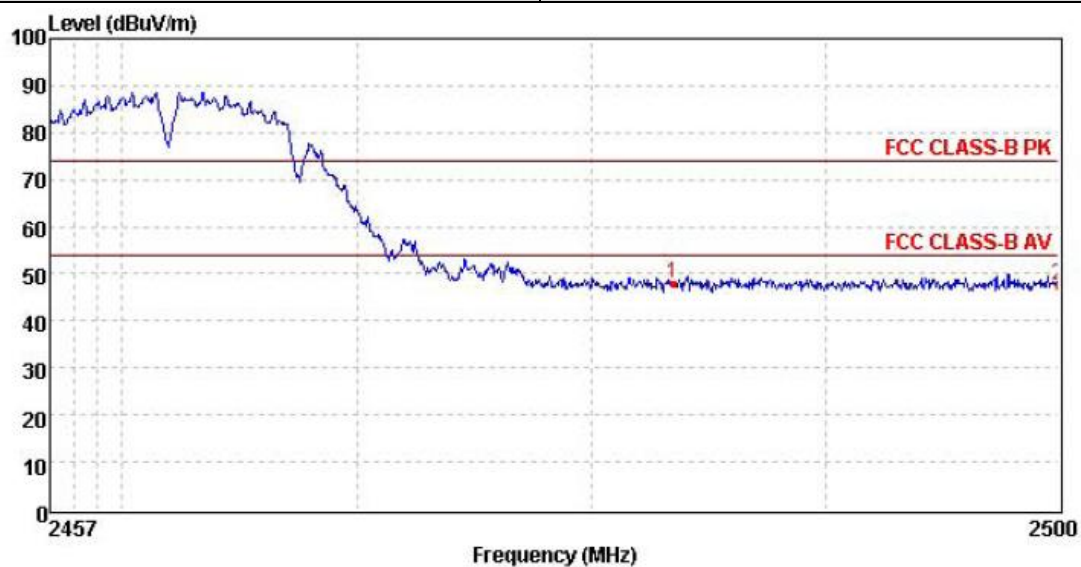


802.11b-2462MHz Peak:

Polarization:

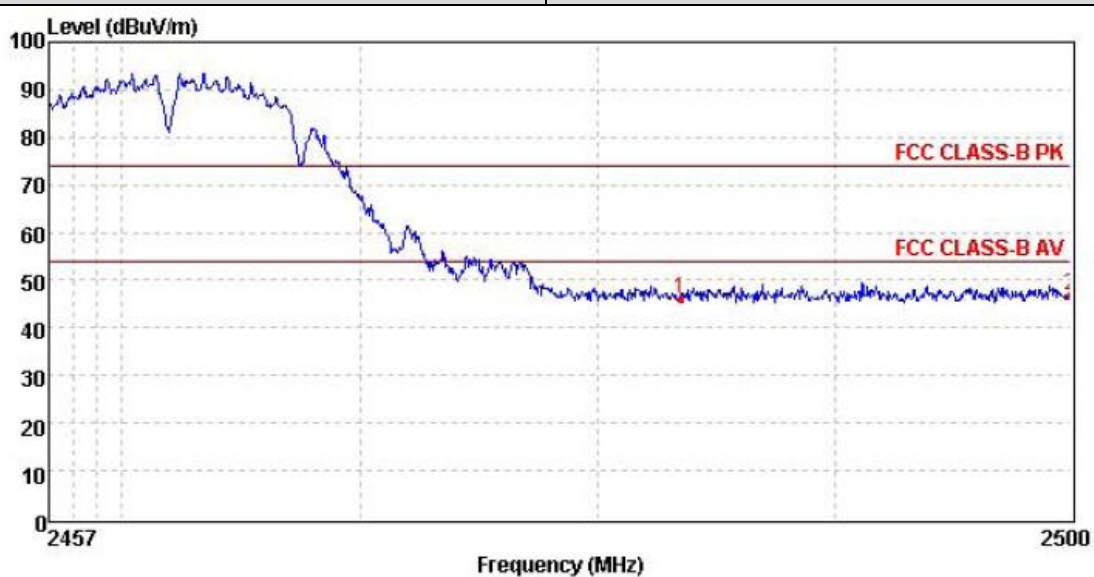
Vertical



| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
|------|------------------|-------------------|---------------|-------------|--------------|-----------------|-----------------|---------------|--------|
| 1    | 2483.49          | 13.80             | 27.26         | 6.83        | 0.00         | 47.89           | 74.00           | -26.11        | Peak   |
| 2    | 2500.00          | 13.66             | 27.20         | 6.84        | 0.00         | 47.70           | 74.00           | -26.30        | Peak   |

Polarization:

Horizontal

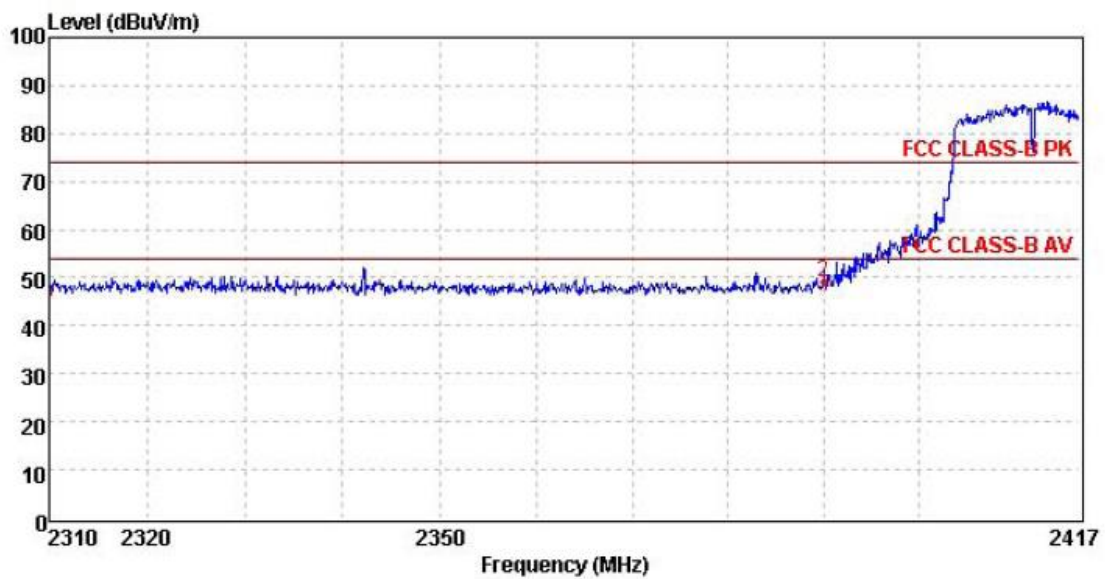


| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
|------|------------------|-------------------|---------------|-------------|--------------|-----------------|-----------------|---------------|--------|
| 1    | 2483.49          | 11.93             | 27.26         | 6.83        | 0.00         | 46.02           | 74.00           | -27.98        | Peak   |
| 2    | 2500.00          | 12.88             | 27.20         | 6.84        | 0.00         | 46.92           | 74.00           | -27.08        | Peak   |

## 802.11g-2412MHz Peak:

Polarization:

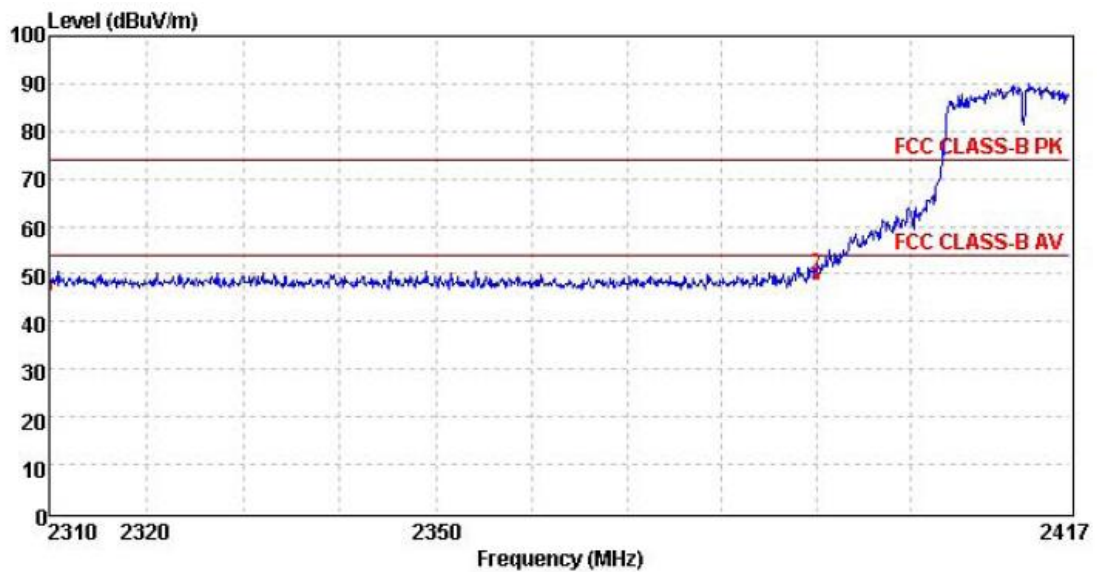
Vertical



| Mark | Frequency<br>MHz | Reading<br>dBUV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBUV/m | Limit<br>dBUV/m | Over<br>limit | Remark |
|------|------------------|-------------------|---------------|-------------|--------------|-----------------|-----------------|---------------|--------|
| 1    | 2310.00          | 12.67             | 28.05         | 6.62        | 0.00         | 47.34           | 74.00           | -26.66        | Peak   |
| 2    | 2390.01          | 14.78             | 27.65         | 6.75        | 0.00         | 49.18           | 74.00           | -24.82        | Peak   |

Polarization:

Horizontal

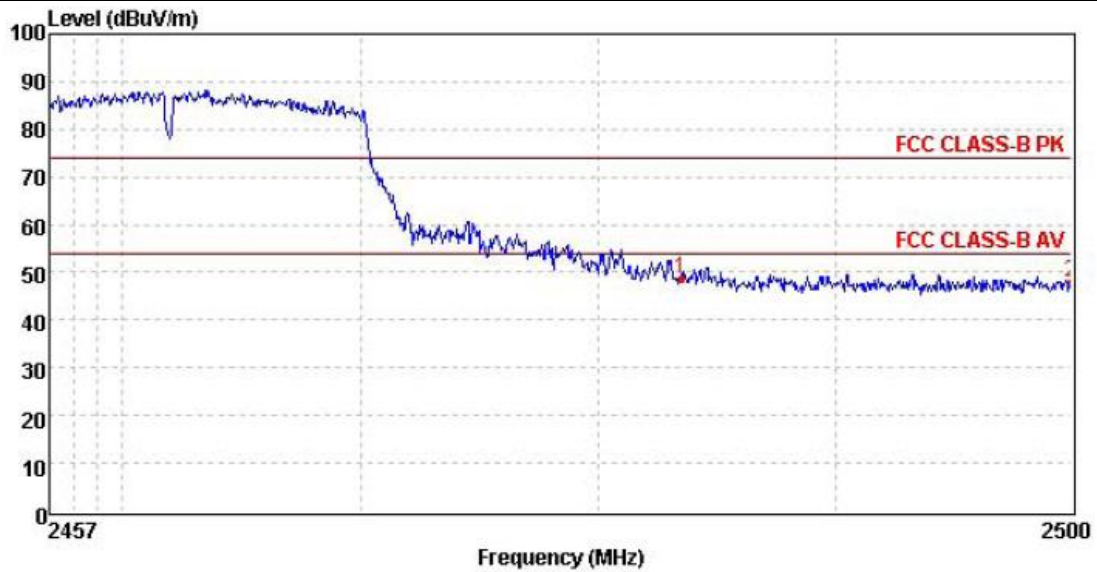


| Mark | Frequency<br>MHz | Reading<br>dBUV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBUV/m | Limit<br>dBUV/m | Over<br>limit | Remark |
|------|------------------|-------------------|---------------|-------------|--------------|-----------------|-----------------|---------------|--------|
| 1    | 2310.00          | 12.81             | 28.05         | 6.62        | 0.00         | 47.48           | 74.00           | -26.52        | Peak   |
| 2    | 2390.01          | 15.51             | 27.65         | 6.75        | 0.00         | 49.91           | 74.00           | -24.09        | Peak   |

802.11g-2462MHz Peak:

Polarization:

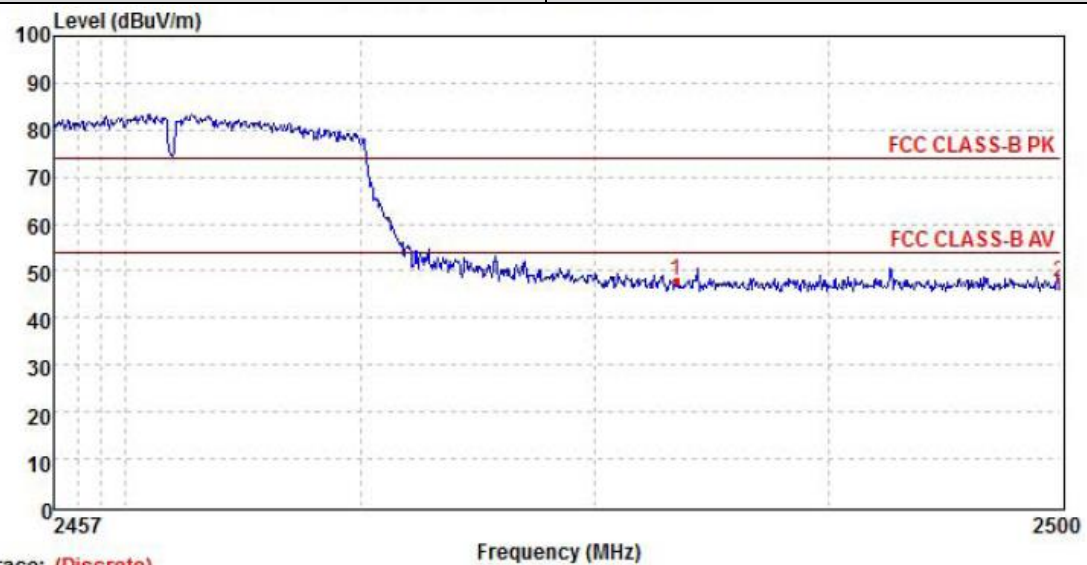
Vertical



| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
|------|------------------|-------------------|---------------|-------------|--------------|-----------------|-----------------|---------------|--------|
| 1    | 2483.49          | 14.75             | 27.26         | 6.83        | 0.00         | 48.84           | 74.00           | -25.16        | Peak   |
| 2    | 2500.00          | 13.92             | 27.20         | 6.84        | 0.00         | 47.96           | 74.00           | -26.04        | Peak   |

Polarization:

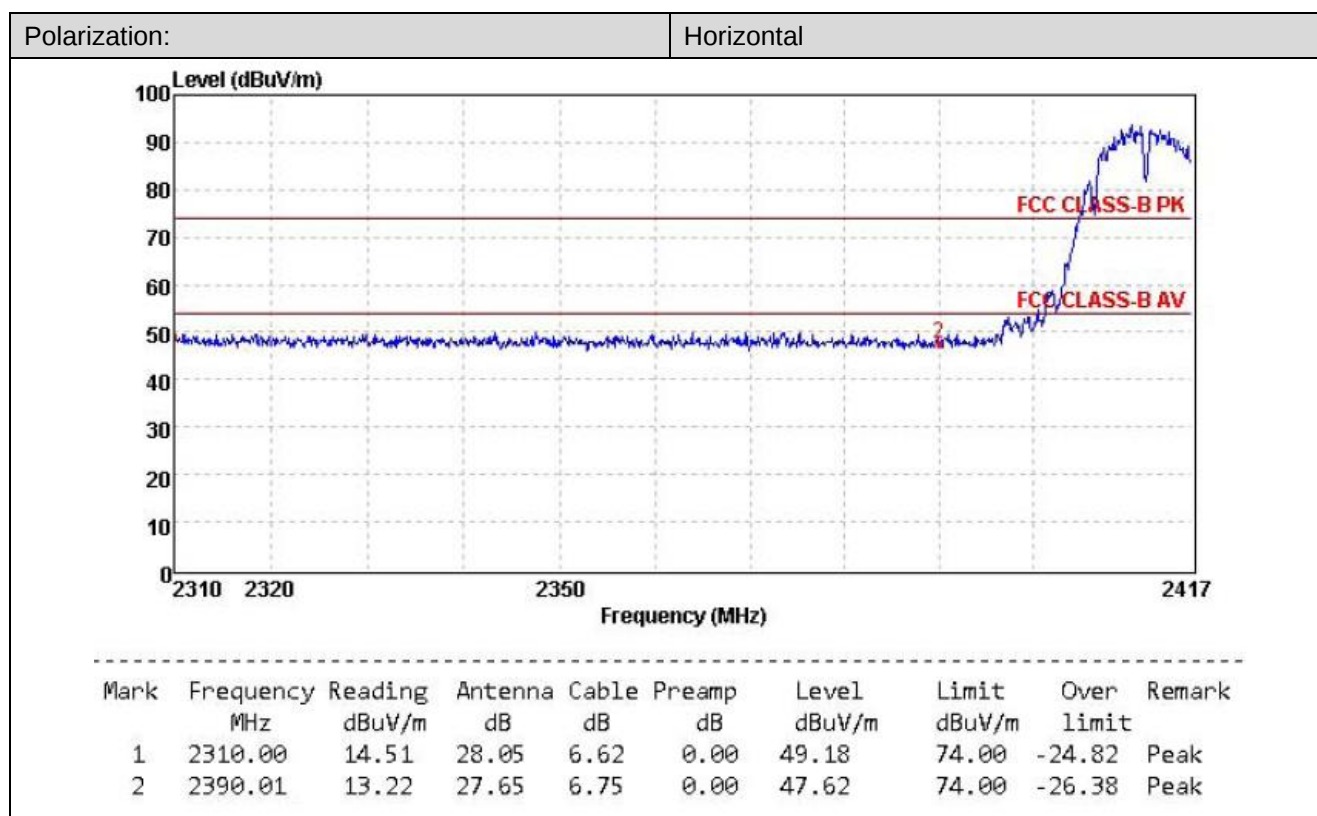
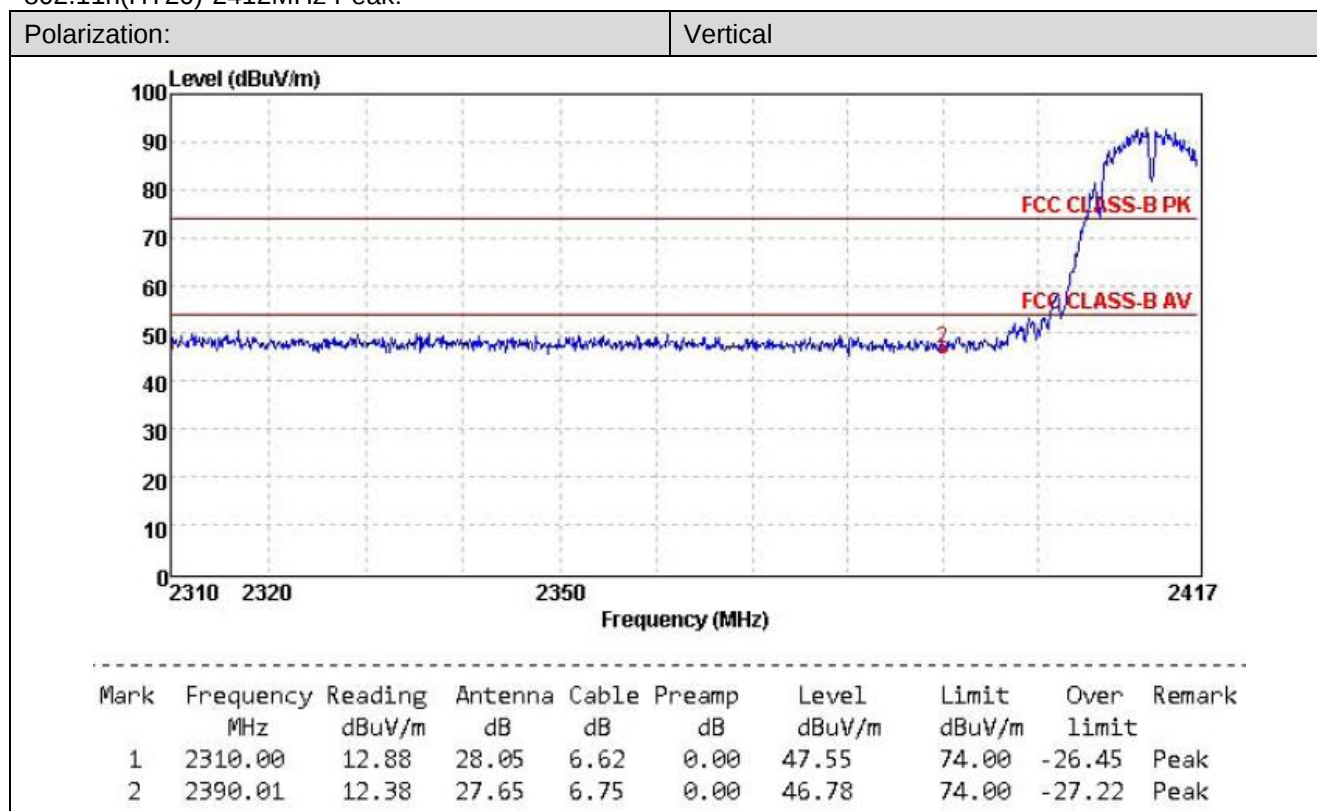
Horizontal



Trace: (Discrete)

| Mark | Frequency<br>mhz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
|------|------------------|-------------------|---------------|-------------|--------------|-----------------|-----------------|---------------|--------|
| 1    | 2483.49          | 13.73             | 27.26         | 6.83        | 0.00         | 47.82           | 74.00           | -26.18        | Peak   |
| 2    | 2500.00          | 13.43             | 27.20         | 6.84        | 0.00         | 47.47           | 74.00           | -26.53        | Peak   |

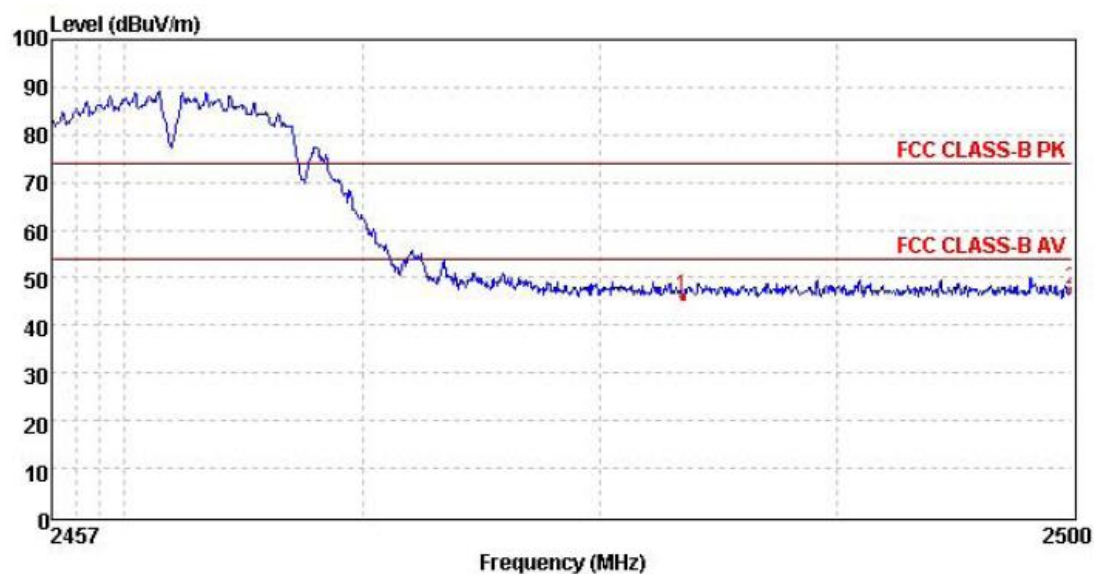
## 802.11n(HT20)-2412MHz Peak:



802.11n(HT20)-2462MHz Peak:

Polarization:

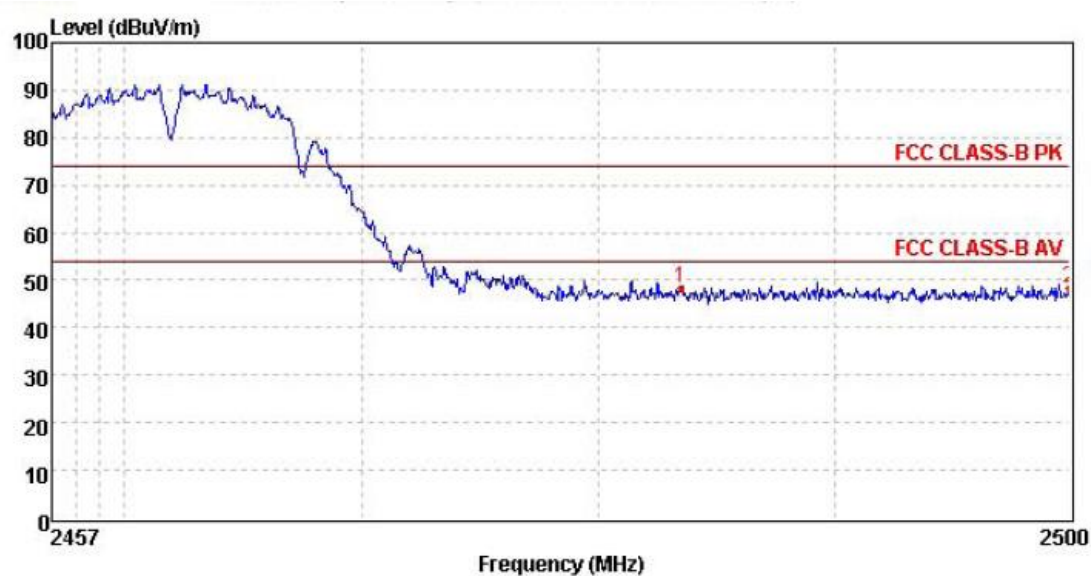
Vertical



| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
|------|------------------|-------------------|---------------|-------------|--------------|-----------------|-----------------|---------------|--------|
| 1    | 2483.49          | 11.95             | 27.26         | 6.83        | 0.00         | 46.04           | 74.00           | -27.96        | Peak   |
| 2    | 2500.00          | 13.60             | 27.20         | 6.84        | 0.00         | 47.64           | 74.00           | -26.36        | Peak   |

Polarization:

Horizontal



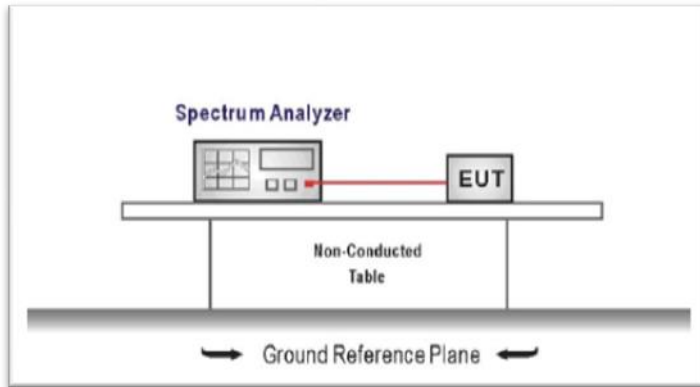
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
|------|------------------|-------------------|---------------|-------------|--------------|-----------------|-----------------|---------------|--------|
| 1    | 2483.49          | 14.34             | 27.26         | 6.83        | 0.00         | 48.43           | 74.00           | -25.57        | Peak   |
| 2    | 2500.00          | 14.46             | 27.20         | 6.84        | 0.00         | 48.50           | 74.00           | -25.50        | Peak   |

## 5.7. Band edge and Spurious Emissions (conducted)

### LIMIT

**FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d):** In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

### TEST CONFIGURATION



### TEST PROCEDURE

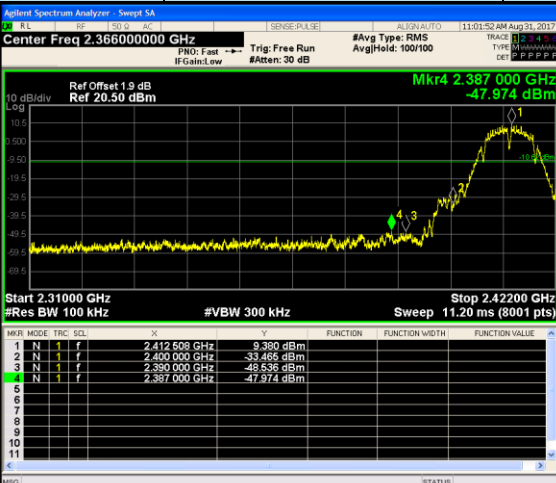
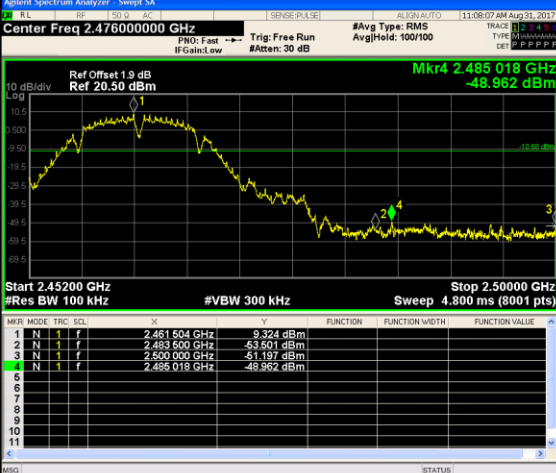
1. Connect the antenna port(s) to the spectrum analyzer input.
2. Establish a reference level by using the following procedure  
Center frequency=DTS channel center frequency  
The span = 1.5 times the DTS bandwidth.  
RBW = 100 kHz, VBW  $\geq 3 \times$  RBW  
Detector = peak, Sweep time = auto couple, Trace mode = max hold  
Allow trace to fully stabilize  
Use the peak marker function to determine the maximum PSD level  
  
Note: the channel found to contain the maximum PSD level can be used to establish the reference level.
3. Emission level measurement  
Set the center frequency and span to encompass frequency range to be measured  
RBW = 100 kHz, VBW  $\geq 3 \times$  RBW  
Detector = peak, Sweep time = auto couple, Trace mode = max hold  
Allow trace to fully stabilize  
Use the peak marker function to determine the maximum amplitude level.
4. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter waveform on the spectrum analyzer.
5. Ensure that the amplitude of all unwanted emission outside of the authorized frequency band excluding restricted frequency bands) are attenuated by at least the minimum requirements specified (at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz). Report the three highest emission relative to the limit.

### TEST MODE:

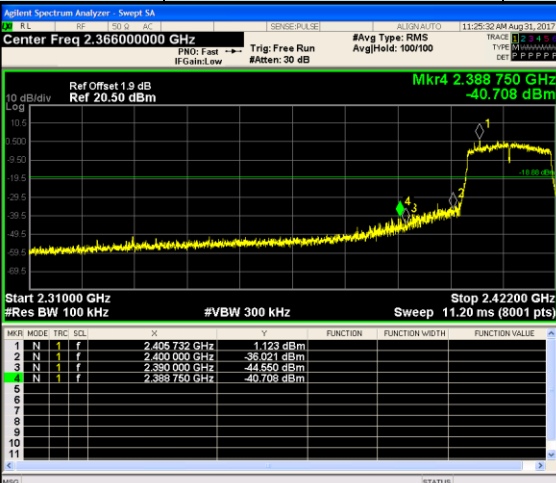
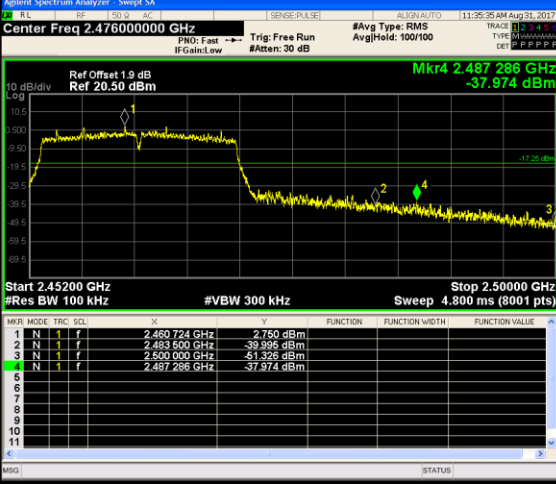
Please refer to the clause 3.3

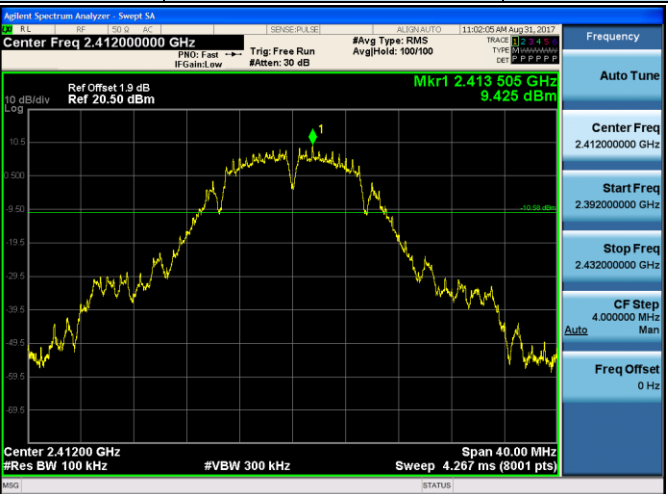
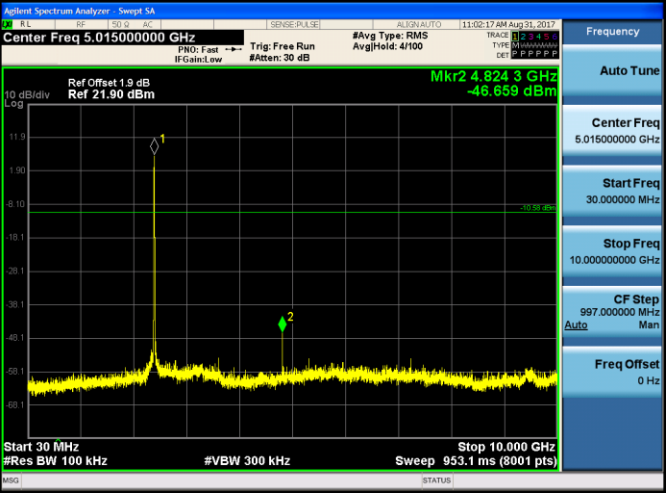
### TEST RESULTS

