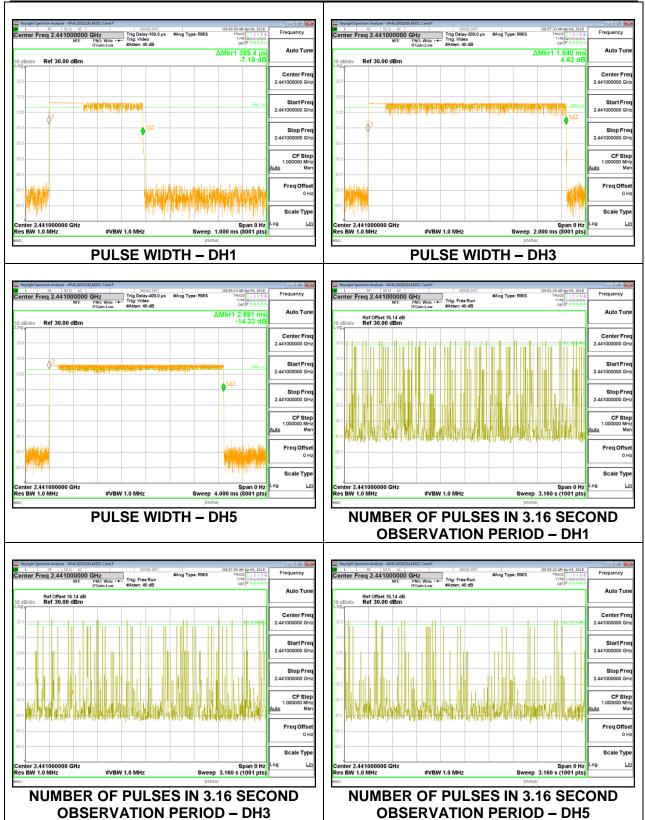
Antenna 3

DH Packet	Pulse	Number of	Average Time	Limit	Margin
	Width	Pulses in	of Occupancy		
	(msec)	3.16	(sec)	(sec)	(sec)
		seconds			
8PSK Normal	8PSK Normal Mode				
3DH1	0.389	32	0.12448	0.4	-0.2755
3DH3	1.64	16	0.2624	0.4	-0.1376
3DH5	2.891	11	0.31801	0.4	-0.082

Note: for AFH(8PSK) mode, please refer to the results of AFH(GFSK) mode; the channel selection and hopping rate are the same for both EDR and Basic Rate operation, data for Basic Rate in section 8.5.1 demonstrates compliance with channel occupancy when AFH is employed.

DATE: 8/10/2018 IC: 579C-E3234A

REPORT NO: 12204512-E1V3 FCC ID: BCG-E3234A



Page 61 of 190

8.5.3. LOW POWER BASIC DATA RATE GFSK MODULATION

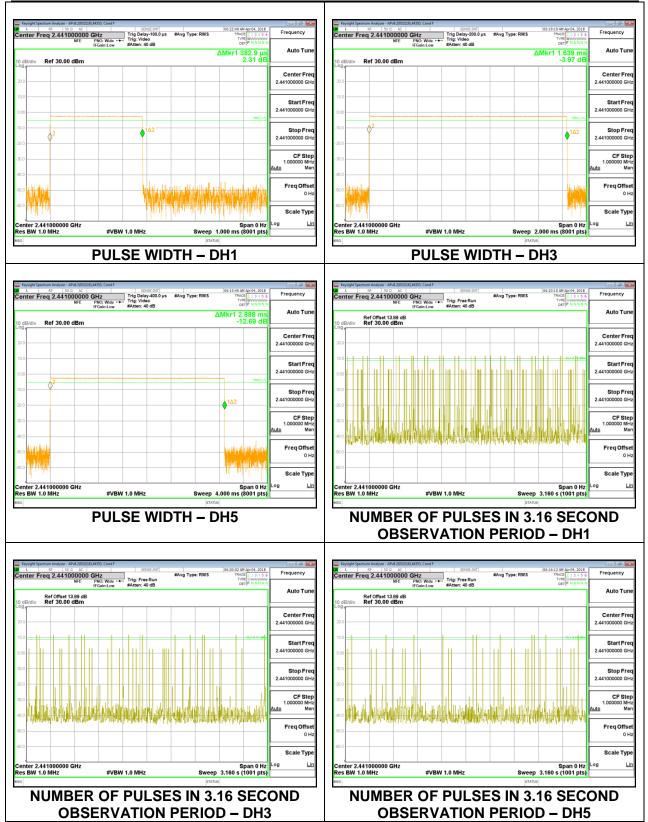
Antenna 4

DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)	
GFSK Norma	I Mode					
DH1	0.383	32	0.1226	0.4	-0.2774	
DH3	1.639	16	0.2622	0.4	-0.1378	
DH5	2.888	11	0.3177	0.4	-0.0823	
DH Packet	Pulse Width (sec)	Number of Pulses in 0.8 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)	
GFSK AFH M	GFSK AFH Mode					
DH1	0.383	8	0.03064	0.4	-0.3694	
DH3	1.639	4	0.06556	0.4	-0.3344	
DH5	2.888	2.75	0.07942	0.4	-0.3206	

