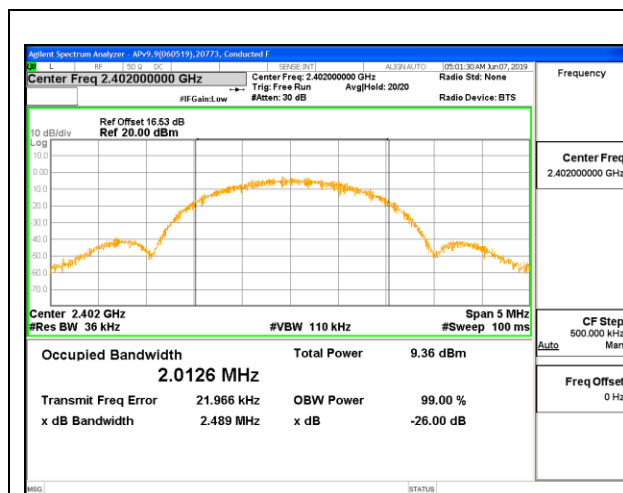
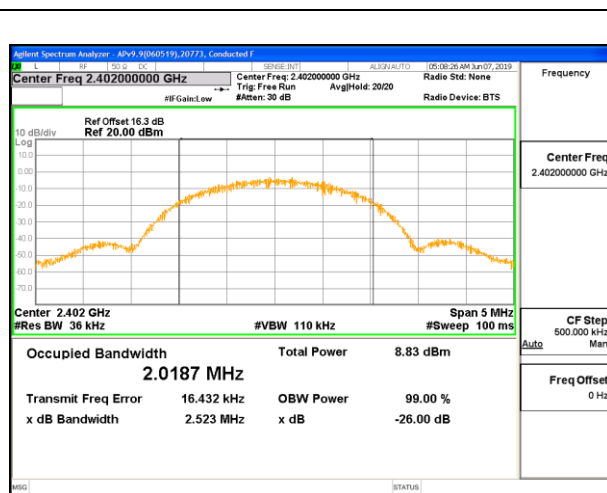
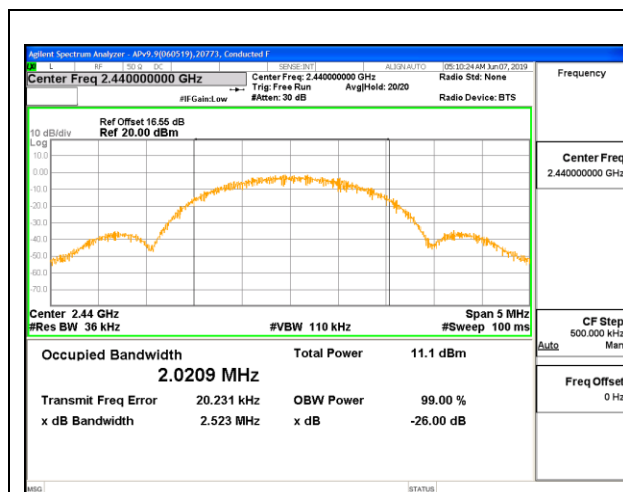




