



Appendix for Testreport

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.

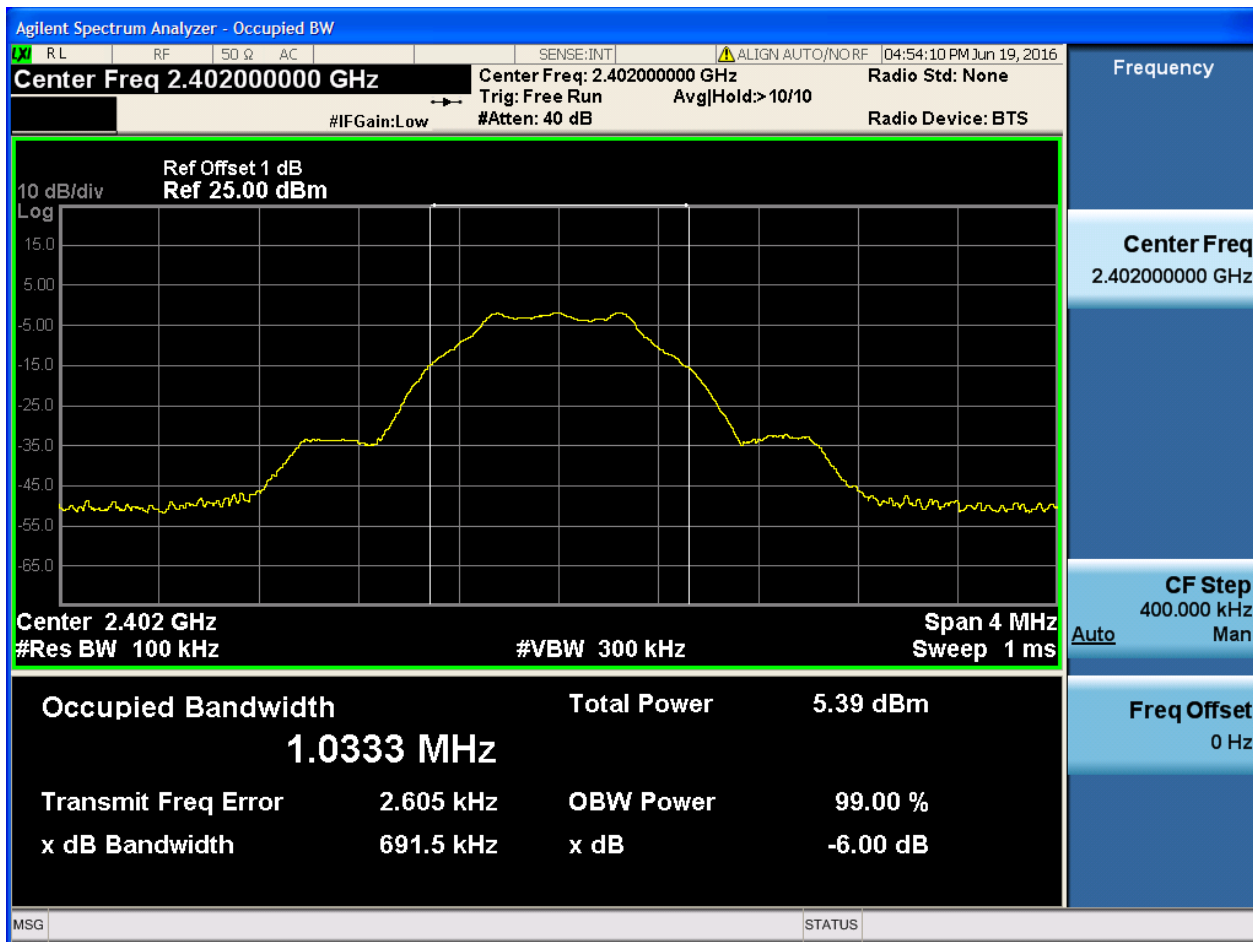
For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	DTS6dBBW[MHz]	Verdict
TM1 _Ch0	L	2402	0.69	pass
TM1 _Ch19	M	2440	0.70	pass
TM1 _Ch39	H	2480	0.69	pass

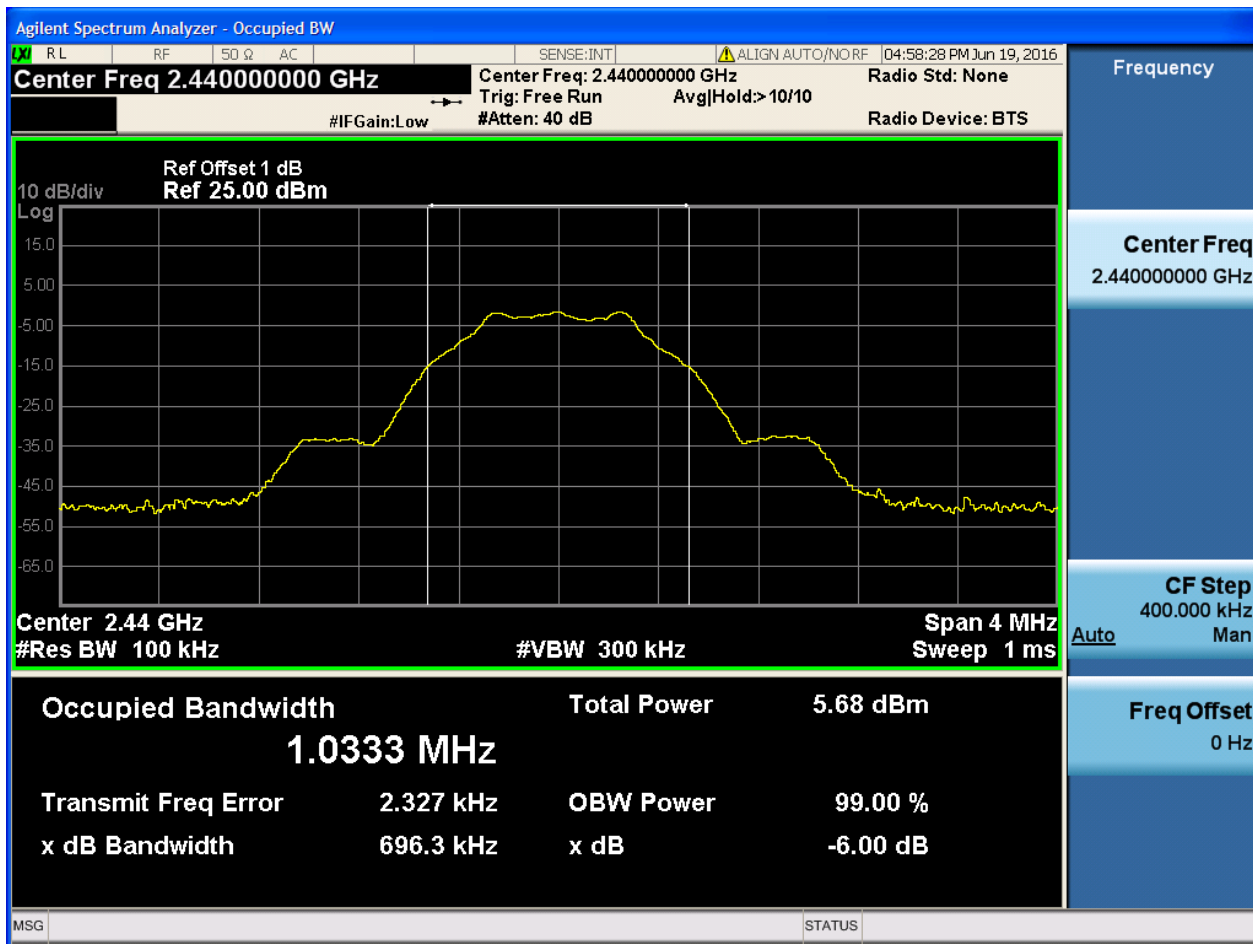
Part II - Test Plots

2.1 TM1_Ch0_L



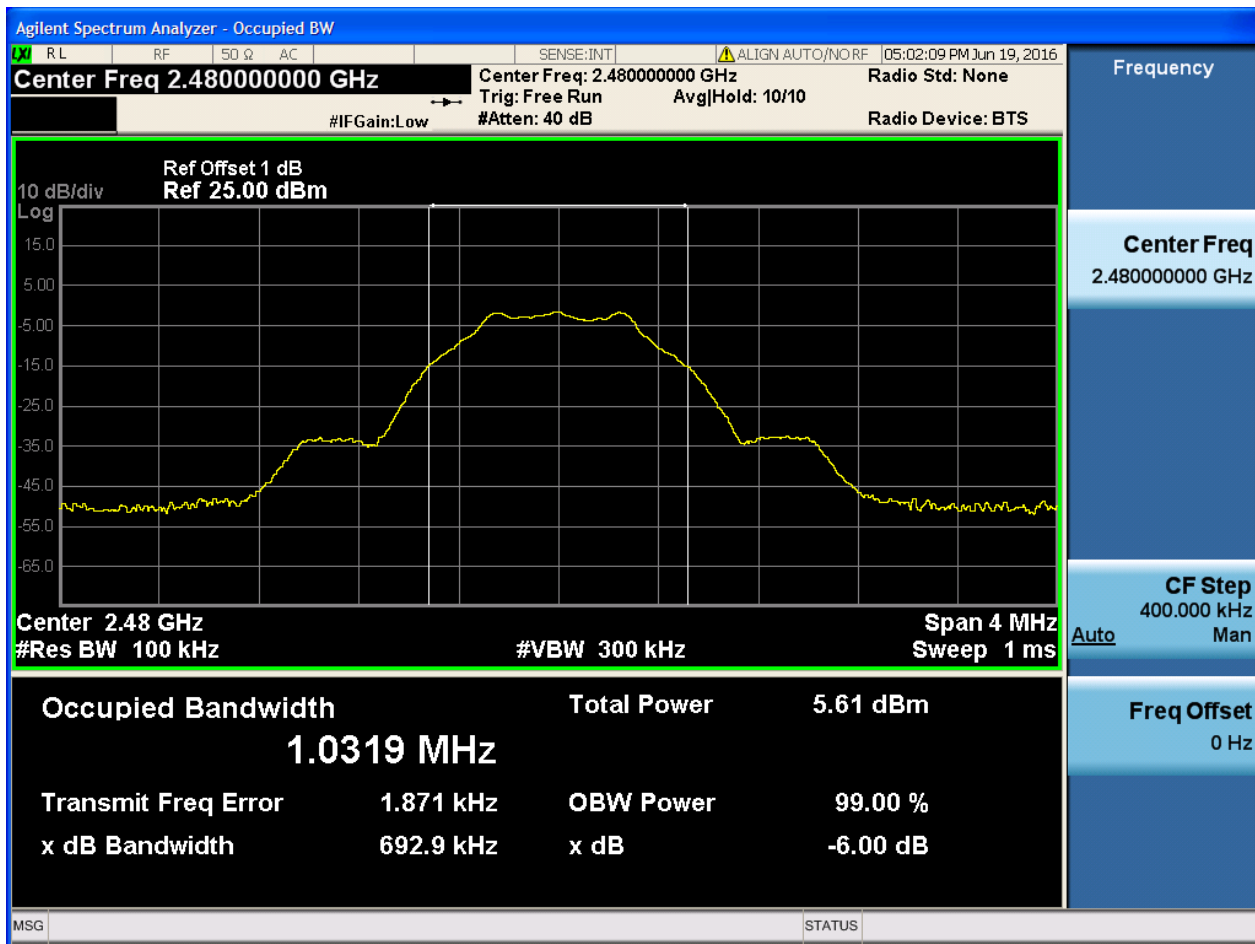


2.2 TM1_Ch19_M





2.3 TM1_Ch39_H



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.

