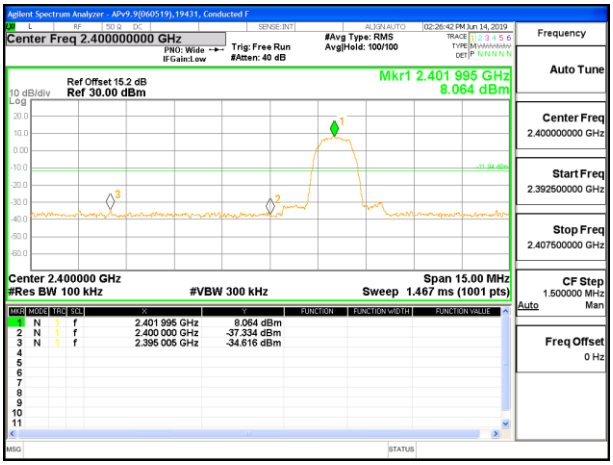
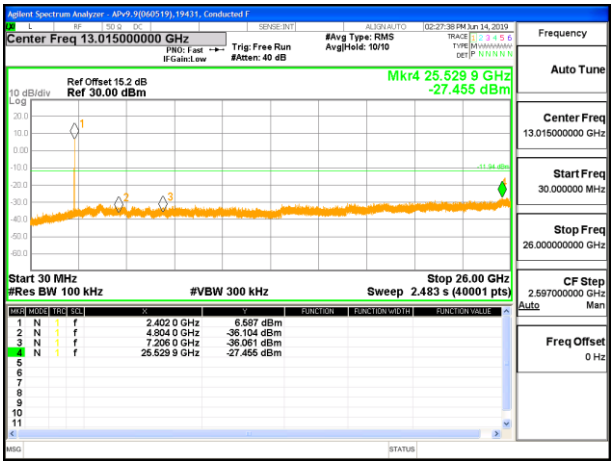
8.8.4 LOW POWER ENHANCED DATA RATE 8PSK MODULATION

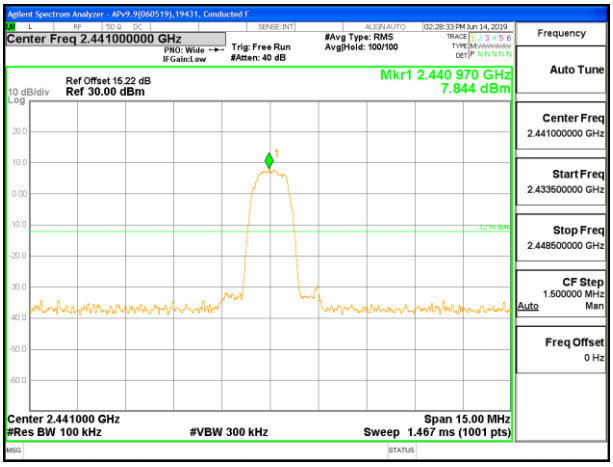
Antenna 4 SPURIOUS EMISSIONS, NON-HOPPING



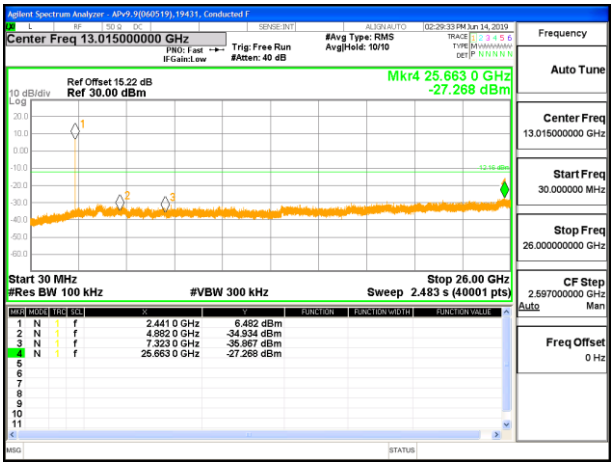
LOW CHANNEL BANDEDGE



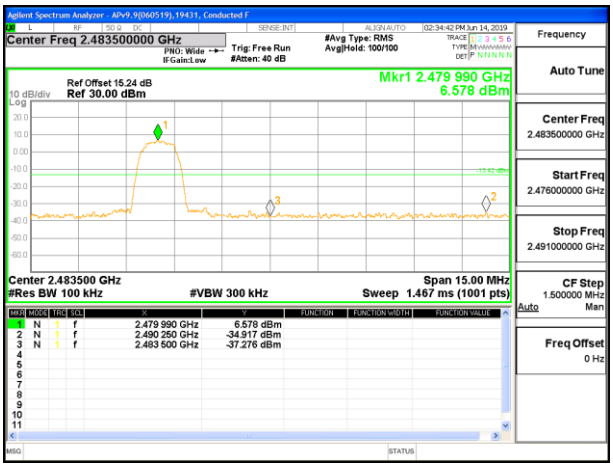
OUT-OF-BAND LOW CHANNEL



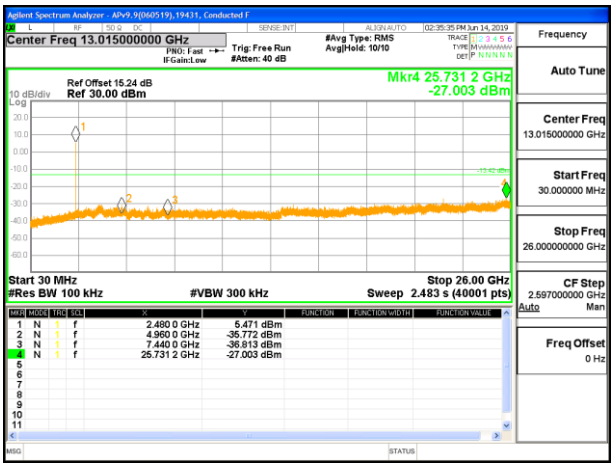
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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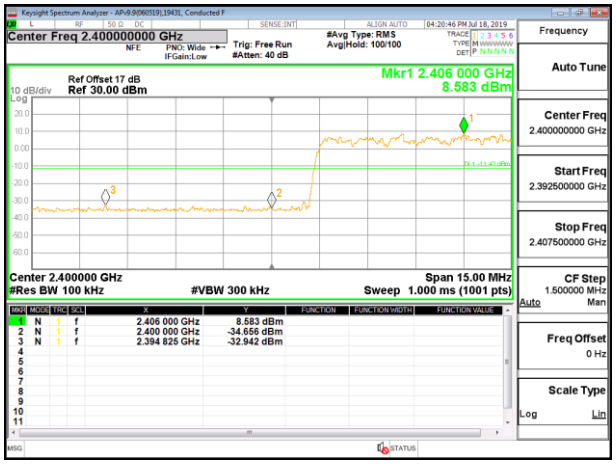
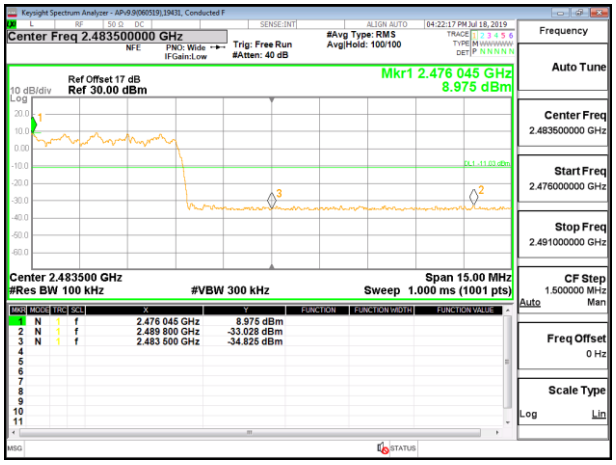
Antenna 4 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE



HIGH BANDEDGE

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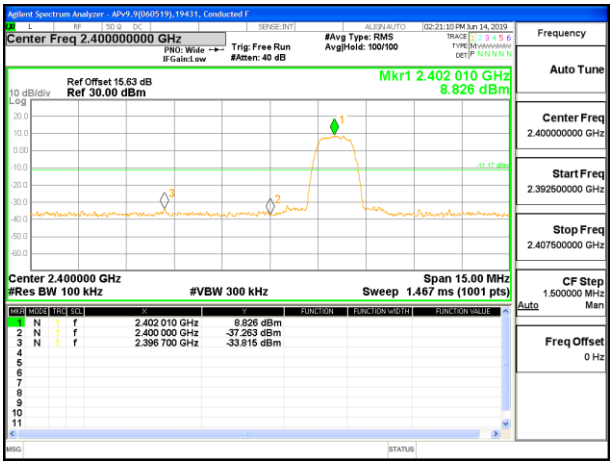
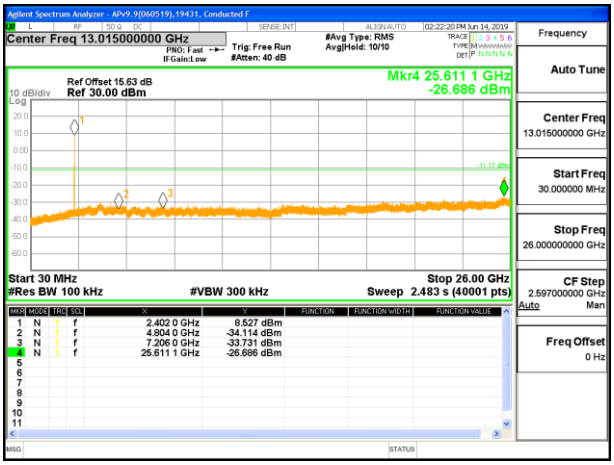
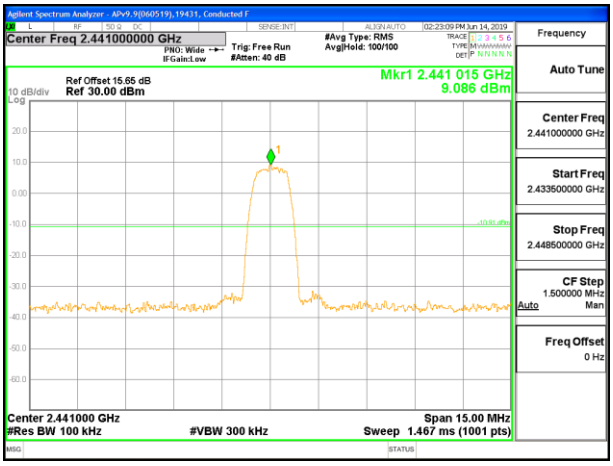
Antenna 3 SPURIOUS EMISSIONS, NON-HOPPING



