



## Appendix for Test report



# Appendix A: 20dB Emission Bandwidth (EBW)



## 1 Result Table

EUT Conf.	EBW [MHz]	Limit[MHz]	Verdict
TM1_DH5_Ch0	0.95	---	Pass
TM1_DH5_Ch39	0.94	---	Pass
TM1_DH5_Ch78	0.94	---	Pass
TM2_2DH5_Ch0	1.31	---	Pass
TM2_2DH5_Ch39	1.32	---	Pass
TM2_2DH5_Ch78	1.31	---	Pass
TM3_3DH5_Ch0	1.31	---	Pass
TM3_3DH5_Ch39	1.32	---	Pass
TM3_3DH5_Ch78	1.31	---	Pass

## 2 Test Plot

### 2.1 TM1\_DH5\_Ch0





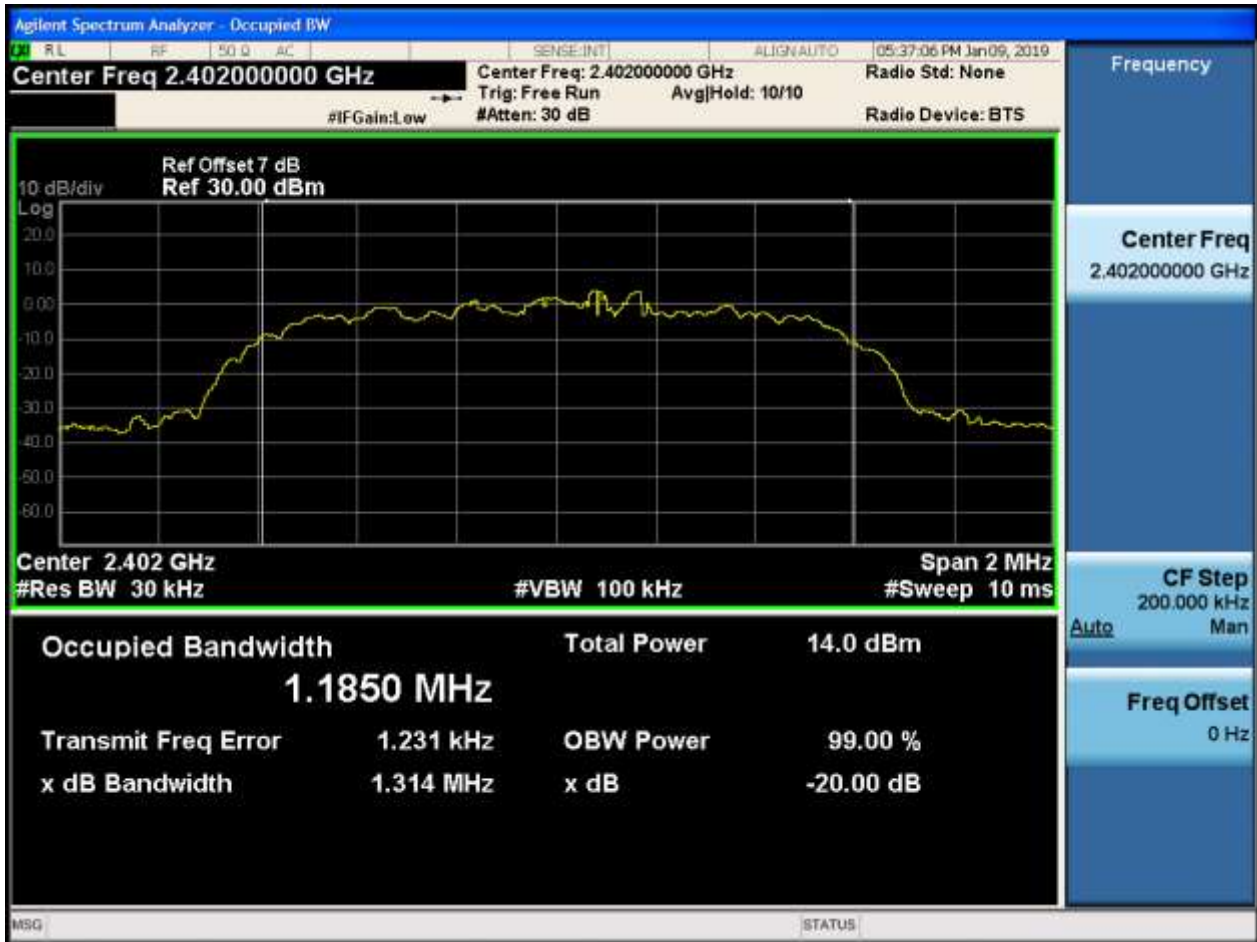
### 2.2 TM1\_DH5\_Ch39



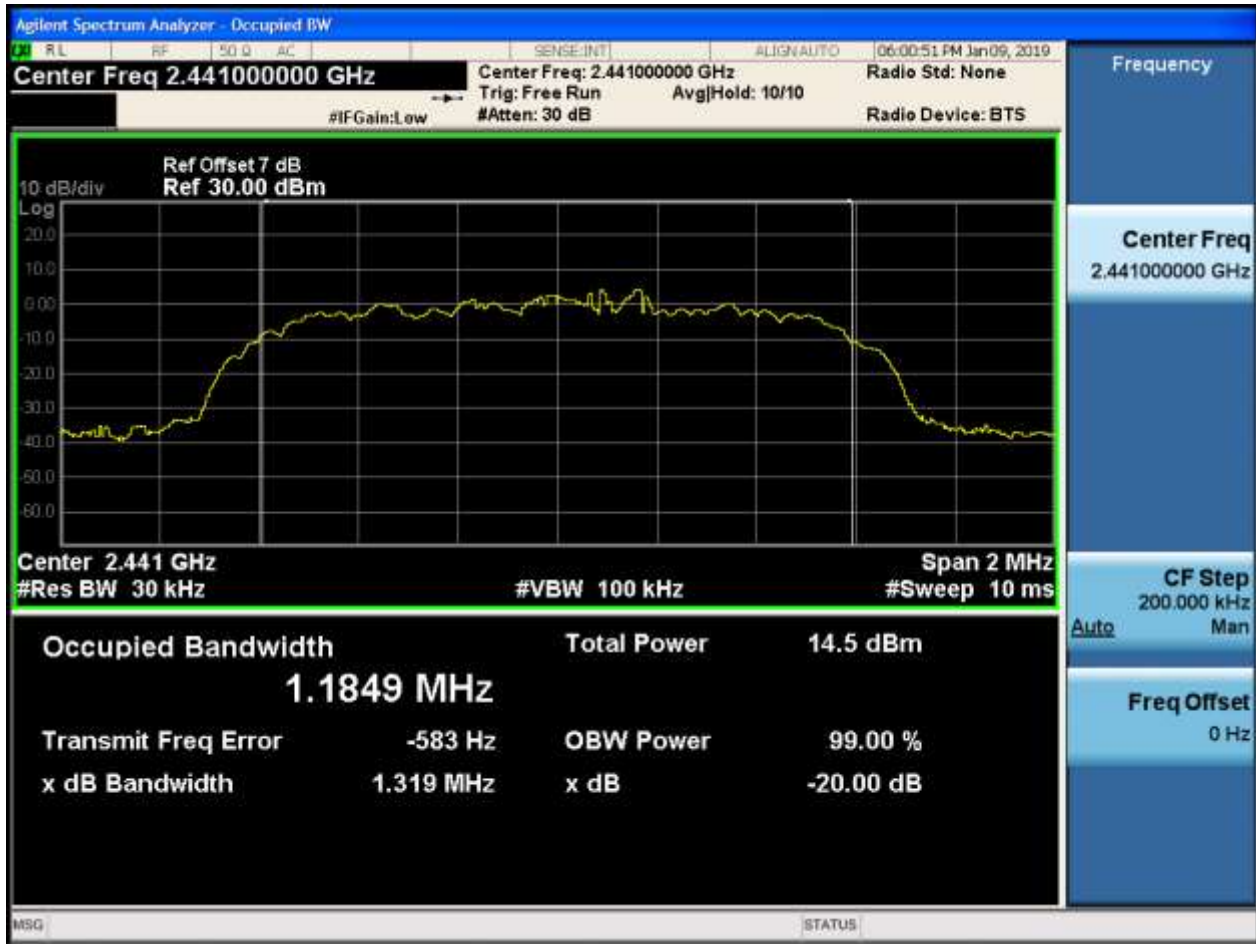
### 2.3 TM1\_DH5\_Ch78



2.4 TM2\_2DH5\_Ch0



### 2.5 TM2\_2DH5\_Ch39





## 2.6 TM2\_2DH5\_Ch78

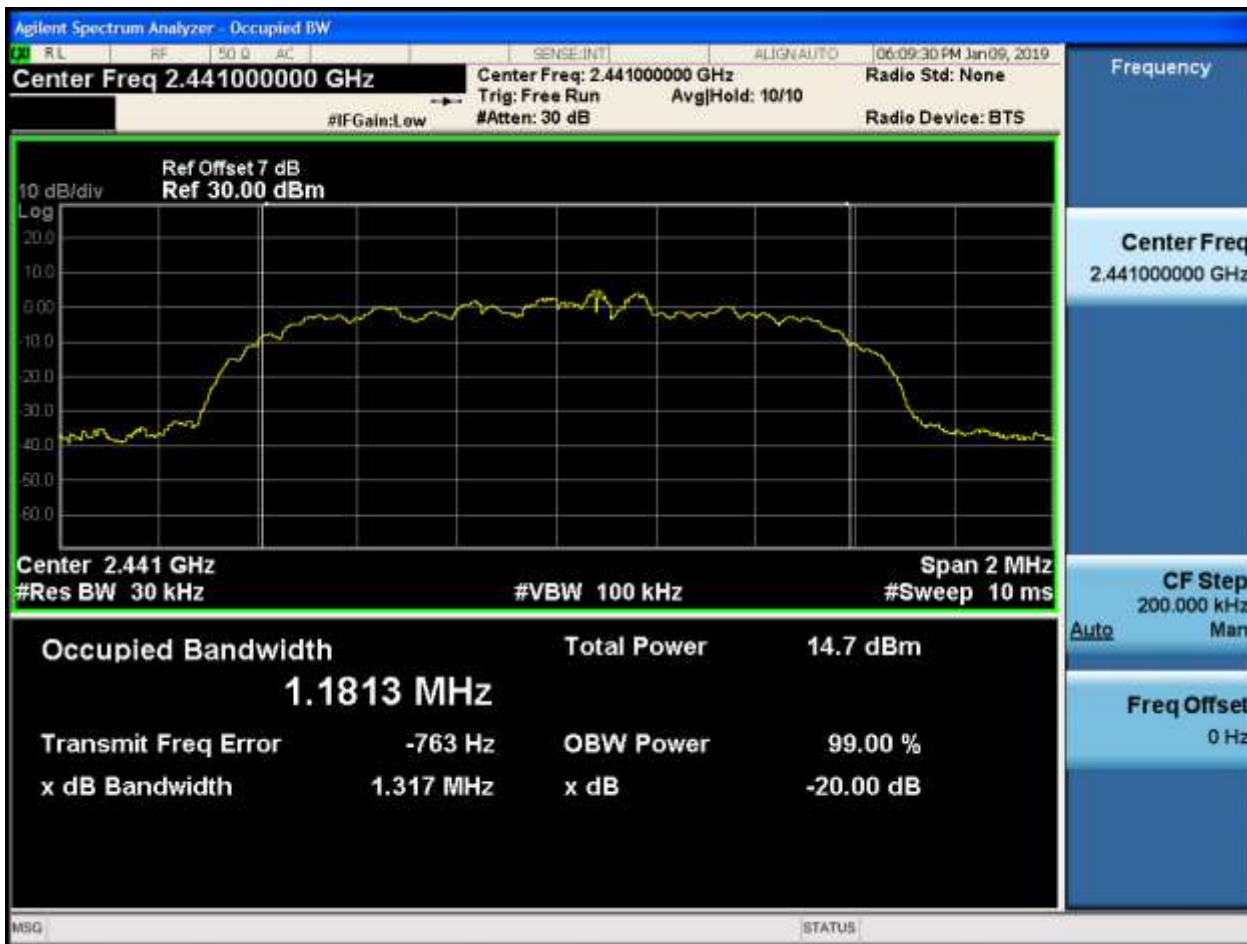


### 2.7 TM3\_3DH5\_Ch0





### 2.8 TM3\_3DH5\_Ch39



### 2.9 TM3\_3DH5\_Ch78





# Appendix B: Carrier Frequency Separation

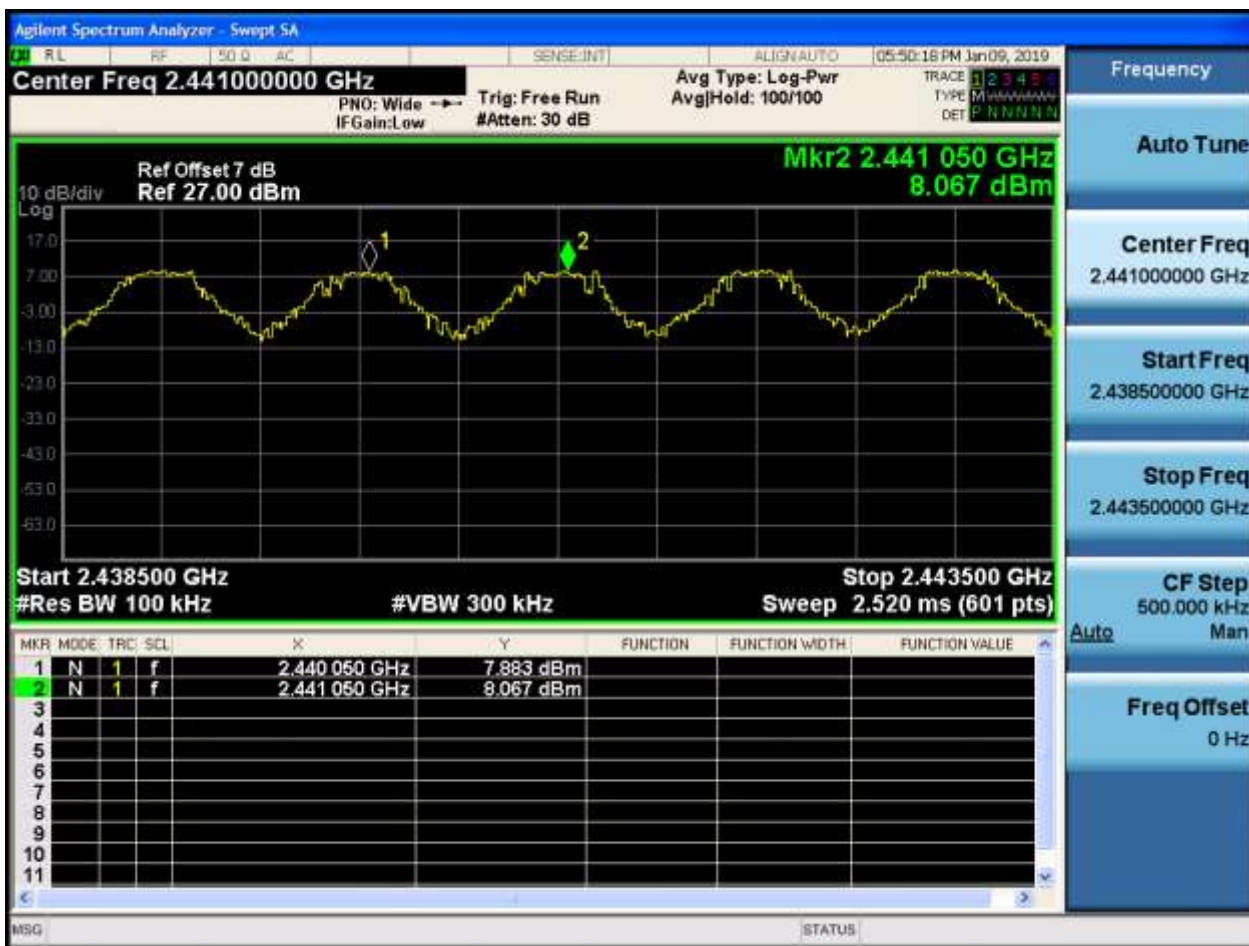


### 3 Result Table

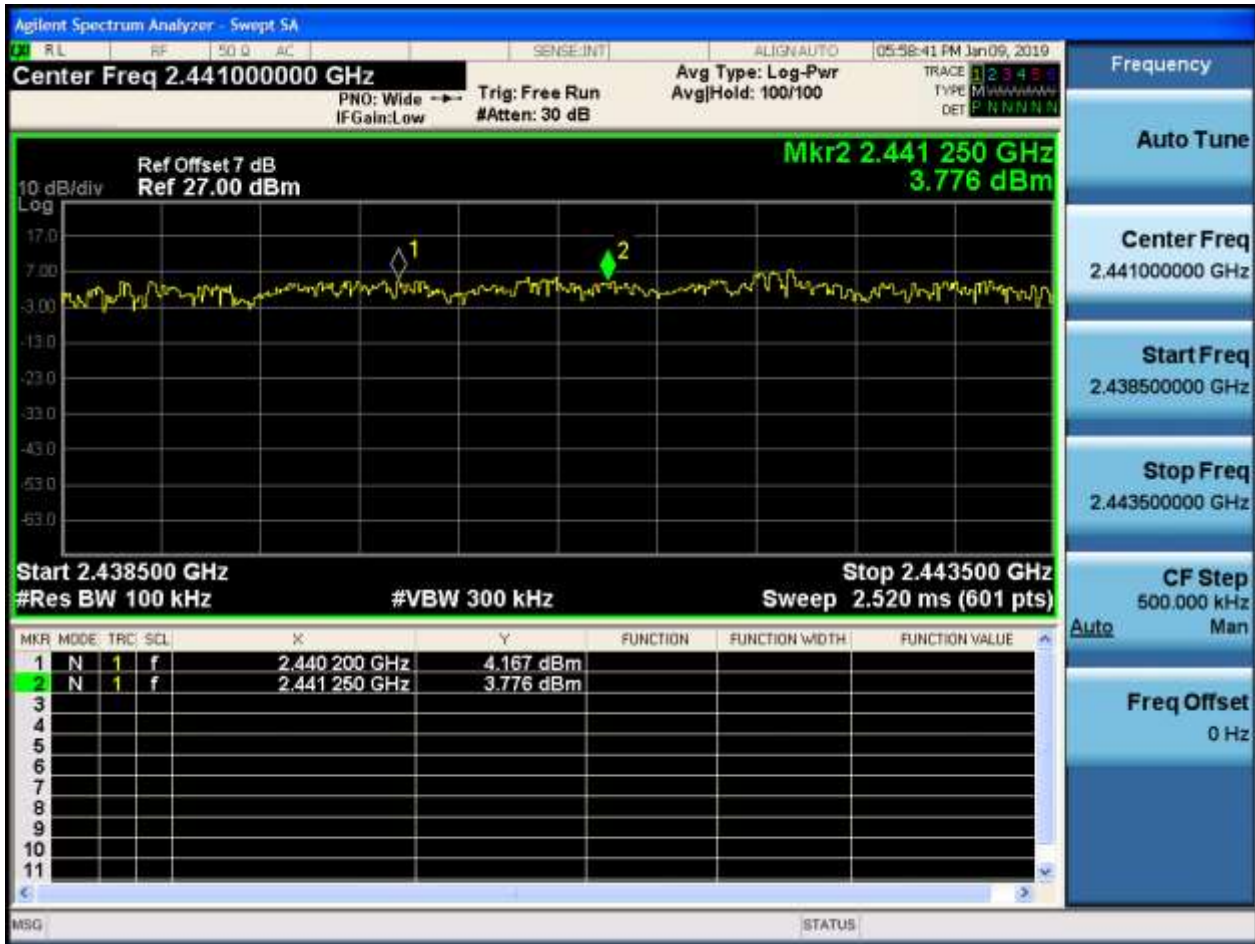
EUT Conf.	Carrier Frequency Separation [MHz]	Limit[MHz]	Verdict
TM1_DH5_Hop	1	$\geq 0.633$	Pass
TM2_2DH5_Hop	1.05	$\geq 0.880$	Pass
TM3_3DH5_Hop	1.2	$\geq 0.880$	Pass

