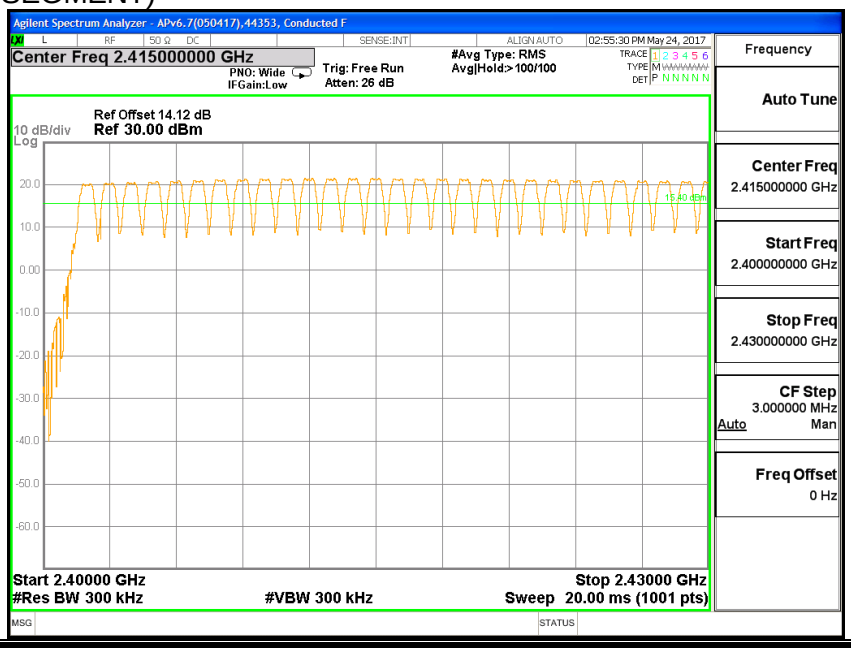
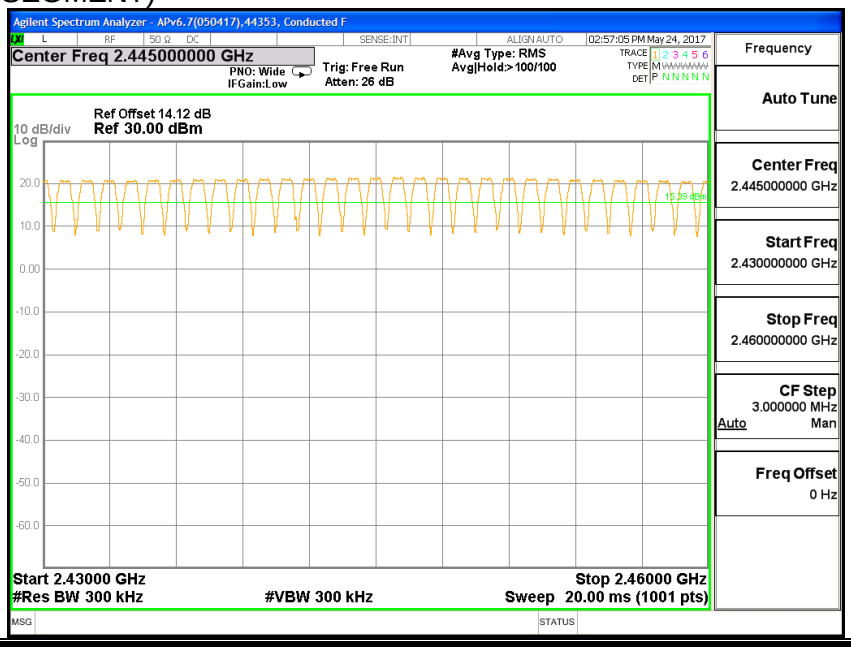
NUMBER OF HOPPING CHANNELS (30 MHz SPAN, FIRST SEGMENT)



NUMBER OF HOPPING CHANNELS (30 MHz SPAN, SECOND SEGMENT)



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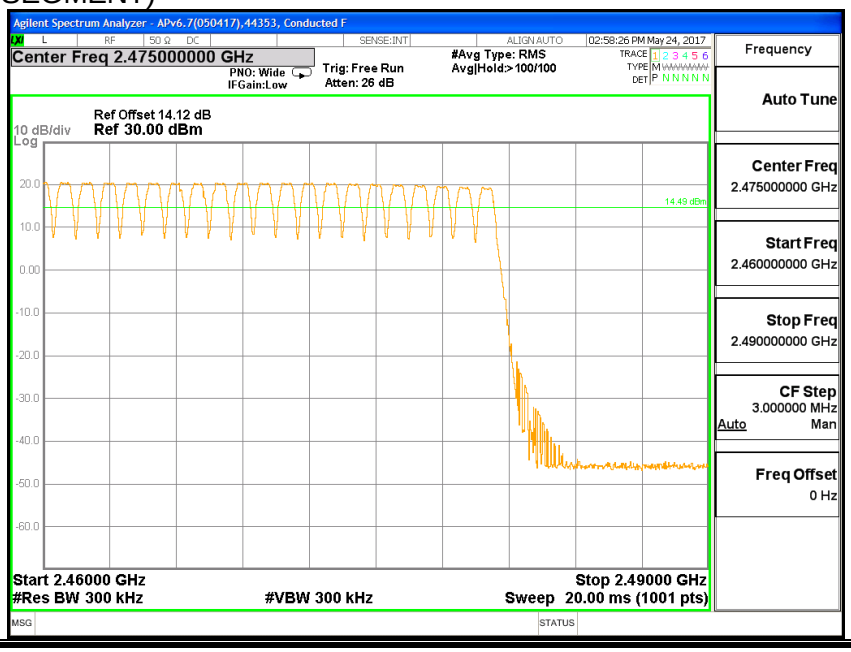
NUMBER OF HOPPING CHANNELS (30 MHz SPAN, THIRD SEGMENT)



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8.8.4. AVERAGE TIME OF OCCUPANCY

LIMITS

FCC §15.247 (a) (1) (iii)

IC RSS-247 (5.1) (d)

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The span is set to 0 Hz, centered on a single, selected hopping channel. The width of a single pulse is measured in a fast scan. The number of pulses is measured in a 3.16 second scan, to enable resolution of each occurrence.

The average time of occupancy in the specified 31.6 second period (79 channels * 0.4 s) is equal to 10 * (# of pulses in 3.16 s) * pulse width.

For AFH mode, the average time of occupancy in the specified 8 second period (20 channels * 0.4 seconds) is equal to 10 * (# of pulses in 0.8 s) * pulse width.

RESULTS

DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
GFSK Normal Mode					
DH1	0.3831	32	0.123	0.4	-0.277
DH3	1.639	17	0.279	0.4	-0.121
DH5	2.888	12	0.347	0.4	-0.053
DH Packet	Pulse Width (msec)	Number of Pulses in 0.8 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
GFSK AFH Mode					
DH1	0.3831	8	0.031	0.4	-0.369
DH3	1.639	4.25	0.070	0.4	-0.330
DH5	2.888	3	0.087	0.4	-0.313

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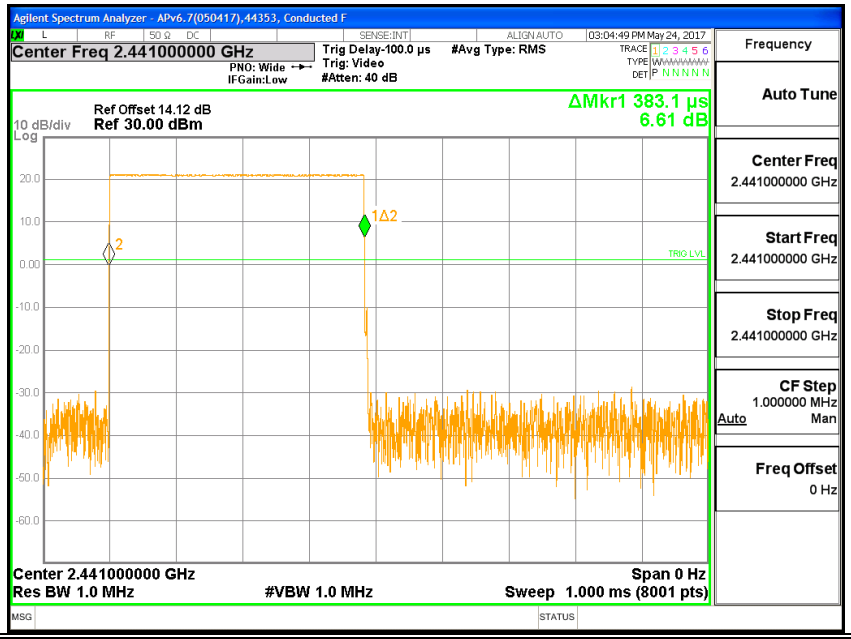
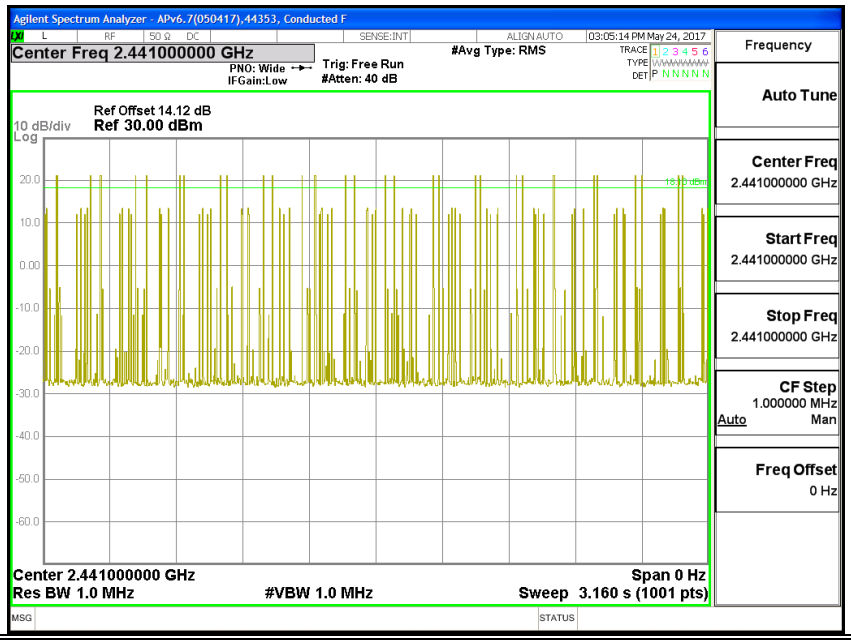
PULSE WIDTH - DH1



NUMBER OF PULSES - DH1



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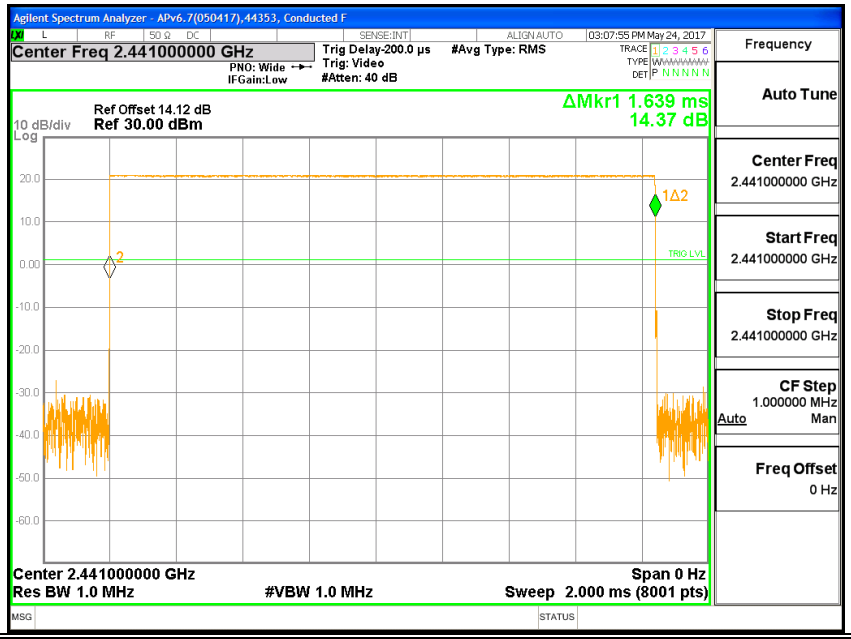
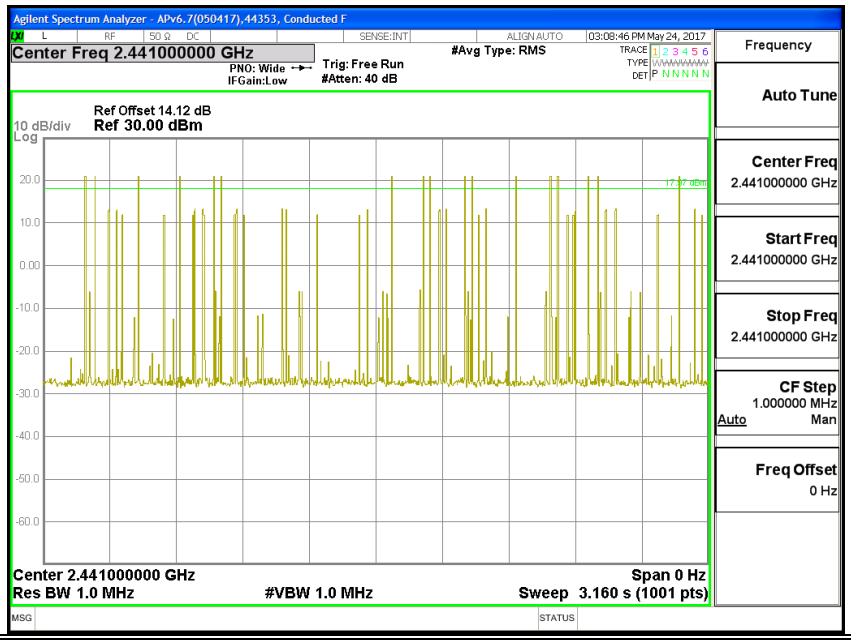
PULSE WIDTH - DH3



NUMBER OF PULSES - DH3



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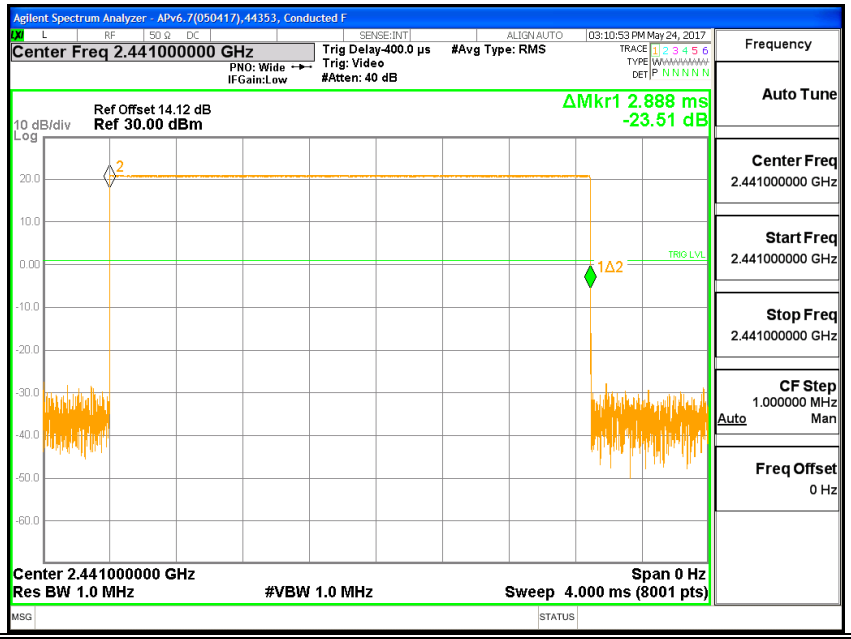
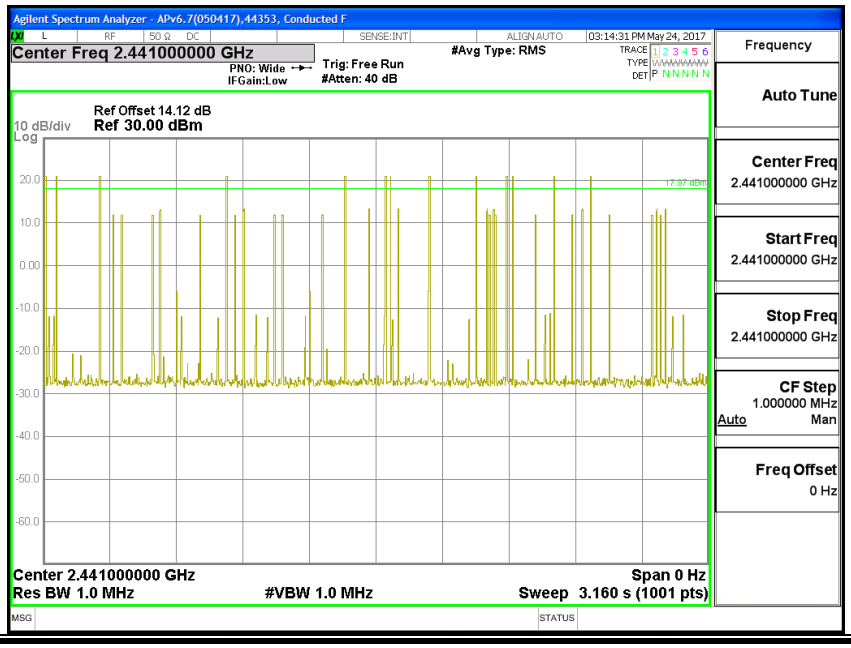
PULSE WIDTH - DH5



NUMBER OF PULSES - DH5



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8.8.5. OUTPUT POWER

ID:	30554	Date:	8/31/2017

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.

TEST PROCEDURE

The transmitter output is connected to a wideband peak and average power meter.

RESULTS

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	20.52	30	-9.48
Middle	2441	20.34	30	-9.66
High	2480	20.44	30	-9.56

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8.8.6. AVERAGE POWER

ID:	30554	Date:	8/31/2017

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	19.94
Middle	2441	19.86
High	2480	19.90

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8.8.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC 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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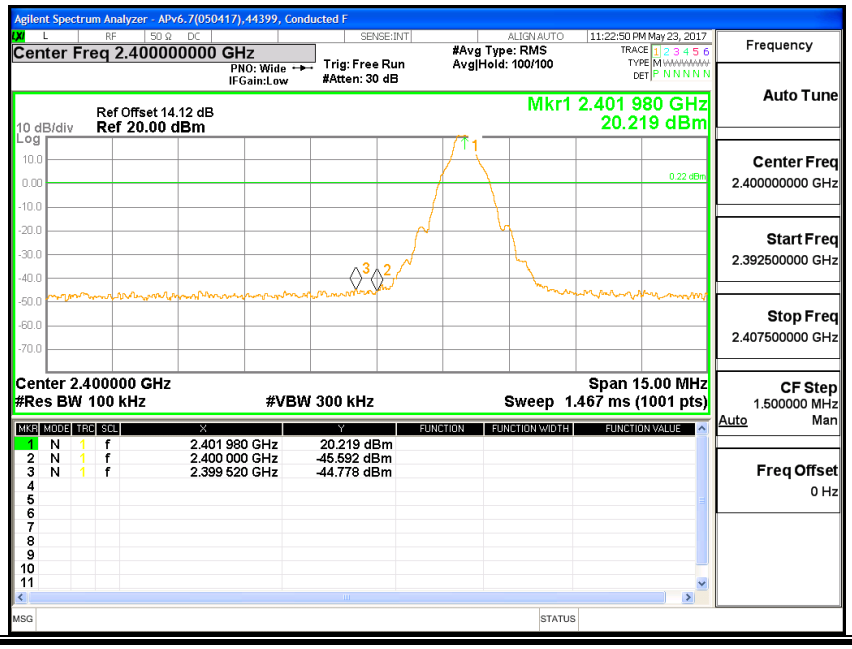
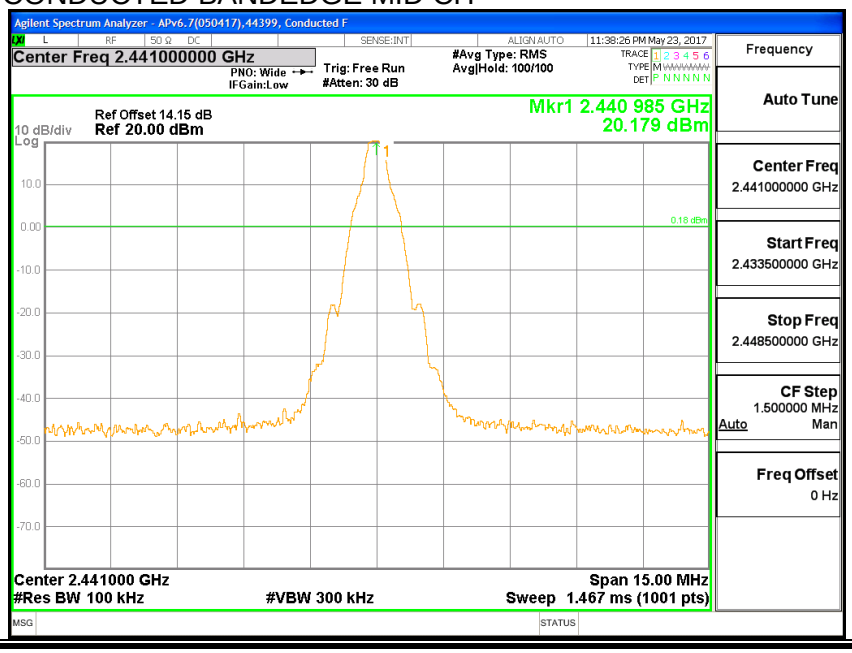
CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

CONDUCTED BANDEDGE LOW CH



CONDUCTED BANDEDGE MID CH



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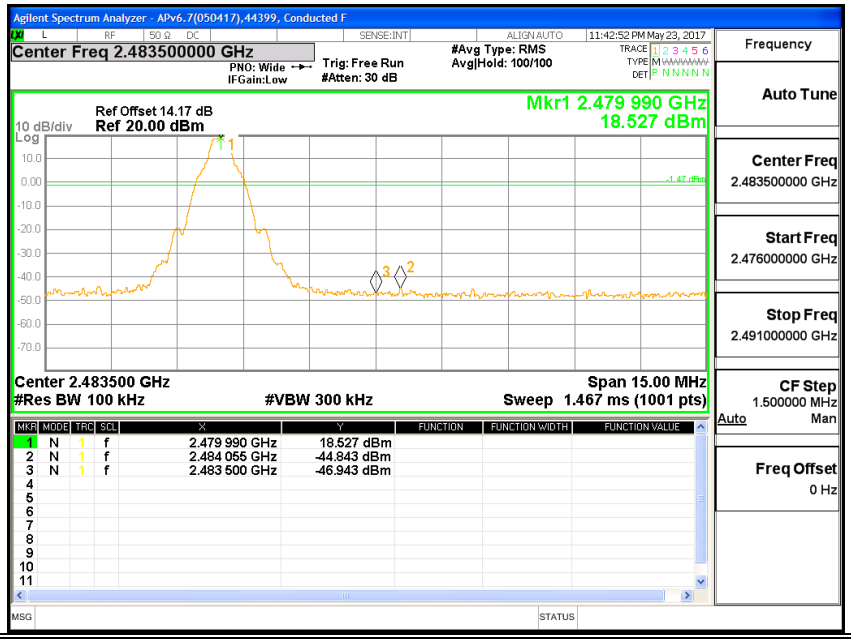
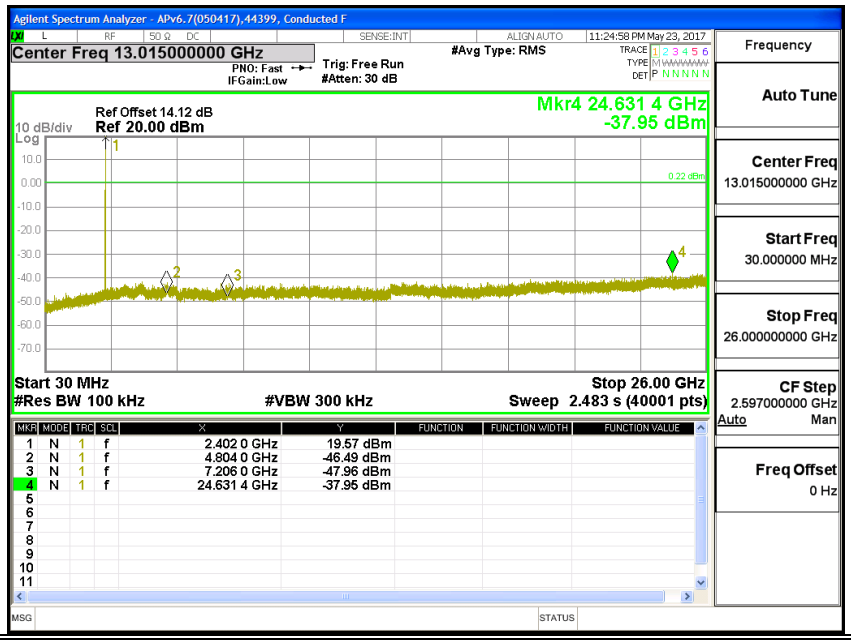
CONDUCTED BANDEDGE HIGH CH



CONDUCTED SPURIOUS EMISSIONS LOW CH



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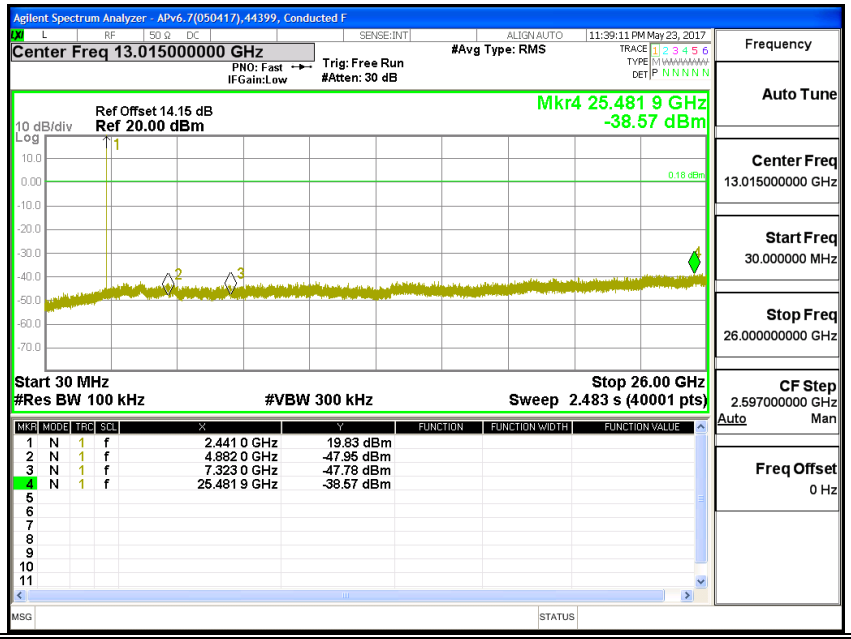
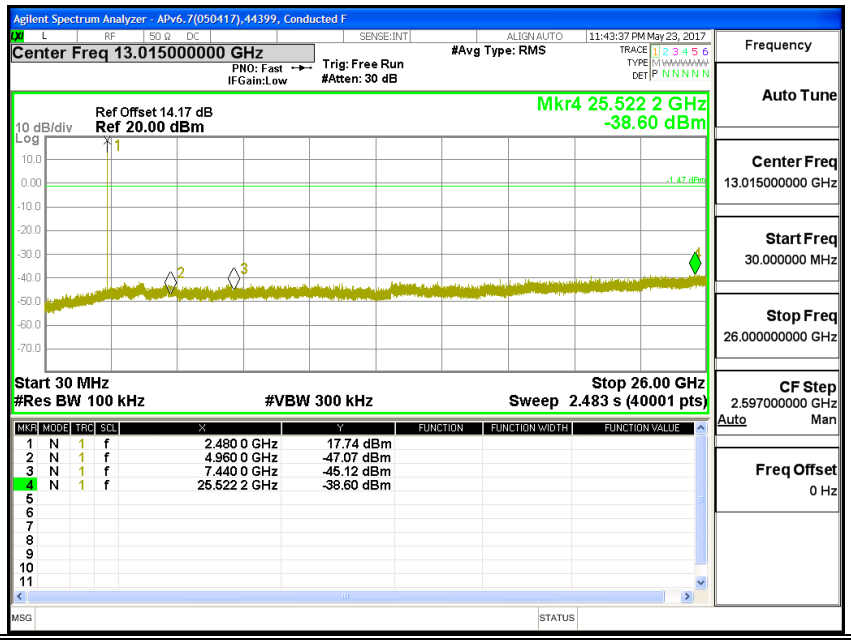
CONDUCTED SPURIOUS EMISSIONS MID CH



CONDUCTED SPURIOUS EMISSIONS HIGH CH



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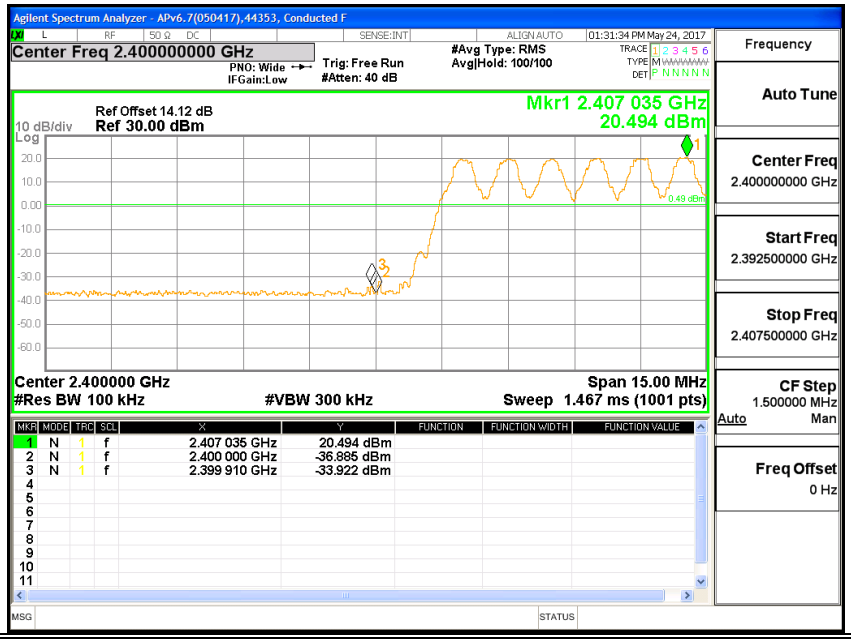
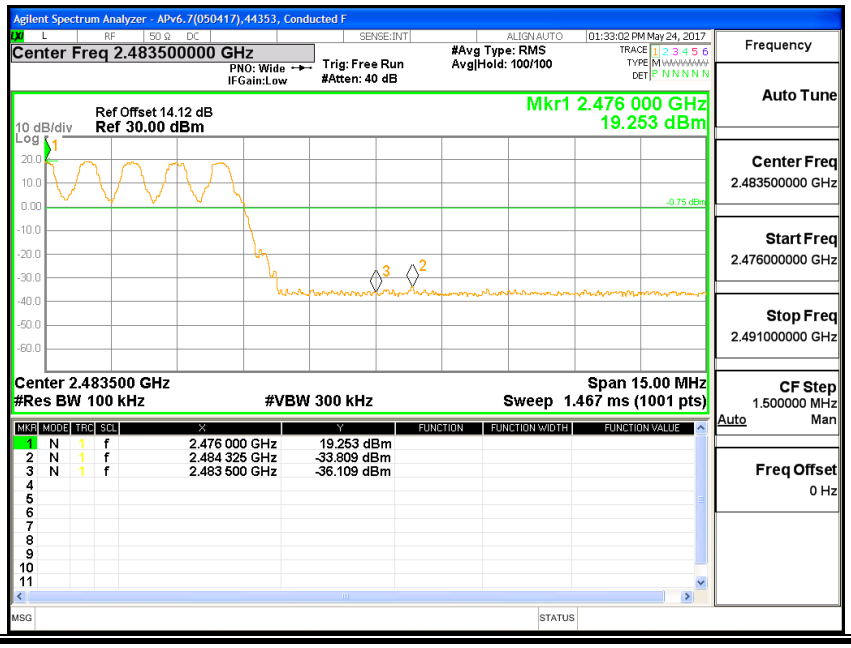
LOW BANDEDGE WITH HOPPING ON



HIGH BANDEDGE WITH HOPPING ON



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8.9. LAT 3, Pmax ENHANCED DATA RATE DQPSK MODULATION

8.9.1. OUTPUT POWER

ID:	44366	Date:	7/26/17

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.

