

9.4 POWER SPECTRAL DENSITY

Frequency (MHz)	Channel No.	Mode	Test Result			
			Measured Power(dBm)	Duty Cycle Factor(dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
2402	0	1M Bit 37 Byte	-1.500	2.04	0.54	8.000
2440	19		-1.237	2.04	0.80	
2480	39		-0.910	2.04	1.13	
2402	0	2M Bit 37 Byte	-5.911	4.81	-1.10	
2440	19		-5.471	4.81	-0.66	
2480	39		-3.952	4.81	0.86	

Note :

1. Spectrum reading values are not plot data.

The PSD results in plot is already including the actual values of loss for the attenuator and cable combination.

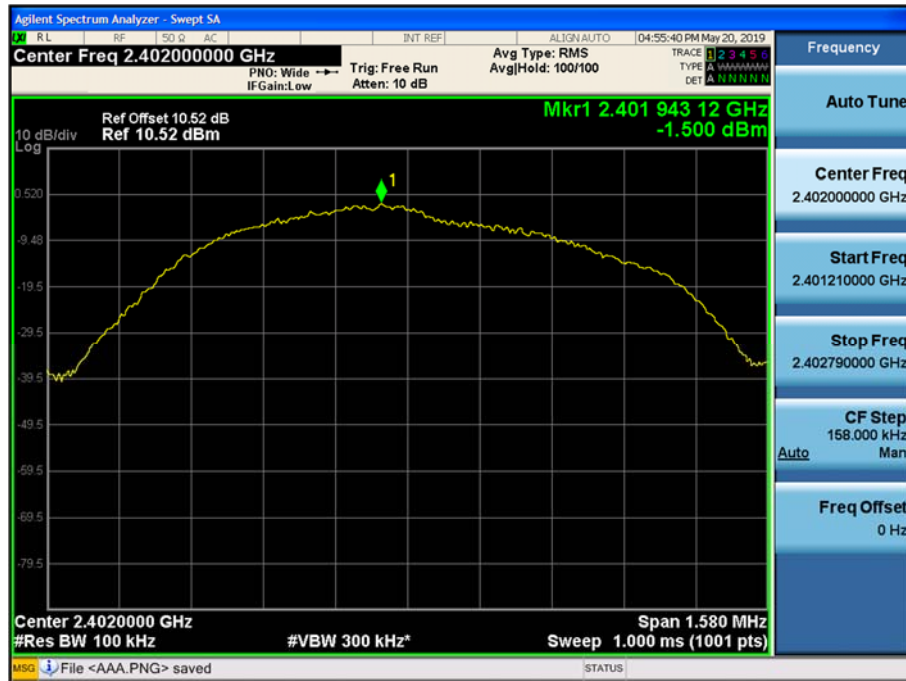
2. Spectrum offset = Attenuator loss + Cable loss

3. We apply to the offset in the 2.4 GHz range that was rounded off to the closest tenth dB.

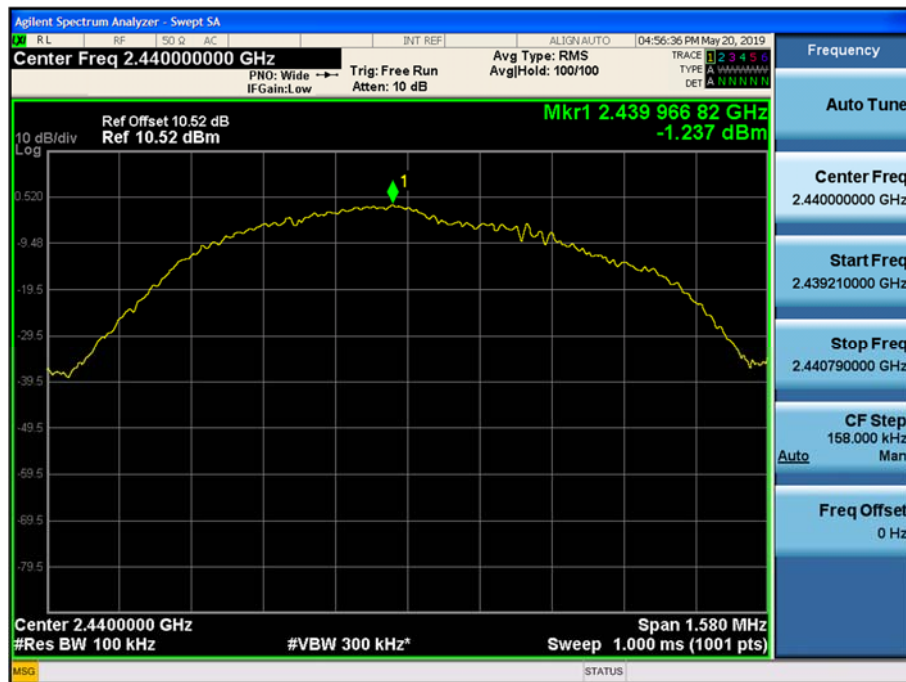
So, 10.52 dB is offset for 2.4 GHz Band.

1M Bit/s (37 Byte) Test Plots

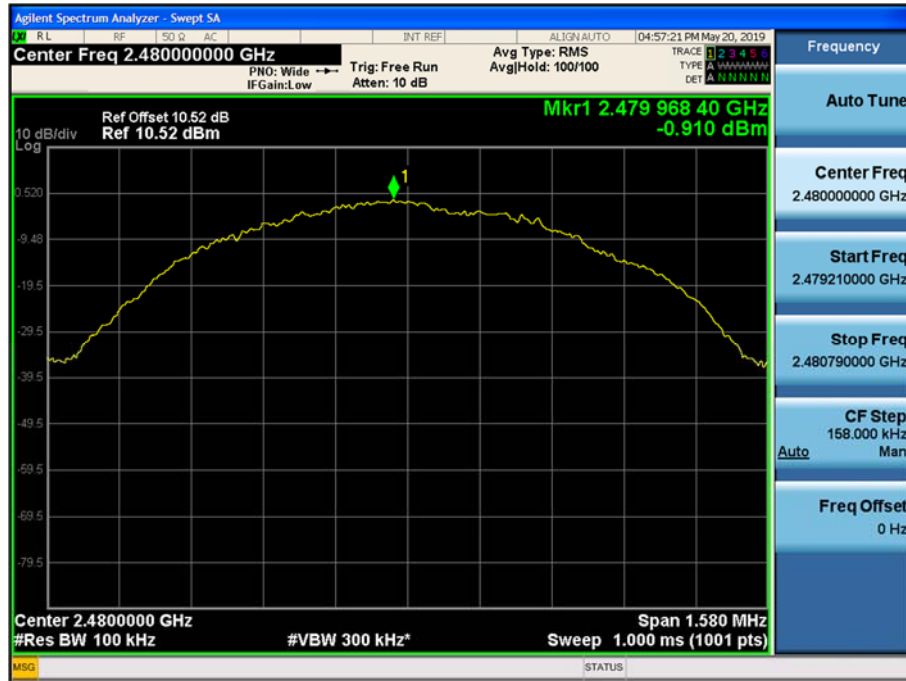
Power Spectral Density (Low-CH 0)



Power Spectral Density (Mid-CH 19)



Power Spectral Density (High-CH 39)

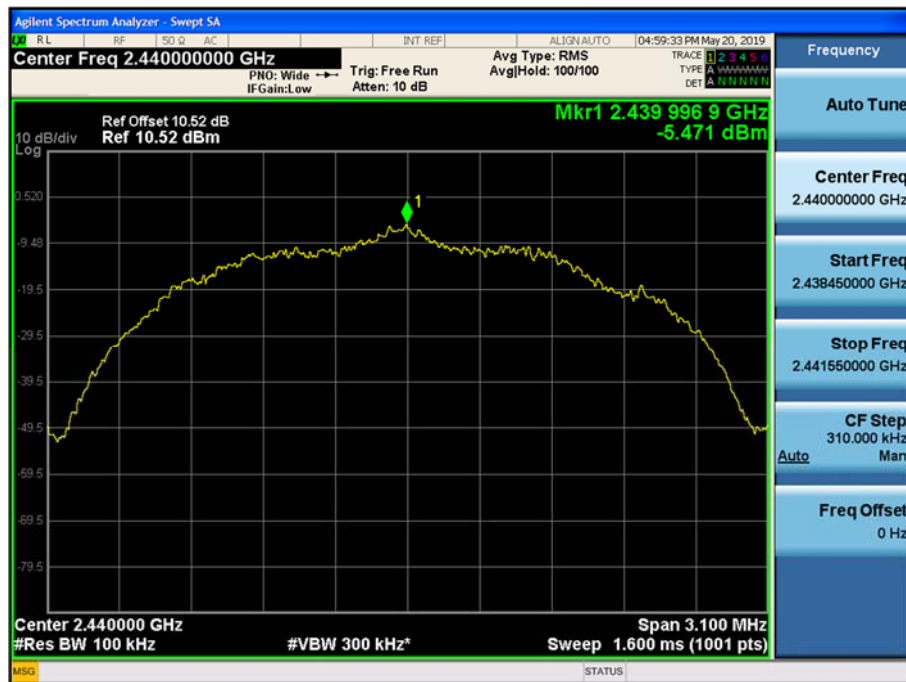


2M Bit/s (37 Byte) Test Plots

Power Spectral Density (Low-CH 0)



Power Spectral Density (Mid-CH 19)



Power Spectral Density (High-CH 39)



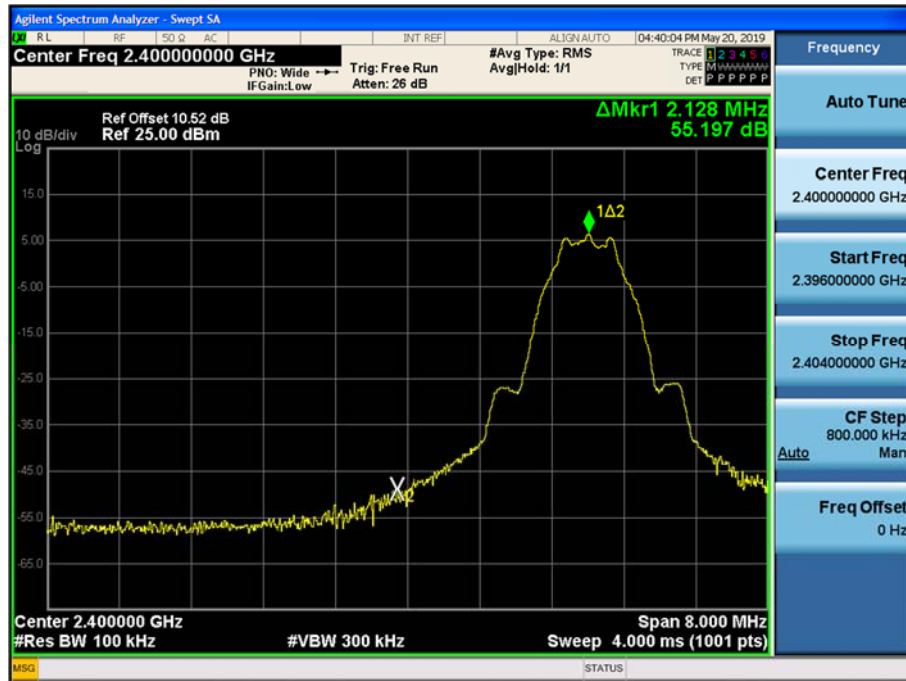
9.5 BAND EDGE/ CONDUCTED SPURIOUS EMISSIONS

Test Result : please refer to the plot below.

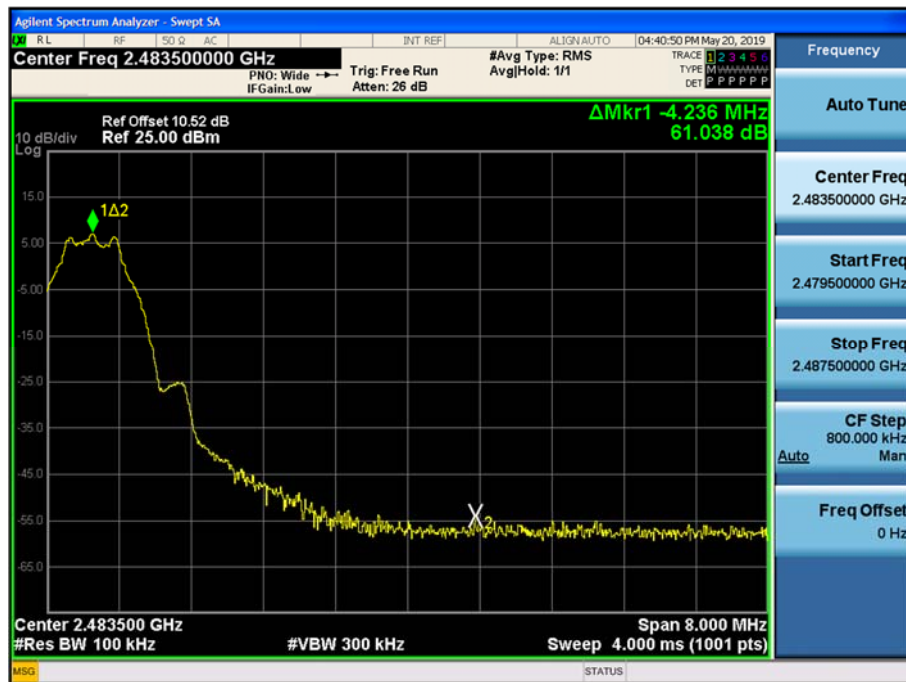
In order to simplify the report, attached plots were only the worst case channel and data rate.