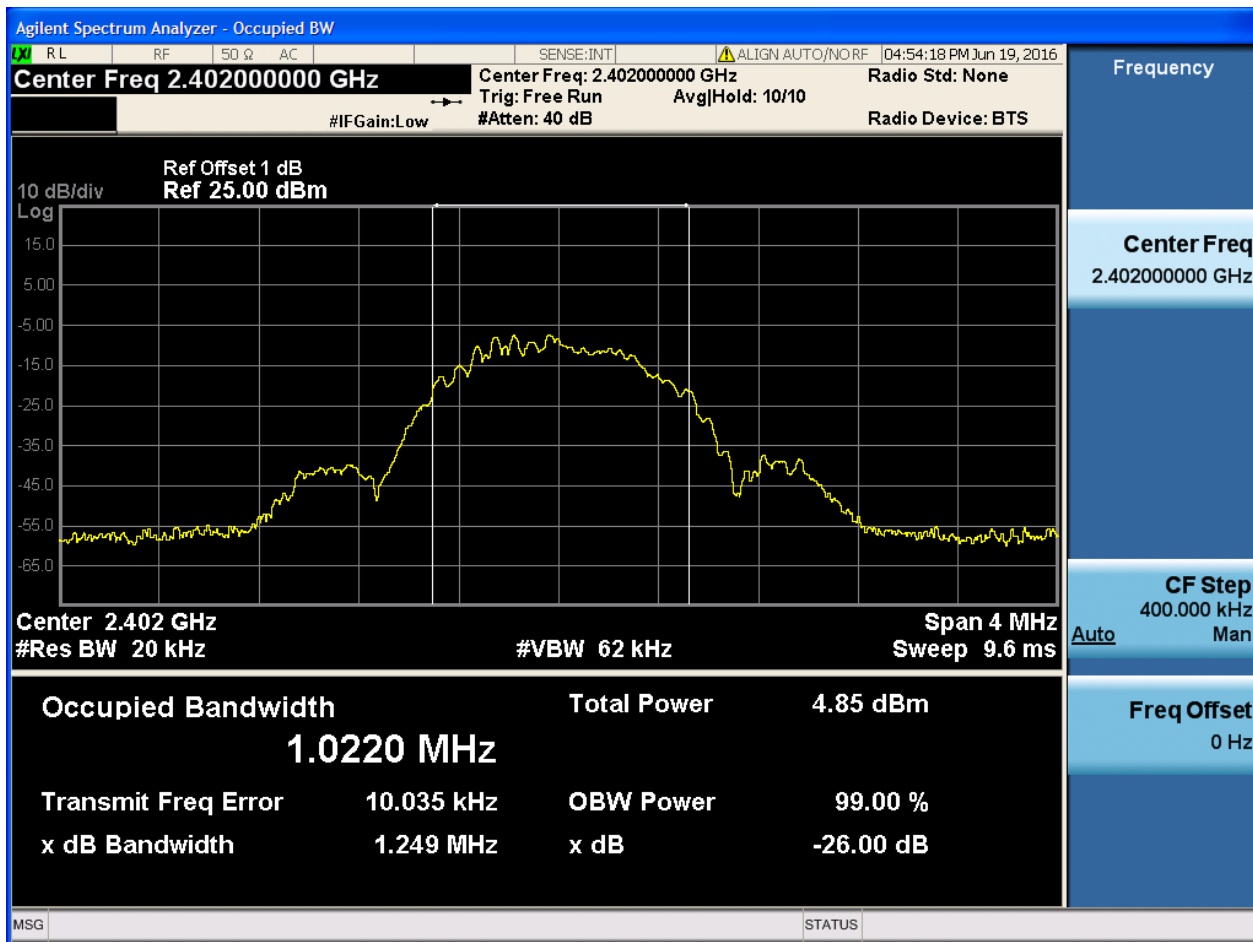
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Occupied Bandwidth [MHz]	Verdict
TM1 _Ch0	L	2402	1.02	pass
TM1 _Ch19	M	2440	1.02	pass
TM1 _Ch39	H	2480	1.02	pass



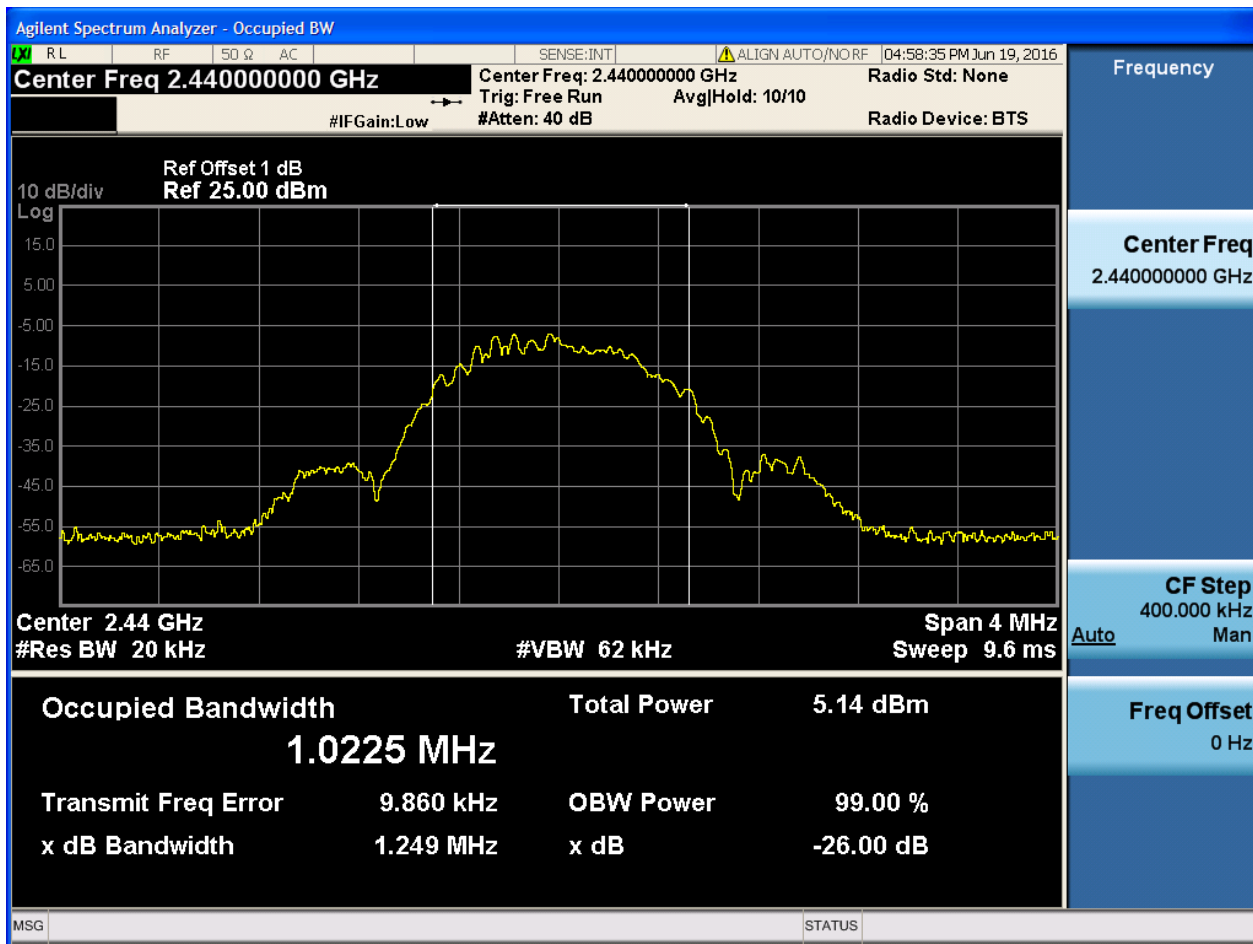
Part II - Test Plots

2.1 TM1_Ch0_L



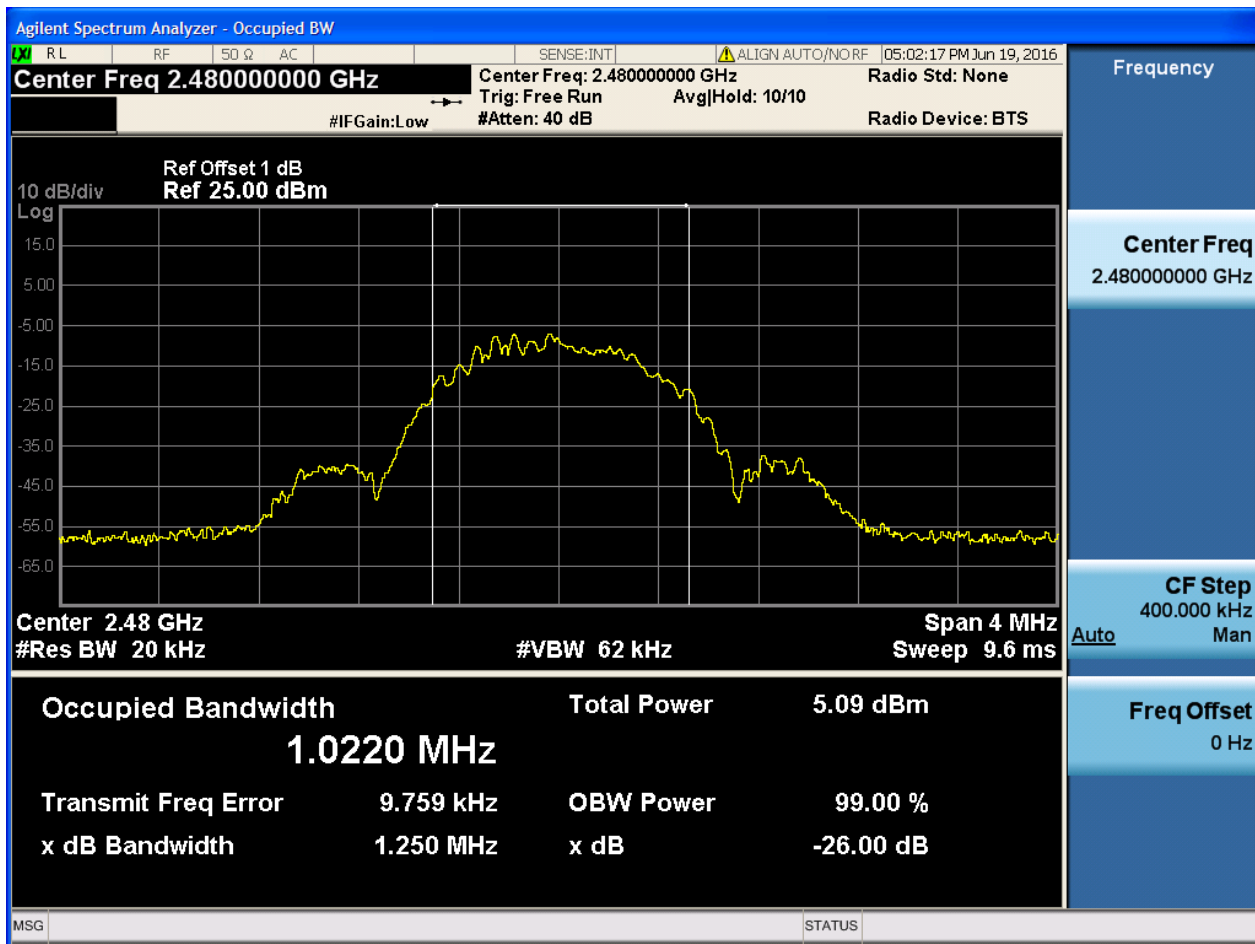


2.1 TM2_Ch19_M





2.3 TM1_Ch39_H





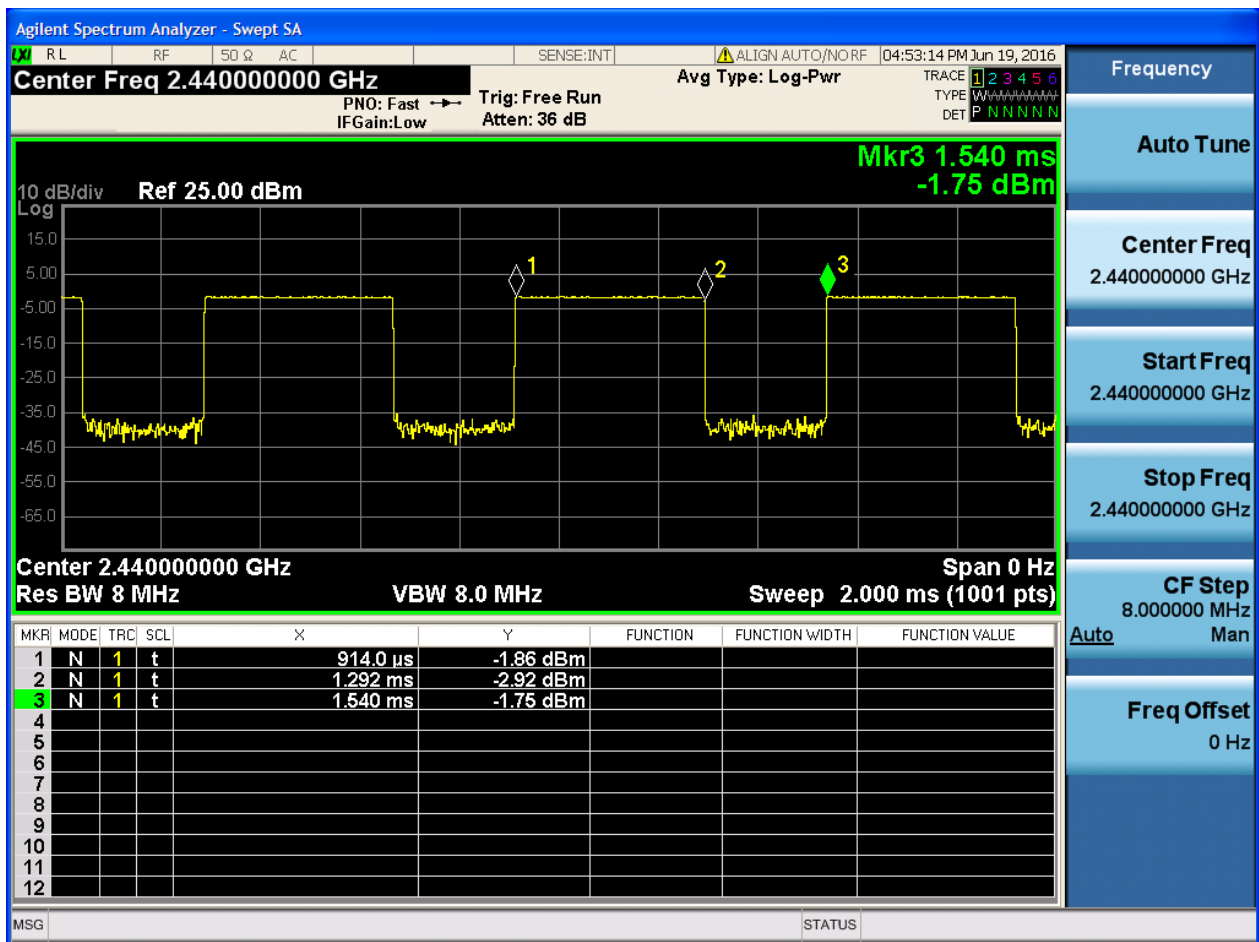
Appendix C: Duty Cycle

Part I - Test Results

Test Mode	TX Freq. [MHz]	Duty cycle [%]
TM1	CH0,CH19,CH39	62

Part II - Test Plots

2.1 TM1



Appendix D: Maximum Conducted Average Output Power

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Power[dBm]	Verdict
TM1 _Ch0	L	2402	-1.24	pass
TM1 _Ch19	M	2440	-0.85	pass
TM1 _Ch39	H	2480	-0.83	pass



Part II - Test Plots

2.1 TM1_Ch0_L





Agilent Spectrum Analyzer - The duty cycle factor 2.22 dB added.