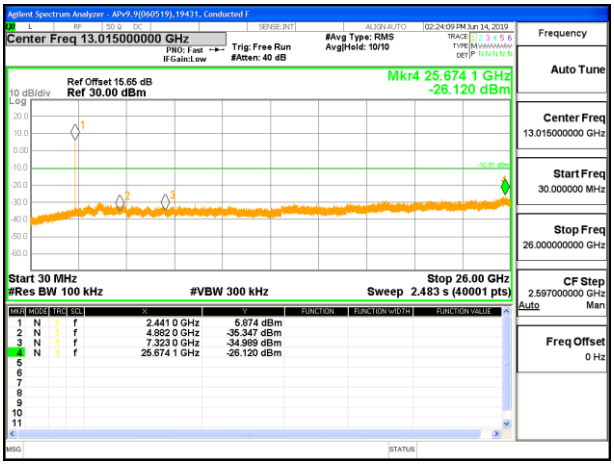
LOW CHANNEL BANDEDGE



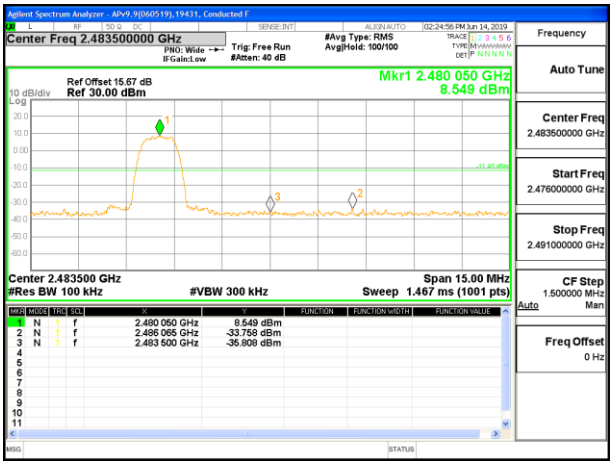
OUT-OF-BAND LOW CHANNEL



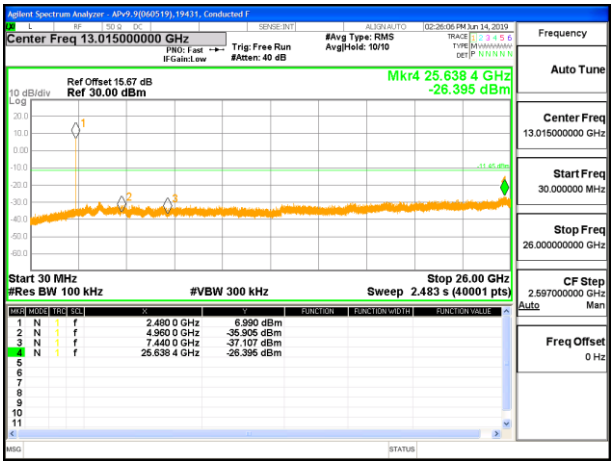
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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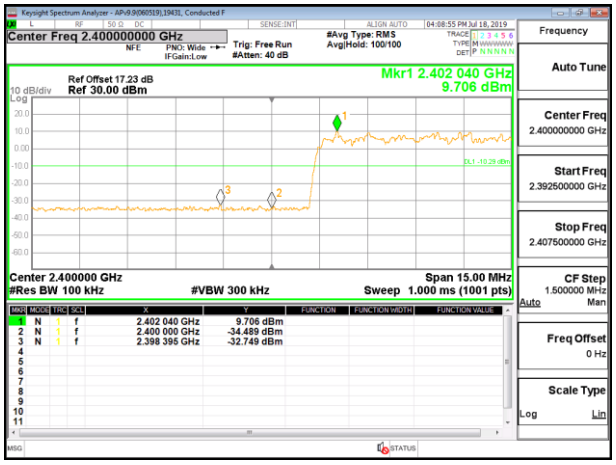
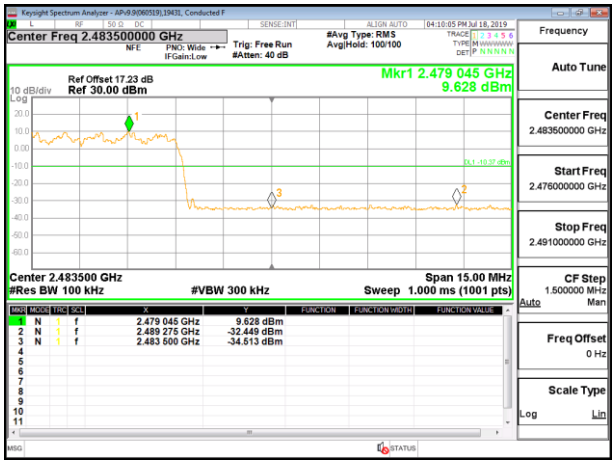
Antenna 3 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



LOW BANDEDGE



HIGH BANDEDGE

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8.9 BEAMFORMING, 99% BANDWIDTH

8.9.1 HIGH POWER BASIC DATA RATE GFSK MODULATION

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

2TX Antenna 4 + Antenna 3 TxBF MODE

Channel	Frequency (MHz)	99% Bandwidth Antenna 4 (MHz)	99% Bandwidth Antenna 3 (MHz)
Low	2402	0.8700	0.8652
Mid	2441	0.8695	0.8638
High	2480	0.8688	0.8628

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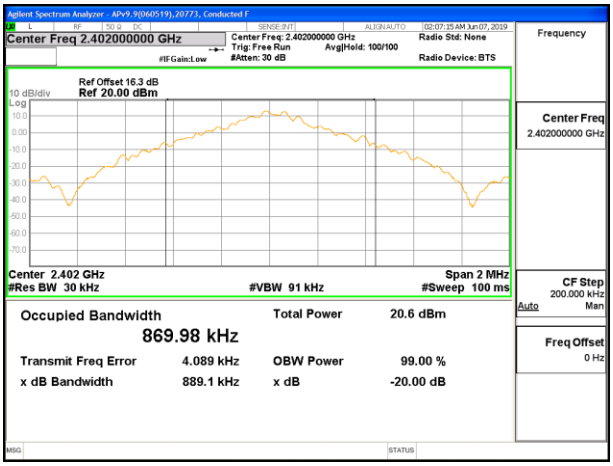
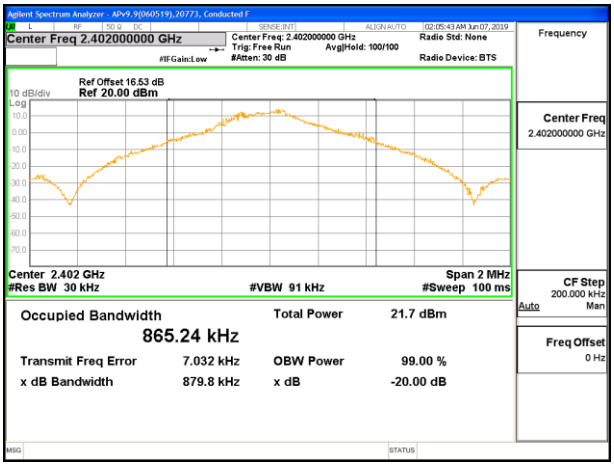
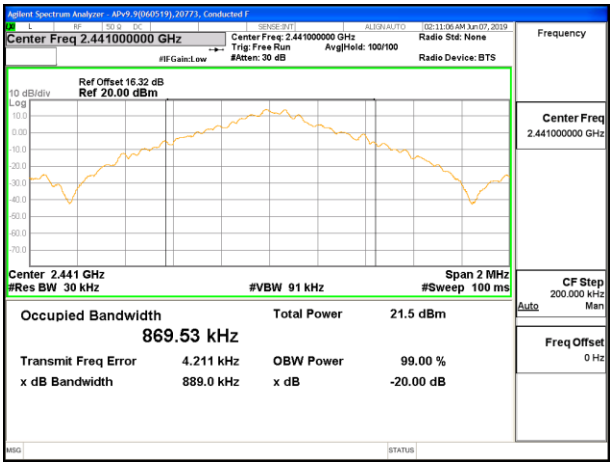


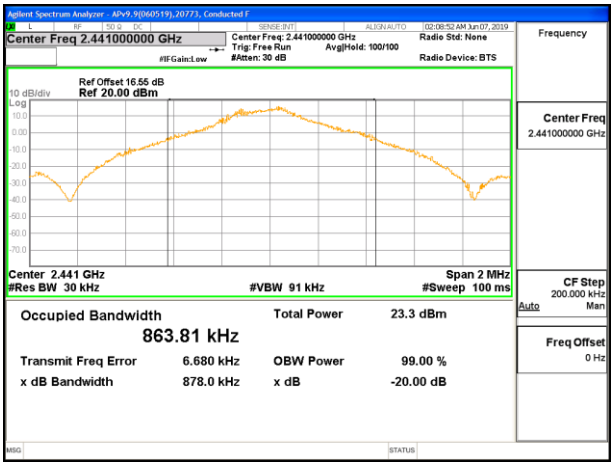
LOW CHANNEL ANTENNA 4



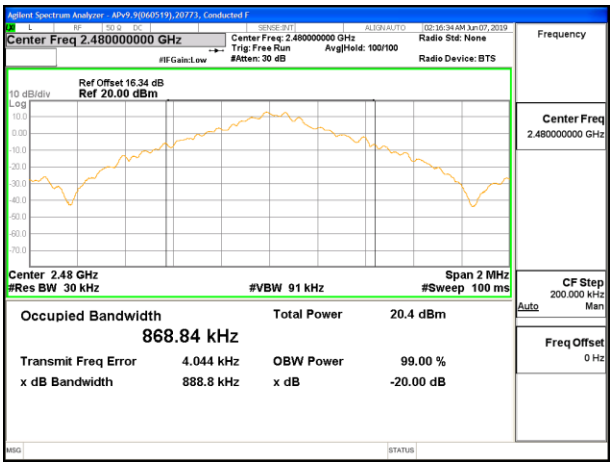
LOW CHANNEL ANTENNA 3



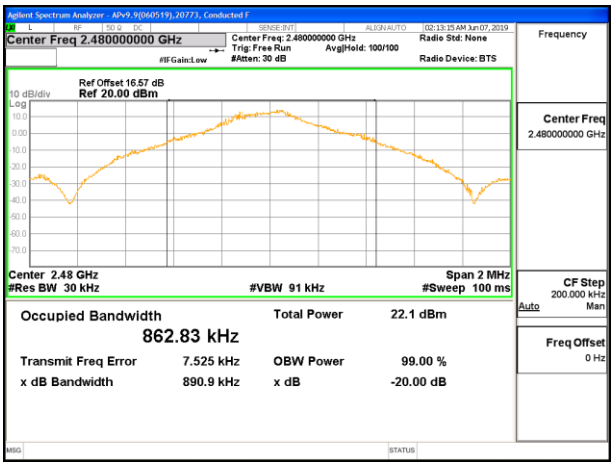
MID CHANNEL ANTENNA 4



MID CHANNEL ANTENNA 3



HIGH CHANNEL ANTENNA 4



HIGH CHANNEL ANTENNA 3

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8.9.2 HIGH POWER ENHANCED DATA RATE 8PSK MODULATION

2TX Antenna 4 + Antenna 3 TxBF MODE

Channel	Frequency (MHz)	99% Bandwidth Antenna 4 (MHz)	99% Bandwidth Antenna 3 (MHz)
Low	2402	1.2216	1.2109
Mid	2441	1.2215	1.2153
High	2480	1.2213	1.2114

