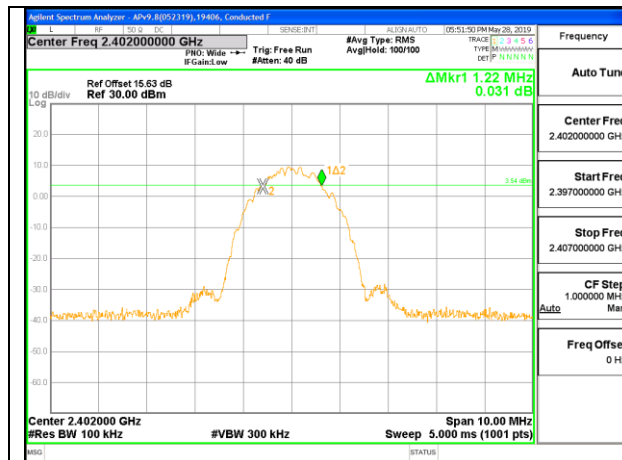
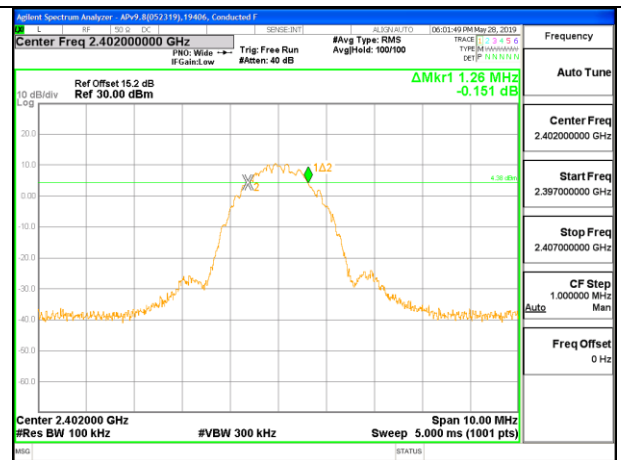
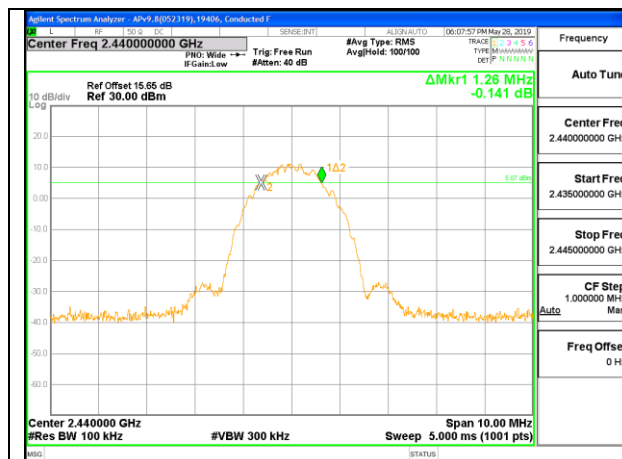




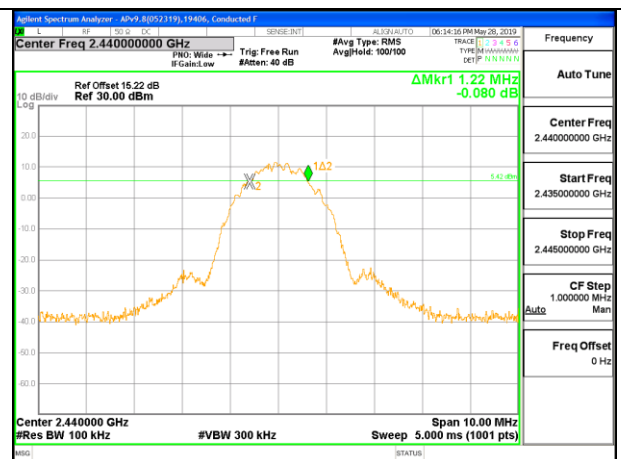
LOW CHANNEL , ANT 2



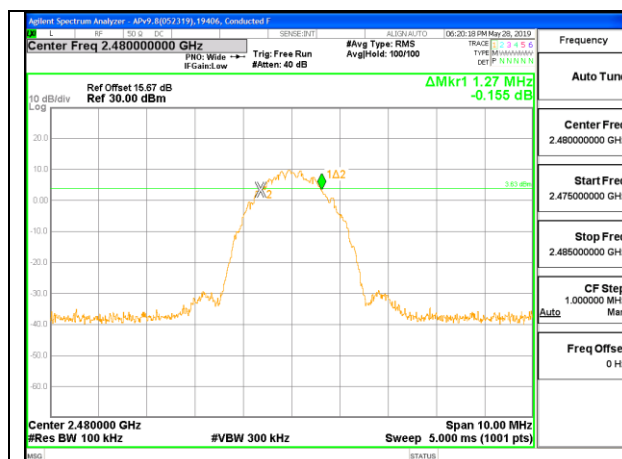
LOW CHANNEL ANT 5



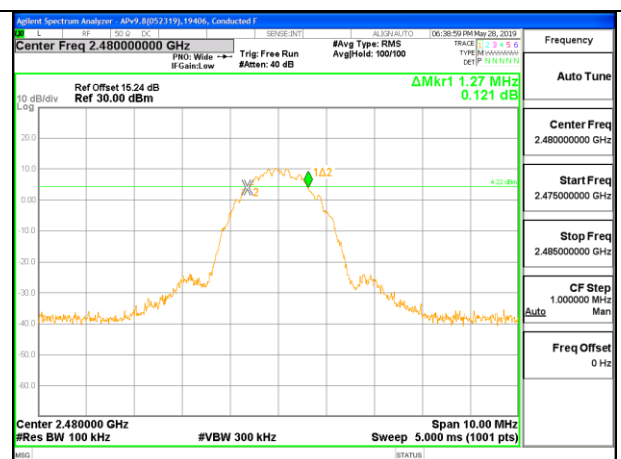
MID CHANNEL ANT 2



MID CHANNEL ANT 5



HIGH CHANNEL ANT 2



HIGH CHANNEL ANT 5

8.10. BEAMFORMING OUTPUT POWER

8.10.1. HIGH POWER BLE (1Mbps)

2TX Antenna 2 + Antenna 5, TxBF Mode

Tested By:	39313
Date:	6/25/2019

Channel	Frequency (MHz)	Output Power Antenna 2 (dBm)	Output Power Antenna 5 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	17.28	17.38	20.34	30	-9.66
Middle	2440	17.35	17.47	20.42	30	-9.58
High	2480	17.25	17.35	20.31	30	-9.69

8.10.2. HIGH POWER BLE (2Mbps)

2TX Antenna 2 + Antenna 5, TxBF Mode

Tested By:	39313
Date:	6/25/2019

Channel	Frequency (MHz)	Output Power Antenna 2 (dBm)	Output Power Antenna 5 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	17.35	17.45	20.41	30	-9.59
Middle	2440	17.41	17.48	20.46	30	-9.54
High	2480	17.32	17.42	20.38	30	-9.62

Note: Test procedures and setting on beamforming are same as BLE normal mode

8.10.3. LOW POWER BLE (1Mbps)

2TX Antenna 2 + Antenna 5, TxBF Mode

Tested By:	39313
Date:	6/25/2019

Channel	Frequency (MHz)	Output Power Antenna 2 (dBm)	Output Power Antenna 5 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	12.42	12.43	15.44	30	-14.56
Middle	2440	12.55	12.60	15.59	30	-14.41
High	2480	12.40	12.42	15.42	30	-14.58

8.10.4. LOW POWER BLE (2Mbps)

2TX Antenna 2 + Antenna 5, TxBF Mode

Tested By:	39316
Date:	6/25/2019

Channel	Frequency (MHz)	Output Power Antenna 2 (dBm)	Output Power Antenna 5 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	12.58	12.62	15.61	30	-14.39
Middle	2440	12.61	12.65	15.64	30	-14.36
High	2480	12.53	12.57	15.56	30	-14.44

8.11. BEAMFORMING AVERAGE POWER

8.11.1. HIGH POWER BLE (1Mbps)

2TX Antenna 2 + Antenna 5, TxBF Mode

Tested By:	39313
Date:	6/25/2019

Channel	Frequency (MHz)	Average Power Antenna 2 (dBm)	Average Power Antenna 5 (dBm)	Total Power (dBm)
Low	2402	16.66	16.71	19.70
Middle	2440	16.72	16.75	19.75
High	2480	16.63	16.67	19.66

8.11.2. HIGH POWER BLE (2Mbps)

2TX Antenna 2 + Antenna 5, TxBF Mode

Tested By:	39313
Date:	6/25/2019

Channel	Frequency (MHz)	Average Power Antenna 2 (dBm)	Average Power Antenna 5 (dBm)	Total Power (dBm)
Low	2402	16.65	16.72	19.70
Middle	2440	16.73	16.77	19.76
High	2480	16.61	16.68	19.66

Note: Test procedures and setting on beamforming are same as BLE normal mode

8.11.3. LOW POWER BLE (1Mbps)

2TX Antenna 2 + Antenna 5, TxBF Mode

Tested By:	39313
Date:	6/25/2019

Channel	Frequency (MHz)	Average Power Antenna 2 (dBm)	Average Power Antenna 5 (dBm)	Total Power (dBm)
Low	2402	12.14	12.13	15.15
Middle	2440	12.23	12.25	15.25
High	2480	12.12	12.12	15.13

8.11.4. LOW POWER BLE (2Mbps)

2TX Antenna 2 + Antenna 5 TxBF Mode

Tested By:	39316
Date:	6/25/2019

Channel	Frequency (MHz)	Average Power Antenna 2 (dBm)	Average Power Antenna 5 (dBm)	Total Power (dBm)
Low	2402	12.19	12.23	15.22
Middle	2440	12.23	12.25	15.25
High	2480	12.13	12.18	15.17

