



# Appendix for Test report



## Appendix A: DTS (6 dB) Bandwidth

In this document, the "DTS6dBBW" refers to the measured "DTS (6 dB) Bandwidth" value. In this Appendix, the "fc(DTS6dBBW)" refers to the centre of the measured "DTS6dBBW". The introduction of the "fc(DTS6dBBW)" is due to that other measurements use it as the spectrum analyzer setting.

For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	DTS6dBBW[MHz]	Verdict
TM1_Ch0	L	2402	Ant 1	0.70	pass
TM1_Ch19	M	2440	Ant 1	0.69	pass
TM1_Ch39	H	2480	Ant 1	0.71	pass

Part II - Test Plots

2.1 TM1 \_Ch0@Ant 1





2.2 TM1 \_Ch19@Ant 1



2.3 TM1 \_Ch39@Ant 1





## Appendix B: Occupied Bandwidth

For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Occupied Bandwidth [MHz]	Verdict
TM1_Ch0	L	2402	Ant 1	1.06	pass
TM1_Ch19	M	2440	Ant 1	1.05	pass
TM1_Ch39	H	2480	Ant 1	1.06	pass

Part II - Test Plots

2.1 TM1 \_Ch0@Ant 1





2.2 TM1 \_Ch19@Ant 1







2.3 TM1 \_Ch39@Ant 1



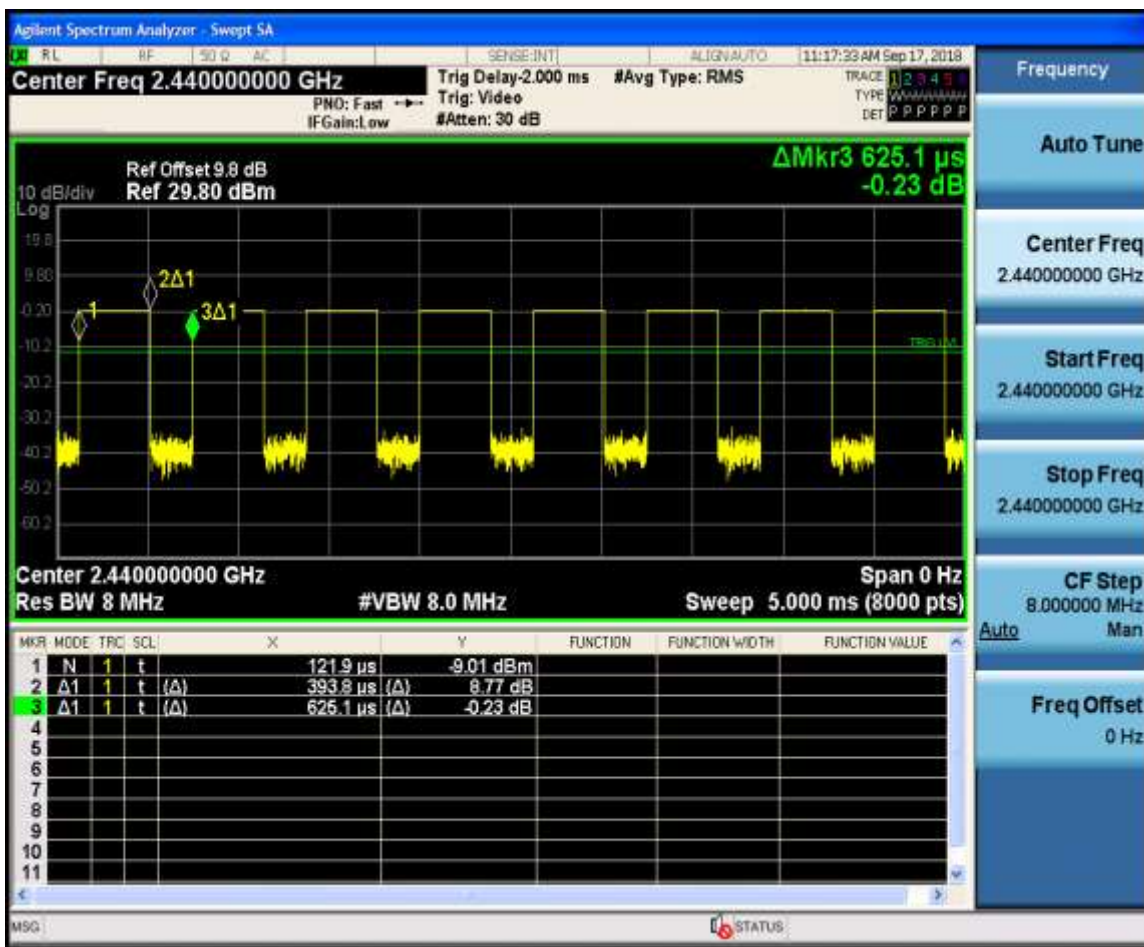
## Appendix C: Duty Cycle

### Part I - Test Results

Test Mode	TX Freq. [MHz]	Duty cycle [%]
TM1	CH0,CH19,CH39	63.0

### Part II - Test Plots

#### 2.1 TM1





## Appendix D: Maximum Conducted Average Output Power

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Duty Cycle [%]	Conducted Power[dBm]	EIRP[dBm]	Verdict
TM1_Ch0	L	2402	63.0	-1.35	1.95	pass
TM1_Ch19	M	2440	63.0	-0.12	3.18	pass
TM1_Ch39	H	2480	63.0	-0.44	2.86	pass

Part II - Test Plots

2.1 TM1 \_Ch0@Ant 1



2.2 TM1 \_Ch19@Ant 1



2.3 TM1 \_Ch39@Ant 1





## Appendix E: Maximum Power Spectral Density Level

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Duty Cycle [%]	Ant	PD[MHz]	Verdict
TM1_Ch0	L	2402	63.0	Ant 1	-15.43	pass
TM1_Ch19	M	2440	63.0	Ant 1	-14.73	pass
TM1_Ch39	H	2480	63.0	Ant 1	-15.11	pass



