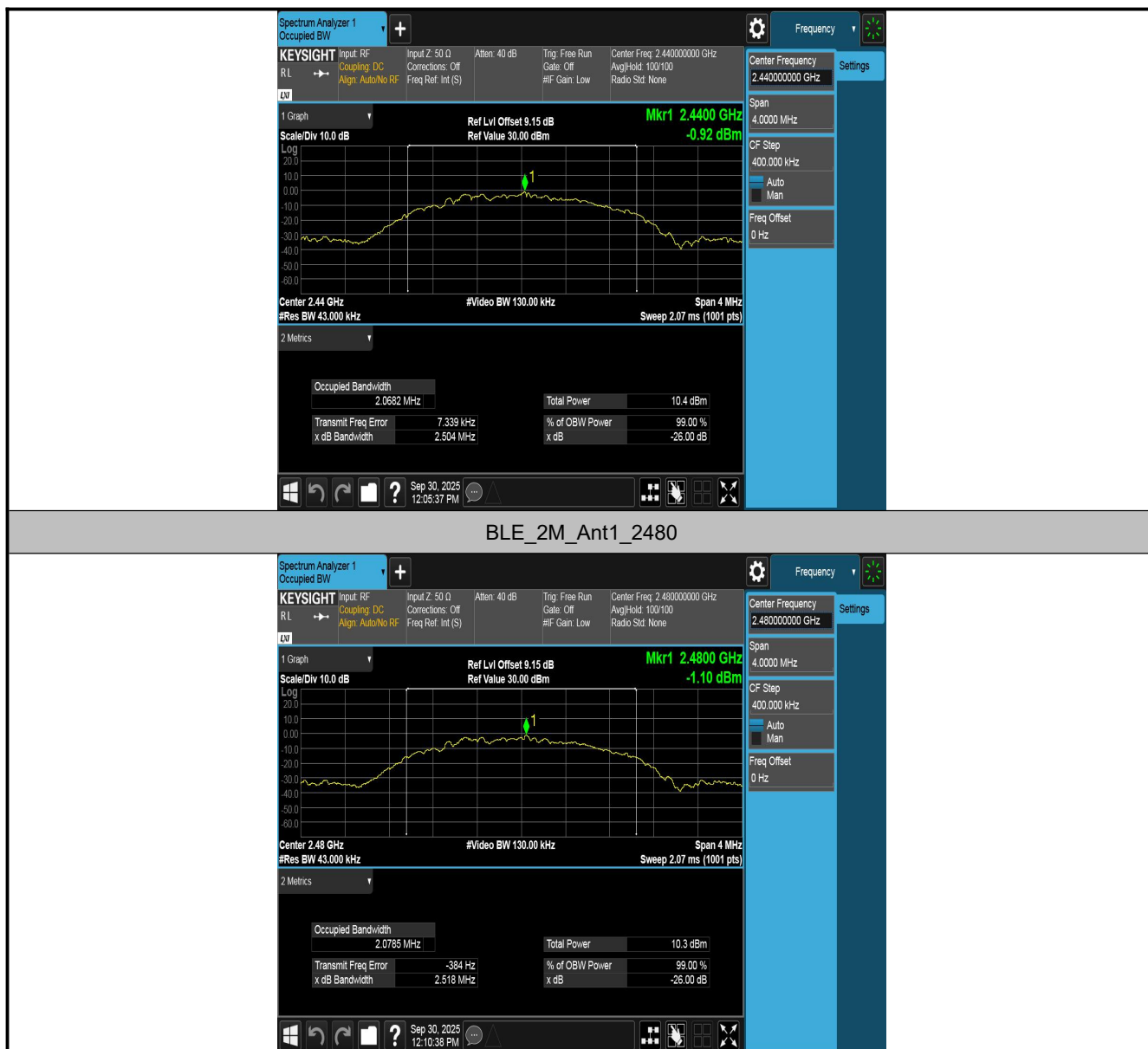




7.3. Output Power Measurement

7.3.1. Test Limit

The maximum permissible conducted output power is 1 Watt (30dBm).

The maximum permissible conducted EIRP is 4 Watt (36.02dBm).

