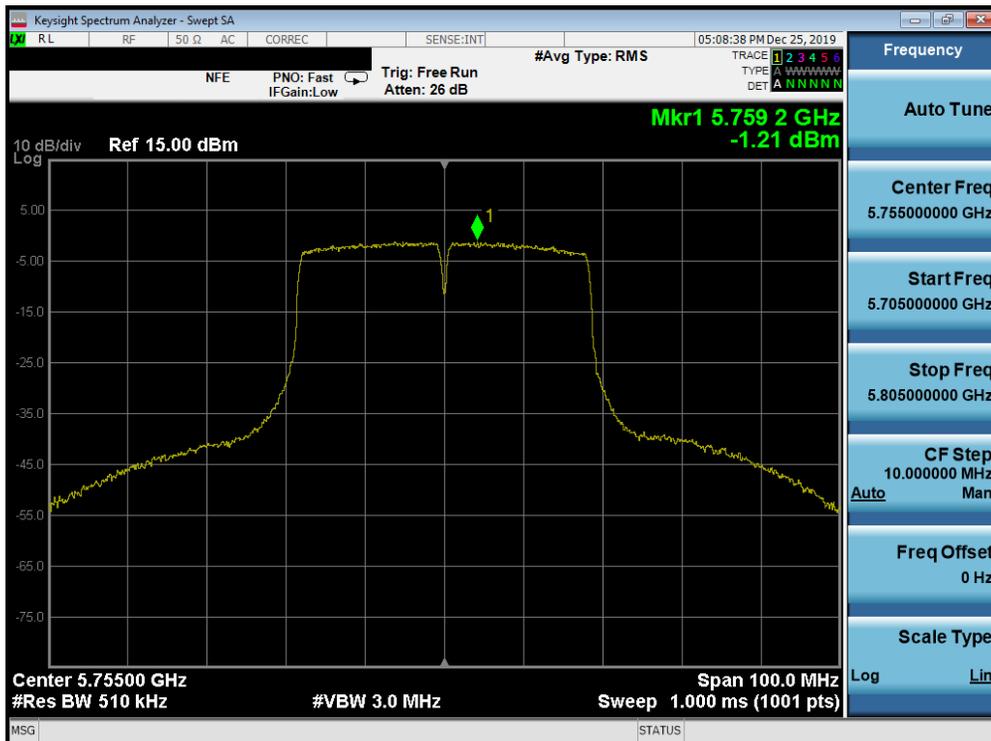
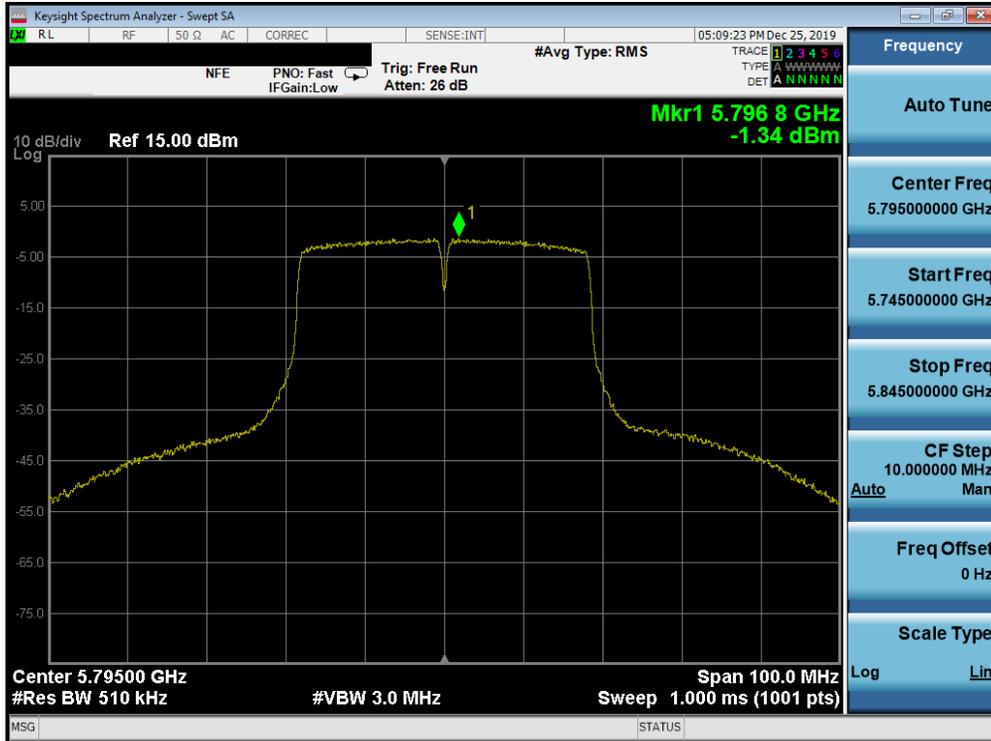


Plot 7-114. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

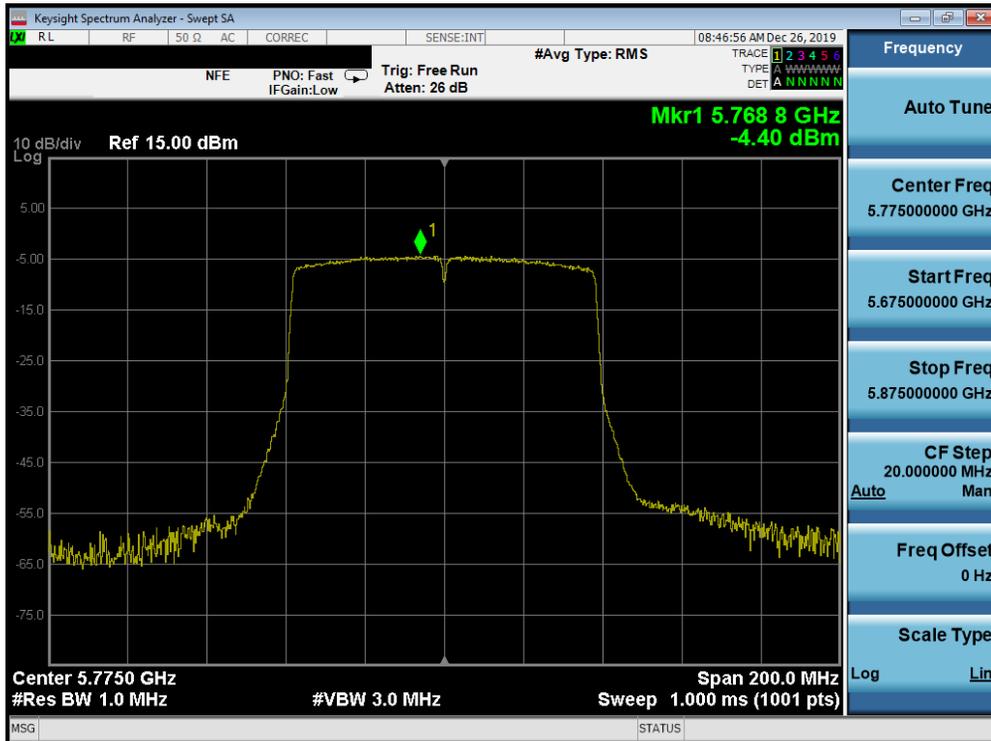


Plot 7-115. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 86 of 176



Plot 7-116. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11n (UNII Band 3) – Ch. 159)



Plot 7-117. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)

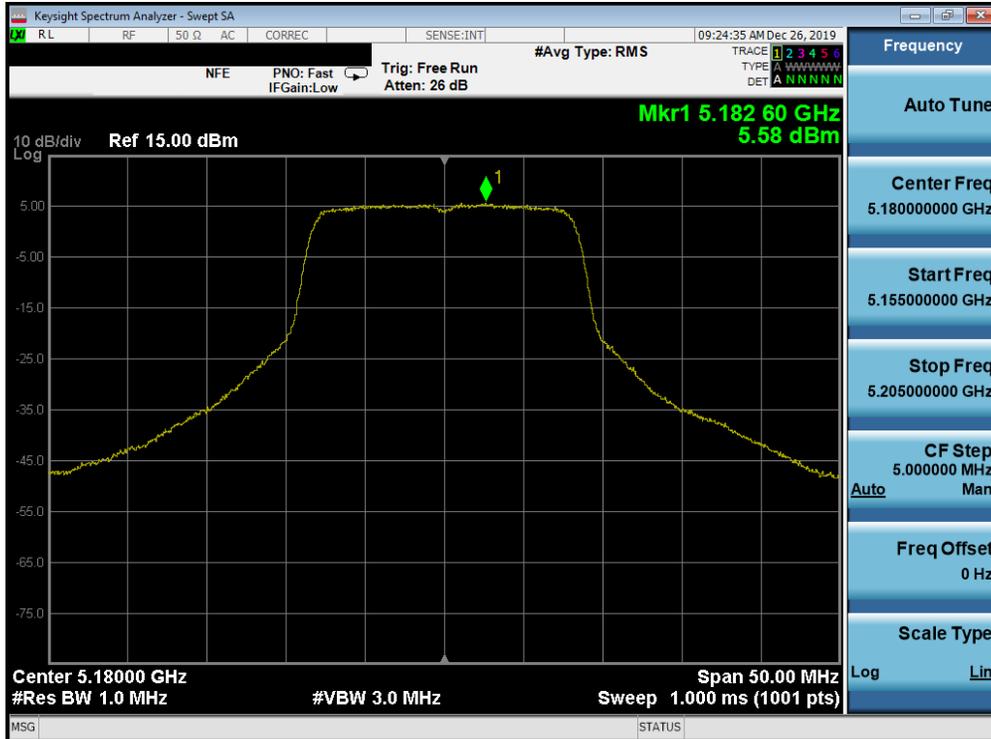
FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 87 of 176

## SISO Antenna-2 Power Spectral Density Measurements

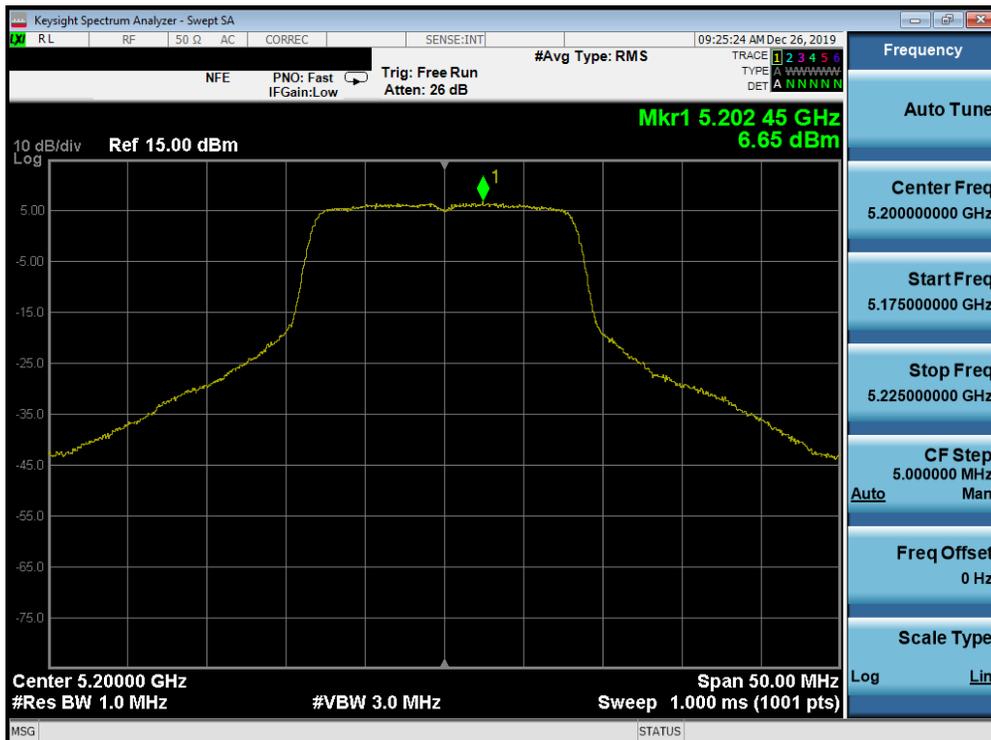
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	a	6	5.58	11.0	-5.42
	5200	40	a	6	6.65	11.0	-4.35
	5240	48	a	6	5.54	11.0	-5.46
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	5.85	11.0	-5.15
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.69	11.0	-4.31
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	3.03	11.0	-7.97
	5190	38	n (40MHz)	13.5/15 (MCS0)	-0.87	11.0	-11.87
	5230	46	n (40MHz)	13.5/15 (MCS0)	1.24	11.0	-9.76
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-7.35	11.0	-18.35
Band 2A	5260	52	a	6	5.71	11.0	-5.29
	5280	56	a	6	6.46	11.0	-4.54
	5320	64	a	6	5.60	11.0	-5.40
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	5.52	11.0	-5.48
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	6.72	11.0	-4.28
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	5.55	11.0	-5.45
	5270	54	n (40MHz)	13.5/15 (MCS0)	1.36	11.0	-9.64
	5310	62	n (40MHz)	13.5/15 (MCS0)	-0.97	11.0	-11.97
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-7.03	11.0	-18.03
Band 2C	5500	100	a	6	5.52	11.0	-5.48
	5600	120	a	6	5.68	11.0	-5.32
	5720	144	a	6	5.80	11.0	-5.20
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	5.66	11.0	-5.34
	5600	120	n (20MHz)	6.5/7.2 (MCS0)	5.67	11.0	-5.33
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	6.15	11.0	-4.85
	5510	102	n (40MHz)	13.5/15 (MCS0)	1.21	11.0	-9.79
	5590	118	n (40MHz)	13.5/15 (MCS0)	1.30	11.0	-9.70
	5710	142	n (40MHz)	13.5/15 (MCS0)	1.64	11.0	-9.36
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-5.32	11.0	-16.32
	5610	122	ac (80MHz)	29.3/32.5 (MCS0)	-5.00	11.0	-16.00
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-7.28	11.0	-18.28

Table 7-23. Conducted Power Spectral Density Measurements SISO ANT2

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset	Page 88 of 176	

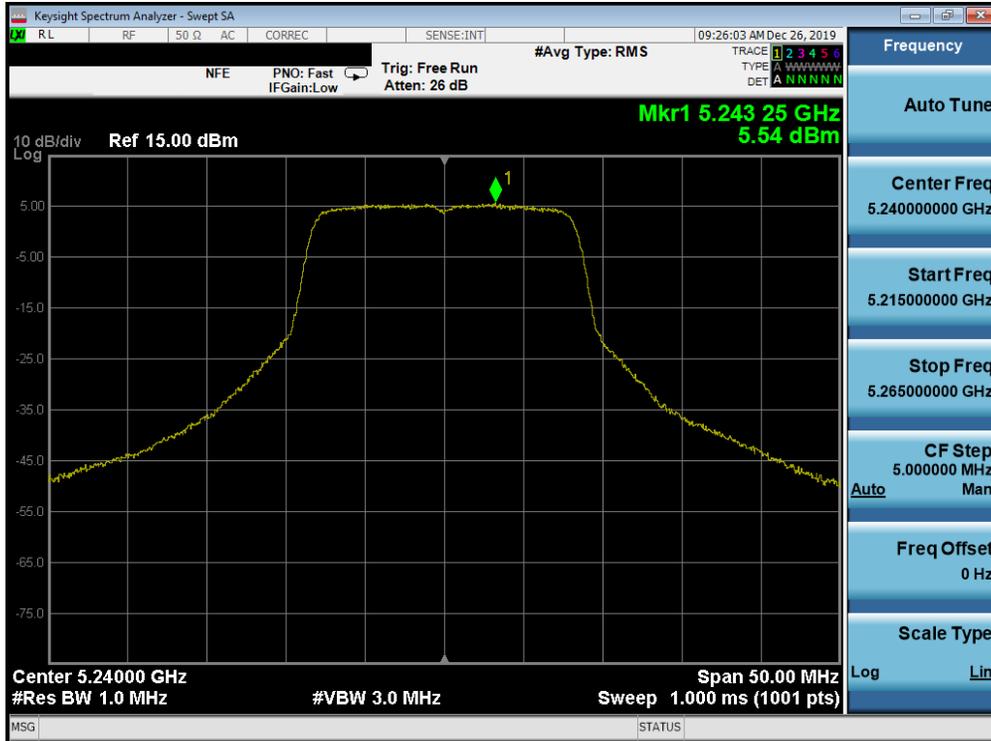


Plot 7-118. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 1) – Ch. 36)

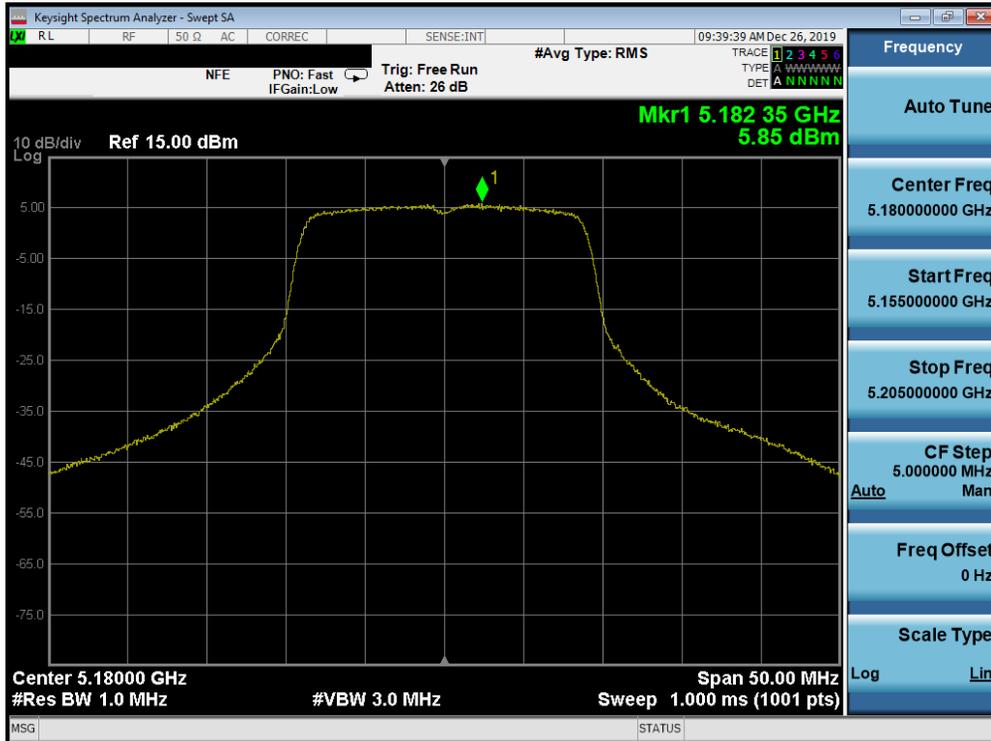


Plot 7-119. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 1) – Ch. 40)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 89 of 176

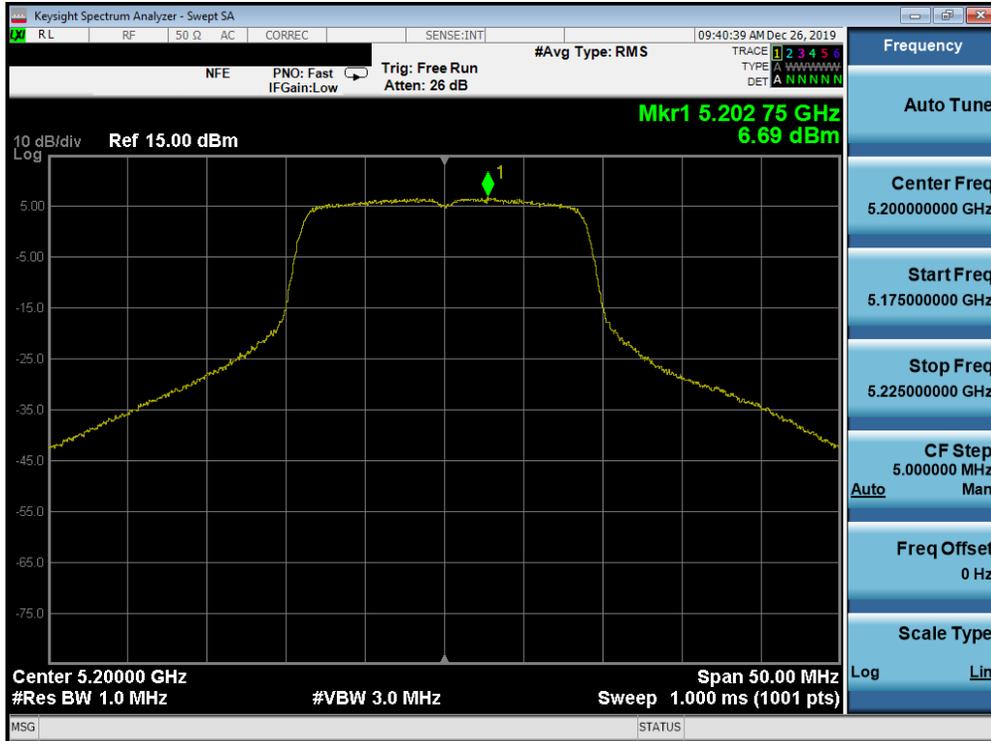


Plot 7-120. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 1) – Ch. 48)

