



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.

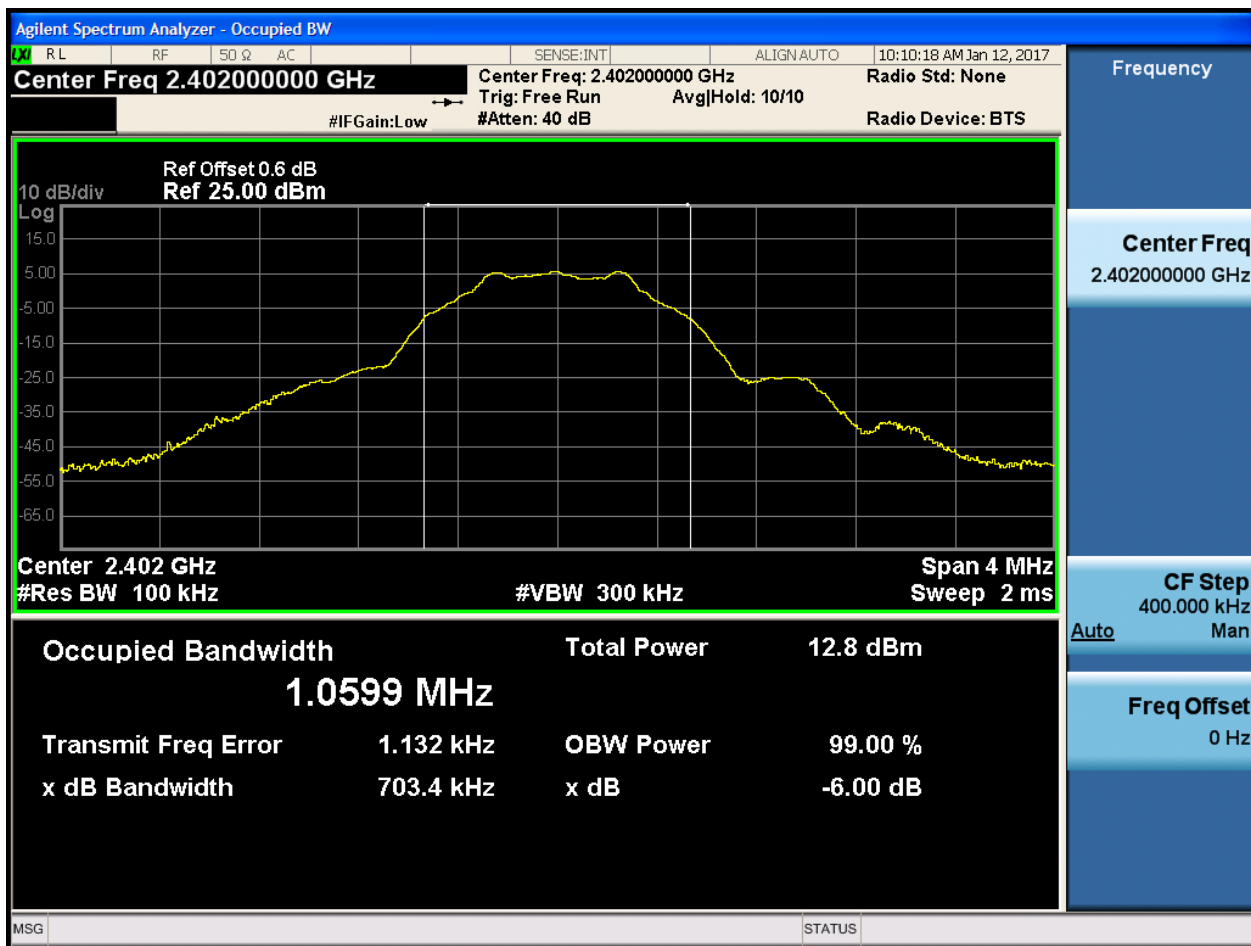
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	DTS6dBBW[MHz]	Verdict
TM1	L	2402	0.70	pass
TM1	M	2440	0.71	pass
TM1	H	2480	0.71	pass



Part II - Test Plots

2.1 TM1_L@Ant 1





2.3 TM1_M@Ant 1





2.5 TM1_H@Ant 1



Appendix B: Occupied Bandwidth

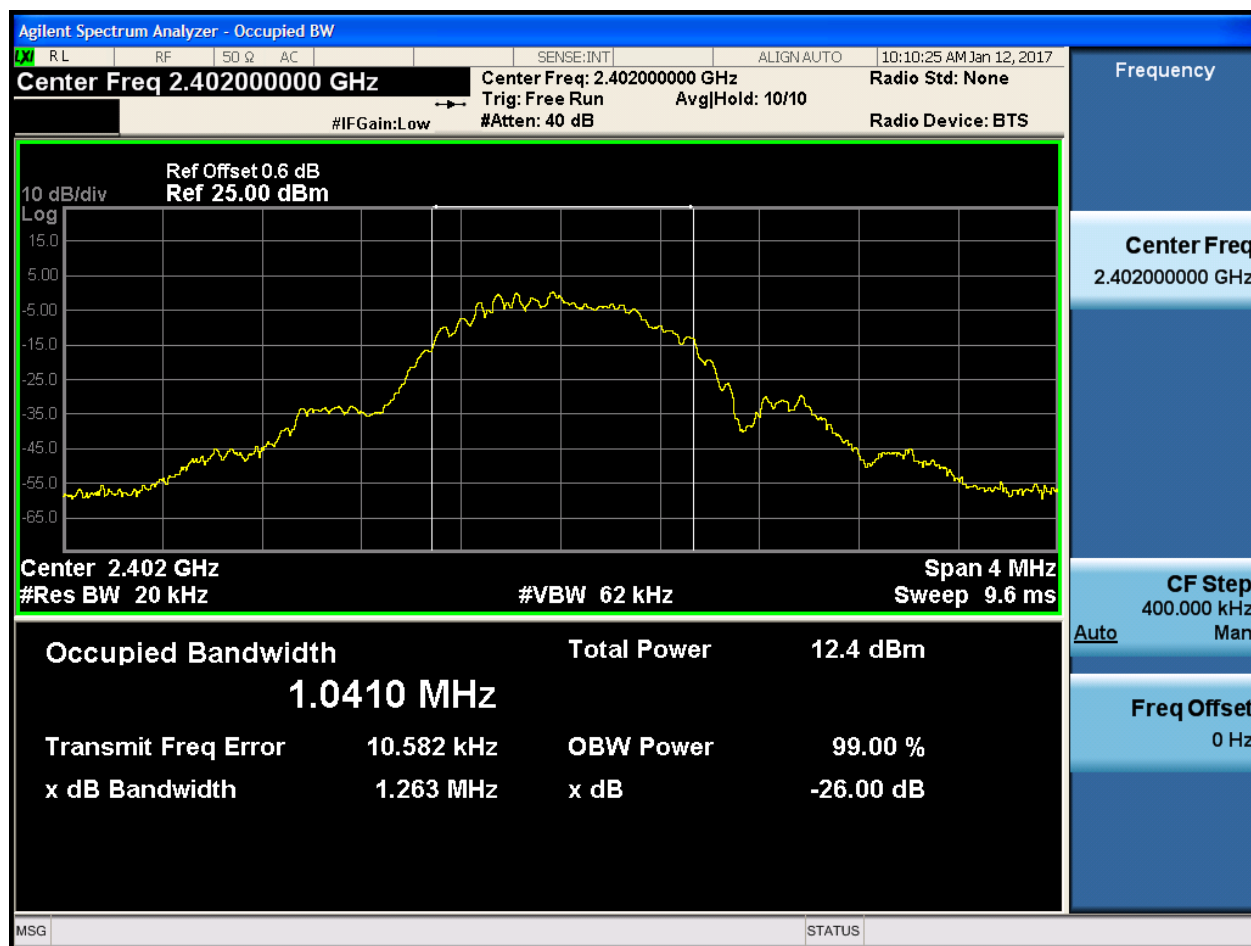
For measurements on smart antenna systems (devices with multiple transmit chains), the test is performed at each chain, and used as respective results for each chain.

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Occupied Bandwidth [MHz]	Verdict
TM1	L	2402	1.04	pass
TM1	M	2440	1.04	pass
TM1	H	2480	1.04	pass