RL RF 50 Ω AC SENSE:INT ALIGN AUTO/NORF 04:58:54 PM Jun 19, 2016

Center Freq 2.440000000 GHz #Avg Type: RMS Avg/Hold: 500/500

PNO: Wide Trg: Free Run IF Gain: Low Atten: 38 dB

TRACE 1 2 3 4 5 6
TYPE A A A A A A
DET A A A A A A

Ref Offset 3.22 dB
Ref 30.00 dB

Mkr1 2.440 000 GHz
Band Power -0.845 dBm

10 dB/div
Log

Start 2.438000 GHz Stop 2.442000 GHz
#Res BW 20 kHz #VBW 62 kHz* Sweep 12.3 ms (601 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.440 000 GHz	-15.045 dBm	Band Power	1.027 MHz	-0.845 dBm
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

MSG STATUS

Frequency

Auto Tune

Center Freq
2.440000000 GHz

Start Freq
2.438000000 GHz

Stop Freq
2.442000000 GHz

CF Step
400.000 kHz

Auto Man

Freq Offset
0 Hz



2.3 TM1_Ch39_H



Appendix E: Maximum Power Spectral Density Level

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	PD[MHz]	Verdict
TM1 _Ch0	L	2402	-13.86	pass
TM1 _Ch19	M	2440	-13.78	pass
TM1 _Ch39	H	2480	-14.10	pass

Part II - Test Plots

2.1 TM1_Ch0_L





2.2 TM1_Ch19_M





2.3 TM1_Ch39_H



Appendix F: Band Edges Compliance

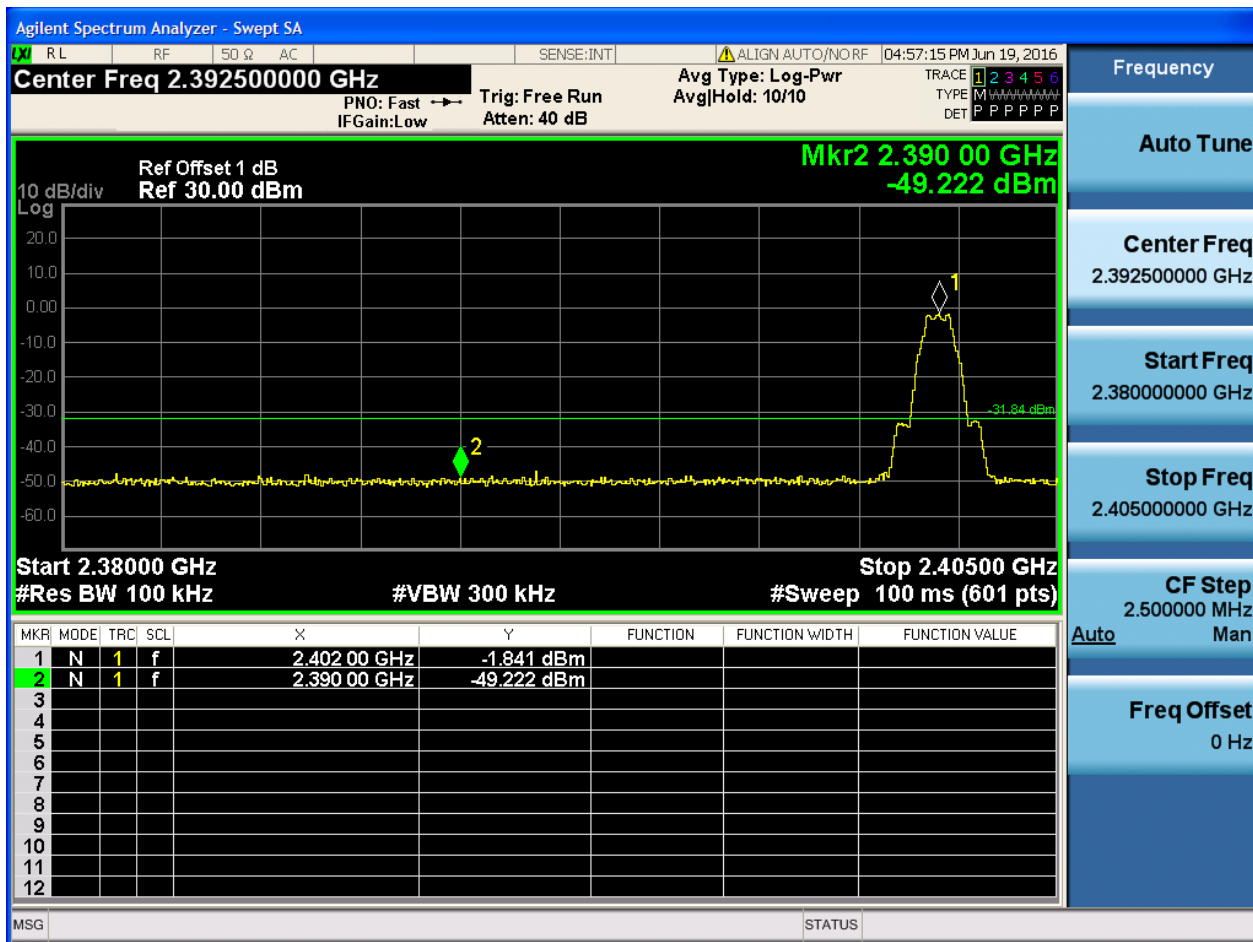
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Carrier Power[dBm]	Max.Spurious Level[dBm]	Verdict
TM1 _Ch0	L	2402	-1.84	-49.22	pass
TM1 _Ch19	H	2480	-1.61	-49.34	pass



