

TEST B.2: MAXIMUM CONDUCTED OUTPUT POWER AND ANTENNA GAIN

| | | |
|----------------|-------------------|---|
| LIMITS: | Product standard: | Part 15 Subpart C §15.247 and RSS-247 |
| | Test standard: | Part 15 Subpart C §15.247(b) and RSS-247 5.4(d) |

LIMITS

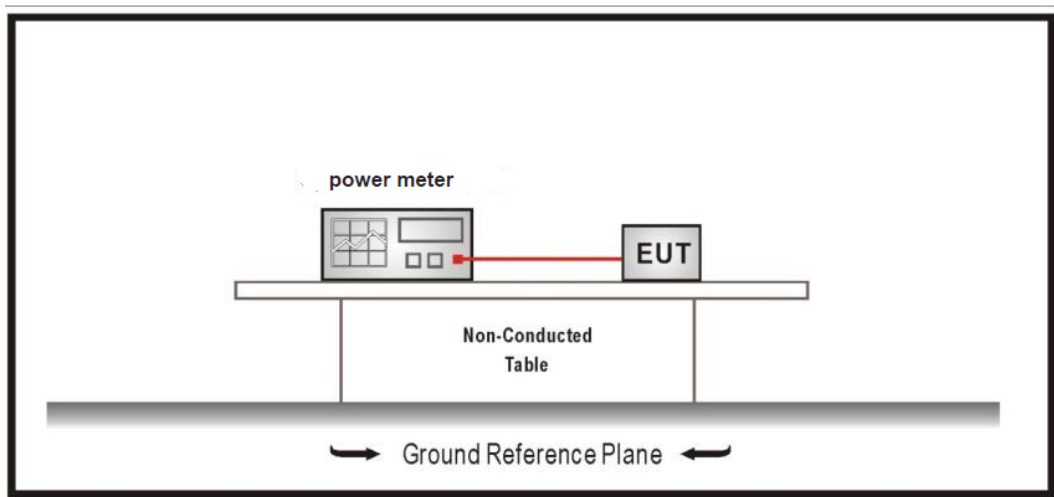
For systems using digital modulation in the 2400 -2483.5 MHz band: 1 watt (30 dBm).

The e.i.r.p. shall not exceed 4 W (RSS-247).

TEST SETUP

Measured according to ANSI C63.10, Section 11.9.2.3.2 Method AVGPM-G

The EIRP power (dBm) is calculated by adding the declared maximum antenna gain to the measured conducted power



| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/01 |
| TESTED CONDITIONS MODES: | TC#01 (b mode) |
| TEST RESULTS: | PASS |

Maximum declared antenna gain: -3.5 dBi

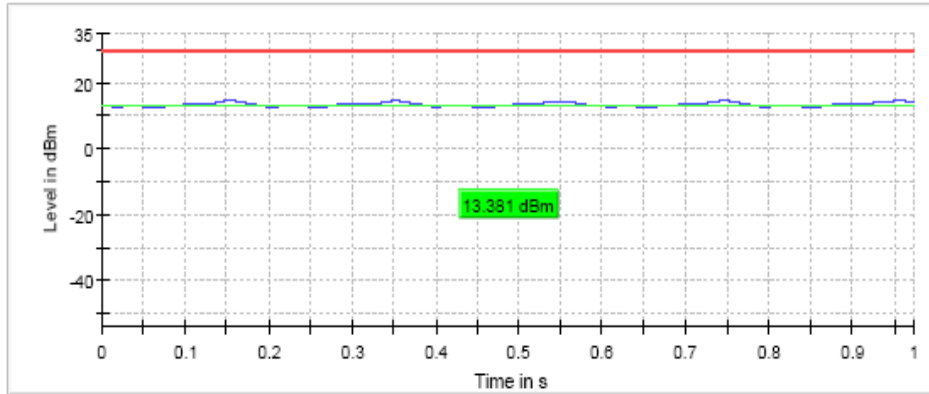
| | Lowest frequency 2412 MHz | Middle frequency 2437 MHz | Highest frequency 2462 MHz |
|-------------------------------|------------------------------|------------------------------|-------------------------------|
| Maximum conducted power (dBm) | 13.4 | 12.9 | 12.2 |
| Maximum EIRP power (dBm) | 9.9 | 9.4 | 8.7 |
| Measurement uncertainty (dB) | <±0.78 | | |

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

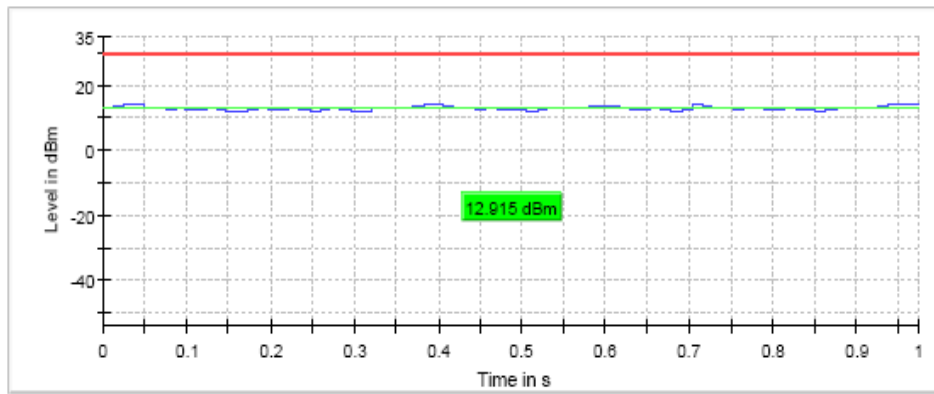
TEST RESULTS (Cont.):

CONDUCTED OUTPUT POWER

Lowest Channel

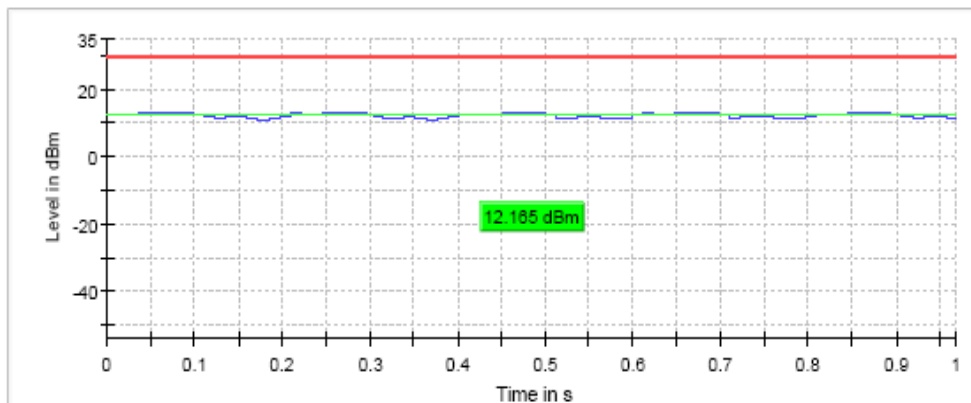


Middle Channel



— Gated Trace — Overall — Limit

Highest Channel



— Gated Trace — Overall — Limit

| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/01 |
| TESTED CONDITIONS MODES: | TC#02 (g mode) |
| TEST RESULTS: | PASS |

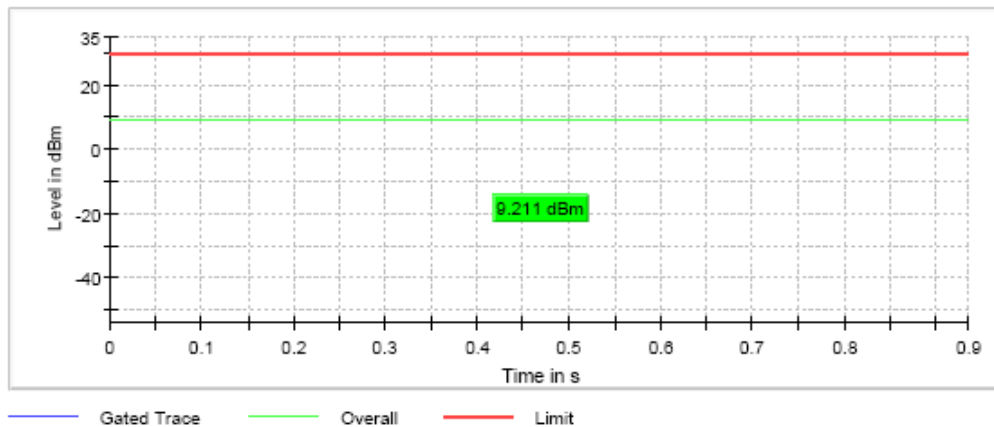
Maximum declared antenna gain: -3.5 dBi

| | Lowest frequency 2412 MHz | Middle frequency 2437 MHz | Highest frequency 2462 MHz |
|-------------------------------|------------------------------|------------------------------|-------------------------------|
| Maximum conducted power (dBm) | 9.2 | 8.9 | 8.2 |
| Maximum EIRP power (dBm) | 5.7 | 5.4 | 4.7 |
| Measurement uncertainty (dB) | <±0.78 | | |

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

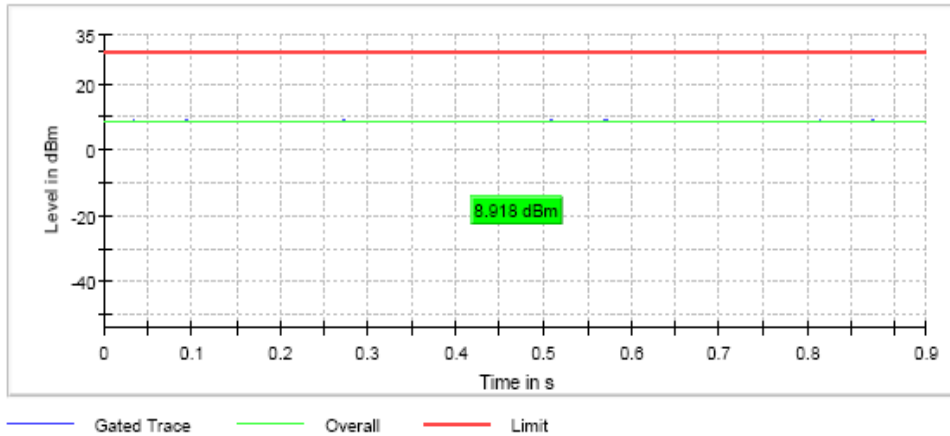
| | |
|------------------------------|-------------------------------|
| TEST RESULTS (Cont.): | CONDUCTED OUTPUT POWER |
|------------------------------|-------------------------------|

Lowest Channel

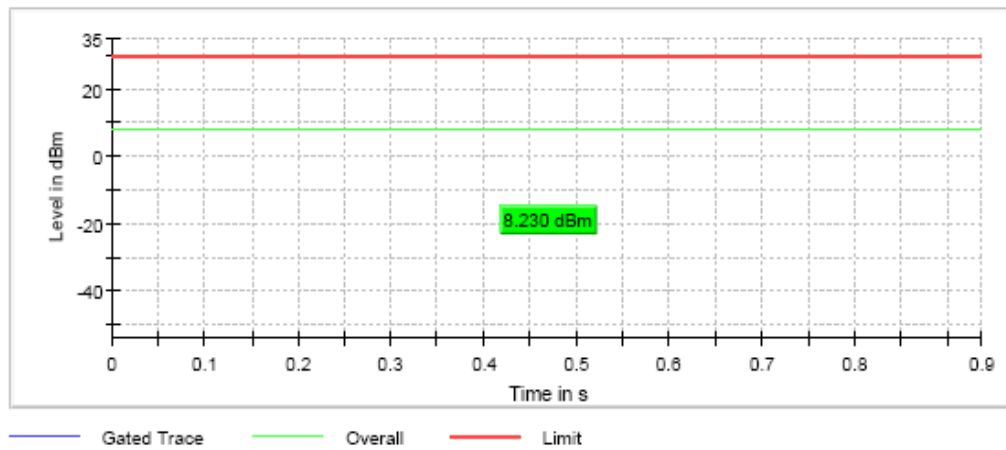


TEST RESULTS (Cont.)

Middle Channel



Highest Channel



| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/01 |
| TESTED CONDITIONS MODES: | TC#03 (n mode) |
| TEST RESULTS: | PASS |

Bandwidth: 20 MHz

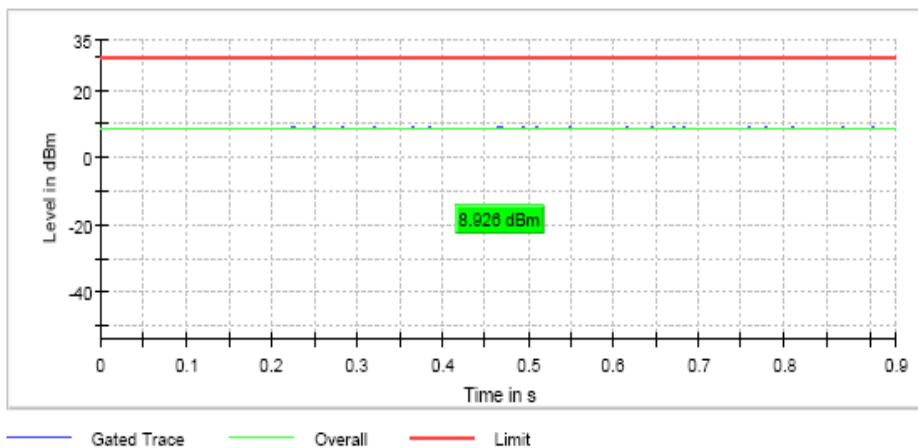
Maximum declared antenna gain: -3.5 dBi

| | Lowest frequency 2412 MHz | Middle frequency 2437 MHz | Highest frequency 2462 MHz |
|-------------------------------|------------------------------|------------------------------|-------------------------------|
| Maximum conducted power (dBm) | 8.9 | 8.6 | 8.9 |
| Maximum EIRP power (dBm) | 5.4 | 5.1 | 5.4 |
| Measurement uncertainty (dB) | <±0.78 | | |

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

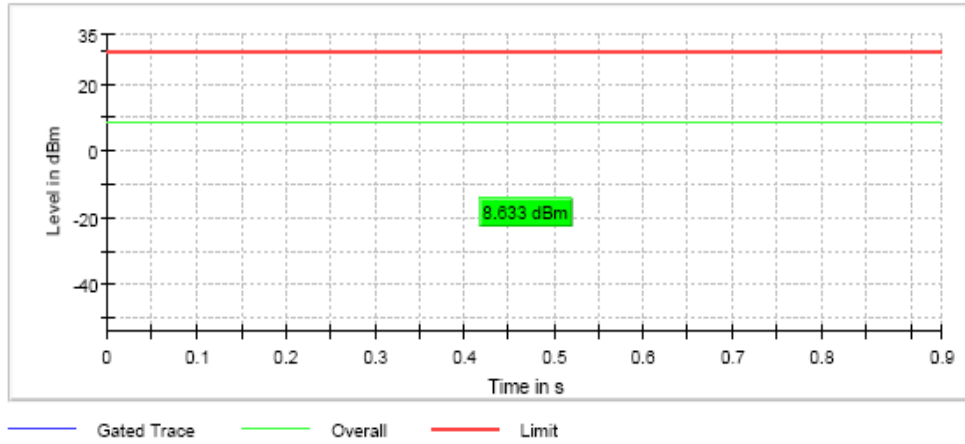
| | |
|------------------------------|-------------------------------|
| TEST RESULTS (Cont.): | CONDUCTED OUTPUT POWER |
|------------------------------|-------------------------------|

Lowest Channel

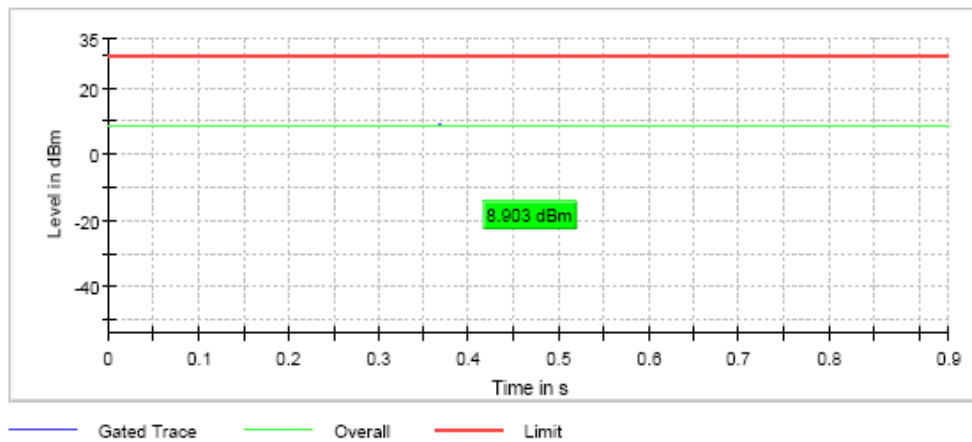


TEST RESULTS (Cont.)

