



## Appendix for Test report

# 1 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.

## 1.1 Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	DTS6dBBW[kHz]	Verdict
TM1_DH5_Ch0	L	2402	682	pass
TM1_DH5_Ch19	M	2440	677	pass
TM1_DH5_Ch39	H	2480	685	pass



## 1.2 Part II - Test Plots

### 1.2.1 TM1\_DH5\_Ch0\_L





1.2.2 TM1\_DH5\_Ch19\_M





1.2.3TM1\_DH5\_Ch39\_H



## 2 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.

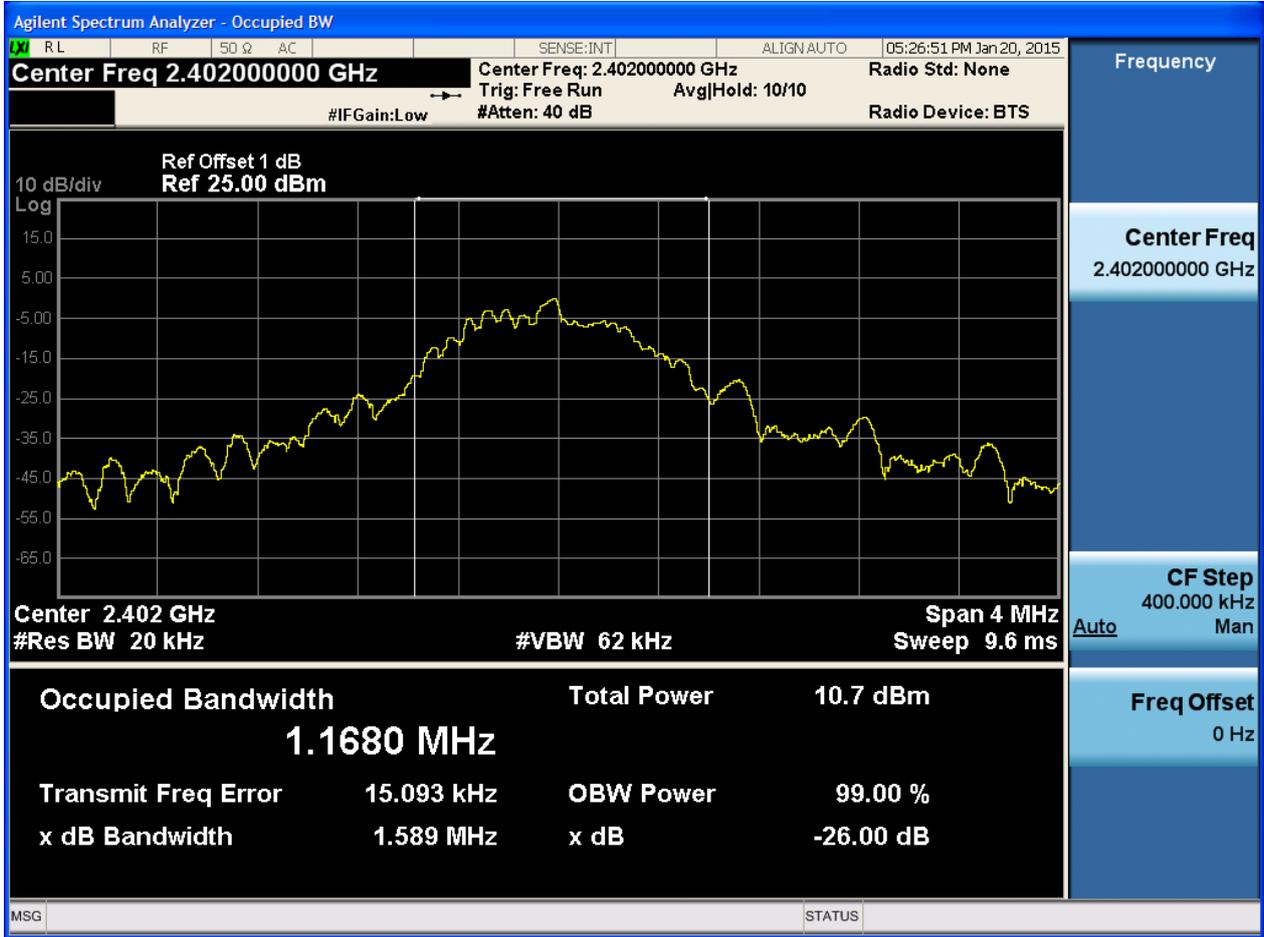
### 2.1 Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Occupied Bandwidth [MHz]	Verdict
TM1_DH5_Ch0	L	2402	1.17	pass
TM1_DH5_Ch19	M	2440	1.05	pass
TM1_DH5_Ch39	H	2480	1.02	pass



## 2.2 Part II - Test Plots

### 2.2.1 TM1\_DH5\_Ch0\_L



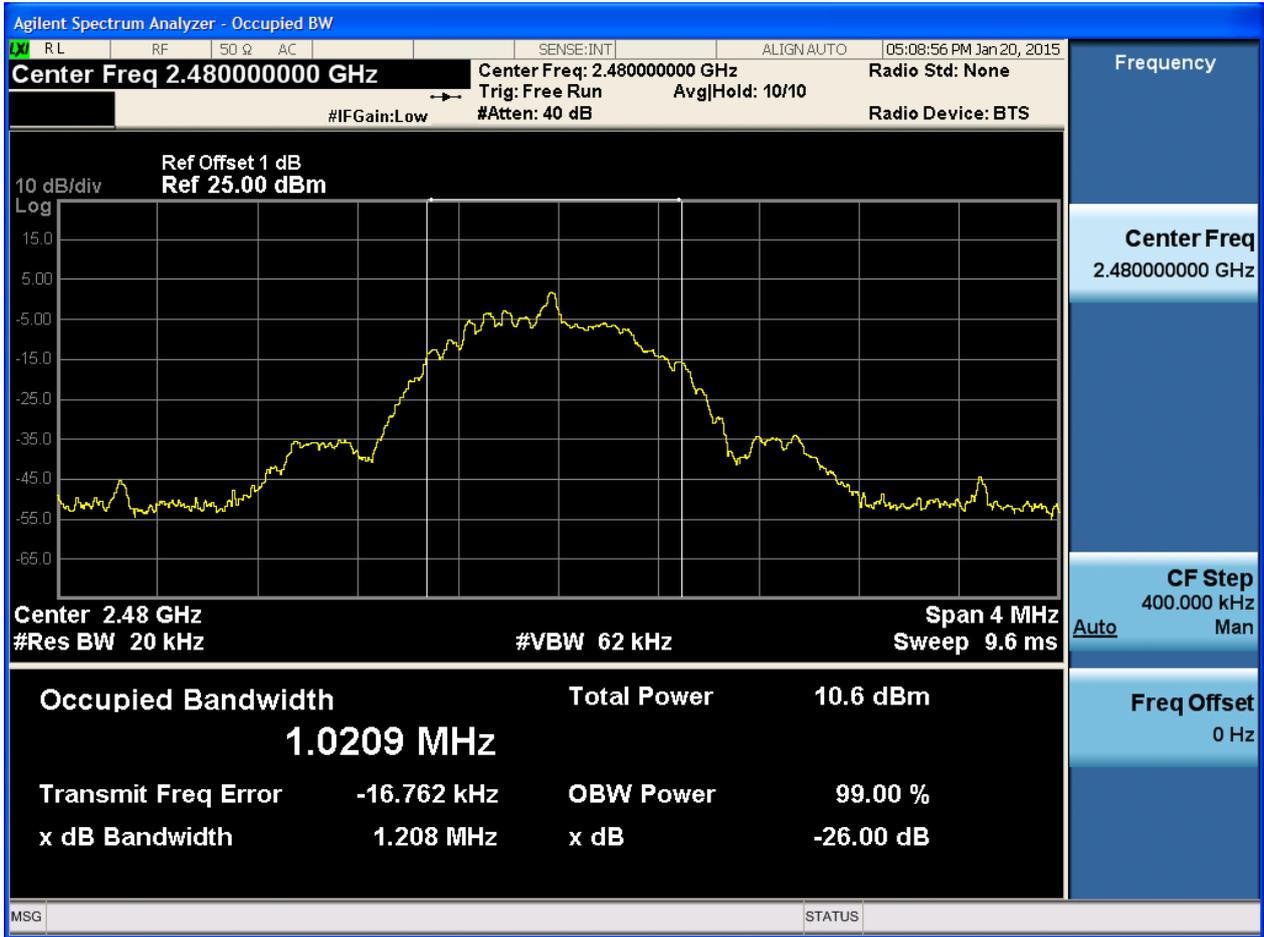


2.2.2 TM1\_DH5\_Ch19\_M





2.2.3 TM1\_DH5\_Ch39\_H



## 3 Appendix C: Duty Cycle

### 3.1 Part I - Test Results

# EUT Conf.	Signal Description	Operating Frequency	Duty cycle [%]
TM1_DH5_Ch0	GFSK for BT 4.0 modulation, package type DH5, hopping off.	Ch No. 0 / 2402 MHz	67.9
TM1_DH5_Ch19	GFSK for BT 4.0 modulation, package type DH5, hopping off.	Ch No. 19 / 2440 MHz	68
TM1_DH5_Ch39	GFSK for BT 4.0 modulation, package type DH5, hopping off.	Ch No. 39 / 2480 MHz	67.7

## 4 Appendix D: Maximum Conducted Average Output Power

### 4.1 Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Duty Cycle [%]	Power[dBm]	Verdict
TM1_DH5_Ch0	L	2402	67.9	3.70	pass
TM1_DH5_Ch19	M	2440	68	3.67	pass
TM1_DH5_Ch39	H	2480	67.7	3.25	pass



## 4.2 Part II - Test Plots

### 4.2.1 TM1\_DH5\_Ch0\_L





4.2.2 TM1\_DH5\_Ch19\_M





### 4.2.3 TM1\_DH5\_Ch39\_H





## 5 Appendix E: Maximum Power Spectral Density Level

### 5.1 Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Duty Cycle [%]	PD[MHz]	Verdict
TM1_DH5_Ch0	L	2402	67.9	-10.24	pass
TM1_DH5_Ch19	M	2440	68	-9.55	pass
TM1_DH5_Ch39	H	2480	67.7	-10.20	pass



