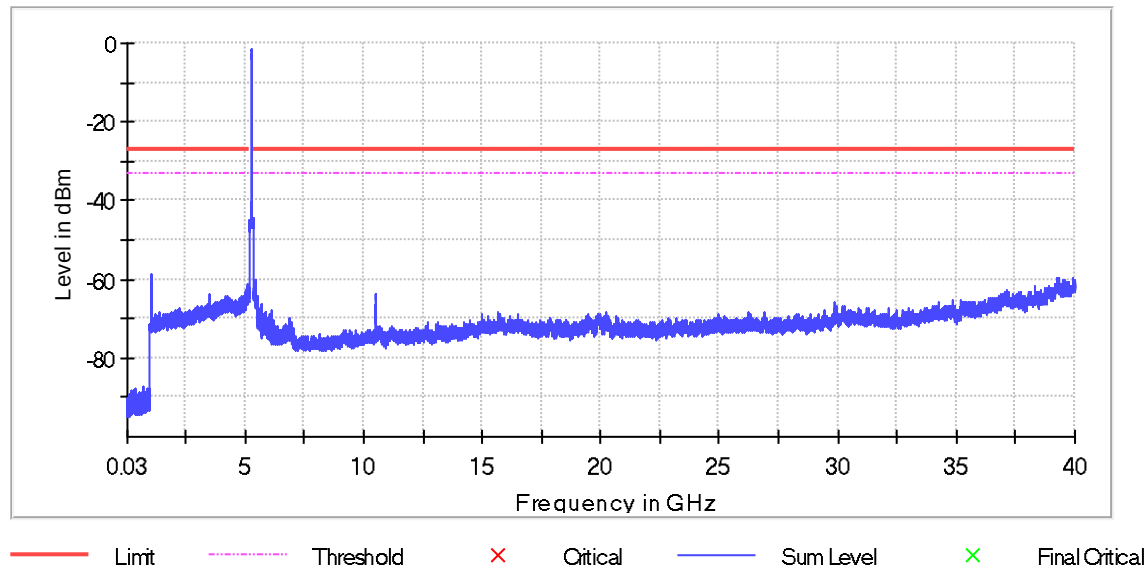
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 1054.500000     | -58.9       | 31.9        | -27.0       |
| 1056.500000     | -59.1       | 32.1        | -27.0       |
| 39279.500000    | -59.5       | 32.5        | -27.0       |
| 1055.500000     | -59.5       | 32.5        | -27.0       |
| 39294.500000    | -59.5       | 32.5        | -27.0       |
| 39258.500000    | -59.6       | 32.6        | -27.0       |
| 39245.500000    | -59.7       | 32.7        | -27.0       |
| 39338.500000    | -59.7       | 32.7        | -27.0       |
| 39280.500000    | -59.8       | 32.8        | -27.0       |
| 39914.500000    | -59.8       | 32.8        | -27.0       |
| 39244.500000    | -59.9       | 32.9        | -27.0       |
| 39255.500000    | -59.9       | 32.9        | -27.0       |
| 1061.500000     | -60.0       | 33.0        | -27.0       |
| 5448.500000     | -60.0       | 33.0        | -27.0       |
| 39240.500000    | -60.0       | 33.0        | -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       | -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       | -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      |

## Tx Spurious Emission (5280 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b),

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5280.000000         | PASS   |

### Final measurements

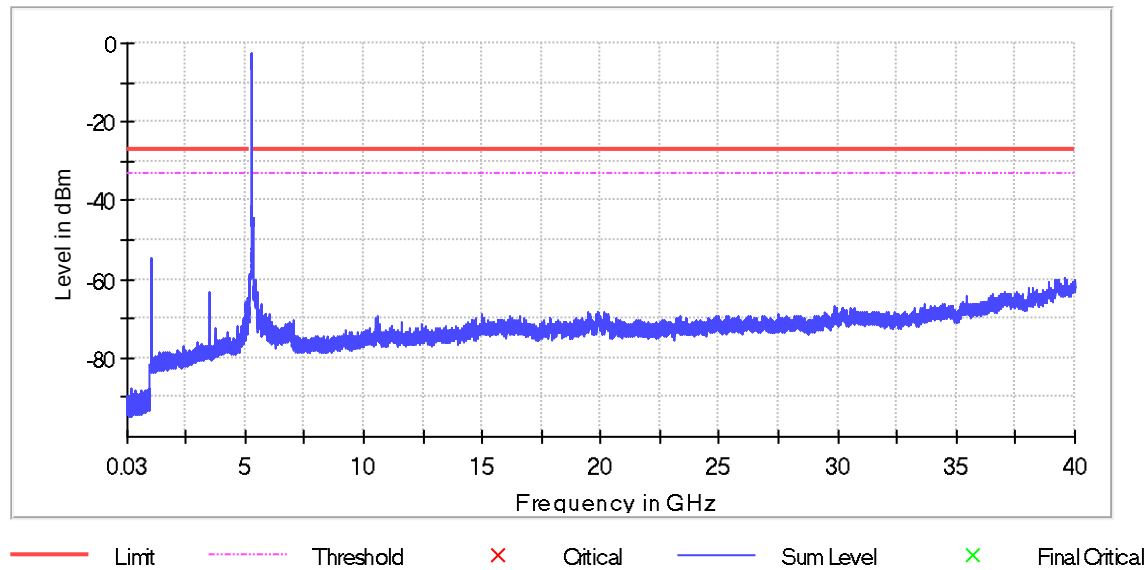
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 1075.500000     | -54.4       | 27.4        | -27.0       |
| 1076.500000     | -54.4       | 27.4        | -27.0       |
| 1074.500000     | -54.6       | 27.6        | -27.0       |
| 1069.500000     | -55.6       | 28.6        | -27.0       |
| 1070.500000     | -55.7       | 28.7        | -27.0       |
| 1081.500000     | -57.7       | 30.7        | -27.0       |
| 1071.500000     | -58.1       | 31.1        | -27.0       |
| 1072.500000     | -58.4       | 31.4        | -27.0       |
| 1080.500000     | -58.5       | 31.5        | -27.0       |
| 1068.500000     | -58.9       | 31.9        | -27.0       |
| 1078.500000     | -59.0       | 32.0        | -27.0       |
| 1079.500000     | -59.6       | 32.6        | -27.0       |
| 39608.500000    | -59.8       | 32.8        | -27.0       |
| 39599.500000    | -59.8       | 32.8        | -27.0       |
| 39214.500000    | -60.0       | 33.0        | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ kHz |
| SweepPoints           | 9700             | ~ 9700             |
| Sweptime              | 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        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ MHz |
| SweepPoints           | 4150             | ~ 4150           |
| Sweptime              | 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                   | 6 / max. 150     | max. 150         |
| Stable                | 3 / 3            | 3                |
| Max Stable Difference | 0.00 dB          | 0.50 dB          |

## Tx Spurious Emission (5320 MHz; 20.000 dBm; 20 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b),

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5320.000000         | PASS   |

### Final measurements

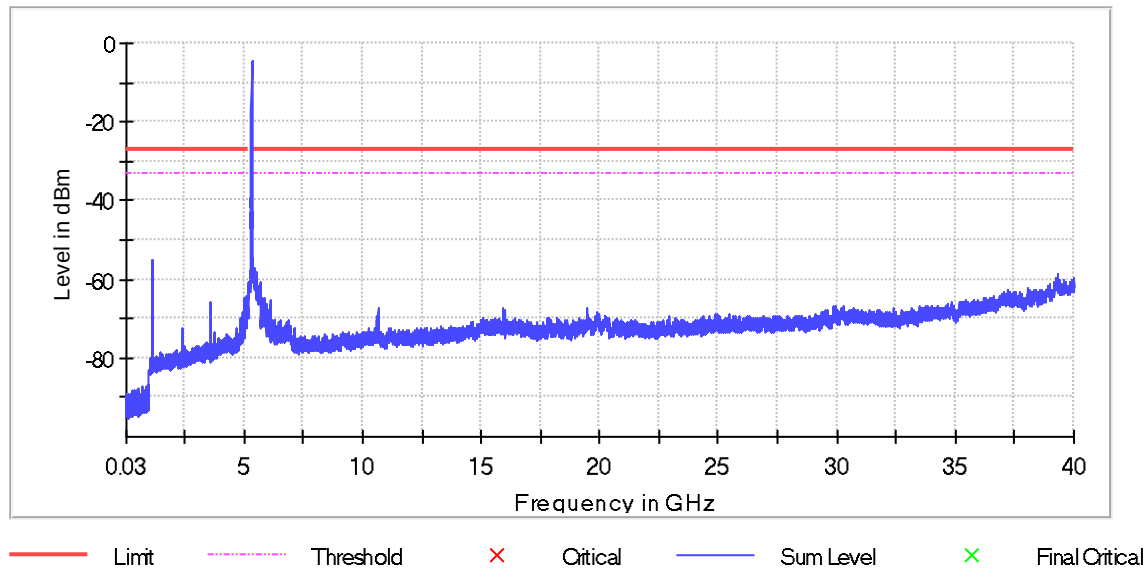
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5350.500000     | -53.6       | 26.6        | -27.0       |
| 5351.500000     | -54.1       | 27.1        | -27.0       |
| 5358.500000     | -54.6       | 27.6        | -27.0       |
| 5357.500000     | -54.8       | 27.8        | -27.0       |
| 5359.500000     | -55.0       | 28.0        | -27.0       |
| 5356.500000     | -55.0       | 28.0        | -27.0       |
| 1114.500000     | -55.1       | 28.1        | -27.0       |
| 5362.500000     | -55.2       | 28.2        | -27.0       |
| 1116.500000     | -55.3       | 28.3        | -27.0       |
| 5353.500000     | -55.7       | 28.7        | -27.0       |
| 1115.500000     | -55.7       | 28.7        | -27.0       |
| 5355.500000     | -55.9       | 28.9        | -27.0       |
| 5360.500000     | -56.2       | 29.2        | -27.0       |
| 5366.500000     | -56.3       | 29.3        | -27.0       |
| 1109.500000     | -56.5       | 29.5        | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ 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        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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                   | 6 / max. 150     | max. 150         |
| Stable                | 3 / 3            | 3                |
| Max Stable Difference | 0.03 dB          | 0.50 dB          |

# FCC 15.407 2015

## DUT Information

### Frequencies

WLAN CH 36 (5180 MHz)  
WLAN CH 149 (5745 MHz)

WLAN CH 40 (5200 MHz)  
WLAN CH 157 (5785 MHz)

WLAN CH 48 (5240 MHz)  
WLAN CH 165 (5825 MHz)

### Bandwidths

20 MHz (20 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\Copy of demoTS8997

### Spectrum Analyzer:

SA FSV 40 (SA FSV 40) @ VISA (ADR  
TCPIP::192.168.48.149::INST0::INSTR), SN 1307.9002K40/101076,  
FW 3.40

### Vector Generator:

VG SMBV100A3 (VG SMBV100B) @ VISA (ADR  
TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33

### Generator:

SMB100A 40G (SMB100A) @ VISA (ADR  
TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev  
2.21.0, 07/2016, CVI 2015

### OSP:

OSP (OSP) @ VISA (ADR TCPIP::192.168.48.148::INST0::INSTR),  
SN OSP120 V02, 101189, FW 2.63.180410

### Power Meter:

OSP-B157 Power Meter (OSP-B157 Power Meter) @ USB (ADR 20)

## Summary

| Test                 | Frequency<br>(MHz) | Nominal<br>Power<br>(dBm) | Nominal<br>Bandwidth<br>(MHz) | Result |
|----------------------|--------------------|---------------------------|-------------------------------|--------|
| Tx Spurious Emission | 5745.000           | 20.0                      | 20.000000                     | PASS   |
| Tx Spurious Emission | 5785.000           | 20.0                      | 20.000000                     | PASS   |
| Tx Spurious Emission | 5825.000           | 20.0                      | 20.000000                     | PASS   |



## Tx Spurious Emission (5745 MHz; 20.000 dBm; 20 MHz)

Customized settings.

