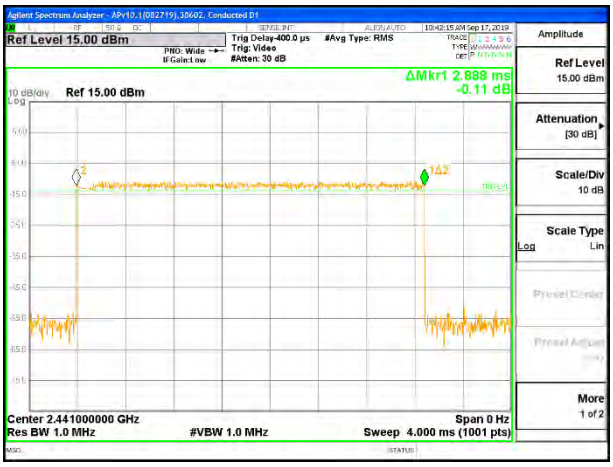
PULSE WIDTH – 3DH1

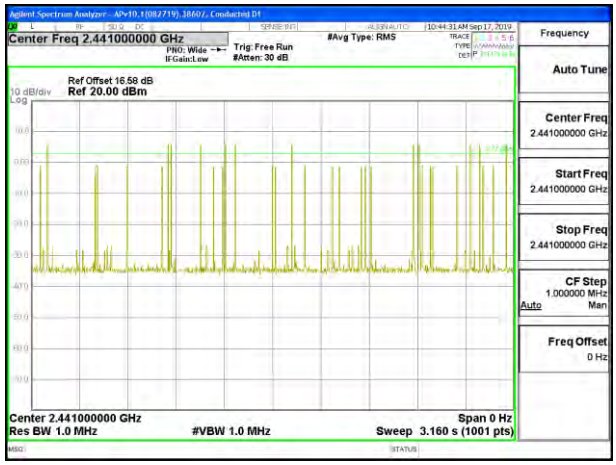
PULSE WIDTH – 3DH3



PULSE WIDTH – 3DH5

NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – 3DH1

NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – 3DH3



NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – 3DH5

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8.10. OUTPUT POWER

LIMITS

§15.247 (b) (1)

RSS-247 (5.4) (b)

The maximum antenna gain is less than 6 dBi, therefore the limit is 30 dBm. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the power meter to allow for a gated peak reading of power.

DIRECTIONAL ANTENNA GAIN

For 1 TX:
There is only one transmitter output therefore the directional gain is equal to the antenna gain.

For 2 TX:

Tx chains are correlated for power due to the device supporting Beamforming mode documented in section 8.11. The directional gains are as follows:

Band (GHz)	UAT 1 Antenna Gain (dBi)	LAT 3 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
2.4	-2.2	-0.4	-1.21	1.76

RESULTS

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8.10.1. HIGH POWER BASIC DATA RATE GFSK MODULATION

UAT 1

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	18.92	21	-2.08
Middle	2441	18.98	21	-2.02
High	2480	18.89	21	-2.11

LAT 3

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	19.88	21	-1.12
Middle	2441	19.93	21	-1.07
High	2480	19.87	21	-1.13

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8.10.2. HIGH POWER ENHANCED DATA RATE 8PSK MODULATION

UAT 1

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	18.33	21	-2.67
Middle	2441	18.34	21	-2.66
High	2480	18.42	21	-2.58

LAT 3

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	18.44	21	-2.56
Middle	2441	18.39	21	-2.61
High	2480	18.31	21	-2.69

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8.10.3. HIGH POWER ENHANCED DATA RATE DQPSK MODULATION

UAT 1

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	18.29	21	-2.71
Middle	2441	18.40	21	-2.60
High	2480	18.25	21	-2.75

LAT 3

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	18.36	21	-2.64
Middle	2441	18.39	21	-2.61
High	2480	18.27	21	-2.73

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8.10.4. LOW POWER BASIC DATA RATE GFSK MODULATION

UAT 1

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	12.46	21	-8.54
Middle	2441	12.55	21	-8.45
High	2480	12.46	21	-8.54

LAT 3

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	12.48	21	-8.52
Middle	2441	12.46	21	-8.54
High	2480	12.55	21	-8.45

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8.10.5. LOW POWER ENHANCED DATA RATE 8PSK MODULATION

UAT 1

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	11.35	21	-9.65
Middle	2441	11.39	21	-9.61
High	2480	11.44	21	-9.56

LAT 3

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	11.34	21	-9.66
Middle	2441	11.44	21	-9.56
High	2480	11.38	21	-9.62

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8.10.6. LOW POWER ENHANCED DATA RATE DQPSK MODULATION

UAT 1

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	11.25	21	-9.75
Middle	2441	11.41	21	-9.59
High	2480	11.34	21	-9.66

LAT 3

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	11.32	21	-9.68
Middle	2441	11.37	21	-9.63
High	2480	11.36	21	-9.64

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8.11. BEAMFORMING OUTPUT POWER

8.11.1. HIGH POWER BASIC DATA RATE GFSK MODULATION

2TX UAT 1 + LAT 3 TxBF Mode

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power UAT 1 (dBm)	Output Power LAT 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	17.04	17.01	20.04	21	-0.96
Middle	2441	17.05	17.12	20.10	21	-0.90
High	2480	16.98	16.93	19.97	21	-1.03

8.11.2. HIGH POWER ENHANCED DATA RATE QPSK MODULATION

2TX UAT 1 + LAT 3 TxBF Mode

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power UAT 1 (dBm)	Output Power LAT 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	16.68	16.75	19.73	21	-1.27
Middle	2441	16.80	16.84	19.83	21	-1.17
High	2480	16.71	16.71	19.72	21	-1.28

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8.11.3. HIGH POWER ENHANCED DATA RATE 8PSK MODULATION

2TX UAT 1 + LAT 3 TxBF Mode

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power UAT 1 (dBm)	Output Power LAT 1 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	16.73	16.83	19.79	21	-1.21
Middle	2441	16.75	16.87	19.82	21	-1.18
High	2480	16.77	16.89	19.84	21	-1.16

8.11.4. LOW POWER BASIC DATA RATE GFSK MODULATION

2TX UAT 1 + LAT 3 TxBF Mode

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power UAT 1 (dBm)	Output Power LAT 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	12.49	12.53	15.52	21	-5.48
Middle	2441	12.44	12.54	15.50	21	-5.50
High	2480	12.5	12.55	15.54	21	-5.46

8.11.5. LOW POWER ENHANCED DATA RATE QPSK MODULATION

2TX UAT 1 + LAT 3 TxBF Mode

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power UAT 1 (dBm)	Output Power LAT 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	11.26	11.30	14.29	21	-6.71
Middle	2441	11.35	11.32	14.35	21	-6.65
High	2480	11.34	11.35	14.36	21	-6.64

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8.11.6. LOW POWER ENHANCED DATA RATE 8PSK MODULATION

2TX UAT 1 + LAT 3 TxBF Mode

Tested By:	20773
Date:	12/12/2019

Channel	Frequency (MHz)	Output Power UAT 1 (dBm)	Output Power LAT 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	11.30	11.35	14.34	21	-6.66
Middle	2441	11.36	11.28	14.33	21	-6.67
High	2480	11.33	11.38	14.37	21	-6.63

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8.12. AVERAGE POWER

LIMITS

None; for reporting purposes only

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the power meter to allow for a gated average reading of power.

RESULTS

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8.12.1. HIGH POWER BASIC DATA RATE GFSK MODULATION

UAT 1

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	18.69
Middle	2441	18.71
High	2480	18.64

LAT 3

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	19.64
Middle	2441	19.65
High	2480	19.60

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8.12.2. HIGH POWER ENHANCED DATA RATE 8PSK MODULATION

UAT 1

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	15.67
Middle	2441	15.72
High	2480	15.71

LAT 3

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	15.71
Middle	2441	15.69
High	2480	15.71

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8.12.3. HIGH POWER ENHANCED DATA RATE DQPSK MODULATION

UAT 1

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	15.64
Middle	2441	15.68
High	2480	15.70

LAT 3

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	15.68
Middle	2441	15.65
High	2480	15.69

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8.12.4. LOW POWER BASIC DATA RATE GFSK MODULATION

UAT 1

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	12.20
Middle	2441	12.25
High	2480	12.22

LAT 3

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	12.21
Middle	2441	12.18
High	2480	12.24

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8.12.5. LOW POWER ENHANCED DATA RATE 8PSK MODULATION

UAT 1

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	8.64
Middle	2441	8.73
High	2480	8.75

LAT 3

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	8.64
Middle	2441	8.71
High	2480	8.74

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8.12.6. LOW POWER ENHANCED DATA RATE DQPSK MODULATION

UAT 1

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	8.59
Middle	2441	8.72
High	2480	8.69

LAT 3

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	8.71
Middle	2441	8.67
High	2480	8.74

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8.13. BEAMFORMING AVERAGE POWER

8.13.1. HIGH POWER BASIC DATA RATE GFSK MODULATION

2TX UAT 1 + LAT 3 TxBF Mode

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power UAT 1 (dBm)	Average Power LAT 3 (dBm)	Total Average Power (dBm)
Low	2402	16.67	16.68	19.69
Middle	2441	16.71	16.73	19.73
High	2480	16.64	16.61	19.64

8.13.2. HIGH POWER ENHANCED RATE QPSK MODULATION

2TX UAT 1 + LAT 3 TxBF Mode

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power UAT 1 (dBm)	Average Power LAT 3 (dBm)	Total Average Power (dBm)
Low	2402	14.14	14.15	17.16
Middle	2441	14.23	14.25	17.25
High	2480	14.16	14.17	17.18

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8.13.3. HIGH POWER ENHANCED DATA RATE 8PSK MODULATION

2TX UAT 1 + LAT 3 TxBF Mode

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power UAT 1 (dBm)	Average Power LAT 3 (dBm)	Total Average Power (dBm)
Low	2402	14.17	14.22	17.21
Middle	2441	14.14	14.20	17.18
High	2480	14.17	14.23	17.21

8.13.4. LOW POWER BASIC DATA RATE GFSK MODULATION

2TX UAT 1 + LAT 3 TxBF Mode

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power UAT 1 (dBm)	Average Power LAT 3 (dBm)	Total Average Power (dBm)
Low	2402	12.14	12.21	15.19
Middle	2441	12.11	12.17	15.15
High	2480	12.19	12.22	15.22

8.13.5. LOW POWER ENHANCED DATA RATE QPSK MODULATION

2TX UAT 1 + LAT 3 TxBF Mode

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power UAT 1 (dBm)	Average Power LAT 3 (dBm)	Total Average Power (dBm)
Low	2402	8.69	8.71	11.71
Middle	2441	8.74	8.68	11.72
High	2480	8.73	8.75	11.75

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8.13.6. LOW POWER ENHANCED DATA RATE 8PSK MODULATION

2TX UAT 1 + LAT 3 TxBF Mode

Tested By:	20773
Date	12/12/2019

Channel	Frequency (MHz)	Average Power UAT 1 (dBm)	Average Power LAT 3 (dBm)	Total Average Power (dBm)
Low	2402	8.69	8.65	11.68
Middle	2441	8.73	8.62	11.69
High	2480	8.66	8.70	11.69

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8.14. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

RSS-247 5.5

Limit = -20 dBc

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer.The resolution bandwidth is set to 100 kHz.The video bandwidth is set to 300 kHz.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

The bandedges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal hopping mode.

RESULTS

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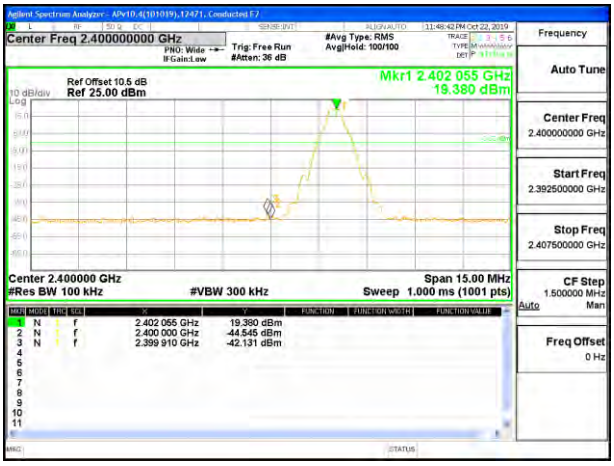
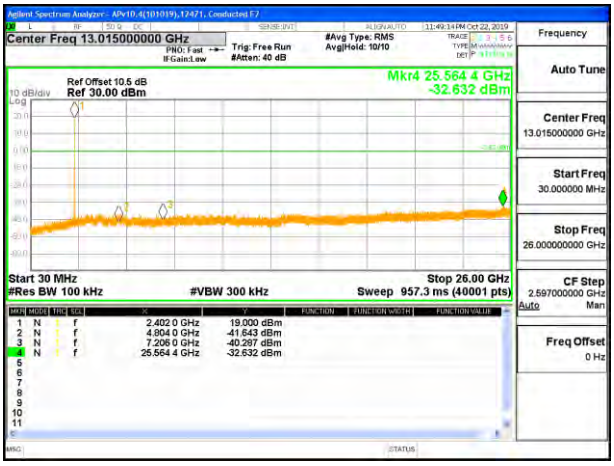
8.14.1. HIGH POWER BASIC DATA RATE GFSK MODULATION

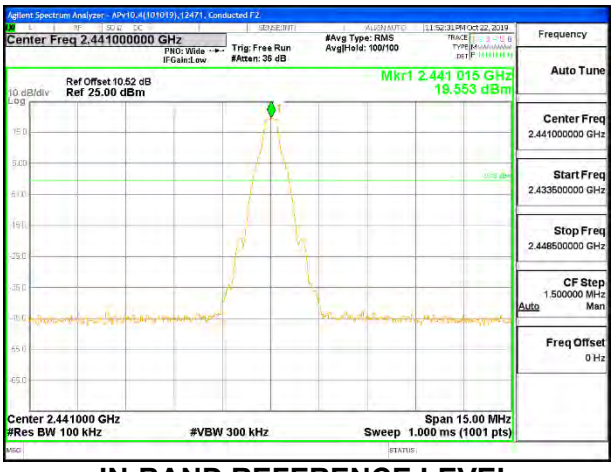
UAT 1 SPURIOUS EMISSIONS, NON-HOPPING



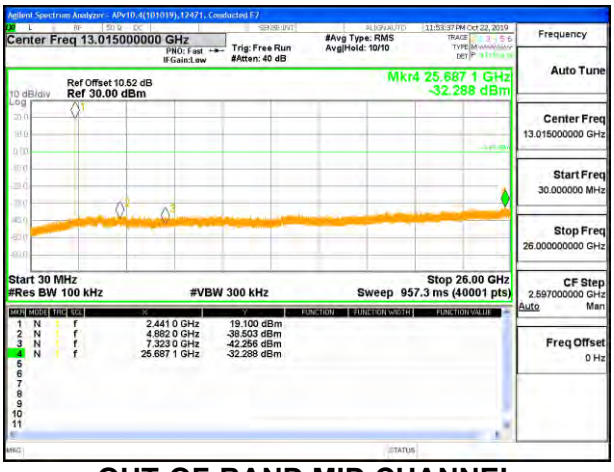
LOW CHANNEL BANDEDGE



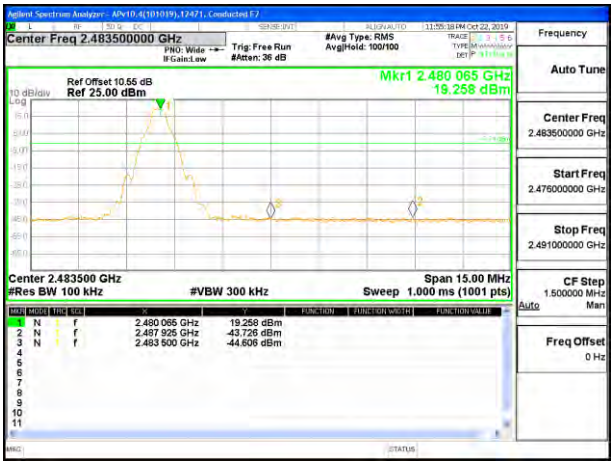
OUT-OF-BAND LOW CHANNEL



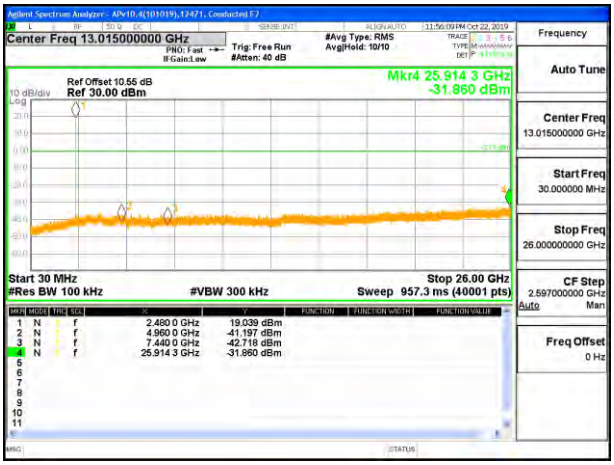
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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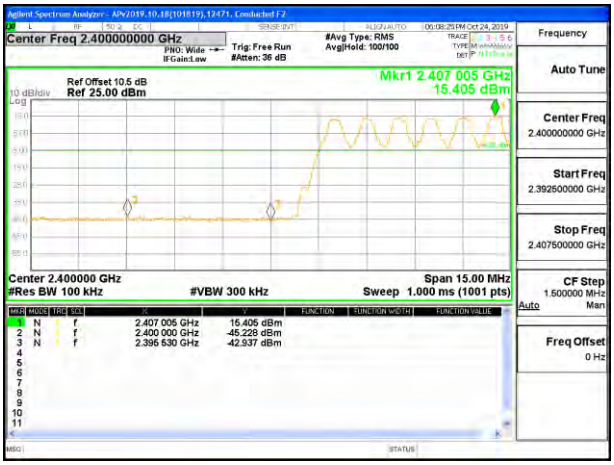
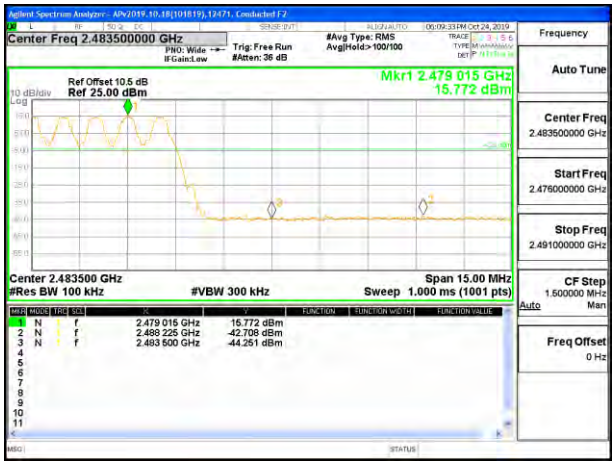
UAT 1 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE



HIGH BANDEDGE

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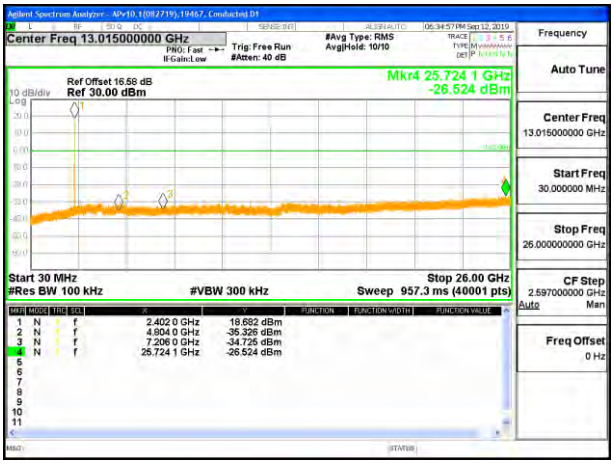
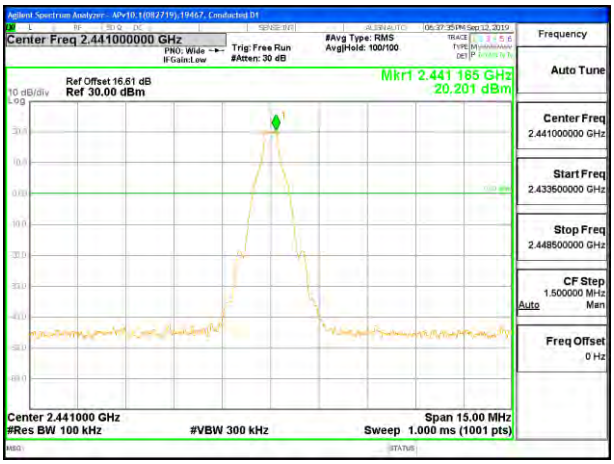
LAT 3 SPURIOUS EMISSIONS, NON-HOPPING

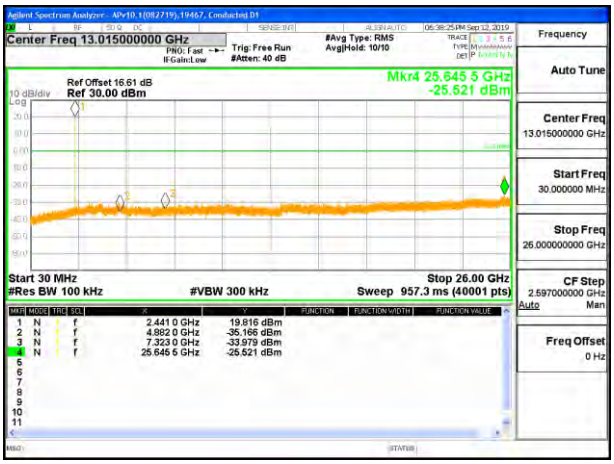
LOW CHANNEL BANDEDGE



OUT-OF-BAND LOW CHANNEL

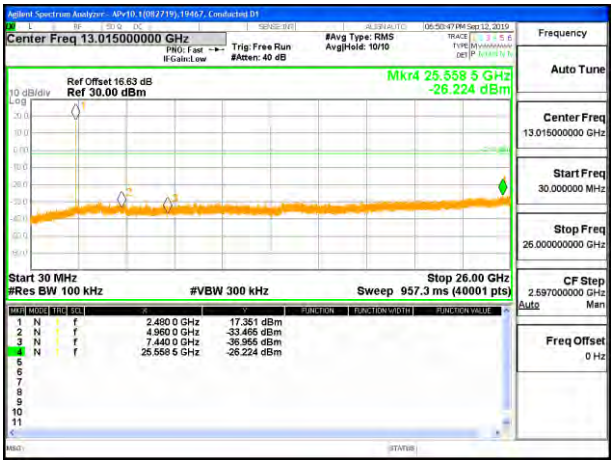


IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL

HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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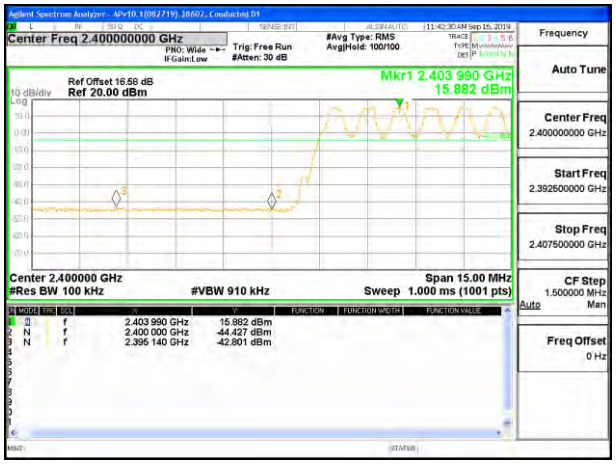
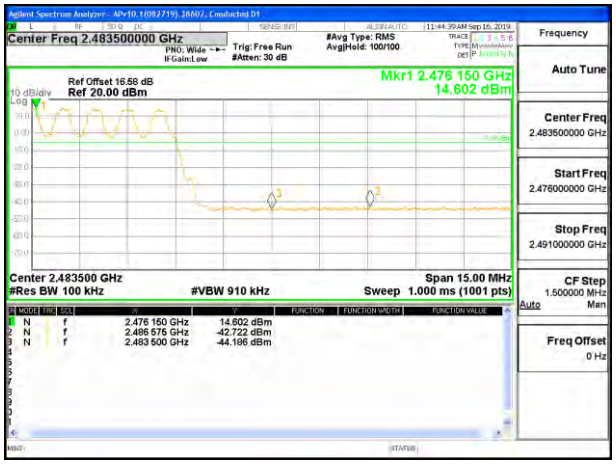
LAT 3 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE



HIGH BANDEDGE

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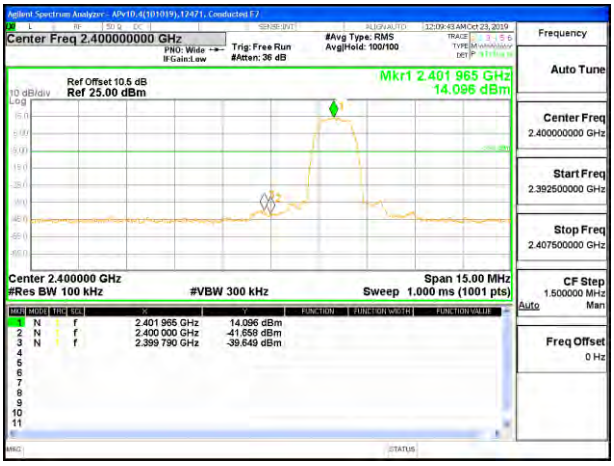
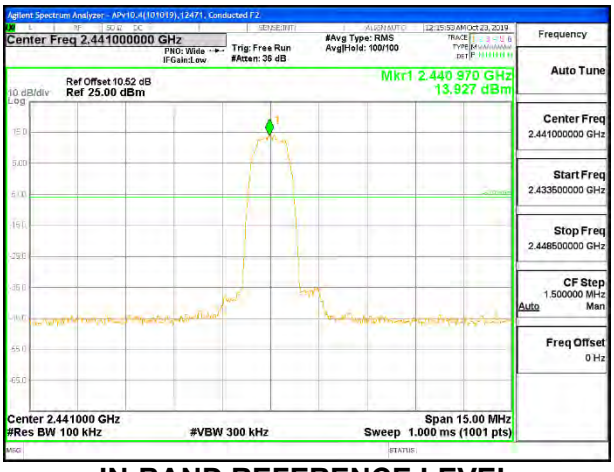
8.14.2. HIGH POWER ENHANCED DATA RATE 8PSK MODULATION