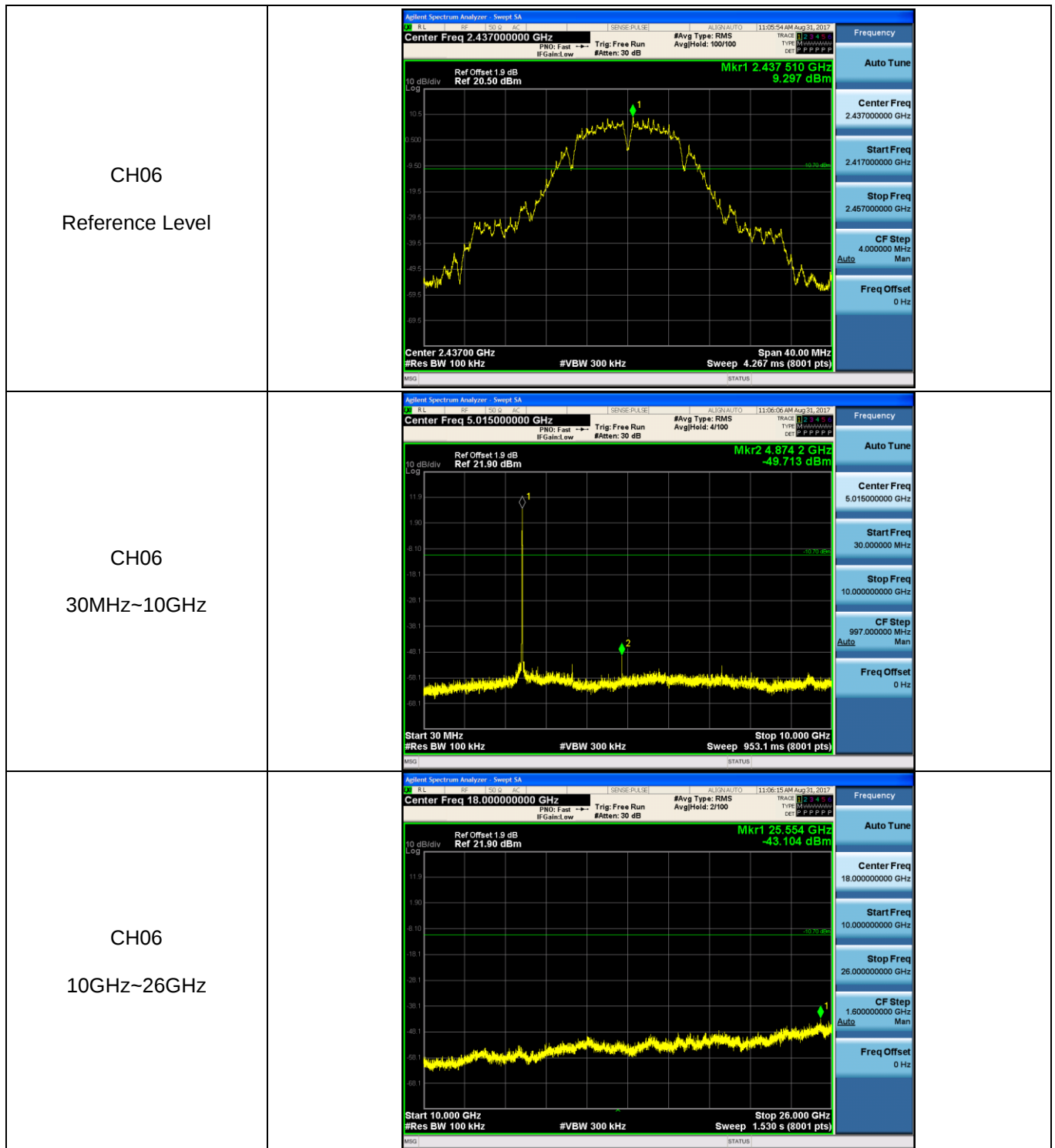
☒ Passed ☐ Not Applicable

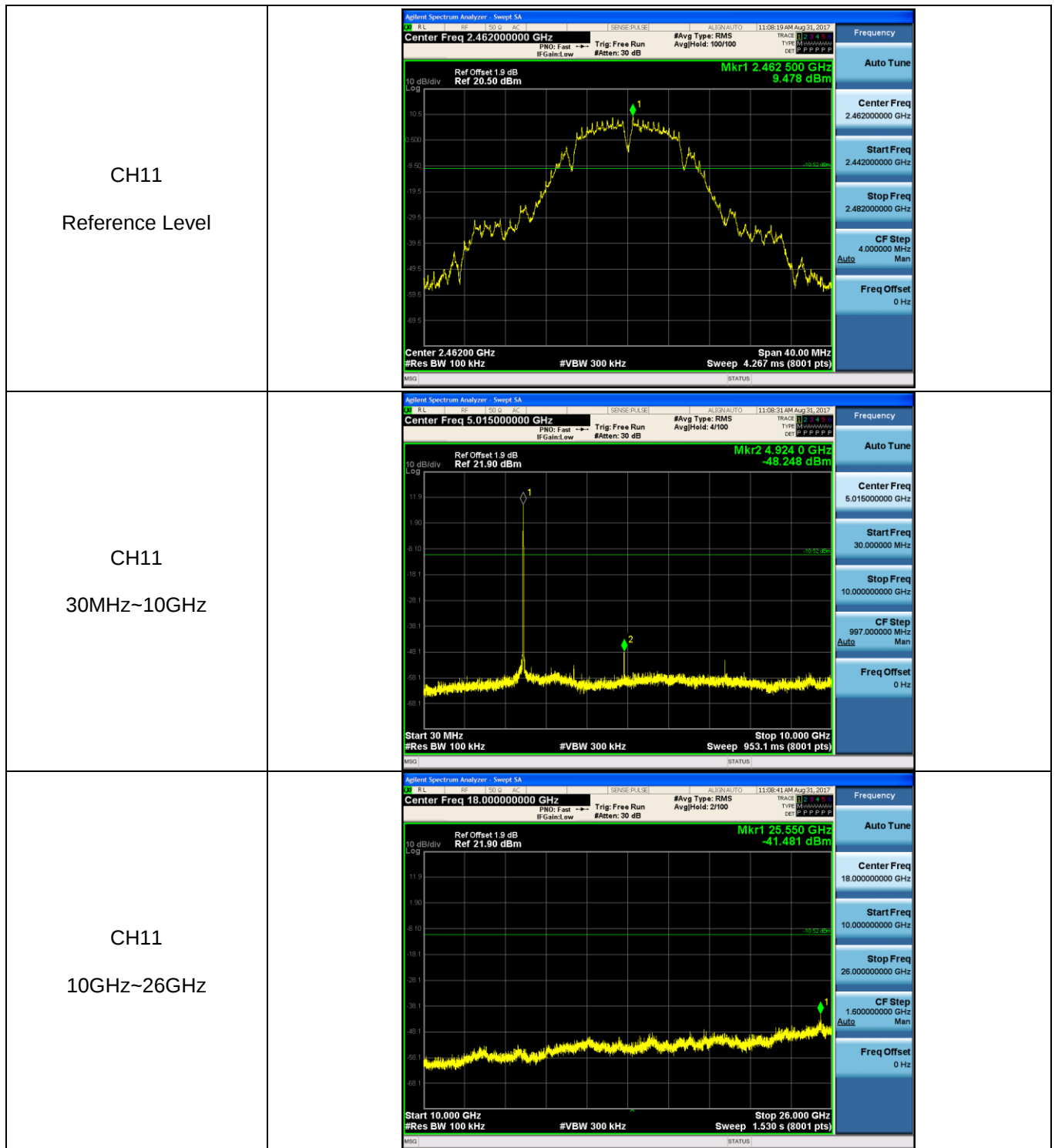
| Test Item: | Bandedge                                                                            | Type: | 802.11 b |
|------------|-------------------------------------------------------------------------------------|-------|----------|
| CH01       |   |       |          |
| CH11       |  |       |          |

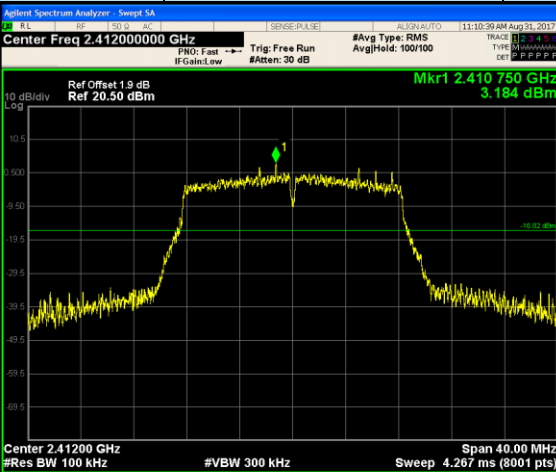
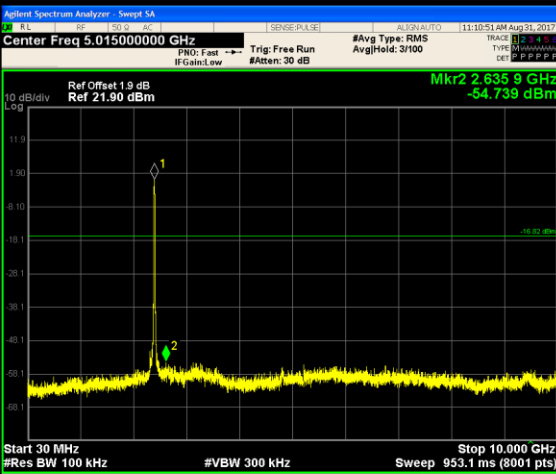
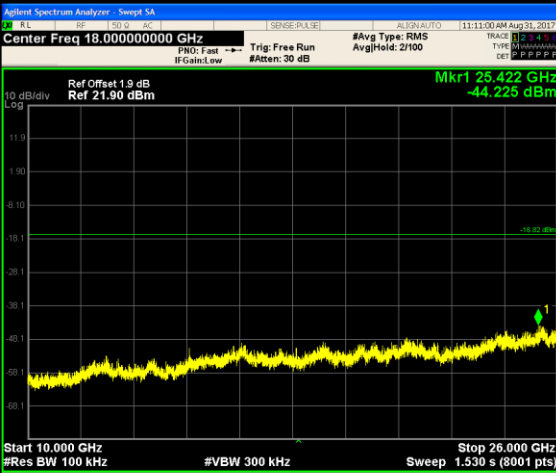
| Test Item: | Bandedge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Type: | 802.11 g |               |             |          |                |                |                |                |   |   |   |   |               |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |                                                                                                                                                                                                                                                                |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------|---------------|-------------|----------|----------------|----------------|----------------|----------------|---|---|---|---|---------------|-----------|--|--|--|---|---|---|---|---------------|-------------|--|--|--|---|---|---|---|---------------|-------------|--|--|--|---|---|---|---|---------------|-------------|--|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CH01       | <div><div><div>Agilent Spectrum Analyzer - Swept SA</div><div><div>Center Freq 2.366000000 GHz</div><div>Ref Offset 1.9 dB<br/>Ref 20.50 dBm</div><div>Mkr4 2.389 058 GHz<br/>-40.172 dBm</div><div>Start 2.31000 GHz<br/>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Stop 2.42200 GHz<br/>Sweep 11.20 ms (8001 pts)</div><table><thead><tr><th>MKR</th><th>MODE</th><th>TRC</th><th>SCL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.415 742 GHz</td><td>2.247 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2.400 000 GHz</td><td>-39.565 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>2.390 000 GHz</td><td>-46.364 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>2.389 058 GHz</td><td>-40.172 dBm</td><td></td><td></td><td></td></tr></tbody></table></div></div></div> | MKR   | MODE     | TRC           | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.415 742 GHz | 2.247 dBm |  |  |  | 2 | N | 1 | f | 2.400 000 GHz | -39.565 dBm |  |  |  | 3 | N | 1 | f | 2.390 000 GHz | -46.364 dBm |  |  |  | 4 | N | 1 | f | 2.389 058 GHz | -40.172 dBm |  |  |  | <div><div>Frequency</div><div>Auto Tune</div><div>Center Freq<br/>2.366000000 GHz</div><div>Start Freq<br/>2.310000000 GHz</div><div>Stop Freq<br/>2.422000000 GHz</div><div>CF Step<br/>11.200000 MHz<br/>Auto Man</div><div>Freq Offset<br/>0 Hz</div></div> |
| MKR        | MODE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | TRC   | SCL      | X             | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |               |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |                                                                                                                                                                                                                                                                |
| 1          | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | f        | 2.415 742 GHz | 2.247 dBm   |          |                |                |                |                |   |   |   |   |               |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |                                                                                                                                                                                                                                                                |
| 2          | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | f        | 2.400 000 GHz | -39.565 dBm |          |                |                |                |                |   |   |   |   |               |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |                                                                                                                                                                                                                                                                |
| 3          | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | f        | 2.390 000 GHz | -46.364 dBm |          |                |                |                |                |   |   |   |   |               |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |                                                                                                                                                                                                                                                                |
| 4          | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | f        | 2.389 058 GHz | -40.172 dBm |          |                |                |                |                |   |   |   |   |               |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |                                                                                                                                                                                                                                                                |
| CH11       | <div><div><div>Agilent Spectrum Analyzer - Swept SA</div><div><div>Center Freq 2.476000000 GHz</div><div>Ref Offset 1.9 dB<br/>Ref 20.50 dBm</div><div>Mkr4 2.483 824 GHz<br/>-36.301 dBm</div><div>Start 2.45200 GHz<br/>#Res BW 100 kHz</div><div>#VBW 300 kHz</div><div>Stop 2.50000 GHz<br/>Sweep 4.800 ms (8001 pts)</div><table><thead><tr><th>MKR</th><th>MODE</th><th>TRC</th><th>SCL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.483 268 GHz</td><td>3.237 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2.483 500 GHz</td><td>-39.879 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>2.500 000 GHz</td><td>-52.458 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>2.483 824 GHz</td><td>-36.301 dBm</td><td></td><td></td><td></td></tr></tbody></table></div></div></div> | MKR   | MODE     | TRC           | SCL         | X        | Y              | FUNCTION       | FUNCTION WIDTH | FUNCTION VALUE | 1 | N | 1 | f | 2.483 268 GHz | 3.237 dBm |  |  |  | 2 | N | 1 | f | 2.483 500 GHz | -39.879 dBm |  |  |  | 3 | N | 1 | f | 2.500 000 GHz | -52.458 dBm |  |  |  | 4 | N | 1 | f | 2.483 824 GHz | -36.301 dBm |  |  |  | <div><div>Frequency</div><div>Auto Tune</div><div>Center Freq<br/>2.476000000 GHz</div><div>Start Freq<br/>2.452000000 GHz</div><div>Stop Freq<br/>2.500000000 GHz</div><div>CF Step<br/>4.800000 MHz<br/>Auto Man</div><div>Freq Offset<br/>0 Hz</div></div>  |
| MKR        | MODE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | TRC   | SCL      | X             | Y           | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |                |                |   |   |   |   |               |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |                                                                                                                                                                                                                                                                |
| 1          | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | f        | 2.483 268 GHz | 3.237 dBm   |          |                |                |                |                |   |   |   |   |               |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |                                                                                                                                                                                                                                                                |
| 2          | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | f        | 2.483 500 GHz | -39.879 dBm |          |                |                |                |                |   |   |   |   |               |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |                                                                                                                                                                                                                                                                |
| 3          | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | f        | 2.500 000 GHz | -52.458 dBm |          |                |                |                |                |   |   |   |   |               |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |                                                                                                                                                                                                                                                                |
| 4          | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | f        | 2.483 824 GHz | -36.301 dBm |          |                |                |                |                |   |   |   |   |               |           |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |   |   |   |   |               |             |  |  |  |                                                                                                                                                                                                                                                                |