TEST PROCEDURE

The transmitter output is connected to a wideband peak and average power meter.

RESULTS

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	20.20	21	-0.80
Middle	2441	20.31	21	-0.69
High	2480	20.18	21	-0.82

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8.9.2. AVERAGE POWER

ID:	44366	Date:	7/26/17

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	17.86
Middle	2441	17.76
High	2480	17.84

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8.10. LAT 3, Pmax ENHANCED DATA RATE 8PSK MODULATION

8.10.1. 20 dB AND 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The RBW is set to ≥ 1% of the 20 dB bandwidth. The VBW is set to ≥ RBW. The sweep time is coupled.

RESULTS

Channel	Frequency (MHz)	20 dB Bandwidth (KHz)	99% Bandwidth (KHz)
Low	2402	1395	1425.7
Middle	2441	1379	1278.4
High	2480	1404	1484.4

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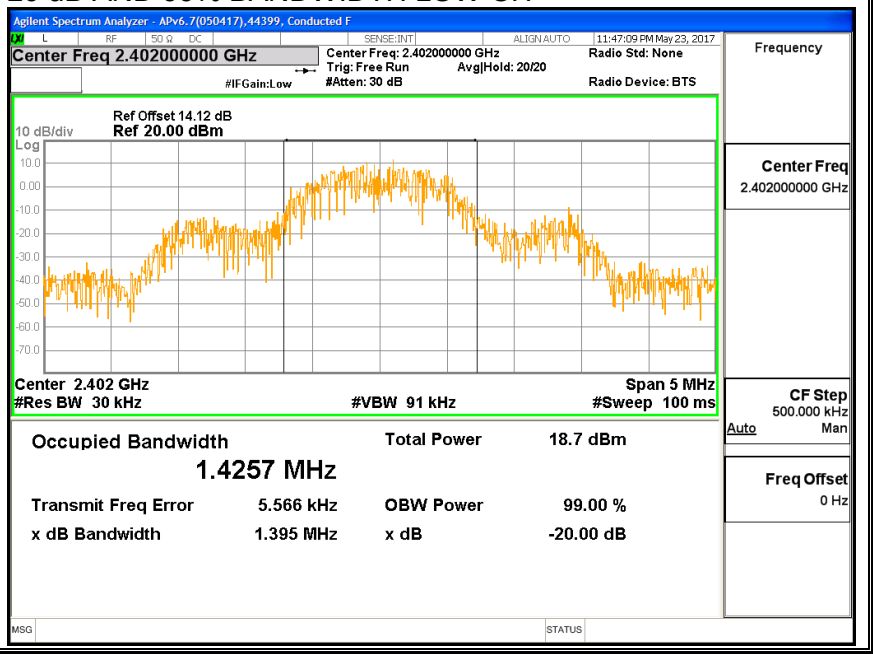
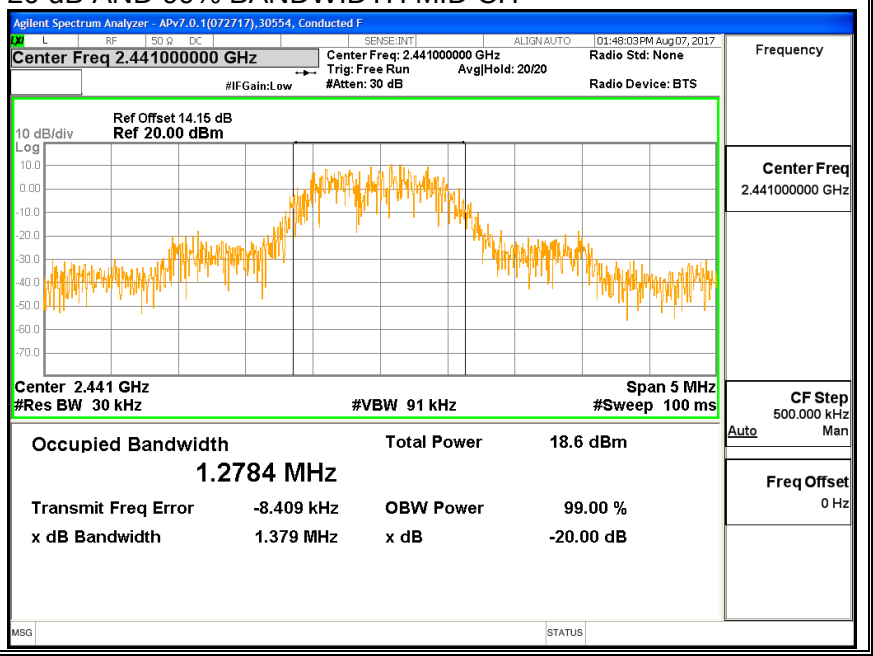
20 dB AND 99% BANDWIDTH LOW CH



20 dB AND 99% BANDWIDTH MID CH



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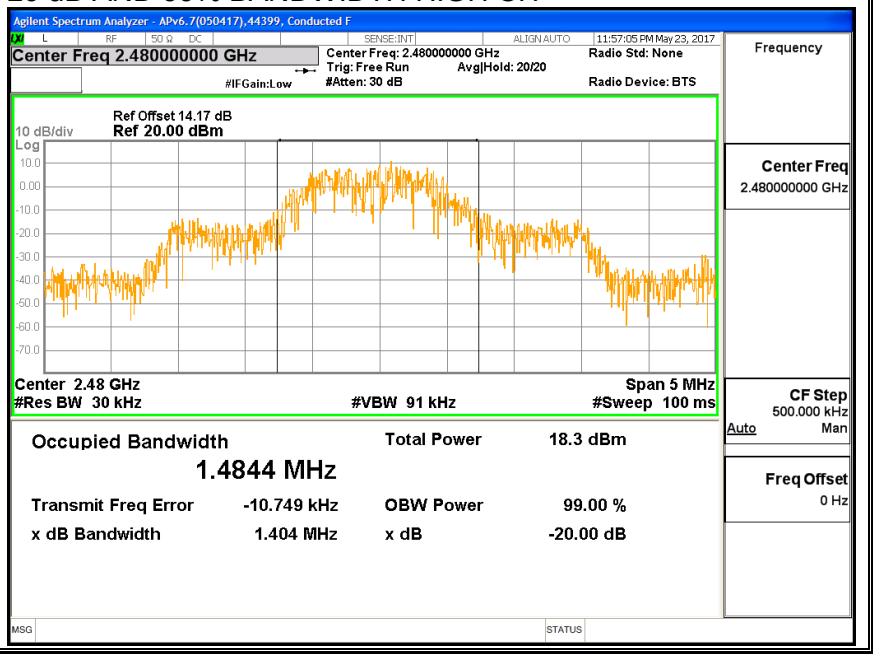
20 dB AND 99% BANDWIDTH HIGH CH



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8.10.2. HOPPING FREQUENCY SEPARATION

LIMITS

FCC §15.247 (a) (1)

IC RSS-247 (5.1) (b)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hoping channel, whichever is greater.

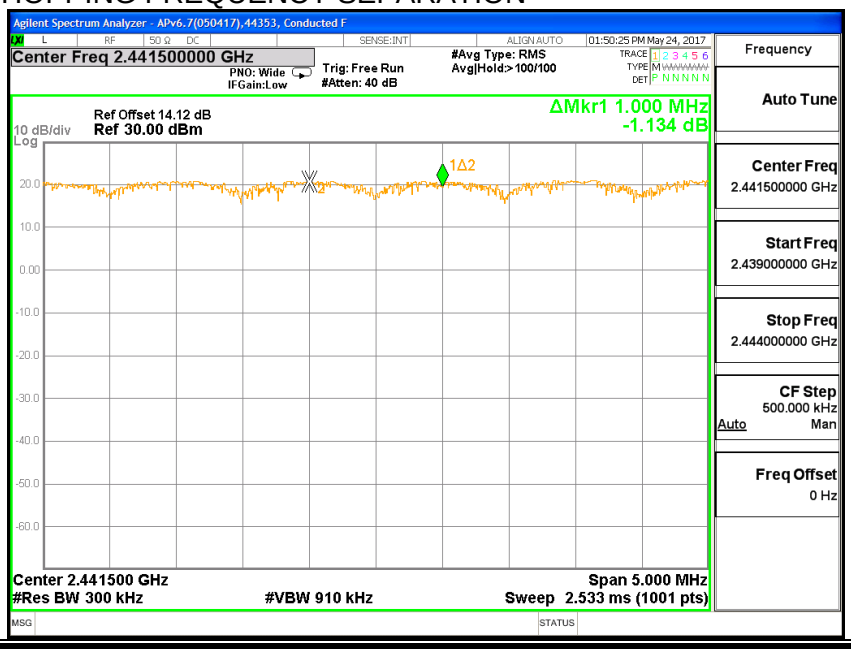
Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than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

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The RBW is set to 300 kHz and the VBW is set to 910 kHz. The sweep time is coupled.

RESULTS

HOPPING FREQUENCY SEPARATION



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8.10.3. NUMBER OF HOPPING CHANNELS

LIMITS

FCC §15.247 (a) (1) (iii)

IC RSS-247 (5.1) (d)

Frequency hopping systems in the 2400 – 2483.5 MHz band shall use at least 15 non-overlapping channels.

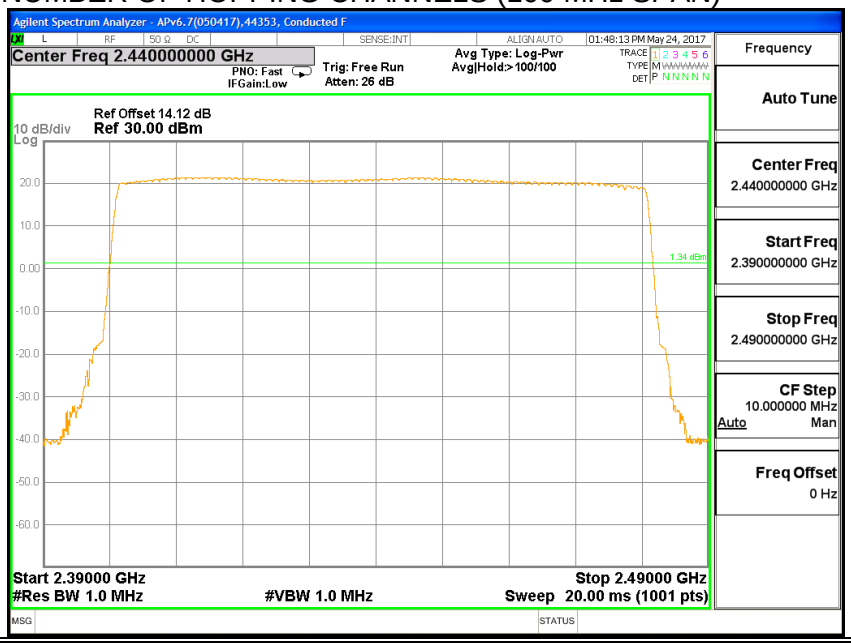
TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The span is set to cover the entire authorized band, in either a single sweep or in multiple contiguous sweeps. The RBW is set to a maximum of 1 % of the span. The analyzer is set to Max Hold.

RESULTS

Normal Mode: 79 Channels observed.

NUMBER OF HOPPING CHANNELS (100 MHz SPAN)



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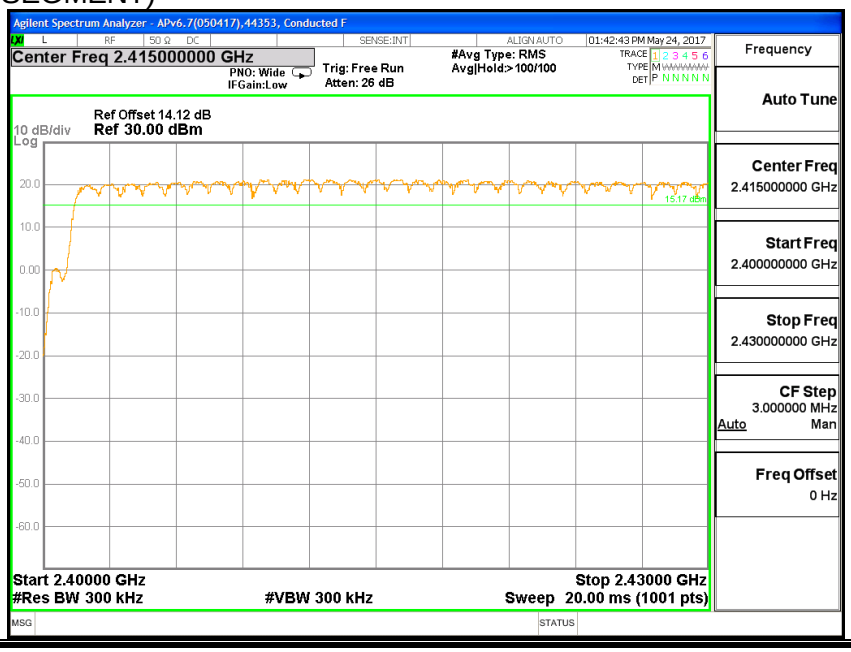
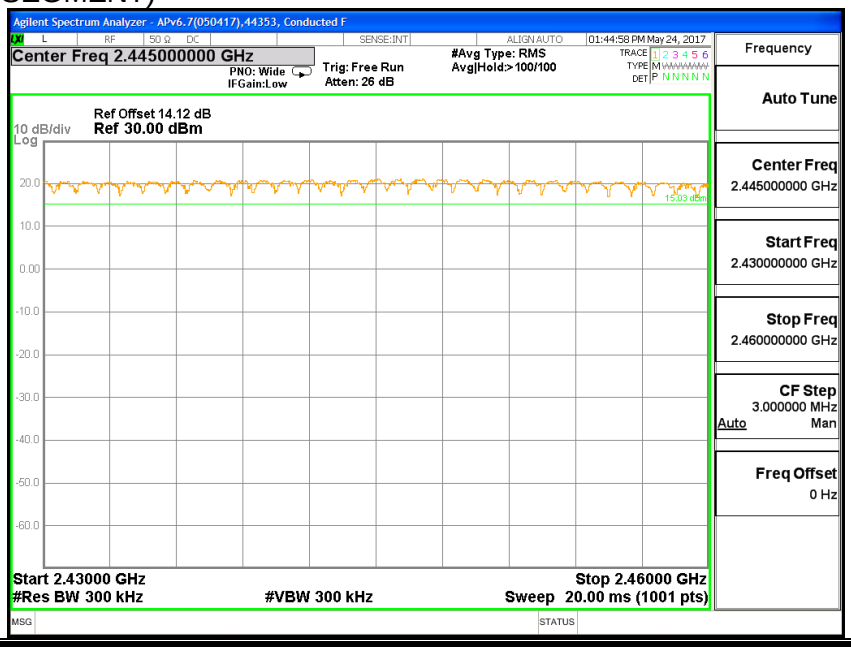
NUMBER OF HOPPING CHANNELS (30 MHz SPAN, FIRST SEGMENT)



NUMBER OF HOPPING CHANNELS (30 MHz SPAN, SECOND SEGMENT)



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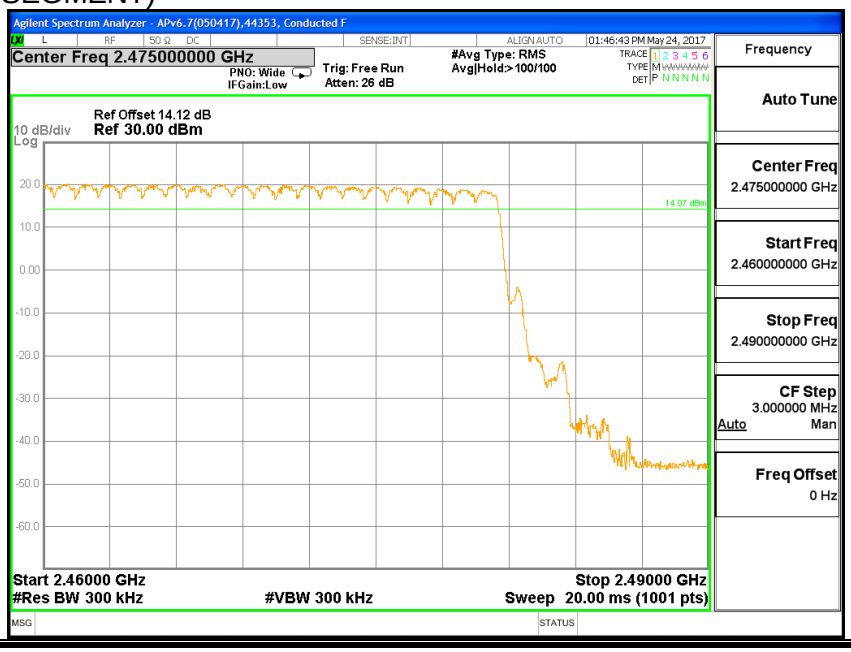
NUMBER OF HOPPING CHANNELS (30 MHz SPAN, THIRD SEGMENT)



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8.10.4. AVERAGE TIME OF OCCUPANCY

LIMITS

FCC §15.247 (a) (1) (iii)

IC RSS-247 (5.1) (d)

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The span is set to 0 Hz, centered on a single, selected hopping channel. The width of a single pulse is measured in a fast scan. The number of pulses is measured in a 3.16 second scan, to enable resolution of each occurrence.

The average time of occupancy in the specified 31.6 second period (79 channels * 0.4 s) is equal to 10 * (# of pulses in 3.16 s) * pulse width.

For AFH mode, the average time of occupancy in the specified 8 second period (20 channels * 0.4 seconds) is equal to 10 * (# of pulses in 0.8 s) * pulse width.

RESULTS

DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
8PSK (EDR) Mode					
3DH1	0.3826	31	0.119	0.4	-0.281
3DH3	1.639	17	0.279	0.4	-0.121
3DH5	2.891	12	0.347	0.4	-0.053

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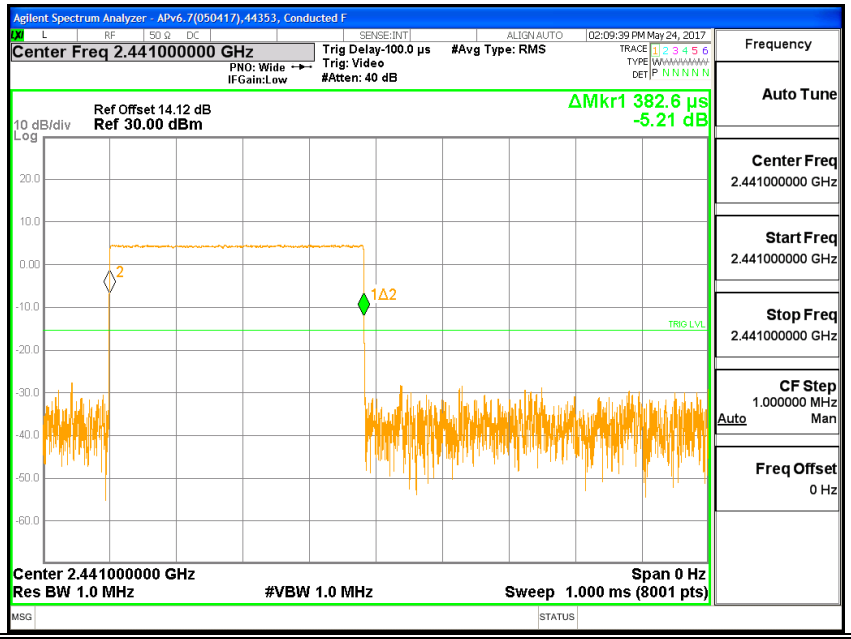
PULSE WIDTH - DH1



NUMBER OF PULSES - DH1

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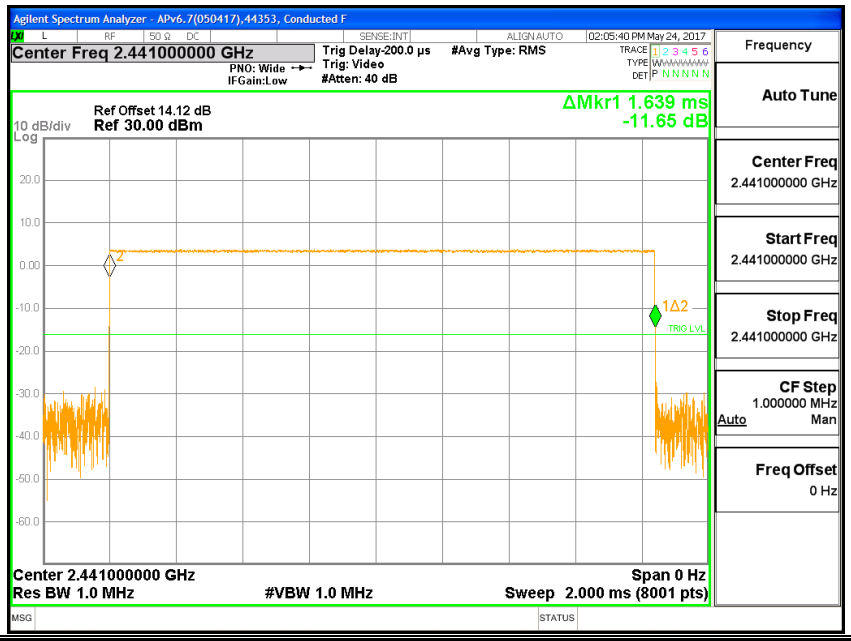
PULSE WIDTH - DH3



NUMBER OF PULSES - DH3

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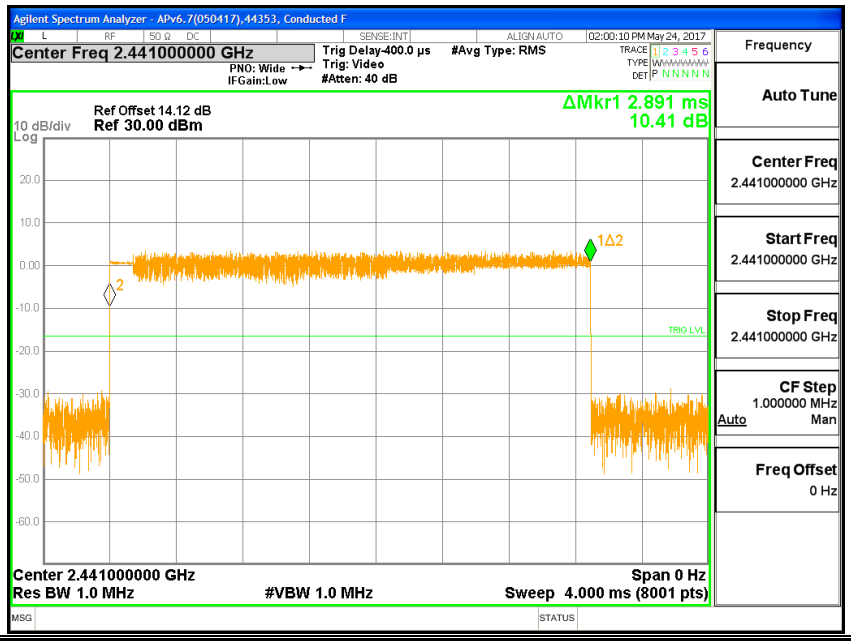
PULSE WIDTH - DH5



NUMBER OF PULSES - DH5

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8.10.5. OUTPUT POWER

ID:	44366	Date:	7/26/17

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.

TEST PROCEDURE

The transmitter output is connected to a wideband peak and average power meter.

RESULTS

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	20.32	30	-9.68
Middle	2441	20.08	30	-9.92
High	2480	20.19	30	-9.81

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8.10.6. AVERAGE POWER

ID:	44366	Date:	7/26/17

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	17.88
Middle	2441	17.75
High	2480	17.86

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8.10.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC 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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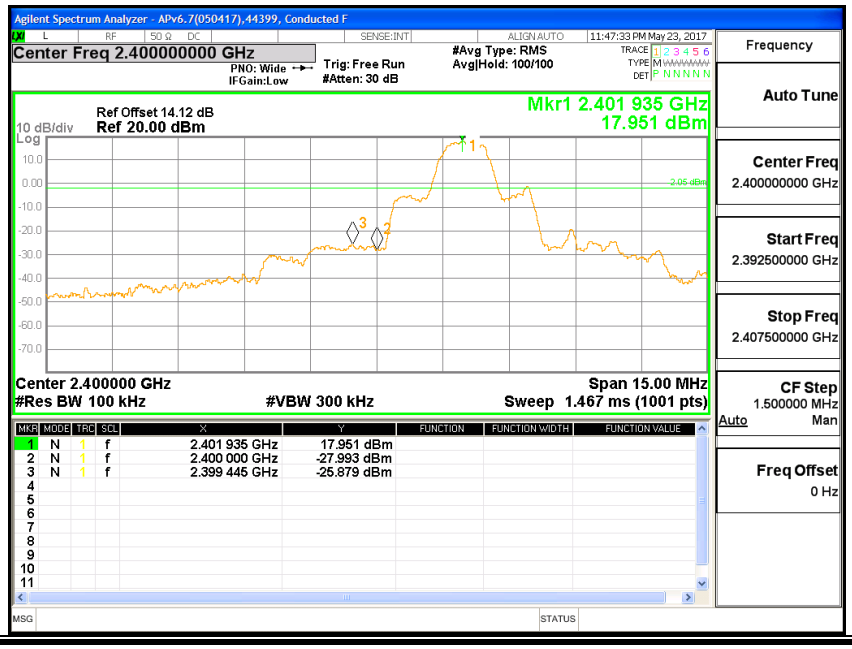
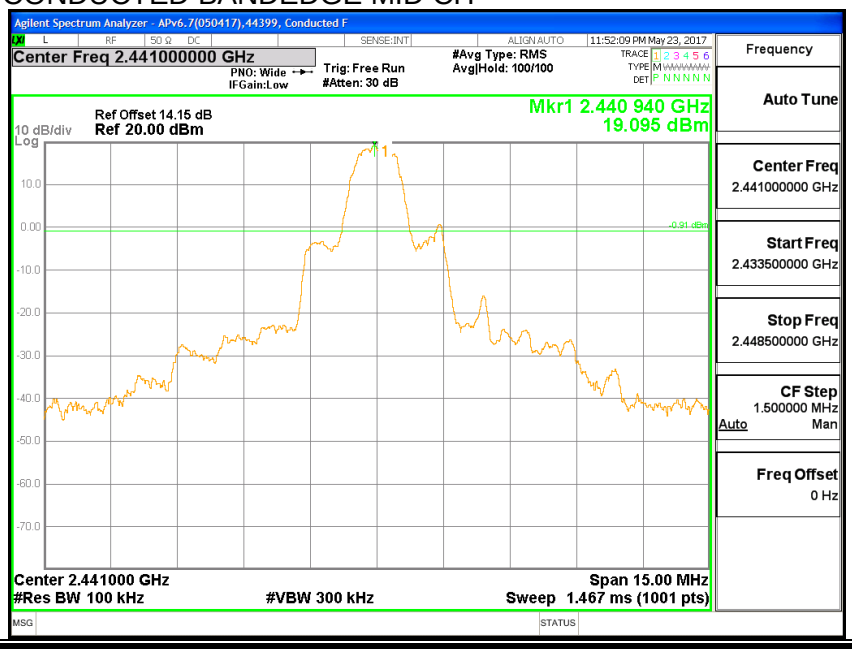
CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