UAT 1 SPURIOUS EMISSIONS, NON-HOPPING

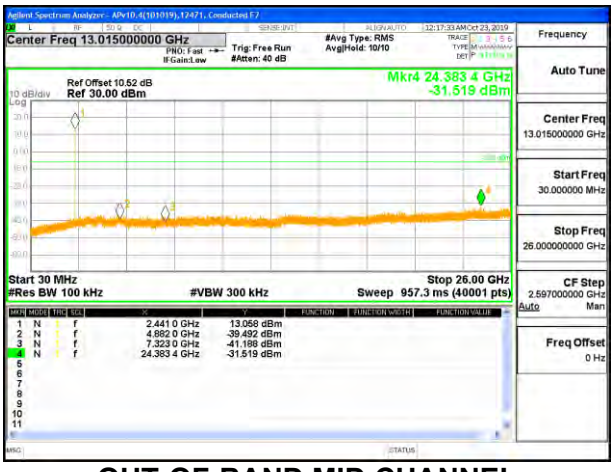


LOW CHANNEL BANDEDGE

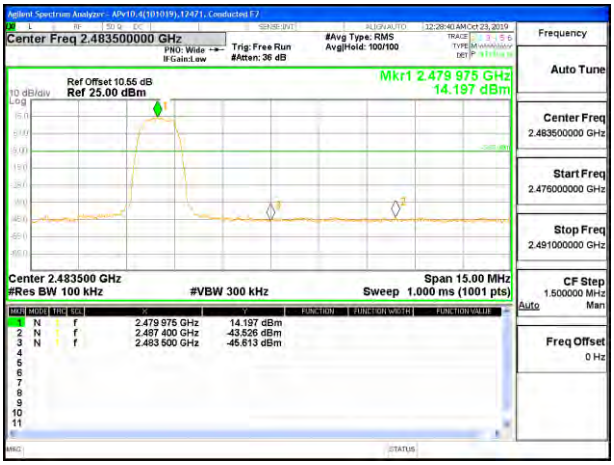
OUT-OF-BAND LOW CHANNEL



IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE

OUT-OF-BAND HIGH CHANNEL

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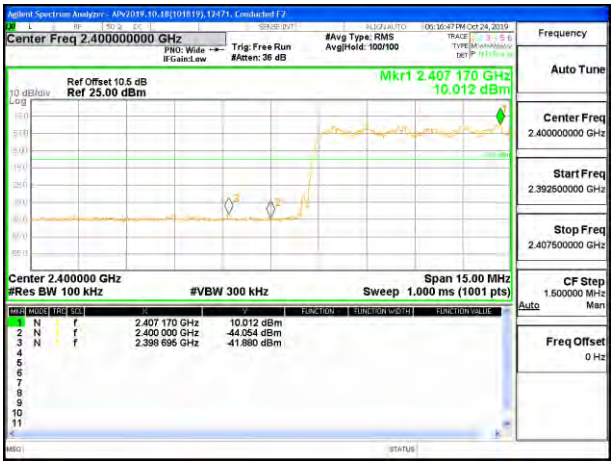
UAT 1 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE

HIGH BANDEDGE

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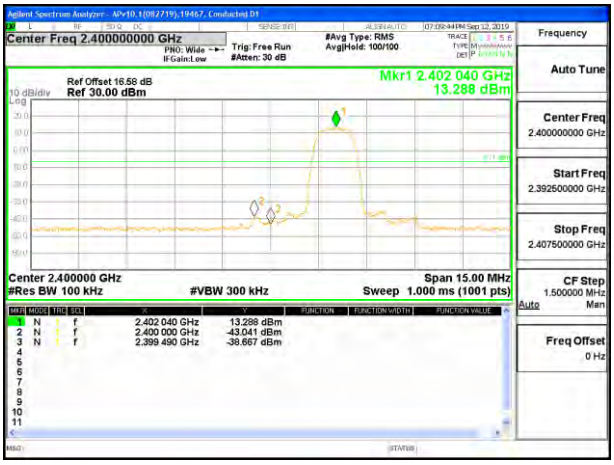
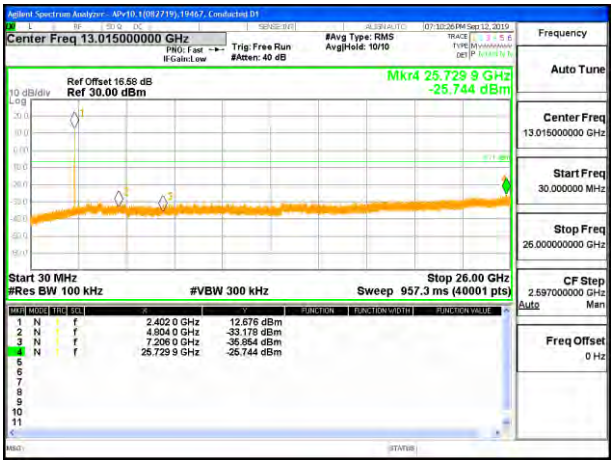
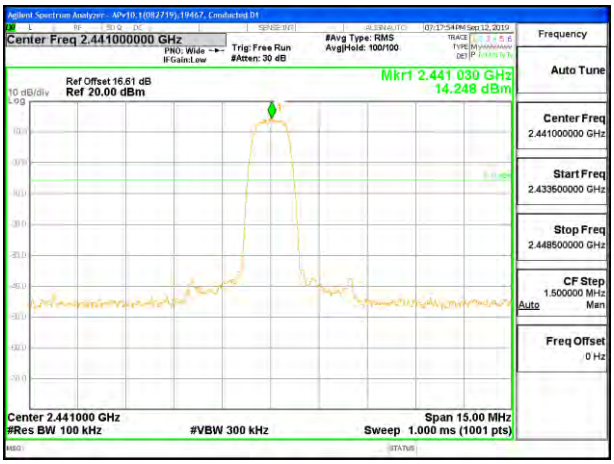
LAT 3 SPURIOUS EMISSIONS, NON-HOPPING



LOW CHANNEL BANDEDGE



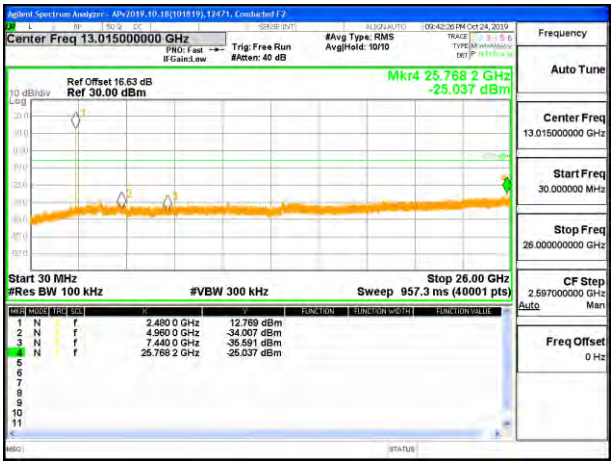
OUT-OF-BAND LOW CHANNEL



IN-BAND REFERENCE LEVEL

OUT-OF-BAND MID CHANNEL

HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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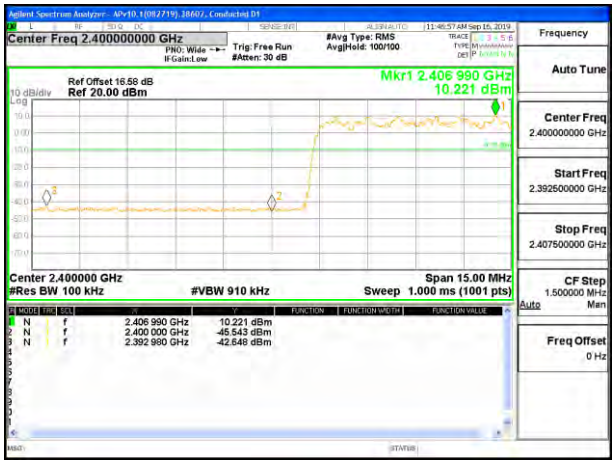
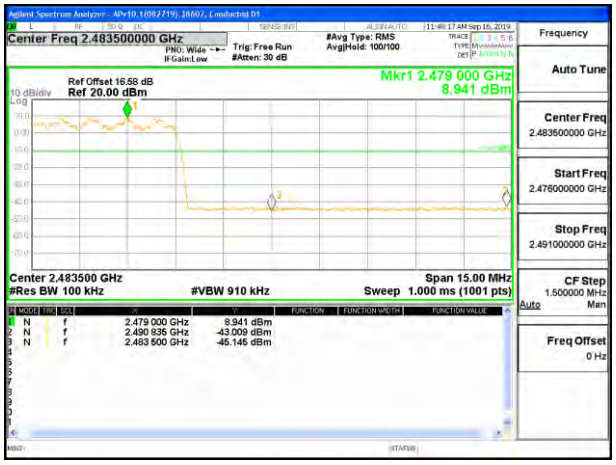
LAT 3 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE



HIGH BANDEDGE

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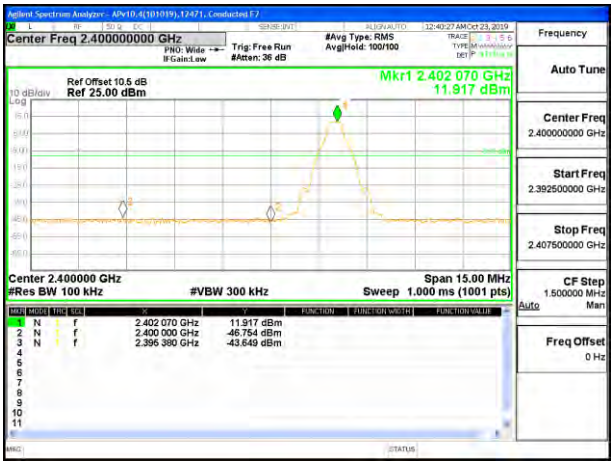
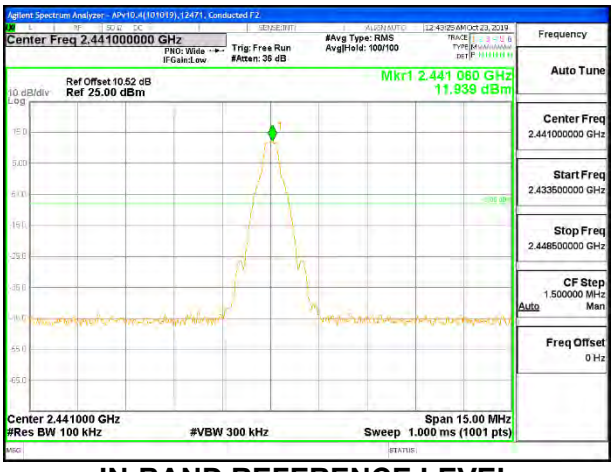
8.14.3. LOW POWER BASIC DATA RATE GFSK MODULATION

UAT 1 SPURIOUS EMISSIONS, NON-HOPPING

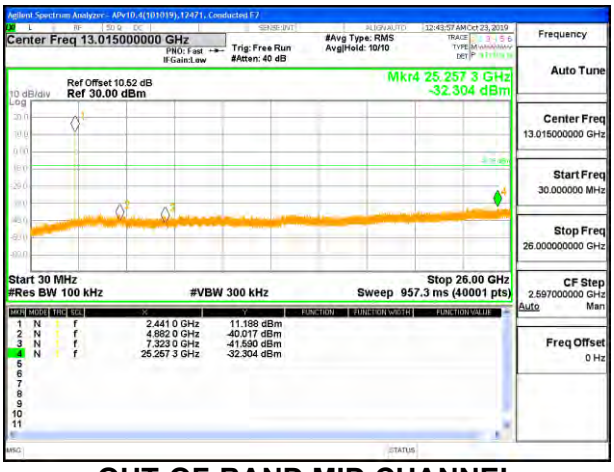


LOW CHANNEL BANDEDGE

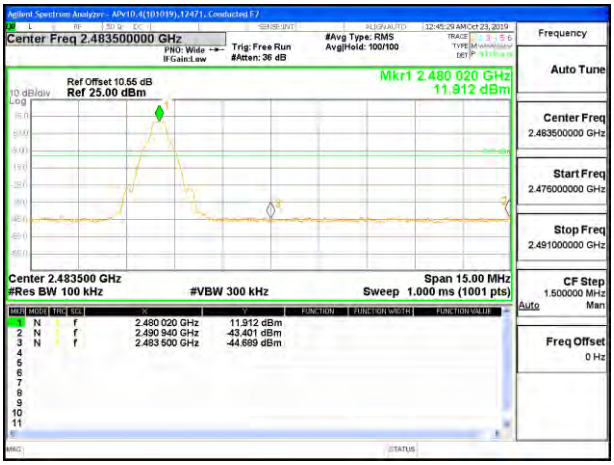
OUT-OF-BAND LOW CHANNEL



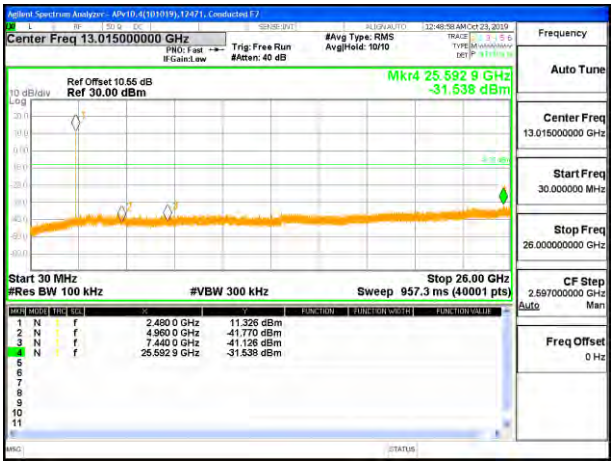
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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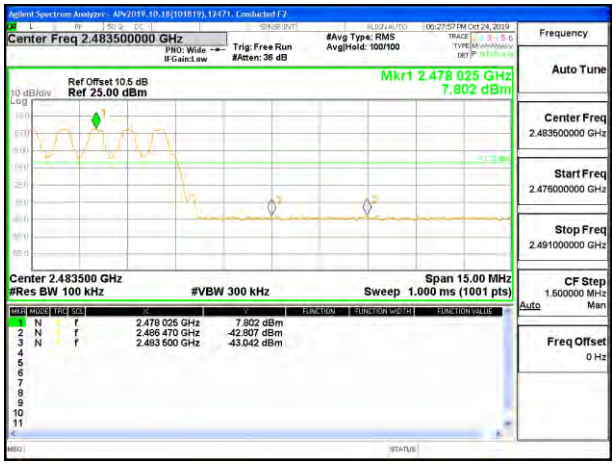
UAT 1 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

LOW BANDEDGE



HIGH BANDEDGE

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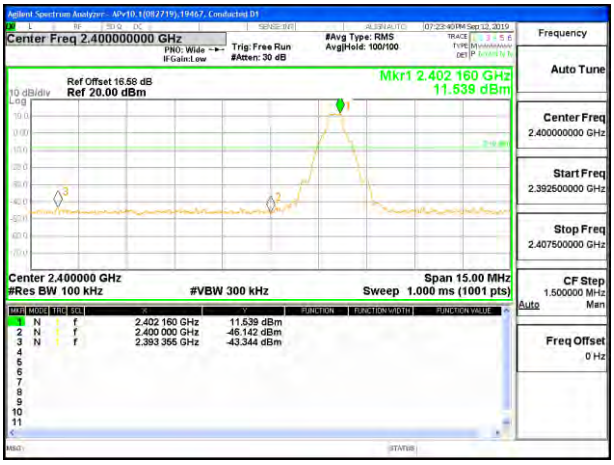
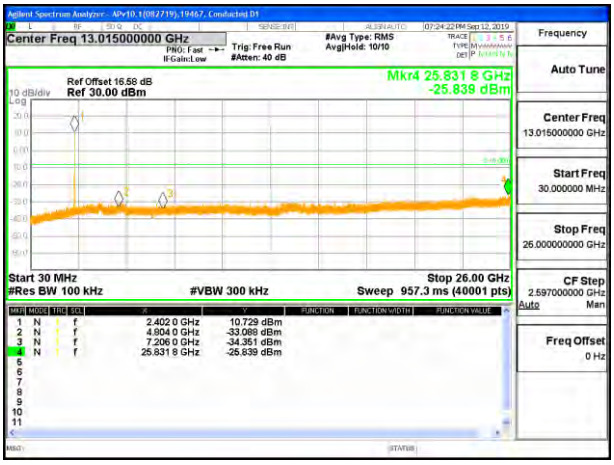
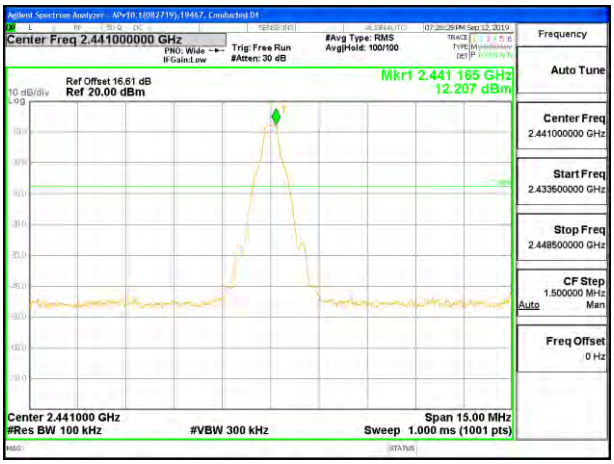
LAT 3 SPURIOUS EMISSIONS, NON-HOPPING



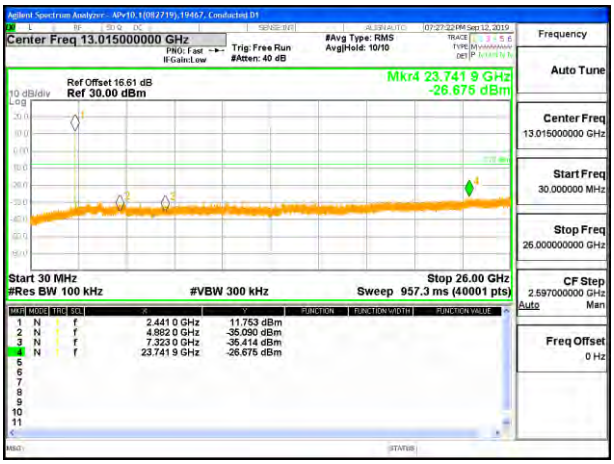
LOW CHANNEL BANDEDGE



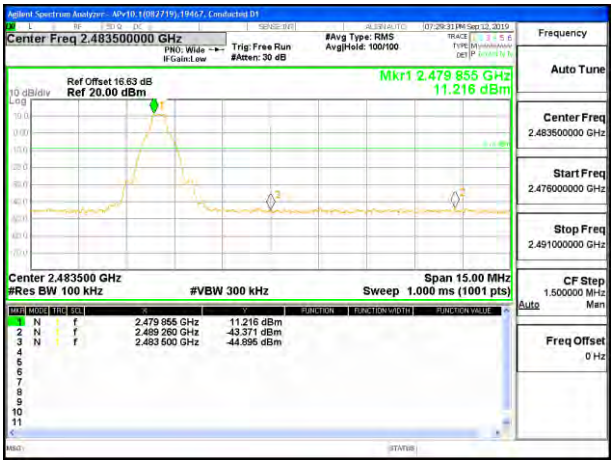
OUT-OF-BAND LOW CHANNEL



IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE

OUT-OF-BAND HIGH CHANNEL

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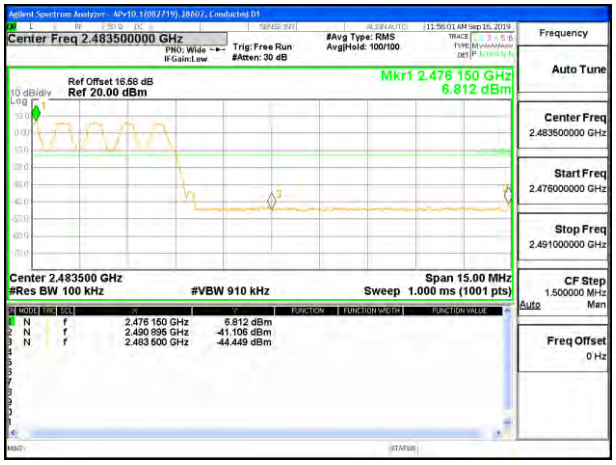
LAT 3 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

LOW BANDEDGE



HIGH BANDEDGE

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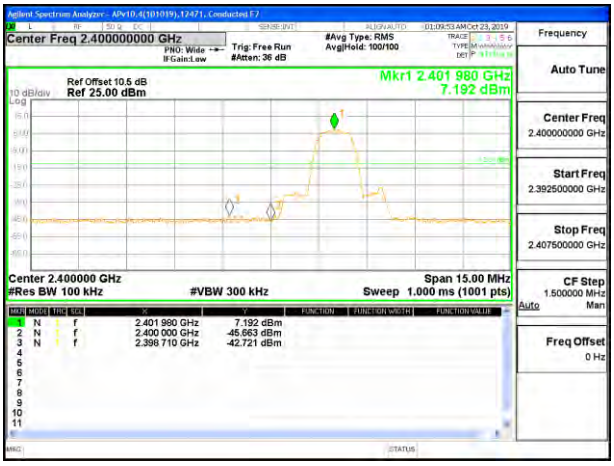
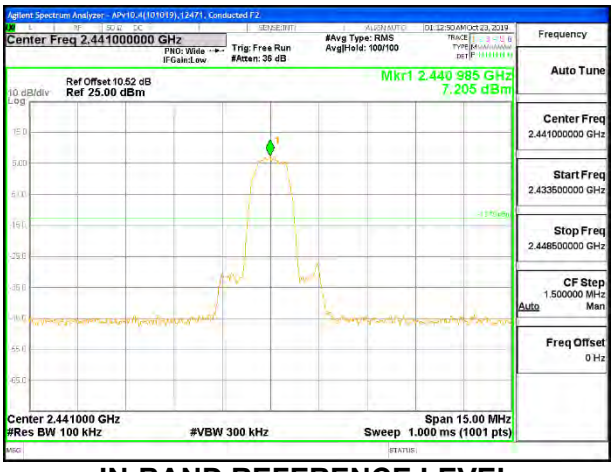
8.14.4. LOW POWER ENHANCED DATA RATE 8PSK MODULATION

UAT 1 SPURIOUS EMISSIONS, NON-HOPPING

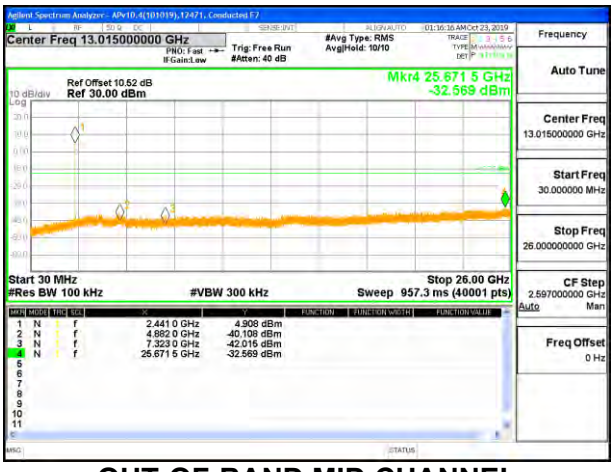


LOW CHANNEL BANDEDGE

OUT-OF-BAND LOW CHANNEL

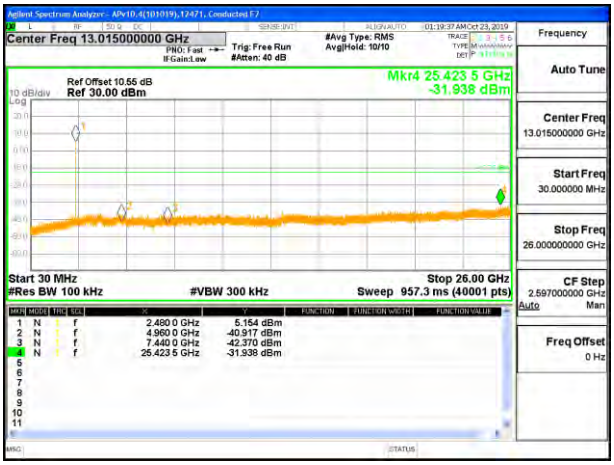


IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL

HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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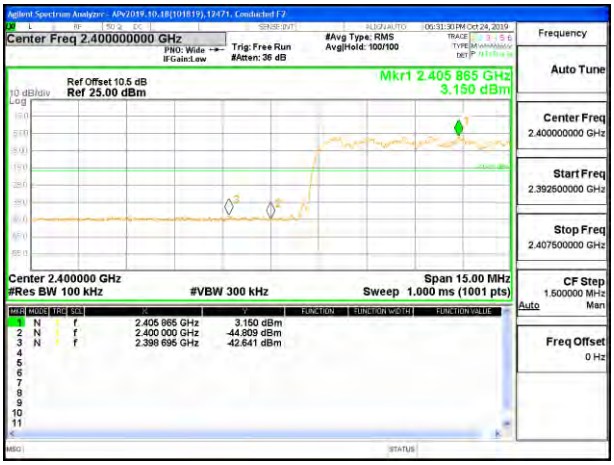
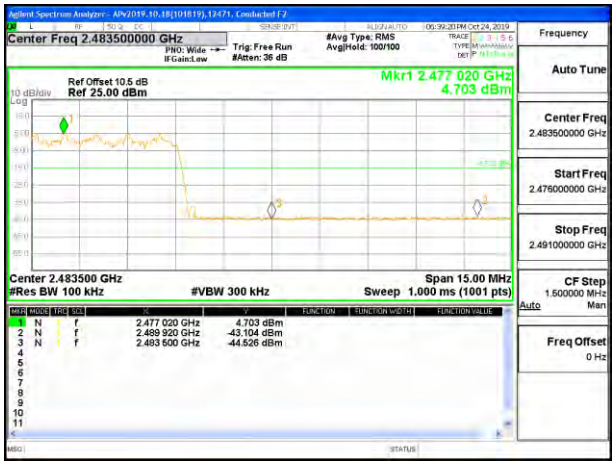
UAT 1 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE



HIGH BANDEDGE

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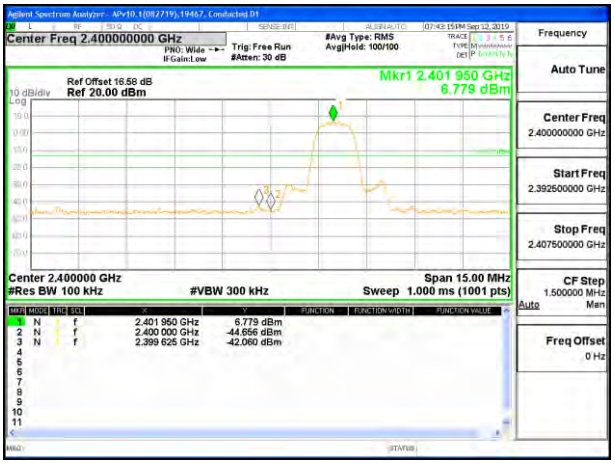
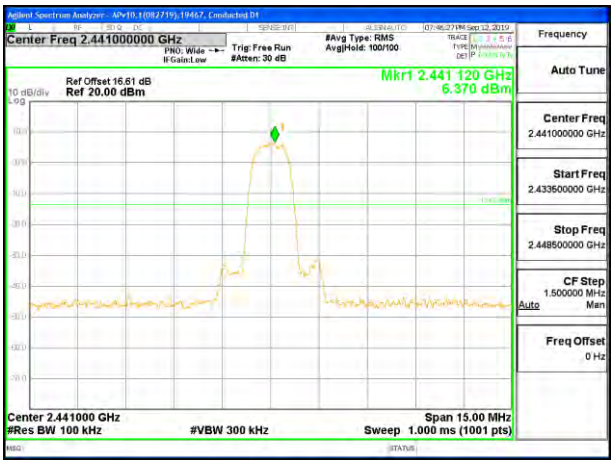
LAT 3 SPURIOUS EMISSIONS, NON-HOPPING

