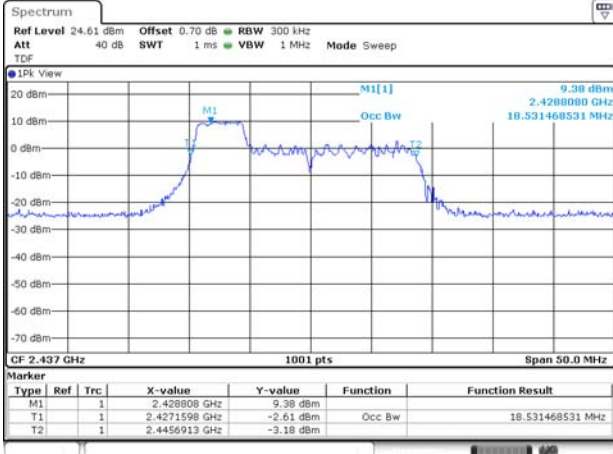


52T / 2 437 MHz

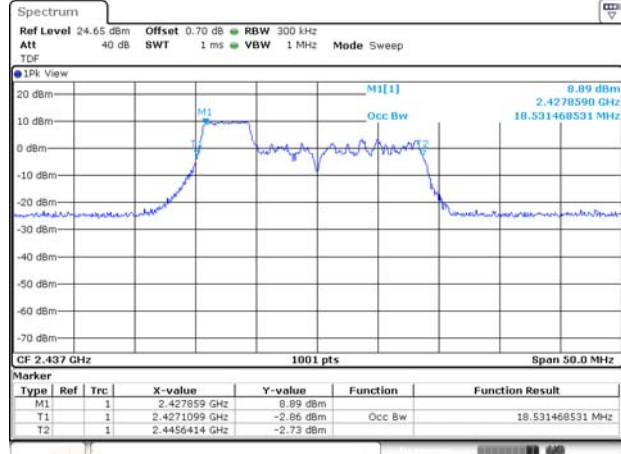
ANT 1

RU offset 37

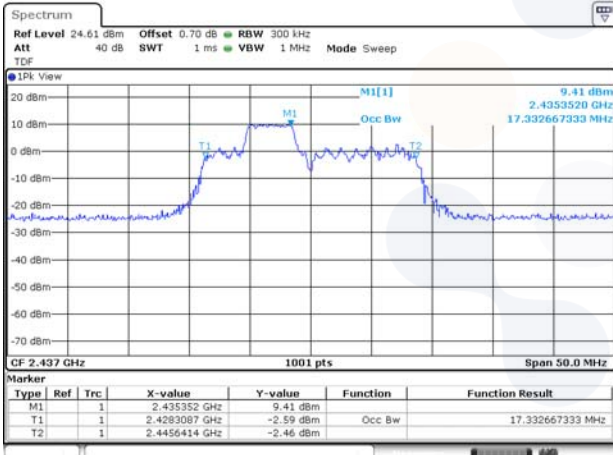


ANT 2

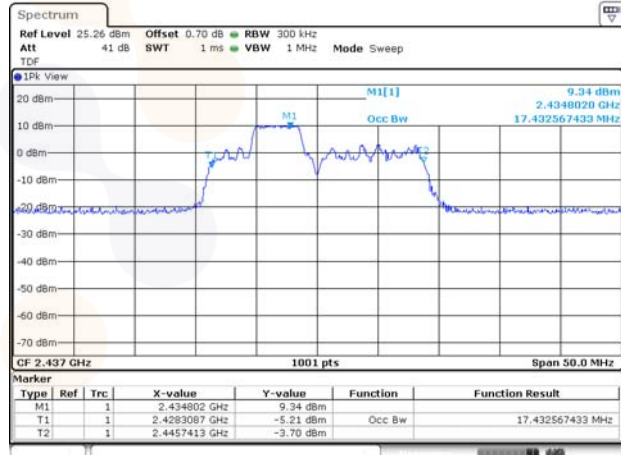
RU offset 37



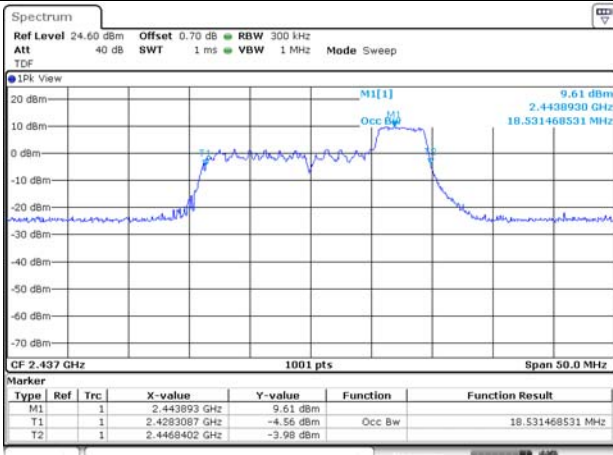
RU offset 38



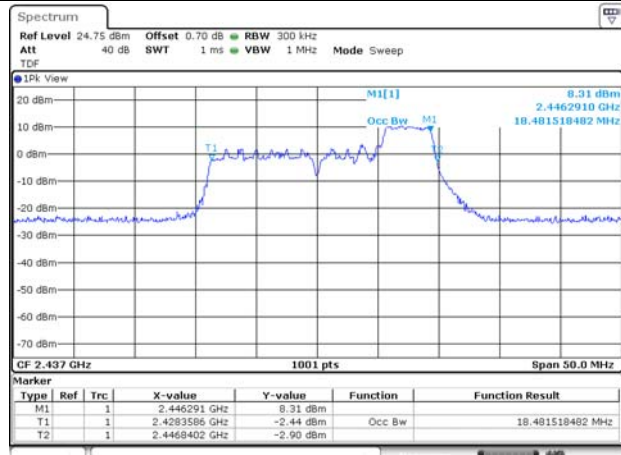
RU offset 38



RU offset 40



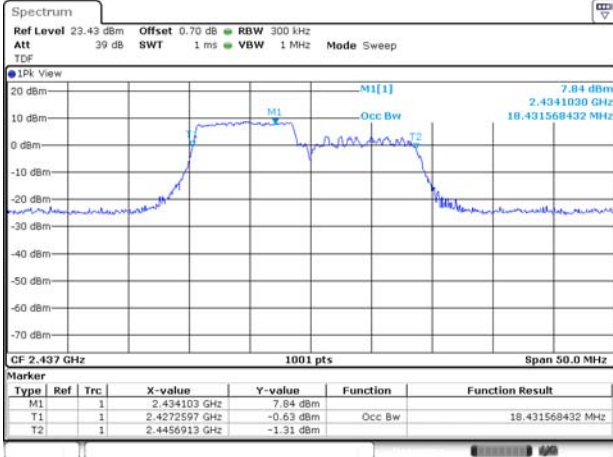
RU offset 40



106T / 2 437 MHz

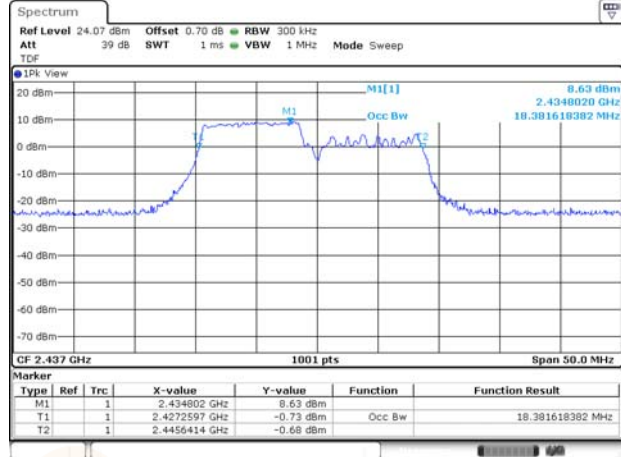
ANT 1

RU offset 53

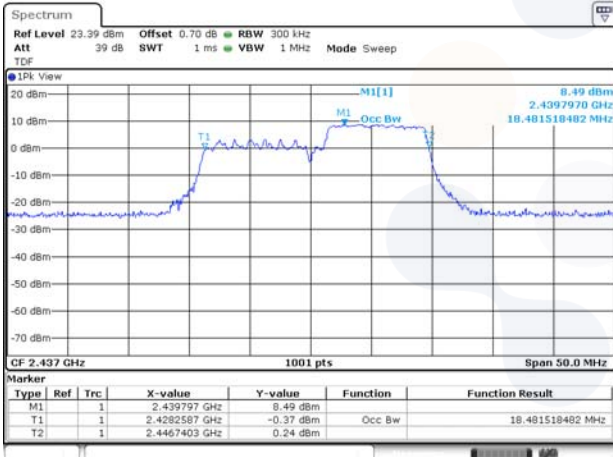


ANT 2

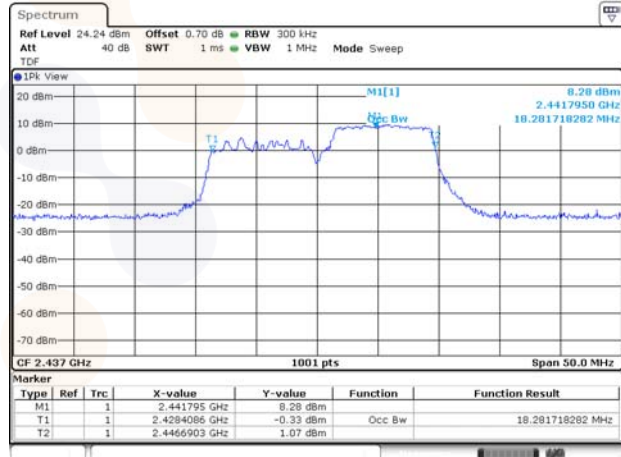
RU offset 53



RU offset 54



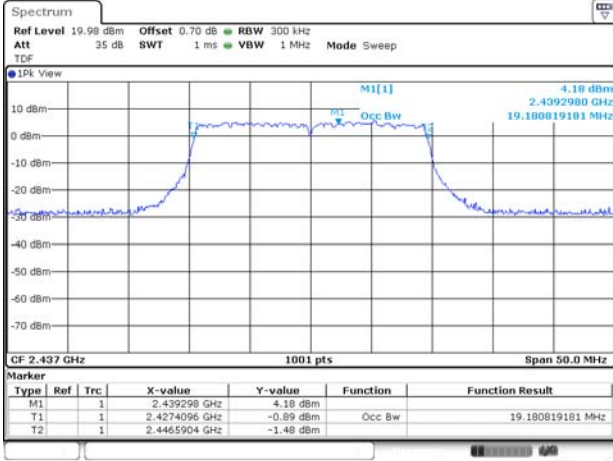
RU offset 54



**242T / 2 437 MHz**

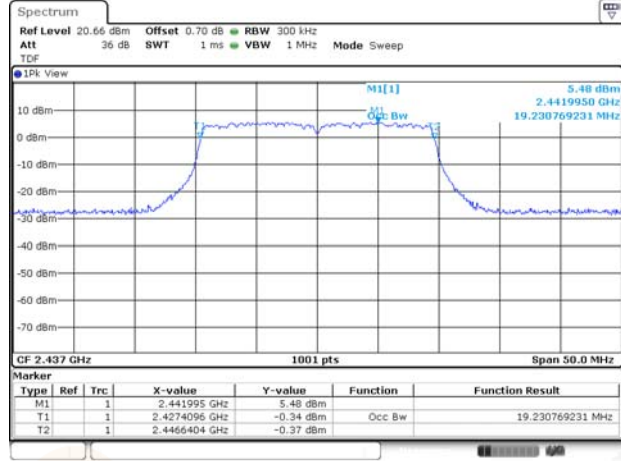
**ANT 1**

**RU offset 61**



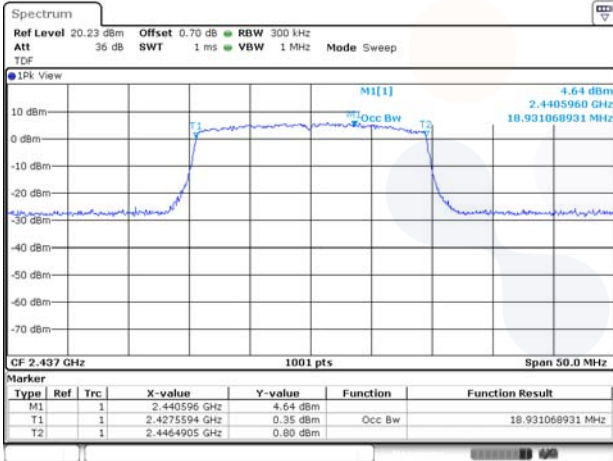
**ANT 2**

**RU offset 61**

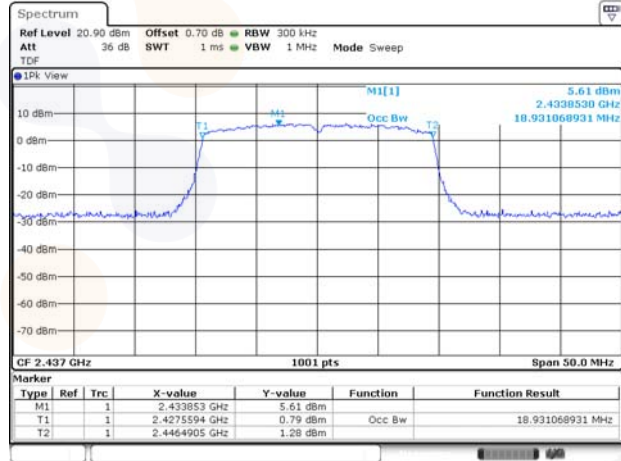


**SU / 2 437 MHz**

**ANT 1**



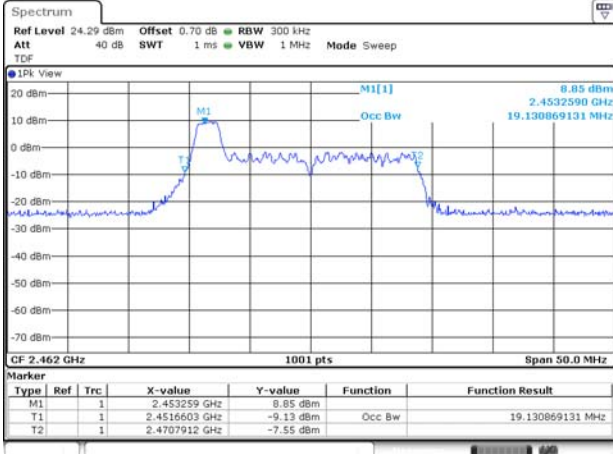