8.12. BEAMFORMING, POWER SPECTRAL DENSITY

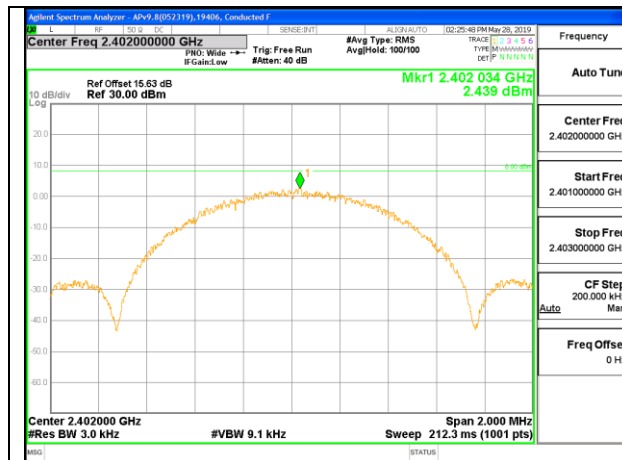
8.12.1. HIGH POWER BLE (1Mbps)

Duty Cycle CF (dB)		Included in Calculations of Corr'd PSD
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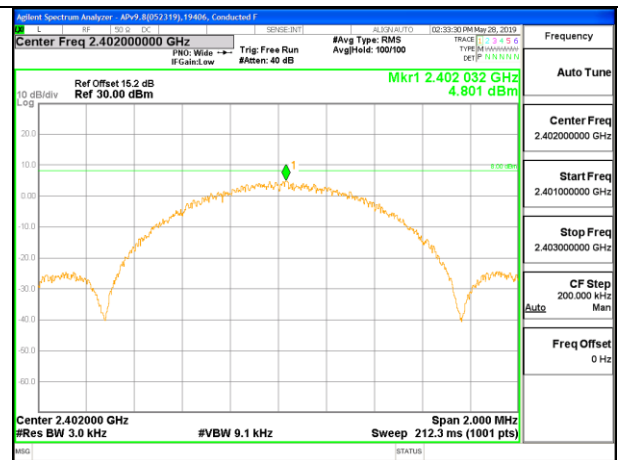
PSD Results

Channel	Frequency (MHz)	ANT 2 Meas (dBm/ 3kHz)	ANT 5 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low	2402	2.439	4.801	6.789	8.0	-1.211
Mid	2440	3.604	3.772	6.699	8.0	-1.301
High	2480	2.025	3.288	5.713	8.0	-2.287

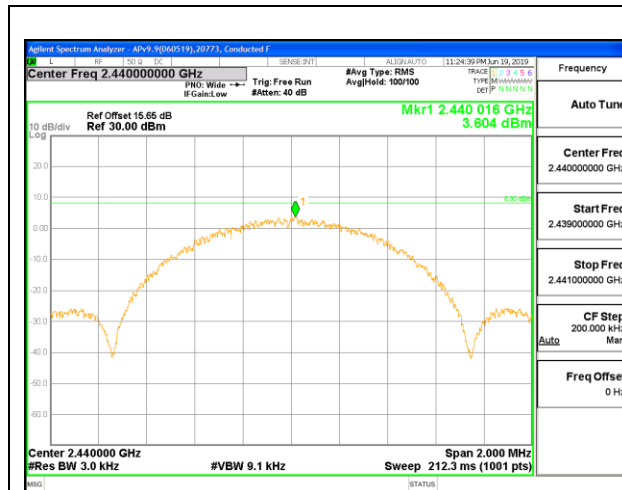
Note: Test procedures and setting on beamforming are same as BLE normal mode



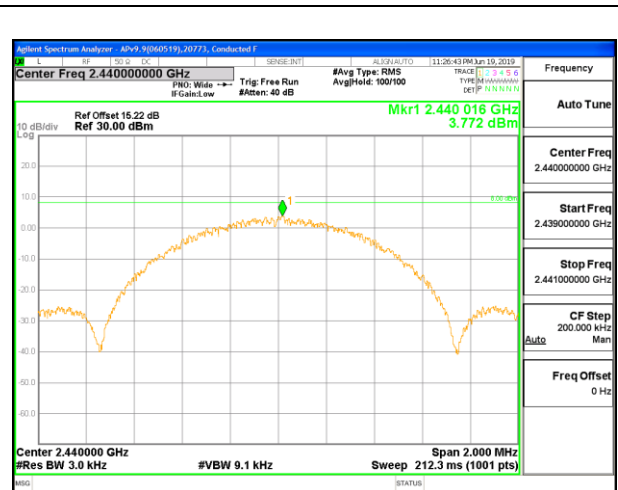
LOW CHANNEL ANT 2



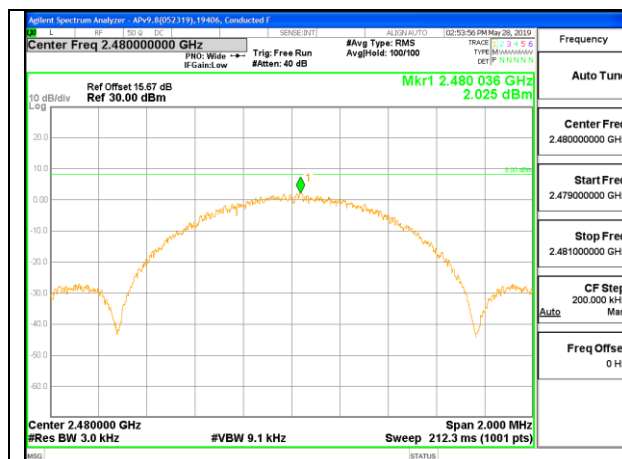
LOW CHANNEL ANT 5



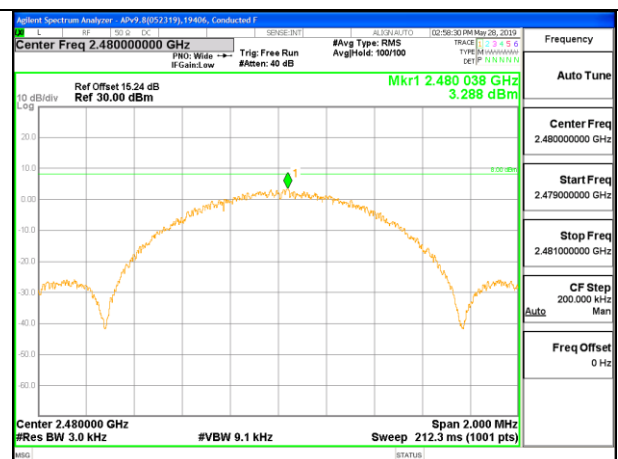
MID CHANNEL ANT 2



MID CHANNEL ANT 5



HIGH CHANNEL ANT 2



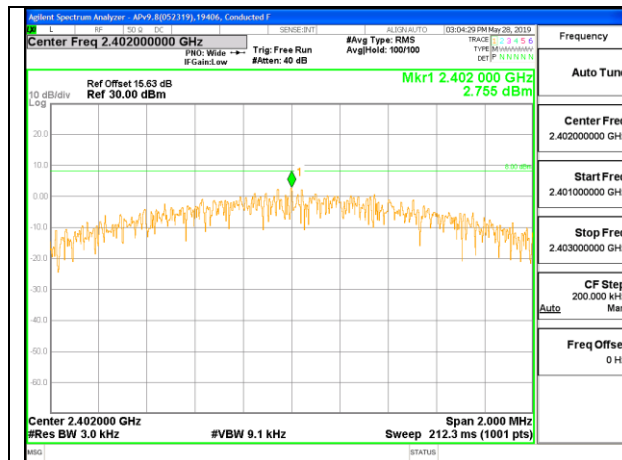
HIGH CHANNEL ANT 5

8.12.2. HIGH POWER BLE (2Mbps)

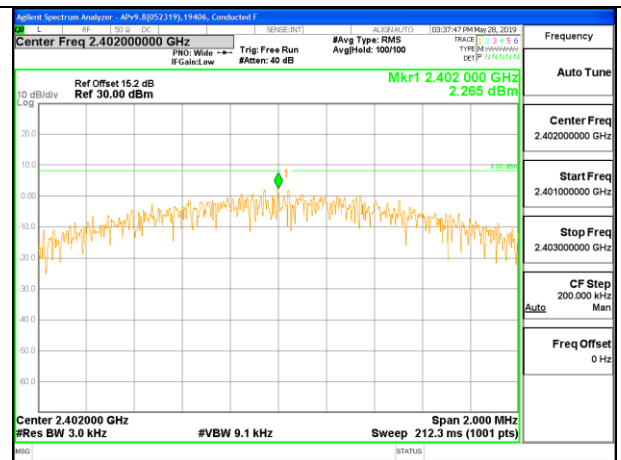
Duty Cycle CF (dB)		Included in Calculations of Corr'd PSD
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PSD Results

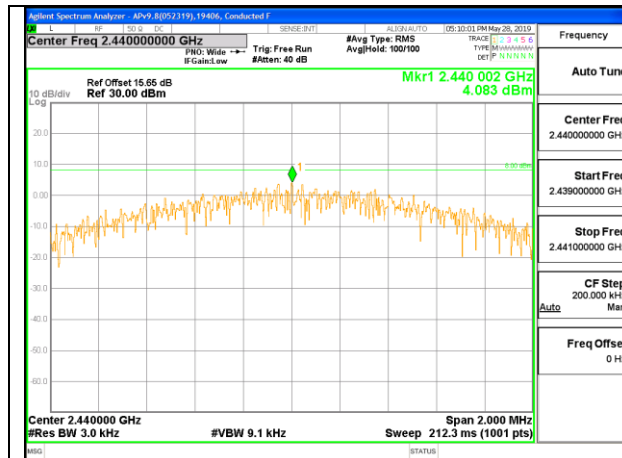
Channel	Frequency (MHz)	ANT 2 Meas (dBm/ 3kHz)	ANT 5 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low	2402	2.755	2.265	5.527	8.0	-2.473
Mid	2440	4.083	3.018	6.593	8.0	-1.407
High	2480	2.359	0.804	4.661	8.0	-3.339



