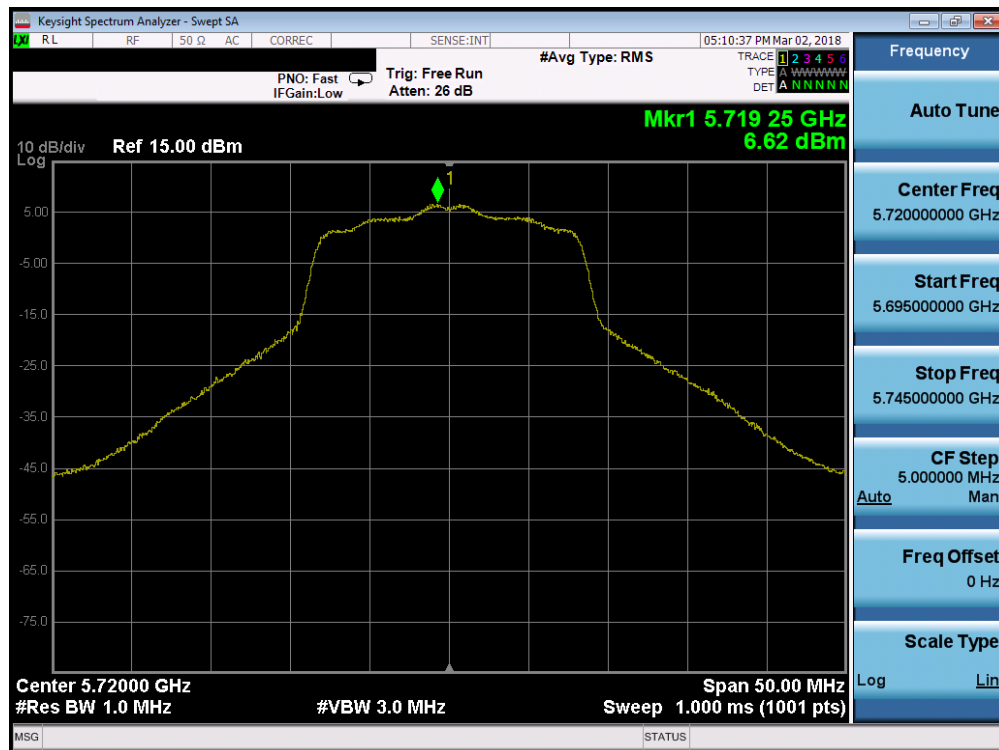
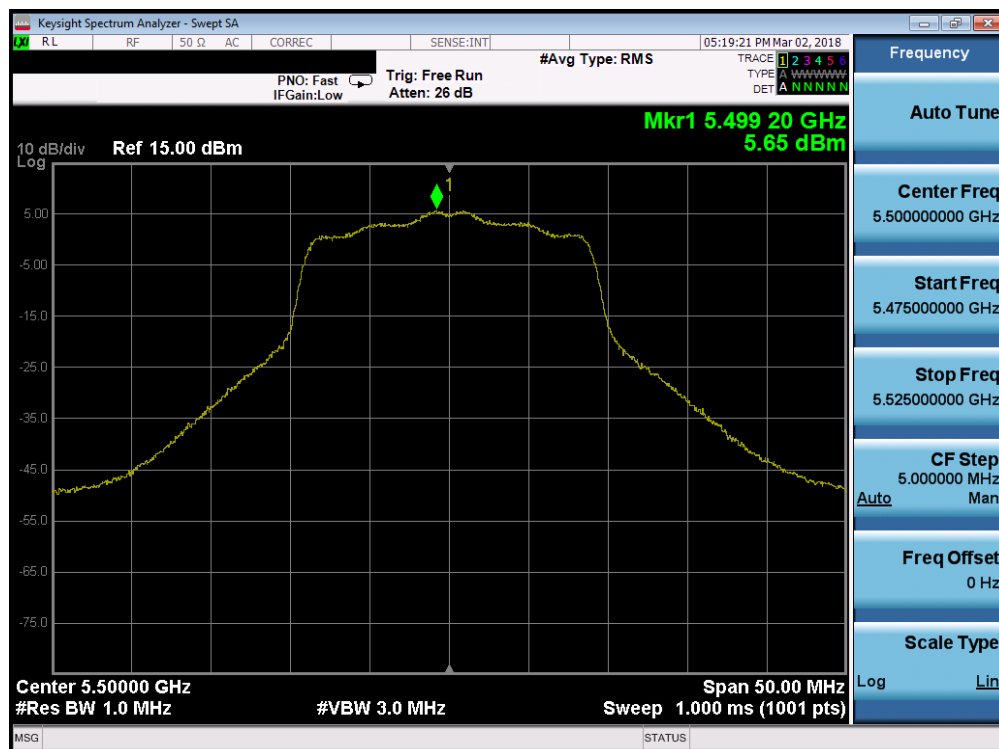


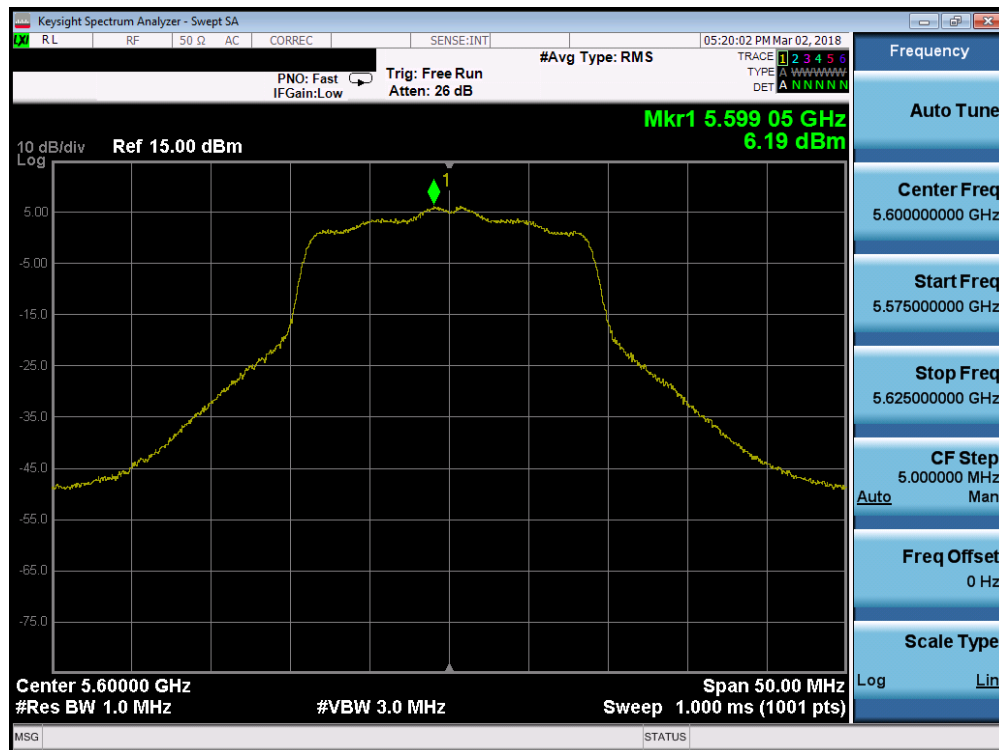


Plot 7-99. Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 144)

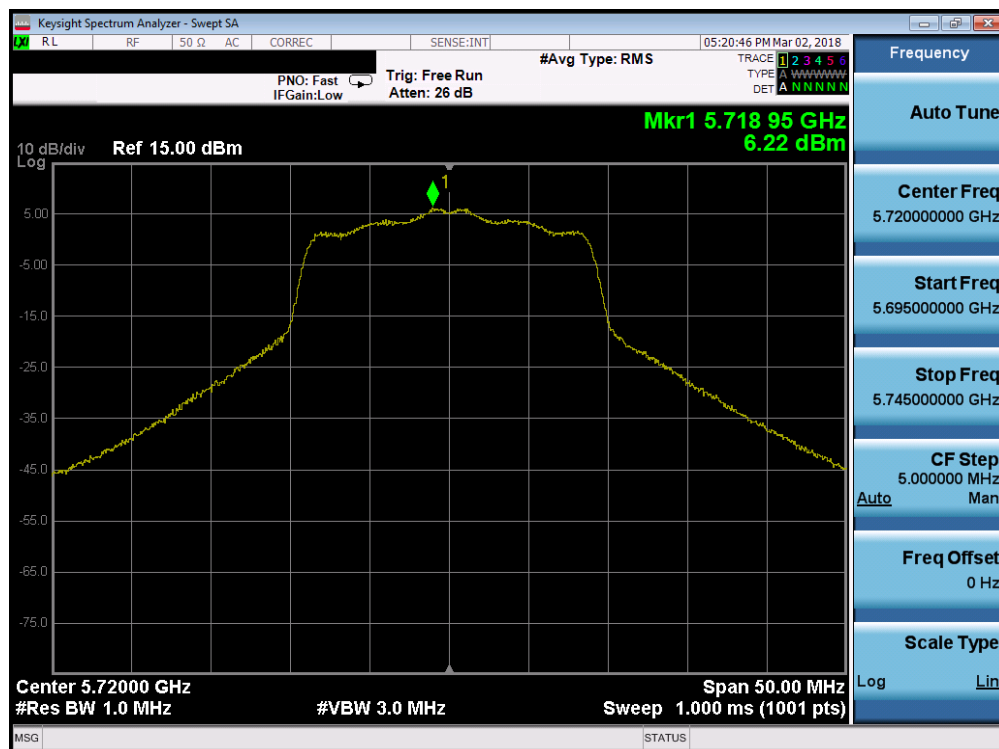


Plot 7-100. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

FCC ID: ZNFG710VM	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 76 of 178

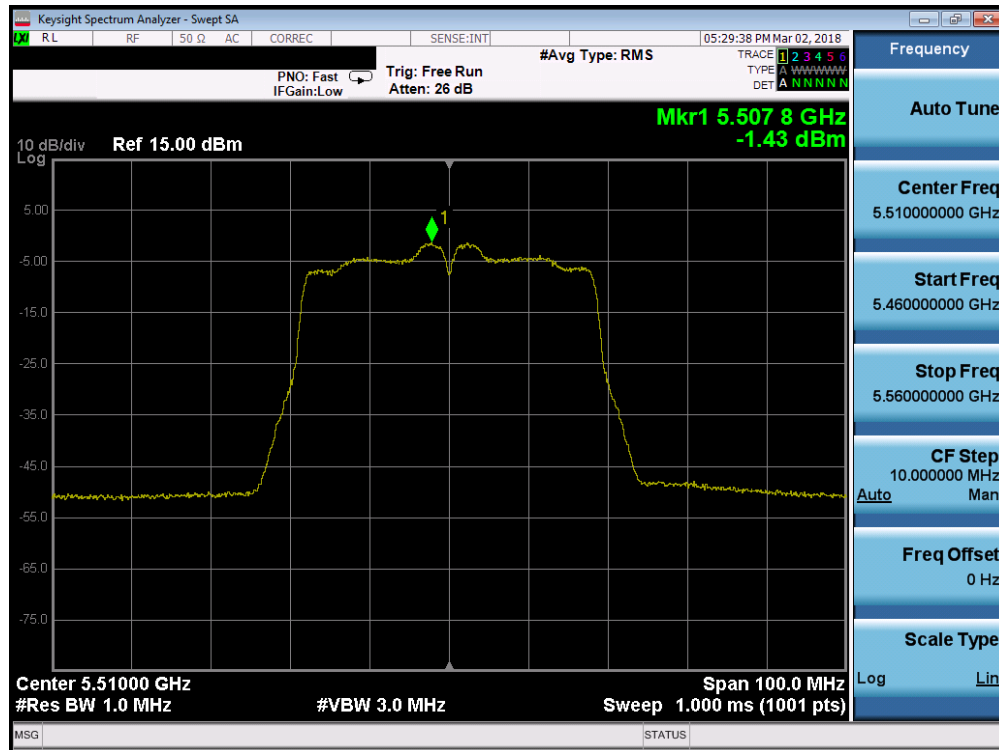


Plot 7-101. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 120)

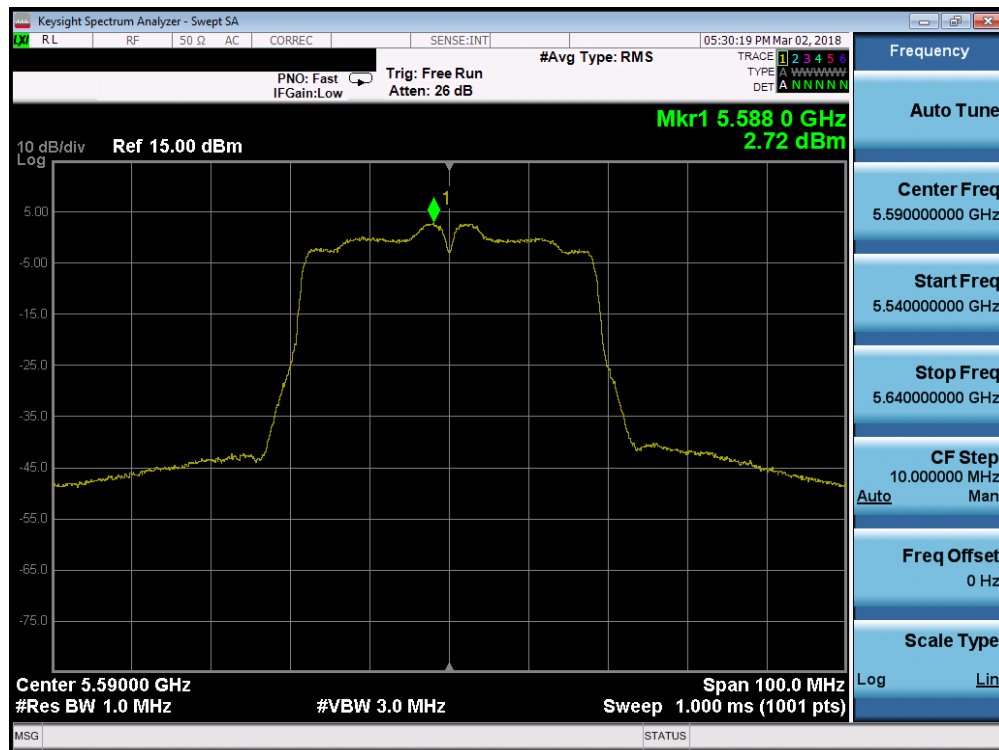


Plot 7-102. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 144)

FCC ID: ZNFG710VM	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 77 of 178

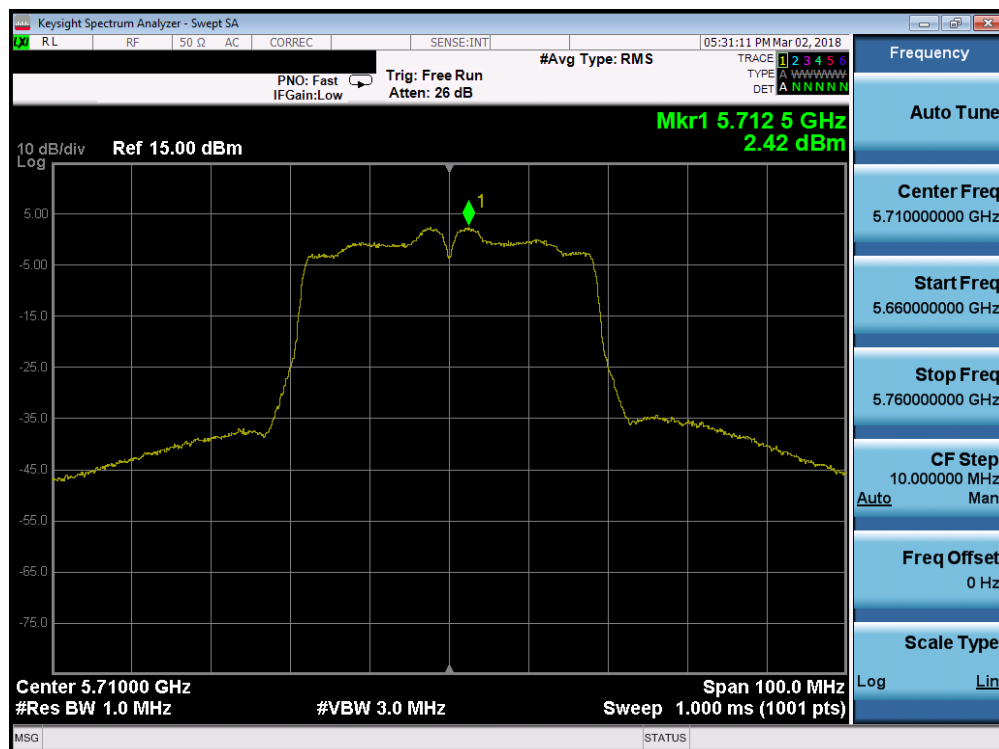


Plot 7-103. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

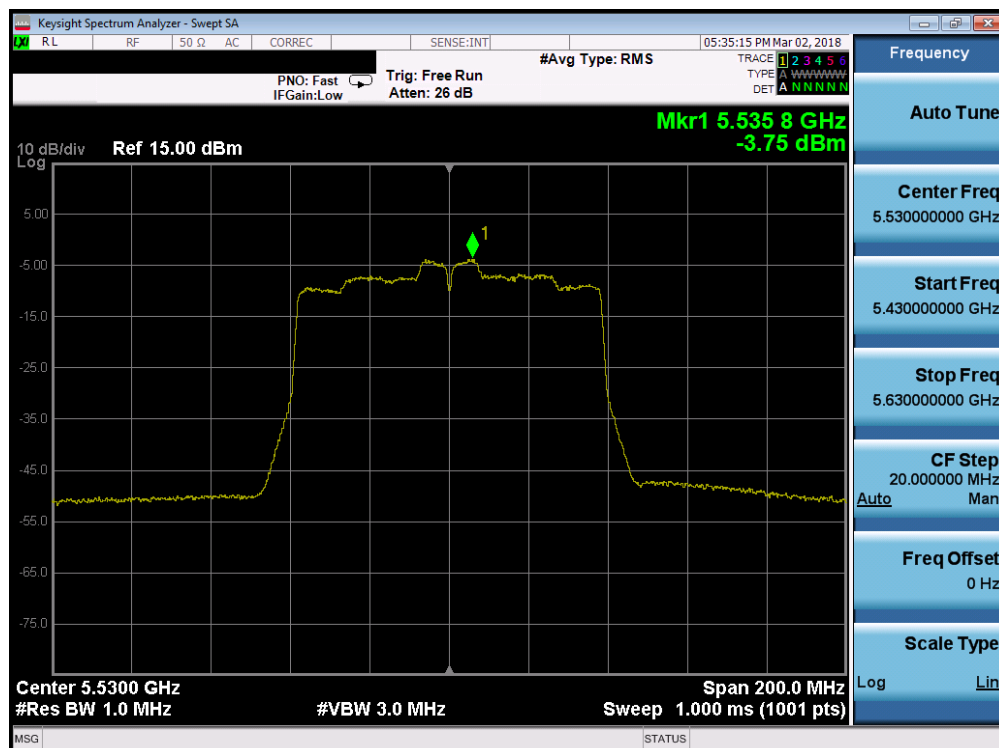


Plot 7-104. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 118)