## 4 Test Plot

### 4.1 TM1\_DH5\_Hop

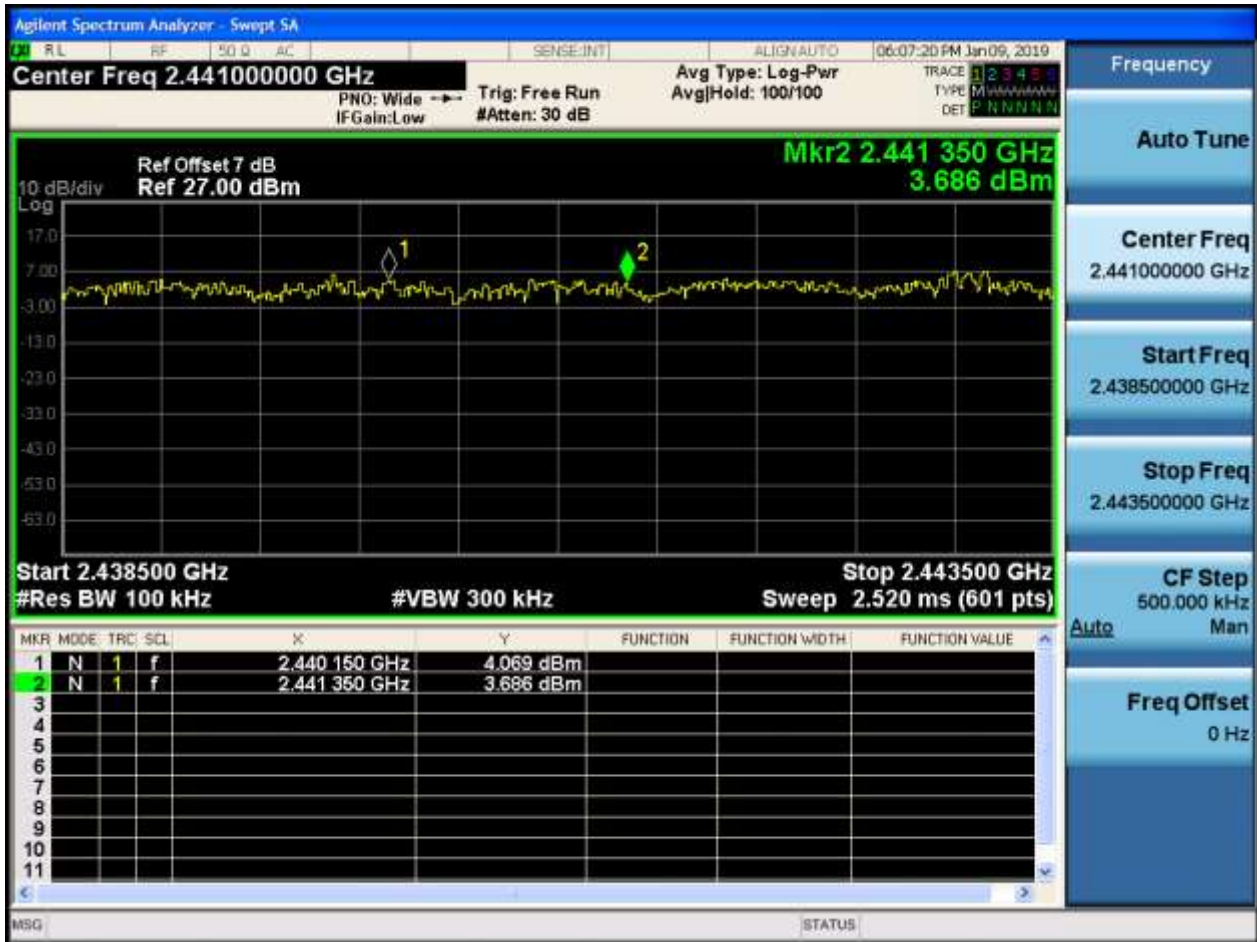


### 4.2 TM2\_2DH5\_Hop





### 4.3 TM3\_3DH5\_Hop





# Appendix C: Number of Hopping Channel



## 5 Result Table

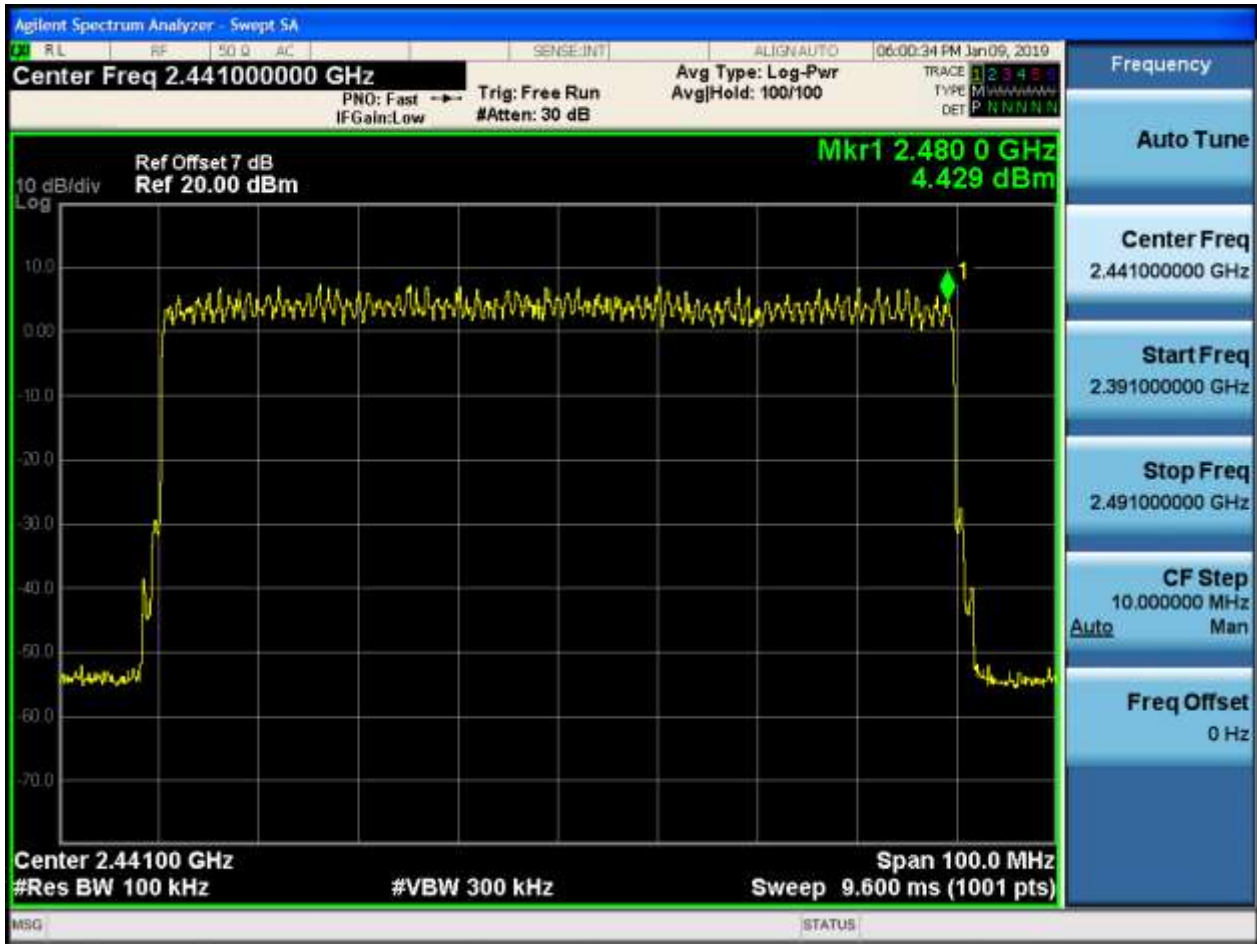
EUT Conf.	Number of Hopping Channel	Limit	Verdict
TM1_DH5_Hop	79	$\geq 15$	Pass
TM2_2DH5_Hop	79	$\geq 15$	Pass
TM3_3DH5_Hop	79	$\geq 15$	Pass

## 6 Test Plot

### 6.1 TM1\_DH5\_Hop



### 6.2 TM2\_2DH5\_Hop



### 6.3 TM3\_3DH5\_Hop





# Appendix D: Time of Occupancy (Dwell Time)

## 7 Result Table

The Dwell Time = Burst Width \* Total Hops. The detailed calculations are showed as follows:

- The duration for dwell time calculation:  $0.4 \text{ [s]} * \text{hopping number} = 0.4 \text{ [s]} * 79 \text{ [ch]} = 31.6 \text{ [s*ch]}$ ;
- The burst width [ms/hop/ch], which is directly measured, refers to the duration on one channel hop.
- The hops per second for all channels: The selected EUT Conf uses a slot type of 5-Tx&1-Rx and a hopping rate of 1600 [ch\*hop/s] for all channels. So the final hopping rate for all channels is  $1600 / 6 = 266.67 \text{ [ch*hop/s]}$ ;
- The hops per second on one channel:  $266.67 \text{ [ch*hop/s]} / 79 \text{ [ch]} = 3.38 \text{ [hop/s]}$ ;
- The total hops for all channels within the dwell time calculation duration:  $3.38 \text{ [hop/s]} * 31.6 \text{ [s*ch]} = 106.67 \text{ [hop*ch]}$ ;
- The dwell time for all channels hopping:  $106.67 \text{ [hop*ch]} * \text{Burst Width [ms/hop/ch]}$ .

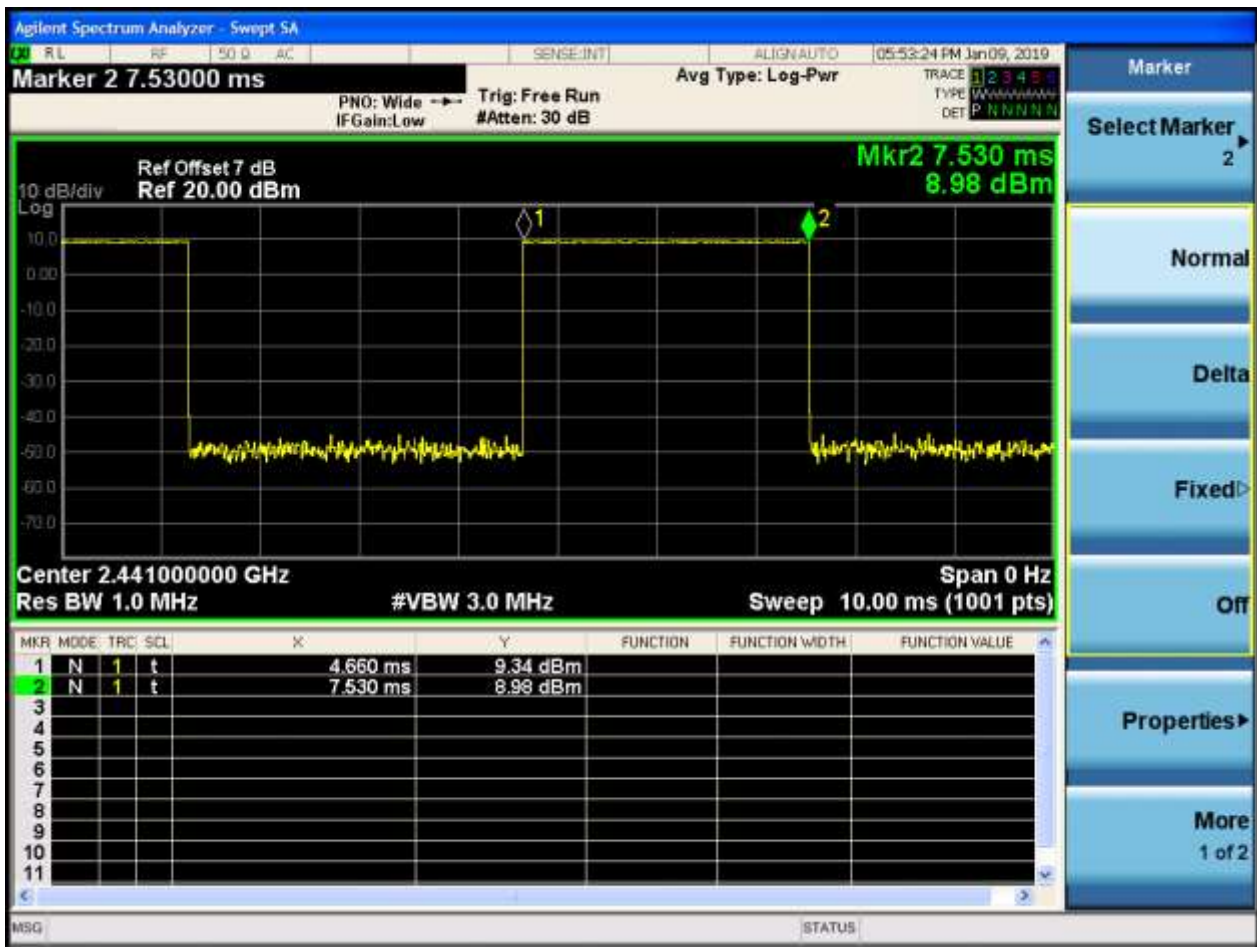
EUT Conf.	Burst Width [s/hop/ch]	Total Hops [hop*ch]	Dwell Time [ms]	Verdict
TM1_DH5_Ch39	0.0029	106.67	0.309	Pass
TM2_2DH5_Ch39	0.0029	106.67	0.309	Pass
TM3_3DH5_Ch39	0.0029	106.67	0.309	Pass



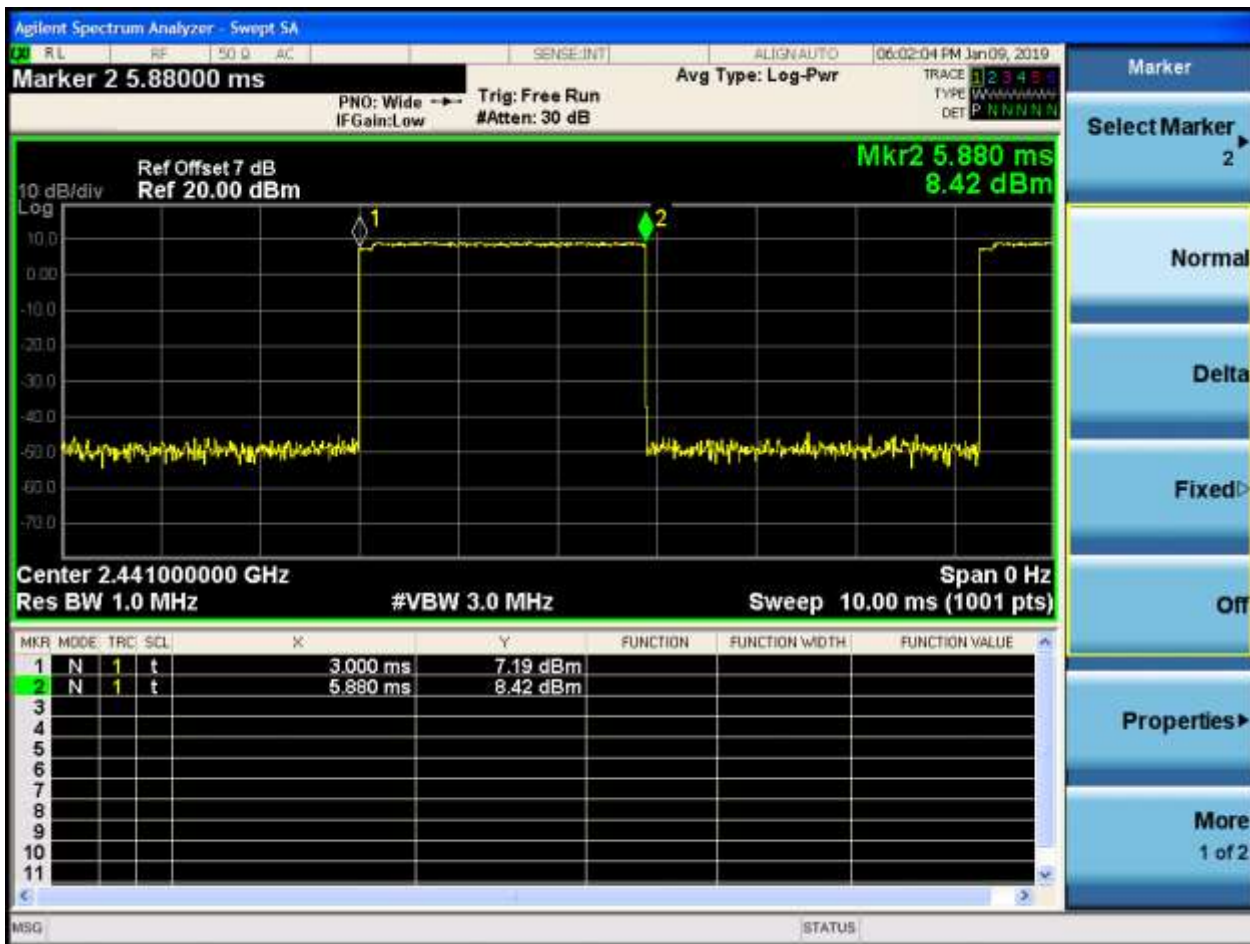
## 8 Test Plot

NOTE: The test plots are only for Burst Width measurements.

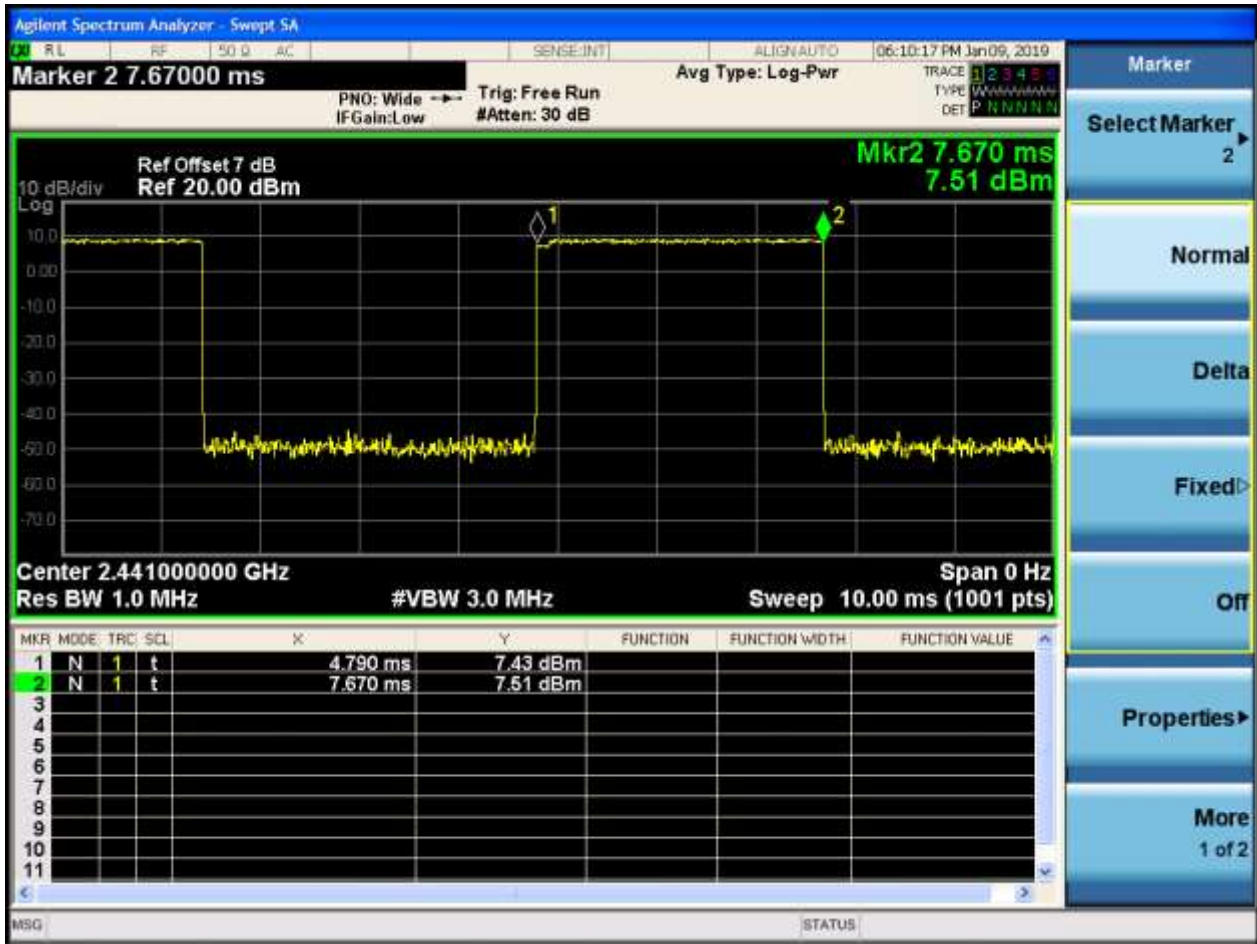
### 8.1 TM1\_DH5\_Ch39



### 8.2 TM2\_2DH5\_Ch39



### 8.3 TM3\_3DH5\_Ch39





# Appendix E: Maximum Peak Conducted Output Power

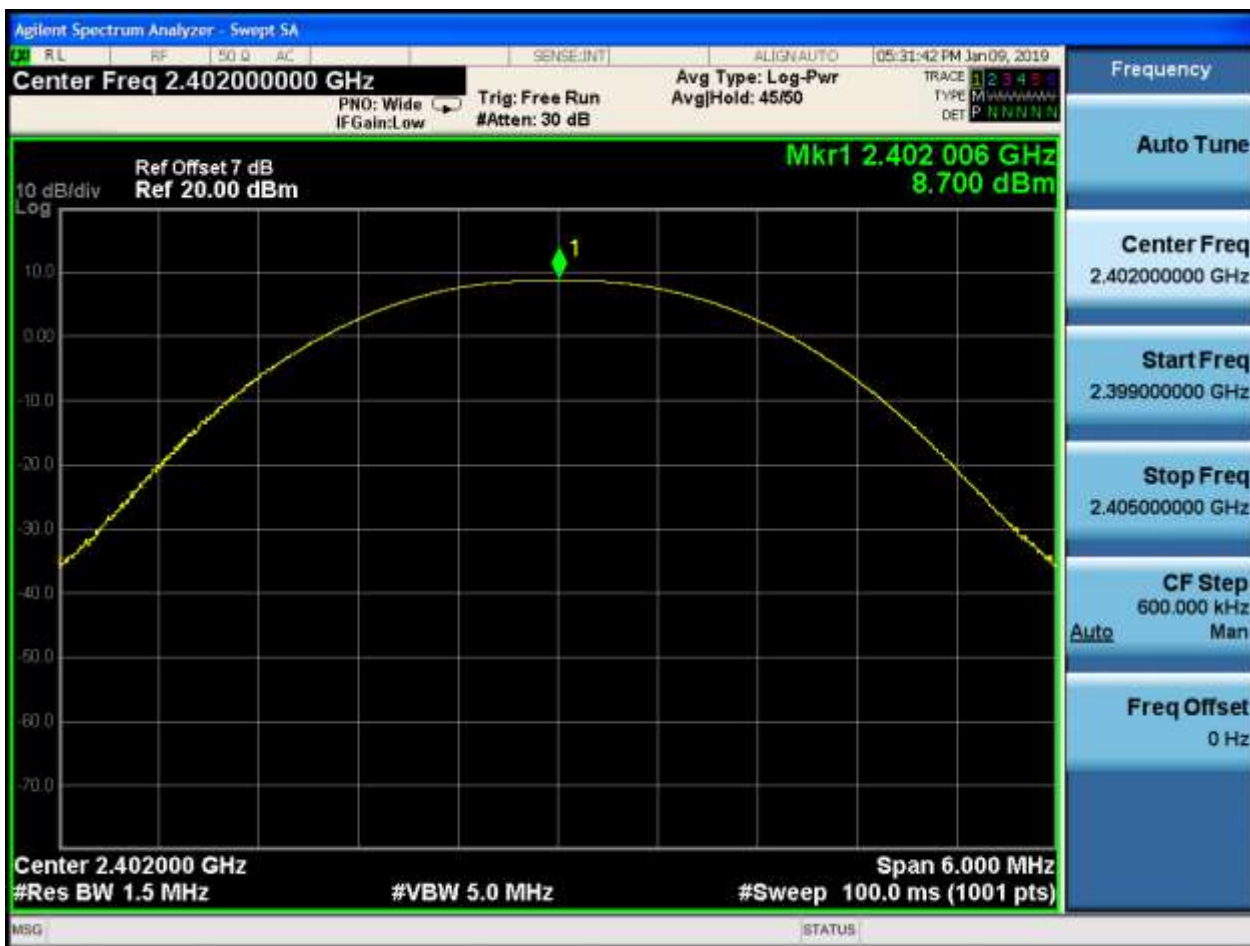


## 9 Result Table

EUT Conf.	Max. Peak Power [dBm]	Limit[dBm]	Verdict
TM1_DH5_Ch0	8.7	20.97	Pass
TM1_DH5_Ch39	9.416	20.97	Pass
TM1_DH5_Ch78	8.063	20.97	Pass
TM2_2DH5_Ch0	8.981	20.97	Pass
TM2_2DH5_Ch39	9.752	20.97	Pass
TM2_2DH5_Ch78	8.311	20.97	Pass
TM3_3DH5_Ch0	8.995	20.97	Pass
TM3_3DH5_Ch39	9.791	20.97	Pass
TM3_3DH5_Ch78	8.319	20.97	Pass