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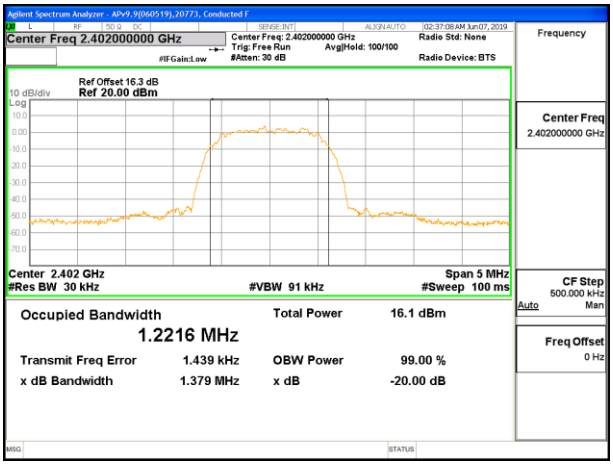
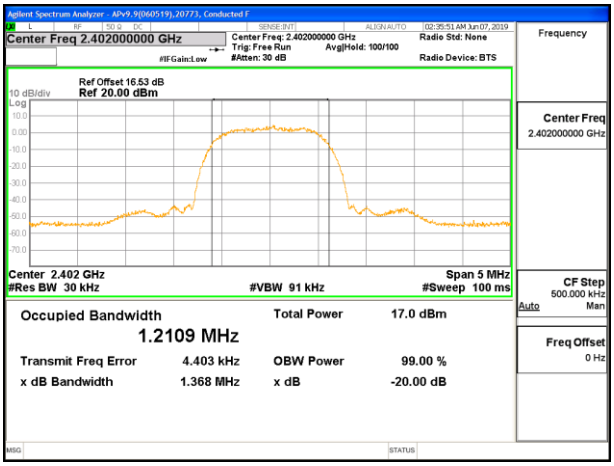
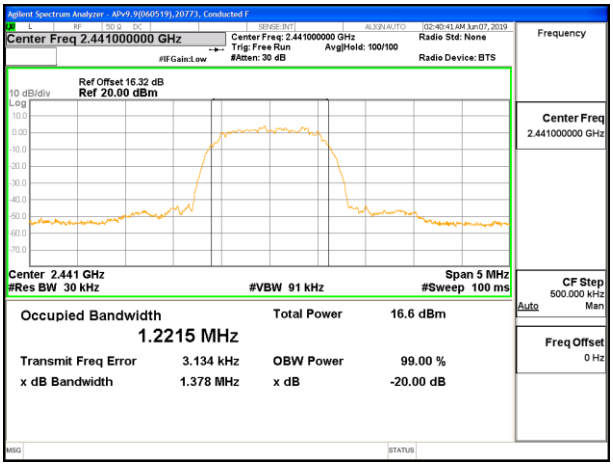


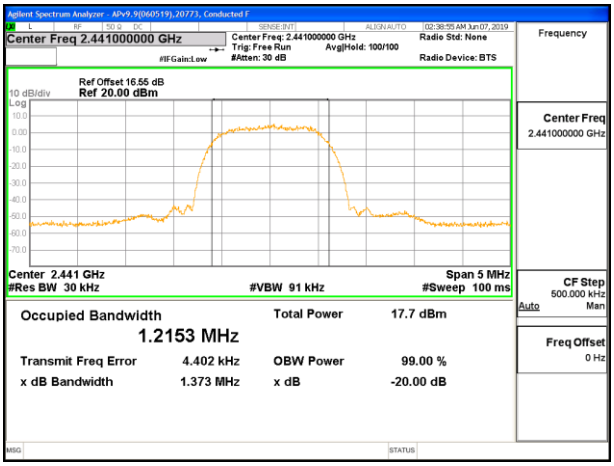
LOW CHANNEL ANTENNA 4



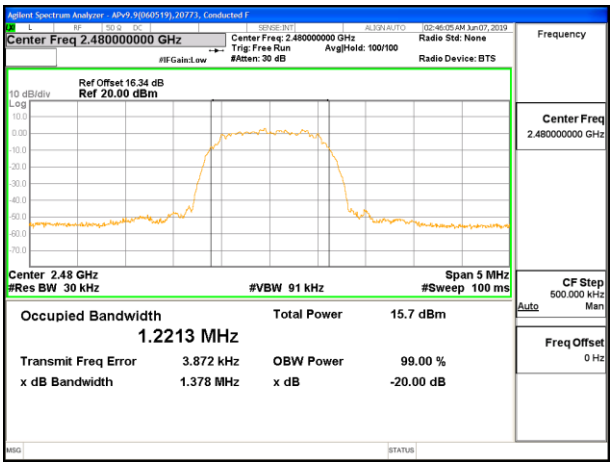
LOW CHANNEL ANTENNA 3



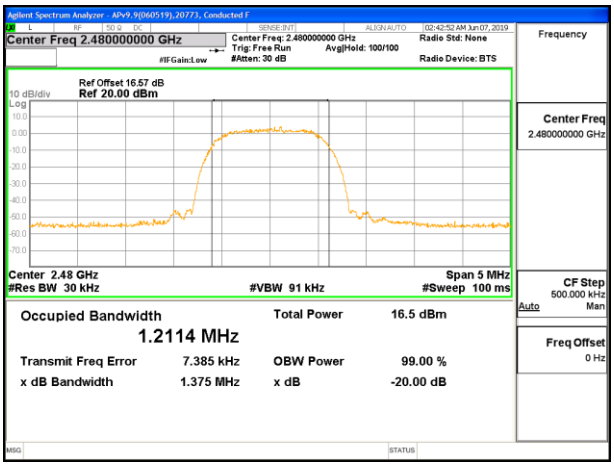
MID CHANNEL ANTENNA 4



MID CHANNEL ANTENNA 3



HIGH CHANNEL ANTENNA 4



HIGH CHANNEL ANTENNA 3

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8.9.3 LOW POWER BASIC DATA RATE GFSK MODULATION

2TX Antenna 4 + Antenna 3 TxBF MODE

Channel	Frequency (MHz)	99% Bandwidth Antenna 4 (MHz)	99% Bandwidth Antenna 3 (MHz)
Low	2402	0.8715	0.8681
Mid	2441	0.8709	0.8686
High	2480	0.8701	0.8691

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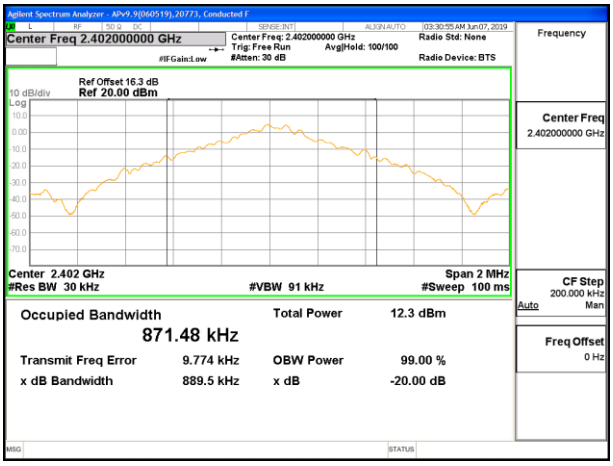
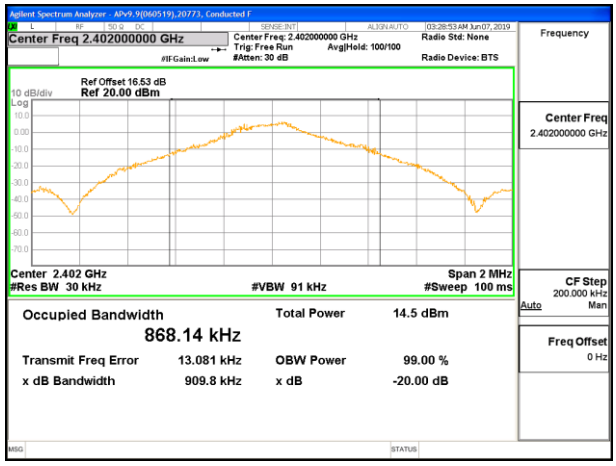
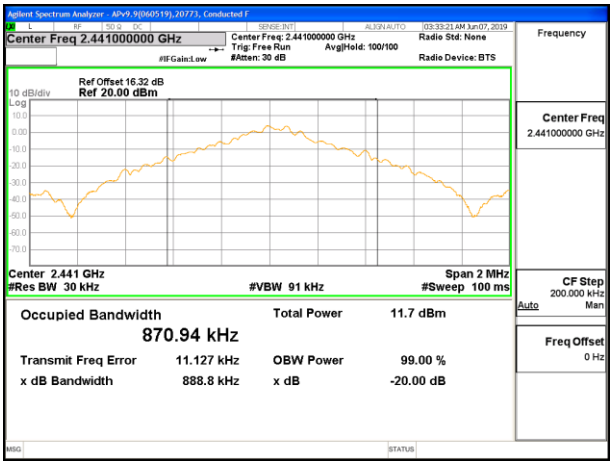


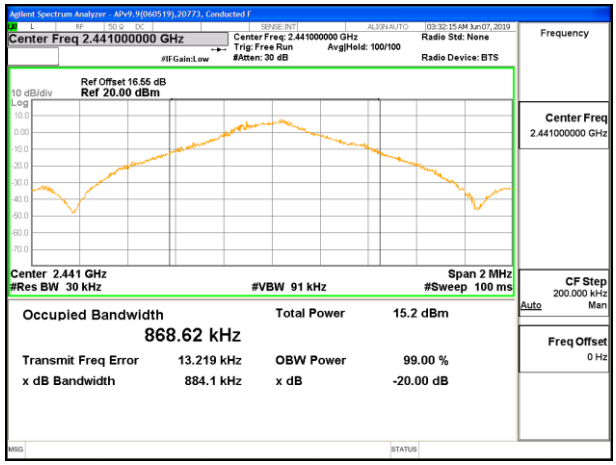
LOW CHANNEL ANTENNA 4



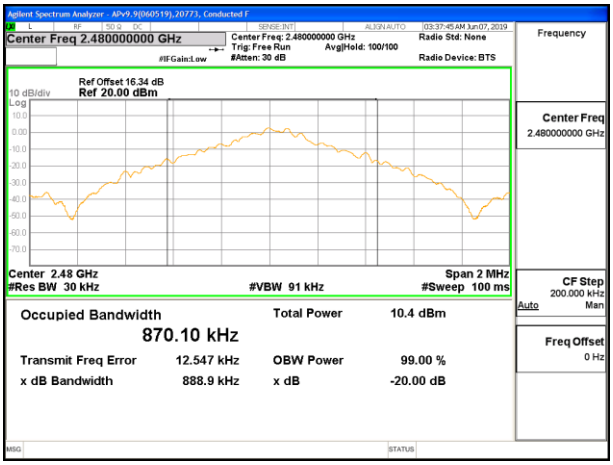
LOW CHANNEL ANTENNA 3



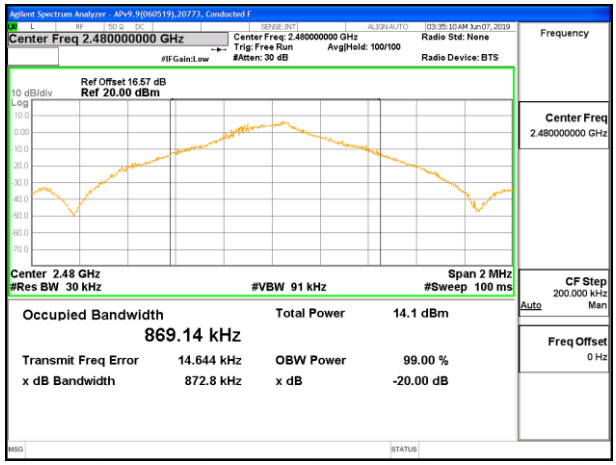
MID CHANNEL ANTENNA 4



MID CHANNEL ANTENNA 3



HIGH CHANNEL ANTENNA 4



HIGH CHANNEL ANTENNA 3

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8.9.4 LOW POWER ENHANCED DATA RATE 8PSK MODULATION

2TX Antenna 4 + Antenna 3 TxBF MODE

Channel	Frequency (MHz)	99% Bandwidth Antenna 4 (MHz)	99% Bandwidth Antenna 3 (MHz)
Low	2402	1.2312	1.2190
Mid	2441	1.2241	1.2215
High	2480	1.2241	1.2254