Part II - Test Plots

2.1 TM1 \_Ch0@Ant 1







2.2 TM1 \_Ch19@Ant 1





2.3 TM1 \_Ch39@Ant 1





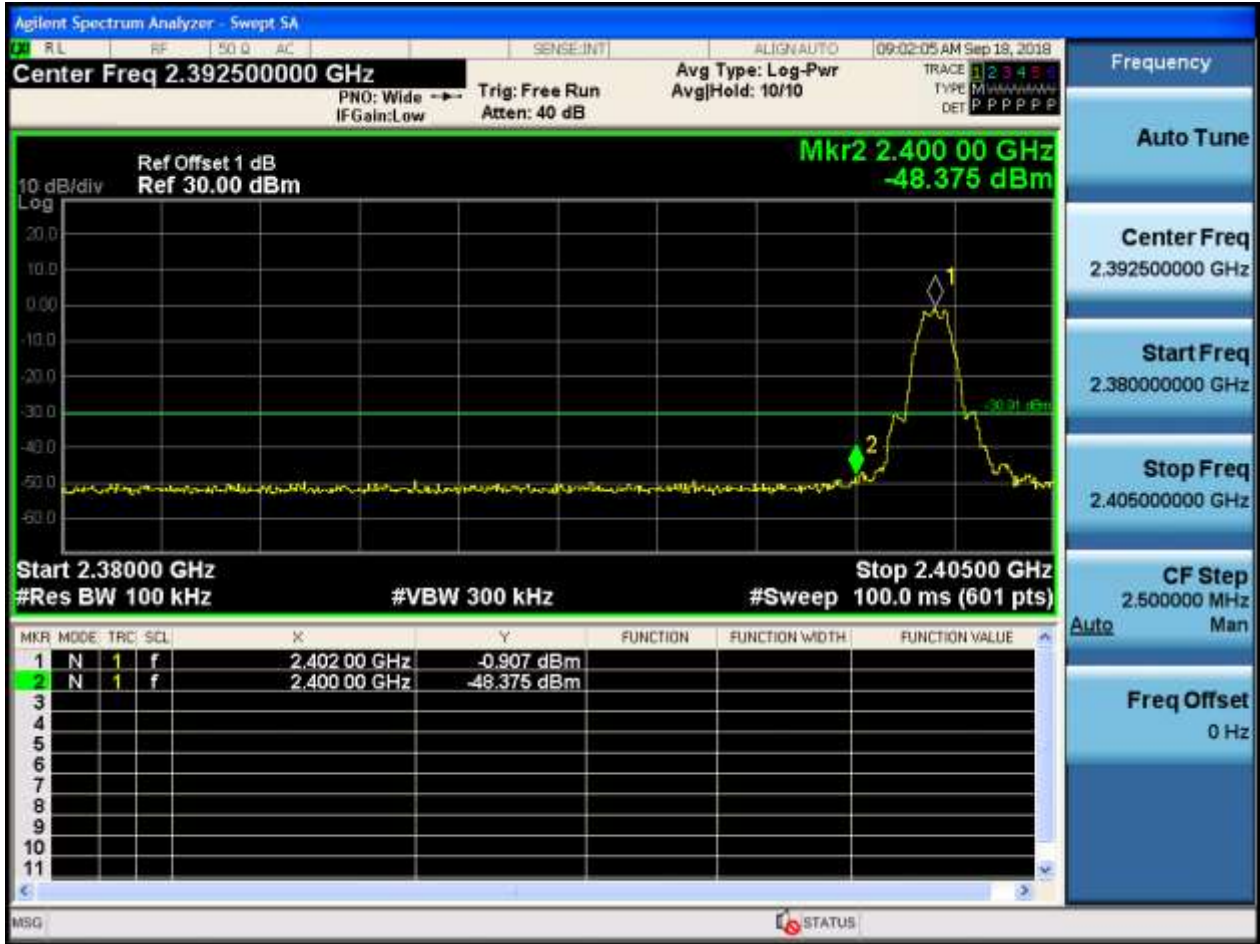
## Appendix F: Band Edges Compliance

### Part I - Test Results

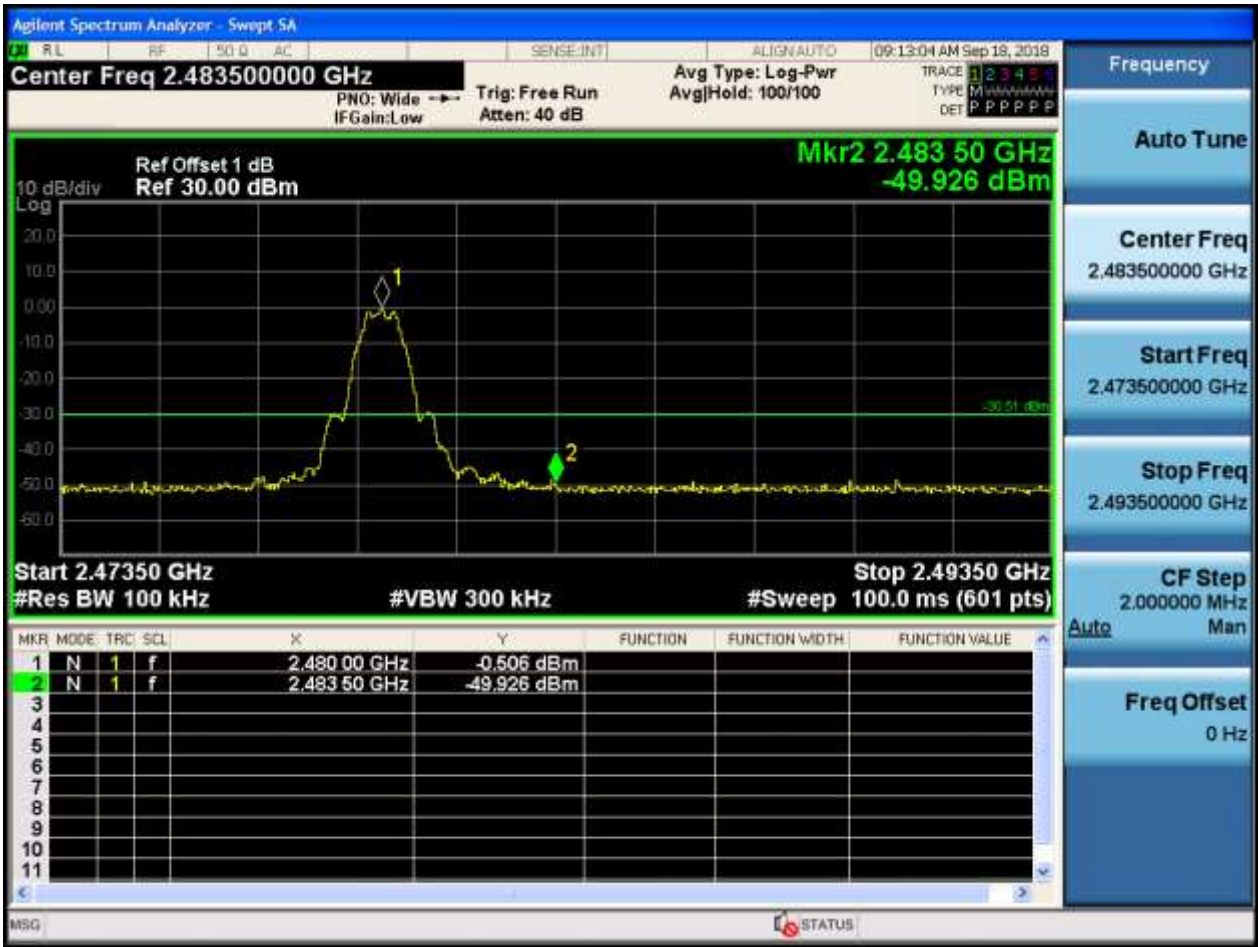
Test Mode	Test Channel	Frequency[MHz]	Carrier Power[dBm]	Max.Spurious Level[dBm]	Verdict
TM1_Ch0	L	2402	-0.91	-48.38	pass
TM1_Ch39	H	2480	-0.51	-49.93	pass

Part II - Test Plots

2.1 TM1 \_Ch0@Ant 1



2.2 TM1 \_Ch39@Ant 1



## Appendix G: Unwanted Emissions into Non-Restricted Frequency

### Bands

In this Appendix, the "Pref", which is used as the reference level, refers to the peak power level in any 100 kHz bandwidth within the fundamental emission, the "Puw" refers to the maximum emission power in 100 kHz band segments outside of the authorized frequency band.

Considering that the higher ratio of RBW to the span for the frequency ranges below 30 MHz makes the results determination be complicated, a narrower RBW other than 100 kHz is used for these ranges. The measured value should add a RBW correction factor (RBWCF) where  $RBWCF [dB] = 10 \times \lg(100 [kHz]/\text{narrower RBW [kHz]})$ . As to this Appendix, the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain and used as respective results for each chain, due to the relative-limit requirement.

In the result table, the "< Limit" denotes that "The Puw [dBm] is less than Pref[dBm]-30[dBm], see test plots for detailed".

### Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Ant	Pref[dBm]	Puw[dBm]	Verdict
TM1 _Ch0	L	2402	Ant 1	-1.36	<limit	pass
TM1 _Ch19	M	2440	Ant 1	-0.14	<limit	pass
TM1 _Ch39	H	2480	Ant 1	-0.49	<limit	pass

## Part II - Test Plots

### 2.1 TM1 \_Ch0@Ant 1

Pref:



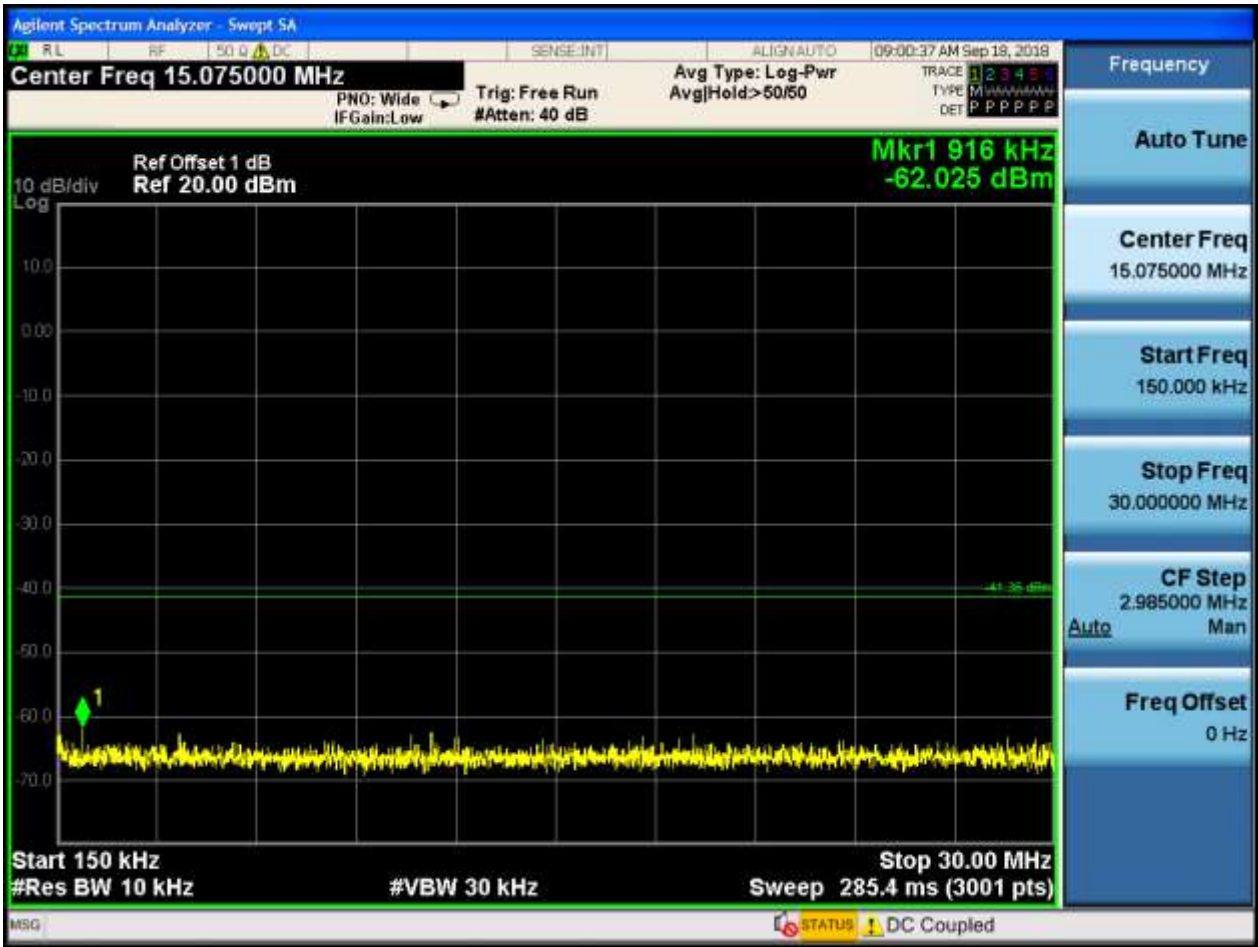




P<sub>uw</sub>:















## 2.2 TM1 \_Ch19@Ant 1

Pref:

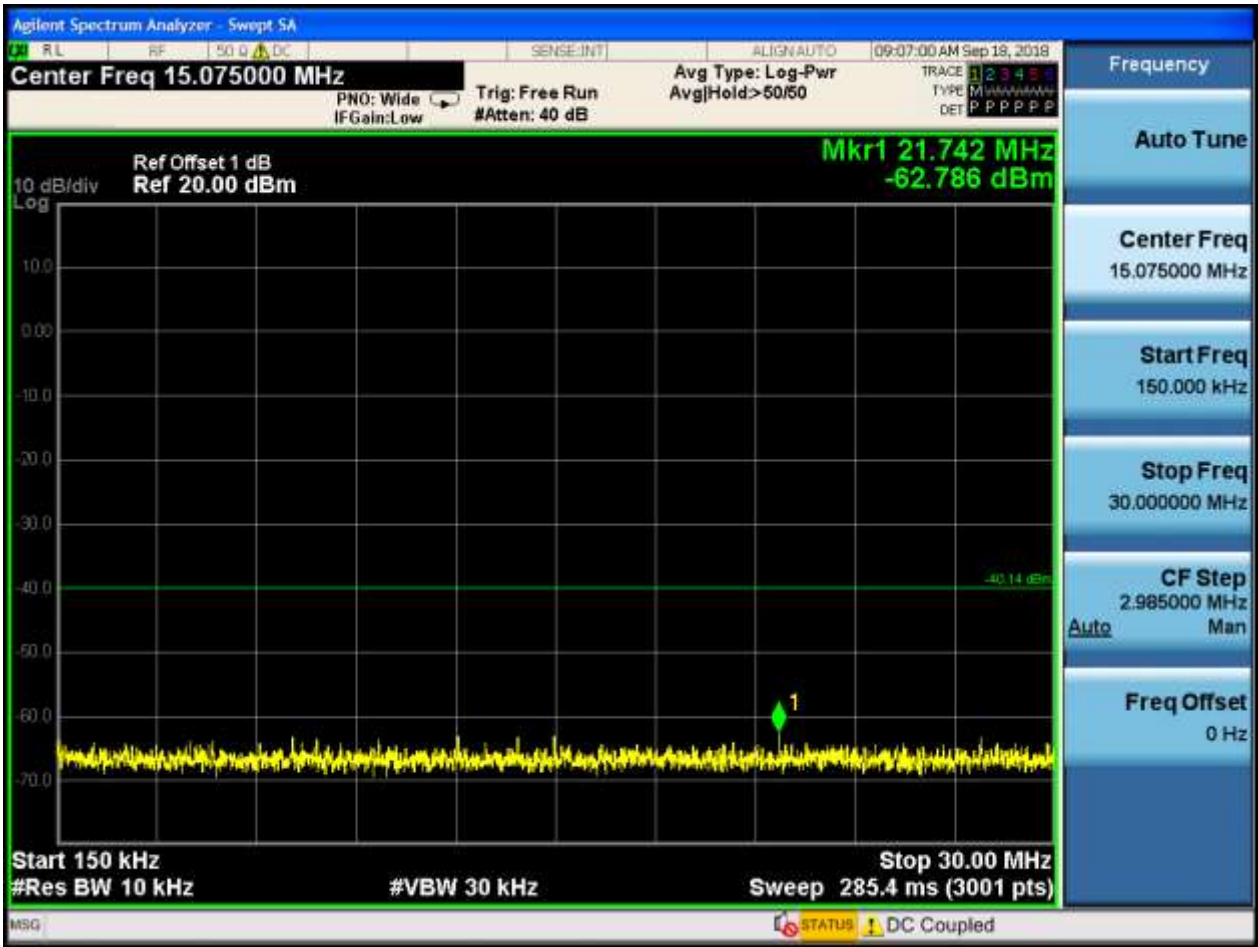






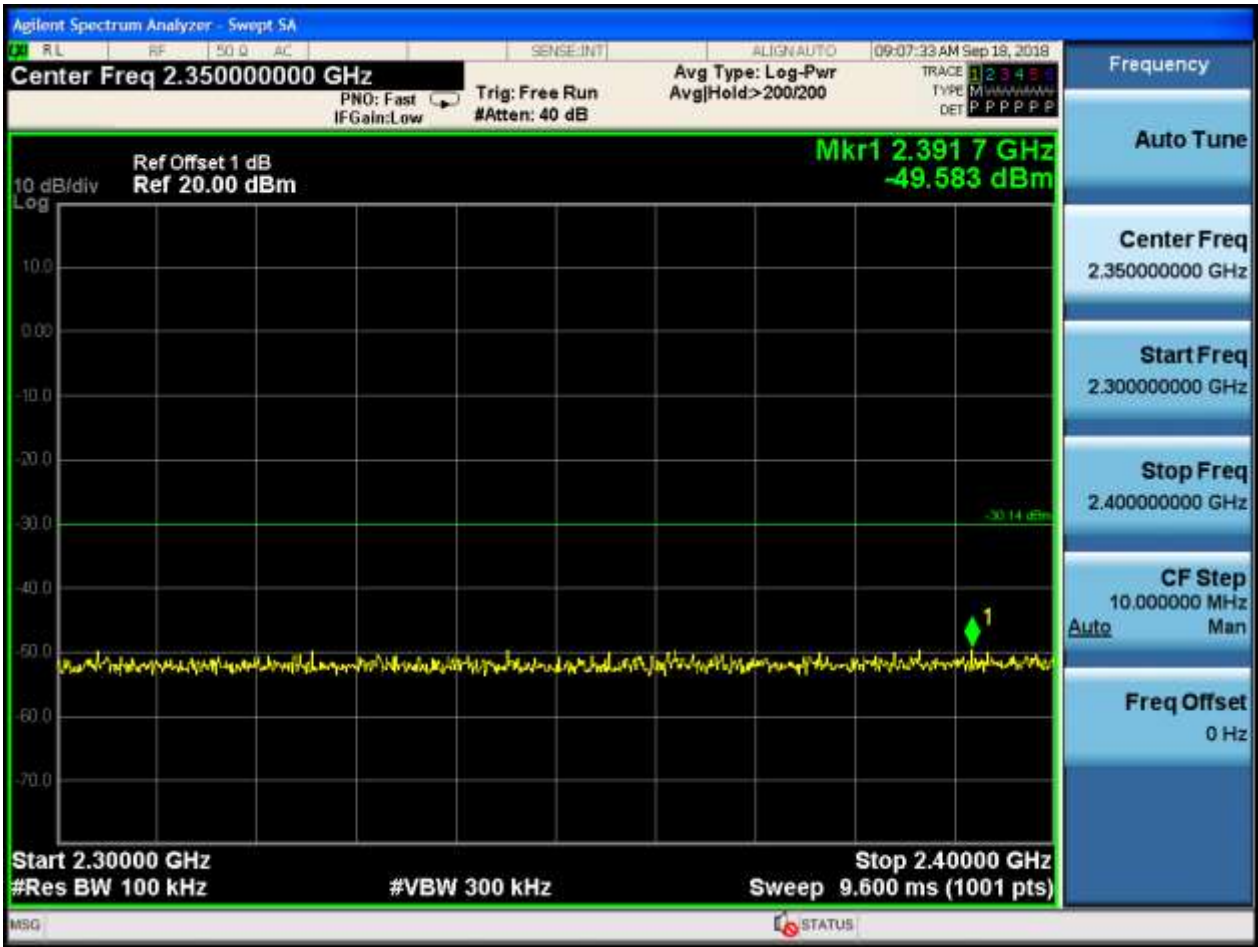
P<sub>uw</sub>:















### 2.3 TM1 \_Ch39@Ant 1

Pref:

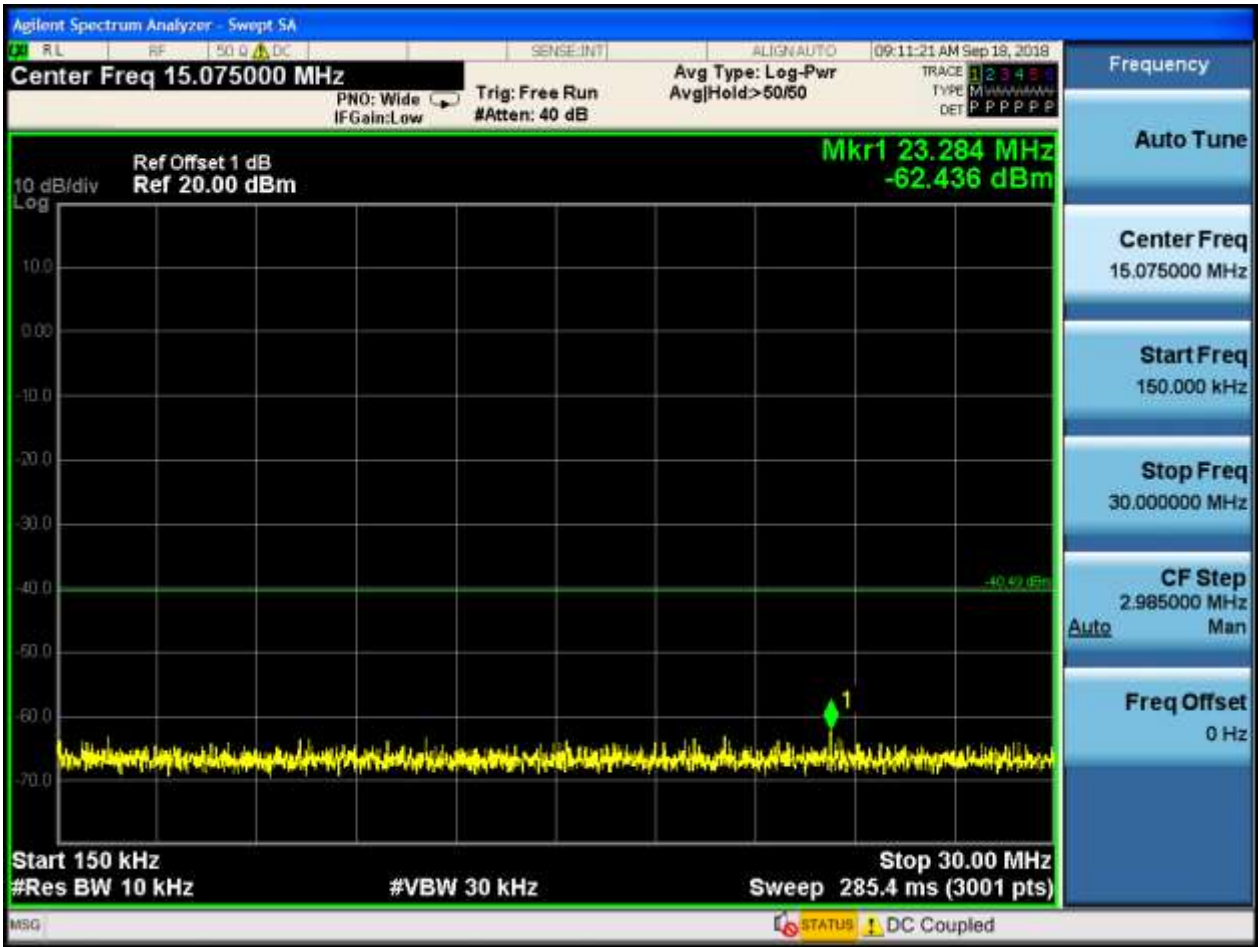




P<sub>uw</sub>:

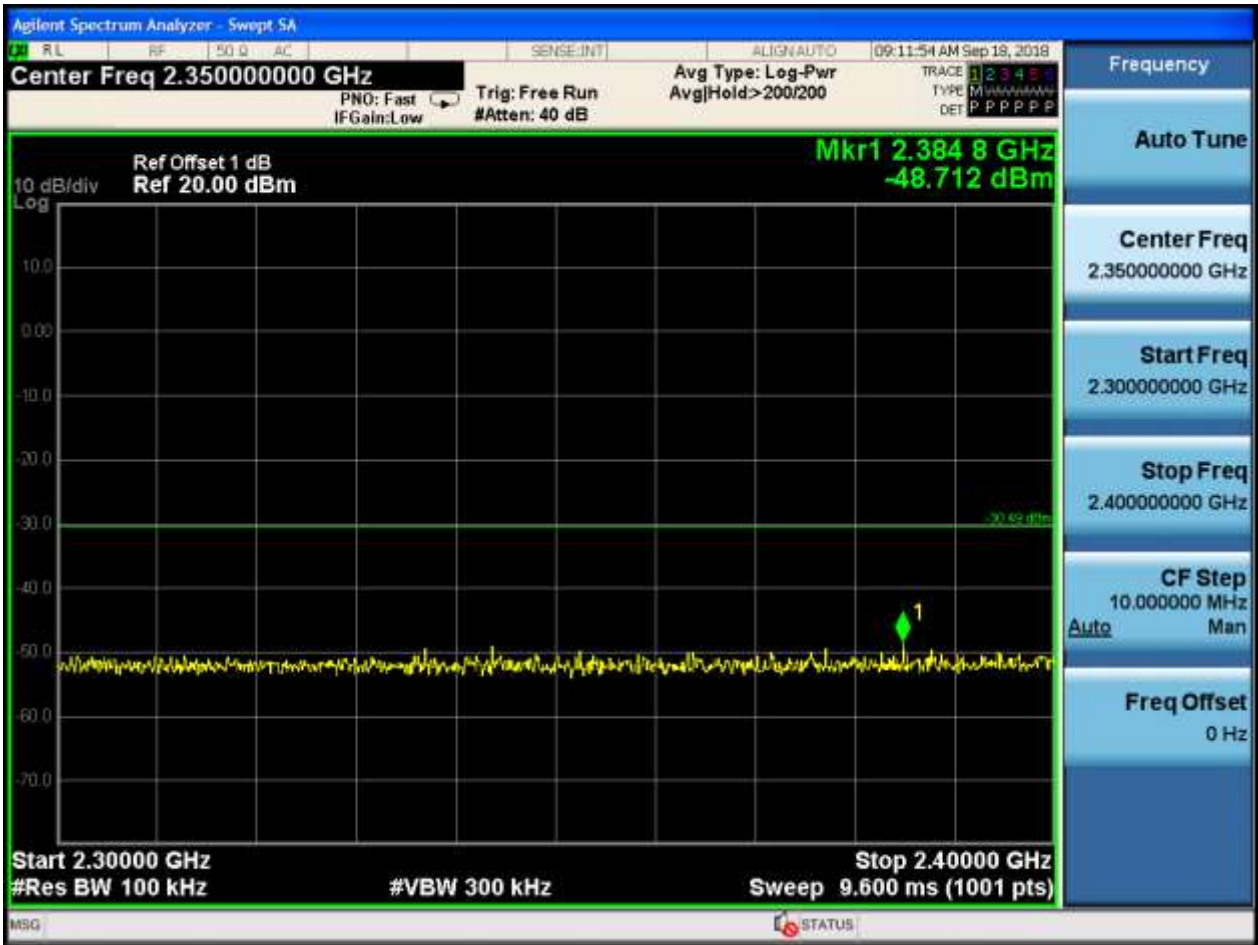


















## **Appendix H: Radiated Spurious Emission & Spurious in Restricted Band**

Note: We tested all modes, but the data presented below is the worst case.

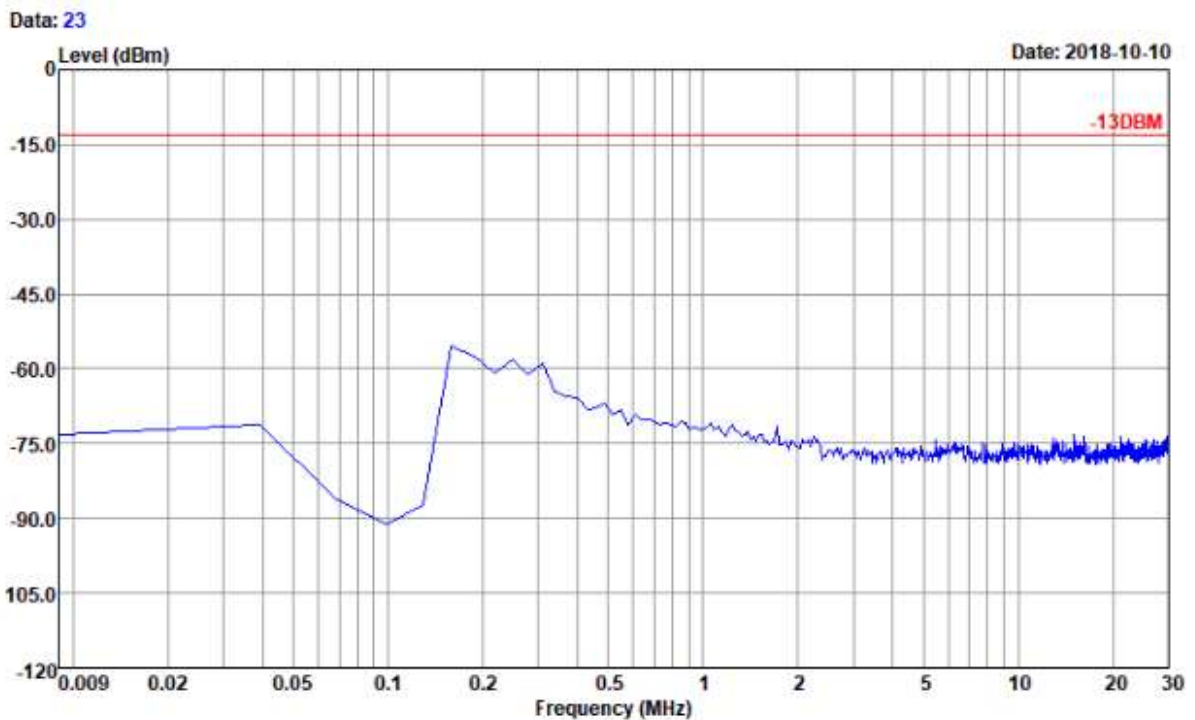
Below 1GHz, RBW = 100 kHz, VBW = 300 kHz.

Above 1GHz, RBW = 1 MHz, VBW = 3 MHz.

The simultaneous transmission has been considered

### 1.1 Part 1: Testing Range of “9 kHz to 30MHz”

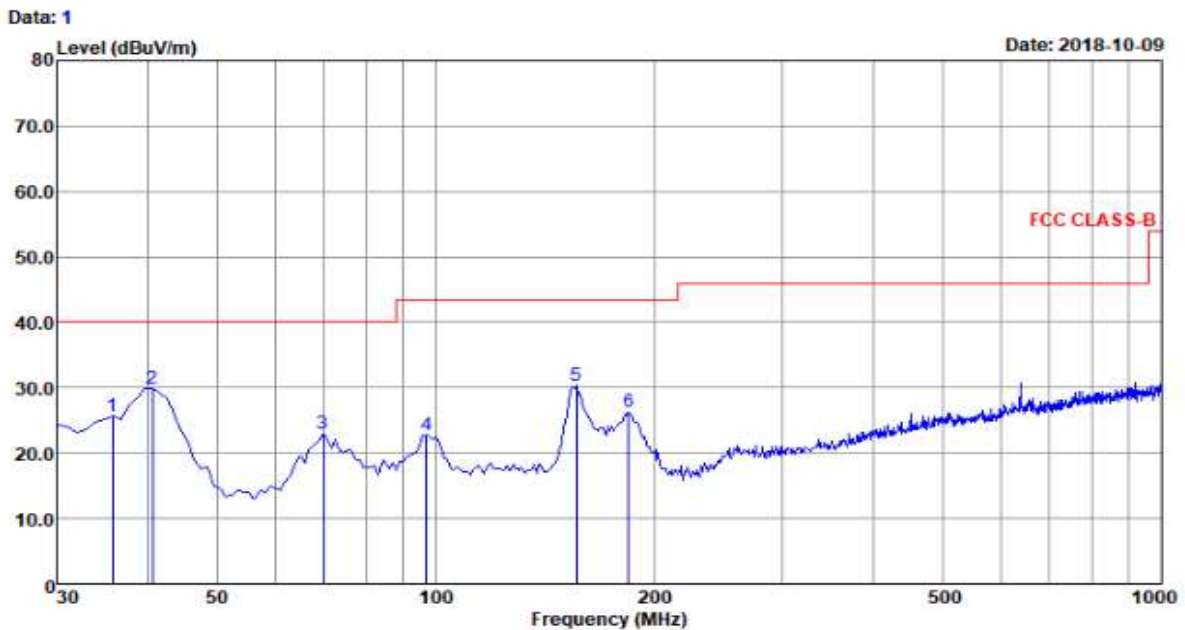
Note 1: The test results and plot for testing range of “9 kHz to 30 MHz” showed as below is the WORST case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.



