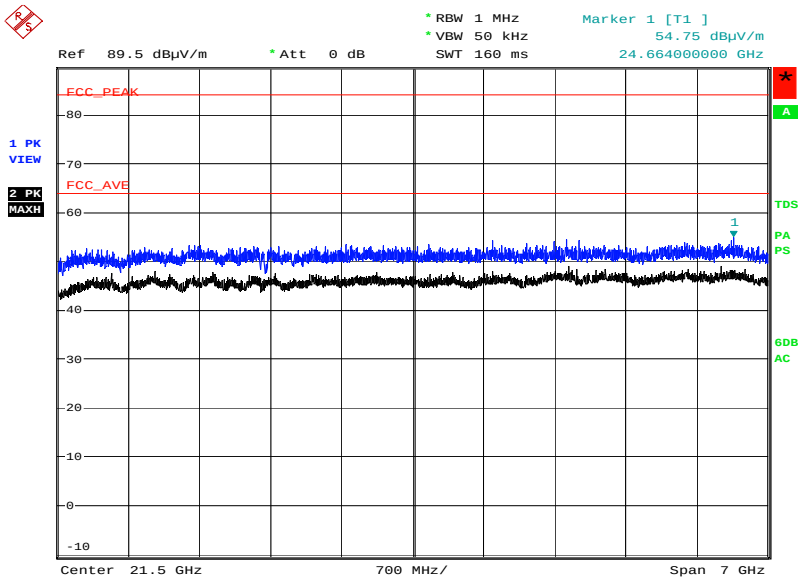




Product Service

802.11g (2nd Diversity Antenna), 2462 MHz, 12 Mbps, 18 GHz to 25 GHz, Spurious Radiated Emissions Plot



Date: 3.JUL.2016 13:53:57

FCC 47 CFR Part 15, Limit Clause 15.247 (d)

Emissions outside the restricted bands shall be at least 20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. 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 below the fundamental instead of 20 dB.

FCC 47 CFR Part 15, Limit Clause 15.205

|                               | Peak (dBμV/m) | Average (dBμV/m) |
|-------------------------------|---------------|------------------|
| Restricted Bands of Operation | As per 15.209 | As per 15.209    |

FCC 47 CFR Part 15, Limit Clause 15.209

| Frequency (MHz) | Field Strength |                  |               | Measurement Distance (m) |
|-----------------|----------------|------------------|---------------|--------------------------|
|                 | (μV/m)         | Average (dBμV/m) | Peak (dBμV/m) |                          |
| 30-88           | 100            | 40.0             | 60.0          | 3                        |
| 88-216          | 150            | 43.5             | 63.5          | 3                        |
| 216-960         | 200            | 46.0             | 66.0          | 3                        |
| Above 960       | 500            | 54.0             | 74.0          | 3                        |



Product Service

Industry Canada RSS-247, Limit Clause, 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.



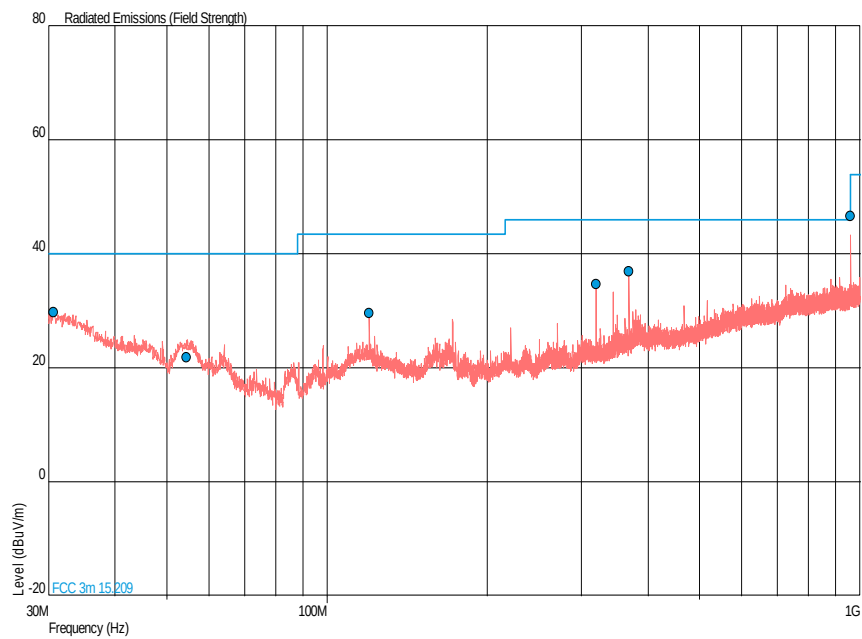
Product Service

5.00 V DC Supply

802.11n 20 MHz Bandwidth, 2412 MHz, MCS7, 30 MHz to 1 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | QP Level (dB $\mu$ V/m) | QP Margin (dB $\mu$ V/m) | QP Level ( $\mu$ V/m) | QP Margin ( $\mu$ V/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|-------------------------|--------------------------|-----------------------|------------------------|-----------|------------|--------------|
| 30.677          | 29.8                    | -10.2                    | 30.9                  | -69.1                  | 43        | 3.53       | Vertical     |
| 54.540          | 21.9                    | -18.1                    | 12.4                  | -87.6                  | 111       | 1.00       | Vertical     |
| 120.012         | 29.7                    | -13.8                    | 30.5                  | -119.5                 | 299       | 1.09       | Vertical     |
| 319.494         | 34.7                    | -11.3                    | 54.3                  | -145.7                 | 0         | 1.00       | Horizontal   |
| 368.645         | 36.9                    | -9.1                     | 70.0                  | -130.0                 | 360       | 1.00       | Horizontal   |
| 960.021         | 46.7                    | -7.3                     | 216.3                 | -284.7                 | 251       | 1.90       | Horizontal   |

802.11n 20 MHz Bandwidth, 2412 MHz, MCS7, 30 MHz to 1 GHz, Spurious Radiated Emissions Plot





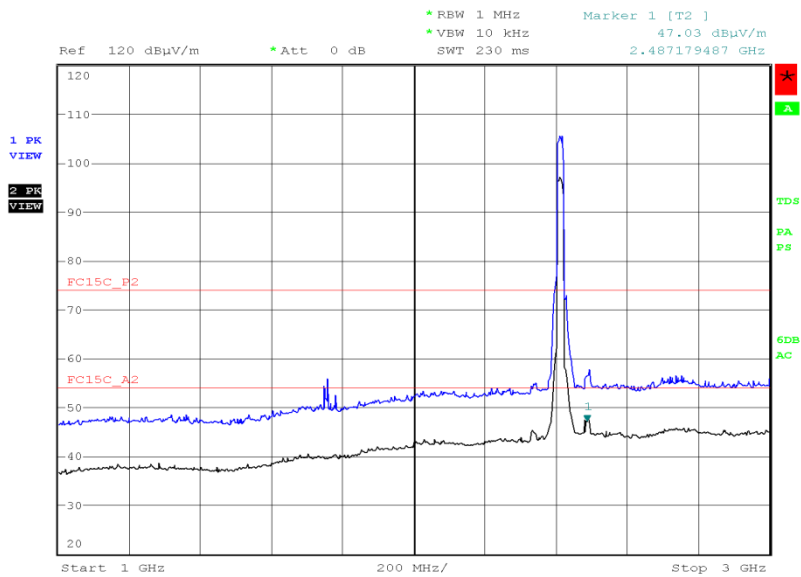
Product Service

802.11n 20 MHz Bandwidth, 2412 MHz, MCS7, 1 GHz to 25 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | Final Peak (dBμV/m) | Final Average (dBμV/m) | Final Peak (μV/m) | Final Average (μV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|---------------------|------------------------|-------------------|----------------------|-----------|------------|--------------|
| *               |                     |                        |                   |                      |           |            |              |

\*No emissions were detected within 6 dB of the limit.

802.11n 20 MHz Bandwidth, 2412 MHz, MCS7, 1 GHz to 3 GHz, Spurious Radiated Emissions Plot

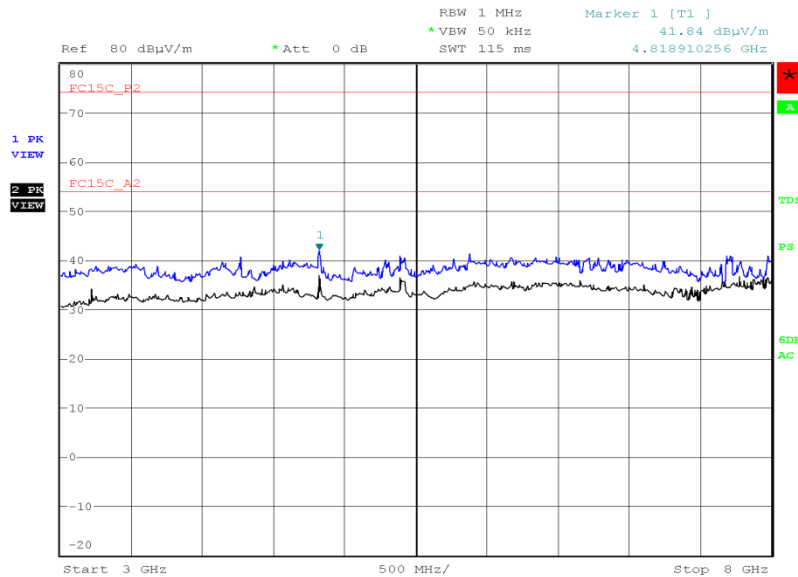


Date: 25.MAY.2016 19:17:11



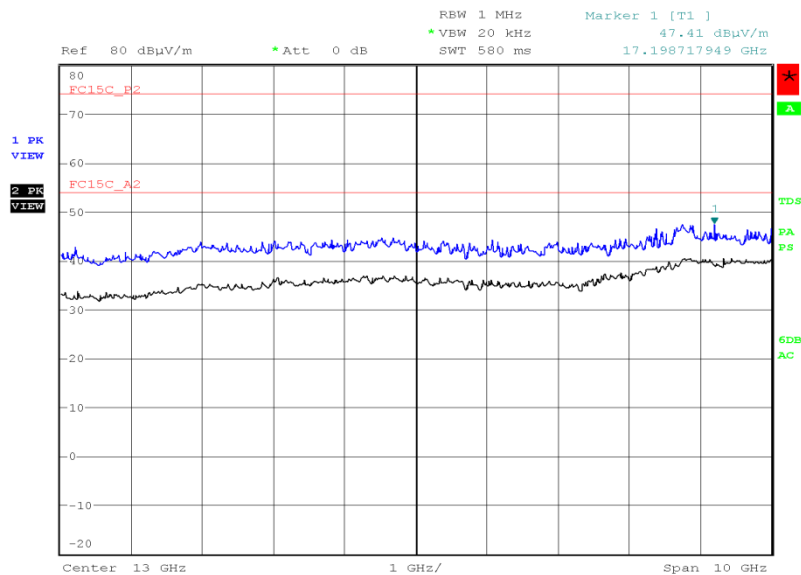
Product Service

### 802.11n 20 MHz Bandwidth, 2412 MHz, MCS7, 3 GHz to 8 GHz, Spurious Radiated Emissions Plot



Date: 26.MAY.2016 10:46:17

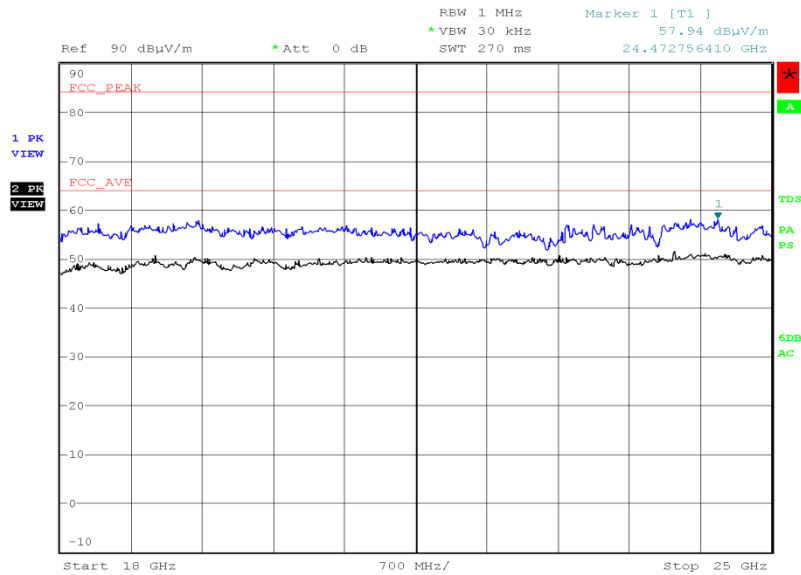
### 802.11n 20 MHz Bandwidth, 2412 MHz, MCS7, 8 GHz to 18 GHz, Spurious Radiated Emissions Plot



Date: 26.MAY.2016 08:05:18



Product Service

802.11n 20 MHz Bandwidth, 2412 MHz, MCS7, 18 GHz to 25 GHz, Spurious Radiated Emissions Plot

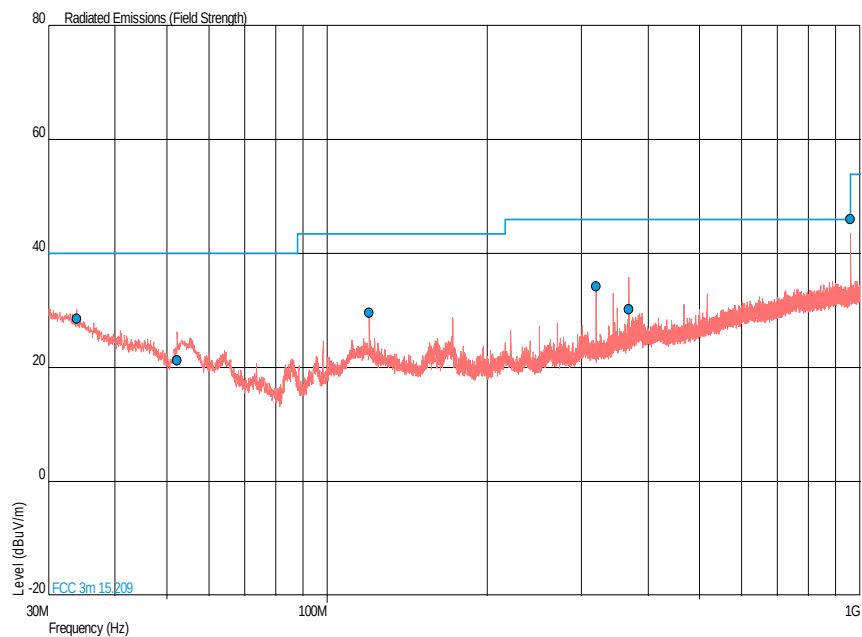
Date: 24.MAY.2016 07:20:45



802.11n 20 MHz Bandwidth, 2437 MHz, MCS7, 30 MHz to 1 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | QP Level (dBμV/m) | QP Margin (dBμV/m) | QP Level (μV/m) | QP Margin (μV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|-------------------|--------------------|-----------------|------------------|-----------|------------|--------------|
| 33.880          | 28.6              | -11.4              | 26.9            | -73.1            | 360       | 1.00       | Vertical     |
| 52.357          | 21.3              | -18.7              | 11.6            | -88.4            | 271       | 1.00       | Vertical     |
| 119.998         | 29.6              | -13.9              | 30.2            | -119.8           | 346       | 1.00       | Vertical     |
| 319.499         | 34.3              | -11.7              | 51.9            | -148.1           | 317       | 1.08       | Horizontal   |
| 368.638         | 30.2              | -15.8              | 32.4            | -167.6           | 281       | 1.00       | Horizontal   |
| 960.003         | 46.0              | -8.0               | 199.5           | -301.5           | 239       | 1.89       | Horizontal   |

802.11n 20 MHz Bandwidth, 2437 MHz, MCS7, 30 MHz to 1 GHz, Spurious Radiated Emissions Plot





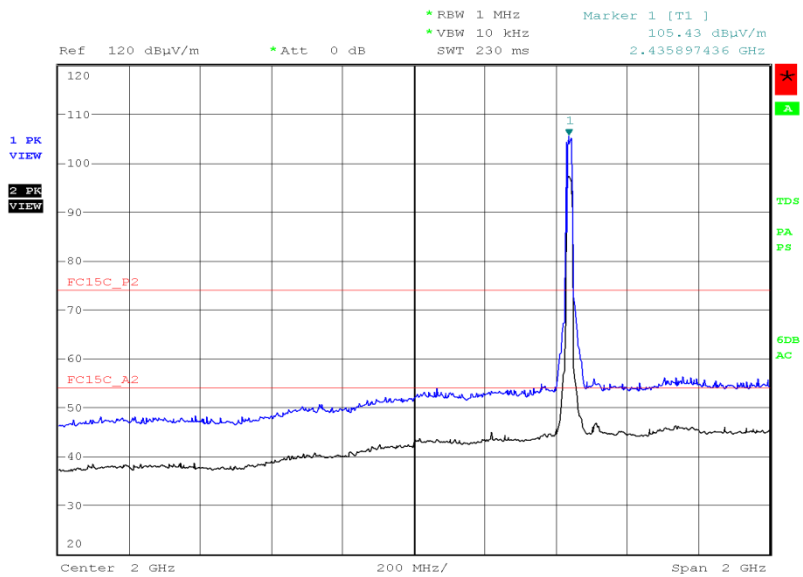
Product Service

802.11n 20 MHz Bandwidth, 2437 MHz, MCS7, 1 GHz to 25 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | Final Peak (dBμV/m) | Final Average (dBμV/m) | Final Peak (μV/m) | Final Average (μV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|---------------------|------------------------|-------------------|----------------------|-----------|------------|--------------|
| *               |                     |                        |                   |                      |           |            |              |

\*No emissions were detected within 6 dB of the limit.

802.11n 20 MHz Bandwidth, 2437 MHz, MCS7, 1 GHz to 3 GHz, Spurious Radiated Emissions Plot

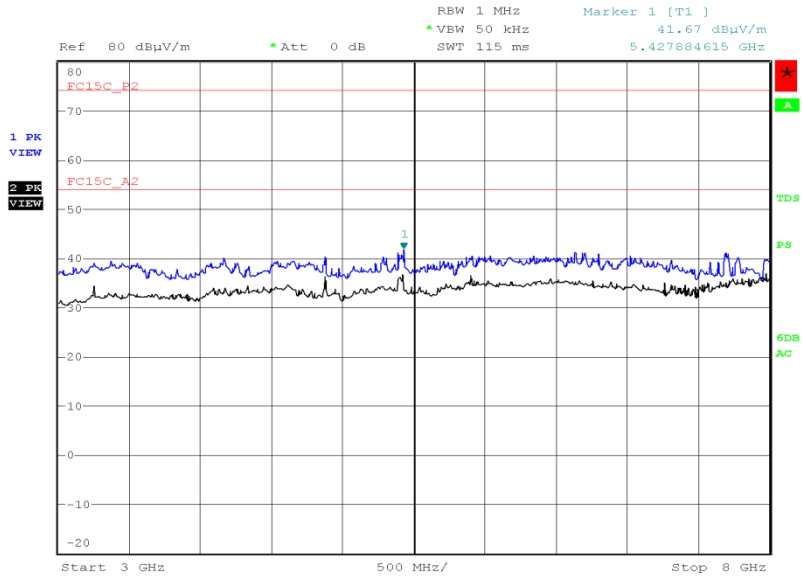


Date: 25.MAY.2016 19:24:27



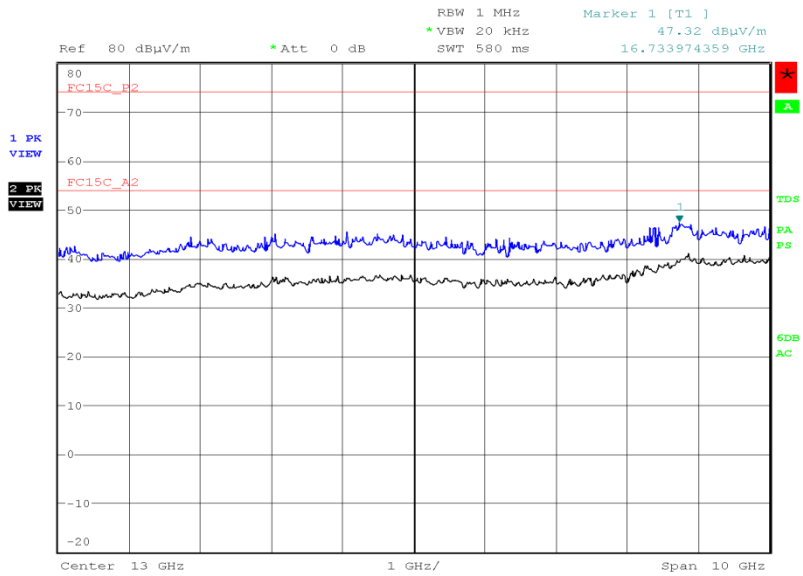
Product Service

802.11n 20 MHz Bandwidth, 2437 MHz, MCS7, 3 GHz to 8 GHz, Spurious Radiated Emissions Plot



Date: 26.MAY.2016 10:57:21

802.11n 20 MHz Bandwidth, 2437 MHz, MCS7, 8 GHz to 18 GHz, Spurious Radiated Emissions Plot



Date: 26.MAY.2016 08:09:47

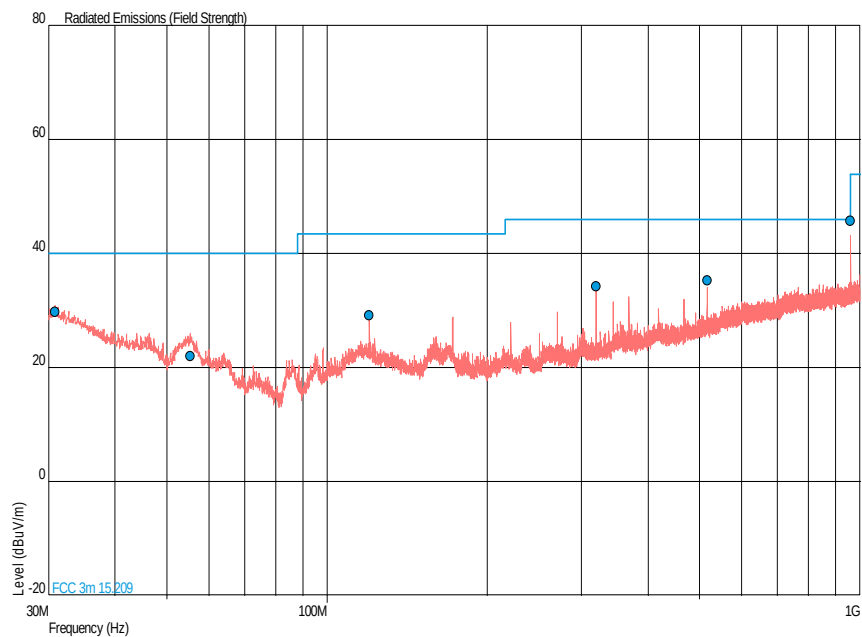




### 802.11n 20 MHz Bandwidth, 2462 MHz, MCS7, 30 MHz to 1 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | QP Level (dBμV/m) | QP Margin (dBμV/m) | QP Level (μV/m) | QP Margin (μV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|-------------------|--------------------|-----------------|------------------|-----------|------------|--------------|
| 30.829          | 29.7              | -10.3              | 30.5            | -69.5            | 360       | 2.69       | Vertical     |
| 55.326          | 22.0              | -18.0              | 12.6            | -87.4            | 34        | 1.00       | Vertical     |
| 119.983         | 29.1              | -14.4              | 28.5            | -121.5           | 335       | 1.00       | Vertical     |
| 319.474         | 34.3              | -11.7              | 51.9            | -148.1           | 312       | 1.00       | Horizontal   |
| 516.084         | 35.3              | -10.7              | 58.2            | -141.8           | 60        | 1.00       | Vertical     |
| 960.018         | 45.8              | -8.2               | 195.0           | -306.0           | 279       | 1.99       | Horizontal   |

### 802.11n 20 MHz Bandwidth, 2462 MHz, MCS7, 30 MHz to 1 GHz, Spurious Radiated Emissions Plot





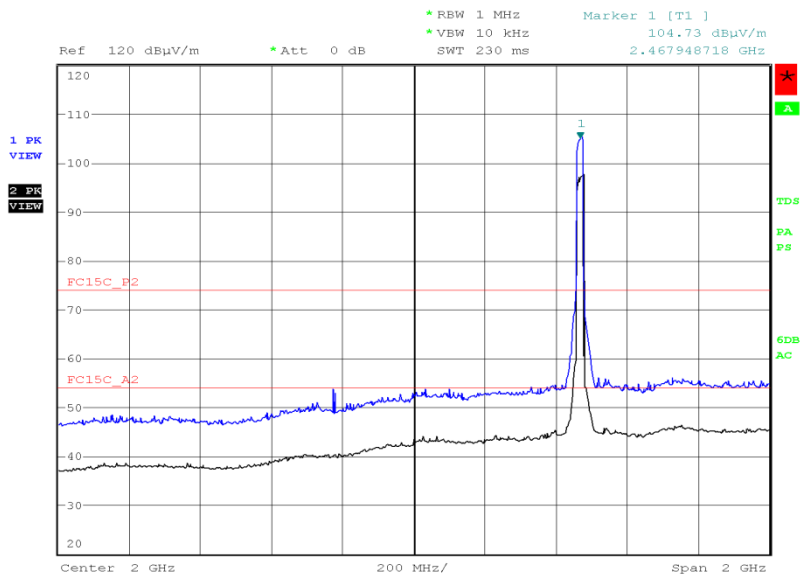
Product Service

802.11n 20 MHz Bandwidth, 2462 MHz, MCS7, 1 GHz to 25 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | Final Peak (dBμV/m) | Final Average (dBμV/m) | Final Peak (μV/m) | Final Average (μV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|---------------------|------------------------|-------------------|----------------------|-----------|------------|--------------|
| *               |                     |                        |                   |                      |           |            |              |

\*No emissions were detected within 6 dB of the limit.

802.11n 20 MHz Bandwidth, 2462 MHz, MCS7, 1 GHz to 3 GHz, Spurious Radiated Emissions Plot

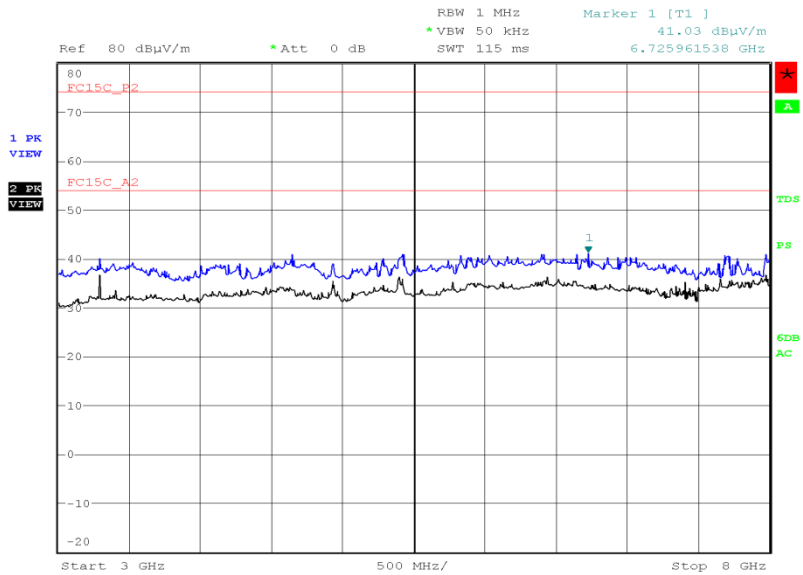


Date: 25.MAY.2016 19:31:37



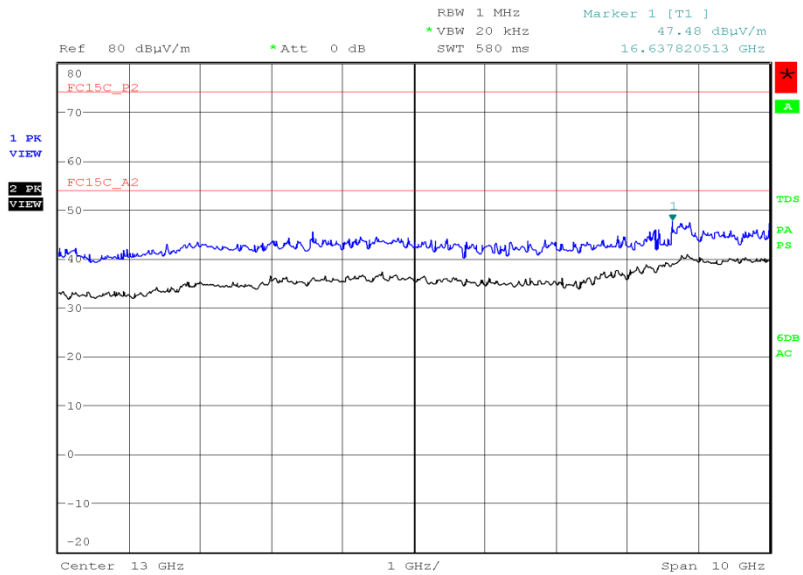
Product Service

802.11n 20 MHz Bandwidth, 2462 MHz, MCS7, 3 GHz to 8 GHz, Spurious Radiated Emissions Plot



Date: 26.MAY.2016 11:17:52

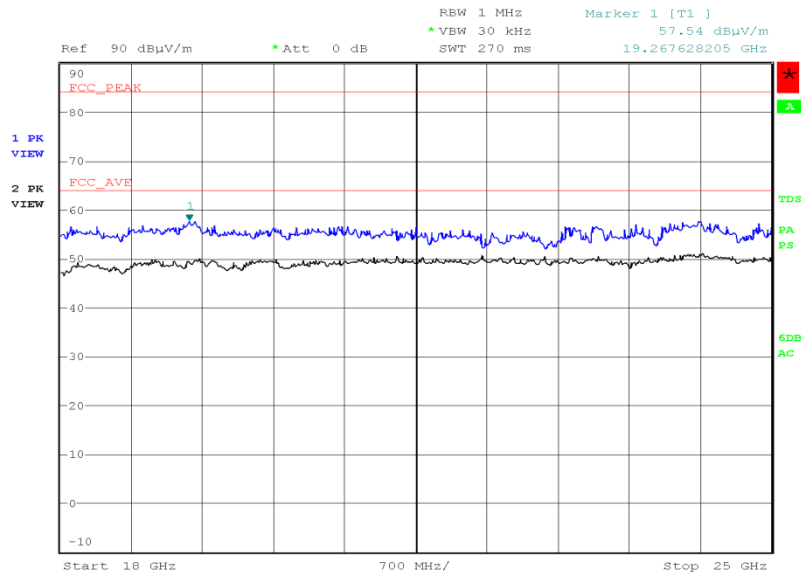
802.11n 20 MHz Bandwidth, 2462 MHz, MCS7, 8 GHz to 18 GHz, Spurious Radiated Emissions Plot



Date: 26.MAY.2016 08:14:42



### 802.11n 20 MHz Bandwidth, 2462 MHz, MCS7, 18 GHz to 25 GHz, Spurious Radiated Emissions Plot



Date: 24.MAY.2016 07:35:23

### FCC 47 CFR Part 15, Limit Clause 15.247 (d)

Emissions outside the restricted bands shall be at least 20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. 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 below the fundamental instead of 20 dB.

