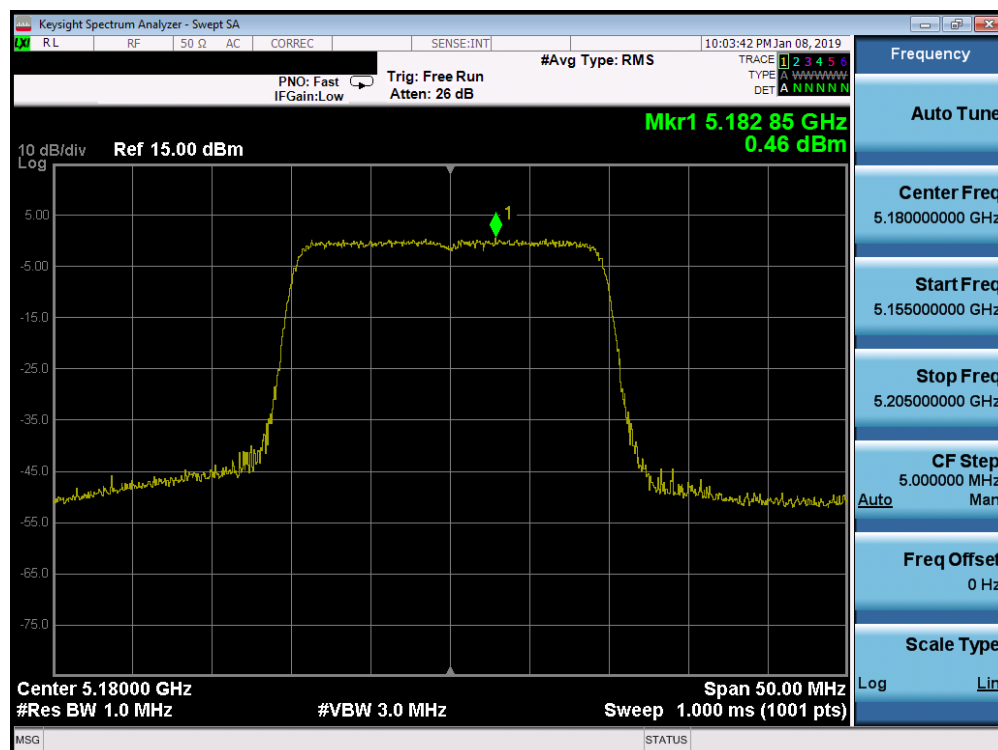
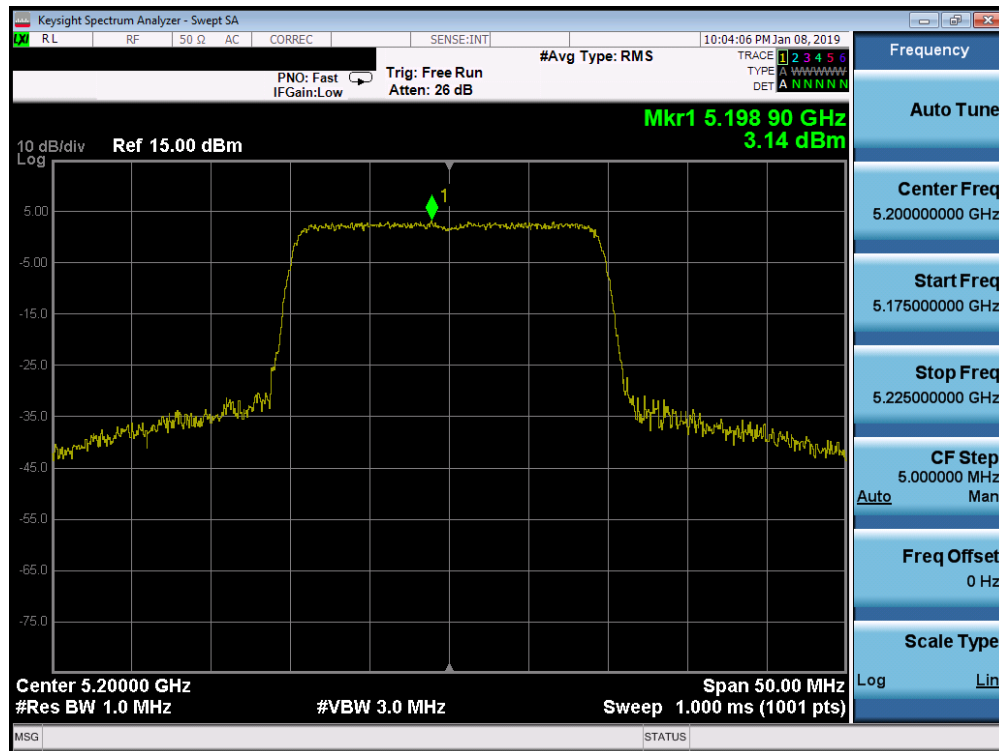


MIMO Antenna-2 Power Spectral Density Measurements (242 Tones)

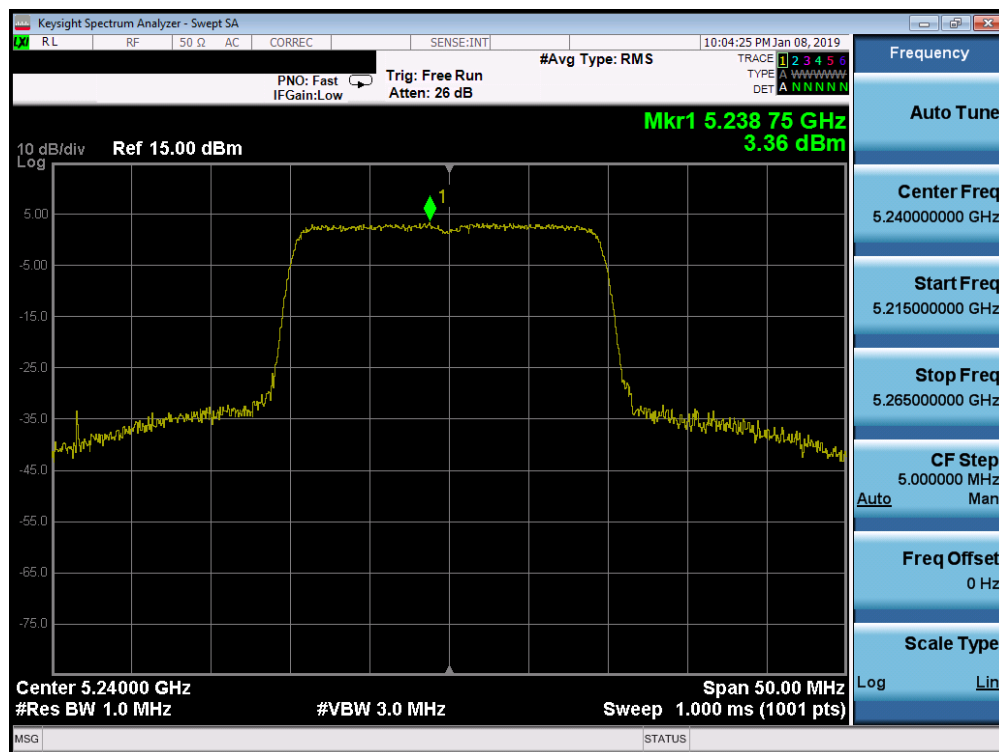


Plot 7-577. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 1) – Ch. 36)

FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset	Page 378 of 519

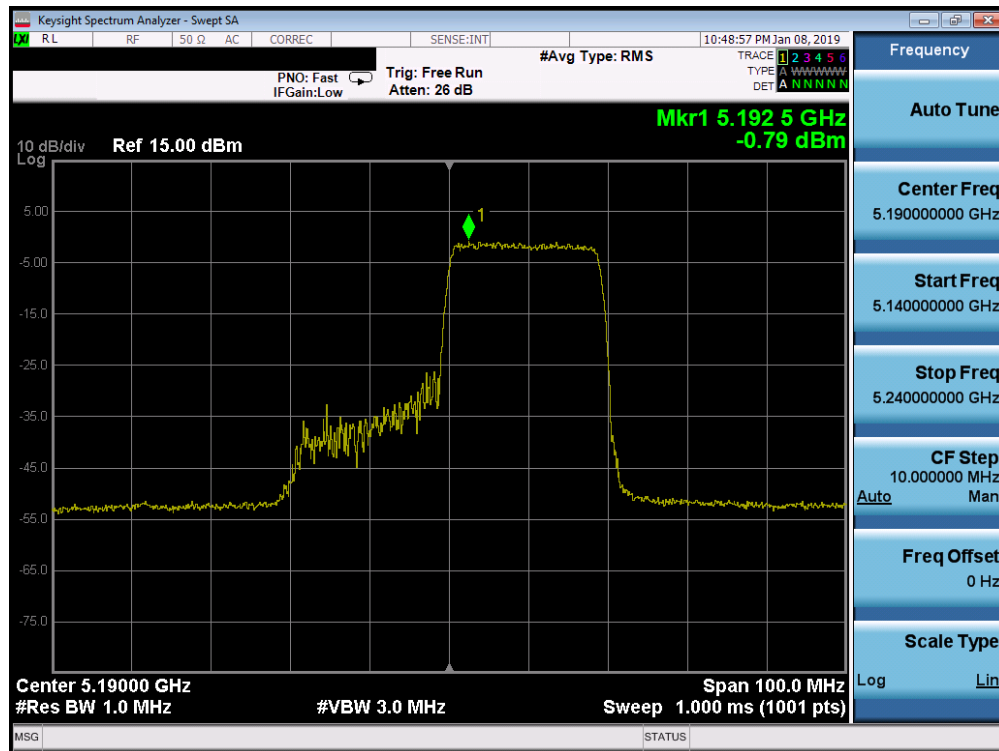


Plot 7-578. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 1) – Ch. 40)

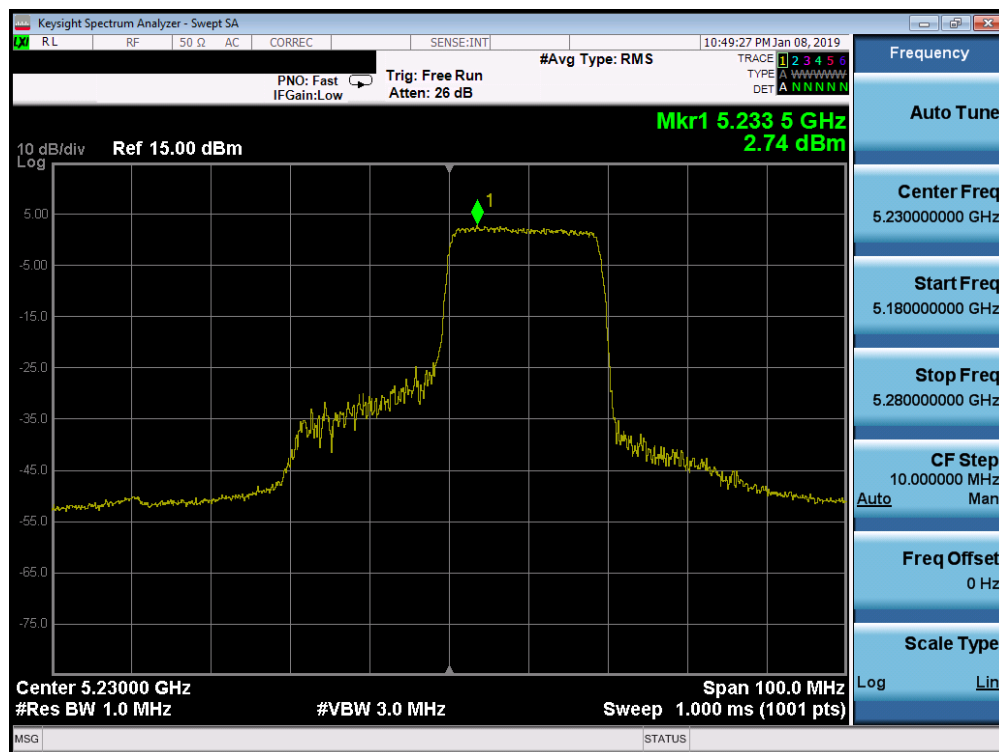


Plot 7-579. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 1) – Ch. 48)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 379 of 519

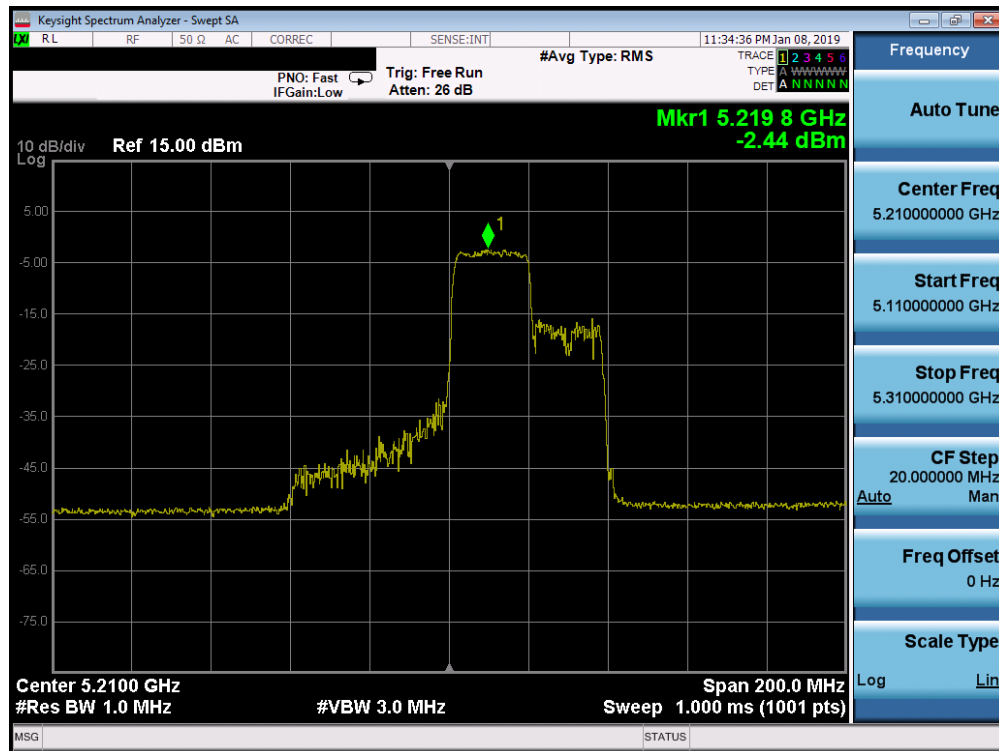


Plot 7-580. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 242 Tones (UNII Band 1) – Ch. 38)

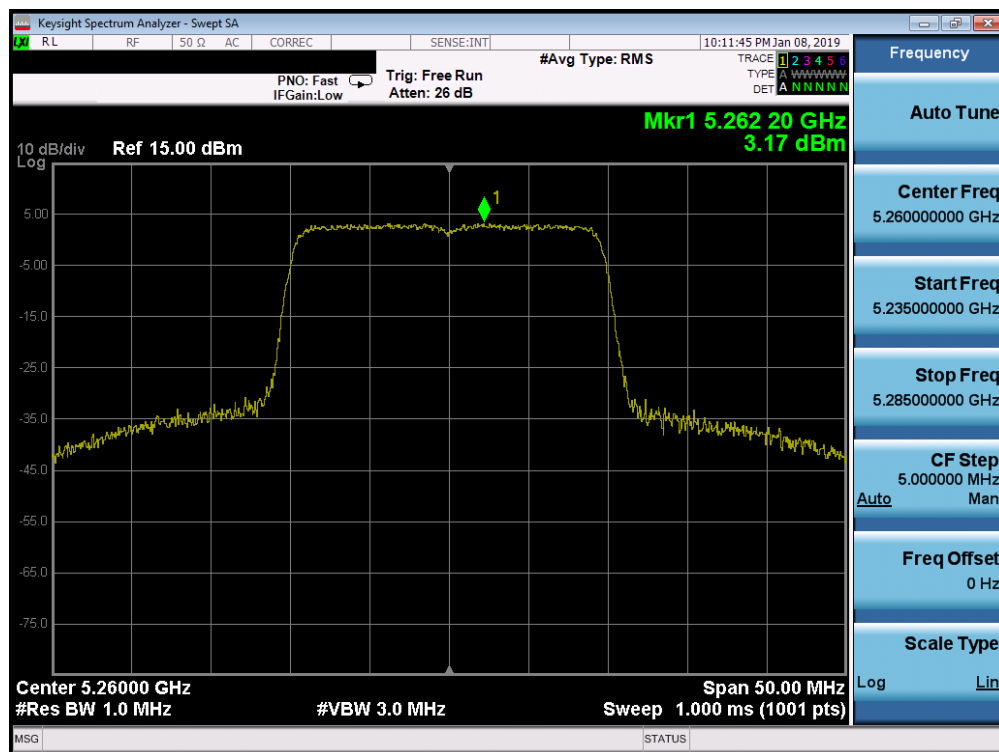


Plot 7-581. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 242 Tones (UNII Band 1) – Ch. 46)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 380 of 519

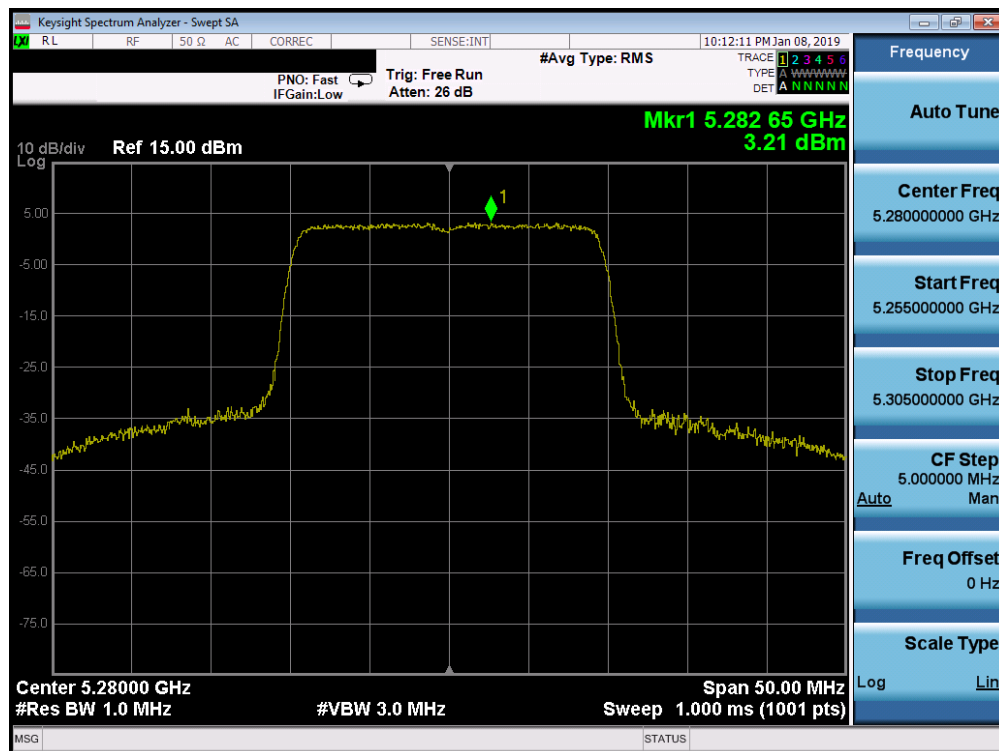


Plot 7-582. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 242 Tones (UNII Band 1) – Ch. 42)

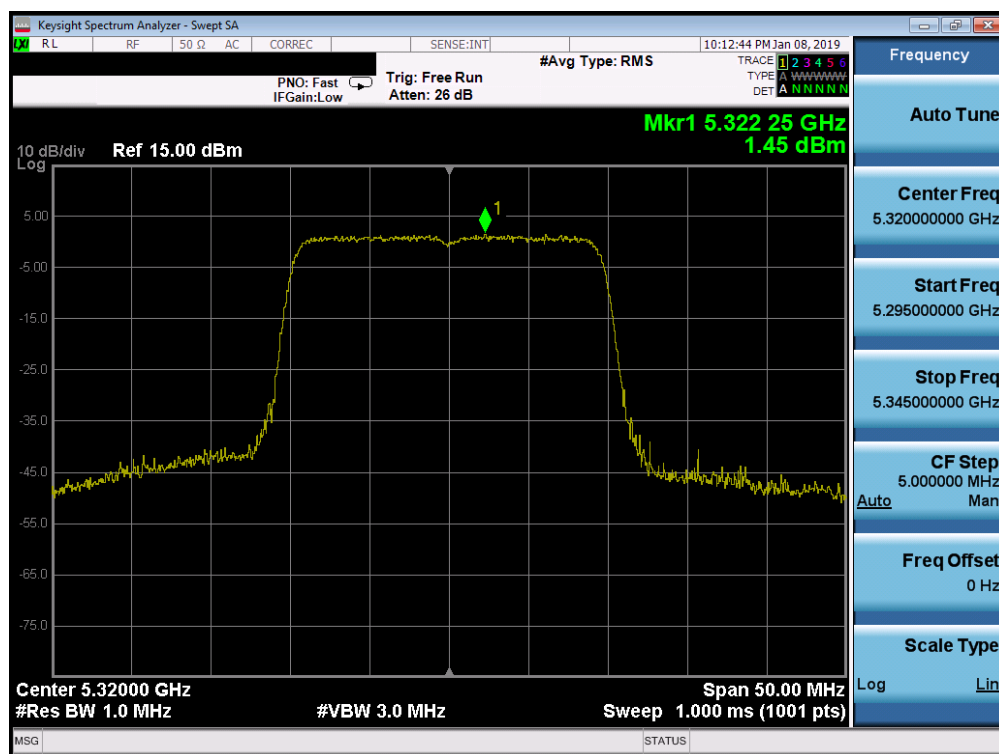


Plot 7-583. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 2A) – Ch. 52)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 381 of 519

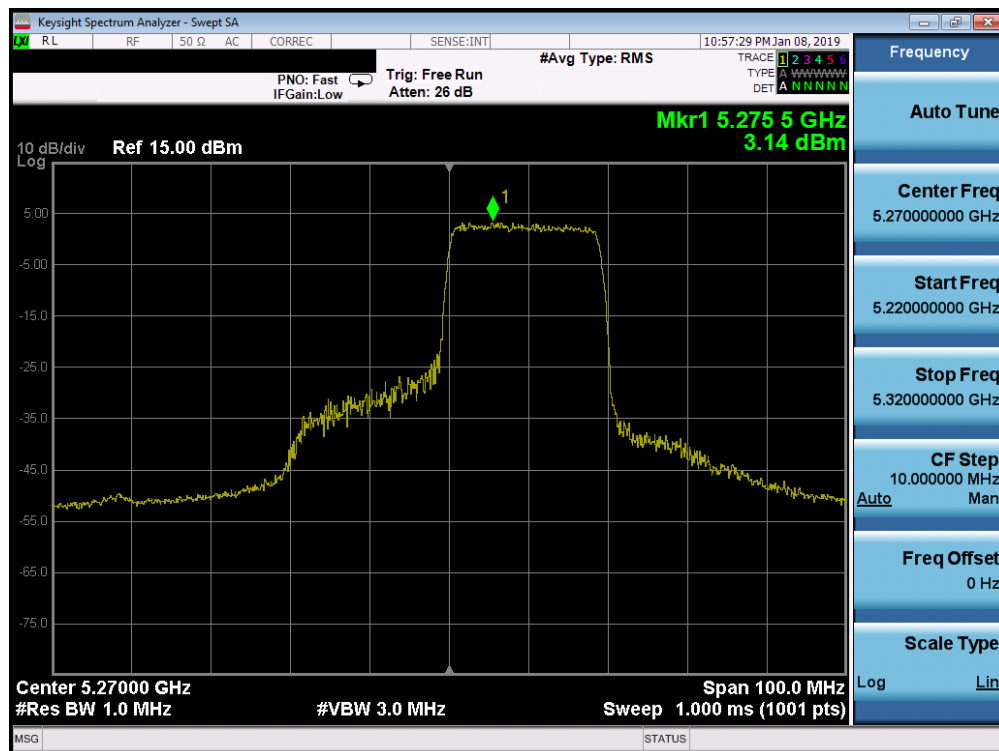


Plot 7-584. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 2A) – Ch. 56)

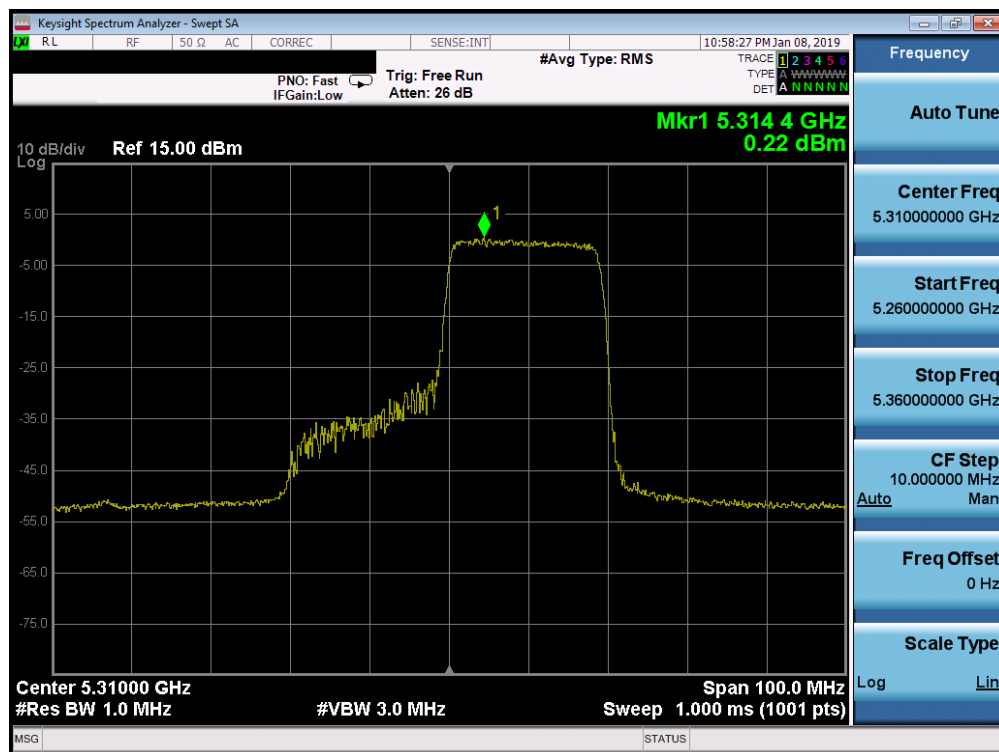


Plot 7-585. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 2A) – Ch. 64)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 382 of 519

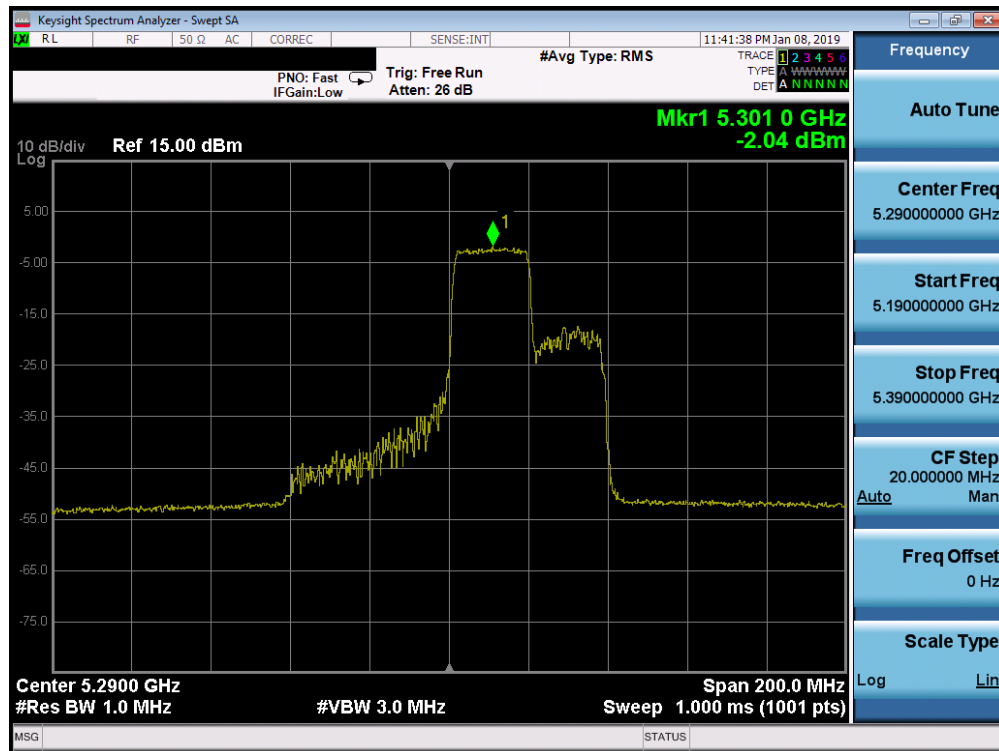


Plot 7-586. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 242 Tones (UNII Band 2A) – Ch. 54)

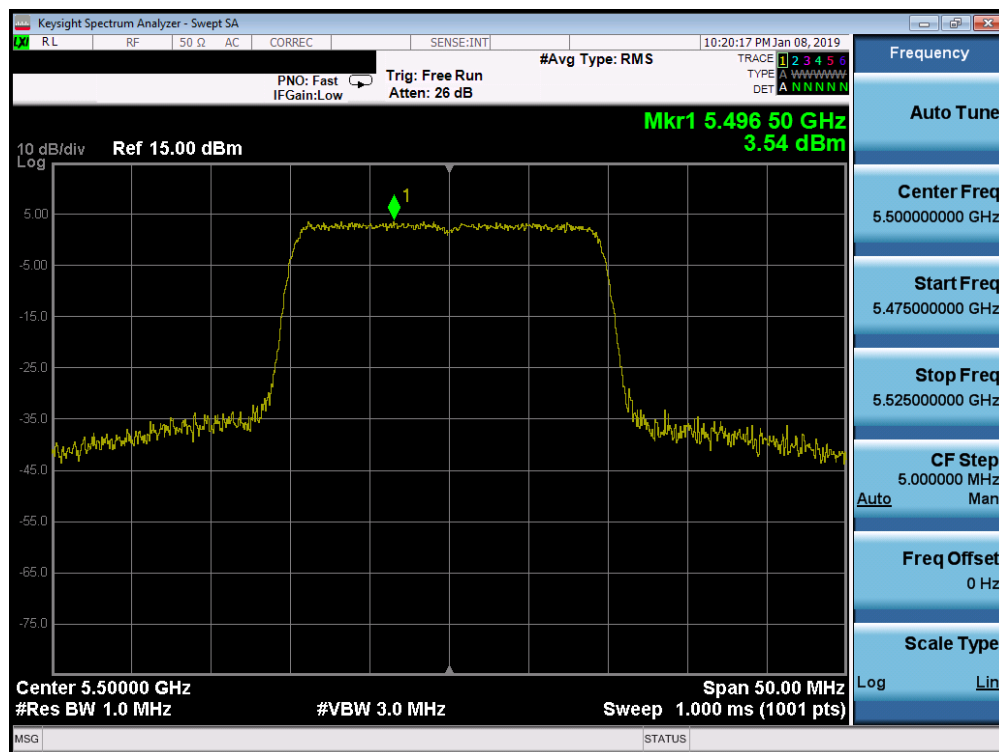


Plot 7-587. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 242 Tones (UNII Band 2A) – Ch. 62)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 383 of 519

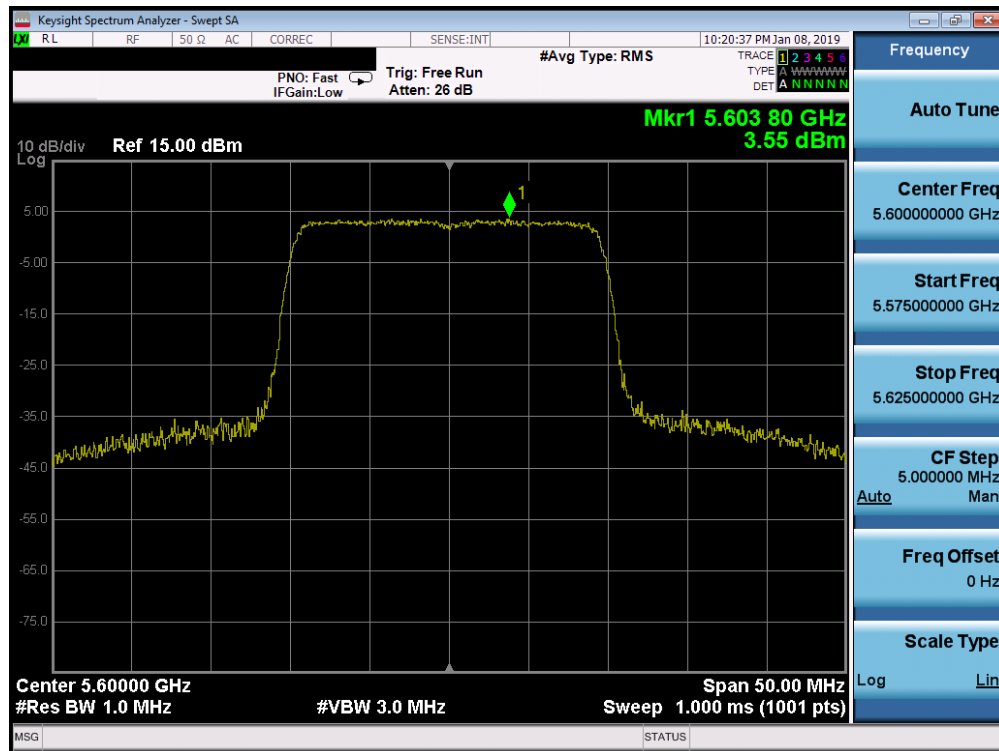


Plot 7-588. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 242 Tones (UNII Band 2A) – Ch. 58)

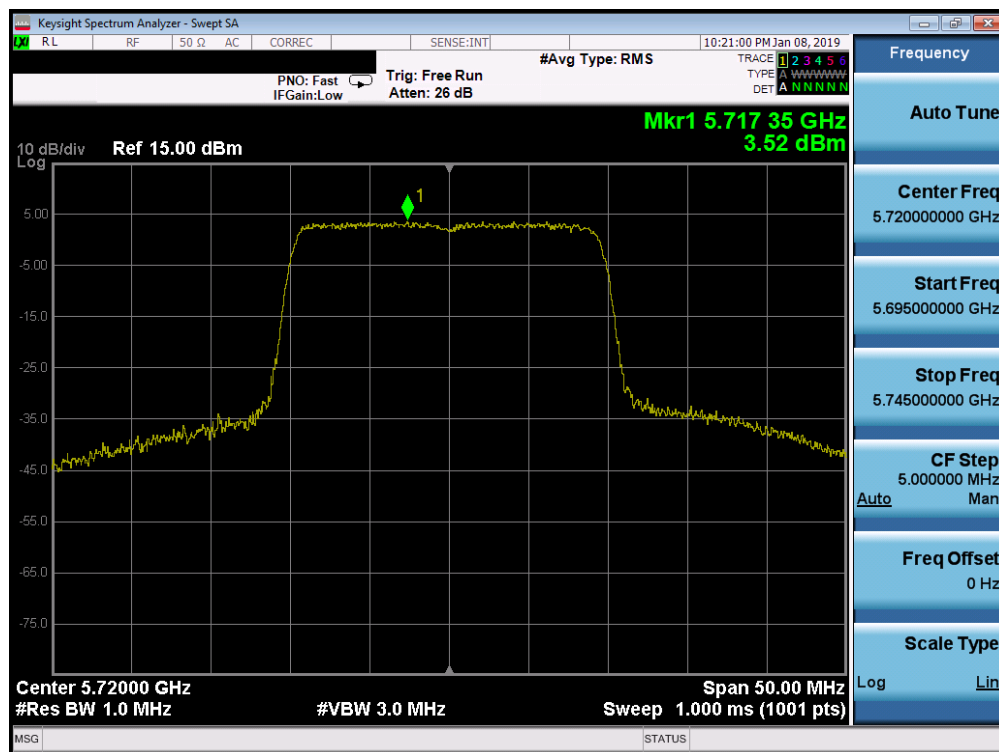


Plot 7-589. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 2C) – Ch. 100)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 384 of 519

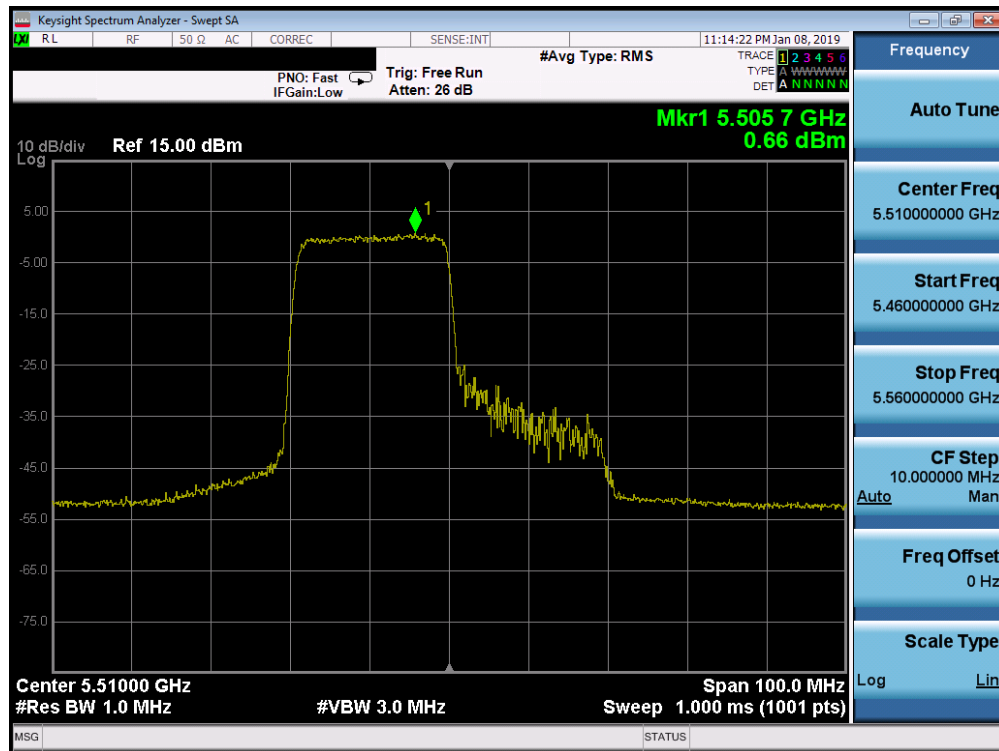


Plot 7-590. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 2C) – Ch. 120)

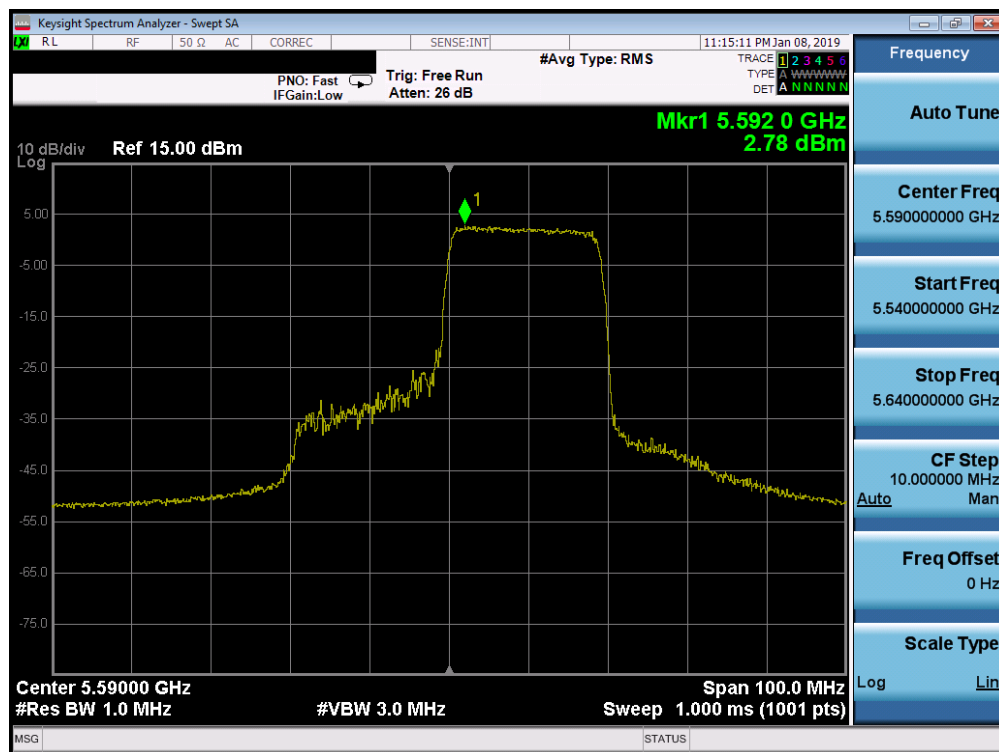


Plot 7-591. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 2C) – Ch. 144)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 385 of 519

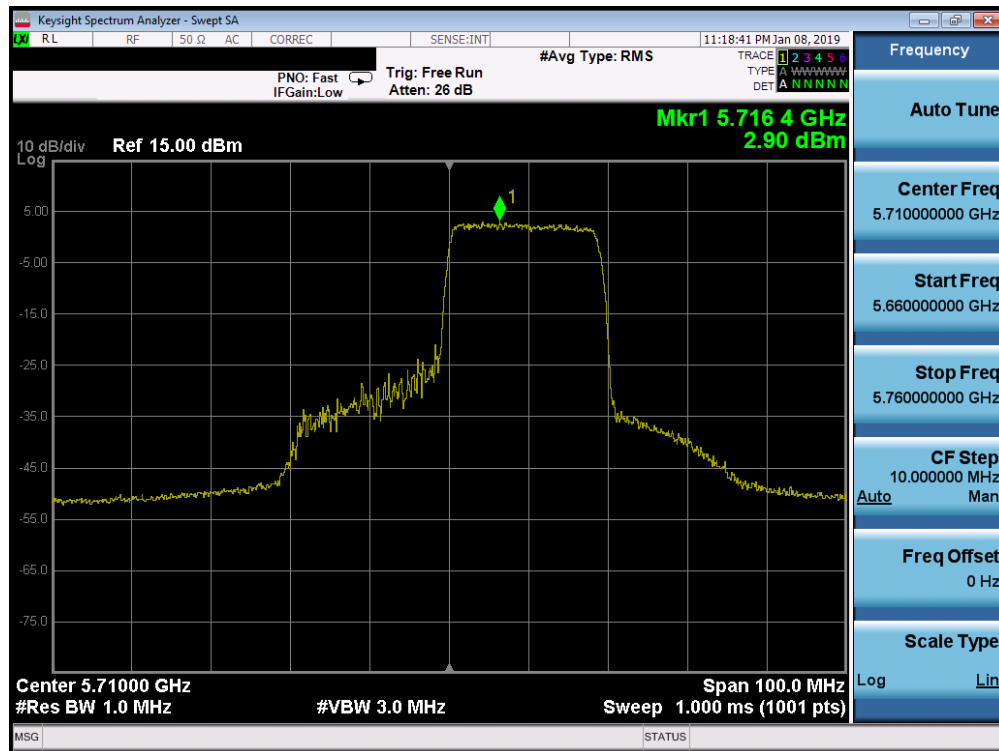


Plot 7-592. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 242 Tones (UNII Band 2C) – Ch. 102)

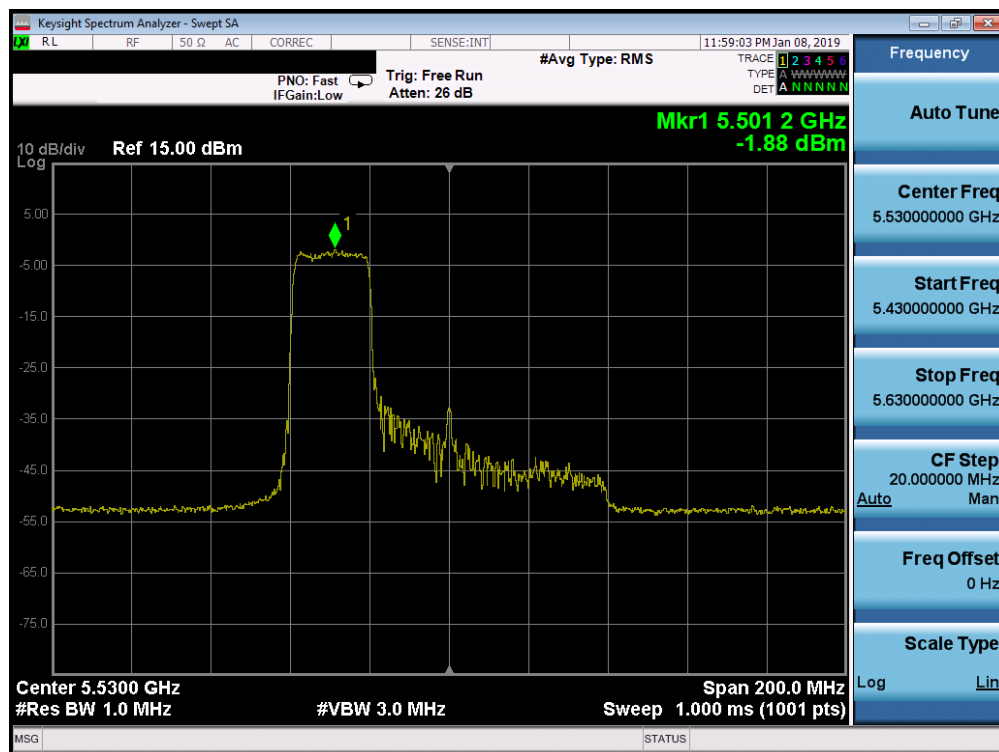


Plot 7-593. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 242 Tones (UNII Band 2C) – Ch. 118)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 386 of 519

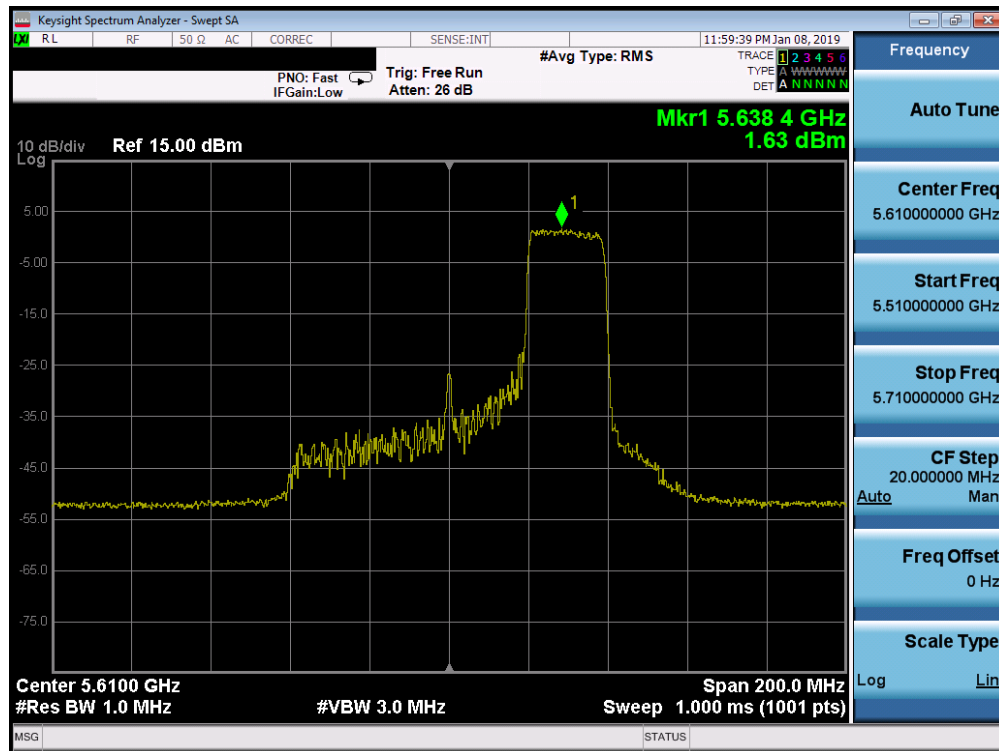


Plot 7-594. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 242 Tones (UNII Band 2C) – Ch. 142)

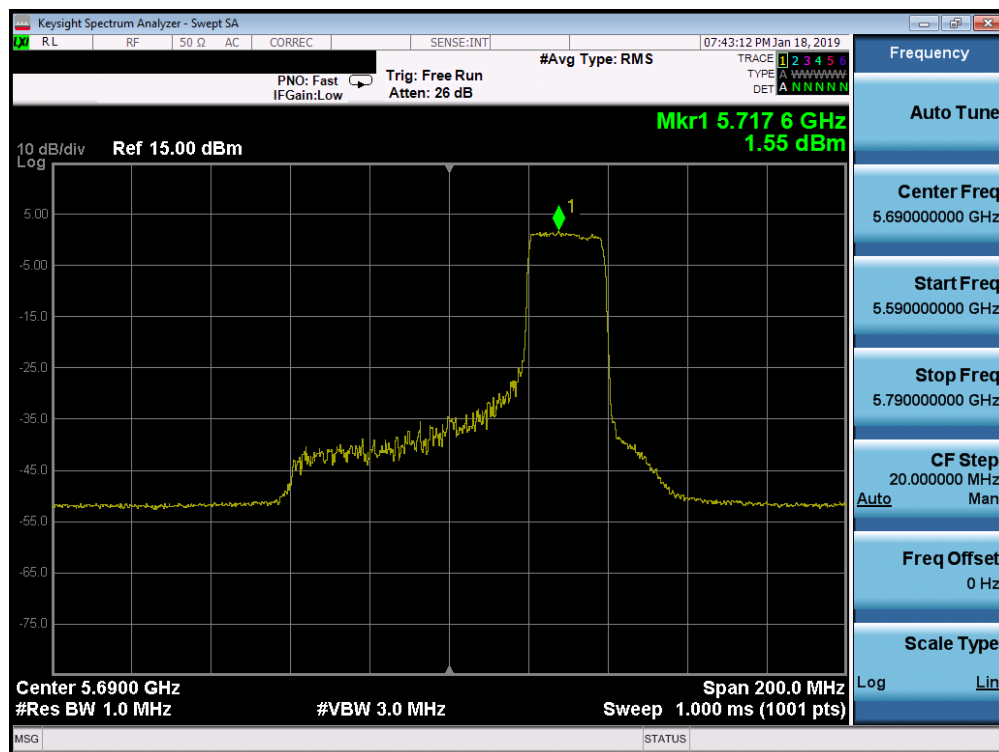


Plot 7-595. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 242 Tones (UNII Band 2C) – Ch. 106)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 387 of 519

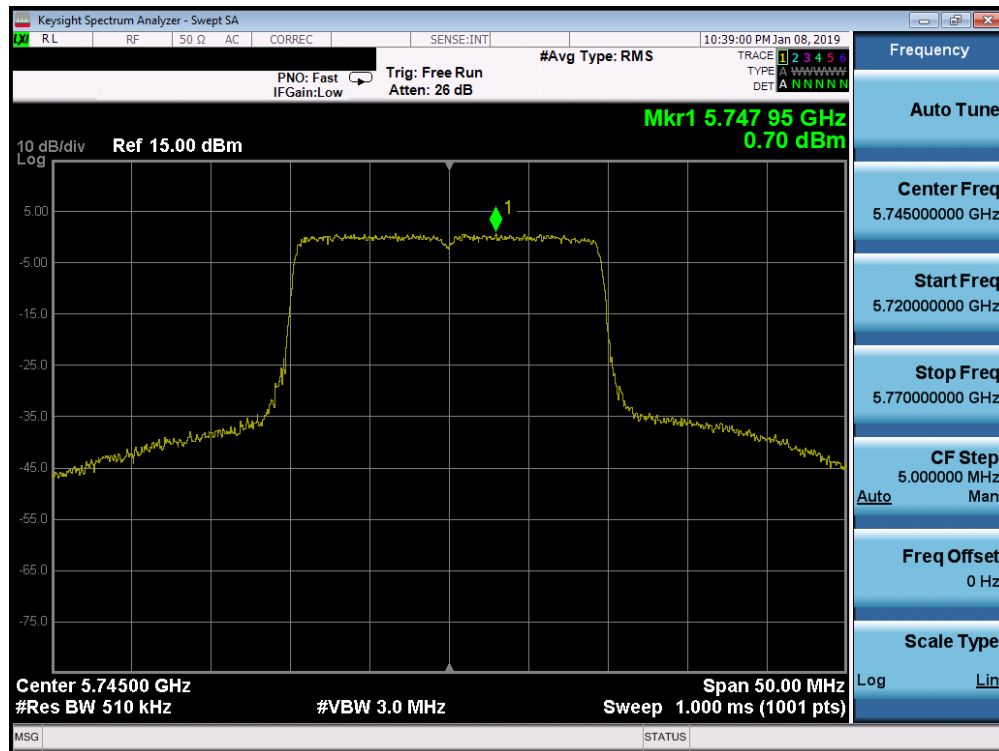


Plot 7-596. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 242 Tones (UNII Band 2C) – Ch. 122)

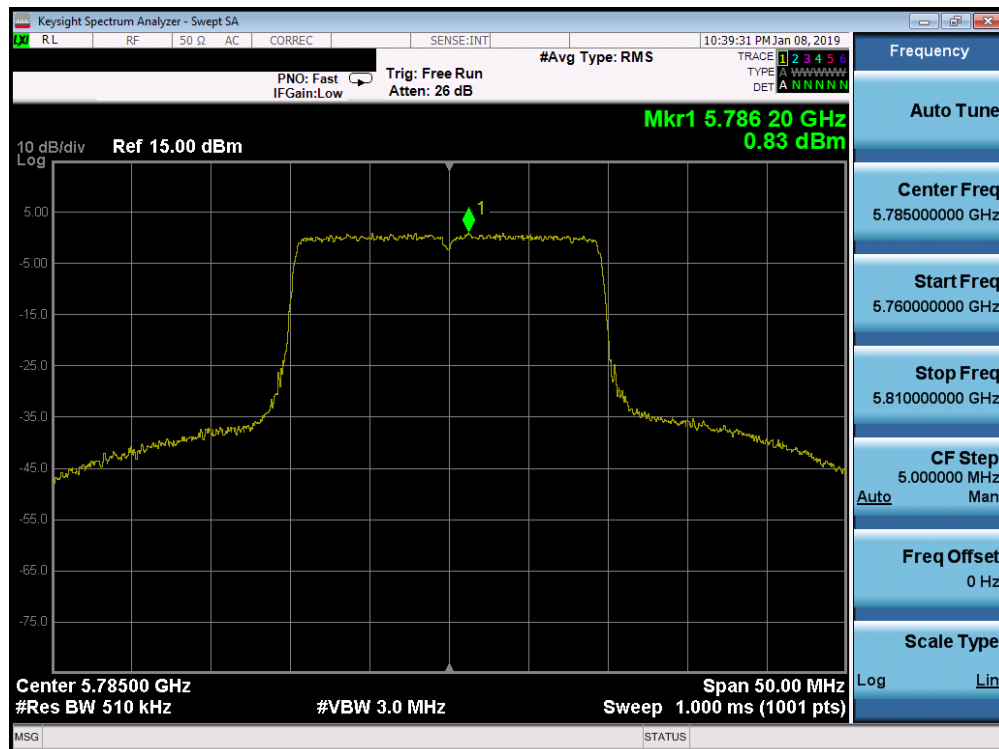


Plot 7-597. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 242 Tones (UNII Band 2C) – Ch. 138)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 388 of 519

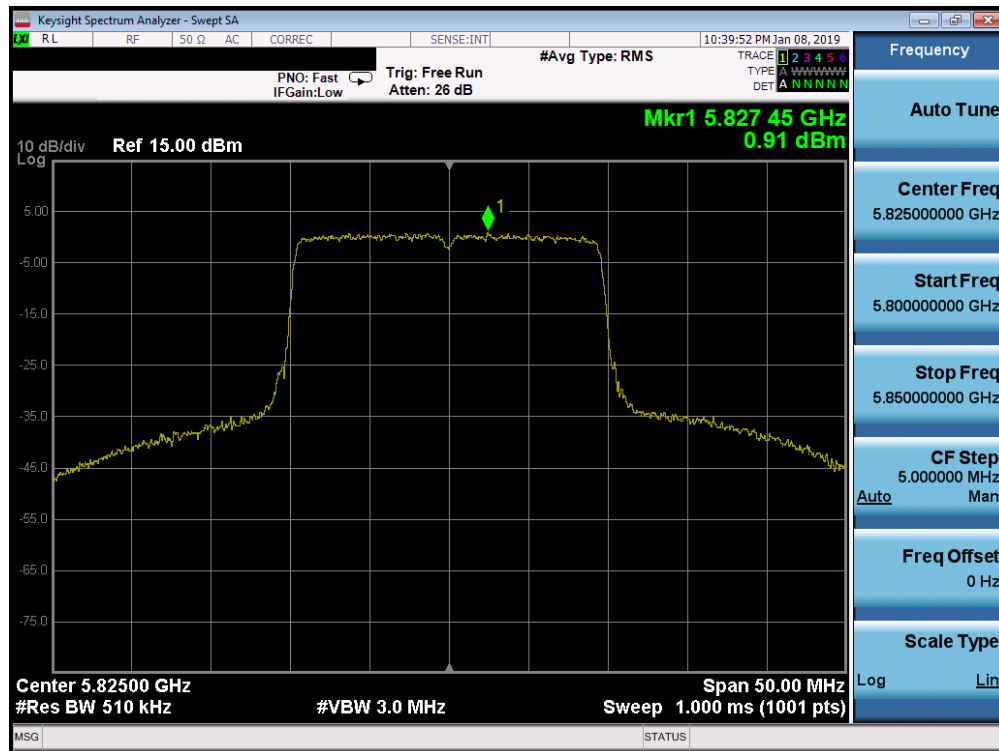


Plot 7-598. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 3) – Ch. 149)

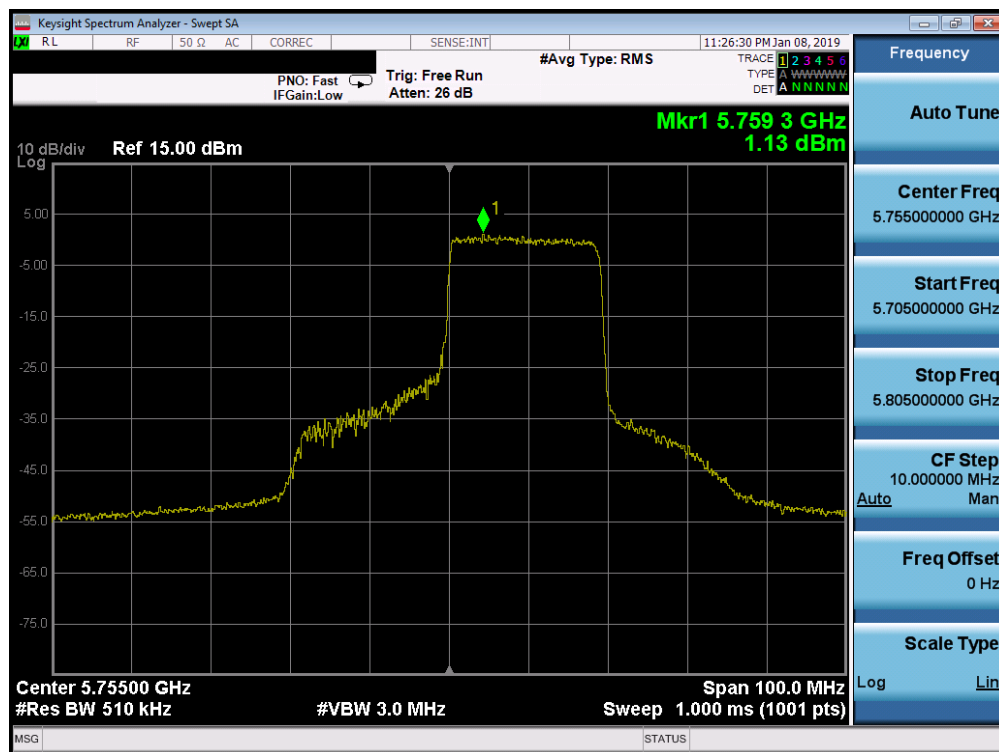


Plot 7-599. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 3) – Ch. 157)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 389 of 519

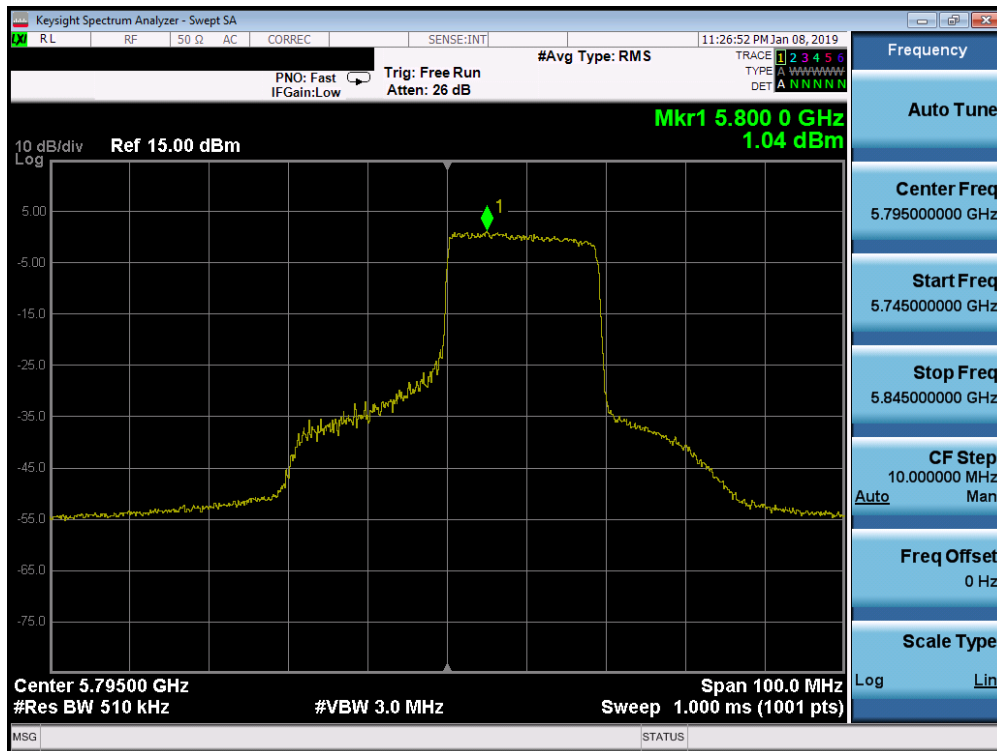


Plot 7-600. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 3) – Ch. 165)

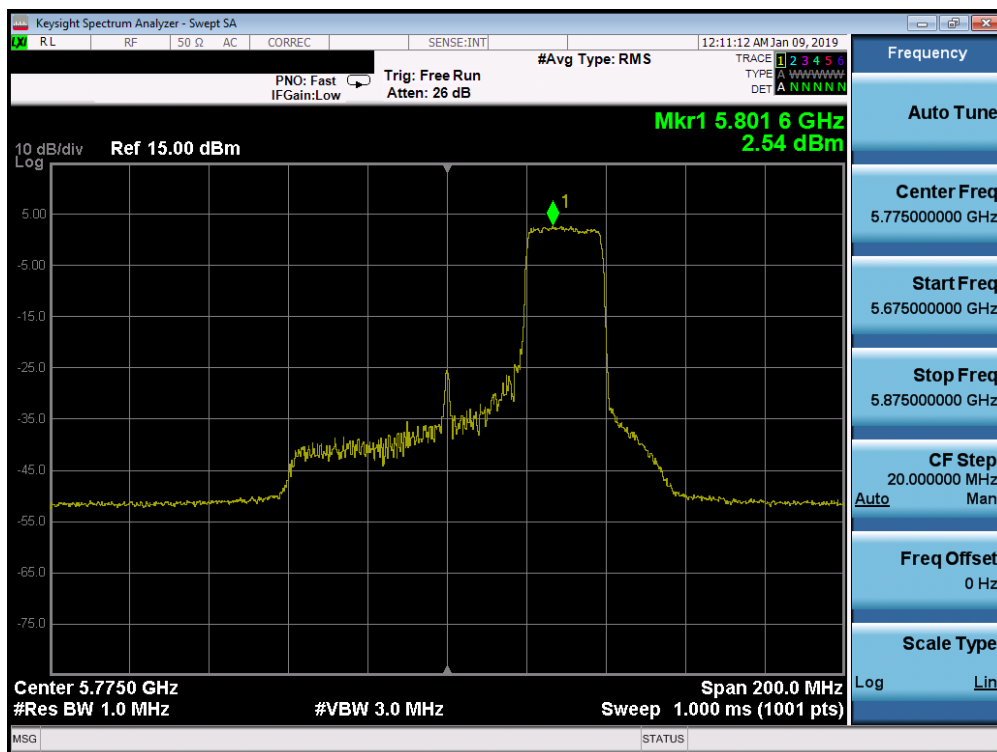


Plot 7-601. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 242 Tones (UNII Band 3) – Ch. 151)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 390 of 519



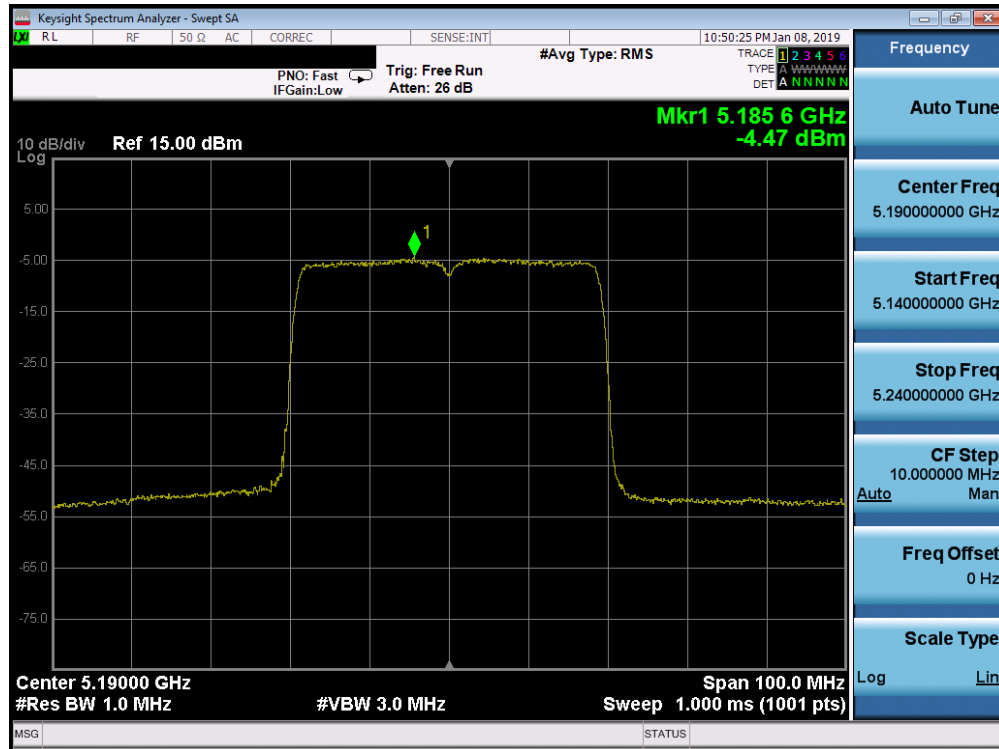
Plot 7-602. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 242 Tones (UNII Band 3) – Ch. 159)



Plot 7-603. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 242 Tones (UNII Band 3) – Ch. 155)

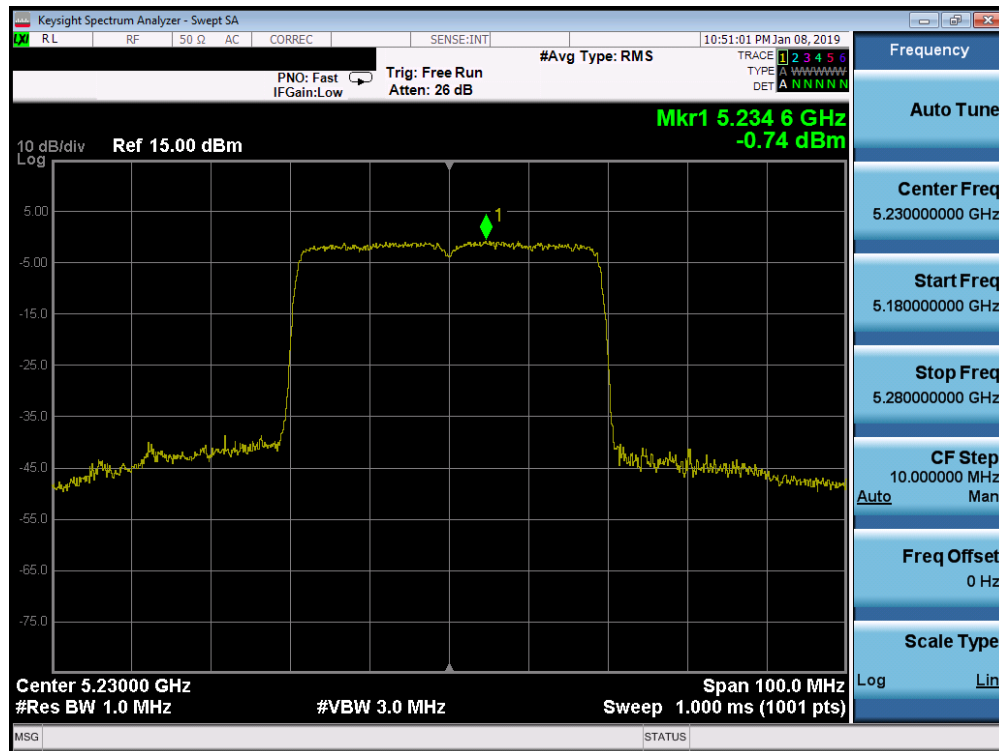
FCC ID: A3LSMG9700			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 391 of 519	

MIMO Antenna-2 Power Spectral Density Measurements (484 Tones)

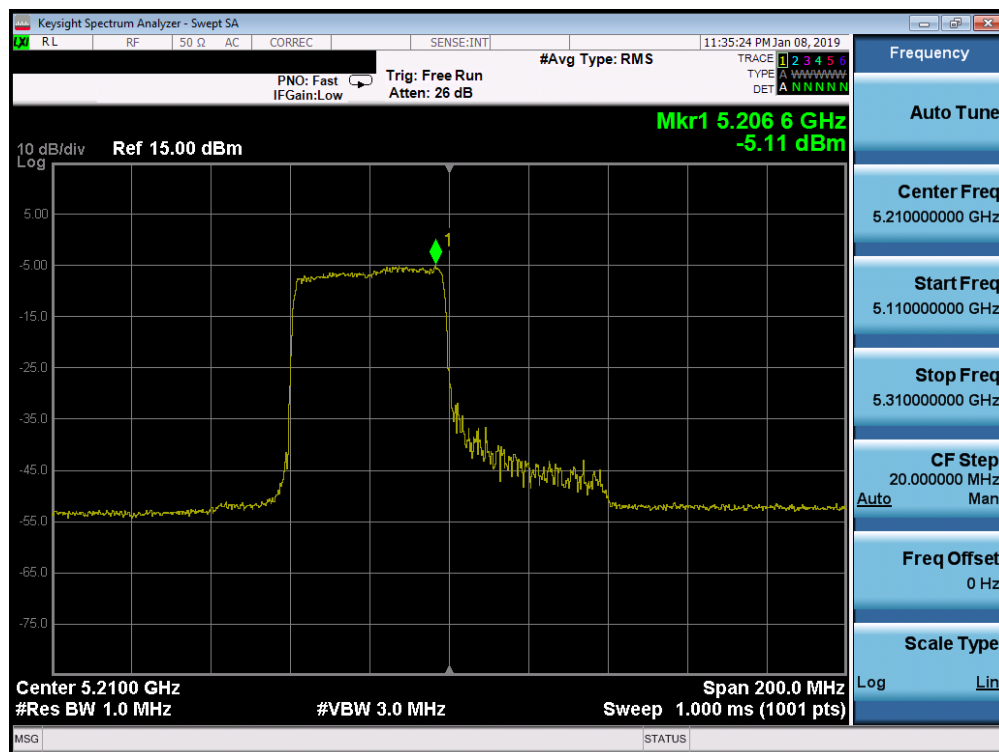


Plot 7-604. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 1) – Ch. 38)

FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset	Page 392 of 519

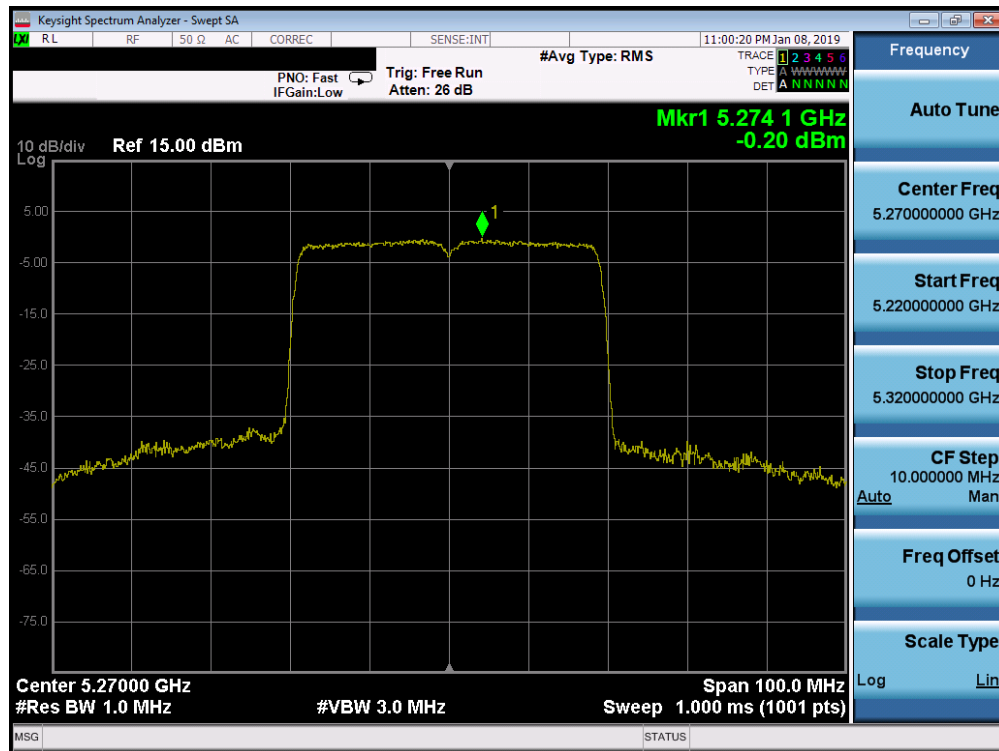


Plot 7-605. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 1) – Ch. 46)

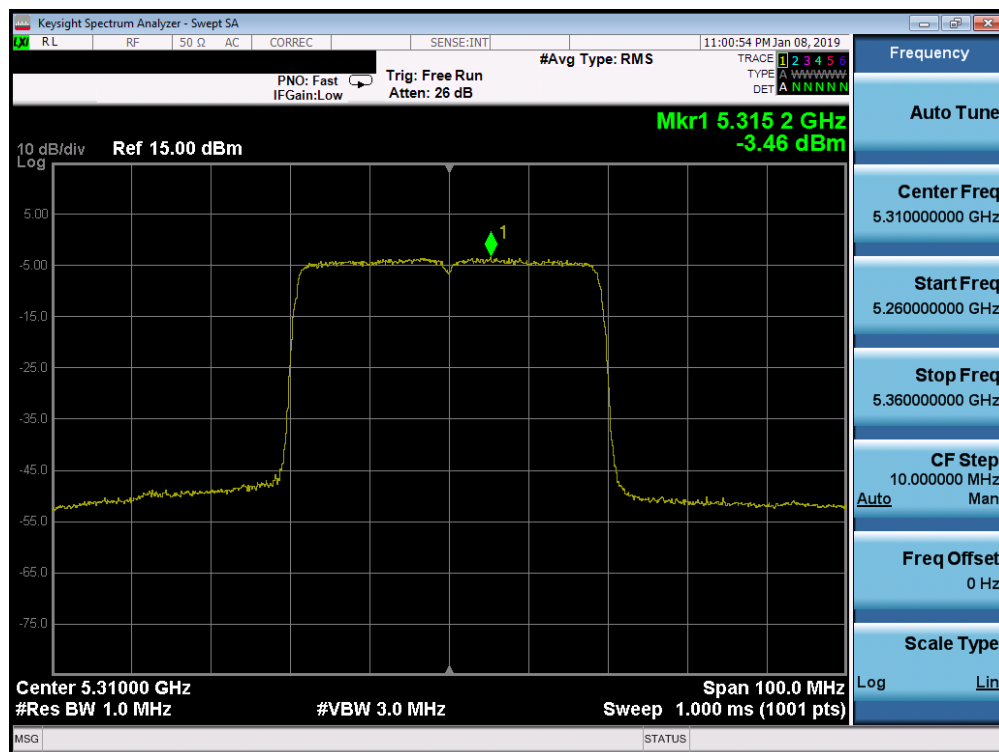


Plot 7-606. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 484 Tones (UNII Band 1) – Ch. 42)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 393 of 519

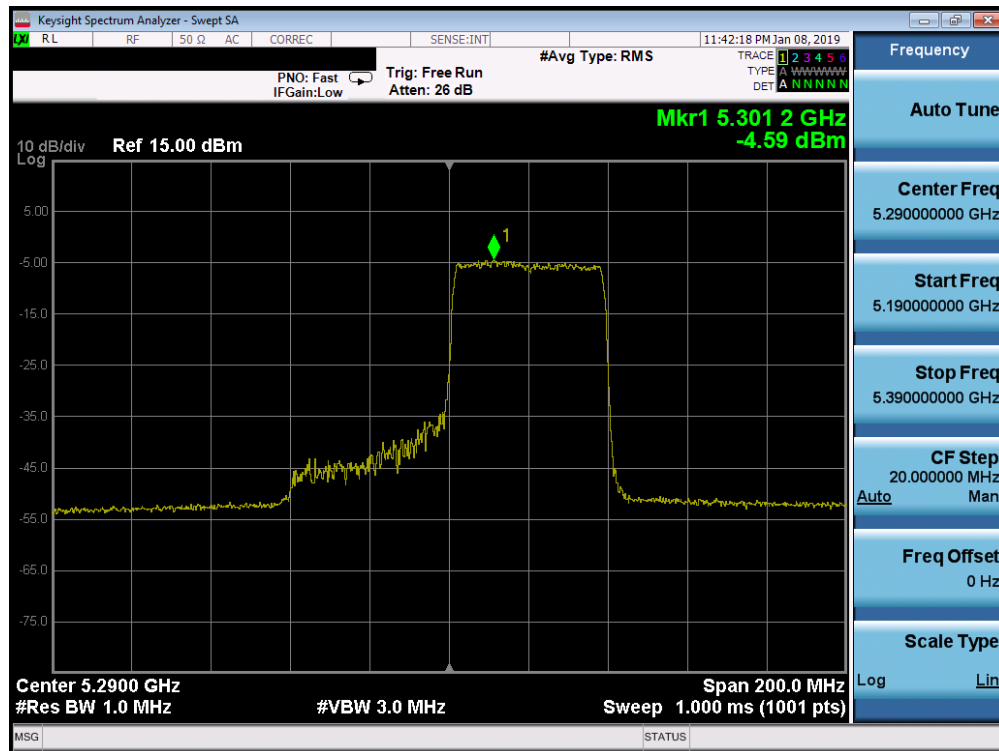


Plot 7-607. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 2A) – Ch. 54)

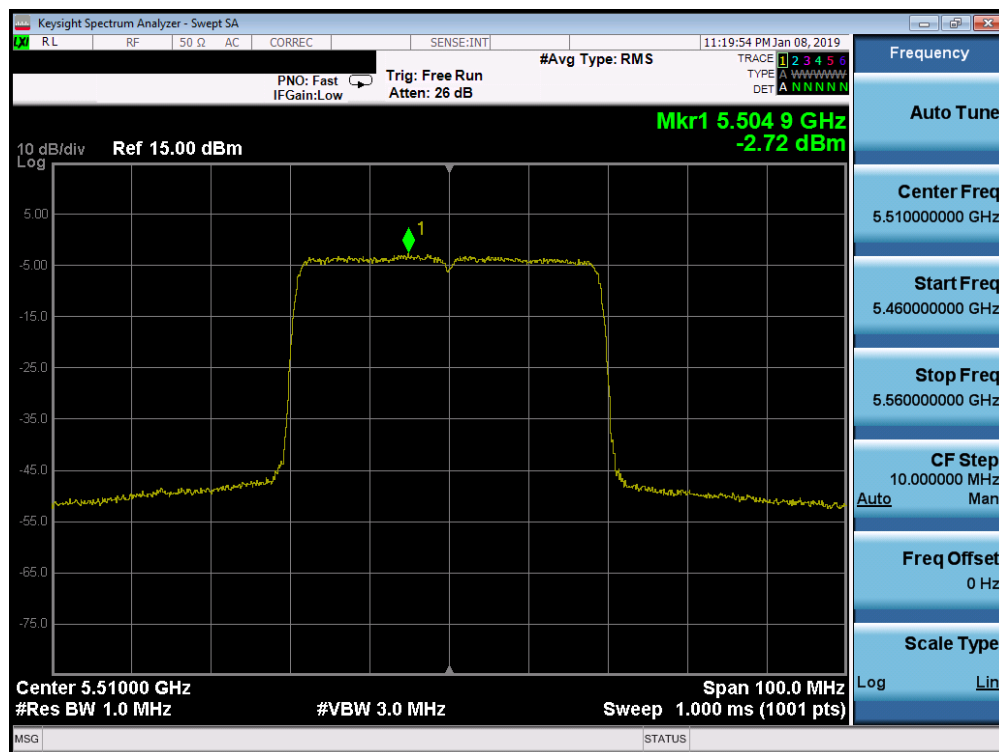


Plot 7-608. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 2A) – Ch. 62)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 394 of 519

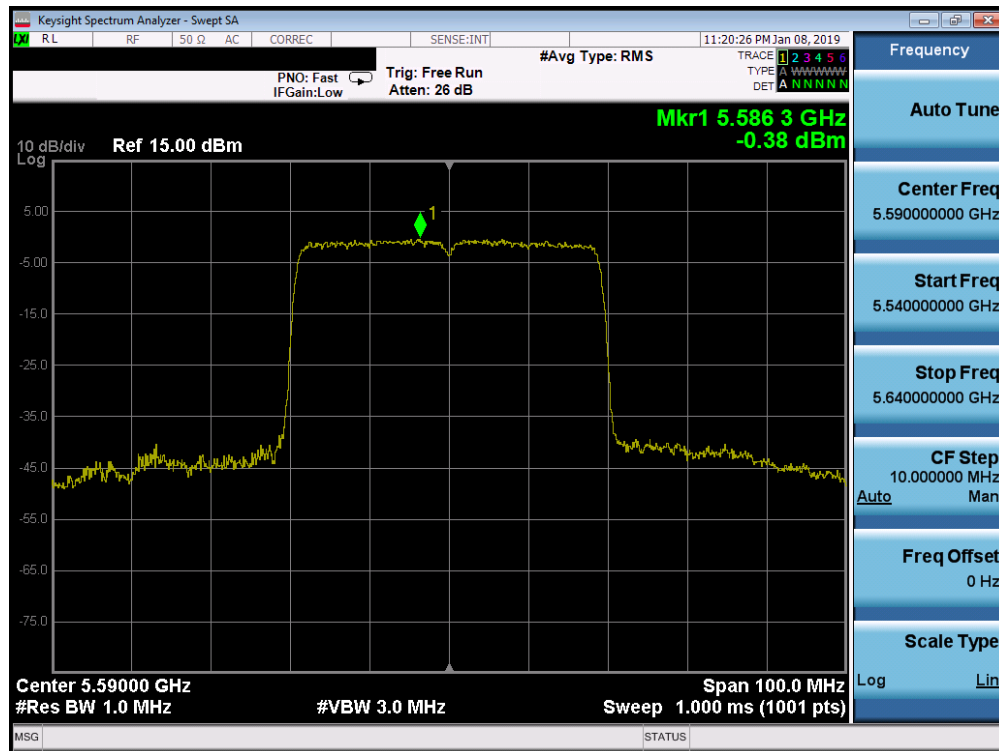


Plot 7-609. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 484 Tones (UNII Band 2A) – Ch. 58)

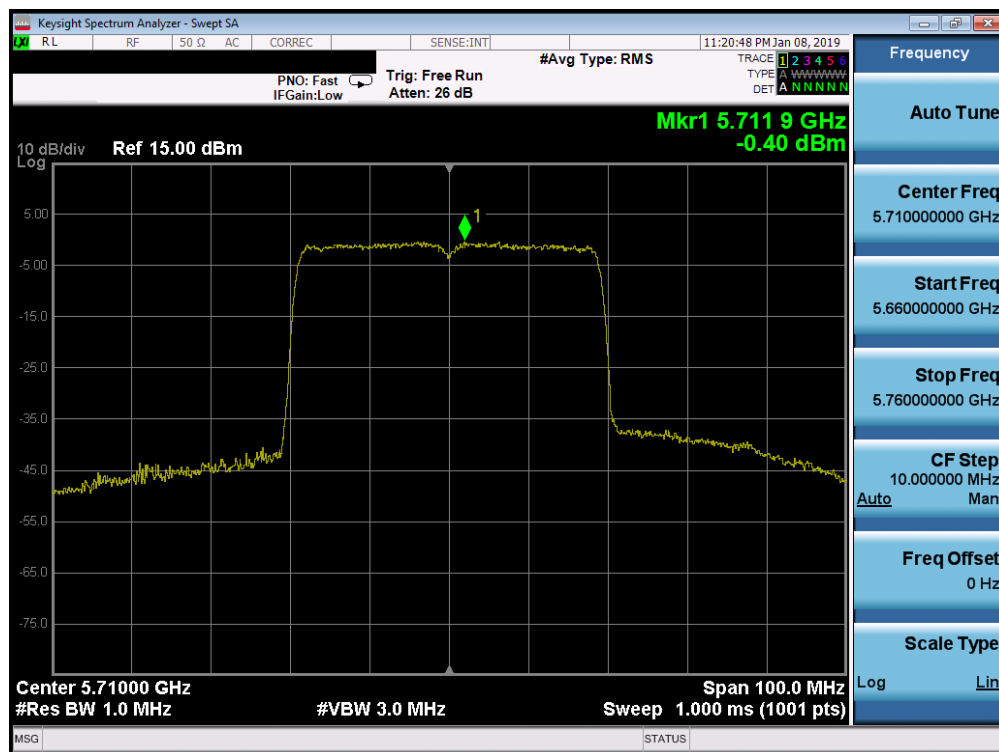


Plot 7-610. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 2C) – Ch. 102)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 395 of 519

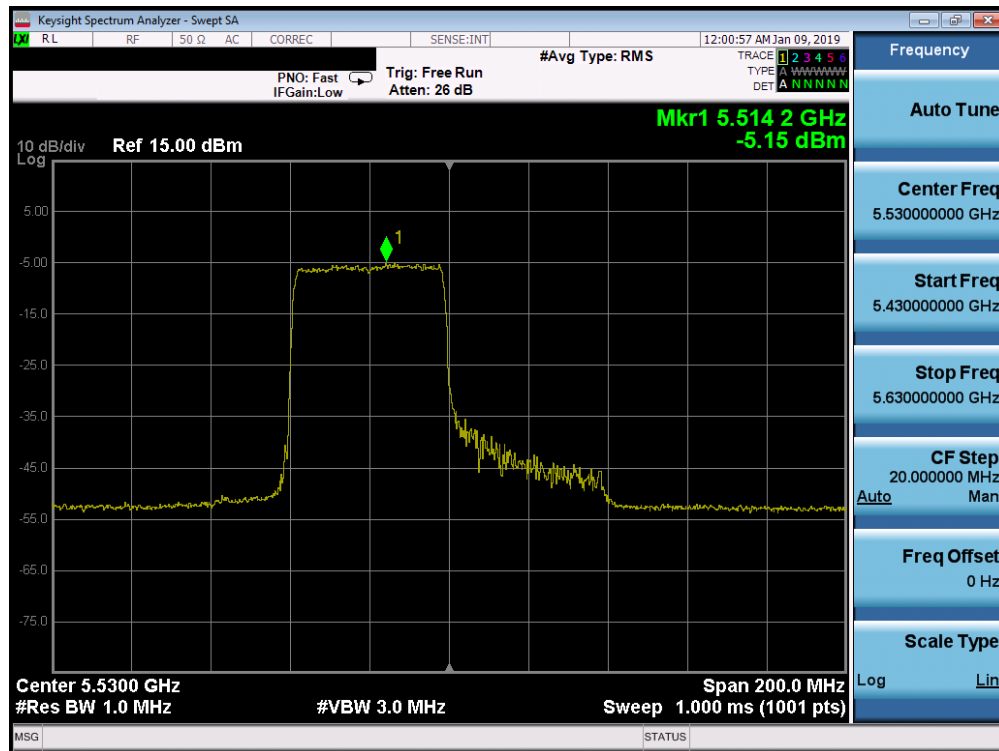


Plot 7-611. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 2C) – Ch. 118)

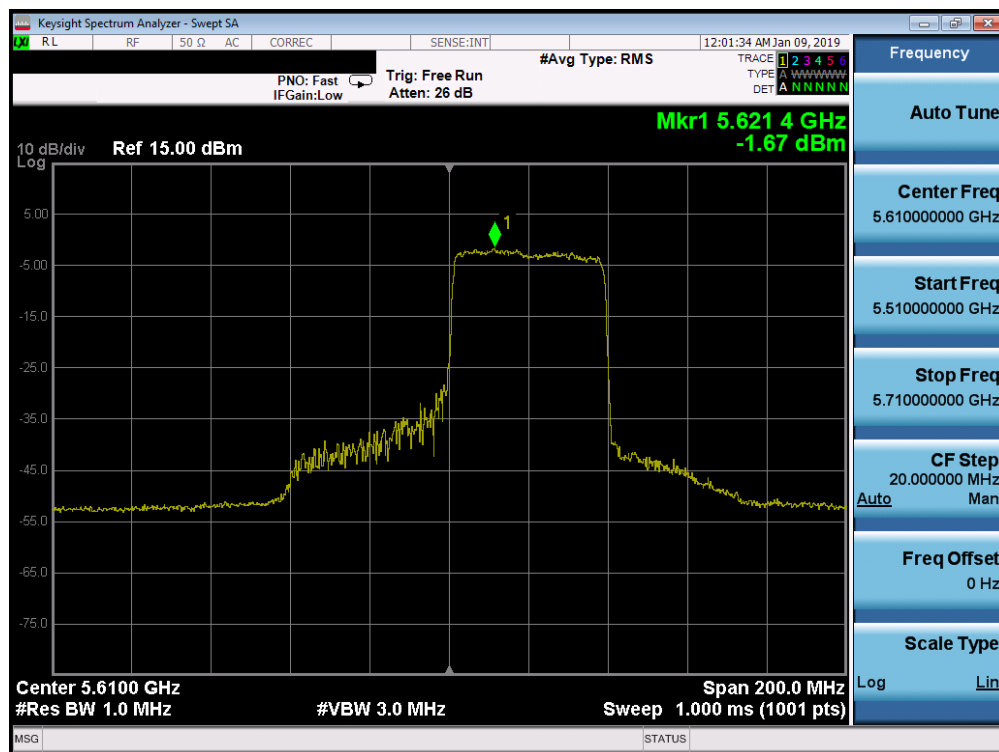


Plot 7-612. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 2C) – Ch. 142)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 396 of 519

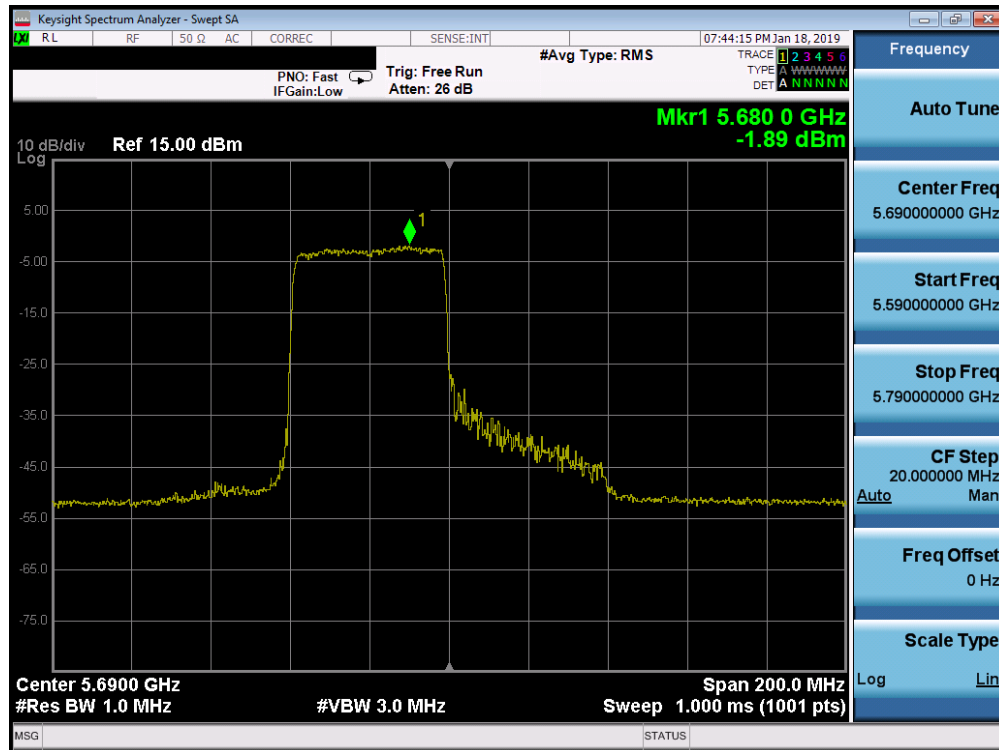


Plot 7-613. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 484 Tones (UNII Band 2C) – Ch. 106)

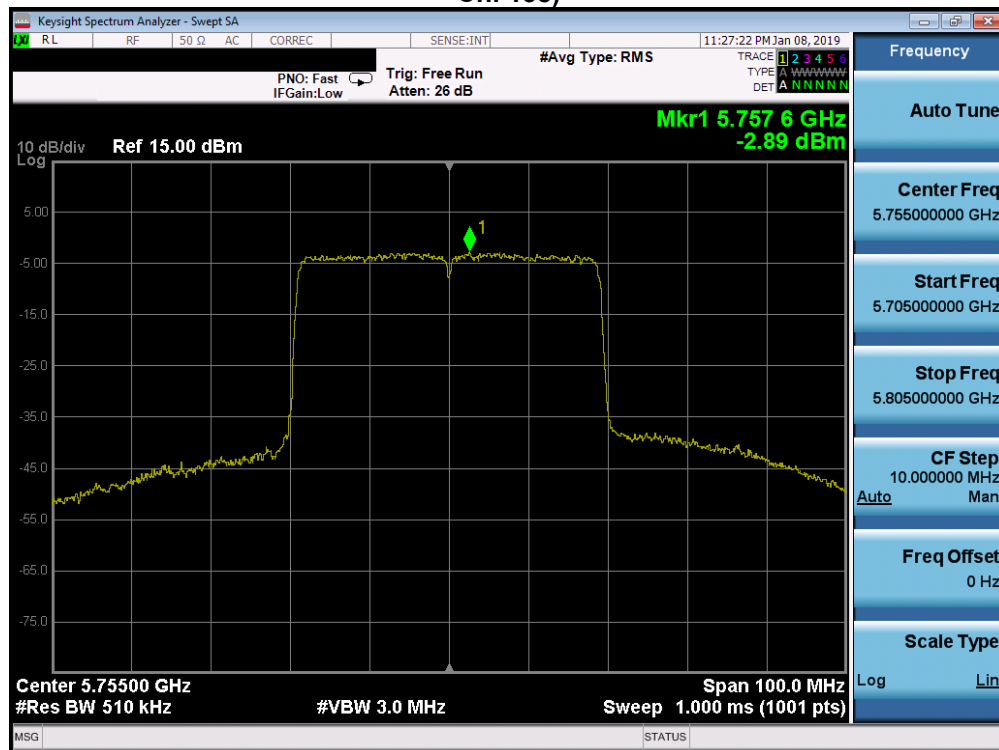


Plot 7-614. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 484 Tones (UNII Band 2C) – Ch. 122)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 397 of 519

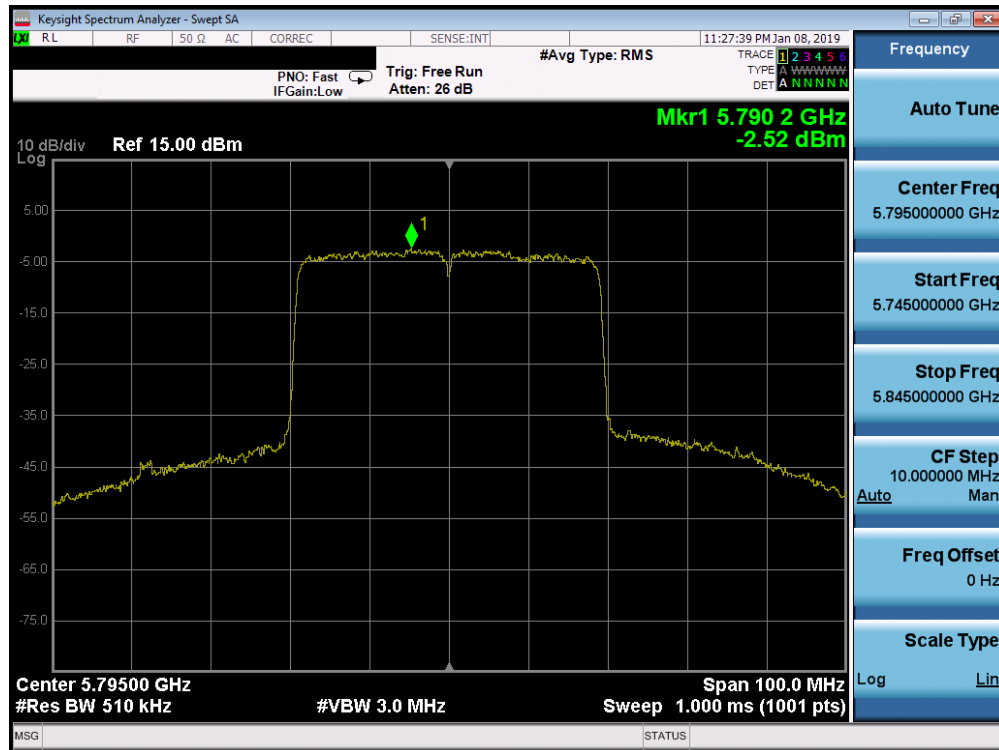


Plot 7-615. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 484 Tones (UNII Band 2C) – Ch. 138)



Plot 7-616. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 3) – Ch. 151)

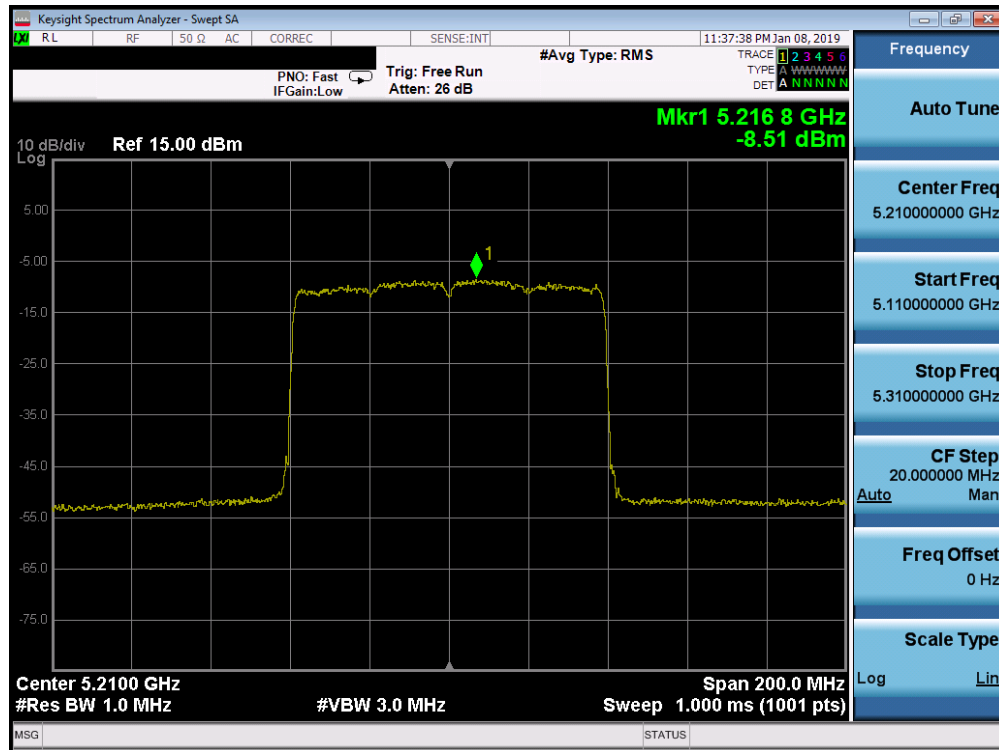
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 398 of 519



Plot 7-617. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 3) – Ch. 159)

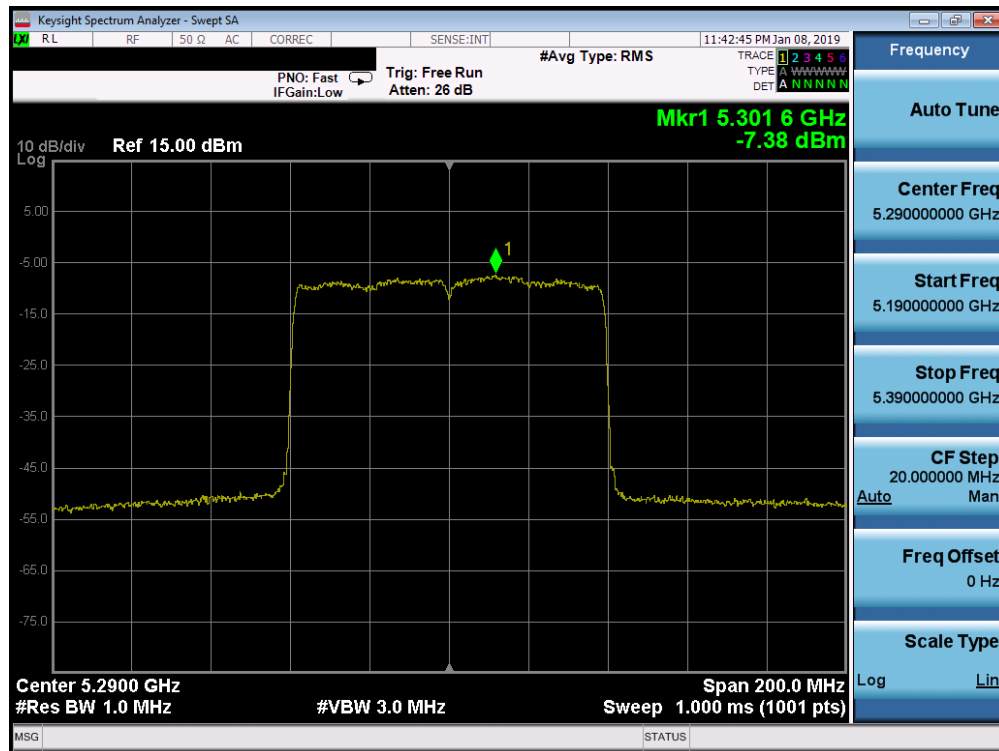
FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 399 of 519

MIMO Antenna-2 Power Spectral Density Measurements (996 Tones)

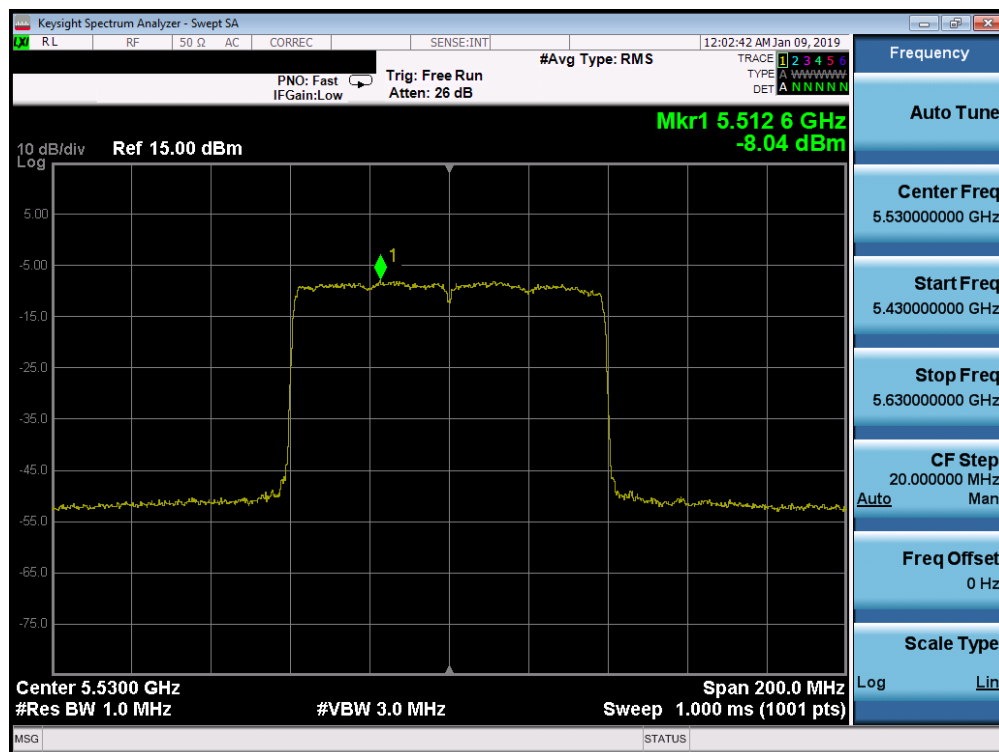


Plot 7-619. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 996 Tones (UNII Band 1) – Ch. 42)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 401 of 519

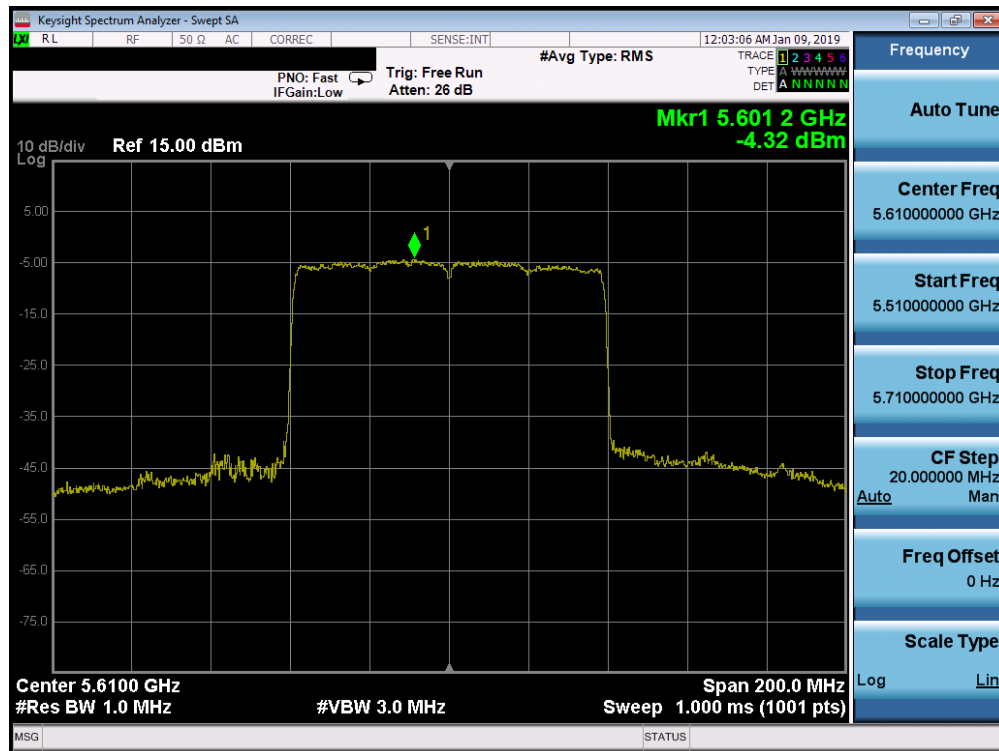


Plot 7-620. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 996 Tones (UNII Band 2A) – Ch. 58)

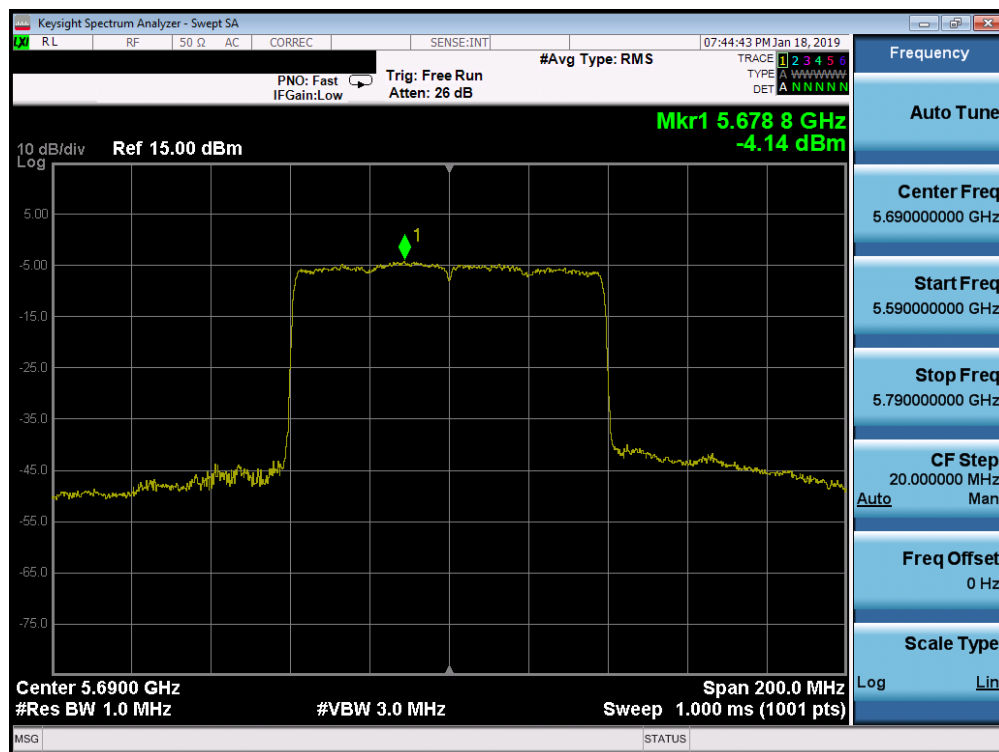


Plot 7-621. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 996 Tones (UNII Band 2C) – Ch. 106)

FCC ID: A3LSMG9700			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset	Page 402 of 519		

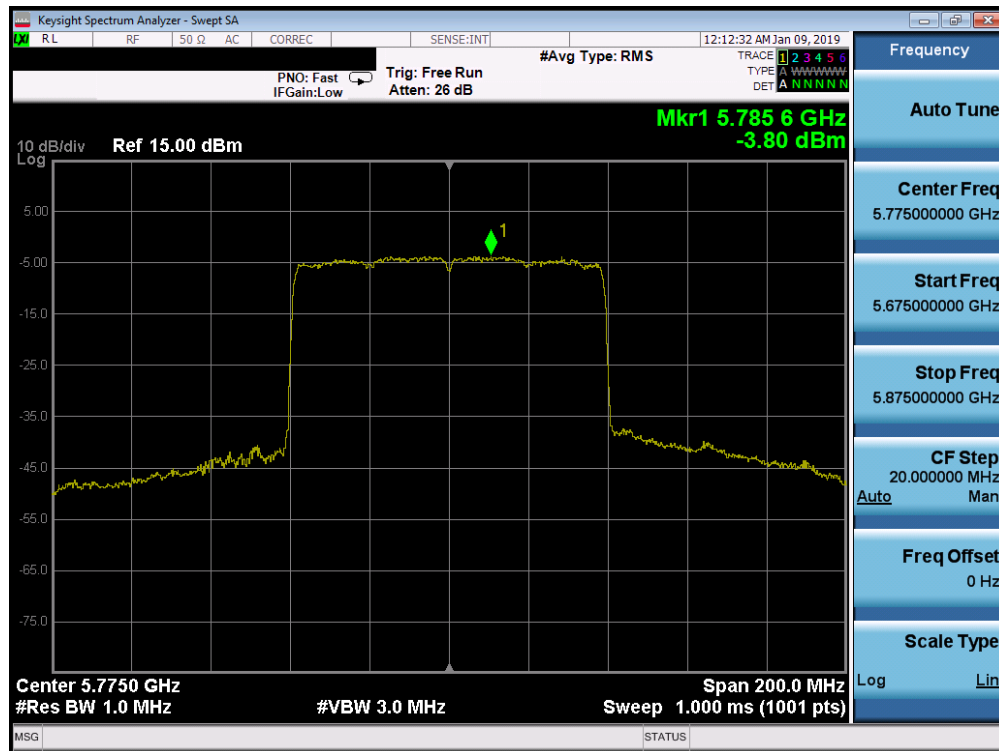


Plot 7-622. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 996 Tones (UNII Band 2C) – Ch. 122)



Plot 7-623. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 996 Tones (UNII Band 2C) – Ch. 138)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 403 of 519



Plot 7-624. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax – 996 Tones (UNII Band 3) – Ch. 155)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 404 of 519

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 7-30 per Section 15.209 and RSS-Gen (8.9).

Frequency	Field Strength [μV/m]	Measured Distance [Meters]
Above 960.0 MHz	500	3

Table 7-117. 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: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 405 of 519

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.

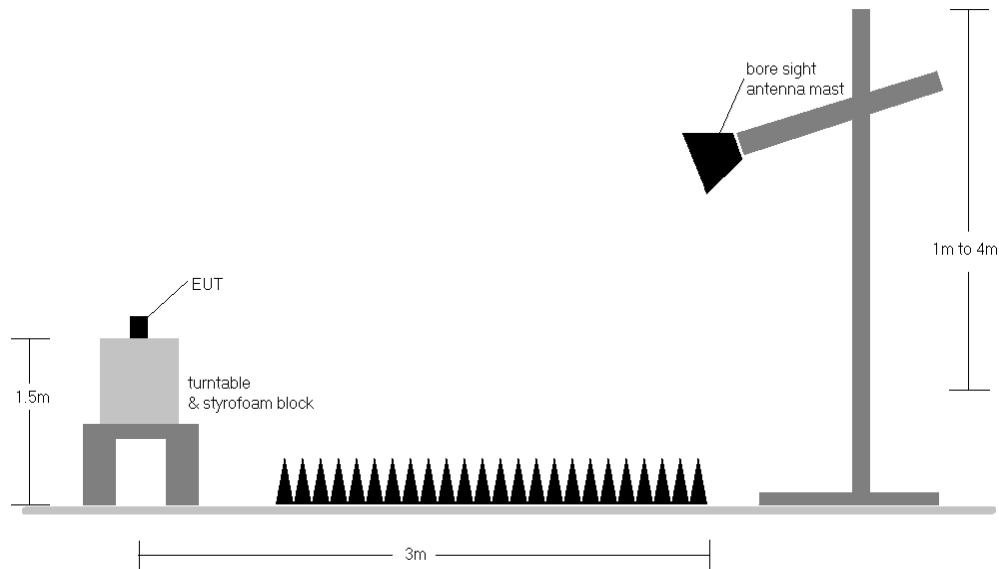


Figure 7-5. Test Instrument & Measurement Setup

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 406 of 519

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 7-30.
2. All spurious emissions lying in restricted bands specified in §15.205 and Section 8.10 of RSS-Gen are below the limit shown in Table 7-30. 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 dBμV/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 68.2dBμV/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

- o Field Strength Level [dBμV/m] = Analyzer Level [dBm] + 107 + AFCL [dB/m]
- o AFCL [dB/m] = Antenna Factor [dB/m] + Cable Loss [dB]
- o Margin [dB] = Field Strength Level [dBμV/m] – Limit [dBμV/m]

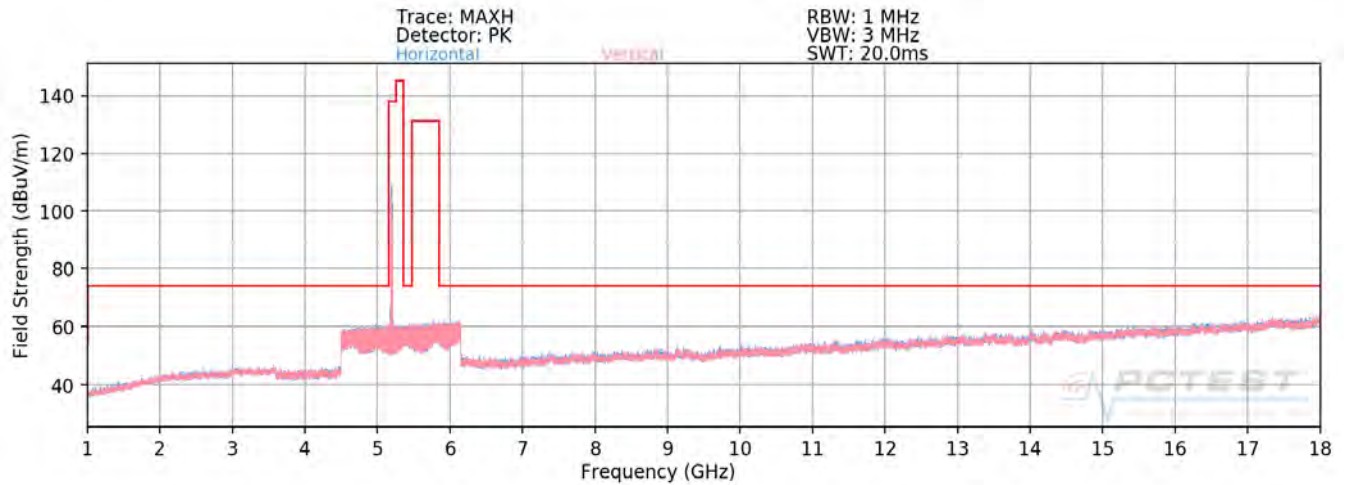
Radiated Band Edge Measurement Offset

- o The amplitude offset shown in the radiated restricted band edge plots in Section 7.8 was calculated using the formula:
Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

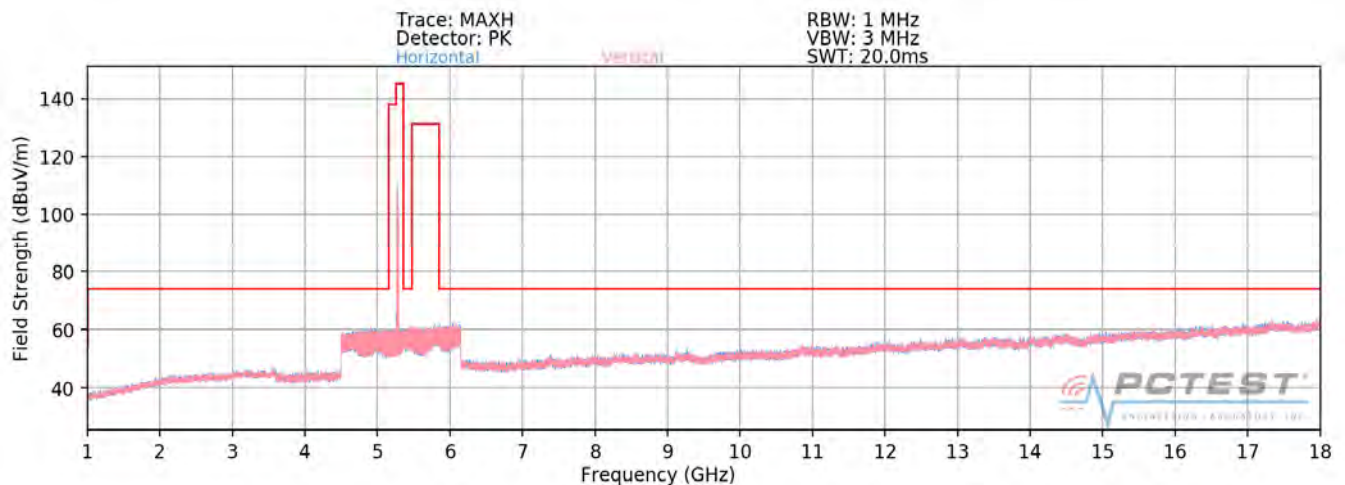
FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 407 of 519

7.6.1 SISO Antenna-1 Radiated Spurious Emission Measurements

106 Tones

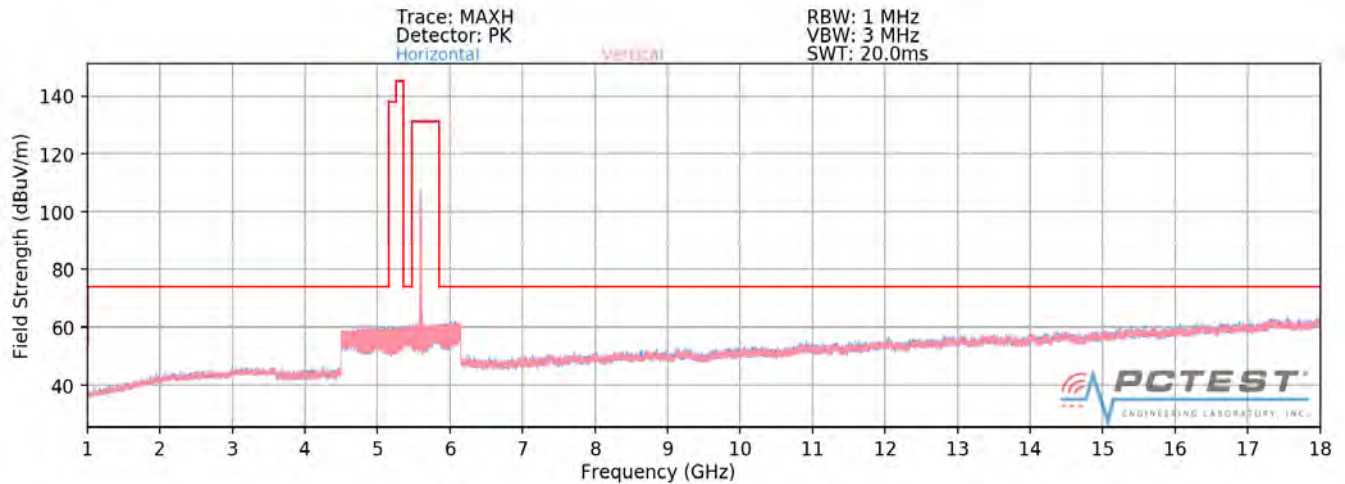


Plot 7-625. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U1 Ch. 40 – 106 Tones)

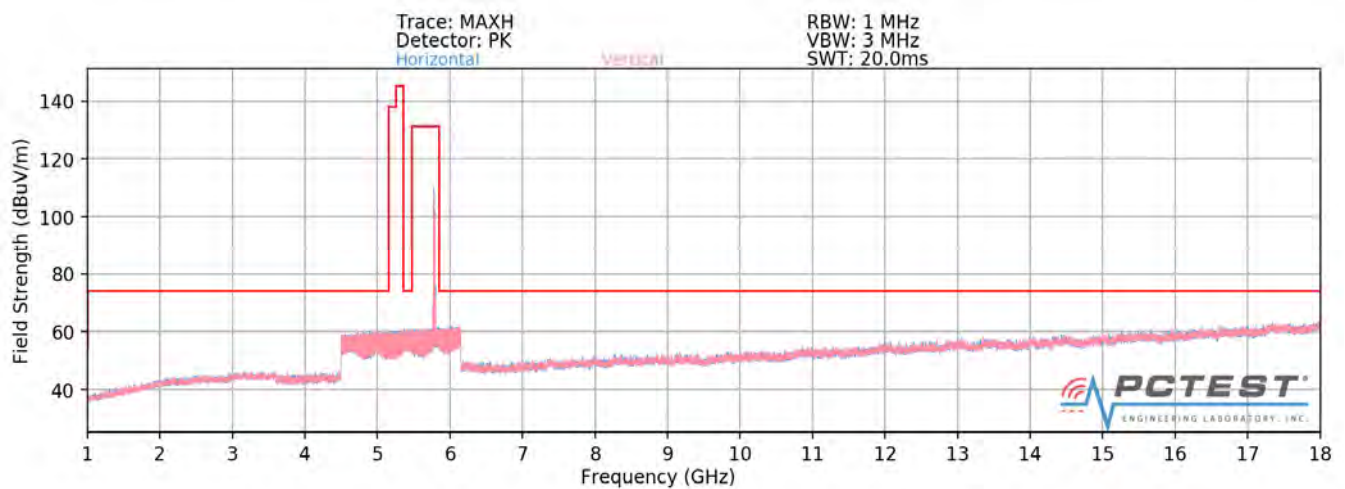


Plot 7-626. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U2A Ch. 56 – 106 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 408 of 519



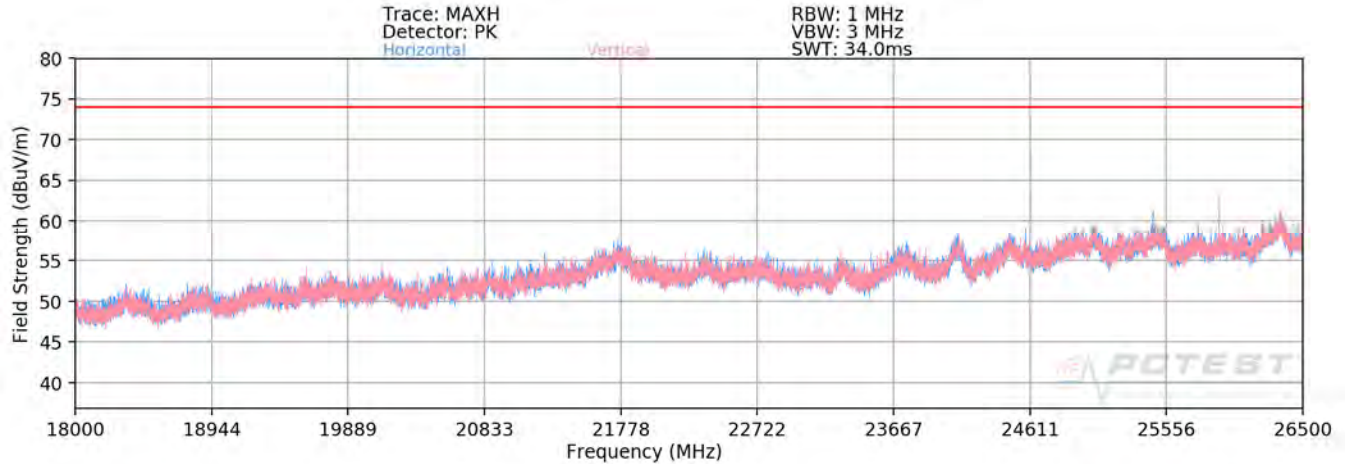
Plot 7-627. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U2C Ch. 120 – 106 Tones)



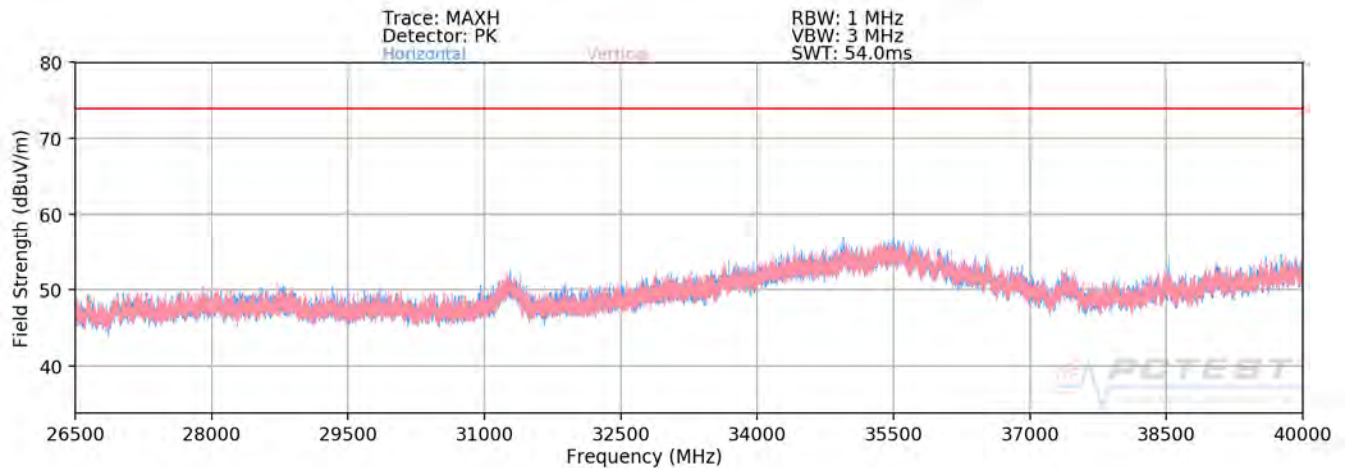
Plot 7-628. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U3 Ch. 157 – 106 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 409 of 519

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



Plot 7-629. Radiated Spurious Plot 18GHz - 26.5GHz SISO ANT1 (802.11ax – 106 Tones)



Plot 7-630. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT1 (802.11ax – 106 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 410 of 519

SISO Antenna-1 Radiated Spurious Emission Measurements (106 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:	53
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	400	293	-63.24	12.74	0.00	56.50	68.20	-11.70
* 15540.00	Average	H	-	-	-79.54	15.28	0.00	42.74	53.98	-11.24
* 15540.00	Peak	H	-	-	-68.93	15.28	0.00	53.35	73.98	-20.63
* 20720.00	Average	H	-	-	-77.92	16.92	-9.54	36.46	53.98	-17.52
* 20720.00	Peak	H	-	-	-66.70	16.92	-9.54	47.68	73.98	-26.30
25900.00	Peak	H	-	-	-65.18	19.39	-9.54	51.67	68.20	-16.53

Table 7-118. Radiated Measurements SISO ANT1 (106 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	53
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	372	293	-62.92	12.24	0.00	56.32	68.20	-11.88
* 15600.00	Average	H	-	-	-79.62	15.40	0.00	42.78	53.98	-11.19
* 15600.00	Peak	H	-	-	-68.26	15.40	0.00	54.14	73.98	-19.83
* 20800.00	Average	H	-	-	-77.64	17.39	-9.54	37.20	53.98	-16.77
* 20800.00	Peak	H	-	-	-66.77	17.39	-9.54	48.07	73.98	-25.90
26000.00	Peak	H	-	-	-64.69	19.98	-9.54	52.74	68.20	-15.46

Table 7-119. Radiated Measurements SISO ANT1 (106 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 411 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	398	296	-62.63	12.41	0.00	56.78	68.20	-11.42
* 15720.00	Average	H	-	-	-79.89	16.70	0.00	43.81	53.98	-10.17
* 15720.00	Peak	H	-	-	-68.82	16.70	0.00	54.88	73.98	-19.10
* 20960.00	Average	H	-	-	-77.90	17.29	-9.54	36.85	53.98	-17.13
* 20960.00	Peak	H	-	-	-66.95	17.29	-9.54	47.80	73.98	-26.18
26200.00	Peak	H	-	-	-65.02	19.80	-9.54	52.24	68.20	-15.96

Table 7-120. Radiated Measurements SISO ANT1 (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-62.98	12.41	0.00	56.43	68.20	-11.77
* 15720.00	Average	H	-	-	-79.99	16.70	0.00	43.71	53.98	-10.27
* 15720.00	Peak	H	-	-	-69.12	16.70	0.00	54.58	73.98	-19.40
* 20960.00	Average	H	-	-	-77.97	17.29	-9.54	36.78	53.98	-17.20
* 20960.00	Peak	H	-	-	-67.08	17.29	-9.54	47.67	73.98	-26.31
26200.00	Peak	H	-	-	-64.80	19.80	-9.54	52.46	68.20	-15.74

Table 7-121. Radiated Measurements SISO ANT1 (106 Tones)with WCP

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 412 of 519

Worst Case Mode: 802.11ax (20MHz BW)
Worst Case Transfer Rate: MCS0
RU Index: 53
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	361	293	-63.51	13.16	0.00	56.65	68.20	-11.55
* 15780.00	Average	H	-	-	-79.80	16.21	0.00	43.41	53.98	-10.57
* 15780.00	Peak	H	-	-	-69.37	16.21	0.00	53.84	73.98	-20.14
* 21040.00	Average	H	-	-	-77.84	17.32	-9.54	36.94	53.98	-17.04
* 21040.00	Peak	H	-	-	-66.71	17.32	-9.54	48.07	73.98	-25.91
26300.00	Peak	H	-	-	-65.02	20.12	-9.54	52.56	68.20	-15.64

Table 7-122. Radiated Measurements SISO ANT1 (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
Worst Case Transfer Rate: MCS0
RU Index: 53
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	400	291	-64.32	13.66	0.00	56.34	68.20	-11.86
* 15840.00	Average	H	-	-	-79.51	15.64	0.00	43.13	53.98	-10.85
* 15840.00	Peak	H	-	-	-68.45	15.64	0.00	54.19	73.98	-19.79
* 21120.00	Average	H	-	-	-77.68	17.26	-9.54	37.04	53.98	-16.94
* 21120.00	Peak	H	-	-	-66.49	17.26	-9.54	48.23	73.98	-25.75
26400.00	Peak	H	-	-	-64.89	19.67	-9.54	52.24	68.20	-15.96

Table 7-123. Radiated Measurements SISO ANT1 (106 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 413 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	400	292	-78.03	14.15	0.00	43.12	53.98	-10.86
* 10640.00	Peak	H	400	292	-66.74	14.15	0.00	54.41	73.98	-19.57
* 15960.00	Average	H	223	344	-79.02	15.01	0.00	42.99	53.98	-10.99
* 15960.00	Peak	H	223	344	-65.81	15.01	0.00	56.20	73.98	-17.78
* 21280.00	Average	H	-	-	-77.91	17.51	-9.54	37.06	53.98	-16.92
* 21280.00	Peak	H	-	-	-66.74	17.51	-9.54	48.23	73.98	-25.75
26600.00	Peak	H	-	-	-49.87	1.44	-9.54	49.03	68.20	-19.17

Table 7-124. Radiated Measurements SISO ANT1 (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-67.76	13.16	0.00	52.40	68.20	-15.80
* 15780.00	Average	H	-	-	-80.22	16.21	0.00	42.99	53.98	-10.99
* 15780.00	Peak	H	-	-	-79.22	16.21	0.00	43.99	73.98	-29.99
* 21040.00	Average	H	-	-	-77.41	17.32	-9.54	37.37	53.98	-16.61
* 21040.00	Peak	H	-	-	-66.38	17.32	-9.54	48.40	73.98	-25.58
26300.00	Peak	H	-	-	-64.91	20.12	-9.54	52.67	68.20	-15.53

Table 7-125. Radiated Measurements SISO ANT1 (106 Tones)with WCP

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 414 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	326	86	-78.59	13.55	0.00	41.96	53.98	-12.02
* 11000.00	Peak	H	326	86	-67.93	13.55	0.00	52.62	73.98	-21.36
16500.00	Peak	H	234	344	-61.97	16.10	0.00	61.13	68.20	-7.07
22000.00	Peak	H	-	-	-66.54	18.25	-9.54	49.17	68.20	-19.03
27500.00	Peak	H	-	-	-48.26	0.12	-9.54	49.32	68.20	-18.88

Table 7-126. Radiated Measurements SISO ANT1 (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-79.40	13.31	0.00	40.91	53.98	-13.07
* 11200.00	Peak	H	-	-	-68.94	13.31	0.00	51.37	73.98	-22.61
16800.00	Peak	H	252	352	-61.65	17.53	0.00	62.88	68.20	-5.32
* 22400.00	Average	H	-	-	-77.93	19.00	-9.54	38.53	53.98	-15.45
* 22400.00	Peak	H	-	-	-66.42	19.00	-9.54	50.04	73.98	-23.94
28000.00	Peak	H	-	-	-48.57	0.74	-9.54	49.62	68.20	-18.58

Table 7-127. Radiated Measurements SISO ANT1 (106 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 415 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-79.45	15.10	0.00	42.65	53.98	-11.33
* 11440.00	Peak	H	-	-	-68.62	15.10	0.00	53.48	73.98	-20.50
17160.00	Peak	H	240	82	-66.17	18.83	0.00	59.66	68.20	-8.54
* 22880.00	Average	H	-	-	-77.71	18.40	-9.54	38.15	53.98	-15.83
* 22880.00	Peak	H	-	-	-66.50	18.40	-9.54	49.36	73.98	-24.62
28600.00	Peak	H	-	-	-49.08	0.41	-9.54	48.79	68.20	-19.41

Table 7-128. Radiated Measurements SISO ANT1 (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-79.66	13.31	0.00	40.65	53.98	-13.33
* 11200.00	Peak	H	-	-	-68.77	13.31	0.00	51.54	73.98	-22.44
16800.00	Peak	H	-	-	-61.98	17.53	0.00	62.55	68.20	-5.65
* 22400.00	Average	H	-	-	-77.84	19.00	-9.54	38.62	53.98	-15.36
* 22400.00	Peak	H	-	-	-66.64	19.00	-9.54	49.82	73.98	-24.16
28000.00	Peak	H	-	-	-48.41	0.74	-9.54	49.78	68.20	-18.42

Table 7-129. Radiated Measurements SISO ANT1 (106 Tones)with WCP

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 416 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-79.30	15.22	0.00	42.92	53.98	-11.06
* 11490.00	Peak	H	-	-	-68.26	15.22	0.00	53.96	73.98	-20.02
17235.00	Peak	H	240	348	-64.47	19.54	0.00	62.07	68.20	-6.13
* 22980.00	Average	H	-	-	-77.49	17.92	-9.54	37.89	53.98	-16.09
* 22980.00	Peak	H	-	-	-66.94	17.92	-9.54	48.44	73.98	-25.54
28725.00	Peak	H	-	-	-49.18	0.67	-9.54	48.95	68.20	-19.25

Table 7-130. Radiated Measurements SISO ANT1 (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-79.18	15.02	0.00	42.84	53.98	-11.14
* 11570.00	Peak	H	-	-	-68.15	15.02	0.00	53.87	73.98	-20.11
17355.00	Peak	H	-	-	-69.70	23.41	0.00	60.71	68.20	-7.49
23140.00	Peak	H	-	-	-66.67	18.32	-9.54	49.11	68.20	-19.09
28925.00	Peak	H	-	-	-49.08	0.75	-9.54	49.13	68.20	-19.07

Table 7-131. Radiated Measurements SISO ANT1 (106 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 417 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-79.21	14.92	0.00	42.71	53.98	-11.27
* 11650.00	Peak	H	-	-	-68.03	14.92	0.00	53.89	73.98	-20.09
17475.00	Peak	H	-	-	-69.75	21.86	0.00	59.11	68.20	-9.09
23300.00	Peak	H	-	-	-66.79	18.77	-9.54	49.44	68.20	-18.76
29125.00	Peak	H	-	-	-49.14	-0.12	-9.54	48.20	68.20	-20.00

Table 7-132. Radiated Measurements SISO ANT1 (106 Tones)

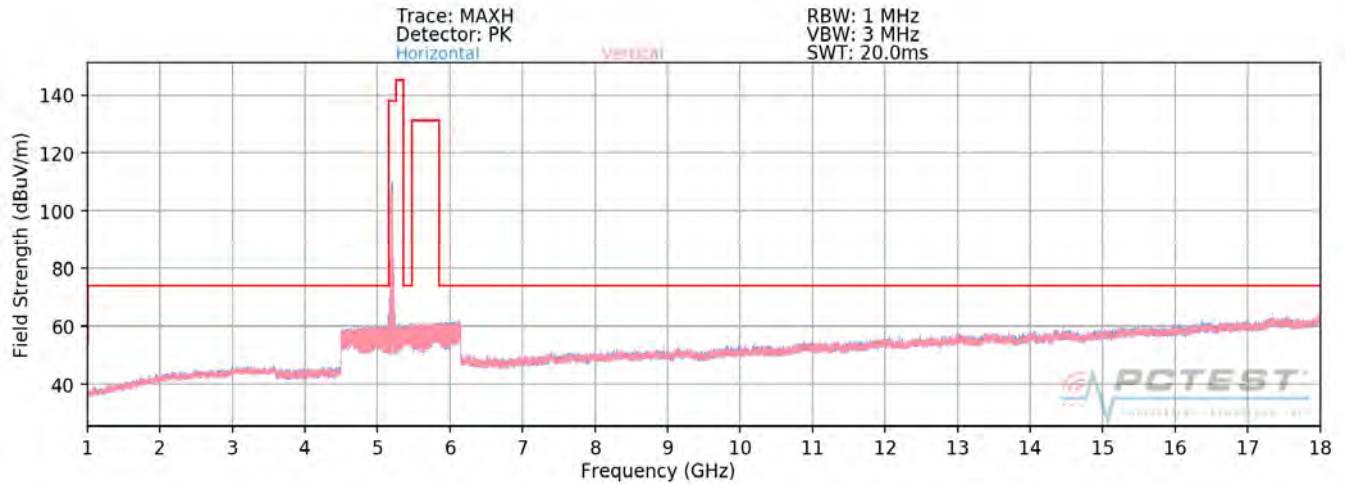
Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5745MHz
 Channel: 149

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	-	-	-79.35	15.22	0.00	42.87	53.98	-11.11
* 11490.00	Peak	H	-	-	-68.22	15.22	0.00	54.00	73.98	-19.98
17235.00	Peak	H	-	-	-65.21	19.54	0.00	61.33	68.20	-6.87
* 22980.00	Average	H	-	-	-77.68	17.92	-9.54	37.70	53.98	-16.28
* 22980.00	Peak	H	-	-	-66.74	17.92	-9.54	48.64	73.98	-25.34
28725.00	Peak	H	-	-	-48.98	0.67	-9.54	49.15	68.20	-19.05

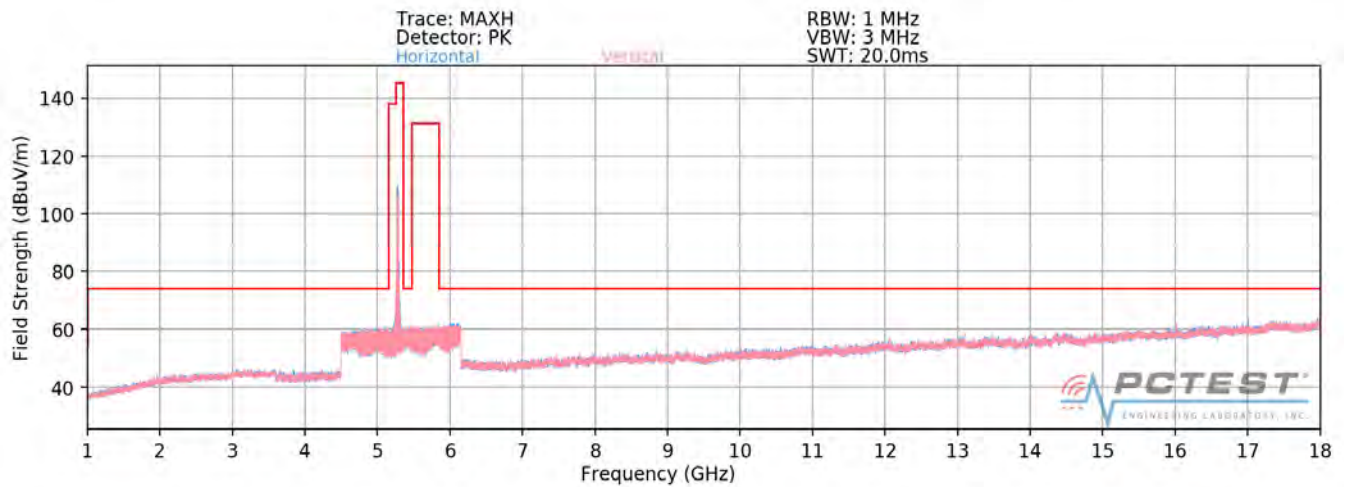
Table 7-133. Radiated Measurements SISO ANT1 (106 Tones)with WCP

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 418 of 519

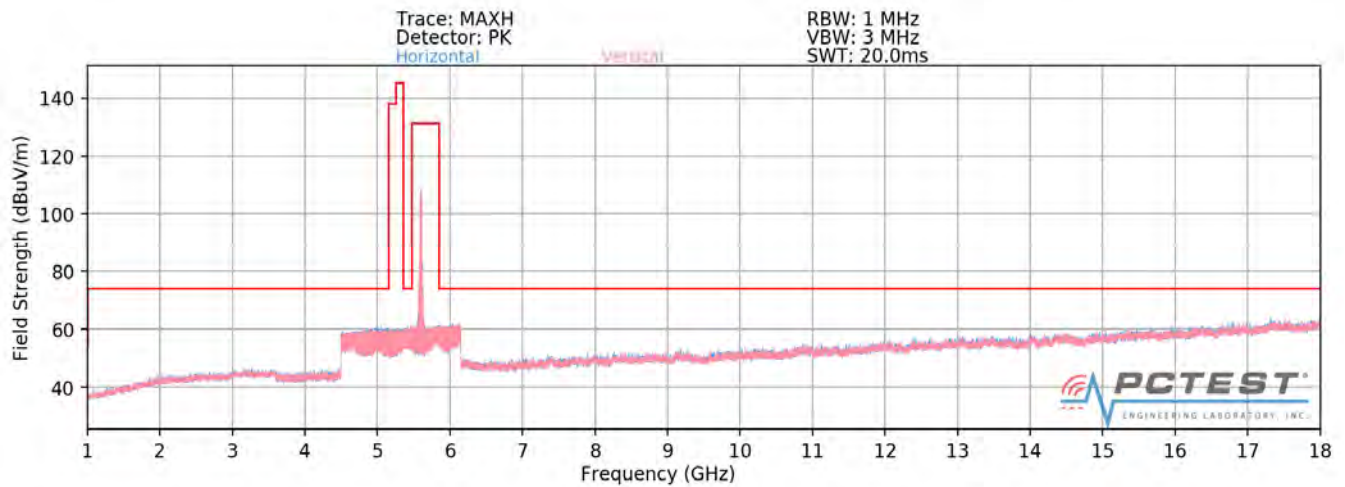
242 Tones



Plot 7-631. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U1 Ch. 40 – 242 Tones)

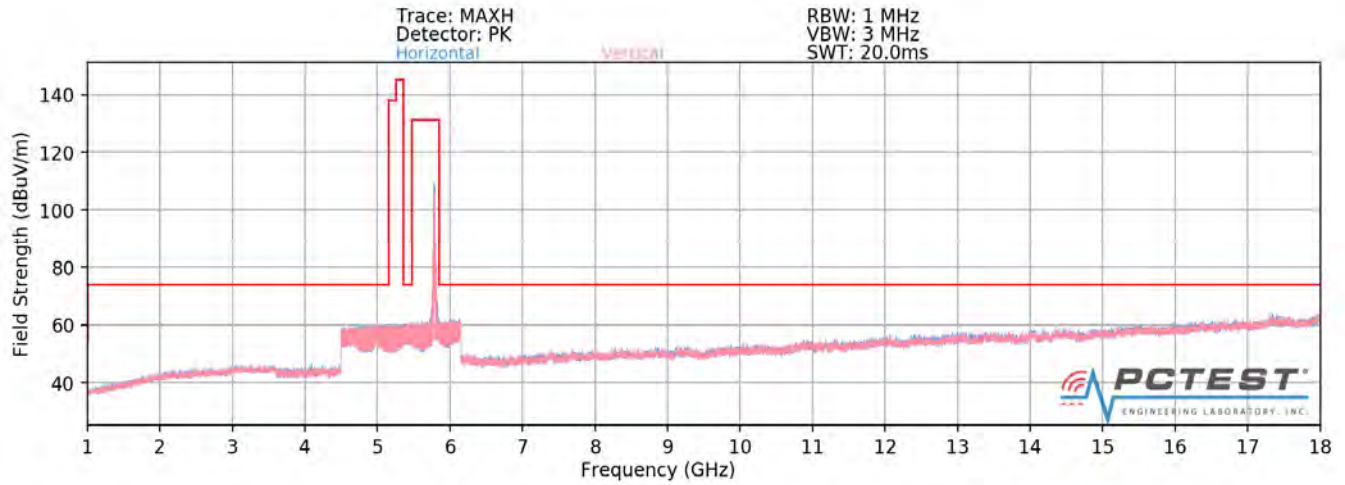


Plot 7-632. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U2A Ch. 56 – 242 Tones)



FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 419 of 519

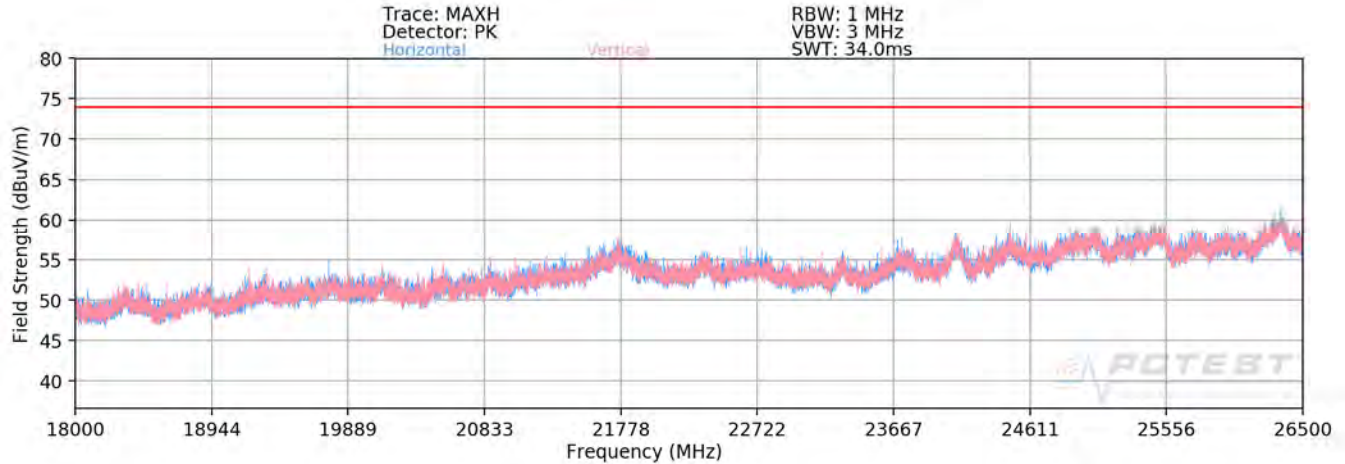
Plot 7-633. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U2C Ch. 120 – 242 Tones)



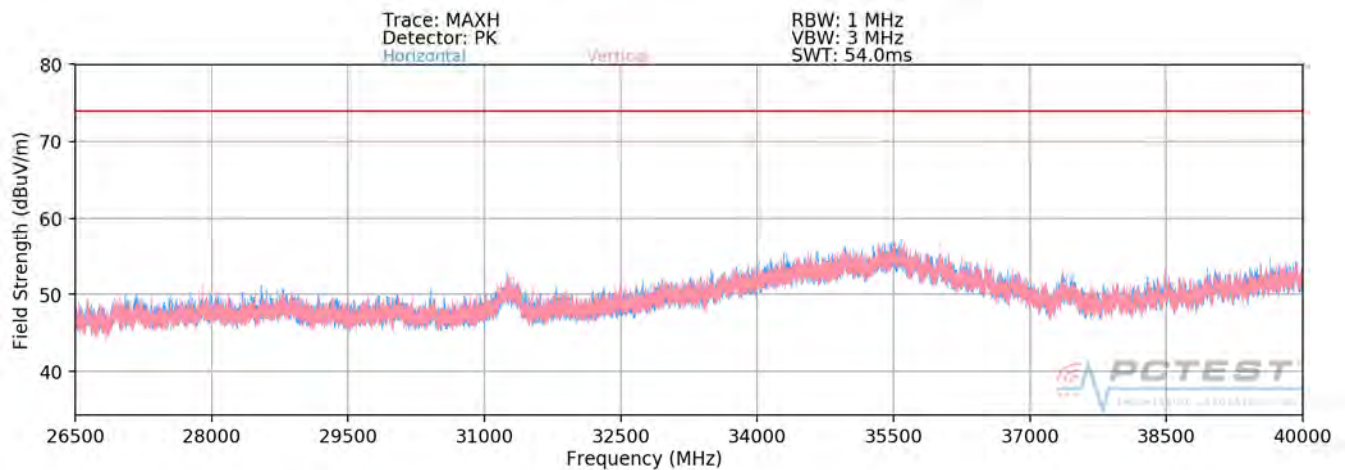
Plot 7-634. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax – U3 Ch. 157 – 242 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 420 of 519

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



Plot 7-635. Radiated Spurious Plot 18GHz - 26.5GHz SISO ANT1 (802.11ax – 242 Tones)



Plot 7-636. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT1 (802.11ax – 242 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 421 of 519

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	-	-	-68.70	15.88	0.00	54.18	68.20	-14.02
* 15540.00	Average	H	-	-	-81.17	23.03	0.00	48.86	53.98	-5.12
* 15540.00	Peak	H	-	-	-69.52	23.03	0.00	60.51	73.98	-13.47
* 20720.00	Average	H	-	-	-77.89	16.92	-9.54	36.49	53.98	-17.49
* 20720.00	Peak	H	-	-	-66.74	16.92	-9.54	47.64	73.98	-26.34
25900.00	Peak	H	-	-	-65.05	19.39	-9.54	51.80	68.20	-16.40

Table 7-134. 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	-	-	-68.86	16.04	0.00	54.18	68.20	-14.02
* 15600.00	Average	H	-	-	-80.95	23.01	0.00	49.06	53.98	-4.92
* 15600.00	Peak	H	-	-	-69.83	23.01	0.00	60.18	73.98	-13.80
* 20800.00	Average	H	-	-	-77.84	17.39	-9.54	37.00	53.98	-16.97
* 20800.00	Peak	H	-	-	-66.73	17.39	-9.54	48.11	73.98	-25.86
26000.00	Peak	H	-	-	-65.90	19.98	-9.54	51.53	68.20	-16.67

Table 7-135. Radiated Measurements SISO ANT1 (242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 422 of 519

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	-	-	-68.99	16.18	0.00	54.19	68.20	-14.01
* 15720.00	Average	H	-	-	-81.20	23.46	0.00	49.26	53.98	-4.72
* 15720.00	Peak	H	-	-	-69.70	23.46	0.00	60.76	73.98	-13.22
* 20960.00	Average	H	-	-	-77.85	17.29	-9.54	36.90	53.98	-17.08
* 20960.00	Peak	H	-	-	-66.14	17.29	-9.54	48.61	73.98	-25.37
26200.00	Peak	H	-	-	-65.77	19.80	-9.54	51.49	68.20	-16.71

Table 7-136. 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	-	-	-69.27	16.24	0.00	53.97	68.20	-14.23
* 15780.00	Average	H	-	-	-81.16	23.09	0.00	48.93	53.98	-5.05
* 15780.00	Peak	H	-	-	-69.65	23.09	0.00	60.44	73.98	-13.54
* 21040.00	Average	H	-	-	-77.68	17.32	-9.54	37.10	53.98	-16.88
* 21040.00	Peak	H	-	-	-66.09	17.32	-9.54	48.69	73.98	-25.29
26300.00	Peak	H	-	-	-65.39	20.12	-9.54	52.19	68.20	-16.01

Table 7-137. Radiated Measurements SISO ANT1 (242 Tones)

Worst Case Mode: 802.11ax (20MHz BW)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 423 of 519

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	-	-	-69.11	16.27	0.00	54.16	68.20	-14.04
* 15840.00	Average	H	-	-	-81.32	23.65	0.00	49.33	53.98	-4.65
* 15840.00	Peak	H	-	-	-70.10	23.65	0.00	60.55	73.98	-13.43
* 21120.00	Average	H	-	-	-77.65	17.26	-9.54	37.07	53.98	-16.91
* 21120.00	Peak	H	-	-	-65.86	17.26	-9.54	48.86	73.98	-25.12
26400.00	Peak	H	-	-	-65.29	19.67	-9.54	51.84	68.20	-16.36

Table 7-138. 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	-	-	-80.83	16.99	0.00	43.16	53.98	-10.82
* 10640.00	Peak	H	-	-	-69.10	16.99	0.00	54.89	73.98	-19.09
* 15960.00	Average	H	-	-	-81.25	23.61	0.00	49.36	53.98	-4.62
* 15960.00	Peak	H	-	-	-69.93	23.61	0.00	60.68	73.98	-13.30
* 21280.00	Average	H	-	-	-77.52	17.51	-9.54	37.45	53.98	-16.53
* 21280.00	Peak	H	-	-	-65.99	17.51	-9.54	48.98	73.98	-25.00
26600.00	Peak	H	-	-	-49.73	1.44	-9.54	49.17	68.20	-19.03

Table 7-139. Radiated Measurements SISO ANT1 (242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 424 of 519

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	-	-	-80.28	17.61	0.00	44.33	53.98	-9.65
* 11000.00	Peak	H	-	-	-68.23	17.61	0.00	56.38	73.98	-17.60
16500.00	Peak	H	-	-	-68.87	25.31	0.00	63.44	68.20	-4.76
22000.00	Peak	H	-	-	-66.42	18.25	-9.54	49.29	68.20	-18.91
27500.00	Peak	H	-	-	-48.36	0.12	-9.54	49.22	68.20	-18.98

Table 7-140. 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	-	-	-80.29	16.98	0.00	43.69	53.98	-10.29
* 11200.00	Peak	H	-	-	-67.67	16.98	0.00	56.31	73.98	-17.67
16800.00	Peak	H	-	-	-69.69	24.87	0.00	62.18	68.20	-6.02
* 22400.00	Average	H	-	-	-78.00	19.00	-9.54	38.46	53.98	-15.52
* 22400.00	Peak	H	-	-	-67.15	19.00	-9.54	49.31	73.98	-24.67
28000.00	Peak	H	-	-	-48.58	0.74	-9.54	49.61	68.20	-18.59

Table 7-141. Radiated Measurements SISO ANT1 (242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 425 of 519

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	-	-	-81.00	18.07	0.00	44.07	53.98	-9.91
* 11440.00	Peak	H	-	-	-69.60	18.07	0.00	55.47	73.98	-18.51
17160.00	Peak	H	-	-	-68.43	24.98	0.00	63.55	68.20	-4.65
* 22880.00	Average	H	-	-	-78.13	18.40	-9.54	37.73	53.98	-16.25
* 22880.00	Peak	H	-	-	-67.05	18.40	-9.54	48.81	73.98	-25.17
28600.00	Peak	H	-	-	-48.96	0.41	-9.54	48.91	68.20	-19.29

Table 7-142. 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	351	33	-80.15	18.31	0.00	45.16	53.98	-8.82
* 11490.00	Peak	H	351	33	-68.44	18.31	0.00	56.87	73.98	-17.11
17235.00	Peak	H	233	350	-67.76	25.66	0.00	64.90	68.20	-3.30
* 22980.00	Average	H	-	-	-77.87	17.92	-9.54	37.51	53.98	-16.47
* 22980.00	Peak	H	-	-	-67.24	17.92	-9.54	48.14	73.98	-25.84
28725.00	Peak	H	-	-	-49.32	0.67	-9.54	48.81	68.20	-19.39

Table 7-143. Radiated Measurements SISO ANT1 (242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 426 of 519

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	343	84	-79.94	18.06	0.00	45.12	53.98	-8.86
* 11570.00	Peak	H	343	84	-68.54	18.06	0.00	56.52	73.98	-17.46
17355.00	Peak	H	242	341	-69.22	27.10	0.00	64.88	68.20	-3.32
23140.00	Peak	H	-	-	-67.08	18.32	-9.54	48.70	68.20	-19.50
28925.00	Peak	H	-	-	-48.92	0.75	-9.54	49.29	68.20	-18.91

Table 7-144. 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

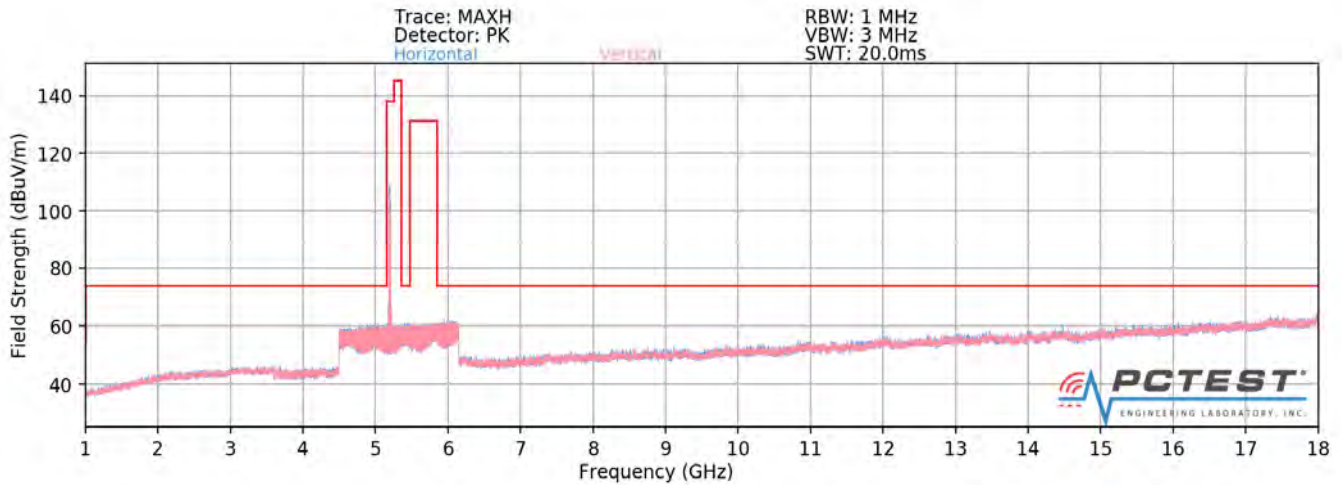
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	H	255	65	-78.81	18.25	0.00	46.44	53.98	-7.54
* 11650.00	Peak	H	255	65	-66.66	18.25	0.00	58.59	73.98	-15.39
17475.00	Peak	H	256	341	-69.32	26.28	0.00	63.96	68.20	-4.24
23300.00	Peak	H	-	-	-66.93	18.77	-9.54	49.30	68.20	-18.90
29125.00	Peak	H	-	-	-48.56	-0.12	-9.54	48.78	68.20	-19.42

Table 7-145. Radiated Measurements SISO ANT1 (242 Tones)

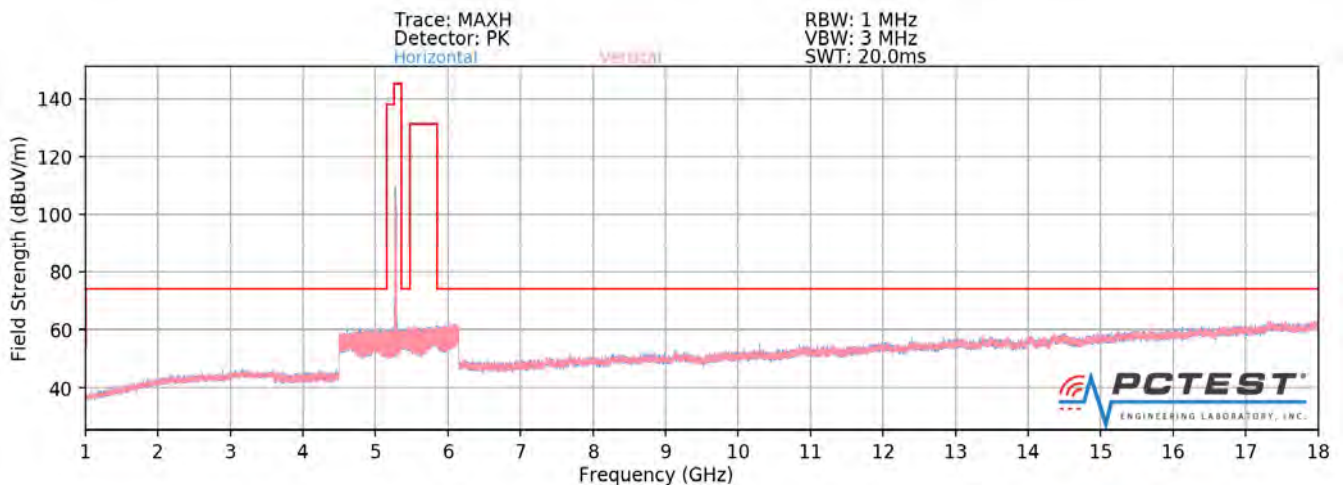
FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 427 of 519

7.6.2 SISO Antenna-2 Radiated Spurious Emission Measurements

106 Tones

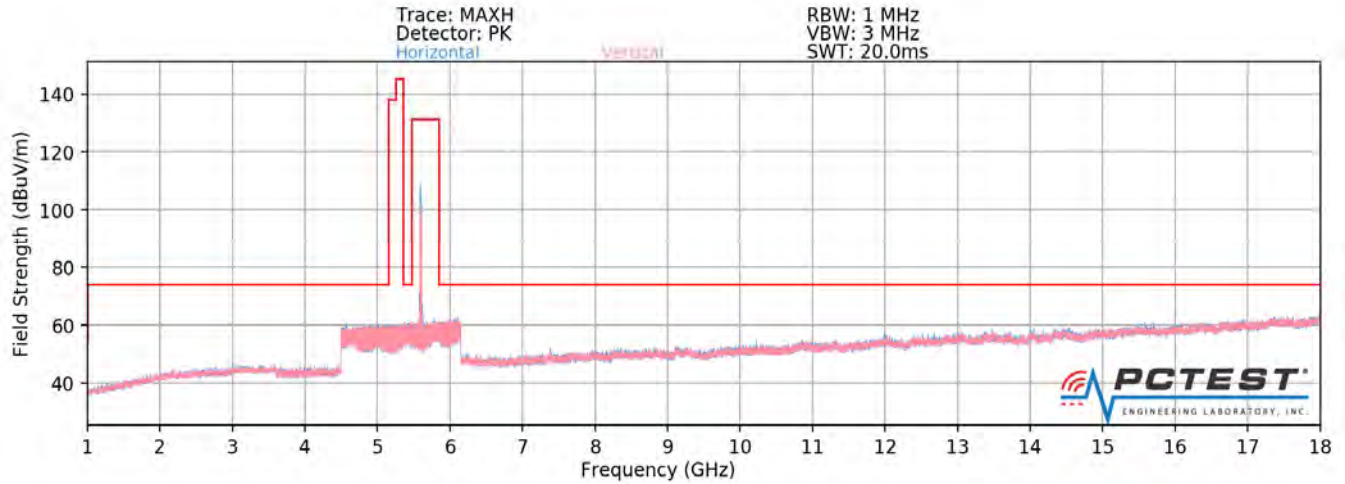


Plot 7-637. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U1 Ch. 40 – 106 Tones)

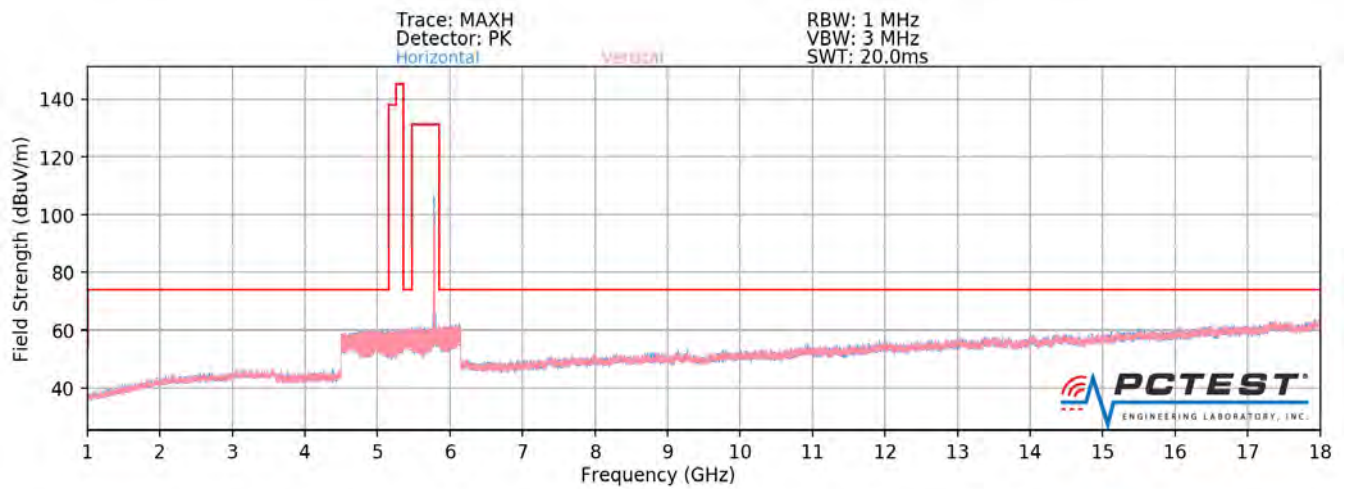


Plot 7-638. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U2A Ch. 56 – 106 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 428 of 519



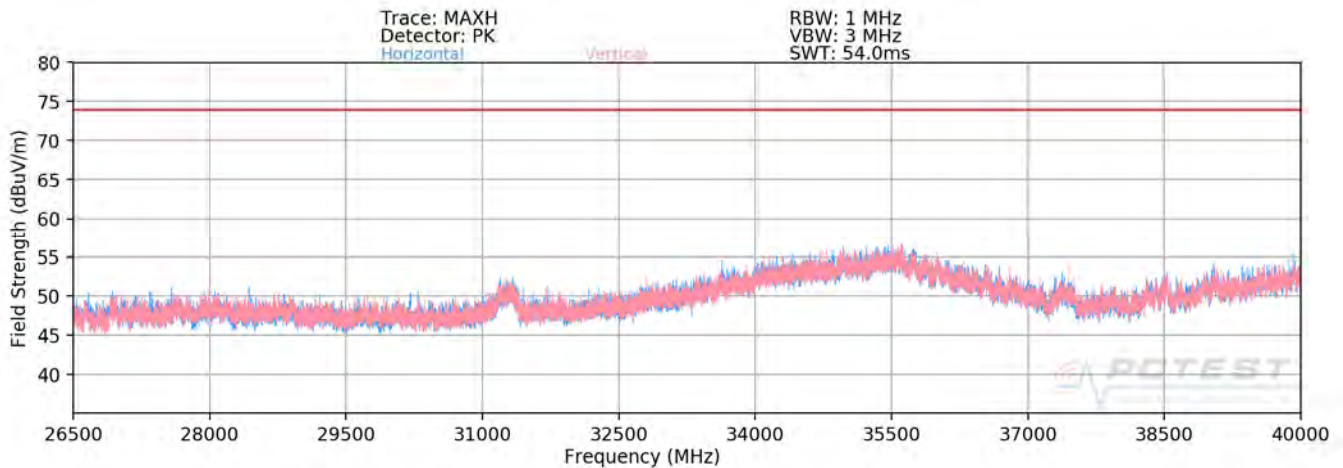
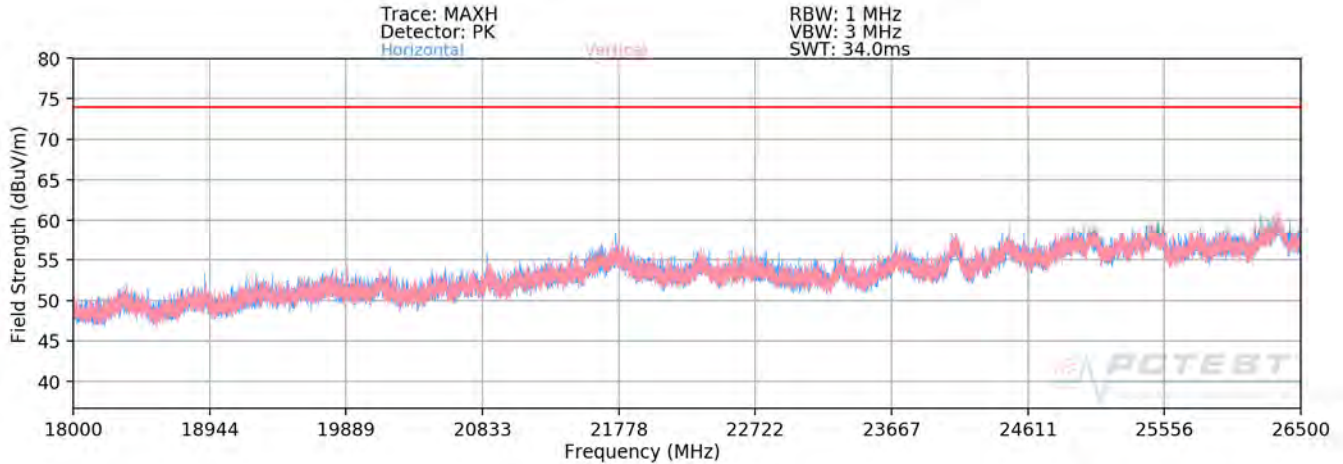
Plot 7-639. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U2C Ch. 120 – 106 Tones)



Plot 7-640. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U3 Ch. 157 – 106 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 429 of 519

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



FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 430 of 519

SISO Antenna-2 Radiated Spurious Emission Measurements (106 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:	53
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	258	232	-67.27	12.74	0.00	52.47	68.20	-15.73
* 15540.00	Average	H	116	152	-79.52	15.28	0.00	42.76	53.98	-11.22
* 15540.00	Peak	H	116	152	-69.24	15.28	0.00	53.04	73.98	-20.94
* 20720.00	Average	H	-	-	-78.08	16.92	-9.54	36.30	53.98	-17.68
* 20720.00	Peak	H	-	-	-66.72	16.92	-9.54	47.66	73.98	-26.32
25900.00	Peak	H	-	-	-65.40	19.39	-9.54	51.45	68.20	-16.75

Table 7-146. Radiated Measurements SISO ANT2 (106 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	53
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	298	55	-68.06	12.24	0.00	51.18	68.20	-17.02
* 15600.00	Average	H	-	-	-79.46	15.40	0.00	42.94	53.98	-11.03
* 15600.00	Peak	H	-	-	-69.20	15.40	0.00	53.20	73.98	-20.77
* 20800.00	Average	H	-	-	-77.94	17.39	-9.54	36.90	53.98	-17.07
* 20800.00	Peak	H	-	-	-67.19	17.39	-9.54	47.65	73.98	-26.32
26000.00	Peak	H	-	-	-65.56	19.98	-9.54	51.87	68.20	-16.33

Table 7-147. Radiated Measurements SISO ANT2 (106 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 431 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	306	41	-66.44	12.41	0.00	52.97	68.20	-15.23
* 15720.00	Average	H	-	-	-79.58	16.70	0.00	44.12	53.98	-9.86
* 15720.00	Peak	H	-	-	-69.57	16.70	0.00	54.13	73.98	-19.85
* 20960.00	Average	H	-	-	-77.82	17.29	-9.54	36.93	53.98	-17.05
* 20960.00	Peak	H	-	-	-67.01	17.29	-9.54	47.74	73.98	-26.24
26200.00	Peak	H	-	-	-65.70	19.80	-9.54	51.56	68.20	-16.64

Table 7-148. Radiated Measurements SISO ANT2 (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-67.21	12.41	0.00	52.20	68.20	-16.00
* 15720.00	Average	H	-	-	-80.10	16.70	0.00	43.60	53.98	-10.38
* 15720.00	Peak	H	-	-	-69.82	16.70	0.00	53.88	73.98	-20.10
* 20960.00	Average	H	-	-	-77.88	17.39	-9.54	36.96	53.98	-17.01
* 20960.00	Peak	H	-	-	-67.03	17.39	-9.54	47.81	73.98	-26.16
26200.00	Peak	H	-	-	-65.45	19.98	-9.54	51.98	68.20	-16.22

Table 7-149. Radiated Measurements SISO ANT2 (106 Tones)with WCP

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 432 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-67.47	13.16	0.00	52.69	68.20	-15.51
* 15780.00	Average	H	-	-	-79.65	16.21	0.00	43.56	53.98	-10.42
* 15780.00	Peak	H	-	-	-69.05	16.21	0.00	54.16	73.98	-19.82
* 21040.00	Average	H	-	-	-77.72	17.32	-9.54	37.06	53.98	-16.92
* 21040.00	Peak	H	-	-	-66.74	17.32	-9.54	48.04	73.98	-25.94
26300.00	Peak	H	-	-	-64.76	20.12	-9.54	52.82	68.20	-15.38

Table 7-150. Radiated Measurements SISO ANT2 (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	397	36	-67.84	13.66	0.00	52.82	68.20	-15.38
* 15840.00	Average	H	-	-	-79.52	15.64	0.00	43.12	53.98	-10.86
* 15840.00	Peak	H	-	-	-69.48	15.64	0.00	53.16	73.98	-20.82
* 21120.00	Average	H	-	-	-77.48	17.26	-9.54	37.24	53.98	-16.74
* 21120.00	Peak	H	-	-	-66.36	17.26	-9.54	48.36	73.98	-25.62
26400.00	Peak	H	-	-	-64.66	19.67	-9.54	52.47	68.20	-15.73

Table 7-151. Radiated Measurements SISO ANT2 (106 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 433 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-79.16	14.15	0.00	41.99	53.98	-11.99
* 10640.00	Peak	H	-	-	-68.79	14.15	0.00	52.36	73.98	-21.62
* 15960.00	Average	H	-	-	-79.61	15.01	0.00	42.40	53.98	-11.58
* 15960.00	Peak	H	-	-	-68.37	15.01	0.00	53.64	73.98	-20.34
* 21280.00	Average	H	-	-	-77.37	17.51	-9.54	37.60	53.98	-16.38
* 21280.00	Peak	H	-	-	-66.48	17.51	-9.54	48.49	73.98	-25.49
26600.00	Peak	H	-	-	-49.81	1.44	-9.54	49.09	68.20	-19.11

Table 7-152. Radiated Measurements SISO ANT2 (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-67.77	13.16	0.00	52.39	68.20	-15.81
* 15780.00	Average	V	-	-	-80.02	16.21	0.00	43.19	53.98	-10.79
* 15780.00	Peak	V	-	-	-70.12	16.21	0.00	53.09	73.98	-20.89
* 21040.00	Average	V	-	-	-77.72	17.32	-9.54	37.06	53.98	-16.92
* 21040.00	Peak	V	-	-	-66.74	17.32	-9.54	48.04	73.98	-25.94
26300.00	Peak	V	-	-	-64.76	20.12	-9.54	52.82	68.20	-15.38

Table 7-153. Radiated Measurements SISO ANT2 (106 Tones)with WCP

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 434 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-79.21	13.55	0.00	41.34	53.98	-12.64
* 11000.00	Peak	H	-	-	-67.78	13.55	0.00	52.77	73.98	-21.21
16500.00	Peak	H	-	-	-69.54	16.10	0.00	53.56	68.20	-14.64
22000.00	Peak	H	-	-	-66.29	18.25	-9.54	49.42	68.20	-18.78
27500.00	Peak	H	-	-	-48.71	0.12	-9.54	48.87	68.20	-19.33

Table 7-154. Radiated Measurements SISO ANT2 (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-79.14	13.31	0.00	41.17	53.98	-12.81
* 11200.00	Peak	H	-	-	-68.18	13.31	0.00	52.13	73.98	-21.85
16800.00	Peak	H	-	-	-69.00	17.53	0.00	55.53	68.20	-12.67
* 22400.00	Average	H	-	-	-77.62	19.00	-9.54	38.84	53.98	-15.14
* 22400.00	Peak	H	-	-	-66.41	19.00	-9.54	50.05	73.98	-23.93
28000.00	Peak	H	-	-	-48.44	0.74	-9.54	49.75	68.20	-18.45

Table 7-155. Radiated Measurements SISO ANT2 (106 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 435 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	380	44	-78.12	15.10	0.00	43.98	53.98	-10.00
* 11440.00	Peak	H	380	44	-67.72	15.10	0.00	54.38	73.98	-19.60
17160.00	Peak	H	-	-	-69.16	18.83	0.00	56.67	68.20	-11.53
* 22880.00	Average	H	-	-	-77.73	18.40	-9.54	38.13	53.98	-15.85
* 22880.00	Peak	H	-	-	-66.27	18.40	-9.54	49.59	73.98	-24.39
28600.00	Peak	H	-	-	-48.17	0.41	-9.54	49.70	68.20	-18.50

Table 7-156. Radiated Measurements SISO ANT2 (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-79.67	15.10	0.00	42.43	53.98	-11.55
* 11440.00	Peak	H	-	-	-68.21	15.10	0.00	53.89	73.98	-20.09
17160.00	Peak	H	-	-	-70.02	18.83	0.00	55.81	68.20	-12.39
* 22880.00	Average	H	-	-	-77.48	19.00	-9.54	38.98	53.98	-15.00
* 22880.00	Peak	H	-	-	-66.54	19.00	-9.54	49.92	73.98	-24.06
28600.00	Peak	H	-	-	-48.86	0.74	-9.54	49.33	68.20	-18.87

Table 7-157. Radiated Measurements SISO ANT2 (106 Tones)with WCP

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 436 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	256	41	-77.53	15.22	0.00	44.69	53.98	-9.29
* 11490.00	Peak	H	256	41	-67.27	15.22	0.00	54.95	73.98	-19.03
17235.00	Peak	H	-	-	-68.47	19.54	0.00	58.07	68.20	-10.13
* 22980.00	Average	H	-	-	-78.01	17.92	-9.54	37.37	53.98	-16.61
* 22980.00	Peak	H	-	-	-67.00	17.92	-9.54	48.38	73.98	-25.60
28725.00	Peak	H	-	-	-48.42	0.67	-9.54	49.71	68.20	-18.49

Table 7-158. Radiated Measurements SISO ANT2 (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-79.11	15.02	0.00	42.91	53.98	-11.07
* 11570.00	Peak	H	-	-	-68.44	15.02	0.00	53.58	73.98	-20.40
17355.00	Peak	H	-	-	-69.66	23.41	0.00	60.75	68.20	-7.45
23140.00	Peak	H	-	-	-66.62	18.32	-9.54	49.16	68.20	-19.04
28925.00	Peak	H	-	-	-48.27	0.75	-9.54	49.94	68.20	-18.26

Table 7-159. Radiated Measurements SISO ANT2 (106 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 437 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	400	36	-78.12	14.92	0.00	43.80	53.98	-10.18
* 11650.00	Peak	H	400	36	-67.74	14.92	0.00	54.18	73.98	-19.80
17475.00	Peak	H	-	-	-69.06	21.86	0.00	59.80	68.20	-8.40
23300.00	Peak	H	-	-	-66.92	18.77	-9.54	49.31	68.20	-18.89
29125.00	Peak	H	-	-	-48.78	-0.12	-9.54	48.56	68.20	-19.64

Table 7-160. Radiated Measurements SISO ANT2 (106 Tones)

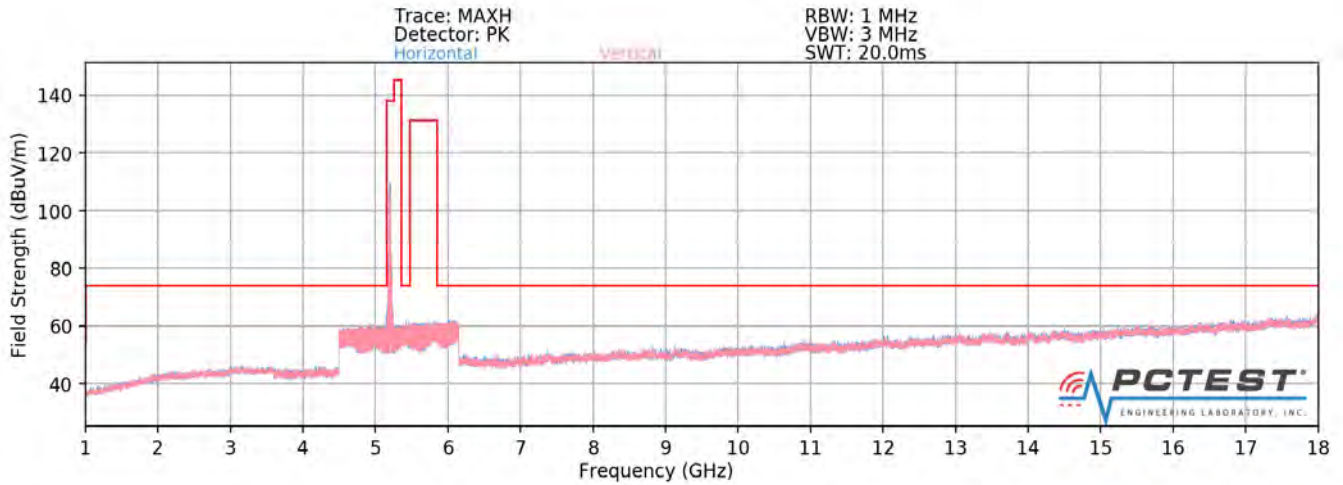
Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5745MHz
 Channel: 149

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	-	-	-78.21	15.22	0.00	44.01	53.98	-9.97
* 11490.00	Peak	H	-	-	-67.89	15.22	0.00	54.33	73.98	-19.65
17235.00	Peak	H	-	-	-68.21	19.54	0.00	58.33	68.20	-9.87
* 22980.00	Average	H	-	-	-77.81	17.92	-9.54	37.57	53.98	-16.41
* 22980.00	Peak	H	-	-	-66.64	17.92	-9.54	48.74	73.98	-25.24
28725.00	Peak	H	-	-	-48.17	0.67	-9.54	49.96	68.20	-18.24

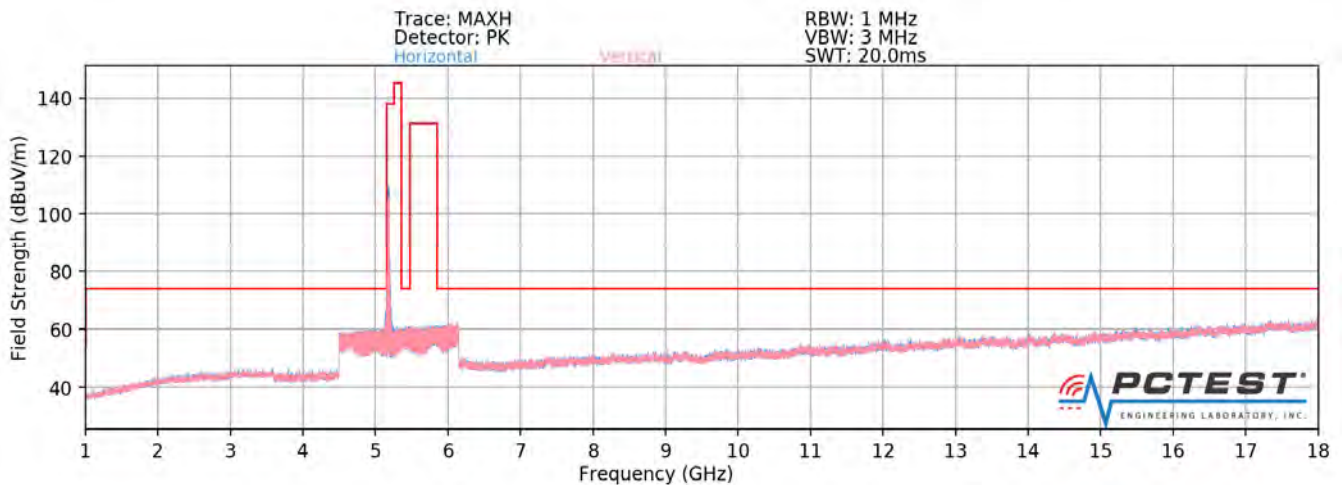
Table 7-161. Radiated Measurements SISO ANT2 (106 Tones)with WCP

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 438 of 519

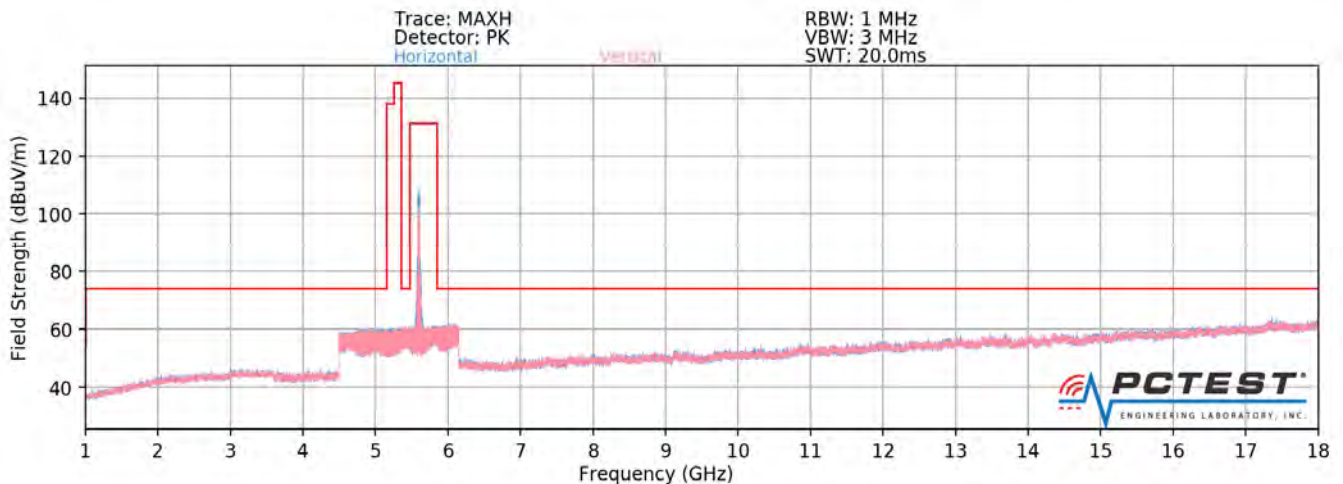
242 Tones



Plot 7-643. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U1 Ch. 40 – 242 Tones)

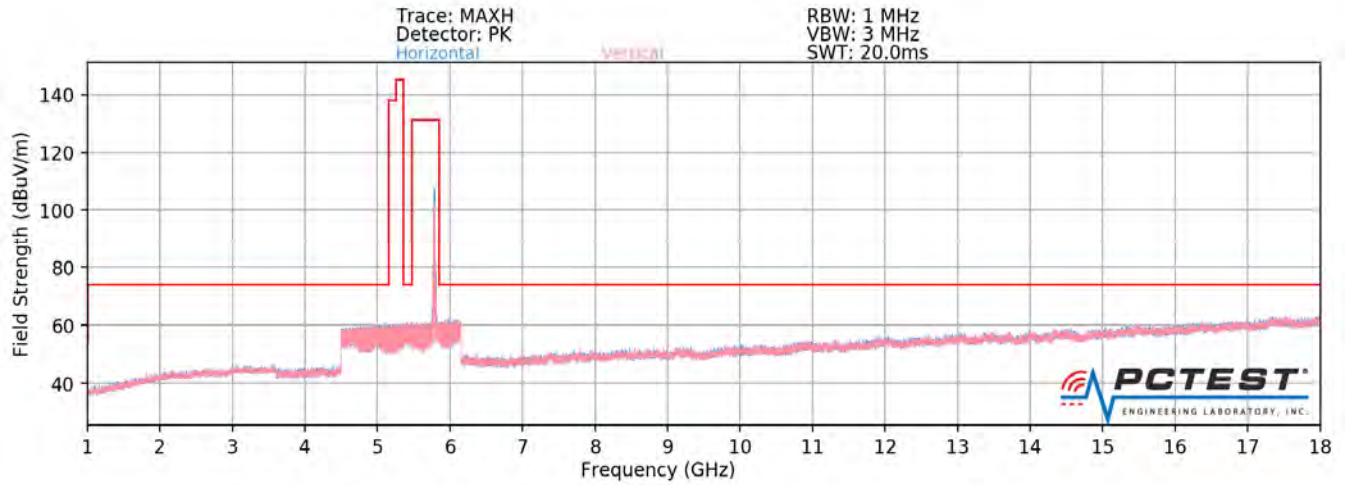


Plot 7-644. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U2A Ch. 56 – 242 Tones)



FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 439 of 519

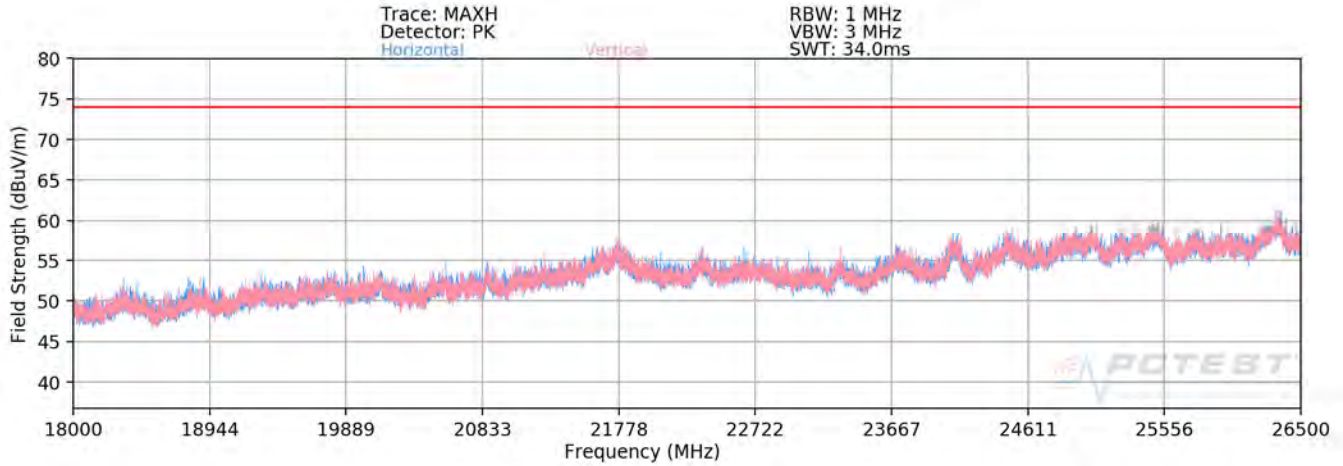
Plot 7-645. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U2C Ch. 120 – 242 Tones)



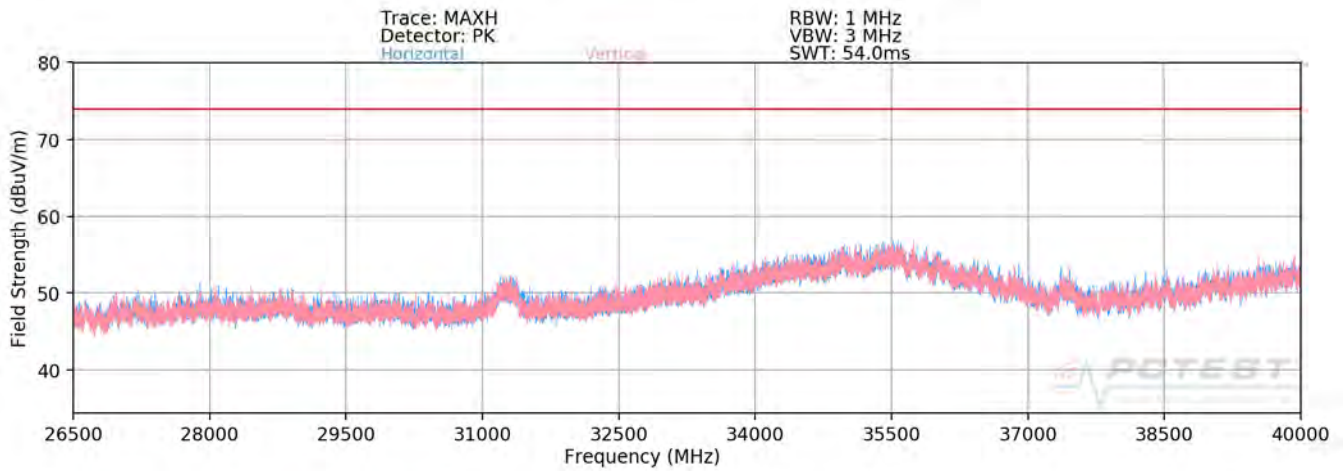
Plot 7-646. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax – U3 Ch. 157 – 242 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 440 of 519

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



Plot 7-647. Radiated Spurious Plot 18GHz - 26.5GHz SISO ANT2 (802.11ax – 242 Tones)



Plot 7-648. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT2 (802.11ax – 242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 441 of 519

SISO Antenna-2 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	283	50	-67.61	12.74	0.00	52.13	68.20	-16.07
* 15540.00	Average	H	-	-	-79.40	15.28	0.00	42.88	53.98	-11.10
* 15540.00	Peak	H	-	-	-68.92	15.28	0.00	53.36	73.98	-20.62
* 20720.00	Average	H	-	-	-77.95	16.92	-9.54	36.43	53.98	-17.55
* 20720.00	Peak	H	-	-	-67.28	16.92	-9.54	47.10	73.98	-26.88
25900.00	Peak	H	-	-	-66.13	19.39	-9.54	50.72	68.20	-17.48

Table 7-162. 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	132	82	-67.22	12.24	0.00	52.02	68.20	-16.18
* 15600.00	Average	H	-	-	-79.36	15.40	0.00	43.04	53.98	-10.93
* 15600.00	Peak	H	-	-	-69.01	15.40	0.00	53.39	73.98	-20.58
* 20800.00	Average	H	-	-	-77.99	17.39	-9.54	36.85	53.98	-17.12
* 20800.00	Peak	H	-	-	-66.05	17.39	-9.54	48.79	73.98	-25.18
26000.00	Peak	H	-	-	-65.33	19.98	-9.54	52.10	68.20	-16.10

Table 7-163. Radiated Measurements SISO ANT2 (242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 442 of 519

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	330	47	-66.63	12.41	0.00	52.78	68.20	-15.42
* 15720.00	Average	H	-	-	-79.63	16.70	0.00	44.07	53.98	-9.91
* 15720.00	Peak	H	-	-	-68.40	16.70	0.00	55.30	73.98	-18.68
* 20960.00	Average	H	-	-	-78.85	17.29	-9.54	35.90	53.98	-18.08
* 20960.00	Peak	H	-	-	-67.31	17.29	-9.54	47.44	73.98	-26.54
26200.00	Peak	H	-	-	-65.19	19.80	-9.54	52.07	68.20	-16.13

Table 7-164. 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	-	-	-68.24	13.16	0.00	51.92	68.20	-16.28
* 15780.00	Average	H	-	-	-79.69	16.21	0.00	43.52	53.98	-10.46
* 15780.00	Peak	H	-	-	-69.19	16.21	0.00	54.02	73.98	-19.96
* 21040.00	Average	H	-	-	-77.72	17.32	-9.54	37.06	53.98	-16.92
* 21040.00	Peak	H	-	-	-66.26	17.32	-9.54	48.52	73.98	-25.46
26300.00	Peak	H	-	-	-65.22	20.12	-9.54	52.36	68.20	-15.84

Table 7-165. Radiated Measurements SISO ANT2 (242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 443 of 519

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	397	338	-67.14	13.66	0.00	53.52	68.20	-14.68
* 15840.00	Average	H	-	-	-79.42	15.64	0.00	43.22	53.98	-10.76
* 15840.00	Peak	H	-	-	-68.79	15.64	0.00	53.85	73.98	-20.13
* 21120.00	Average	H	-	-	-78.36	17.26	-9.54	36.36	53.98	-17.62
* 21120.00	Peak	H	-	-	-69.51	17.26	-9.54	45.21	73.98	-28.77
26400.00	Peak	H	-	-	-65.64	19.67	-9.54	51.49	68.20	-16.71

Table 7-166. 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	393	56	-78.88	14.15	0.00	42.27	53.98	-11.71
* 10640.00	Peak	H	393	56	-68.24	14.15	0.00	52.91	73.98	-21.07
* 15960.00	Average	H	-	-	-79.49	15.01	0.00	42.52	53.98	-11.46
* 15960.00	Peak	H	-	-	-68.81	15.01	0.00	53.20	73.98	-20.78
* 21280.00	Average	H	-	-	-77.60	17.51	-9.54	37.37	53.98	-16.61
* 21280.00	Peak	H	-	-	-65.53	17.51	-9.54	49.44	73.98	-24.54
26600.00	Peak	H	-	-	-50.99	1.44	-9.54	47.91	68.20	-20.29

Table 7-167. Radiated Measurements SISO ANT2 (242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 444 of 519

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	-	-	-79.12	13.55	0.00	41.43	53.98	-12.55
* 11000.00	Peak	H	-	-	-68.47	13.55	0.00	52.08	73.98	-21.90
16500.00	Peak	H	-	-	-69.13	16.10	0.00	53.97	68.20	-14.23
22000.00	Peak	H	-	-	-66.01	18.25	-9.54	49.70	68.20	-18.50
27500.00	Peak	H	-	-	-49.03	0.12	-9.54	48.55	68.20	-19.65

Table 7-168. 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	-	-	-79.09	13.31	0.00	41.22	53.98	-12.76
* 11200.00	Peak	H	-	-	-67.86	13.31	0.00	52.45	73.98	-21.53
16800.00	Peak	H	-	-	-69.45	17.53	0.00	55.08	68.20	-13.12
* 22400.00	Average	H	-	-	-77.89	19.00	-9.54	38.57	53.98	-15.41
* 22400.00	Peak	H	-	-	-66.93	19.00	-9.54	49.53	73.98	-24.45
28000.00	Peak	H	-	-	-49.09	0.74	-9.54	49.10	68.20	-19.10

Table 7-169. Radiated Measurements SISO ANT2 (242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 445 of 519

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	295	46	-78.09	15.10	0.00	44.01	53.98	-9.97
* 11440.00	Peak	H	295	46	-67.75	15.10	0.00	54.35	73.98	-19.63
17160.00	Peak	H	-	-	-68.27	18.83	0.00	57.56	68.20	-10.64
* 22880.00	Average	H	-	-	-77.92	18.40	-9.54	37.94	53.98	-16.04
* 22880.00	Peak	H	-	-	-66.91	18.40	-9.54	48.95	73.98	-25.03
28600.00	Peak	H	-	-	-48.55	0.41	-9.54	49.32	68.20	-18.88

Table 7-170. 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	394	47	-77.79	15.22	0.00	44.43	53.98	-9.55
* 11490.00	Peak	H	394	47	-67.09	15.22	0.00	55.13	73.98	-18.85
17235.00	Peak	H	-	-	-68.75	19.54	0.00	57.79	68.20	-10.41
* 22980.00	Average	H	-	-	-77.97	17.92	-9.54	37.41	53.98	-16.57
* 22980.00	Peak	H	-	-	-66.79	17.92	-9.54	48.59	73.98	-25.39
28725.00	Peak	H	-	-	-48.92	0.67	-9.54	49.21	68.20	-18.99

Table 7-171. Radiated Measurements SISO ANT2 (242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 446 of 519

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	400	35	-77.71	15.02	0.00	44.31	53.98	-9.67
* 11570.00	Peak	H	400	35	-67.24	15.02	0.00	54.78	73.98	-19.20
17355.00	Peak	H	-	-	-69.92	23.41	0.00	60.49	68.20	-7.71
23140.00	Peak	H	-	-	-67.14	18.32	-9.54	48.64	68.20	-19.56
28925.00	Peak	H	-	-	-49.37	0.75	-9.54	48.84	68.20	-19.36

Table 7-172. 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

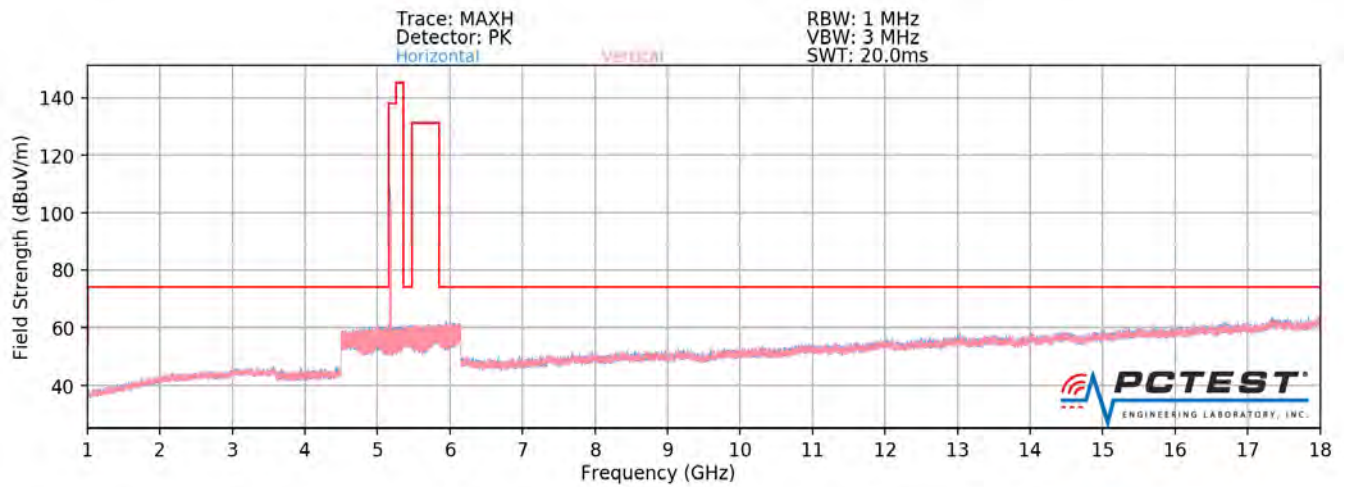
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	H	400	38	-78.08	14.92	0.00	43.84	53.98	-10.14
* 11650.00	Peak	H	400	38	-67.72	14.92	0.00	54.20	73.98	-19.78
17475.00	Peak	H	-	-	-69.52	21.86	0.00	59.34	68.20	-8.86
23300.00	Peak	H	-	-	-67.01	18.77	-9.54	49.22	68.20	-18.98
29125.00	Peak	H	-	-	-48.99	-0.12	-9.54	48.35	68.20	-19.85

Table 7-173. Radiated Measurements SISO ANT2 (242 Tones)

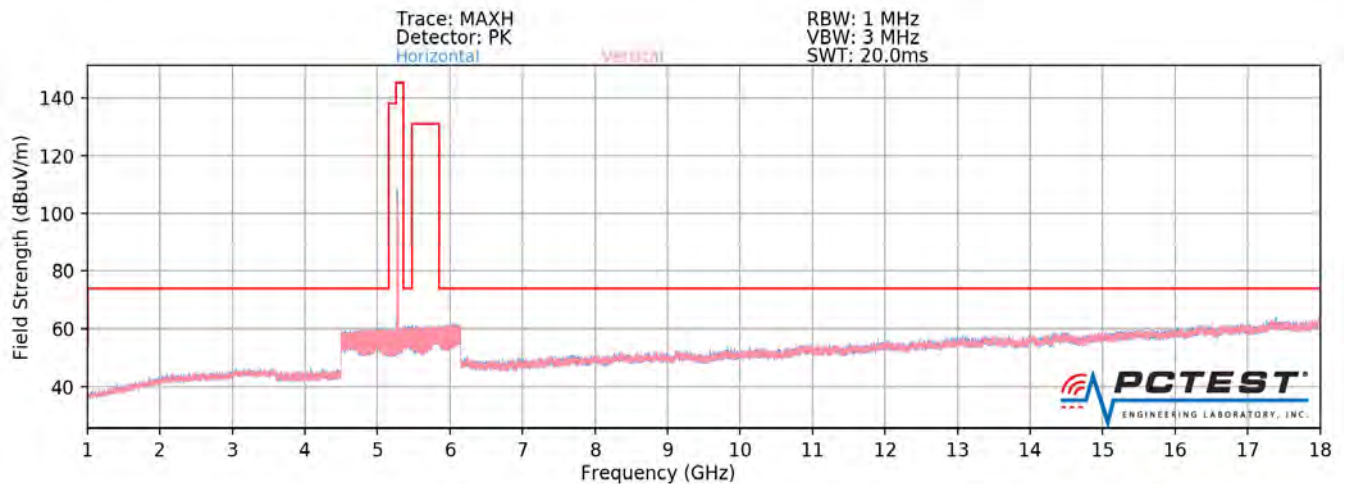
FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 447 of 519

7.6.3 MIMO Radiated Spurious Emission Measurements

106 Tones

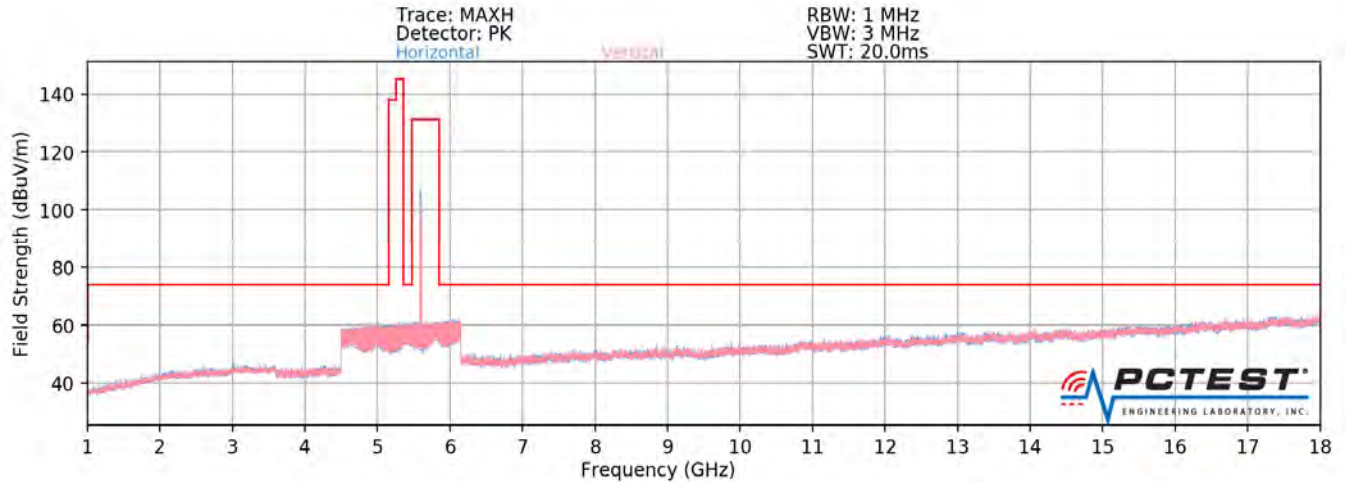


Plot 7-649. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U1 Ch. 40 – 106 Tones)

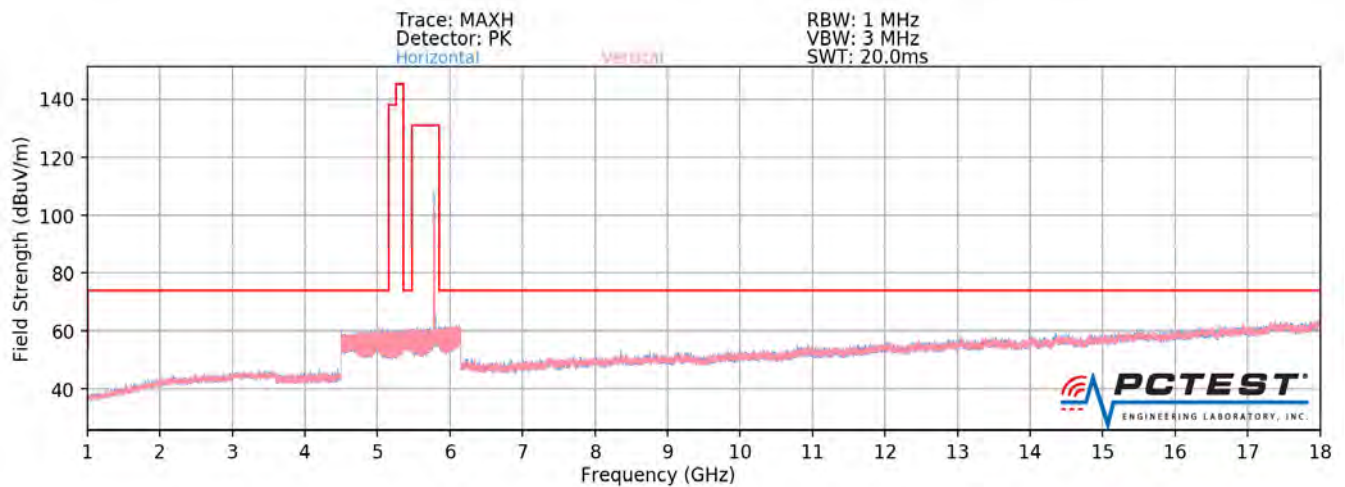


Plot 7-650. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U2A Ch. 56 – 106 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 448 of 519



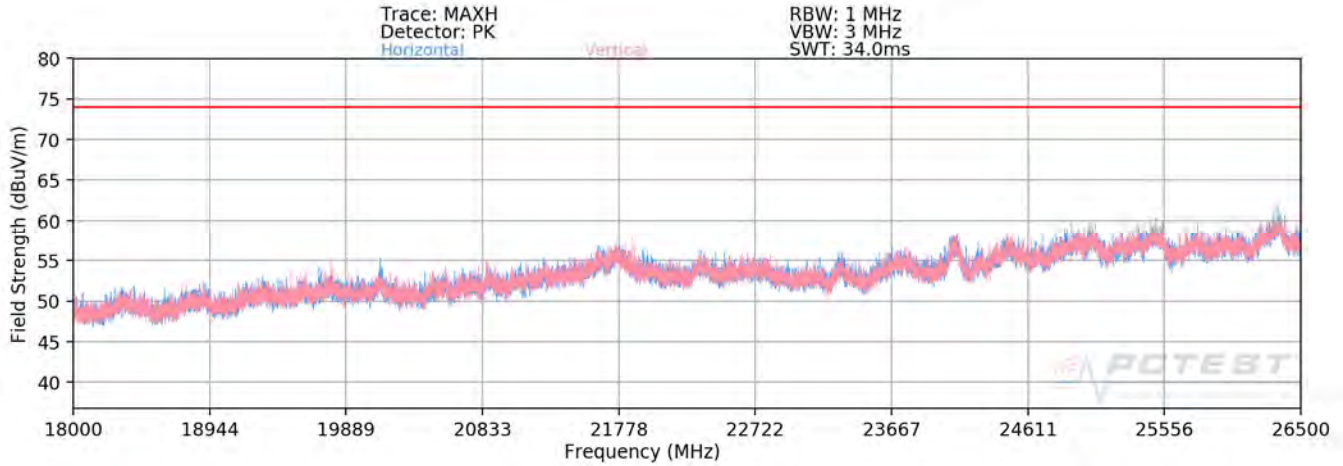
Plot 7-651. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U2C Ch. 120 – 106 Tones)



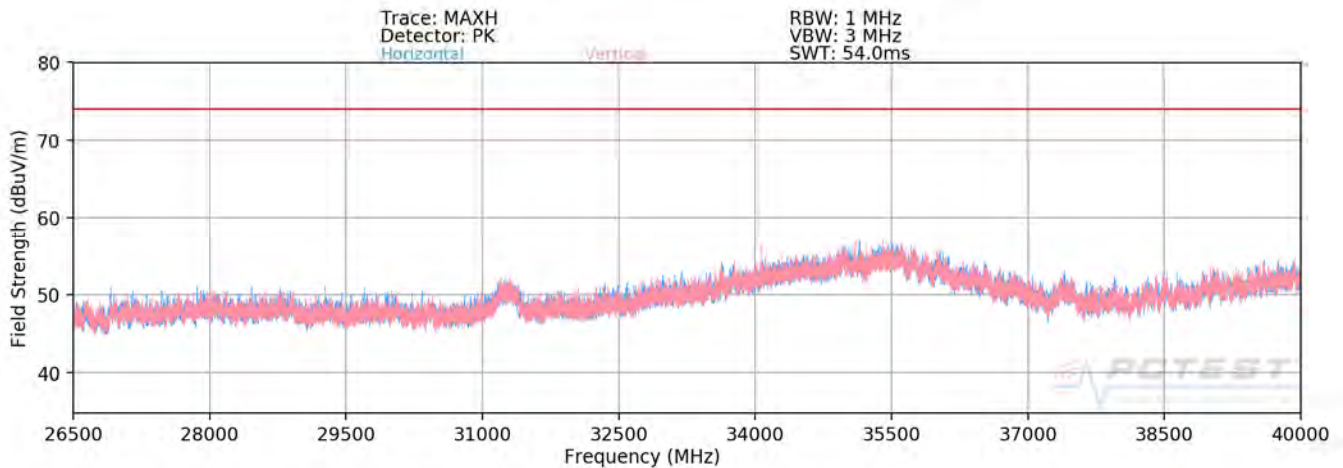
Plot 7-652. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U3 Ch. 157 – 106 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 449 of 519

MIMO Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-653. Radiated Spurious Plot 18GHz - 26.5GHz MIMO (802.11ax – 106 Tones)



Plot 7-654. Radiated Spurious Plot 26.5GHz - 40GHz MIMO (802.11ax – 106 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 450 of 519

MIMO Radiated Spurious Emission Measurements (106 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:	53
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	332	40	-61.01	12.74	0.00	58.73	68.20	-9.47
* 15540.00	Average	H	-	-	-79.58	15.28	0.00	42.70	53.98	-11.28
* 15540.00	Peak	H	-	-	-68.46	15.28	0.00	53.82	73.98	-20.16
* 20720.00	Average	H	-	-	-77.86	16.92	-9.54	36.52	53.98	-17.46
* 20720.00	Peak	H	-	-	-66.47	16.92	-9.54	47.91	73.98	-26.07
25900.00	Peak	H	-	-	-65.49	19.39	-9.54	51.36	68.20	-16.84

Table 7-174. Radiated Measurements MIMO (106 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	53
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	294	55	-76.73	12.24	0.00	42.51	68.20	-25.69
* 15600.00	Average	H	-	-	-79.58	15.40	0.00	42.82	53.98	-11.15
* 15600.00	Peak	H	-	-	-78.29	15.40	0.00	44.11	73.98	-29.86
* 20800.00	Average	H	-	-	-77.68	17.39	-9.54	37.16	53.98	-16.81
* 20800.00	Peak	H	-	-	-67.06	17.39	-9.54	47.78	73.98	-26.19
26000.00	Peak	H	-	-	-64.68	19.98	-9.54	52.75	68.20	-15.45

Table 7-175. Radiated Measurements MIMO (106 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 451 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	393	293	-65.79	12.41	0.00	53.62	68.20	-14.58
* 15720.00	Average	H	-	-	-79.74	16.70	0.00	43.96	53.98	-10.02
* 15720.00	Peak	H	-	-	-69.38	16.70	0.00	54.32	73.98	-19.66
* 20960.00	Average	H	-	-	-77.63	17.29	-9.54	37.12	53.98	-16.86
* 20960.00	Peak	H	-	-	-66.98	17.29	-9.54	47.77	73.98	-26.21
26200.00	Peak	H	-	-	-65.16	19.80	-9.54	52.10	68.20	-16.10

Table 7-176. Radiated Measurements MIMO (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-62.76	12.74	0.00	56.98	68.20	-11.22
* 15540.00	Average	H	-	-	-80.12	15.28	0.00	42.16	53.98	-11.82
* 15540.00	Peak	H	-	-	-68.22	15.28	0.00	54.06	73.98	-19.92
* 20720.00	Average	H	-	-	-77.84	17.39	-9.54	37.00	53.98	-16.97
* 20720.00	Peak	H	-	-	-66.81	17.39	-9.54	48.03	73.98	-25.94
25900.00	Peak	H	-	-	-65.08	19.98	-9.54	52.35	68.20	-15.85

Table 7-177. Radiated Measurements MIMO (106 Tones)with WCP

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 452 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	400	293	-67.64	13.16	0.00	52.52	68.20	-15.68
* 15780.00	Average	H	-	-	-79.89	16.21	0.00	43.32	53.98	-10.66
* 15780.00	Peak	H	-	-	-68.25	16.21	0.00	54.96	73.98	-19.02
* 21040.00	Average	H	-	-	-77.50	17.32	-9.54	37.28	53.98	-16.70
* 21040.00	Peak	H	-	-	-67.09	17.32	-9.54	47.69	73.98	-26.29
26300.00	Peak	H	-	-	-65.21	20.12	-9.54	52.37	68.20	-15.83

Table 7-178. Radiated Measurements MIMO (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	400	296	-67.64	13.66	0.00	53.02	68.20	-15.18
* 15840.00	Average	H	-	-	-79.64	15.64	0.00	43.00	53.98	-10.98
* 15840.00	Peak	H	-	-	-68.37	15.64	0.00	54.27	73.98	-19.71
* 21120.00	Average	H	-	-	-77.87	17.26	-9.54	36.85	53.98	-17.13
* 21120.00	Peak	H	-	-	-67.04	17.26	-9.54	47.68	73.98	-26.30
26400.00	Peak	H	-	-	-64.35	19.67	-9.54	52.78	68.20	-15.42

Table 7-179. Radiated Measurements MIMO (106 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 453 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-79.32	14.15	0.00	41.83	53.98	-12.15
* 10640.00	Peak	H	-	-	-68.24	14.15	0.00	52.91	73.98	-21.07
* 15960.00	Average	H	-	-	-79.53	15.01	0.00	42.48	53.98	-11.50
* 15960.00	Peak	H	-	-	-68.14	15.01	0.00	53.87	73.98	-20.11
* 21280.00	Average	H	-	-	-77.65	17.51	-9.54	37.32	53.98	-16.66
* 21280.00	Peak	H	-	-	-67.22	17.51	-9.54	47.75	73.98	-26.23
26600.00	Peak	H	-	-	-49.18	1.44	-9.54	49.72	68.20	-18.48

Table 7-180. Radiated Measurements MIMO (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-68.65	13.66	0.00	52.01	68.20	-16.19
* 15840.00	Average	H	-	-	-80.02	15.64	0.00	42.62	53.98	-11.36
* 15840.00	Peak	H	-	-	-68.77	15.64	0.00	53.87	73.98	-20.11
* 21120.00	Average	H	-	-	-77.67	17.26	-9.54	37.05	53.98	-16.93
* 21120.00	Peak	H	-	-	-66.91	17.26	-9.54	47.81	73.98	-26.17
26400.00	Peak	H	-	-	-64.87	19.67	-9.54	52.26	68.20	-15.94

Table 7-181. Radiated Measurements MIMO (106 Tones)with WCP

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 454 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-79.21	13.55	0.00	41.34	53.98	-12.64
* 11000.00	Peak	H	-	-	-68.39	13.55	0.00	52.16	73.98	-21.82
16500.00	Peak	H	-	-	-68.61	16.10	0.00	54.49	68.20	-13.71
22000.00	Peak	H	-	-	-67.08	18.25	-9.54	48.63	68.20	-19.57
27500.00	Peak	H	-	-	-48.87	0.12	-9.54	48.71	68.20	-19.49

Table 7-182. Radiated Measurements MIMO (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-79.23	13.31	0.00	41.08	53.98	-12.90
* 11200.00	Peak	H	-	-	-68.31	13.31	0.00	52.00	73.98	-21.98
16800.00	Peak	H	-	-	-66.79	17.53	0.00	57.74	68.20	-10.46
* 22400.00	Average	H	-	-	-78.08	19.00	-9.54	38.38	53.98	-15.60
* 22400.00	Peak	H	-	-	-66.81	19.00	-9.54	49.65	73.98	-24.33
28000.00	Peak	H	-	-	-49.08	0.74	-9.54	49.11	68.20	-19.09

Table 7-183. Radiated Measurements MIMO (106 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 455 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-79.44	15.10	0.00	42.66	53.98	-11.32
* 11440.00	Peak	H	-	-	-68.29	15.10	0.00	53.81	73.98	-20.17
17160.00	Peak	H	-	-	-68.16	18.83	0.00	57.67	68.20	-10.53
* 22880.00	Average	H	-	-	-77.89	18.40	-9.54	37.97	53.98	-16.01
* 22880.00	Peak	H	-	-	-66.57	18.40	-9.54	49.29	73.98	-24.69
28600.00	Peak	H	-	-	-49.01	0.41	-9.54	48.86	68.20	-19.34

Table 7-184. Radiated Measurements MIMO (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-79.55	13.31	0.00	40.76	53.98	-13.22
* 11200.00	Peak	V	-	-	-68.02	13.31	0.00	52.29	73.98	-21.69
16800.00	Peak	V	-	-	-67.07	17.53	0.00	57.46	68.20	-10.74
* 22400.00	Average	V	-	-	-77.68	19.00	-9.54	38.78	53.98	-15.20
* 22400.00	Peak	V	-	-	-66.57	19.00	-9.54	49.89	73.98	-24.09
28000.00	Peak	V	-	-	-49.26	0.74	-9.54	48.93	68.20	-19.27

Table 7-185. Radiated Measurements MIMO (106 Tones)with WCP

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 456 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-80.56	18.31	0.00	44.75	53.98	-9.23
* 11490.00	Peak	H	-	-	-69.45	18.31	0.00	55.86	73.98	-18.12
17235.00	Peak	H	-	-	-69.97	25.66	0.00	62.69	68.20	-5.51
* 22980.00	Average	H	-	-	-77.92	17.92	-9.54	37.46	53.98	-16.52
* 22980.00	Peak	H	-	-	-66.85	17.92	-9.54	48.53	73.98	-25.45
28725.00	Peak	H	-	-	-49.18	0.67	-9.54	48.95	69.20	-20.25

Table 7-186. Radiated Measurements MIMO (106 Tones)

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	297	64	-80.11	18.06	0.00	44.95	53.98	-9.03
* 11570.00	Peak	H	297	64	-68.84	18.06	0.00	56.22	73.98	-17.76
17355.00	Peak	H	-	-	-69.43	27.10	0.00	64.67	68.20	-3.53
23140.00	Peak	H	-	-	-66.78	18.32	-9.54	49.00	68.20	-19.20
28925.00	Peak	H	-	-	-49.03	0.75	-9.54	49.18	68.20	-19.02

Table 7-187. Radiated Measurements MIMO (106 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 457 of 519

Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 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	-	-	-80.40	18.25	0.00	44.85	53.98	-9.13
* 11650.00	Peak	H	-	-	-68.72	18.25	0.00	56.53	73.98	-17.45
17475.00	Peak	H	-	-	-69.20	26.28	0.00	64.08	68.20	-4.12
23300.00	Peak	H	-	-	-66.46	18.77	-9.54	49.77	68.20	-18.43
29125.00	Peak	H	-	-	-48.87	-0.12	-9.54	48.47	68.20	-19.73

Table 7-188. Radiated Measurements MIMO (106 Tones)

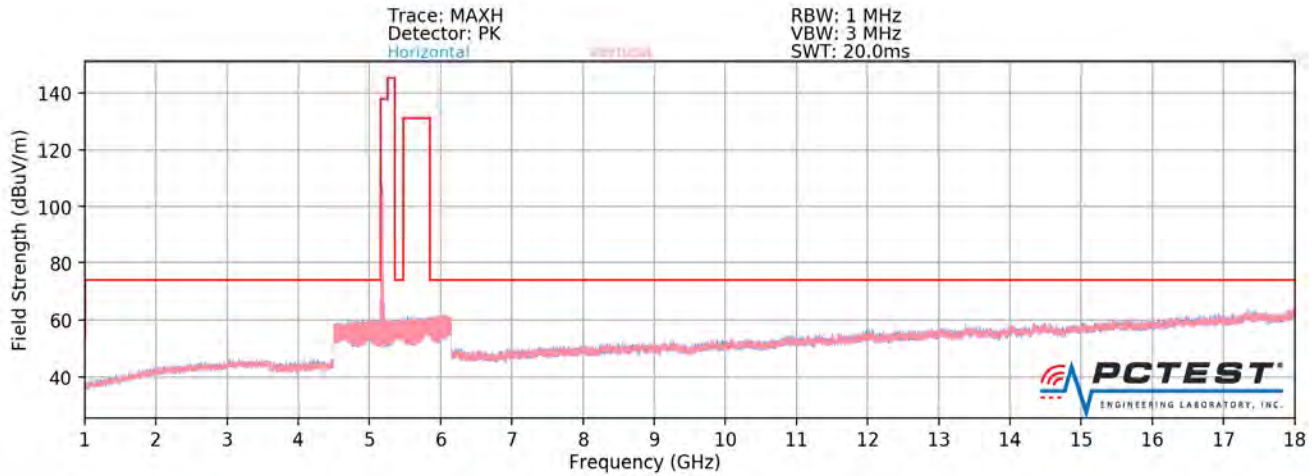
Worst Case Mode: 802.11ax (20MHz BW)
 Worst Case Transfer Rate: MCS0
 RU Index: 53
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5785MHz
 Channel: 157

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	-	-	-79.87	18.06	0.00	45.19	53.98	-8.79
* 11570.00	Peak	H	-	-	-68.65	18.06	0.00	56.41	73.98	-17.57
17355.00	Peak	H	-	-	-70.02	27.10	0.00	64.08	68.20	-4.12
23140.00	Peak	H	-	-	-67.18	17.92	-9.54	48.20	68.20	-20.00
28925.00	Peak	H	-	-	-49.12	0.67	-9.54	49.01	68.20	-19.19

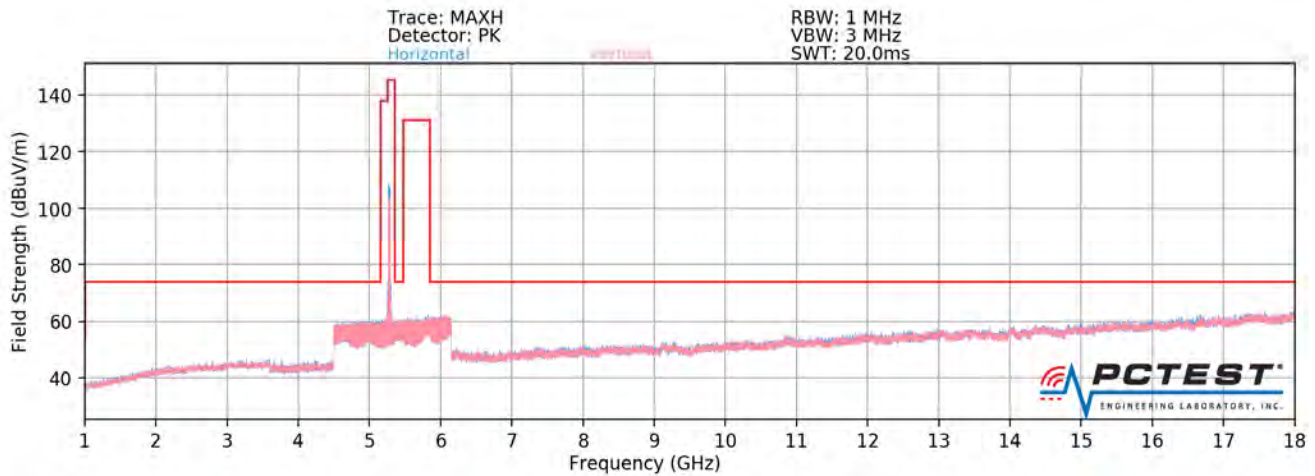
Table 7-189. Radiated Measurements MIMO (106 Tones)with WCP

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 458 of 519

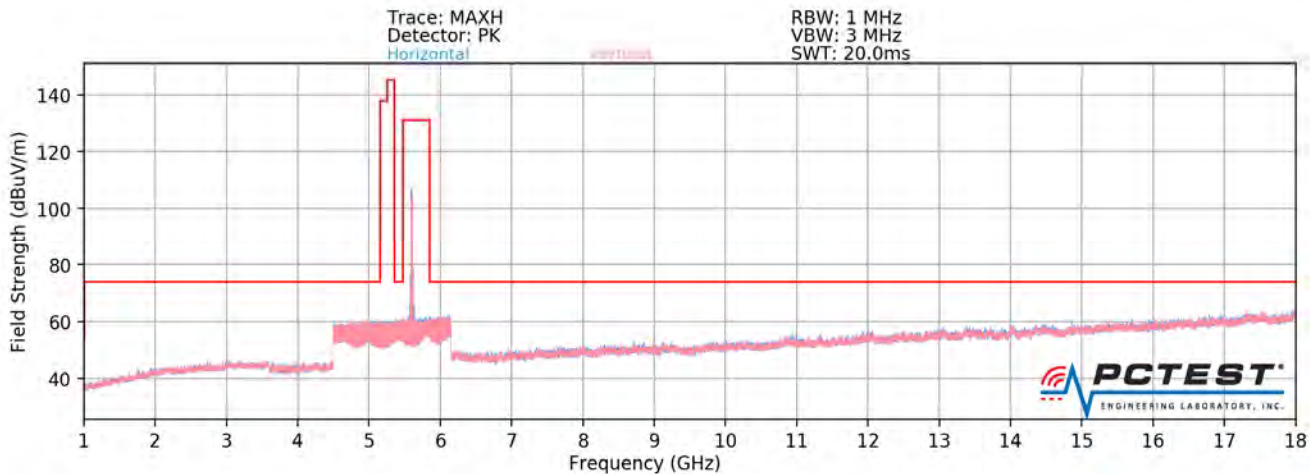
242 Tones



Plot 7-655. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U1 Ch. 40 – 242 Tones)

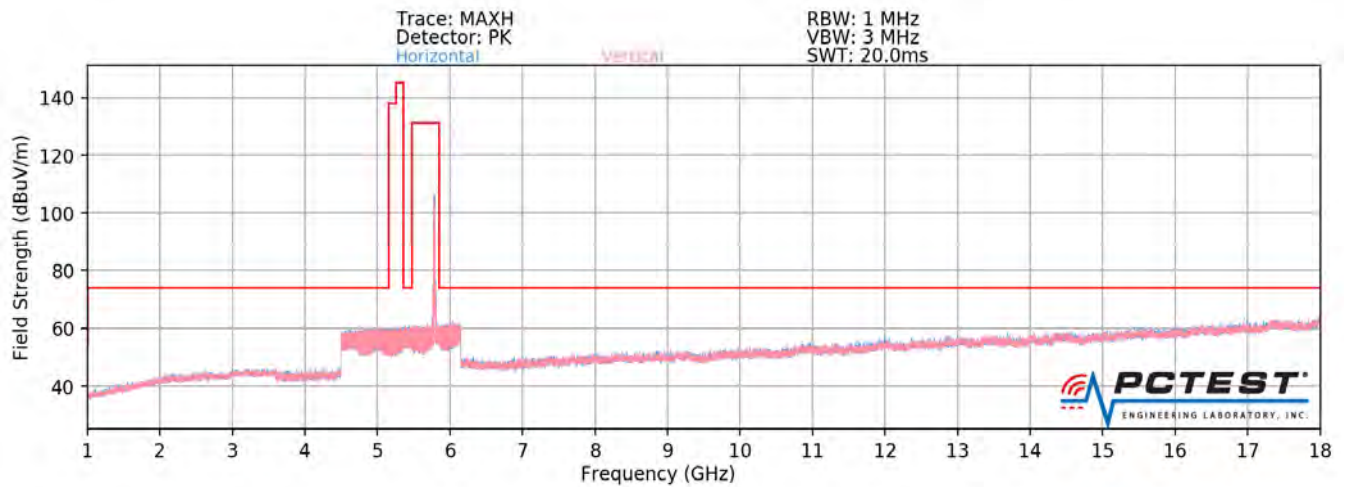


Plot 7-656. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U2A Ch. 56 – 242 Tones)



Plot 7-657. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U2C Ch. 120 – 242 Tones)

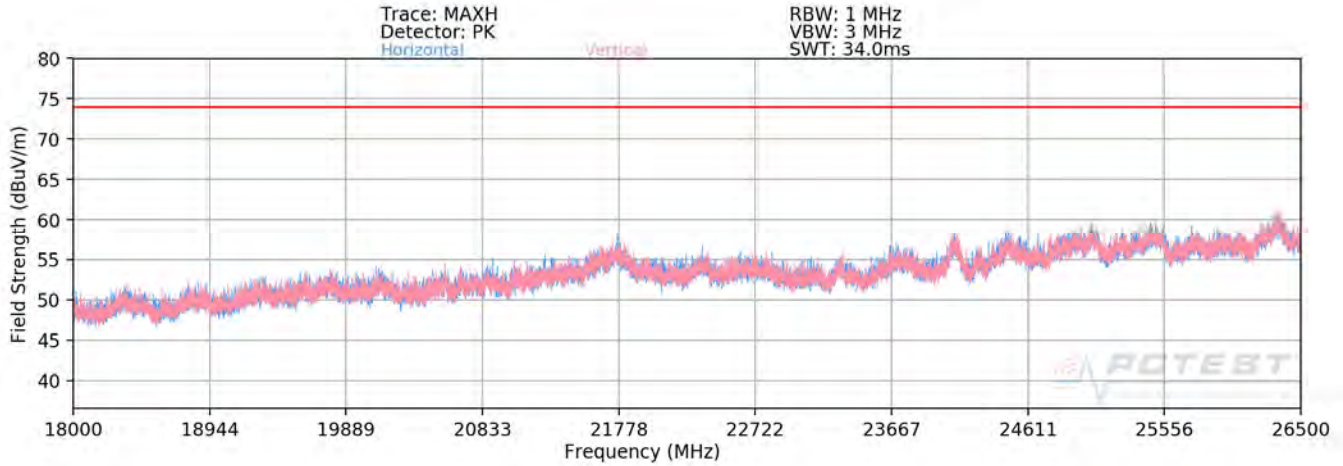
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 459 of 519



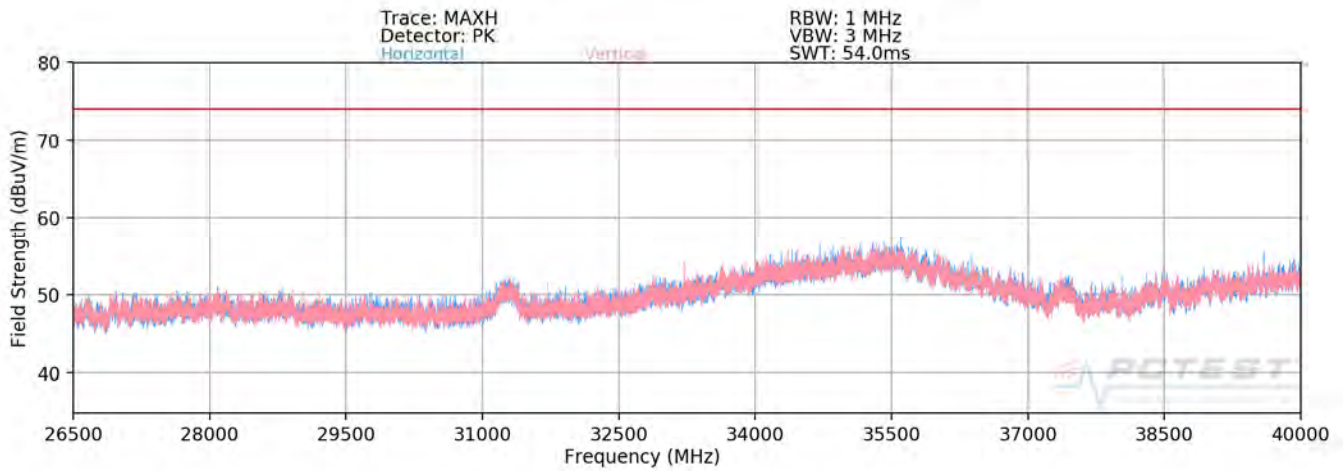
Plot 7-658. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U3 Ch. 157 – 242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 460 of 519

MIMO Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-659. Radiated Spurious Plot 18GHz - 26.5GHz MIMO (802.11ax – 242 Tones)



Plot 7-660. Radiated Spurious Plot 26.5GHz - 40GHz MIMO (802.11ax – 242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 461 of 519

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	H	391	291	-66.30	12.74	0.00	53.44	68.20	-14.76
* 15540.00	Average	H	-	-	-79.44	15.28	0.00	42.84	53.98	-11.14
* 15540.00	Peak	H	-	-	-68.66	15.28	0.00	53.62	73.98	-20.36
* 20720.00	Average	H	-	-	-77.89	16.92	-9.54	36.49	53.98	-17.49
* 20720.00	Peak	H	-	-	-66.75	16.92	-9.54	47.63	73.98	-26.35
25900.00	Peak	H	-	-	-65.59	19.39	-9.54	51.26	68.20	-16.94

Table 7-190. 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	H	-	-	-67.25	12.24	0.00	51.99	68.20	-16.21
* 15600.00	Average	H	-	-	-79.54	15.40	0.00	42.86	53.98	-11.11
* 15600.00	Peak	H	-	-	-69.03	15.40	0.00	53.37	73.98	-20.60
* 20800.00	Average	H	-	-	-77.92	17.39	-9.54	36.92	53.98	-17.05
* 20800.00	Peak	H	-	-	-66.60	17.39	-9.54	48.24	73.98	-25.73
26000.00	Peak	H	-	-	-65.92	19.98	-9.54	51.51	68.20	-16.69

Table 7-191. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 462 of 519

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	390	294	-65.67	12.41	0.00	53.74	68.20	-14.46
* 15720.00	Average	H	-	-	-79.77	16.70	0.00	43.93	53.98	-10.05
* 15720.00	Peak	H	-	-	-69.00	16.70	0.00	54.70	73.98	-19.28
* 20960.00	Average	H	-	-	-78.01	17.29	-9.54	36.74	53.98	-17.24
* 20960.00	Peak	H	-	-	-65.82	17.29	-9.54	48.93	73.98	-25.05
26200.00	Peak	H	-	-	-64.84	19.80	-9.54	52.42	68.20	-15.78

Table 7-192. 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	H	400	295	-66.31	13.16	0.00	53.85	68.20	-14.35
* 15780.00	Average	H	-	-	-79.90	16.21	0.00	43.31	53.98	-10.67
* 15780.00	Peak	H	-	-	-69.20	16.21	0.00	54.01	73.98	-19.97
* 21040.00	Average	H	-	-	-77.59	17.32	-9.54	37.19	53.98	-16.79
* 21040.00	Peak	H	-	-	-66.32	17.32	-9.54	48.46	73.98	-25.52
26300.00	Peak	H	-	-	-64.95	20.12	-9.54	52.63	68.20	-15.57

Table 7-193. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 463 of 519

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	400	291	-66.74	13.66	0.00	53.92	68.20	-14.28
* 15840.00	Average	H	-	-	-79.71	15.64	0.00	42.93	53.98	-11.05
* 15840.00	Peak	H	-	-	-69.26	15.64	0.00	53.38	73.98	-20.60
* 21120.00	Average	H	-	-	-77.82	17.26	-9.54	36.90	53.98	-17.08
* 21120.00	Peak	H	-	-	-66.59	17.26	-9.54	48.13	73.98	-25.85
26400.00	Peak	H	-	-	-65.41	19.67	-9.54	51.72	68.20	-16.48

Table 7-194. 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	H	-	-	-79.12	14.15	0.00	42.03	53.98	-11.95
* 10640.00	Peak	H	-	-	-68.17	14.15	0.00	52.98	73.98	-21.00
* 15960.00	Average	H	-	-	-79.57	15.01	0.00	42.44	53.98	-11.54
* 15960.00	Peak	H	-	-	-68.63	15.01	0.00	53.38	73.98	-20.60
* 21280.00	Average	H	-	-	-77.74	17.51	-9.54	37.23	53.98	-16.75
* 21280.00	Peak	H	-	-	-66.22	17.51	-9.54	48.75	73.98	-25.23
26600.00	Peak	H	-	-	-50.56	1.44	-9.54	48.34	68.20	-19.86

Table 7-195. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 464 of 519

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	-	-	-79.05	13.55	0.00	41.50	53.98	-12.48
* 11000.00	Peak	H	-	-	-68.33	13.55	0.00	52.22	73.98	-21.76
16500.00	Peak	H	-	-	-69.03	16.10	0.00	54.07	68.20	-14.13
22000.00	Peak	H	-	-	-65.51	18.25	-9.54	50.20	68.20	-18.00
27500.00	Peak	H	-	-	-48.91	0.12	-9.54	48.67	68.20	-19.53

Table 7-196. 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	H	-	-	-79.11	13.31	0.00	41.20	53.98	-12.78
* 11200.00	Peak	H	-	-	-68.12	13.31	0.00	52.19	73.98	-21.79
16800.00	Peak	H	-	-	-68.87	17.53	0.00	55.66	68.20	-12.54
* 22400.00	Average	H	-	-	-77.84	19.00	-9.54	38.62	53.98	-15.36
* 22400.00	Peak	H	-	-	-66.58	19.00	-9.54	49.88	73.98	-24.10
28000.00	Peak	H	-	-	-48.74	0.74	-9.54	49.45	68.20	-18.75

Table 7-197. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 465 of 519

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	-	-	-79.44	15.10	0.00	42.66	53.98	-11.32
* 11440.00	Peak	H	-	-	-67.78	15.10	0.00	54.32	73.98	-19.66
17160.00	Peak	H	-	-	-67.12	18.83	0.00	58.71	68.20	-9.49
* 22880.00	Average	H	-	-	-77.92	18.40	-9.54	37.94	53.98	-16.04
* 22880.00	Peak	H	-	-	-66.84	18.40	-9.54	49.02	73.98	-24.96
28600.00	Peak	H	-	-	-49.51	0.41	-9.54	48.36	68.20	-19.84

Table 7-198. 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	H	311	40	-78.59	15.22	0.00	43.63	53.98	-10.35
* 11490.00	Peak	H	311	40	-67.58	15.22	0.00	54.64	73.98	-19.34
17235.00	Peak	H	-	-	-68.88	19.54	0.00	57.66	68.20	-10.54
* 22980.00	Average	H	-	-	-79.41	17.92	-9.54	35.97	53.98	-18.01
* 22980.00	Peak	H	-	-	-67.34	17.92	-9.54	48.04	73.98	-25.94
28725.00	Peak	H	-	-	-49.67	0.67	-9.54	48.46	69.20	-20.74

Table 7-199. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 466 of 519

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	400	29	-78.25	15.02	0.00	43.77	53.98	-10.21
* 11570.00	Peak	H	400	29	-66.51	15.02	0.00	55.51	73.98	-18.47
17355.00	Peak	H	-	-	-70.09	23.41	0.00	60.32	68.20	-7.88
23140.00	Peak	H	-	-	-66.70	18.32	-9.54	49.08	68.20	-19.12
28925.00	Peak	H	-	-	-50.03	0.75	-9.54	48.18	68.20	-20.02

Table 7-200. 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	H	398	47	-78.41	14.92	0.00	43.51	53.98	-10.47
* 11650.00	Peak	H	398	47	-66.76	14.92	0.00	55.16	73.98	-18.82
17475.00	Peak	H	-	-	-68.93	21.86	0.00	59.93	68.20	-8.27
23300.00	Peak	H	-	-	-65.86	18.77	-9.54	50.37	68.20	-17.83
29125.00	Peak	H	-	-	-49.61	-0.12	-9.54	47.73	68.20	-20.47

Table 7-201. Radiated Measurements MIMO (242 Tones)

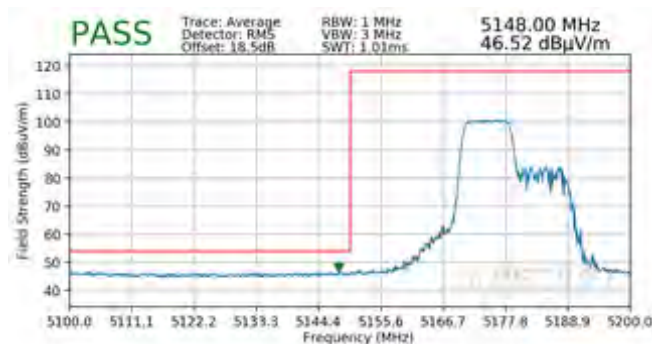
FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 467 of 519

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

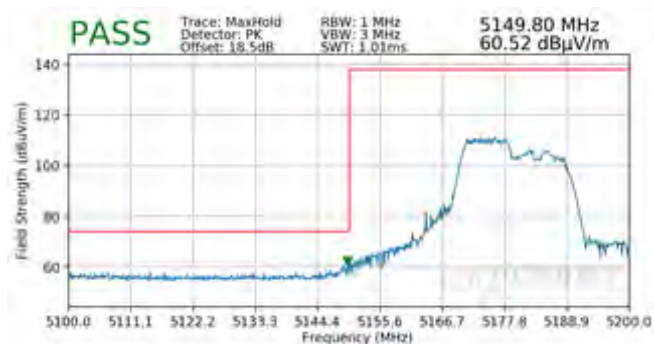
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]; RSS-Gen [8.9]

106 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	53
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

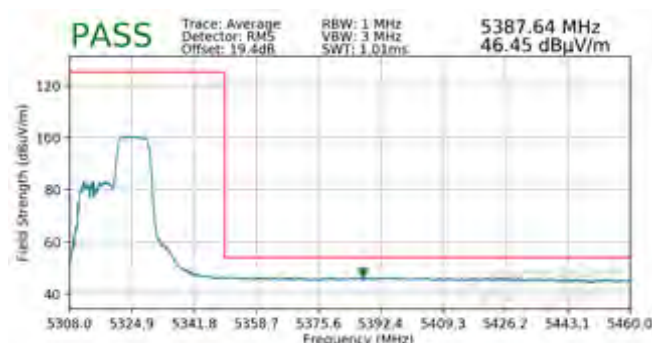


Plot 7-661. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 106 Tones)



Plot 7-662. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1 – 106 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	54
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



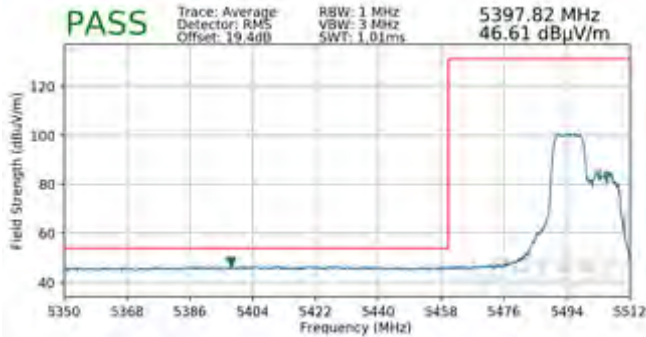
Plot 7-663. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A – 106 Tones)



Plot 7-664. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 106 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 468 of 519

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	53
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100

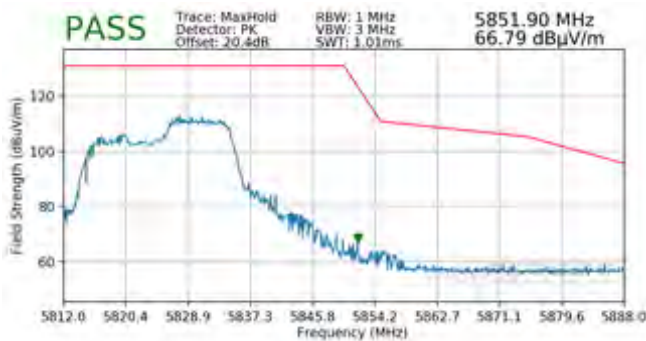


Plot 7-665. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C – 106 Tones)



Plot 7-666. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C – 106 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	54
Distance of Measurements:	3 Meters
Operating Frequency:	5825MHz
Channel:	165

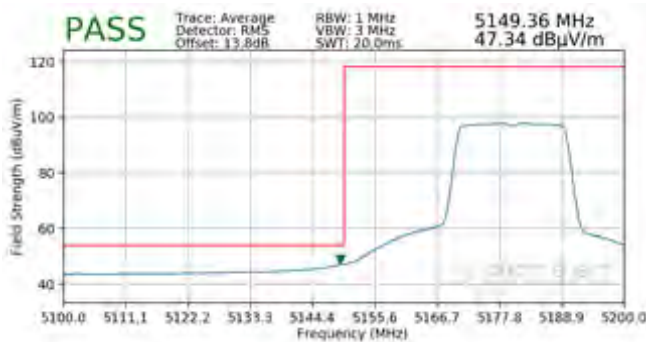


Plot 7-667. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3 – 106 Tones)

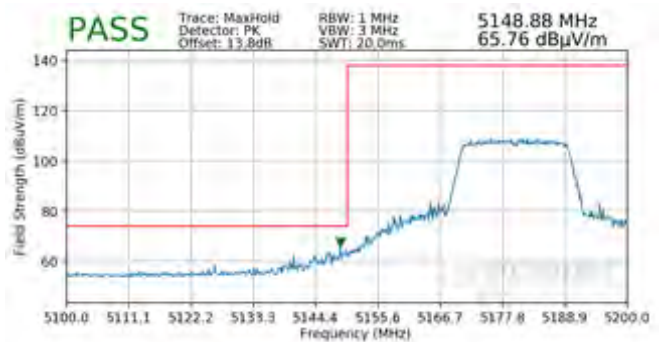
FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset	Page 469 of 519

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

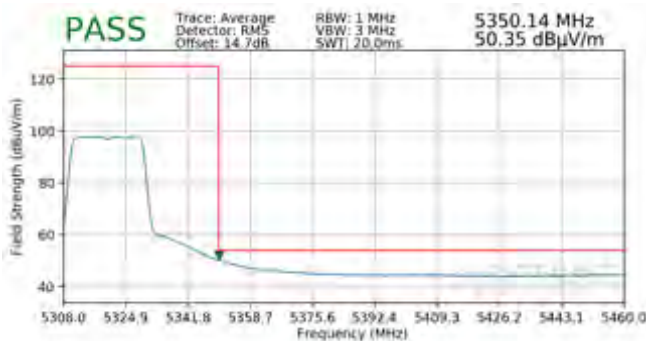


Plot 7-668. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 242 Tones)

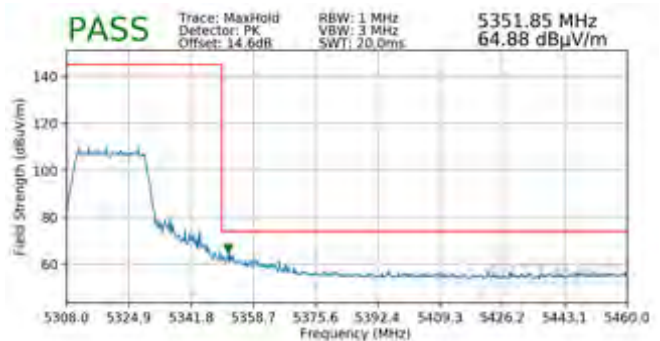


Plot 7-669. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1 – 242 Tones)

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



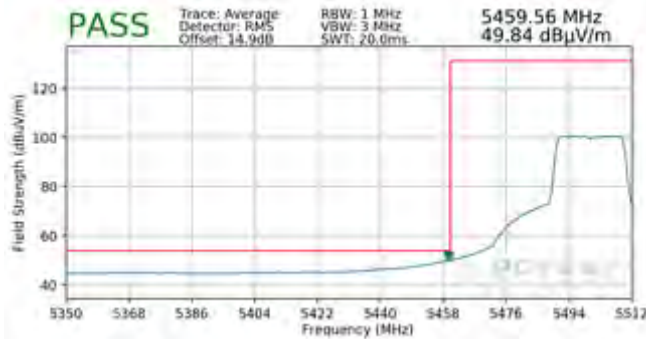
Plot 7-670. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A – 242 Tones)



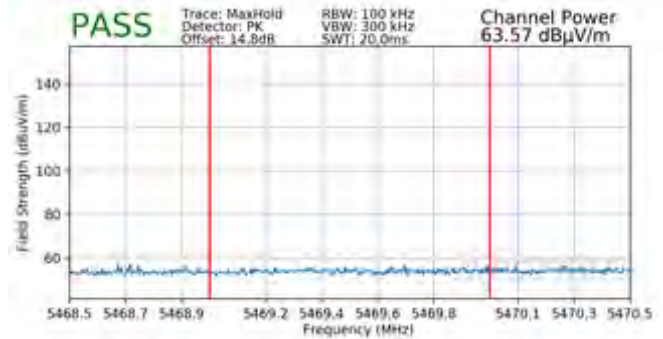
Plot 7-671. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 242 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 470 of 519

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

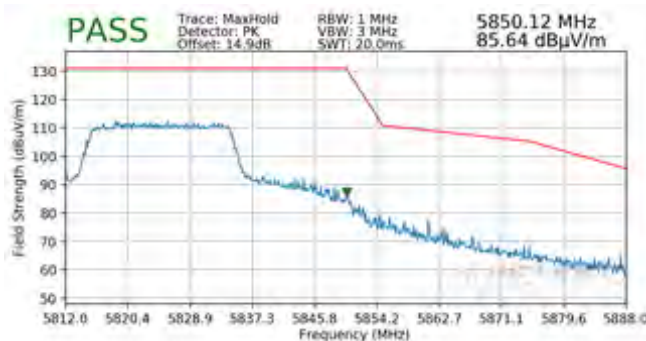


Plot 7-672. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C – 242 Tones)



Plot 7-673. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C – 242 Tones)

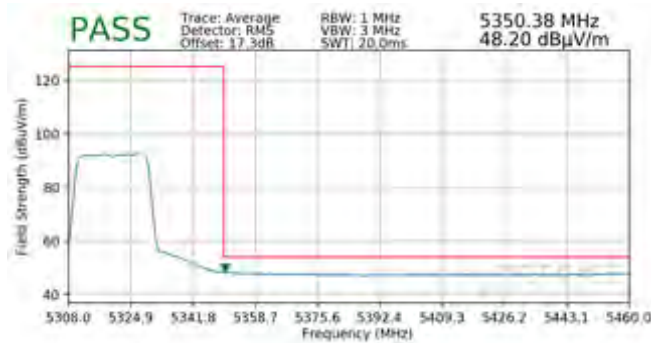
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5825MHz
Channel:	165



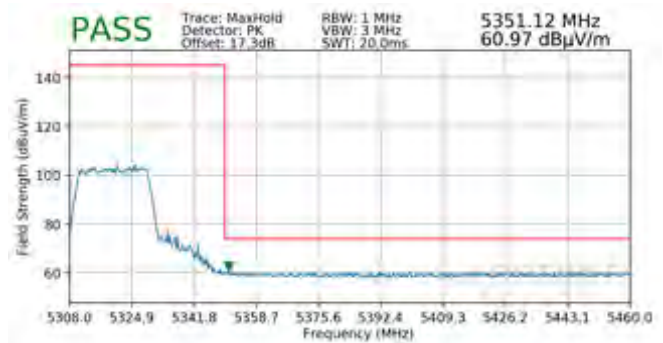
Plot 7-674. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3 – 242 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 471 of 519

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



**Plot 7-675. Radiated Band Edge Plot SISO ANT1
(Average - WCP - 242 Tones)**



**Plot 7-676. Radiated Band Edge Plot SISO ANT1
(Peak - WCP - 242 Tones)**

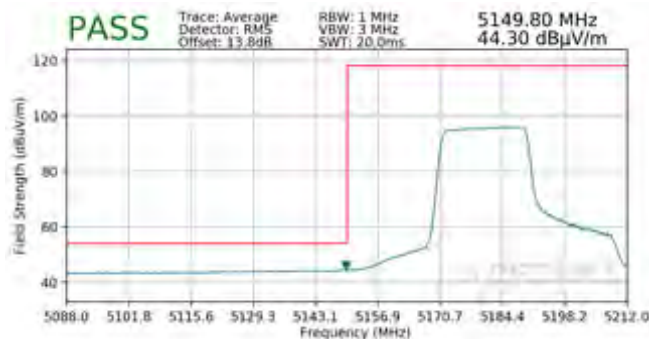
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 472 of 519

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

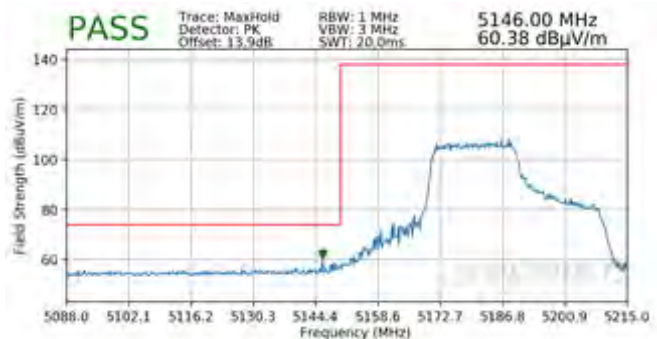
\$15.407(b.1)(b.2) \$15.205 \$15.209; RSS-Gen [8.9]

242 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38



Plot 7-677. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 242 Tones)

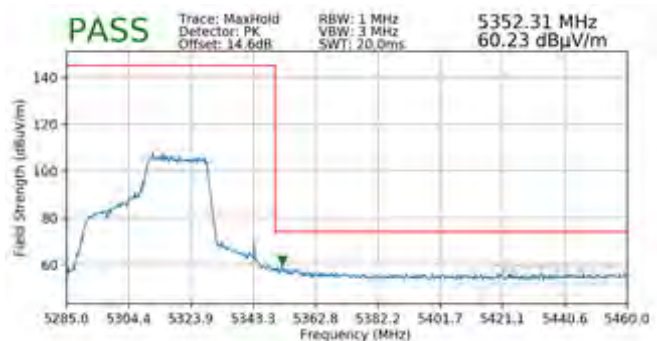


Plot 7-678. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1 – 242 Tones)

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



Plot 7-679. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A – 242 Tones)



Plot 7-680. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 242 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 473 of 519

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5510MHz
Channel:	102

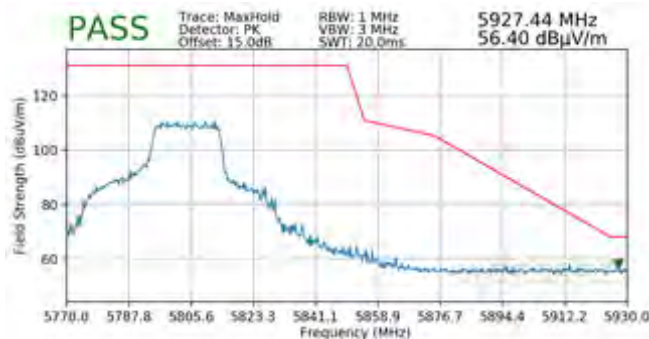


Plot 7-681. Radiated Lower Band Edge Plot SISO ANT1 (Average - UNII Band 2C - 242 Tones)



Plot 7-682. 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	62
Distance of Measurements:	3 Meters
Operating Frequency:	5795MHz
Channel:	159

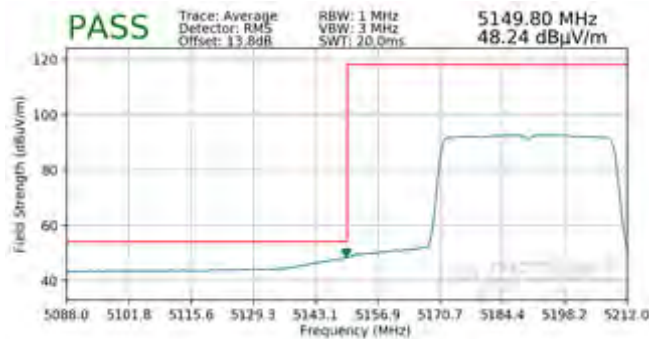


Plot 7-683. Radiated Upper Band Edge Plot SISO ANT1 (Peak - UNII Band 3 - 242 Tones)

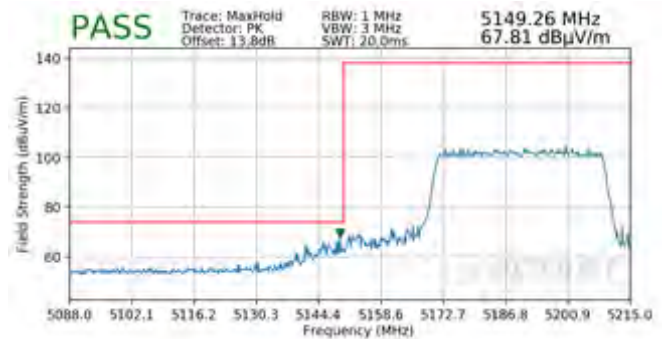
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 474 of 519

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 7-684. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 484 Tones)



Plot 7-685. 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



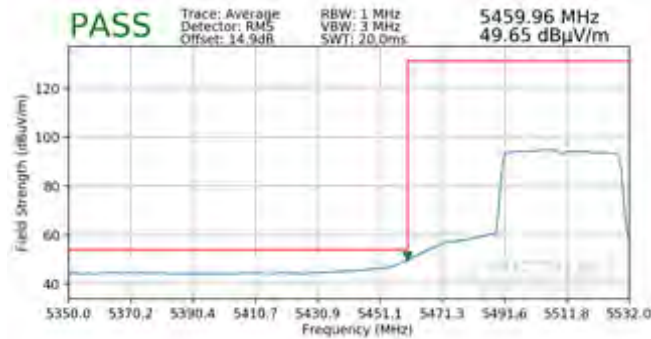
Plot 7-686. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A – 484 Tones)



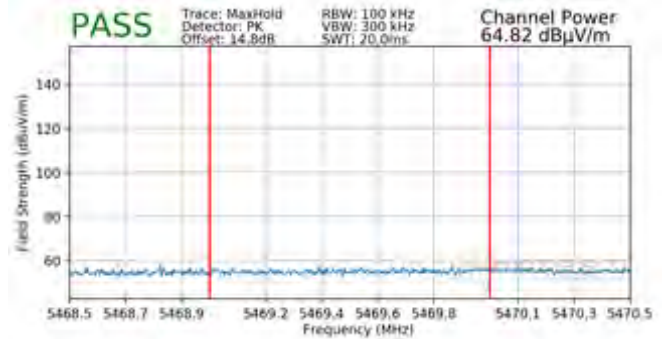
Plot 7-687. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 484 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 475 of 519

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

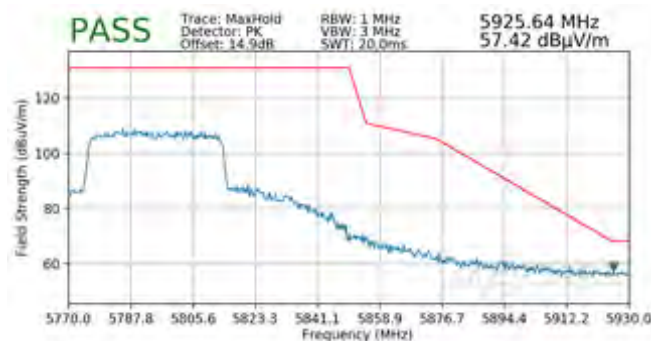


Plot 7-688. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C – 484 Tones)



Plot 7-689. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C – 484 Tones)

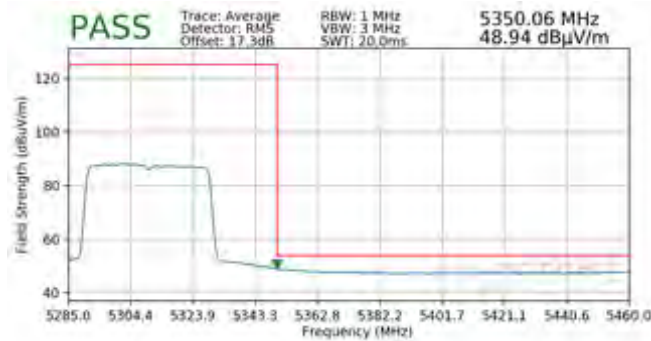
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5795MHz
Channel:	159



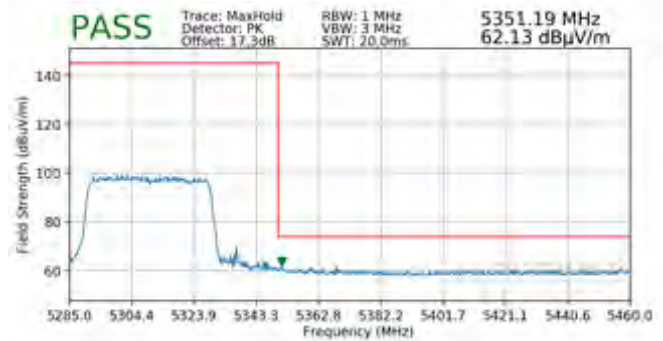
Plot 7-690. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3 – 484 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 476 of 519

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



**Plot 7-691. Radiated Band Edge Plot SISO ANT1
(Average – WCP – 484 Tones)**



**Plot 7-692. Radiated Band Edge Plot SISO ANT1
(Peak – WCP – 484 Tones)**

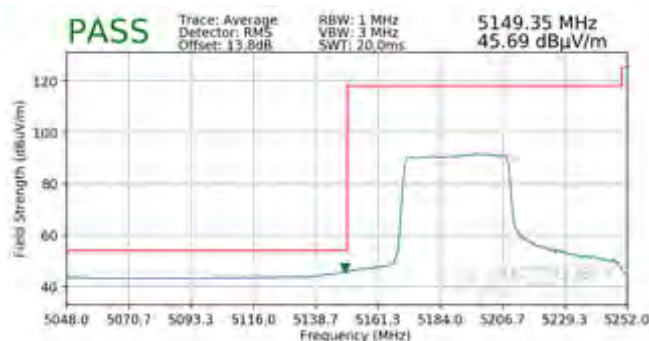
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 477 of 519

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

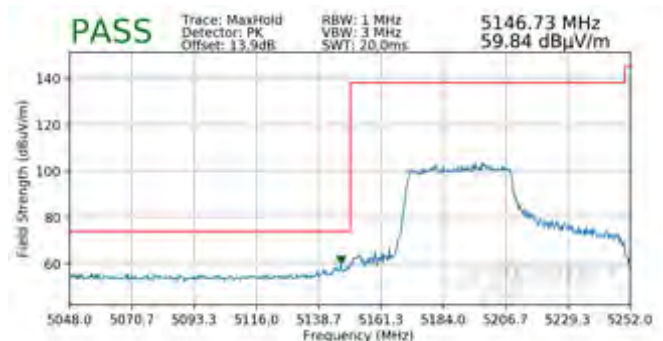
\$15.407(b.1)(b.2) \$15.205 \$15.209; RSS-Gen [8.9]

484 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

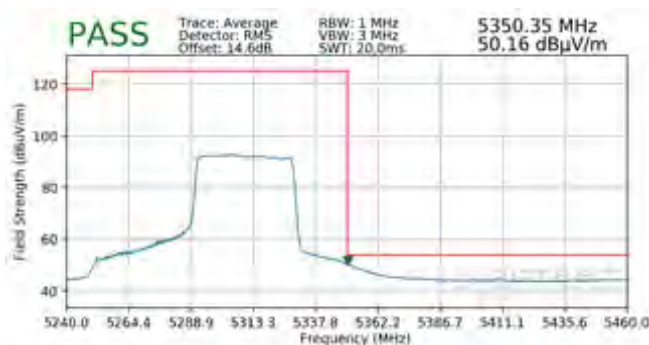


Plot 7-693. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 484 Tones)

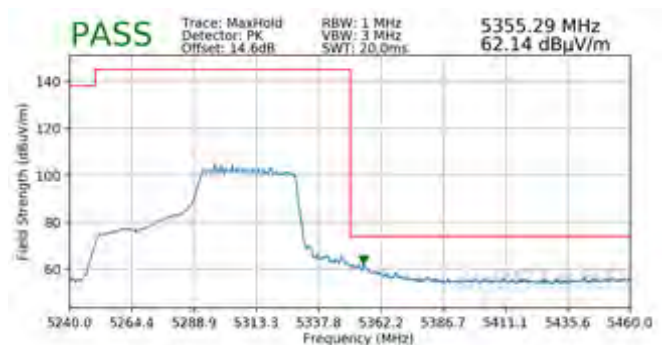


Plot 7-694. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1 – 484 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	66
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



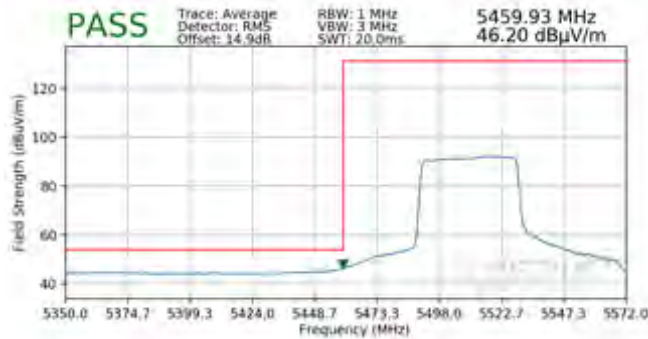
Plot 7-695. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A – 484 Tones)



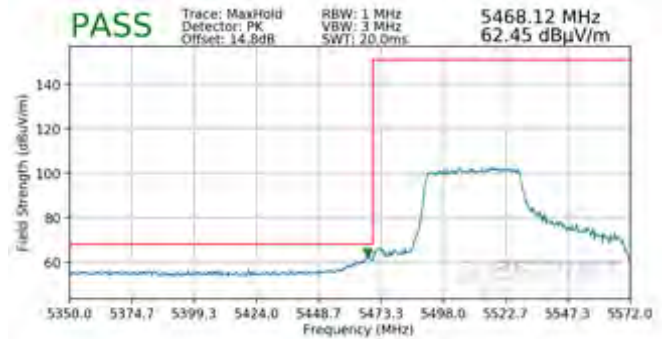
Plot 7-696. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 484 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 478 of 519

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5530MHz
Channel:	106

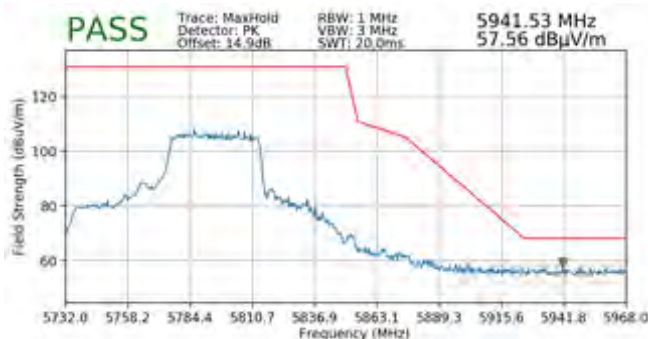


Plot 7-697. Radiated Lower Band Edge Plot SISO ANT1 (Average - UNII Band 2C - 484 Tones)



Plot 7-698. 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	66
Distance of Measurements:	3 Meters
Operating Frequency:	5775MHz
Channel:	155

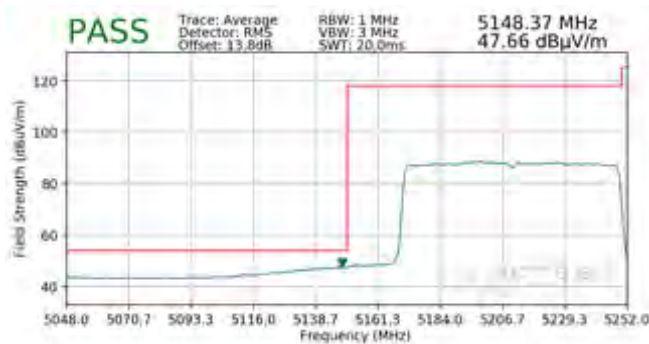


Plot 7-699. Radiated Upper Band Edge Plot SISO ANT1 (Peak - UNII Band 3 - 484 Tones)

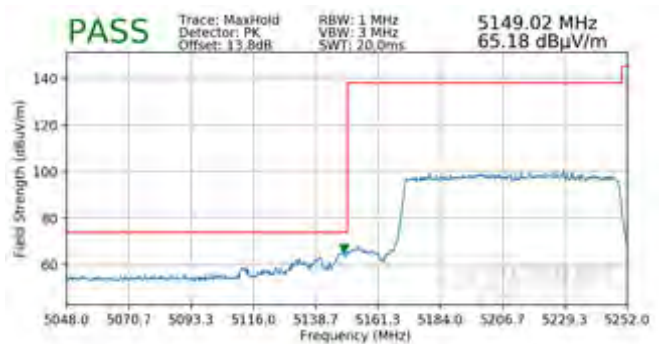
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 479 of 519

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

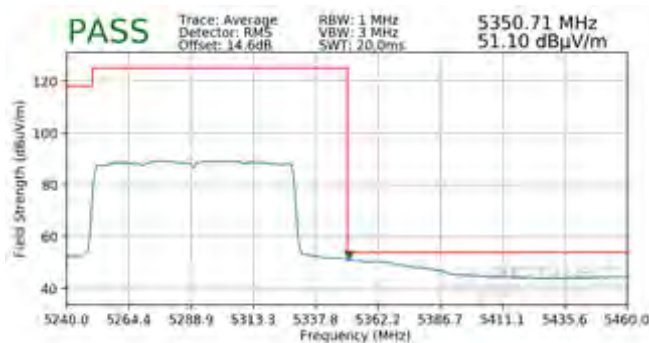


Plot 7-700. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 996 Tones)



Plot 7-701. 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



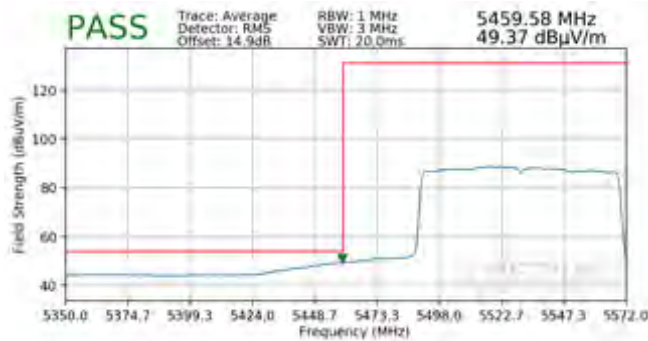
Plot 7-702. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A – 996 Tones)



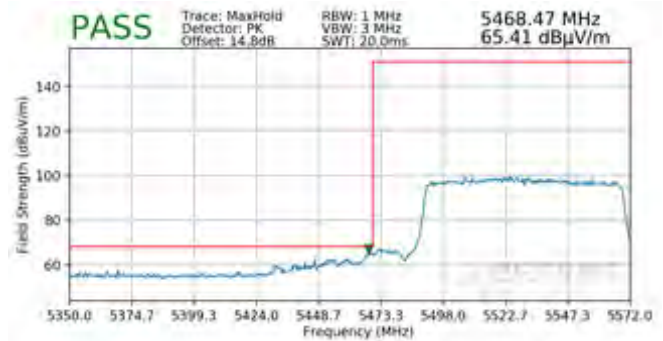
Plot 7-703. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 996 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 480 of 519

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

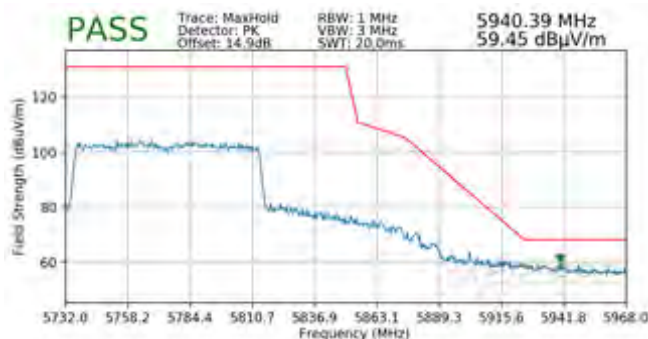


Plot 7-704. Radiated Lower Band Edge Plot SISO ANT1 (Average - UNII Band 2C - 996 Tones)



Plot 7-705. Radiated Lower Band Edge Plot SISO ANT1 (Peak - UNII Band 2C - 996 Tones)

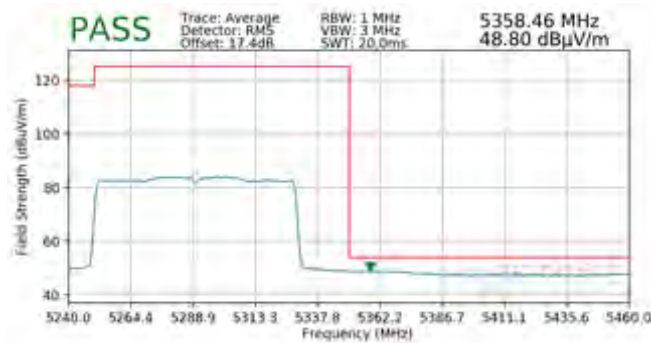
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	67
Distance of Measurements:	3 Meters
Operating Frequency:	5775MHz
Channel:	155



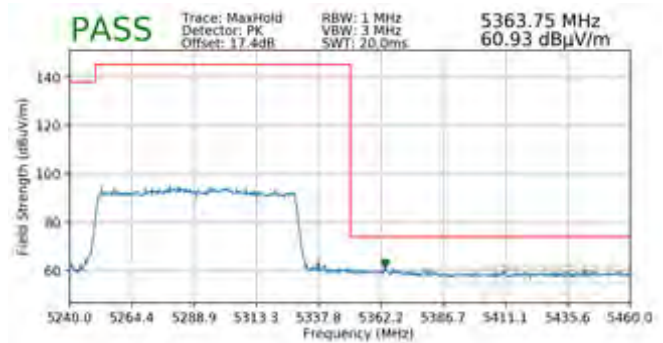
Plot 7-706. Radiated Upper Band Edge Plot SISO ANT1 (Peak - UNII Band 3 - 996 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 481 of 519

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



**Plot 7-707. Radiated Band Edge Plot SISO ANT1
(Average – WCP – 996 Tones)**



**Plot 7-708. Radiated Band Edge Plot SISO ANT1
(Peak – WCP – 996 Tones)**

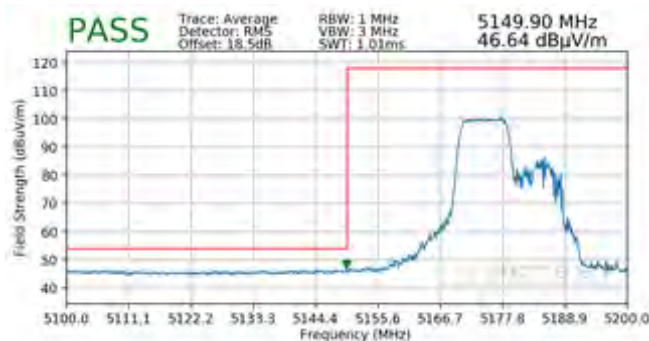
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 482 of 519

7.6.7 SISO Antenna-2 Radiated Band Edge Measurements (20MHz BW)

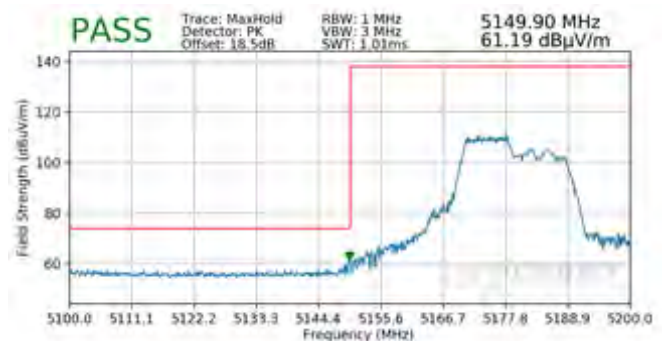
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]; RSS-Gen [8.9]

106 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	53
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

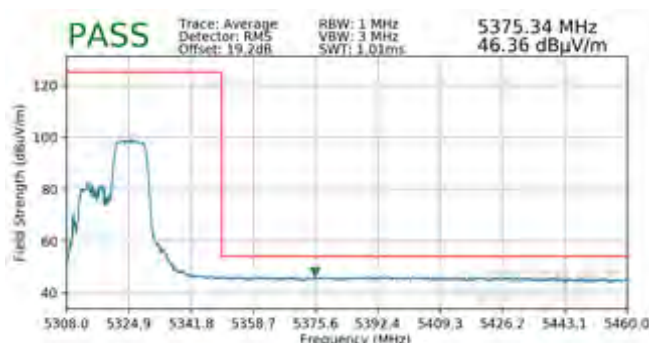


Plot 7-709. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1 – 106 Tones)

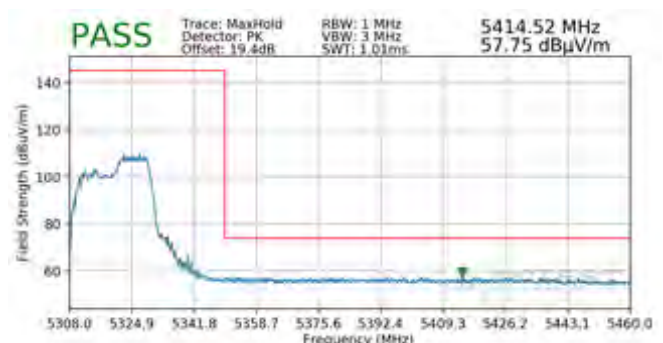


Plot 7-710. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1 – 106 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	54
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



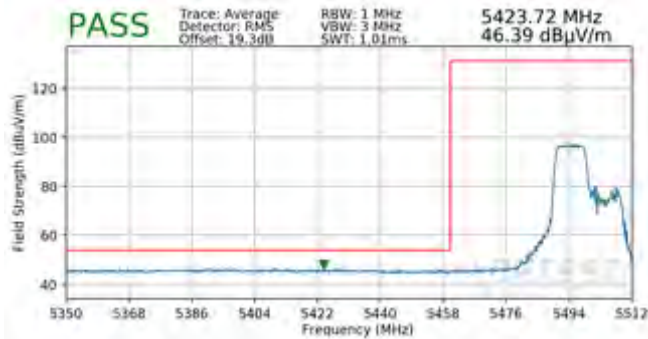
Plot 7-711. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A – 106 Tones)



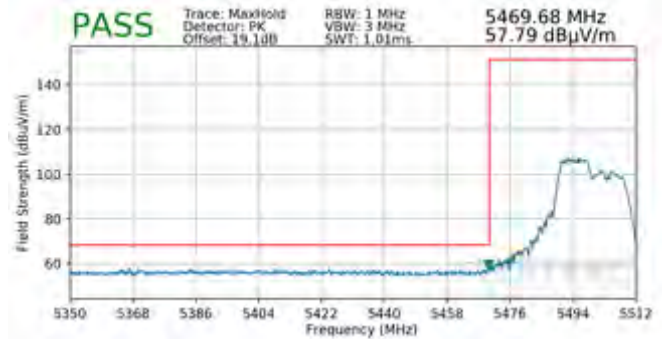
Plot 7-712. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A – 106 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 483 of 519

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	53
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100

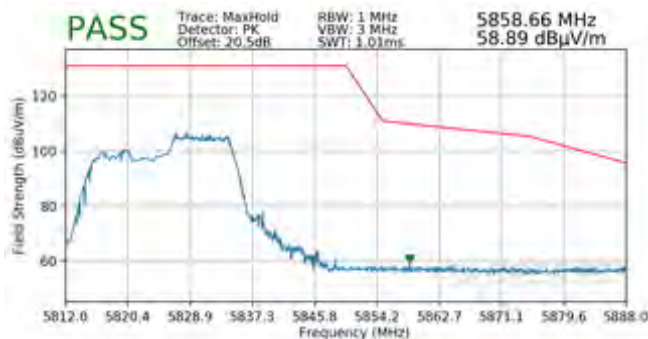


Plot 7-713. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 106 Tones)



Plot 7-714. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C – 106 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	54
Distance of Measurements:	3 Meters
Operating Frequency:	5825MHz
Channel:	165

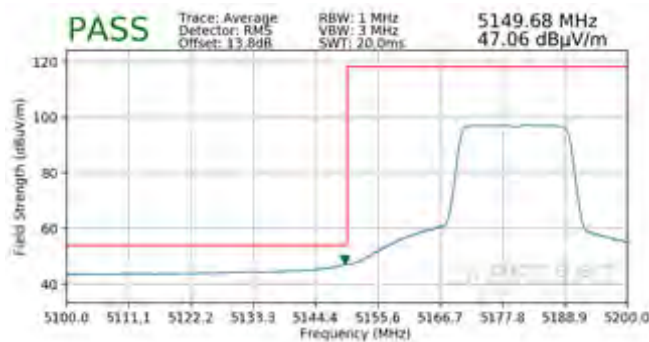


Plot 7-715. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 106 Tones)

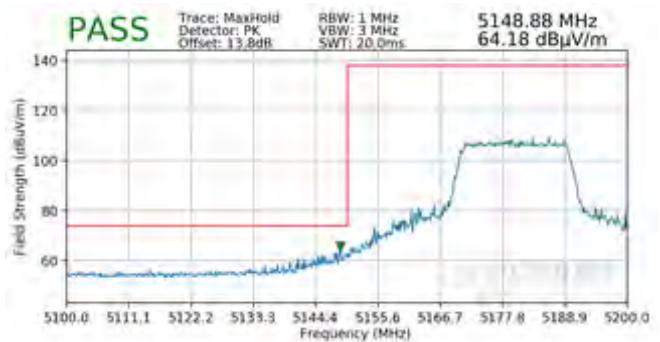
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 484 of 519

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 7-716. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1 – 242 Tones)

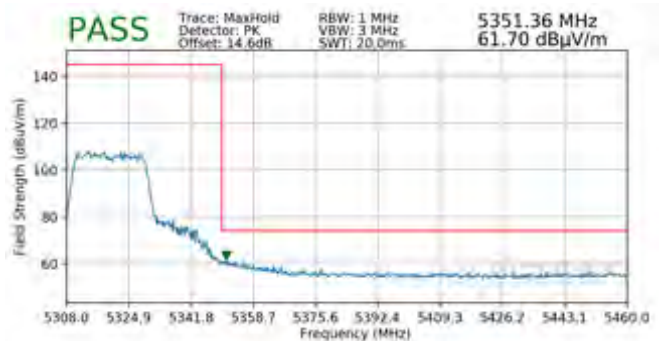


Plot 7-717. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1 – 242 Tones)

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



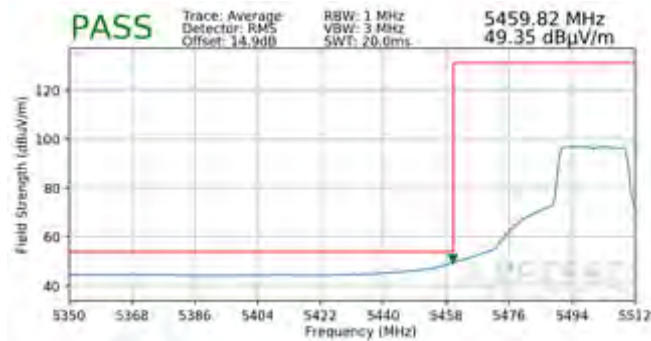
Plot 7-718. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A – 242 Tones)



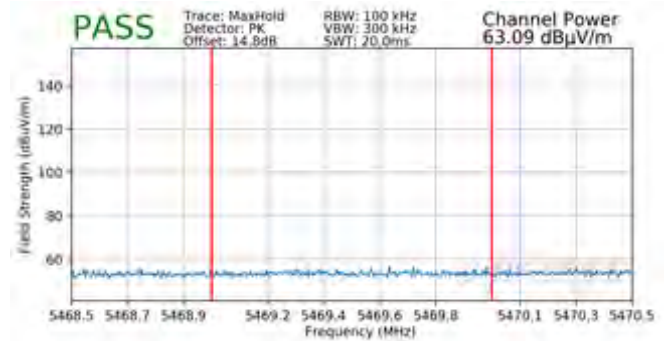
Plot 7-719. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A – 242 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 485 of 519

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

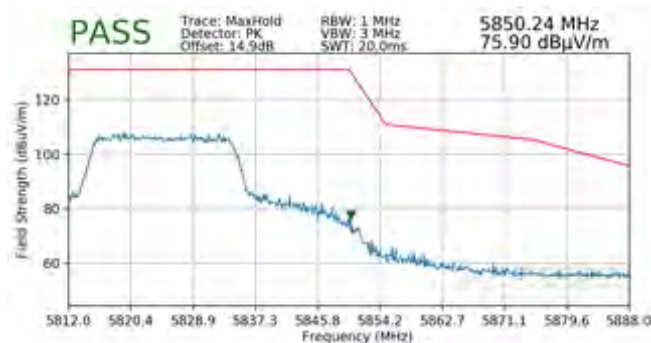


Plot 7-720. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 242 Tones)



Plot 7-721. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C – 242 Tones)

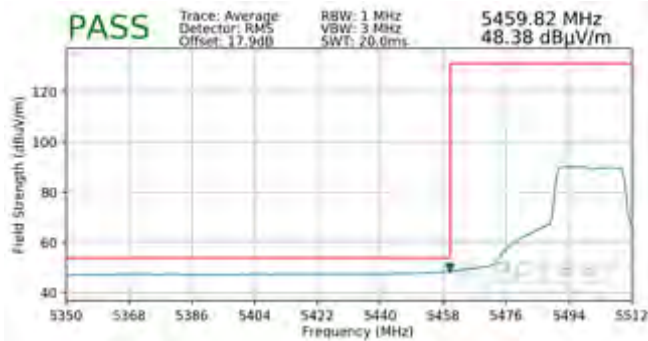
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5825MHz
Channel:	165



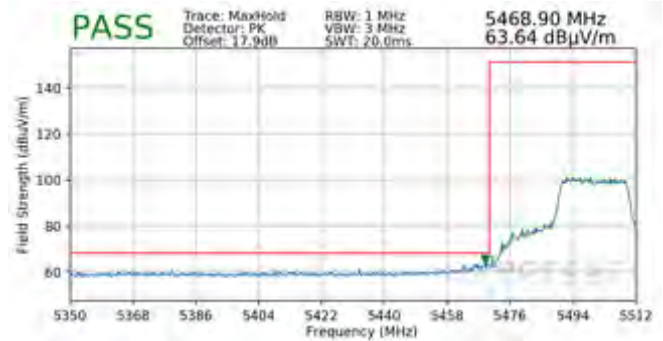
Plot 7-722. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 242 Tones)

FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset	Page 486 of 519

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



**Plot 7-723. Radiated Band Edge Plot SISO ANT2
(Average – WCP – 242 Tones)**



**Plot 7-724. Radiated Band Edge Plot SISO ANT2
(Peak – WCP – 242 Tones)**

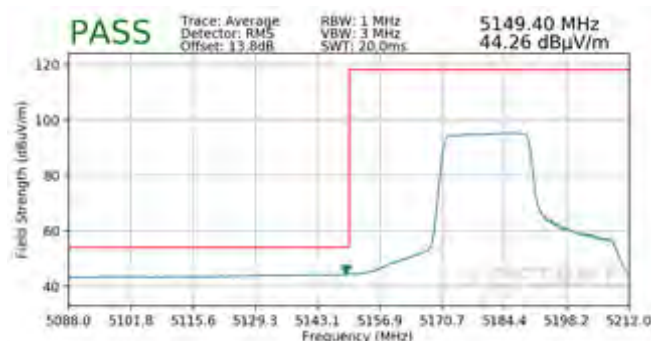
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 487 of 519

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

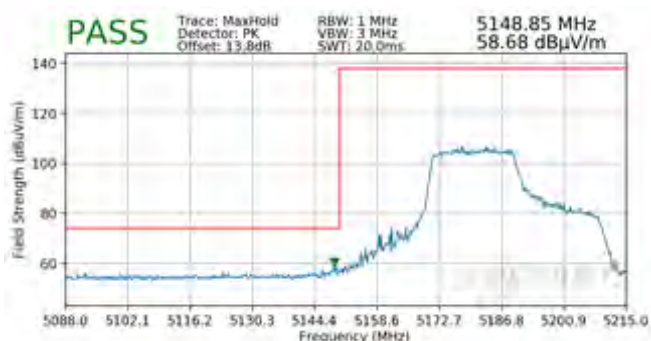
\$15.407(b.1)(b.2) \$15.205 \$15.209; RSS-Gen [8.9]

242 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38



Plot 7-725. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1 – 242 Tones)

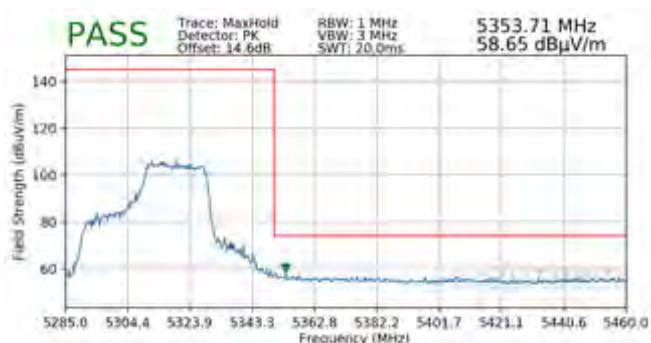


Plot 7-726. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1 – 242 Tones)

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



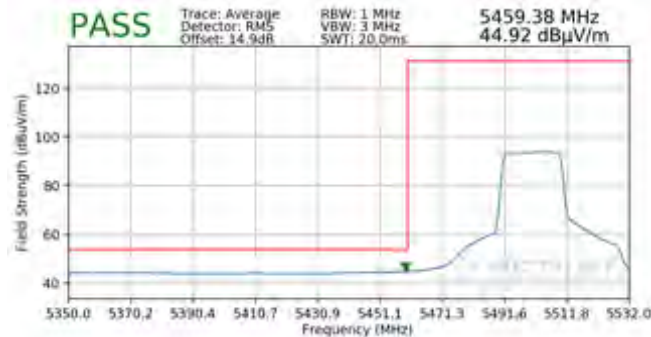
Plot 7-727. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A – 242 Tones)



Plot 7-728. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A – 242 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 488 of 519

Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
RU Index: 61
Distance of Measurements: 3 Meters
Operating Frequency: 5510MHz
Channel: 102

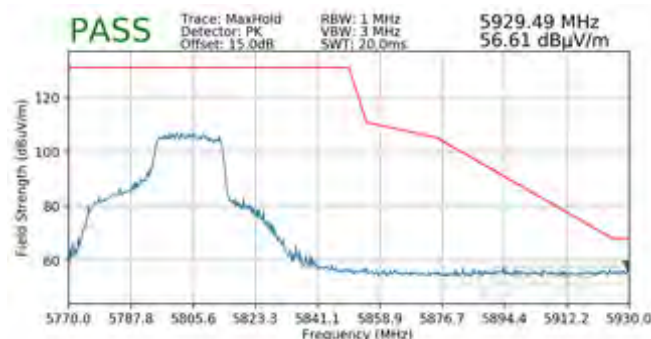


Plot 7-729. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 242 Tones)



Plot 7-730. 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: 62
Distance of Measurements: 3 Meters
Operating Frequency: 5795MHz
Channel: 159

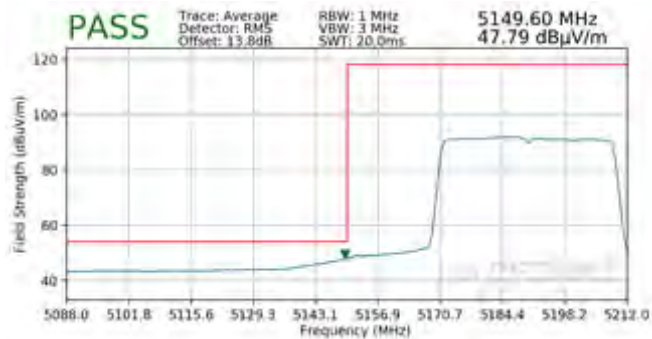


Plot 7-731. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 242 Tones)

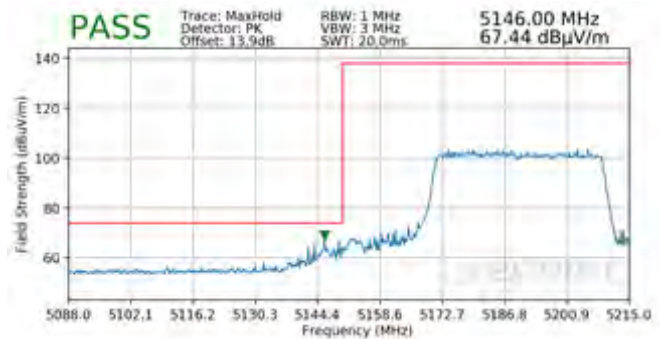
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 489 of 519

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 7-732. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1 – 484 Tones)



Plot 7-733. 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



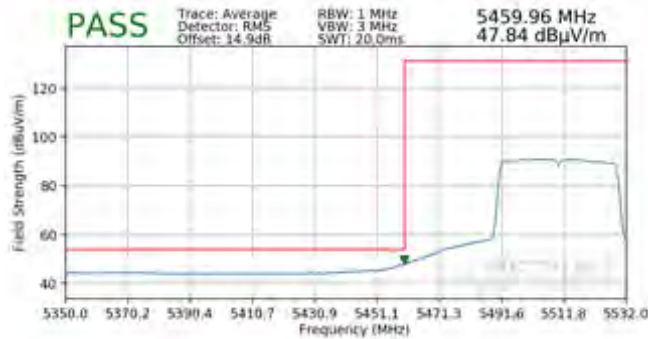
Plot 7-734. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A – 484 Tones)



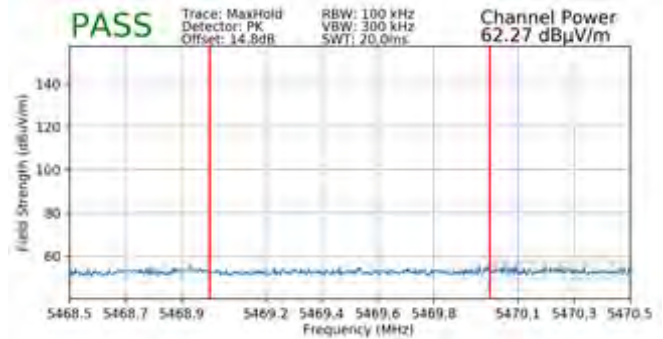
Plot 7-735. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A – 484 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 490 of 519

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

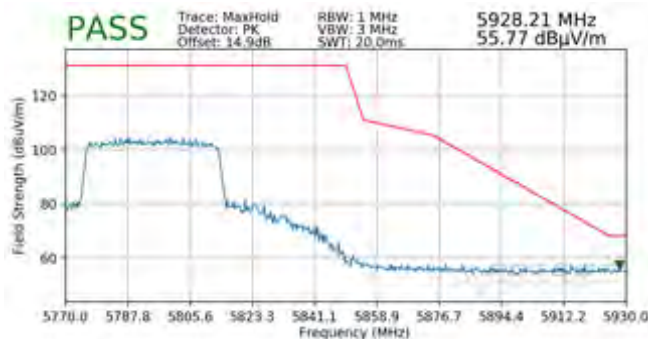


Plot 7-736. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 484 Tones)



Plot 7-737. 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



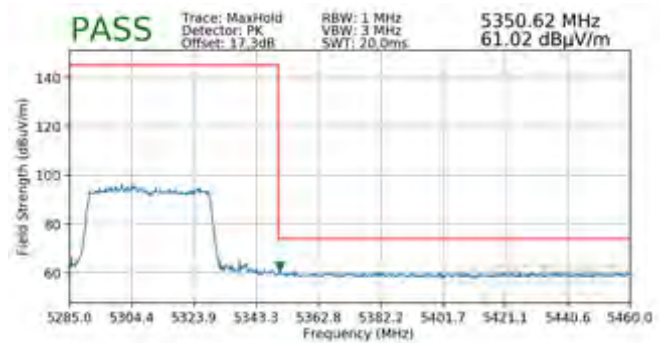
Plot 7-738. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 484 Tones)

FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset	Page 491 of 519

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



**Plot 7-739. Radiated Band Edge Plot SISO ANT2
(Average – WCP – 484 Tones)**



**Plot 7-740. Radiated Band Edge Plot SISO ANT2
(Peak – WCP – 484 Tones)**

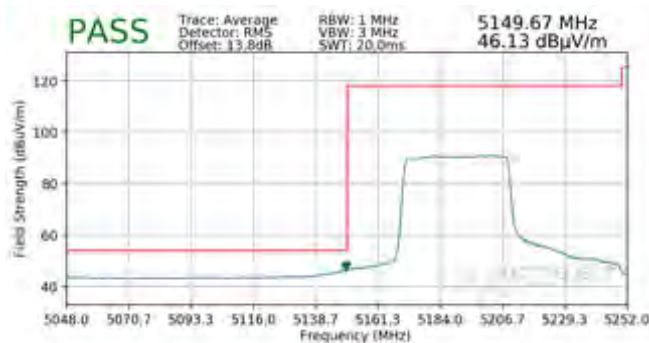
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 492 of 519

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

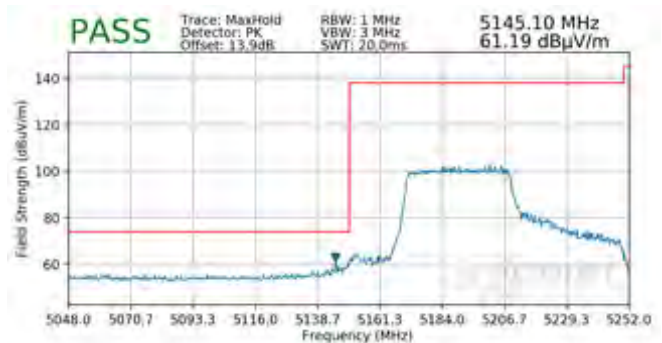
\$15.407(b.1)(b.2) \$15.205 \$15.209; RSS-Gen [8.9]

484 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

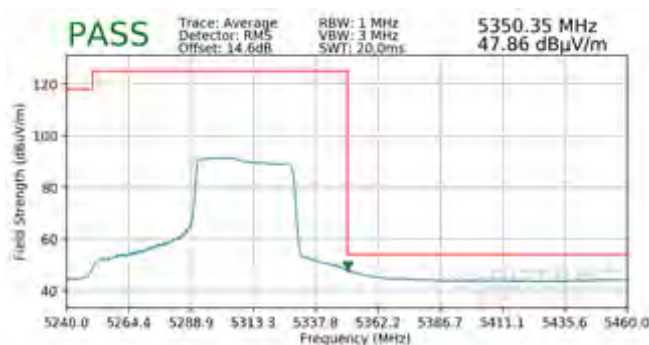


Plot 7-741. Radiated Lower Band Edge Plot SISO ANT2 (Average - UNII Band 1 - 484 Tones)

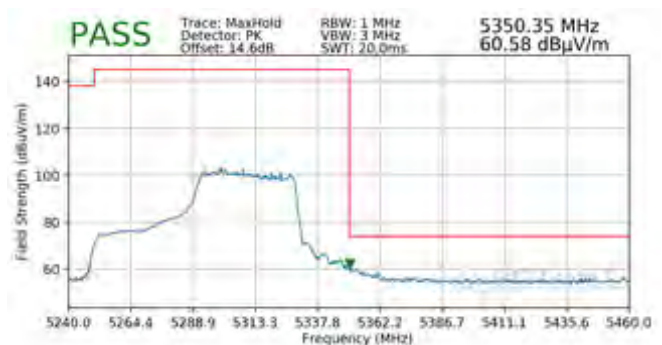


Plot 7-742. Radiated Lower Band Edge Plot SISO ANT2 (Peak - UNII Band 1 - 484 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	66
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



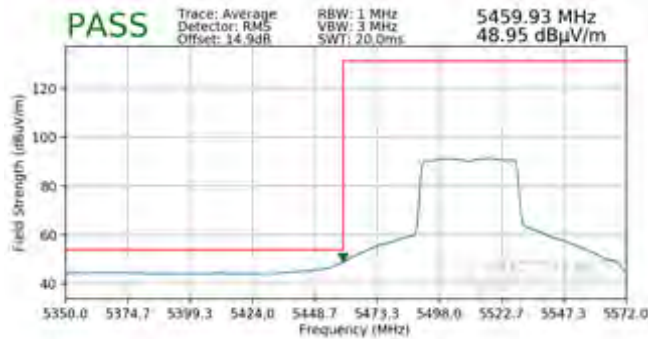
Plot 7-743. Radiated Upper Band Edge Plot SISO ANT2 (Average - UNII Band 2A - 484 Tones)



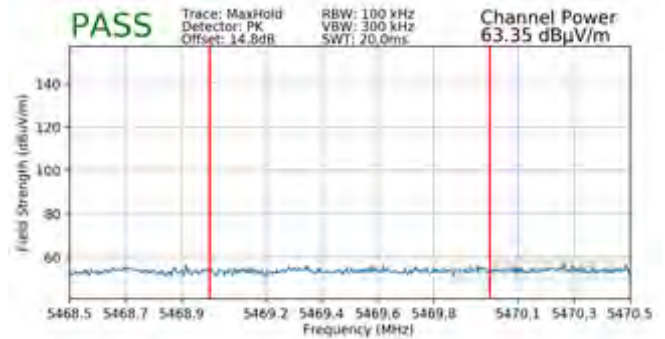
Plot 7-744. Radiated Upper Band Edge Plot SISO ANT2 (Peak - UNII Band 2A - 484 Tones)

FCC ID: A3LSMG9700			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset			Page 493 of 519

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5530MHz
Channel:	106

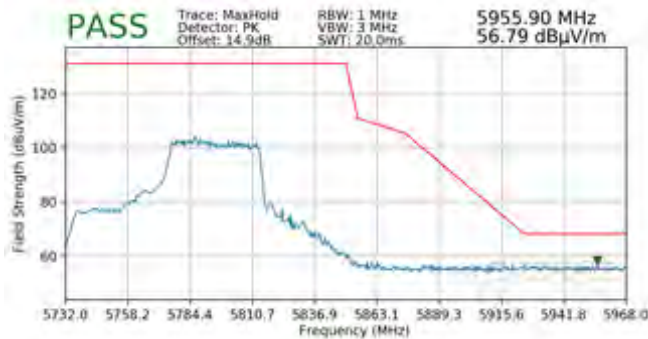


Plot 7-745. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 484 Tones)



Plot 7-746. 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	66
Distance of Measurements:	3 Meters
Operating Frequency:	5775MHz
Channel:	155

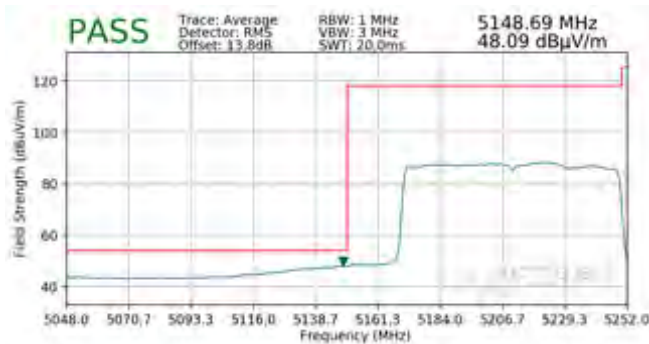


Plot 7-747. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 484 Tones)

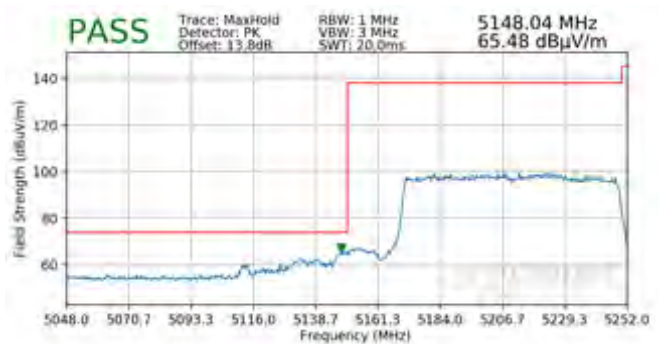
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 494 of 519

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

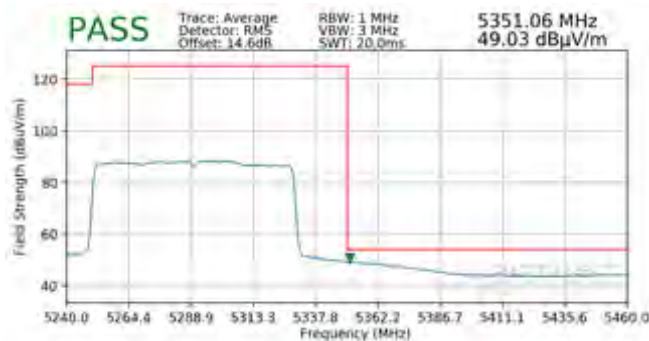


Plot 7-748. Radiated Lower Band Edge Plot SISO ANT2 (Average - UNII Band 1 - 996 Tones)



Plot 7-749. 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



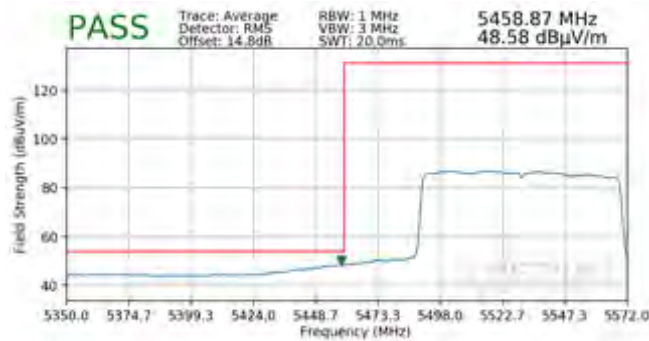
Plot 7-750. Radiated Upper Band Edge Plot SISO ANT2 (Average - UNII Band 2A - 996 Tones)



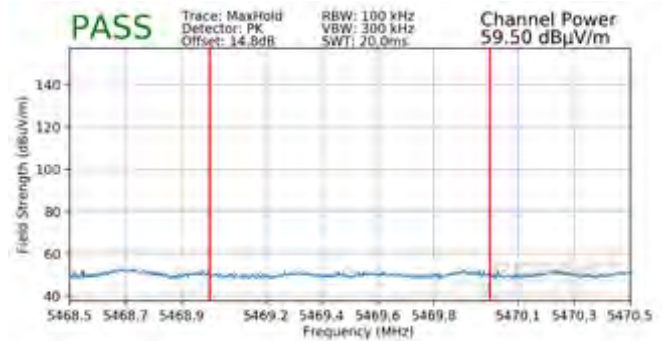
Plot 7-751. Radiated Upper Band Edge Plot SISO ANT2 (Peak - UNII Band 2A - 996 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 495 of 519

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

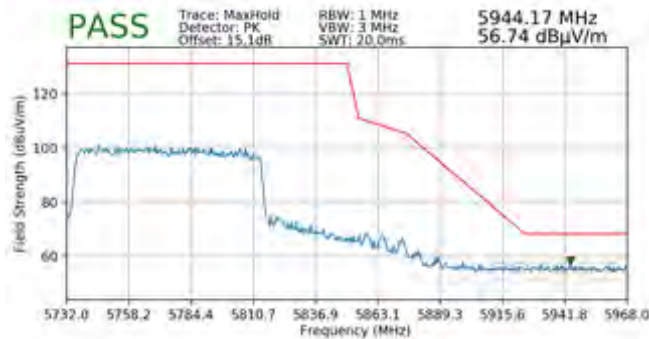


Plot 7-752. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 996 Tones)



Plot 7-753. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C – 996 Tones)

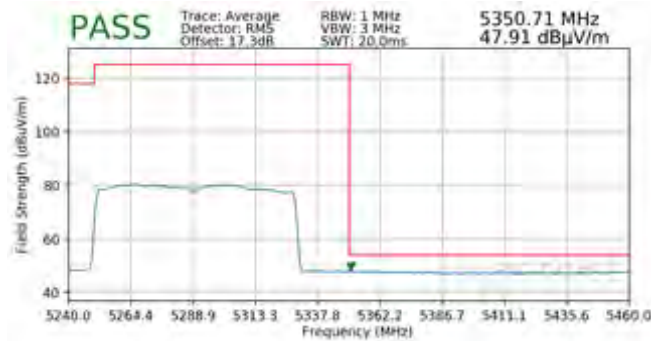
Worst Case Mode: 802.11ax
Worst Case Transfer Rate: MCS0
RU Index: 67
Distance of Measurements: 3 Meters
Operating Frequency: 5775MHz
Channel: 155



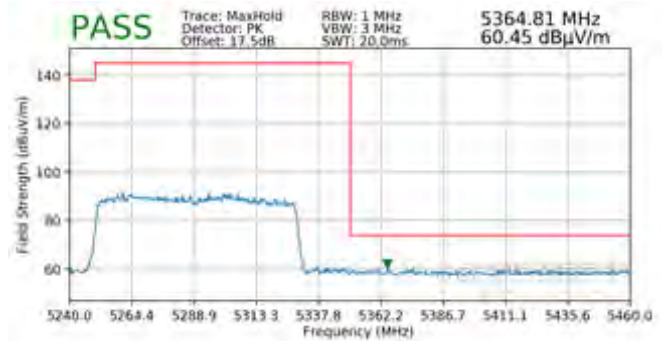
Plot 7-754. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 996 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 496 of 519

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



**Plot 7-755. Radiated Band Edge Plot SISO ANT2
(Average – WCP – 996 Tones)**



**Plot 7-756. Radiated Band Edge Plot SISO ANT2
(Peak – WCP – 996 Tones)**

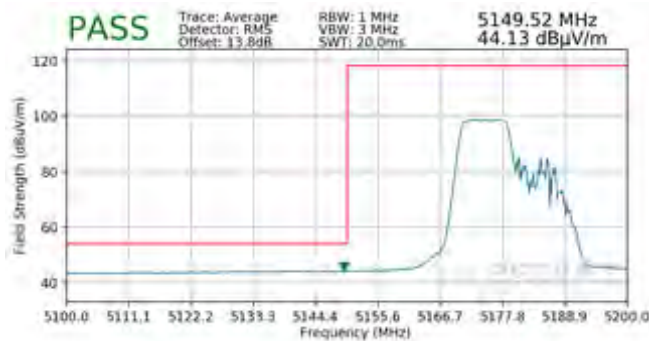
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 497 of 519

7.6.10 MIMO Radiated Band Edge Measurements (20MHz BW)

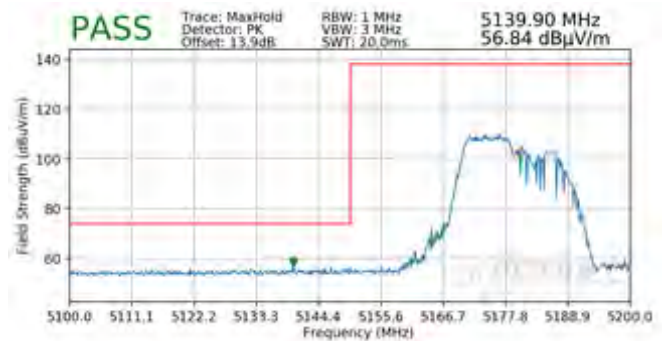
§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]; RSS-Gen [8.9]

106 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	53
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

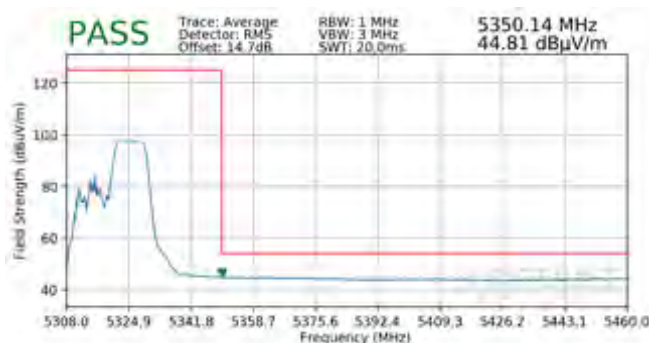


Plot 7-757. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1 – 106 Tones)

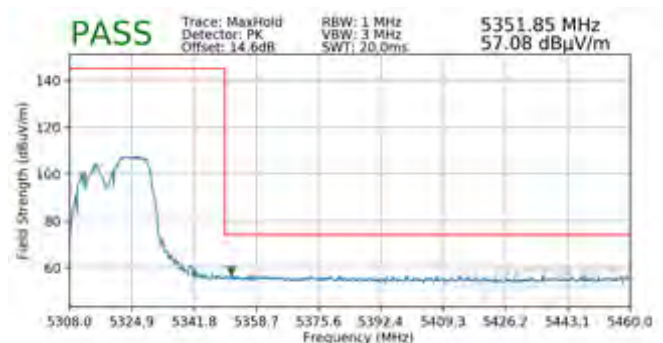


Plot 7-758. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1 – 106 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	54
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64



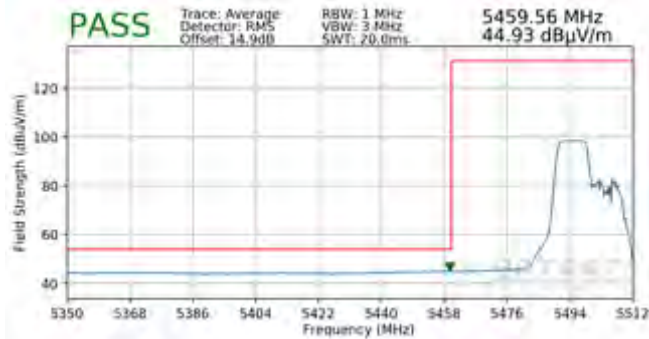
Plot 7-759. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A – 106 Tones)



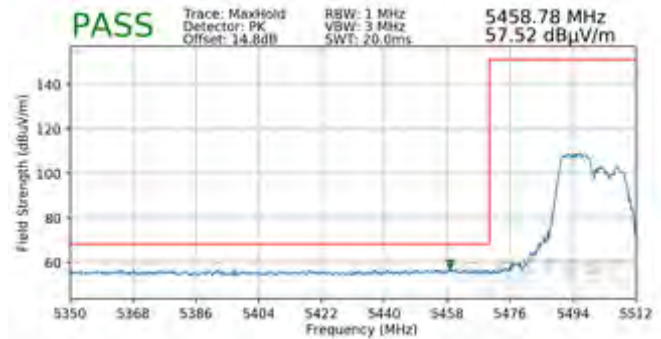
Plot 7-760. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A – 106 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 498 of 519

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	53
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100

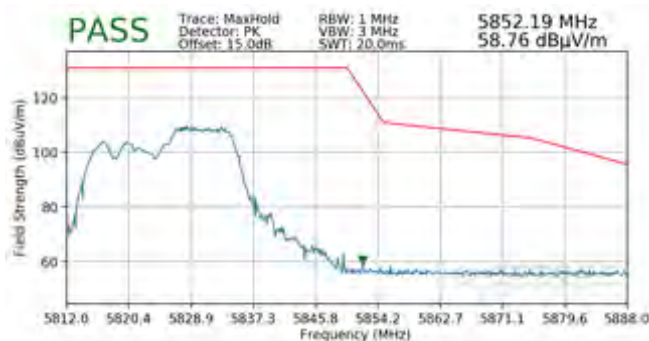


**Plot 7-761. Radiated Lower Band Edge Plot MIMO
(Average – UNII Band 2C – 106 Tones)**



**Plot 7-762. Radiated Lower Band Edge Plot MIMO
(Peak – UNII Band 2C – 106 Tones)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	54
Distance of Measurements:	3 Meters
Operating Frequency:	5825MHz
Channel:	165

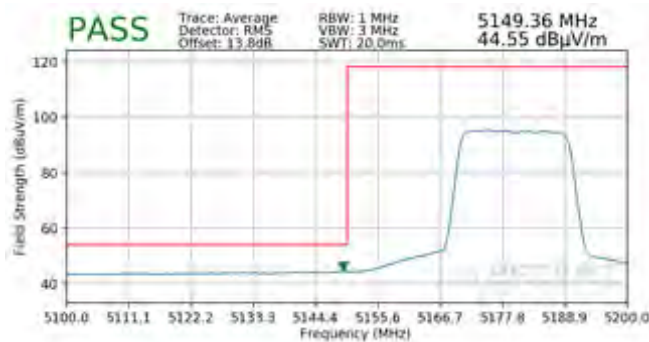


**Plot 7-763. Radiated Upper Band Edge Plot MIMO
(Peak – UNII Band 3 – 106 Tones)**

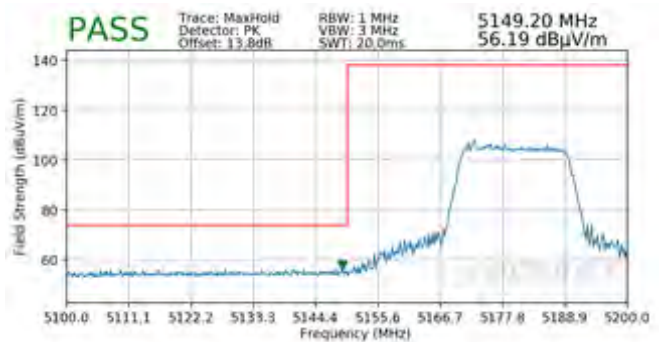
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 499 of 519

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 7-764. Radiated Lower Band Edge Plot MIMO
(Average – UNII Band 1 – 242 Tones)**

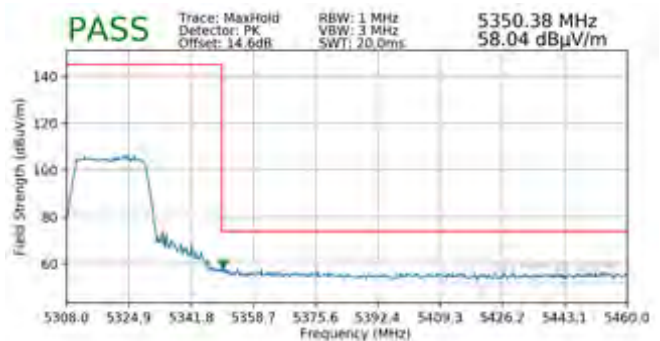


**Plot 7-765. Radiated Lower Band Edge Plot MIMO
(Peak – UNII Band 1 – 242 Tones)**

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



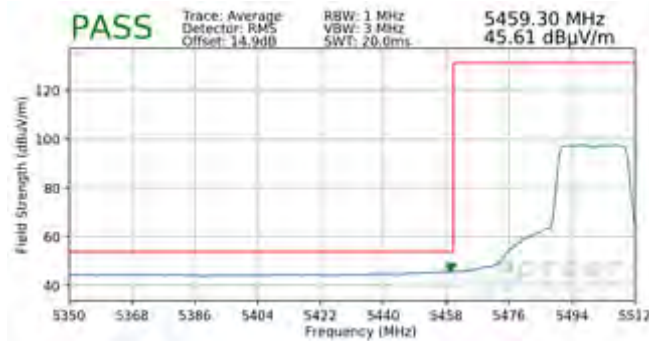
**Plot 7-766. Radiated Upper Band Edge Plot MIMO
(Average – UNII Band 2A – 242 Tones)**



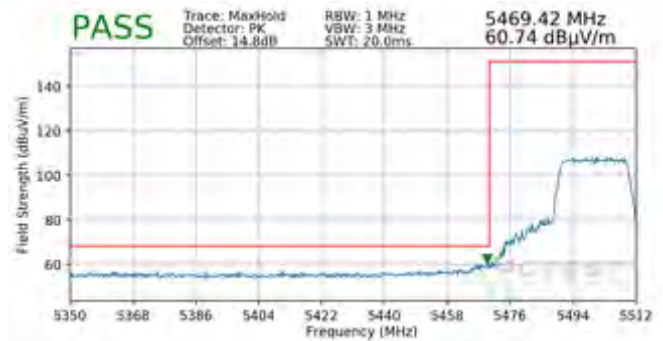
**Plot 7-767. Radiated Upper Band Edge Plot MIMO
(Peak – UNII Band 2A – 242 Tones)**

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 500 of 519

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

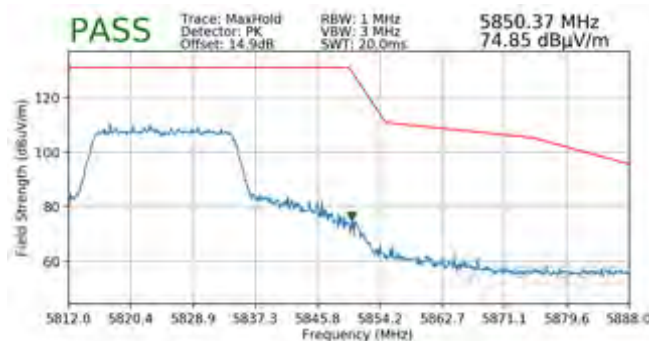


**Plot 7-768. Radiated Lower Band Edge Plot MIMO
(Average – UNII Band 2C – 242 Tones)**



**Plot 7-769. Radiated Lower Band Edge Plot MIMO
(Peak – UNII Band 2C – 242 Tones)**

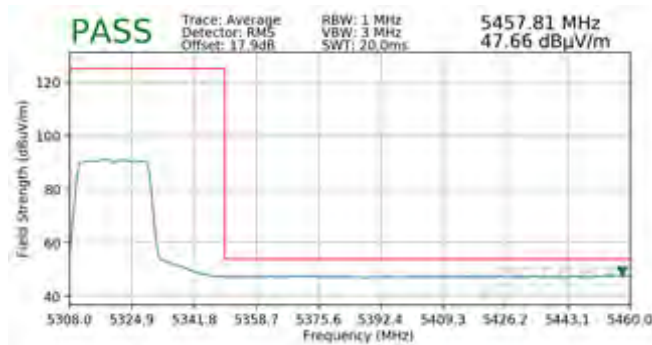
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5825MHz
Channel:	165



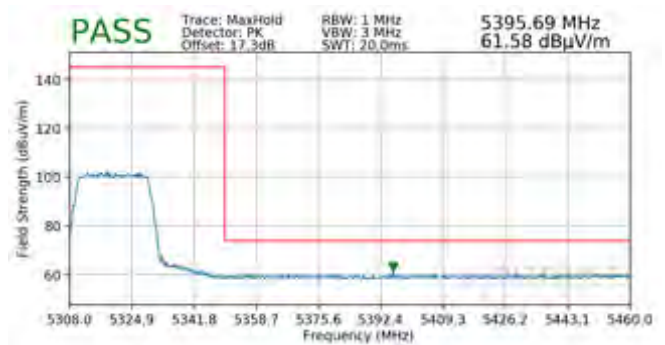
**Plot 7-770. Radiated Upper Band Edge Plot MIMO
(Peak – UNII Band 3 – 242 Tones)**

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 501 of 519

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



**Plot 7-771. Radiated Band Edge Plot MIMO
(Average – WCP – 242 Tones)**



**Plot 7-772. Radiated Band Edge Plot MIMO (Peak –
WCP – 242 Tones)**

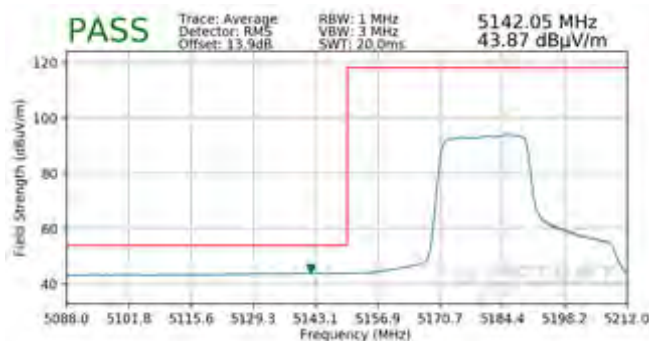
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 502 of 519

7.6.11 MIMO Radiated Band Edge Measurements (40MHz BW)

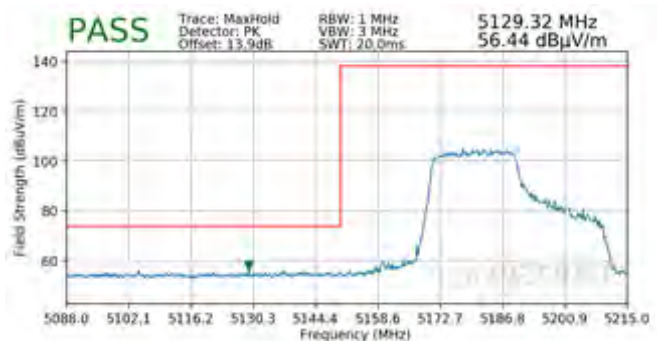
\$15.407(b.1)(b.2) \$15.205 \$15.209; RSS-Gen [8.9]

242 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

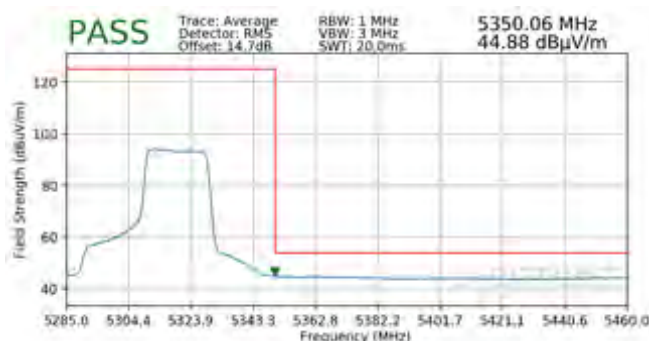


Plot 7-773. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1 – 242 Tones)

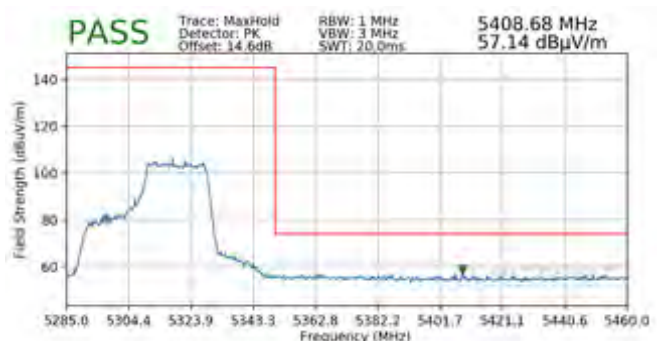


Plot 7-774. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1 – 242 Tones)

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



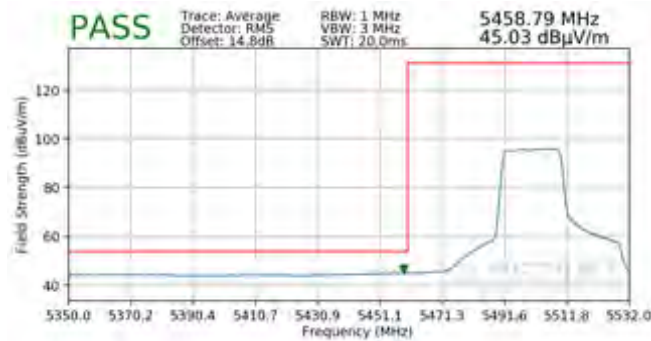
Plot 7-775. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A – 242 Tones)



Plot 7-776. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A – 242 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 503 of 519

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	61
Distance of Measurements:	3 Meters
Operating Frequency:	5510MHz
Channel:	102

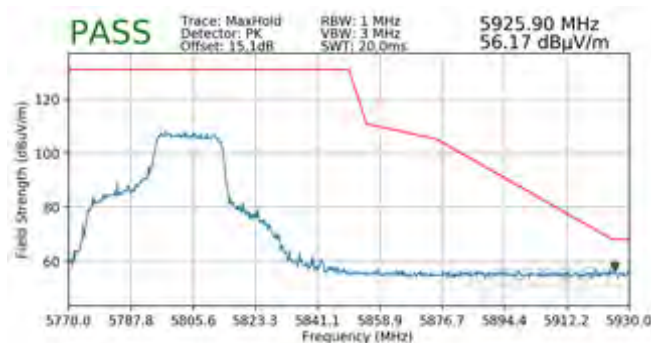


**Plot 7-777. Radiated Lower Band Edge Plot MIMO
(Average – UNII Band 2C – 242 Tones)**



**Plot 7-778. Radiated Lower Band Edge Plot MIMO
(Peak – UNII Band 2C – 242 Tones)**

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	62
Distance of Measurements:	3 Meters
Operating Frequency:	5795MHz
Channel:	159

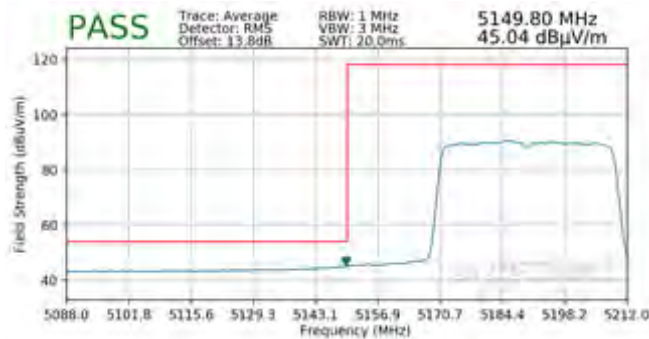


**Plot 7-779. Radiated Upper Band Edge Plot MIMO
(Peak – UNII Band 3 – 242 Tones)**

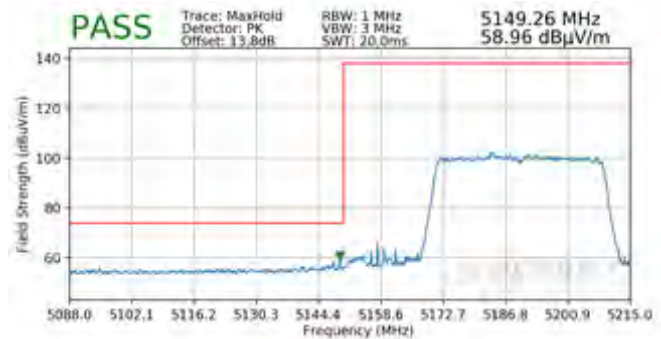
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 504 of 519

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 7-780. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1 – 484 Tones)



Plot 7-781. 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 7-782. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A – 484 Tones)



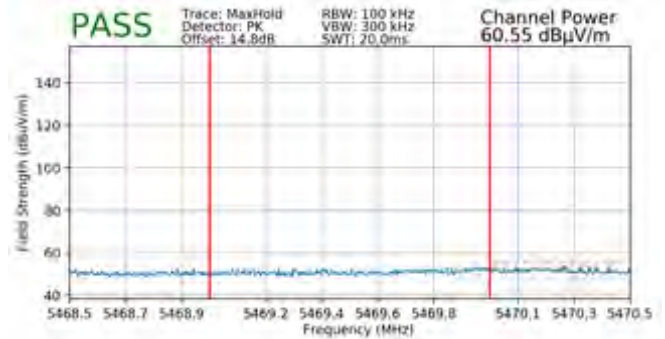
Plot 7-783. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A – 484 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 505 of 519

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

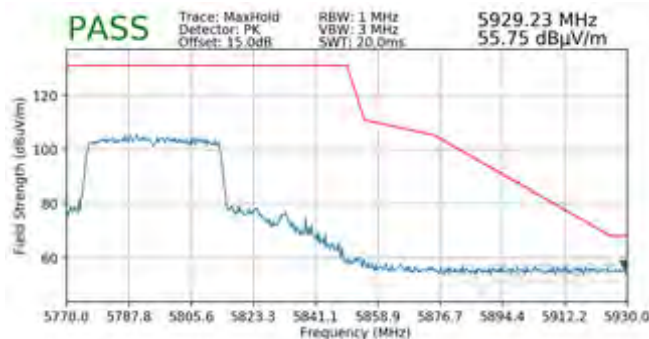


**Plot 7-784. Radiated Lower Band Edge Plot MIMO
(Average – UNII Band 2C – 484 Tones)**



**Plot 7-785. 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



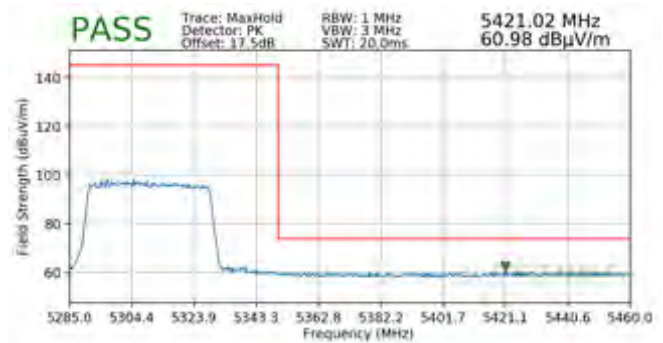
**Plot 7-786. Radiated Upper Band Edge Plot MIMO
(Peak – UNII Band 3 – 484 Tones)**

FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset	Page 506 of 519

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



**Plot 7-787. Radiated Band Edge Plot MIMO
(Average – WCP – 484 Tones)**



**Plot 7-788. Radiated Band Edge Plot MIMO (Peak –
WCP – 484 Tones)**

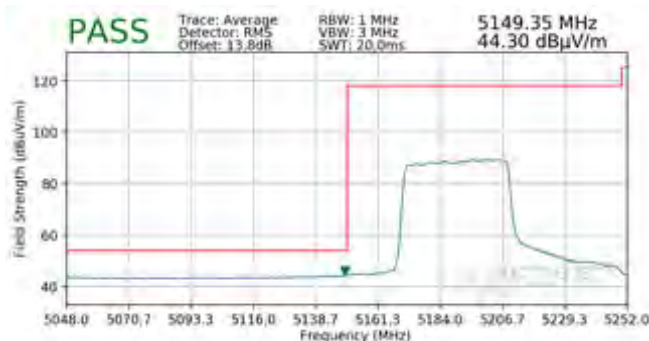
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 507 of 519

7.6.12 MIMO Radiated Band Edge Measurements (80MHz BW)

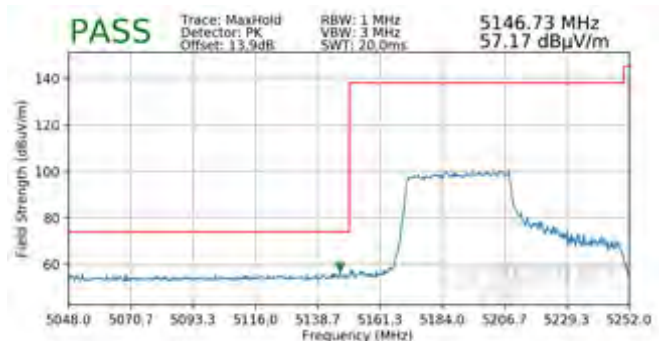
\$15.407(b.1)(b.2) \$15.205 \$15.209; RSS-Gen [8.9]

484 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

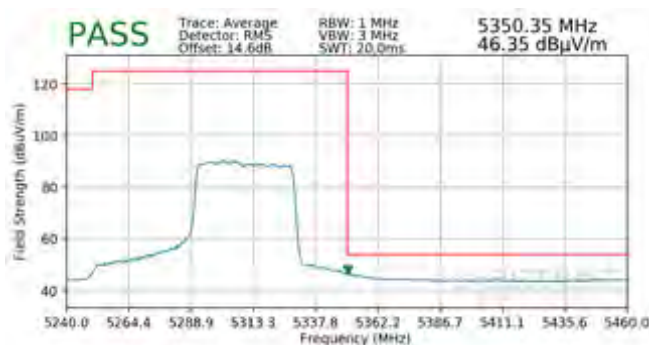


Plot 7-789. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1 – 484 Tones)

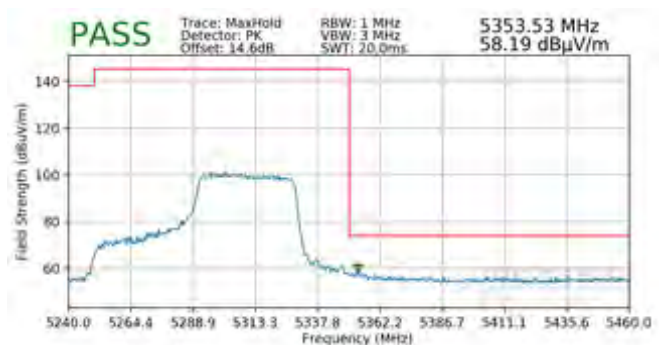


Plot 7-790. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1 – 484 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	66
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58



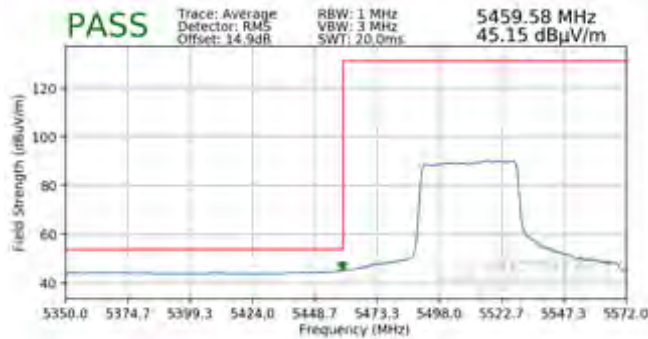
Plot 7-791. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A – 484 Tones)



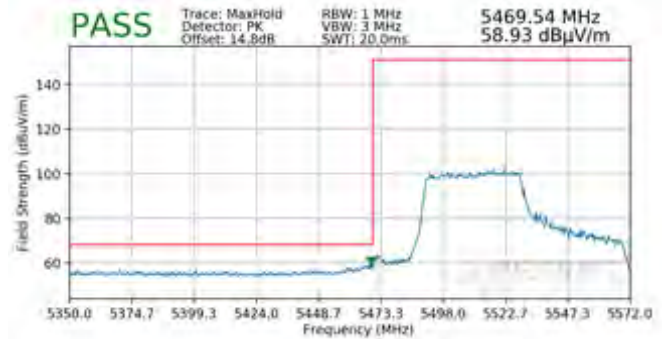
Plot 7-792. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A – 484 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 508 of 519

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	65
Distance of Measurements:	3 Meters
Operating Frequency:	5530MHz
Channel:	106

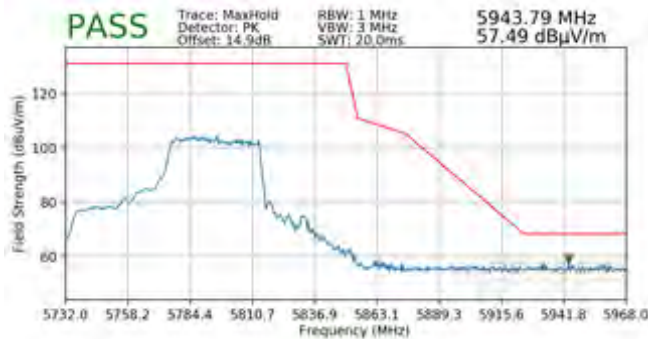


Plot 7-793. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 2C – 484 Tones)



Plot 7-794. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 2C – 484 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	66
Distance of Measurements:	3 Meters
Operating Frequency:	5775MHz
Channel:	155

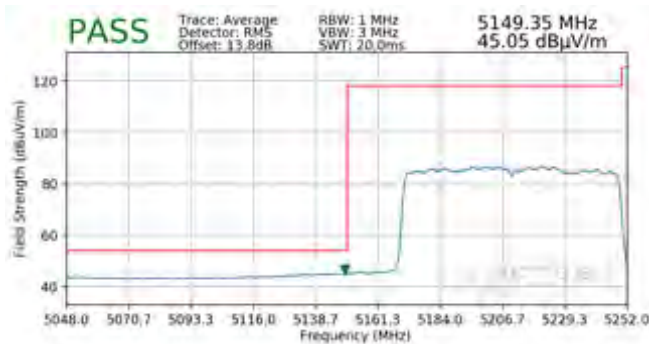


Plot 7-795. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 3 – 484 Tones)

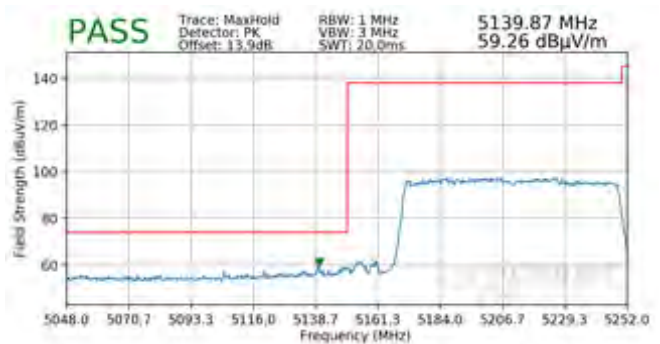
FCC ID: A3LSMG9700	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset	Page 509 of 519

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 7-796. Radiated Lower Band Edge Plot MIMO
(Average – UNII Band 1 – 996 Tones)**

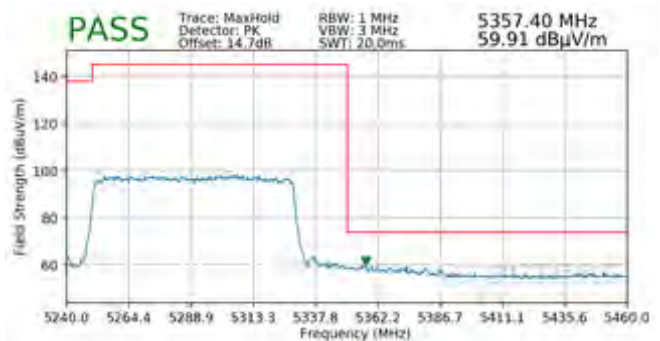


**Plot 7-797. Radiated Lower Band Edge Plot MIMO
(Peak – UNII Band 1 – 996 Tones)**

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



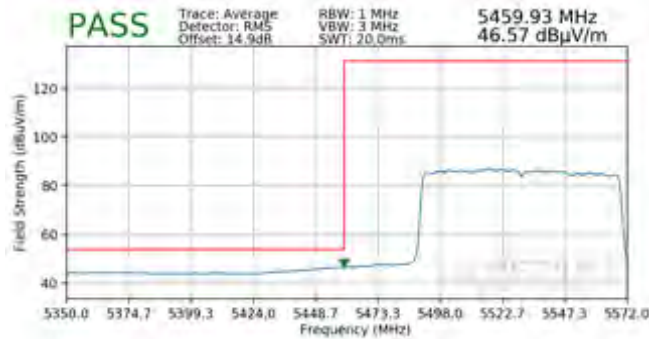
**Plot 7-798. Radiated Upper Band Edge Plot MIMO
(Average – UNII Band 2A – 996 Tones)**



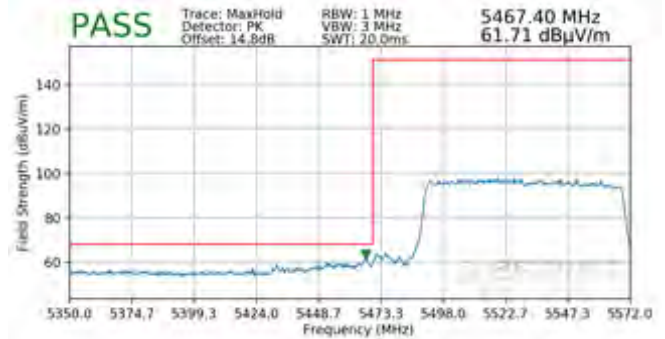
**Plot 7-799. Radiated Upper Band Edge Plot MIMO
(Peak – UNII Band 2A – 996 Tones)**

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 510 of 519

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

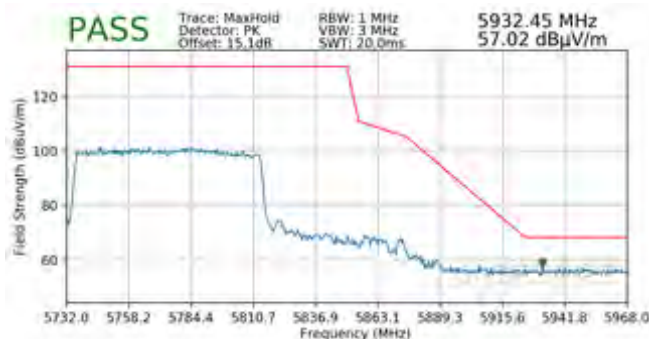


**Plot 7-800. Radiated Lower Band Edge Plot MIMO
(Average – UNII Band 2C – 996 Tones)**



**Plot 7-801. Radiated Lower Band Edge Plot MIMO
(Peak – UNII Band 2C – 996 Tones)**

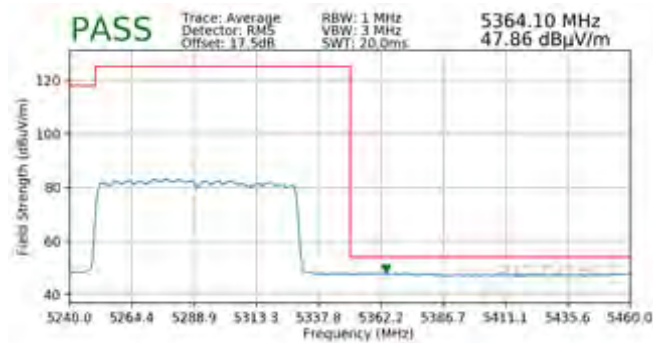
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index	67
Distance of Measurements:	3 Meters
Operating Frequency:	5775MHz
Channel:	155



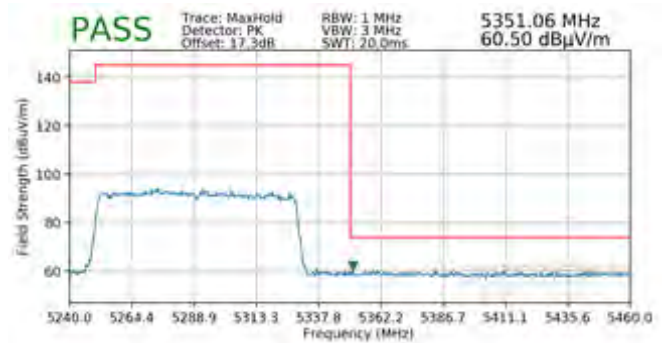
**Plot 7-802. Radiated Upper Band Edge Plot MIMO
(Peak – UNII Band 3 – 996 Tones)**

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 511 of 519

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



Plot 7-803. Radiated Band Edge Plot MIMO (Average – WCP – 996 Tones)



Plot 7-804. Radiated Band Edge Plot MIMO (Peak – WCP – 996 Tones)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 512 of 519

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 7-202 per Section 15.209 and RSS-Gen (8.9).

Frequency	Field Strength [μV/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 7-202. 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: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 513 of 519

Test Setup

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

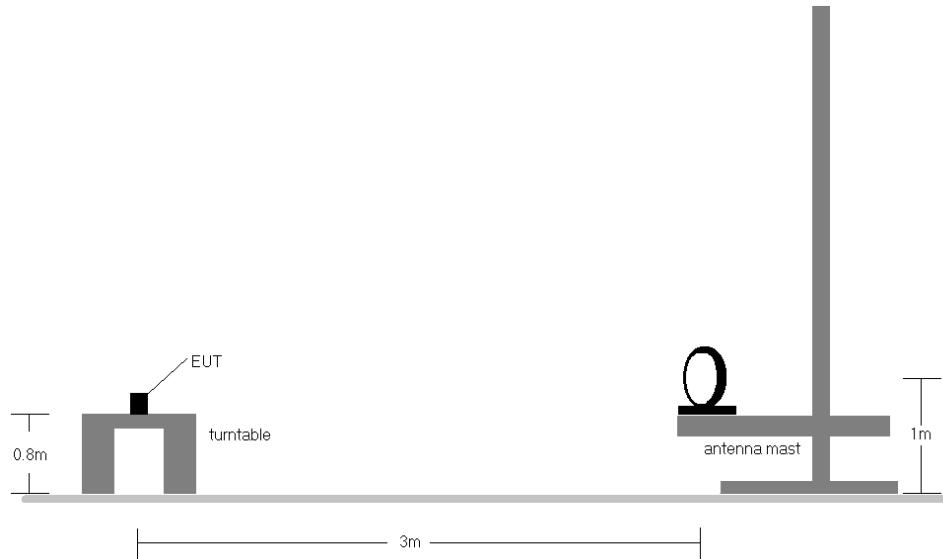


Figure 7-6. Radiated Test Setup < 30MHz

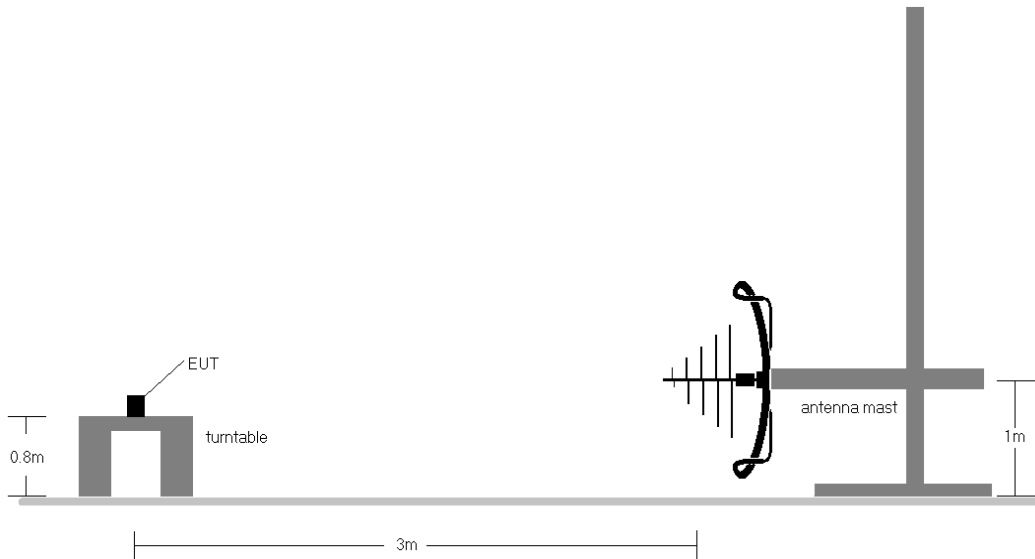


Figure 7-7. Radiated Test Setup < 1GHz

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 514 of 519

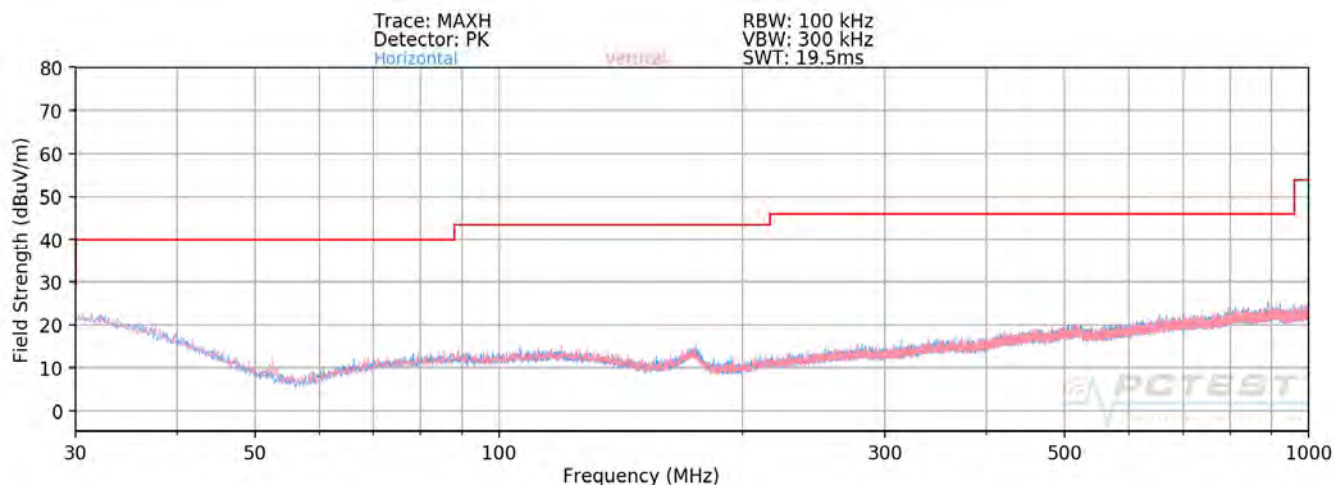
Test Notes

1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen (8.10) are below the limit shown in Table 7-202.
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.

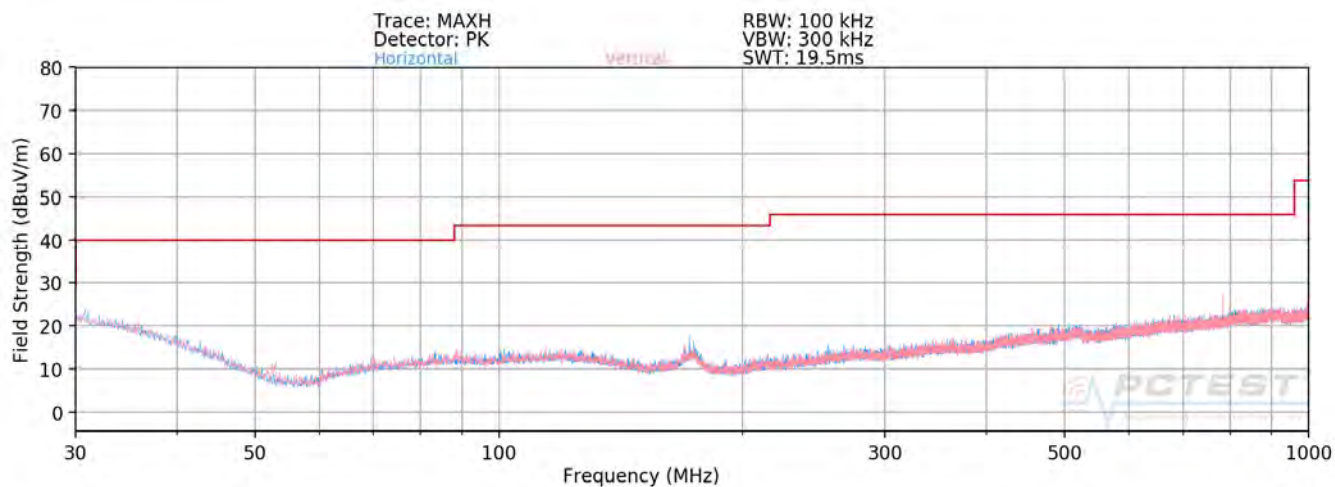
FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset	Page 515 of 519

SISO Antenna-1 Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209; RSS-Gen [8.9]



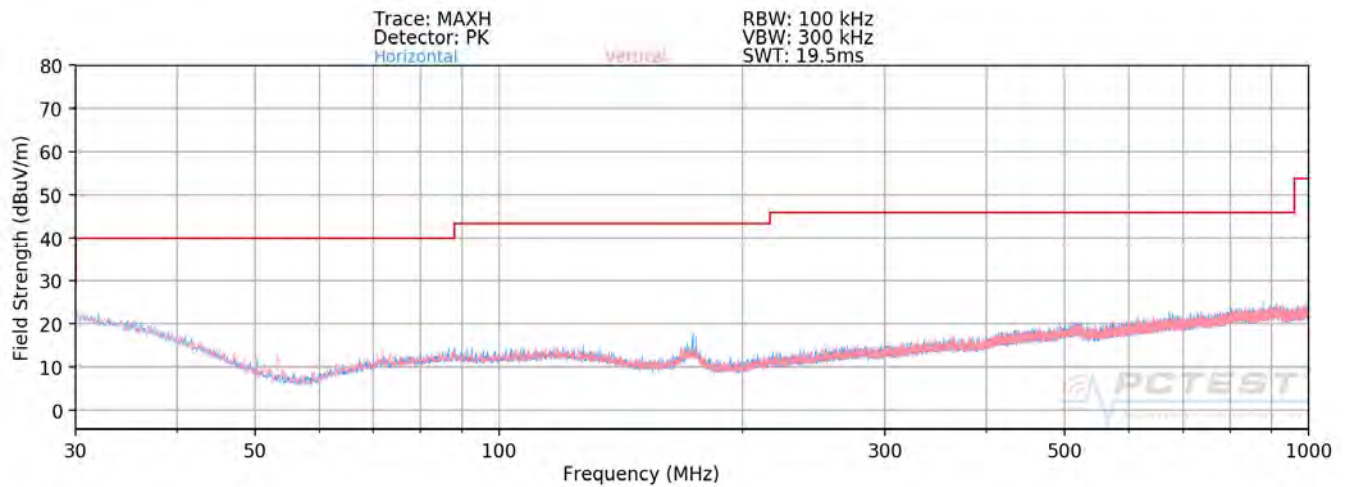
Plot 7-805. Radiated Spurious Plot below 1GHz SISO ANT1 (802.11ax – 106 Tones – U3 Ch. 157)



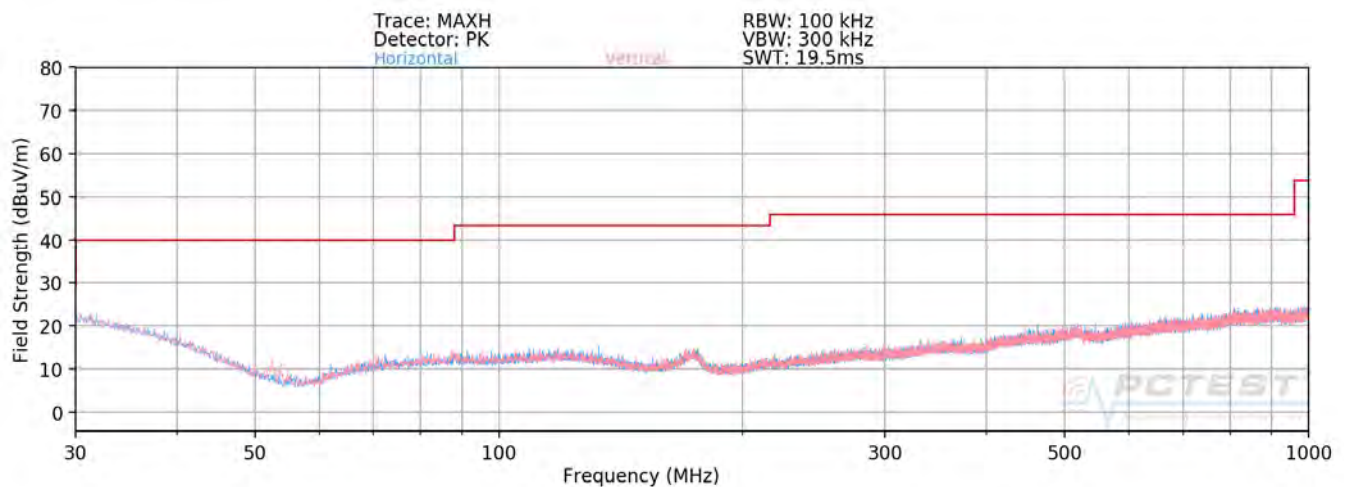
Plot 7-806. Radiated Spurious Plot below 1GHz SISO ANT1 (802.11ax – 242 Tones – U3 Ch. 157)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 516 of 519

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



Plot 7-807. Radiated Spurious Plot below 1GHz SISO ANT2 (802.11ax – 106 Tones – U3 Ch. 157)

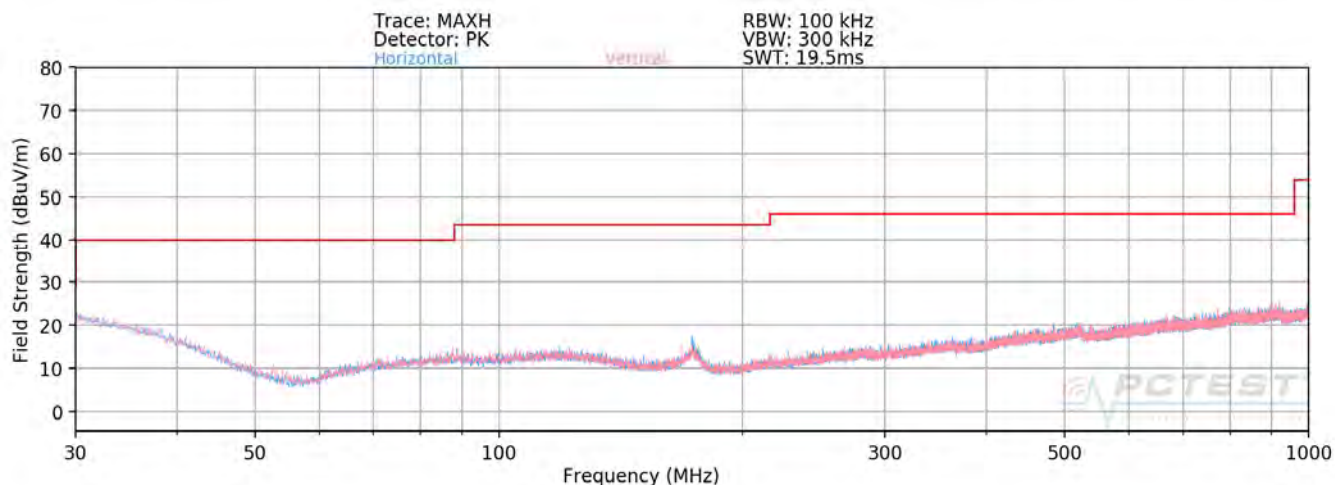


Plot 7-808. Radiated Spurious Plot below 1GHz SISO ANT2 (802.11ax – 242 Tones – U3 Ch. 157)

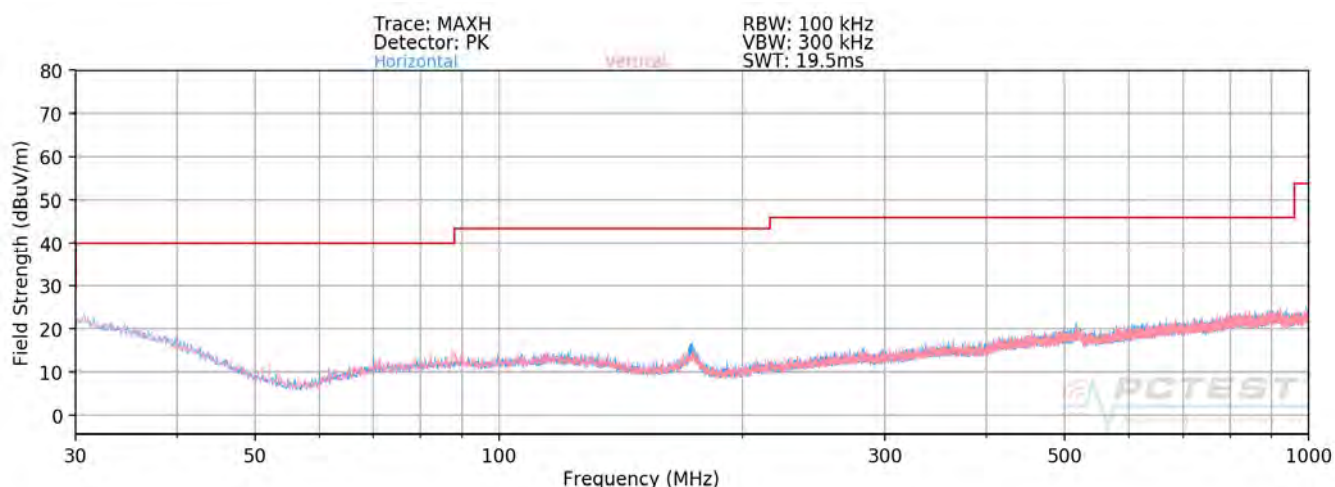
FCC ID: A3LSMG9700	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset	Page 517 of 519	

MIMO Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209; RSS-Gen [8.9]



Plot 7-809. Radiated Spurious Plot below 1GHz MIMO (802.11ax – 106 Tones – U3 Ch. 157)



Plot 7-810. Radiated Spurious Plot below 1GHz MIMO (802.11ax – 242 Tones – U3 Ch. 157)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 518 of 519

8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMG9700** is in compliance with Part 15 Subpart E (15.407) of the FCC Rules.

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-15.A3L	Test Dates: 11/9/2018 - 1/22/2019	EUT Type: Portable Handset		Page 519 of 519