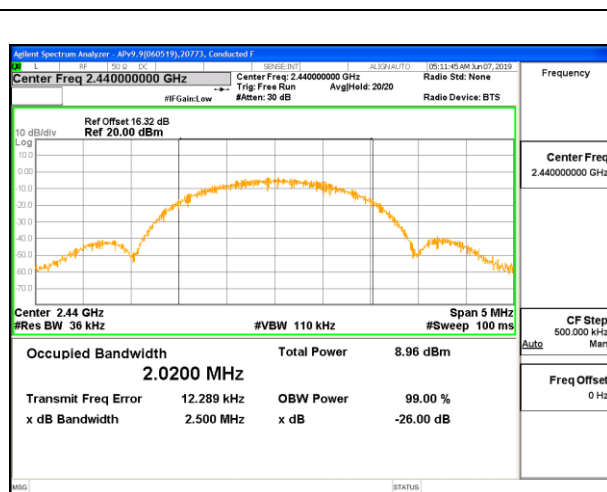
LOW CHANNEL ANT 4



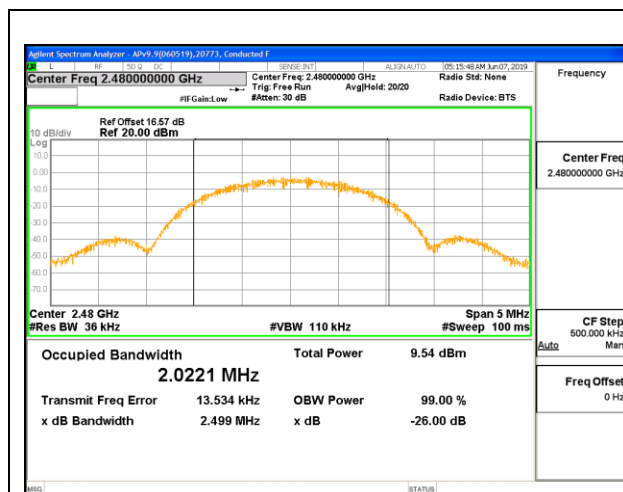
LOW CHANNEL ANT 3



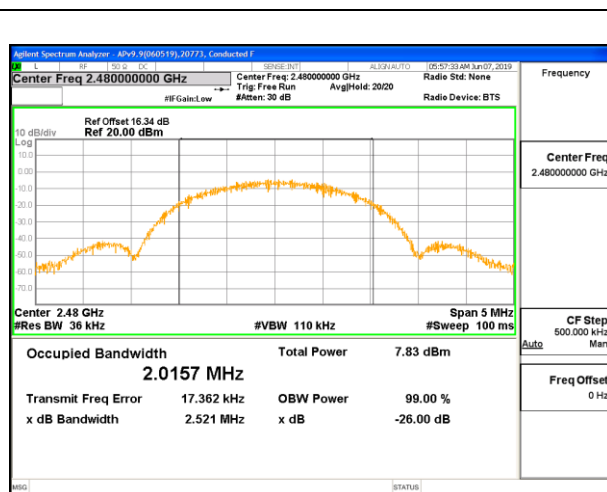
MID CHANNEL ANT 4



MID CHANNEL ANT 3



HIGH CHANNEL ANT 4



HIGH CHANNEL ANT 3

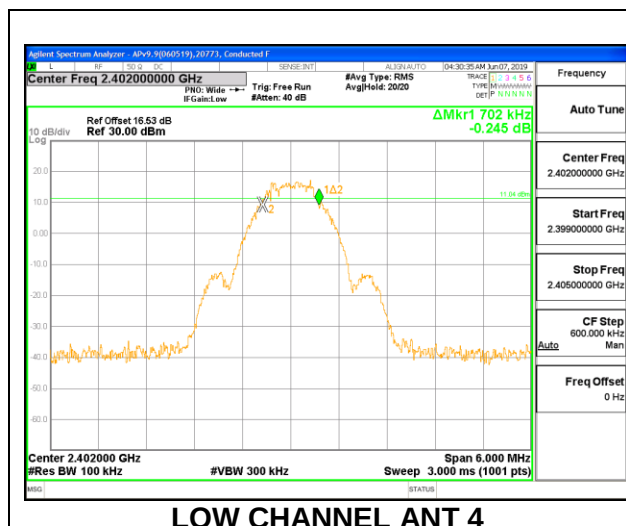
8.8 BEAMFORMING, 6dB BANDWIDTH

8.8.1 HIGH POWER BLE (1Mbps)

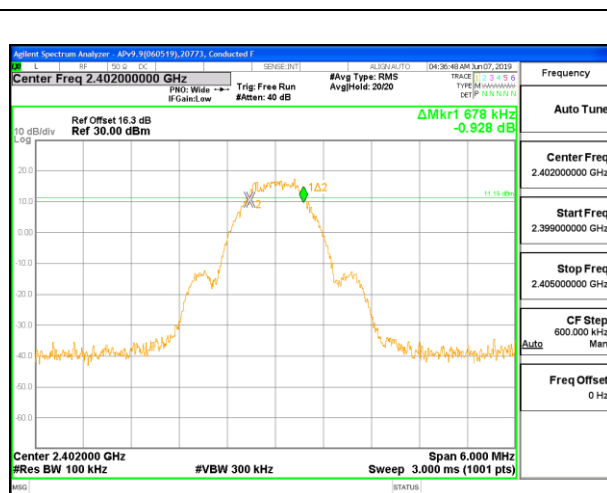
Note: Test procedures and setting are same as BLE normal mode.

2TX Antenna 4 + Antenna 3 TxBF MODE

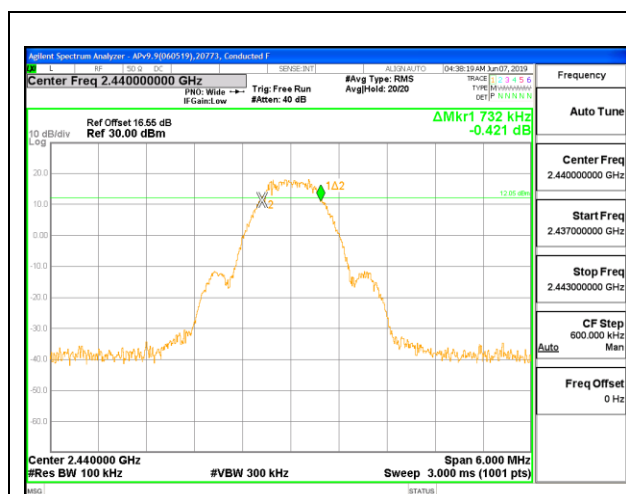
Channel	Frequency (MHz)	6dB Bandwidth ANT 4 (MHz)	6dB Bandwidth ANT 3 (MHz)	Minimum Limit (MHz)
Low	2402	0.702	0.678	0.500
Mid	2440	0.732	0.756	0.500
High	2480	0.660	0.756	0.500