And for antenna gain greater than 6dBi the limit shall reduce by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

7.3.2. Test Procedure Used

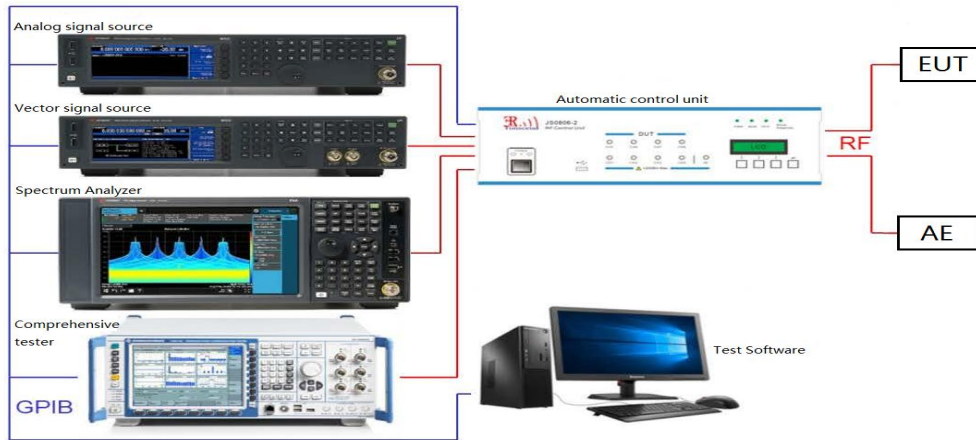
ANSI C63.10-2013 – Section 11.9.1.1

KDB 558074 D01 v05r02 – Section 8.3.1.2

7.3.3. Test Setting

- 1.Set the RBW $\geq$ DTS bandwidth.
- 2.Set the VBW $\geq$ $[3 \times \text{RBW}]$.
- 3.Set the span $\geq [3 \times \text{RBW}]$.
- 4.Detector = peak.
- 5.Sweep time = auto couple.
- 6.Trace mode = max hold.
- 7.Allow trace to fully stabilize.
8. Use peak marker function to determine the peak amplitude level.