**ANT 2**



**26T / 2 462 MHz**

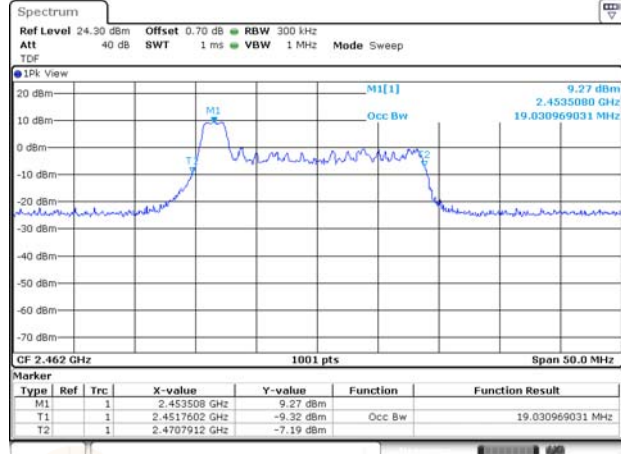
**ANT 1**

**RU offset 0**

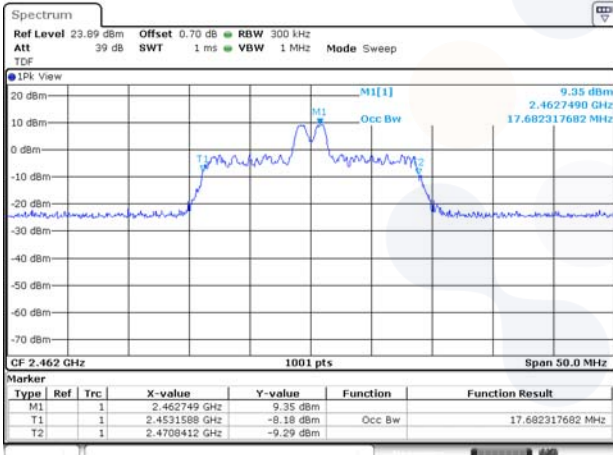


**ANT 2**

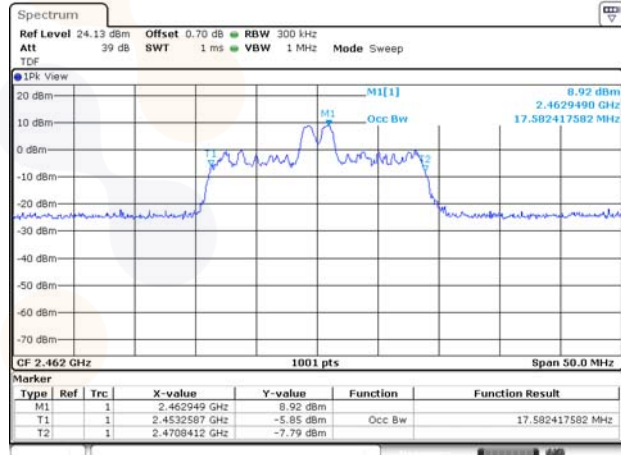
**RU offset 0**



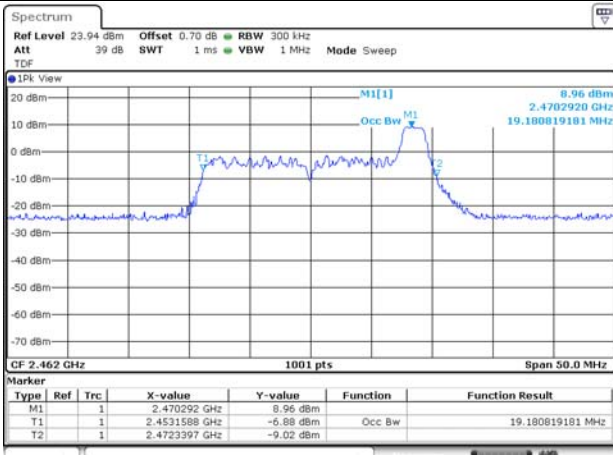
**RU offset 4**



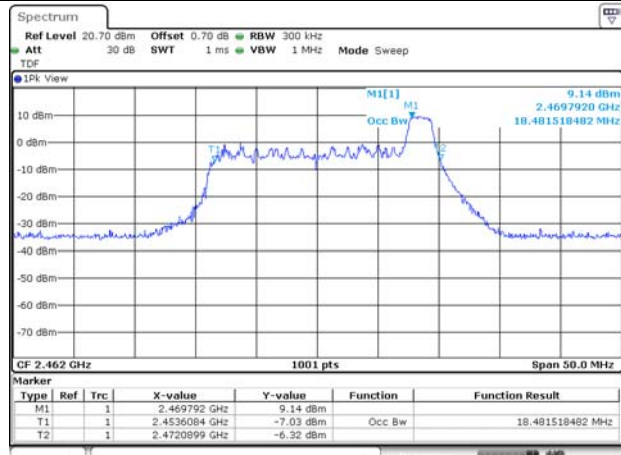
**RU offset 4**



**RU offset 8**



**RU offset 8**

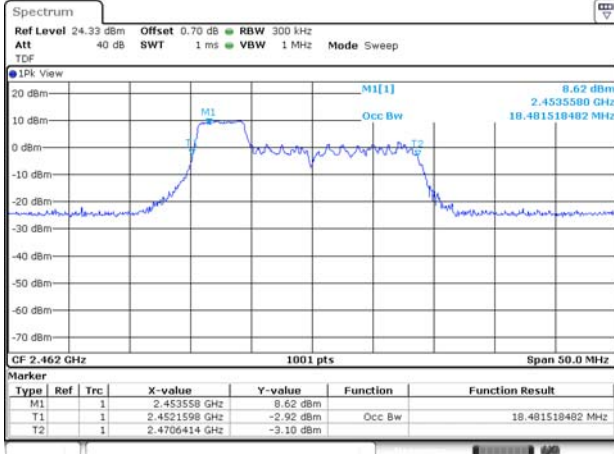




**52T / 2 462 MHz**

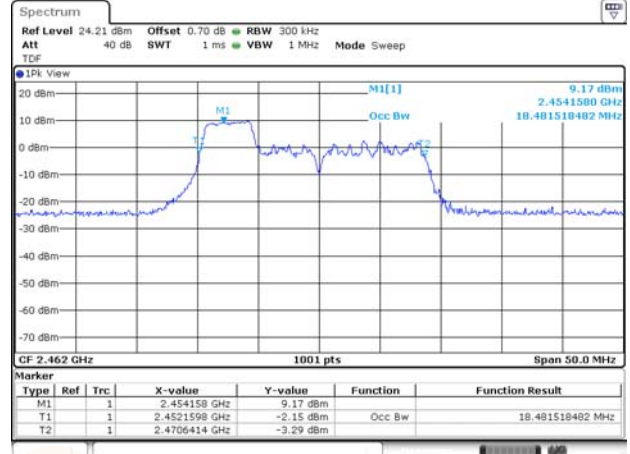
**ANT 1**

**RU offset 37**

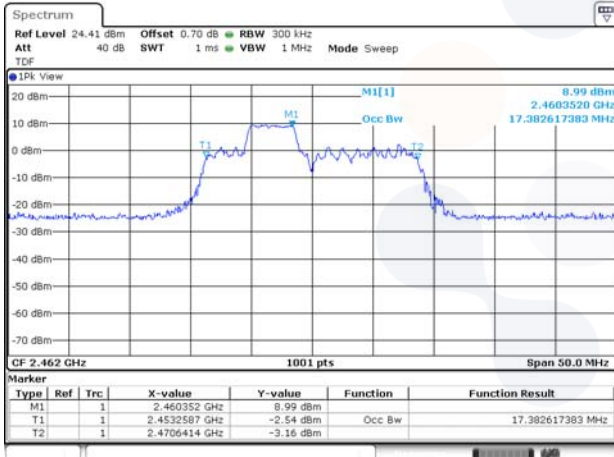


**ANT 2**

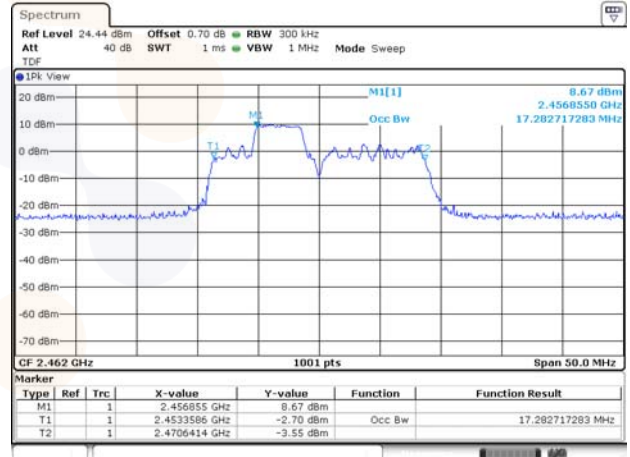
**RU offset 37**



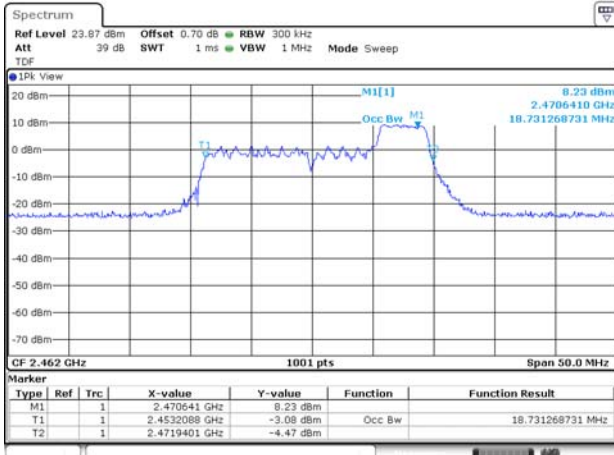
**RU offset 38**



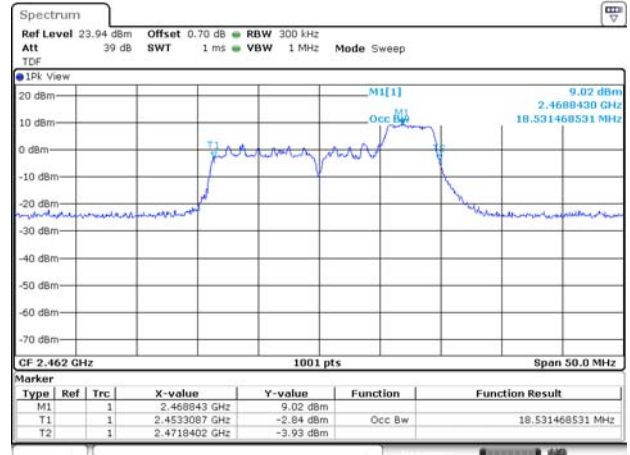
**RU offset 38**



**RU offset 40**



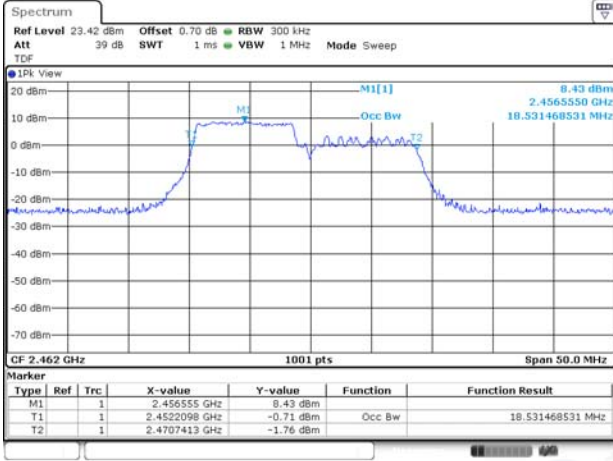
**RU offset 40**



106T / 2 462 MHz

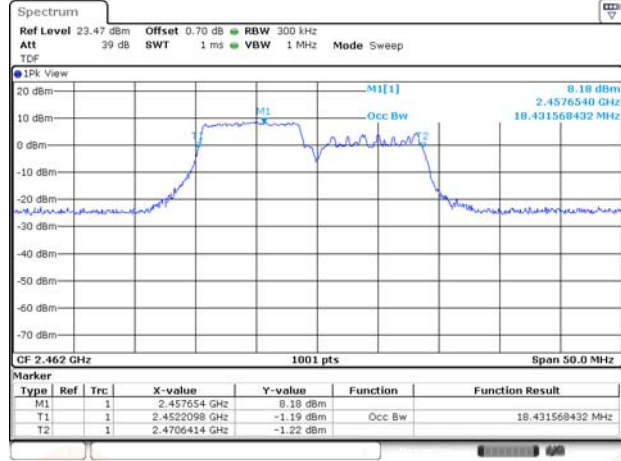
ANT 1

RU offset 53