### 1.2 Part 2: Testing Range of “30 MHz to 1 GHz”

Note 1: The test results and plot for testing range of “30 MHz to 1 GHz” showed as below is the WORST case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.

Note 2: The emissions in this range are mainly from the Platform Device (Notepad PC and its ancillary components).



Site : 03CH01-SZ  
 Condition : FCC CLASS-B 3m LF\_ANT(35408)\_6 VERTICAL  
 : RBW:120.000KHz VBW:300.000KHz

Freq	Level	Over Limit	Antenna		Cable		Preamp	Remark
			Line	Factor	Loss	Factor		
MHz	dBUV/m	dB	dBUV/m	dB/m	dB	dB	dB	
1	35.82	25.68 -14.32	40.00	20.92	0.33	0.33	31.60	Peak
2 pp	40.67	29.97 -10.03	40.00	18.19	0.39	0.39	31.70	Peak
3	69.77	22.93 -17.07	40.00	12.90	0.57	0.57	31.60	Peak
4	96.93	22.83 -20.67	43.50	16.10	0.81	0.81	31.50	Peak
5	156.10	30.27 -13.23	43.50	16.27	1.35	1.35	31.38	Peak
6	184.23	26.21 -17.29	43.50	15.28	1.51	1.51	31.26	Peak

Note:

1, Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

The reading level is calculated by software which is not shown in the sheet.

2, Over limit=Level –Limit Line

### 1.3 Part 3: Testing Range of “1GHz to 3GHz”

Note 1: The testing range of “1GHz to 3 GHz” is for checking radiated emissions located in restricted bands near the EUT operating bands.

Note 2: Two limits are required in the testing range above 1 GHz, that is Peak limit (74 dB $\mu$ V/m) and Average Limit (54 dB $\mu$ V/m).

Note 3: The peak spike exceeds the limit line is EUT’s operating frequency.

Note 4:

1, Level = Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

The reading level is calculated by software which is not shown in the sheet.

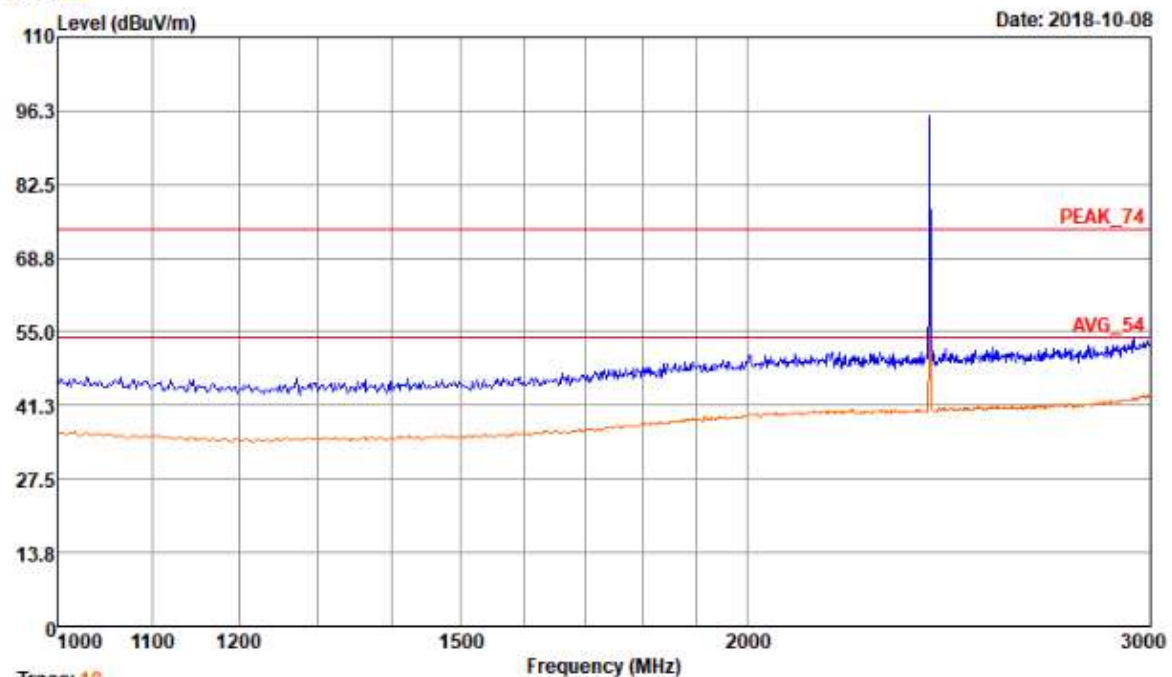
2, Over limit = Level – Limit Line

Test Mode:

#### 1.3.1 Test Mode: TM1



Data: 17

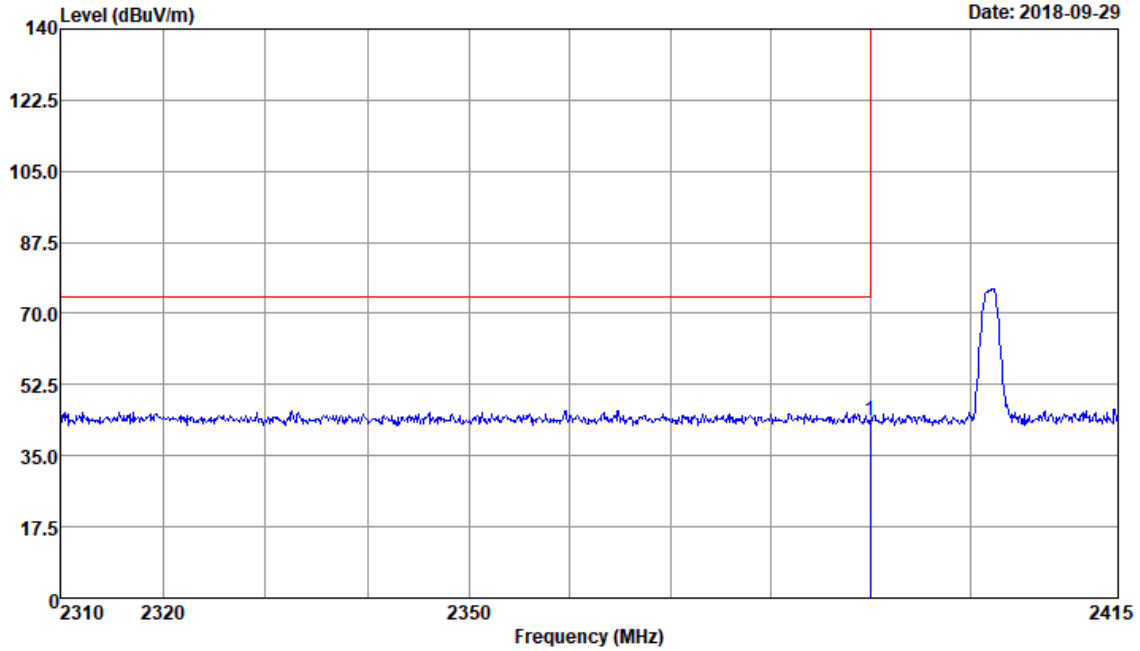




1.3.1.1 Channel 0



Data: 133



Site : 03CH01-SZ

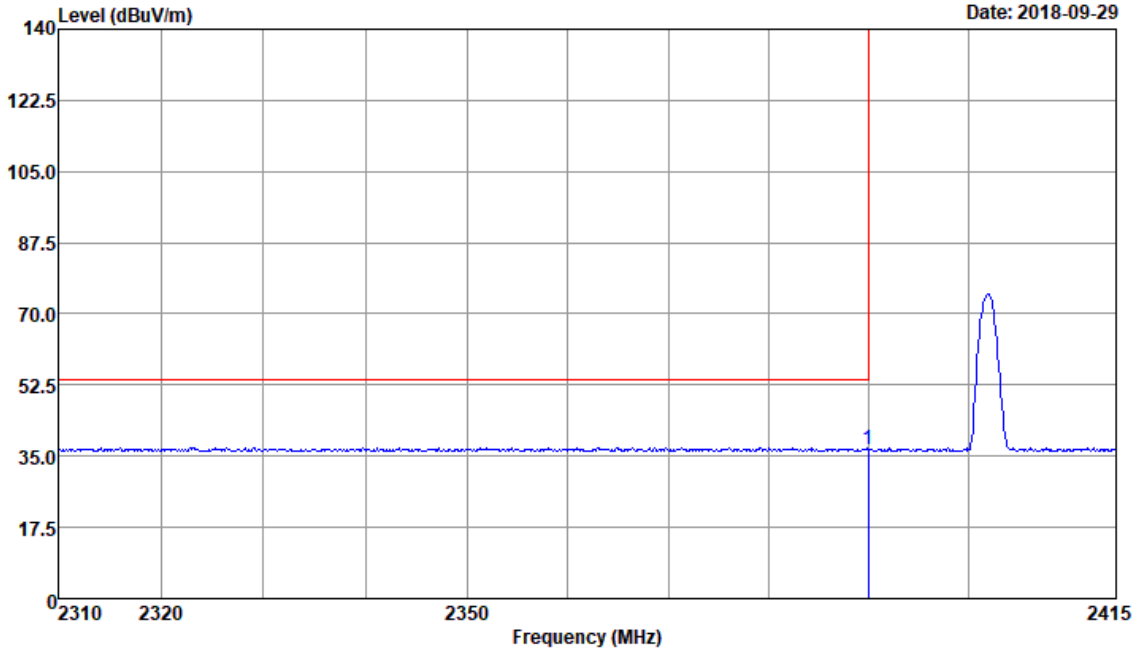
Condition : PEAK\_BE\_74 3m HORIZONTAL

: RBW:1000.000KHz VBW:3000.000KHz

	Over	Limit	Antenna	Cable	Preamp		
Freq	Level	Limit	Line	Factor	Loss	Factor	Remark
MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	
1 pp 2390.00	43.69	-30.31	74.00	0.00	0.00	0.00	Peak HORIZONTAL