FCC ID: ZNFG710VM	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 78 of 178

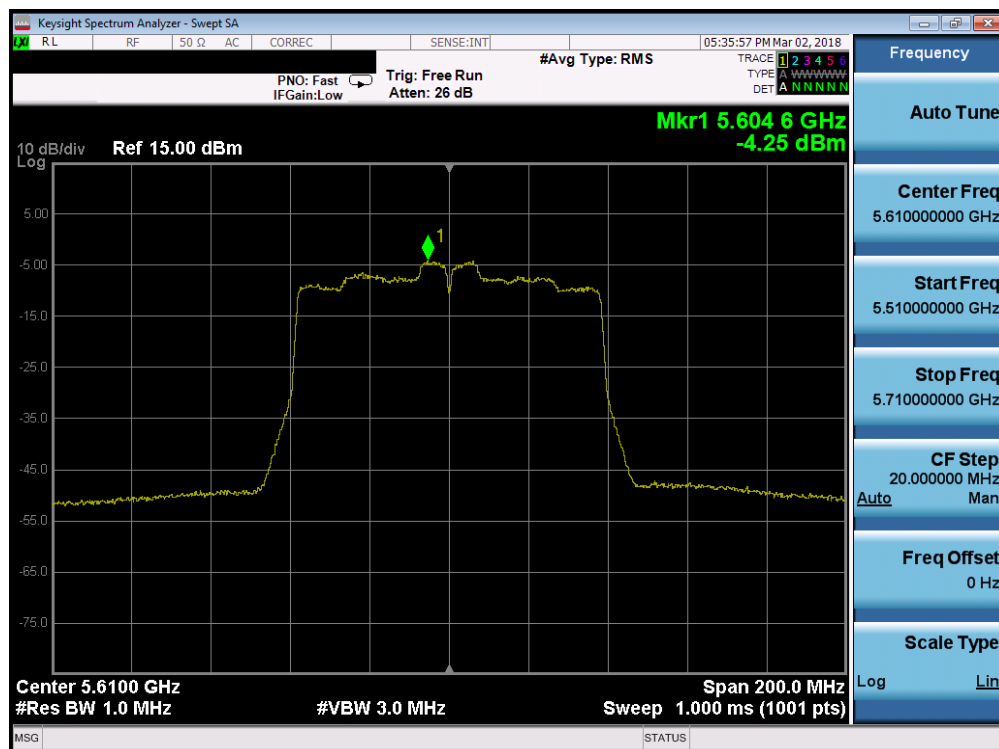


Plot 7-105. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)

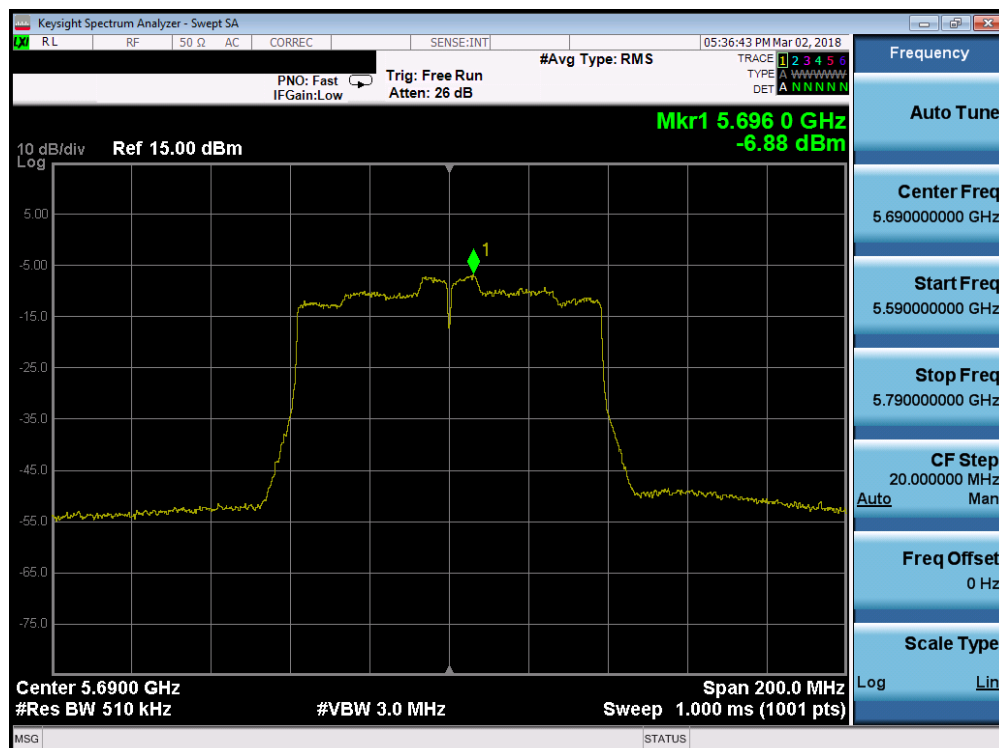


Plot 7-106. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 79 of 178



Plot 7-107. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 122)

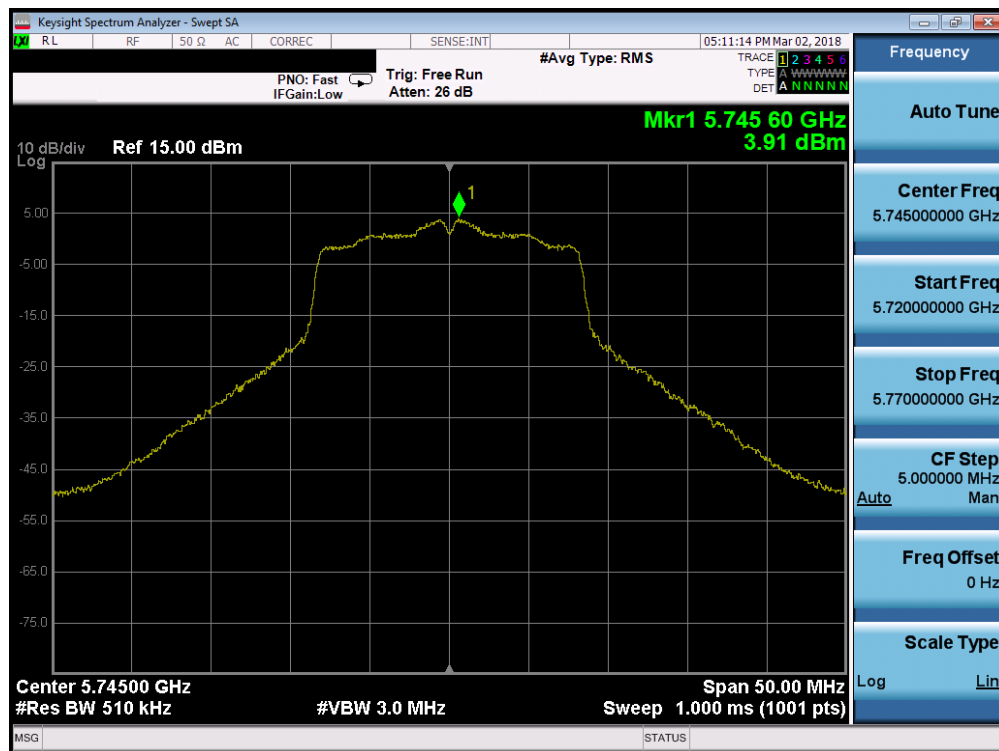


Plot 7-108. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 138)

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 80 of 178

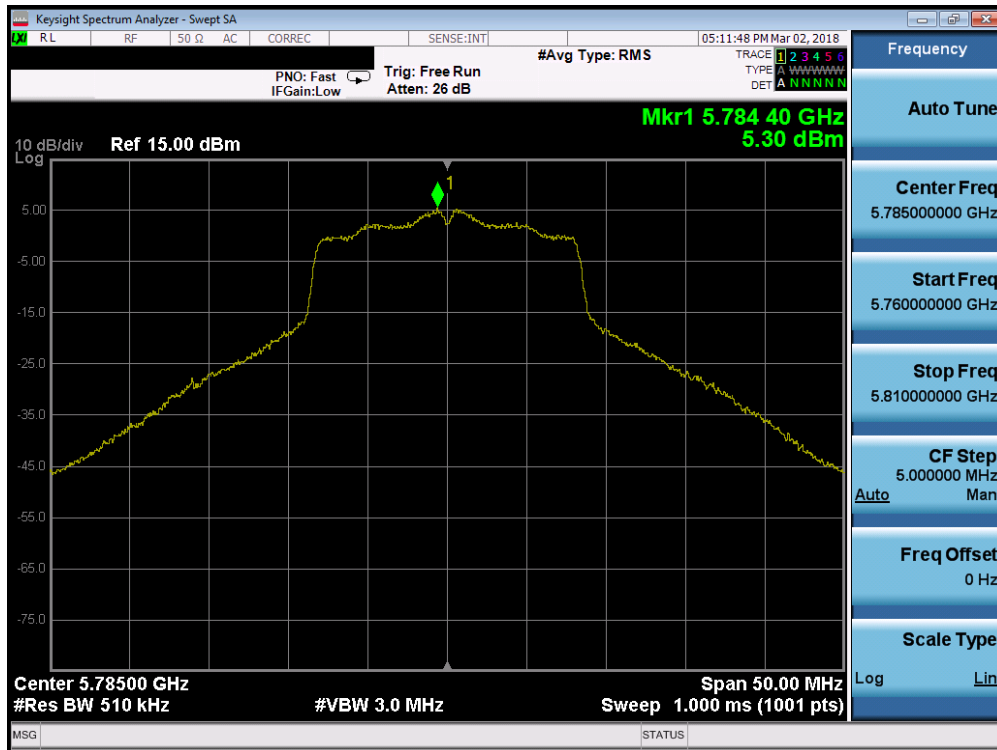
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
Band 3	5745	149	a	6	3.91	30.0	-26.09
	5785	157	a	6	5.30	30.0	-24.70
	5825	165	a	6	4.07	30.0	-25.93
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	3.71	30.0	-26.29
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	4.96	30.0	-25.04
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	4.01	30.0	-25.99
	5755	151	n (40MHz)	13.5/15 (MCS0)	-0.13	30.0	-30.13
	5795	159	n (40MHz)	13.5/15 (MCS0)	0.49	30.0	-29.51
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-3.08	30.0	-33.08

Table 7-19. Band 3 Conducted Power Spectral Density Measurements

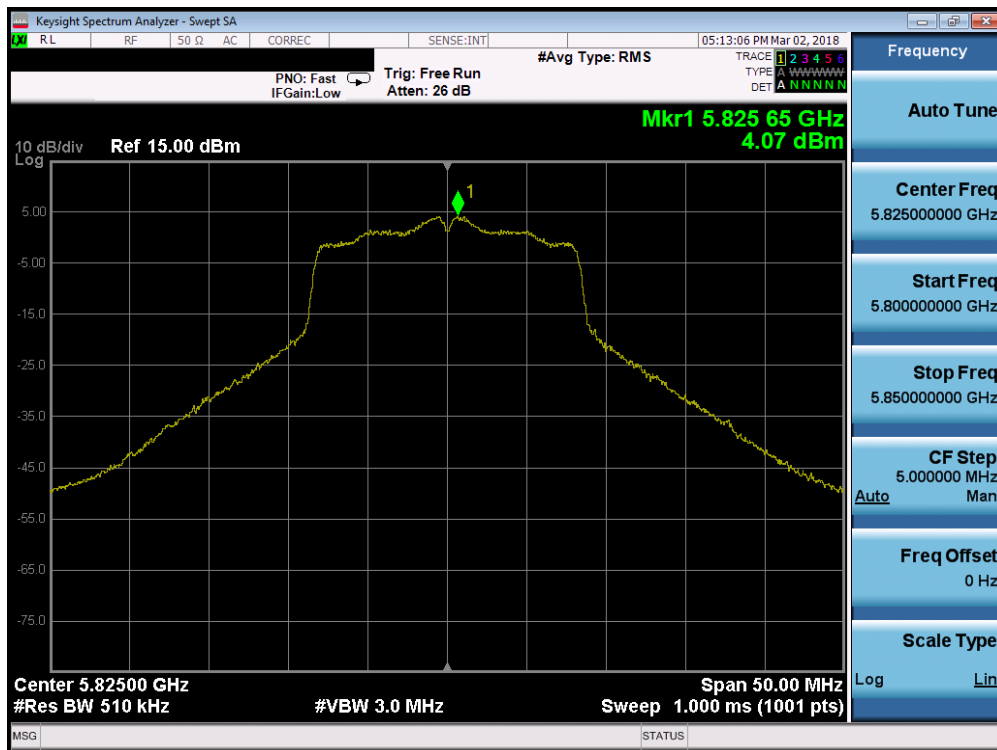


Plot 7-109. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 149)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 81 of 178

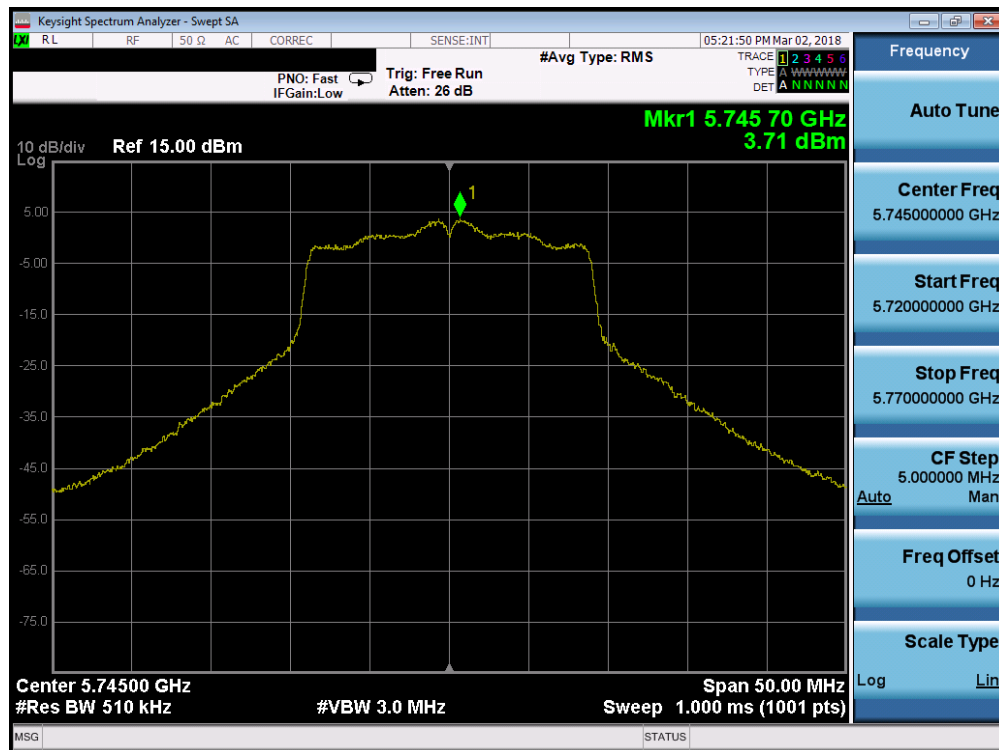


Plot 7-110. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 157)