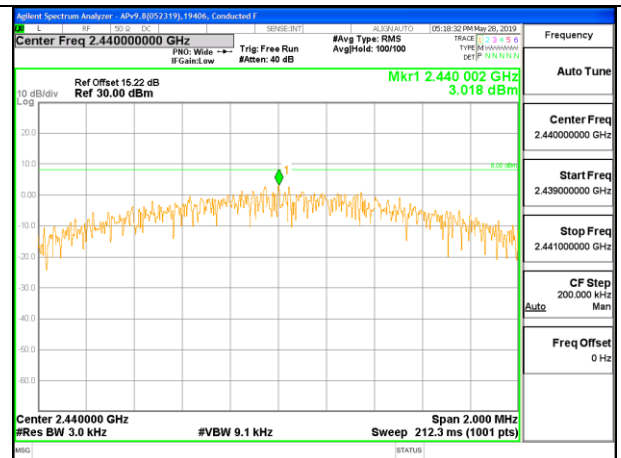
LOW CHANNEL , ANT 2



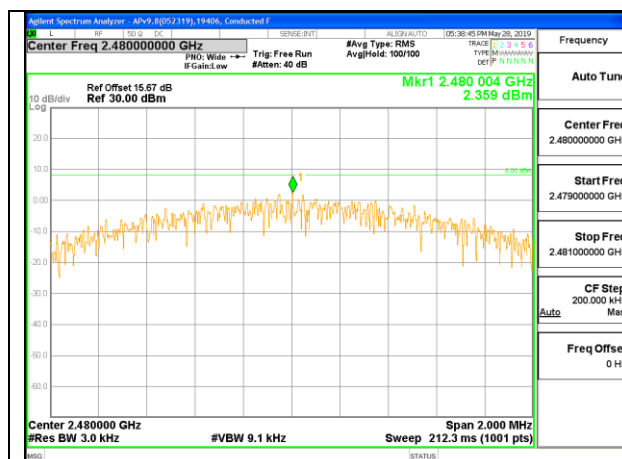
LOW CHANNEL ANT 5



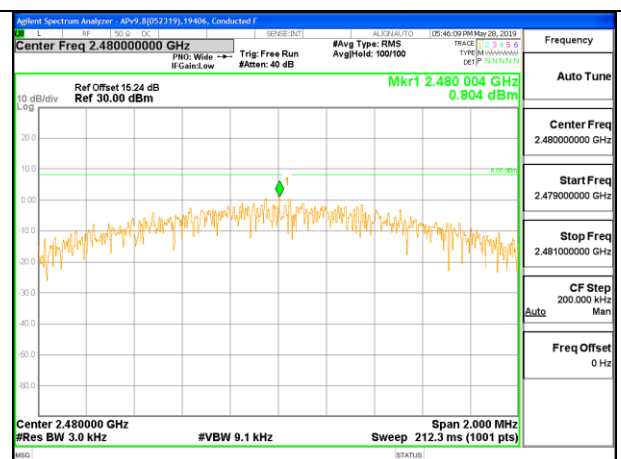
MID CHANNEL ANT 2



MID CHANNEL ANT 5



HIGH CHANNEL ANT 2



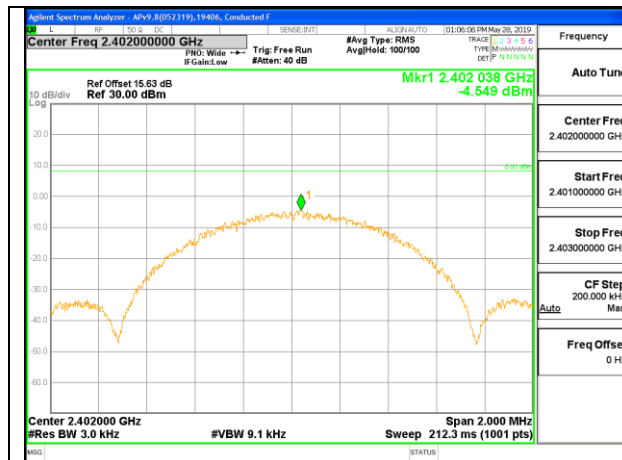
HIGH CHANNEL ANT 5

8.12.3. LOW POWER BLE (1Mbps)

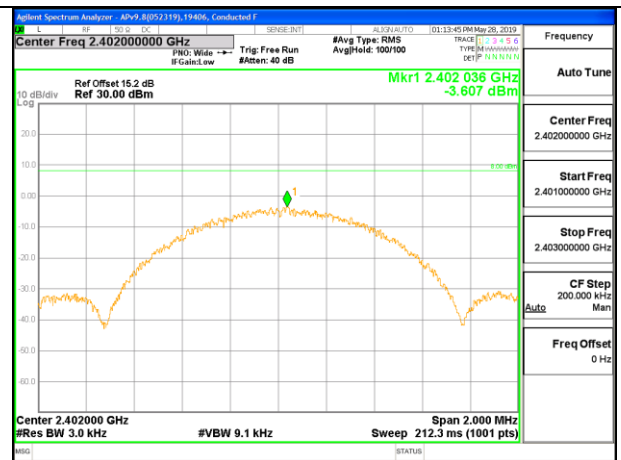
Duty Cycle CF (dB)		Included in Calculations of Corr'd PSD
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PSD Results

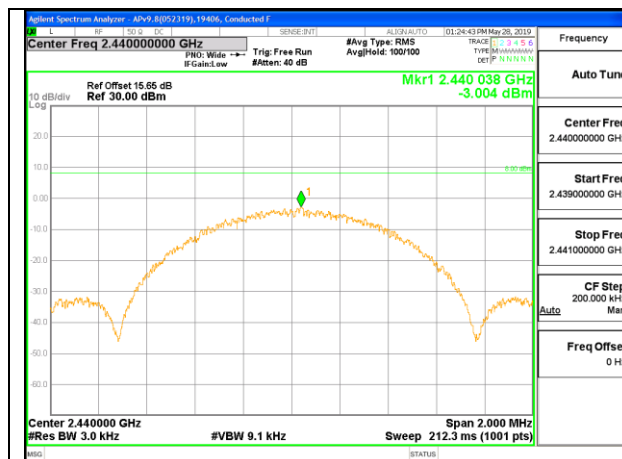
Channel	Frequency (MHz)	ANT 2 Meas (dBm/ 3kHz)	ANT 5 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low	2402	-4.549	-3.607	-1.042	8.0	-9.042
Mid	2440	-3.004	-2.577	0.225	8.0	-7.775
High	2480	-4.362	-3.757	-1.039	8.0	-9.039



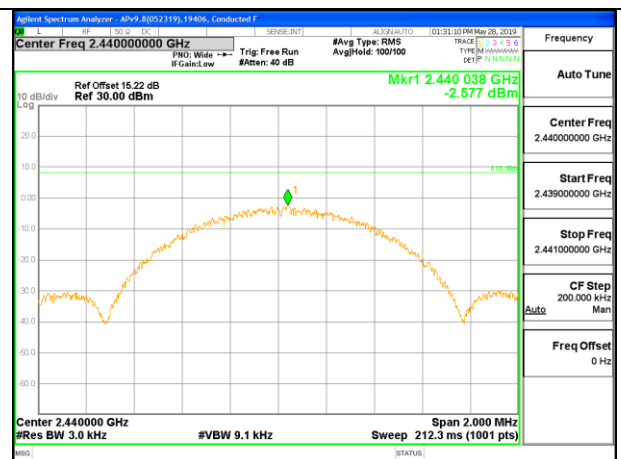
LOW CHANNEL ANT 2



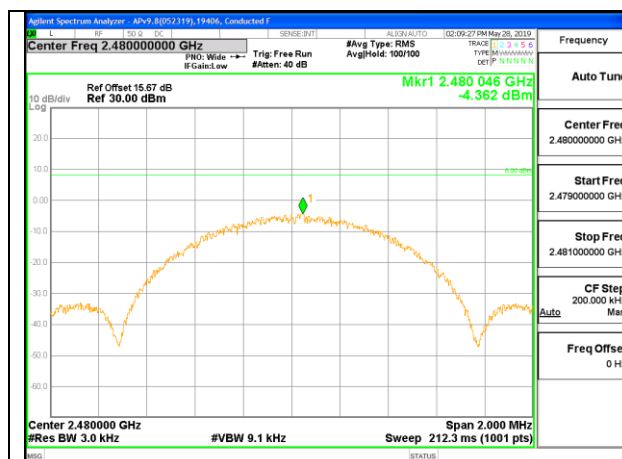
LOW CHANNEL ANT 5



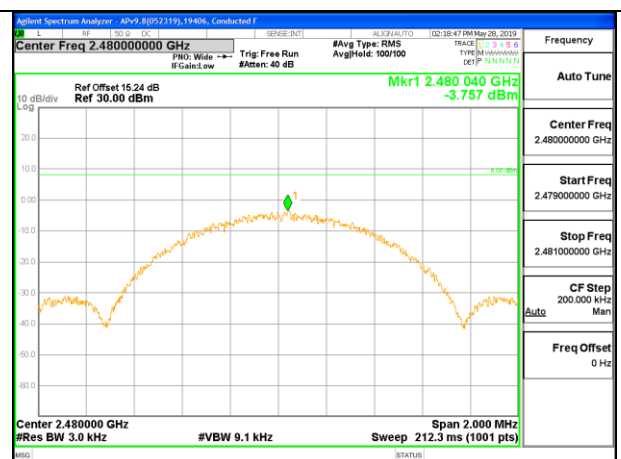
MID CHANNEL ANT 2



MID CHANNEL ANT 5



HIGH CHANNEL ANT 2



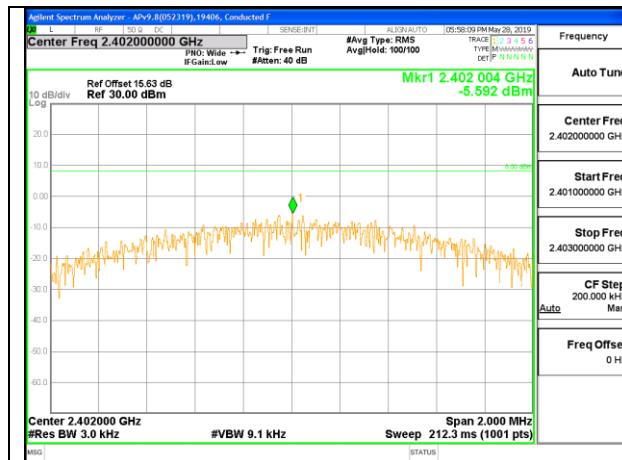
HIGH CHANNEL ANT 5

8.12.4. LOW POWER BLE (2Mbps)

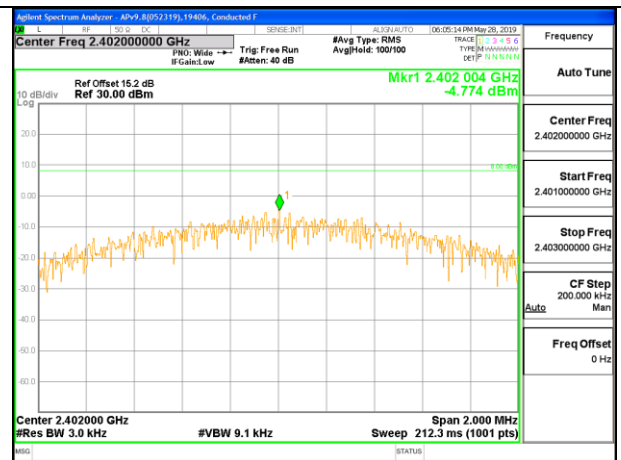
Duty Cycle CF (dB)		Included in Calculations of Corr'd PSD
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PSD Results

