



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.

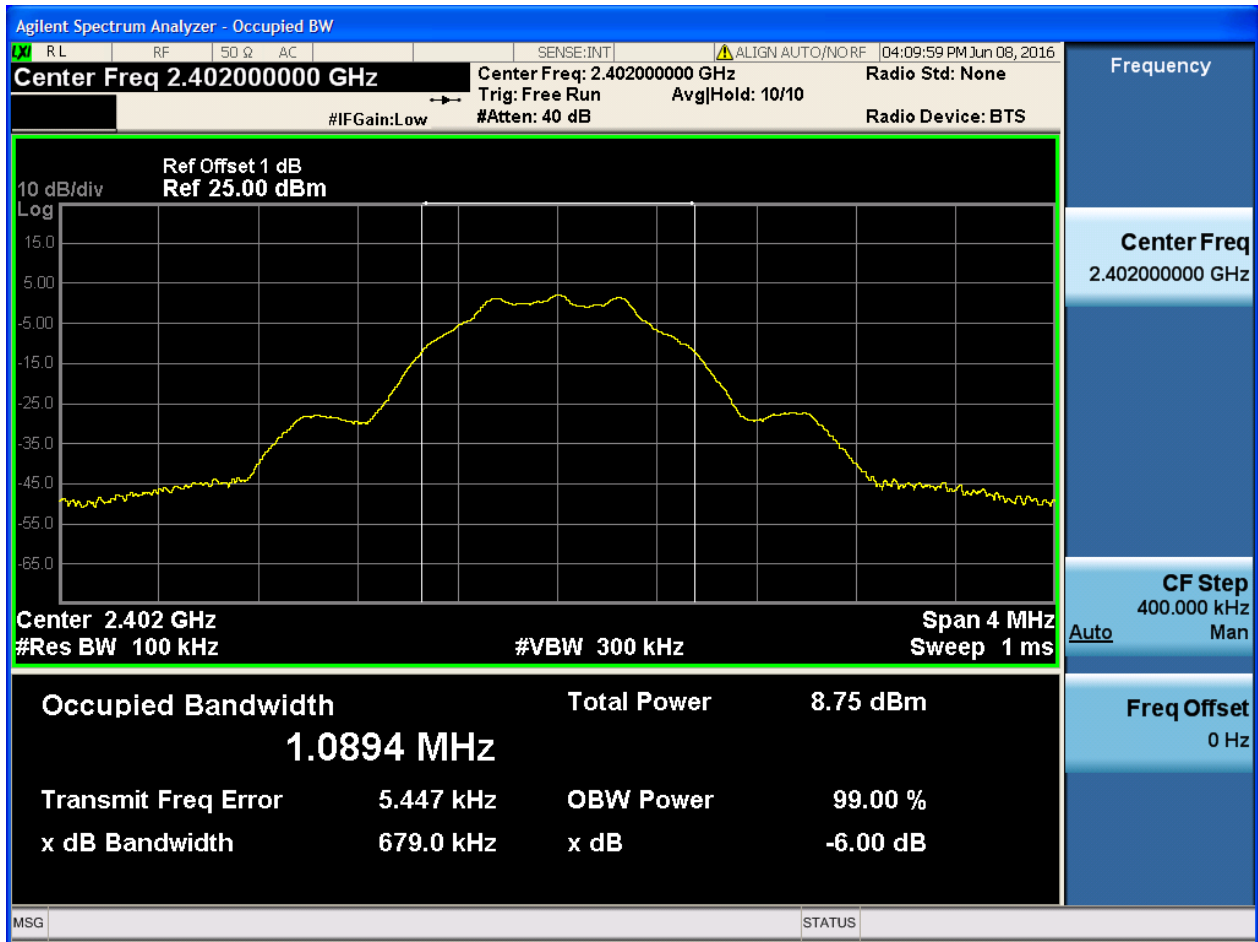
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	DTS6dBBW[MHz]	Verdict
TM1 _Ch0	L	2402	0.68	pass
TM1 _Ch19	M	2440	0.68	pass
TM1 _Ch39	H	2480	0.79	pass



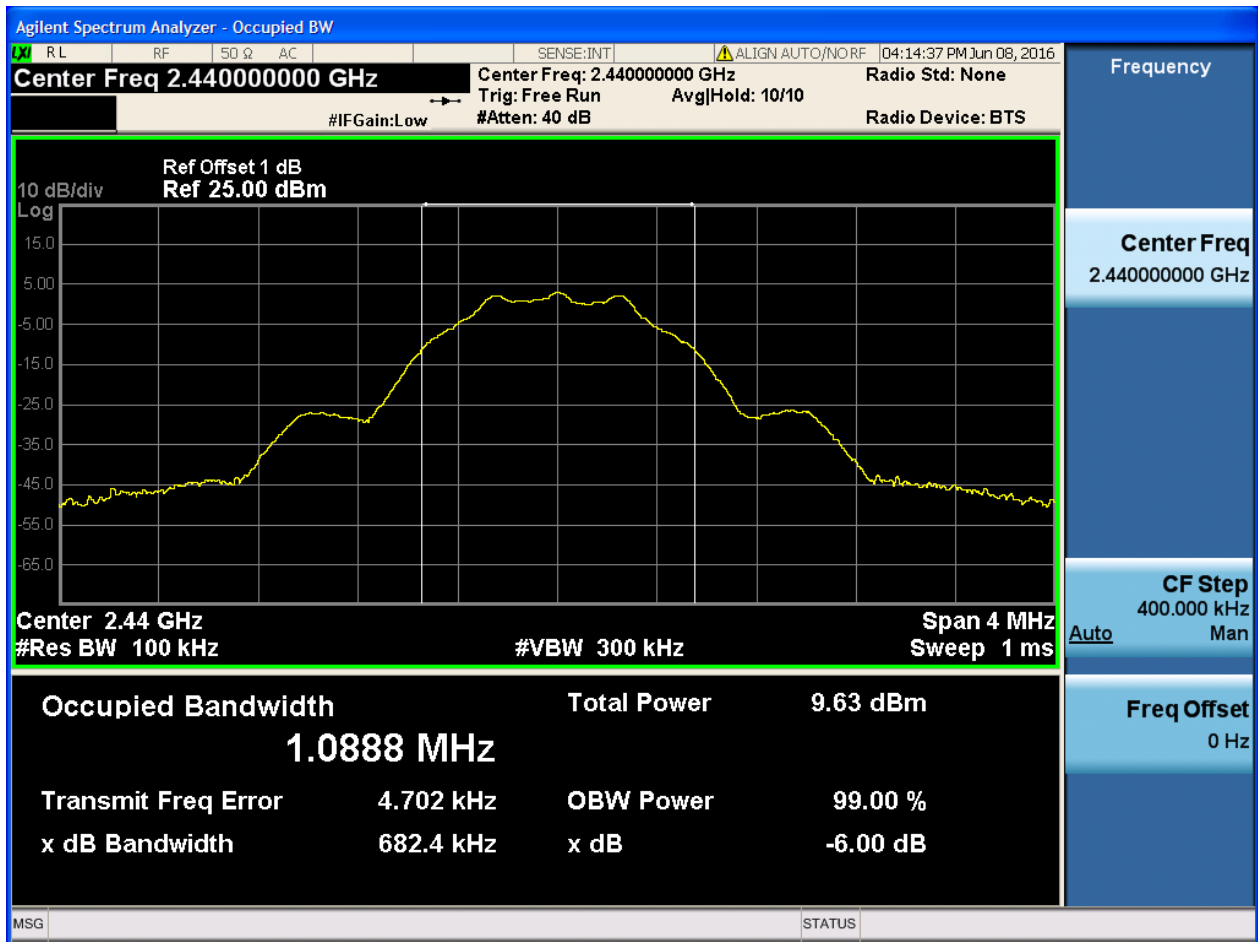
Part II - Test Plots

2.1 TM1_Ch0_L



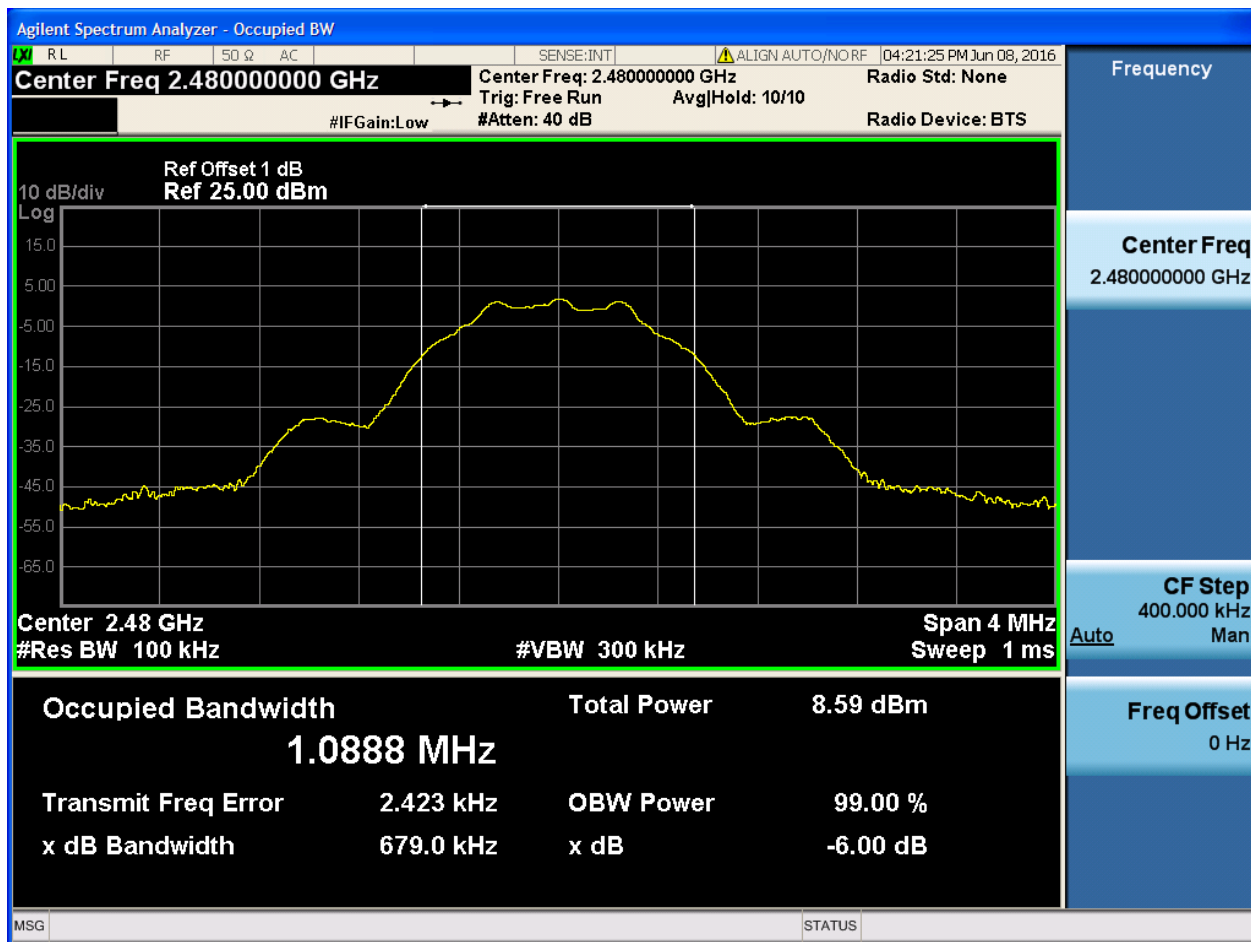


2.2 TM1_Ch19_M





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.

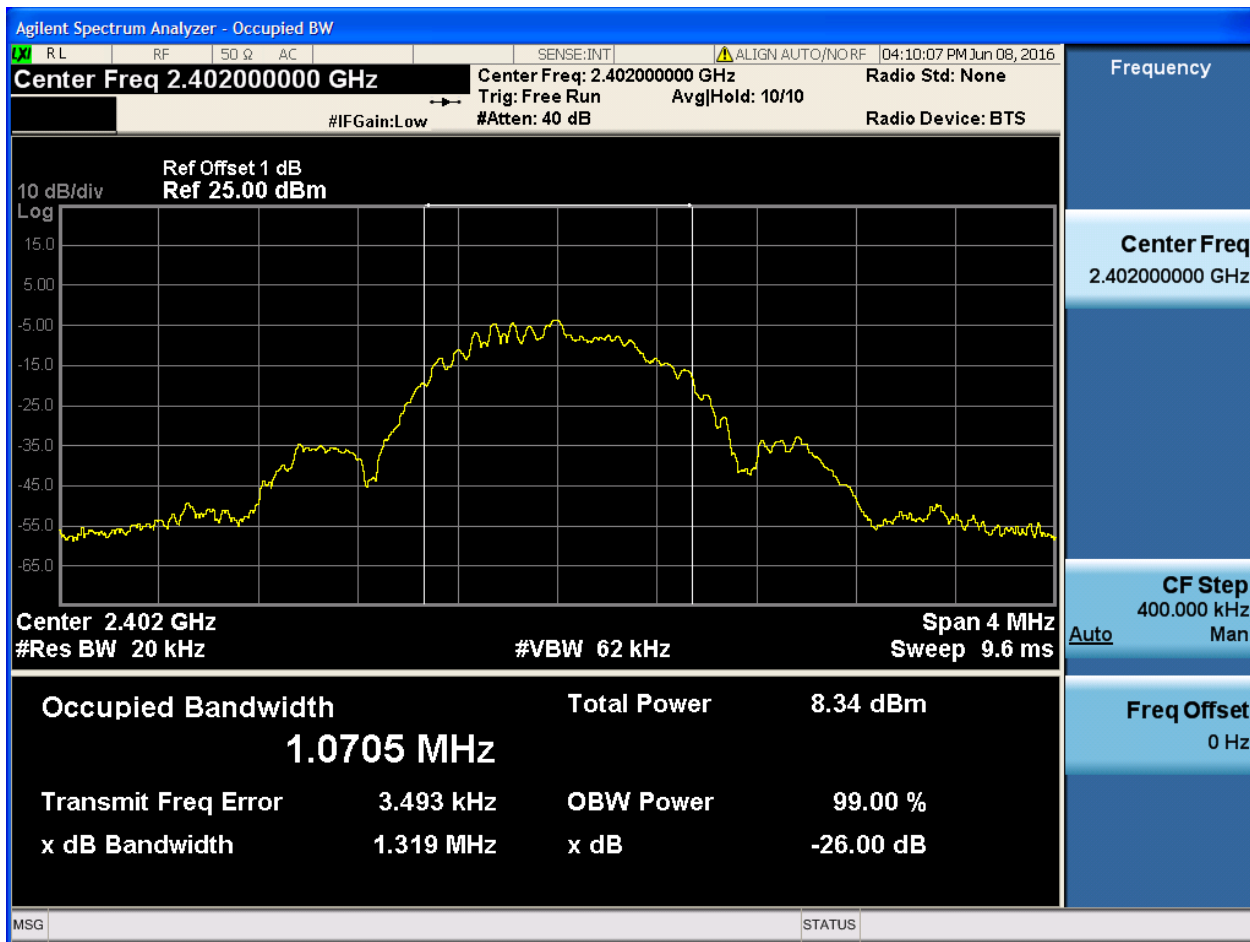
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Occupied Bandwidth [MHz]	Verdict
TM1 _Ch0	L	2402	1.07	pass
TM1 _Ch19	M	2440	1.07	pass
TM1 _Ch39	H	2480	1.07	pass