1M Bit/s (37 Byte) Test Plots -BandEdge

Low-CH 0



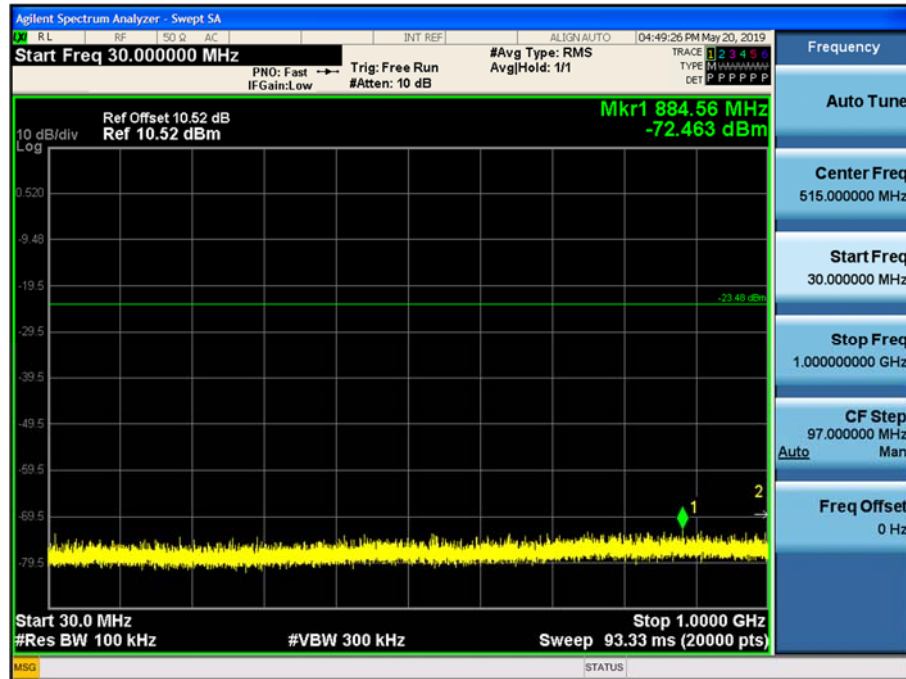
High-CH 39



1M Bit/s (37 Byte) Test Plots -Conducted Spurious Emission

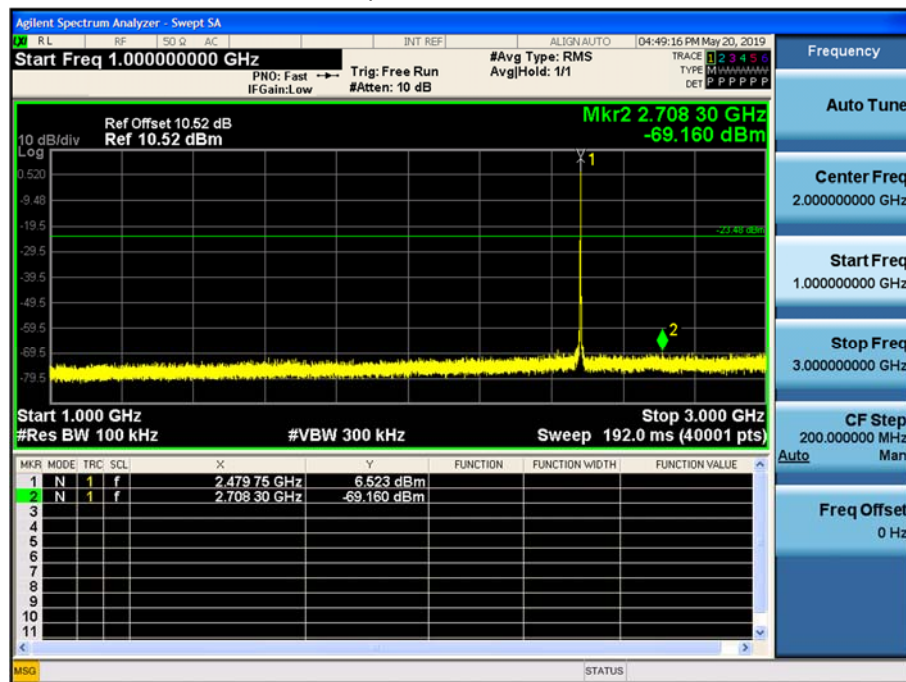
30 MHz ~ 1 GHz

Conducted Spurious Emission (Low-CH 39)



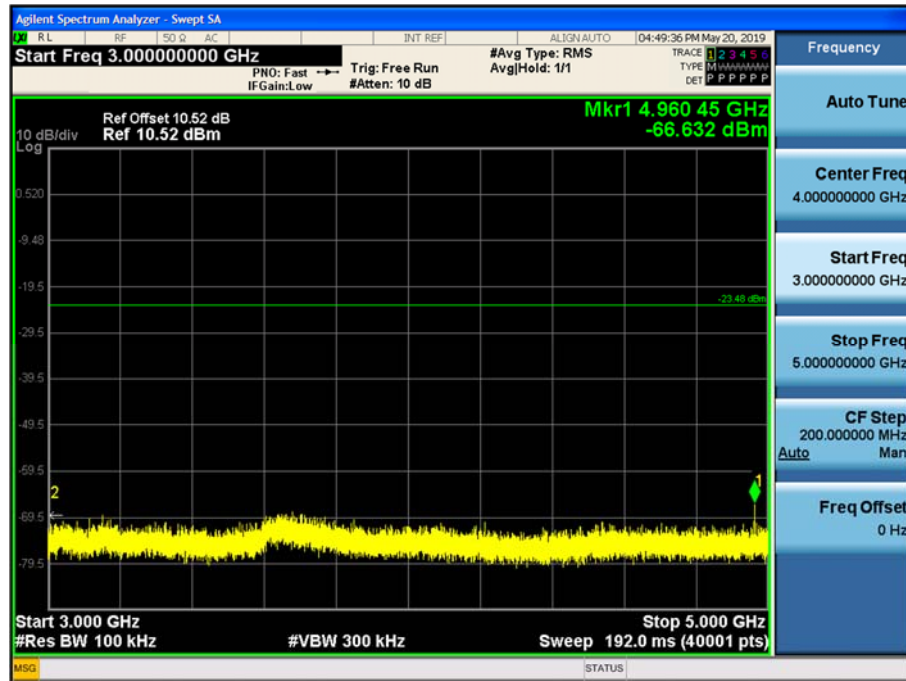
1 GHz ~ 3 GHz

Conducted Spurious Emission (Low-CH 39)



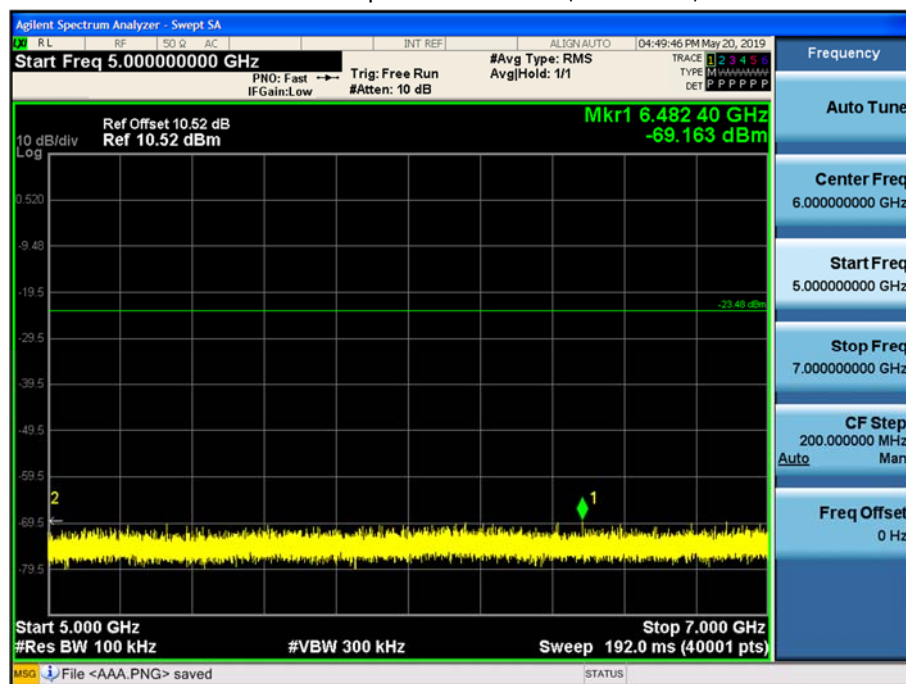
3 GHz ~ 5 GHz

Conducted Spurious Emission (Low-CH 39)



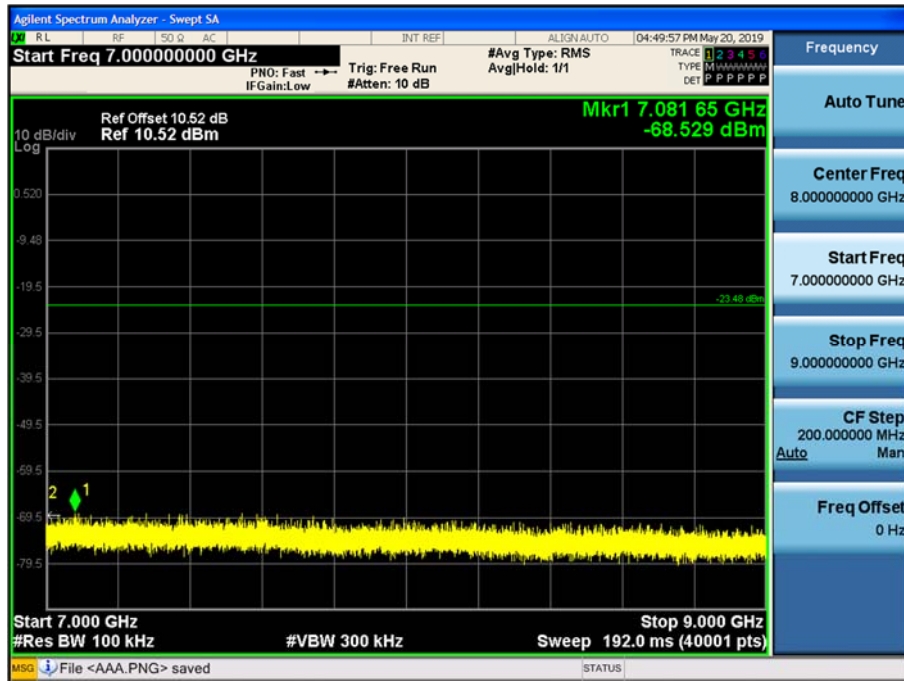
5 GHz ~ 7 GHz

Conducted Spurious Emission (Low-CH 39)



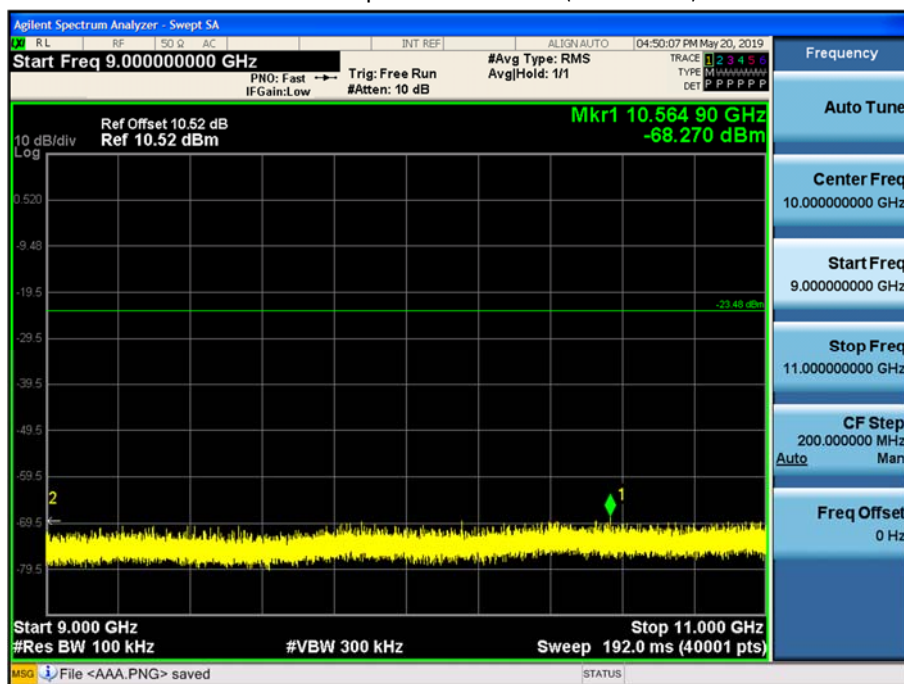
7 GHz ~ 9 GHz

Conducted Spurious Emission (Low-CH 39)