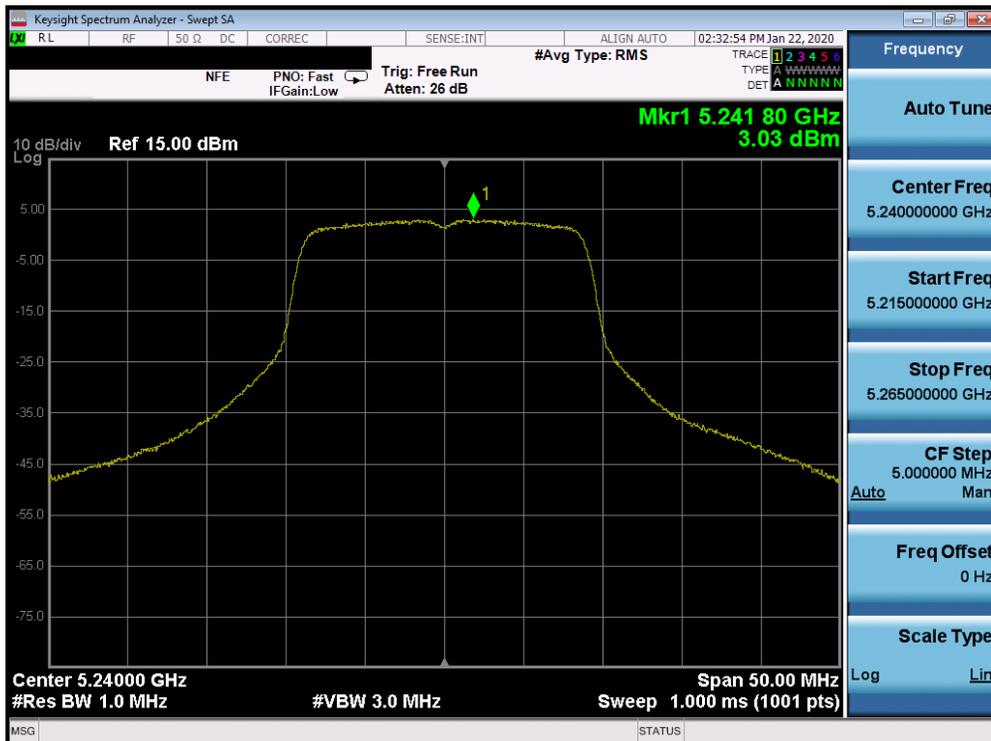


Plot 7-121. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 90 of 176

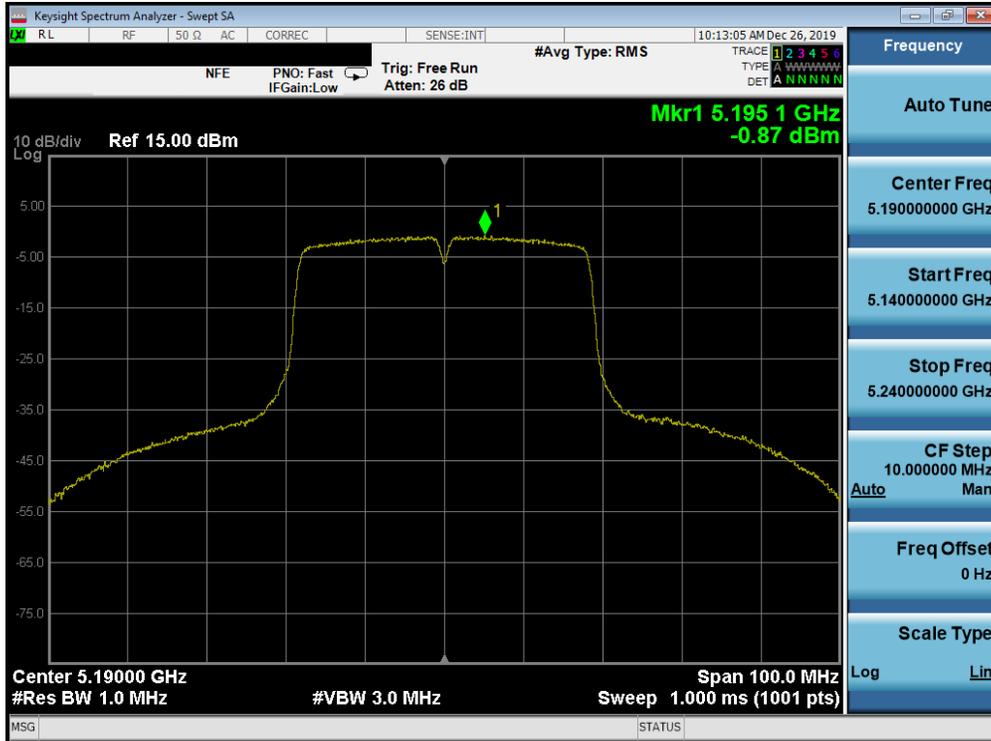


Plot 7-122. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

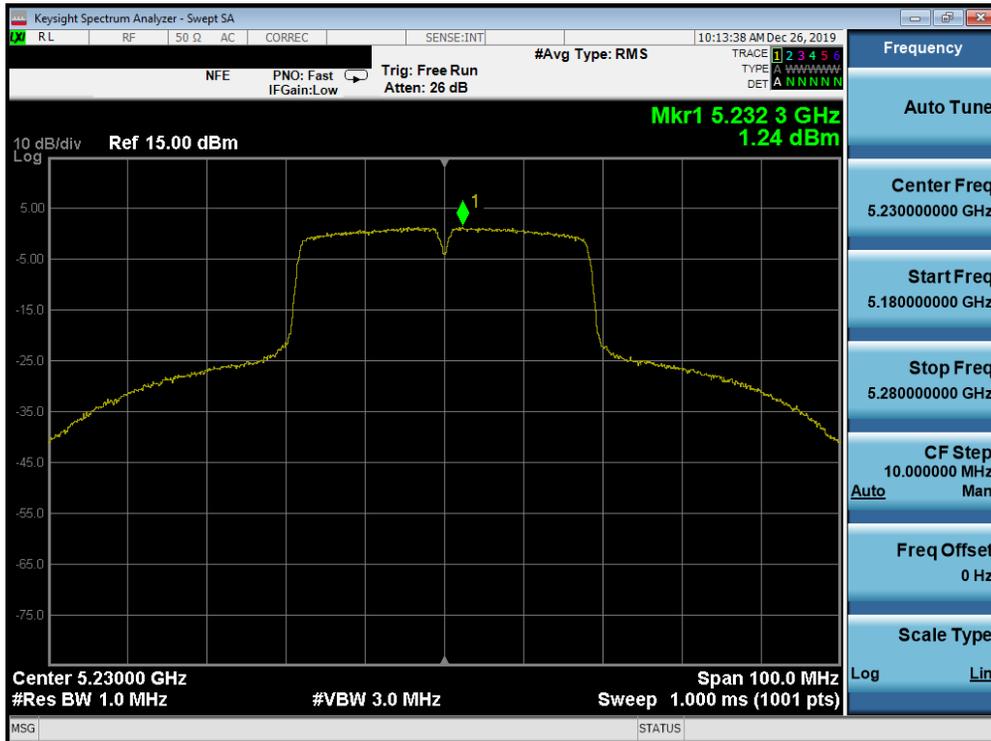


Plot 7-123. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 91 of 176

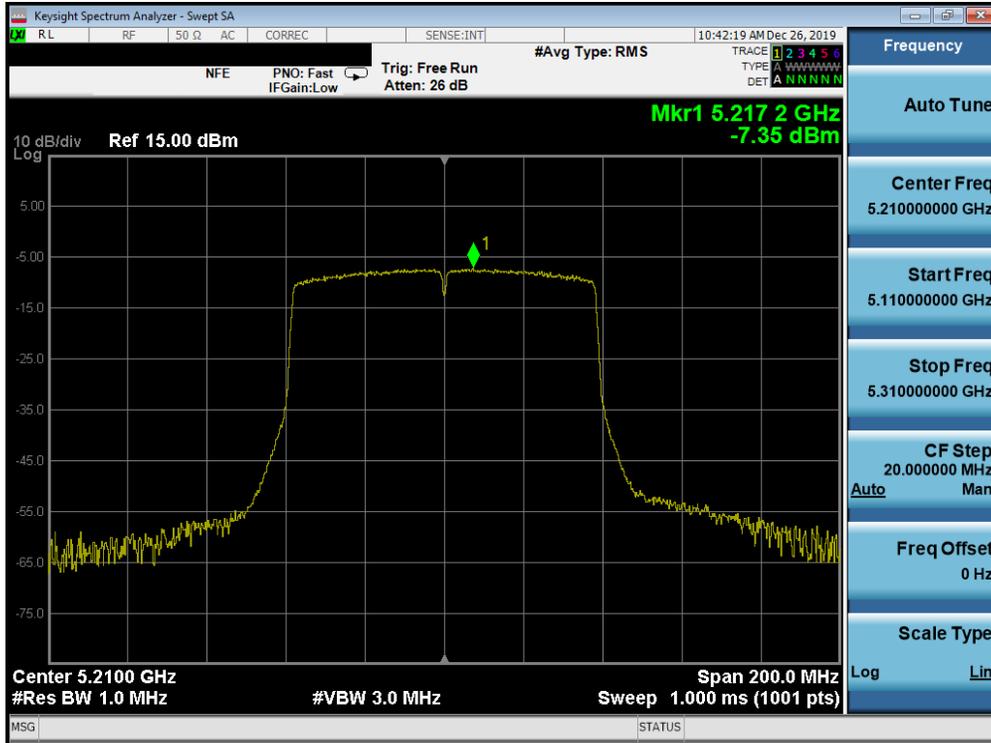


Plot 7-124. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

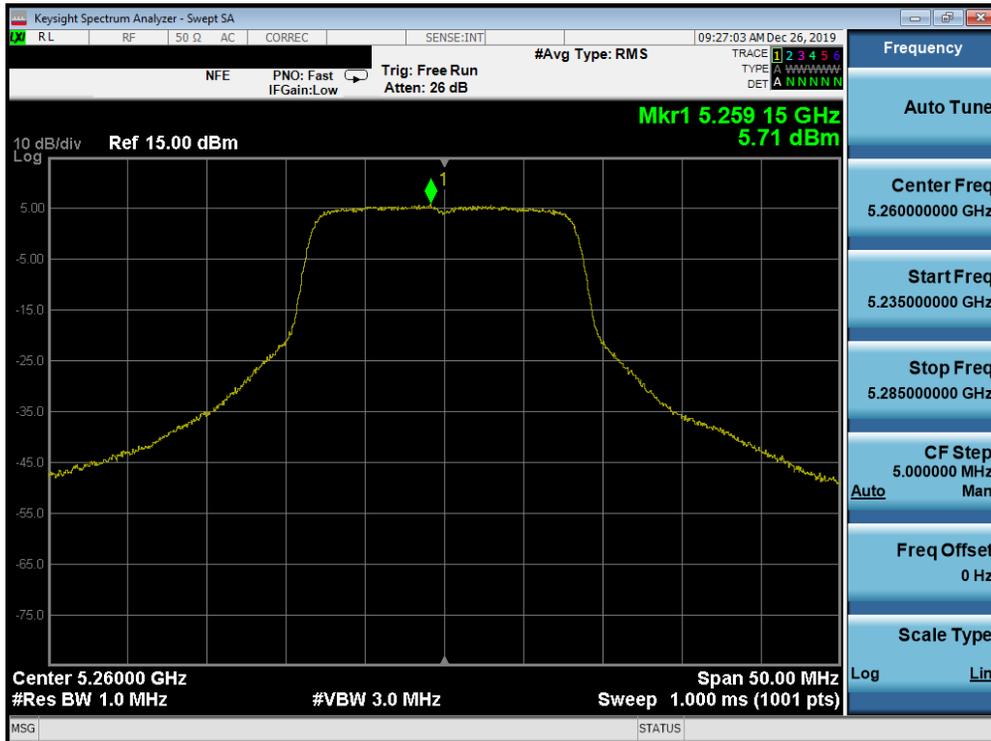


Plot 7-125. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 92 of 176

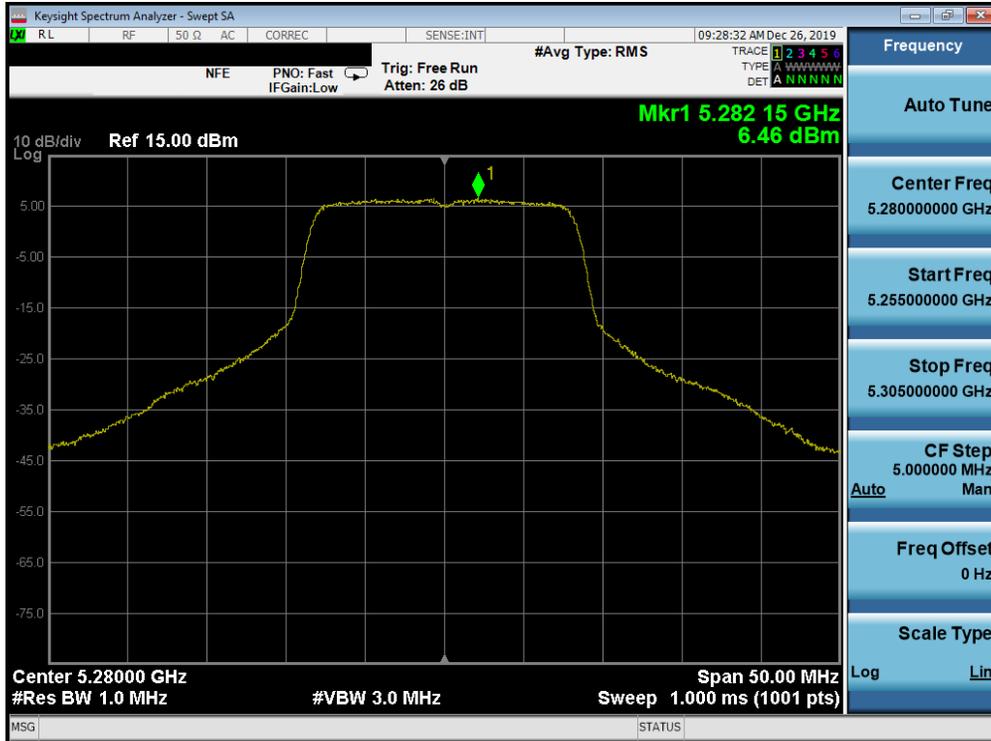


Plot 7-126. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

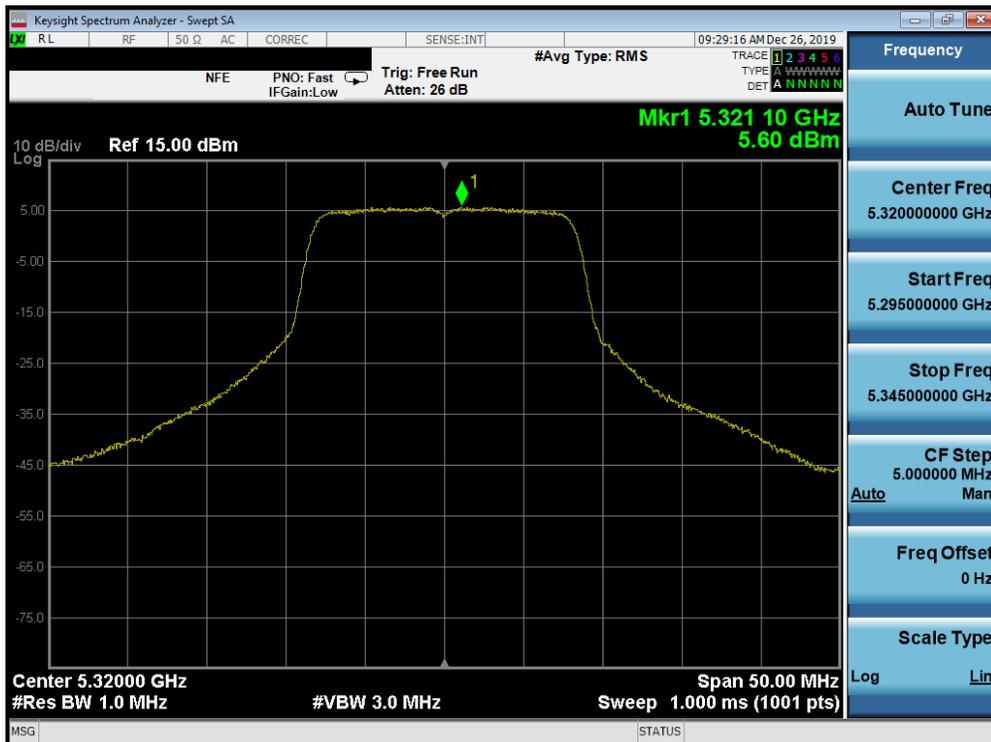


Plot 7-127. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2A) – Ch. 52)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 93 of 176

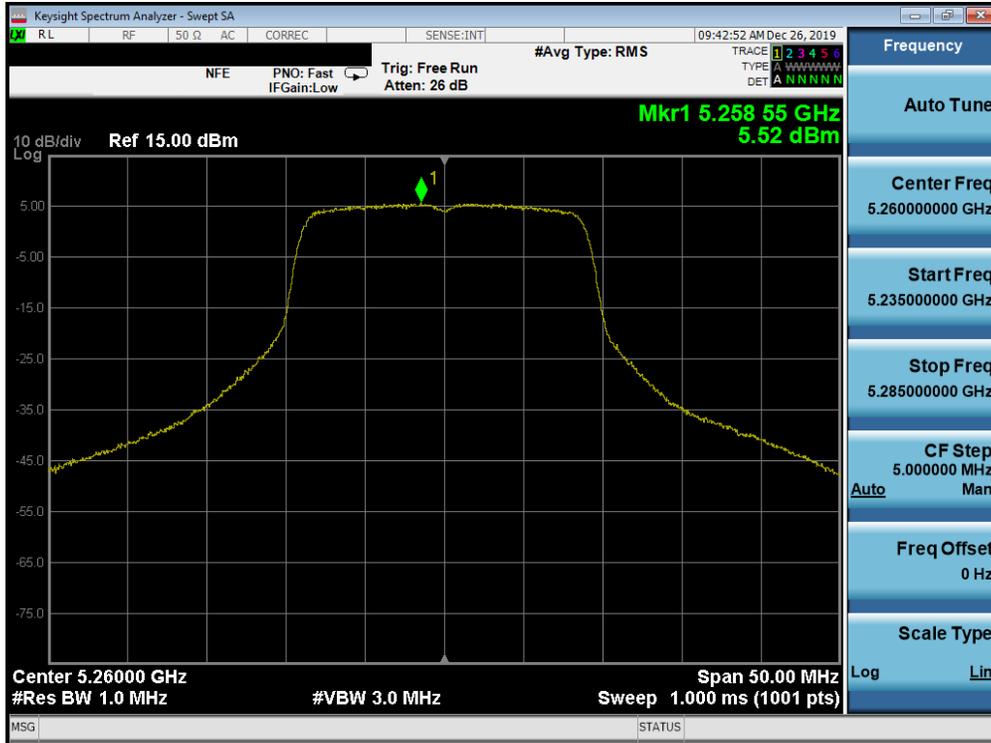


Plot 7-128. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2A) – Ch. 56)

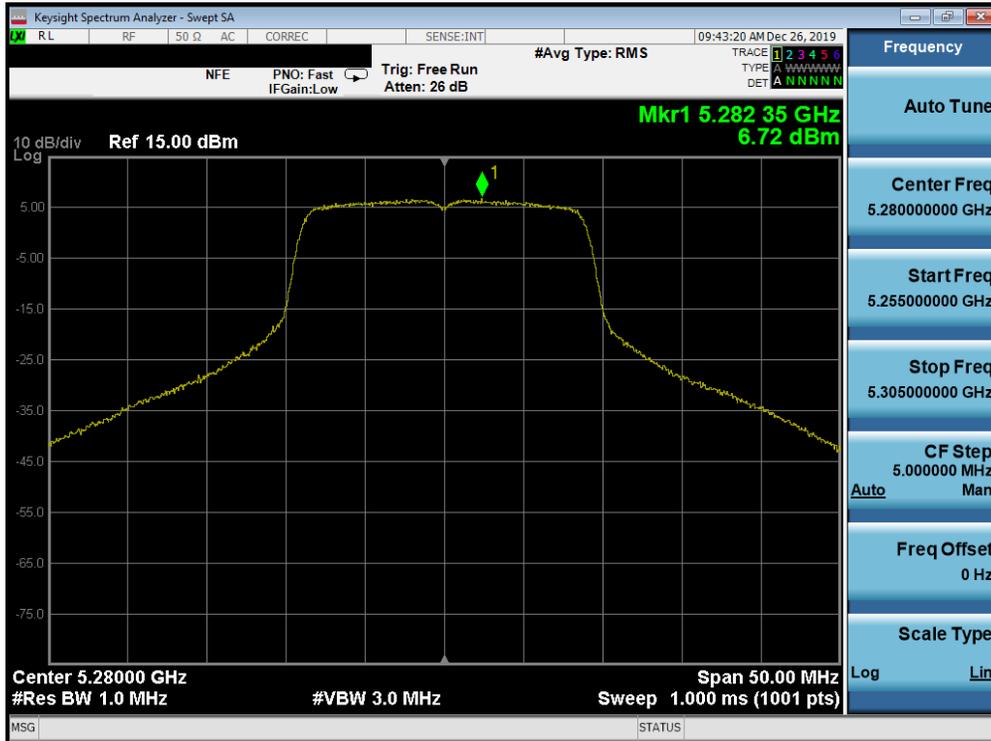


Plot 7-129. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2A) – Ch. 64)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 94 of 176

