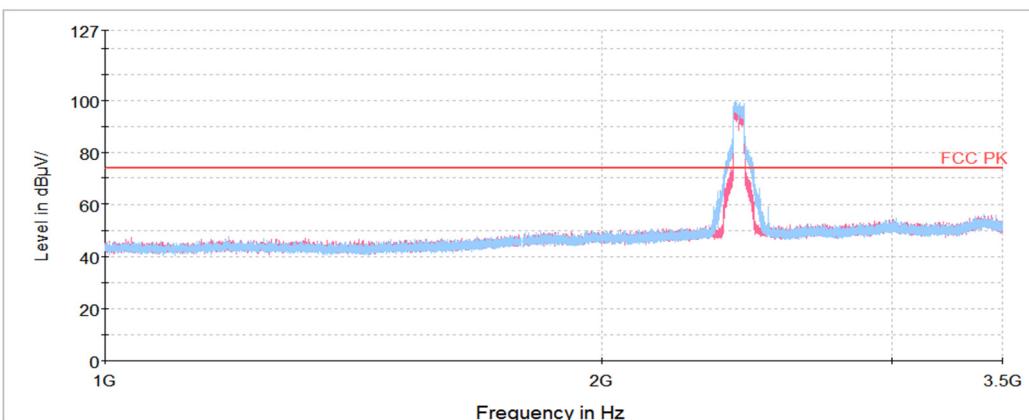
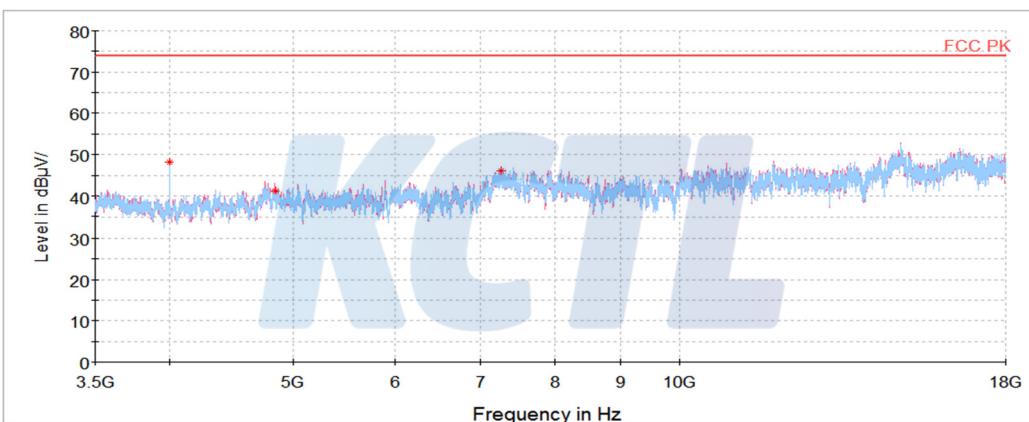
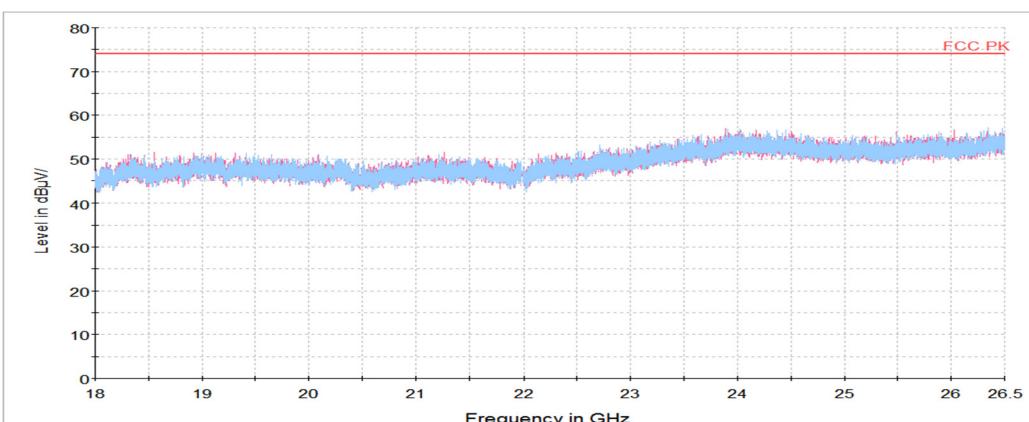


**Horizontal/Vertical for 1 GHz ~ 3.5 GHz****Horizontal/Vertical for 3.5 GHz ~ 18 GHz****Horizontal/Vertical for 18 GHz ~ 26.5 GHz**