CONDUCTED BANDEDGE LOW CH



CONDUCTED BANDEDGE MID CH



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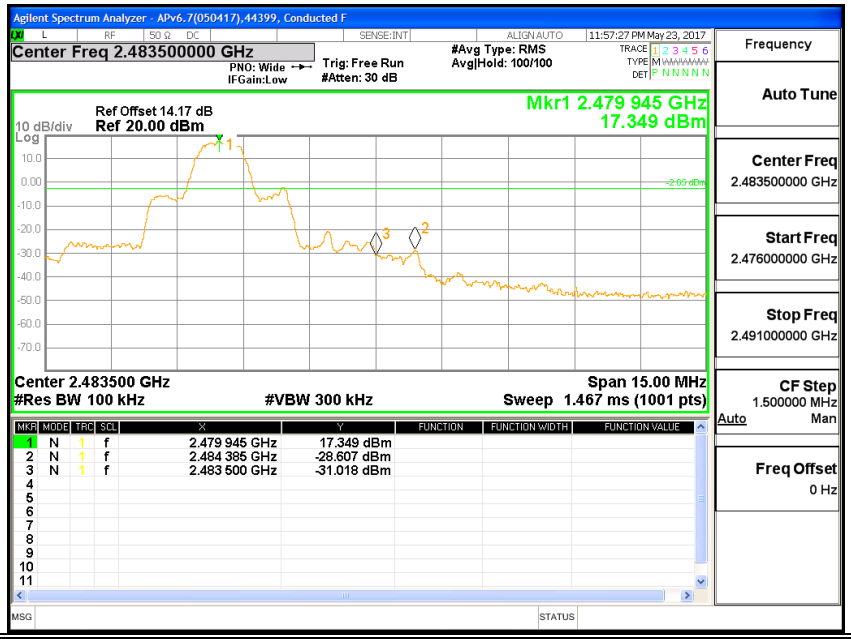
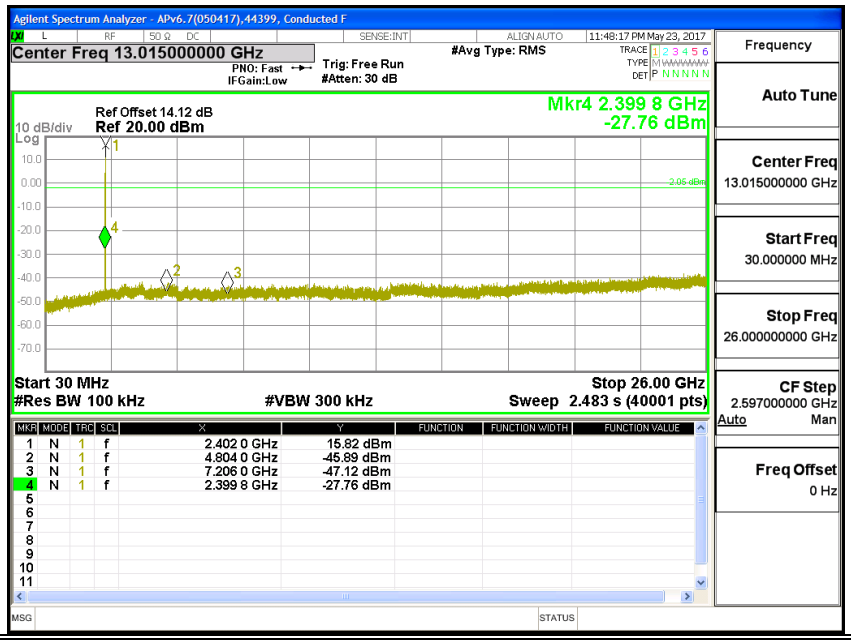
CONDUCTED BANDEDGE HIGH CH



CONDUCTED SPURIOUS EMISSIONS LOW CH



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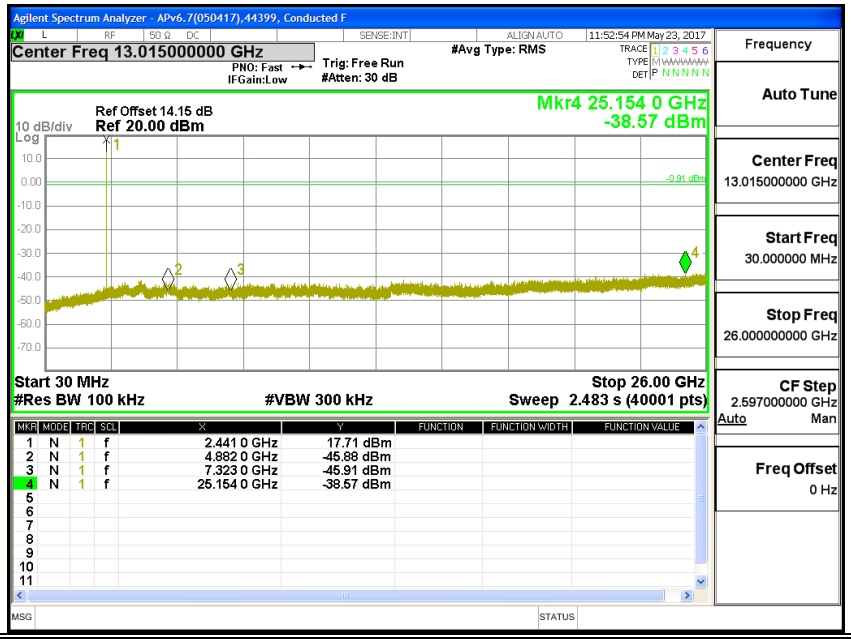
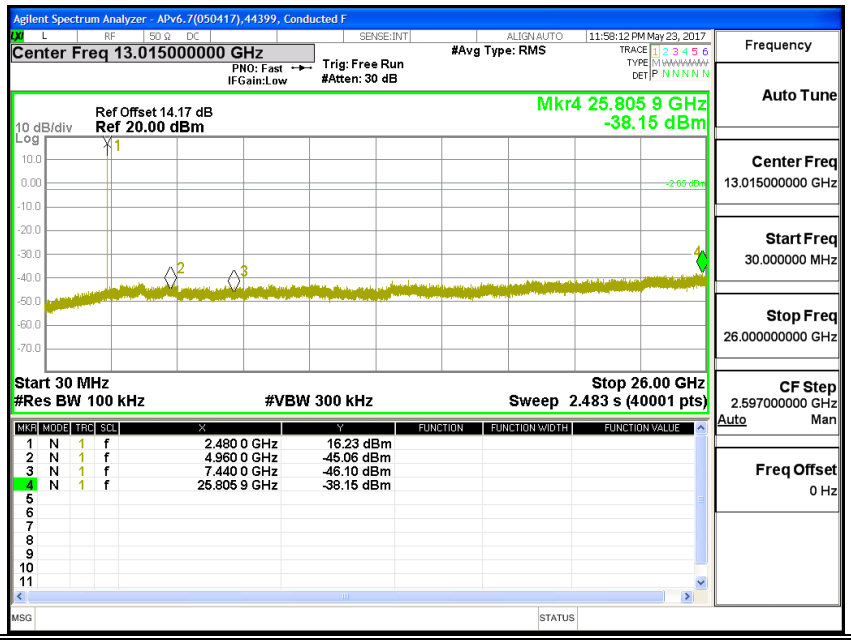
CONDUCTED SPURIOUS EMISSIONS MID CH



CONDUCTED SPURIOUS EMISSIONS HIGH CH



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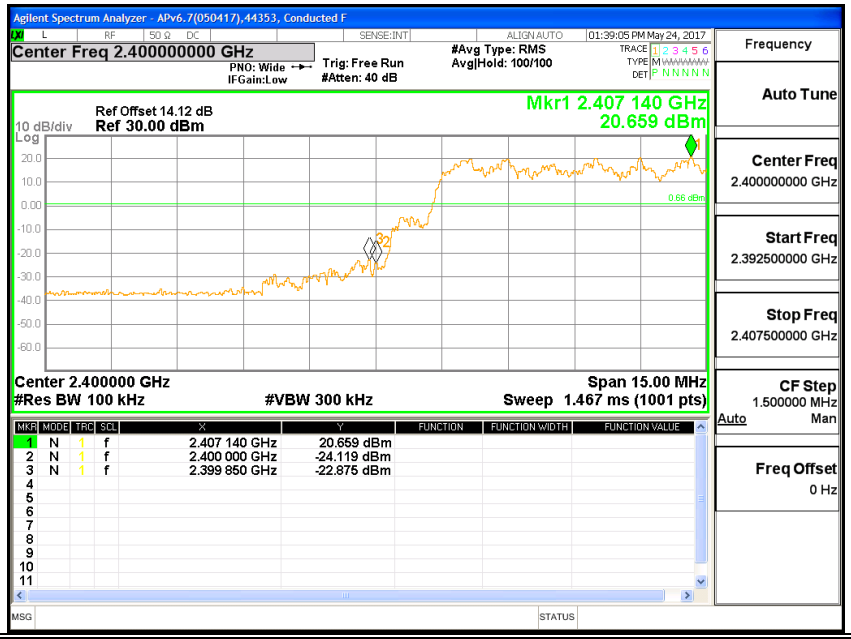
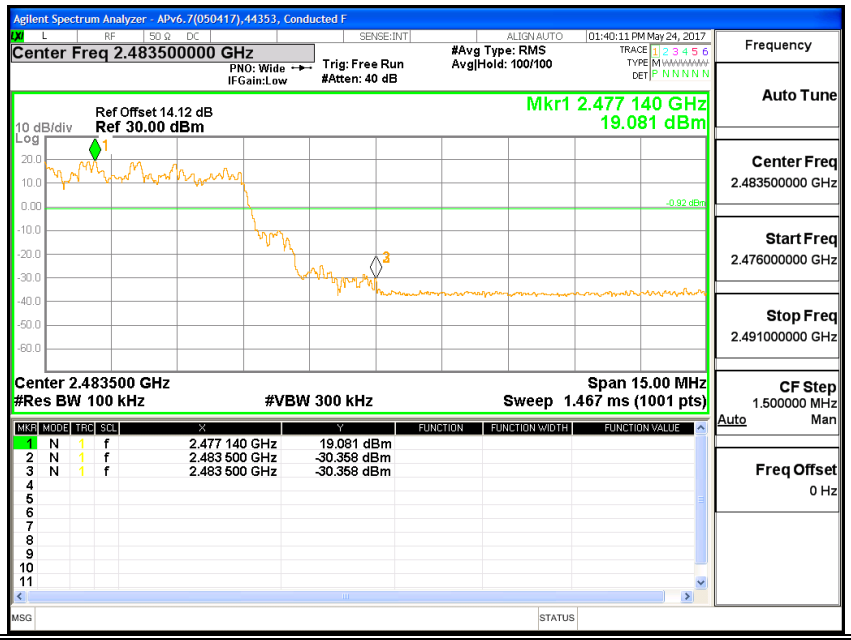
LOW BANDEDGE WITH HOPPING ON



HIGH BANDEDGE WITH HOPPING ON



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8.11. LAT 3, Plow BASIC DATA RATE GFSK MODULATION

8.11.1. 20 dB AND 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The RBW is set to ≥ 1% of the 20 dB bandwidth. The VBW is set to ≥ RBW. The sweep time is coupled.

RESULTS

Channel	Frequency (MHz)	20 dB Bandwidth (KHz)	99% Bandwidth (KHz)
Low	2402	831.3	846.78
Middle	2441	862.9	850.42
High	2480	853.1	864.87

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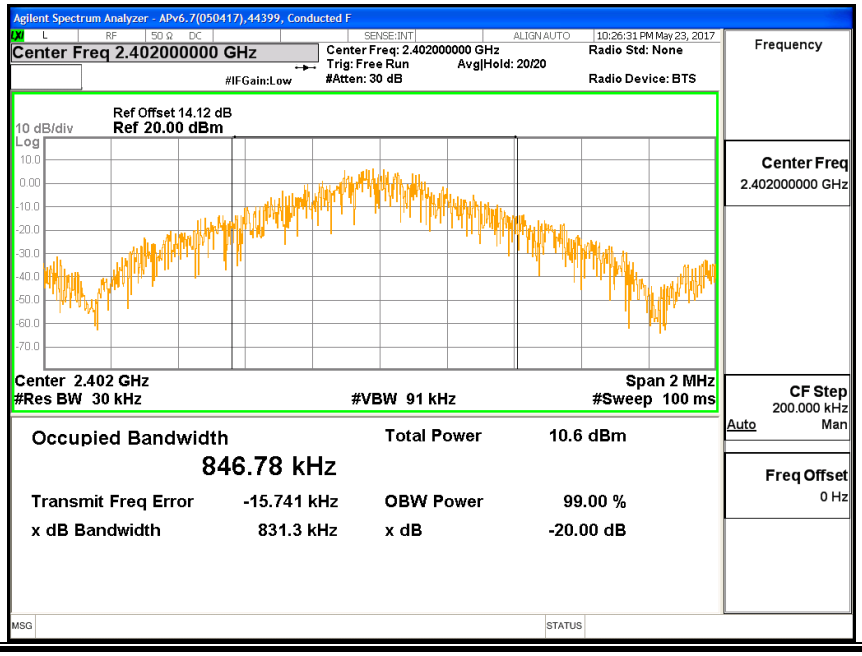
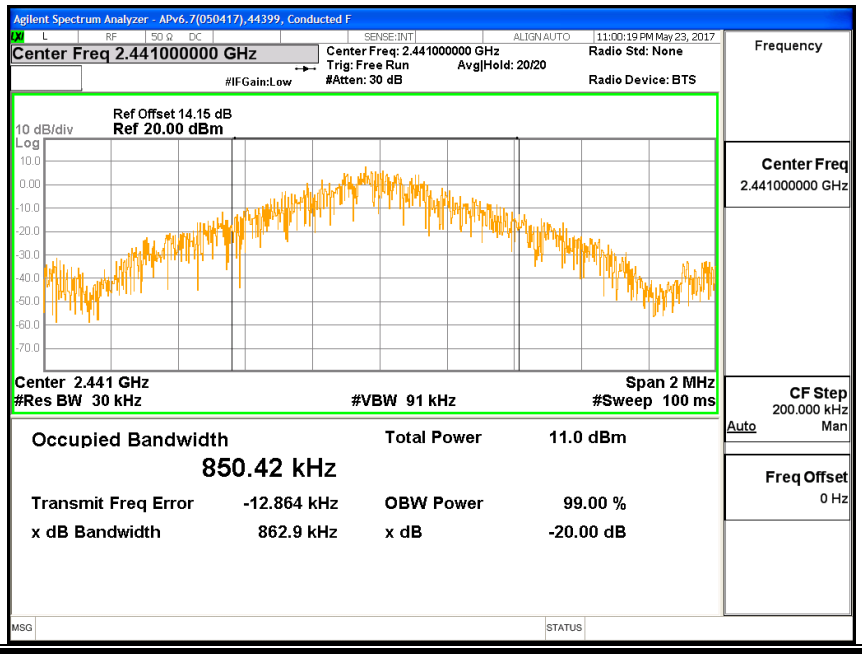
20 dB AND 99% BANDWIDTH LOW CH



20 dB AND 99% BANDWIDTH MID CH



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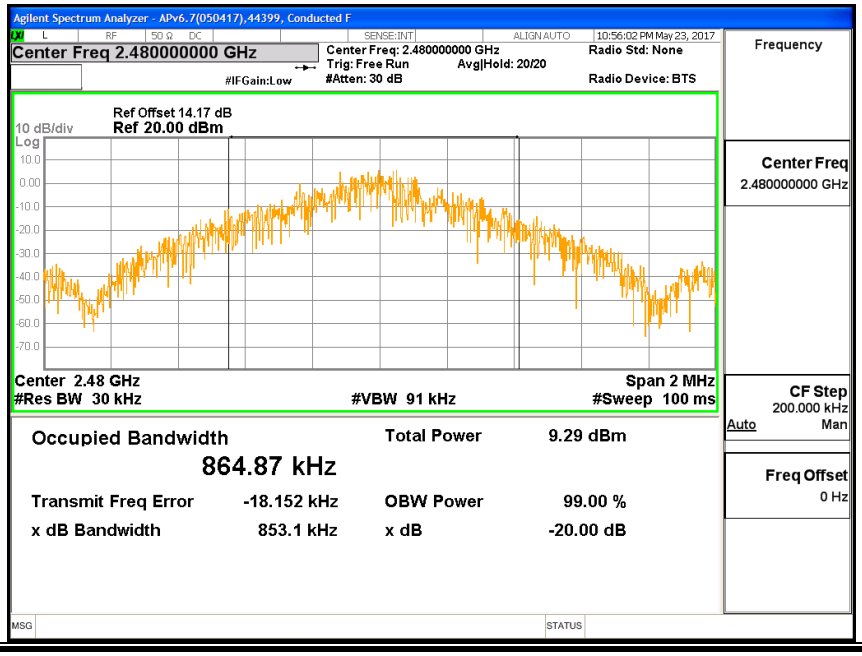
20 dB AND 99% BANDWIDTH HIGH CH



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8.11.2. HOPPING FREQUENCY SEPARATION

LIMITS

FCC §15.247 (a) (1)

IC RSS-247 (5.1) (b)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hoping channel, whichever is greater.

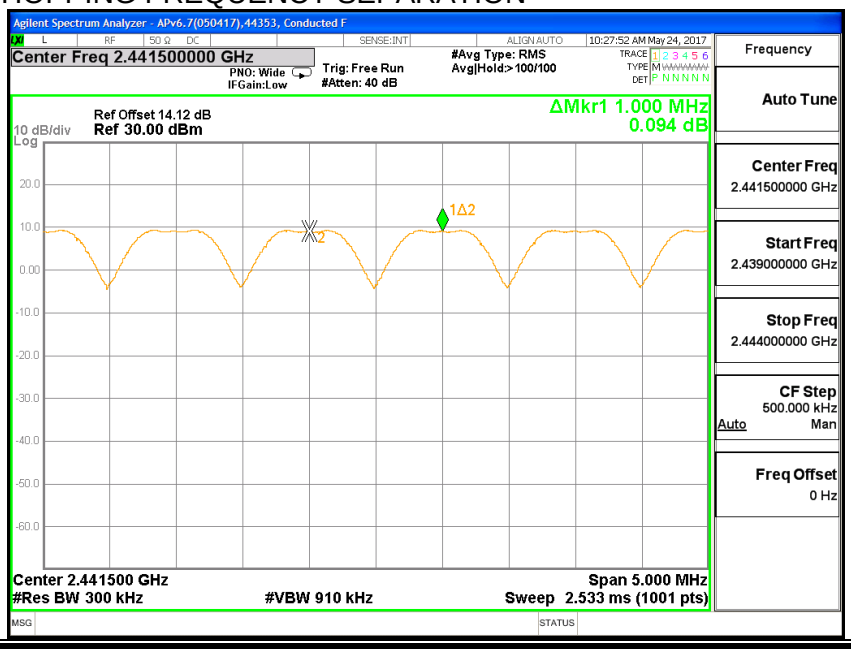
Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than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

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The RBW is set to 300 kHz and the VBW is set to 910 kHz. The sweep time is coupled.

RESULTS

HOPPING FREQUENCY SEPARATION



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8.11.3. NUMBER OF HOPPING CHANNELS

LIMITS

FCC §15.247 (a) (1) (iii)

IC RSS-247 (5.1) (d)

Frequency hopping systems in the 2400 – 2483.5 MHz band shall use at least 15 non-overlapping channels.

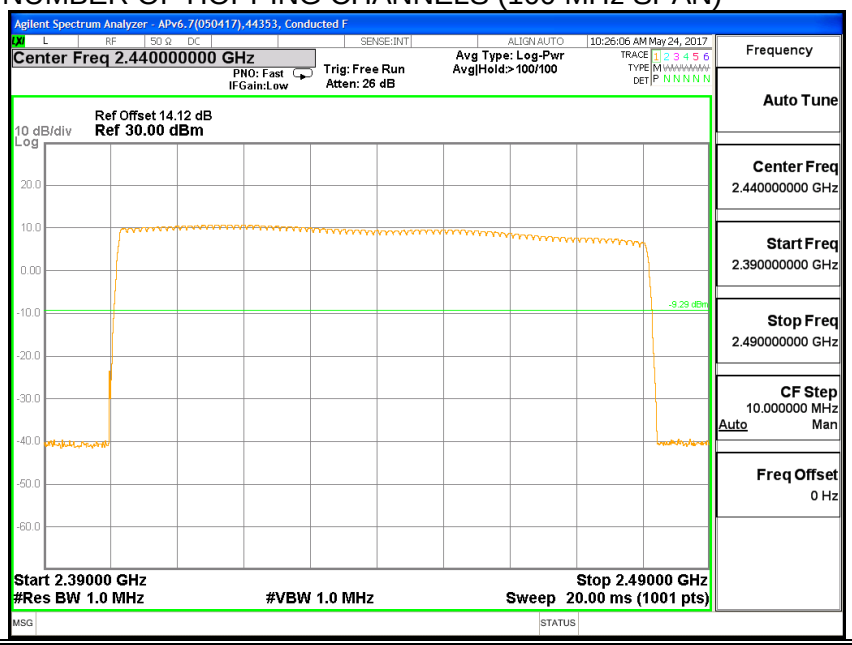
TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The span is set to cover the entire authorized band, in either a single sweep or in multiple contiguous sweeps. The RBW is set to a maximum of 1 % of the span. The analyzer is set to Max Hold.

RESULTS

Normal Mode: 79 Channels observed.

NUMBER OF HOPPING CHANNELS (100 MHz SPAN)



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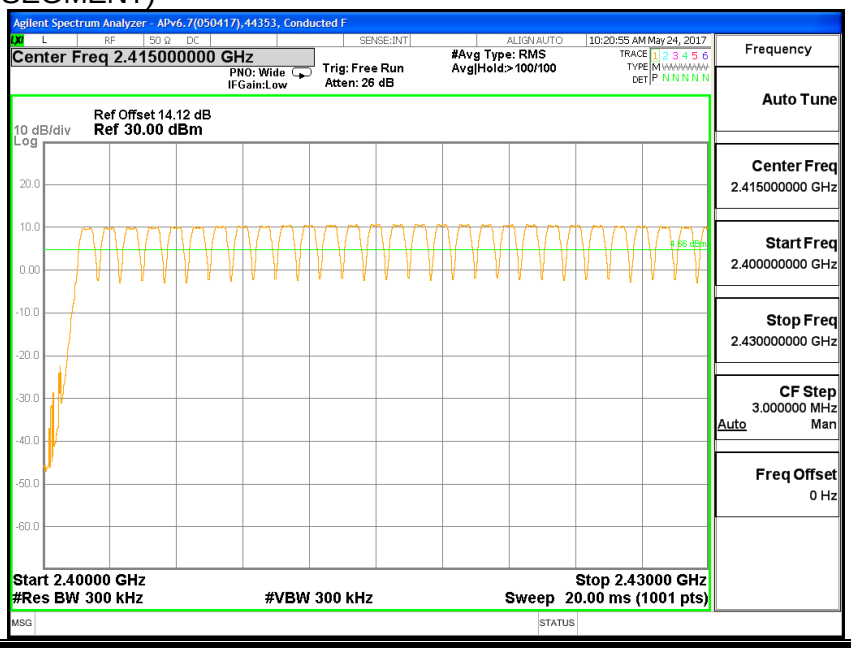
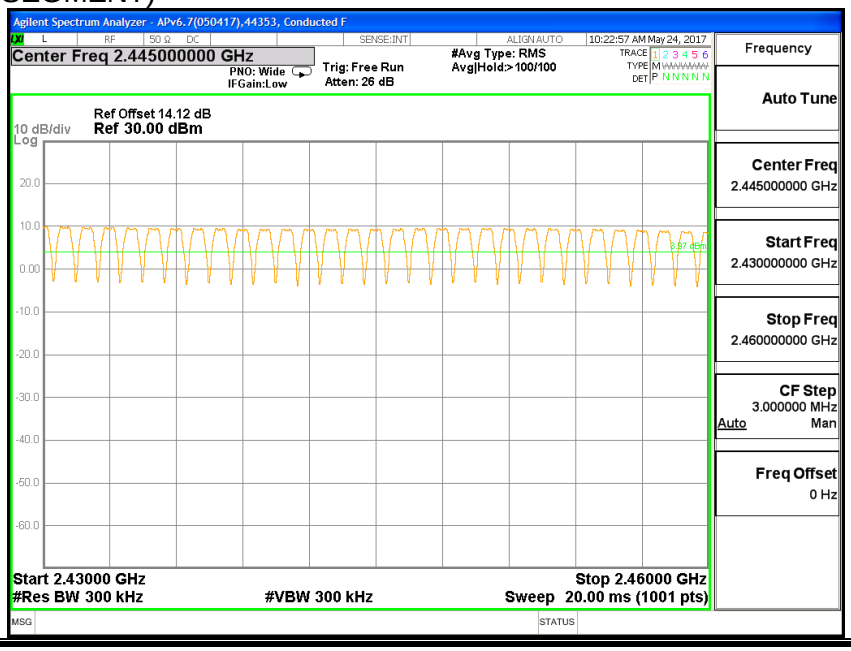
NUMBER OF HOPPING CHANNELS (30 MHz SPAN, FIRST SEGMENT)



NUMBER OF HOPPING CHANNELS (30 MHz SPAN, SECOND SEGMENT)



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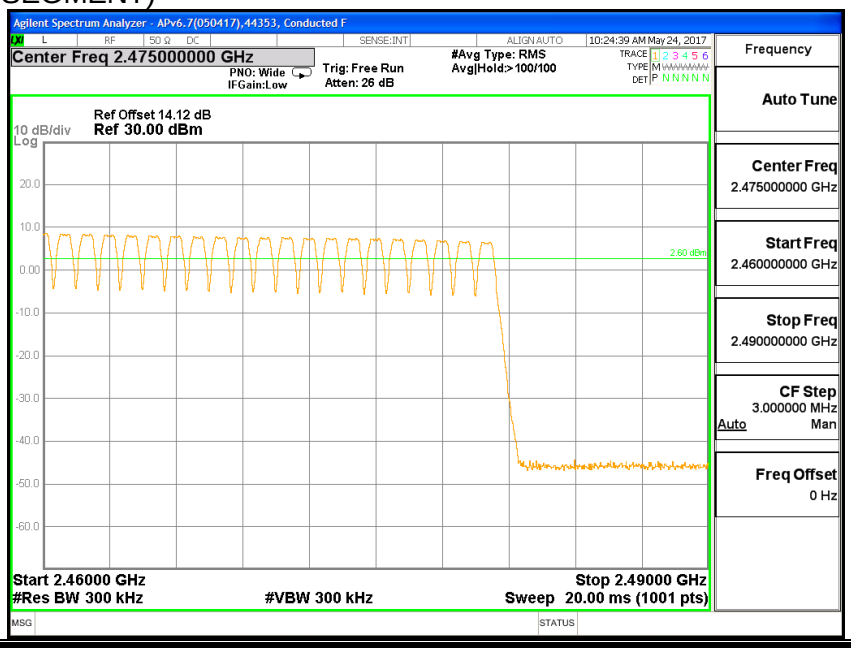
NUMBER OF HOPPING CHANNELS (30 MHz SPAN, THIRD SEGMENT)



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8.11.4. AVERAGE TIME OF OCCUPANCY

LIMITS

FCC §15.247 (a) (1) (iii)

IC RSS-247 (5.1) (d)

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The span is set to 0 Hz, centered on a single, selected hopping channel. The width of a single pulse is measured in a fast scan. The number of pulses is measured in a 3.16 second scan, to enable resolution of each occurrence.

The average time of occupancy in the specified 31.6 second period (79 channels * 0.4 s) is equal to 10 * (# of pulses in 3.16 s) * pulse width.

For AFH mode, the average time of occupancy in the specified 8 second period (20 channels * 0.4 seconds) is equal to 10 * (# of pulses in 0.8 s) * pulse width.

RESULTS

DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
GFSK Normal Mode					
DH1	0.3828	31	0.119	0.4	-0.281
DH3	1.639	16	0.262	0.4	-0.138
DH5	2.887	11	0.318	0.4	-0.082
DH Packet	Pulse Width (msec)	Number of Pulses in 0.8 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
GFSK AFH Mode					
DH1	0.3828	7.75	0.030	0.4	-0.370
DH3	1.639	4	0.066	0.4	-0.334
DH5	2.887	2.75	0.079	0.4	-0.321

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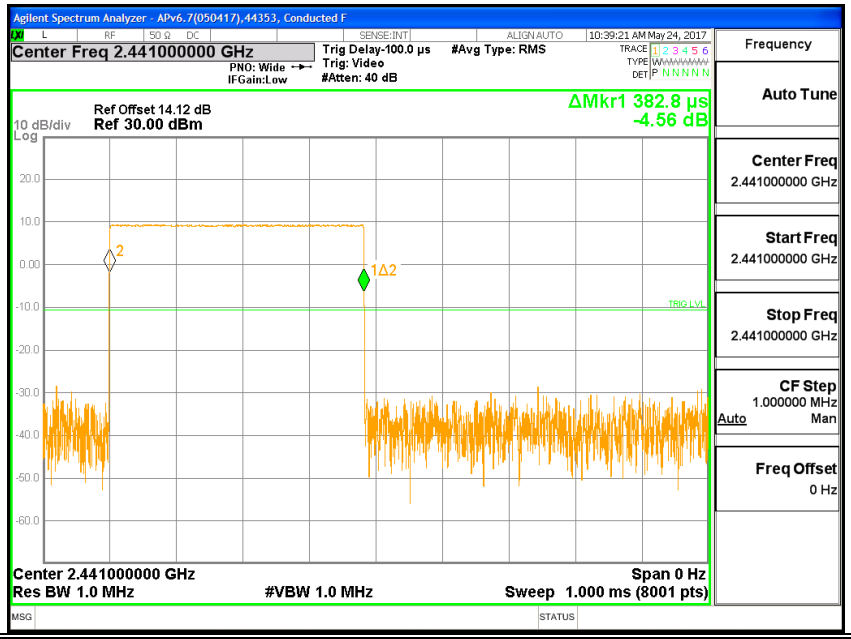
PULSE WIDTH - DH1



NUMBER OF PULSES - DH1

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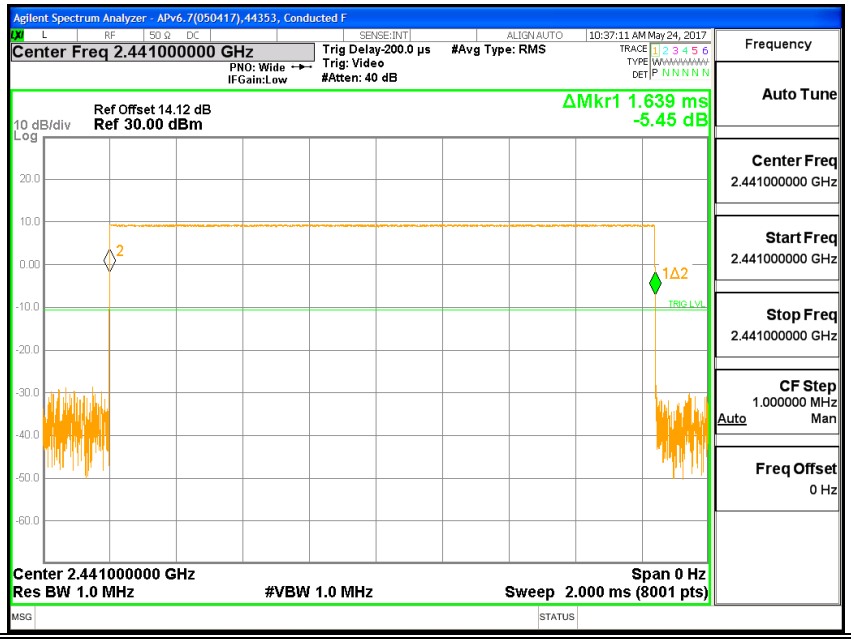
PULSE WIDTH - DH3



NUMBER OF PULSES - DH3

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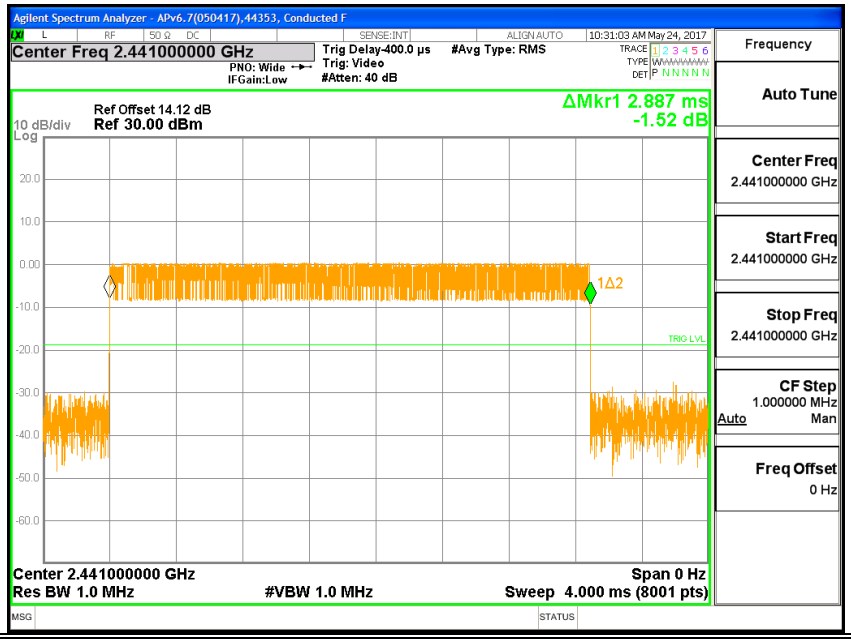
PULSE WIDTH - DH5



NUMBER OF PULSES - DH5

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8.11.5. OUTPUT POWER

ID:	30554	Date:	8/31/2017

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.