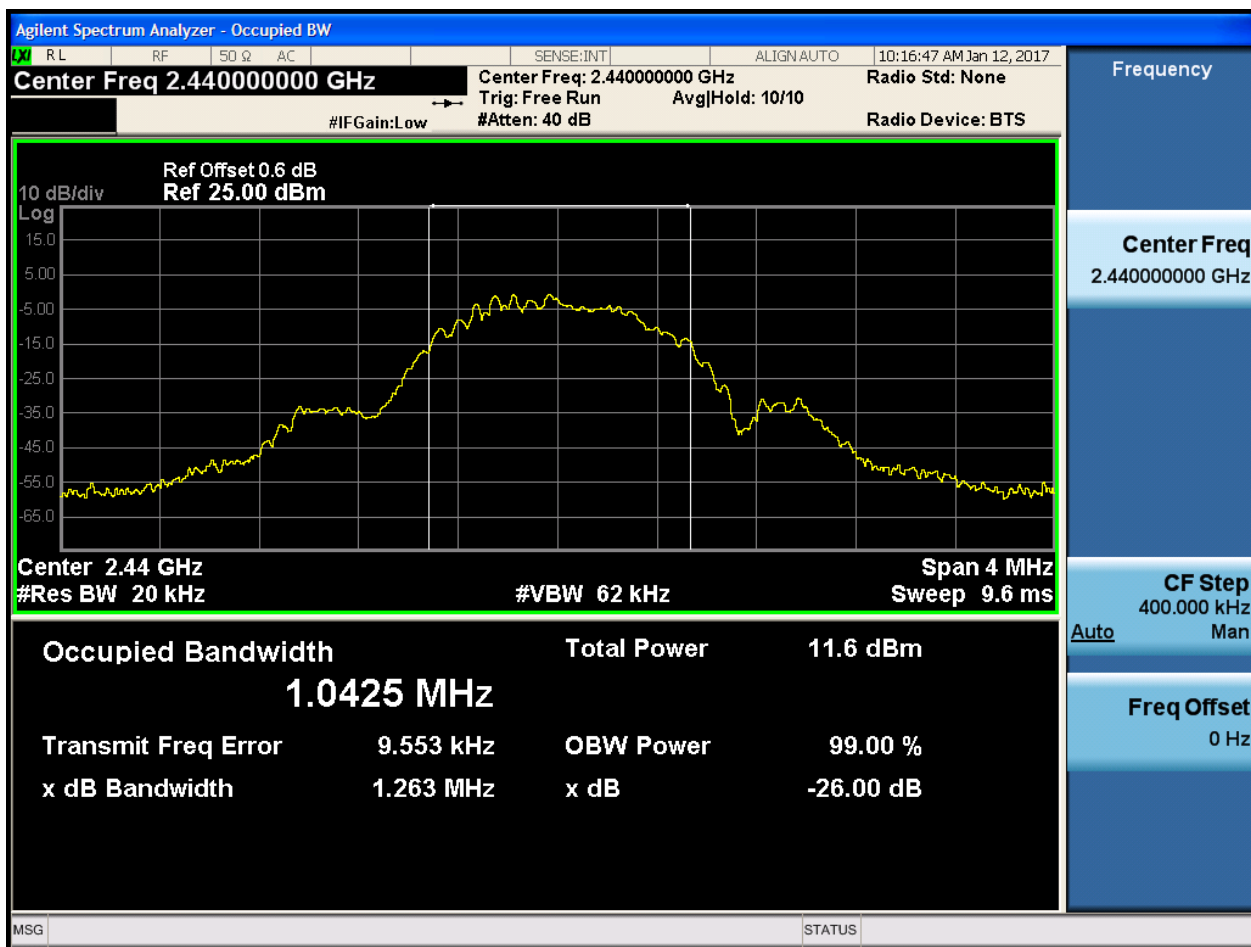
Part II - Test Plots

2.1 TM1_L@Ant 1





2.1 TM1_M@Ant 1





2.1 TM1_H@Ant 1





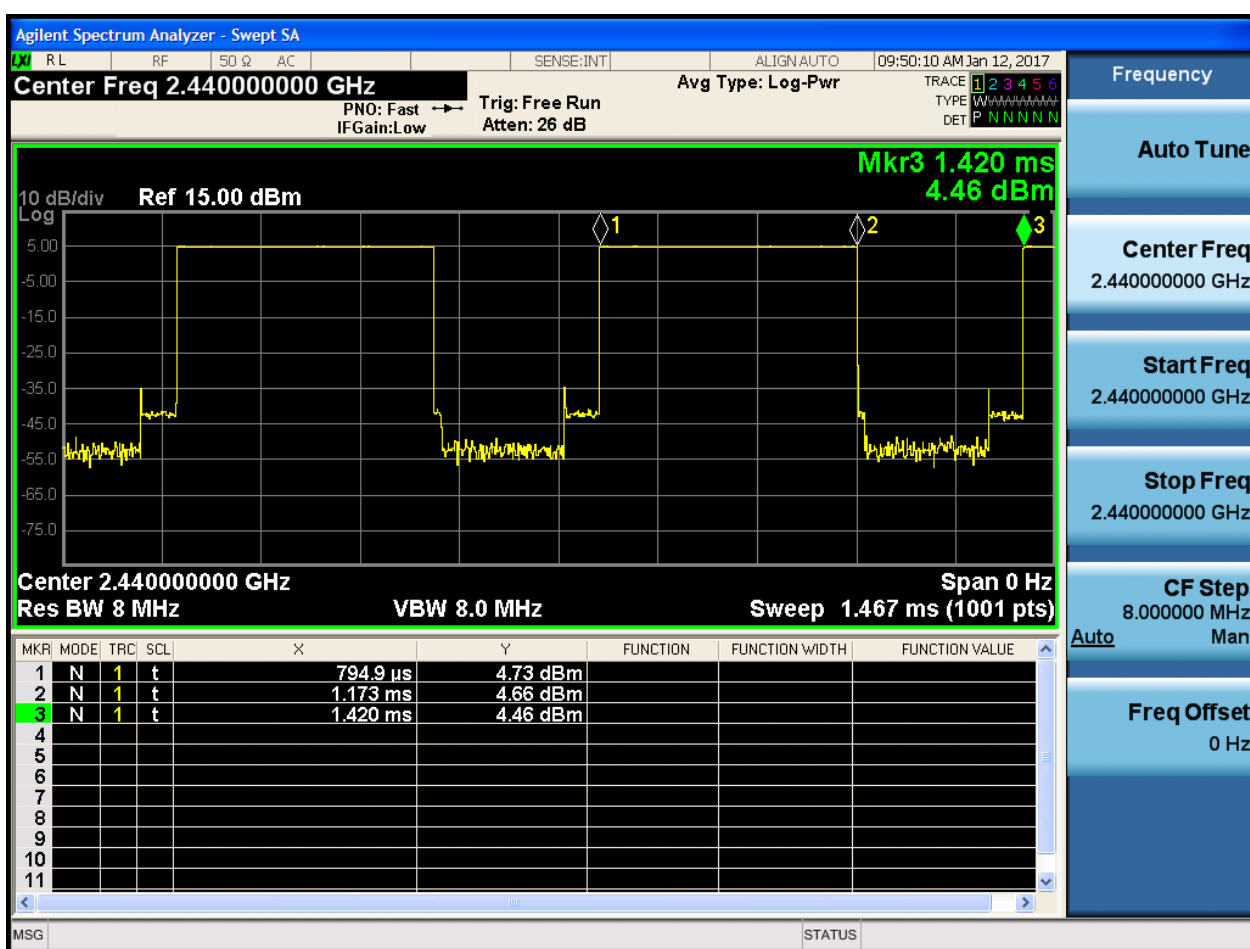
Appendix C: Duty Cycle

Part I - Test Results

Test Mode	TX Freq. [MHz]	Duty cycle [%]
TM1	CH0,CH19,CH39	60.5

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	L	2402	6.35	pass
TM1	M	2440	5.52	pass
TM1	H	2480	4.79	pass

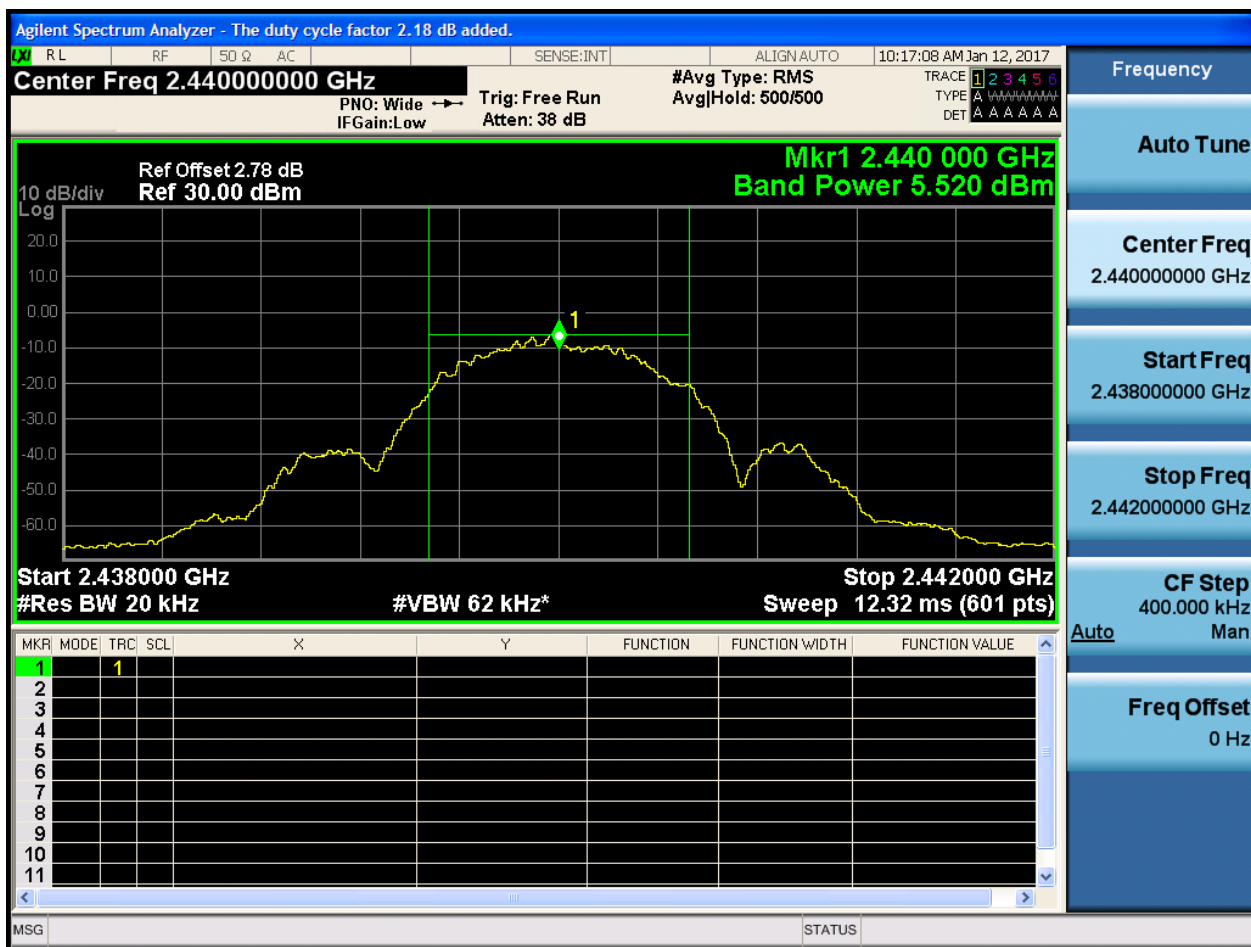
Part II - Test Plots

2.1 TM1_L@Ant 1



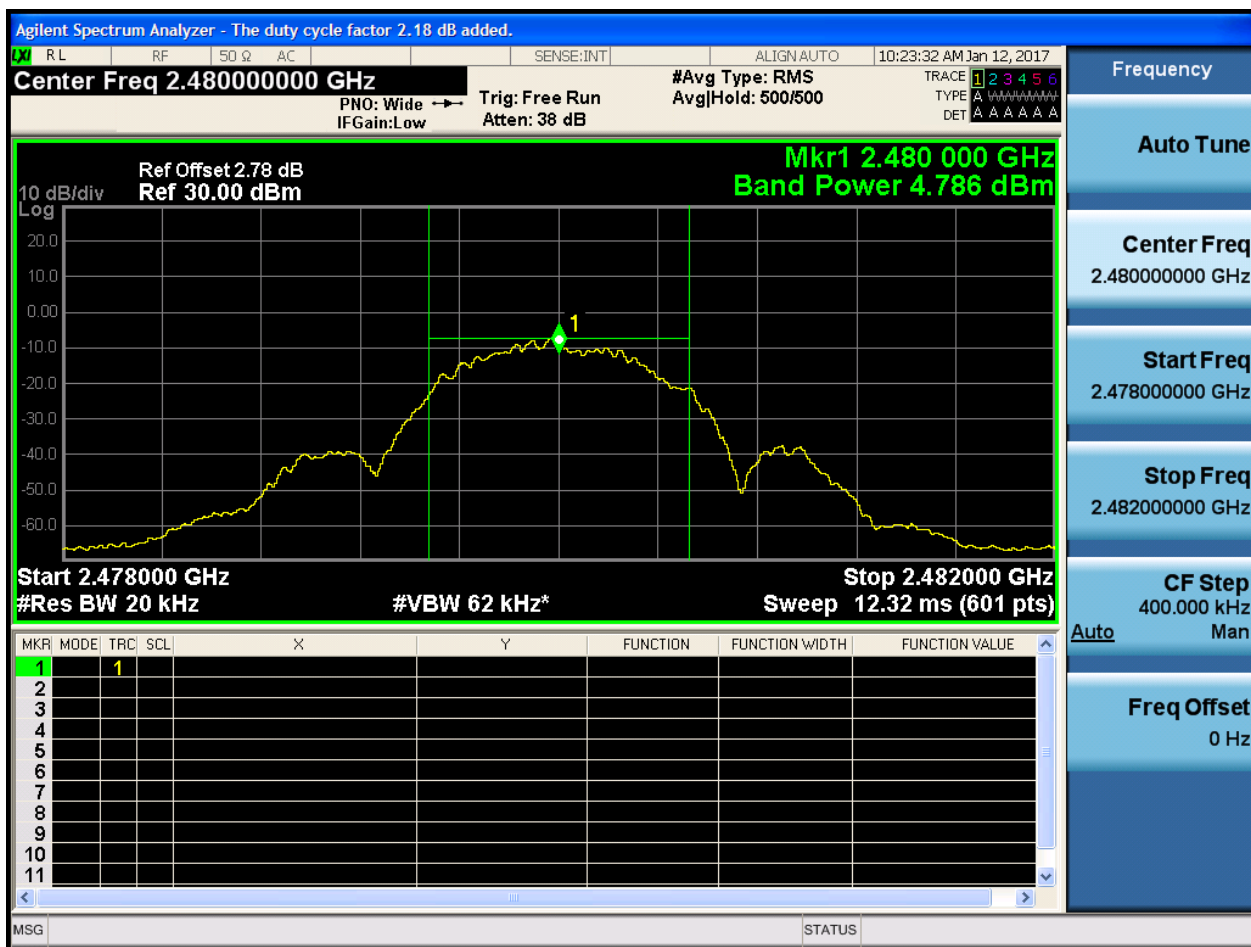


2.3 TM1_M@Ant 1





2.5 TM1_H@Ant 1



Appendix E: Maximum Power Spectral Density Level

Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	PD[MHz]	Verdict
TM1	L	2402	-8.55	pass
TM1	M	2440	-9.25	pass
TM1	H	2480	-9.97	pass

Part II - Test Plots

2.1 TM1_L@Ant 1





2.3 TM1_M@Ant 1





2.5 TM1_H@Ant 1



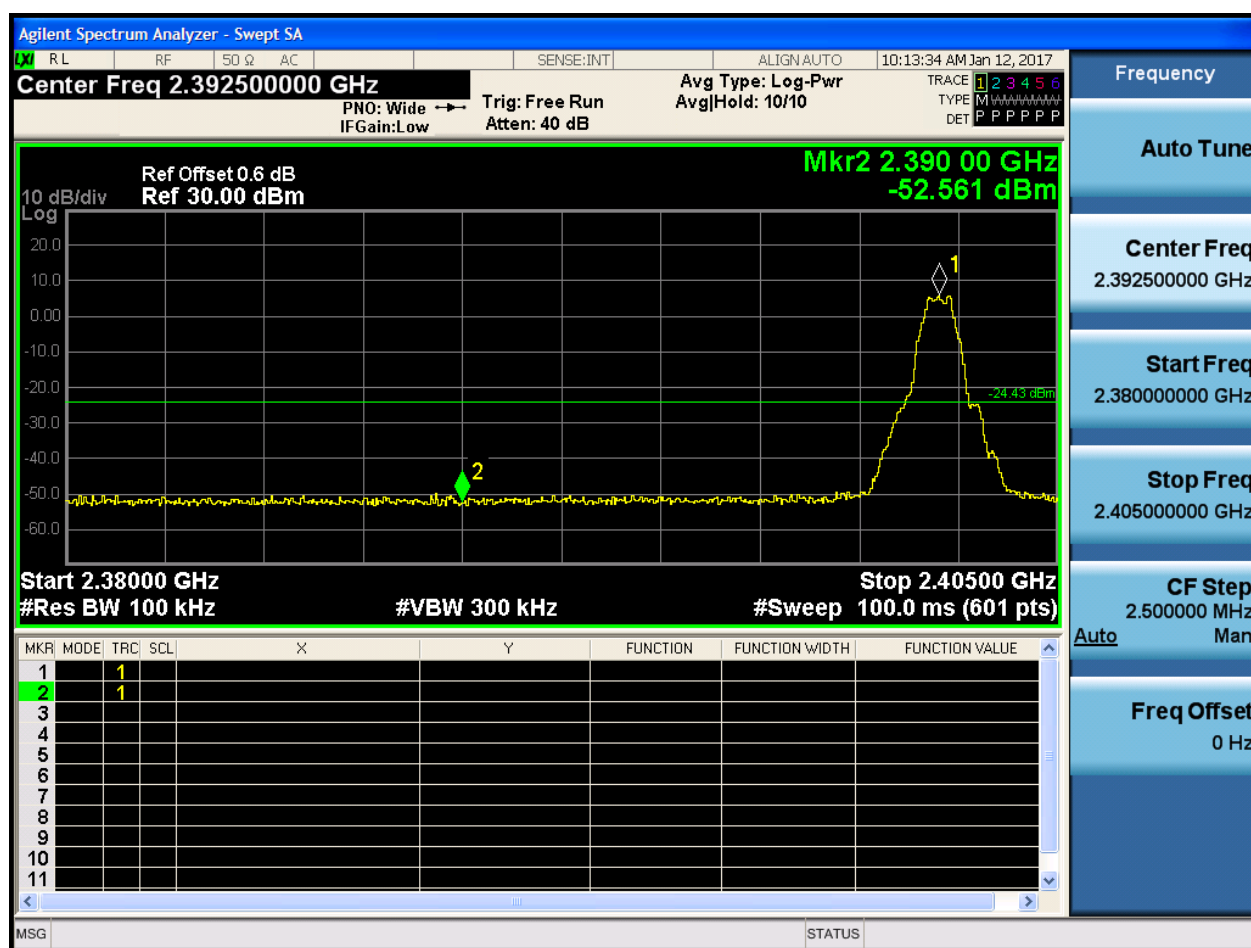
Appendix F: Band Edges Compliance

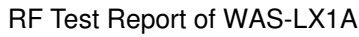
Part I - Test Results

Test Mode	Test Channel	Frequency[MHz]	Carrier Power[dBm]	Max.Spurious Level[dBm]	Verdict
TM1	L	2402	5.57	-52.56	pass
TM1	H	2480	4.11	-51.85	pass

