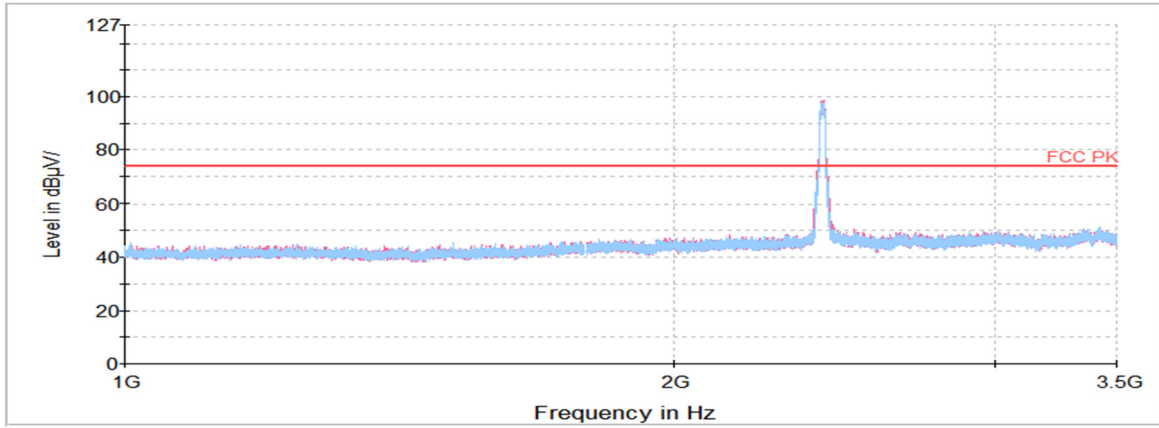
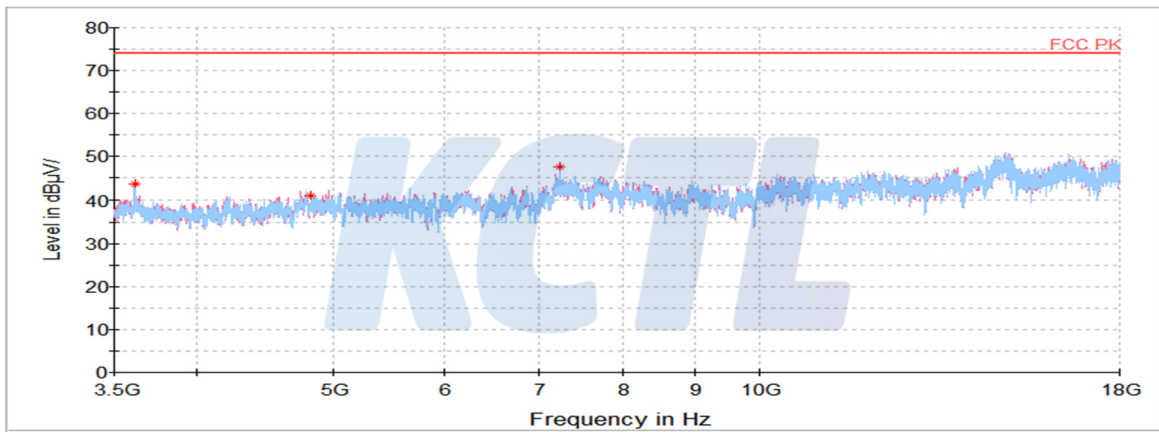


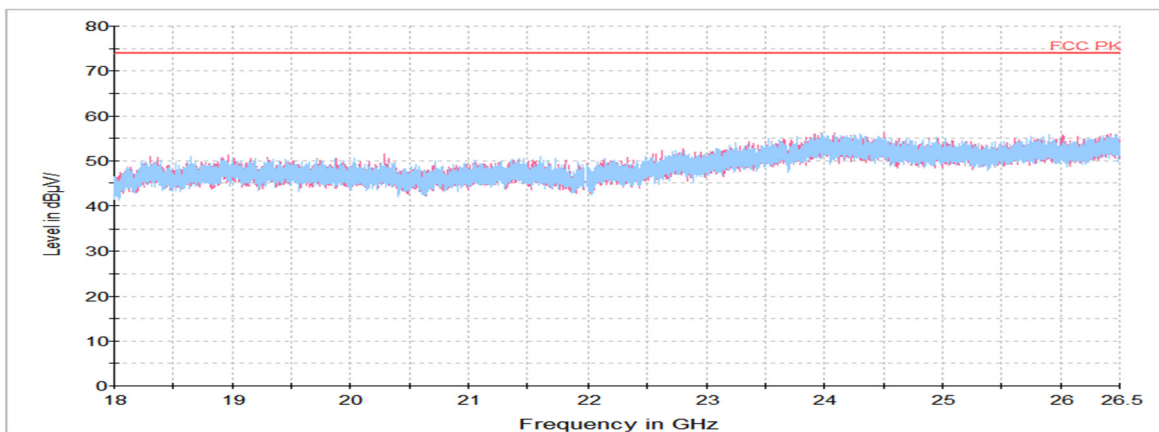
**Horizontal/Vertical for 1 GHz ~ 3.5 GHz**



**Horizontal/Vertical for 3.5 GHz ~ 18 GHz**



**Horizontal/Vertical for 18 GHz ~ 26.5 GHz**



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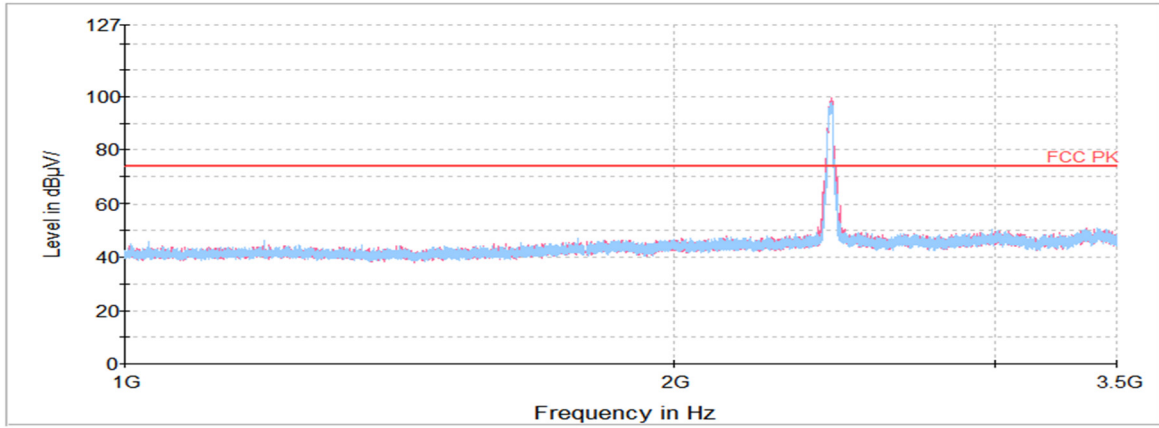
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**Middle Channel**