Middle Channel



Highest Channel



| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/01 |
| TESTED CONDITIONS MODES: | TC#04 (n mode) |
| TEST RESULTS: | PASS |

Bandwidth: 40 MHz

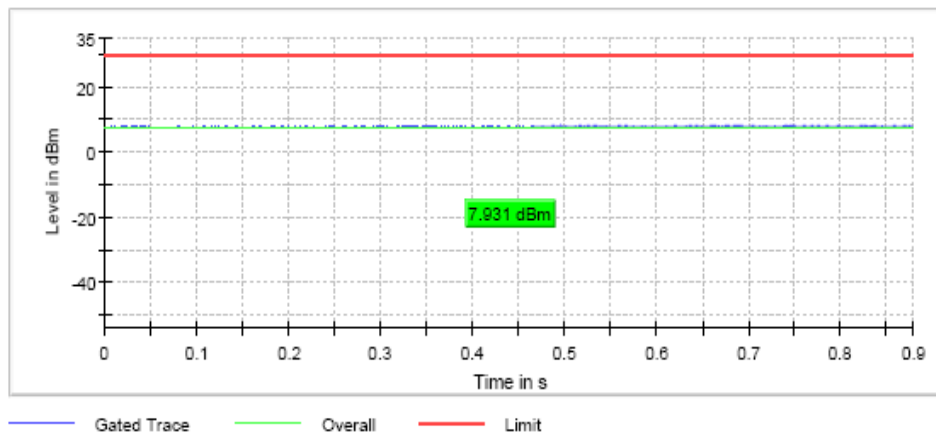
Maximum declared antenna gain: -3.5 dBi

| | Lowest frequency 2422 MHz | Middle frequency 2437 MHz | Highest frequency 2452 MHz |
|-------------------------------|------------------------------|------------------------------|-------------------------------|
| Maximum conducted power (dBm) | 7.9 | 9 | 8.5 |
| Maximum EIRP power (dBm) | 4.4 | 5.5 | 5 |
| Measurement uncertainty (dB) | <±0.78 | | |

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

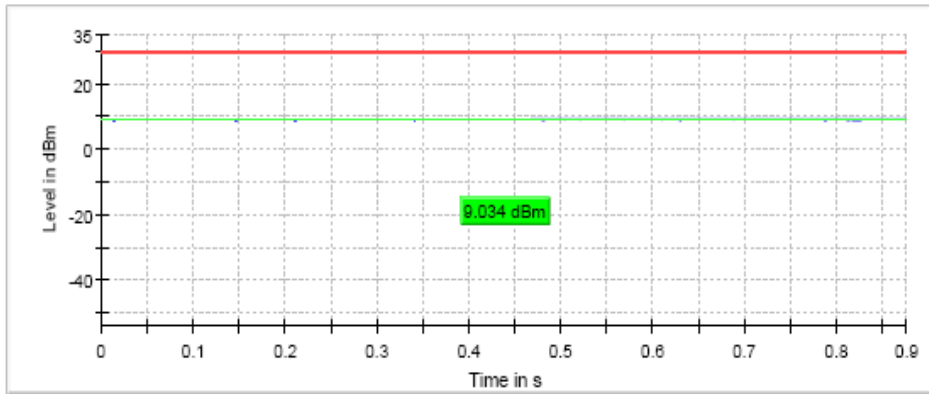
| | |
|-----------------------------|--|
| TEST RESULTS (Cont.) | |
|-----------------------------|--|

Low Channel



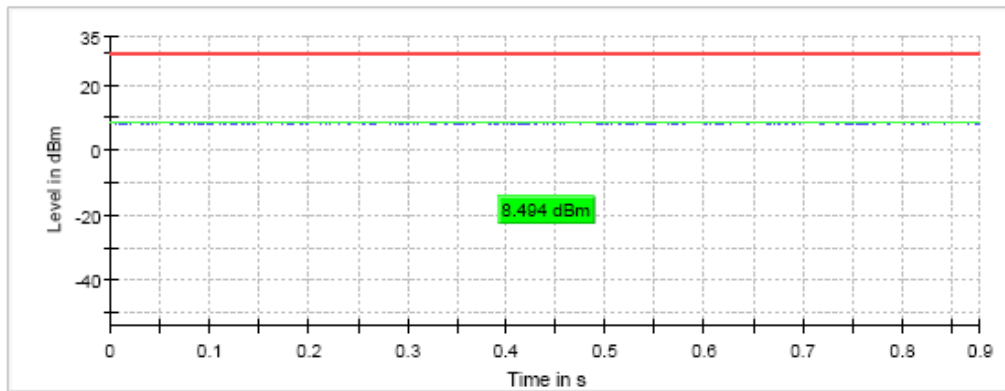
TEST RESULTS (Cont.)

Middle Channel



— Gated Trace — Overall — Limit

Highest Channel



— Gated Trace — Overall — Limit

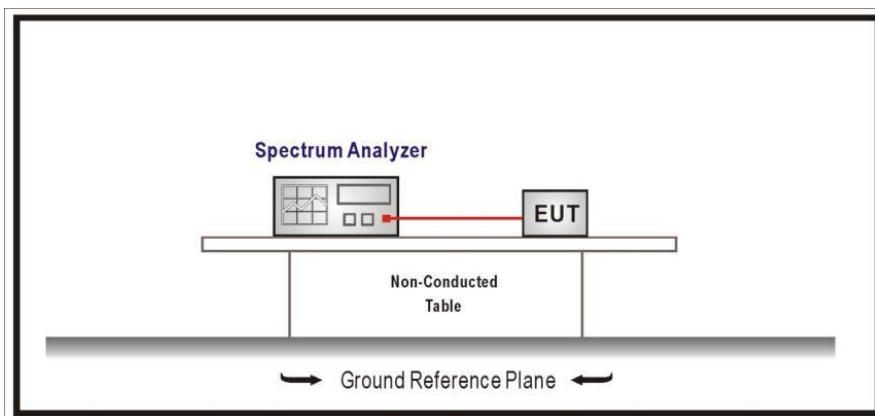
TEST B.3: BAND-EDGE EMISSIONS COMPLIANCE (TRANSMITTER)

| | | |
|----------------|-------------------|--|
| LIMITS: | Product standard: | Part 15 Subpart C §15.247 and RSS-247 |
| | Test standard: | Part 15 Subpart C §15.247(d) and RSS-247 5.5 |

LIMITS

In any 100 kHz bandwidth outside the frequency band in which the digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required shall be 30 dB instead of 20 dB.

TEST SETUP

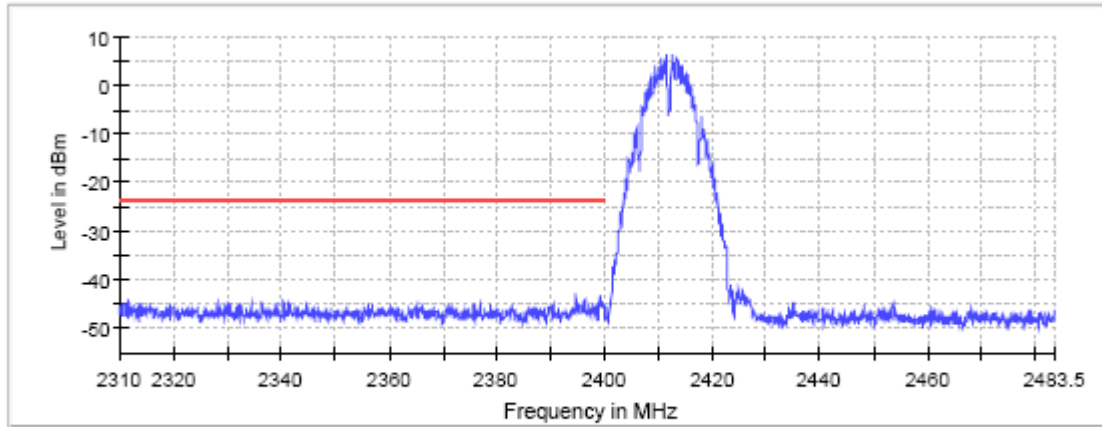


| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/01 |
| TESTED CONDITIONS MODES: | TC#01 (b mode) |
| TEST RESULTS: | PASS |

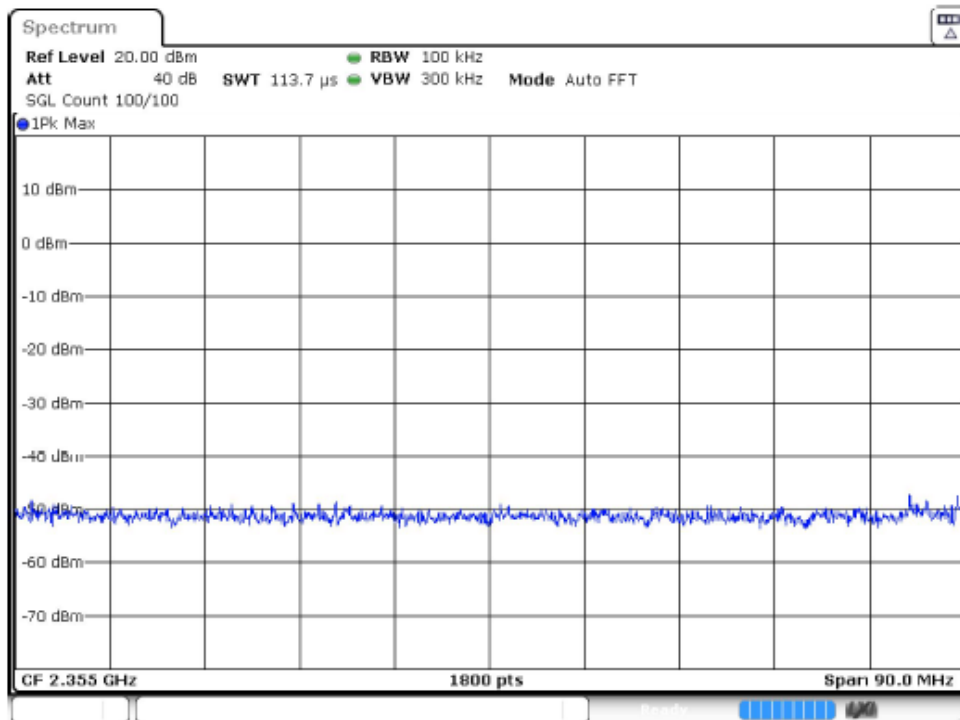
Note: Radiated measurements were used to show compliance with the limits in the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz.

TEST RESULTS (Cont.):

Lowest Channel

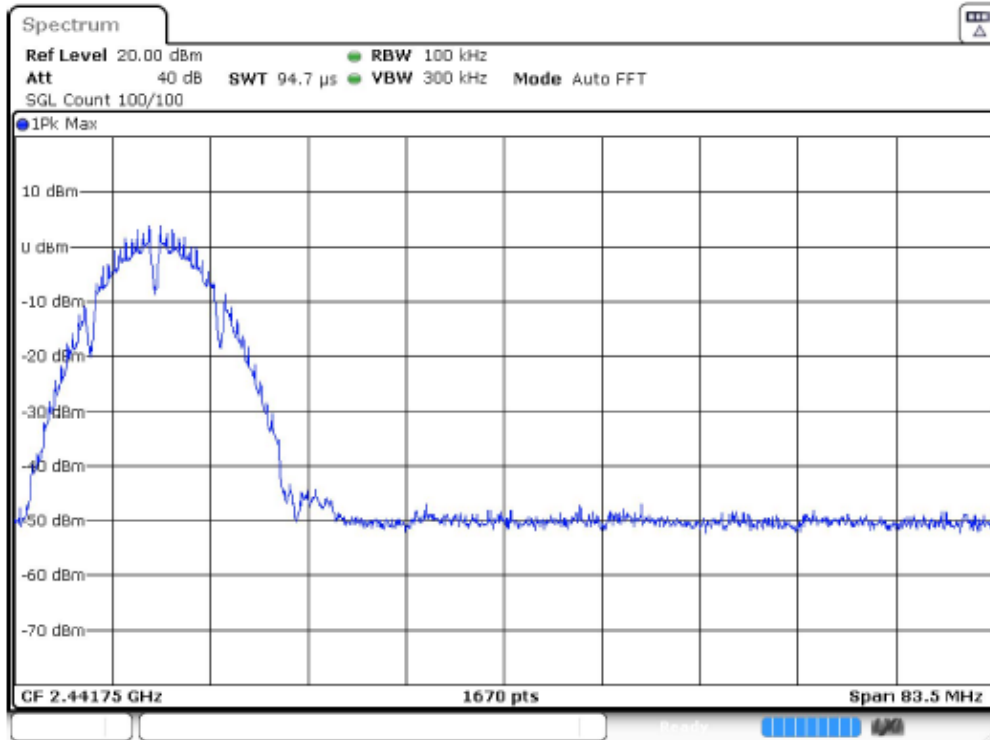


— Limit — Sum Level × Fail



Date: 5.MAR.2019 11:21:32

TEST RESULTS (Cont.):

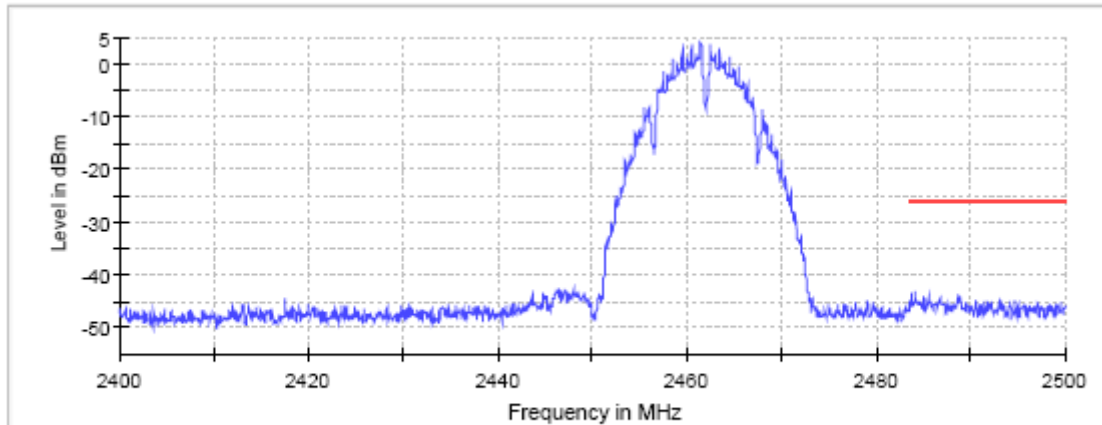


Measurement

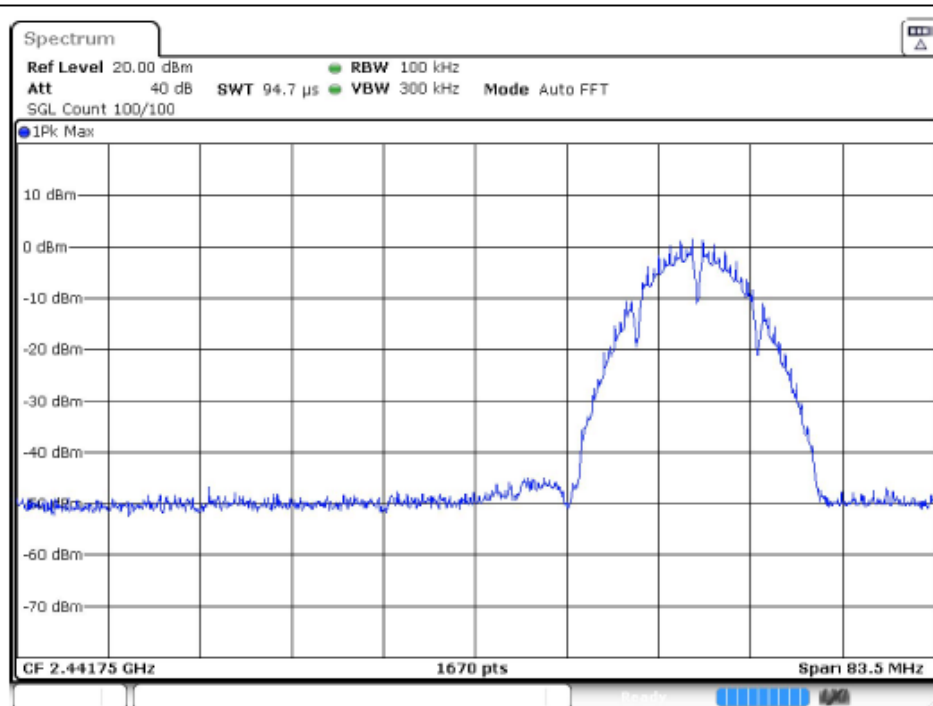
| Setting | Instrument Value | Instrument Value |
|-----------------------|------------------|------------------|
| Start Frequency | 2.31000 GHz | 2.40000 GHz |
| Stop Frequency | 2.40000 GHz | 2.48350 GHz |
| Span | 90.000 MHz | 83.500 MHz |
| RBW | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz |
| SweepPoints | 1800 | 1670 |
| Sweptime | 113.672 μ s | 94.727 μ s |
| Reference Level | 20.000 dBm | 20.000 dBm |
| Attenuation | 40.000 dB | 40.000 dB |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | FFT |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | 8 / max. 150 |
| Stable | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.00 dB | 0.16 dB |

TEST RESULTS (Cont.):