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5745.000000         | PASS   |

### Final measurements

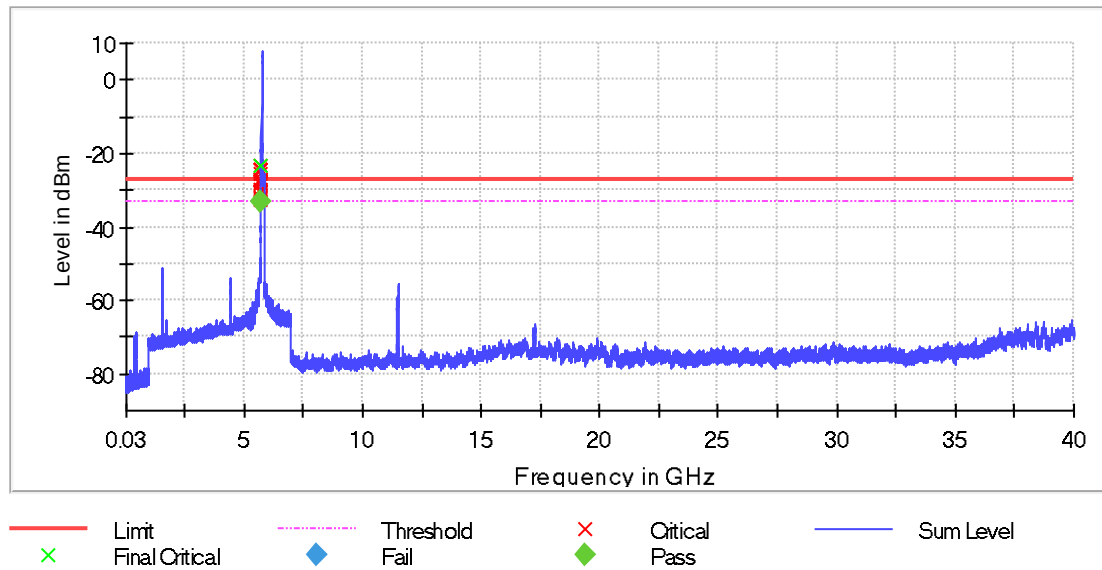
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| 5721.500000     | -23.2                       | -33.1       | -27.0       | 6.1         | PASS   |

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5721.500000     | -23.2       | -3.8        | -27.0       |
| 5720.500000     | -24.2       | -2.8        | -27.0       |
| 5724.500000     | -24.3       | -2.7        | -27.0       |
| 5723.500000     | -24.4       | -2.6        | -27.0       |
| 5722.500000     | -24.6       | -2.4        | -27.0       |
| 5719.500000     | -25.3       | -1.7        | -27.0       |
| 5716.500000     | -27.1       | 0.1         | -27.0       |
| 5717.500000     | -27.2       | 0.2         | -27.0       |
| 5718.500000     | -27.3       | 0.3         | -27.0       |
| 5715.500000     | -27.7       | 0.7         | -27.0       |
| 5714.500000     | -28.0       | 1.0         | -27.0       |
| 5713.500000     | -28.1       | 1.1         | -27.0       |
| 5708.500000     | -29.7       | 2.7         | -27.0       |
| 5707.500000     | -30.1       | 3.1         | -27.0       |
| 5710.500000     | -30.2       | 3.2         | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ 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                   | 53 / max. 150    | max. 150           |
| Stable                | 3 / 3            | 3                  |
| Max Stable Difference | 0.46 dB          | 0.50 dB            |

## Pre Measurement 2

| Setting               | Instrument Value | Target Value     |
|-----------------------|------------------|------------------|
| RBW                   | 1.000 MHz        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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                   | 21 / 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 (5785 MHz; 20.000 dBm; 20 MHz)

Customized settings.

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5785.000000         | PASS   |

### Final measurements

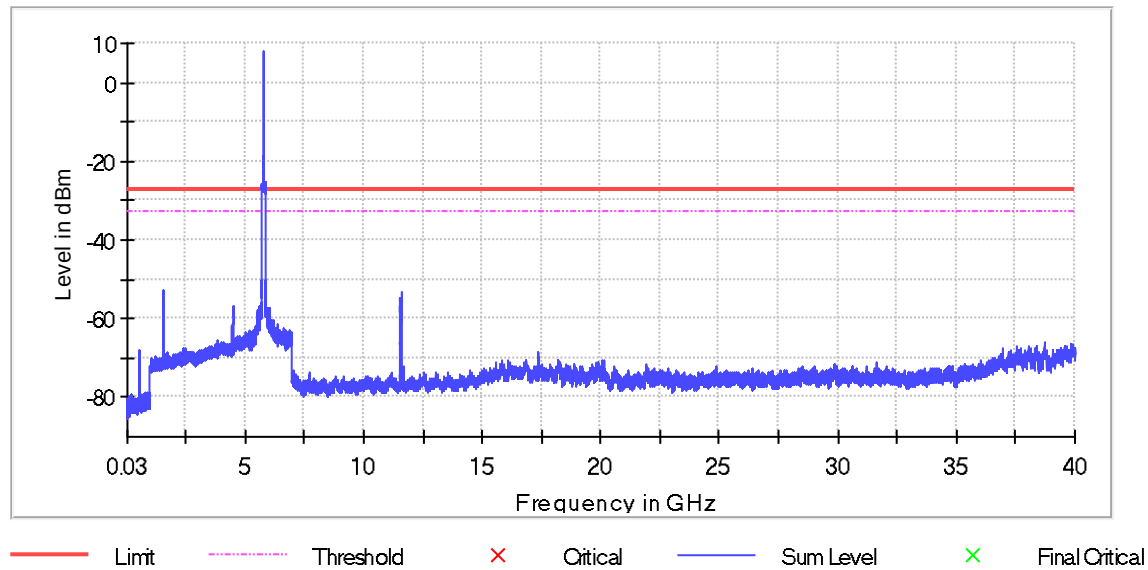
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5724.500000     | -48.3       | 21.3        | -27.0       |
| 5723.500000     | -49.5       | 22.5        | -27.0       |
| 5722.500000     | -49.6       | 22.6        | -27.0       |
| 5721.500000     | -49.7       | 22.7        | -27.0       |
| 5851.500000     | -50.0       | 23.0        | -27.0       |
| 5718.500000     | -50.4       | 23.4        | -27.0       |
| 5720.500000     | -50.5       | 23.5        | -27.0       |
| 5717.500000     | -50.5       | 23.5        | -27.0       |
| 5715.500000     | -51.1       | 24.1        | -27.0       |
| 5719.500000     | -51.4       | 24.4        | -27.0       |
| 5714.500000     | -51.7       | 24.7        | -27.0       |
| 5701.500000     | -51.7       | 24.7        | -27.0       |
| 5710.500000     | -51.8       | 24.8        | -27.0       |
| 5716.500000     | -52.0       | 25.0        | -27.0       |
| 5852.500000     | -52.0       | 25.0        | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ 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                   | 59 / max. 150    | max. 150           |
| Stable                | 3 / 3            | 3                  |
| Max Stable Difference | 0.41 dB          | 0.50 dB            |

## Pre Measurement 2

| Setting               | Instrument Value | Target Value     |
|-----------------------|------------------|------------------|
| RBW                   | 1.000 MHz        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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                   | 21 / max. 150    | max. 150         |
| Stable                | 3 / 3            | 3                |
| Max Stable Difference | 0.00 dB          | 0.50 dB          |

## Tx Spurious Emission (5825 MHz; 20.000 dBm; 20 MHz)

Customized settings.

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5825.000000         | PASS   |

### Final measurements

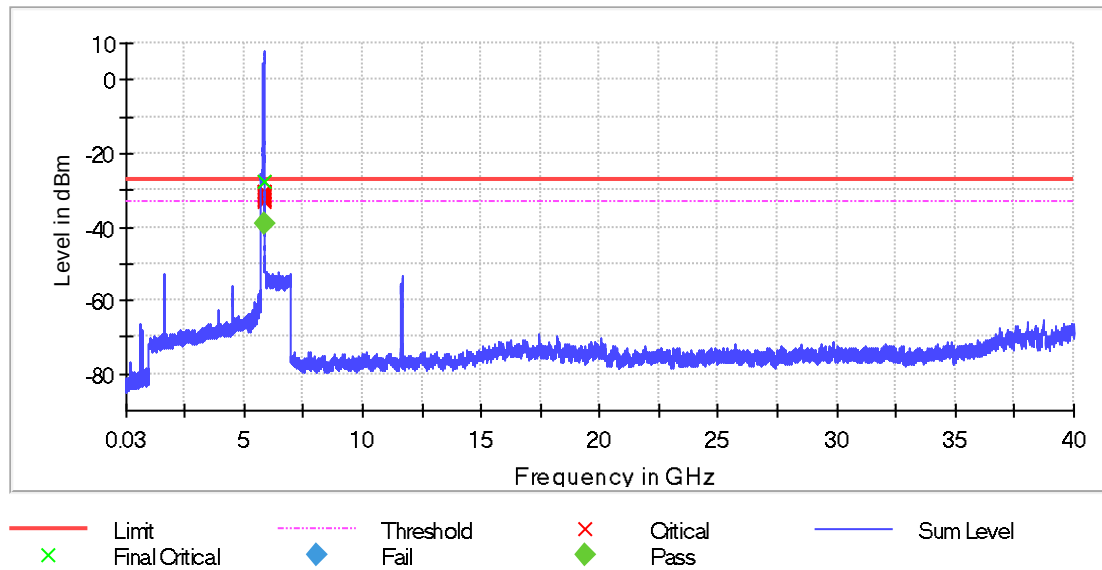
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| 5850.500000     | -27.5                       | -39.2       | -27.0       | 12.2        | PASS   |

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5850.500000     | -27.5       | 0.5         | -27.0       |
| 5853.500000     | -30.4       | 3.4         | -27.0       |
| 5854.500000     | -30.4       | 3.4         | -27.0       |
| 5852.500000     | -30.6       | 3.6         | -27.0       |
| 5855.500000     | -30.7       | 3.7         | -27.0       |
| 5851.500000     | -31.3       | 4.3         | -27.0       |
| 5856.500000     | -31.5       | 4.5         | -27.0       |
| 5858.500000     | -32.3       | 5.3         | -27.0       |
| 5857.500000     | -32.4       | 5.4         | -27.0       |
| 5859.500000     | -32.7       | 5.7         | -27.0       |
| 5860.500000     | -32.9       | 5.9         | -27.0       |
| 5862.500000     | -33.6       | 6.6         | -27.0       |
| 5861.500000     | -36.1       | 9.1         | -27.0       |
| 5863.500000     | -36.2       | 9.2         | -27.0       |
| 5864.500000     | -36.8       | 9.8         | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ 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                   | 74 / max. 150    | max. 150           |
| Stable                | 3 / 3            | 3                  |
| Max Stable Difference | 0.15 dB          | 0.50 dB            |

## Pre Measurement 2

| Setting               | Instrument Value | Target Value     |
|-----------------------|------------------|------------------|
| RBW                   | 1.000 MHz        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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                   | 13 / 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 | 20.000 dBm       | 20.000 dBm   |
| Attenuation     | 40.000 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 38 (5190 MHz)  
WLAN CH 159 (5795 MHz)

WLAN CH 46 (5230 MHz)

WLAN CH 151 (5755 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\Copy of demoTS8997

### Spectrum Analyzer:

SA FSV 40 (SA FSV 40) @ VISA (ADR  
TCPIP::192.168.48.149::INST0::INSTR), SN 1307.9002K40/101076,  
FW 3.40

### Vector Generator:

VG SMBV100A3 (VG SMBV100B) @ VISA (ADR  
TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33

### Generator:

SMB100A 40G (SMB100A) @ VISA (ADR  
TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev  
2.21.0, 07/2016, CVI 2015

### OSP:

OSP (OSP) @ VISA (ADR TCPIP::192.168.48.148::INST0::INSTR),  
SN OSP120 V02, 101189, FW 2.63.180410

### Power Meter:

OSP-B157 Power Meter (OSP-B157 Power Meter) @ USB (ADR 20)

## Summary

| Test                 | Frequency<br>(MHz) | Nominal<br>Power<br>(dBm) | Nominal<br>Bandwidth<br>(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.