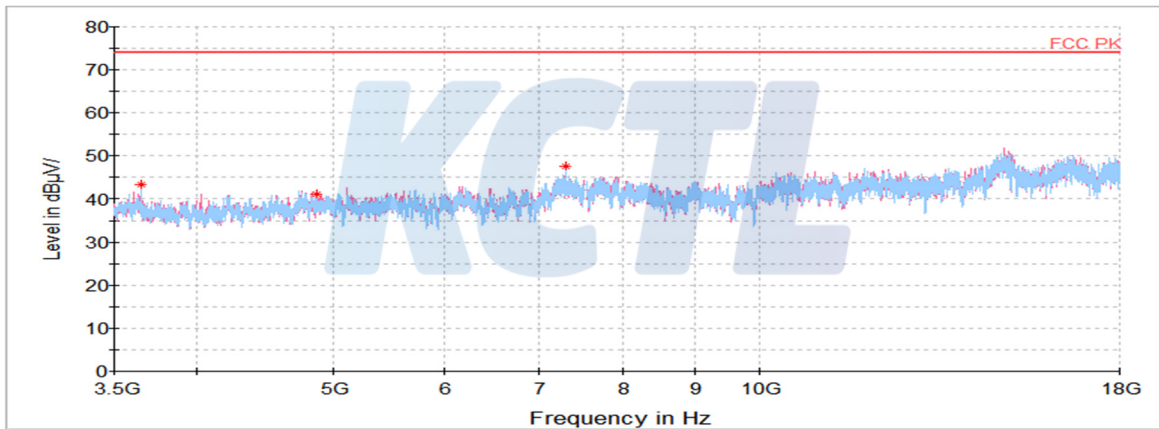
| Frequency  | Pol.  | Reading         | Ant. Factor | Amp. + Cable | DCCF | Result            | Limit             | Margin |
|--|-------|-----------------|-------------|--------------|------|-------------------|-------------------|--------|
| (MHz)  | (V/H) | (dB( $\mu V$ )) | (dB)        | (dB)         | (dB) | (dB( $\mu V/m$ )) | (dB( $\mu V/m$ )) | (dB)   |
| <b>Peak data</b>   |       |                 |             |              |      |                   |                   |        |
| 4 874.78 <sup>1)</sup>   | H     | 61.27           | 33.95       | -54.23       | -    | 40.99             | 74.00             | 33.01  |
| 7 311.23 <sup>1)</sup>   | H     | 63.57           | 35.40       | -51.50       | -    | 47.47             | 74.00             | 26.53  |
| <b>Average Data</b>  |       |                 |             |              |      |                   |                   |        |
| No spurious emissions were detected within 20 dB of the limit. |       |                 |             |              |      |                   |                   |        |



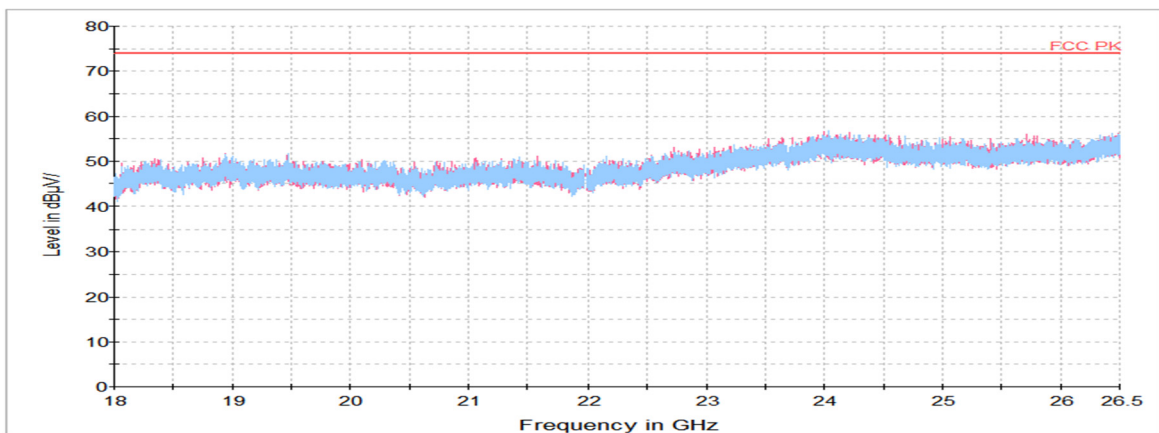
**Horizontal/Vertical for 1 GHz ~ 3.5 GHz**



**Horizontal/Vertical for 3.5 GHz ~ 18 GHz**



**Horizontal/Vertical for 18 GHz ~ 26.5 GHz**



**KCTL Inc.**

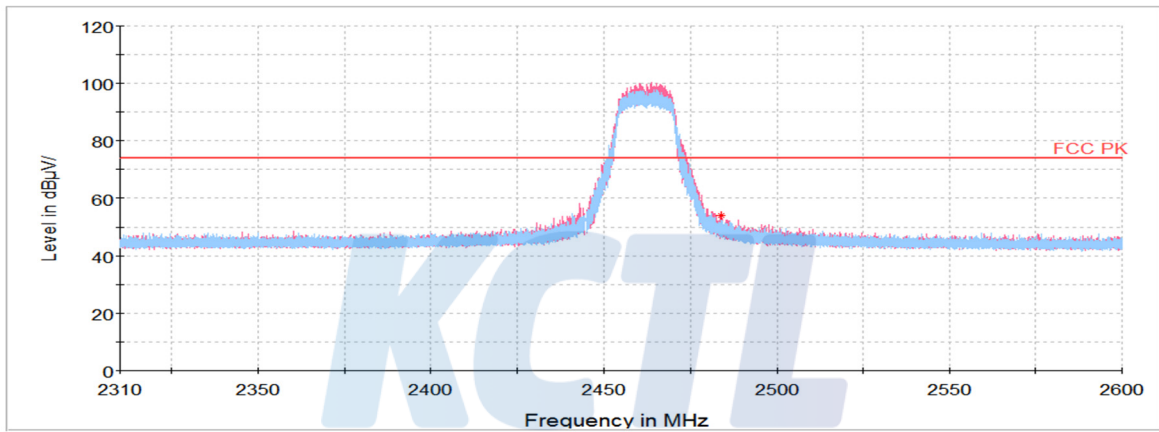
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KR20-SRF0077

