

**Plot 7-364. Radiated Spurious Plot 26.5GHz - 40GHz Dual Band Sim. Tx (ANT1 6GHz & ANT2 2.4GHz)**

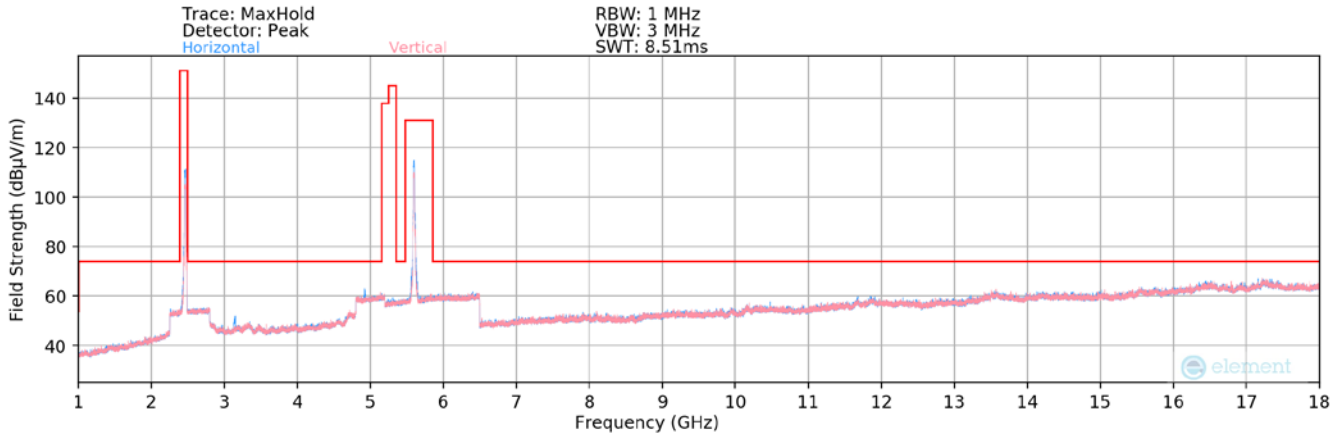
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4484.00	Avg	H	-	-	-80.79	9.76	0.00	35.97	53.98	-18.01
4484.00	Peak	H	-	-	-70.21	9.76	0.00	46.55	73.98	-27.43
9408.00	Avg	H	-	-	-83.15	19.97	0.00	43.82	53.98	-10.16
9408.00	Peak	H	-	-	-73.23	19.97	0.00	53.74	73.98	-20.24
11430.00	Avg	H	-	-	-84.26	23.56	0.00	46.30	53.98	-7.68
11430.00	Peak	H	-	-	-74.36	23.56	0.00	56.20	73.98	-17.78
19827.00	Avg	H	-	-	-66.03	2.80	-9.54	34.23	53.98	-19.75
19827.00	Peak	H	-	-	-56.72	2.80	-9.54	43.54	73.98	-30.44

**Table 7-76. Radiated Measurements Dual Band Sim. Tx (ANT1 6GHz & ANT2 2.4GHz)**

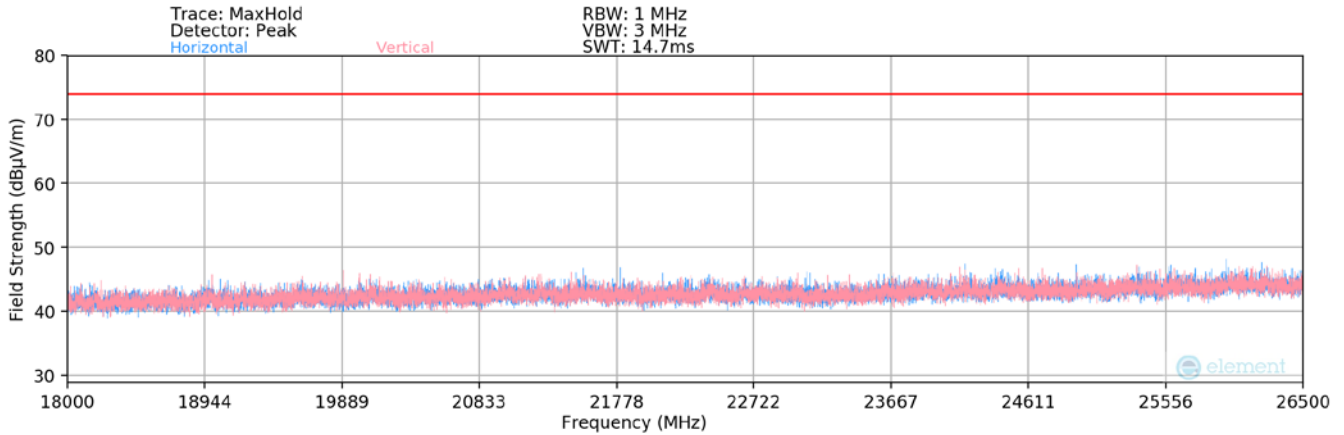
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 244 of 284

Description	2.4 GHz Emission	5 GHz Emission
Antenna	1, 2	1, 2
Channel	11	120
Operating Frequency (MHz)	2462	5600
Data Rate (Mbps)	1	6
Mode	b	a

Table 7-77. Config-5 (MIMO 2.4GHz & MIMO 5GHz)

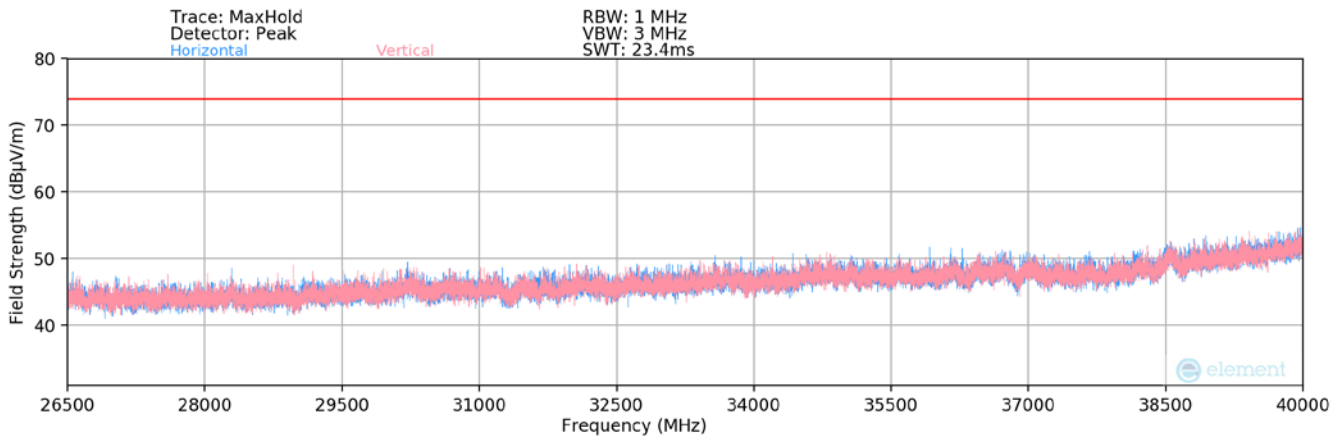


Plot 7-365. Radiated Spurious Plot above 1GHz Dual Band Sim. Tx (MIMO 2.4GHz & MIMO 5GHz)



Plot 7-366. Radiated Spurious Plot 18GHz - 26.5GHz Dual Band Sim. Tx (MIMO 2.4GHz & MIMO 5GHz)

FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 245 of 284



**Plot 7-367. Radiated Spurious Plot 26.5GHz - 40GHz Dual Band Sim. Tx (MIMO 2.4GHz & MIMO 5GHz)**

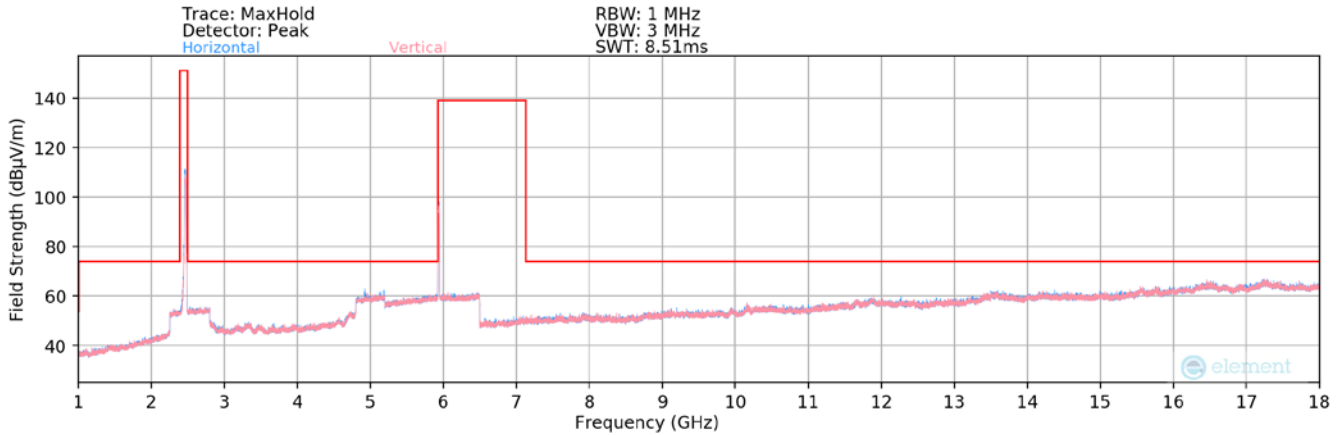
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
3814.00	Avg	V	-	-	-81.39	8.61	0.00	34.22	53.98	-19.76
3814.00	Peak	V	-	-	-71.30	8.61	0.00	44.31	73.98	-29.67
6952.00	Avg	V	-	-	-82.97	15.75	0.00	39.78	53.98	-14.20
6952.00	Peak	V	-	-	-73.37	15.75	0.00	49.38	73.98	-24.60
8738.00	Avg	V	-	-	-83.57	18.75	0.00	42.18	53.98	-11.80
8738.00	Peak	V	-	-	-74.29	18.75	0.00	51.46	73.98	-22.52
18152.00	Avg	V	-	-	-65.24	1.76	-9.54	33.98	53.98	-20.00
18152.00	Peak	V	-	-	-55.57	1.76	-9.54	43.64	73.98	-30.33

**Table 7-78. Radiated Measurements Dual Band Sim. Tx (MIMO 2.4GHz & MIMO 5GHz)**

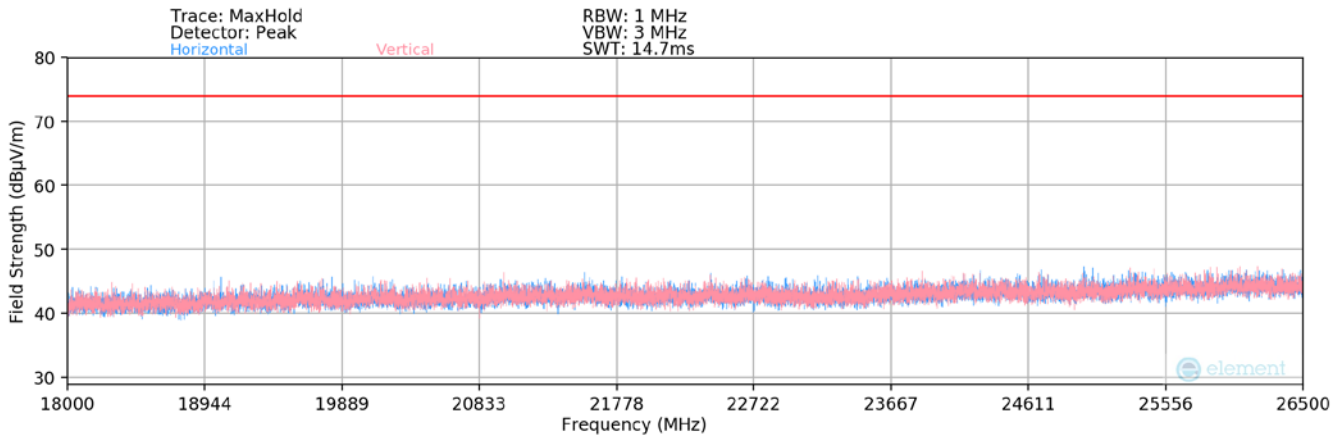
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 246 of 284

Description	2.4 GHz Emission	6 GHz Emission
Antenna	1, 2	1, 2
Channel	11	2
Operating Frequency (MHz)	2462	5935
Data Rate (Mbps)	1	6
Mode	b	a

Table 7-79. Config-6 (MIMO 2.4GHz & MIMO 6GHz)

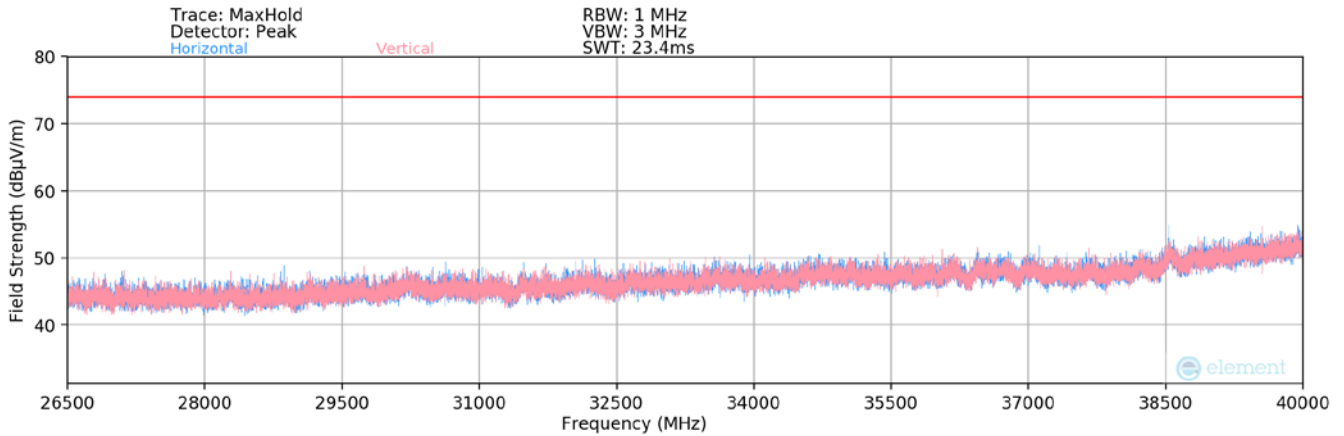


Plot 7-368. Radiated Spurious Plot above 1GHz Dual Band Sim. Tx (MIMO 2.4GHz & MIMO 6GHz)