### Result

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

### Final measurements

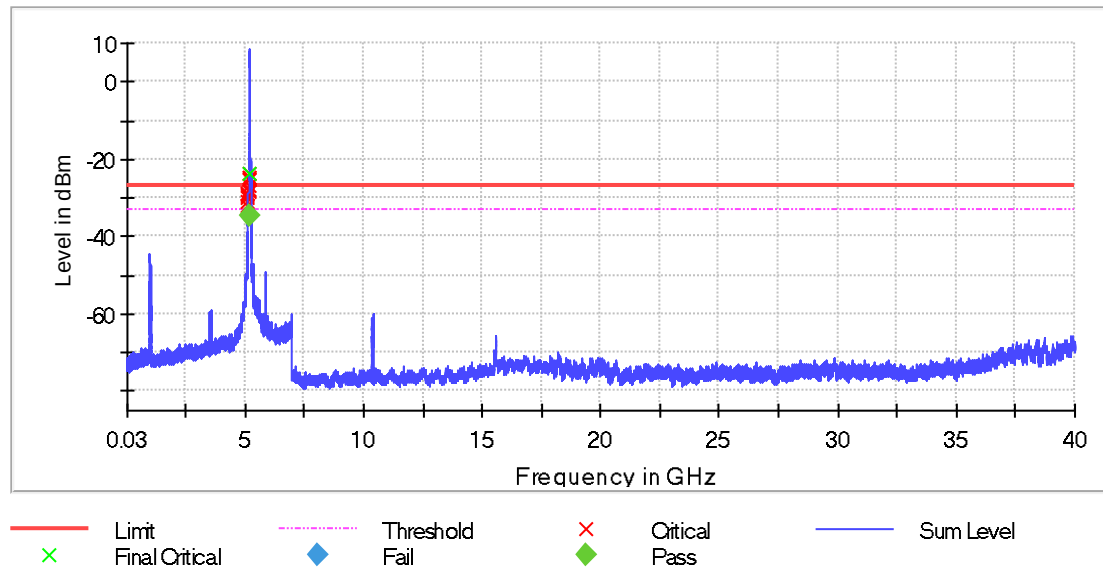
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| 5145.500000     | -23.8                       | -34.4       | -27.0       | 7.4         | PASS   |

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5145.500000     | -23.8       | -3.2        | -27.0       |
| 5147.500000     | -24.9       | -2.1        | -27.0       |
| 5149.500000     | -24.9       | -2.1        | -27.0       |
| 5146.500000     | -25.1       | -1.9        | -27.0       |
| 5148.500000     | -25.2       | -1.8        | -27.0       |
| 5144.500000     | -26.8       | -0.2        | -27.0       |
| 5143.500000     | -28.0       | 1.0         | -27.0       |
| 5142.500000     | -28.3       | 1.3         | -27.0       |
| 5140.500000     | -28.9       | 1.9         | -27.0       |
| 5141.500000     | -28.9       | 1.9         | -27.0       |
| 5139.500000     | -29.6       | 2.6         | -27.0       |
| 5138.500000     | -29.9       | 2.9         | -27.0       |
| 5137.500000     | -31.3       | 4.3         | -27.0       |
| 5136.500000     | -32.3       | 5.3         | -27.0       |
| 5135.500000     | -33.0       | 6.0         | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ kHz |
| SweepPoints           | 9700             | ~ 9700             |
| SweepTime             | 9.700 ms         | AUTO               |
| Reference Level       | -10.000 dBm      | -30.000 dBm        |
| Attenuation           | 20.000 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                   | 46 / max. 150    | max. 150           |
| Stable                | 3 / 3            | 3                  |
| Max Stable Difference | 0.45 dB          | 0.50 dB            |

## Pre Measurement 2

| Setting               | Instrument Value | Target Value     |
|-----------------------|------------------|------------------|
| RBW                   | 1.000 MHz        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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                   | 14 / 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 (5230 MHz; 20.000 dBm; 40 MHz)

Customized settings.

### Result

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

### Final measurements

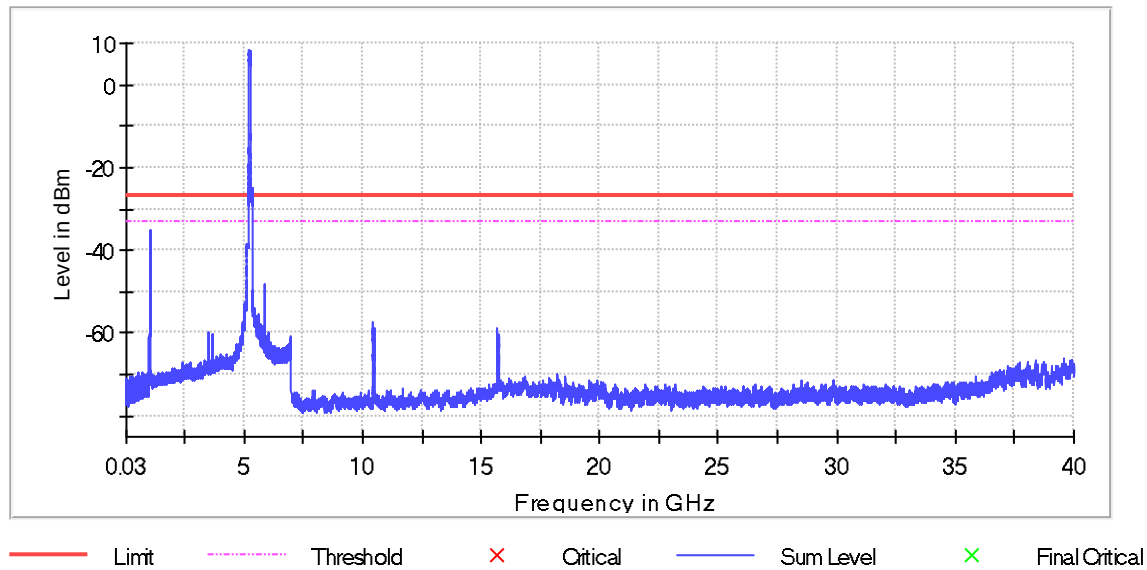
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 1026.500000     | -35.2       | 8.2         | -27.0       |
| 1028.500000     | -35.5       | 8.5         | -27.0       |
| 1025.500000     | -35.8       | 8.8         | -27.0       |
| 1024.500000     | -36.2       | 9.2         | -27.0       |
| 1029.500000     | -36.7       | 9.7         | -27.0       |
| 1022.500000     | -36.7       | 9.7         | -27.0       |
| 1018.500000     | -36.9       | 9.9         | -27.0       |
| 1019.500000     | -37.1       | 10.1        | -27.0       |
| 1021.500000     | -37.1       | 10.1        | -27.0       |
| 1023.500000     | -37.1       | 10.1        | -27.0       |
| 1020.500000     | -37.2       | 10.2        | -27.0       |
| 1027.500000     | -37.6       | 10.6        | -27.0       |
| 5149.500000     | -37.7       | 10.7        | -27.0       |
| 1017.500000     | -37.8       | 10.8        | -27.0       |
| 1030.500000     | -37.9       | 10.9        | -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       | -10.000 dBm      | -30.000 dBm    |
| Attenuation           | 20.000 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                   | 30 / 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<br>TCPIP::192.168.48.149::INST0::INSTR), SN 1321.3008K39/101229,<br>FW 3.40              |
| Vector Generator:  | VG SMBV100A (VG SMBV100A) @ VISA (ADR<br>TCPIP::192.168.48.25::INST0::INSTR), SN 260451, FW 4.15.125.49                    |
| Generator:         | SMB100A (SMB100A) @ VISA (ADR<br>TCPIP::192.168.48.30::INST0::INSTR), SN 178361, FW / Drv:Rev<br>2.21.0, 07/2016, CVI 2015 |
| OSP:               | OSP-B157W (OSP-B157W) @ VISA (ADR<br>TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. /, FW<br>1.23.0.2                 |



## Summary

| Test                 | Frequency<br>(MHz) | Nominal<br>Power<br>(dBm) | Nominal<br>Bandwidth<br>(MHz) | Result |
|----------------------|--------------------|---------------------------|-------------------------------|--------|
| Tx Spurious Emission | 5270.000           | 20.0                      | 40.000000                     | PASS   |
| Tx Spurious Emission | 5310.000           | 20.0                      | 40.000000                     | PASS   |

## Tx Spurious Emission (5270 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b),

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5270.000000         | PASS   |

### Final measurements

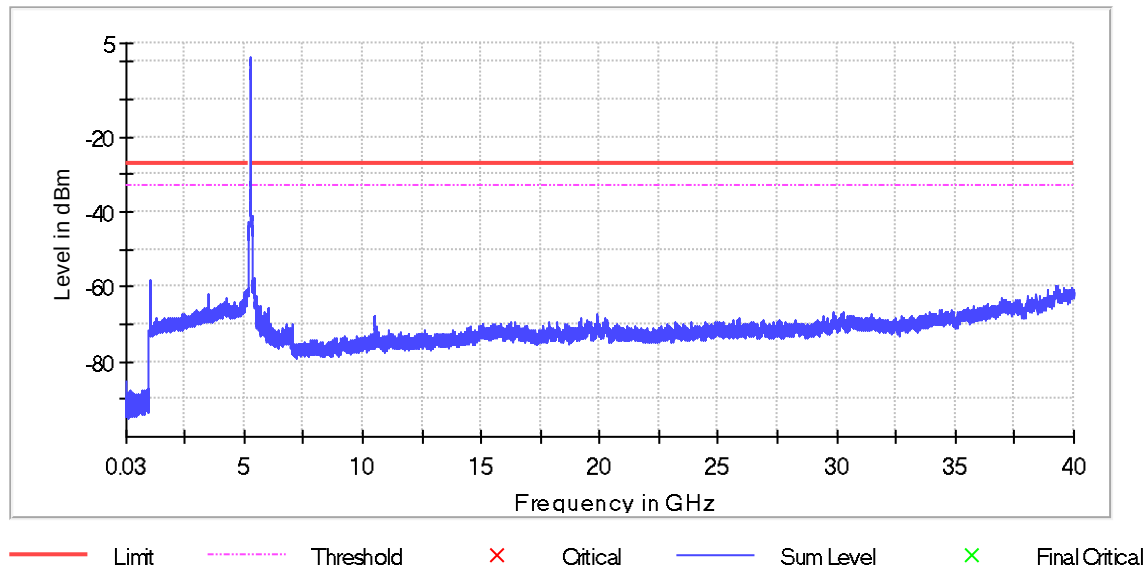
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5425.500000     | -57.8       | 30.8        | -27.0       |
| 1068.500000     | -58.3       | 31.3        | -27.0       |
| 5360.500000     | -58.3       | 31.3        | -27.0       |
| 5412.500000     | -58.8       | 31.8        | -27.0       |
| 5403.500000     | -58.8       | 31.8        | -27.0       |
| 5368.500000     | -58.9       | 31.9        | -27.0       |
| 5447.500000     | -58.9       | 31.9        | -27.0       |
| 1065.500000     | -59.0       | 32.0        | -27.0       |
| 5390.500000     | -59.0       | 32.0        | -27.0       |
| 5423.500000     | -59.1       | 32.1        | -27.0       |
| 5359.500000     | -59.1       | 32.1        | -27.0       |
| 1069.500000     | -59.1       | 32.1        | -27.0       |
| 5429.500000     | -59.2       | 32.2        | -27.0       |
| 5416.500000     | -59.2       | 32.2        | -27.0       |
| 5363.500000     | -59.3       | 32.3        | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ 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        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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                   | 16 / max. 150    | max. 150         |
| Stable                | 3 / 3            | 3                |
| Max Stable Difference | 0.00 dB          | 0.50 dB          |