### FCC 47 CFR Part 15, Limit Clause 15.205

|                               | Peak (dBμV/m) | Average (dBμV/m) |
|-------------------------------|---------------|------------------|
| Restricted Bands of Operation | As per 15.209 | As per 15.209    |

### FCC 47 CFR Part 15, Limit Clause 15.209

| Frequency (MHz) | Field Strength |                  |               | Measurement Distance (m) |
|-----------------|----------------|------------------|---------------|--------------------------|
|                 | (μV/m)         | Average (dBμV/m) | Peak (dBμV/m) |                          |
| 30-88           | 100            | 40.0             | 60.0          | 3                        |
| 88-216          | 150            | 43.5             | 63.5          | 3                        |
| 216-960         | 200            | 46.0             | 66.0          | 3                        |
| Above 960       | 500            | 54.0             | 74.0          | 3                        |



Product Service

Industry Canada RSS-247, Limit Clause, 5.5

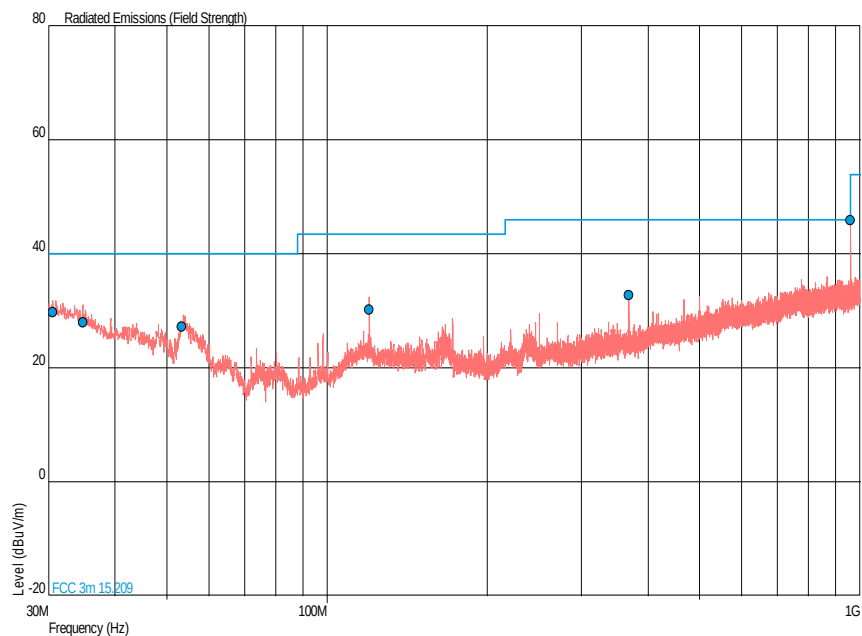
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.



## 5.00 V DC Supply

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2412 MHz, MCS7, 30 MHz to 1 GHz,  
Spurious Radiated Emissions Results

| Frequency (MHz) | QP Level (dB $\mu$ V/m) | QP Margin (dB $\mu$ V/m) | QP Level ( $\mu$ V/m) | QP Margin ( $\mu$ V/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|-------------------------|--------------------------|-----------------------|------------------------|-----------|------------|--------------|
| 30.590          | 29.7                    | -10.3                    | 30.5                  | -69.5                  | 281       | 1.00       | Vertical     |
| 34.803          | 28.0                    | -12.0                    | 25.1                  | -74.9                  | 195       | 1.00       | Horizontal   |
| 53.353          | 27.3                    | -12.7                    | 23.2                  | -76.8                  | 343       | 1.00       | Vertical     |
| 120.010         | 30.2                    | -13.3                    | 32.4                  | -117.6                 | 275       | 1.00       | Vertical     |
| 368.633         | 32.7                    | -13.3                    | 43.2                  | -156.8                 | 26        | 1.50       | Vertical     |
| 960.021         | 45.9                    | -8.1                     | 197.2                 | -303.8                 | 314       | 1.00       | Horizontal   |

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2412 MHz, MCS7, 30 MHz to 1 GHz,  
Spurious Radiated Emissions Plot




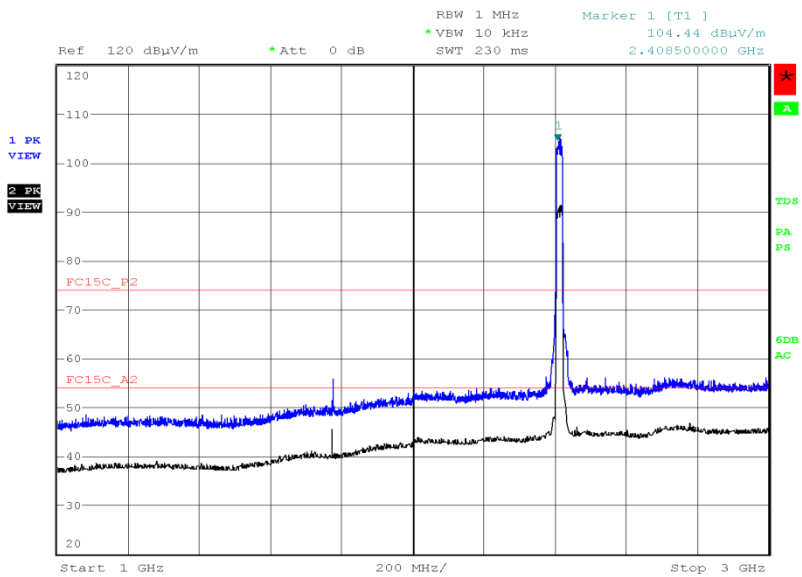
Product Service

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2412 MHz, MCS7, 1 GHz to 25 GHz,  
Spurious Radiated Emissions Results

| Frequency<br>(MHz) | Final Peak<br>(dBμV/m) | Final<br>Average<br>(dBμV/m) | Final Peak<br>(μV/m) | Final<br>Average<br>(μV/m) | Angle (°) | Height (m) | Polarisation |
|--------------------|------------------------|------------------------------|----------------------|----------------------------|-----------|------------|--------------|
| *                  |                        |                              |                      |                            |           |            |              |

\*No emissions were detected within 10 dB of the limit.

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2412 MHz, MCS7, 1 GHz to 3 GHz,  
Spurious Radiated Emissions Plot

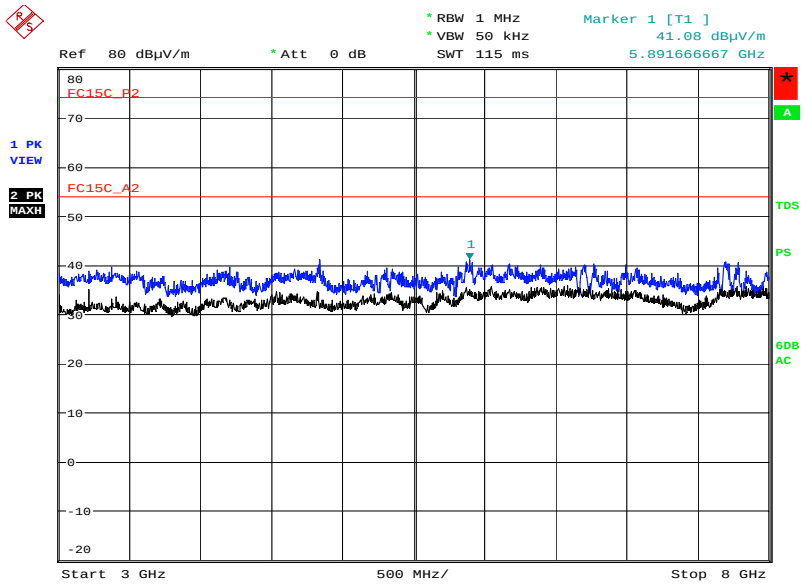


Date: 15.JUN.2016 13:27:49



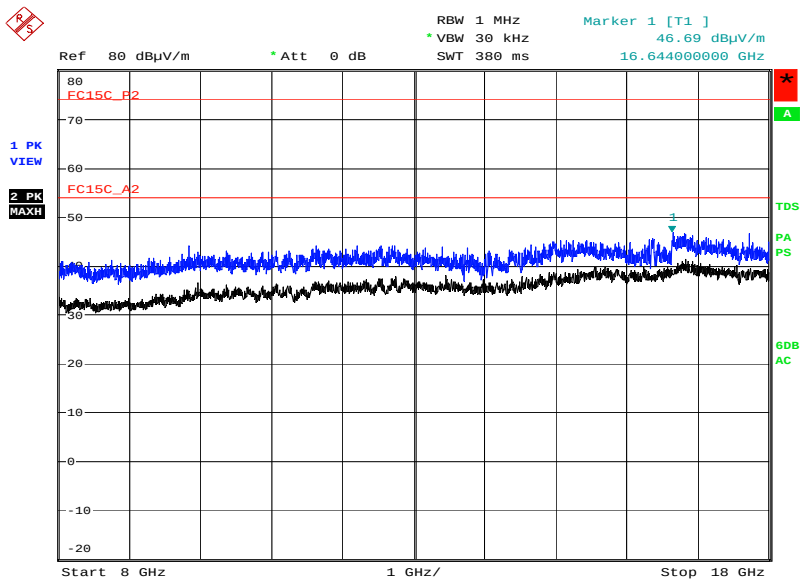
Product Service

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2412 MHz, MCS7, 3 GHz to 8 GHz,  
Spurious Radiated Emissions Plot



Date: 6.JUL.2016 21:55:12

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2412 MHz, MCS7, 8 GHz to 18 GHz,  
Spurious Radiated Emissions Plot

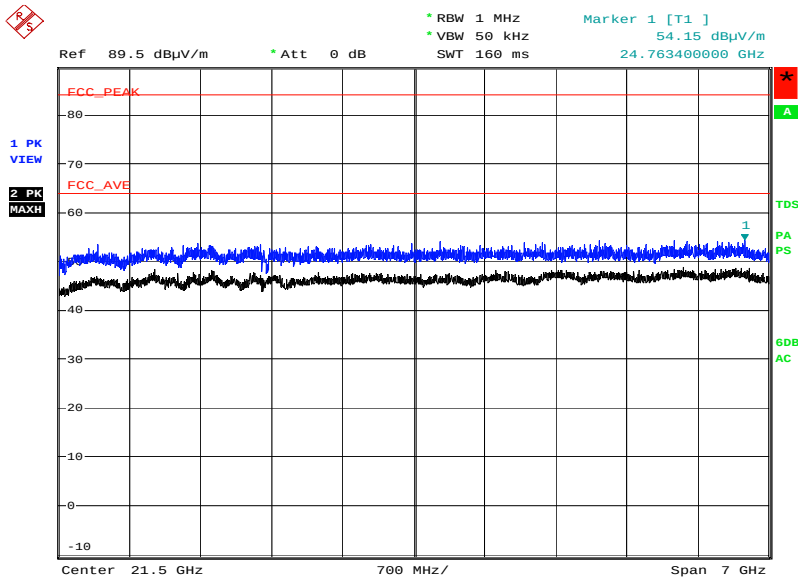


Date: 29.JUN.2016 21:08:06



Product Service

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2412 MHz, MCS7, 18 GHz to 25 GHz,  
Spurious Radiated Emissions Plot



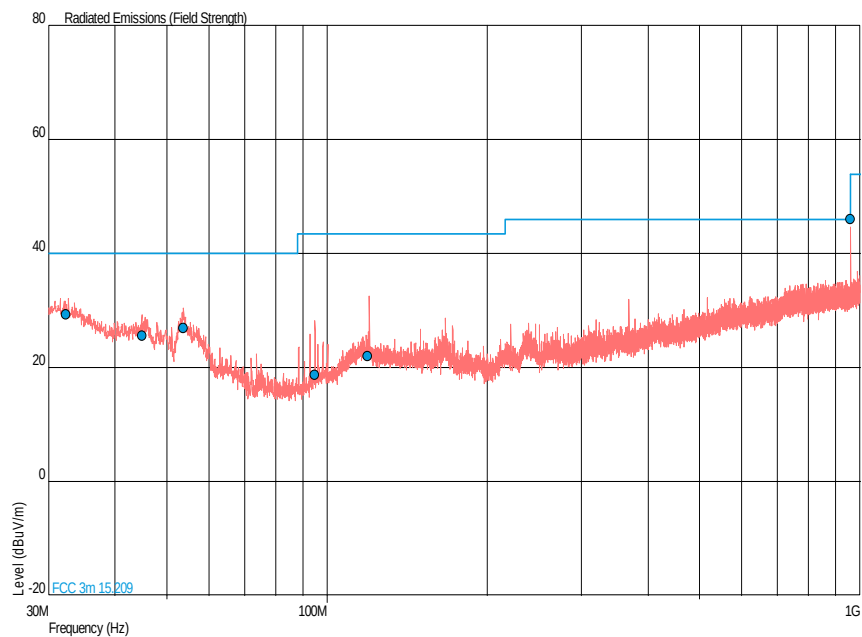
Date: 3.JUL.2016 13:57:44



802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2437 MHz, MCS7, 30 MHz to 1 GHz,  
Spurious Radiated Emissions Results

| Frequency (MHz) | QP Level (dBμV/m) | QP Margin (dBμV/m) | QP Level (μV/m) | QP Margin (μV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|-------------------|--------------------|-----------------|------------------|-----------|------------|--------------|
| 32.382          | 29.4              | -10.6              | 29.5            | -70.5            | 86        | 2.99       | Horizontal   |
| 44.932          | 25.6              | -14.4              | 19.1            | -80.9            | 125       | 1.00       | Vertical     |
| 53.681          | 26.9              | -13.1              | 22.1            | -77.9            | 360       | 1.00       | Vertical     |
| 94.858          | 18.7              | -24.8              | 8.6             | -141.4           | 295       | 1.00       | Vertical     |
| 118.906         | 22.0              | -21.5              | 12.6            | -137.4           | 348       | 1.77       | Vertical     |
| 960.003         | 46.1              | -7.9               | 201.8           | -299.2           | 306       | 1.00       | Horizontal   |

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2437 MHz, MCS7, 30 MHz to 1 GHz,  
Spurious Radiated Emissions Plot





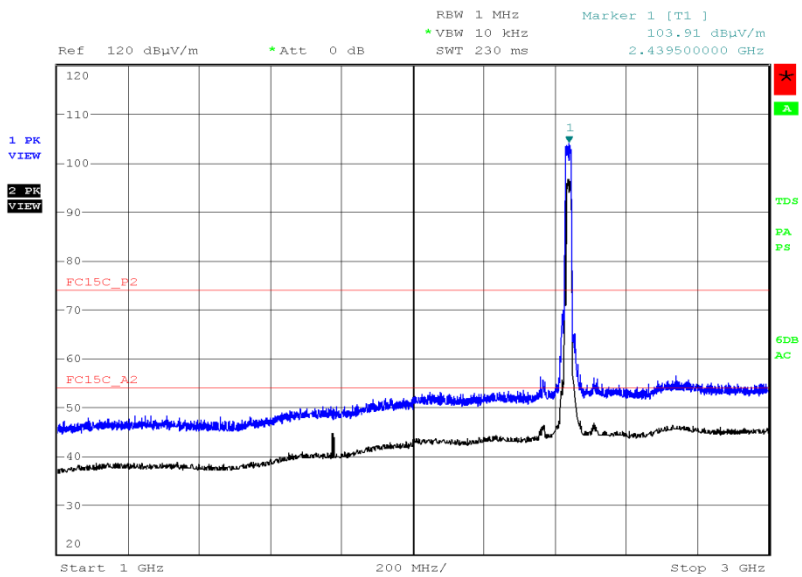
Product Service

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2437 MHz, MCS7, 1 GHz to 25 GHz,  
Spurious Radiated Emissions Results

| Frequency<br>(MHz) | Final Peak<br>(dBμV/m) | Final<br>Average<br>(dBμV/m) | Final Peak<br>(μV/m) | Final<br>Average<br>(μV/m) | Angle (°) | Height (m) | Polarisation |
|--------------------|------------------------|------------------------------|----------------------|----------------------------|-----------|------------|--------------|
| *                  |                        |                              |                      |                            |           |            |              |

\*No emissions were detected within 10 dB of the limit.

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2437 MHz, MCS7, 1 GHz to 3 GHz,  
Spurious Radiated Emissions Plot

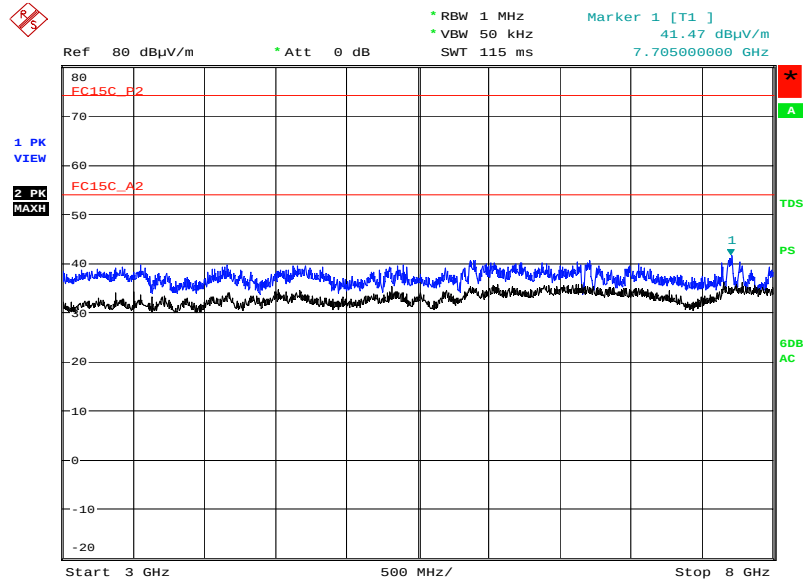


Date: 15.JUN.2016 13:20:21



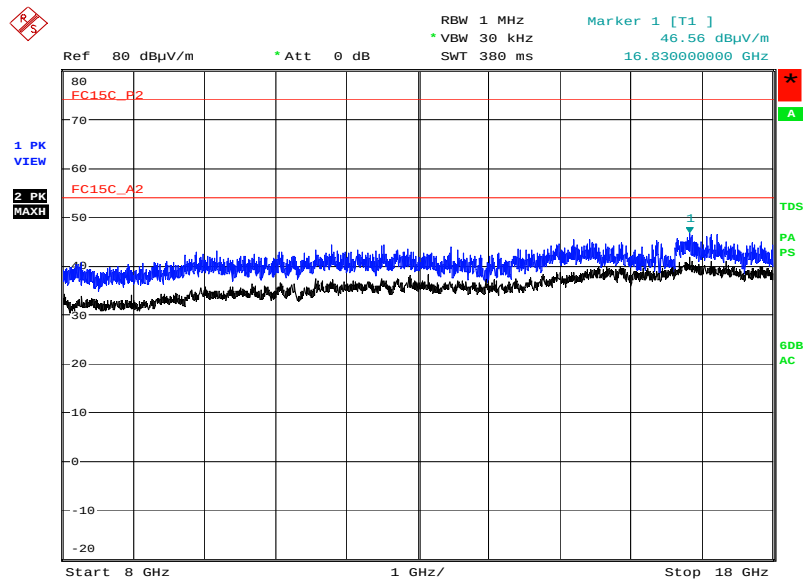
Product Service

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2437 MHz, MCS7, 3 GHz to 8 GHz,  
Spurious Radiated Emissions Plot



Date: 6.JUL.2016 22:07:39

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2437 MHz, MCS7, 8 GHz to 18 GHz,  
Spurious Radiated Emissions Plot

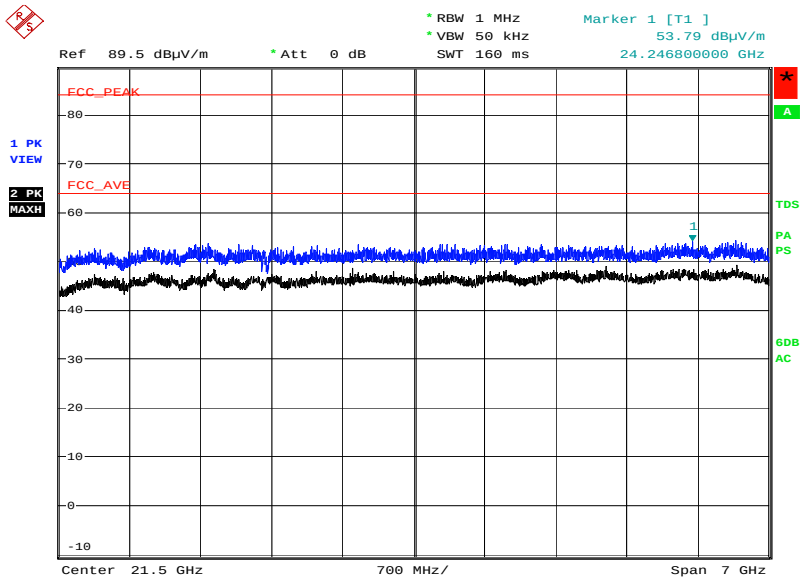


Date: 29.JUN.2016 21:16:29



Product Service

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2437 MHz, MCS7, 18 GHz to 25 GHz,  
Spurious Radiated Emissions Plot



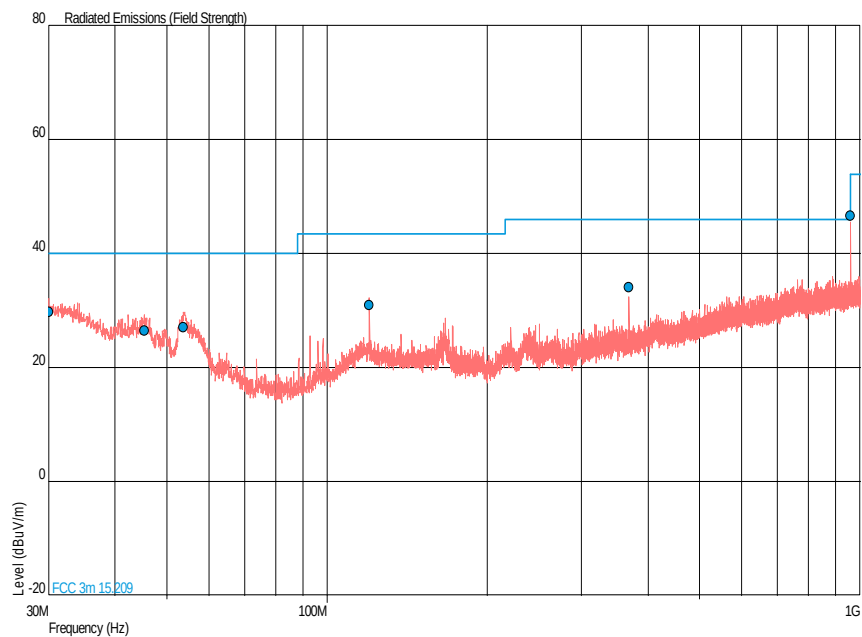
Date: 3.JUL.2016 14:00:31



802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2462 MHz, MCS7, 30 MHz to 1 GHz,  
Spurious Radiated Emissions Results

| Frequency (MHz) | QP Level (dBμV/m) | QP Margin (dBμV/m) | QP Level (μV/m) | QP Margin (μV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|-------------------|--------------------|-----------------|------------------|-----------|------------|--------------|
| 30.045          | 29.8              | -10.2              | 30.9            | -69.1            | 360       | 1.00       | Vertical     |
| 45.368          | 26.4              | -13.6              | 20.9            | -79.1            | 174       | 1.00       | Vertical     |
| 53.657          | 27.0              | -13.0              | 22.4            | -77.6            | 359       | 1.00       | Vertical     |
| 120.010         | 31.0              | -12.5              | 35.5            | -114.5           | 296       | 1.00       | Vertical     |
| 368.645         | 34.1              | -11.9              | 50.7            | -149.3           | 0         | 1.59       | Vertical     |
| 960.005         | 46.6              | -7.4               | 213.8           | -287.2           | 314       | 1.97       | Horizontal   |

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2462 MHz, MCS7, 30 MHz to 1 GHz,  
Spurious Radiated Emissions Plot





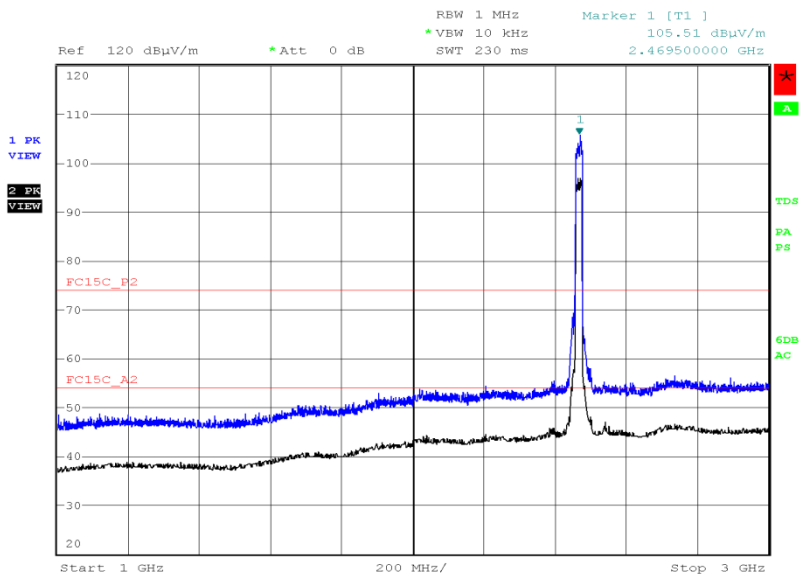
Product Service

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2462 MHz, MCS7, 1 GHz to 25 GHz,  
Spurious Radiated Emissions Results

| Frequency<br>(MHz) | Final Peak<br>(dBμV/m) | Final<br>Average<br>(dBμV/m) | Final Peak<br>(μV/m) | Final<br>Average<br>(μV/m) | Angle (°) | Height (m) | Polarisation |
|--------------------|------------------------|------------------------------|----------------------|----------------------------|-----------|------------|--------------|
| *                  |                        |                              |                      |                            |           |            |              |

\*No emissions were detected within 10 dB of the limit.