Part II - Test Plots

2.1 TM1_L@Ant 1





Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:INT ALIGN AUTO 10:26:39 AM Jan 12, 2017

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

PNO: Wide → 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 0.6 dB
Ref 30.00 dBm

Mkr2 2.483 50 GHz
-51.847 dBm

10 dB/div
Log

Start 2.47350 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.49350 GHz #Sweep 100.0 ms (601 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1		1						
2		1						
3								
4								
5								
6								
7								
8								
9								
10								
11								

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

Auto

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	L	2402	5.60	<limit	pass
TM1	M	2440	4.84	<limit	pass
TM1	H	2480	4.09	<limit	pass

Part II - Test Plots

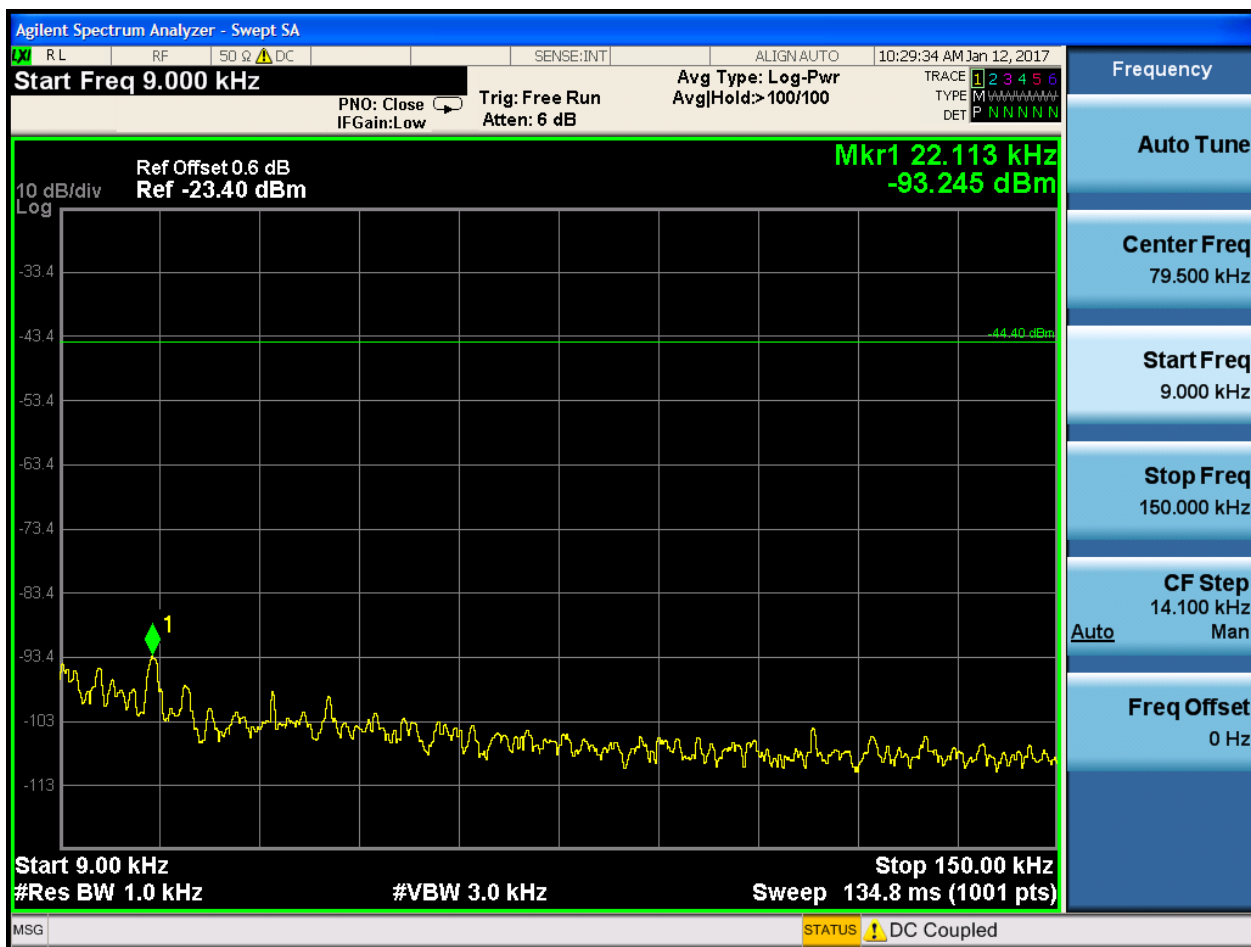
2.1 TM1_L@Ant 1

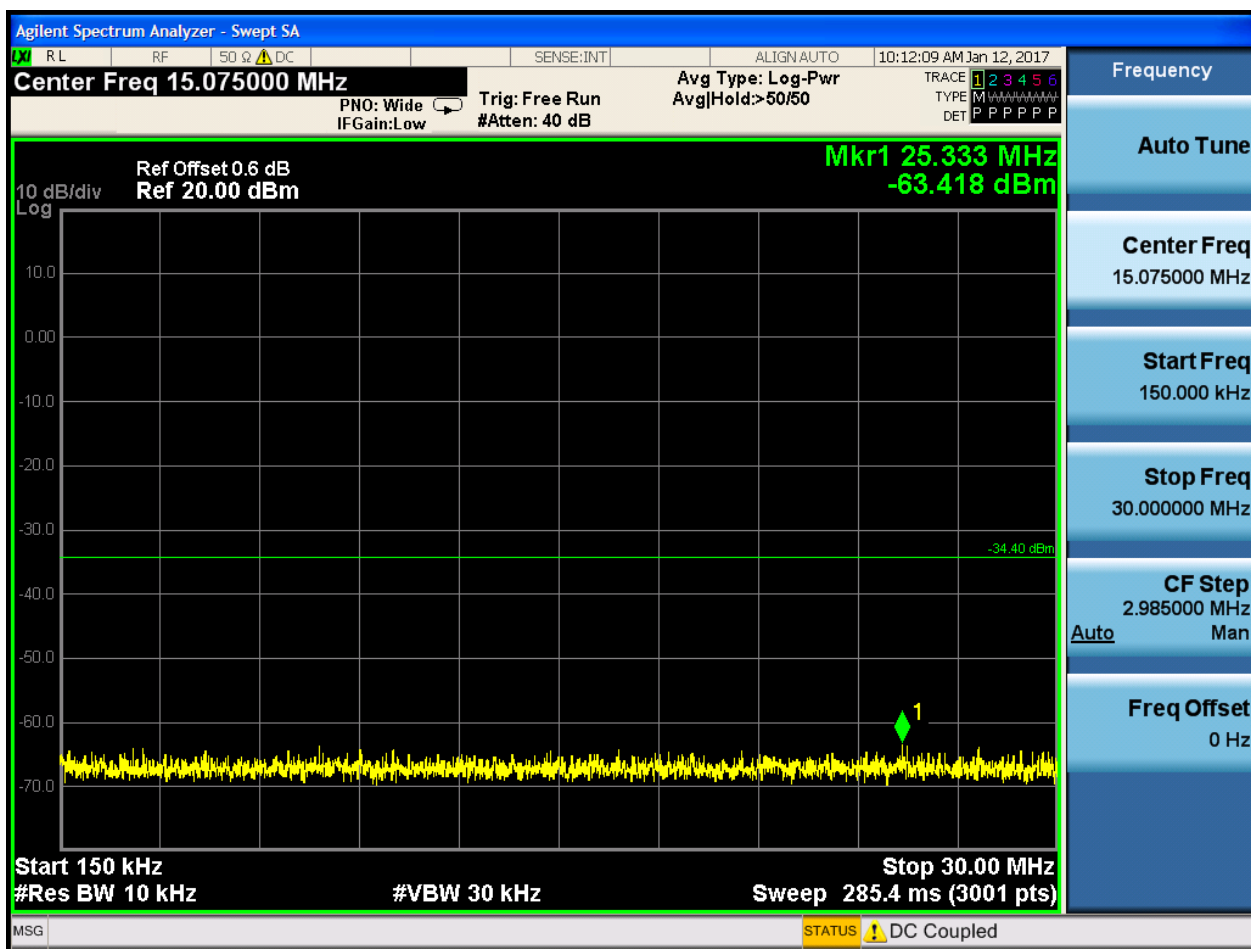
Pref:

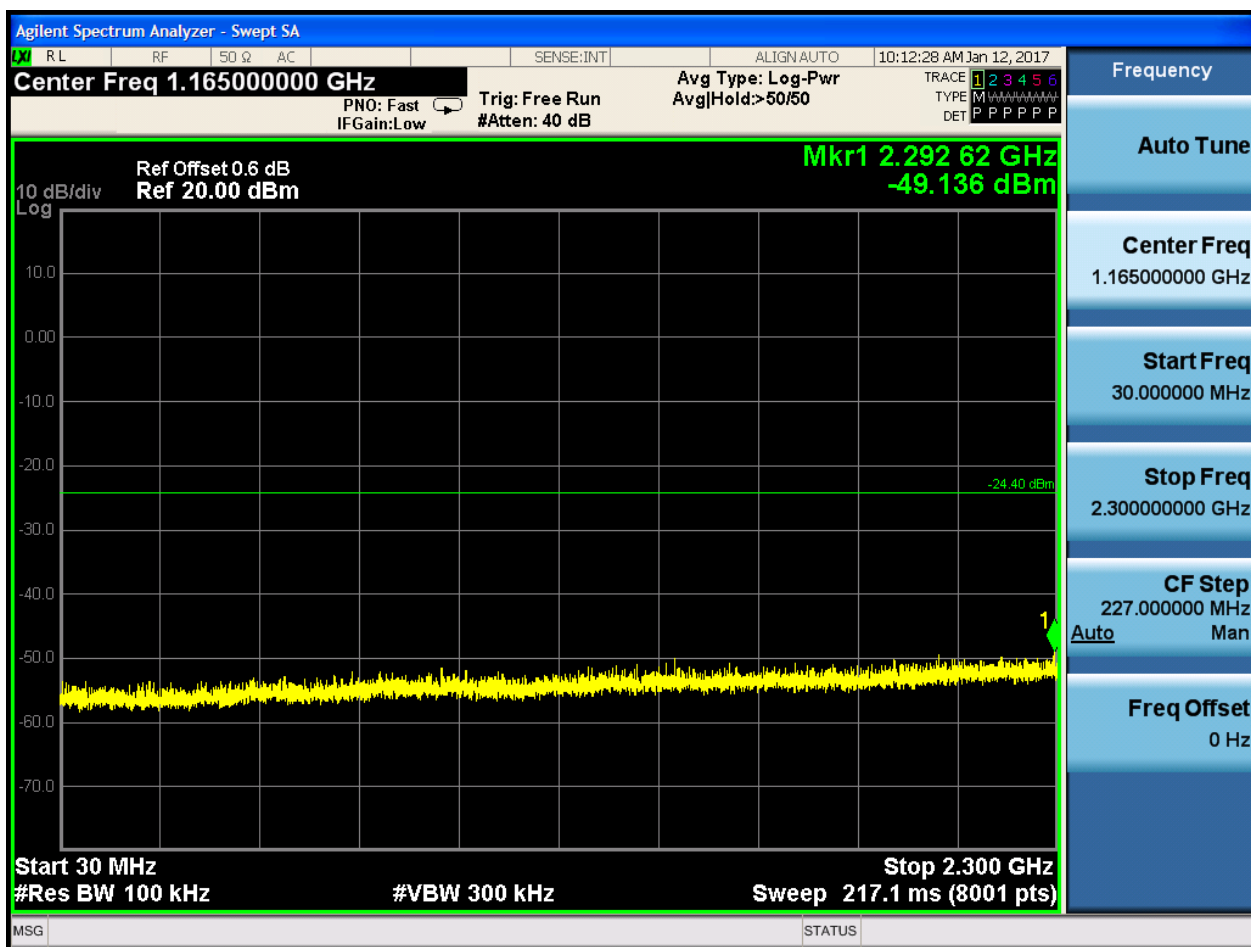


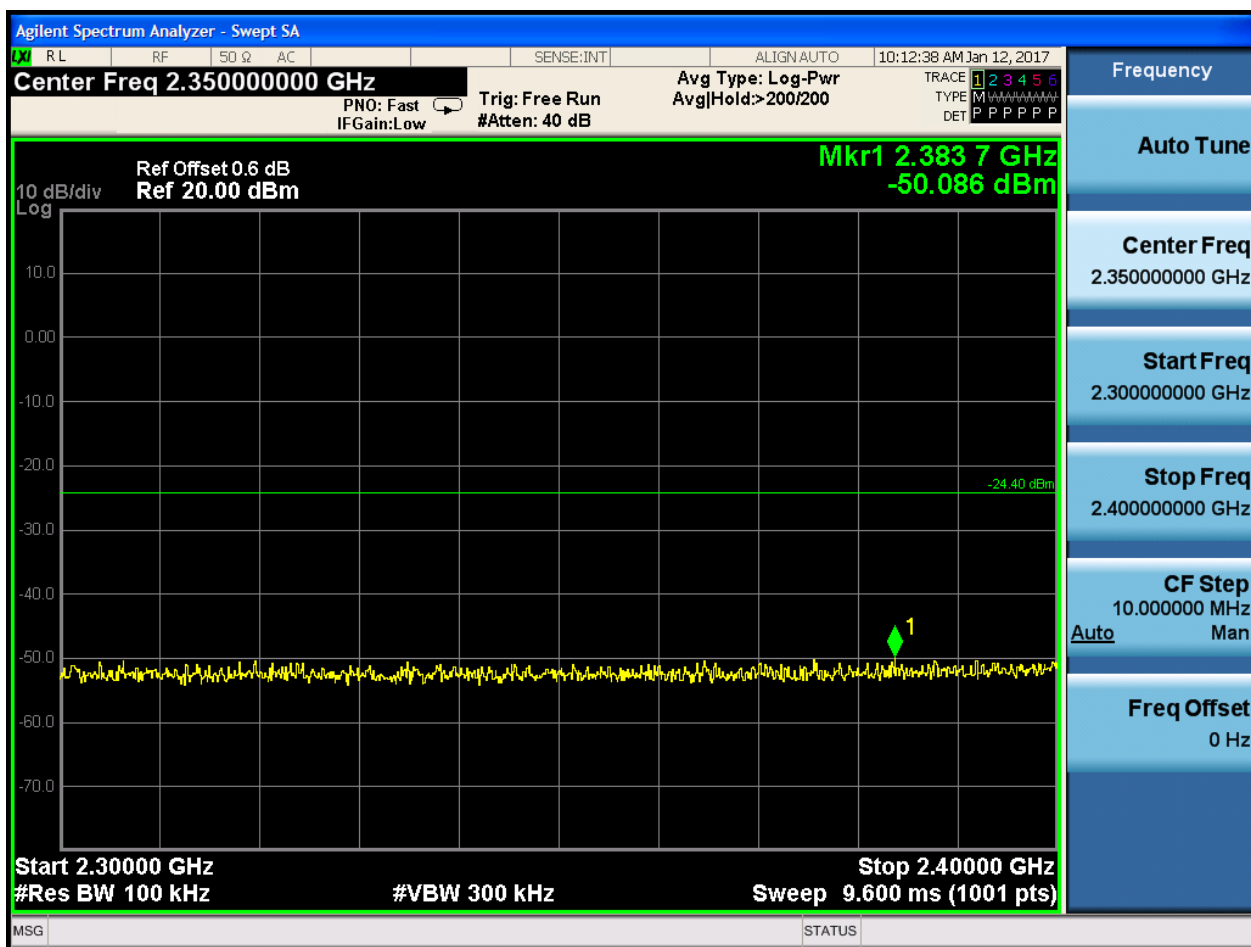


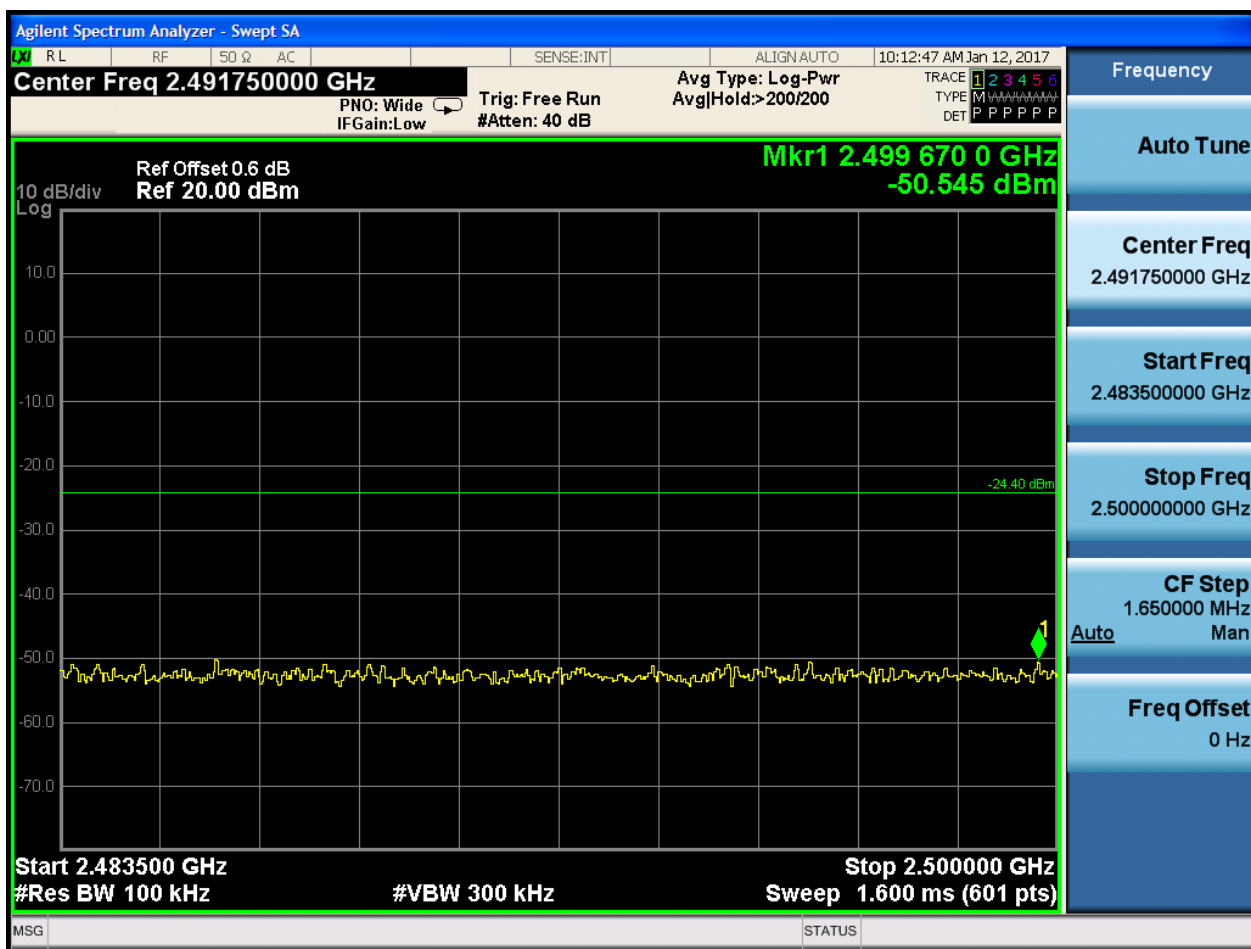
Puw:









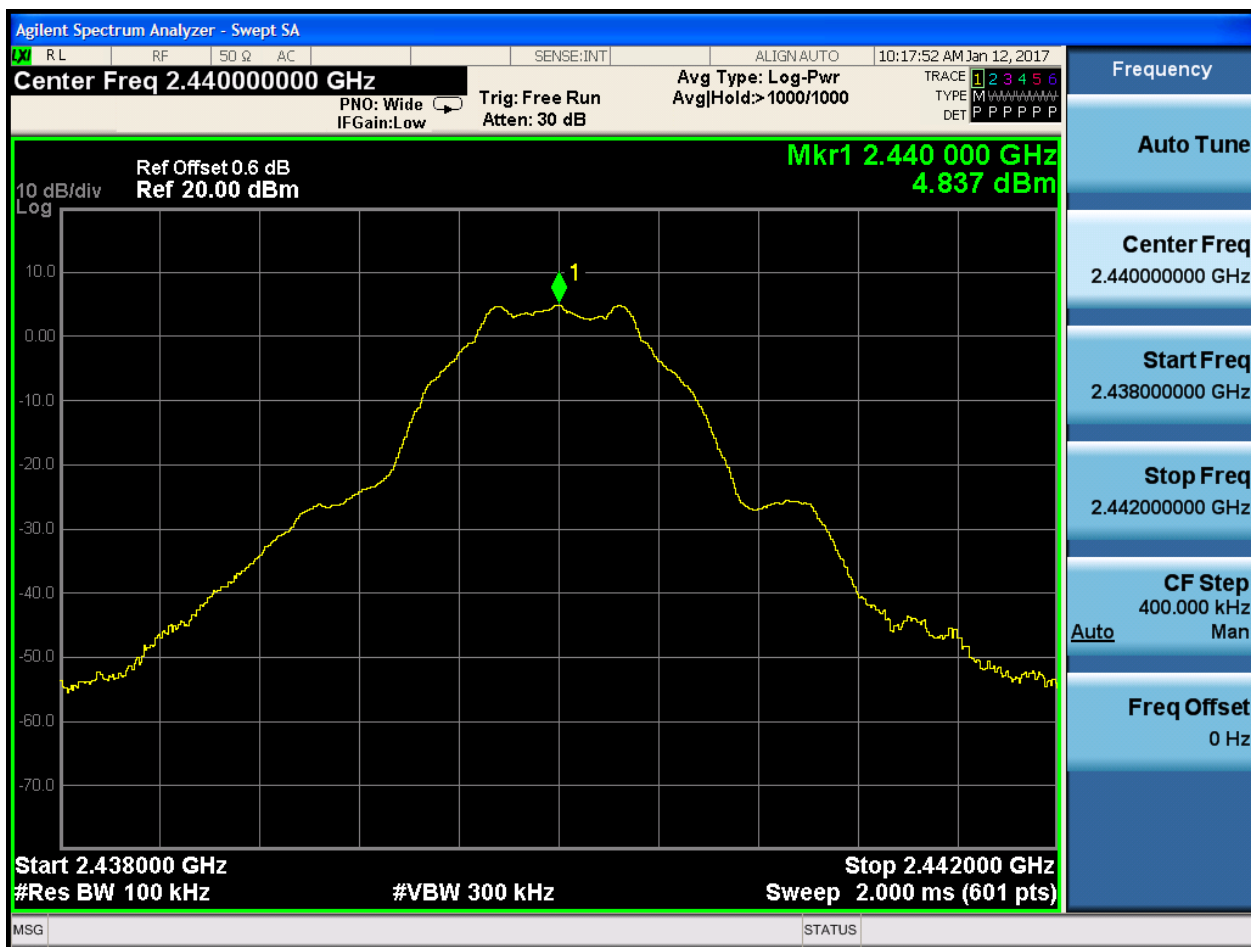






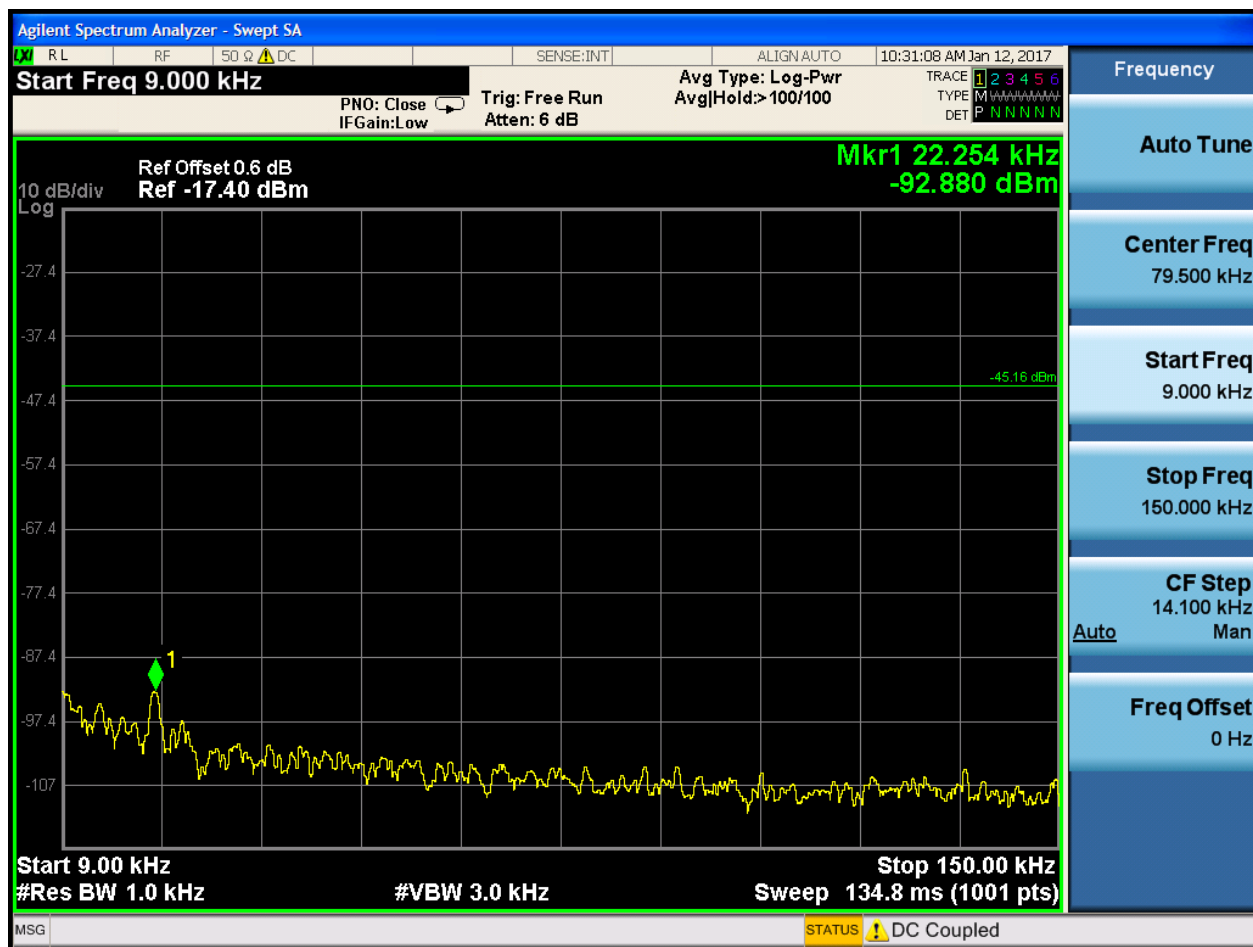
2.3 TM1_M@Ant 1

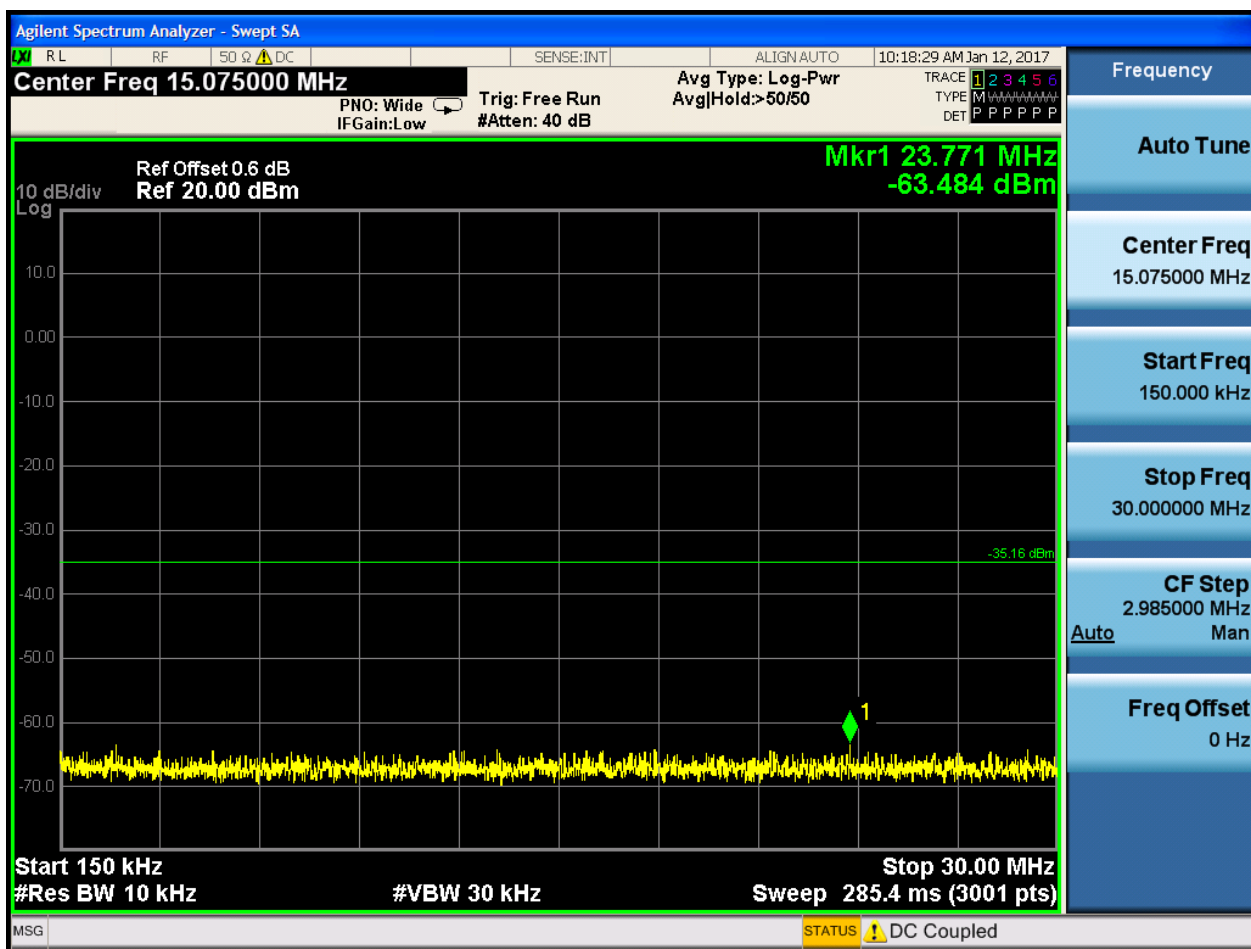
Pref:

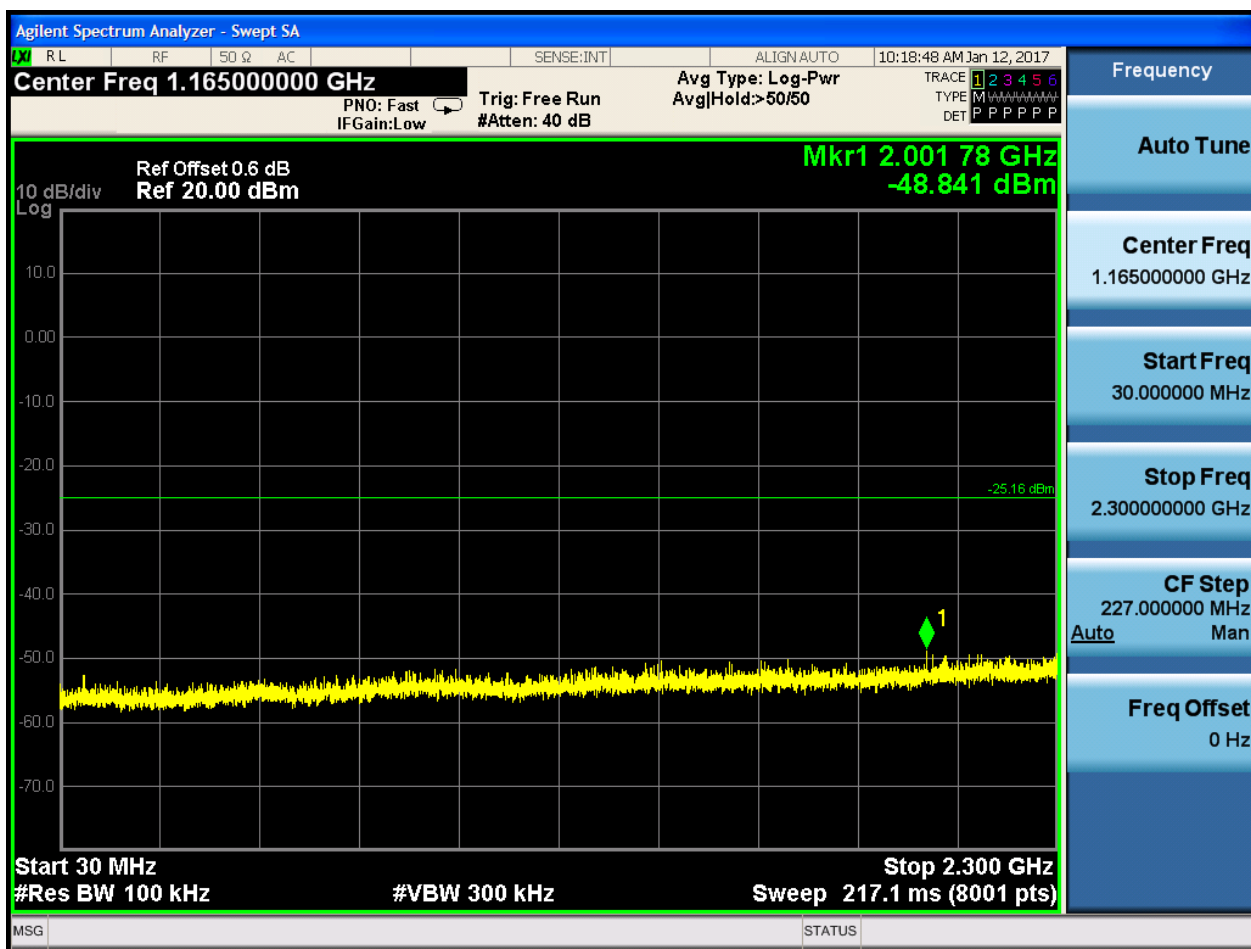


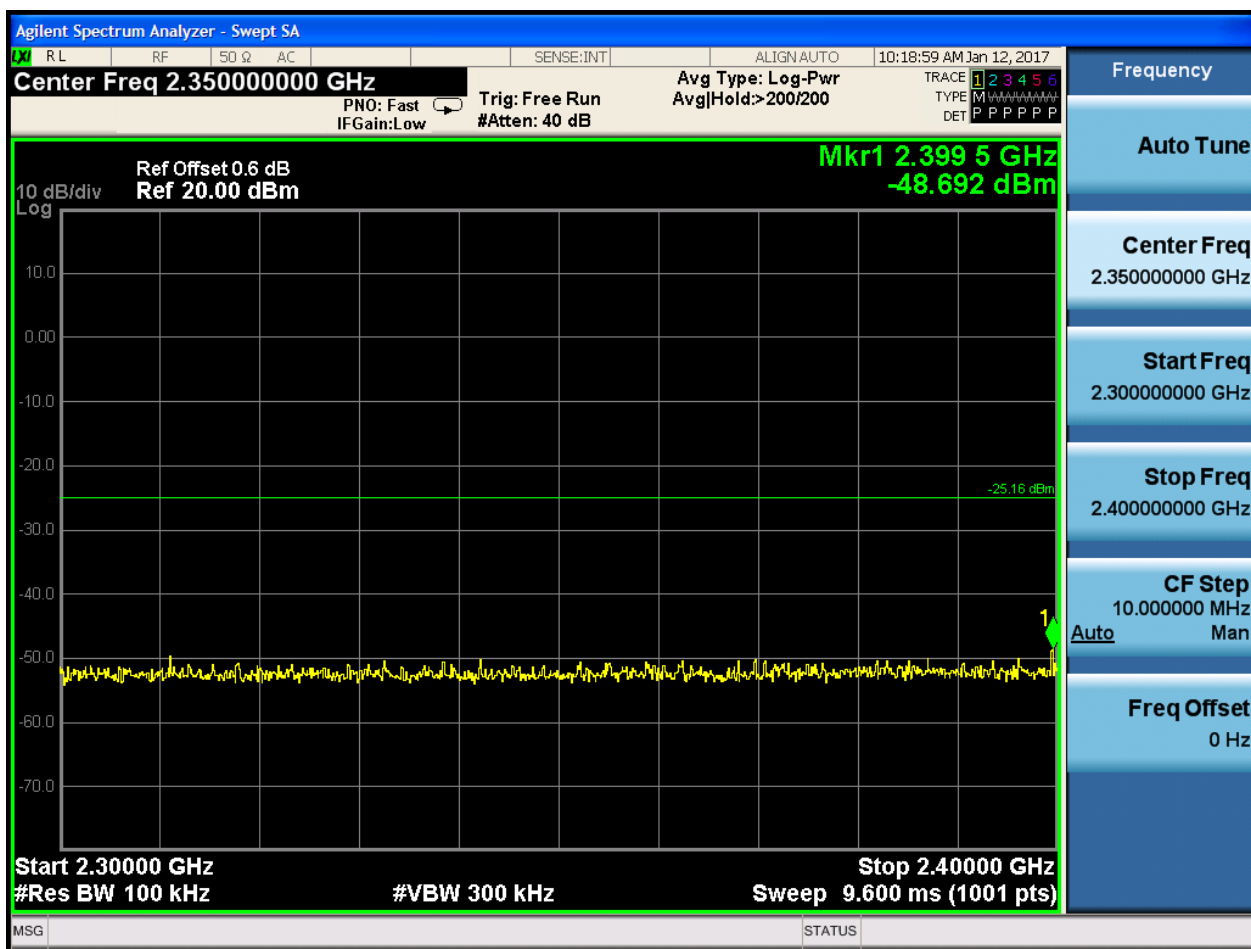


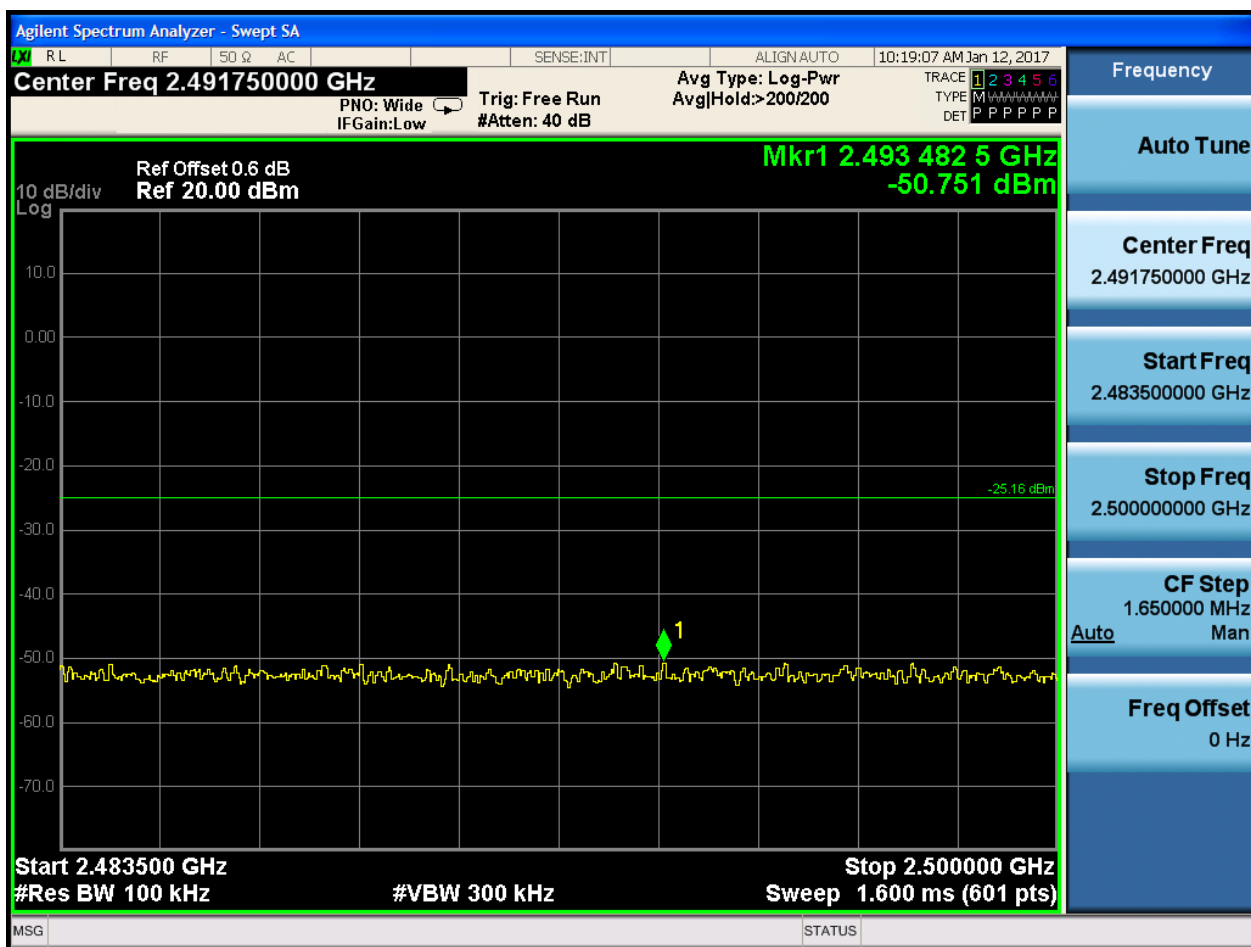
Puw:









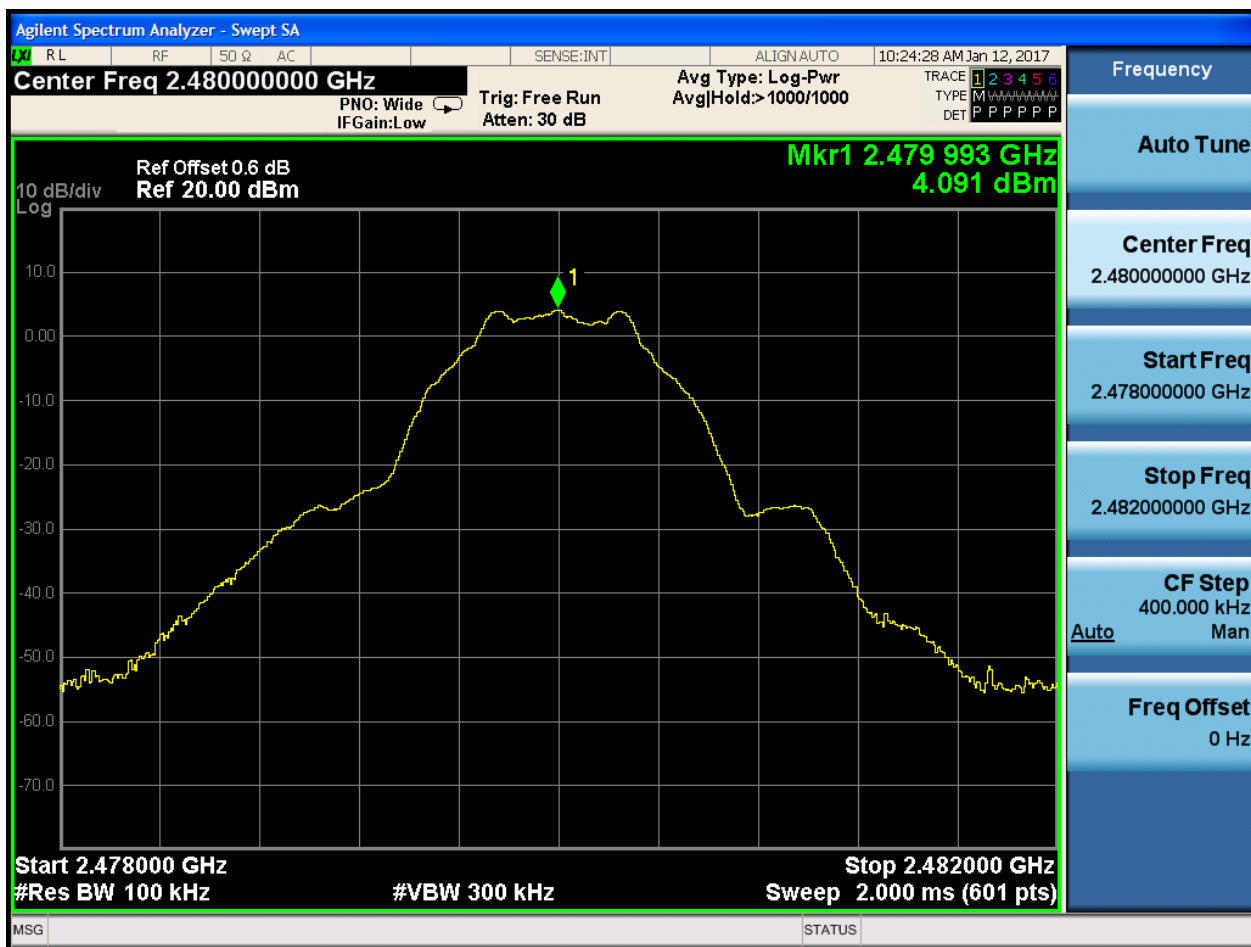






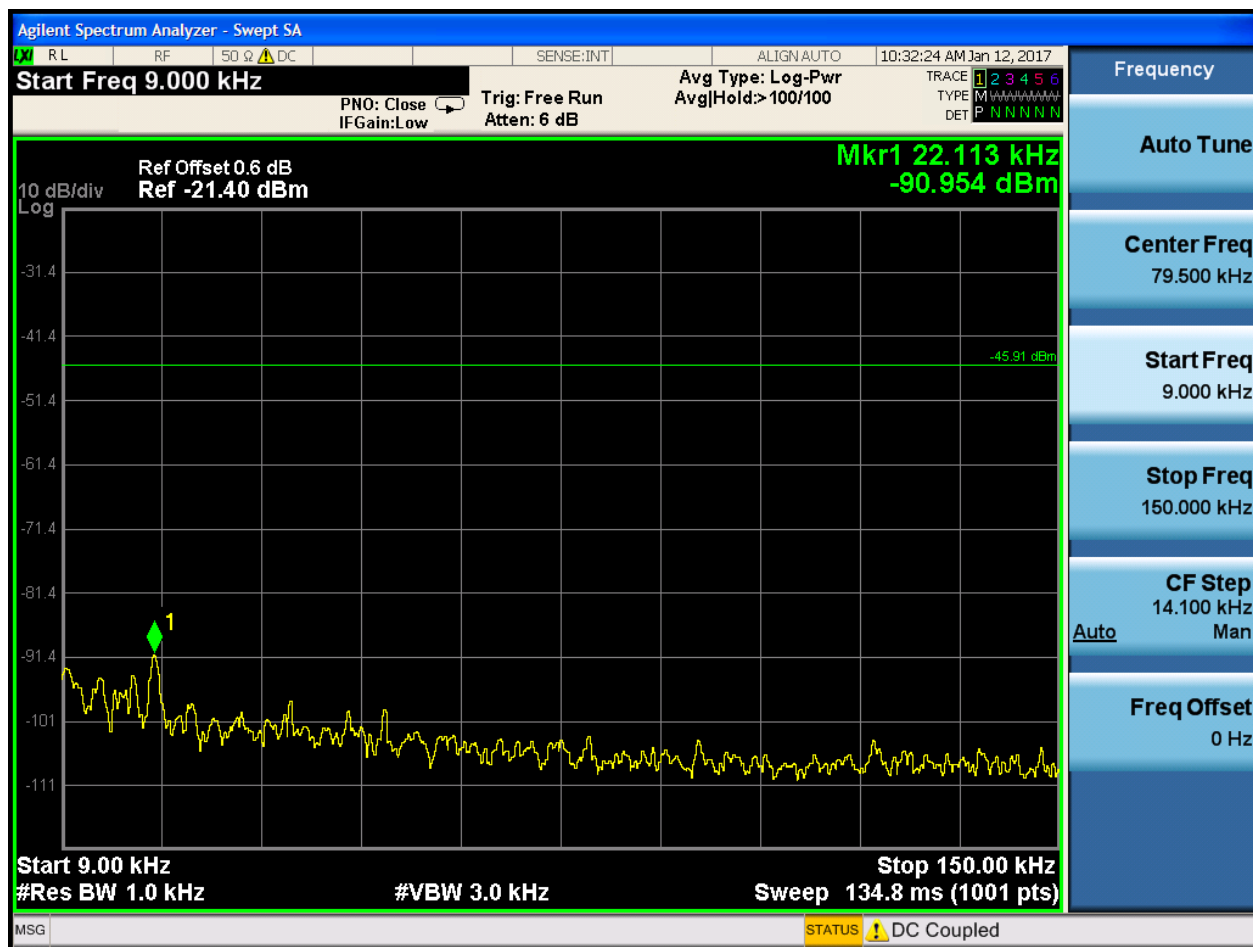
2.5 TM1_H@Ant 1

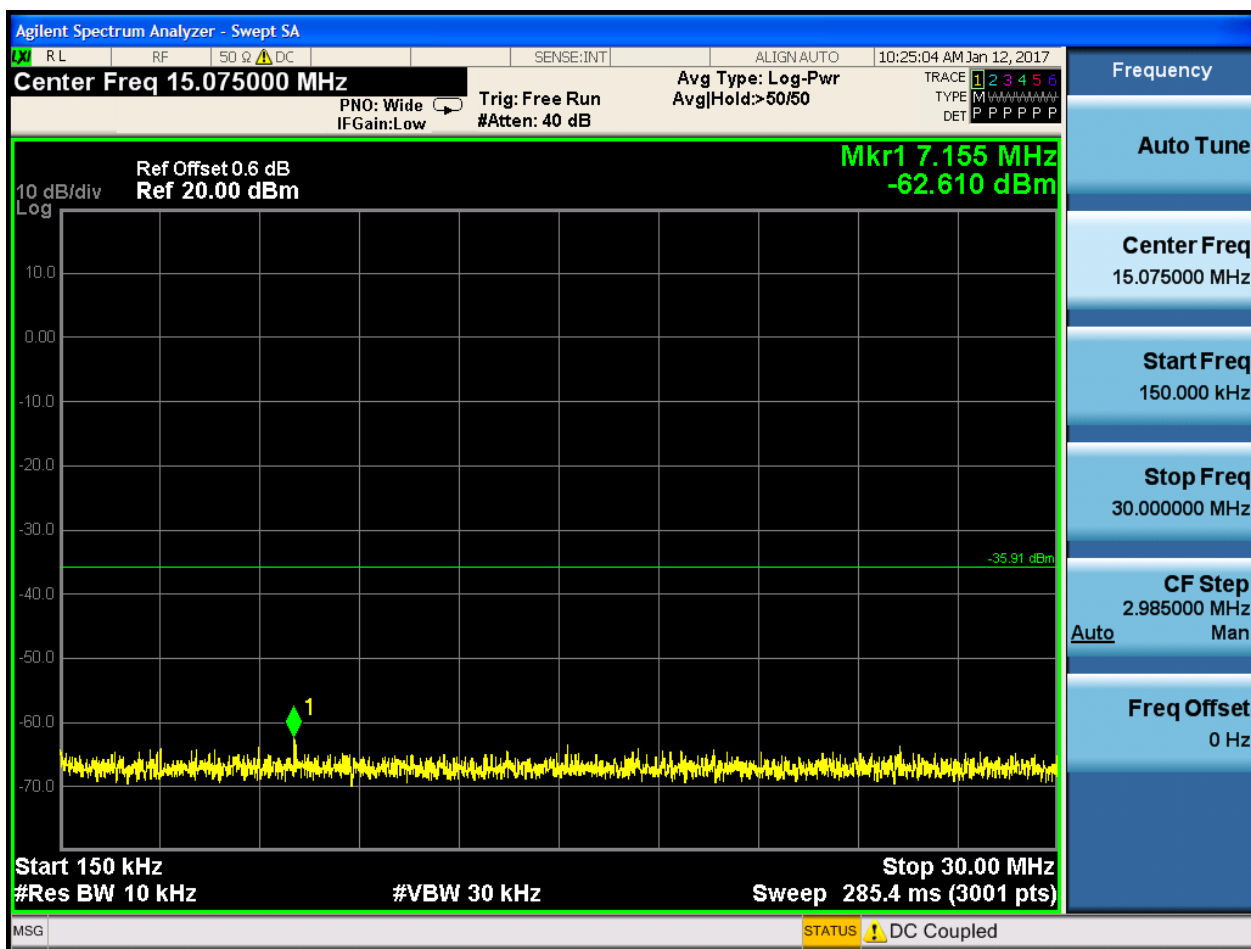
Pref:

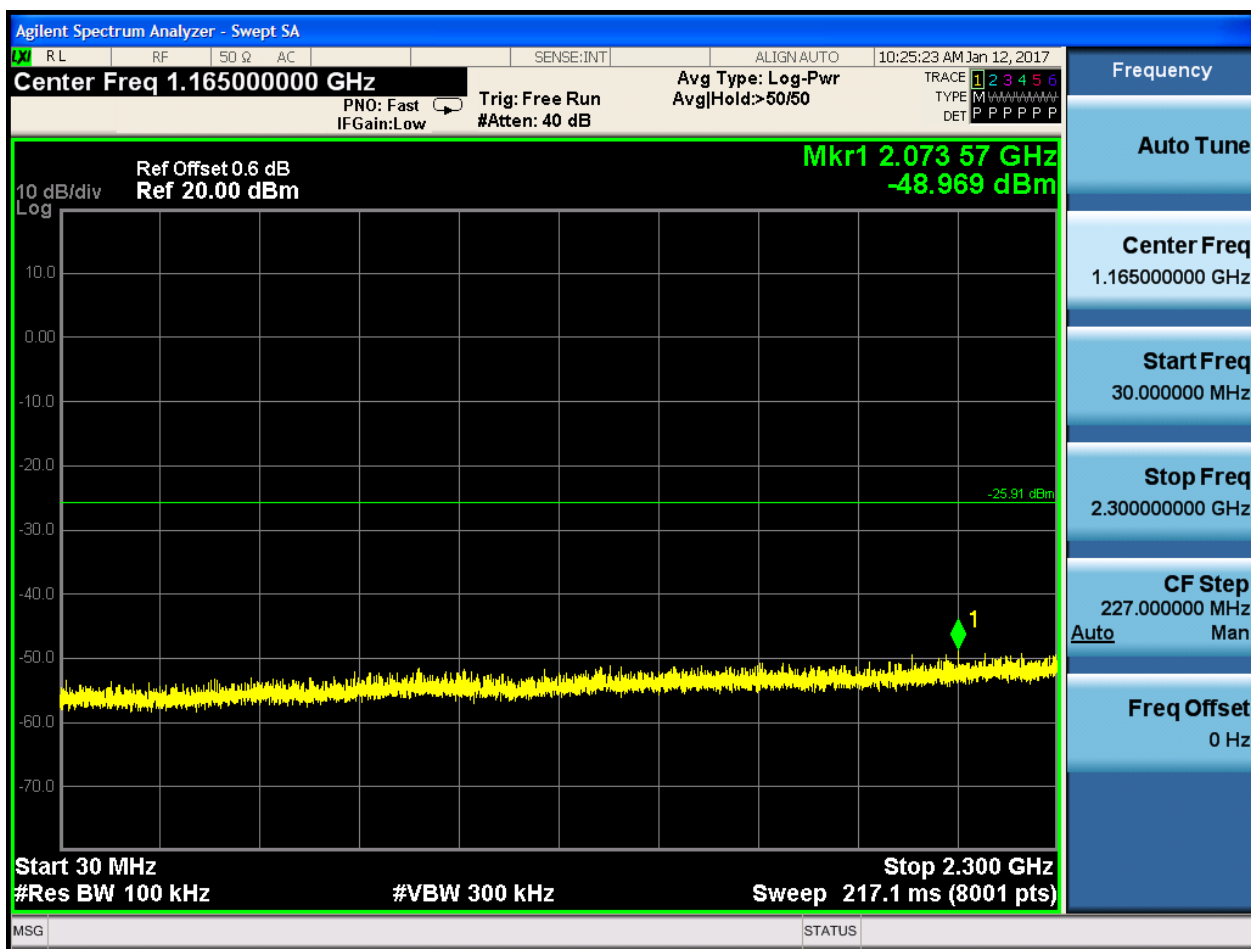


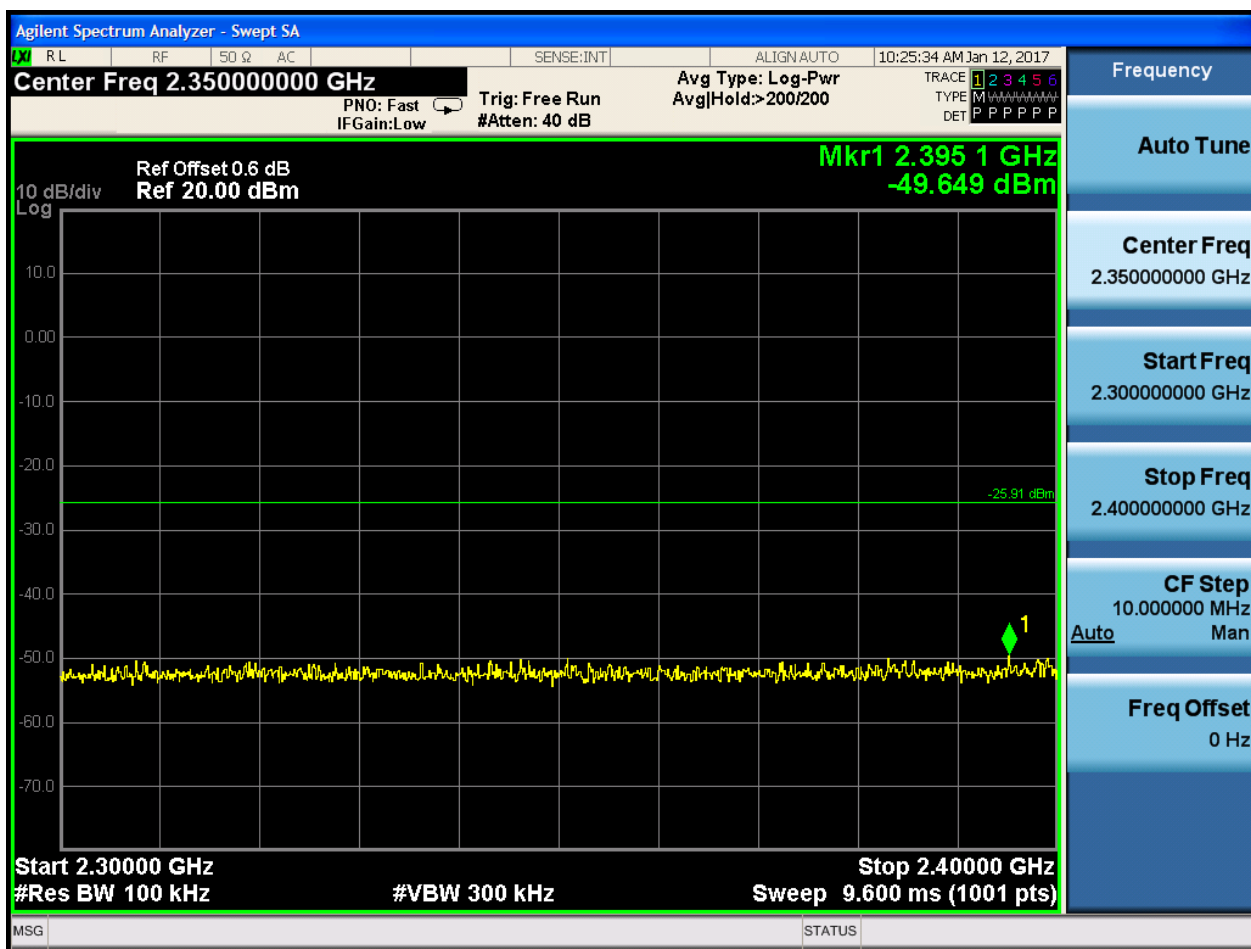


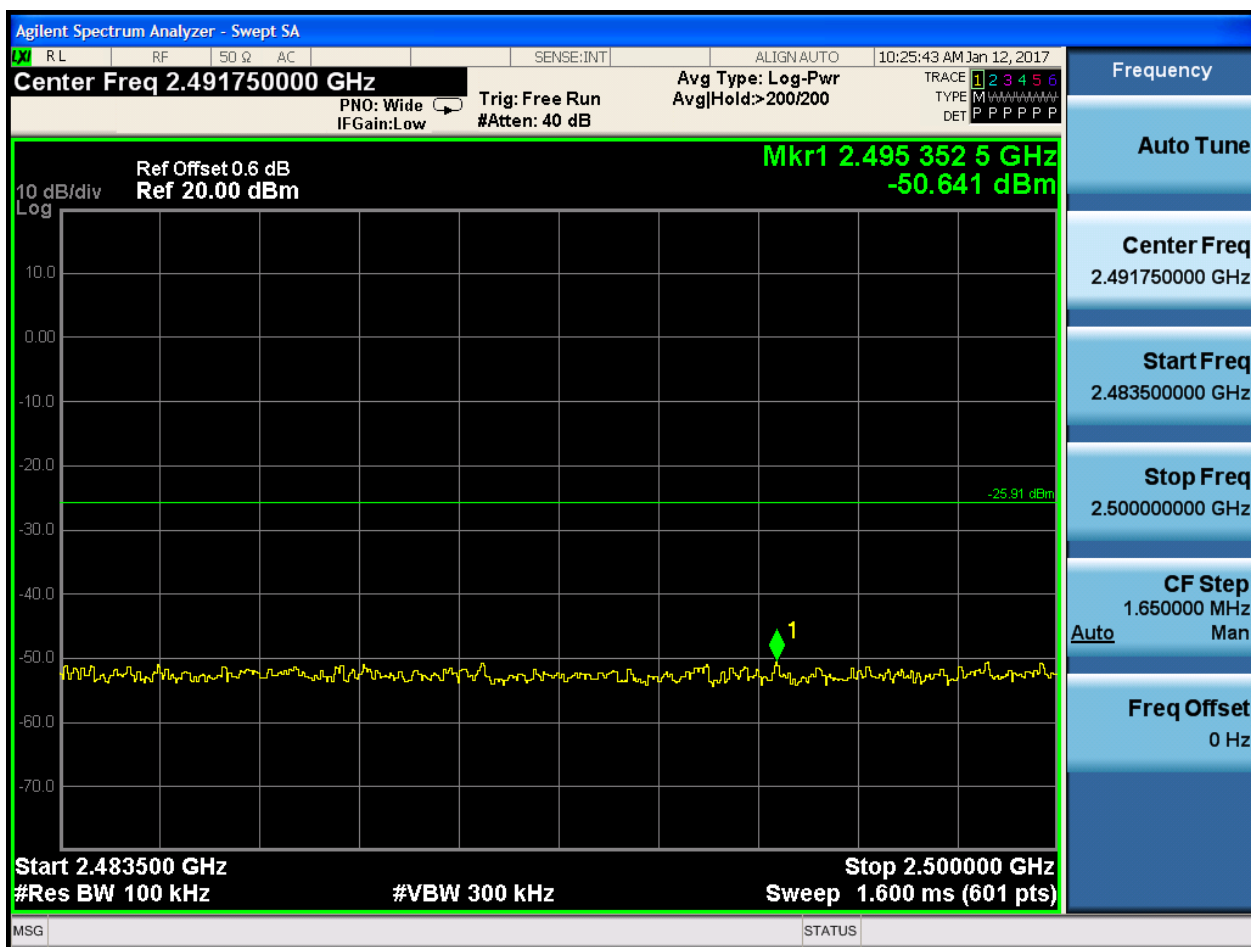
Puw:

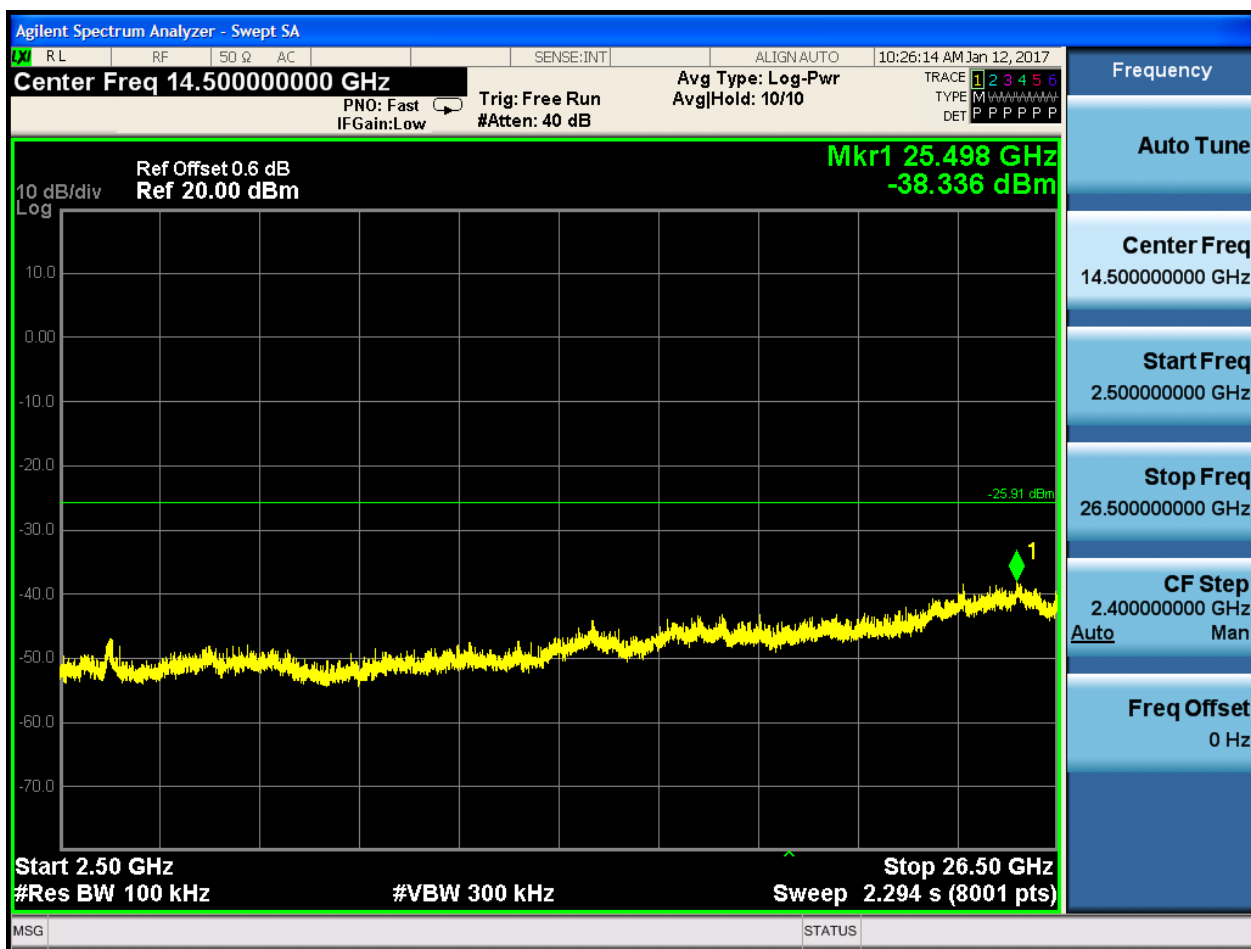












Appendix H: Radiated Spurious Emission & Spurious in Restricted Band

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

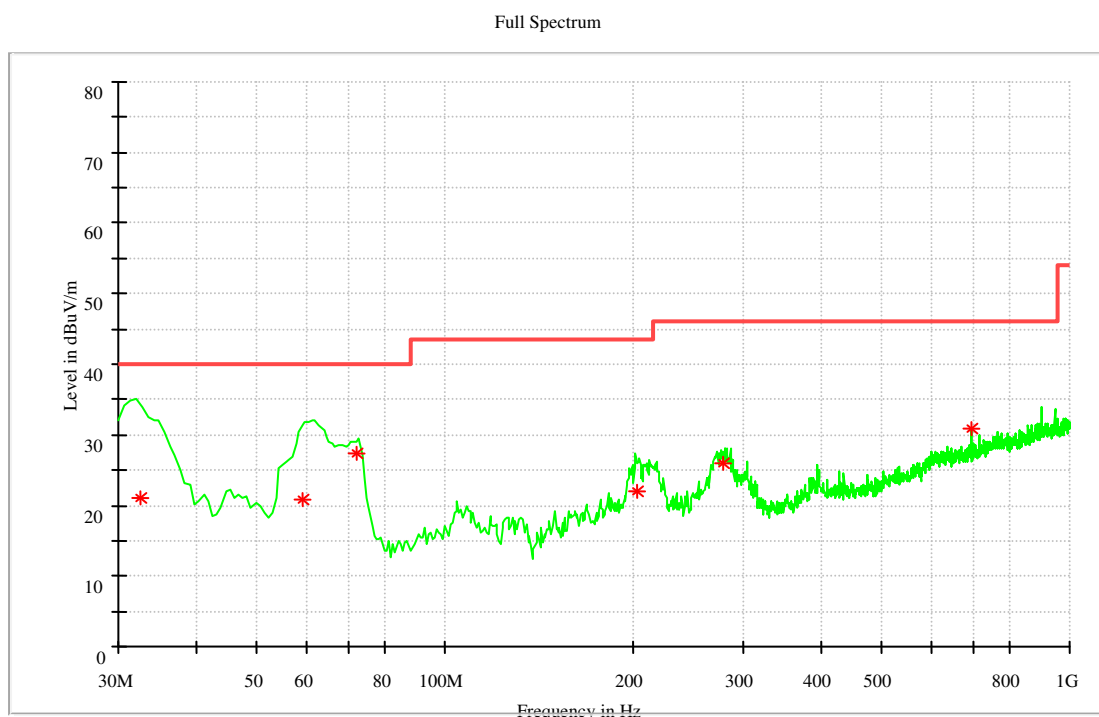
1.1 Part 1: Testing Range of “9 kHz to 30MHz”

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 (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Transd. (dB)
32.471142	21.08	40.00	18.92	184.0	V	235.0	14.2
59.082857	20.72	40.00	19.28	296.0	V	266.0	13.4
72.124000	27.26	40.00	12.74	101.0	V	86.0	10.6
202.440571	22.08	43.50	21.42	100.0	V	309.0	12.6
279.649714	26.03	46.00	19.97	110.0	H	229.0	14.9
696.724000	30.77	46.00	15.23	119.0	V	285.0	22.4

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

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.