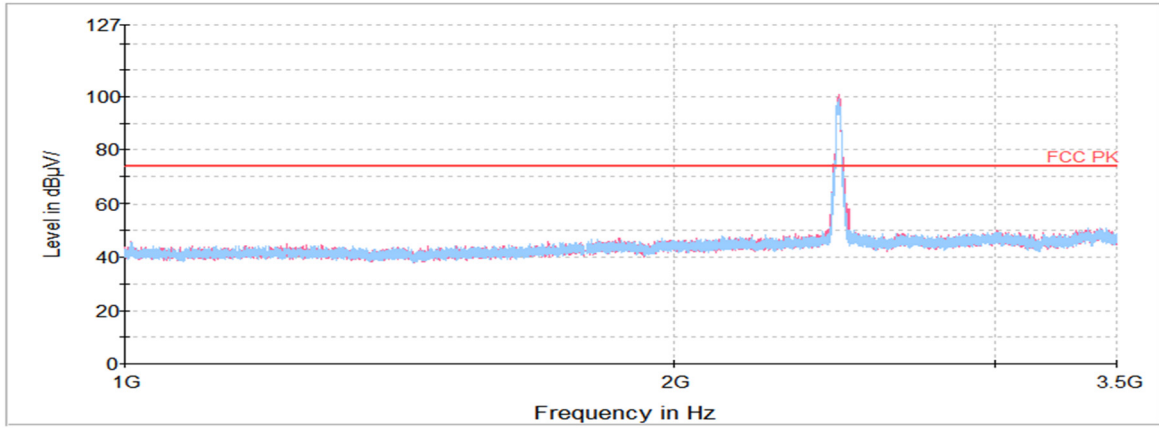
Page (40) of (54)

**KCTL****Highest Channel**

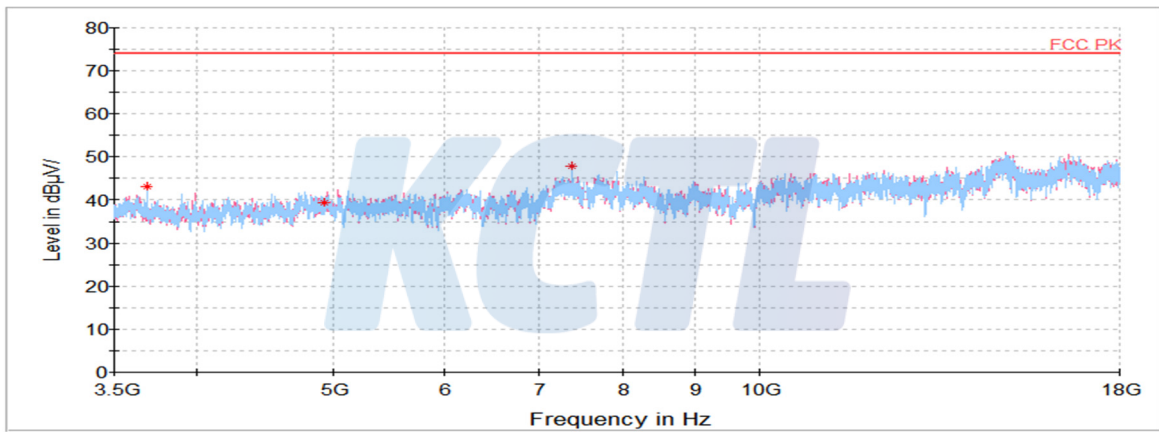
| Frequency  | Pol.  | Reading         | Ant. Factor | Amp. + Cable | DCCF | Result            | Limit             | Margin |
|--|-------|-----------------|-------------|--------------|------|-------------------|-------------------|--------|
| (MHz)  | (V/H) | (dB( $\mu V$ )) | (dB)        | (dB)         | (dB) | (dB( $\mu V/m$ )) | (dB( $\mu V/m$ )) | (dB)   |
| <b>Peak data</b>   |       |                 |             |              |      |                   |                   |        |
| 2 483.73 <sup>1)</sup>   | V     | 50.89           | 32.07       | -29.21       | -    | 53.75             | 74.00             | 20.25  |
| 4 925.53 <sup>1)</sup>   | H     | 60.14           | 33.97       | -54.87       | -    | 39.24             | 74.00             | 34.76  |
| 7 386.45 <sup>1)</sup>   | V     | 63.57           | 35.40       | -51.13       | -    | 47.84             | 74.00             | 26.16  |
| <b>Average Data</b>  |       |                 |             |              |      |                   |                   |        |
| No spurious emissions were detected within 20 dB of the limit. |       |                 |             |              |      |                   |                   |        |

**Horizontal/Vertical for Band-edge**

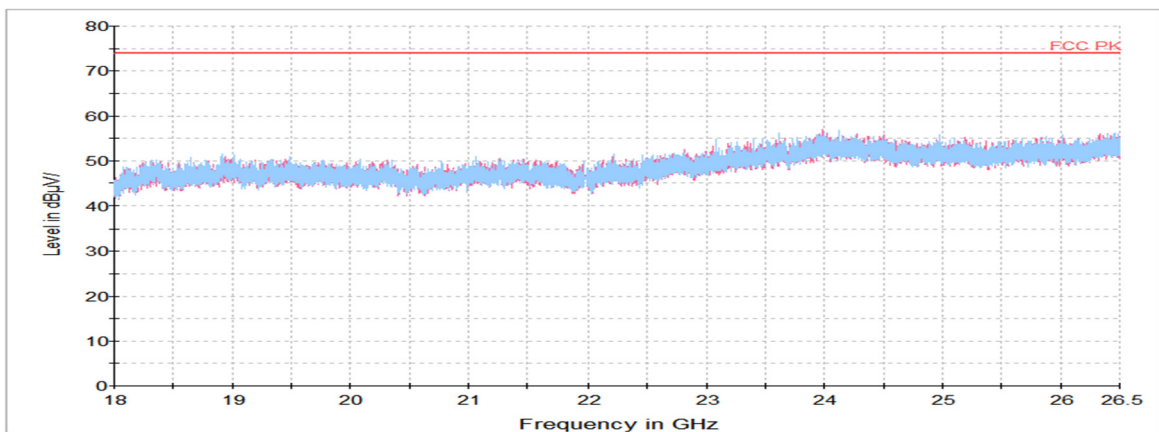
**Horizontal/Vertical for 1 GHz ~ 3.5 GHz**