Data: 134

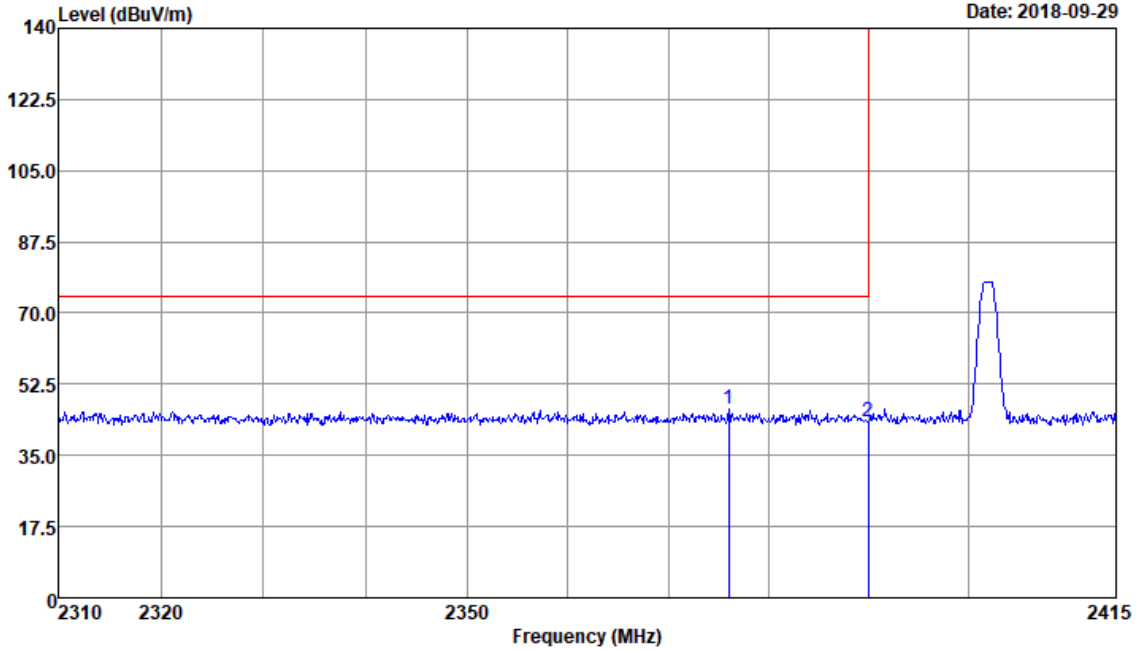


Site : 03CH01-SZ  
 Condition : AVG\_BE\_54 3m HORIZONTAL  
 : RBW:1000.000KHz VBW:3.000KHz

Freq	Level	Over Limit	Antenna Line	Cable Factor	Preamp Loss	Remark	Pol/Phase
MHz	dBuV/m	dB	dBuV/m	dB/m	dB		
1 pp 2390.00	36.61	-17.39	54.00	0.00	0.00	0.00 Average	HORIZONTAL



Data: 129



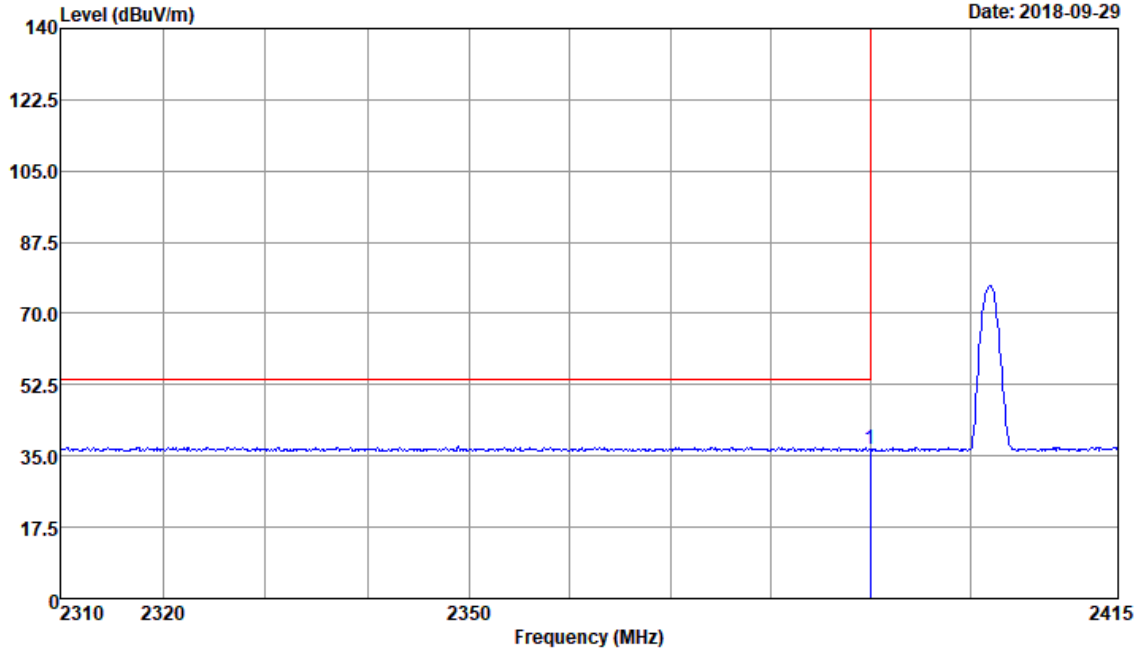
Site : 03CH01-SZ  
 Condition : PEAK\_BE\_74 3m VERTICAL  
 : RBW:1000.000KHz VBW:3000.000KHz

	Over	Limit	Antenna	Cable	Preamp				
Freq	Level	Limit	Line	Factor	Loss	Factor	Remark	Pol/Phase	
MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB			
1 pp	2376.05	46.32	-27.68	74.00	0.00	0.00	0.00	Peak	VERTICAL
2	2390.00	43.11	-30.89	74.00	0.00	0.00	0.00	Peak	VERTICAL



Data: 130

Date: 2018-09-29



Site : 03CH01-SZ

Condition : AVG\_BE\_54 3m VERTICAL

: RBW:1000.000KHz VBW:3.000KHz

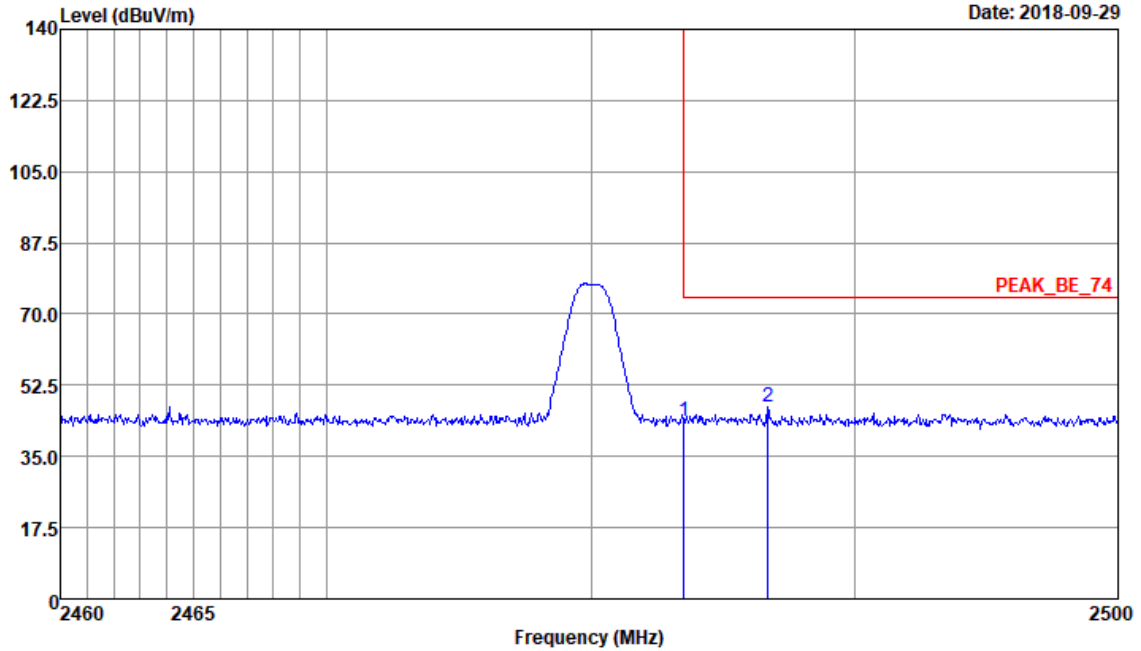
Freq	Level	Over Limit	Antenna Line	Cable Factor	Preamp Loss	Factor	Remark	Pol/Phase
MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB		
1 pp 2390.00	36.58	-17.42	54.00	0.00	0.00	0.00	Average	VERTICAL