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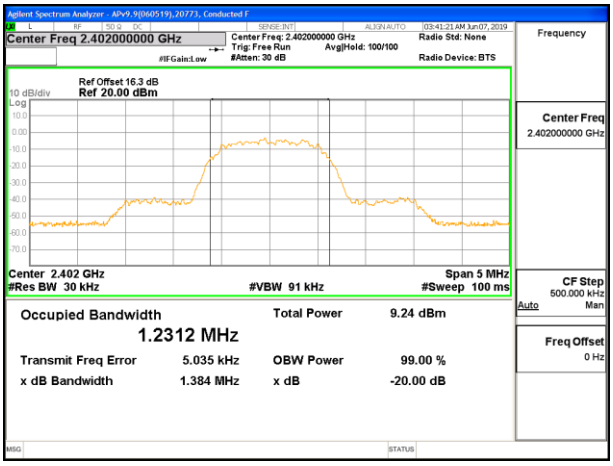

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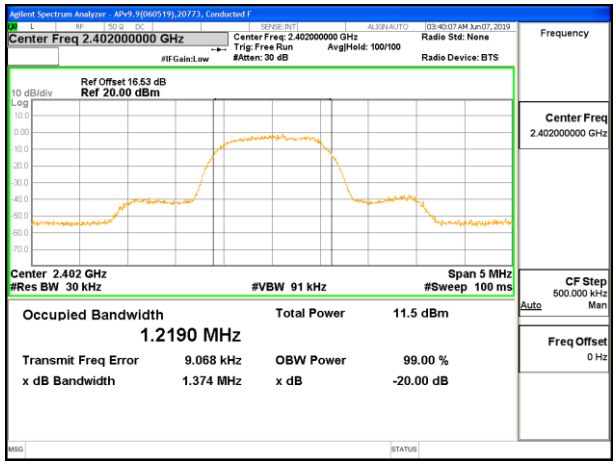
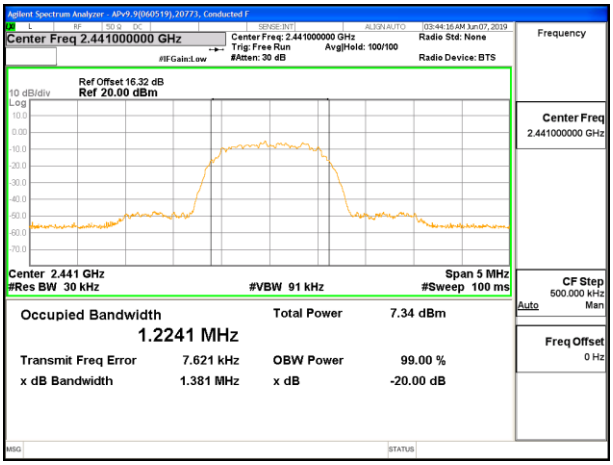
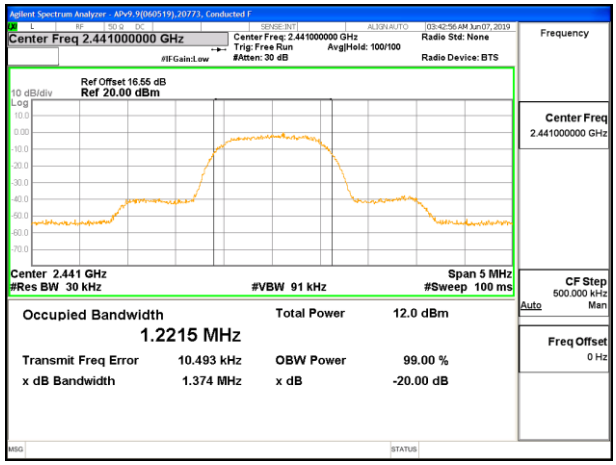


LOW CHANNEL ANTENNA 3



MID CHANNEL ANTENNA 4



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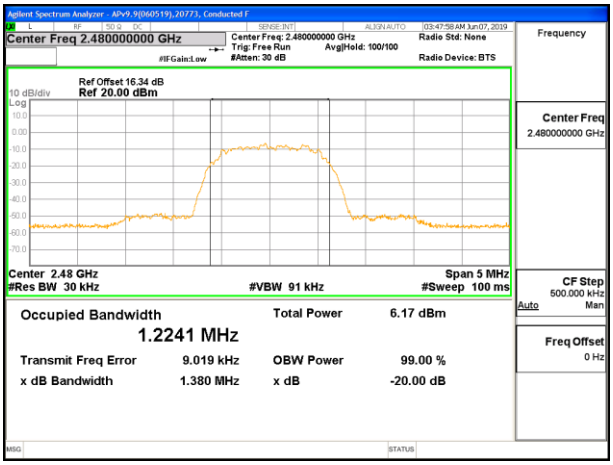
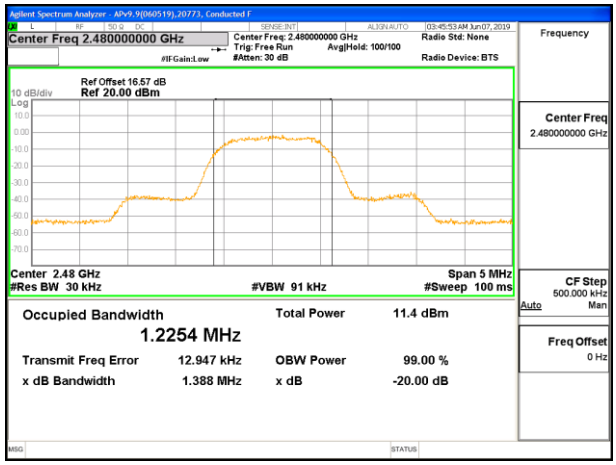


HIGH CHANNEL ANTENNA 4



HIGH CHANNEL ANTENNA 3

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8.10 BEAMFORMING, 20 dB BANDWIDTH

8.10.1 HIGH POWER BASIC DATA RATE GFSK MODULATION

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

2TX Antenna 4 + Antenna 3 TxBF MODE

Channel	Frequency (MHz)	20dB Bandwidth Antenna 4 (MHz)	20dB Bandwidth Antenna 3 (MHz)
Low	2402	0.938	0.954
Mid	2441	0.930	0.934
High	2480	0.936	0.918

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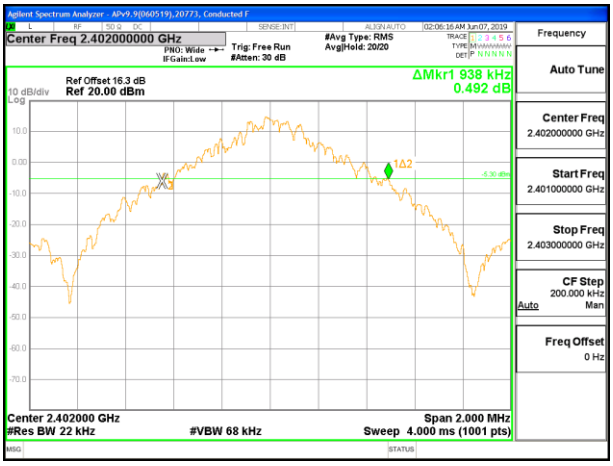
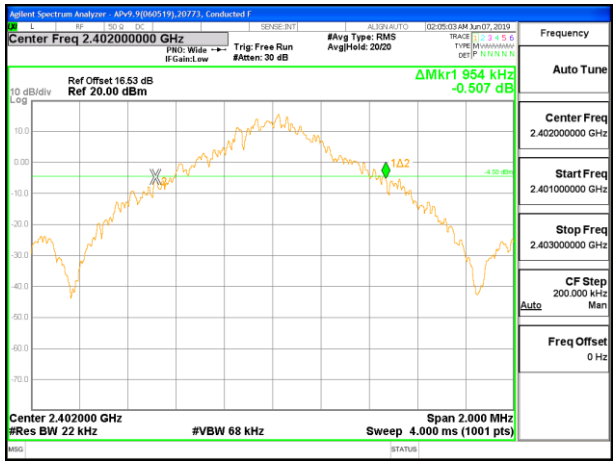
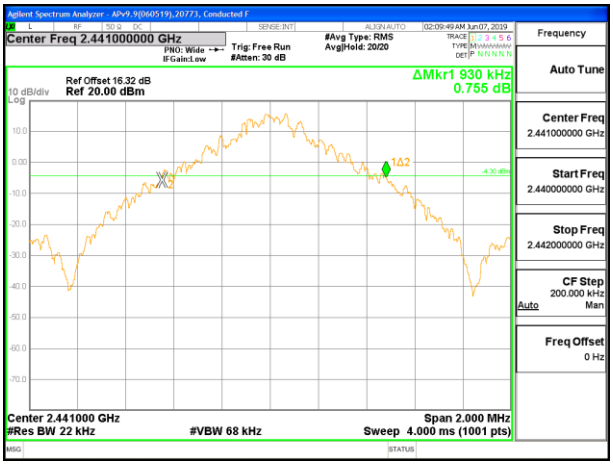


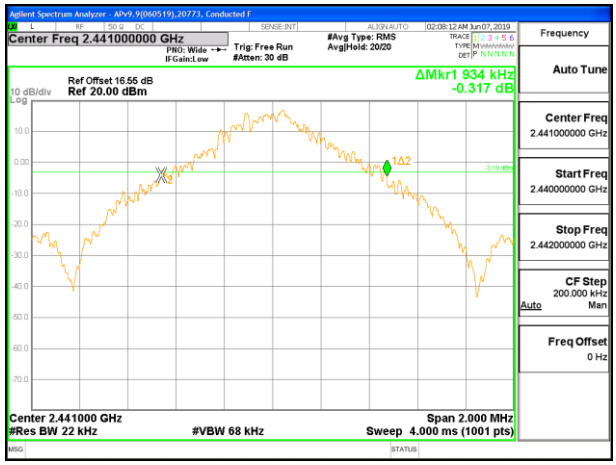
LOW CHANNEL ANTENNA 4



LOW CHANNEL ANTENNA 3



MID CHANNEL ANTENNA 4



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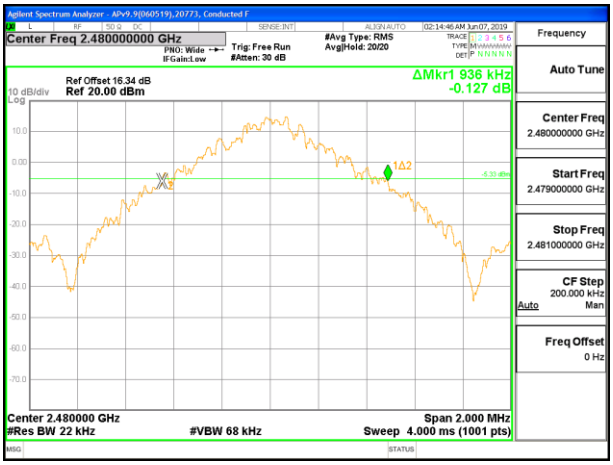