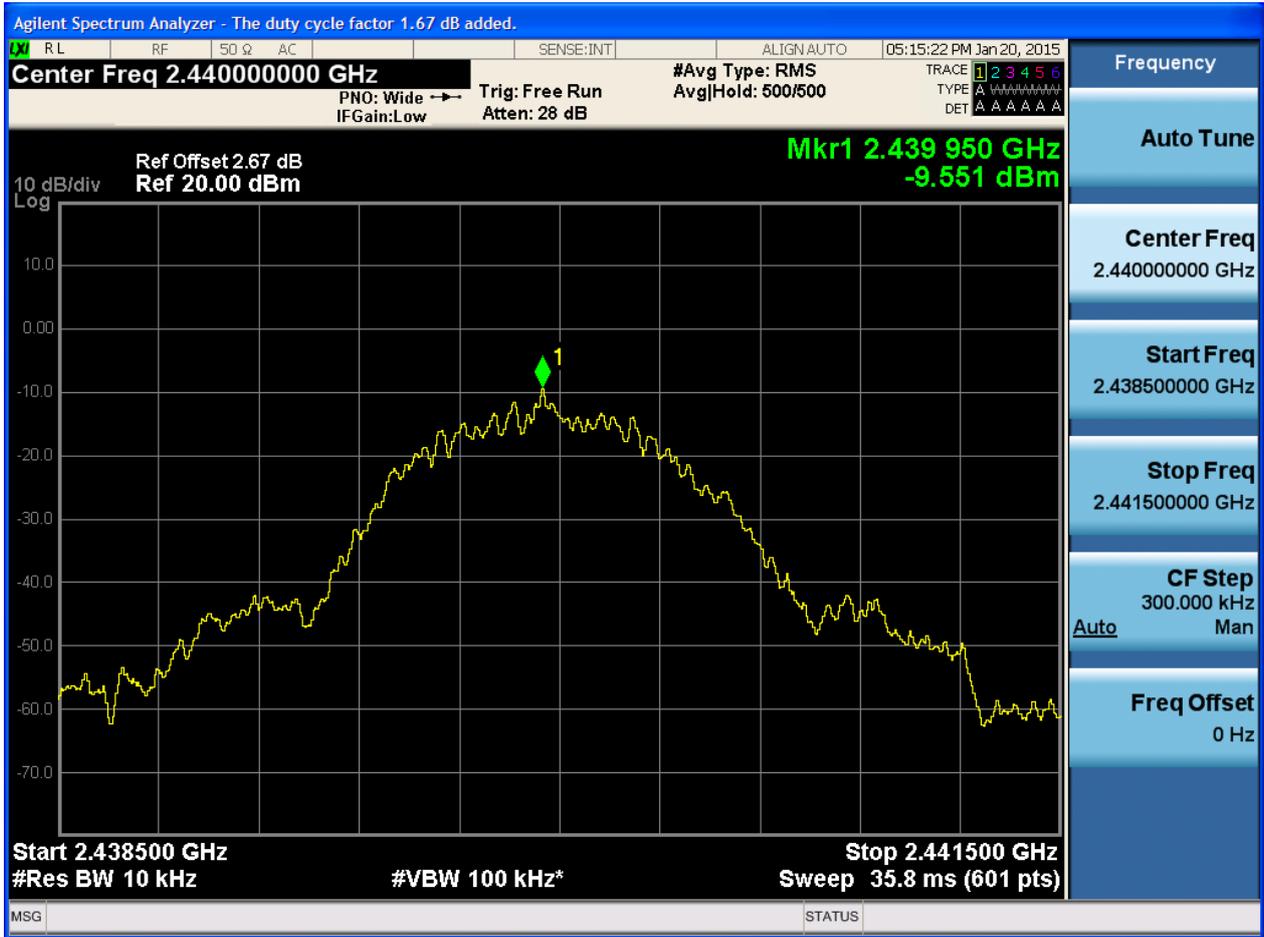
## 5.2 Part II - Test Plots

### 5.2.1 TM1\_DH5\_Ch0\_L





5.2.2 TM1\_DH5\_Ch19\_M





### 5.2.3 TM1\_DH5\_Ch39\_H



## 6 Appendix F: Band Edges Compliance

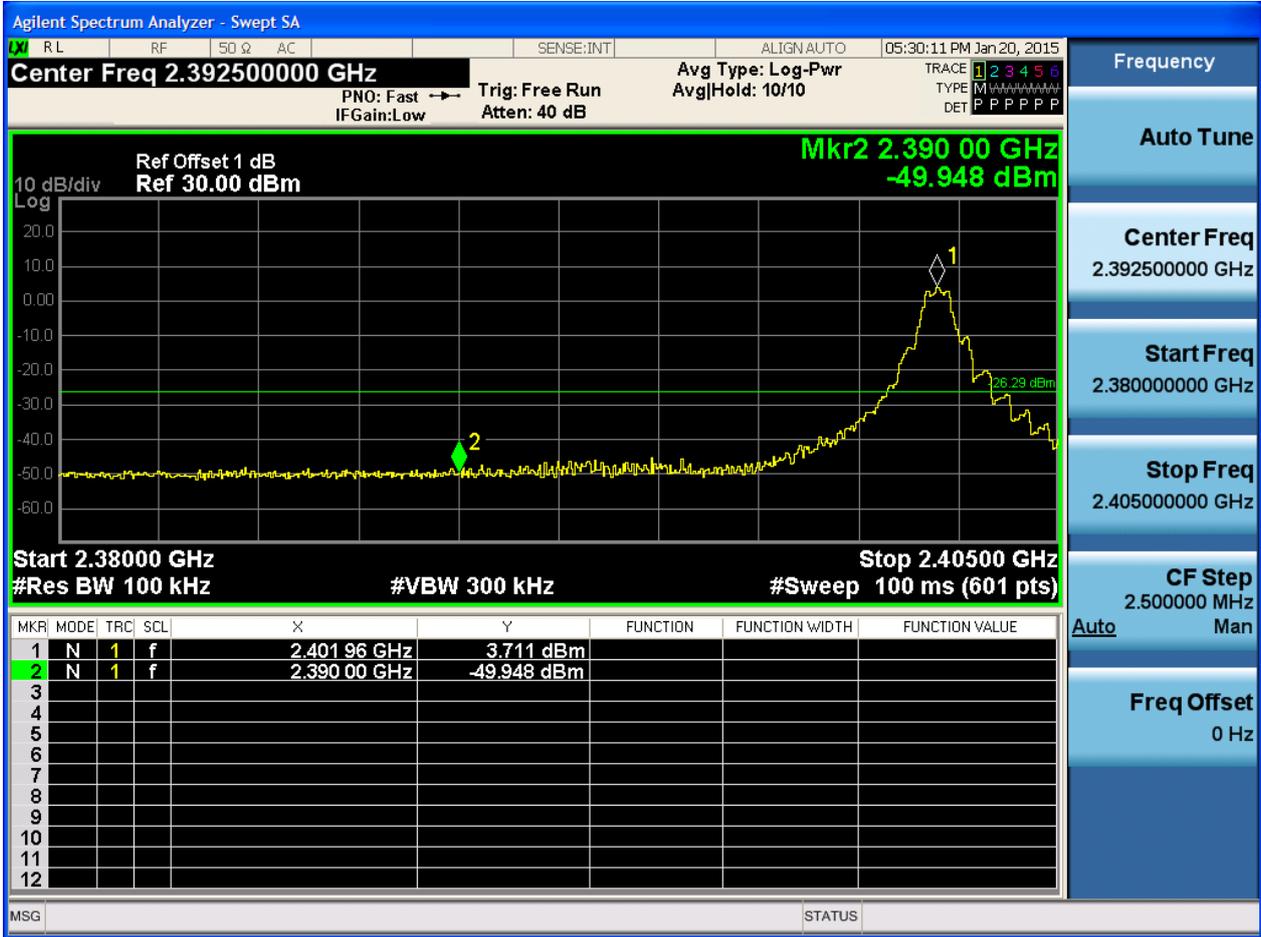
### 6.1 Part I - Test Results

Test Mode	Test Channel	Frequency [MHz]	Carrier Power[dBm]	Max.Spurious Level[dBm]	Verdict
TM1_DH5_Ch0	L	2402	3.71	-49.95	pass
TM1_DH5_Ch39	H	2480	3.36	-49.28	pass



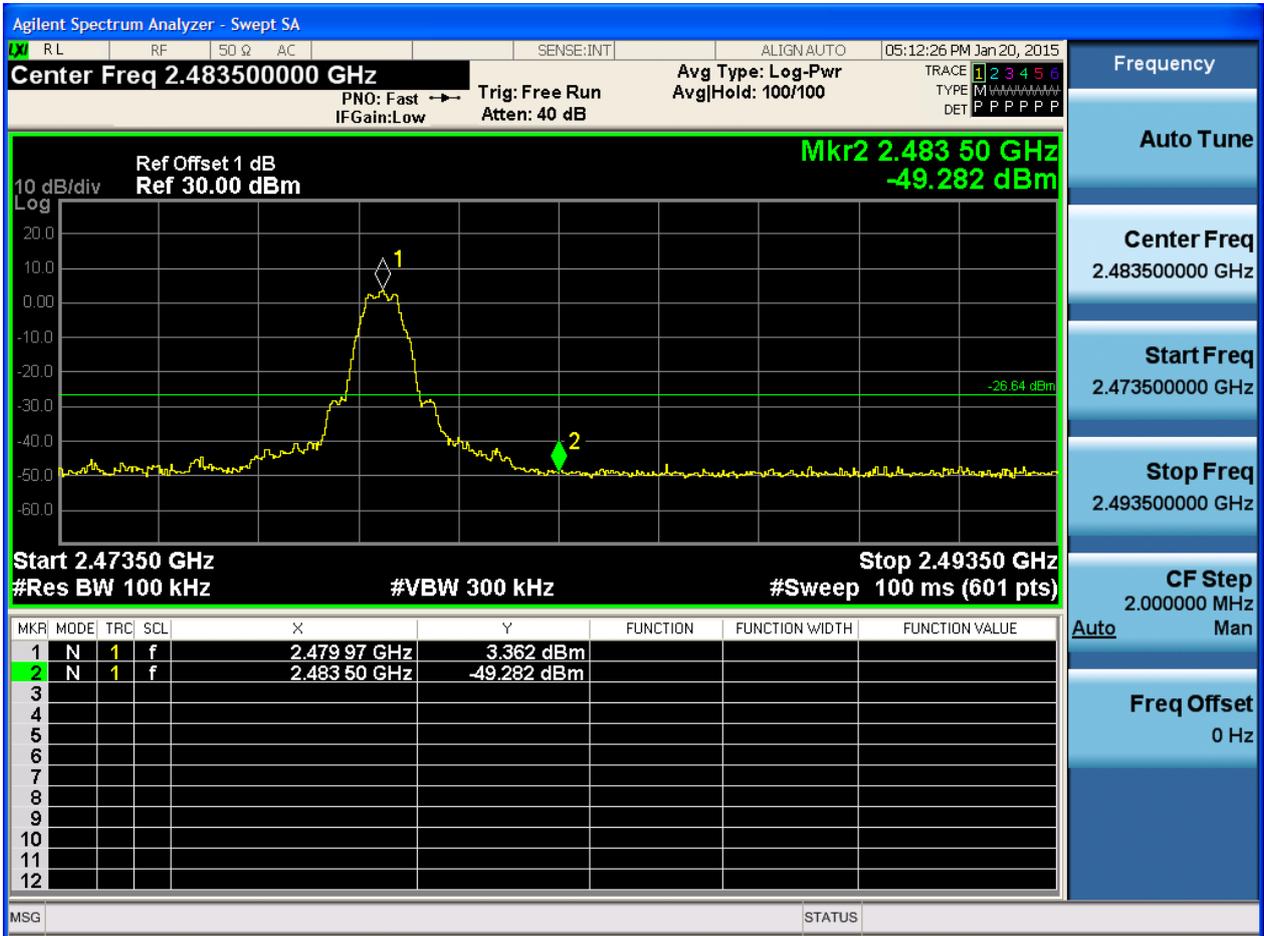
## 6.2 Part II - Test Plots

### 6.2.1 TM1\_DH5\_Ch0\_L





6.2.2 TM1\_DH5\_Ch39\_H



## 7 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]-20[dBm], see test plots for detailed".

### 7.1 Part I - Test Results

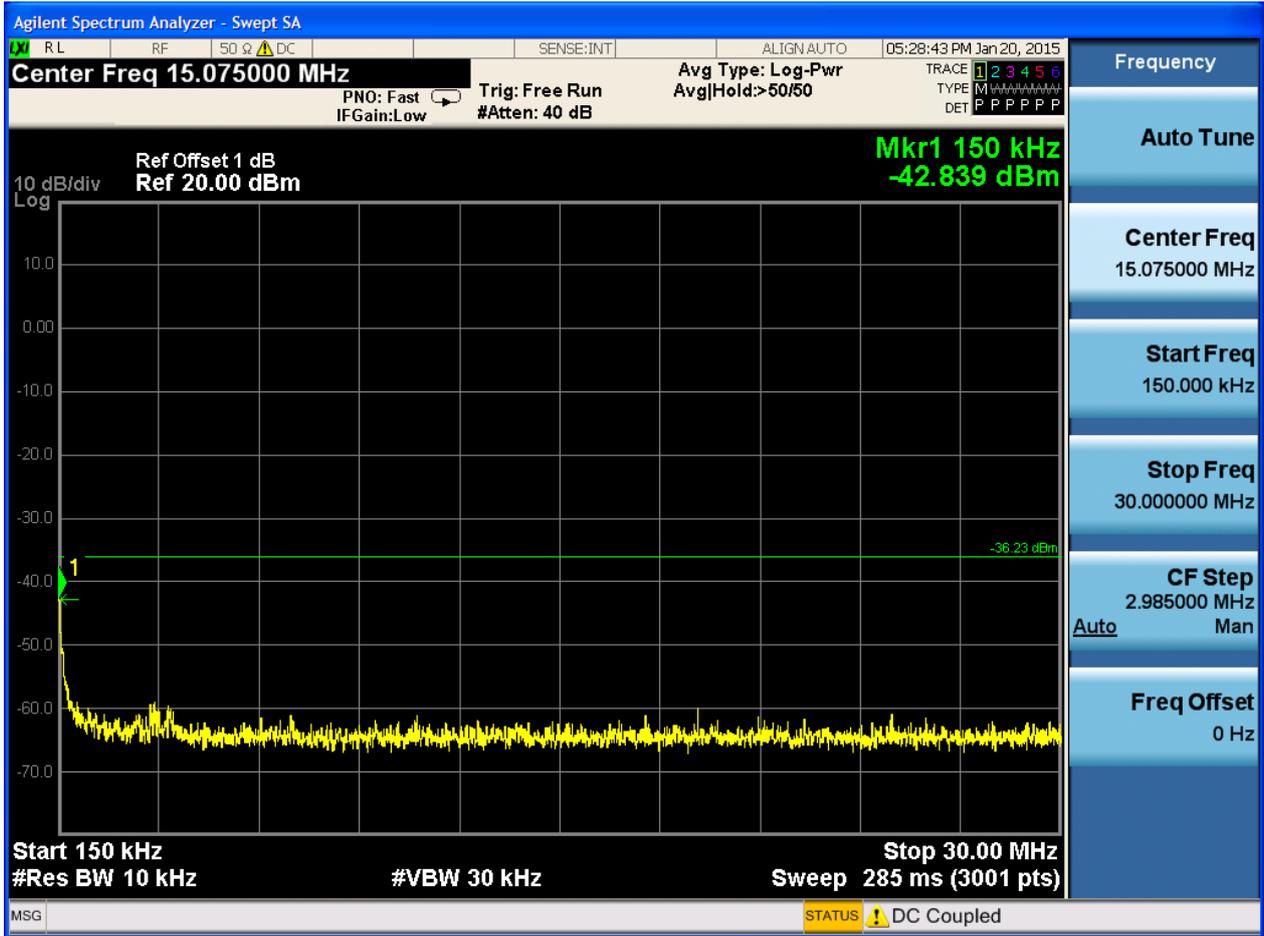
Test Mode	Test Channel	Frequency[MHz]	Pref[dBm]	Puw[dBm]	Verdict
TM1_DH5_Ch0	L	2402	3.77	<limit	pass
TM1_DH5_Ch19	M	2440	3.74	<limit	pass
TM1_DH5_Ch39	H	2480	3.47	<limit	pass

