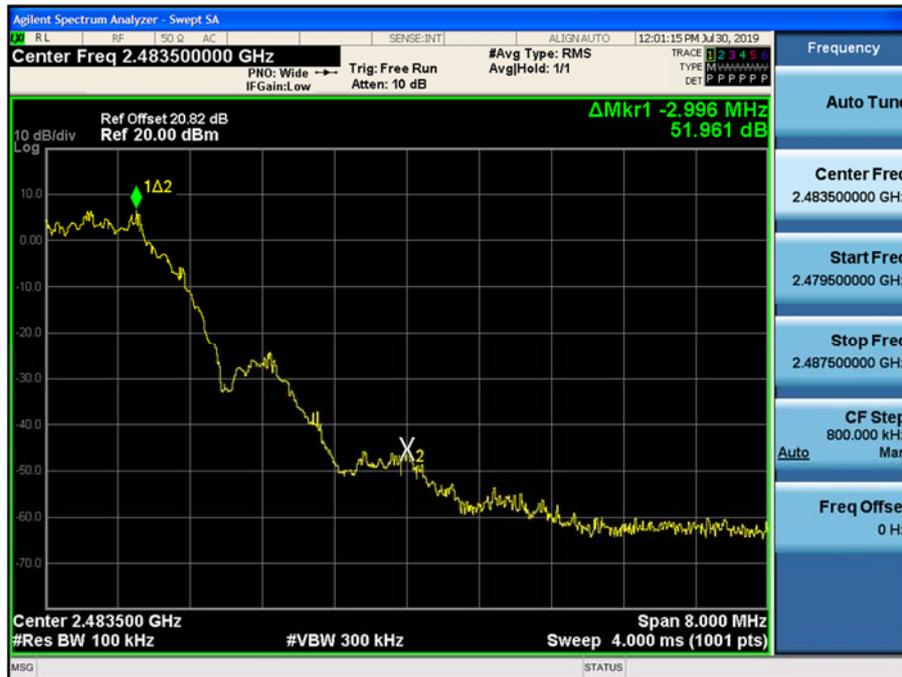


5.0 LE: 2M PHY Bit/s (255 Byte) Test Plots -BandEdge

Low-CH 0



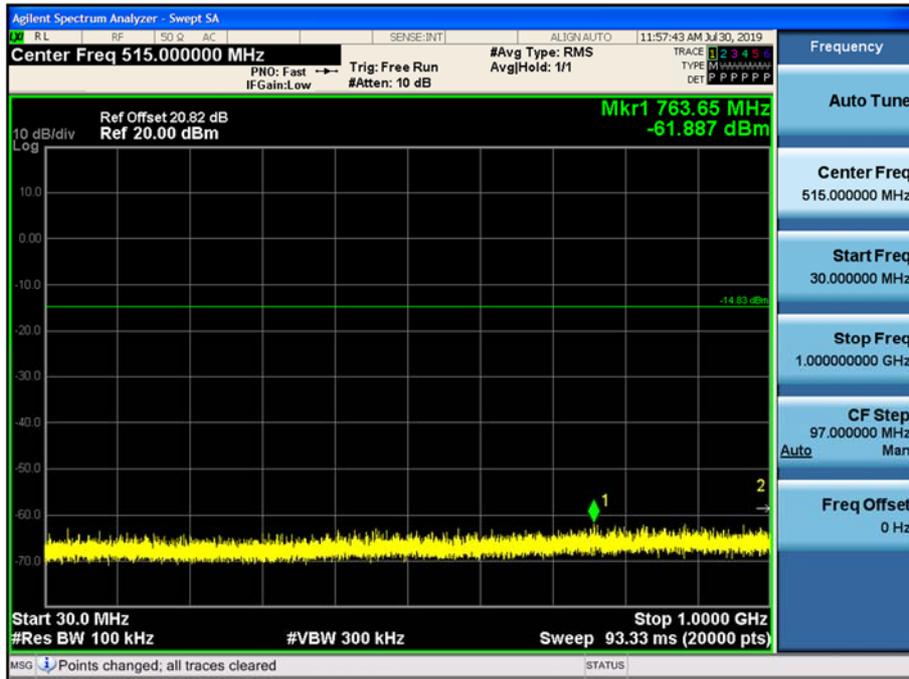
High-CH 39



5.0 LE: 1M PHY Bit/s (37 Byte) Test Plots -Conducted Spurious Emission

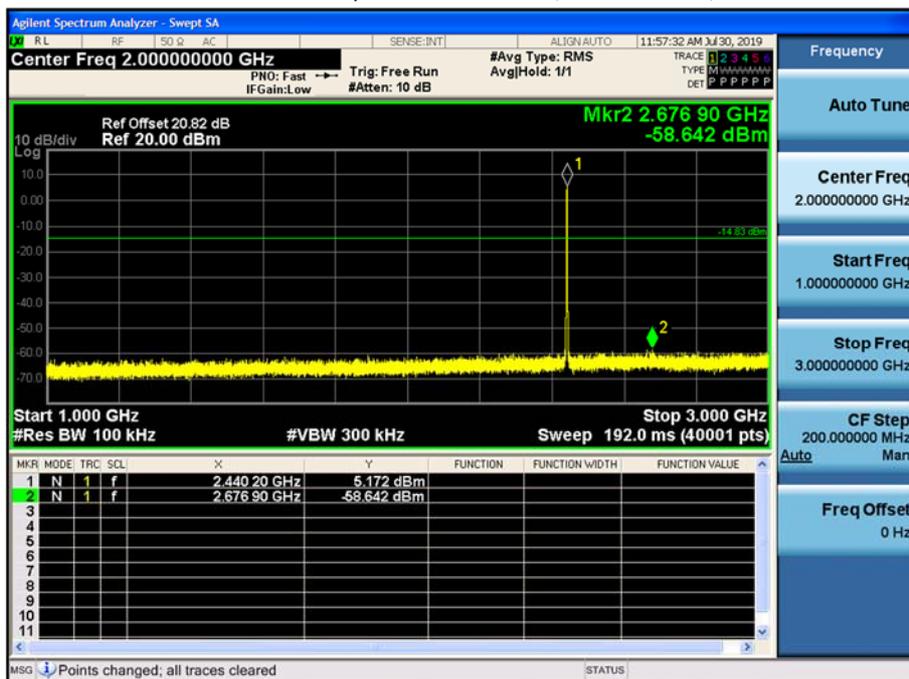
30 MHz ~ 1 GHz

Conducted Spurious Emission (Middle-CH 19)