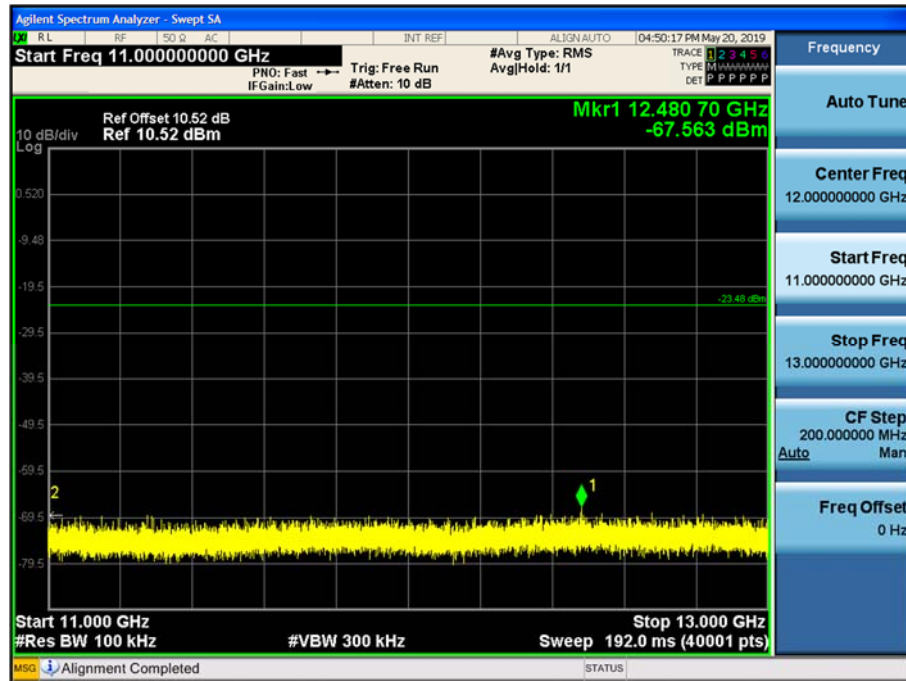
9 GHz ~ 11 GHz

Conducted Spurious Emission (Low-CH 39)



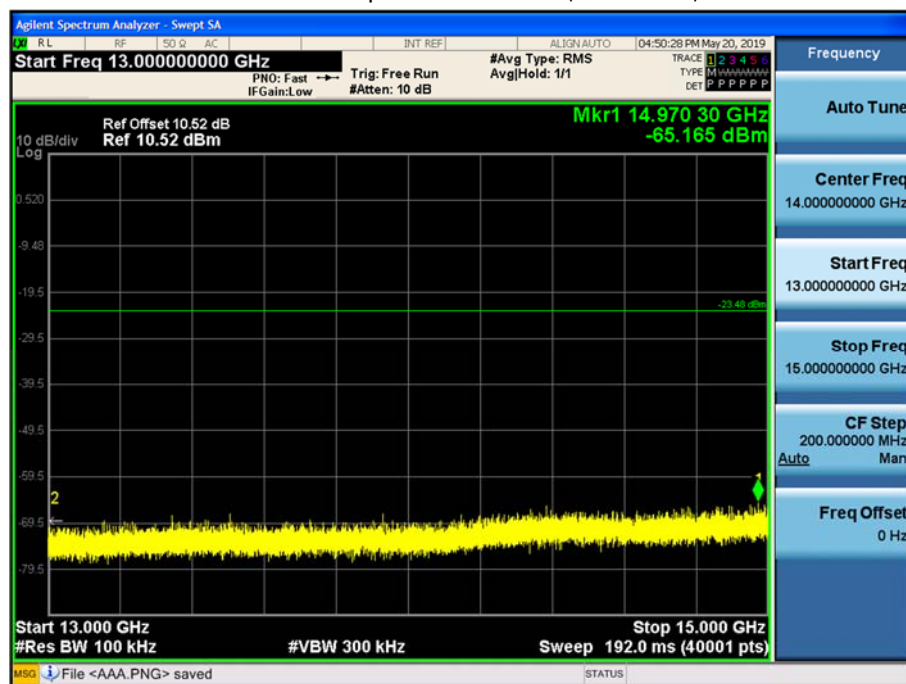
11 GHz ~ 13 GHz

Conducted Spurious Emission (Low-CH 39)



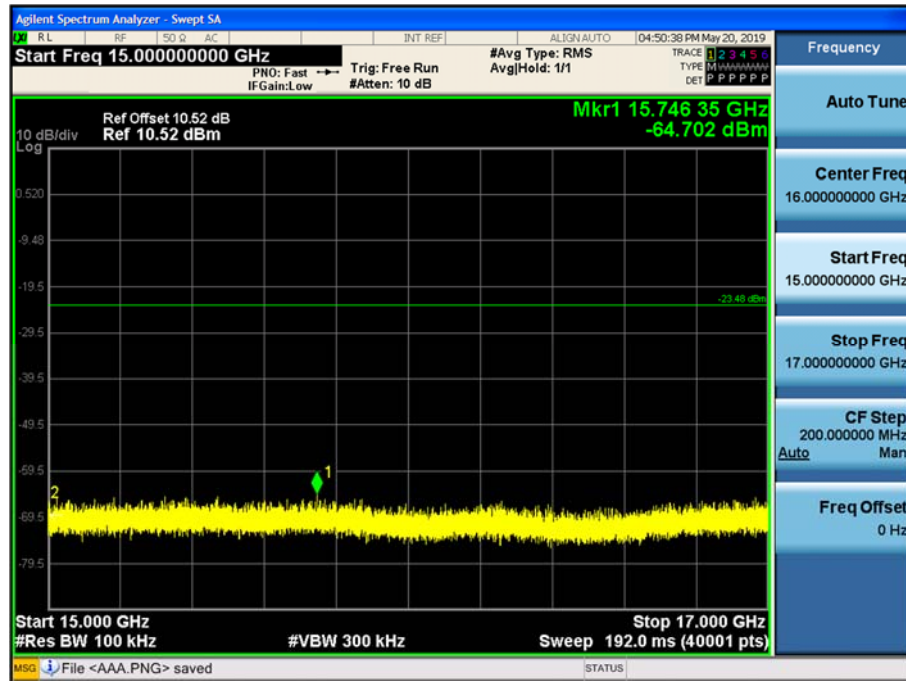
13 GHz ~ 15 GHz

Conducted Spurious Emission (Low-CH 39)



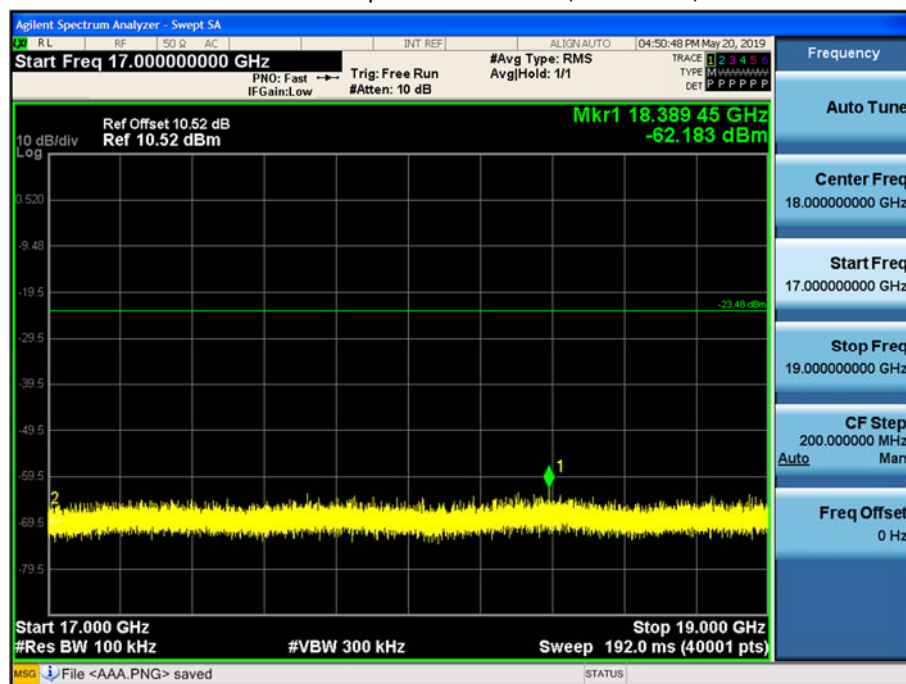
15 GHz ~ 17 GHz

Conducted Spurious Emission (Low-CH 39)



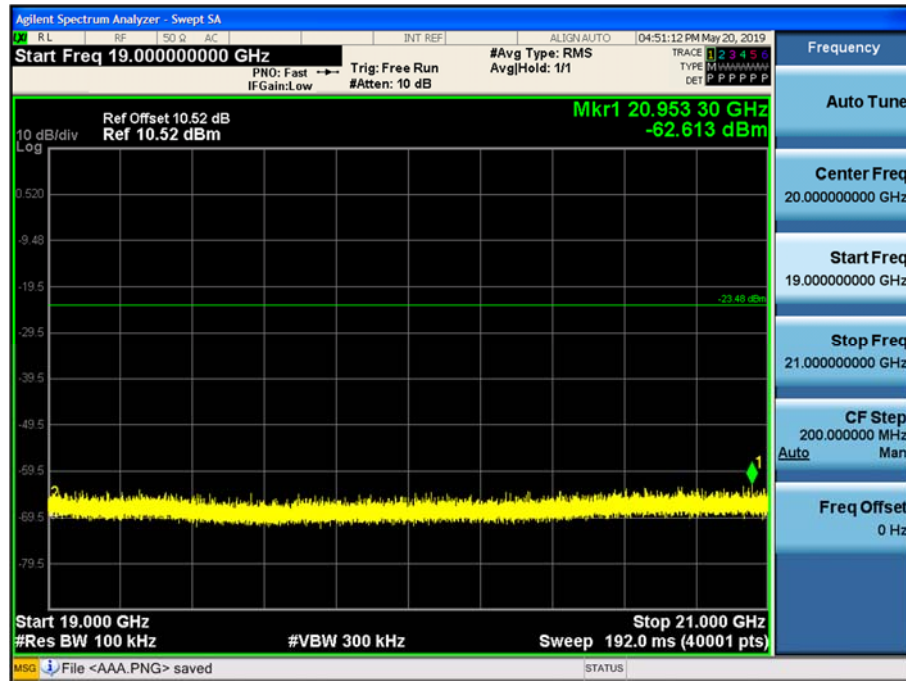
17 GHz ~ 19 GHz

Conducted Spurious Emission (Low-CH 39)



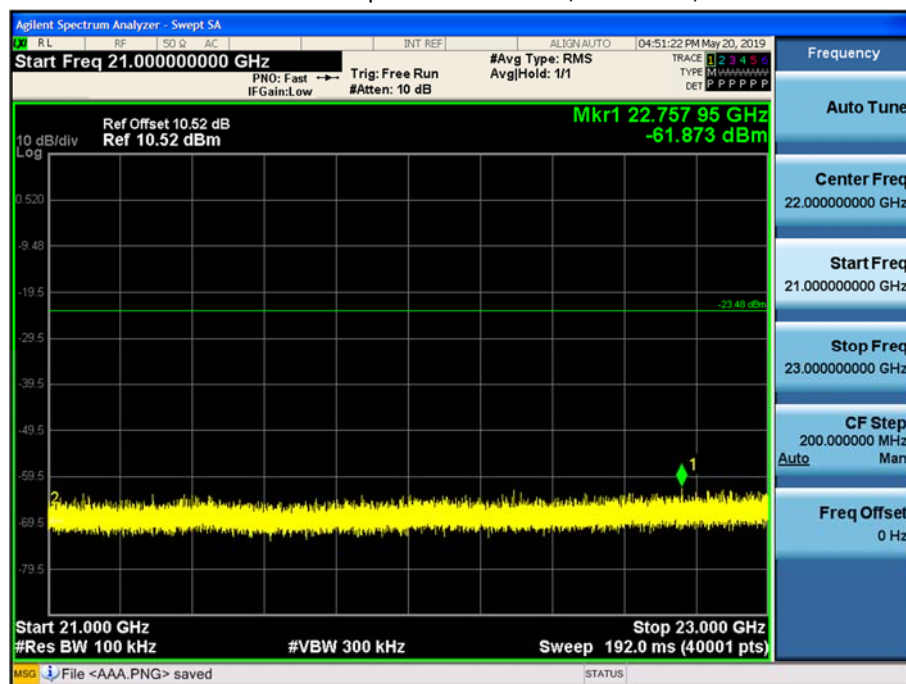
19 GHz ~ 21 GHz

Conducted Spurious Emission (Low-CH 39)