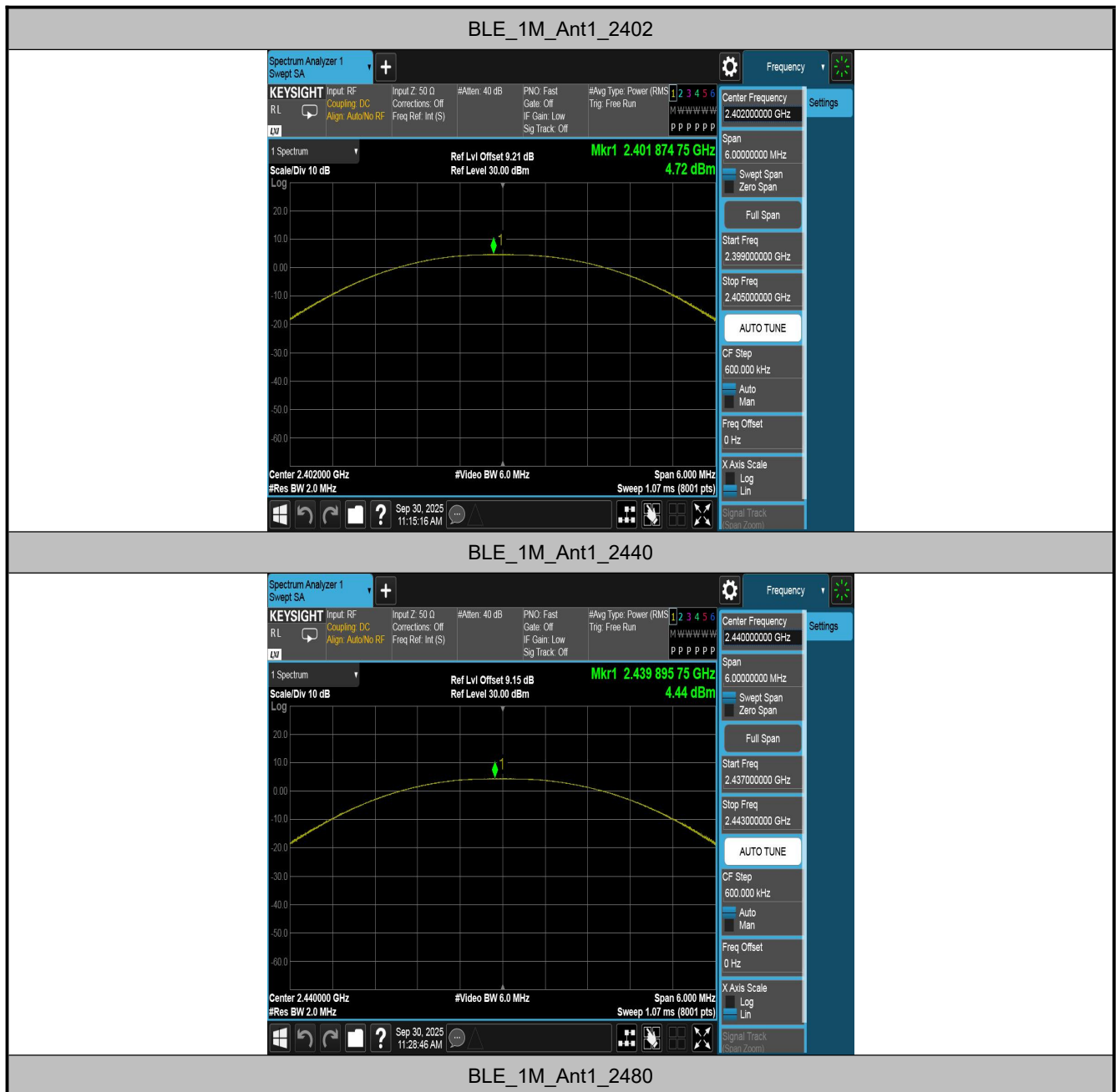
7.3.4. Test Setup



7.3.5. Test Result

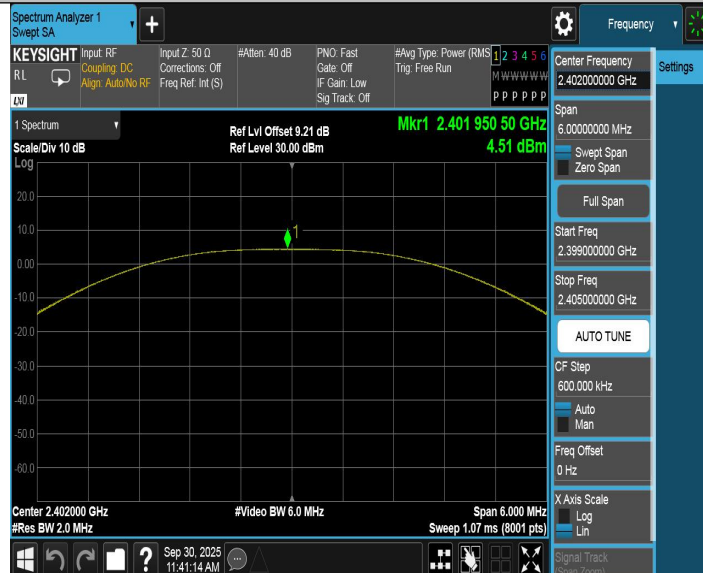
Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	EIRP[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	4.72	≤30	8.72	≤36.02	PASS
		2440	4.44	≤30	8.44	≤36.02	PASS
		2480	4.34	≤30	8.34	≤36.02	PASS
BLE_2M	Ant1	2402	4.51	≤30	8.51	≤36.02	PASS
		2440	4.19	≤30	8.19	≤36.02	PASS
		2480	4.14	≤30	8.14	≤36.02	PASS