Plot 7-369. Radiated Spurious Plot 18GHz - 26.5GHz Dual Band Sim. Tx (MIMO 2.4GHz & MIMO 6GHz)

FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 247 of 284



**Plot 7-370. Radiated Spurious Plot 26.5GHz - 40GHz Dual Band Sim. Tx (MIMO 2.4GHz & MIMO 6GHz)**

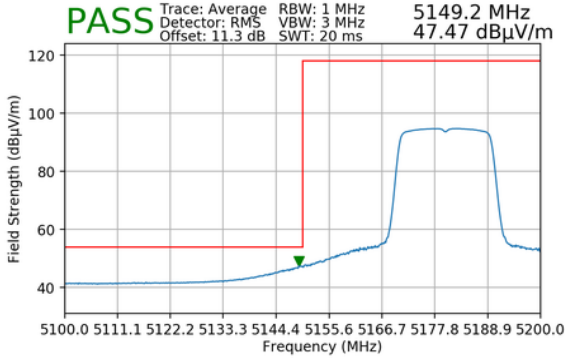
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4484.00	Avg	H	-	-	-81.03	9.76	0.00	35.73	53.98	-18.25
4484.00	Peak	H	-	-	-71.05	9.76	0.00	45.71	73.98	-28.27
9408.00	Avg	H	-	-	-83.57	19.97	0.00	43.40	53.98	-10.58
9408.00	Peak	H	-	-	-74.37	19.97	0.00	52.60	73.98	-21.38
11430.00	Avg	H	-	-	-84.05	23.56	0.00	46.51	53.98	-7.47
11430.00	Peak	H	-	-	-75.57	23.56	0.00	54.99	73.98	-18.99
19827.00	Avg	H	-	-	-65.83	2.80	-9.54	34.43	53.98	-19.55
19827.00	Peak	H	-	-	-56.77	2.80	-9.54	43.49	73.98	-30.49

**Table 7-80. Radiated Measurements Dual Band Sim. Tx (MIMO 2.4GHz & MIMO 6GHz)**

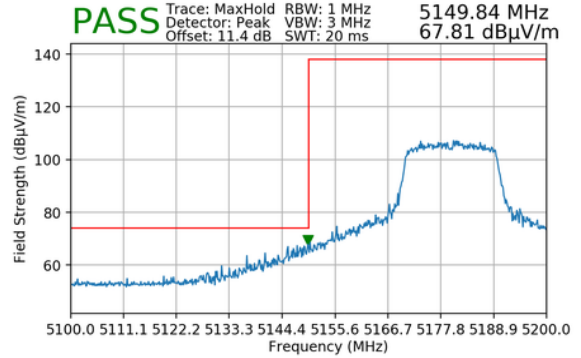
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 248 of 284

### 7.6.5 SISO Antenna-1 Radiated Band Edge Measurements (20MHz BW) §15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

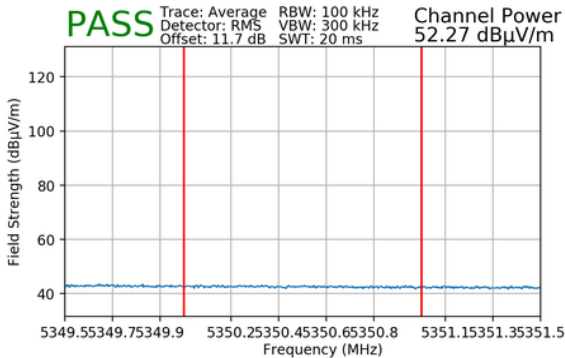


**Plot 7-371. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1)**

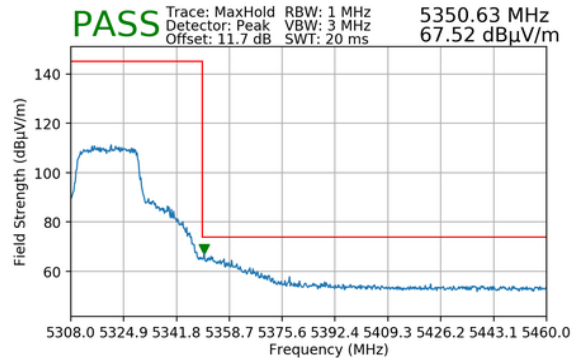


**Plot 7-372. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1)**

Worst Case Mode:	802.11a
Worst Case Transfer Rate:	6Mbps
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



**Plot 7-373. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A)**

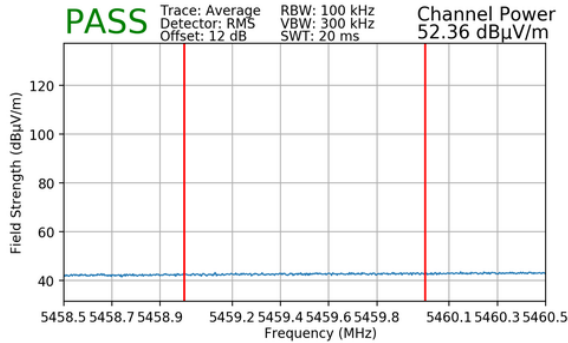


**Plot 7-374. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A)**

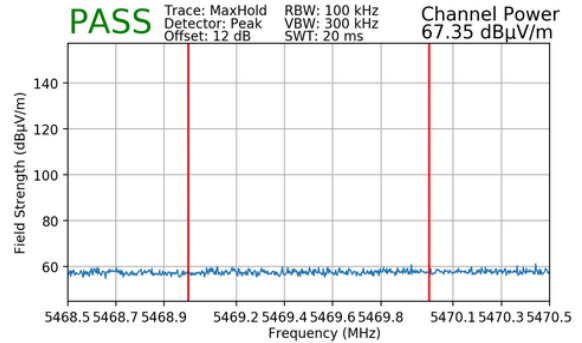
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 249 of 284



Worst Case Mode: 802.11ax  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5500MHz  
 Channel: 100

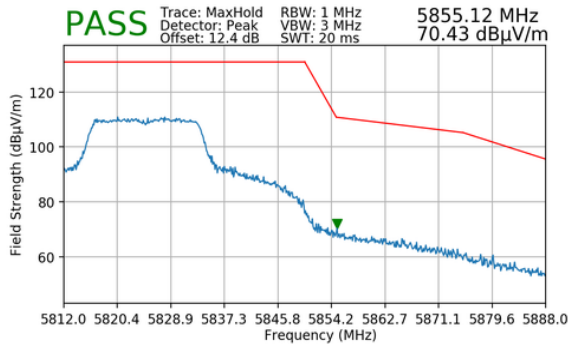


**Plot 7-375. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C)**



**Plot 7-376. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C)**

Worst Case Mode: 802.11n  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5825MHz  
 Channel: 165



**Plot 7-377. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3)**

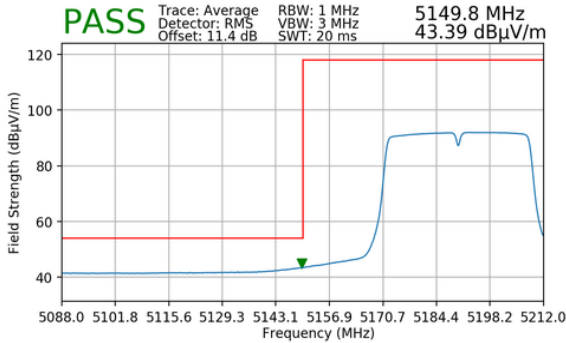
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 250 of 284

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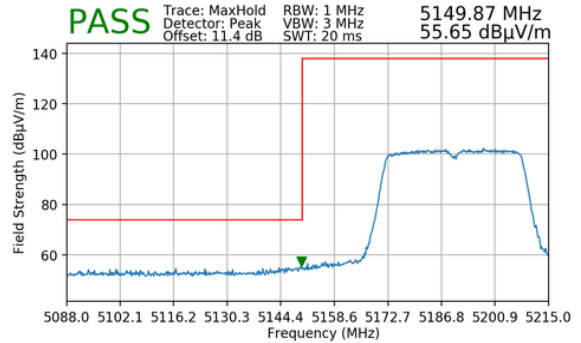
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### 7.6.6 SISO Antenna-1 Radiated Band Edge Measurements (40MHz BW) §15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

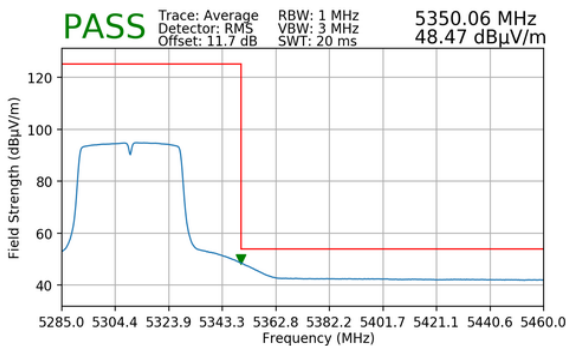


**Plot 7-378. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1)**

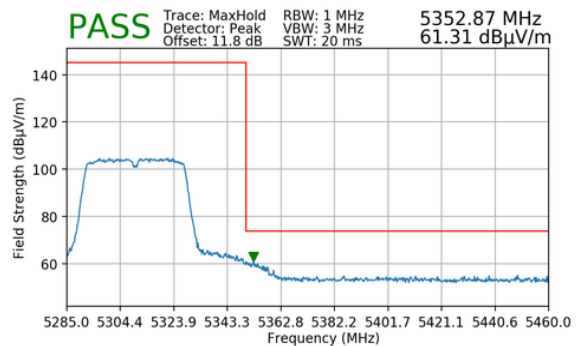


**Plot 7-379. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1)**

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5310MHz
Channel:	62



**Plot 7-380. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A)**

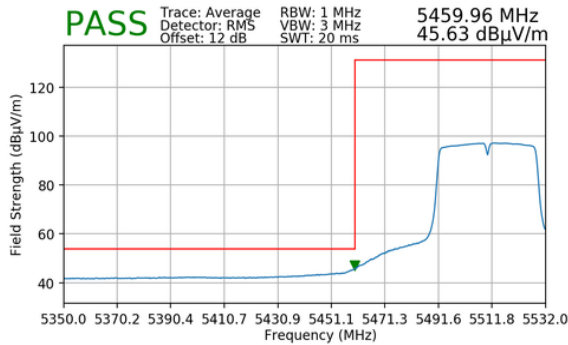


**Plot 7-381. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A)**

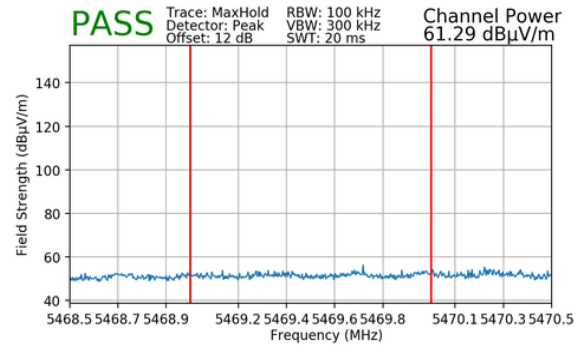
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 251 of 284



Worst Case Mode: 802.11n  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5510MHz  
 Channel: 102

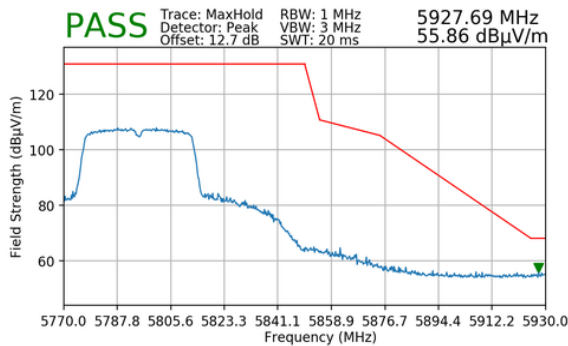


**Plot 7-382. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C)**



**Plot 7-383. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C)**

Worst Case Mode: 802.11n  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5795MHz  
 Channel: 159

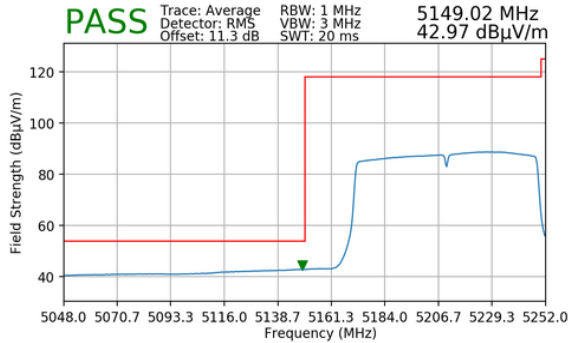


**Plot 7-384. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3)**

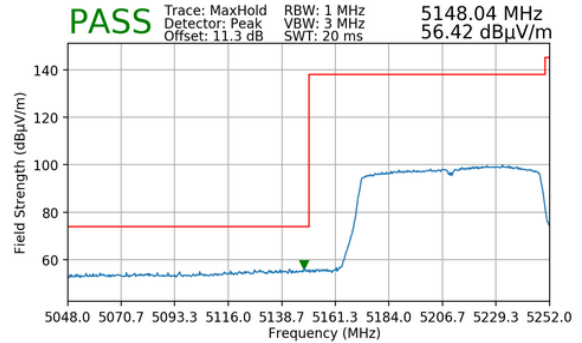
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 252 of 284