Page 62 of 190

DATE: 8/10/2018 IC: 579C-E3234A

REPORT NO: 12204512-E1V3 FCC ID: BCG-E3234A



Page 63 of 190

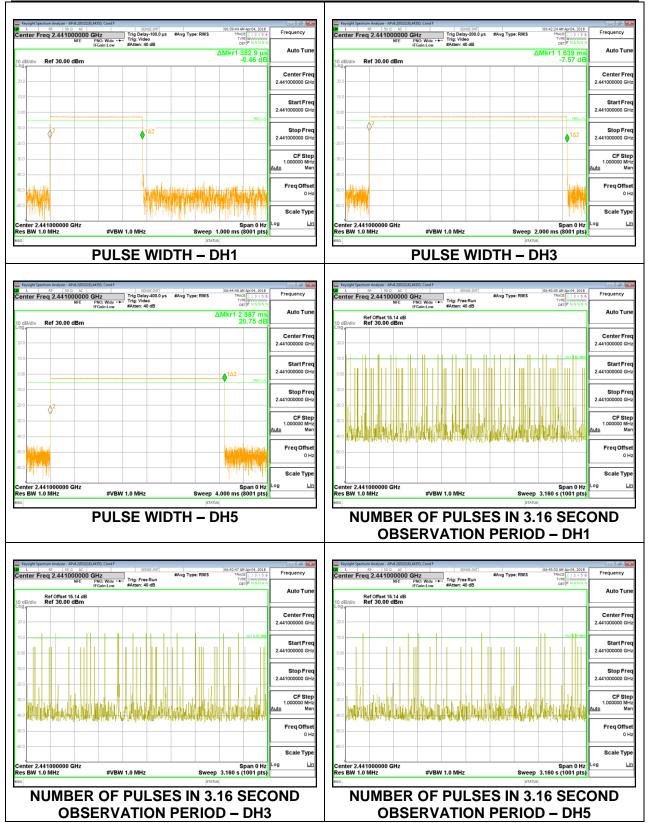
Antenna 3

DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
GFSK Norma	I Mode				
DH1	0.383	32	0.1226	0.4	-0.2774
DH3	1.639	16	0.2622	0.4	-0.1378
DH5	2.887	9	0.2598	0.4	-0.1402
		-			
DH Packet	Pulse Width (sec)	Number of Pulses in 0.8 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
GFSK AFH Mode					
GFSK AFH M	lode				
GFSK AFH M DH1	lode 0.383	8	0.03064	0.4	-0.3694
		8 4	0.03064 0.06556	0.4	-0.3694 -0.3344