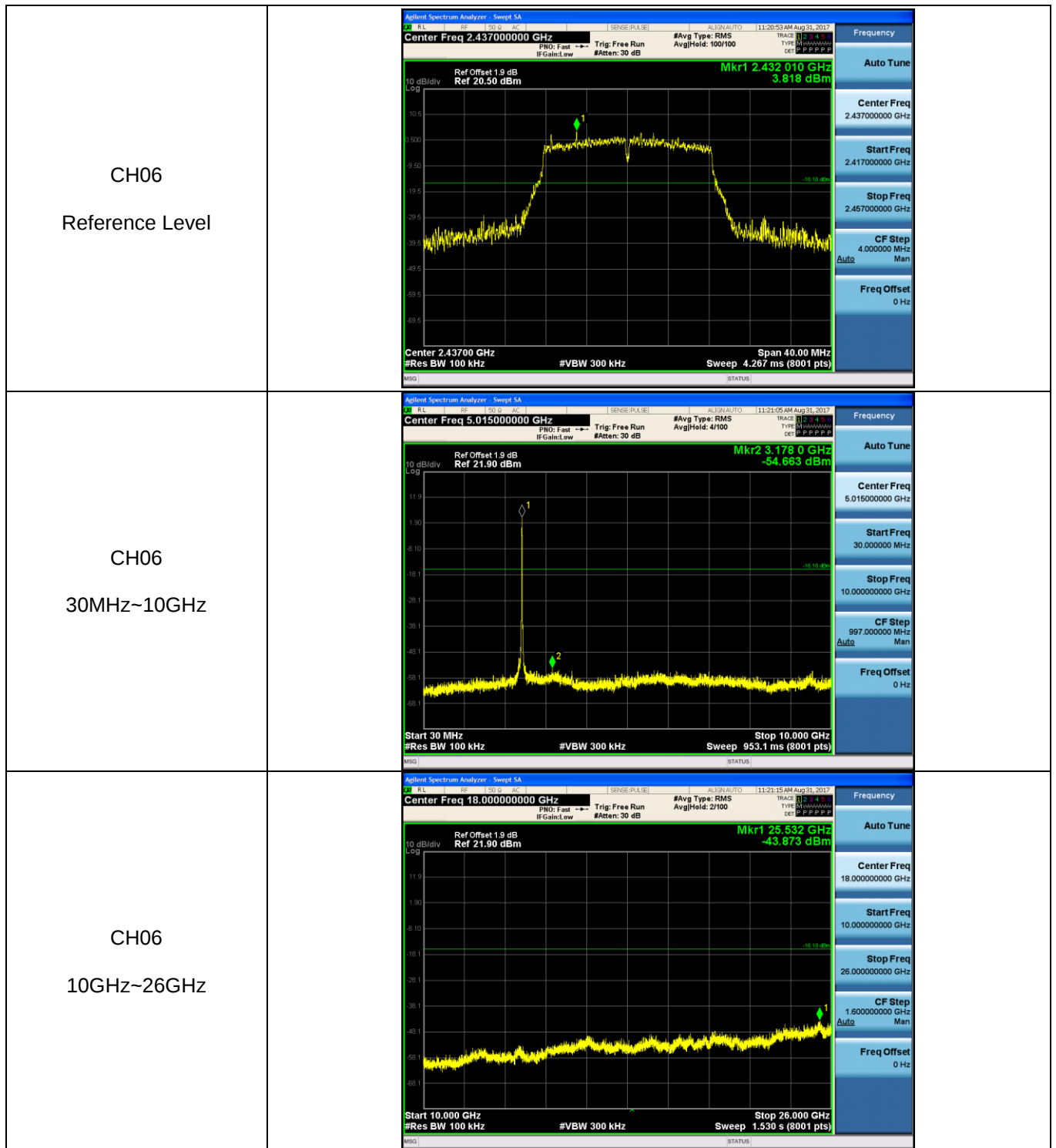
| Test Item: | Bandedge                                                                            | Type: | 802.11 n(HT20)                                                                                                                                                                                                                               |
|------------|-------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CH01       |   |       | <div>Frequency</div> <div>Auto Tune</div> <div>Center Freq<br/>2.366000000 GHz</div> <div>Start Freq<br/>2.310000000 GHz</div> <div>Stop Freq<br/>2.422000000 GHz</div> <div>CF Step<br/>11.200000 MHz</div> <div>Freq Offset<br/>0 Hz</div> |
| CH11       |  |       | <div>Frequency</div> <div>Auto Tune</div> <div>Center Freq<br/>2.476000000 GHz</div> <div>Start Freq<br/>2.452000000 GHz</div> <div>Stop Freq<br/>2.500000000 GHz</div> <div>CF Step<br/>4.800000 MHz</div> <div>Freq Offset<br/>0 Hz</div>  |

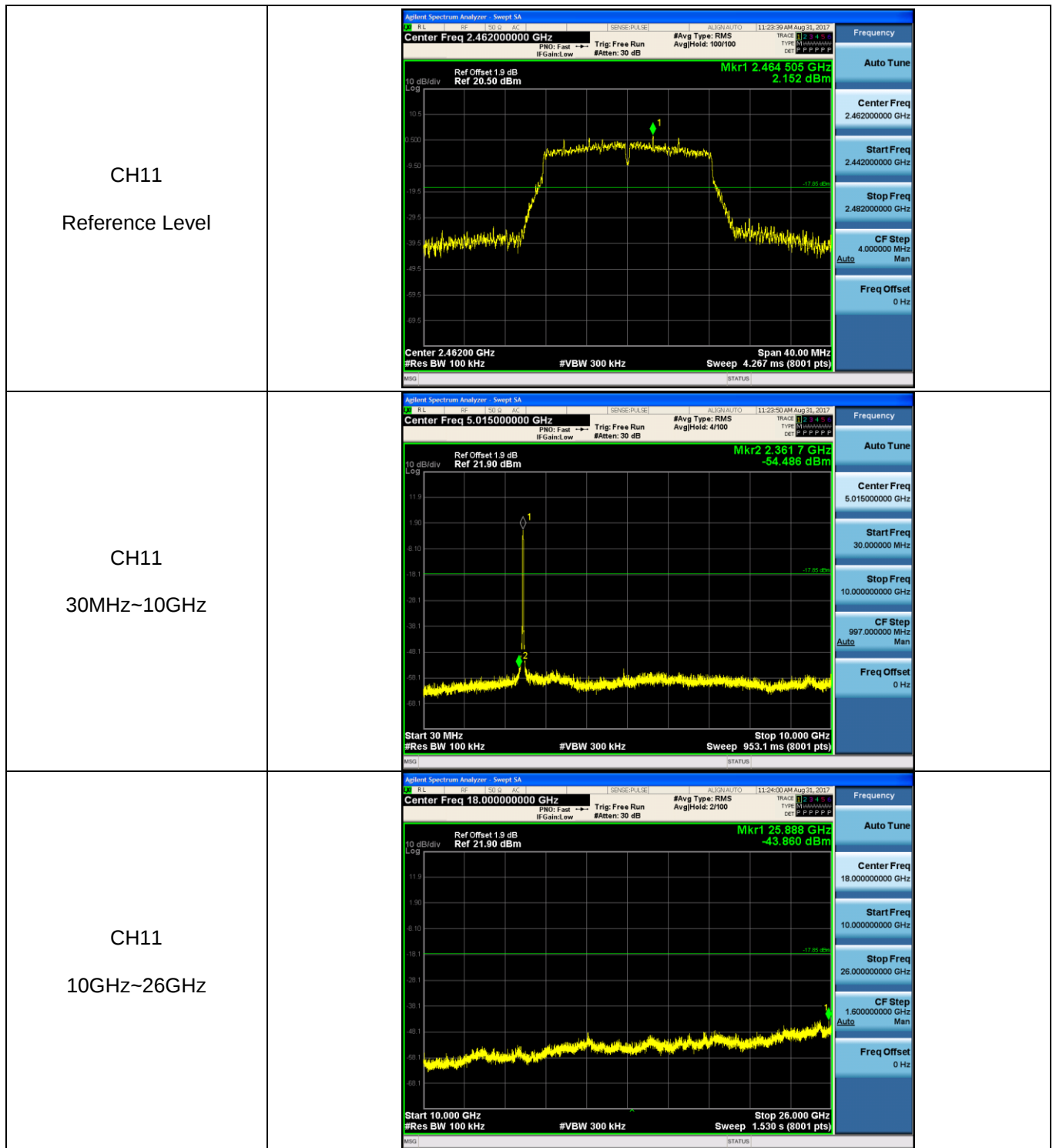
| Test Item:              | SE | Type:                                                                                                                                                                                                                                                                                                                                                    | 802.11 b |
|-------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CH01<br>Reference Level |    |  <p>Agilent Spectrum Analyzer - Sweep SA<br/>Center Freq 2.412000000 GHz<br/>Ref Offset 1.9 dB<br/>Ref 20.50 dBm<br/>Mkr1 2.413 506 GHz<br/>9.425 dBm<br/>Span 40.00 MHz<br/>#Res BW 100 kHz<br/>#VBW 300 kHz<br/>Sweep 4.267 ms (8001 pts)</p>                        |          |
| CH01<br>30MHz~10GHz     |    |  <p>Agilent Spectrum Analyzer - Sweep SA<br/>Center Freq 5.015000000 GHz<br/>Ref Offset 1.9 dB<br/>Ref 21.90 dBm<br/>Mkr2 4.924 3 GHz<br/>-46.659 dBm<br/>Start 30 MHz<br/>Stop 10.000 GHz<br/>#Res BW 100 kHz<br/>#VBW 300 kHz<br/>Sweep 953.1 ms (8001 pts)</p>     |          |
| CH01<br>10GHz~26GHz     |    |  <p>Agilent Spectrum Analyzer - Sweep SA<br/>Center Freq 18.000000000 GHz<br/>Ref Offset 1.9 dB<br/>Ref 21.90 dBm<br/>Mkr1 25.552 GHz<br/>-42.850 dBm<br/>Start 10.000 GHz<br/>Stop 26.000 GHz<br/>#Res BW 100 kHz<br/>#VBW 300 kHz<br/>Sweep 1.530 s (8001 pts)</p> |          |