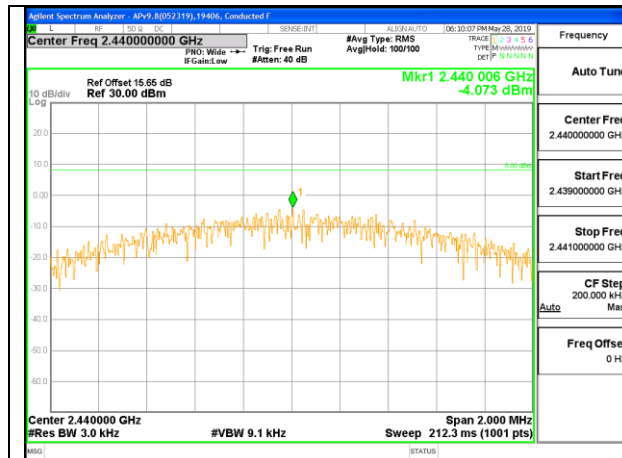
Channel	Frequency (MHz)	ANT 2 Meas (dBm/ 3kHz)	ANT 5 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low	2402	-5.59	-4.77	-2.15	8.0	-10.2
Mid	2440	-4.07	-3.75	-0.90	8.0	-8.9
Hjigh	2480	-5.48	-4.95	-2.20	8.0	-10.2



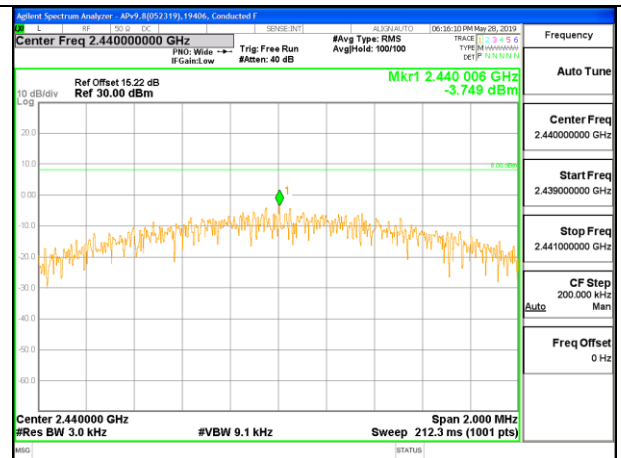
LOW CHANNEL ANT 2



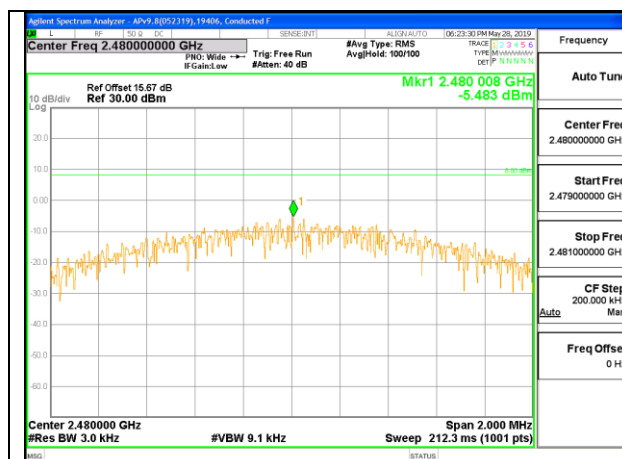
LOW CHANNEL ANT 5



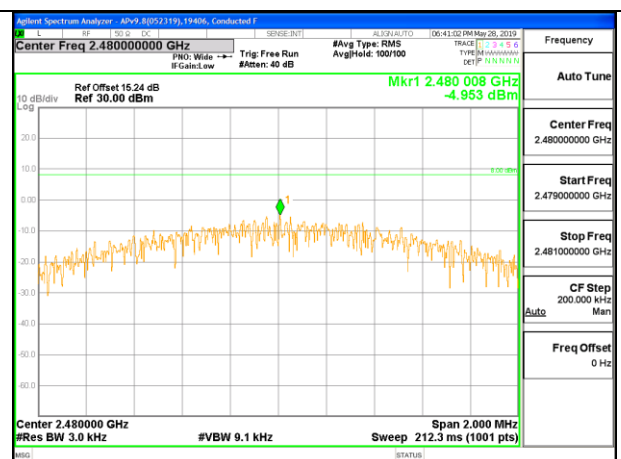
MID CHANNEL ANT 2



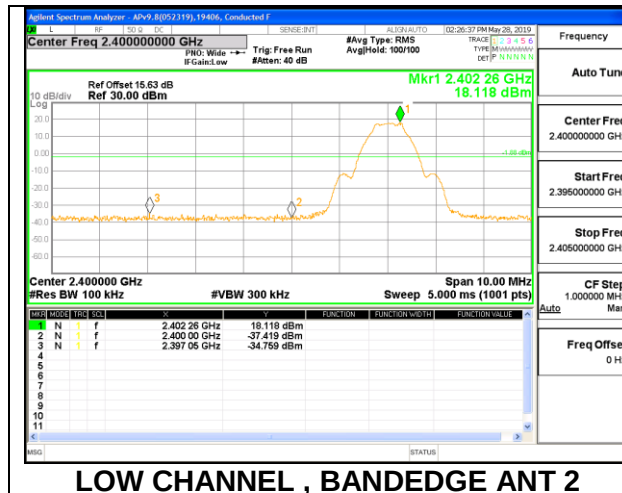
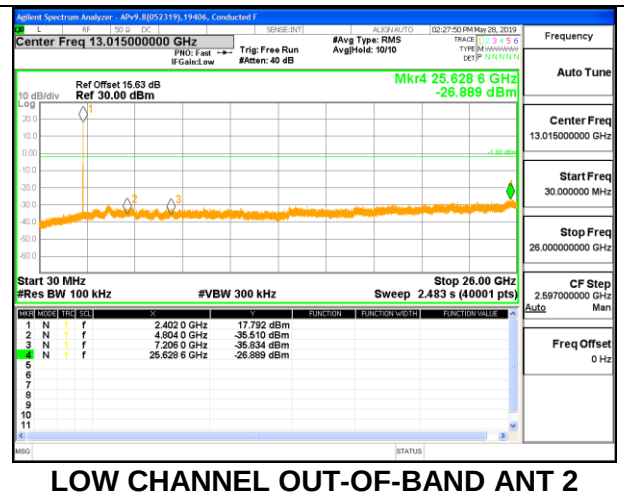
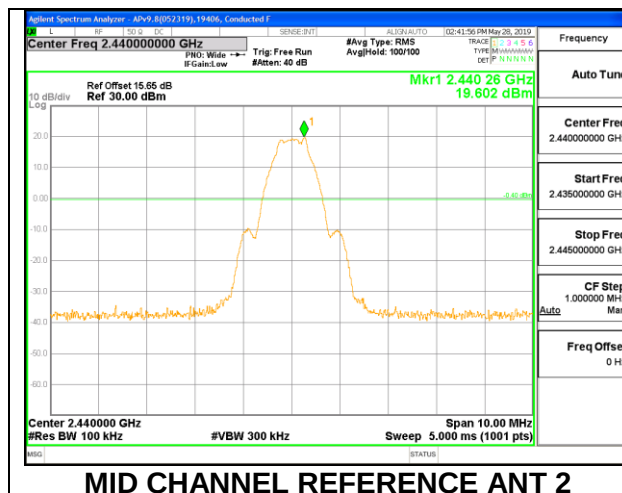
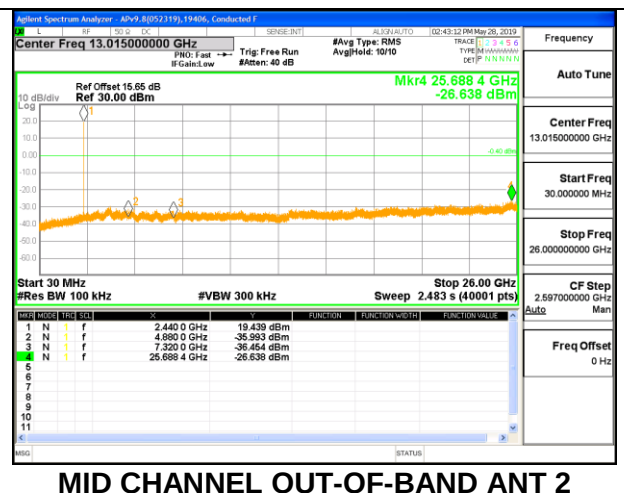
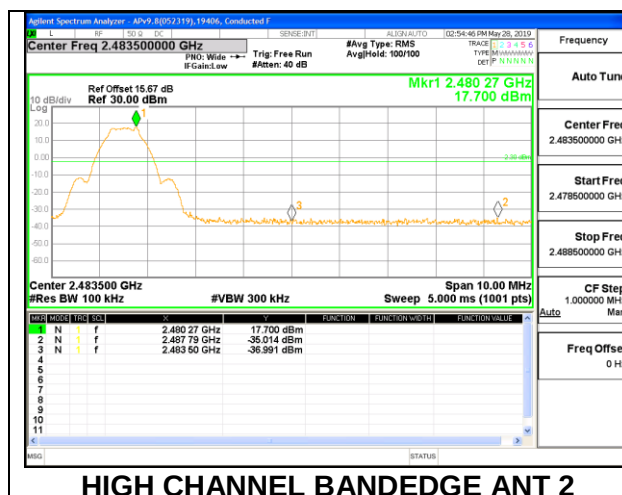
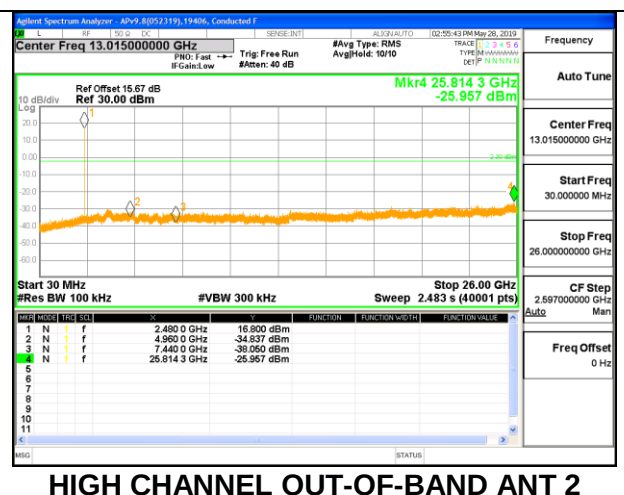
MID CHANNEL ANT 5