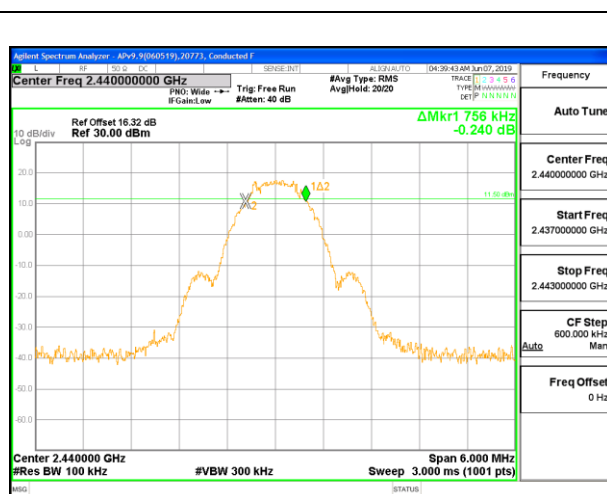
LOW CHANNEL ANT 4



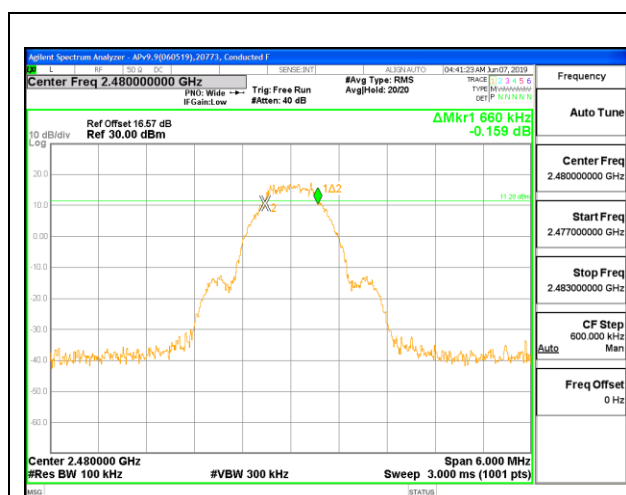
LOW CHANNEL ANT 3



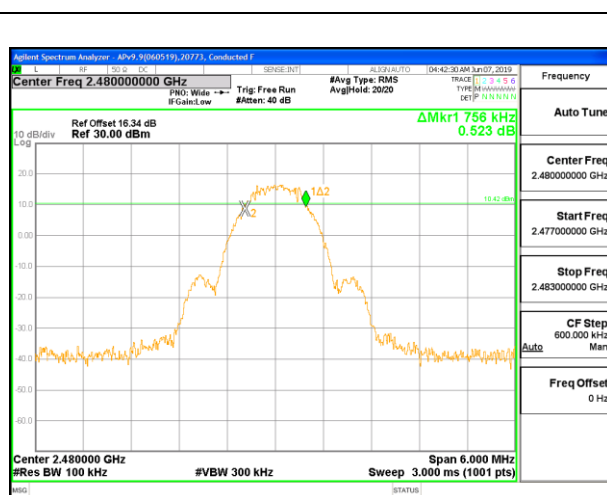
MID CHANNEL ANT 4



MID CHANNEL ANT 3



HIGH CHANNEL ANT 4

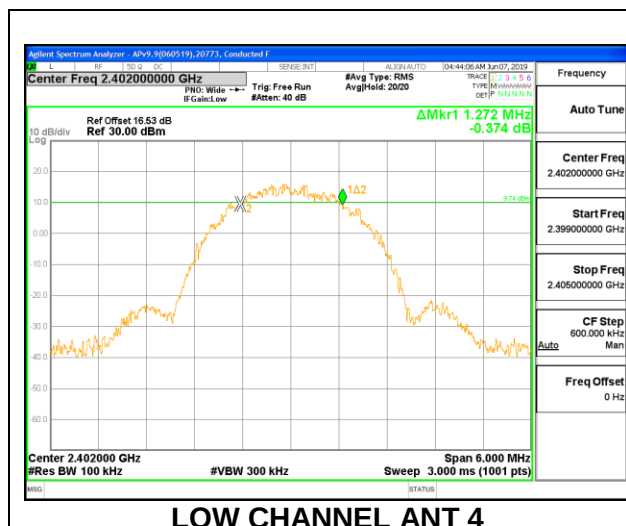


HIGH CHANNEL ANT 3

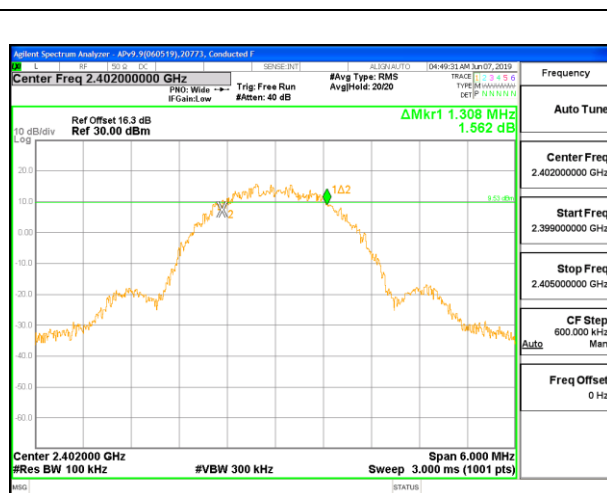
8.8.2 HIGH POWER BLE (2Mbps)

2TX Antenna 4 + Antenna 3 TxBF MODE

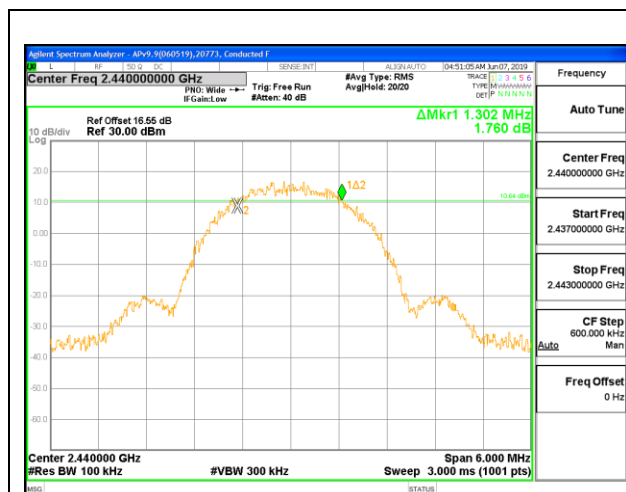
Channel	Frequency (MHz)	6dB Bandwidth ANT 4 (MHz)	6dB Bandwidth ANT 3 (MHz)	Minimum Limit (MHz)
Low	2402	1.272	1.308	0.500
Mid	2440	1.302	1.302	0.500
High	2480	1.398	1.338	0.500