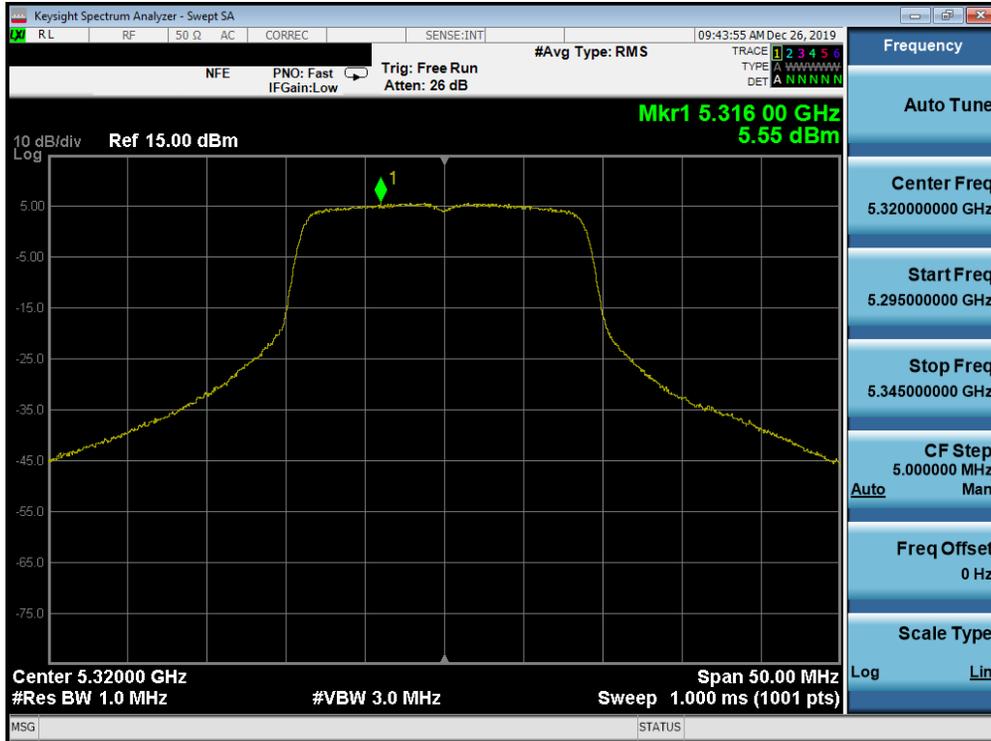


Plot 7-130. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

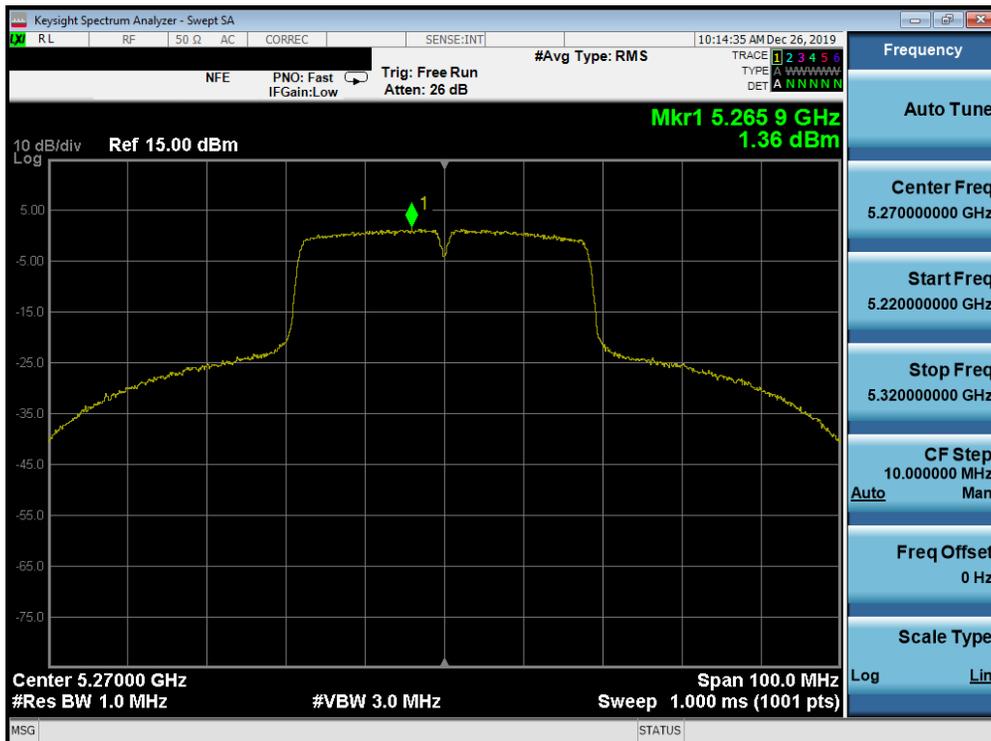


Plot 7-131. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 95 of 176

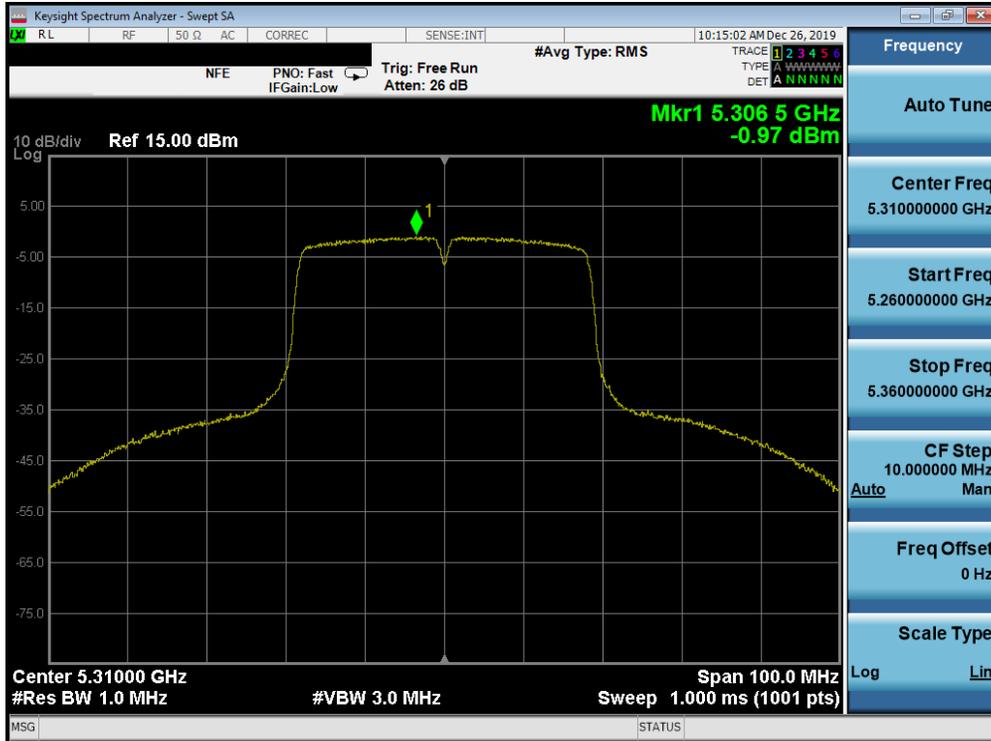


Plot 7-132. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

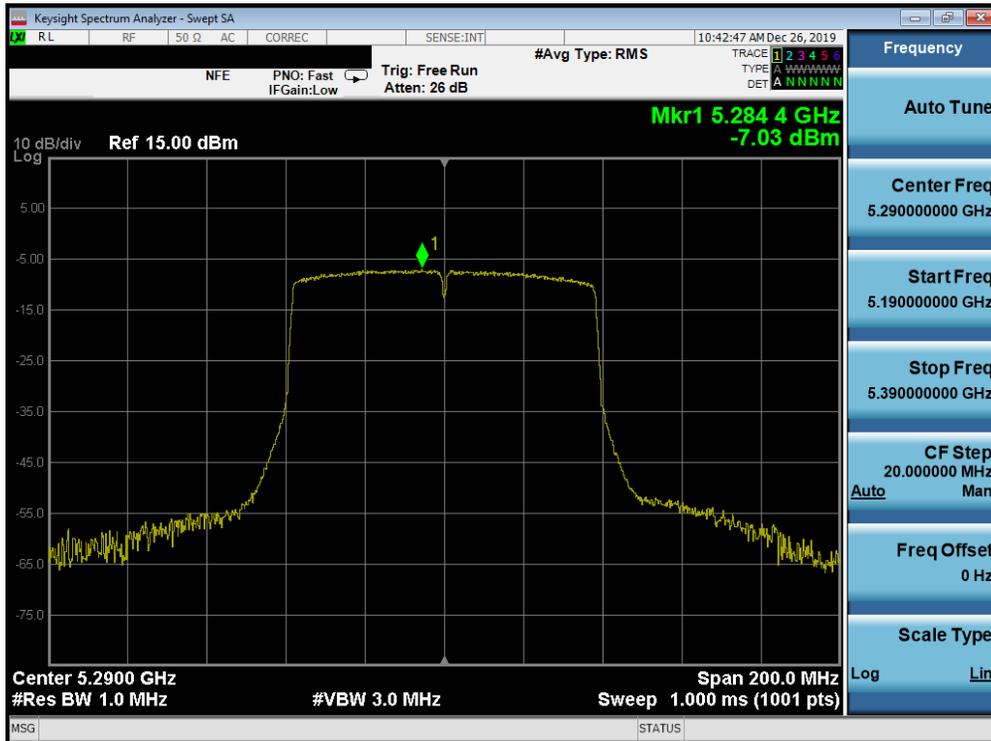


Plot 7-133. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 96 of 176

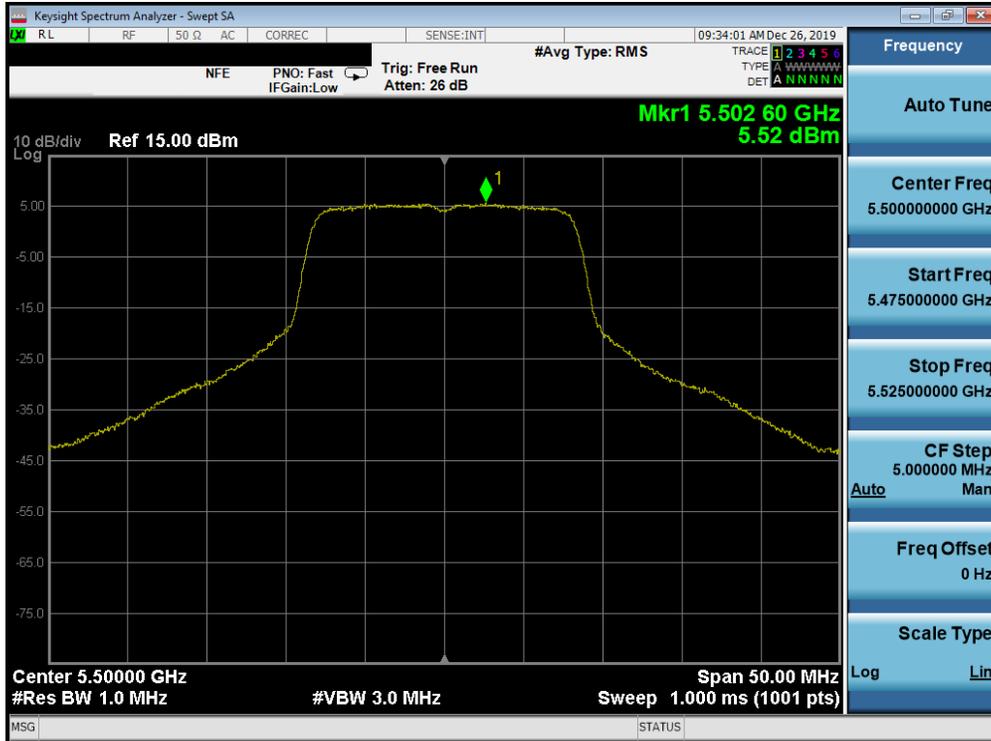


Plot 7-134. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

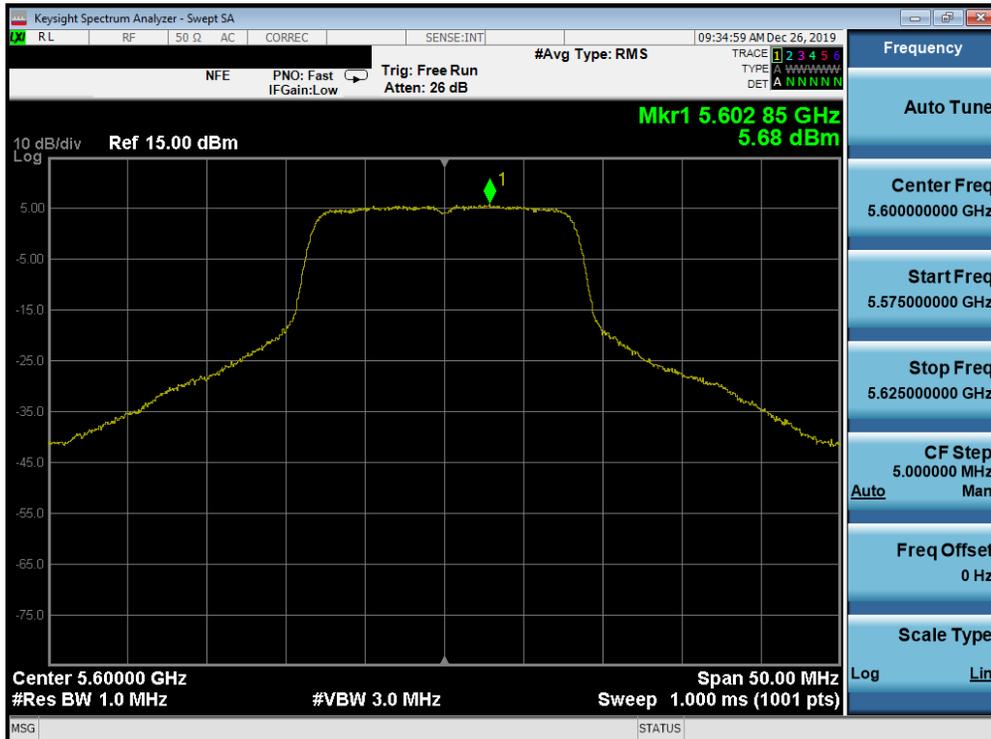


Plot 7-135. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 97 of 176

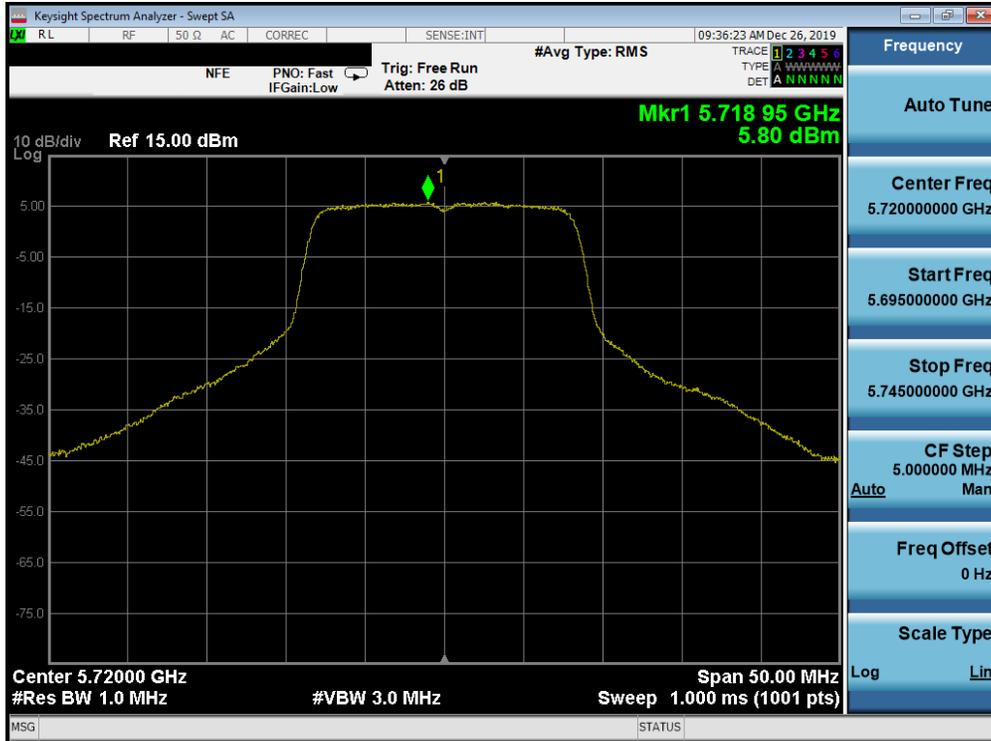


Plot 7-136. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2C) – Ch. 100)

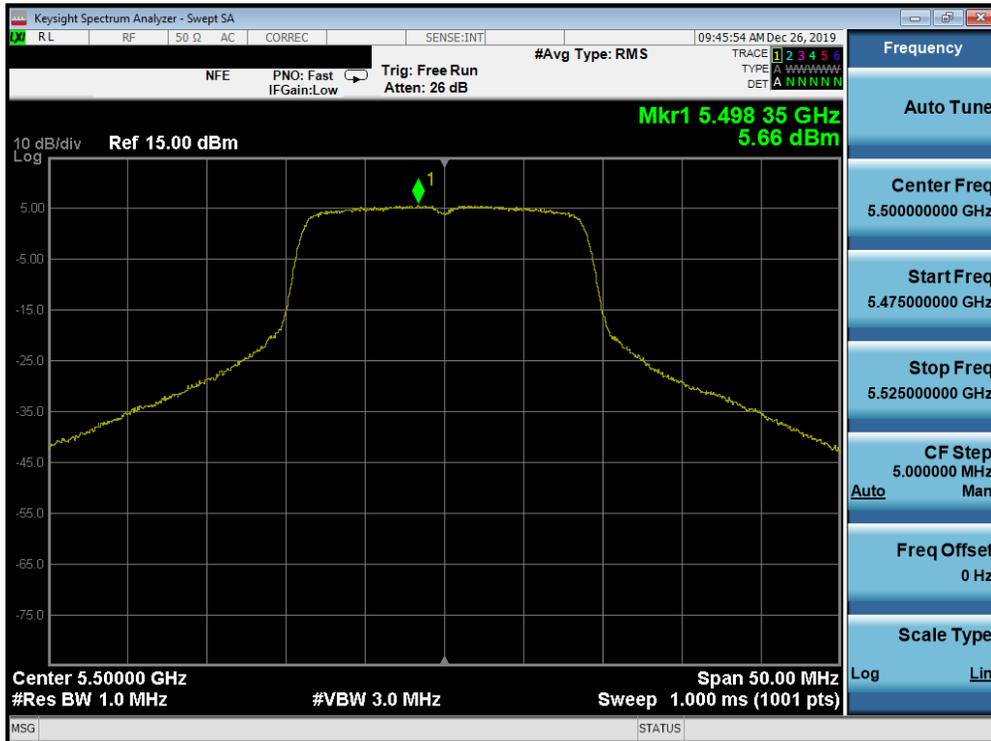


Plot 7-137. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2C) – Ch. 120)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 98 of 176

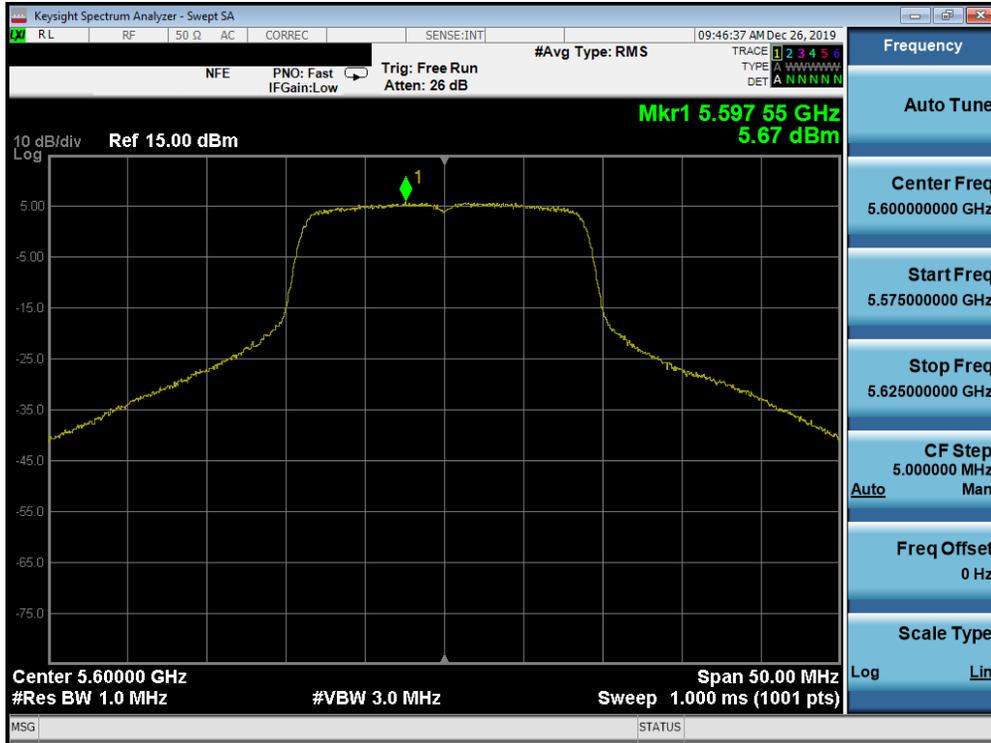


Plot 7-138. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 2C) – Ch. 144)

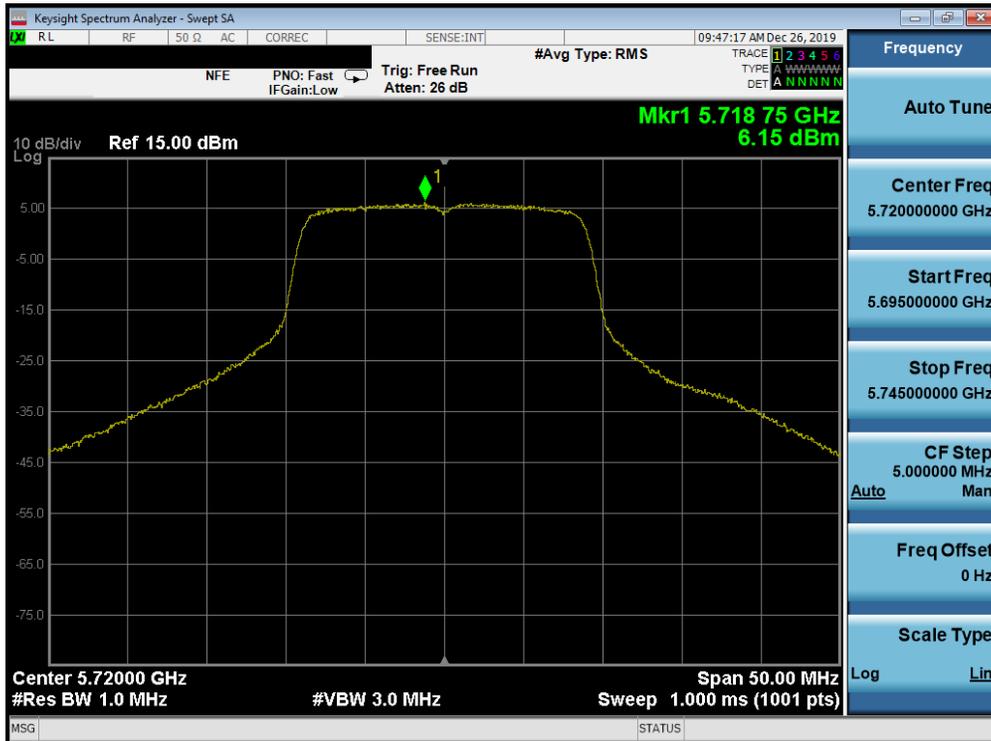


Plot 7-139. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 99 of 176

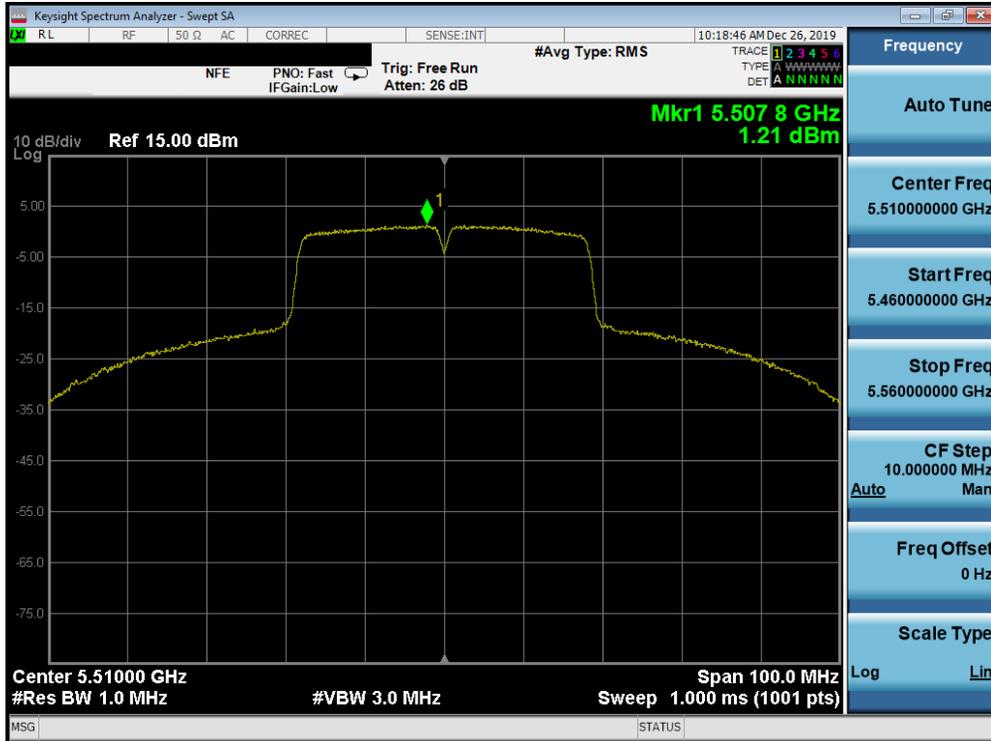


Plot 7-140. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2C) – Ch. 120)

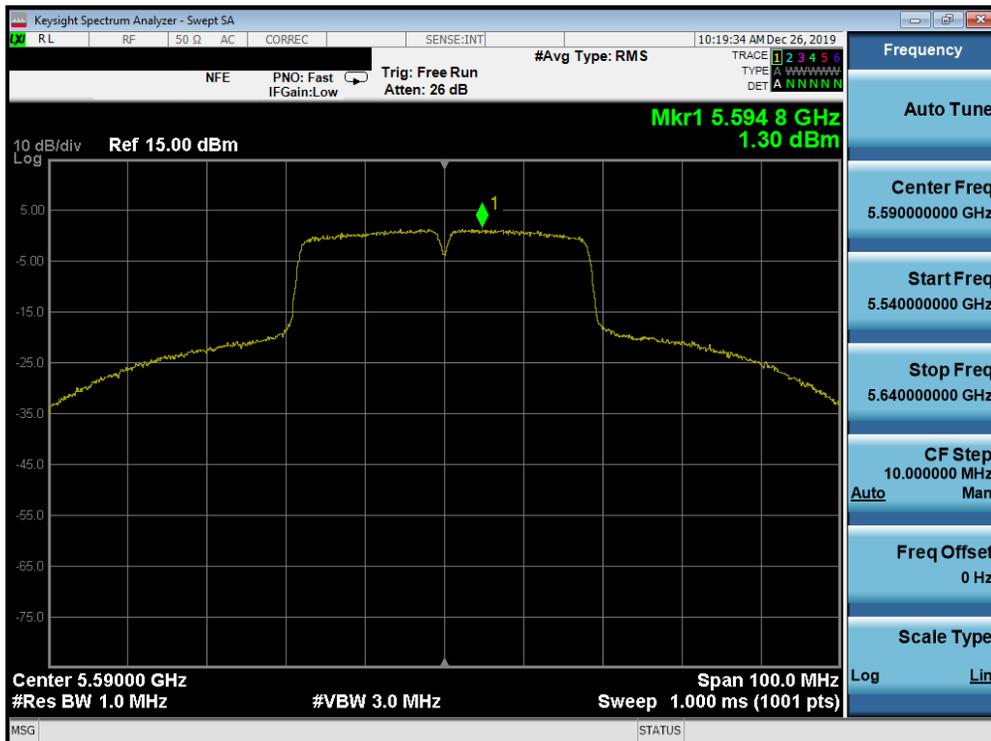


Plot 7-141. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 2C) – Ch. 144)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 100 of 176