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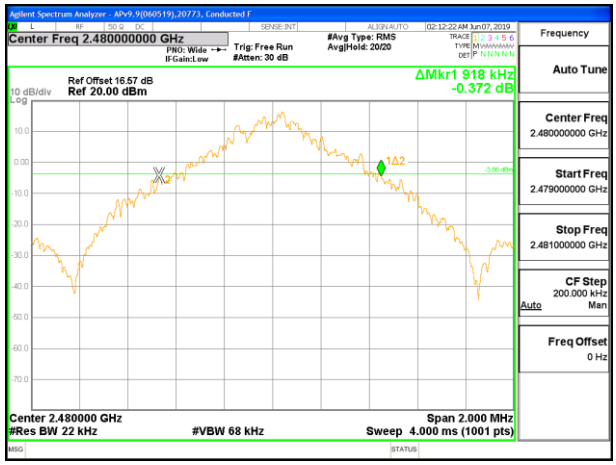

HIGH CHANNEL ANTENNA 3

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8.10.2 HIGH POWER ENHANCED DATA RATE 8PSK MODULATION

2TX Antenna 4 + Antenna 3 TxBF MODE

Channel	Frequency (MHz)	20dB Bandwidth Antenna 4 (MHz)	20dB Bandwidth Antenna 3 (MHz)
Low	2402	1.356	1.374
Mid	2441	1.342	1.368
High	2480	1.350	1.372

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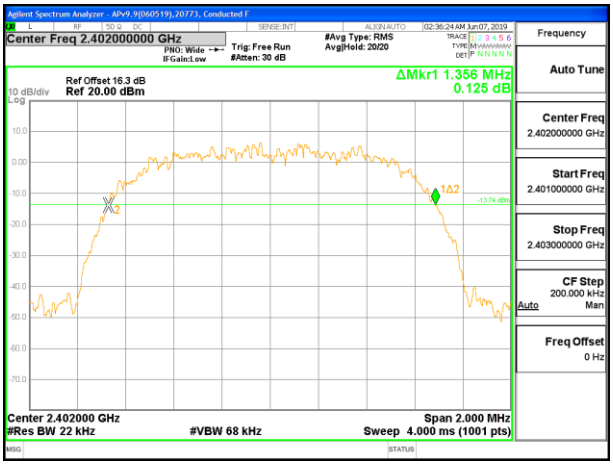

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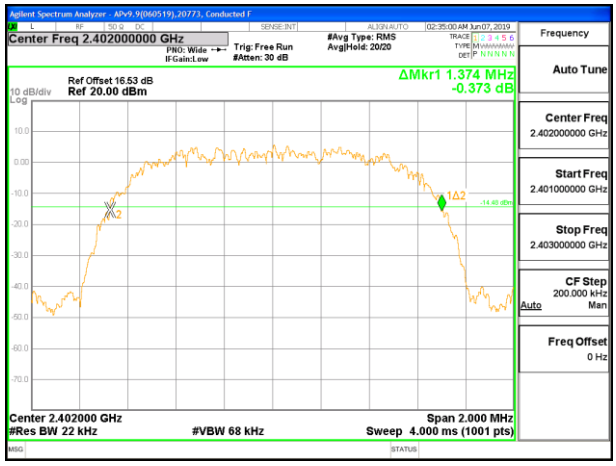

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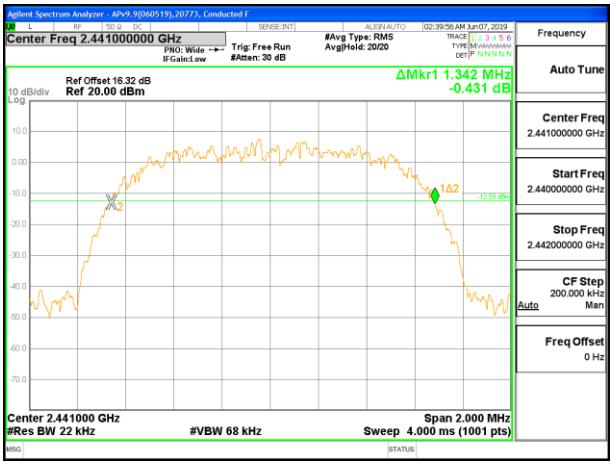

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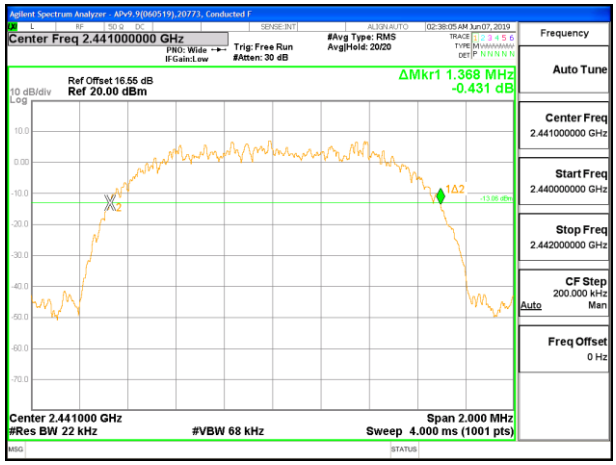

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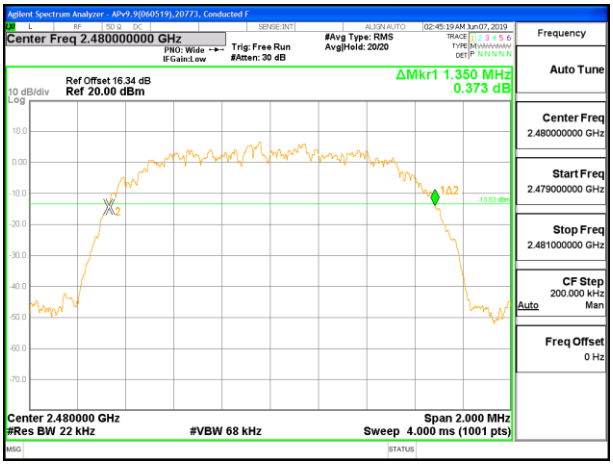
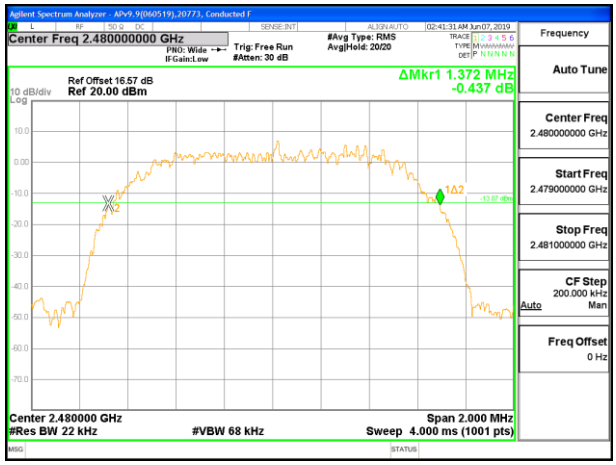


HIGH CHANNEL ANTENNA 4



HIGH CHANNEL ANTENNA 3

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8.10.3 LOW POWER BASIC DATA RATE GFSK MODULATION

2TX Antenna 4 + Antenna 3 TxBF MODE

Channel	Frequency (MHz)	20dB Bandwidth Antenna 4 (MHz)	20dB Bandwidth Antenna 3 (MHz)
Low	2402	0.908	1.012
Mid	2441	0.936	0.926
High	2480	0.940	0.886

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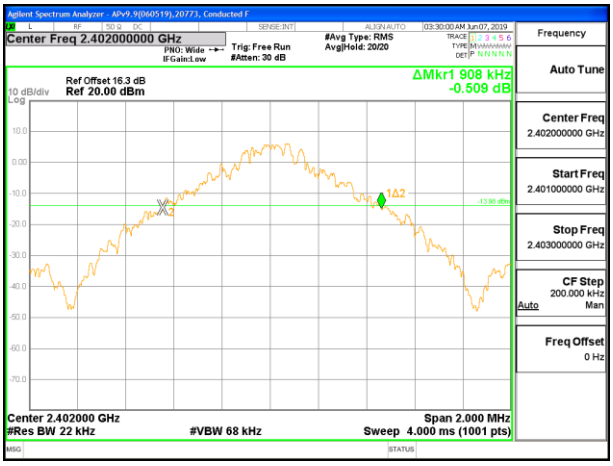

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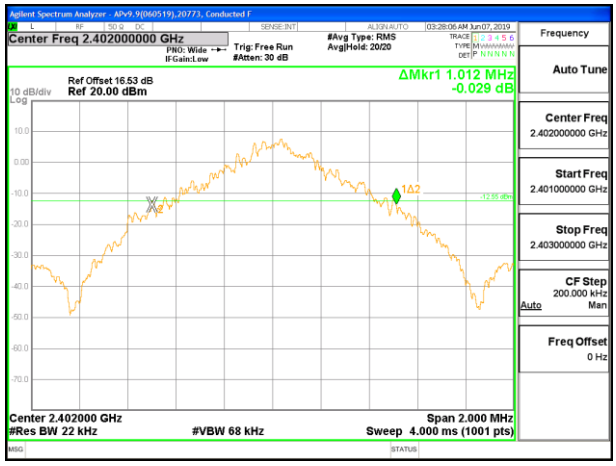
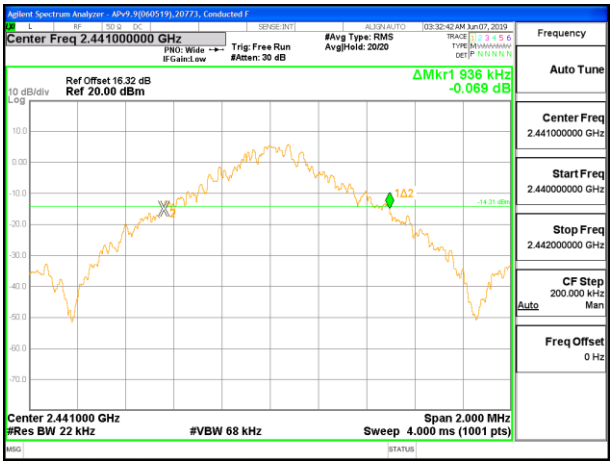
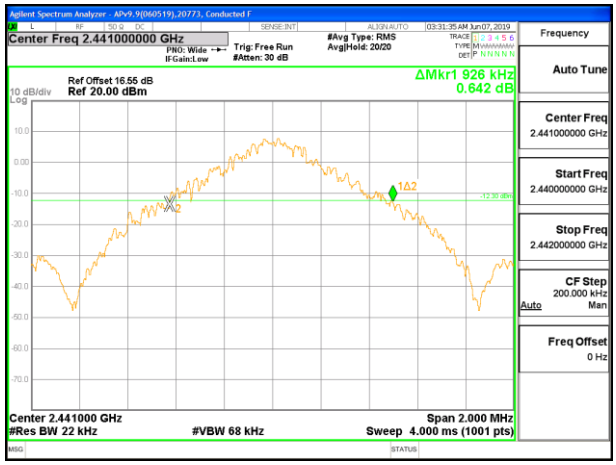