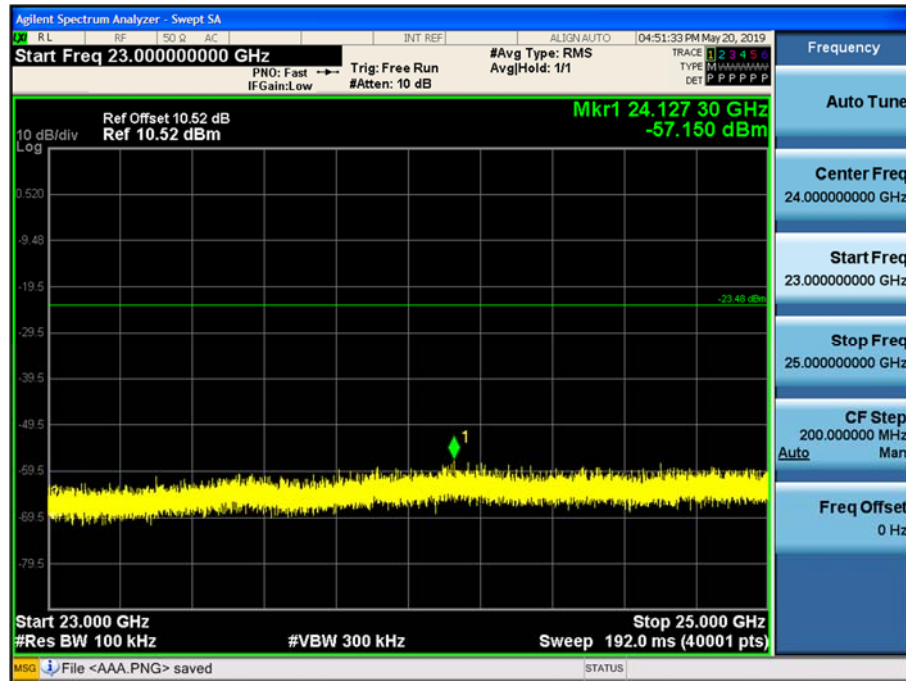
21 GHz ~ 23 GHz

Conducted Spurious Emission (Low-CH 39)



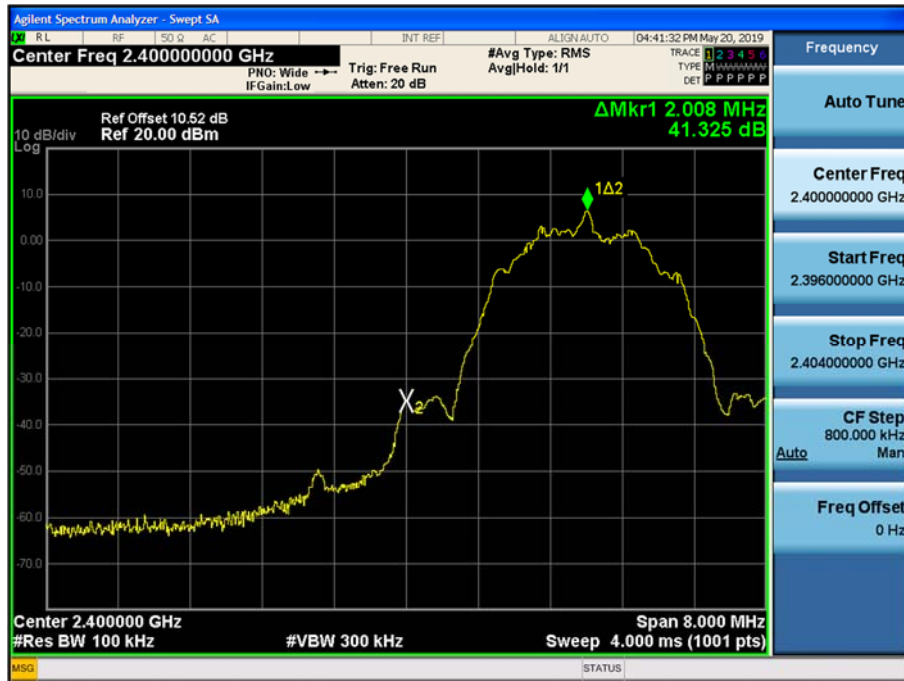
23 GHz ~ 25 GHz

Conducted Spurious Emission (Low-CH 39)



2M Bit/s (37 Byte) Test Plots -BandEdge

Low-CH 0



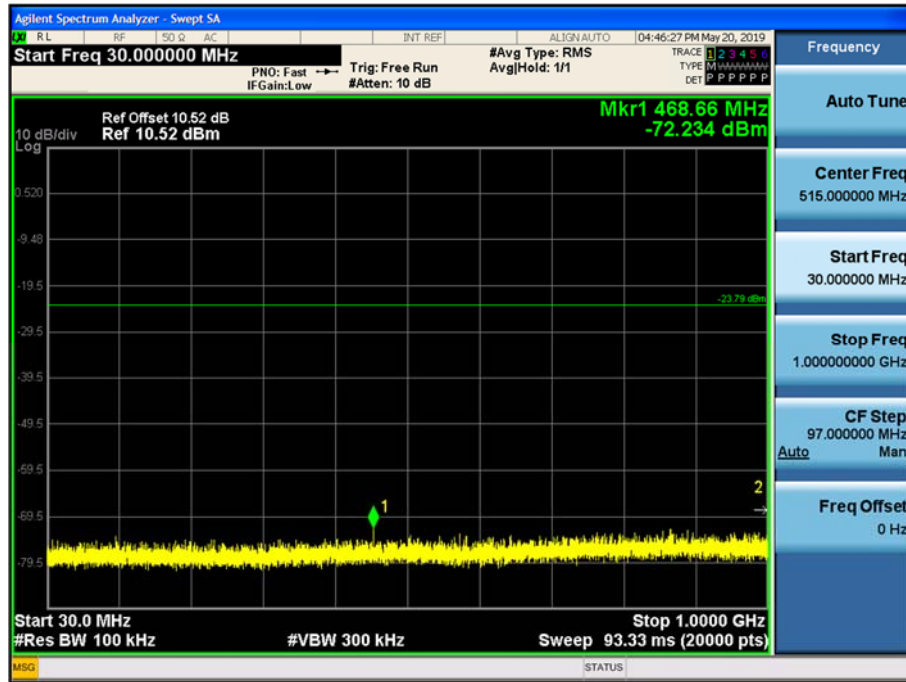
High-CH 39



2M Bit/s (37 Byte) Test Plots -Conducted Spurious Emission

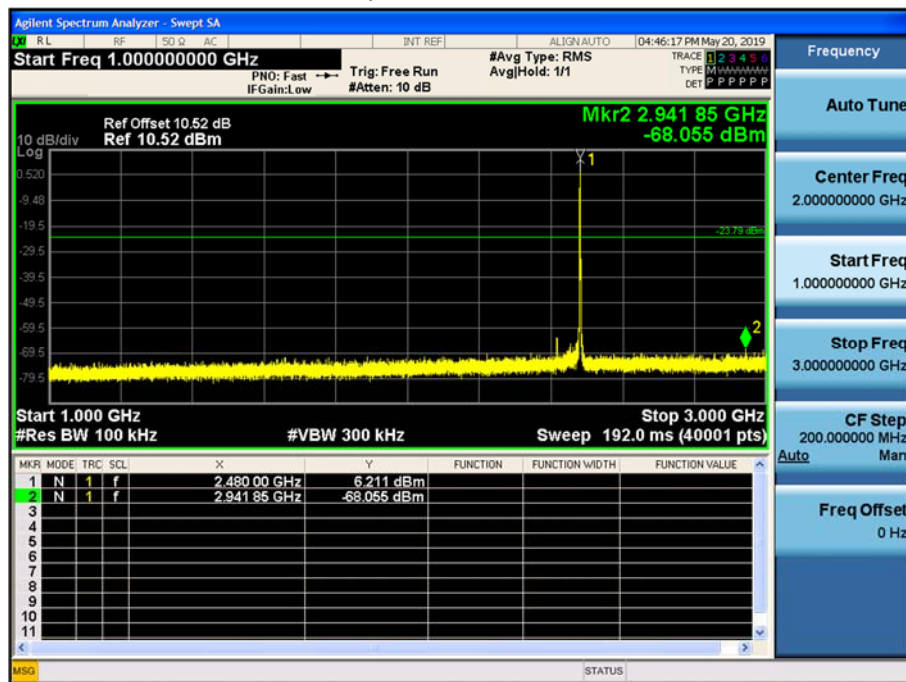
30 MHz ~ 1 GHz

Conducted Spurious Emission (Low-CH 39)



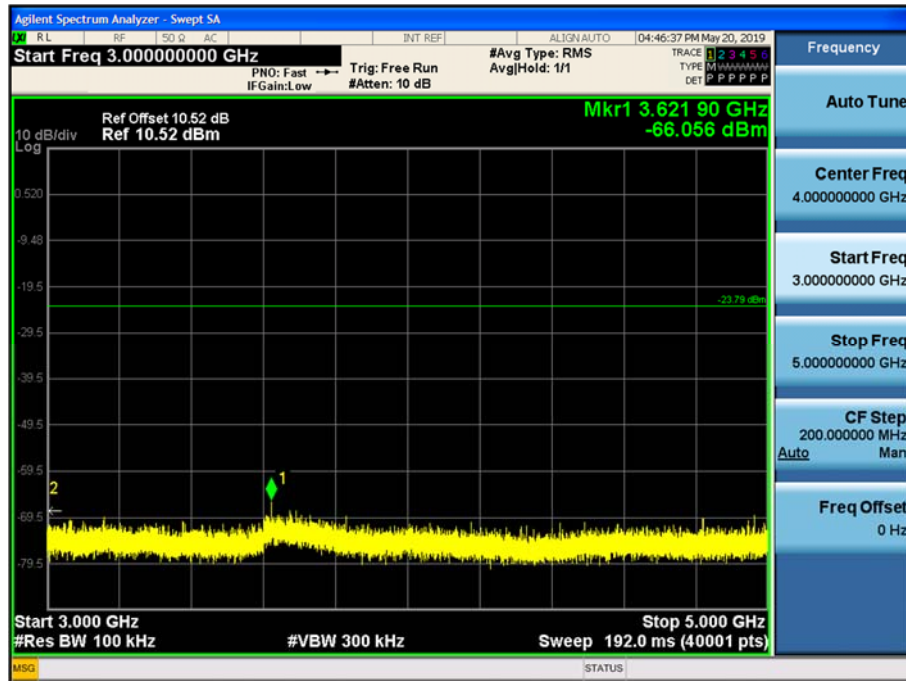
1 GHz ~ 3 GHz

Conducted Spurious Emission (Low-CH 39)



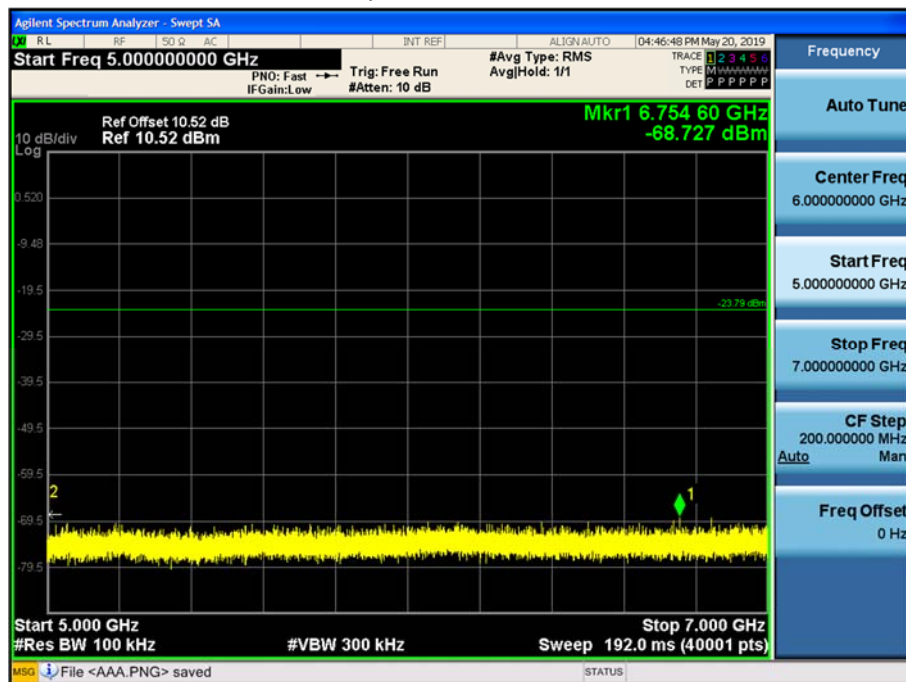
3 GHz ~ 5 GHz

Conducted Spurious Emission (Low-CH 39)



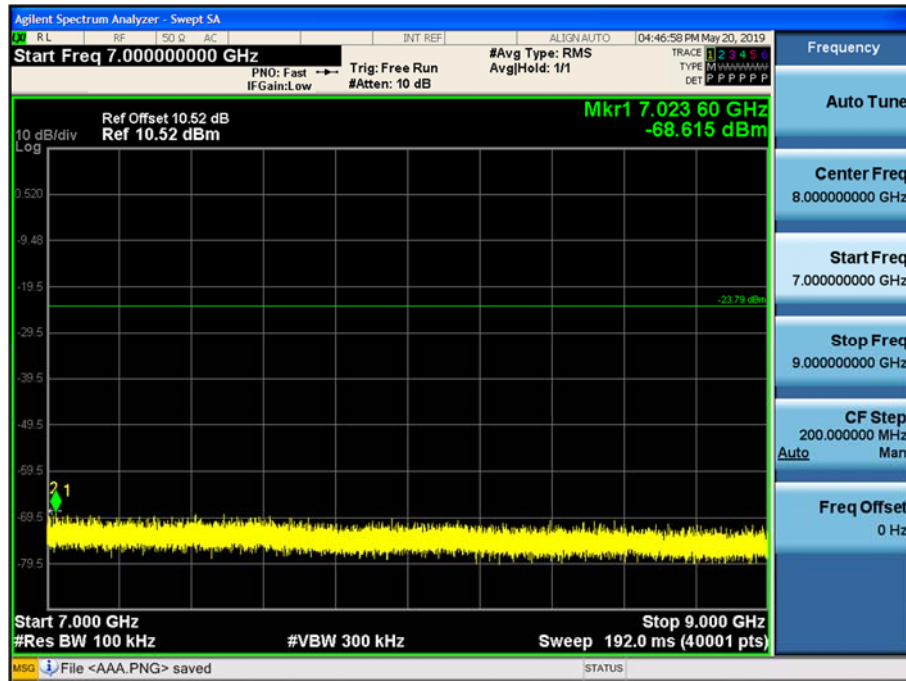
5 GHz ~ 7 GHz

Conducted Spurious Emission (Low-CH 39)