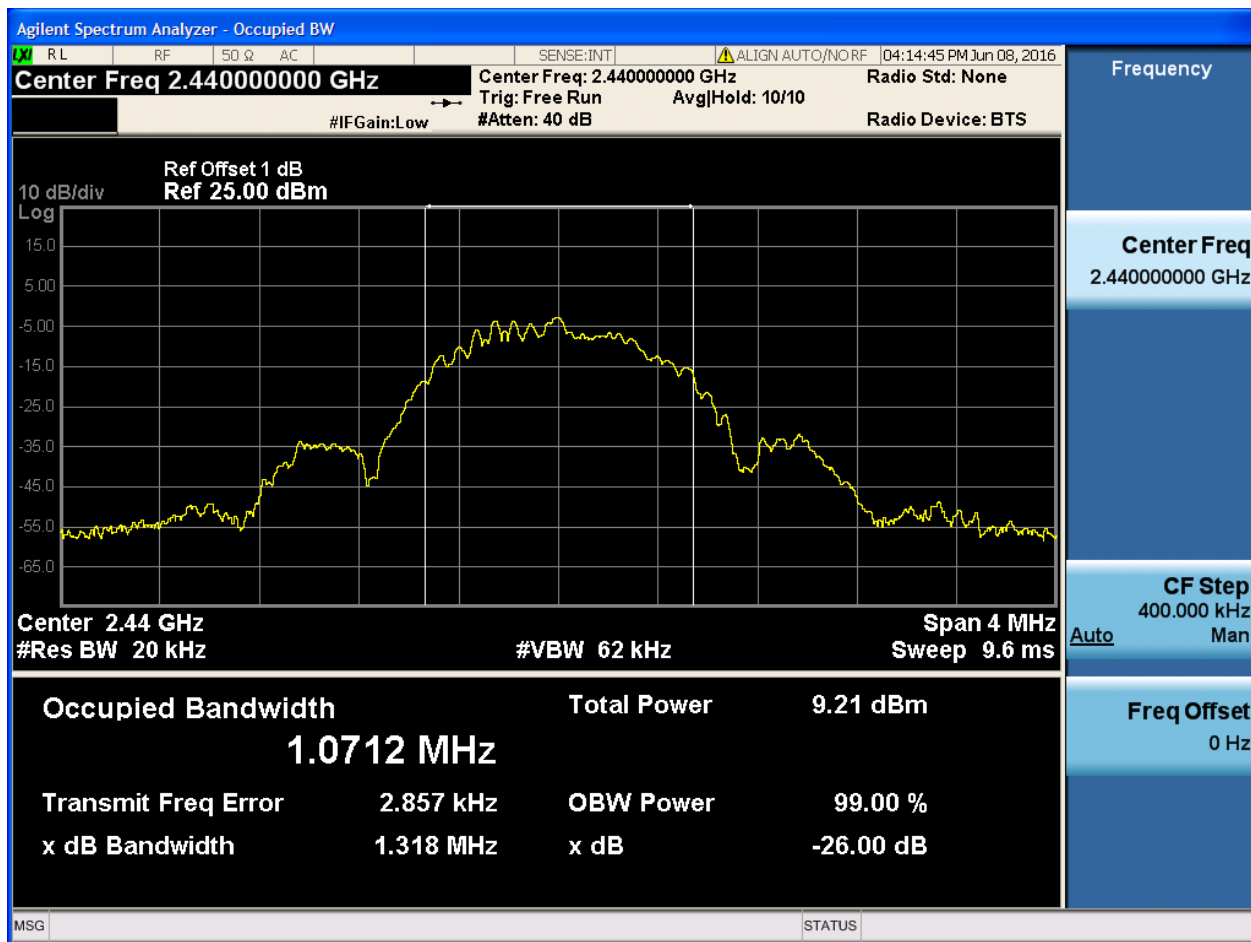
Part II - Test Plots

2.1 TM1_Ch0_L



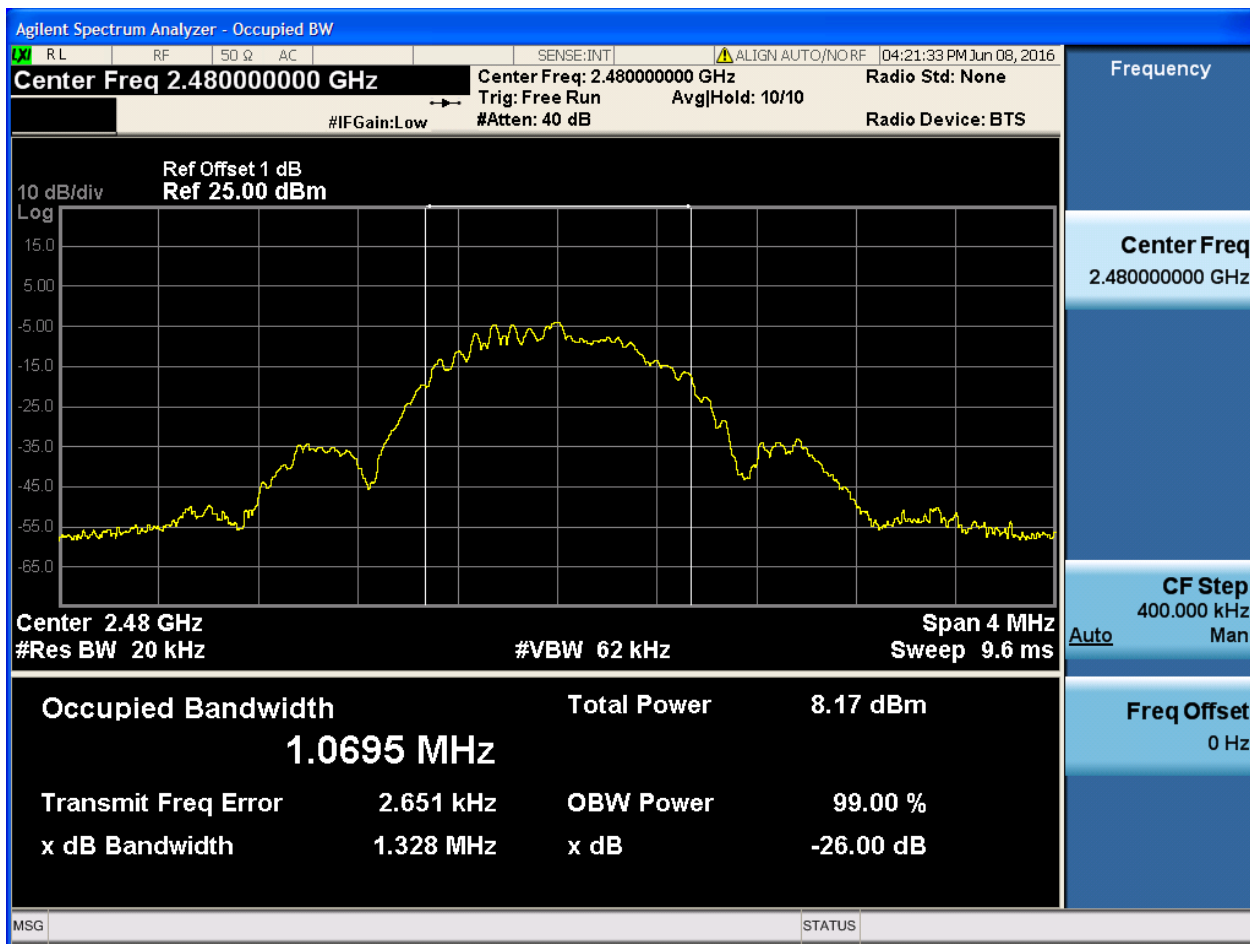


2.2 TM1_Ch19_M





2.3 TM1_Ch39_H





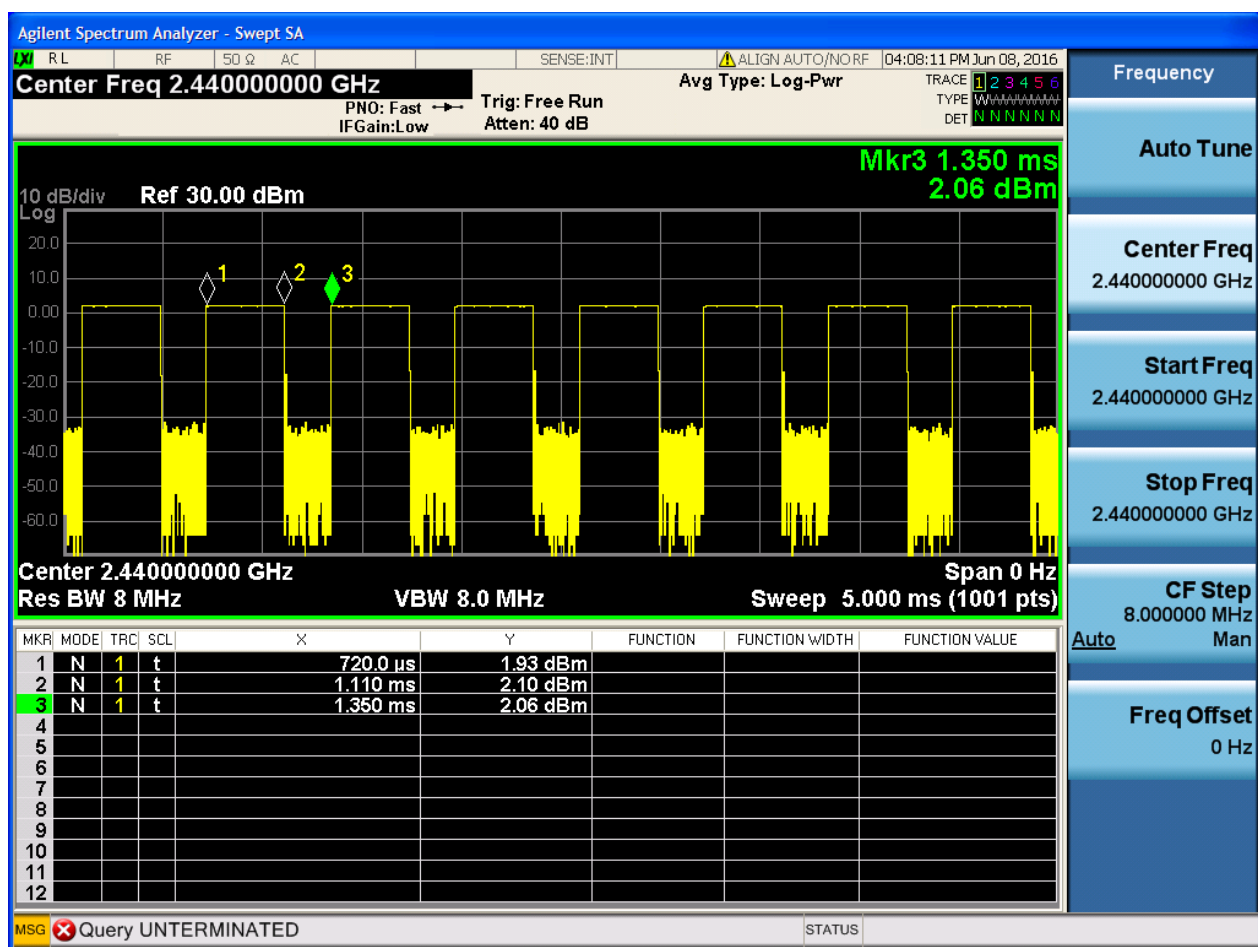
Appendix C: Duty Cycle

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]	Duty Cycle [%]	Power[dBm]	Verdict
TM1 _Ch0	L	2402	62	2.20	pass
TM1 _Ch19	M	2440	62	2.72	pass
TM1 _Ch39	H	2480	62	1.86	pass



Part II - Test Plots

2.1 TM1_Ch0_L





2.2 TM1_Ch19_M





2.3 TM1_Ch39_H





Appendix E: Maximum Power Spectral Density Level

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Duty Cycle [%]	PD[MHz]	Verdict
TM1 _Ch0	L	2402	62	-12.82	pass
TM1 _Ch19	M	2440	62	-11.71	pass
TM1 _Ch39	H	2480	62	-12.85	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