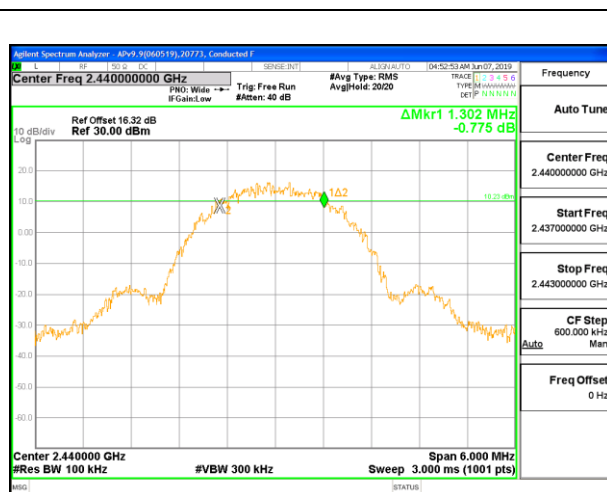
LOW CHANNEL ANT 4



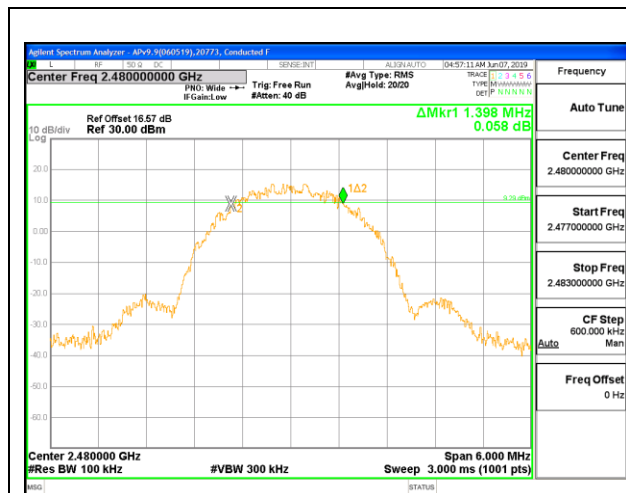
LOW CHANNEL ANT 3



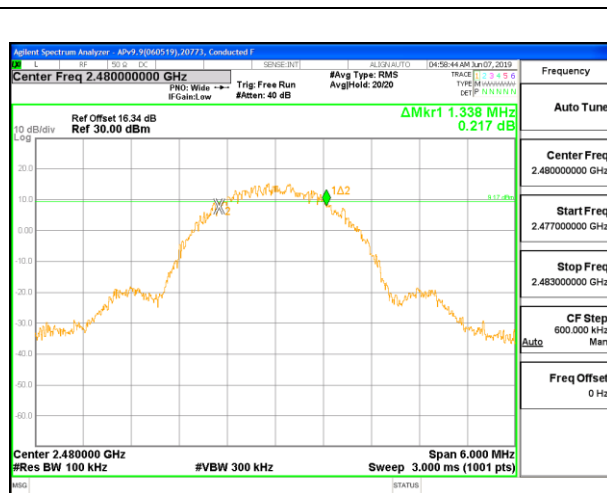
MID CHANNEL ANT 4



MID CHANNEL ANT 3



HIGH CHANNEL ANT 4

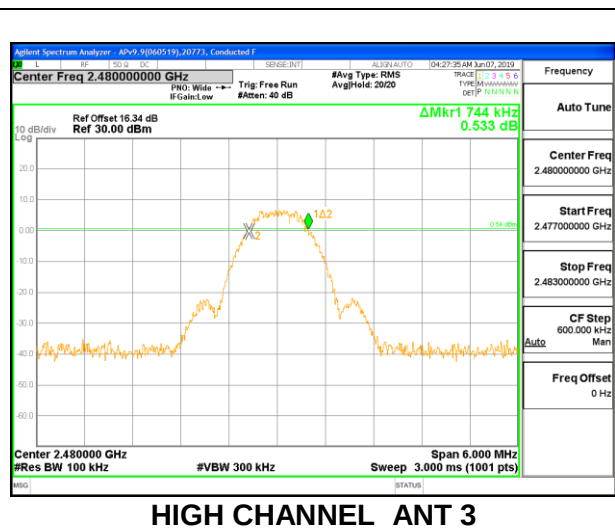
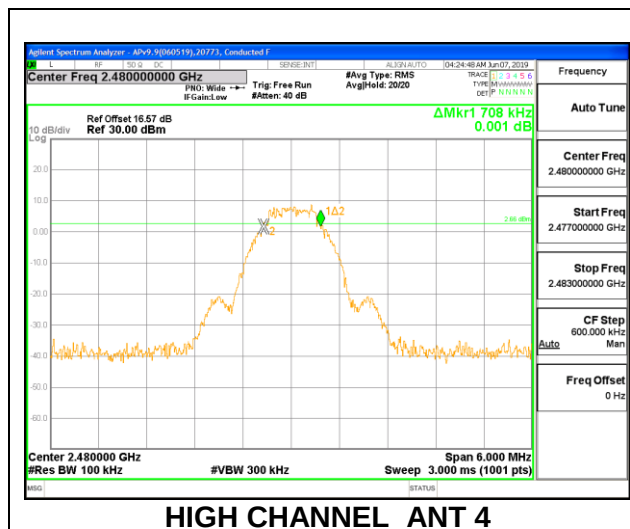
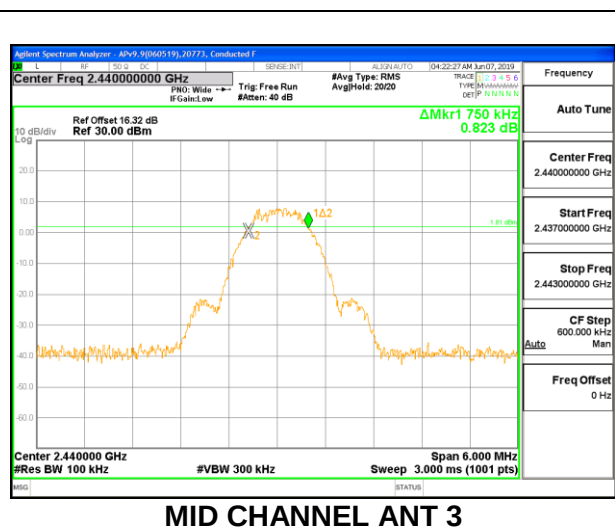
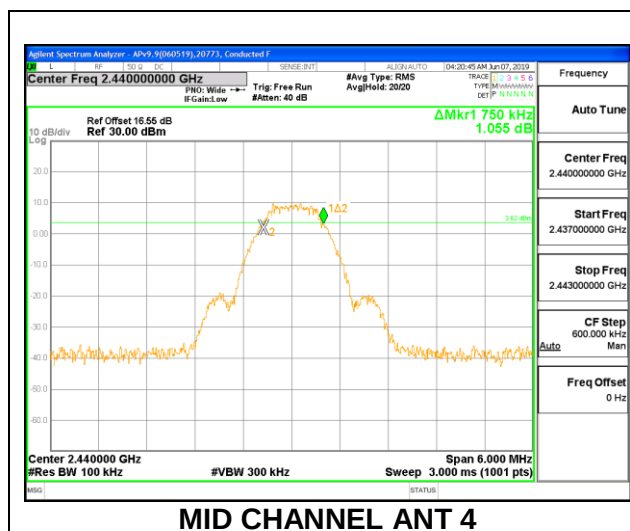
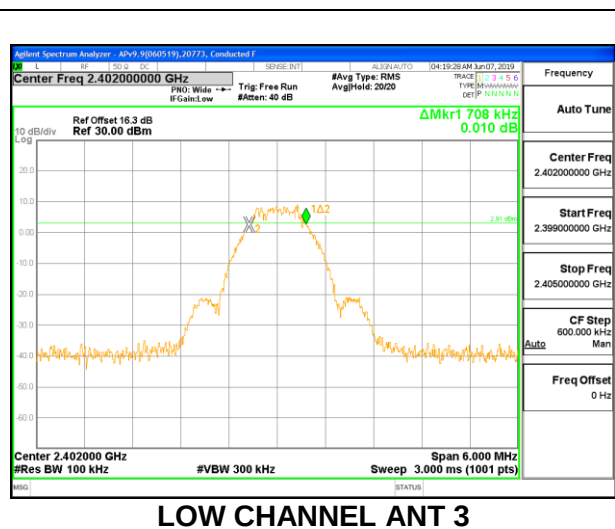
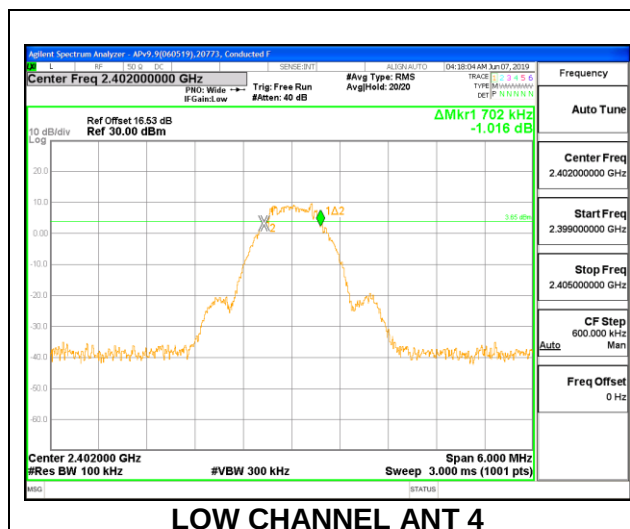