Page 64 of 190

DATE: 8/10/2018 IC: 579C-E3234A

REPORT NO: 12204512-E1V3 FCC ID: BCG-E3234A



Page 65 of 190

8.5.4. LOW POWER ENCHANCED DATA RATE 8PSK MODULATION

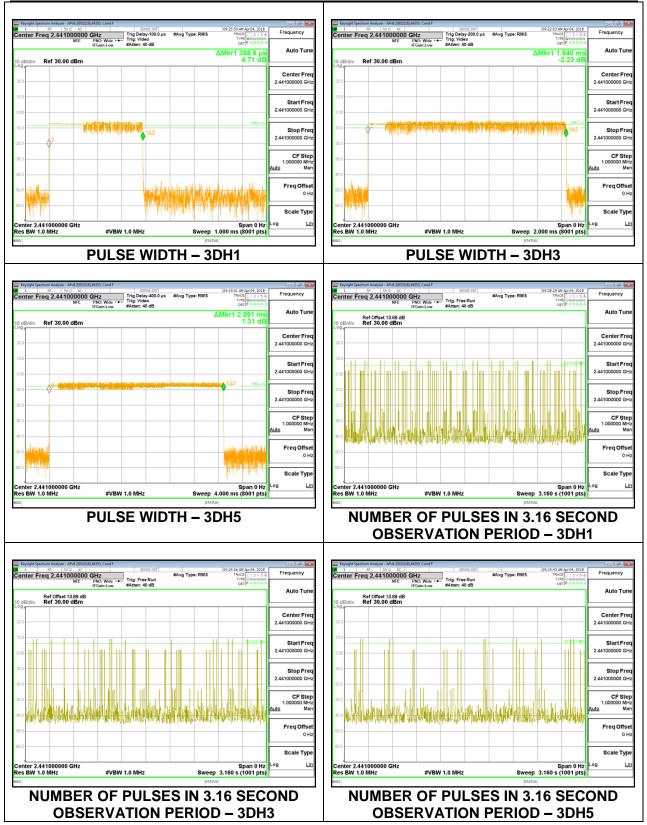
Antenna 4

DH Packet	Pulse	Number of	Average Time	Limit	Margin
	Width (msec)	Pulses in 3.16 seconds	of Occupancy (sec)	(sec)	(sec)
8PSK Normal Mode					
3DH1	0.3886	32	0.124352	0.4	-0.2756
3DH3	1.640	16	0.2624	0.4	-0.1376
3DH5	2.891	11	0.31801	0.4	-0.082

Note: for AFH(8PSK) mode, please refer to the results of AFH(GFSK) mode; the channel selection and hopping rate are the same for both EDR and Basic Rate operation, data for Basic Rate in section 8.5.3 demonstrates compliance with channel occupancy when AFH is employed.

DATE: 8/10/2018 IC: 579C-E3234A

REPORT NO: 12204512-E1V3 FCC ID: BCG-E3234A



Page 67 of 190

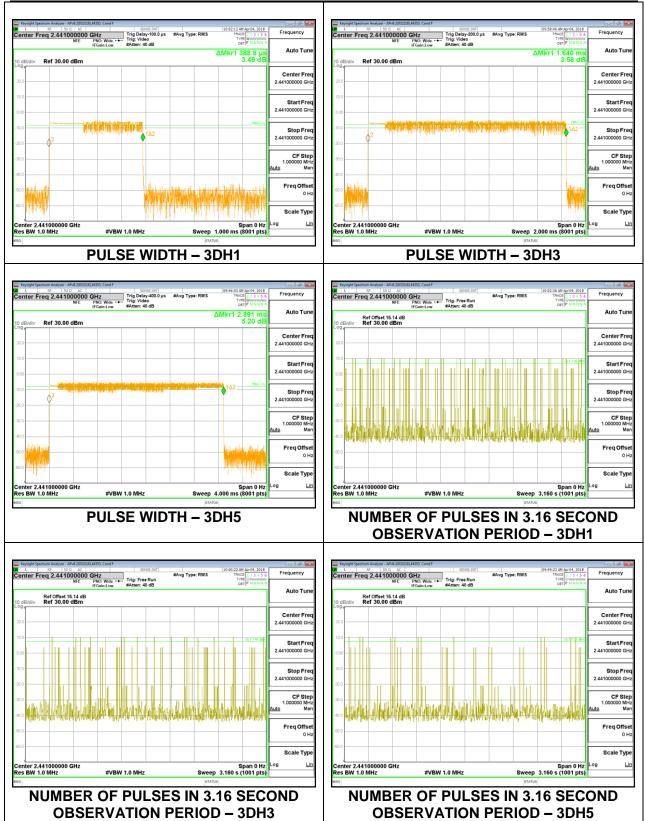
Antenna 3

DH Packet	Pulse	Number of	Average Time	Limit	Margin
	Width	Pulses in	of Occupancy		
	(msec)	3.16	(sec)	(sec)	(sec)
		seconds			
8PSK Normal Mode					
3DH1	0.389	32	0.12448	0.4	-0.2755
3DH3	1.64	16	0.2624	0.4	-0.1376
3DH5	2.891	12	0.34692	0.4	-0.0531

Note: for AFH(8PSK) mode, please refer to the results of AFH(GFSK) mode; the channel selection and hopping rate are the same for both EDR and Basic Rate operation, data for Basic Rate in section 8.5.3 demonstrates compliance with channel occupancy when AFH is employed.

DATE: 8/10/2018 IC: 579C-E3234A

REPORT NO: 12204512-E1V3 FCC ID: BCG-E3234A



Page 69 of 190

8.6. OUTPUT POWER

<u>LIMITS</u>

§15.247 (b) (1)

RSS-247 (5.4) (b)

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

The transmitter output is connected to a 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.