## Tx Spurious Emission (5310 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b),

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5310.000000         | PASS   |

### Final measurements

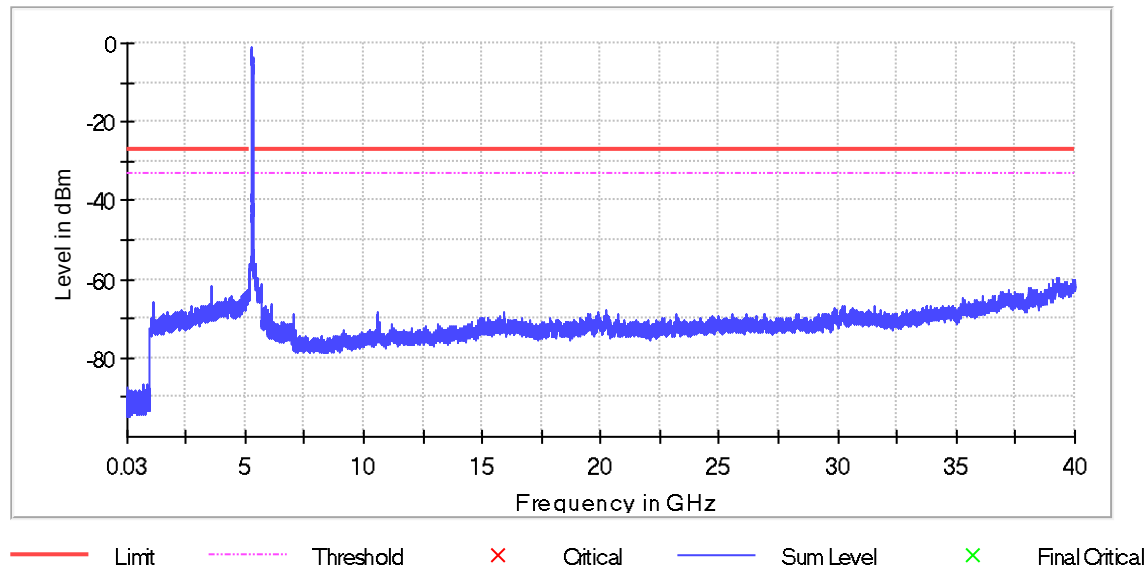
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5350.500000     | -50.2       | 23.2        | -27.0       |
| 5351.500000     | -51.6       | 24.6        | -27.0       |
| 5356.500000     | -52.7       | 25.7        | -27.0       |
| 5355.500000     | -52.7       | 25.7        | -27.0       |
| 5352.500000     | -52.8       | 25.8        | -27.0       |
| 5353.500000     | -53.7       | 26.7        | -27.0       |
| 5354.500000     | -54.6       | 27.6        | -27.0       |
| 5360.500000     | -55.2       | 28.2        | -27.0       |
| 5357.500000     | -55.2       | 28.2        | -27.0       |
| 5412.500000     | -56.0       | 29.0        | -27.0       |
| 5361.500000     | -56.0       | 29.0        | -27.0       |
| 5362.500000     | -56.1       | 29.1        | -27.0       |
| 5406.500000     | -56.2       | 29.2        | -27.0       |
| 5407.500000     | -56.2       | 29.2        | -27.0       |
| 5409.500000     | -56.5       | 29.5        | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ 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        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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          |

# 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<br>TCPIP::192.168.48.149::INST0::INSTR), SN 1321.3008K39/101229,<br>FW 3.40              |
| Vector Generator:  | VG SMBV100A (VG SMBV100A) @ VISA (ADR<br>TCPIP::192.168.48.25::INST0::INSTR), SN 260451, FW 4.15.125.49                    |
| Generator:         | SMB100A (SMB100A) @ VISA (ADR<br>TCPIP::192.168.48.30::INST0::INSTR), SN 178361, FW / Drv:Rev<br>2.21.0, 07/2016, CVI 2015 |
| OSP:               | OSP-B157W (OSP-B157W) @ VISA (ADR<br>TCPIP::192.168.48.157::INST0::INSTR), SN 1527.1144. / , FW<br>1.23.0.2                |

## Summary

| Test                 | Frequency<br>(MHz) | Nominal<br>Power<br>(dBm) | Nominal<br>Bandwidth<br>(MHz) | Result |
|----------------------|--------------------|---------------------------|-------------------------------|--------|
| Tx Spurious Emission | 5510.000           | 20.0                      | 40.000000                     | PASS   |
| Tx Spurious Emission | 5590.000           | 20.0                      | 40.000000                     | PASS   |
| Tx Spurious Emission | 5670.000           | 20.0                      | 40.000000                     | PASS   |

## Tx Spurious Emission (5510 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b),

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5510.000000         | PASS   |

### Final measurements

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

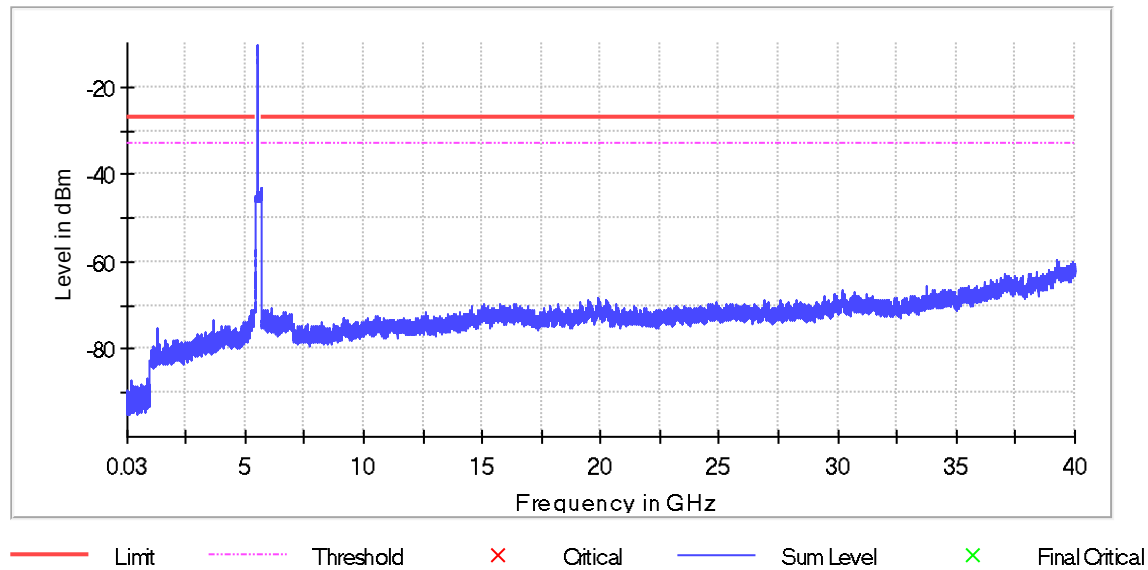
### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5467.500000     | -57.4       | 30.4        | -27.0       |
| 5465.500000     | -57.6       | 30.6        | -27.0       |
| 5469.500000     | -57.7       | 30.7        | -27.0       |
| 5464.500000     | -58.2       | 31.2        | -27.0       |
| 5468.500000     | -58.5       | 31.5        | -27.0       |
| 5466.500000     | -58.6       | 31.6        | -27.0       |
| 5460.500000     | -59.6       | 32.6        | -27.0       |
| 39271.500000    | -59.8       | 32.8        | -27.0       |
| 39270.500000    | -60.1       | 33.1        | -27.0       |
| 39299.500000    | -60.1       | 33.1        | -27.0       |
| 39924.500000    | -60.1       | 33.1        | -27.0       |
| 5463.500000     | -60.3       | 33.3        | -27.0       |
| 5462.500000     | -60.3       | 33.3        | -27.0       |
| 39263.500000    | -60.4       | 33.4        | -27.0       |
| 39877.500000    | -60.4       | 33.4        | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ 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        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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 (5590 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b),

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5590.000000         | PASS   |

### Final measurements

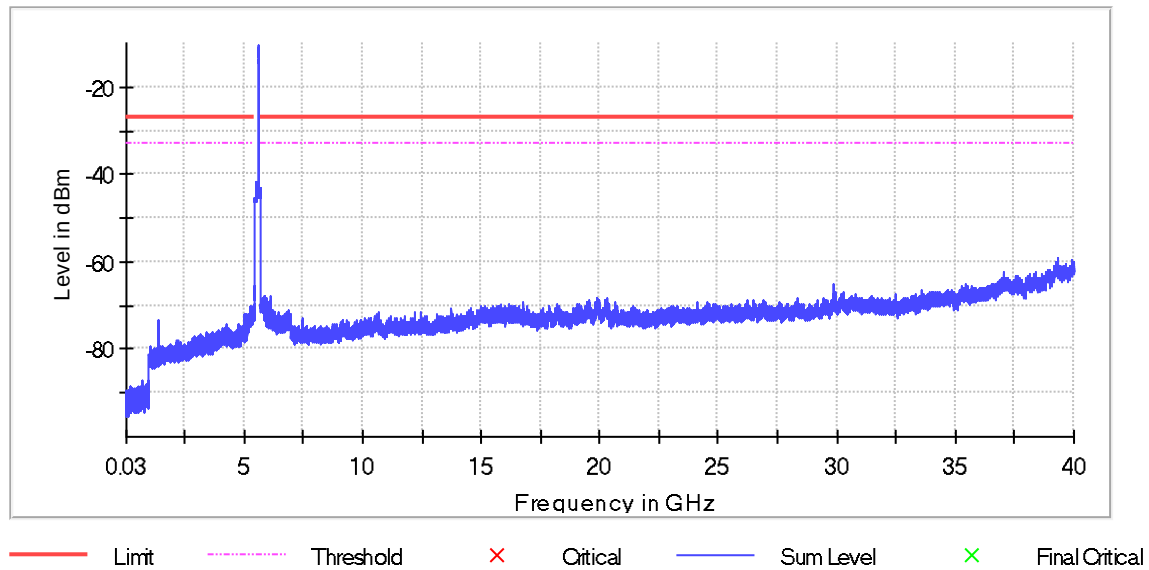
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 39290.500000    | -59.2       | 32.2        | -27.0       |
| 39941.500000    | -59.7       | 32.7        | -27.0       |
| 39273.500000    | -59.9       | 32.9        | -27.0       |
| 39272.500000    | -60.0       | 33.0        | -27.0       |
| 39271.500000    | -60.0       | 33.0        | -27.0       |
| 39304.500000    | -60.0       | 33.0        | -27.0       |
| 39249.500000    | -60.1       | 33.1        | -27.0       |
| 39232.500000    | -60.1       | 33.1        | -27.0       |
| 39267.500000    | -60.1       | 33.1        | -27.0       |
| 39266.500000    | -60.2       | 33.2        | -27.0       |
| 39262.500000    | -60.2       | 33.2        | -27.0       |
| 39959.500000    | -60.2       | 33.2        | -27.0       |
| 39265.500000    | -60.3       | 33.3        | -27.0       |
| 39233.500000    | -60.3       | 33.3        | -27.0       |
| 39289.500000    | -60.3       | 33.3        | -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                   | 4 / max. 150     | max. 150     |
| Stable                | 3 / 3            | 3            |
| Max Stable Difference | 0.00 dB          | 0.50 dB      |

## Tx Spurious Emission (5670 MHz; 20.000 dBm; 40 MHz)

Customized settings.