**KCTL Inc.**

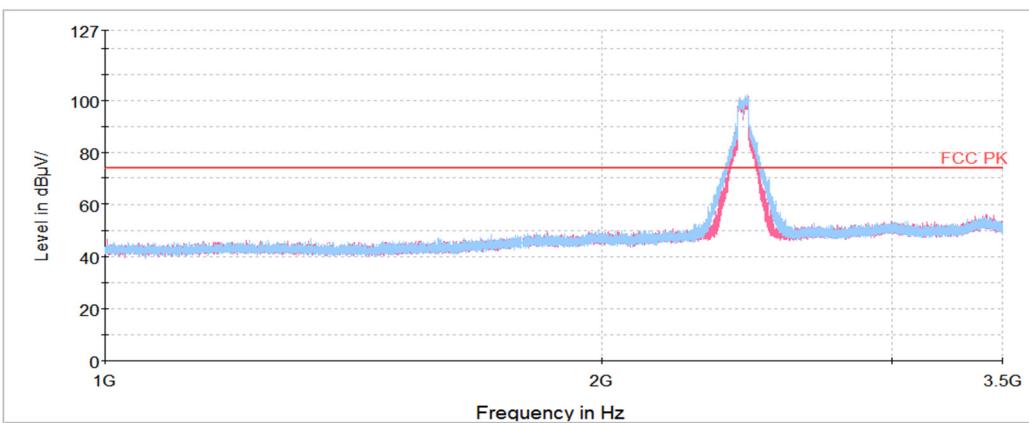
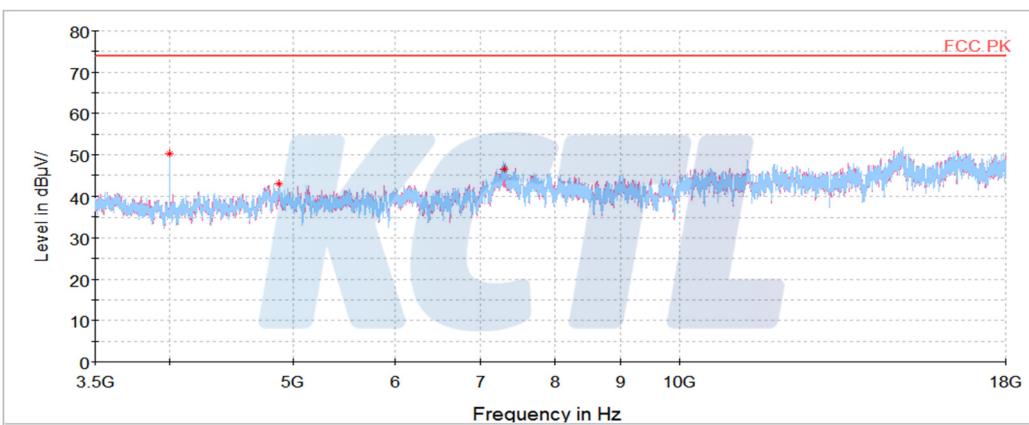
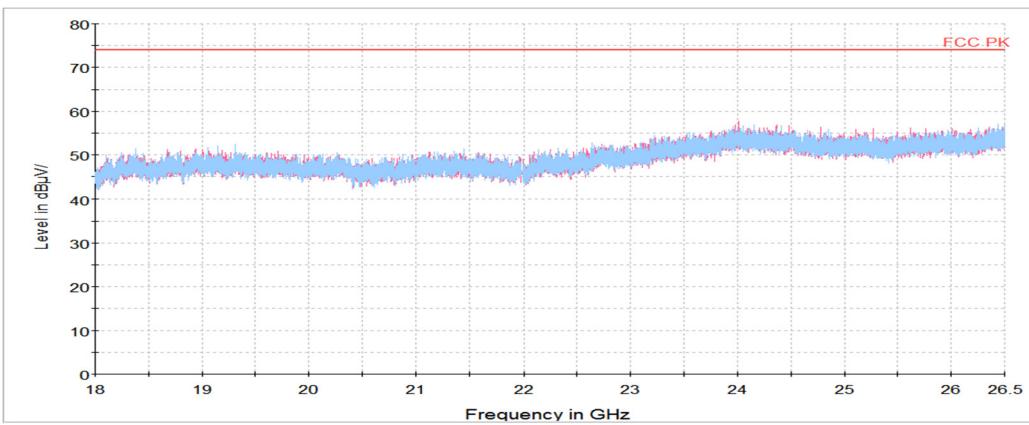
65, Sinwon-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
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**Middle Channel (2 437 MHz)**

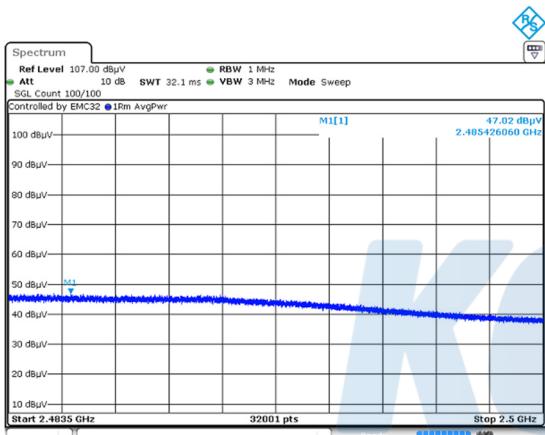
Frequency (MHz)	Pol.	Reading (dB(µV))	Ant. Factor (dB)	Amp. + Cable (dB)	DCCF	Result (dB(µV/m))	Limit (dB(µV/m))	Margin (dB)
<b>Peak data</b>								
3 999.80 <sup>1)</sup>	H	73.92	33.00	-56.65	-	50.27	74.00	23.73
4 871.16 <sup>1)</sup>	H	63.12	33.95	-54.13	-	42.94	74.00	31.06
7 312.14 <sup>1)</sup>	H	62.66	35.40	-51.50	-	46.56	74.00	27.44
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit								



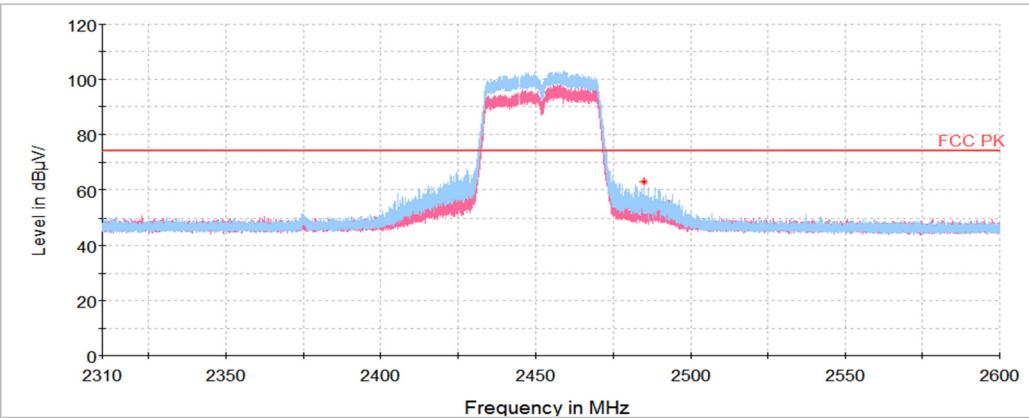
**Horizontal/Vertical for 1 GHz ~ 3.5 GHz****Horizontal/Vertical for 3.5 GHz ~ 18 GHz****Horizontal/Vertical for 18 GHz ~ 26.5 GHz**