RESULTS

Page 70 of 190

8.6.1. HIGH POWER BASIC DATA RATE GFSK MODULATION

Antenna 4

Tested By:	12492
Date:	7/17/2018

Channel	Frequency	Output Power	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	2402	18.10	30	-11.9
Middle	2441	18.13	30	-11.87
High	2480	18.04	30	-11.96

Antenna 3

Tested By:	12492
Date:	7/17/2018

Channel	Frequency	Output Power	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	2402	20.15	30	-9.85
Middle	2441	20.20	30	-9.8
High	2480	20.12	30	-9.88

Page 71 of 190

8.6.2. HIGH POWER ENCHANCED DATA RATE 8PSK MODULATION

Antenna 4

Tested By:	52287
Date:	7/17/2018

Channel	Frequency	Output Power	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	2402	20.10	21	-0.9
Middle	2441	20.22	21	-0.78
High	2480	20.15	21	-0.85

Antenna 3

Tested By:	52287
Date:	7/17/2018

Channel	Frequency	Output Power	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	2402	20.17	21	-0.83
Middle	2441	20.24	21	-0.76
High	2480	20.15	21	-0.85

Page 72 of 190

8.6.3. HIGH POWER ENCHANCED DATA RATE DQPSK MODULATION

Antenna 4

Tested By:	52287
Date:	7/17/2018

Channel	Frequency	Output Power	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	2402	20.07	21	-0.93
Middle	2441	20.15	21	-0.85
High	2480	20.03	21	-0.97

Antenna 3

Tested By:	52287
Date:	7/17/2018

Channel	Frequency	Output Power	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	2402	20.09	21	-0.91
Middle	2441	20.18	21	-0.82
High	2480	20.10	21	-0.9

Page 73 of 190

8.6.4. LOW POWER BASIC DATA RATE GFSK MODULATION

Antenna 4

Tested By:	52287
Date:	7/17/2018

Channel	Frequency	Output Power	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	2402	11.18	30	-18.82
Middle	2441	11.32	30	-18.68
High	2480	11.22	30	-18.78

Antenna 3

Tested By:	52287
Date:	7/17/2018

Channel	Frequency	Output Power	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	2402	11.10	30	-18.9
Middle	2441	11.23	30	-18.77
High	2480	11.14	30	-18.86

Page 74 of 190

8.6.5. LOW POWER ENCHANCED DATA RATE 8PSK MODULATION

Antenna 4

Tested By:	52287
Date:	7/17/2018

Channel	Frequency	Output Power	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	2402	10.11	21	-10.89
Middle	2441	10.06	21	-10.94
High	2480	10.12	21	-10.88

Antenna 3

Tested By:	52287
Date:	7/17/2018

Channel	Frequency	Output Power	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	2402	10.17	21	-10.83
Middle	2441	10.23	21	-10.77
High	2480	10.15	21	-10.85

Page 75 of 190

8.6.6. LOW POWER ENCHANCED DATA RATE DQPSK MODULATION

Antenna 4

Tested By:	52287
Date:	7/17/2018

Channel	Frequency	Output Power	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	2402	10.04	21	-10.96
Middle	2441	10.10	21	-10.9
High	2480	10.07	21	-10.93

Antenna 3

Tested By:	52287
Date:	7/17/2018

Channel	Frequency	Output Power	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	2402	10.18	21	-10.82
Middle	2441	10.20	21	-10.8
High	2480	10.17	21	-10.83

Page 76 of 190

8.7. AVERAGE POWER

LIMITS

None; for reporting purposes only

TEST PROCEDURE

The transmitter output is connected to a 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

Page 77 of 190

8.7.1. HIGH POWER BASIC DATA RATE GFSK MODULATION

Antenna 4

Tested By:	12492
Date	7/17/2018

Channel	Frequency	Average Power
	(MHz)	(dBm)
Low	2402	17.89
Middle	2441	17.90
High	2480	17.75

Tested By:	12492
Date	7/17/2018

Channel	Frequency	Average Power
	(MHz)	(dBm)
Low	2402	19.78
Middle	2441	19.89
High	2480	19.76

8.7.2. HIGH POWER ENCHANCED DATA RATE 8PSK MODULATION

Antenna 4

Tested By:	12492	
Date	7/17/2018	
Channel	Frequency	Average Power

	(MHz)	(dBm)
Low	2402	17.30
Middle	2441	17.48
High	2480	17.36

Tested By:	12492
Date	7/17/2018

Channel	Frequency	Average Power
	(MHz)	(dBm)
Low	2402	17.43
Middle	2441	17.50
High	2480	17.41

8.7.3. HIGH POWER ENCHANCED DATA RATE DQPSK MODULATION

Antenna 4

Tested By:	12492	
Date	7/17/2018	
Channel	Frequency	Average Power
	(MHz)	(dBm)

	(MHz)	(dBm)
Low	2402	17.33
Middle	2441	17.40
High	2480	17.30

Tested By:	12492
Date	7/17/2018

Channel	Frequency	Average Power
	(MHz)	(dBm)
Low	2402	17.37
Middle	2441	17.45
High	2480	17.38