HIGH CHANNEL ANT 3

8.8.3 LOW POWER BLE (1Mbps)

2TX Antenna 4 + Antenna 3 TxBF MODE

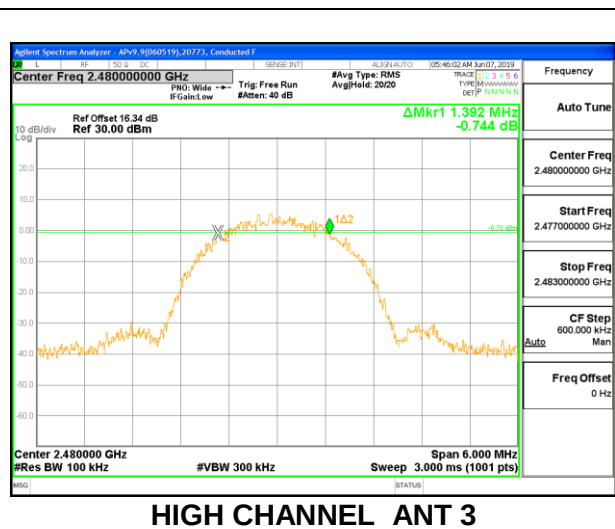
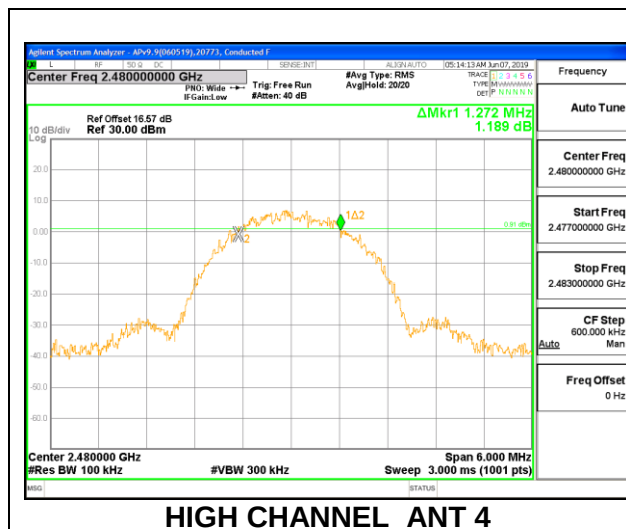
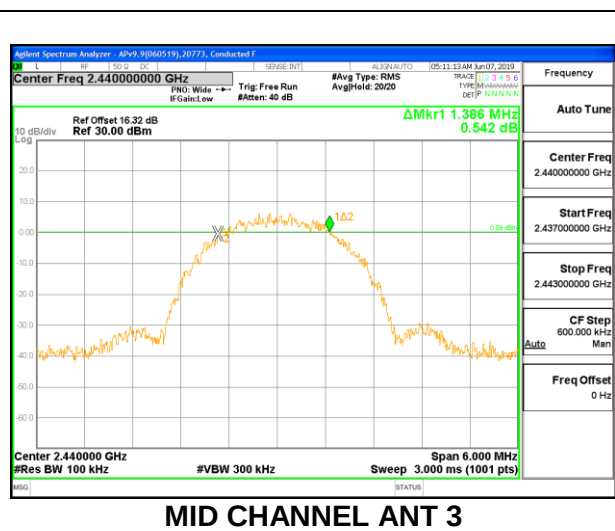
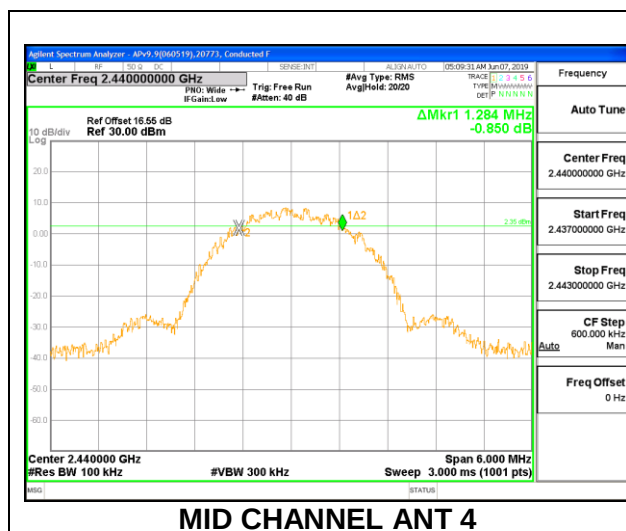
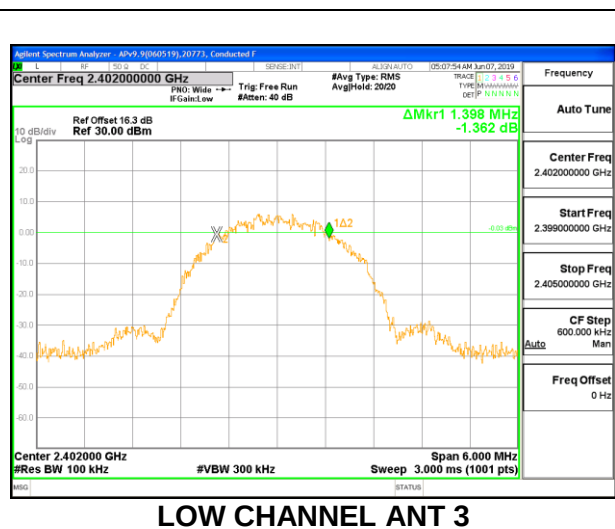
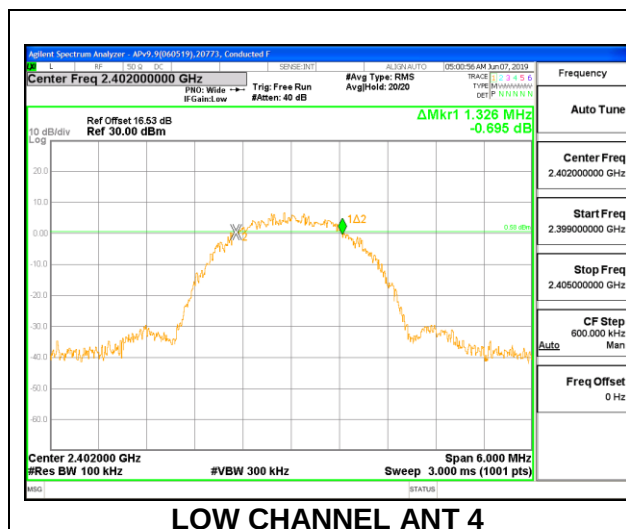
Channel	Frequency (MHz)	6dB Bandwidth ANT 4 (MHz)	6dB Bandwidth ANT 3 (MHz)	Minimum Limit (MHz)
Low	2402	0.702	0.708	0.500
Mid	2440	0.750	0.750	0.500
High	2480	0.708	0.744	0.500