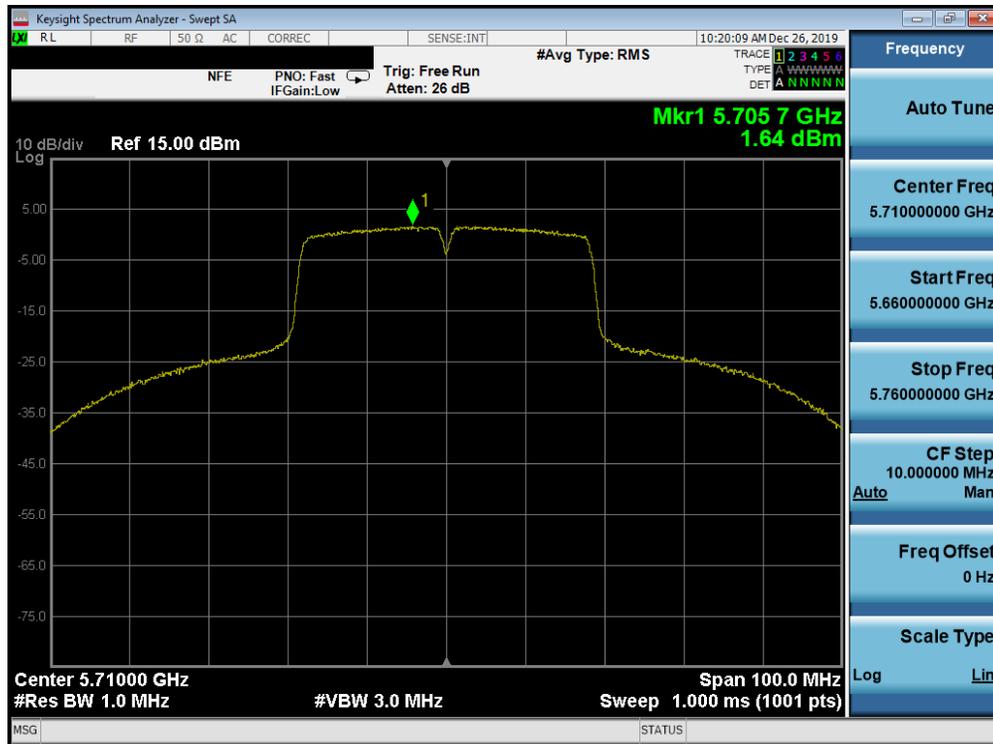


Plot 7-142. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

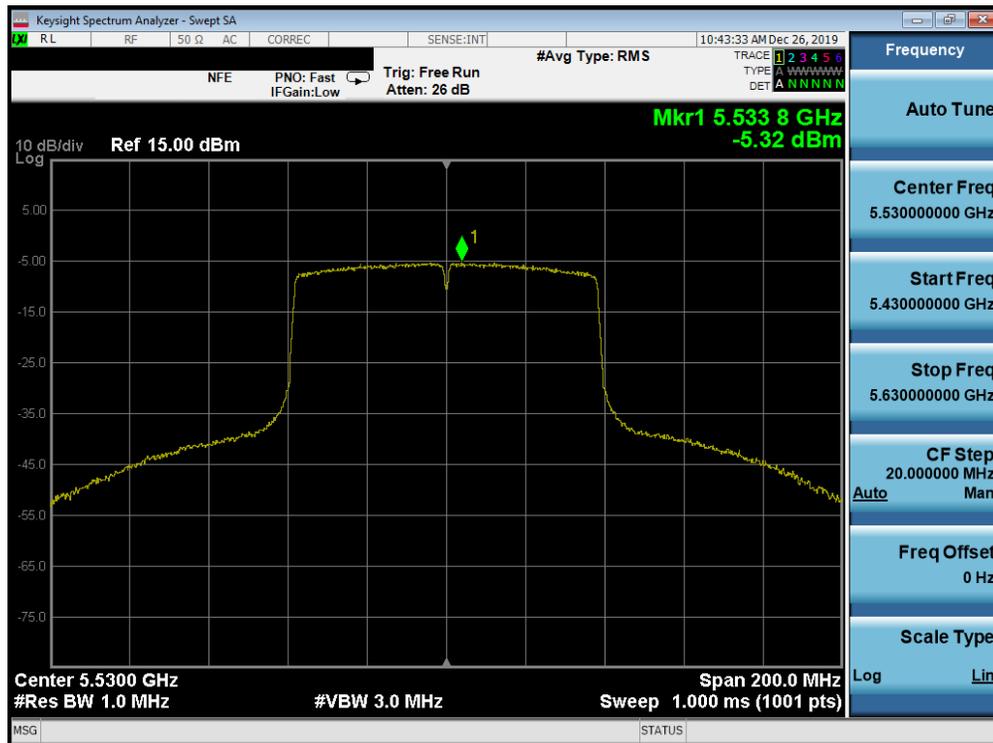


Plot 7-143. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2C) – Ch. 118)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 101 of 176

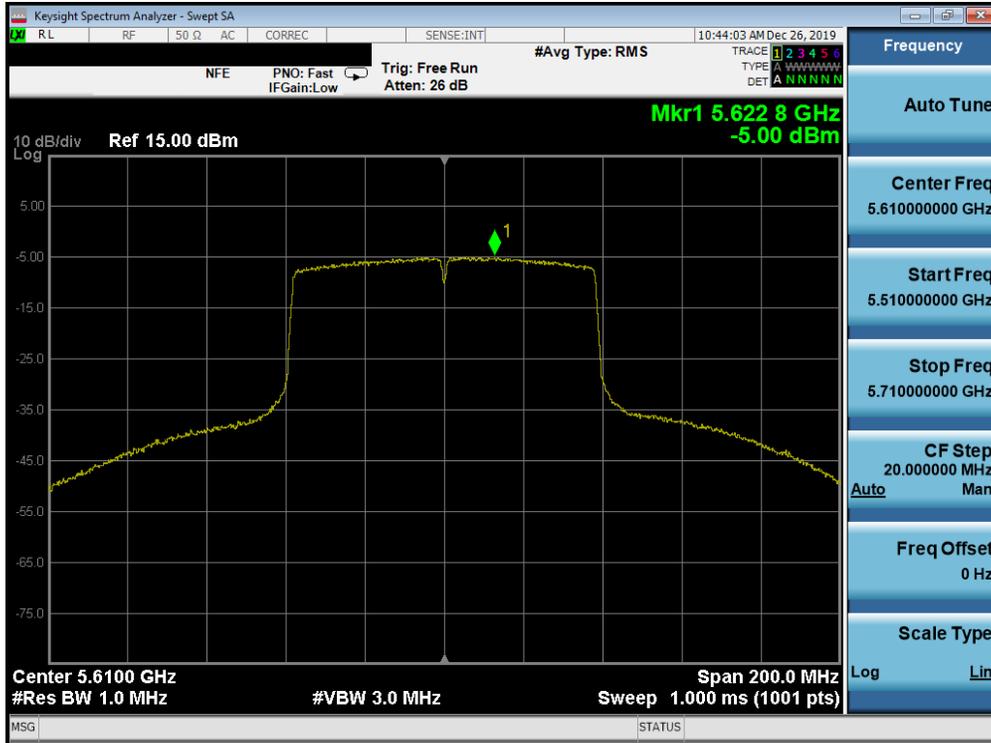


Plot 7-144. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)

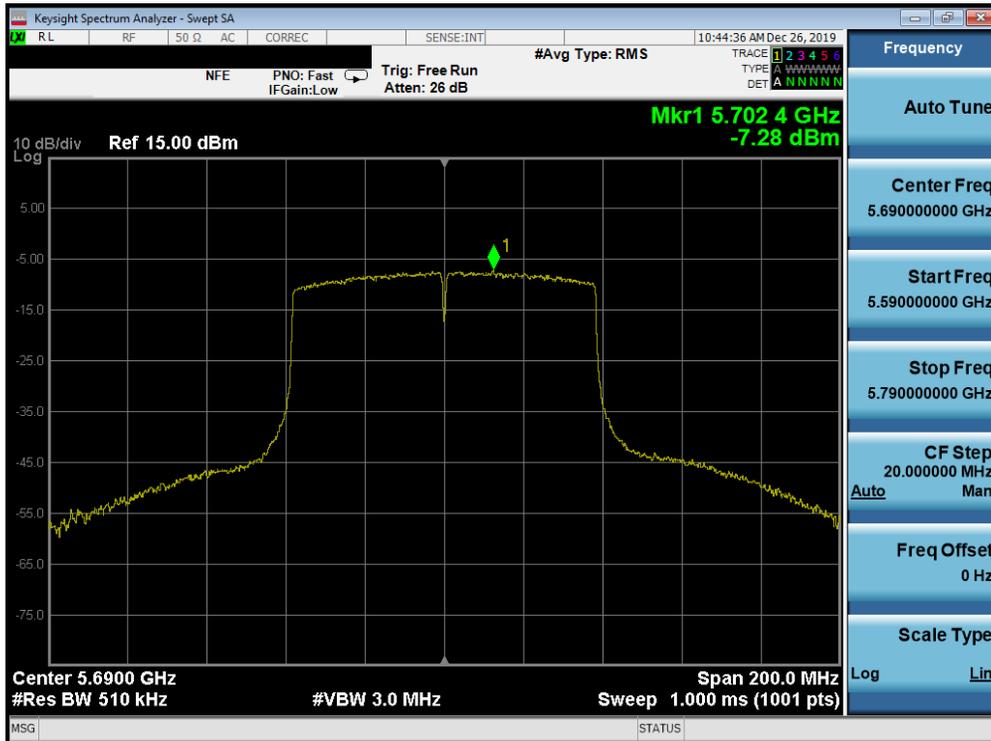


Plot 7-145. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 102 of 176



Plot 7-146. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 122)

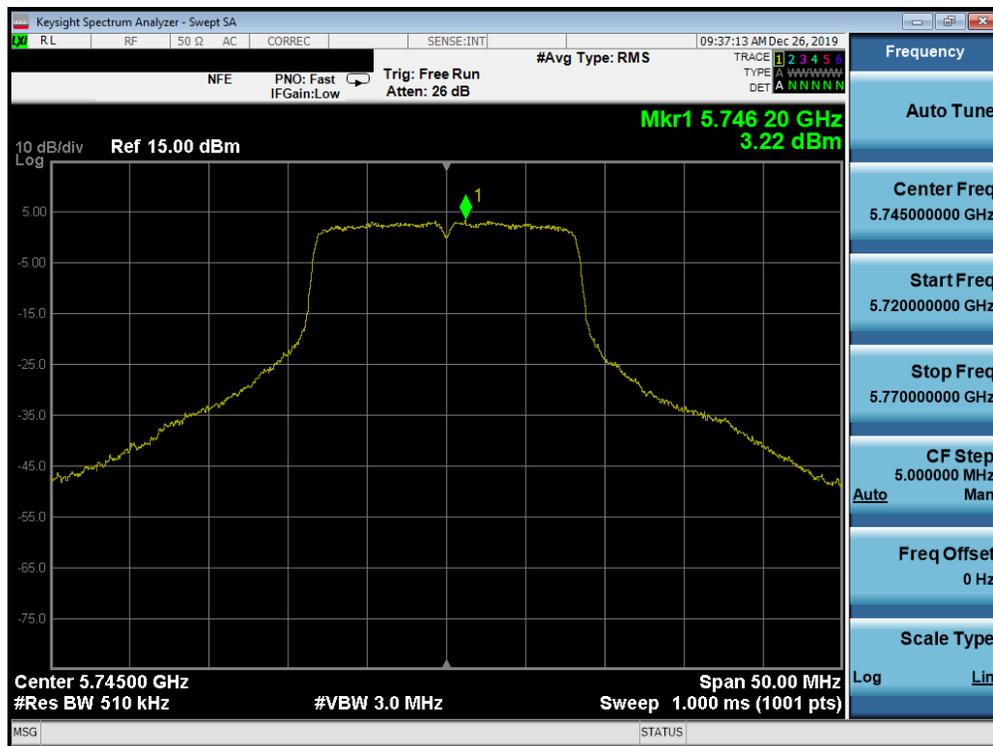


Plot 7-147. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 2C) – Ch. 138)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 103 of 176

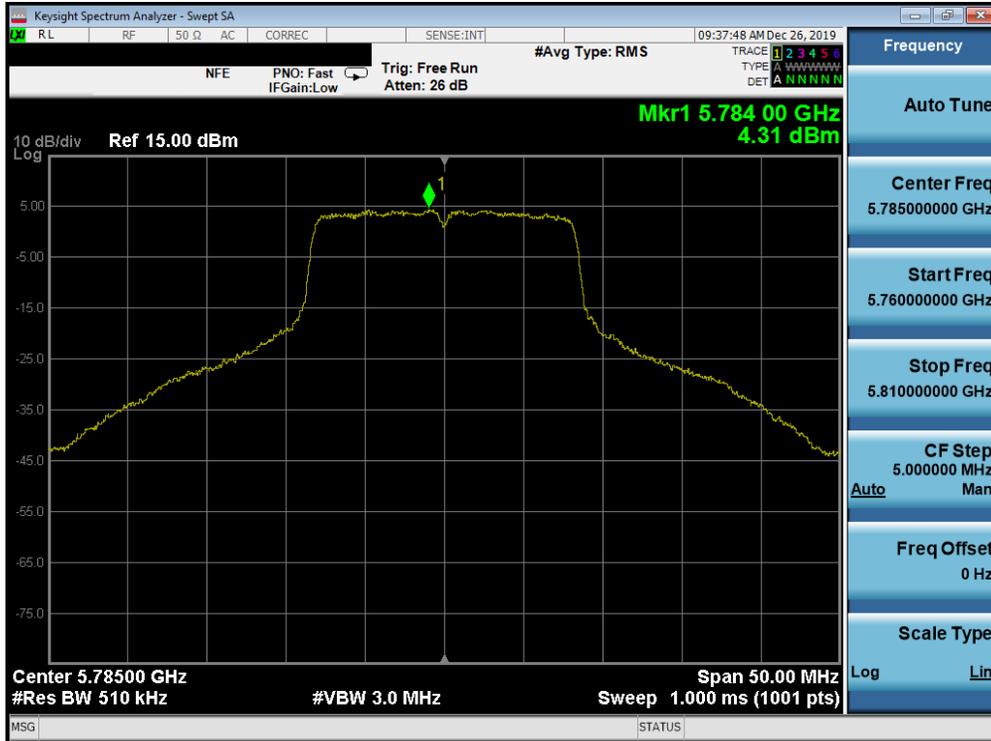
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
<b>Band 3</b>	5745	149	a	6	3.22	30.0	-26.78
	5785	157	a	6	4.31	30.0	-25.69
	5825	165	a	6	4.07	30.0	-25.93
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	3.09	30.0	-26.91
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	4.36	30.0	-25.64
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	4.19	30.0	-25.81
	5755	151	n (40MHz)	13.5/15 (MCS0)	-0.85	30.0	-30.85
	5795	159	n (40MHz)	13.5/15 (MCS0)	-0.90	30.0	-30.90
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-4.10	30.0	-34.10

**Table 7-24. Band 3 Conducted Power Spectral Density Measurements SISO ANT2**

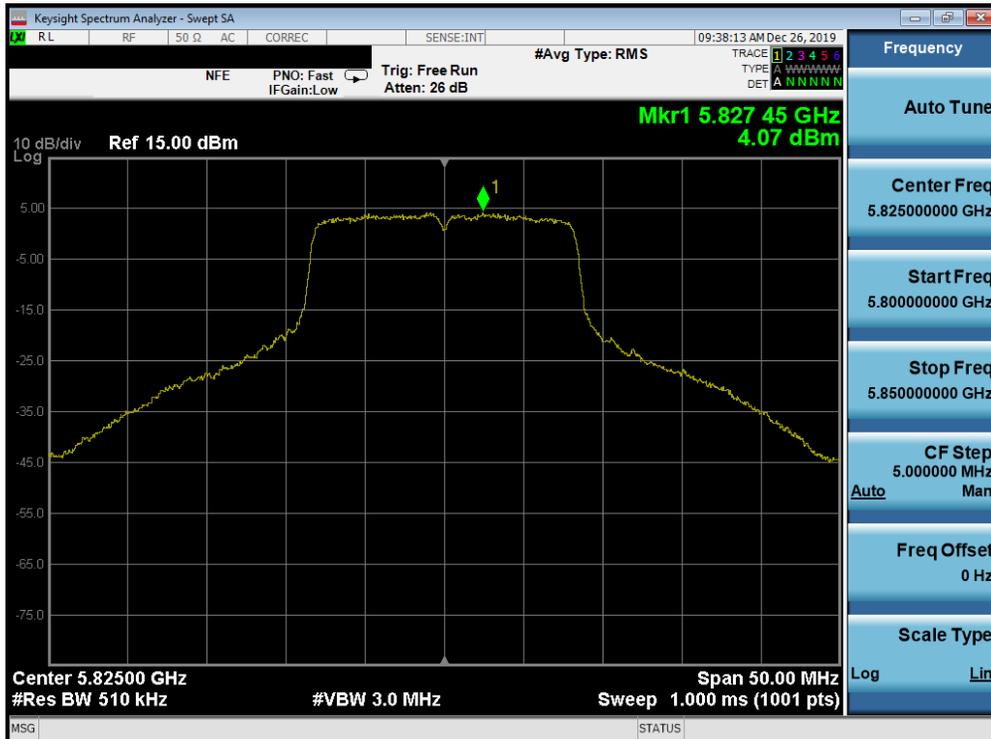


**Plot 7-148. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 3) – Ch. 149)**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 104 of 176

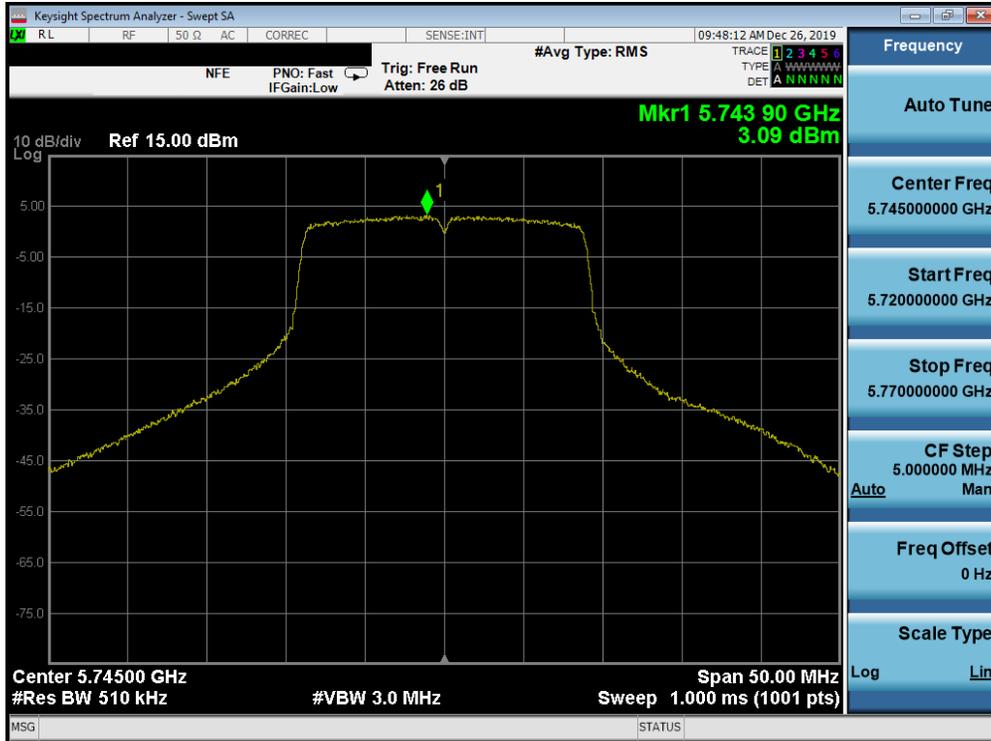


Plot 7-149. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 3) – Ch. 157)

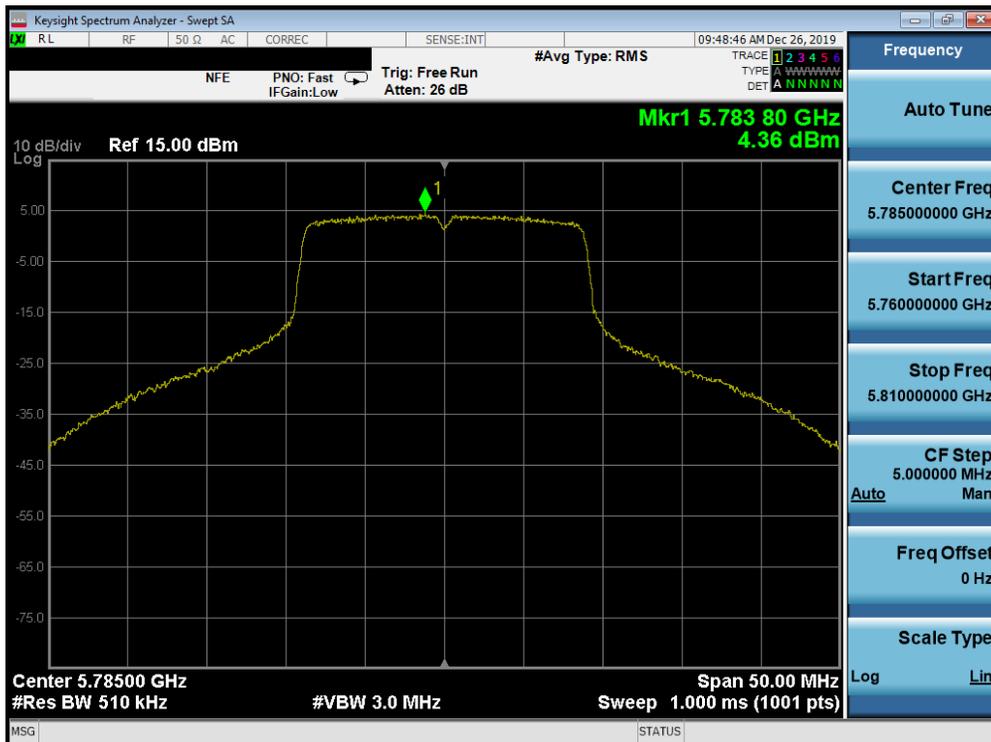


Plot 7-150. Power Spectral Density Plot SISO ANT2 (802.11a (UNII Band 3) – Ch. 165)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 105 of 176

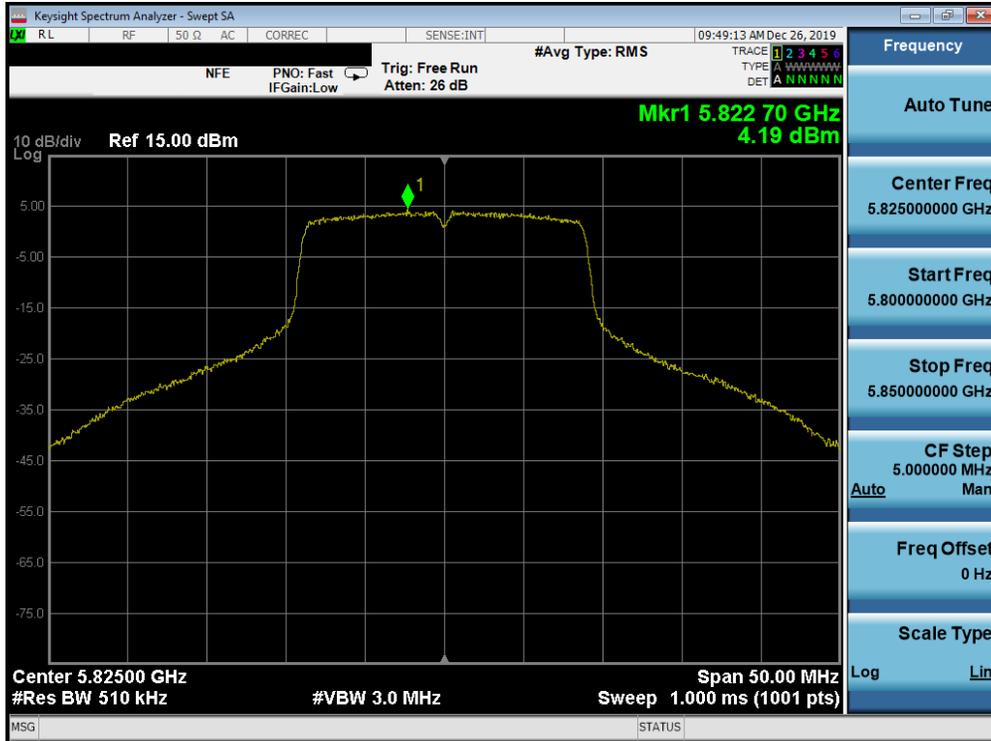


Plot 7-151. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

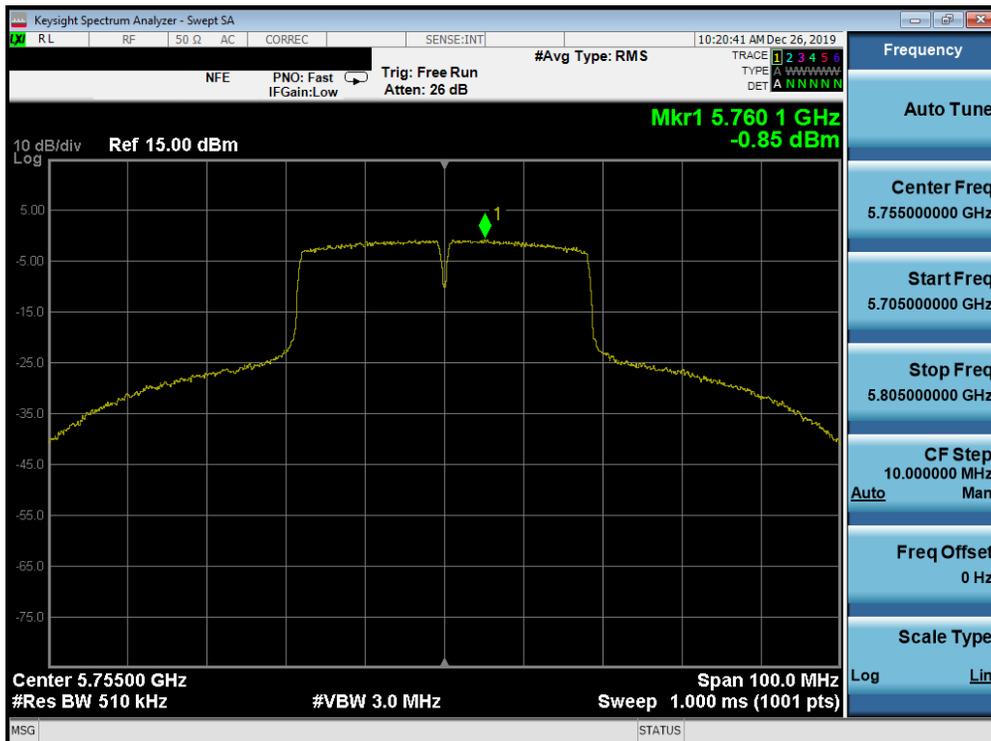


Plot 7-152. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

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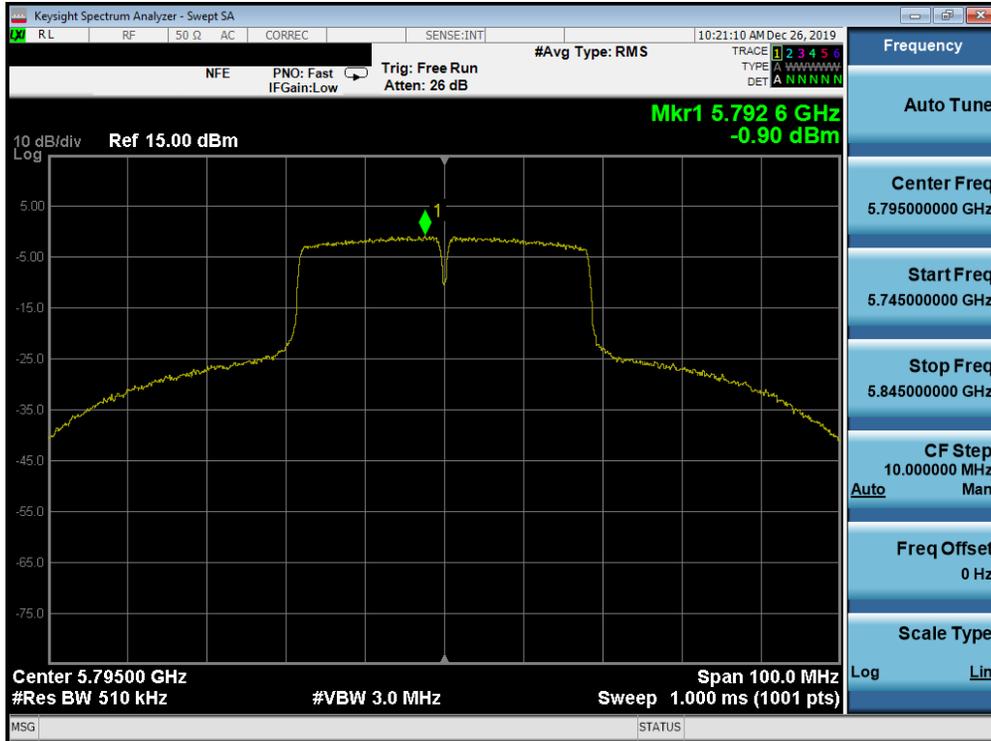