Test according to FCC title 47 part 15 §15.407(b),

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5670.000000         | PASS   |

### Final measurements

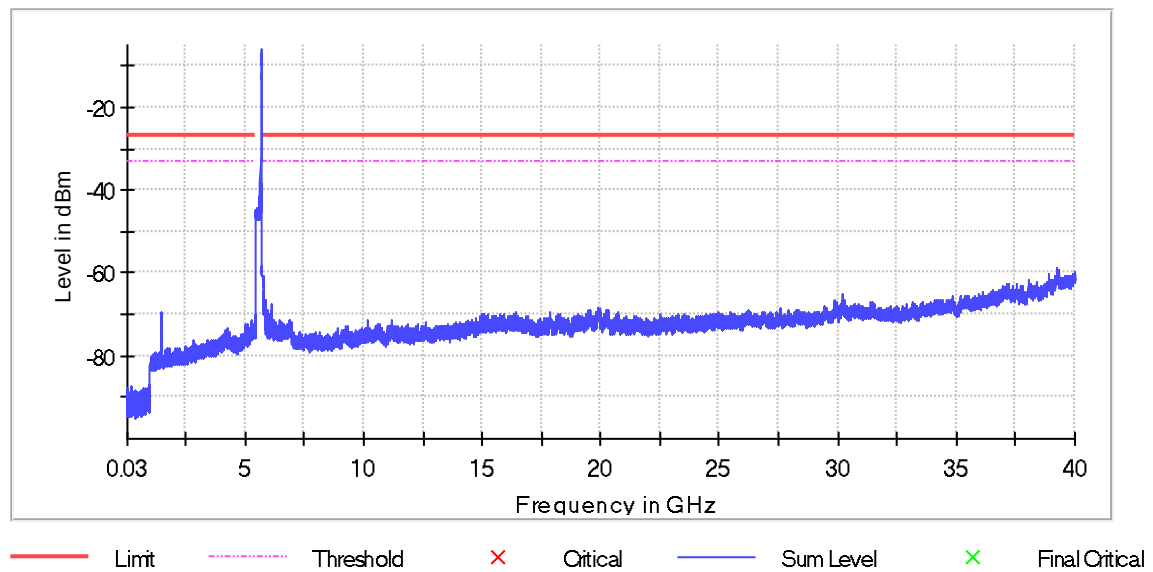
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

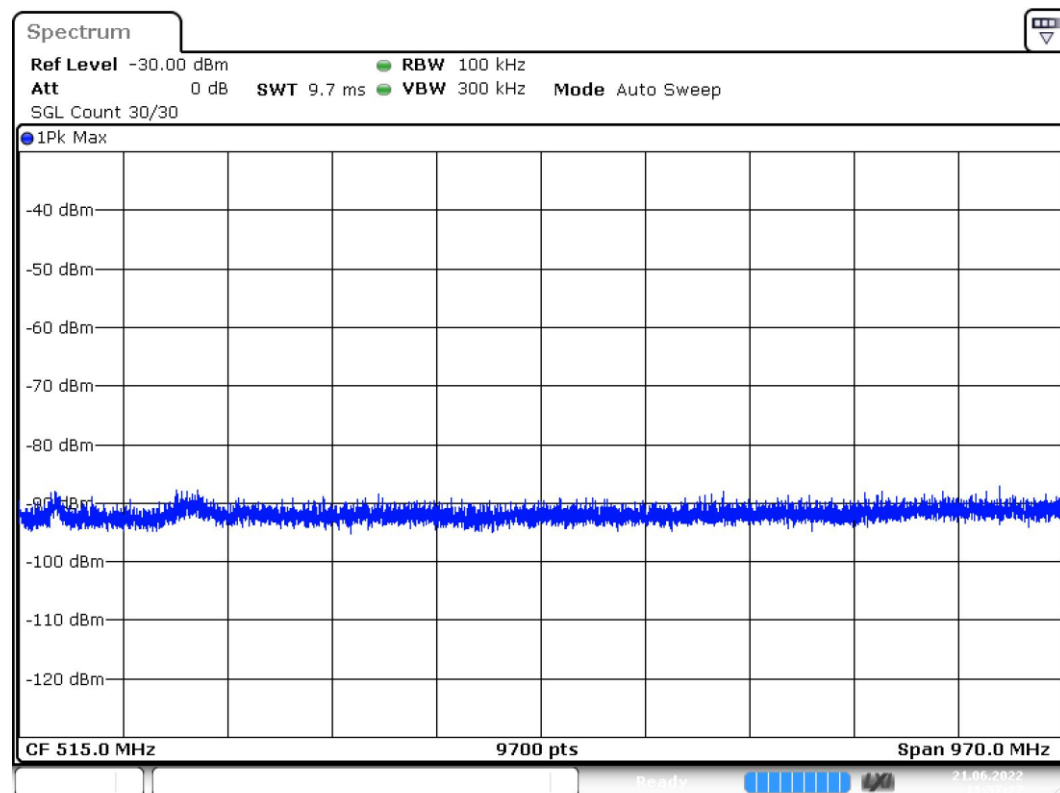
| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5725.500000     | -56.8       | 29.8        | -27.0       |
| 5726.500000     | -57.8       | 30.8        | -27.0       |
| 5728.500000     | -58.4       | 31.4        | -27.0       |
| 5729.500000     | -58.6       | 31.6        | -27.0       |
| 39248.500000    | -58.6       | 31.6        | -27.0       |
| 5732.500000     | -59.0       | 32.0        | -27.0       |
| 39251.500000    | -59.1       | 32.1        | -27.0       |
| 39294.500000    | -59.3       | 32.3        | -27.0       |
| 39993.500000    | -59.6       | 32.6        | -27.0       |
| 5730.500000     | -59.6       | 32.6        | -27.0       |
| 39298.500000    | -59.6       | 32.6        | -27.0       |
| 5731.500000     | -59.7       | 32.7        | -27.0       |
| 39266.500000    | -59.7       | 32.7        | -27.0       |
| 39315.500000    | -59.8       | 32.8        | -27.0       |
| 39316.500000    | -60.0       | 33.0        | -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                 |