LOW CHANNEL ANTENNA 3



MID CHANNEL ANTENNA 4



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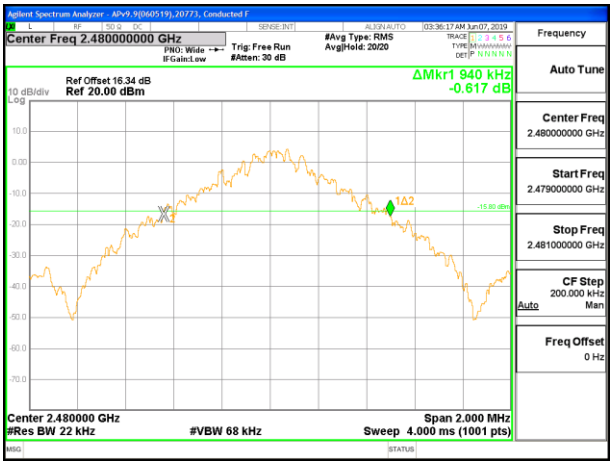
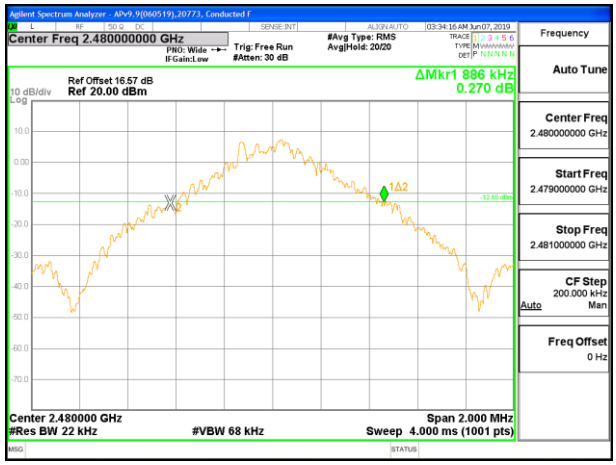


HIGH CHANNEL ANTENNA 4



HIGH CHANNEL ANTENNA 3

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8.10.4 LOW POWER ENHANCED DATA RATE 8PSK MODULATION

2TX Antenna 4 + Antenna 3 TxBF MODE

Channel	Frequency (MHz)	20dB Bandwidth Antenna 4 (MHz)	20dB Bandwidth Antenna 3 (MHz)
Low	2402	1.356	1.372
Mid	2441	1.350	1.396
High	2480	1.358	1.378

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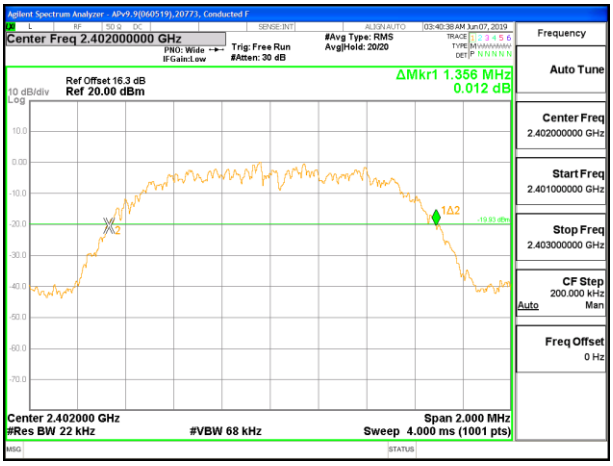

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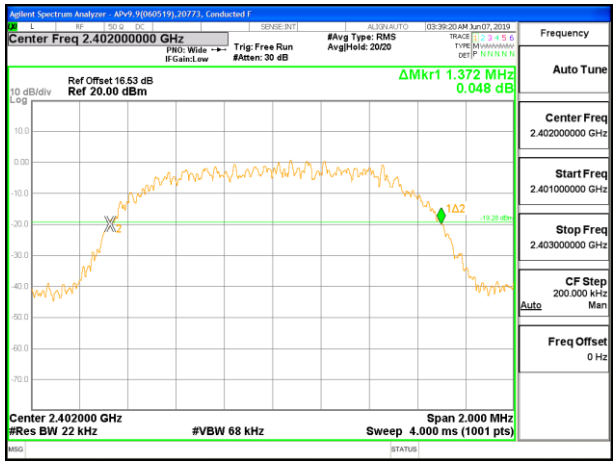
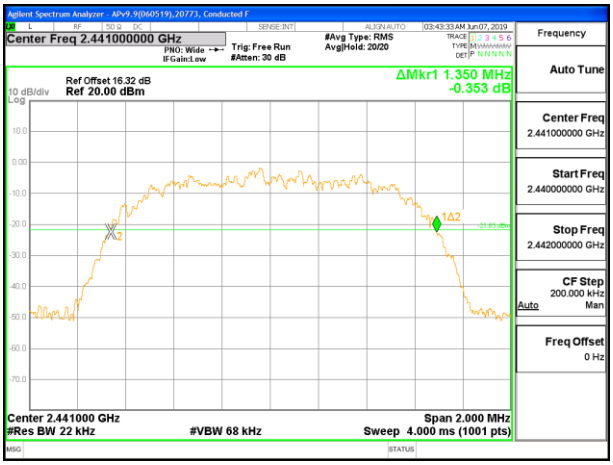


LOW CHANNEL ANTENNA 3



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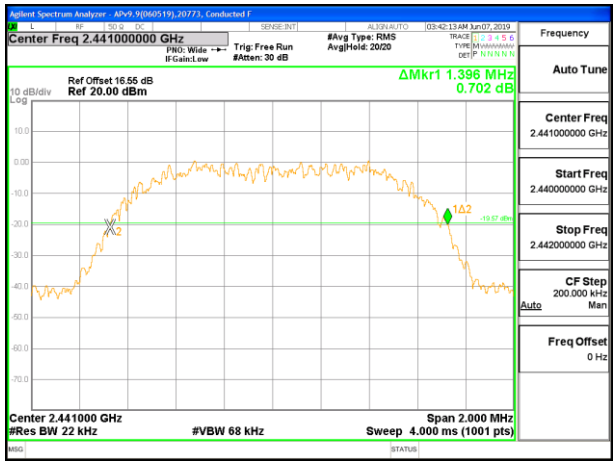

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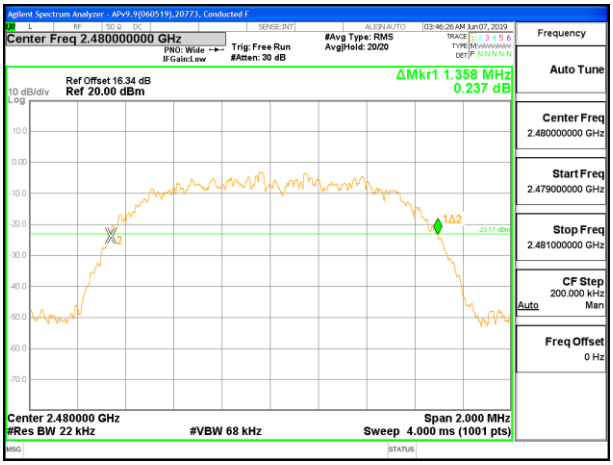

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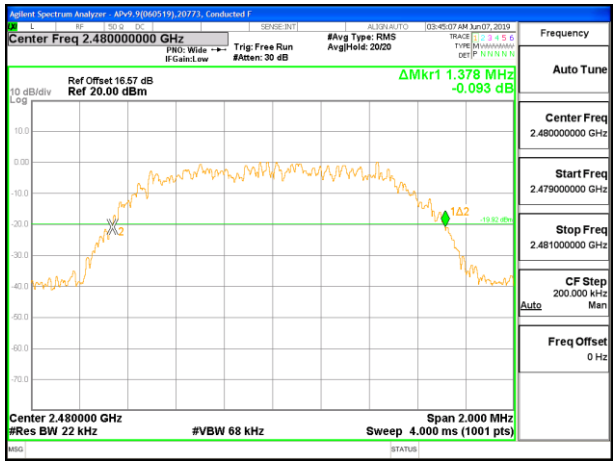

HIGH CHANNEL ANTENNA 3

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8.11 BEAMFORMING, HOPPING FREQUENCY SEPARATION

LIMITS

FCC §15.247 (a) (1)

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 VBW >= RBW. The sweep time is coupled.

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

RESULTS

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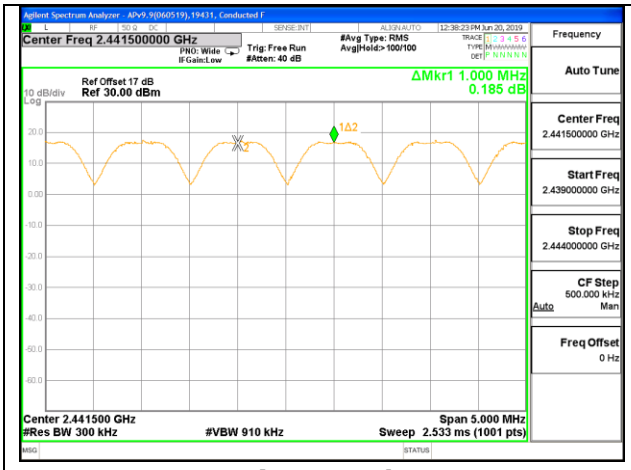
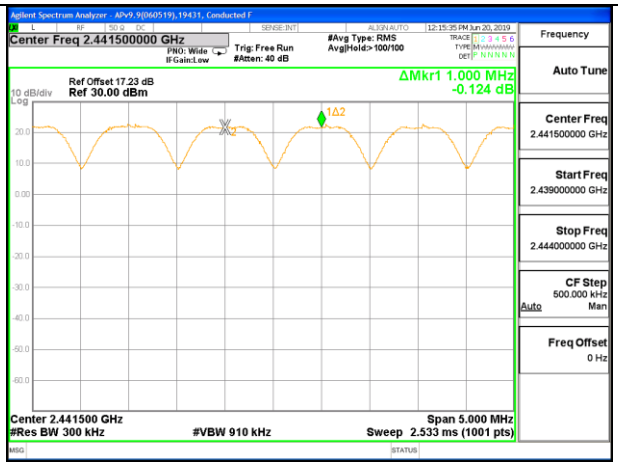
8.11.1 HIGH POWER BASIC DATA RATE GFSK MODULATION