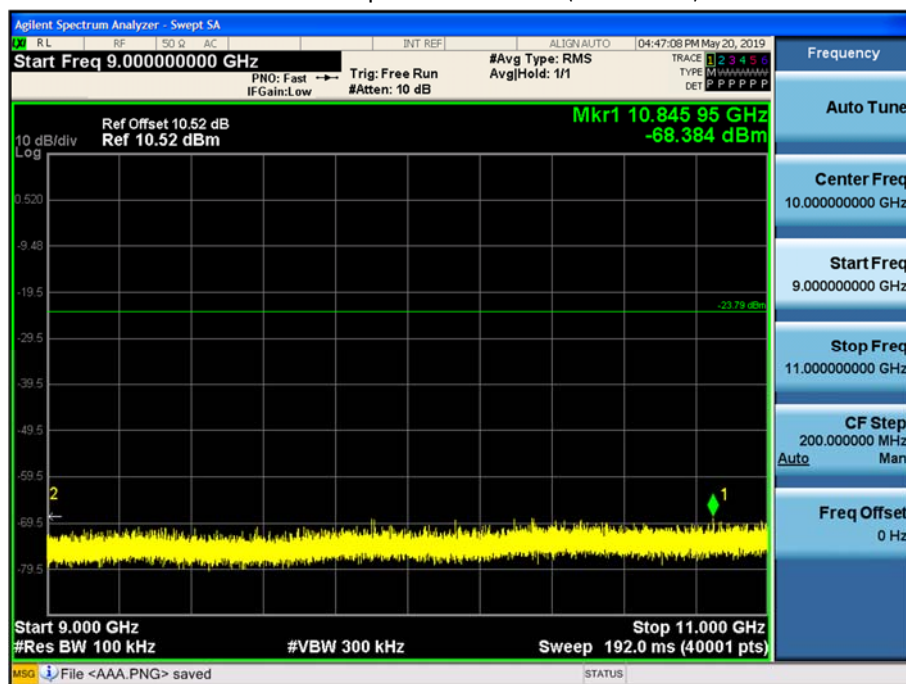
7 GHz ~ 9 GHz

Conducted Spurious Emission (Low-CH 39)



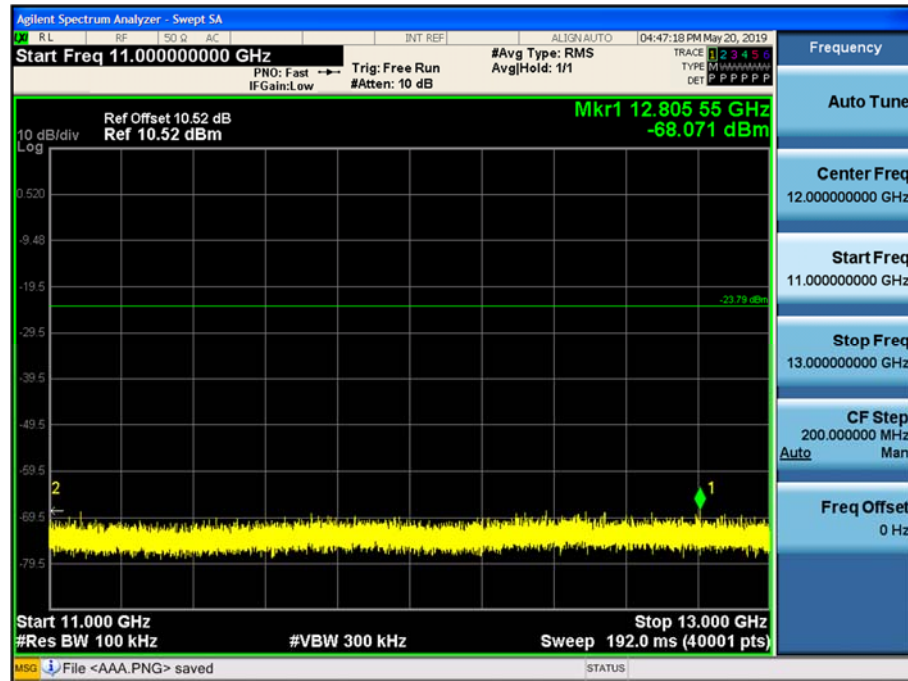
9 GHz ~ 11 GHz

Conducted Spurious Emission (Low-CH 39)



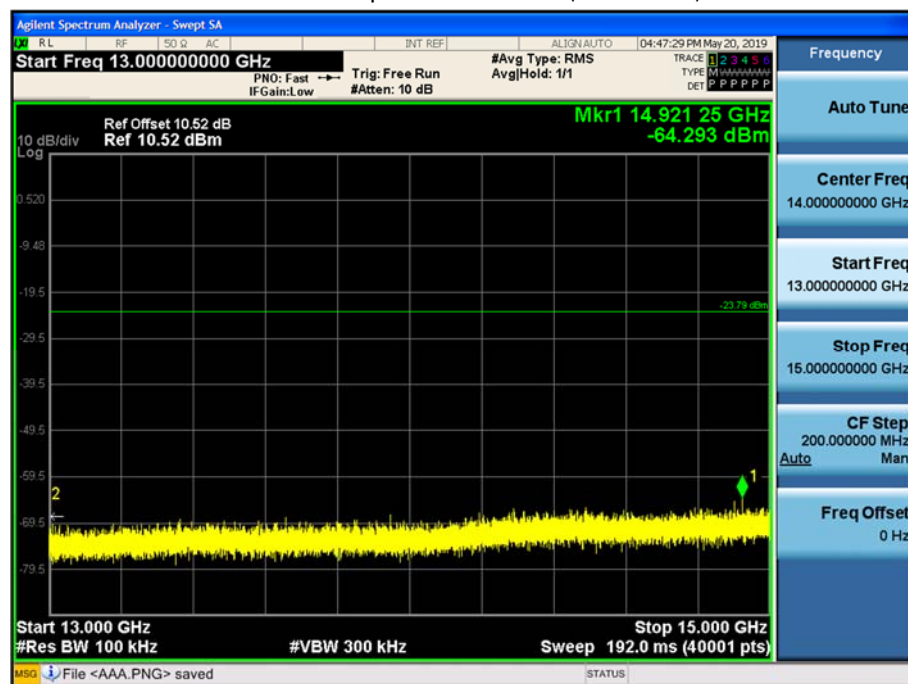
11 GHz ~ 13 GHz

Conducted Spurious Emission (Low-CH 39)



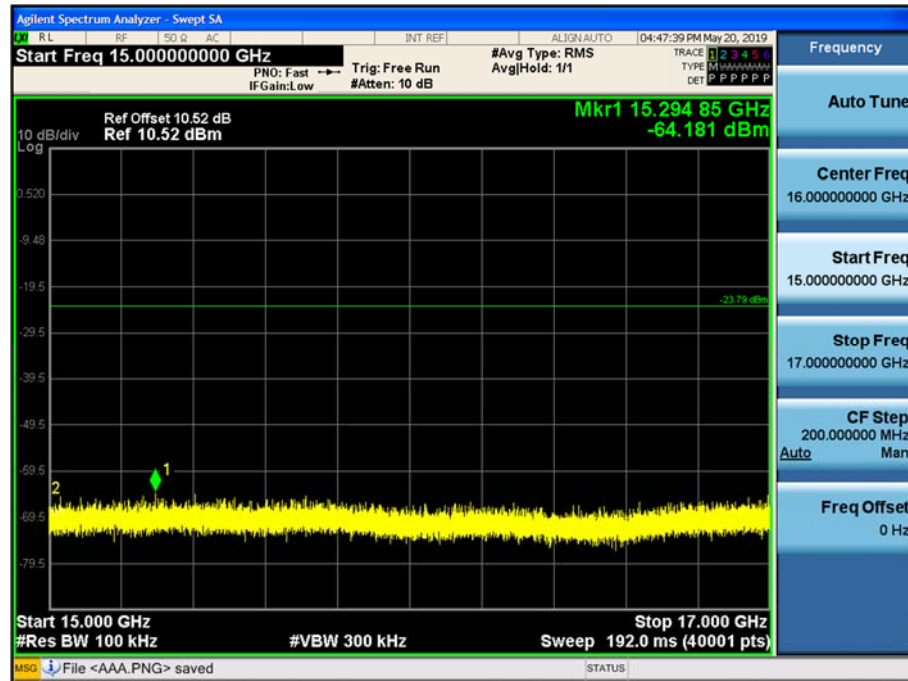
13 GHz ~ 15 GHz

Conducted Spurious Emission (Low-CH 39)



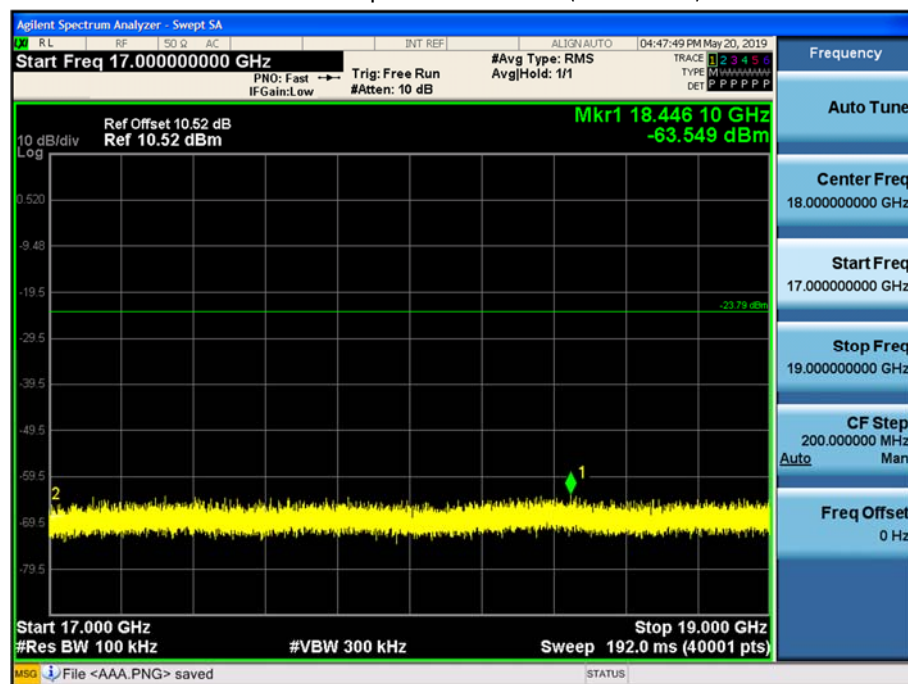
15 GHz ~ 17 GHz

Conducted Spurious Emission (Low-CH 39)



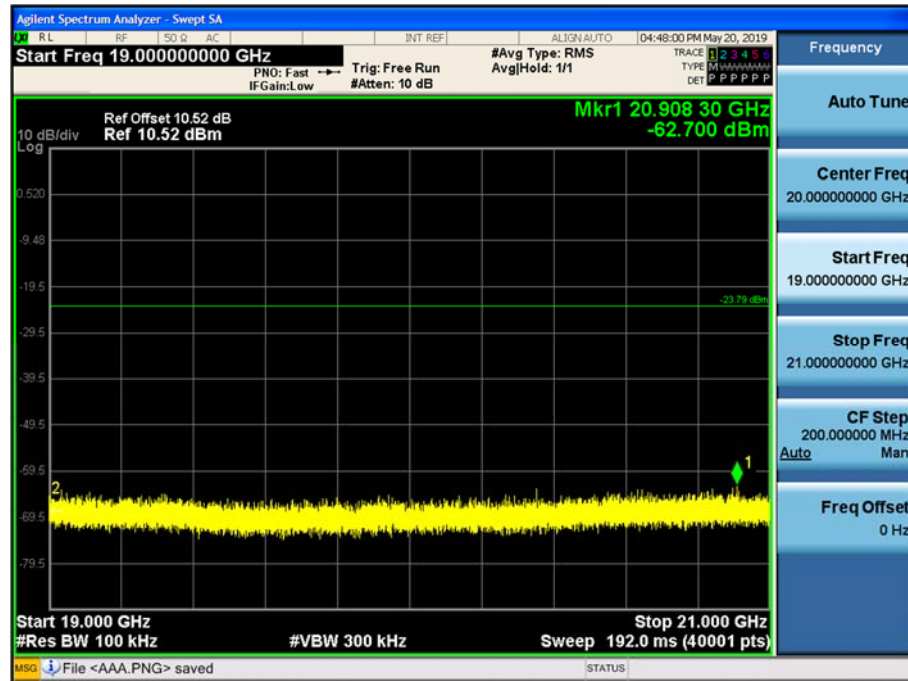
17 GHz ~ 19 GHz

Conducted Spurious Emission (Low-CH 39)