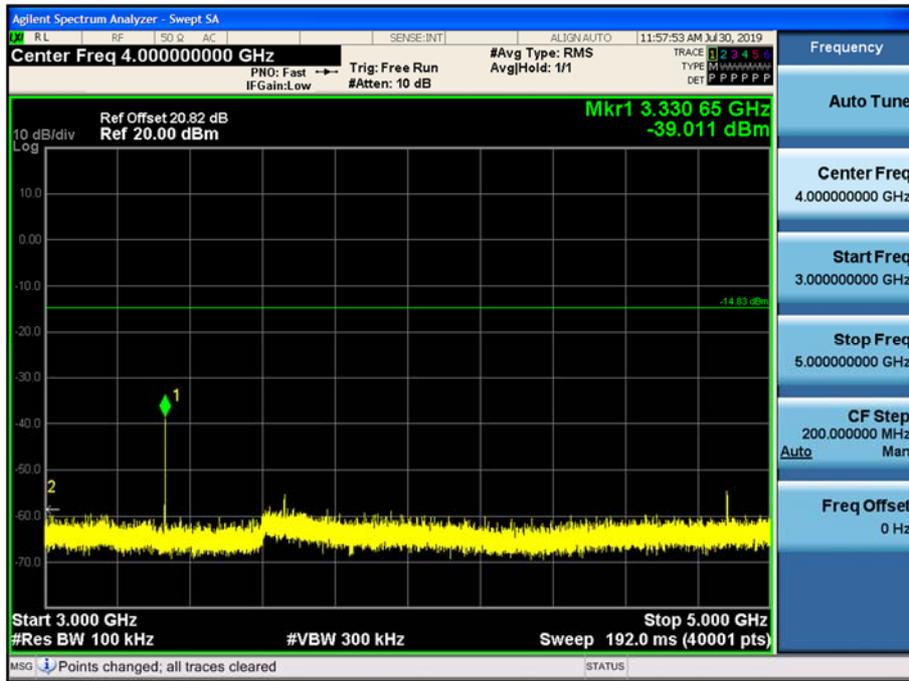
1 GHz ~ 3 GHz

Conducted Spurious Emission (Middle-CH 19)



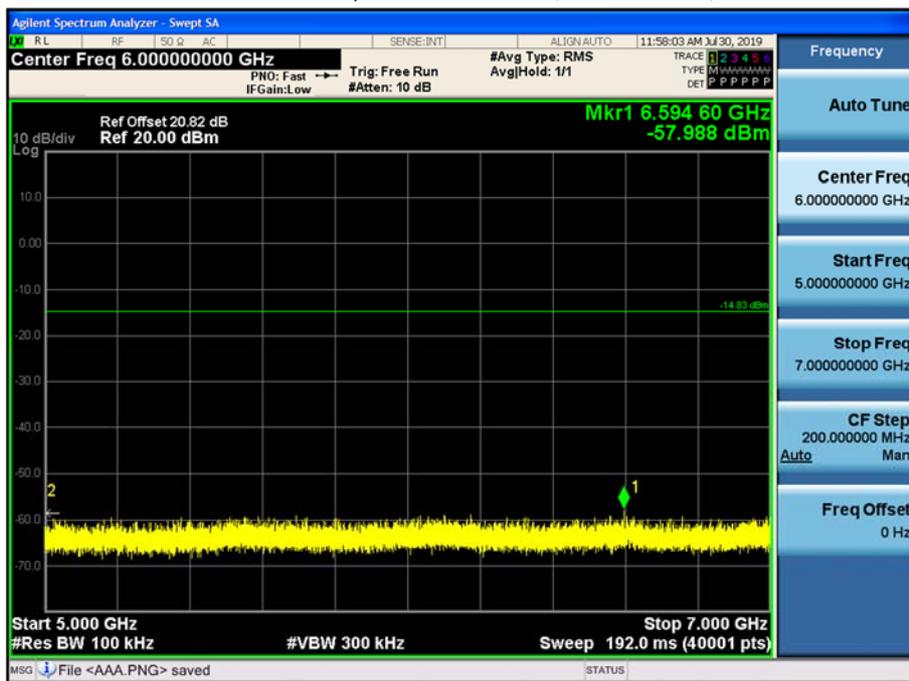
3 GHz ~ 5 GHz

Conducted Spurious Emission (Middle-CH 19)



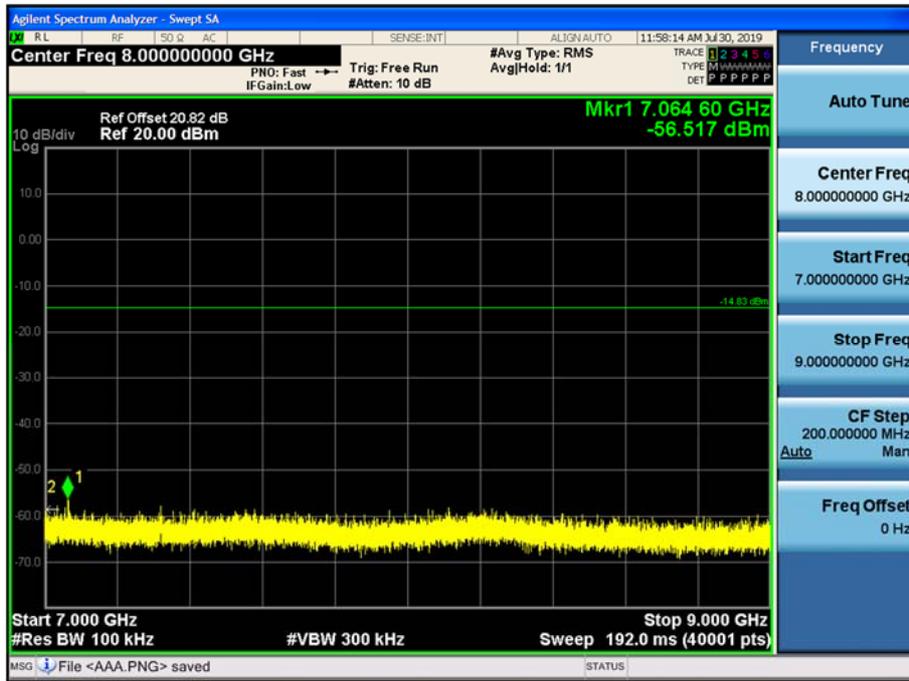
5 GHz ~ 7 GHz

Conducted Spurious Emission (Middle-CH 19)



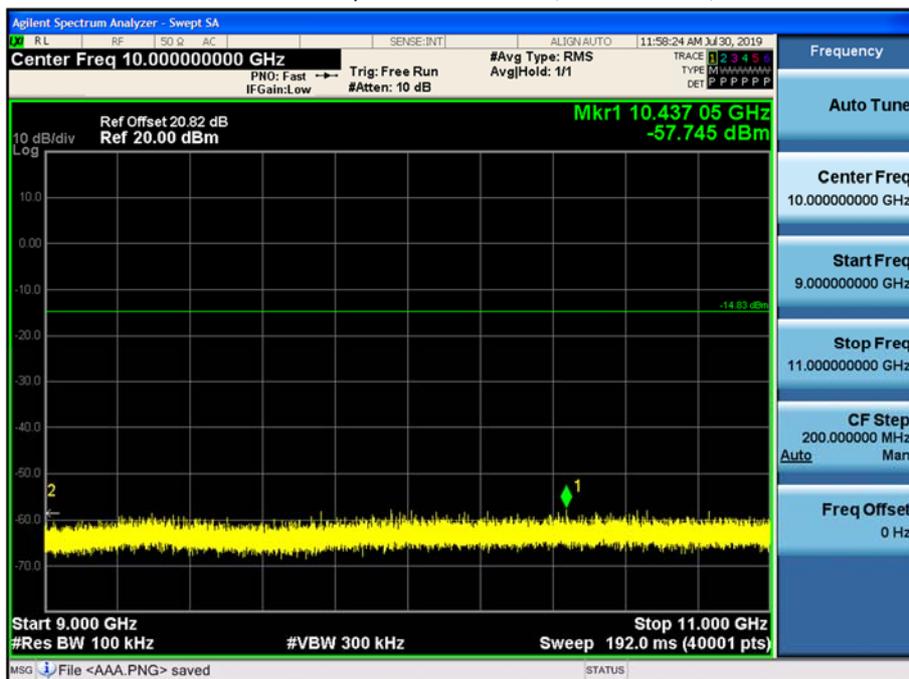
7 GHz ~ 9 GHz

Conducted Spurious Emission (Middle-CH 19)