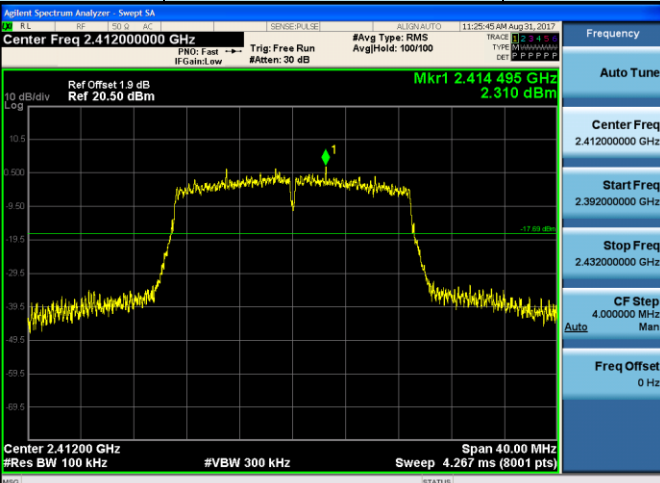
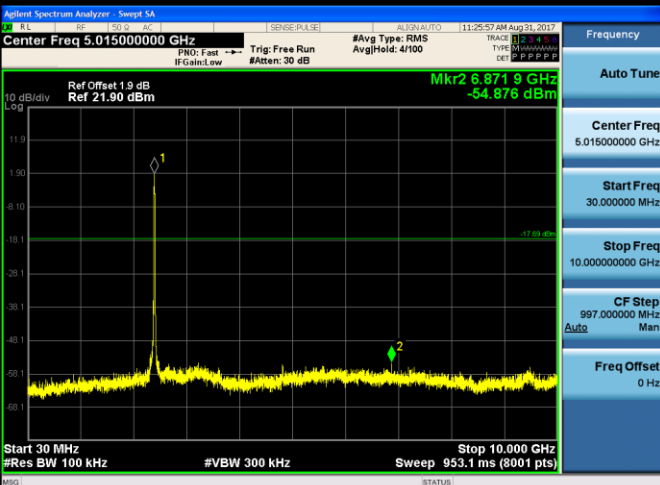
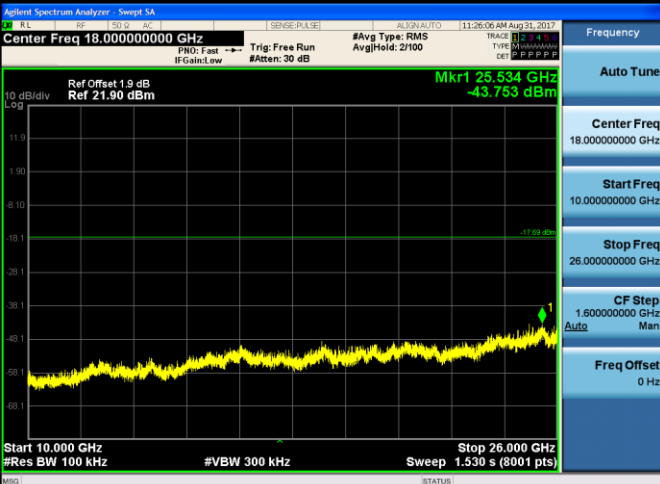


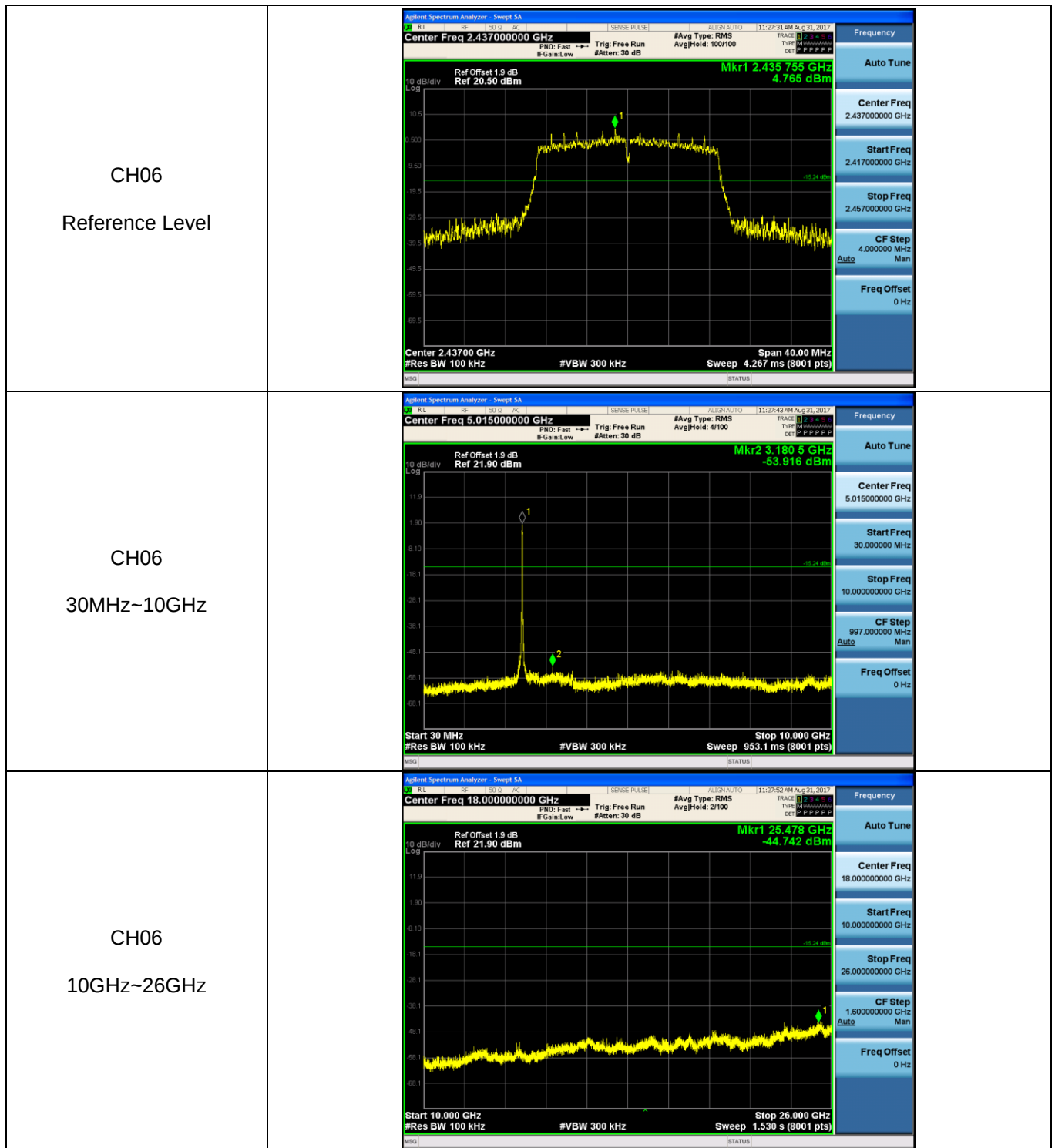


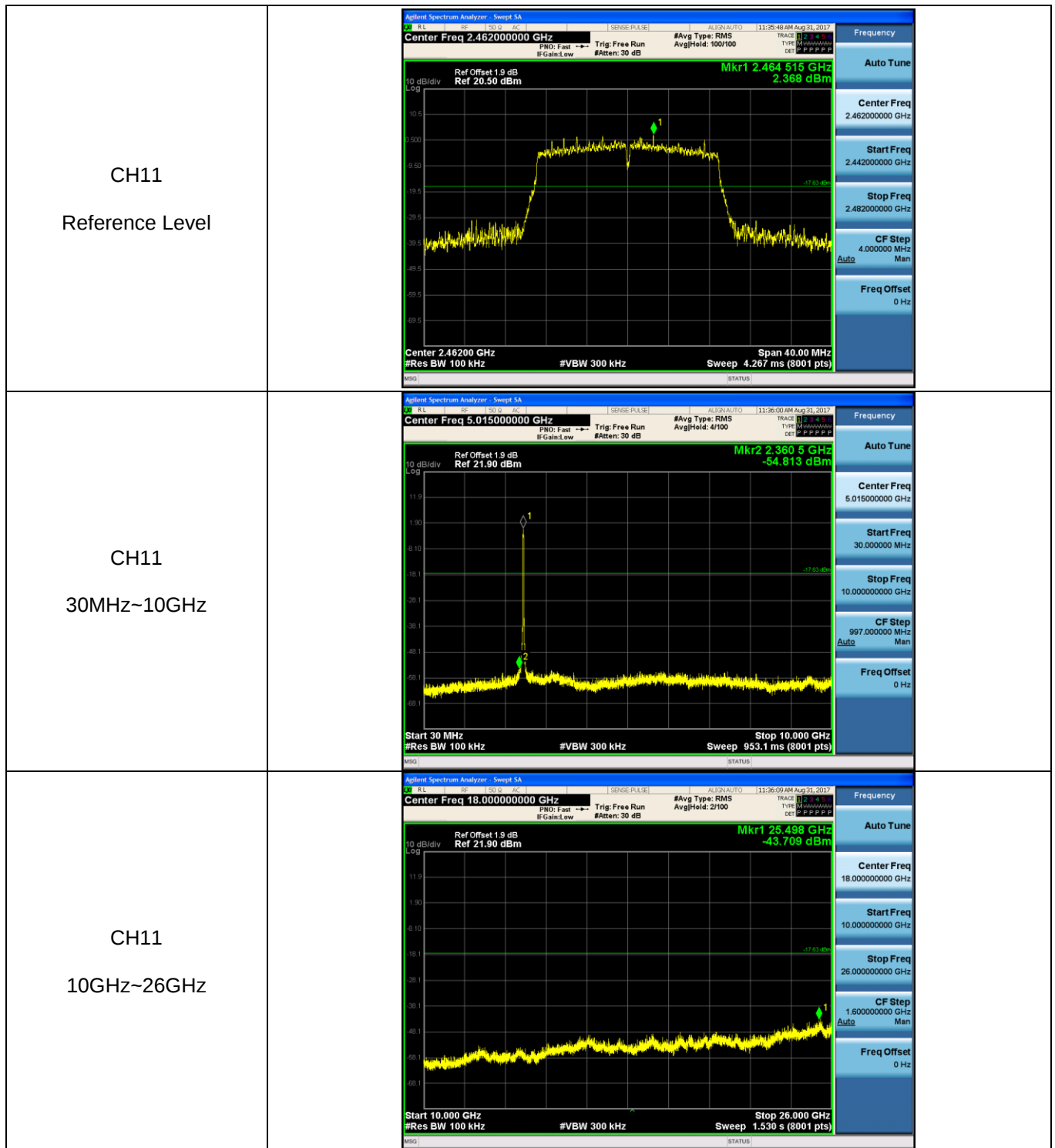
| Test Item:              | SE | Type:                                                                                | 802.11 g                                                                                                                                                                                                                                                       |
|-------------------------|----|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CH01<br>Reference Level |    |    | <div>Frequency</div> <div>Auto Tune</div> <div>Center Freq<br/>2.412000000 GHz</div> <div>Start Freq<br/>2.392000000 GHz</div> <div>Stop Freq<br/>2.432000000 GHz</div> <div>CF Step<br/>4.000000 MHz<br/>Auto Man</div> <div>Freq Offset<br/>0 Hz</div>       |
| CH01<br>30MHz~10GHz     |    |   | <div>Frequency</div> <div>Auto Tune</div> <div>Center Freq<br/>5.015000000 GHz</div> <div>Start Freq<br/>30.000000 MHz</div> <div>Stop Freq<br/>10.000000000 GHz</div> <div>CF Step<br/>997.000000 MHz<br/>Auto Man</div> <div>Freq Offset<br/>0 Hz</div>      |
| CH01<br>10GHz~26GHz     |    |  | <div>Frequency</div> <div>Auto Tune</div> <div>Center Freq<br/>18.000000000 GHz</div> <div>Start Freq<br/>10.000000000 GHz</div> <div>Stop Freq<br/>26.000000000 GHz</div> <div>CF Step<br/>1.600000000 GHz<br/>Auto Man</div> <div>Freq Offset<br/>0 Hz</div> |





| Test Item:              | SE | Type:                                                                                | 802.11 n(HT20) |
|-------------------------|----|--------------------------------------------------------------------------------------|----------------|
| CH01<br>Reference Level |    |    |                |
| CH01<br>30MHz~10GHz     |    |   |                |
| CH01<br>10GHz~26GHz     |    |  |                |