**Highest Channel (2 452 MHz)**

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>								
2 485.43 <sup>1)</sup>	H	60.03	32.07	-29.22	-	62.88	74.00	11.12
4 903.78 <sup>1)</sup>	V	60.23	33.96	-54.92	-	39.27	74.00	34.73
7 356.55 <sup>1)</sup>	H	60.07	35.40	-51.28	-	44.19	74.00	29.81
<b>Average Data</b>								
2 485.43 <sup>1)</sup>	H	47.02	32.07	-29.22	0.44	50.31	54.00	3.69

**Average data (2 485.43 MHz)**

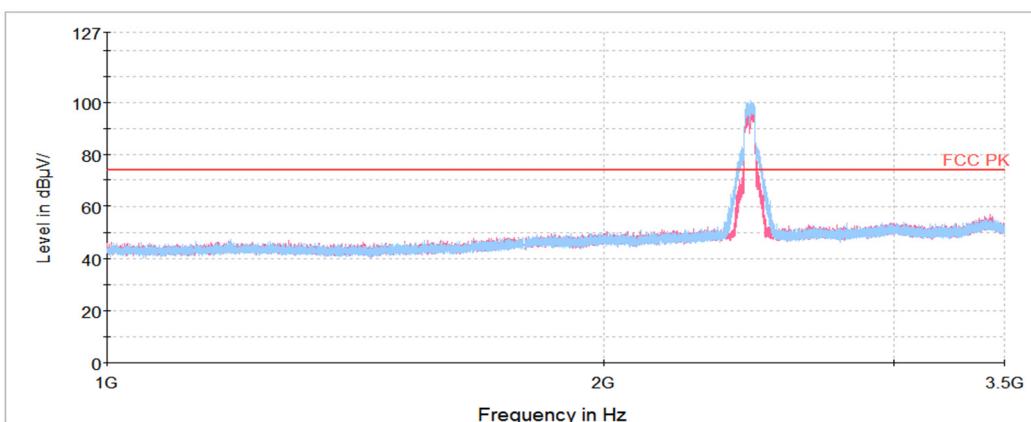
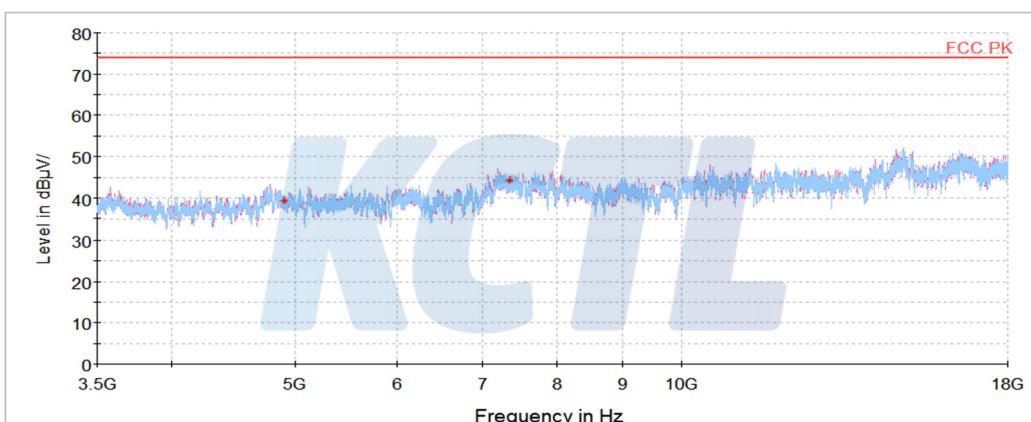
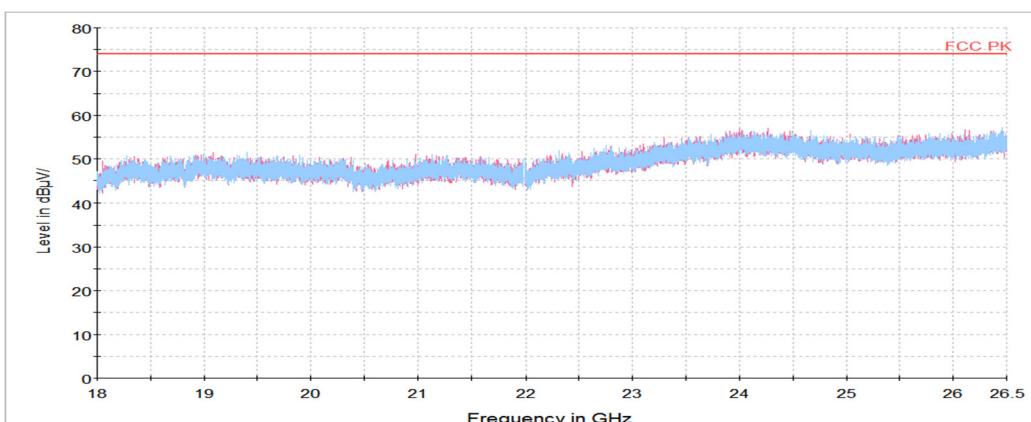
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**Horizontal/Vertical for Band-edge**