Plot 7-153. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

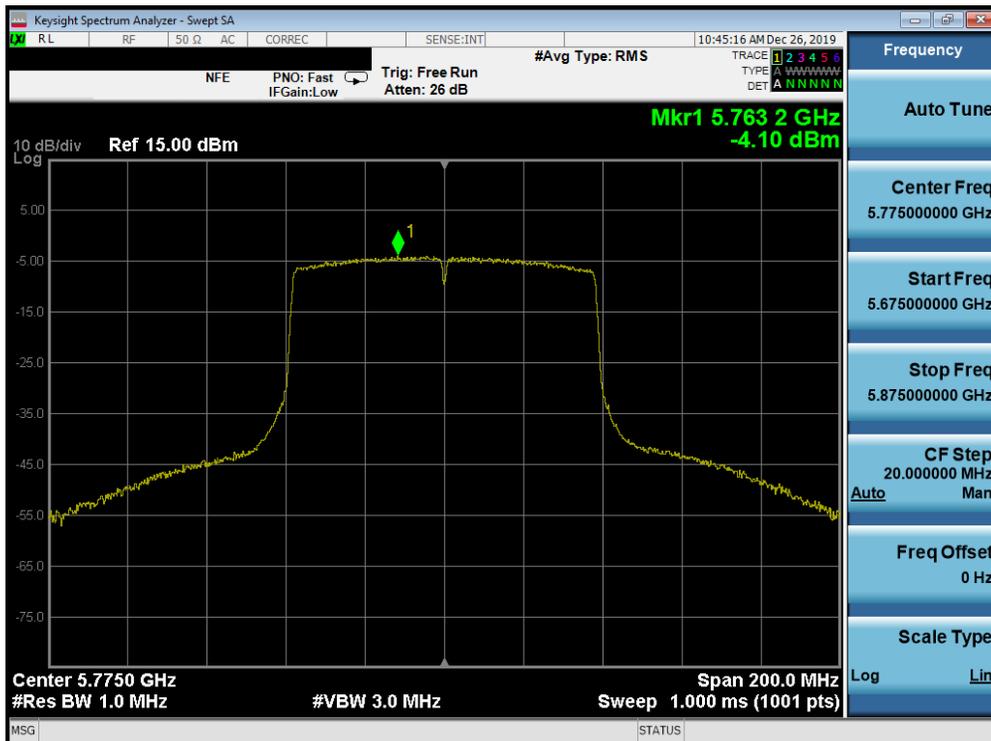


Plot 7-154. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Plot 7-155. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11n (UNII Band 3) – Ch. 159)



Plot 7-156. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)

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## Summed MIMO Power Spectral Density Measurements

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	a	6	5.70	5.58	8.65	11.0	-2.35
	5200	40	a	6	6.78	6.65	9.73	11.0	-1.27
	5240	48	a	6	5.87	5.54	8.72	11.0	-2.28
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	5.60	5.85	8.74	11.0	-2.26
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.63	6.69	9.67	11.0	-1.33
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	3.24	3.03	6.15	11.0	-4.85
	5190	38	n (40MHz)	13.5/15 (MCS0)	-1.01	-0.87	2.07	11.0	-8.93
	5230	46	n (40MHz)	13.5/15 (MCS0)	1.16	1.24	4.21	11.0	-6.79
5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-7.30	-7.35	-4.31	11.0	-15.31	
Band 2A	5260	52	a	6	5.77	5.71	8.75	11.0	-2.25
	5280	56	a	6	6.86	6.46	9.67	11.0	-1.33
	5320	64	a	6	5.61	5.60	8.62	11.0	-2.38
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	5.96	5.52	8.76	11.0	-2.24
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	6.70	6.72	9.72	11.0	-1.28
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	5.78	5.55	8.68	11.0	-2.32
	5270	54	n (40MHz)	13.5/15 (MCS0)	1.27	1.36	4.33	11.0	-6.67
	5310	62	n (40MHz)	13.5/15 (MCS0)	-0.71	-0.97	2.17	11.0	-8.83
5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-7.24	-7.03	-4.12	11.0	-15.12	
Band 2C	5500	100	a	6	5.80	5.52	8.67	11.0	-2.33
	5600	120	a	6	5.87	5.68	8.79	11.0	-2.21
	5720	144	a	6	6.34	5.80	9.09	11.0	-1.91
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	5.82	5.66	8.75	11.0	-2.25
	5600	120	n (20MHz)	6.5/7.2 (MCS0)	6.01	5.67	8.85	11.0	-2.15
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	6.47	6.15	9.32	11.0	-1.68
	5510	102	n (40MHz)	13.5/15 (MCS0)	1.04	1.21	4.14	11.0	-6.86
	5590	118	n (40MHz)	13.5/15 (MCS0)	1.37	1.30	4.35	11.0	-6.65
	5710	142	n (40MHz)	13.5/15 (MCS0)	1.71	1.64	4.69	11.0	-6.31
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-5.46	-5.32	-2.38	11.0	-13.38
5610	122	ac (80MHz)	29.3/32.5 (MCS0)	-5.58	-5.00	-2.27	11.0	-13.27	
5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-7.83	-7.28	-4.54	11.0	-15.54	

Table 7-25. Bands 1, 2A, 2C MIMO Conducted Power Spectral Density Measurements

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Antenn-1 Power Density [dBm]	Antenn-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
Band 3	5745	149	a	6	3.55	3.22	6.40	30.0	-23.60
	5785	157	a	6	4.06	4.31	7.20	30.0	-22.80
	5825	165	a	6	4.14	4.07	7.12	30.0	-22.88
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	3.43	3.09	6.27	30.0	-23.73
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	4.17	4.36	7.28	30.0	-22.72
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	3.78	4.19	7.00	30.0	-23.00
	5755	151	n (40MHz)	13.5/15 (MCS0)	-1.21	-0.85	1.98	30.0	-28.02
	5795	159	n (40MHz)	13.5/15 (MCS0)	-1.34	-0.90	1.90	30.0	-28.10
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-4.40	-4.10	-1.24	30.0	-31.24

Table 7-26. Band 3 MIMO Conducted Power Spectral Density Measurements

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**Note:**

Per ANSI C63.10-2013 Section 14.3.2.2 and KDB 662911 v02r01 Section E)2), the power spectral density at Antenna 1 and Antenna 2 were first measured separately as shown in the section above. The measured values were then summed in linear power units then converted back to dBm.

**Sample MIMO Calculation:**

At 5180MHz in 802.11n (20MHz BW) mode, the average conducted power spectral density was measured to be 5.60 dBm for Antenna-1 and 5.85 dBm for Antenna-2.

$$\text{Antenna 1} + \text{Antenna 2} = \text{MIMO}$$

$$(5.60 \text{ dBm} + 5.85 \text{ dBm}) = (3.63 \text{ mW} + 3.85 \text{ mW}) = 7.48 \text{ mW} = 8.74 \text{ dBm}$$

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## 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. 802.11a, 802.11n (20MHz BW), 802.11n (40MHz BW), and 802.11ac (80MHz)), 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 7-27 per Section 15.209 and RSS-Gen (8.9).**

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

Table 7-27. 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

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**Peak Measurements above 1GHz**

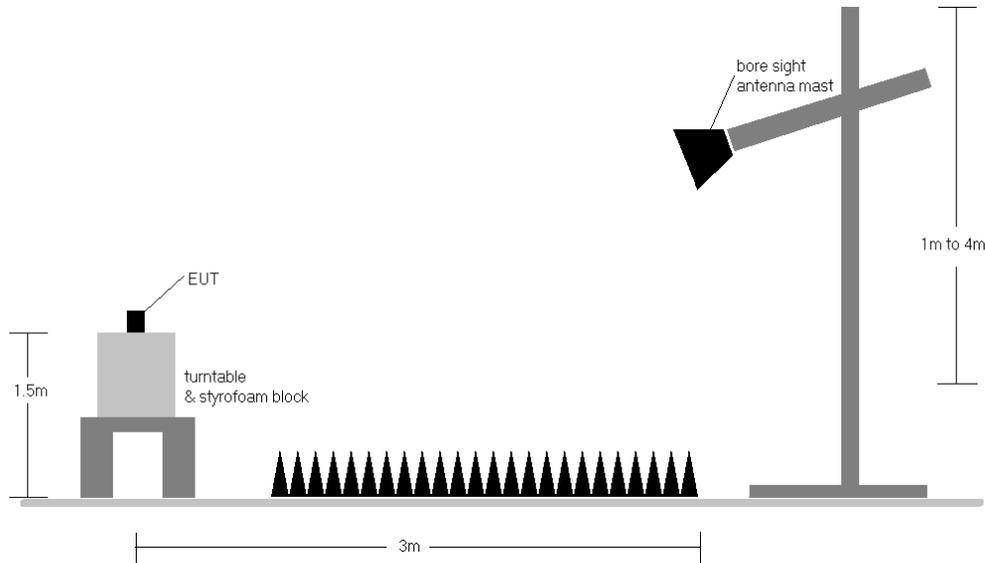
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

**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**

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**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 7-27.
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 7-27. 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. Radiated spurious emissions were investigated while operating in MIMO mode, however, it was determined that single antenna operation produced the worst case emissions. Since the emissions produced from MIMO operation were found to be more than 20dB below the limit, the MIMO emissions are not reported.
8. 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.
9. The "-" shown in the following RSE tables are used to denote a noise floor measurement.

**Sample Calculations**

**Determining Spurious Emissions Levels**

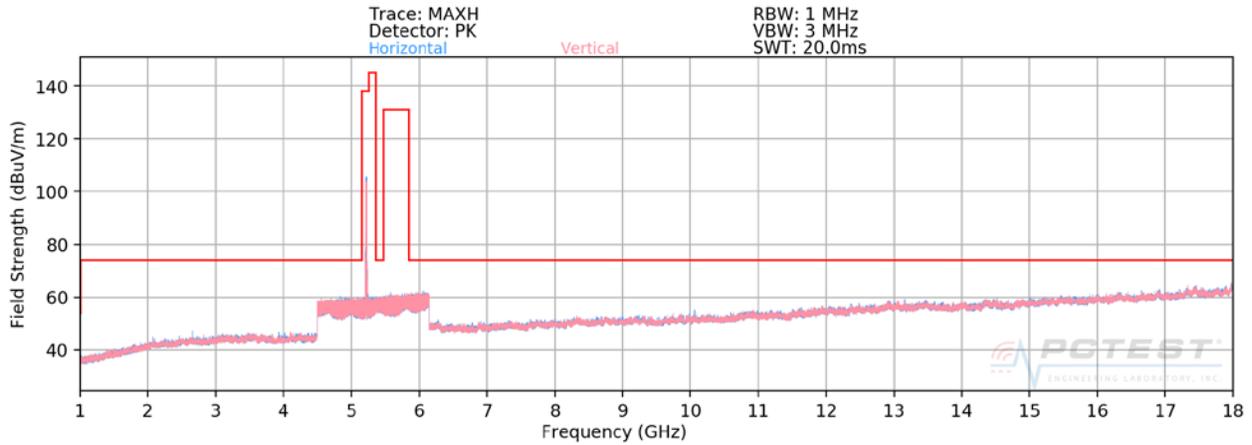
- Field Strength Level [dBμV/m] = Analyzer Level [dBm] + 107 + AFCL [dB/m]
- AFCL [dB/m] = Antenna Factor [dB/m] + Cable Loss [dB]
- Margin [dB] = Field Strength Level [dBμV/m] – Limit [dBμV/m]

**Radiated Band Edge Measurement Offset**

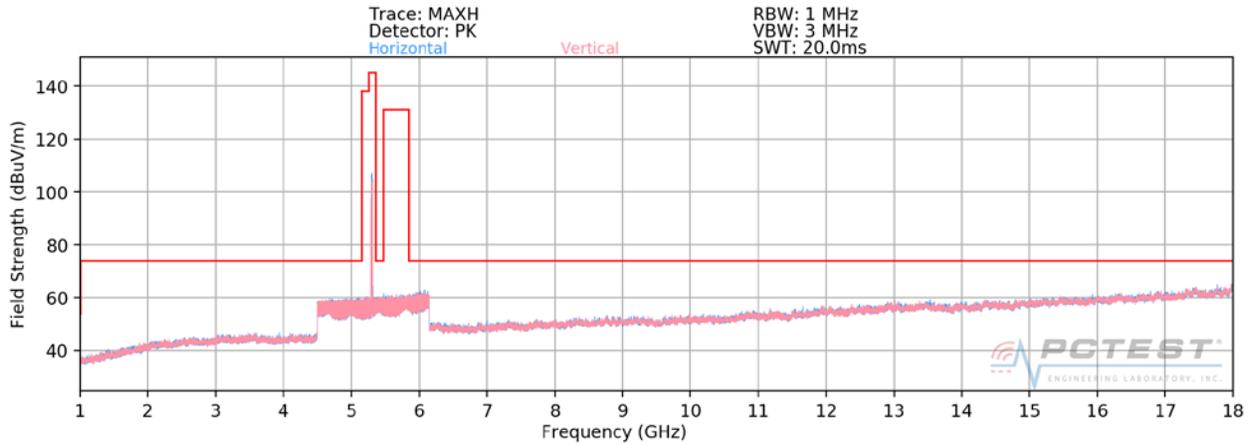
- The amplitude offset shown in the radiated restricted band edge plots was calculated using the formula:  
Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Pre-amplifier Gain

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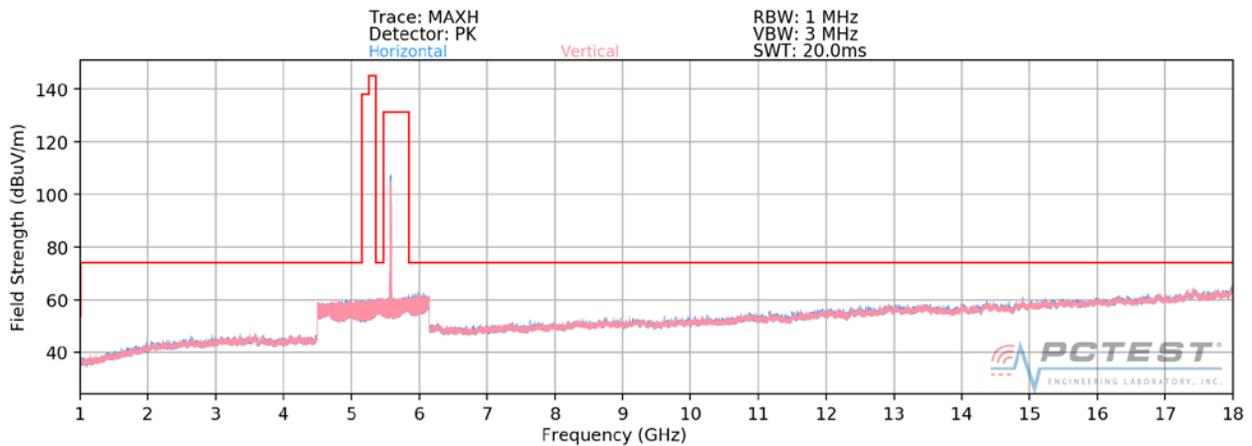
### 7.6.1 SISO Antenna-1 Radiated Spurious Emission Measurements



**Plot 7-157. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11a – U1 Ch. 40)**

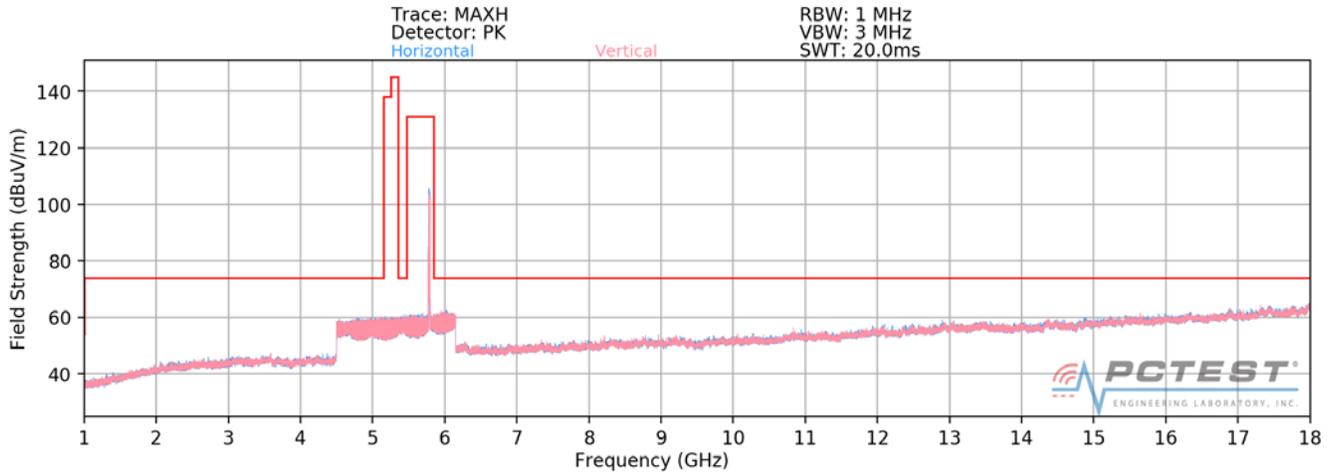


**Plot 7-158. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11a – U2A Ch. 56)**



**Plot 7-159. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11a – U2C Ch. 120)**

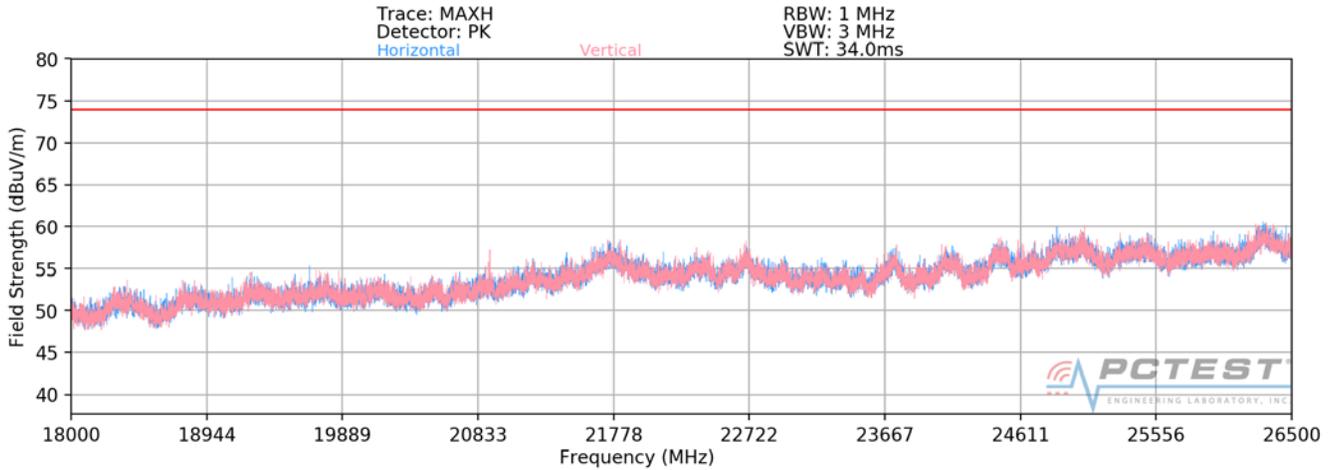
FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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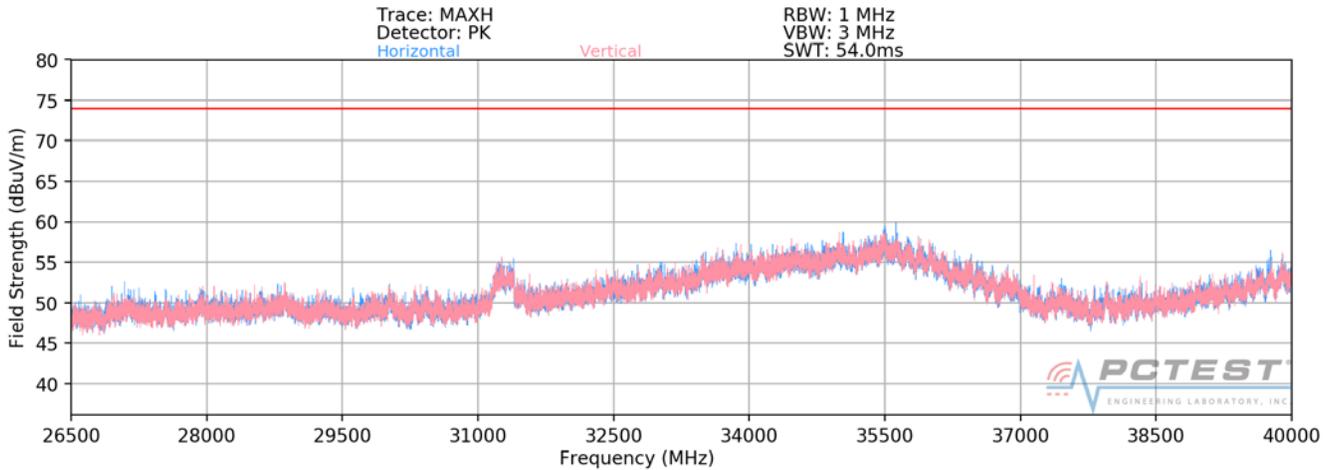
**Plot 7-160. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11a – U3 Ch. 157)**

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



**Plot 7-161. Radiated Spurious Plot 18GHz - 26.5GHz SISO ANT1 (802.11a)**



**Plot 7-162. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT1 (802.11a)**

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## SISO Antenna-1 Radiated Spurious Emission Measurements

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

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5180MHz  
 Channel: 36

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
10360.00	Peak	V	152	324	-67.02	11.61	0.00	51.59	68.20	-16.61
* 15540.00	Average	V	-	-	-82.63	13.79	0.00	38.16	53.98	-15.82
* 15540.00	Peak	V	-	-	-69.22	13.79	0.00	51.57	73.98	-22.41
* 20720.00	Average	V	-	-	-79.16	17.51	-9.54	35.81	53.98	-18.17
* 20720.00	Peak	V	-	-	-68.05	17.51	-9.54	46.92	73.98	-27.06
25900.00	Peak	V	-	-	-65.78	19.88	-9.54	51.56	68.20	-16.64