### 10 Test Plot

#### 10.1 TM1\_DH5\_Ch0



10.2TM1\_DH5\_Ch39



10.3TM1\_DH5\_Ch78



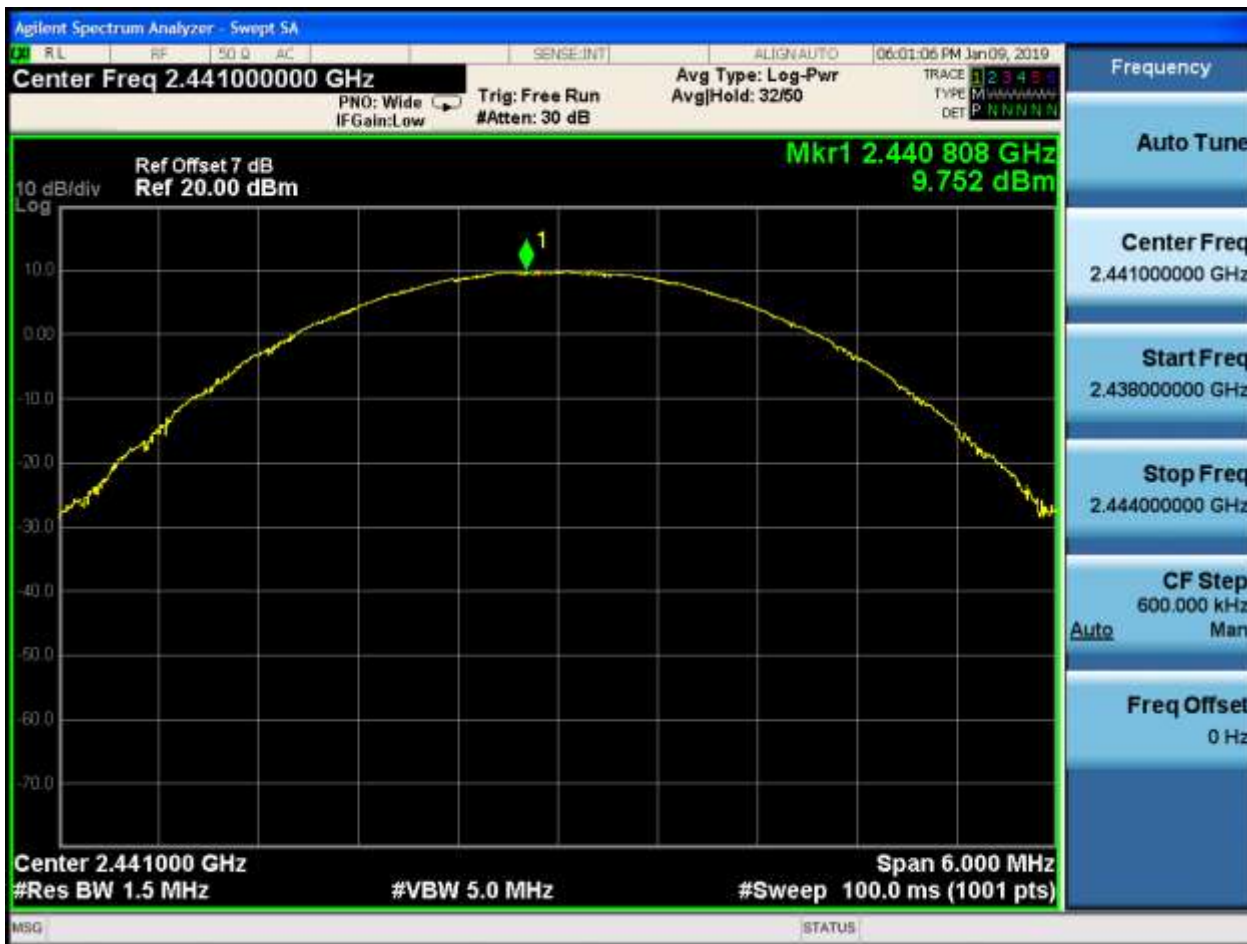


10.4TM2\_2DH5\_Ch0





### 10.5TM2\_2DH5\_Ch39



10.6TM2\_2DH5\_Ch78





### 10.7TM3\_3DH5\_Ch0





### 10.8TM3\_3DH5\_Ch39





### 10.9TM3\_3DH5\_Ch78





# Appendix F: Band edge spurious emission

### 11 Result Table

EUT Conf.	Chan nel No.	Carrier Frequency [MHz]	Max. Spurious Level [dBm]	Frequency Hopping	Carrier Power [dBm]	Limit [dBm]	Result
TM1_DH5_Ch0	0	2402	-49.428	Off	8.419	-11.581	Pass
	-	-	-53.745	On	8.185	-11.815	Pass
TM1_DH5_Ch78	78	2480	-53.456	Off	7.709	-12.291	Pass
	-	-	-54.373	On	6.572	-13.428	Pass
TM2_2DH5_Ch0	0	2402	-43.655	Off	6.468	-13.532	Pass
	-	-	-47.408	On	3.876	-16.124	Pass
TM2_2DH5_Ch78	78	2480	-52.033	Off	5.978	-14.022	Pass
	-	-	-54.055	On	3.355	-16.645	Pass
TM3_3DH5_Ch0	0	2402	-44.116	Off	6.485	-13.515	Pass
	-	-	-48.896	On	5.444	-14.556	Pass
TM3_3DH5_Ch78	78	2480	-51.905	Off	6.066	-13.934	Pass
	-	-	-56.116	On	6.069	-13.931	Pass

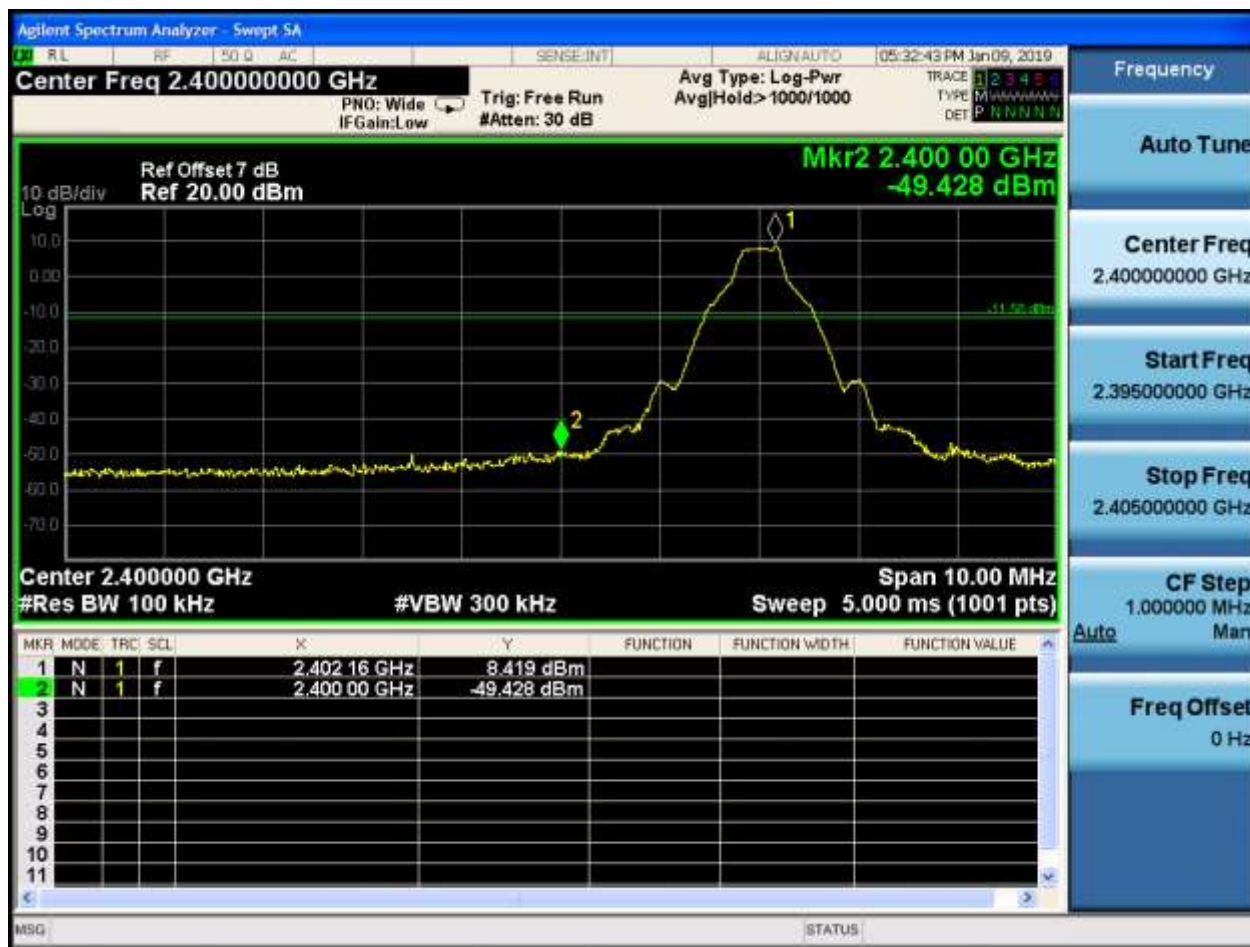




## 12 Test Plot

### 12.1TM1\_DH5\_Ch0

No hopping



With hopping





### 12.2TM1\_DH5\_Ch78

No hopping



With hopping



12.3TM2\_2DH5\_Ch0

No hopping



With hopping



12.4TM2\_2DH5\_Ch78

No hopping



With hopping





12.5TM3\_3DH5\_Ch0

No hopping



With hopping



12.6TM3\_3DH5\_Ch78

No hopping



With hopping





# Appendix G: Conducted RF Spurious Emission

### 13 Result Table

In this Appendix, the “Pref” refers to the peak power level in any 100 kHz bandwidth within the fundamental emission which is used as the reference level, 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.

In the result table, the “< Limit” denotes that “The Puw [dBm] is less than Pref [dBm] - 20 [dB], see test plots for detailed”.

EUT Conf.	Pref [dBm/100 kHz]	Puw [dBm/100 kHz]	Verdict
TM1_DH5_Ch0	8.441	< Limit	Pass
TM1_DH5_Ch39	9.076	< Limit	Pass
TM1_DH5_Ch78	7.796	< Limit	Pass
TM2_2DH5_Ch0	6.513	< Limit	Pass
TM2_2DH5_Ch39	7.136	< Limit	Pass
TM2_2DH5_Ch78	6.076	< Limit	Pass
TM3_3DH5_Ch0	6.531	< Limit	Pass
TM3_3DH5_Ch39	7.159	< Limit	Pass
TM3_3DH5_Ch78	6.064	< Limit	Pass