**Horizontal/Vertical for 3.5 GHz ~ 18 GHz**



**Horizontal/Vertical for 18 GHz ~ 26.5 GHz**



**KCTL Inc.**

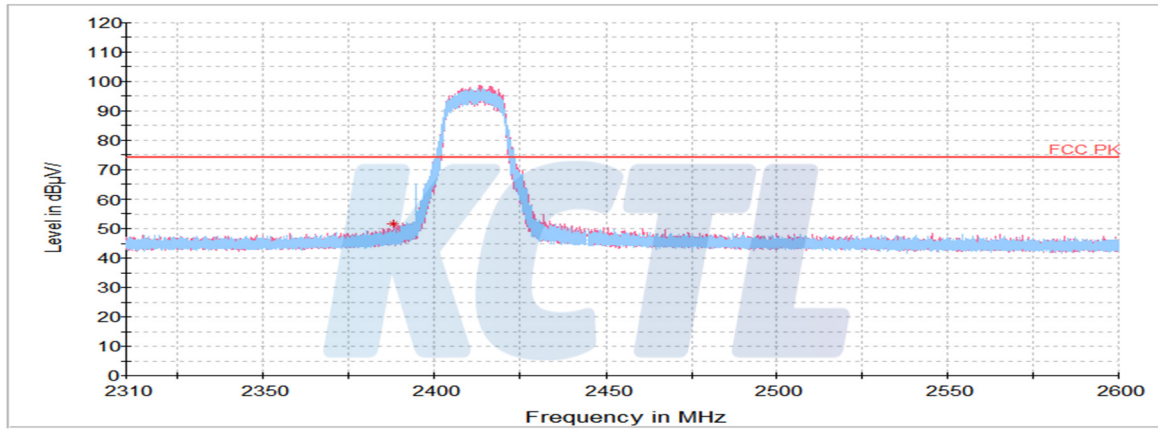
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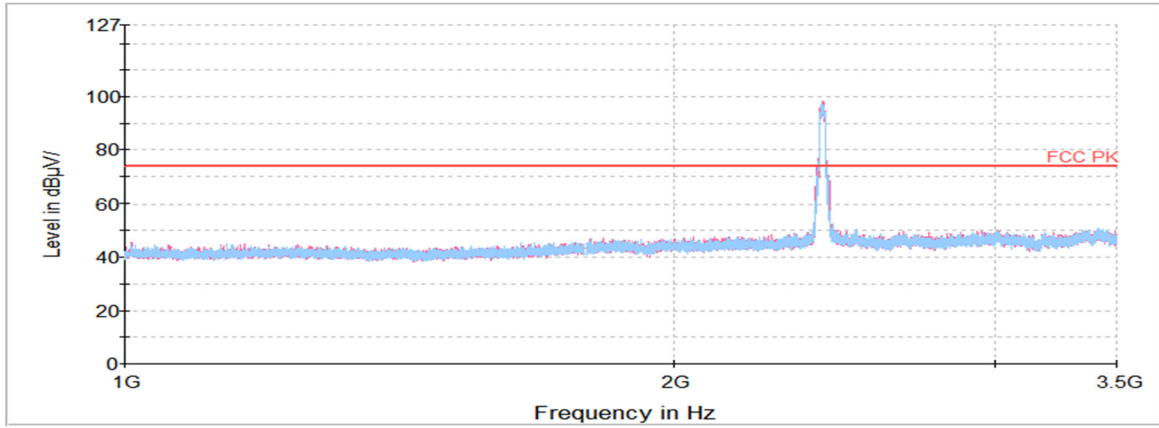
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**KCTL****802.11n HT20****Lowest Channel**

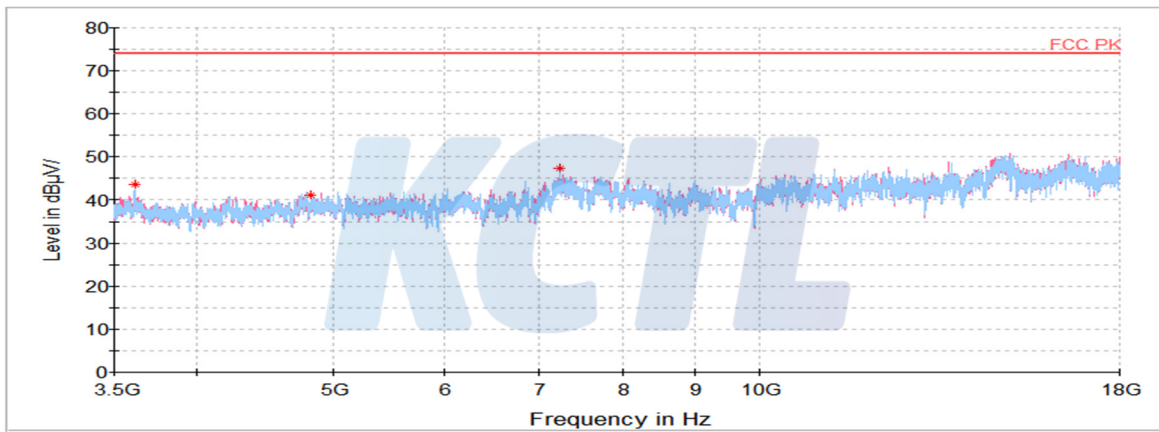
| Frequency  | Pol.  | Reading        | Ant. Factor | Amp. + Cable | DCCF | Result           | Limit            | Margin |
|--|-------|----------------|-------------|--------------|------|------------------|------------------|--------|
| (MHz)  | (V/H) | (dB( $\mu$ V)) | (dB)        | (dB)         | (dB) | (dB( $\mu$ V/m)) | (dB( $\mu$ V/m)) | (dB)   |
| <b>Peak data</b>   |       |                |             |              |      |                  |                  |        |
| 2 388.87 <sup>1)</sup>   | V     | 48.94          | 31.88       | -29.04       | -    | 51.78            | 74.00            | 22.22  |
| 4 824.03 <sup>1)</sup>   | V     | 59.95          | 33.93       | -52.83       | -    | 41.05            | 74.00            | 32.95  |
| 7 236.02   | H     | 63.60          | 35.40       | -51.87       | -    | 47.13            | 74.00            | 26.87  |
| <b>Average Data</b>  |       |                |             |              |      |                  |                  |        |
| No spurious emissions were detected within 20 dB of the limit. |       |                |             |              |      |                  |                  |        |