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2462 MHz, MCS7, 1 GHz to 3 GHz,  
Spurious Radiated Emissions Plot

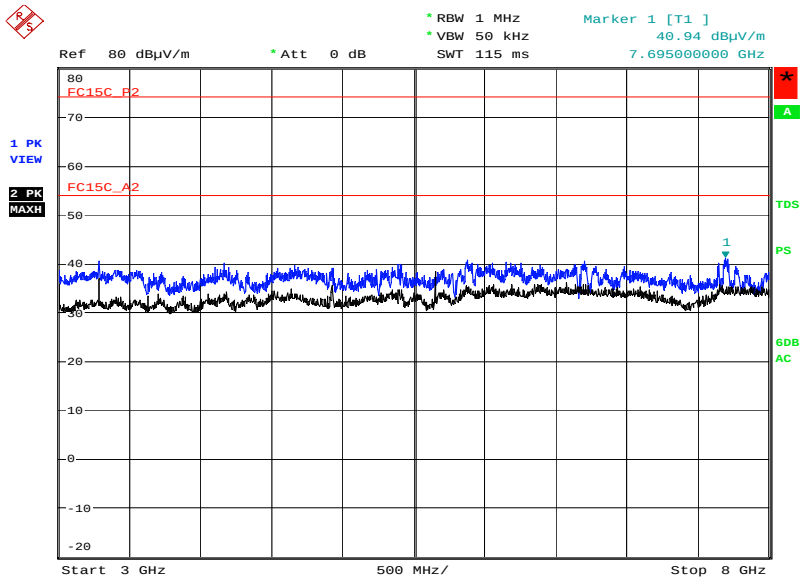


Date: 15.JUN.2016 13:33:39



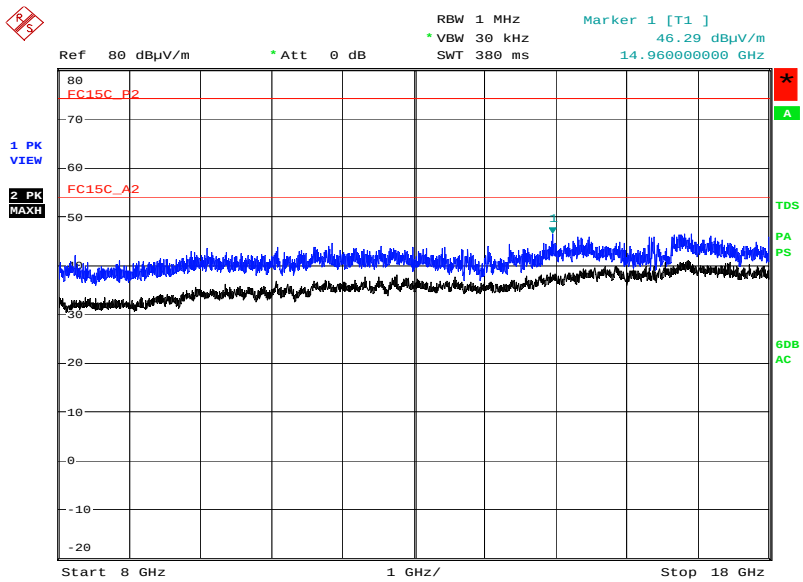
Product Service

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2462 MHz, MCS7, 3 GHz to 8 GHz,  
Spurious Radiated Emissions Plot



Date: 6.JUL.2016 22:14:53

802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2462 MHz, MCS7, 8 GHz to 18 GHz,  
Spurious Radiated Emissions Plot

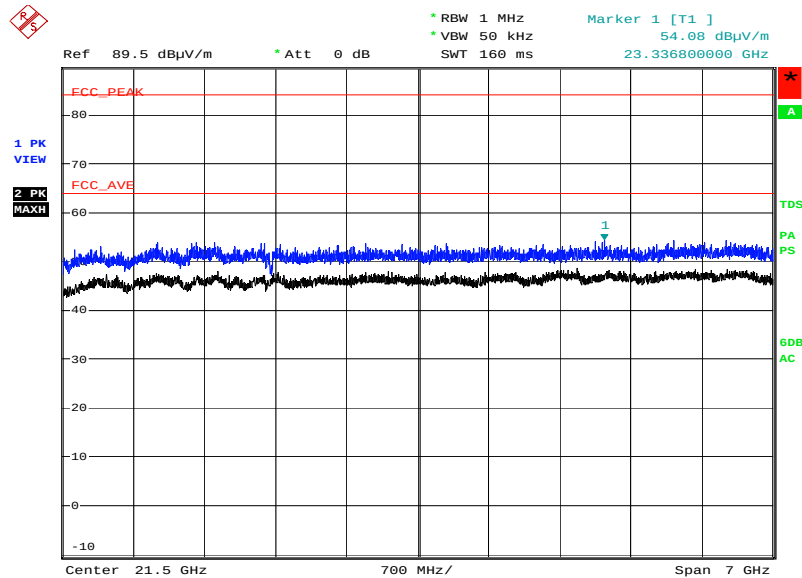


Date: 29.JUN.2016 21:26:41



Product Service

### 802.11n 20 MHz Bandwidth (2nd Diversity Antenna), 2462 MHz, MCS7, 18 GHz to 25 GHz, Spurious Radiated Emissions Plot



Date: 3.JUL.2016 14:03:14

### FCC 47 CFR Part 15, Limit Clause 15.247 (d)

Emissions outside the restricted bands shall be at least 20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. 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 below the fundamental instead of 20 dB.

### FCC 47 CFR Part 15, Limit Clause 15.205

|                               | Peak (dBμV/m) | Average (dBμV/m) |
|-------------------------------|---------------|------------------|
| Restricted Bands of Operation | As per 15.209 | As per 15.209    |

### FCC 47 CFR Part 15, Limit Clause 15.209

| Frequency (MHz) | Field Strength |                  |               | Measurement Distance (m) |
|-----------------|----------------|------------------|---------------|--------------------------|
|                 | (μV/m)         | Average (dBμV/m) | Peak (dBμV/m) |                          |
| 30-88           | 100            | 40.0             | 60.0          | 3                        |
| 88-216          | 150            | 43.5             | 63.5          | 3                        |
| 216-960         | 200            | 46.0             | 66.0          | 3                        |
| Above 960       | 500            | 54.0             | 74.0          | 3                        |



Product Service

Industry Canada RSS-247, Limit Clause, 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

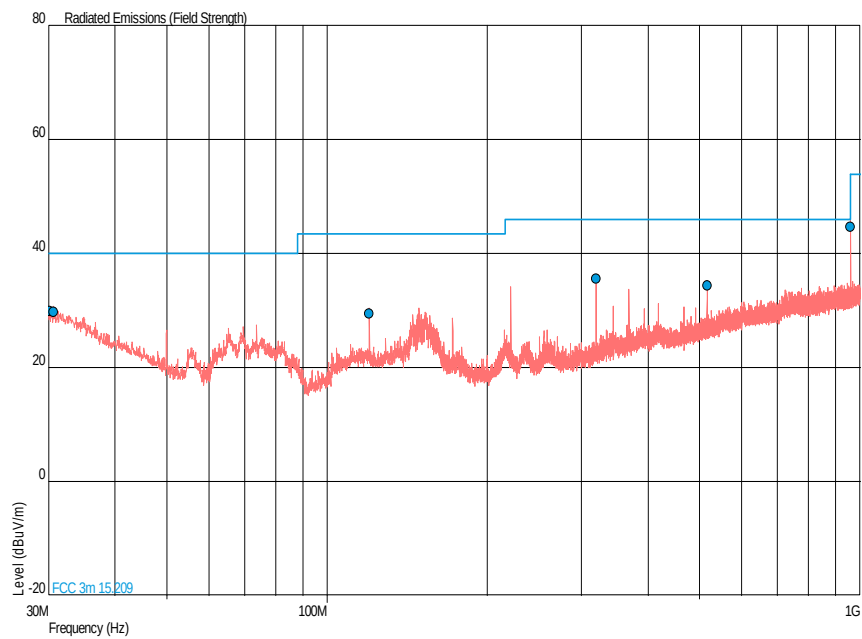


5.00 V DC Supply

Bluetooth Low Energy, 2402 MHz, 30 MHz to 1 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | QP Level (dBμV/m) | QP Margin (dBμV/m) | QP Level (μV/m) | QP Margin (μV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|-------------------|--------------------|-----------------|------------------|-----------|------------|--------------|
| 30.198          | 29.9              | -10.1              | 30.9            | -69.1            | 358       | 2.11       | Horizontal   |
| 30.691          | 29.7              | -10.3              | 20.9            | -79.1            | 348       | 1.00       | Horizontal   |
| 120.000         | 29.5              | -14.0              | 22.4            | -127.6           | 298       | 1.00       | Vertical     |
| 319.484         | 35.6              | -10.4              | 35.5            | -164.5           | 53        | 1.00       | Horizontal   |
| 516.114         | 34.4              | -11.6              | 50.7            | -149.3           | 169       | 1.00       | Vertical     |
| 960.000         | 44.7              | -1.3               | 213.8           | 13.8             | 27        | 1.00       | Horizontal   |

Bluetooth Low Energy, 2402 MHz, 30 MHz to 1 GHz, Spurious Radiated Emissions Plot





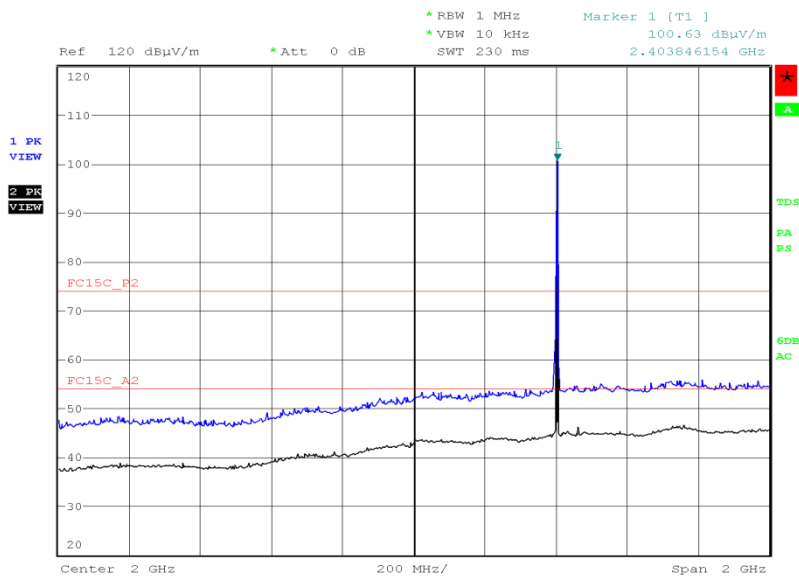
Product Service

Bluetooth Low Energy, 2402 MHz, 1 GHz to 25 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | Final Peak (dBµV/m) | Final Average (dBµV/m) | Final Peak (µV/m) | Final Average (µV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|---------------------|------------------------|-------------------|----------------------|-----------|------------|--------------|
| *               |                     |                        |                   |                      |           |            |              |

\*No emissions were detected within 6 dB of the limit.

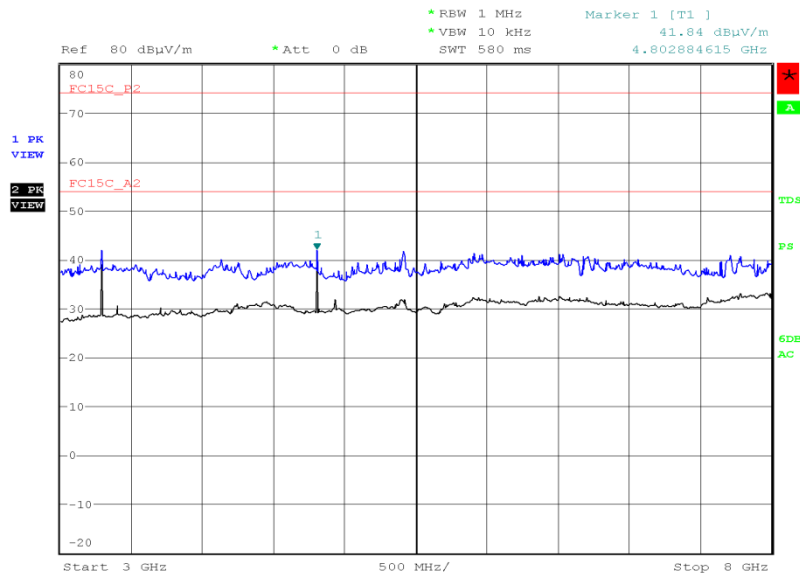
Bluetooth Low Energy, 2402 MHz, 1 GHz to 3 GHz, Spurious Radiated Emissions Plot



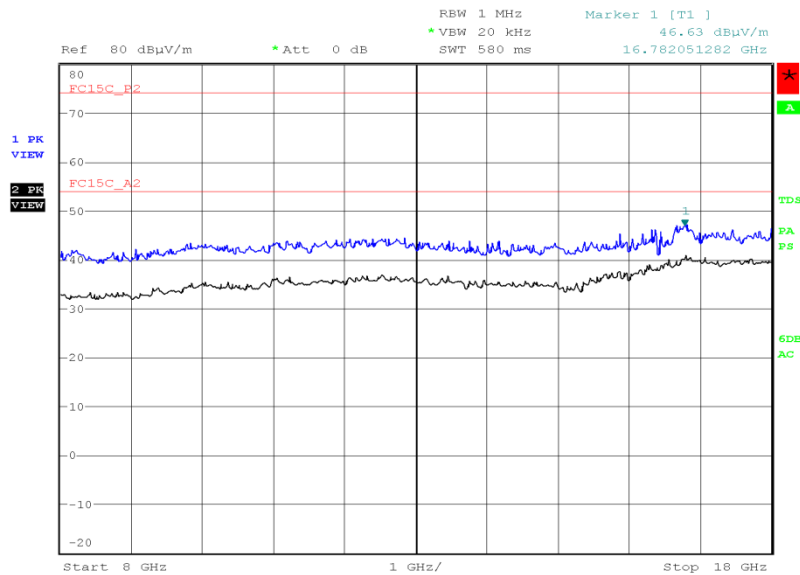
Date: 25.MAY.2016 19:46:13



Product Service

Bluetooth Low Energy, 2402 MHz, 3 GHz to 8 GHz, Spurious Radiated Emissions Plot

Date: 25.MAY.2016 20:37:43

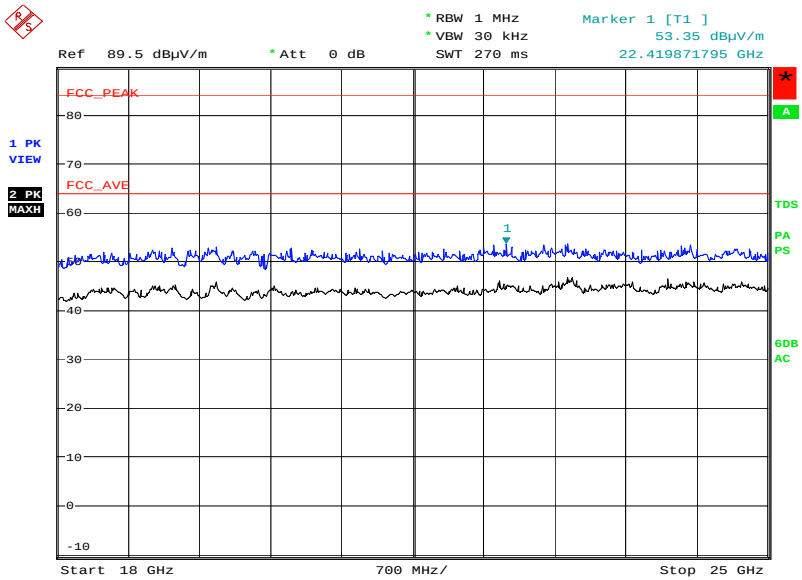
Bluetooth Low Energy, 2402 MHz, 8 GHz to 18 GHz, Spurious Radiated Emissions Plot

Date: 26.MAY.2016 08:37:32



Product Service

Bluetooth Low Energy, 2402 MHz, 18 GHz to 25 GHz, Spurious Radiated Emissions Plot



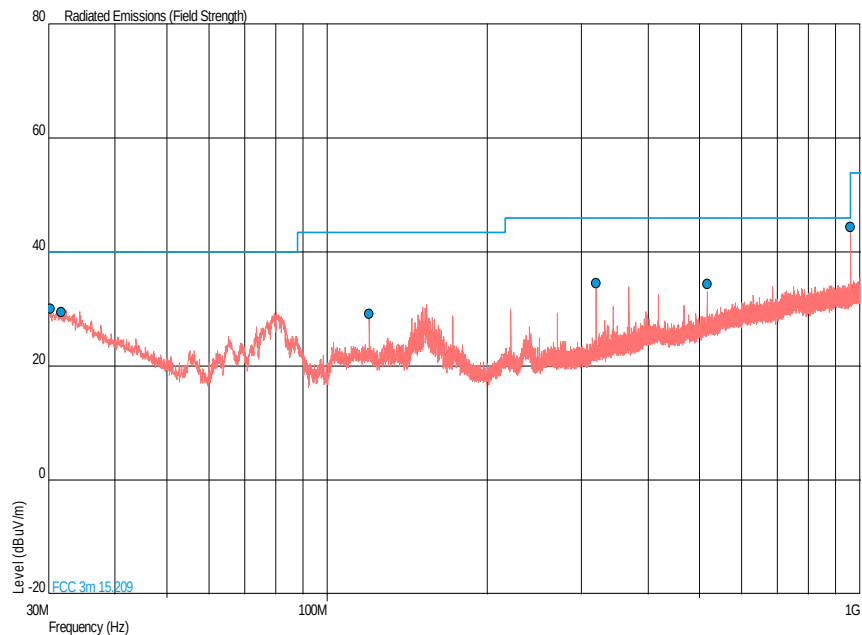
Date: 10.JUL.2016 23:15:48



### Bluetooth Low Energy, 2440 MHz, 30 MHz to 1 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | QP Level (dBμV/m) | QP Margin (dBμV/m) | QP Level (μV/m) | QP Margin (μV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|-------------------|--------------------|-----------------|------------------|-----------|------------|--------------|
| 30.212          | 30.0              | -10.0              | 31.6            | -68.4            | 207       | 2.58       | Vertical     |
| 31.722          | 29.5              | -10.5              | 29.9            | -70.1            | 26        | 3.60       | Horizontal   |
| 119.994         | 29.2              | -14.3              | 28.8            | -121.2           | 360       | 1.00       | Vertical     |
| 319.487         | 34.6              | -11.4              | 53.7            | -146.3           | 210       | 1.00       | Horizontal   |
| 516.093         | 34.4              | -11.6              | 52.5            | -147.5           | 130       | 1.16       | Vertical     |
| 960.000         | 44.3              | -1.7               | 164.1           | -35.9            | 132       | 1.48       | Horizontal   |

### Bluetooth Low Energy, 2440 MHz, 30 MHz to 1 GHz, Spurious Radiated Emissions Plot





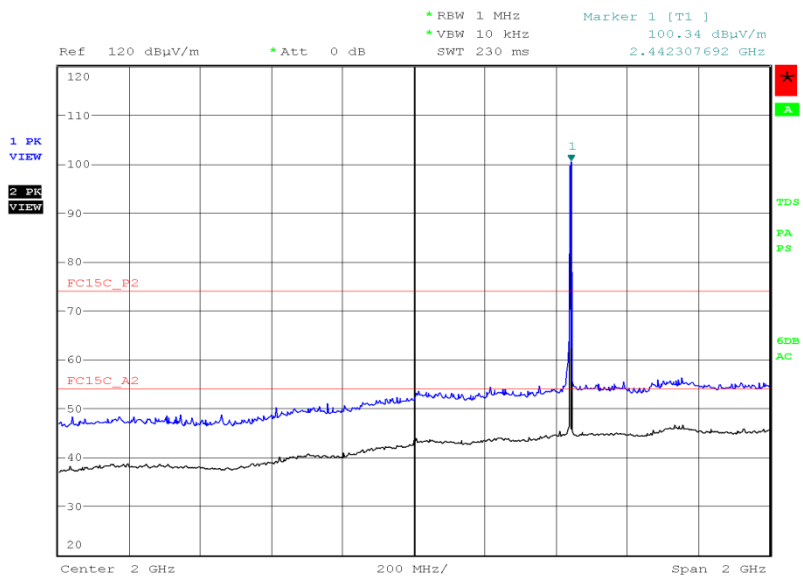
Product Service

Bluetooth Low Energy, 2440 MHz, 1 GHz to 25 GHz, Spurious Radiated Emissions Results

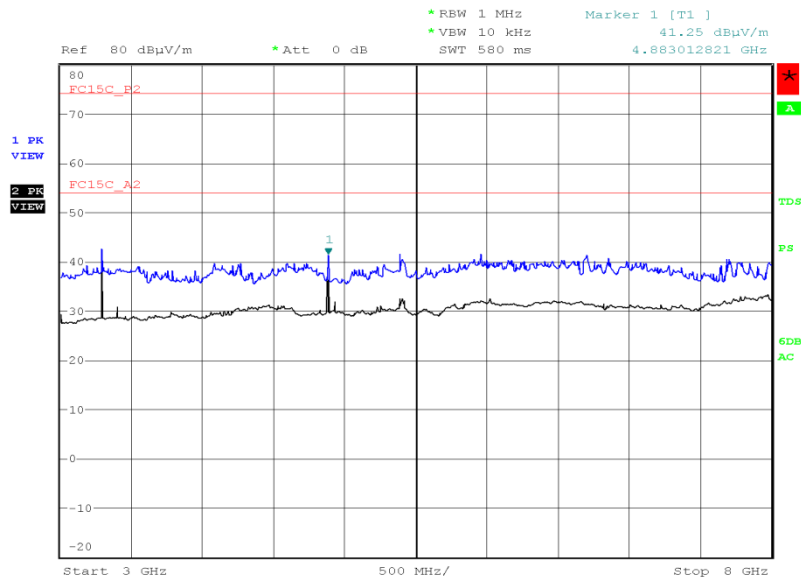
| Frequency (MHz) | Final Peak (dBµV/m) | Final Average (dBµV/m) | Final Peak (µV/m) | Final Average (µV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|---------------------|------------------------|-------------------|----------------------|-----------|------------|--------------|
| *               |                     |                        |                   |                      |           |            |              |

\*No emissions were detected within 6 dB of the limit.

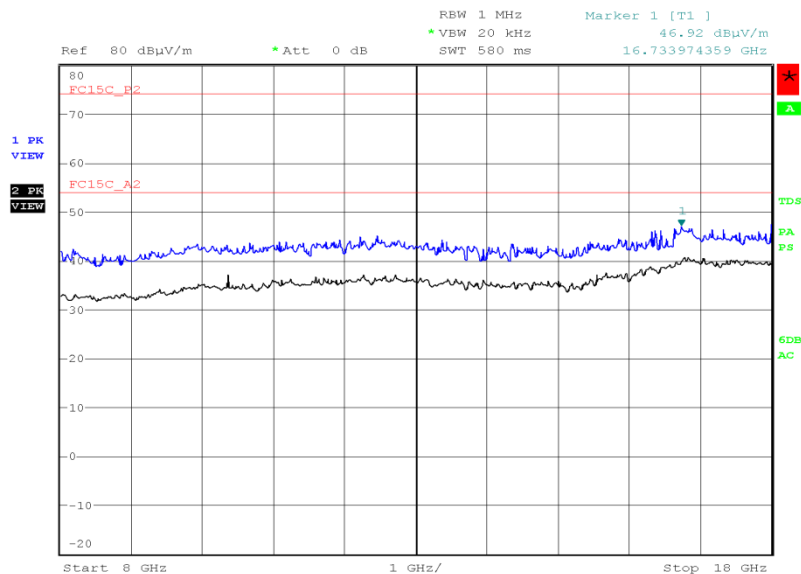
Bluetooth Low Energy, 2440 MHz, 1 GHz to 3 GHz, Spurious Radiated Emissions Plot



Date: 25.MAY.2016 19:59:50

Bluetooth Low Energy, 2440 MHz, 3 GHz to 8 GHz, Spurious Radiated Emissions Plot

Date: 25.MAY.2016 20:42:39

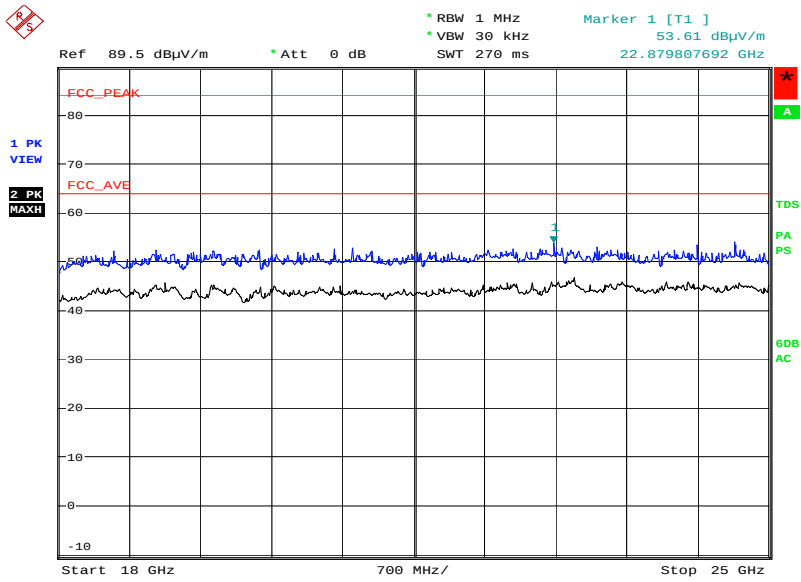
Bluetooth Low Energy, 2440 MHz, 8 GHz to 18 GHz, Spurious Radiated Emissions Plot

Date: 26.MAY.2016 08:41:59



Product Service

Bluetooth Low Energy, 2440 MHz, 18 GHz to 25 GHz, Spurious Radiated Emissions Plot



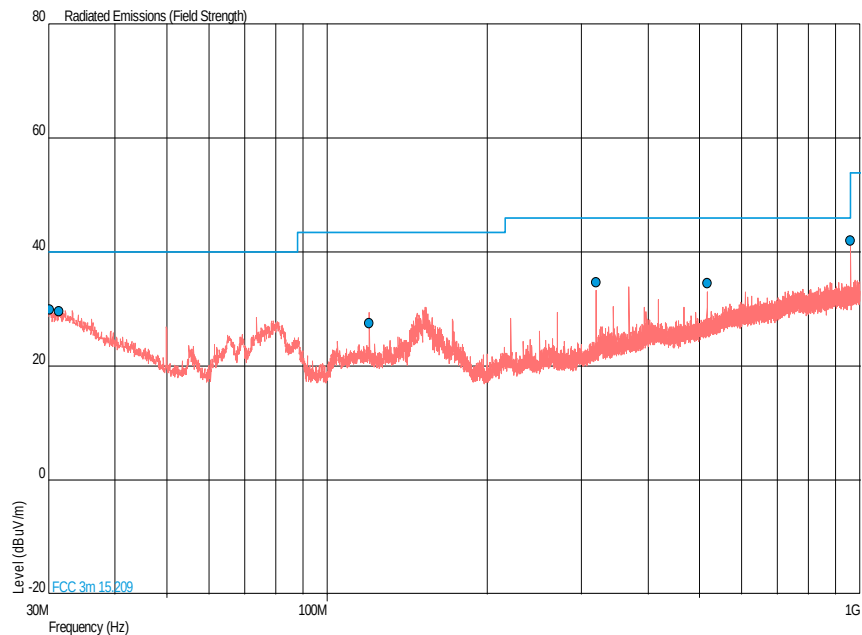
Date: 10.JUL.2016 23:20:20



### Bluetooth Low Energy, 2480 MHz, 30 MHz to 1 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | QP Level (dBμV/m) | QP Margin (dBμV/m) | QP Level (μV/m) | QP Margin (μV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|-------------------|--------------------|-----------------|------------------|-----------|------------|--------------|
| 30.105          | 29.9              | -10.1              | 31.3            | -68.7            | 49        | 1.00       | Horizontal   |
| 31.358          | 29.7              | -10.3              | 30.5            | -69.5            | 350       | 1.00       | Horizontal   |
| 120.000         | 27.5              | -16.0              | 23.7            | -126.3           | 6         | 1.00       | Vertical     |
| 319.484         | 34.8              | -11.2              | 55.0            | -145.0           | 208       | 1.00       | Horizontal   |
| 516.084         | 34.5              | -11.5              | 53.1            | -146.9           | 286       | 1.00       | Vertical     |
| 960.000         | 42.0              | -4.0               | 125.9           | -74.1            | 23        | 1.00       | Horizontal   |

### Bluetooth Low Energy, 2480 MHz, 30 MHz to 1 GHz, Spurious Radiated Emissions Plot





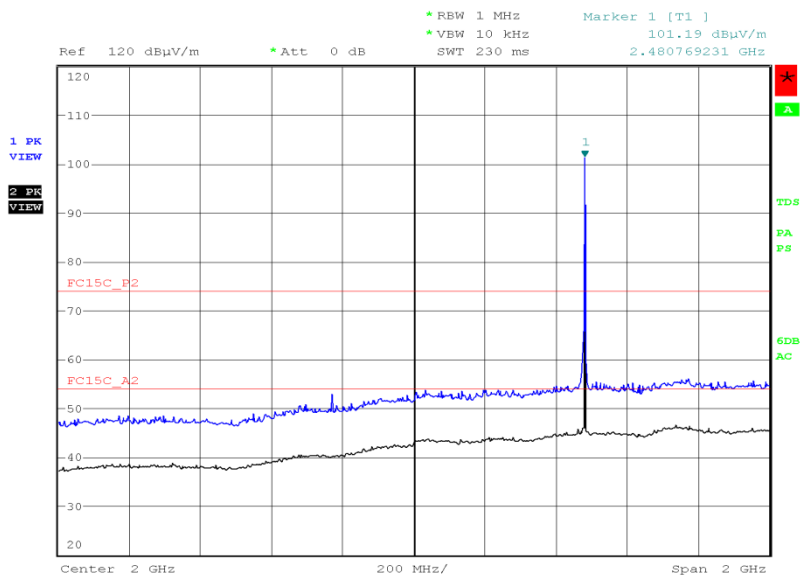
Product Service

Bluetooth Low Energy, 2480 MHz, 1 GHz to 25 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | Final Peak (dBμV/m) | Final Average (dBμV/m) | Final Peak (μV/m) | Final Average (μV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|---------------------|------------------------|-------------------|----------------------|-----------|------------|--------------|
| *               |                     |                        |                   |                      |           |            |              |

\*No emissions were detected within 6 dB of the limit.