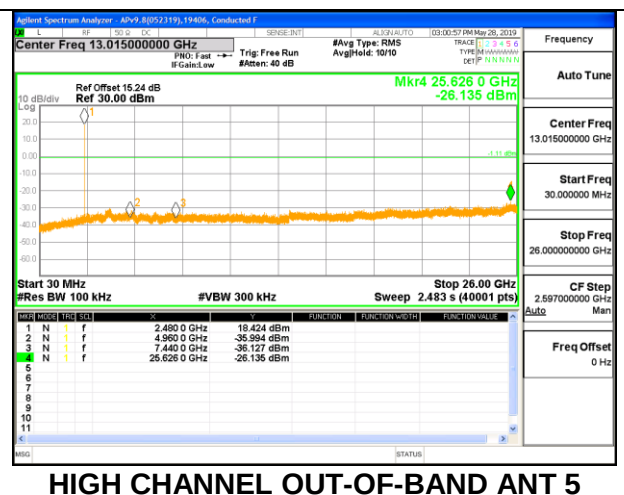
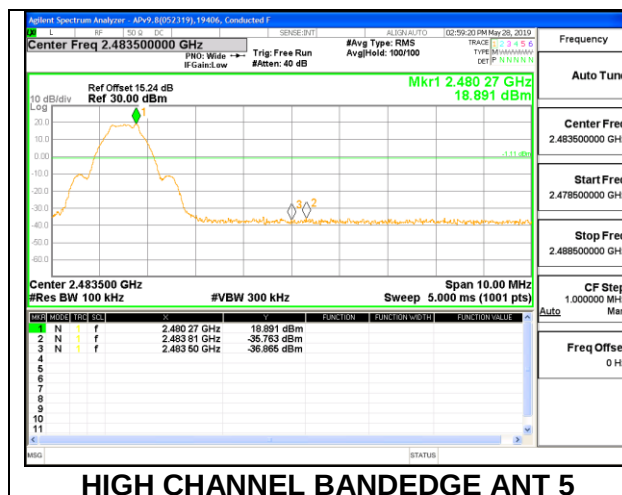
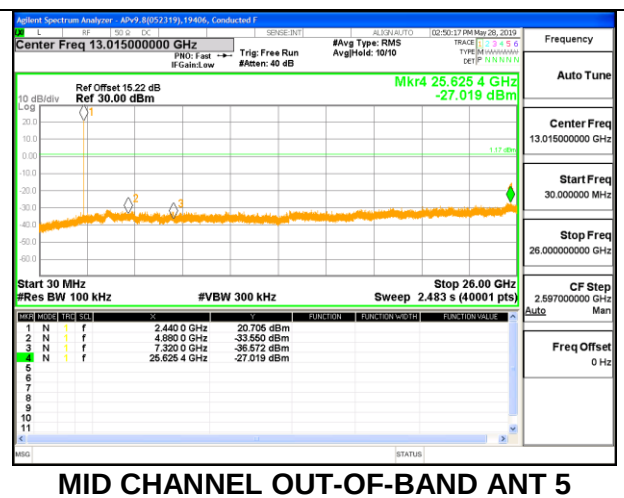
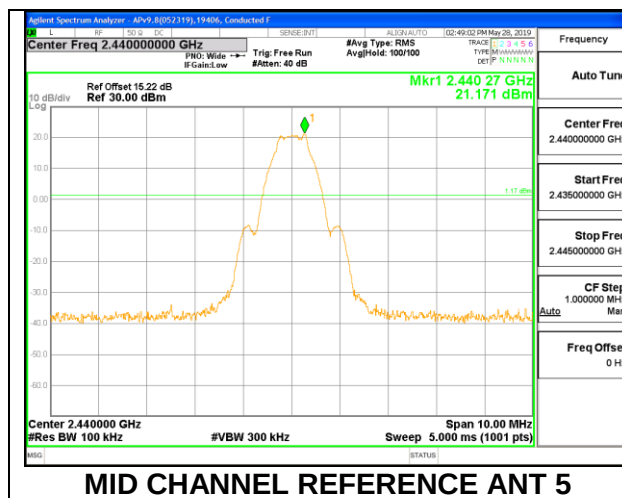
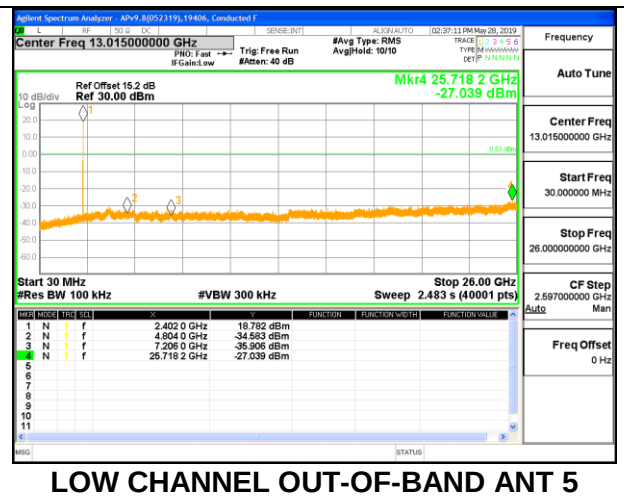
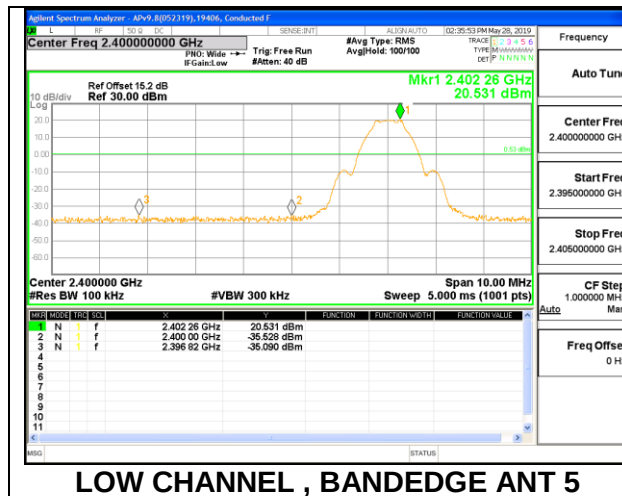