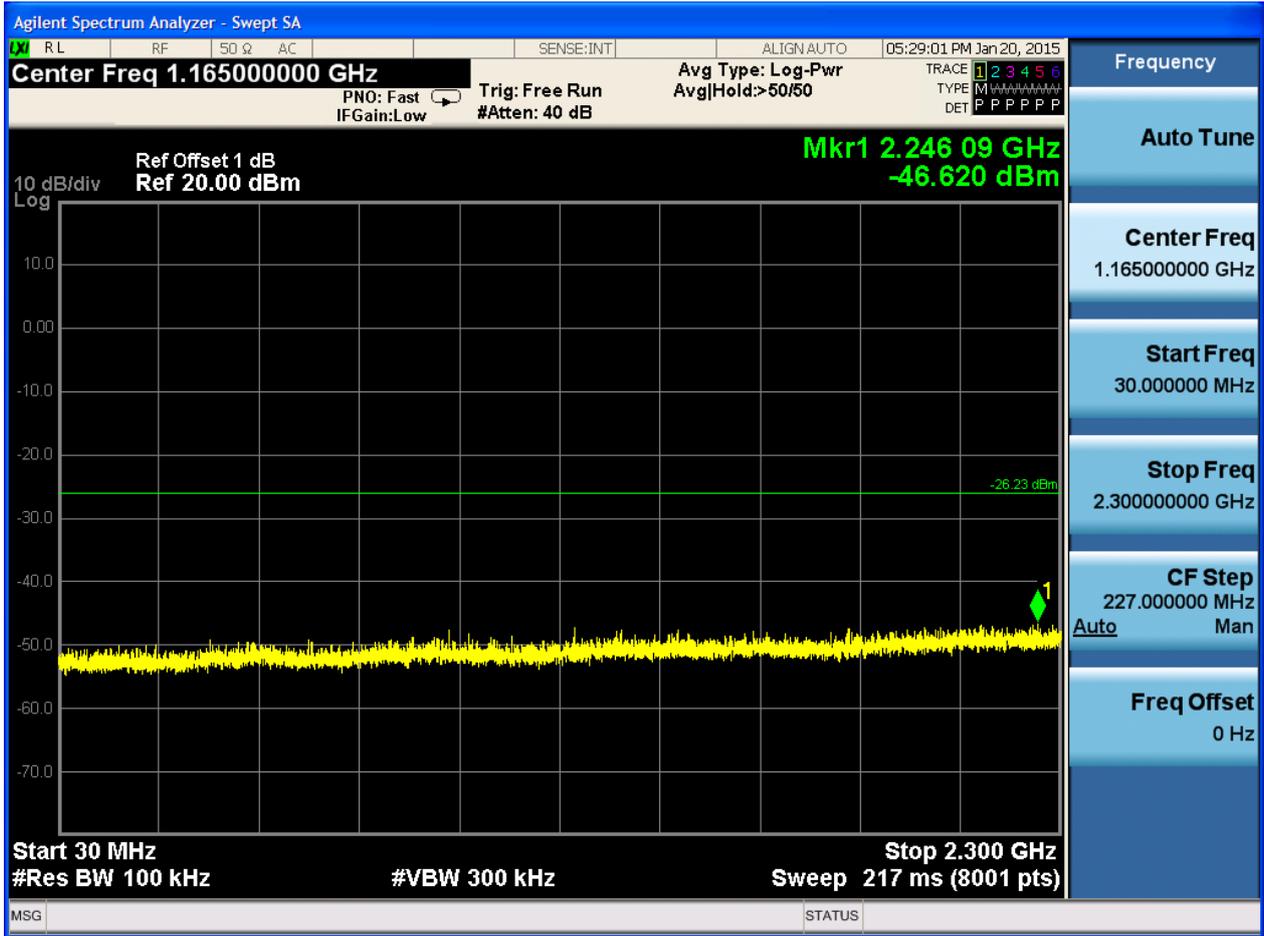


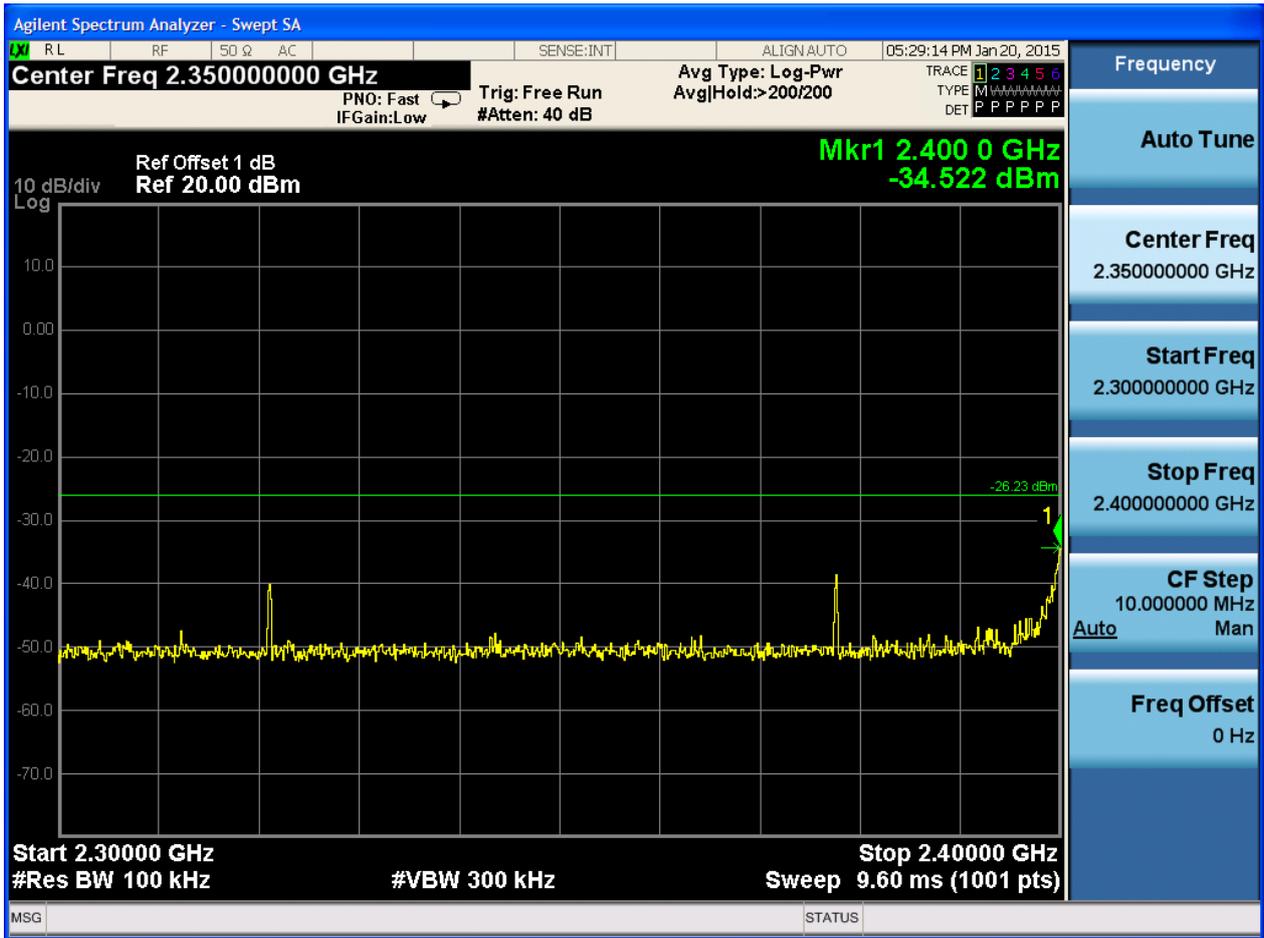


7.1.2.2 Puw:

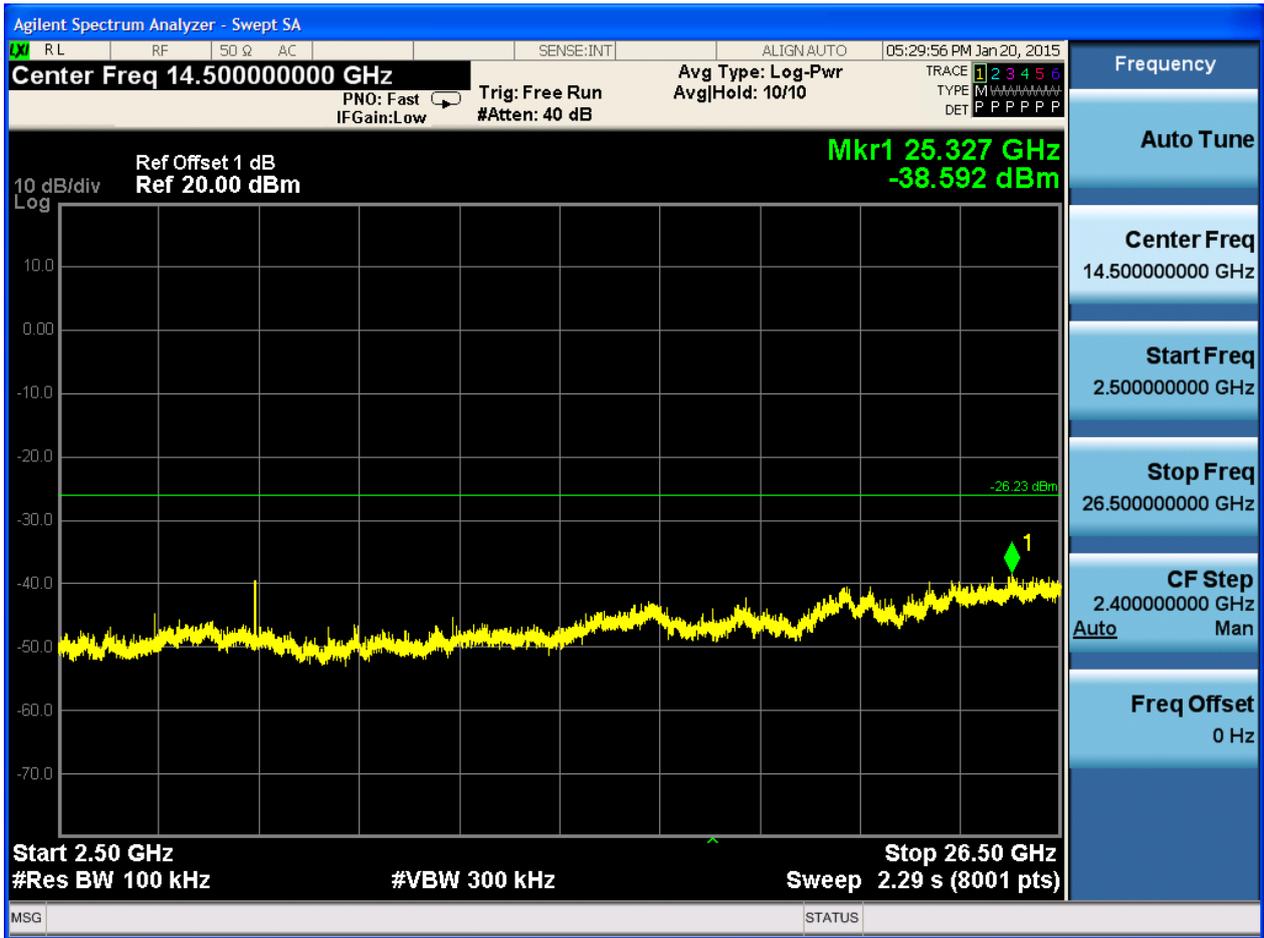














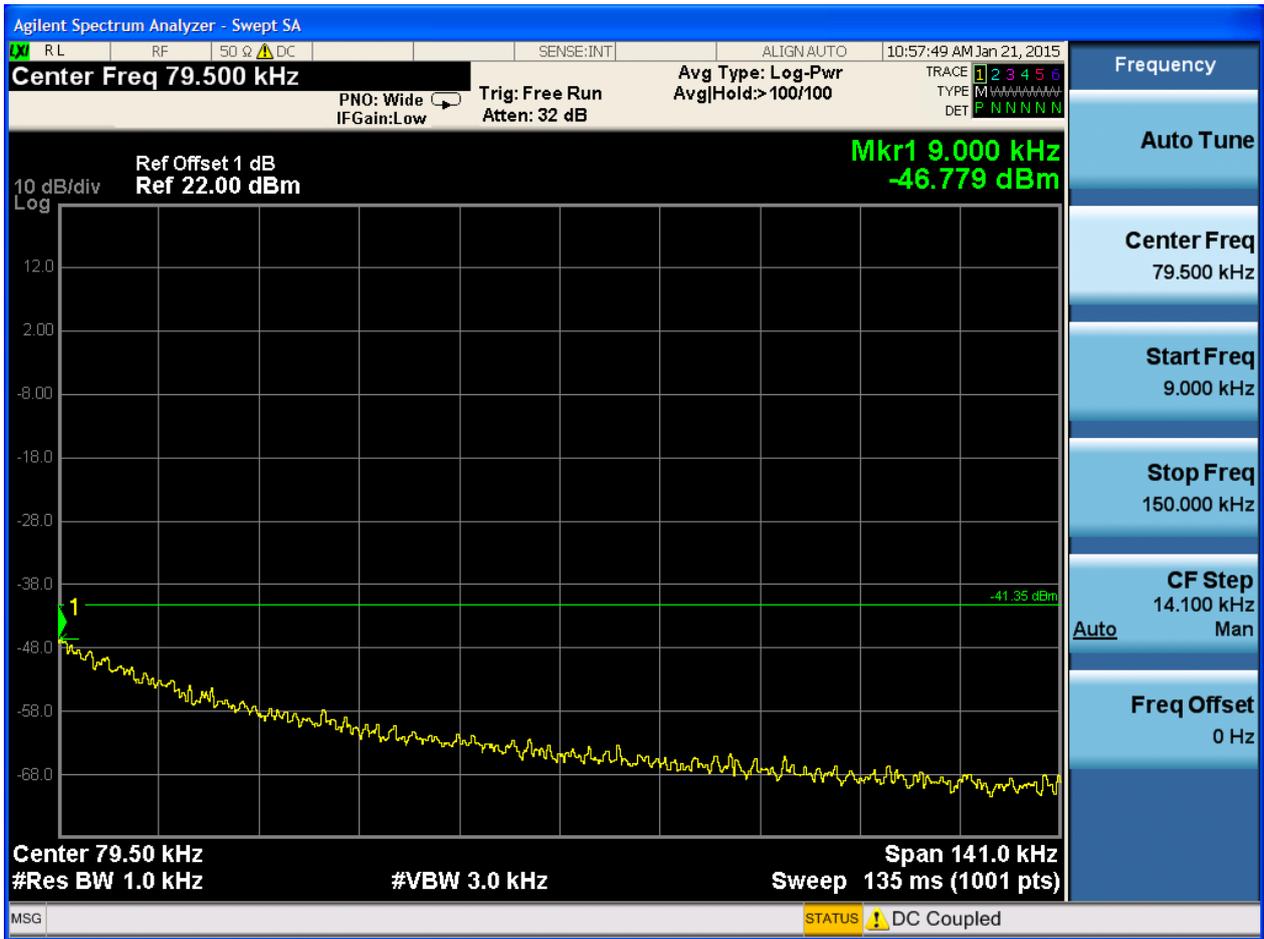
### 7.1.3 TM1\_DH5\_Ch19\_M

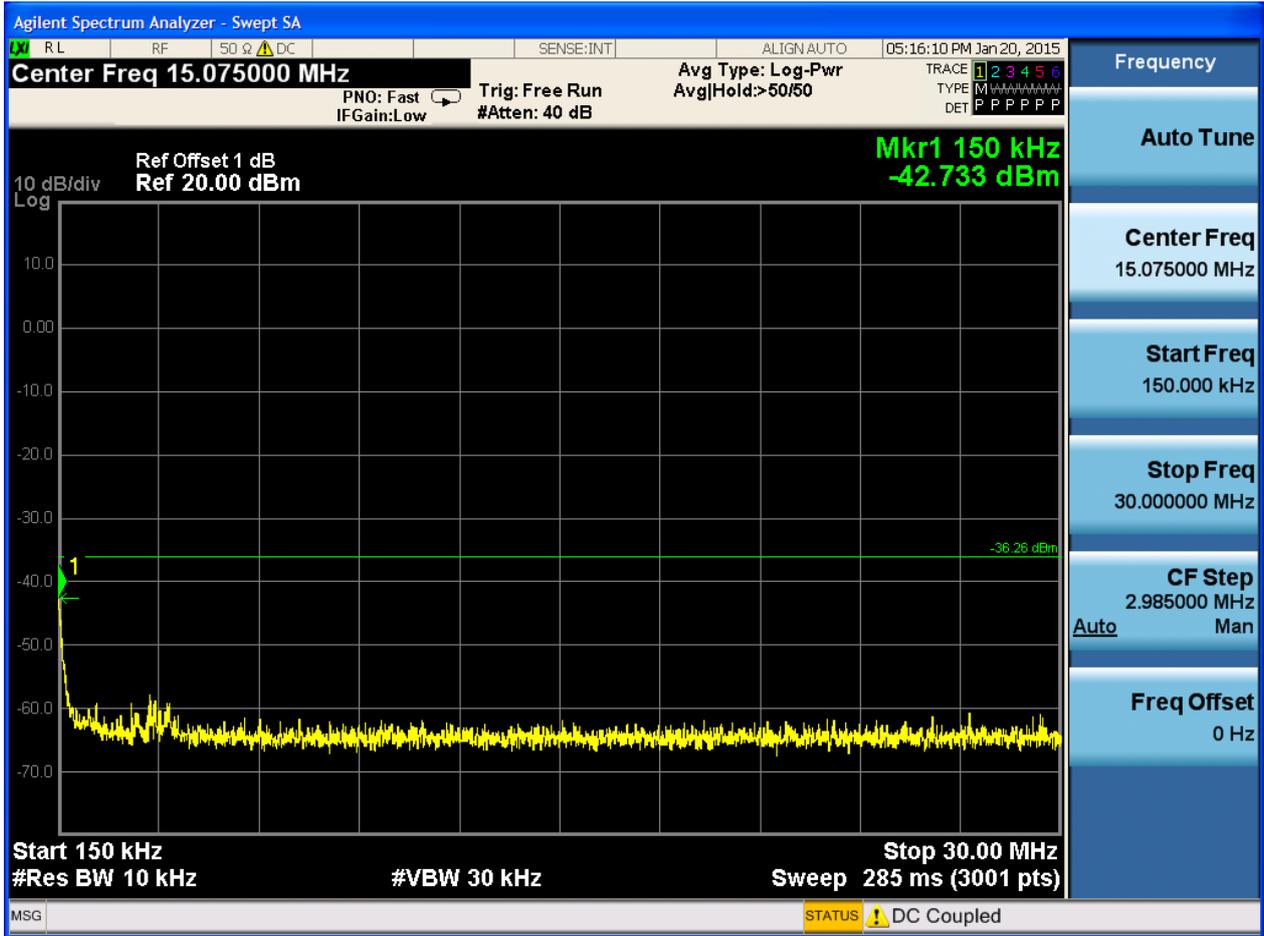
#### 7.1.3.1 Pref:

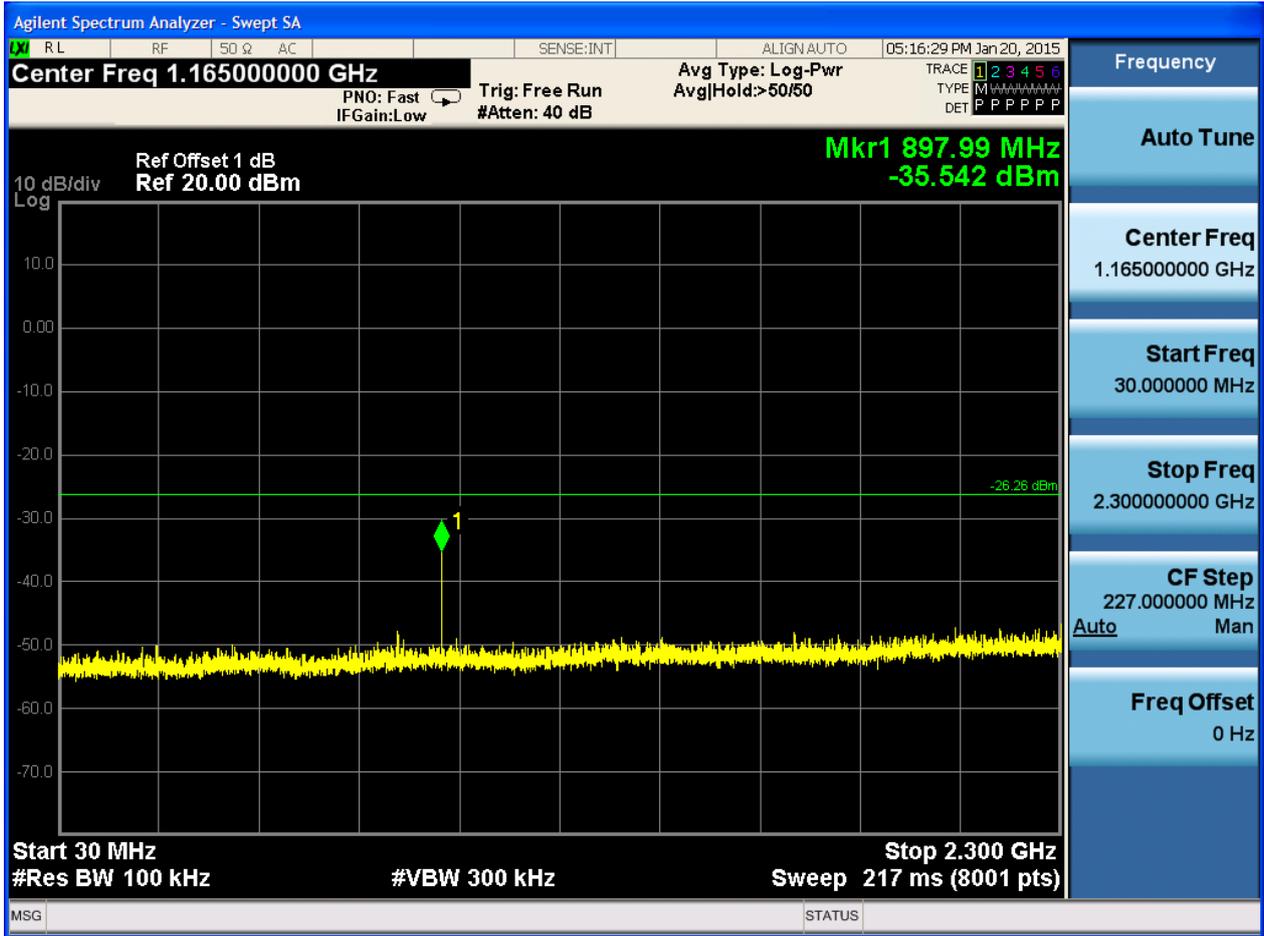


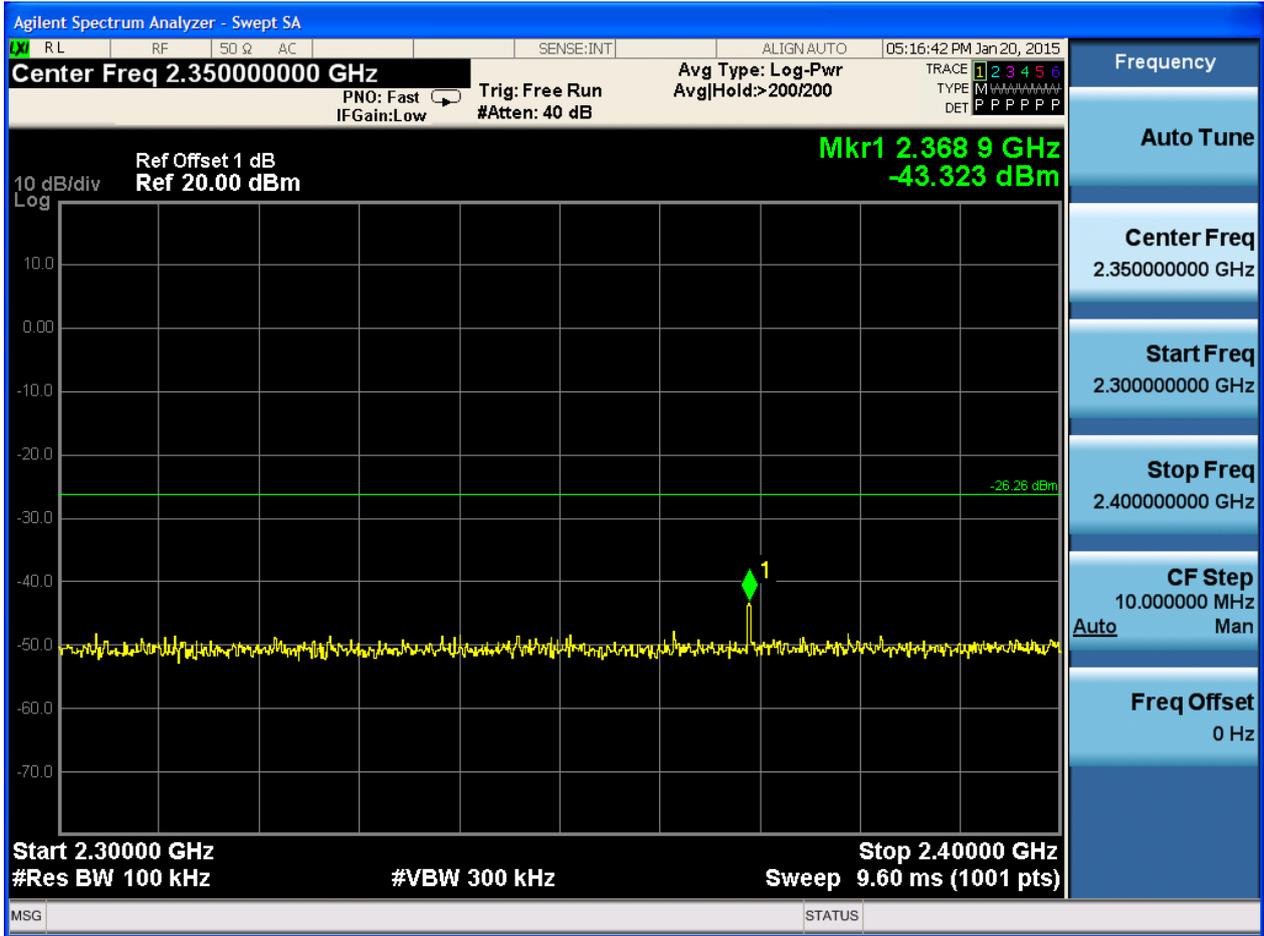


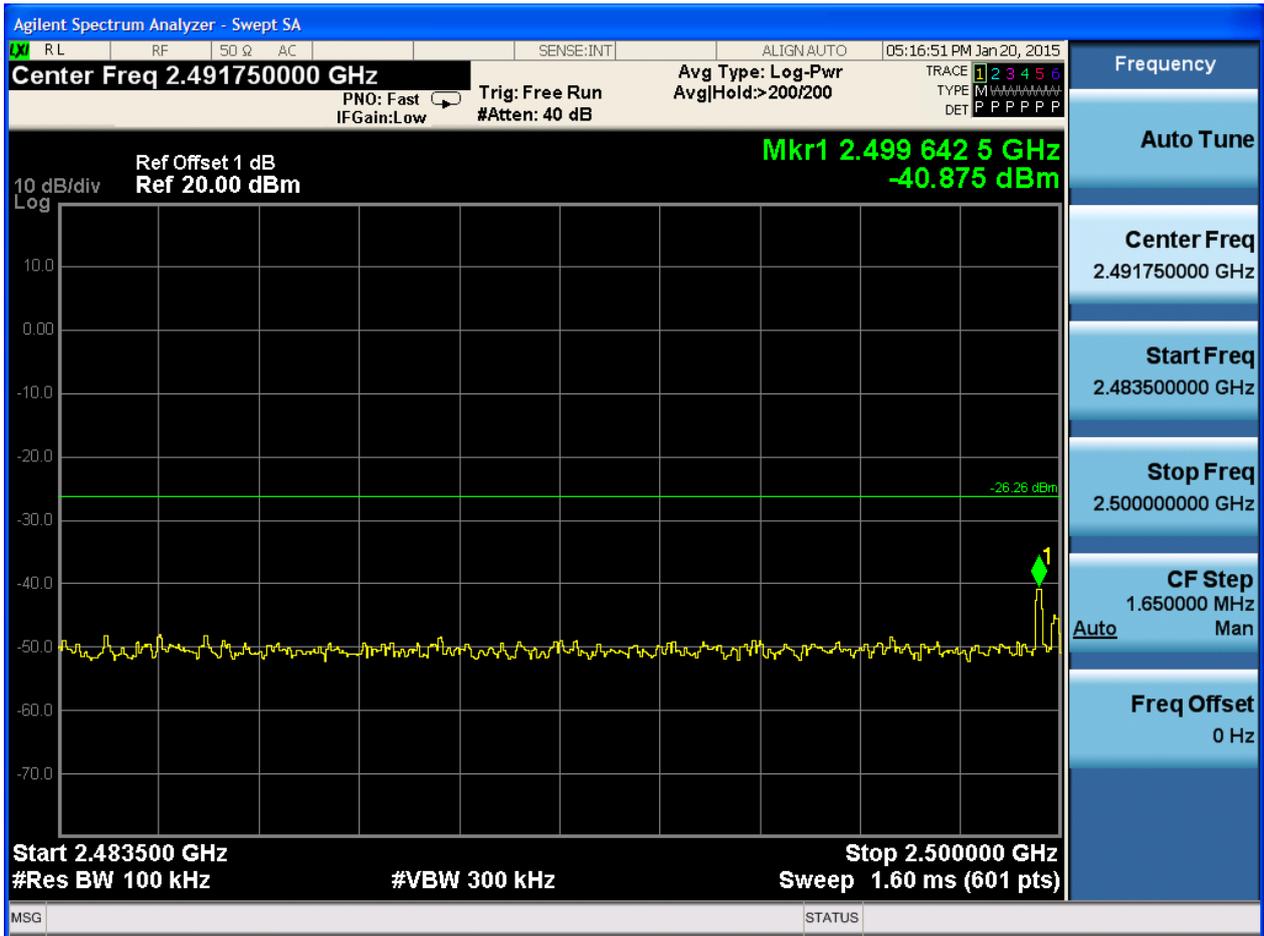
7.1.3.2 Puw:

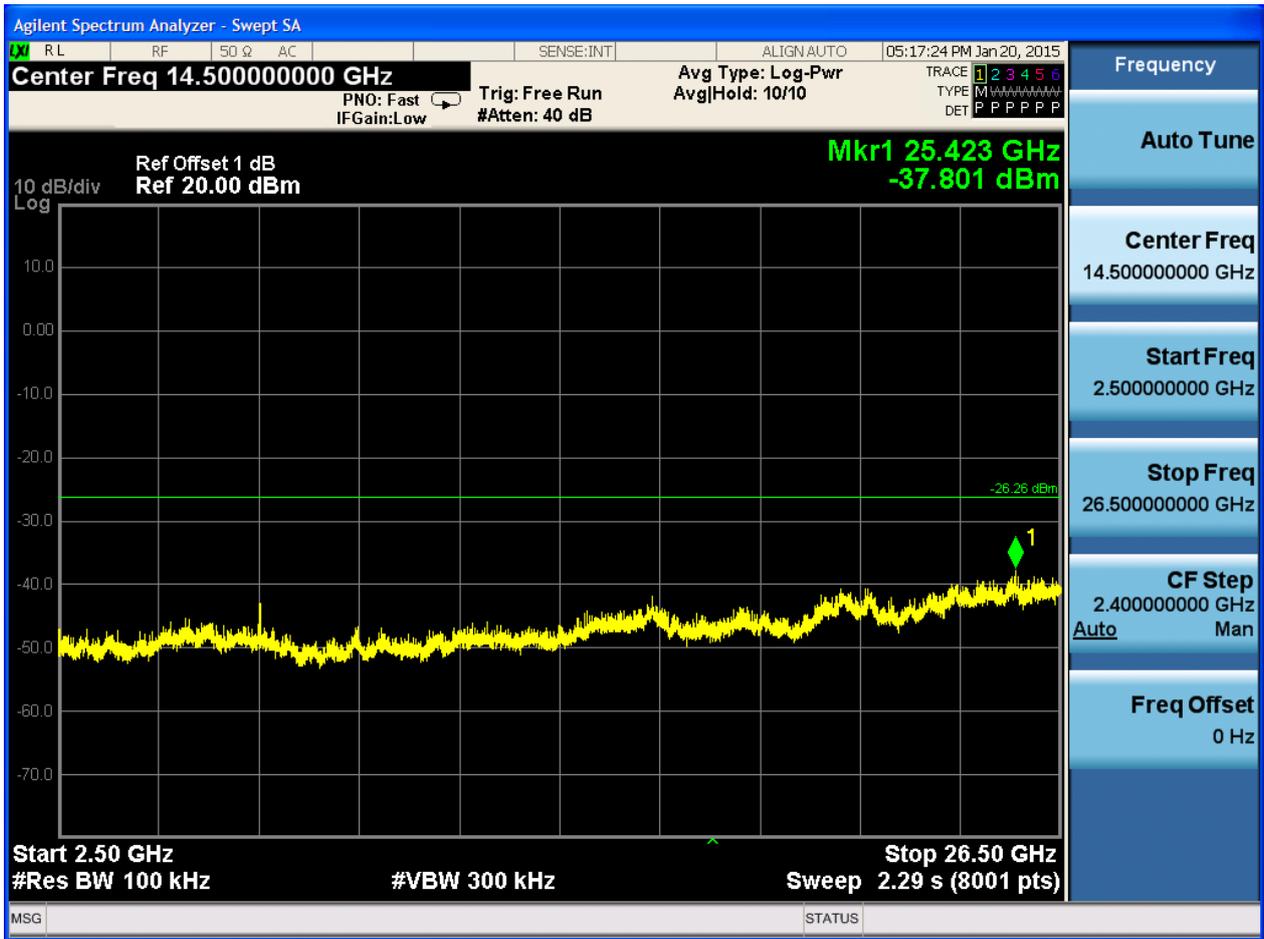














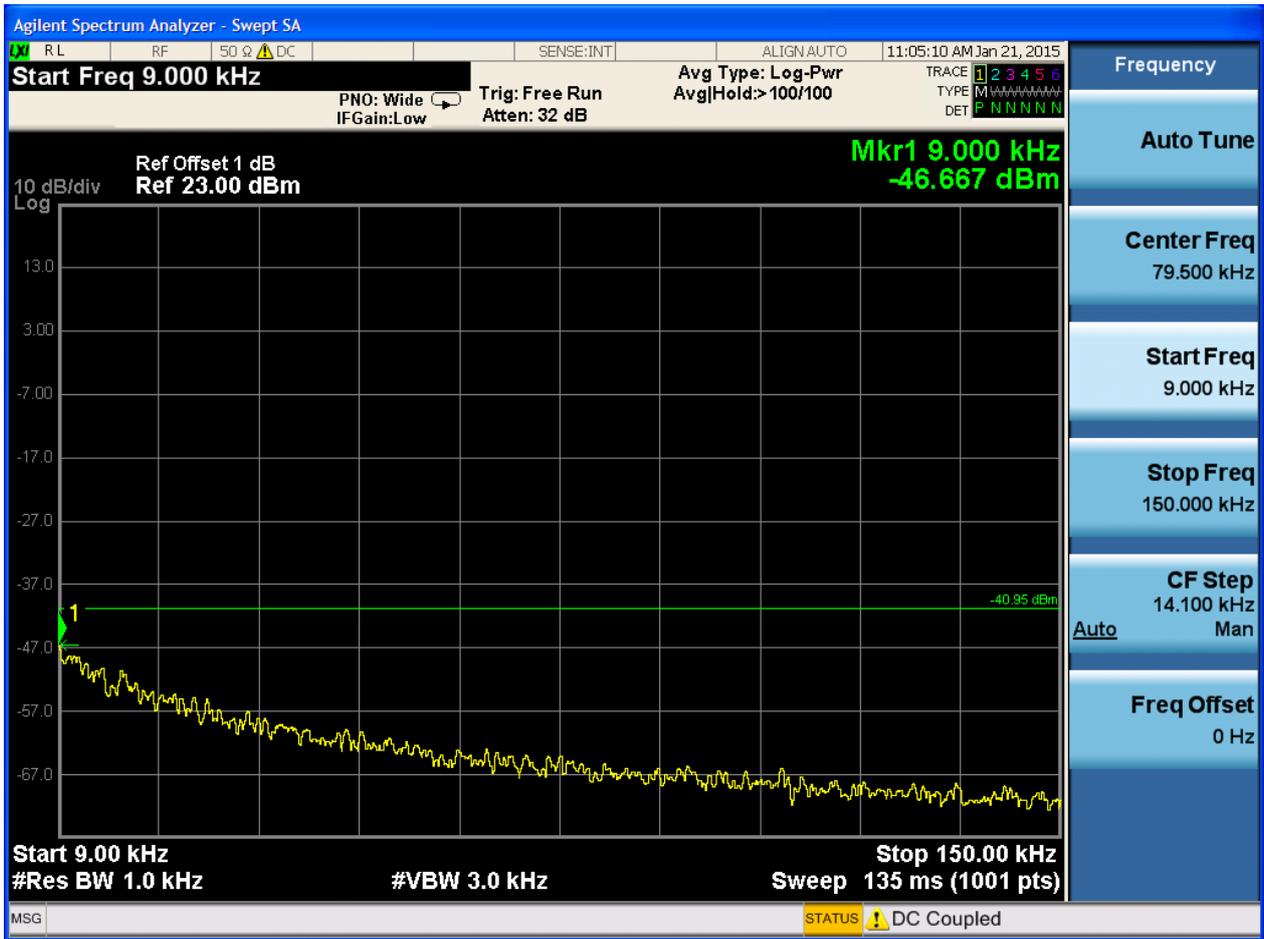
### 7.1.4 TM1\_DH5\_Ch39\_H

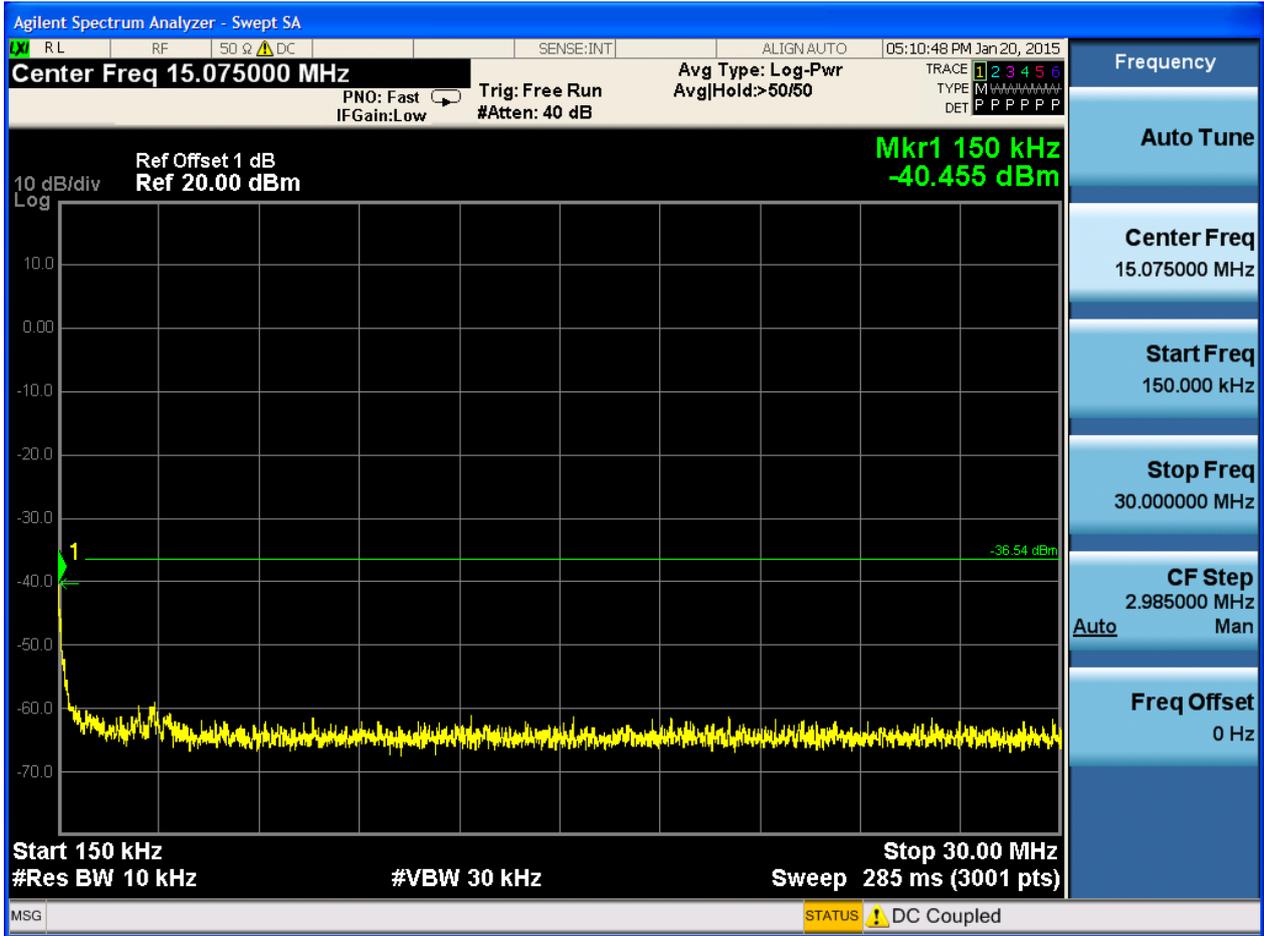