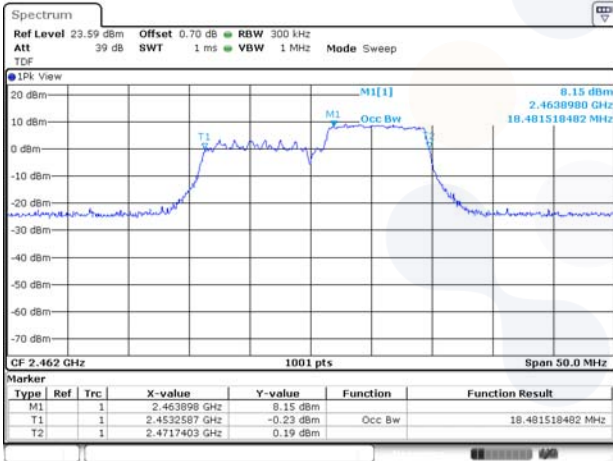


ANT 2

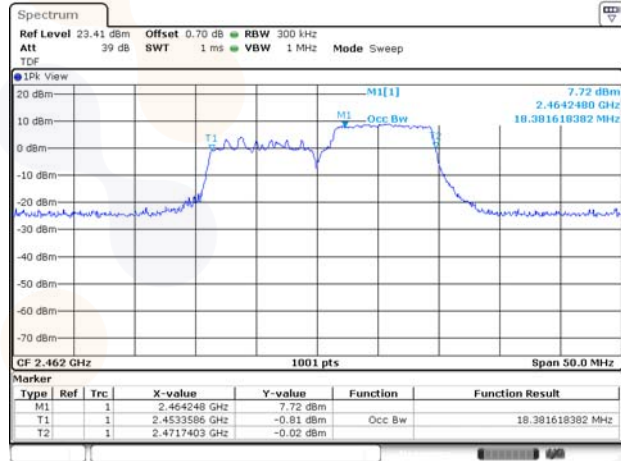
RU offset 53



RU offset 54



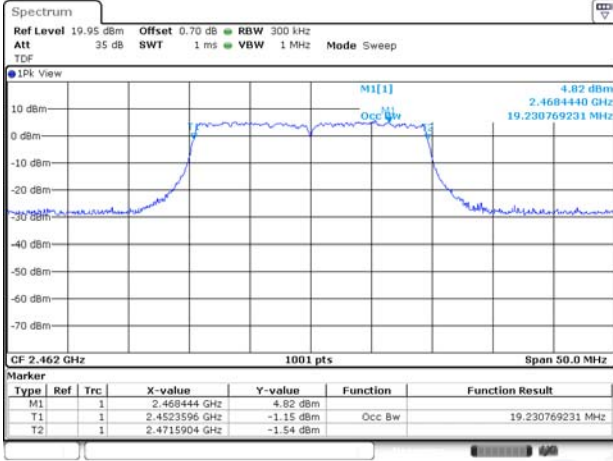
RU offset 54



**242T / 2 462 MHz**

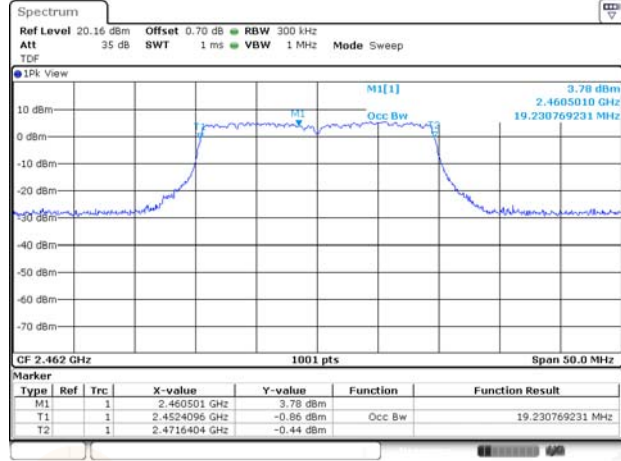
**ANT 1**

**RU offset 61**



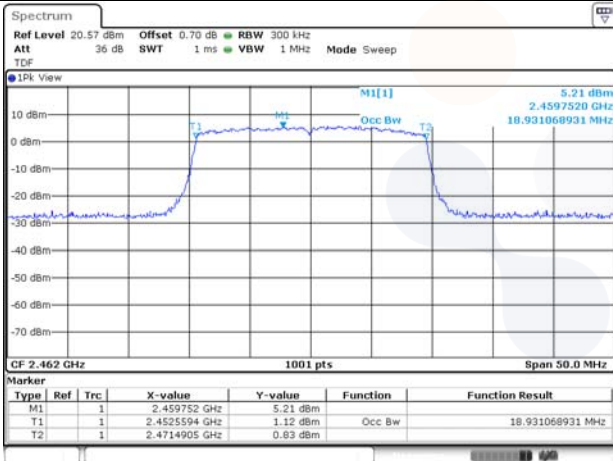
**ANT 2**

**RU offset 61**

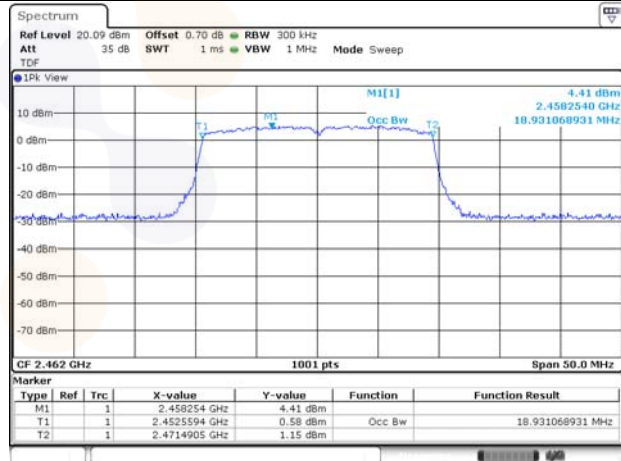


**SU / 2 462 MHz**

**ANT 1**



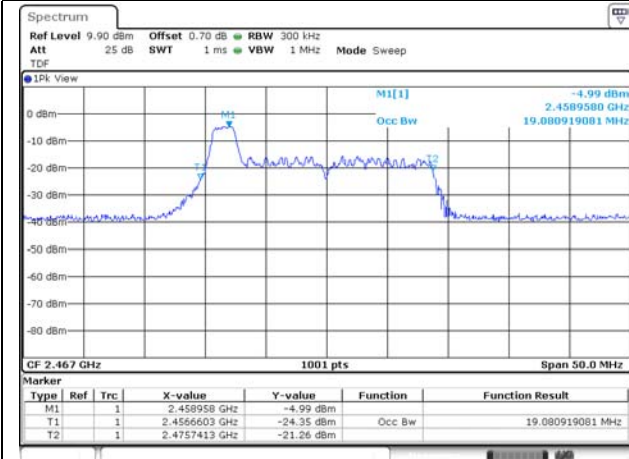
**ANT 2**



**26T / 2 467 MHz**

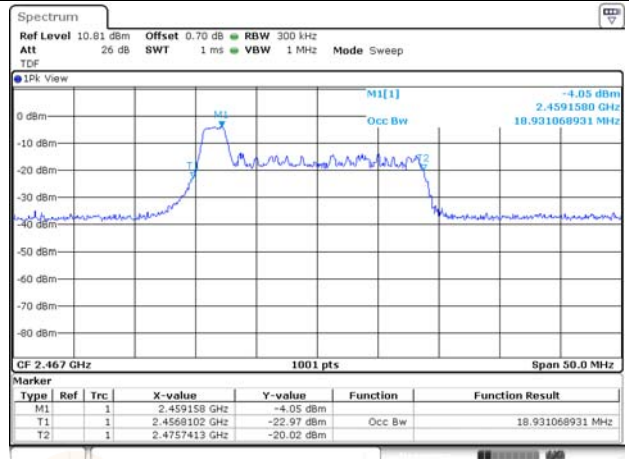
**ANT 1**

**RU offset 0**

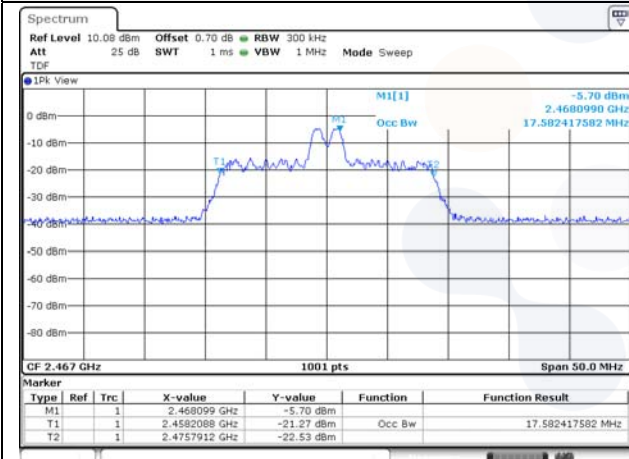


**ANT 2**

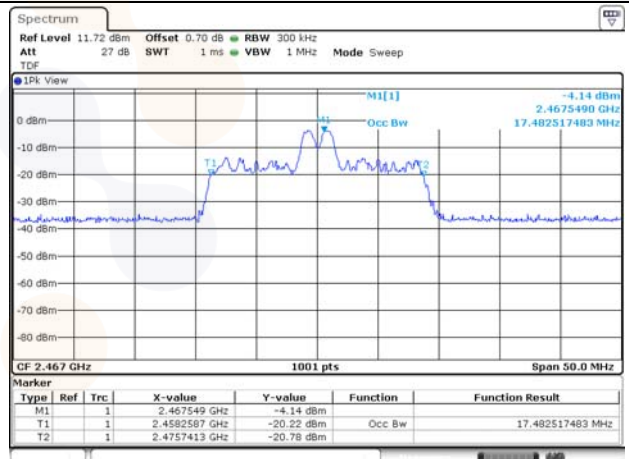
**RU offset 0**



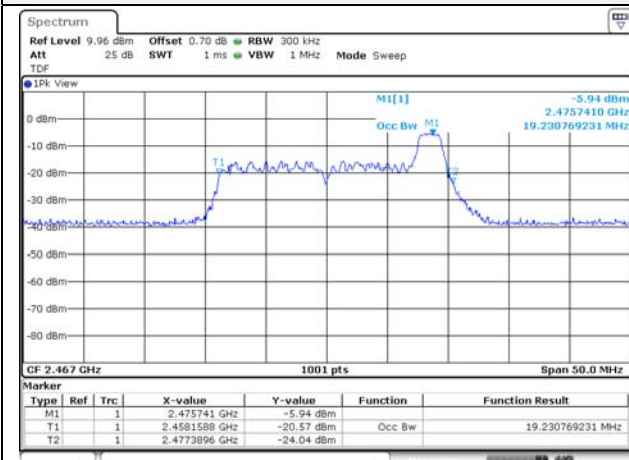
**RU offset 4**



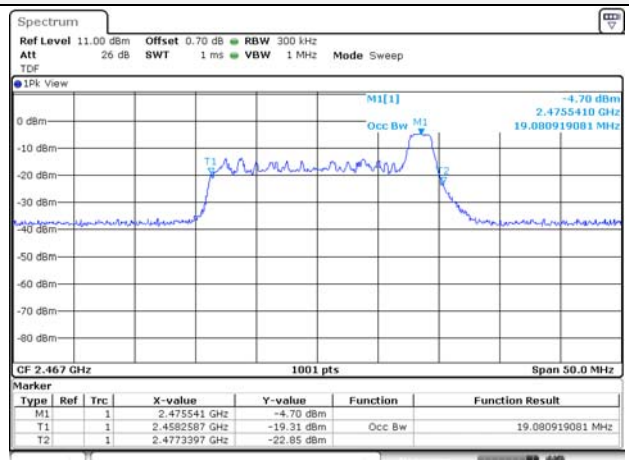
**RU offset 4**



**RU offset 8**



**RU offset 8**

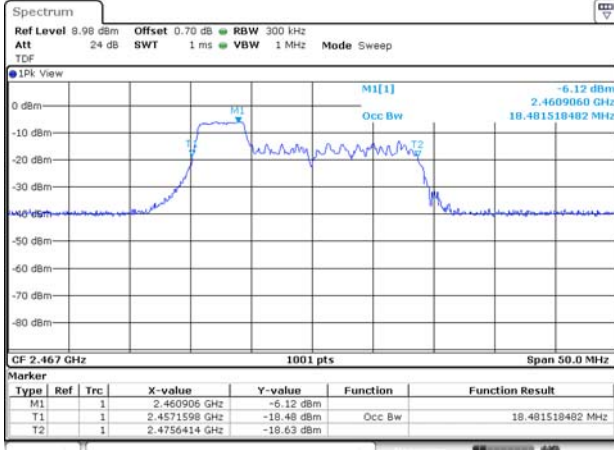




**52T / 2 467 MHz**

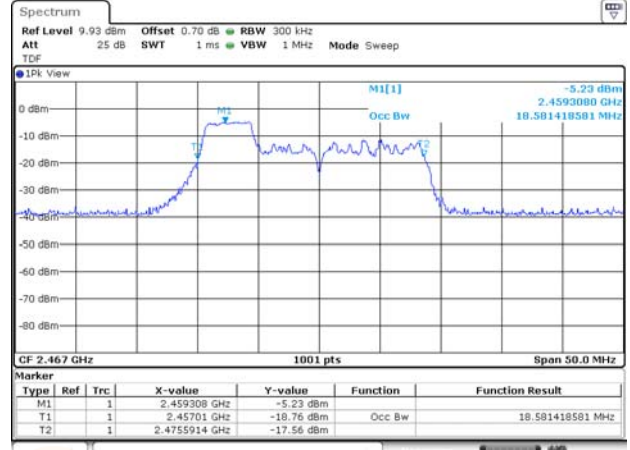