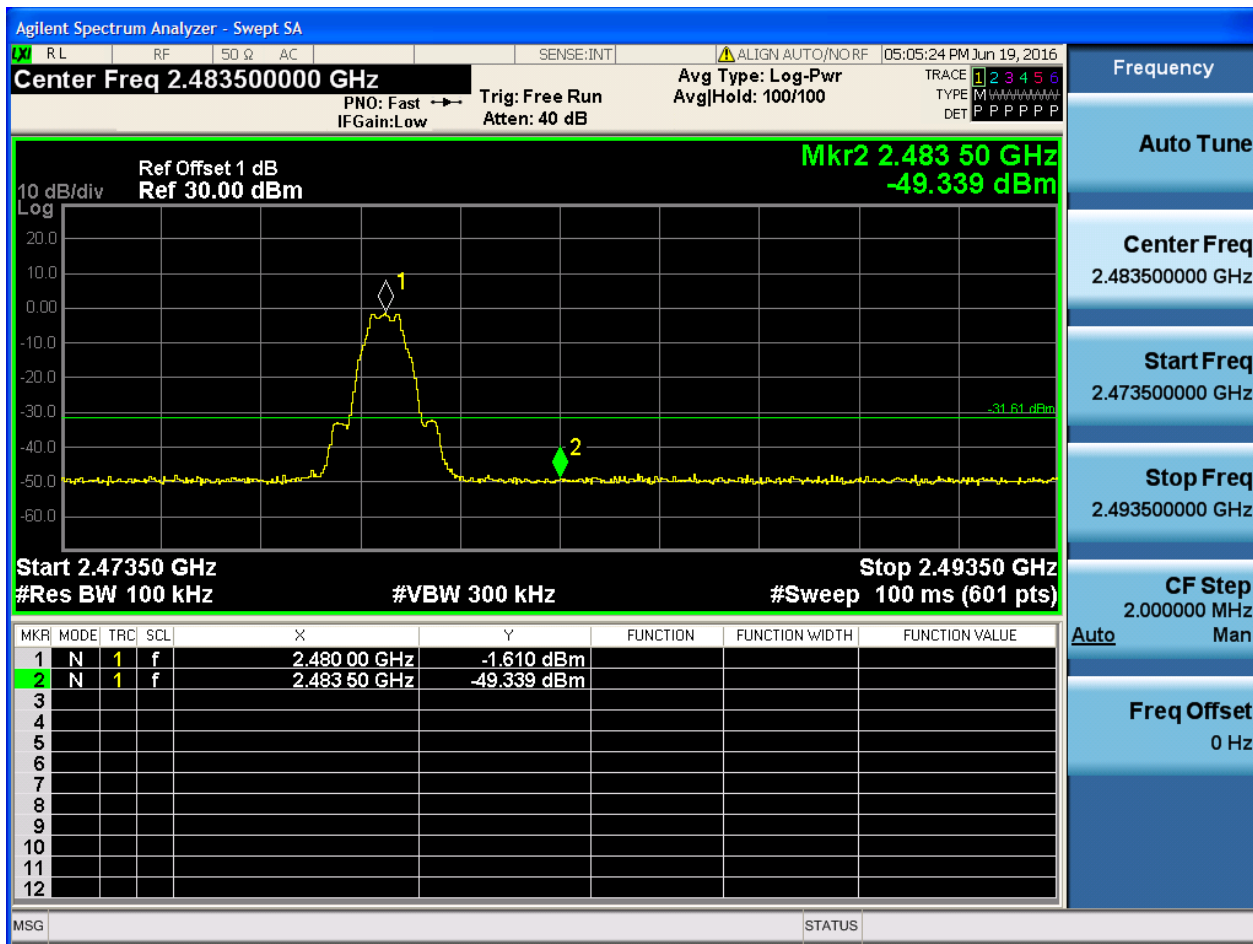
Part II - Test Plots

2.1 TM1_Ch0_L





2.2 TM1_Ch39_H



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

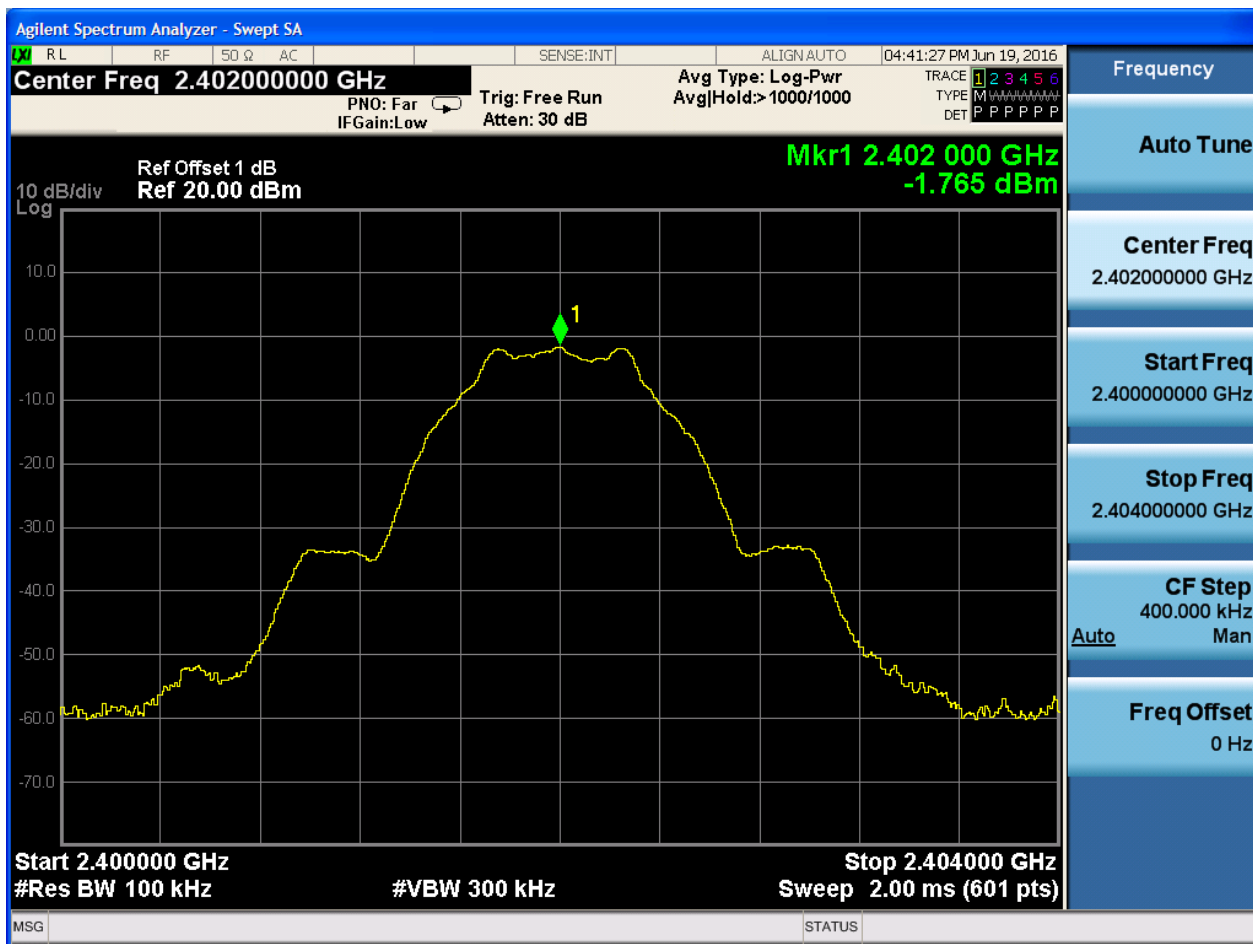
Test Mode	Test Channel	Frequency[MHz]	Pref[dBm]	Puw[dBm]	Verdict
TM1_Ch0	L	2402	-1.76	<limit	pass
TM1_Ch19	M	2440	-1.54	<limit	pass
TM1_Ch39	H	2480	-1.93	<limit	pass



Part II - Test Plots

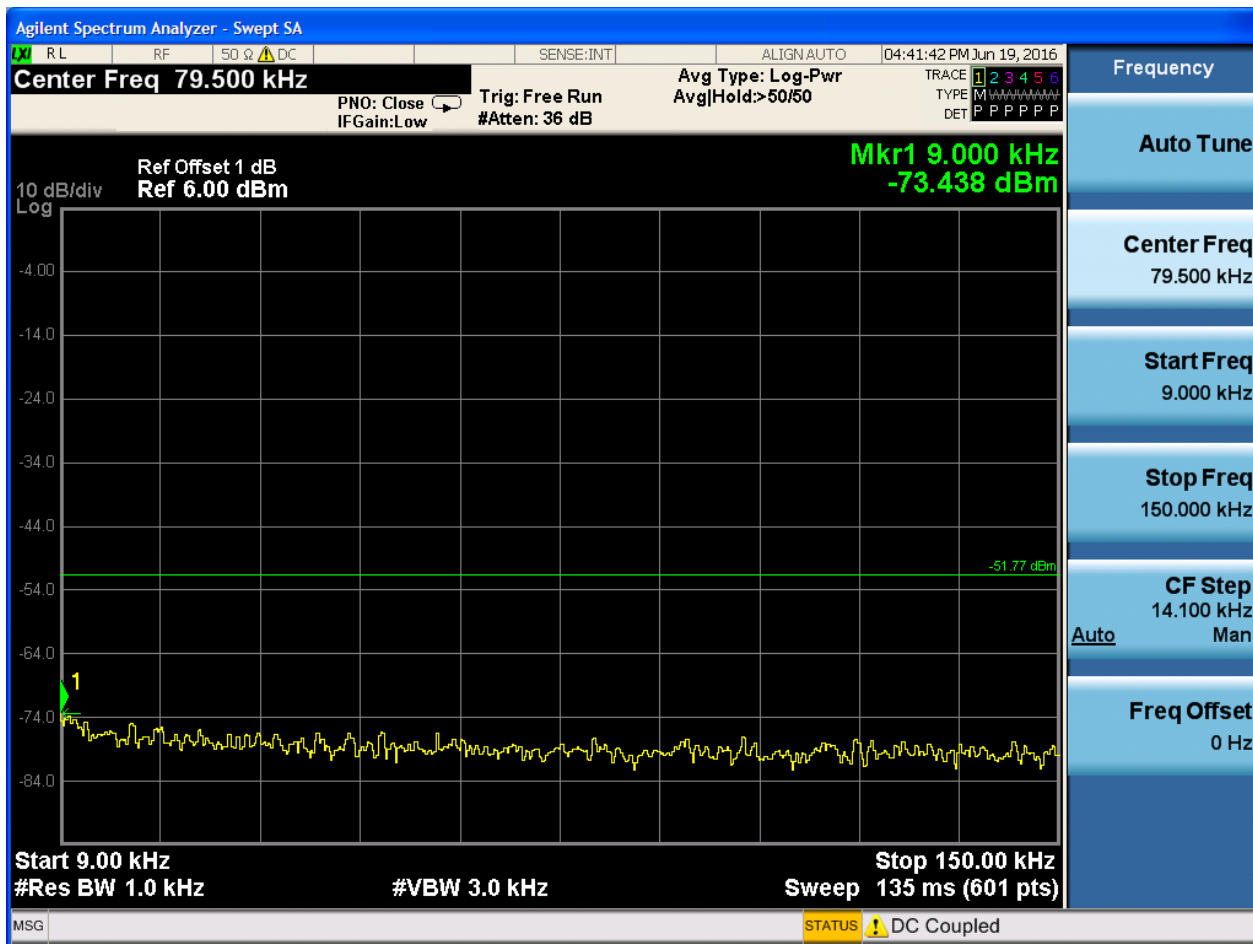
2.1 TM1_Ch0_L

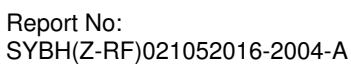
Pref:



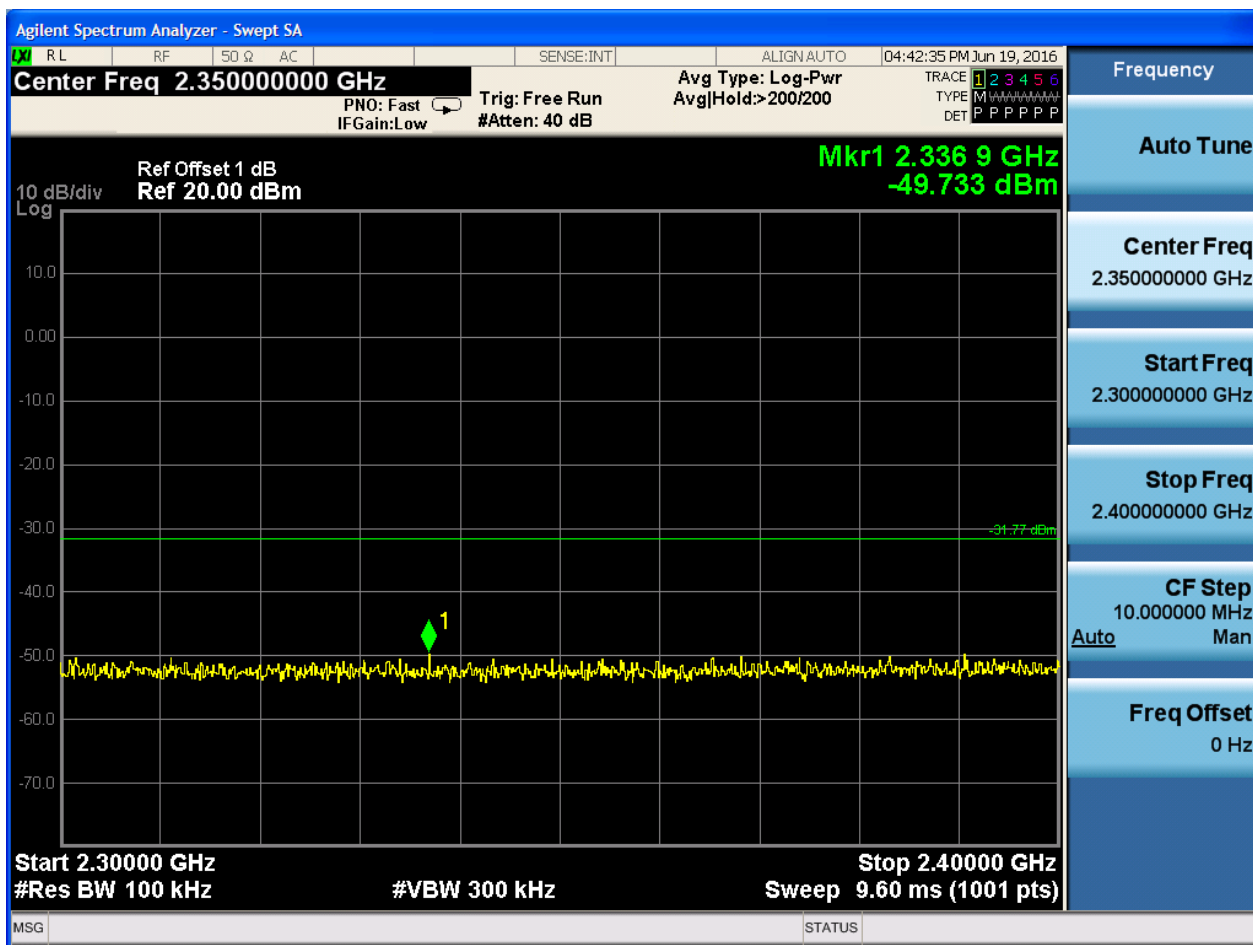


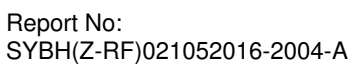
Puw:









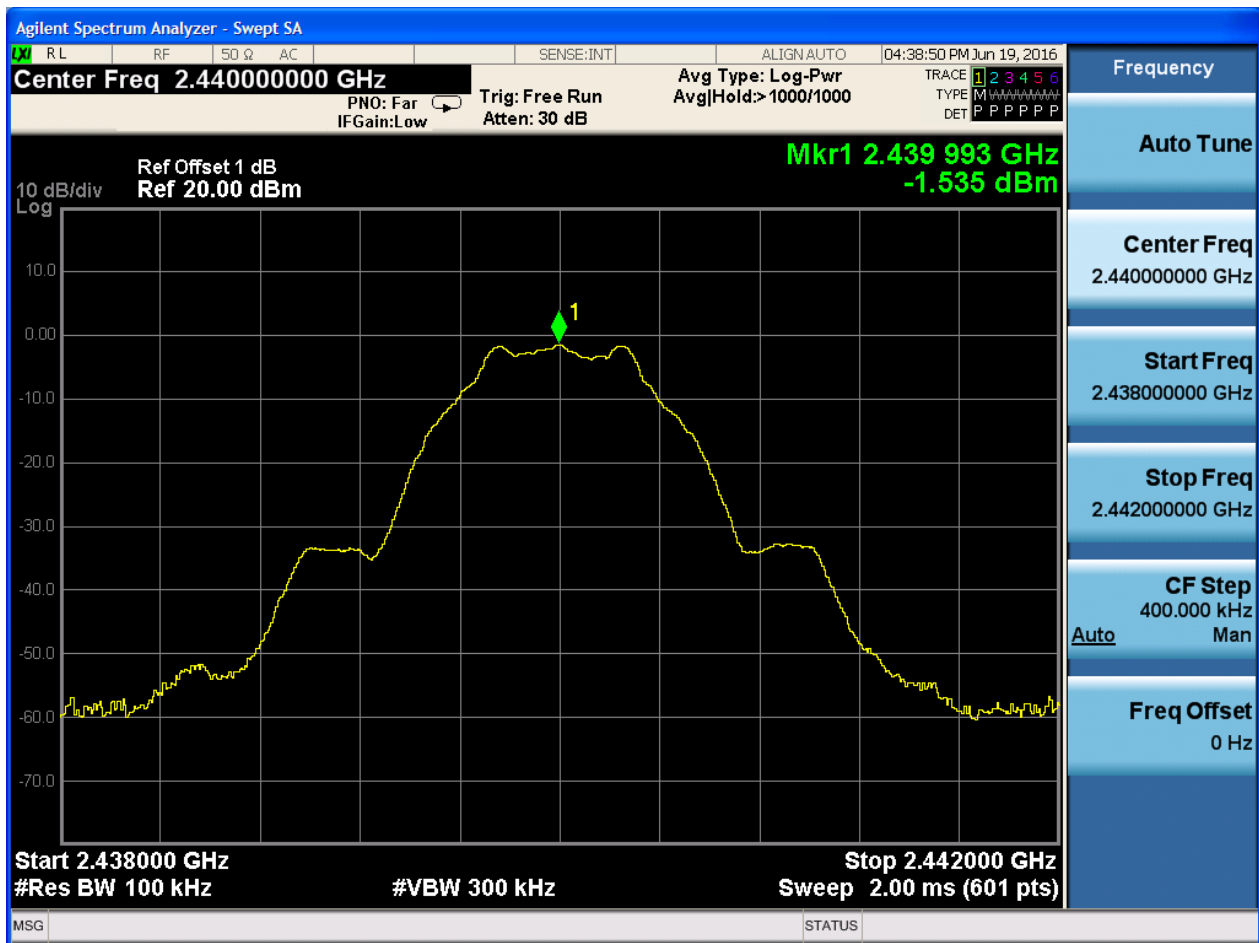






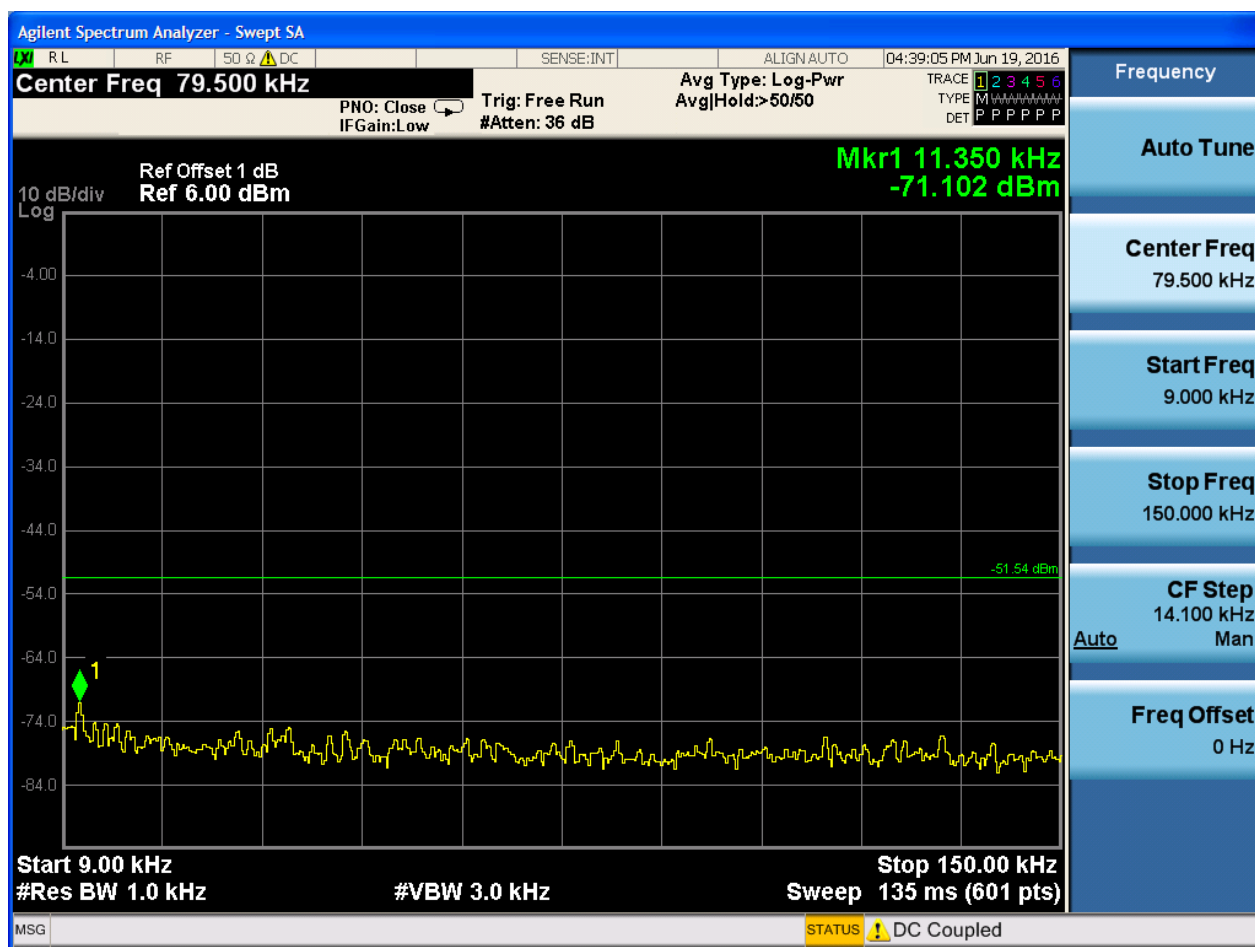
2.2 TM1_Ch19_M

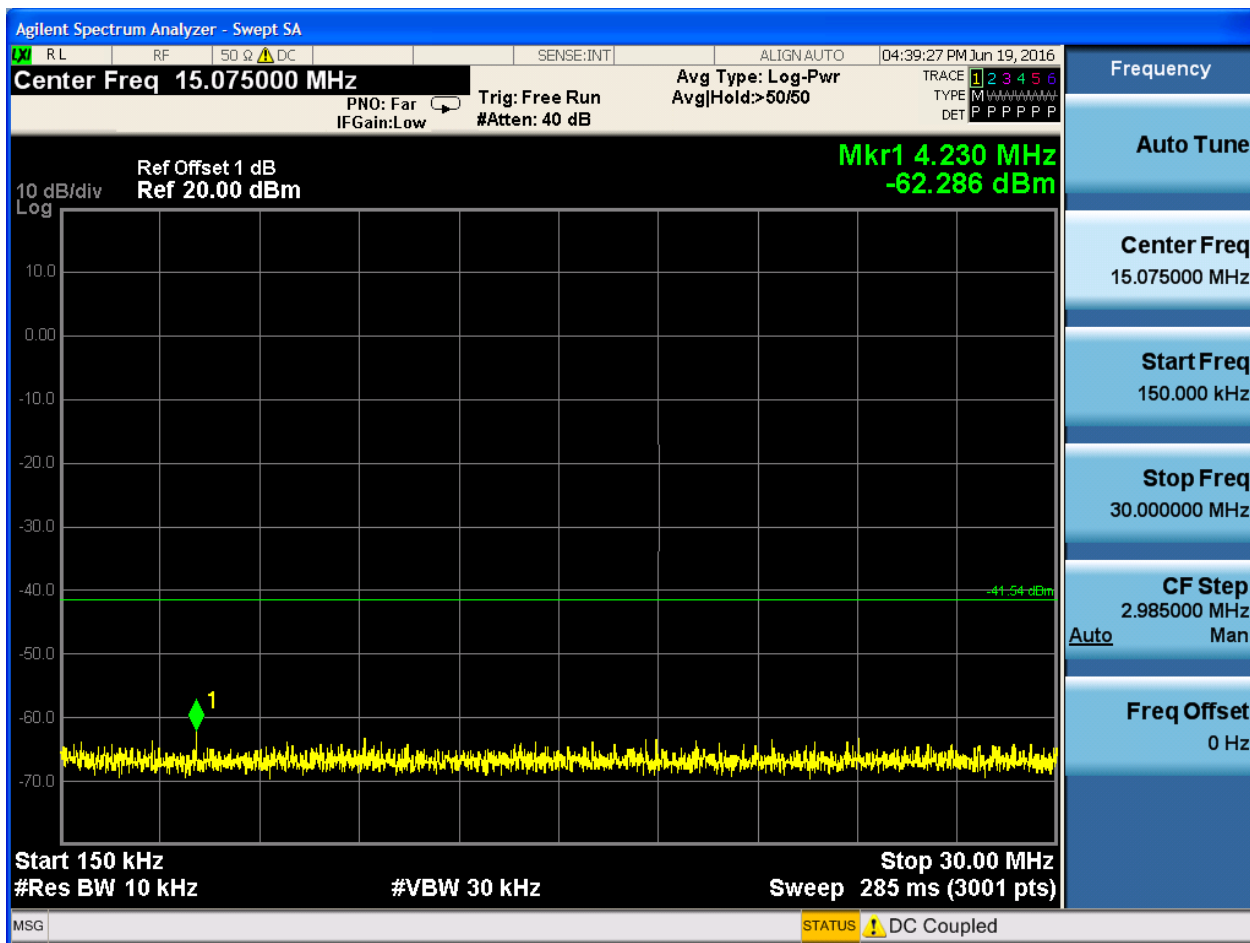
Pref:

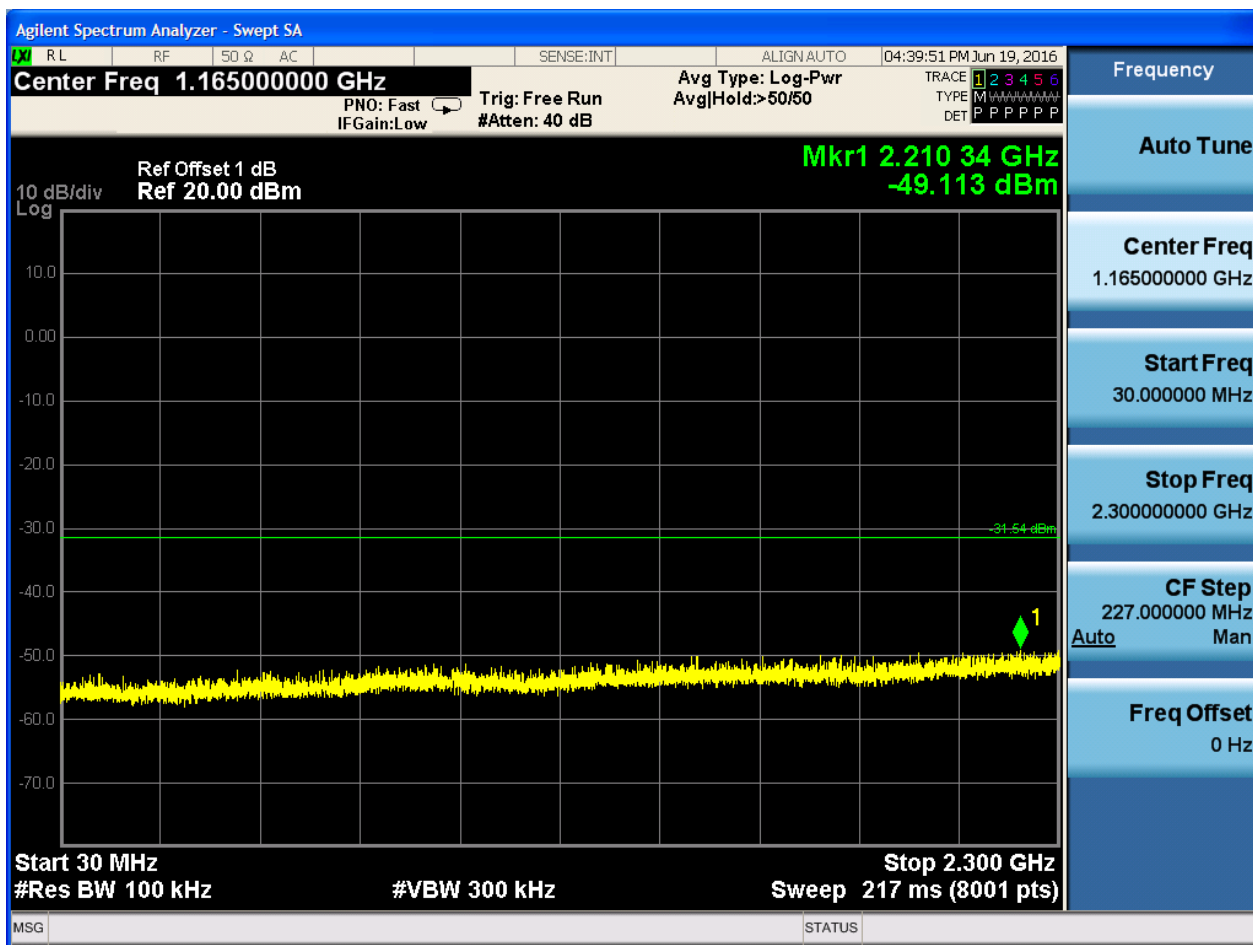


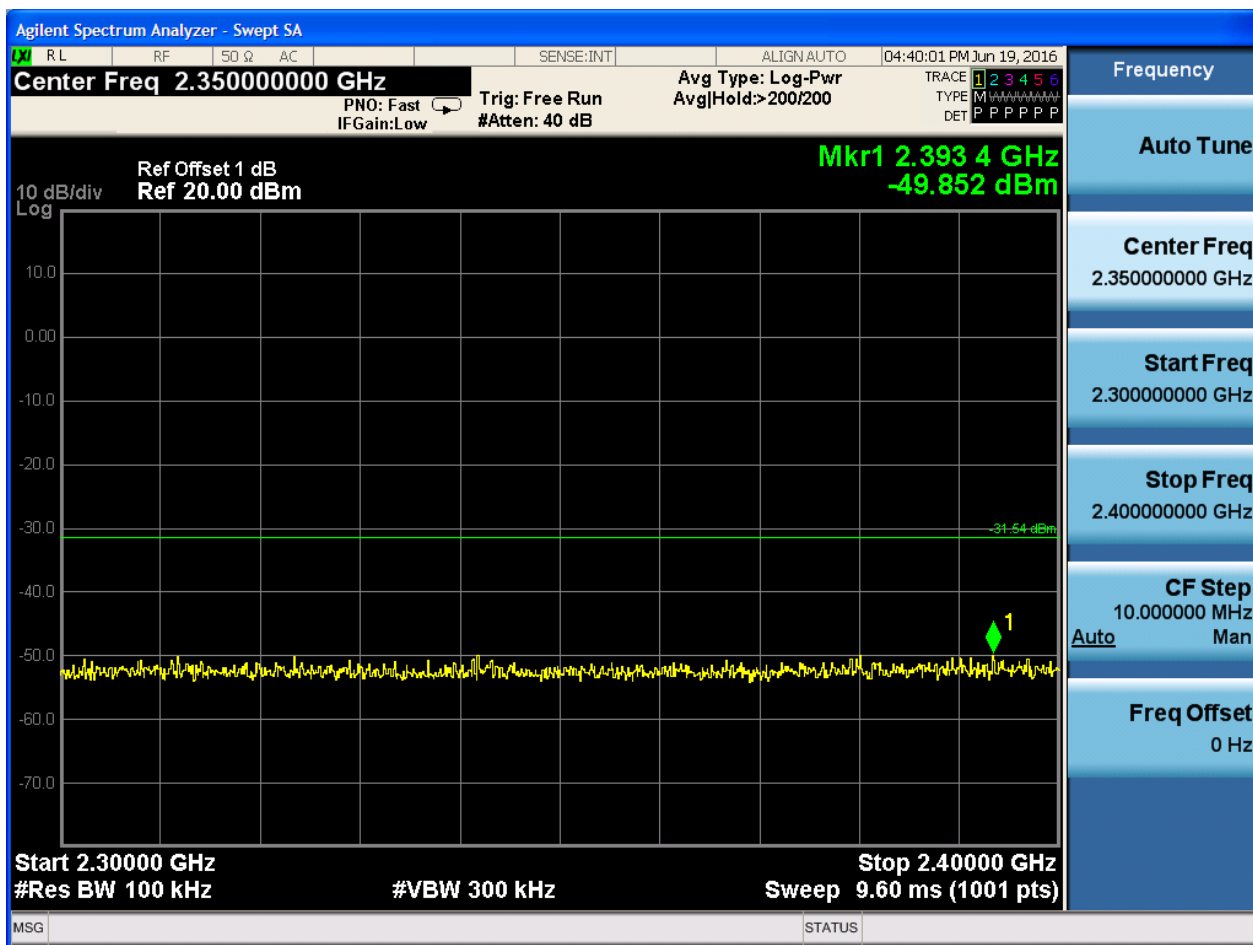


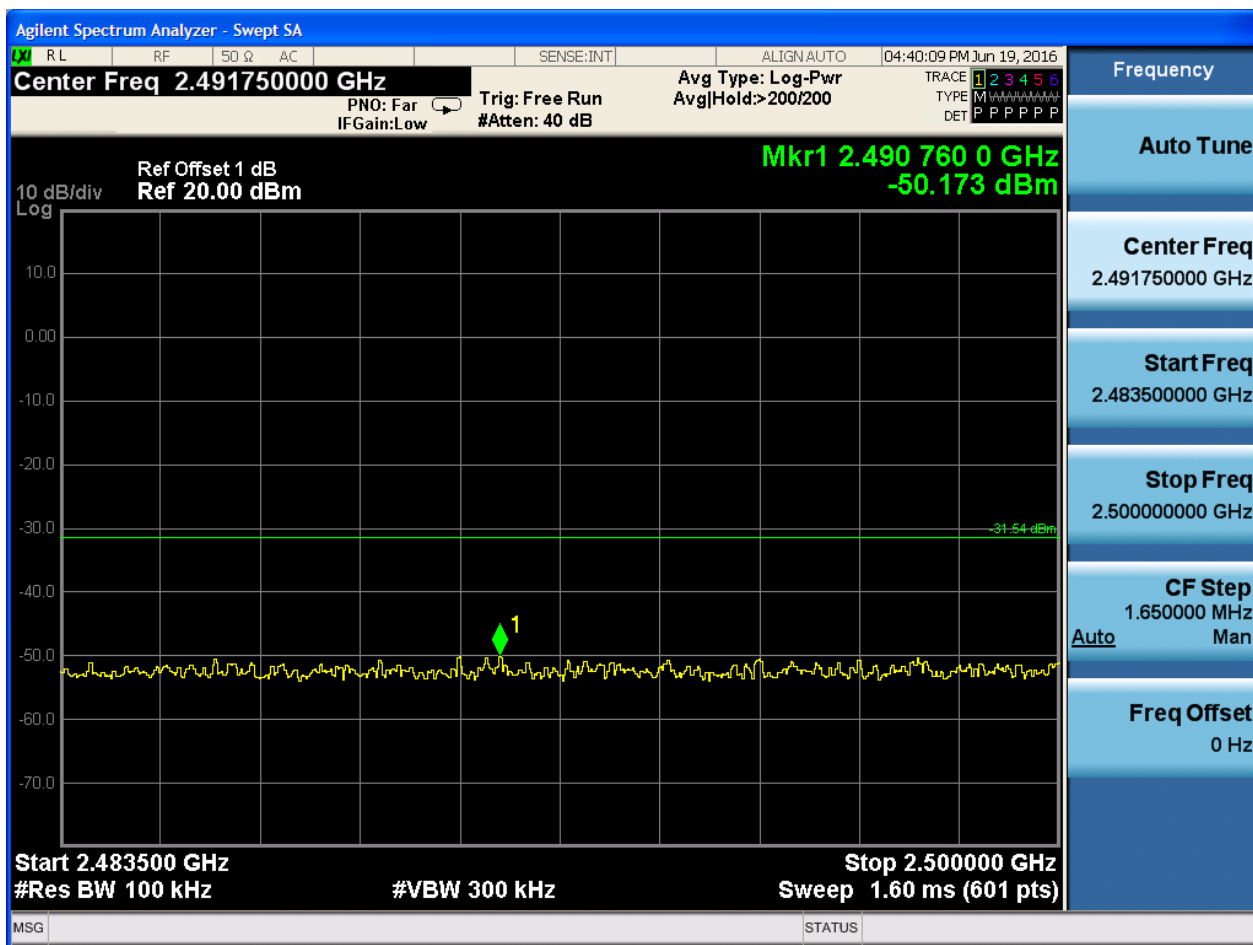
Puw:















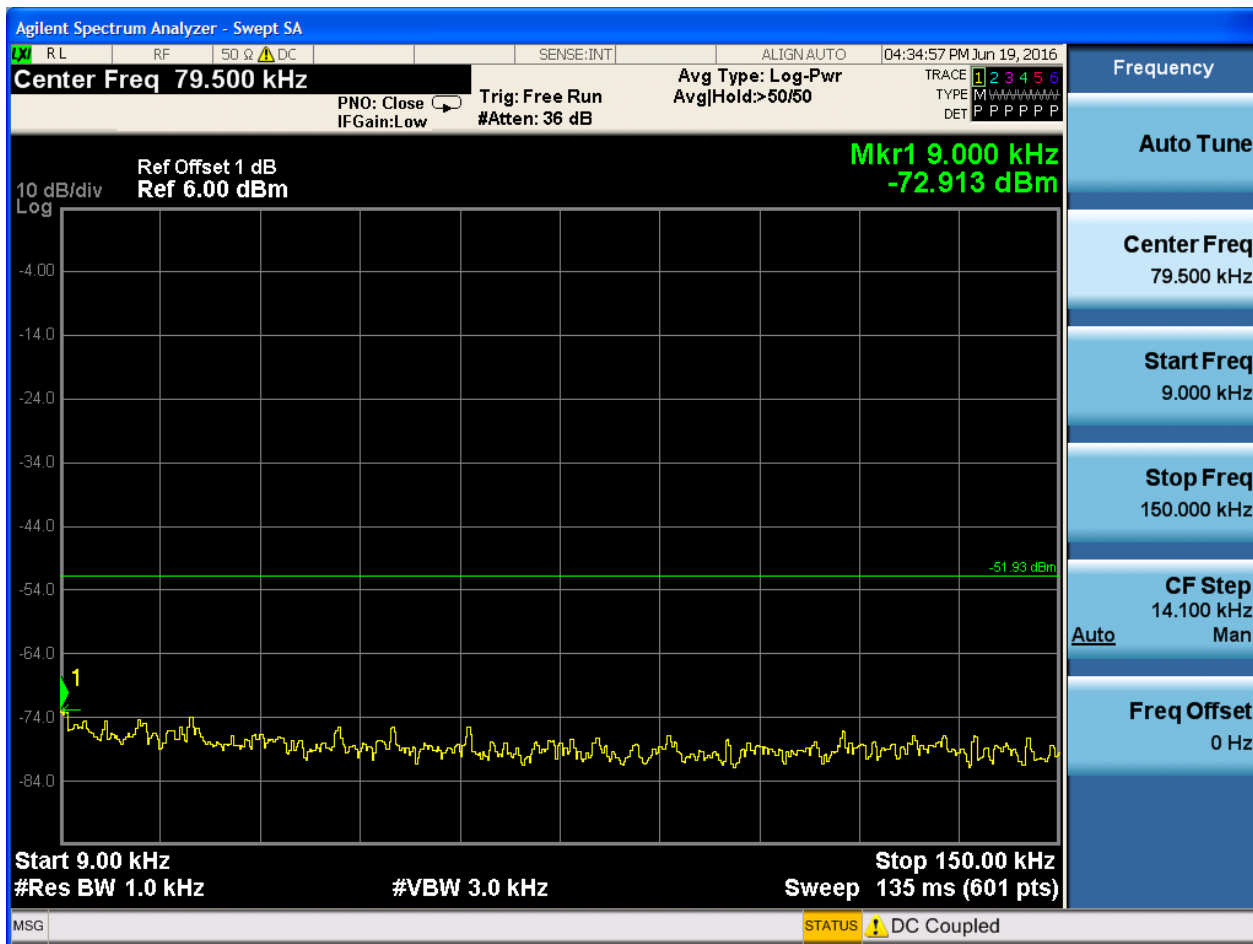
2.3 TM1_Ch39_H

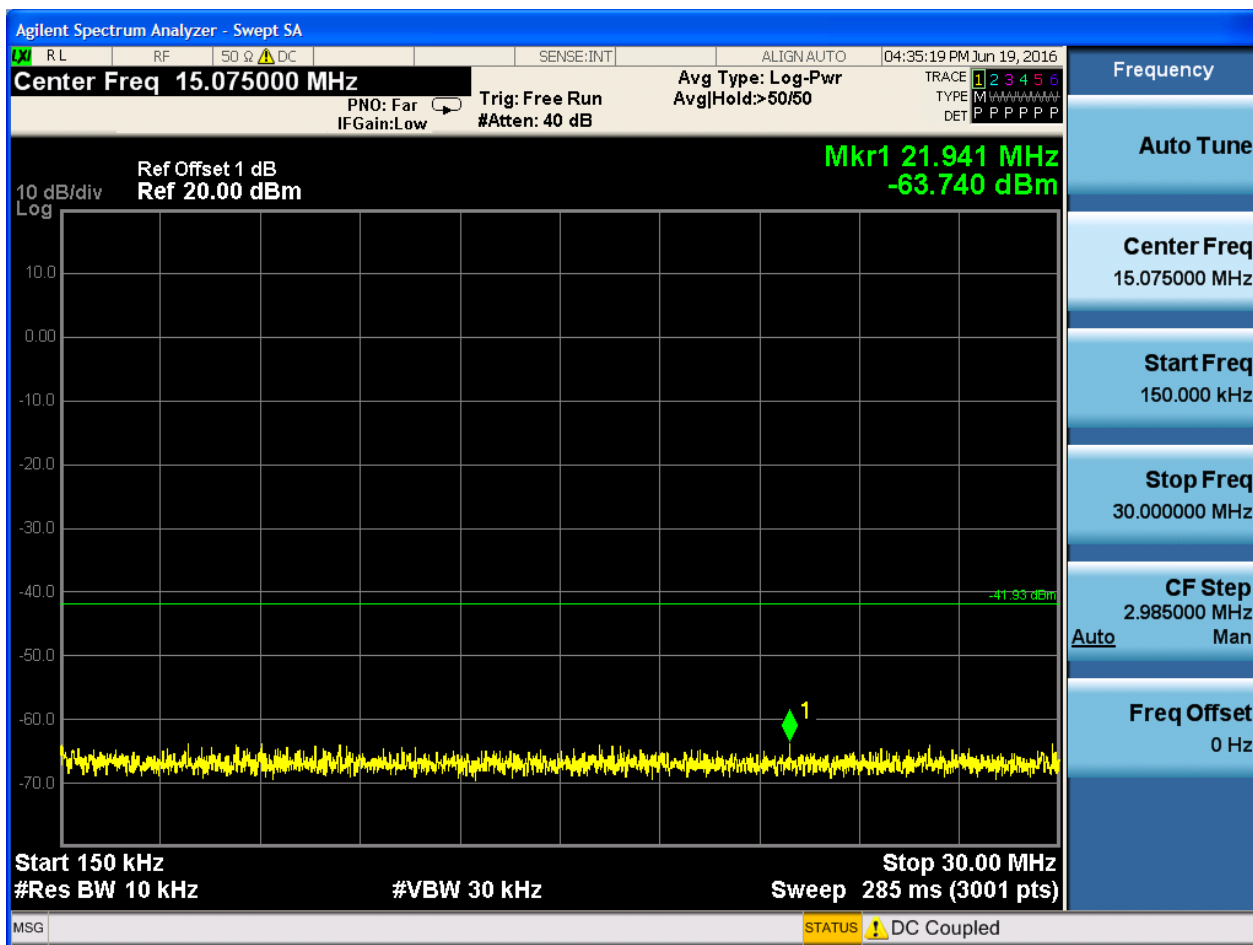
Pref:

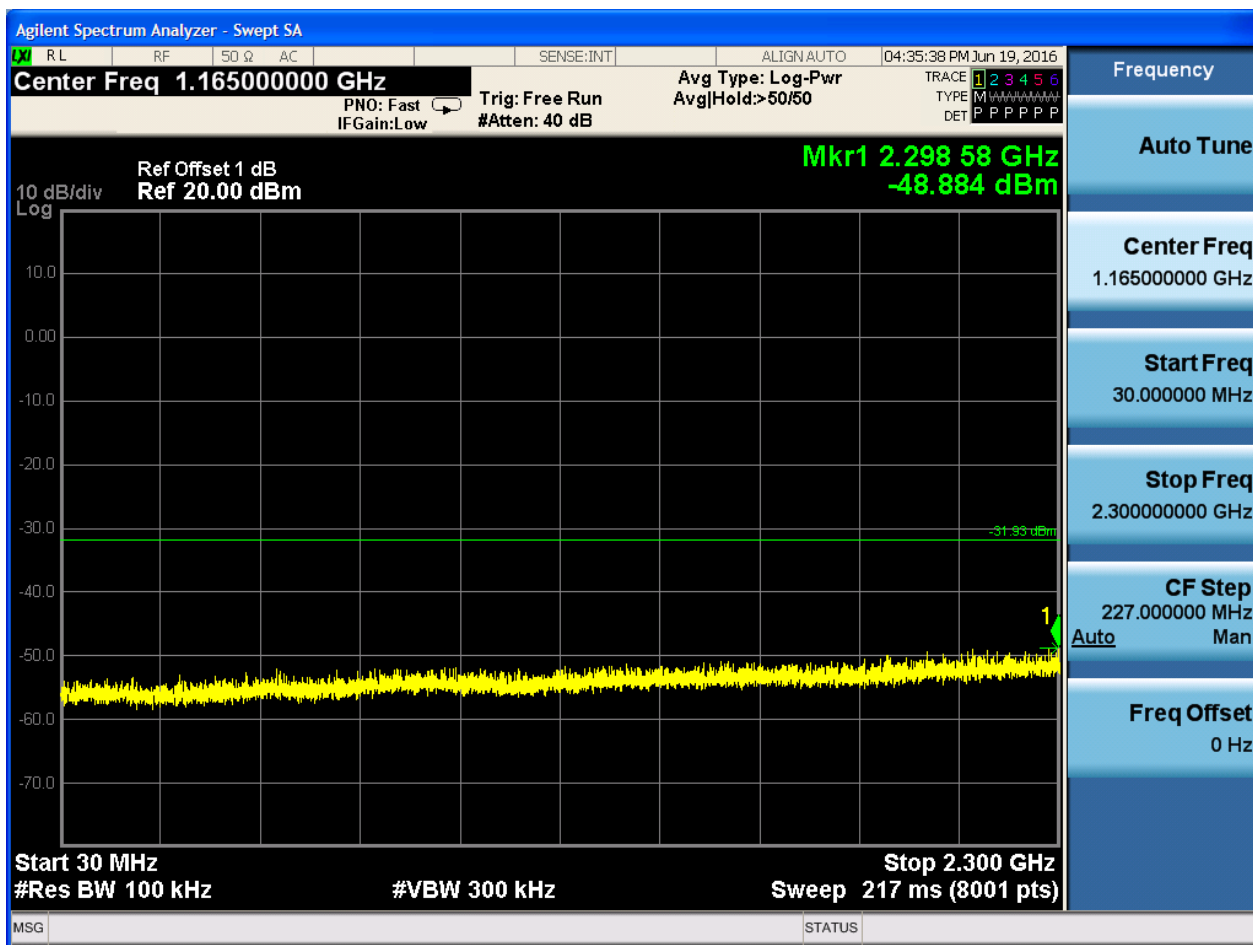


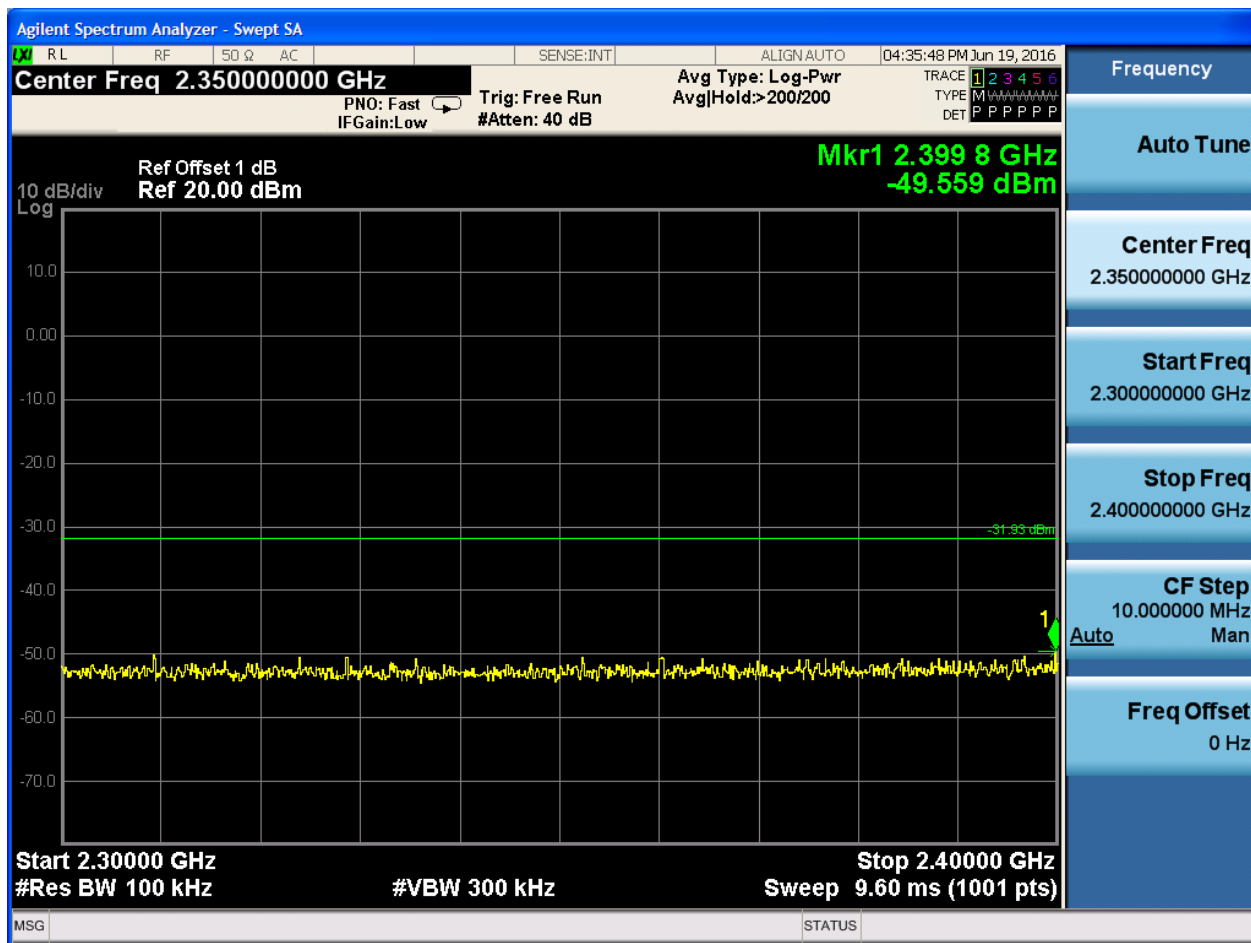


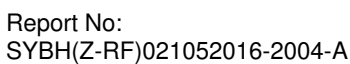
Puw:













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

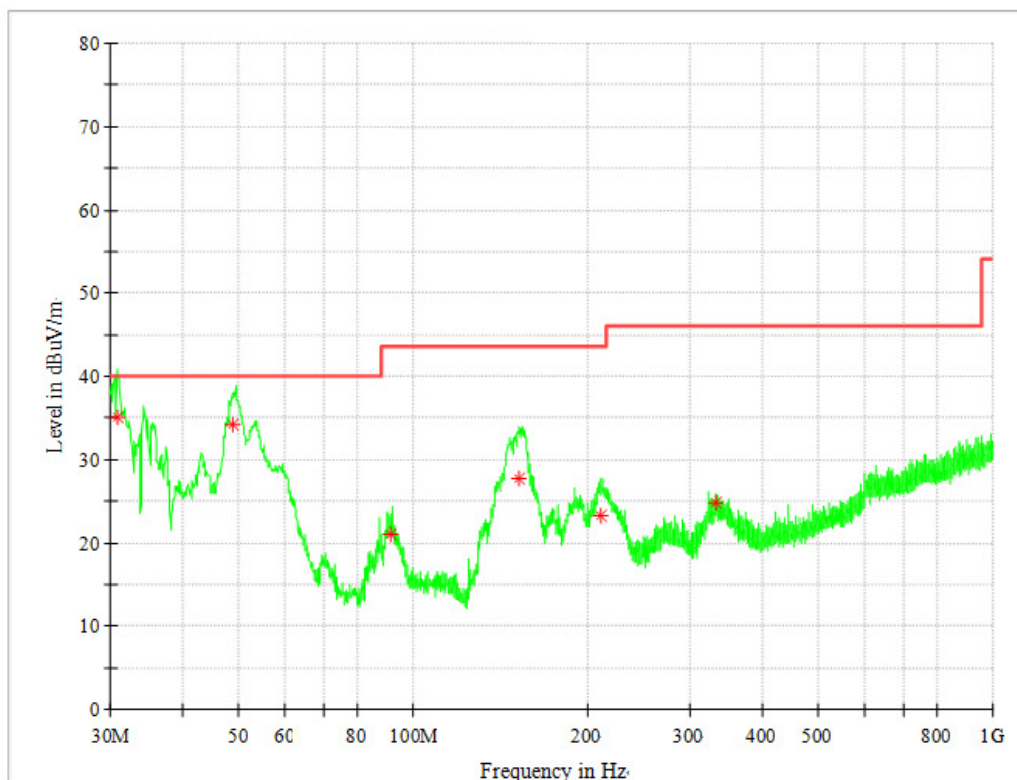
1.1 Part 1: Testing Range of “9 kHz to 30MHz”

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

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).



Frequency (MHz)	Level (dBμ V/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Trans d. (dB)
30.894350	35.09	40.00	4.91	100.0	V	177.0	14.7
48.984650	34.19	40.00	5.81	100.0	V	6.0	15.2
91.500650	21.10	43.50	22.40	130.0	H	49.0	12.5
152.293700	27.76	43.50	15.74	100.0	V	157.0	10.3
210.644100	23.22	43.50	20.28	142.0	V	232.0	13.0
332.958650	24.70	46.00	21.30	100.0	H	341.0	16.7

Note:

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

Margin=Limit-Level. The reading level is calculated by software which is not shown in the sheet.

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.