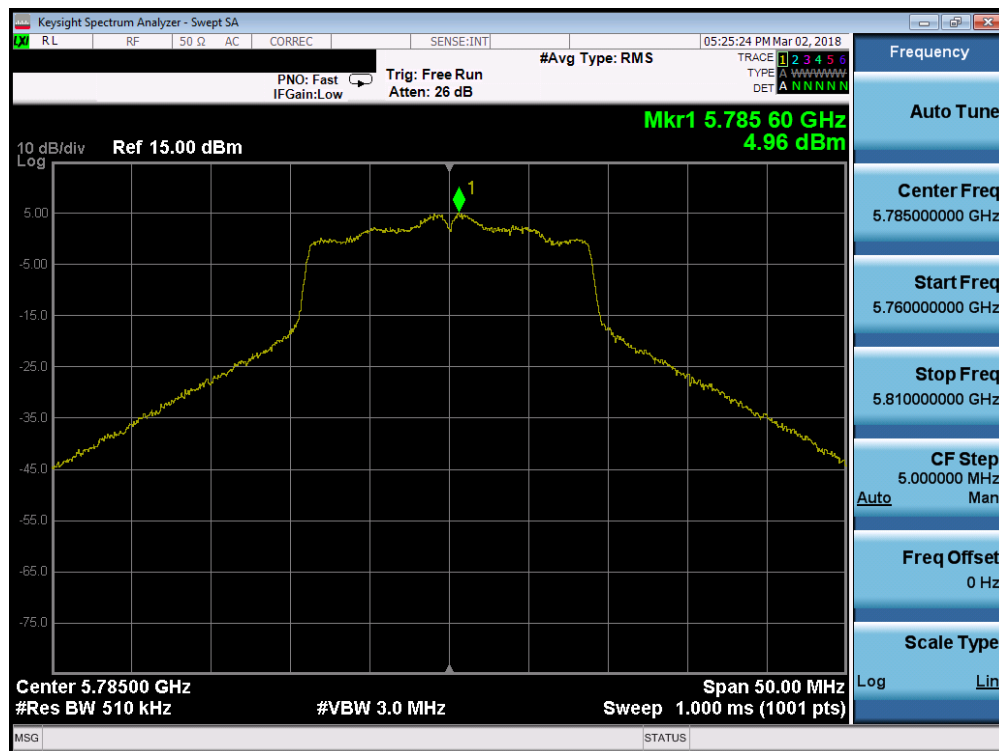


Plot 7-111. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 165)

FCC ID: ZNFG710VM	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset	Page 82 of 178

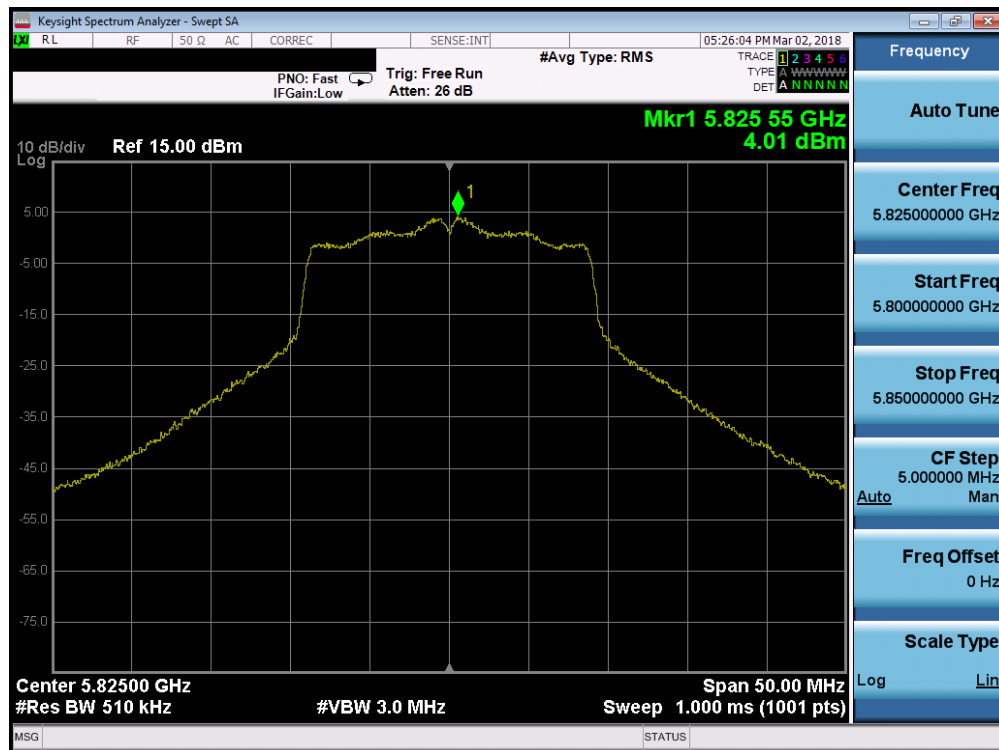


Plot 7-112. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

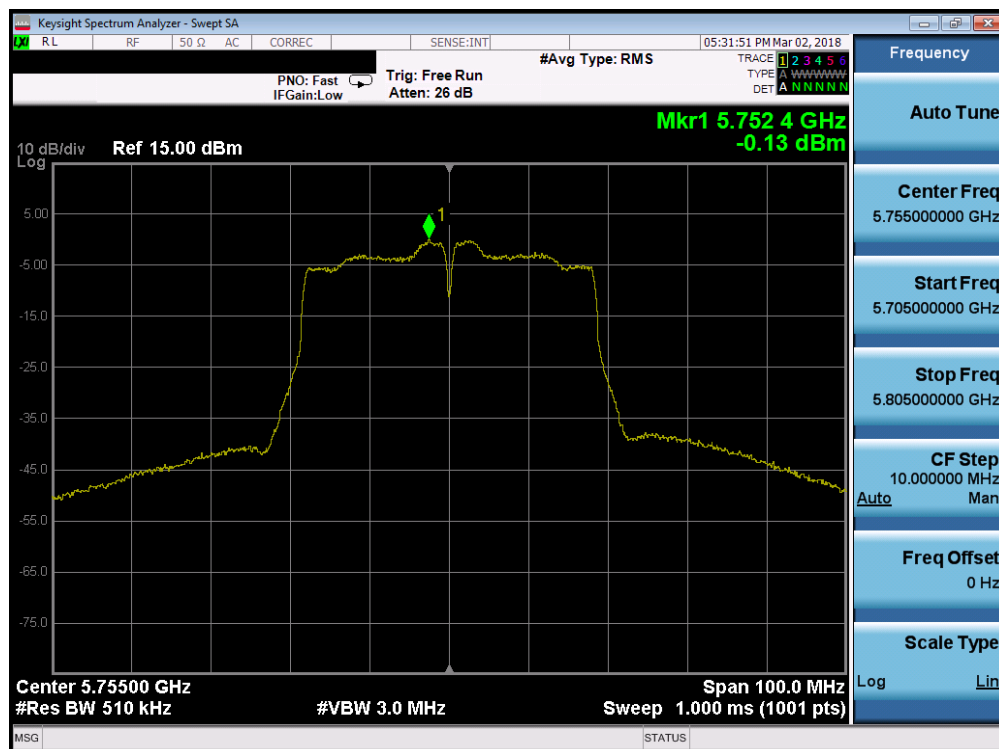


Plot 7-113. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

FCC ID: ZNFG710VM	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 83 of 178

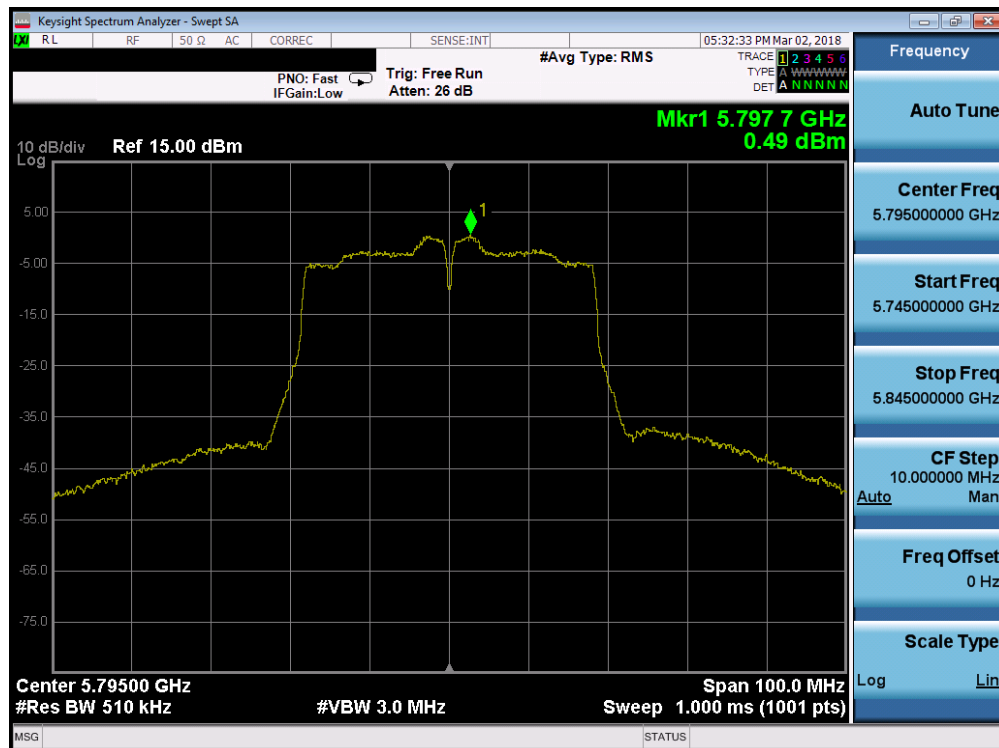


Plot 7-114. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

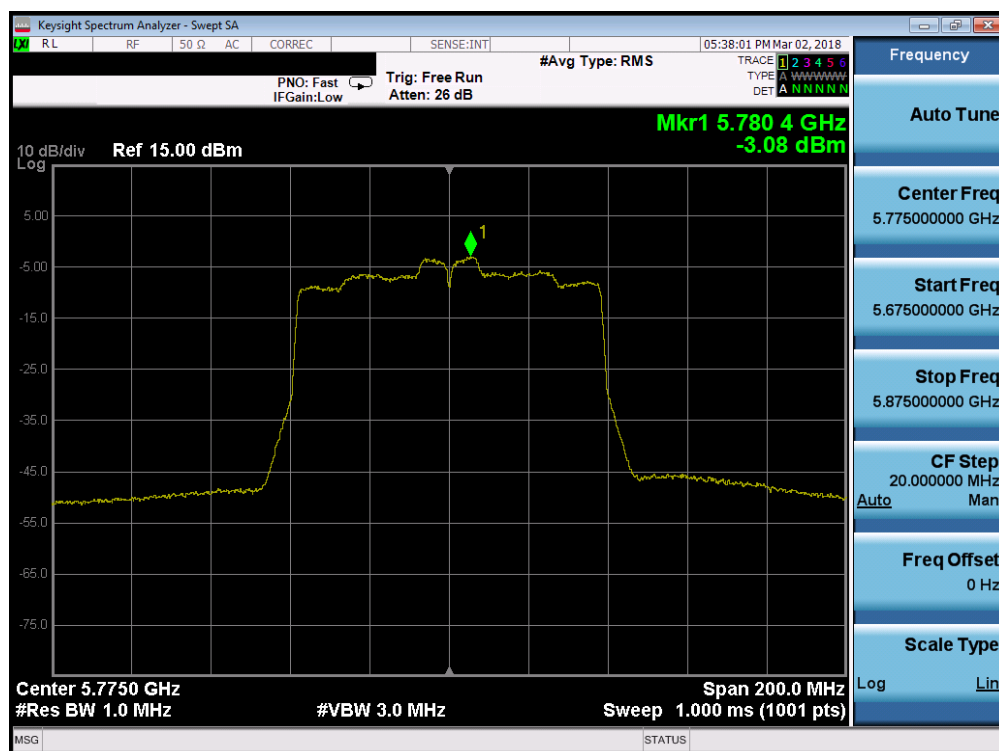


Plot 7-115. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 84 of 178



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



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

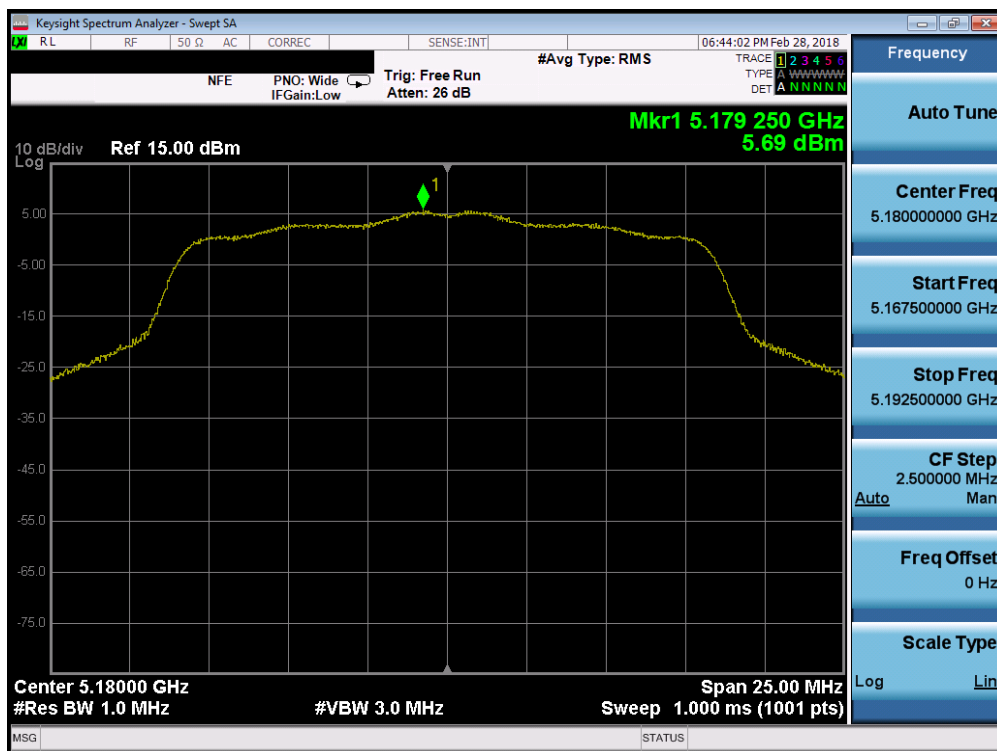
FCC ID: ZNFG710VM	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 85 of 178

Antenna-2 Power Spectral Density Measurements

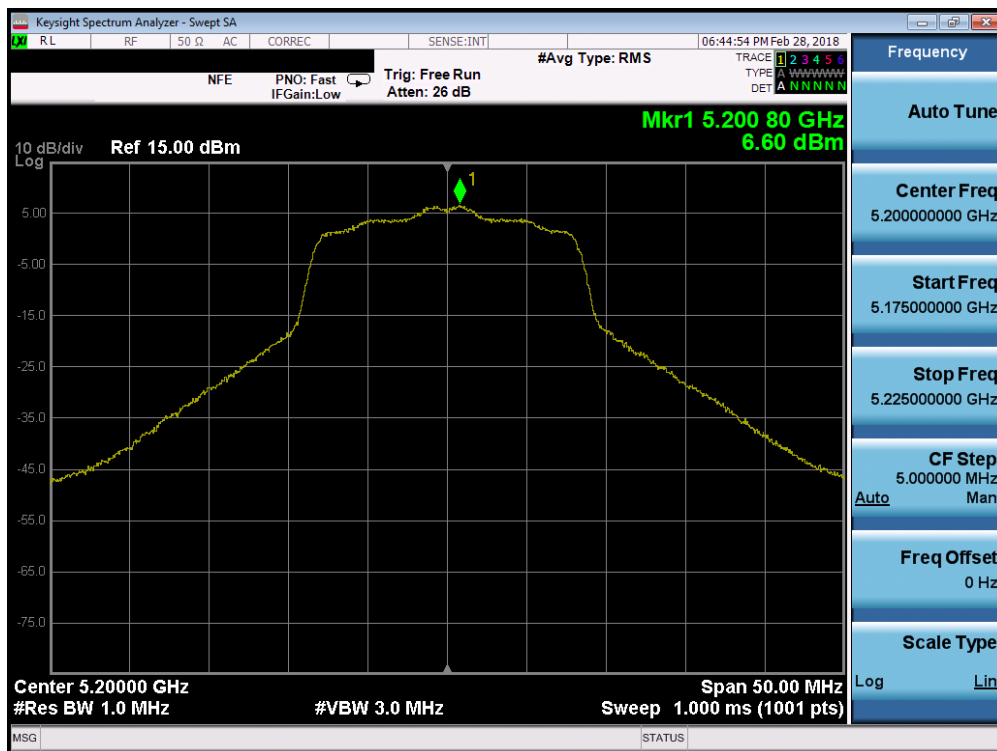
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	a	6	5.69	11.0	-5.31
	5200	40	a	6	6.60	11.0	-4.40
	5240	48	a	6	6.02	11.0	-4.98
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	6.39	11.0	-4.61
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.95	11.0	-4.05
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	6.47	11.0	-4.53
	5190	38	n (40MHz)	13.5/15 (MCS0)	-0.54	11.0	-11.54
	5230	46	n (40MHz)	13.5/15 (MCS0)	2.69	11.0	-8.31
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-2.84	11.0	-13.84
Band 2A	5260	52	a	6	5.88	11.0	-5.12
	5280	56	a	6	6.99	11.0	-4.01
	5320	64	a	6	5.69	11.0	-5.31
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	6.45	11.0	-4.55
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	7.51	11.0	-3.49
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	6.41	11.0	-4.59
	5270	54	n (40MHz)	13.5/15 (MCS0)	-0.26	11.0	-11.26
	5310	62	n (40MHz)	13.5/15 (MCS0)	-0.96	11.0	-11.96
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-6.21	11.0	-17.21
Band 2C	5500	100	a	6	6.01	11.0	-4.99
	5600	120	a	6	5.68	11.0	-5.32
	5720	144	a	6	6.09	11.0	-4.91
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	6.14	11.0	-4.86
	5600	120	n (20MHz)	6.5/7.2 (MCS0)	5.99	11.0	-5.01
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	5.33	11.0	-5.67
	5510	102	n (40MHz)	13.5/15 (MCS0)	-1.88	11.0	-12.88
	5590	118	n (40MHz)	13.5/15 (MCS0)	1.60	11.0	-9.40
	5710	142	n (40MHz)	13.5/15 (MCS0)	2.71	11.0	-8.29
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-3.36	11.0	-14.36
	5610	122	ac (80MHz)	29.3/32.5 (MCS0)	-3.77	11.0	-14.77
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-5.44	11.0	-16.44

Table 7-20. Conducted Power Spectral Density Measurements

FCC ID: ZNFG710VM	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 86 of 178