### 7.6.7 SISO Antenna-1 Radiated Band Edge Measurements (80MHz BW) §15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode:	802.11ac
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

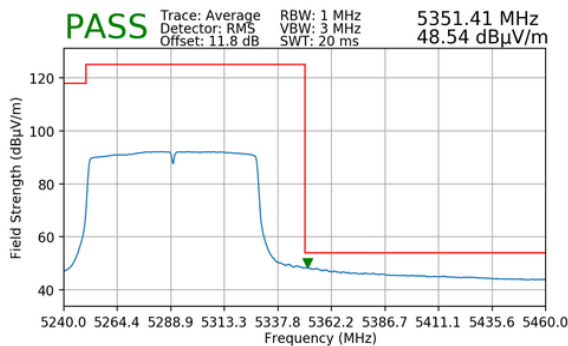


**Plot 7-385. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1)**

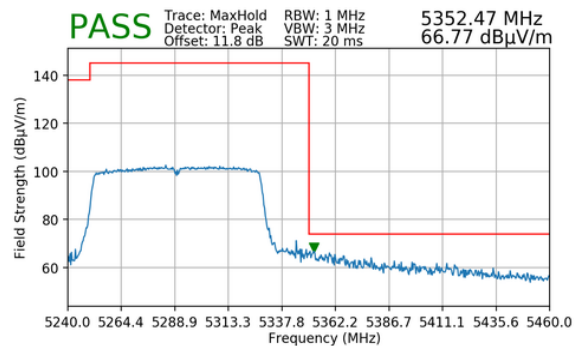


**Plot 7-386. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1)**

Worst Case Mode:	802.11ac
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



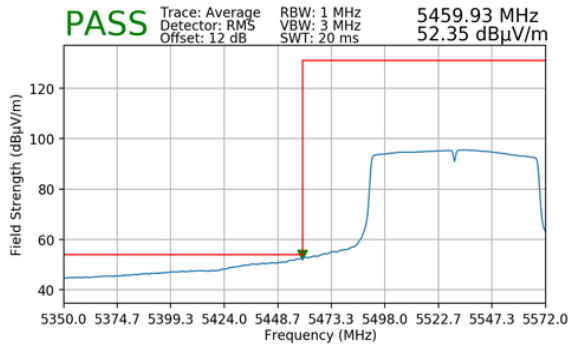
**Plot 7-387. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A)**



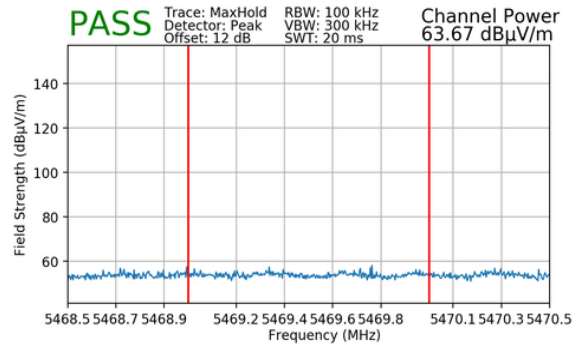
**Plot 7-388. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A)**

FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 253 of 284

Worst Case Mode: 802.11ac  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5530MHz  
 Channel: 106

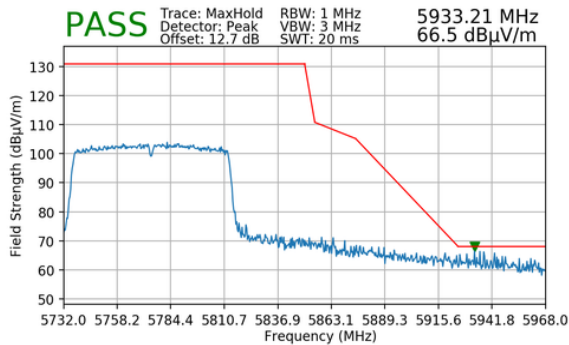


**Plot 7-389. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C)**



**Plot 7-390. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C)**

Worst Case Mode: 802.11ac  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5775MHz  
 Channel: 155

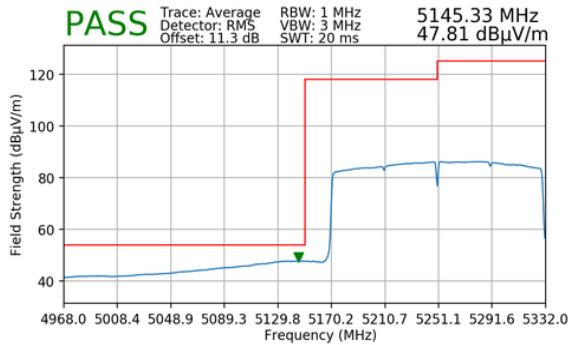


**Plot 7-391. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3)**

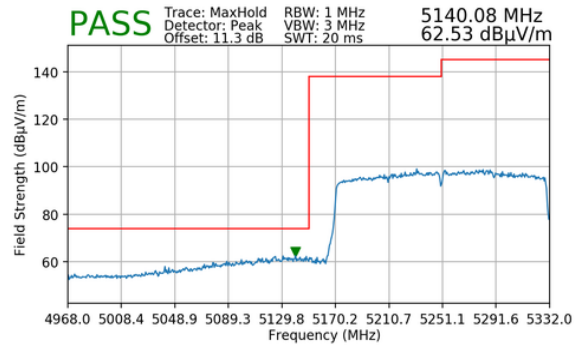
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 254 of 284

### 7.6.8 SISO Antenna-1 Radiated Band Edge Measurements (160MHz BW) §15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5250MHz
Channel:	50

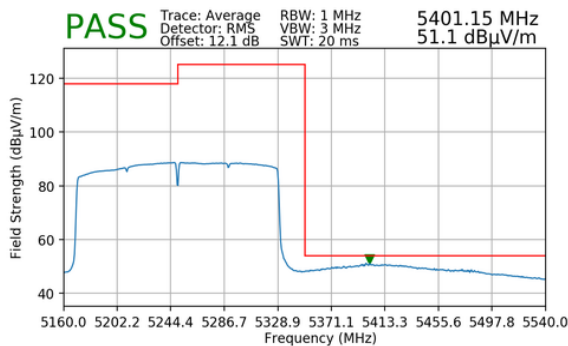


**Plot 7-392. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1)**

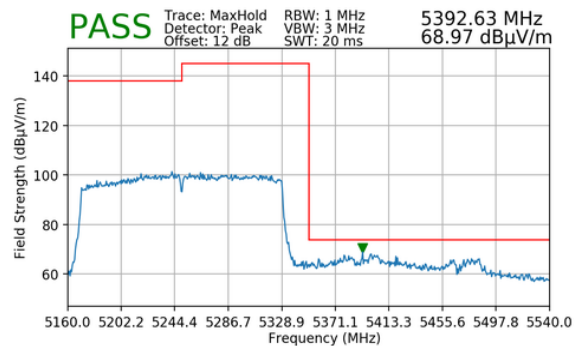


**Plot 7-393. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1)**

Worst Case Mode:	802.11ac
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5250MHz
Channel:	50



**Plot 7-394. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A)**

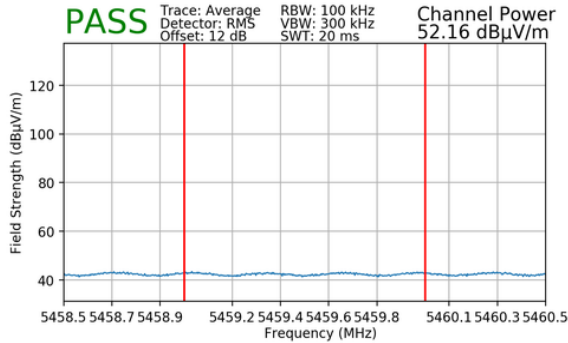


**Plot 7-395. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A)**

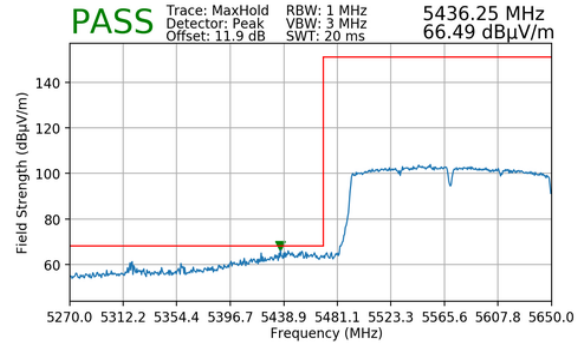
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 255 of 284



Worst Case Mode: 802.11ac  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5570MHz  
 Channel: 114



**Plot 7-396. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C)**



**Plot 7-397. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C)**

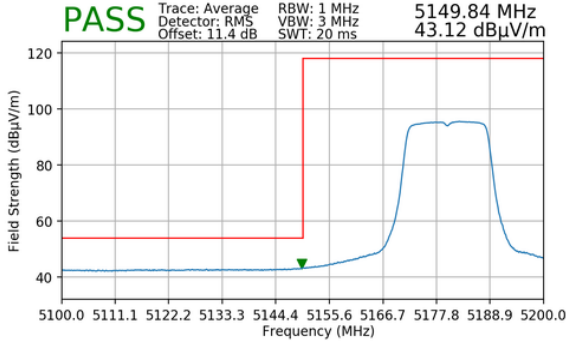
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 256 of 284

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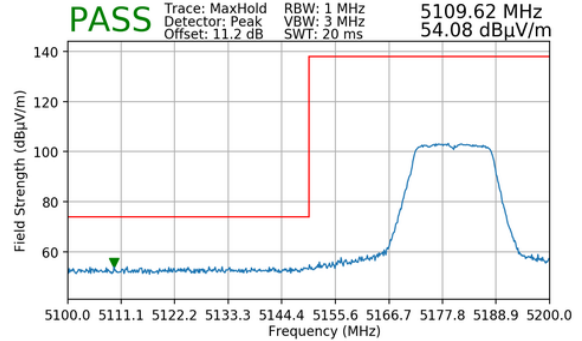
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### 7.6.9 SISO Antenna-2 Radiated Band Edge Measurements (20MHz BW) §15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode:	802.11a
Worst Case Transfer Rate:	6Mbps
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

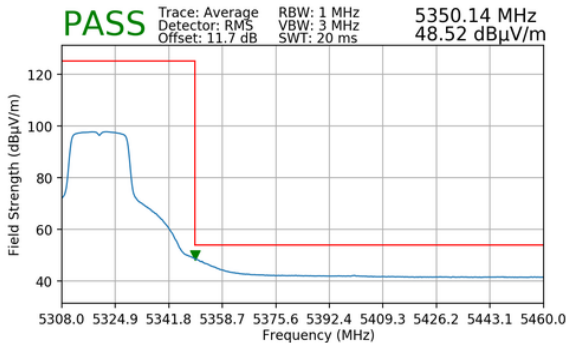


**Plot 7-398. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1)**

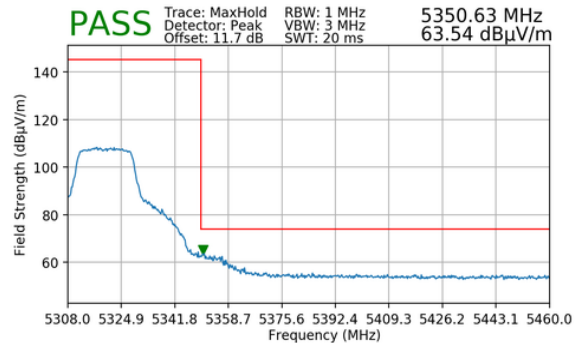


**Plot 7-399. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1)**

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



**Plot 7-400. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A)**

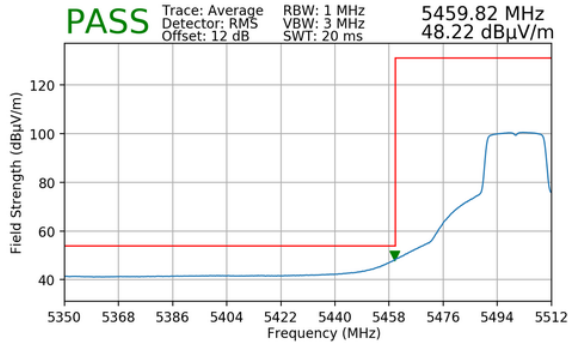


**Plot 7-401. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A)**

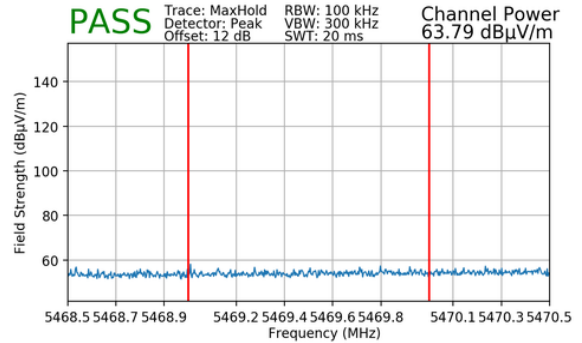
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 257 of 284



Worst Case Mode: 802.11ax  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5500MHz  
 Channel: 100

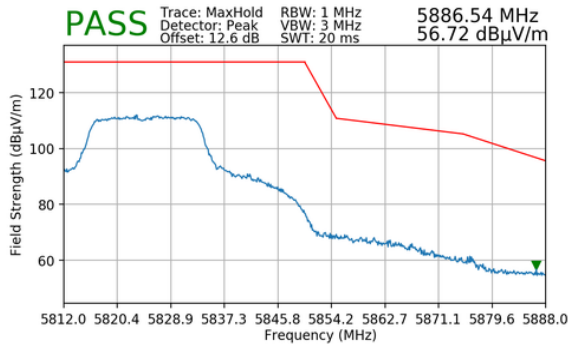


**Plot 7-402. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C)**



**Plot 7-403. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C)**

Worst Case Mode: 802.11ac  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5825MHz  
 Channel: 165