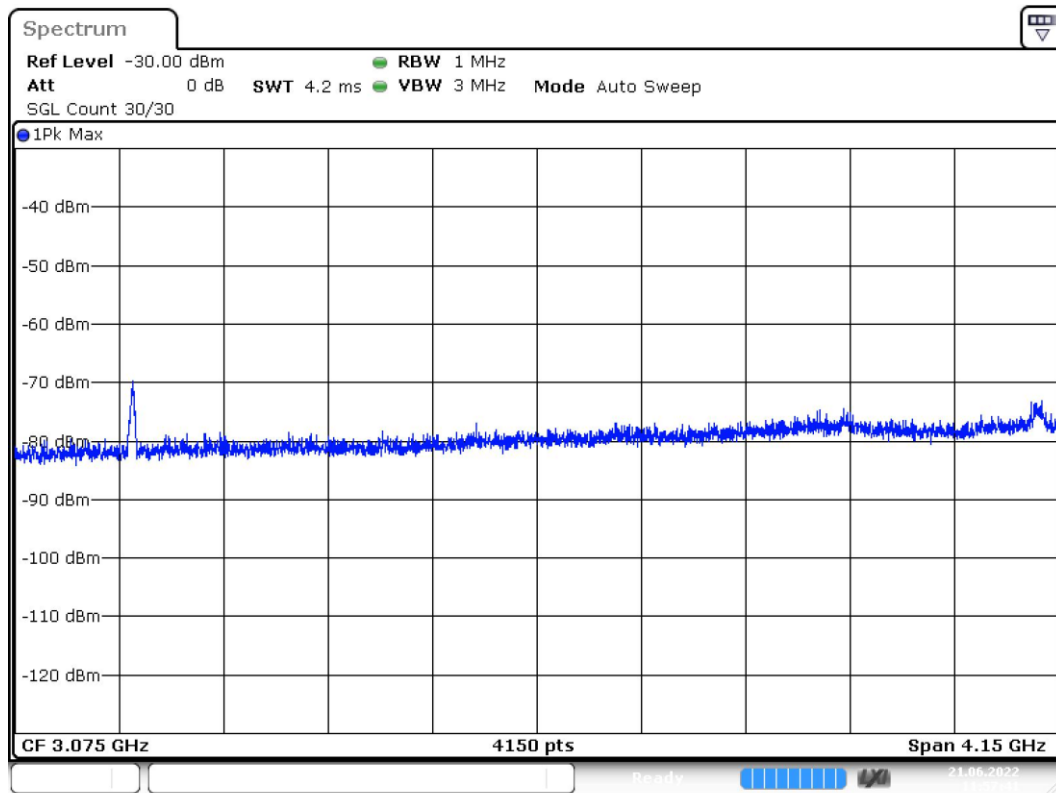


## Spurious Connector 1\_0



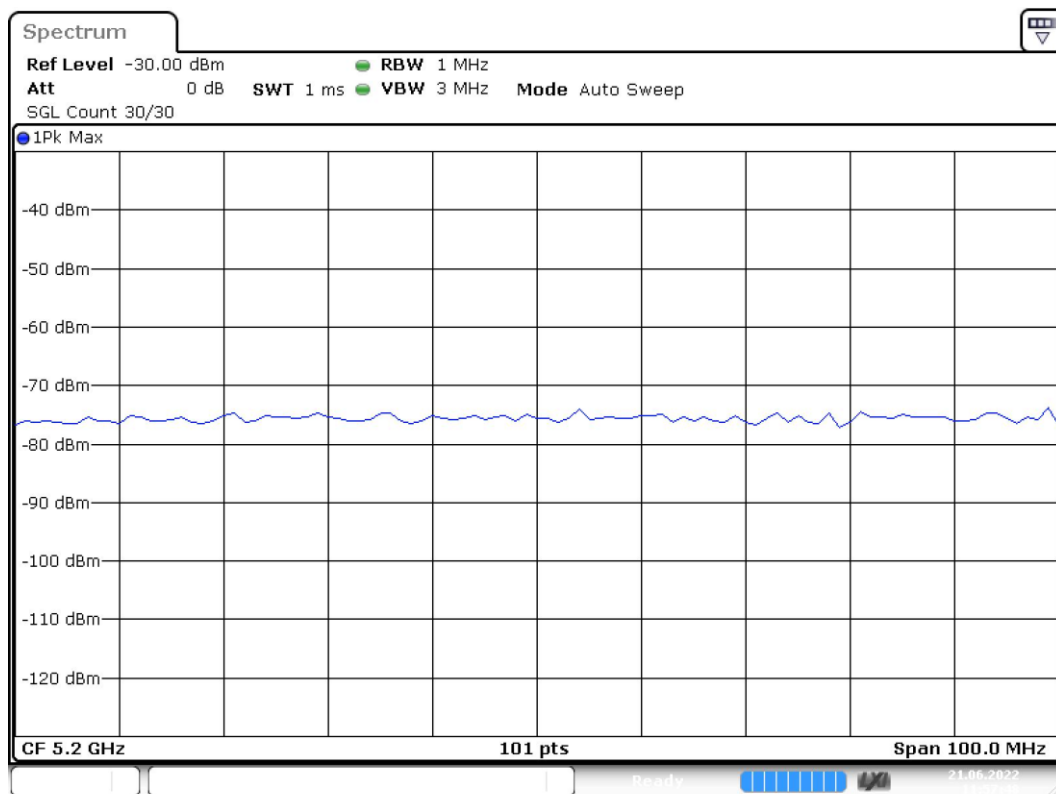
Date: 21.JUN.2022 11:57:27

## Spurious Connector 1\_1



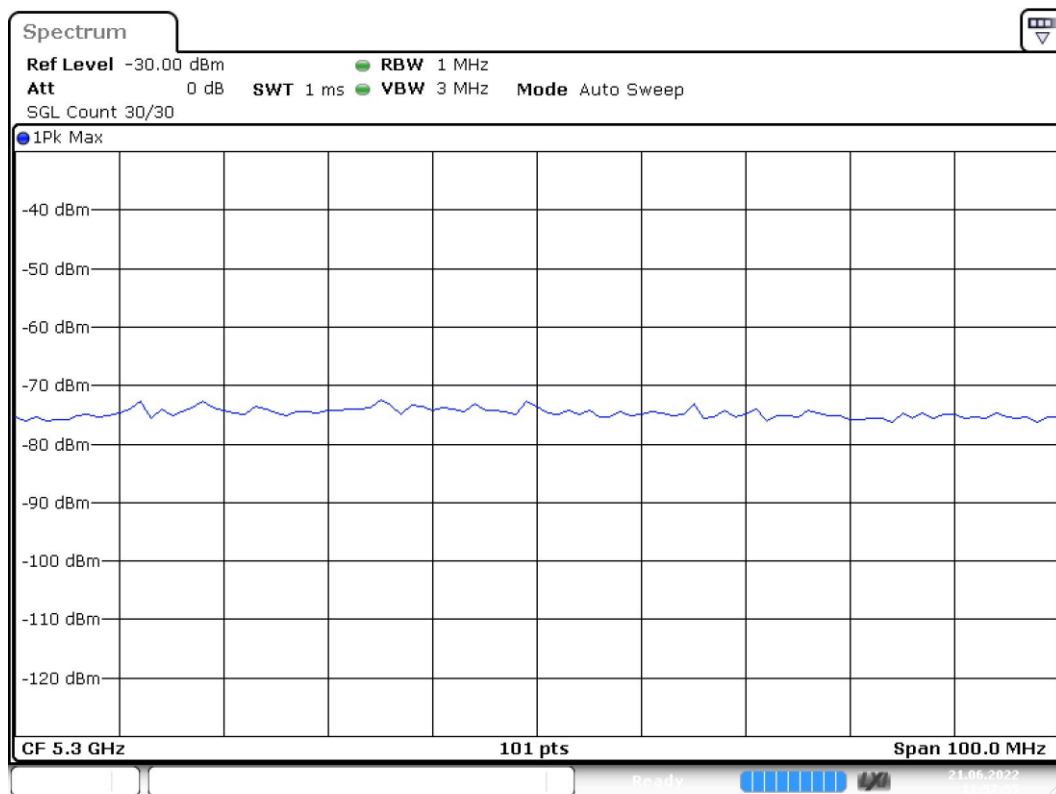
Date: 21.JUN.2022 11:57:42

Spurious Connector 1\_2



Date: 21.JUN.2022 11:57:49

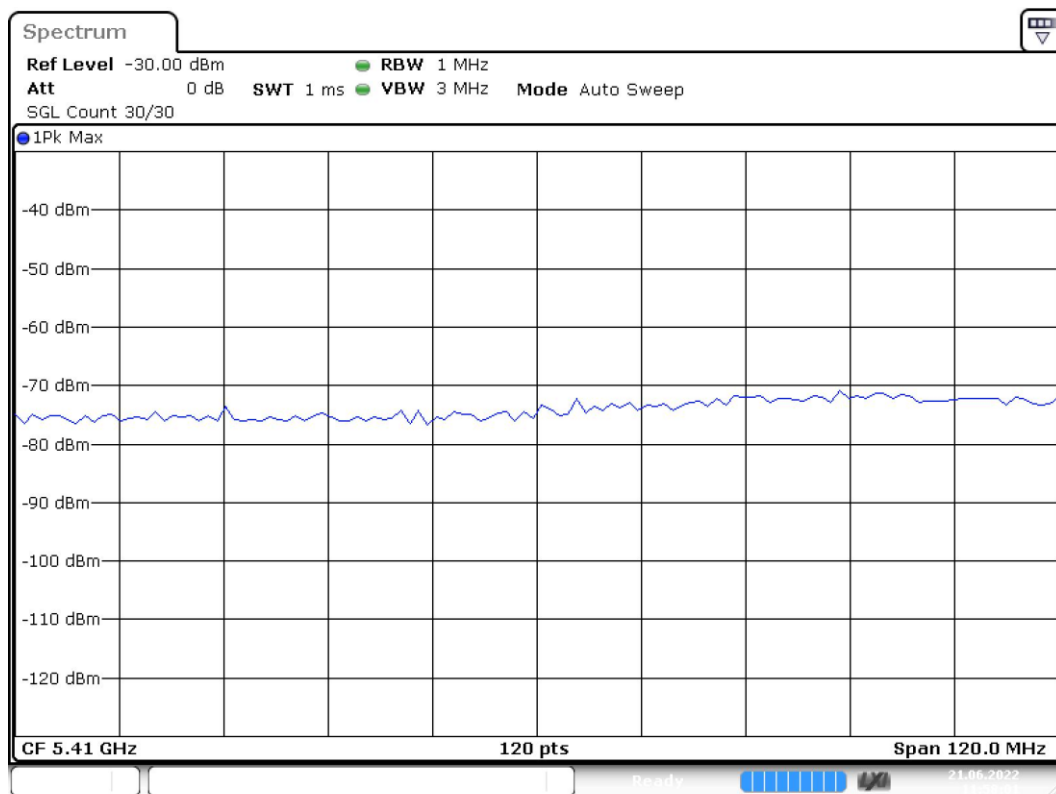
Spurious Connector 1\_3



Date: 21.JUN.2022 11:57:55

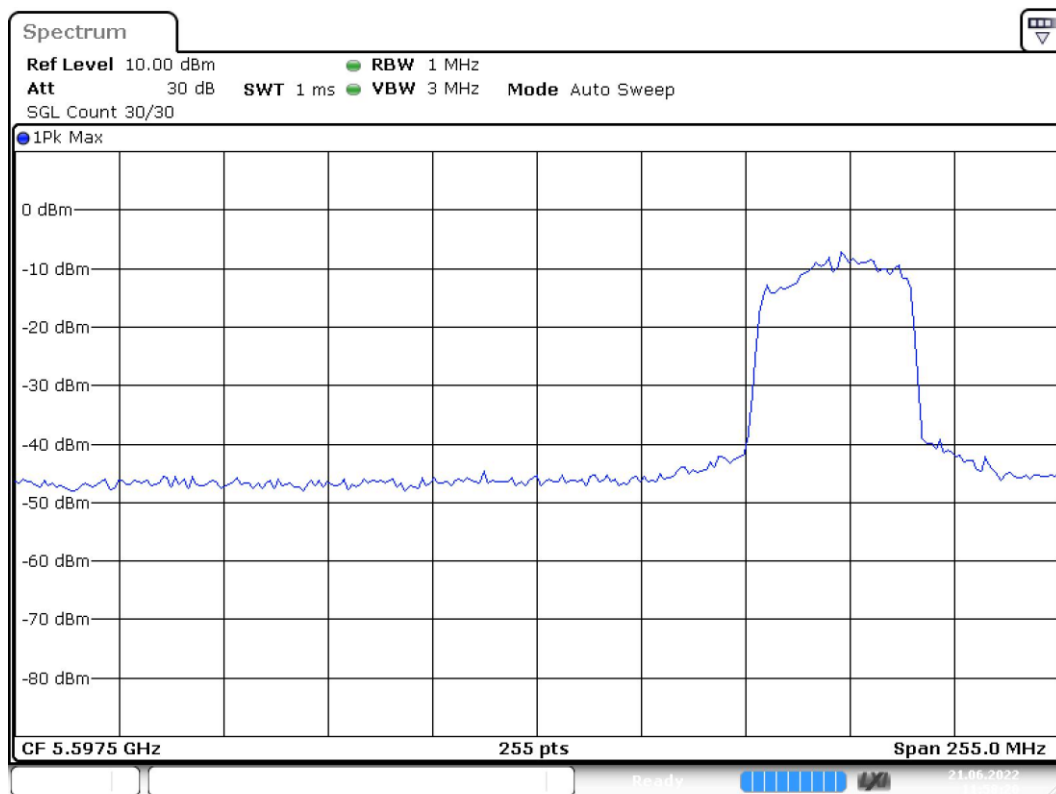
Spurious Connector 1\_4





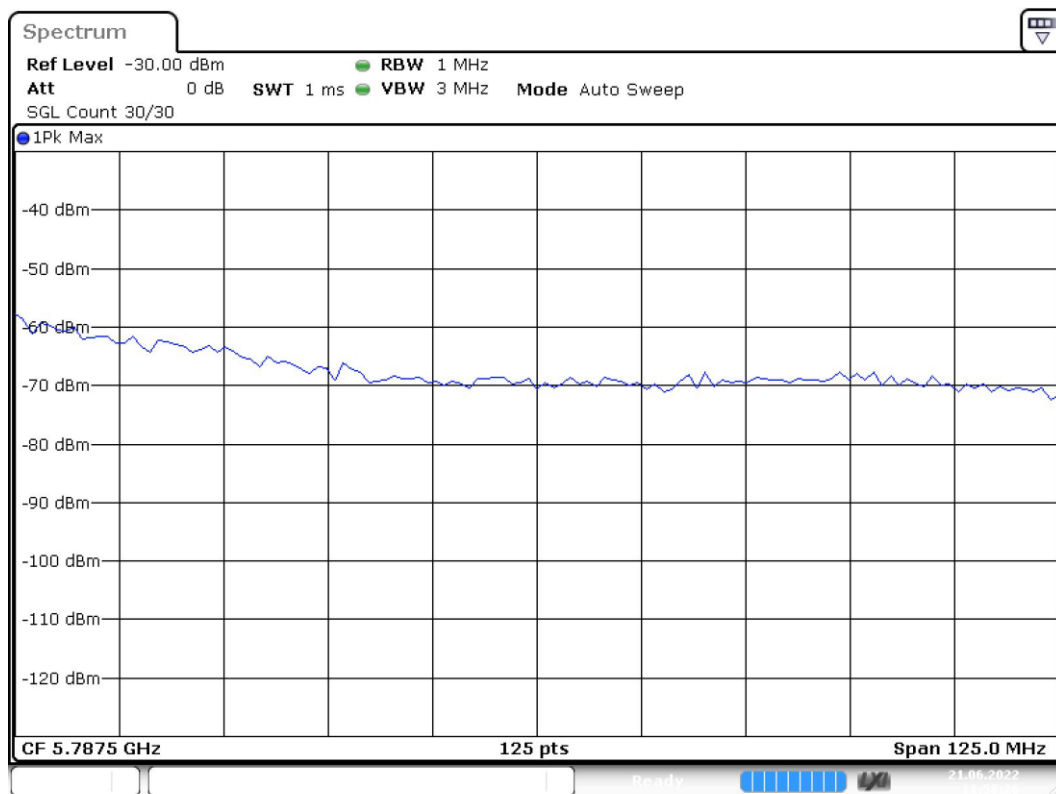
Date: 21.JUN.2022 11:58:02

Spurious Connector 1\_5



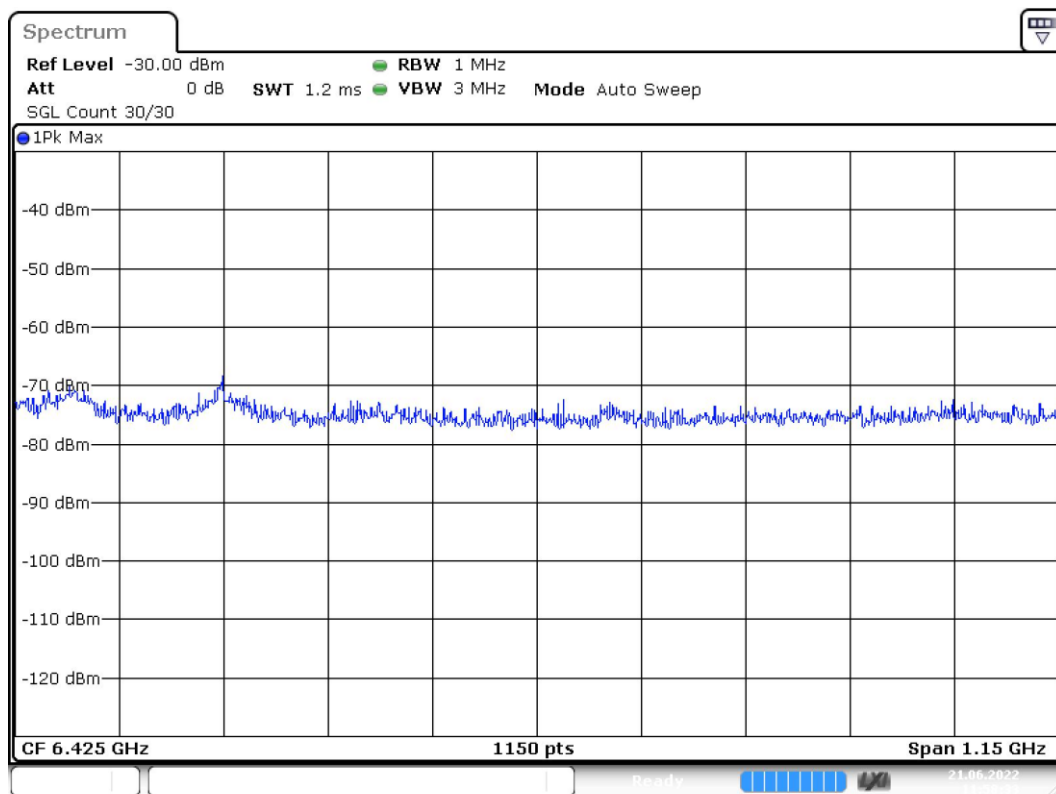
Date: 21.JUN.2022 11:58:20

Spurious Connector 1\_6



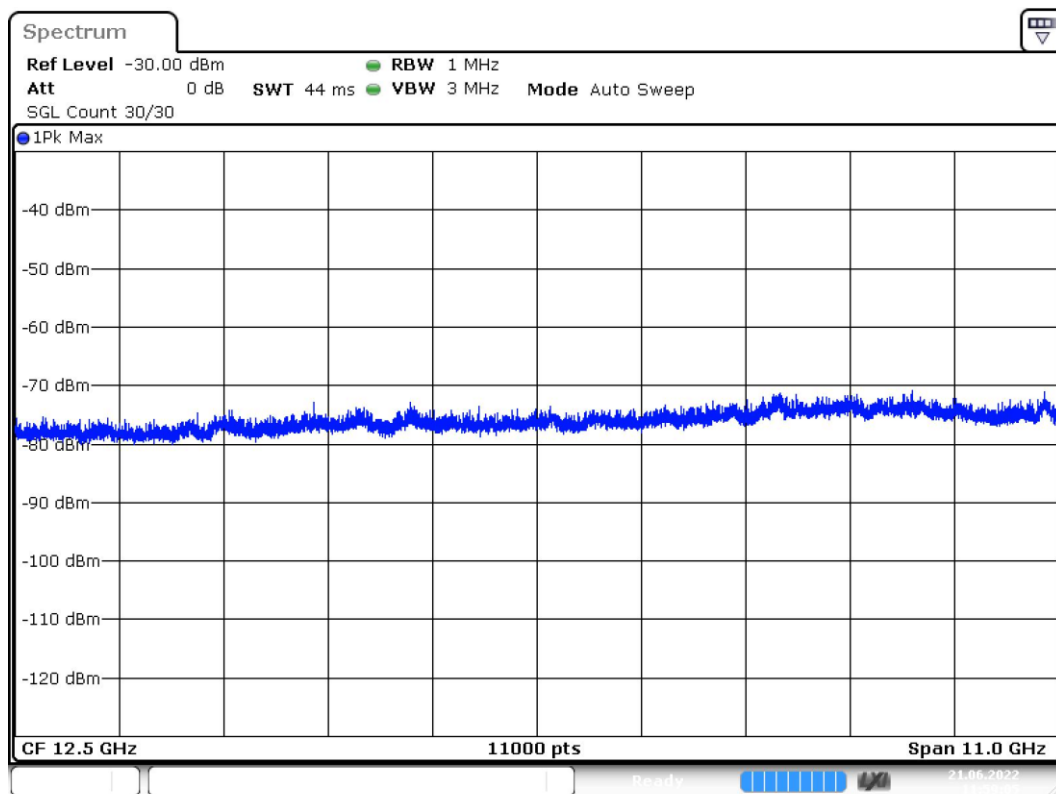
Date: 21.JUN.2022 11:58:26

Spurious Connector 1\_7



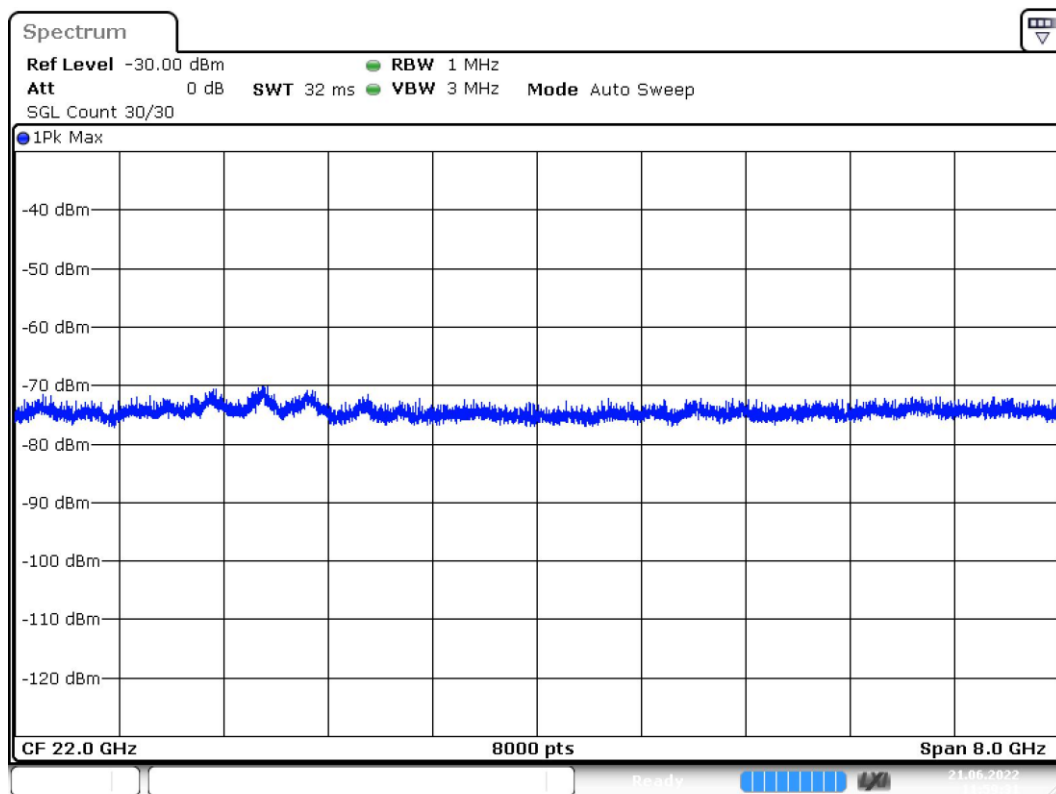
Date: 21.JUN.2022 11:58:34

Spurious Connector 1\_8



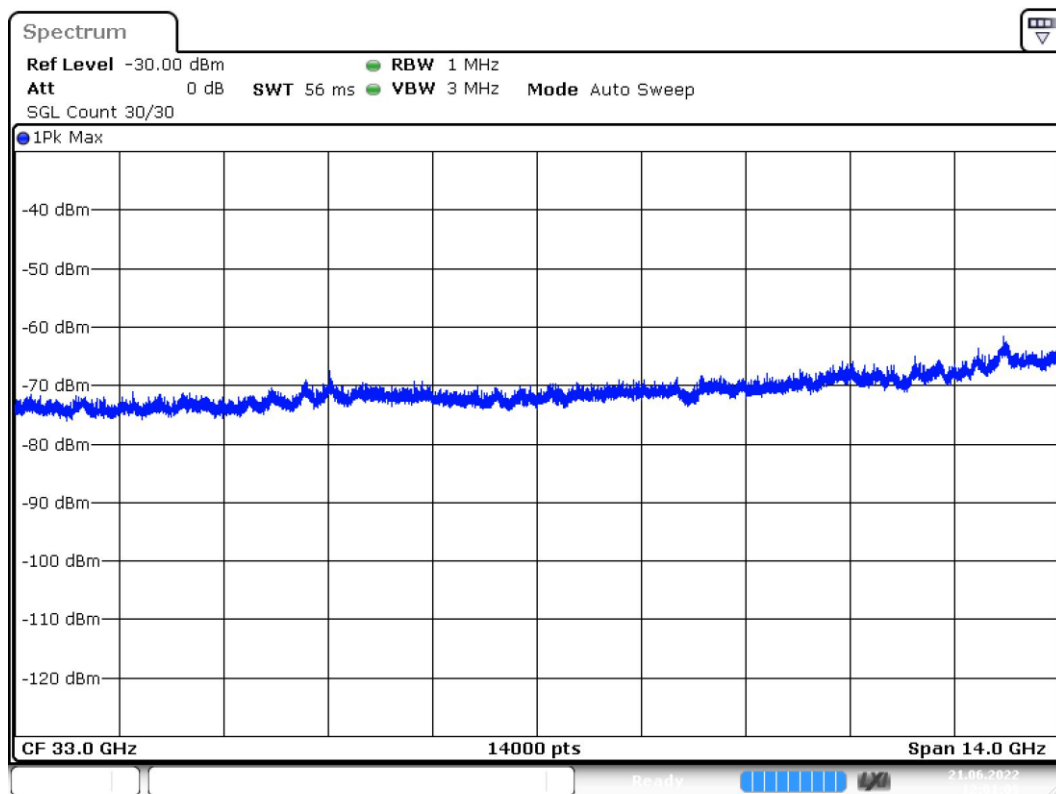
Date: 21.JUN.2022 11:59:06

Spurious Connector 1\_9



Date: 21.JUN.2022 11:59:31

Spurious Connector 1\_10



Date: 21.JUN.2022 12:01:09

## 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           |

|                              |                     |                 |
|------------------------------|---------------------|-----------------|
| <b>Filter</b>                | <b>3 dB</b>         | <b>3 dB</b>     |
| <b>Trace Mode</b>            | <b>Max Hold</b>     | <b>Max Hold</b> |
| <b>Sweep type</b>            | <b>Sweep</b>        | <b>AUTO</b>     |
| <b>Preamp</b>                | <b>off</b>          | <b>off</b>      |
| <b>Stable mode</b>           | <b>Trace</b>        | <b>Trace</b>    |
| <b>Stable value</b>          | <b>0.50 dB</b>      | <b>0.50 dB</b>  |
| <b>Run</b>                   | <b>8 / max. 150</b> | <b>max. 150</b> |
| <b>Stable</b>                | <b>3 / 3</b>        | <b>3</b>        |
| <b>Max Stable Difference</b> | <b>0.00 dB</b>      | <b>0.50 dB</b>  |



# FCC 15.407 2015

## DUT Information

### Frequencies

WLAN CH 38 (5190 MHz)  
WLAN CH 159 (5795 MHz)

WLAN CH 46 (5230 MHz)

WLAN CH 151 (5755 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\Copy of demoTS8997

### Spectrum Analyzer:

SA FSV 40 (SA FSV 40) @ VISA (ADR  
TCPIP::192.168.48.149::INST0::INSTR), SN 1307.9002K40/101076,  
FW 3.40

### Vector Generator:

VG SMBV100A3 (VG SMBV100B) @ VISA (ADR  
TCPIP::192.168.48.29::INST0::INSTR), SN 101685, FW 4.70.006.33

### Generator:

SMB100A 40G (SMB100A) @ VISA (ADR  