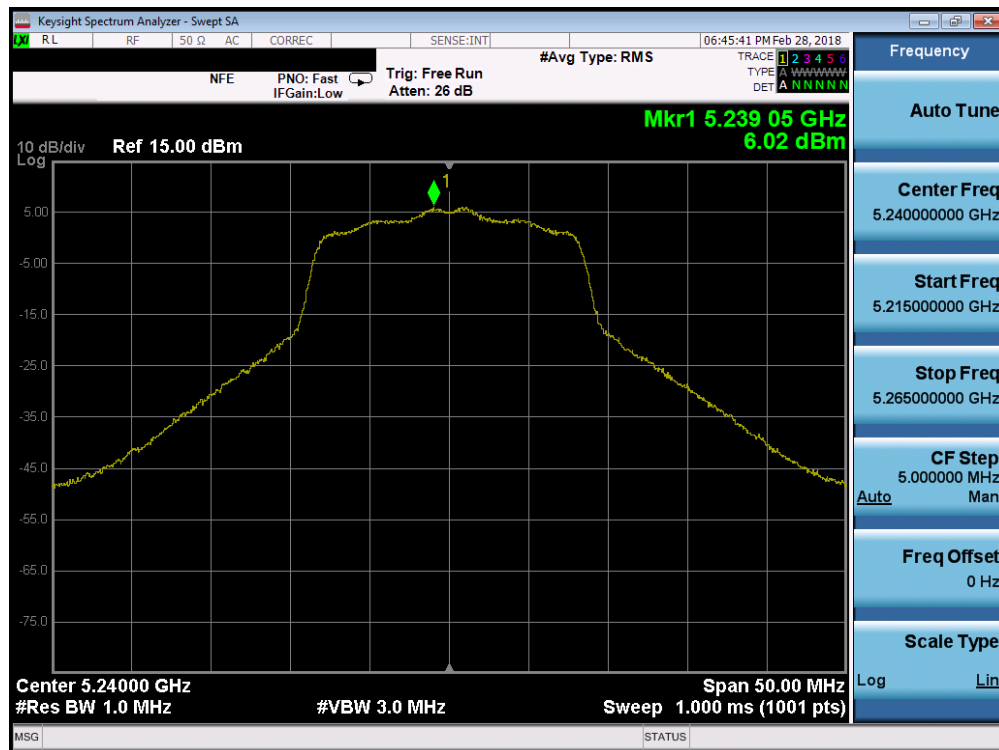


Plot 7-118. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 36)

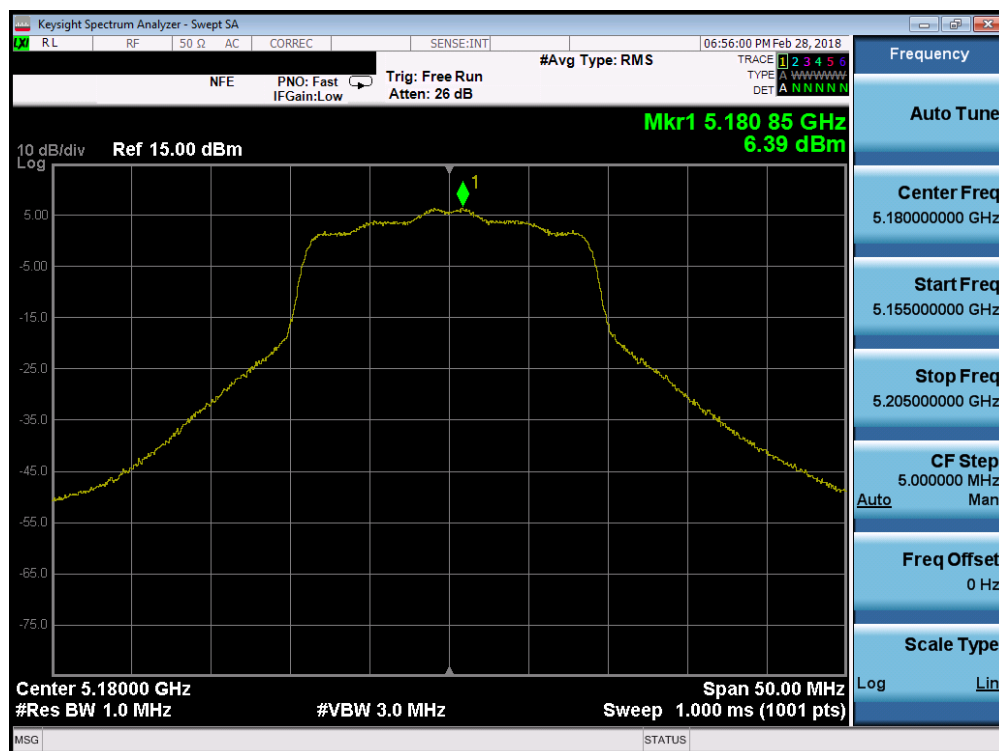


Plot 7-119. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 40)

FCC ID: ZNFG710VM	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 87 of 178

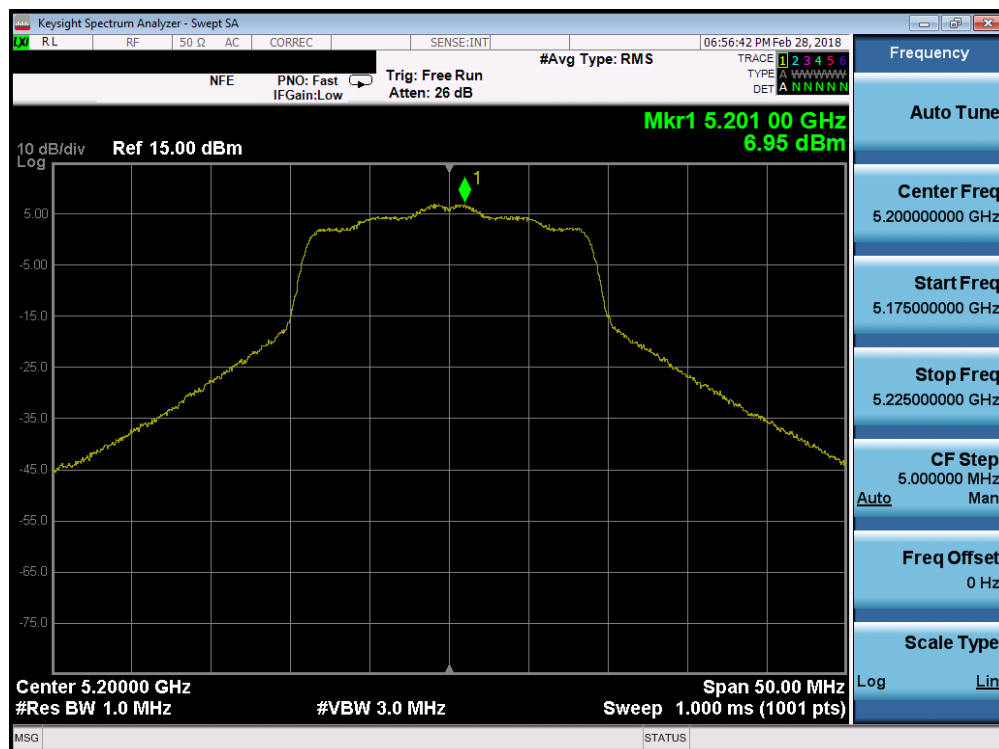


Plot 7-120. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 48)

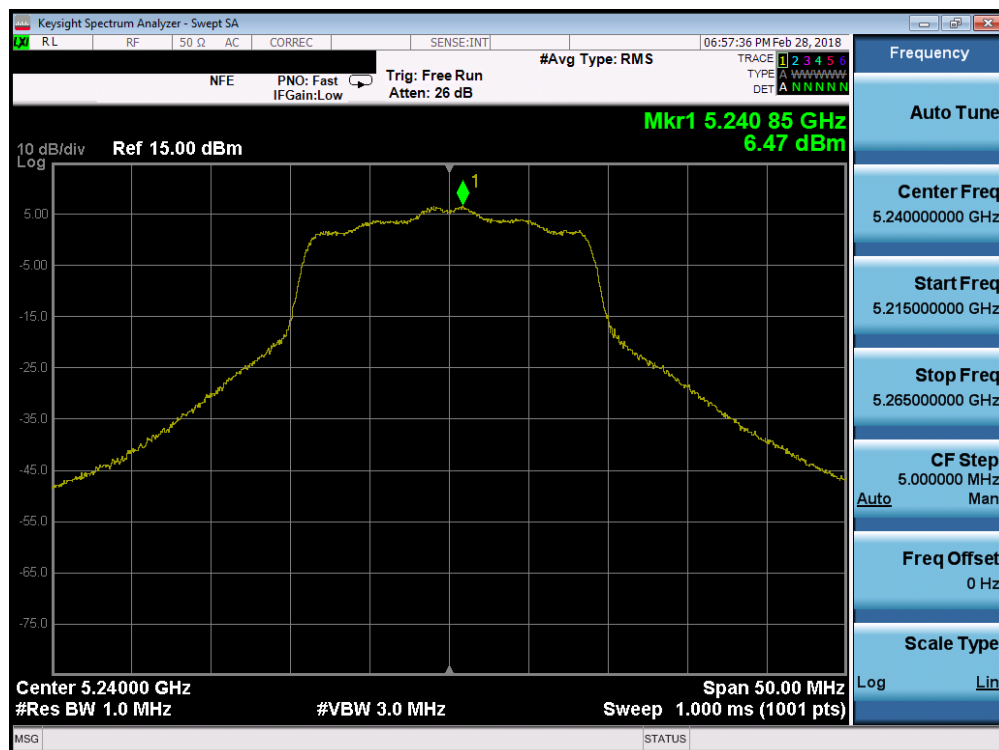


Plot 7-121. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 88 of 178

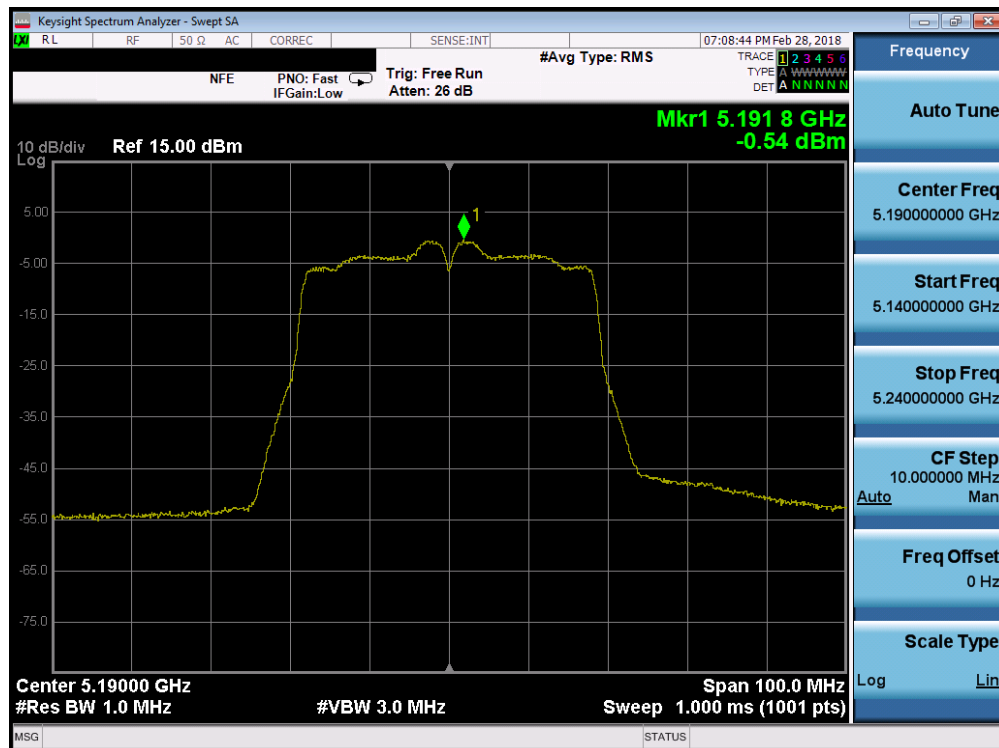


Plot 7-122. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

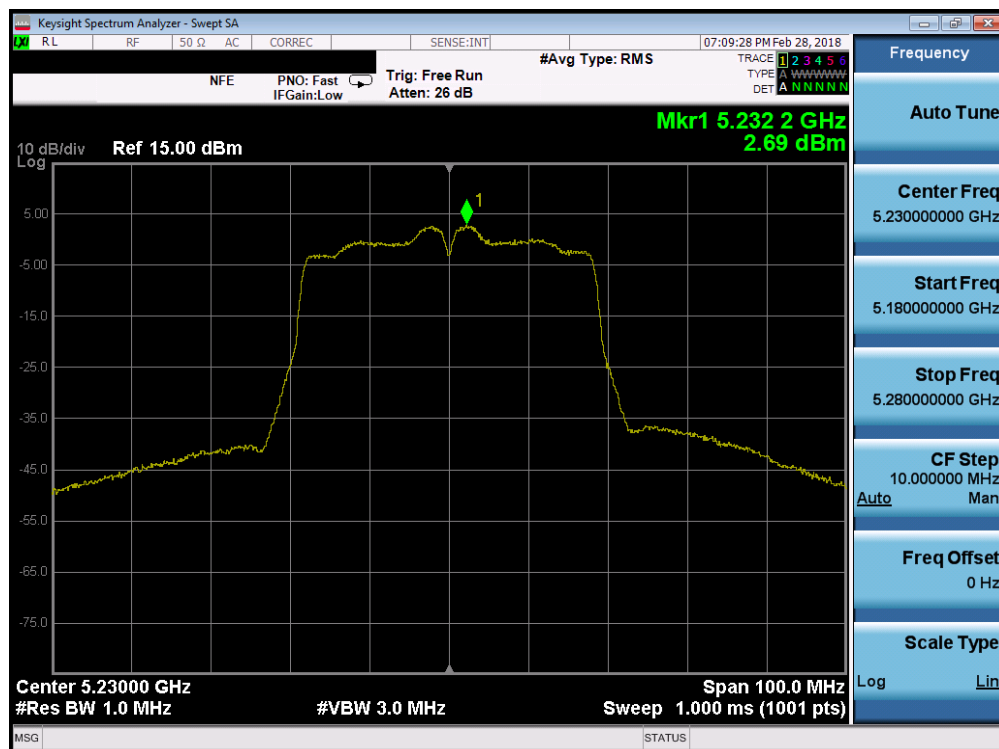


Plot 7-123. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 89 of 178

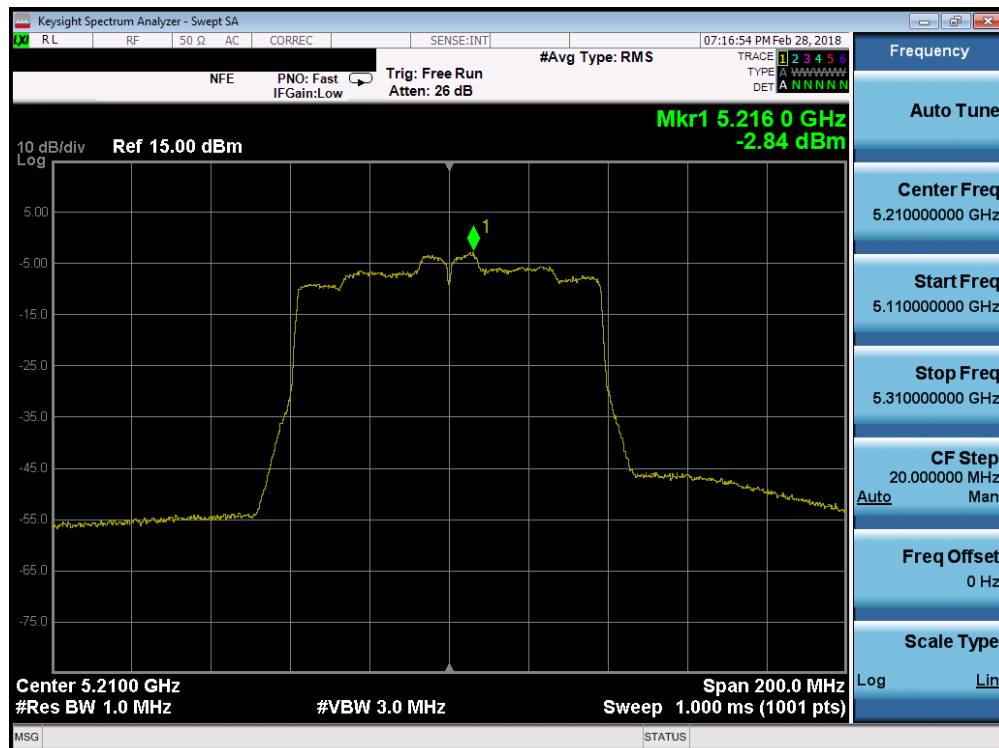


Plot 7-124. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 38)