Test Graphs

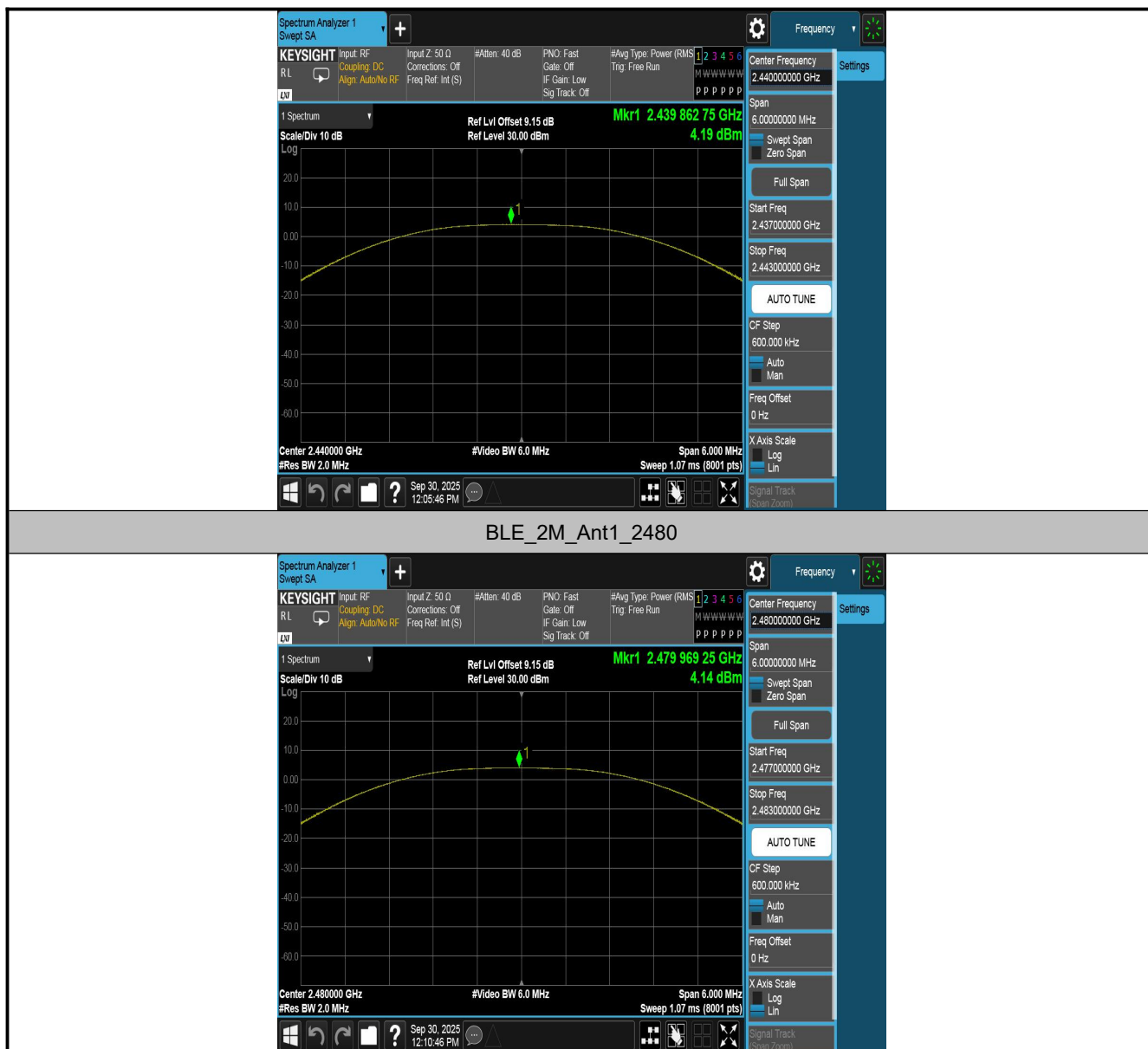




BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



7.4. Power Spectral Density Measurement

7.4.1. Test Limit

The maximum permissible power spectral density is 8dBm in any 3 kHz band. And for antenna gain greater than 6dBi the limit shall reduce by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

7.4.2. Test Procedure Used

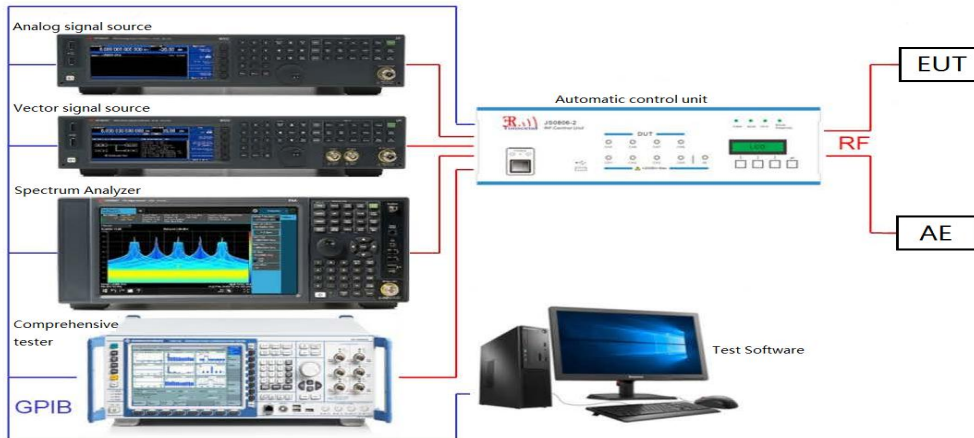
KDB 558074 D01 v05r02 - Section 8.4

ANSI C63.10 – Section 11.10.2

7.4.3. Test Setting

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq [3 \times \text{RBW}]$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.

7.4.4. Test Setup



7.4.5. Test Result

Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-11.32	≤8.00	PASS
		2440	-11.50	≤8.00	PASS
		2480	-11.71	≤8.00	PASS
BLE_2M	Ant1	2402	-15.03	≤8.00	PASS
		2440	-15.19	≤8.00	PASS
		2480	-15.42	≤8.00	PASS