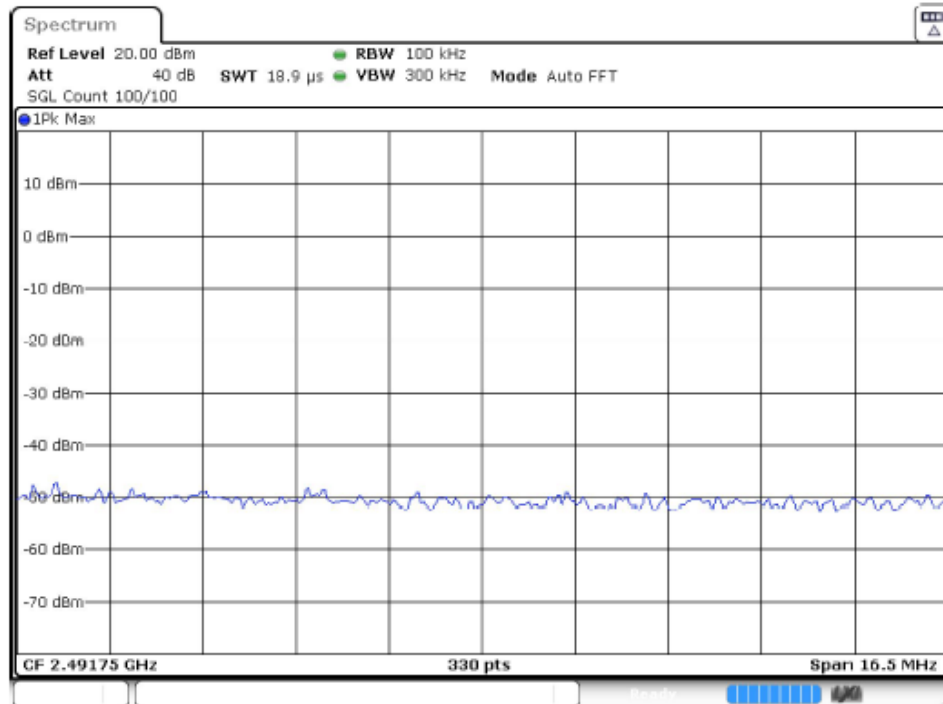
Highest Channel



— Limit — Sum Level × Fail



TEST RESULTS (Cont.):



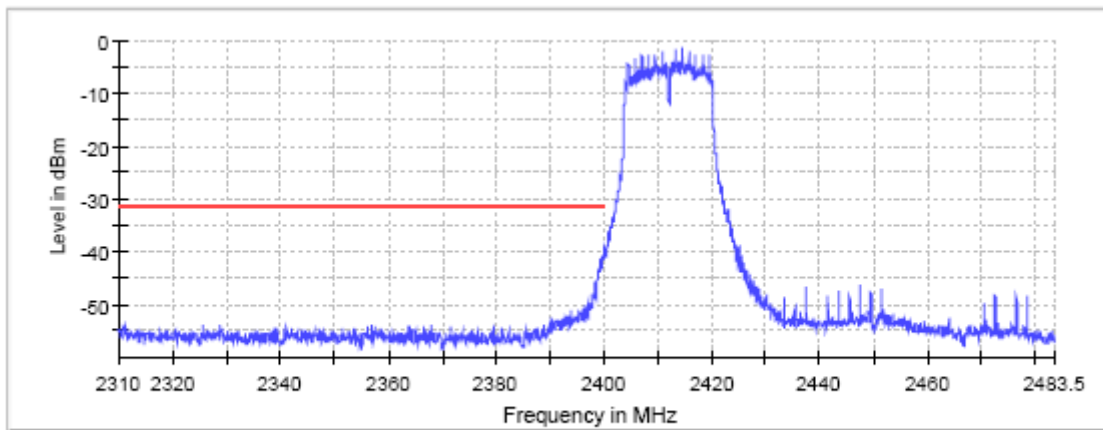
Measurement

| Setting | Instrument Value | Instrument Value |
|-----------------------|------------------|------------------|
| Start Frequency | 2.40000 GHz | 2.48350 GHz |
| Stop Frequency | 2.48350 GHz | 2.50000 GHz |
| Span | 83.500 MHz | 16.500 MHz |
| RBW | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz |
| SweepPoints | 1670 | 330 |
| Sweeptime | 94.727 μ s | 18.945 μ s |
| Reference Level | 20.000 dBm | 20.000 dBm |
| Attenuation | 40.000 dB | 40.000 dB |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | FFT |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 7 / max. 150 | 4 / max. 150 |
| Stable | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.21 dB | 0.00 dB |

| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/01 |
| TESTED CONDITIONS MODES: | TC#02 (g mode) |
| TEST RESULTS: | PASS |

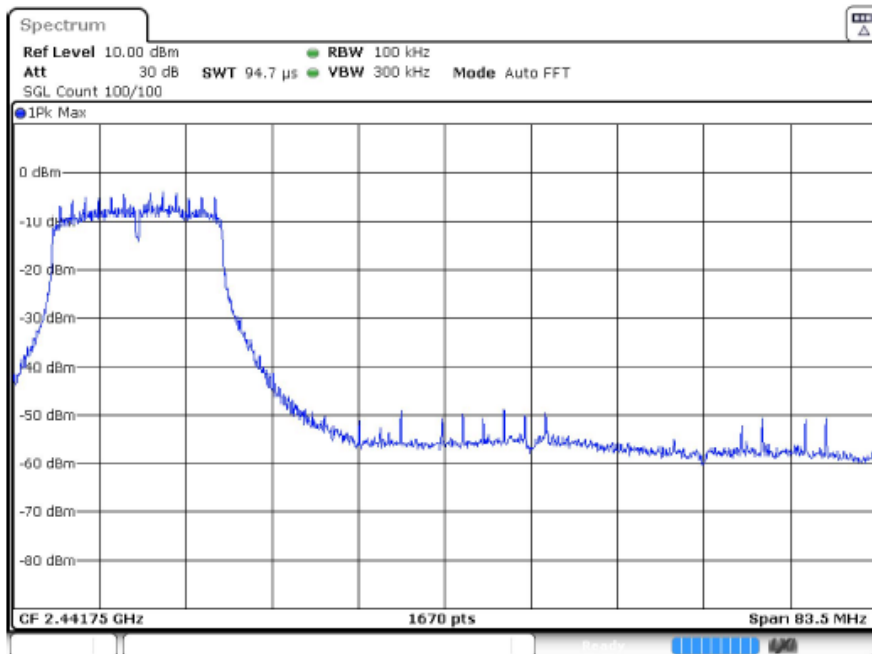
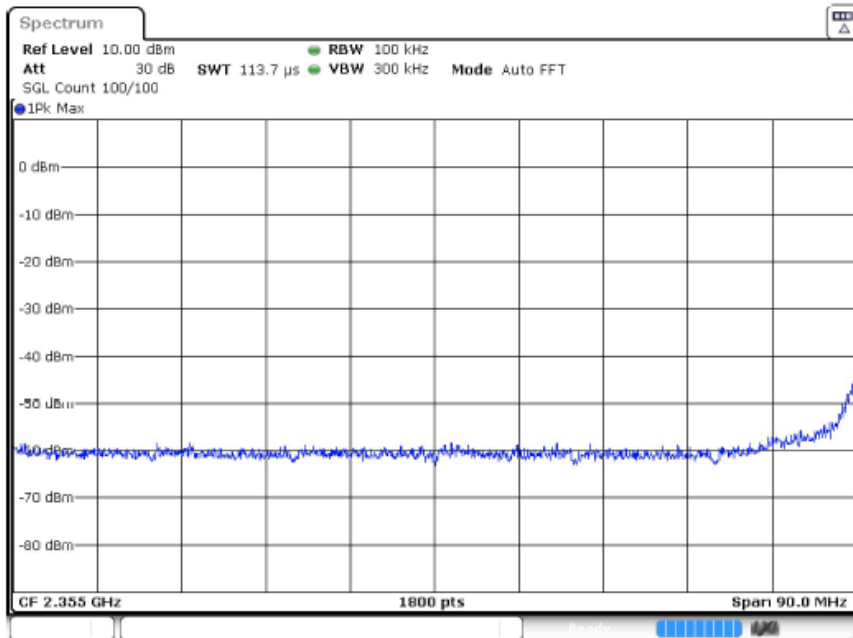
Note: Radiated measurements were used to show compliance with the limits in the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz.

Low Channel



— Limit — Sum Level × Fail

TEST RESULTS (Cont.):



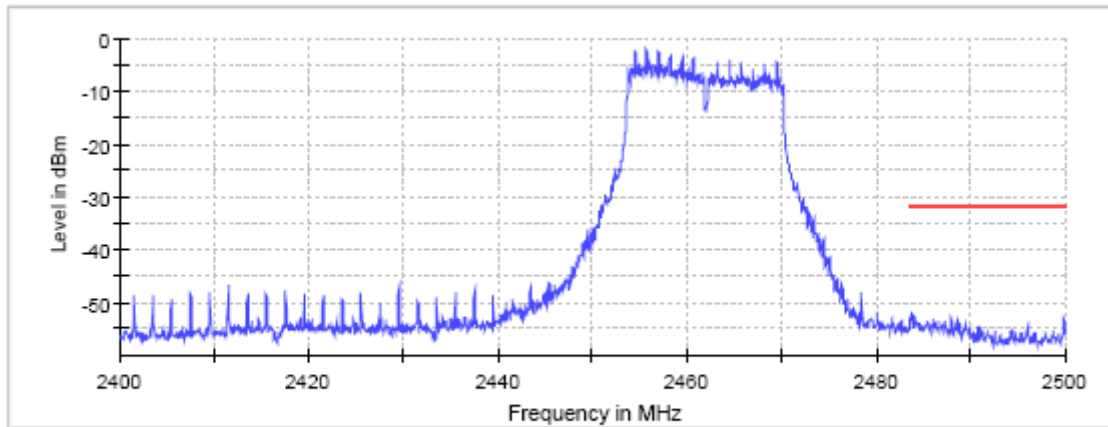
TEST RESULTS (Cont.):

Measurement

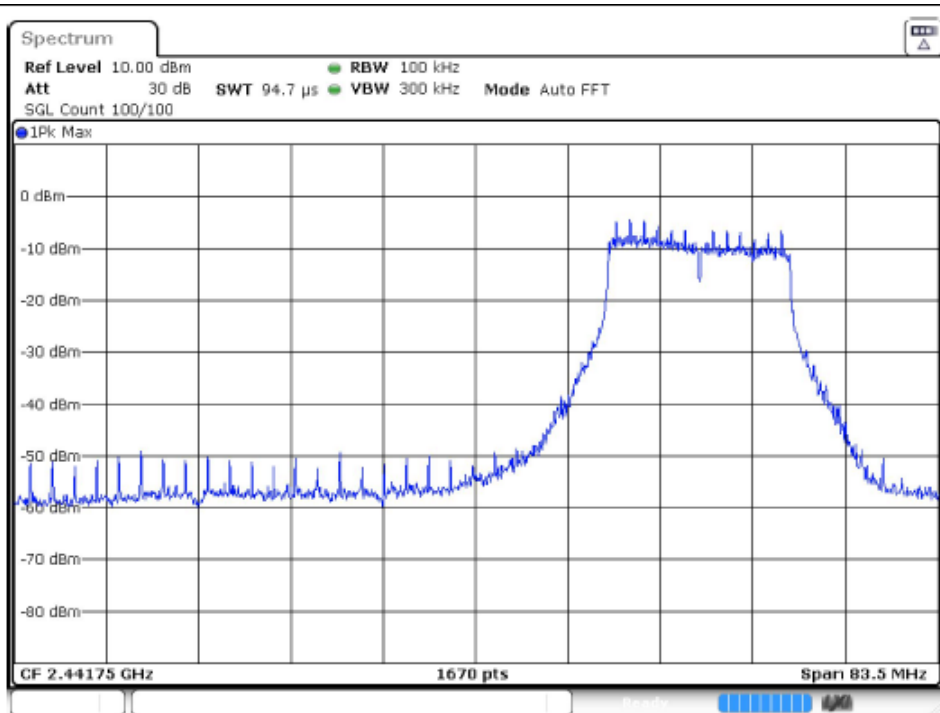
| Setting | Instrument Value | Instrument Value |
|------------------------------|-------------------------|-------------------------|
| Start Frequency | 2.31000 GHz | 2.40000 GHz |
| Stop Frequency | 2.40000 GHz | 2.48350 GHz |
| Span | 90.000 MHz | 83.500 MHz |
| RBW | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz |
| SweepPoints | 1800 | 1670 |
| Sweeptime | 113.672 μ s | 94.727 μ s |
| Reference Level | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | 30.000 dB |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | FFT |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 14 / max. 150 | 32 / max. 150 |
| Stable | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.00 dB | 0.27 dB |

TEST RESULTS (Cont.):

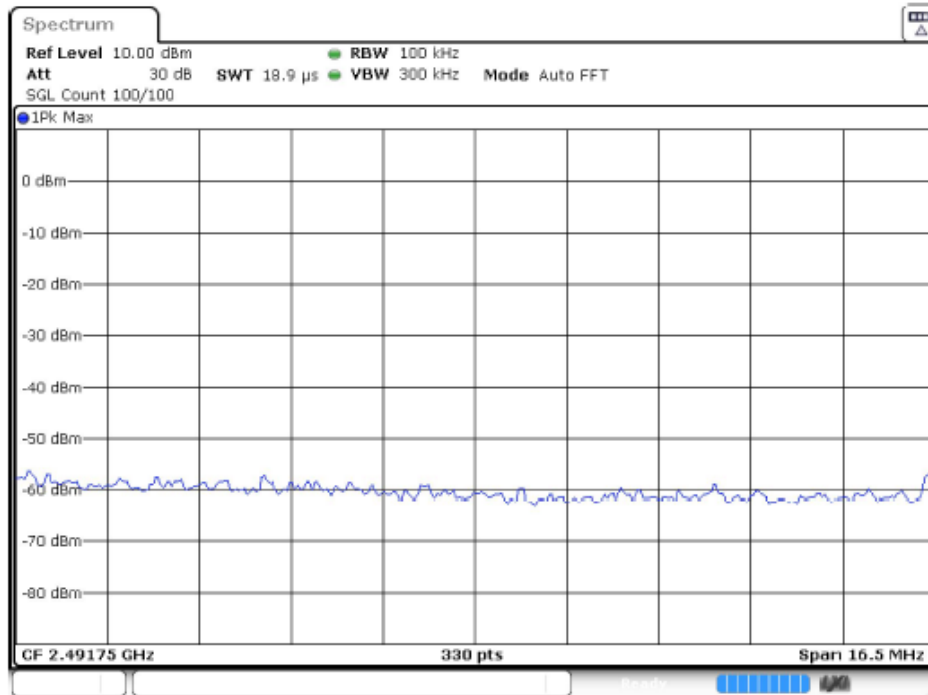
Highest Channel



— Limit — Sum Level × Fail



TEST RESULTS (Cont.):



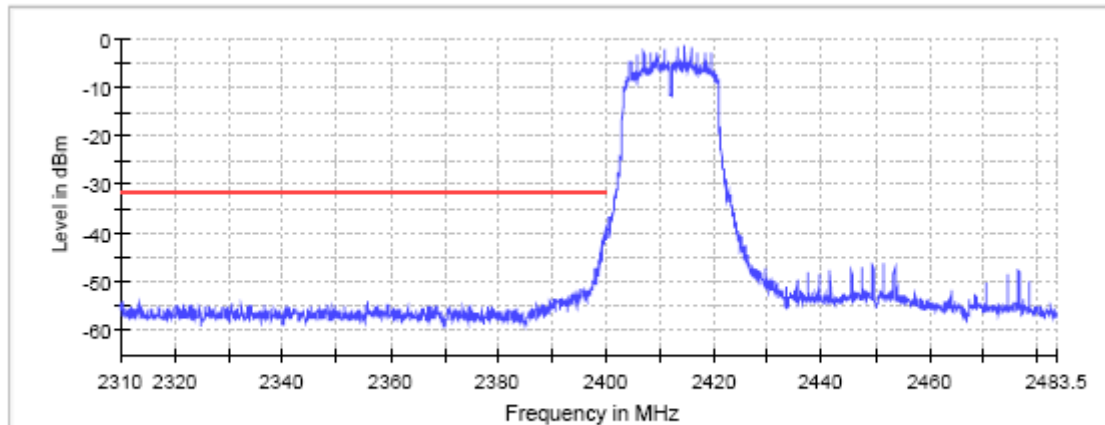
Measurement

| Setting | Instrument Value | Instrument Value |
|-----------------------|------------------|------------------|
| Start Frequency | 2.40000 GHz | 2.48350 GHz |
| Stop Frequency | 2.48350 GHz | 2.50000 GHz |
| Span | 83.500 MHz | 16.500 MHz |
| RBW | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz |
| SweepPoints | 1670 | 330 |
| Sweeptime | 94.727 μ s | 18.945 μ s |
| Reference Level | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | 30.000 dB |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | FFT |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 38 / max. 150 | 4 / max. 150 |
| Stable | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.30 dB | 0.00 dB |

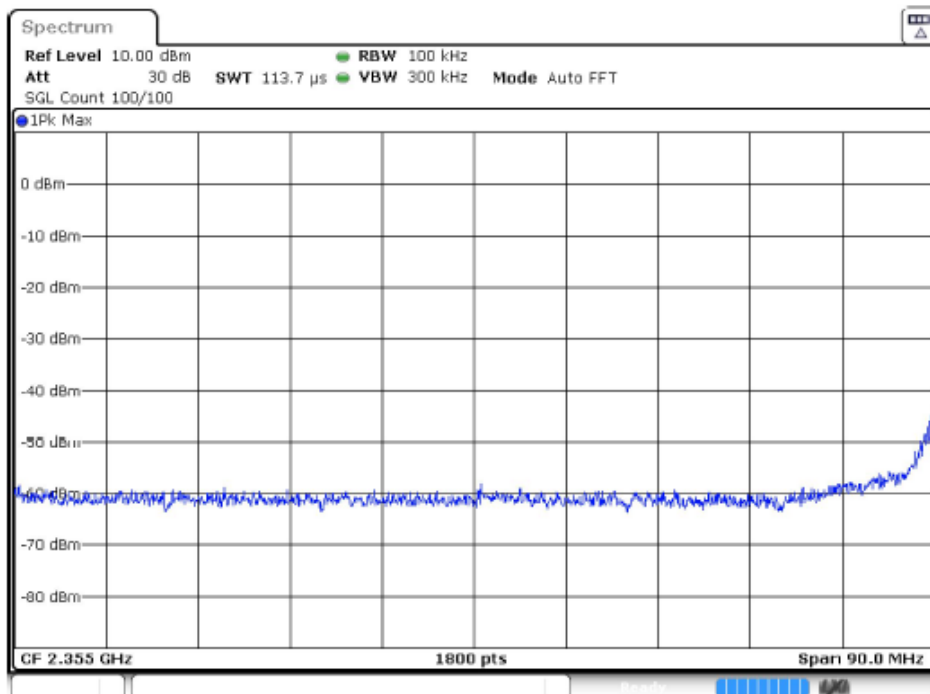
| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/01 |
| TESTED CONDITIONS MODES: | TC#03 (n mode) |
| TEST RESULTS: | PASS |