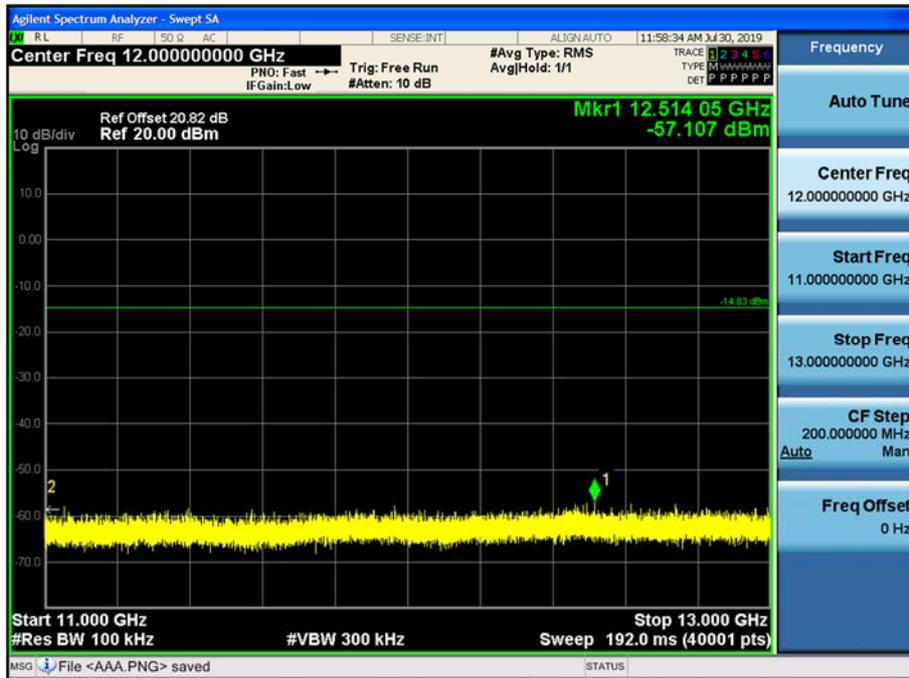
9 GHz ~ 11 GHz

Conducted Spurious Emission (Middle-CH 19)



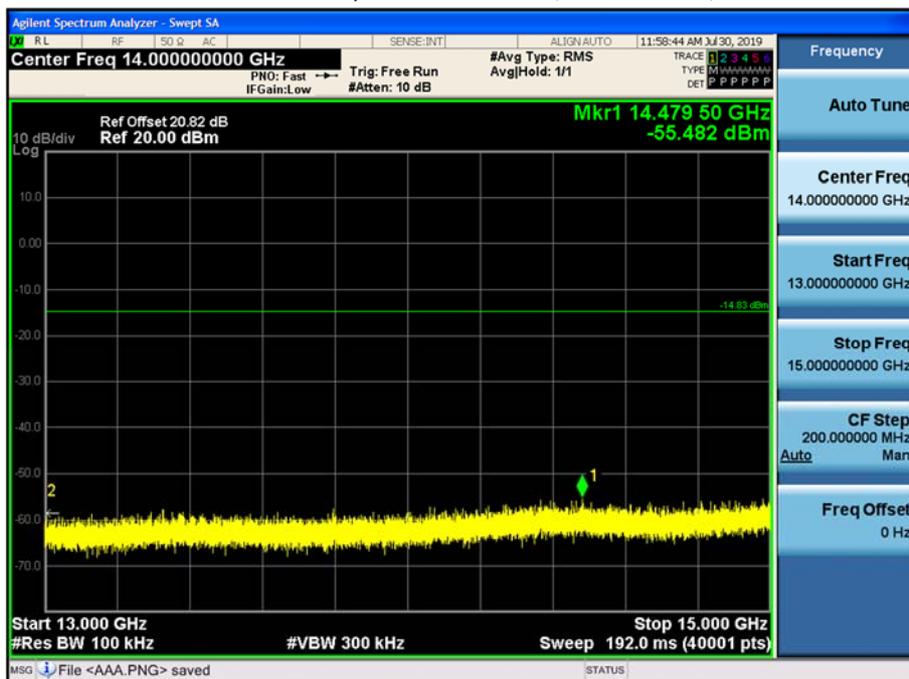
11 GHz ~ 13 GHz

Conducted Spurious Emission (Middle-CH 19)



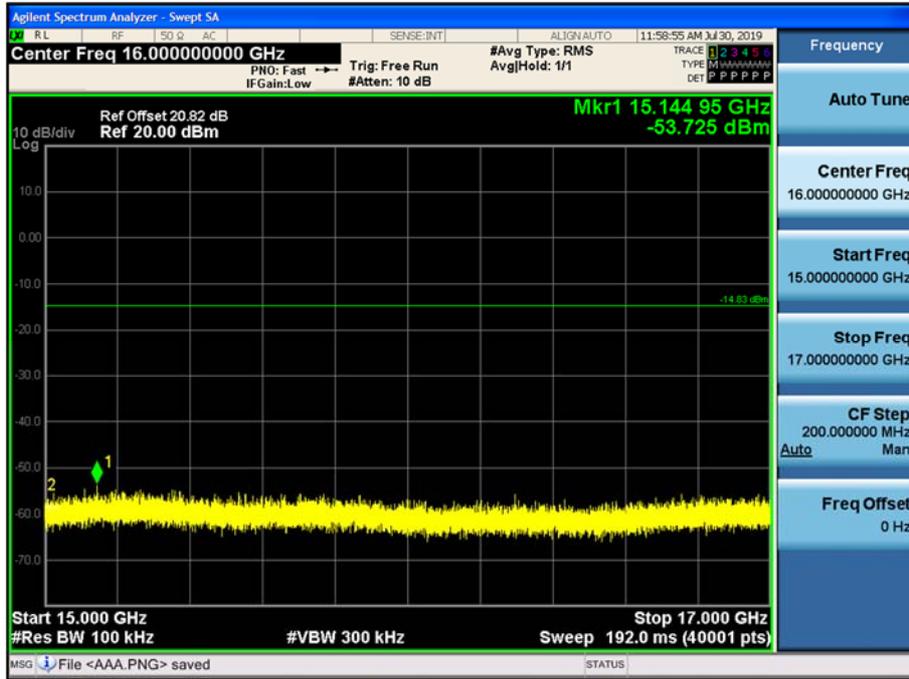
13 GHz ~ 15 GHz

Conducted Spurious Emission (Middle-CH 19)



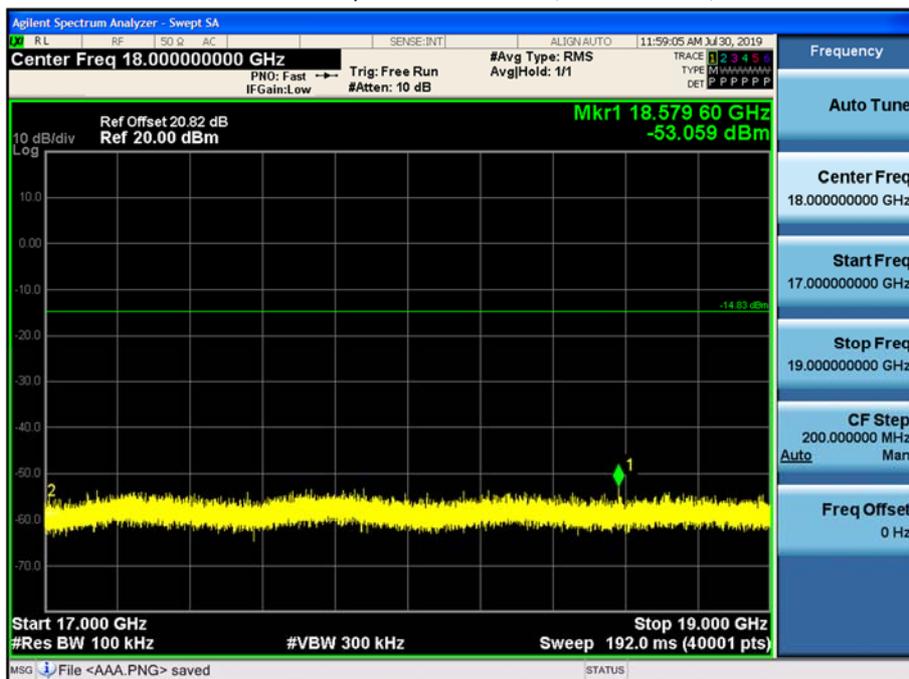
15 GHz ~ 17 GHz

Conducted Spurious Emission (Middle-CH 19)