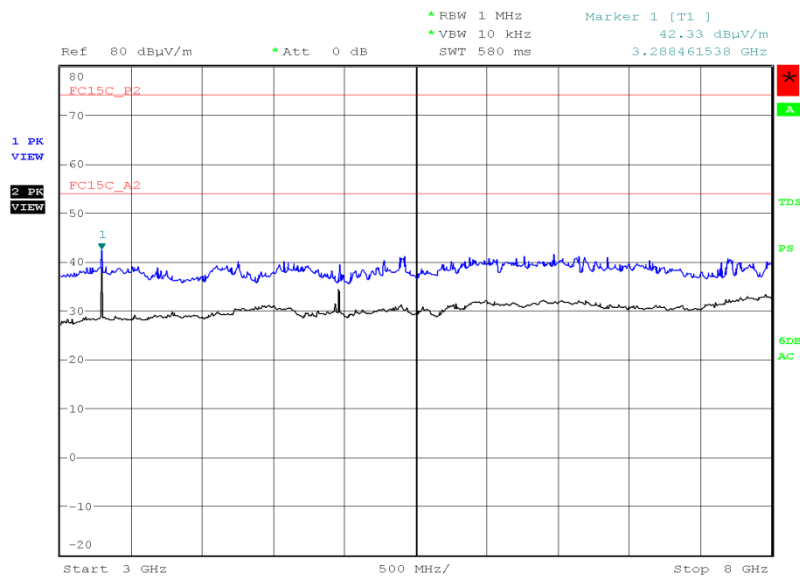
Bluetooth Low Energy, 2480 MHz, 1 GHz to 3 GHz, Spurious Radiated Emissions Plot



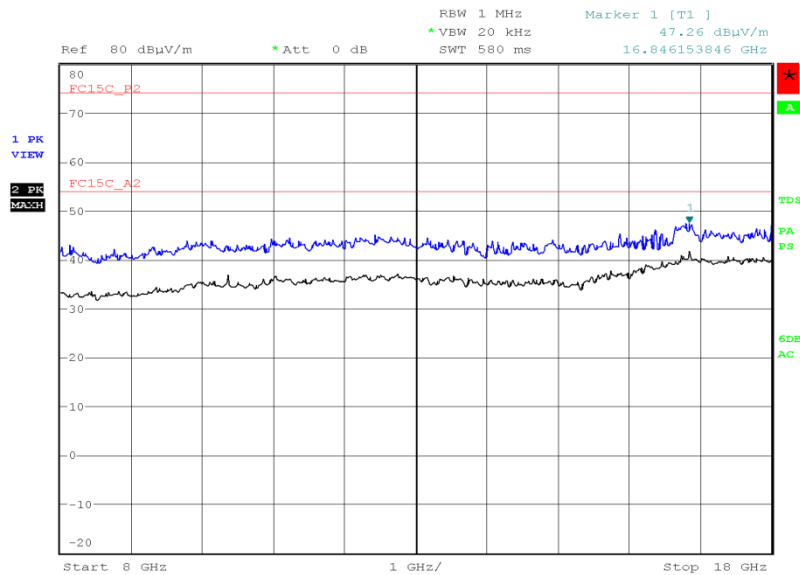
Date: 25.MAY.2016 20:04:50



Product Service

Bluetooth Low Energy, 2480 MHz, 3 GHz to 8 GHz, Spurious Radiated Emissions Plot

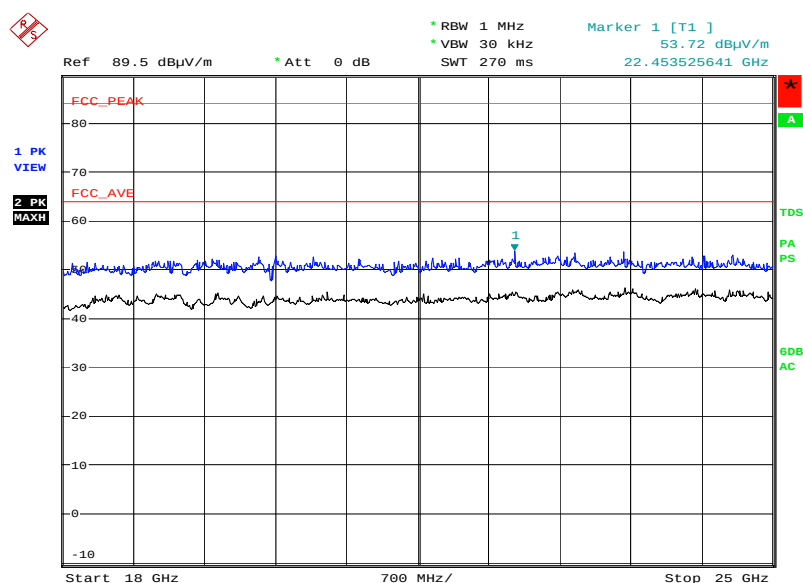
Date: 25.MAY.2016 20:30:31

Bluetooth Low Energy, 2480 MHz, 8 GHz to 18 GHz, Spurious Radiated Emissions Plot

Date: 26.MAY.2016 08:55:38



### Bluetooth Low Energy, 2480 MHz, 18 GHz to 25 GHz, Spurious Radiated Emissions Plot



Date: 10.JUL.2016 23:26:03

### FCC 47 CFR Part 15, Limit Clause 15.247 (d)

Emissions outside the restricted bands shall be at least 20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. 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 below the fundamental instead of 20 dB.

### FCC 47 CFR Part 15, Limit Clause 15.205

|                               | Peak (dBμV/m) | Average (dBμV/m) |
|-------------------------------|---------------|------------------|
| Restricted Bands of Operation | As per 15.209 | As per 15.209    |

### FCC 47 CFR Part 15, Limit Clause 15.209

| Frequency (MHz) | Field Strength |                  |               | Measurement Distance (m) |
|-----------------|----------------|------------------|---------------|--------------------------|
|                 | (μV/m)         | Average (dBμV/m) | Peak (dBμV/m) |                          |
| 30-88           | 100            | 40.0             | 60.0          | 3                        |
| 88-216          | 150            | 43.5             | 63.5          | 3                        |
| 216-960         | 200            | 46.0             | 66.0          | 3                        |
| Above 960       | 500            | 54.0             | 74.0          | 3                        |



Product Service

Industry Canada RSS-247, Limit Clause, 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

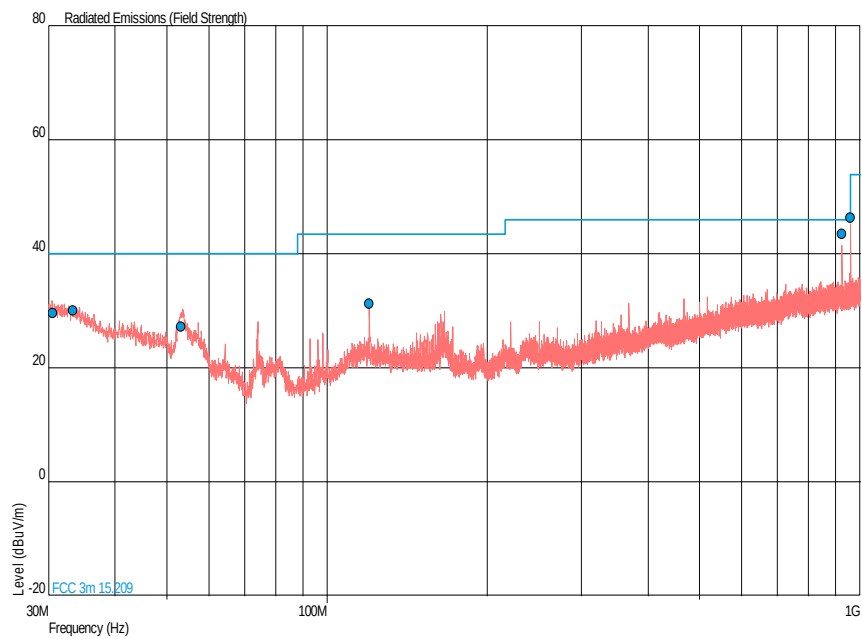


5.00 V DC Supply

Bluetooth Low Energy (2nd Diversity Antenna), 2402 MHz, 30 MHz to 1 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | QP Level (dB $\mu$ V/m) | QP Margin (dB $\mu$ V/m) | QP Level ( $\mu$ V/m) | QP Margin ( $\mu$ V/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|-------------------------|--------------------------|-----------------------|------------------------|-----------|------------|--------------|
| 30.530          | 29.7                    | -10.3                    | 31.3                  | -68.7                  | 24        | 1.00       | Vertical     |
| 33.360          | 30.1                    | -9.9                     | 30.5                  | -69.5                  | 360       | 2.18       | Vertical     |
| 53.137          | 27.2                    | -12.8                    | 23.7                  | -76.3                  | 347       | 1.08       | Vertical     |
| 120.006         | 31.3                    | -12.2                    | 55.0                  | -95.0                  | 309       | 1.00       | Vertical     |
| 923.463         | 43.5                    | -2.5                     | 53.1                  | -146.9                 | 334       | 2.48       | Horizontal   |
| 960.018         | 46.3                    | -7.7                     | 125.9                 | -375.1                 | 305       | 2.00       | Horizontal   |

Bluetooth Low Energy (2nd Diversity Antenna), 2402 MHz, 30 MHz to 1 GHz, Spurious Radiated Emissions Plot





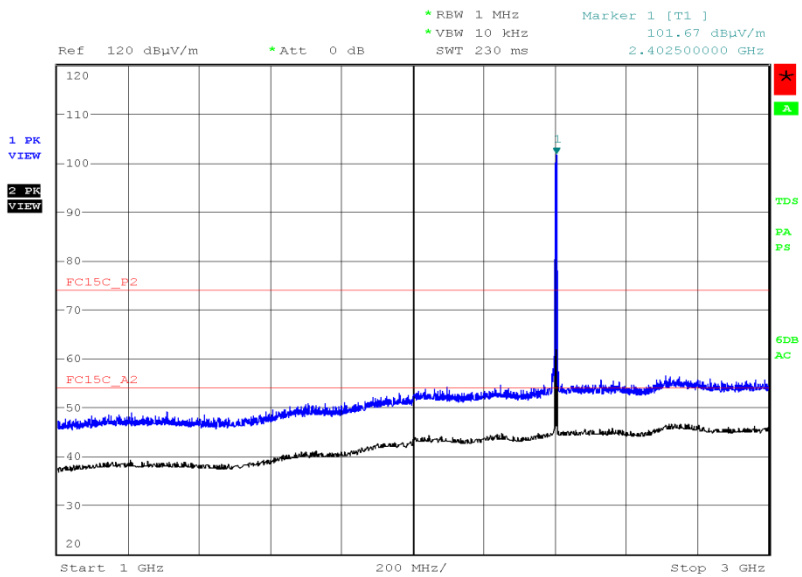
Product Service

Bluetooth Low Energy (2nd Diversity Antenna), 2402 MHz, 1 GHz to 25 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | Final Peak (dBµV/m) | Final Average (dBµV/m) | Final Peak (µV/m) | Final Average (µV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|---------------------|------------------------|-------------------|----------------------|-----------|------------|--------------|
| *               |                     |                        |                   |                      |           |            |              |

\*No emissions were detected within 10 dB of the limit.

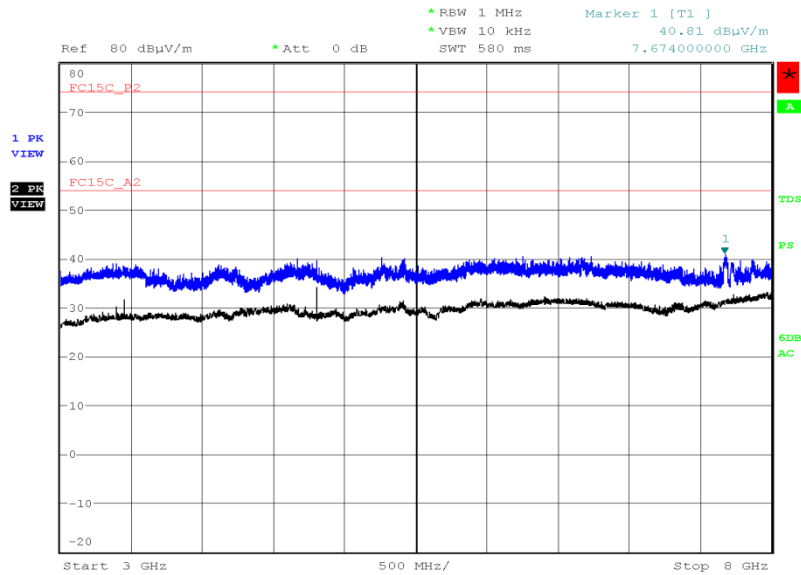
Bluetooth Low Energy (2nd Diversity Antenna), 2402 MHz, 1 GHz to 3 GHz, Spurious Radiated Emissions Plot



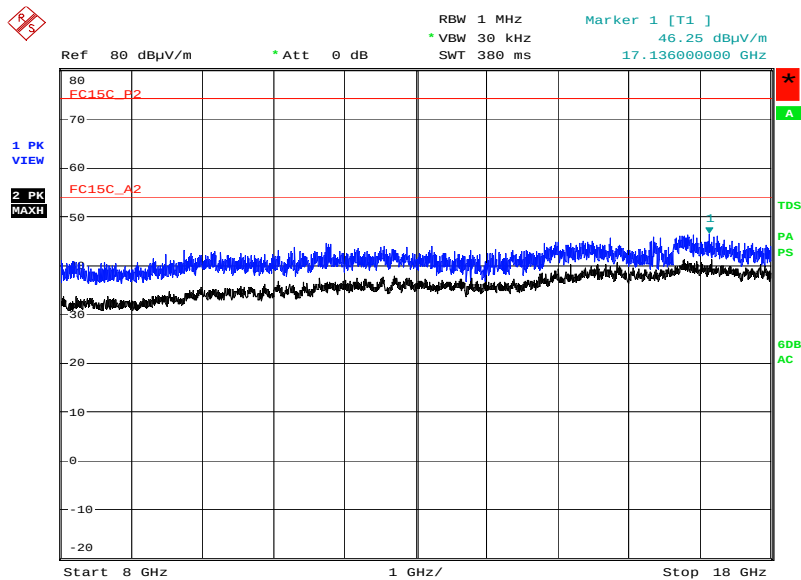
Date: 15.JUN.2016 15:39:26



Product Service

Bluetooth Low Energy (2nd Diversity Antenna), 2402 MHz, 3 GHz to 8 GHz, Spurious Radiated Emissions Plot

Date: 17.JUN.2016 10:32:27

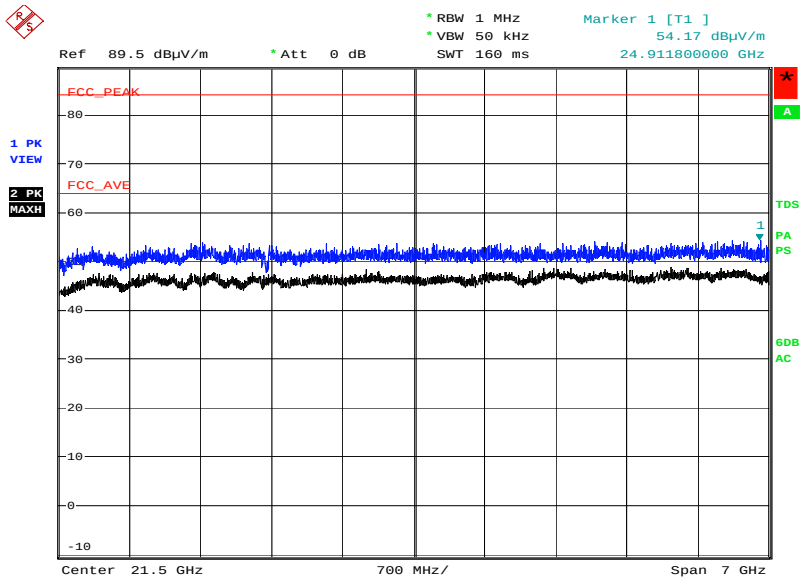
Bluetooth Low Energy (2nd Diversity Antenna), 2402 MHz, 8 GHz to 18 GHz, Spurious Radiated Emissions Plot

Date: 29.JUN.2016 22:10:42



Product Service

Bluetooth Low Energy (2nd Diversity Antenna), 2402 MHz, 18 GHz to 25 GHz, Spurious Radiated Emissions Plot



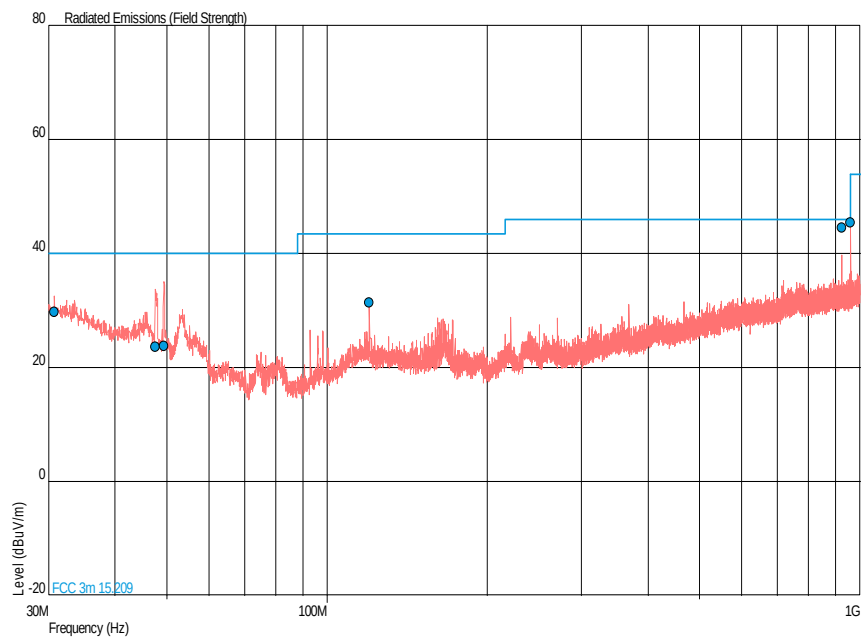
Date: 3.JUL.2016 14:50:46



Bluetooth Low Energy (2nd Diversity Antenna), 2440 MHz, 30 MHz to 1 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | QP Level (dBμV/m) | QP Margin (dBμV/m) | QP Level (μV/m) | QP Margin (μV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|-------------------|--------------------|-----------------|------------------|-----------|------------|--------------|
| 30.773          | 29.7              | -10.3              | 30.5            | -69.5            | 360       | 1.00       | Vertical     |
| 47.609          | 23.7              | -16.3              | 15.3            | -84.7            | 150       | 1.00       | Vertical     |
| 49.402          | 23.8              | -16.2              | 15.5            | -84.5            | 297       | 1.00       | Vertical     |
| 119.998         | 31.4              | -12.1              | 37.2            | -112.8           | 305       | 1.00       | Vertical     |
| 923.429         | 44.6              | -1.4               | 169.8           | -30.2            | 0         | 2.50       | Horizontal   |
| 960.018         | 45.5              | -8.5               | 188.4           | -312.6           | 312       | 1.00       | Horizontal   |

Bluetooth Low Energy (2nd Diversity Antenna), 2440 MHz, 30 MHz to 1 GHz, Spurious Radiated Emissions Plot





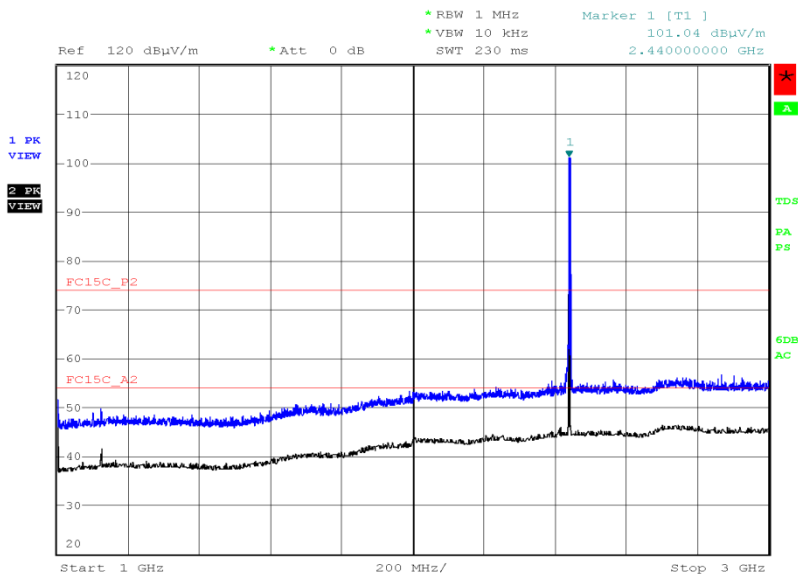
Product Service

Bluetooth Low Energy (2nd Diversity Antenna), 2440 MHz, 1 GHz to 25 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | Final Peak (dBμV/m) | Final Average (dBμV/m) | Final Peak (μV/m) | Final Average (μV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|---------------------|------------------------|-------------------|----------------------|-----------|------------|--------------|
| *               |                     |                        |                   |                      |           |            |              |

\*No emissions were detected within 10 dB of the limit.

Bluetooth Low Energy (2nd Diversity Antenna), 2440 MHz, 1 GHz to 3 GHz, Spurious Radiated Emissions Plot

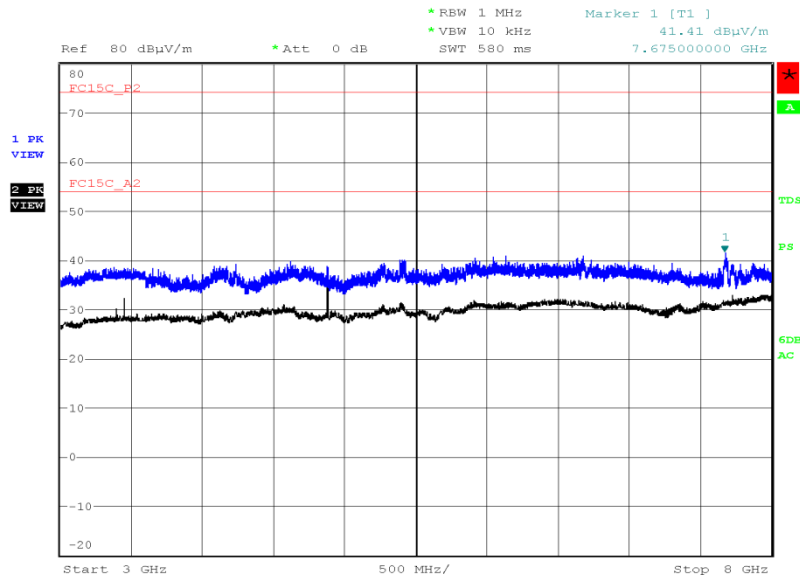


Date: 15.JUN.2016 15:47:46



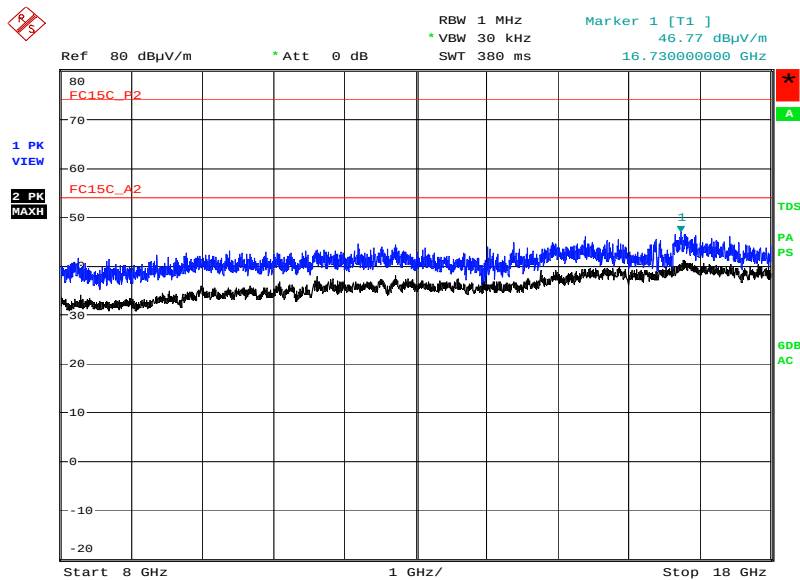
Product Service

### Bluetooth Low Energy (2nd Diversity Antenna), 2440 MHz, 3 GHz to 8 GHz, Spurious Radiated Emissions Plot



Date: 17.JUN.2016 10:41:09

### Bluetooth Low Energy (2nd Diversity Antenna), 2440 MHz, 8 GHz to 18 GHz, Spurious Radiated Emissions Plot

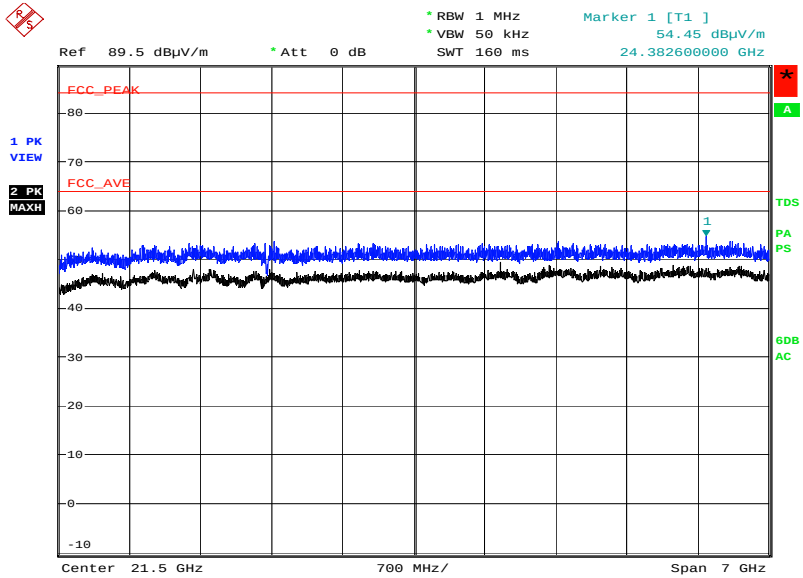


Date: 29.JUN.2016 22:21:52



Product Service

Bluetooth Low Energy (2nd Diversity Antenna), 2440 MHz, 18 GHz to 25 GHz, Spurious Radiated Emissions Plot



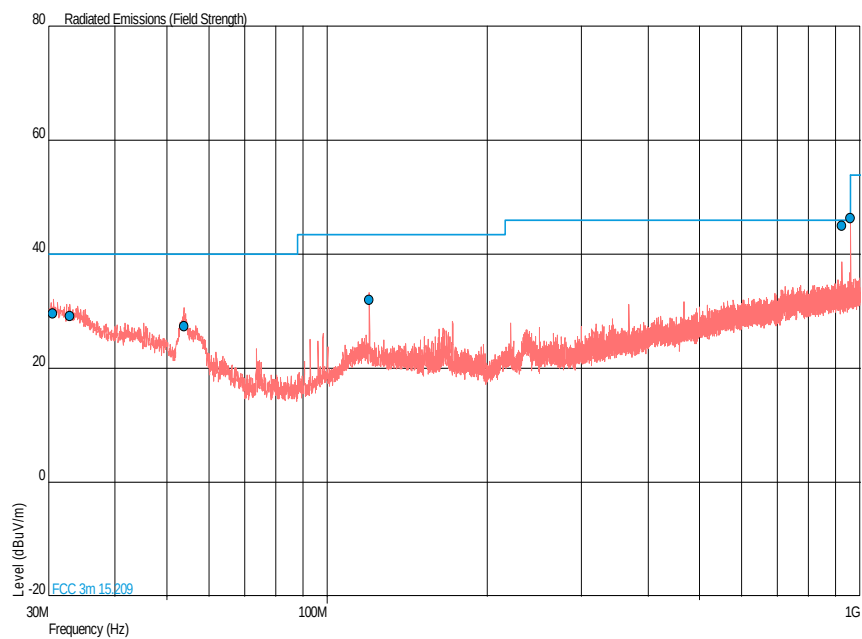
Date: 3.JUL.2016 14:55:07



Bluetooth Low Energy (2nd Diversity Antenna), 2480 MHz, 30 MHz to 1 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | QP Level (dBμV/m) | QP Margin (dBμV/m) | QP Level (μV/m) | QP Margin (μV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|-------------------|--------------------|-----------------|------------------|-----------|------------|--------------|
| 30.607          | 29.7              | -10.3              | 30.5            | -69.5            | 269       | 1.00       | Horizontal   |
| 32.910          | 29.2              | -10.8              | 28.8            | -71.2            | 37        | 1.00       | Vertical     |
| 53.947          | 27.4              | -12.6              | 23.4            | -76.6            | 165       | 1.00       | Vertical     |
| 120.004         | 32.0              | -11.5              | 39.8            | -110.2           | 8         | 2.08       | Vertical     |
| 923.404         | 44.9              | -1.1               | 175.8           | -24.2            | 29        | 2.31       | Horizontal   |
| 960.003         | 46.4              | -7.6               | 208.9           | -292.1           | 360       | 1.99       | Horizontal   |

Bluetooth Low Energy (2nd Diversity Antenna), 2480 MHz, 30 MHz to 1 GHz, Spurious Radiated Emissions Plot





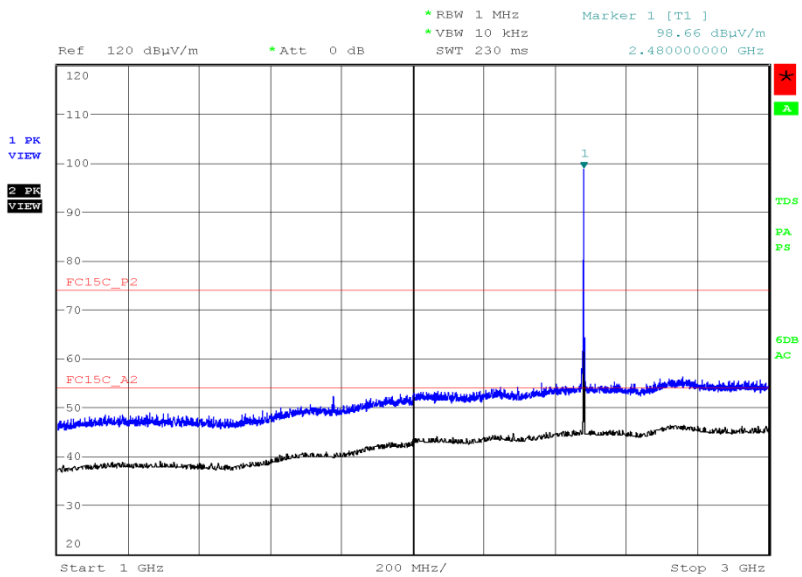
Product Service

Bluetooth Low Energy (2nd Diversity Antenna), 2480 MHz, 1 GHz to 25 GHz, Spurious Radiated Emissions Results

| Frequency (MHz) | Final Peak (dBμV/m) | Final Average (dBμV/m) | Final Peak (μV/m) | Final Average (μV/m) | Angle (°) | Height (m) | Polarisation |
|-----------------|---------------------|------------------------|-------------------|----------------------|-----------|------------|--------------|
| *               |                     |                        |                   |                      |           |            |              |

\*No emissions were detected within 10 dB of the limit.