**KCTL Inc.**

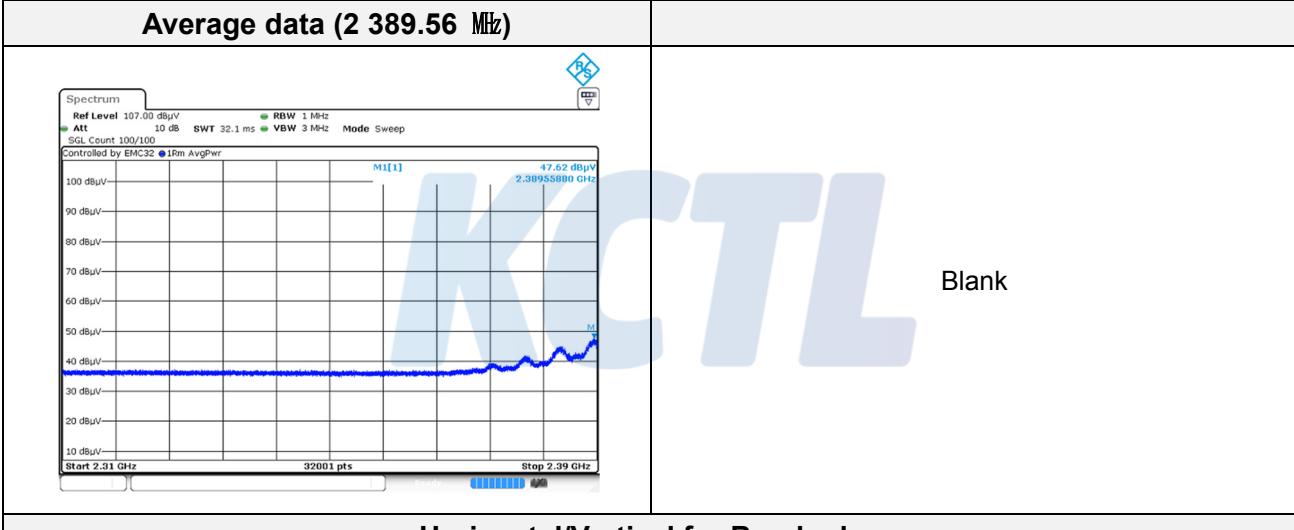
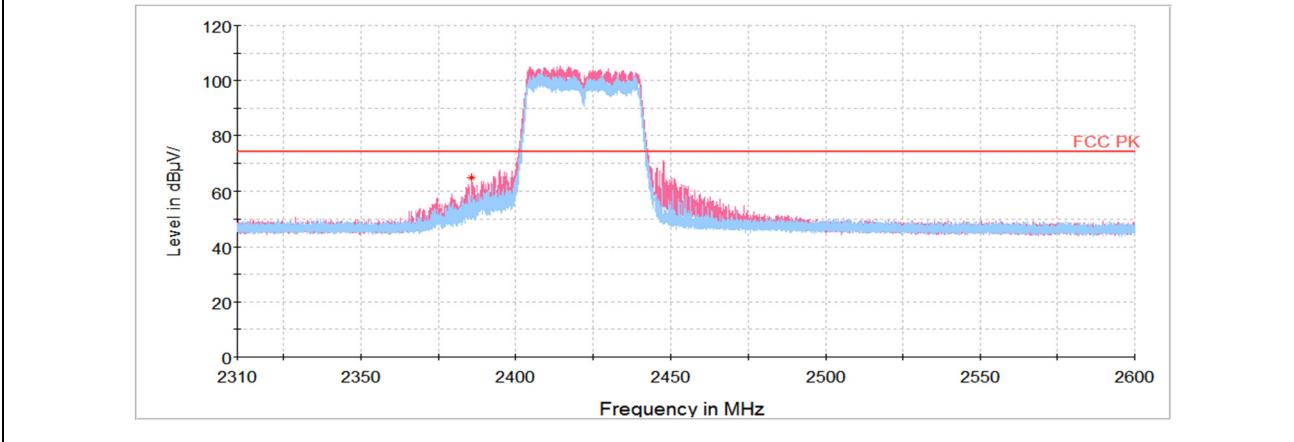
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Suwon-si, Gyeonggi-do, 16677, Korea  
TEL: 82-31-285-0894 FAX: 82-505-299-8311  
[www.kctl.co.kr](http://www.kctl.co.kr)

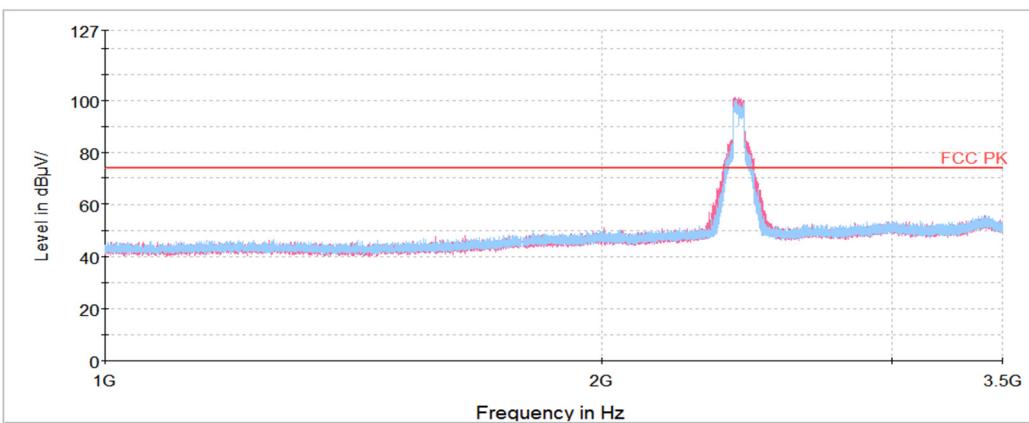
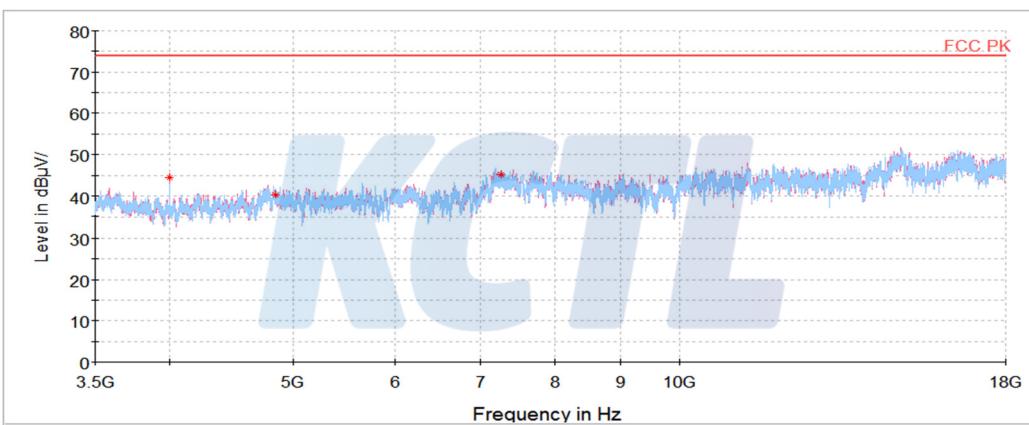
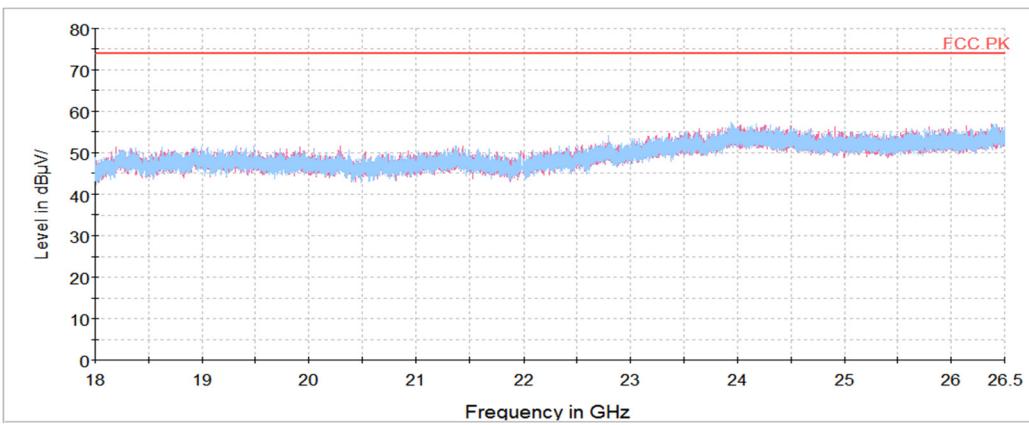
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**KCTL****Horizontal/Vertical for 1 GHz ~ 3.5 GHz****Horizontal/Vertical for 3.5 GHz ~ 18 GHz****Horizontal/Vertical for 18 GHz ~ 26.5 GHz**