**Horizontal/Vertical for Band-edge**

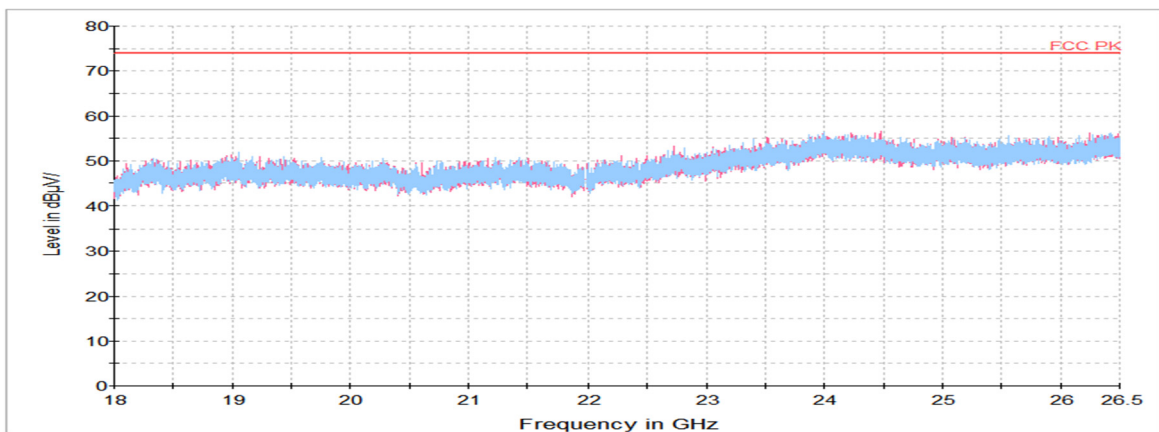
**Horizontal/Vertical for 1 GHz ~ 3.5 GHz**



**Horizontal/Vertical for 3.5 GHz ~ 18 GHz**



**Horizontal/Vertical for 18 GHz ~ 26.5 GHz**





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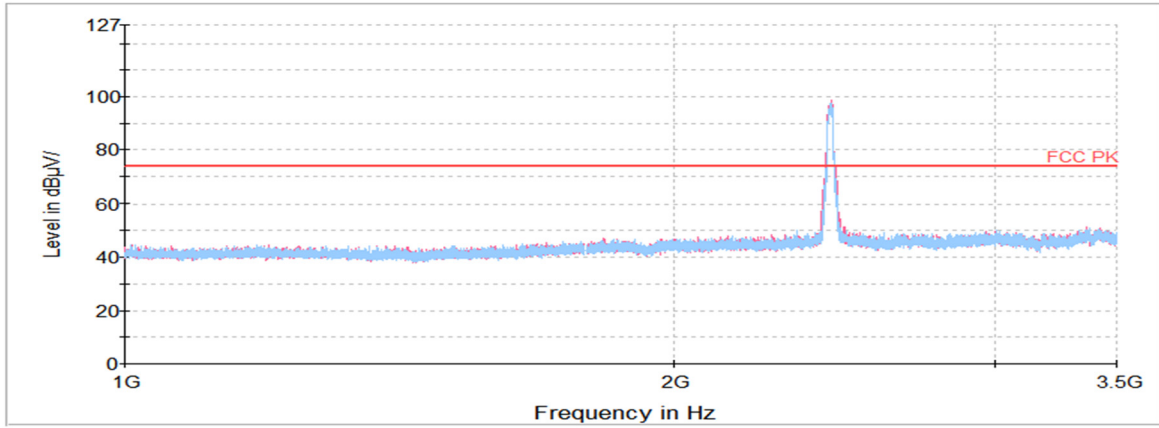
**Middle Channel**

| Frequency<br>(MHz)   | Pol.<br>(V/H) | Reading<br>(dB( $\mu$ V)) | Ant. Factor<br>(dB) | Amp. + Cable<br>(dB) | DCCF<br>(dB) | Result<br>(dB( $\mu$ V/m)) | Limit<br>(dB( $\mu$ V/m)) | Margin<br>(dB) |
|--|---------------|---------------------------|---------------------|----------------------|--------------|----------------------------|---------------------------|----------------|
| <b>Peak data</b>   |               |                           |                     |                      |              |                            |                           |                |
| 4 875.69 <sup>1)</sup>   | V             | 60.03                     | 33.95               | -54.25               | -            | 39.73                      | 74.00                     | 34.27          |
| 7 310.78 <sup>1)</sup>   | H             | 63.89                     | 35.40               | -51.50               | -            | 47.79                      | 74.00                     | 26.21          |
| <b>Average Data</b>  |               |                           |                     |                      |              |                            |                           |                |
| No spurious emissions were detected within 20 dB of the limit. |               |                           |                     |                      |              |                            |                           |                |