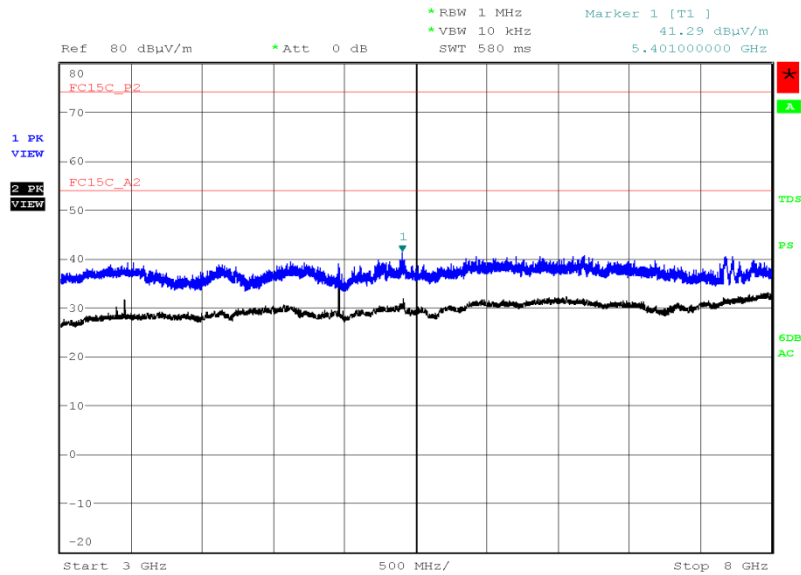
Bluetooth Low Energy (2nd Diversity Antenna), 2480 MHz, 1 GHz to 3 GHz, Spurious Radiated Emissions Plot



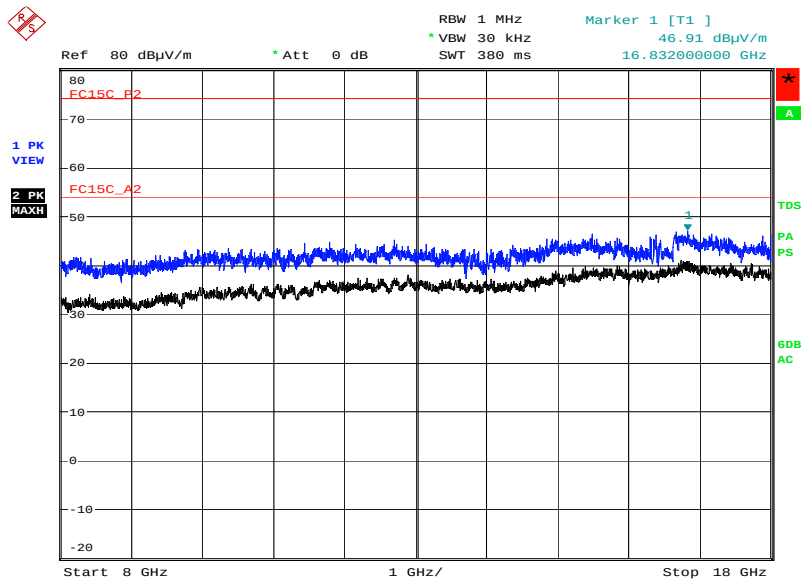
Date: 15.JUN.2016 15:55:05



Product Service

Bluetooth Low Energy (2nd Diversity Antenna), 2480 MHz, 3 GHz to 8 GHz, Spurious Radiated Emissions Plot

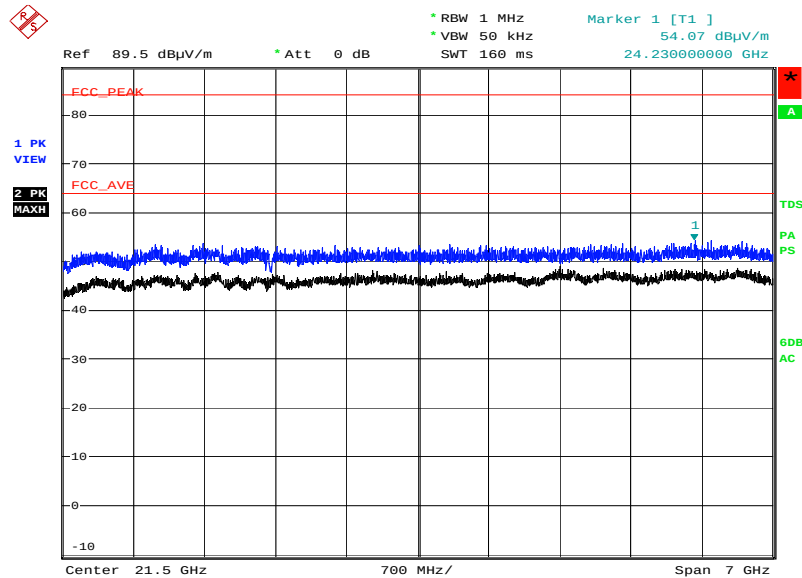
Date: 17.JUN.2016 10:50:00

Bluetooth Low Energy (2nd Diversity Antenna), 2480 MHz, 8 GHz to 18 GHz, Spurious Radiated Emissions Plot

Date: 29.JUN.2016 22:30:41



### Bluetooth Low Energy (2nd Diversity Antenna), 2480 MHz, 18 GHz to 25 GHz, Spurious Radiated Emissions Plot



Date: 3.JUL.2016 14:58:07

### FCC 47 CFR Part 15, Limit Clause 15.247 (d)

Emissions outside the restricted bands shall be at least 20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. 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 below the fundamental instead of 20 dB.

### FCC 47 CFR Part 15, Limit Clause 15.205

|                               | Peak (dBμV/m) | Average (dBμV/m) |
|-------------------------------|---------------|------------------|
| Restricted Bands of Operation | As per 15.209 | As per 15.209    |

### FCC 47 CFR Part 15, Limit Clause 15.209

| Frequency (MHz) | Field Strength |                  |               | Measurement Distance (m) |
|-----------------|----------------|------------------|---------------|--------------------------|
|                 | (μV/m)         | Average (dBμV/m) | Peak (dBμV/m) |                          |
| 30-88           | 100            | 40.0             | 60.0          | 3                        |
| 88-216          | 150            | 43.5             | 63.5          | 3                        |
| 216-960         | 200            | 46.0             | 66.0          | 3                        |
| Above 960       | 500            | 54.0             | 74.0          | 3                        |



Product Service

Industry Canada RSS-247, Limit Clause, 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.



Product Service

**2.6 RESTRICTED BAND EDGES****2.6.1 Specification Reference**

FCC 47 CFR Part 15C, Clause 15.205  
Industry Canada RSS-GEN, Clause 8.10

**2.6.2 Equipment Under Test and Modification State**

Minuet/FS5332 S/N: RAD108624 (Module) and RAD108700 (Platform) - Modification State 0

**2.6.3 Date of Test**

9 May 2016 & 26 May 2016

**2.6.4 Test Equipment Used**

The major items of test equipment used for the above tests are identified in Section 3.1.

**2.6.5 Test Procedure**

The test was performed in accordance with ANSI C63.10, clause 6.3, 6.5 and 6.6.

Remarks

Plots for average measurements were taken in accordance with ANSI C63.10, clause 4.1.4.2.3  
Final average measurements were taken in accordance with ANSI C63.10, clause 4.1.4.2.2

**2.6.6 Environmental Conditions**

|                     |               |
|---------------------|---------------|
| Ambient Temperature | 19.7 - 20.9°C |
| Relative Humidity   | 37.0 - 40.0%  |



Product Service

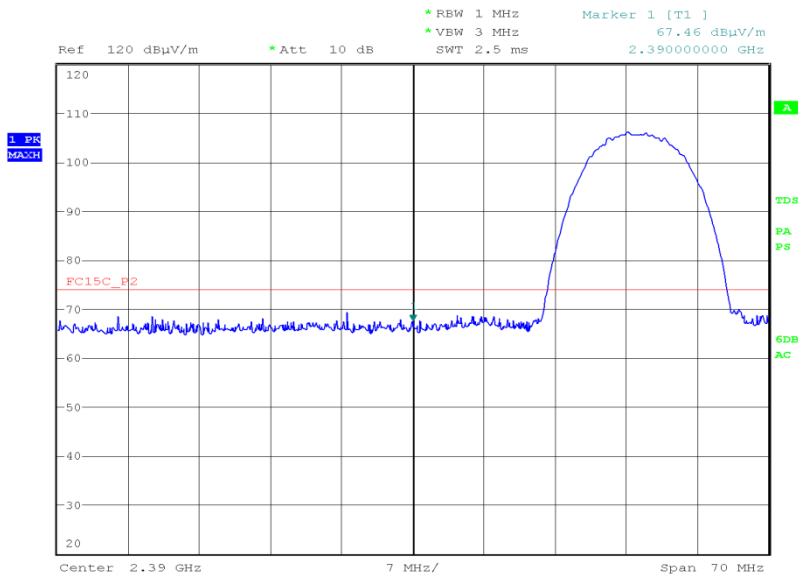
2.6.7 Test Results

5.00 V DC Supply

802.11b, 1 Mbps, Restricted Band Edges Results

| 2412 MHz                       |               | 2462 MHz                       |               |
|--------------------------------|---------------|--------------------------------|---------------|
| Measured Frequency 2390.00 MHz |               | Measured Frequency 2483.50 MHz |               |
| dBμV/m                         |               | dBμV/m                         |               |
| Final Peak                     | Final Average | Final Peak                     | Final Average |
| 67.46                          | 46.55         | 64.00                          | 48.16         |

802.11b, 2412 MHz, Measured Frequency 2390 MHz, 1 Mbps, Final Peak, Restricted Band Edges Plot

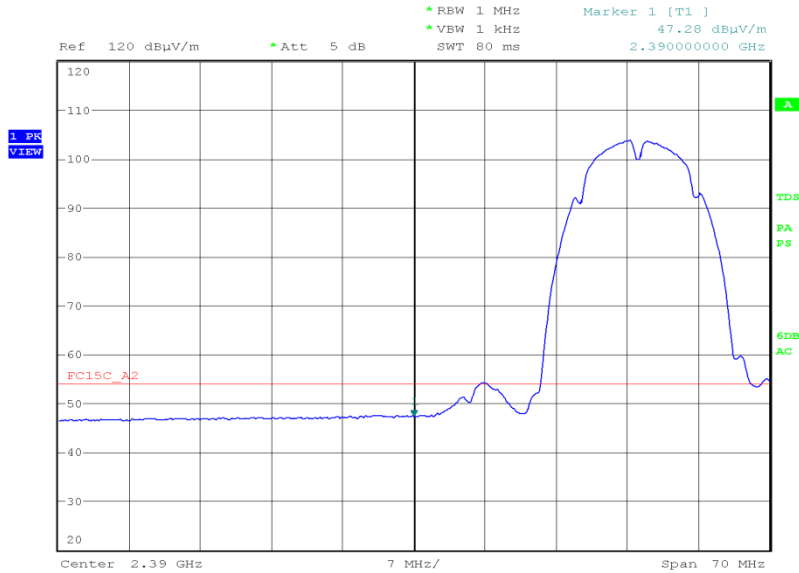


Date: 9.MAY.2016 14:31:28



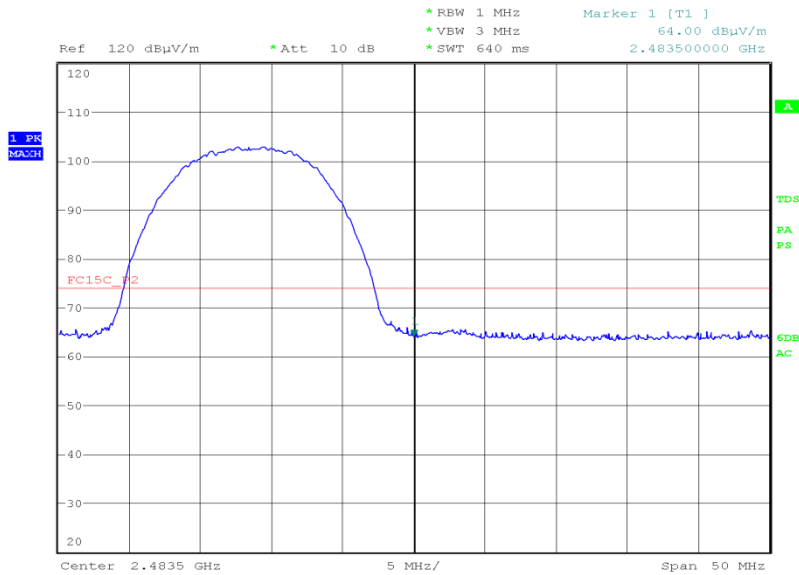
Product Service

802.11b, 2412 MHz, Measured Frequency 2390 MHz, 1 Mbps, Final Average, Restricted Band Edges Plot



Date: 9.MAY.2016 14:29:37

802.11b, 2462 MHz, Measured Frequency 2483.5 MHz, 1 Mbps, Final Peak, Restricted Band Edges Plot

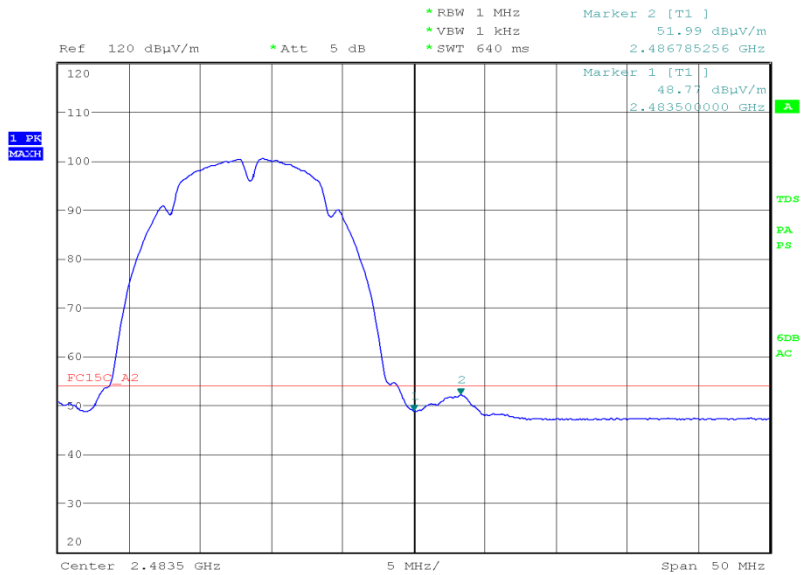


Date: 9.MAY.2016 15:36:16



Product Service

802.11b, 2462 MHz, Measured Frequency 2483.5 MHz, 1 Mbps, Final Average, Restricted Band Edges Plot



Date: 9.MAY.2016 15:30:23

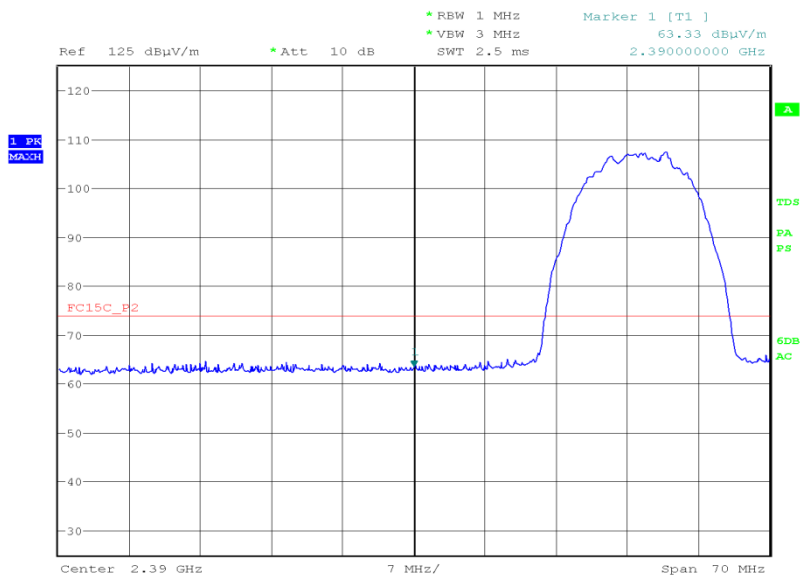


Product Service

802.11b, 5.5 Mbps, Restricted Band Edges Results

| 2412 MHz                       |               | 2462 MHz                       |               |
|--------------------------------|---------------|--------------------------------|---------------|
| Measured Frequency 2390.00 MHz |               | Measured Frequency 2483.50 MHz |               |
| dBμV/m                         |               | dBμV/m                         |               |
| Final Peak                     | Final Average | Final Peak                     | Final Average |
| 63.33                          | 46.55         | 63.13                          | 47.30         |

802.11b, 2412 MHz, Measured Frequency 2390 MHz, 5.5 Mbps, Final Peak, Restricted Band Edges Plot

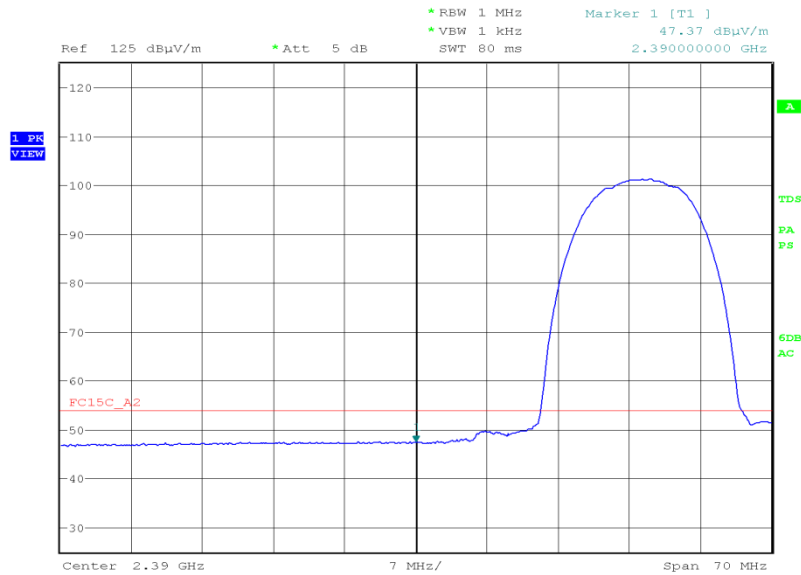


Date: 9.MAY.2016 16:32:57



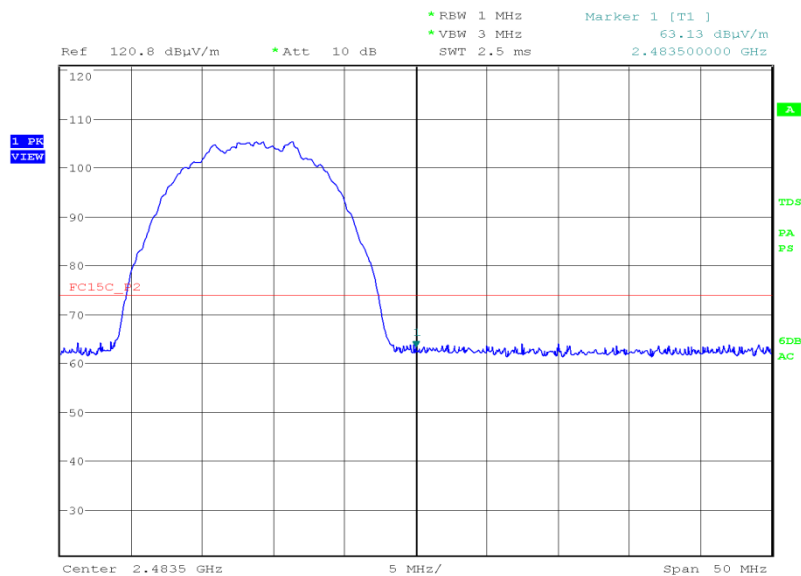
Product Service

802.11b, 2412 MHz, Measured Frequency 2390 MHz, 5.5 Mbps, Final Average, Restricted Band Edges Plot



Date: 9.MAY.2016 16:30:16

802.11b, 2462 MHz, Measured Frequency 2483.5 MHz, 5.5 Mbps, Final Peak, Restricted Band Edges Plot

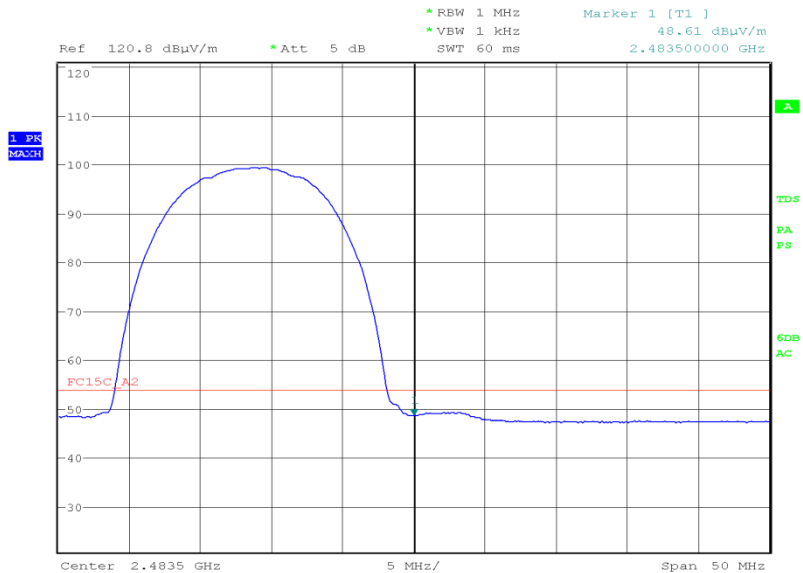


Date: 9.MAY.2016 16:12:58



Product Service

802.11b, 2462 MHz, Measured Frequency 2483.5 MHz, 5.5 Mbps, Final Average, Restricted Band Edges Plot



Date: 9.MAY.2016 16:11:48

Remark

The test was performed on 1 Mbps because this was deemed the worst case data rate for Conducted Output Power.

The test was performed on 5.5 Mbps because this was deemed the worst case data rate for 6 dB Bandwidth.

Final average results shown in the tables above were recorded using a CISPR average detector as described in ANSI C63.10 clause 4.1.2. In order to determine the maximum emissions with the restricted band near the band edge, the method described in ANSI C63.10 clause 6.10.5.2 has been used and these plots are included in the report.

FCC 47 CFR Part 15, Limit Clause 15.205

|                               | Peak (dBuV/m) | Average (dBuV/m) |
|-------------------------------|---------------|------------------|
| Restricted Bands of Operation | 74            | 54               |

Industry Canada RSS-GEN, Limit Clause 8.10

|                               | Peak (dBuV/m) | Average (dBuV/m) |
|-------------------------------|---------------|------------------|
| Restricted Bands of Operation | 74            | 54               |



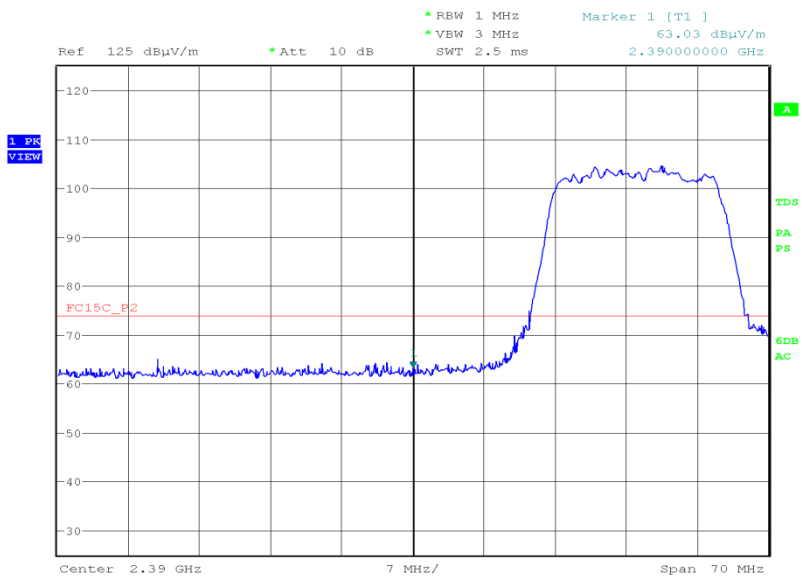
Product Service

5.00 V DC Supply

802.11g, 12 Mbps, Restricted Band Edges Results

| 2412 MHz                       |               | 2462 MHz                       |               |
|--------------------------------|---------------|--------------------------------|---------------|
| Measured Frequency 2390.00 MHz |               | Measured Frequency 2483.50 MHz |               |
| dBμV/m                         |               | dBμV/m                         |               |
| Final Peak                     | Final Average | Final Peak                     | Final Average |
| 63.03                          | 47.07         | 64.78                          | 50.80         |

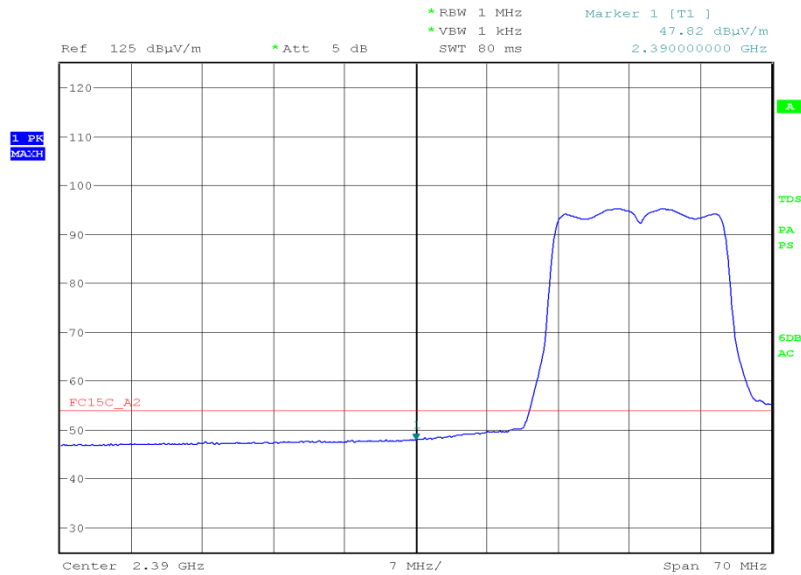
802.11g, 2412 MHz, Measured Frequency 2390 MHz, 12 Mbps, Final Peak, Restricted Band Edges Plot