TEST PROCEDURE

The transmitter output is connected to a wideband peak and average power meter.

RESULTS

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	10.26	30	-19.74
Middle	2441	10.24	30	-19.76
High	2480	10.11	30	-19.89

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8.11.6. AVERAGE POWER

ID:	30554	Date:	8/31/2017

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	9.76
Middle	2441	9.94
High	2480	9.91

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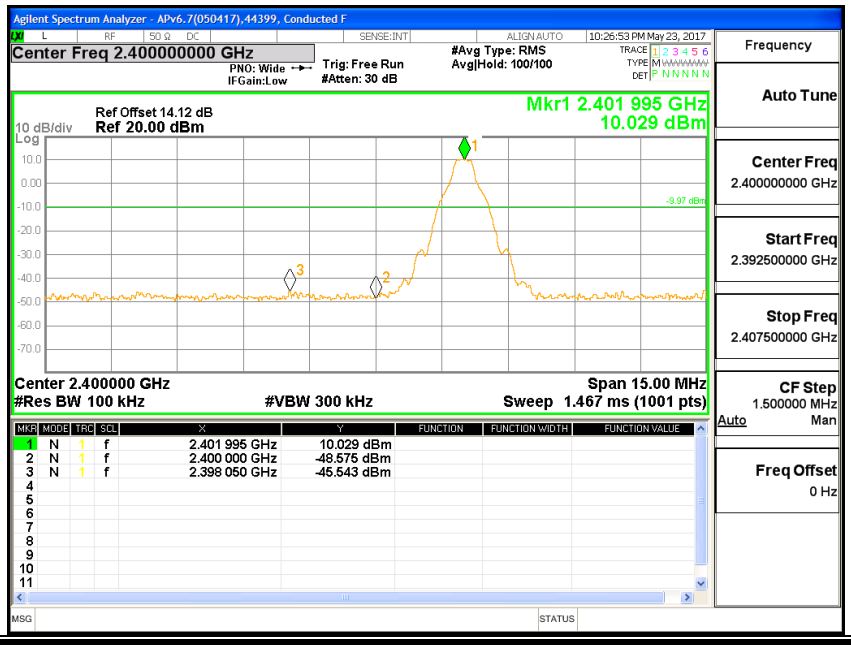
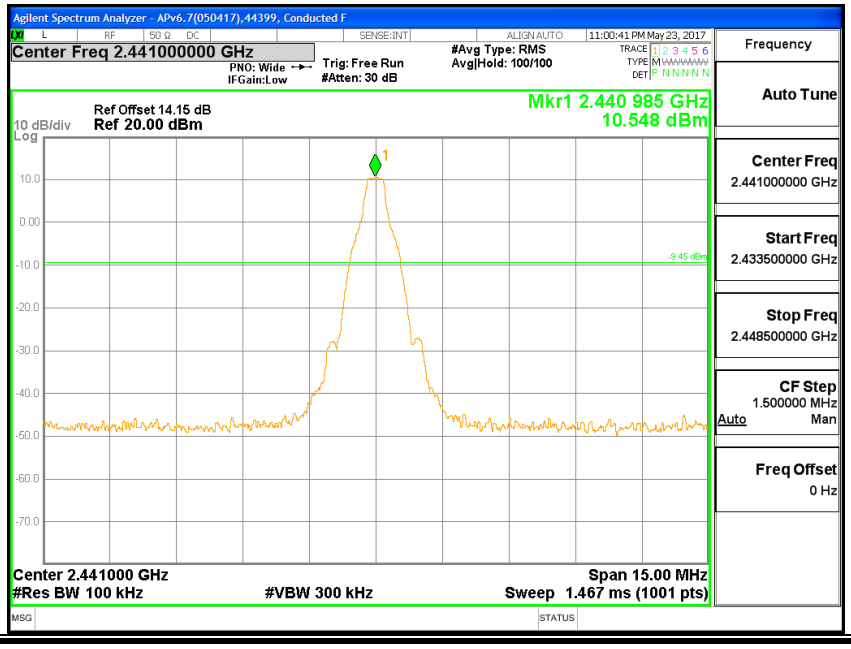
8.11.7. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

CONDUCTED BANDEDGE LOW CH



CONDUCTED BANDEDGE MID CH



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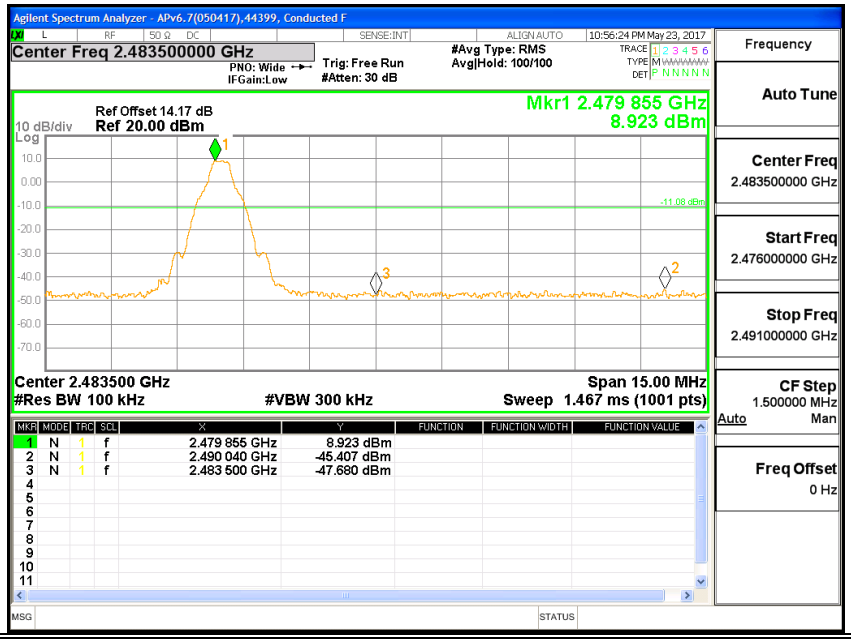
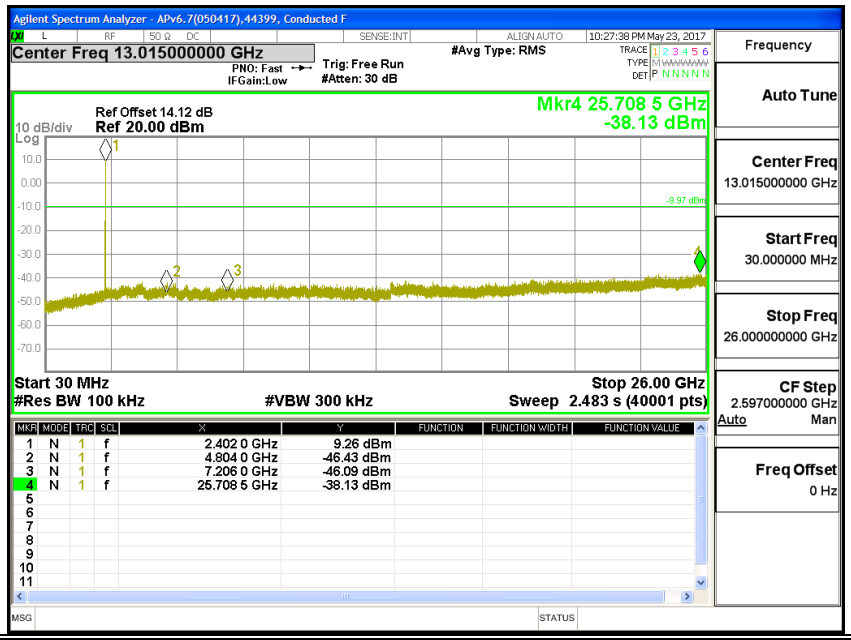
CONDUCTED BANDEDGE HIGH CH



CONDUCTED SPURIOUS EMISSIONS LOW CH



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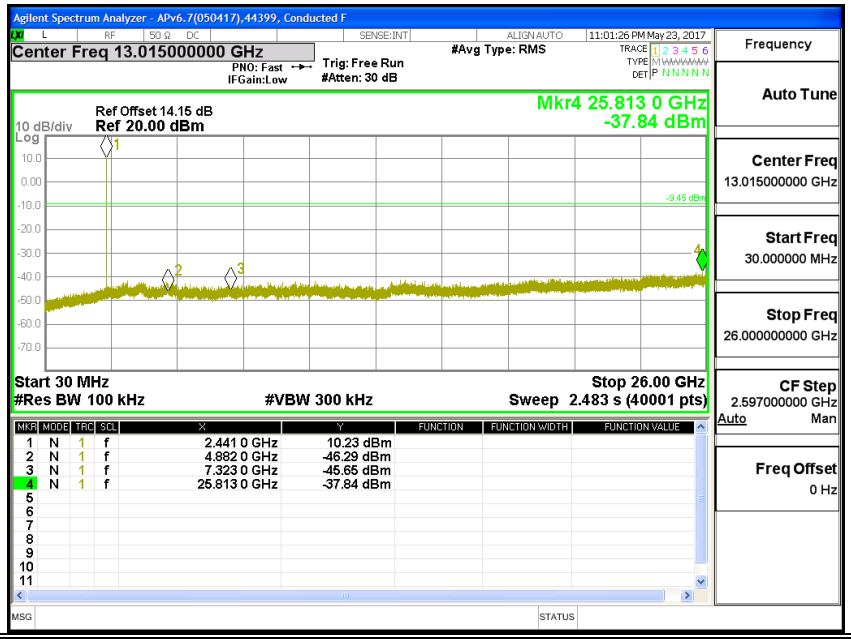
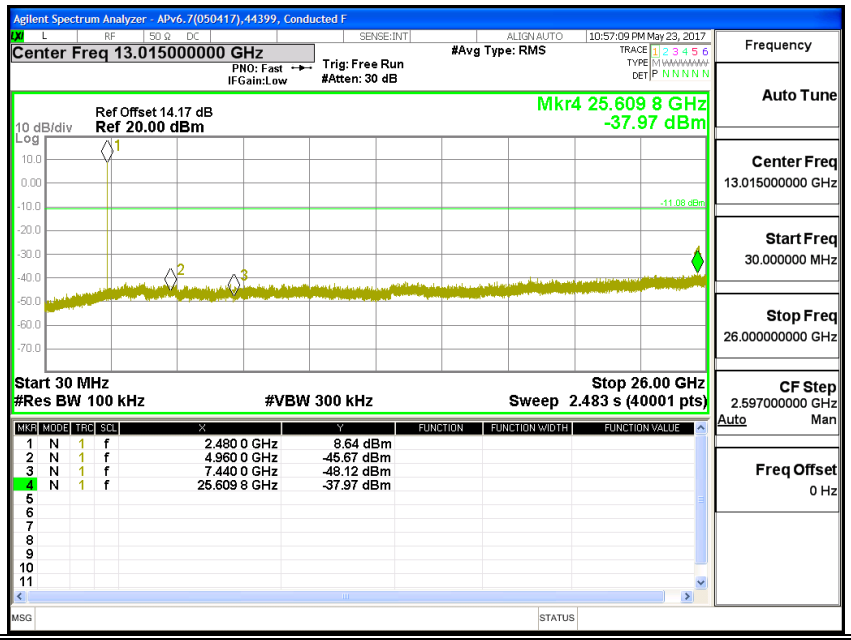
CONDUCTED SPURIOUS EMISSIONS MID CH



CONDUCTED SPURIOUS EMISSIONS HIGH CH



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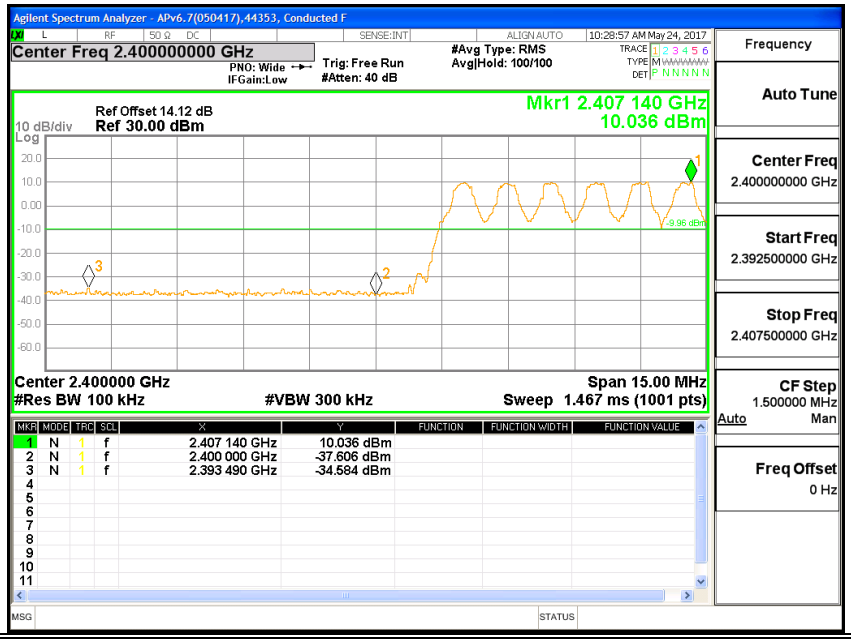
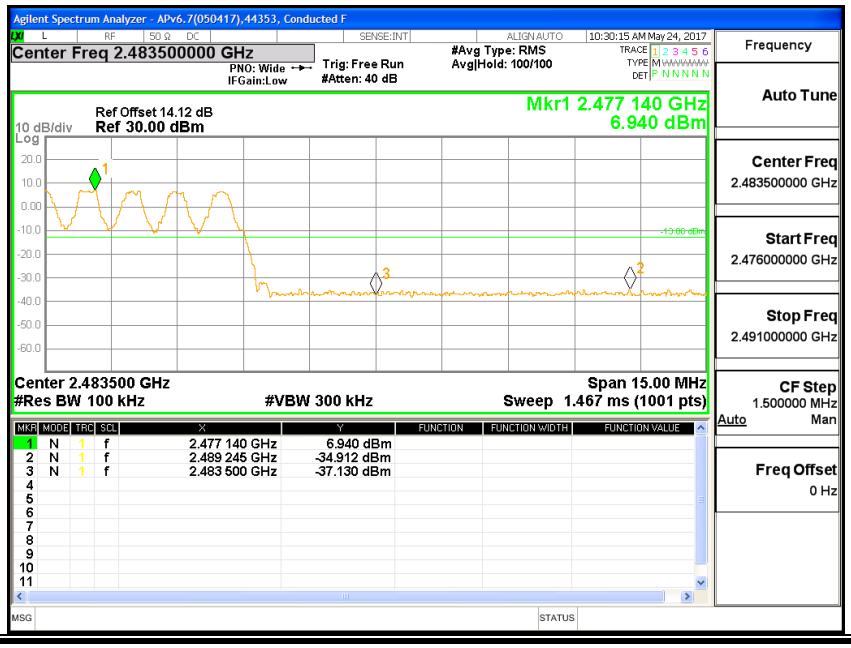
LOW BANDEDGE WITH HOPPING ON



HIGH BANDEDGE WITH HOPPING ON



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8.12. LAT 3, Plow ENHANCED DATA RATE DQPSK MODULATION

8.12.1. OUTPUT POWER

ID:	44366	Date:	7/26/17

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.

TEST PROCEDURE

The transmitter output is connected to a wideband peak and average power meter.

RESULTS

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	10.58	21	-10.42
Middle	2441	10.67	21	-10.33
High	2480	10.71	21	-10.29

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8.12.2. AVERAGE POWER

ID:	44366	Date:	7/26/17

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	8.25
Middle	2441	8.26
High	2480	8.43

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8.13. LAT 3, Plow ENHANCED DATA RATE 8PSK MODULATION

8.13.1. 20 dB AND 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The RBW is set to ≥ 1% of the 20 dB bandwidth. The VBW is set to ≥ RBW. The sweep time is coupled.

RESULTS

Channel	Frequency (MHz)	20 dB Bandwidth (KHz)	99% Bandwidth (KHz)
Low	2402	1341	1224.4
Middle	2441	1330	1219.7
High	2480	1347	1233.5

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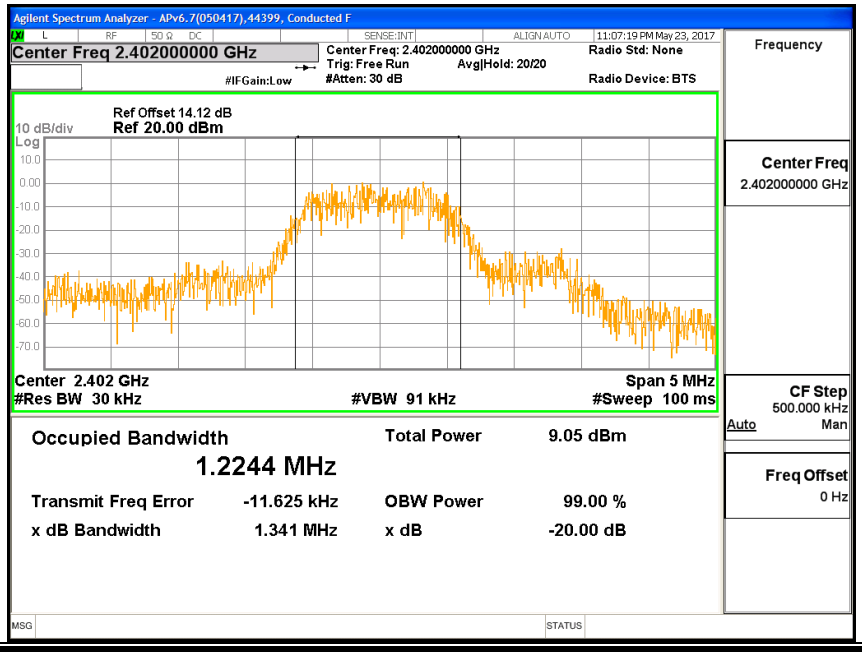
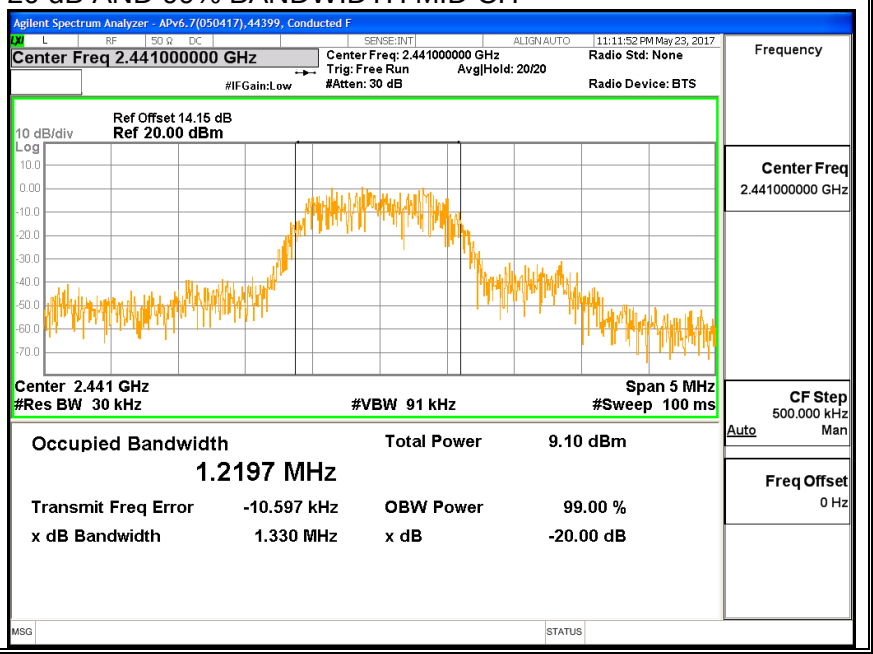
20 dB AND 99% BANDWIDTH LOW CH



20 dB AND 99% BANDWIDTH MID CH



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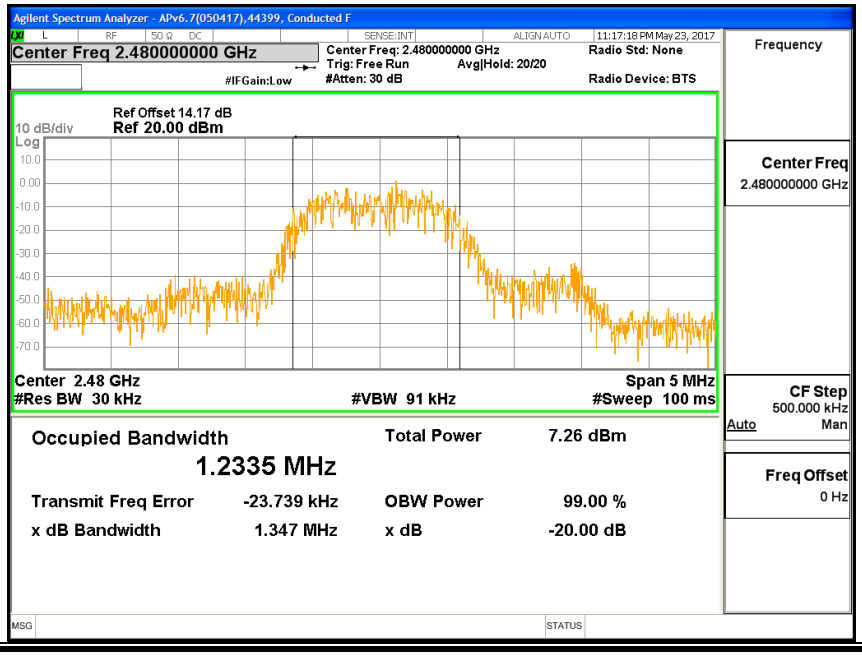
20 dB AND 99% BANDWIDTH HIGH CH



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8.13.2. HOPPING FREQUENCY SEPARATION

LIMITS

FCC §15.247 (a) (1)

IC RSS-247 (5.1) (b)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hoping channel, whichever is greater.

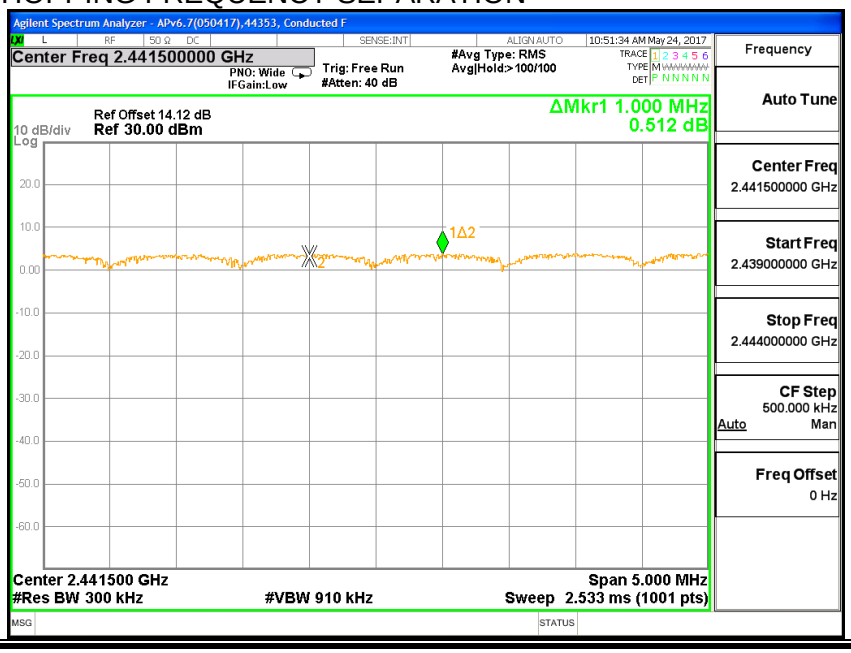
Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than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

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The RBW is set to 300 kHz and the VBW is set to 910 kHz. The sweep time is coupled.

RESULTS

HOPPING FREQUENCY SEPARATION



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8.13.3. NUMBER OF HOPPING CHANNELS

LIMITS

FCC §15.247 (a) (1) (iii)

IC RSS-247 (5.1) (d)

Frequency hopping systems in the 2400 – 2483.5 MHz band shall use at least 15 non-overlapping channels.

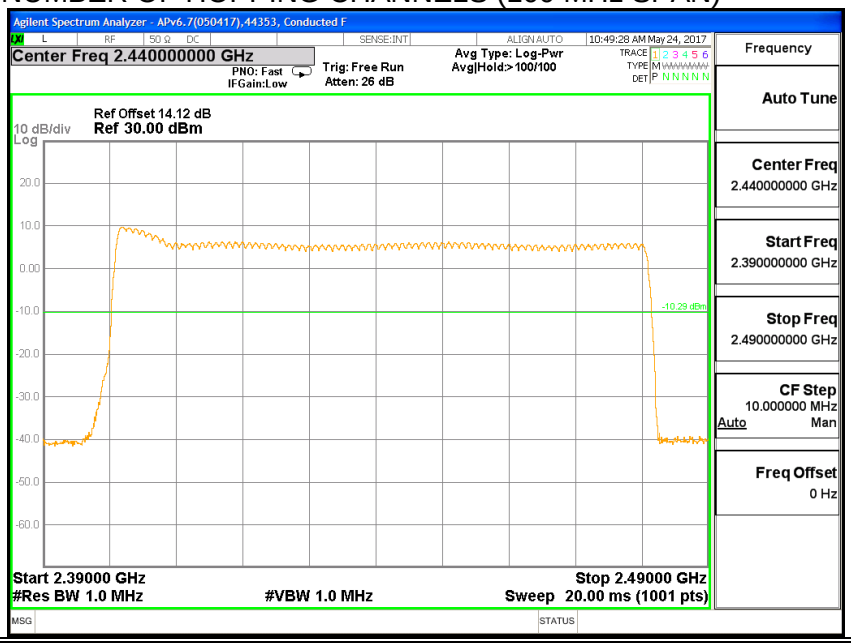
TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The span is set to cover the entire authorized band, in either a single sweep or in multiple contiguous sweeps. The RBW is set to a maximum of 1 % of the span. The analyzer is set to Max Hold.

RESULTS

Normal Mode: 79 Channels observed.