1.3.1.2 Channel 39



Data: 139

Date: 2018-09-29



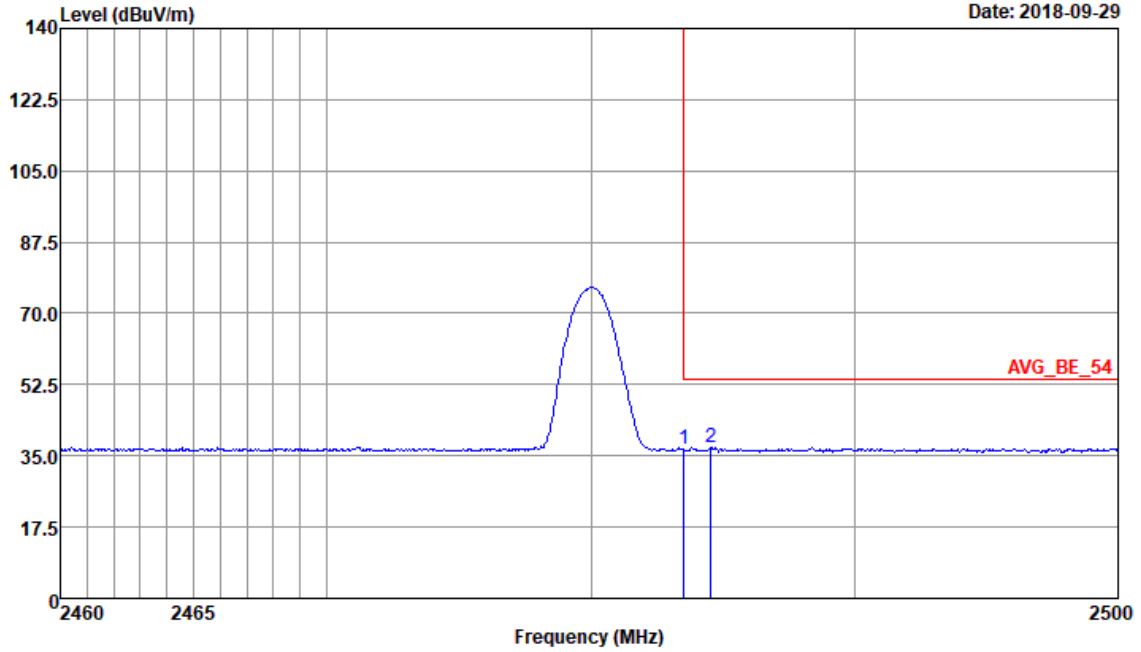
Site : 03CH01-SZ  
 Condition : PEAK\_BE\_74 3m HORIZONTAL  
 : RBW:1000.000KHz VBW:3000.000KHz

	Freq	Level	Over Limit	Antenna Line	Cable Factor	Preamp Loss	Factor	Remark	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dB/m	dB	dB		
1	2483.52	43.66	-30.34	74.00	0.00	0.00	0.00	Peak	HORIZONTAL
2 pp	2486.68	47.03	-26.97	74.00	0.00	0.00	0.00	Peak	HORIZONTAL



Data: 140

Date: 2018-09-29

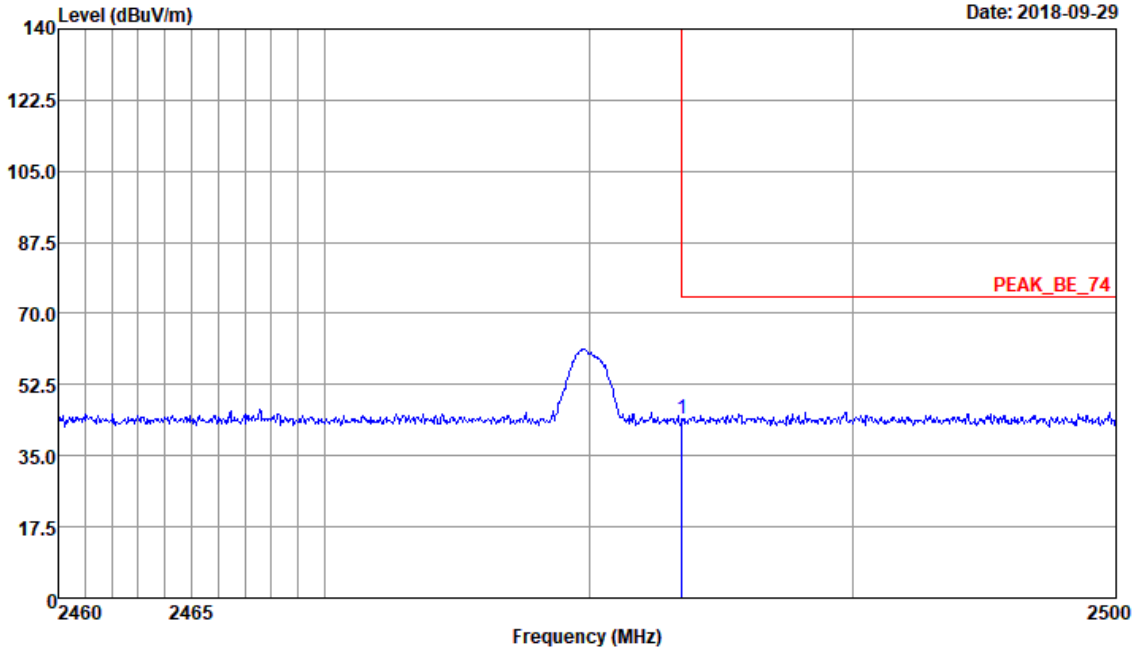


Site : 03CH01-SZ  
 Condition : AVG\_BE\_54 3m HORIZONTAL  
 : RBW:1000.000KHz VBW:3.000KHz

	Freq	Level	Over Limit	Antenna Line	Cable Factor	Preamp Loss	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB		
1	2483.52	36.60	-17.40	54.00	0.00	0.00	0.00	Average	HORIZONTAL
2	pp 2484.52	36.99	-17.01	54.00	0.00	0.00	0.00	Average	HORIZONTAL



Data: 143



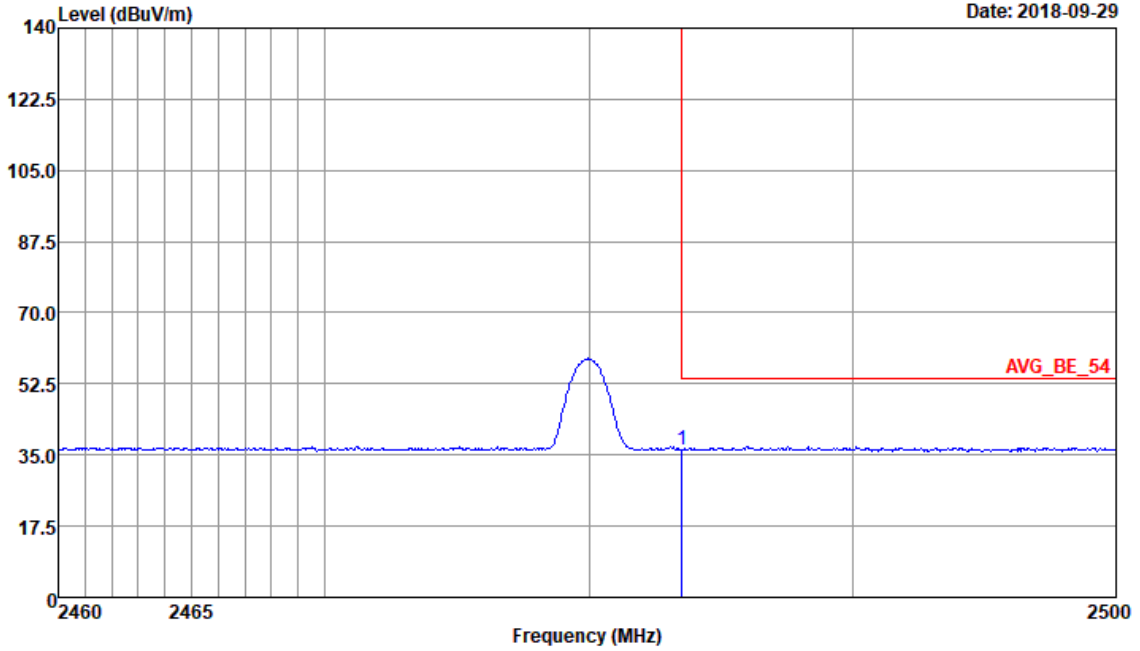
Site : 03CH01-SZ  
 Condition : PEAK\_BE\_74 3m VERTICAL  
 : RBW:1000.000KHz VBW:3000.000KHz

Freq	Level	Over Limit	Antenna Line	Cable Factor	Preamp Loss	Remark	Pol/Phase
MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	
1 pp 2483.52	43.96	-30.04	74.00	0.00	0.00	0.00 Peak	VERTICAL