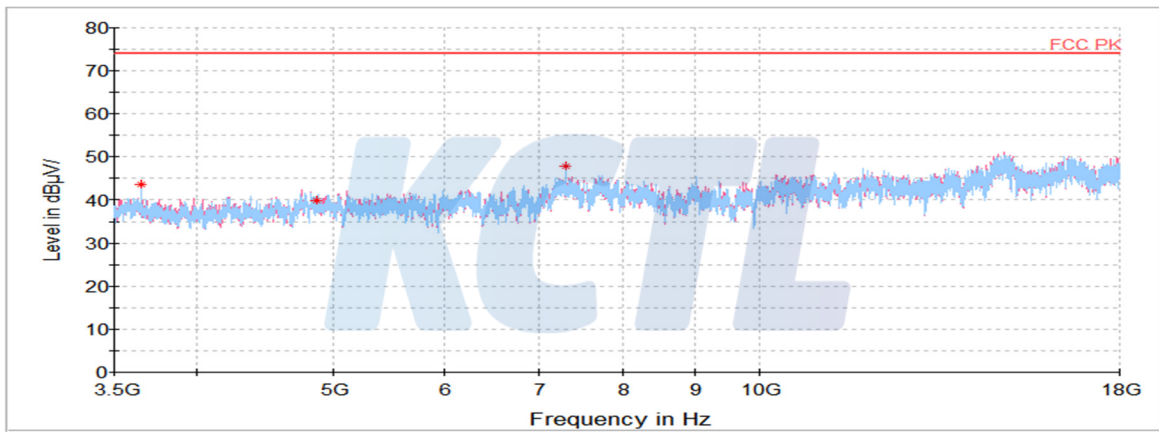




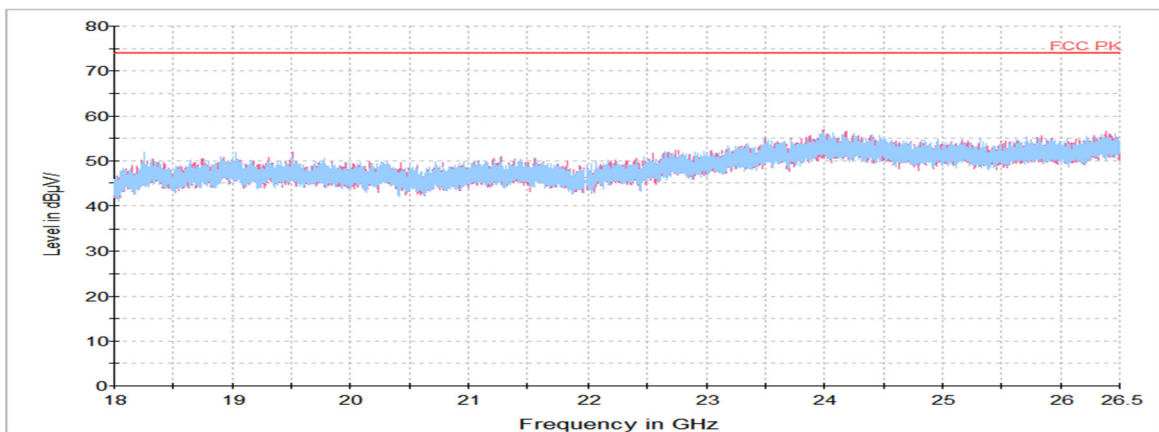
**Horizontal/Vertical for 1 GHz ~ 3.5 GHz**



**Horizontal/Vertical for 3.5 GHz ~ 18 GHz**



**Horizontal/Vertical for 18 GHz ~ 26.5 GHz**



**KCTL Inc.**

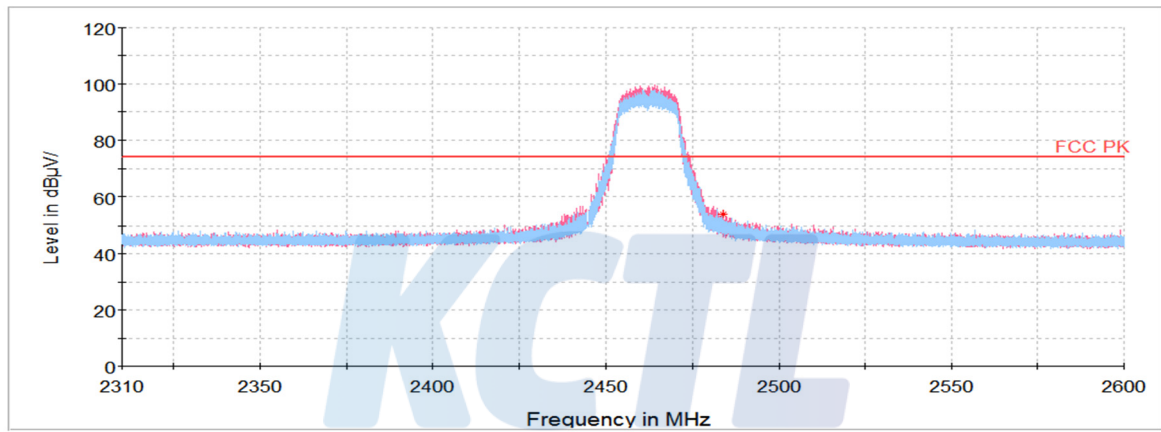
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Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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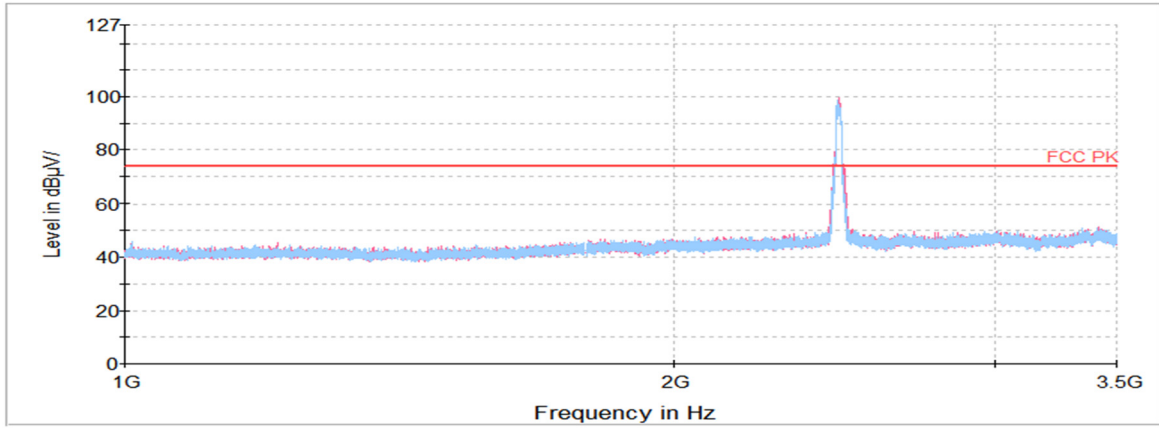
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**KCTL****Highest Channel**