NUMBER OF HOPPING CHANNELS (100 MHz SPAN)



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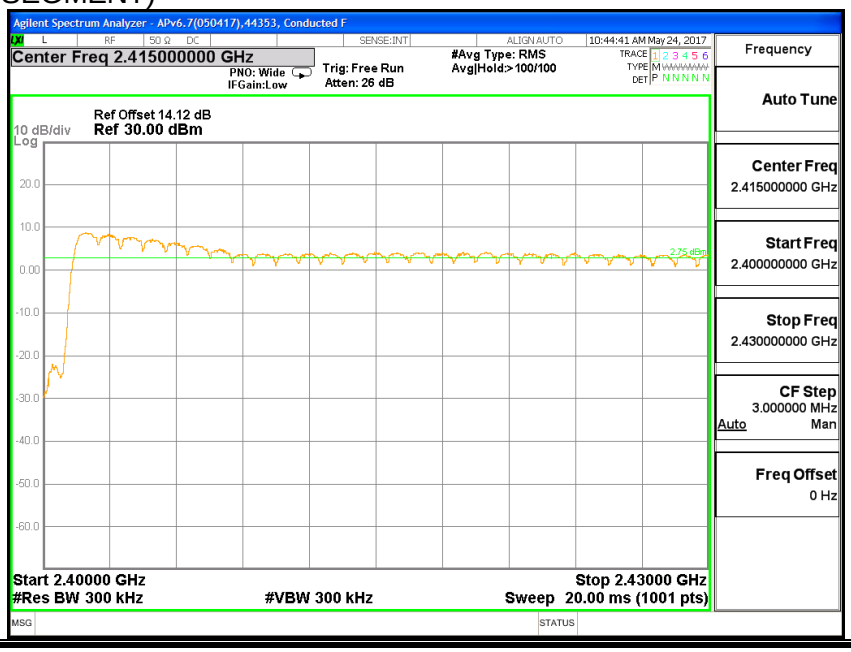
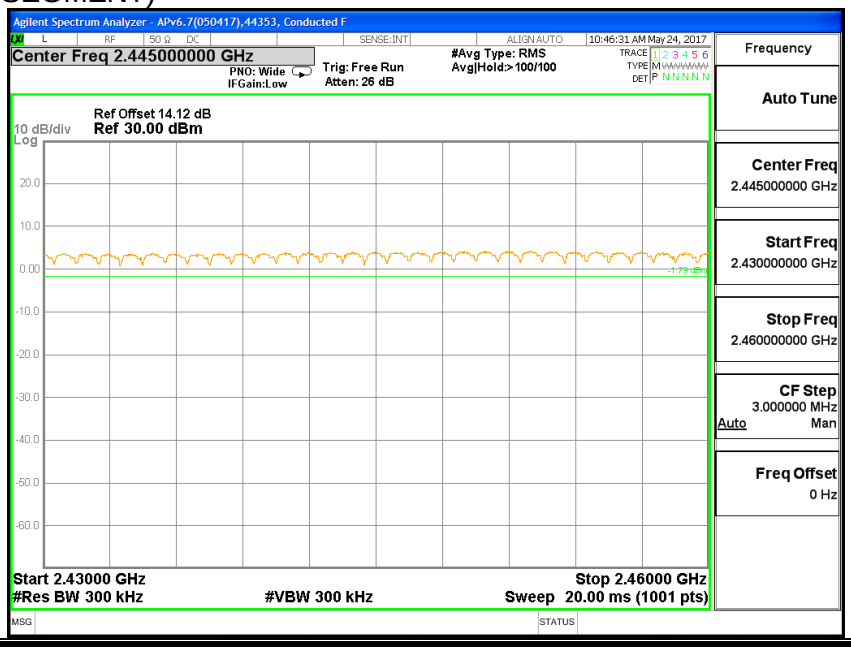
NUMBER OF HOPPING CHANNELS (30 MHz SPAN, FIRST SEGMENT)



NUMBER OF HOPPING CHANNELS (30 MHz SPAN, SECOND SEGMENT)



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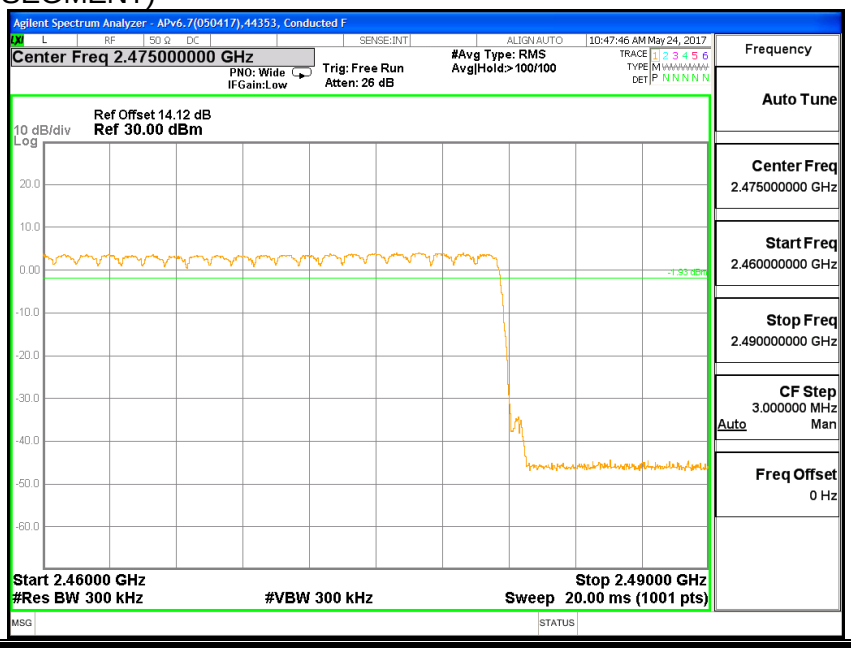
NUMBER OF HOPPING CHANNELS (30 MHz SPAN, THIRD SEGMENT)



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8.13.4. AVERAGE TIME OF OCCUPANCY

LIMITS

FCC §15.247 (a) (1) (iii)

IC RSS-247 (5.1) (d)

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The span is set to 0 Hz, centered on a single, selected hopping channel. The width of a single pulse is measured in a fast scan. The number of pulses is measured in a 3.16 second scan, to enable resolution of each occurrence.

The average time of occupancy in the specified 31.6 second period (79 channels * 0.4 s) is equal to 10 * (# of pulses in 3.16 s) * pulse width.

For AFH mode, the average time of occupancy in the specified 8 second period (20 channels * 0.4 seconds) is equal to 10 * (# of pulses in 0.8 s) * pulse width.

RESULTS

DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
8PSK (EDR) Mode					
3DH1	0.3826	32	0.122	0.4	-0.278
3DH3	1.639	17	0.279	0.4	-0.121
3DH5	2.891	12	0.347	0.4	-0.053

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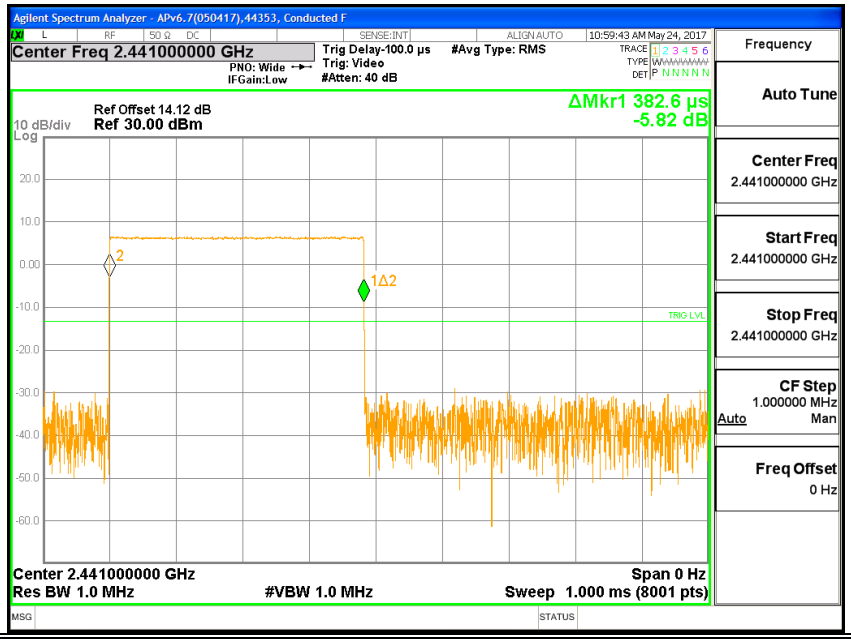
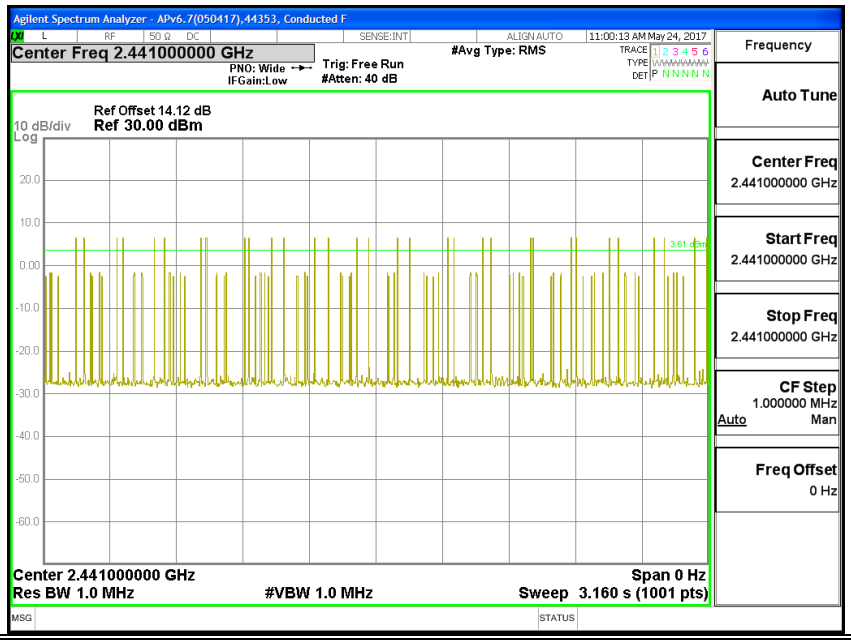
PULSE WIDTH - DH1



NUMBER OF PULSES - DH1



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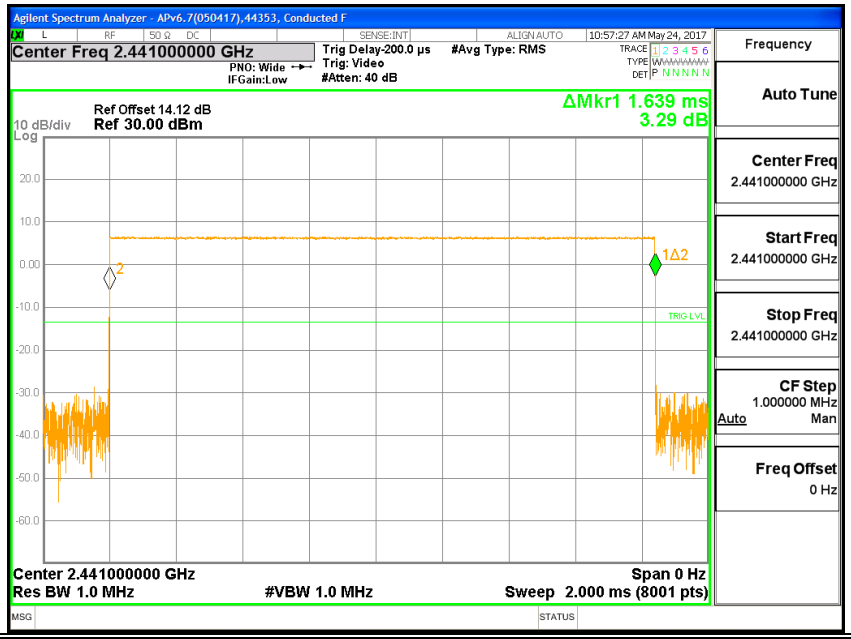
PULSE WIDTH - DH3



NUMBER OF PULSES - DH3

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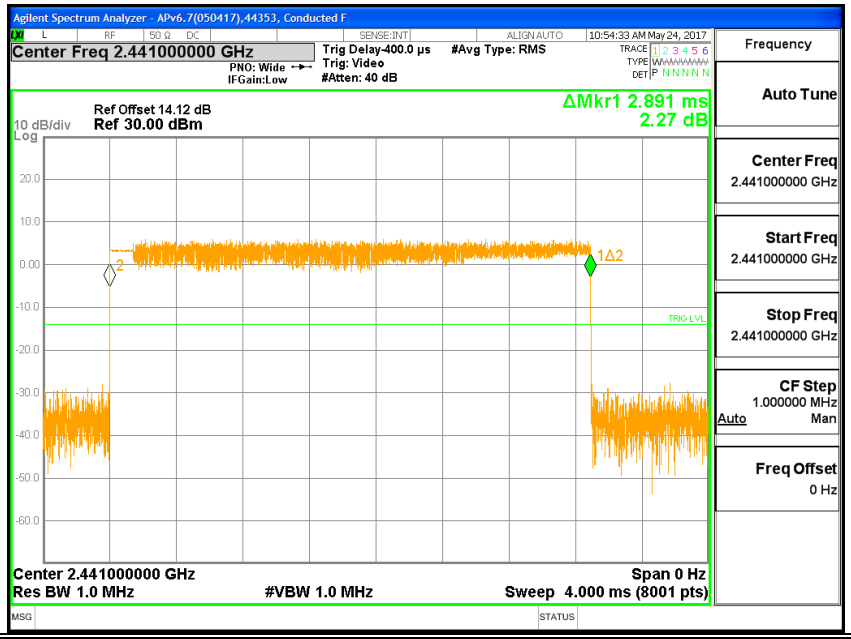
PULSE WIDTH - DH5



NUMBER OF PULSES - DH5

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8.13.5. OUTPUT POWER

ID:	44366	Date:	7/26/17

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.

TEST PROCEDURE

The transmitter output is connected to a wideband peak and average power meter.

RESULTS

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	10.86	21	-10.14
Middle	2441	10.66	21	-10.34
High	2480	10.67	21	-10.33

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8.13.6. AVERAGE POWER

ID:	44366	Date:	7/26/17

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	8.36
Middle	2441	8.39
High	2480	8.28

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8.13.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC 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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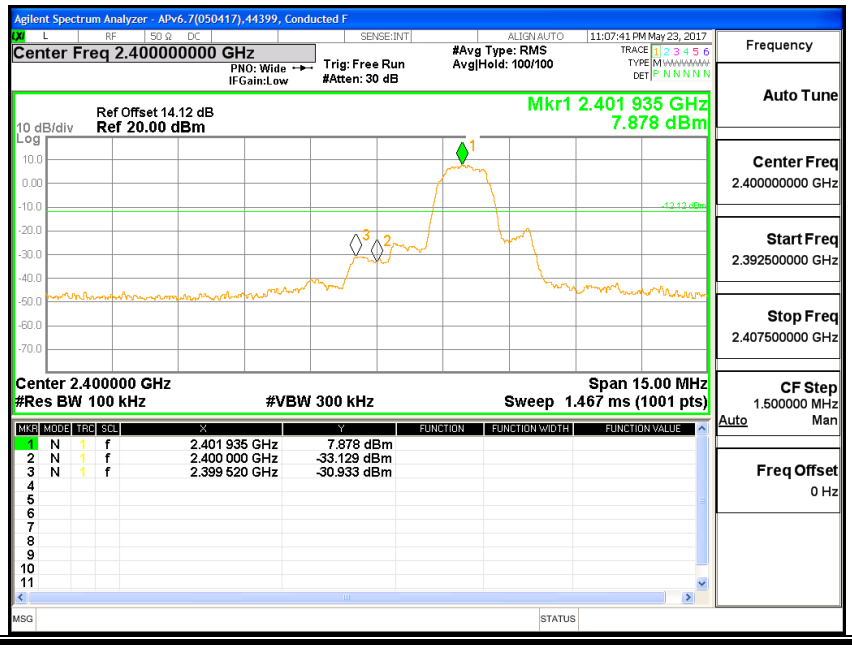
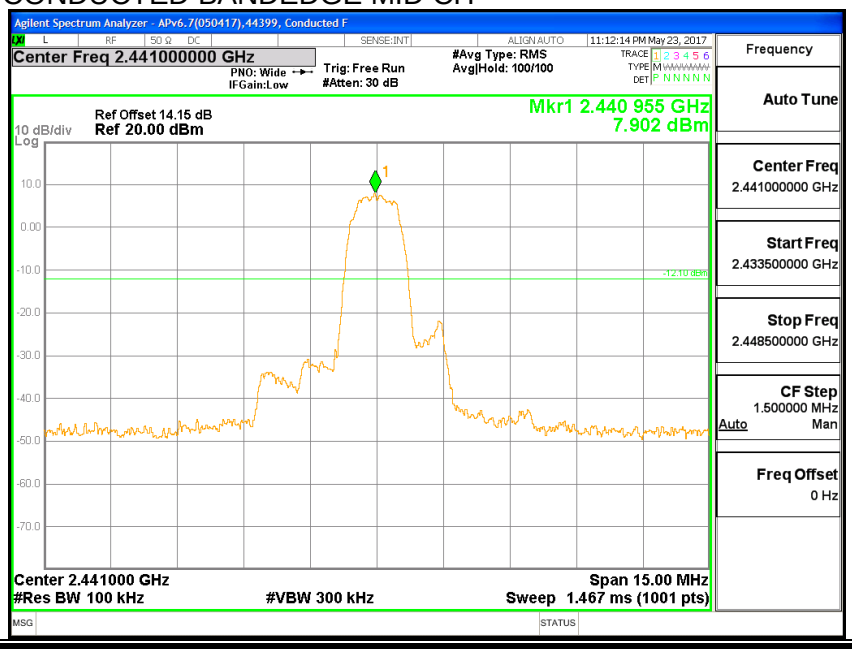
CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

CONDUCTED BANDEDGE LOW CH



CONDUCTED BANDEDGE MID CH



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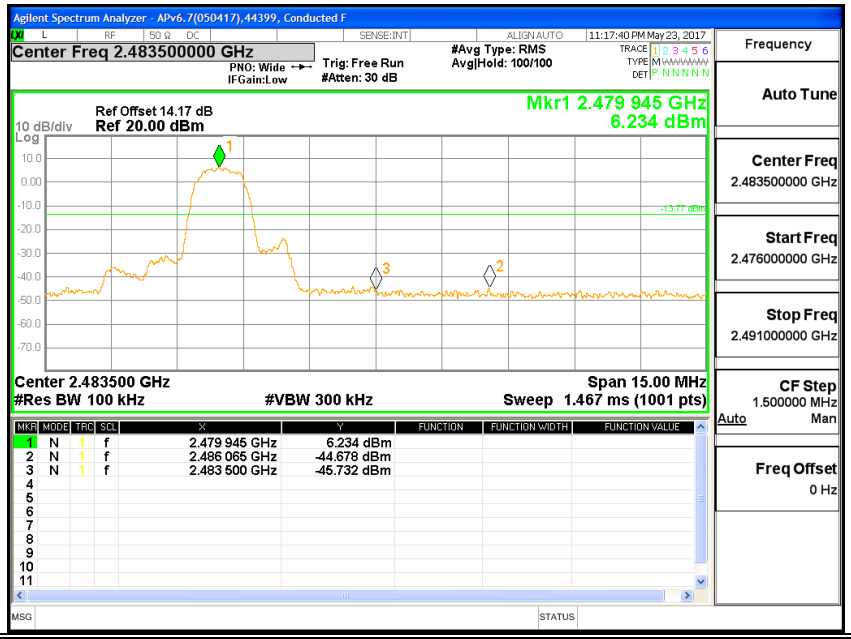
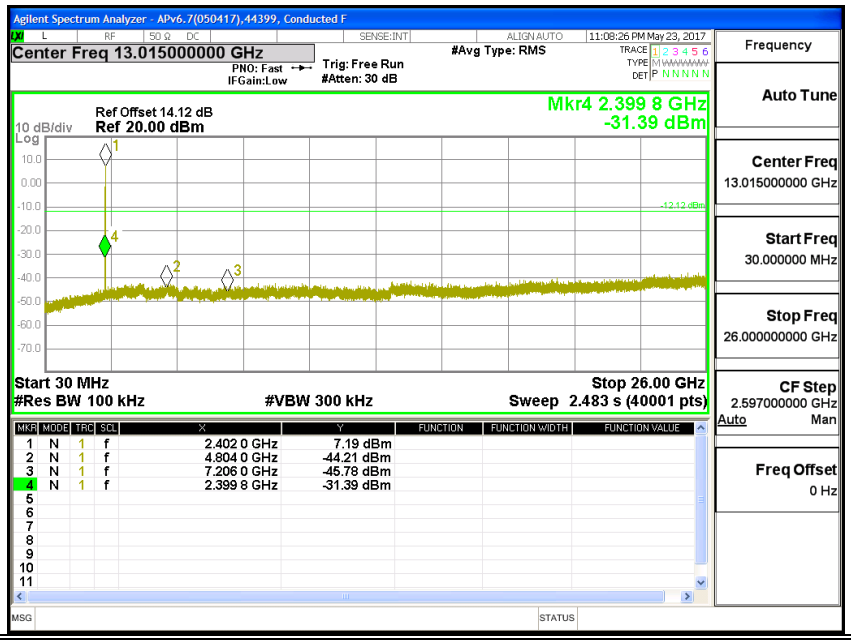
CONDUCTED BANDEDGE HIGH CH



CONDUCTED SPURIOUS EMISSIONS LOW CH



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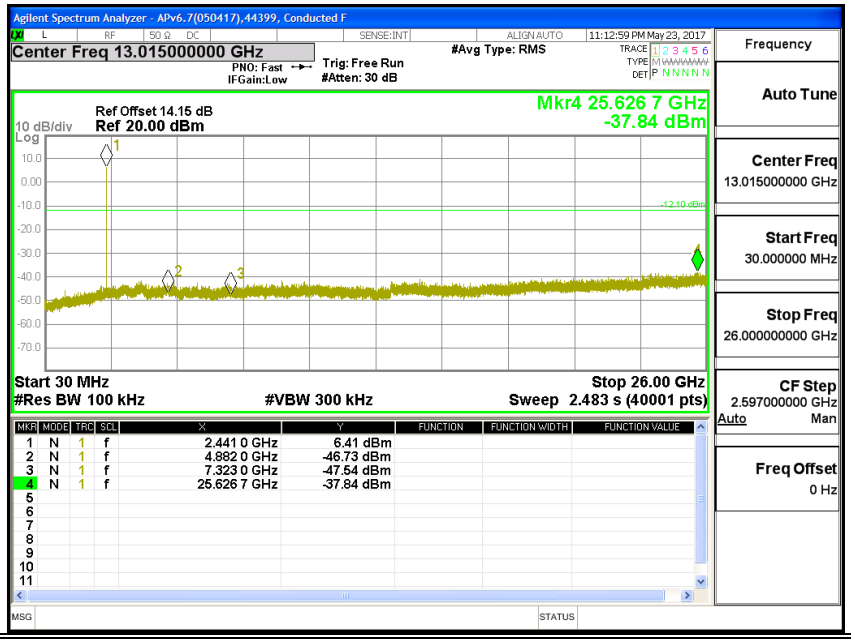
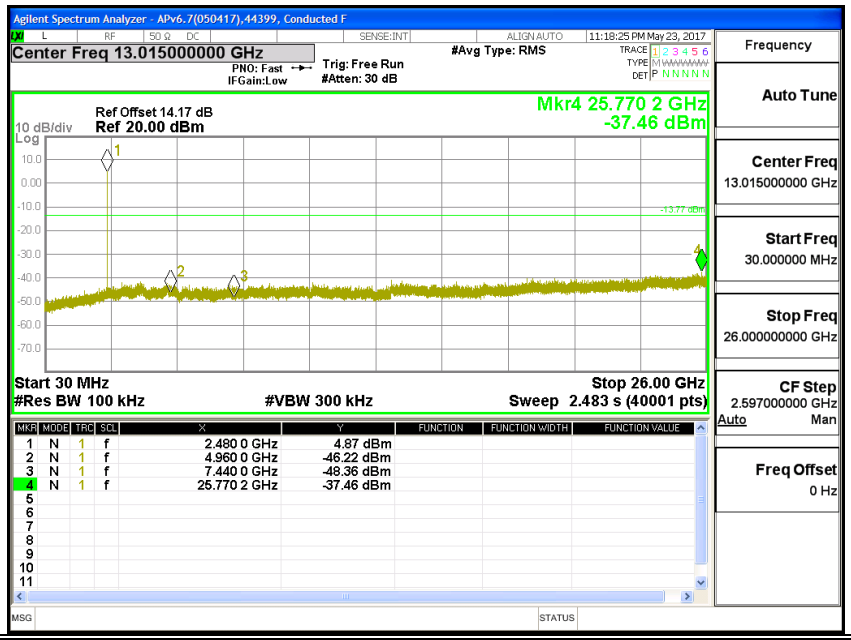
CONDUCTED SPURIOUS EMISSIONS MID CH



CONDUCTED SPURIOUS EMISSIONS HIGH CH



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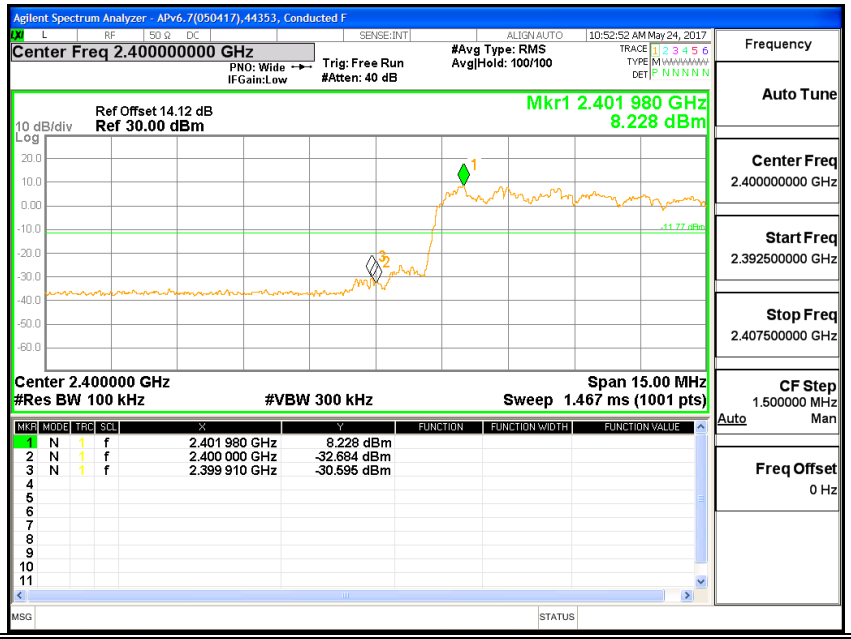
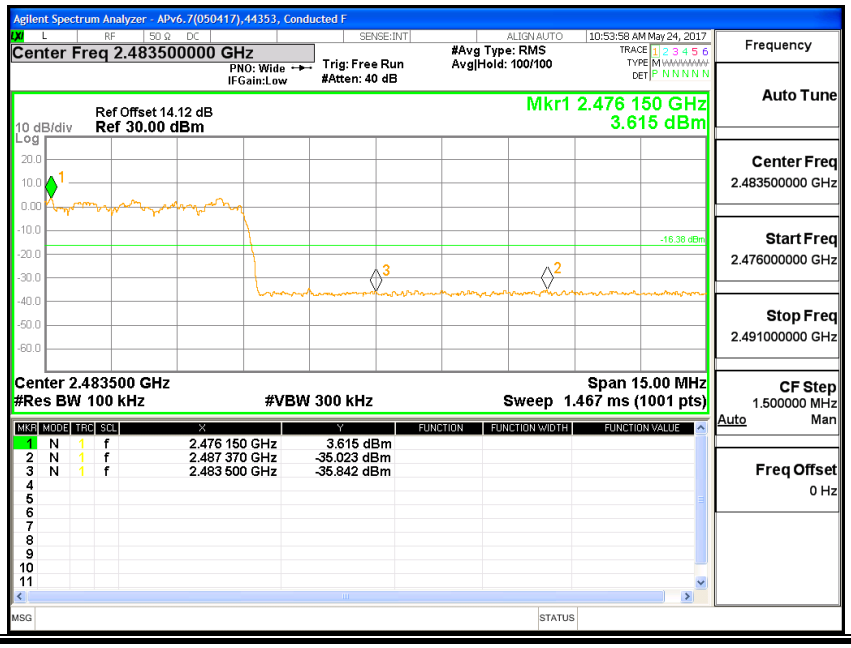
LOW BANDEDGE WITH HOPPING ON



HIGH BANDEDGE WITH HOPPING ON



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9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC 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
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 scans above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T (10 Hz) video bandwidth with peak detector for average measurements.

PKFH - FHSS: RB=100k/1MHz VB=3 x RB, Peak→ this is a note from Radiated automation software. When the frequency is below 1G, software is using RB=100kHz; when the frequency is above 1G, software is using RB=1MHz.

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.