8.7.4. LOW POWER BASIC DATA RATE GFSK MODULATION

Antenna 4

Date	7/17/2018

Channel	Frequency	Average Power
	(MHz)	(dBm)
Low	2402	10.77
Middle	2441	10.90
High	2480	10.83

Tested By:	12492
Date	7/17/2018

Channel	Frequency	Average Power
	(MHz)	(dBm)
Low	2402	10.73
Middle	2441	10.84
High	2480	10.78

8.7.5. LOW POWER ENCHANCED DATA RATE 8PSK MODULATION

Antenna 4

Tested By:	12492	
Date	7/17/2018	
Channel	Frequency	Average Power
	(MHz)	(dBm)
Low	2402	7.47
Middle	2441	7.45

2480

7.49

Antenna 3

Tested By:	12492
Date	7/17/2018

High

Channel	Frequency	Average Power
	(MHz)	(dBm)
Low	2402	7.43
Middle	2441	7.46
High	2480	7.41

Page 82 of 190

8.7.6. LOW POWER ENCHANCED DATA RATE DQPSK MODULATION

Antenna 4

Tested By:	12492	
Date	7/17/2018	
и		
Channel	Frequency	Average Power
	(MHz)	(dBm)
Low	2402	7.38

2441

2480

7.42

7.40

Antenna 3

Tested By:	12492
Date	7/17/2018

Middle

High

Channel	Frequency	Average Power
	(MHz)	(dBm)
Low	2402	7.40
Middle	2441	7.45
High	2480	7.39

8.8. CONDUCTED SPURIOUS EMISSIONS

<u>LIMITS</u>

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.

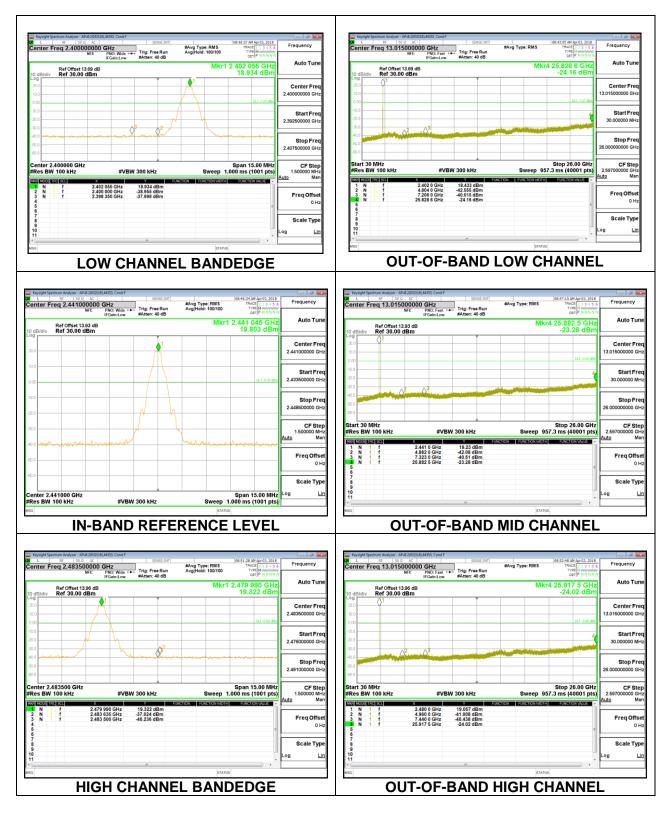
The bandedges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal hopping mode.