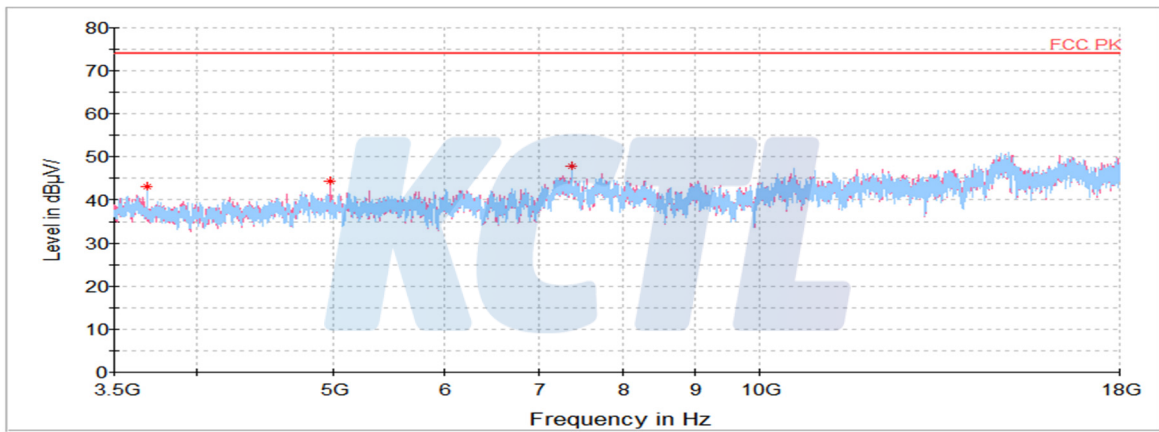
| Frequency  | Pol.  | Reading        | Ant. Factor | Amp. + Cable | DCCF | Result           | Limit            | Margin |
|--|-------|----------------|-------------|--------------|------|------------------|------------------|--------|
| (MHz)  | (V/H) | (dB( $\mu$ V)) | (dB)        | (dB)         | (dB) | (dB( $\mu$ V/m)) | (dB( $\mu$ V/m)) | (dB)   |
| <b>Peak data</b>   |       |                |             |              |      |                  |                  |        |
| 2 483.81 <sup>1)</sup>   | V     | 50.88          | 32.07       | -29.21       | -    | 53.74            | 74.00            | 20.26  |
| 4 984.89 <sup>1)</sup>   | V     | 65.11          | 33.99       | -54.76       | -    | 44.34            | 74.00            | 29.66  |
| 7 386.00 <sup>1)</sup>   | V     | 63.47          | 35.40       | -51.13       | -    | 47.74            | 74.00            | 26.26  |
| <b>Average Data</b>  |       |                |             |              |      |                  |                  |        |
| No spurious emissions were detected within 20 dB of the limit. |       |                |             |              |      |                  |                  |        |

**Horizontal/Vertical for Band-edge**

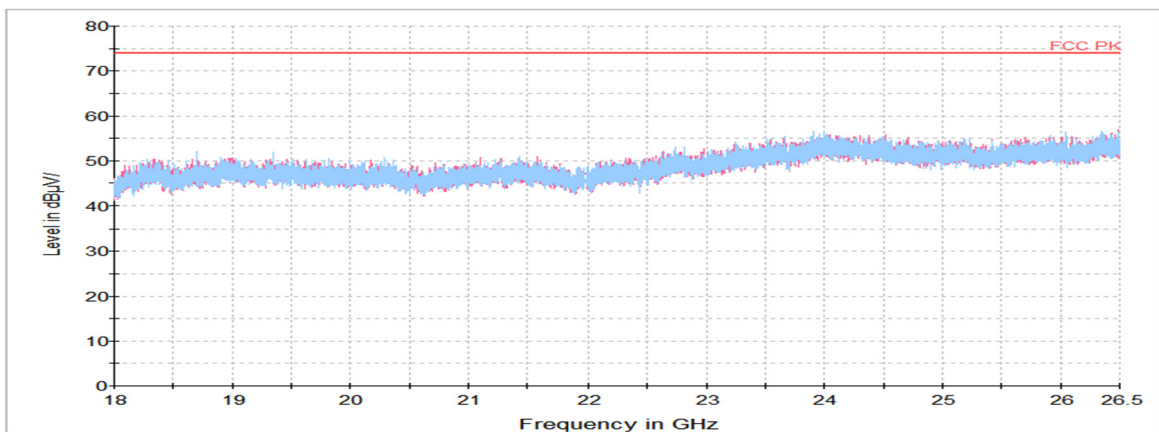
**Horizontal/Vertical for 1 GHz ~ 3.5 GHz**



**Horizontal/Vertical for 3.5 GHz ~ 18 GHz**

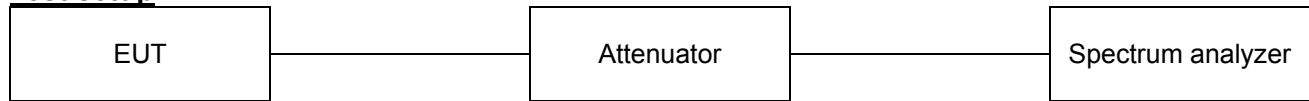


**Horizontal/Vertical for 18 GHz ~ 26.5 GHz**



## 7.5. Conducted Spurious Emission

### Test setup



### Limit

According to §15.247(d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operation, 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, provided the transmitter demonstrates compliance with the peak conducted power averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation specified in §15.209(a) is not required. In addition, radiated emission limits specified in §15.209(a) (see §15.205(c)).

Limit : 20 dBc

### Test procedure

ANSI C63.10-2013 - Section 11.11.3

### Test settings

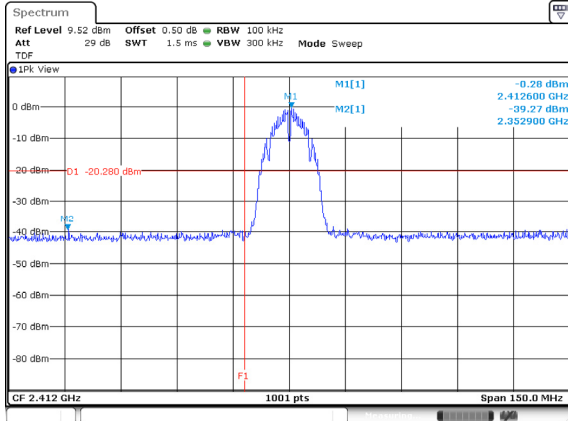
Set the spectrum analyzer as follows:

- 1) Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10<sup>th</sup> harmonic.  
Typically, several plots are required to cover this entire span.
- 2) RBW = 100 kHz
- 3) VBW ≥ RBW
- 4) Sweep = auto
- 5) Detector function = peak
- 6) Trace = max hold
- 7) Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded.
- 8) Each frequency found during preliminary measurements was re-examined and investigated. The test-receiver system was set up to average, peak, and quasi-peak detector function with specified bandwidth.