Date: 9.MAY.2016 17:26:36

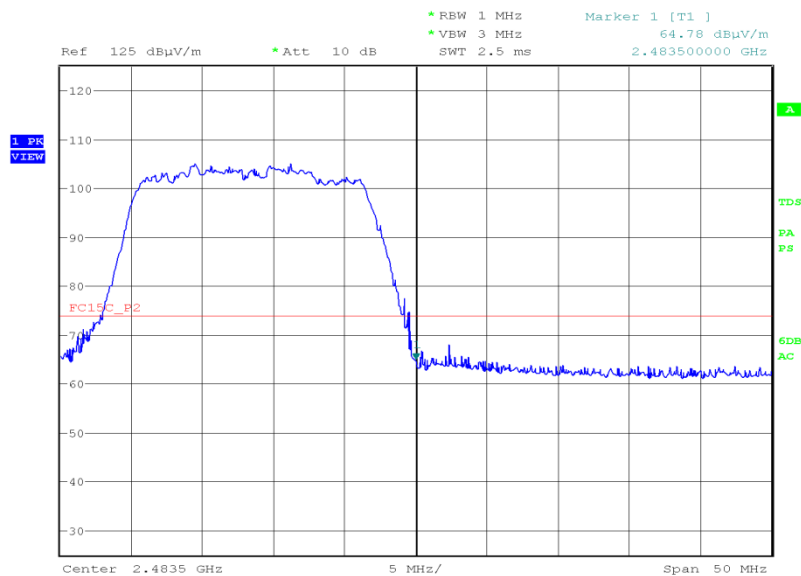
Product Service

802.11g, 2412 MHz, Measured Frequency 2390 MHz, 12 Mbps, Final Average, Restricted Band Edges Plot



Date: 9.MAY.2016 17:25:23

802.11g, 2462 MHz, Measured Frequency 2483.5 MHz, 12 Mbps, Final Peak, Restricted Band Edges Plot

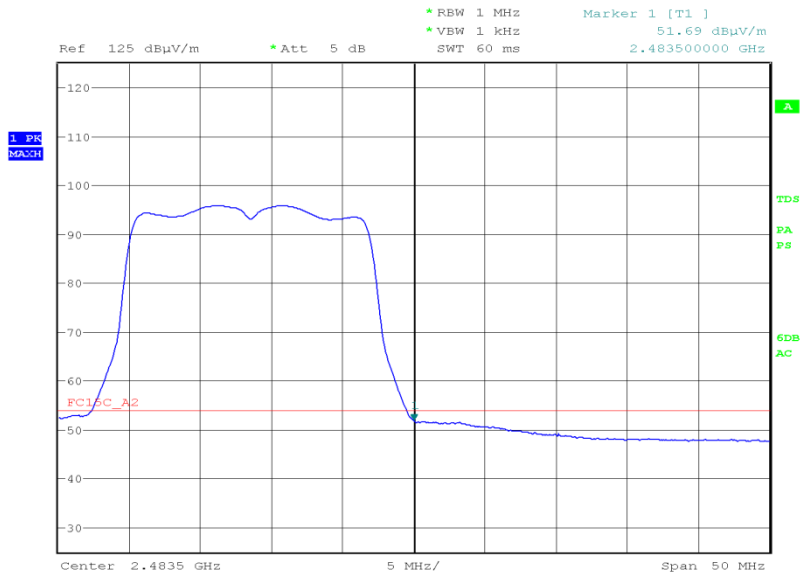


Date: 9.MAY.2016 17:03:23



Product Service

802.11g, 2462 MHz, Measured Frequency 2483.5 MHz, 12 Mbps, Final Average, Restricted  
Band Edges Plot



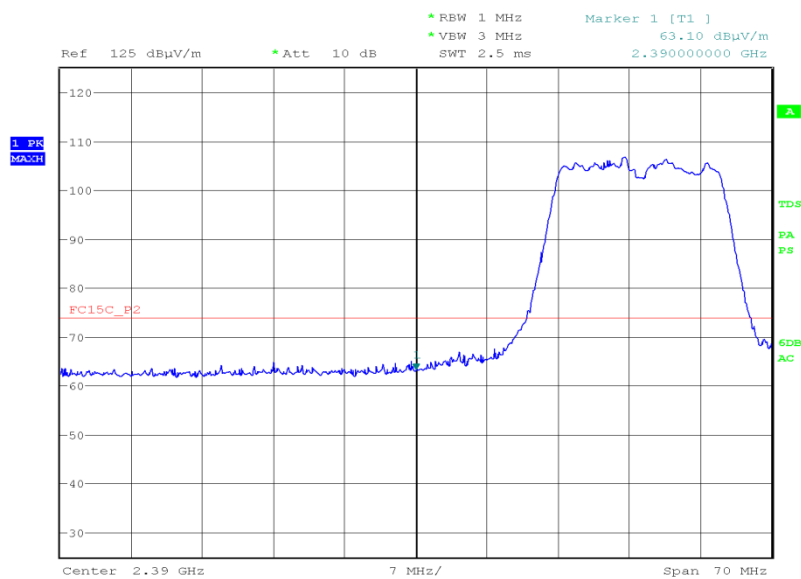
Date: 9.MAY.2016 17:05:06



### 802.11g, 36 Mbps, Restricted Band Edges Results

| 2412 MHz                       |               | 2462 MHz                       |               |
|--------------------------------|---------------|--------------------------------|---------------|
| Measured Frequency 2390.00 MHz |               | Measured Frequency 2483.50 MHz |               |
| dBμV/m                         |               | dBμV/m                         |               |
| Final Peak                     | Final Average | Final Peak                     | Final Average |
| 63.10                          | 47.82         | 68.01                          | 50.16         |

### 802.11g, 2412 MHz, Measured Frequency 2390 MHz, 36 Mbps, Final Peak, Restricted Band Edges Plot

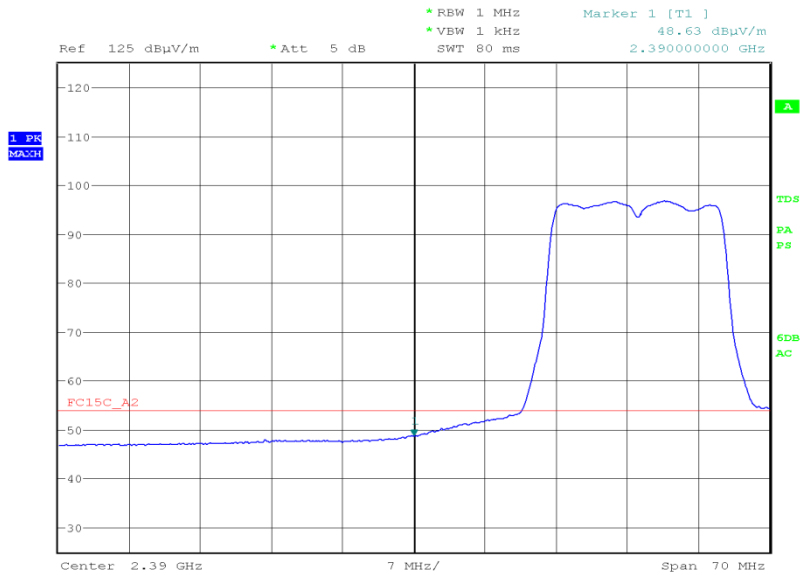


Date: 10.MAY.2016 09:16:53



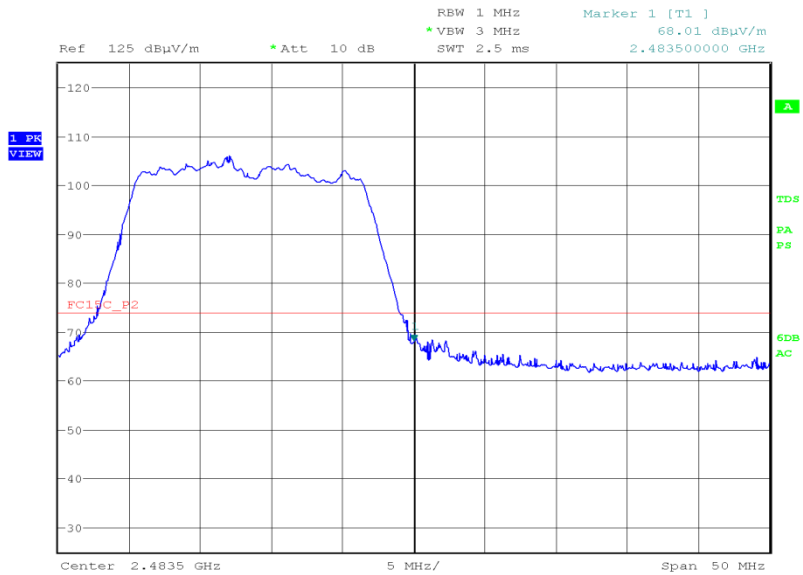
Product Service

802.11g, 2412 MHz, Measured Frequency 2390 MHz, 36 Mbps, Final Average, Restricted Band Edges Plot



Date: 10.MAY.2016 09:13:59

802.11g, 2462 MHz, Measured Frequency 2483.5 MHz, 36 Mbps, Final Peak, Restricted Band Edges Plot

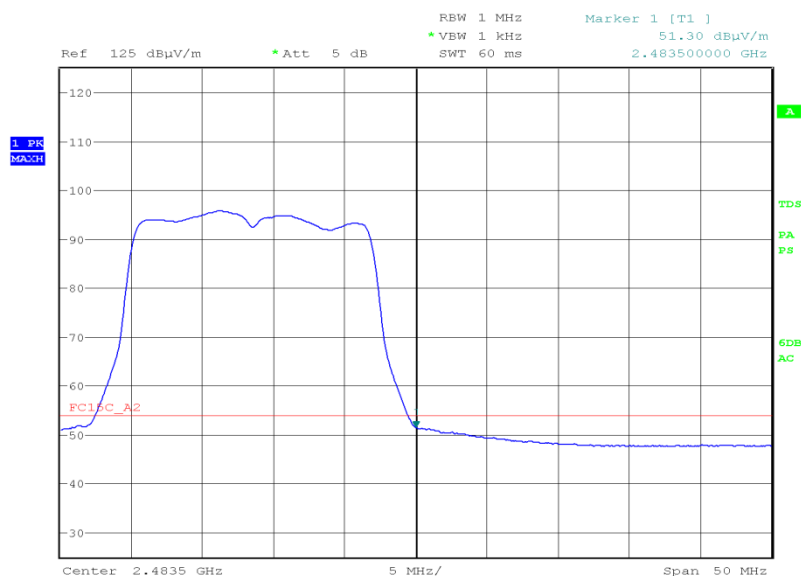


Date: 10.MAY.2016 08:41:20



Product Service

### 802.11g, 2462 MHz, Measured Frequency 2483.5 MHz, 36 Mbps, Final Average, Restricted Band Edges Plot



Date: 10.MAY.2016 08:40:18

### Remark

The test was performed on 12 Mbps because this was deemed the worst case data rate for Conducted Output Power.

The test was performed on 36 Mbps because this was deemed the worst case data rate for 6 dB Bandwidth.

Final average results shown in the tables above were recorded using a CISPR average detector as described in ANSI C63.10 clause 4.1.2. In order to determine the maximum emissions with the restricted band near the band edge, the method described in ANSI C63.10 clause 6.10.5.2 has been used and these plots are included in the report.

### FCC 47 CFR Part 15, Limit Clause 15.205

|                               | Peak (dBμV/m) | Average (dBμV/m) |
|-------------------------------|---------------|------------------|
| Restricted Bands of Operation | 74            | 54               |

### Industry Canada RSS-GEN, Limit Clause 8.10

|                               | Peak (dBμV/m) | Average (dBμV/m) |
|-------------------------------|---------------|------------------|
| Restricted Bands of Operation | 74            | 54               |



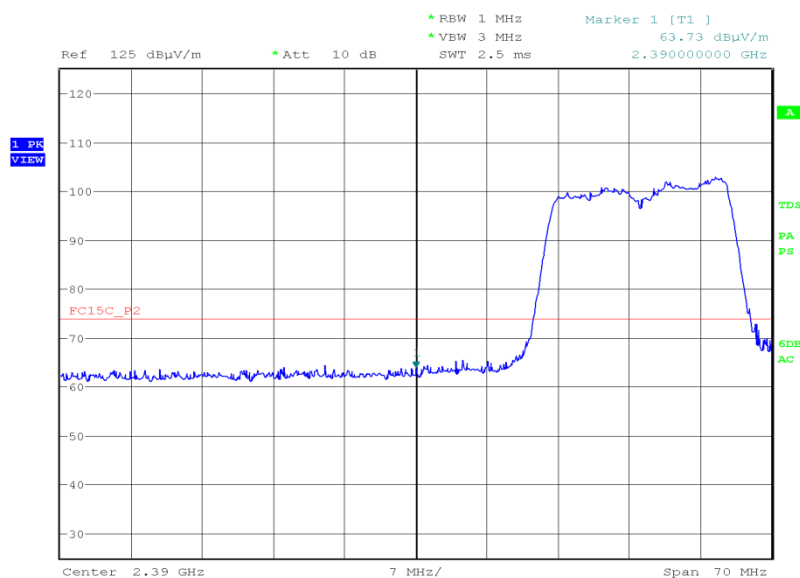
Product Service

5.00 V DC Supply

### 802.11n 20 MHz Bandwidth, MCS7, Restricted Band Edges Results

| 2412 MHz                       |               | 2462 MHz                       |               |
|--------------------------------|---------------|--------------------------------|---------------|
| Measured Frequency 2390.00 MHz |               | Measured Frequency 2483.50 MHz |               |
| dBμV/m                         |               | dBμV/m                         |               |
| Final Peak                     | Final Average | Final Peak                     | Final Average |
| 63.73                          | 47.59         | 70.30                          | 50.46         |

### 802.11n 20 MHz Bandwidth, 2412 MHz, Measured Frequency 2390 MHz, MCS7, Final Peak, Restricted Band Edges Plot

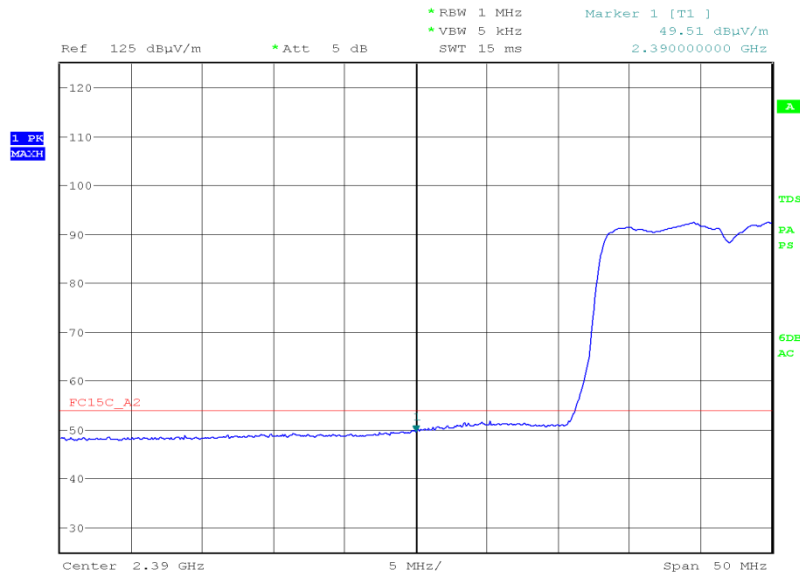


Date: 10.MAY.2016 09:44:16



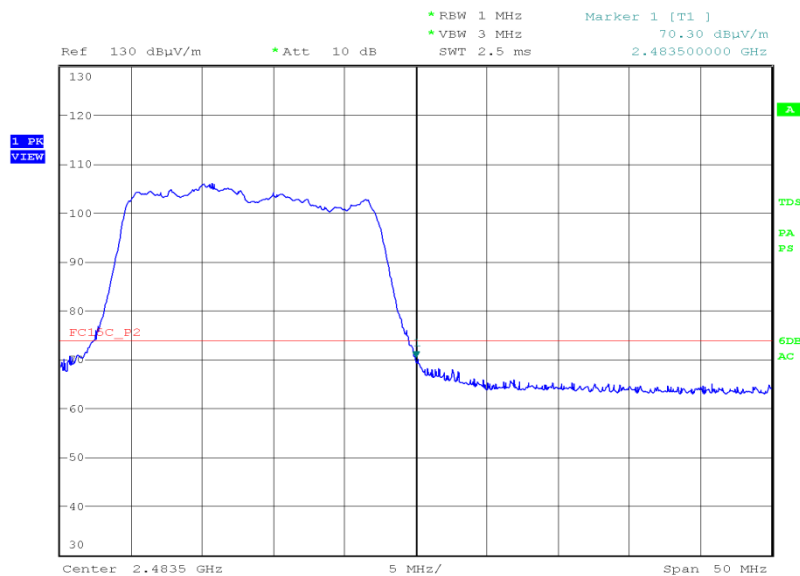
Product Service

**802.11n 20 MHz Bandwidth, 2412 MHz, Measured Frequency 2390 MHz, MCS7, Final Average, Restricted Band Edges Plot**



Date: 10.MAY.2016 09:37:27

**802.11n 20 MHz Bandwidth, 2462 MHz, Measured Frequency 2483.5 MHz, MCS7, Final Peak, Restricted Band Edges Plot**

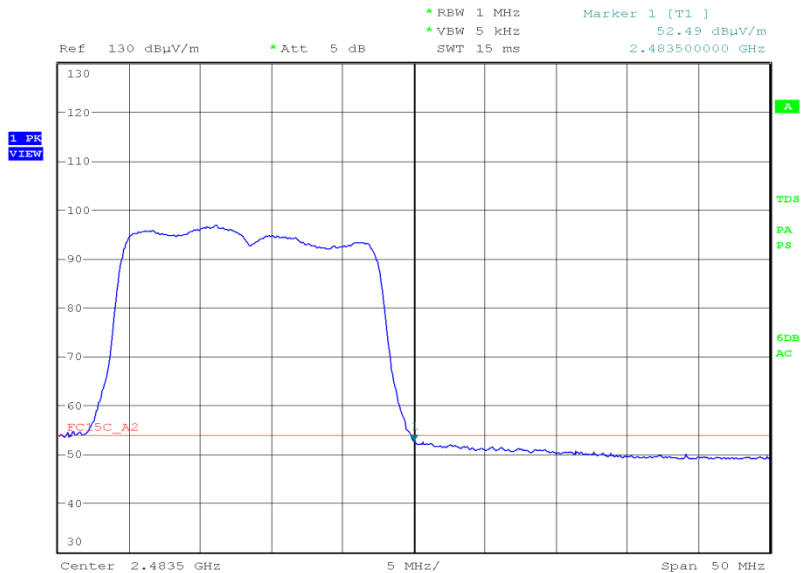


Date: 6.MAY.2016 16:10:49



Product Service

802.11n 20 MHz Bandwidth, 2462 MHz, Measured Frequency 2483.5 MHz, MCS7, Final Average, Restricted Band Edges Plot



Date: 6.MAY.2016 16:11:27

Remark

The test was performed on MCS7 because this was deemed the worst case data rate for Conducted Output Power.

The test was performed on MCS7 because this was deemed the worst case data rate for 6 dB Bandwidth.

Final average results shown in the tables above were recorded using a CISPR average detector as described in ANSI C63.10 clause 4.1.2. In order to determine the maximum emissions with the restricted band near the band edge, the method described in ANSI C63.10 clause 6.10.5.2 has been used and these plots are included in the report.

FCC 47 CFR Part 15, Limit Clause 15.205

|                               | Peak (dBμV/m) | Average (dBμV/m) |
|-------------------------------|---------------|------------------|
| Restricted Bands of Operation | 74            | 54               |

Industry Canada RSS-GEN, Limit Clause 8.10

|                               | Peak (dBμV/m) | Average (dBμV/m) |
|-------------------------------|---------------|------------------|
| Restricted Bands of Operation | 74            | 54               |



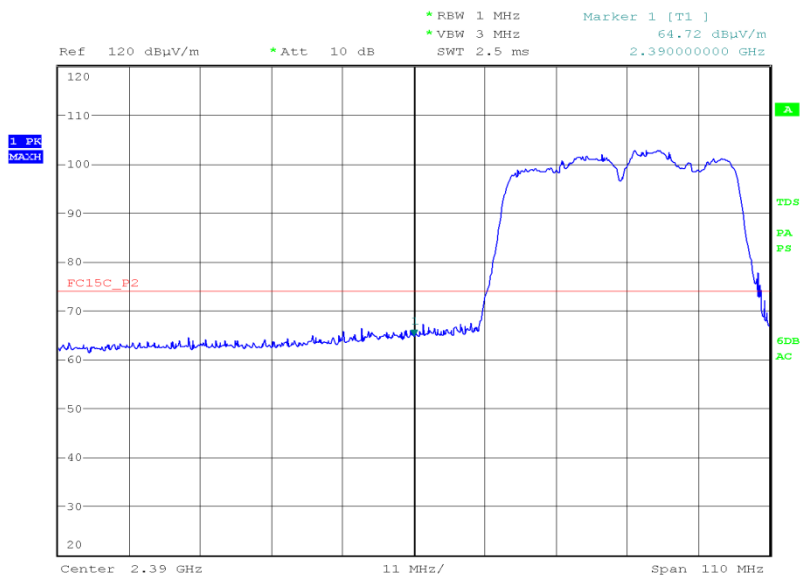
Product Service

5.00 V DC Supply

802.11n 40 MHz Bandwidth, MCS0, Restricted Band Edges Results

| 2422 MHz                       |               | 2452 MHz                       |               |
|--------------------------------|---------------|--------------------------------|---------------|
| Measured Frequency 2390.00 MHz |               | Measured Frequency 2483.50 MHz |               |
| dBμV/m                         |               | dBμV/m                         |               |
| Final Peak                     | Final Average | Final Peak                     | Final Average |
| 64.72                          | 50.12         | 63.71                          | 50.2          |

802.11n 40 MHz Bandwidth, 2422 MHz, Measured Frequency 2390 MHz, MCS0, Final Peak, Restricted Band Edges Plot

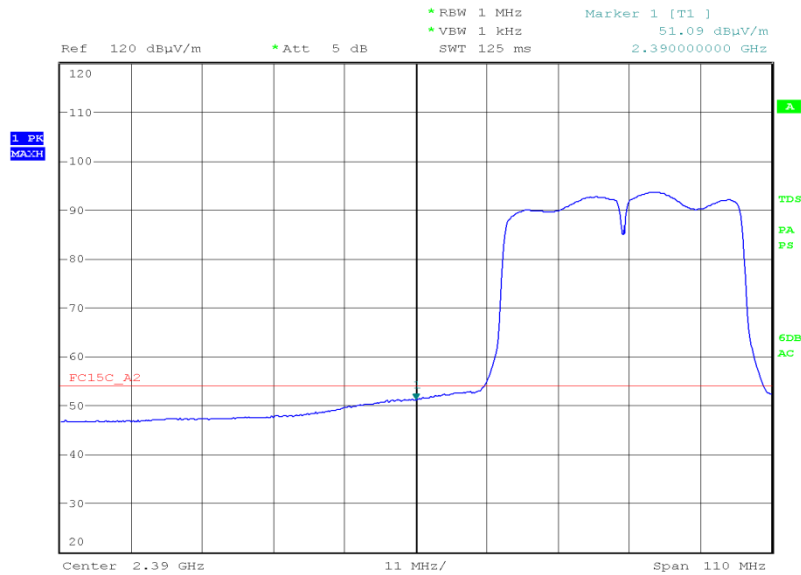


Date: 9.MAY.2016 12:09:46



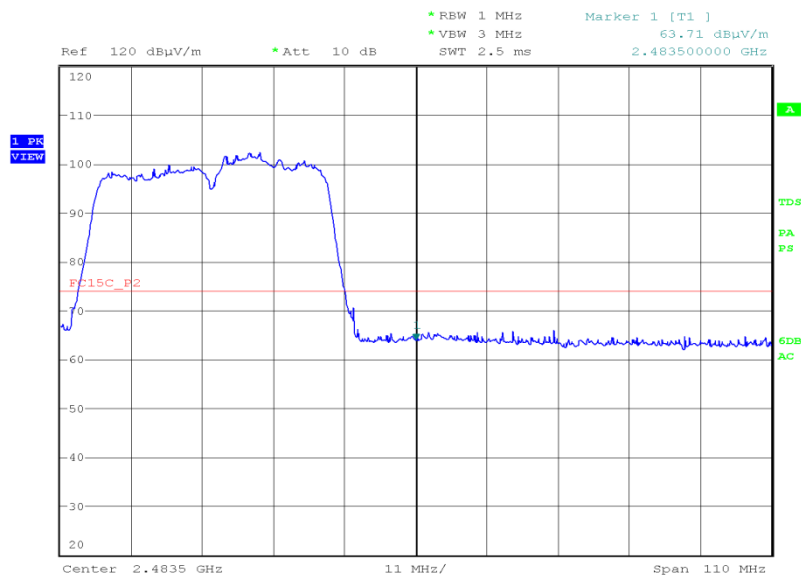
Product Service

802.11n 40 MHz Bandwidth, 2422 MHz, Measured Frequency 2390 MHz, MCS0, Final Average, Restricted Band Edges Plot



Date: 9.MAY.2016 12:08:40

802.11n 40 MHz Bandwidth, 2452 MHz, Measured Frequency 2483.5 MHz, MCS0, Final Peak, Restricted Band Edges Plot

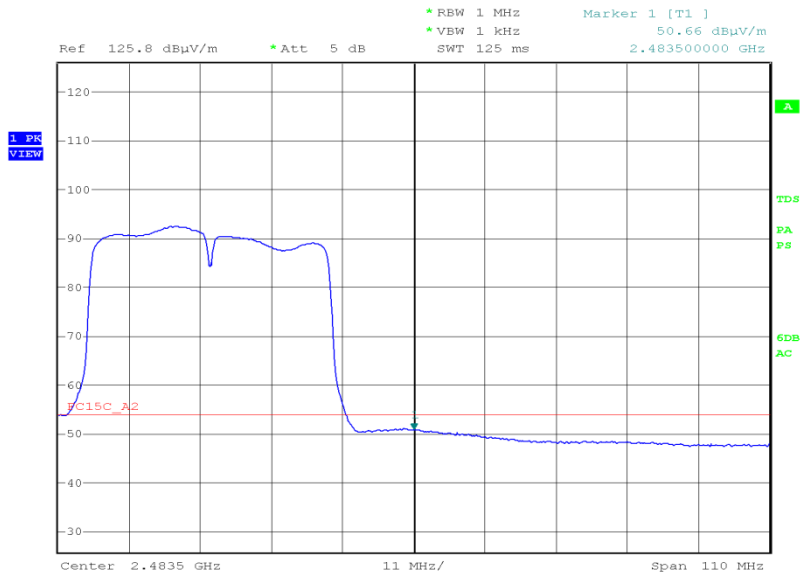


Date: 9.MAY.2016 12:31:58



Product Service

802.11n 40 MHz Bandwidth, 2452 MHz, Measured Frequency 2483.5 MHz, MCS0, Final Average, Restricted Band Edges Plot



Date: 9.MAY.2016 12:25:24

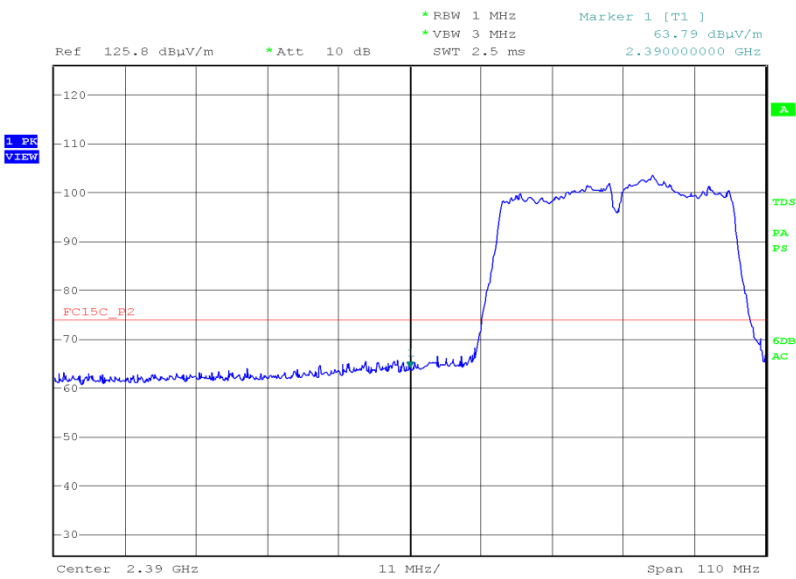


Product Service

802.11n 40 MHz Bandwidth, MCS5, Restricted Band Edges Results

| 2422 MHz                       |               | 2452 MHz                       |               |
|--------------------------------|---------------|--------------------------------|---------------|
| Measured Frequency 2390.00 MHz |               | Measured Frequency 2483.50 MHz |               |
| dBμV/m                         |               | dBμV/m                         |               |
| Final Peak                     | Final Average | Final Peak                     | Final Average |
| 63.79                          | 50.03         | 65.05                          | 50.85         |

802.11n 40 MHz Bandwidth, 2422 MHz, Measured Frequency 2390 MHz, MCS5, Final Peak, Restricted Band Edges Plot