**ANT 1**

**RU offset 37**

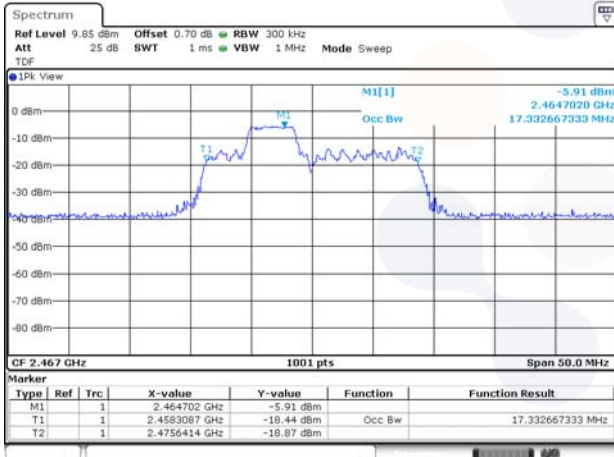


**ANT 2**

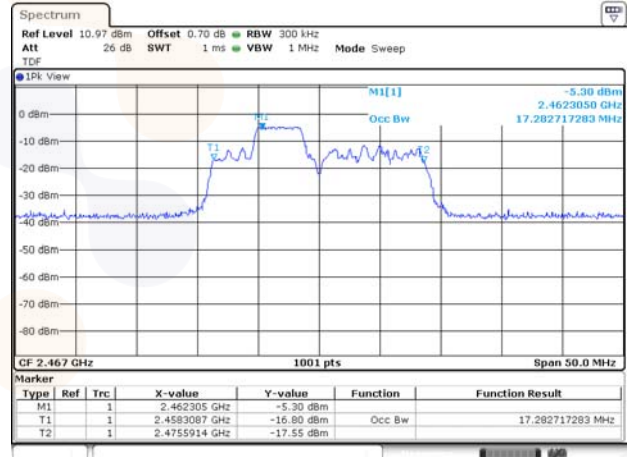
**RU offset 37**



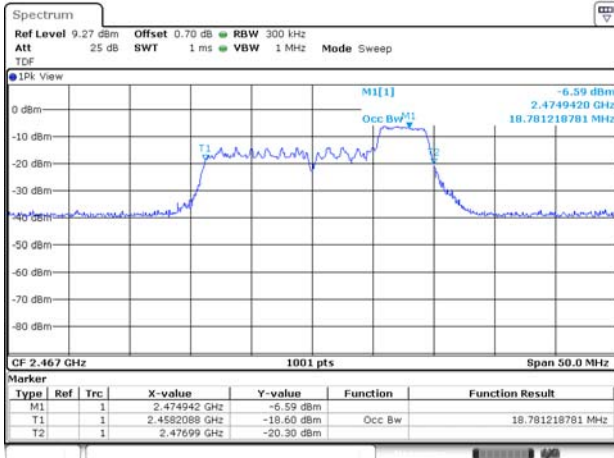
**RU offset 38**



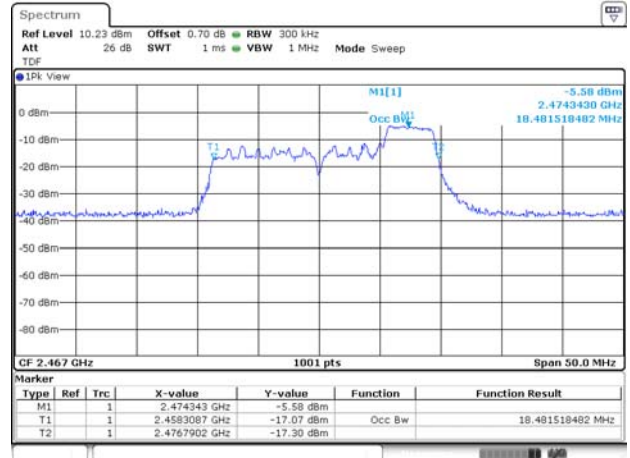
**RU offset 38**



**RU offset 40**



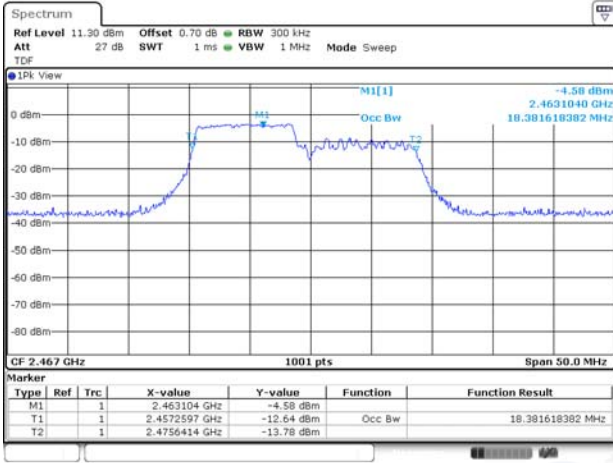
**RU offset 40**



106T / 2 467 MHz

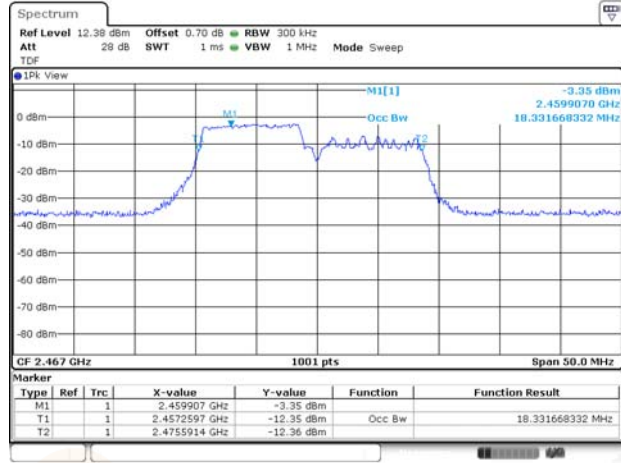
ANT 1

RU offset 53

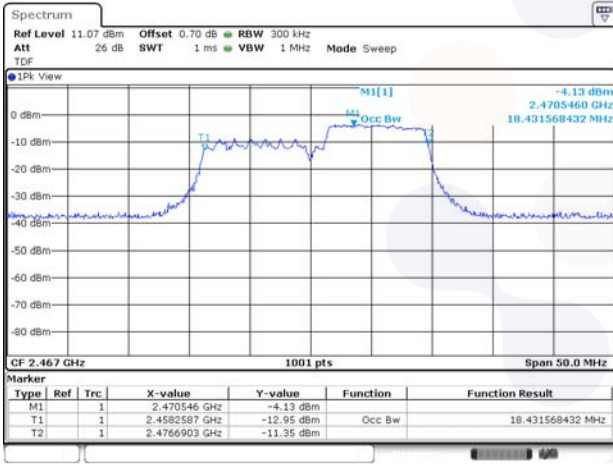


ANT 2

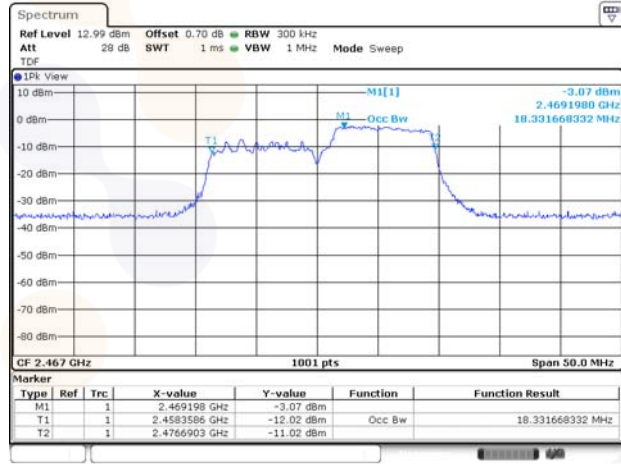
RU offset 53



RU offset 54



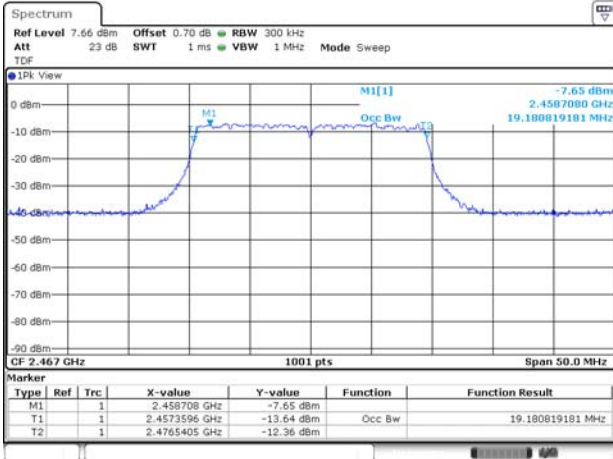
RU offset 54



**242T / 2 467 MHz**

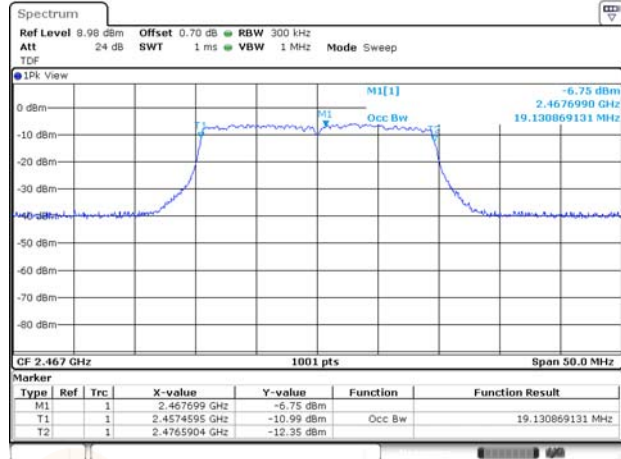
**ANT 1**

**RU offset 61**



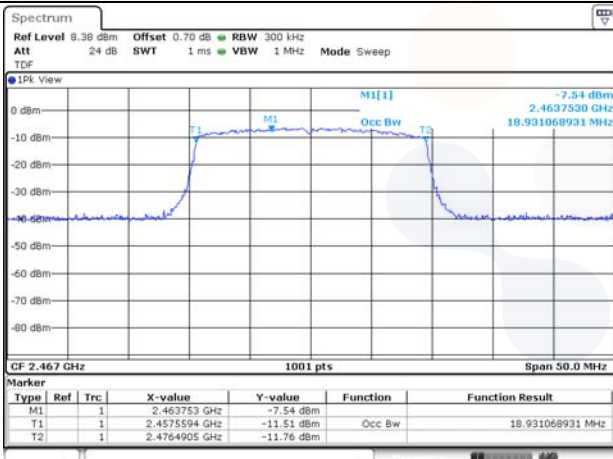
**ANT 2**

**RU offset 61**

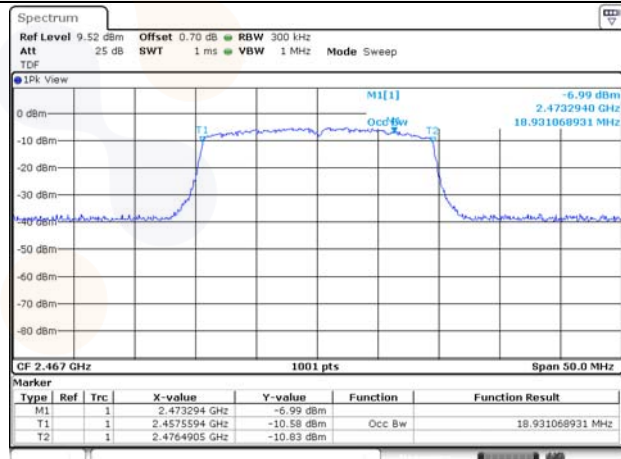


**SU / 2 467 MHz**

**ANT 1**



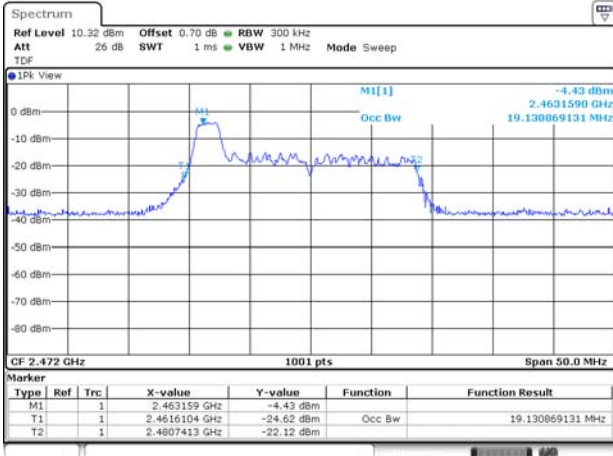
**ANT 2**



**26T / 2 472 MHz**

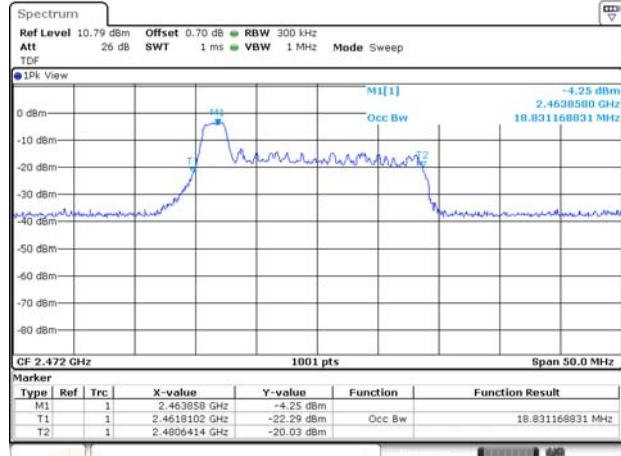