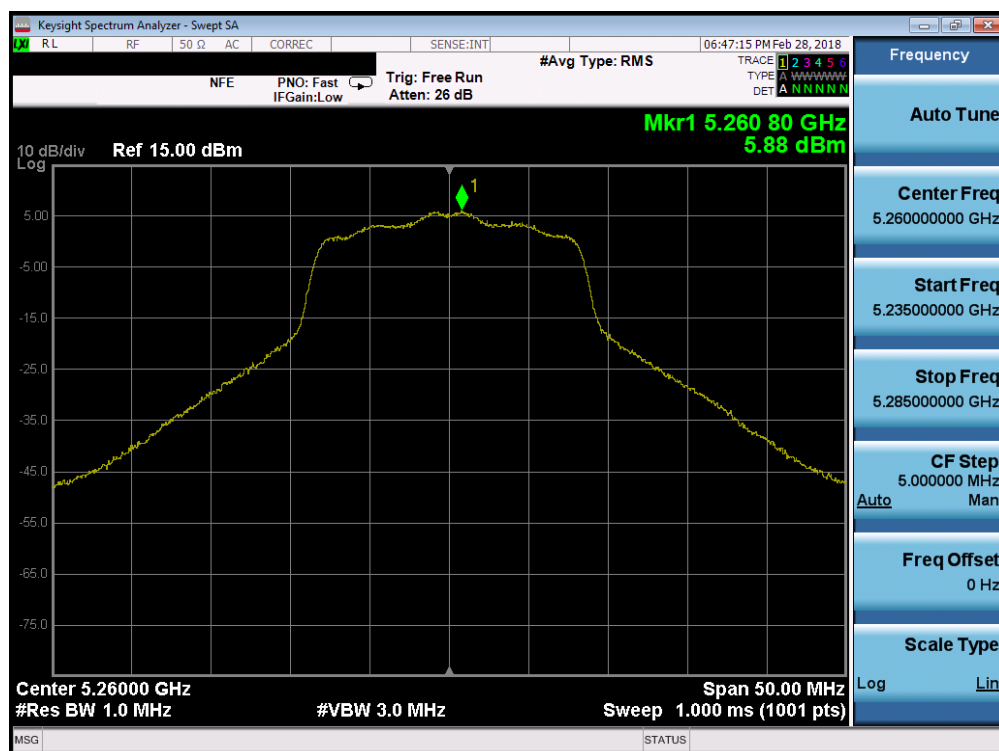


Plot 7-125. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

FCC ID: ZNFG710VM	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 90 of 178

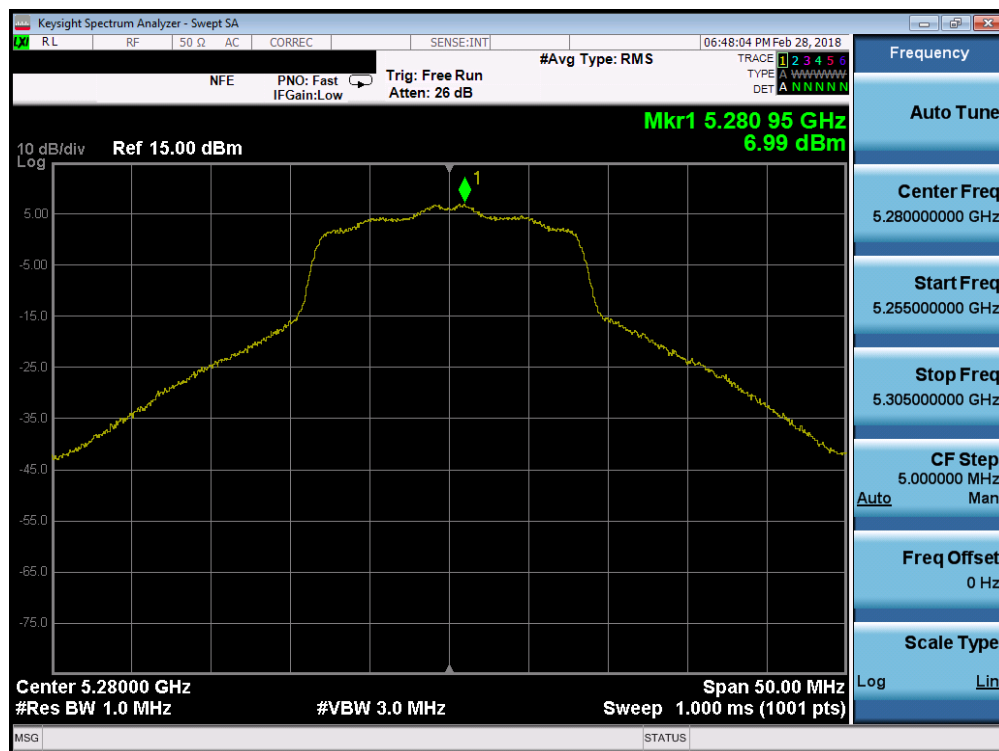


Plot 7-126. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)

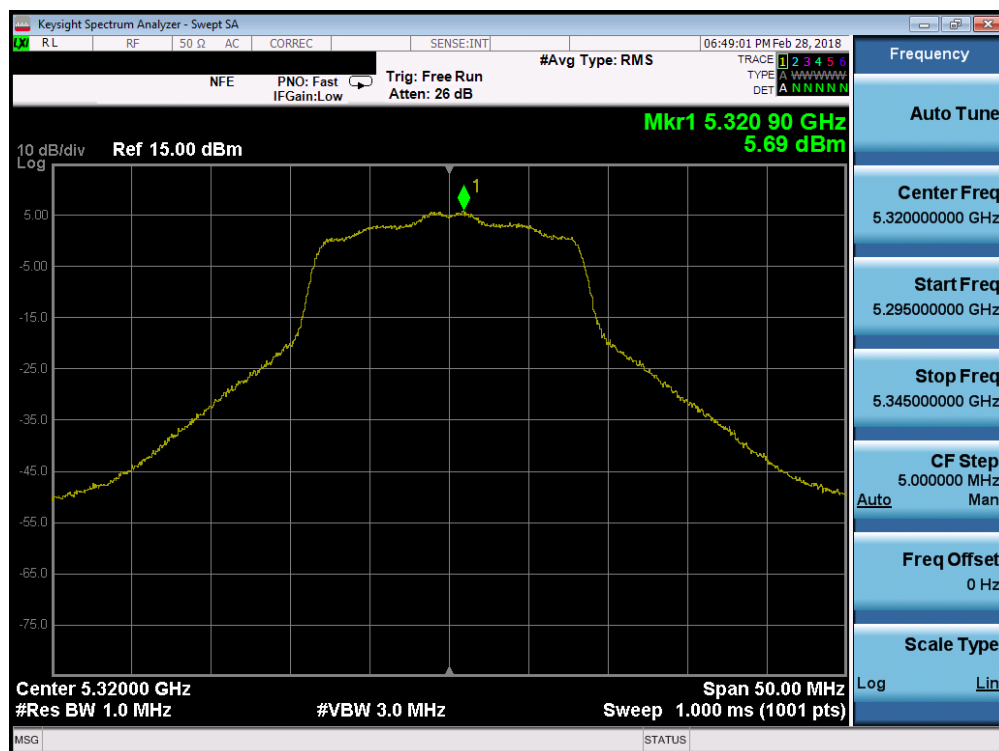


Plot 7-127. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 52)

FCC ID: ZNFG710VM	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 91 of 178

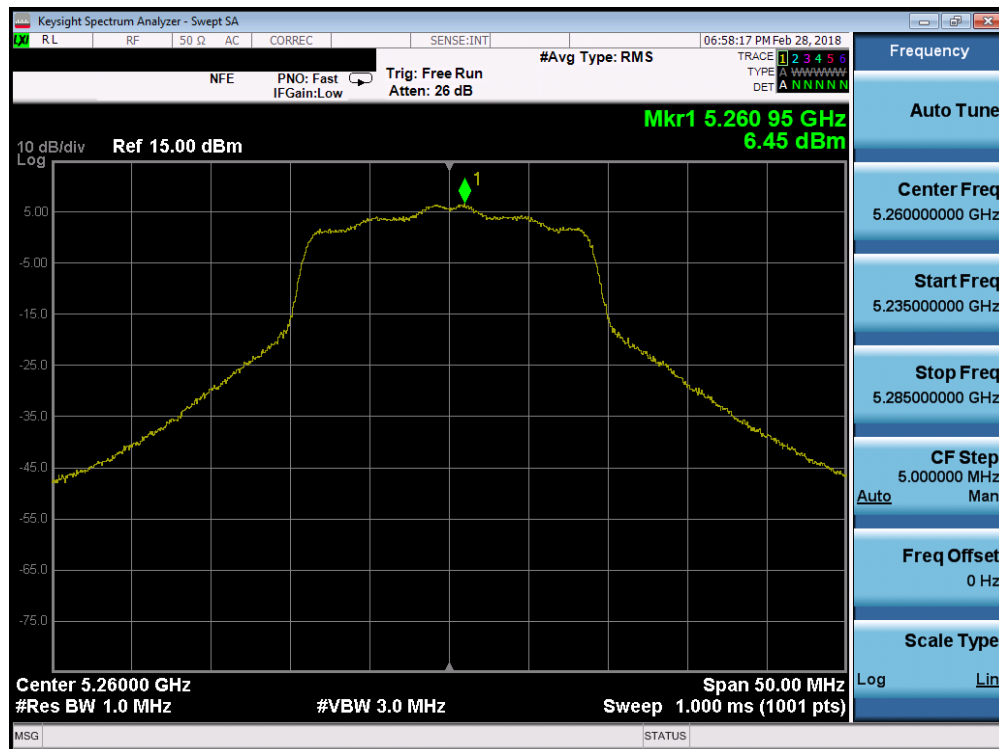


Plot 7-128. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 56)

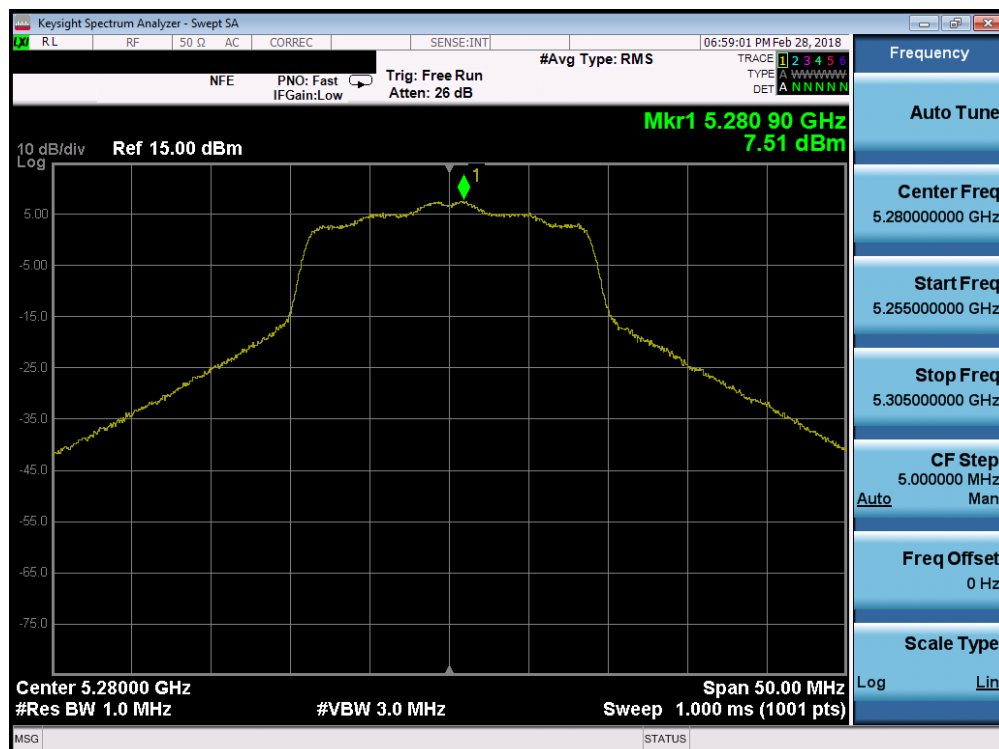


Plot 7-129. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 64)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 92 of 178

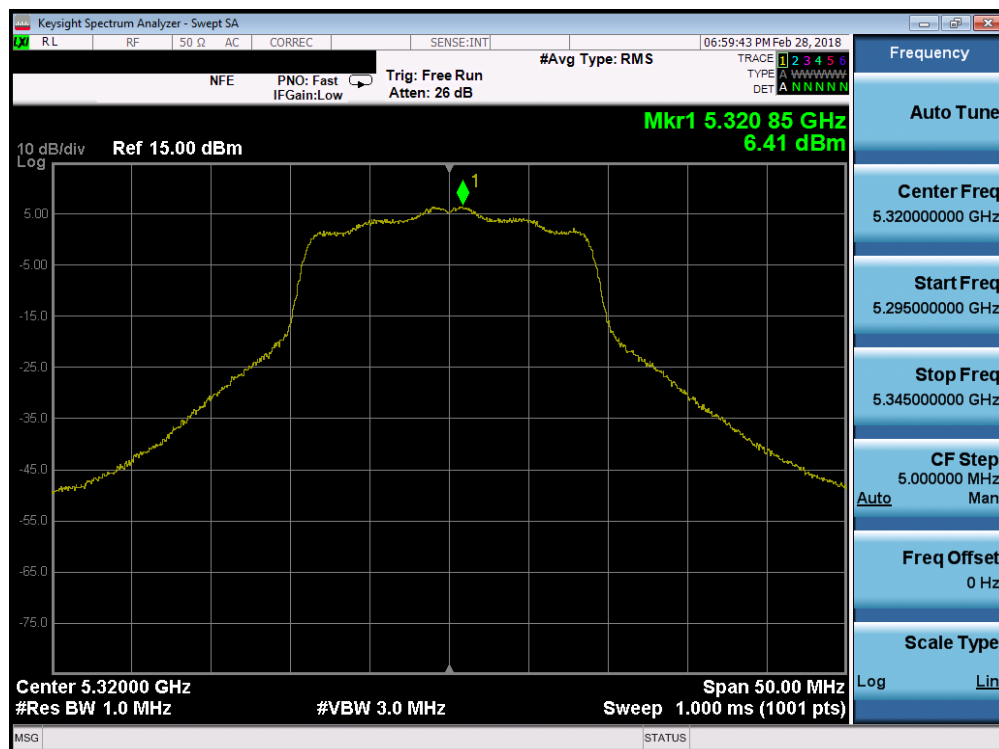


Plot 7-130. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

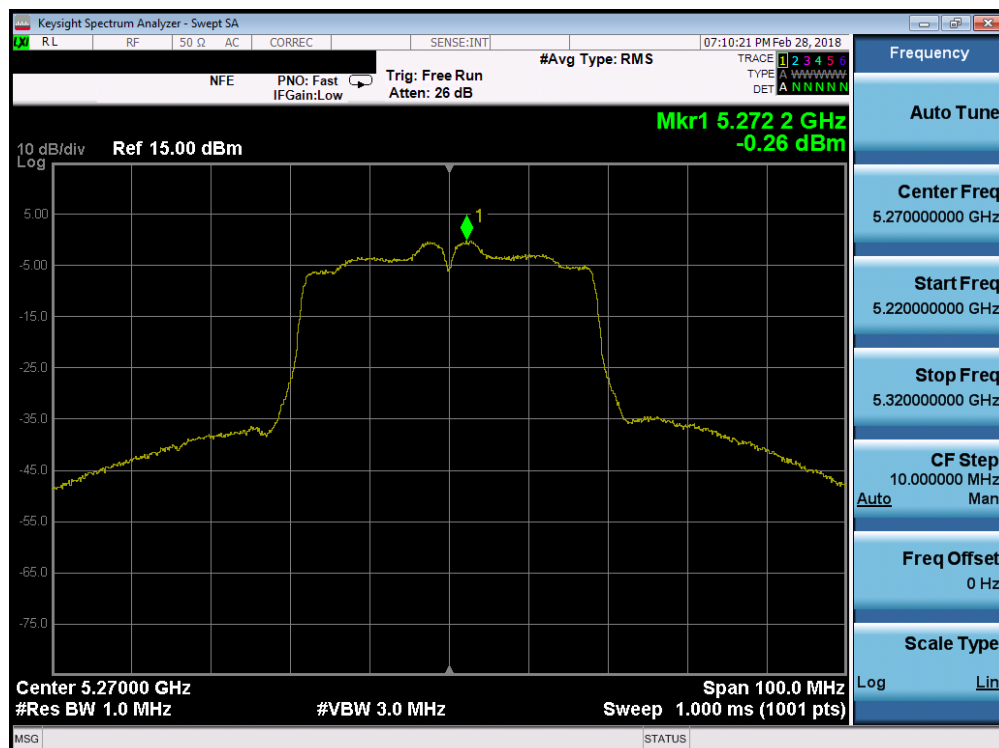


Plot 7-131. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

FCC ID: ZNFG710VM	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset	Page 93 of 178

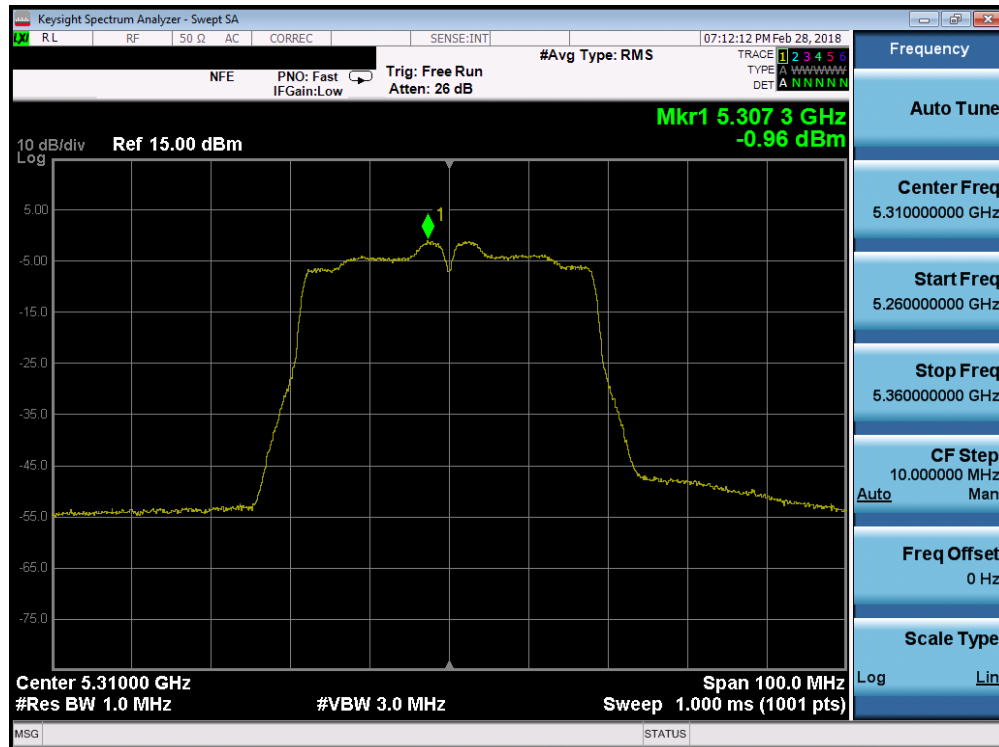


Plot 7-132. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

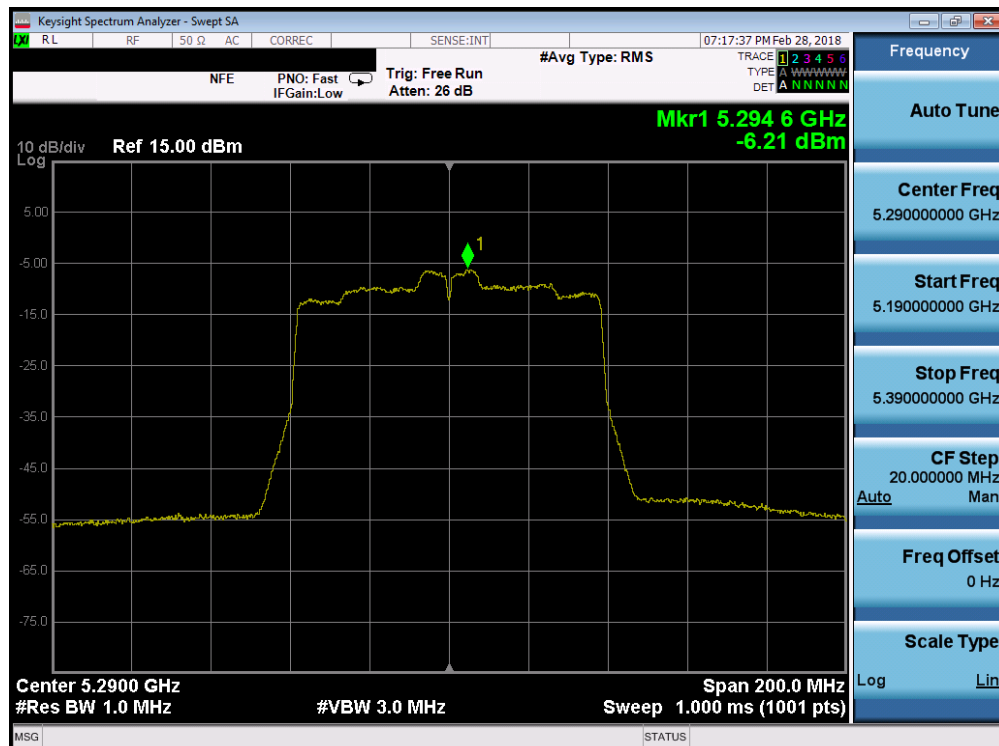


Plot 7-133. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 94 of 178

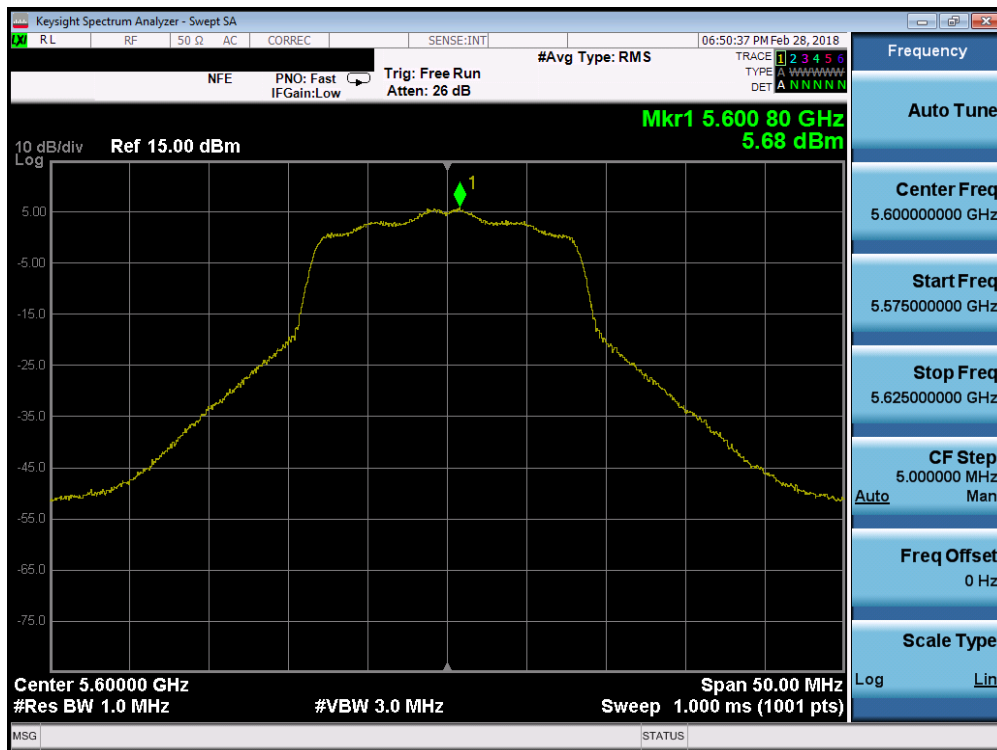
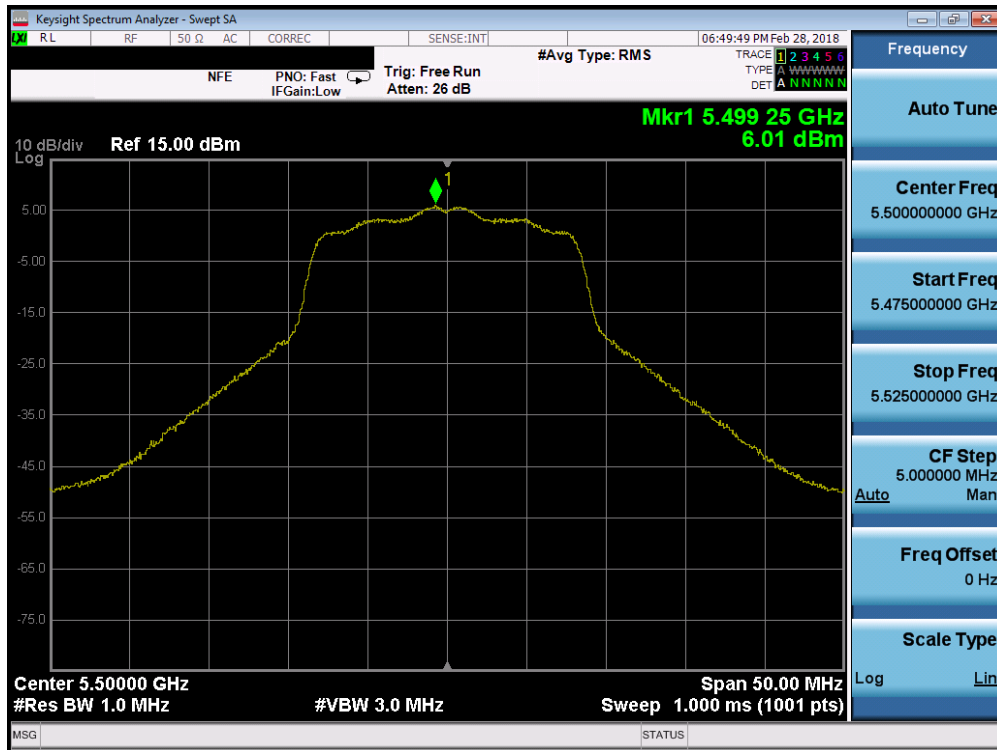


Plot 7-134. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

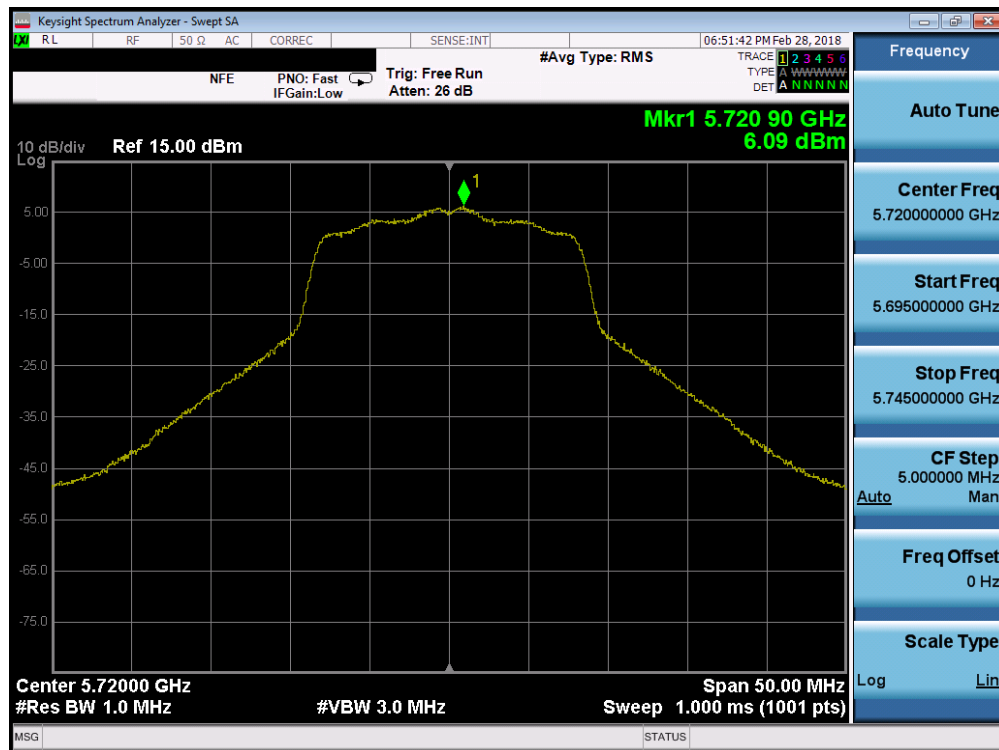


Plot 7-135. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

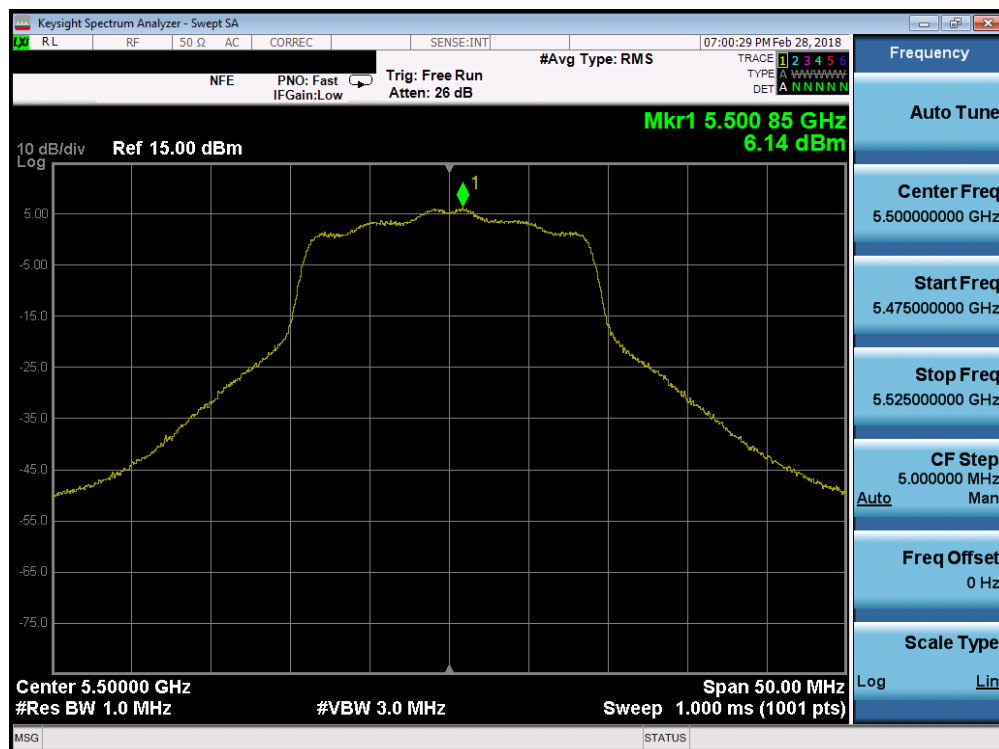
FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 95 of 178



FCC ID: ZNFG710VM	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset	Page 96 of 178

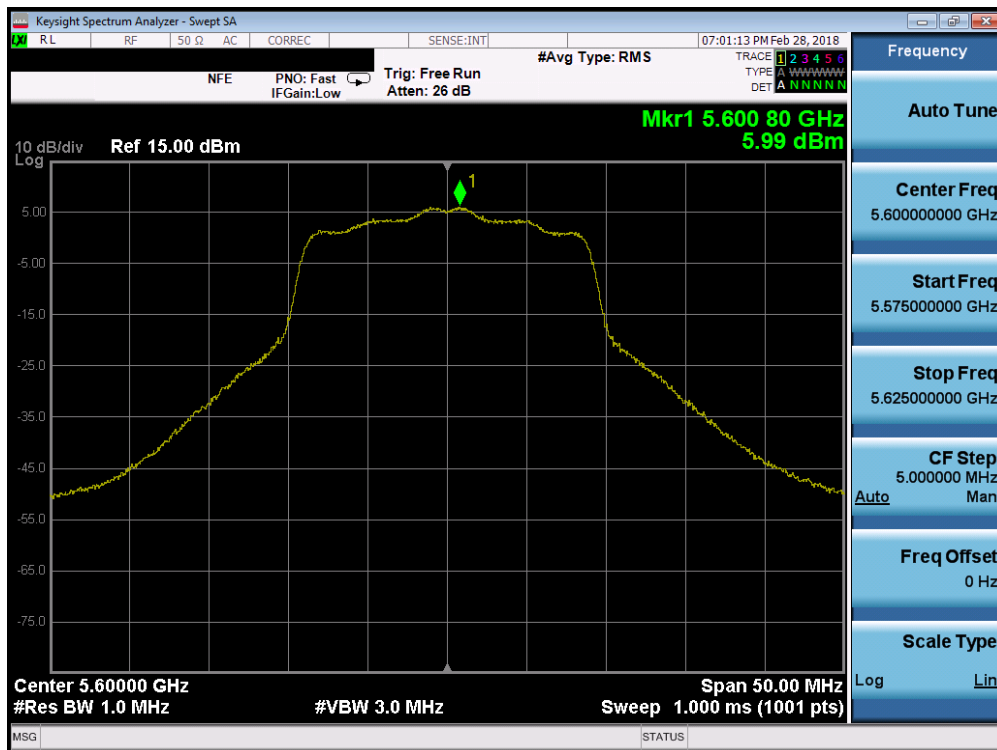


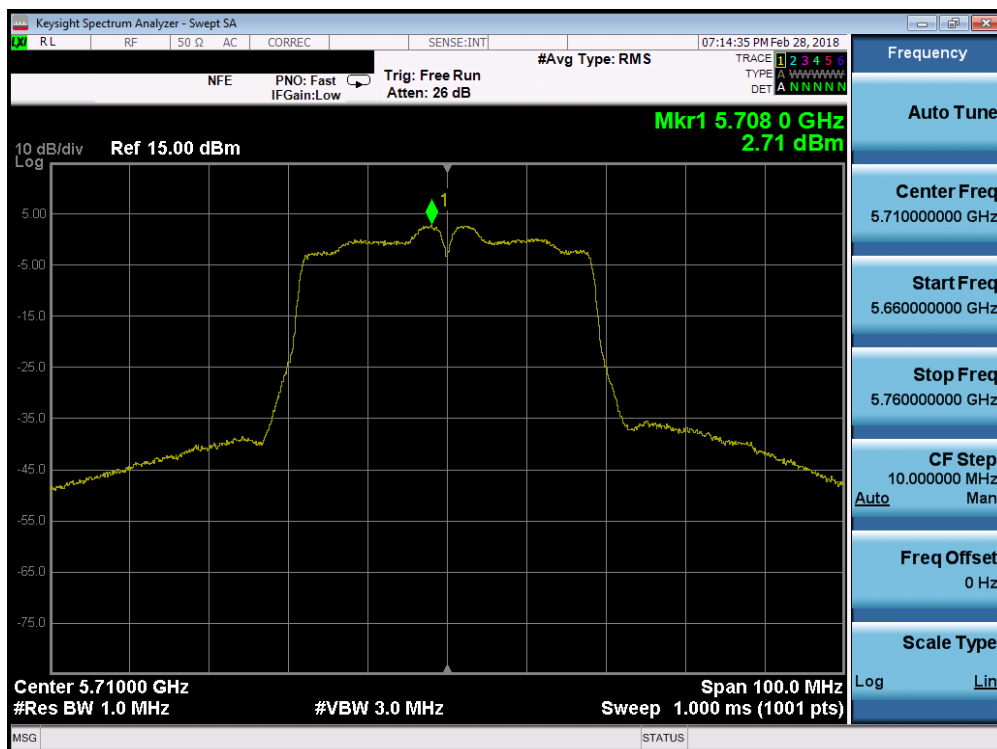
Plot 7-138. Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 144)