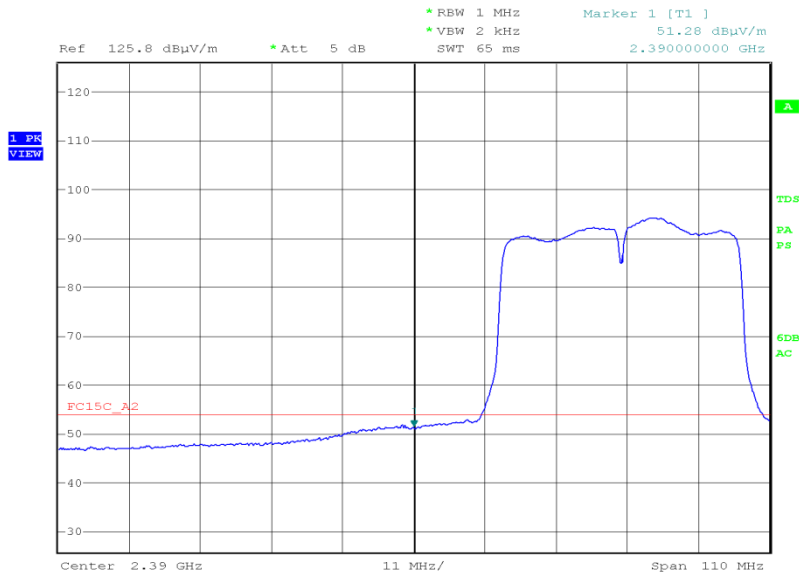


Date: 9.MAY.2016 13:42:13



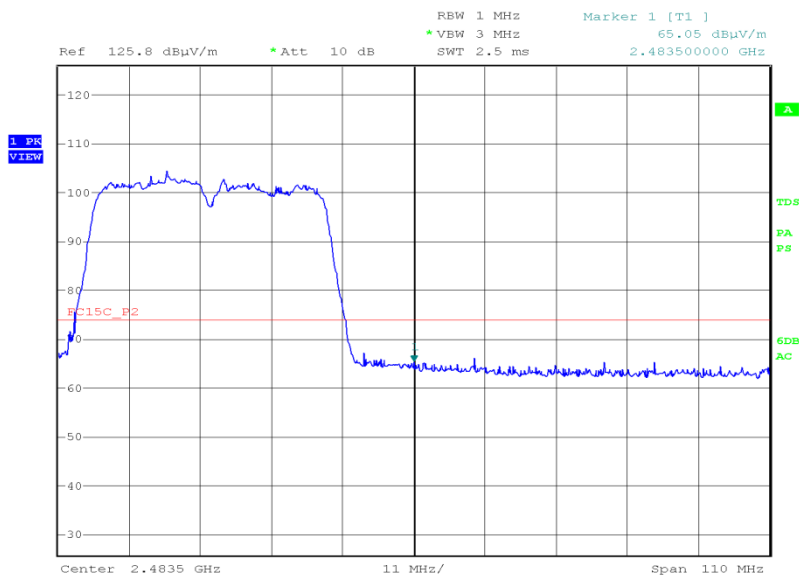
Product Service

802.11n 40 MHz Bandwidth, 2422 MHz, Measured Frequency 2390 MHz, MCS5, Final Average, Restricted Band Edges Plot



Date: 9.MAY.2016 13:40:48

802.11n 40 MHz Bandwidth, 2452 MHz, Measured Frequency 2483.5 MHz, MCS5, Final Peak, Restricted Band Edges Plot

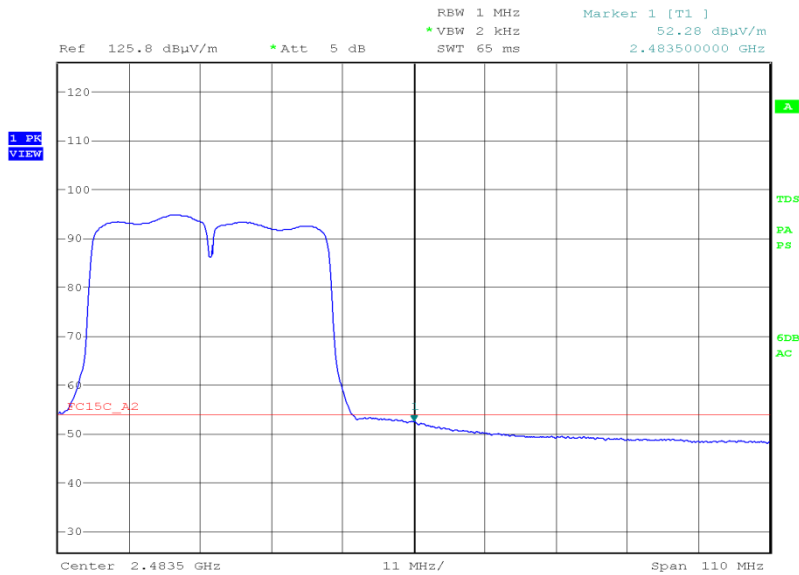


Date: 9.MAY.2016 12:48:41



Product Service

802.11n 40 MHz Bandwidth, 2452 MHz, Measured Frequency 2483.5 MHz, MCS5, Final Average, Restricted Band Edges Plot



Date: 9.MAY.2016 12:47:52

Remark

The test was performed on MCS0 because this was deemed the worst case data rate for Conducted Output Power.

The test was performed on MCS5 because this was deemed the worst case data rate for 6 dB Bandwidth.

Final average results shown in the tables above were recorded using a CISPR average detector as described in ANSI C63.10 clause 4.1.2. In order to determine the maximum emissions with the restricted band near the band edge, the method described in ANSI C63.10 clause 6.10.5.2 has been used and these plots are included in the report.

FCC 47 CFR Part 15, Limit Clause 15.205

|                               | Peak (dBμV/m) | Average (dBμV/m) |
|-------------------------------|---------------|------------------|
| Restricted Bands of Operation | 74            | 54               |

Industry Canada RSS-GEN, Limit Clause 8.10

|                               | Peak (dBμV/m) | Average (dBμV/m) |
|-------------------------------|---------------|------------------|
| Restricted Bands of Operation | 74            | 54               |

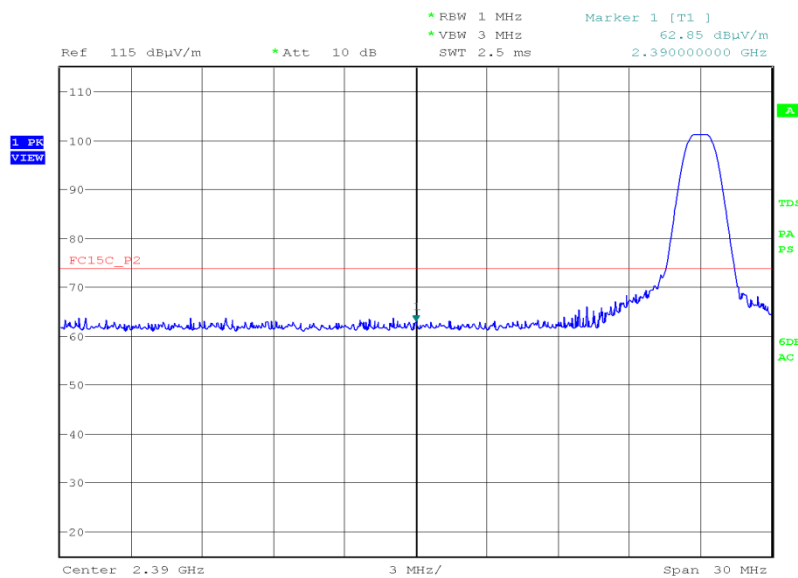


Product Service

5.00 V DC Supply

Bluetooth Low Energy, GFSK, Restricted Band Edges Results

| 2402 MHz                    |               | 2480 MHz                      |               |
|-----------------------------|---------------|-------------------------------|---------------|
| Measured Frequency 2390 MHz |               | Measured Frequency 2483.5 MHz |               |
| dBμV/m                      |               | dBμV/m                        |               |
| Final Peak                  | Final Average | Final Peak                    | Final Average |
| 62.85                       | 46.24         | 66.27                         | 46.50         |

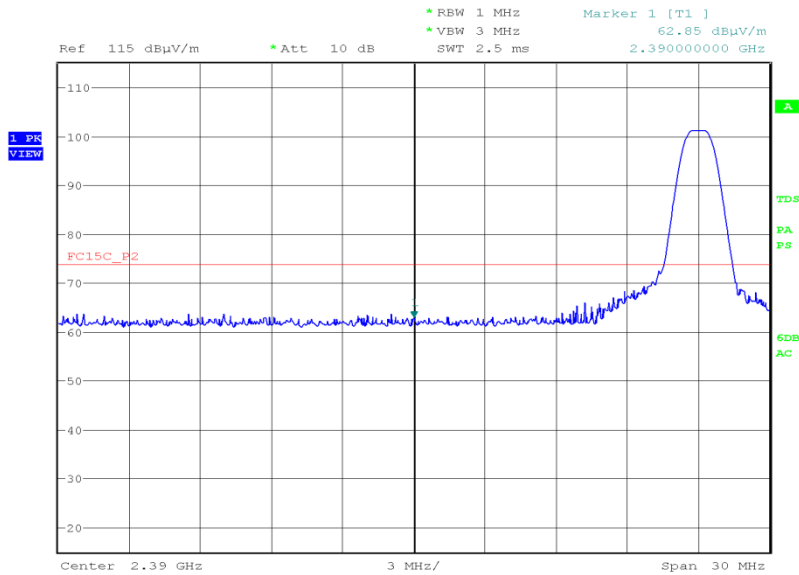
Bluetooth Low Energy, 2402 MHz, Measured Frequency 2390 MHz, GFSK, Final Peak, Restricted Band Edges Plot

Date: 25.MAY.2016 15:37:30



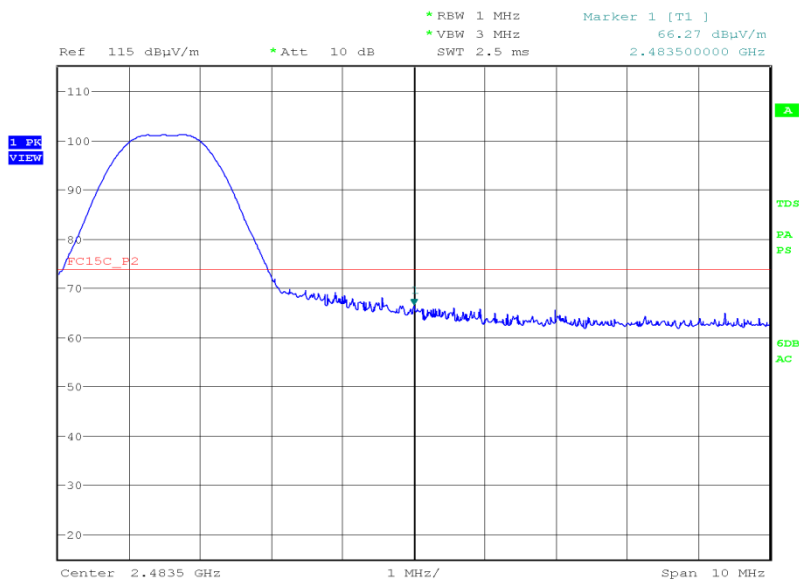
Product Service

Bluetooth Low Energy, 2402 MHz, Measured Frequency 2390 MHz, GFSK, Final Average, Restricted Band Edges Plot



Date: 25.MAY.2016 15:37:30

Bluetooth Low Energy, 2480 MHz, Measured Frequency 2483.5 MHz, GFSK, Final Peak, Restricted Band Edges Plot

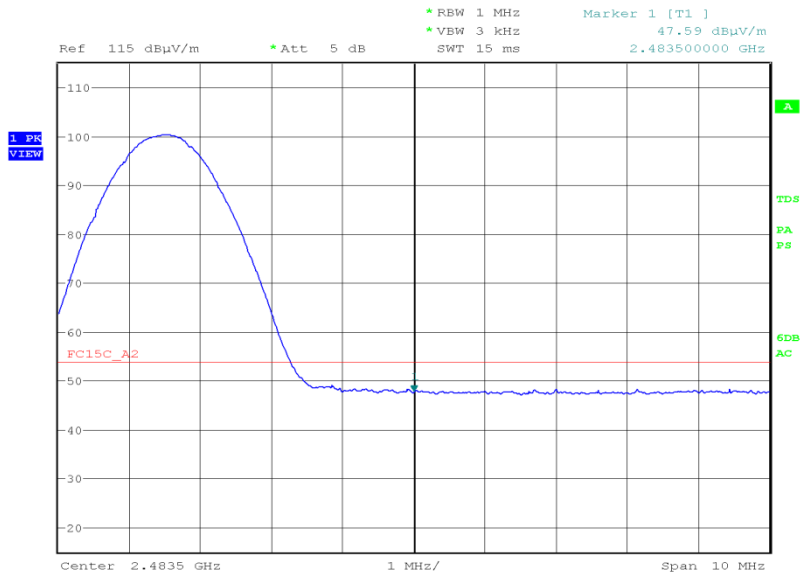


Date: 25.MAY.2016 15:54:30



Product Service

Bluetooth Low Energy, 2480 MHz, Measured Frequency 2483.5 MHz, GFSK, Final Average, Restricted Band Edges Plot



Date: 25.MAY.2016 15:55:10

Remarks

Final average results shown in the tables above were recorded using a CISPR average detector as described in ANSI C63.10 clause 4.1.2. In order to determine the maximum emissions with the restricted band near the band edge, the method described in ANSI C63.10 clause 6.10.5.2 has been used and these plots are included in the report.

FCC 47 CFR Part 15, Limit Clause 15.205

|                               | Peak (dBμV/m) | Average (dBμV/m) |
|-------------------------------|---------------|------------------|
| Restricted Bands of Operation | 74            | 54               |

Industry Canada RSS-GEN, Limit Clause 8.10

|                               | Peak (dBμV/m) | Average (dBμV/m) |
|-------------------------------|---------------|------------------|
| Restricted Bands of Operation | 74            | 54               |



Product Service

**2.7 AUTHORISED BAND EDGES****2.7.1 Specification Reference**

FCC 47 CFR Part 15C, Clause 15.247 (d)  
Industry Canada RSS-247m Clause 5.5

**2.7.2 Equipment Under Test and Modification State**

Minuet/FS5332 S/N: RAD108624 (Module) and RAD108700 (Platform) - Modification State 0

**2.7.3 Date of Test**

9 May 2016 & 26 May 2016

**2.7.4 Test Equipment Used**

The major items of test equipment used for the above tests are identified in Section 3.1.

**2.7.5 Test Procedure**

The test was performed in accordance with ANSI C63.10, clause 6.3, 6.5 and 6.6.

**2.7.6 Environmental Conditions**

|                     |               |
|---------------------|---------------|
| Ambient Temperature | 19.7 - 20.9°C |
| Relative Humidity   | 37.0 - 40.0%  |



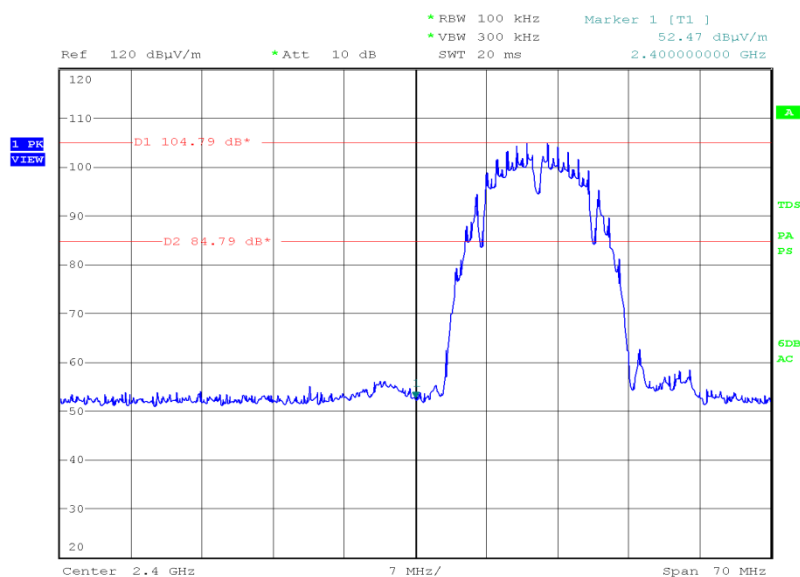
## 2.7.7 Test Results

5.00 V DC Supply

### 802.11b, 1 Mbps, Authorised Band Edges Results

|                                |                                |
|--------------------------------|--------------------------------|
| 2412 MHz                       | 2462 MHz                       |
| Measured Frequency 2400.00 MHz | Measured Frequency 2483.50 MHz |
| dBμV/m                         | dBμV/m                         |
| Final Peak                     | Final Peak                     |
| 52.47                          | 51.89                          |

### 802.11b, 2412 MHz, Measured Frequency 2400.00 MHz, 1 Mbps, Final Peak, Authorised Band Edges Plot

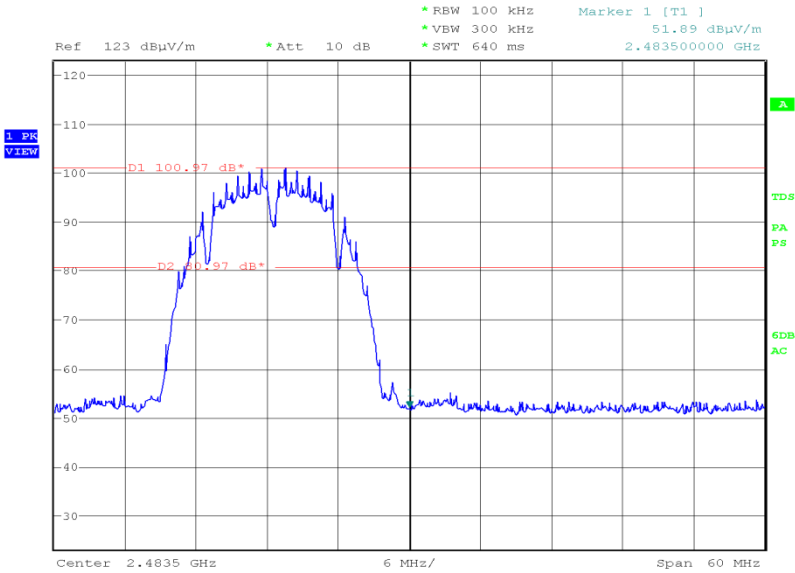


Date: 9.MAY.2016 14:36:19



Product Service

802.11b, 2462 MHz, Measured Frequency 2483.50 MHz, 1 Mbps, Final Peak, Authorised Band Edges Plot



Date: 9.MAY.2016 15:49:01

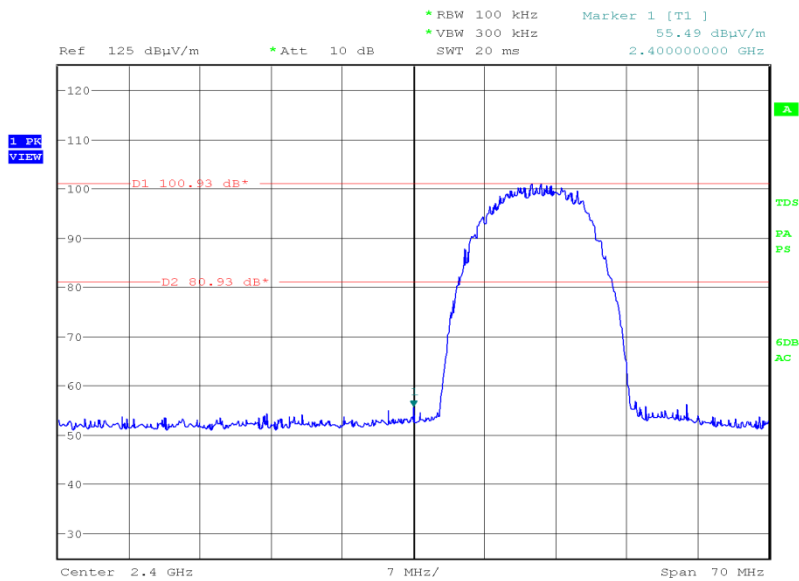


Product Service

802.11b, 5.5 Mbps, Authorised Band Edges Results

|                                |                                |
|--------------------------------|--------------------------------|
| 2412 MHz                       | 2462 MHz                       |
| Measured Frequency 2400.00 MHz | Measured Frequency 2483.50 MHz |
| dBµV/m                         | dBµV/m                         |
| Final Peak                     | Final Peak                     |
| 55.49                          | 50.02                          |

802.11b, 2412 MHz, Measured Frequency 2400.00 MHz, 5.5 Mbps, Final Peak, Authorised Band Edges Plot

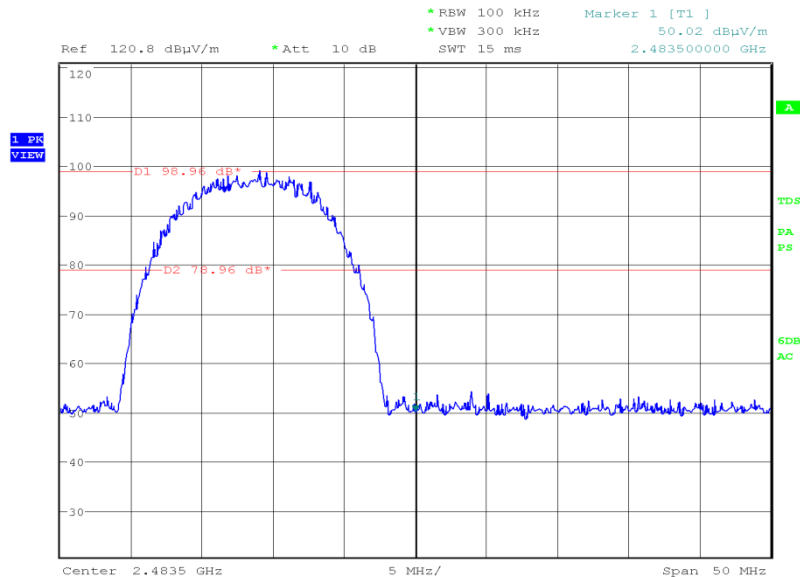


Date: 9.MAY.2016 16:35:56



Product Service

802.11b, 2462 MHz, Measured Frequency 2483.50 MHz, 5.5 Mbps, Final Peak, Authorised Band Edges Plot



Date: 9.MAY.2016 16:14:50

Remark

The test was performed on 1 Mbps because this was deemed the worst case data rate for Conducted Output Power.

The test was performed on 5.5 Mbps because this was deemed the worst case data rate for 6 dB Bandwidth.

FCC 47 CFR Part 15, Limit Clause 15.247 (d)

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. 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 below the fundamental instead of 20 dB.

Industry Canada RSS-247, Limit Clause 5.5

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. 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 below the fundamental instead of 20 dB.

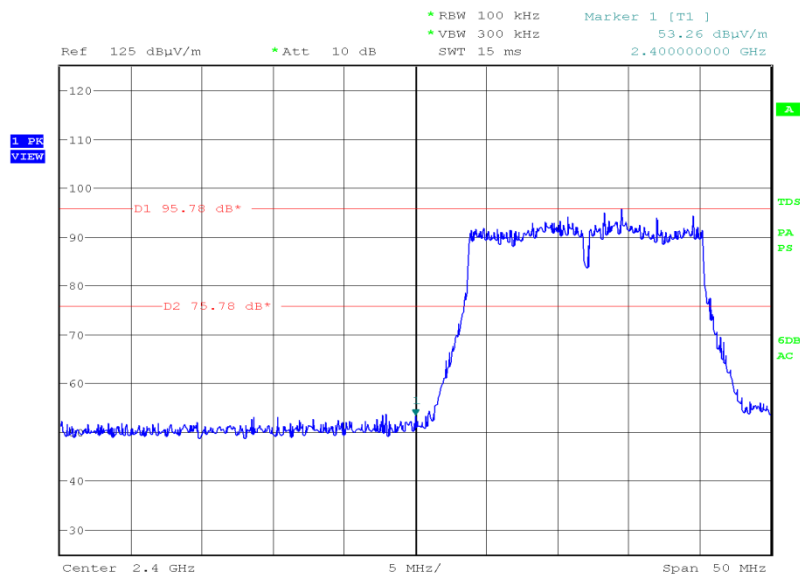


Product Service

5.00 V DC Supply

802.11g, 12 Mbps, Authorised Band Edges Results

|                                |                                |
|--------------------------------|--------------------------------|
| 2412 MHz                       | 2462 MHz                       |
| Measured Frequency 2400.00 MHz | Measured Frequency 2483.50 MHz |
| dB $\mu$ V/m                   | dB $\mu$ V/m                   |
| Final Peak                     | Final Peak                     |
| 53.26                          | 51.18                          |

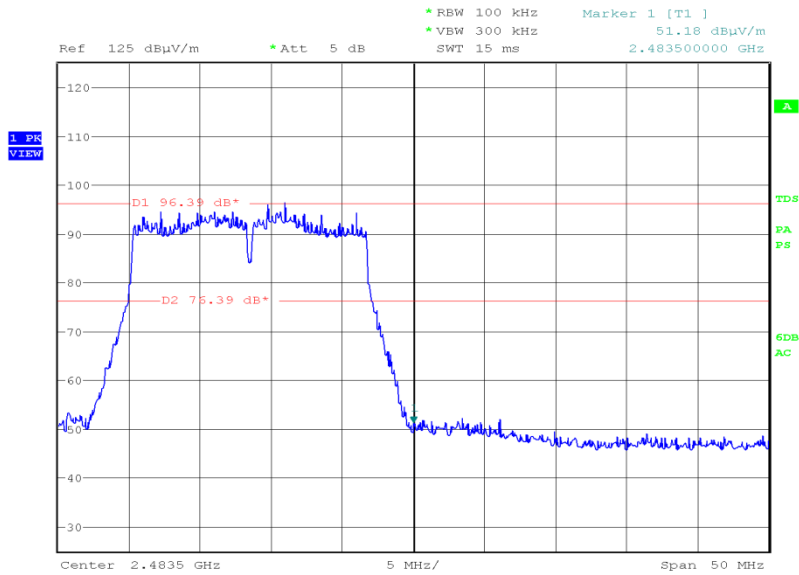
802.11g, 2412 MHz, Measured Frequency 2400.00 MHz, 12 Mbps, Final Peak, Authorised Band Edges Plot

Date: 9.MAY.2016 17:27:49



Product Service

802.11g, 2462 MHz, Measured Frequency 2483.50 MHz, 12 Mbps, Final Peak, Authorised Band Edges Plot



Date: 9.MAY.2016 17:07:57

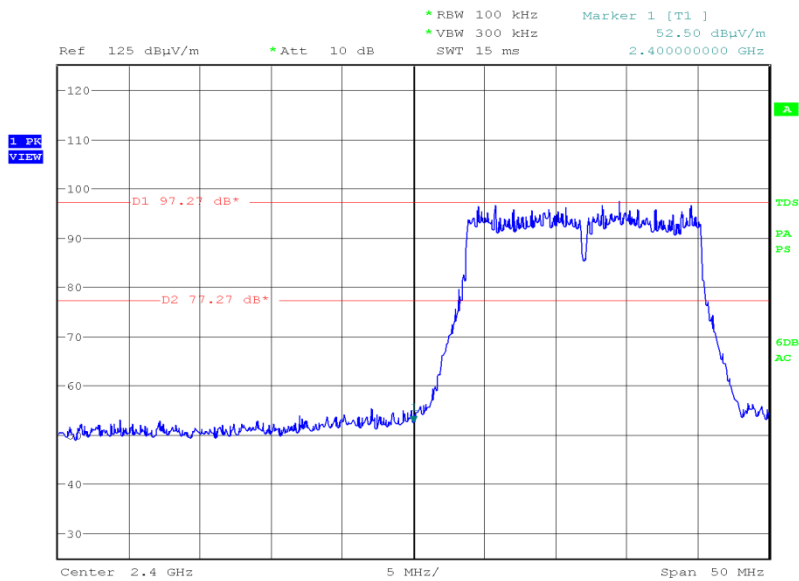


Product Service

802.11g, 36 Mbps, Authorised Band Edges Results

|                                |                                |
|--------------------------------|--------------------------------|
| 2412 MHz                       | 2462 MHz                       |
| Measured Frequency 2400.00 MHz | Measured Frequency 2483.50 MHz |
| dBµV/m                         | dBµV/m                         |
| Final Peak                     | Final Peak                     |
| 52.50                          | 54.06                          |

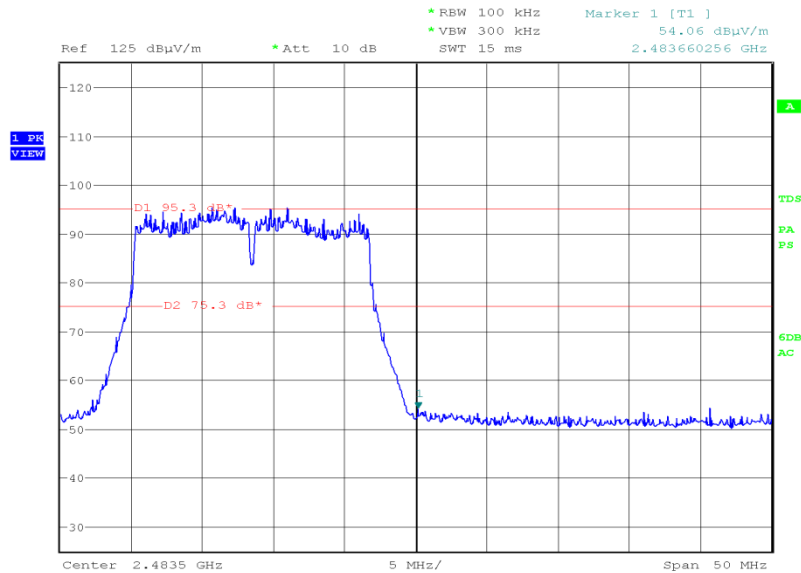
802.11g, 2412 MHz, Measured Frequency 2400.00 MHz, 36 Mbps, Final Peak, Authorised Band Edges Plot



Date: 10.MAY.2016 09:20:14



802.11g, 2462 MHz, Measured Frequency 2483.50 MHz, 36 Mbps, Final Peak, Authorised Band Edges Plot



Date: 10.MAY.2016 08:43:25

Remark

The test was performed on 12 Mbps because this was deemed the worst case data rate for Conducted Output Power.