Bandwidth: 20 MHz

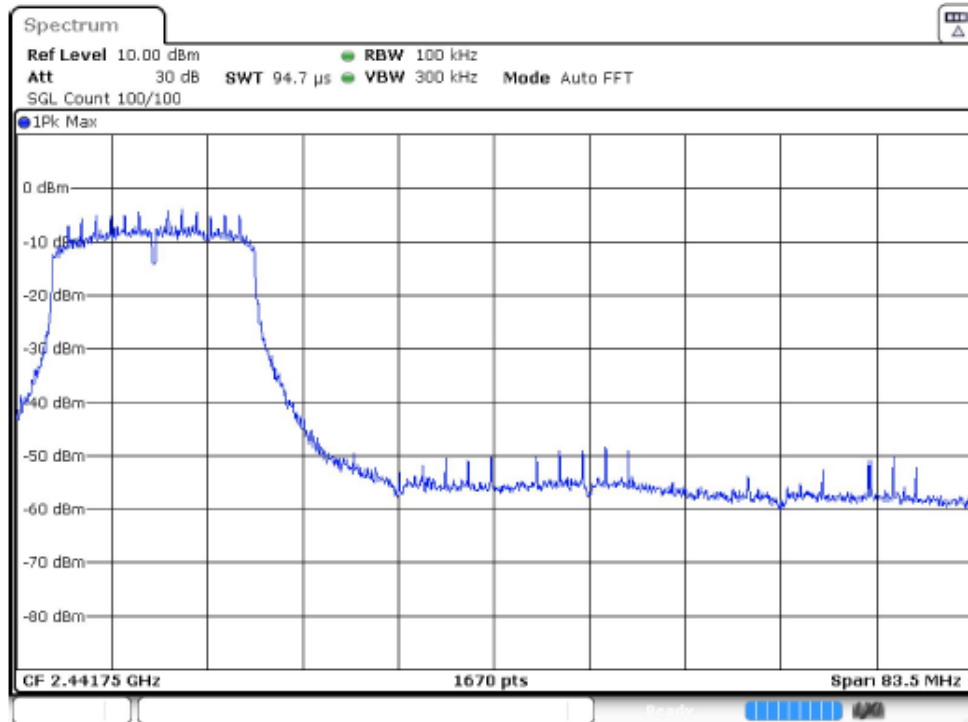
Low Channel



— Limit — Sum Level × Fail



TEST RESULTS (Cont.):

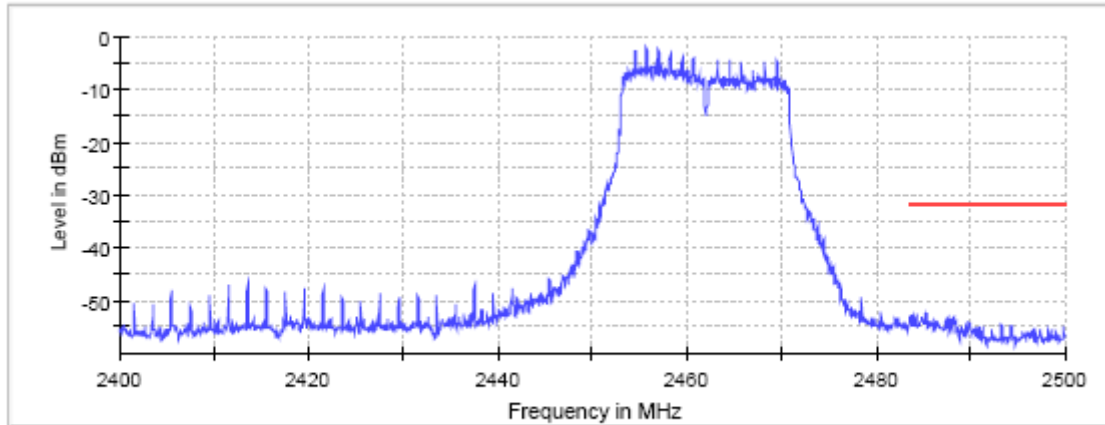


Measurement

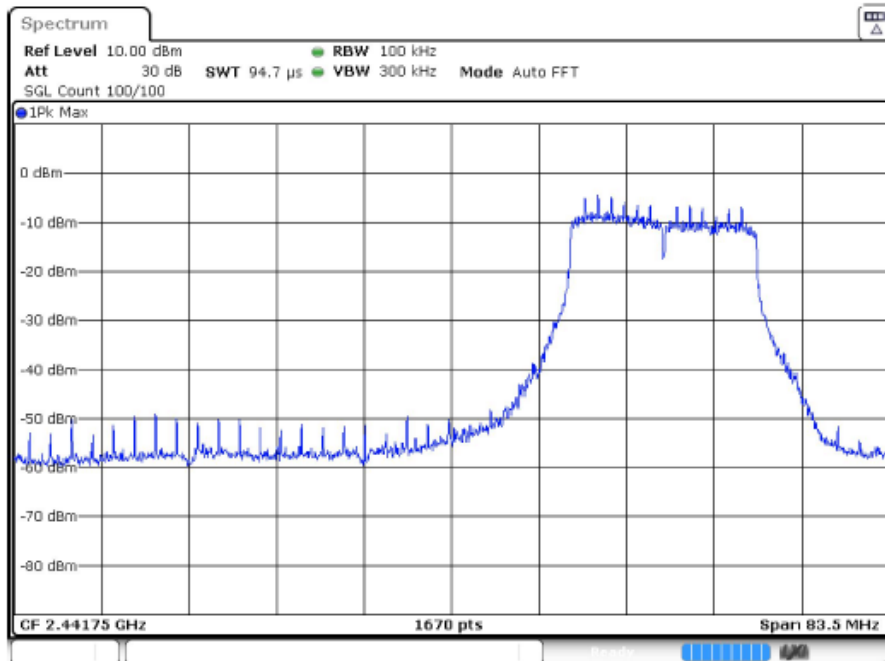
| Setting | Instrument Value | Instrument Value |
|-----------------------|------------------|------------------|
| Start Frequency | 2.31000 GHz | 2.40000 GHz |
| Stop Frequency | 2.40000 GHz | 2.48350 GHz |
| Span | 90.000 MHz | 83.500 MHz |
| RBW | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz |
| SweepPoints | 1800 | 1670 |
| Sweeptime | 113.672 μ s | 94.727 μ s |
| Reference Level | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | 30.000 dB |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | FFT |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 6 / max. 150 | 46 / max. 150 |
| Stable | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.00 dB | 0.48 dB |

TEST RESULTS (Cont.):

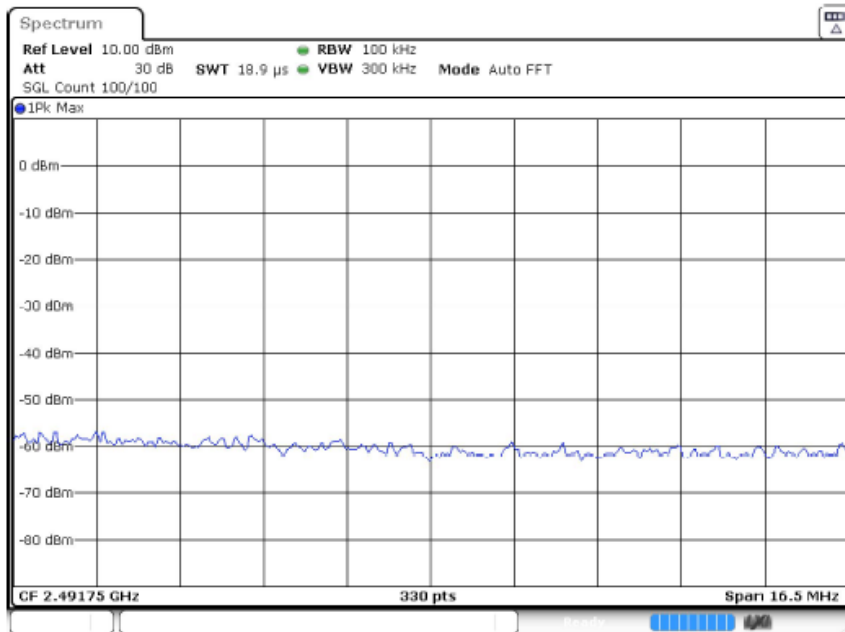
Highest Channel



— Limit — Sum Level × Fail



TEST RESULTS (Cont.):



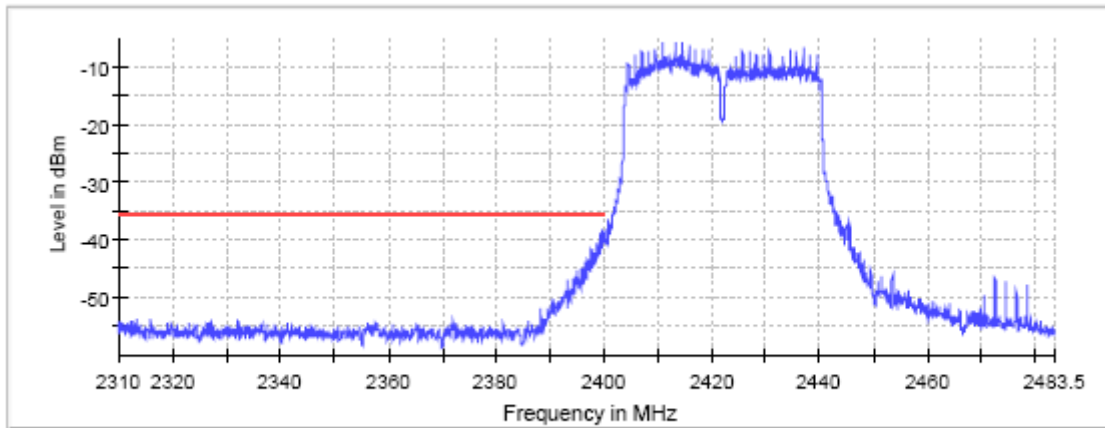
Measurement

| Setting | Instrument Value | Instrument Value |
|-----------------------|------------------|------------------|
| Start Frequency | 2.40000 GHz | 2.48350 GHz |
| Stop Frequency | 2.48350 GHz | 2.50000 GHz |
| Span | 83.500 MHz | 16.500 MHz |
| RBW | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz |
| SweepPoints | 1670 | 330 |
| Sweeptime | 94.727 μs | 18.945 μs |
| Reference Level | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | 30.000 dB |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | FFT |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 43 / max. 150 | 4 / max. 150 |
| Stable | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.04 dB | 0.00 dB |

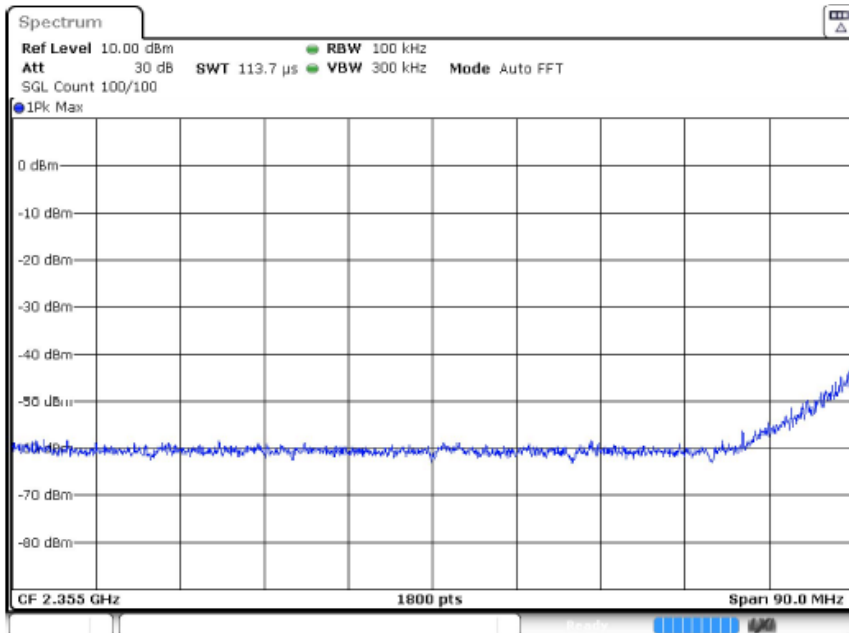
| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/01 |
| TESTED CONDITIONS MODES: | TC#04 (n mode) |
| TEST RESULTS: | PASS |

Bandwidth: 40 MHz

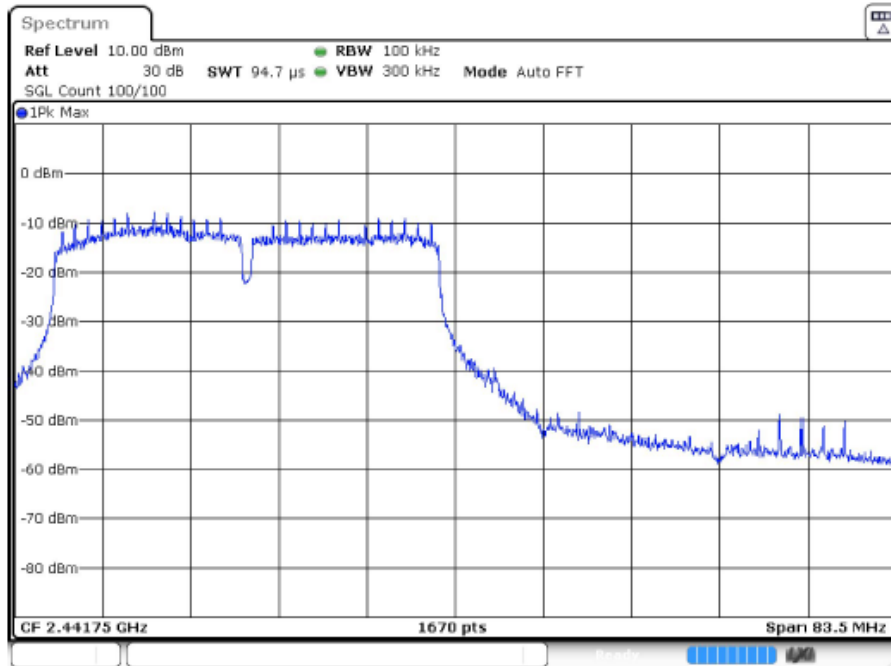
Low Channel



— Limit — Sum Level × Fail



TEST RESULTS (Cont.):

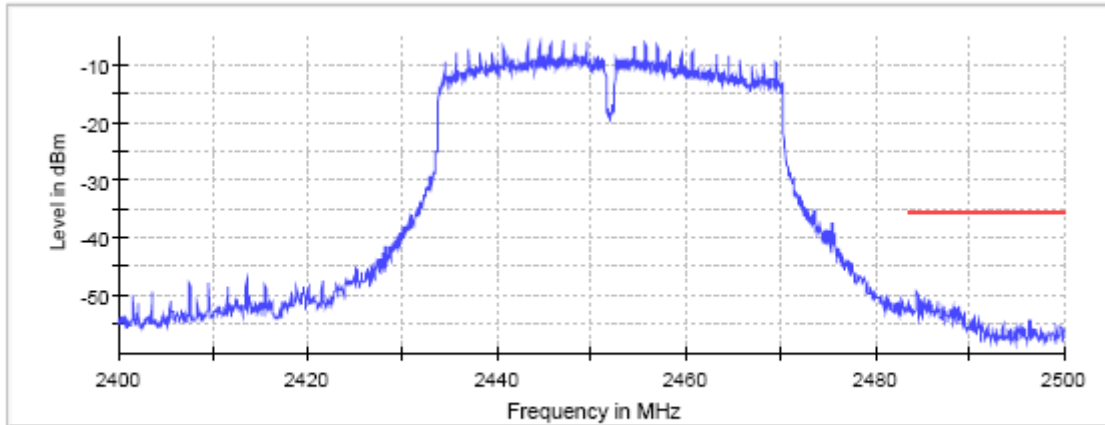


Measurement

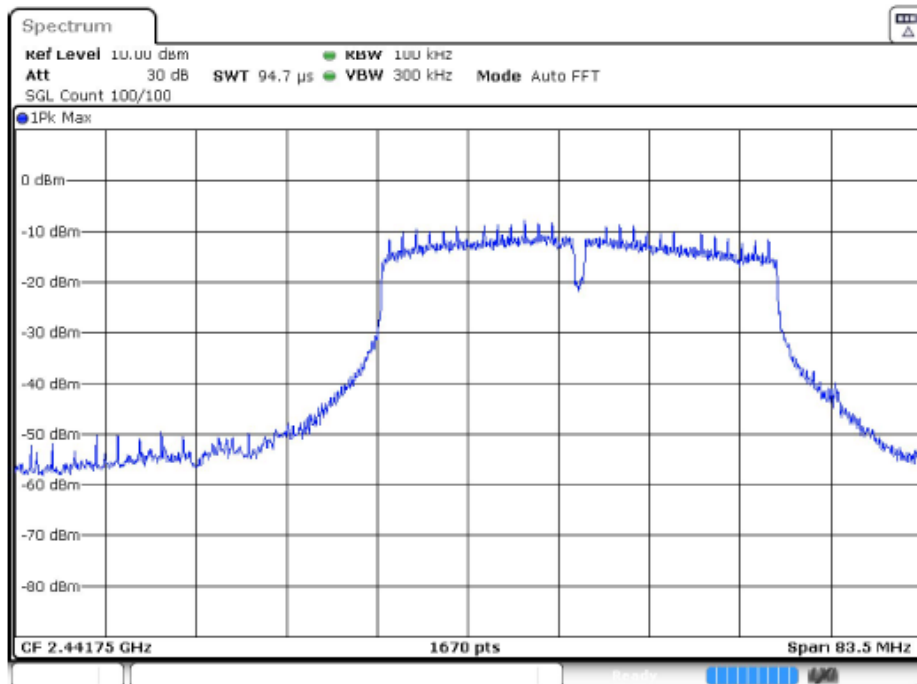
| Setting | Instrument Value | Instrument Value |
|-----------------------|------------------|------------------|
| Start Frequency | 2.31000 GHz | 2.40000 GHz |
| Stop Frequency | 2.40000 GHz | 2.48350 GHz |
| Span | 90.00 MHz | 83.500 MHz |
| RBW | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz |
| SweepPoints | 1800 | 1670 |
| Sweptime | 113.672 μs | 94.727 μs |
| Reference Level | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | 30.000 dB |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | FFT |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 17 / max. 150 | 48 / max. 150 |
| Stable | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.02 dB | 0.17 dB |