**Plot 7-404. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3)**

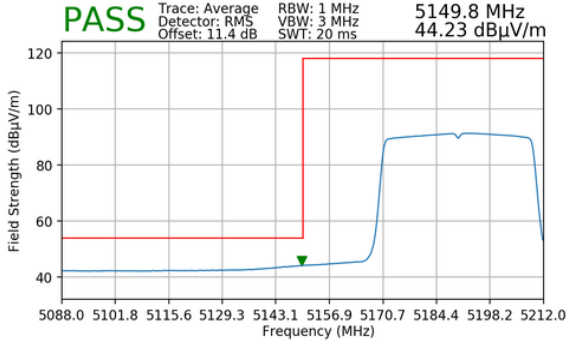
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 258 of 284

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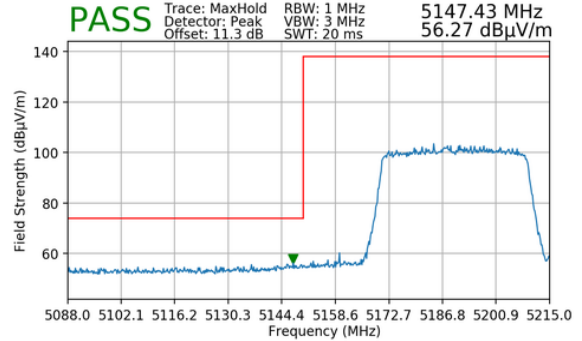
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### 7.6.10 SISO Antenna-2 Radiated Band Edge Measurements (40MHz BW) §15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

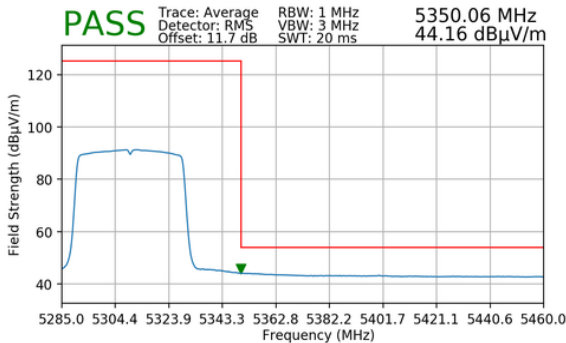


**Plot 7-405. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1)**

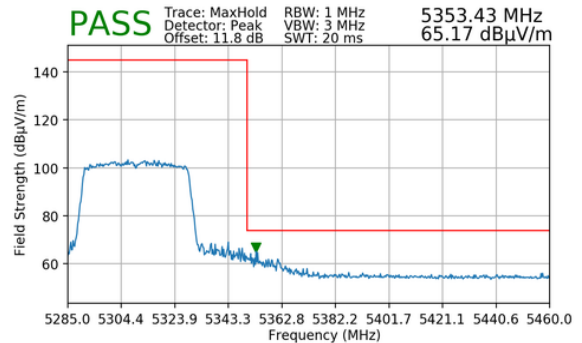


**Plot 7-406. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5310MHz
Channel:	62



**Plot 7-407. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A)**

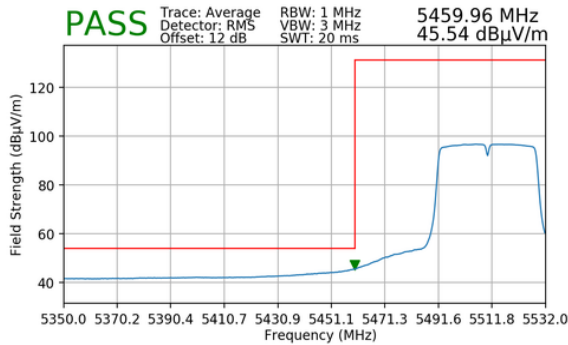


**Plot 7-408. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A)**

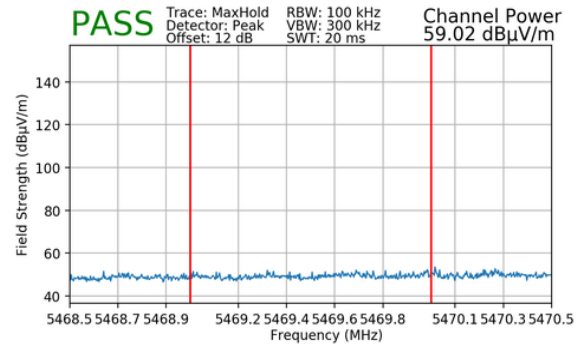
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 259 of 284



Worst Case Mode: 802.11n  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5510MHz  
 Channel: 102

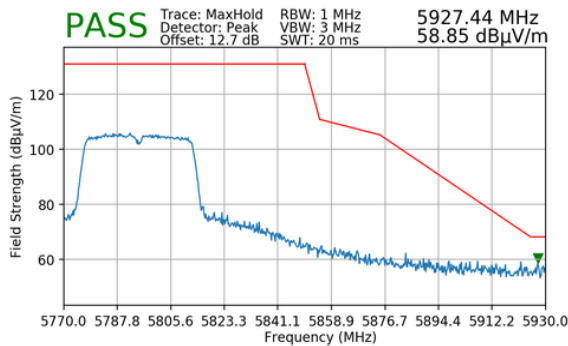


**Plot 7-409. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C)**



**Plot 7-410. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C)**

Worst Case Mode: 802.11ax  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5795MHz  
 Channel: 159

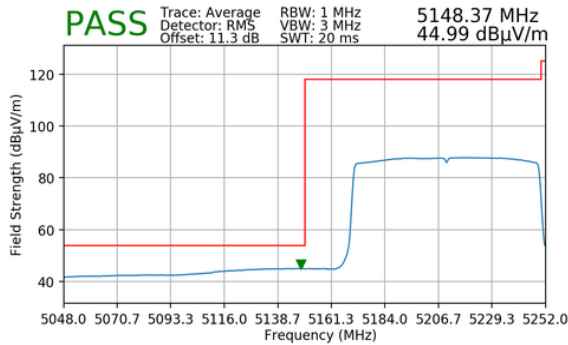


**Plot 7-411. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3)**

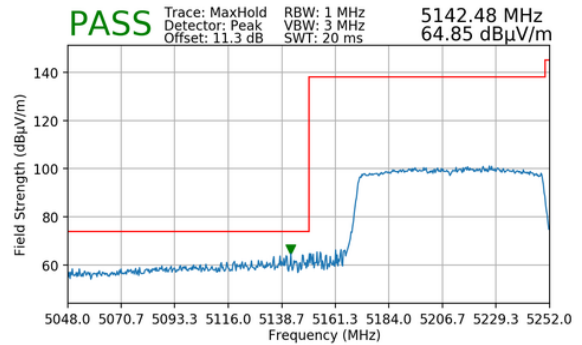
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 260 of 284

### 7.6.11 SISO Antenna-2 Radiated Band Edge Measurements (80MHz BW) §15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

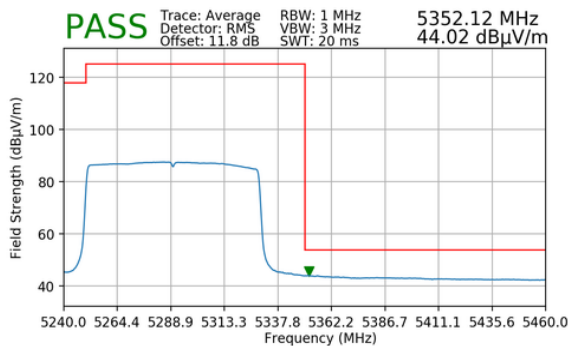


**Plot 7-412. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1)**

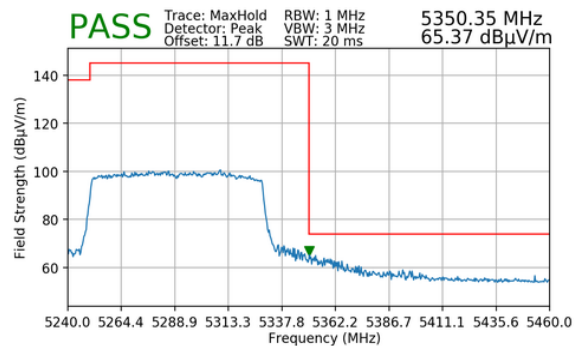


**Plot 7-413. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



**Plot 7-414. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A)**

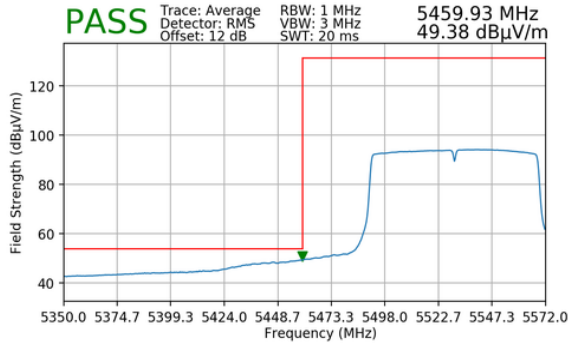


**Plot 7-415. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A)**

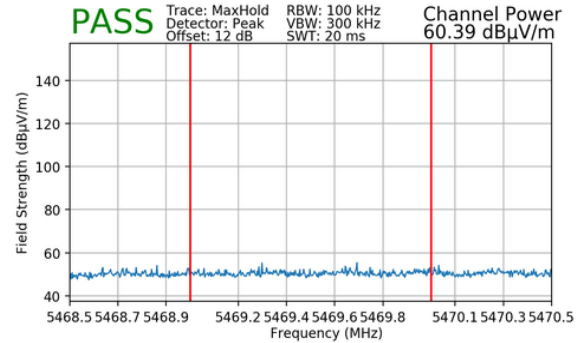
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 261 of 284



Worst Case Mode: 802.11ac  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5530MHz  
 Channel: 106

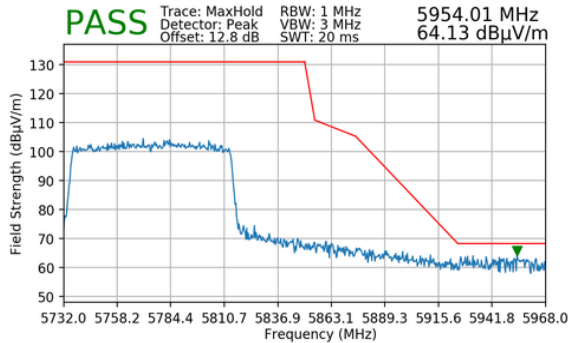


**Plot 7-416. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C)**



**Plot 7-417. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C)**

Worst Case Mode: 802.11ac  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5775MHz  
 Channel: 155



**Plot 7-418. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3)**

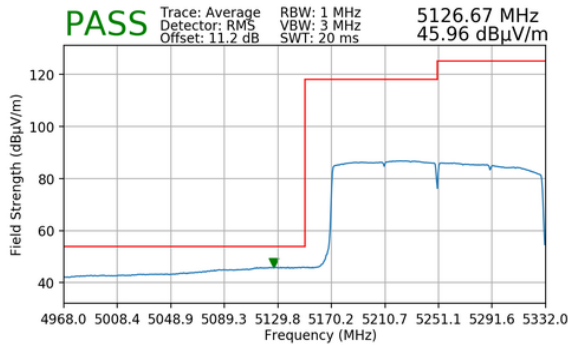
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 262 of 284

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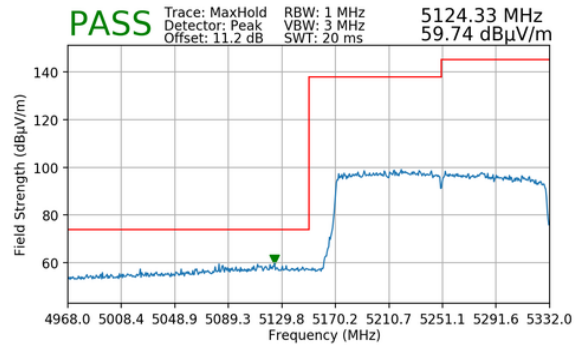
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### 7.6.12 SISO Antenna-2 Radiated Band Edge Measurements (160MHz BW) §15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5250MHz
Channel:	50

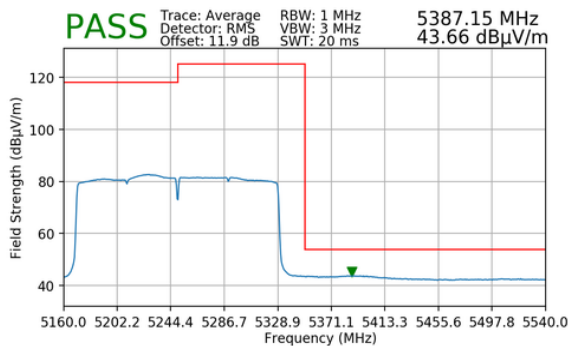


**Plot 7-419. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1)**

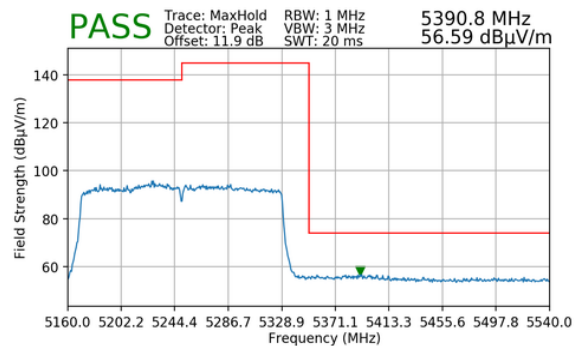


**Plot 7-420. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5250MHz
Channel:	50



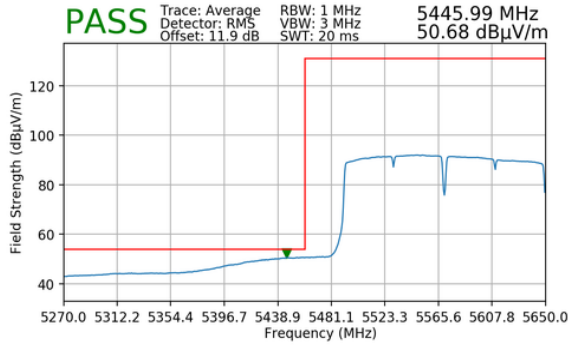
**Plot 7-421. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A)**