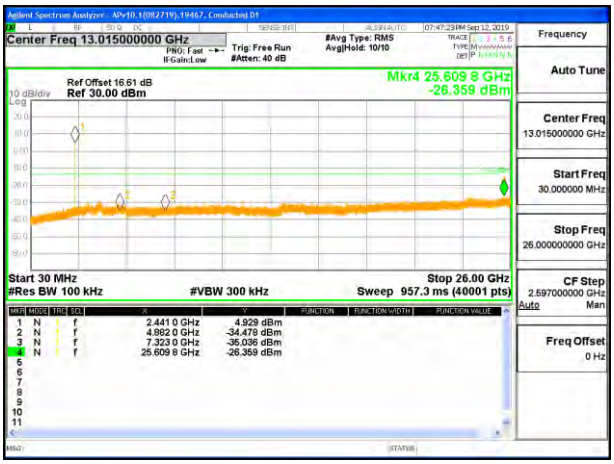


LOW CHANNEL BANDEDGE

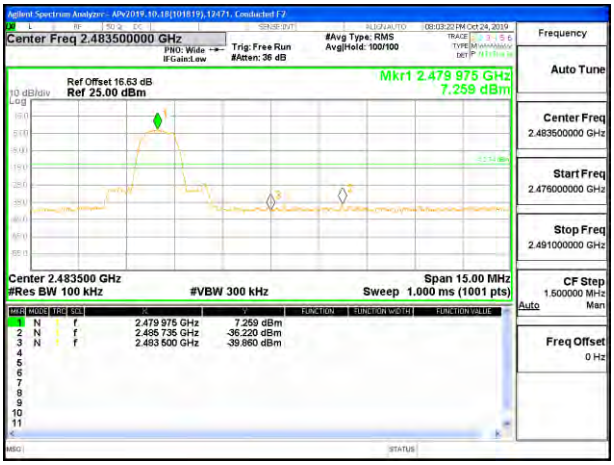
OUT-OF-BAND LOW CHANNEL



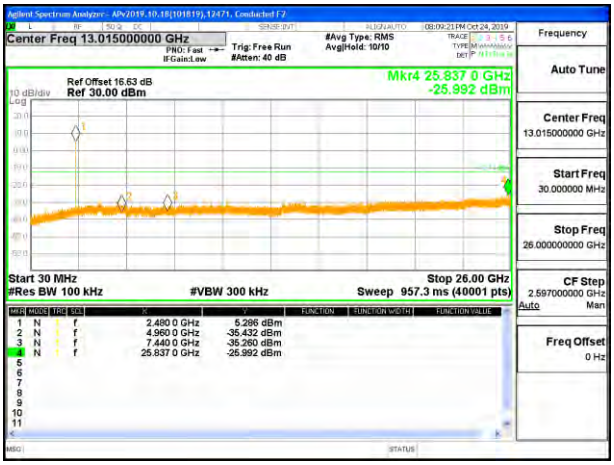
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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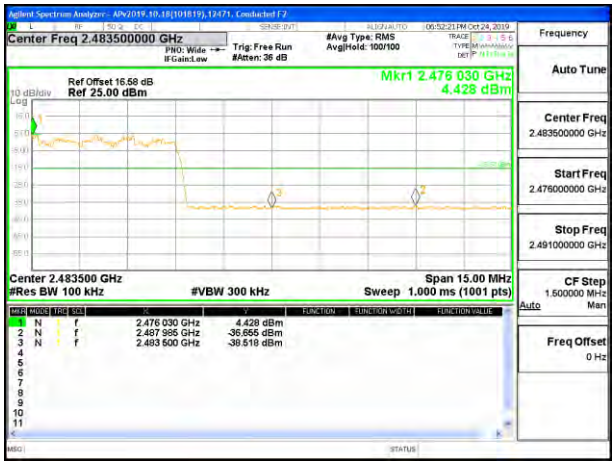
LAT 3 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

LOW BANDEDGE



HIGH BANDEDGE

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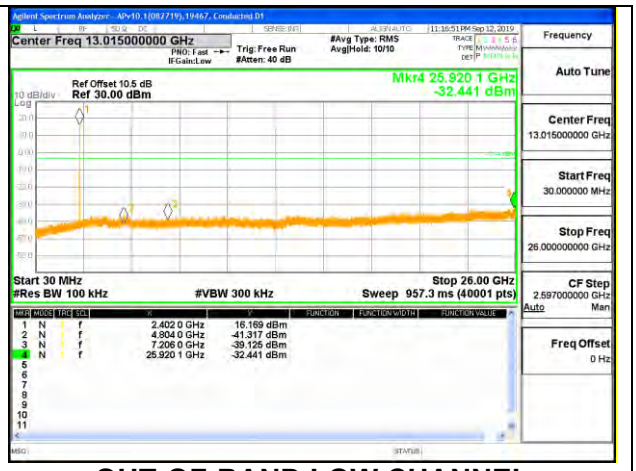
8.15. BEAMFORMING CONDUCTED SPURIOUS EMISSIONS

Note: Test procedure on beamforming mode is the same as BT BDR and EDR mode

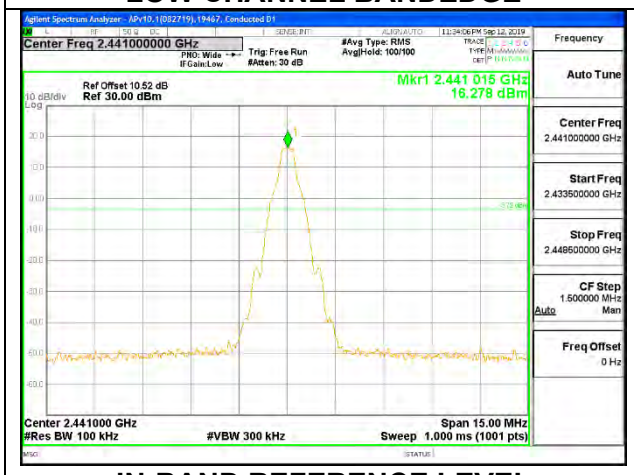
8.15.1. HIGH POWER BASIC DATA RATE GFSK MODULATION

UAT 1 SPURIOUS EMISSIONS, NON-HOPPING

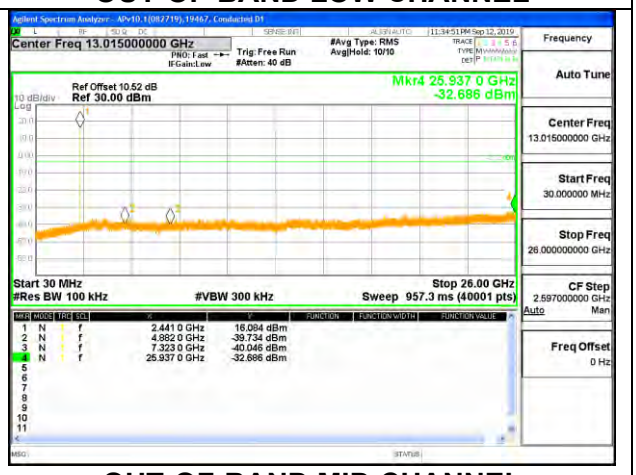
LOW CHANNEL BANDEDGE



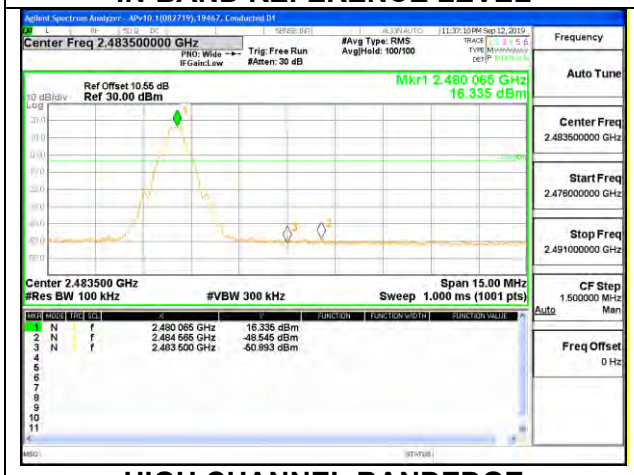
OUT-OF-BAND LOW CHANNEL



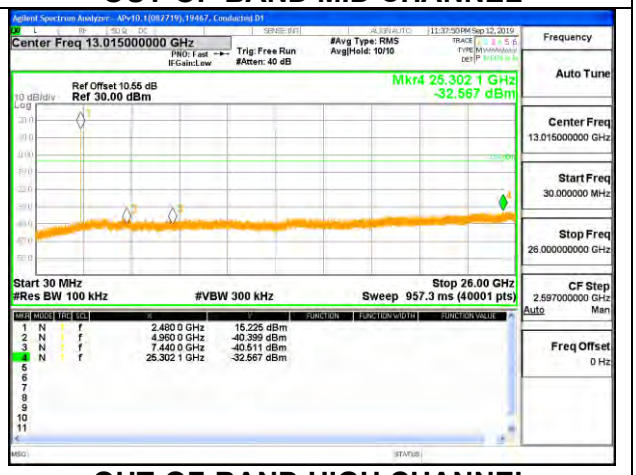
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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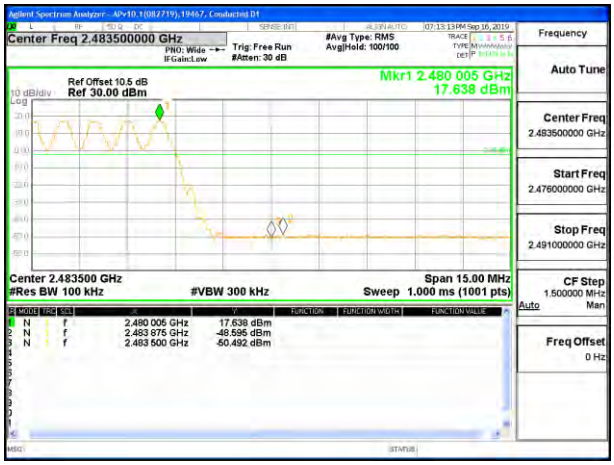
UAT 1 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

LOW BANDEDGE



HIGH BANDEDGE

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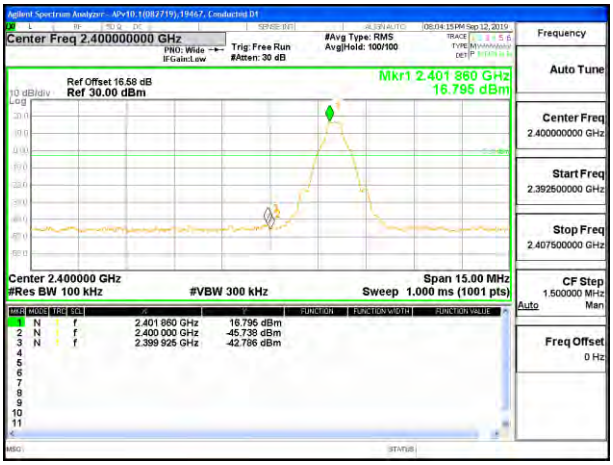
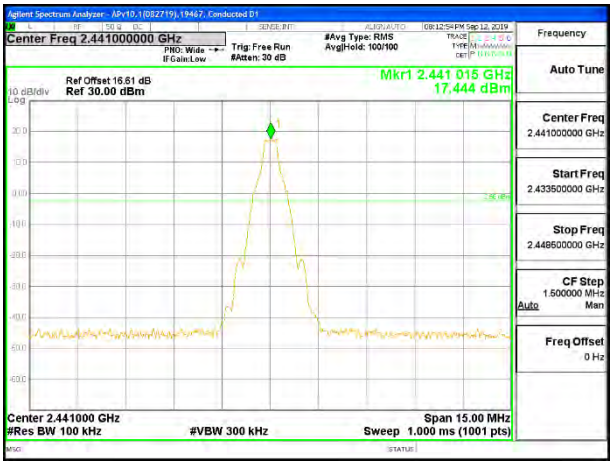
LAT 3 SPURIOUS EMISSIONS, NON-HOPPING



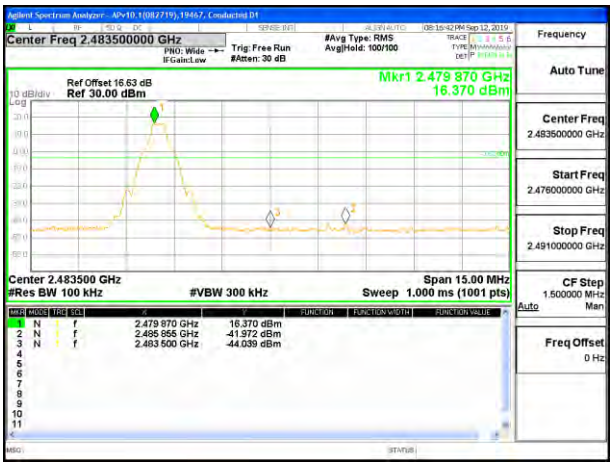
LOW CHANNEL BANDEDGE

OUT-OF-BAND LOW CHANNEL

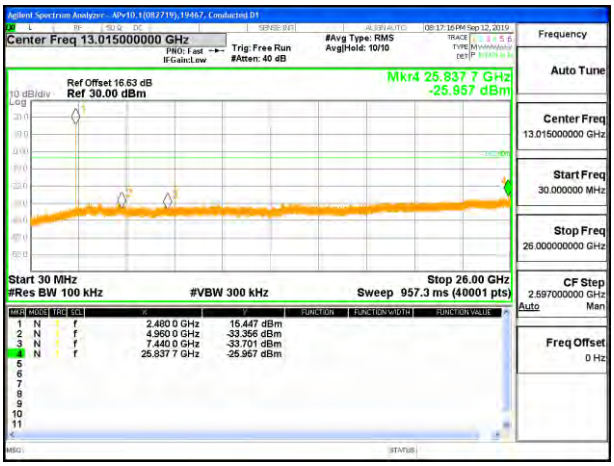


IN-BAND REFERENCE LEVEL

OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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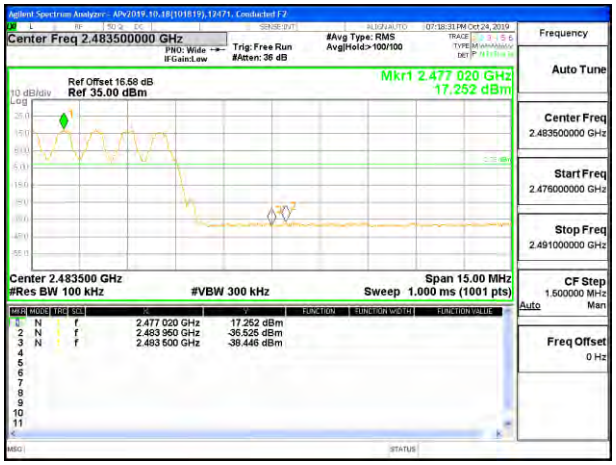
LAT 3 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

LOW BANDEDGE



HIGH BANDEDGE

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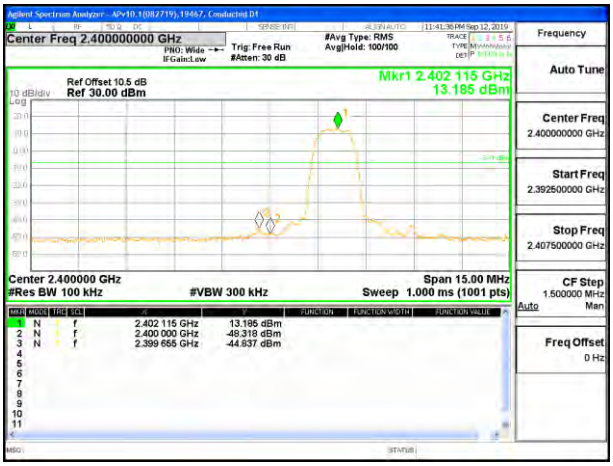
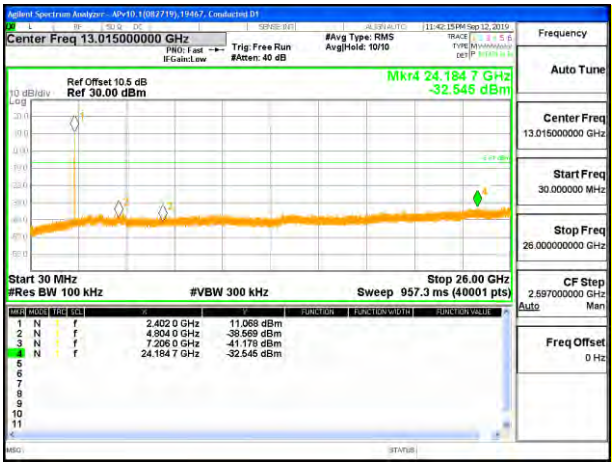
8.15.2. HIGH POWER ENHANCED DATA RATE 8PSK MODULATION

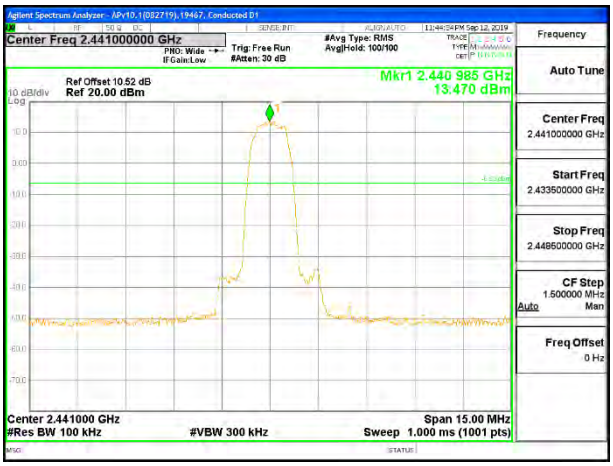
UAT 1 SPURIOUS EMISSIONS, NON-HOPPING



LOW CHANNEL BANDEDGE



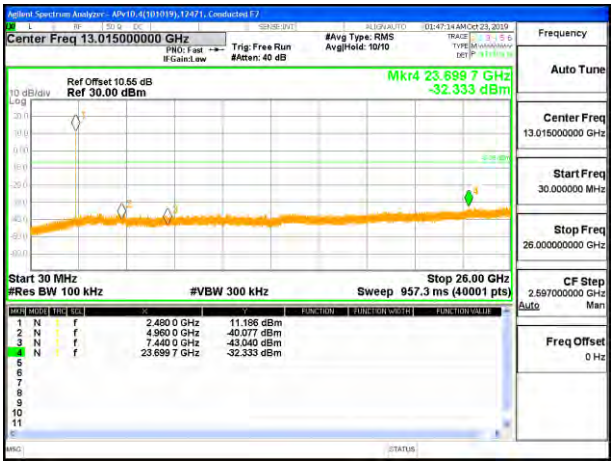
OUT-OF-BAND LOW CHANNEL



IN-BAND REFERENCE LEVEL

OUT-OF-BAND MID CHANNEL

HIGH CHANNEL BANDEDGE(power low)



OUT-OF-BAND HIGH CHANNEL

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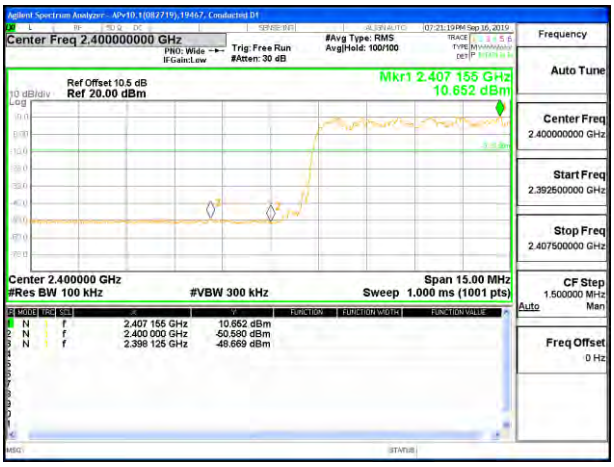
UAT 1 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE

HIGH BANDEDGE

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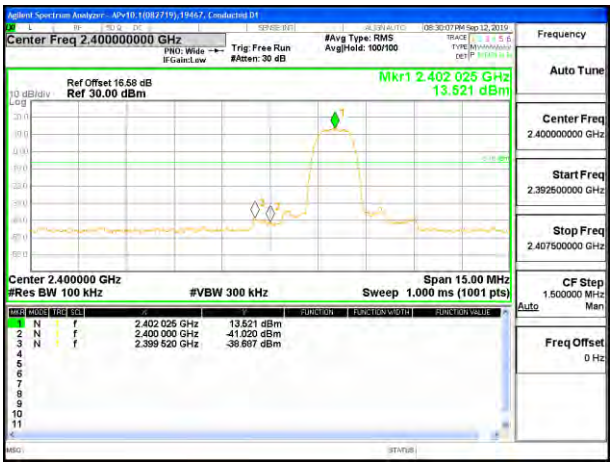
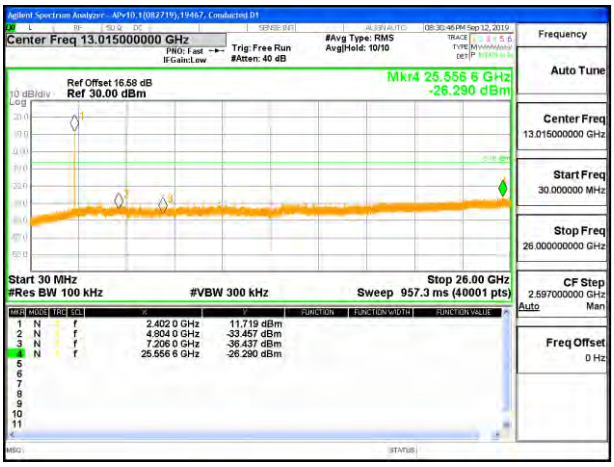
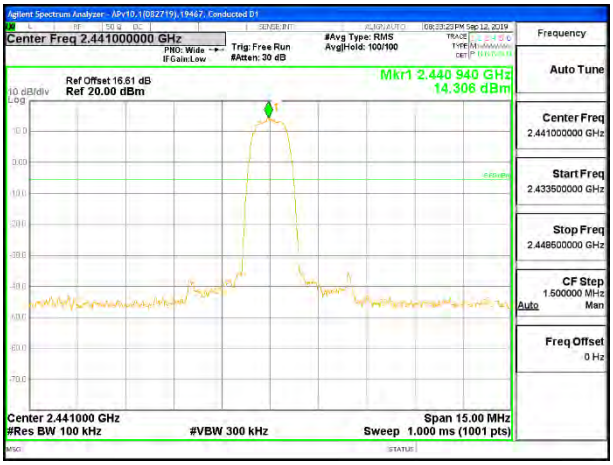
LAT 3 SPURIOUS EMISSIONS, NON-HOPPING



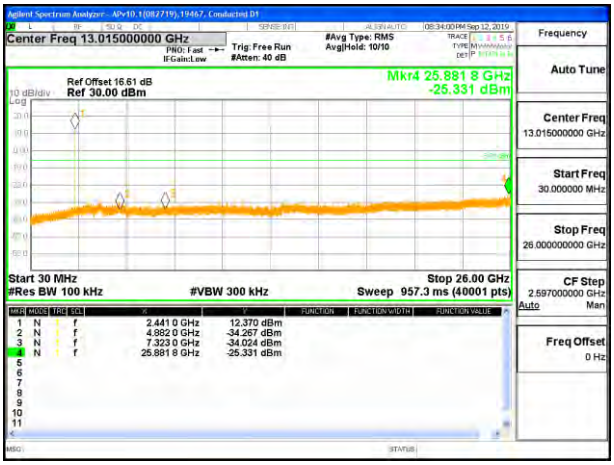
LOW CHANNEL BANDEDGE



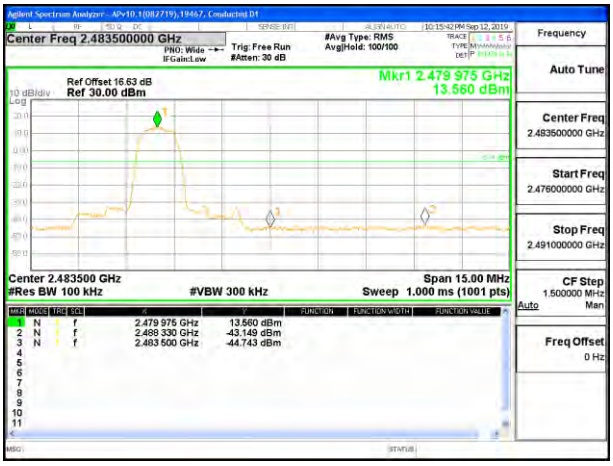
OUT-OF-BAND LOW CHANNEL



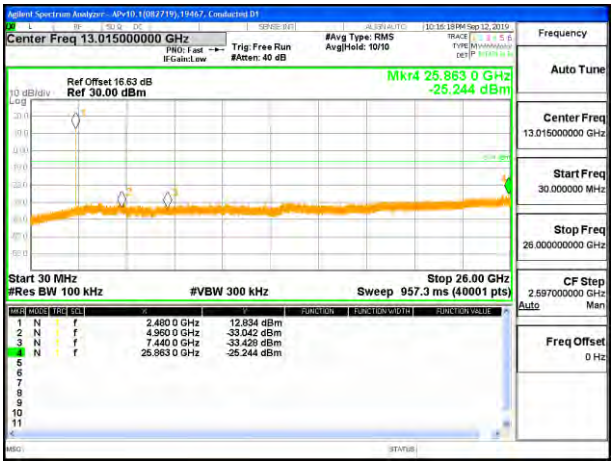
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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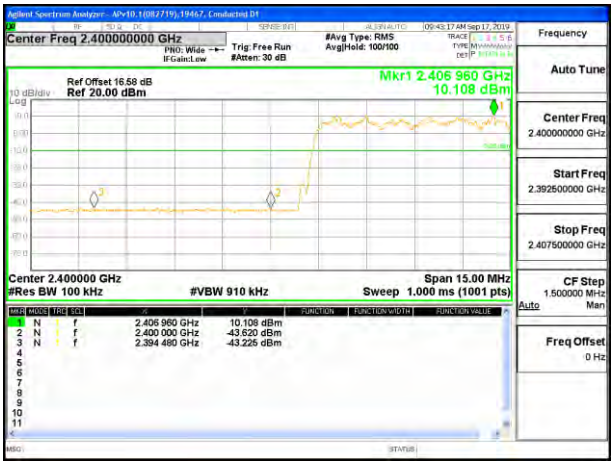
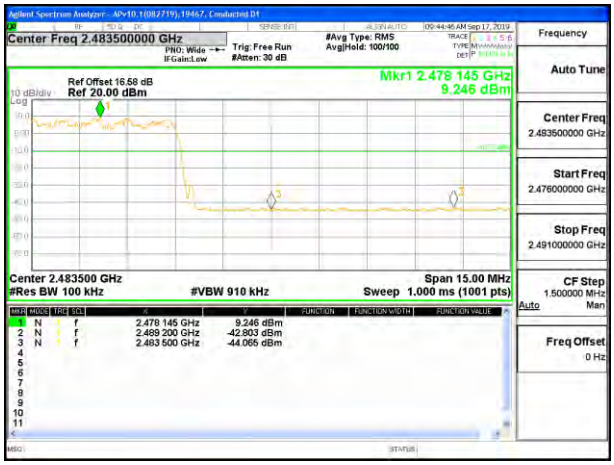
LAT 3 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE



HIGH BANDEDGE

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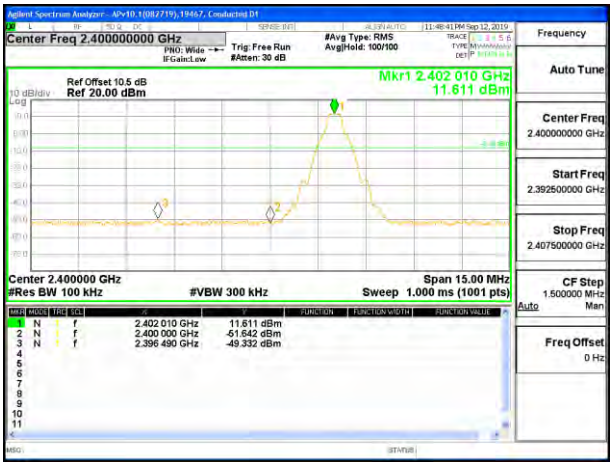
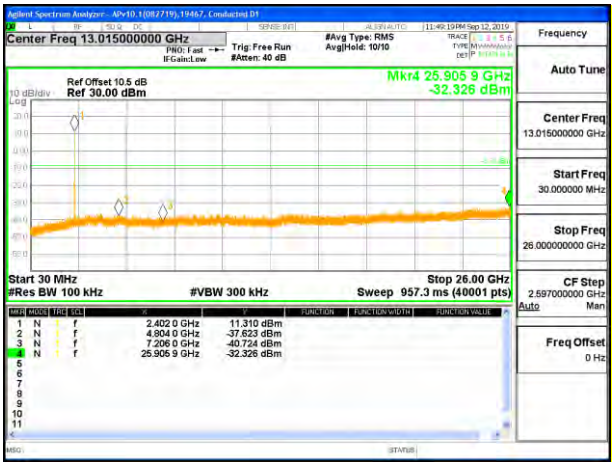
8.15.3. LOW POWER BASIC DATA RATE GFSK MODULATION

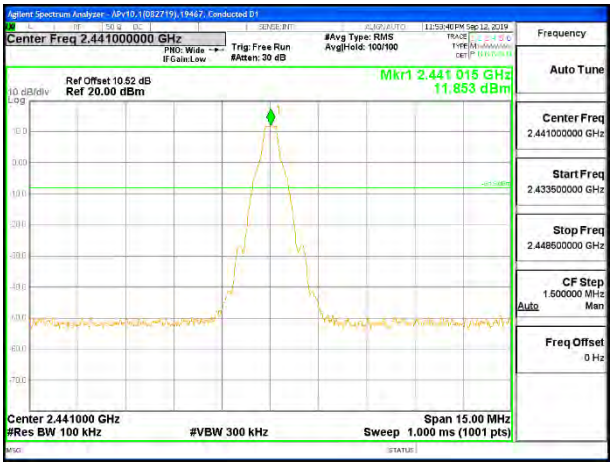
UAT 1 SPURIOUS EMISSIONS, NON-HOPPING



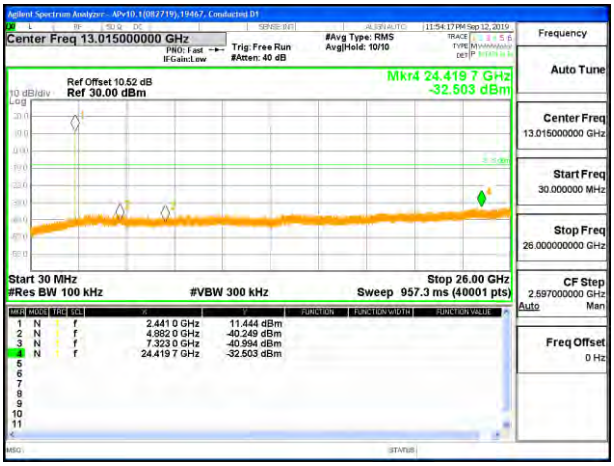
LOW CHANNEL BANDEDGE



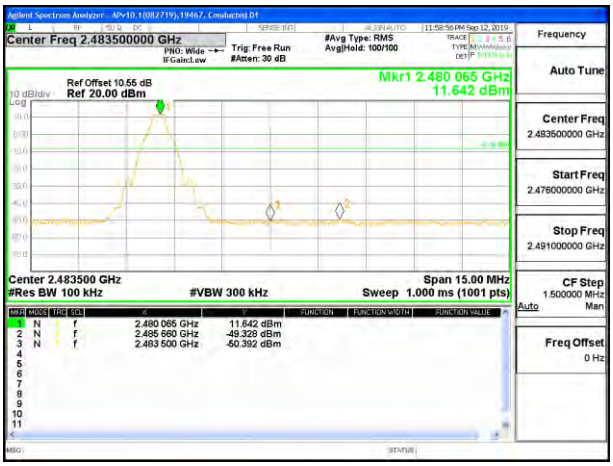
OUT-OF-BAND LOW CHANNEL



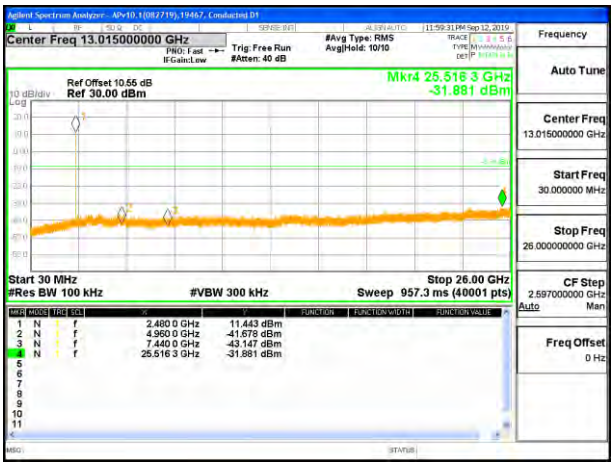
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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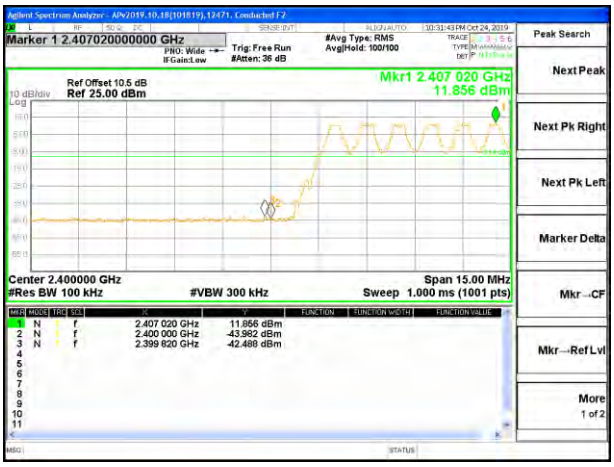
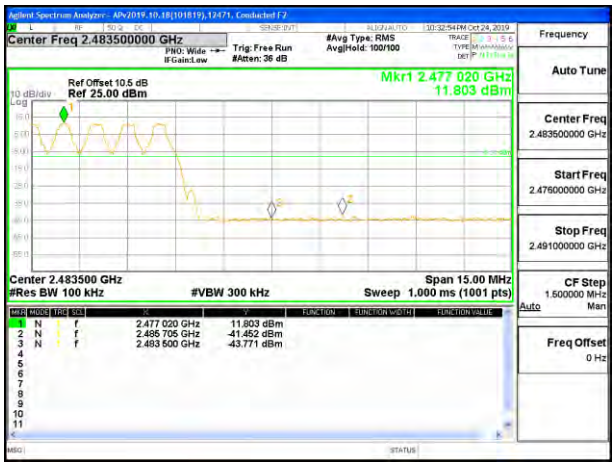
UAT 1 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE



HIGH BANDEDGE

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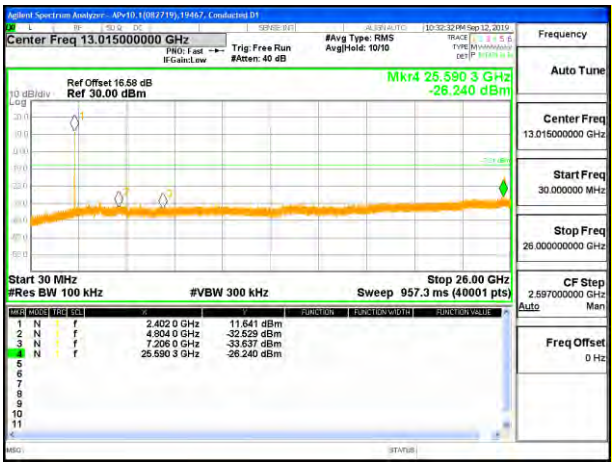
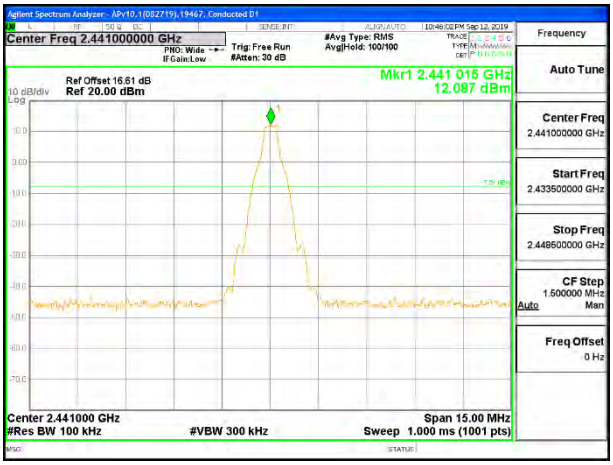
LAT 3 SPURIOUS EMISSIONS, NON-HOPPING

LOW CHANNEL BANDEDGE

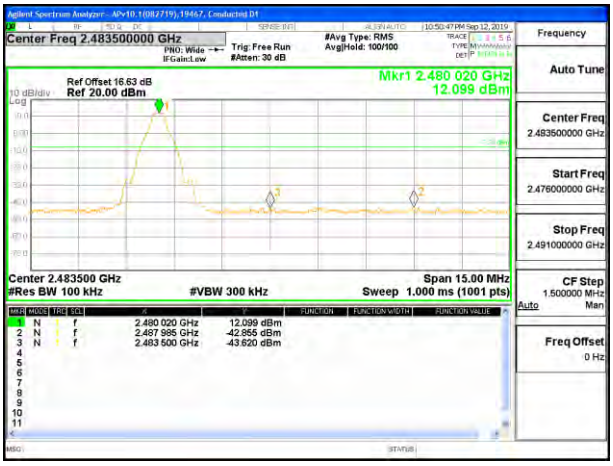


OUT-OF-BAND LOW CHANNEL

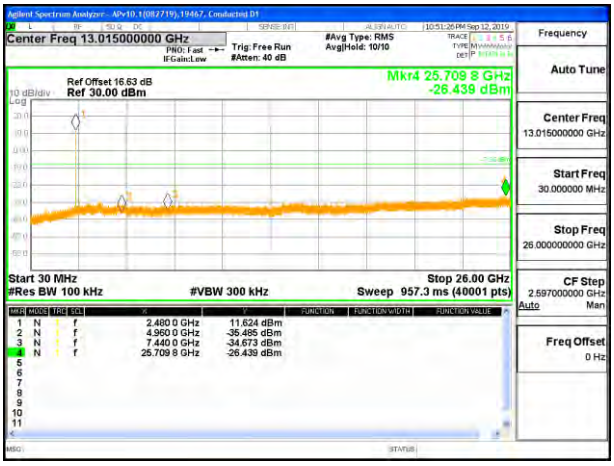


IN-BAND REFERENCE LEVEL

OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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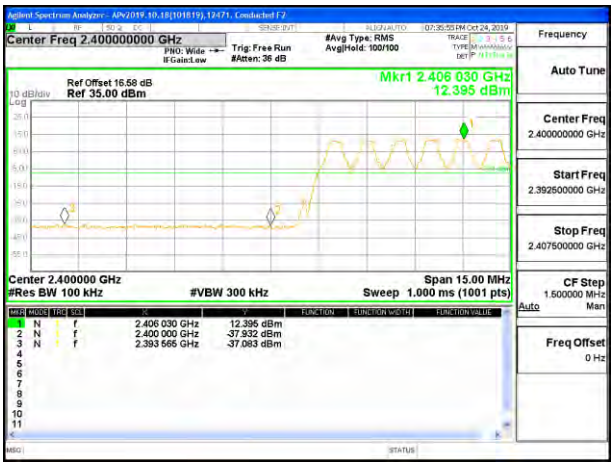
LAT 3 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE

HIGH BANDEDGE

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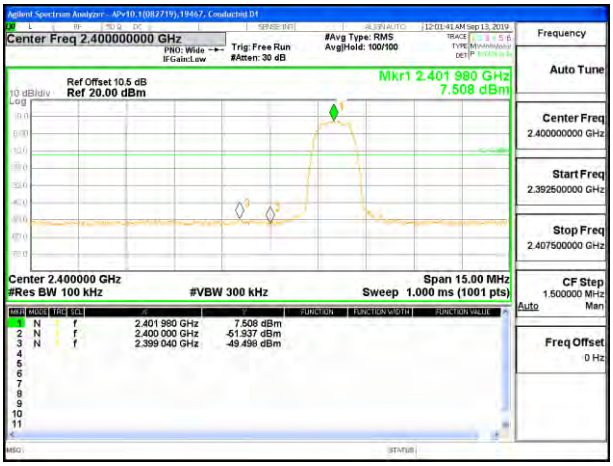
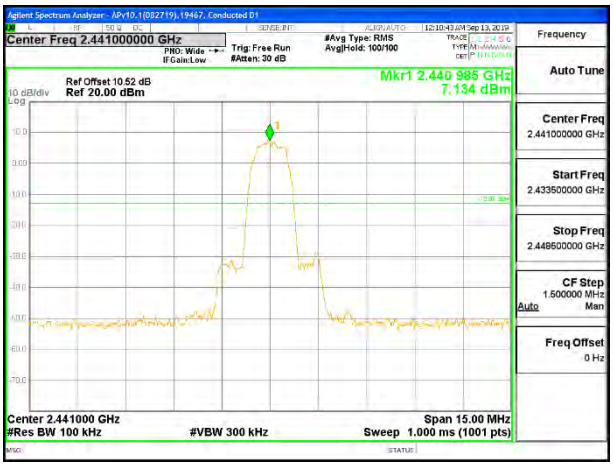
8.15.4. LOW POWER ENHANCED DATA RATE 8PSK MODULATION

UAT 1 SPURIOUS EMISSIONS, NON-HOPPING

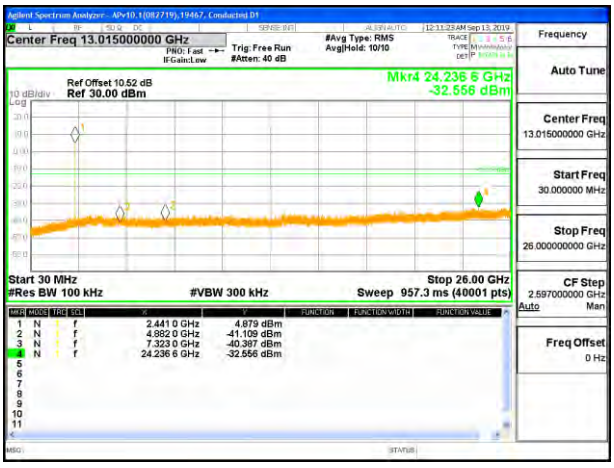


LOW CHANNEL BANDEDGE

OUT-OF-BAND LOW CHANNEL



IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL

HIGH CHANNEL BANDEDGE

OUT-OF-BAND HIGH CHANNEL

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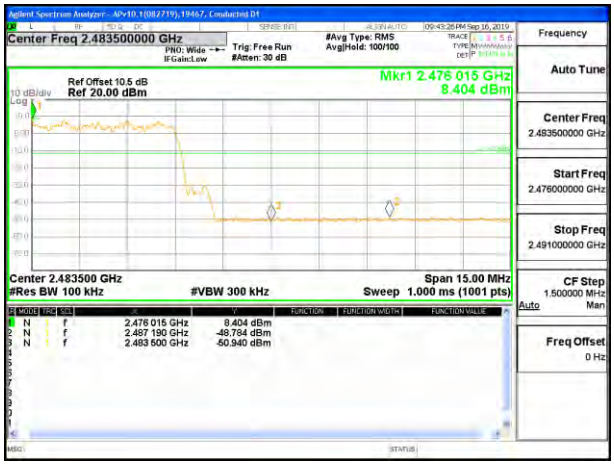
UAT 1 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

LOW BANDEDGE



HIGH BANDEDGE

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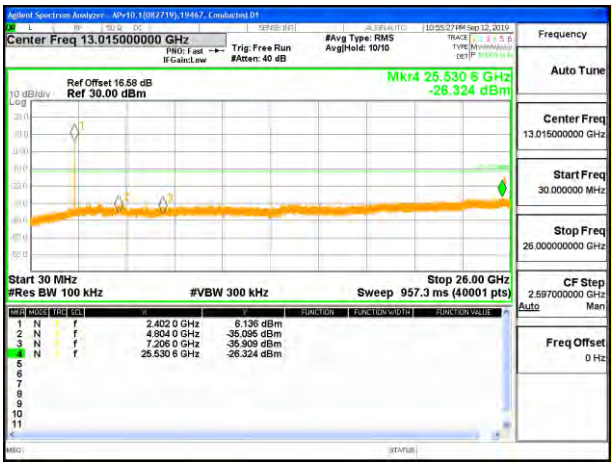
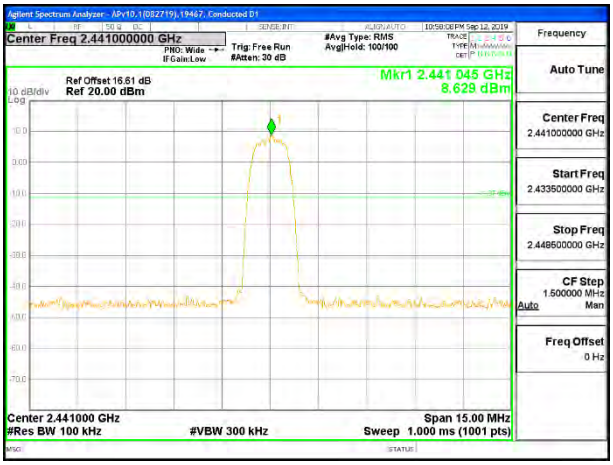
LAT 3 SPURIOUS EMISSIONS, NON-HOPPING

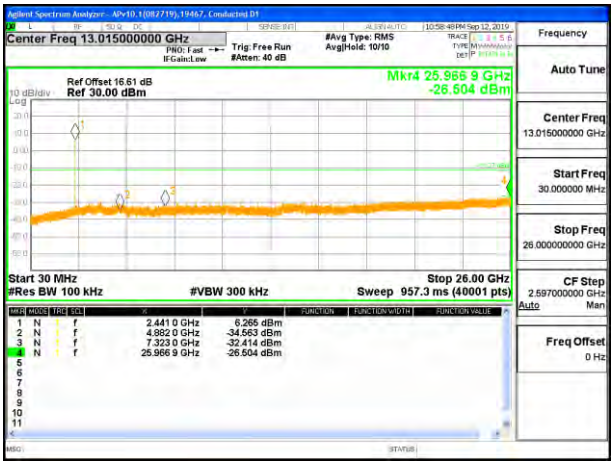
LOW CHANNEL BANDEDGE



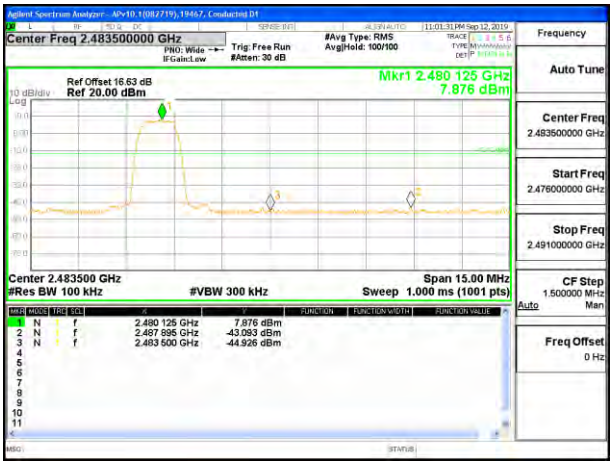
OUT-OF-BAND LOW CHANNEL



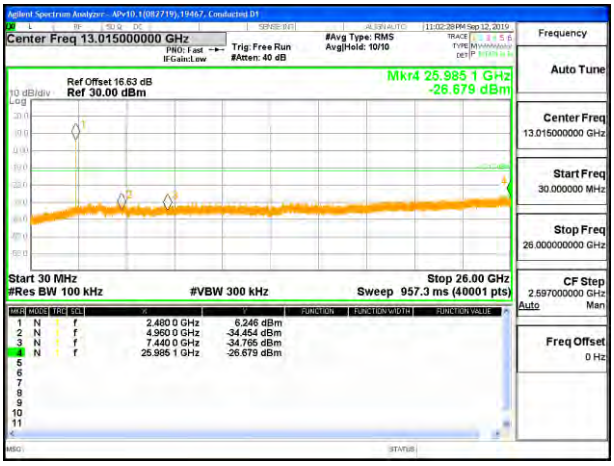
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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LAT 3 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

LOW BANDEDGE

HIGH BANDEDGE

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9. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

RSS-GEN, Section 8.9 and 8.10.

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
0.009-0.490	2400/F(kHz) @ 300 m	-
0.490-1.705	24000/F(kHz) @ 30 m	-
1.705 - 30	30 @ 30m	-
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

For final measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements.

The spectrum from 1 GHz to 18 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band. Below 1GHz and above 18GHz emissions, the channel with the highest output power was tested.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel), parallel and perpendicular are the worst orientations, therefore testing was performed on these two orientations only.

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KDB 414788 Open Field Site(OFS) and Chamber Correlation Justification

Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

KDB 558074 D01 15.247 Meas Guidance v05r02

Use of a duty cycle correction factor (DCCF) is permitted for calculating average radiated field strength emission levels for an FHSS device in 15.247. This DCCF can be applied when the field strength limit (e.g., within a Government Restricted band) and the conditions specified in Section 15.35(c) can be satisfied. The average radiated field strength is calculated by subtracting the DCCF from the maximum radiated field strength level as determined through measurement. The maximum radiated field strength level represents the worst-case (maximum amplitude) RMS measurement of the emission(s) during continuous transmission (i.e., not including any time intervals during which the transmitter is off or is transmitting at a reduced power level). It is also acceptable to apply the DCCF to a measurement performed with a peak detector instead of the specified RMS power averaging detector. Note that Section 15.35(c) specifies that the DCCF shall represent the worst-case (greatest duty cycle) over any 100 msec transmission period.