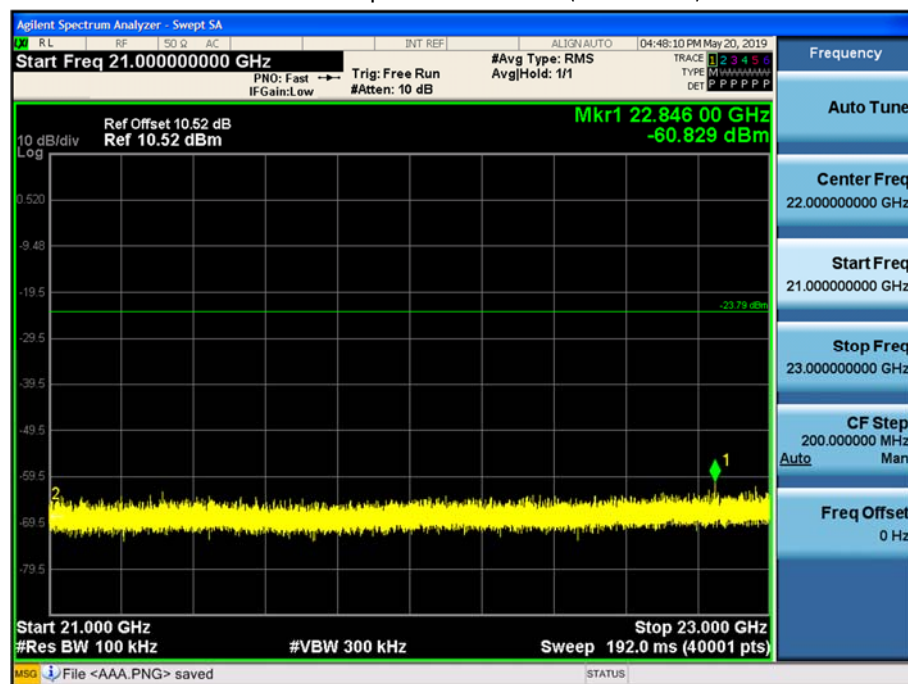
19 GHz ~ 21 GHz

Conducted Spurious Emission (Low-CH 39)



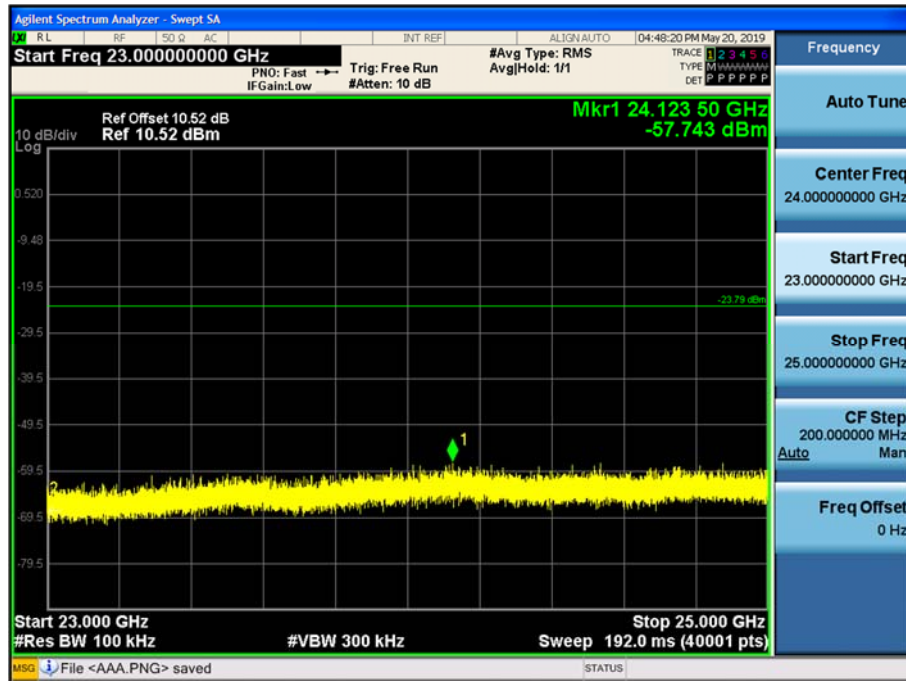
21 GHz ~ 23 GHz

Conducted Spurious Emission (Low-CH 39)



23 GHz ~ 25 GHz

Conducted Spurious Emission (Low-CH 39)



9.6 RADIATED SPURIOUS EMISSIONS

Frequency Range : 9 kHz – 30MHz

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dBuV/m	dBm/m	dBm	(H/V)	dBuV/m	dBuV/m	dB
No Critical peaks found							

Note:

1. The reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
2. Distance extrapolation factor = $40 \cdot \log(\text{specific distance} / \text{test distance})$ (dB)
3. Limit line = specific Limits (dBuV) + Distance extrapolation factor
4. Radiated test is performed with hopping off.

Frequency Range : Below 1 GHz

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dBuV/m	dBm/m	dBm	(H/V)	dBuV/m	dBuV/m	dB
No Critical peaks found							

Note:

1. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.

Frequency Range : Above 1 GHz

Mode : 1M Bit/s (37 Byte)

Operation Mode: CH Low

Frequency [MHz]	Reading [dBuV]	Duty Cycle Factor [dB]	A.F + C.L - A.G + D.F [dB]	Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
4804	49.32	0.00	0.44	V	49.76	73.98	24.22	PK
4804	37.68	2.04	0.44	V	40.16	53.98	13.82	AV
7206	46.17	0.00	9.25	V	55.415	73.98	18.57	PK
7206	33.60	2.04	9.25	V	44.885	53.98	9.10	AV
4804	49.62	0.00	0.44	H	50.06	73.98	23.92	PK
4804	38.30	2.04	0.44	H	40.78	53.98	13.20	AV
7206	45.80	0.00	9.25	H	55.045	73.98	18.94	PK
7206	33.12	2.04	9.25	H	44.405	53.98	9.58	AV

Operation Mode: CH Mid

Frequency [MHz]	Reading [dBuV]	Duty Cycle Factor [dB]	A.F + C.L - A.G + D.F [dB]	Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
4880	49.12	0.00	0.96	V	50.08	73.98	23.90	PK
4880	37.54	2.04	0.96	V	40.54	53.98	13.44	AV
7320	45.32	0.00	9.14	V	54.46	73.98	19.52	PK
7320	33.50	2.04	9.14	V	44.68	53.98	9.30	AV
4880	49.50	0.00	0.96	H	50.46	73.98	23.52	PK
4880	38.25	2.04	0.96	H	41.25	53.98	12.73	AV
7320	45.10	0.00	9.14	H	54.24	73.98	19.74	PK
7320	33.12	2.04	9.14	H	44.3	53.98	9.68	AV

Operation Mode: CH High

Frequency [MHz]	Reading [dBuV]	Duty Cycle Factor [dB]	A.F + C.L - A.G + D.F [dB]	Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
4960	50.67	0.00	0.66	V	51.33	73.98	22.65	PK
4960	39.77	2.04	0.66	V	42.47	53.98	11.51	AV
7440	45.97	0.00	10.16	V	56.13	73.98	17.85	PK
7440	33.52	2.04	10.16	V	45.72	53.98	8.26	AV
4960	51.27	0.00	0.66	H	51.93	73.98	22.05	PK
4960	40.80	2.04	0.66	H	43.5	53.98	10.48	AV
7440	45.48	0.00	10.16	H	55.64	73.98	18.34	PK
7440	33.12	2.04	10.16	H	45.32	53.98	8.66	AV

Mode : 2M Bit/s (37 Byte)

Operation Mode: CH Low

Frequency [MHz]	Reading [dBuV]	Duty Cycle Factor [dB]	A.F + C.L - A.G + D.F [dB]	Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
4804	48.71	0.00	0.44	V	49.15	73.98	24.83	PK
4804	36.55	4.81	0.44	V	41.8	53.98	12.18	AV
7206	45.83	0.00	9.25	V	55.075	73.98	18.91	PK
7206	33.51	4.81	9.25	V	47.565	53.98	6.42	AV
4804	49.18	0.00	0.44	H	49.62	73.98	24.36	PK
4804	37.03	4.81	0.44	H	42.28	53.98	11.70	AV
7206	45.42	0.00	9.25	H	54.665	73.98	19.32	PK
7206	33.27	4.81	9.25	H	47.325	53.98	6.65	AV

Operation Mode: CH Mid

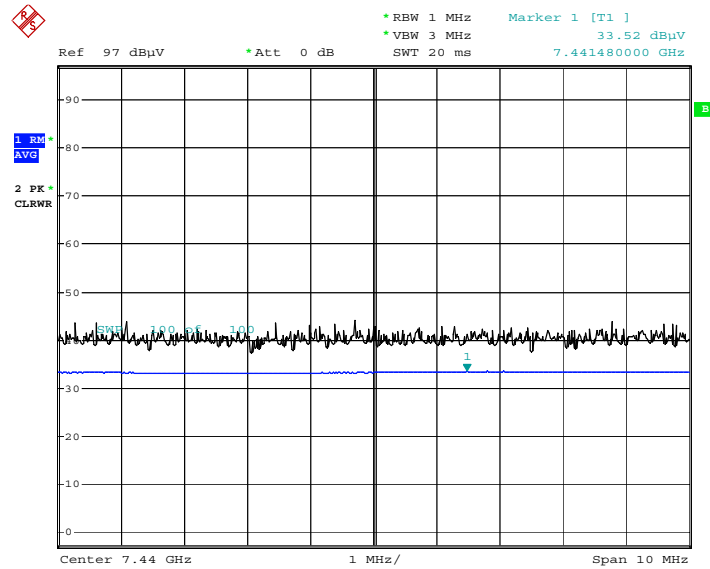
Frequency [MHz]	Reading [dBuV]	Duty Cycle Factor [dB]	A.F + C.L - A.G + D.F [dB]	Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
4880	49.53	0.00	0.96	V	50.49	73.98	23.49	PK
4880	36.51	4.81	0.96	V	42.28	53.98	11.70	AV
7320	45.49	0.00	9.14	V	54.63	73.98	19.35	PK
7320	33.47	4.81	9.14	V	47.42	53.98	6.56	AV
4880	49.86	0.00	0.96	H	50.82	73.98	23.16	PK
4880	36.94	4.81	0.96	H	42.71	53.98	11.27	AV
7320	45.17	0.00	9.14	H	54.31	73.98	19.67	PK
7320	33.21	4.81	9.14	H	47.16	53.98	6.82	AV

Operation Mode: CH High

Frequency [MHz]	Reading [dBuV]	Duty Cycle Factor [dB]	A.F + C.L - A.G + D.F [dB]	Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
4960	51.29	0.00	0.66	V	51.95	73.98	22.03	PK
4960	38.17	4.81	0.66	V	43.64	53.98	10.34	AV
7440	46.28	0.00	10.16	V	56.44	73.98	17.54	PK
7440	33.59	4.81	10.16	V	48.56	53.98	5.42	AV
4960	51.98	0.00	0.66	H	52.64	73.98	21.34	PK
4960	38.69	4.81	0.66	H	44.16	53.98	9.82	AV
7440	45.99	0.00	10.16	H	56.15	73.98	17.83	PK
7440	33.27	4.81	10.16	H	48.24	53.98	5.74	AV

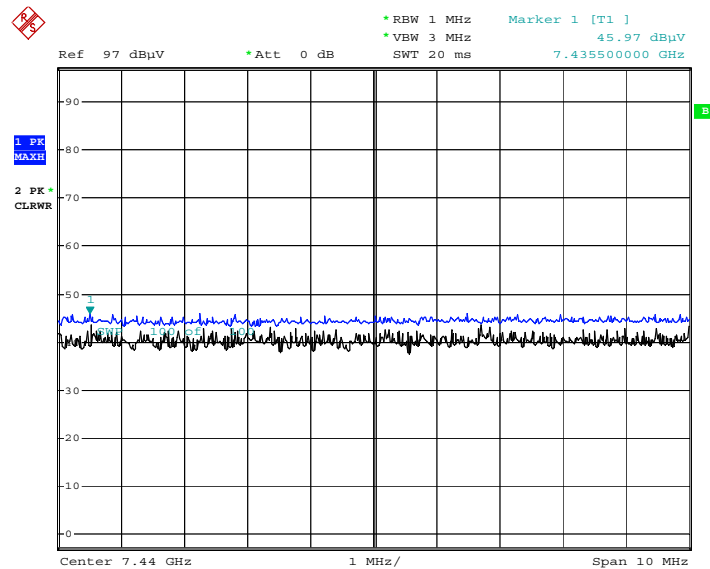
1M Bit 37 Byte Test Plots (Worst case : X-V)

Radiated Spurious Emissions plot – Average Reading (Ch.39 3rd Harmonic)