TEST RESULTS (Cont.):

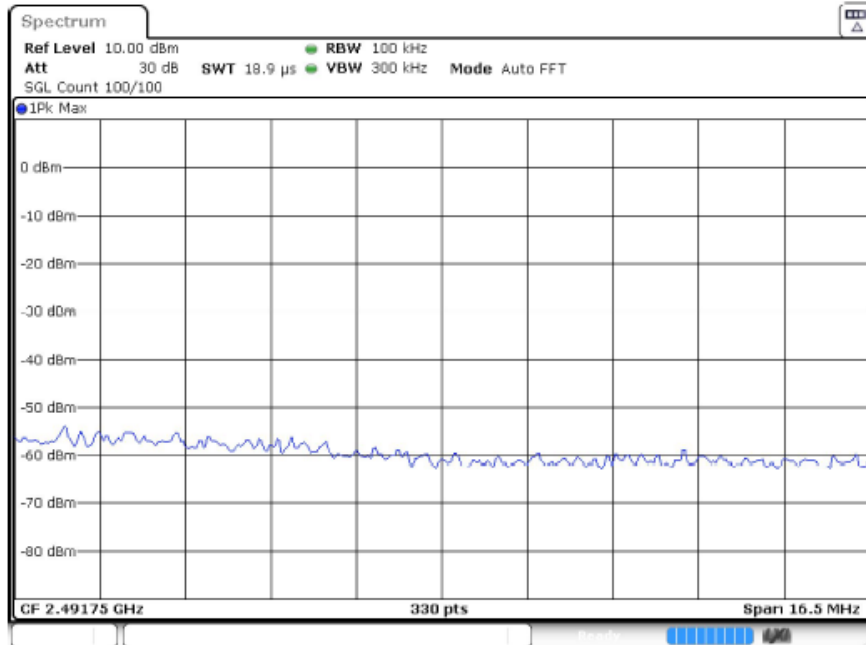
Highest Channel



— Limit — Sum Level × Fail



TEST RESULTS (Cont.):



Measurement

| Setting | Instrument Value | Instrument Value |
|-----------------------|------------------|------------------|
| Start Frequency | 2.40000 GHz | 2.48350 GHz |
| Stop Frequency | 2.48350 GHz | 2.50000 GHz |
| Span | 83.500 MHz | 16.500 MHz |
| RBW | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz |
| SweepPoints | 1670 | 330 |
| Sweeptime | 94.727 μ s | 18.945 μ s |
| Reference Level | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | 30.000 dB |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| SweepType | FFT | FFT |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 72 / max. 150 | 4 / max. 150 |
| Stable | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.23 dB | 0.00 dB |

TEST B.4: POWER SPECTRAL DENSITY

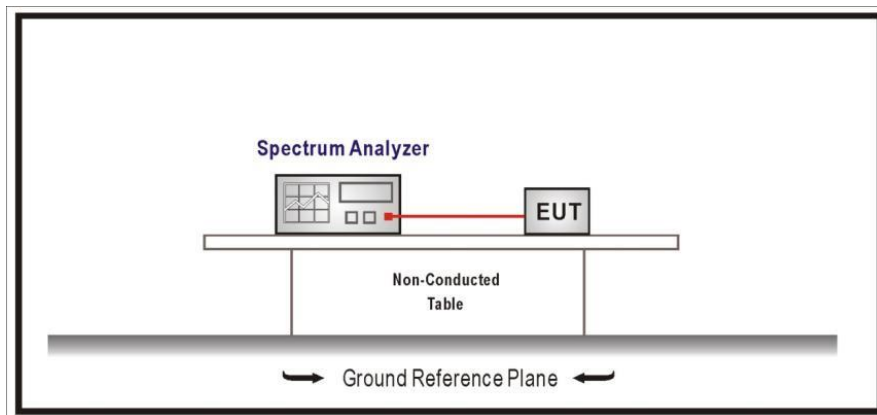
| | | |
|----------------|-------------------|--|
| LIMITS: | Product standard: | Part 15 Subpart C §15.247 and RSS-247 |
| | Test standard: | Part 15 Subpart C §15.247(e) and RSS-247 5.2 (b) |

LIMITS

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

TEST SETUP

For all modes, the maximum power spectral density level in the fundamental emission was measured using the method AVGPSD-1 according to point 10.3. of Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 558074 D01 DTS Meas Guidance v04 dated 05/04/2017.

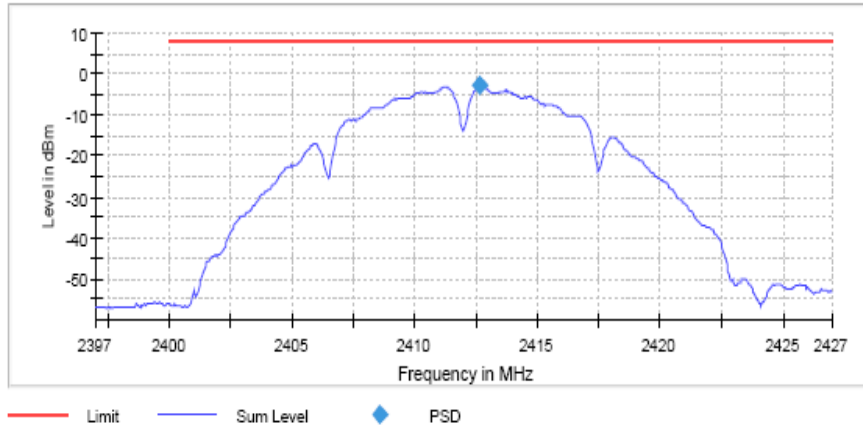


| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/01 |
| TESTED CONDITIONS MODES: | TC#01 (b mode) |
| TEST RESULTS: | PASS |

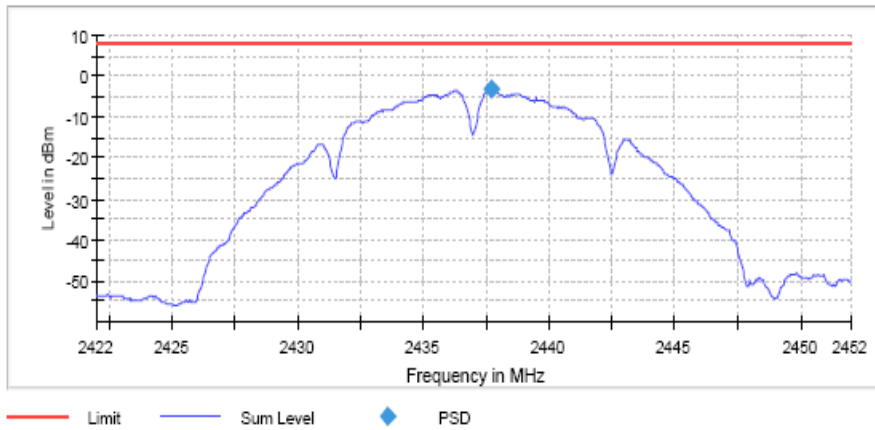
| | Lowest frequency | Middle frequency | Highest frequency |
|------------------------------|------------------|------------------|-------------------|
| | 2412 MHz | 2437 MHz | 2462 MHz |
| Power spectral density (dBm) | -2.921 | -3.178 | -4.938 |
| Measurement uncertainty (dB) | <±0.78 | | |

TEST RESULTS (Cont.):

Low Channel

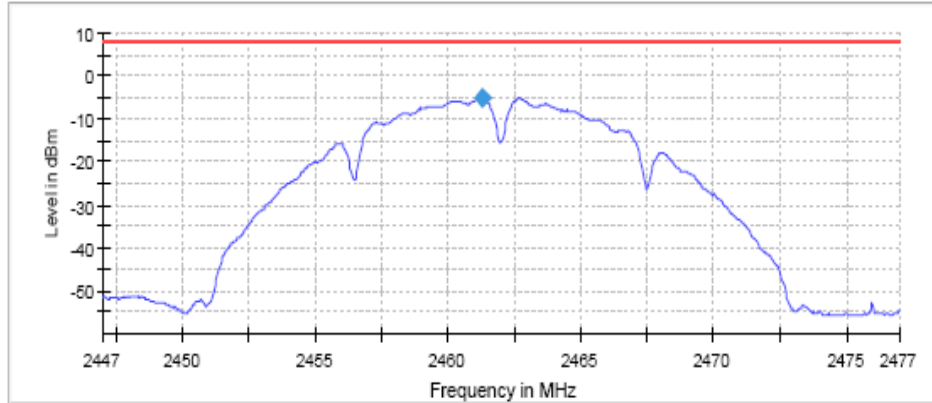


Middle Channel



TEST RESULTS (Cont.):

High Channel



— Limit — Sum Level ◆ PSD

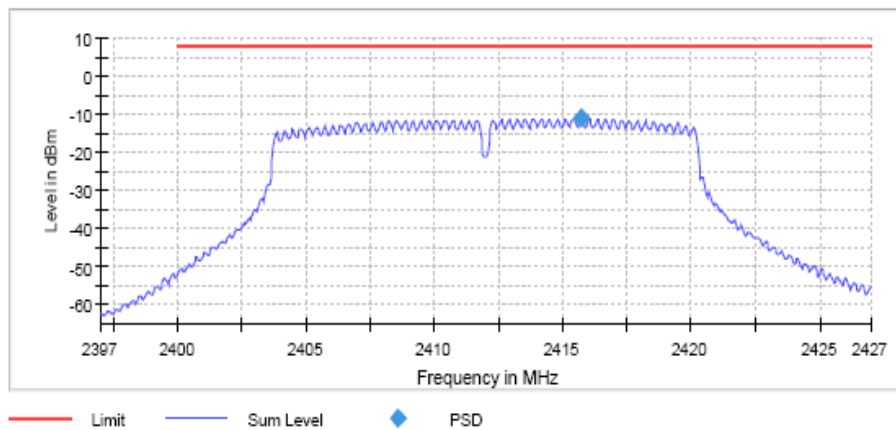
Measurement

| Setting | Instrument Value | Instrument Value | Instrument Value |
|-----------------------|------------------|------------------|------------------|
| Start Frequency | 2.39700 GHz | 2.42200 GHz | 2.44700 GHz |
| Stop Frequency | 2.42700 GHz | 2.45200 GHz | 2.47700 GHz |
| Span | 30.000 MHz | 30.000 MHz | 30.000 MHz |
| RBW | 100.000 kHz | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz | 300.000 kHz |
| SweepPoints | 600 | 600 | 600 |
| Sweptime | 3.000 s | 3.000 s | 3.000 s |
| Reference Level | 20.000 dBm | 20.000 dBm | 20.000 dBm |
| Attenuation | 40.000 dB | 40.000 dB | 40.000 dB |
| Detector | RMS | RMS | RMS |
| SweepCount | 1 | 1 | 1 |
| Filter | 3 dB | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold | Max Hold |
| Sweeptype | Sweep | Sweep | Sweep |
| Preamp | off | off | off |
| Stablemode | Trace | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB | 0.50 dB |
| Run | 5 / max. 150 | 6 / max. 150 | 7 / max. 150 |
| Stable | 3 / 3 | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.26 dB | 0.31 dB | 0.21 dB |

| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/01 |
| TESTED CONDITIONS MODES: | TC#02 (g mode) |
| TEST RESULTS: | PASS |

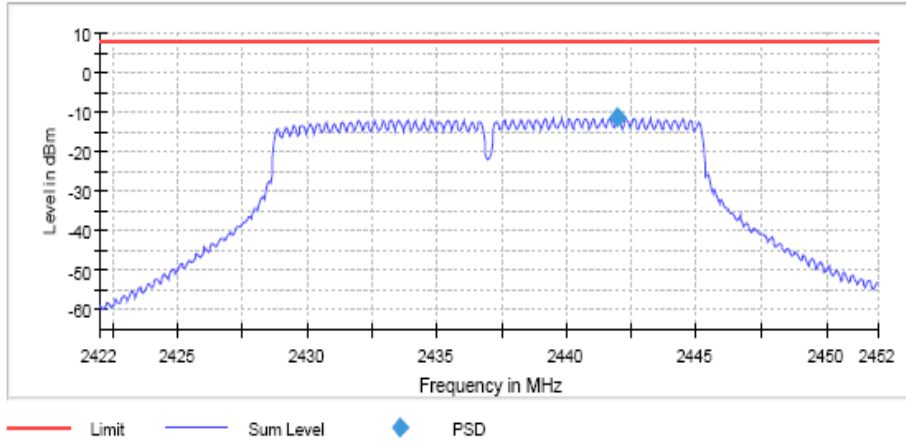
| | Lowest frequency 2412 MHz | Middle frequency 2437 MHz | Highest frequency 2462 MHz |
|------------------------------|------------------------------|------------------------------|-------------------------------|
| Power spectral density (dBm) | -10.962 | -11.381 | -11.540 |
| Measurement uncertainty (dB) | <±0.78 | | |

Low Channel

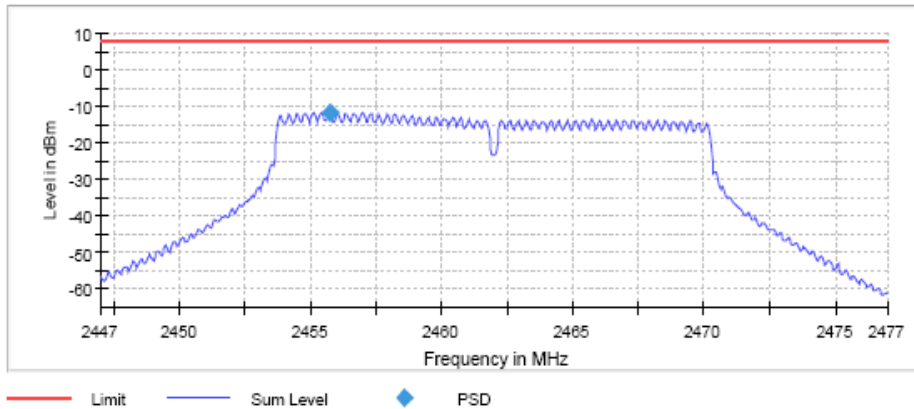


TEST RESULTS (Cont.):

Middle Channel



High Channel



Measurement

| Setting | Instrument Value | Instrument Value | Instrument Value |
|-----------------------|------------------|------------------|------------------|
| Start Frequency | 2.39700 GHz | 2.42200 GHz | 2.44700 GHz |
| Stop Frequency | 2.42700 GHz | 2.45200 GHz | 2.47700 GHz |
| Span | 30.000 MHz | 30.000 MHz | 30.000 MHz |
| RBW | 100.000 kHz | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz | 300.000 kHz |
| SweepPoints | 600 | 600 | 600 |
| Sweeptime | 3.000 s | 3.000 s | 3.000 s |
| Reference Level | 10.000 dBm | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | 30.000 dB | 30.000 dB |
| Detector | RMS | RMS | RMS |
| SweepCount | 1 | 1 | 1 |
| Filter | 3 dB | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold | Max Hold |
| Sweeptype | Sweep | Sweep | Sweep |
| Preamp | off | off | off |
| Stablemode | Trace | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB | 0.50 dB |
| Run | 5 / max. 150 | 6 / max. 150 | 6 / max. 150 |
| Stable | 3 / 3 | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.30 dB | 0.31 dB | 0.30 dB |

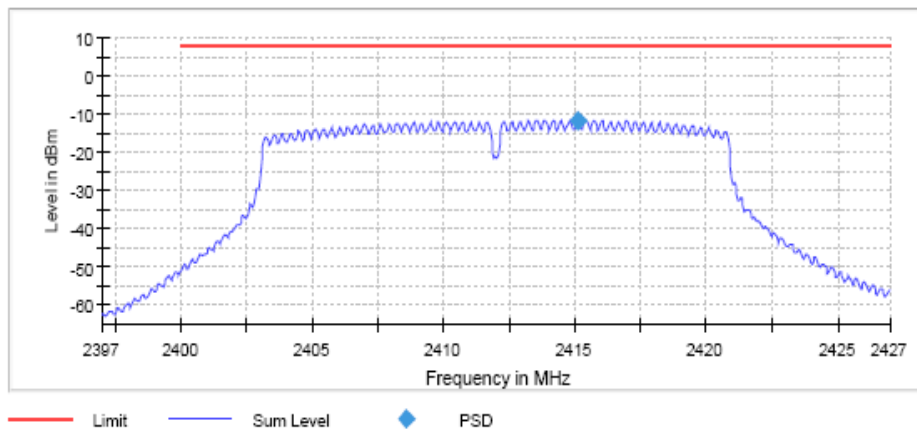
| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/01 |
| TESTED CONDITIONS MODES: | TC#03 (n mode) |
| TEST RESULTS: | PASS |