HOPPING FREQUENCY SEPARATION



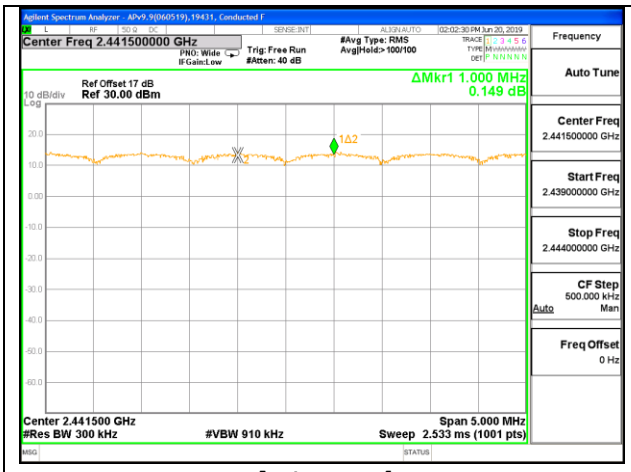
Antenna 4



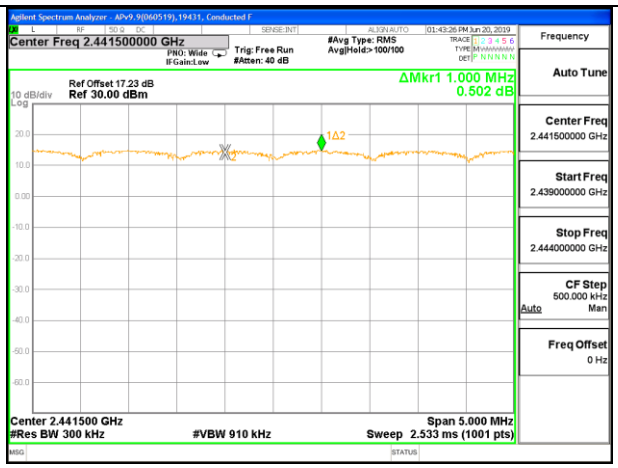
Antenna 3

8.11.2 HIGH POWER ENHANCED DATA RATE 8PSK MODULATION

HOPPING FREQUENCY SEPARATION



Antenna 4



Antenna 3

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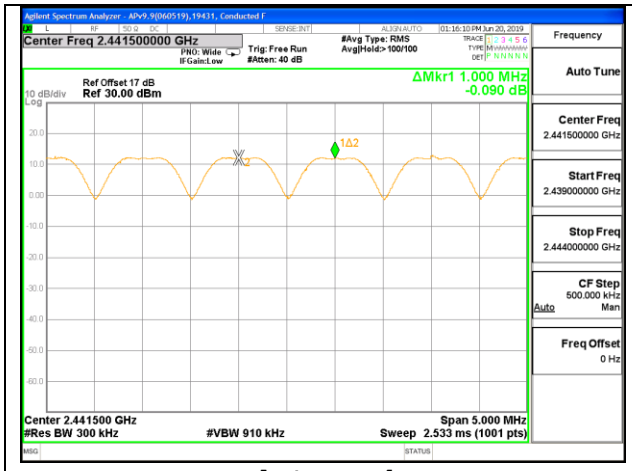
8.11.3 LOW POWER BASIC DATA RATE GFSK MODULATION

HOPPING FREQUENCY SEPARATION



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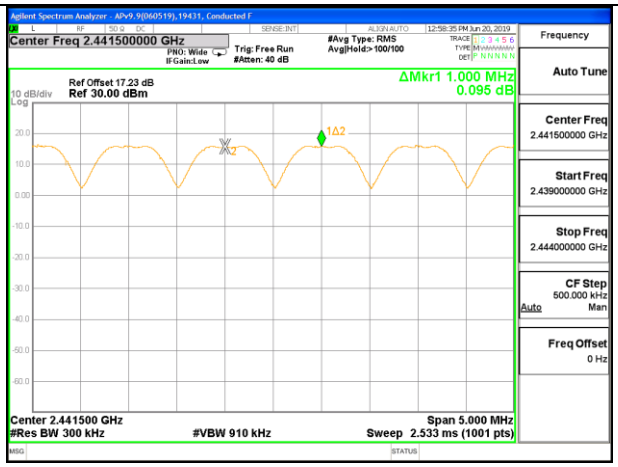
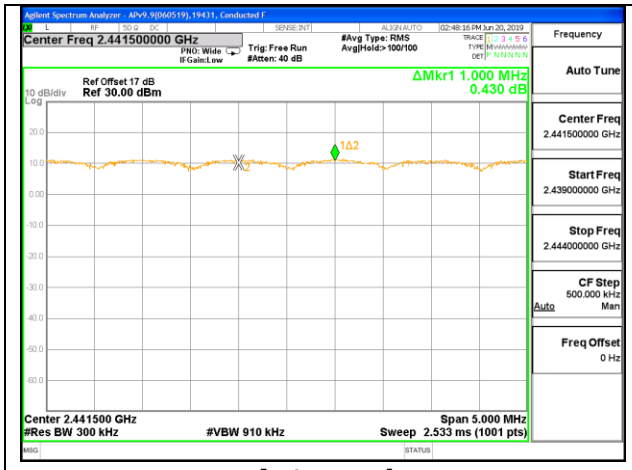


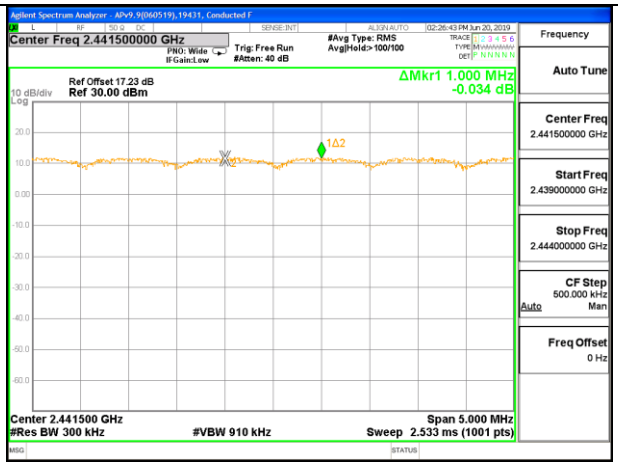
Antenna 3

8.11.4 LOW POWER ENHANCED DATA RATE 8PSK MODULATION

HOPPING FREQUENCY SEPARATION



Antenna 4



Antenna 3

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8.12 BEAMFORMING, NUMBER OF HOPPING CHANNELS

LIMITS

FCC §15.247 (a) (1) (iii)

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.

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

RESULTS

Normal Mode: All Channels Observed

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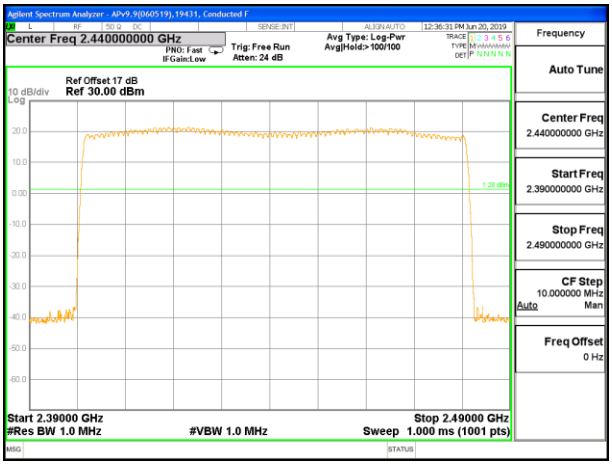
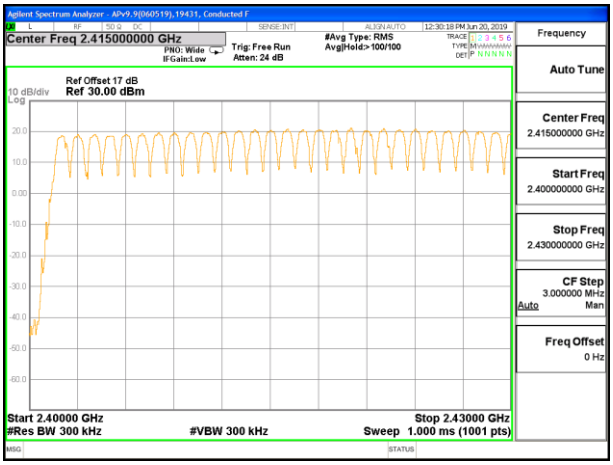
8.12.1 HIGH POWER BASIC DATA RATE GFSK MODULATION