Date: 23.MAY.2019 10:11:16

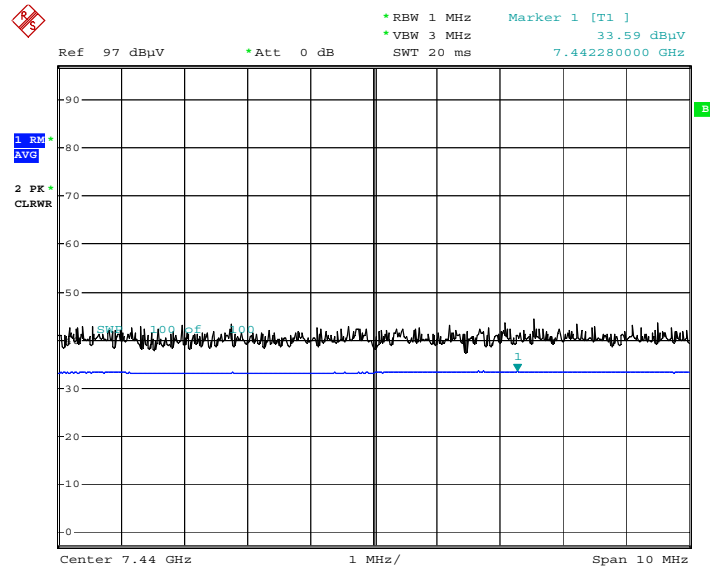
Radiated Spurious Emissions plot – Peak Reading (Ch.39 3rd Harmonic)



Date: 23.MAY.2019 10:12:36

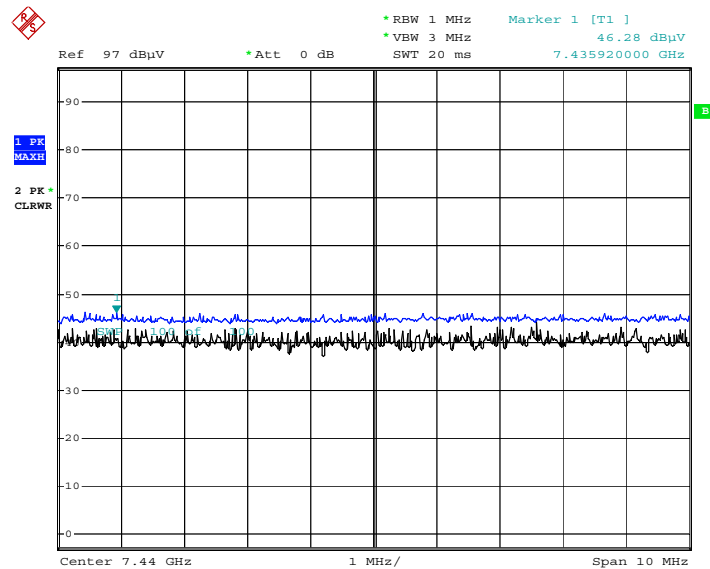
2M Bit 37 Byte Test Plots (Worst case : X-V)

Radiated Spurious Emissions plot – Average Reading (Ch.39 3rd Harmonic)



Date: 23.MAY.2019 10:15:26

Radiated Spurious Emissions plot – Peak Reading (Ch.39 3rd Harmonic)



Date: 23.MAY.2019 10:14:39

Note:

Plot of worst case are only reported.

9.7 RADIATED RESTRICTED BAND EDGES

Mode : 1M Bit/s

Operating Frequency 2402 MHz
Channel No. 0

Frequency [MHz]	Reading [dBuV/m]	Duty Cycle Factor [dB]	A.F.+C.L.+D.F. [dB]	Ant. Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2390.0	17.86	0.00	33.39	H	51.25	73.98	22.73	PK
2390.0	7.35	2.04	33.39	H	42.78	53.98	11.20	AV
2390.0	17.54	0.00	33.39	V	50.93	73.98	23.05	PK
2390.0	7.11	2.04	33.39	V	42.54	53.98	11.44	AV

Operating Frequency 2480 MHz
Channel No. 39

Frequency [MHz]	Reading [dBuV/m]	Duty Cycle Factor [dB]	A.F.+C.L.+D.F. [dB]	Ant. Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2483.5	23.29	0.00	33.39	H	56.68	73.98	17.30	PK
2483.5	7.83	2.04	33.39	H	43.26	53.98	10.72	AV
2483.5	18.97	0.00	33.39	V	52.36	73.98	21.62	PK
2483.5	7.53	2.04	33.39	V	42.96	53.98	11.02	AV

Mode : 2M Bit/s

Operating Frequency 2402 MHz
Channel No. 0

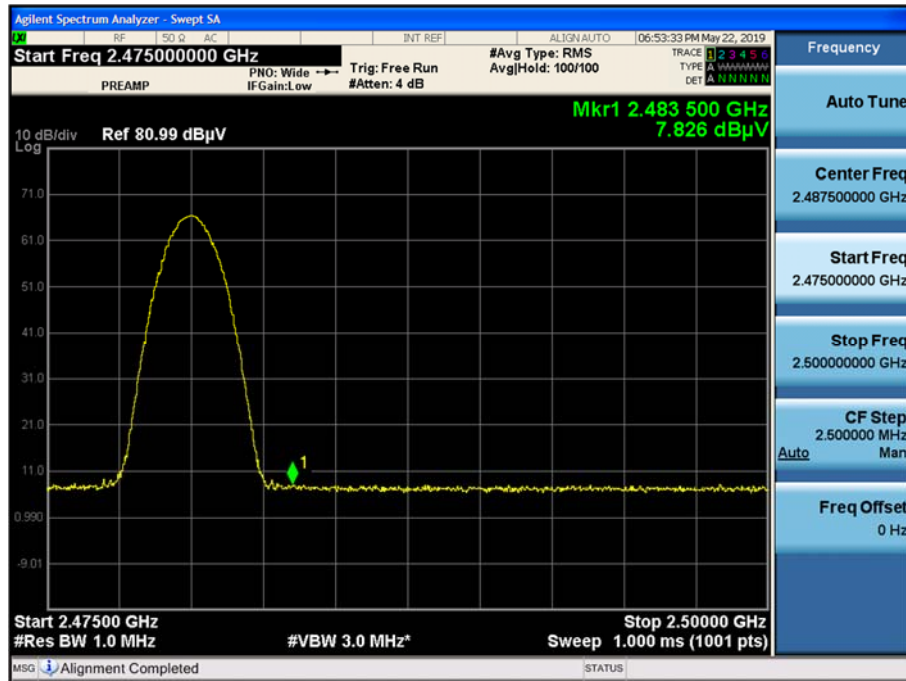
Frequency [MHz]	Reading [dBuV/m]	Duty Cycle Factor [dB]	A.F.+C.L.+D.F. [dB]	Ant. Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2390.0	15.50	0.00	33.39	H	48.89	73.98	25.09	PK
2390.0	7.30	4.81	33.39	H	45.50	53.98	8.48	AV
2390.0	15.29	0.00	33.39	V	48.68	73.98	25.30	PK
2390.0	7.11	4.81	33.39	V	45.31	53.98	8.67	AV

Operating Frequency 2480 MHz
Channel No. 39

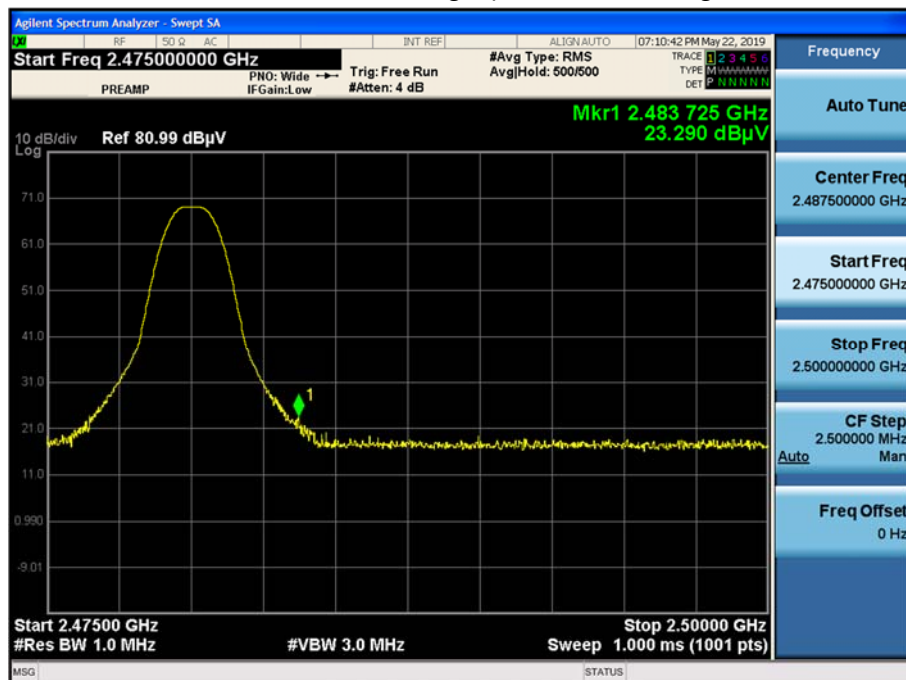
Frequency [MHz]	Reading [dBuV/m]	Duty Cycle Factor [dB]	A.F.+C.L.+D.F. [dB]	Ant. Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2483.5	24.22	0.00	33.39	H	57.61	73.98	16.38	PK
2483.5	9.04	4.81	33.39	H	47.24	53.98	6.74	AV
2483.5	20.87	0.00	33.39	V	54.26	73.98	19.72	PK
2483.5	8.97	4.81	33.39	V	47.17	53.98	6.81	AV

Mode : 1M Bit/s (37 Byte) Test Plots (Worst case : X-H)

Radiated Restricted Band Edges plot – Average Reading (Ch.39)

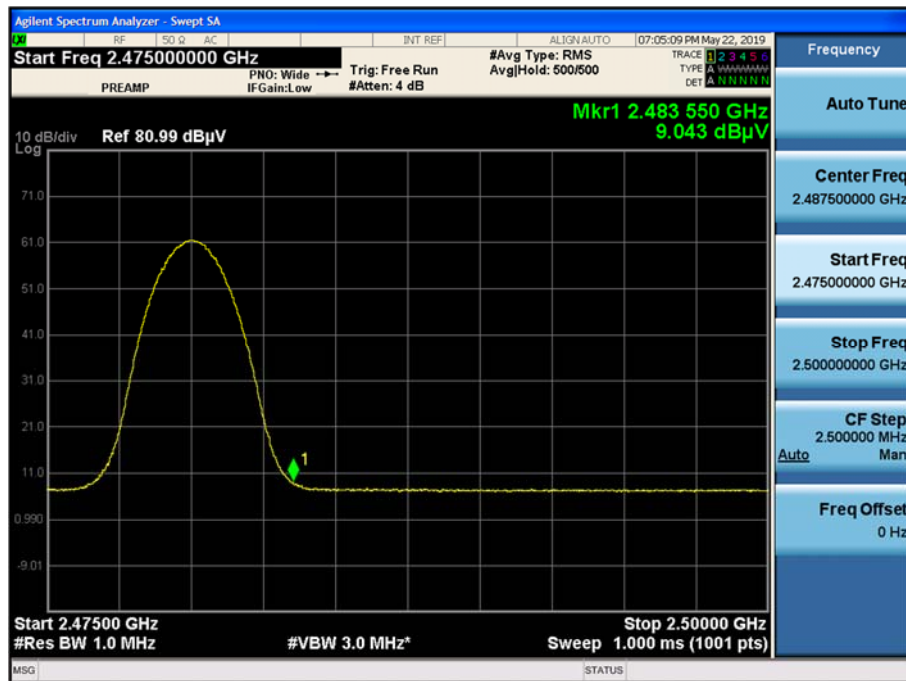


Radiated Restricted Band Edges plot – Peak Reading (Ch.39)

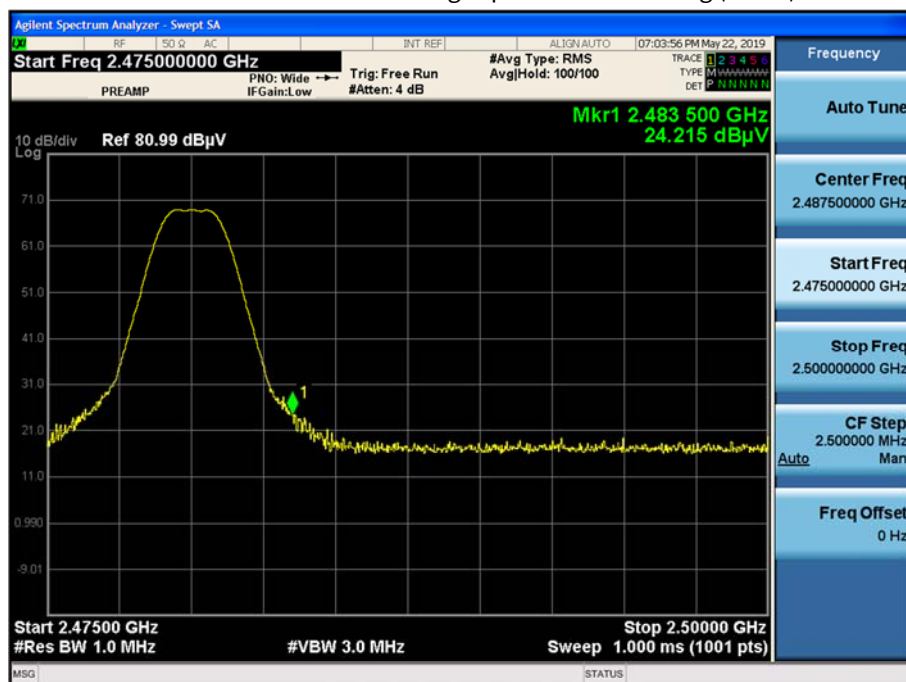


Mode : 2M Bit/s (37 Byte) Test Plots (Worst case : X-H)

Radiated Restricted Band Edges plot – Average Reading (Ch.39)



Radiated Restricted Band Edges plot – Peak Reading (Ch.39)



Note:

Plot of worst case are only reported.