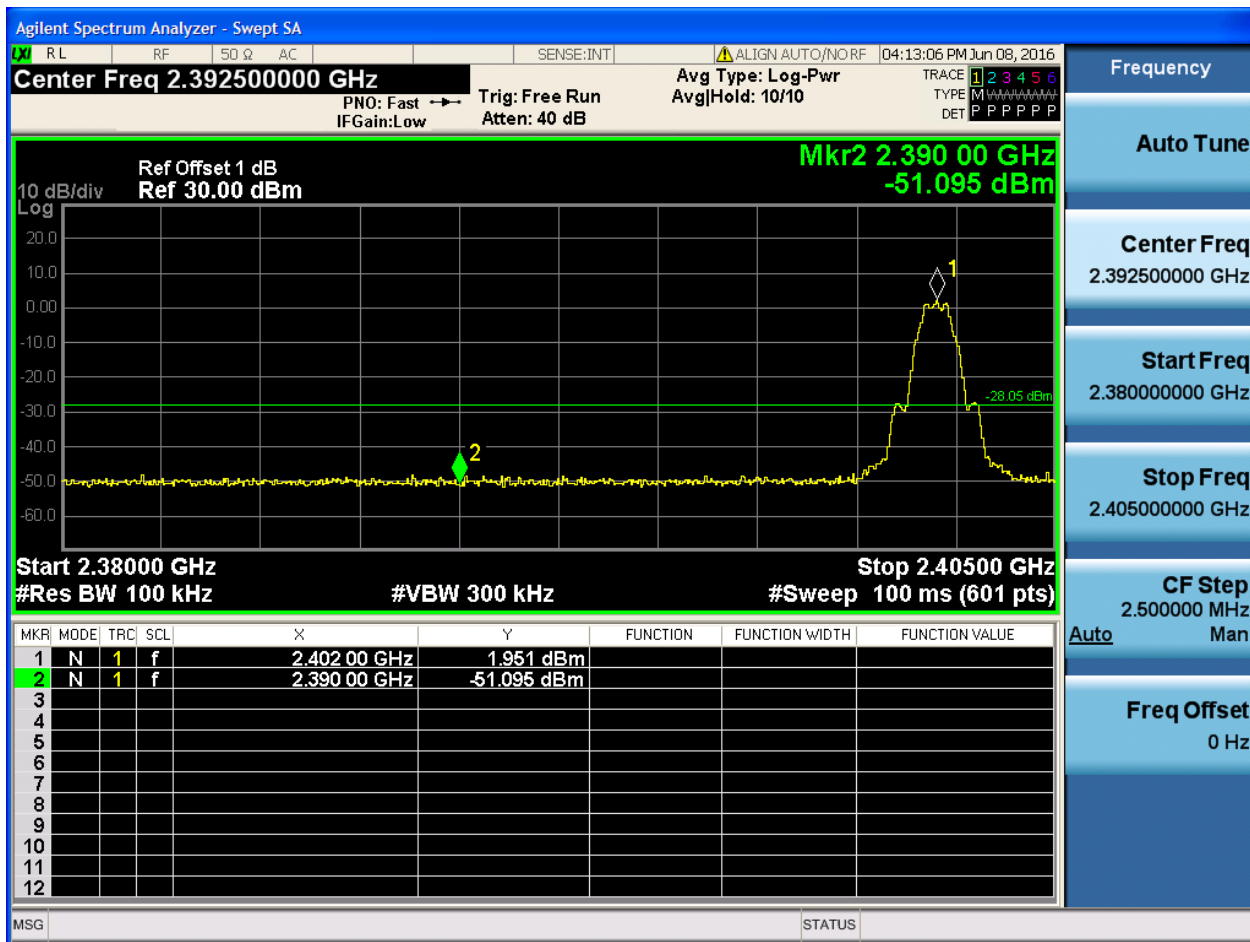
Part I - Test Results

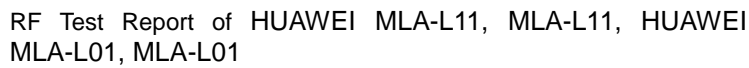
Test Mode	Test Channel	Frequency[MHz]	Carrier Power[dBm]	Max.Spurious Level[dBm]	Verdict
TM1_Ch0	L	2402	1.95	-51.10	pass
TM1_Ch39	H	2480	1.78	-49.28	pass



Part II - Test Plots

2.1 TM1_Ch0_L





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ⚠ ALIGN AUTO/NORF 04:24:40 PM Jun 08, 2016

Center Freq 2.483500000 GHz Avg Type: Log-Pwr AvgHold: 100/100

PNO: Fast \rightarrow Trig: Free Run IFGain:Low Atten: 40 dB

TRACE 1 2 3 4 5 6
TYPE M W W W W W W W
DET P P P P P P

Ref Offset 1 dB
Ref 30.00 dBm

Mkr2 2.483 50 GHz
-49.284 dBm

10 dB/div
Log

Start 2.47350 GHz Stop 2.49350 GHz
#Res BW 100 kHz #VBW 300 kHz #Sweep 100 ms (601 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.480 00 GHz	1.784 dBm			
2	N	1	f	2.483 50 GHz	-49.284 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

MSG STATUS

Frequency

Auto Tune

Center Freq
2.483500000 GHz

Start Freq
2.473500000 GHz

Stop Freq
2.493500000 GHz

CF Step
2.000000 MHz
Man

Freq Offset
0 Hz

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	2.02	<limit	pass
TM1_Ch19	M	2440	2.92	<limit	pass
TM1_Ch39	H	2480	1.93	<limit	pass



Part II - Test Plots

2.1 TM1_Ch0_L

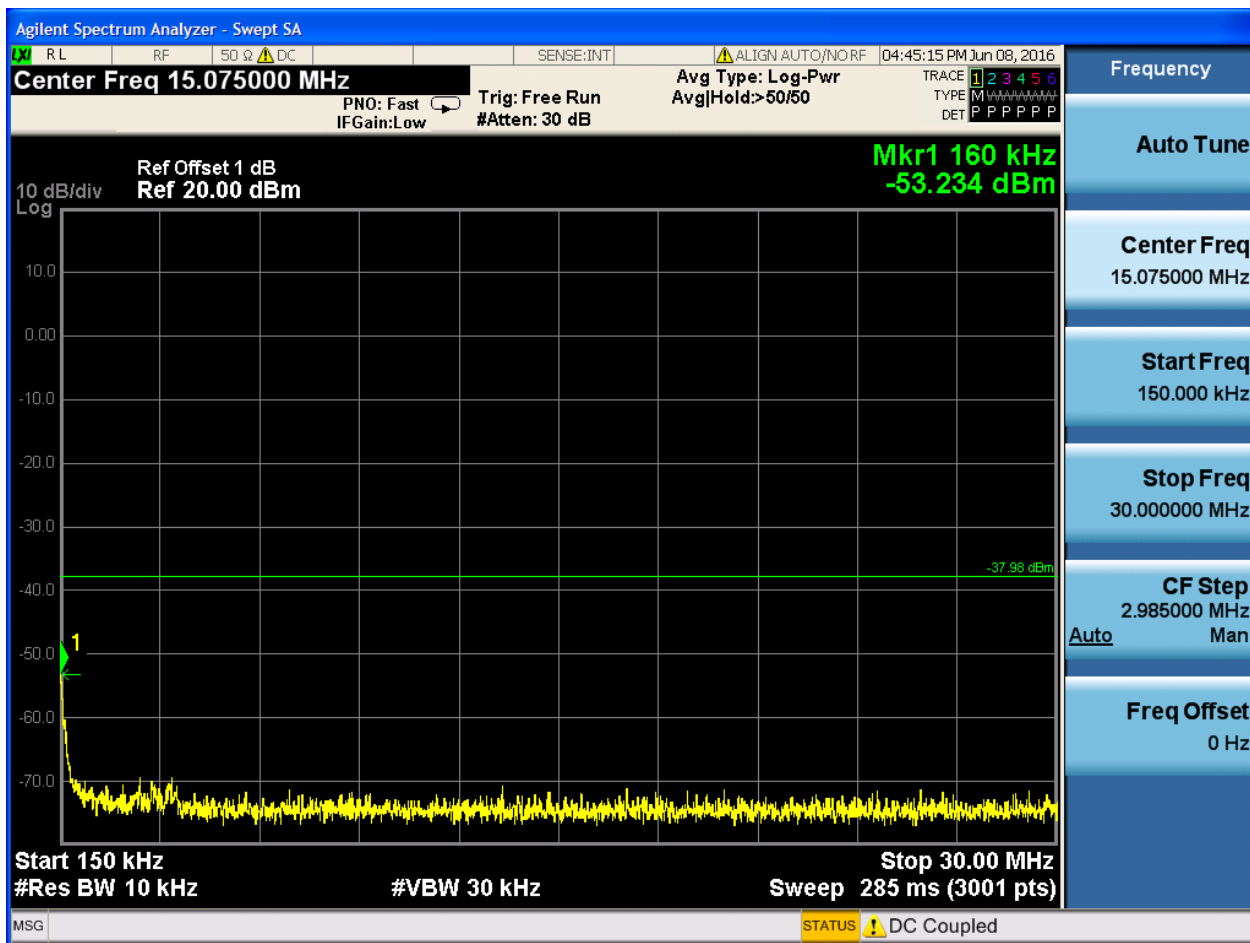
Pref:

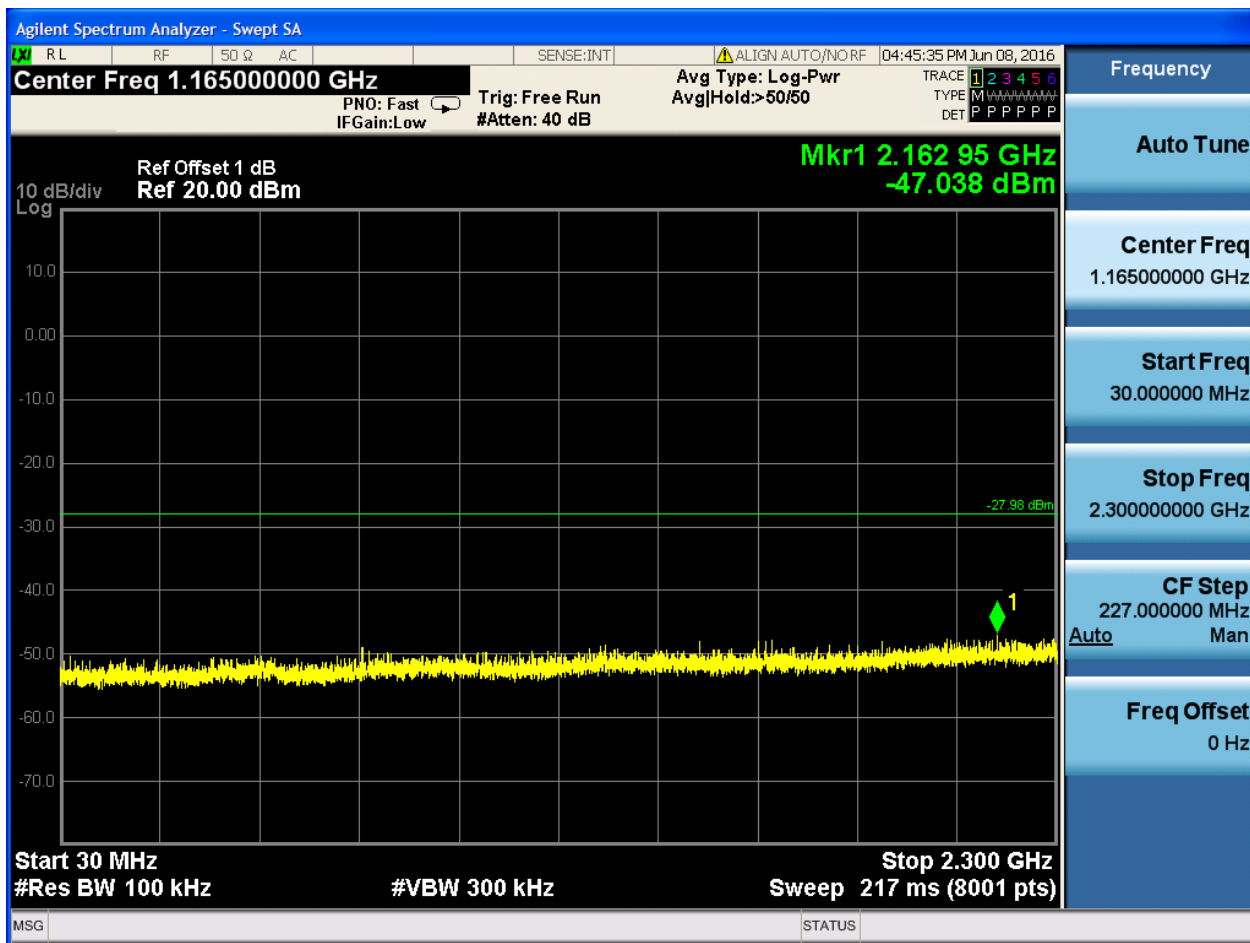


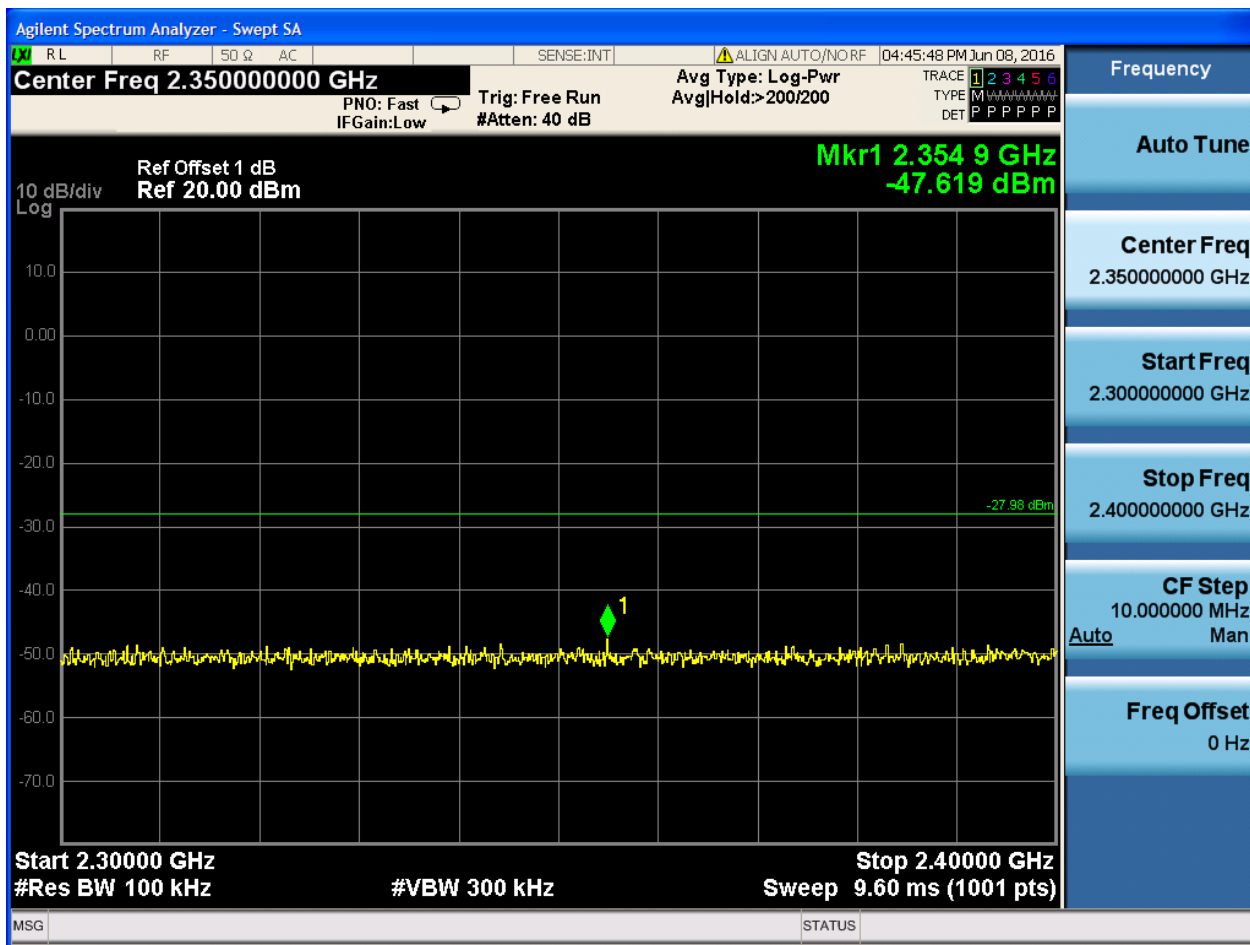


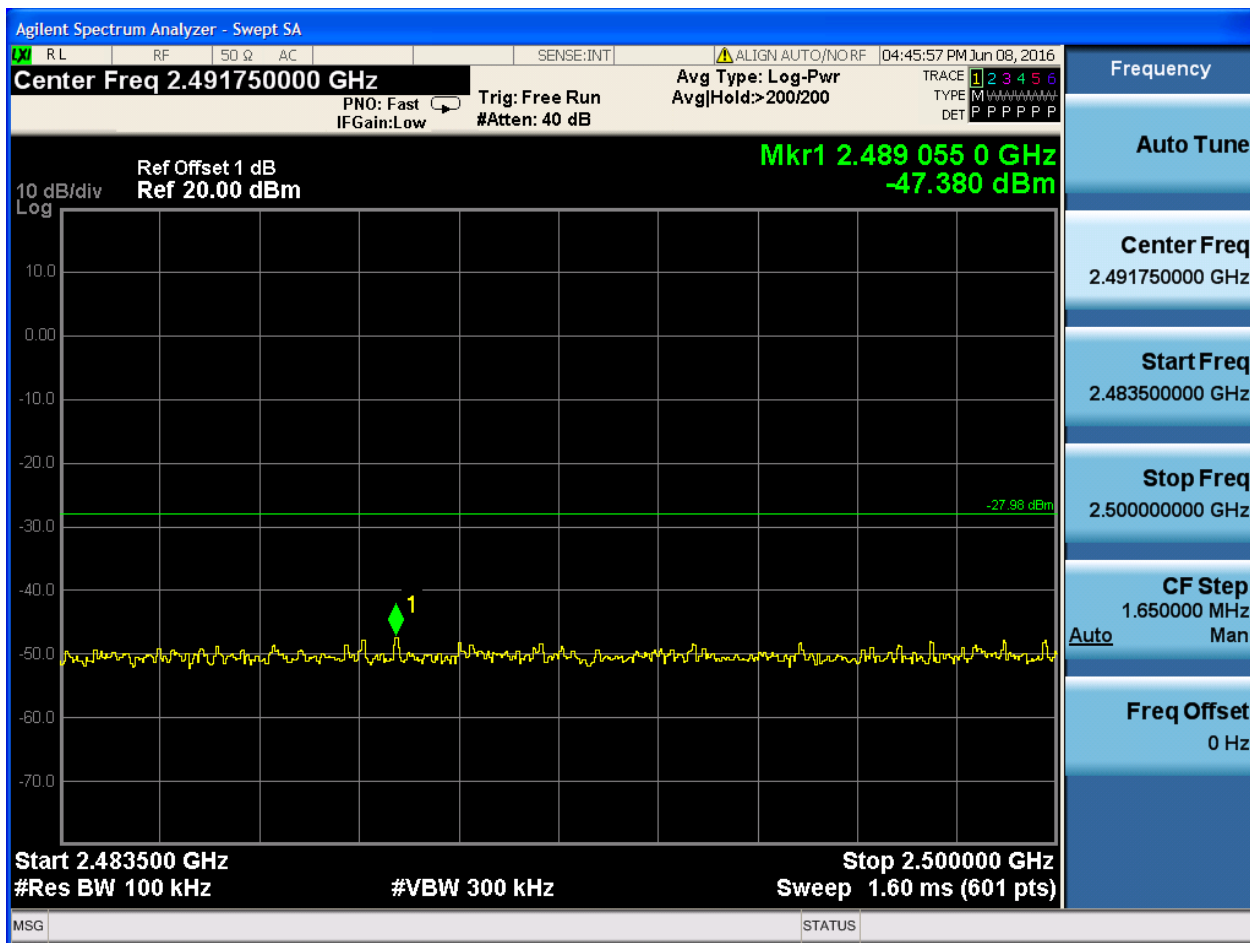
Puw:

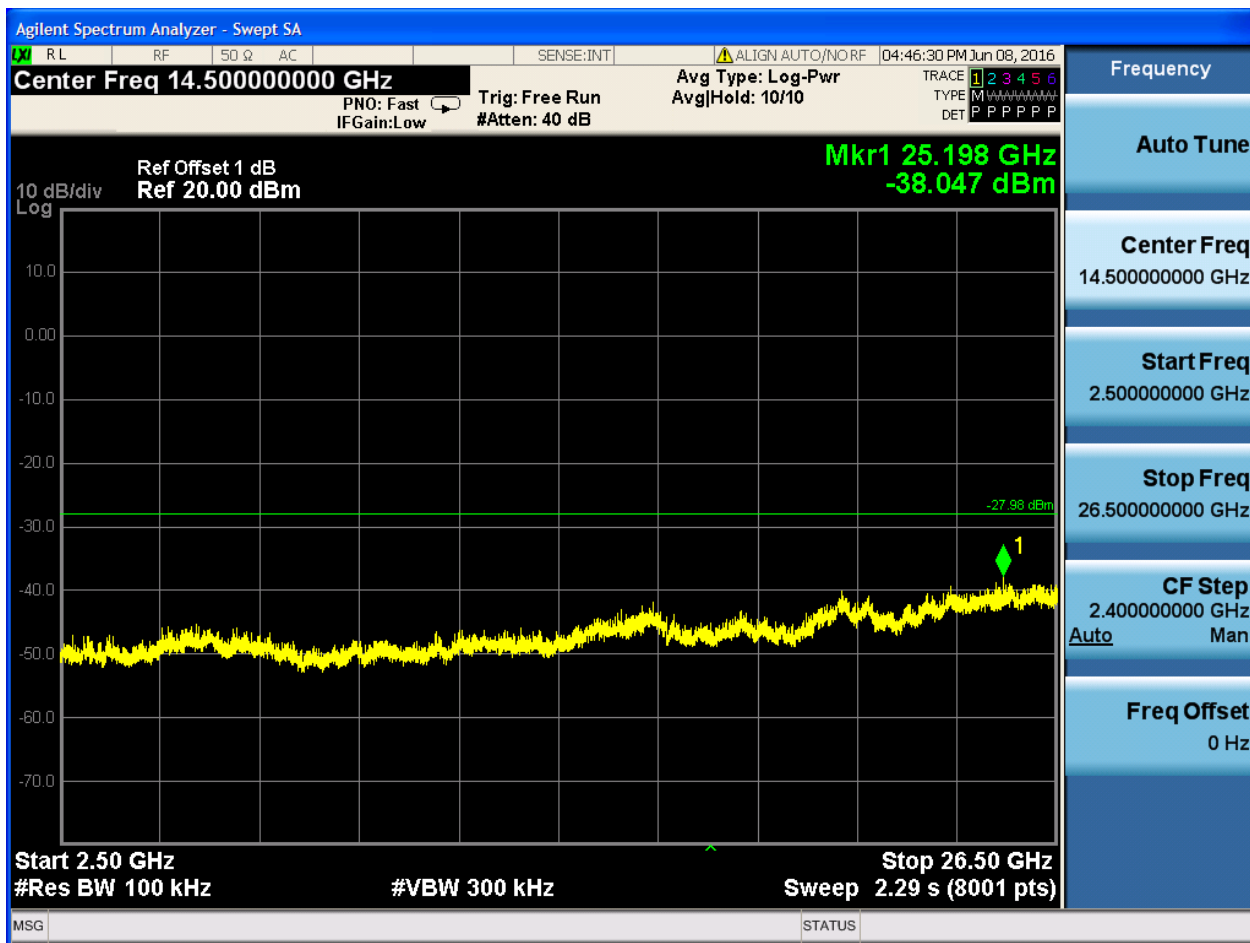








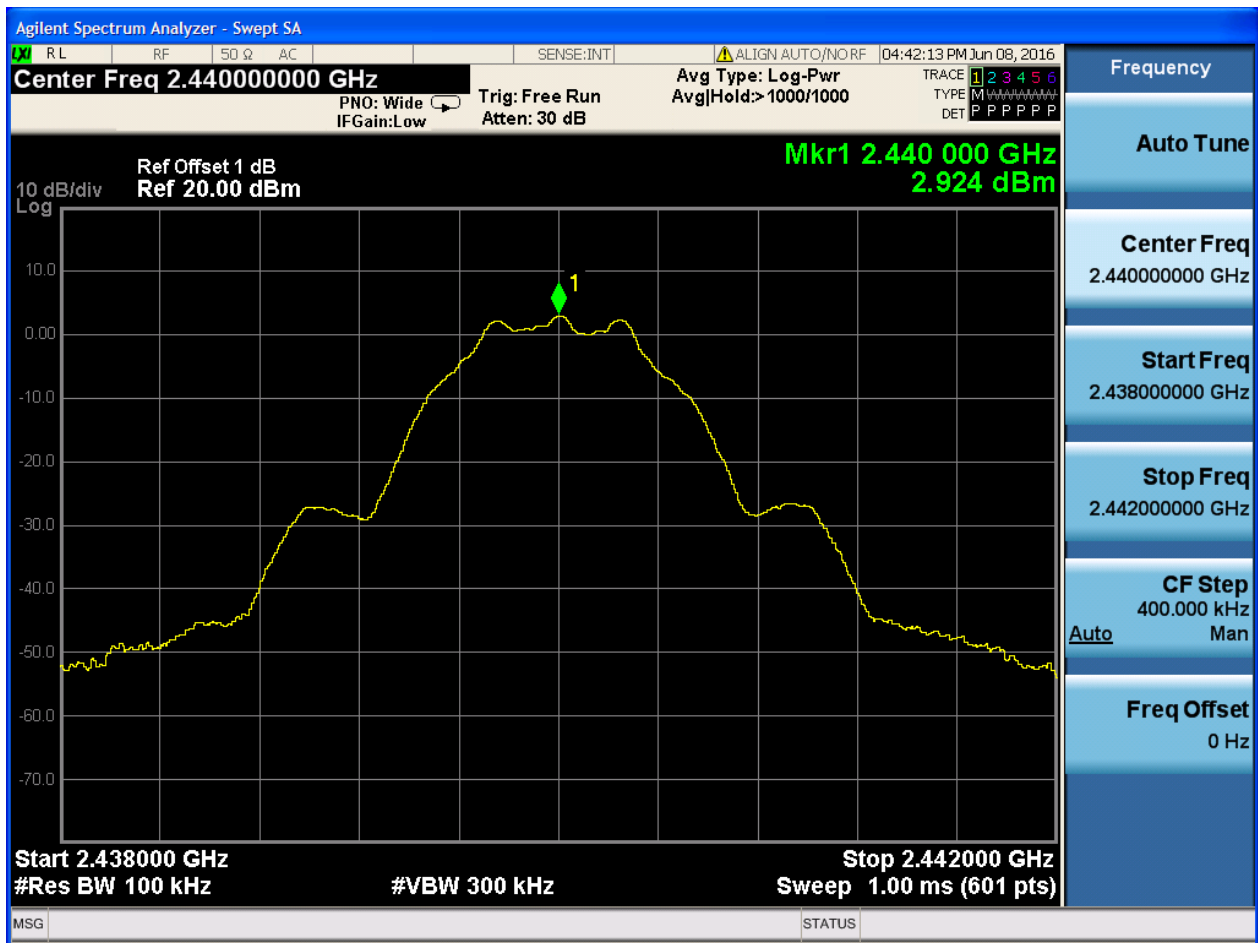






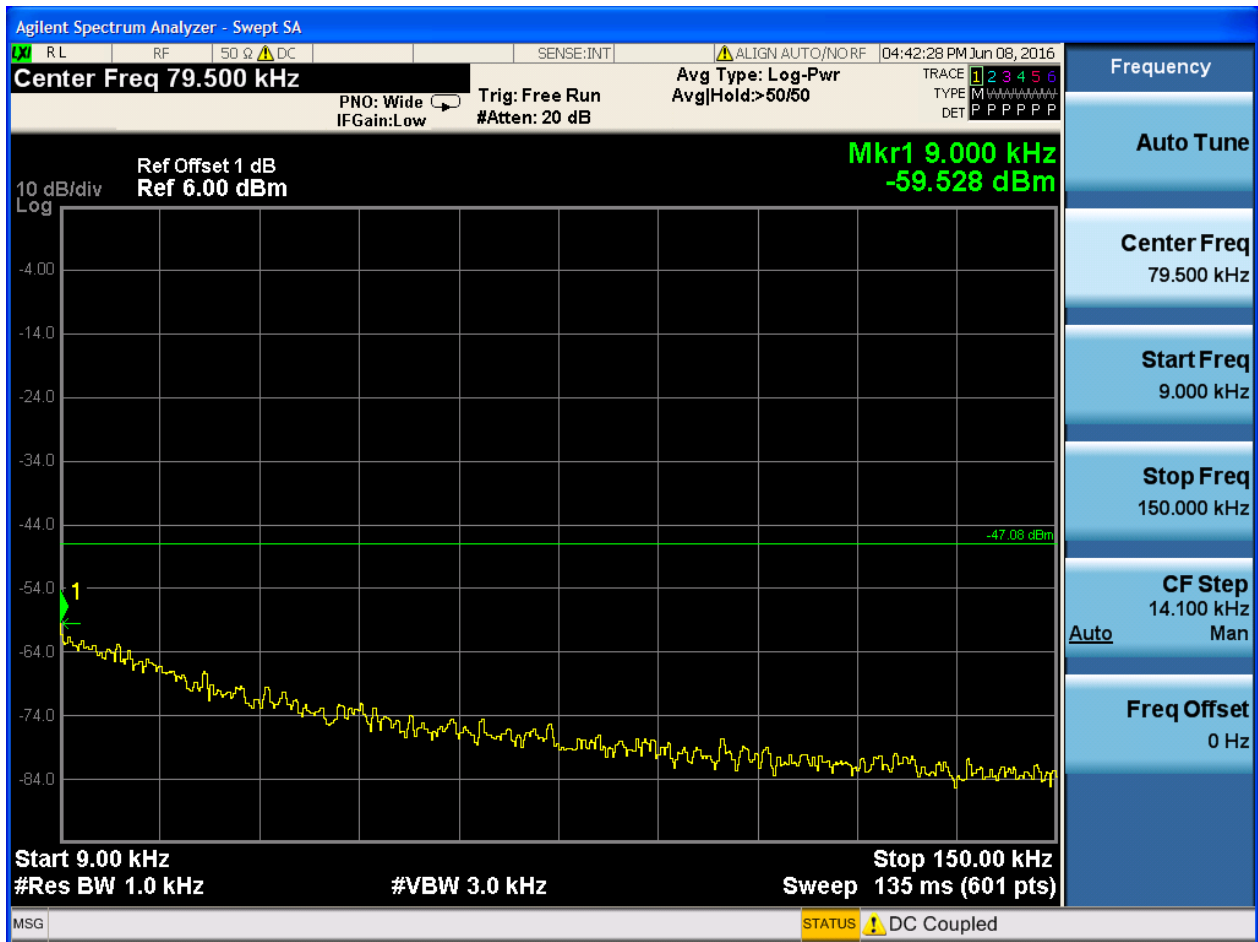
2.2 TM1_Ch19_M

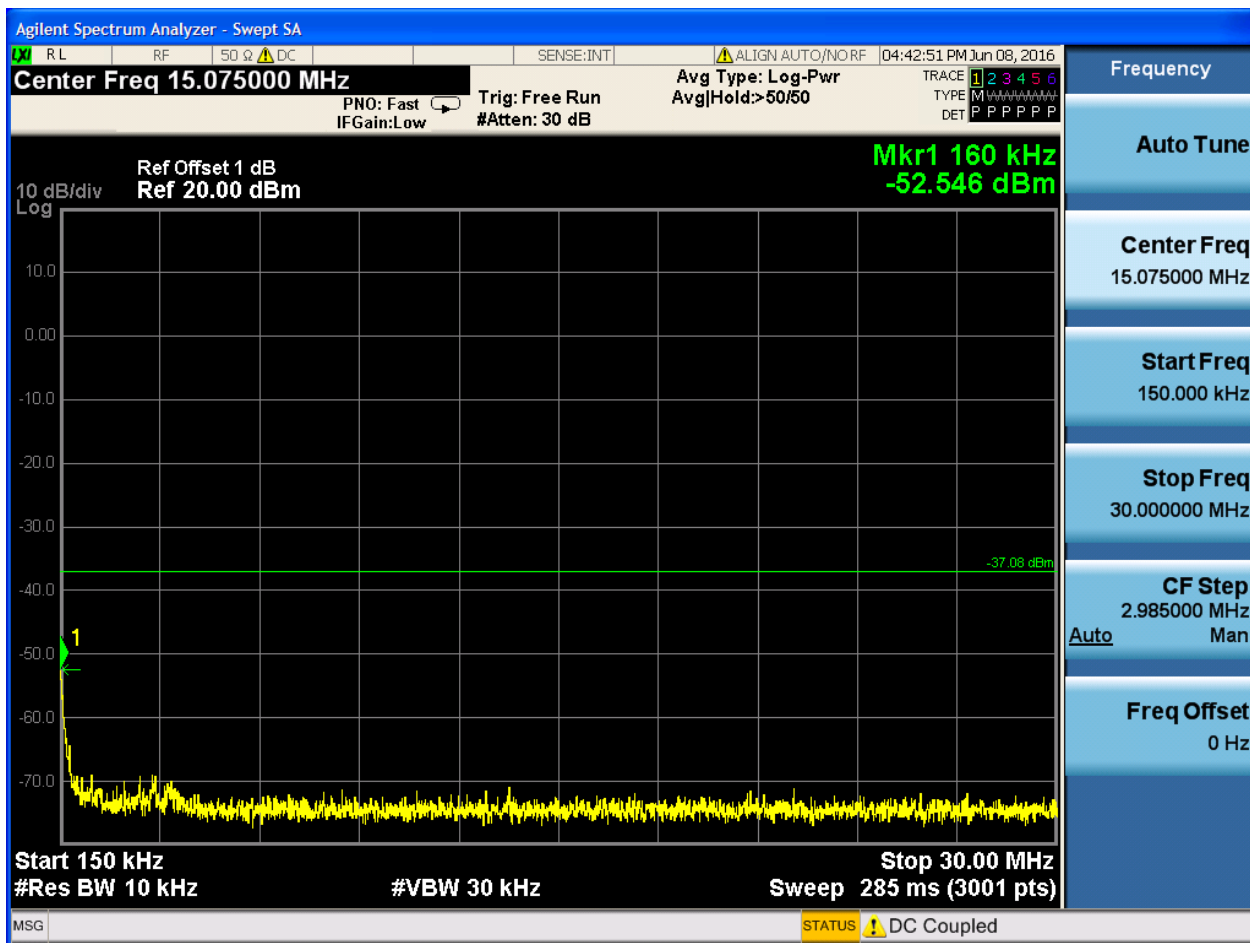
Pref:

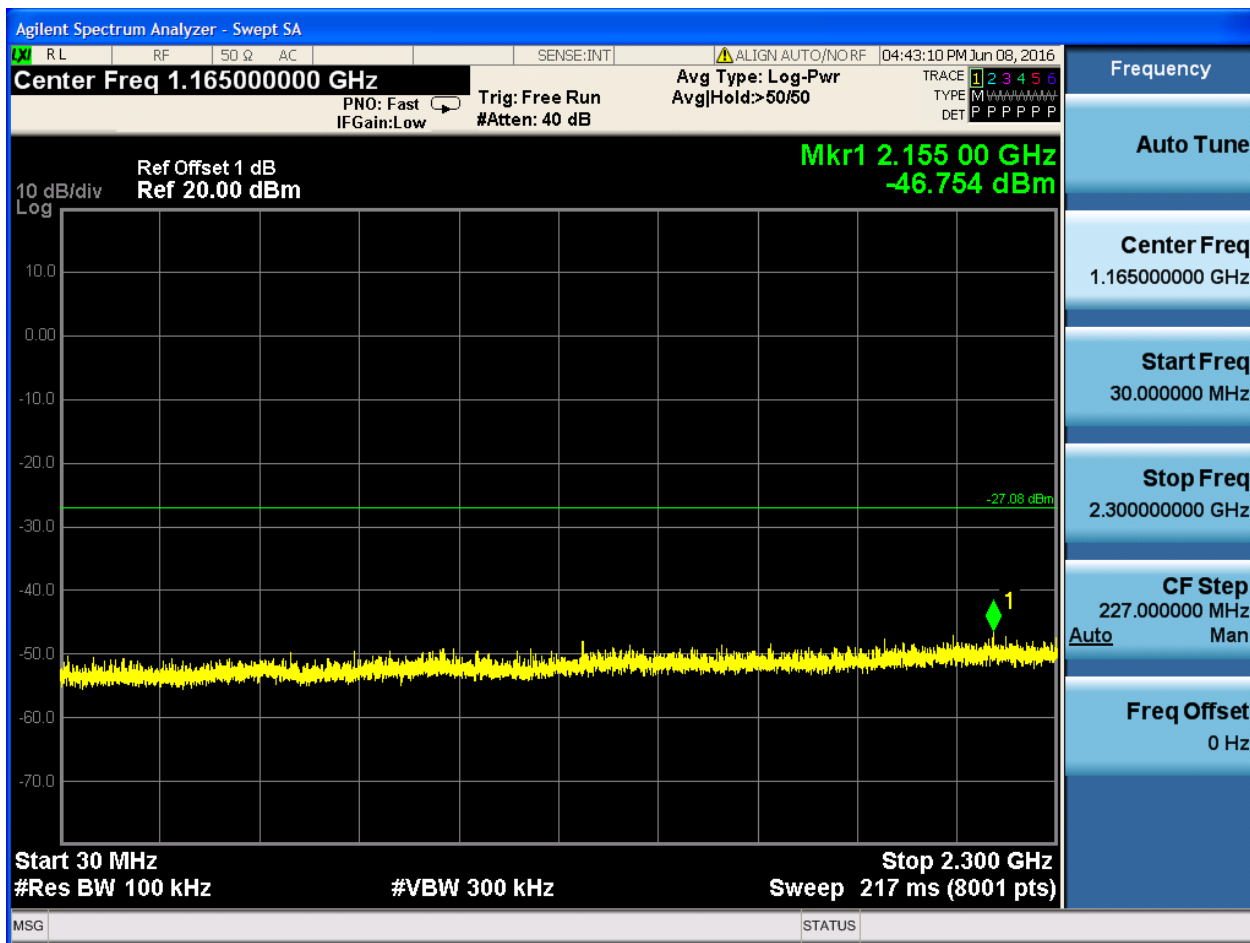


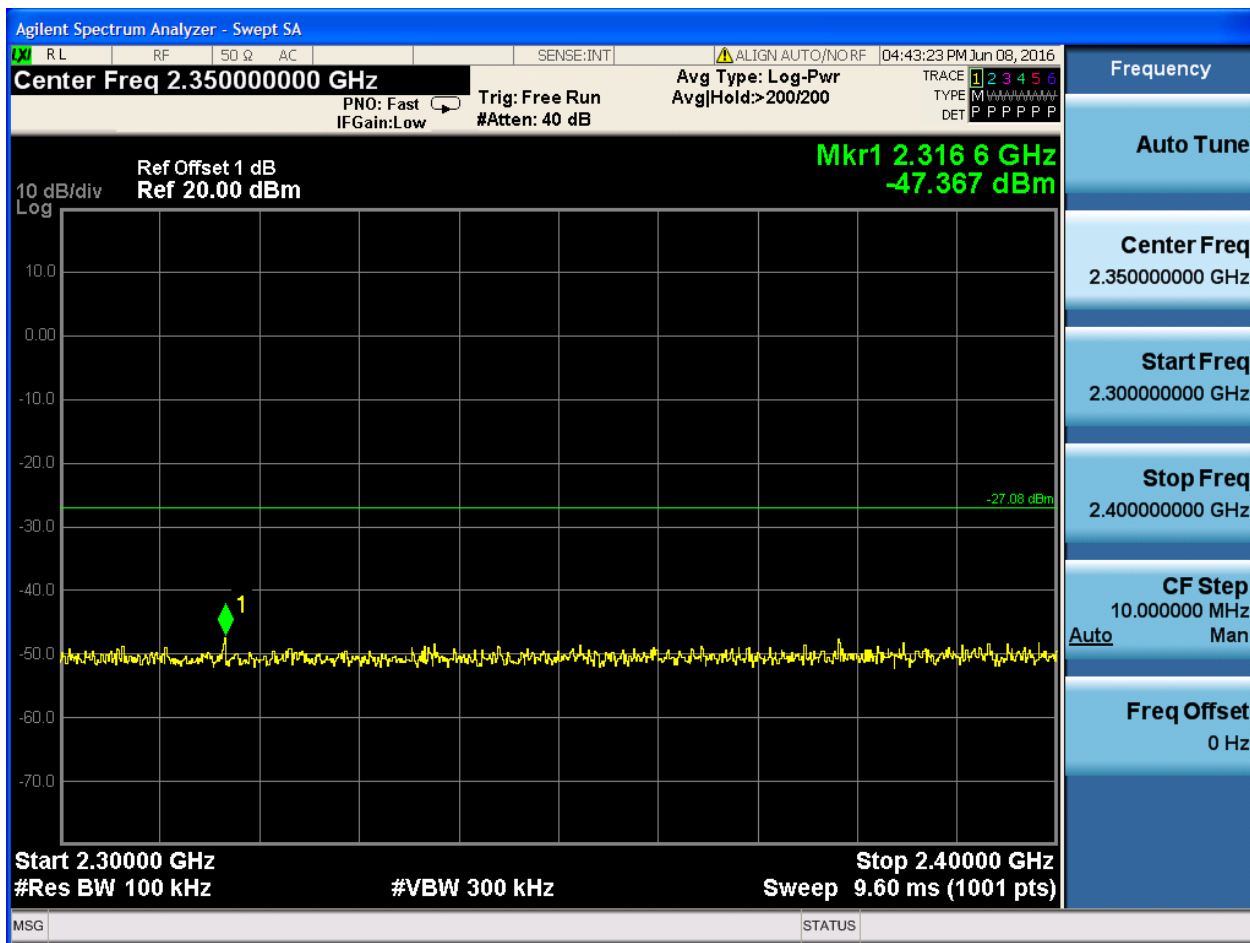


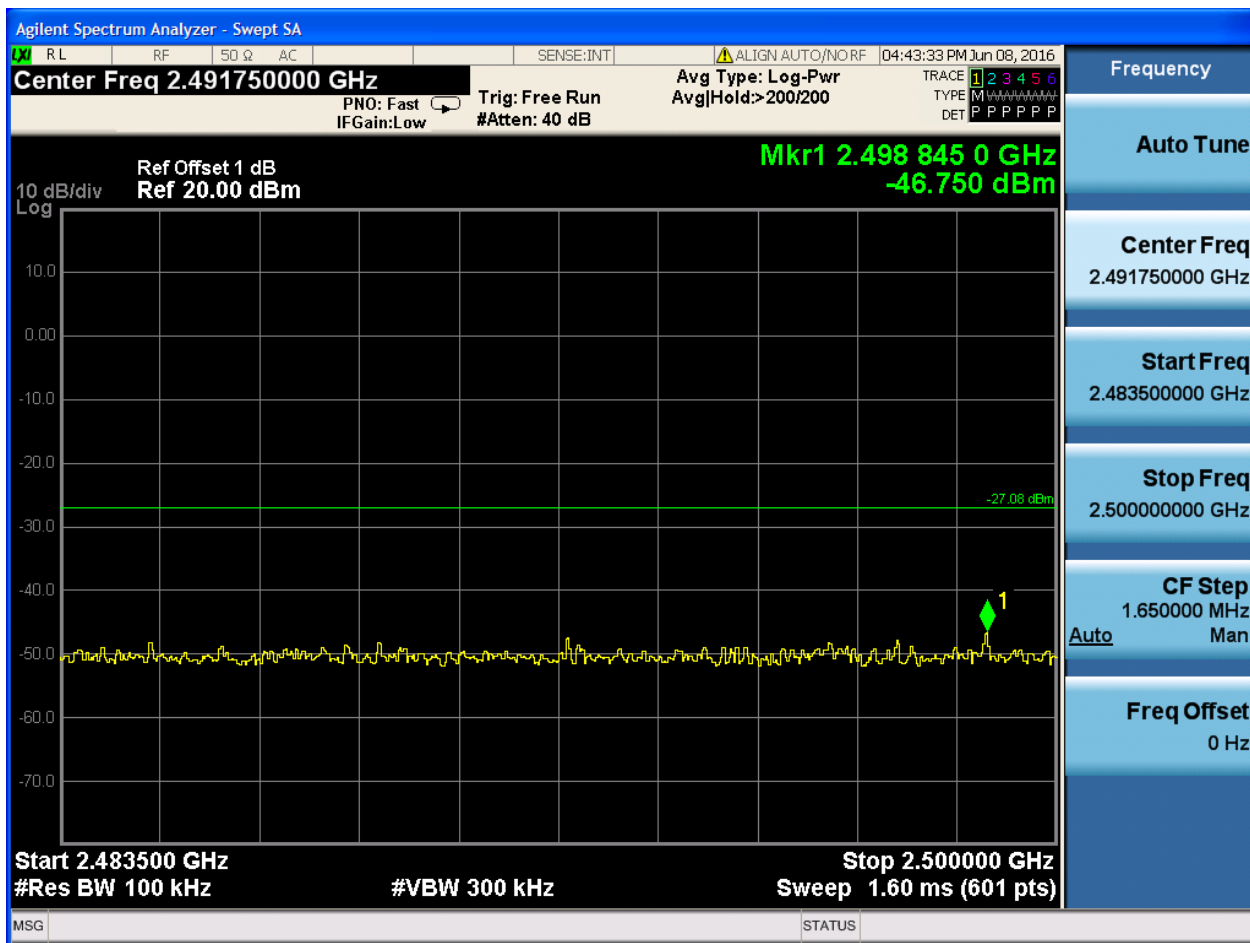
Puw:

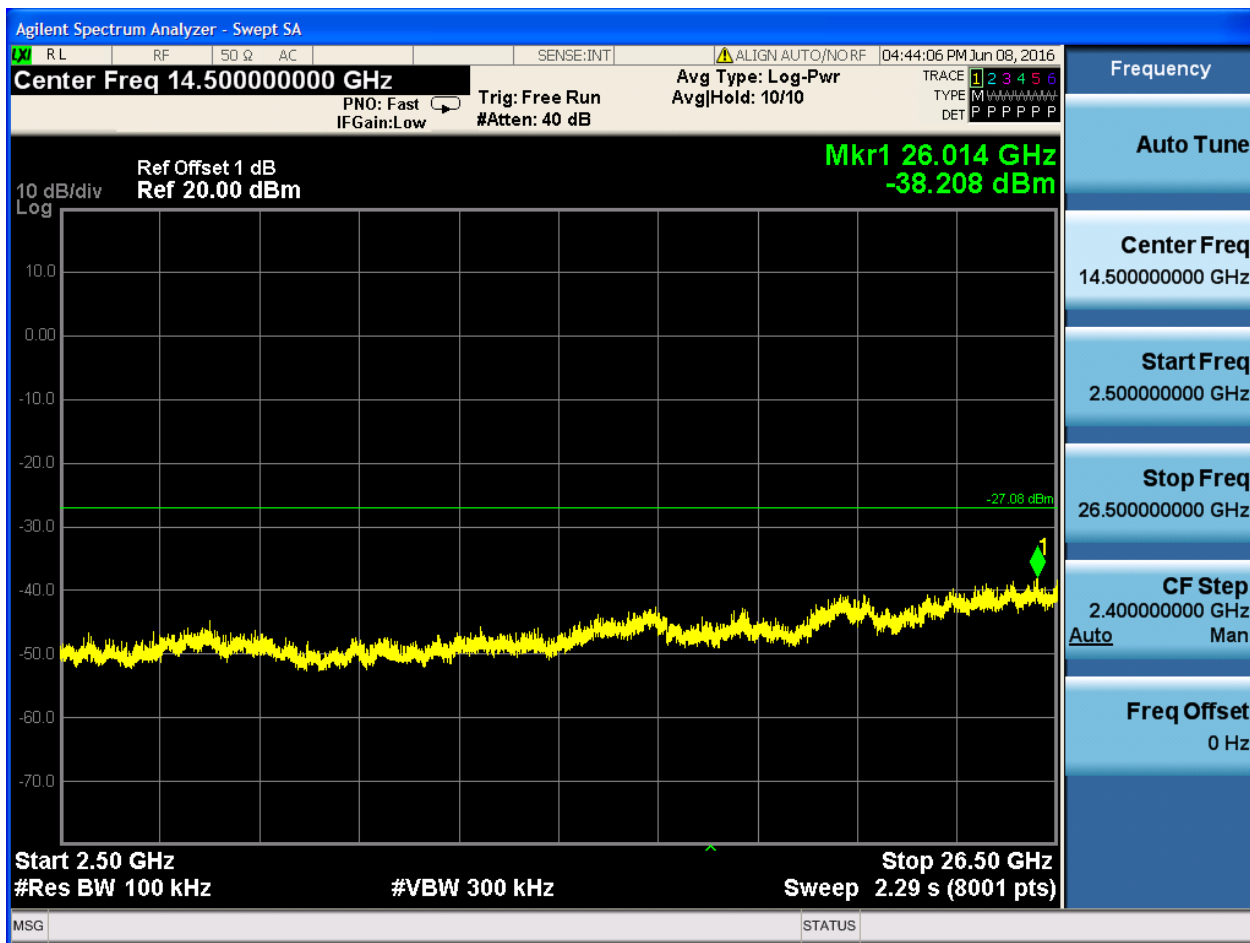








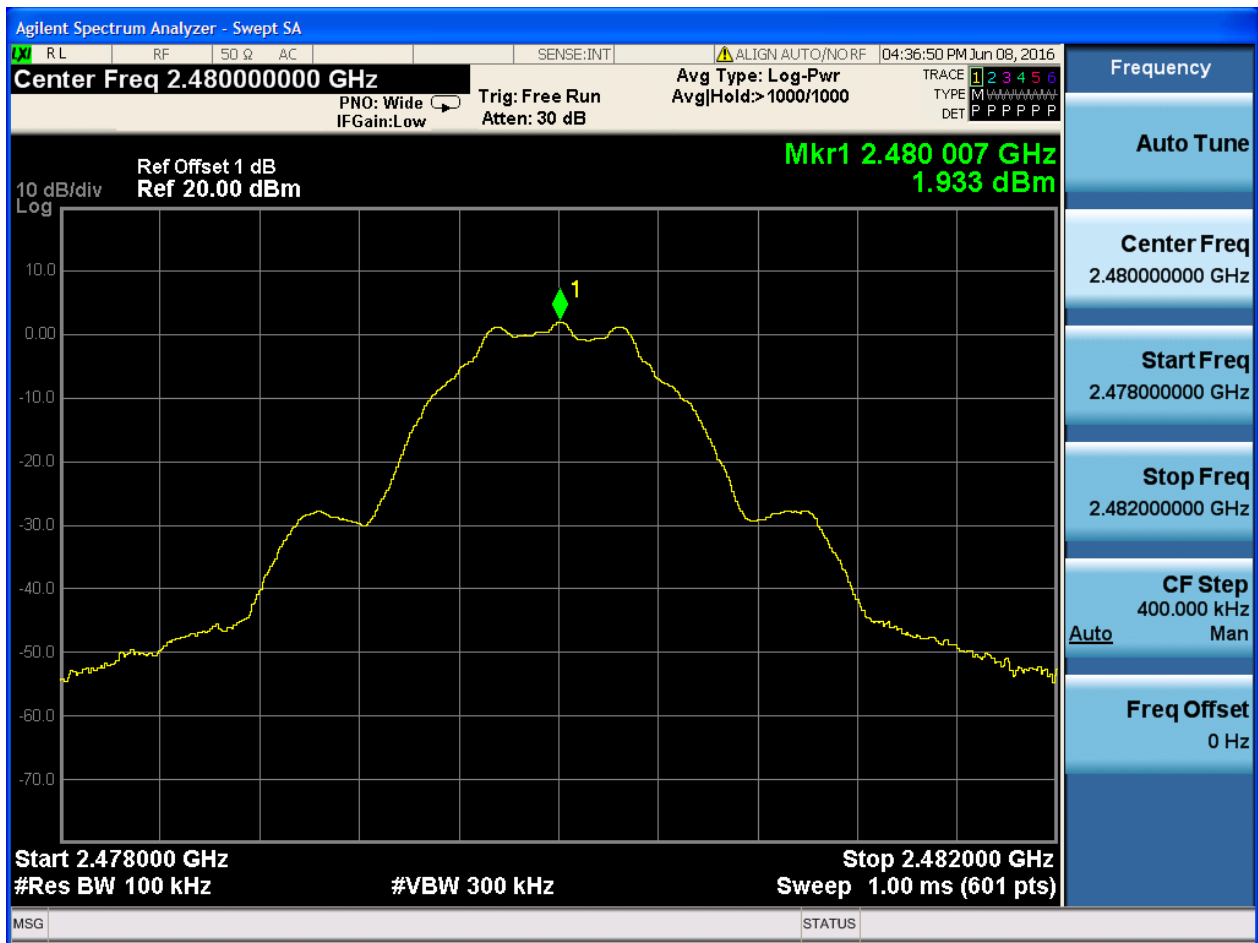






2.3 TM1_Ch39_H

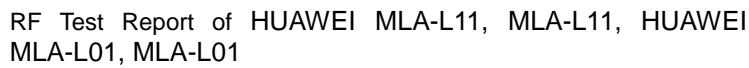
Pref:

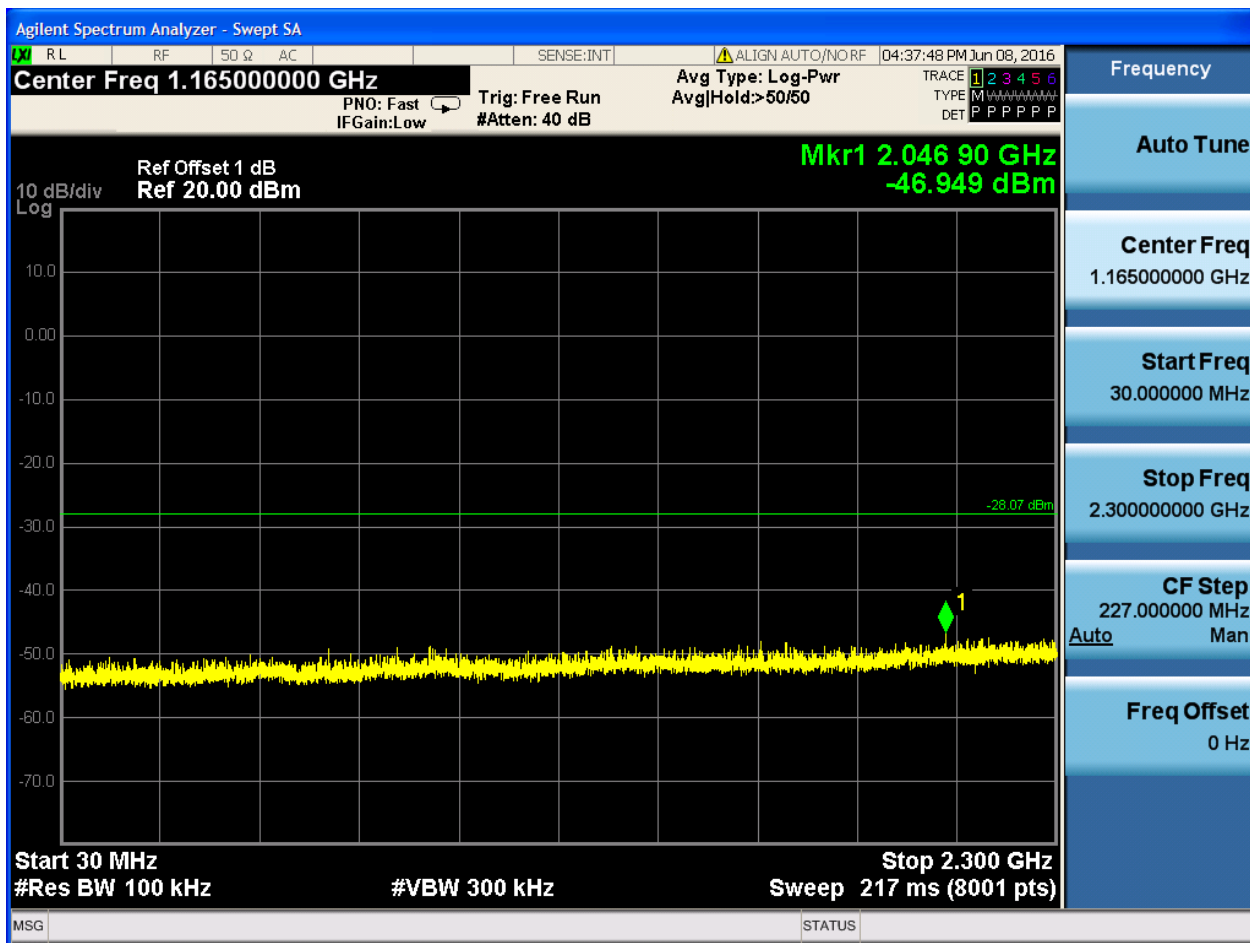


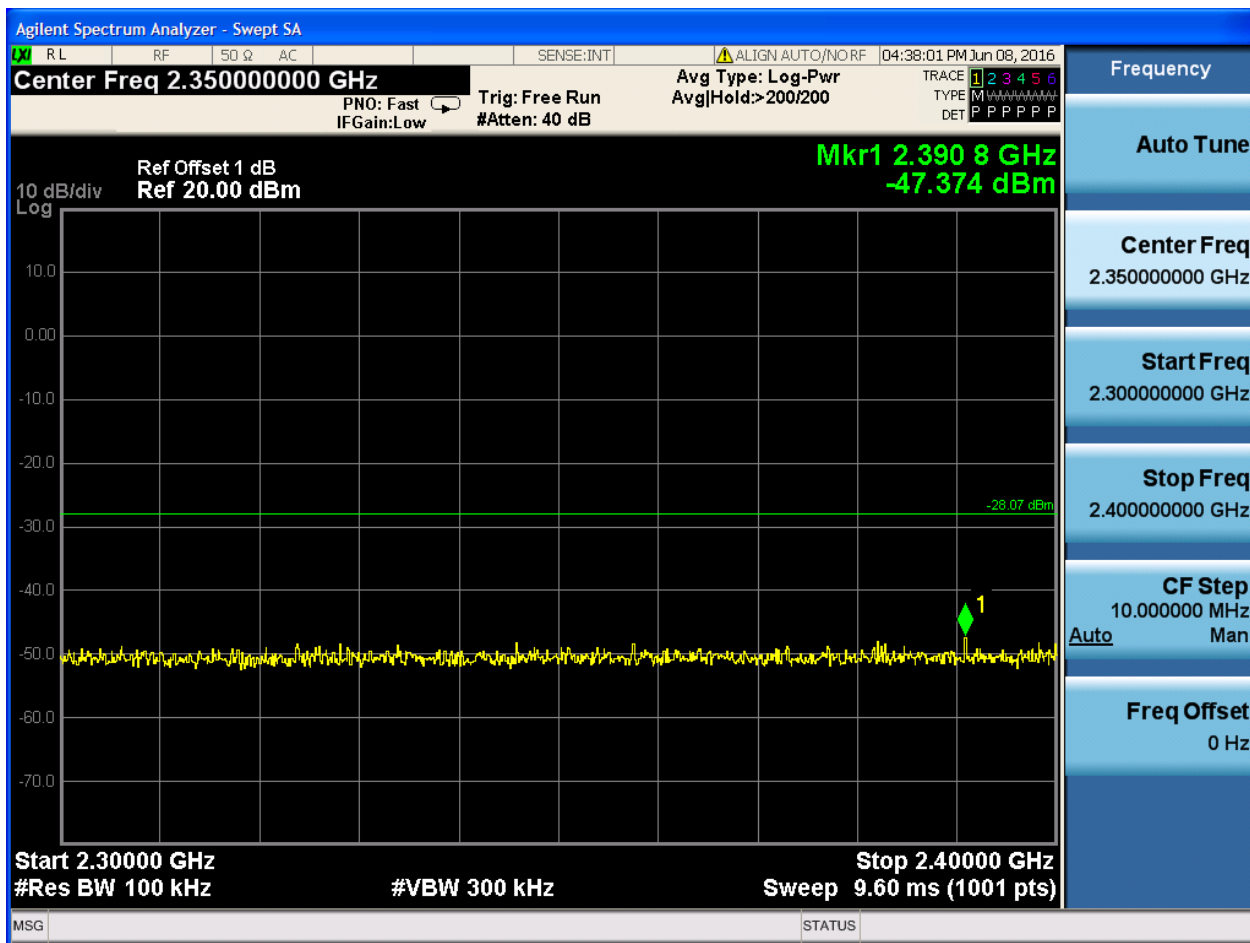


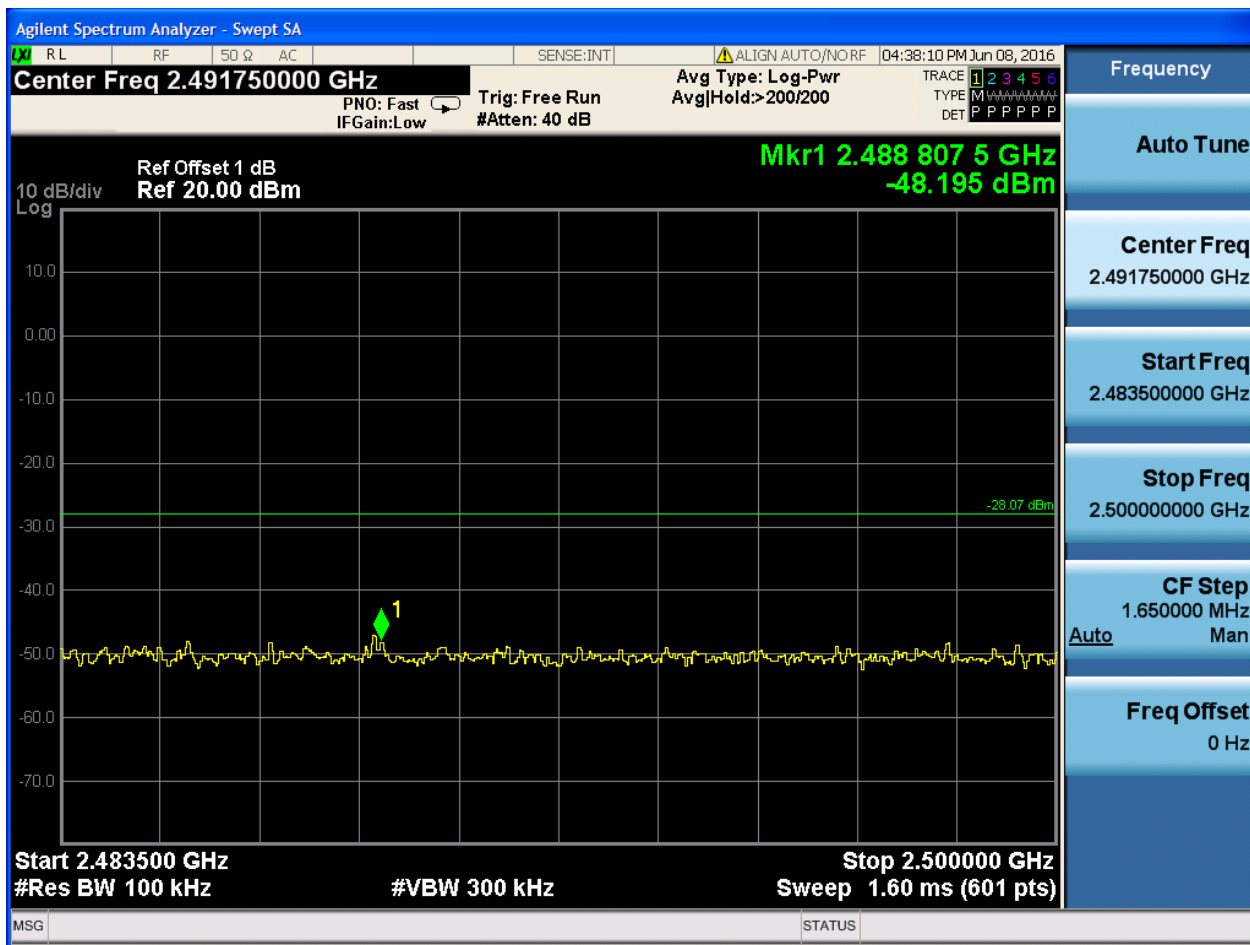
Puw:

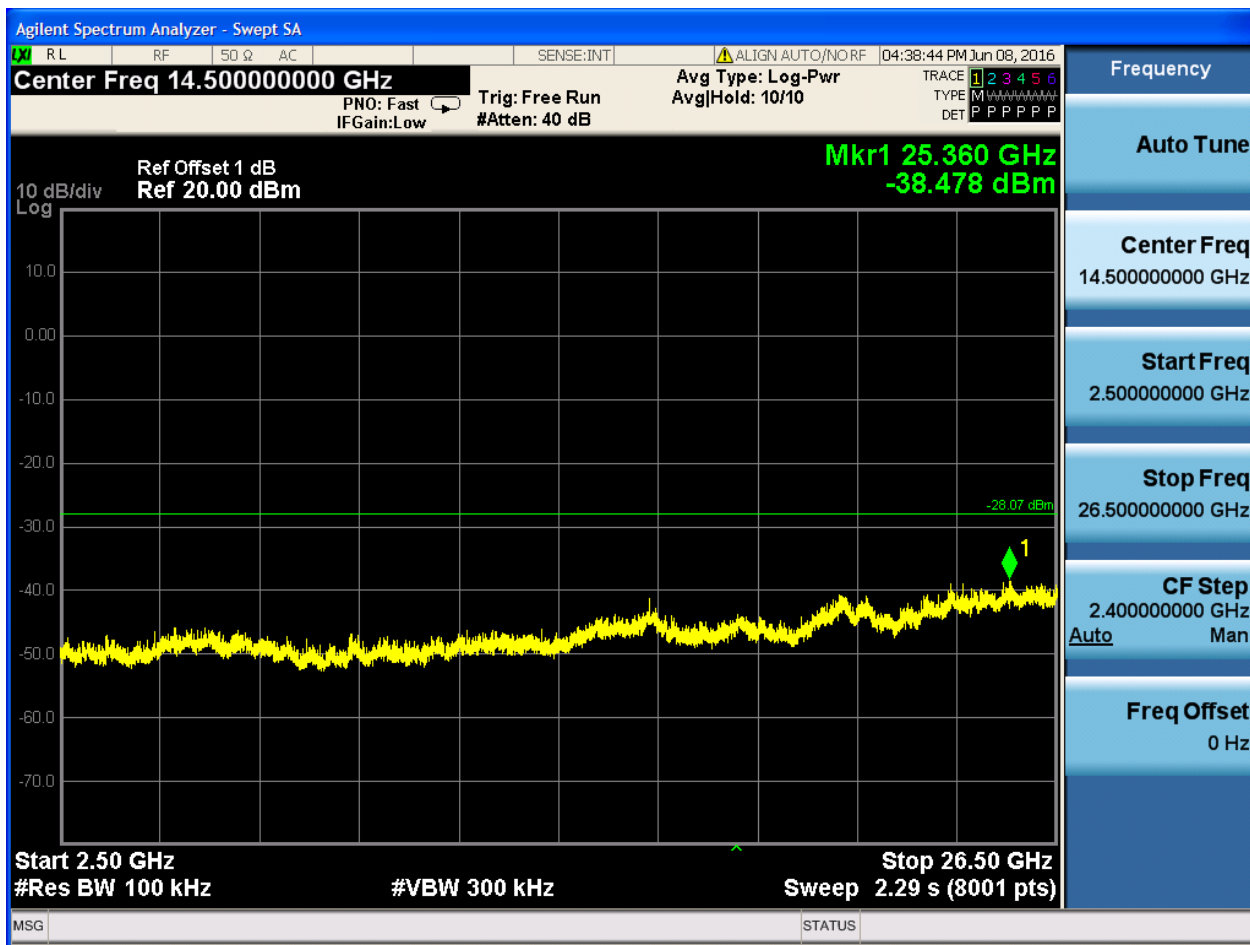














Appendix H: Radiated Spurious Emission & Spurious in Restricted Band

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

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

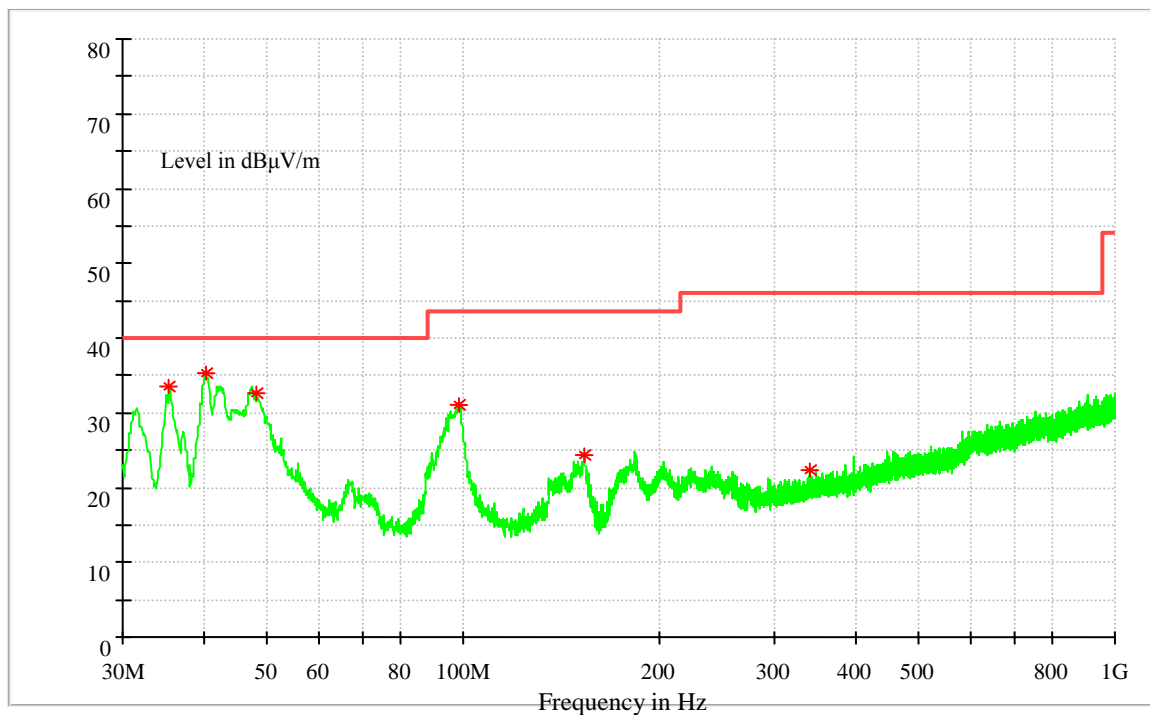
Part 1: Testing Range of “9 kHz to 30MHz”