### 14 Test Plot

#### 14.1 TM1\_DH5\_Ch0

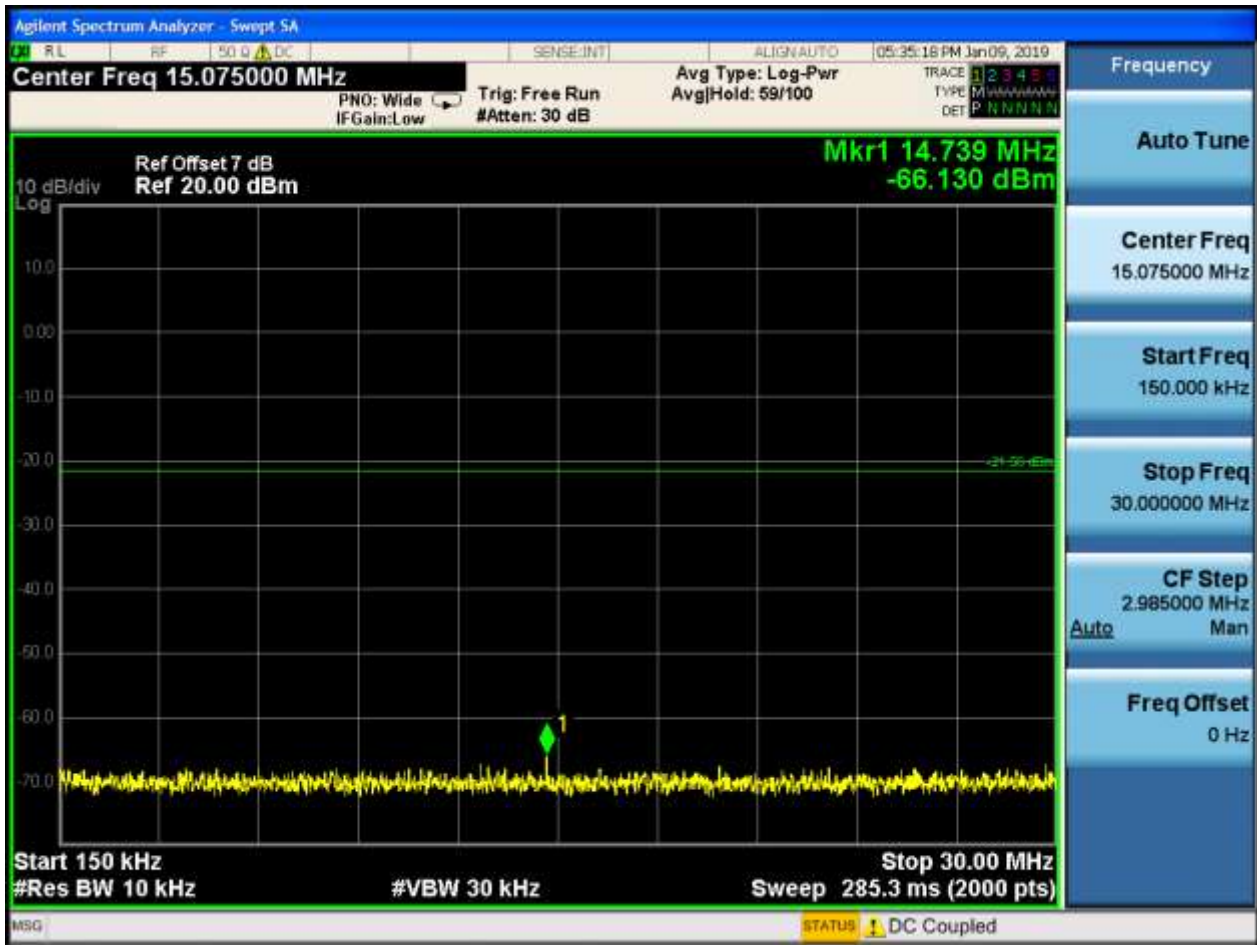
##### 14.1.1 Pref



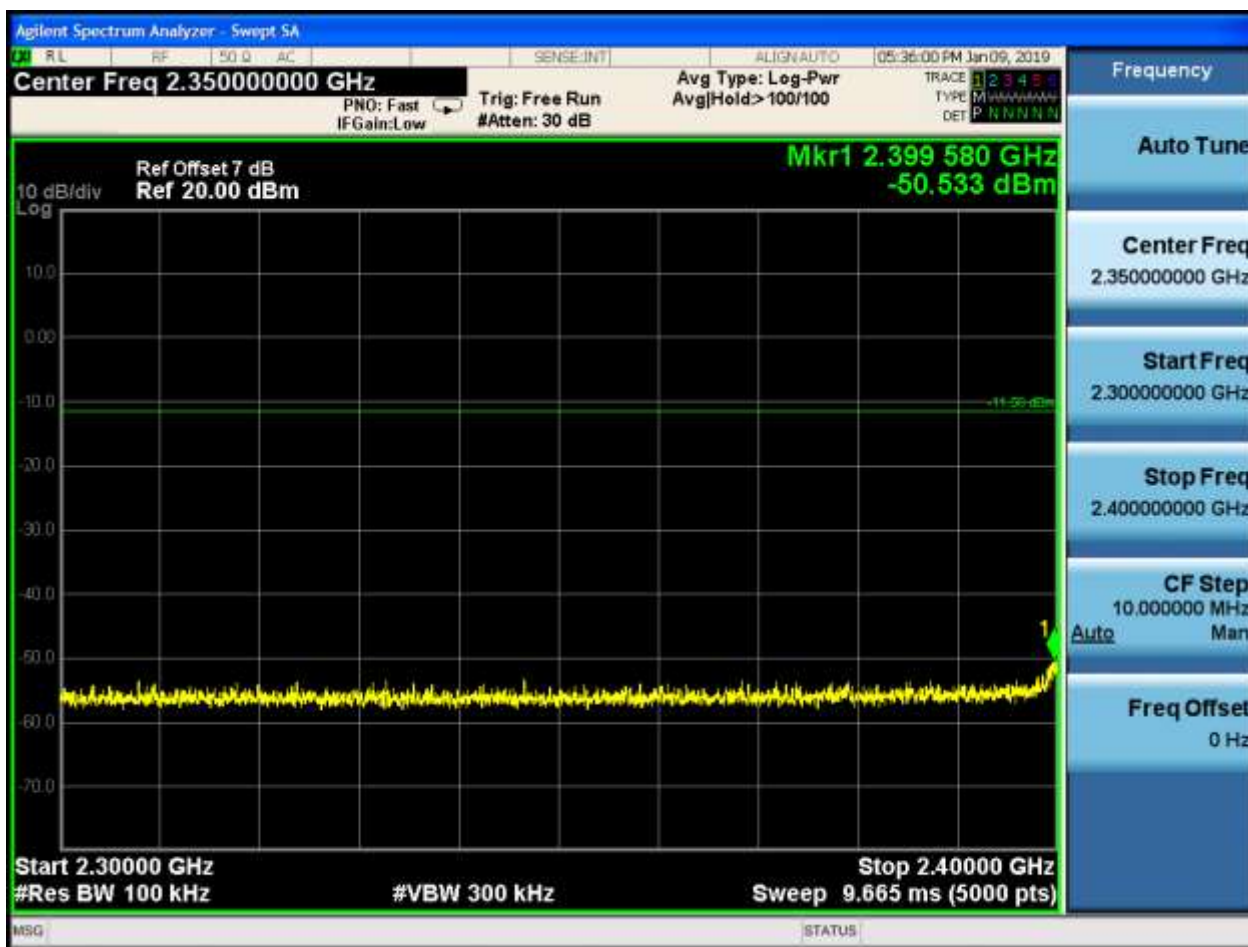
### 14.1.2 Puw

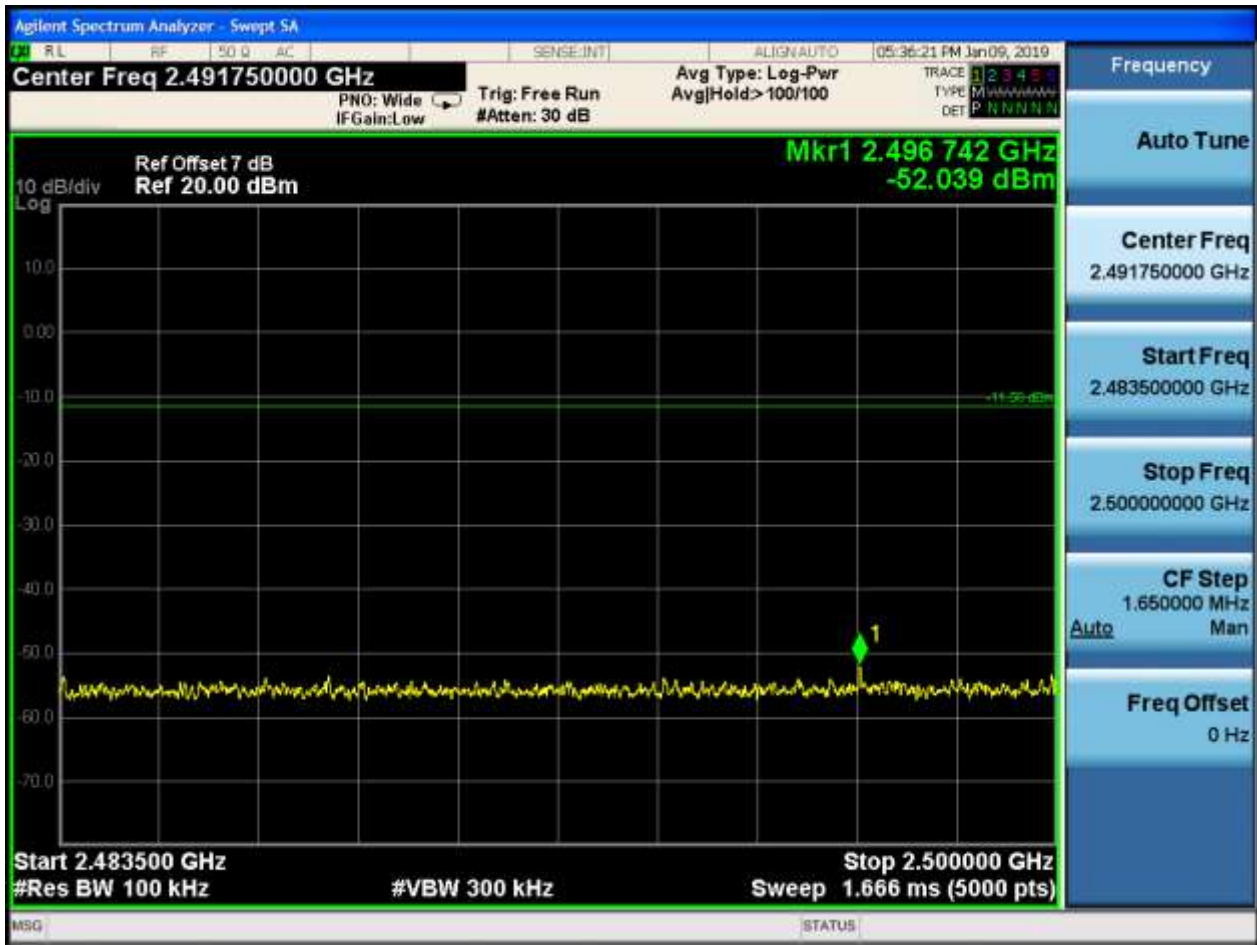














## 14.2TM1\_DH5\_Ch39

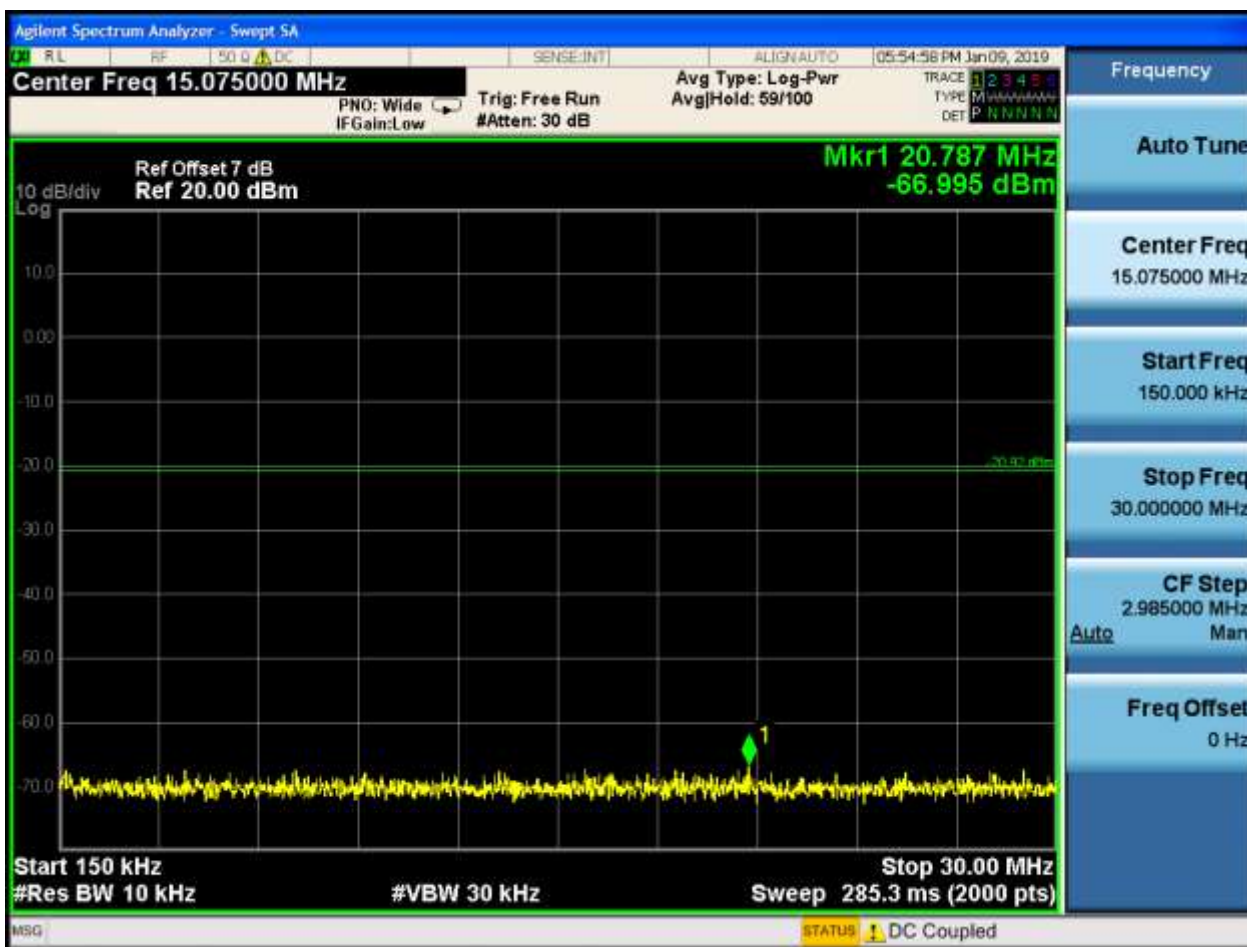
## 14.2.1 Pref





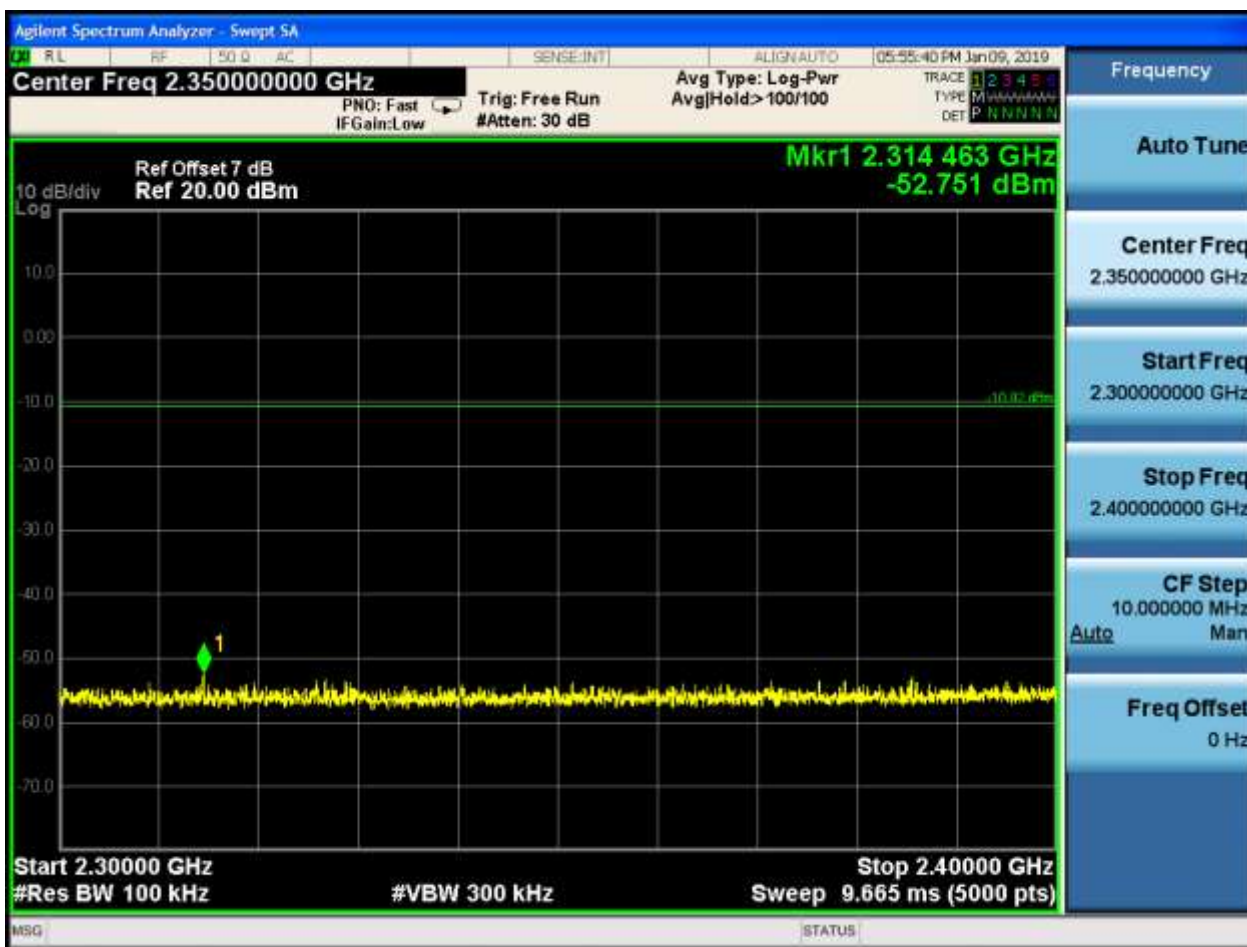
### 14.2.2 Puw

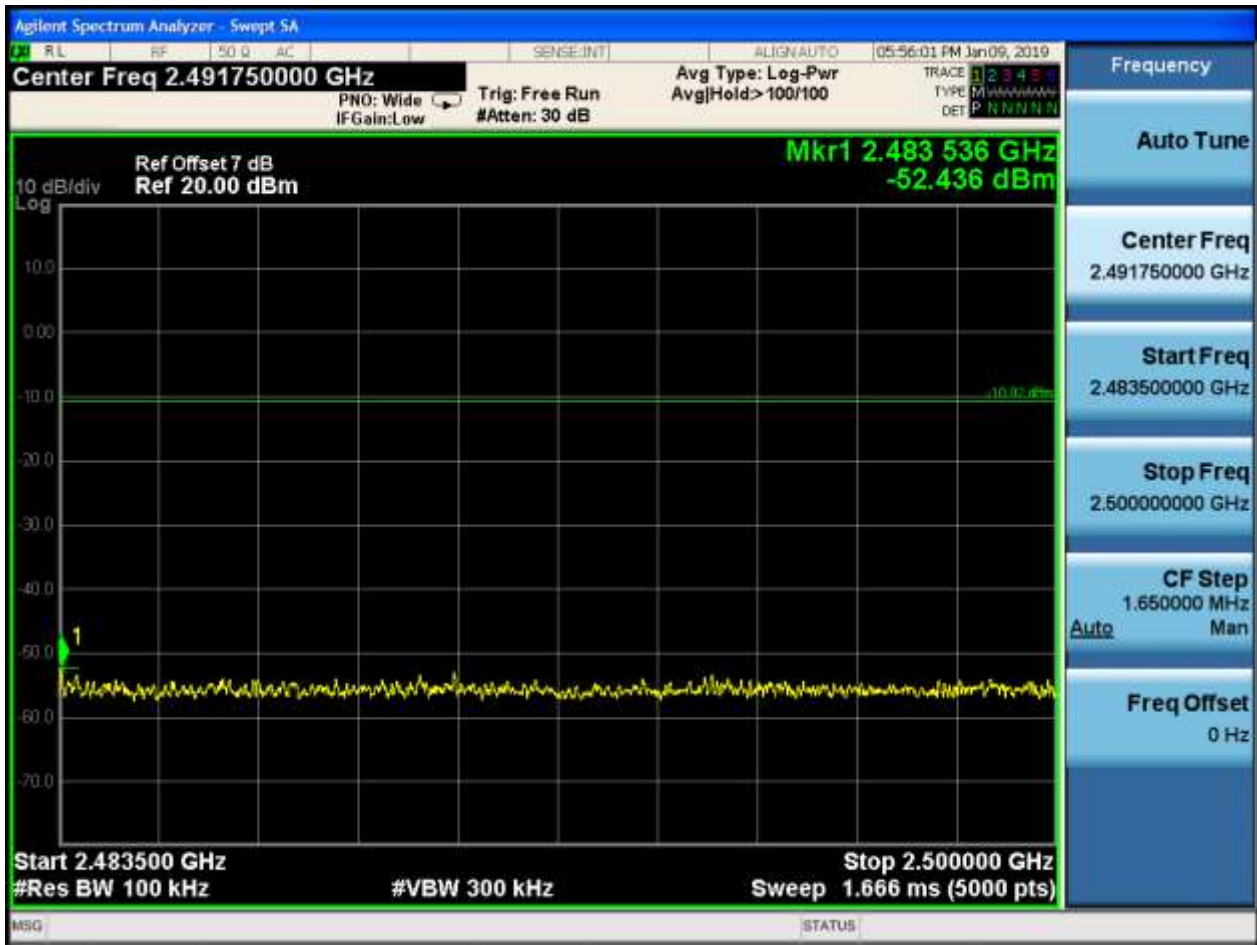














### 14.3TM1\_DH5\_Ch78

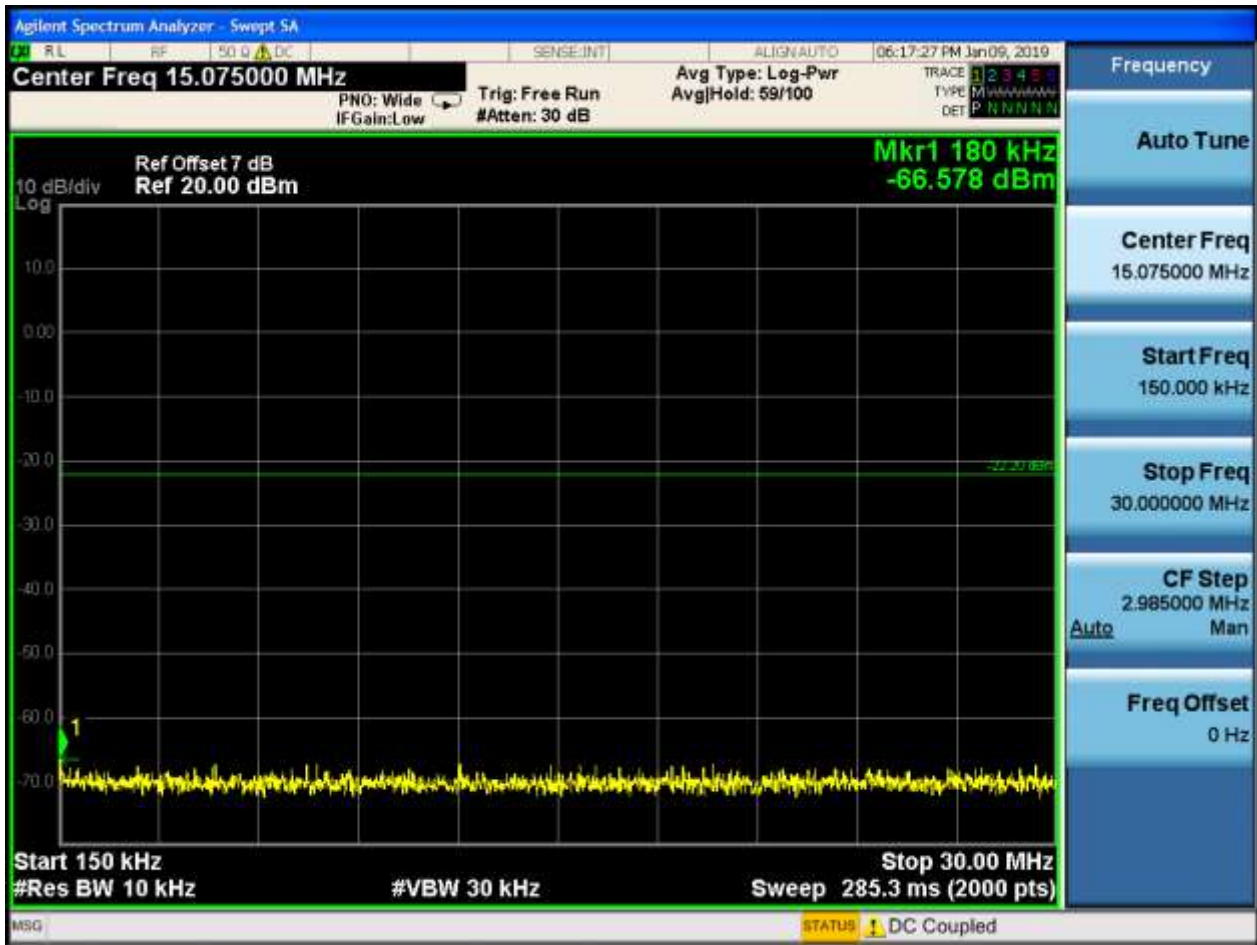
#### 14.3.1 Pref





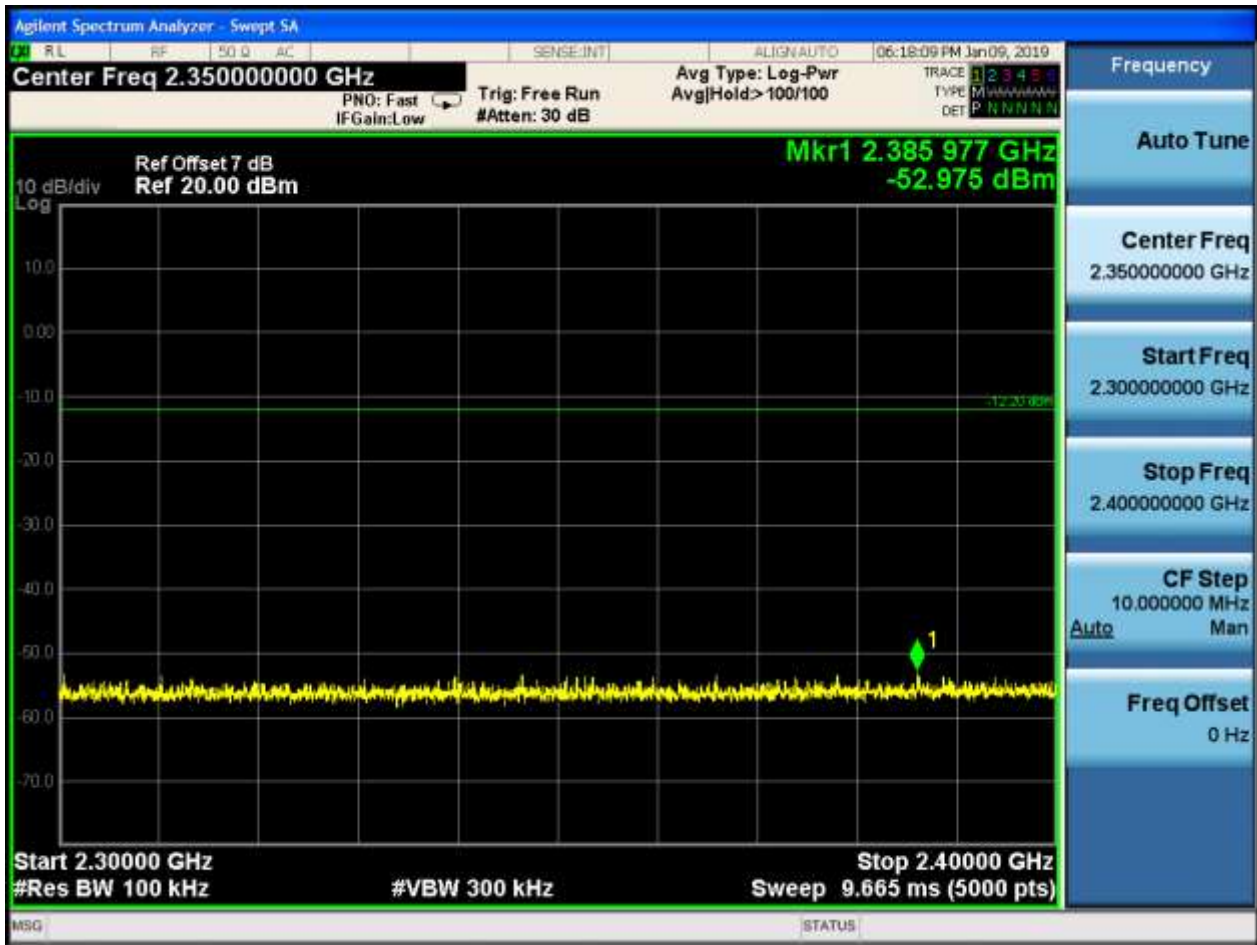
### 14.3.2 Puw

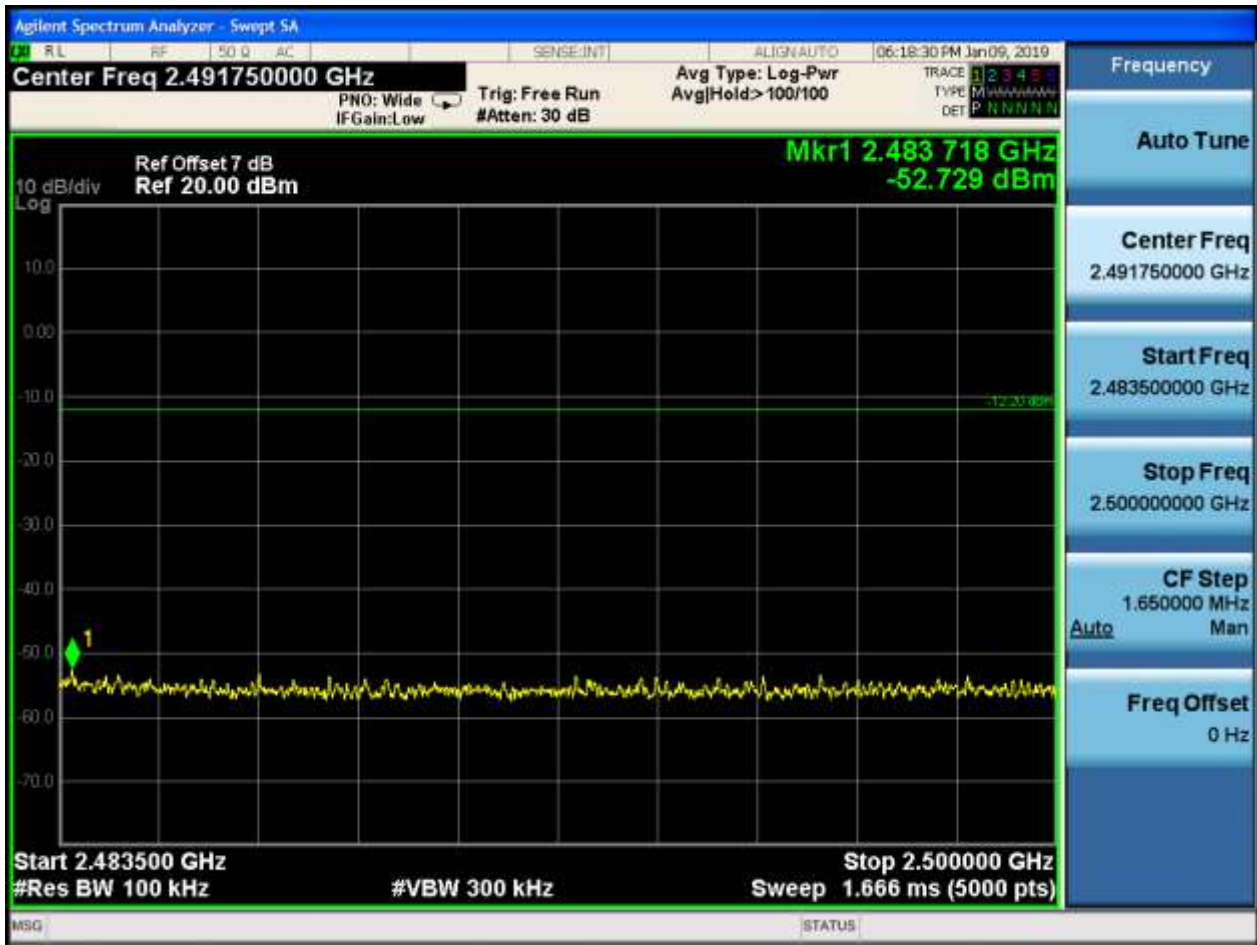