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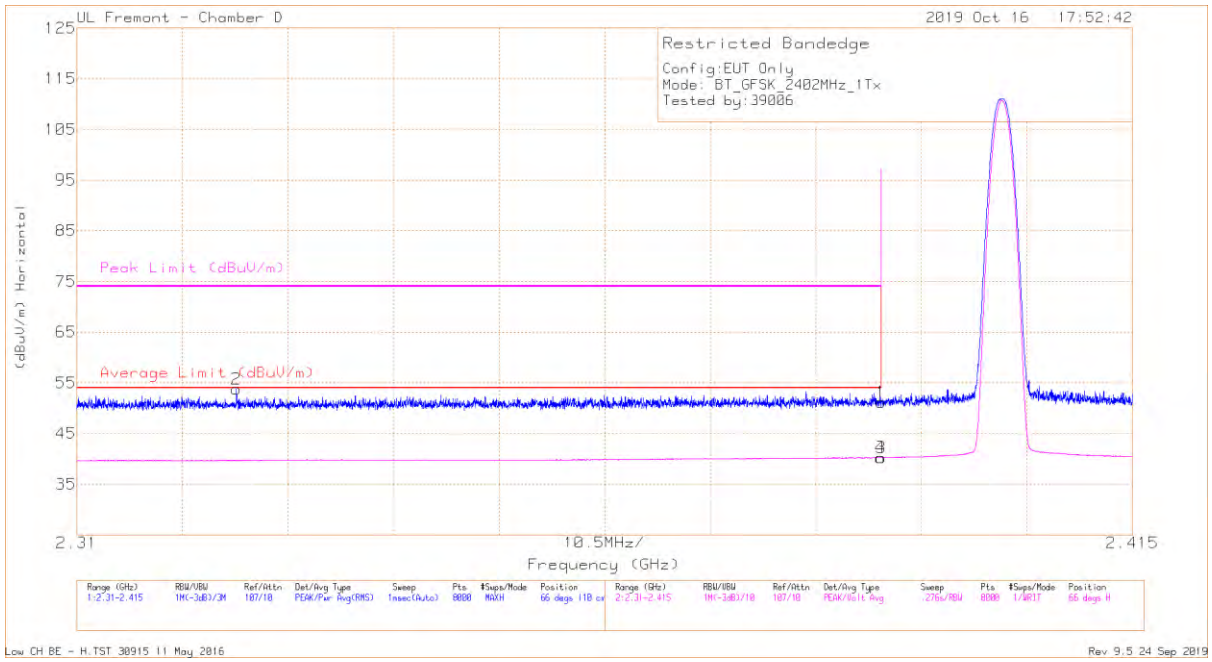
9.1. TRANSMITTER ABOVE 1 GHz

9.1.1. HIGH POWER BASIC DATA RATE GFSK MODULATION

UAT 1

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.66	Pk	32	-20.5	51.16	-	-	74	-22.84	66	110	H
2	* 2.32587	42.66	Pk	31.7	-20.6	53.76	-	-	74	-20.24	66	110	H
3	* 2.39	28.74	VA1T	32	-20.5	40.24	54	-13.76	-	-	66	110	H
4	* 2.38997	28.75	VA1T	32	-20.5	40.25	54	-13.75	-	-	66	110	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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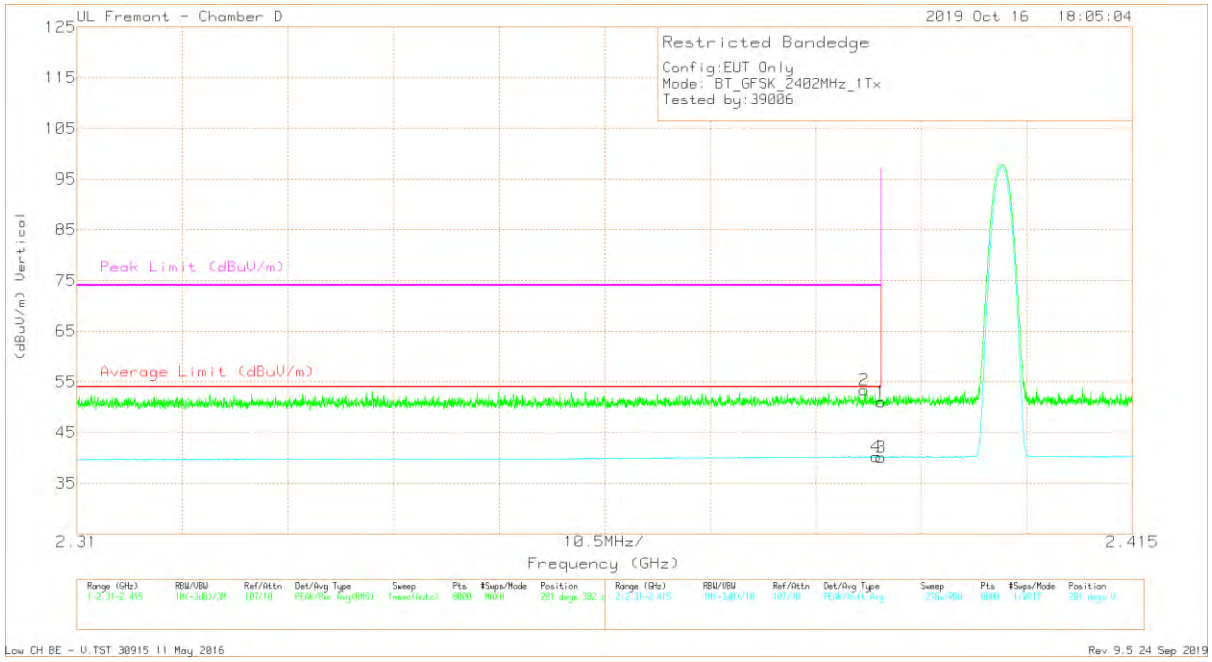
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.58	Pk	32	-20.5	51.08	-	-	74	-22.92	201	382	V
2	* 2.38833	41.94	Pk	32	-20.6	53.34	-	-	74	-20.66	201	382	V
3	* 2.39	28.63	VA1T	32	-20.5	40.13	54	-13.87	-	-	201	382	V
4	* 2.38954	28.71	VA1T	32	-20.5	40.21	54	-13.79	-	-	201	382	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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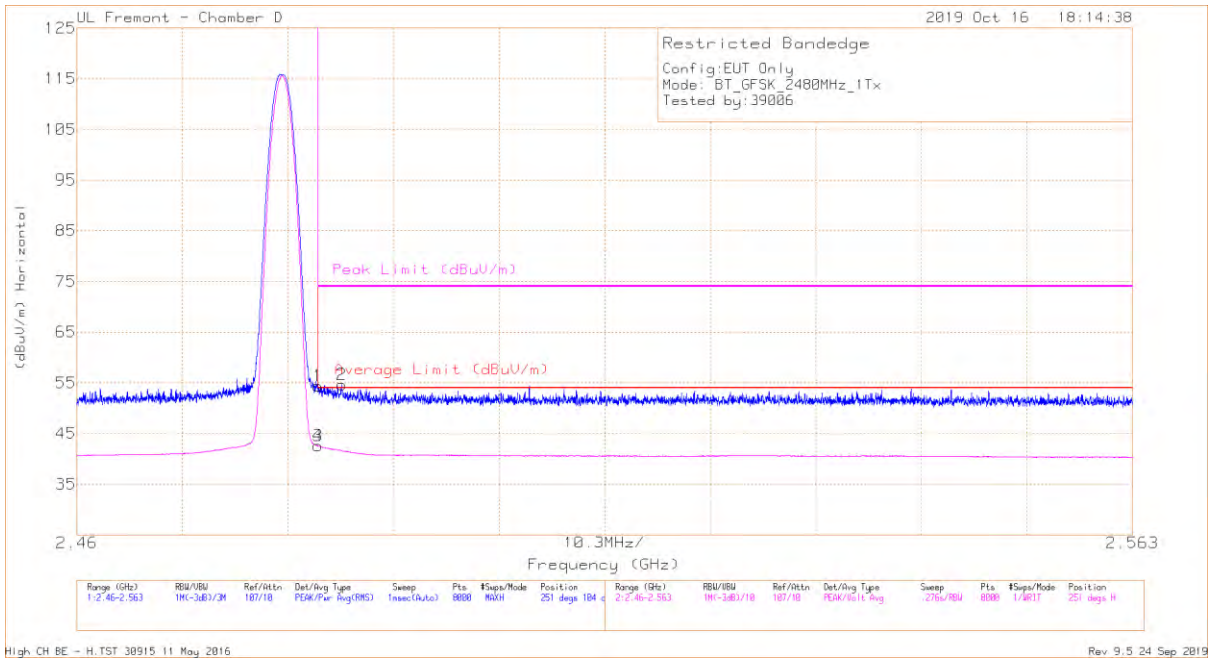
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	42.45	Pk	32.4	-20.5	54.35	-	-	74	-19.65	251	104	H
2	* 2.48586	42.87	Pk	32.3	-20.5	54.67	-	-	74	-19.33	251	104	H
3	* 2.4835	30.64	VA1T	32.4	-20.5	42.54	54	-11.46	-	-	251	104	H
4	* 2.48351	30.64	VA1T	32.4	-20.5	42.54	54	-11.46	-	-	251	104	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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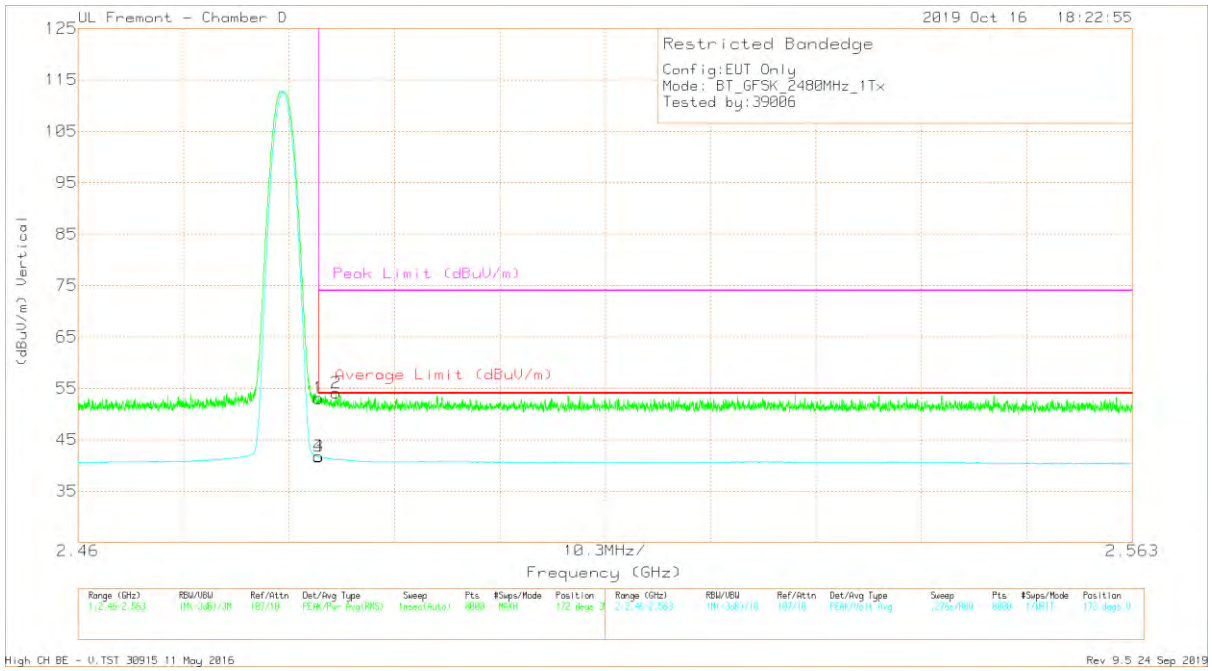
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	41.18	Pk	32.4	-20.5	53.08	-	-	74	-20.92	172	358	V
2	* 2.4852	42.29	Pk	32.3	-20.5	54.09	-	-	74	-19.91	172	358	V
3	* 2.4835	29.84	VA1T	32.4	-20.5	41.74	54	-12.26	-	-	172	358	V
4	* 2.48353	29.82	VA1T	32.4	-20.5	41.72	54	-12.28	-	-	172	358	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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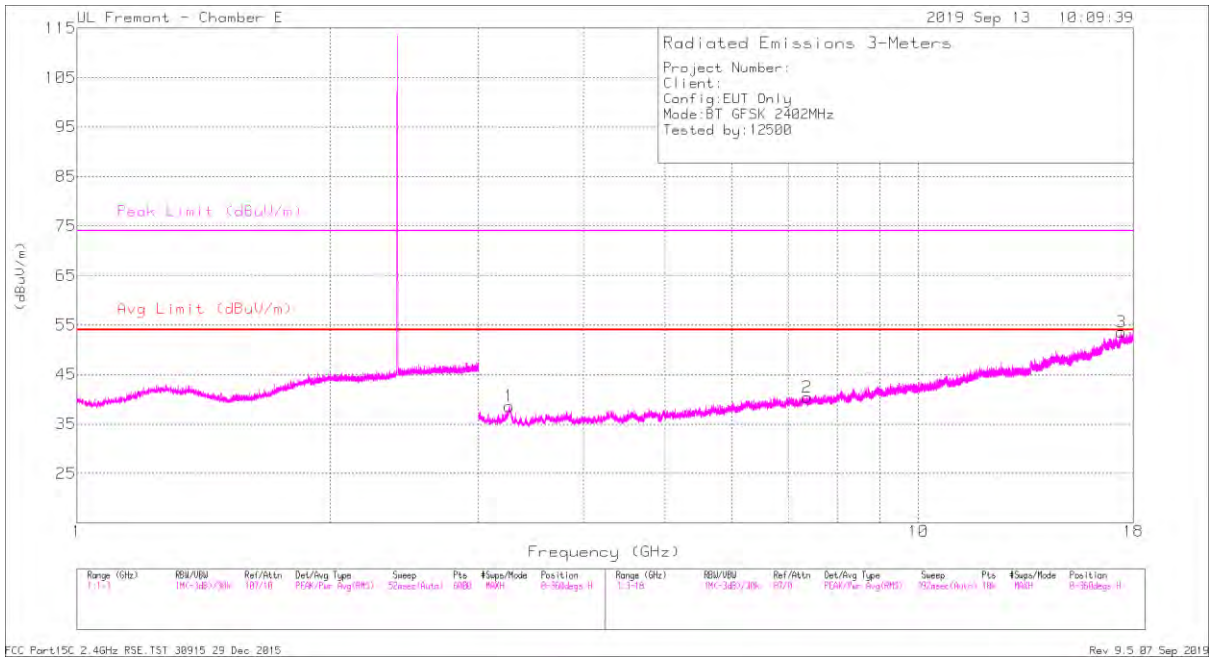
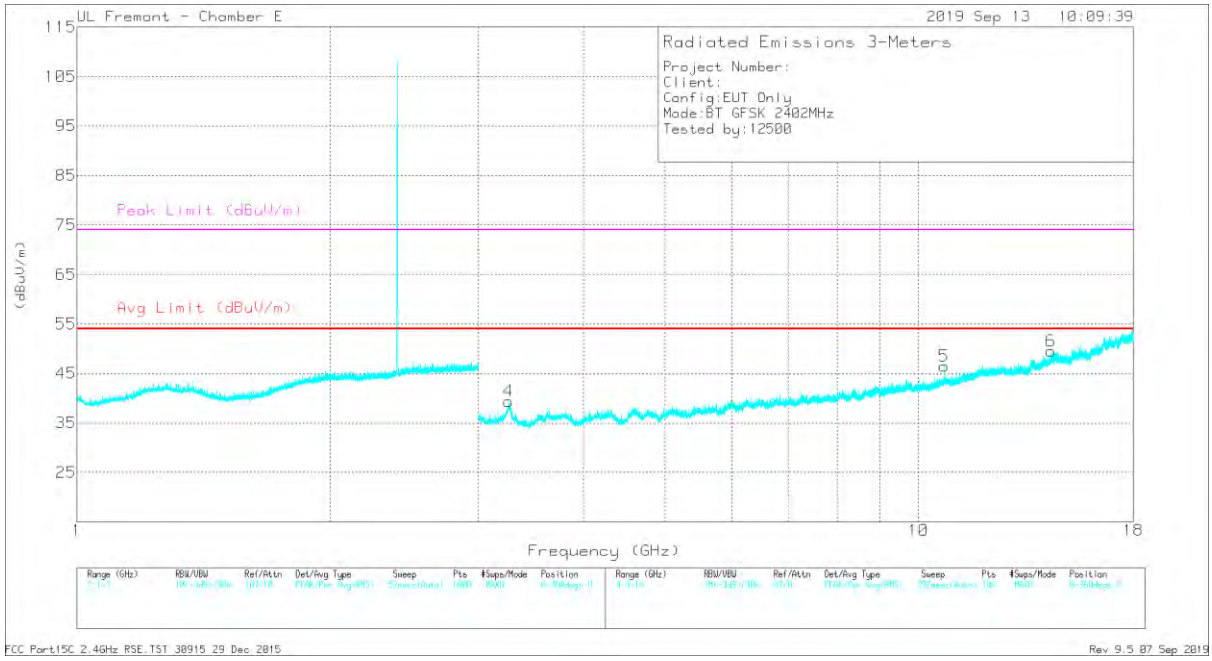
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.26074	43.57	PKFH	35.1	-34.1	44.57	-	-	74	-29.43	45	121	H
	* 3.26391	31.79	VA1T	35.1	-34.1	32.79	54	-21.21	-	-	45	121	H
2	* 7.36919	38.19	PKFH	35.7	-27.5	46.39	-	-	74	-27.61	321	185	H
	* 7.36776	25.88	VA1T	35.7	-27.4	34.18	54	-19.82	-	-	321	185	H
3	17.42723	34.89	PKFH	41.5	-17	59.39	-	-	-	-	74	397	H
4	3.25478	44.33	PKFH	34.7	-34.2	44.83	-	-	-	-	243	299	V
5	* 10.71958	36.01	PKFH	37.9	-24	49.91	-	-	74	-24.09	339	296	V
	* 10.7177	24.49	VA1T	37.9	-24	38.39	54	-15.61	-	-	339	296	V
6	14.3726	35.09	PKFH	39.4	-19.6	54.89	-	-	-	-	281	389	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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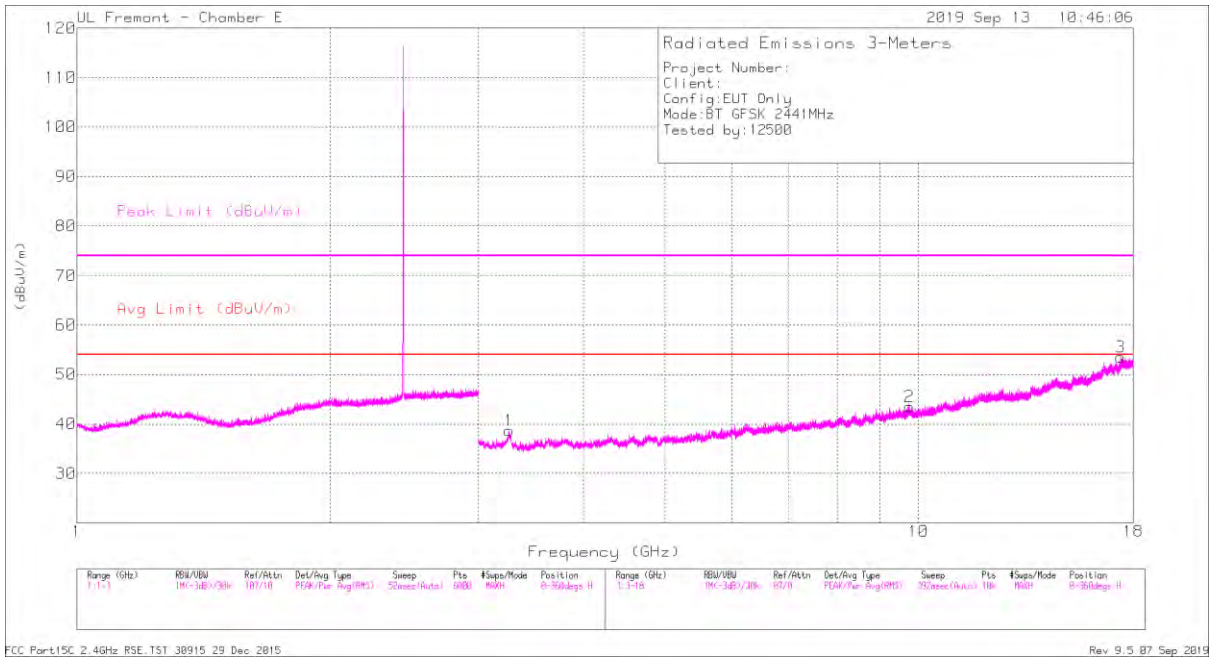
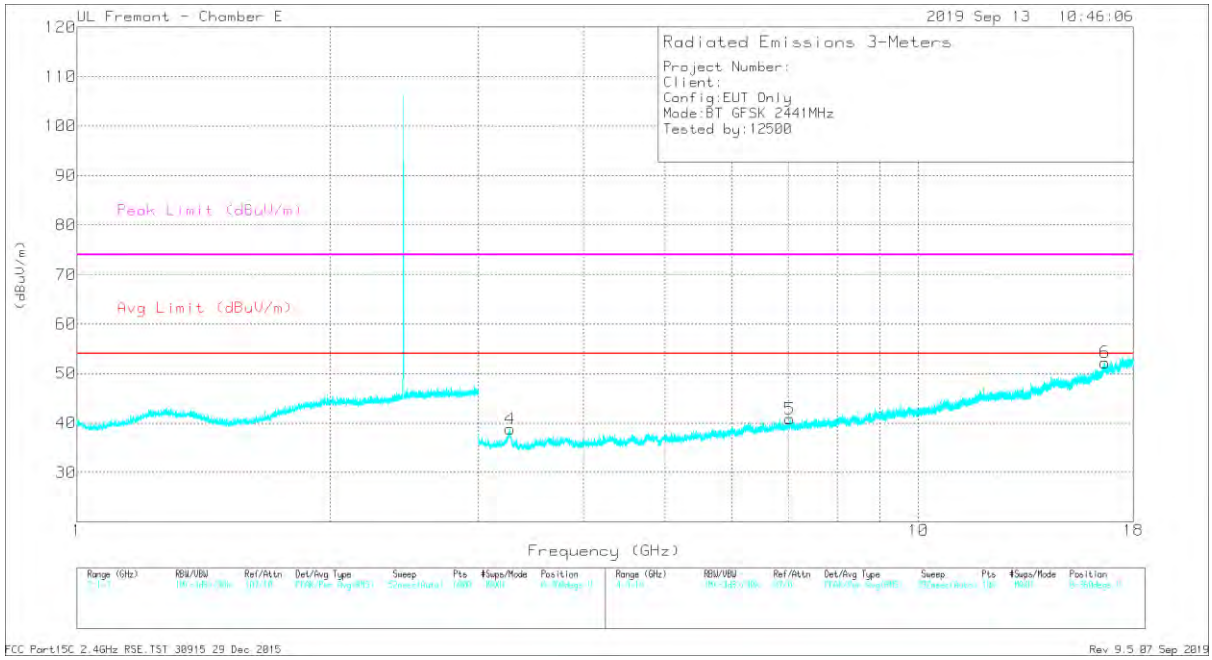
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.26431	43.38	PKFH	35.1	-34.1	44.38	-	-	74	-29.62	191	100	H
	* 3.265	31.82	VA1T	35.1	-34.1	32.82	54	-21.18	-	-	191	100	H
2	9.75273	36.4	PKFH	37	-24.3	49.1	-	-	74	-24.9	312	287	H
3	17.39933	35.12	PKFH	41.4	-17.5	59.02	-	-	74	-14.98	292	130	H
4	3.27353	43.89	PKFH	34.6	-34.1	44.39	-	-	74	-29.61	89	176	V
5	7.0309	37.68	PKFH	35.6	-27	46.28	-	-	74	-27.72	228	309	V
6	16.65881	34.44	PKFH	41.3	-17.9	57.84	-	-	74	-16.16	4	272	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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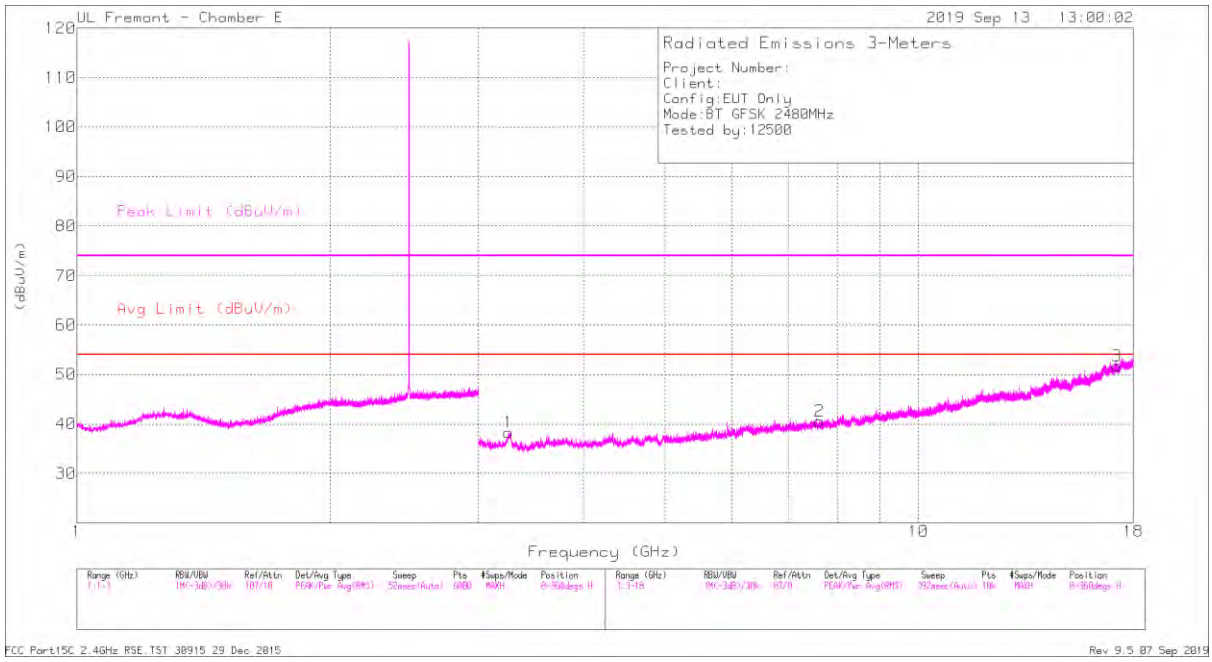
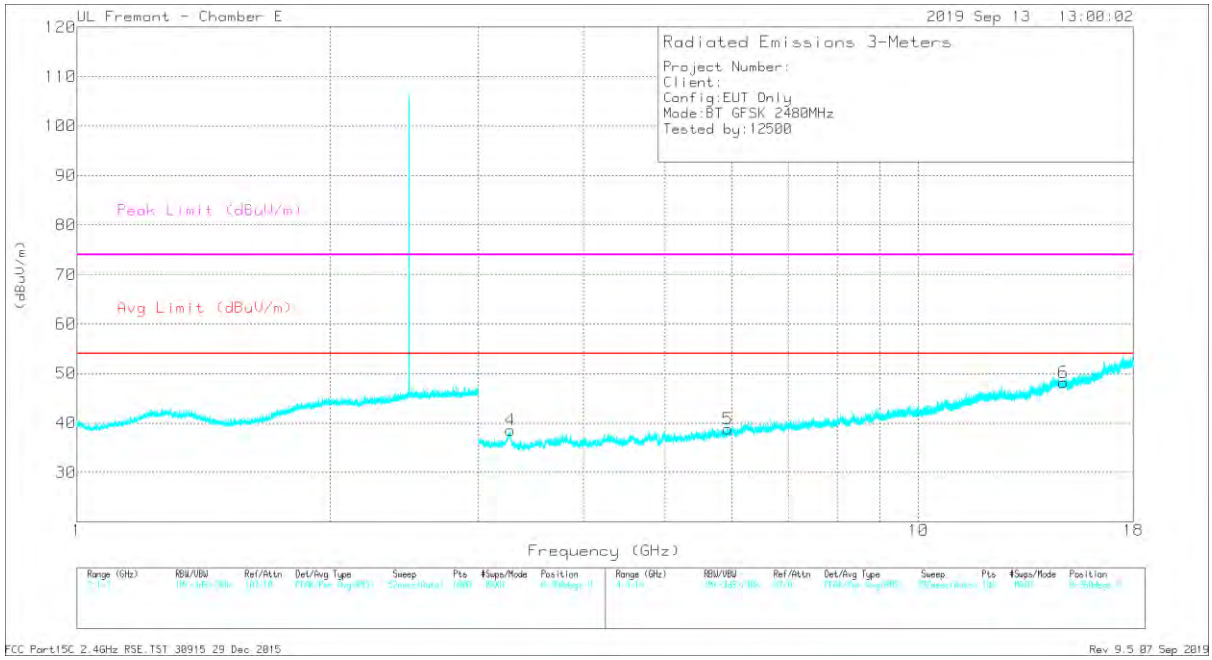
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 7.62569	38.25	PKFH	35.8	-27.3	46.75	-	-	74	-27.25	326	141	H
	* 7.62476	25.97	VA1T	35.8	-27.2	34.57	54	-19.43	-	-	326	141	H
1	3.25679	42.91	PKFH	34.9	-34.2	43.61	-	-	74	-30.39	153	379	H
3	17.20358	34.3	PKFH	41.4	-18.1	57.6	-	-	74	-16.4	30	305	H
4	3.27561	44.69	PKFH	34.4	-34.1	44.99	-	-	74	-29.01	268	356	V
5	5.93239	40.35	PKFH	35.1	-29.9	45.55	-	-	74	-28.45	55	332	V
6	14.87346	34.84	PKFH	39.9	-19.9	54.84	-	-	74	-19.16	356	155	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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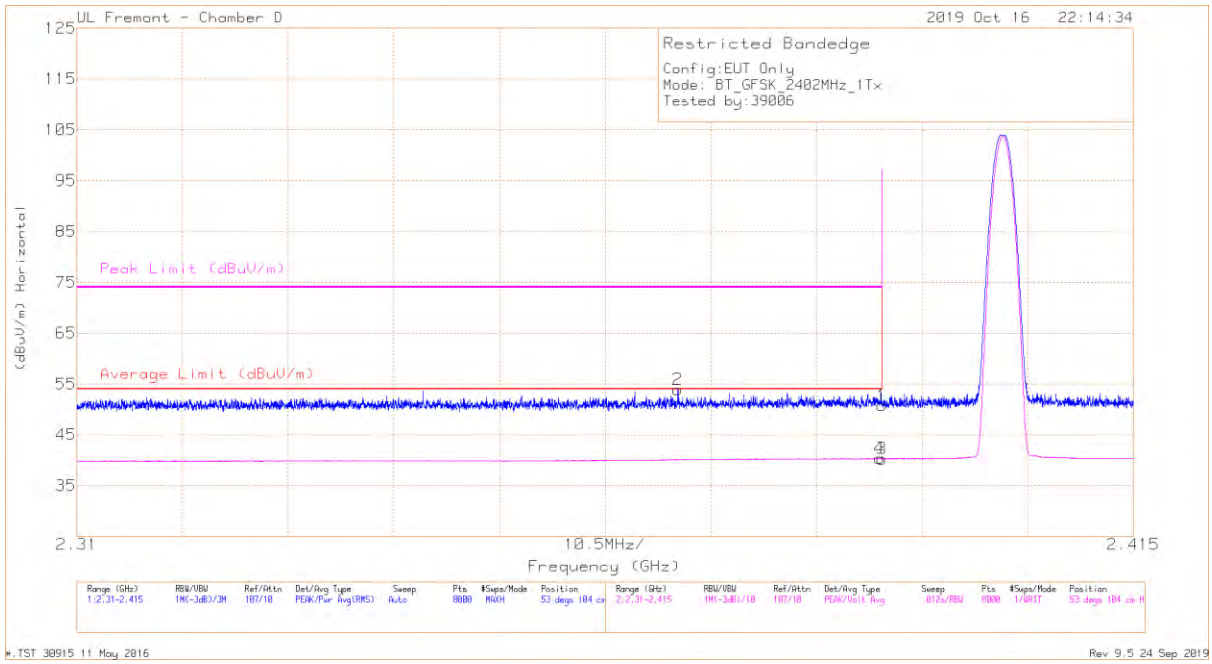
LAT 3