Table 7-28. Radiated Measurements SISO ANT1

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5200MHz  
 Channel: 40

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
10400.00	Peak	V	120	324	-66.87	11.62	0.00	51.75	68.20	-16.45
* 15600.00	Average	V	-	-	-82.96	12.99	0.00	37.03	53.98	-16.95
* 15600.00	Peak	V	-	-	-70.10	12.99	0.00	49.89	73.98	-24.09
* 20800.00	Average	V	-	-	-78.90	17.87	-9.54	36.42	53.98	-17.56
* 20800.00	Peak	V	-	-	-67.61	17.87	-9.54	47.71	73.98	-26.27
26000.00	Peak	V	-	-	-66.39	20.15	-9.54	51.21	68.20	-16.99

Table 7-29. Radiated Measurements SISO ANT1

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Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5240MHz  
 Channel: 48

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
10480.00	Peak	V	133	3171	-66.68	11.91	0.00	52.23	68.20	-15.97
* 15720.00	Average	V	-	-	-82.74	14.48	0.00	38.74	53.98	-15.24
* 15720.00	Peak	V	-	-	-70.49	14.48	0.00	50.99	73.98	-22.99
* 20960.00	Average	V	-	-	-79.23	18.06	-9.54	36.28	53.98	-17.69
* 20960.00	Peak	V	-	-	-67.83	18.06	-9.54	47.68	73.98	-26.29
26200.00	Peak	V	-	-	-65.66	20.23	-9.54	52.03	68.20	-16.17

**Table 7-30. Radiated Measurements SISO ANT1**

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 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	136	320	-66.46	12.28	0.00	52.82	68.20	-15.38
* 15780.00	Average	V	-	-	-82.87	13.45	0.00	37.58	53.98	-16.40
* 15780.00	Peak	V	-	-	-70.89	13.45	0.00	49.56	73.98	-24.42
* 21040.00	Average	V	-	-	-78.88	18.36	-9.54	36.93	53.98	-17.05
* 21040.00	Peak	V	-	-	-67.69	18.36	-9.54	48.12	73.98	-25.86
26300.00	Peak	V	-	-	-66.26	20.96	-9.54	52.15	68.20	-16.05

**Table 7-31. Radiated Measurements SISO ANT1**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5280MHz  
 Channel: 56

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	Peak	V	147	314	-66.30	12.38	0.00	53.08	68.20	-15.12
* 15840.00	Average	V	-	-	-82.43	14.77	0.00	39.34	53.98	-14.64
* 15840.00	Peak	V	-	-	-70.41	14.77	0.00	51.36	73.98	-22.62
* 21120.00	Average	V	-	-	-78.63	18.17	-9.54	36.99	53.98	-16.98
* 21120.00	Peak	V	-	-	-67.13	18.17	-9.54	48.49	73.98	-25.48
26400.00	Peak	V	-	-	-65.98	20.65	-9.54	52.13	68.20	-16.07

**Table 7-32. Radiated Measurements SISO ANT1**

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5320MHz  
 Channel: 64

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	Average	V	133	321	-79.34	12.24	0.00	39.90	53.98	-14.08
* 10640.00	Peak	V	133	321	-66.98	12.24	0.00	52.26	73.98	-21.72
* 15960.00	Average	V	-	-	-82.92	14.16	0.00	38.24	53.98	-15.74
* 15960.00	Peak	V	-	-	-70.56	14.16	0.00	50.60	73.98	-23.38
* 21280.00	Average	V	-	-	-78.32	18.57	-9.54	37.71	53.98	-16.27
* 21280.00	Peak	V	-	-	-67.49	18.57	-9.54	48.54	73.98	-25.44
26600.00	Peak	V	-	-	-51.85	5.16	-9.54	50.77	68.20	-17.43

**Table 7-33. Radiated Measurements SISO ANT1**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset	Page 119 of 176	

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5500MHz  
 Channel: 100

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
* 11000.00	Average	V	161	11	-76.86	12.63	0.00	42.77	53.98	-11.20
* 11000.00	Peak	V	161	11	-64.91	12.63	0.00	54.72	73.98	-19.25
16500.00	Peak	V	-	-	-69.73	15.01	0.00	52.28	68.20	-15.92
22000.00	Peak	V	-	-	-67.38	19.12	-9.54	49.19	68.20	-19.01
27500.00	Peak	V	-	-	-51.06	3.98	-9.54	50.38	68.20	-17.82

**Table 7-34. Radiated Measurements SISO ANT1**

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 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	168	12	-76.19	12.68	0.00	43.49	53.98	-10.49
* 11200.00	Peak	V	168	12	-63.84	12.68	0.00	55.84	73.98	-18.14
16800.00	Peak	V	-	-	-70.40	15.94	0.00	52.54	68.20	-15.66
* 22400.00	Average	V	-	-	-78.72	19.90	-9.54	38.64	53.98	-15.34
* 22400.00	Peak	V	-	-	-66.58	19.90	-9.54	50.78	73.98	-23.20
28000.00	Peak	V	-	-	-51.27	4.37	-9.54	50.55	68.20	-17.65

**Table 7-35. Radiated Measurements SISO ANT1**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset	Page 120 of 176	

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5720MHz  
 Channel: 144

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
* 11440.00	Average	V	164	12	-78.63	12.86	0.00	41.23	53.98	-12.75
* 11440.00	Peak	V	164	12	-66.95	12.86	0.00	52.91	73.98	-21.07
17160.00	Peak	V	-	-	-82.14	17.87	0.00	42.73	68.20	-25.47
* 22880.00	Average	V	-	-	-79.26	19.50	-9.54	37.70	53.98	-16.28
* 22880.00	Peak	V	-	-	-68.22	19.50	-9.54	48.74	73.98	-25.24
28600.00	Peak	V	-	-	-51.10	5.14	-9.54	51.50	68.20	-16.70

**Table 7-36. Radiated Measurements SISO ANT1**

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5745MHz  
 Channel: 149

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
* 11490.00	Average	V	146	4	-79.73	13.52	0.00	40.79	53.98	-13.19
* 11490.00	Peak	V	146	4	-67.66	13.52	0.00	52.86	73.98	-21.12
17235.00	Peak	V	-	-	-70.17	17.74	0.00	54.57	68.20	-13.63
* 22980.00	Average	V	-	-	-78.85	19.89	-9.54	38.49	53.98	-15.49
* 22980.00	Peak	V	-	-	-68.07	19.89	-9.54	49.27	73.98	-24.71
28725.00	Peak	V	-	-	-51.55	4.66	-9.54	50.57	68.20	-17.63

**Table 7-37. Radiated Measurements SISO ANT1**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset	Page 121 of 176	

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5785MHz  
 Channel: 157

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
* 11570.00	Average	V	251	305	-79.97	12.59	0.00	39.62	53.98	-14.36
* 11570.00	Peak	V	251	305	-67.70	12.59	0.00	51.89	73.98	-22.09
17355.00	Peak	V	-	-	-69.83	19.47	0.00	56.64	68.20	-11.56
23140.00	Peak	V	-	-	-68.18	19.59	-9.54	48.87	68.20	-19.33
28925.00	Peak	V	-	-	-52.43	4.43	-9.54	49.46	68.20	-18.74

**Table 7-38. Radiated Measurements SISO ANT1**

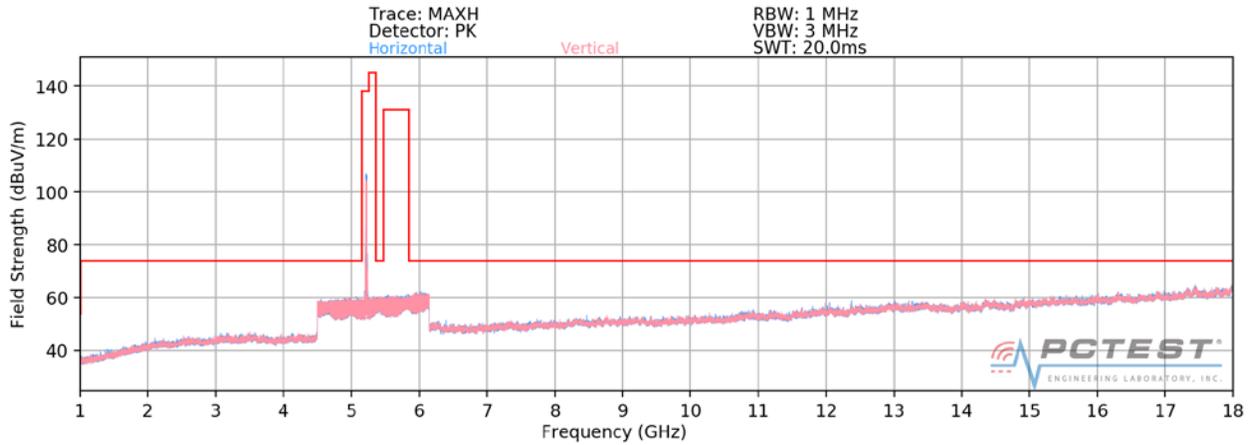
Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5825MHz  
 Channel: 165

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
* 11650.00	Average	V	267	314	-81.26	13.51	0.00	39.25	53.98	-14.73
* 11650.00	Peak	V	267	314	-68.75	13.51	0.00	51.76	73.98	-22.22
17475.00	Peak	V	-	-	-70.40	19.87	0.00	56.47	68.20	-11.73
23300.00	Peak	V	-	-	-67.63	18.93	-9.54	48.76	68.20	-19.44
29125.00	Peak	V	-	-	-50.61	3.48	-9.54	50.33	68.20	-17.87

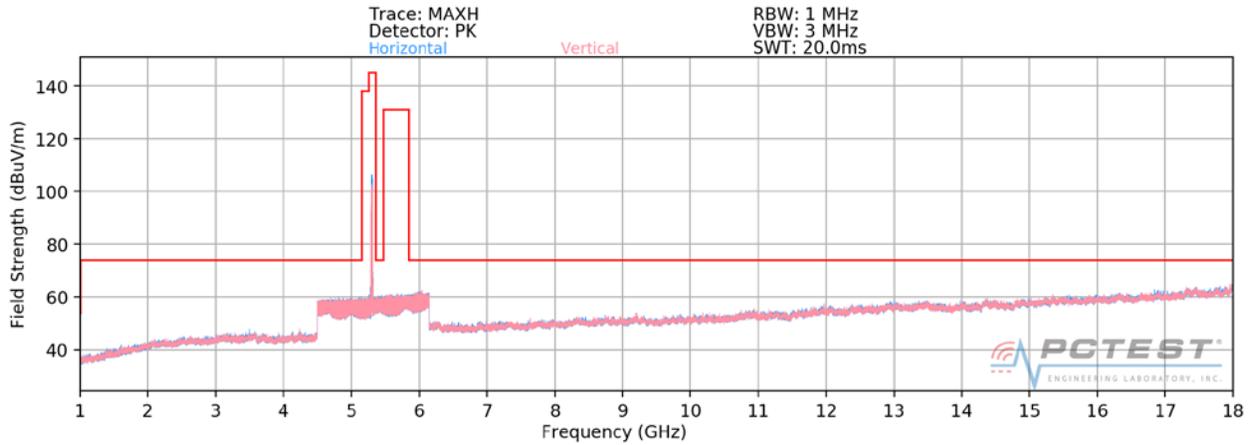
**Table 7-39. Radiated Measurements SISO ANT1**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset	Page 122 of 176	

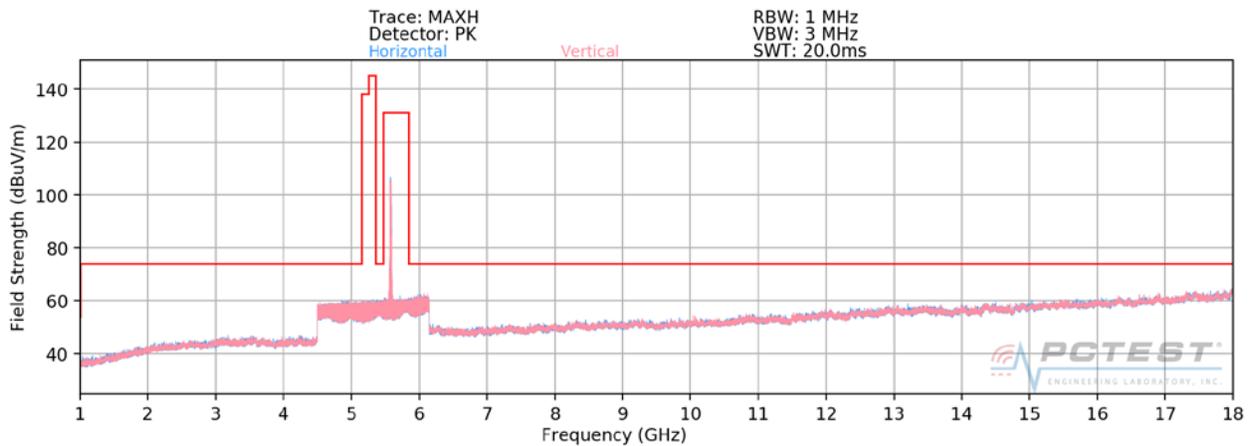
## 7.6.2 SISO Antenna-2 Radiated Spurious Emission Measurements



Plot 7-163. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11a – U1 Ch. 40)

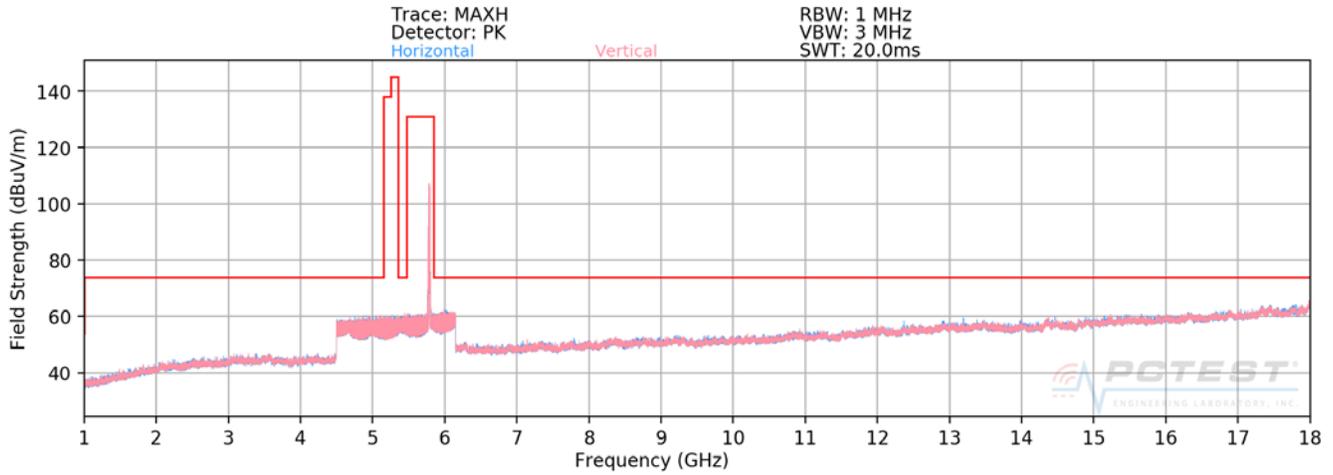


Plot 7-164. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11a – U2A Ch. 56)



Plot 7-165. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11a – U2C Ch. 120)

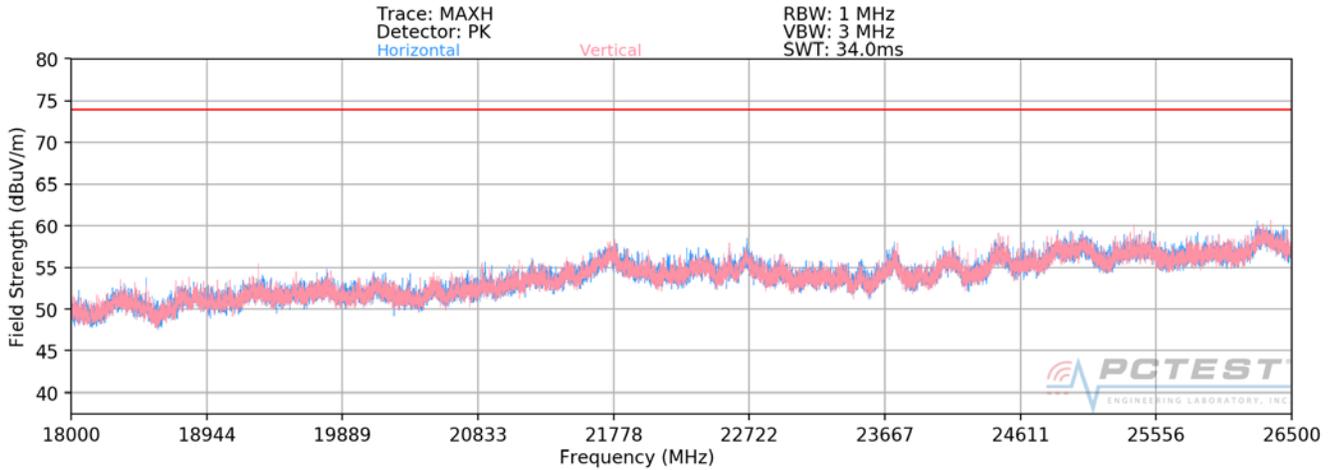
FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 123 of 176



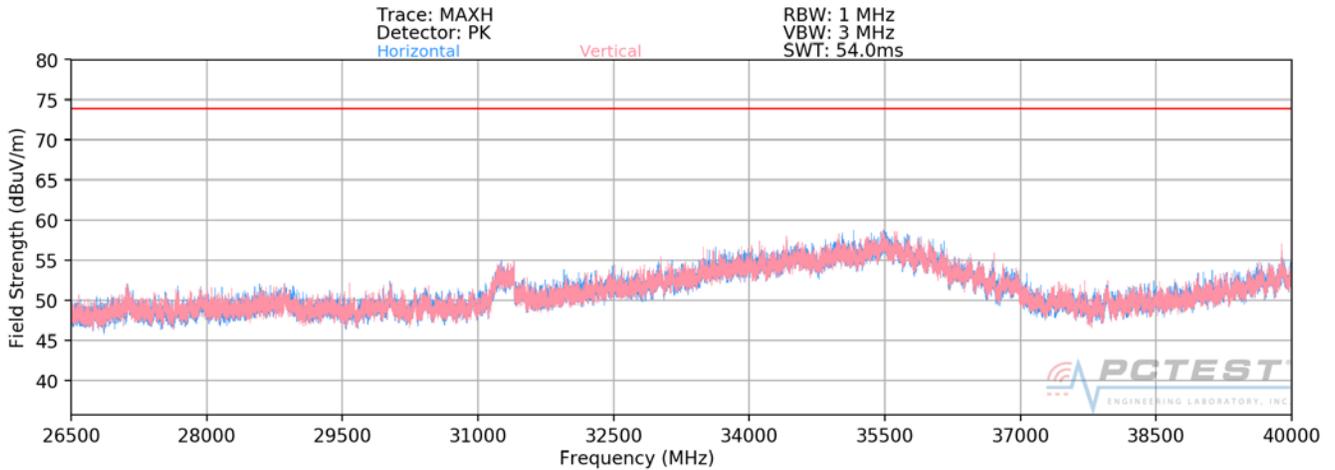
**Plot 7-166. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11a – U3 Ch. 157)**

<b>FCC ID:</b> ZNFV600VM	 <b>MEASUREMENT REPORT (CERTIFICATION)</b> 		<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1911250199-09.ZNF	<b>Test Dates:</b> 11/25/2019-1/17/2019	<b>EUT Type:</b> Portable Handset	Page 124 of 176

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



**Plot 7-167. Radiated Spurious Plot above 18GHz - 26.5GHz SISO ANT2 (802.11a)**



**Plot 7-168. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT2 (802.11a)**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 125 of 176

## SISO Antenna-2 Radiated Spurious Emission Measurements

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

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 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	357	214	-65.59	11.61	0.00	53.02	68.20	-15.18
* 15540.00	Average	H	-	-	-82.57	13.79	0.00	38.22	53.98	-15.76
* 15540.00	Peak	H	-	-	-70.45	13.79	0.00	50.34	73.98	-23.64
* 20720.00	Average	H	-	-	-78.98	17.51	-9.54	35.99	53.98	-17.99
* 20720.00	Peak	H	-	-	-67.55	17.51	-9.54	47.42	73.98	-26.56
25900.00	Peak	H	-	-	-66.41	19.88	-9.54	50.93	68.20	-17.27

Table 7-40. Radiated Measurements SISO ANT2

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 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	-	-	-70.35	11.62	0.00	48.27	68.20	-19.93
* 15600.00	Average	H	-	-	-82.16	12.99	0.00	37.83	53.98	-16.15
* 15600.00	Peak	H	-	-	-70.87	12.99	0.00	49.12	73.98	-24.86
* 20800.00	Average	H	-	-	-78.99	17.87	-9.54	36.33	53.98	-17.65
* 20800.00	Peak	H	-	-	-67.47	17.87	-9.54	47.85	73.98	-26.13
26000.00	Peak	H	-	-	-66.03	20.15	-9.54	51.57	68.20	-16.63

Table 7-41. Radiated Measurements SISO ANT2

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5240MHz  
 Channel: 48

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
10480.00	Peak	H	-	-	-69.50	11.91	0.00	49.41	68.20	-18.79
* 15720.00	Average	H	-	-	-82.59	14.48	0.00	38.89	53.98	-15.09
* 15720.00	Peak	H	-	-	-70.69	14.48	0.00	50.79	73.98	-23.19
* 20960.00	Average	H	-	-	-79.32	18.06	-9.54	36.19	53.98	-17.78
* 20960.00	Peak	H	-	-	-68.40	18.06	-9.54	47.11	73.98	-26.86
26200.00	Peak	H	-	-	-66.91	20.23	-9.54	50.78	68.20	-17.42

**Table 7-42. Radiated Measurements SISO ANT2**

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 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	356	22	-69.37	12.28	0.00	49.91	68.20	-18.29
* 15780.00	Average	H	-	-	-82.70	13.45	0.00	37.75	53.98	-16.23
* 15780.00	Peak	H	-	-	-70.39	13.45	0.00	50.06	73.98	-23.92
* 21040.00	Average	H	-	-	-78.86	18.36	-9.54	36.95	53.98	-17.03
* 21040.00	Peak	H	-	-	-67.60	18.36	-9.54	48.21	73.98	-25.77
26300.00	Peak	H	-	-	-65.72	20.96	-9.54	52.69	68.20	-15.51

**Table 7-43. Radiated Measurements SISO ANT2**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset	Page 127 of 176	

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 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	42	-68.78	12.38	0.00	50.60	68.20	-17.60
* 15840.00	Average	H	249	351	-82.44	14.77	0.00	39.33	53.98	-14.65
* 15840.00	Peak	H	249	351	-69.95	14.77	0.00	51.82	73.98	-22.16
* 21120.00	Average	H	-	-	-78.70	18.17	-9.54	36.92	53.98	-17.05
* 21120.00	Peak	H	-	-	-67.56	18.17	-9.54	48.06	73.98	-25.91
26400.00	Peak	H	-	-	-66.10	20.65	-9.54	52.01	68.20	-16.19

**Table 7-44. Radiated Measurements SISO ANT2**

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 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	-	-	-82.29	12.24	0.00	36.95	53.98	-17.03
* 10640.00	Peak	H	-	-	-70.17	12.24	0.00	49.07	73.98	-24.91
* 15960.00	Average	H	-	-	-82.85	14.16	0.00	38.31	53.98	-15.67
* 15960.00	Peak	H	-	-	-70.24	14.16	0.00	50.92	73.98	-23.06
* 21280.00	Average	H	-	-	-78.40	18.57	-9.54	37.63	53.98	-16.35
* 21280.00	Peak	H	-	-	-67.01	18.57	-9.54	49.02	73.98	-24.96
26600.00	Peak	H	-	-	-52.29	5.16	-9.54	50.33	68.20	-17.87

**Table 7-45. Radiated Measurements SISO ANT2**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset	Page 128 of 176	

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 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	162	265	-82.42	12.63	0.00	37.21	53.98	-16.76
* 11000.00	Peak	H	162	265	-70.01	12.63	0.00	49.62	73.98	-24.35
16500.00	Peak	H	-	-	-70.09	15.01	0.00	51.92	68.20	-16.28
22000.00	Peak	H	-	-	-66.87	19.12	-9.54	49.70	68.20	-18.50
27500.00	Peak	H	-	-	-50.93	3.98	-9.54	50.51	68.20	-17.69