RESULTS

Page 84 of 190

8.8.1. HIGH POWER BASIC DATA RATE GFSK MODULATION

Antenna 4 SPURIOUS EMISSIONS, NON-HOPPING



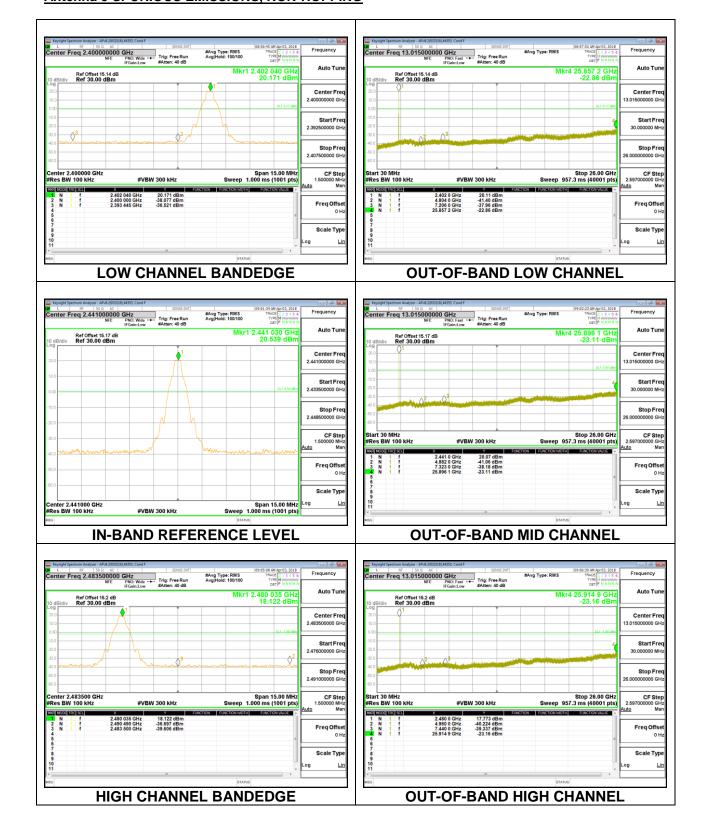
Page 85 of 190

REPORT NO: 12204512-E1V3 FCC ID: BCG-E3234A Antenna 4 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

18 koryad Spectra mang-marka enter Freq 2.483500000 GHz NFE PNO: Wide →→ Trig: Free Run #Atten: 40 dB 57 AM Apr 04, 201 Frequency AM Apr 04, 201 Frequency #Avg Type: RMS Avg|Hold: 100/100 #Avg Type: RMS Avg|Hold: 100/100 NPE DET Auto Tur Auto Tur 2.404 005 GH 16.480 dBn Mkr1 2.480 140 GH 20.688 dBn Ref Offset 13.89 dB Ref 30.00 dBm Ref Offset 13.89 dB Ref 30.00 dBm ¢۱ Center Fr 2.483500000 G Center Fre Start Fre 2500000 GH Start Fre 2.47 $\sqrt[3]{}$ Stop Fre 2.407500000 GH Stop Fre 1000000 GH 2.49 CF Step 1.500000 ML Span 15.00 MHz ep 1.000 ms (1001 pts) nter 2.400000 GH es BW 100 kHz CF Step 1.500000 MHz Span 15.00 MHz ep 1.000 ms (1001 pts) enter 2.483500 GH Res BW 100 kHz #VBW 300 kHz #VBW 300 kHz 2.404 005 GHz 2.400 000 GHz 2.397 240 GHz 16.480 dBm -39.038 dBm -37.372 dBm 20.688 dBm -36.999 dBm -38.902 dBm NNN N N 2.480 140 GHz 2.484 385 GHz 2.483 500 GHz 1 11 Freq Offse Freq Offse 0 H Scale Typ Scale Typ 10 Li LOW BANDEDGE **HIGH BANDEDGE**

Page 86 of 190

REPORT NO: 12204512-E1V3 FCC ID: BCG-E3234A Antenna 3 SPURIOUS EMISSIONS, NON-HOPPING



Page 87 of 190

DATE: 8/10/2018 IC: 579C-E3234A

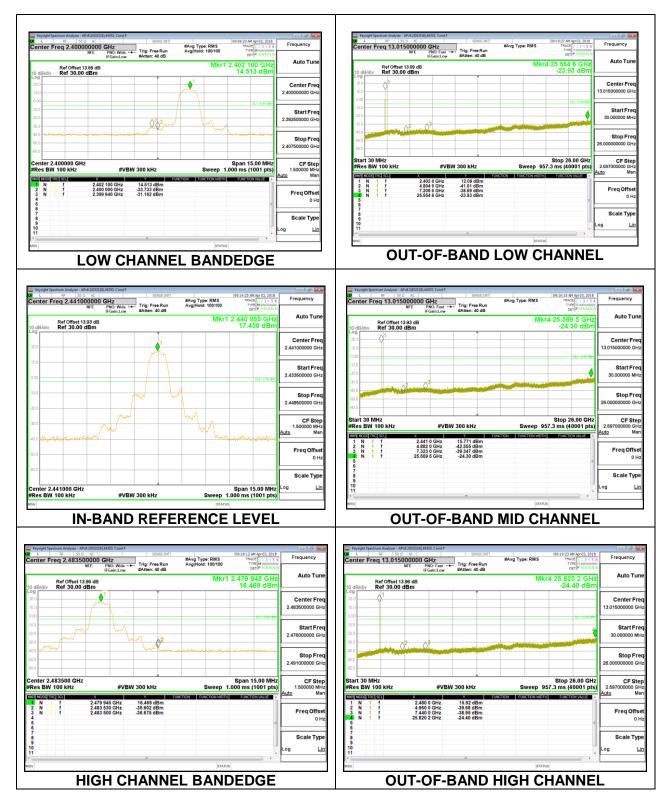
REPORT NO: 12204512-E1V3 FCC ID: BCG-E3234A Antenna 3 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