8.8.4 LOW POWER BLE (2Mbps)

2TX Antenna 4 + Antenna 3 TxBF MODE

Channel	Frequency (MHz)	6dB Bandwidth ANT 4 (MHz)	6dB Bandwidth ANT 3 (MHz)	Minimum Limit (MHz)
Low	2402	1.326	1.398	0.500
Mid	2440	1.284	1.386	0.500
High	2480	1.272	1.392	0.500



8.9 BEAMFORMING OUTPUT POWER

8.9.1 HIGH POWER BLE (1Mbps)

2TX Antenna 4 + Antenna 3, TxBF Mode

Tested By:	12492
Date:	7/24/2019

Channel	Frequency (MHz)	Output Power Antenna 4 (dBm)	Output Power Antenna 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	17.19	17.18	20.20	30	-9.80
Middle	2440	17.23	17.29	20.27	30	-9.73
High	2480	17.15	17.23	20.20	30	-9.80

8.9.2 HIGH POWER BLE (2Mbps)

2TX Antenna 4 + Antenna 3, TxBF Mode

Tested By:	12492
Date:	7/24/2019

Channel	Frequency (MHz)	Output Power Antenna 4 (dBm)	Output Power Antenna 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	17.24	17.21	20.24	30	-9.76
Middle	2440	17.21	17.24	20.24	30	-9.76
High	2480	17.19	17.26	20.24	30	-9.76

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

8.9.3 LOW POWER BLE (1Mbps)

2TX Antenna 4 + Antenna 3, TxBF Mode

Tested By:	12492
Date:	7/24/2019

Channel	Frequency (MHz)	Output Power Antenna 4 (dBm)	Output Power Antenna 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	12.68	12.63	15.67	30	-14.33
Middle	2440	12.74	12.70	15.73	30	-14.27
High	2480	12.75	12.66	15.72	30	-14.28

8.9.4 LOW POWER BLE (2Mbps)

2TX Antenna 4 + Antenna 3, TxBF Mode

Tested By:	12492
Date:	7/24/2019

Channel	Frequency (MHz)	Output Power Antenna 4 (dBm)	Output Power Antenna 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	12.67	12.70	15.70	30	-14.30
Middle	2440	12.68	12.74	15.72	30	-14.28
High	2480	12.72	12.76	15.75	30	-14.25

8.10 BEAMFORMING AVERAGE POWER

8.10.1 HIGH POWER BLE (1Mbps)

2TX Antenna 4 + Antenna 3, TxBF Mode

Tested By:	12492
Date:	7/24/2019

Channel	Frequency (MHz)	Average Power Antenna 4 (dBm)	Average Power Antenna 3 (dBm)	Total Power (dBm)
Low	2402	16.93	16.90	19.93
Middle	2440	16.97	16.95	19.97
High	2480	16.89	16.92	19.92

8.10.2 HIGH POWER BLE (2Mbps)

2TX Antenna 4 + Antenna 3, TxBF Mode

Tested By:	12492
Date:	7/24/2019

Channel	Frequency (MHz)	Average Power Antenna 4 (dBm)	Average Power Antenna 3 (dBm)	Total Power (dBm)
Low	2402	16.95	16.89	19.93
Middle	2440	16.91	16.92	19.93
High	2480	16.88	16.94	19.92