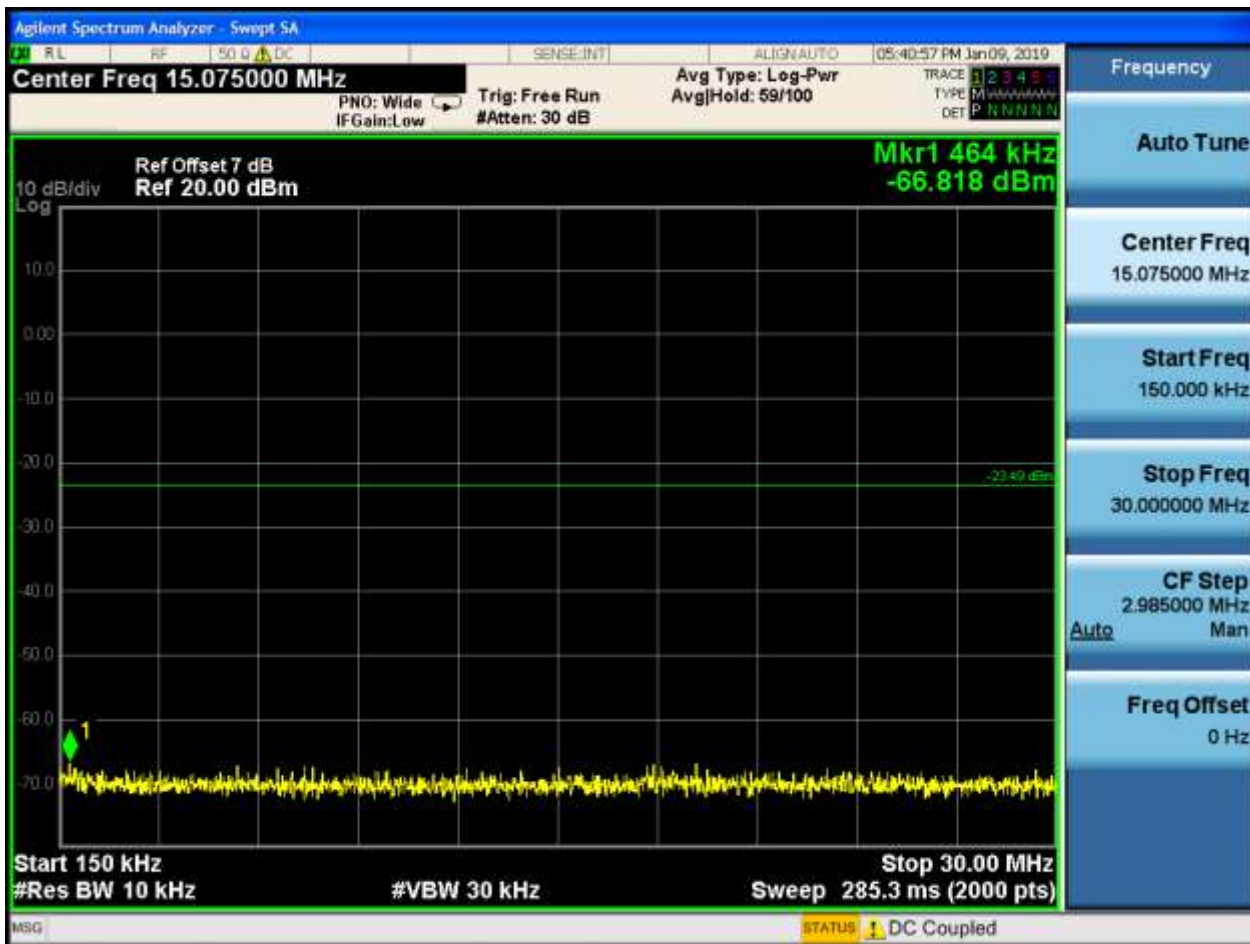
## 14.4TM2\_2DH5\_Ch0

## 14.4.1 Pref

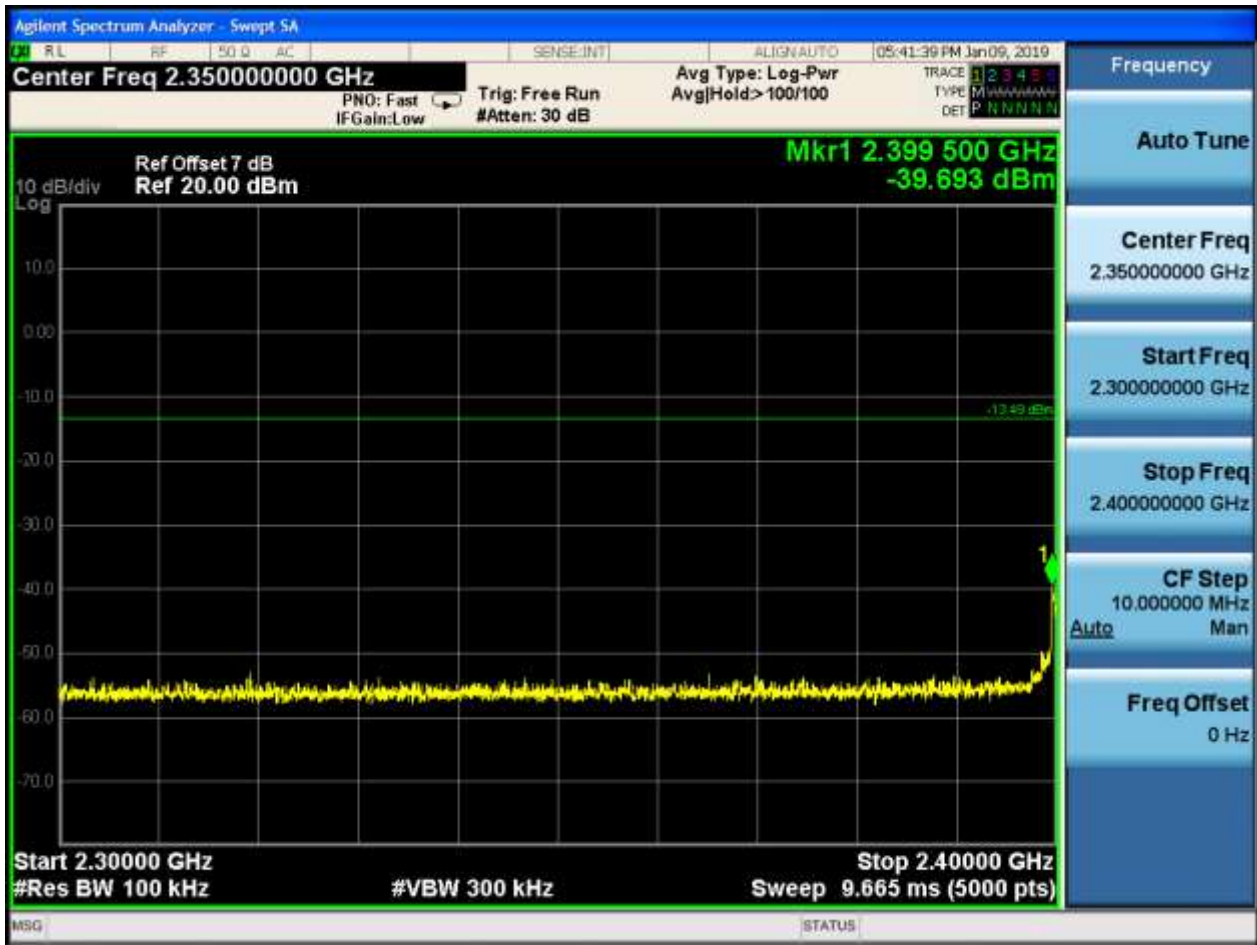


### 14.4.2 Puw

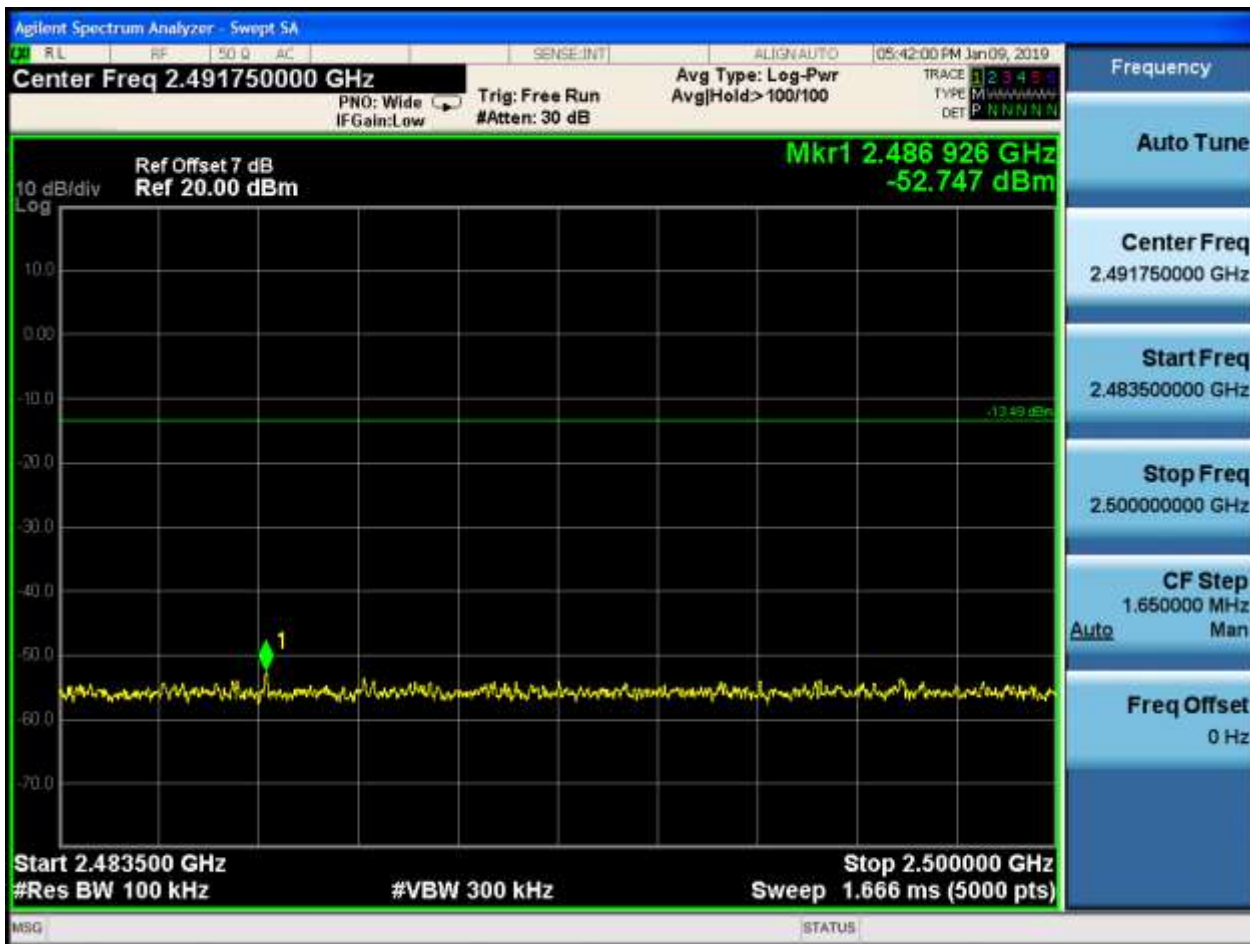














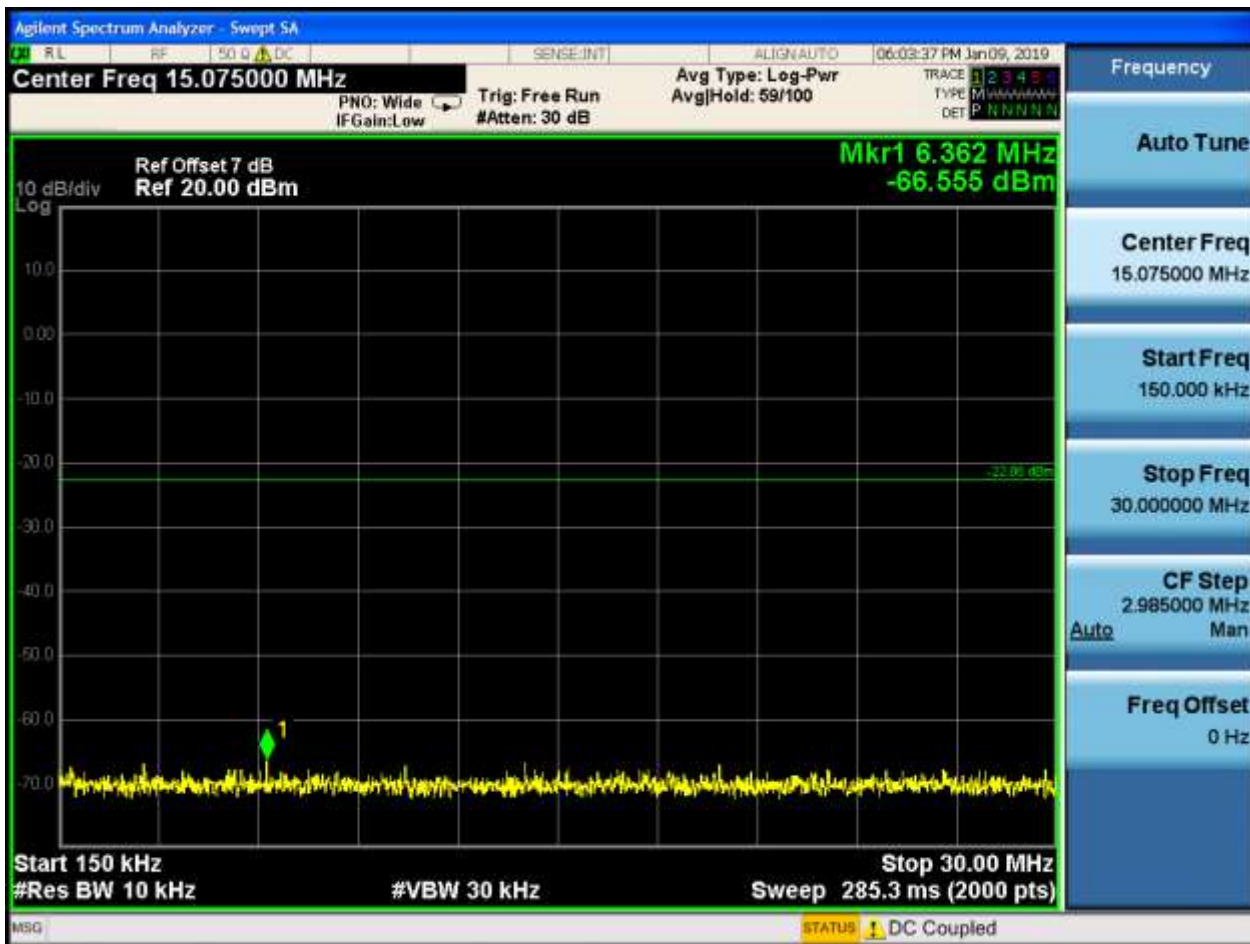
## 14.5TM2\_2DH5\_Ch39

## 14.5.1 Pref

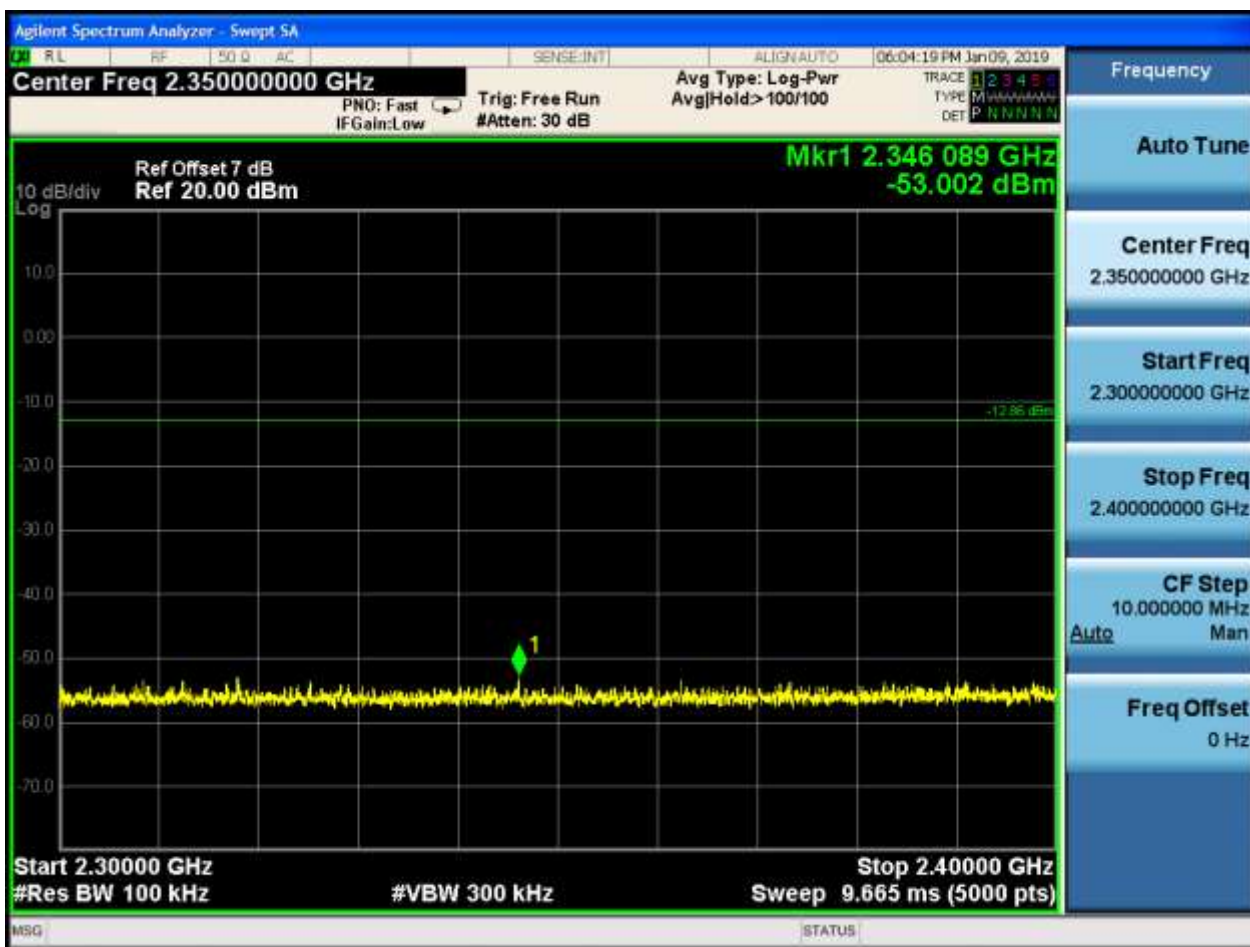


### 14.5.2 Puw















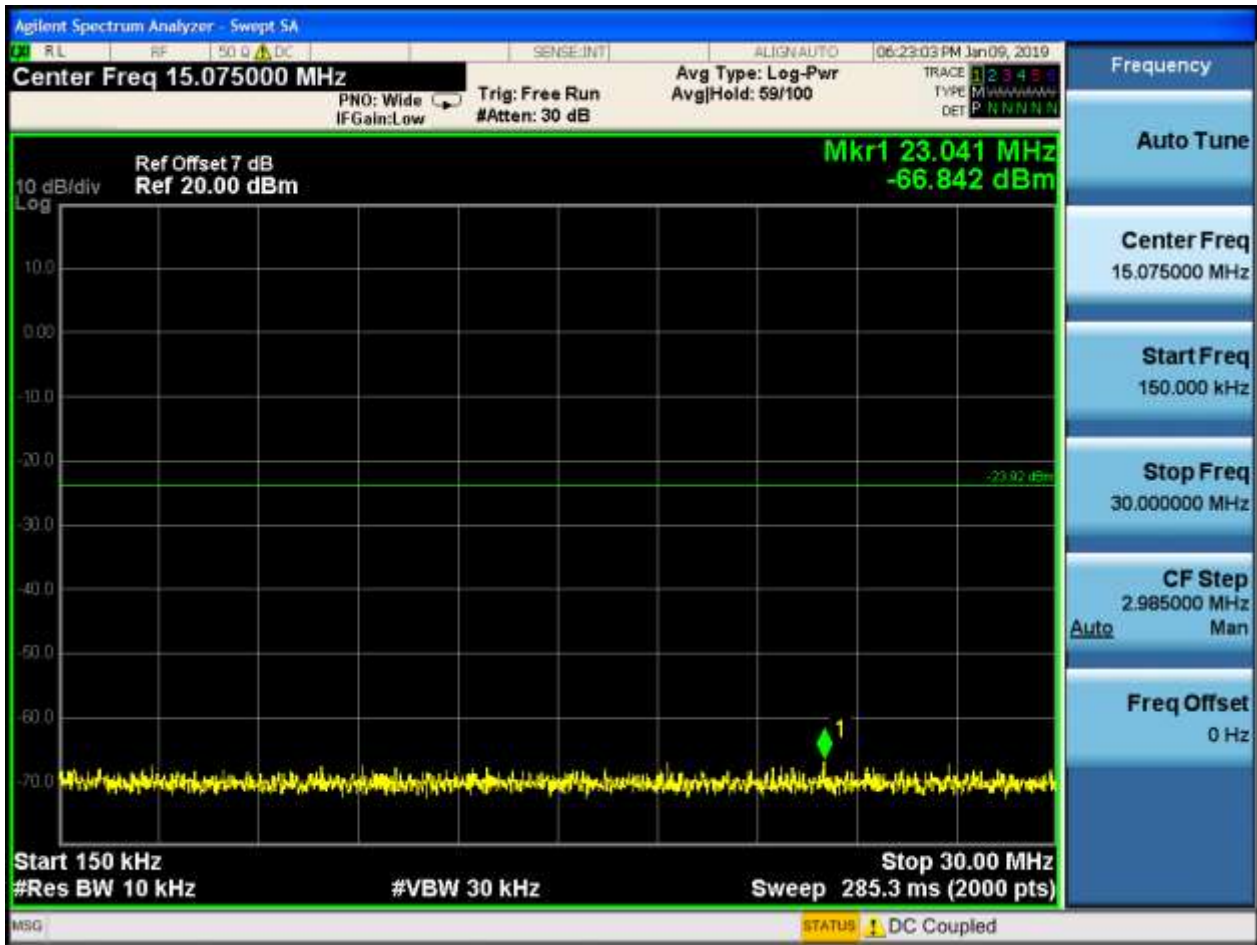
## 14.6TM2\_2DH5\_Ch78

## 14.6.1 Pref

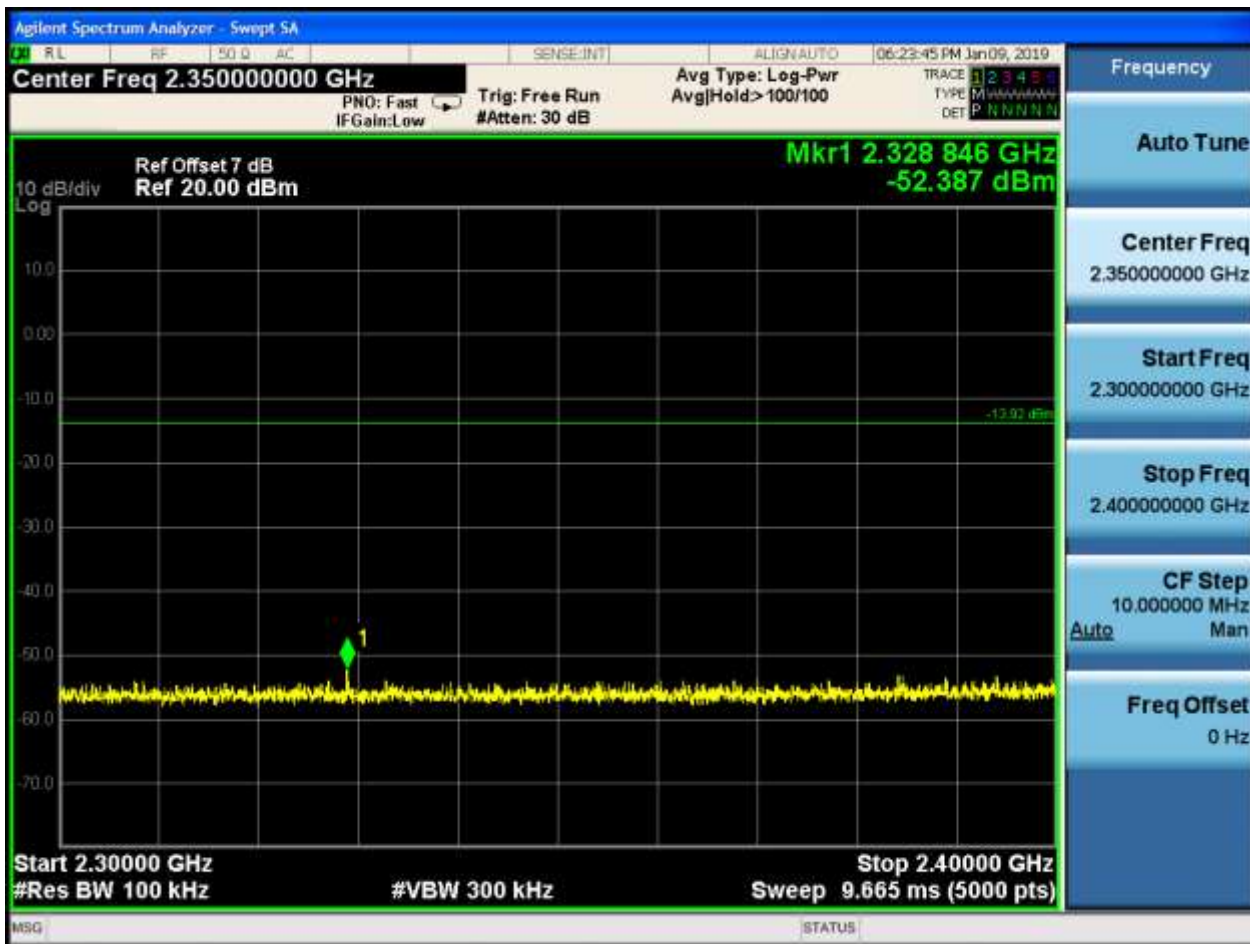


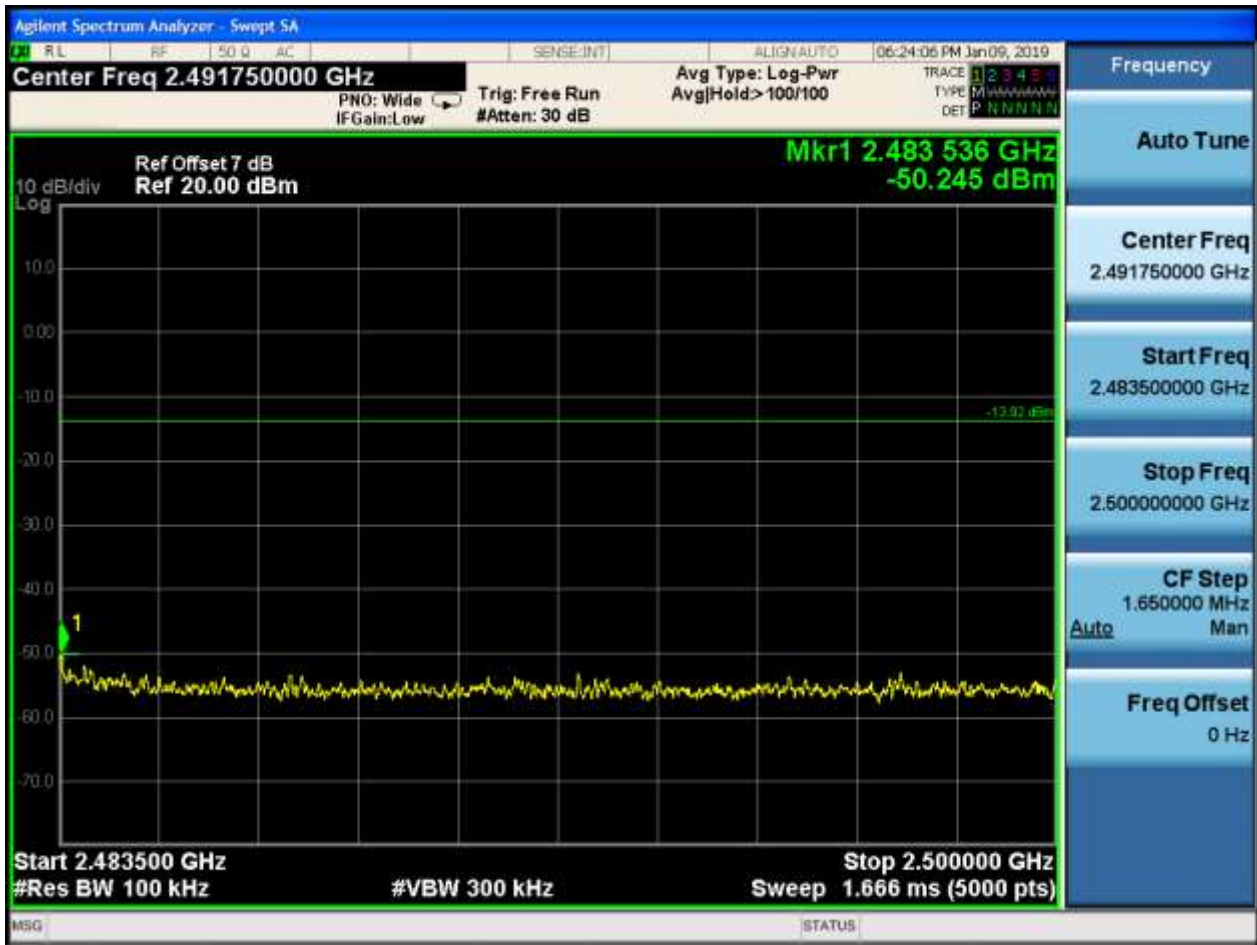
## 14.6.2 Puw















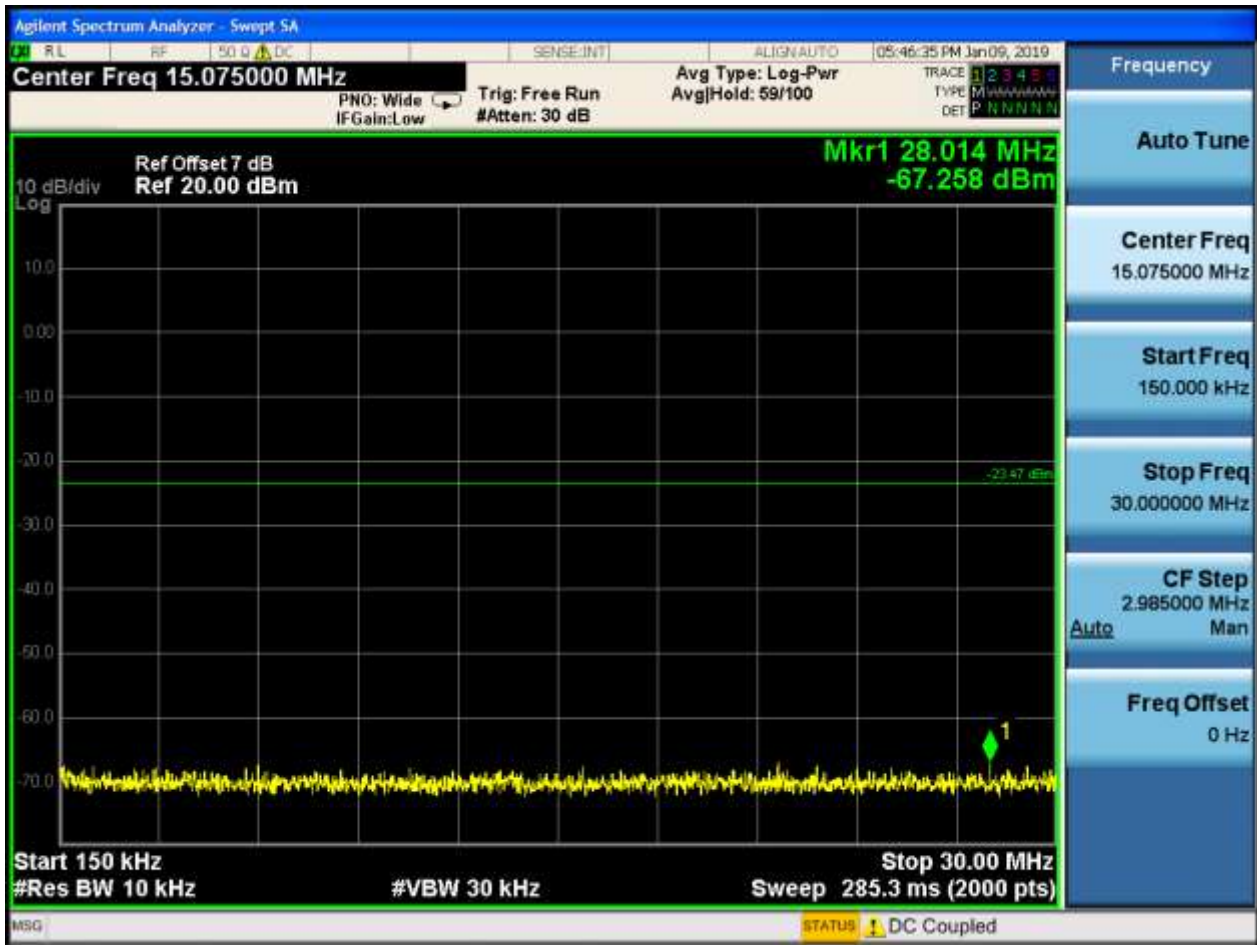