**802.11n HT40 3TX MIMO****Lowest Channel (2 422 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(µV))	(dB)	(dB)	(dB)	(dB(µV/m))	(dB(µV/m))	(dB)
<b>Peak data</b>								
2 389.56 <sup>1)</sup>	V	61.90	31.88	-29.04	-	64.74	74.00	9.26
3 999.80 <sup>1)</sup>	V	68.13	33.00	-56.65	-	44.48	74.00	29.52
4 844.88 <sup>1)</sup>	H	59.65	33.94	-53.40	-	40.19	74.00	33.81
7 266.38 <sup>1)</sup>	H	61.50	35.40	-51.72	-	45.18	74.00	28.82
<b>Average Data</b>								
2 389.56 <sup>1)</sup>	V	47.62	31.88	-29.04	0.44	50.90	54.00	3.10

**Average data (2 389.56 MHz)****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.**

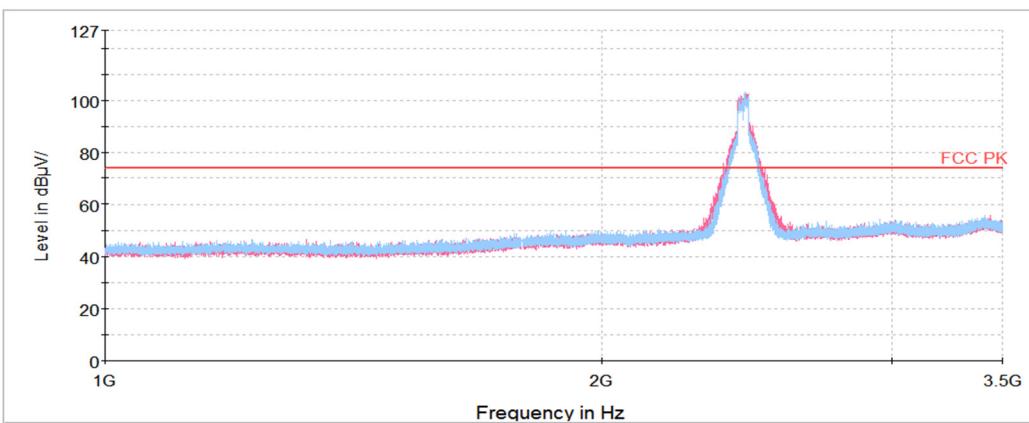
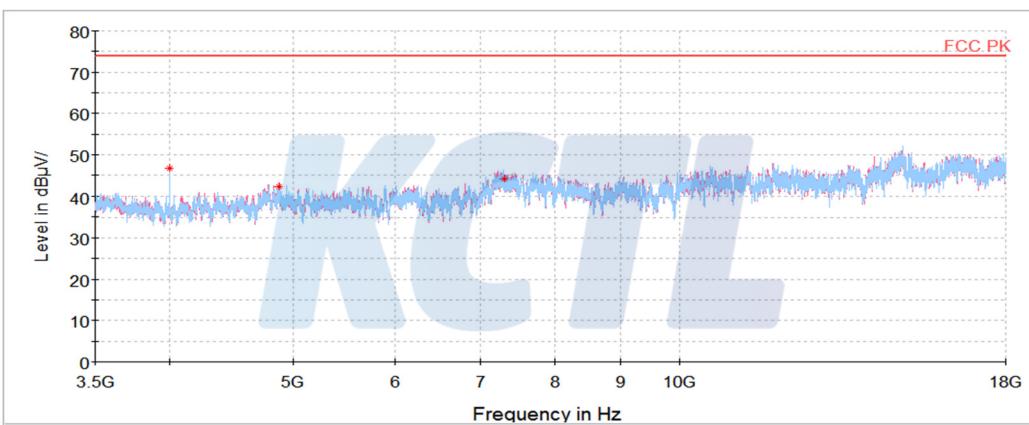
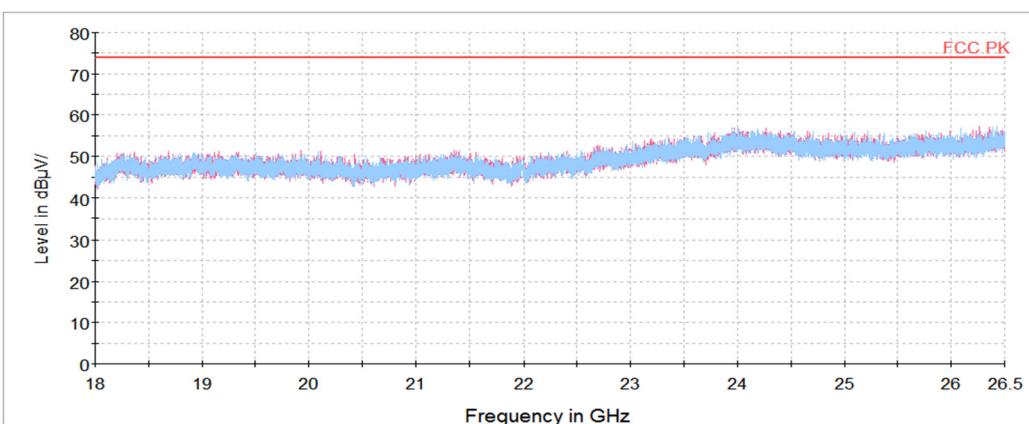
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**Middle Channel (2 437 MHz)**