#### 7.1.4.1 Pref:

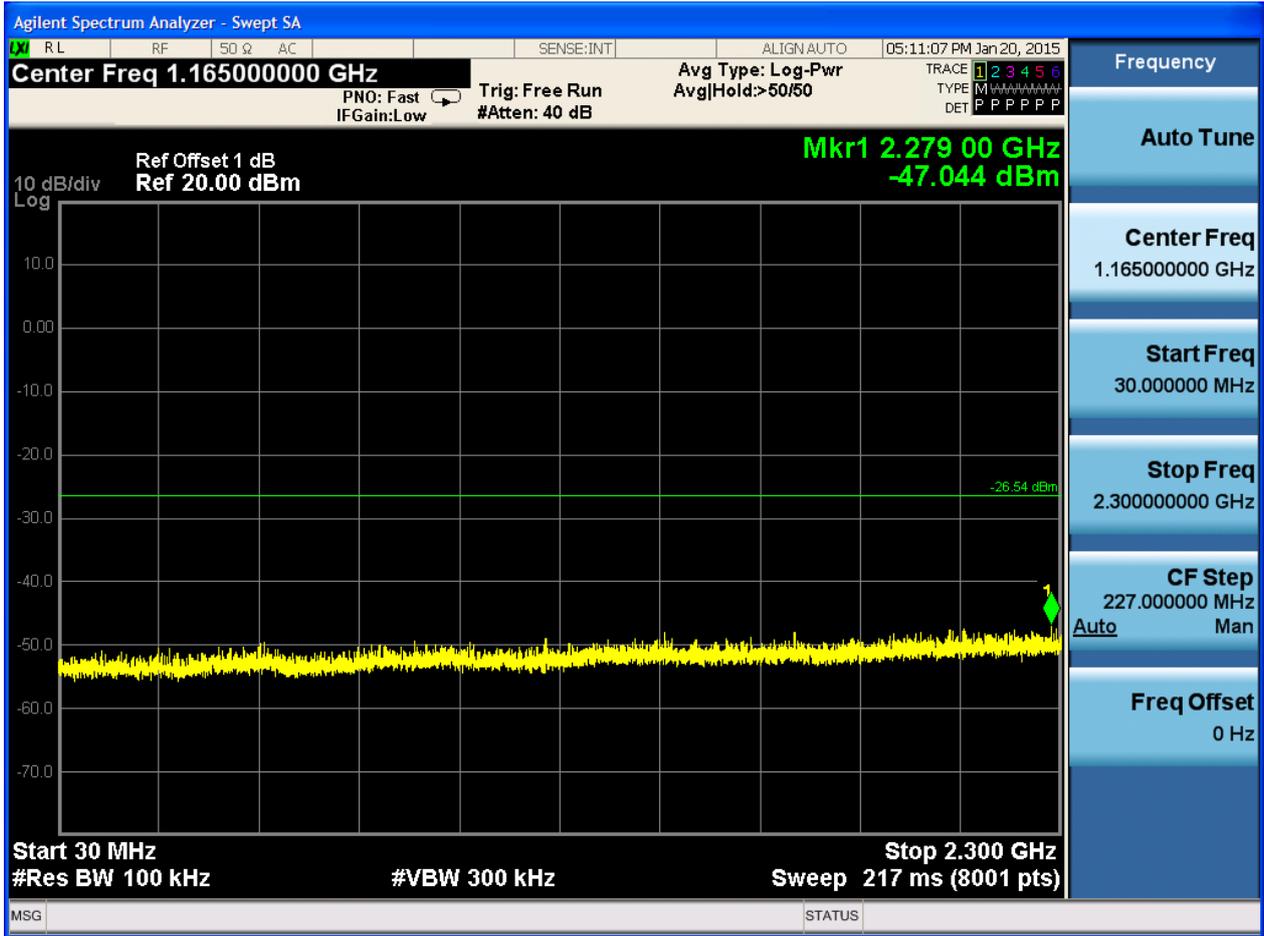


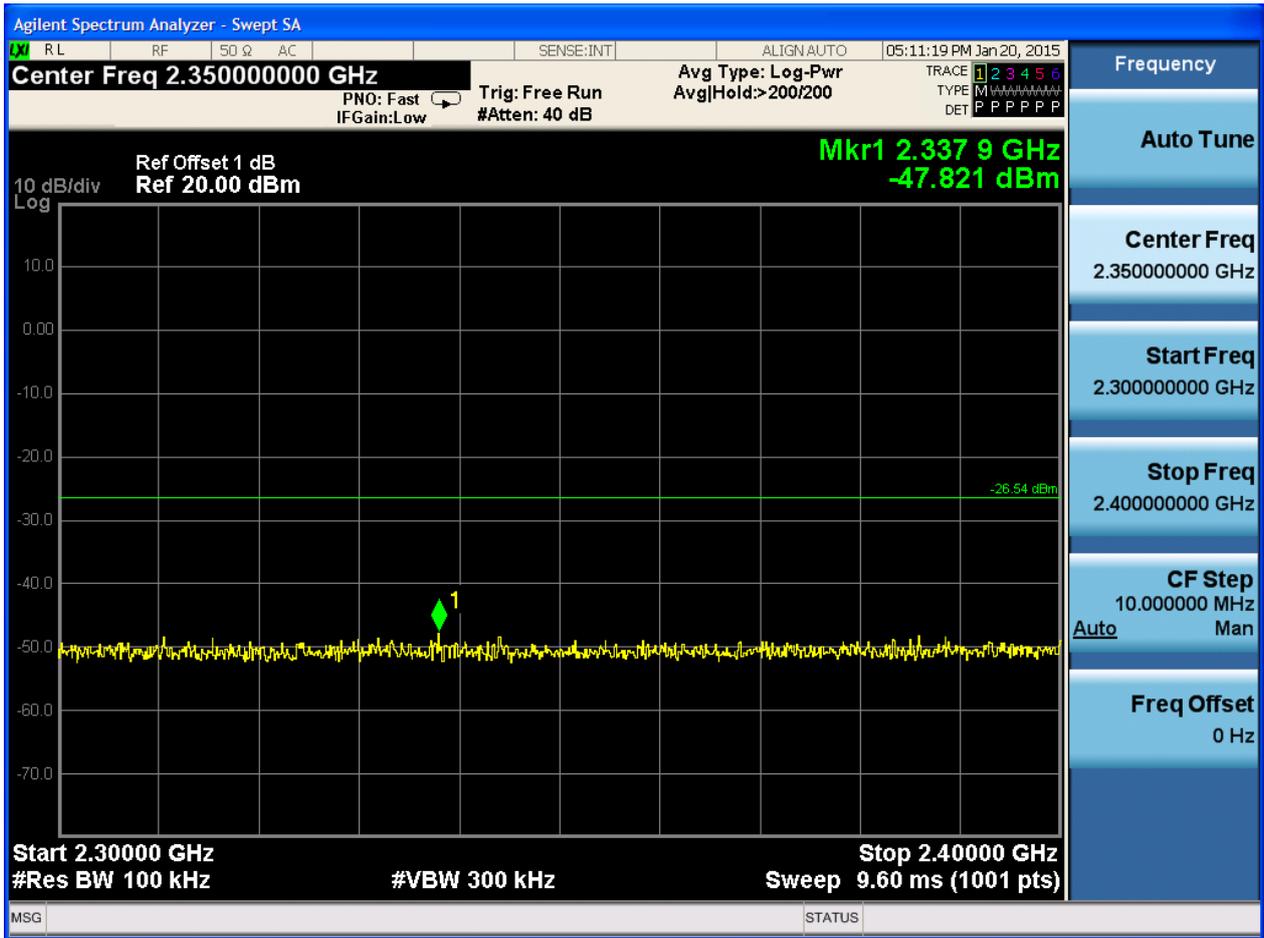


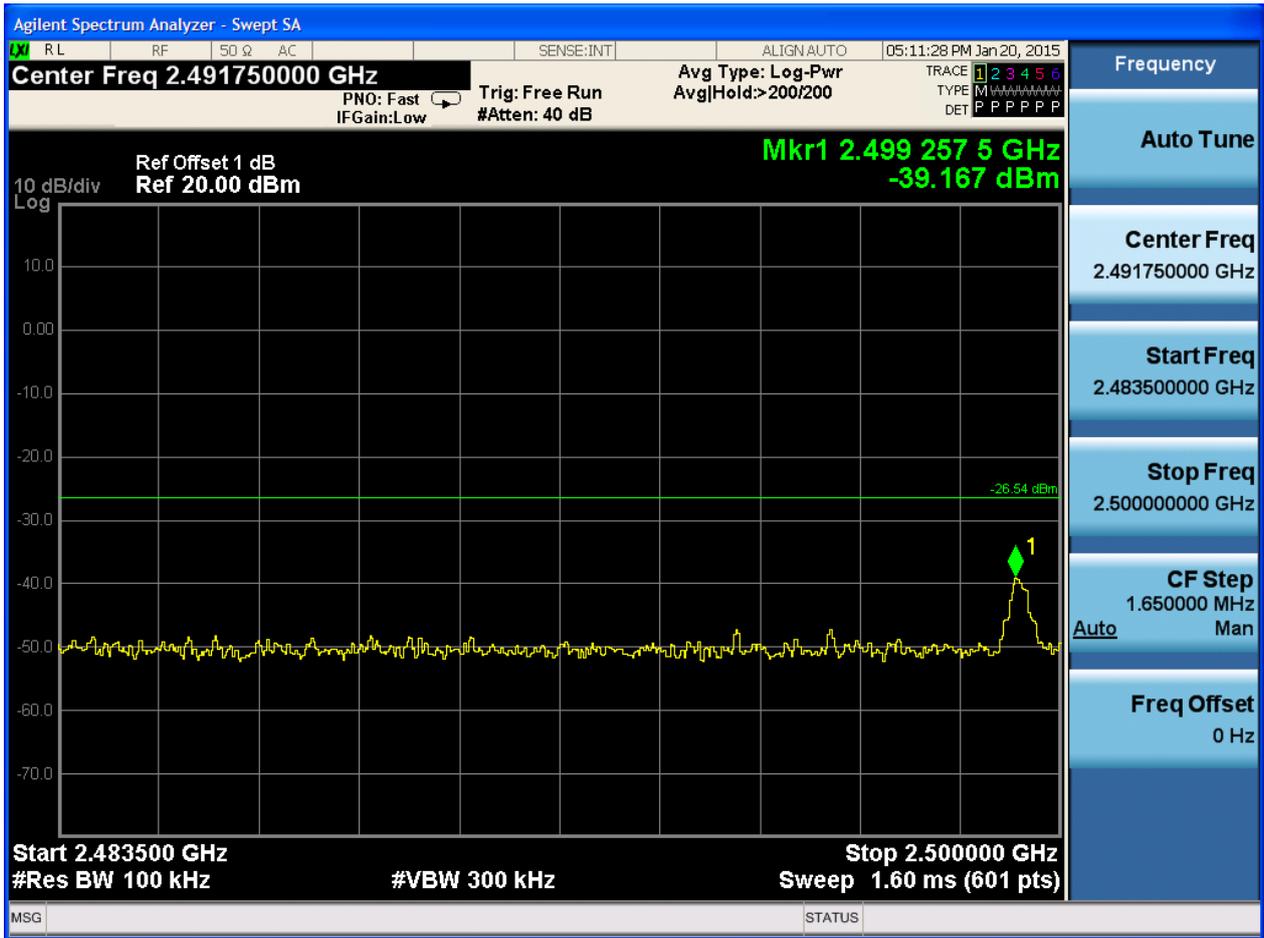
7.1.4.2 Puw:

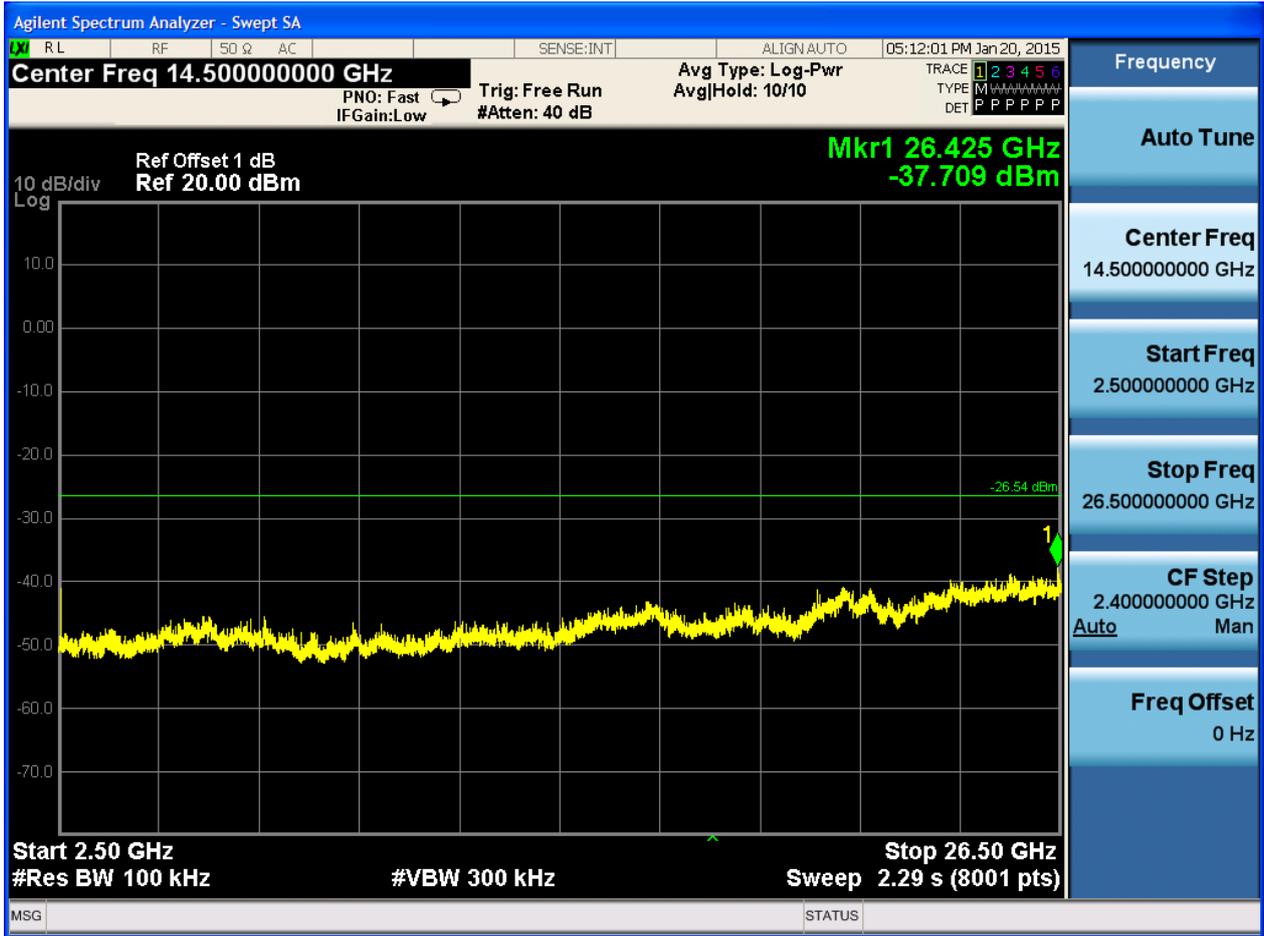












## 8 Appendix H: Radiated Spurious Emission & Spurious in Restricted Band

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

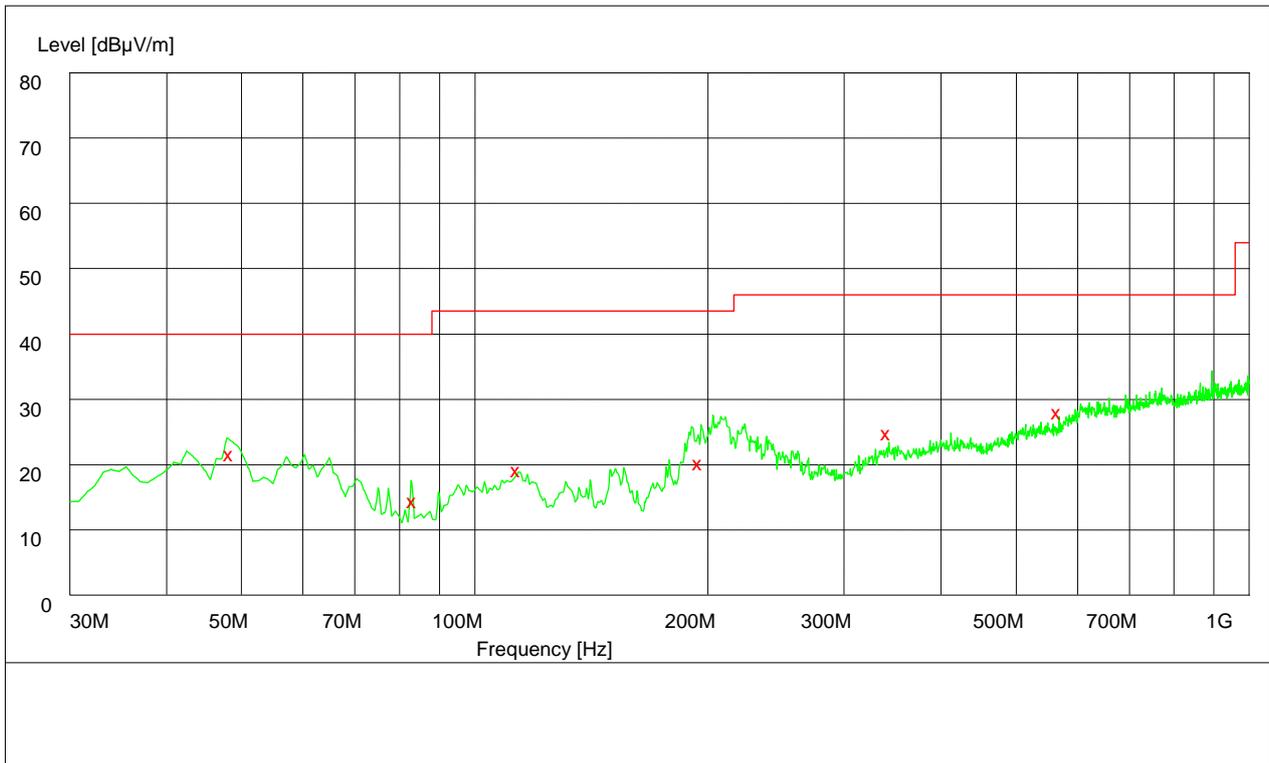
## 8.1 Part 1: Testing Range of “9 KHz to 30 MHz”

NOTE1: No peak found in the Test Range of “9 kHz to 30MHz”

## 8.2 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).



Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Plarization
48.448000	23.10	15.6	40.0	16.9	100.0	0.00	VERTICAL
83.548000	15.90	9.7	40.0	24.1	171.0	360.00	HORIZONTAL
113.684000	20.60	13.9	43.5	22.9	100.0	161.00	VERTICAL
195.164000	21.70	13.9	43.5	21.8	146.0	316.00	HORIZONTAL

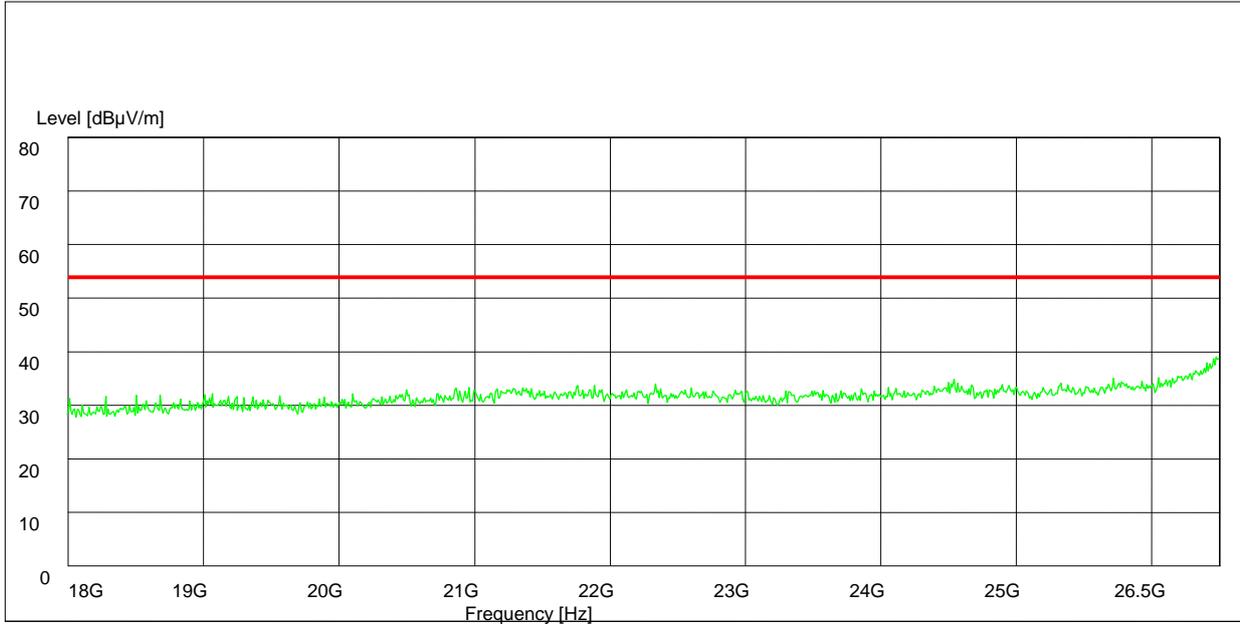


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341.828000	26.30	19.2	46.0	19.7	176.0	360.00	VERTICAL
567.644000	29.50	22.1	46.0	16.5	176.0	53.00	HORIZONTAL

### 8.3 Part 3: Testing Range of “18 GHz to 26.5 GHz”

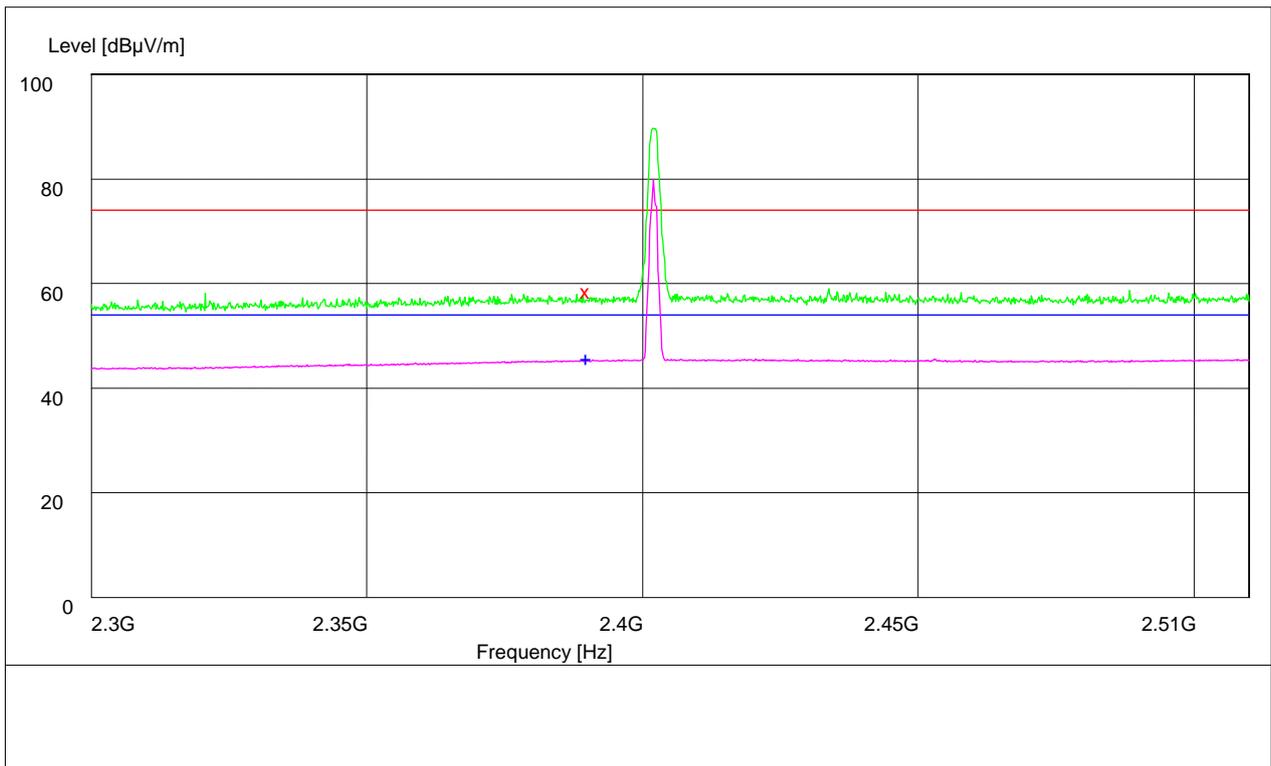
Note: No peak found in pre- test.