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

8.10.3 LOW POWER BLE (1Mbps)

2TX Antenna 4 + Antenna 3, TxBF Mode

Tested By:	12492
Date:	7/24/2019

Channel	Frequency (MHz)	Average Power Antenna 4 (dBm)	Average Power Antenna 3 (dBm)	Total Power (dBm)
Low	2402	12.43	12.40	15.43
Middle	2440	12.44	12.48	15.47
High	2480	12.47	12.44	15.47

8.10.4 LOW POWER BLE (2Mbps)

2TX Antenna 4 + Antenna 3 TxBF Mode

Tested By:	12492
Date:	7/24/2019

Channel	Frequency (MHz)	Average Power Antenna 4 (dBm)	Average Power Antenna 3 (dBm)	Total Power (dBm)
Low	2402	12.40	12.39	15.41
Middle	2440	12.42	12.41	15.43
High	2480	12.47	12.46	15.48

8.11 BEAMFORMING, POWER SPECTRAL DENSITY

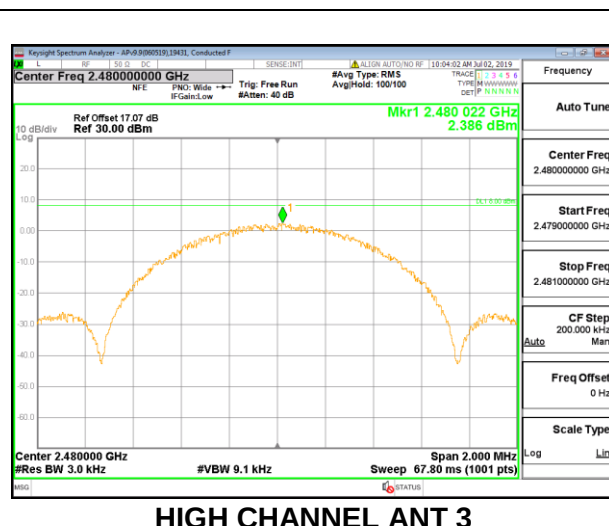
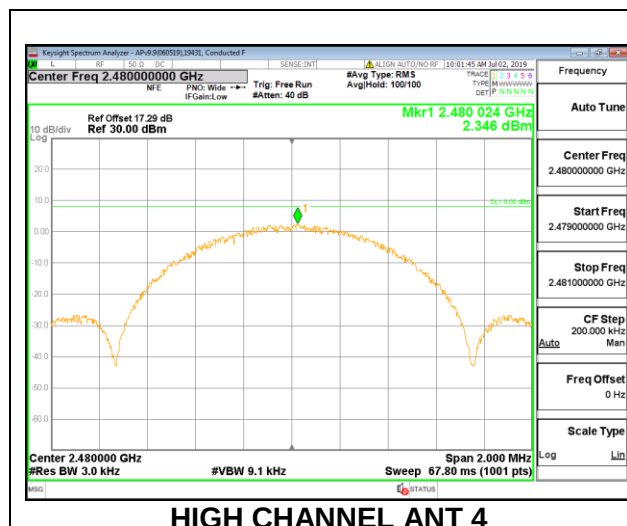
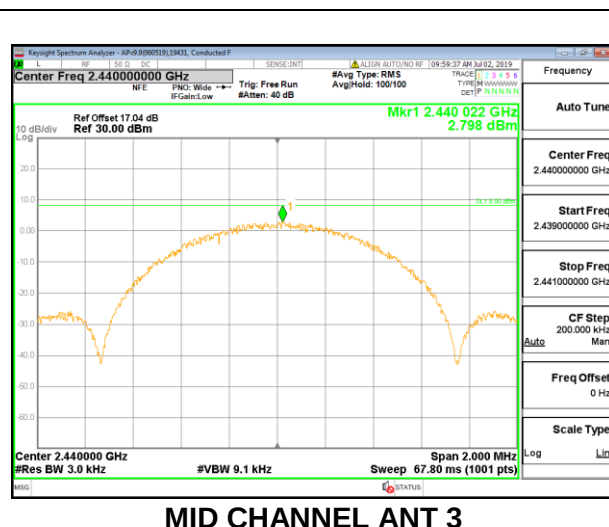
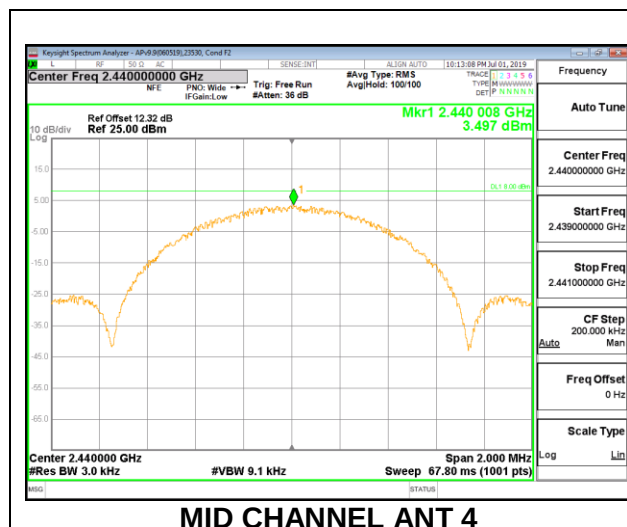
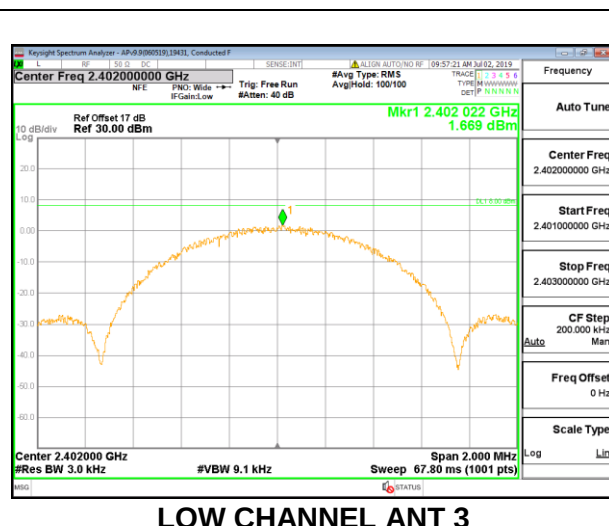
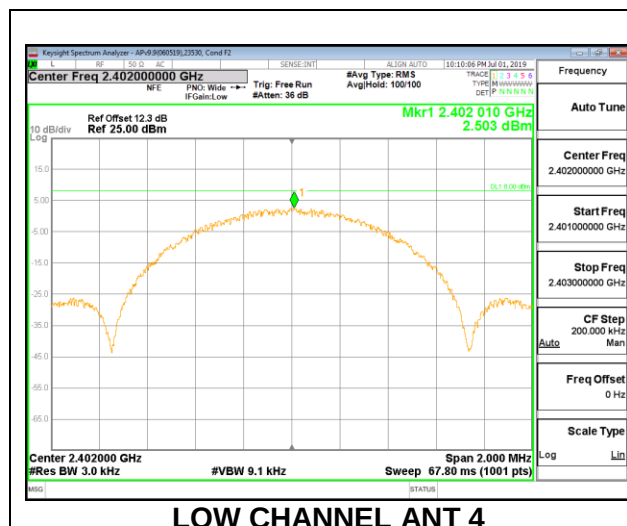
8.11.1 HIGH POWER BLE (1Mbps)