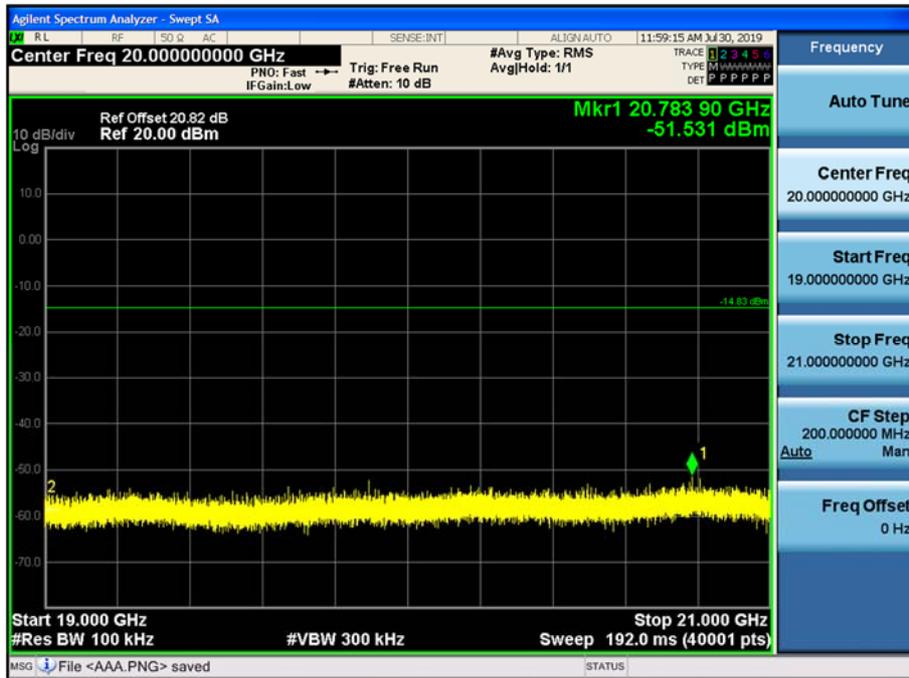
17 GHz ~ 19 GHz

Conducted Spurious Emission (Middle-CH 19)



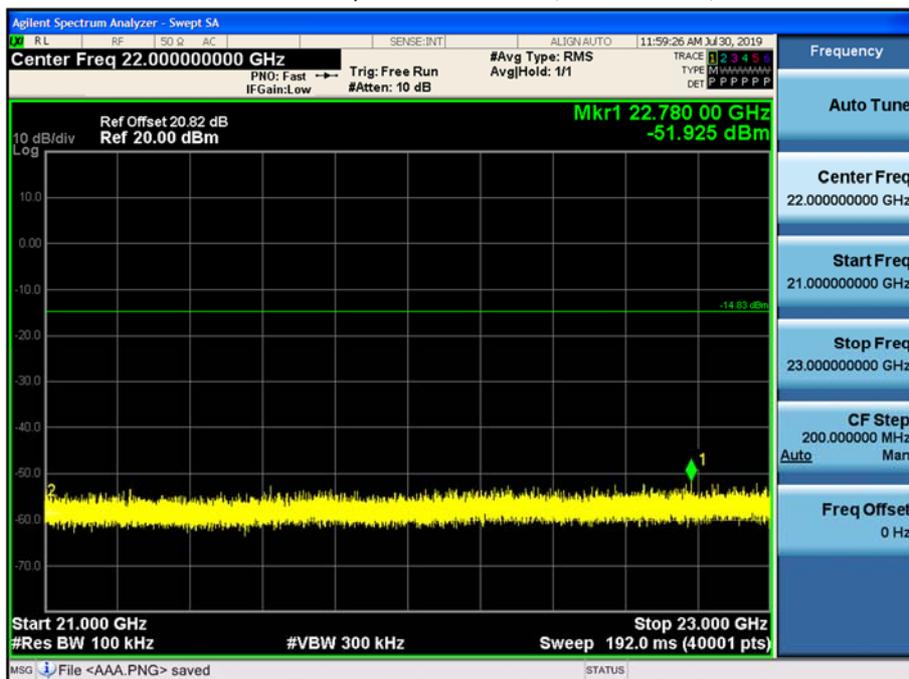
19 GHz ~ 21 GHz

Conducted Spurious Emission (Middle-CH 19)



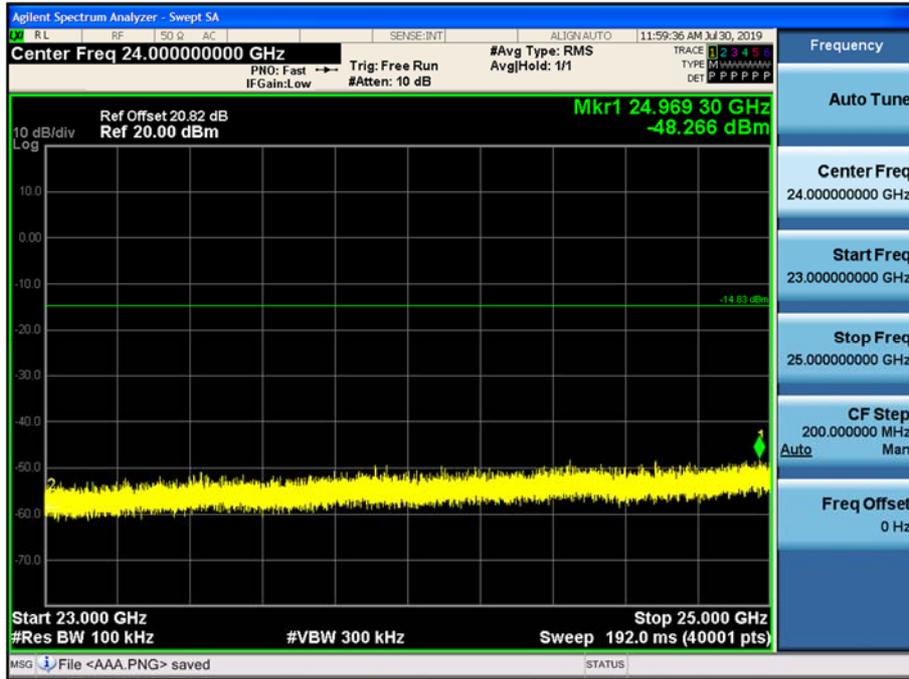
21 GHz ~ 23 GHz

Conducted Spurious Emission (Middle-CH 19)