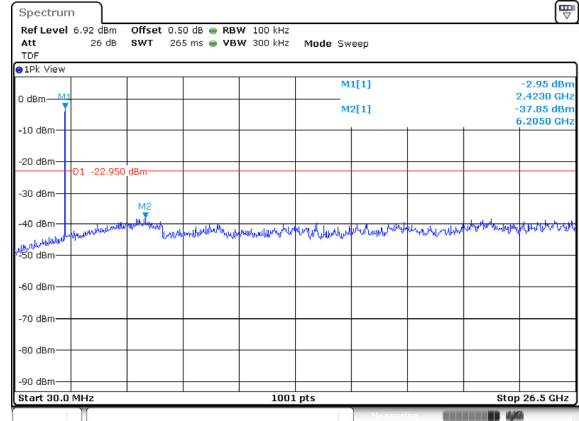
**Test results**

**802.11b**

**Conducted band-edge / Low ch.**

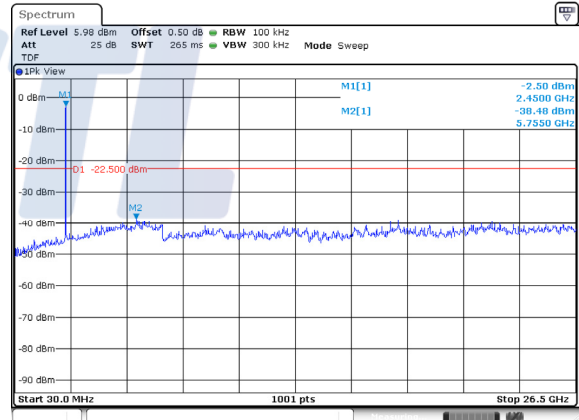


**Conducted spurious / Low ch.**

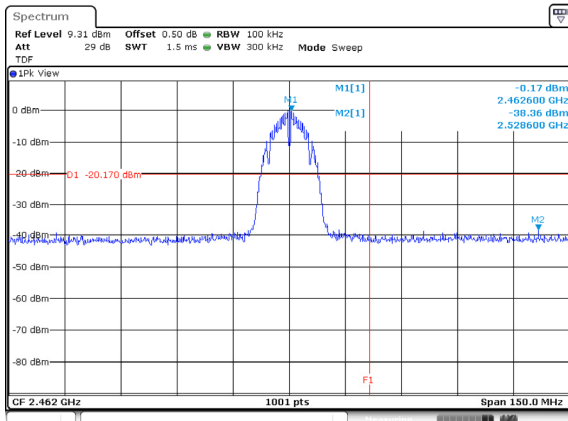


**Conducted spurious / Mid ch.**

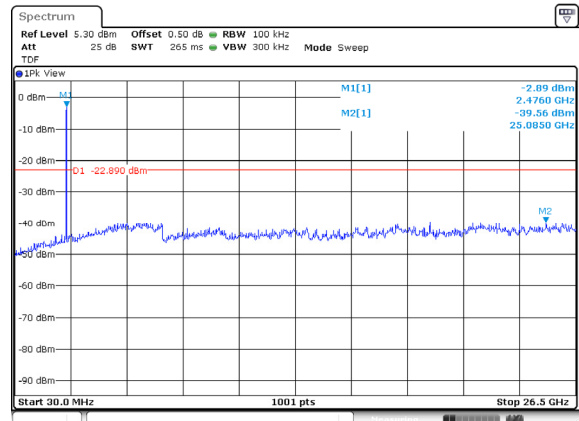
Blank



**Conducted band-edge / High ch.**



**Conducted spurious / High ch.**



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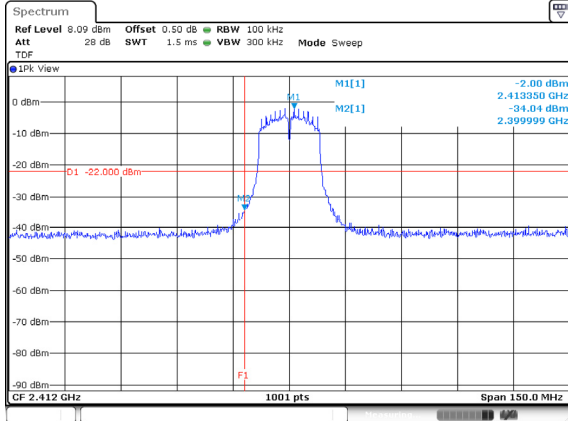
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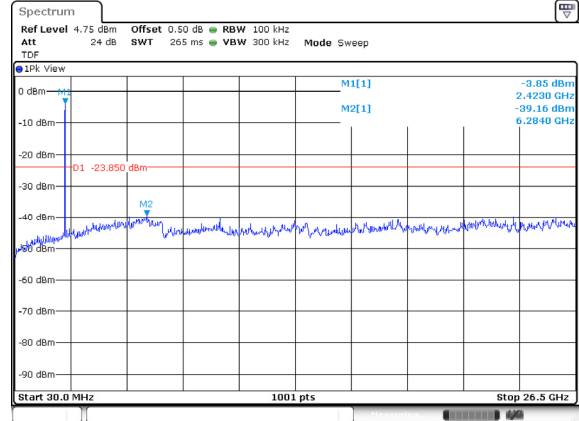


## 802.11g

### Conducted band-edge / Low ch.

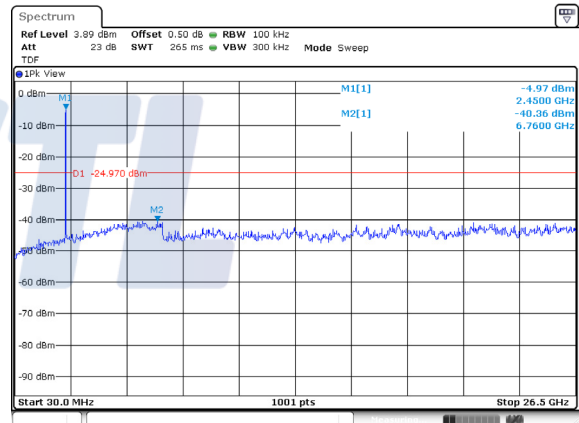


### Conducted spurious / Low ch.

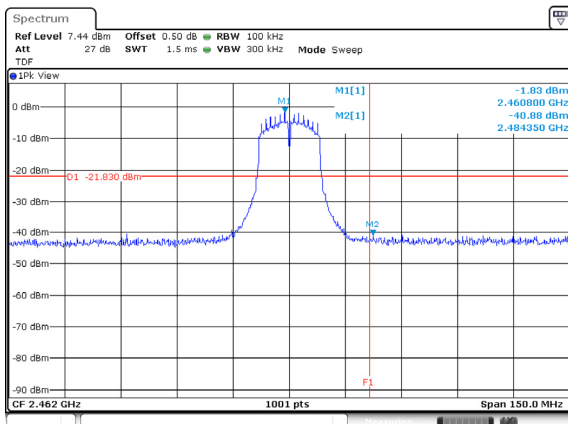


Blank

### Conducted spurious / Mid ch.



### Conducted band-edge / High ch.



### Conducted spurious / High ch.