RESULTS

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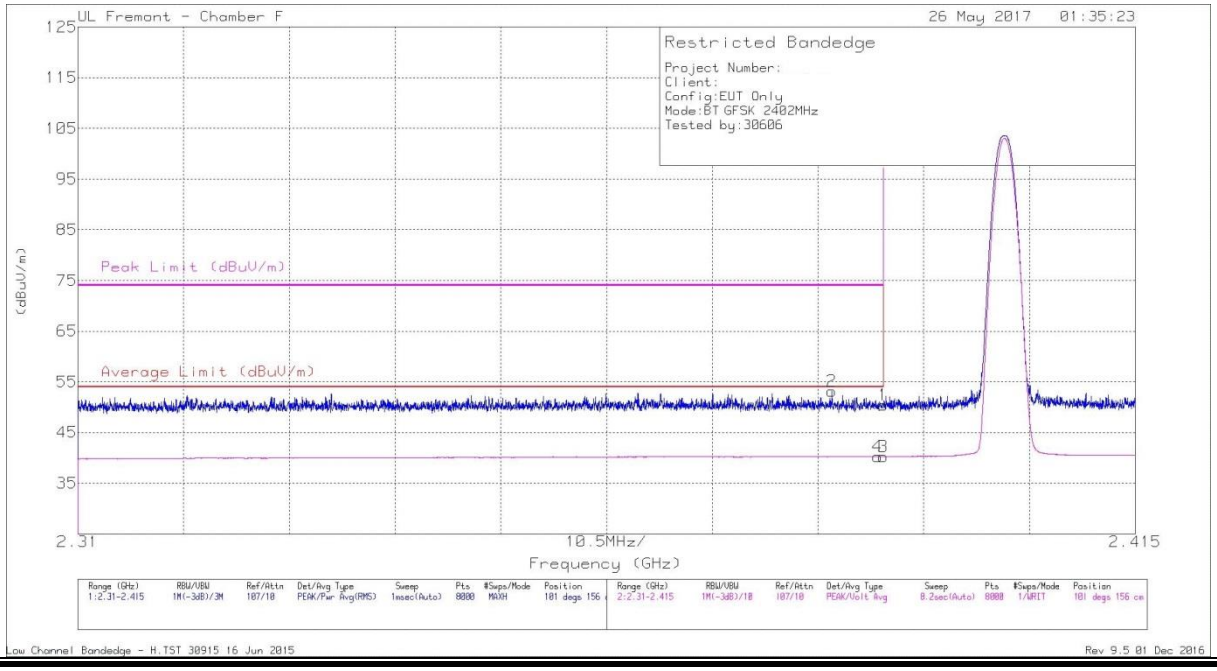
9.2. UAT 1, HIGH POWER BASIC DATA RATE GFSK MODULATION

9.2.1. RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	39.49	Pk	31.9	-21	50.39	-	-	74	-23.61	101	156	H
2	* 2.385	42.22	Pk	31.8	-20.9	53.12	-	-	74	-20.88	101	156	H
3	* 2.39	29.32	VA1T	31.9	-21	40.22	54	-13.78	-	-	101	156	H
4	* 2.389	29.26	VA1T	31.9	-20.9	40.26	54	-13.74	-	-	101	156	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
Low Channel Bandedge - H.TST 30915 16 Jun 2015
Rev 9.5 01 Dec 2016

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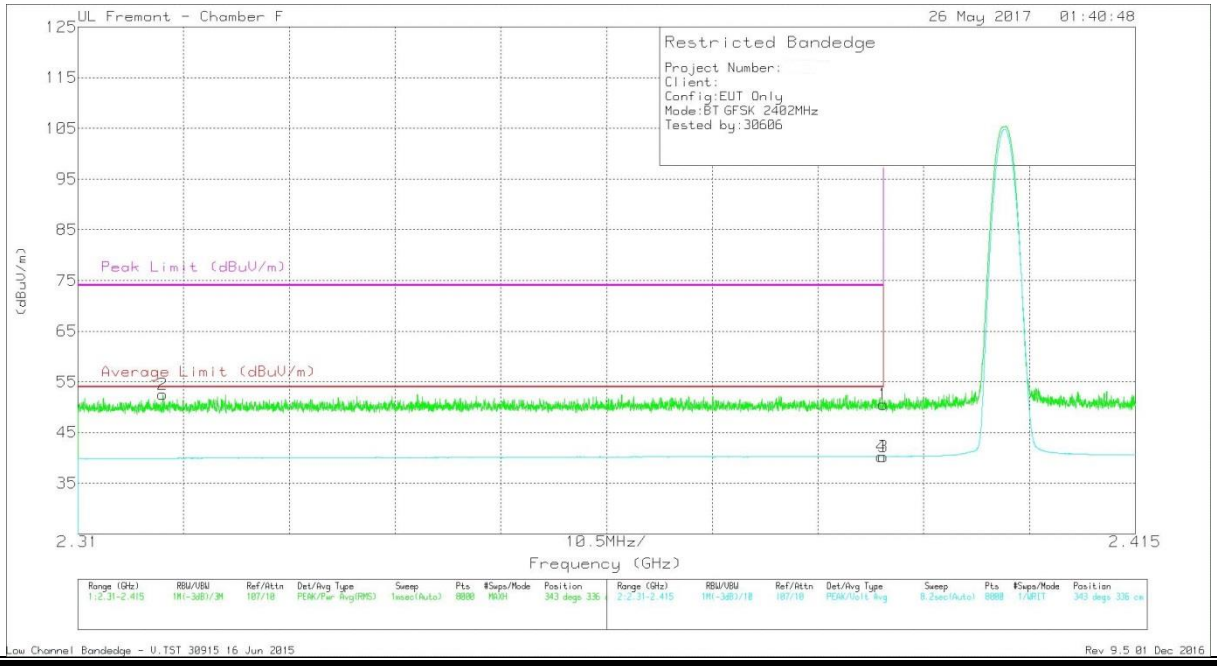
LOW CHANNEL VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	39.67	Pk	31.9	-21	50.57	-	-	74	-23.43	343	336	V
2	* 2.318	41.87	Pk	31.7	-21	52.57	-	-	74	-21.43	343	336	V
3	* 2.39	29.37	VA1T	31.9	-21	40.27	54	-13.73	-	-	343	336	V
4	* 2.39	29.38	VA1T	31.9	-21	40.28	54	-13.72	-	-	343	336	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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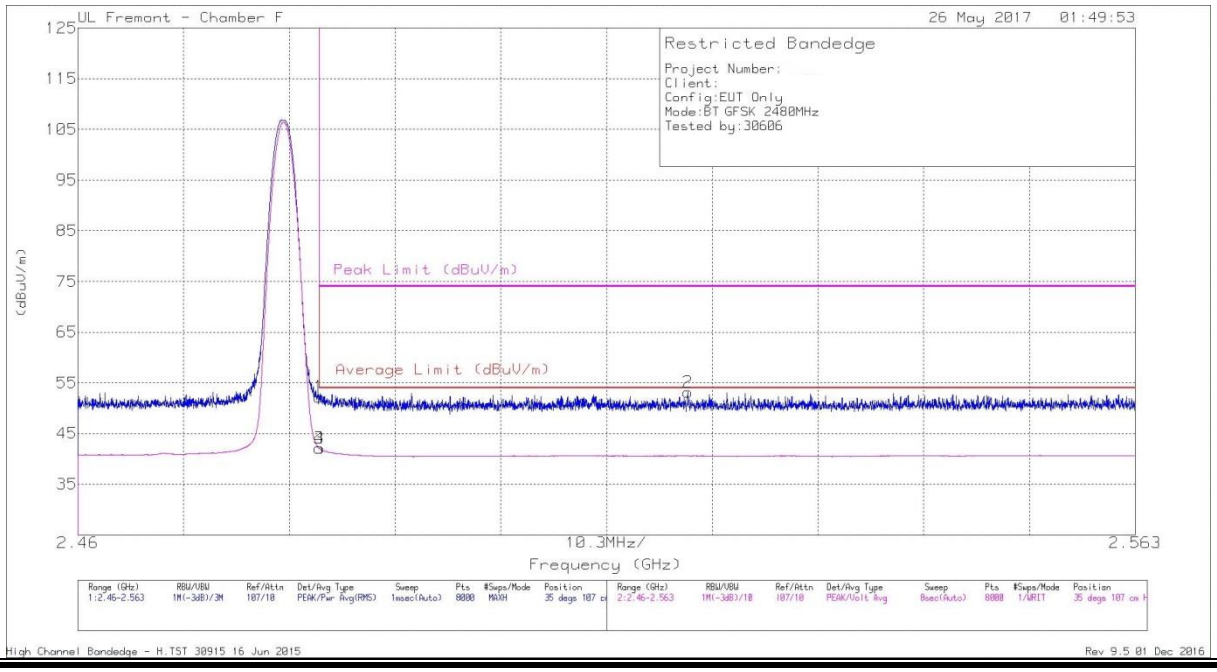
9.2.2. AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	* 2.484	41.12	Pk	32.1	-21	52.22	-	-	74	-21.78	35	107	H
2	2.519	42	Pk	32.2	-21	53.2	-	-	74	-20.8	35	107	H
3	* 2.484	30.99	VA1T	32.1	-21	42.09	54	-13.91	-	-	35	107	H
4	* 2.484	30.96	VA1T	32.1	-21	42.06	54	-13.94	-	-	35	107	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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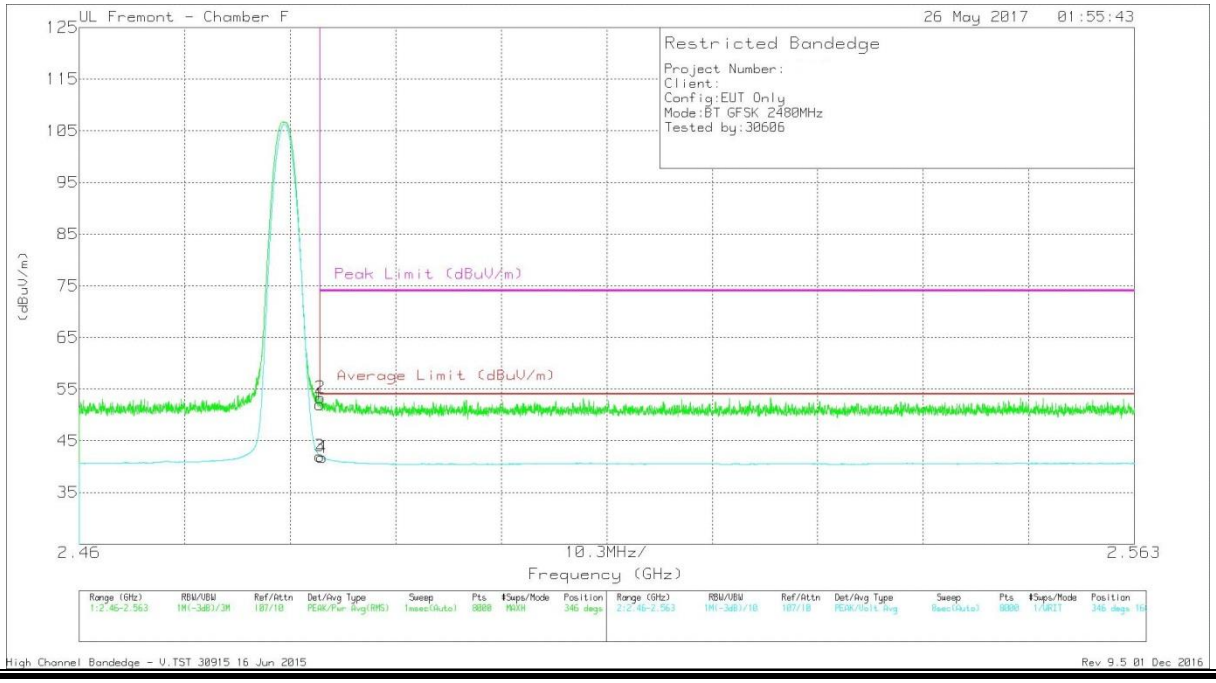
HIGH CHANNEL VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	* 2.484	40.96	Pk	32.1	-21	52.06	-	-	74	-21.94	346	166	V
2	* 2.484	42.25	Pk	32.1	-21	53.35	-	-	74	-20.65	346	166	V
3	* 2.484	30.95	VA1T	32.1	-21	42.05	54	-11.95	-	-	346	166	V
4	* 2.484	30.68	VA1T	32.1	-21	41.78	54	-12.22	-	-	346	166	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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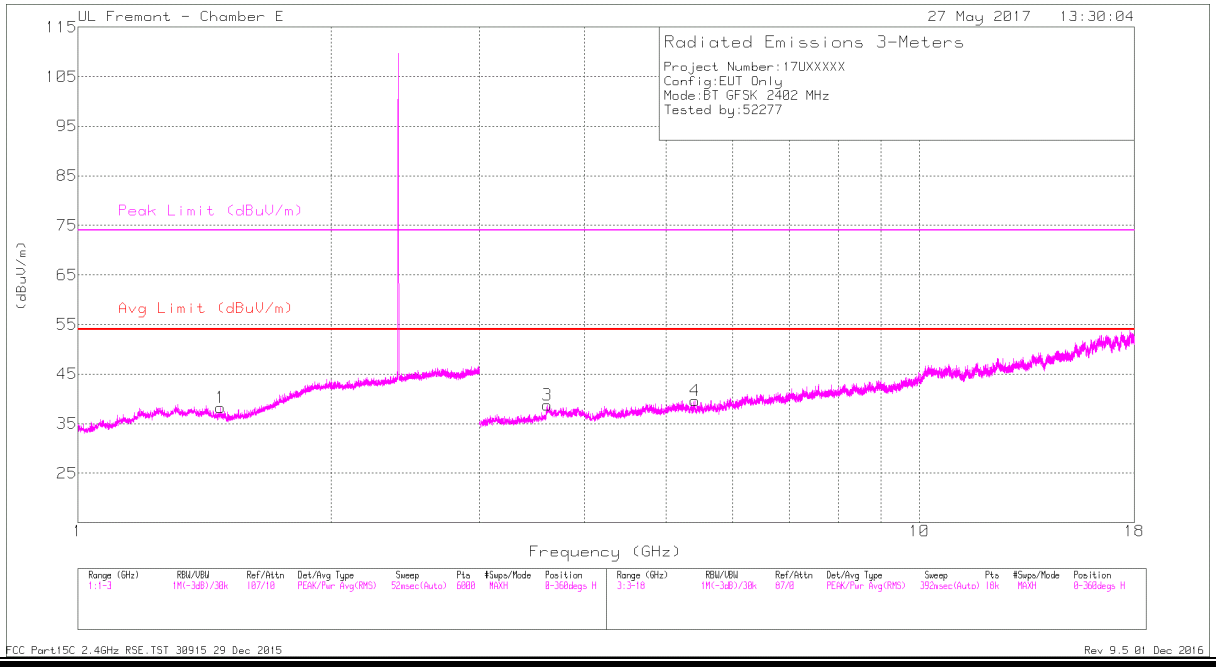
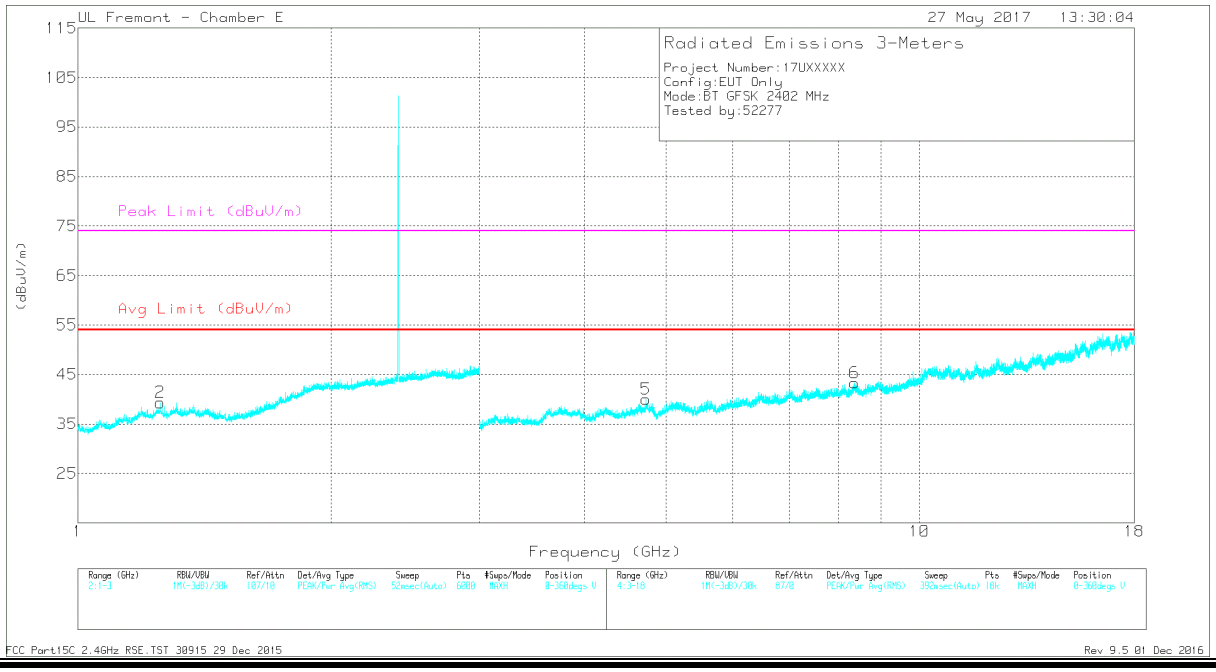
9.2.3. HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



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DATA

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.478	37.46	PK2	28.1	-21	44.56	-	-	74	-29.44	100	400	H
	* 1.478	25.1	MAv1	28.1	-20.9	32.3	54	-21.7	-	-	100	400	H
2	* 1.253	37.59	PK2	29.9	-22	45.49	-	-	74	-28.51	163	347	V
	* 1.252	25.5	MAv1	29.9	-21.8	33.6	54	-20.4	-	-	163	347	V
3	* 3.613	41.56	PK2	34	-30.6	44.96	-	-	74	-29.04	31	399	H
	* 3.616	29.9	MAv1	34	-30.5	33.4	54	-20.6	-	-	31	399	H
4	* 5.409	40.03	PK2	35.1	-29.3	45.83	-	-	74	-28.17	318	130	H
	* 5.407	28.38	MAv1	35.1	-29.3	34.18	54	-19.82	-	-	318	130	H
5	* 4.733	39.99	PK2	34.7	-29.1	45.59	-	-	74	-28.41	108	240	V
	* 4.733	28.75	MAv1	34.7	-29.1	34.35	54	-19.65	-	-	108	240	V
6	* 8.365	39.07	PK2	37.4	-25.7	50.77	-	-	74	-23.23	73	317	V
	* 8.368	26.82	MAv1	37.4	-25.5	38.72	54	-15.28	-	-	73	317	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average
FCC Part15C 2.4GHz RSE.TST 30915 29 Dec 2015
Rev 9.5 01 Dec 2016

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47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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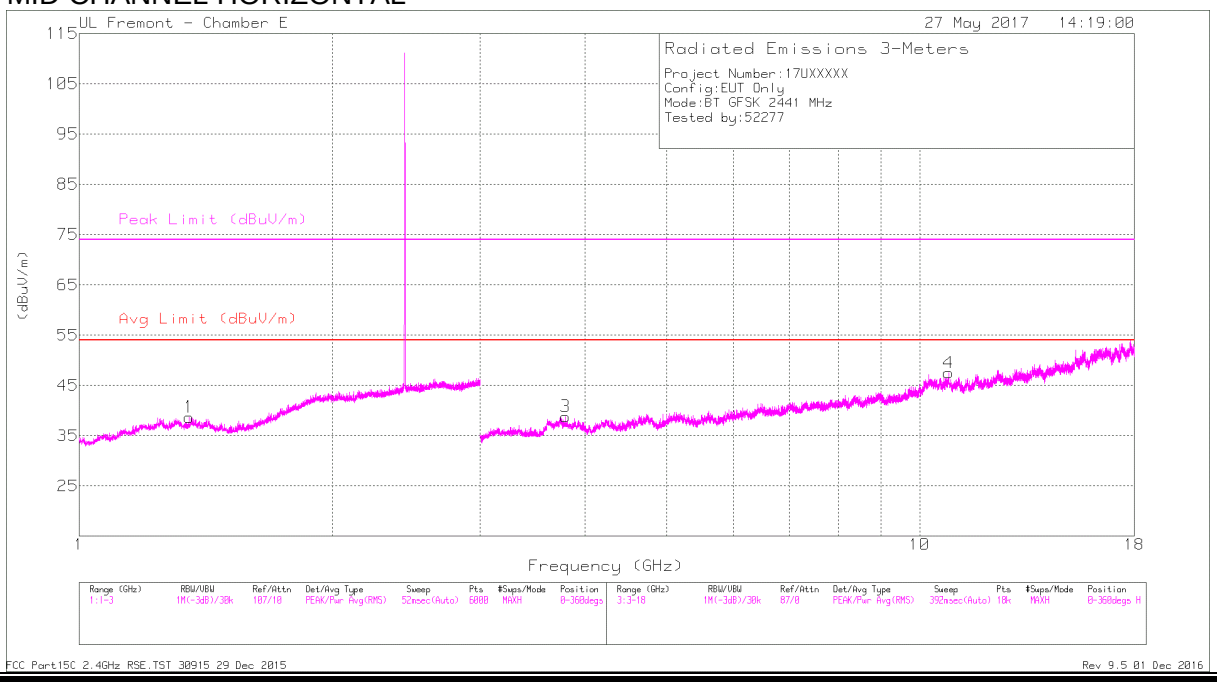
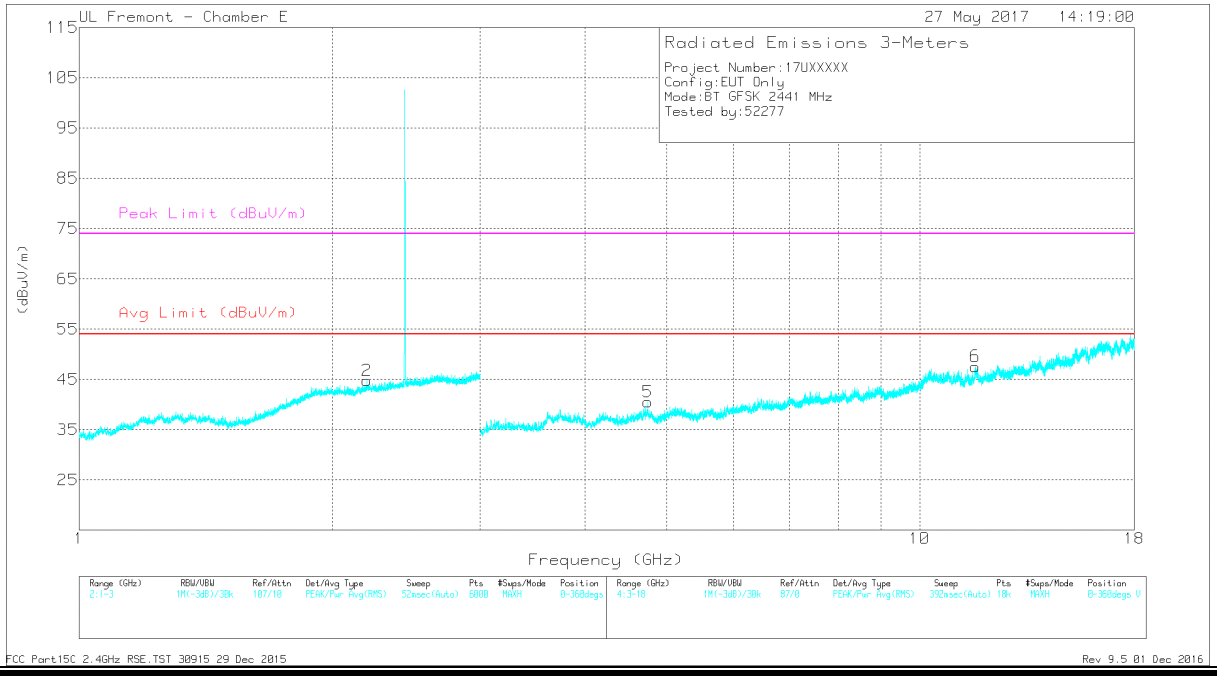
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



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DATA

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	36.45	PK2	29.6	-21.7	44.35	-	-	74	-29.65	302	300	H
	* 1.354	24.9	MAv1	29.6	-21.7	32.8	54	-21.2	-	-	302	300	H
2	* 2.23	38.37	PK2	32.1	-19.8	50.67	-	-	74	-23.33	169	374	V
	* 2.297	25.98	MAv1	32.1	-19.8	38.28	54	-15.72	-	-	169	374	V
3	* 3.792	42.14	PK2	34.4	-30.4	46.14	-	-	74	-27.86	231	229	H
	* 3.79	30.33	MAv1	34.4	-30.4	34.33	54	-19.67	-	-	231	229	H
4	* 10.824	37.08	PK2	39.6	-22.5	54.18	-	-	74	-19.82	106	212	H
	* 10.822	24.89	MAv1	39.6	-22.5	41.99	54	-12.01	-	-	106	212	H
5	* 4.747	41.59	PK2	34.7	-29	47.29	-	-	74	-26.71	360	368	V
	* 4.746	29.03	MAv1	34.7	-29.1	34.63	54	-19.37	-	-	360	368	V
6	* 11.647	37.65	PK2	39.6	-22.7	54.55	-	-	74	-19.45	89	244	V
	* 11.647	25.46	MAv1	39.6	-22.8	42.26	54	-11.74	-	-	89	244	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

FCC Part15C 2.4GHz RSE.TST 30915 29 Dec 2015
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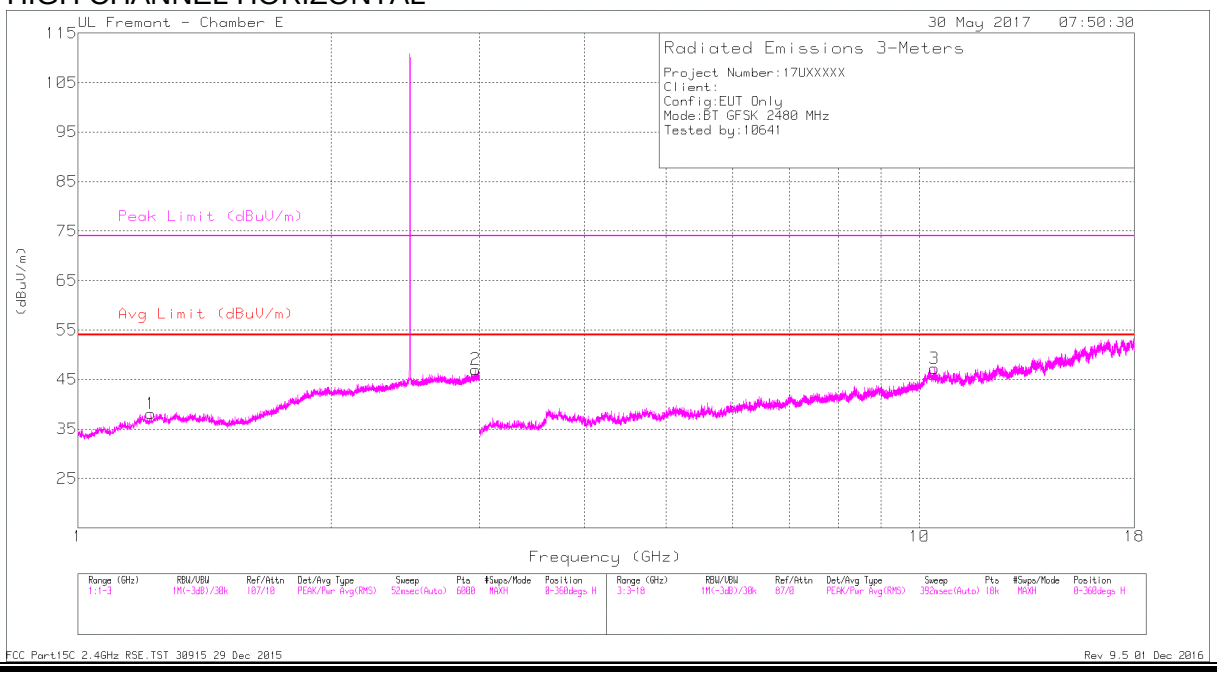
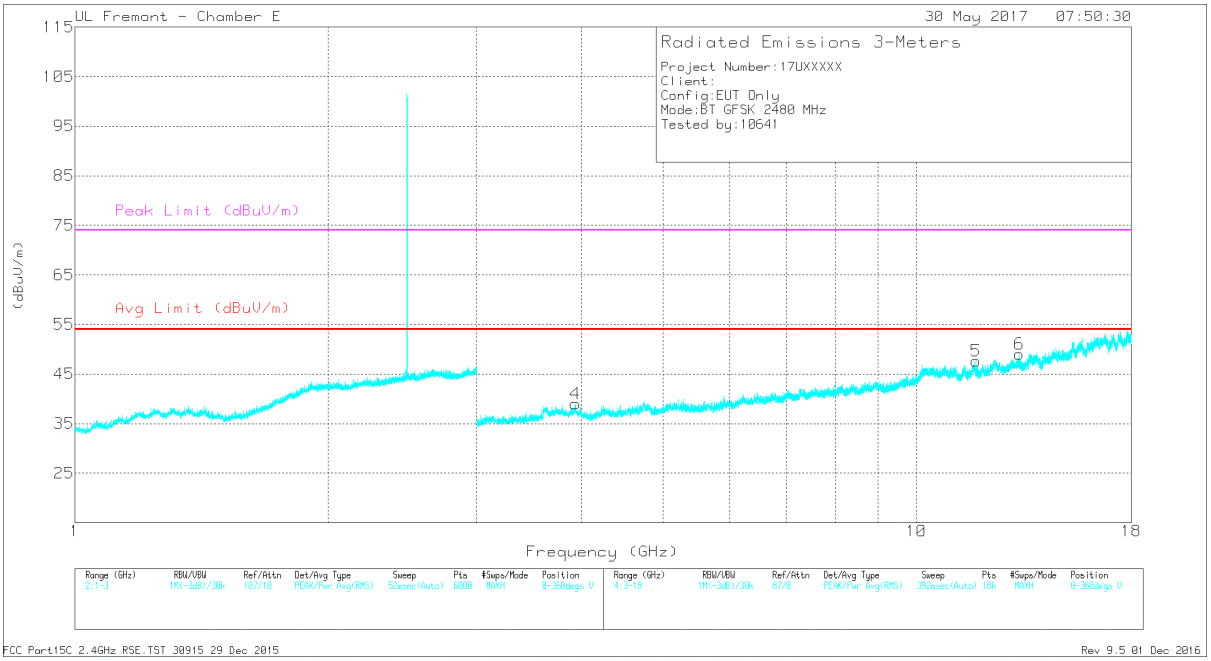
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.222	35.96	PKFH	29.9	-22.2	43.66	-	-	74	-30.34	150	240	H
	* 1.222	23.65	VA1T	29.9	-22.3	31.25	54	-22.75	-	-	150	240	H
4	* 3.931	39.7	PKFH	34.2	-29.3	44.6	-	-	74	-29.4	231	332	V
	* 3.932	28.24	VA1T	34.2	-29.2	33.24	54	-20.76	-	-	231	332	V
5	* 11.776	37.28	PKFH	39.7	-24.2	52.78	-	-	74	-21.22	106	205	V
	* 11.773	24.72	VA1T	39.7	-24.2	40.22	54	-13.78	-	-	106	205	V
6	* 13.254	37.04	PKFH	40.8	-24.5	53.34	-	-	74	-20.66	349	200	V
	* 13.256	25.56	VA1T	40.8	-24.5	41.86	54	-12.14	-	-	349	200	V
2	2.967	37.01	PKFH	32.7	-18.9	50.81	-	-	-	-	319	310	H
3	10.421	35.1	PKFH	39.8	-23.1	51.8	-	-	-	-	29	283	H

* - 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

FCC Part15C 2.4GHz RSE.TST 30915 29 Dec 2015

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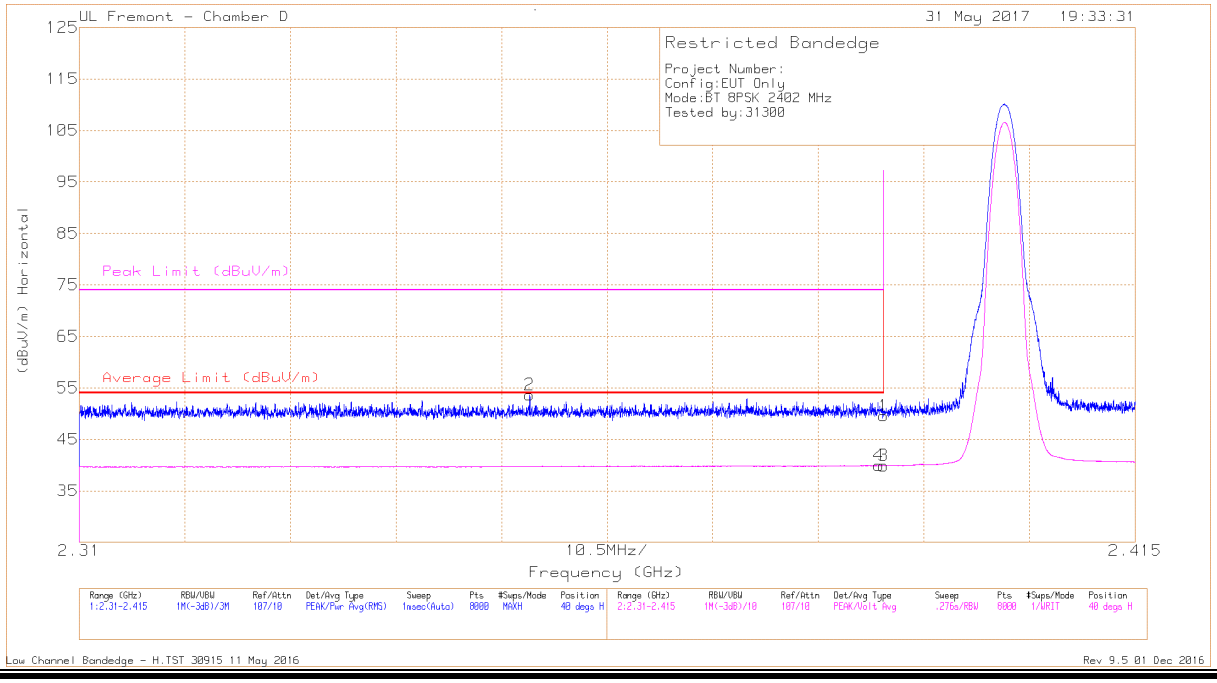
9.3. UAT 1, HIGH POWER ENHANCED DATA RATE 8PSK MODULATION