Bandwidth: 20 MHz

| | Lowest frequency 2412 MHz | Middle frequency 2437 MHz | Highest frequency 2462 MHz |
|------------------------------|------------------------------|------------------------------|-------------------------------|
| Power spectral density (dBm) | -11.529 | -11.972 | -12.289 |
| Measurement uncertainty (dB) | <±0.78 | | |

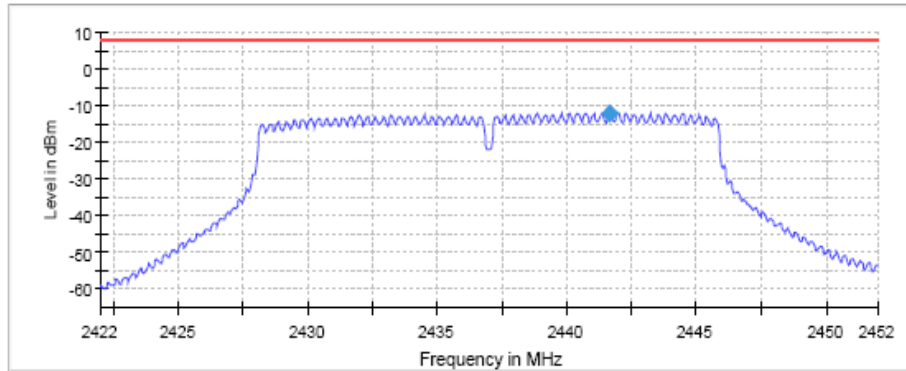
| | |
|------------------------------|--|
| TEST RESULTS (Cont.): | |
|------------------------------|--|

Low Channel

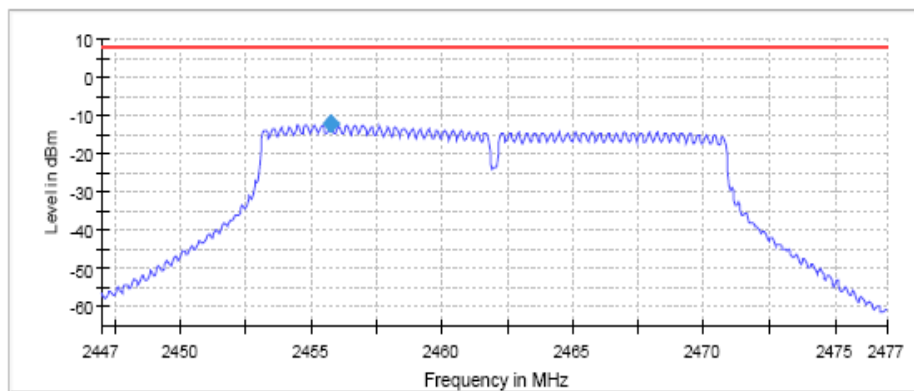


TEST RESULTS (Cont.):

Middle Channel



High Channel



TEST RESULTS (Cont.):

| Measurement | | | |
|-----------------------|------------------|------------------|------------------|
| Setting | Instrument Value | Instrument Value | Instrument Value |
| Start Frequency | 2.39700 GHz | 2.42200 GHz | 2.44700 GHz |
| Stop Frequency | 2.42700 GHz | 2.45200 GHz | 2.47700 GHz |
| Span | 30.000 MHz | 30.000 MHz | 30.000 MHz |
| RBW | 100.000 kHz | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz | 300.000 kHz |
| SweepPoints | 600 | 600 | 600 |
| Sweeptime | 3.000 s | 3.000 s | 3.000 s |
| Reference Level | 10.000 dBm | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | 30.000 dB | 30.000 dB |
| Detector | RMS | RMS | RMS |
| SweepCount | 1 | 1 | 1 |
| Filter | 3 dB | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold | Max Hold |
| Sweeptype | Sweep | Sweep | Sweep |
| Preamp | off | off | off |
| Stablemode | Trace | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB | 0.50 dB |
| Run | 5 / max. 150 | 5 / max. 150 | 5 / max. 150 |
| Stable | 3 / 3 | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.48 dB | 0.37 dB | 0.33 dB |

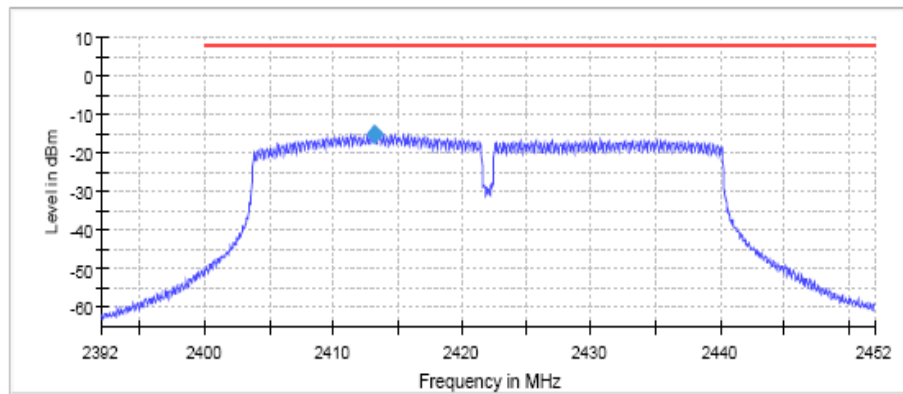
| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/01 |
| TESTED CONDITIONS MODES: | TC#04 (n mode) |
| TEST RESULTS: | PASS |

Bandwidth: 40 MHz

| | Lowest frequency | Middle frequency | Highest frequency |
|------------------------------|------------------|------------------|-------------------|
| | 2422 MHz | 2437 MHz | 2452 MHz |
| Power spectral density (dBm) | -15.096 | -13.721 | -14.903 |
| Measurement uncertainty (dB) | <±0.78 | | |

| | |
|------------------------------|--|
| TEST RESULTS (Cont.): | |
|------------------------------|--|

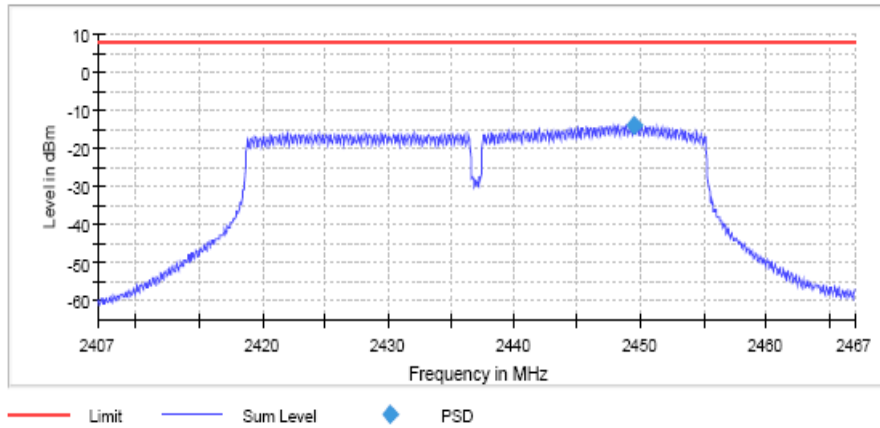
Low Channel



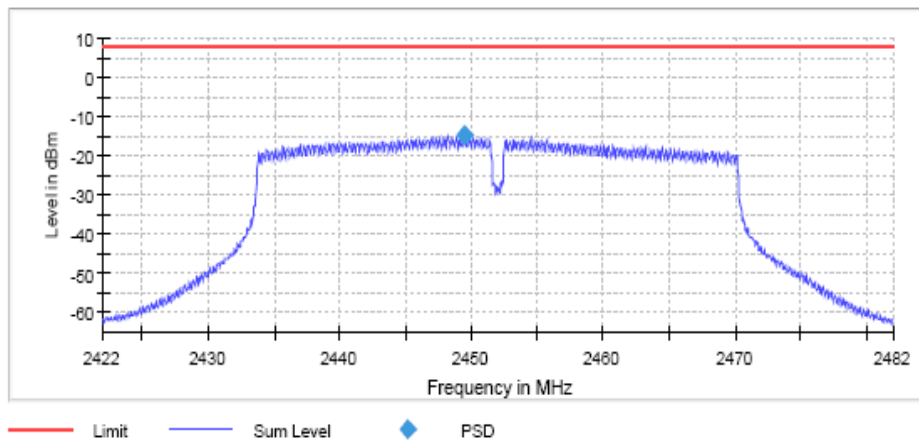
— Limit — Sum Level ◆ PSD

TEST RESULTS (Cont.):

Mid Channel



High Channel



TEST RESULTS (Cont.):

| Measurement | | | |
|-----------------------|------------------|------------------|------------------|
| Setting | Instrument Value | Instrument Value | Instrument Value |
| Start Frequency | 2.39200 GHz | 2.40700 GHz | 2.42200 GHz |
| Stop Frequency | 2.45200 GHz | 2.46700 GHz | 2.48200 GHz |
| Span | 60.000 MHz | 60.000 MHz | 60.000 MHz |
| RBW | 100.000 kHz | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz | 300.000 kHz |
| SweepPoints | 1200 | 1200 | 1200 |
| Sweeptime | 6.000 s | 6.000 s | 6.000 s |
| Reference Level | 10.000 dBm | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | 30.000 dB | 30.000 dB |
| Detector | RMS | RMS | RMS |
| SweepCount | 1 | 1 | 1 |
| Filter | 3 dB | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold | Max Hold |
| Sweeptype | Sweep | Sweep | Sweep |
| Preamp | off | off | off |
| Stablemode | Trace | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB | 0.50 dB |
| Run | 7 / max. 150 | 5 / max. 150 | 8 / max. 150 |
| Stable | 3 / 3 | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.23 dB | 0.43 dB | 0.32 dB |

TEST B.5: EMISSION LIMITATIONS RADIATED (TRANSMITTER)

| | | |
|----------------|-------------------|--|
| LIMITS: | Product standard: | Part 15 Subpart C §15.247 and RSS-247 |
| | Test standard: | Part 15 Subpart C §15.247(d) and RSS-247 5.5 |

LIMITS

Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c) / RSS-Gen):

| Frequency Range (MHz) | Field strength (µV/m) | Field strength (dBµV/m) | Measurement distance (m) |
|-----------------------|-----------------------|-------------------------|--------------------------|
| 0.009-0.490 | 2400/F(kHz) | - | 300 |
| 0.490-1.705 | 24000/F(kHz) | - | 30 |
| 1.705 - 30.0 | 30 | - | 30 |
| 30 - 88 | 100 | 40 | 3 |
| 88 - 216 | 150 | 43.5 | 3 |
| 216 - 960 | 200 | 46 | 3 |
| 960 - 25000 | 500 | 54 | 3 |

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

RSS-247. Attenuation below the general field strength limits specified in RSS-Gen is not required

TEST SETUP

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna is situated at 3 m for the frequency range 30-1000 MHz (Bi-log antenna) and at 1m for the frequency range 1-40 GHz (1 GHz-18 GHz and 18 GHz-40 GHz Double ridge horn antennas).

For radiated emissions in the range 1-40 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

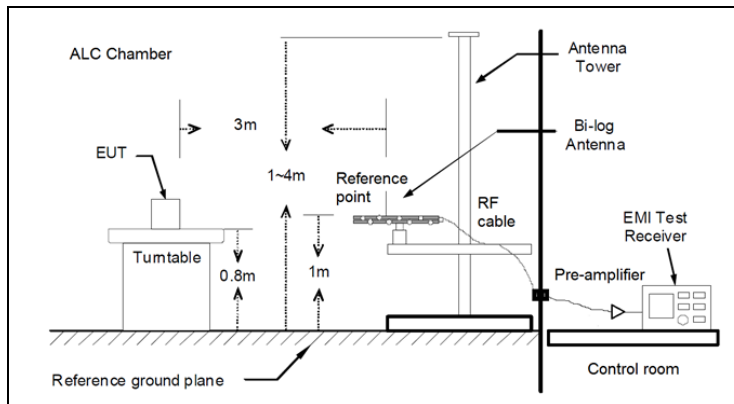
The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360° and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

Measurements were made in both horizontal and vertical planes of polarization.

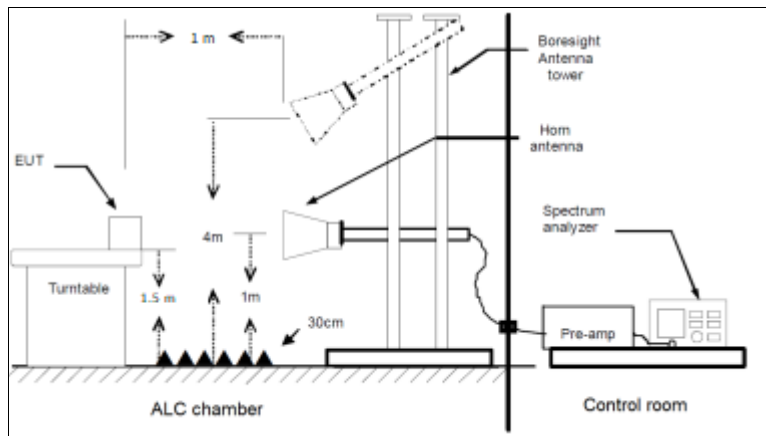
The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

TEST SETUP (CONT.)

Radiated measurements Setup $f < 1$ GHz



Radiated measurements setup $f > 1$ GHz



| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/02 |
| TESTED CONDITIONS MODES: | TC#01 (b mode) |
| TEST RESULTS: | PASS |

The tables and plots show the results for the worst case of modulation and data rate: 1Mb/s for 802.11b

Frequency range 30 MHz – 1000 MHz

The spurious emissions below 1 GHz do not depend on the operating channel and mode selected in the EUT.

Frequency range 1 GHz – 26 GHz

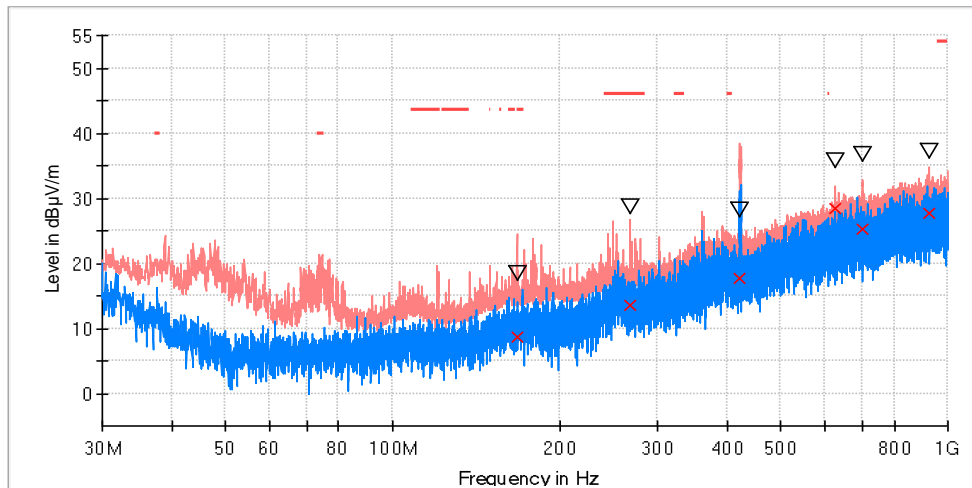
The results in the next tables show the maximum measured levels in the 1-26 GHz range including the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz (see next plots).

The radiated spurious signals detected at less than 10 dB respect to the limit for the lowest, middle and highest operating channels are showed in the tables below of each frequency range.

| | |
|-----------------------------|-----------------------|
| TEST RESULTS (Cont.) | |
| FREQUENCY RANGE | 30 MHz – 1 GHz |

CHANNEL: Middle (2437 MHz).

RF_FCC_15.247_E Field_30MHz_1GHz



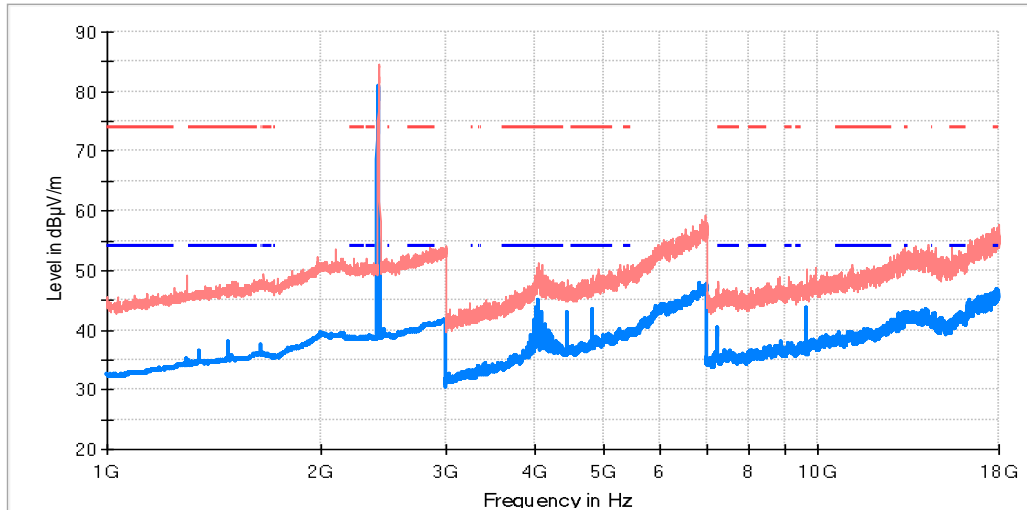
- PK+_MAXH
- PK+_CLRWR
- TX limits to Spurious Emission FCC15.247 (30MHz to 1GHz) Restricted Bands QPK Limit
- ▽ MaxPeak-PK+ (Single)
- × QuasiPeak-QPK (Single)

Result Table _ Single

| Frequency (MHz) | PK+_MAXH (dBµV/m) | QuasiPeak (dBµV/m) | Pol |
|-----------------|-------------------|--------------------|-----|
| 167.206500 | 18.3 | 8.7 | H |
| 267.019500 | 28.8 | 13.6 | H |
| 701.337000 | 36.7 | 25.2 | H |
| 922.206000 | 37.1 | 27.6 | H |
| 624.998000 | 35.7 | 28.5 | V |
| 421.637500 | 28.1 | 17.6 | V |

| | |
|-----------------------------|-----------------------|
| TEST RESULTS (Cont.) | |
| FREQUENCY RANGE | 1 GHz – 18 GHz |

CHANNEL: Lowest (2412 MHz).