23 GHz ~ 25 GHz

Conducted Spurious Emission (Middle-CH 19)



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 : 5.0 LE: 1M PHY 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	46.11	0.00	2.17	V	48.28	73.98	25.70	PK
4804	34.69	2.17	2.17	V	39.03	53.98	14.95	AV
7206	47.18	0.00	8.97	V	56.15	73.98	17.83	PK
7206	35.87	2.17	8.97	V	47.01	53.98	6.97	AV
4804	46.59	0.00	2.17	H	48.76	73.98	25.22	PK
4804	35.02	2.17	2.17	H	39.36	53.98	14.62	AV
7206	47.65	0.00	8.97	H	56.62	73.98	17.36	PK
7206	36.06	2.17	8.97	H	47.2	53.98	6.78	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	43.86	0.00	2.66	V	46.52	73.98	27.46	PK
4880	31.55	2.17	2.66	V	36.38	53.98	17.60	AV
7320	44.24	0.00	9.04	V	53.28	73.98	20.70	PK
7320	33.14	2.17	9.04	V	44.35	53.98	9.63	AV
4880	44.03	0.00	2.66	H	46.69	73.98	27.29	PK
4880	31.59	2.17	2.66	H	36.42	53.98	17.56	AV
7320	44.47	0.00	9.04	H	53.51	73.98	20.47	PK
7320	33.22	2.17	9.04	H	44.43	53.98	9.55	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	42.57	0.00	1.54	V	44.11	73.98	29.87	PK
4960	31.58	2.17	1.54	V	35.29	53.98	18.69	AV
7440	43.30	0.00	9.82	V	53.12	73.98	20.86	PK
7440	32.83	2.17	9.82	V	44.82	53.98	9.16	AV
4960	42.71	0.00	1.54	H	44.25	73.98	29.73	PK
4960	31.77	2.17	1.54	H	35.48	53.98	18.50	AV
7440	43.42	0.00	9.82	H	53.24	73.98	20.74	PK
7440	32.98	2.17	9.82	H	44.97	53.98	9.01	AV

Mode : 5.0 LE: 2M PHY Bit/s (255 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	44.58	0.00	2.17	V	46.75	73.98	27.23	PK
4804	33.27	2.46	2.17	V	37.9	53.98	16.08	AV
7206	47.21	0.00	8.97	V	56.18	73.98	17.80	PK
7206	32.81	2.46	8.97	V	44.24	53.98	9.74	AV
4804	44.80	0.00	2.17	H	46.97	73.98	27.01	PK
4804	33.32	2.46	2.17	H	37.95	53.98	16.03	AV
7206	47.31	0.00	8.97	H	56.28	73.98	17.70	PK
7206	32.90	2.46	8.97	H	44.33	53.98	9.65	AV

Operation Mode: CH Mid

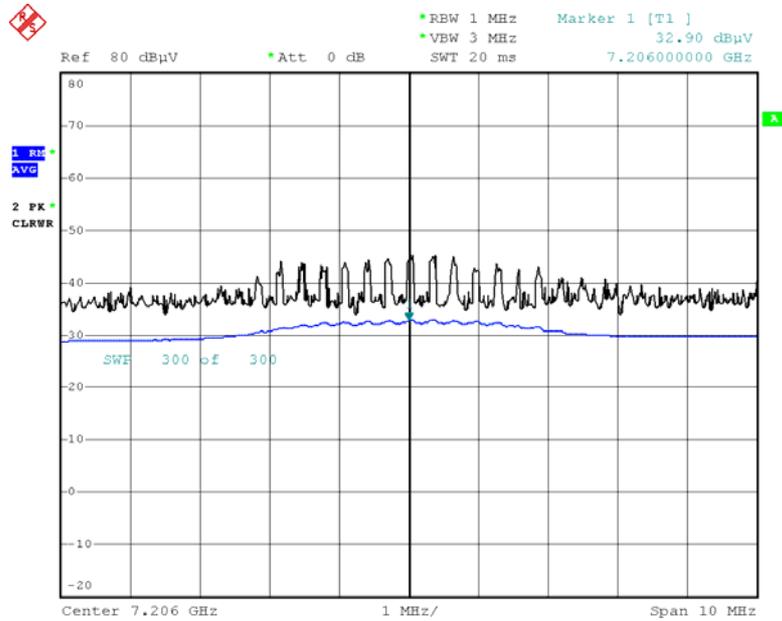
Frequency [MHz]	Reading [dBuV]	Duty Cycle Factor [dB]	A.F + C.L - A.G + D.F [dB]	Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
4880	43.79	0.00	2.66	V	46.45	73.98	27.53	PK
4880	31.23	2.46	2.66	V	36.35	53.98	17.63	AV
7320	44.03	0.00	9.04	V	53.07	73.98	20.91	PK
7320	31.56	2.46	9.04	V	43.06	53.98	10.92	AV
4880	43.87	0.00	2.66	H	46.53	73.98	27.45	PK
4880	31.33	2.46	2.66	H	36.45	53.98	17.53	AV
7320	44.08	0.00	9.04	H	53.12	73.98	20.86	PK
7320	31.66	2.46	9.04	H	43.16	53.98	10.82	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	43.64	0.00	1.54	V	45.18	73.98	28.80	PK
4960	31.62	2.46	1.54	V	35.62	53.98	18.36	AV
7440	44.11	0.00	9.82	V	53.93	73.98	20.05	PK
7440	31.38	2.46	9.82	V	43.66	53.98	10.32	AV
4960	43.75	0.00	1.54	H	45.29	73.98	28.69	PK
4960	31.71	2.46	1.54	H	35.71	53.98	18.27	AV
7440	44.28	0.00	9.82	H	54.1	73.98	19.88	PK
7440	31.44	2.46	9.82	H	43.72	53.98	10.26	AV

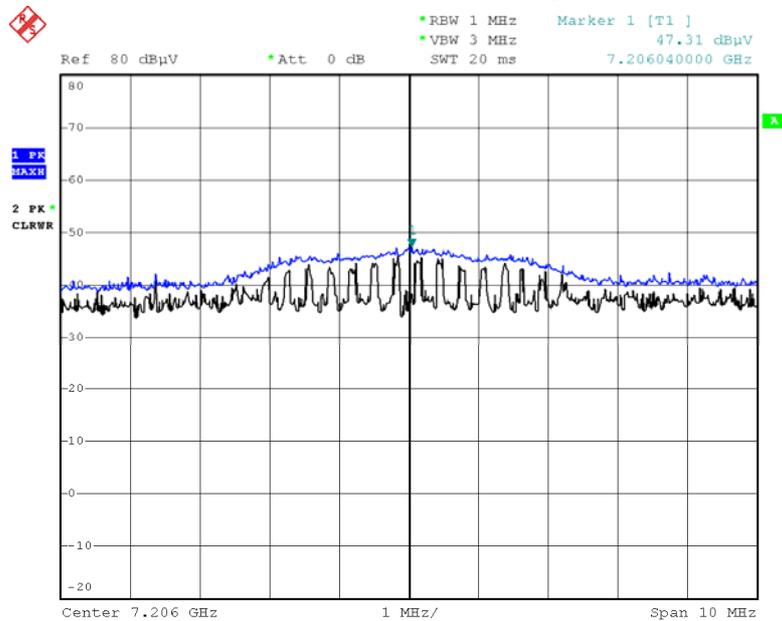
5.0 LE: 2M PHY Bit 37 Byte Test Plots (Worst case : H)

Radiated Spurious Emissions plot – Average Reading (Ch.0 3rd Harmonic)



Date: 25.JUL.2019 02:20:46

Radiated Spurious Emissions plot – Peak Reading (Ch.0 3rd Harmonic)



Date: 25.JUL.2019 02:19:17

Note:

Plot of worst case are only reported.