Test Graphs





BLE_1M_Ant1_2480



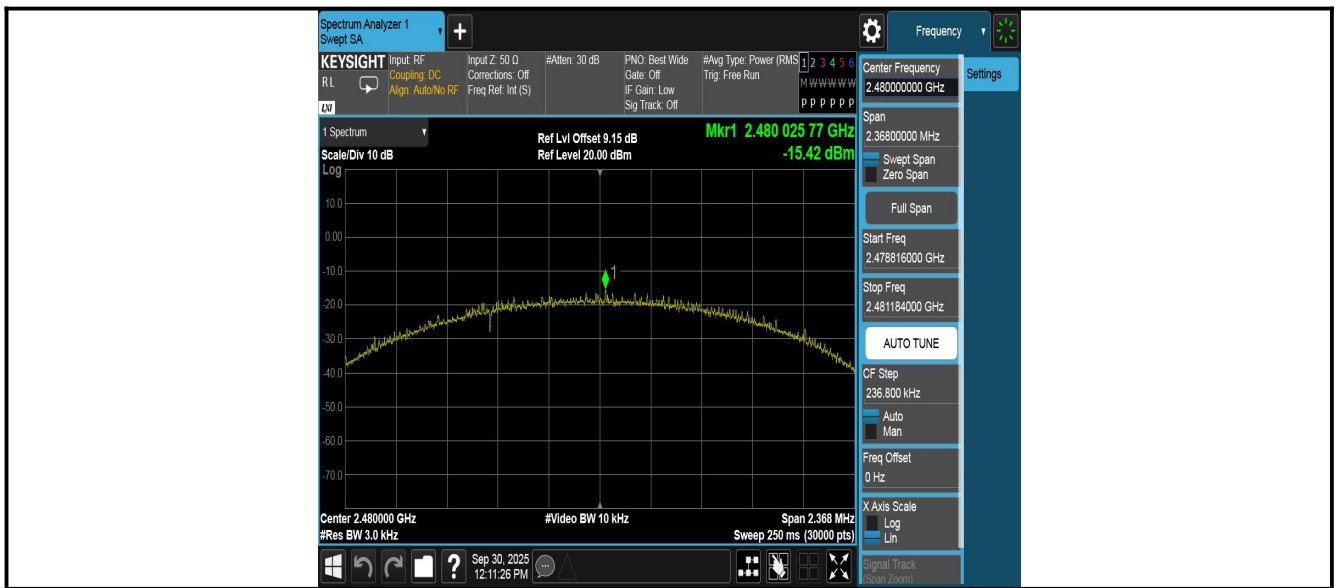
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



7.5. Conducted Band Edge and Out-of-Band Emissions

7.5.1. Test Limit

The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100 kHz bandwidth per the PSD procedure.

7.5.2. Test Procedure Used

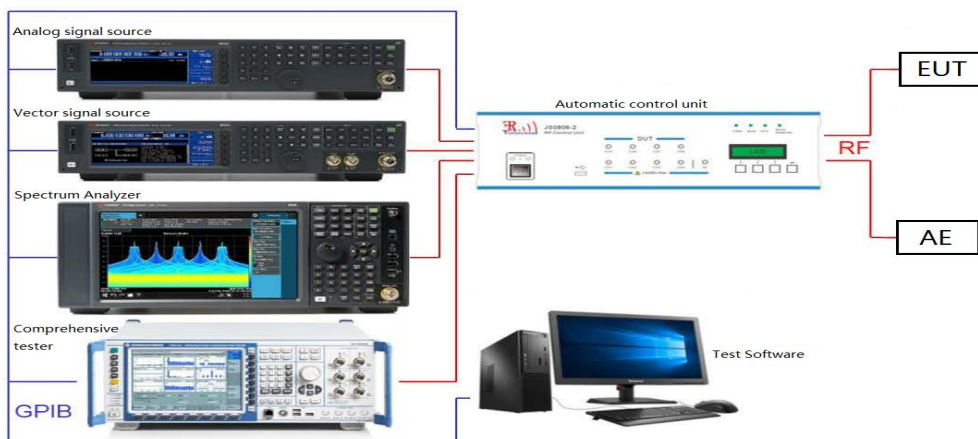
KDB 558074 D01 v05r02 - Section 8.5 & Section 8.6

ANSI C63.10 – Section 11.11&11.12

7.5.3. Test Setting

- (a) Set the center frequency and span to encompass frequency range to be measured
- (b) RBW = 100kHz
- (c) VBW = 300kHz
- (d) Detector = Peak
- (e) Trace mode = max hold
- (f) Sweep time = auto couple
- (g) The trace was allowed to stabilize