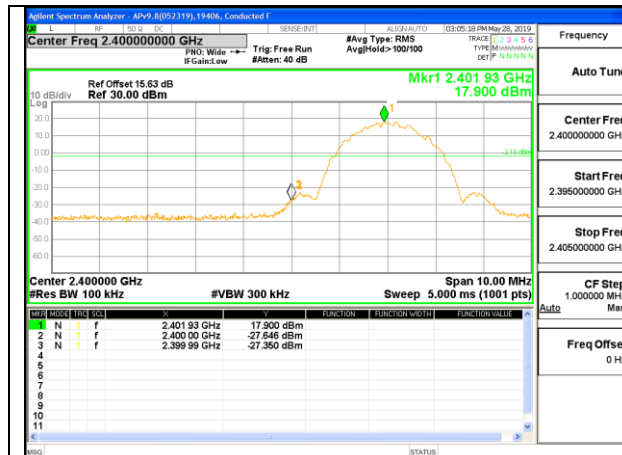
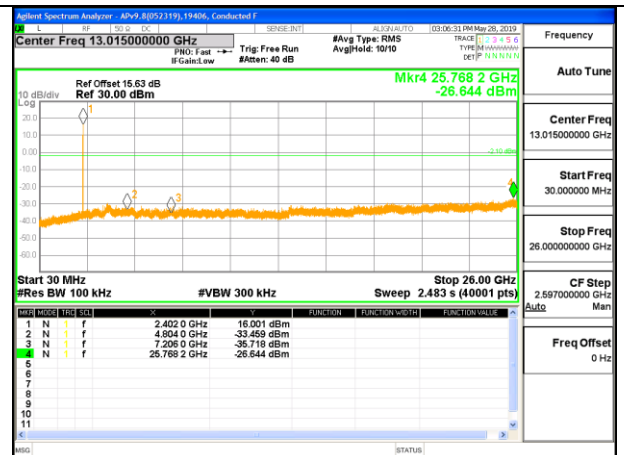
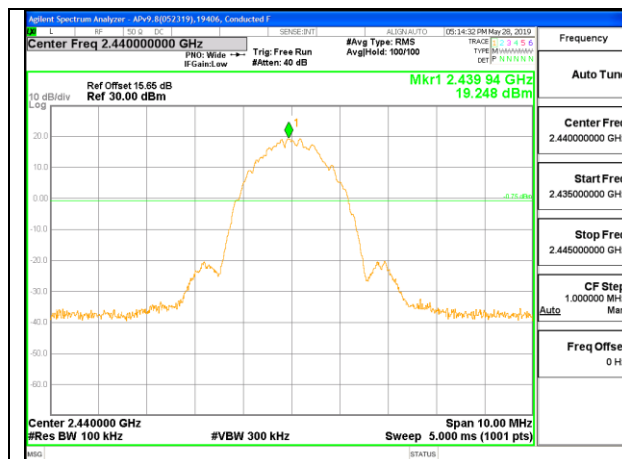
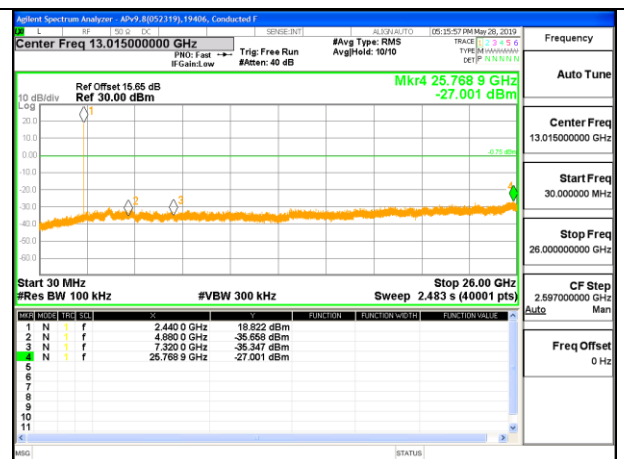
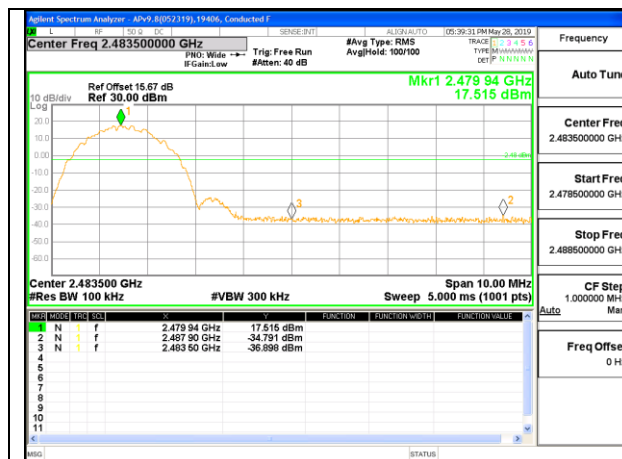
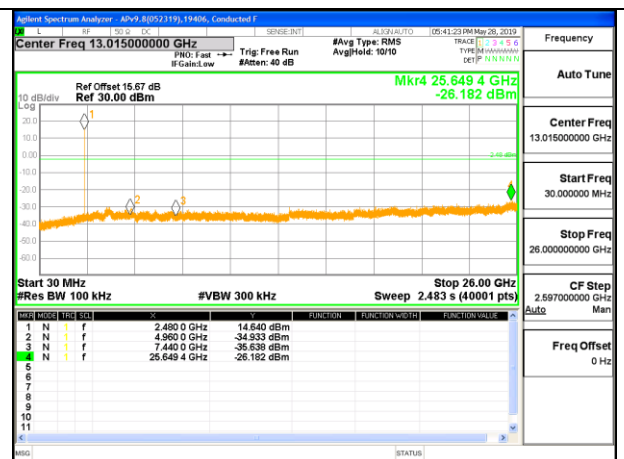
HIGH CHANNEL ANT 2

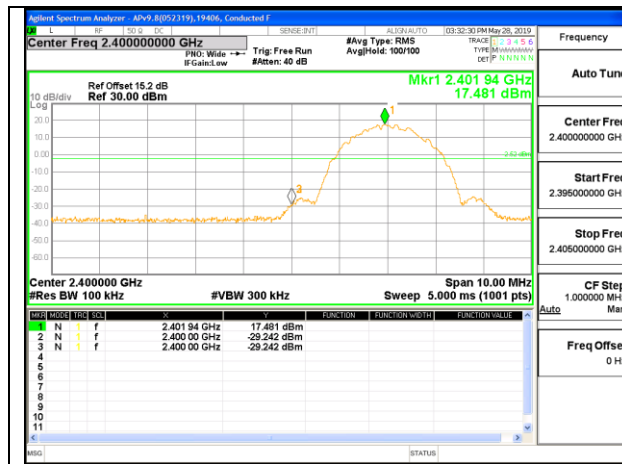
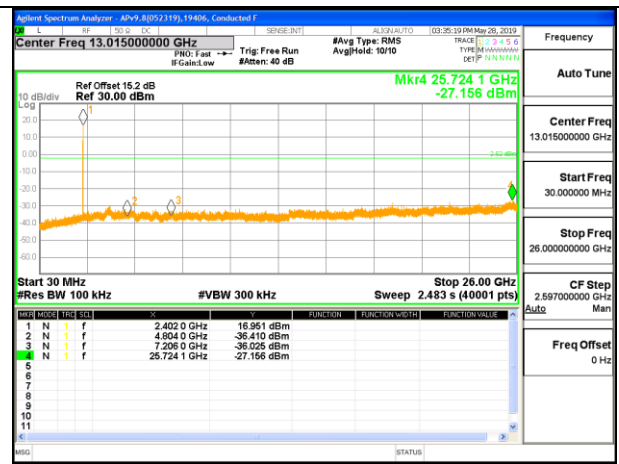
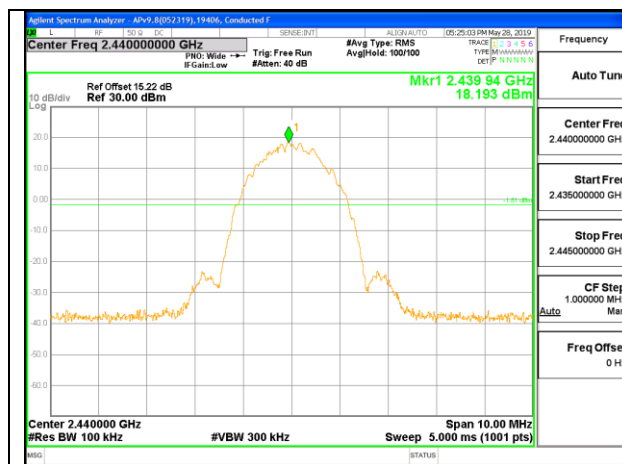
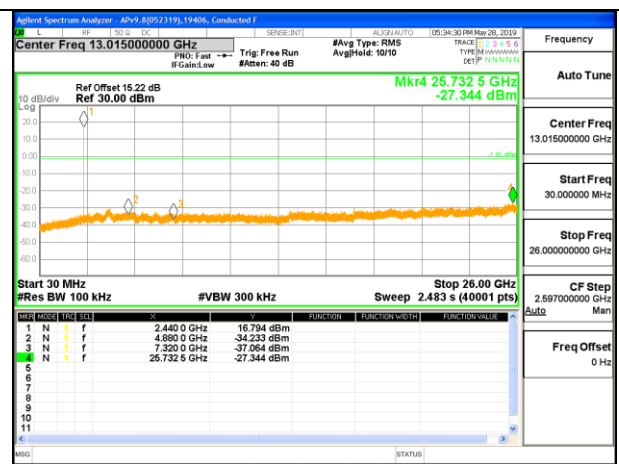
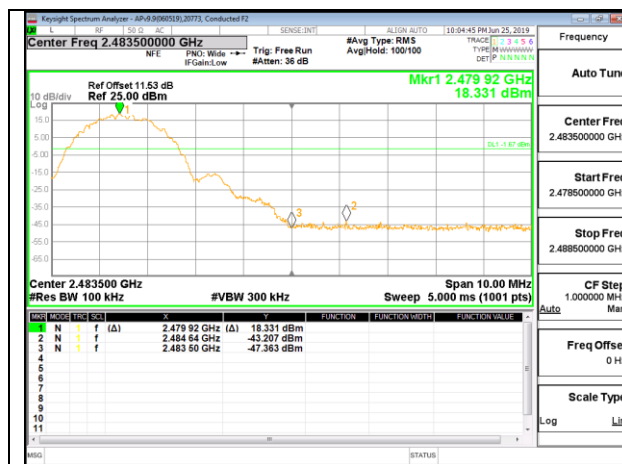
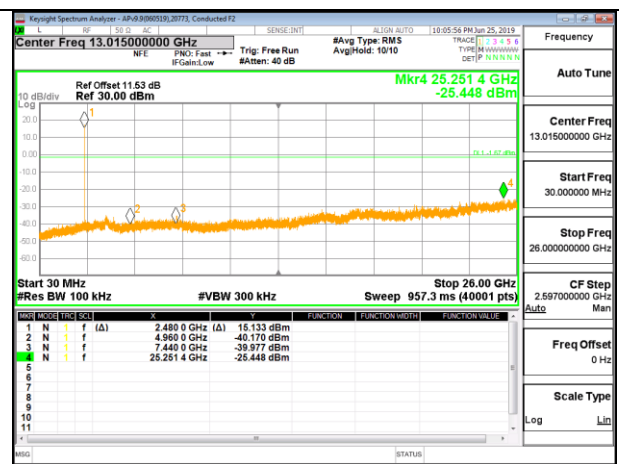