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.32	Pk	32	-20.5	50.82	-	-	74	-23.18	53	104	H
2	* 2.36973	42.57	Pk	31.9	-20.6	53.87	-	-	74	-20.13	53	104	H
3	* 2.39	28.8	VA1T	32	-20.5	40.3	54	-13.7	-	-	53	104	H
4	* 2.38979	28.83	VA1T	32	-20.5	40.33	54	-13.67	-	-	53	104	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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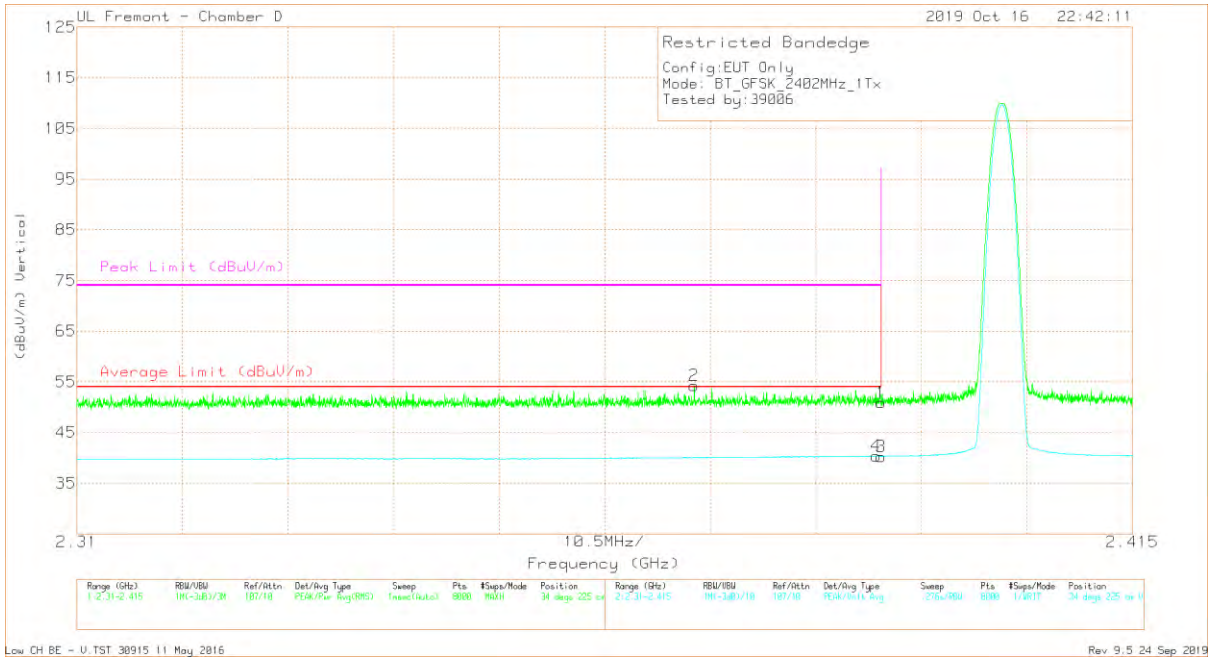
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.4	Pk	32	-20.5	50.9	-	-	74	-23.1	34	225	V
2	* 2.37142	42.97	Pk	31.9	-20.6	54.27	-	-	74	-19.73	34	225	V
3	* 2.39	28.79	VA1T	32	-20.5	40.29	54	-13.71	-	-	34	225	V
4	* 2.38952	28.86	VA1T	32	-20.5	40.36	54	-13.64	-	-	34	225	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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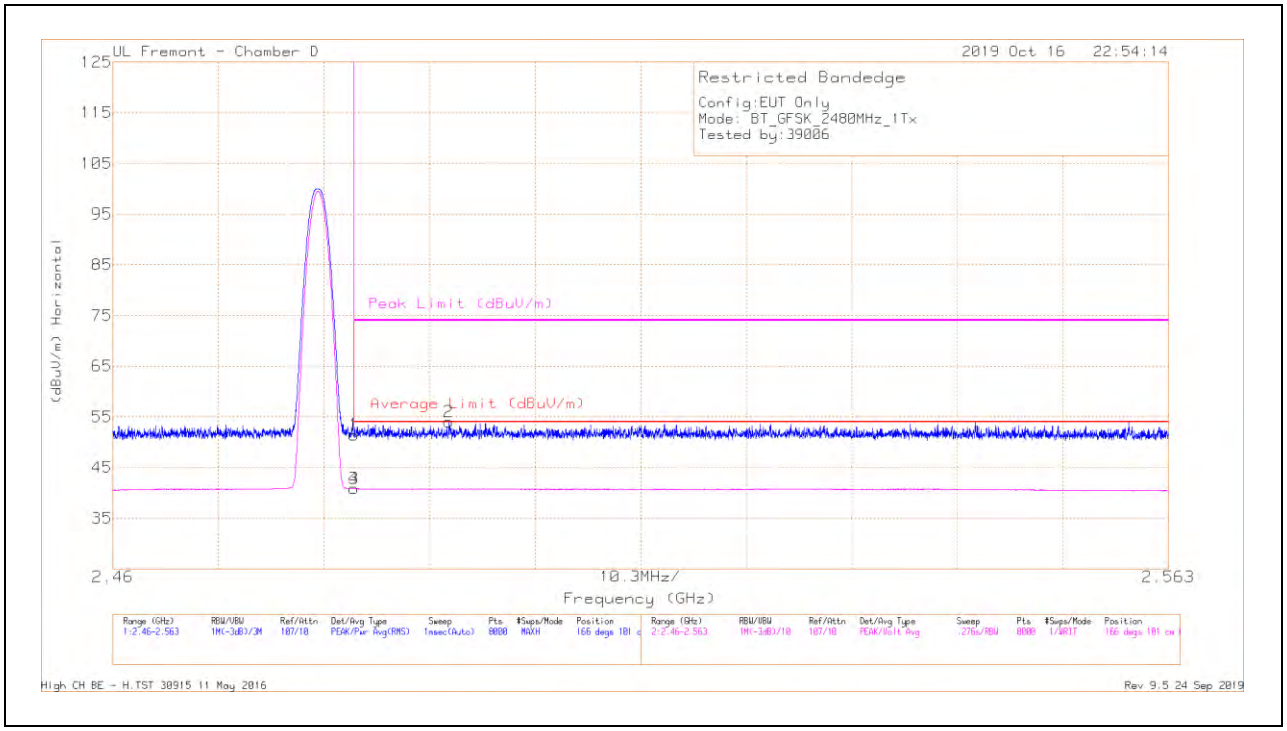
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	39.56	Pk	32.4	-20.5	51.46	-	-	74	-22.54	166	101	H
2	* 2.49277	41.96	Pk	32.4	-20.4	53.96	-	-	74	-20.04	166	101	H
3	* 2.4835	28.95	VA1T	32.4	-20.5	40.85	54	-13.15	-	-	166	101	H
4	* 2.48353	28.94	VA1T	32.4	-20.5	40.84	54	-13.16	-	-	166	101	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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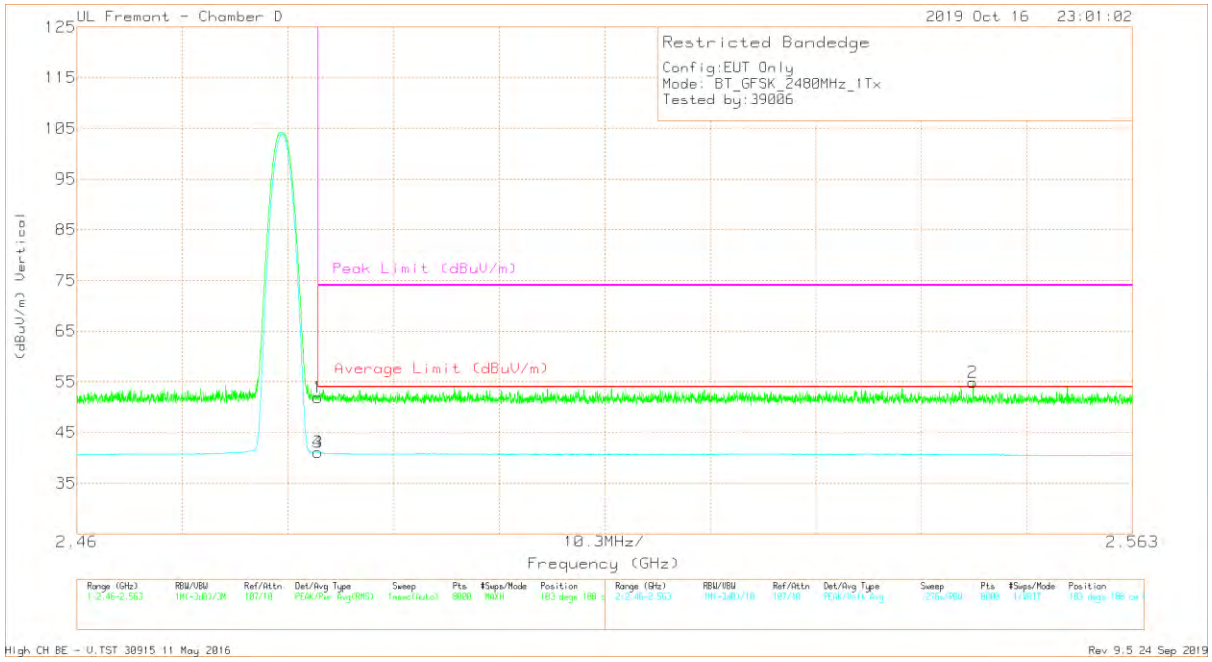
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	39.97	Pk	32.4	-20.5	51.87	-	-	74	-22.13	183	188	V
3	* 2.4835	29.2	VA1T	32.4	-20.5	41.1	54	-12.9	-	-	183	188	V
4	* 2.48353	29.17	VA1T	32.4	-20.5	41.07	54	-12.93	-	-	183	188	V
2	2.54745	43.04	Pk	32.1	-20.3	54.84	-	-	74	-19.16	183	188	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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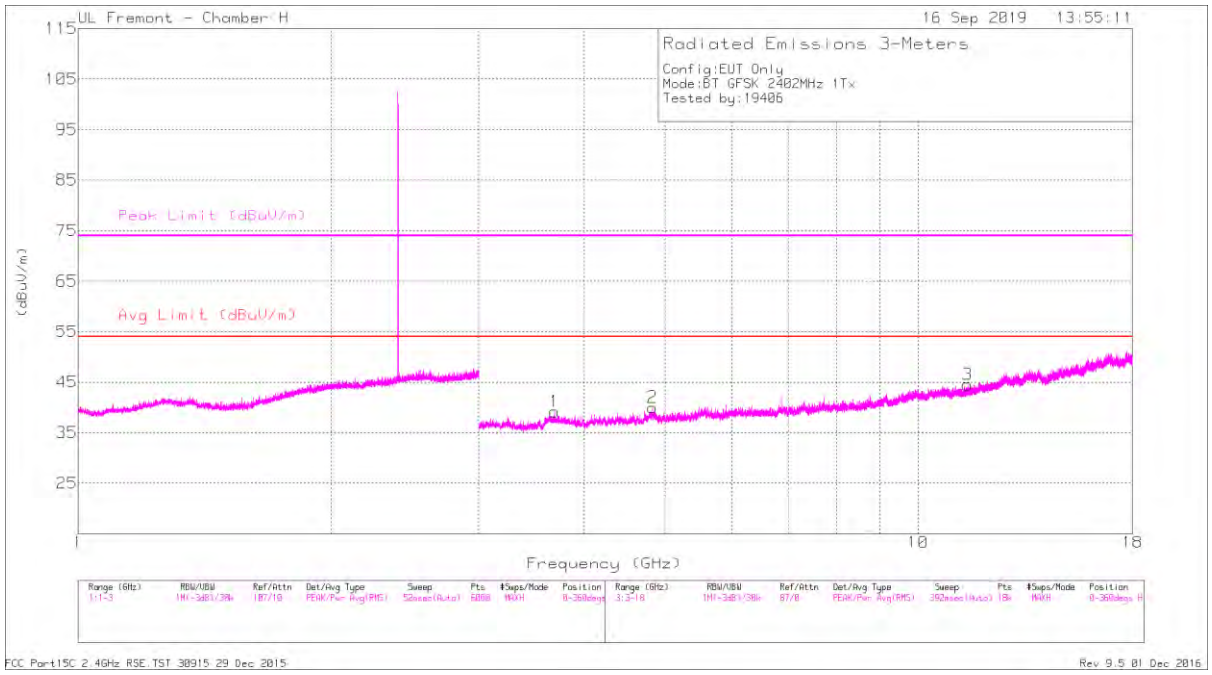
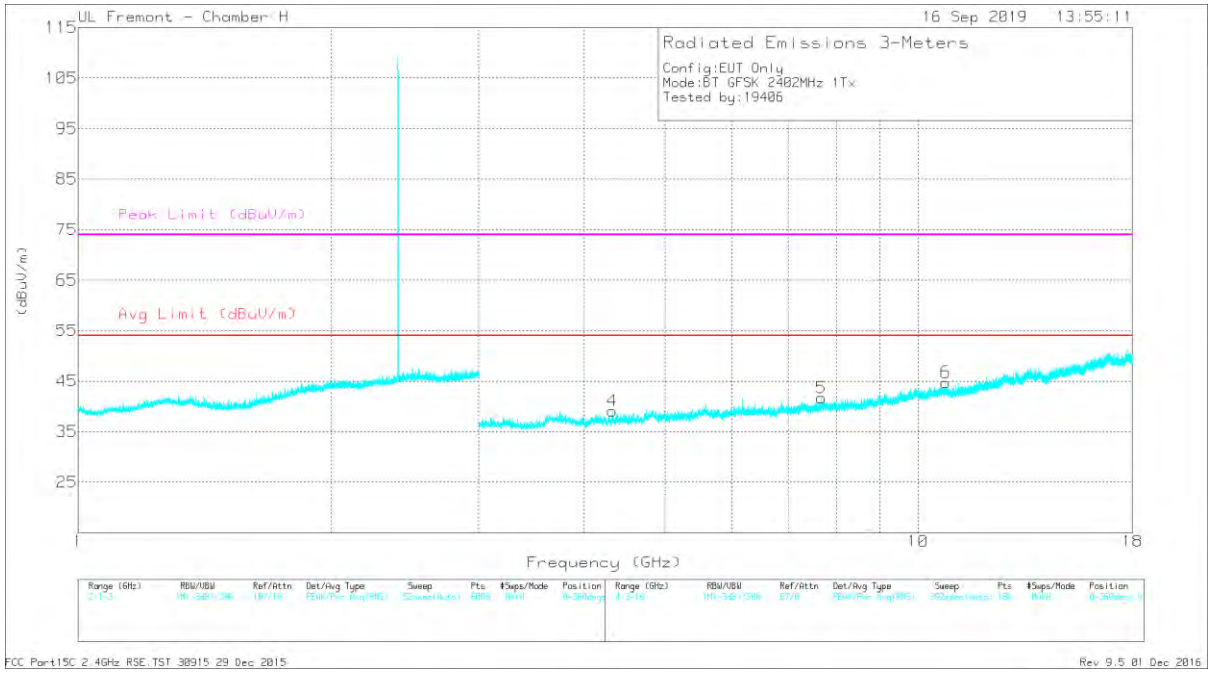
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.692	40.47	PKFH	33.1	-30.3	43.27	-	-	74	-30.73	105	108	H
	* 3.695	28.83	VA1T	33.1	-30.3	31.63	54	-22.37	-	-	105	108	H
2	* 4.829	41.17	PKFH	34.4	-30.4	45.17	-	-	74	-28.83	2	263	H
	* 4.831	29.11	VA1T	34.3	-30.4	33.01	54	-20.99	-	-	2	263	H
3	* 11.454	35.27	PKFH	38.2	-23.2	50.27	-	-	74	-23.73	206	299	H
	* 11.455	23.17	VA1T	38.2	-23.1	38.27	54	-15.73	-	-	206	299	H
4	* 4.324	39.51	PKFH	33.7	-29.8	43.41	-	-	74	-30.59	125	372	V
	* 4.328	28.06	VA1T	33.7	-29.9	31.86	54	-22.14	-	-	125	372	V
5	* 7.678	37.56	PKFH	36.1	-26.8	46.86	-	-	74	-27.14	34	377	V
	* 7.679	25.63	VA1T	36.2	-26.8	35.03	54	-18.97	-	-	34	377	V
6	* 10.795	34.62	PKFH	37.6	-22.2	50.02	-	-	74	-23.98	158	381	V
	* 10.794	22.84	VA1T	37.6	-22.2	38.24	54	-15.76	-	-	158	381	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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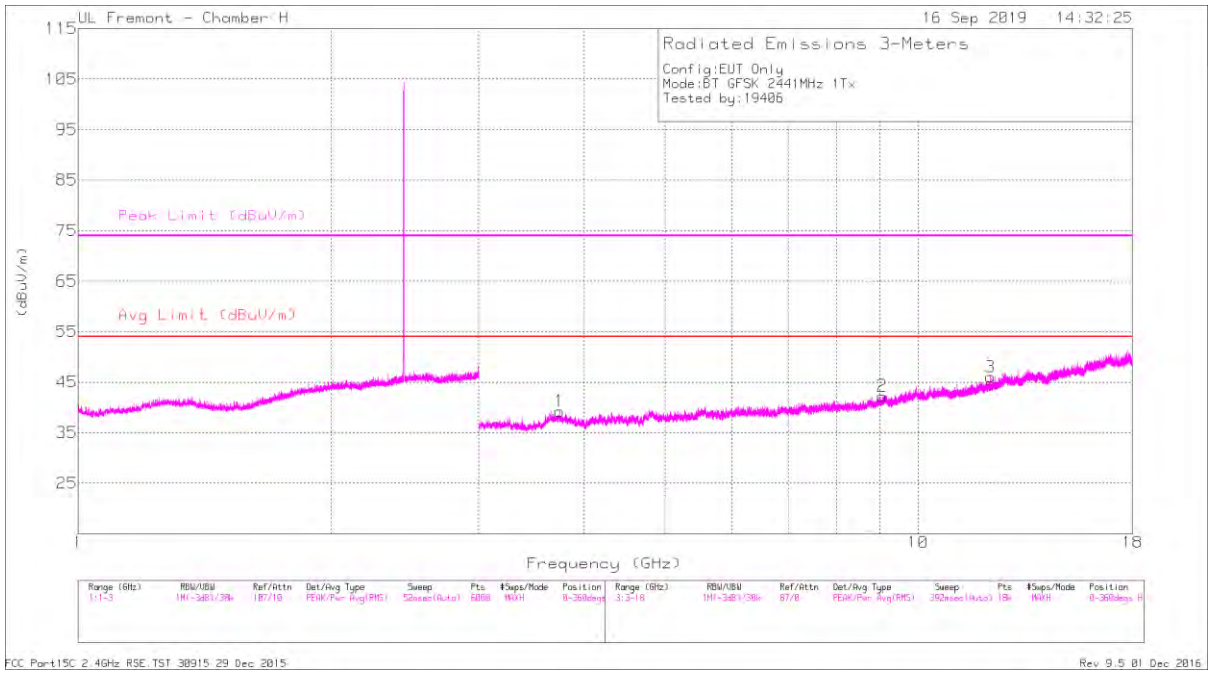
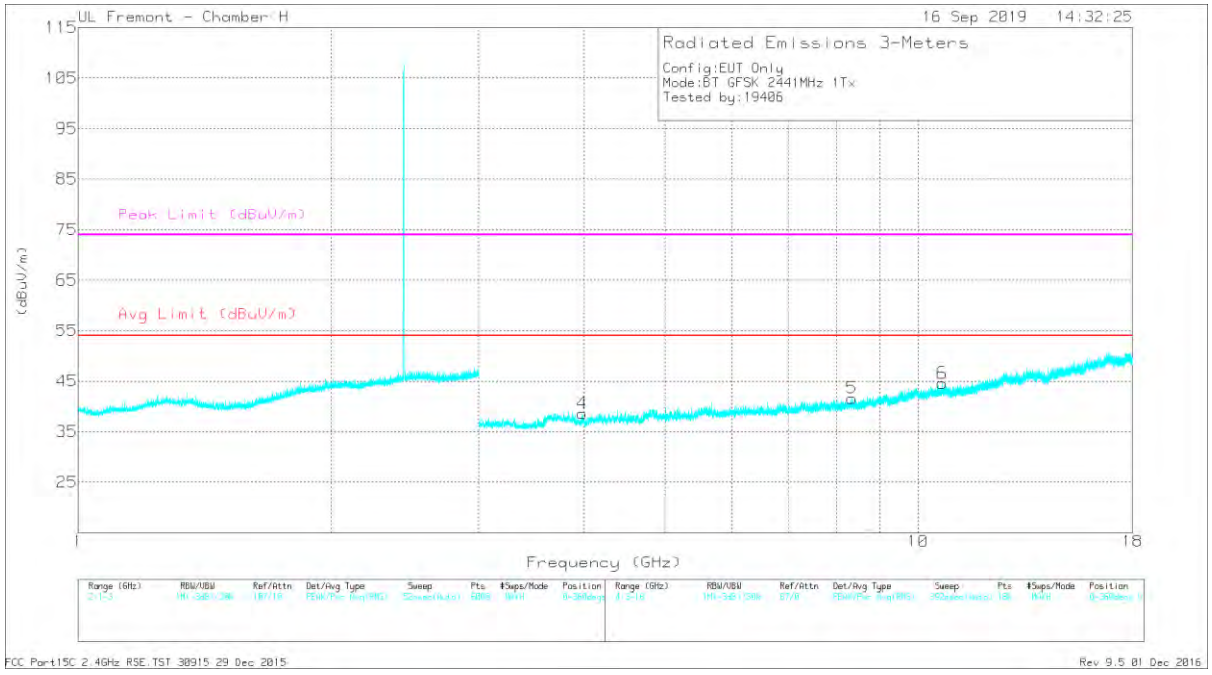
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.746	41.25	PKFH	33.3	-30.9	43.65	-	-	74	-30.35	24	329	H
	* 3.746	29.17	VA1T	33.3	-30.9	31.57	54	-22.43	-	-	24	329	H
2	* 9.075	36.28	PKFH	36.2	-24.5	47.98	-	-	74	-26.02	37	374	H
	* 9.076	24	VA1T	36.2	-24.5	35.7	54	-18.3	-	-	37	374	H
3	* 12.202	34.78	PKFH	38.9	-23	50.68	-	-	74	-23.32	356	345	H
	* 12.199	23.14	VA1T	38.9	-23.1	38.94	54	-15.06	-	-	356	345	H
4	* 3.979	40.17	PKFH	33.5	-29.8	43.87	-	-	74	-30.13	166	125	V
	* 3.982	28.07	VA1T	33.5	-29.9	31.67	54	-22.33	-	-	166	125	V
5	* 8.344	36.4	PKFH	36	-25.7	46.7	-	-	74	-27.3	215	254	V
	* 8.346	24.74	VA1T	36	-25.7	35.04	54	-18.96	-	-	215	254	V
6	* 10.688	34.45	PKFH	37.6	-22.7	49.35	-	-	74	-24.65	358	100	V
	* 10.689	23.07	VA1T	37.6	-22.7	37.97	54	-16.03	-	-	358	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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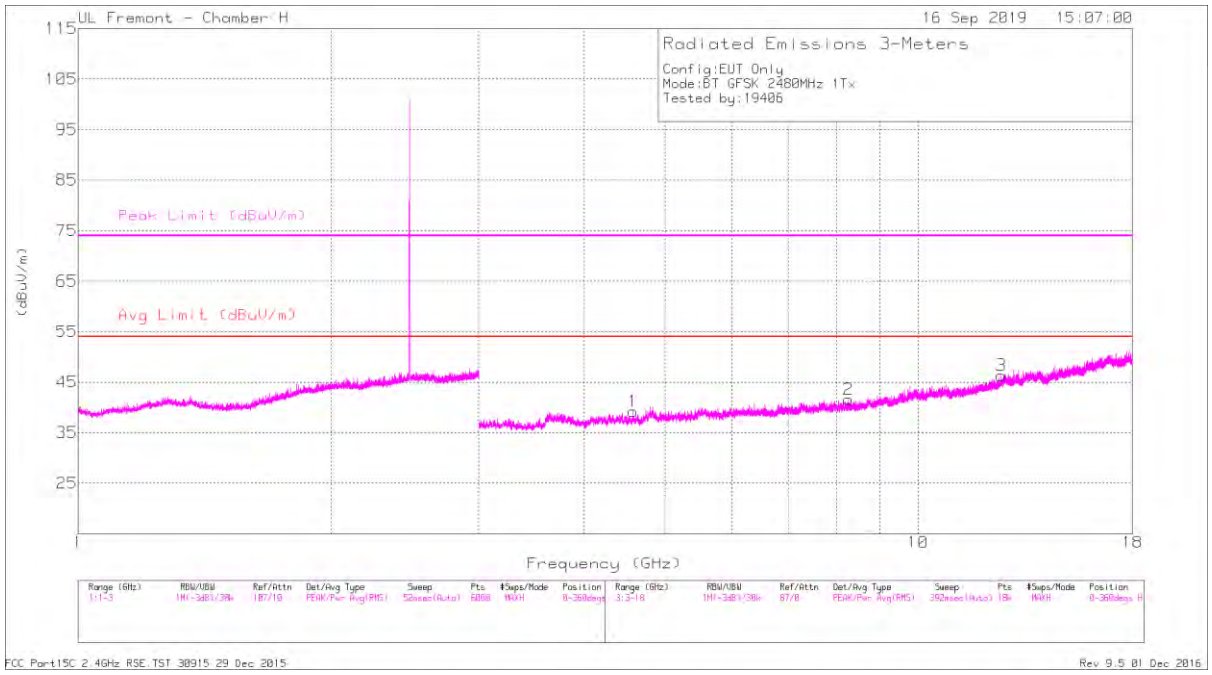
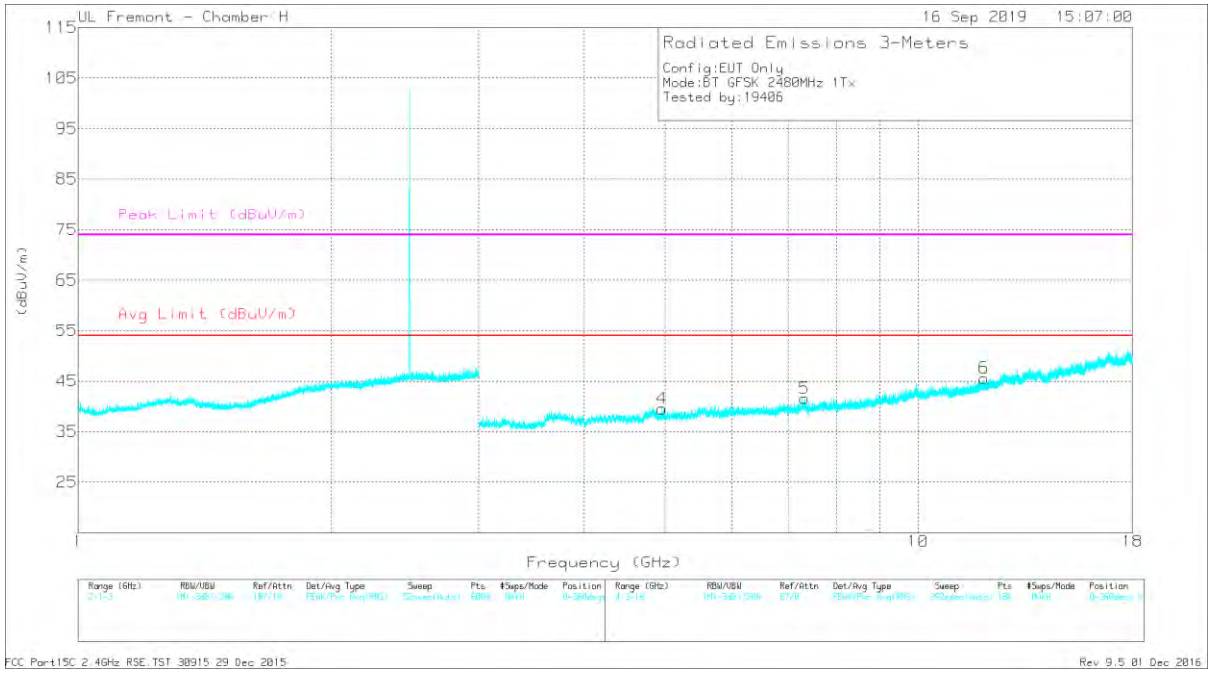
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.579	40.98	PKFH	34.1	-30.2	44.88	-	-	74	-29.12	260	262	H
	* 4.578	28.83	VA1T	34.1	-30.2	32.73	54	-21.27	-	-	260	262	H
2	* 8.262	36.27	PKFH	36.1	-26	46.37	-	-	74	-27.63	242	334	H
	* 8.262	24.64	VA1T	36.1	-26	34.74	54	-19.26	-	-	242	334	H
3	* 12.566	36.63	PKFH	39.5	-22.9	53.23	-	-	74	-20.77	41	304	H
	* 12.564	23.2	VA1T	39.6	-22.9	39.9	54	-14.1	-	-	41	304	H
4	* 4.954	40	PKFH	34.2	-29.7	44.5	-	-	74	-29.5	277	272	V
	* 4.955	27.54	VA1T	34.2	-29.6	32.14	54	-21.86	-	-	277	272	V
5	* 7.327	37.33	PKFH	36	-26.6	46.73	-	-	74	-27.27	89	195	V
	* 7.327	25.43	VA1T	36	-26.6	34.83	54	-19.17	-	-	89	195	V
6	* 11.993	35.17	PKFH	38.7	-23.2	50.67	-	-	74	-23.33	194	229	V
	* 11.99	23.22	VA1T	38.7	-23.2	38.72	54	-15.28	-	-	194	229	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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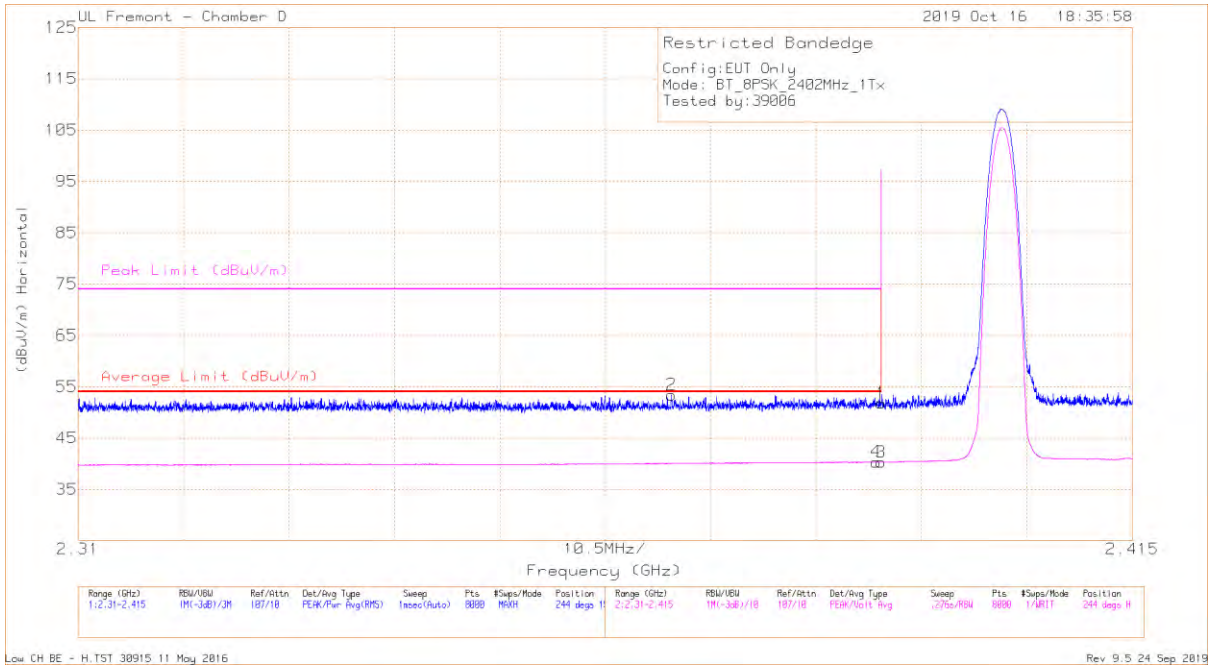
9.1.2. HIGH POWER ENHANCED DATA RATE 8PSK MODULATION