**ANT 1**

**RU offset 0**

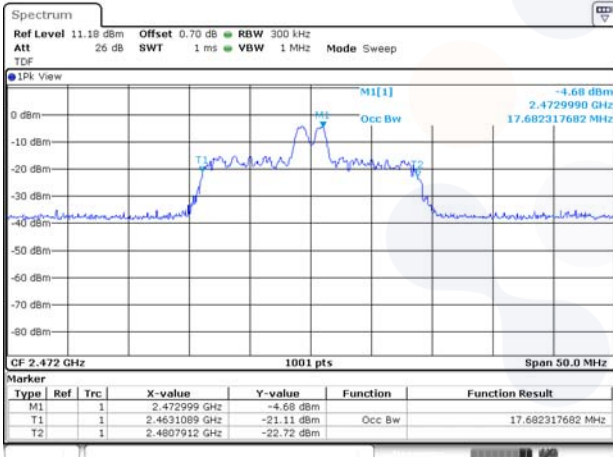


**ANT 2**

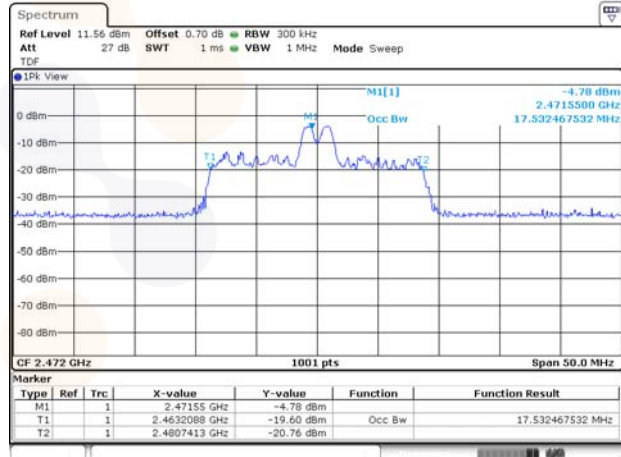
**RU offset 0**



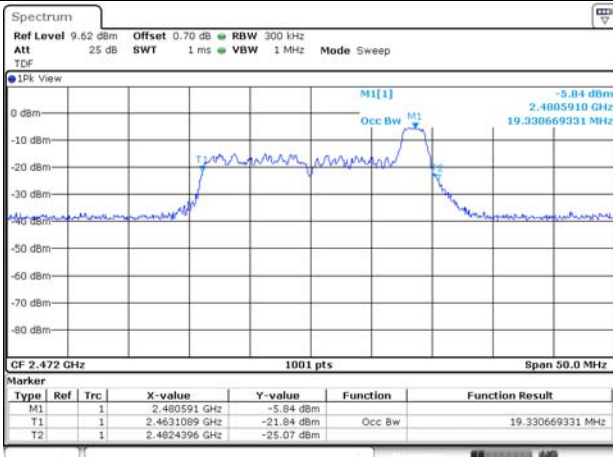
**RU offset 4**



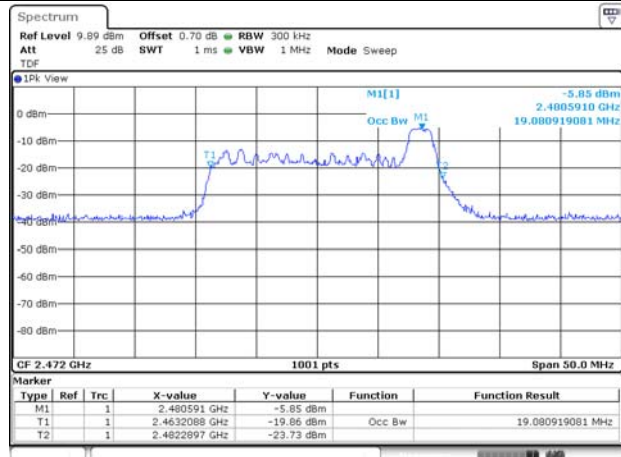
**RU offset 4**



**RU offset 8**



**RU offset 8**

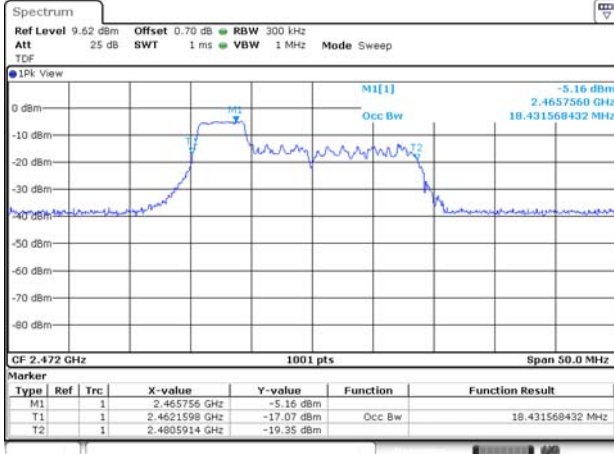




**52T / 2 472 MHz**

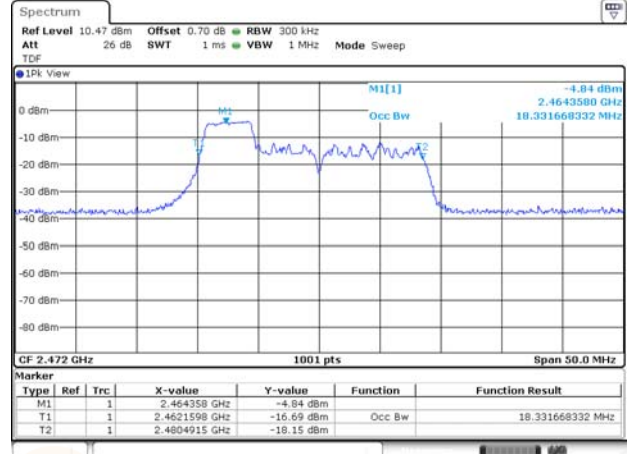
**ANT 1**

**RU offset 37**

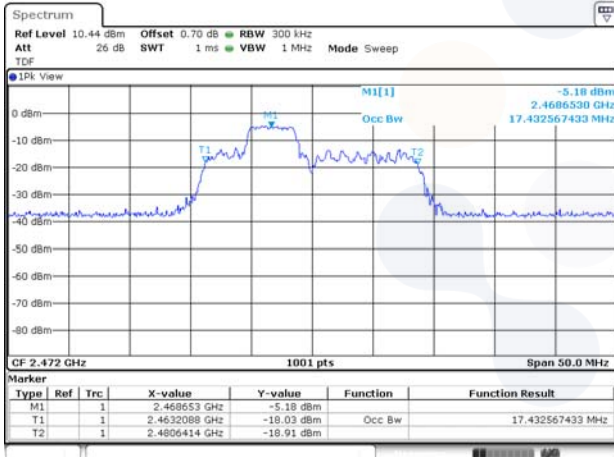


**ANT 2**

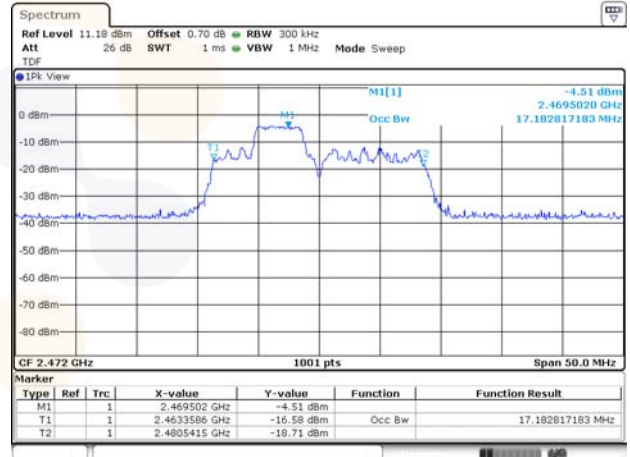
**RU offset 37**



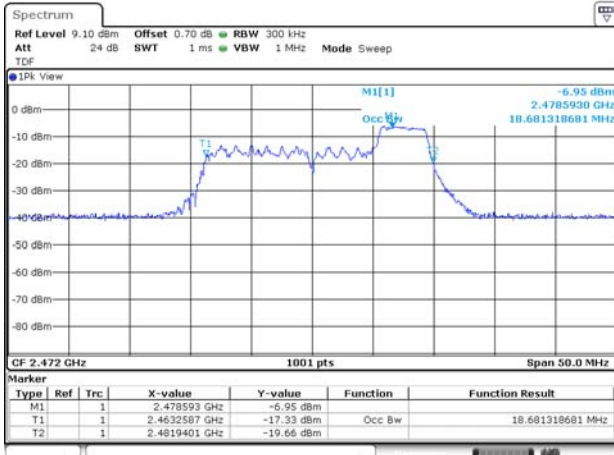
**RU offset 38**



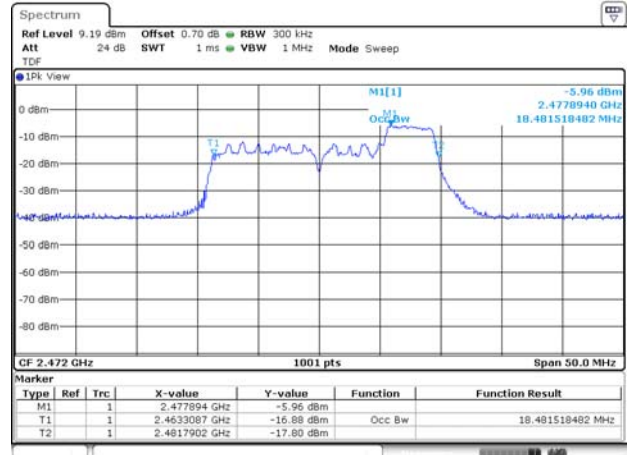
**RU offset 38**



**RU offset 40**



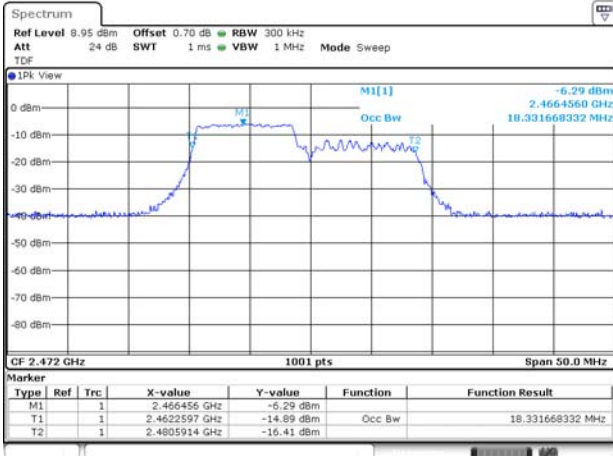
**RU offset 40**



**106T / 2 472 MHz**

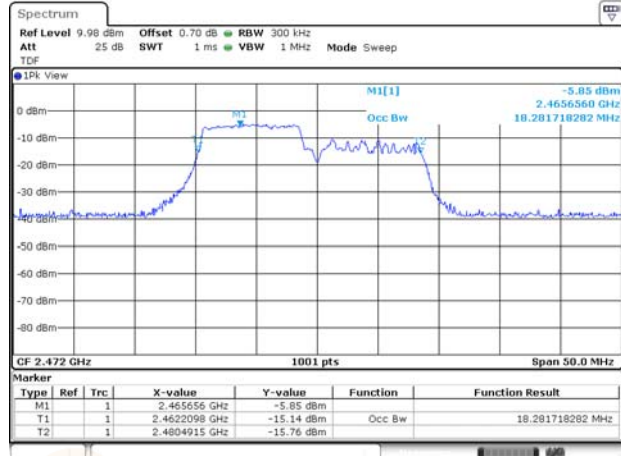
**ANT 1**

**RU offset 53**

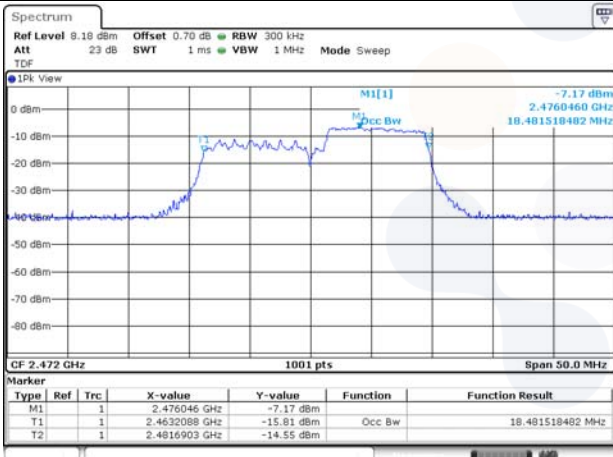