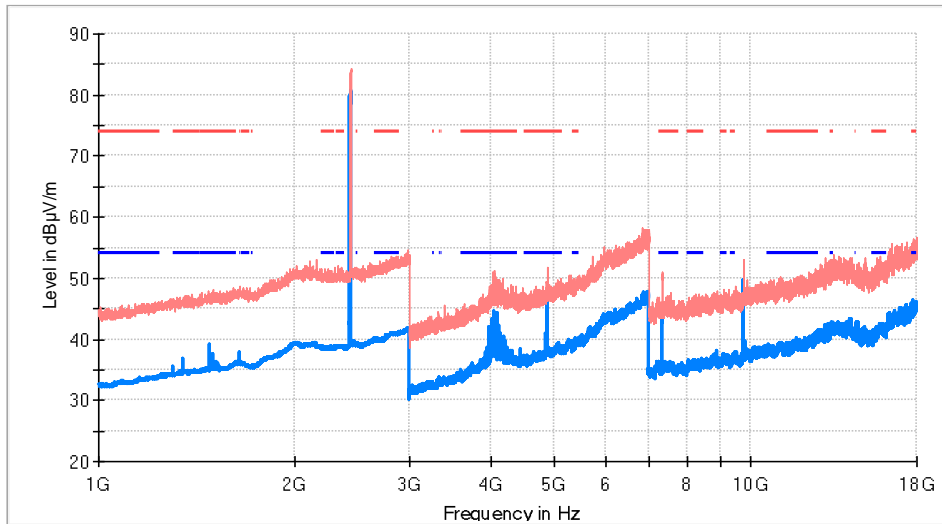
- AVG_MAXH
- PK+ MAXH
- - - TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- - - TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

Maximizations

| Frequency (MHz) | PK+ MAXH (dBµV/m) | AVG_MAXH (dBµV/m) | Pol | Comments |
|-----------------|-------------------|-------------------|-----|-------------|
| 1485.000000 | 47.59 | 38.06 | H | |
| 2411.000000 | 84.65 | 81.09 | H | Fundamental |
| 4056.500000 | 51.37 | 45.02 | V | |
| 4454.500000 | 48.46 | 42.97 | V | |
| 4824.000000 | 48.79 | 43.46 | V | |
| 7234.000000 | 48.06 | 40.33 | V | |
| 9648.000000 | 50.07 | 43.72 | H | |

TEST RESULTS (Cont.)

CHANNEL: Middle (2437 MHz).



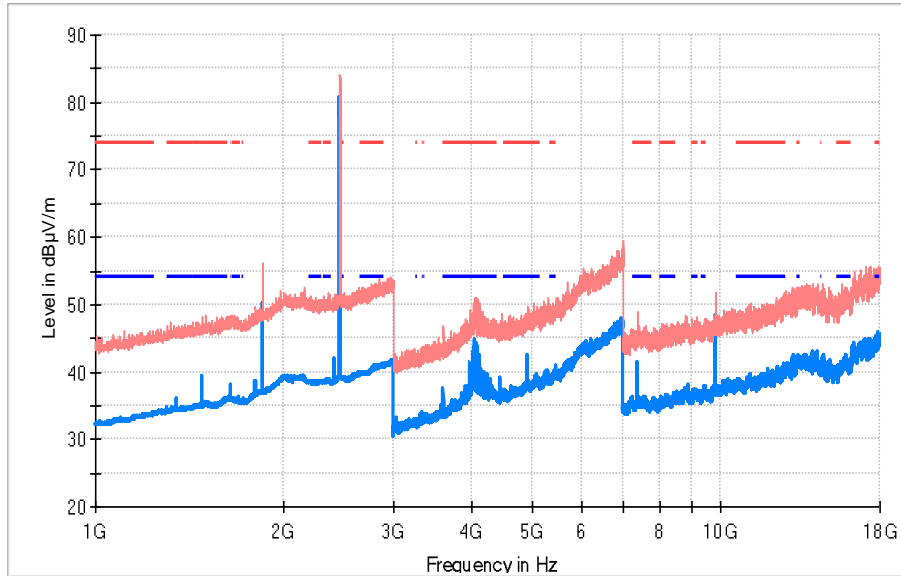
- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

Maximizations

| Frequency (MHz) | PK+_MAXH (dBuV/m) | AVG_MAXH (dBuV/m) | Pol | Comments |
|-----------------|-------------------|-------------------|-----|-------------|
| 2436.000000 | 84.19 | 80.69 | H | Fundamental |
| 4053.000000 | 51.32 | 44.53 | V | |
| 4874.000000 | 51.90 | 46.22 | V | |
| 7309.500000 | 50.29 | 44.68 | V | |
| 9748.000000 | 52.98 | 49.69 | V | |

TEST RESULTS (Cont.)

CHANNEL: Highest (2462 MHz).



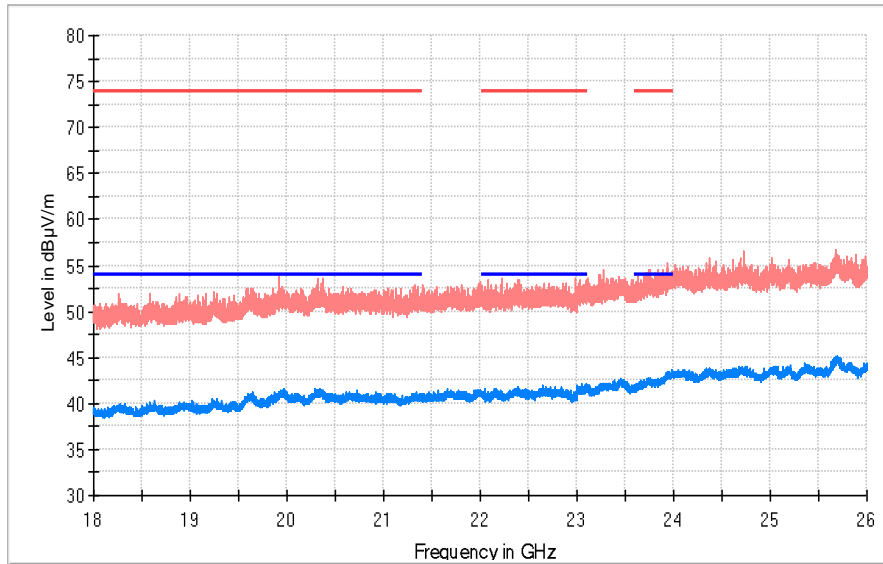
- AVG_MAXH
- PK+_MAXH
- - - TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- - - TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

Maximizations

| Frequency (MHz) | PK+_MAXH (dBuV/m) | AVG_MAXH (dBuV/m) | Height (cm) | Comments |
|-----------------|-------------------|-------------------|-------------|-------------|
| 1851.000000 | 56.15 | 50.14 | H | |
| 2461.000000 | 84.14 | 80.59 | H | Fundamental |
| 4050.500000 | 50.74 | 44.79 | V | |
| 4923.500000 | 49.70 | 42.47 | V | |
| 7384.500000 | 48.29 | 41.53 | V | |
| 9848.000000 | 51.89 | 48.45 | V | |

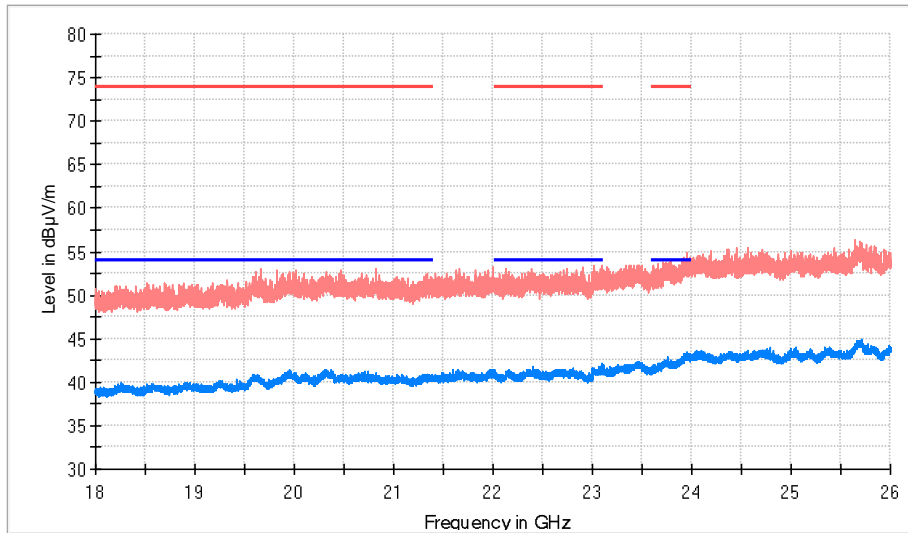
| | |
|-----------------------------|------------------------|
| TEST RESULTS (Cont.) | |
| FREQUENCY RANGE | 18 GHz – 26 GHz |

CHANNEL: Lowest (2412 MHz).



- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

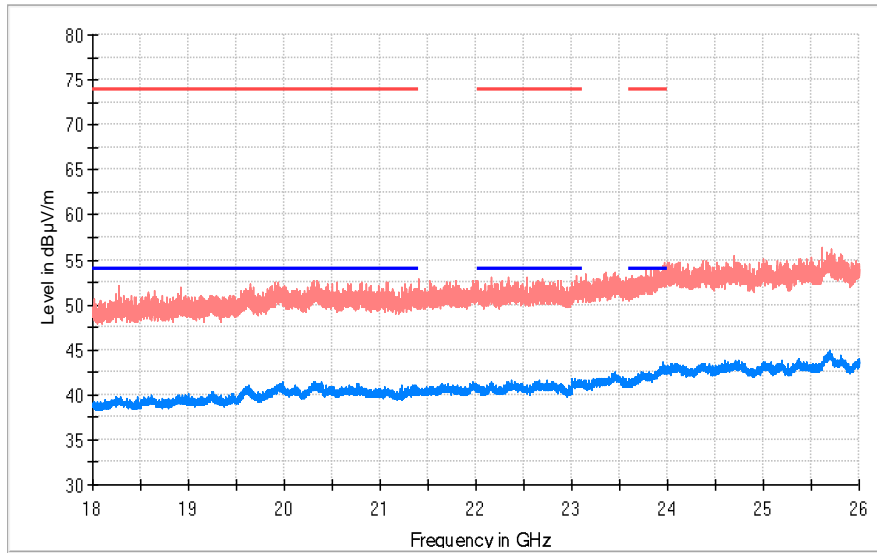
CHANNEL: Middle (2437 MHz).



- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

TEST RESULTS (Cont.)

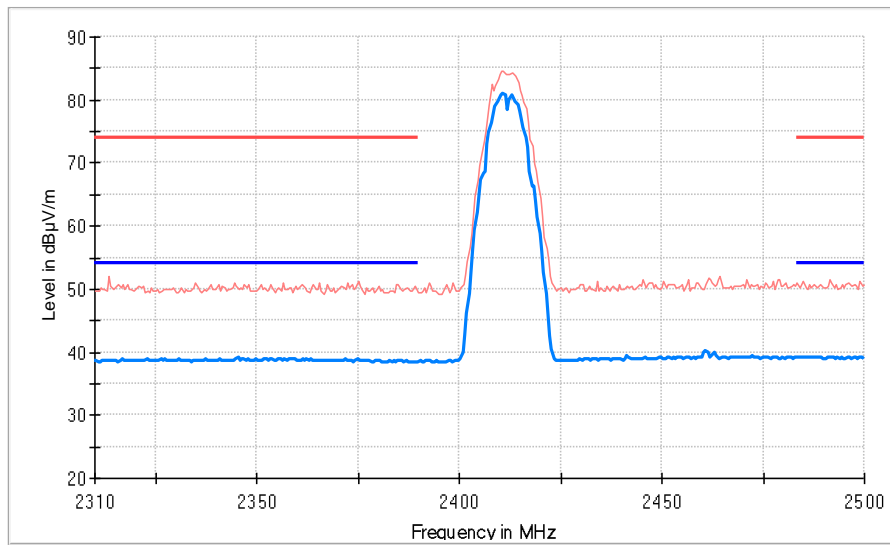
CHANNEL: Highest (2462 MHz).



- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

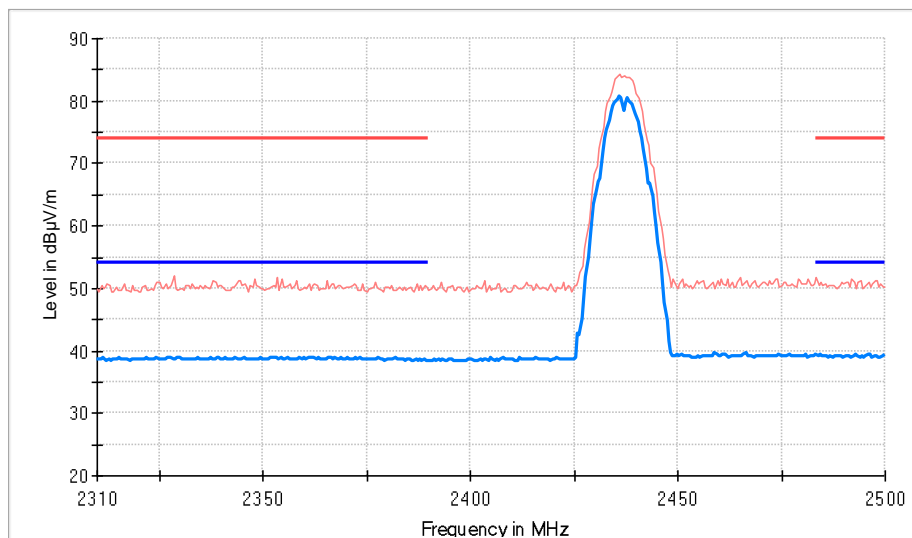
| | |
|-----------------------------|---------------------------|
| TEST RESULTS (Cont.) | |
| RESTRICTED BANDS | 2.31 GHz – 2.5 GHz |

CHANNEL: Lowest (2412 MHz)



- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

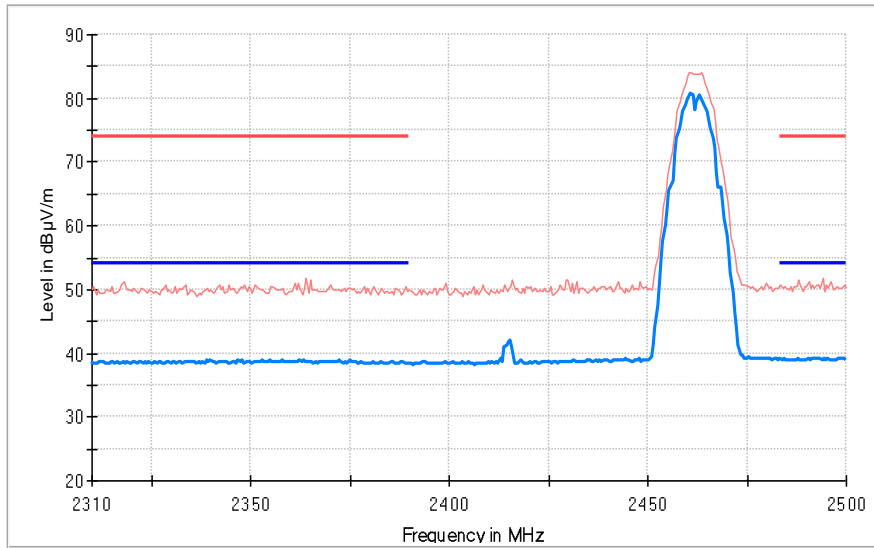
CHANNEL: Middle (2437 MHz)



- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

TEST RESULTS (Cont.)

CHANNEL: Highest (2462 MHz)



- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/02 |
| TESTED CONDITIONS MODES: | TC#02 (g mode) |
| TEST RESULTS: | PASS |

For radiated spurious emissions for OFDM modes 802.11g, 802.11n20 and 802.11n40 a preliminary scan was performed to determine the worst case.

The tables and plots show the results for the worst case of modulation and data rate: 6Mb/s for 802.11g

Frequency range 30 MHz – 1000 MHz

The spurious emissions below 1 GHz do not depend on the operating channel and mode selected in the EUT.