Data: 144

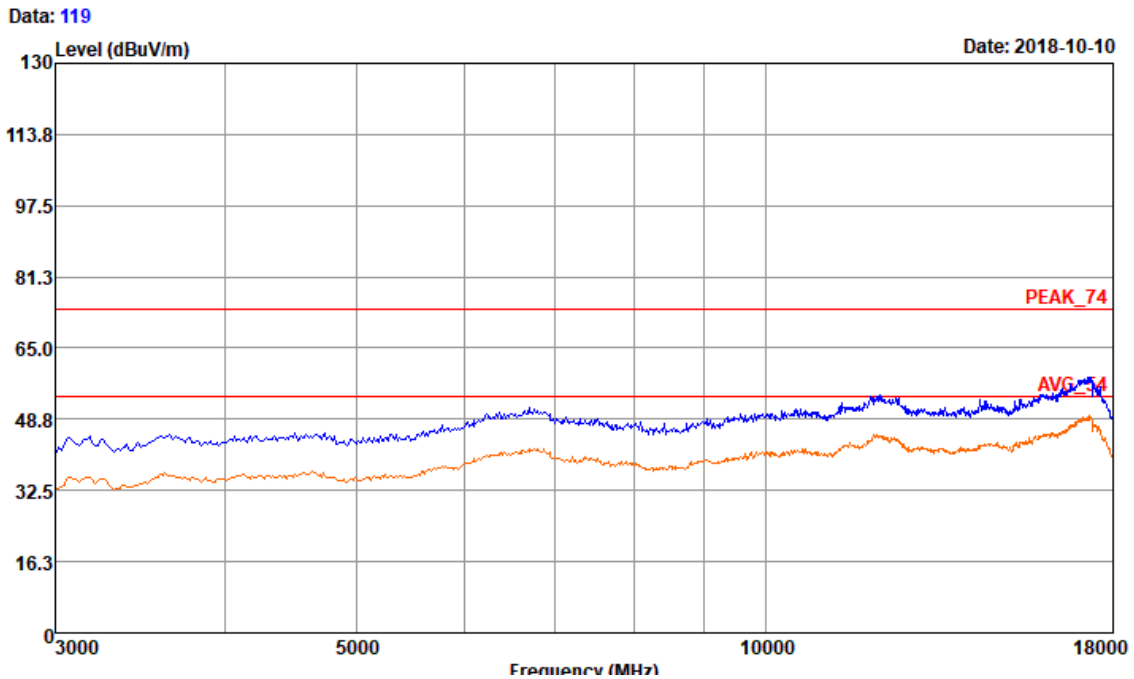


Site : 03CH01-SZ  
 Condition : AVG\_BE\_54 3m VERTICAL  
 : RBW:1000.000KHz VBW:3.000KHz

Freq	Level	Over Limit	Antenna Line	Cable Factor	Preamp Loss	Remark	Pol/Phase
MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	
1 pp 2483.52	36.36	-17.64	54.00	0.00	0.00	0.00 Average	VERTICAL

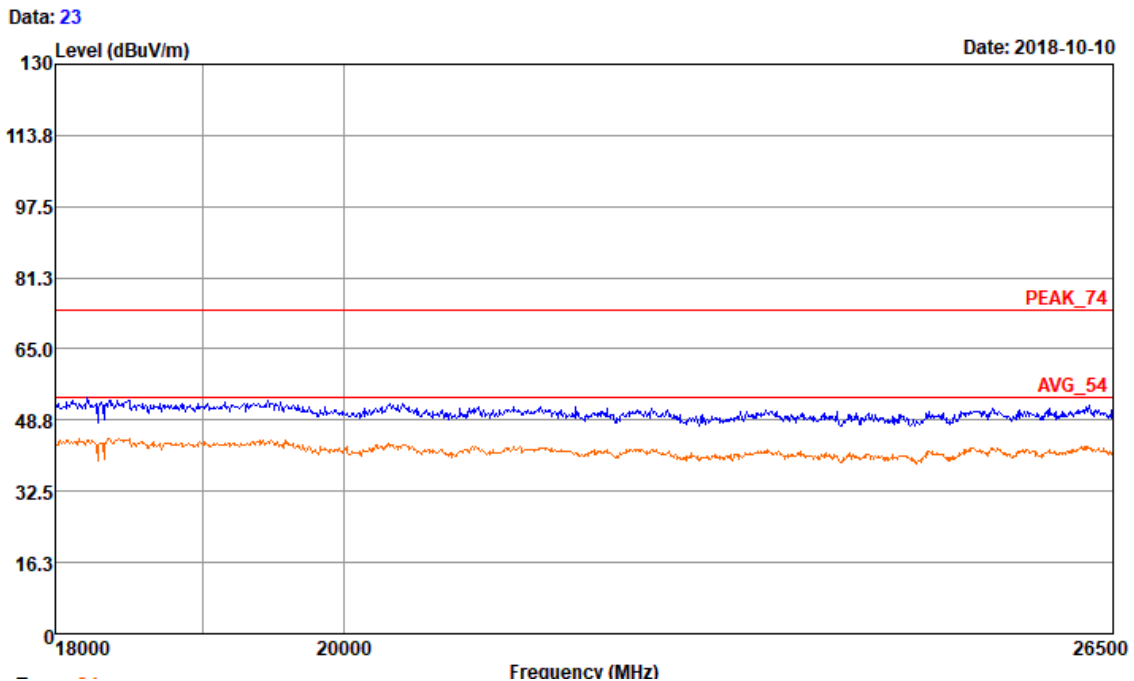
#### 1.4 Part 4: Testing Range of “3 GHz to 18 GHz”

- Note 1: The test results and plot for testing range of “3 GHz to 18 GHz” showed as below is the WORST case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.
- Note 2: The testing range of “3 GHz to 18 GHz” is for checking radiated emissions located in restricted bands faraway from the EUT operating bands.
- Note 3: Two limits are required in the testing range above 1 GHz, that is Peak limit (74 dB $\mu$ V/m) and Average Limit (54 dB $\mu$ V/m).



### 1.5 Part 5: Testing Range of “18 GHz to 26.5 GHz”

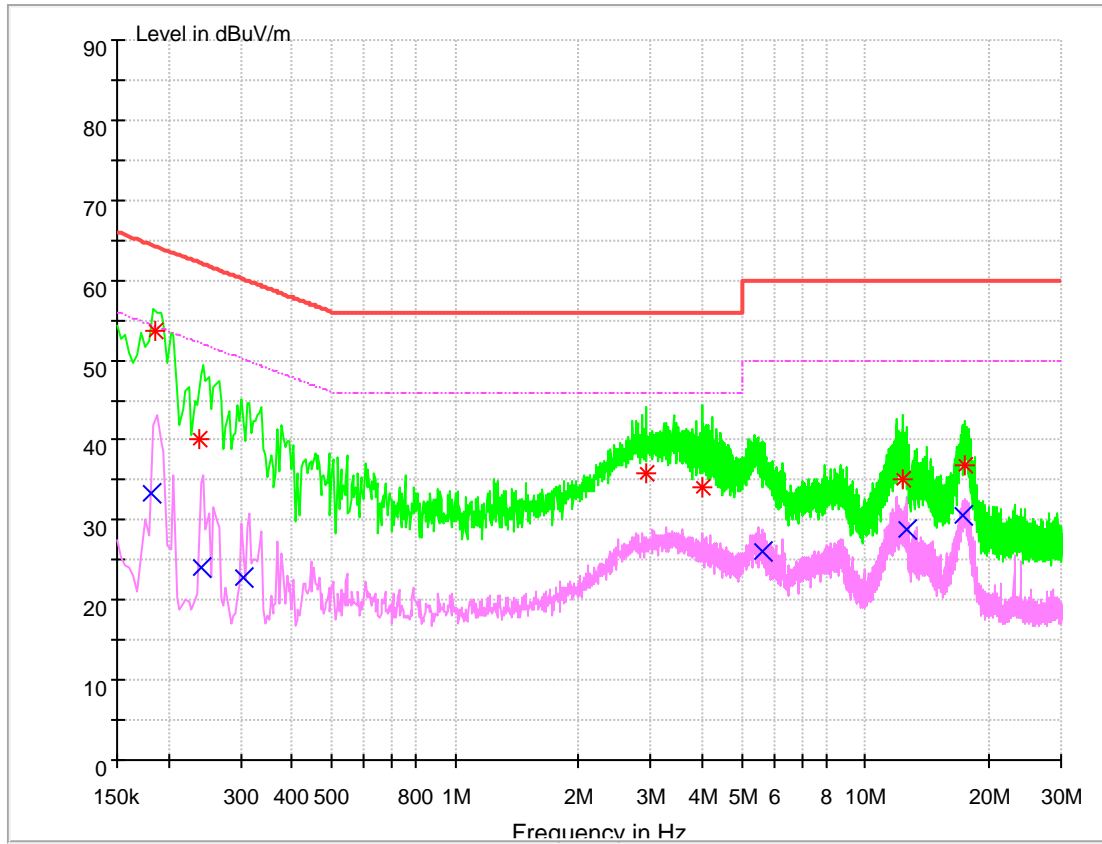
- Note 1: The test results and plot for testing range of “18 GHz to 26.5 GHz” showed as below is the WORST case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.
- Note 2: The testing range of “18 GHz to 26.5 GHz” is for checking radiated emissions located in restricted bands faraway from the EUT operating bands.
- Note 3: Two limits are required in the testing range above 1 GHz, that is Peak limit (74 dB $\mu$ V/m) and Average Limit (54 dB $\mu$ V/m).



## Appendix I: Conducted Emission at Power Port

Note: RBW =9 kHz, VBW = 30 kHz

### Channel 39



#### MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Transd. (dB)	Margin (dB)	Line	PE
0.185754	53.64	64.22	9.7	10.58	L1	FLO
0.237328	40.16	62.19	9.7	22.03	N	FLO
2.923148	35.83	56.00	9.8	20.17	L1	FLO
4.006337	34.08	56.00	9.8	21.92	L1	FLO
12.353297	35.21	60.00	10.0	24.79	N	FLO



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17.486641	36.80	60.00	10.1	23.20	N	FLO
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**MEASUREMENT RESULT: AV Detector**

Frequency (MHz)	Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Transd. (dB)	Margin (dB)	Line	PE
0.18231	33.39	54.38	9.7	20.99	L1	FLO
0.240419	24.17	52.08	9.7	27.91	N	FLO
0.305042	22.90	50.10	9.7	27.20	L1	FLO
5.582653	26.04	50.00	9.8	23.96	N	FLO
12.603859	28.81	50.00	10.0	21.19	L1	FLO
17.36374	30.70	50.00	10.1	19.30	N	FLO

## Note:

1, Level = Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

The reading level is calculated by software which is not shown in the sheet.

2, Margin = Limit - Level

END