7.5.4. Test Setup



7.5.5. Test Result

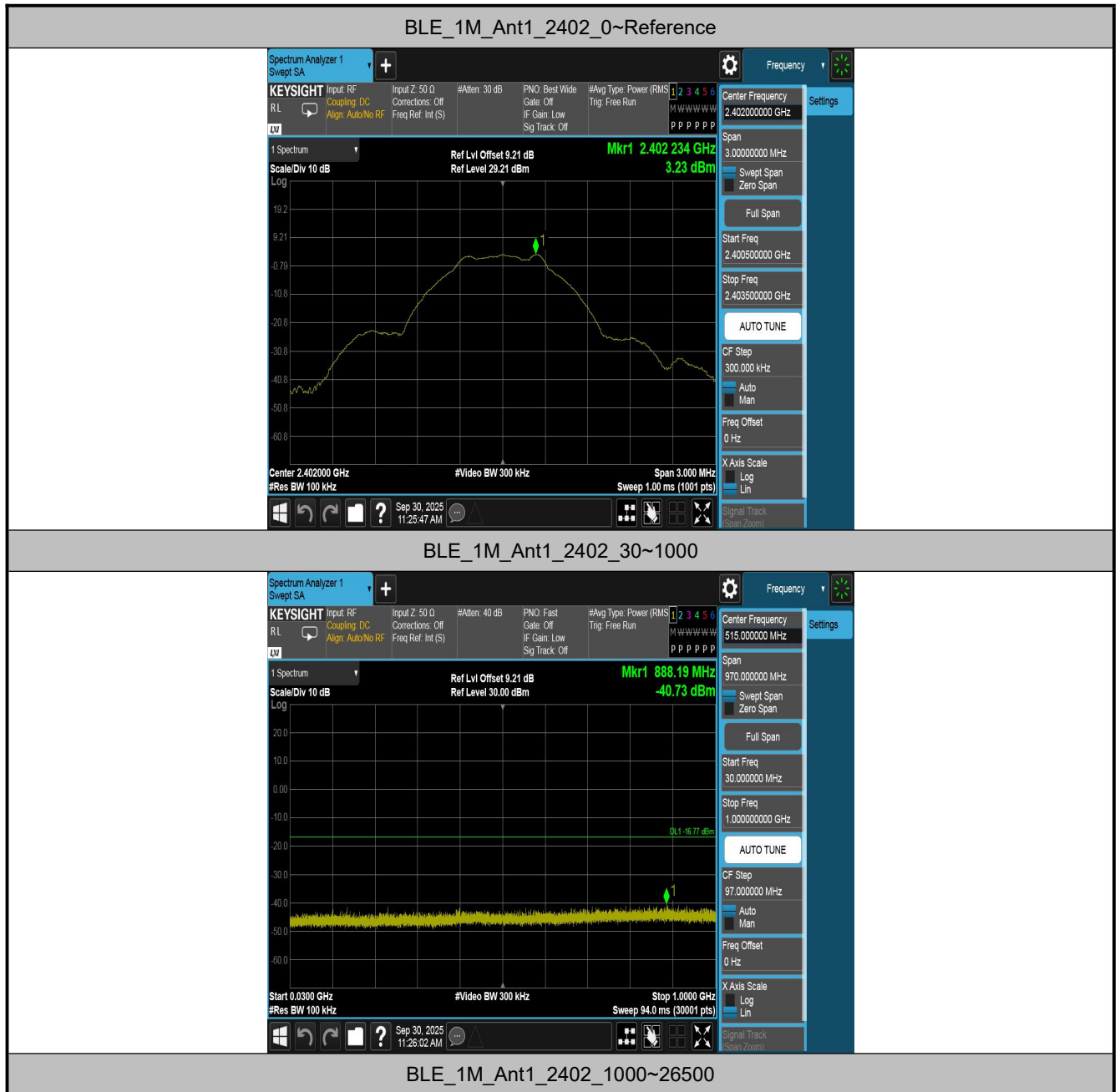
Test Mode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	3.23	3.23	---	PASS
			30~1000	3.23	-40.73	≤-16.77	PASS
			1000~26500	3.23	-31.76	≤-16.77	PASS
		2440	Reference	3.01	3.01	---	PASS
			30~1000	3.01	-36.52	≤-16.99	PASS
			1000~26500	3.01	-29.97	≤-16.99	PASS
		2480	Reference	2.79	2.79	---	PASS
			30~1000	2.79	-39.4	≤-17.21	PASS
			1000~26500	2.79	-31.42	≤-17.21	PASS
BLE_2M	Ant1	2402	Reference	2.53	2.53	---	PASS
			30~1000	2.53	-39.13	≤-17.47	PASS
			1000~26500	2.53	-31.02	≤-17.47	PASS
		2440	Reference	2.30	2.30	---	PASS
			30~1000	2.30	-40.79	≤-17.7	PASS
			1000~26500	2.30	-32.04	≤-17.7	PASS
		2480	Reference	2.12	2.12	---	PASS
			30~1000	2.12	-40.37	≤-17.88	PASS
			1000~26500	2.12	-31.57	≤-17.88	PASS