9.3.1. RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	38.19	Pk	32.1	-20.7	49.59	-	-	74	-24.41	40	125	H
2	* 2.355	42.44	Pk	32.1	-20.9	53.64	-	-	74	-20.36	40	125	H
3	* 2.39	28.49	VA1T	32.1	-20.7	39.89	54	-14.11	-	-	40	125	H
4	* 2.39	28.64	VA1T	32.1	-20.8	39.94	54	-14.06	-	-	40	125	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
Low Channel Bandedge - H.TST 30915 11 May 2016
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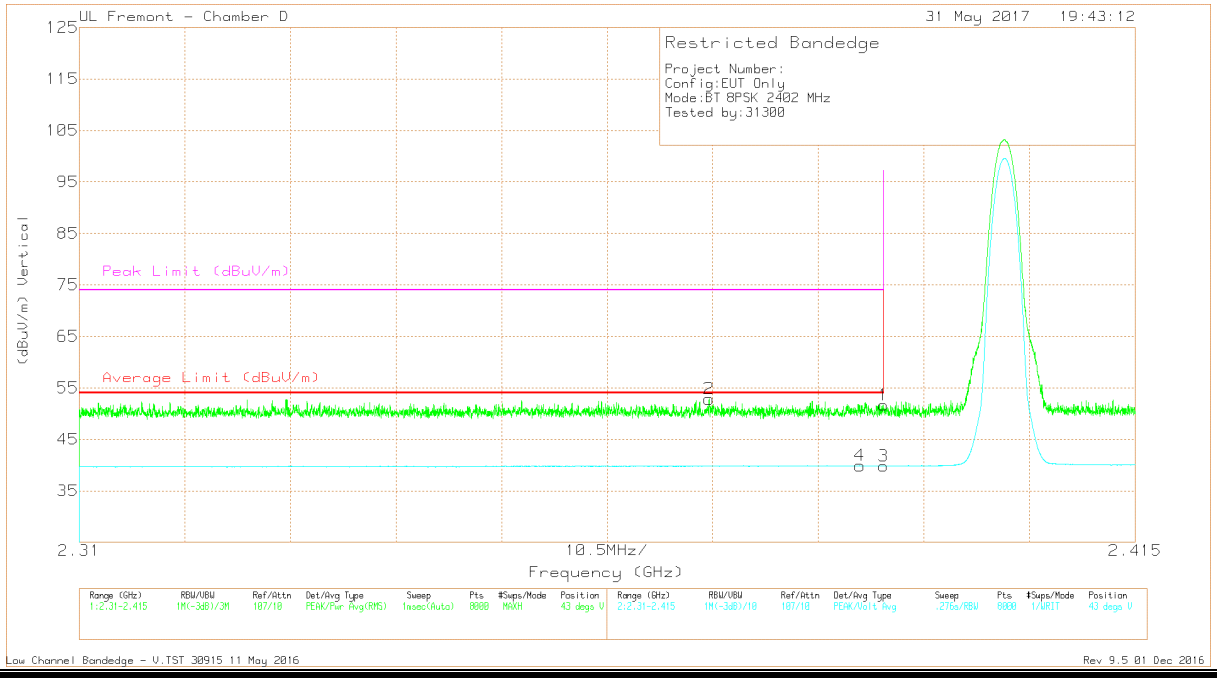
LOW CHANNEL VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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
2	* 2.373	41.55	Pk	32.1	-20.8	52.85	-	-	74	-21.15	43	392	V
4	* 2.388	28.59	VA1T	32.1	-20.8	39.89	54	-14.11	-	-	43	392	V
1	* 2.39	40.26	Pk	32.1	-20.7	51.66	-	-	74	-22.34	43	392	V
3	* 2.39	28.43	VA1T	32.1	-20.7	39.83	54	-14.17	-	-	43	392	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

Low Channel Bandedge - V.TST 30915 11 May 2016

Rev 9.5 01 Dec 2016

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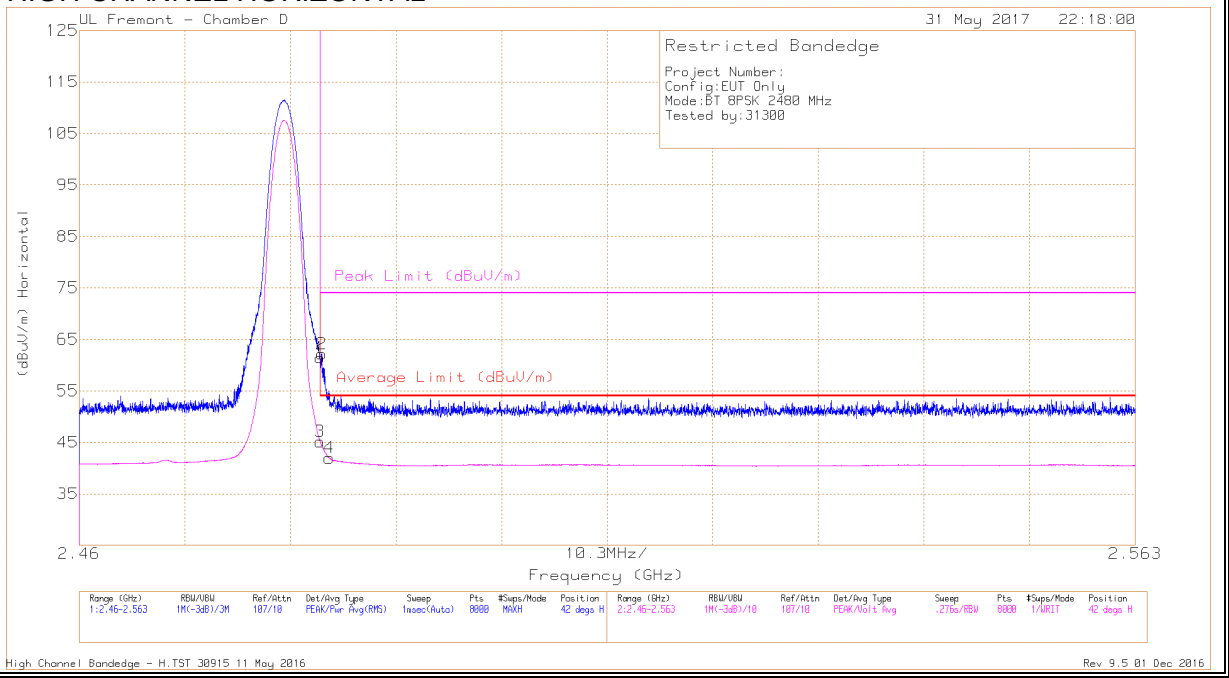
9.3.2. AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	* 2.484	49.71	Pk	32.5	-20.8	61.41	-	-	74	-12.59	42	122	H
2	* 2.484	50.48	Pk	32.5	-20.8	62.18	-	-	74	-11.82	42	122	H
3	* 2.484	33.44	VA1T	32.5	-20.8	45.14	54	-8.86	-	-	42	122	H
4	* 2.484	30.27	VA1T	32.5	-20.8	41.97	54	-12.03	-	-	42	122	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
High Channel Bandedge - H.TST 30915 11 May 2016
Rev 9.5 01 Dec 2016

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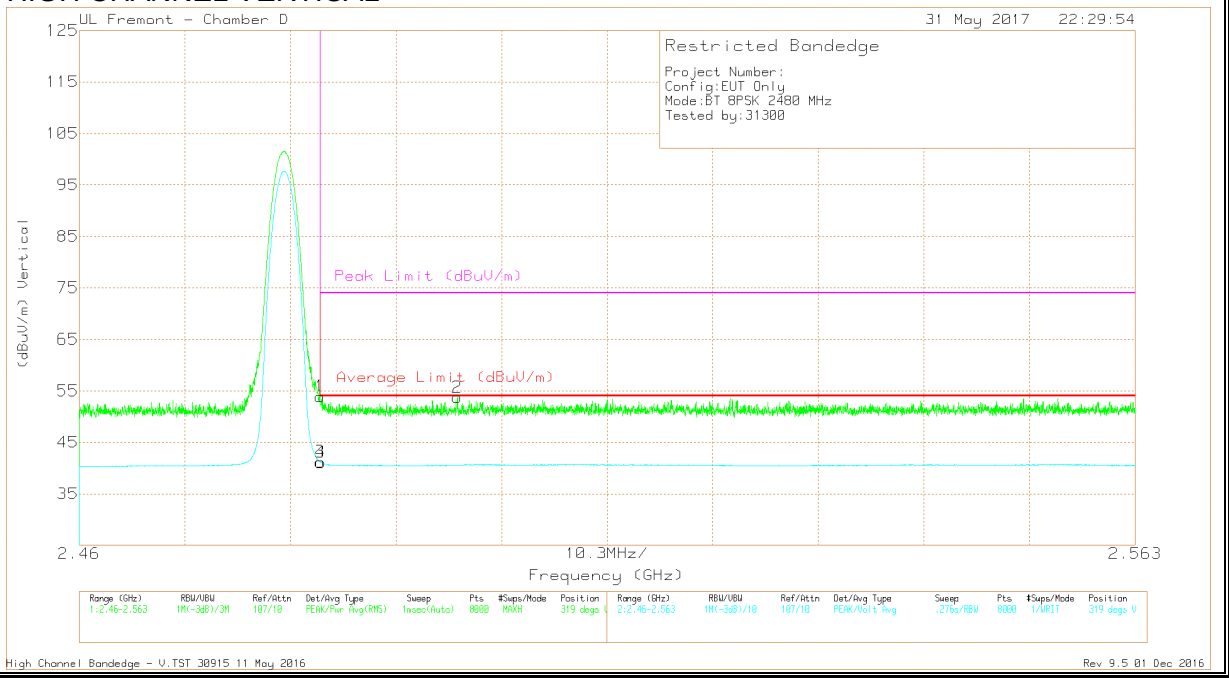
HIGH CHANNEL VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	* 2.484	42.23	Pk	32.5	-20.8	53.93	-	-	74	-20.07	319	308	V
3	* 2.484	29.51	VA1T	32.5	-20.8	41.21	54	-12.79	-	-	319	308	V
4	* 2.484	29.42	VA1T	32.5	-20.8	41.12	54	-12.88	-	-	319	308	V
2	* 2.497	41.82	Pk	32.6	-20.7	53.72	-	-	74	-20.28	319	308	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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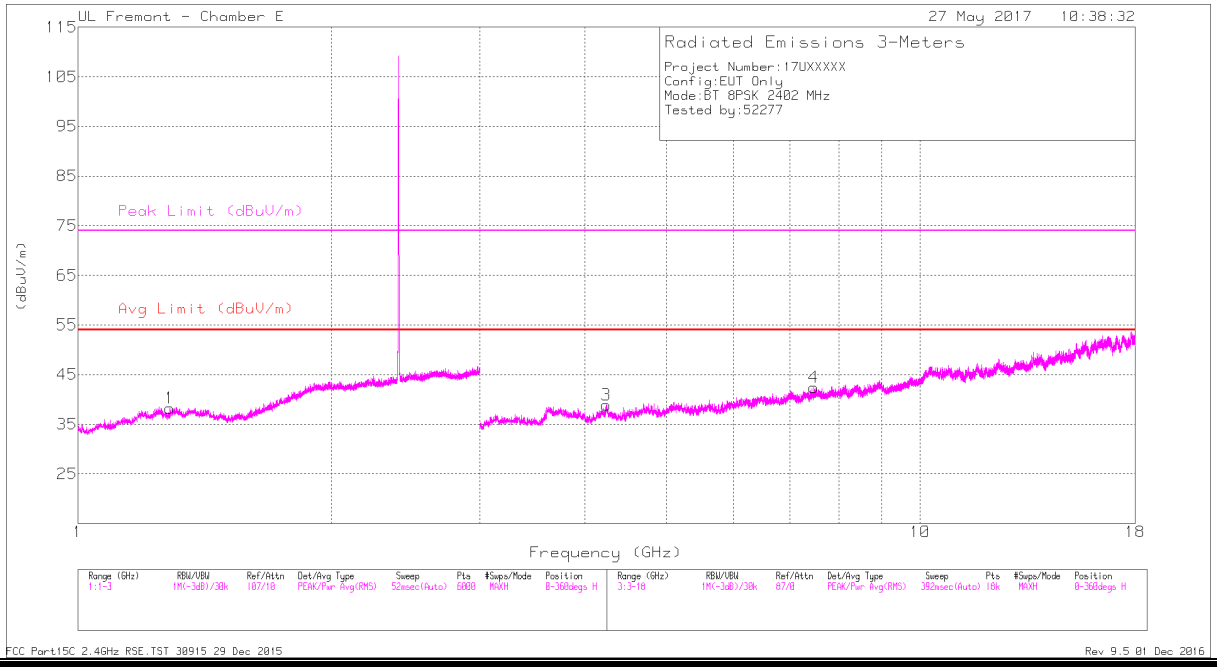
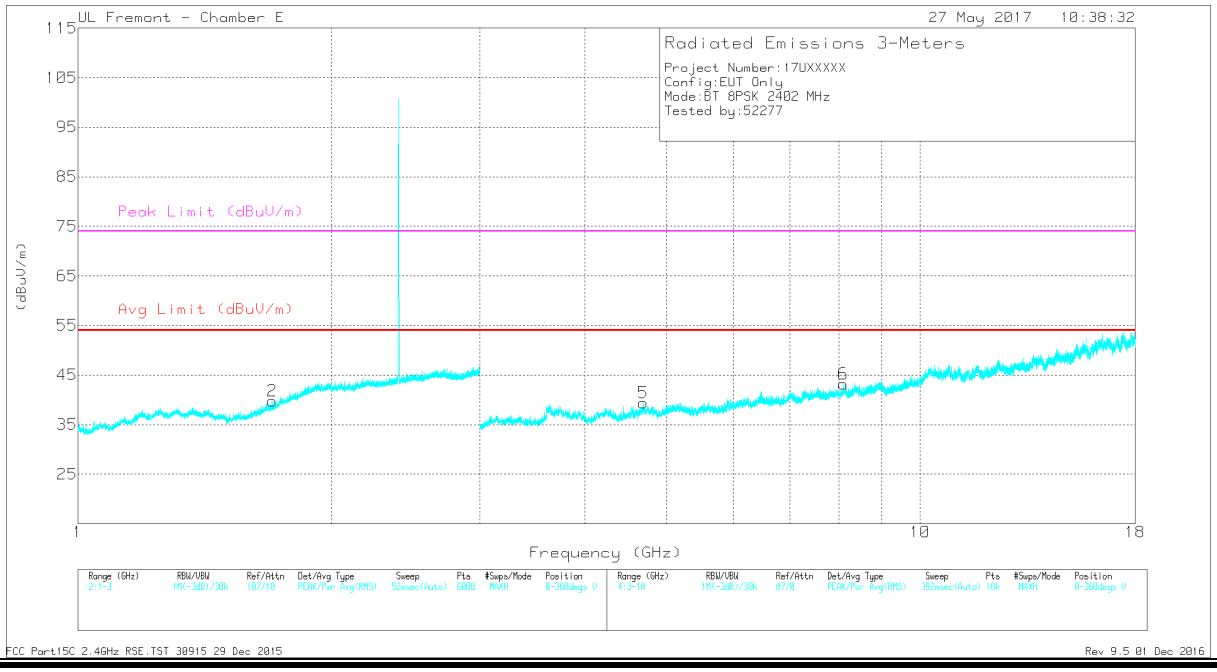
9.3.3. HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



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DATA

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.285	37.18	PK2	29.8	-22.1	44.88	-	-	74	-29.12	360	250	H
	* 1.286	24.97	MAv1	29.8	-22	32.77	54	-21.23	-	-	360	250	H
2	* 1.702	36.93	PK2	29.5	-20.5	45.93	-	-	74	-28.07	221	206	V
	* 1.7	25.14	MAv1	29.5	-20.7	33.94	54	-20.06	-	-	221	206	V
3	* 4.236	41.27	PK2	34	-28.7	46.57	-	-	74	-27.43	343	183	H
	* 4.235	29.38	MAv1	34	-28.7	34.68	54	-19.32	-	-	343	183	H
4	* 7.476	38.83	PK2	37	-27	48.83	-	-	74	-25.17	220	400	H
	* 7.476	27.12	MAv1	37	-27	37.12	54	-16.88	-	-	220	400	H
5	* 4.689	41.35	PK2	34.6	-29.4	46.55	-	-	74	-27.45	156	309	V
	* 4.689	29.16	MAv1	34.6	-29.4	34.36	54	-19.64	-	-	156	309	V
6	* 8.103	37.87	PK2	37.3	-25.6	49.57	-	-	74	-24.43	257	389	V
	* 8.107	26.33	MAv1	37.3	-25.6	38.03	54	-15.97	-	-	257	389	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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Rev 9.5 01 Dec 2016

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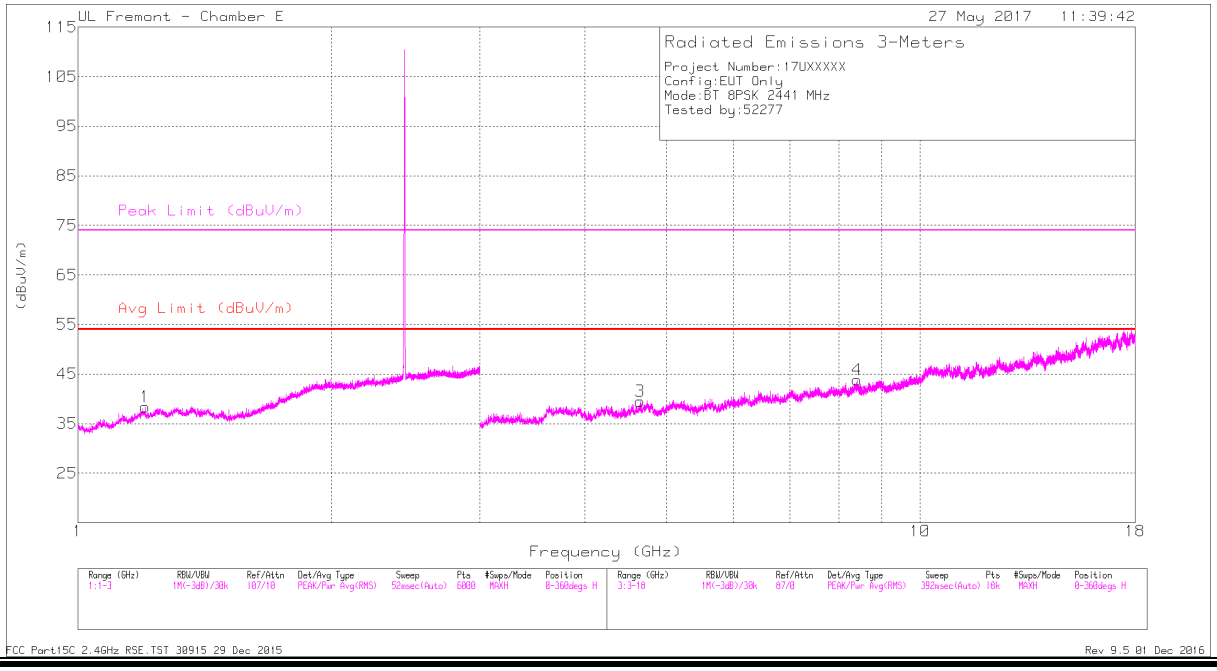
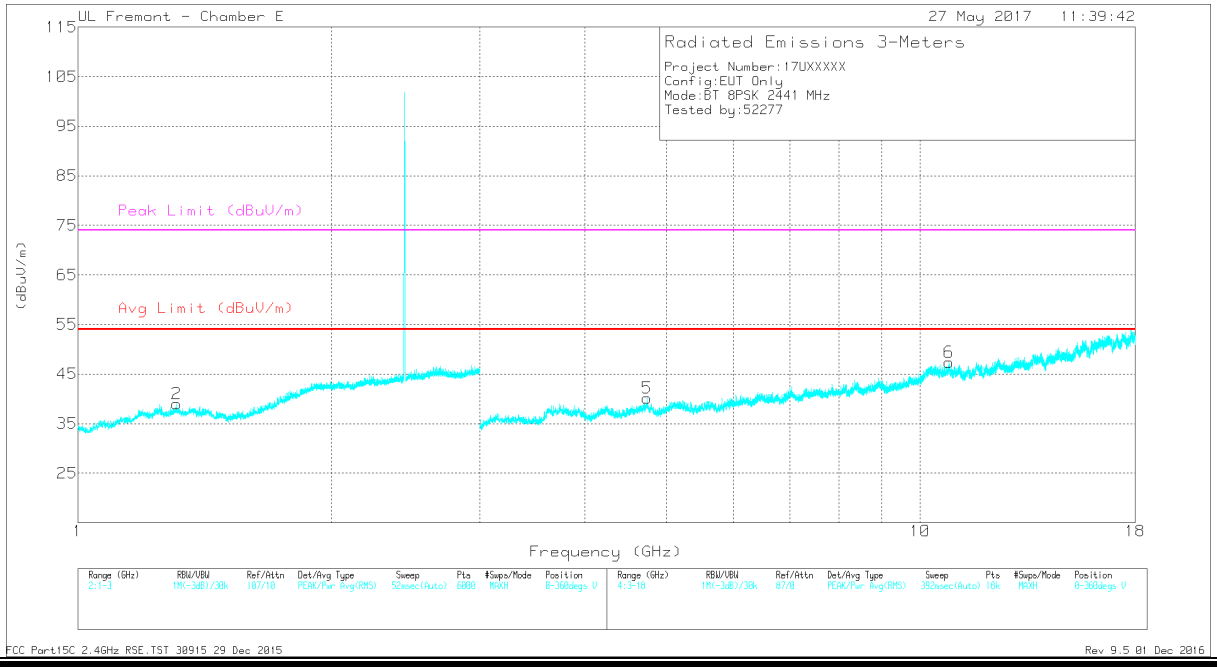
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



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DATA

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.2	37.36	PK2	29.9	-22.3	44.96	-	-	74	-29.04	180	400	H
	* 1.2	25.15	MAv1	29.9	-22.3	32.75	54	-21.25	-	-	180	400	H
2	* 1.311	37.26	PK2	29.8	-21.7	45.36	-	-	74	-28.64	60	375	V
	* 1.308	25.47	MAv1	29.8	-21.7	33.57	54	-20.43	-	-	60	375	V
3	* 4.649	42.14	PK2	34.6	-30.4	46.34	-	-	74	-27.66	146	142	H
	* 4.65	30.55	MAv1	34.6	-30.4	34.75	54	-19.25	-	-	146	142	H
4	* 8.412	37.95	PK2	37.3	-25.3	49.95	-	-	74	-24.05	132	220	H
	* 8.413	26.32	MAv1	37.3	-25.3	38.32	54	-15.68	-	-	132	220	H
5	* 4.738	40.8	PK2	34.7	-28.9	46.6	-	-	74	-27.4	25	361	V
	* 4.74	28.91	MAv1	34.7	-28.9	34.71	54	-19.29	-	-	25	361	V
6	* 10.824	36.35	PK2	39.6	-22.5	53.45	-	-	74	-20.55	102	263	V
	* 10.821	24.91	MAv1	39.6	-22.5	42.01	54	-11.99	-	-	102	263	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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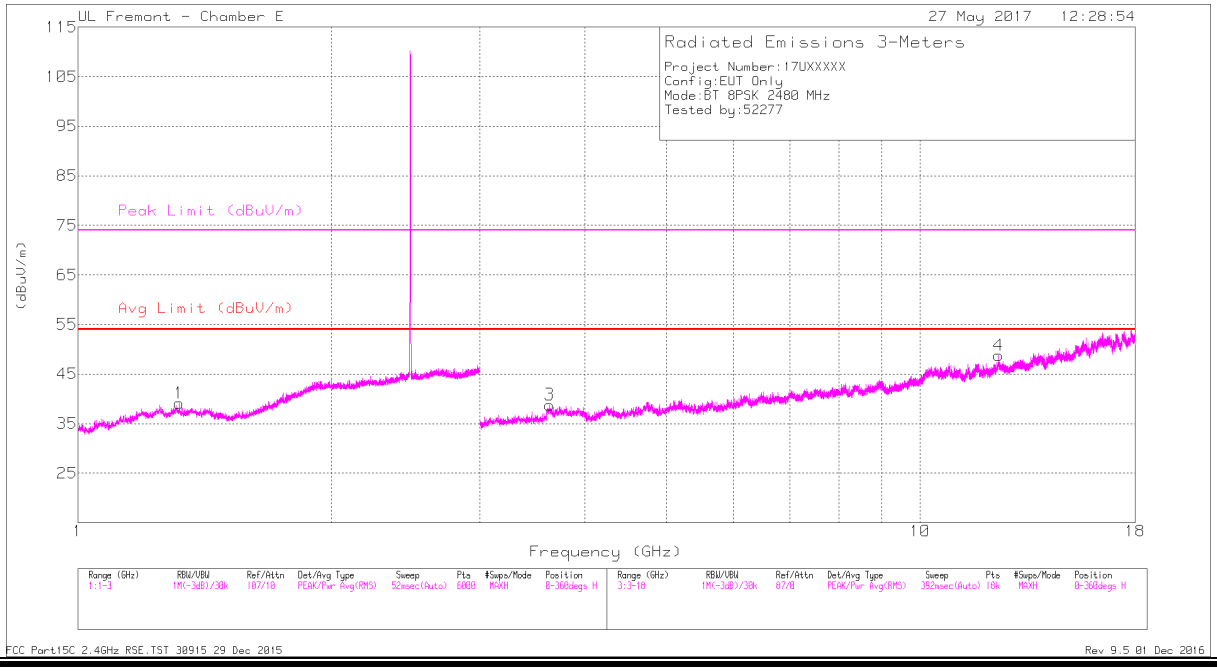
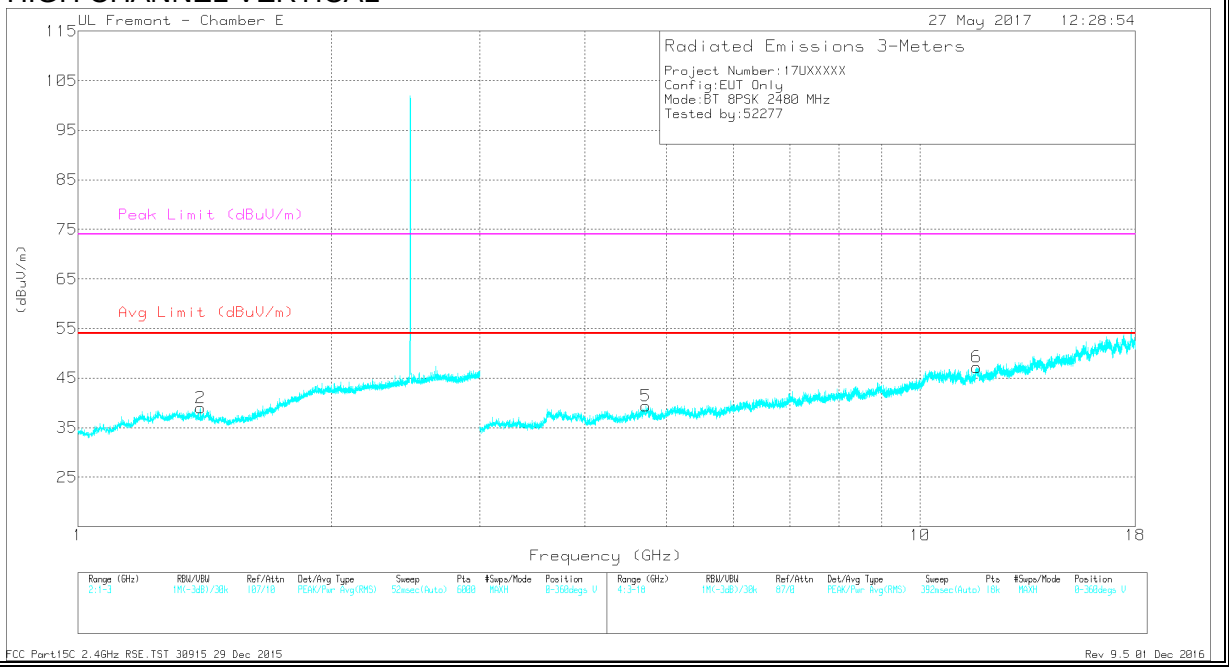
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