9.7 RADIATED RESTRICTED BAND EDGES

Mode : 5.0 LE: 1M PHY Bit/s 37 byte

Operating Frequency 2402 MHz
 Channel No. 0

Frequency [MHz]	Reading [dBuV/m]	Duty Cycle Factor [dB]	A.F.+C.L.+D.F -AMP+ATT. [dB]	Ant. Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2390.0	19.14	0.00	35.17	H	54.31	73.98	19.67	PK
2390.0	7.79	2.17	35.17	H	45.13	53.98	8.85	AV
2390.0	19.27	0.00	35.17	V	54.44	73.98	19.54	PK
2390.0	7.82	2.17	35.17	V	45.16	53.98	8.82	AV

Operating Frequency 2480 MHz
 Channel No. 39

Frequency [MHz]	Reading [dBuV/m]	Duty Cycle Factor [dB]	A.F.+C.L.+D.F -AMP+ATT. [dB]	Ant. Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2483.5	20.36	0.00	35.36	H	55.72	73.98	18.26	PK
2483.5	9.80	2.17	35.36	H	47.33	53.98	6.65	AV
2483.5	20.47	0.00	35.36	V	55.83	73.98	18.15	PK
2483.5	9.88	2.17	35.36	V	47.41	53.98	6.57	AV

Mode : 5.0 LE: 2M PHY Bit/s 255 byte

Operating Frequency 2402 MHz
 Channel No. 0

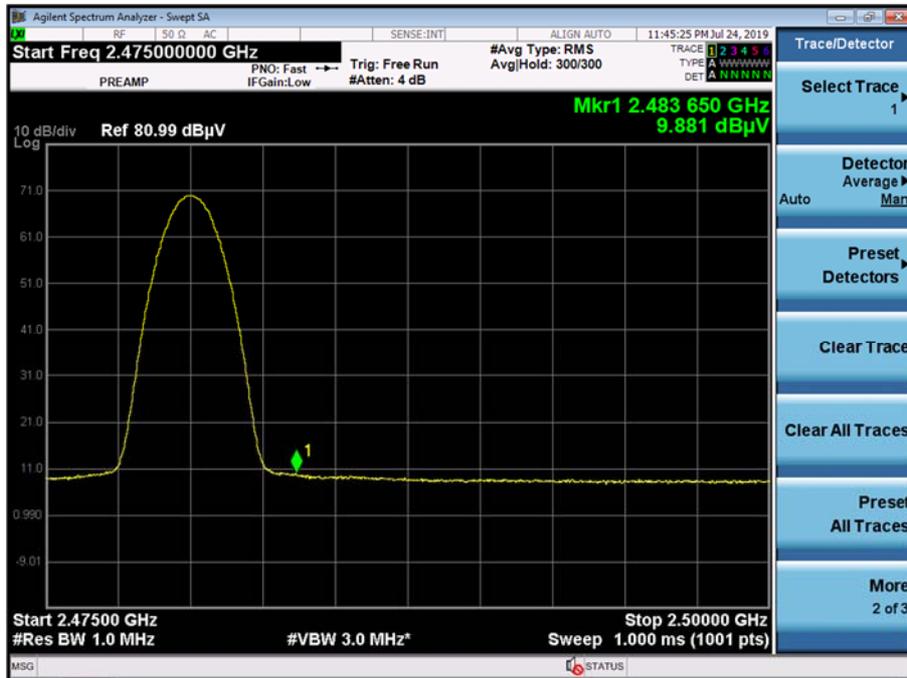
Frequency [MHz]	Reading [dBuV/m]	Duty Cycle Factor [dB]	A.F.+C.L.+D.F -AMP+ATT [dB]	Ant. Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2390.0	20.02	0.00	35.17	H	55.19	73.98	18.79	PK
2390.0	8.10	2.46	35.17	H	45.73	53.98	8.25	AV
2390.0	20.13	0.00	35.17	V	55.30	73.98	18.68	PK
2390.0	8.12	2.46	35.17	V	45.75	53.98	8.23	AV

Operating Frequency 2480 MHz
 Channel No. 39

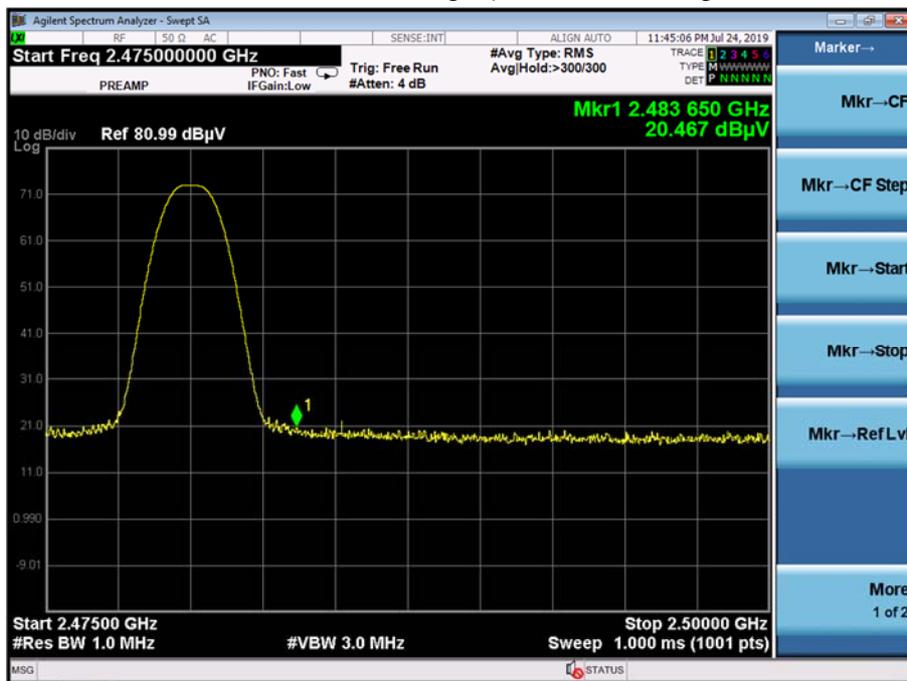
Frequency [MHz]	Reading [dBuV/m]	Duty Cycle Factor [dB]	A.F.+C.L.+D.F -AMP+ATT [dB]	Ant. Pol. [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
2483.5	23.98	0.00	35.36	H	59.34	73.98	14.64	PK
2483.5	11.88	2.46	35.36	H	49.70	53.98	4.29	AV
2483.5	24.16	0.00	35.36	V	59.52	73.98	14.46	PK
2483.5	11.95	2.46	35.36	V	49.77	53.98	4.21	AV

Mode : 5.0 LE: 1M PHY Bit/s (37 Byte) Test Plots (Worst case : V)