TCPIP::192.168.48.30::INST0::INSTR), SN 177894, FW / Drv:Rev  
2.21.0, 07/2016, CVI 2015

### OSP:

OSP (OSP) @ VISA (ADR TCPIP::192.168.48.148::INST0::INSTR),  
SN OSP120 V02, 101189, FW 2.63.180410

### Power Meter:

OSP-B157 Power Meter (OSP-B157 Power Meter) @ USB (ADR 20)

## Summary

| Test                 | Frequency<br>(MHz) | Nominal<br>Power<br>(dBm) | Nominal<br>Bandwidth<br>(MHz) | Result |
|----------------------|--------------------|---------------------------|-------------------------------|--------|
| Tx Spurious Emission | 5755.000           | 20.0                      | 40.000000                     | PASS   |
| Tx Spurious Emission | 5795.000           | 20.0                      | 40.000000                     | PASS   |

## Tx Spurious Emission (5755 MHz; 20.000 dBm; 40 MHz)

Customized settings.

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5755.000000         | PASS   |

### Final measurements

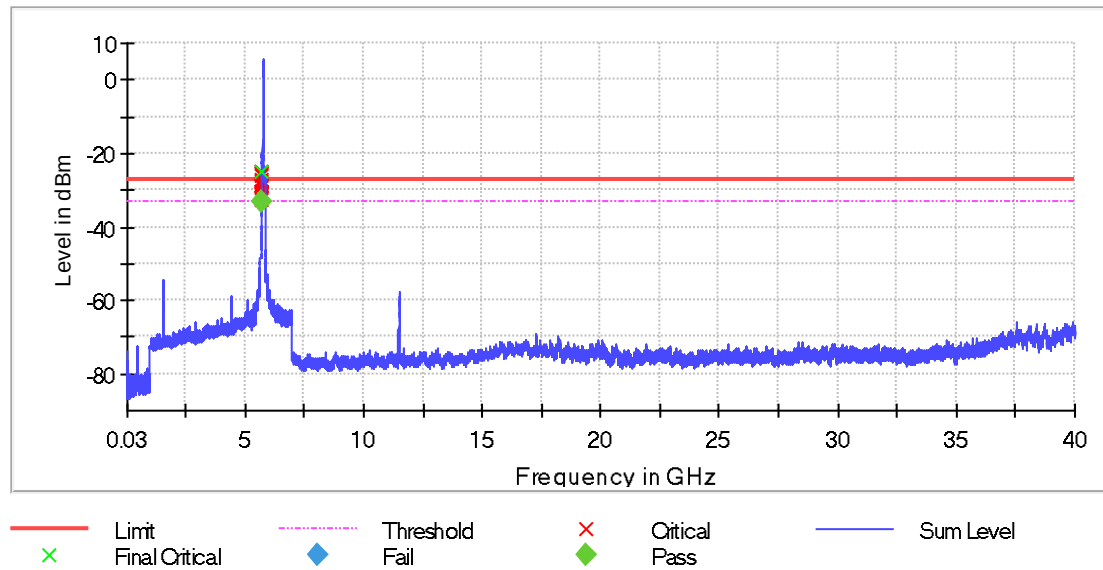
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| 5721.500000     | -25.1                       | -33.4       | -27.0       | 6.4         | PASS   |

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5721.500000     | -25.1       | -1.9        | -27.0       |
| 5722.500000     | -25.2       | -1.8        | -27.0       |
| 5720.500000     | -25.4       | -1.6        | -27.0       |
| 5724.500000     | -25.7       | -1.3        | -27.0       |
| 5723.500000     | -25.9       | -1.1        | -27.0       |
| 5719.500000     | -26.9       | -0.1        | -27.0       |
| 5718.500000     | -27.8       | 0.8         | -27.0       |
| 5717.500000     | -28.3       | 1.3         | -27.0       |
| 5715.500000     | -28.6       | 1.6         | -27.0       |
| 5716.500000     | -28.6       | 1.6         | -27.0       |
| 5714.500000     | -28.6       | 1.6         | -27.0       |
| 5713.500000     | -28.6       | 1.6         | -27.0       |
| 5709.500000     | -30.5       | 3.5         | -27.0       |
| 5711.500000     | -30.5       | 3.5         | -27.0       |
| 5712.500000     | -30.6       | 3.6         | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ 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                   | 7 / 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        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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                   | 18 / max. 150    | max. 150         |