**Table 7-46. Radiated Measurements SISO ANT2**

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 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	-	-	-82.29	12.68	0.00	37.39	53.98	-16.59
* 11200.00	Peak	H	-	-	-69.04	12.68	0.00	50.64	73.98	-23.34
16800.00	Peak	H	-	-	-67.39	15.94	0.00	55.55	68.20	-12.65
* 22400.00	Average	H	-	-	-78.80	19.90	-9.54	38.56	53.98	-15.42
* 22400.00	Peak	H	-	-	-67.23	19.90	-9.54	50.13	73.98	-23.85
28000.00	Peak	H	-	-	-51.02	4.37	-9.54	50.80	68.20	-17.40

**Table 7-47. Radiated Measurements SISO ANT2**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset	Page 129 of 176	

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 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	-	-	-82.77	12.86	0.00	37.09	53.98	-16.89
* 11440.00	Peak	H	-	-	-70.18	12.86	0.00	49.68	73.98	-24.30
17160.00	Peak	H	-	-	-67.39	17.87	0.00	57.48	68.20	-10.72
* 22880.00	Average	H	-	-	-79.37	19.50	-9.54	37.59	53.98	-16.39
* 22880.00	Peak	H	-	-	-67.61	19.50	-9.54	49.35	73.98	-24.63
28600.00	Peak	H	-	-	-52.12	5.14	-9.54	50.48	68.20	-17.72

**Table 7-48. Radiated Measurements SISO ANT2**

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 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	280	174	-82.75	13.52	0.00	37.77	53.98	-16.21
* 11490.00	Peak	H	280	174	-70.20	13.52	0.00	50.32	73.98	-23.66
17235.00	Peak	H	-	-	-67.41	17.74	0.00	57.33	68.20	-10.87
* 22980.00	Average	H	-	-	-79.13	19.89	-9.54	38.21	53.98	-15.77
* 22980.00	Peak	H	-	-	-67.67	19.89	-9.54	49.67	73.98	-24.31
28725.00	Peak	H	-	-	-51.57	4.66	-9.54	50.55	68.20	-17.65

**Table 7-49. Radiated Measurements SISO ANT2**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset	Page 130 of 176	

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 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	-	-	-82.48	12.59	0.00	37.11	53.98	-16.87
* 11570.00	Peak	H	-	-	-71.06	12.59	0.00	48.53	73.98	-25.45
17355.00	Peak	H	-	-	-68.93	19.47	0.00	57.54	68.20	-10.66
23140.00	Peak	H	-	-	-67.58	19.59	-9.54	49.47	68.20	-18.73
28925.00	Peak	H	-	-	-51.79	4.43	-9.54	50.10	68.20	-18.10

**Table 7-50. Radiated Measurements SISO ANT2**

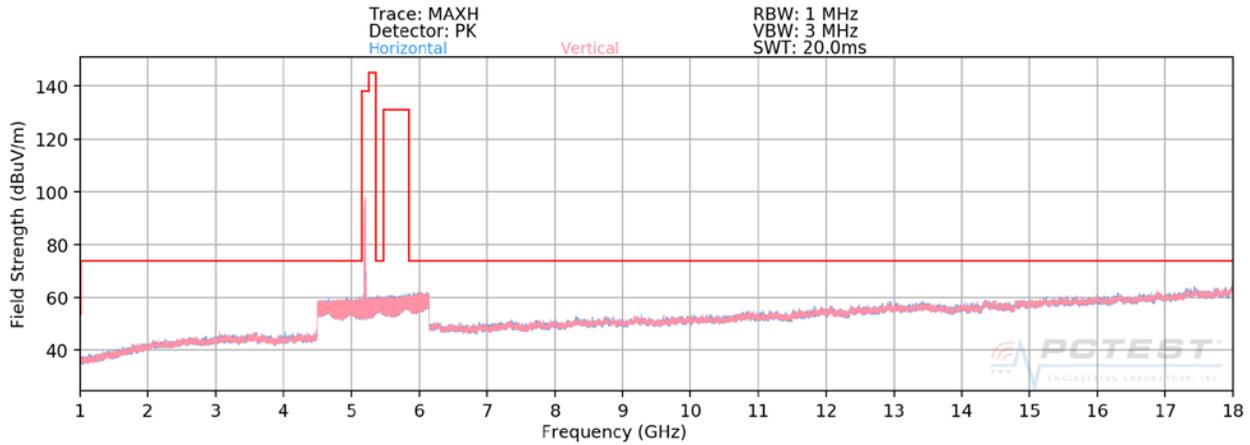
Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5825MHz  
 Channel: 165

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	-	-	-82.64	13.51	0.00	37.87	53.98	-16.11
* 11650.00	Peak	H	-	-	-70.09	13.51	0.00	50.42	73.98	-23.56
17475.00	Peak	H	-	-	-69.63	19.87	0.00	57.24	68.20	-10.96
23300.00	Peak	H	-	-	-67.67	18.93	-9.54	48.72	68.20	-19.48
29125.00	Peak	H	-	-	-51.08	3.48	-9.54	49.86	68.20	-18.34

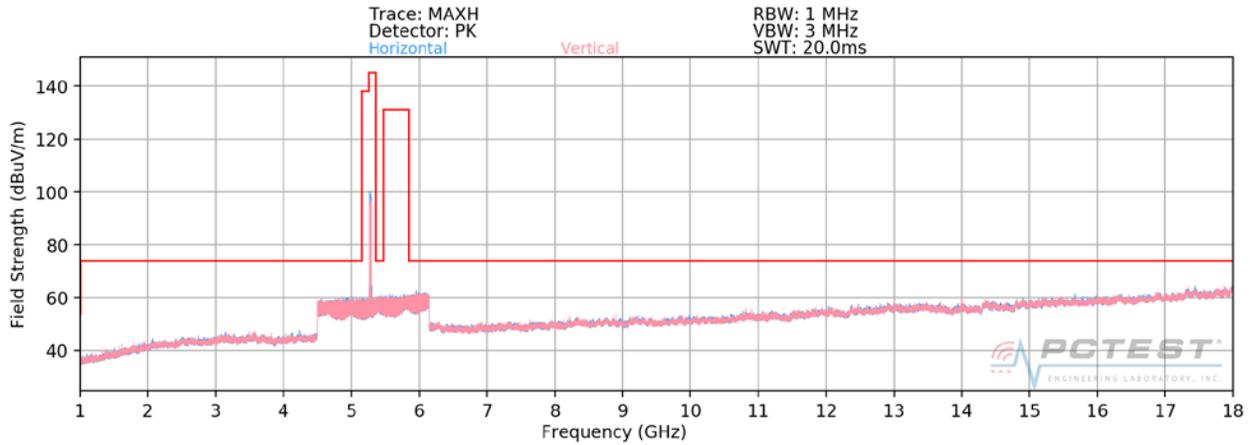
**Table 7-51. Radiated Measurements SISO ANT2**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset	Page 131 of 176	

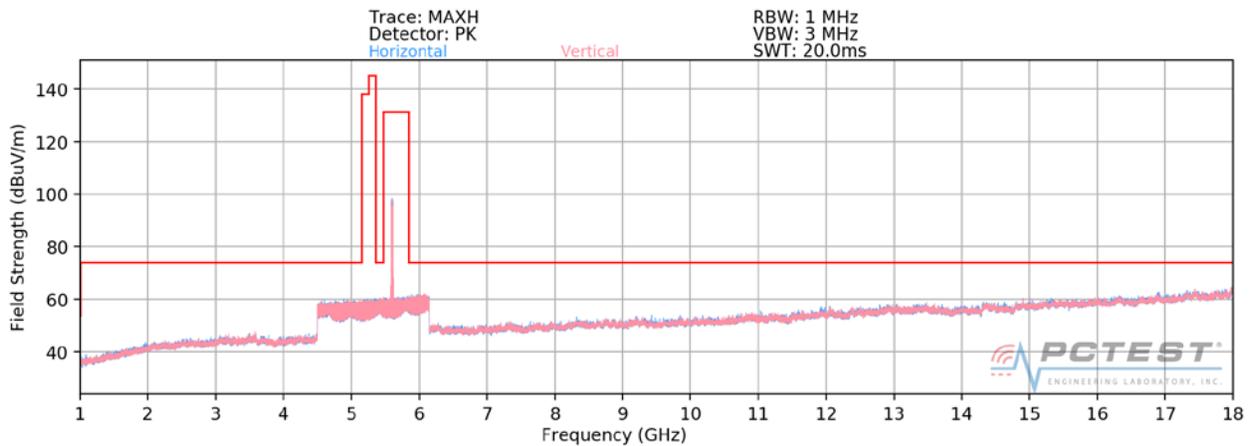
### 7.6.3 MIMO/CDD Radiated Spurious Emission Measurements



**Plot 7-169. Radiated Spurious Plot above 1GHz MIMO/CDD (802.11a – U1 Ch. 40)**

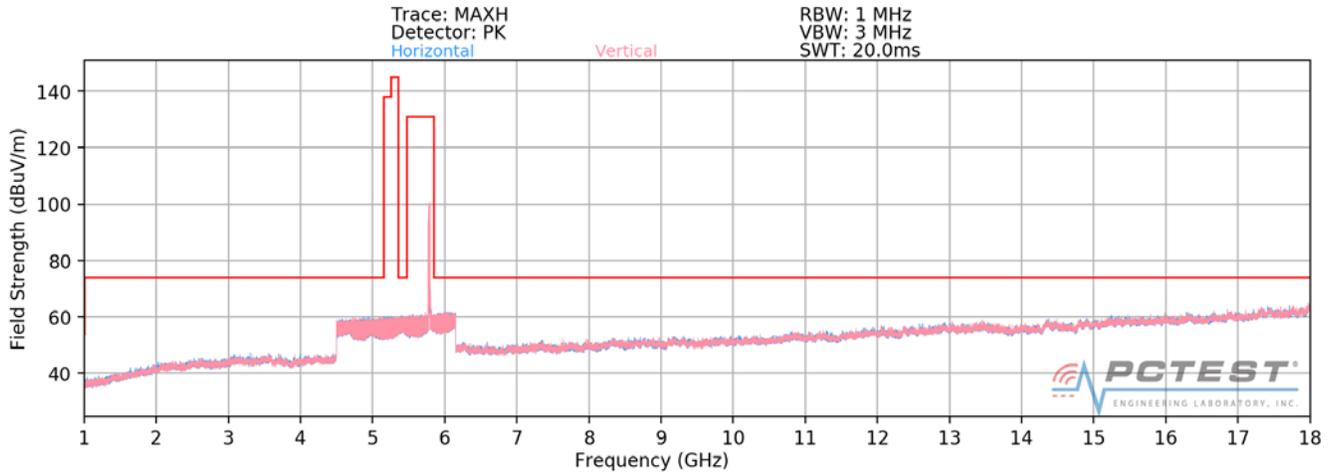


**Plot 7-170. Radiated Spurious Plot above 1GHz MIMO/CDD (802.11a – U2A Ch. 56)**



**Plot 7-171. Radiated Spurious Plot above 1GHz MIMO/CDD (802.11a – U2C Ch. 120)**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 132 of 176



**Plot 7-172. Radiated Spurious Plot above 1GHz MIMO/CDD (802.11a – U3 Ch. 157)**

<b>FCC ID:</b> ZNFV600VM	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1911250199-09.ZNF	<b>Test Dates:</b> 11/25/2019-1/17/2019	<b>EUT Type:</b> Portable Handset	Page 133 of 176

## MIMO/CDD Radiated Spurious Emission Measurements

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

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5180MHz  
 Channel: 36

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
10360.00	Peak	V	136	325	-61.48	11.61	0.00	57.13	68.20	-11.07
* 15540.00	Average	V	-	-	-82.47	13.79	0.00	38.32	53.98	-15.66
* 15540.00	Peak	V	-	-	-69.17	13.79	0.00	51.62	73.98	-22.36
* 20720.00	Average	V	-	-	-79.20	17.51	-9.54	35.77	53.98	-18.21
* 20720.00	Peak	V	-	-	-67.84	17.51	-9.54	47.13	73.98	-26.85
25900.00	Peak	V	-	-	-66.67	19.88	-9.54	50.67	68.20	-17.53

Table 7-52. Radiated Measurements MIMO/CDD

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5200MHz  
 Channel: 40

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
10400.00	Peak	V	148	351	-60.18	11.62	0.00	58.44	68.20	-9.76
* 15600.00	Average	V	-	-	-82.04	12.99	0.00	37.95	53.98	-16.03
* 15600.00	Peak	V	-	-	-68.87	12.99	0.00	51.12	73.98	-22.86
* 20800.00	Average	V	-	-	-79.00	17.87	-9.54	36.32	53.98	-17.66
* 20800.00	Peak	V	-	-	-67.63	17.87	-9.54	47.69	73.98	-26.29
26000.00	Peak	V	-	-	-66.25	20.15	-9.54	51.35	68.20	-16.85

Table 7-53. Radiated Measurements MIMO/CDD

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset	Page 134 of 176	

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5240MHz  
 Channel: 48

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	Peak	V	134	331	-60.67	11.91	0.00	58.24	68.20	-9.96
* 15720.00	Average	V	-	-	-81.82	14.48	0.00	39.66	53.98	-14.32
* 15720.00	Peak	V	-	-	-68.57	14.48	0.00	52.91	73.98	-21.07
* 20960.00	Average	V	-	-	-79.30	18.06	-9.54	36.21	53.98	-17.76
* 20960.00	Peak	V	-	-	-67.89	18.06	-9.54	47.62	73.98	-26.35
26200.00	Peak	V	-	-	-66.03	20.23	-9.54	51.66	68.20	-16.54

**Table 7-54. Radiated Measurements MIMO/CDD**

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 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	151	325	-63.78	12.28	0.00	55.50	68.20	-12.70
* 15780.00	Average	V	-	-	-82.45	13.45	0.00	38.00	53.98	-15.98
* 15780.00	Peak	V	-	-	-69.76	13.45	0.00	50.69	73.98	-23.29
* 21040.00	Average	V	-	-	-78.90	18.36	-9.54	36.91	53.98	-17.07
* 21040.00	Peak	V	-	-	-67.93	18.36	-9.54	47.88	73.98	-26.10
26300.00	Peak	V	-	-	-65.64	20.96	-9.54	52.77	68.20	-15.43

**Table 7-55. Radiated Measurements MIMO/CDD**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset	Page 135 of 176	

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5280MHz  
 Channel: 56

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	Peak	V	146	320	-62.61	12.38	0.00	56.77	68.20	-11.43
* 15840.00	Average	V	-	-	-81.97	14.77	0.00	39.80	53.98	-14.18
* 15840.00	Peak	V	-	-	-68.28	14.77	0.00	53.49	73.98	-20.49
* 21120.00	Average	V	-	-	-78.84	18.17	-9.54	36.78	53.98	-17.19
* 21120.00	Peak	V	-	-	-67.93	18.17	-9.54	47.69	73.98	-26.28
26400.00	Peak	V	-	-	-65.63	20.65	-9.54	52.48	68.20	-15.72

**Table 7-56. Radiated Measurements MIMO/CDD**

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5320MHz  
 Channel: 64

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	Average	V	135	327	-75.39	12.24	0.00	43.85	53.98	-10.13
* 10640.00	Peak	V	135	327	-62.61	12.24	0.00	56.63	73.98	-17.35
* 15960.00	Average	V	-	-	-84.35	14.16	0.00	36.81	53.98	-17.17
* 15960.00	Peak	V	-	-	-68.28	14.16	0.00	52.88	73.98	-21.10
* 21280.00	Average	V	-	-	-78.48	18.57	-9.54	37.55	53.98	-16.43
* 21280.00	Peak	V	-	-	-66.69	18.57	-9.54	49.34	73.98	-24.64
26600.00	Peak	V	-	-	-52.17	5.16	-9.54	50.45	68.20	-17.75

**Table 7-57. Radiated Measurements MIMO/CDD**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset	Page 136 of 176	

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5500MHz  
 Channel: 100

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11000.00	Average	V	162	10	-76.40	12.63	0.00	43.23	53.98	-10.74
* 11000.00	Peak	V	162	10	-64.56	12.63	0.00	55.07	73.98	-18.90
16500.00	Peak	V	-	-	-68.26	15.01	0.00	53.75	68.20	-14.45
22000.00	Peak	H	-	-	-66.81	19.12	-9.54	49.76	68.20	-18.44
27500.00	Peak	H	-	-	-50.53	3.98	-9.54	50.91	68.20	-17.29

**Table 7-58. Radiated Measurements MIMO/CDD**

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 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	155	35	-75.61	12.68	0.00	44.07	53.98	-9.91
* 11200.00	Peak	V	155	35	-63.81	12.68	0.00	55.87	73.98	-18.11
16800.00	Peak	V	-	-	-68.31	15.94	0.00	54.63	68.20	-13.57
* 22400.00	Average	H	-	-	-78.70	19.90	-9.54	38.66	53.98	-15.32
* 22400.00	Peak	H	-	-	-67.46	19.90	-9.54	49.90	73.98	-24.08
28000.00	Peak	H	-	-	-51.80	4.37	-9.54	50.02	68.20	-18.18

**Table 7-59. Radiated Measurements MIMO/CDD**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset	Page 137 of 176	

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5720MHz  
 Channel: 144

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11440.00	Average	V	143	5	-76.05	12.86	0.00	43.81	53.98	-10.17
* 11440.00	Peak	V	143	5	-65.31	12.86	0.00	54.55	73.98	-19.43
17160.00	Peak	V	-	-	-67.98	17.87	0.00	56.89	68.20	-11.31
* 22880.00	Average	H	-	-	-79.36	19.50	-9.54	37.60	53.98	-16.38
* 22880.00	Peak	H	-	-	-67.56	19.50	-9.54	49.40	73.98	-24.58
28600.00	Peak	H	-	-	-51.89	5.14	-9.54	50.71	68.20	-17.49

**Table 7-60. Radiated Measurements MIMO/CDD**

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5745MHz  
 Channel: 149

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	V	145	13	-80.35	13.52	0.00	40.17	53.98	-13.81
* 11490.00	Peak	V	145	13	-65.31	13.52	0.00	55.21	73.98	-18.77
17235.00	Peak	V	125	328	-65.28	17.74	0.00	59.46	68.20	-8.74
* 22980.00	Average	V	-	-	-79.19	19.89	-9.54	38.15	53.98	-15.83
* 22980.00	Peak	V	-	-	-67.55	19.89	-9.54	49.79	73.98	-24.19
28725.00	Peak	V	-	-	-52.05	4.66	-9.54	50.07	69.20	-19.13

**Table 7-61. Radiated Measurements MIMO/CDD**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset	Page 138 of 176	

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5785MHz  
 Channel: 157

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	V	150	11	-79.53	12.59	0.00	40.06	53.98	-13.92
* 11570.00	Peak	V	150	11	-66.86	12.59	0.00	52.73	73.98	-21.25
17355.00	Peak	V	118	354	-66.09	19.47	0.00	60.38	68.20	-7.82
23140.00	Peak	V	-	-	-67.83	19.59	-9.54	49.22	68.20	-18.98
28925.00	Peak	V	-	-	-52.69	4.43	-9.54	49.20	68.20	-19.00

**Table 7-62. Radiated Measurements MIMO/CDD**

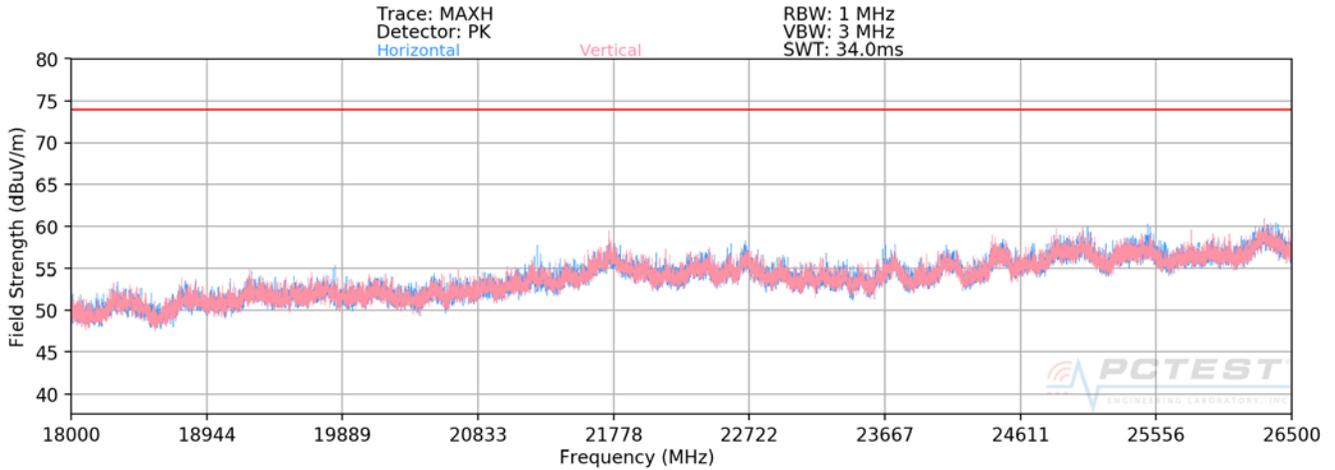
Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5825MHz  
 Channel: 165

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	V	154	26	-78.31	13.51	0.00	42.20	53.98	-11.78
* 11650.00	Peak	V	154	26	-65.18	13.51	0.00	55.33	73.98	-18.65
17475.00	Peak	V	114	350	-66.87	19.87	0.00	60.00	68.20	-8.20
23300.00	Peak	V	-	-	-67.34	18.93	-9.54	49.05	68.20	-19.15
29125.00	Peak	V	-	-	-50.43	3.48	-9.54	50.51	68.20	-17.69

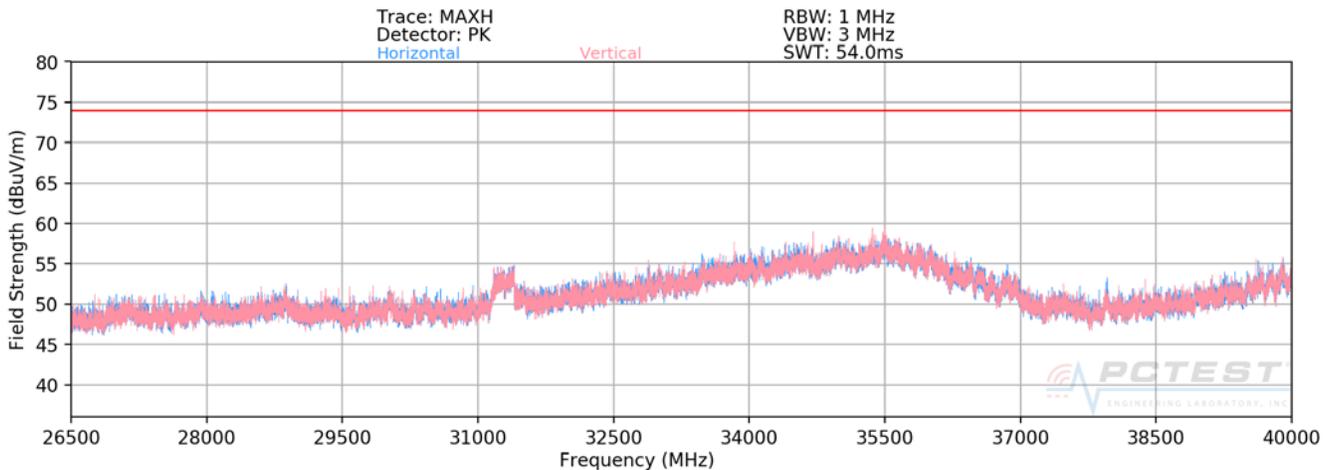
**Table 7-63. Radiated Measurements MIMO/CDD**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset	Page 139 of 176	

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



**Plot 7-173. Radiated Spurious Plot above 18GHz - 26.5GHz MIMO/CDD (802.11a)**



**Plot 7-174. Radiated Spurious Plot 26.5GHz - 40GHz MIMO/CDD (802.11a)**

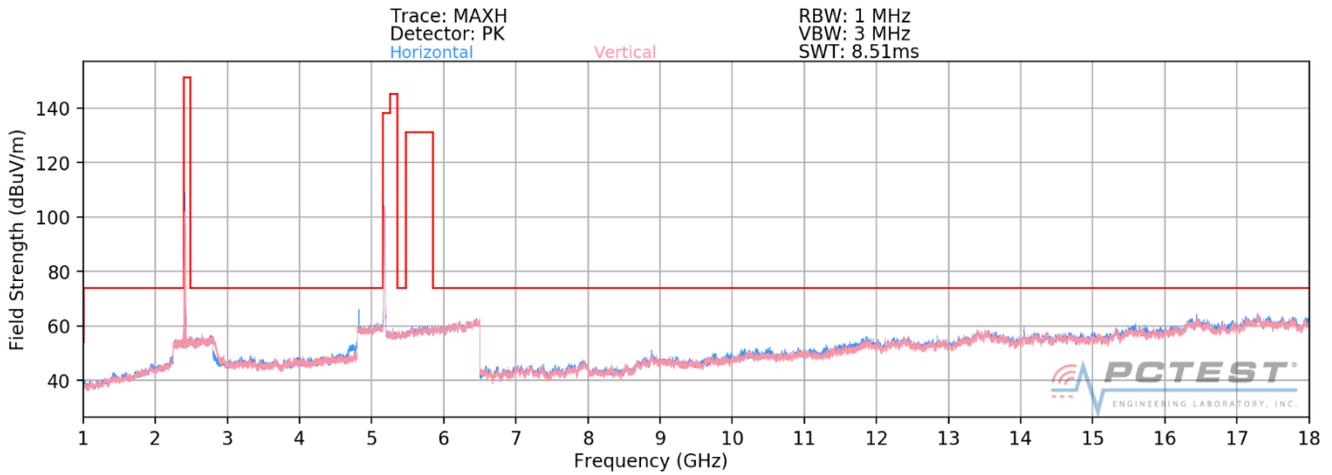
FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 140 of 176

### 7.6.4 Simultaneous Tx Radiated Spurious Emissions Measurements

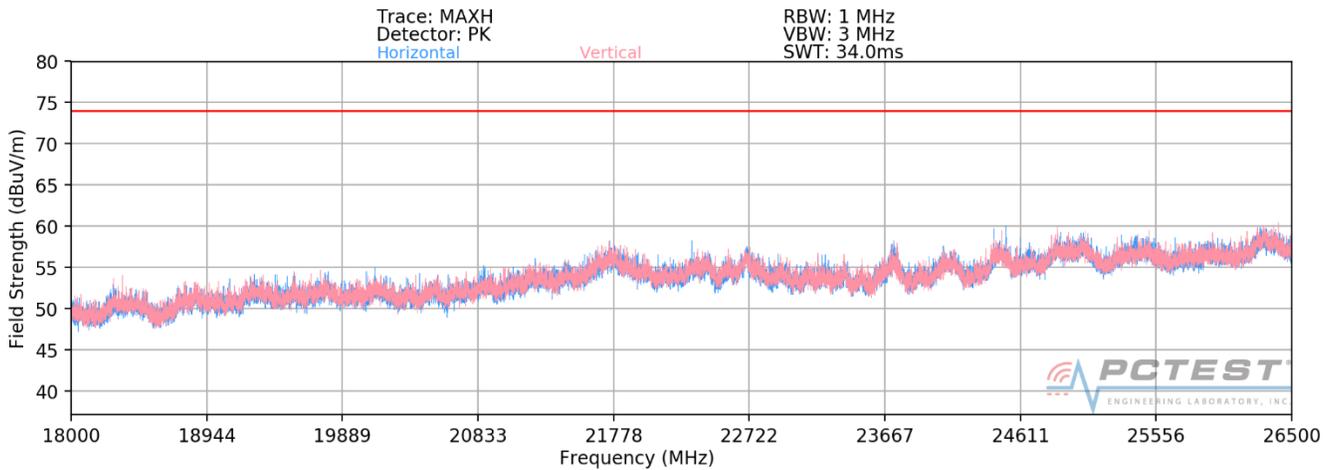
§15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Description	2.4 GHz Emission	5 GHz Emission
Antenna	1	2
Channel	1	36
Operating Frequency (MHz)	2412	5180
Data Rate (Mbps)	1	6
Mode	802.11b	802.11a

**Table 7-64. Simultaneous Transmission Config-1**

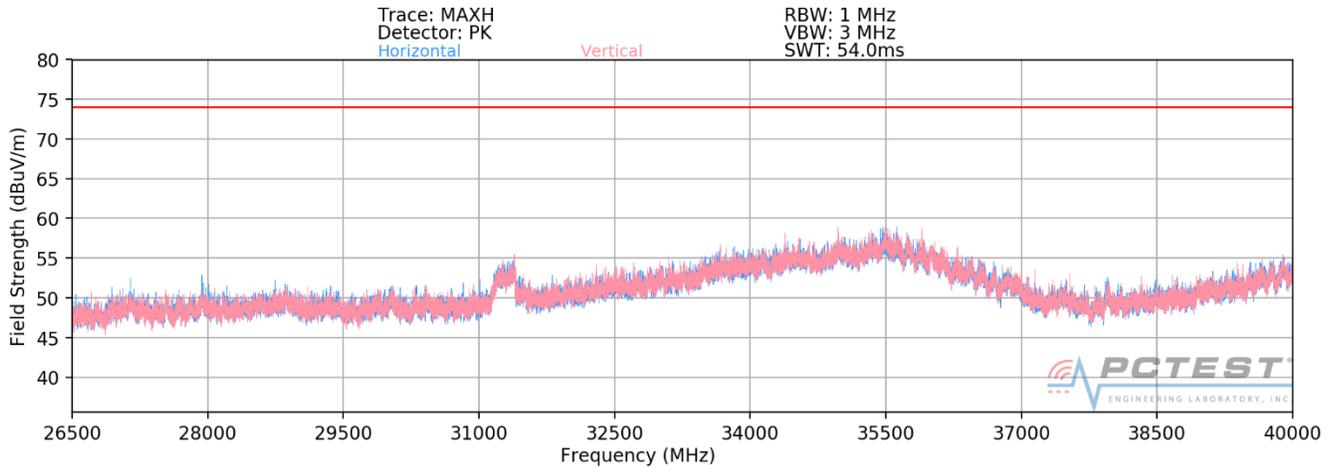


**Plot 7-175. Radiated Spurious Plot above 1GHz (2.4GHz – 5GHz)**



**Plot 7-176. Radiated Spurious Plot 18GHz – 26.5GHz (2.4GHz – 5GHz)**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 141 of 176



**Plot 7-177. Radiated Spurious Plot above 26.5GHz (2.4GHz – 5GHz)**

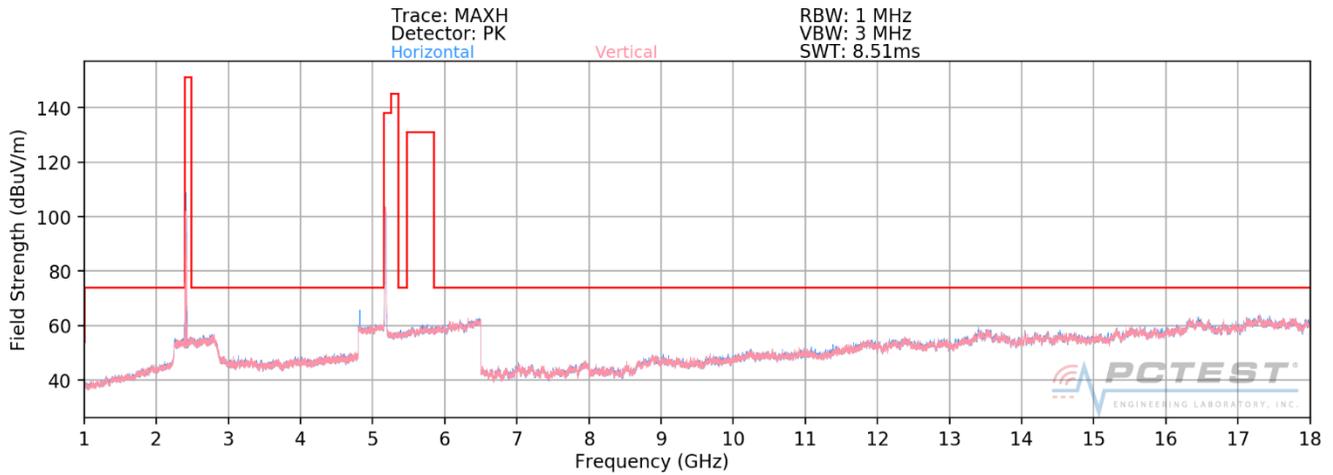
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
356.00	Peak	H	-	-	-97.31	22.49	32.18	68.20	-36.02
3124.00	Peak	H	-	-	-66.79	0.77	40.98	68.20	-27.22
5892.00	Peak	H	-	-	-68.42	5.05	43.63	68.20	-24.57
7948.00	Peak	H	-	-	-69.55	8.85	46.30	68.20	-21.90
8660.00	Peak	H	-	-	-70.56	11.15	47.59	68.20	-20.61
10716.00	Average	H	-	-	-83.58	11.75	35.17	53.98	-18.81
10716.00	Peak	H	-	-	-70.58	11.75	48.17	73.98	-25.81
13484.00	Peak	H	-	-	-72.20	14.85	49.65	68.20	-18.55
16252.00	Peak	H	-	-	-71.86	13.79	48.93	68.20	-19.27

**Table 7-65. Radiated Measurements (ANT1 2.4GHz – ANT2 5GHz)**

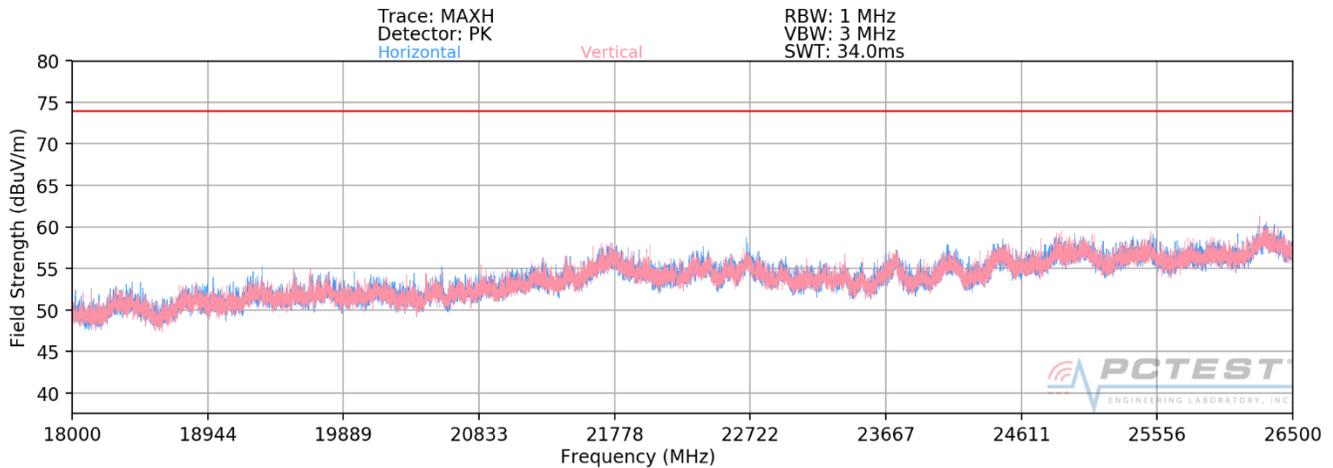
FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset			Page 142 of 176

Description	2.4 GHz Emission	5 GHz Emission
Antenna	2	1
Channel	1	36
Operating Frequency (MHz)	2412	5180
Data Rate (Mbps)	1	6
Mode	802.11b	802.11a

**Table 7-66. Simultaneous Transmission Config-2**

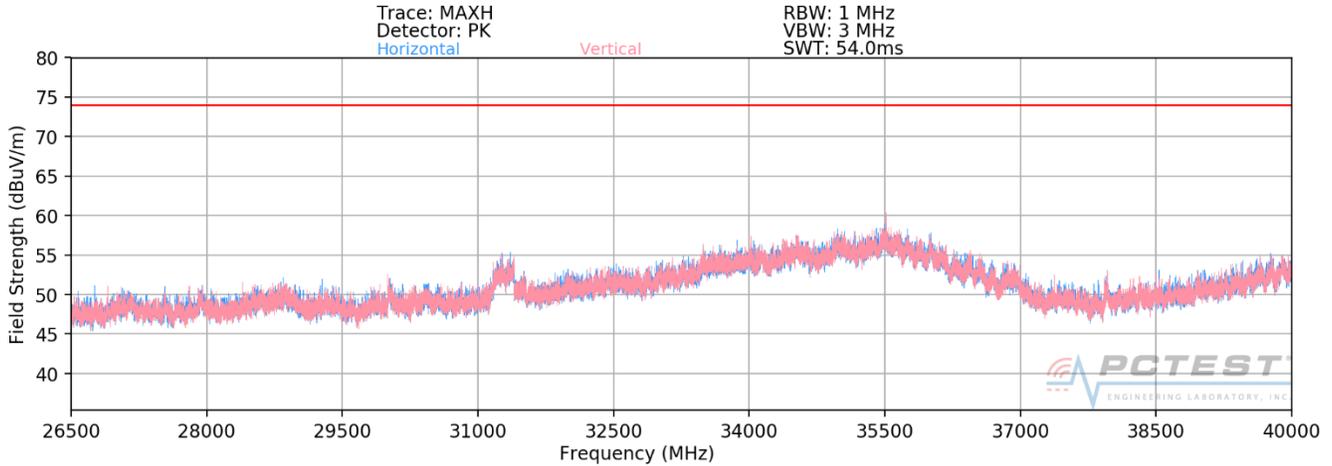


**Plot 7-178. Radiated Spurious Plot above 1GHz (5GHz – 2.4 GHz)**



**Plot 7-179. Radiated Spurious Plot 18GHz – 26.5GHz (5GHz – 2.4 GHz)**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 143 of 176



**Plot 7-180. Radiated Spurious Plot above 26.5GHz (5GHz – 2.4 GHz)**

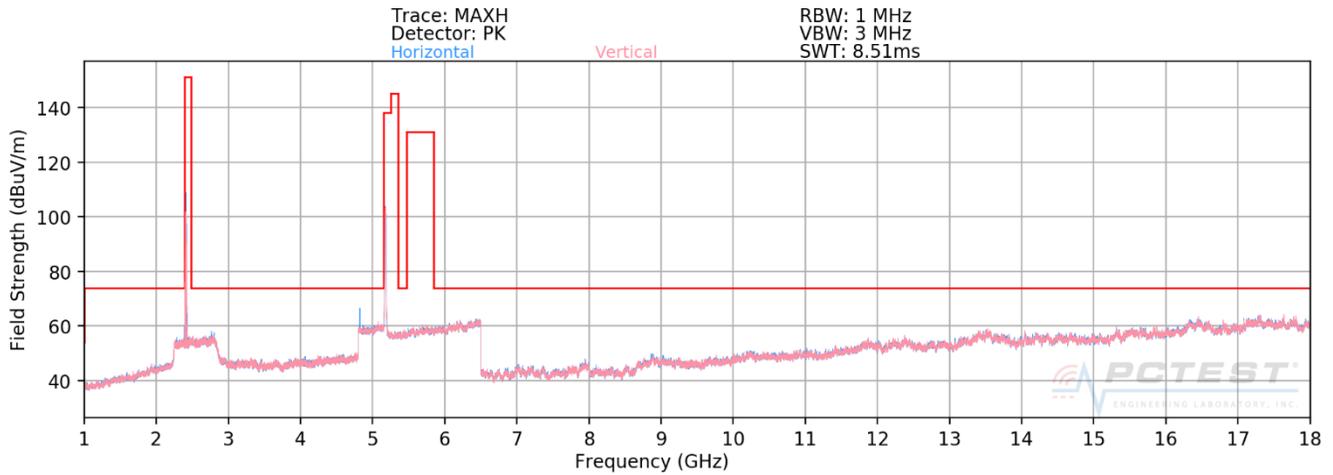
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
356.00	Peak	H	-	-	-97.28	22.49	32.21	68.20	-35.99
3124.00	Peak	H	-	-	-65.83	0.77	41.94	68.20	-26.26
5892.00	Peak	H	-	-	-67.79	5.05	44.26	68.20	-23.94
7948.00	Peak	H	-	-	-69.31	8.85	46.54	68.20	-21.66
8660.00	Peak	H	-	-	-69.55	11.15	48.60	68.20	-19.60
10716.00	Average	H	-	-	-82.49	11.75	36.26	53.98	-17.72
10716.00	Peak	H	-	-	-70.26	11.75	48.49	73.98	-25.49
13484.00	Peak	H	-	-	-70.62	14.85	51.23	68.20	-16.97
16252.00	Peak	H	-	-	-70.51	13.79	50.28	68.20	-17.92

**Table 7-67. Radiated Measurements (ANT1 5GHz – ANT2 2.4GHz)**

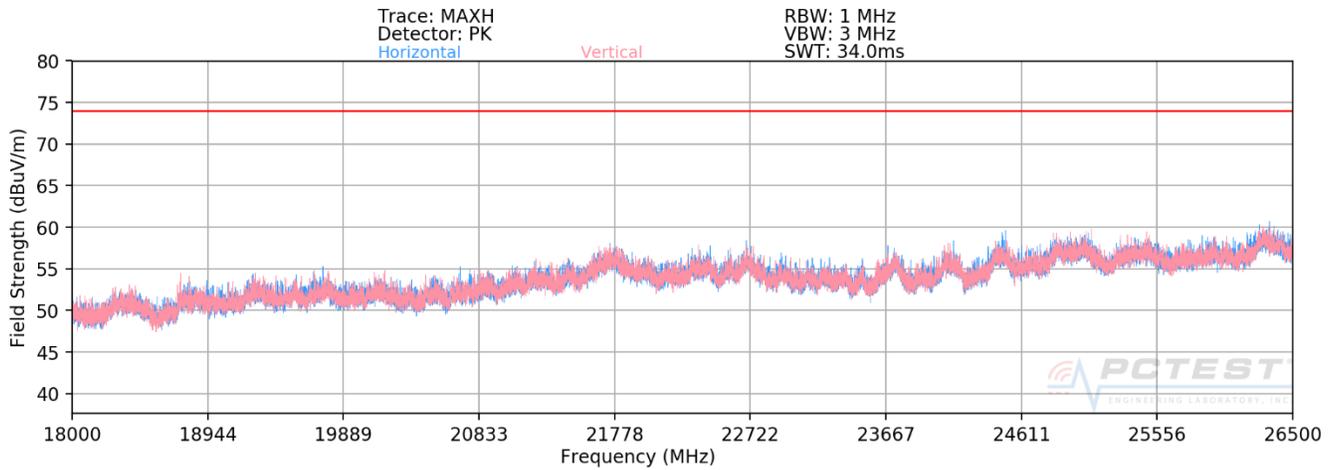
FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset			Page 144 of 176

Description	2.4 GHz Emission	5 GHz Emission
Antenna	1, 2	1, 2
Channel	1	36
Operating Frequency (MHz)	2412	5180
Data Rate (Mbps)	6	6
Mode	802.11g	802.11a

**Table 7-68. Dual Band Simultaneous Transmission**

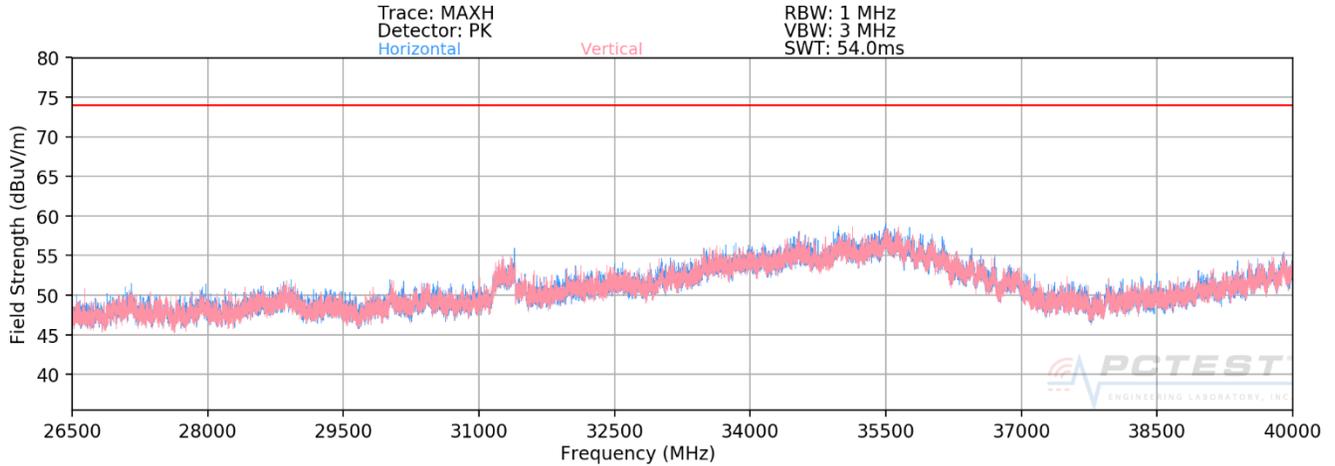


**Plot 7-181. Radiated Spurious Plot above 1GHz (Dual Band Simult. Tx)**



**Plot 7-182. Radiated Spurious Plot 18GHz – 26.5GHz (Dual Band Simult. Tx)**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 145 of 176



**Plot 7-183. Radiated Spurious Plot above 26.5GHz (Dual Band Simult. Tx)**

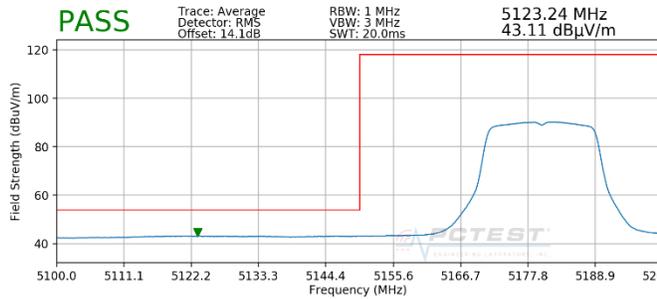
Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
356.00	Peak	V	-	-	-96.05	22.49	33.44	68.20	-34.76
3124.00	Peak	V	-	-	-65.08	0.77	42.69	68.20	-25.51
5892.00	Peak	V	-	-	-66.21	5.05	45.84	68.20	-22.36
7948.00	Peak	V	-	-	-69.61	8.85	46.24	68.20	-21.96
8660.00	Peak	V	-	-	-68.56	11.15	49.59	68.20	-18.61
10716.00	Average	V	-	-	-81.20	11.75	37.55	53.98	-16.43
10716.00	Peak	V	-	-	-71.64	11.75	47.11	73.98	-26.87
13484.00	Peak	V	-	-	-70.64	14.85	51.21	68.20	-16.99
16252.00	Peak	V	-	-	-69.84	13.79	50.95	68.20	-17.25

**Table 7-69. Radiated Measurements (Dual Band Simult. Tx)**

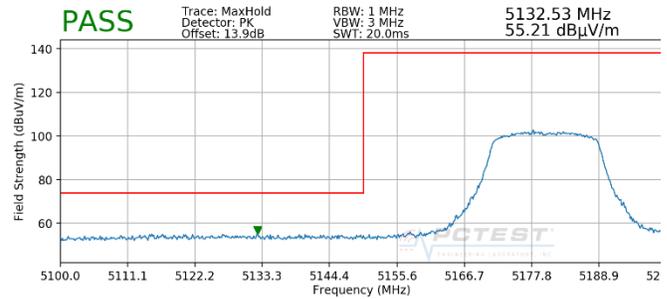
FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 146 of 176	

### 7.6.5 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]

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

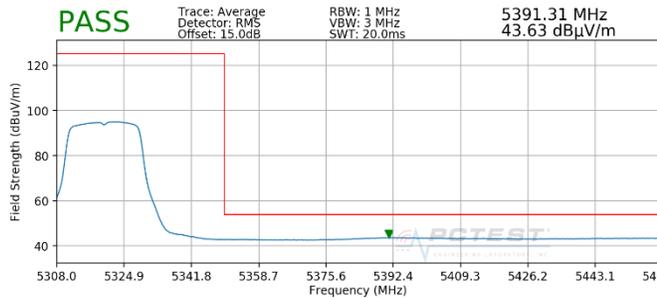


**Plot 7-184. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1)**

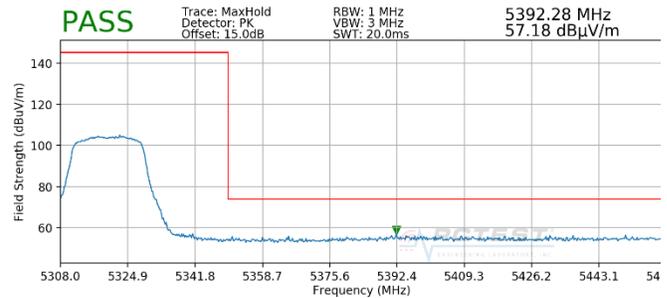


**Plot 7-185. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1)**

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



**Plot 7-186. Radiated Upper Band Edge Plot SISO ANT1 (Average – UNII Band 2A)**



**Plot 7-187. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A)**

FCC ID: ZNFV600VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1911250199-09.ZNF	Test Dates: 11/25/2019-1/17/2019	EUT Type: Portable Handset		Page 147 of 176