### 14.7TM3\_3DH5\_Ch0

#### 14.7.1 Pref

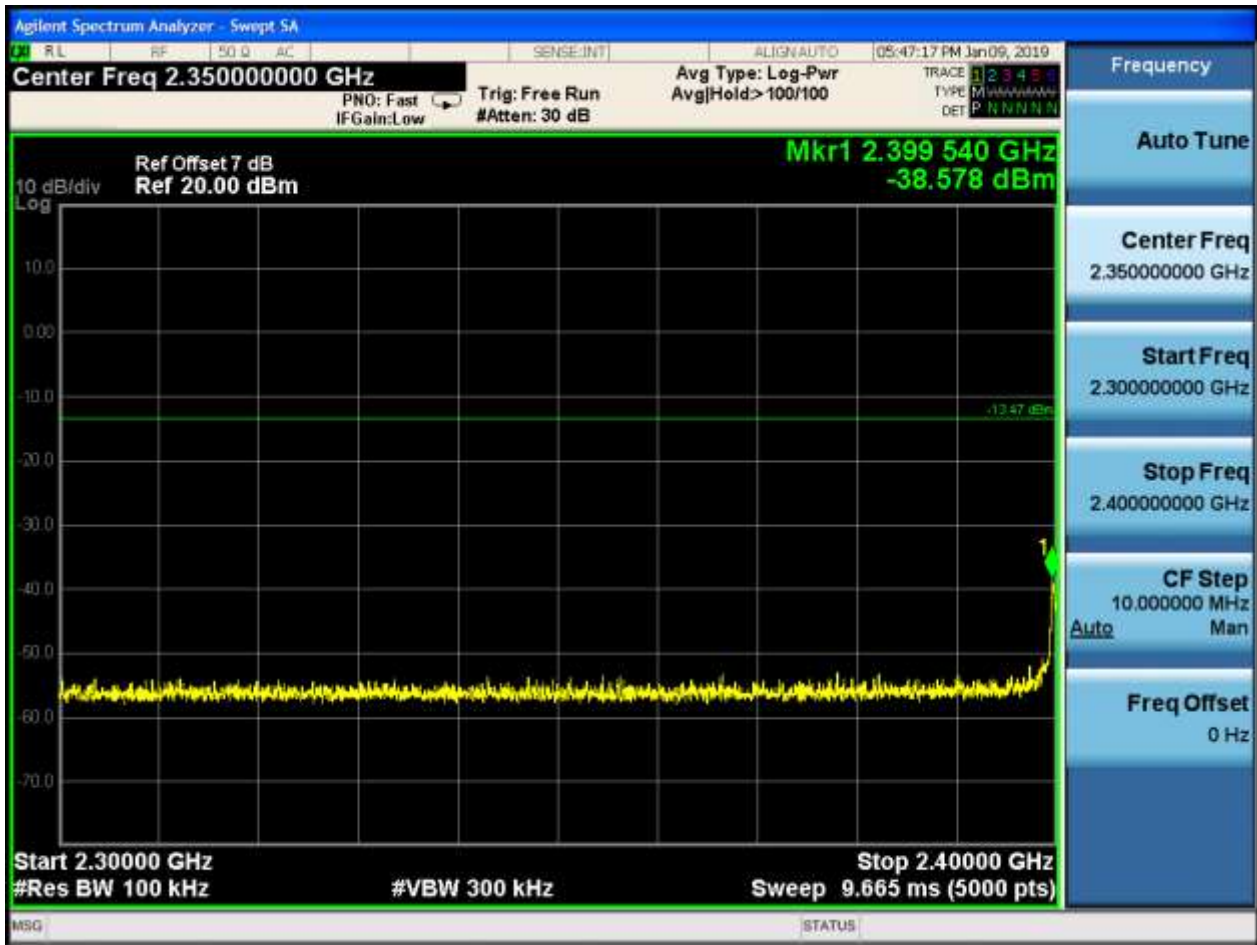


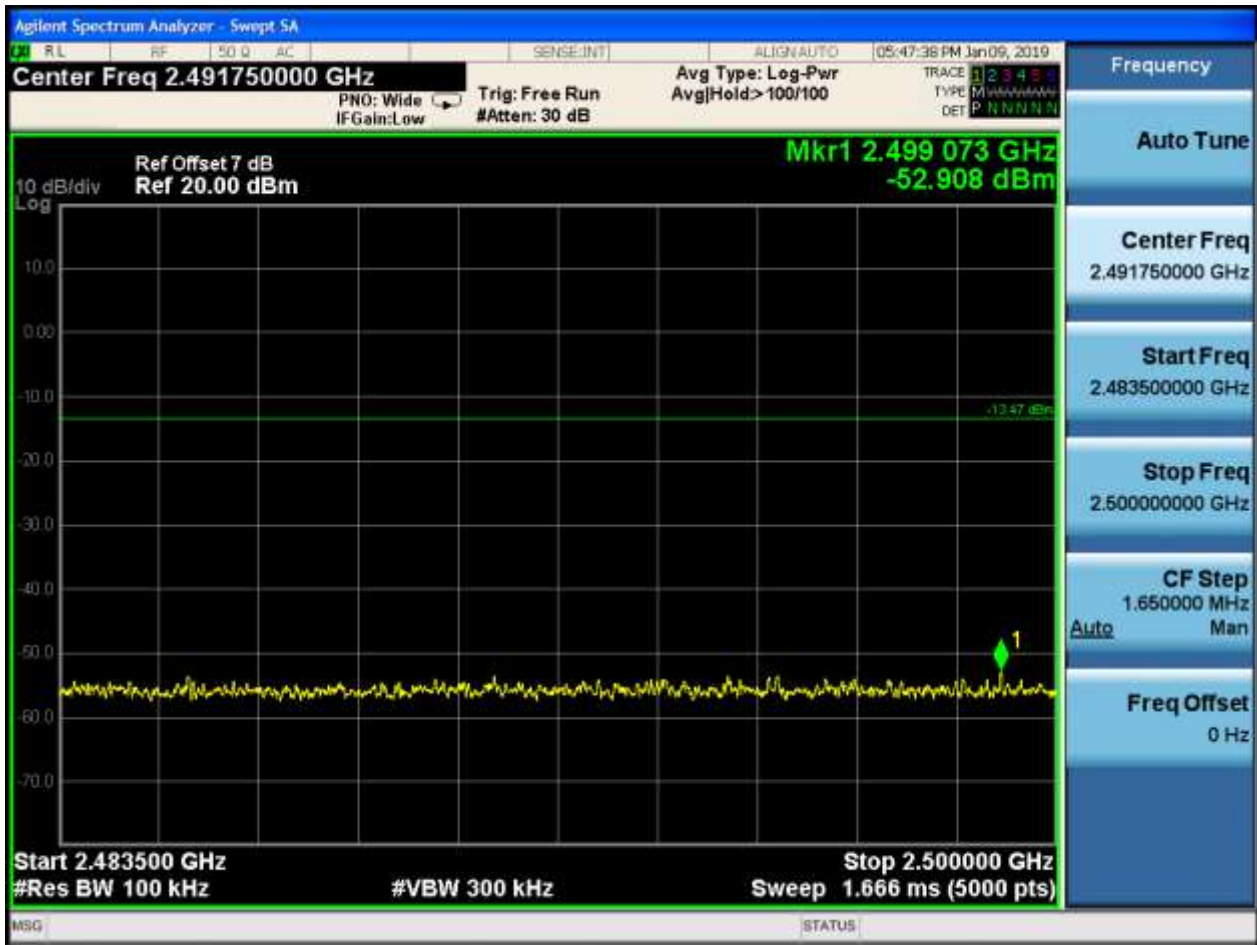
### 14.7.2 Puw













### 14.8TM3\_3DH5\_Ch39

#### 14.8.1 Pref

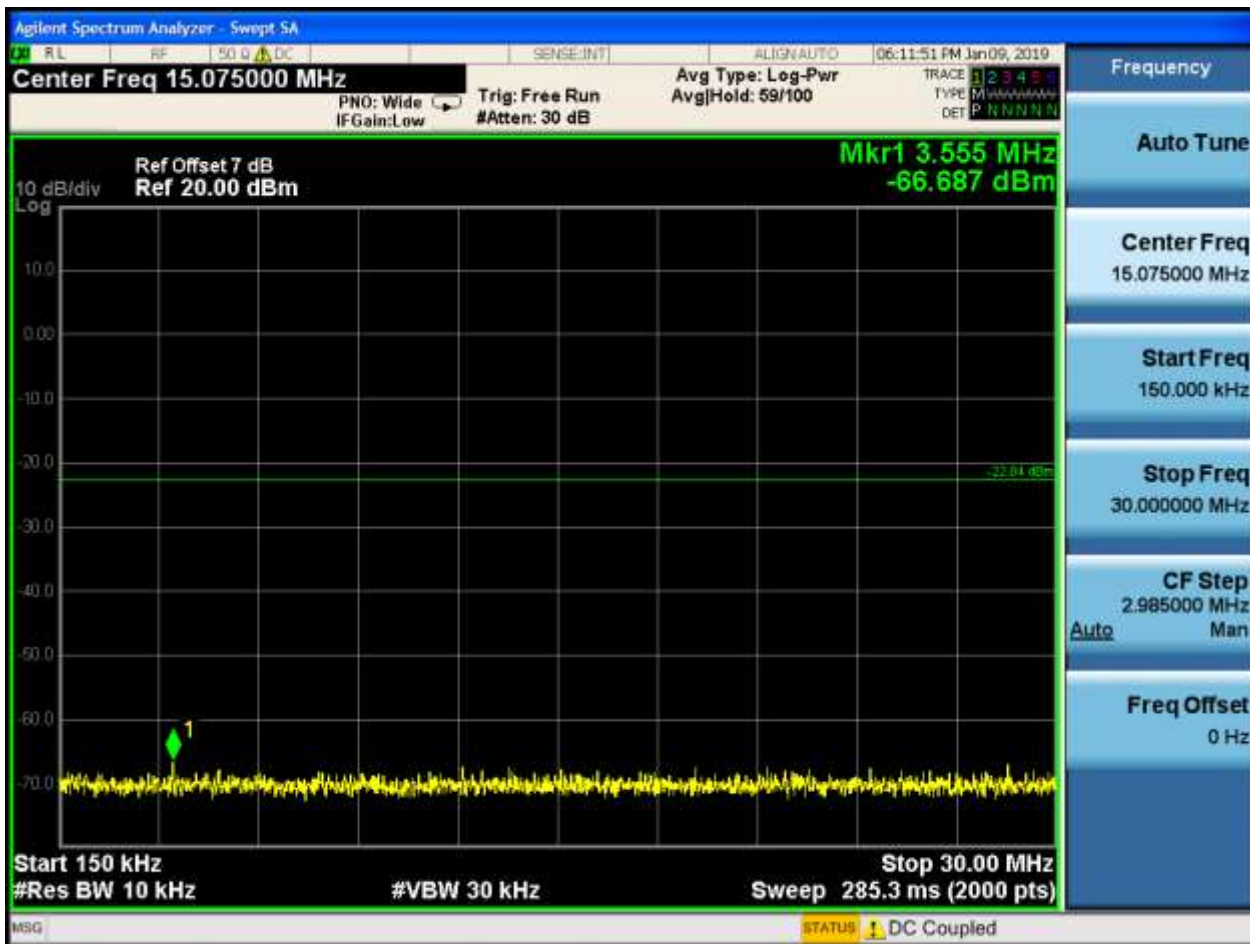




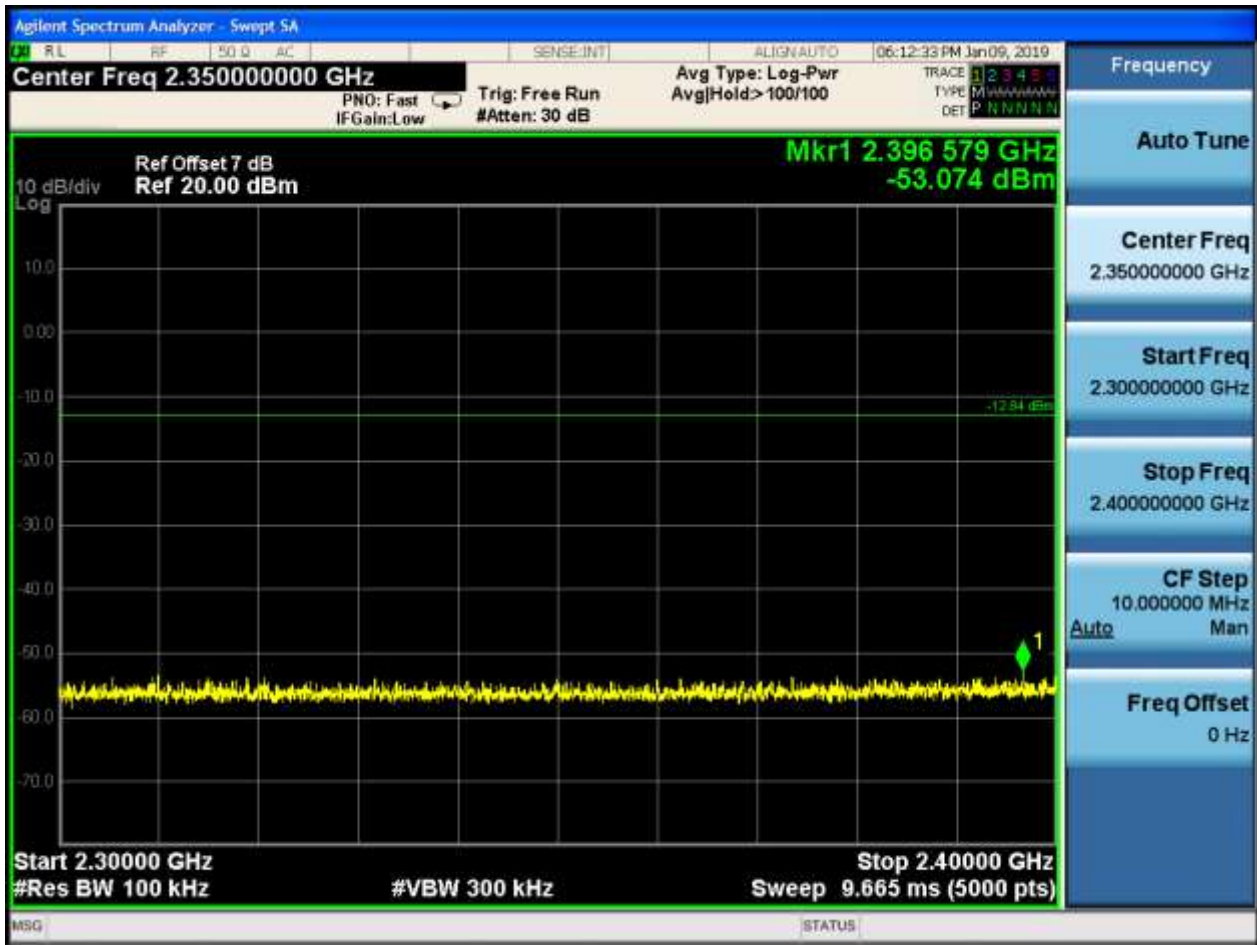


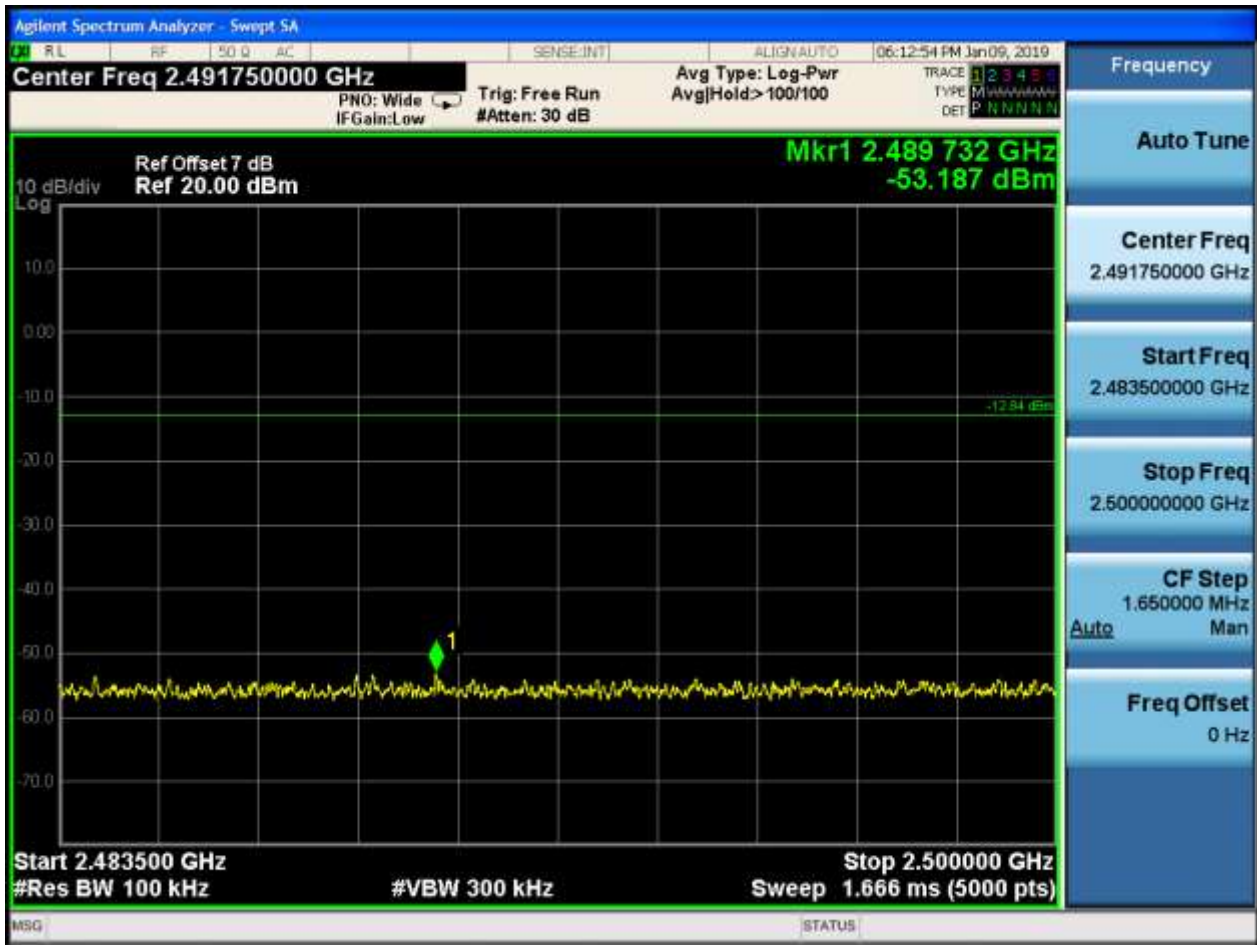
### 14.8.2 Puw













## 14.9TM3\_3DH5\_Ch78

## 14.9.1 Pref

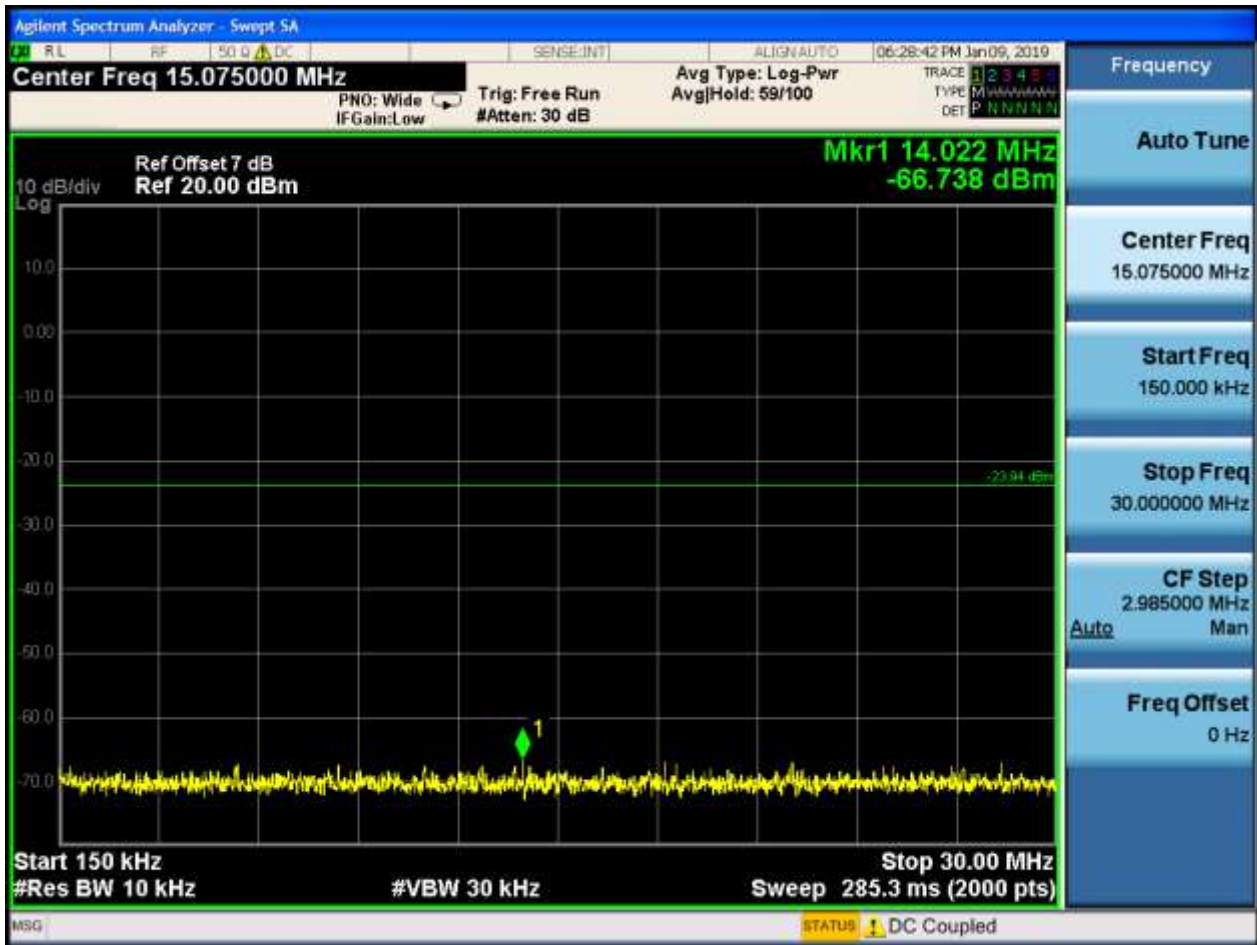




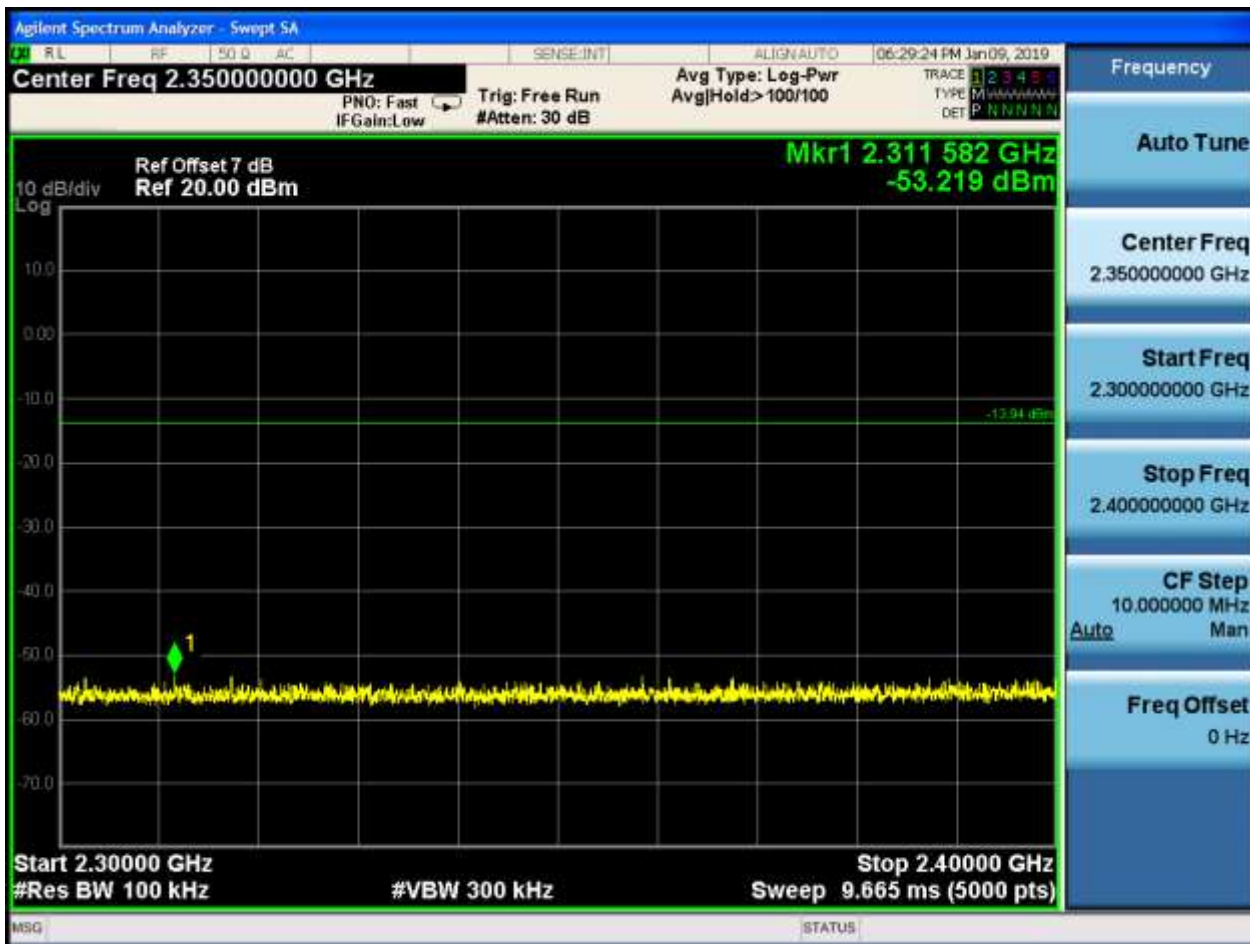
### 14.9.2 Puw

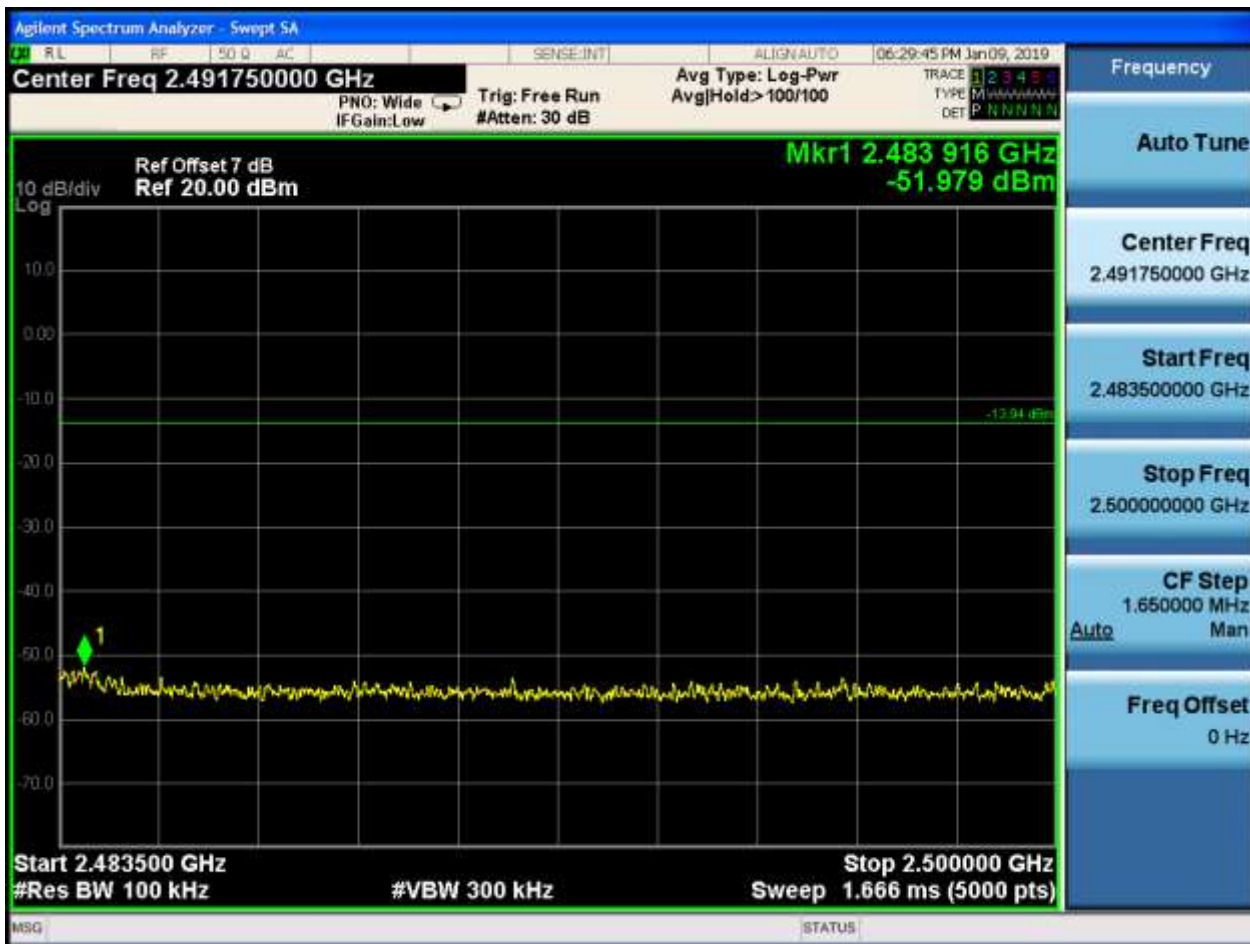
















# Appendix H: Radiated Emissions in the Restricted Bands



## 1 Result Table

The whole testing range is from “30 MHz to 26.5 GHz (10th harmonics)” is divided into 5 parts according to the test site settings, which are:

- (Part 1): Test range of “9 KHz to 30 MHz”,
- (Part 2): Test range of “30 Mhz to 1GHz
- (Part 3): Test range of “1 GHz to 3 GHz”.
- (Part 4): Test range of “3 GHz to 18 GHz”,
- (Part 5): Test range of “18 GHz to 26.5 GHz”.

In this Appendix, only the test results and plots under the worst case can be reported. In the result table, the “< Limit” denotes that “Not found obvious spikes or see marked spikes on plots and listed emissions records”.