**ANT 2**

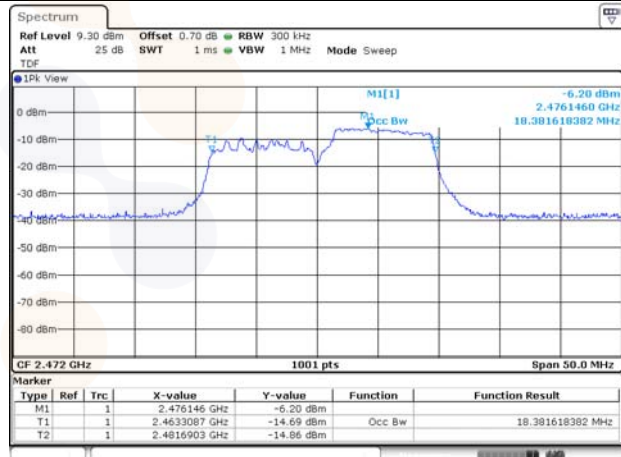
**RU offset 53**



**RU offset 54**



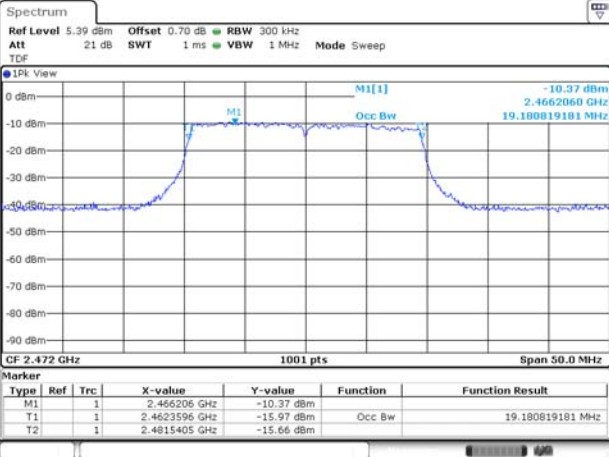
**RU offset 54**



**242T / 2 472 MHz**

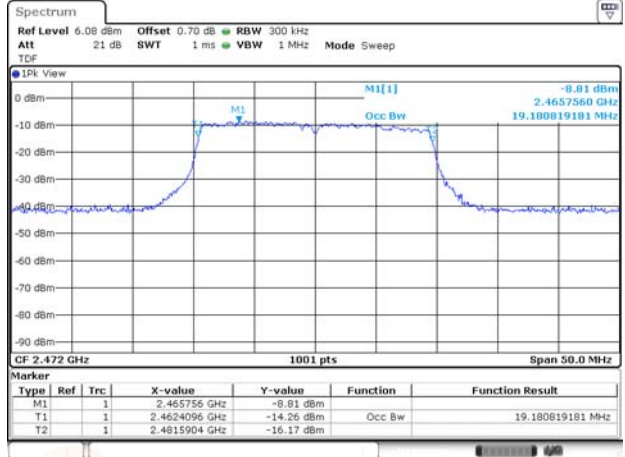
**ANT 1**

**RU offset 61**



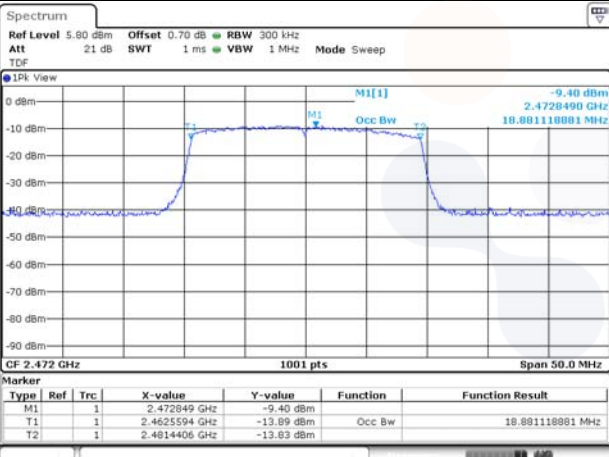
**ANT 2**

**RU offset 61**

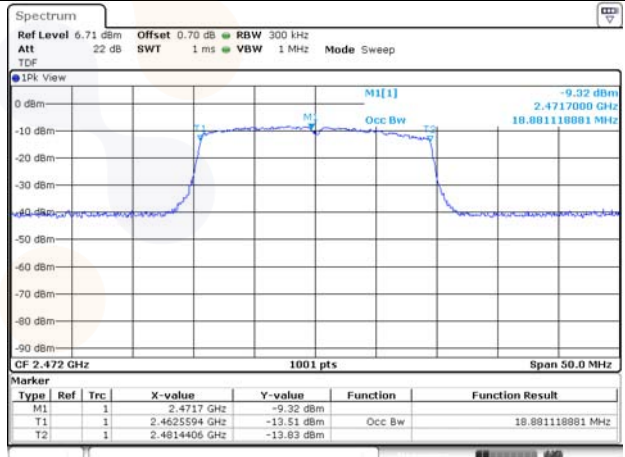


**SU / 2 472 MHz**

**ANT 1**



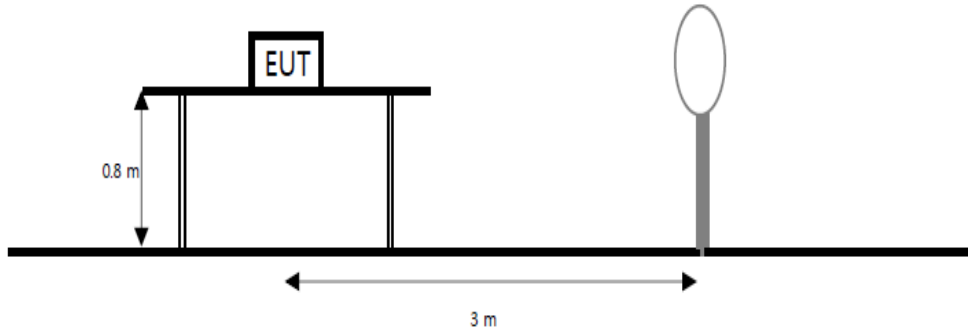
**ANT 2**



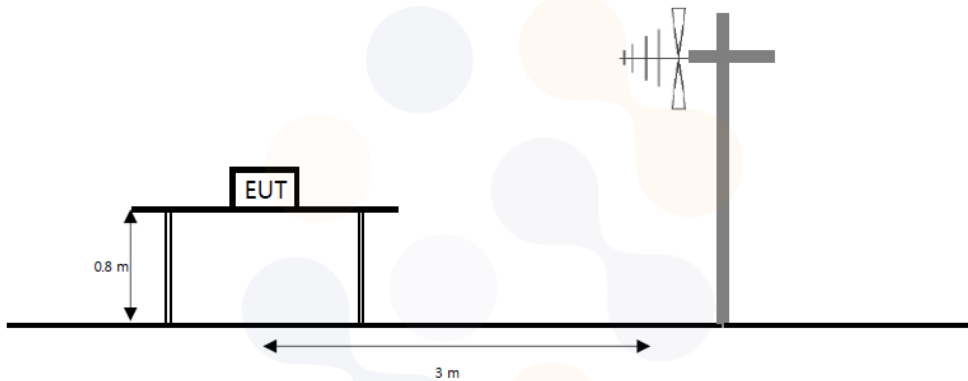
## 7.4. Spurious Emission, Band Edge and Restricted bands

### Test setup

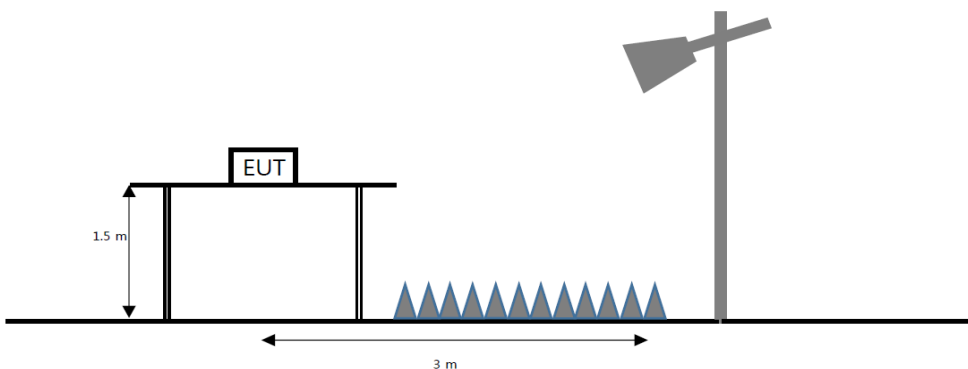
The diagram below shows the test setup that is utilized to make the measurements for emission from 9 kHz to 30 MHz Emissions



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 MHz to 1 GHz emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 GHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz emissions, whichever is lower.