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
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PSD Results

Channel	Frequency (MHz)	ANT 4 Meas (dBm/ 3kHz)	ANT 3 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low	2402	2.503	1.669	5.116	8.0	-2.884
Mid	2440	3.497	2.798	6.172	8.0	-1.828
High	2480	2.346	2.386	5.376	8.0	-2.624

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

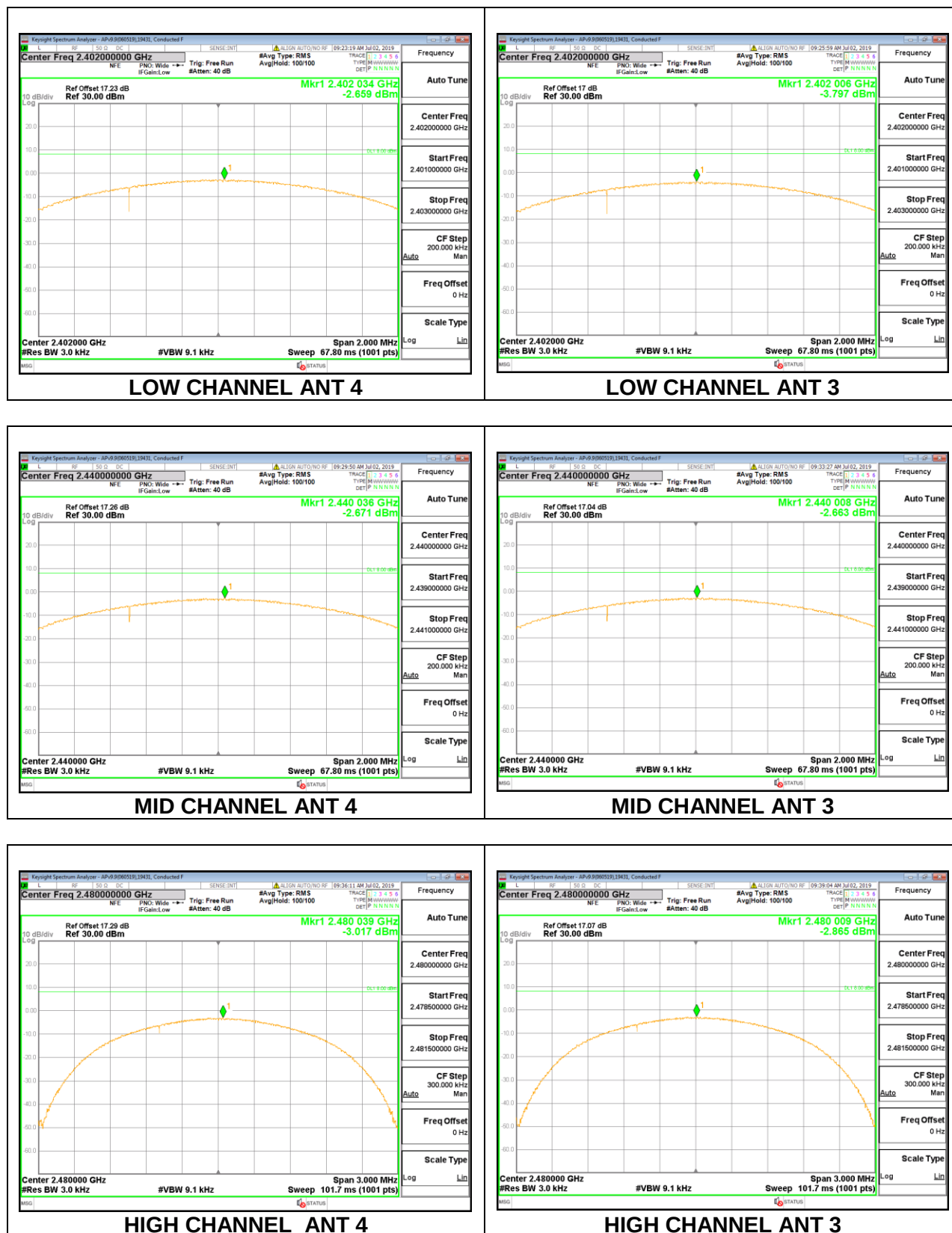


8.11.2 HIGH POWER BLE (2Mbps)

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
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PSD Results

Channel	Frequency (MHz)	ANT 4 Meas (dBm/ 3kHz)	ANT 3 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low	2402	-2.659	-3.797	-0.181	8.0	-8.181
Mid	2440	-2.671	-2.663	0.343	8.0	-7.657
High	2480	-3.017	-2.865	0.070	8.0	-7.930



8.11.3 LOW POWER BLE (1Mbps)

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
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PSD Results

Channel	Frequency (MHz)	ANT 4 Meas (dBm/ 3kHz)	ANT 3 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low	2402	-5.166	-4.858	-1.999	8.0	-9.999
Mid	2440	-5.140	-4.245	-1.659	8.0	-9.659
High	2480	-3.794	-4.809	-1.262	8.0	-9.262