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

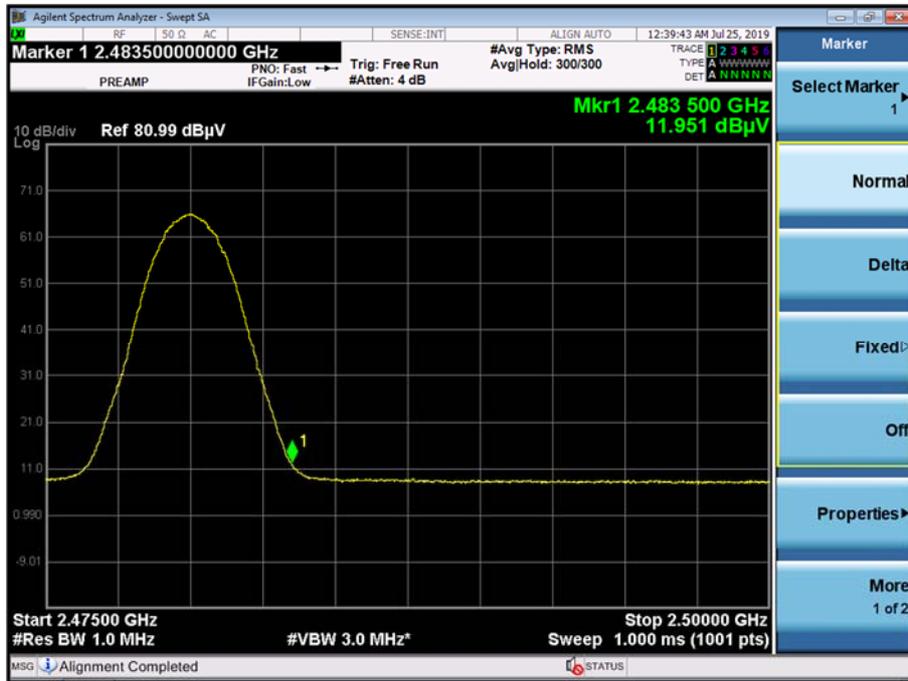


Radiated Restricted Band Edges plot – Peak Reading (Ch.39)

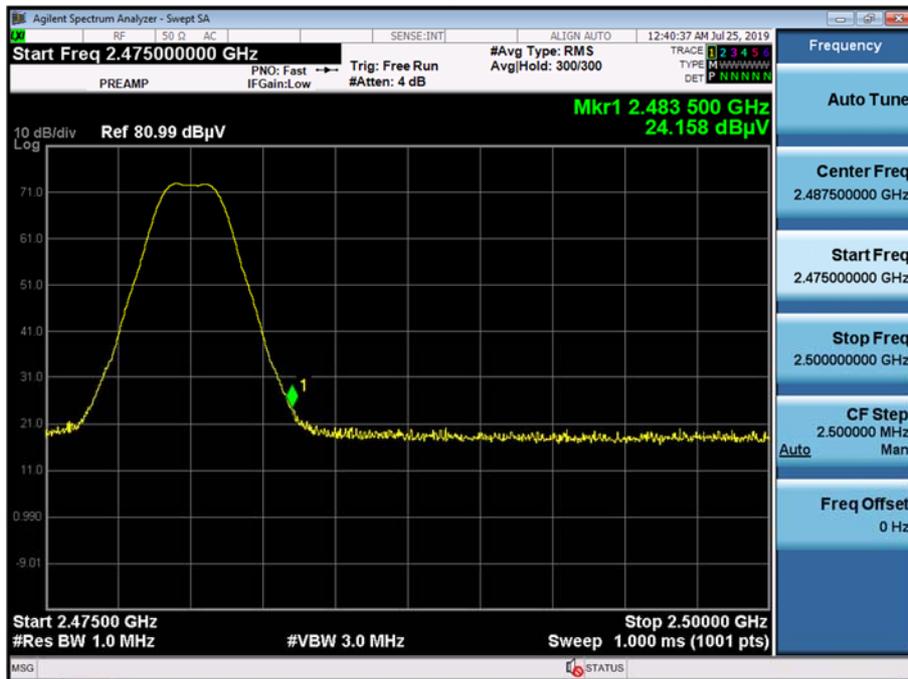


Mode : 5.0 LE: 2M PHY Bit/s (255 Byte) Test Plots (Worst case : V)

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 RECEIVER SPURIOUS EMISSIONS

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

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							

9.9 POWERLINE CONDUCTED EMISSIONS

Conducted Emissions (Line 1)

Test

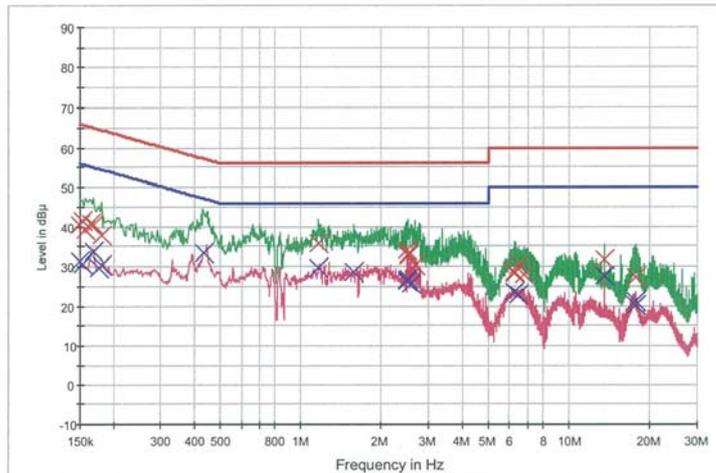
1 / 2

HCT TEST Report

Common Information

EUT: LGSBWAC94
 Manufacturer: LG Electronics, Inc.
 Test Site: SHIELD ROOM
 Operating Conditions: BLE_L1

FCC CLASS B



— FCC CLASS B_QP — FCC CLASS B_AV — Preview Result 1-PK+
— Preview Result 2-AVG x Final Result 1-QPK x Final Result 2-CAV

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	40.5	9.000	Off	L1	9.6	25.5	66.0
0.154000	41.5	9.000	Off	L1	9.6	24.3	65.8
0.158000	39.0	9.000	Off	L1	9.6	26.6	65.6
0.164000	40.8	9.000	Off	L1	9.6	24.4	65.3
0.168000	40.5	9.000	Off	L1	9.6	24.6	65.1
0.180000	37.6	9.000	Off	L1	9.6	26.8	64.5
1.166000	35.6	9.000	Off	L1	9.7	20.4	56.0
2.470000	34.1	9.000	Off	L1	9.8	21.9	56.0
2.492000	34.0	9.000	Off	L1	9.8	22.0	56.0
2.500000	33.0	9.000	Off	L1	9.8	23.0	56.0
2.504000	32.7	9.000	Off	L1	9.8	23.3	56.0
2.652000	30.4	9.000	Off	L1	9.8	25.6	56.0
6.260000	28.4	9.000	Off	L1	9.9	31.6	60.0
6.294000	28.5	9.000	Off	L1	9.9	31.5	60.0
6.494000	30.2	9.000	Off	L1	9.9	29.8	60.0
6.758000	27.9	9.000	Off	L1	9.9	32.1	60.0
13.562000	31.7	9.000	Off	L1	10.0	28.4	60.0
17.818000	27.2	9.000	Off	L1	10.1	32.8	60.0

2019-07-16

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Test

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Final Result 2

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	31.5	9.000	Off	L1	9.6	24.5	56.0
0.154000	30.8	9.000	Off	L1	9.6	25.0	55.8
0.168000	33.6	9.000	Off	L1	9.6	21.5	55.1
0.176000	29.7	9.000	Off	L1	9.6	25.0	54.7
0.180000	30.5	9.000	Off	L1	9.6	24.0	54.5
0.434000	33.4	9.000	Off	L1	9.7	13.8	47.2
1.166000	29.7	9.000	Off	L1	9.7	16.3	46.0
1.572000	28.7	9.000	Off	L1	9.8	17.3	46.0
2.486000	26.4	9.000	Off	L1	9.8	19.6	46.0
2.494000	26.8	9.000	Off	L1	9.8	19.2	46.0
2.512000	26.9	9.000	Off	L1	9.8	19.1	46.0
2.586000	25.6	9.000	Off	L1	9.8	20.4	46.0
6.294000	23.4	9.000	Off	L1	9.9	26.6	50.0
6.494000	22.8	9.000	Off	L1	9.9	27.2	50.0
6.502000	22.9	9.000	Off	L1	9.9	27.1	50.0
13.562000	27.7	9.000	Off	L1	10.0	22.3	50.0
17.720000	21.1	9.000	Off	L1	10.1	28.9	50.0
17.818000	20.2	9.000	Off	L1	10.1	29.8	50.0