Frequency range 1 GHz – 26 GHz

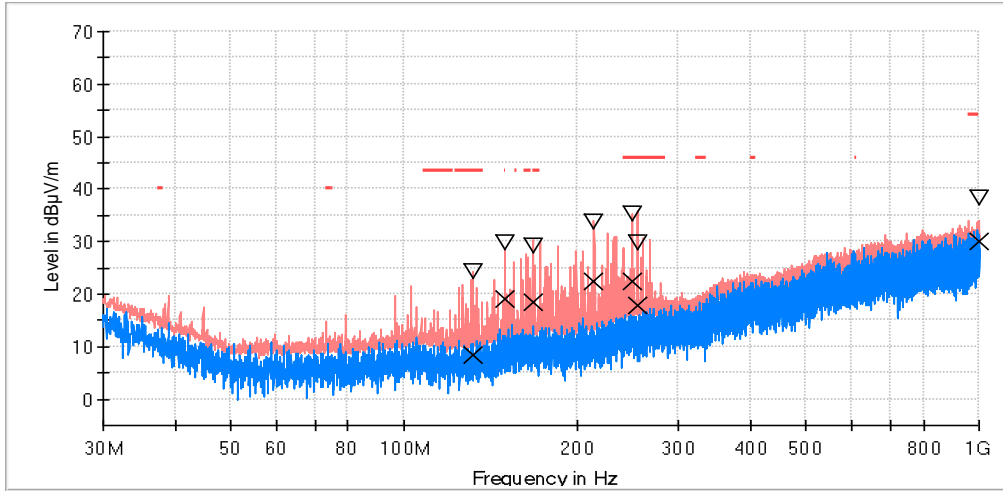
The results in the next tables show the maximum measured levels in the 1-26 GHz range including the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz (see next plots).

The radiated spurious signals detected at less than 10 dB respect to the limit for the lowest, middle and highest operating channels are showed in the tables below of each frequency range.

| | |
|-----------------------------|-----------------------|
| TEST RESULTS (Cont.) | |
| FREQUENCY RANGE | 30 MHz – 1 GHz |

CHANNEL: Middle (2437 MHz).

RF_FCC_15.247_E Field_30MHz_1GHz



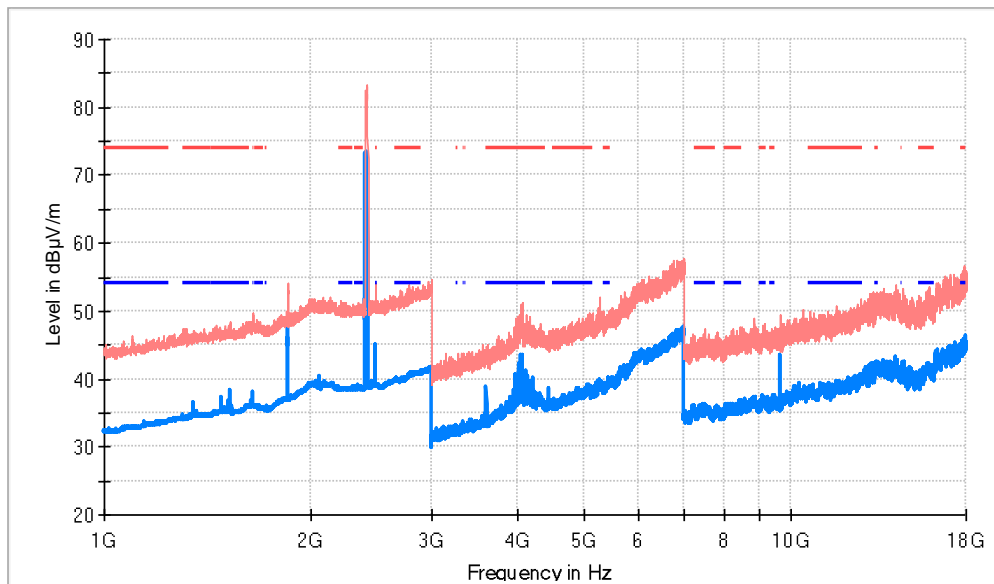
- PK+_MAXH
- PK+_CLRWR
- TX limits to Spurious Emission FCC15.247 (30MHz to 1GHz) Restricted Bands QPK Limit
- ▽ MaxPeak-PK+ (Single)
- × QuasiPeak-QPK (Single)

Result Table _ Single

| Frequency (MHz) | PK+_MAXH (dBµV/m) | QuasiPeak (dBµV/m) | Pol |
|-----------------|-------------------|--------------------|-----|
| 998.399500 | 38.29 | 30.05 | H |
| 149.649500 | 29.64 | 19.02 | V |
| 167.206500 | 29.18 | 18.55 | V |
| 214.203000 | 33.80 | 22.44 | V |
| 255.137000 | 29.71 | 17.84 | V |
| 131.947000 | 24.14 | 8.37 | V |
| 249.365500 | 35.38 | 22.34 | V |

| | |
|-----------------------------|-----------------------|
| TEST RESULTS (Cont.) | |
| FREQUENCY RANGE | 1 GHz – 18 GHz |

CHANNEL: Lowest (2412 MHz).



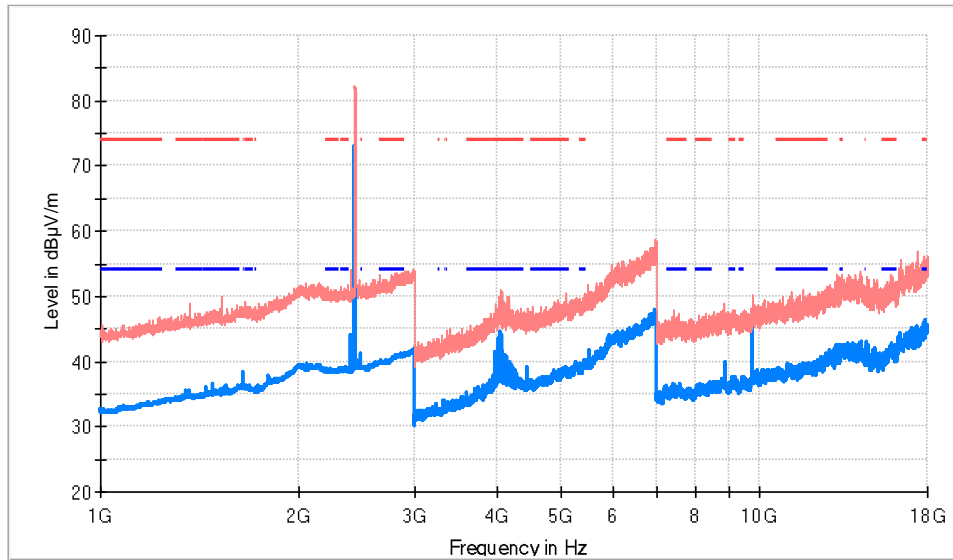
- AVG_MAXH
- PK+_MAXH
- - - TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- - - TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

Maximizations

| Frequency (MHz) | PK+_MAXH (dBµV/m) | AVG_MAXH (dBµV/m) | Pol | Comments |
|-----------------|-------------------|-------------------|-----|-------------|
| 1851.000000 | 54.06 | 47.67 | H | |
| 2408.000000 | 82.70 | 73.54 | H | Fundamental |
| 2481.000000 | 53.05 | 45.01 | H | |
| 3609.000000 | 44.45 | 38.82 | V | |
| 4048.000000 | 49.65 | 43.43 | V | |
| 9648.000000 | 49.35 | 43.51 | H | |

TEST RESULTS (Cont.)

CHANNEL: Middle (2437 MHz).



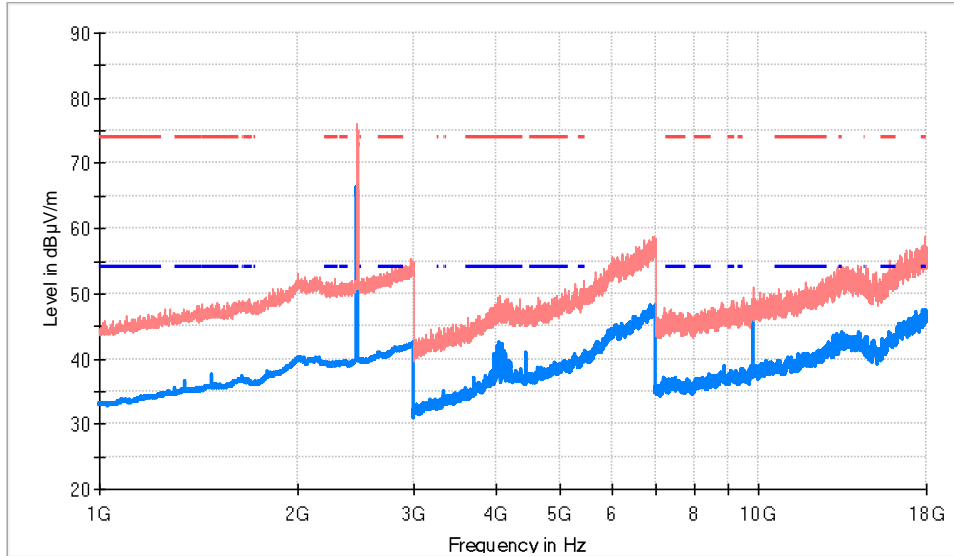
- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

Maximizations

| Frequency (MHz) | PK+_MAXH (dBµV/m) | AVG_MAXH (dBµV/m) | Pol | Comments |
|-----------------|-------------------|-------------------|-----|-------------|
| 2433.500000 | 82.33 | 72.89 | H | Fundamental |
| 4049.500000 | 50.62 | 44.60 | V | |
| 8909.500000 | 46.63 | 39.81 | V | |
| 9748.000000 | 50.01 | 45.62 | V | |

TEST RESULTS (Cont.)

CHANNEL: Highest (2462 MHz).



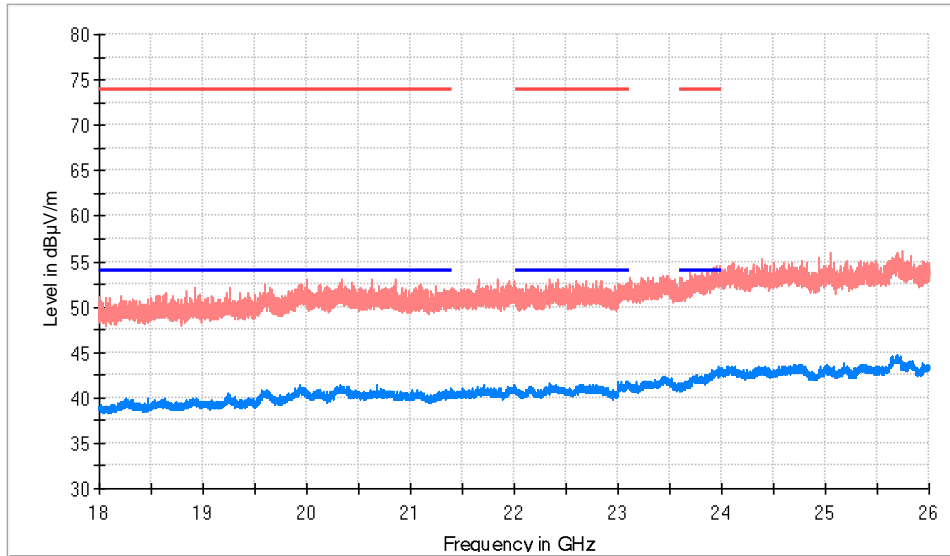
- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC1 5.2.47 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC1 5.2.47 (1GHz to 26 GHz) Restricted Bands AVG Limit

Maximizations

| Frequency (MHz) | PK+_MAXH (dBµV/m) | AVG_MAXH (dBµV/m) | Height (cm) | Comments |
|-----------------|-------------------|-------------------|-------------|-------------|
| 2458.000000 | 74.97 | 66.35 | V | Fundamental |
| 4053.500000 | 49.09 | 42.59 | V | |
| 4455.000000 | 46.67 | 41.03 | H | |
| 9848.000000 | 50.14 | 46.00 | V | |

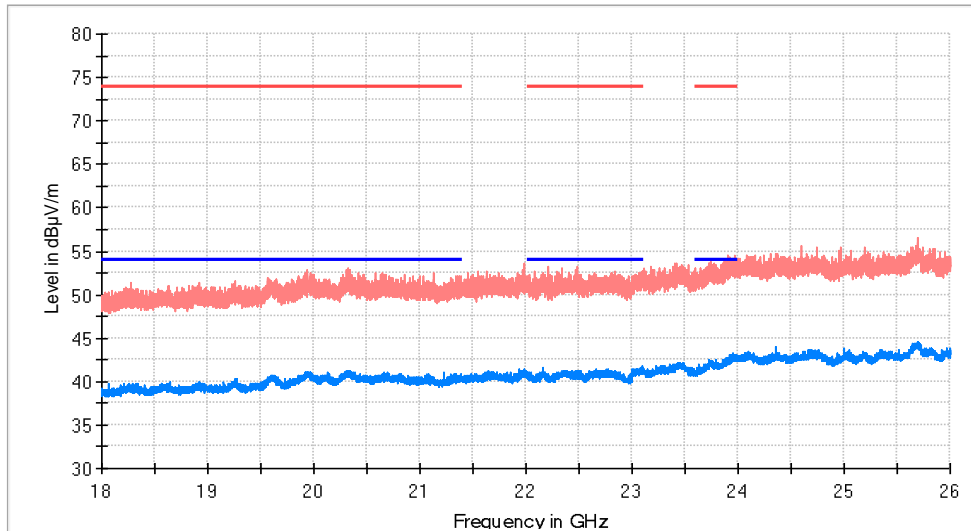
| | |
|-----------------------------|------------------------|
| TEST RESULTS (Cont.) | |
| FREQUENCY RANGE | 18 GHz – 26 GHz |

CHANNEL: Lowest (2412 MHz).



- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

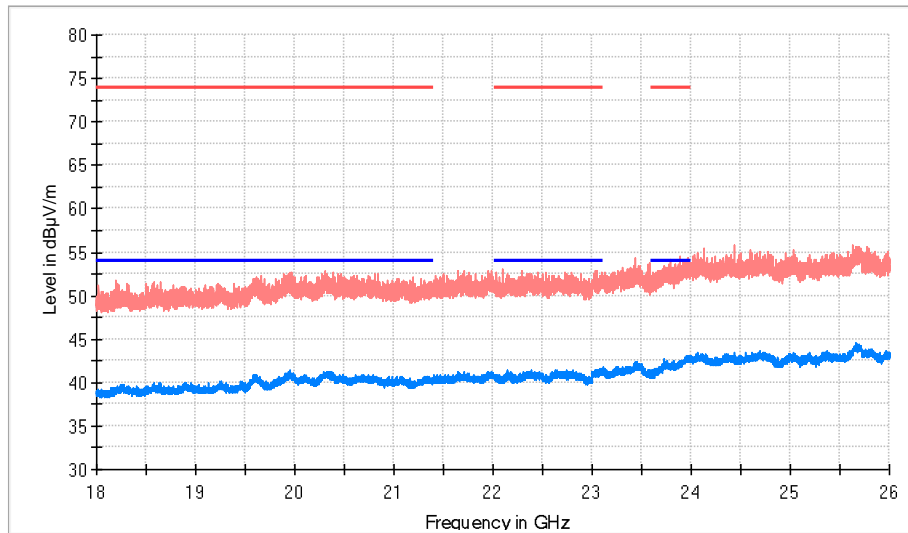
CHANNEL: Middle (2437 MHz).



- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

TEST RESULTS (Cont.)

CHANNEL: Highest (2462 MHz).

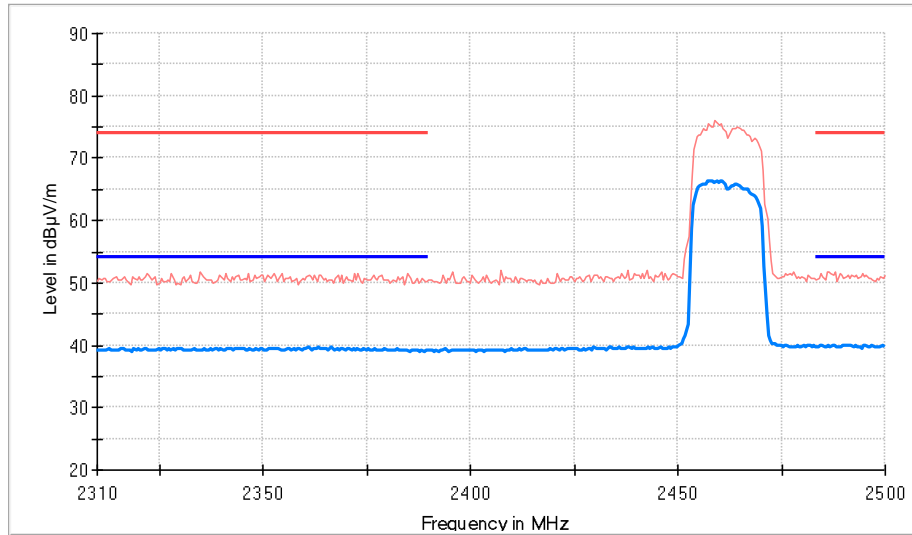


- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC1 5.247 (1 GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC1 5.247 (1 GHz to 26 GHz) Restricted Bands AVG Limit

| TEST RESULTS (Cont.) | |
|---|--------------------|
| RESTRICTED BANDS | 2.31 GHz – 2.5 GHz |
| CHANNEL: Lowest (2412 MHz) | |
| <p data-bbox="319 1086 1141 1176"> — AVG_MAXH — PK+_MAXH — TX limits to Spurious Emission FCC1 5.247 (1 GHz to 26 GHz) Restricted Bands PK Limit — TX limits to Spurious Emission FCC1 5.247 (1 GHz to 26 GHz) Restricted Bands AVG Limit </p> | |
| CHANNEL: Middle (2437 MHz) | |
| <p data-bbox="319 1915 1141 2004"> — AVG_MAXH — PK+_MAXH — TX limits to Spurious Emission FCC1 5.247 (1 GHz to 26 GHz) Restricted Bands PK Limit — TX limits to Spurious Emission FCC1 5.247 (1 GHz to 26 GHz) Restricted Bands AVG Limit </p> | |

TEST RESULTS (Cont.)

CHANNEL: Highest (2462 MHz)



- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit