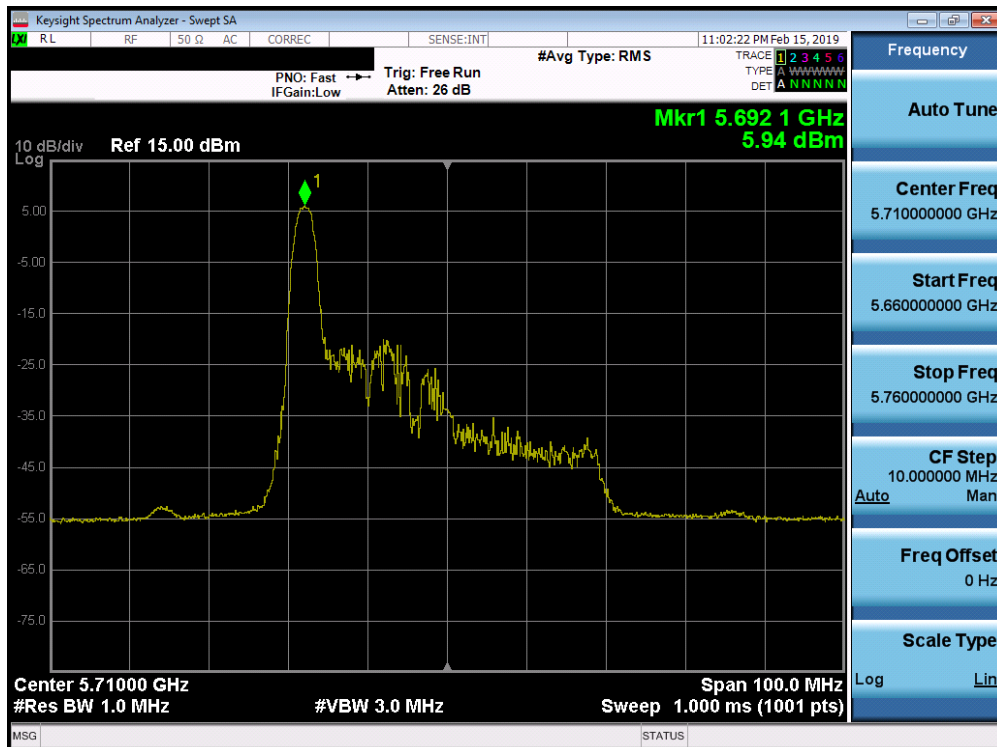
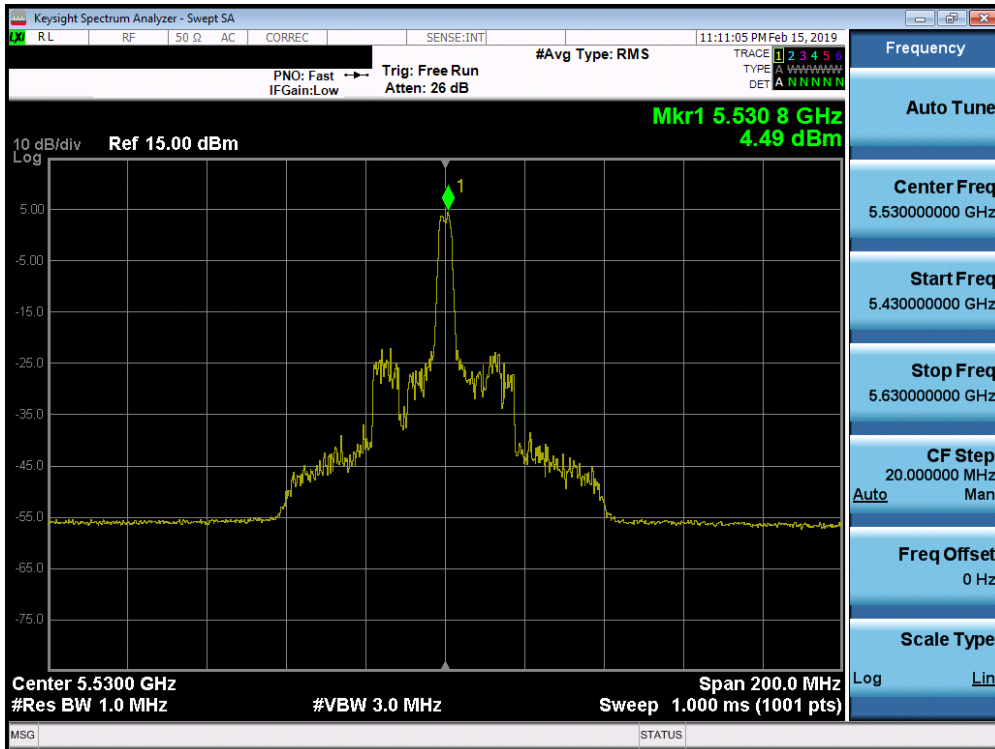


Plot 7-233. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 118)

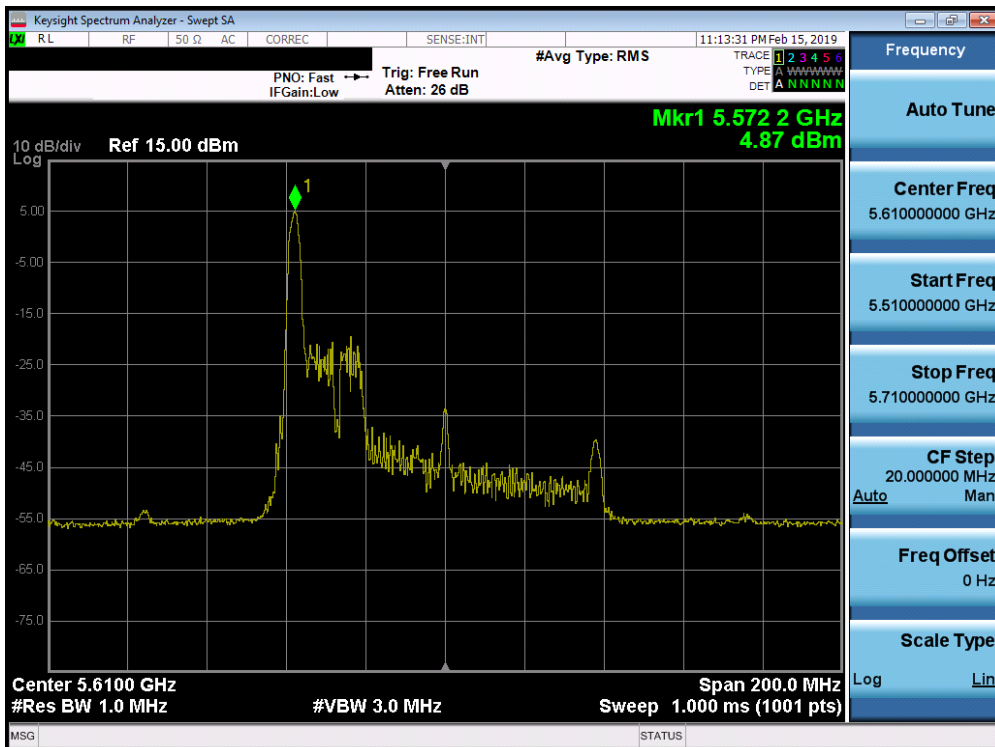


Plot 7-234. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 142)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 177 of 287

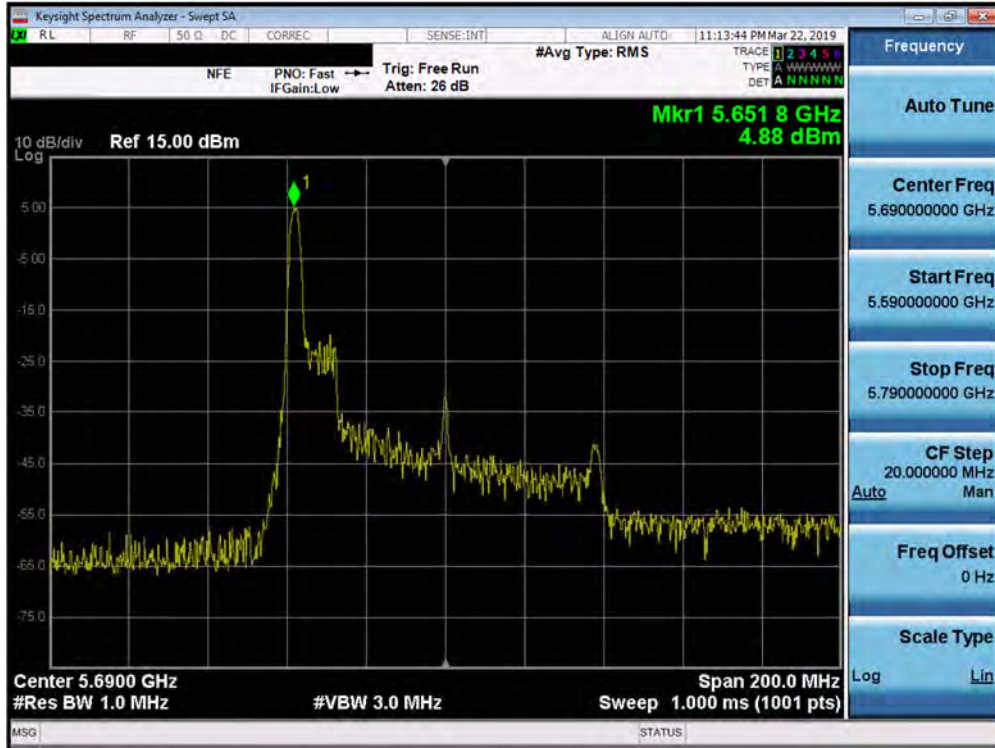


Plot 7-235. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 106)

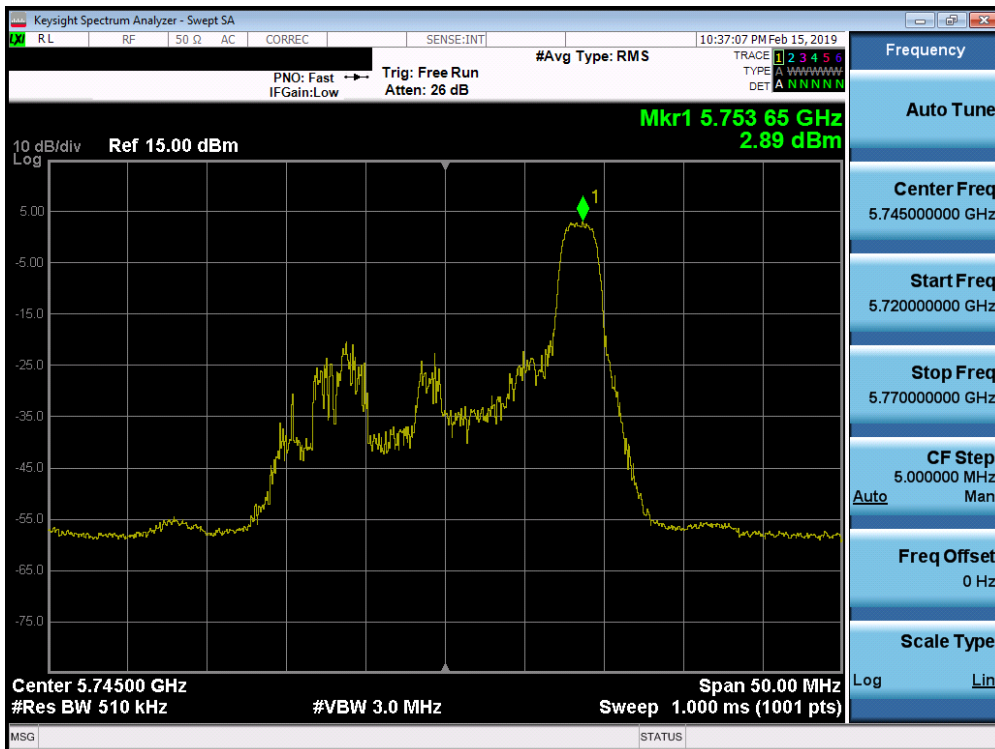


Plot 7-236. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 122)

FCC ID: A3LSMG977U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 178 of 287



Plot 7-237. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 138)

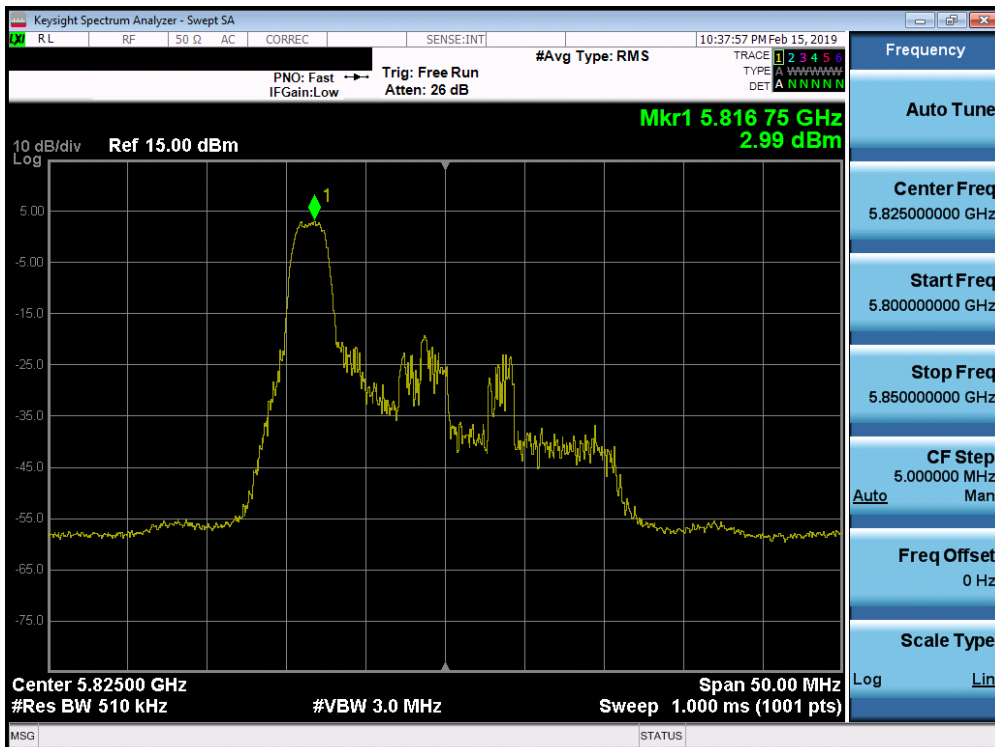


Plot 7-238. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 149)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 179 of 287

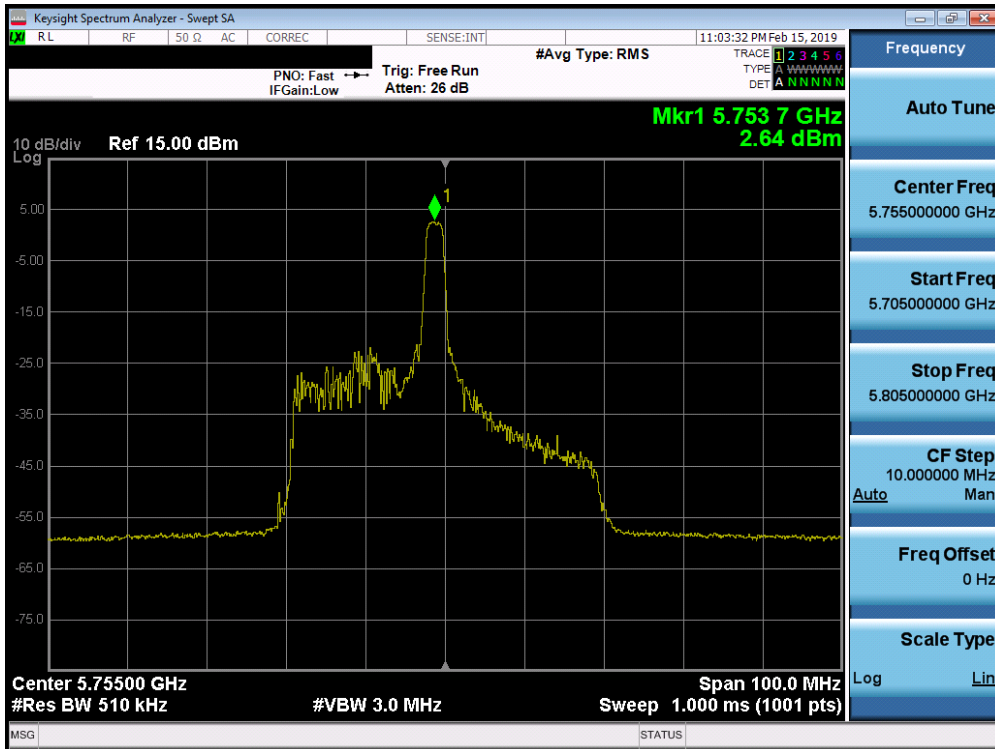


Plot 7-239. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 157)

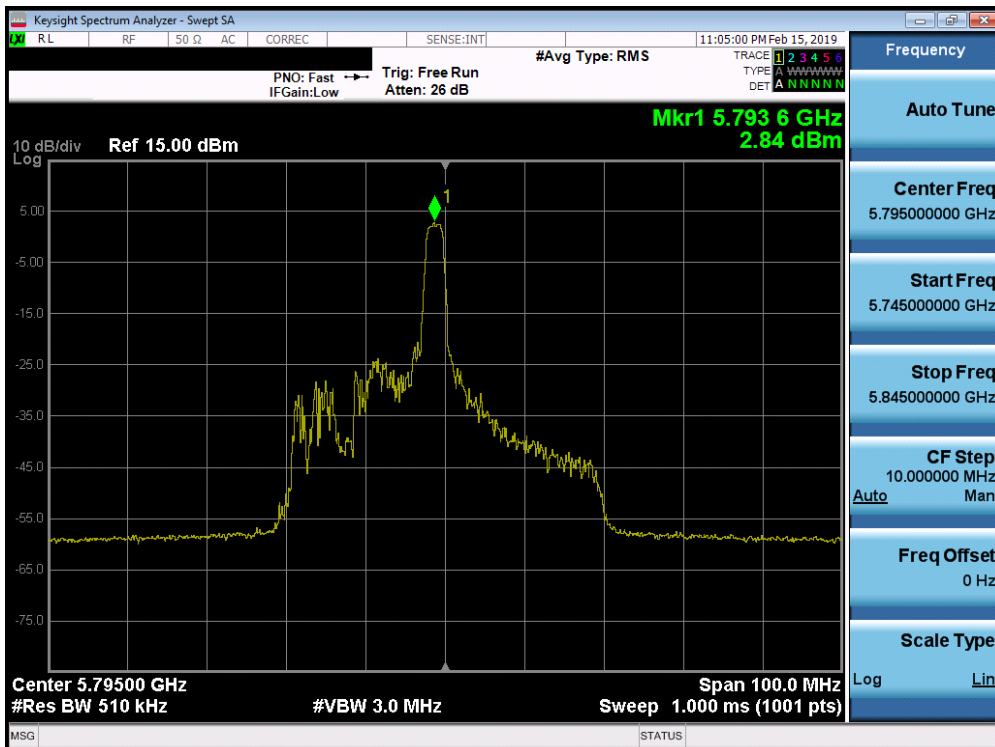


Plot 7-240. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 165)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 180 of 287

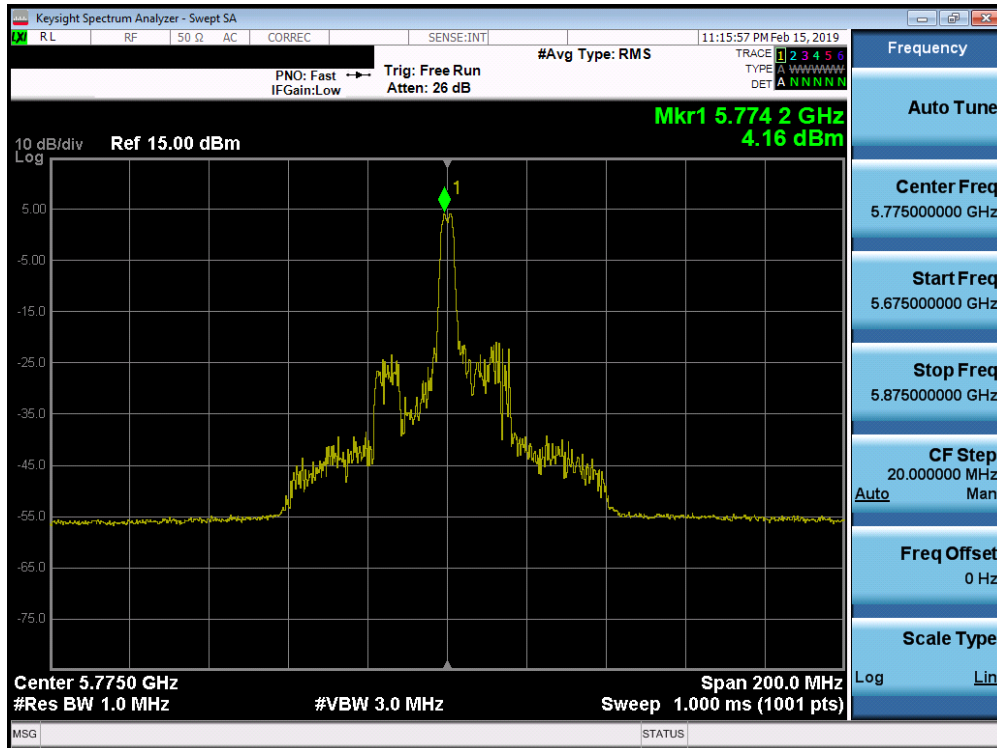


Plot 7-241. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 151)



Plot 7-242. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 159)

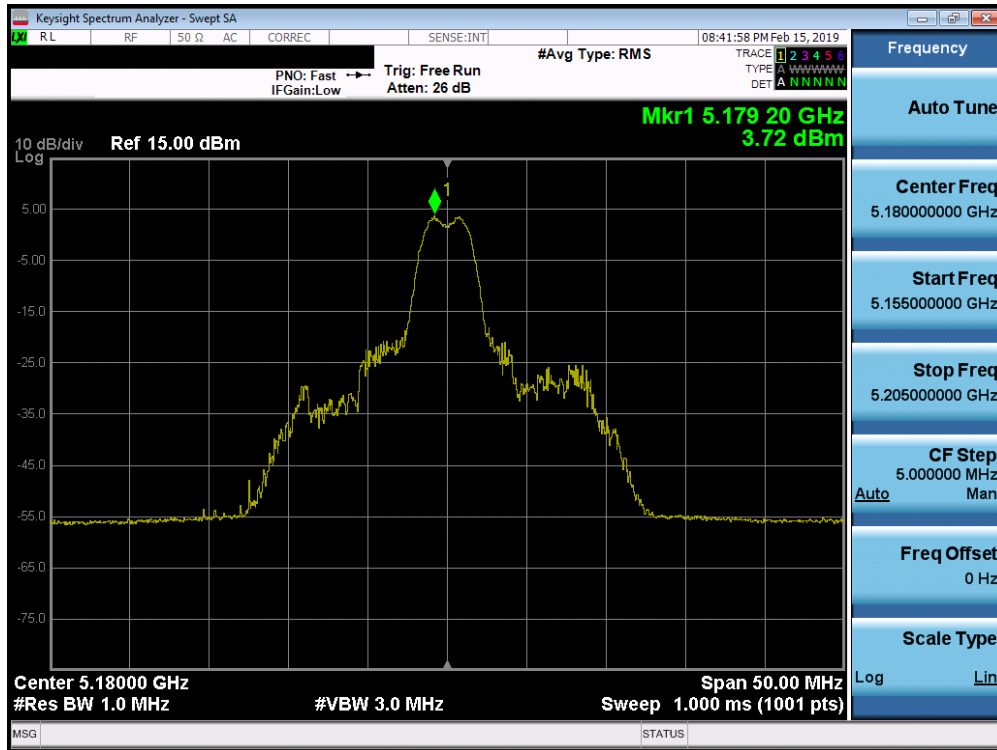
FCC ID: A3LSMG977U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 181 of 287



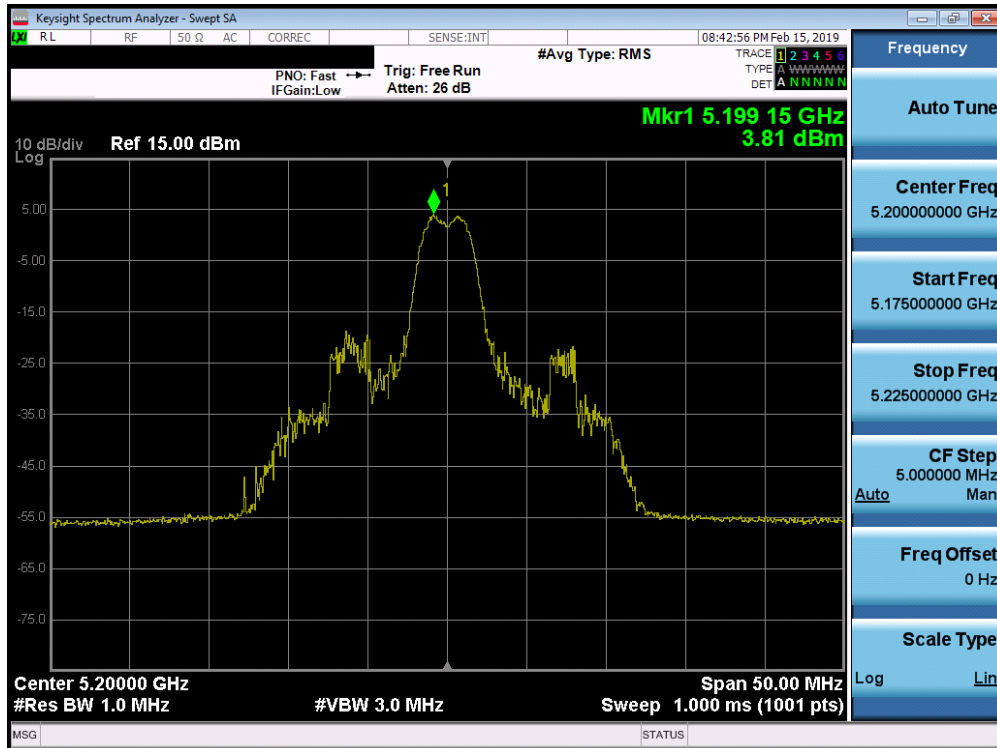
Plot 7-243. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 155)

FCC ID: A3LSMG977U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset	Page 182 of 287

## MIMO Antenna-2 Power Spectral Density Measurements (26 Tones)

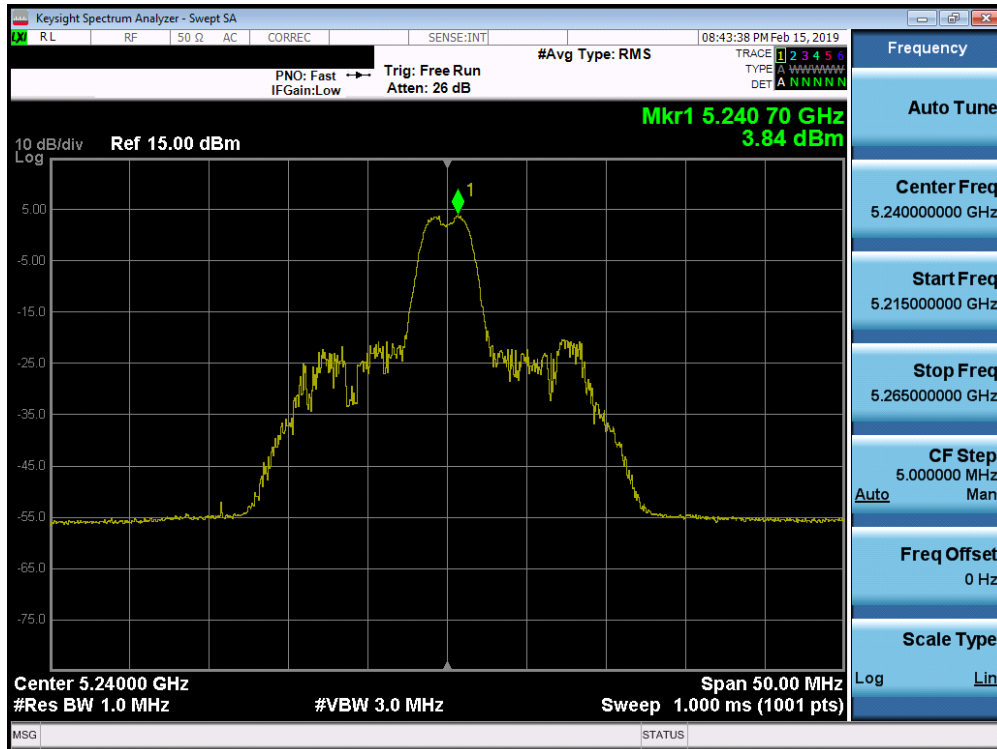


Plot 7-244. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 36)

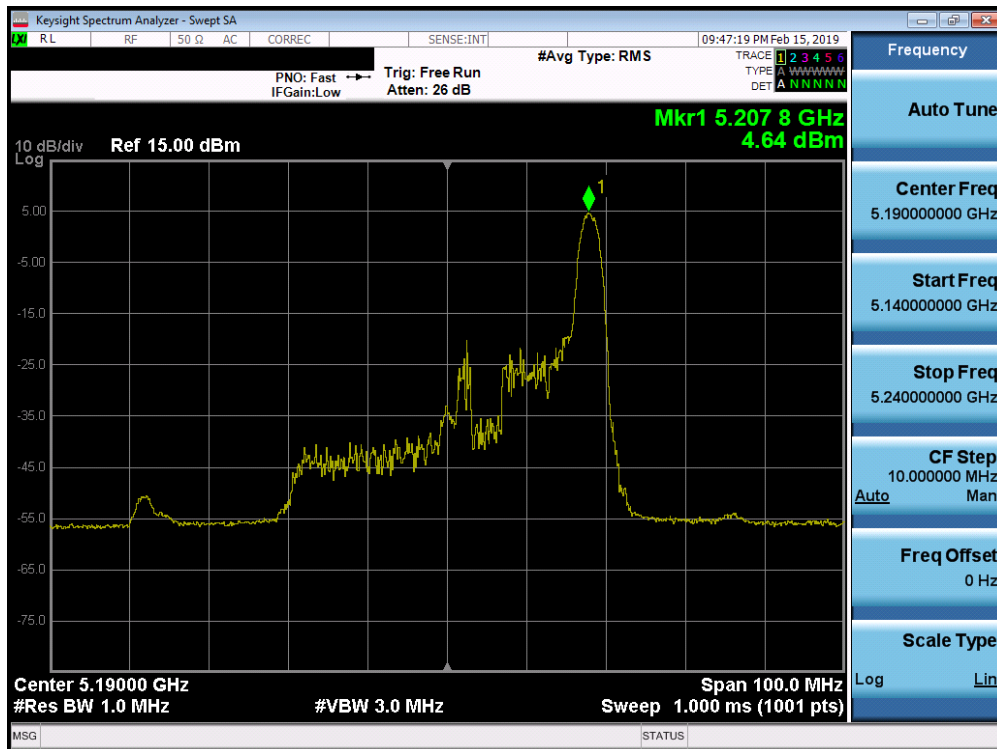


Plot 7-245. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 40)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 183 of 287



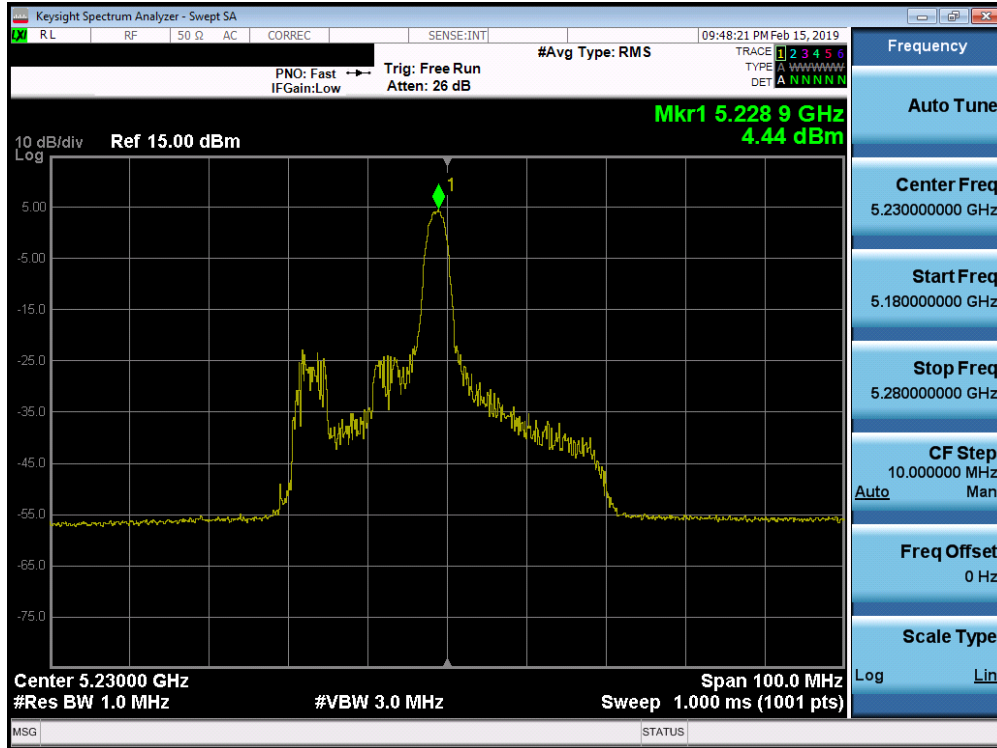
Plot 7-246. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 48)



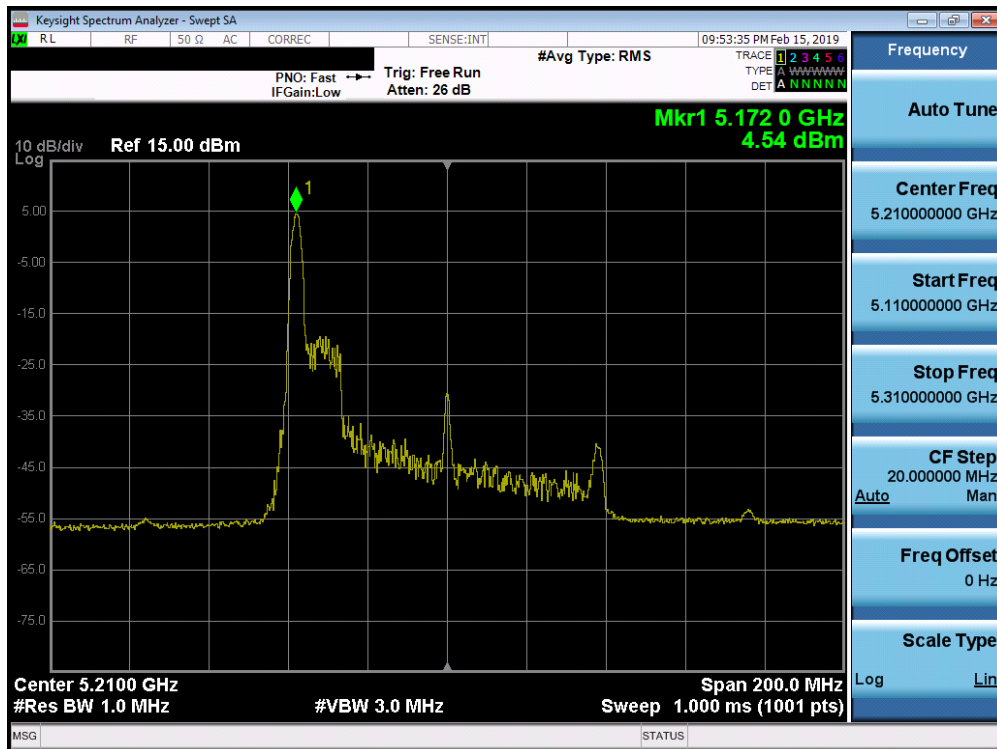
Plot 7-247. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 38)

FCC ID: A3LSMG977U	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT</b> (CERTIFICATION)	<b>SAMSUNG</b>	Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 184 of 287



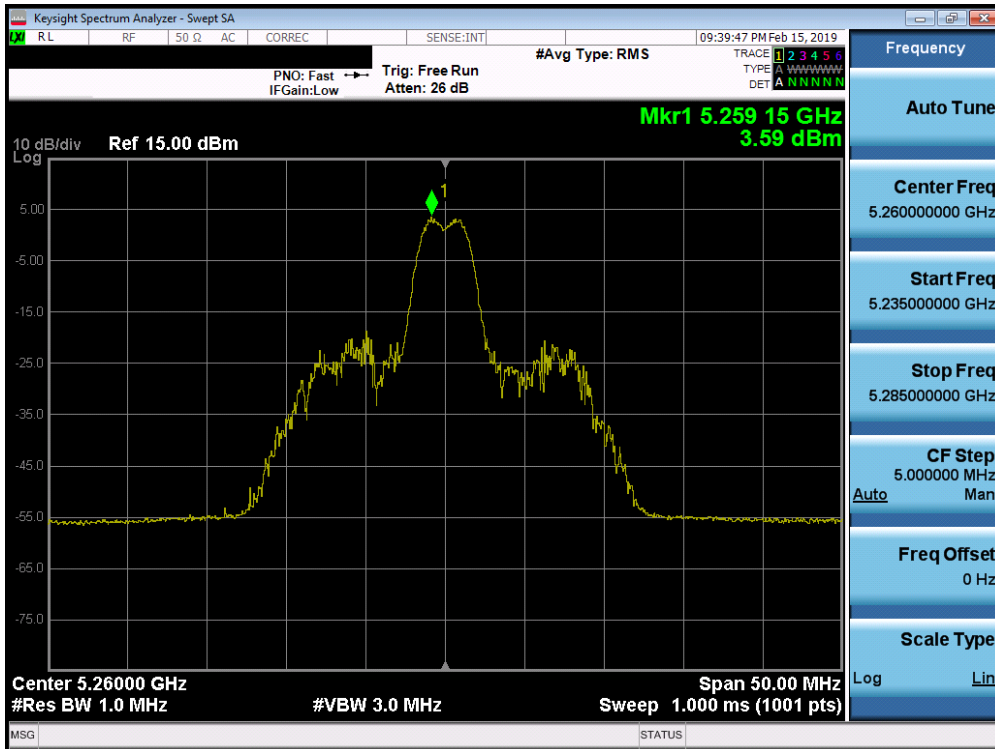


Plot 7-248. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 46)

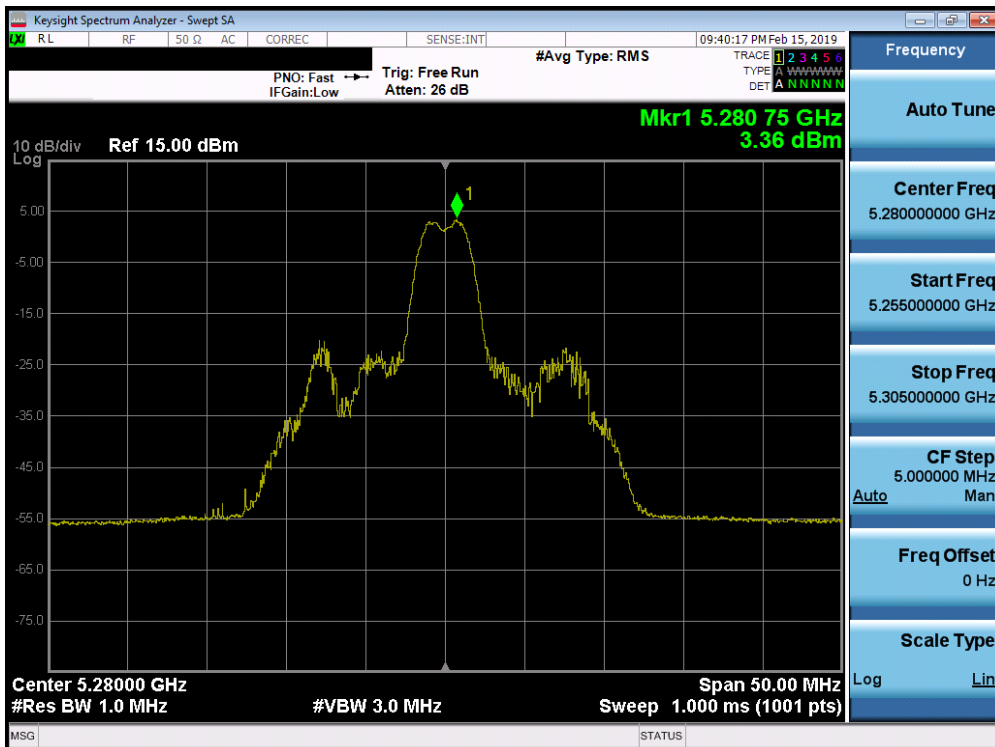


Plot 7-249. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 42)

FCC ID: A3LSMG977U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 185 of 287

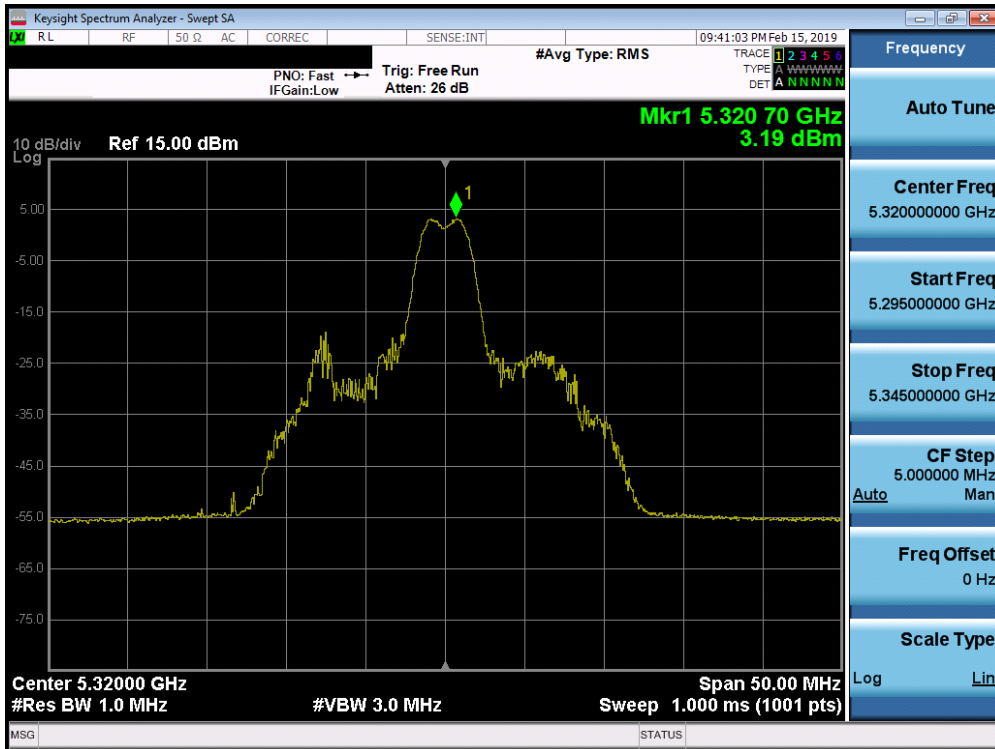


Plot 7-250. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 52)

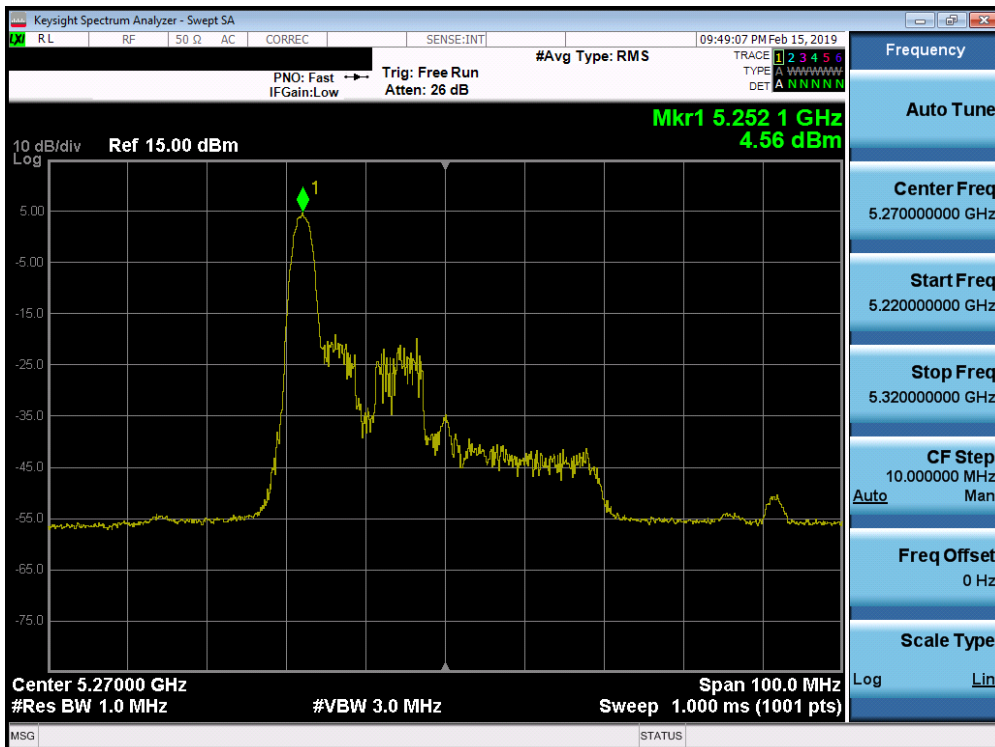


Plot 7-251. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 56)

FCC ID: A3LSMG977U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 186 of 287

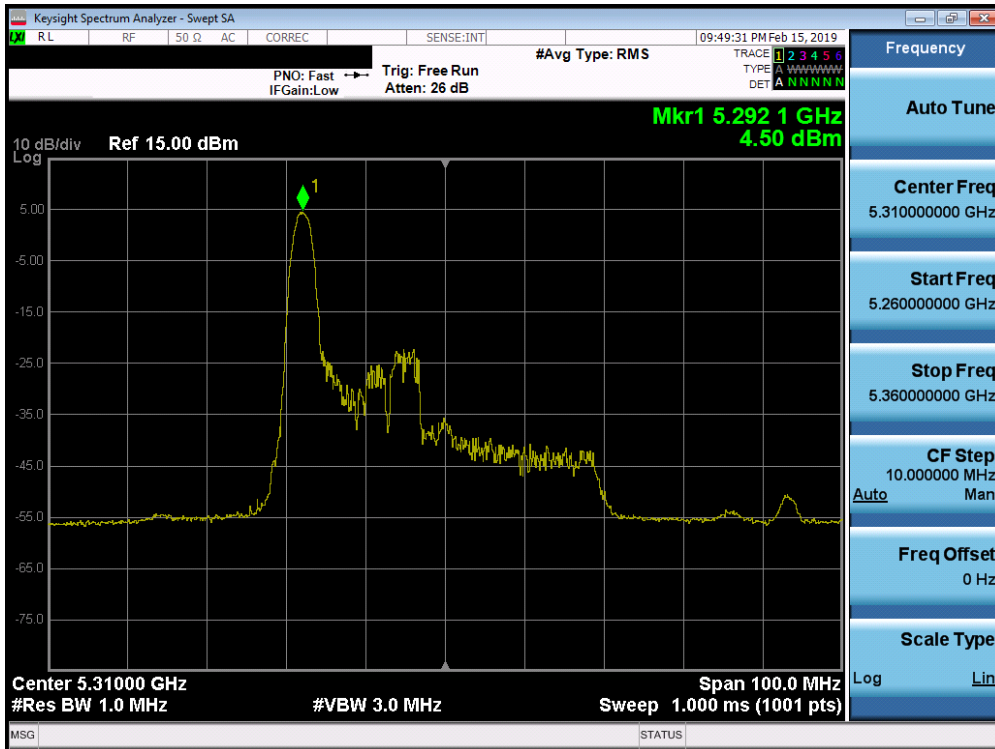


Plot 7-252. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 64)

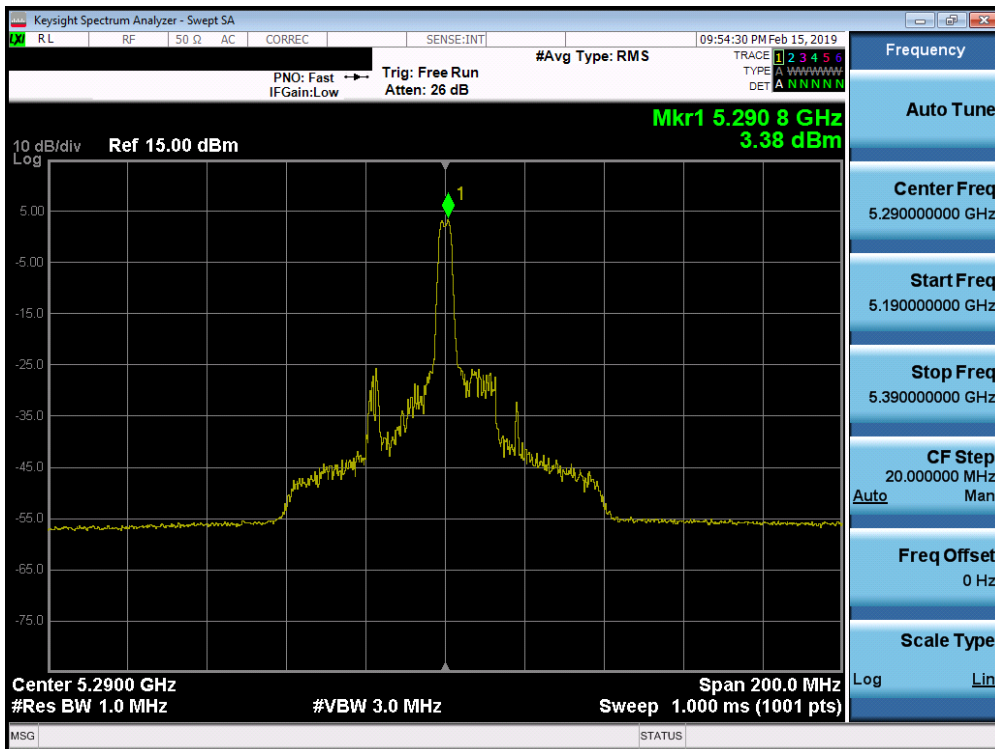


Plot 7-253. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 54)

FCC ID: A3LSMG977U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 187 of 287

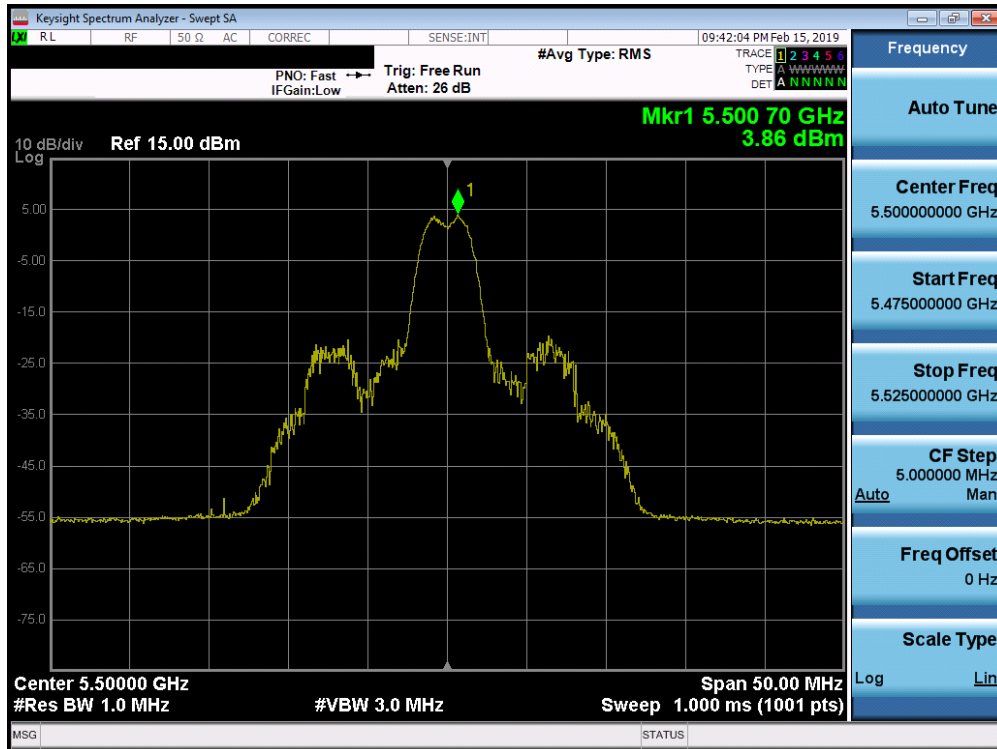


Plot 7-254. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 62)

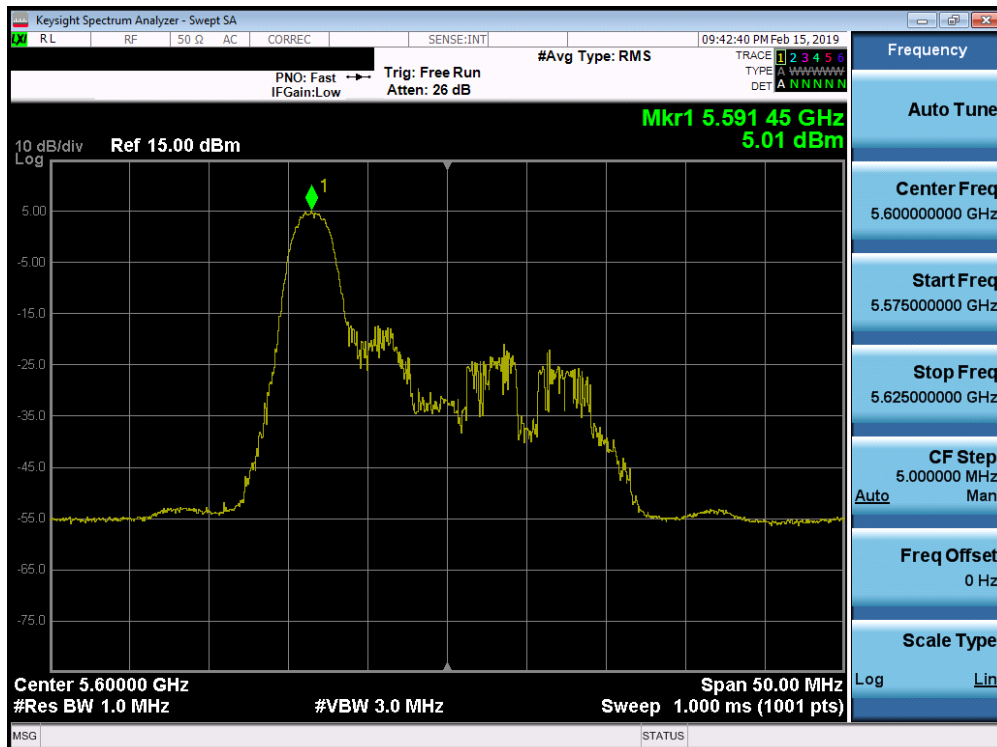


Plot 7-255. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 58)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 188 of 287

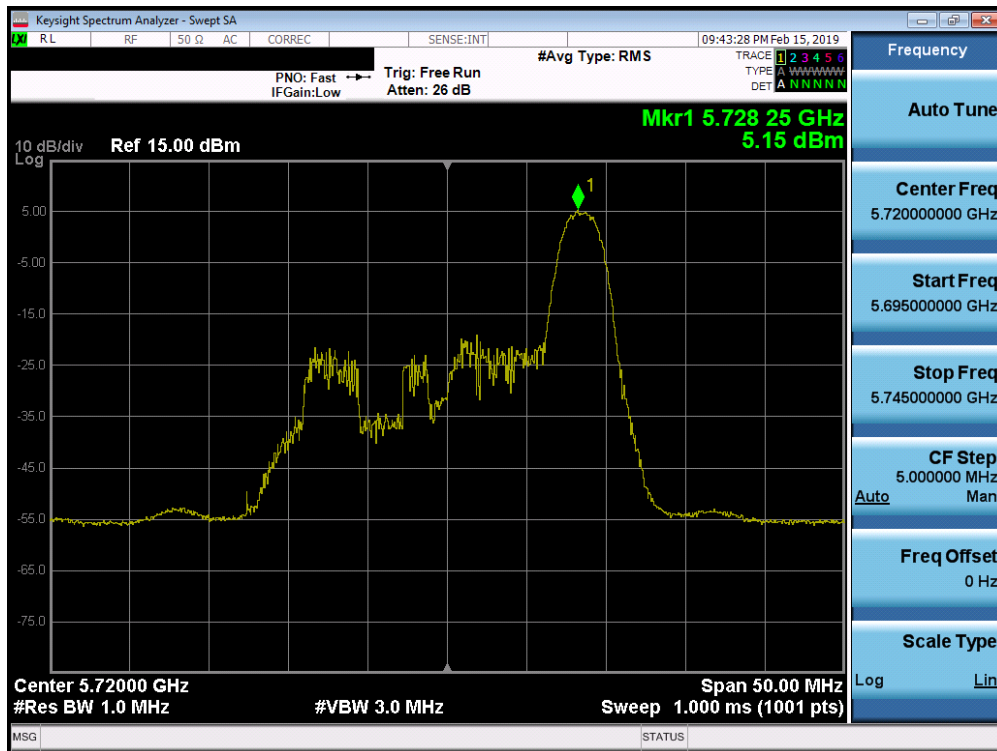


Plot 7-256. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 100)

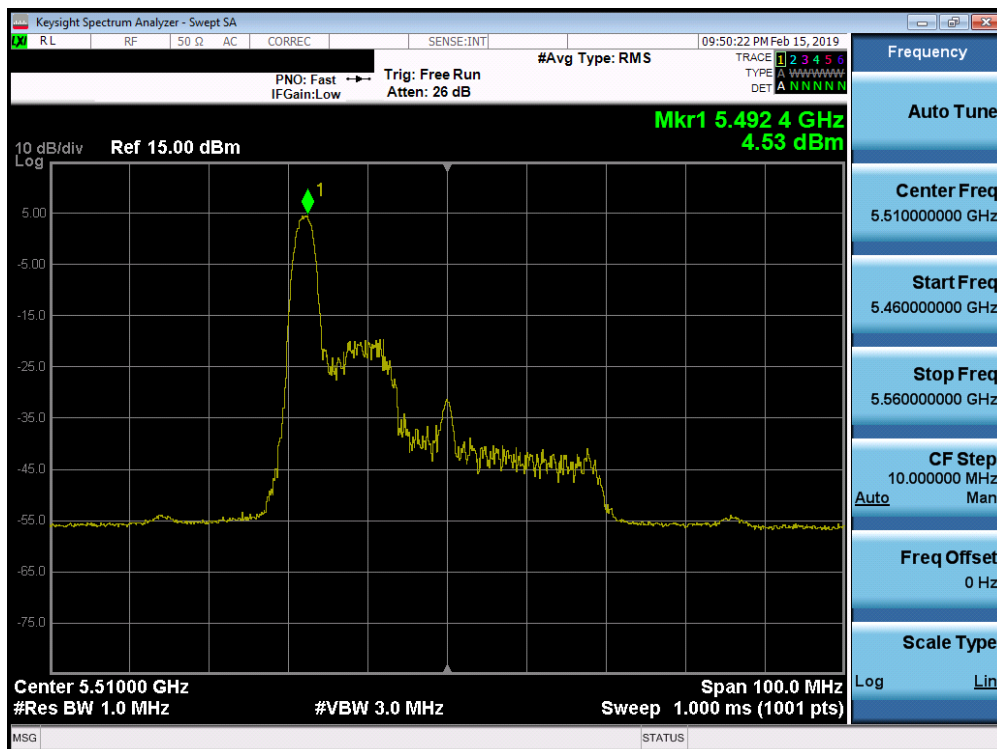


Plot 7-257. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 120)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 189 of 287

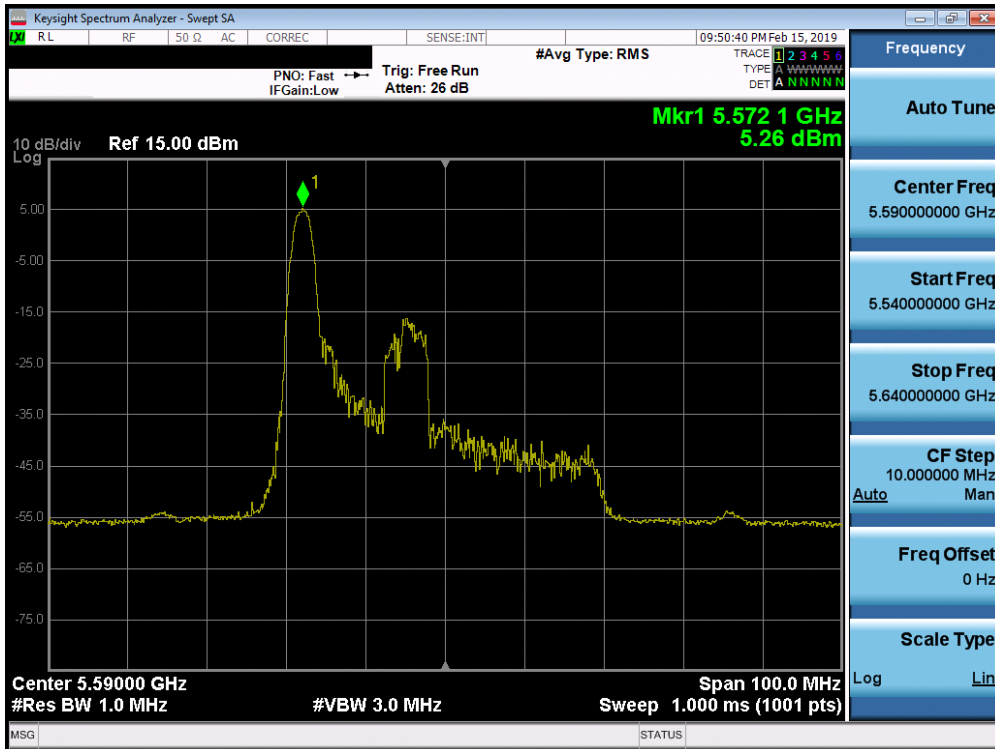


Plot 7-258. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 144)

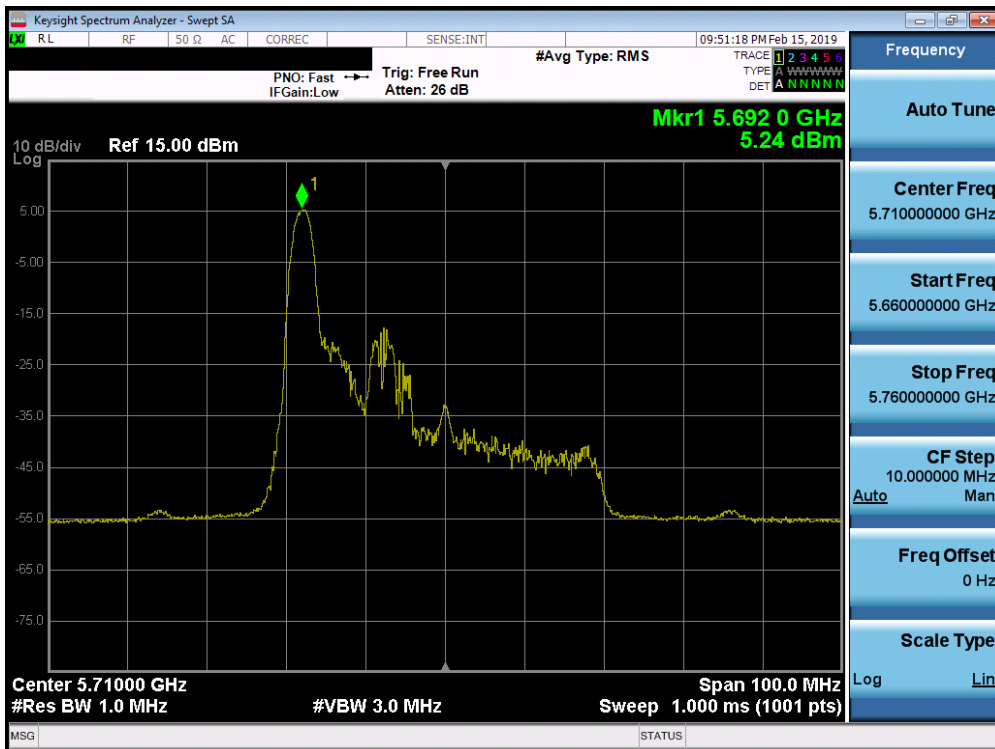


Plot 7-259. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 102)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 190 of 287

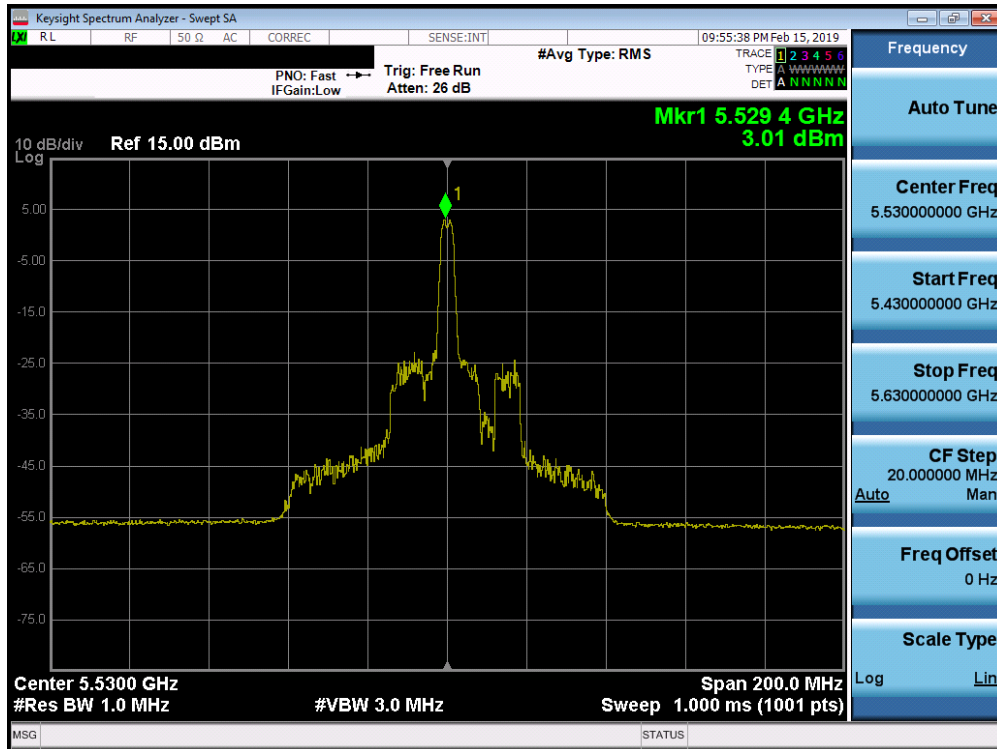


Plot 7-260. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 118)

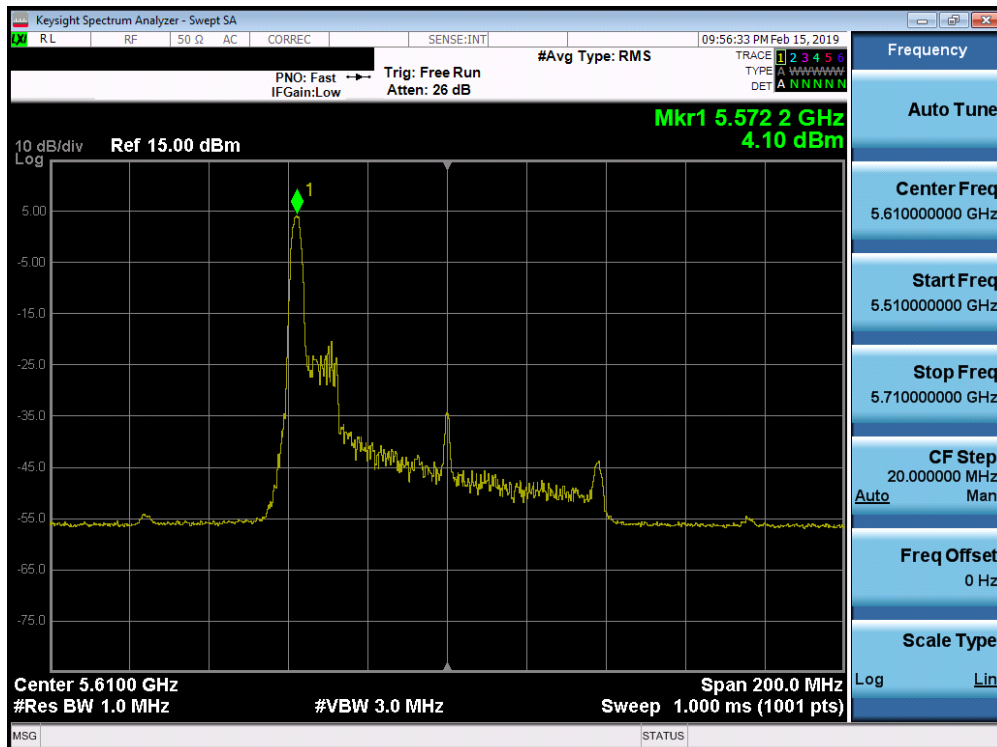


Plot 7-261. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 142)

FCC ID: A3LSMG977U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 191 of 287



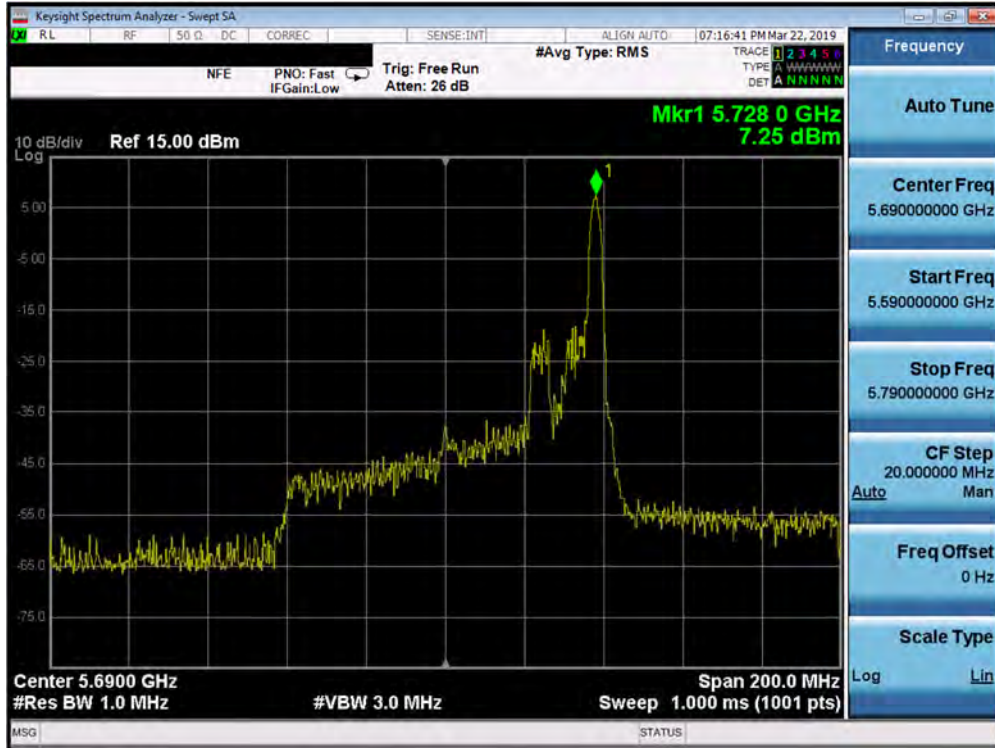
Plot 7-262. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 106)



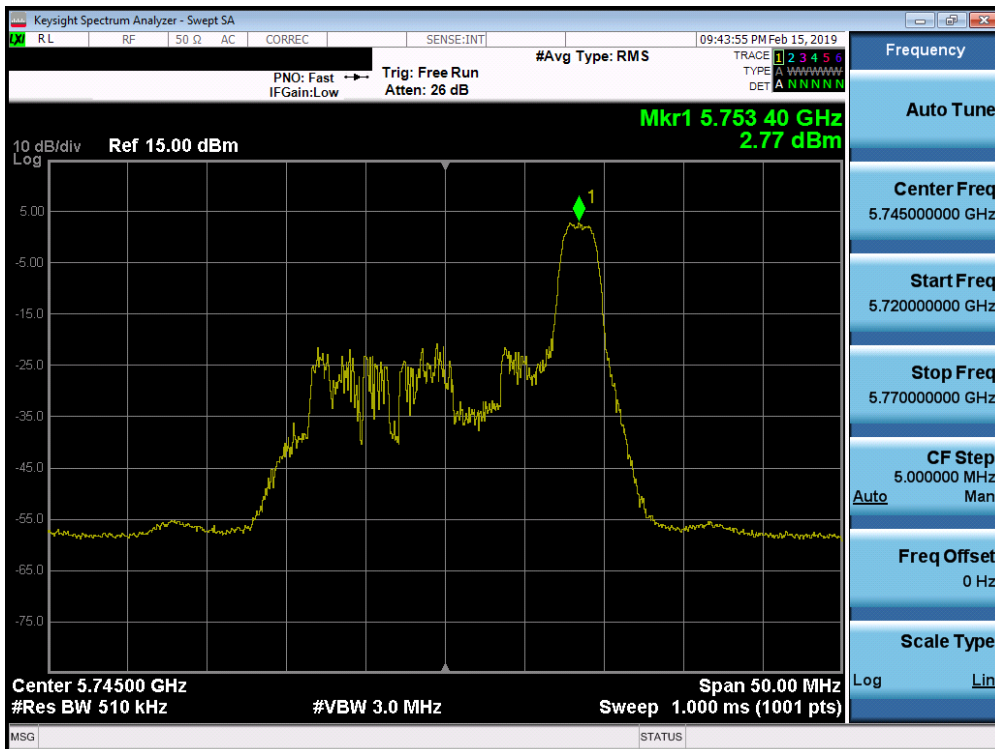
Plot 7-263. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 122)

FCC ID: A3LSMG977U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 192 of 287



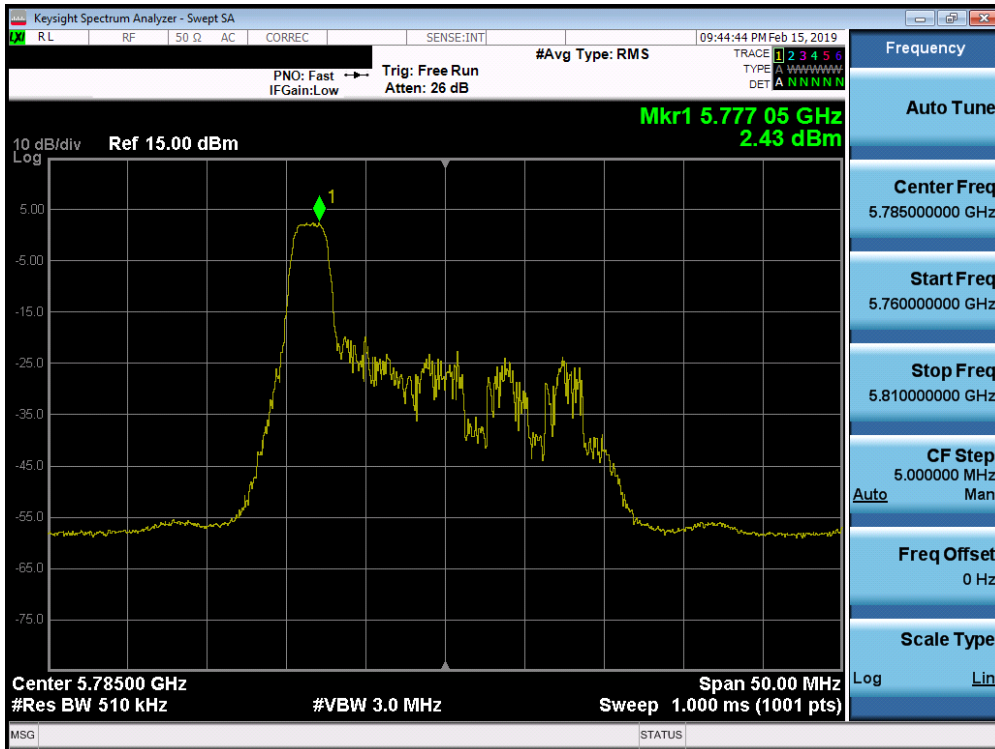


Plot 7-264. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 138)

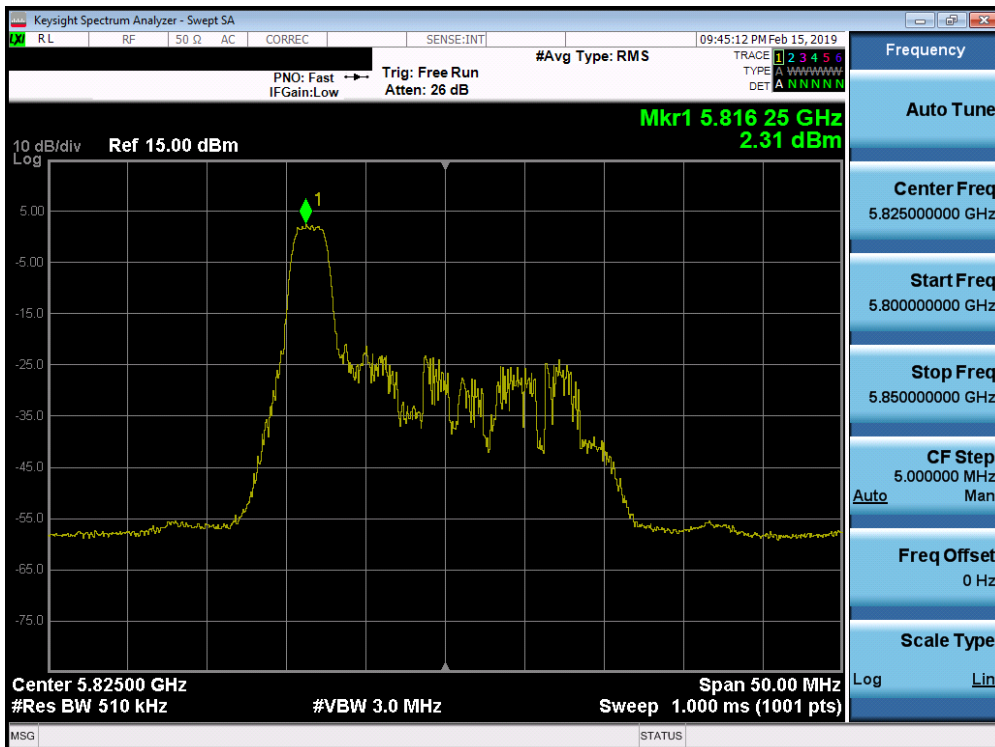


Plot 7-265. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 149)

FCC ID: A3LSMG977U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 193 of 287

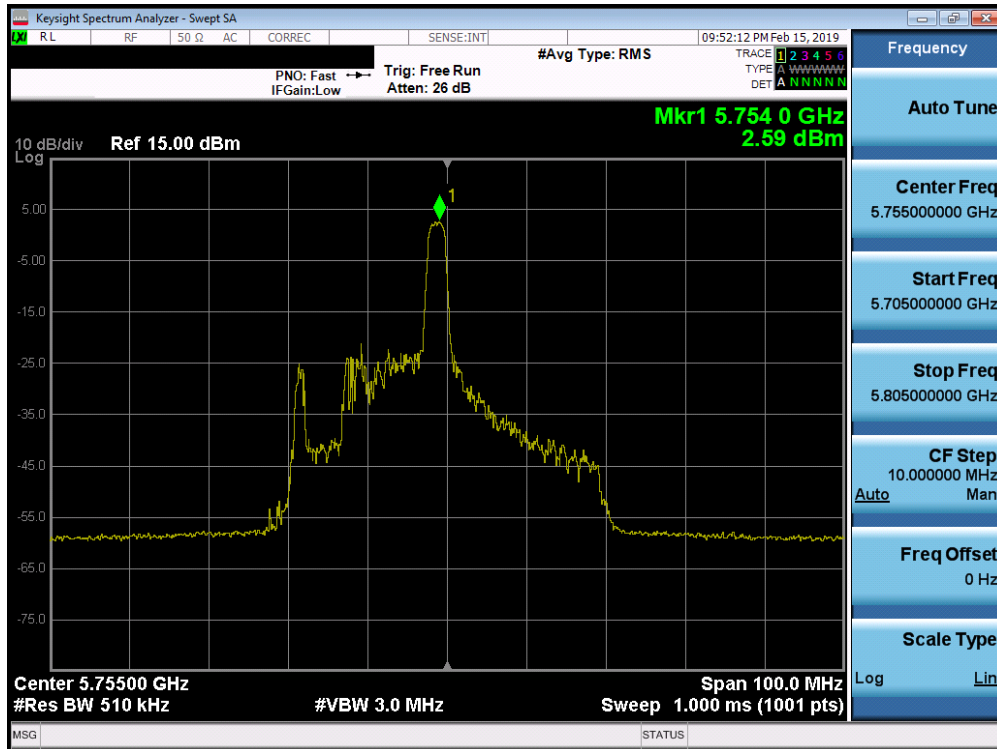


Plot 7-266. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 157)

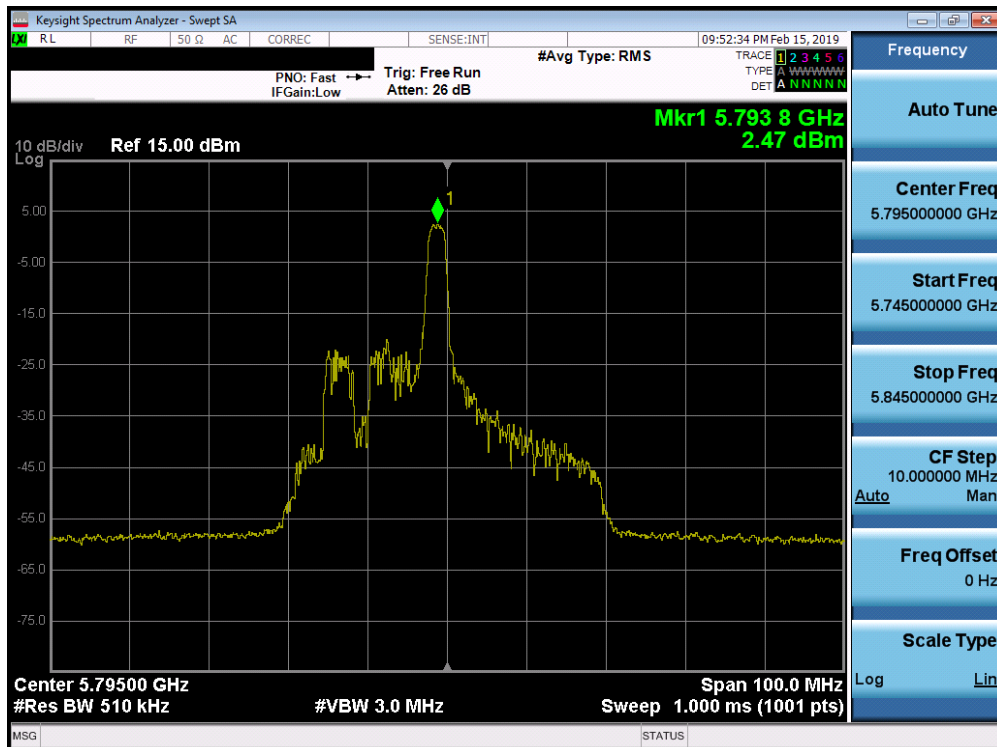


Plot 7-267. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 165)

FCC ID: A3LSMG977U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 194 of 287

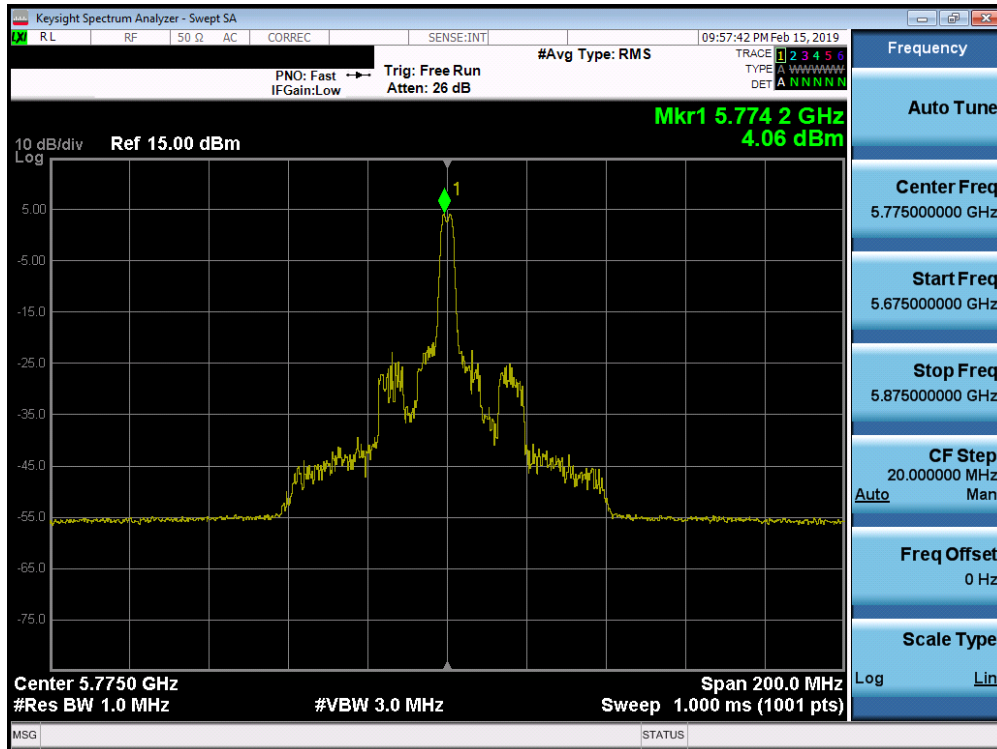


Plot 7-268. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 151)



Plot 7-269. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 159)

FCC ID: A3LSMG977U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 195 of 287



Plot 7-270. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 155)

FCC ID: A3LSMG977U	 <b>MEASUREMENT REPORT (CERTIFICATION)</b>			Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 196 of 287

## 7.6 Radiated Spurious Emission Measurements – Above 1GHz

§15.407(b) §15.205 §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 its maximum power control level, as defined in ANSI C63.10-2013 and KDB 789033 D02 v02r01, and at the appropriate frequencies. All channels, modes (e.g. 26 Tones, 52 Tones, 106 Tones, 242 Tones, 484 Tones and 996 Tones), and modulations/data rates were investigated among all UNII bands. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

***For transmitters operating in the 5.15-5.25 GHz and 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.***

***For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.***

***For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.***

***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 7-67 per Section 15.209 and RSS-Gen (8.9).***

Frequency	Field Strength [ $\mu\text{V/m}$ ]	Measured Distance [Meters]
Above 960.0 MHz	500	3

Table 7-67. Radiated Limits

### Test Procedures Used

ANSI C63.10-2013 – Sections 12.7.7.2, 12.7.6, 12.7.5  
KDB 789033 D02 v02r01 – Section G

### Test Settings

#### Average Measurements above 1GHz (Method AD)

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 measurement points = 1001 (Number of points must be  $\geq 2 \times \text{span/RBW}$ )
6. Averaging type = power (RMS)
7. Sweep time = auto couple
8. Trace was averaged over 100 sweeps

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 197 of 287

### Peak Measurements above 1GHz

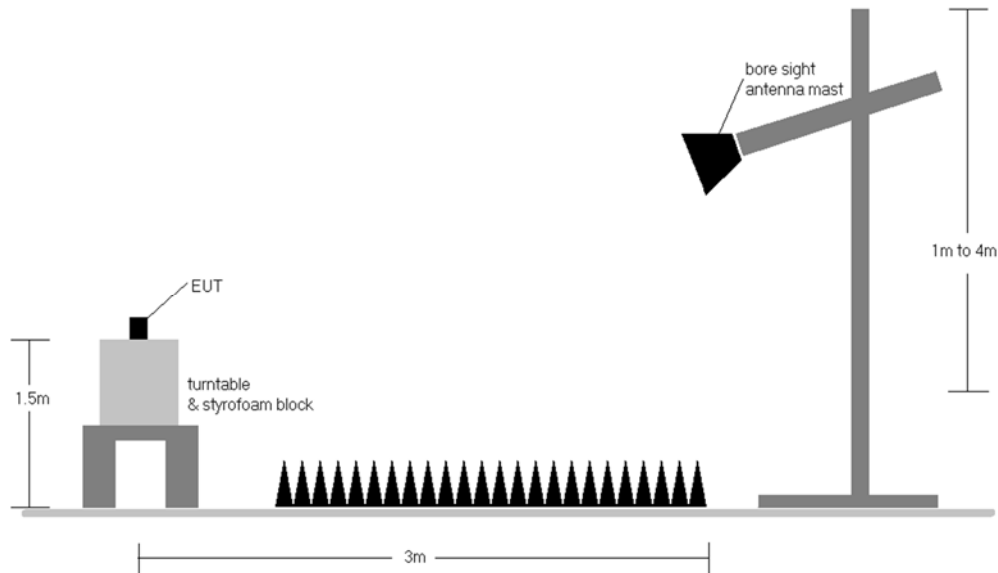
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

### Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = 120kHz
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

### Test Setup

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



**Figure 7-5. Test Instrument & Measurement Setup**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 198 of 287

**Test Notes**

1. All emissions that lie in the restricted bands (denoted by a \* next to the frequency) specified in §15.205 and Section 8.10 of RSS-Gen are below the limit shown in Table 7-67.
2. All spurious emissions that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB $\mu$ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dB $\mu$ V/m.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. This unit was tested with its standard battery.
5. The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. Above 1 GHz, average and peak measurements were taken using linearly polarized horn antennas. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
6. Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
7. The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. Any emissions found to be within 20dB of the limit are fully investigated and the results are shown in this section.
8. The "-" shown in the following RSE tables are used to denote a noise floor measurement.
9. For radiated measurements, emissions were investigated for the fully-loaded RU configuration and for all of the partially-loaded RU configurations. Among all of the available partially-loaded RU configurations, only the configuration with the worst case emissions is reported.

**Sample Calculations**

**Determining Spurious Emissions Levels**

- Field Strength Level [dB $\mu$ V/m] = Analyzer Level [dBm] + 107 + AFCL [dB/m]
- AFCL [dB/m] = Antenna Factor [dB/m] + Cable Loss [dB]
- Margin [dB] = Field Strength Level [dB $\mu$ V/m] – Limit [dB $\mu$ V/m]

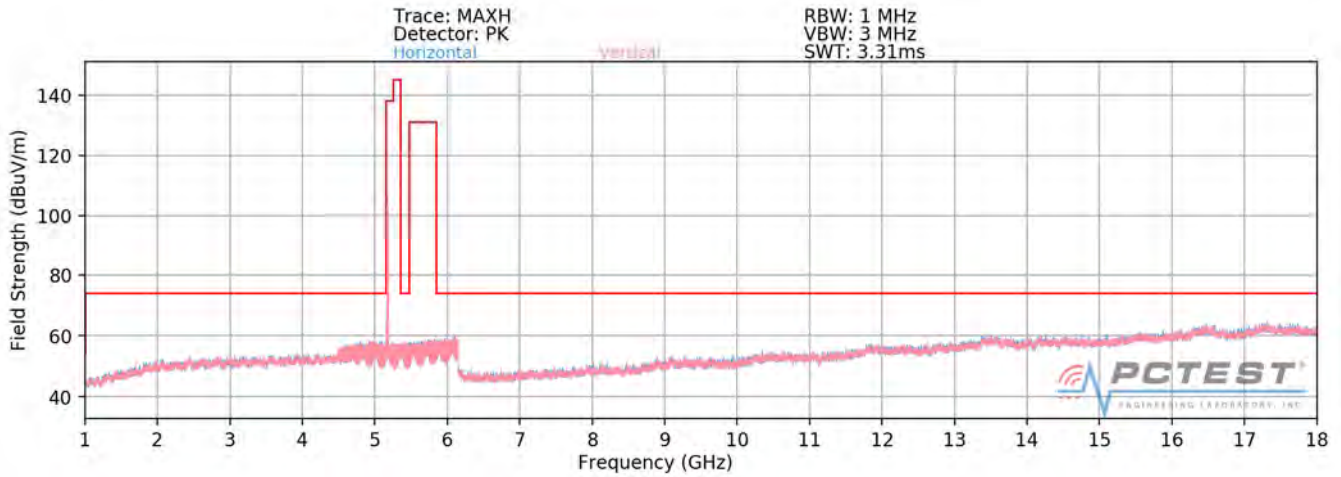
**Radiated Band Edge Measurement Offset**

- The amplitude offset shown in the radiated restricted band edge plots in Section Radiated Spurious Emission Measurements – Above 1GHz was calculated using the formula:  
Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

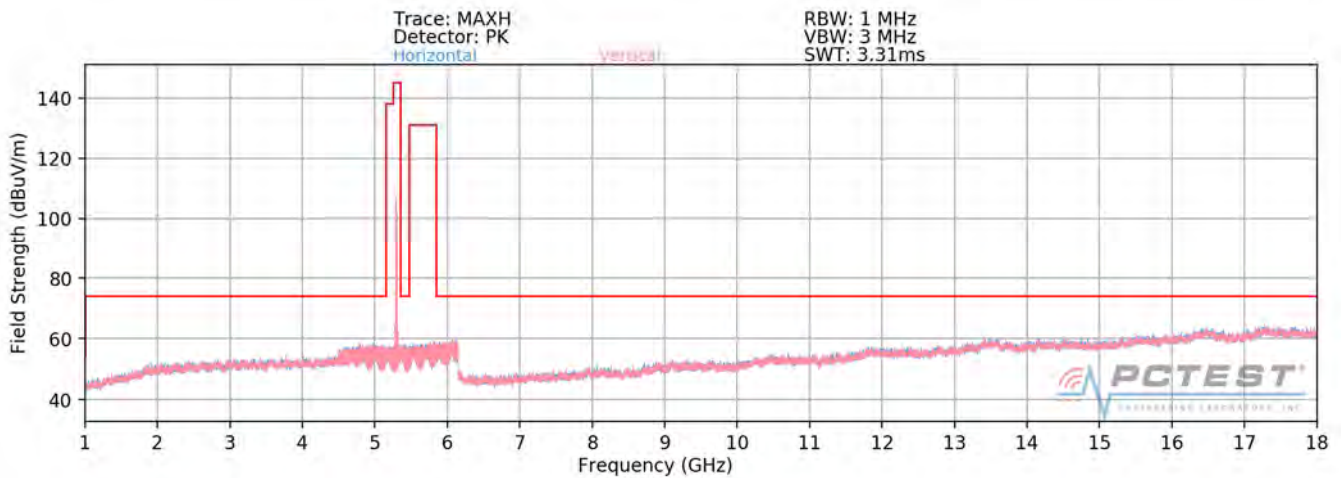
<b>FCC ID:</b> A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1901100003-10.A3L	<b>Test Dates:</b> 01/22/2019 - 03/25/2019	<b>EUT Type:</b> Portable Handset	Page 199 of 287	

## 7.6.1 SISO Antenna-1 Radiated Spurious Emission Measurements

### 26 Tones



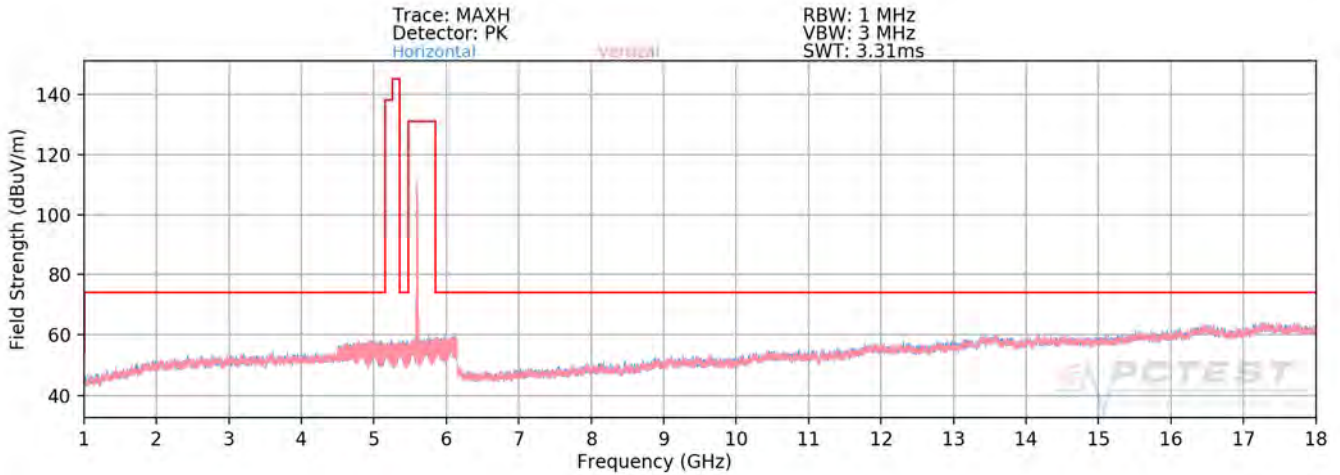
Plot 7-271. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U1 Ch. 40 – 26 Tones)



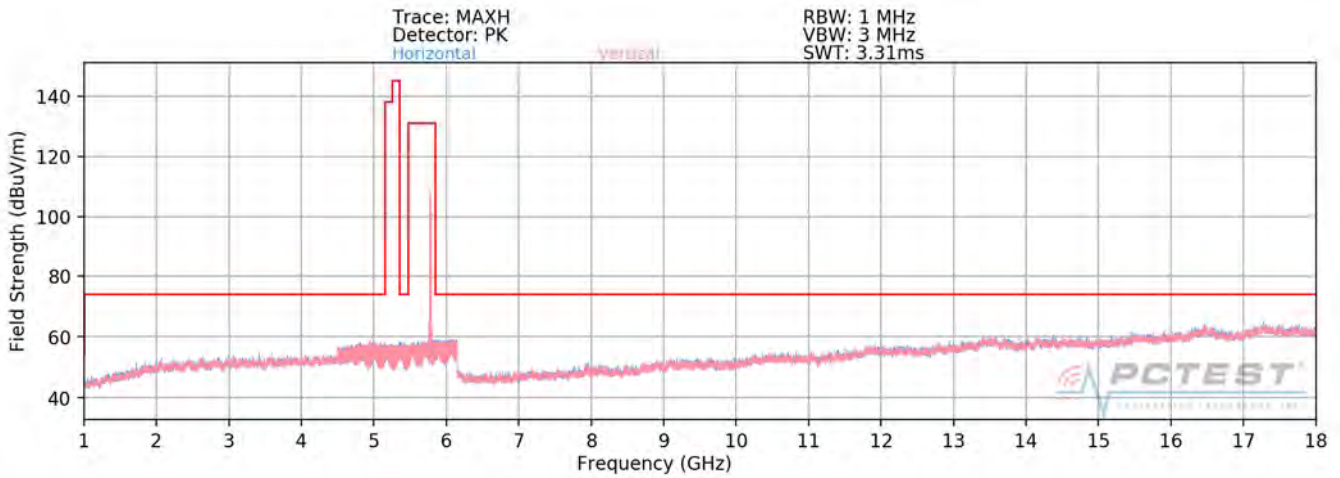
Plot 7-272. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U2A Ch. 56 – 26 Tones)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 200 of 287





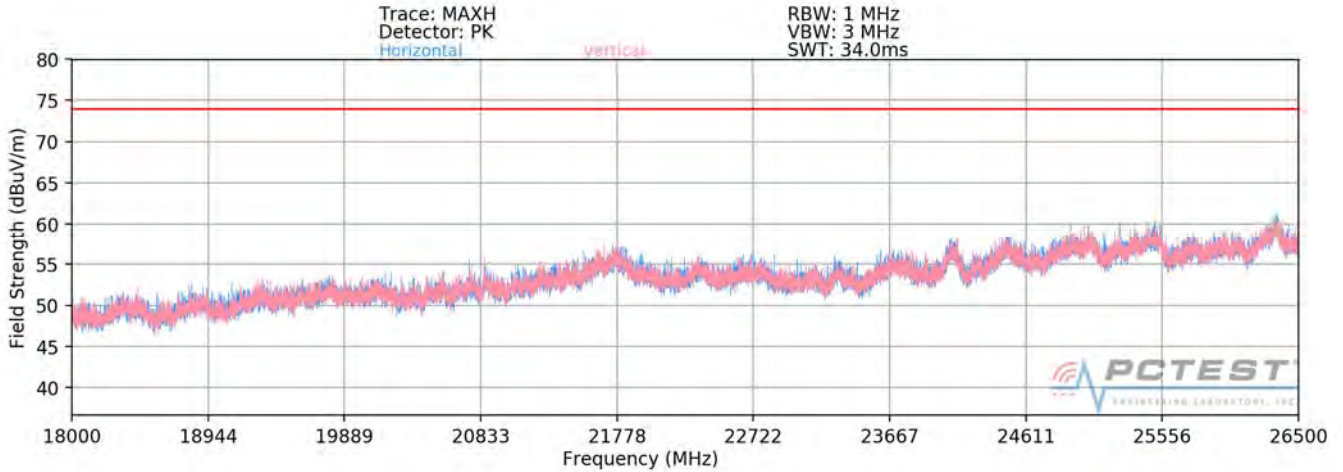
**Plot 7-273. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U2C Ch. 120 – 26 Tones)**



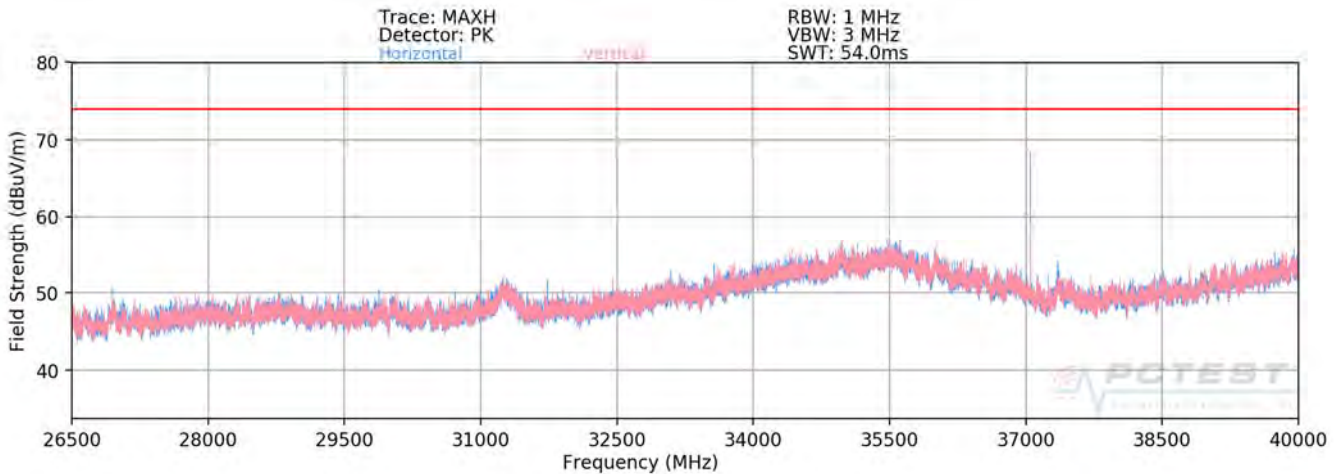
**Plot 7-274. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U3 Ch. 157 – 26 Tones)**

FCC ID: A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 201 of 287

### SISO Antenna-1 Radiated Spurious Emissions Measurements (Above 18GHz)



**Plot 7-275. Radiated Spurious Plot 18GHz - 26.5GHz SISO ANT1 (802.11ax – 26 Tones)**



**Plot 7-276. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT1 (802.11ax – 26 Tones)**

FCC ID: A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 202 of 287

## SISO Antenna-1 Radiated Spurious Emission Measurements (26 Tones)

§15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5180MHz  
 Channel: 36

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]
10360.00	Peak	H	308	25	-56.30	12.74	0.00	63.44	68.20	-4.76
* 15540.00	Average	H	-	-	-79.47	15.28	0.00	42.81	53.98	-11.17
* 15540.00	Peak	H	-	-	-68.55	15.28	0.00	53.73	73.98	-20.25
* 20720.00	Average	H	-	-	-77.92	17.17	-9.54	36.70	53.98	-17.28
* 20720.00	Peak	H	-	-	-67.62	17.17	-9.54	47.00	73.98	-26.98
25900.00	Peak	H	-	-	-65.18	19.93	-9.54	52.20	68.20	-16.00

Table 7-68. Radiated Measurements SISO ANT1 (26 Tones)

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5200MHz  
 Channel: 40

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]
10400.00	Peak	H	293	16	-57.80	12.24	0.00	61.44	68.20	-6.76
* 15600.00	Average	H	-	-	-79.61	15.40	0.00	42.79	53.98	-11.18
* 15600.00	Peak	H	-	-	-69.55	15.40	0.00	52.85	73.98	-21.12
* 20800.00	Average	H	-	-	-77.91	17.65	-9.54	37.20	53.98	-16.78
* 20800.00	Peak	H	-	-	-66.69	17.65	-9.54	48.42	73.98	-25.56
26000.00	Peak	H	-	-	-64.93	20.68	-9.54	53.21	68.20	-14.99

Table 7-69. Radiated Measurements SISO ANT1 (26 Tones)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 203 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5240MHz  
 Channel: 48

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]
10480.00	Peak	H	290	1	-59.75	12.41	0.00	59.66	68.20	-8.54
* 15720.00	Average	H	-	-	-79.65	16.70	0.00	44.05	53.98	-9.93
* 15720.00	Peak	H	-	-	-69.72	16.70	0.00	53.98	73.98	-20.00
* 20960.00	Average	H	-	-	-78.21	17.53	-9.54	36.78	53.98	-17.20
* 20960.00	Peak	H	-	-	-67.09	17.53	-9.54	47.90	73.98	-26.08
26200.00	Peak	H	-	-	-64.96	20.23	-9.54	52.73	68.20	-15.47

**Table 7-70. Radiated Measurements SISO ANT1 (26 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5260MHz  
 Channel: 52

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]
10520.00	Peak	H	309	5	-62.75	13.16	0.00	57.41	68.20	-10.79
* 15780.00	Average	H	-	-	-79.72	16.21	0.00	43.49	53.98	-10.49
* 15780.00	Peak	H	-	-	-70.48	16.21	0.00	52.73	73.98	-21.25
* 21040.00	Average	H	-	-	-77.37	17.48	-9.54	37.56	53.98	-16.42
* 21040.00	Peak	H	-	-	-66.59	17.48	-9.54	48.34	73.98	-25.64
26300.00	Peak	H	-	-	-65.04	20.33	-9.54	52.75	68.20	-15.45

**Table 7-71. Radiated Measurements SISO ANT1 (26 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 204 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5280MHz  
 Channel: 56

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]
10560.00	Peak	H	356	10	-63.25	13.66	0.00	57.41	68.20	-10.79
* 15840.00	Average	H	-	-	-79.66	15.64	0.00	42.98	53.98	-11.00
* 15840.00	Peak	H	-	-	-69.67	15.64	0.00	52.97	73.98	-21.01
* 21120.00	Average	H	-	-	-77.29	17.27	-9.54	37.43	53.98	-16.54
* 21120.00	Peak	H	-	-	-65.58	17.27	-9.54	49.14	73.98	-24.83
26400.00	Peak	H	-	-	-64.72	20.27	-9.54	53.01	68.20	-15.19

**Table 7-72. Radiated Measurements SISO ANT1 (26 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5320MHz  
 Channel: 64

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]
* 10640.00	Average	H	330	358	-76.46	14.15	0.00	44.69	53.98	-9.29
* 10640.00	Peak	H	330	358	-63.97	14.15	0.00	57.18	73.98	-16.80
* 15960.00	Average	H	-	-	-79.72	15.01	0.00	42.29	53.98	-11.69
* 15960.00	Peak	H	-	-	-69.61	15.01	0.00	52.40	73.98	-21.58
* 21280.00	Average	H	-	-	-77.29	17.58	-9.54	37.75	53.98	-16.23
* 21280.00	Peak	H	-	-	-66.04	17.58	-9.54	49.00	73.98	-24.98
26600.00	Peak	H	-	-	-50.76	3.11	-9.54	49.81	68.20	-18.39

**Table 7-73. Radiated Measurements SISO ANT1 (26 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 205 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5500MHz  
 Channel: 100

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]
* 11000.00	Average	H	-	-	-79.07	13.55	0.00	41.48	53.98	-12.50
* 11000.00	Peak	H	-	-	-68.05	13.55	0.00	52.50	73.98	-21.48
16500.00	Peak	H	-	-	-69.29	16.10	0.00	53.81	68.20	-14.39
22000.00	Peak	H	-	-	-66.26	18.05	-9.54	49.25	68.20	-18.95
27500.00	Peak	H	-	-	-49.46	2.08	-9.54	50.08	68.20	-18.12

**Table 7-74. Radiated Measurements SISO ANT1 (26 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5600MHz  
 Channel: 120

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]
* 11200.00	Average	H	398	32	-78.14	14.57	0.00	43.43	53.98	-10.55
* 11200.00	Peak	H	398	32	-67.77	14.57	0.00	53.80	73.98	-20.18
16800.00	Peak	H	-	-	-69.08	17.52	0.00	55.44	68.20	-12.76
* 22400.00	Average	H	-	-	-77.50	19.05	-9.54	39.01	53.98	-14.97
* 22400.00	Peak	H	-	-	-65.92	19.05	-9.54	50.59	73.98	-23.39
28000.00	Peak	H	-	-	-50.51	3.19	-9.54	50.13	68.20	-18.07

**Table 7-75. Radiated Measurements SISO ANT1 (26 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 206 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5720MHz  
 Channel: 144

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]
* 11440.00	Average	H	132	277	-73.91	15.10	0.00	48.19	53.98	-5.79
* 11440.00	Peak	H	132	277	-62.86	15.10	0.00	59.24	73.98	-14.74
17160.00	Peak	H	-	-	-68.08	18.83	0.00	57.75	68.20	-10.45
* 22880.00	Average	H	-	-	-77.81	18.60	-9.54	38.24	53.98	-15.74
* 22880.00	Peak	H	-	-	-66.63	18.60	-9.54	49.42	73.98	-24.56
28600.00	Peak	H	-	-	-49.28	1.74	-9.54	49.91	68.20	-18.29

**Table 7-76. Radiated Measurements SISO ANT1 (26 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5745MHz  
 Channel: 149

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]
* 11490.00	Average	H	119	277	-75.76	15.22	0.00	46.46	53.98	-7.52
* 11490.00	Peak	H	119	277	-63.11	15.22	0.00	59.11	73.98	-14.87
17235.00	Peak	H	-	-	-69.22	19.54	0.00	57.32	68.20	-10.88
* 22980.00	Average	H	-	-	-77.40	18.46	-9.54	38.52	53.98	-15.46
* 22980.00	Peak	H	-	-	-65.71	18.46	-9.54	50.21	73.98	-23.77
28725.00	Peak	H	-	-	-49.93	2.47	-9.54	50.00	68.20	-18.20

**Table 7-77. Radiated Measurements SISO ANT1 (26 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 207 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5785MHz  
 Channel: 157

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]
* 11570.00	Average	H	112	282	-76.18	15.02	0.00	45.84	53.98	-8.14
* 11570.00	Peak	H	112	282	-65.44	15.02	0.00	56.58	73.98	-17.40
17355.00	Peak	H	-	-	-70.40	23.41	0.00	60.01	68.20	-8.19
23140.00	Peak	H	-	-	-65.31	18.84	-9.54	50.99	68.20	-17.21
28925.00	Peak	H	-	-	-50.95	2.80	-9.54	49.31	68.20	-18.89

**Table 7-78. Radiated Measurements SISO ANT1 (26 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5825MHz  
 Channel: 165

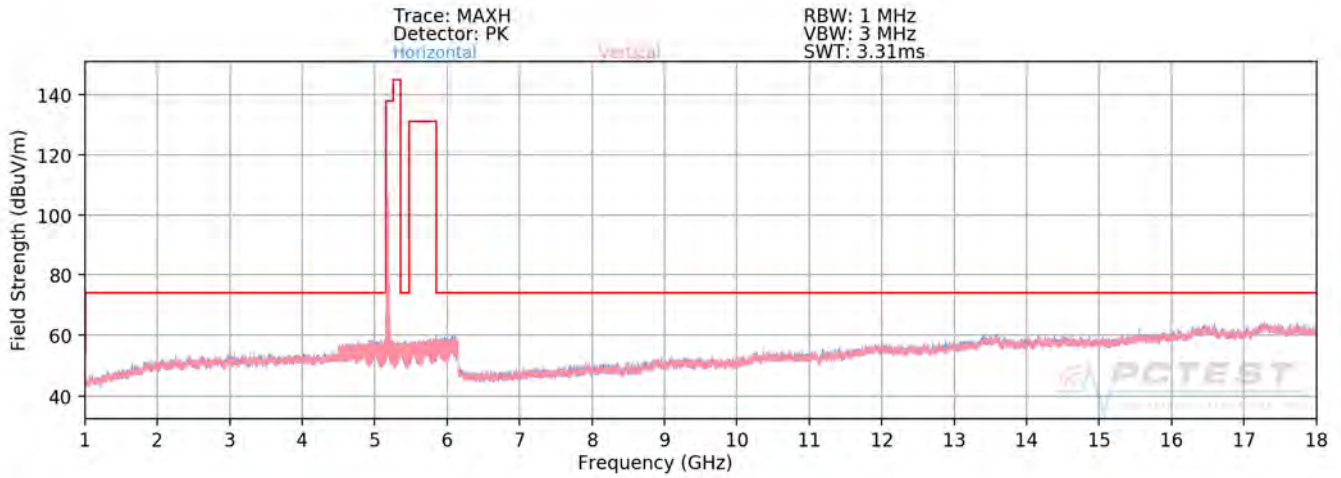
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
* 11650.00	Average	H	116	279	-77.65	14.92	0.00	44.27	53.98	-9.71
* 11650.00	Peak	H	116	279	-67.38	14.92	0.00	54.54	73.98	-19.44
17475.00	Peak	H	-	-	-69.66	21.86	0.00	59.20	68.20	-9.00
23300.00	Peak	H	-	-	-66.82	19.55	-9.54	50.18	68.20	-18.02
29125.00	Peak	H	-	-	-50.28	1.07	-9.54	48.25	68.20	-19.95

**Table 7-79. Radiated Measurements SISO ANT1 (26 Tones)**

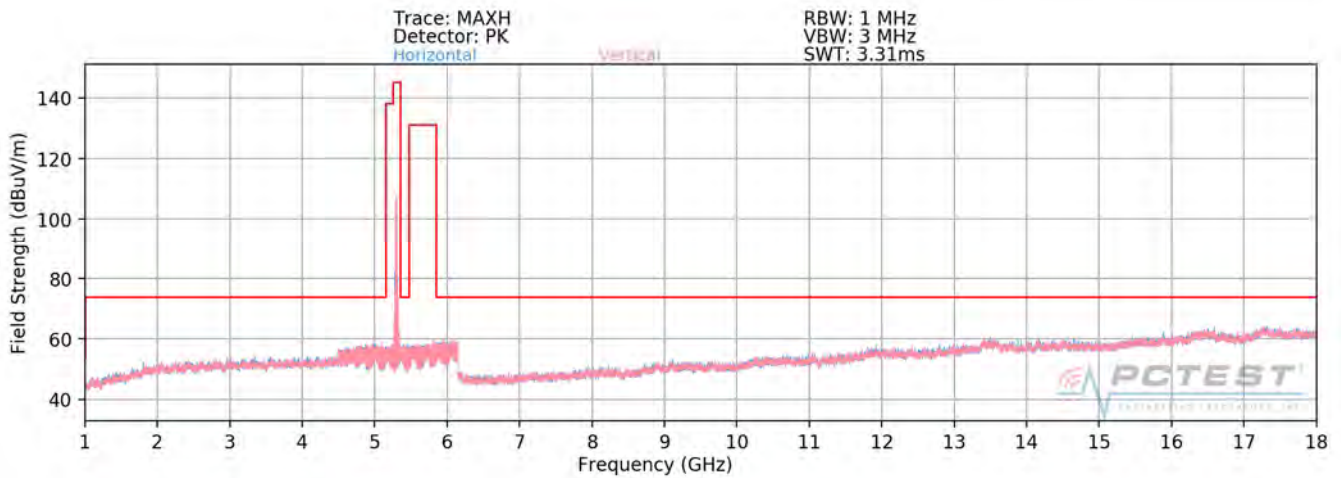
FCC ID: A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 208 of 287



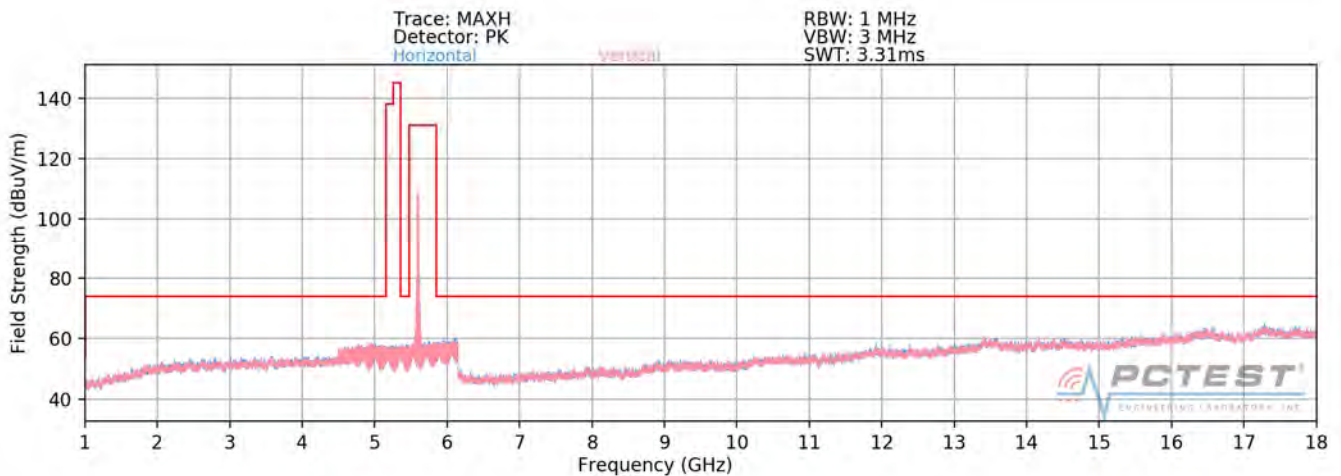
**242 Tones**



**Plot 7-277. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U1 Ch. 40 – 242 Tones)**

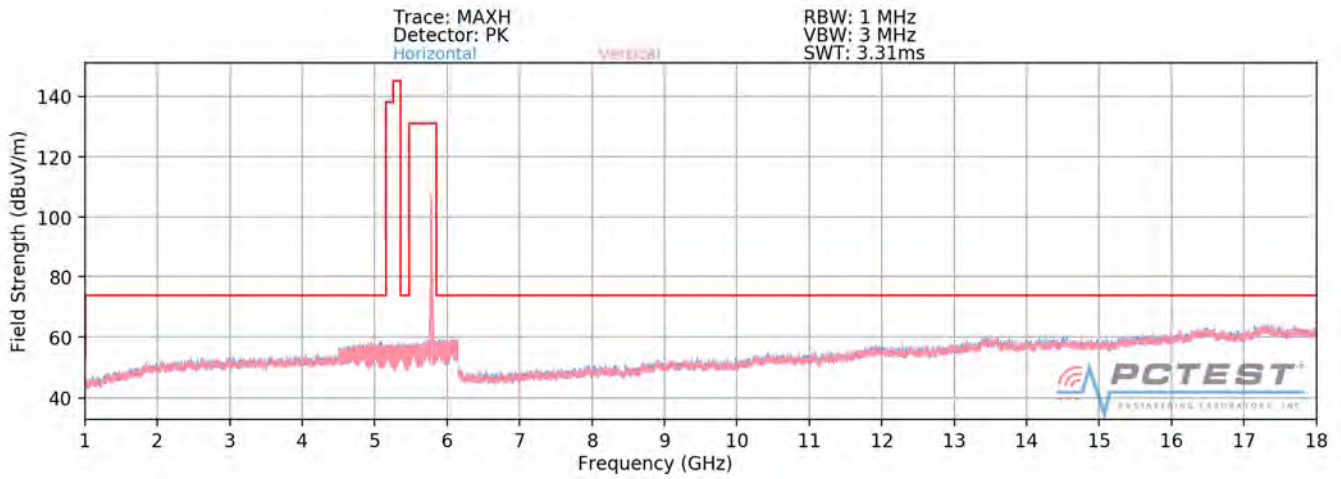


**Plot 7-278. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U2A Ch. 56 – 242 Tones)**



**Plot 7-279. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U2C Ch. 120 – 242 Tones)**

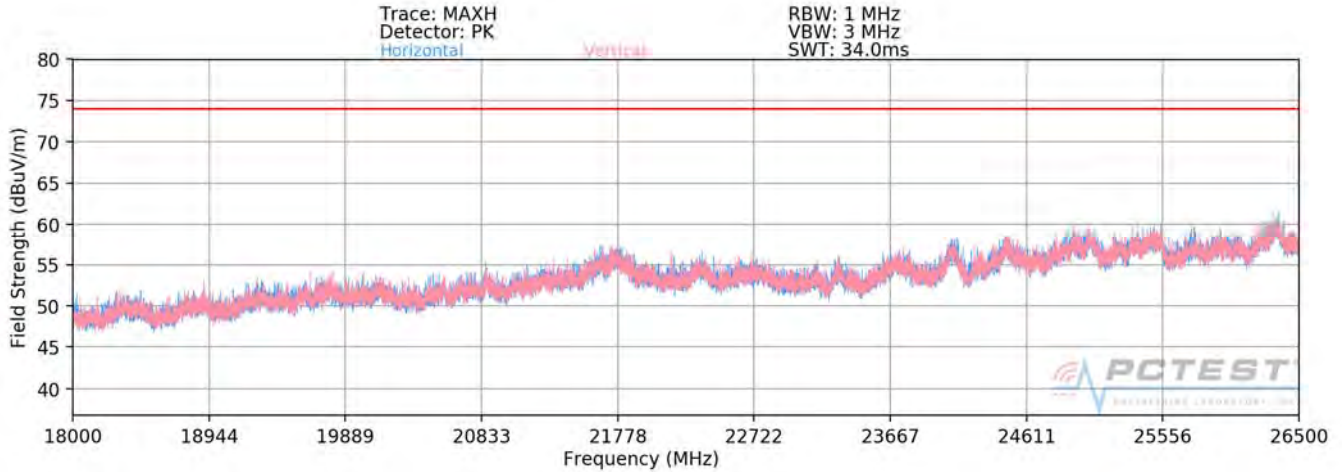
FCC ID: A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 209 of 287



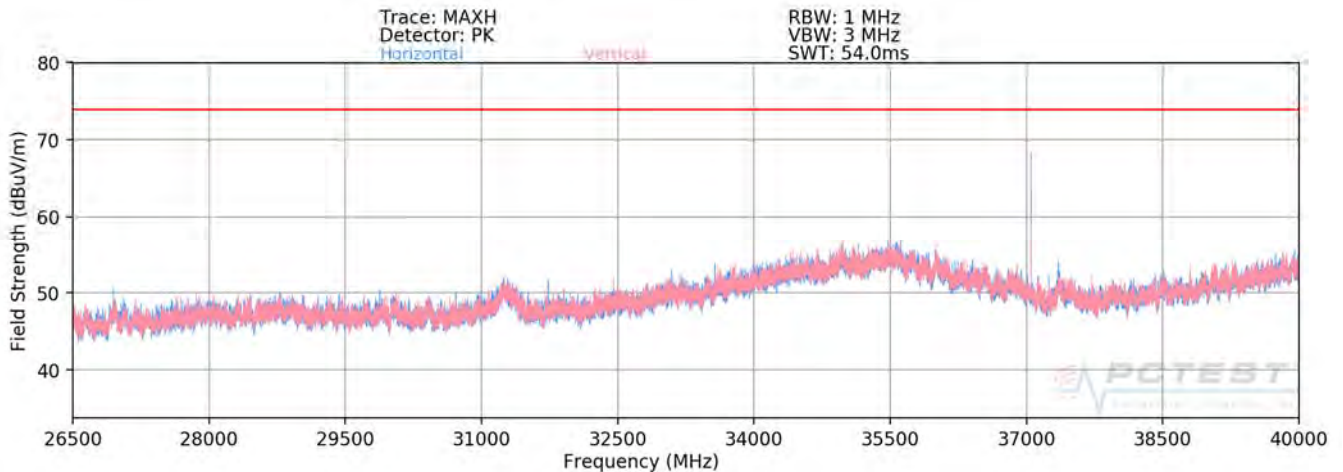
**Plot 7-280. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U3 Ch. 157 – 242 Tones)**

FCC ID: A3LSMG977U	 <b>MEASUREMENT REPORT (CERTIFICATION)</b> 		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset	Page 210 of 287

## SISO Antenna-1 Radiated Spurious Emissions Measurements (Above 18GHz)



**Plot 7-281. Radiated Spurious Plot 18GHz - 26.5GHz SISO ANT1 (802.11ax – 242 Tones)**



**Plot 7-282. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT1 (802.11ax – 242 Tones)**

FCC ID: A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 211 of 287

## SISO Antenna-1 Radiated Spurious Emission Measurements (242 Tones)

§15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5180MHz  
 Channel: 36

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]
10360.00	Peak	H	257	356	-69.83	18.99	0.00	56.16	68.20	-12.04
* 15540.00	Average	H	-	-	-85.36	27.73	0.00	49.37	53.98	-4.61
* 15540.00	Peak	H	-	-	-74.29	27.73	0.00	60.44	73.98	-13.54
* 20720.00	Average	H	-	-	-77.89	17.17	-9.54	36.73	53.98	-17.25
* 20720.00	Peak	H	-	-	-66.61	17.17	-9.54	48.01	73.98	-25.97
25900.00	Peak	H	-	-	-65.52	19.93	-9.54	51.86	68.20	-16.34

Table 7-80. Radiated Measurements SISO ANT1 (242 Tones)

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5200MHz  
 Channel: 40

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]
10400.00	Peak	H	247	353	-70.12	19.36	0.00	56.24	68.20	-11.96
* 15600.00	Average	H	-	-	-85.41	27.61	0.00	49.20	53.98	-4.78
* 15600.00	Peak	H	-	-	-75.05	27.61	0.00	59.56	73.98	-14.42
* 20800.00	Average	H	-	-	-77.93	17.65	-9.54	37.18	53.98	-16.80
* 20800.00	Peak	H	-	-	-66.92	17.65	-9.54	48.19	73.98	-25.79
26000.00	Peak	H	-	-	-65.67	20.68	-9.54	52.47	68.20	-15.73

Table 7-81. Radiated Measurements SISO ANT1 (242 Tones)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 212 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5240MHz  
 Channel: 48

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]
10480.00	Peak	H	-	-	-73.23	19.72	0.00	53.49	68.20	-14.71
* 15720.00	Average	H	-	-	-85.21	27.41	0.00	49.20	53.98	-4.78
* 15720.00	Peak	H	-	-	-73.57	27.41	0.00	60.84	73.98	-13.14
* 20960.00	Average	H	-	-	-78.07	17.53	-9.54	36.92	53.98	-17.06
* 20960.00	Peak	H	-	-	-66.38	17.53	-9.54	48.61	73.98	-25.37
26200.00	Peak	H	-	-	-65.51	20.23	-9.54	52.18	68.20	-16.02

**Table 7-82. Radiated Measurements SISO ANT1 (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5260MHz  
 Channel: 52

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]
10520.00	Peak	H	-	-	-72.97	19.44	0.00	53.47	68.20	-14.73
* 15780.00	Average	H	-	-	-85.24	27.10	0.00	48.86	53.98	-5.12
* 15780.00	Peak	H	-	-	-73.25	27.10	0.00	60.85	73.98	-13.13
* 21040.00	Average	H	-	-	-77.81	17.48	-9.54	37.12	53.98	-16.86
* 21040.00	Peak	H	-	-	-66.78	17.48	-9.54	48.15	73.98	-25.83
26300.00	Peak	H	-	-	-65.18	20.33	-9.54	52.61	68.20	-15.59

**Table 7-83. Radiated Measurements SISO ANT1 (242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 213 of 287	

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5280MHz  
 Channel: 56

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]
10560.00	Peak	H	-	-	-72.70	19.62	0.00	53.92	68.20	-14.28
* 15840.00	Average	H	-	-	-84.72	27.05	0.00	49.33	53.98	-4.65
* 15840.00	Peak	H	-	-	-74.10	27.05	0.00	59.95	73.98	-14.03
* 21120.00	Average	H	-	-	-77.72	17.27	-9.54	37.00	53.98	-16.97
* 21120.00	Peak	H	-	-	-66.59	17.27	-9.54	48.13	73.98	-25.84
26400.00	Peak	H	-	-	-66.44	20.27	-9.54	51.29	68.20	-16.91

**Table 7-84. Radiated Measurements SISO ANT1 (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5320MHz  
 Channel: 64

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]
* 10640.00	Average	H	-	-	-83.45	19.97	0.00	43.52	53.98	-10.46
* 10640.00	Peak	H	-	-	-71.82	19.97	0.00	55.15	73.98	-18.83
* 15960.00	Average	H	-	-	-85.36	27.35	0.00	48.99	53.98	-4.99
* 15960.00	Peak	H	-	-	-73.92	27.35	0.00	60.43	73.98	-13.55
* 21280.00	Average	H	-	-	-77.33	17.58	-9.54	37.71	53.98	-16.27
* 21280.00	Peak	H	-	-	-66.06	17.58	-9.54	48.98	73.98	-25.00
26600.00	Peak	H	-	-	-51.84	3.11	-9.54	48.73	68.20	-19.47

**Table 7-85. Radiated Measurements SISO ANT1 (242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset	Page 214 of 287	

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5500MHz  
 Channel: 100

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]
* 11000.00	Average	H	-	-	-79.16	13.55	0.00	41.39	53.98	-12.59
* 11000.00	Peak	H	-	-	-68.06	13.55	0.00	52.49	73.98	-21.49
16500.00	Peak	H	-	-	-68.98	16.10	0.00	54.12	68.20	-14.08
22000.00	Peak	H	-	-	-66.08	18.05	-9.54	49.43	68.20	-18.77
27500.00	Peak	H	-	-	-49.42	2.08	-9.54	50.12	68.20	-18.08

**Table 7-86. Radiated Measurements SISO ANT1 (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5600MHz  
 Channel: 120

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]
* 11200.00	Average	H	398	62	-76.96	14.57	0.00	44.61	53.98	-9.37
* 11200.00	Peak	H	398	62	-65.24	14.57	0.00	56.33	73.98	-17.65
16800.00	Peak	H	-	-	-68.33	17.52	0.00	56.19	68.20	-12.01
* 22400.00	Average	H	-	-	-78.01	19.05	-9.54	38.50	53.98	-15.48
* 22400.00	Peak	H	-	-	-66.55	19.05	-9.54	49.96	73.98	-24.02
28000.00	Peak	H	-	-	-50.80	3.19	-9.54	49.84	68.20	-18.36

**Table 7-87. Radiated Measurements SISO ANT1 (242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 215 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5720MHz  
 Channel: 144

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]
* 11440.00	Average	H	118	280	-75.15	15.10	0.00	46.95	53.98	-7.03
* 11440.00	Peak	H	118	280	-64.06	15.10	0.00	58.04	73.98	-15.94
17160.00	Peak	H	-	-	-68.28	18.83	0.00	57.55	68.20	-10.65
* 22880.00	Average	H	-	-	-78.32	18.60	-9.54	37.73	53.98	-16.25
* 22880.00	Peak	H	-	-	-67.41	18.60	-9.54	48.64	73.98	-25.34
28600.00	Peak	H	-	-	-48.92	1.74	-9.54	50.27	68.20	-17.93

**Table 7-88. Radiated Measurements SISO ANT1 (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5745MHz  
 Channel: 149

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]
* 11490.00	Average	H	111	278	-76.23	15.22	0.00	45.99	53.98	-7.99
* 11490.00	Peak	H	111	278	-64.56	15.22	0.00	57.66	73.98	-16.32
17235.00	Peak	H	-	-	-68.97	19.54	0.00	57.57	68.20	-10.63
* 22980.00	Average	H	-	-	-77.80	18.46	-9.54	38.12	53.98	-15.86
* 22980.00	Peak	H	-	-	-66.67	18.46	-9.54	49.25	73.98	-24.73
28725.00	Peak	H	-	-	-50.34	2.47	-9.54	49.59	68.20	-18.61

**Table 7-89. Radiated Measurements SISO ANT1 (242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 216 of 287



Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5785MHz  
 Channel: 157

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]
* 11570.00	Average	H	111	279	-76.96	15.02	0.00	45.06	53.98	-8.92
* 11570.00	Peak	H	111	279	-65.89	15.02	0.00	56.13	73.98	-17.85
17355.00	Peak	H	-	-	-68.94	23.41	0.00	61.47	68.20	-6.73
23140.00	Peak	H	-	-	-67.13	18.84	-9.54	49.17	68.20	-19.03
28925.00	Peak	H	-	-	-50.14	2.80	-9.54	50.12	68.20	-18.08

**Table 7-90. Radiated Measurements SISO ANT1 (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5825MHz  
 Channel: 165

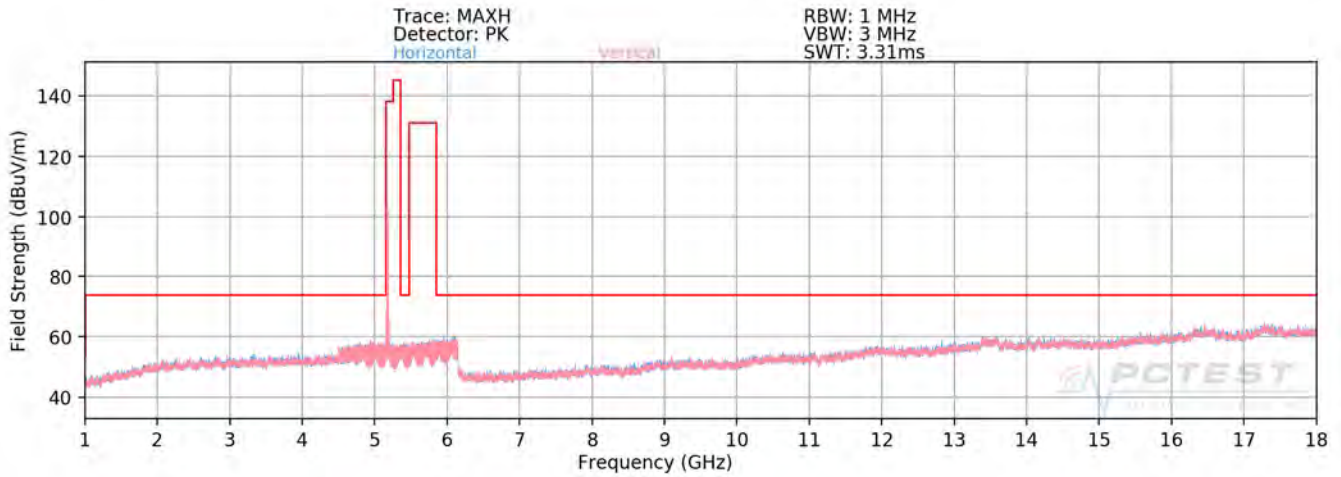
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
* 11650.00	Average	H	117	281	-78.19	14.92	0.00	43.73	53.98	-10.25
* 11650.00	Peak	H	117	281	-66.95	14.92	0.00	54.97	73.98	-19.01
17475.00	Peak	H	-	-	-69.47	21.86	0.00	59.39	68.20	-8.81
23300.00	Peak	H	-	-	-66.48	19.55	-9.54	50.52	68.20	-17.68
29125.00	Peak	H	-	-	-49.46	1.07	-9.54	49.07	68.20	-19.13

**Table 7-91. Radiated Measurements SISO ANT1 (242 Tones)**

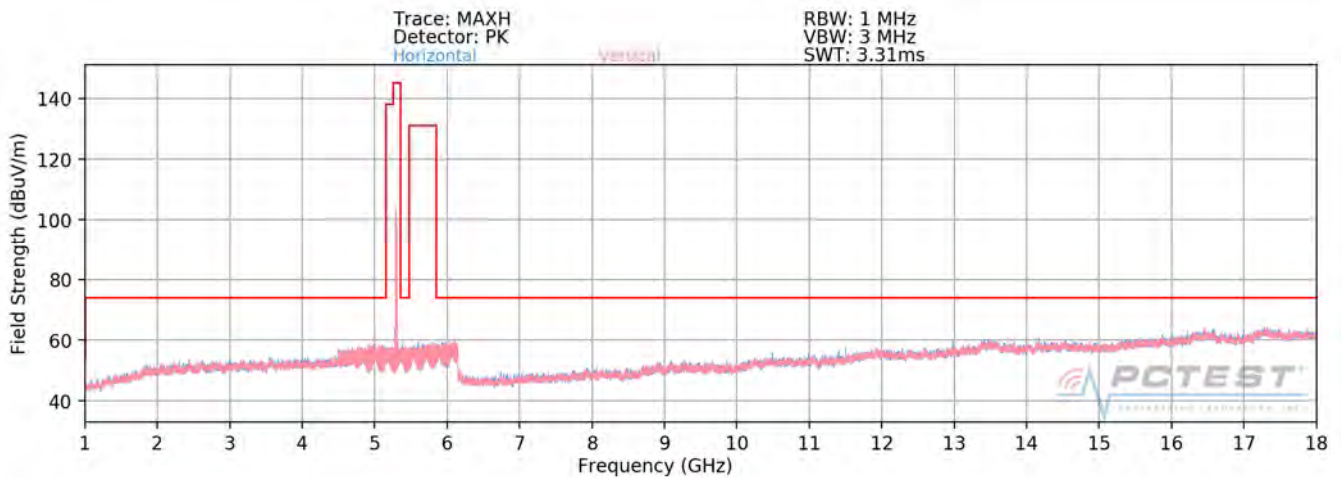
FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 217 of 287

## 7.6.2 SISO Antenna-2 Radiated Spurious Emission Measurements

### 26 Tones

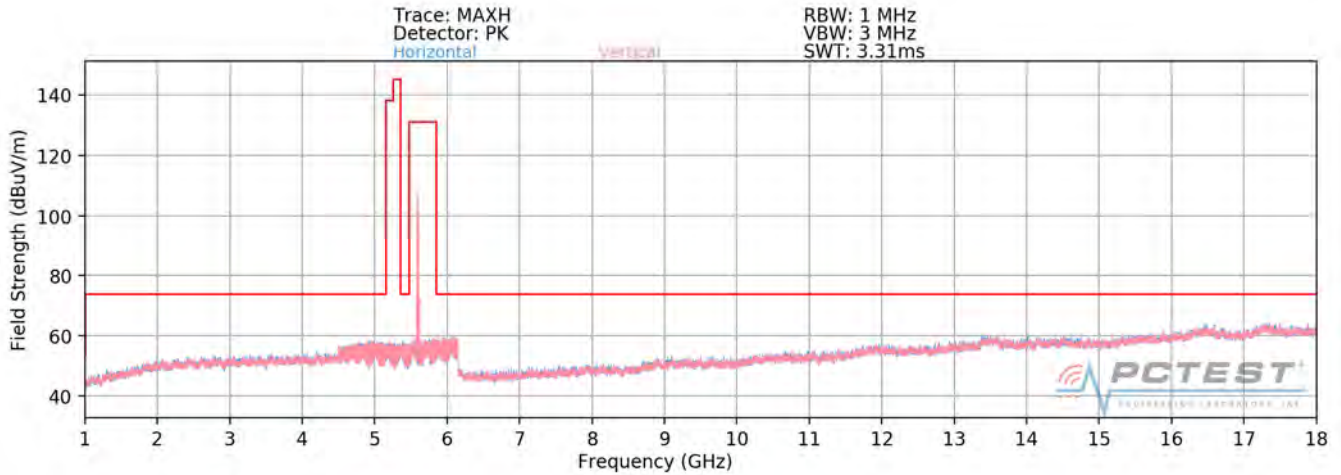


**Plot 7-283. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U1 Ch. 40 – 26 Tones)**

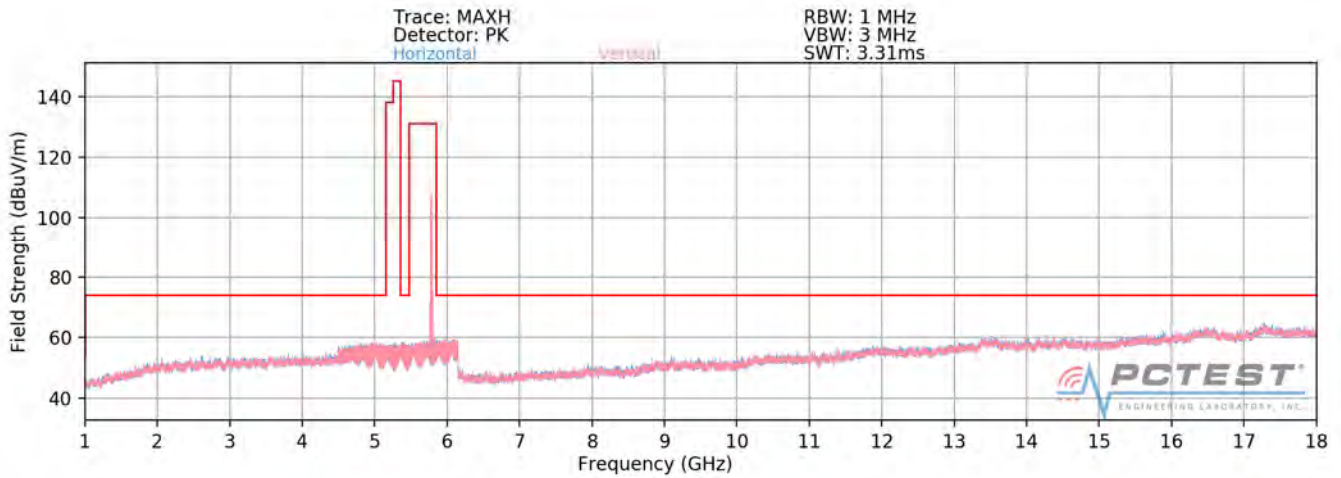


**Plot 7-284. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U2A Ch. 56 – 26 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 218 of 287



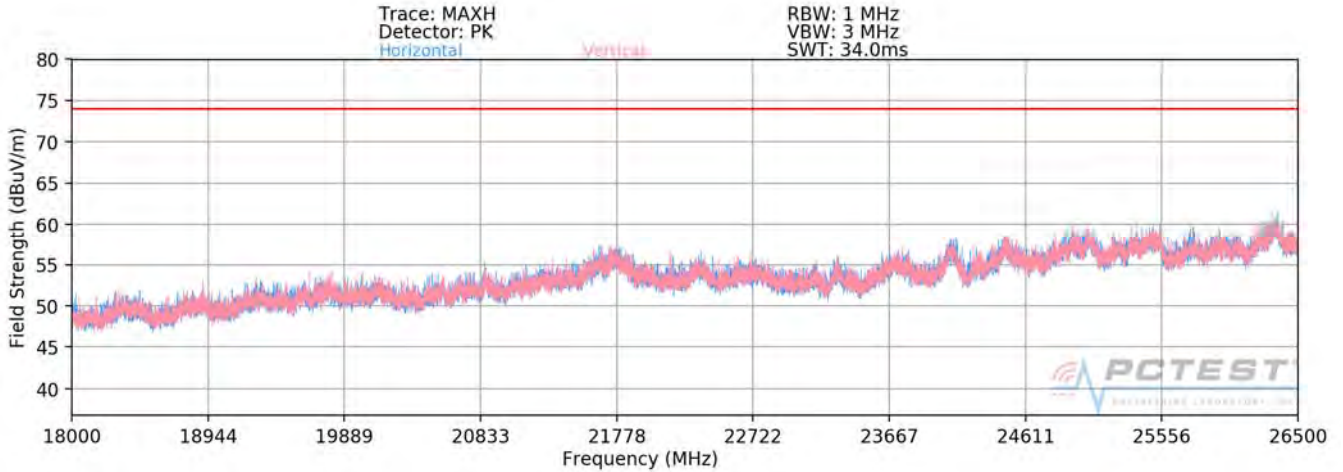
**Plot 7-285. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U2C Ch. 120 – 26 Tones)**



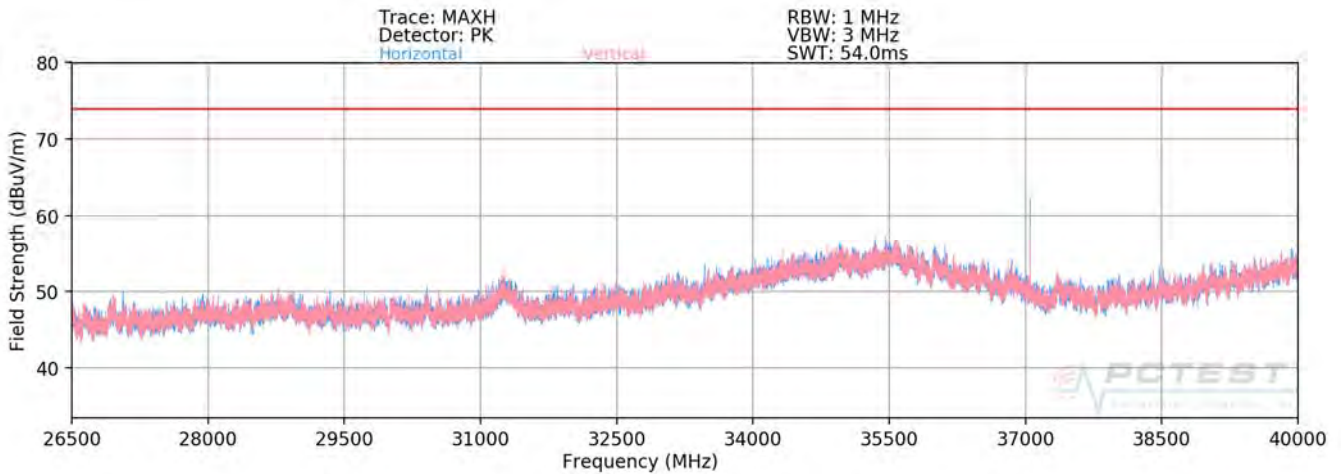
**Plot 7-286. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U3 Ch. 157 – 26 Tones)**

<p>FCC ID: A3LSMG977U</p>		<p><b>MEASUREMENT REPORT (CERTIFICATION)</b></p>	 <p>Approved by: Quality Manager</p>
<p>Test Report S/N: 1M1901100003-10.A3L</p>	<p>Test Dates: 01/22/2019 - 03/25/2019</p>	<p>EUT Type: Portable Handset</p>	<p>Page 219 of 287</p>

### SISO Antenna-2 Radiated Spurious Emissions Measurements (Above 18GHz)



**Plot 7-287. Radiated Spurious Plot above 18GHz - 26.5GHz SISO ANT2 (802.11ax – 26 Tones)**



**Plot 7-288. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT2 (802.11ax – 26 Tones)**

FCC ID: A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 220 of 287

## SISO Antenna-2 Radiated Spurious Emission Measurements

§15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5180MHz  
 Channel: 36

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]
10360.00	Peak	H	-	-	-69.29	15.60	0.00	53.31	68.20	-14.89
* 15540.00	Average	H	-	-	-81.13	22.59	0.00	48.46	53.98	-5.52
* 15540.00	Peak	H	-	-	-69.89	22.59	0.00	59.70	73.98	-14.28
* 20720.00	Average	H	-	-	-77.69	17.17	-9.54	36.93	53.98	-17.05
* 20720.00	Peak	H	-	-	-66.49	17.17	-9.54	48.13	73.98	-25.85
25900.00	Peak	H	-	-	-65.06	19.93	-9.54	52.32	68.20	-15.88

Table 7-92. Radiated Measurements SISO ANT2 (26 Tones)

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5200MHz  
 Channel: 40

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]
10400.00	Peak	H	-	-	-69.17	15.83	0.00	53.66	68.20	-14.54
* 15600.00	Average	H	-	-	-81.08	22.66	0.00	48.58	53.98	-5.40
* 15600.00	Peak	H	-	-	-69.23	22.66	0.00	60.43	73.98	-13.55
* 20800.00	Average	H	-	-	-77.63	17.65	-9.54	37.48	53.98	-16.50
* 20800.00	Peak	H	-	-	-66.61	17.65	-9.54	48.50	73.98	-25.48
26000.00	Peak	H	-	-	-65.79	20.68	-9.54	52.35	68.20	-15.85

Table 7-93. Radiated Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 221 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5240MHz  
 Channel: 48

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]
10480.00	Peak	H	-	-	-69.44	15.79	0.00	53.35	68.20	-14.85
* 15720.00	Average	H	-	-	-81.09	22.96	0.00	48.87	53.98	-5.11
* 15720.00	Peak	H	-	-	-69.99	22.96	0.00	59.97	73.98	-14.01
* 20960.00	Average	H	-	-	-77.58	17.53	-9.54	37.41	53.98	-16.57
* 20960.00	Peak	H	-	-	-66.56	17.53	-9.54	48.43	73.98	-25.55
26200.00	Peak	H	-	-	-64.76	20.23	-9.54	52.93	68.20	-15.27

**Table 7-94. Radiated Measurements SISO ANT2 (26 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5260MHz  
 Channel: 52

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]
10520.00	Peak	H	-	-	-69.80	15.97	0.00	53.17	68.20	-15.03
* 15780.00	Average	H	-	-	-81.10	22.93	0.00	48.83	53.98	-5.15
* 15780.00	Peak	H	-	-	-69.50	22.93	0.00	60.43	73.98	-13.55
* 21040.00	Average	H	-	-	-77.33	17.48	-9.54	37.60	53.98	-16.38
* 21040.00	Peak	H	-	-	-65.78	17.48	-9.54	49.15	73.98	-24.83
26300.00	Peak	H	-	-	-64.36	20.33	-9.54	53.43	68.20	-14.77

**Table 7-95. Radiated Measurements SISO ANT2 (26 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 222 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5280MHz  
 Channel: 56

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]
10560.00	Peak	H	-	-	-68.30	16.18	0.00	54.88	68.20	-13.32
* 15840.00	Average	H	-	-	-81.28	23.30	0.00	49.02	53.98	-4.96
* 15840.00	Peak	H	-	-	-69.96	23.30	0.00	60.34	73.98	-13.64
* 21120.00	Average	H	-	-	-77.35	17.27	-9.54	37.37	53.98	-16.60
* 21120.00	Peak	H	-	-	-66.26	17.27	-9.54	48.46	73.98	-25.51
26400.00	Peak	H	-	-	-64.88	20.27	-9.54	52.85	68.20	-15.35

**Table 7-96. Radiated Measurements SISO ANT2 (26 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5320MHz  
 Channel: 64

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]
* 10640.00	Average	H	-	-	-80.76	16.41	0.00	42.65	53.98	-11.33
* 10640.00	Peak	H	-	-	-69.22	16.41	0.00	54.19	73.98	-19.79
* 15960.00	Average	H	-	-	-81.31	23.41	0.00	49.10	53.98	-4.88
* 15960.00	Peak	H	-	-	-69.78	23.41	0.00	60.63	73.98	-13.35
* 21280.00	Average	H	-	-	-77.03	17.58	-9.54	38.01	53.98	-15.97
* 21280.00	Peak	H	-	-	-66.02	17.58	-9.54	49.02	73.98	-24.96
26600.00	Peak	H	-	-	-51.96	3.11	-9.54	48.61	68.20	-19.59

**Table 7-97. Radiated Measurements SISO ANT2 (26 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset	Page 223 of 287	

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5500MHz  
 Channel: 100

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]
* 11000.00	Average	H	-	-	-80.50	17.19	0.00	43.69	53.98	-10.29
* 11000.00	Peak	H	-	-	-69.21	17.19	0.00	54.98	73.98	-19.00
16500.00	Peak	H	-	-	-69.31	24.79	0.00	62.48	68.20	-5.72
22000.00	Peak	H	-	-	-66.04	18.05	-9.54	49.47	68.20	-18.73
27500.00	Peak	H	-	-	-48.67	2.08	-9.54	50.87	68.20	-17.33

**Table 7-98. Radiated Measurements SISO ANT2 (26 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5600MHz  
 Channel: 120

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]
* 11200.00	Average	H	-	-	-80.31	16.89	0.00	43.58	53.98	-10.40
* 11200.00	Peak	H	-	-	-68.02	16.89	0.00	55.87	73.98	-18.11
16800.00	Peak	H	-	-	-69.90	24.53	0.00	61.63	68.20	-6.57
* 22400.00	Average	H	-	-	-77.72	19.05	-9.54	38.79	53.98	-15.19
* 22400.00	Peak	H	-	-	-66.87	19.05	-9.54	49.64	73.98	-24.34
28000.00	Peak	H	-	-	-49.58	3.19	-9.54	51.06	68.20	-17.14

**Table 7-99. Radiated Measurements SISO ANT2 (26 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 224 of 287



Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5720MHz  
 Channel: 144

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]
* 11440.00	Average	H	136	2	-80.71	17.81	0.00	44.10	53.98	-9.88
* 11440.00	Peak	H	136	2	-68.33	17.81	0.00	56.48	73.98	-17.50
17160.00	Peak	H	-	-	-70.03	24.98	0.00	61.95	68.20	-6.25
* 22880.00	Average	H	-	-	-77.84	18.60	-9.54	38.21	53.98	-15.77
* 22880.00	Peak	H	-	-	-66.83	18.60	-9.54	49.22	73.98	-24.76
28600.00	Peak	H	-	-	-49.27	1.74	-9.54	49.92	68.20	-18.28

**Table 7-100. Radiated Measurements SISO ANT2 (26 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5745MHz  
 Channel: 149

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]
* 11490.00	Average	H	117	30	-79.73	17.61	0.00	44.88	53.98	-9.10
* 11490.00	Peak	H	117	30	-68.14	17.61	0.00	56.47	73.98	-17.51
17235.00	Peak	H	-	-	-69.70	25.44	0.00	62.74	68.20	-5.46
* 22980.00	Average	H	-	-	-77.63	18.46	-9.54	38.29	53.98	-15.69
* 22980.00	Peak	H	-	-	-65.71	18.46	-9.54	50.21	73.98	-23.77
28725.00	Peak	H	-	-	-50.32	2.47	-9.54	49.61	68.20	-18.59

**Table 7-101. Radiated Measurements SISO ANT2 (26 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 225 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5785MHz  
 Channel: 157

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]
* 11570.00	Average	H	154	1	-79.30	17.67	0.00	45.37	53.98	-8.61
* 11570.00	Peak	H	154	1	-68.41	17.67	0.00	56.26	73.98	-17.72
17355.00	Peak	H	168	50	-69.38	26.58	0.00	64.20	68.20	-4.00
23140.00	Peak	H	-	-	-65.83	18.84	-9.54	50.47	68.20	-17.73
28925.00	Peak	H	-	-	-50.44	2.80	-9.54	49.82	68.20	-18.38

**Table 7-102. Radiated Measurements SISO ANT2 (26 Tones)**

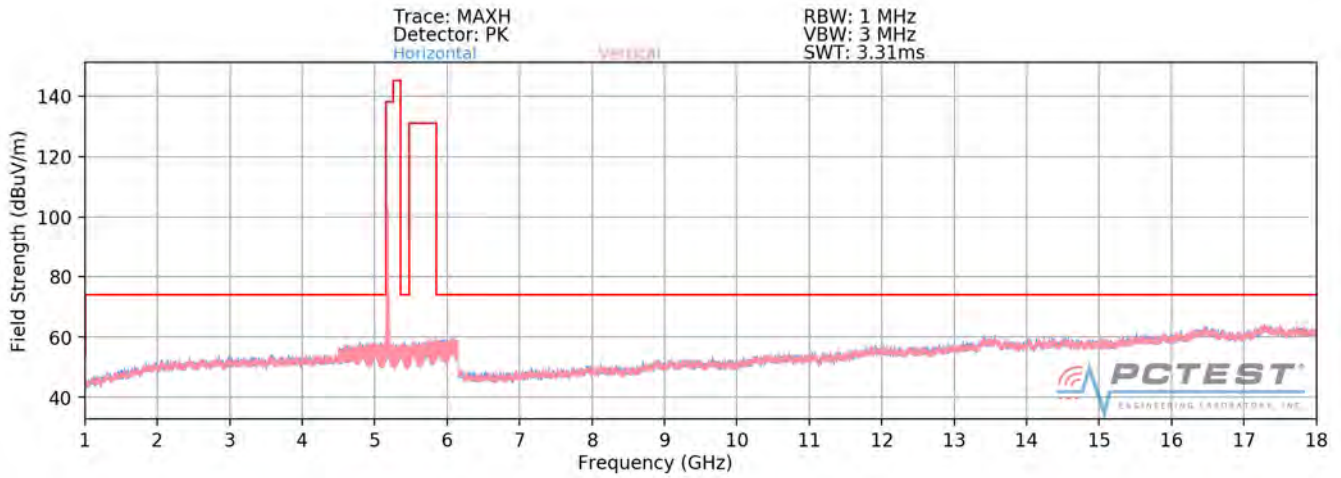
Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5825MHz  
 Channel: 165

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]
* 11650.00	Average	H	125	27	-78.82	17.69	0.00	45.87	53.98	-8.11
* 11650.00	Peak	H	125	27	-67.37	17.69	0.00	57.32	73.98	-16.66
17475.00	Peak	H	-	-	-69.57	26.26	0.00	63.69	68.20	-4.51
23300.00	Peak	H	-	-	-66.24	19.55	-9.54	50.76	68.20	-17.44
29125.00	Peak	H	-	-	-49.87	1.07	-9.54	48.66	68.20	-19.54

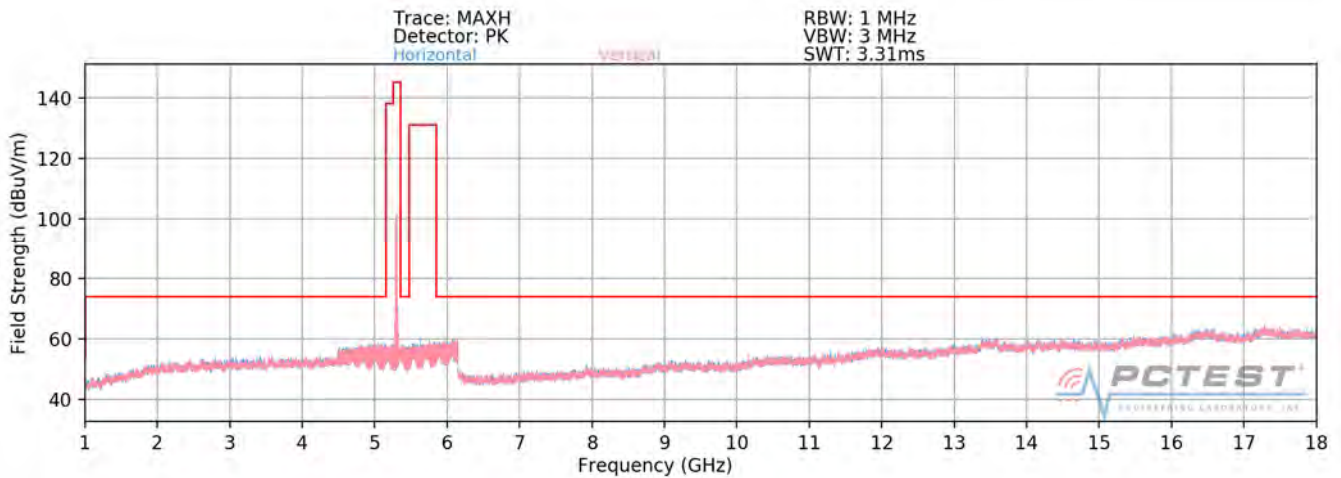
**Table 7-103. Radiated Measurements SISO ANT2 (26 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 226 of 287

## 242 Tones

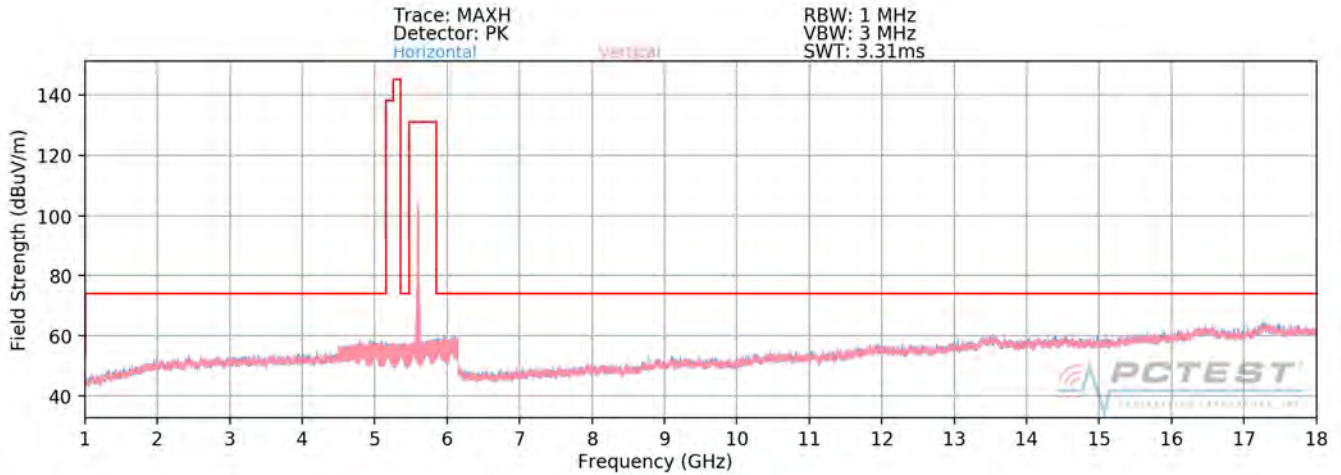


**Plot 7-289. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U1 Ch. 40 – 242 Tones)**

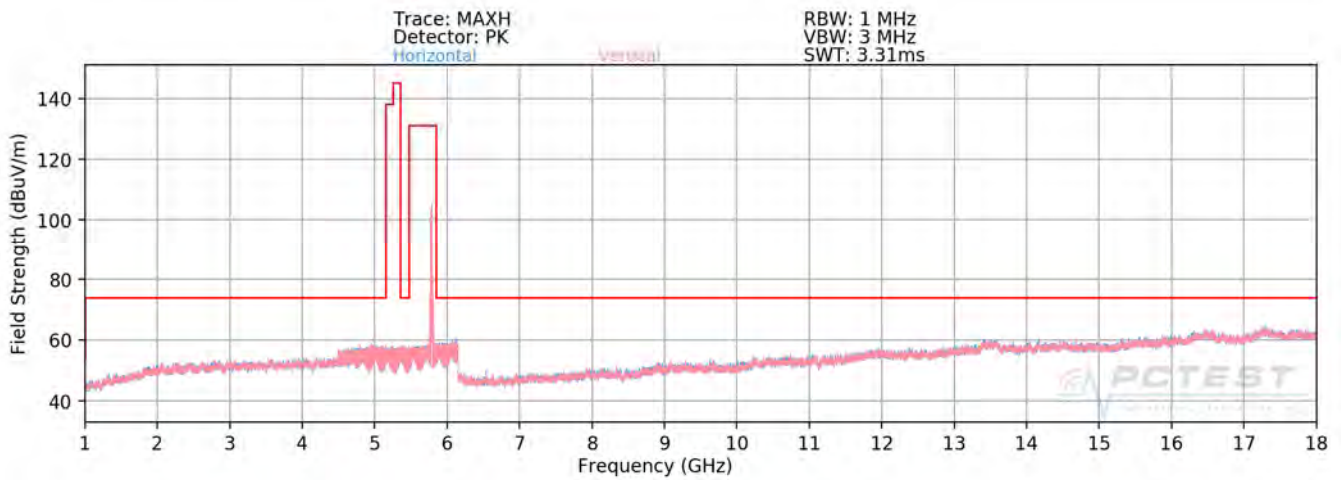


**Plot 7-290. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U2A Ch. 56 – 242 Tones)**

FCC ID: A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 227 of 287



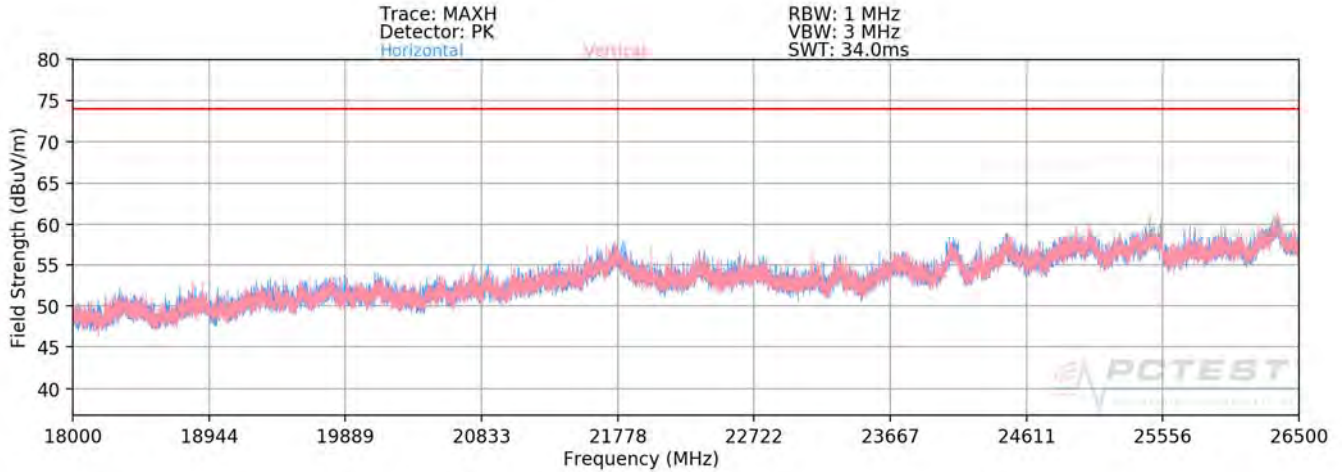
**Plot 7-291. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U2C Ch. 120 – 242 Tones)**



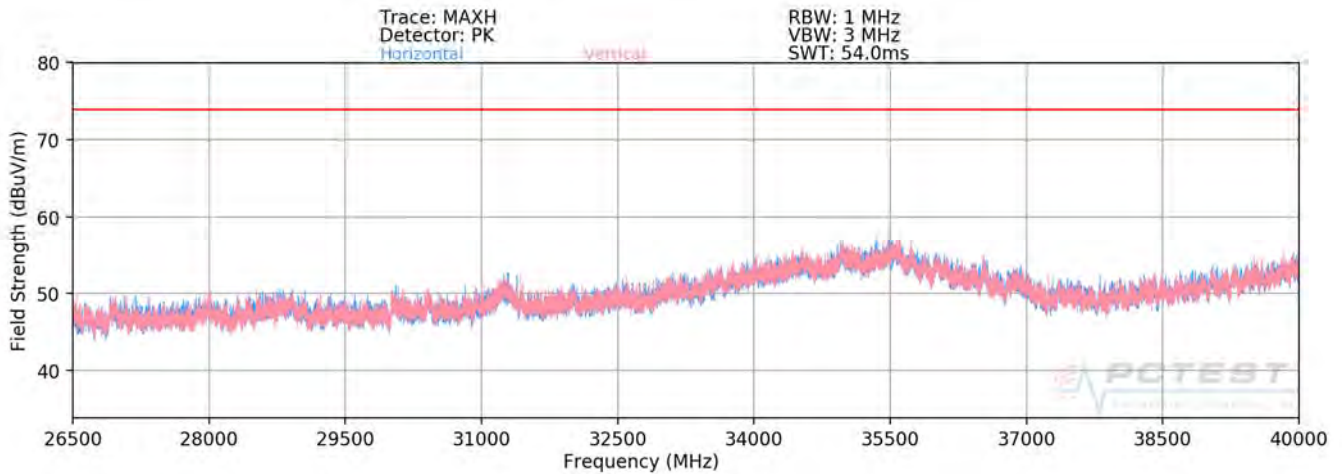
**Plot 7-292. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U3 Ch. 157 – 242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 228 of 287

## SISO Antenna-2 Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-293. Radiated Spurious Plot above 18GHz - 26.5GHz SISO ANT2 (802.11ax – 242 Tones)



Plot 7-294. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT2 (802.11ax – 242 Tones)

FCC ID: A3LSMG977U			<b>MEASUREMENT REPORT</b> <b>(CERTIFICATION)</b>		<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1901100003-10.A3L	<b>Test Dates:</b> 01/22/2019 - 03/25/2019	<b>EUT Type:</b> Portable Handset		Page 229 of 287	

## SISO Antenna-2 Radiated Spurious Emission Measurements

§15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5180MHz  
 Channel: 36

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]
10360.00	Peak	H	114	305	-68.14	12.74	0.00	51.60	68.20	-16.60
* 15540.00	Average	H	-	-	-79.60	15.28	0.00	42.68	53.98	-11.30
* 15540.00	Peak	H	-	-	-69.50	15.28	0.00	52.78	73.98	-21.20
* 20720.00	Average	H	-	-	-78.06	17.17	-9.54	36.56	53.98	-17.42
* 20720.00	Peak	H	-	-	-67.29	17.17	-9.54	47.33	73.98	-26.65
25900.00	Peak	H	-	-	-65.74	19.93	-9.54	51.64	68.20	-16.56

**Table 7-104. Radiated Measurements SISO ANT2 (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5200MHz  
 Channel: 40

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]
10400.00	Peak	H	-	-	-68.41	12.24	0.00	50.83	68.20	-17.37
* 15600.00	Average	H	-	-	-79.58	15.40	0.00	42.82	53.98	-11.15
* 15600.00	Peak	H	-	-	-69.69	15.40	0.00	52.71	73.98	-21.26
* 20800.00	Average	H	-	-	-78.15	17.65	-9.54	36.96	53.98	-17.02
* 20800.00	Peak	H	-	-	-67.29	17.65	-9.54	47.82	73.98	-26.16
26000.00	Peak	H	-	-	-65.58	20.68	-9.54	52.56	68.20	-15.64

**Table 7-105. Radiated Measurements SISO ANT2 (242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 230 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5240MHz  
 Channel: 48

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]
10480.00	Peak	H	-	-	-68.45	12.41	0.00	50.96	68.20	-17.24
* 15720.00	Average	H	-	-	-79.84	16.70	0.00	43.86	53.98	-10.12
* 15720.00	Peak	H	-	-	-69.48	16.70	0.00	54.22	73.98	-19.76
* 20960.00	Average	H	-	-	-78.37	17.53	-9.54	36.62	53.98	-17.36
* 20960.00	Peak	H	-	-	-67.22	17.53	-9.54	47.77	73.98	-26.21
26200.00	Peak	H	-	-	-66.03	20.23	-9.54	51.66	68.20	-16.54

**Table 7-106. Radiated Measurements SISO ANT2 (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5260MHz  
 Channel: 52

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]
10520.00	Peak	H	-	-	-68.13	13.16	0.00	52.03	68.20	-16.17
* 15780.00	Average	H	-	-	-79.74	16.21	0.00	43.47	53.98	-10.51
* 15780.00	Peak	H	-	-	-69.65	16.21	0.00	53.56	73.98	-20.42
* 21040.00	Average	H	-	-	-77.76	17.48	-9.54	37.17	53.98	-16.81
* 21040.00	Peak	H	-	-	-66.84	17.48	-9.54	48.09	73.98	-25.89
26300.00	Peak	H	-	-	-65.57	20.33	-9.54	52.22	68.20	-15.98

**Table 7-107. Radiated Measurements SISO ANT2 (242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 231 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5280MHz  
 Channel: 56

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]
10560.00	Peak	H	-	-	-67.79	13.66	0.00	52.87	68.20	-15.33
* 15840.00	Average	H	-	-	-79.50	15.64	0.00	43.14	53.98	-10.84
* 15840.00	Peak	H	-	-	-68.67	15.64	0.00	53.97	73.98	-20.01
* 21120.00	Average	H	-	-	-77.68	17.27	-9.54	37.04	53.98	-16.93
* 21120.00	Peak	H	-	-	-66.64	17.27	-9.54	48.08	73.98	-25.89
26400.00	Peak	H	-	-	-65.40	20.27	-9.54	52.33	68.20	-15.87

**Table 7-108. Radiated Measurements SISO ANT2 (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5320MHz  
 Channel: 64

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]
* 10640.00	Average	H	-	-	-79.13	14.15	0.00	42.02	53.98	-11.96
* 10640.00	Peak	H	-	-	-68.81	14.15	0.00	52.34	73.98	-21.64
* 15960.00	Average	H	-	-	-79.71	15.01	0.00	42.30	53.98	-11.68
* 15960.00	Peak	H	-	-	-69.94	15.01	0.00	52.07	73.98	-21.91
* 21280.00	Average	H	-	-	-77.25	17.58	-9.54	37.79	53.98	-16.19
* 21280.00	Peak	H	-	-	-66.39	17.58	-9.54	48.65	73.98	-25.33
26600.00	Peak	H	-	-	-52.51	3.11	-9.54	48.06	68.20	-20.14

**Table 7-109. Radiated Measurements SISO ANT2 (242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 232 of 287



Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5500MHz  
 Channel: 100

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]
* 11000.00	Average	H	-	-	-79.35	13.55	0.00	41.20	53.98	-12.78
* 11000.00	Peak	H	-	-	-69.54	13.55	0.00	51.01	73.98	-22.97
16500.00	Peak	H	-	-	-69.49	16.10	0.00	53.61	68.20	-14.59
22000.00	Peak	H	-	-	-66.58	18.05	-9.54	48.93	68.20	-19.27
27500.00	Peak	H	-	-	-47.99	2.08	-9.54	51.55	68.20	-16.65

**Table 7-110. Radiated Measurements SISO ANT2 (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5600MHz  
 Channel: 120

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]
* 11200.00	Average	H	111	7	-79.10	13.31	0.00	41.21	53.98	-12.77
* 11200.00	Peak	H	111	7	-68.60	13.31	0.00	51.71	73.98	-22.27
16800.00	Peak	H	-	-	-68.96	17.53	0.00	55.57	68.20	-12.63
* 22400.00	Average	H	-	-	-77.90	19.05	-9.54	38.61	53.98	-15.37
* 22400.00	Peak	H	-	-	-66.30	19.05	-9.54	50.21	73.98	-23.77
28000.00	Peak	H	-	-	-50.54	3.19	-9.54	50.10	68.20	-18.10

**Table 7-111. Radiated Measurements SISO ANT2 (242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 233 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5720MHz  
 Channel: 144

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]
* 11440.00	Average	H	120	359	-77.73	15.10	0.00	44.37	53.98	-9.61
* 11440.00	Peak	H	120	359	-67.45	15.10	0.00	54.65	73.98	-19.33
17160.00	Peak	H	-	-	-69.02	18.83	0.00	56.81	68.20	-11.39
* 22880.00	Average	H	-	-	-78.15	18.60	-9.54	37.90	53.98	-16.08
* 22880.00	Peak	H	-	-	-66.42	18.60	-9.54	49.63	73.98	-24.35
28600.00	Peak	H	-	-	-48.95	1.74	-9.54	50.24	68.20	-17.96

**Table 7-112. Radiated Measurements SISO ANT2 (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5745MHz  
 Channel: 149

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]
* 11490.00	Average	H	150	359	-77.88	15.22	0.00	44.34	53.98	-9.64
* 11490.00	Peak	H	150	359	-66.94	15.22	0.00	55.28	73.98	-18.70
17235.00	Peak	H	-	-	-68.97	19.54	0.00	57.57	68.20	-10.63
* 22980.00	Average	H	-	-	-77.92	18.46	-9.54	38.00	53.98	-15.98
* 22980.00	Peak	H	-	-	-67.35	18.46	-9.54	48.57	73.98	-25.41
28725.00	Peak	H	-	-	-49.83	2.47	-9.54	50.10	68.20	-18.10

**Table 7-113. Radiated Measurements SISO ANT2 (242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 234 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5785MHz  
 Channel: 157

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]
* 11570.00	Average	H	154	1	-77.98	15.02	0.00	44.04	53.98	-9.94
* 11570.00	Peak	H	154	1	-67.17	15.02	0.00	54.85	73.98	-19.13
17355.00	Peak	H	-	-	-69.98	23.41	0.00	60.43	68.20	-7.77
23140.00	Peak	H	-	-	-68.04	18.84	-9.54	48.26	68.20	-19.94
28925.00	Peak	H	-	-	-50.32	2.80	-9.54	49.94	68.20	-18.26

**Table 7-114. Radiated Measurements SISO ANT2 (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5825MHz  
 Channel: 165

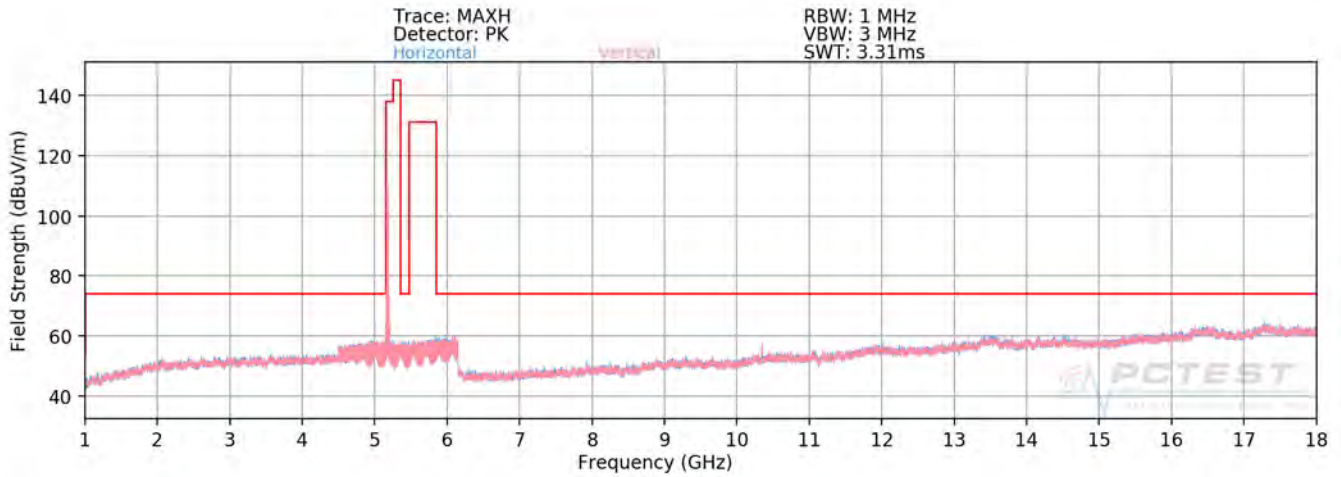
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
* 11650.00	Average	H	137	352	-78.39	14.92	0.00	43.53	53.98	-10.45
* 11650.00	Peak	H	137	352	-67.04	14.92	0.00	54.88	73.98	-19.10
17475.00	Peak	H	-	-	-69.04	21.86	0.00	59.82	68.20	-8.38
23300.00	Peak	H	-	-	-66.76	19.55	-9.54	50.24	68.20	-17.96
29125.00	Peak	H	-	-	-49.30	1.07	-9.54	49.23	68.20	-18.97

**Table 7-115. Radiated Measurements SISO ANT2 (242 Tones)**

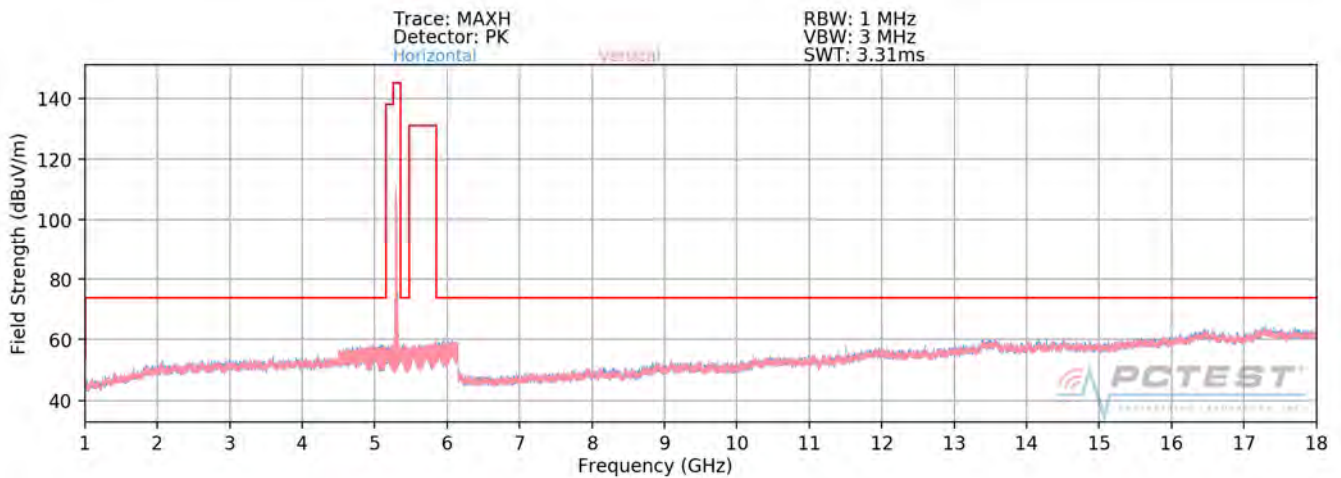
FCC ID: A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 235 of 287

### 7.6.3 MIMO Radiated Spurious Emission Measurements

#### 26 Tones

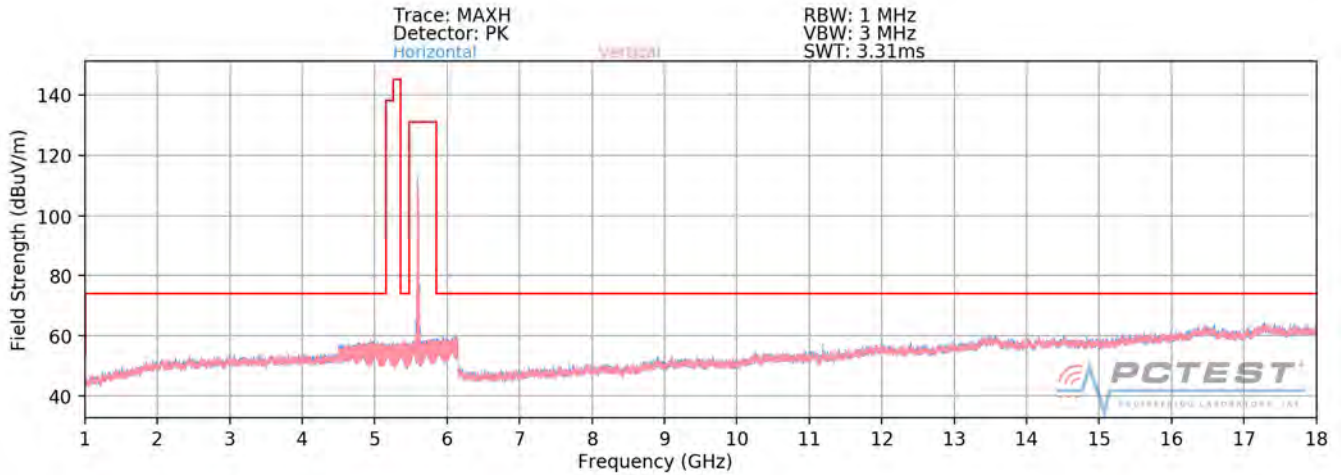


**Plot 7-295. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U1 Ch. 40 – 26 Tones)**

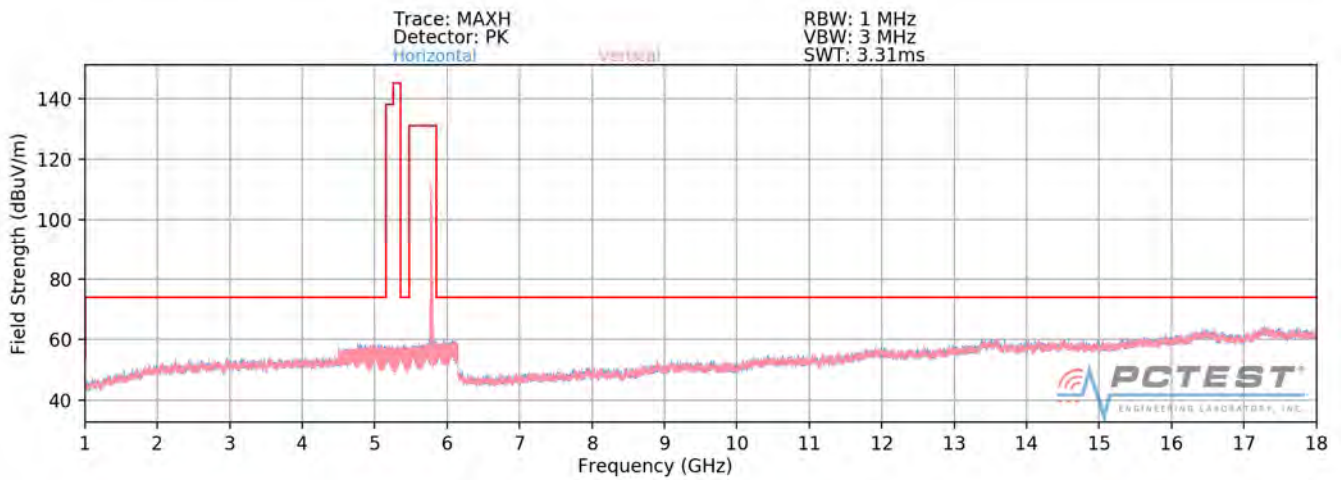


**Plot 7-296. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U2A Ch. 56 – 26 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 236 of 287



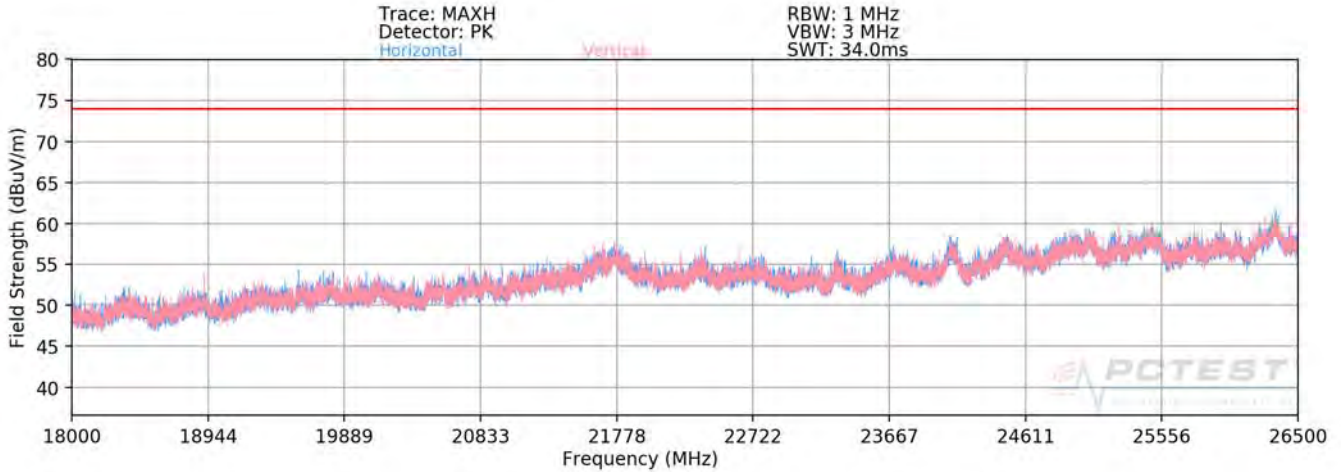
**Plot 7-297. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U2C Ch. 120 – 26 Tones)**



**Plot 7-298. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U3 Ch. 157 – 26 Tones)**

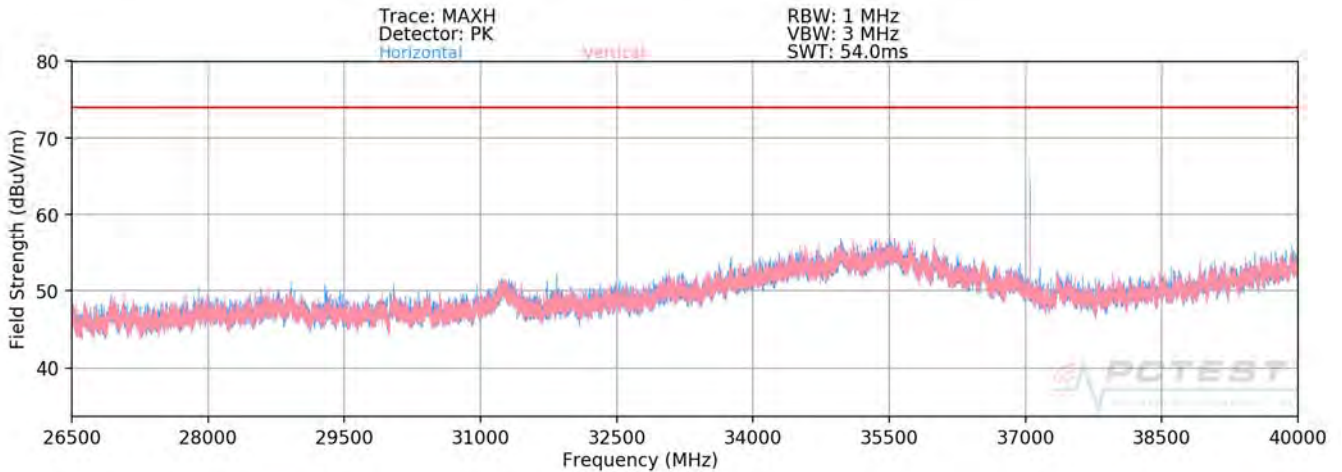
<p>FCC ID: A3LSMG977U</p>		<p><b>MEASUREMENT REPORT (CERTIFICATION)</b></p>	<p><b>Approved by:</b> Quality Manager</p>
<p><b>Test Report S/N:</b> 1M1901100003-10.A3L</p>	<p><b>Test Dates:</b> 01/22/2019 - 03/25/2019</p>	<p><b>EUT Type:</b> Portable Handset</p>	<p>Page 237 of 287</p>

### MIMO Radiated Spurious Emissions Measurements (Above 18GHz)



**Plot 7-299. Radiated Spurious Plot above 18GHz - 26.5GHz MIMO (802.11ax – 26 Tones)**

### Plot 7-300. Radiated Spurious Plot 26.5GHz - 40GHz



**MIMO (802.11ax – 26 Tones)**

FCC ID: A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 238 of 287

## MIMO Radiated Spurious Emission Measurements (26 Tones)

§15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5180MHz  
 Channel: 36

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]
10360.00	Peak	V	135	2	-65.49	15.60	0.00	57.11	68.20	-11.09
* 15540.00	Average	V	-	-	-81.04	22.59	0.00	48.55	53.98	-5.43
* 15540.00	Peak	V	-	-	-69.30	22.59	0.00	60.29	73.98	-13.69
* 20720.00	Average	V	-	-	-77.49	17.17	-9.54	37.13	53.98	-16.85
* 20720.00	Peak	V	-	-	-65.77	17.17	-9.54	48.85	73.98	-25.13
25900.00	Peak	V	-	-	-65.18	19.93	-9.54	52.20	68.20	-16.00

Table 7-116. Radiated Measurements MIMO (26 Tones)

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5200MHz  
 Channel: 40

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]
10400.00	Peak	V	146	7	-66.30	15.83	0.00	56.53	68.20	-11.67
* 15600.00	Average	V	-	-	-81.06	22.66	0.00	48.60	53.98	-5.38
* 15600.00	Peak	V	-	-	-69.57	22.66	0.00	60.09	73.98	-13.89
* 20800.00	Average	V	-	-	-77.85	17.65	-9.54	37.26	53.98	-16.72
* 20800.00	Peak	V	-	-	-66.17	17.65	-9.54	48.94	73.98	-25.04
26000.00	Peak	V	-	-	-64.52	20.68	-9.54	53.62	68.20	-14.58

Table 7-117. Radiated Measurements MIMO (26 Tones)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 239 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5240MHz  
 Channel: 48

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]
10480.00	Peak	V	168	1	-68.27	15.79	0.00	54.52	68.20	-13.68
* 15720.00	Average	V	-	-	-81.08	22.96	0.00	48.88	53.98	-5.10
* 15720.00	Peak	V	-	-	-69.17	22.96	0.00	60.79	73.98	-13.19
* 20960.00	Average	V	-	-	-77.92	17.53	-9.54	37.07	53.98	-16.91
* 20960.00	Peak	V	-	-	-66.57	17.53	-9.54	48.42	73.98	-25.56
26200.00	Peak	V	-	-	-65.14	20.23	-9.54	52.55	68.20	-15.65

**Table 7-118. Radiated Measurements MIMO (26 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5260MHz  
 Channel: 52

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]
10520.00	Peak	V	105	360	-68.32	15.97	0.00	54.65	68.20	-13.55
* 15780.00	Average	V	-	-	-81.16	22.93	0.00	48.77	53.98	-5.21
* 15780.00	Peak	V	-	-	-70.22	22.93	0.00	59.71	73.98	-14.27
* 21040.00	Average	V	-	-	-77.64	17.48	-9.54	37.29	53.98	-16.69
* 21040.00	Peak	V	-	-	-66.63	17.48	-9.54	48.30	73.98	-25.68
26300.00	Peak	V	-	-	-64.91	20.33	-9.54	52.88	68.20	-15.32

**Table 7-119. Radiated Measurements MIMO (26 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 240 of 287



Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5280MHz  
 Channel: 56

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]
10560.00	Peak	V	-	-	-69.22	16.18	0.00	53.96	68.20	-14.24
* 15840.00	Average	V	-	-	-81.29	23.30	0.00	49.01	53.98	-4.97
* 15840.00	Peak	V	-	-	-70.21	23.30	0.00	60.09	73.98	-13.89
* 21120.00	Average	V	-	-	-77.42	17.27	-9.54	37.30	53.98	-16.67
* 21120.00	Peak	V	-	-	-66.40	17.27	-9.54	48.32	73.98	-25.65
26400.00	Peak	V	-	-	-64.70	20.27	-9.54	53.03	68.20	-15.17

**Table 7-120. Radiated Measurements MIMO (26 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5320MHz  
 Channel: 64

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]
* 10640.00	Average	V	-	-	-80.77	16.41	0.00	42.64	53.98	-11.34
* 10640.00	Peak	V	-	-	-69.66	16.41	0.00	53.75	73.98	-20.23
* 15960.00	Average	V	-	-	-81.32	23.41	0.00	49.09	53.98	-4.89
* 15960.00	Peak	V	-	-	-69.76	23.41	0.00	60.65	73.98	-13.33
* 21280.00	Average	V	-	-	-77.35	17.58	-9.54	37.69	53.98	-16.29
* 21280.00	Peak	V	-	-	-65.33	17.58	-9.54	49.71	73.98	-24.27
26600.00	Peak	V	-	-	-52.51	3.11	-9.54	48.06	68.20	-20.14

**Table 7-121. Radiated Measurements MIMO (26 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 241 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5500MHz  
 Channel: 100

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]
* 11000.00	Average	V	-	-	-80.27	17.19	0.00	43.92	53.98	-10.06
* 11000.00	Peak	V	-	-	-68.96	17.19	0.00	55.23	73.98	-18.75
16500.00	Peak	V	-	-	-69.67	24.79	0.00	62.12	68.20	-6.08
22000.00	Peak	V	-	-	-66.58	18.05	-9.54	48.93	68.20	-19.27
27500.00	Peak	V	-	-	-48.44	2.08	-9.54	51.10	68.20	-17.10

**Table 7-122. Radiated Measurements MIMO (26 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5600MHz  
 Channel: 120

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]
* 11200.00	Average	V	201	3	-79.26	16.89	0.00	44.63	53.98	-9.35
* 11200.00	Peak	V	201	3	-67.65	16.89	0.00	56.24	73.98	-17.74
16800.00	Peak	V	-	-	-70.01	24.53	0.00	61.52	68.20	-6.68
* 22400.00	Average	V	-	-	-77.82	19.05	-9.54	38.69	53.98	-15.29
* 22400.00	Peak	V	-	-	-66.87	19.05	-9.54	49.64	73.98	-24.34
28000.00	Peak	V	-	-	-51.13	3.19	-9.54	49.51	68.20	-18.69

**Table 7-123. Radiated Measurements MIMO (26 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 242 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5720MHz  
 Channel: 144

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]
* 11440.00	Average	V	180	2	-80.45	17.81	0.00	44.36	53.98	-9.62
* 11440.00	Peak	V	180	2	-68.06	17.81	0.00	56.75	73.98	-17.23
17160.00	Peak	V	-	-	-69.78	24.98	0.00	62.20	68.20	-6.00
* 22880.00	Average	V	-	-	-78.08	18.60	-9.54	37.97	53.98	-16.01
* 22880.00	Peak	V	-	-	-66.99	18.60	-9.54	49.06	73.98	-24.92
28600.00	Peak	V	-	-	-49.59	1.74	-9.54	49.60	68.20	-18.60

**Table 7-124. Radiated Measurements MIMO (26 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5745MHz  
 Channel: 149

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]
* 11490.00	Average	V	147	48	-79.21	17.61	0.00	45.40	53.98	-8.58
* 11490.00	Peak	V	147	48	-67.85	17.61	0.00	56.76	73.98	-17.22
17235.00	Peak	V	-	-	-69.94	25.44	0.00	62.50	68.20	-5.70
* 22980.00	Average	V	-	-	-77.55	18.46	-9.54	38.37	53.98	-15.61
* 22980.00	Peak	V	-	-	-66.53	18.46	-9.54	49.39	73.98	-24.59
28725.00	Peak	V	-	-	-49.54	2.47	-9.54	50.39	69.20	-18.81

**Table 7-125. Radiated Measurements MIMO (26 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 243 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5785MHz  
 Channel: 157

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]
* 11570.00	Average	V	135	56	-80.61	17.67	0.00	44.06	53.98	-9.92
* 11570.00	Peak	V	135	56	-68.92	17.67	0.00	55.75	73.98	-18.23
17355.00	Peak	V	-	-	-69.70	26.58	0.00	63.88	68.20	-4.32
23140.00	Peak	V	-	-	-66.23	18.84	-9.54	50.07	68.20	-18.13
28925.00	Peak	V	-	-	-49.59	2.80	-9.54	50.67	68.20	-17.53

**Table 7-126. Radiated Measurements MIMO (26 Tones)**

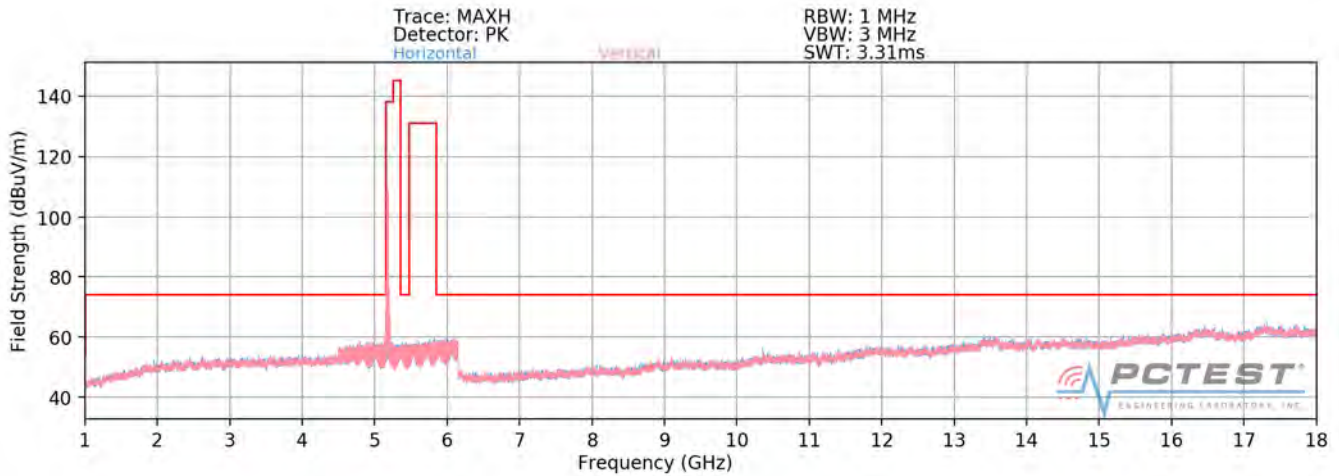
Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5825MHz  
 Channel: 165

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]
* 11650.00	Average	V	174	15	-80.76	17.69	0.00	43.93	53.98	-10.05
* 11650.00	Peak	V	174	15	-69.53	17.69	0.00	55.16	73.98	-18.82
17475.00	Peak	V	-	-	-70.26	26.26	0.00	63.00	68.20	-5.20
23300.00	Peak	V	-	-	-67.16	19.55	-9.54	49.84	68.20	-18.36
29125.00	Peak	V	-	-	-48.99	1.07	-9.54	49.54	68.20	-18.66

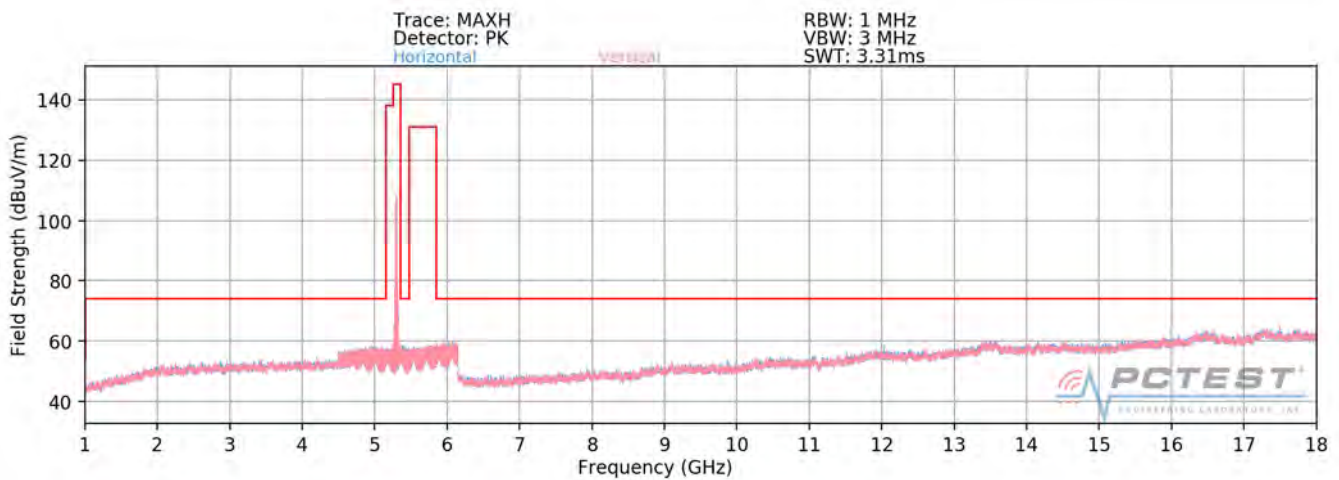
**Table 7-127. Radiated Measurements MIMO (26 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 244 of 287

## 242 Tones

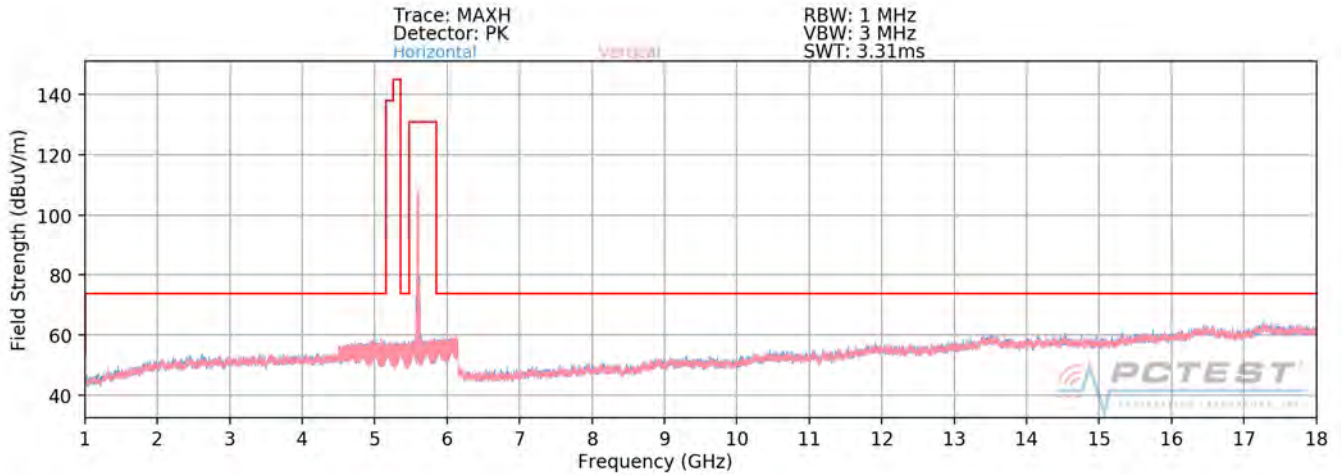


**Plot 7-301. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U1 Ch. 40 – 242 Tones)**

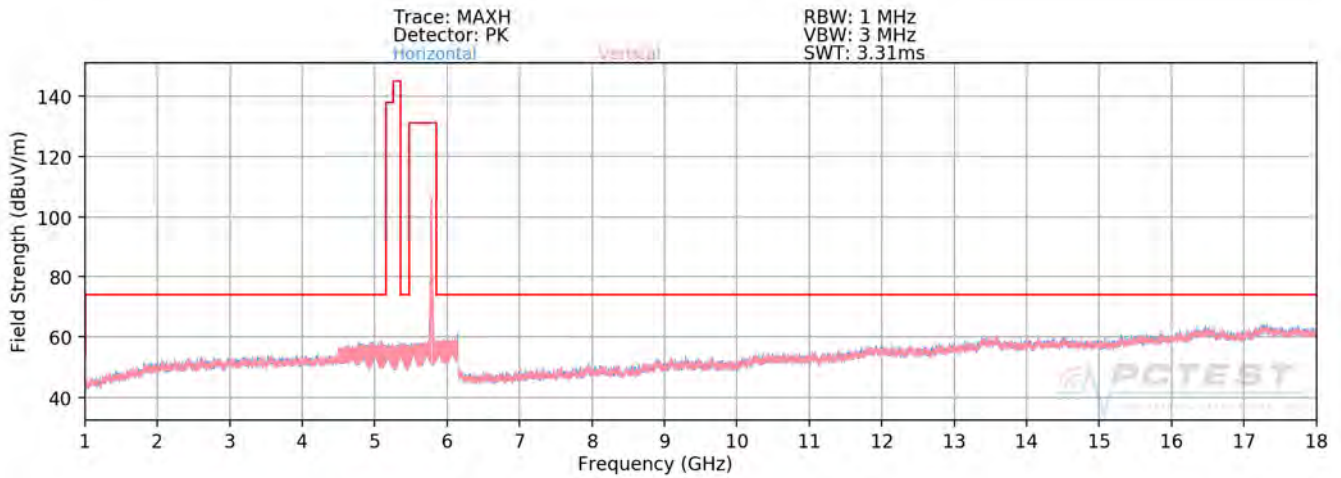


**Plot 7-302. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U2A Ch. 56 – 242 Tones)**

<b>FCC ID:</b> A3LSMG977U	 <b>MEASUREMENT REPORT (CERTIFICATION)</b> 		<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1901100003-10.A3L	<b>Test Dates:</b> 01/22/2019 - 03/25/2019	<b>EUT Type:</b> Portable Handset	Page 245 of 287



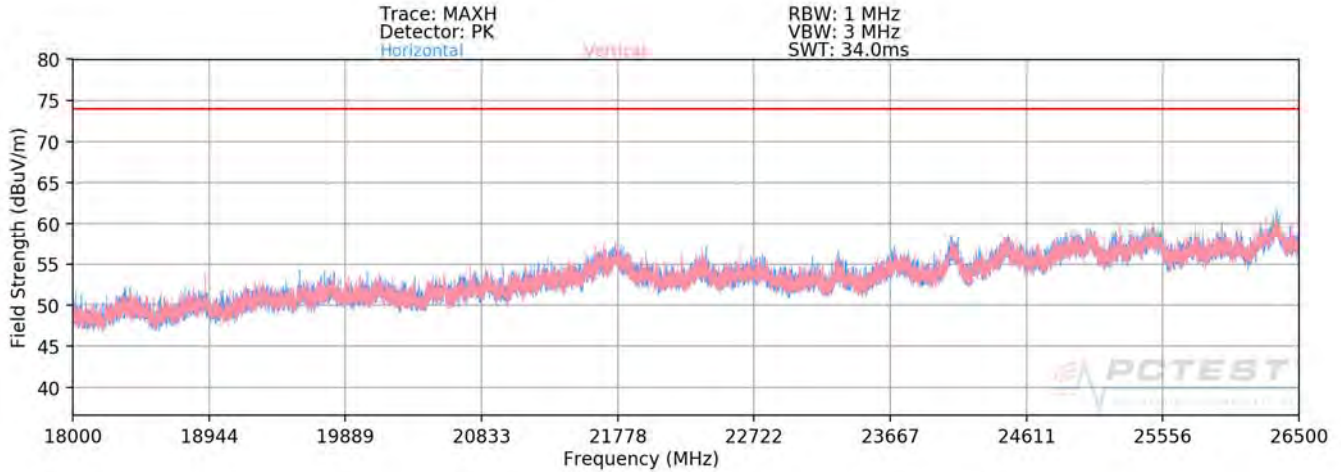
**Plot 7-303. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U2C Ch. 120 – 242 Tones)**



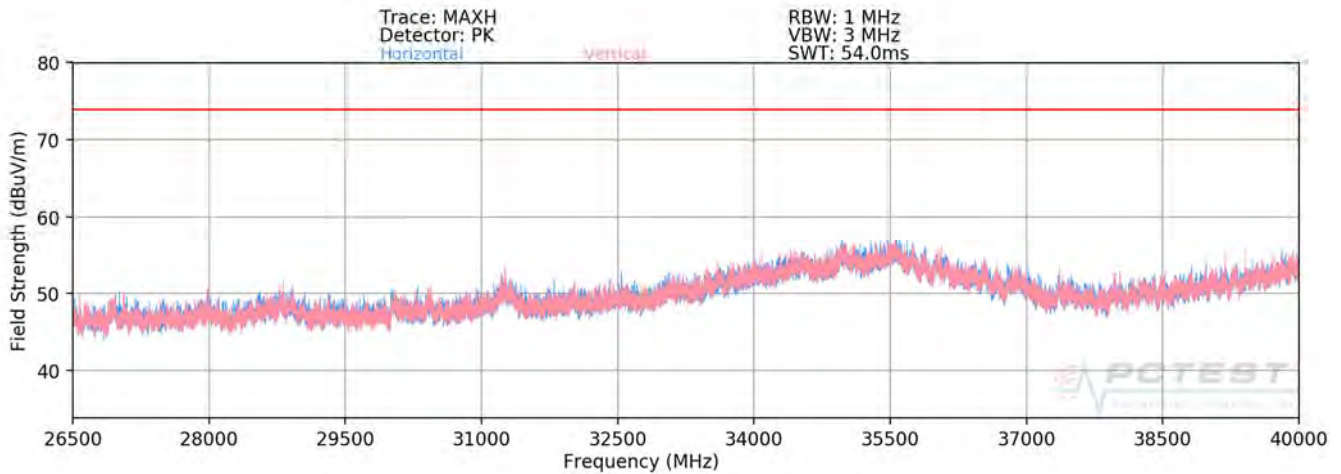
**Plot 7-304. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U3 Ch. 157 – 242 Tones)**

<p>FCC ID: A3LSMG977U</p>		<p><b>MEASUREMENT REPORT (CERTIFICATION)</b></p>	 <p>Approved by: Quality Manager</p>
<p>Test Report S/N: 1M1901100003-10.A3L</p>	<p>Test Dates: 01/22/2019 - 03/25/2019</p>	<p>EUT Type: Portable Handset</p>	<p>Page 246 of 287</p>

## MIMO Radiated Spurious Emissions Measurements (Above 18GHz)



**Plot 7-305. Radiated Spurious Plot above 18GHz - 26.5GHz MIMO (802.11ax – 242 Tones)**



**Plot 7-306. Radiated Spurious Plot 26.5GHz - 40GHz MIMO (802.11ax – 242 Tones)**

FCC ID: A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 247 of 287

## MIMO Radiated Spurious Emission Measurements (242 Tones)

§15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5180MHz  
 Channel: 36

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]
10360.00	Peak	V	146	2	-67.27	15.60	0.00	55.33	68.20	-12.87
* 15540.00	Average	V	-	-	-81.08	22.59	0.00	48.51	53.98	-5.47
* 15540.00	Peak	V	-	-	-68.95	22.59	0.00	60.64	73.98	-13.34
* 20720.00	Average	V	-	-	-77.72	17.17	-9.54	36.90	53.98	-17.08
* 20720.00	Peak	V	-	-	-66.92	17.17	-9.54	47.70	73.98	-26.28
25900.00	Peak	V	-	-	-64.96	19.93	-9.54	52.42	68.20	-15.78

**Table 7-128. Radiated Measurements MIMO (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5200MHz  
 Channel: 40

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]
10400.00	Peak	V	264	3	-67.38	15.83	0.00	55.45	68.20	-12.75
* 15600.00	Average	V	-	-	-81.13	22.66	0.00	48.53	53.98	-5.45
* 15600.00	Peak	V	-	-	-69.11	22.66	0.00	60.55	73.98	-13.43
* 20800.00	Average	V	-	-	-78.04	17.65	-9.54	37.07	53.98	-16.91
* 20800.00	Peak	V	-	-	-66.72	17.65	-9.54	48.39	73.98	-25.59
26000.00	Peak	V	-	-	-66.22	20.68	-9.54	51.92	68.20	-16.28

**Table 7-129. Radiated Measurements MIMO (242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 248 of 287	



Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5240MHz  
 Channel: 48

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]
10480.00	Peak	V	117	4	-68.58	15.79	0.00	54.21	68.20	-13.99
* 15720.00	Average	V	-	-	-81.15	22.96	0.00	48.81	53.98	-5.17
* 15720.00	Peak	V	-	-	-69.85	22.96	0.00	60.11	73.98	-13.87
* 20960.00	Average	V	-	-	-77.87	17.53	-9.54	37.12	53.98	-16.86
* 20960.00	Peak	V	-	-	-67.12	17.53	-9.54	47.87	73.98	-26.11
26200.00	Peak	V	-	-	-65.90	20.23	-9.54	51.79	68.20	-16.41

**Table 7-130. Radiated Measurements MIMO (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5260MHz  
 Channel: 52

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]
10520.00	Peak	V	-	-	-68.35	15.97	0.00	54.62	68.20	-13.58
* 15780.00	Average	V	-	-	-81.14	22.93	0.00	48.79	53.98	-5.19
* 15780.00	Peak	V	-	-	-69.33	22.93	0.00	60.60	73.98	-13.38
* 21040.00	Average	V	-	-	-78.13	17.48	-9.54	36.80	53.98	-17.18
* 21040.00	Peak	V	-	-	-66.92	17.48	-9.54	48.01	73.98	-25.97
26300.00	Peak	V	-	-	-65.47	20.33	-9.54	52.32	68.20	-15.88

**Table 7-131. Radiated Measurements MIMO (242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 249 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5280MHz  
 Channel: 56

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]
10560.00	Peak	V	-	-	-69.29	16.18	0.00	53.89	68.20	-14.31
* 15840.00	Average	V	-	-	-81.33	23.30	0.00	48.97	53.98	-5.01
* 15840.00	Peak	V	-	-	-70.62	23.30	0.00	59.68	73.98	-14.30
* 21120.00	Average	V	-	-	-77.62	17.27	-9.54	37.10	53.98	-16.87
* 21120.00	Peak	V	-	-	-66.44	17.27	-9.54	48.28	73.98	-25.69
26400.00	Peak	V	-	-	-65.44	20.27	-9.54	52.29	68.20	-15.91

**Table 7-132. Radiated Measurements MIMO (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5320MHz  
 Channel: 64

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]
* 10640.00	Average	V	-	-	-80.78	16.41	0.00	42.63	53.98	-11.35
* 10640.00	Peak	V	-	-	-69.56	16.41	0.00	53.85	73.98	-20.13
* 15960.00	Average	V	-	-	-81.50	23.41	0.00	48.91	53.98	-5.07
* 15960.00	Peak	V	-	-	-70.44	23.41	0.00	59.97	73.98	-14.01
* 21280.00	Average	V	-	-	-77.36	17.58	-9.54	37.68	53.98	-16.30
* 21280.00	Peak	V	-	-	-65.94	17.58	-9.54	49.10	73.98	-24.88
26600.00	Peak	V	-	-	-51.79	3.11	-9.54	48.78	68.20	-19.42

**Table 7-133. Radiated Measurements MIMO (242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 250 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5500MHz  
 Channel: 100

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]
* 11000.00	Average	V	-	-	-80.35	17.19	0.00	43.84	53.98	-10.14
* 11000.00	Peak	V	-	-	-68.65	17.19	0.00	55.54	73.98	-18.44
16500.00	Peak	V	-	-	-69.38	24.79	0.00	62.41	68.20	-5.79
22000.00	Peak	V	-	-	-67.25	18.05	-9.54	48.26	68.20	-19.94
27500.00	Peak	V	-	-	-50.45	2.08	-9.54	49.09	68.20	-19.11

**Table 7-134. Radiated Measurements MIMO (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5600MHz  
 Channel: 120

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]
* 11200.00	Average	V	223	364	-79.76	16.89	0.00	44.13	53.98	-9.85
* 11200.00	Peak	V	223	364	-67.98	16.89	0.00	55.91	73.98	-18.07
16800.00	Peak	V	-	-	-69.60	24.53	0.00	61.93	68.20	-6.27
* 22400.00	Average	V	-	-	-77.88	19.05	-9.54	38.63	53.98	-15.35
* 22400.00	Peak	V	-	-	-67.12	19.05	-9.54	49.39	73.98	-24.59
28000.00	Peak	V	-	-	-50.11	3.19	-9.54	50.53	68.20	-17.67

**Table 7-135. Radiated Measurements MIMO (242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 251 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5720MHz  
 Channel: 144

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]
* 11440.00	Average	V	-	-	-80.72	17.81	0.00	44.09	53.98	-9.89
* 11440.00	Peak	V	-	-	-68.89	17.81	0.00	55.92	73.98	-18.06
17160.00	Peak	V	-	-	-70.06	24.98	0.00	61.92	68.20	-6.28
* 22880.00	Average	V	-	-	-78.52	18.60	-9.54	37.53	53.98	-16.45
* 22880.00	Peak	V	-	-	-66.70	18.60	-9.54	49.35	73.98	-24.63
28600.00	Peak	V	-	-	-49.44	1.74	-9.54	49.75	68.20	-18.45

**Table 7-136. Radiated Measurements MIMO (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5745MHz  
 Channel: 149

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]
* 11490.00	Average	V	-	-	-80.86	17.61	0.00	43.75	53.98	-10.23
* 11490.00	Peak	V	-	-	-69.52	17.61	0.00	55.09	73.98	-18.89
17235.00	Peak	V	-	-	-70.15	25.44	0.00	62.29	68.20	-5.91
* 22980.00	Average	V	-	-	-77.76	18.46	-9.54	38.16	53.98	-15.82
* 22980.00	Peak	V	-	-	-66.85	18.46	-9.54	49.07	73.98	-24.91
28725.00	Peak	V	-	-	-50.71	2.47	-9.54	49.22	69.20	-19.98

**Table 7-137. Radiated Measurements MIMO (242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 252 of 287

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5785MHz  
 Channel: 157

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]
* 11570.00	Average	V	-	-	-80.73	17.67	0.00	43.94	53.98	-10.04
* 11570.00	Peak	V	-	-	-69.30	17.67	0.00	55.37	73.98	-18.61
17355.00	Peak	V	-	-	-70.27	26.58	0.00	63.31	68.20	-4.89
23140.00	Peak	V	-	-	-66.67	18.84	-9.54	49.63	68.20	-18.57
28925.00	Peak	V	-	-	-50.13	2.80	-9.54	50.13	68.20	-18.07

**Table 7-138. Radiated Measurements MIMO (242 Tones)**

Worst Case Mode: 802.11ax (20MHz BW)  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5825MHz  
 Channel: 165

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]
* 11650.00	Average	V	-	-	-80.72	17.69	0.00	43.97	53.98	-10.01
* 11650.00	Peak	V	-	-	-68.74	17.69	0.00	55.95	73.98	-18.03
17475.00	Peak	V	-	-	-69.82	26.26	0.00	63.44	68.20	-4.76
23300.00	Peak	V	-	-	-67.59	19.55	-9.54	49.41	68.20	-18.79
29125.00	Peak	V	-	-	-49.49	1.07	-9.54	49.04	68.20	-19.16

**Table 7-139. Radiated Measurements MIMO (242 Tones)**

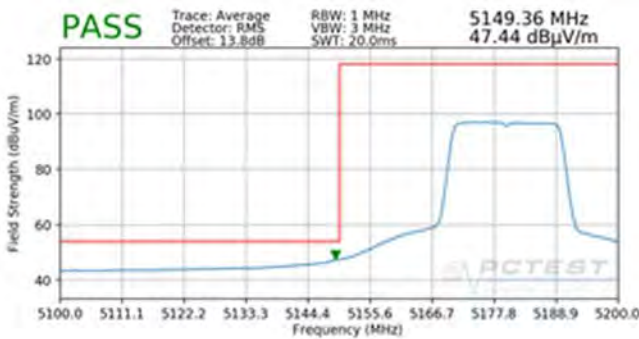
FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 253 of 287

## 7.6.4 SISO Antenna-1 Radiated Band Edge Measurements (20MHz BW)

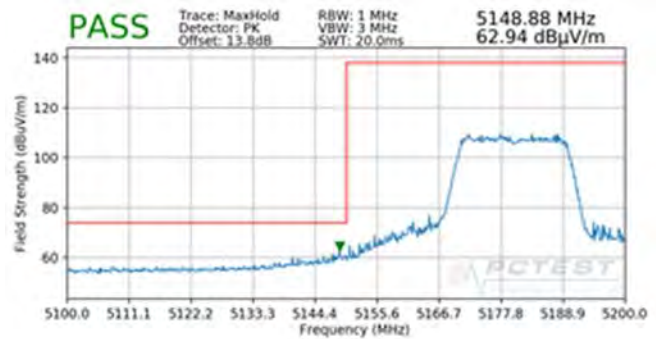
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]; RSS-Gen [8.9]

### 242 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

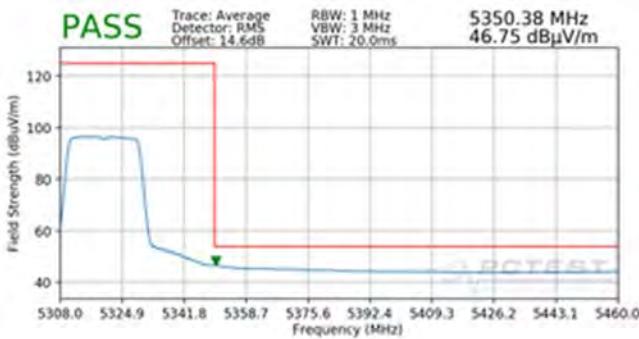


**Plot 7-307. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 242 Tones)**

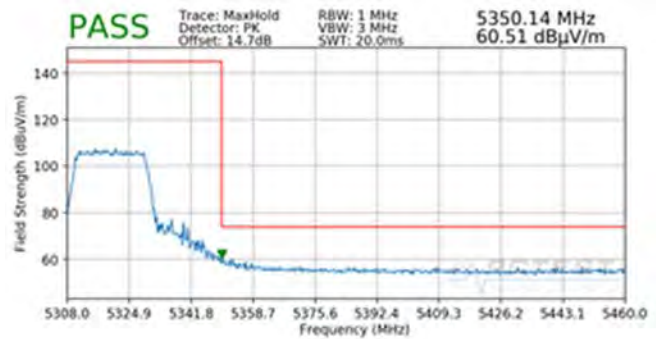


**Plot 7-308. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1 – 242 Tones)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



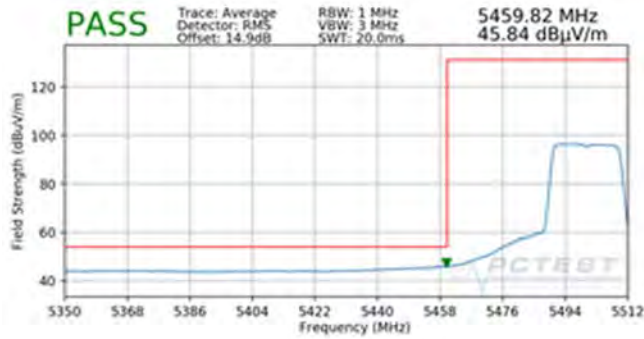
**Plot 7-309. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A – 242 Tones)**



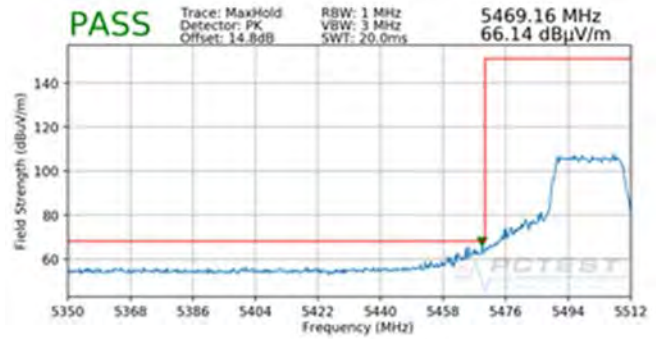
**Plot 7-310. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 242 Tones)**

FCC ID: A3LSMG977U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 254 of 287

Worst Case Mode: 802.11ax  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5500MHz  
 Channel: 100

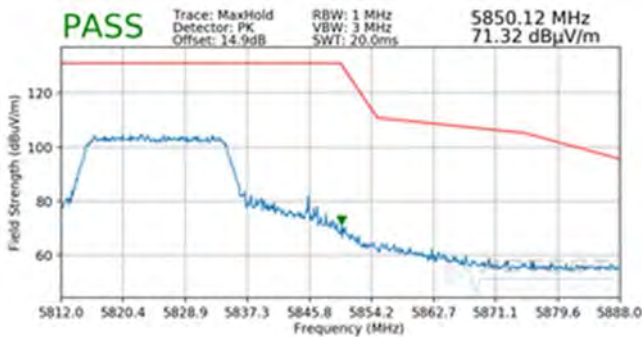


**Plot 7-311. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C – 242 Tones)**



**Plot 7-312. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C – 242 Tones)**

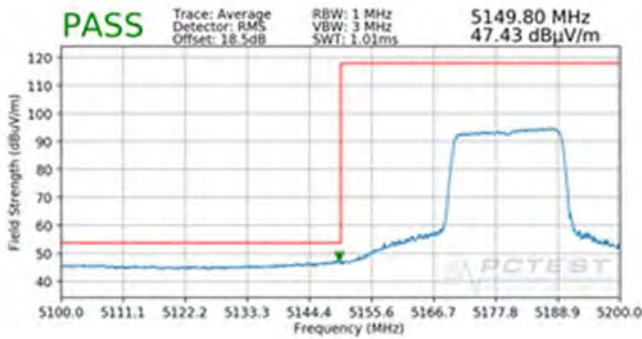
Worst Case Mode: 802.11ax  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5825MHz  
 Channel: 165



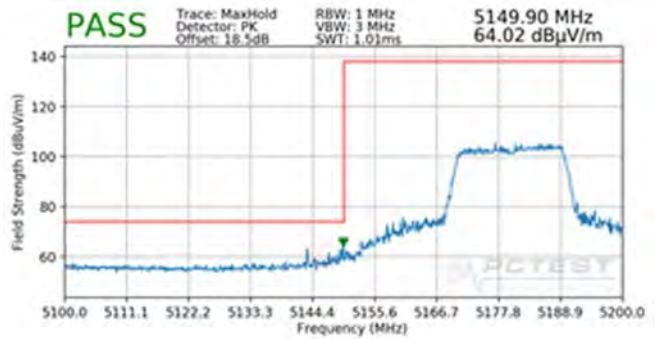
**Plot 7-313. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3 – 242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 255 of 287

Worst Case Mode: 802.11ax  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5180MHz  
 Channel: 36



**Plot 7-314. Radiated Band Edge Plot SISO ANT1 (Average – WCP – 242 Tones)**



**Plot 7-315. Radiated Band Edge Plot SISO ANT1 (Peak – WCP – 242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 256 of 287

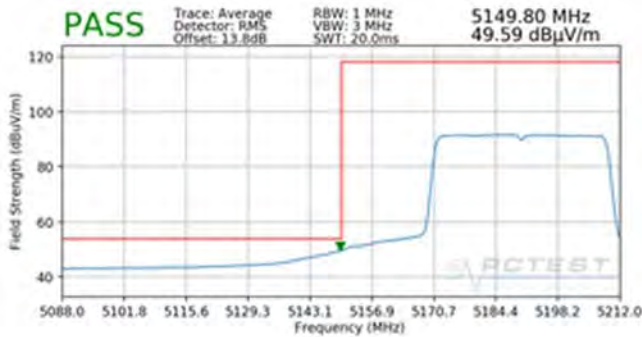


## 7.6.5 SISO Antenna-1 Radiated Band Edge Measurements (40MHz BW)

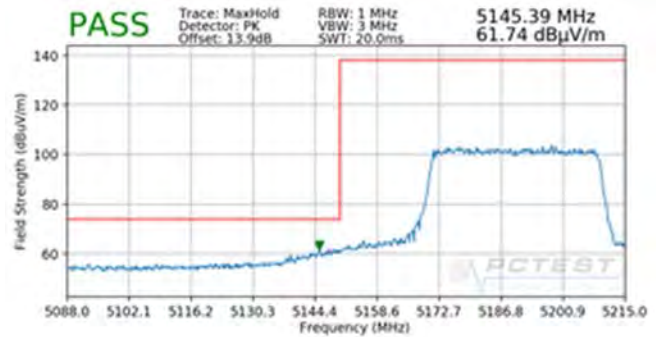
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

### 484 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

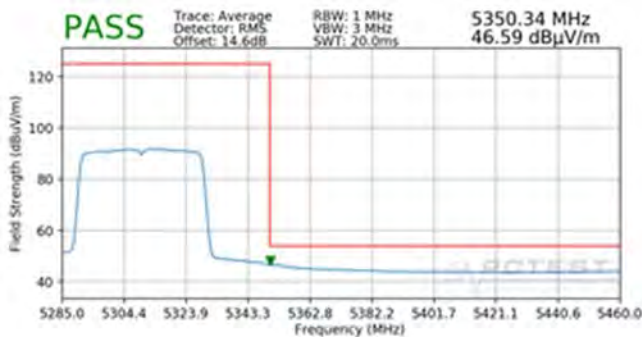


**Plot 7-316. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 484 Tones)**

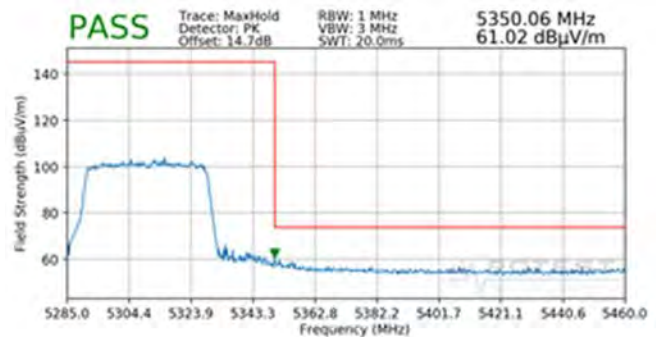


**Plot 7-317. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1 – 484 Tones)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	5310MHz
Channel:	62



**Plot 7-318. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A – 484 Tones)**



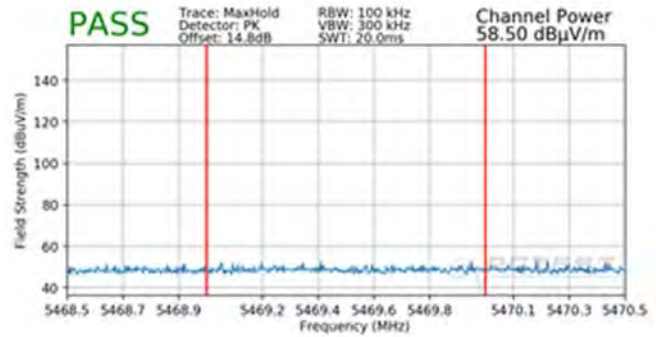
**Plot 7-319. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 484 Tones)**

FCC ID: A3LSMG977U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 257 of 287

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	5510MHz
Channel:	102

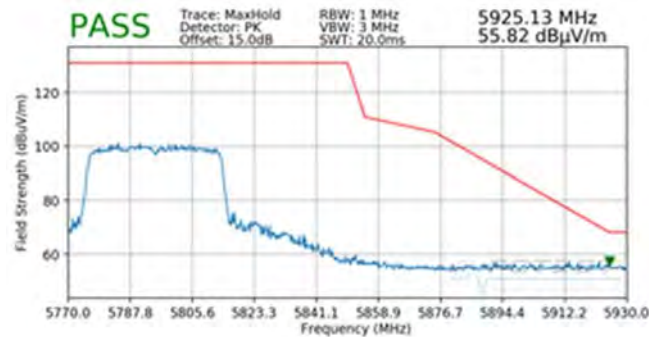


**Plot 7-320. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C – 484 Tones)**



**Plot 7-321. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C – 484 Tones)**

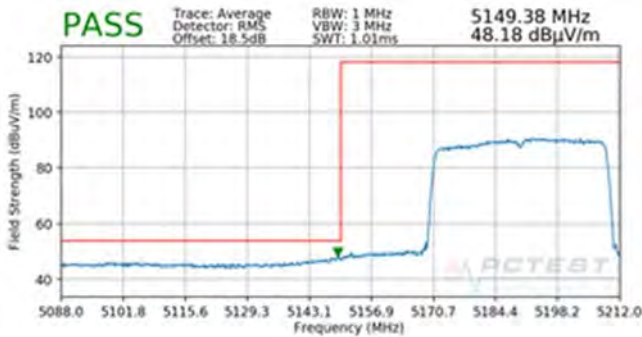
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	5795MHz
Channel:	159



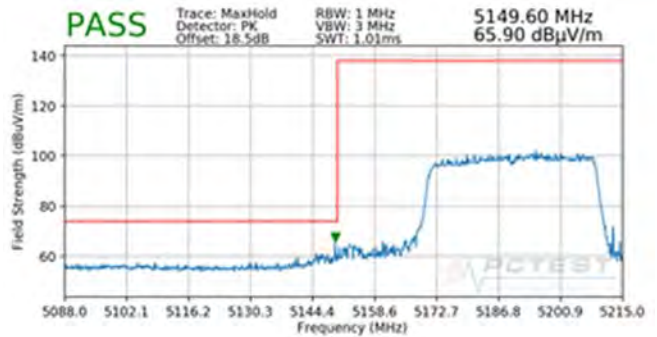
**Plot 7-322. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3 – 484 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 258 of 287

Worst Case Mode: 802.11ax  
 Worst Case Transfer Rate: MCS0  
 RU Index: 65  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5190MHz  
 Channel: 38



**Plot 7-323. Radiated Band Edge Plot SISO ANT1 (Average – WCP – 484 Tones)**



**Plot 7-324. Radiated Band Edge Plot SISO ANT1 (Peak – WCP – 484 Tones)**

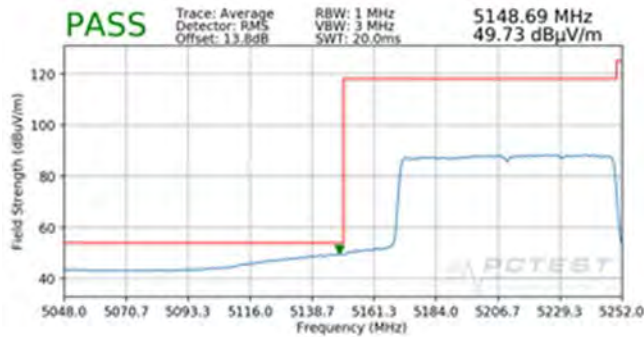
FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 259 of 287

## 7.6.6 SISO Antenna-1 Radiated Band Edge Measurements (80MHz BW)

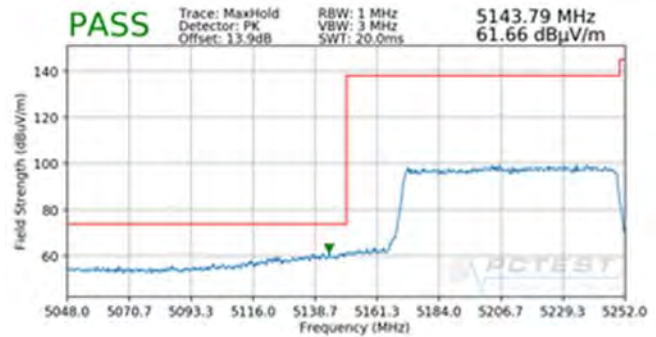
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

### 996 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

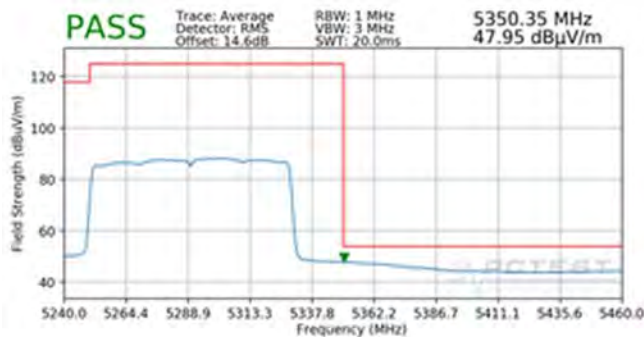


**Plot 7-325. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 996 Tones)**

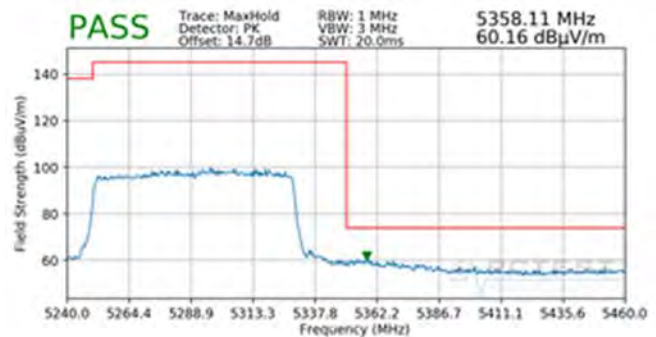


**Plot 7-326. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1 – 996 Tones)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



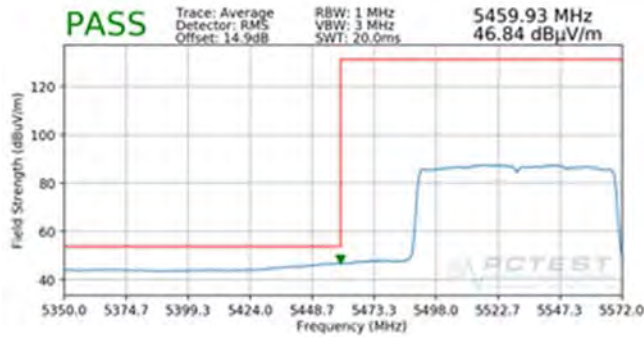
**Plot 7-327. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A – 996 Tones)**



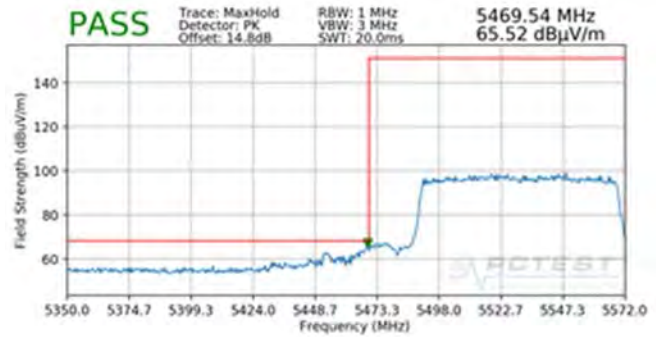
**Plot 7-328. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 996 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 260 of 287

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	5530MHz
Channel:	106

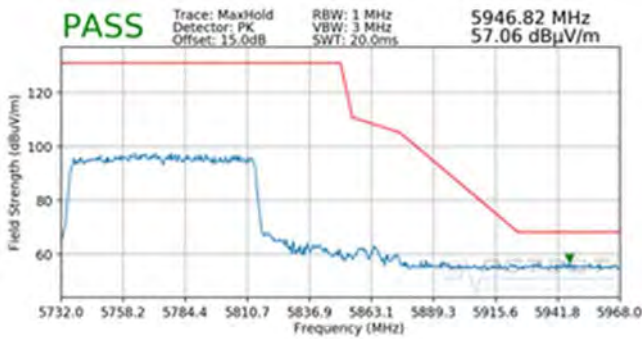


**Plot 7-329. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C – 996 Tones)**



**Plot 7-330. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C – 996 Tones)**

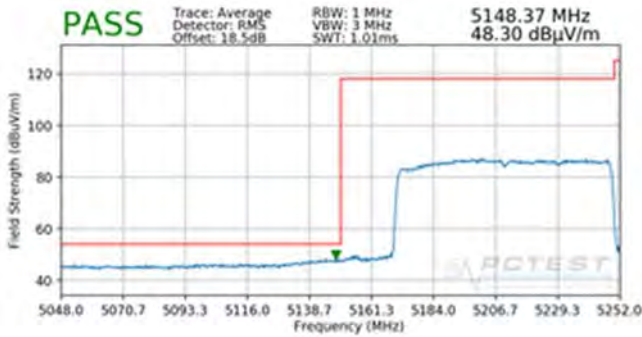
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	5775MHz
Channel:	155



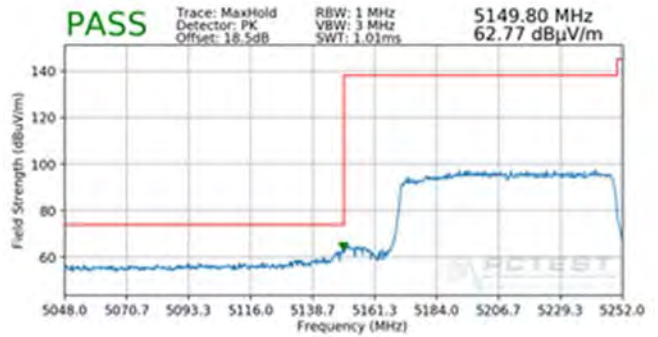
**Plot 7-331. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3 – 996 Tones)**

FCC ID: A3LSMG977U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-10.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 261 of 287

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42



**Plot 7-332. Radiated Band Edge Plot SISO ANT1  
(Average – WCP – 996 Tones)**



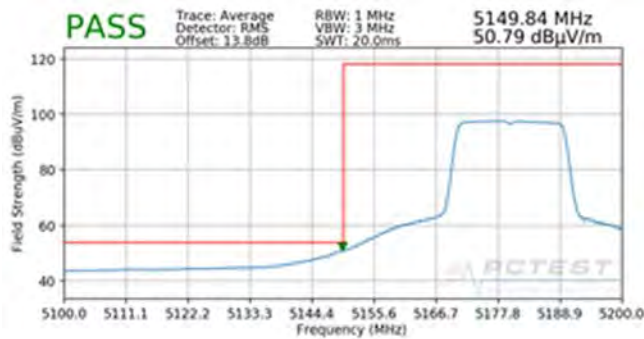
**Plot 7-333. Radiated Band Edge Plot SISO ANT1  
(Peak – WCP – 996 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 262 of 287

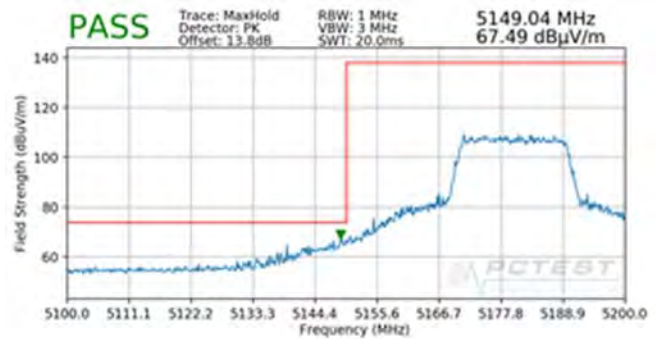
### 7.6.7 SISO Antenna-2 Radiated Band Edge Measurements (20MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

#### 242 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

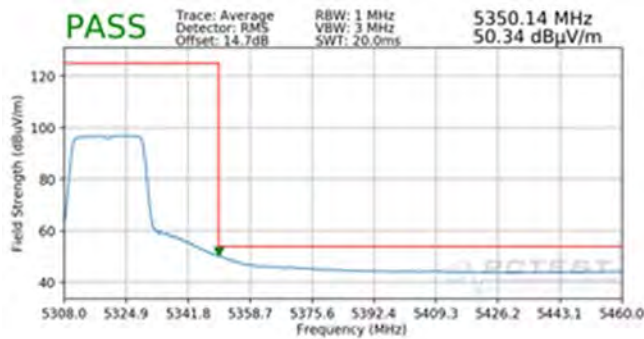


**Plot 7-334. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1 – 242 Tones)**

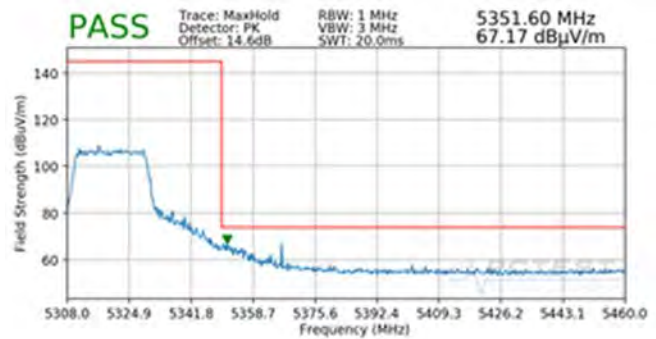


**Plot 7-335. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1 – 242 Tones)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



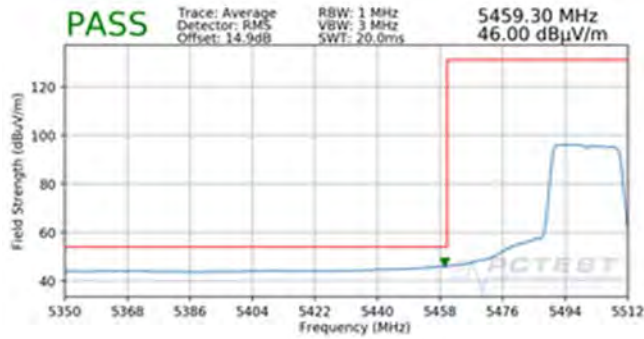
**Plot 7-336. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A – 242 Tones)**



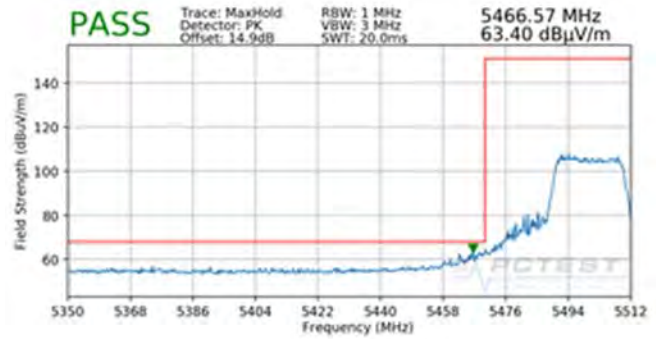
**Plot 7-337. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A – 242 Tones)**

FCC ID: A3LSMG977U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 263 of 287

Worst Case Mode: 802.11ax  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5500MHz  
 Channel: 100

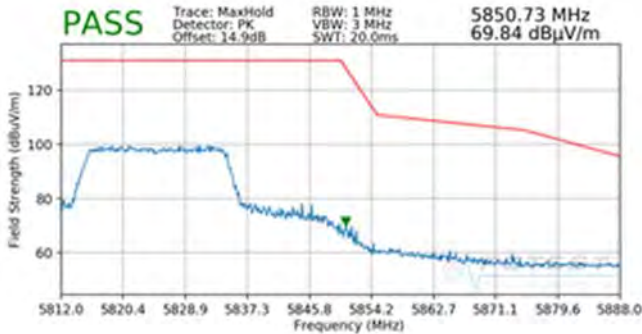


**Plot 7-338. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 242 Tones)**



**Plot 7-339. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C – 242 Tones)**

Worst Case Mode: 802.11ax  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5825MHz  
 Channel: 165

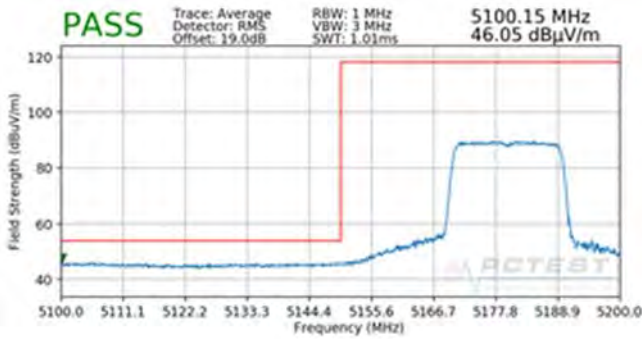


**Plot 7-340. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 242 Tones)**

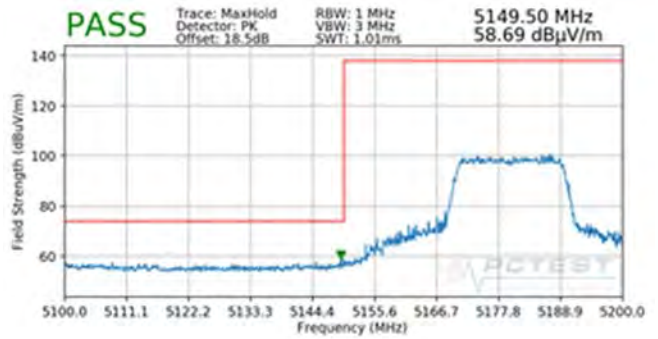
FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 264 of 287



Worst Case Mode: 802.11ax  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5180MHz  
 Channel: 36



**Plot 7-341. Radiated Band Edge Plot SISO ANT2 (Average – WCP – 242 Tones)**



**Plot 7-342. Radiated Band Edge Plot SISO ANT2 (Peak – WCP – 242 Tones)**

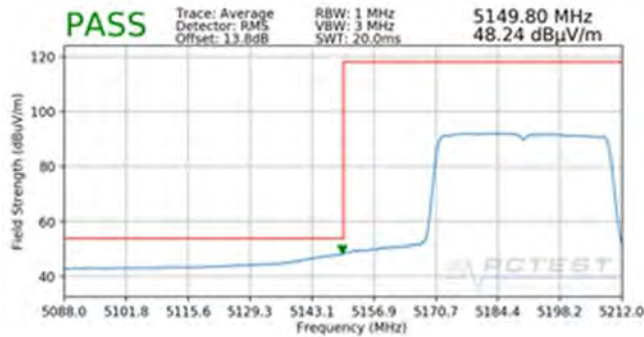
FCC ID: A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 265 of 287

## 7.6.8 SISO Antenna-2 Radiated Band Edge Measurements (40MHz BW)

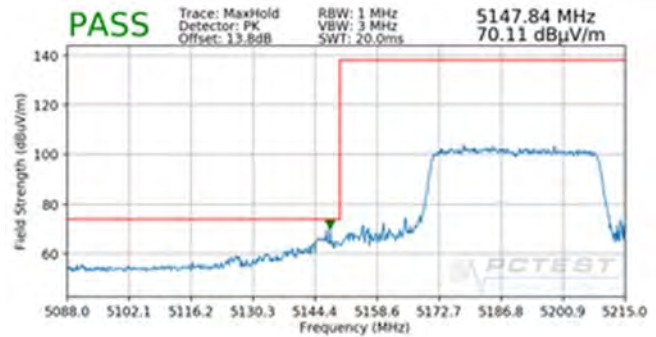
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

### 484 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

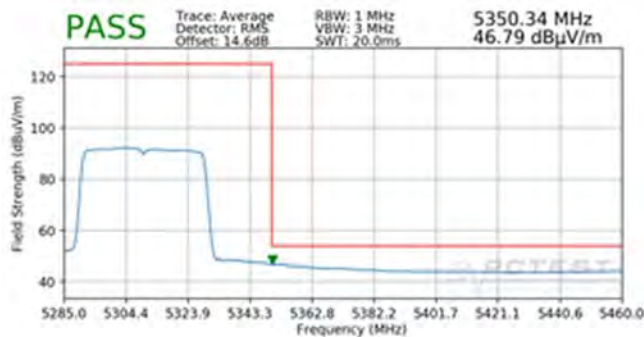


**Plot 7-343. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1 – 484 Tones)**

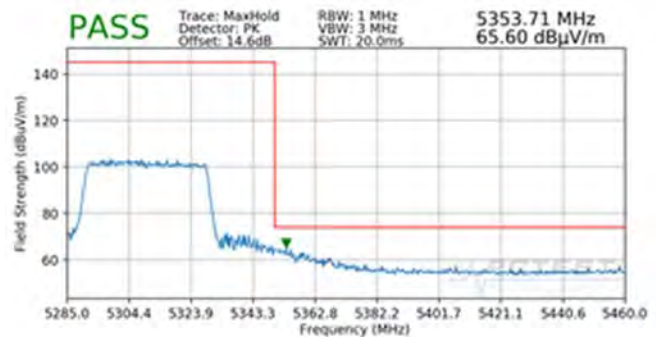


**Plot 7-344. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1 – 484 Tones)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	5310MHz
Channel:	62



**Plot 7-345. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A – 484 Tones)**



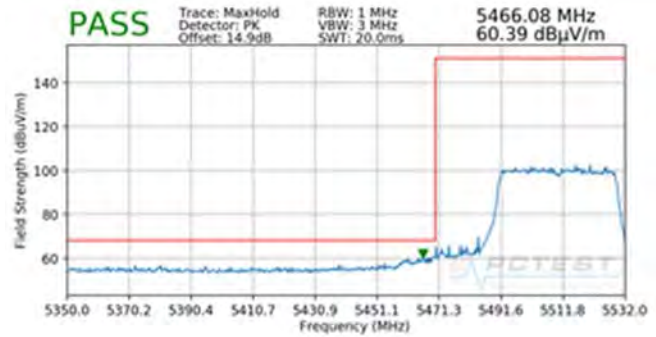
**Plot 7-346. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A – 484 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 266 of 287

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	5510MHz
Channel:	102

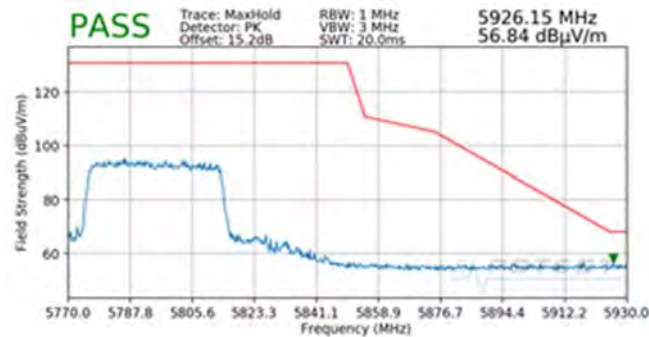


**Plot 7-347. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 484 Tones)**



**Plot 7-348. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C – 484 Tones)**

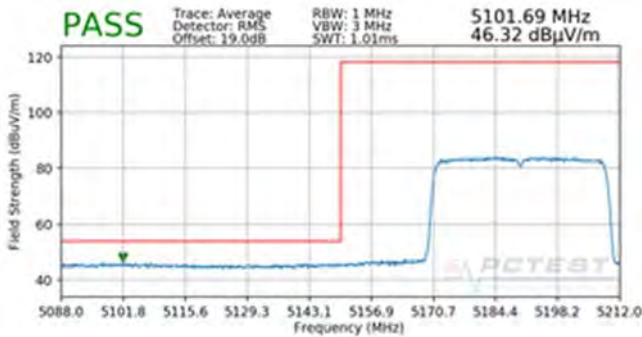
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	5795MHz
Channel:	159



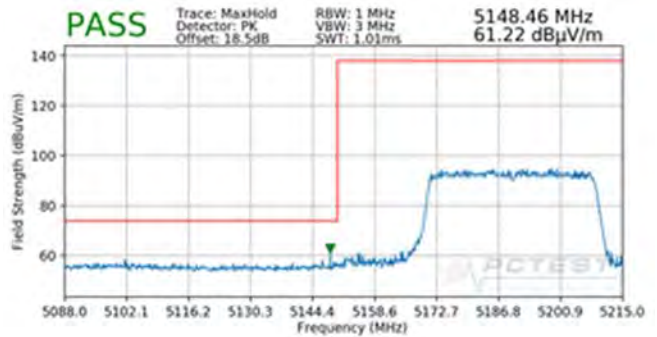
**Plot 7-349. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 484 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 267 of 287

Worst Case Mode: 802.11ax  
 Worst Case Transfer Rate: MCS0  
 RU Index: 65  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5190MHz  
 Channel: 38



**Plot 7-350. Radiated Band Edge Plot SISO ANT2 (Average – WCP – 484 Tones)**



**Plot 7-351. Radiated Band Edge Plot SISO ANT2 (Peak – WCP – 484 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 268 of 287

## 7.6.9 SISO Antenna-2 Radiated Band Edge Measurements (80MHz BW)

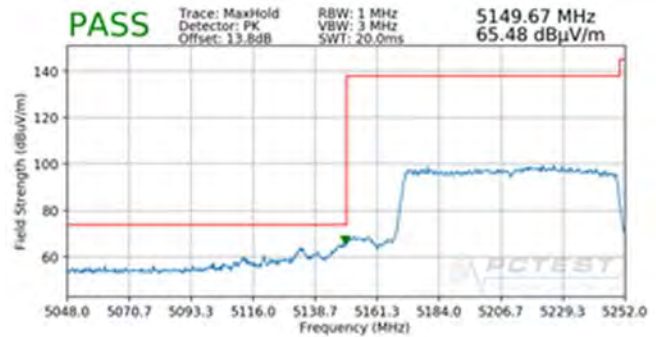
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

### 996 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

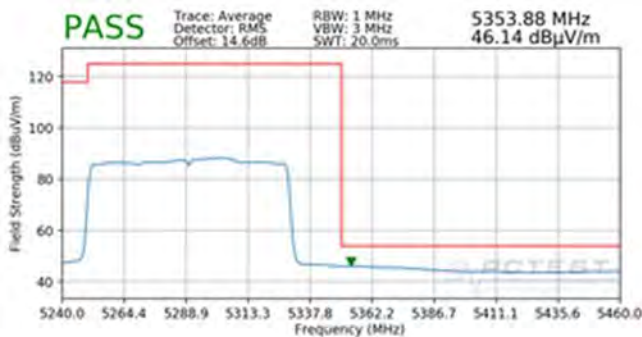


**Plot 7-352. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1 – 996 Tones)**

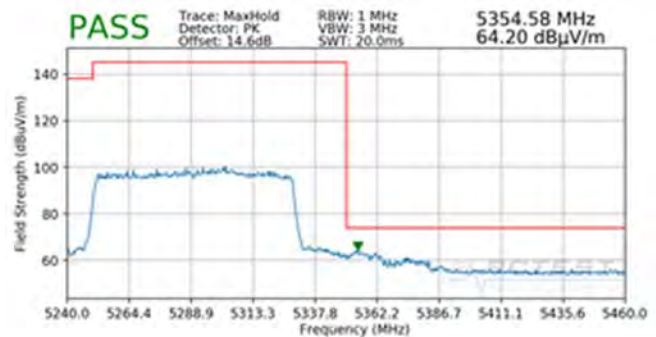


**Plot 7-353. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1 – 996 Tones)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



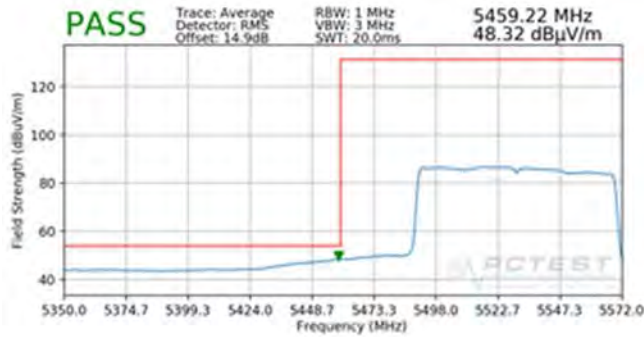
**Plot 7-354. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A – 996 Tones)**



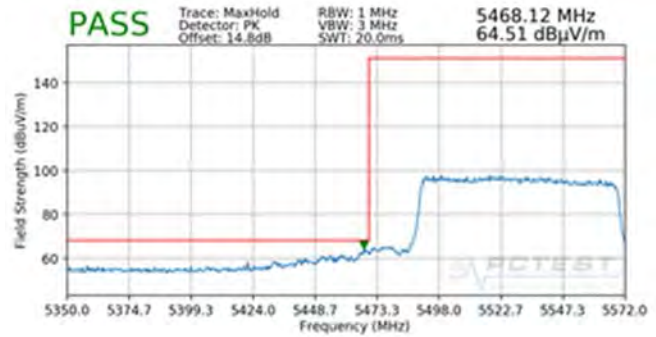
**Plot 7-355. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A – 996 Tones)**

FCC ID: A3LSMG977U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset	Page 269 of 287

Worst Case Mode: 802.11ax  
 Worst Case Transfer Rate: MCS0  
 RU Index: 67  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5530MHz  
 Channel: 106

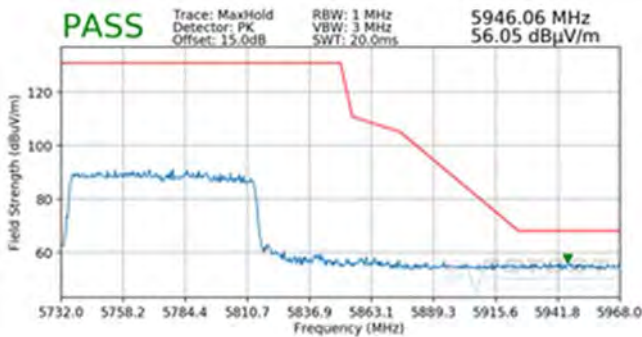


**Plot 7-356. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 996 Tones)**



**Plot 7-357. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C – 996 Tones)**

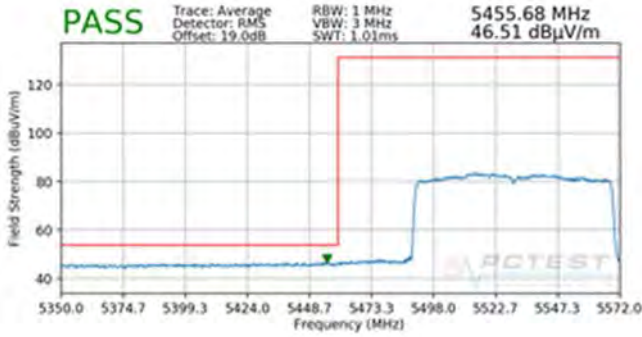
Worst Case Mode: 802.11ax  
 Worst Case Transfer Rate: MCS0  
 RU Index: 67  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5775MHz  
 Channel: 155



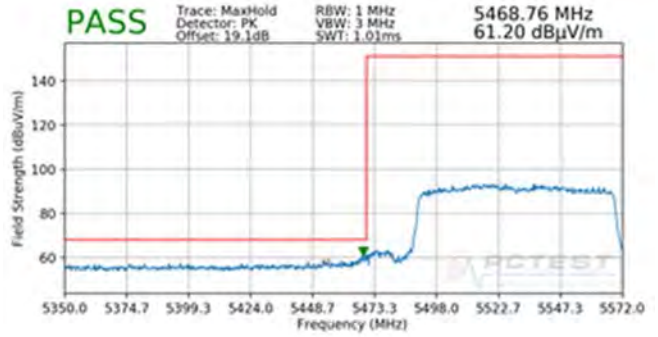
**Plot 7-358. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 996 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 270 of 287

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	5530MHz
Channel:	106



**Plot 7-359. Radiated Band Edge Plot SISO ANT2 (Average – WCP – 996 Tones)**



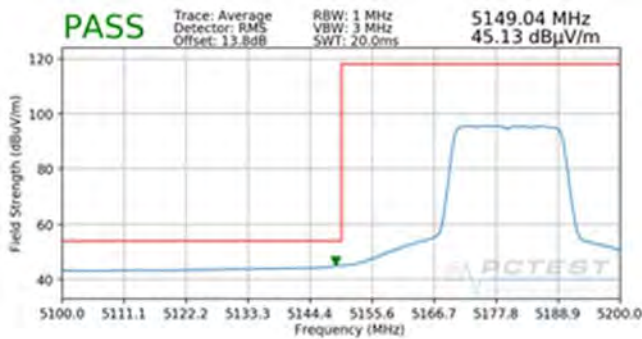
**Plot 7-360. Radiated Band Edge Plot SISO ANT2 (Peak – WCP – 996 Tones)**

FCC ID: A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 271 of 287

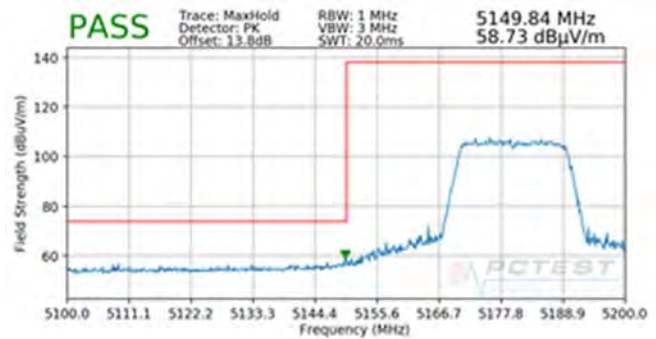
### 7.6.10 MIMO Radiated Band Edge Measurements (20MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

#### 242 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

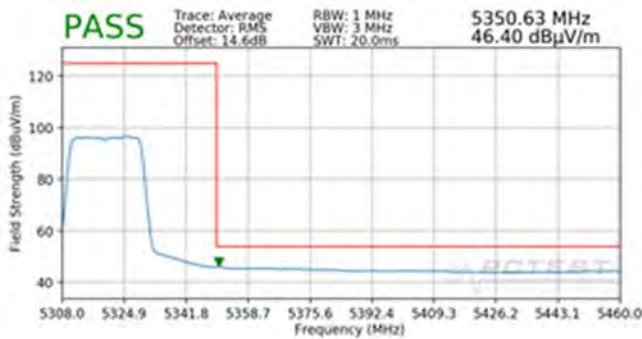


Plot 7-361. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1 – 242 Tones)

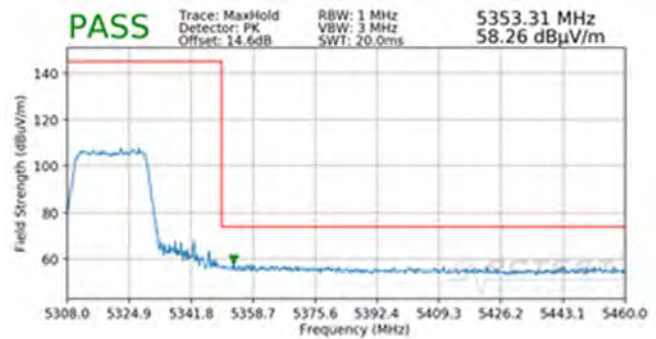


Plot 7-362. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1 – 242 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



Plot 7-363. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A – 242 Tones)

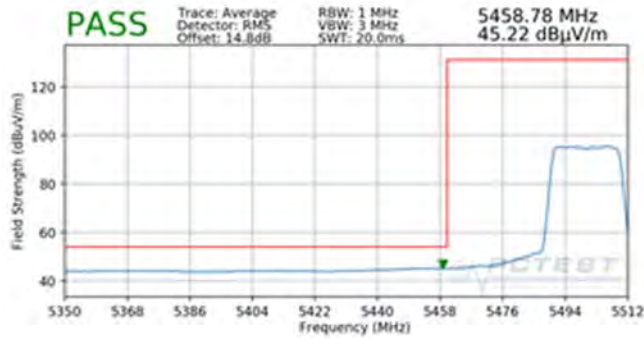


Plot 7-364. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A – 242 Tones)

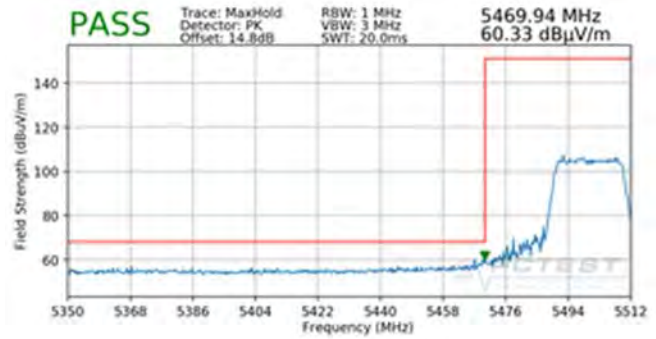
FCC ID: A3LSMG977U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 272 of 287



Worst Case Mode: 802.11ax  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5500MHz  
 Channel: 100

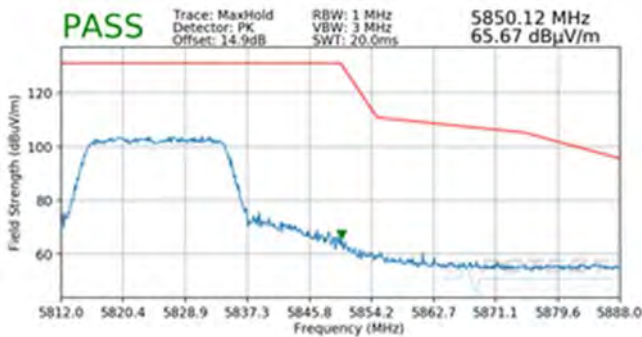


**Plot 7-365. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 2C – 242 Tones)**



**Plot 7-366. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 2C – 242 Tones)**

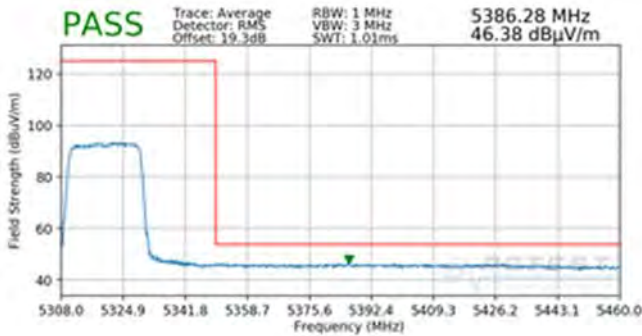
Worst Case Mode: 802.11ax  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5825MHz  
 Channel: 165



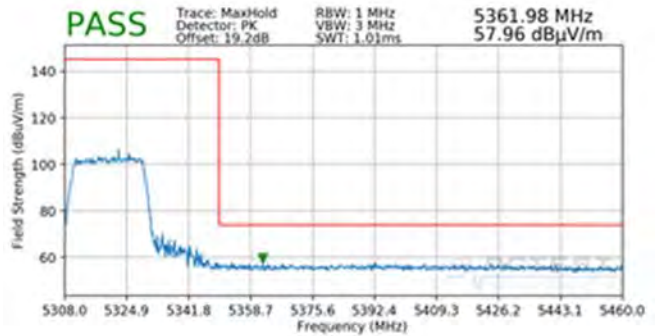
**Plot 7-367. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 3 – 242 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 273 of 287

Worst Case Mode: 802.11ax  
 Worst Case Transfer Rate: MCS0  
 RU Index: 61  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5320MHz  
 Channel: 64



**Plot 7-368. Radiated Band Edge Plot MIMO (Average – WCP – 242 Tones)**



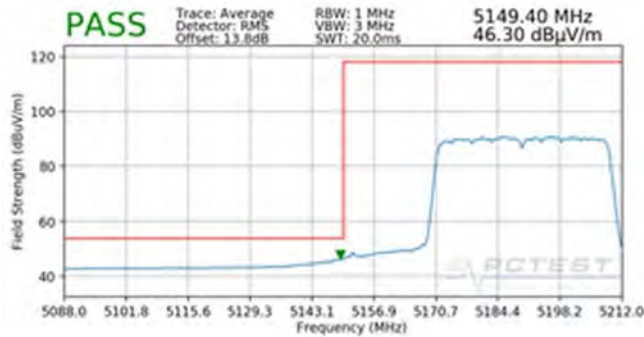
**Plot 7-369. Radiated Band Edge Plot MIMO (Peak – WCP – 242 Tones)**

FCC ID: A3LSMG977U	 <b>MEASUREMENT REPORT (CERTIFICATION)</b>			<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1901100003-09.A3L	<b>Test Dates:</b> 01/22/2019 - 03/25/2019	<b>EUT Type:</b> Portable Handset	Page 274 of 287	

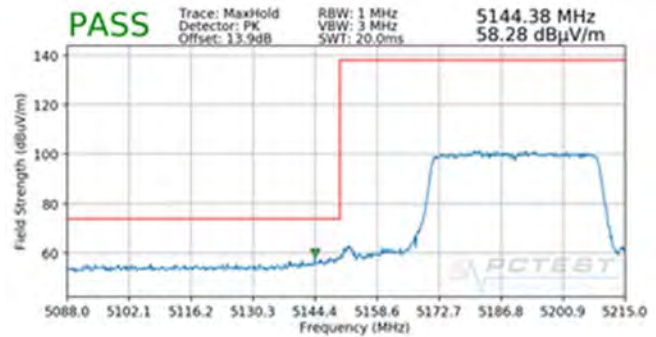
### 7.6.11 MIMO Radiated Band Edge Measurements (40MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

#### 484 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

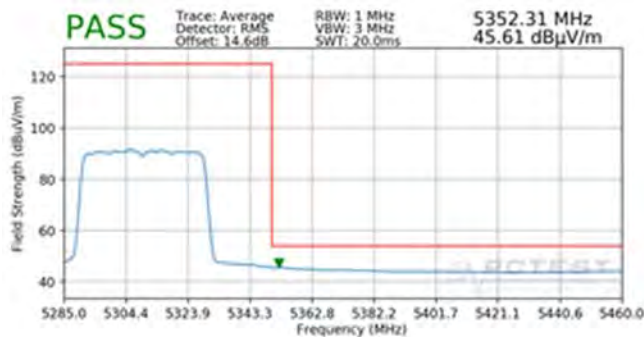


**Plot 7-370. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1 – 484 Tones)**

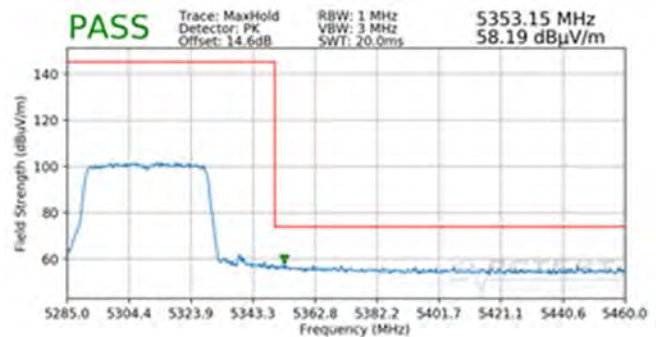


**Plot 7-371. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1 – 484 Tones)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	5310MHz
Channel:	62



**Plot 7-372. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A – 484 Tones)**



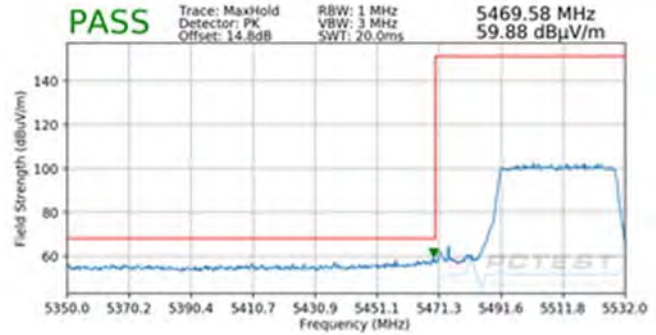
**Plot 7-373. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A – 484 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 275 of 287

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	5510MHz
Channel:	102

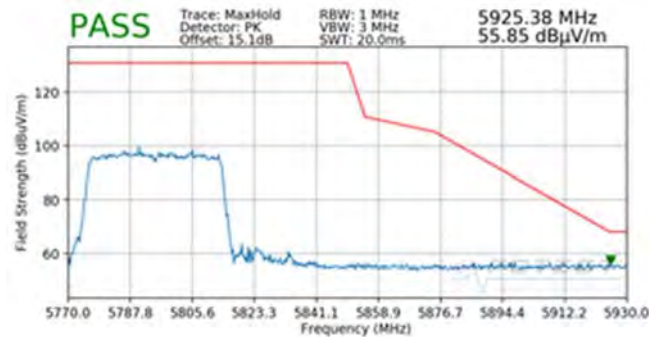


**Plot 7-374. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 2C – 484 Tones)**



**Plot 7-375. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 2C – 484 Tones)**

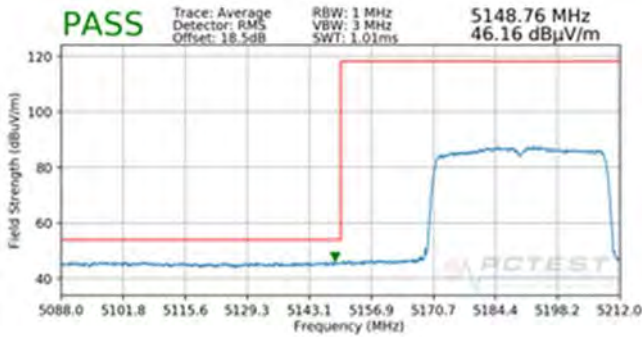
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	5795MHz
Channel:	159



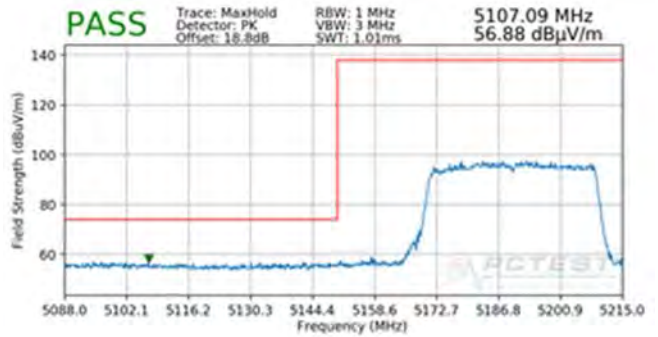
**Plot 7-376. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 3 – 484 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 276 of 287

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	65
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38



**Plot 7-377. Radiated Band Edge Plot MIMO (Average – WCP – 484 Tones)**



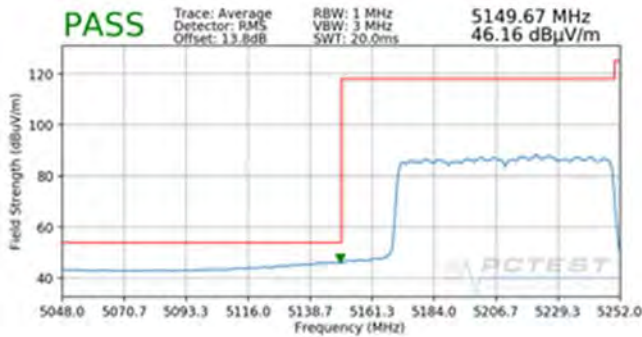
**Plot 7-378. Radiated Band Edge Plot MIMO (Peak – WCP – 484 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 277 of 287

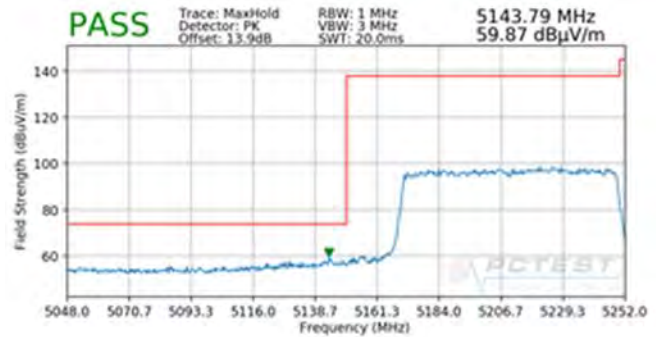
## 7.6.12 MIMO Radiated Band Edge Measurements (80MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

### 996 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

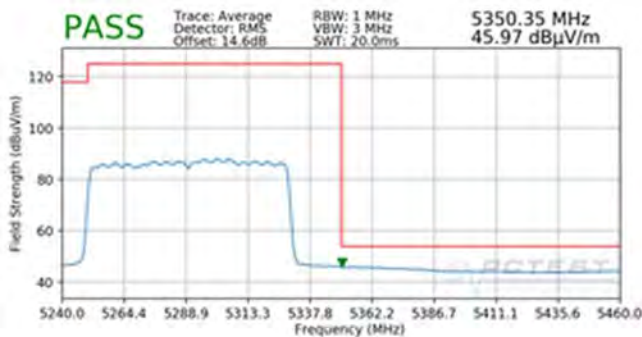


**Plot 7-379. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1 – 996 Tones)**

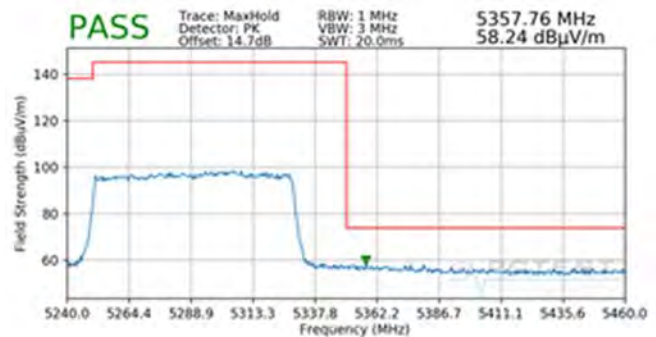


**Plot 7-380. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1 – 996 Tones)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



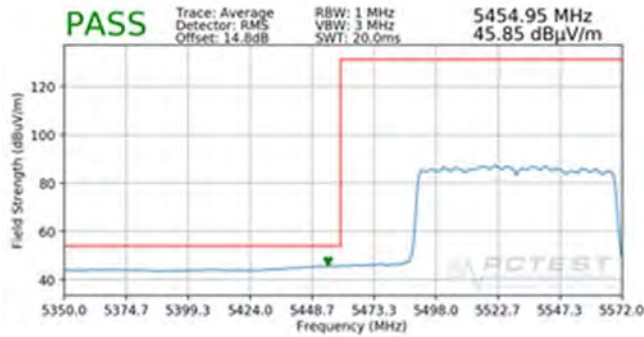
**Plot 7-381. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A – 996 Tones)**



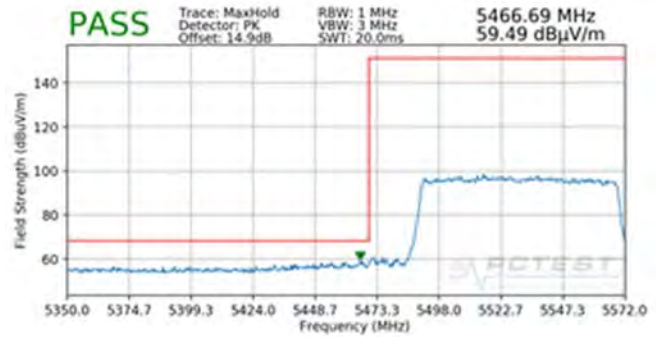
**Plot 7-382. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A – 996 Tones)**

FCC ID: A3LSMG977U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 278 of 287

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	5530MHz
Channel:	106

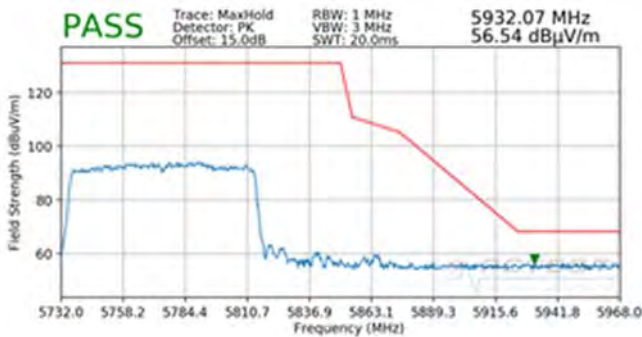


**Plot 7-383. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 2C – 996 Tones)**



**Plot 7-384. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 2C – 996 Tones)**

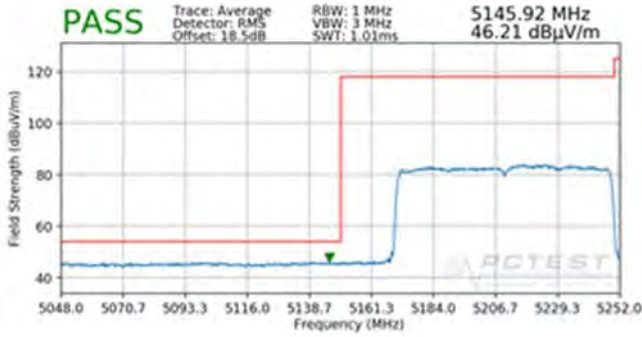
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	5775MHz
Channel:	155



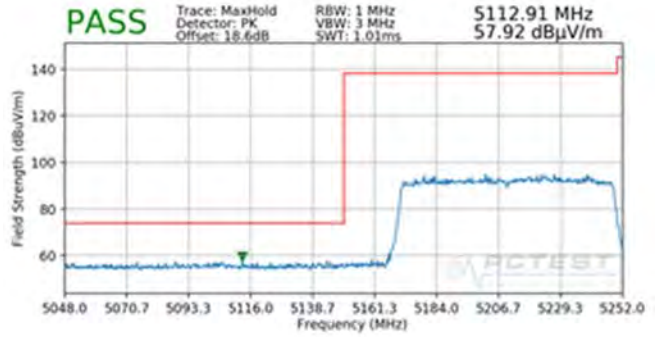
**Plot 7-385. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 3 – 996 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 279 of 287

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	67
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42



**Plot 7-386. Radiated Band Edge Plot MIMO (Average – WCP – 996 Tones)**



**Plot 7-387. Radiated Band Edge Plot MIMO (Peak – WCP – 996 Tones)**

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 280 of 287



## 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 7-130 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 7-140. Radiated Limits**

### Test Procedures Used

ANSI C63.10-2013

### Test Settings

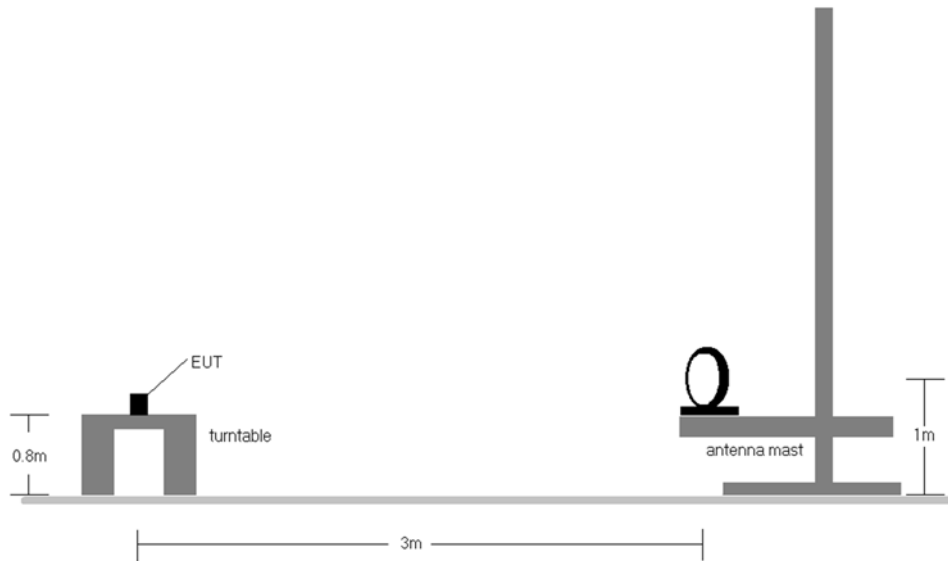
#### Quasi-Peak Field Strength Measurements

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

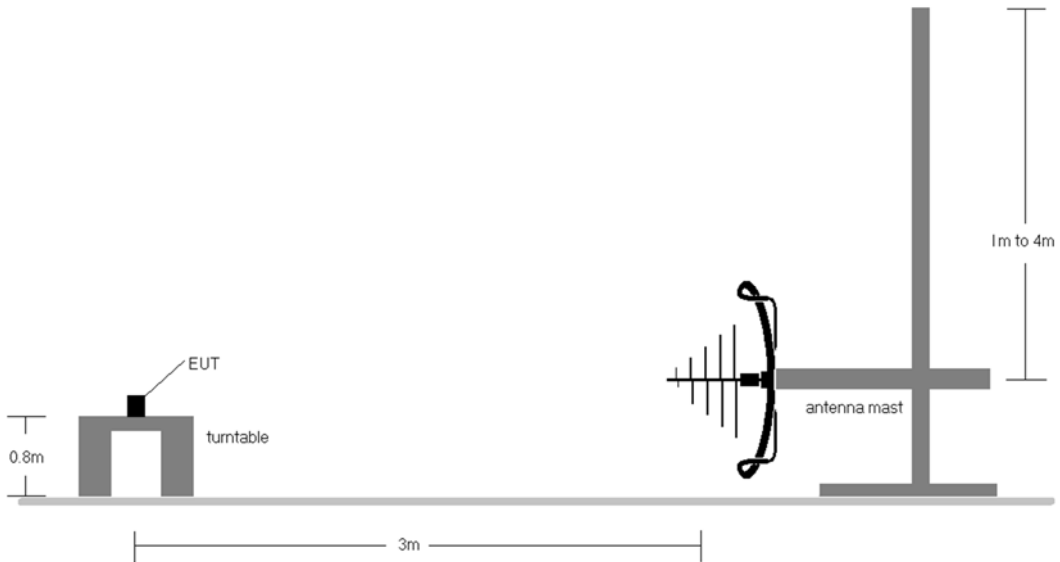
FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset	Page 281 of 287	

**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**

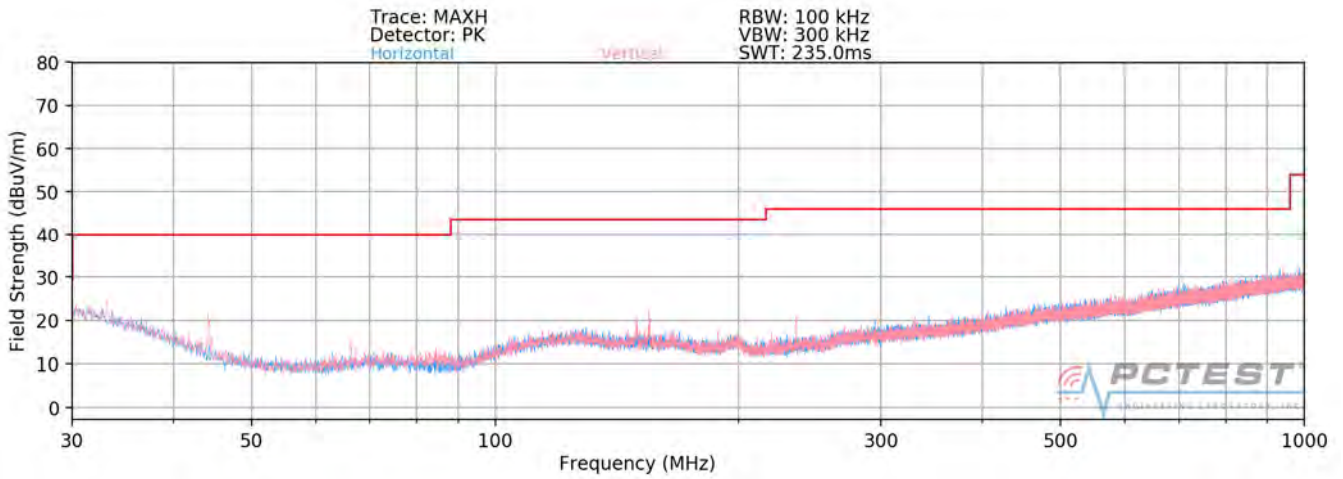
<b>FCC ID:</b> A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1901100003-09.A3L	<b>Test Dates:</b> 01/22/2019 - 03/25/2019	<b>EUT Type:</b> Portable Handset	Page 282 of 287	

**Test Notes**

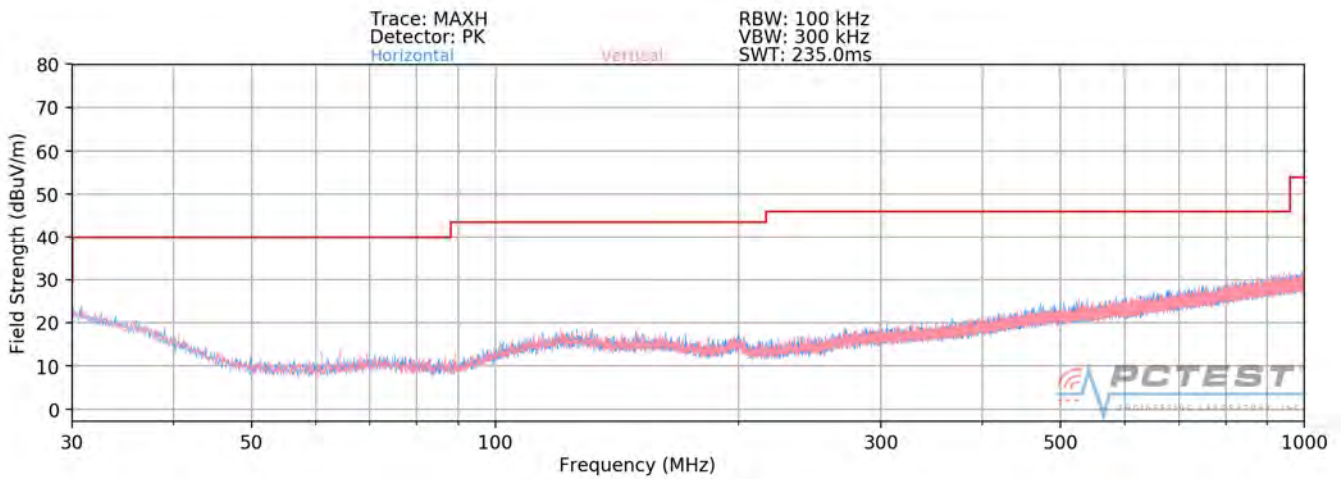
1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen (8.10) are below the limit shown in Table 7-130.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
3. This 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.

<b>FCC ID:</b> A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1901100003-09.A3L	<b>Test Dates:</b> 01/22/2019 - 03/25/2019	<b>EUT Type:</b> Portable Handset	Page 283 of 287	

**SISO Antenna-1 Radiated Spurious Emissions Measurements (Below 1GHz)**  
§15.209; RSS-Gen [8.9]



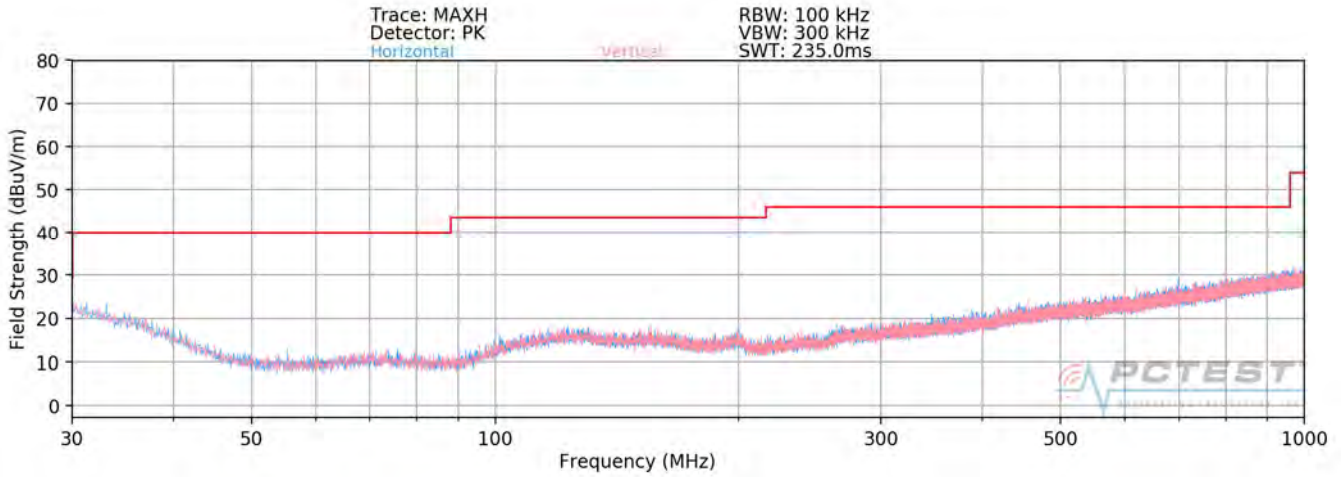
**Plot 7-388. Radiated Spurious Plot below 1GHz SISO ANT1 (802.11ax – 26 Tones – U3 Ch. 157)**



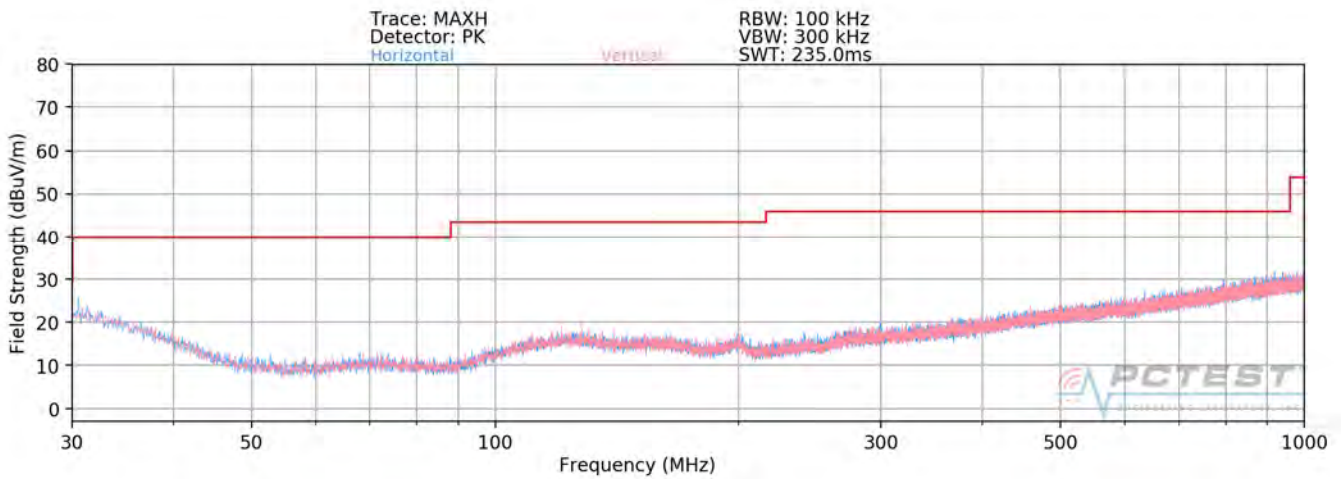
**Plot 7-389. Radiated Spurious Plot below 1GHz SISO ANT1 (802.11ax – 242 Tones – U3 Ch. 157)**

FCC ID: A3LSMG977U	<b>MEASUREMENT REPORT (CERTIFICATION)</b>			<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1901100003-09.A3L	<b>Test Dates:</b> 01/22/2019 - 03/25/2019	<b>EUT Type:</b> Portable Handset	Page 284 of 287	

**SISO Antenna-2 Radiated Spurious Emissions Measurements (Below 1GHz)**  
§15.209; RSS-Gen [8.9]



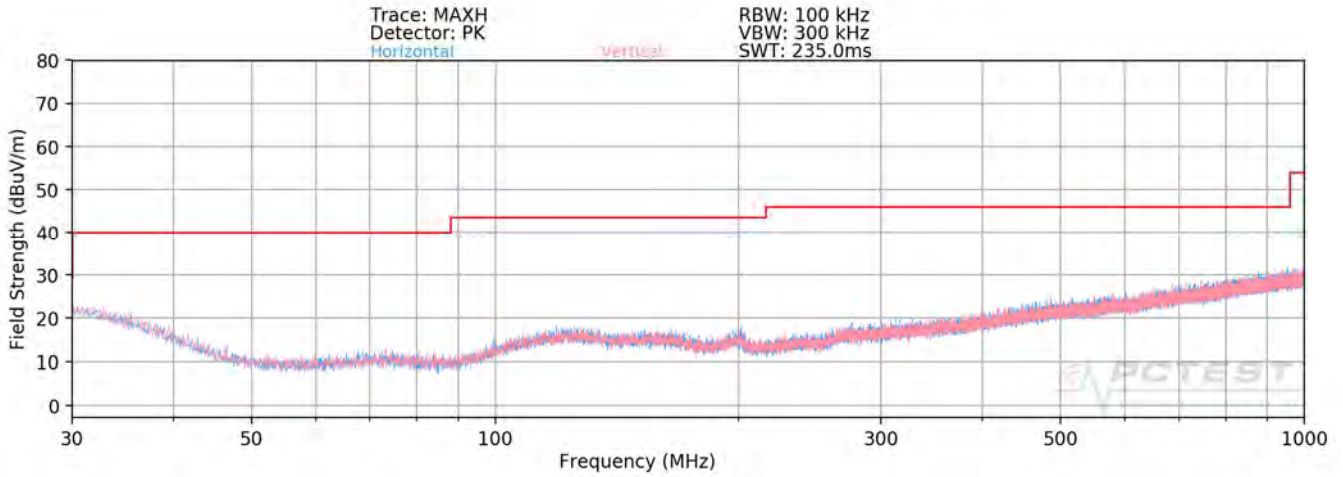
**Plot 7-390. Radiated Spurious Plot below 1GHz SISO ANT2 (802.11ax – 26 Tones – U3 Ch. 157)**



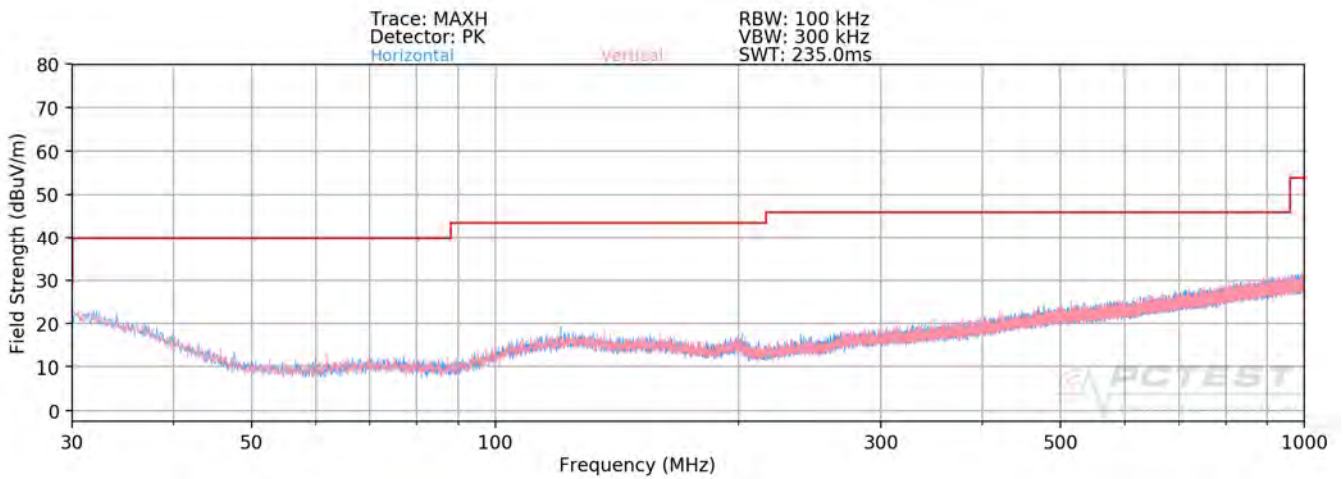
**Plot 7-391. Radiated Spurious Plot below 1GHz SISO ANT2 (802.11ax – 242 Tones – U3 Ch. 157)**

FCC ID: A3LSMG977U	<b>MEASUREMENT REPORT (CERTIFICATION)</b>			<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1901100003-09.A3L	<b>Test Dates:</b> 01/22/2019 - 03/25/2019	<b>EUT Type:</b> Portable Handset	Page 285 of 287	

**MIMO Radiated Spurious Emissions Measurements (Below 1GHz)**  
**§15.209; RSS-Gen [8.9]**



**Plot 7-392. Radiated Spurious Plot below 1GHz MIMO (802.11ax – 26 Tones – U3 Ch. 157)**



**Plot 7-393. Radiated Spurious Plot below 1GHz MIMO (802.11ax – 242 Tones – U3 Ch. 157)**

FCC ID: A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1901100003-09.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 286 of 287

## 8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMG977U** is in compliance with Part 15 Subpart E (15.407) of the FCC Rules.

<b>FCC ID:</b> A3LSMG977U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1901100003-09.A3L	<b>Test Dates:</b> 01/22/2019 - 03/25/2019	<b>EUT Type:</b> Portable Handset		Page 287 of 287