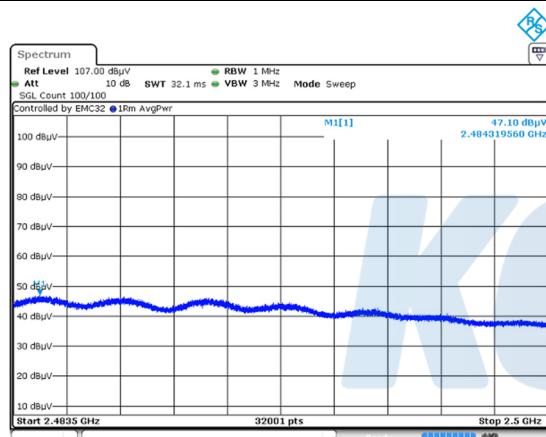
Frequency (MHz)	Pol.	Reading (dB(µV))	Ant. Factor (dB)	Amp. + Cable (dB)	DCCF	Result (dB(µV/m))	Limit (dB(µV/m))	Margin (dB)
<b>Peak data</b>								
4 000.25 <sup>1)</sup>	H	70.43	33.00	-56.65	-	46.78	74.00	27.22
4 874.33 <sup>1)</sup>	H	62.46	33.95	-54.22	-	42.19	74.00	31.81
7 313.50 <sup>1)</sup>	H	60.21	35.40	-51.49	-	44.12	74.00	29.88
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit								



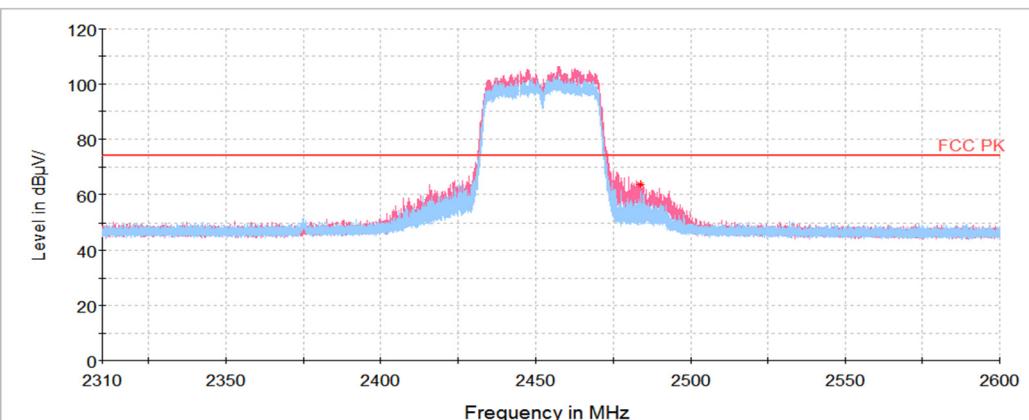
**Horizontal/Vertical for 1 GHz ~ 3.5 GHz****Horizontal/Vertical for 3.5 GHz ~ 18 GHz****Horizontal/Vertical for 18 GHz ~ 26.5 GHz**