**Limit**

According to section 15.209(a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength ( $\mu\text{V}/\text{m}$ )	Measurement distance (m)
0.009 - 0.490	2 400/F(kHz)	300
0.490 - 1.705	24 000/F(kHz)	30
1.705 - 30	30	30
30 - 88	100**	3
88 - 216	150**	3
216 - 960	200**	3
Above 960	500	3

\*\*Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54–72 MHz, 76–88 MHz, 174–216 MHz or 470–806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., Section 15.231 and 15.241.

According to section 15.205(a) and (b), only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.009 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
0.495 - 0.505	16.694 75 - 16.695 25	608 - 614	5.35 - 5.46
2.173 5 - 2.190 5	16.804 25 - 16.804 75	960 - 1 240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1 300 - 1 427	8.025 - 8.5
4.177 25 - 4.177 75	37.5 - 38.25	1 435 - 1 626.5	9.0 - 9.2
4.207 25 - 4.207 75	73 - 74.6	1 645.5 - 1 646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1 660 - 1 710	10.6 - 12.7
6.267 75 - 6.268 25	108 - 121.94	1 718.8 - 1 722.2	13.25 - 13.4
6.311 75 - 6.312 25	123 - 138	2 200 - 2 300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2 310 - 2 390	15.35 - 16.2
8.362 - 8.366	156.524 75 - 156.525	2 483.5 - 2 500	17.7 - 21.4
8.376 25 - 8.386 75	25	2 690 - 2 900	22.01 - 23.12
8.414 25 - 8.414 75	156.7 - 156.9	3 260 - 3 267	23.6 - 24.0
12.29 - 12.293	162.012 5 - 167.17	3 332 - 3 339	31.2 - 31.8
12.519 75 - 12.520 25	167.72 - 173.2	3 345.8 - 3 358	36.43 - 36.5
12.576 75 - 12.577 25	240 - 285	3 600 - 4 400	Above 38.6
13.36 - 13.41	322 - 335.4		

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in section 15.209. At frequencies equal to or less than 1 000 MHz, compliance with the limits in section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1 000 MHz, compliance with the emission limits in section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in section 15.35 apply to these measurements.

## **Test procedure**

ANSI C63.10-2013

## **Test settings**

### **Peak field strength measurements**

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in table
3. VBW  $\geq$  (3 $\times$ RBW)
4. Detector = peak
5. Sweep time = auto
6. Trace mode = max hold
7. Allow sweeps to continue until the trace stabilizes

**Table. RBW as a function of frequency**

Frequency	RBW
9 kHz to 150 kHz	200 Hz to 300 Hz
0.15 MHz to 30 MHz	9 kHz to 10 kHz
30 MHz to 1 000 MHz	100 kHz to 120 kHz
> 1 000 MHz	1 MHz

### **Average field strength measurements**

#### **Trace averaging with continuous EUT transmission at full power**


If the EUT can be configured or modified to transmit continuously ( $D \geq 98\%$ ), then the average emission levels shall be measured using the following method (with EUT transmitting continuously):

1. RBW = 1 MHz (unless otherwise specified).
2. VBW  $\geq$  (3 $\times$ RBW).
3. Detector = RMS (power averaging), if  $[\text{span} / (\# \text{ of points in sweep})] \leq (\text{RBW} / 2)$ . Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.
4. Averaging type = power (i.e., rms):
  - 1) As an alternative, the detector and averaging type may be set for linear voltage averaging.
  - 2) Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.
5. Sweep time = auto.
6. Perform a trace average of at least 100 traces.

#### **Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction**

If continuous transmission of the EUT ( $D \geq 98\%$ ) cannot be achieved and the duty cycle is constant (duty cycle variations are less than  $\pm 2\%$ ), then the following procedure shall be used:

1. The EUT shall be configured to operate at the maximum achievable duty cycle.
2. Measure the duty cycle D of the transmitter output signal as described in 11.6.
3. RBW = 1 MHz (unless otherwise specified).
4. VBW  $\geq$  [3  $\times$  RBW].
5. Detector = RMS (power averaging), if  $[\text{span} / (\# \text{ of points in sweep})] \leq (\text{RBW} / 2)$ . Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.
6. Averaging type = power (i.e., rms):

<p style="text-align: center;"><b>Eurofins KCTL Co.,Ltd.</b>  65, Sinwon-ro, Yeongtong-gu,  Suwon-si, Gyeonggi-do, 16677, Korea  TEL: 82-70-5008-1021 FAX: 82-505-299-8311  <a href="http://www.kctl.co.kr">www.kctl.co.kr</a></p>	<p style="text-align: center;">Report No.:  KR23-SRF0176-B  Page (119) of (161)</p>	
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- 1) As an alternative, the detector and averaging type may be set for linear voltage averaging.
- 2) Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.
7. Sweep time = auto.
8. Perform a trace average of at least 100 traces.
9. A correction factor shall be added to the measurement results prior to comparing with the emission limit to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:
  - 1) If power averaging (rms) mode was used in step f), then the applicable correction factor is  $[10 \log (1 / D)]$ , where D is the duty cycle.
  - 2) If linear voltage averaging mode was used in step f), then the applicable correction factor is  $[20 \log (1 / D)]$ , where D is the duty cycle.
  - 3) If a specific emission is demonstrated to be continuous ( $D \geq 98\%$ ) rather than turning ON and OFF with with the transmit cycle, then no duty cycle correction is required for that emission.

**Notes:**

1.  $f < 30$  MHz, extrapolation factor of 40 dB/decade of distance.  $F_d = 40 \log(D_m/D_s)$   
 $f \geq 30$  MHz, extrapolation factor of 20 dB/decade of distance.  $F_d = 20 \log(D_m/D_s)$   
Where:  
 $F_d$ = Distance factor in dB  
 $D_m$ = Measurement distance in meters  
 $D_s$ = Specification distance in meters
2. Factors(dB) = Antenna factor(dB/m) + Cable loss(dB) + or Amp. gain(dB) + or  $F_d$ (dB)
3. The worst-case emissions are reported however emissions whose levels were not within 20 dB of respective limits were not reported.
4. Average test would be performed if the peak result were greater than the average limit.
5. <sup>1)</sup> means restricted band.
6. Below 30 MHz frequency range, In order to search for the worst result, all orientations about parallel, perpendicular, and ground-parallel were investigated then reported. when the emission level was higher than 20 dB of the limit, then the following statement shall be made: "No spurious emissions were detected within 20 dB of the limit."
7. Measurement configuration for 11ax RU allocations
  - 1) For the radiated band-edge test, it was tested at 11ax RU allocations near the band edge.
  - 2) For the spurious emissions, it was tested at the RU allocations with actual highest power considering each bandwidth/channel.
8. Above 1 GHz the worst results between two antenna polarizations (H and V) were documented in the test report.

**Test results (Above 1 000 MHz)**

**SISO Restricted Band edge (Lowest Channel)**

**802.11ax\_HE20 SU mode\_Lowest Channel (2 412 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 389.99 <sup>1)</sup>	V	63.60	27.30	-31.90	-	59.00	74.00	15.00
<b>Average Data</b>								
2 389.99 <sup>1)</sup>	V	45.17	27.30	-31.90	0.39	40.96	54.00	13.04

**802.11ax\_HE20 RU mode (26T / RU offset 0)\_Lowest Channel (2 412 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 389.16 <sup>1)</sup>	V	49.10	27.29	-31.90	-	44.49	74.00	29.51
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

**802.11ax\_HE20 RU mode (52T / RU offset 37)\_Lowest Channel (2 412 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 388.34 <sup>1)</sup>	H	49.70	27.28	-31.91	-	45.07	74.00	28.93
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

**802.11ax\_HE20 RU mode (106T / RU offset 53)\_Lowest Channel (2 412 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 389.97 <sup>1)</sup>	V	56.40	27.30	-31.90	-	51.80	74.00	22.20
<b>Average Data</b>								
2 389.97 <sup>1)</sup>	V	37.76	27.30	-31.90	0.17	33.33	54.00	20.67



**802.11ax\_HE20 RU mode (242T / RU offset 61)\_Lowest Channel (2 412 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 389.83 <sup>1)</sup>	V	65.20	27.30	-31.90	-	60.60	74.00	13.40
<b>Average Data</b>								
2 389.83 <sup>1)</sup>	V	50.86	27.30	-31.90	0.37	46.63	54.00	7.37



### MIMO Restricted Band edge (Lowest Channel)

#### **802.11ax\_HE20 SU mode\_Lowest Channel (2 412 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 389.80 <sup>1)</sup>	V	62.70	27.30	-31.90	-	58.10	74.00	15.90
<b>Average Data</b>								
2 389.80 <sup>1)</sup>	V	49.68	27.30	-31.90	0.39	45.47	54.00	8.53

#### **802.11ax\_HE20 RU mode (26T / RU offset 0)\_Lowest Channel (2 412 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 388.21 <sup>1)</sup>	H	50.20	27.28	-31.91	-	45.57	74.00	28.43
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

#### **802.11ax\_HE20 RU mode (52T / RU offset 37)\_Lowest Channel (2 412 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 388.75 <sup>1)</sup>	V	52.60	27.29	-31.91	-	47.98	74.00	26.02
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

#### **802.11ax\_HE20 RU mode (106T / RU offset 53)\_Lowest Channel (2 412 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 388.70 <sup>1)</sup>	V	58.90	27.29	-31.91	-	54.28	74.00	19.72
<b>Average Data</b>								
2 388.70 <sup>1)</sup>	V	41.39	27.29	-31.91	0.17	36.94	54.00	17.06

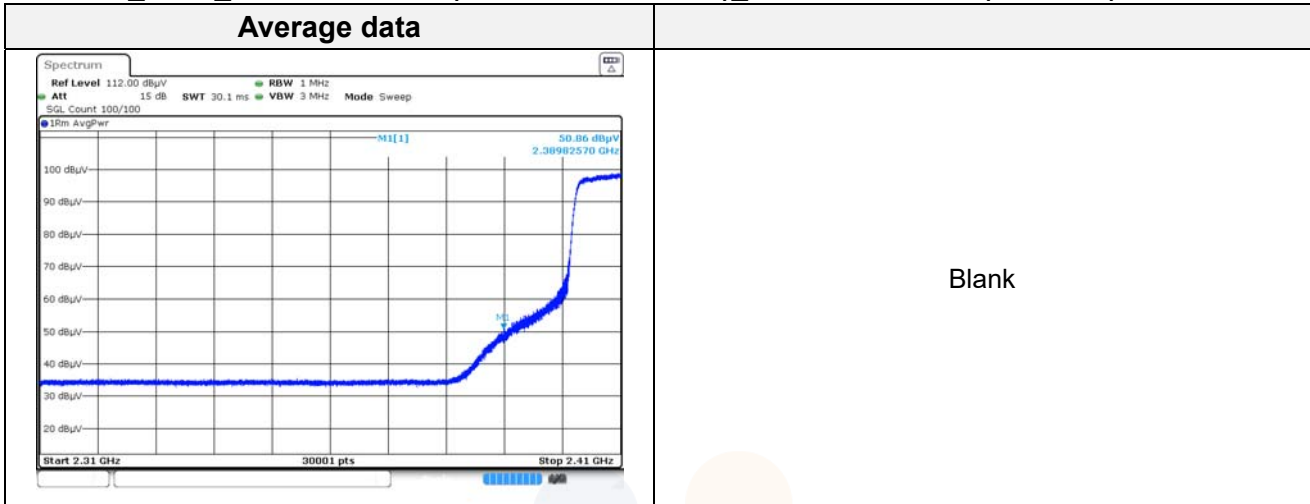
#### **802.11ax\_HE20 RU mode (242T / RU offset 61)\_Lowest Channel (2 412 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 389.76 <sup>1)</sup>	V	62.30	27.30	-31.90	-	57.70	74.00	16.30
<b>Average Data</b>								
2 389.76 <sup>1)</sup>	V	50.52	27.30	-31.90	0.36	46.28	54.00	7.72