## 5.8. Spurious Emissions (radiated)

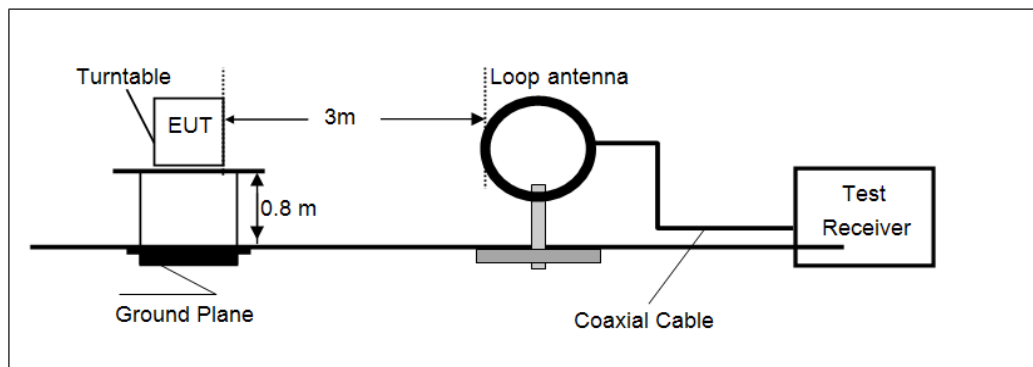
### LIMIT

#### FCC CFR Title 47 Part 15 Subpart C Section 15.209

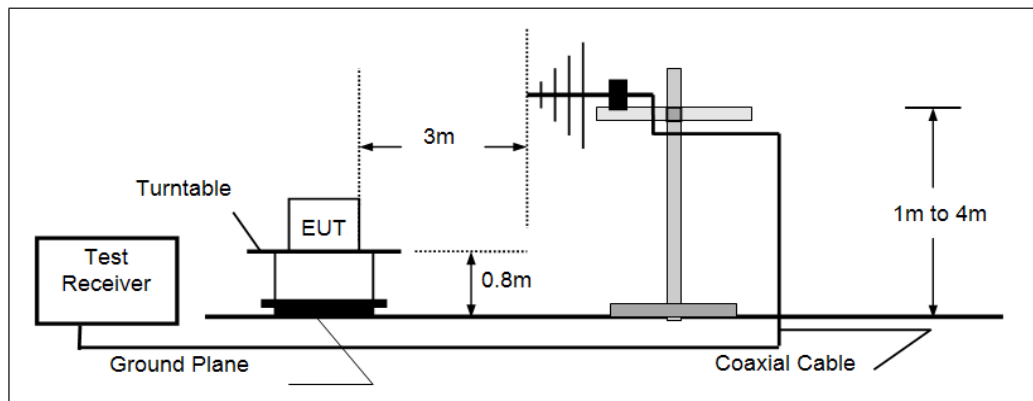
| Frequency     | Limit (dBuV/m @3m) | Value      |
|---------------|--------------------|------------|
| 30MHz-88MHz   | 40.00              | Quasi-peak |
| 88MHz-216MHz  | 43.50              | Quasi-peak |
| 216MHz-960MHz | 46.00              | Quasi-peak |
| 960MHz-1GHz   | 54.00              | Quasi-peak |
| Above 1GHz    | 54.00              | Average    |
|               | 74.00              | Peak       |

### TEST CONFIGURATION

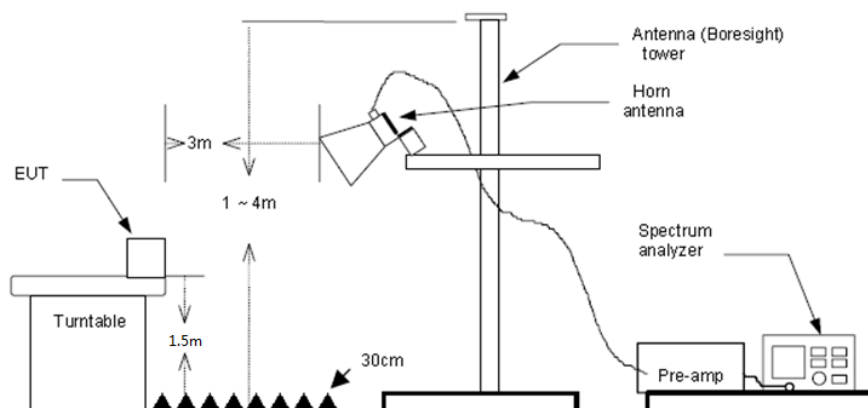
#### ➤ 9kHz ~30MHz



#### ➤ 30MHz ~ 1GHz



#### ➤ Above 1GHz



**TEST PROCEDURE**

1. The EUT was tested according to ANSI C63.10:2013 for compliance to FCC 47CFR 15.247 requirements.
2. The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna.
5. Use the following spectrum analyzer settings
  - (1) Span shall wide enough to fully capture the emission being measured;
  - (2) Below 1GHz, RBW=120kHz, VBW=300kHz, Sweep=auto, Detector function=peak, Trace=max hold;  
If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
  - (3) Above 1GHz, RBW=1MHz, VBW=3MHz PEAK detector for Peak value.  
RBW=1MHz, VBW=3MHz RMS detector for Average value.

**TEST MODE:**

Please refer to the clause 3.3

**TEST RESULTS**

☒ **Passed**      ☐ **Not Applicable**

Note:

- 1) Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
- 2) The emission levels of other frequencies are very lower than the limit and not show in test report.

➤ **9kHz ~ 30MHz**

The EUT was pre-scanned the frequency band (9kHz~30MHz), found the radiated level lower than the limit, so don't show on the report.

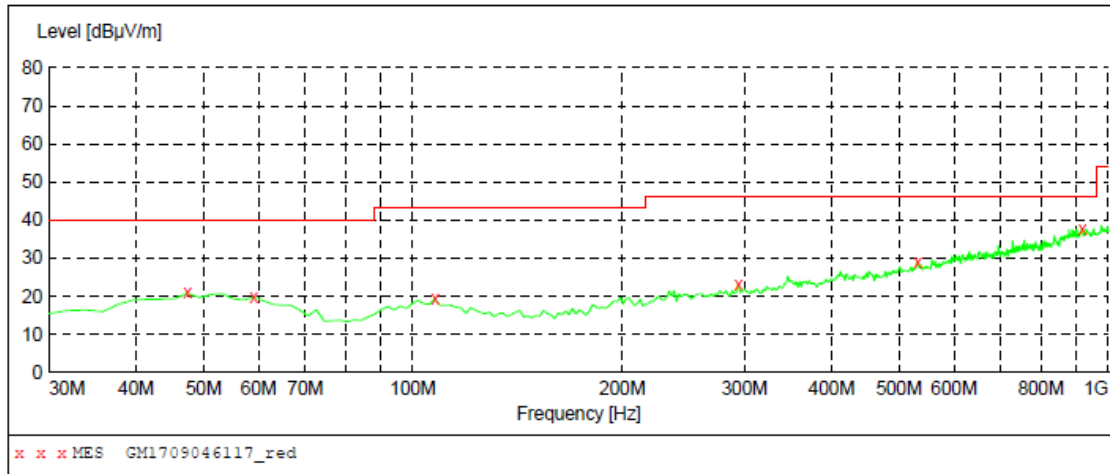
➤ **30MHz ~1000MHz**

Have pre-scan all modulation mode, found the 802.11b mode CH01 which it was worst case, so only the worst case's data on the test report.

## ➤ 30MHz ~ 1GHz

Polarization:

Vertical

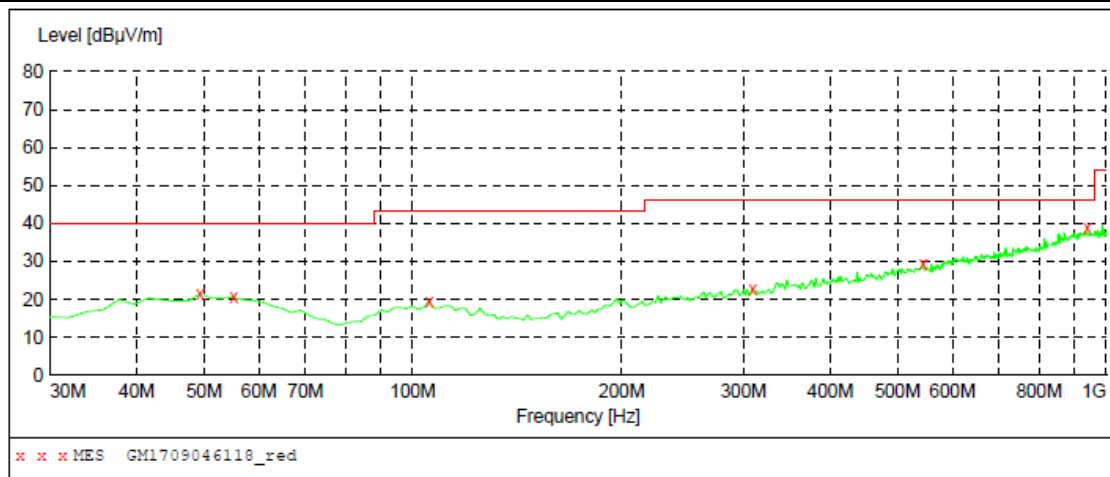
**MEASUREMENT RESULT: "GM1709046117\_red"**

9/4/2017 11:01PM

| Frequency<br>MHz | Level<br>dBμV/m | Transd<br>dB | Limit<br>dBμV/m | Margin<br>dB | Det. | Height<br>cm | Azimuth<br>deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 47.460000        | 20.90           | -8.8         | 40.0            | 19.1         | QP   | 100.0        | 147.00         | VERTICAL     |
| 59.100000        | 19.80           | -9.8         | 40.0            | 20.2         | QP   | 100.0        | 252.00         | VERTICAL     |
| 107.600000       | 19.30           | -10.6        | 43.5            | 24.2         | QP   | 100.0        | 130.00         | VERTICAL     |
| 293.840000       | 23.00           | -7.4         | 46.0            | 23.0         | QP   | 100.0        | 118.00         | VERTICAL     |
| 532.460000       | 28.80           | -1.1         | 46.0            | 17.2         | QP   | 100.0        | 118.00         | VERTICAL     |
| 916.580000       | 37.80           | 6.9          | 46.0            | 8.2          | QP   | 100.0        | 356.00         | VERTICAL     |

Polarization:

Horizontal

**MEASUREMENT RESULT: "GM1709046118\_red"**

9/4/2017 11:04PM

| Frequency<br>MHz | Level<br>dBμV/m | Transd<br>dB | Limit<br>dBμV/m | Margin<br>dB | Det. | Height<br>cm | Azimuth<br>deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 49.400000        | 21.50           | -8.7         | 40.0            | 18.5         | QP   | 300.0        | 0.00           | HORIZONTAL   |
| 55.220000        | 20.60           | -9.2         | 40.0            | 19.4         | QP   | 300.0        | 179.00         | HORIZONTAL   |
| 105.660000       | 19.60           | -10.5        | 43.5            | 23.9         | QP   | 300.0        | 196.00         | HORIZONTAL   |
| 309.360000       | 22.80           | -7.1         | 46.0            | 23.2         | QP   | 100.0        | 67.00          | HORIZONTAL   |
| 544.100000       | 29.50           | -0.9         | 46.0            | 16.5         | QP   | 300.0        | 196.00         | HORIZONTAL   |
| 937.920000       | 38.90           | 7.1          | 46.0            | 7.1          | QP   | 100.0        | 51.00          | HORIZONTAL   |