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

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)
35.335	33.6	40	6.4	100	V	15	15.2
40.30625	35.4	40	4.6	100	V	354	15.5
47.945	32.69	40	7.31	100	V	267	15.2
98.6275	30.95	43.5	12.55	100	V	141	13.6
153.55375	24.32	43.5	19.18	100	V	239	10.3
341.37	22.31	46	23.69	100	V	239	17

Note:

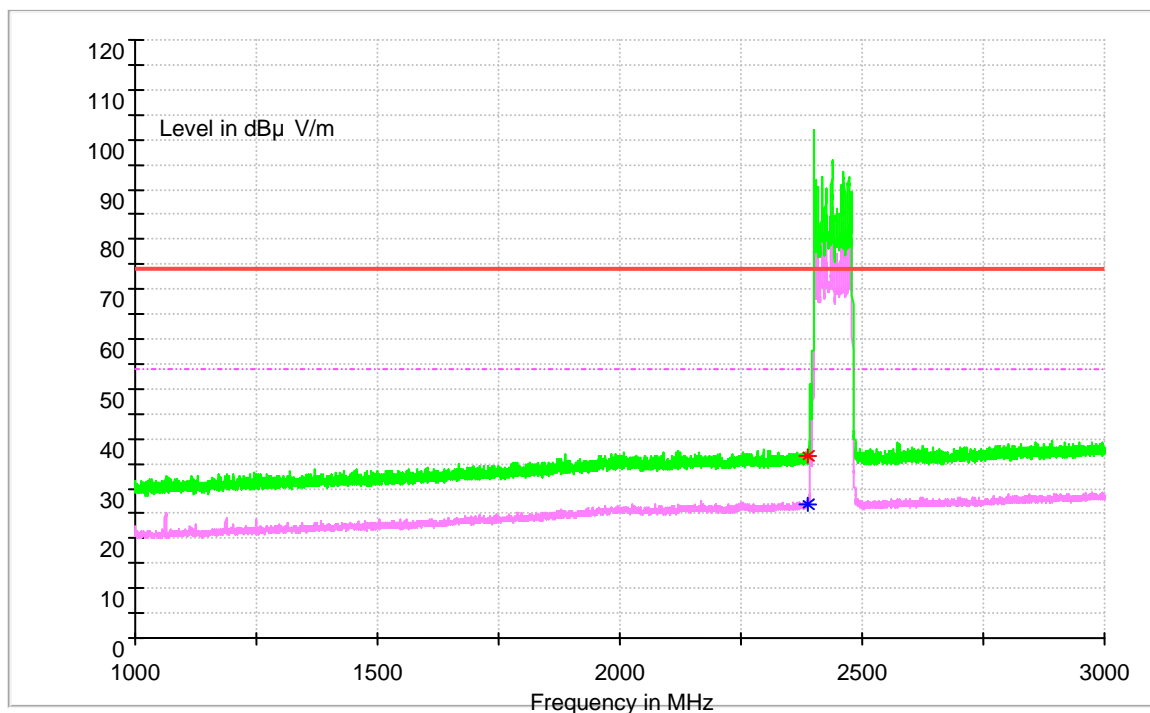
Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

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

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 μ V/m) and Average Limit (54 dB μ 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 μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h	Transd. (dB)
2390	26.91	54	27.09	100	H	213	-7.9

MEASUREMENT RESULT: PK Detector

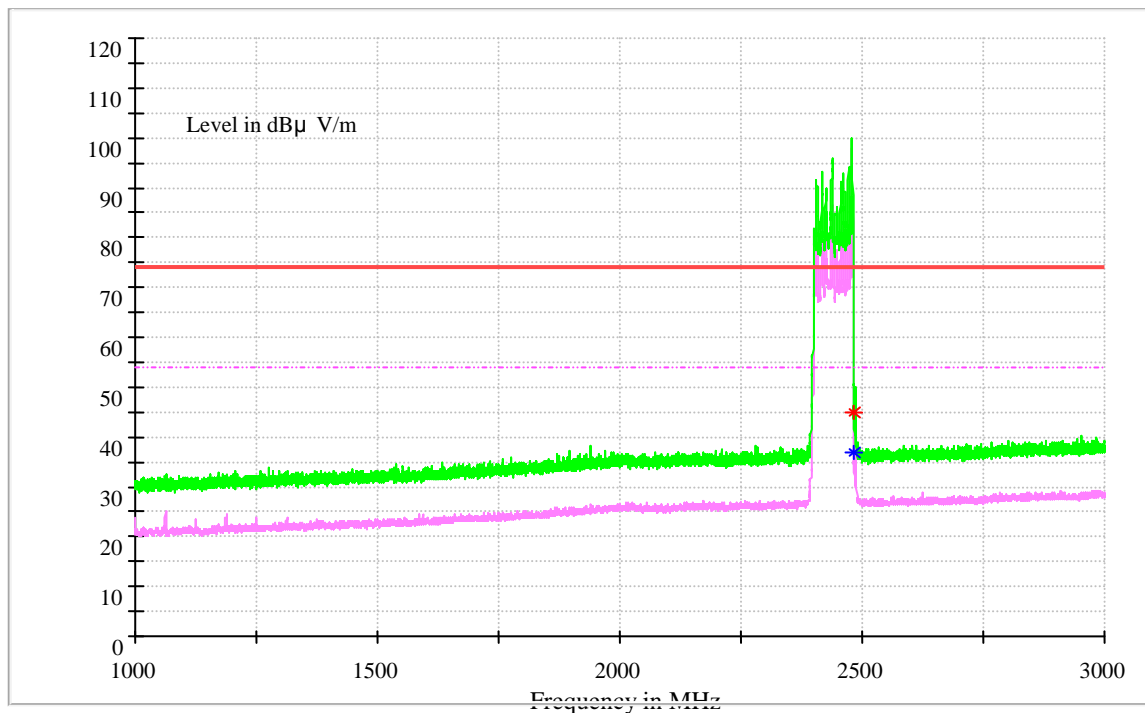
Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h (deg)	Transd. (dB)
2390	36.64	74	37.36	100	H	167	-7.9

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.

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)
2483.5	36.97	54	17.03	100	H	257	2

MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth h (deg)	Transd. (dB)
2483.5	44.99	74	29.01	100	H	201	2

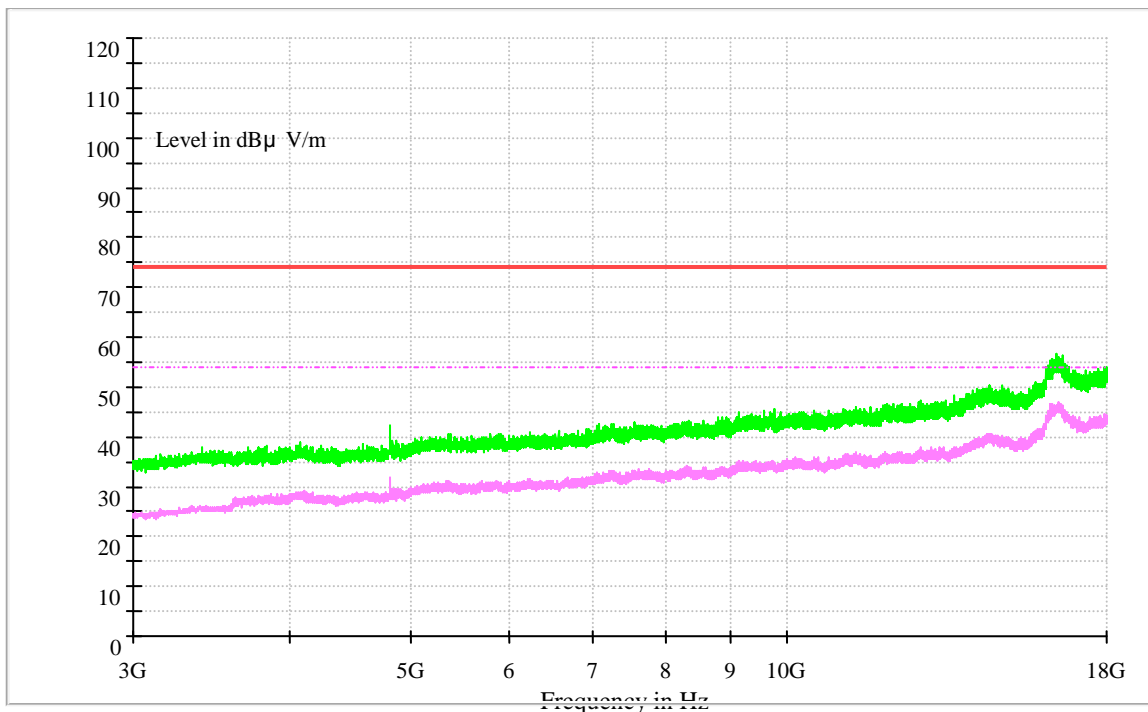
Note2:

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.

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).





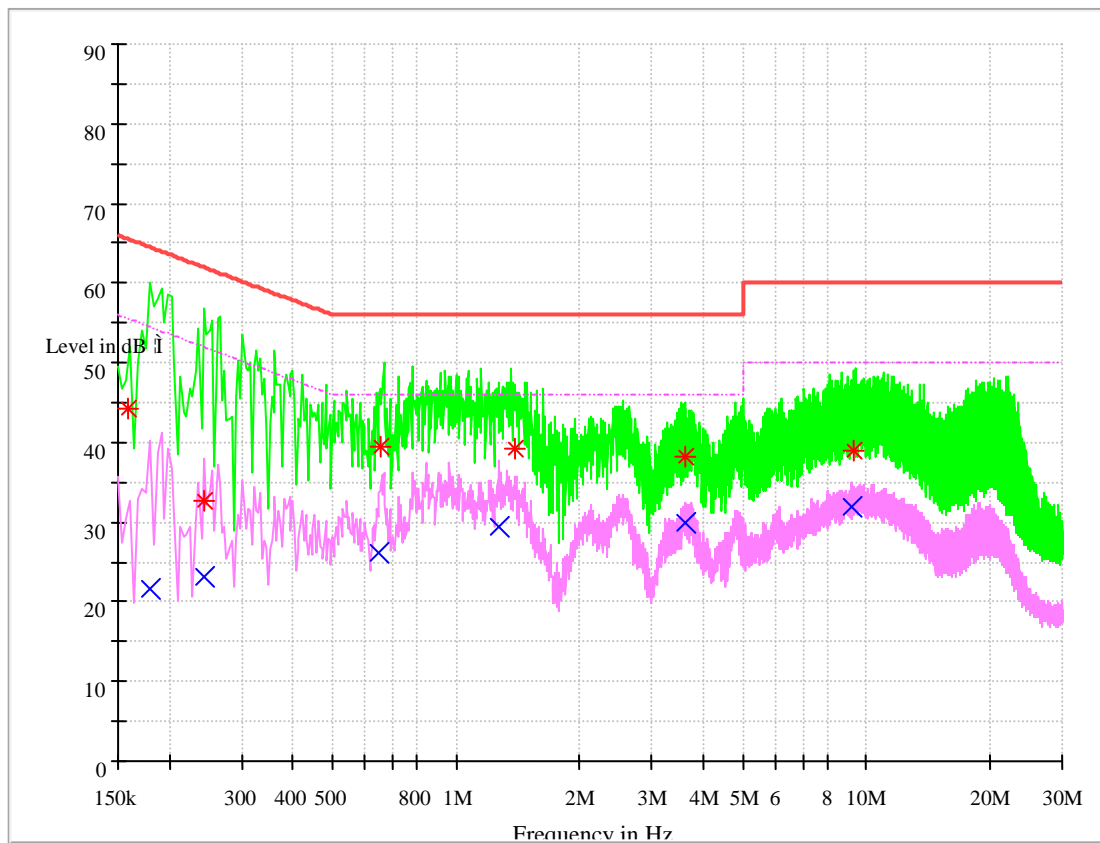
Part 5: Testing Range of “18 GHz to 26.5 GHz”

NOTE1: 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
0.30117	27.42	50.22	9.7	22.8	L1	FLO
0.52606	34.64	46	9.7	11.36	L1	FLO
1.11746	35.24	46	9.7	10.76	L1	FLO
1.89017	30.81	46	9.7	15.19	L1	FLO
3.08618	23.2	46	9.8	22.8	L1	FLO
5.79599	27.23	50	9.8	22.77	L1	FLO



MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dBμ V)	Limit (dBμ V)	Transd. (dB)	Margin (dB)	Line	PE
0.17368	45.20	64.78	9.7	19.58	N	FLO
0.52923	44.51	56	9.7	11.49	N	FLO
1.12	41.12	56	9.7	14.88	N	FLO
1.84051	37.73	56	9.7	18.27	L1	FLO
3.94907	36.63	56	9.8	19.37	L1	FLO
3.00426	33.38	56	9.8	22.62	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