Test Graphs of Conducted Band Edge





Test Graphs of Out-of-Band Emissions



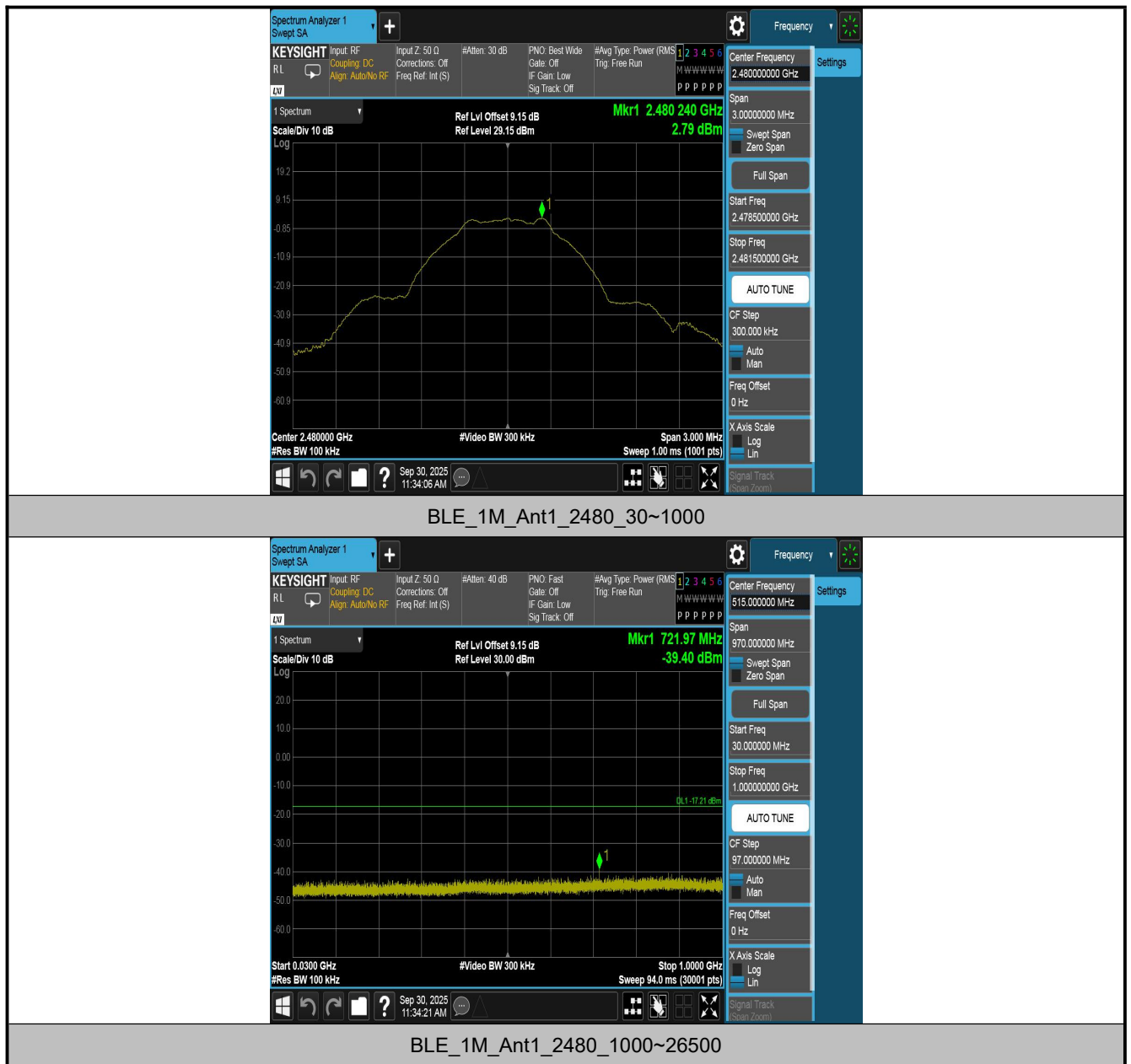


BLE_1M_Ant1_2440_0~Reference



BLE_1M_Ant1_2440_30~1000



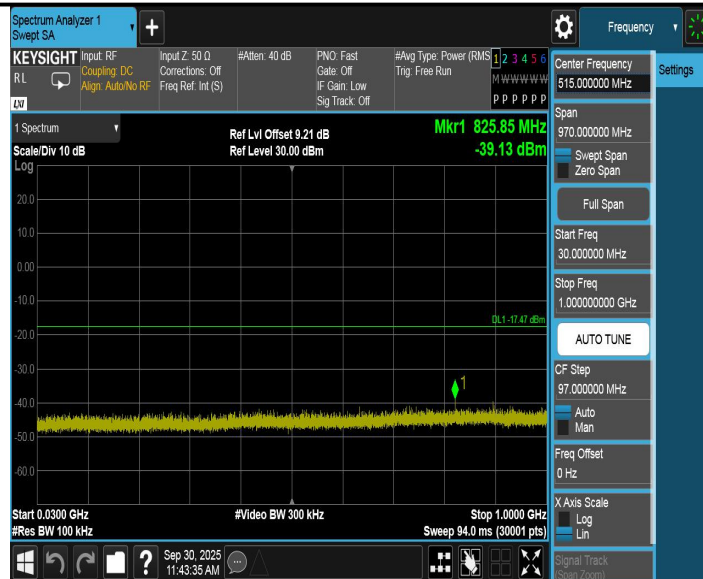




BLE_2M_Ant1_2402_0~Reference



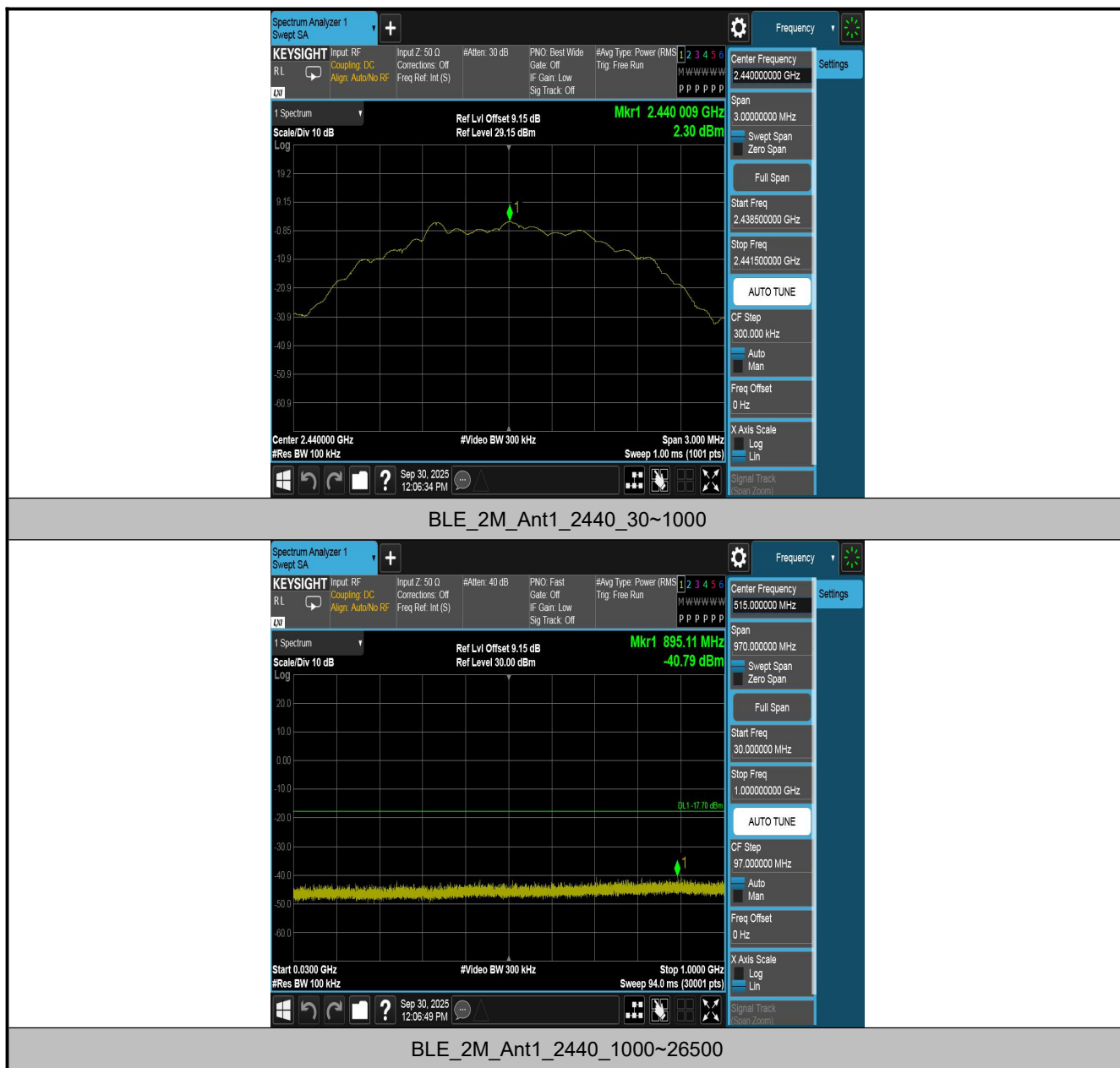
BLE_2M_Ant1_2402_30~1000



BLE_2M_Ant1_2402_1000~26500



BLE_2M_Ant1_2440_0~Reference





BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



7.6. Radiated Spurious Emission Measurement

7.6.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 – 0.490	2400/F (kHz)	300
0.490 – 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.6.2. Test Procedure Used

ANSI C63.10-2013 – Section 6.6.4.3

7.6.3. Test Setting

Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in Table 1
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Table 1 - RBW as a function of frequency

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = Power Average (RMS)
5. Number of sweep point = 2001 (Number of sweep points must be $\geq 2 \times \text{span} / \text{RBW}$)
6. Sweep time = auto
7. Trace (RMS) averaging was performed over at least 100 traces.