18 koryad Spectra mang-marka enter Freq 2.483500000 GHz NFE PNO: Wide →→ Trig: Free Run #Atten: 40 dB 0 AM Apr 04, 201 Frequency 4M Apr 04, 201 Frequency #Avg Type: RMS Avg|Hold:>100/100 #Avg Type: RMS Avg|Hold: 100/100 TYPE M DET P NPE DET Auto Tur Auto Tur Mkr1 2.403 150 GH: 17.943 dBn Mkr1 2.479 990 GH: 19.765 dBn Ref Offset 15.14 dB Ref 30.00 dBm Ref Offset 15.14 dB Ref 30.00 dBm ٥ Center Fr 2.483500000 G Center Fre Start Fre 2500000 GH Start Fre 2.47 $\langle \rangle^2$ Stop Fre 2.407500000 GH Stop Fre 2.49 Span 15.00 MHz ep 1.000 ms (1001 pts) CF Step 1.500000 ML nter 2.400000 GH es BW 100 kHz CF Step 1.500000 MHz Span 15.00 MHz ep 1.000 ms (1001 pts) enter 2.483500 GH Res BW 100 kHz #VBW 300 kHz #VBW 300 kHz 2.403 150 GHz 2.400 000 GHz 2.392 590 GHz 17.943 dBm -37.667 dBm -36.165 dBm 2.479 990 GHz 2.490 040 GHz 2.483 500 GHz 19.765 dBm -35.527 dBm -37.877 dBm NNN N N 1 11 Freq Offse Freq Offse 0 H 0 H Scale Typ Scale Typ 10 Li LOW BANDEDGE **HIGH BANDEDGE**

Page 88 of 190

8.8.2. HIGH POWER ENCHANCED DATA RATE 8PSK MODULATION

Antenna 4 SPURIOUS EMISSIONS, NON-HOPPING

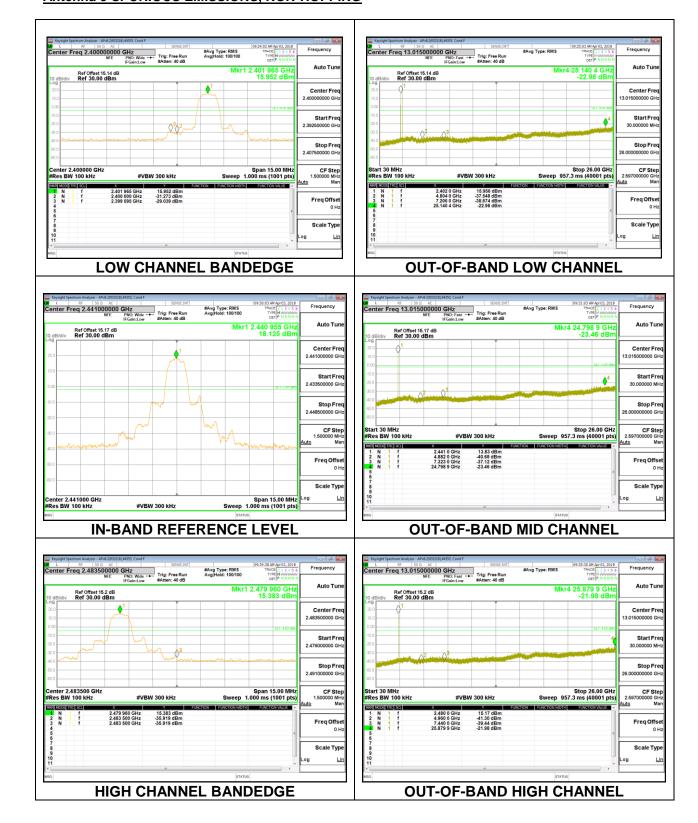


Page 89 of 190

REPORT NO: 12204512-E1V3 FCC ID: BCG-E3234A Antenna 4 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