2019-07-16

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Conducted Emissions (Line 2)

Test

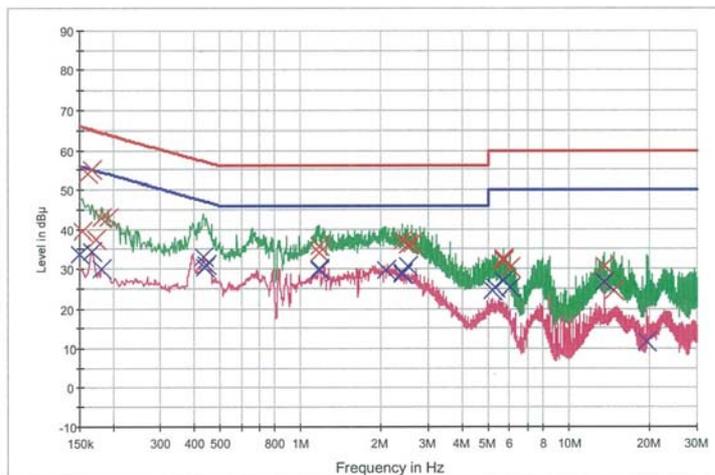
1 / 2

HCT TEST Report

Common Information

EUT: LGSBWAC94
 Manufacturer: LG Electronics, Inc.
 Test Site: SHIELD ROOM
 Operating Conditions: BLE_N

FCC CLASS B



— FCC CLASS B_QP — FCC CLASS B_AV — Preview Result 1-PK+
 — Preview Result 2-AVG × Final Result 1-QPK × Final Result 2-CAV

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.154000	39.6	9.000	Off	N	9.6	26.2	65.8
0.160000	54.0	9.000	Off	N	9.6	11.5	65.5
0.166000	55.2	9.000	Off	N	9.6	10.0	65.2
0.172000	37.5	9.000	Off	N	9.6	27.4	64.9
0.180000	43.0	9.000	Off	N	9.6	21.5	64.5
0.192000	42.7	9.000	Off	N	9.6	21.2	63.9
1.170000	35.7	9.000	Off	N	9.7	20.3	56.0
1.178000	34.2	9.000	Off	N	9.7	21.8	56.0
2.396000	37.0	9.000	Off	N	9.7	19.0	56.0
2.404000	37.1	9.000	Off	N	9.7	18.9	56.0
2.520000	36.1	9.000	Off	N	9.7	19.9	56.0
2.596000	36.3	9.000	Off	N	9.7	19.7	56.0
5.714000	32.7	9.000	Off	N	9.9	27.3	60.0
5.718000	32.5	9.000	Off	N	9.9	27.5	60.0
5.722000	32.0	9.000	Off	N	9.9	28.0	60.0
6.020000	30.4	9.000	Off	N	9.9	29.6	60.0
13.558000	30.8	9.000	Off	N	10.0	29.2	60.0
14.614000	24.5	9.000	Off	N	10.1	35.5	60.0

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Final Result 2

Frequency (MHz)	CAverage (dBuV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.150000	33.7	9.000	Off	N	9.6	22.3	56.0
0.166000	34.3	9.000	Off	N	9.6	20.9	55.2
0.180000	29.9	9.000	Off	N	9.6	24.6	54.5
0.434000	32.9	9.000	Off	N	9.6	14.2	47.2
0.442000	30.4	9.000	Off	N	9.6	16.6	47.0
0.446000	31.1	9.000	Off	N	9.6	15.8	46.9
1.170000	29.9	9.000	Off	N	9.7	16.1	46.0
1.178000	29.6	9.000	Off	N	9.7	16.4	46.0
2.076000	29.6	9.000	Off	N	9.7	16.4	46.0
2.396000	28.5	9.000	Off	N	9.7	17.5	46.0
2.404000	28.8	9.000	Off	N	9.7	17.2	46.0
2.520000	30.6	9.000	Off	N	9.7	15.4	46.0
5.178000	24.7	9.000	Off	N	9.8	25.3	50.0
5.330000	25.1	9.000	Off	N	9.8	24.9	50.0
5.718000	26.9	9.000	Off	N	9.9	23.1	50.0
6.020000	25.3	9.000	Off	N	9.9	24.7	50.0
13.558000	26.7	9.000	Off	N	10.0	23.3	50.0
19.526000	11.8	9.000	Off	N	10.2	38.2	50.0

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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	06/18/2019	Annual	100033
ESPAC	SU-642 /Temperature Chamber	03/12/2019	Annual	0093008124
Agilent	N9020A / Signal Analyzer	05/23/2019	Annual	MY51110085
Agilent	N9030A / Signal Analyzer	01/10/2019	Annual	MY49431210
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	05/24/2019	Annual	05001
Hewlett Packard	E3632A / DC Power Supply	06/18/2019	Annual	KR75303960
Agilent	8493C / Attenuator(10 dB)	07/02/2019	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
Rohde & Schwarz	CBT / Bluetooth Tester	05/16/2019	Annual	100422

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.

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
Emco	2090 / Controller	N/A	N/A	060520
Ets	Turn Table	N/A	N/A	N/A
Rohde & Schwarz	Loop Antenna	08/23/2018	Biennial	1513-175
Schwarzbeck	VULB 9160 / Hybrid Antenna	08/09/2018	Biennial	3368
Schwarzbeck	BBHA 9120D / Horn Antenna	11/21/2017	Biennial	9120D-1191
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	12/04/2017	Biennial	BBHA9170541
Rohde & Schwarz	FSP(9 kHz ~ 30 GHz) / Spectrum Analyzer	09/19/2018	Annual	836650/016
Rohde & Schwarz	FSV40-N / Spectrum Analyzer	09/19/2018	Annual	101068-SZ
Wainwright Instruments	WHKX10-2700-3000-18000-40SS / High Pass Filter	01/03/2019	Annual	4
Wainwright Instruments	WHKX8-6090-7000-18000-40SS / High Pass Filter	01/03/2019	Annual	5
Wainwright Instruments	WRCJV2400/2483.5-2370/2520-60/12SS / Band Reject Filter	06/19/2019	Annual	2
Wainwright Instruments	WRCJV5100/5850-40/50-8EEK / Band Reject Filter	01/03/2019	Annual	2
Api tech.	18B-03 / Attenuator (3 dB)	06/04/2019	Annual	1
WEINSCHTEL	56-10 / Attenuator(10 dB)	10/10/2018	Annual	72316
CERNEX	CBLU1183540B-01/Broadband Bench Top LNA	01/03/2019	Annual	28549
CERNEX	CBL06185030 / Broadband Low Noise Amplifier	01/03/2019	Annual	24615
CERNEX	CBL18265035 / Power Amplifier	01/03/2019	Annual	22966
CERNEX	CBL26405040 / Power Amplifier	06/18/2019	Annual	25956
TESCOM	TC-3000C / Bluetooth Tester	03/26/2019	Annual	3000C000276

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-1908-FI003-P