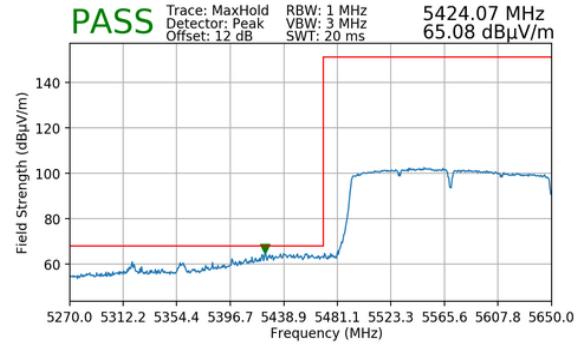
**Plot 7-422. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A)**

FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 263 of 284

Worst Case Mode: 802.11ac  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5570MHz  
 Channel: 114



**Plot 7-423. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C)**

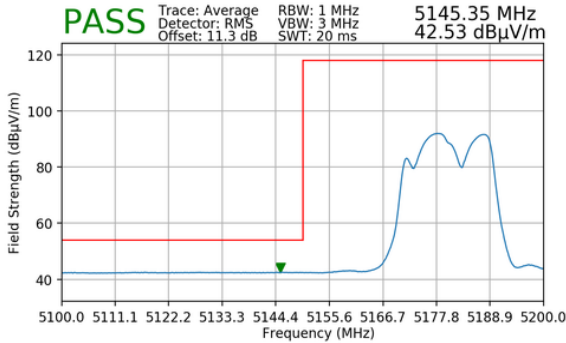


**Plot 7-424. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C)**

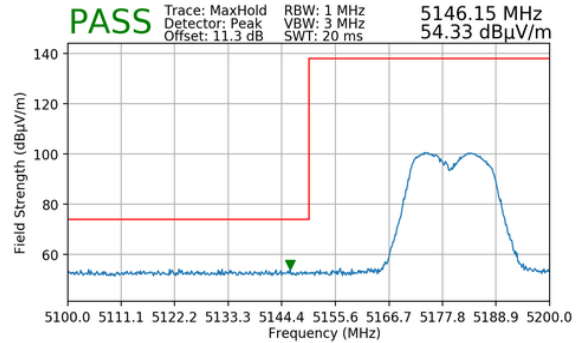
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 264 of 284

### 7.6.13 MIMO Radiated Band Edge Measurements (20MHz BW) §15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

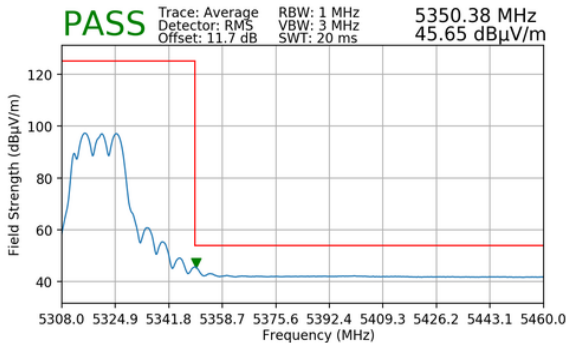


**Plot 7-425. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1)**

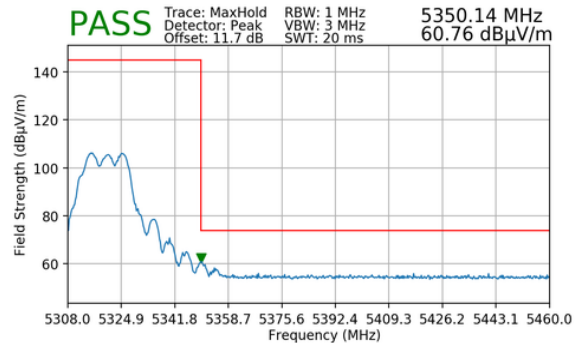


**Plot 7-426. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1)**

Worst Case Mode:	802.11a
Worst Case Transfer Rate:	6Mbps
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



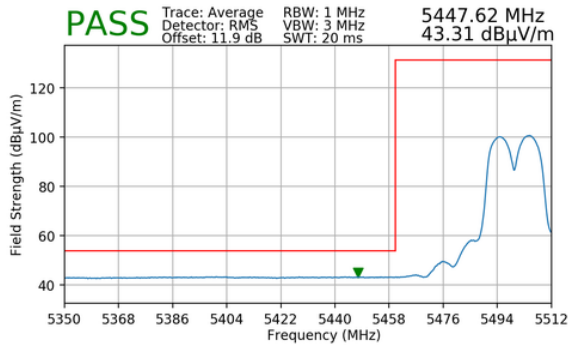
**Plot 7-427. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A)**



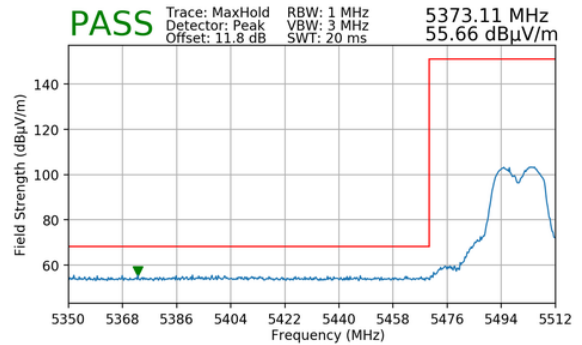
**Plot 7-428. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A)**

FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 265 of 284

Worst Case Mode: 802.11n  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5500MHz  
 Channel: 100

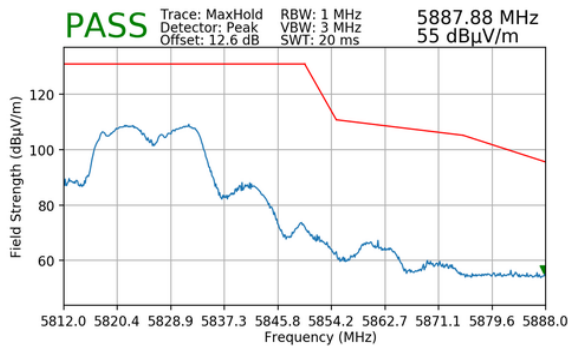


**Plot 7-429. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 2C)**



**Plot 7-430. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 2C)**

Worst Case Mode: 802.11ac  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5825MHz  
 Channel: 165



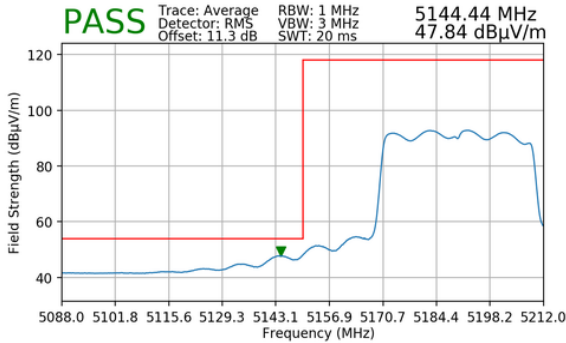
**Plot 7-431. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 3)**

FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 266 of 284

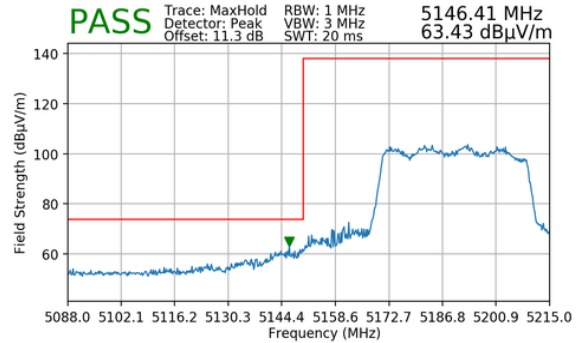
### 7.6.14 MIMO Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

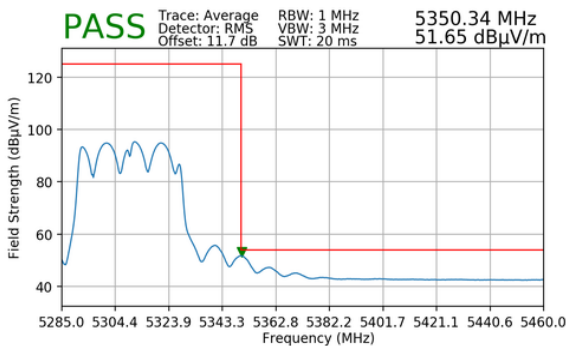


**Plot 7-432. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1)**

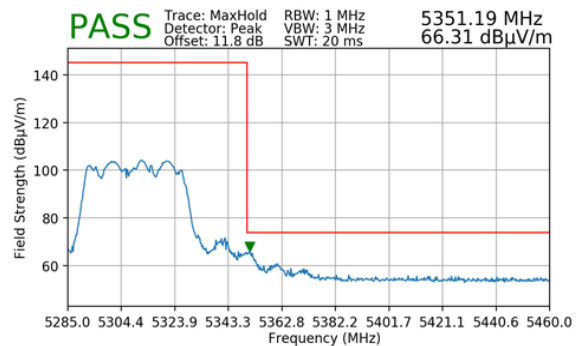


**Plot 7-433. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1)**

Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5310MHz
Channel:	62



**Plot 7-434. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A)**

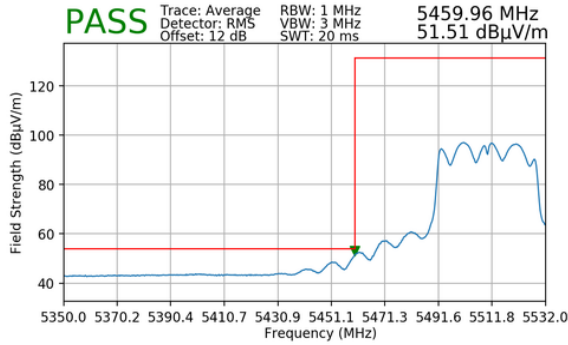


**Plot 7-435. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A)**

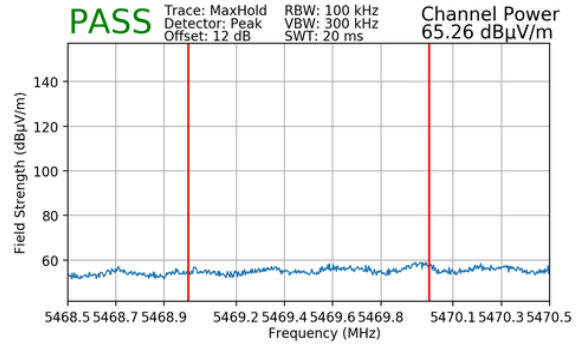
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 267 of 284



Worst Case Mode: 802.11n  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5510MHz  
 Channel: 102

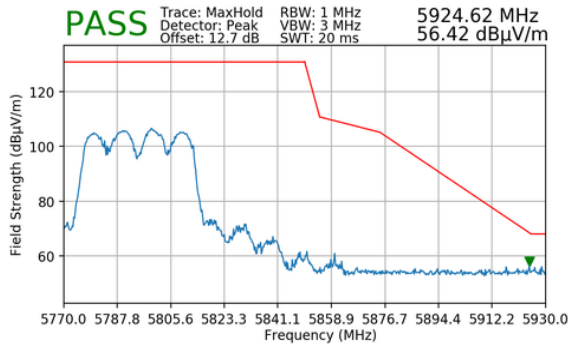


**Plot 7-436. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 2C)**



**Plot 7-437. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 2C)**

Worst Case Mode: 802.11ac  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5795MHz  
 Channel: 159



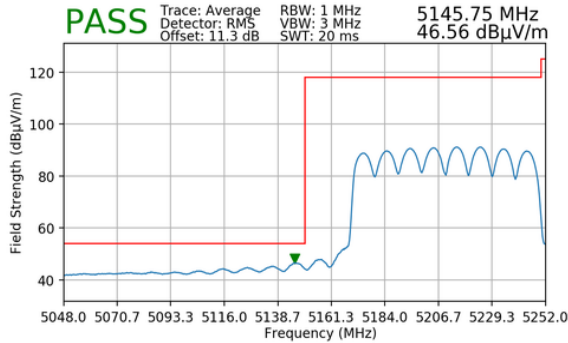
**Plot 7-438. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 3)**

FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 268 of 284

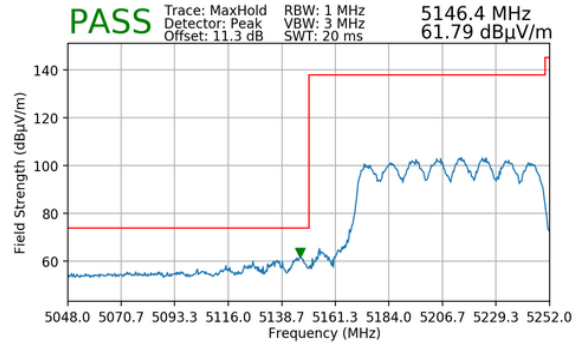
### 7.6.15 MIMO Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