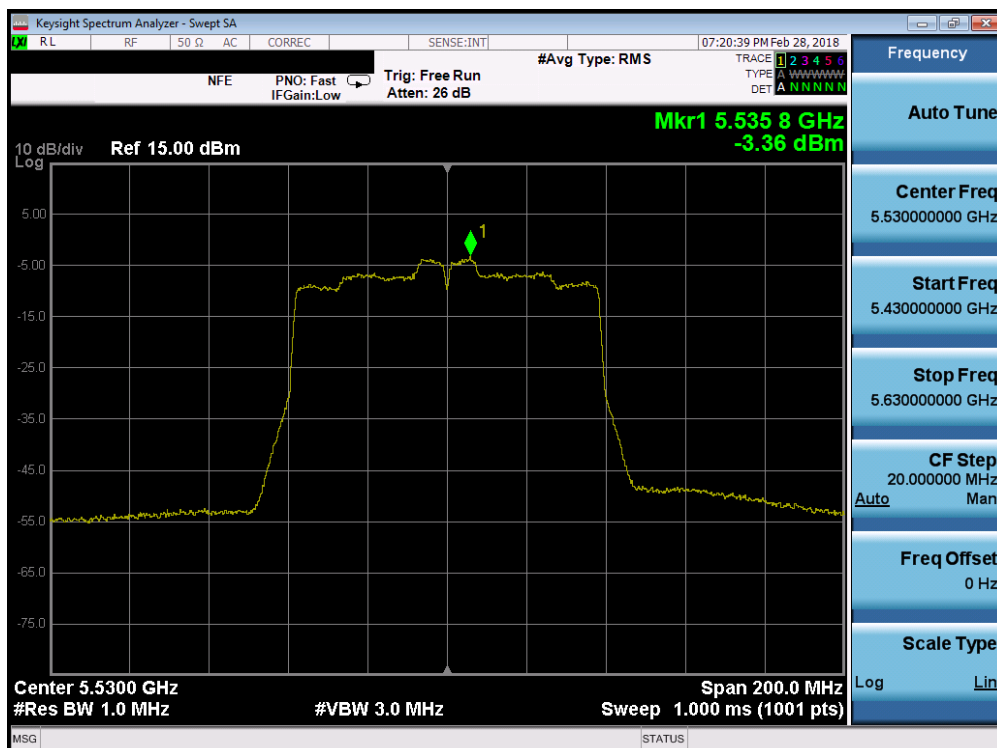
Plot 7-139. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

FCC ID: ZNFG710VM	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 97 of 178



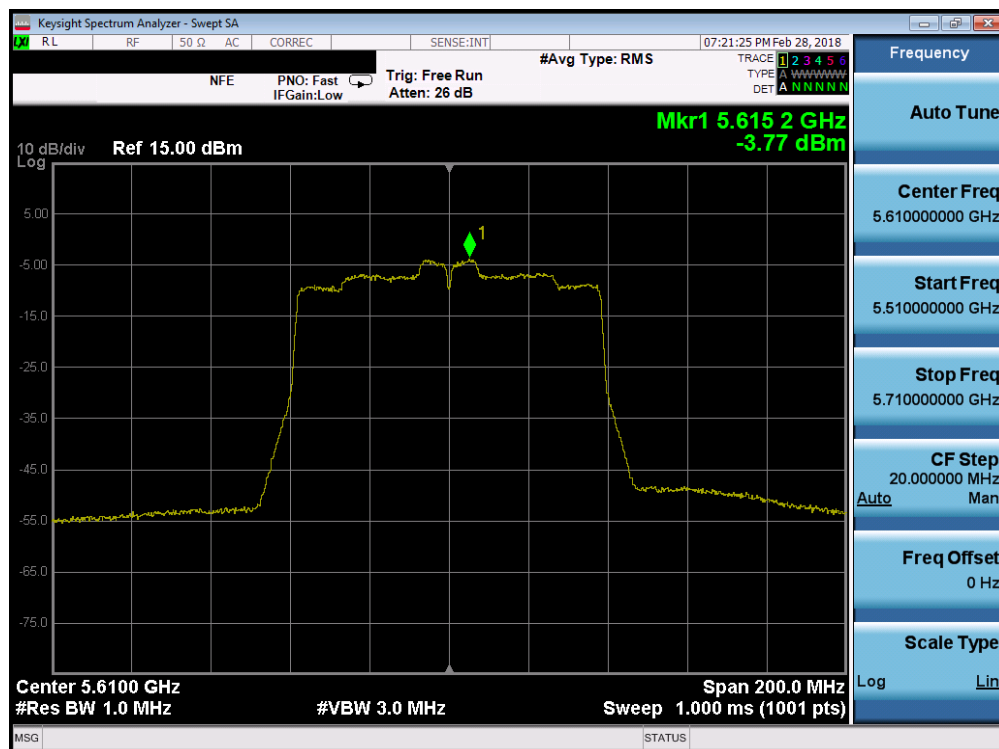


Plot 7-144. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)

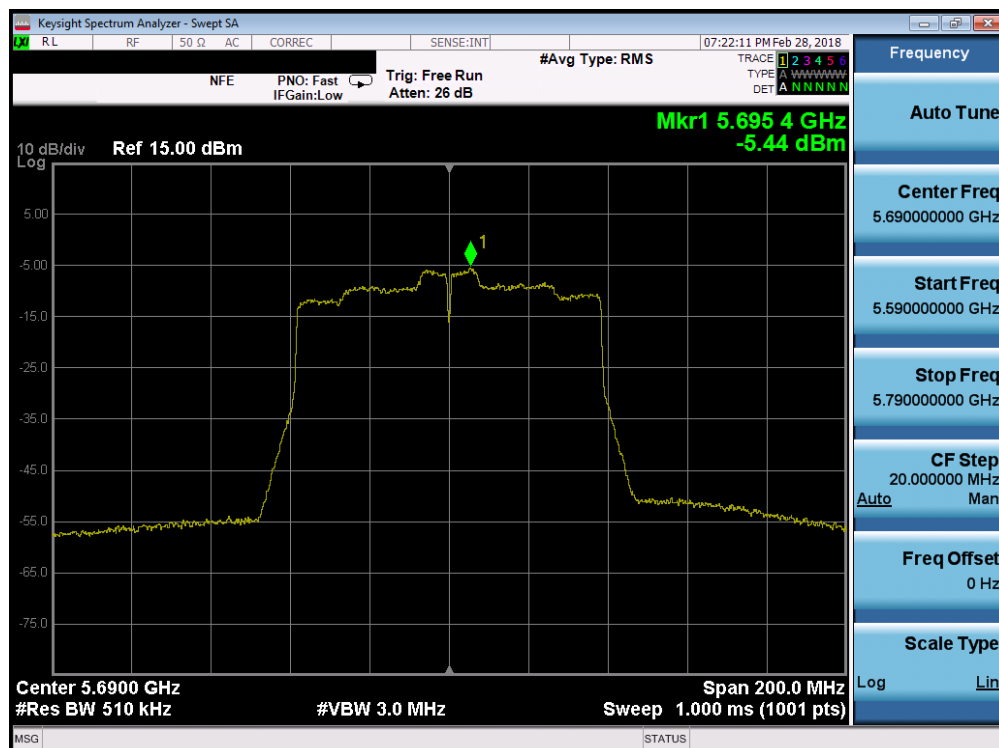


Plot 7-145. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 100 of 178



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

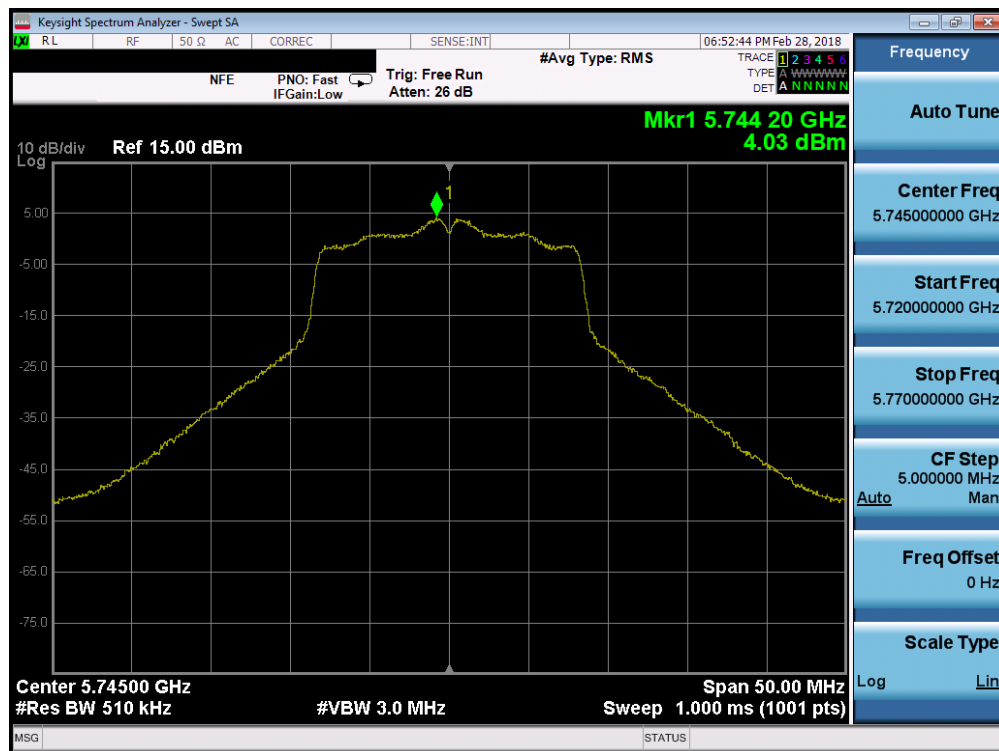


Plot 7-147. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 138)

FCC ID: ZNFG710VM	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 101 of 178

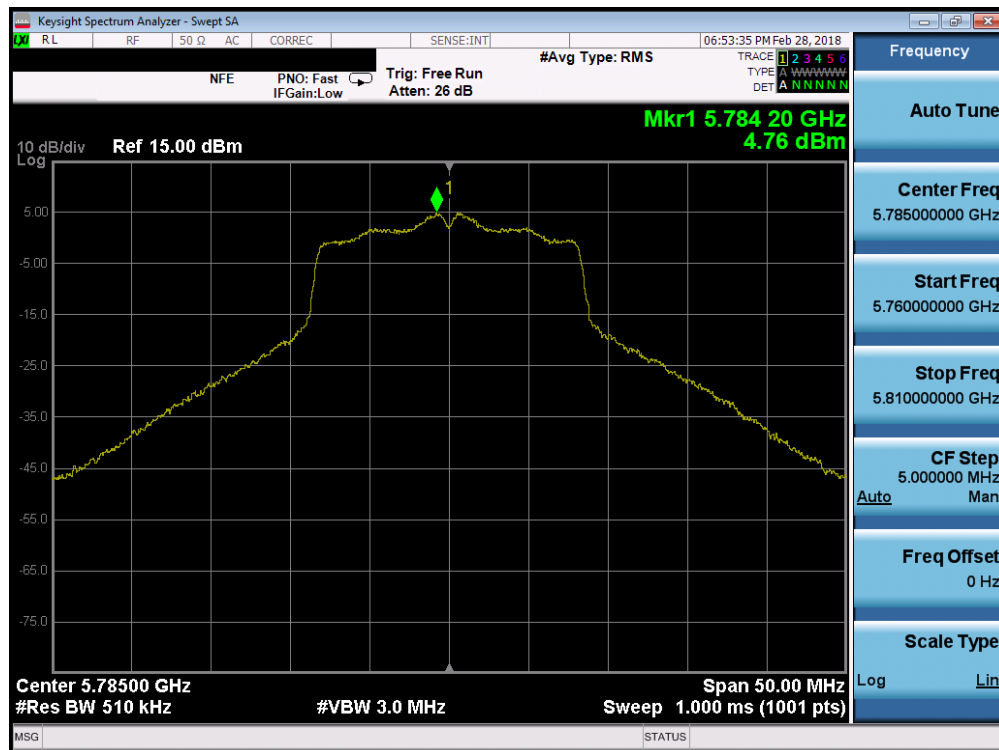
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
Band 3	5745	149	a	6	4.03	30.0	-25.97
	5785	157	a	6	4.76	30.0	-25.24
	5825	165	a	6	4.13	30.0	-25.87
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	3.74	30.0	-26.26
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	4.59	30.0	-25.41
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	3.35	30.0	-26.65
	5755	151	n (40MHz)	13.5/15 (MCS0)	-0.04	30.0	-30.04
	5795	159	n (40MHz)	13.5/15 (MCS0)	-0.46	30.0	-30.46
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-3.20	30.0	-33.20

Table 7-21. Band 3 Conducted Power Spectral Density Measurements

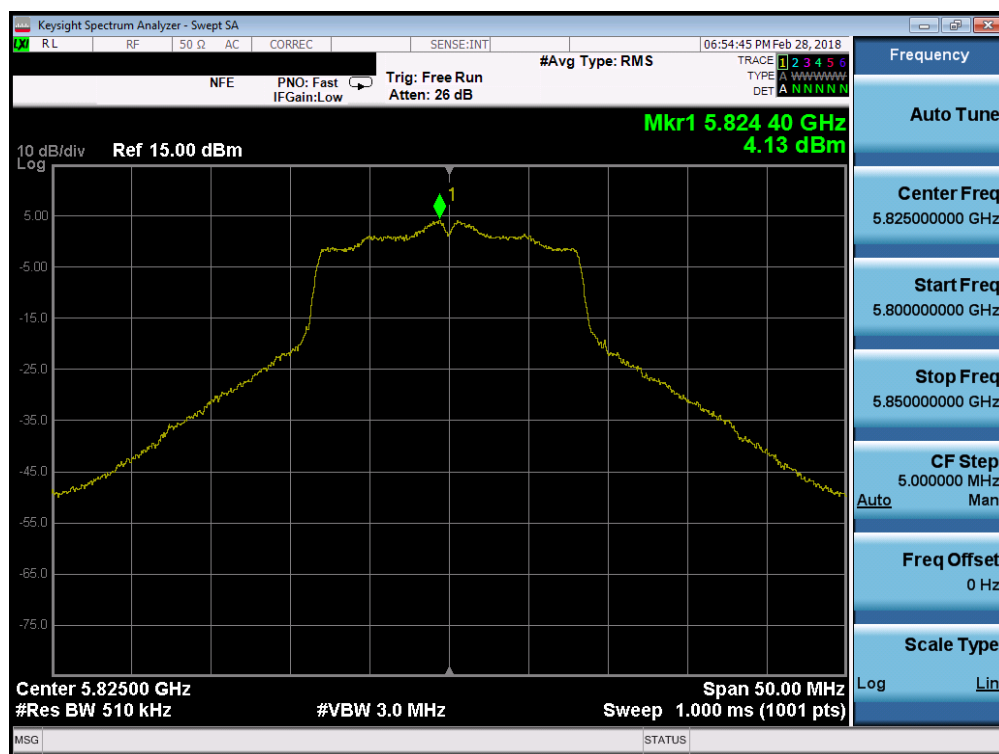


Plot 7-148. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 149)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 102 of 178

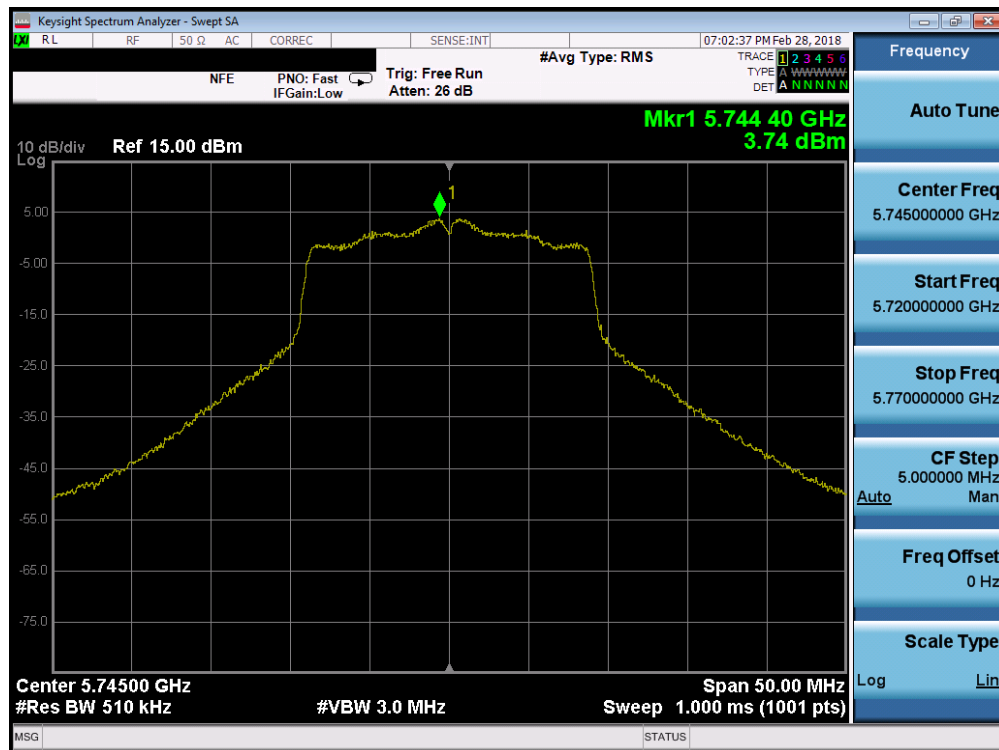


Plot 7-149. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 157)