UAT 1

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	40.31	Pk	32	-20.5	51.81	-	-	74	-22.19	244	152	H
2	* 2.36908	42.21	Pk	31.8	-20.6	53.41	-	-	74	-20.59	244	152	H
3	* 2.39	28.8	VA1T	32	-20.5	40.3	54	-13.7	-	-	244	152	H
4	* 2.38948	28.86	VA1T	32	-20.5	40.36	54	-13.64	-	-	244	152	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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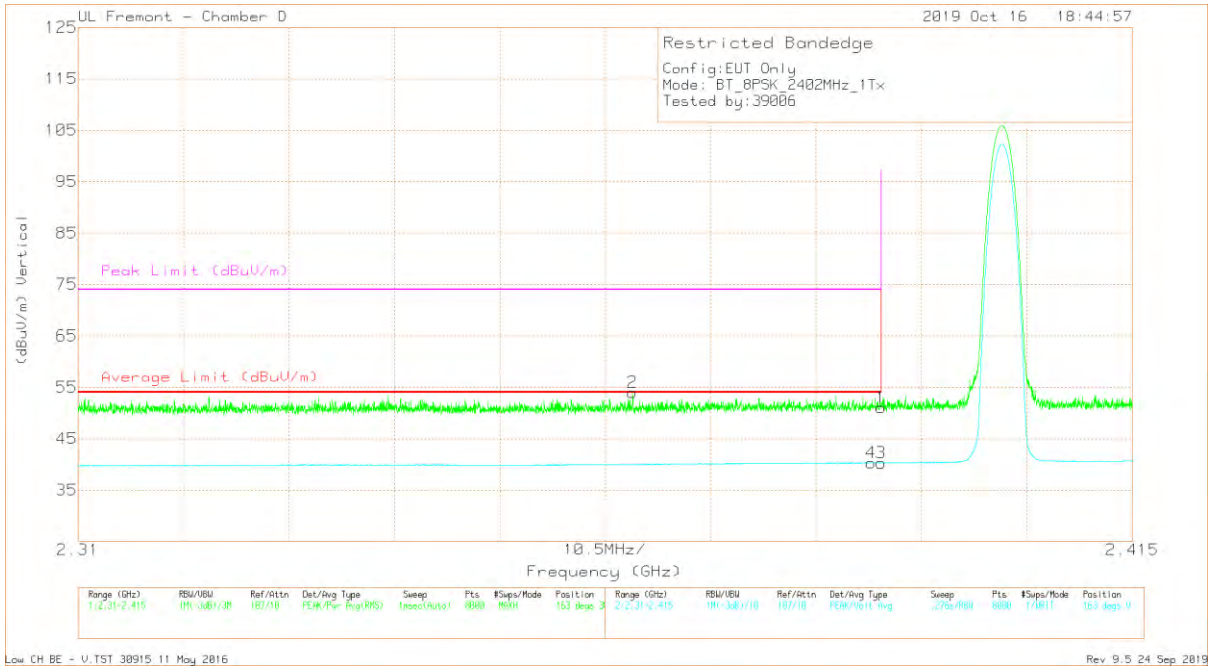
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.53	Pk	32	-20.5	51.03	-	-	74	-22.97	163	382	V
2	* 2.36523	42.77	Pk	31.8	-20.6	53.97	-	-	74	-20.03	163	382	V
3	* 2.39	28.77	VA1T	32	-20.5	40.27	54	-13.73	-	-	163	382	V
4	* 2.38899	28.82	VA1T	32	-20.5	40.32	54	-13.68	-	-	163	382	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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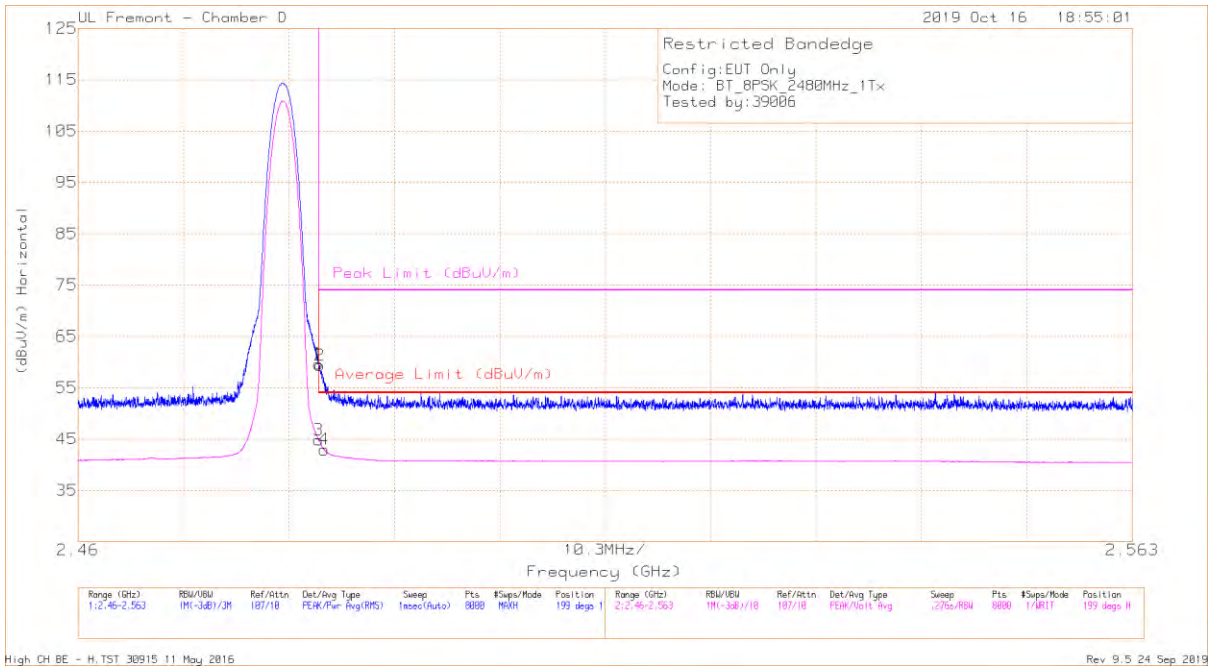
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	47.76	Pk	32.4	-20.5	59.66	-	-	74	-14.34	199	176	H
2	* 2.4836	47.45	Pk	32.4	-20.5	59.35	-	-	74	-14.65	199	176	H
3	* 2.4835	32.9	VA1T	32.4	-20.5	44.8	54	-9.2	-	-	199	176	H
4	* 2.48404	31.16	VA1T	32.3	-20.5	42.96	54	-11.04	-	-	199	176	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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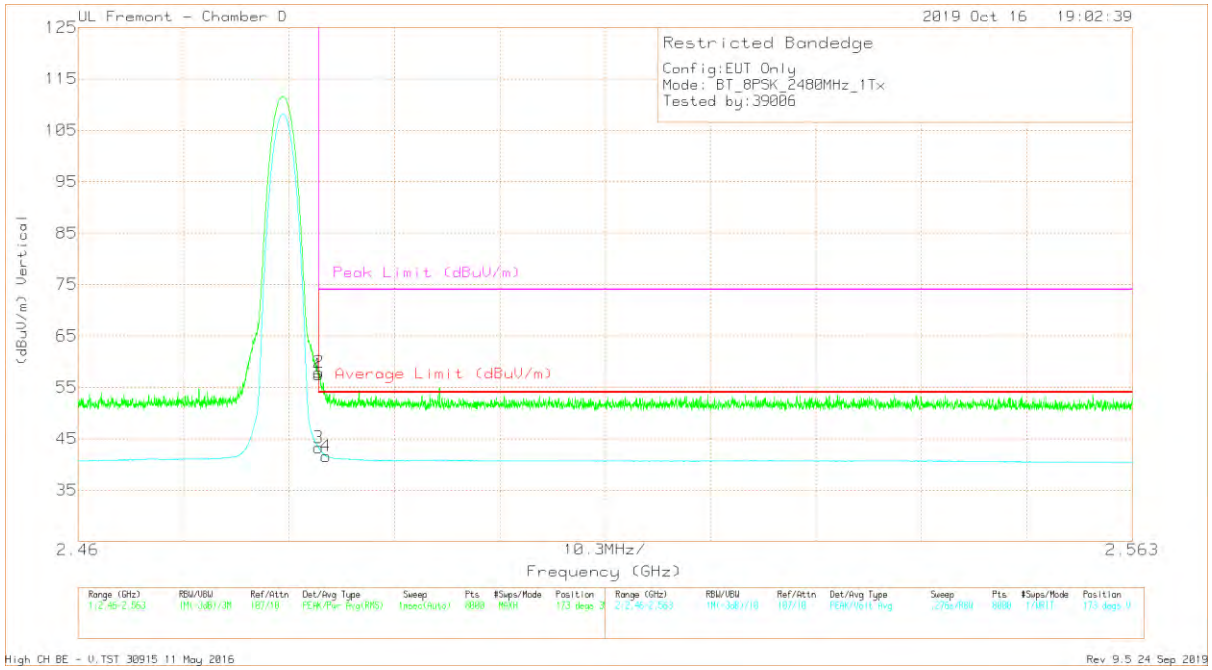
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	45.56	Pk	32.4	-20.5	57.46	-	-	74	-16.54	173	359	V
2	* 2.48353	46.03	Pk	32.4	-20.5	57.93	-	-	74	-16.07	173	359	V
3	* 2.4835	31.37	VA1T	32.4	-20.5	43.27	54	-10.73	-	-	173	359	V
4	* 2.48426	29.8	VA1T	32.3	-20.5	41.6	54	-12.4	-	-	173	359	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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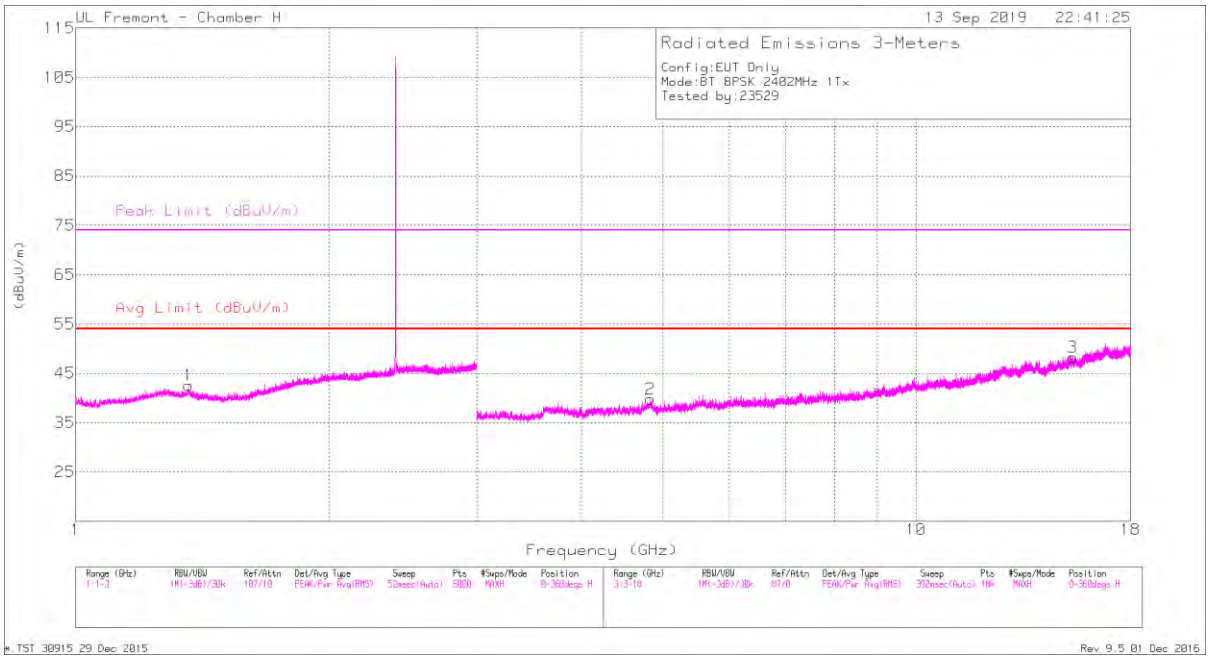
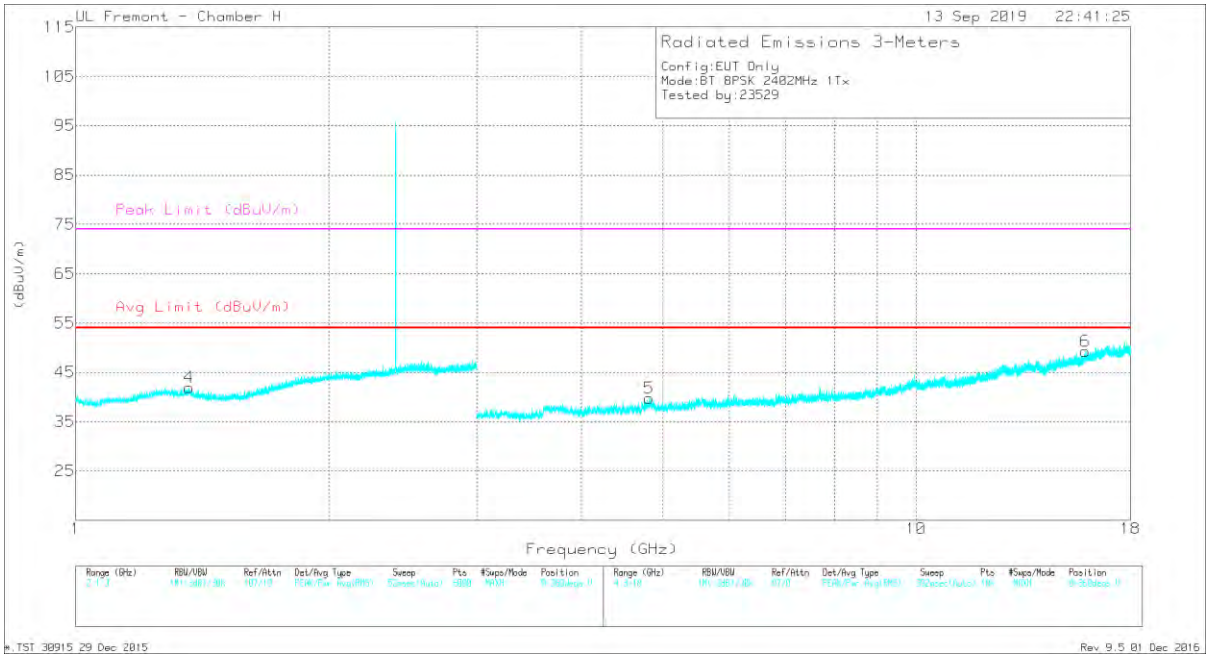
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.361	43.61	PKFH	29.1	-25.2	47.51	-	-	74	-26.49	62	134	H
	* 1.362	31.88	VA1T	29.1	-25.2	35.78	54	-18.22	-	-	62	134	H
2	* 4.827	40.92	PKFH	34.4	-30.3	45.02	-	-	74	-28.98	190	206	H
	* 4.83	29.03	VA1T	34.4	-30.4	33.03	54	-20.97	-	-	190	206	H
3	* 15.375	34.83	PKFH	40.9	-21.8	53.93	-	-	74	-20.07	226	313	H
	* 15.371	22.78	VA1T	40.9	-21.9	41.78	54	-12.22	-	-	226	313	H
4	* 1.365	44.09	PKFH	29.1	-25.2	47.99	-	-	74	-26.01	255	187	V
	* 1.365	31.85	VA1T	29.1	-25.2	35.75	54	-18.25	-	-	255	187	V
5	* 4.811	40.7	PKFH	34.4	-30.3	44.8	-	-	74	-29.2	75	299	V
	* 4.812	28.56	VA1T	34.4	-30.3	32.66	54	-21.34	-	-	75	299	V
6	* 15.914	34.08	PKFH	41.2	-20.8	54.48	-	-	74	-19.52	337	147	V
	* 15.911	22.71	VA1T	41.2	-20.8	43.11	54	-10.89	-	-	337	147	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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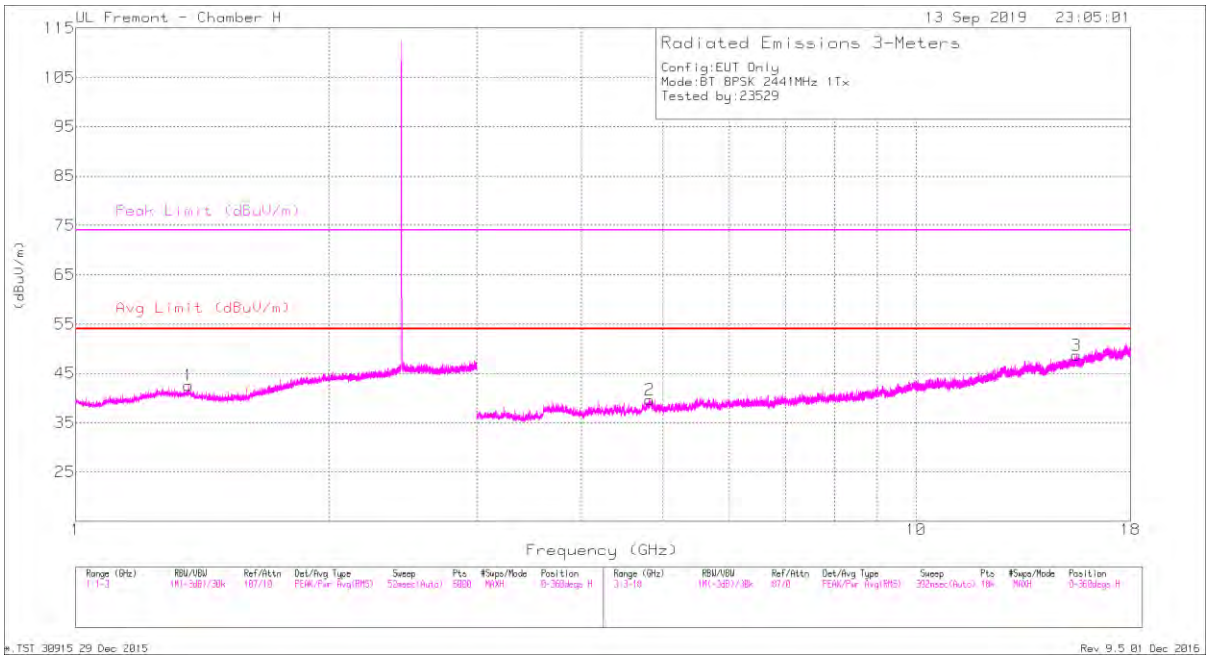
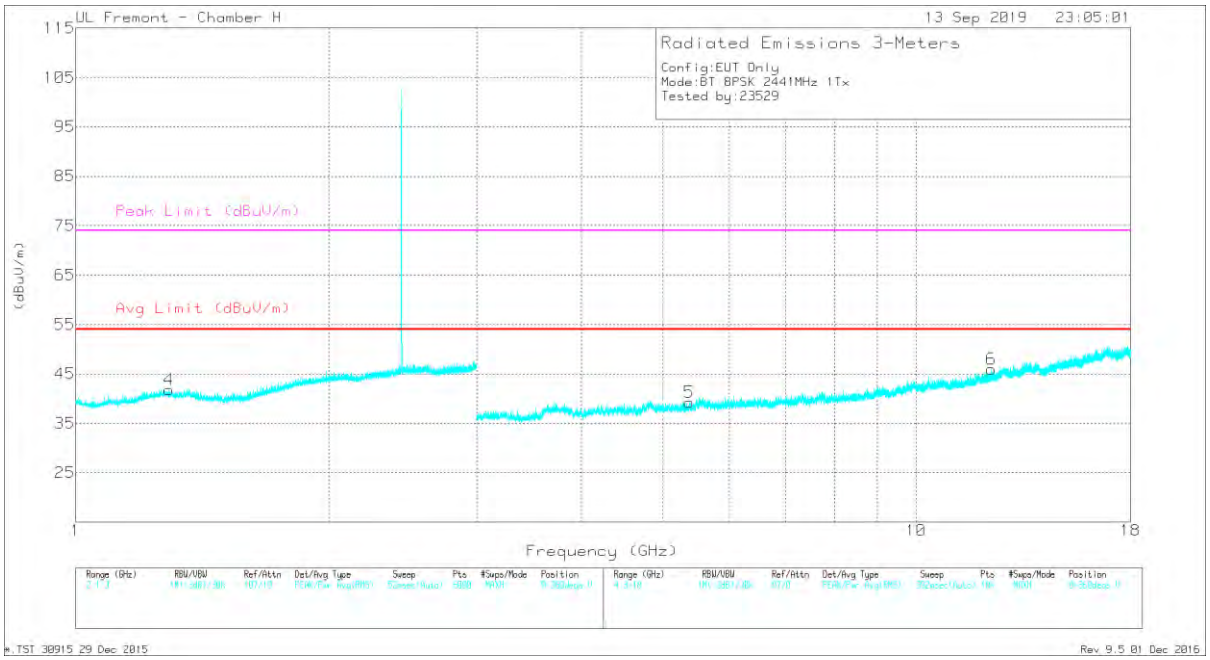
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.363	43.88	PKFH	29.1	-25.2	47.78	-	-	74	-26.22	286	178	H
	* 1.361	31.97	VA1T	29.1	-25.2	35.87	54	-18.13	-	-	286	178	H
2	* 4.825	40.93	PKFH	34.4	-30.3	45.03	-	-	74	-28.97	111	155	H
	* 4.825	28.97	VA1T	34.4	-30.3	33.07	54	-20.93	-	-	111	155	H
3	* 15.532	34.79	PKFH	40.9	-22.2	53.49	-	-	74	-20.51	327	224	H
	* 15.532	23.22	VA1T	40.9	-22.2	41.92	54	-12.08	-	-	327	224	H
4	* 1.29	43.6	PKFH	29.2	-25.4	47.4	-	-	74	-26.6	222	206	V
	* 1.291	31.94	VA1T	29.1	-25.4	35.64	54	-18.36	-	-	222	206	V
5	* 5.373	39.68	PKFH	34.8	-29	45.48	-	-	74	-28.52	273	172	V
	* 5.37	27.24	VA1T	34.9	-29	33.14	54	-20.86	-	-	273	172	V
6	* 12.285	35.56	PKFH	39	-22.9	51.66	-	-	74	-22.34	139	303	V
	* 12.281	23.21	VA1T	39	-23	39.21	54	-14.79	-	-	139	303	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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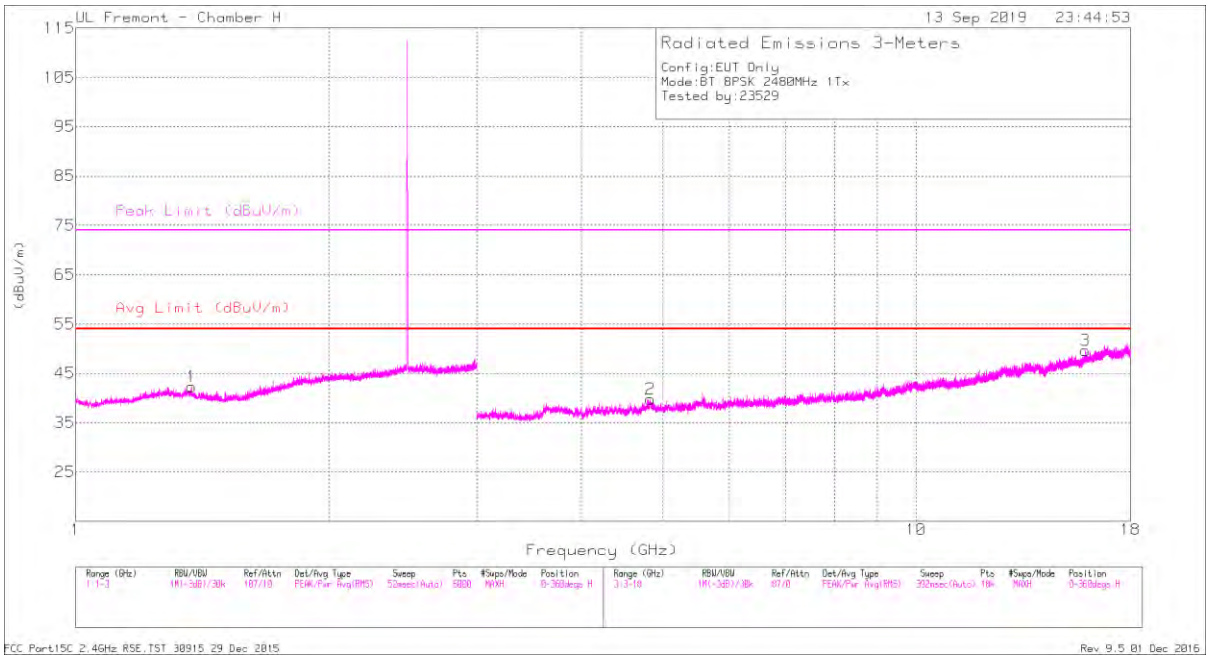
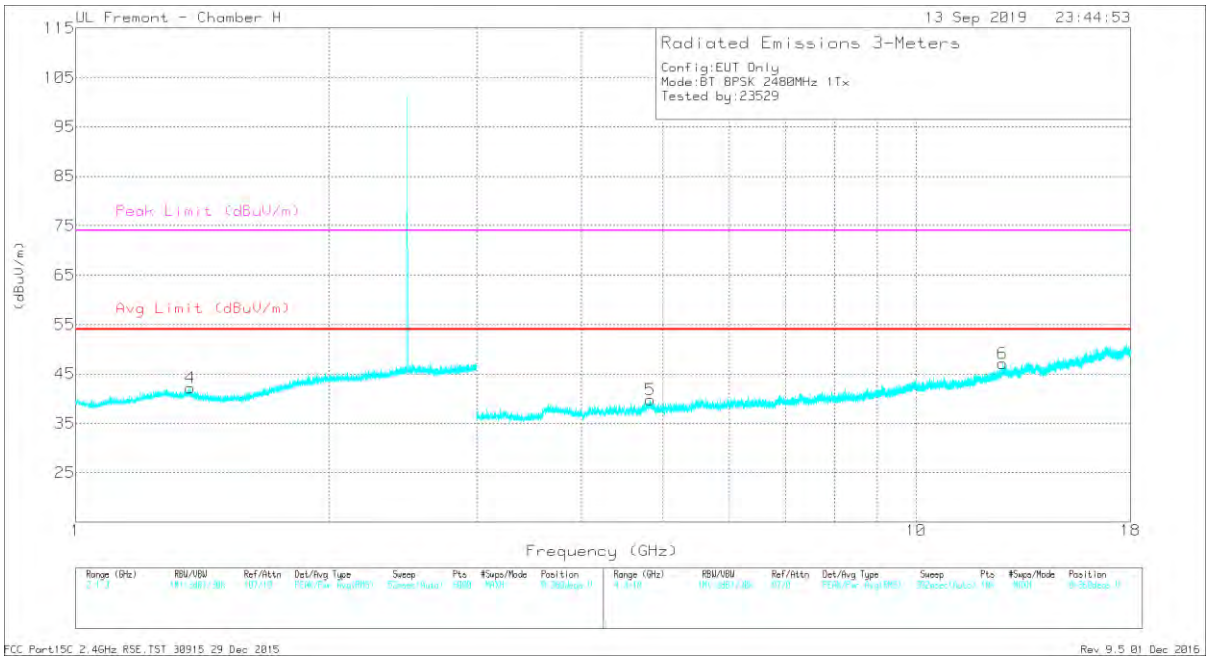
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.373	43.51	PKFH	28.8	-25.2	47.11	-	-	74	-26.89	104	254	H
	* 1.371	31.85	VA1T	28.9	-25.2	35.55	54	-18.45	-	-	104	254	H
2	* 4.827	40.82	PKFH	34.4	-30.3	44.92	-	-	74	-29.08	171	136	H
	* 4.826	28.95	VA1T	34.4	-30.3	33.05	54	-20.95	-	-	171	136	H
3	* 15.908	34.75	PKFH	41.3	-20.7	55.35	-	-	74	-18.65	322	167	H
	* 15.91	22.81	VA1T	41.2	-20.7	43.31	54	-10.69	-	-	322	167	H
4	* 1.37	43.63	PKFH	28.9	-25.2	47.33	-	-	74	-26.67	204	231	V
	* 1.367	31.86	VA1T	29	-25.2	35.66	54	-18.34	-	-	204	231	V
5	* 4.834	40.49	PKFH	34.3	-30.4	44.39	-	-	74	-29.61	300	197	V
	* 4.831	29.03	VA1T	34.3	-30.4	32.93	54	-21.07	-	-	300	197	V
6	* 12.679	34.88	PKFH	39.8	-22.2	52.48	-	-	74	-21.52	257	202	V
	* 12.677	22.97	VA1T	39.8	-22.3	40.47	54	-13.53	-	-	257	202	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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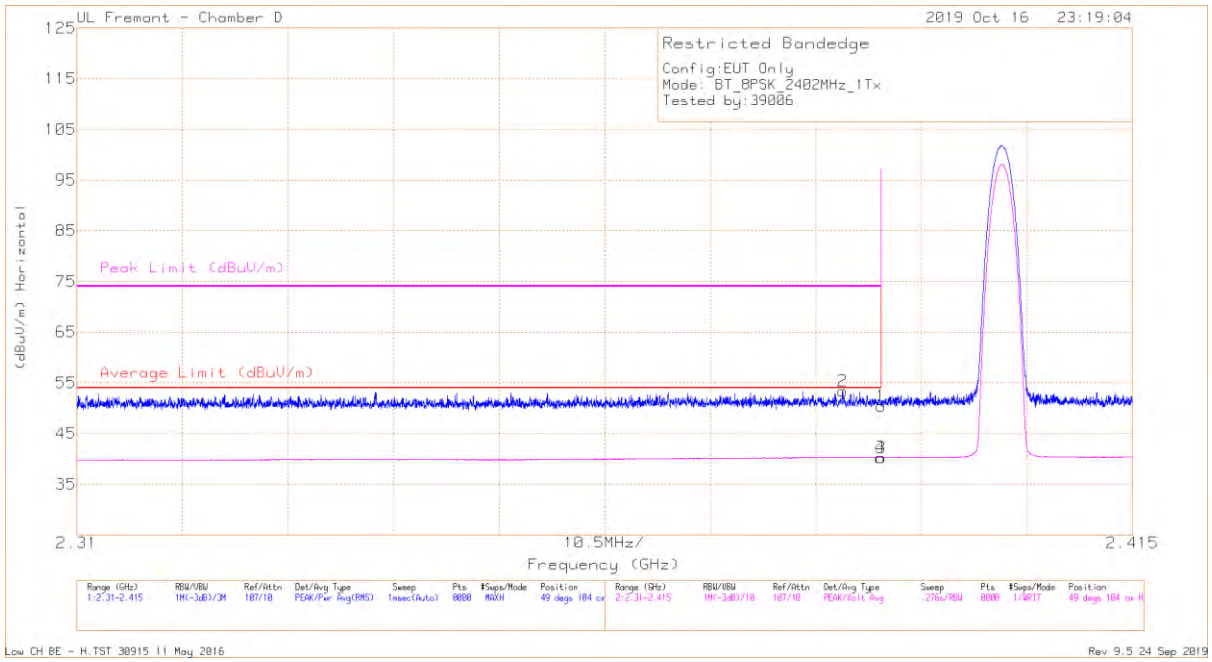
LAT 3