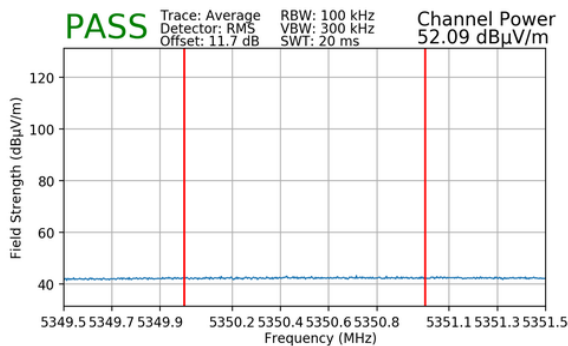


**Plot 7-439. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1)**

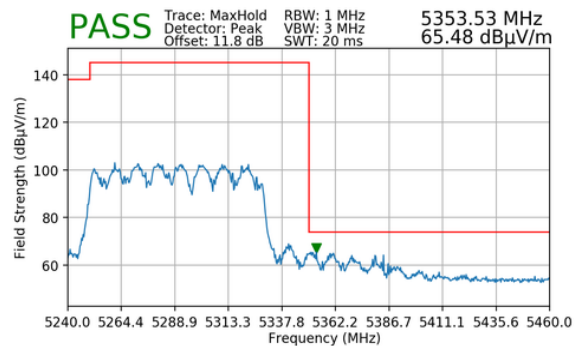


**Plot 7-440. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



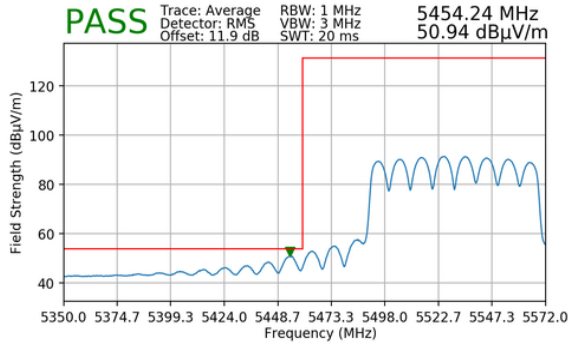
**Plot 7-441. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A)**



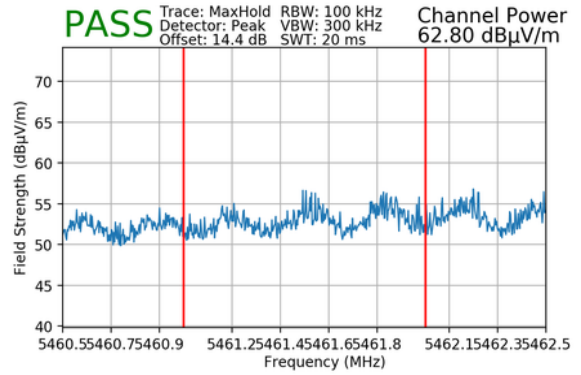
**Plot 7-442. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A)**

FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 269 of 284

Worst Case Mode: 802.11ac  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5530MHz  
 Channel: 106

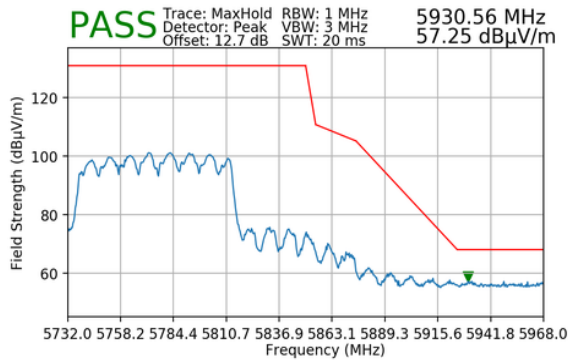


**Plot 7-443. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 2C)**



**Plot 7-444. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 2C)**

Worst Case Mode: 802.11ac  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5775MHz  
 Channel: 155



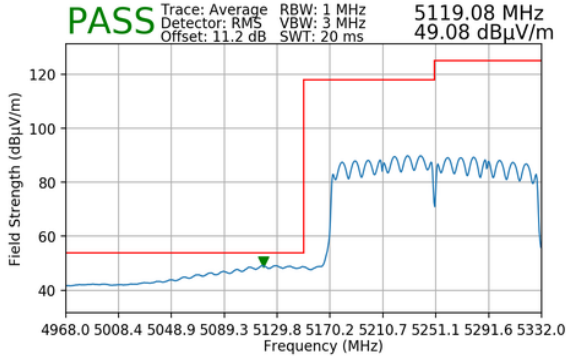
**Plot 7-445. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 3)**

FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
Test Report S/N: 1M2204040049-15-R1.C3K	Test Dates: 3/14/2022-7/1/2022	EUT Type: Portable Computing Device	Page 270 of 284

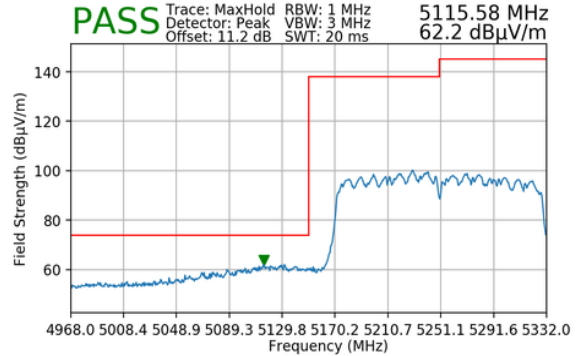
### 7.6.16 MIMO Radiated Band Edge Measurements (160MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode:	802.11ac
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5250MHz
Channel:	50

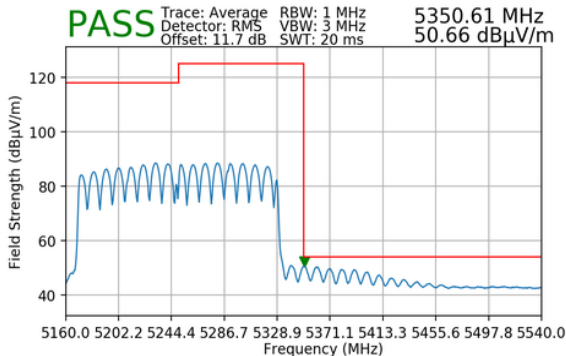


**Plot 7-446. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1)**

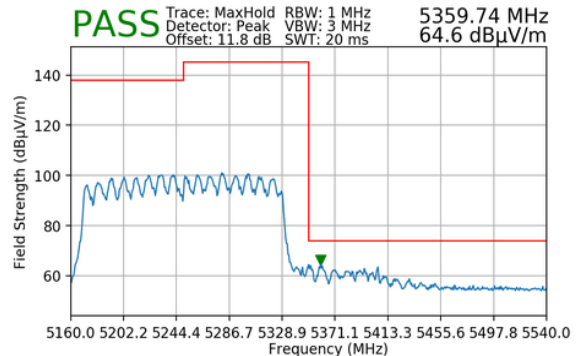


**Plot 7-447. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5250MHz
Channel:	50



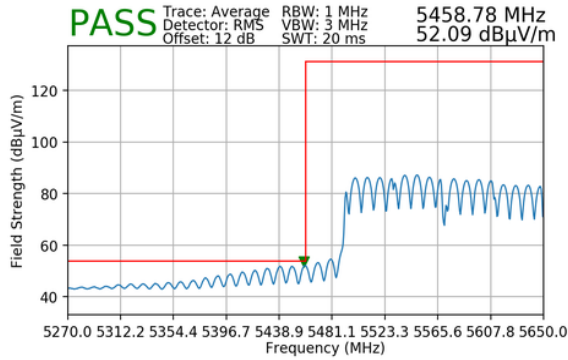
**Plot 7-448. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A)**



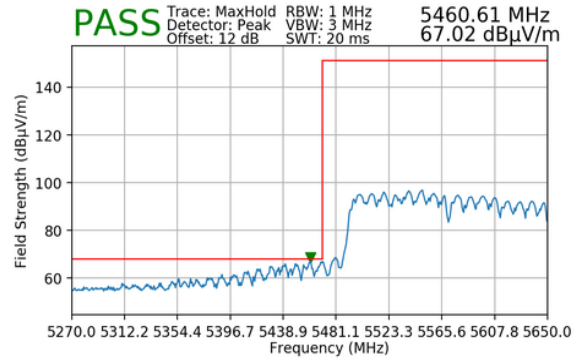
**Plot 7-449. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A)**

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Worst Case Mode: 802.11ac  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5570MHz  
 Channel: 114



**Plot 7-450. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 2C)**



**Plot 7-451. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 2C)**

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## 7.7 Radiated Spurious Emissions Measurements – Below 1GHz

§15.209; RSS-Gen [8.9]

### Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

**All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR and Table 6 of RSS-Gen (8.10) must not exceed the limits shown in Table 7-81 per Section 15.209 and RSS-Gen (8.9).**

Frequency	Field Strength [ $\mu\text{V/m}$ ]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3

**Table 7-81. Radiated Limits**

### Test Procedures Used

ANSI C63.10-2013

### Test Settings

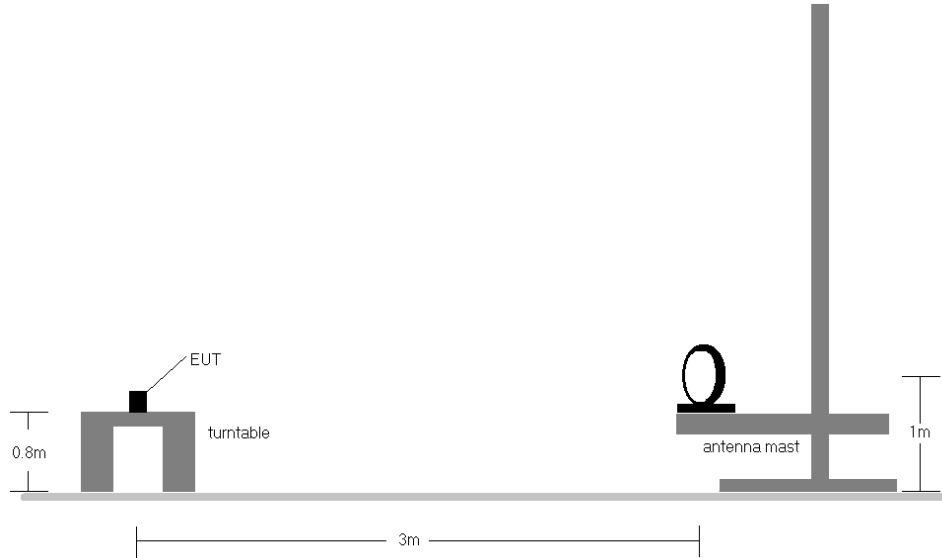
#### Quasi-Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 120kHz (for emissions from 30MHz – 1GHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

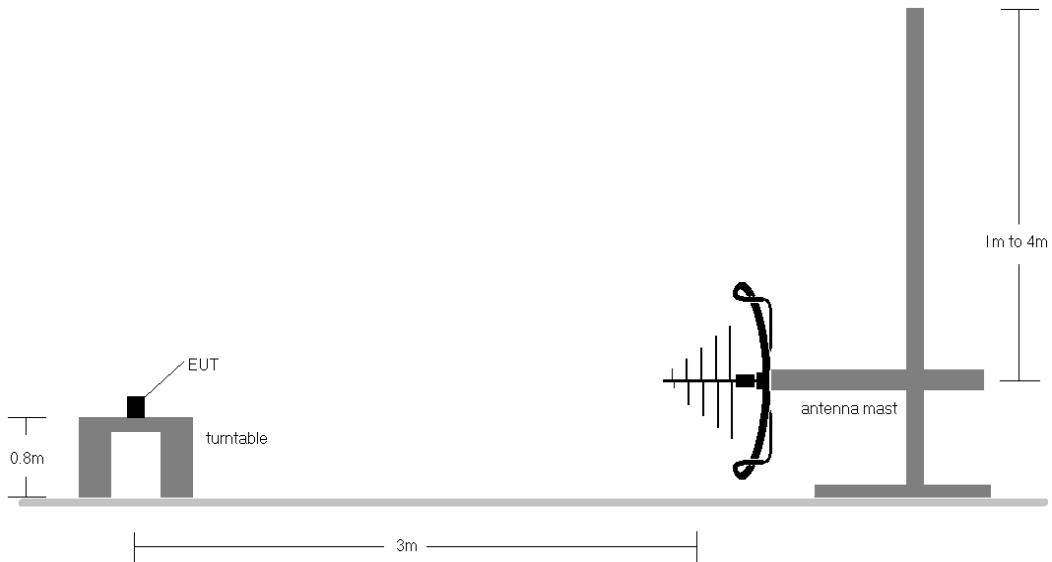
FCC ID: C3K1997	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
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**Test Setup**

The EUT and measurement equipment were set up as shown in the diagrams below.



**Figure 7-6. Radiated Test Setup < 30MHz**



**Figure 7-7. Radiated Test Setup < 1GHz**

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**Test Notes**

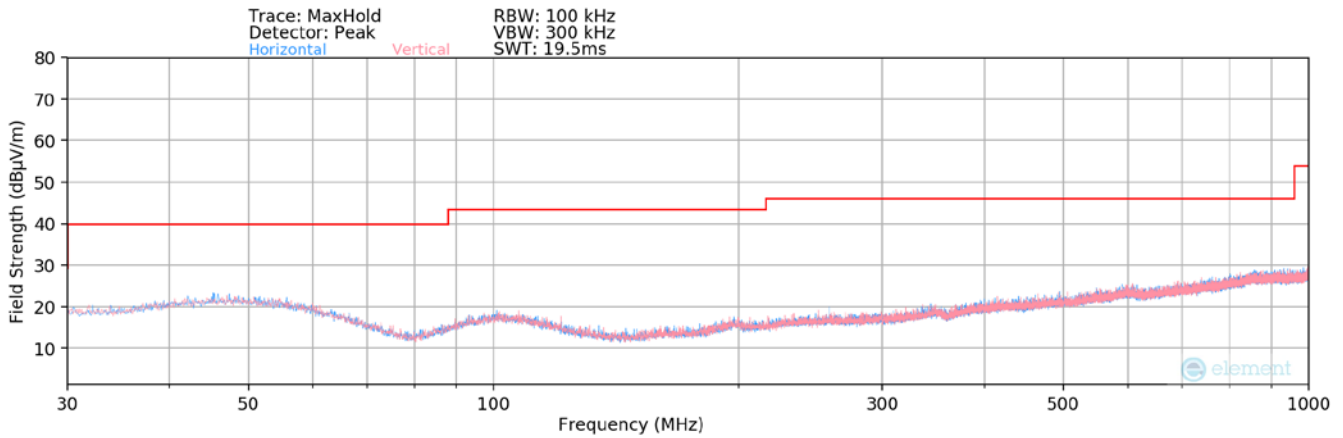
1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen (8.10) are below the limit shown in Table 7-81.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
3. This unit was tested with its standard battery.
4. The spectrum is investigated using a peak detector and final measurements are recorded using CISPR quasi peak detector. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
5. Emissions were measured at a 3 meter test distance.
6. Emissions are investigated while operating on the center channel of the mode, band, and modulation that produced the worst case results during the transmitter spurious emissions testing.
7. No spurious emissions were detected within 20dB of the limit below 30MHz.
8. The results recorded using the broadband antenna is known to correlate with the results obtained by using a tuned dipole with an acceptable degree of accuracy. The VSWR for the measurement antenna was found to be less than 2:1.
9. The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. There were no emissions detected in the 30MHz – 1GHz frequency range, as shown in the subsequent plots.