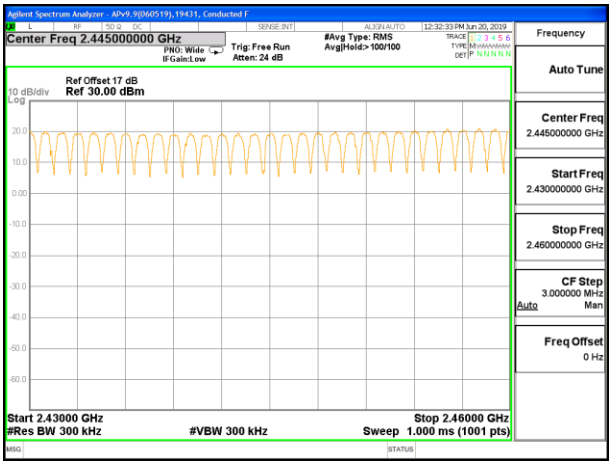
Antenna 4



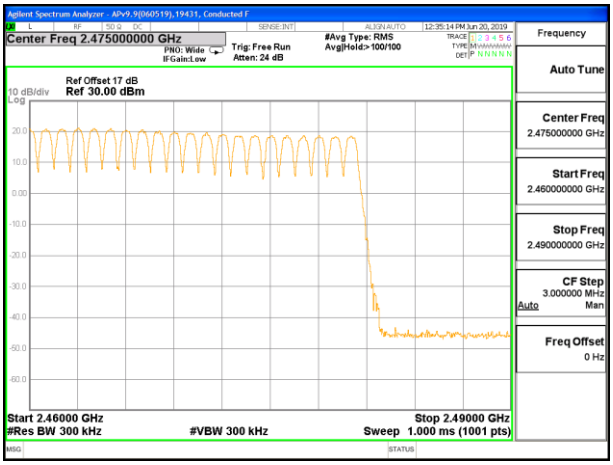
100MHz SPAN



30MHz SPAN, SEGMENT 1 OF 3



30MHz SPAN, SEGMENT 2 OF 3



30MHz SPAN, SEGMENT 3 OF 3

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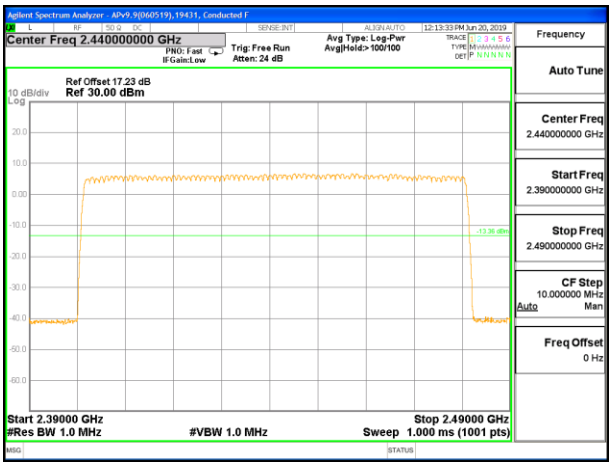
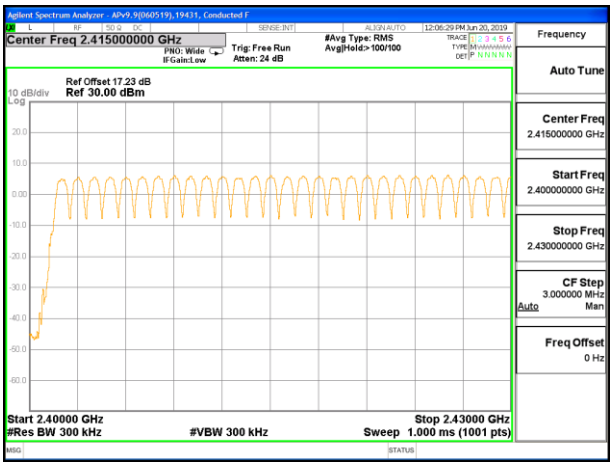
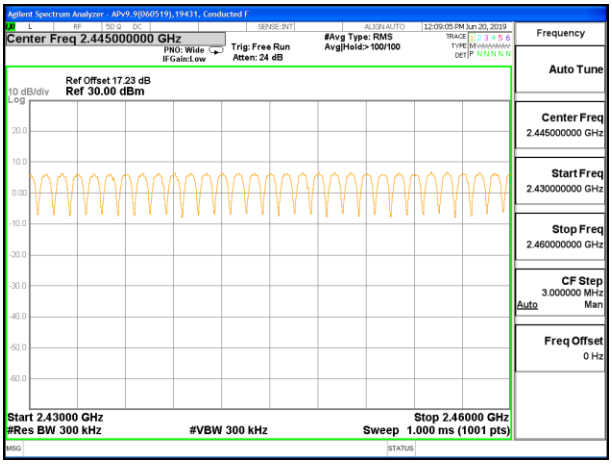
Antenna 3



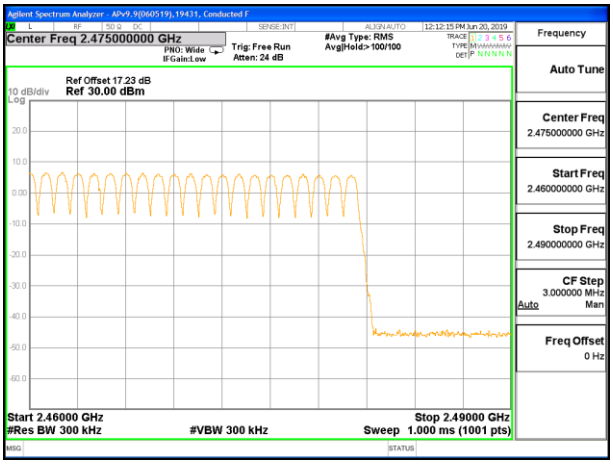
100MHz SPAN



30MHz SPAN, SEGMENT 1 OF 3



30MHz SPAN, SEGMENT 2 OF 3



30MHz SPAN, SEGMENT 3 OF 3

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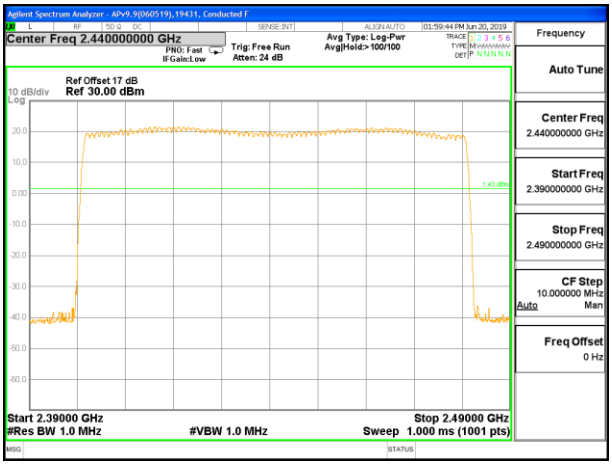
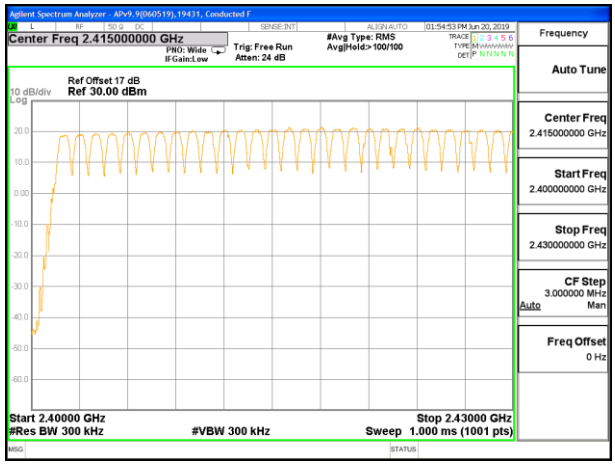
8.12.2 HIGH POWER ENHANCED DATA RATE 8PSK MODULATION

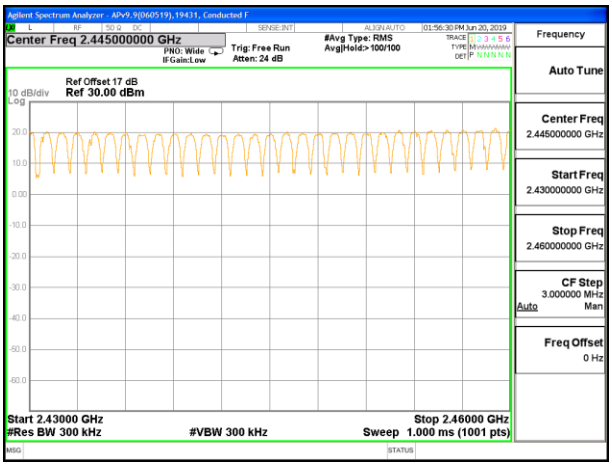
Antenna 4



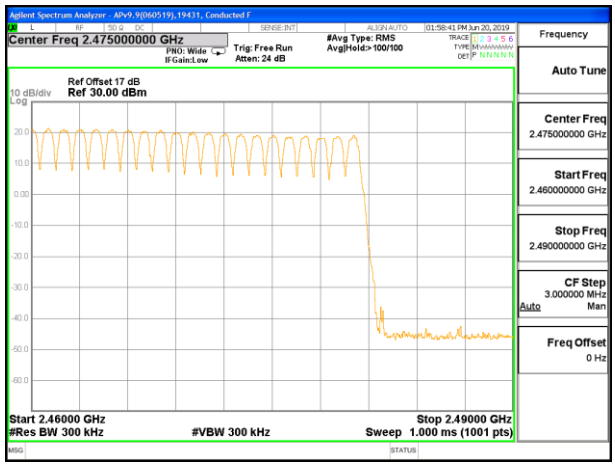
100MHz SPAN



30MHz SPAN, SEGMENT 1 OF 3



30MHz SPAN, SEGMENT 2 OF 3



30MHz SPAN, SEGMENT 3 OF 3

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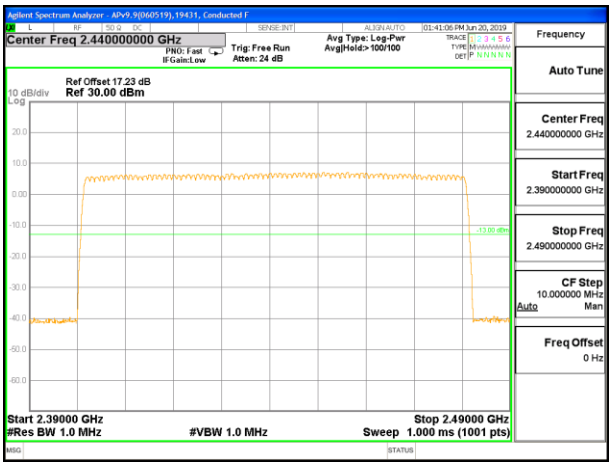
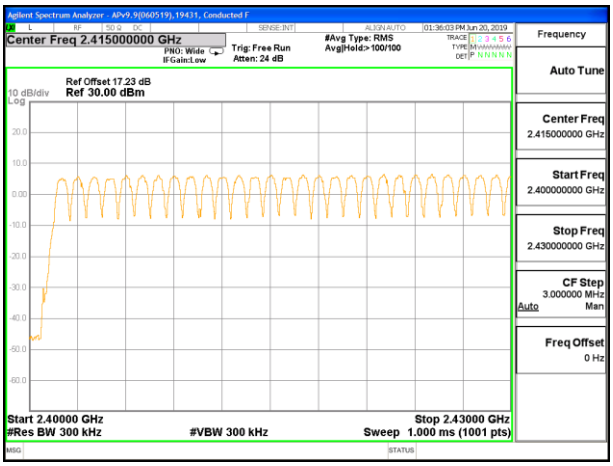
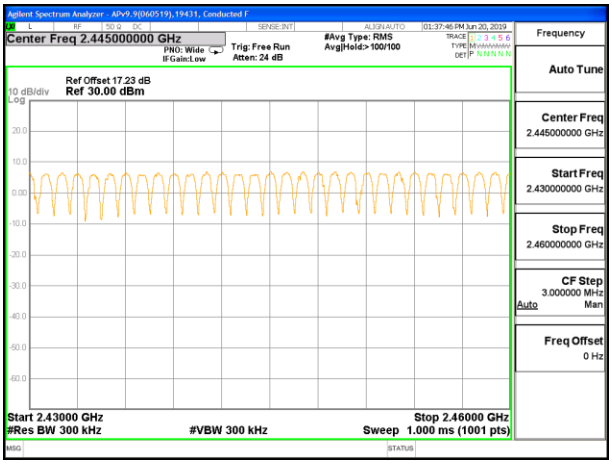
Antenna 3



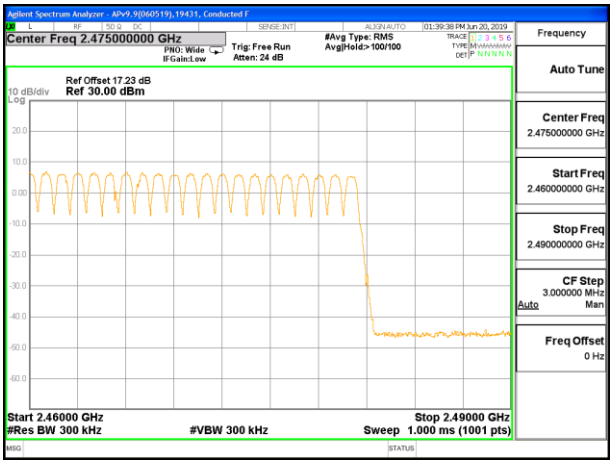
100MHz SPAN



30MHz SPAN, SEGMENT 1 OF 3



30MHz SPAN, SEGMENT 2 OF 3



30MHz SPAN, SEGMENT 3 OF 3

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