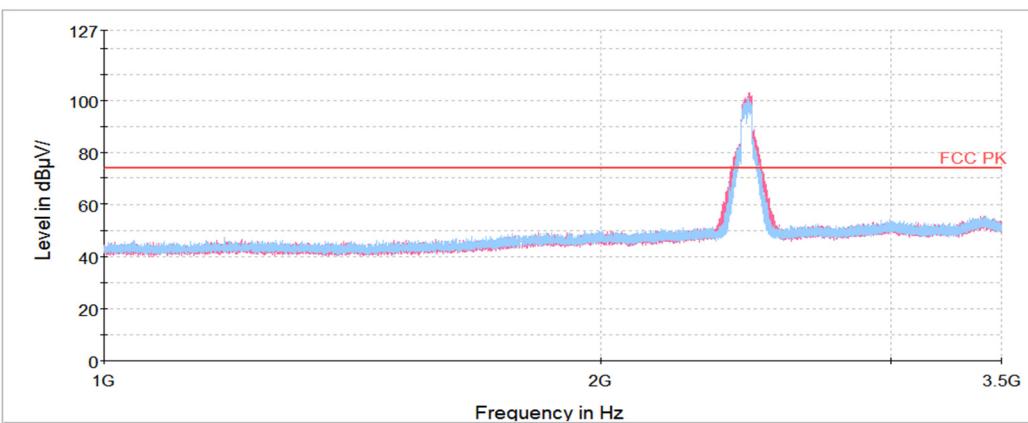
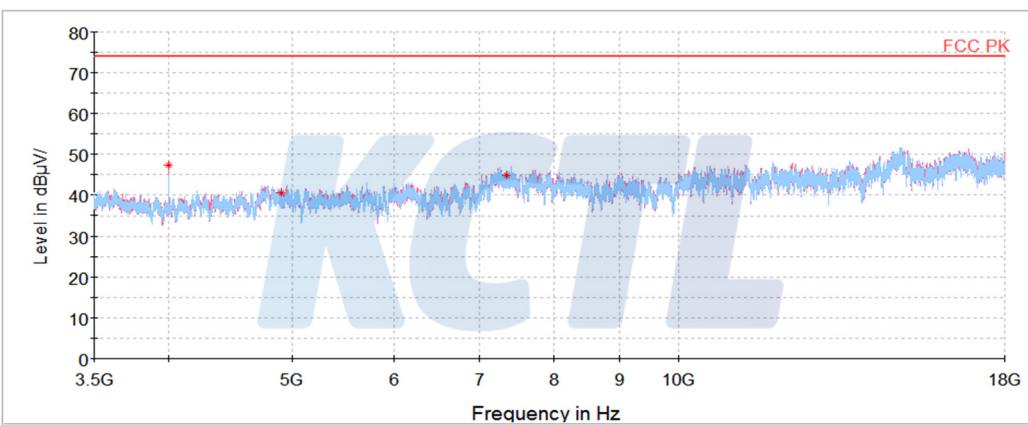
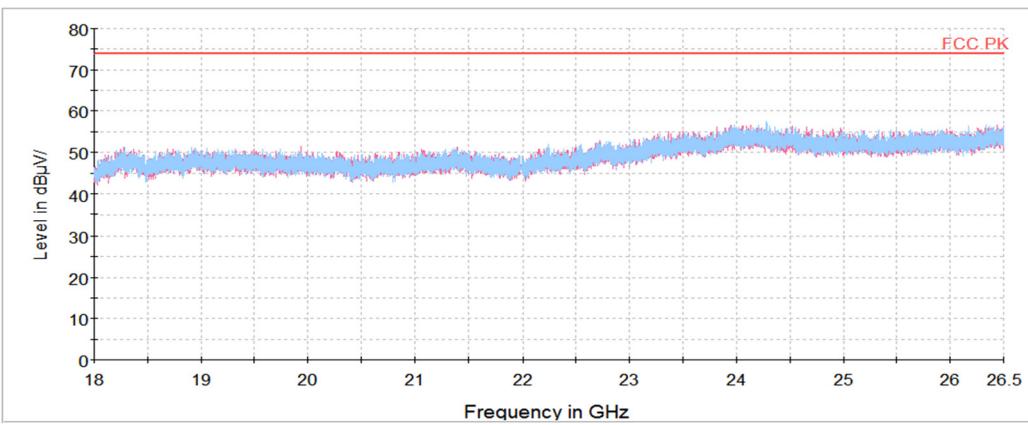
**Highest Channel (2 452 MHz)**

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>								
2 484.32 <sup>1)</sup>	V	60.49	32.07	-29.22	-	63.34	74.00	10.66
3 999.80 <sup>1)</sup>	V	70.97	33.00	-56.65	-	47.32	74.00	26.68
4 906.05 <sup>1)</sup>	H	61.37	33.96	-54.91	-	40.42	74.00	33.58
7 356.09 <sup>1)</sup>	V	60.54	35.40	-51.28	-	44.66	74.00	29.34
<b>Average Data</b>								
2 484.32 <sup>1)</sup>	V	47.10	32.07	-29.22	0.44	50.39	54.00	3.61

**Average data (2 484.32 MHz)**

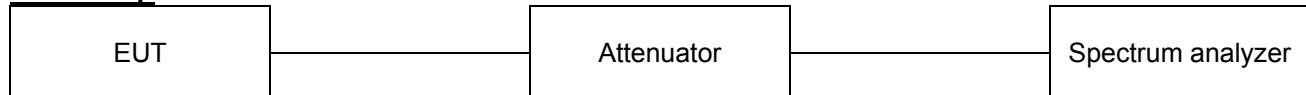
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**Horizontal/Vertical for Band-edge**

**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 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Limit : 30 dBc

### Test procedure

ANSI C63.10-2013 - Section 11.11.3

### Test settings

Establish an emission level by using the following procedure:

- 1) Set the center frequency and span to encompass frequency range to be measured.
- 2) Set the RBW = 100 kHz
- 3) Set the VBW  $\geq [3 \times \text{RBW}]$
- 4) Detector = peak
- 5) Sweep time = auto couple
- 6) Trace mode = max hold
- 7) Allow trace to fully stabilize.
- 8) Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

# KCTL Inc.

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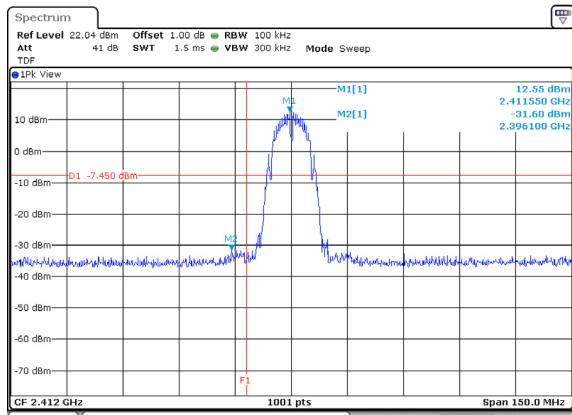
# KCTL