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## MIMO Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209



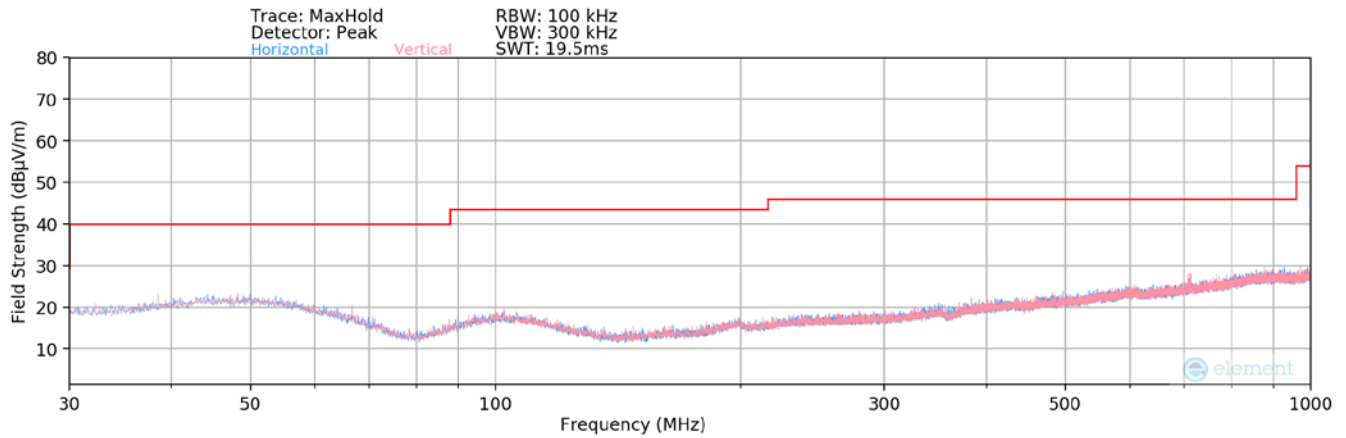
Plot 7-452. Radiated Spurious Plot below 1GHz MIMO (802.11a – U2C Ch. 120)

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]
31.25	Quasi-Peak	H	-	-	-69.16	-17.98	19.86	40.00
110.33	Quasi-Peak	H	-	-	-71.80	-16.83	18.37	43.52
294.14	Quasi-Peak	H	-	-	-76.67	-14.30	16.03	46.02
417.44	Quasi-Peak	H	-	-	-73.87	-10.95	22.18	46.02
549.62	Quasi-Peak	H	-	-	-73.64	-8.88	24.48	46.02
868.01	Quasi-Peak	H	-	-	-73.93	-3.92	29.15	46.02

Table 7-82. Radiated Spurious Emissions below 1GHz MIMO

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## Simultaneous Tx Radiated Spurious Emissions Measurements (Below 1GHz) §15.209



**Plot 7-453. Radiated Spurious Plot below 1GHz (Dual Band Simult. Tx)**

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## 7.8 Line-Conducted Test Data

### §15.407

#### Test Overview and Limit

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for conducted spurious emissions. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section.

**All conducted emissions must not exceed the limits shown in the table below, per Section 15.207 and RSS-Gen (8.8).**

Frequency of emission (MHz)	Conducted Limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

**Table 7-83. Conducted Limits**

\*Decreases with the logarithm of the frequency.

#### Test Procedures Used

ANSI C63.10-2013, Section 6.2

#### Test Settings

##### Quasi-Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

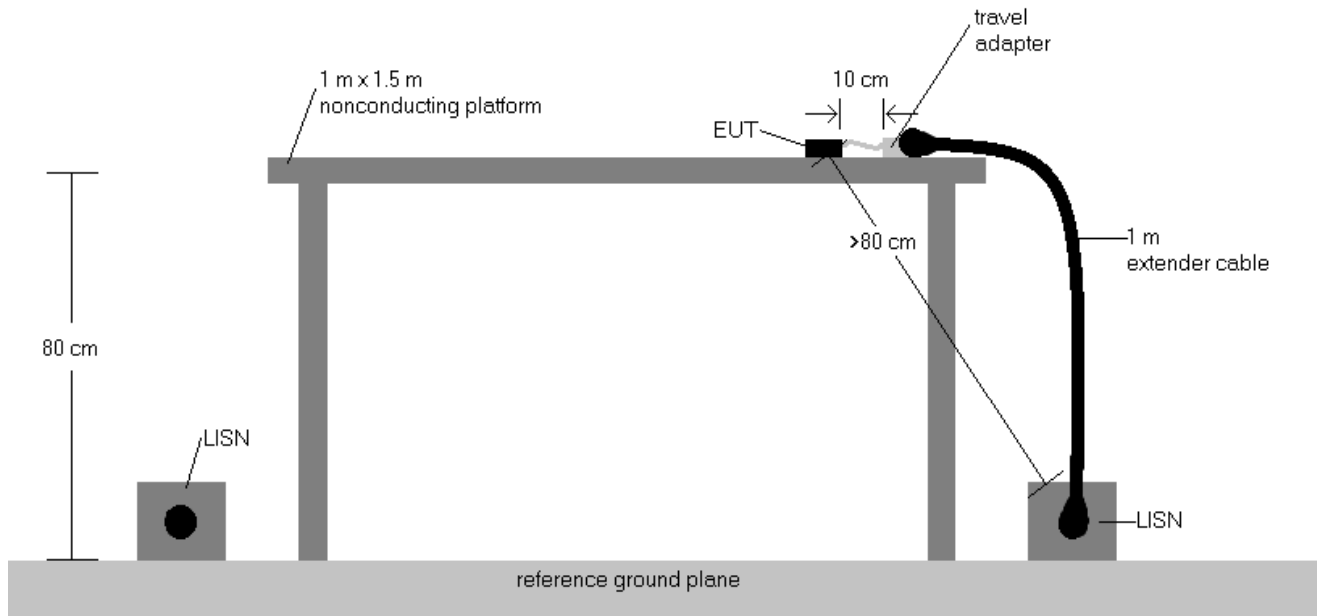
##### Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = RMS
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

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**Test Setup**

The EUT and measurement equipment were set up as shown in the diagram below.

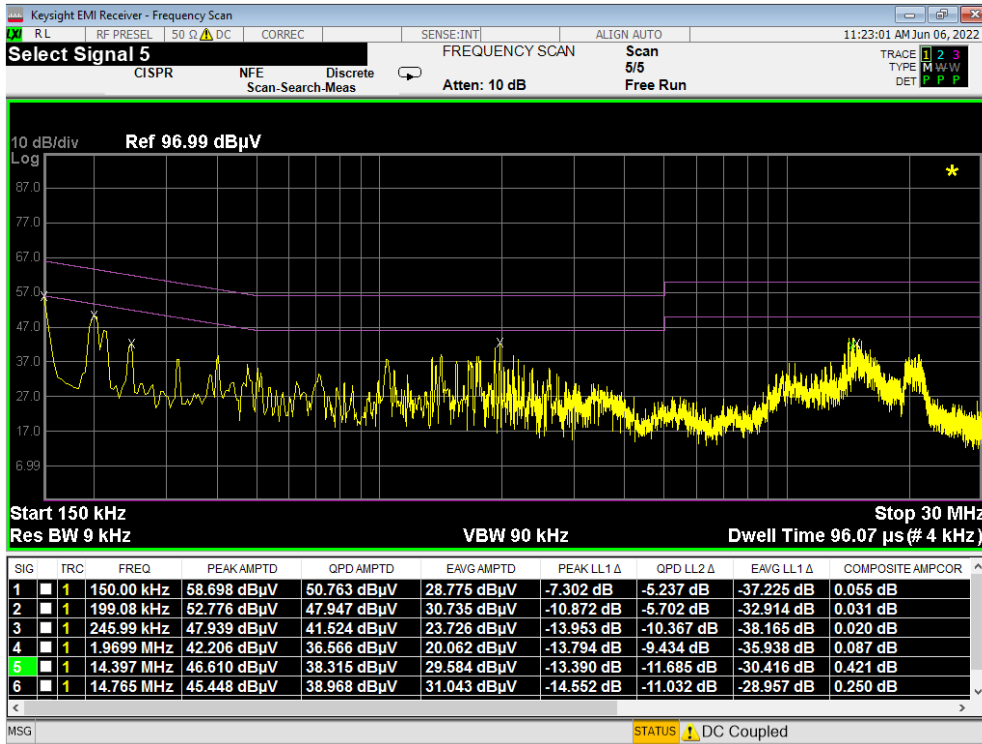


**Figure 7-8. Test Instrument & Measurement Setup**

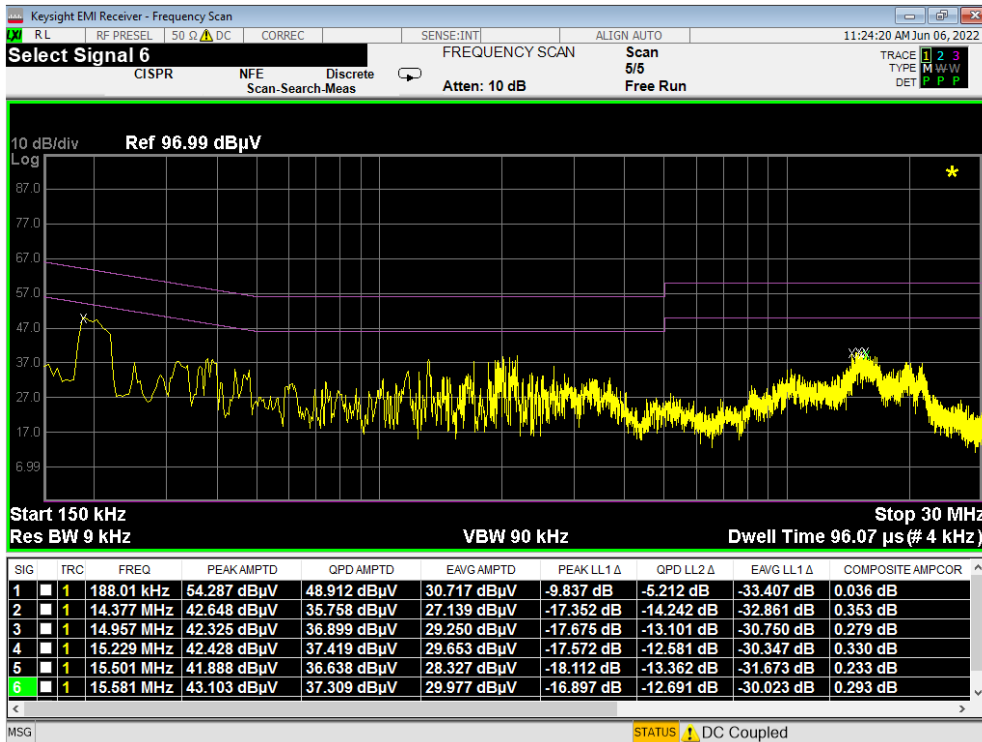
**Test Notes**

1. All modes of operation were investigated and the worst-case emissions are reported using mid channel. The emissions found were not affected by the choice of channel used during testing.
2. The limit for an intentional radiator from 150kHz to 30MHz are specified in 15.207 and RSS-Gen (8.8).
3.  $Corr. (dB) = Cable\ loss (dB) + LISN\ insertion\ factor (dB)$
4.  $QP/AV\ Level (dB\mu V) = QP/AV\ Analyzer/Receiver\ Level (dB\mu V) + Corr. (dB)$
5.  $Margin (dB) = QP/AV\ Limit (dB\mu V) - QP/AV\ Level (dB\mu V)$
6. Traces shown in plot are made using a peak detector.
7. Deviations to the Specifications: None.