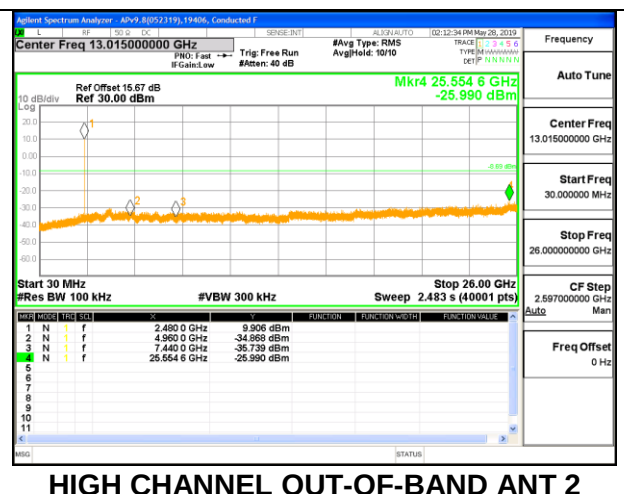
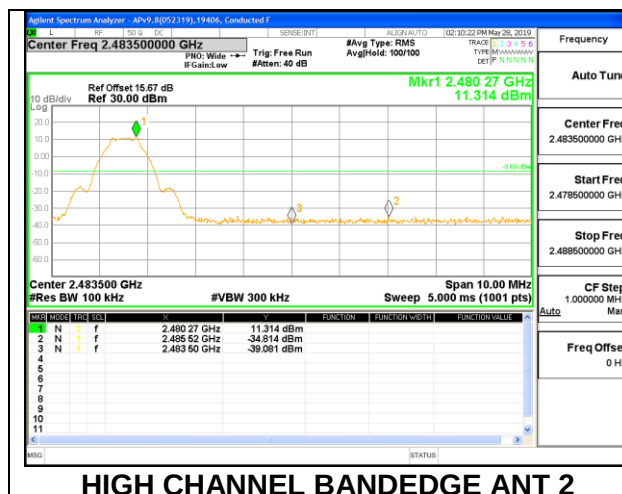
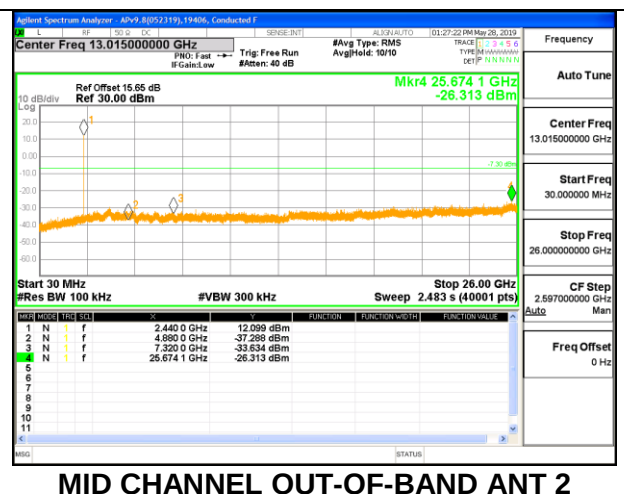
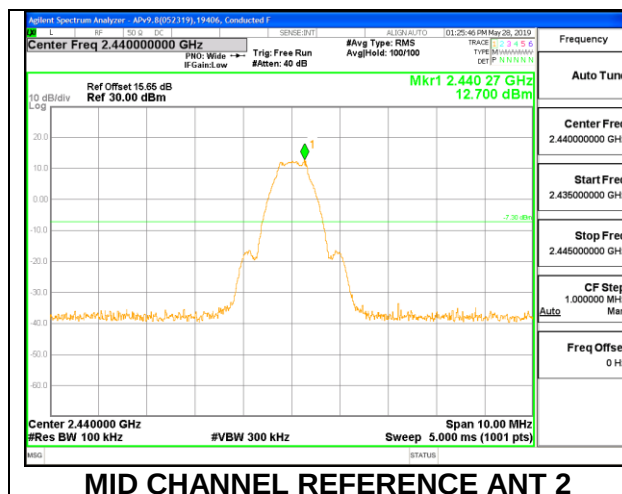
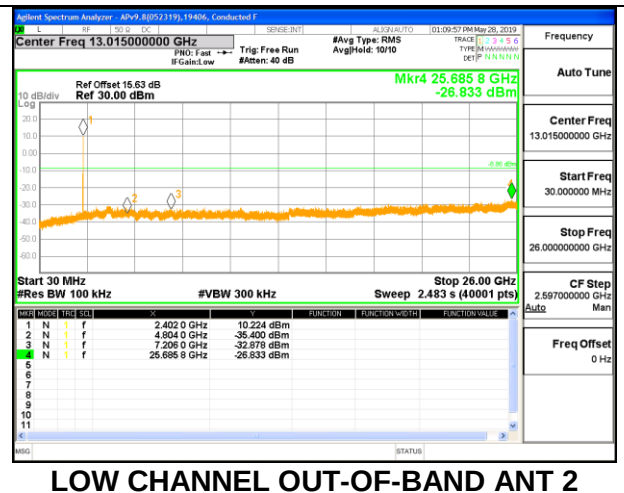
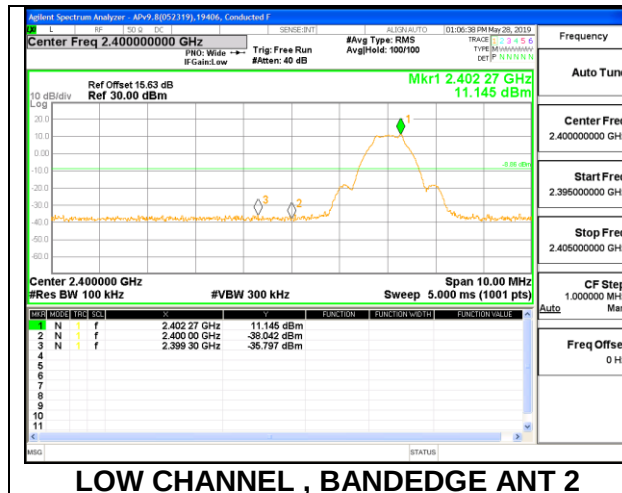
HIGH CHANNEL ANT 5

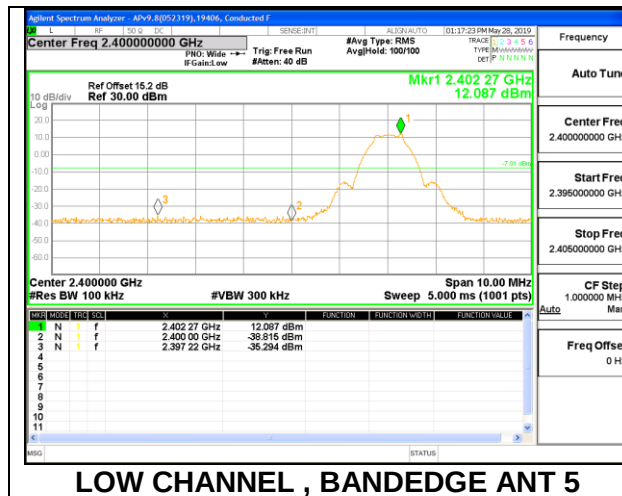
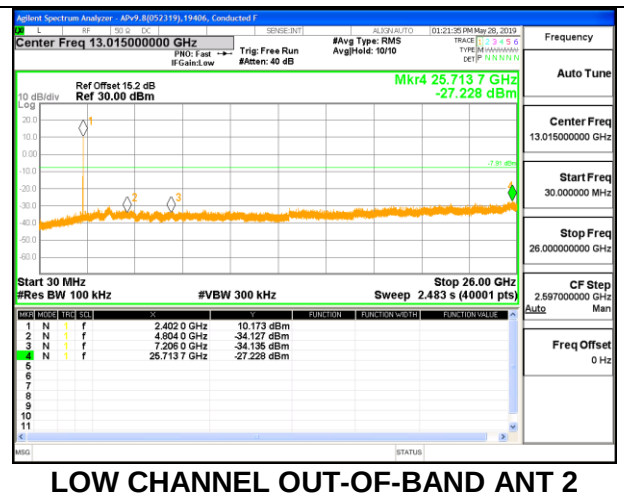
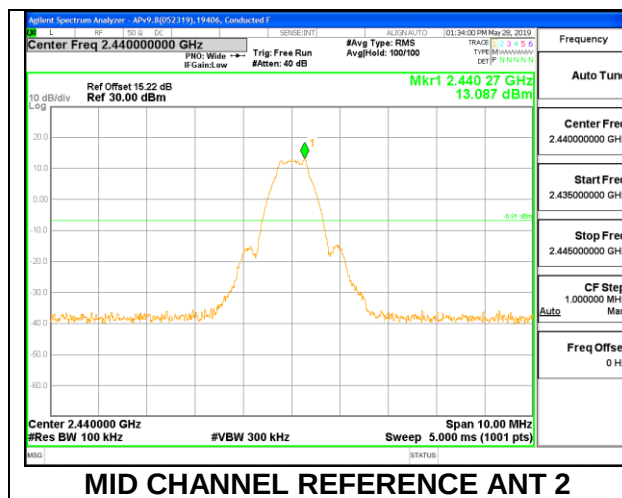
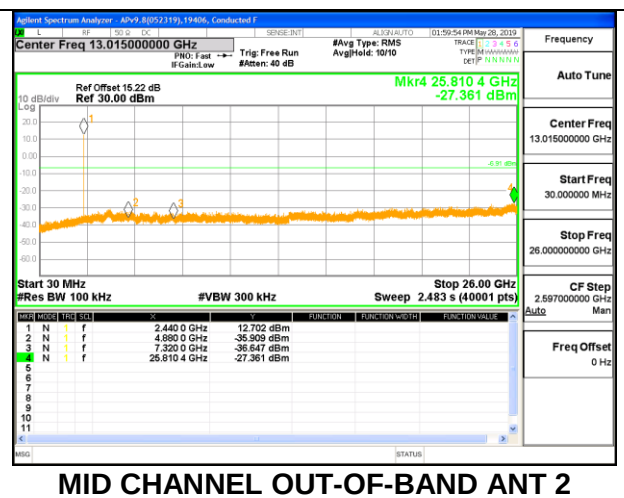
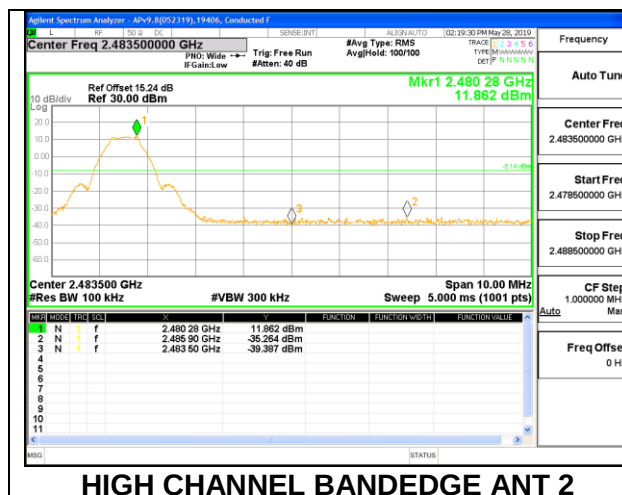
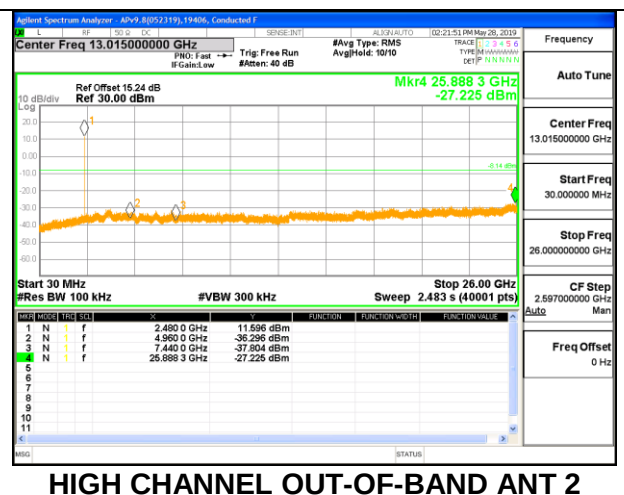
8.13. BEAMFORMING, CONDUCTED SPURIOUS**8.13.1. HIGH POWER BLE (1Mbps)****LOW CHANNEL , BANDEDGE ANT 2****LOW CHANNEL OUT-OF-BAND ANT 2****MID CHANNEL REFERENCE ANT 2****MID CHANNEL OUT-OF-BAND ANT 2****HIGH CHANNEL BANDEDGE ANT 2****HIGH CHANNEL OUT-OF-BAND ANT 2**