9.8 POWERLINE CONDUCTED EMISSIONS

Conducted Emissions (Line 1)

BT LE L1

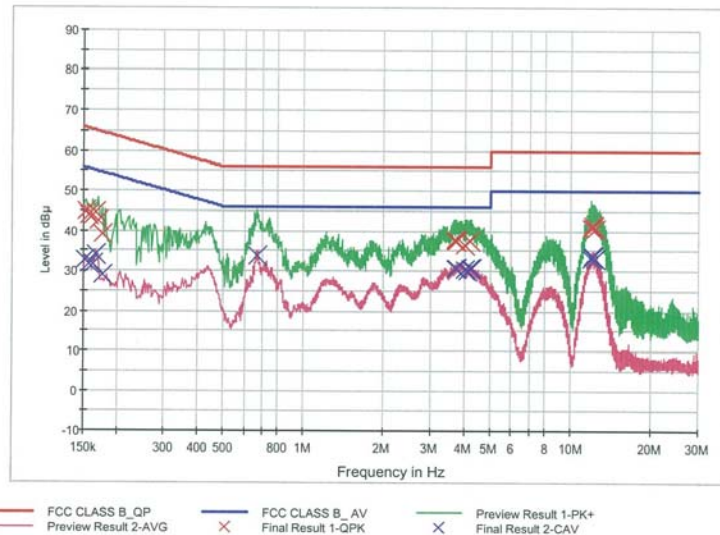
1 / 2

HCT TEST Report

Common Information

EUT: SM-T727V
Manufacturer: SAMSUNG
Test Site: SHIELD ROOM
Operating Conditions: BT LE MODE

FCC CLASS B_Exten Cable



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.154000	45.0	9.000	Off	L1	9.7	20.8	65.8
0.158000	43.8	9.000	Off	L1	9.7	21.8	65.6
0.162000	43.9	9.000	Off	L1	9.7	21.5	65.4
0.166000	44.4	9.000	Off	L1	9.7	20.7	65.2
0.170000	42.4	9.000	Off	L1	9.7	22.5	65.0
0.176000	39.0	9.000	Off	L1	9.7	25.6	64.7
3.690000	37.6	9.000	Off	L1	10.0	18.4	56.0
3.702000	37.4	9.000	Off	L1	10.0	18.6	56.0
3.760000	37.6	9.000	Off	L1	10.0	18.4	56.0
4.004000	36.6	9.000	Off	L1	10.0	19.4	56.0
4.198000	37.6	9.000	Off	L1	10.0	18.4	56.0
4.222000	37.3	9.000	Off	L1	10.0	18.7	56.0
11.864000	41.0	9.000	Off	L1	10.3	19.0	60.0
12.054000	41.0	9.000	Off	L1	10.3	19.0	60.0
12.082000	41.4	9.000	Off	L1	10.3	18.6	60.0
12.118000	41.4	9.000	Off	L1	10.3	18.6	60.0
12.176000	41.1	9.000	Off	L1	10.3	18.9	60.0
12.288000	40.5	9.000	Off	L1	10.3	19.5	60.0

2019-05-17

오전 10:19:14

BTLE L1

2 / 2

Final Result 2

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.152000	32.7	9.000	Off	L1	9.7	23.2	55.9
0.158000	31.7	9.000	Off	L1	9.7	23.8	55.6
0.162000	31.7	9.000	Off	L1	9.7	23.7	55.4
0.166000	34.1	9.000	Off	L1	9.7	21.1	55.2
0.176000	29.1	9.000	Off	L1	9.7	25.6	54.7
0.668000	33.8	9.000	Off	L1	9.8	12.2	46.0
3.702000	30.8	9.000	Off	L1	10.0	15.2	46.0
3.760000	30.8	9.000	Off	L1	10.0	15.2	46.0
4.004000	30.3	9.000	Off	L1	10.0	15.7	46.0
4.102000	29.9	9.000	Off	L1	10.0	16.1	46.0
4.198000	30.7	9.000	Off	L1	10.0	15.3	46.0
4.230000	30.7	9.000	Off	L1	10.0	15.3	46.0
11.864000	33.1	9.000	Off	L1	10.3	16.9	50.0
11.926000	32.9	9.000	Off	L1	10.3	17.1	50.0
12.036000	33.5	9.000	Off	L1	10.3	16.5	50.0
12.082000	33.7	9.000	Off	L1	10.3	16.3	50.0
12.118000	33.8	9.000	Off	L1	10.3	16.2	50.0
12.288000	33.1	9.000	Off	L1	10.3	16.9	50.0

2019-05-17

오전 10:19:14

Conducted Emissions (Line 2)

Test

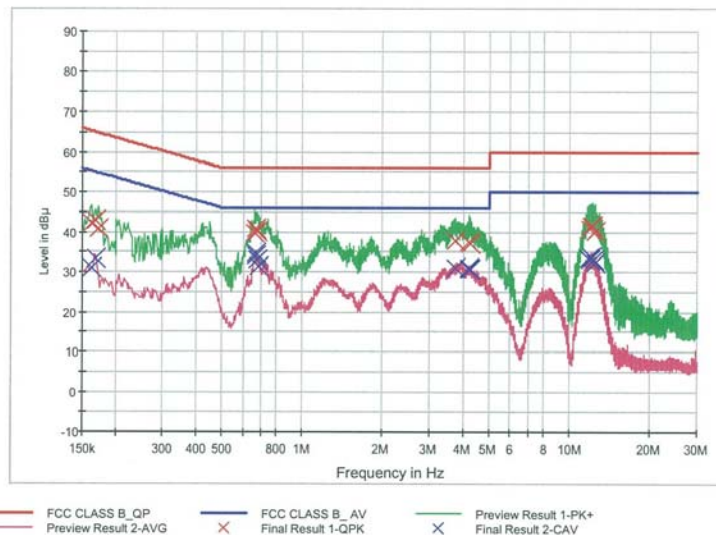
1 / 2

HCT TEST Report

Common Information

EUT: SM-T727V
 Manufacturer: SAMSUNG
 Test Site: SHIELD ROOM
 Operating Conditions: BT LE MODE

FCC CLASS B_Exten Cable



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.162000	42.3	9.000	Off	N	9.8	23.1	65.4
0.168000	43.0	9.000	Off	N	9.8	22.0	65.1
0.172000	40.9	9.000	Off	N	9.8	24.0	64.9
0.662000	39.9	9.000	Off	N	9.9	16.1	56.0
0.674000	40.9	9.000	Off	N	9.9	15.1	56.0
0.680000	40.2	9.000	Off	N	9.9	15.8	56.0
3.754000	37.8	9.000	Off	N	10.2	18.2	56.0
4.186000	37.6	9.000	Off	N	10.2	18.4	56.0
4.192000	37.6	9.000	Off	N	10.2	18.4	56.0
4.196000	37.6	9.000	Off	N	10.2	18.4	56.0
4.214000	37.5	9.000	Off	N	10.2	18.5	56.0
4.266000	37.0	9.000	Off	N	10.2	19.0	56.0
11.952000	40.8	9.000	Off	N	10.5	19.2	60.0
12.080000	41.4	9.000	Off	N	10.5	18.6	60.0
12.084000	41.4	9.000	Off	N	10.5	18.6	60.0
12.120000	41.6	9.000	Off	N	10.5	18.4	60.0
12.148000	41.5	9.000	Off	N	10.5	18.5	60.0
12.486000	40.2	9.000	Off	N	10.6	19.8	60.0

2019-05-17

오전 9:59:21

Test

2 / 2

Final Result 2

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.162000	31.1	9.000	Off	N	9.8	24.3	55.4
0.168000	33.5	9.000	Off	N	9.8	21.6	55.1
0.670000	34.6	9.000	Off	N	9.9	11.4	46.0
0.674000	34.1	9.000	Off	N	9.9	11.9	46.0
0.680000	33.0	9.000	Off	N	9.9	13.0	46.0
0.688000	31.4	9.000	Off	N	9.9	14.6	46.0
3.754000	31.1	9.000	Off	N	10.2	14.9	46.0
4.186000	30.8	9.000	Off	N	10.2	15.2	46.0
4.192000	30.7	9.000	Off	N	10.2	15.3	46.0
4.196000	30.8	9.000	Off	N	10.2	15.2	46.0
4.214000	31.0	9.000	Off	N	10.2	15.0	46.0
4.246000	30.7	9.000	Off	N	10.2	15.3	46.0
11.826000	33.3	9.000	Off	N	10.5	16.7	50.0
11.952000	33.1	9.000	Off	N	10.5	16.9	50.0
12.084000	33.8	9.000	Off	N	10.5	16.2	50.0
12.272000	33.0	9.000	Off	N	10.5	17.0	50.0
12.394000	32.9	9.000	Off	N	10.6	17.1	50.0
12.486000	32.3	9.000	Off	N	10.6	17.7	50.0

2019-05-17

오전 9:59:21

10. LIST OF TEST EQUIPMENT

Conducted Test

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Rohde & Schwarz	ENV216 / LISN	12/12/2018	Annual	102245
Rohde & Schwarz	ESCI / Test Receiver	06/27/2018	Annual	100033
ESPAC	SU-642 / Temperature Chamber	03/12/2019	Annual	0093008124
Agilent	N9020A / Signal Analyzer	06/08/2018	Annual	MY51110085
Agilent	N9020A / Signal Analyzer	06/08/2018	Annual	MY52090906
Agilent	N9030A / Signal Analyzer	01/10/2019	Annual	MY49431210
Rohde & Schwarz	OSP 120 / Power Measurement Set	07/26/2018	Annual	101231
Agilent	N1911A / Power Meter	04/10/2019	Annual	MY45100523
Agilent	N1921A / Power Sensor	04/10/2019	Annual	MY52260025
Agilent	87300B / Directional Coupler	11/20/2018	Annual	3116A03621
Hewlett Packard	11667B / Power Splitter	06/07/2018	Annual	05001
Hewlett Packard	E3632A / DC Power Supply	06/26/2018	Annual	KR75303960
Agilent	8493C / Attenuator(10 dB)	07/10/2018	Annual	07560
Rohde & Schwarz	EMC32 / Software	N/A	N/A	N/A
HCT CO., LTD.	FCC WLAN&BT&BLE Conducted Test Software v3.0	N/A	N/A	N/A

Radiated Test

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Innco system	CO3000 / Controller(Antenna mast)	N/A	N/A	CO3000-4p
Innco system	MA4640/800-XP-EP / Antenna Position Tower	N/A	N/A	N/A
Audix	EM1000 / Controller	N/A	N/A	060520
Audix	Turn Table	N/A	N/A	N/A
Rohde & Schwarz	Loop Antenna	08/23/2018	Biennial	1513-175
Schwarzbeck	VULB 9168 / Hybrid Antenna	03/22/2019	Biennial	760
Schwarzbeck	VULB 9160 / TRILOG Antenna	08/09/2018	Biennial	9160-3368
Schwarzbeck	BBHA 9120D / Horn Antenna	08/01/2017	Biennial	1151
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	12/04/2017	Biennial	BBHA9170541
Rohde & Schwarz	FSP(9 kHz ~ 30 GHz) / Spectrum Analyzer	09/03/2018	Annual	100688
Rohde & Schwarz	FSV40-N / Spectrum Analyzer	09/28/2018	Annual	101068-SZ
Agilent	N9020A / Signal Analyzer	06/08/2018	Annual	MY51110085
Wainwright Instruments	WHK3.0/18G-10EF / High Pass Filter	06/07/2018	Annual	8
Wainwright Instruments	WHKX7.0/18G-8SS / High Pass Filter	05/03/2019	Annual	29
Wainwright Instruments	WRCJV2400/2483.5-2370/2520-60/12SS / Band Reject Filter	06/29/2018	Annual	2
Wainwright Instruments	WRCJV5100/5850-40/50-8EEK / Band Reject Filter	01/03/2019	Annual	2
Api tech.	18B-03 / Attenuator (3 dB)	06/07/2018	Annual	1
Agilent	8493C-10 / Attenuator(10 dB)	07/17/2018	Annual	08285
CERNEX	CBLU1183540 / Power Amplifier	07/10/2018	Annual	22964
CERNEX	CBL06185030 / Power Amplifier	07/10/2018	Annual	22965
CERNEX	CBL18265035 / Power Amplifier	01/03/2019	Annual	22966
CERNEX	CBL26405040 / Power Amplifier	06/29/2018	Annual	25956

Note:

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

11. ANNEX A_ TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-1905-FC041-P