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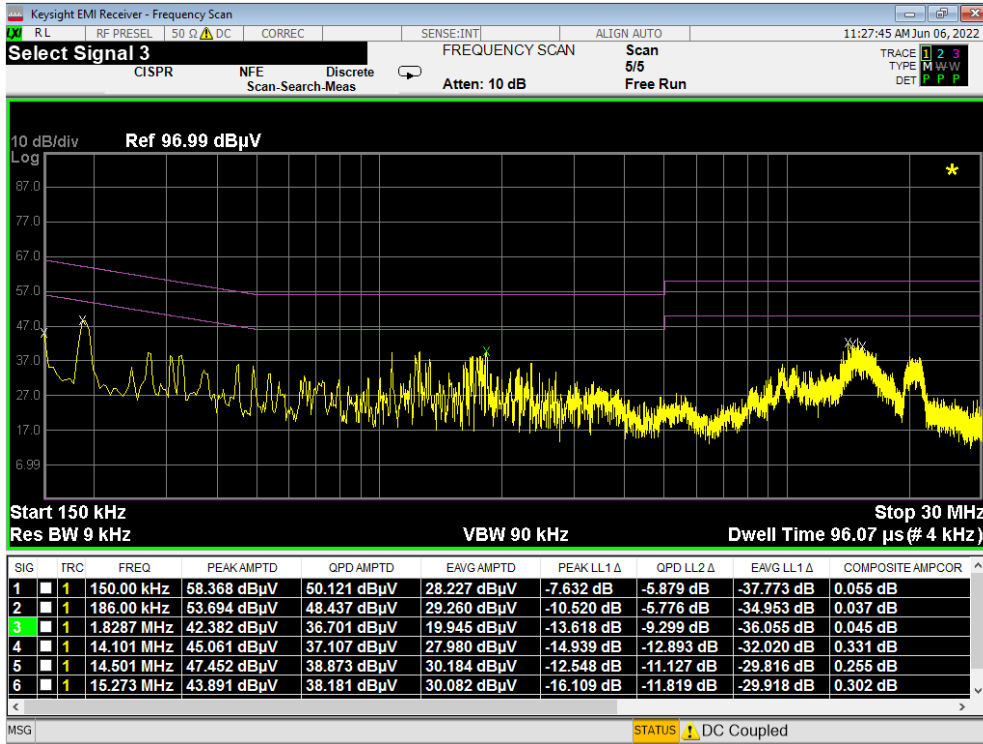


Plot 7-454. Line Conducted Plot with 802.11a UNII Band 1 (L1)

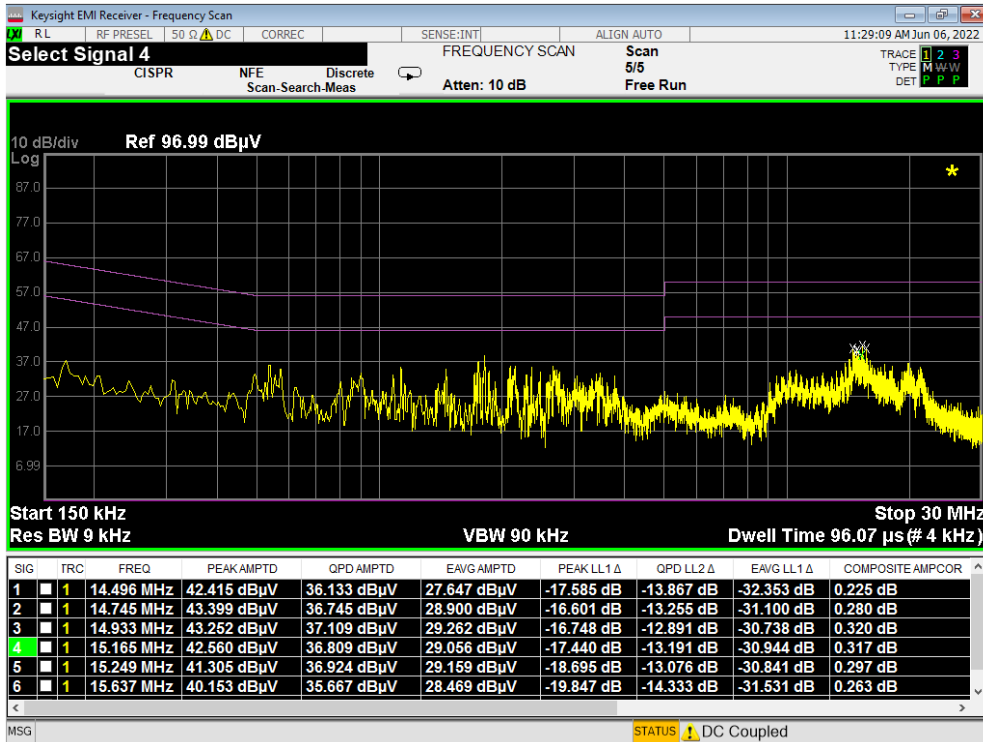


Plot 7-455. Line Conducted Plot with 802.11a UNII Band 1 (N)

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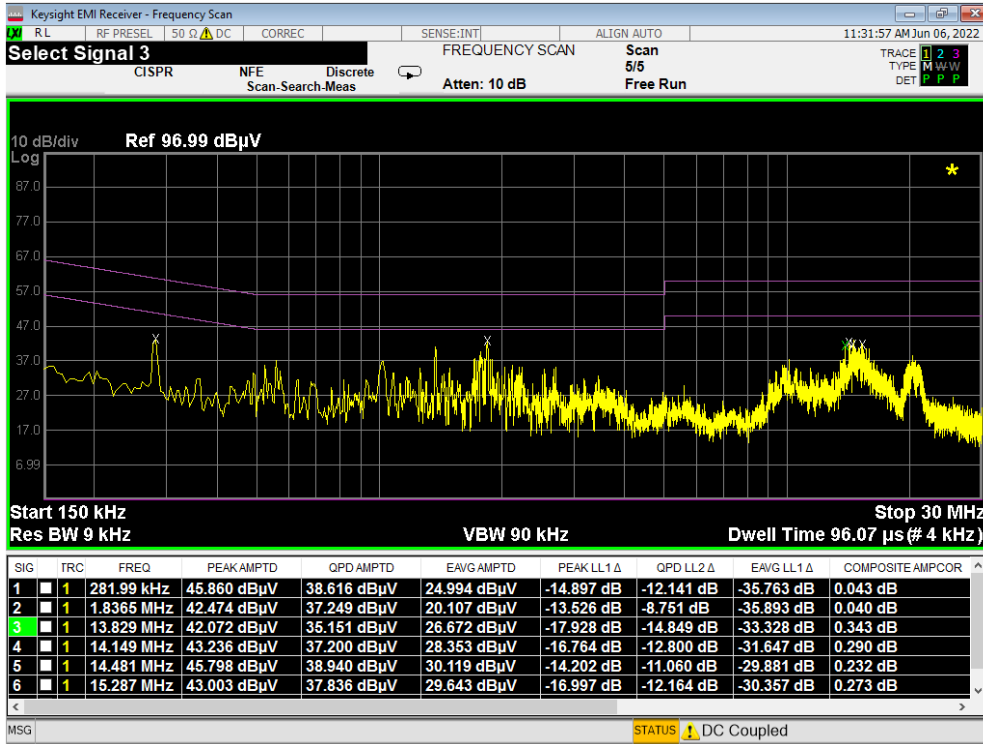


Plot 7-456. Line Conducted Plot with 802.11a UNII Band 2A (L1)

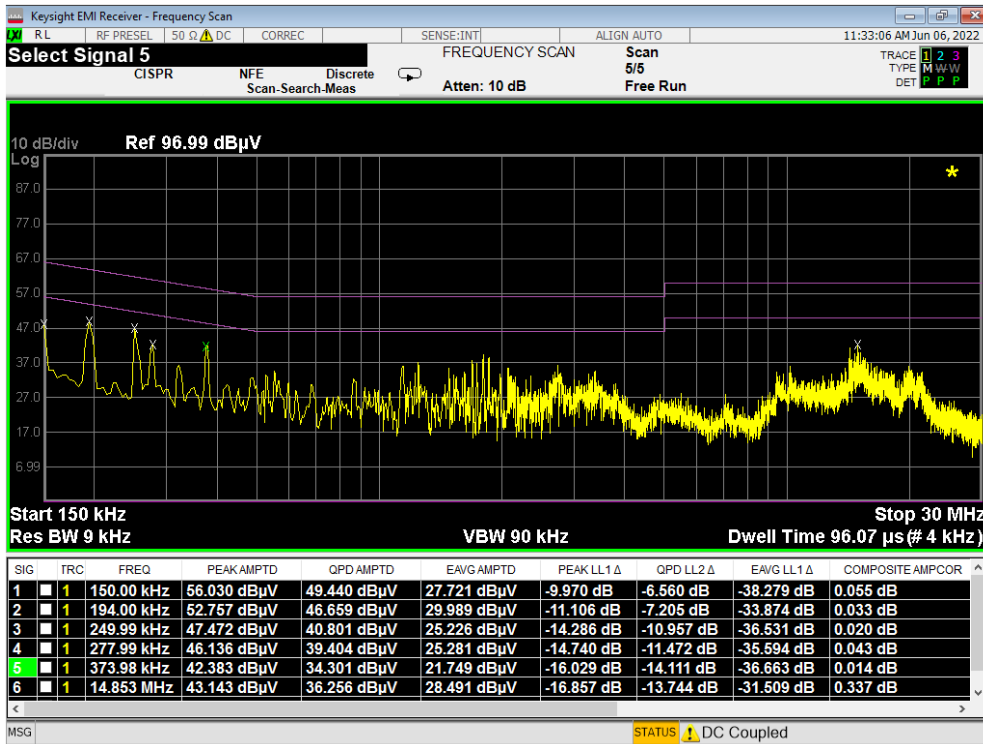


Plot 7-457. Line Conducted Plot with 802.11a UNII Band 2A (N)

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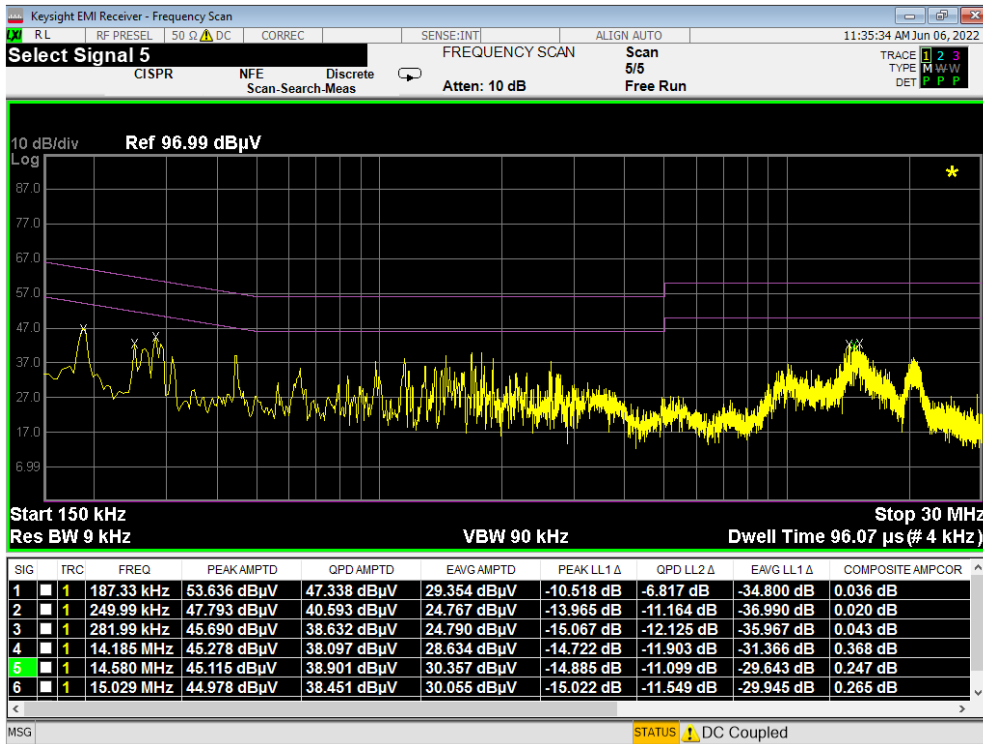


Plot 7-458. Line Conducted Plot with 802.11a UNII Band 2C (L1)

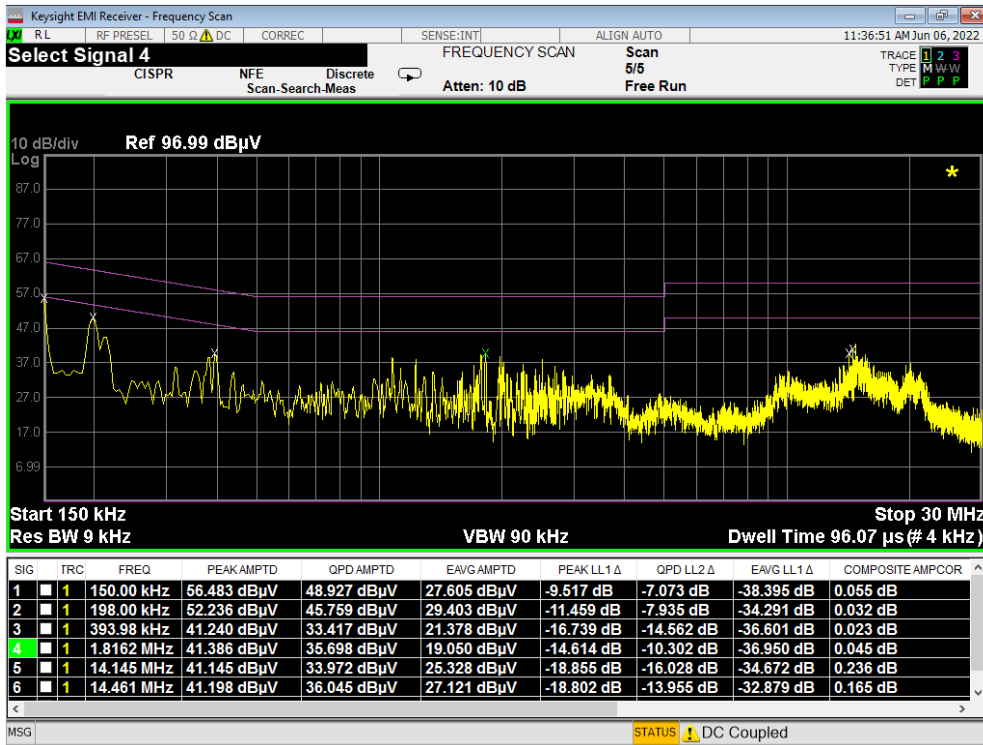


Plot 7-459. Line Conducted Plot with 802.11a UNII Band 2C (N)

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Plot 7-460. Line Conducted Plot with 802.11a UNII Band 3 (L1)



Plot 7-461. Line Conducted Plot with 802.11a UNII Band 3 (N)

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## 8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Microsoft Corporation Portable Computing Device FCC ID: C3K1997** is in compliance with Part 15 Subpart E (15.407) of the FCC Rules.

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