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DATA

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.318	37.72	PK2	29.8	-21.7	45.82	-	-	74	-28.18	54	275	H
	* 1.317	25.21	MAv1	29.8	-21.8	33.21	54	-20.79	-	-	54	275	H
2	* 1.395	36.9	PK2	29.5	-21.6	44.8	-	-	74	-29.2	166	356	V
	* 1.398	24.85	MAv1	29.5	-21.5	32.85	54	-21.15	-	-	166	356	V
3	* 3.629	41.47	PK2	34.1	-30.2	45.37	-	-	74	-28.63	10	185	H
	* 3.629	29.57	MAv1	34.1	-30.2	33.47	54	-20.53	-	-	10	185	H
4	* 12.396	37.53	PK2	40.9	-23.1	55.33	-	-	74	-18.67	186	198	H
	* 12.396	25.46	MAv1	40.9	-23.1	43.26	54	-10.74	-	-	186	198	H
5	* 4.723	40.03	PK2	34.7	-29.1	45.63	-	-	74	-28.37	241	123	V
	* 4.724	28.34	MAv1	34.7	-29.1	33.94	54	-20.06	-	-	241	123	V
6	* 11.664	36.58	PK2	39.7	-22.2	54.08	-	-	74	-19.92	235	181	V
	* 11.664	25.18	MAv1	39.7	-22.2	42.68	54	-11.32	-	-	235	181	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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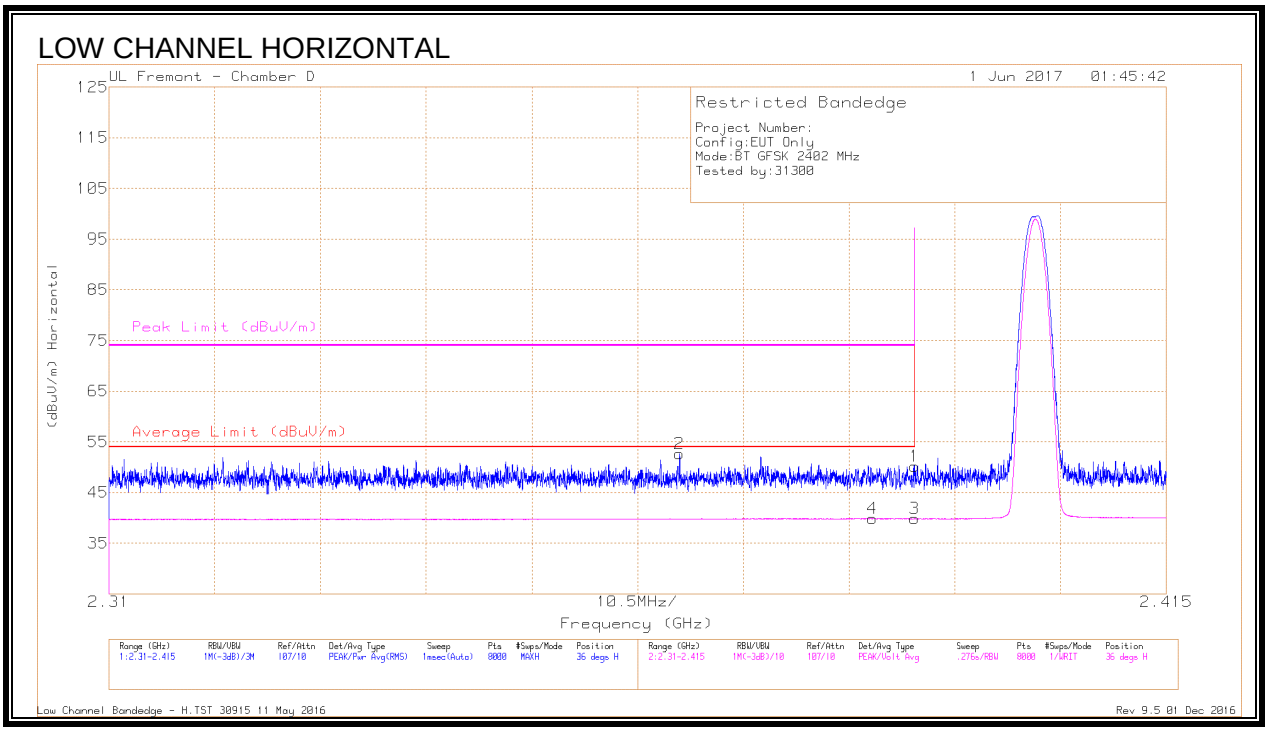
9.4. UAT 1, LOW POWER BASIC DATA RATE GFSK MODULATION

9.4.1. RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	38.79	Pk	32.1	-20.7	50.19	-	-	74	-23.81	36	126	H
2	* 2.367	41.32	Pk	32.1	-20.8	52.62	-	-	74	-21.38	36	126	H
3	* 2.39	28.41	VA1T	32.1	-20.7	39.81	54	-14.19	-	-	36	126	H
4	* 2.386	28.57	VA1T	32.1	-20.8	39.87	54	-14.13	-	-	36	126	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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Rev 9.5 01 Dec 2016

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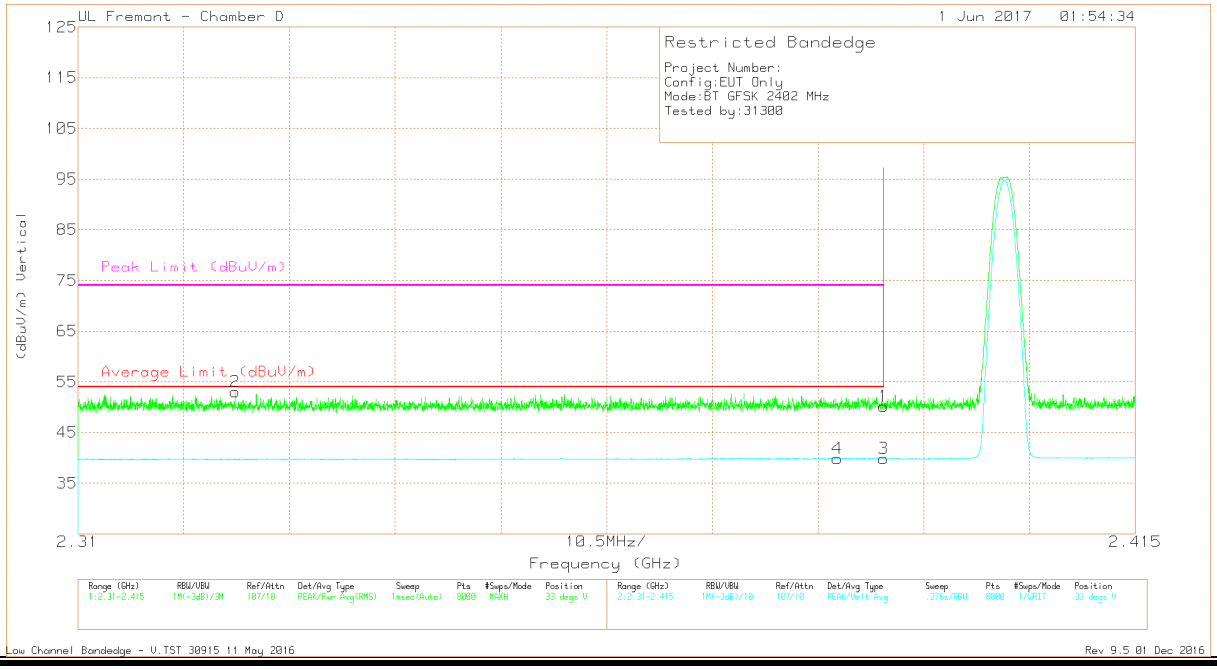
LOW CHANNEL VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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
2	* 2.326	41.85	Pk	32.1	-20.9	53.05	-	-	74	-20.95	33	391	V
4	* 2.385	28.6	VA1T	32.1	-20.8	39.9	54	-14.1	-	-	33	391	V
1	* 2.39	38.72	Pk	32.1	-20.7	50.12	-	-	74	-23.88	33	391	V
3	* 2.39	28.41	VA1T	32.1	-20.7	39.81	54	-14.19	-	-	33	391	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

Low Channel Bandedge - V.TST 30915 11 May 2016

Rev 9.5 01 Dec 2016

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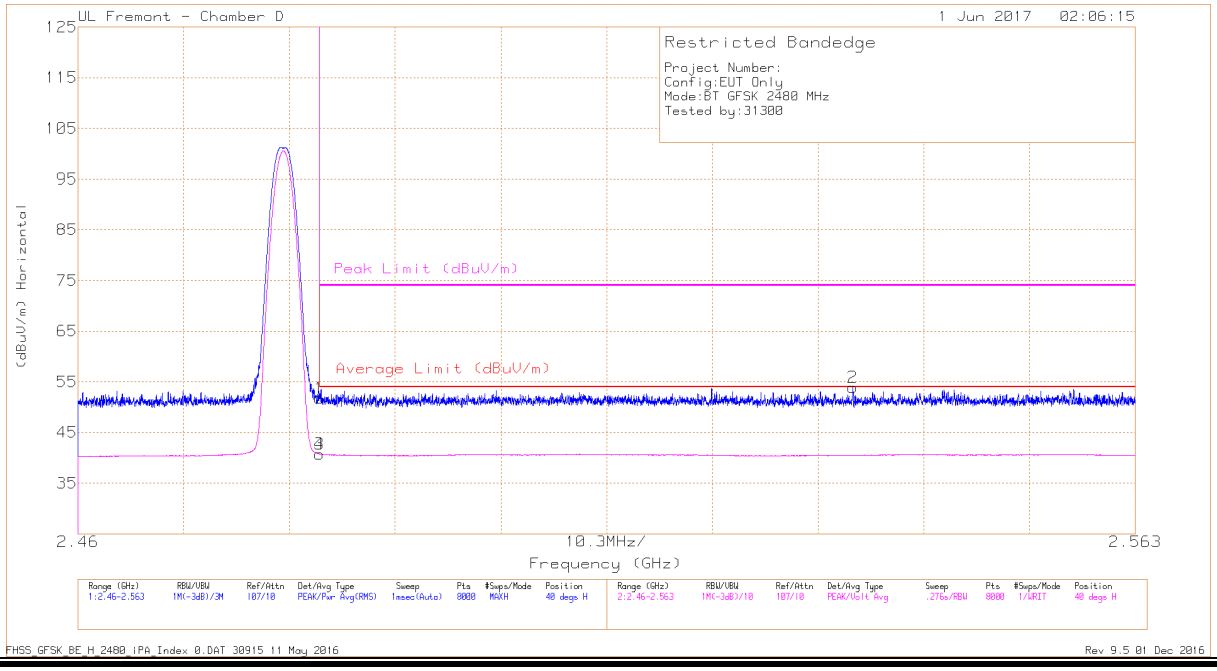
9.4.2. AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	* 2.484	40.11	Pk	32.5	-20.8	51.81	-	-	74	-22.19	40	103	H
3	* 2.484	29.08	VA1T	32.5	-20.8	40.78	54	-13.22	-	-	40	103	H
4	* 2.484	29.08	VA1T	32.5	-20.8	40.78	54	-13.22	-	-	40	103	H
2	2.535	41.99	Pk	32.6	-20.7	53.89	-	-	74	-20.11	40	103	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
FHSS_GFSK_BE_H_2480_iPA_Index 0.DAT 30915 11 May 2016
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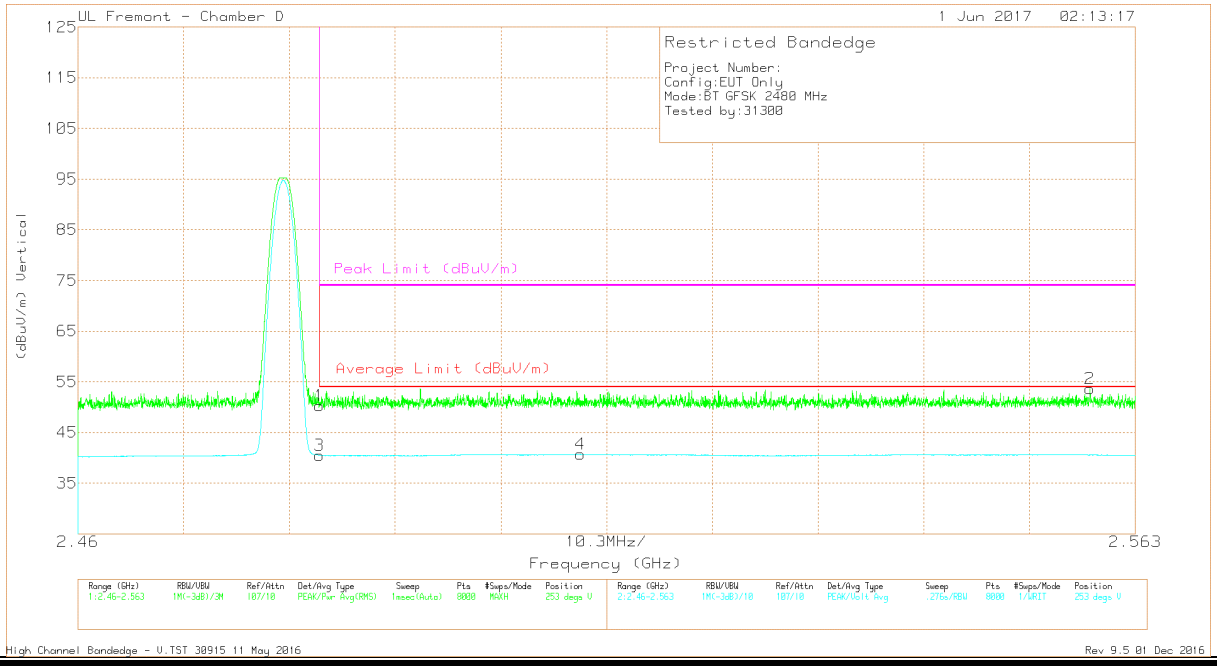
HIGH CHANNEL VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	* 2.484	38.56	Pk	32.5	-20.8	50.26	-	-	74	-23.74	253	313	V
3	* 2.484	28.77	VA1T	32.5	-20.8	40.47	54	-13.53	-	-	253	313	V
4	2.509	28.69	VA1T	32.6	-20.6	40.69	54	-13.31	-	-	253	313	V
2	2.559	41.78	Pk	32.5	-20.6	53.68	-	-	74	-20.32	253	313	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

High Channel Bandedge - V.TST 30915 11 May 2016

Rev 9.5 01 Dec 2016

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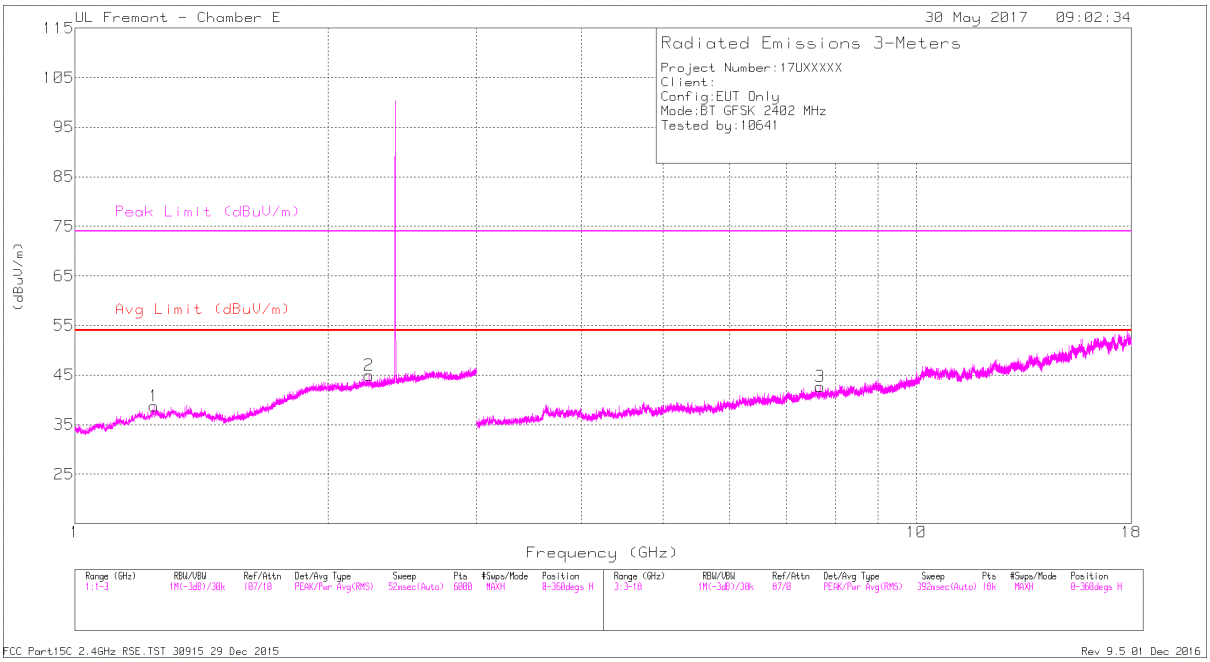
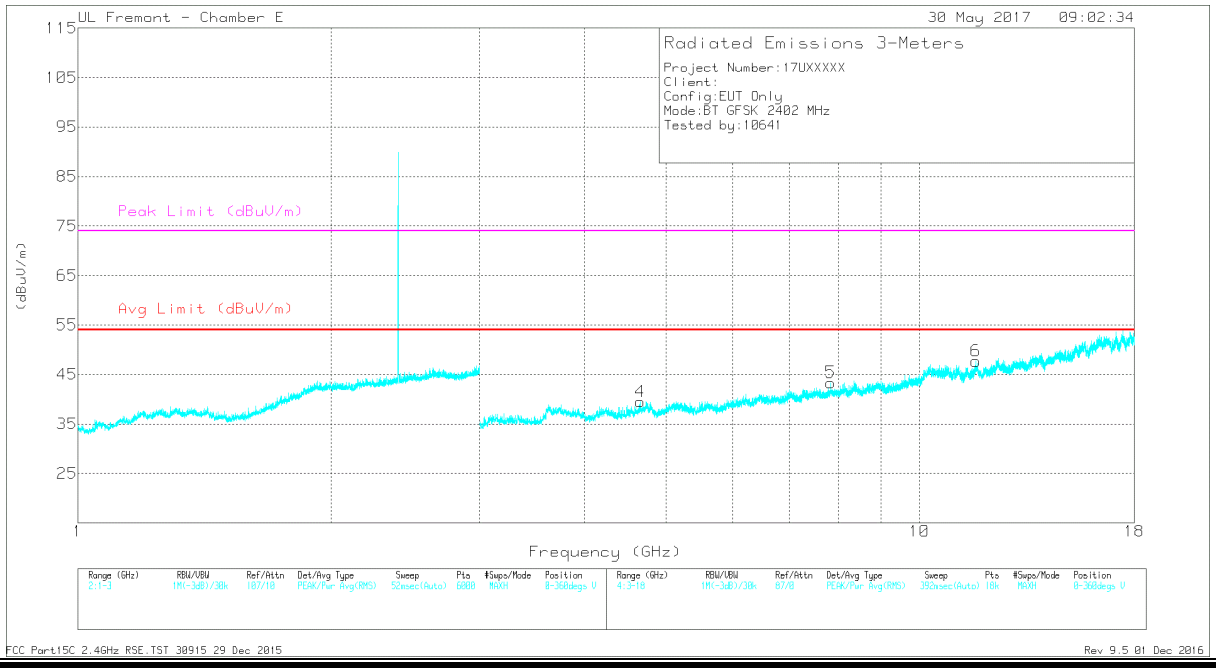
9.4.3. HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.242	37.09	PK2	29.9	-22	44.99	-	-	74	-29.01	115	250	H
	* 1.242	25.2	MAv1	29.9	-22	33.1	54	-20.9	-	-	115	250	H
2	* 2.237	38.5	PK2	32.1	-19.4	51.2	-	-	74	-22.8	345	193	H
	* 2.239	25.94	MAv1	32.1	-19.5	38.54	54	-15.46	-	-	345	193	H
3	* 7.689	38.47	PK2	37.1	-27.2	48.37	-	-	74	-25.63	153	161	H
	* 7.69	27.32	MAv1	37.1	-27.2	37.22	54	-16.78	-	-	153	161	H
4	* 4.658	42.86	PK2	34.6	-30.4	47.06	-	-	74	-26.94	3	141	V
	* 4.657	30.7	MAv1	34.6	-30.4	34.9	54	-19.1	-	-	3	141	V
6	* 11.66	36.84	PK2	39.6	-22.3	54.14	-	-	74	-19.86	42	277	V
	* 11.66	24.95	MAv1	39.6	-22.3	42.25	54	-11.75	-	-	42	277	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

FCC Part15C 2.4GHz RSE.TST 30915 29 Dec 2015
Rev 9.5 01 Dec 2016

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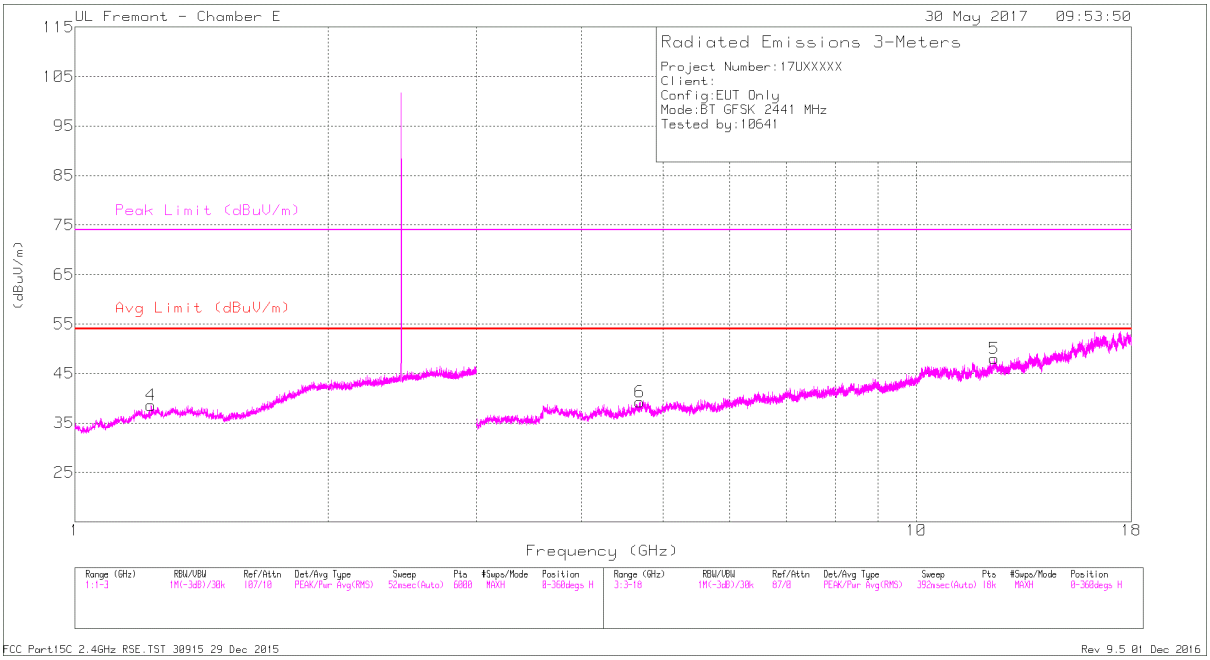
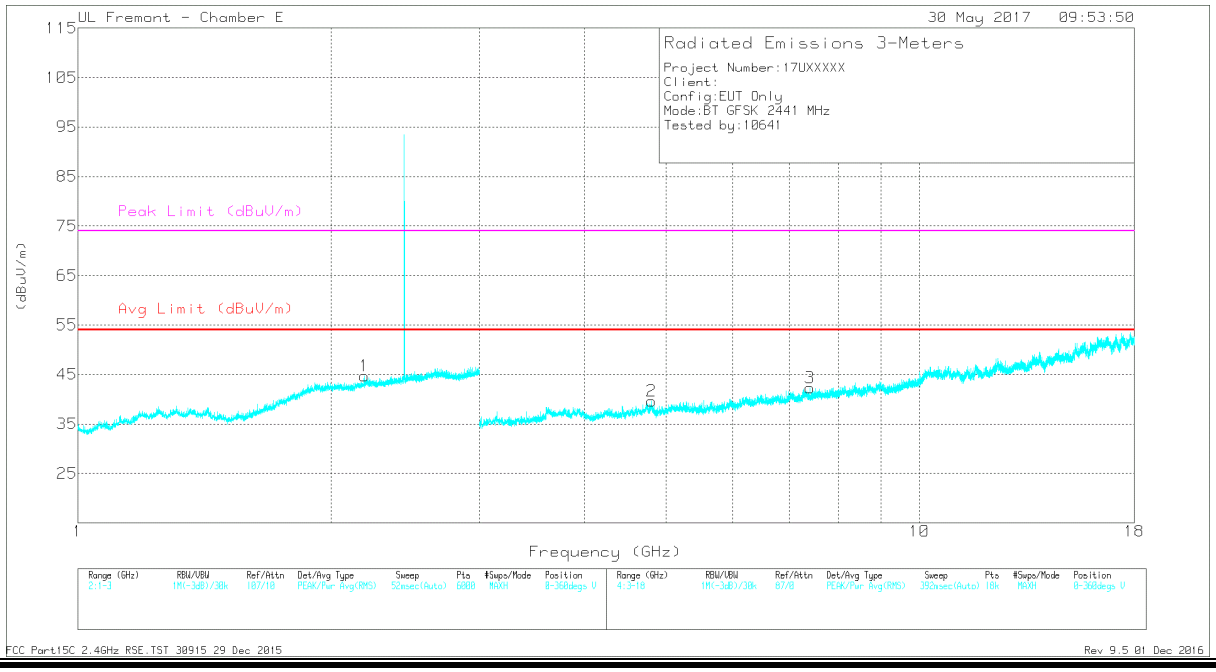
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
4	* 1.23	37.6	PK2	29.9	-22	45.5	-	-	74	-28.5	78	289	H
	* 1.234	24.96	MAv1	29.9	-22.1	32.76	54	-21.24	-	-	78	289	H
6	* 4.691	41.98	PK2	34.6	-29.4	47.18	-	-	74	-26.82	166	156	H
	* 4.69	29.77	MAv1	34.6	-29.4	34.97	54	-19.03	-	-	166	156	H
5	* 12.375	37.23	PK2	40.8	-23.4	54.63	-	-	74	-19.37	127	195	H
	* 12.374	25.67	MAv1	40.8	-23.5	42.97	54	-11.03	-	-	127	195	H
2	* 4.805	41.24	PK2	34.9	-29.6	46.54	-	-	74	-27.46	115	360	V
	* 4.805	29.71	MAv1	34.9	-29.6	35.01	54	-18.99	-	-	115	360	V
3	* 7.412	39.55	PK2	36.9	-27.8	48.65	-	-	74	-25.35	103	297	V
	* 7.412	27.51	MAv1	36.9	-27.8	36.61	54	-17.39	-	-	103	297	V
1	2.192	38.27	PK2	32.1	-19.7	50.67	-	-	-	-	113	194	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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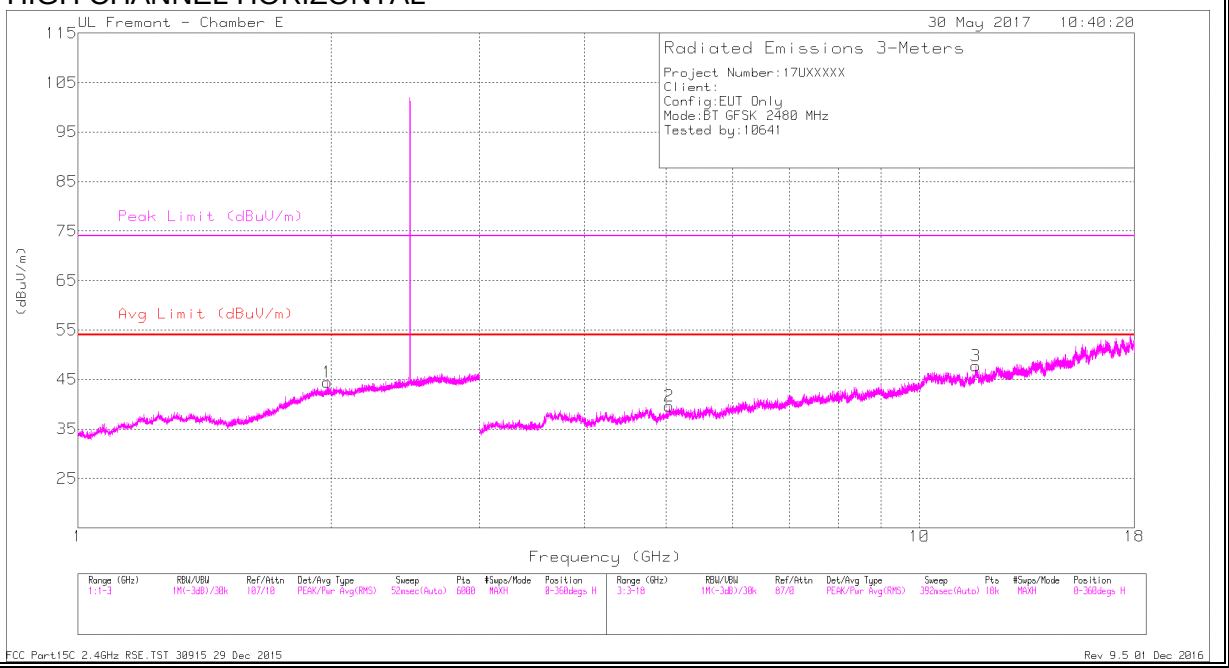
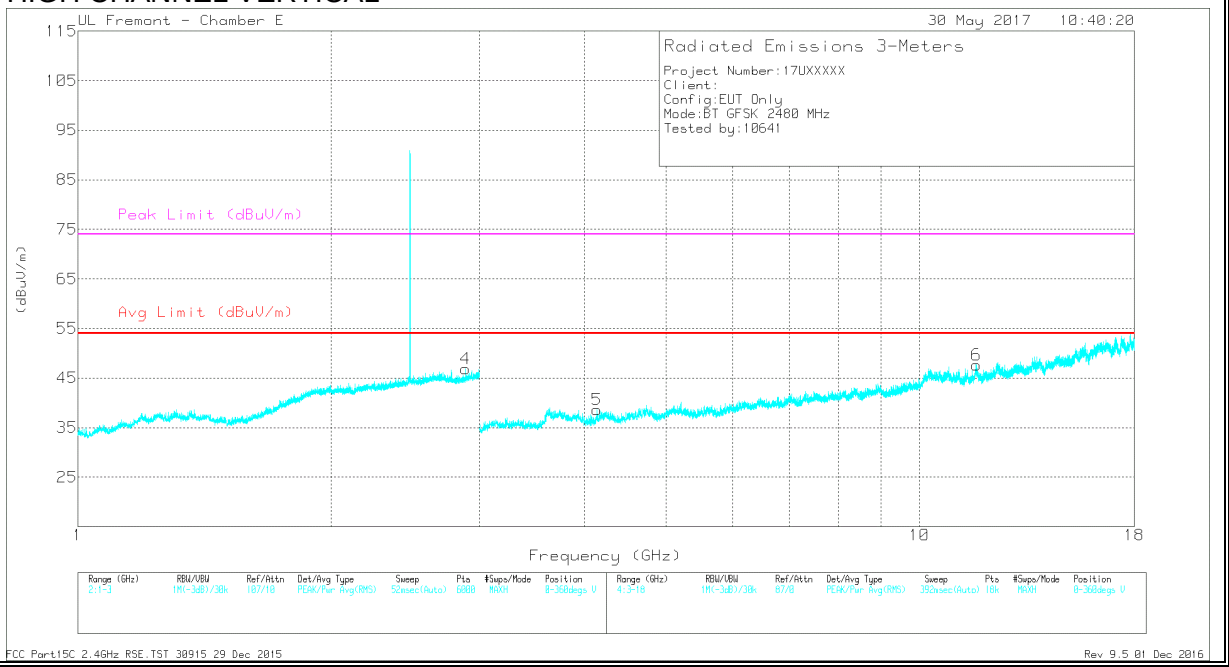
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



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