## Test results

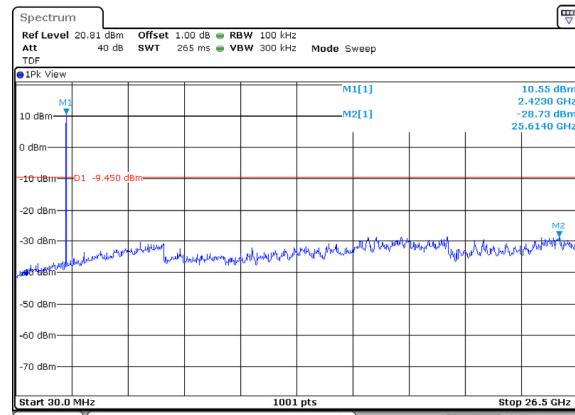
### SISO ANT 0

#### 802.11b

##### Conducted band-edge / 2 412 MHz

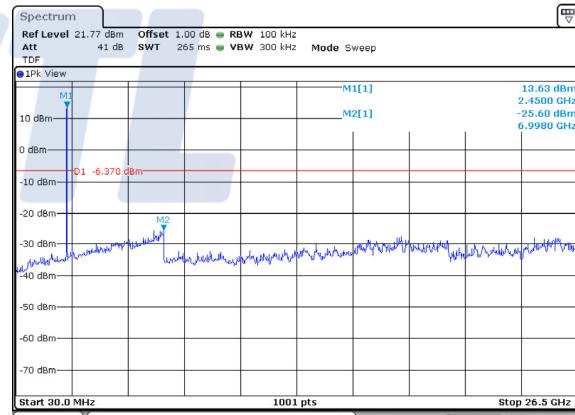


##### Conducted spurious / 2 412 MHz

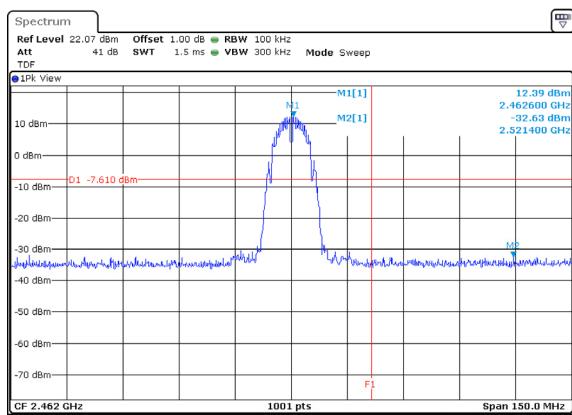


##### Conducted spurious / 2 437 MHz

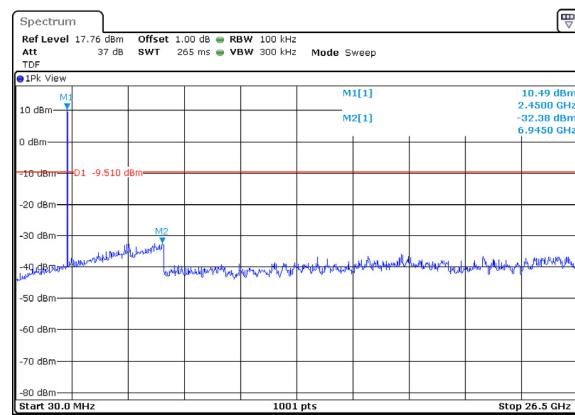
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##### Conducted band-edge / 2 462 MHz

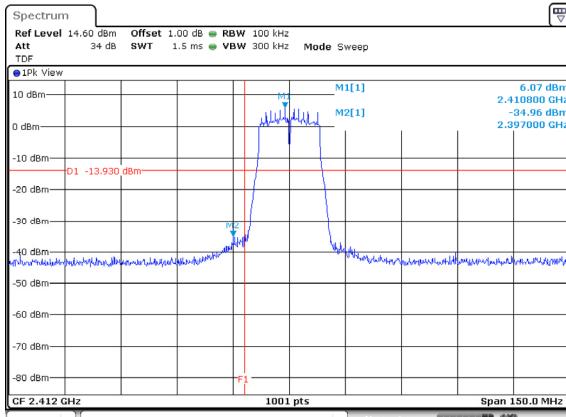


##### Conducted spurious / 2 462 MHz

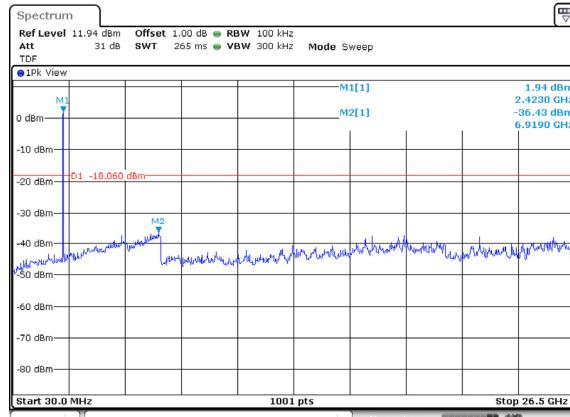


## 802.11g

## Conducted band-edge / 2 412 MHz

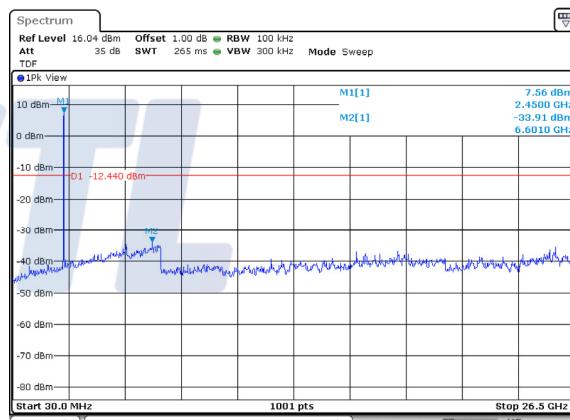


## Conducted spurious / 2 412 MHz

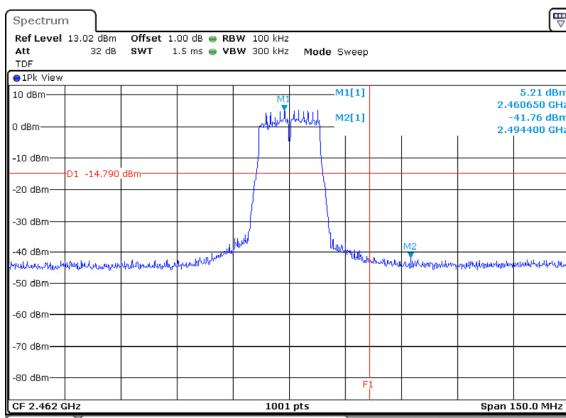


## Conducted spurious / 2 437 MHz

Blank



## Conducted band-edge / 2 462 MHz



## Conducted spurious / 2 462 MHz