| Stable                | 3 / 3            | 3                |
| Max Stable Difference | 0.19 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 (5795 MHz; 20.000 dBm; 40 MHz)

Customized settings.

### Result

| DUT Frequency (MHz) | Result |
|---------------------|--------|
| 5795.000000         | PASS   |

### Final measurements

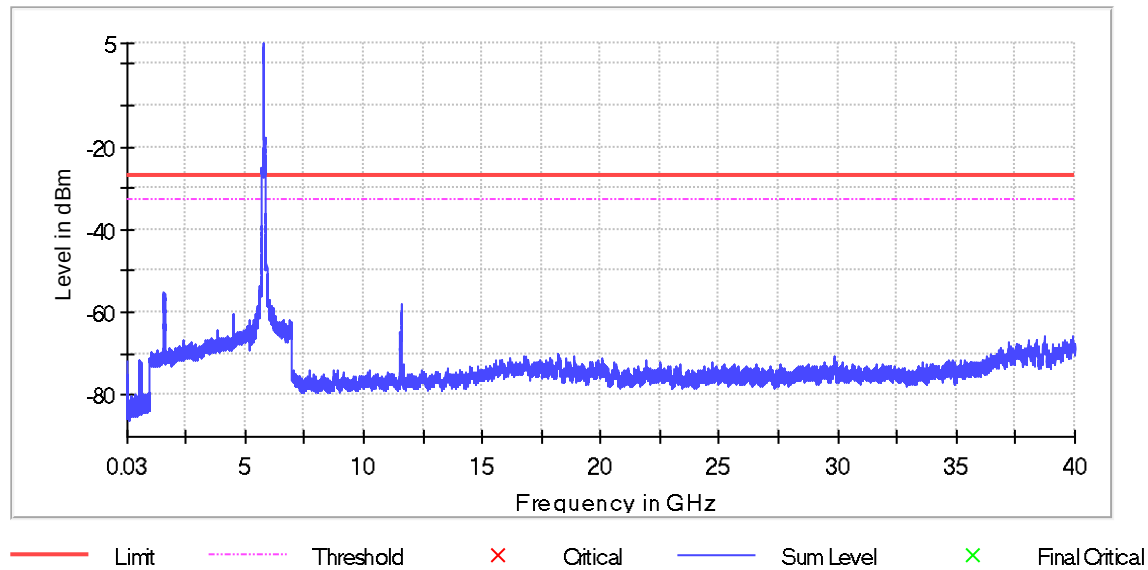
| Frequency (MHz) | Level Pre Measurement (dBm) | level (dBm) | Limit (dBm) | Margin (dB) | Result |
|-----------------|-----------------------------|-------------|-------------|-------------|--------|
| ---             | ---                         | ---         | ---         | ---         | ---   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

### Pre Measurements

| Frequency (MHz) | Level (dBm) | Margin (dB) | Limit (dBm) |
|-----------------|-------------|-------------|-------------|
| 5724.500000     | -35.8       | 8.8         | -27.0       |
| 5851.500000     | -36.0       | 9.0         | -27.0       |
| 5853.500000     | -36.0       | 9.0         | -27.0       |
| 5852.500000     | -37.3       | 10.3        | -27.0       |
| 5850.500000     | -37.9       | 10.9        | -27.0       |
| 5856.500000     | -37.9       | 10.9        | -27.0       |
| 5854.500000     | -38.4       | 11.4        | -27.0       |
| 5855.500000     | -38.5       | 11.5        | -27.0       |
| 5720.500000     | -39.1       | 12.1        | -27.0       |
| 5859.500000     | -39.2       | 12.2        | -27.0       |
| 5861.500000     | -39.3       | 12.3        | -27.0       |
| 5864.500000     | -39.8       | 12.8        | -27.0       |
| 5862.500000     | -39.8       | 12.8        | -27.0       |
| 5723.500000     | -39.8       | 12.8        | -27.0       |
| 5857.500000     | -40.0       | 13.0        | -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      | $\leq 100.000$ kHz |
| VBW                   | 300.000 kHz      | $\geq 300.000$ 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                   | 17 / 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        | $\leq 1.000$ MHz |
| VBW                   | 3.000 MHz        | $\geq 3.000$ 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                   | 28 / max. 150    | max. 150         |
| Stable                | 3 / 3            | 3                |
| Max Stable Difference | 0.00 dB          | 0.50 dB          |