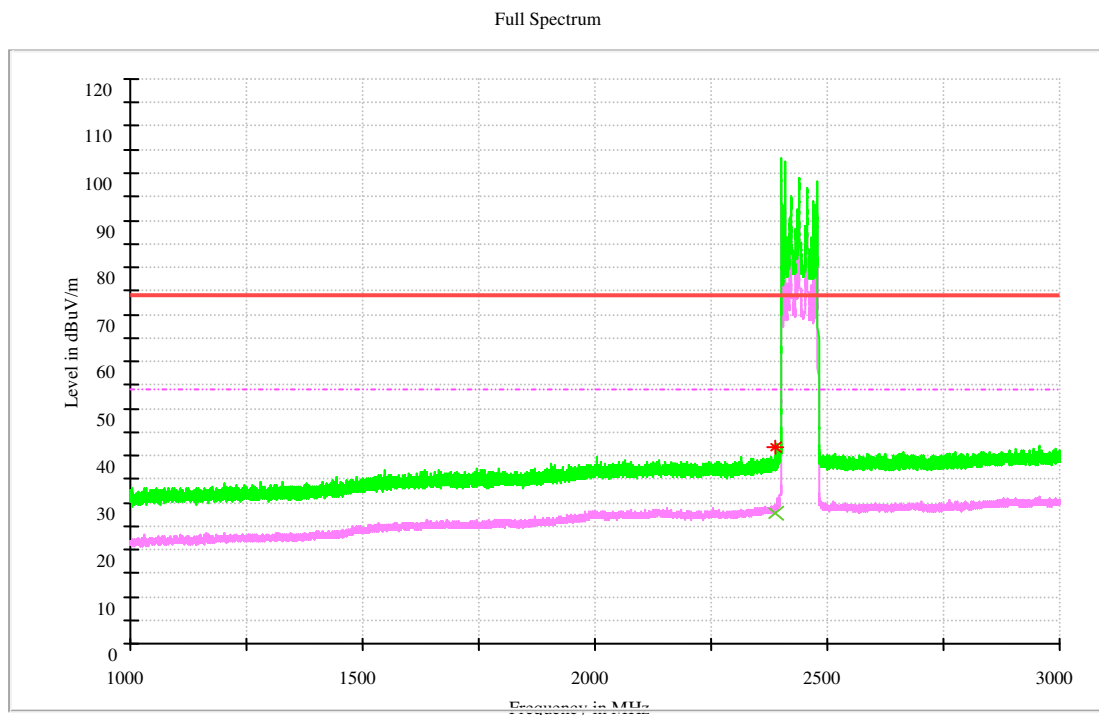
Note 2: Two limits are required in the testing range above 1 GHz, that is Peak limit (74 dBμV/m) and Average Limit (54 dBμV/m).

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	Azimut h	Transd. (dB)
2390	27.80	54.00	26.20	150.0	H	245.0	-7.6

MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimut h (deg)	Transd. (dB)
2390	41.68	74.00	32.32	100.0	H	247.0	-7.6

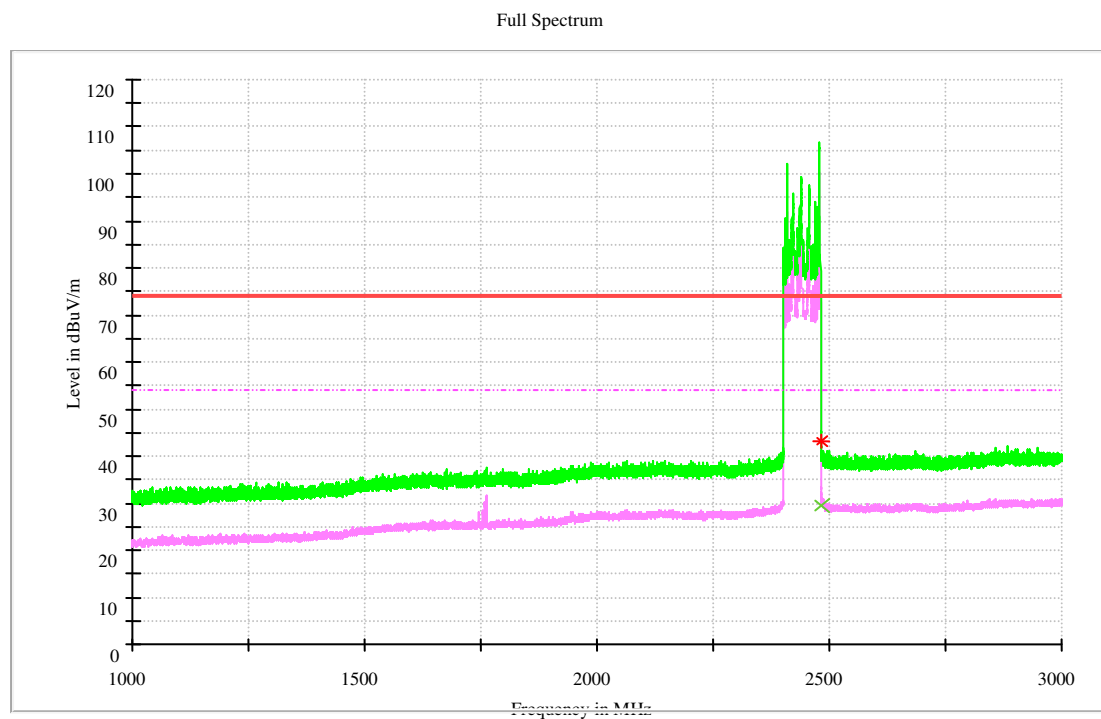
Note2:

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

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)
2483.5	29.54	54.00	24.46	100.0	H	10.0	-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)
2483.5	43.02	74.00	30.98	100.0	H	45.0	-5.4

Note2:

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.

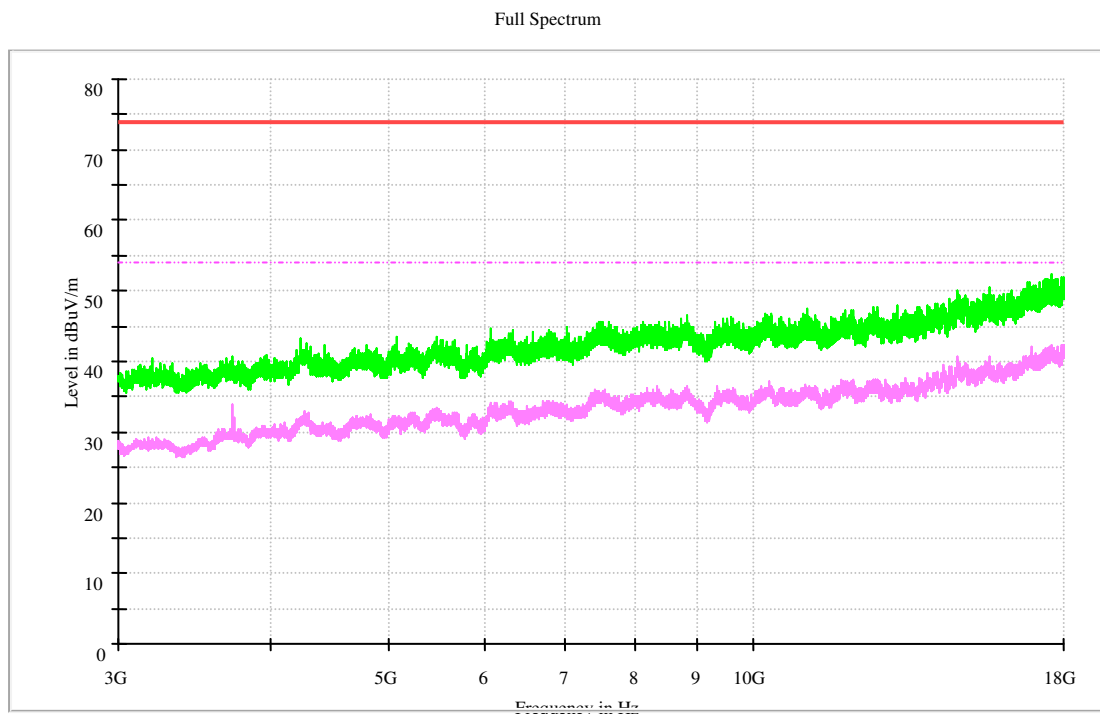
2, Margin=Limit - Level

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 dBμV/m) and Average Limit (54 dBμV/m).



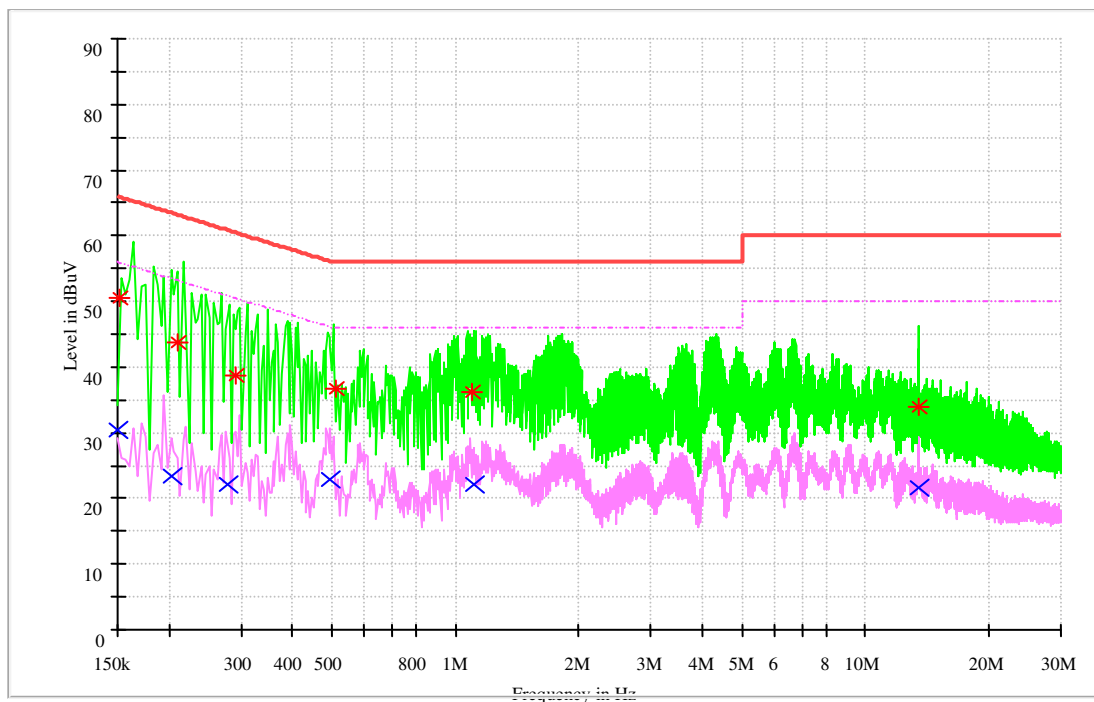
1.5 Part 5: Testing Range of “18 GHz to 26.5 GHz”

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

Appendix I: AC Power Line Conducted Emission

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
0.150340	30.48	55.98	9.7	25.50	N	FLO
0.203540	23.30	53.47	9.7	30.17	L1	FLO
0.278588	22.17	50.86	9.7	28.69	N	FLO
0.496918	23.00	46.05	9.7	23.05	N	FLO
1.109695	22.20	46.00	9.7	23.80	N	FLO
13.542787	21.73	50.00	10.1	28.27	N	FLO

MEASUREMENT RESULT: PK Detector

Frequency (MHz)	Level (dBμ V)	Limit (dBμ V)	Transd. (dB)	Margin (dB)	Line	PE
0.151279	50.52	65.93	9.7	15.41	L1	FLO
0.210480	43.83	63.19	9.7	19.36	L1	FLO
0.290948	38.65	60.50	9.7	21.85	L1	FLO
0.510807	36.61	56.00	9.7	19.39	N	FLO
1.095703	36.22	56.00	9.7	19.78	N	FLO
13.497953	34.06	60.00	10.1	25.94	N	FLO

Note2:

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