## ➤ Above 1 GHz

| 802.11b         |                   |                       |                 |                          | CH01           |                     |                 |              |            |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization | Test value |
| 1732.97         | 37.19             | 25.27                 | 5.83            | 37.00                    | 31.29          | 74.00               | -42.71          | Vertical     | Peak       |
| 3616.45         | 40.58             | 29.30                 | 8.29            | 38.27                    | 39.90          | 74.00               | -34.10          | Vertical     | Peak       |
| 4821.76         | 37.52             | 31.56                 | 9.55            | 36.90                    | 41.73          | 74.00               | -32.27          | Vertical     | Peak       |
| 6645.07         | 33.38             | 34.20                 | 11.41           | 35.28                    | 43.71          | 74.00               | -30.29          | Vertical     | Peak       |
| 1702.36         | 37.23             | 25.20                 | 5.77            | 36.93                    | 31.27          | 74.00               | -42.73          | Horizontal   | Peak       |
| 3616.45         | 40.58             | 29.30                 | 8.29            | 38.27                    | 39.90          | 74.00               | -34.10          | Horizontal   | Peak       |
| 4821.76         | 37.52             | 31.56                 | 9.55            | 36.90                    | 41.73          | 74.00               | -32.27          | Horizontal   | Peak       |
| 6833.77         | 34.20             | 34.24                 | 11.64           | 34.96                    | 45.12          | 74.00               | -28.88          | Horizontal   | Peak       |

| 802.11b         |                   |                       |                 |                          | CH06           |                     |                 |              |            |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization | Test value |
| 1638.59         | 37.34             | 25.02                 | 5.65            | 36.80                    | 31.21          | 74.00               | -42.79          | Vertical     | Peak       |
| 2875.99         | 37.04             | 28.41                 | 7.41            | 38.31                    | 34.55          | 74.00               | -39.45          | Vertical     | Peak       |
| 3653.46         | 40.30             | 29.30                 | 8.33            | 38.26                    | 39.67          | 74.00               | -34.33          | Vertical     | Peak       |
| 6267.19         | 33.20             | 33.03                 | 11.00           | 35.30                    | 41.93          | 74.00               | -32.07          | Vertical     | Peak       |
| 1638.59         | 37.34             | 25.02                 | 5.65            | 36.80                    | 31.21          | 74.00               | -42.79          | Horizontal   | Peak       |
| 2875.99         | 37.04             | 28.41                 | 7.41            | 38.31                    | 34.55          | 74.00               | -39.45          | Horizontal   | Peak       |
| 3653.46         | 40.30             | 29.30                 | 8.33            | 38.26                    | 39.67          | 74.00               | -34.33          | Horizontal   | Peak       |
| 5762.24         | 32.85             | 31.91                 | 10.53           | 35.42                    | 39.87          | 74.00               | -34.13          | Horizontal   | Peak       |

| 802.11b         |                   |                       |                 |                          | CH11           |                     |                 |              |            |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization | Test value |
| 1676.56         | 38.21             | 25.13                 | 5.72            | 36.88                    | 32.18          | 74.00               | -41.82          | Vertical     | Peak       |
| 3160.03         | 38.75             | 28.80                 | 7.67            | 38.21                    | 37.01          | 74.00               | -36.99          | Vertical     | Peak       |
| 3690.85         | 40.66             | 29.30                 | 8.37            | 38.25                    | 40.08          | 74.00               | -33.92          | Vertical     | Peak       |
| 6645.07         | 32.67             | 34.20                 | 11.41           | 35.28                    | 43.00          | 74.00               | -31.00          | Vertical     | Peak       |
| 1728.56         | 36.99             | 25.26                 | 5.82            | 36.99                    | 31.08          | 74.00               | -42.92          | Horizontal   | Peak       |
| 3135.99         | 36.88             | 28.80                 | 7.64            | 38.21                    | 35.11          | 74.00               | -38.89          | Horizontal   | Peak       |
| 3923.37         | 37.96             | 29.70                 | 8.67            | 38.16                    | 38.17          | 74.00               | -35.83          | Horizontal   | Peak       |
| 6511.12         | 34.14             | 34.02                 | 11.20           | 35.34                    | 44.02          | 74.00               | -29.98          | Horizontal   | Peak       |

## Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The peak level is lower than average limit (54 dBuV/m), this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

| 802.11g         |                   |                       |                 |                          | CH01           |                     |                 |              |            |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization | Test value |
| 1711.05         | 36.20             | 25.22                 | 5.79            | 36.95                    | 30.26          | 74.00               | -43.74          | Vertical     | Peak       |
| 3026.20         | 37.38             | 28.65                 | 7.51            | 38.23                    | 35.31          | 74.00               | -38.69          | Vertical     | Peak       |
| 4512.97         | 35.17             | 30.73                 | 9.32            | 37.37                    | 37.85          | 74.00               | -36.15          | Vertical     | Peak       |
| 6544.35         | 31.63             | 34.09                 | 11.26           | 35.35                    | 41.63          | 74.00               | -32.37          | Vertical     | Peak       |
| 1283.34         | 37.21             | 26.22                 | 4.80            | 36.52                    | 31.71          | 74.00               | -42.29          | Horizontal   | Peak       |
| 3080.60         | 38.14             | 28.76                 | 7.58            | 38.22                    | 36.26          | 74.00               | -37.74          | Horizontal   | Peak       |
| 4501.49         | 36.22             | 30.70                 | 9.30            | 37.39                    | 38.83          | 74.00               | -35.17          | Horizontal   | Peak       |
| 7527.83         | 32.79             | 36.13                 | 12.49           | 34.92                    | 46.49          | 74.00               | -27.51          | Horizontal   | Peak       |

| 802.11g         |                   |                       |                 |                          | CH06           |                     |                 |              |            |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization | Test value |
| 1724.17         | 37.08             | 25.25                 | 5.81            | 36.98                    | 31.16          | 74.00               | -42.84          | Vertical     | Peak       |
| 3653.46         | 41.02             | 29.30                 | 8.33            | 38.26                    | 40.39          | 74.00               | -33.61          | Vertical     | Peak       |
| 4871.10         | 35.59             | 31.46                 | 9.59            | 36.76                    | 39.88          | 74.00               | -34.12          | Vertical     | Peak       |
| 7319.96         | 35.20             | 36.30                 | 11.99           | 34.92                    | 48.57          | 74.00               | -25.43          | Vertical     | Peak       |
| 1711.05         | 36.52             | 25.22                 | 5.79            | 36.95                    | 30.58          | 74.00               | -43.42          | Horizontal   | Peak       |
| 3026.20         | 36.68             | 28.65                 | 7.51            | 38.23                    | 34.61          | 74.00               | -39.39          | Horizontal   | Peak       |
| 5151.68         | 33.61             | 31.69                 | 9.79            | 36.25                    | 38.84          | 74.00               | -35.16          | Horizontal   | Peak       |
| 6696.01         | 32.29             | 34.20                 | 11.48           | 35.18                    | 42.79          | 74.00               | -31.21          | Horizontal   | Peak       |

| 802.11g         |                   |                       |                 |                          | CH11           |                     |                 |              |            |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization | Test value |
| 2223.98         | 36.82             | 27.65                 | 6.48            | 37.41                    | 33.54          | 74.00               | -40.46          | Vertical     | Peak       |
| 3690.85         | 38.66             | 29.30                 | 8.37            | 38.25                    | 38.08          | 74.00               | -35.92          | Vertical     | Peak       |
| 5112.49         | 33.46             | 31.85                 | 9.76            | 36.29                    | 38.78          | 74.00               | -35.22          | Vertical     | Peak       |
| 7508.69         | 32.47             | 36.11                 | 12.42           | 34.91                    | 46.09          | 74.00               | -27.91          | Vertical     | Peak       |
| 1750.70         | 36.84             | 25.30                 | 5.86            | 37.04                    | 30.96          | 74.00               | -43.04          | Horizontal   | Peak       |
| 3507.65         | 37.09             | 29.02                 | 8.13            | 38.40                    | 35.84          | 74.00               | -38.16          | Horizontal   | Peak       |
| 4983.99         | 35.37             | 31.48                 | 9.66            | 36.44                    | 40.07          | 74.00               | -33.93          | Horizontal   | Peak       |
| 7489.60         | 32.76             | 36.12                 | 12.36           | 34.89                    | 46.35          | 74.00               | -27.65          | Horizontal   | Peak       |

## Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

| 802.11n(HT20)   |                   |                       |                 |                          | CH01           |                     |                 |              |            |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization | Test value |
| 1764.12         | 37.86             | 25.33                 | 5.89            | 37.06                    | 32.02          | 74.00               | -41.98          | Vertical     | Peak       |
| 3616.45         | 40.08             | 29.30                 | 8.29            | 38.27                    | 39.40          | 74.00               | -34.60          | Vertical     | Peak       |
| 4821.76         | 36.43             | 31.56                 | 9.55            | 36.90                    | 40.64          | 74.00               | -33.36          | Vertical     | Peak       |
| 6628.18         | 32.29             | 34.20                 | 11.39           | 35.31                    | 42.57          | 74.00               | -31.43          | Vertical     | Peak       |
| 1286.61         | 36.33             | 26.21                 | 4.81            | 36.52                    | 30.83          | 74.00               | -43.17          | Horizontal   | Peak       |
| 3033.91         | 37.06             | 28.67                 | 7.52            | 38.22                    | 35.03          | 74.00               | -38.97          | Horizontal   | Peak       |
| 3883.62         | 36.40             | 29.68                 | 8.62            | 38.18                    | 36.52          | 74.00               | -37.48          | Horizontal   | Peak       |
| 6478.05         | 32.90             | 33.85                 | 11.13           | 35.33                    | 42.55          | 74.00               | -31.45          | Horizontal   | Peak       |

| 802.11n(HT20)   |                   |                       |                 |                          | CH06           |                     |                 |              |            |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization | Test value |
| 1676.56         | 37.34             | 25.13                 | 5.72            | 36.88                    | 31.31          | 74.00               | -42.69          | Vertical     | Peak       |
| 3151.99         | 36.65             | 28.80                 | 7.66            | 38.21                    | 34.90          | 74.00               | -39.10          | Vertical     | Peak       |
| 3653.46         | 39.33             | 29.30                 | 8.33            | 38.26                    | 38.70          | 74.00               | -35.30          | Vertical     | Peak       |
| 5747.59         | 32.97             | 31.84                 | 10.51           | 35.46                    | 39.86          | 74.00               | -34.14          | Vertical     | Peak       |
| 1680.83         | 37.14             | 25.14                 | 5.73            | 36.89                    | 31.12          | 74.00               | -42.88          | Horizontal   | Peak       |
| 3662.78         | 38.08             | 29.30                 | 8.34            | 38.26                    | 37.46          | 74.00               | -36.54          | Horizontal   | Peak       |
| 5434.56         | 34.45             | 31.64                 | 10.15           | 36.64                    | 39.60          | 74.00               | -34.40          | Horizontal   | Peak       |
| 7357.33         | 32.57             | 36.30                 | 12.03           | 34.88                    | 46.02          | 74.00               | -27.98          | Horizontal   | Peak       |

| 802.11n(HT20)   |                   |                       |                 |                          | CH11           |                     |                 |              |            |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|--------------|------------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization | Test value |
| 1818.84         | 37.44             | 25.38                 | 5.99            | 37.16                    | 31.65          | 74.00               | -42.35          | Vertical     | Peak       |
| 2890.67         | 37.25             | 28.46                 | 7.42            | 38.30                    | 34.83          | 74.00               | -39.17          | Vertical     | Peak       |
| 3690.85         | 40.17             | 29.30                 | 8.37            | 38.25                    | 39.59          | 74.00               | -34.41          | Vertical     | Peak       |
| 5138.58         | 33.91             | 31.74                 | 9.78            | 36.26                    | 39.17          | 74.00               | -34.83          | Vertical     | Peak       |
| 2246.74         | 35.57             | 27.78                 | 6.52            | 37.47                    | 32.40          | 74.00               | -41.60          | Horizontal   | Peak       |
| 3498.74         | 36.25             | 28.99                 | 8.11            | 38.41                    | 34.94          | 74.00               | -39.06          | Horizontal   | Peak       |
| 4834.05         | 34.16             | 31.53                 | 9.56            | 36.86                    | 38.39          | 74.00               | -35.61          | Horizontal   | Peak       |
| 7264.28         | 31.65             | 36.26                 | 11.93           | 35.00                    | 44.84          | 74.00               | -29.16          | Horizontal   | Peak       |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

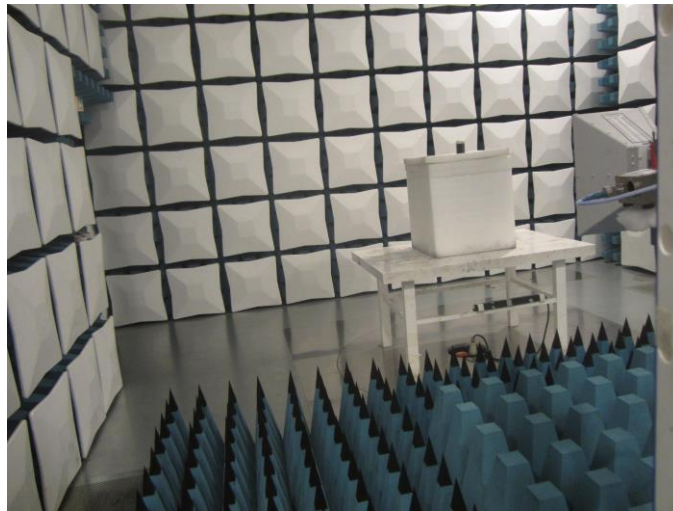
## 6. TEST SETUP PHOTOS

### Conducted Emissions



### Radiated Emissions





## 7. EXTERANAL AND INTERNAL PHOTOS

Reference to Test Report No.: TRE1708016501.

.....End of Report.....