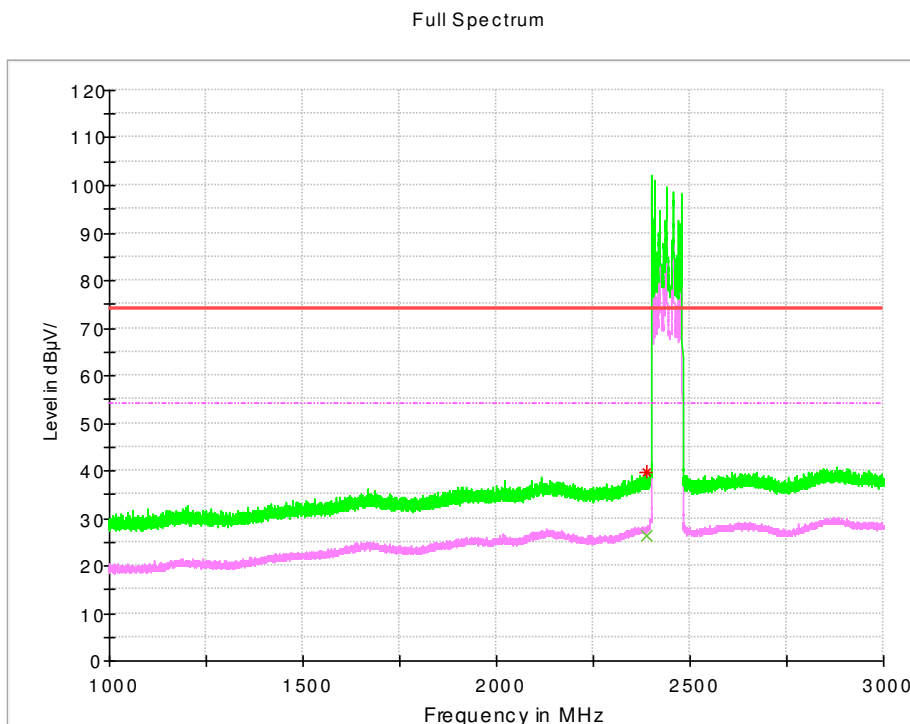
Note 2: Two limits are required in the testing range above 1 GHz, that is Peak limit (74 dBμV/m) and Average Limit (54 dBμV/m).

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

Test Mode:

1.4.1 Test Mode: TM1

1.4.1.1 Channel 0



MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Transd. (dB)
2390.000000	26.20	54.00	27.80	134.0	H	240.0	-7.6

MEASUREMENT RESULT: PK Detector

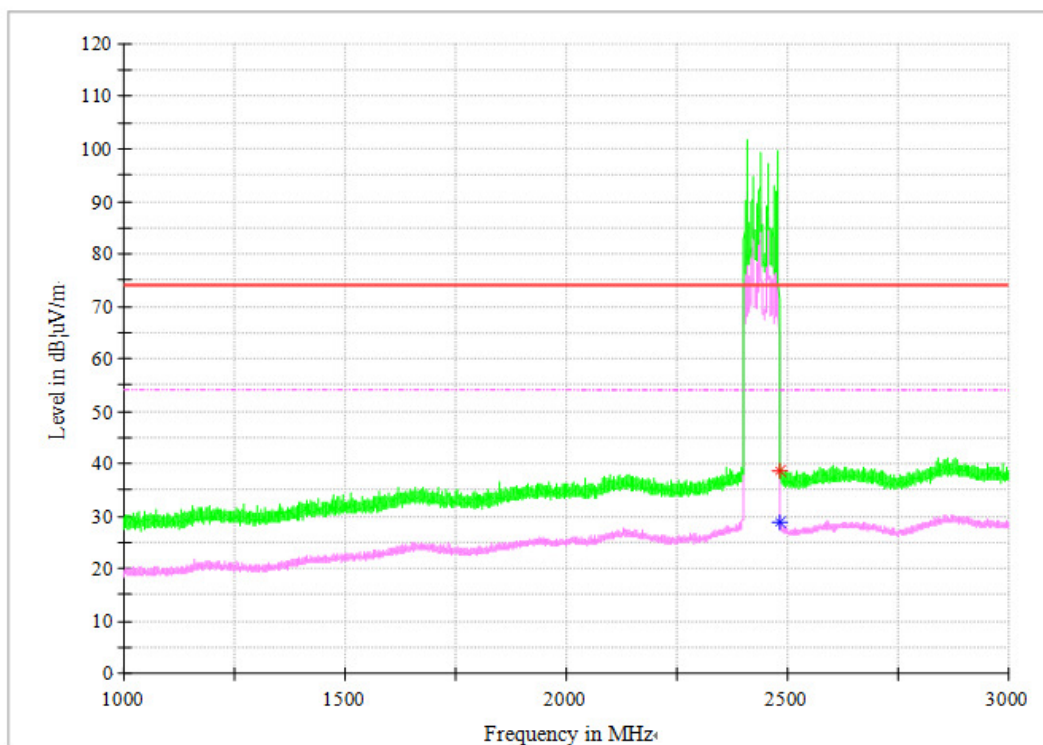
Frequency (MHz)	Level (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Transd. (dB)
2390.000000	39.57	74.00	34.43	150.0	H	275.0	-7.6

Note2:

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

Margin=Limit-Level. The reading level is calculated by software which is not shown in the sheet.

1.4.1.2 Channel 39



MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h	Transd. (dB)
2483.500000	28.71	54.00	25.29	150.0	V	238.0	-5.4

MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h (deg)	Transd. (dB)
2483.500000	38.49	74.00	35.51	150.0	H	26.0	-5.4

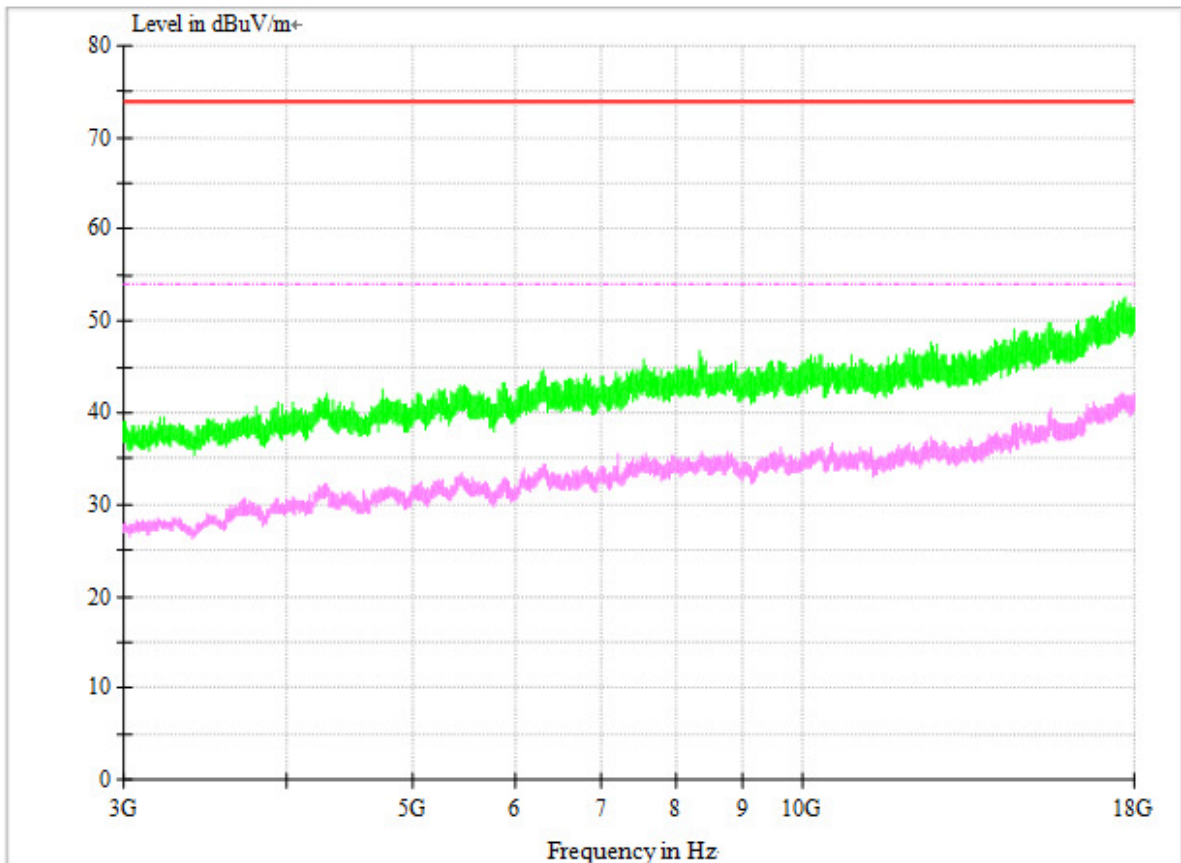
Note2:

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

Margin=Limit-Level. The reading level is calculated by software which is not shown in the sheet.

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 μ V/m) and Average Limit (54 dB μ V/m).



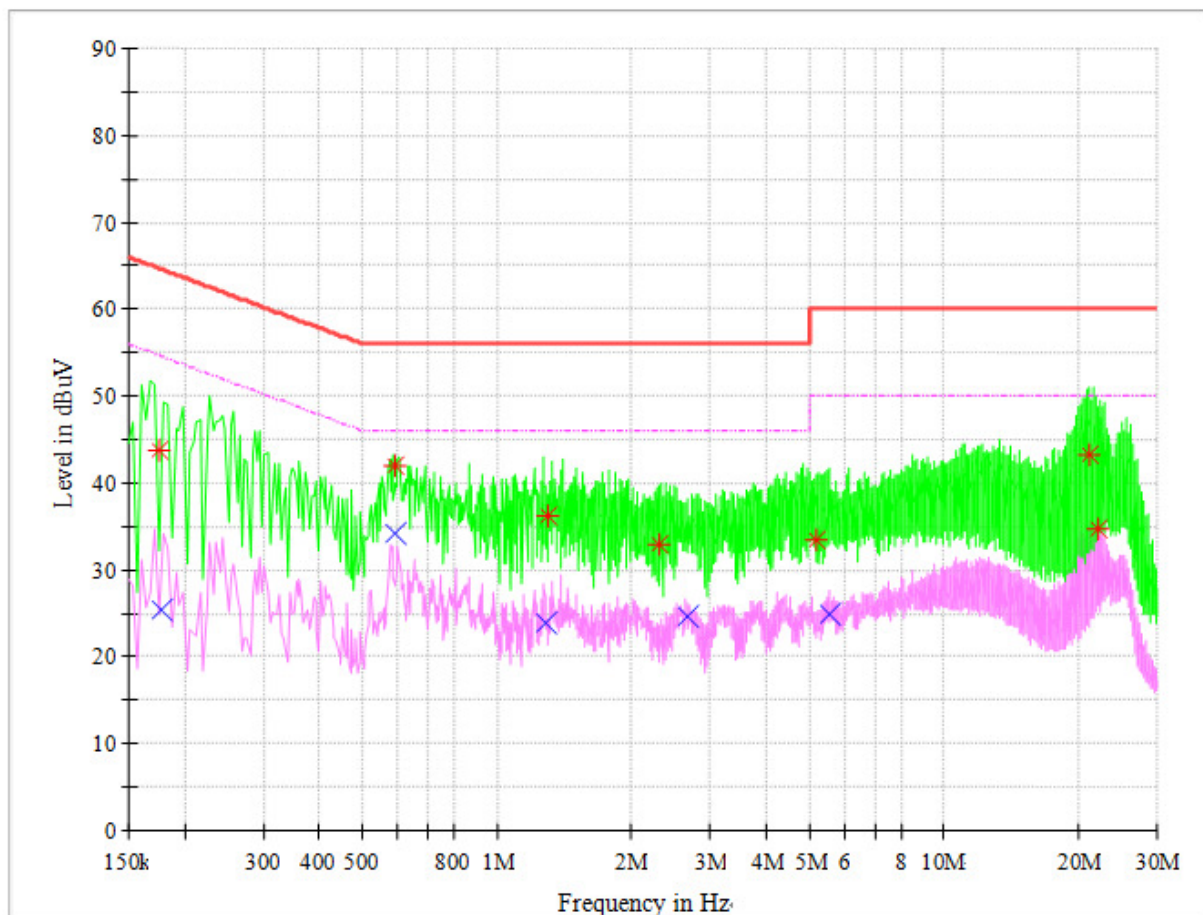
1.5 Part 5: Testing Range of “18 GHz to 26.5 GHz”

NOTE: No peak found in the Test Range of “18 GHz to 26.5GHz”

Appendix I: Conducted Emission at Power Port

Note: RBW = 9 kHz, VBW = 30 kHz

Channel 39



MEASUREMENT RESULT: AV Detector

Frequency (MHz)	Level (dBμ V)	Limit (dBμ V)	Transd. (dB)	Margin (dB)	Line	PE
0.178324	25.45	54.56	9.7	29.12	N	FLO
0.592818	34.16	46.00	9.7	11.84	L1	FLO
1.281106	23.89	46.00	9.7	22.11	N	FLO
2.659679	24.57	46.00	9.8	21.43	L1	FLO
5.551352	24.99	50.00	9.8	25.01	L1	FLO
22.232146	34.74	50.00	10.2	25.26	L1	FLO

MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dBμ V)	Limit (dBμ V)	Transd. (dB)	Margin (dB)	Line	PE
0.175436	43.85	64.70	9.7	20.85	N	FLO
0.591596	42.10	56.00	9.7	13.90	L1	FLO
1.295626	36.09	56.00	9.7	19.91	N	FLO
2.320380	32.82	56.00	9.8	23.18	N	FLO
5.198725	33.32	60.00	9.8	26.68	N	FLO
21.114005	43.22	60.00	10.2	16.78	N	FLO

Note2:

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

Margin=Limit-Level. The reading level is calculated by software which is not shown in the sheet.

END