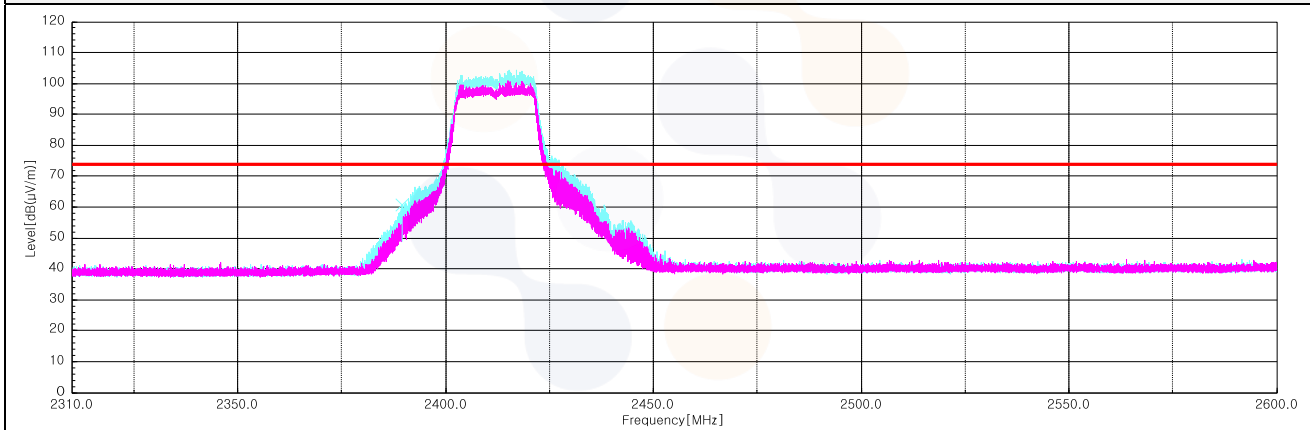
**Plot of Bandedge**

In order to simplify the report, attached plots were only the lowest margin condition

**802.11ax\_SISO\_HE20 RU mode (242T / RU offset 61)\_Lowest Channel (2 412 MHz)**



**Horizontal/Vertical for Band-edge**



### SISO Restricted Band edge (11 Channel)

#### 802.11ax\_HE20 SU mode\_11 Channel (2 462 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 488.15 <sup>1)</sup>	V	55.30	27.80	-32.29	-	50.81	74.00	23.19
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

#### 802.11ax\_HE20 RU mode (26T / RU offset 8)\_11 Channel (2 462 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 486.01 <sup>1)</sup>	H	46.30	27.80	-32.28	-	41.82	74.00	32.18
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

#### 802.11ax\_HE20 RU mode (52T / RU offset 40)\_11 Channel (2 462 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 488.07 <sup>1)</sup>	V	54.10	27.80	-32.29	-	49.61	74.00	24.39
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

#### 802.11ax\_HE20 RU mode (106T / RU offset 54)\_11 Channel (2 462 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.85 <sup>1)</sup>	V	61.00	27.80	-32.27	-	56.53	74.00	17.47
<b>Average Data</b>								
2 483.85 <sup>1)</sup>	V	43.04	27.80	-32.27	0.17	38.74	54.00	15.26

#### 802.11ax\_HE20 RU mode (242T / RU offset 61)\_11 Channel (2 462 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.66 <sup>1)</sup>	V	62.40	27.80	-32.27	-	57.93	74.00	16.07
<b>Average Data</b>								
2 483.66 <sup>1)</sup>	V	46.12	27.80	-32.27	0.37	42.02	54.00	11.98

### MIMO Restricted Band edge (11 Channel)

#### **802.11ax\_HE20 SU mode\_11 Channel (2 462 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.60 <sup>1)</sup>	V	62.70	27.80	-32.26	-	58.24	74.00	15.76
<b>Average Data</b>								
2 483.60 <sup>1)</sup>	V	48.97	27.80	-32.26	0.39	44.90	54.00	9.10

#### **802.11ax\_HE20 RU mode (26T / RU offset 8)\_11 Channel (2 462 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 484.16 <sup>1)</sup>	V	51.20	27.80	-32.27	-	46.73	74.00	27.27
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

#### **802.11ax\_HE20 RU mode (52T / RU offset 40)\_11 Channel (2 462 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 485.43 <sup>1)</sup>	V	53.30	27.80	-32.27	-	48.83	74.00	25.17
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

#### **802.11ax\_HE20 RU mode (106T / RU offset 54)\_11 Channel (2 462 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.87 <sup>1)</sup>	V	65.30	27.80	-32.27	-	60.83	74.00	13.17
<b>Average Data</b>								
2 483.87 <sup>1)</sup>	V	47.07	27.80	-32.27	0.17	42.77	54.00	11.23

#### **802.11ax\_HE20 RU mode (242T / RU offset 61)\_11 Channel (2 462 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.57 <sup>1)</sup>	V	67.20	27.80	-32.26	-	62.74	74.00	11.26
<b>Average Data</b>								
2 483.57 <sup>1)</sup>	V	50.35	27.80	-32.26	0.36	46.25	54.00	7.75



### SISO Restricted Band edge (12 Channel)

#### 802.11ax\_HE20 SU mode\_12 Channel (2 467 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.66 <sup>1)</sup>	V	50.90	27.80	-32.27	-	46.43	74.00	27.57
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

#### 802.11ax\_HE20 RU mode (26T / RU offset 8)\_12 Channel (2 467 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.61 <sup>1)</sup>	V	46.90	27.80	-32.26	-	42.44	74.00	31.56
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

#### 802.11ax\_HE20 RU mode (52T / RU offset 40)\_12 Channel (2 467 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 484.16 <sup>1)</sup>	V	46.00	27.80	-32.27	-	41.53	74.00	32.47
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

#### 802.11ax\_HE20 RU mode (106T / RU offset 54)\_12 Channel (2 467 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.56 <sup>1)</sup>	V	48.90	27.80	-32.26	-	44.44	74.00	29.56
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

#### 802.11ax\_HE20 RU mode (242T / RU offset 61)\_12 Channel (2 467 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.61 <sup>1)</sup>	V	47.60	27.80	-32.26	-	43.14	74.00	30.86
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

### MIMO Restricted Band edge (12 Channel)

#### 802.11ax\_HE20 SU mode\_12 Channel (2 467 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 484.99 <sup>1)</sup>	V	52.40	27.80	-32.27	-	47.93	74.00	26.07
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

#### 802.11ax\_HE20 RU mode (26T / RU offset 8)\_12 Channel (2 467 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.60 <sup>1)</sup>	V	49.60	27.80	-32.26	-	45.14	74.00	28.86
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

#### 802.11ax\_HE20 RU mode (52T / RU offset 40)\_12 Channel (2 467 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.65 <sup>1)</sup>	V	49.90	27.80	-32.26	-	45.44	74.00	28.56
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

#### 802.11ax\_HE20 RU mode (106T / RU offset 54)\_12 Channel (2 467 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 484.11 <sup>1)</sup>	V	55.00	27.80	-32.27	-	50.53	74.00	23.47
<b>Average Data</b>								
No spurious emissions were detected within 20 dB of the limit.								

#### 802.11ax\_HE20 RU mode (242T / RU offset 61)\_12 Channel (2 467 MHz)

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.52 <sup>1)</sup>	V	58.20	27.80	-32.26	-	53.74	74.00	20.26
<b>Average Data</b>								
2 483.52 <sup>1)</sup>	V	41.14	27.80	-32.26	0.36	37.04	54.00	16.96

### SISO Restricted Band edge (Highest Channel)

#### **802.11ax\_HE20 SU mode\_Highest Channel (2 472 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.53 <sup>1)</sup>	V	59.70	27.80	-32.26	-	55.24	74.00	18.76
<b>Average Data</b>								
2 483.53 <sup>1)</sup>	V	43.91	27.80	-32.26	0.39	39.84	54.00	14.16

#### **802.11ax\_HE20 RU mode (26T / RU offset 8)\_Highest Channel (2 472 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.51 <sup>1)</sup>	V	69.90	27.80	-32.26	-	65.44	74.00	8.56
<b>Average Data</b>								
2 483.51 <sup>1)</sup>	V	53.38	27.80	-32.26	0.11	49.03	54.00	4.97

#### **802.11ax\_HE20 RU mode (52T / RU offset 40)\_Highest Channel (2 472 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.68 <sup>1)</sup>	V	73.20	27.80	-32.27	-	68.73	74.00	5.27
<b>Average Data</b>								
2 483.68 <sup>1)</sup>	V	55.75	27.80	-32.27	0.10	51.38	54.00	2.62

#### **802.11ax\_HE20 RU mode (106T / RU offset 54)\_Highest Channel (2 472 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.52 <sup>1)</sup>	V	67.30	27.80	-32.26	-	62.84	74.00	11.16
<b>Average Data</b>								
2 483.52 <sup>1)</sup>	V	51.92	27.80	-32.26	0.17	47.63	54.00	6.37

#### **802.11ax\_HE20 RU mode (242T / RU offset 61)\_Highest Channel (2 472 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.53 <sup>1)</sup>	V	66.00	27.80	-32.26	-	61.54	74.00	12.46
<b>Average Data</b>								
2 483.53 <sup>1)</sup>	V	49.75	27.80	-32.26	0.37	45.66	54.00	8.34

### **MIMO Restricted Band edge (Highest Channel)**

#### **802.11ax\_HE20 SU mode\_Highest Channel (2 472 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.50 <sup>1)</sup>	V	64.00	27.80	-32.26	-	59.54	74.00	14.46
<b>Average Data</b>								
2 483.50 <sup>1)</sup>	V	47.73	27.80	-32.26	0.39	43.66	54.00	10.34

#### **802.11ax\_HE20 RU mode (26T / RU offset 8)\_Highest Channel (2 472 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.51 <sup>1)</sup>	V	74.90	27.80	-32.26	-	70.44	74.00	3.56
<b>Average Data</b>								
2 483.51 <sup>1)</sup>	V	51.92	27.80	-32.26	0.10	47.56	54.00	6.44

#### **802.11ax\_HE20 RU mode (52T / RU offset 40)\_Highest Channel (2 472 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.54 <sup>1)</sup>	V	71.50	27.80	-32.26	-	67.04	74.00	6.96
<b>Average Data</b>								
2 483.54 <sup>1)</sup>	V	50.16	27.80	-32.26	0.11	45.81	54.00	8.19

#### **802.11ax\_HE20 RU mode (106T / RU offset 54)\_Highest Channel (2 472 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.50 <sup>1)</sup>	V	72.50	27.80	-32.26	-	68.04	74.00	5.96
<b>Average Data</b>								
2 483.50 <sup>1)</sup>	V	50.11	27.80	-32.26	0.17	45.82	54.00	8.18

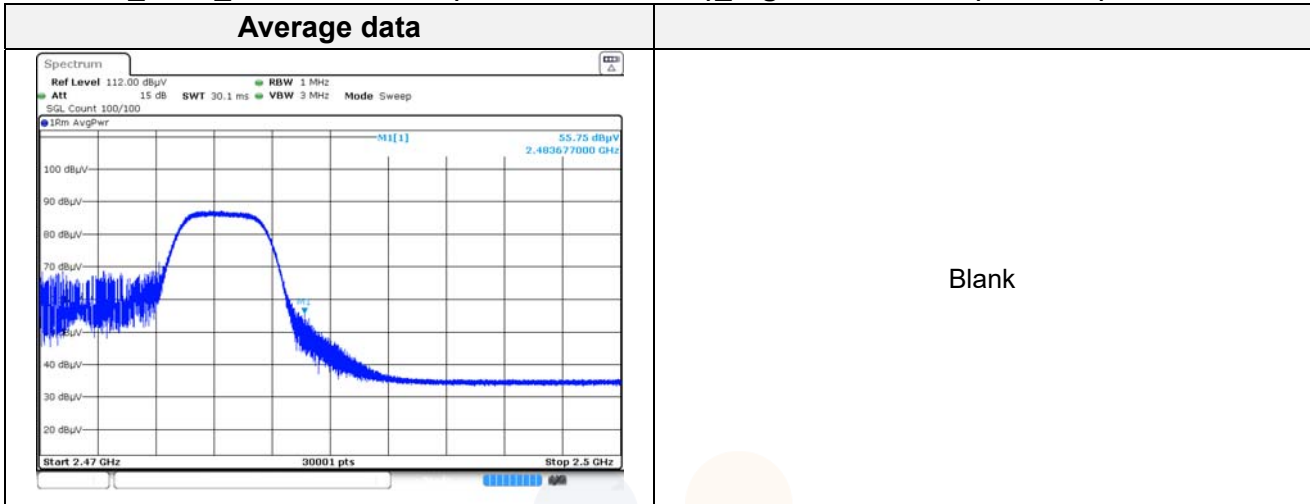
#### **802.11ax\_HE20 RU mode (242T / RU offset 61)\_Highest Channel (2 472 MHz)**

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	DCF	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
<b>Peak data</b>								
2 483.51 <sup>1)</sup>	V	70.90	27.80	-32.26	-	66.44	74.00	7.56
<b>Average Data</b>								
2 483.51 <sup>1)</sup>	V	53.13	27.80	-32.26	0.36	49.03	54.00	4.97

**Plot of Band edge**

In order to simplify the report, attached plots were only the lowest margin condition

**802.11ax\_SISO\_HE20 RU mode (52T / RU offset 40)\_Highest Channel (2 472 MHz)**



**Horizontal/Vertical for Band-edge**