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	38.87	Pk	32	-20.5	50.37	-	-	74	-23.63	49	104	H
2	* 2.38618	42.04	Pk	32	-20.6	53.44	-	-	74	-20.56	49	104	H
3	* 2.39	28.78	VA1T	32	-20.5	40.28	54	-13.72	-	-	49	104	H
4	* 2.38996	28.79	VA1T	32	-20.5	40.29	54	-13.71	-	-	49	104	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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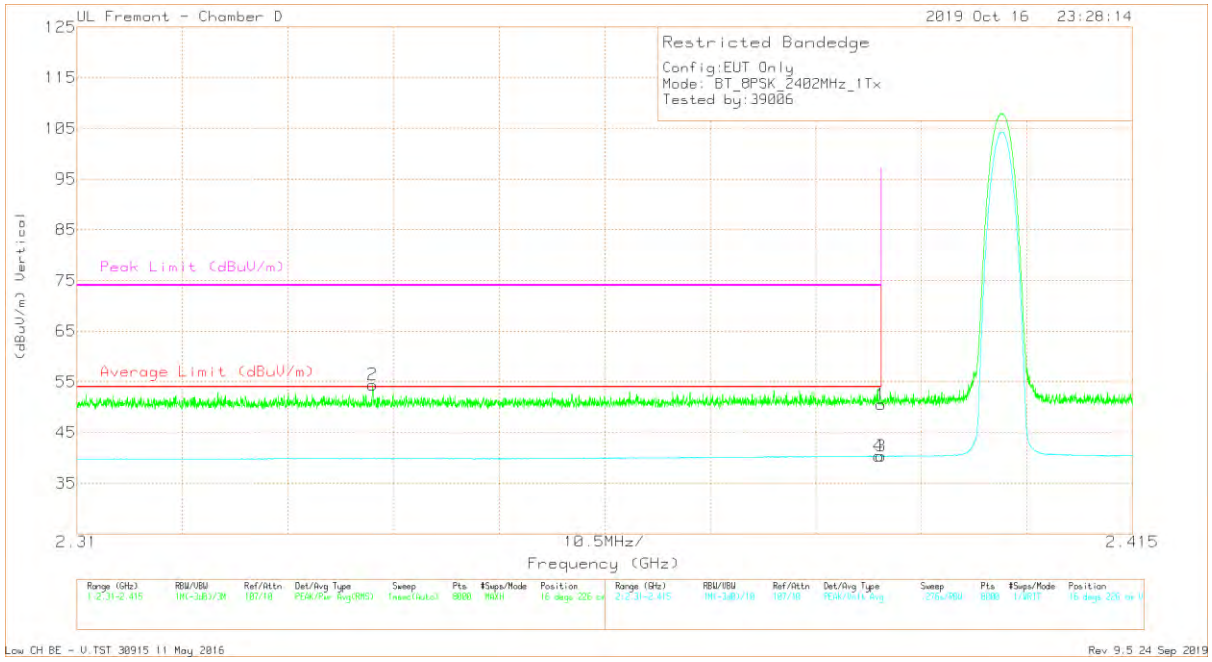
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.02	Pk	32	-20.5	50.52	-	-	74	-23.48	16	226	V
2	* 2.33942	43.35	Pk	31.8	-20.7	54.45	-	-	74	-19.55	16	226	V
3	* 2.39	28.81	VA1T	32	-20.5	40.31	54	-13.69	-	-	16	226	V
4	* 2.38979	28.83	VA1T	32	-20.5	40.33	54	-13.67	-	-	16	226	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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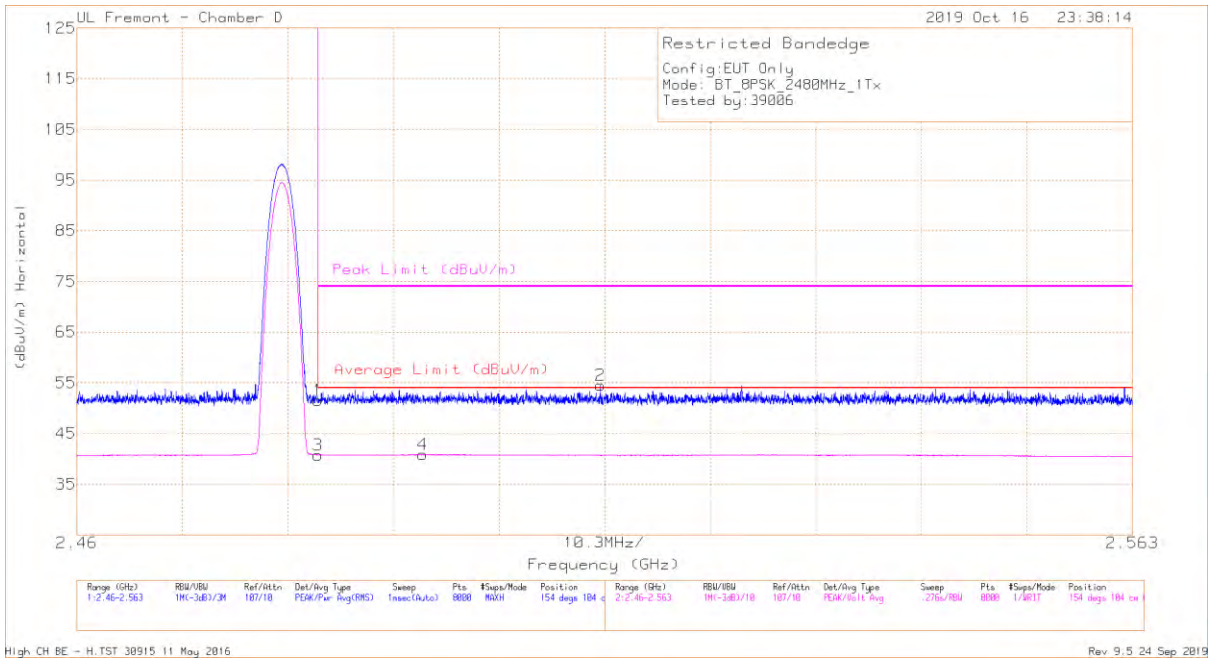
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	39.66	Pk	32.4	-20.5	51.56	-	-	74	-22.44	154	104	H
3	* 2.4835	28.88	VA1T	32.4	-20.5	40.78	54	-13.22	-	-	154	104	H
4	* 2.49372	28.85	VA1T	32.4	-20.4	40.85	54	-13.15	-	-	154	104	H
2	2.5111	42.57	Pk	32.3	-20.4	54.47	-	-	74	-19.53	154	104	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
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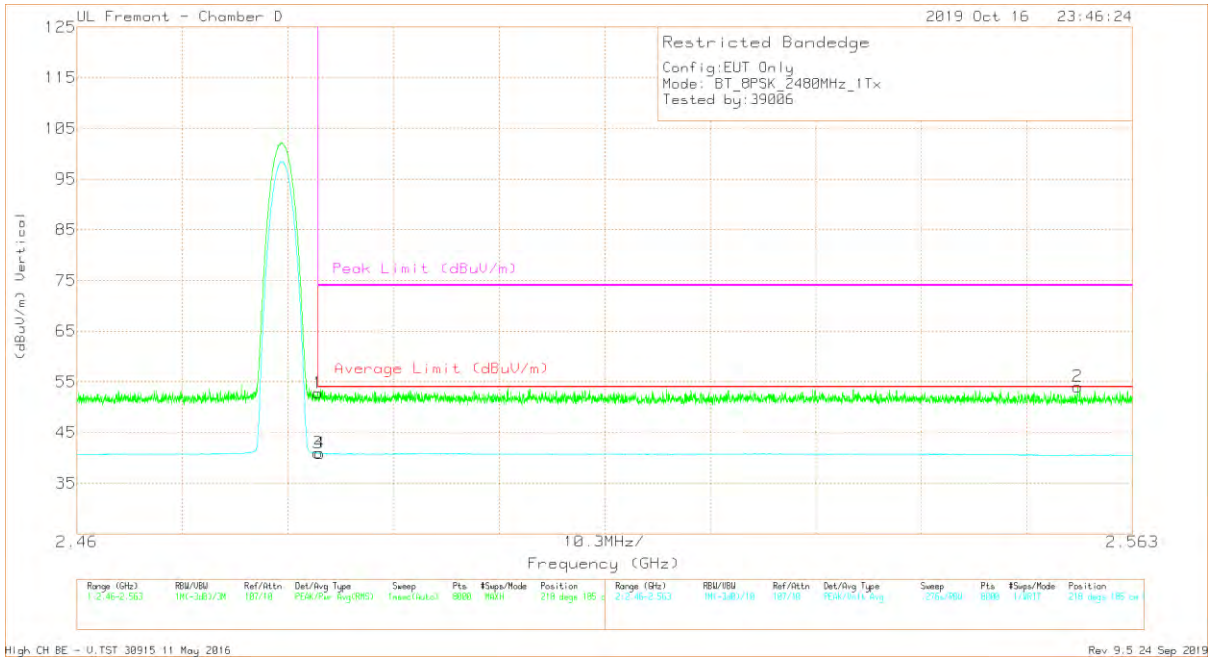
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	40.85	Pk	32.4	-20.5	52.75	-	-	74	-21.25	218	185	V
3	* 2.4835	29.03	VA1T	32.4	-20.5	40.93	54	-13.07	-	-	218	185	V
4	* 2.48371	29.02	VA1T	32.4	-20.5	40.92	54	-13.08	-	-	218	185	V
2	2.55765	42.48	Pk	32	-20.4	54.08	-	-	74	-19.92	218	185	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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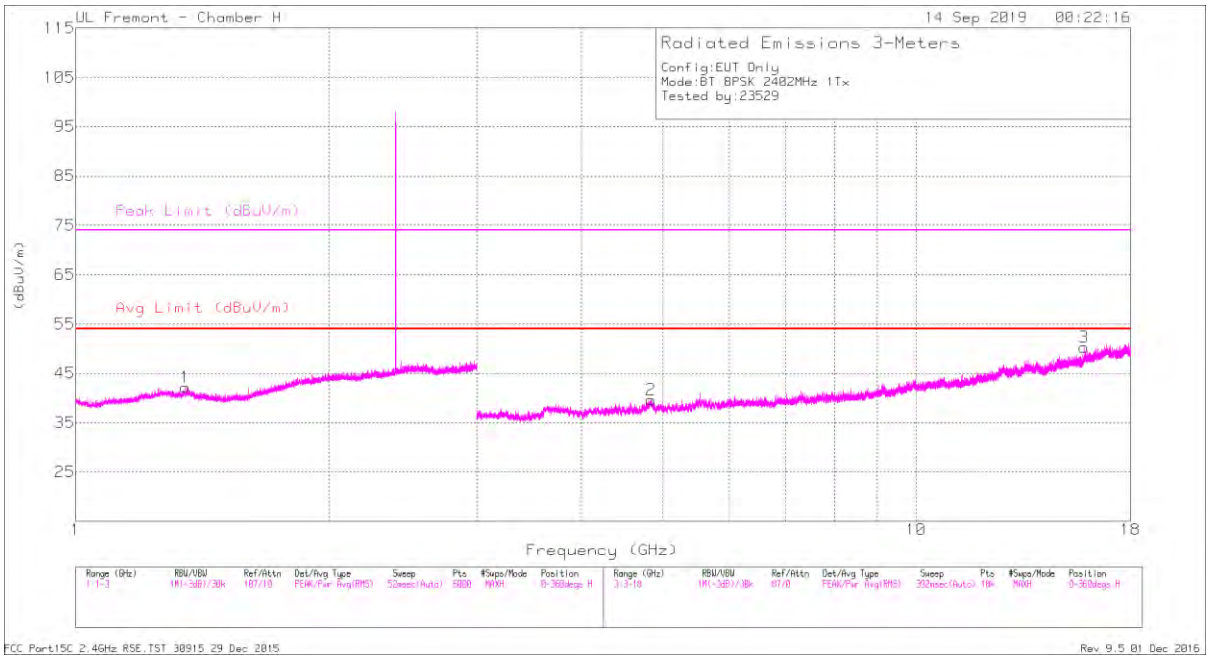
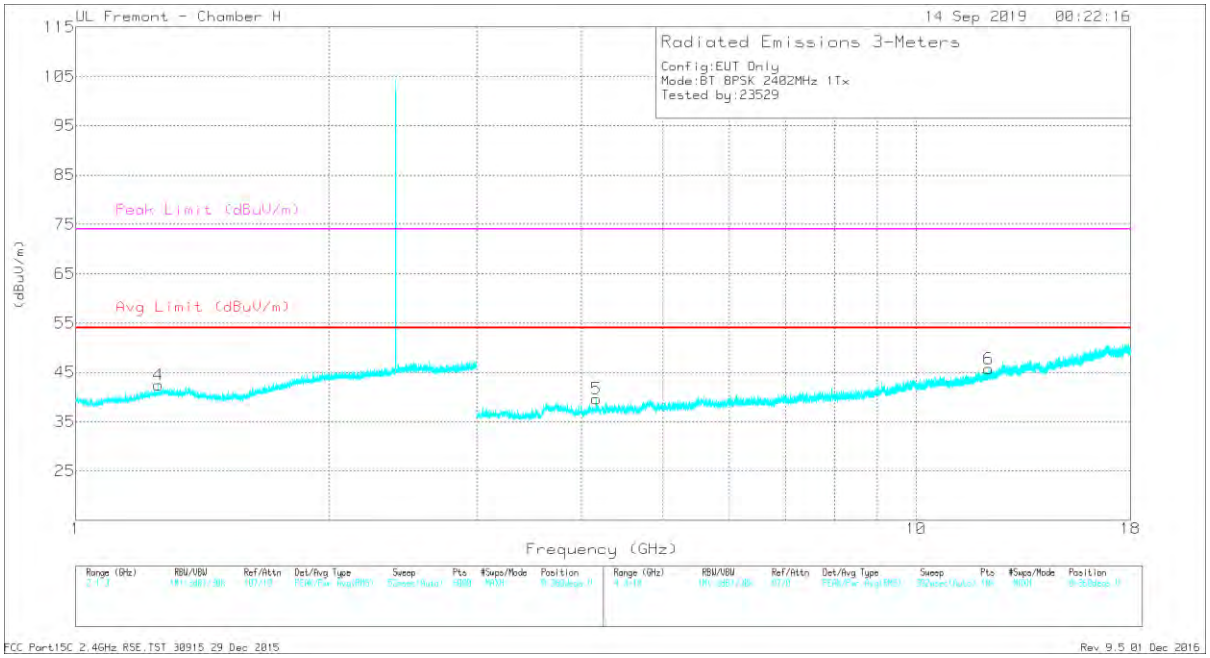
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.352	44.26	PKFH	29	-25.2	48.06	-	-	74	-25.94	130	134	H
	* 1.352	31.85	VA1T	29	-25.2	35.65	54	-18.35	-	-	130	134	H
2	* 4.841	40.91	PKFH	34.4	-30.4	44.91	-	-	74	-29.09	220	224	H
	* 4.837	28.61	VA1T	34.3	-30.3	32.61	54	-21.39	-	-	220	224	H
3	* 15.852	35.02	PKFH	41.1	-21	55.12	-	-	74	-18.88	328	237	H
	* 15.851	22.81	VA1T	41.1	-21	42.91	54	-11.09	-	-	328	237	H
4	* 1.254	44.29	PKFH	29	-25.5	47.79	-	-	74	-26.21	259	156	V
	* 1.255	32.01	VA1T	29	-25.5	35.51	54	-18.49	-	-	259	156	V
5	* 4.163	41.22	PKFH	33.4	-30.7	43.92	-	-	74	-30.08	169	188	V
	* 4.162	28.95	VA1T	33.5	-30.7	31.75	54	-22.25	-	-	169	188	V
6	* 12.204	34.7	PKFH	38.9	-23	50.6	-	-	74	-23.4	244	158	V
	* 12.201	23.09	VA1T	38.9	-23	38.99	54	-15.01	-	-	244	158	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak
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