The test was performed on 36 Mbps because this was deemed the worst case data rate for 6 dB Bandwidth.

FCC 47 CFR Part 15, Limit Clause 15.247 (d)

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. 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 below the fundamental instead of 20 dB.

Industry Canada RSS-247, Limit Clause 5.5

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. 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 below the fundamental instead of 20 dB.

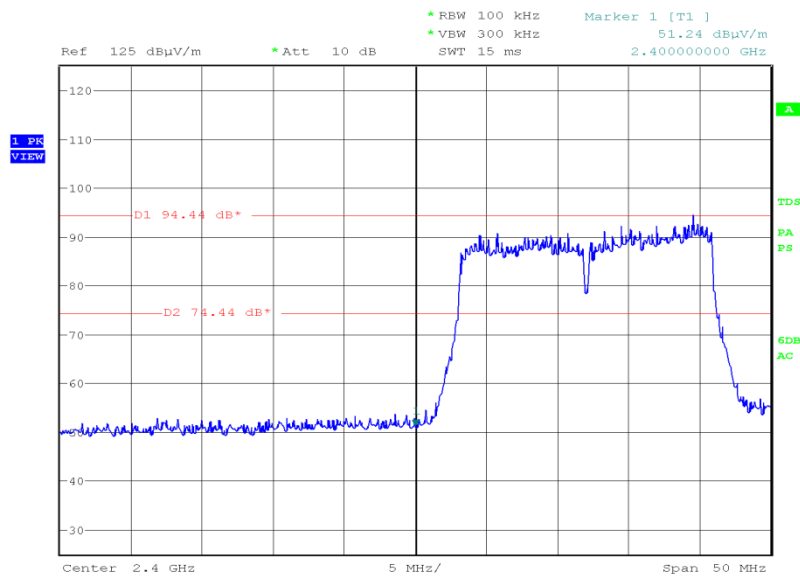


Product Service

5.00 V DC Supply

802.11n 20 MHz Bandwidth, MCS7, Authorised Band Edges Results

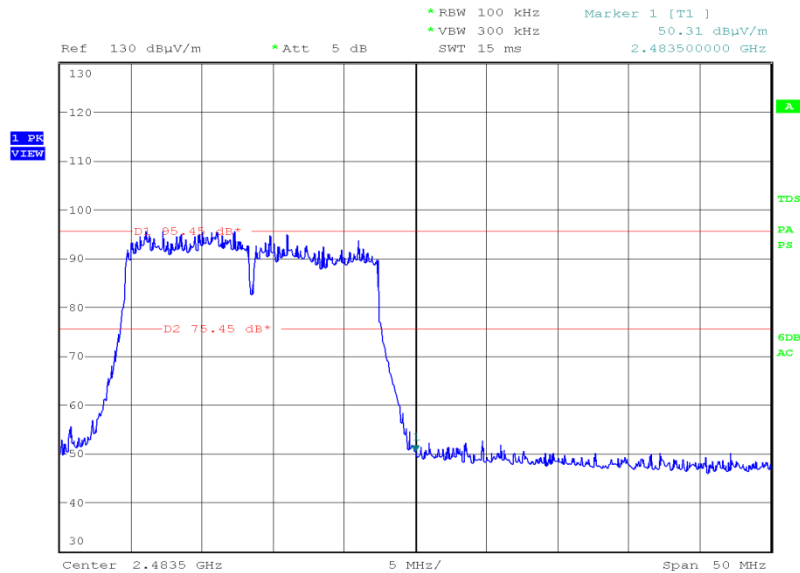
|                                |                                |
|--------------------------------|--------------------------------|
| 2412 MHz                       | 2462 MHz                       |
| Measured Frequency 2400.00 MHz | Measured Frequency 2483.50 MHz |
| dB $\mu$ V/m                   | dB $\mu$ V/m                   |
| Final Peak                     | Final Peak                     |
| 51.24                          | 50.31                          |

802.11n 20 MHz Bandwidth, 2412 MHz, Measured Frequency 2400.00 MHz, MCS7, Final Peak, Authorised Band Edges Plot

Date: 10.MAY.2016 09:40:04



802.11n 20 MHz Bandwidth, 2462 MHz, Measured Frequency 2483.50 MHz, MCS7, Final Peak, Authorised Band Edges Plot



Date: 6.MAY.2016 16:14:39

Remark

The test was performed on MCS7 because this was deemed the worst case data rate for Conducted Output Power and 6 dB Bandwidth.

FCC 47 CFR Part 15, Limit Clause 15.247 (d)

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. 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 below the fundamental instead of 20 dB.

Industry Canada RSS-247, Limit Clause 5.5

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. 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 below the fundamental instead of 20 dB.

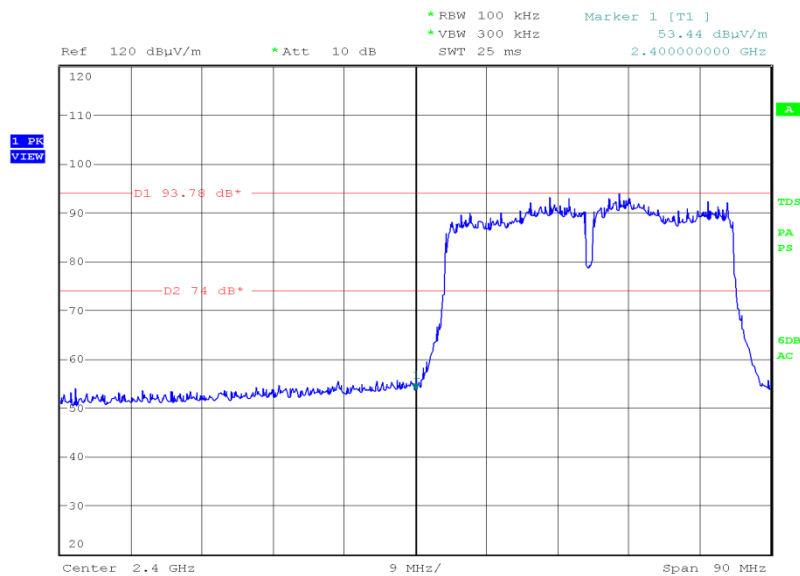


Product Service

5.00 V DC Supply

802.11n 40 MHz Bandwidth, MCS0, Authorised Band Edges Results

|                                |                                |
|--------------------------------|--------------------------------|
| 2422 MHz                       | 2452 MHz                       |
| Measured Frequency 2400.00 MHz | Measured Frequency 2483.50 MHz |
| dB $\mu$ V/m                   | dB $\mu$ V/m                   |
| Final Peak                     | Final Peak                     |
| 53.44                          | 53.43                          |

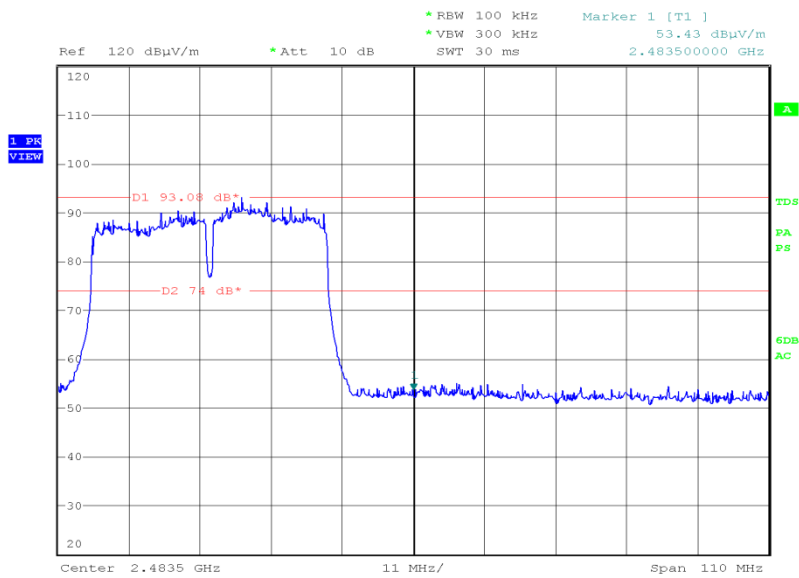
802.11n 40 MHz Bandwidth, 2422 MHz, Measured Frequency 2400.00 MHz, MCS0, Final Peak, Authorised Band Edges Plot


Date: 9.MAY.2016 12:16:47



Product Service

802.11n 40 MHz Bandwidth, 2452 MHz, Measured Frequency 2483.50 MHz, MCS0, Final Peak, Authorised Band Edges Plot



Date: 9.MAY.2016 12:33:13

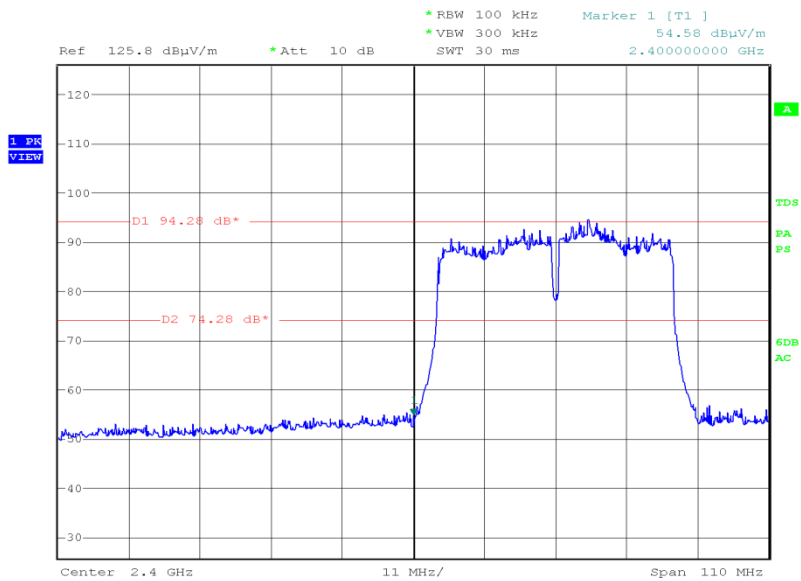


Product Service

802.11n 40 MHz Bandwidth, MCS5, Authorised Band Edges Results

|                                |                                |
|--------------------------------|--------------------------------|
| 2422 MHz                       | 2452 MHz                       |
| Measured Frequency 2400.00 MHz | Measured Frequency 2483.50 MHz |
| dBµV/m                         | dBµV/m                         |
| Final Peak                     | Final Peak                     |
| 54.58                          | 53.08                          |

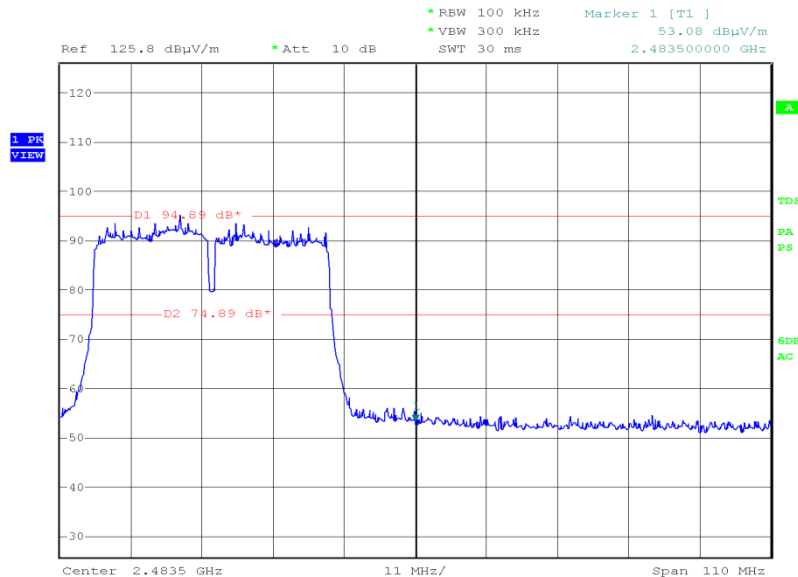
802.11n 40 MHz Bandwidth, 2422 MHz, Measured Frequency 2400.00 MHz, MCS5, Final Peak, Authorised Band Edges Plot



Date: 9.MAY.2016 13:45:52



802.11n 40 MHz Bandwidth, 2452 MHz, Measured Frequency 2483.50 MHz, MCS5, Final Peak, Authorised Band Edges Plot



Date: 9.MAY.2016 12:51:02

Remark

The test was performed on MCS0 because this was deemed the worst case data rate for Conducted Output Power.

The test was performed on MCS5 because this was deemed the worst case data rate for 6 dB Bandwidth.

FCC 47 CFR Part 15, Limit Clause 15.247 (d)

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. 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 below the fundamental instead of 20 dB.

Industry Canada RSS-247, Limit Clause 5.5

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. 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 below the fundamental instead of 20 dB.

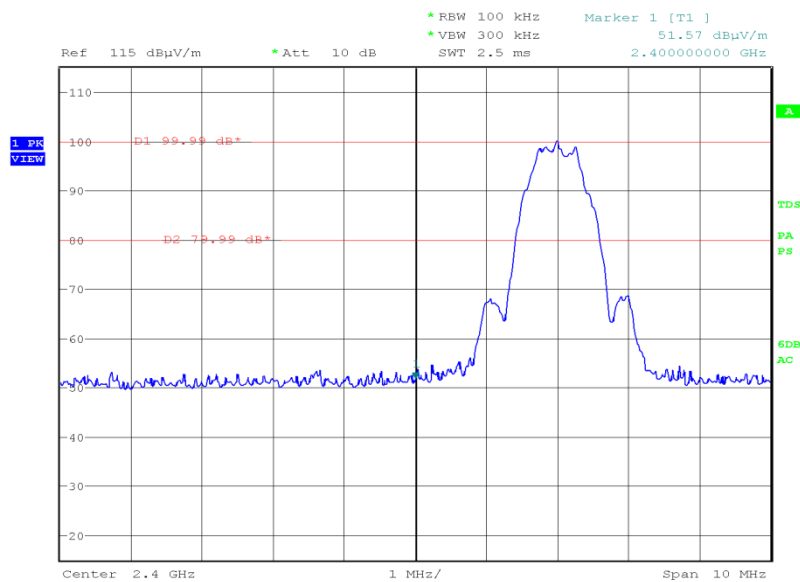


Product Service

5.00 V DC Supply

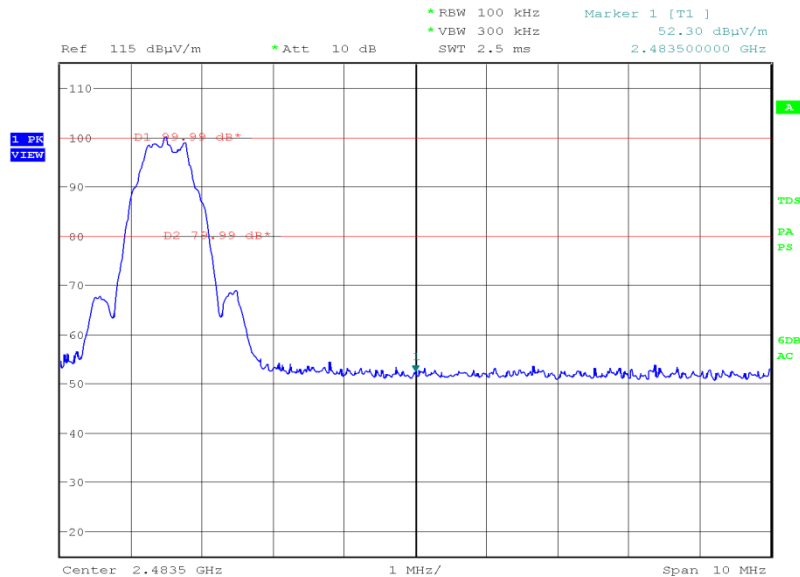
Bluetooth Low Energy, GFSK, Authorised Band Edges Results

|                                |                                |
|--------------------------------|--------------------------------|
| 2402 MHz                       | 2480 MHz                       |
| Measured Frequency 2400.00 MHz | Measured Frequency 2483.50 MHz |
| dB $\mu$ V/m                   | dB $\mu$ V/m                   |
| Final Peak                     | Final Peak                     |
| 51.57                          | 52.30                          |

Bluetooth Low Energy, 2402 MHz, Measured Frequency 2400.00 MHz, GFSK, Final Peak, Authorised Band Edges Plot

Date: 25.MAY.2016 15:33:46

Bluetooth Low Energy, 2480 MHz, Measured Frequency 2483.50 MHz, GFSK, Final Peak, Authorised Band Edges Plot



Date: 25.MAY.2016 15:57:54

FCC 47 CFR Part 15, Limit Clause 15.247 (d)

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. 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 below the fundamental instead of 20 dB.

Industry Canada RSS-247, Limit Clause 5.5

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. 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 below the fundamental instead of 20 dB.



Product Service

### **SECTION 3**

#### **3TEST EQUIPMENT USED**



### 3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

| Instrument                                          | Manufacturer          | Type No.                   | TE No. | Calibration Period (months) | Calibration Due |
|-----------------------------------------------------|-----------------------|----------------------------|--------|-----------------------------|-----------------|
| <b>Section 2.1 – AC Line Conducted Emissions</b>    |                       |                            |        |                             |                 |
| LISN                                                | Rohde & Schwarz       | ESH2-Z5                    | 17     | 12                          | 11-Feb-2017     |
| Multimeter                                          | Iso-tech              | IDM-101                    | 466    | 12                          | 11-Sep-2016     |
| Hygrometer                                          | Rotronic              | A1                         | 1388   | 12                          | 13-Apr-2017     |
| Screened Room (5)                                   | Rainford              | Rainford                   | 1545   | 36                          | 20-Dec-2017     |
| Transient Limiter                                   | Hewlett Packard       | 11947A                     | 2377   | 12                          | 16-Feb-2017     |
| EMI Test Receiver                                   | Rohde & Schwarz       | ESU40                      | 3506   | 12                          | 2-Nov-2016      |
| 7m Armoured RF Cable                                | SSI Cable Corp.       | 1501-13-13-7m WA(-)        | 3600   | -                           | TU              |
| <b>Section 2.2 - Peak Power Spectral Density</b>    |                       |                            |        |                             |                 |
| Power Supply Unit                                   | Farnell               | LB30-4                     | 158    | -                           | O/P Mon         |
| 20dB/2W Attenuator                                  | Narda                 | 4772-20                    | 462    | -                           | TU              |
| Cable (2m, SMA-SMA )                                | Reynolds              | 262-0248-2000              | 2400   | 12                          | 20-Aug-2016     |
| Multimeter                                          | Iso-tech              | IDM101                     | 2424   | 12                          | 29-Sep-2016     |
| Hygrometer                                          | Rotronic              | I-1000                     | 3220   | 12                          | 19-Aug-2016     |
| Network Analyser                                    | Rohde & Schwarz       | ZVA 40                     | 3548   | 12                          | 2-Sep-2016      |
| Calibration Unit                                    | Rohde & Schwarz       | ZV-Z54                     | 4368   | 12                          | 7-Sep-2016      |
| Frequency Standard                                  | Spectracom            | Secure Sync 1200-0408-0601 | 4393   | 6                           | 3-Sep-2016      |
| PXA Signal Analyser                                 | Keysight Technologies | N9030A                     | 4654   | 12                          | 8-Oct-2016      |
| <b>Section 2.3 - 6dB Bandwidth</b>                  |                       |                            |        |                             |                 |
| Power Supply Unit                                   | Farnell               | LB30-4                     | 158    | -                           | O/P Mon         |
| Multimeter                                          | Iso-tech              | IDM101                     | 2424   | 12                          | 29-Sep-2016     |
| Hygrometer                                          | Rotronic              | I-1000                     | 3220   | 12                          | 19-Aug-2016     |
| Network Analyser                                    | Rohde & Schwarz       | ZVA 40                     | 3548   | 12                          | 2-Sep-2016      |
| 2 Metre SMA Type Cable                              | Rhophase              | 3PS-1801A-2000-3PS         | 4111   | 12                          | 6-Nov-2016      |
| Calibration Unit                                    | Rohde & Schwarz       | ZV-Z54                     | 4368   | 12                          | 7-Sep-2016      |
| Frequency Standard                                  | Spectracom            | Secure Sync 1200-0408-0601 | 4393   | 6                           | 3-Sep-2016      |
| PXA Signal Analyser                                 | Keysight Technologies | N9030A                     | 4654   | 12                          | 8-Oct-2016      |
| <b>Section 2.4 - Maximum Conducted Output Power</b> |                       |                            |        |                             |                 |
| Power Supply Unit                                   | Farnell               | LB30-4                     | 158    | -                           | O/P Mon         |
| 20dB/2W Attenuator                                  | Narda                 | 4772-20                    | 462    | -                           | TU              |
| Cable (2m, SMA-SMA )                                | Reynolds              | 262-0248-2000              | 2400   | 12                          | 20-Aug-2016     |
| Multimeter                                          | Iso-tech              | IDM101                     | 2424   | 12                          | 29-Sep-2016     |
| Hygrometer                                          | Rotronic              | I-1000                     | 3220   | 12                          | 19-Aug-2016     |
| Network Analyser                                    | Rohde & Schwarz       | ZVA 40                     | 3548   | 12                          | 2-Sep-2016      |
| P-Series Power Meter                                | Agilent Technologies  | N1911A                     | 3980   | 12                          | 25-Sep-2016     |
| 50 MHz-18 GHz Wideband Power Sensor                 | Agilent Technologies  | N1921A                     | 3982   | 12                          | 25-Sep-2016     |
| Calibration Unit                                    | Rohde & Schwarz       | ZV-Z54                     | 4368   | 12                          | 7-Sep-2016      |



Product Service

| Instrument                                       | Manufacturer             | Type No.               | TE No. | Calibration Period (months) | Calibration Due |
|--------------------------------------------------|--------------------------|------------------------|--------|-----------------------------|-----------------|
| <b>Section 2.5 - Spurious Radiated Emissions</b> |                          |                        |        |                             |                 |
| Antenna 18-40GHz (Double Ridge Guide)            | Link Microtek Ltd        | AM180HA-K-TU2          | 230    | 24                          | 12-Feb-2018     |
| Antenna (Double Ridge Guide, 1GHz-18GHz)         | EMCO                     | 3115                   | 234    | 12                          | 29-Apr-2017     |
| Multimeter                                       | Iso-tech                 | IDM-101                | 466    | 12                          | 11-Sep-2016     |
| Hygrometer                                       | Rotronic                 | A1                     | 1388   | 12                          | 13-Apr-2017     |
| Antenna 18-40GHz (Double Ridge Guide)            | Q-Par Angus Ltd          | QSH 180K               | 1511   | 24                          | 27-Nov-2016     |
| Pre-Amplifier                                    | Phase One                | PS04-0086              | 1533   | 12                          | 30-Jul-2016     |
| 18GHz - 40GHz Pre-Amplifier                      | Phase One                | PS04-0087              | 1534   | 12                          | 23-Dec-2016     |
| Screened Room (5)                                | Rainford                 | Rainford               | 1545   | 36                          | 20-Dec-2017     |
| Turntable Controller                             | Inn-Co GmbH              | CO 1000                | 1606   | -                           | TU              |
| Hygrometer                                       | Rotronic                 | A1                     | 2138   | 12                          | 9-Dec-2016      |
| Cable (2m)                                       | Rosenberger              | FA147A2020002020       | 2195   | 12                          | 19-Aug-2016     |
| Multimeter                                       | Iso-tech                 | IDM101                 | 2417   | 12                          | 29-Sep-2016     |
| Power Supply                                     | Farnell                  | LT30-2                 | 2659   | -                           | TU              |
| Filter (Hi Pass)                                 | Lorch                    | 9HP7-7000-SR           | 2833   | 12                          | 5-Feb-2017      |
| Antenna (Bilog)                                  | Chase                    | CBL6143                | 2904   | 24                          | 11-Jun-2017     |
| Compliance 5 Emissions                           | Schaffner                | C5e Software V.5.00.00 | 3275   | -                           | N/A - Software  |
| EMI Test Receiver                                | Rohde & Schwarz          | ESU40                  | 3506   | 12                          | 2-Nov-2016      |
| 9m RF Cable (N Type)                             | Rhophase                 | NPS-2303-9000-NPS      | 3791   | -                           | TU              |
| Tilt Antenna Mast                                | maturo GmbH              | TAM 4.0-P              | 3916   | -                           | TU              |
| Mast Controller                                  | maturo GmbH              | NCD                    | 3917   | -                           | TU              |
| Cable 1503 2M 2.92(P)m 2.92(P)m                  | Rhophase                 | KPS-1503A-2000-KPS     | 4293   | -                           | O/P Mon         |
| 1GHz to 8GHz Low Noise Amplifier                 | Wright Technologies      | APS04-0085             | 4365   | 12                          | 6-Oct-2016      |
| Suspended Substrate Highpass Filter              | Advance Power Components | 11SH10-3000/X18000-O/O | 4411   | 12                          | 23-Mar-2017     |
| Cable (Yellow, Rx, Km-Km 2m)                     | Scott Cables             | KPS-1501-2000-KPS      | 4527   | -                           | TU              |
| Double Ridged Waveguide Horn Antenna             | ETS-Lindgren             | 3117                   | 4722   | 12                          | 29-Dec-2016     |
| <b>Section 2.6 - Restricted Band Edges</b>       |                          |                        |        |                             |                 |
| Screened Room (5)                                | Rainford                 | Rainford               | 1545   | 36                          | 20-Dec-2017     |
| Turntable Controller                             | Inn-Co GmbH              | CO 1000                | 1606   | -                           | TU              |
| Hygrometer                                       | Rotronic                 | A1                     | 2138   | 12                          | 9-Dec-2016      |
| Multimeter                                       | Iso-tech                 | IDM101                 | 2417   | 12                          | 29-Sep-2016     |
| Power Supply                                     | Farnell                  | LT30-2                 | 2659   | -                           | TU              |
| EMI Test Receiver                                | Rohde & Schwarz          | ESU40                  | 3506   | 12                          | 2-Nov-2016      |
| Tilt Antenna Mast                                | maturo GmbH              | TAM 4.0-P              | 3916   | -                           | TU              |
| Mast Controller                                  | maturo GmbH              | NCD                    | 3917   | -                           | TU              |
| Double Ridged Waveguide Horn Antenna             | ETS-Lindgren             | 3117                   | 4722   | 12                          | 29-Dec-2016     |
| <b>Section 2.7- Authorised Band Edges</b>        |                          |                        |        |                             |                 |
| Screened Room (5)                                | Rainford                 | Rainford               | 1545   | 36                          | 20-Dec-2017     |
| Turntable Controller                             | Inn-Co GmbH              | CO 1000                | 1606   | -                           | TU              |
| Hygrometer                                       | Rotronic                 | A1                     | 2138   | 12                          | 9-Dec-2016      |
| Multimeter                                       | Iso-tech                 | IDM101                 | 2417   | 12                          | 29-Sep-2016     |
| Power Supply                                     | Farnell                  | LT30-2                 | 2659   | -                           | TU              |
| EMI Test Receiver                                | Rohde & Schwarz          | ESU40                  | 3506   | 12                          | 2-Nov-2016      |
| Tilt Antenna Mast                                | maturo GmbH              | TAM 4.0-P              | 3916   | -                           | TU              |
| Mast Controller                                  | maturo GmbH              | NCD                    | 3917   | -                           | TU              |
| Double Ridged Waveguide Horn Antenna             | ETS-Lindgren             | 3117                   | 4722   | 12                          | 29-Dec-2016     |

TU – Traceability Unscheduled

O/P MON – Output Monitored with Calibrated Equipment



### 3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:-

| Test Discipline                | MU                                                                                                             |
|--------------------------------|----------------------------------------------------------------------------------------------------------------|
| 6 dB Bandwidth                 | $\pm 212.114$ kHz                                                                                              |
| Power Spectral Density         | $\pm 3.0$ dB                                                                                                   |
| Maximum Conducted Output Power | $\pm 0.70$ dB                                                                                                  |
| AC Line Conducted Emissions    | $\pm 3.2$ dB                                                                                                   |
| Spurious Radiated Emissions    | 30 MHz to 1 GHz: $\pm 5.1$ dB<br>1 GHz to 40 GHz: $\pm 6.3$ dB                                                 |
| Authorised Band Edges          | Conducted: $\pm 3.08$ dB<br>Radiated: 30 MHz to 1 GHz: $\pm 5.1$ dB<br>Radiated: 1 GHz to 40 GHz: $\pm 6.3$ dB |
| Restricted Band Edges          | 30 MHz to 1 GHz: $\pm 5.1$ dB<br>1 GHz to 40 GHz: $\pm 6.3$ dB                                                 |



Product Service

## **SECTION 4**

### **4ACCREDITATION, DISCLAIMERS AND COPYRIGHT**



Product Service

#### 4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT



This report relates only to the actual item/items tested.

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