10 keyset Spectram Array 200 AC enter Freq 2.483500000 GHz NFE PNO: Wide →→ Trig: Free Run #Atten: 40 dB 4M Apr 04, 20 Frequency 4 AM Apr 04, 201 Frequency #Avg Type: RMS Avg|Hold: 100/100 #Avg Type: RMS Avg|Hold: 100/100 TYPE TYPE Auto Tur Auto Tur 1 2.406 150 GH: 17.272 dBn Mkr1 2.477 005 GH 19.601 dBn Ref Offset 13.89 dB Ref 30.00 dBm Ref Offset 13.89 dB Ref 30.00 dBm ¢ Center Fr 2.483500000 G Center Fre Start Fre 2500000 GH Start Fre Ŷ0² 2.47 Stop Fre 2.407500000 GH Stop Fre 1000000 GH 2.49 CF Step 1.500000 ML Span 15.00 MHz ep 1.000 ms (1001 pts) nter 2.400000 GHz es BW 100 kHz CF Step 1.500000 MHz Span 15.00 MHz ep 1.000 ms (1001 pts) enter 2.483500 GH Res BW 100 kHz #VBW 300 kHz #VBW 300 kHz 2.406 150 GHz 2.400 000 GHz 2.399 640 GHz 17.272 dBm -31.442 dBm -27.484 dBm 2.477 005 GHz 2.483 515 GHz 2.483 500 GHz 19.601 dBm -32.372 dBm -32.423 dBm NNN N N 1 11 Freq Offse Freq Offse 0 H 0 H Scale Typ Scale Typ 9 10 Li LOW BANDEDGE **HIGH BANDEDGE**

Page 90 of 190



Page 91 of 190

DATE: 8/10/2018 IC: 579C-E3234A

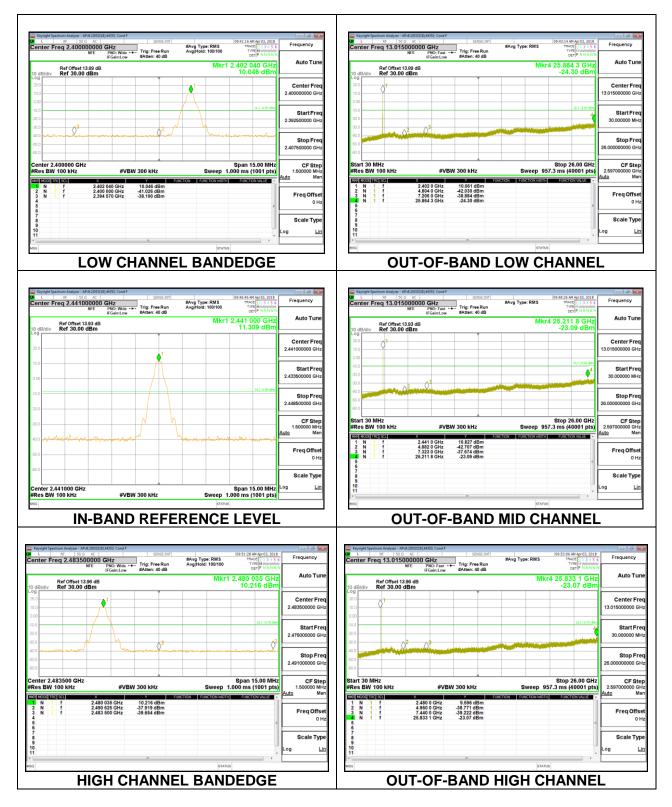
REPORT NO: 12204512-E1V3 FCC ID: BCG-E3234A Antenna 3 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

10 M Apr 04, 2 Frequency AM Apr 04, 201 Frequency #Avg Type: RMS Avg|Hold: 100/100 #Avg Type: RMS Avg|Hold: 100/100 NPE DET Auto Tur Auto Tur 2.406 150 GH 19.550 dBn Mkr1 2.476 000 GH 19.301 dBn Ref Offset 15.14 dB Ref 30.00 dBm Ref Offset 15.14 dB Ref 30.00 dBm Ø Center Fr 2.483500000 G Center Fre Start Fre 2500000 GH Start Fre $\langle \rangle^3 \langle \rangle^2$ 2.47 Stop Fre 2.407500000 GH Stop Fre 1000000 GH 2.49 CF Step 1.500000 ML nter 2.400000 GHz es BW 100 kHz Span 15.00 MHz ep 1.000 ms (1001 pts) CF Step 1.500000 MHz Span 15.00 MHz ep 1.000 ms (1001 pts) enter 2.483500 GH Res BW 100 kHz #VBW 300 kHz #VBW 300 kHz 2.406 150 GHz 2.400 000 GHz 2.399 580 GHz 19.550 dBm -25.894 dBm -24.430 dBm 2.476 000 GHz 2.483 500 GHz 2.483 500 GHz 19.301 dBm -31.933 dBm -31.933 dBm NNN N N 1 11 Freq Offse Freq Offse 0 H 0 H Scale Typ Scale Typ 10 Li LOW BANDEDGE **HIGH BANDEDGE**

Page 92 of 190

8.8.3. LOW POWER BASIC DATA RATE GFSK MODULATION

Antenna 4 SPURIOUS EMISSIONS, NON-HOPPING



Page 93 of 190