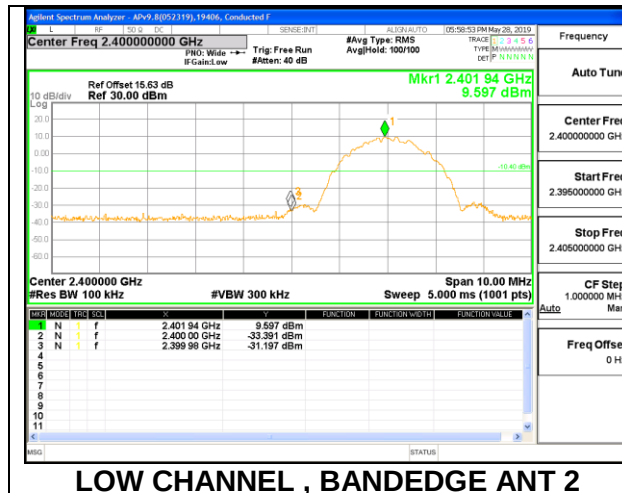
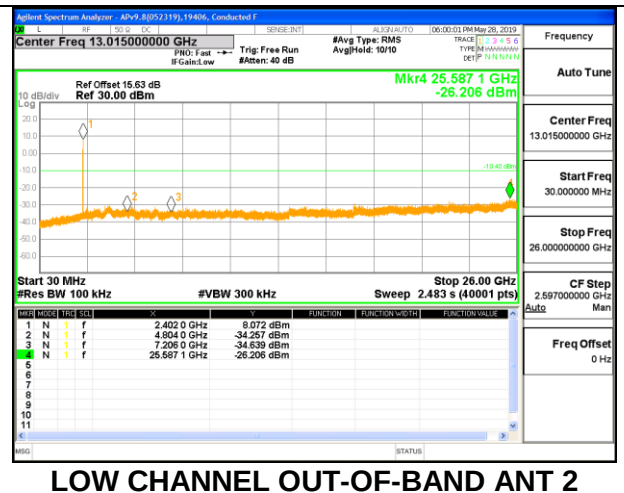
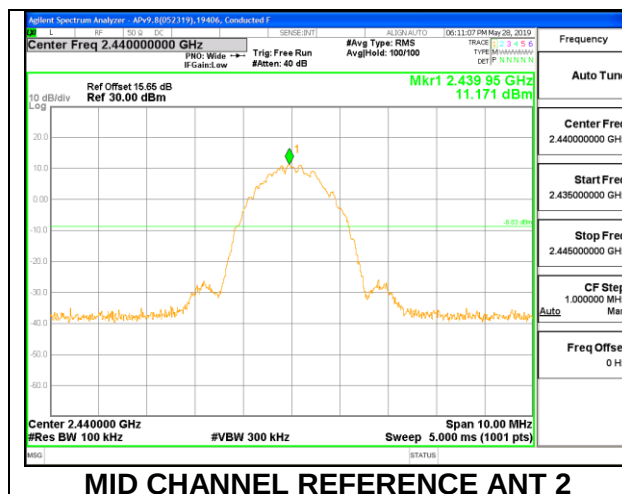
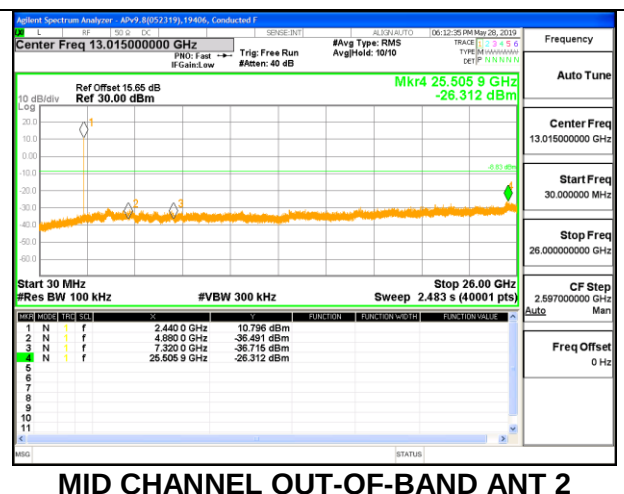
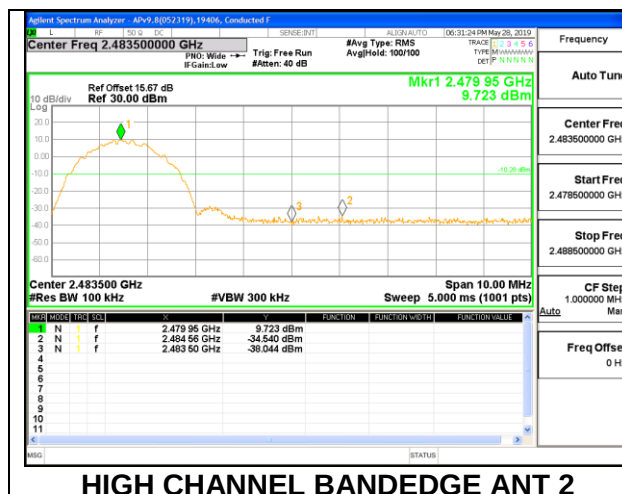
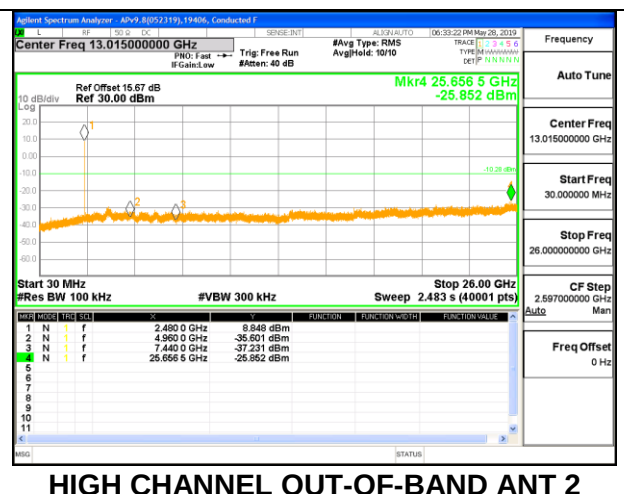
HIGH POWER, 1Mbps,

8.13.2. HIGH POWER BLE (2Mbps)**LOW CHANNEL , BANDEDGE ANT 2****LOW CHANNEL OUT-OF-BAND ANT 2****MID CHANNEL REFERENCE ANT 2****MID CHANNEL OUT-OF-BAND ANT 2****HIGH CHANNEL BANDEDGE ANT 2****HIGH CHANNEL OUT-OF-BAND ANT 2**

HIGH POWER, 2Mbps**LOW CHANNEL , BANDEDGE ANT 5****LOW CHANNEL OUT-OF-BAND ANT 5****MID CHANNEL REFERENCE ANT 5****MID CHANNEL OUT-OF-BAND ANT 5****HIGH CHANNEL BANDEDGE ANT 5****HIGH CHANNEL OUT-OF-BAND ANT 5**

8.13.3. LOW POWER BLE (1Mbps)

LOW POWER, 1Mbps,**LOW CHANNEL , BANDEDGE ANT 5****LOW CHANNEL OUT-OF-BAND ANT 2****MID CHANNEL REFERENCE ANT 2****MID CHANNEL OUT-OF-BAND ANT 2****HIGH CHANNEL BANDEDGE ANT 2****HIGH CHANNEL OUT-OF-BAND ANT 2**

8.13.4. LOW POWER BLE (2Mbps)**LOW CHANNEL , BANDEDGE ANT 2****LOW CHANNEL OUT-OF-BAND ANT 2****MID CHANNEL REFERENCE ANT 2****MID CHANNEL OUT-OF-BAND ANT 2****HIGH CHANNEL BANDEDGE ANT 2****HIGH CHANNEL OUT-OF-BAND ANT 2**