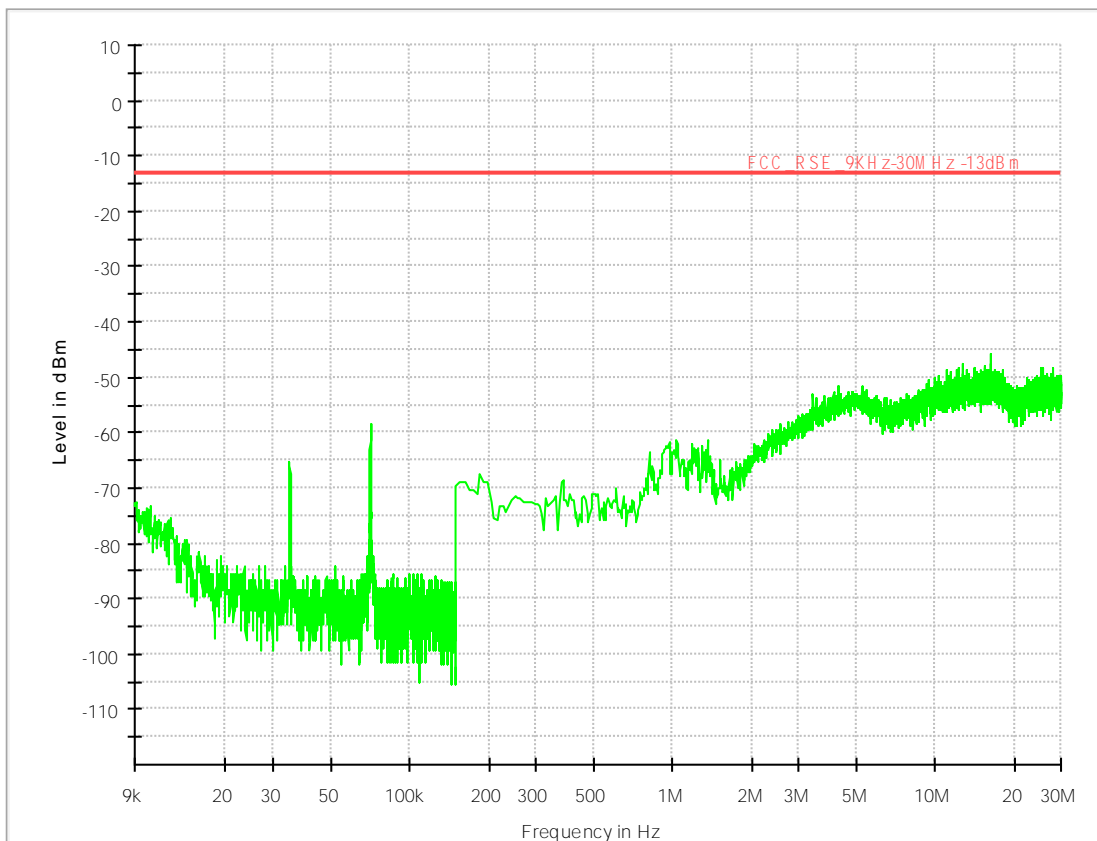
Test Range	EUT Conf.	Emissions	Verdict
30 MHz to 1 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass
1 GHz to 3 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass
	TM1_DH5_Ch78 (Worst Conf.)	< Limit	Pass
3 GHz to 18 GHz	TM1_DH5_Ch0 (Worse Conf.)	< Limit	Pass
18 GHz to 26.5 GHz	TM1_DH5_Ch0 (Worst Conf.)	< Limit	Pass

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

## 2 Result Plot

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

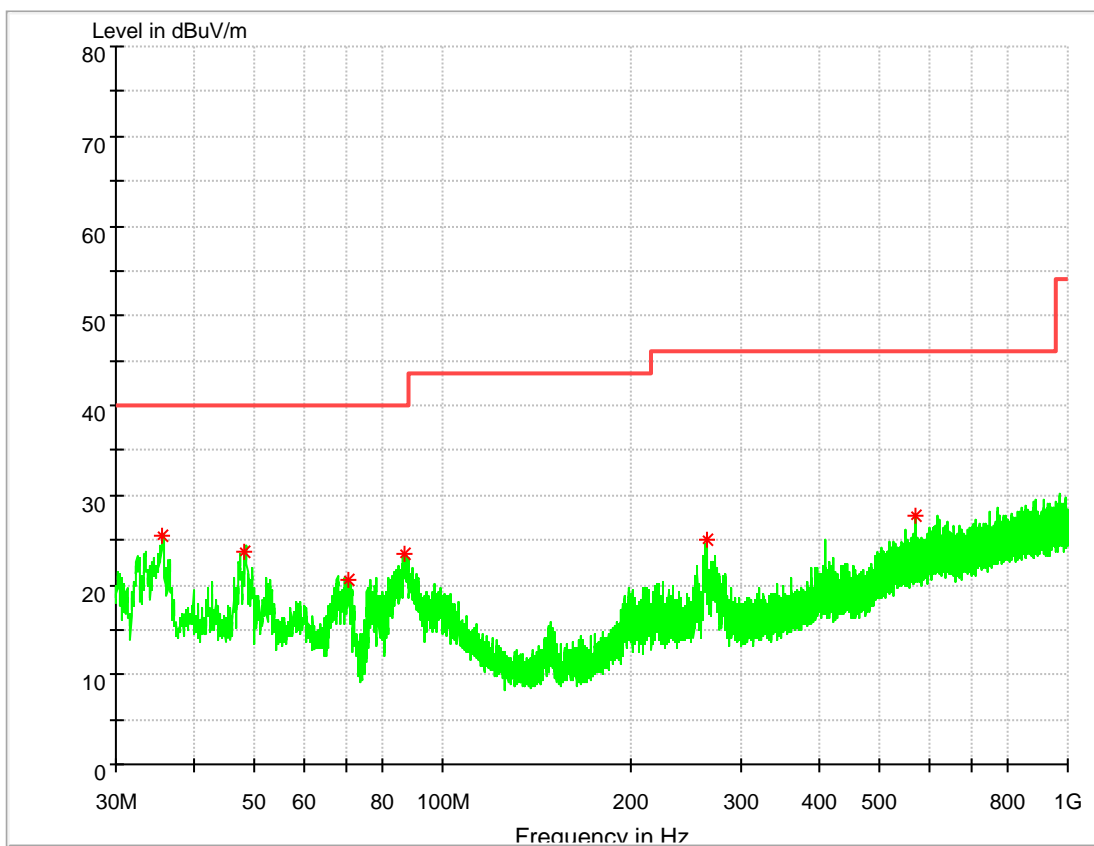
Note 1: The test results and plot for testing range of “9 kHz to 30 MHz” showed as below is the WORST case for all Test Modes and Channels. This range will not be presented for each Test Mode and each Channel.





**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 (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Transd. (dB)
35.529000	25.49	40.00	14.51	100.0	V	51.0	13.2
48.236000	23.73	40.00	16.27	100.0	V	330.0	14.2
70.610667	20.64	40.00	19.36	100.0	V	92.0	9.5
86.551000	23.38	40.00	16.62	100.0	V	192.0	11.9
264.610667	25.10	46.00	20.90	100.0	V	107.0	14.0
572.003667	27.74	46.00	18.26	100.0	H	35.0	20.3

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.

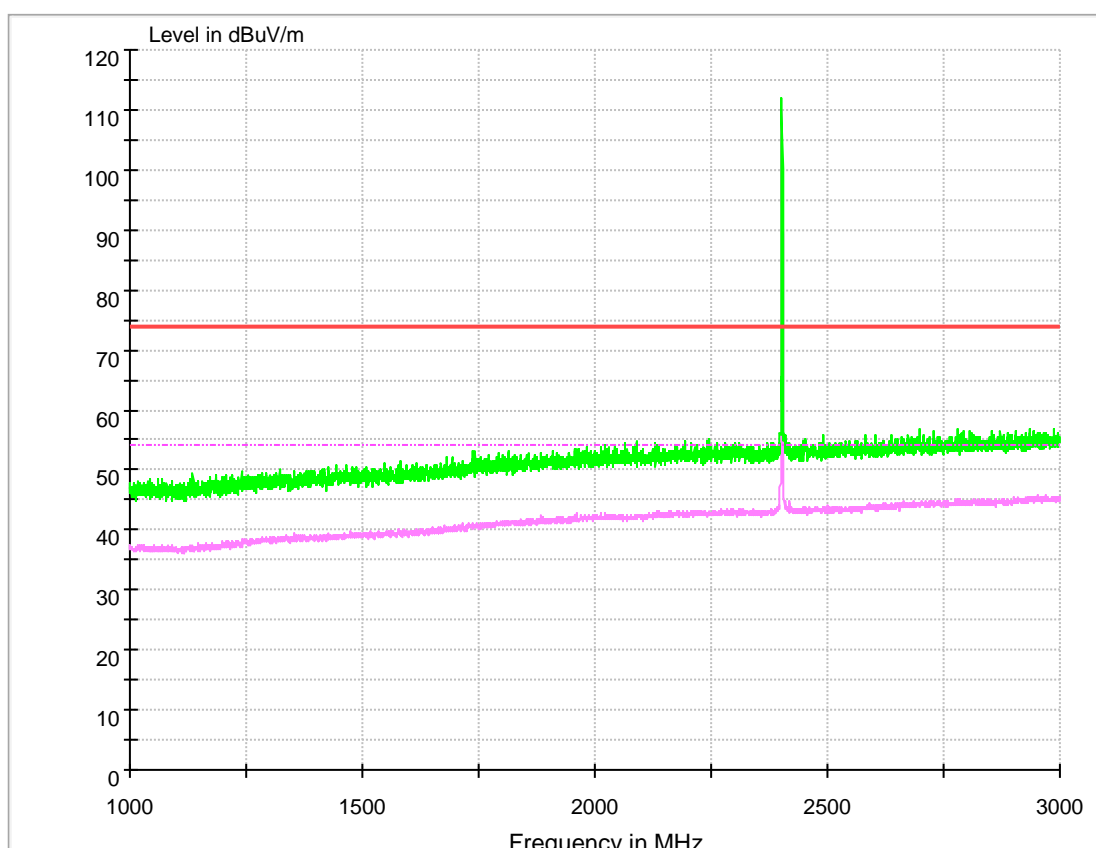
2, Margin = Limit - Level

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

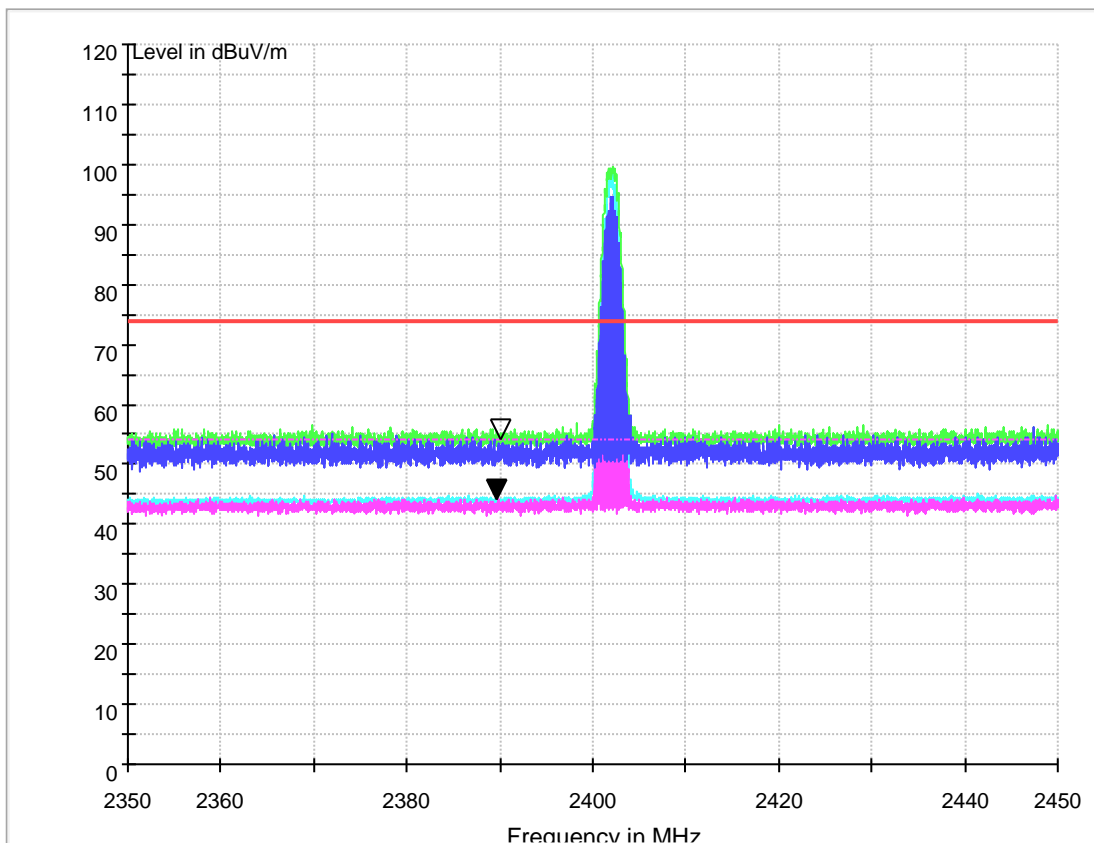
Note 1: The testing range of “1 GHz to 3 GHz” is for checking radiated emissions located in restricted bands near the EUT operating bands.

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.



### Channel 0



MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h	Transd. (dB)
2390	44.357	54.00	9.643	150.0	H	57.0	-5.8

MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h (deg)	Transd. (dB)
2390	54.430	74.00	19.570	150.0	H	48.0	-5.8

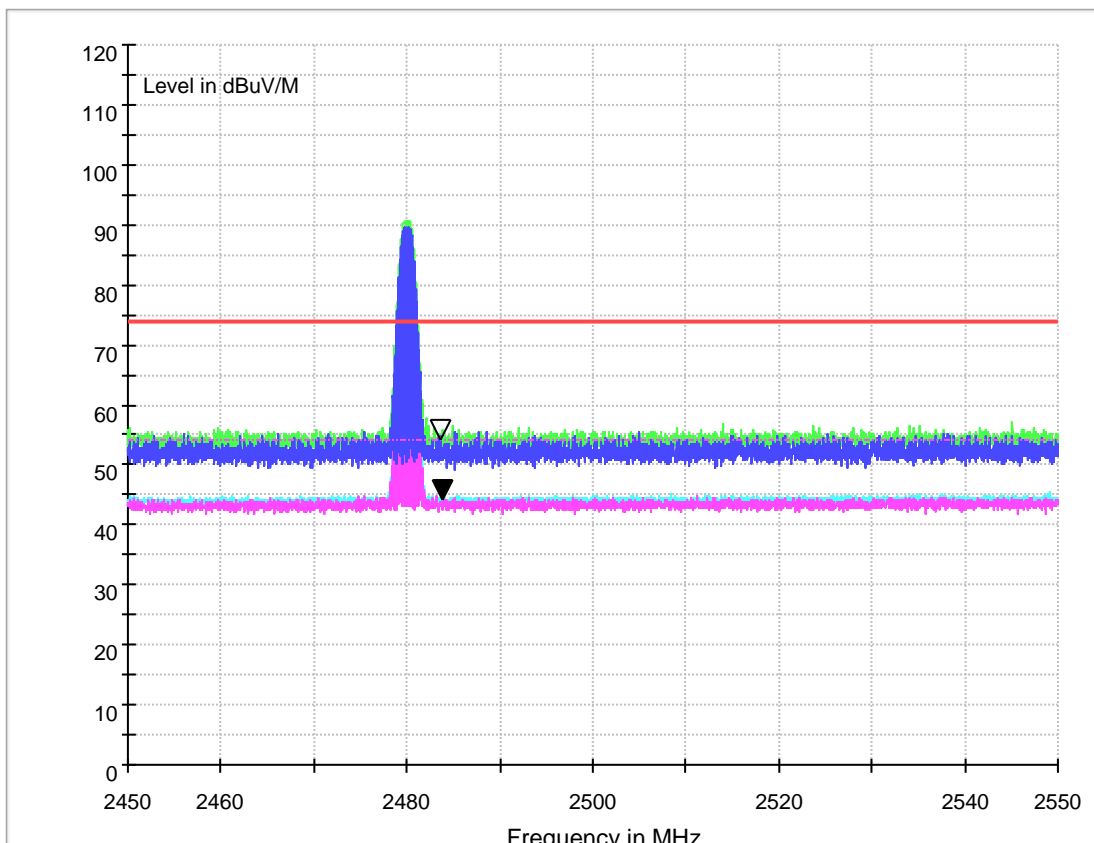
Note:

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

### Channel 78



MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h	Transd. (dB)
2483.5	44.506	54.00	9.494	150.0	H	57.0	-10.2

MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h (deg)	Transd. (dB)
2483.5	54.330	74.00	19.670	150.0	H	-8.0	-10.2

Note:

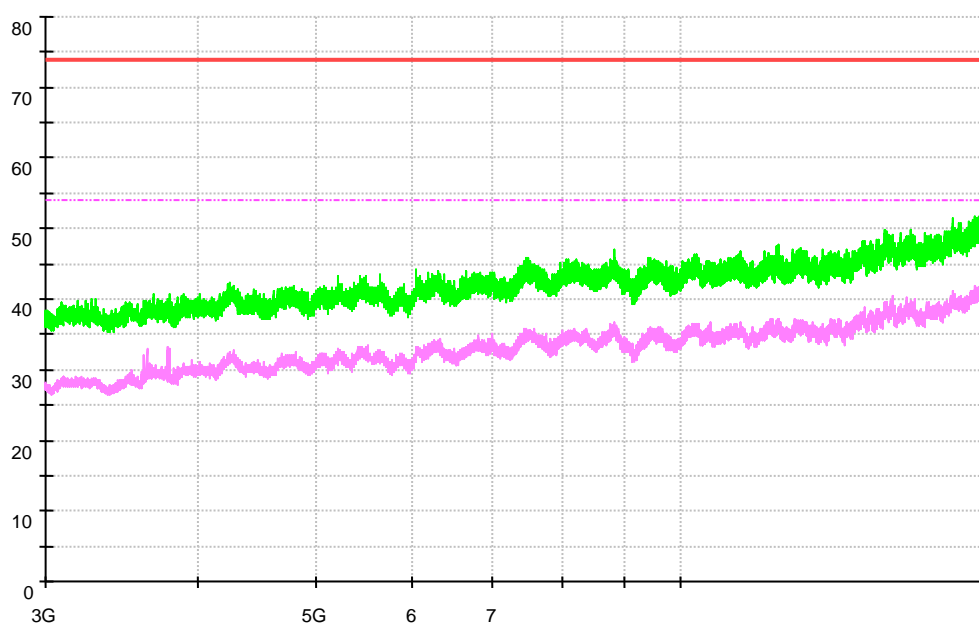
1, Level = Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

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

2, Margin = Limit - Level

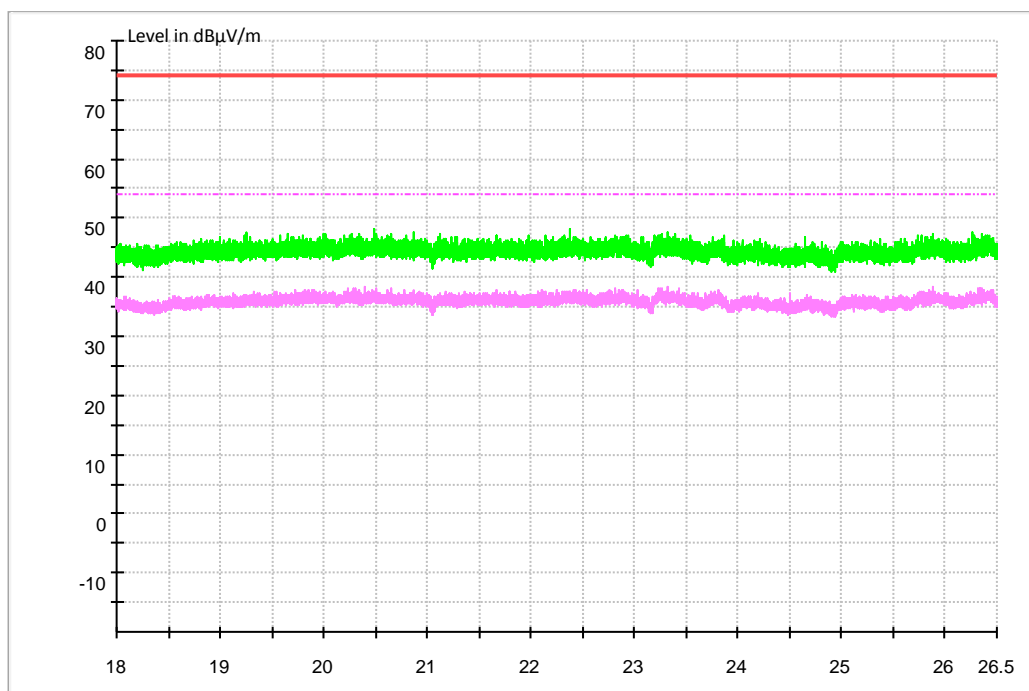
#### Part 4: Testing Range of “3 GHz to 18 GHz”

- 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).



### 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



## 1 Result Table

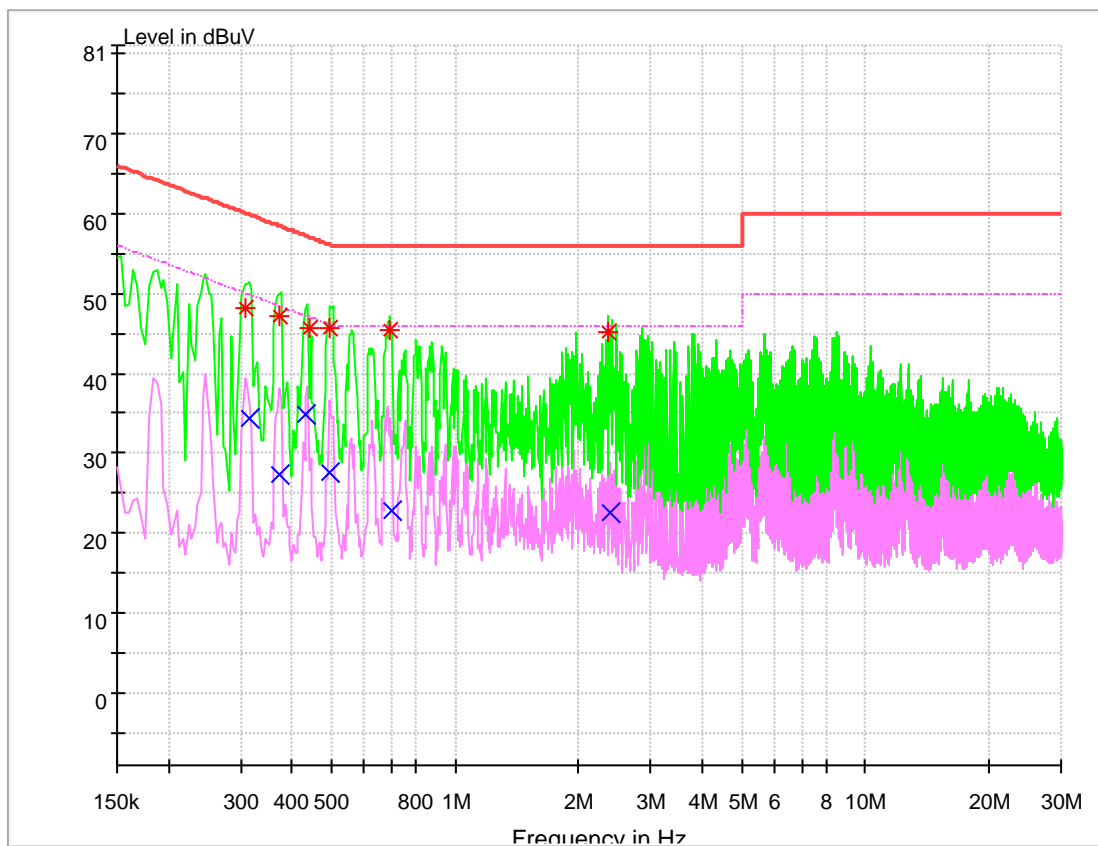
In this Appendix, only the test results and plots under the worst case can be reported.

EUT Conf.	Maximum Emissions	Verdict
TM1_DH5_Ch78	Not found obvious spikes or see marked spikes on plots and listed emissions records.	Pass



2 Result Plot

# Channel 78



**MEASUREMENT RESULT: QK Detector**

Frequency (MHz)	Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Transd. (dB)	Margin (dB)	Line	PE
0.309486	48.24	59.98	9.7	11.74	L1	FLO
0.372152	47.20	58.45	9.7	11.25	L1	FLO
0.441444	45.70	57.04	9.7	11.34	N	FLO
0.495606	45.53	56.07	9.7	10.54	L1	FLO
0.694230	45.35	56.00	9.7	10.65	L1	FLO
2.353468	45.09	56.00	9.7	10.91	N	FLO

**MEASUREMENT RESULT: AV Detector**

Frequency (MHz)	Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Transd. (dB)	Margin (dB)	Line	PE
0.315858	34.39	49.82	9.7	15.43	N	FLO



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0.371998	27.34	48.46	9.7	21.12	L1	FLO
0.432642	34.77	47.20	9.7	12.43	L1	FLO
0.495138	27.59	46.08	9.7	18.49	N	FLO
0.703630	22.81	46.00	9.7	23.19	L1	FLO
2.397042	22.65	46.00	9.7	23.35	L1	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

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END