### 8.4 Part 4: Testing Range of “2.3GHz to 2.5GHz”

- Note 1: The testing range of “2.3 GHz to 2.5 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.

**8.4.1 Test Mode:**  
**8.4.1.1 Channel 00**



Note: The peak exceeds the limit line is carrier frequency.

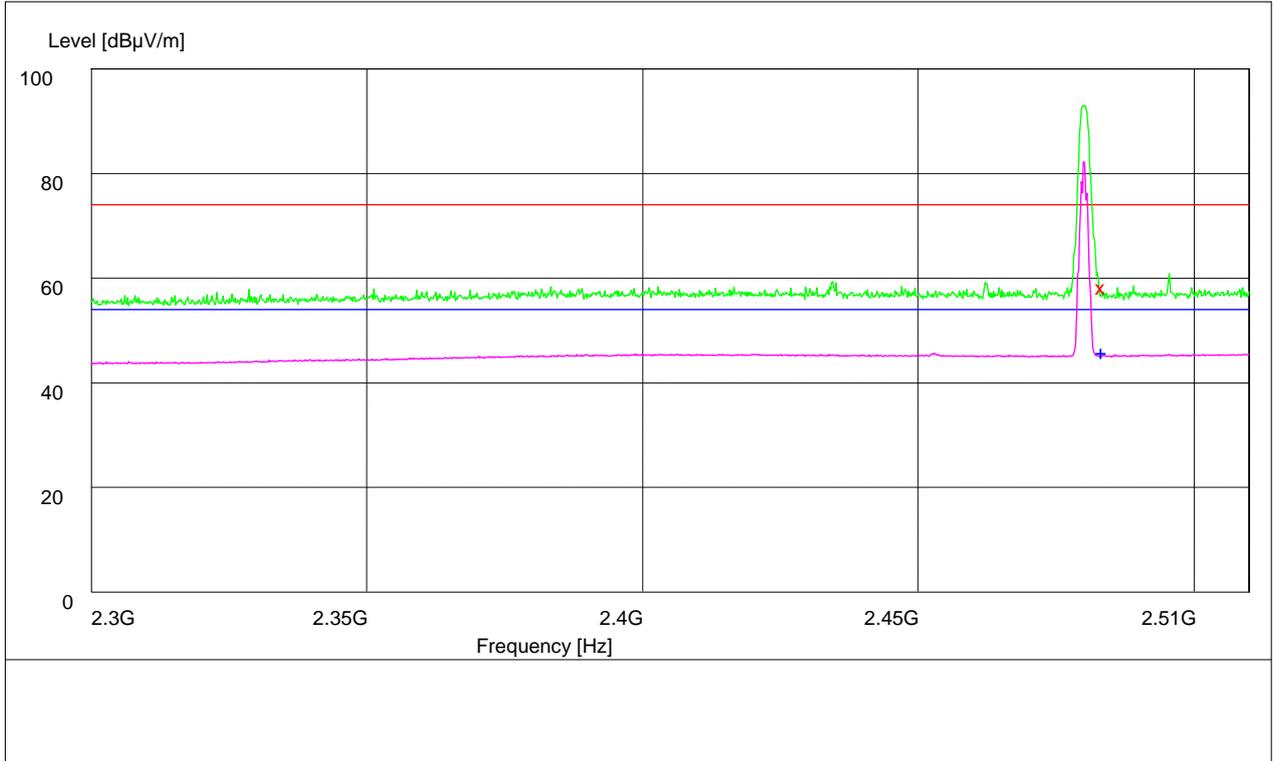
MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dB $\mu$ V/m	Transd dB	Limit dB $\mu$ V/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	60.30	34.8	74.0	13.7	178.0	57.00	HORIZONTAL

MEASUREMENT RESULT: AVDetector

Frequency MHz	Level dB $\mu$ V/m	Transd dB	Limit dB $\mu$ V/m	Margin dB	Height cm	Azimuth deg	Polarization
2390.000000	47.60	34.8	54.0	6.4	195.0	143.00	HORIZONTAL

#### 8.4.1.2 Channel 39



Note: The peak exceeds the limit line is carrier frequency.

MEASUREMENT RESULT: PK Detector

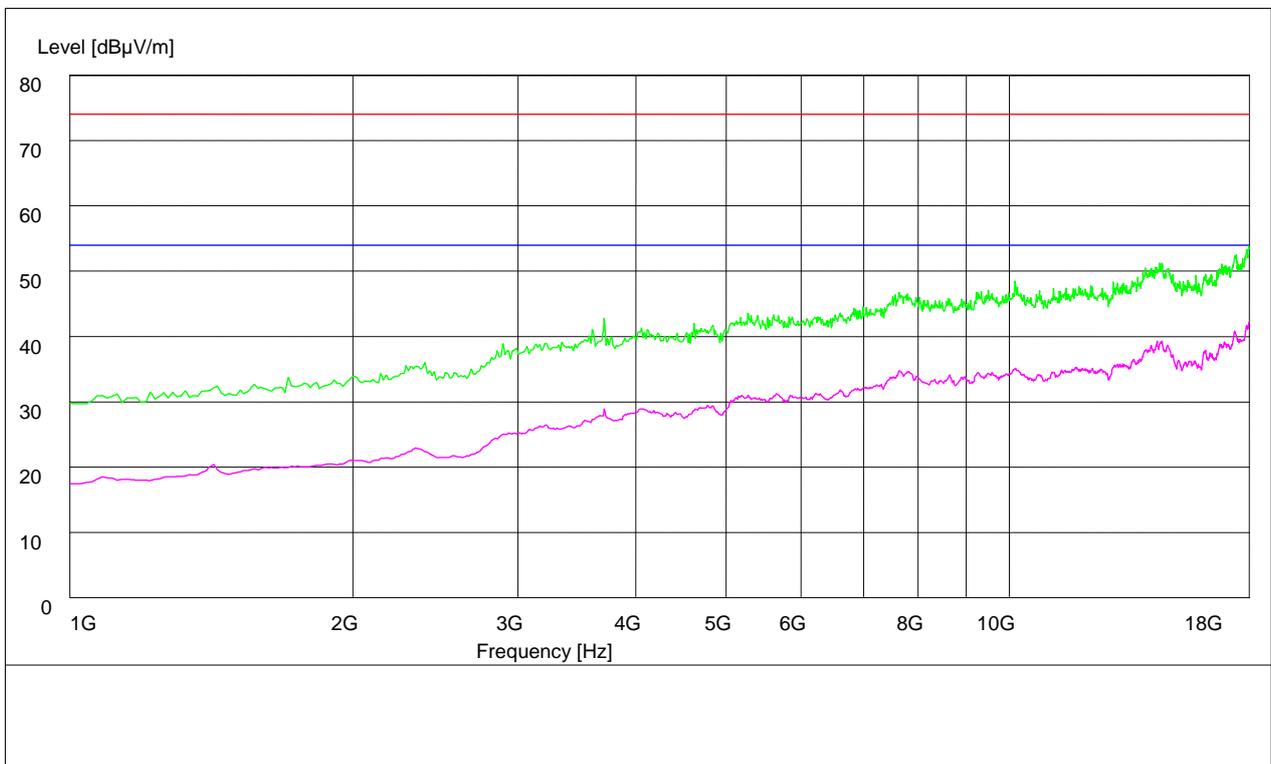
Frequency MHz	Level dB $\mu$ V/m	Transd dB	Limit dB $\mu$ V/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	59.90	35.1	74.0	14.1	164.0	102.00	VERTICAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dB $\mu$ V/m	Transd dB	Limit dB $\mu$ V/m	Margin dB	Height cm	Azimuth deg	Polarization
2483.500000	47.60	35.1	54.0	6.4	191.0	304.00	HORIZONTAL

## 8.5 Part 5: Testing Range of “1 GHz to 18 GHz”

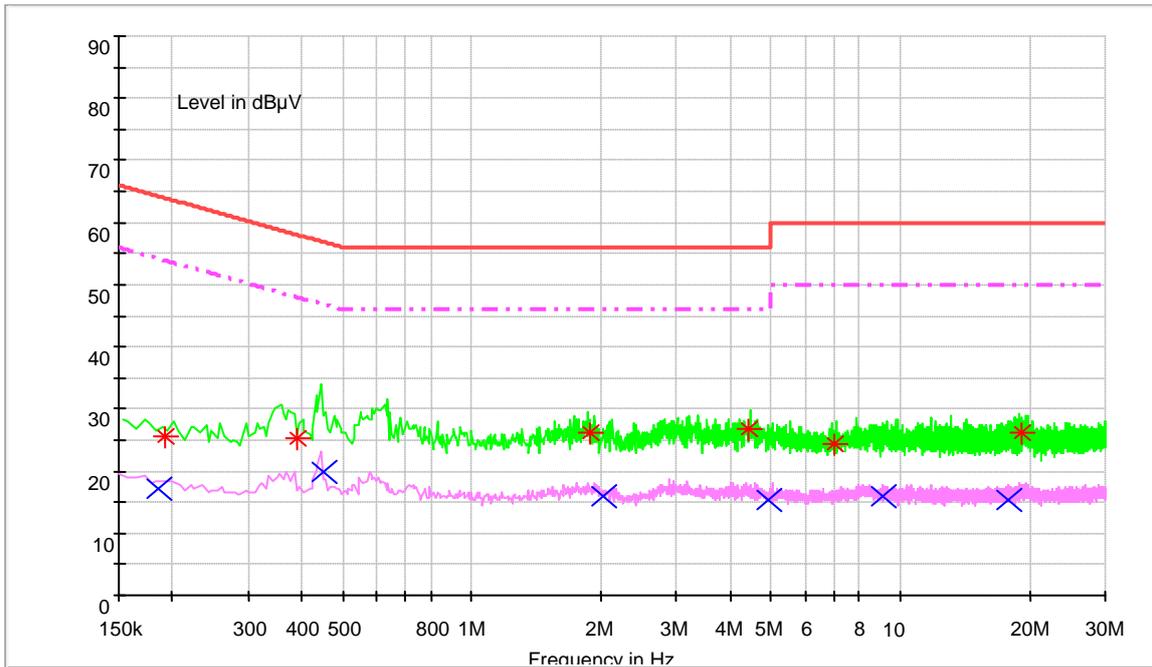
- Note 1: The test results and plot for testing range of “1 GHz to 18 GHz” showed as below is the WORST case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.
- Note 2: The testing range of “1 GHz to 18 GHz” is for checking radiated emissions located 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).



# 9 Appendix I: Conducted Emission at Power Port

Note: RBW =9 kHz, VBW = 30 kHz

## Channel 19



### MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.192348	25.5	9.7	63.9	38.4	N	FLO
0.391062	25.2	9.7	58	32.8	N	FLO
1.895786	26.2	9.7	56	29.8	N	FLO
4.415951	26.6	9.8	56	29.4	L1	FLO
7.03728	24.5	9.9	60	35.5	L1	FLO
19.04284	26.2	10.1	60	33.8	N	FLO

### MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.18523	17	9.7	54.2	37.2	N	FLO



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0.448572	19.9	9.7	46.9	27	N	FLO
2.024295	15.9	9.7	46	30.1	N	FLO
4.938046	15.3	9.8	46	30.7	L1	FLO
9.081952	15.9	9.9	50	34.1	N	FLO
17.78778	15.4	10.1	50	34.6	L1	FLO

Note: Level= Reading level+ Transd (cable loss + correction factor).The reading level is used to calculate by software which is not shown in the sheet.

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END