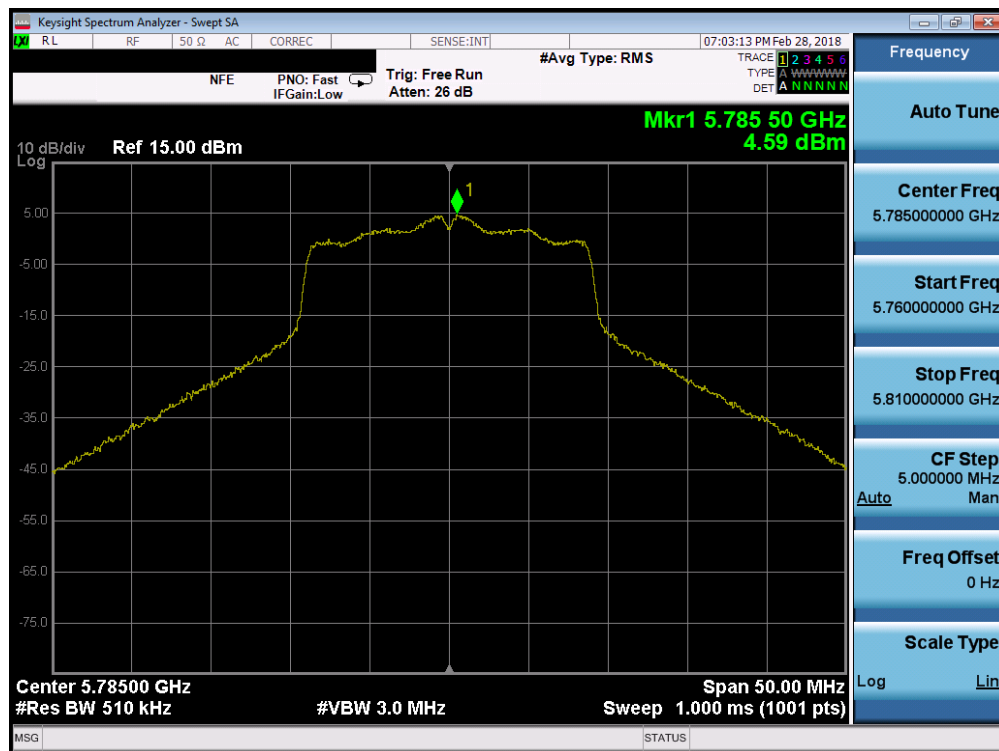


Plot 7-150. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 165)

FCC ID: ZNFG710VM	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 103 of 178

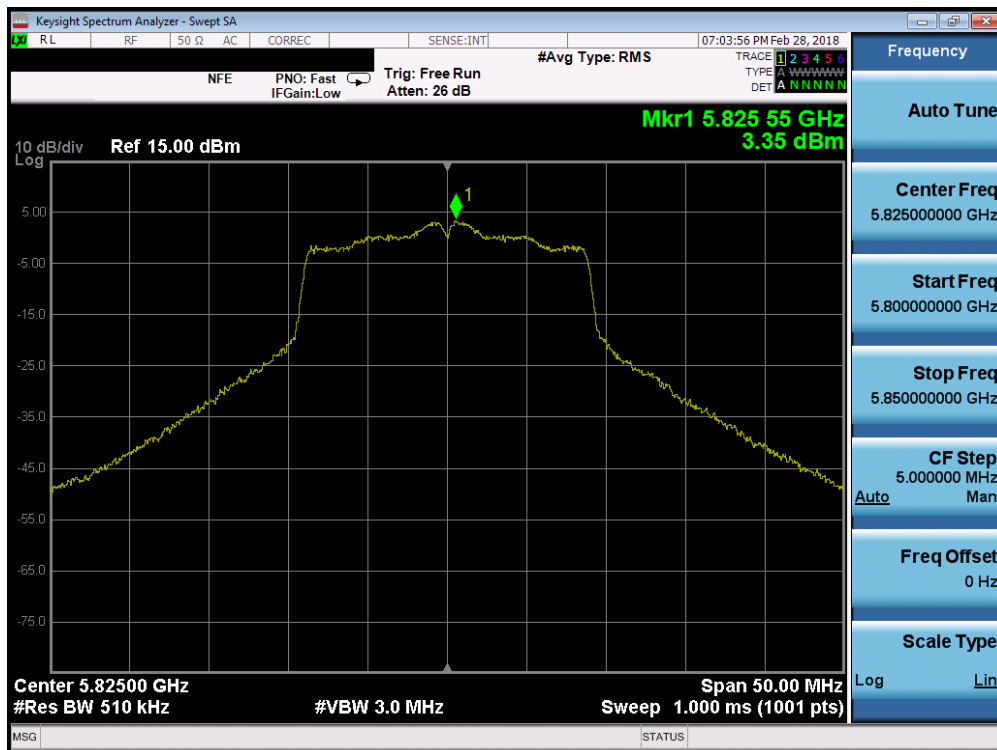


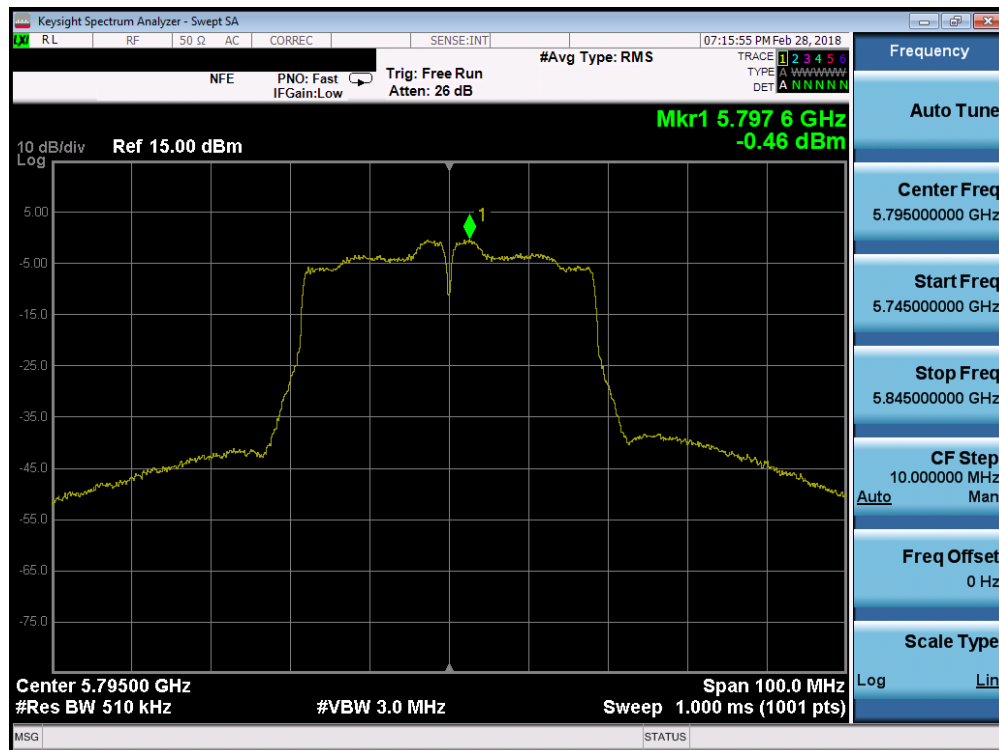
Plot 7-151. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 149)



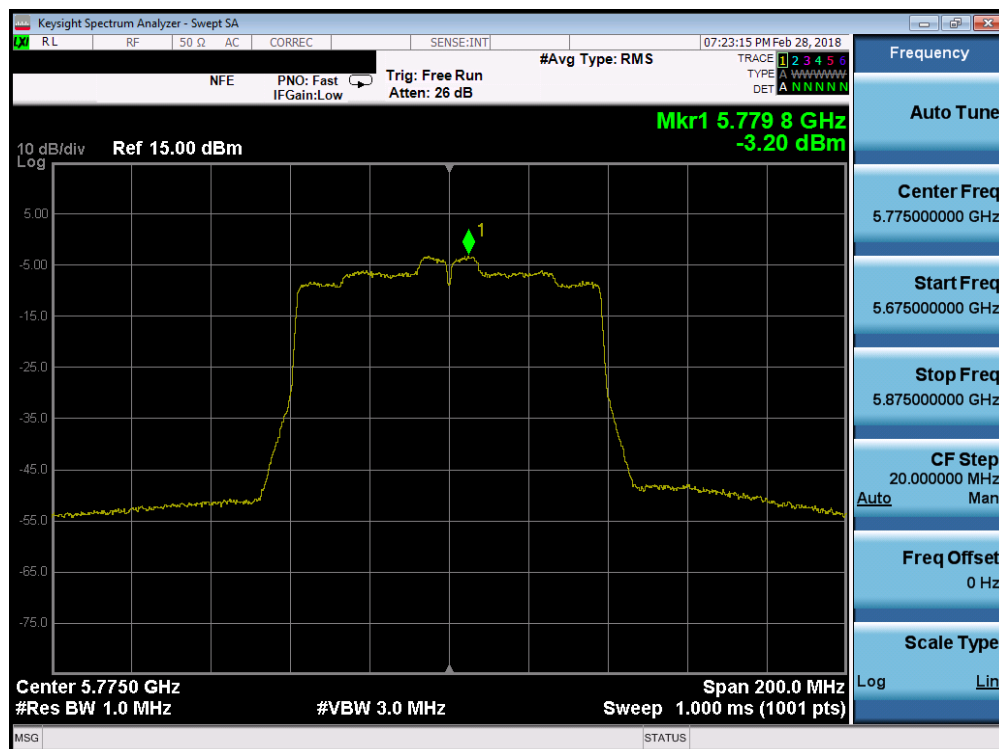
Plot 7-152. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 104 of 178





Plot 7-155. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 159)



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

FCC ID: ZNFG710VM	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 106 of 178

Summed MIMO/CDD 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/CDD Power Density [dBm]	Max Power Density [dBm/MHz]	Margin [dB]
Band 1	5180	36	a	6.5/7.2 (MCS0)	6.44	5.69	9.09	11.0	-1.91
	5200	40	a	6.5/7.2 (MCS0)	7.13	6.60	9.88	11.0	-1.12
	5240	48	a	6.5/7.2 (MCS0)	6.11	6.02	9.08	11.0	-1.92
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	5.98	6.39	9.20	11.0	-1.80
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.82	6.95	9.89	11.0	-1.11
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	5.31	6.47	8.94	11.0	-2.06
	5190	38	n (40MHz)	13.5/15 (MCS0)	-0.64	-0.54	2.42	11.0	-8.58
	5230	46	n (40MHz)	13.5/15 (MCS0)	2.25	2.69	5.49	11.0	-5.51
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-3.48	-2.84	-0.14	11.0	-11.14
Band 2A	5260	52	a	6.5/7.2 (MCS0)	5.82	5.88	8.86	11.0	-2.14
	5280	56	a	6.5/7.2 (MCS0)	7.16	6.99	10.09	11.0	-0.91
	5320	64	a	6.5/7.2 (MCS0)	6.48	5.69	9.11	11.0	-1.89
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	5.60	6.45	9.06	11.0	-1.94
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	6.69	7.51	10.13	11.0	-0.87
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	6.16	6.41	9.30	11.0	-1.70
	5270	54	n (40MHz)	13.5/15 (MCS0)	2.34	-0.26	4.24	11.0	-6.76
	5310	62	n (40MHz)	13.5/15 (MCS0)	-0.98	-0.96	2.04	11.0	-8.96
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-6.71	-6.21	-3.44	11.0	-14.44
Band 2C	5500	100	a	6.5/7.2 (MCS0)	5.92	6.01	8.97	11.0	-2.03
	5600	120	a	6.5/7.2 (MCS0)	6.36	5.68	9.04	11.0	-1.96
	5720	144	a	6.5/7.2 (MCS0)	6.62	6.09	9.37	11.0	-1.63
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	5.65	6.14	8.91	11.0	-2.09
	5600	120	n (20MHz)	6.5/7.2 (MCS0)	6.19	5.99	9.10	11.0	-1.90
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	6.22	5.33	8.81	11.0	-2.19
	5510	102	n (40MHz)	13.5/15 (MCS0)	-1.43	-1.88	1.36	11.0	-9.64
	5590	118	n (40MHz)	13.5/15 (MCS0)	2.72	1.60	5.21	11.0	-5.79
	5710	142	n (40MHz)	13.5/15 (MCS0)	2.42	2.71	5.58	11.0	-5.42
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-3.75	-3.36	-0.54	11.0	-11.54
	5610	122	ac (80MHz)	29.3/32.5 (MCS0)	-4.25	-3.77	-0.99	11.0	-11.99
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-6.88	-5.44	-3.09	11.0	-14.09

Table 7-22. Bands 1, 2A, 2C MIMO/CDD 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/CDD Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
Band 3	5745	149	a	6.5/7.2 (MCS0)	3.91	4.03	6.98	30.0	-23.02
	5785	157	a	6.5/7.2 (MCS0)	5.30	4.76	8.05	30.0	-21.95
	5825	165	a	6.5/7.2 (MCS0)	4.07	4.13	7.11	30.0	-22.89
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	3.71	3.74	6.74	30.0	-23.26
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	4.96	4.59	7.79	30.0	-22.21
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	4.01	3.35	6.70	30.0	-23.30
	5755	151	n (40MHz)	13.5/15 (MCS0)	-0.13	-0.04	2.93	30.0	-27.07
	5795	159	n (40MHz)	13.5/15 (MCS0)	0.49	-0.46	3.05	30.0	-26.95
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-3.08	-3.20	-0.13	30.0	-30.13

Table 7-23. Band 3 MIMO/CDD Conducted Power Spectral Density Measurements

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 107 of 178

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/CDD Calculation:

At 5180MHz in 802.11n (20MHz BW) mode, the average conducted power spectral density was measured to be 5.98 dBm for Antenna-1 and 6.39 dBm for Antenna-2.

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

$$(5.98 \text{ dBm} + 6.39 \text{ dBm}) = (3.97 \text{ mW} + 4.36 \text{ mW}) = 8.32 \text{ mW} = 9.20 \text{ dBm}$$

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 108 of 178

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 7-24 per Section 15.209 and RSS-Gen (8.9).

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

Table 7-24. 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: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 109 of 178

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.

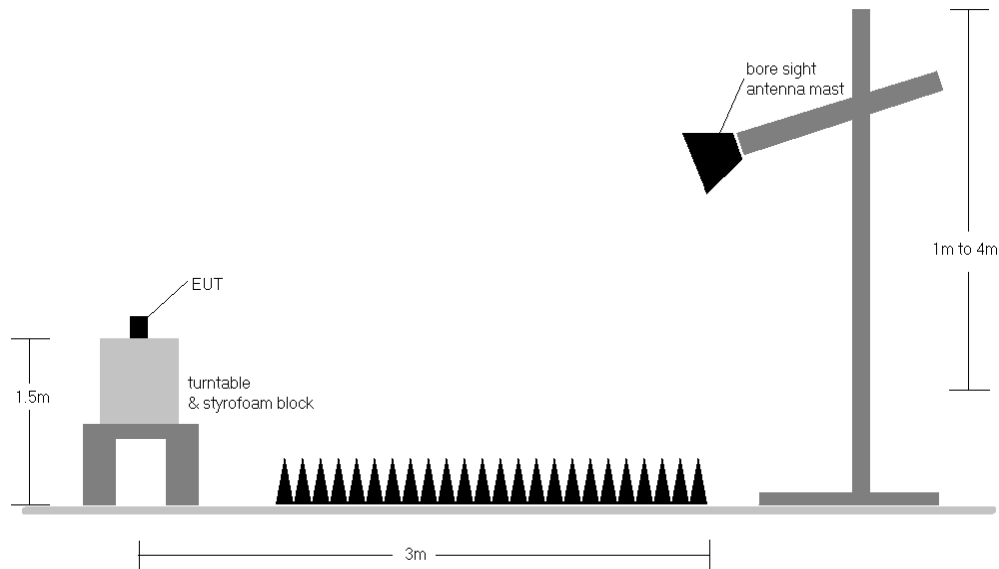


Figure 7-5. Test Instrument & Measurement Setup

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 110 of 178

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 7-24.
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 7-24. 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]

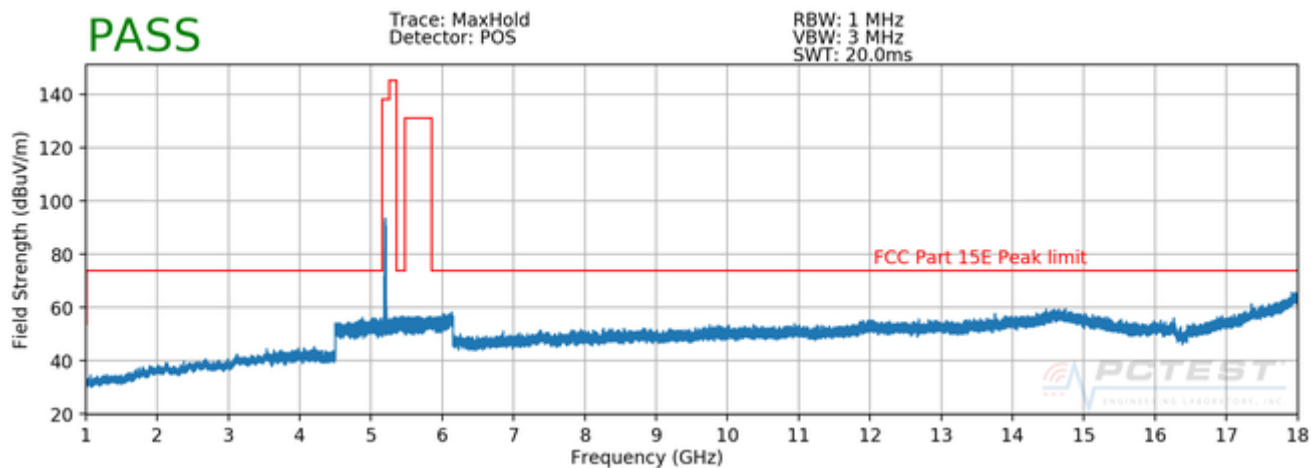
Radiated Band Edge Measurement Offset

- The amplitude offset shown in the radiated restricted band edge plots in Section 7.6 was calculated using the formula:

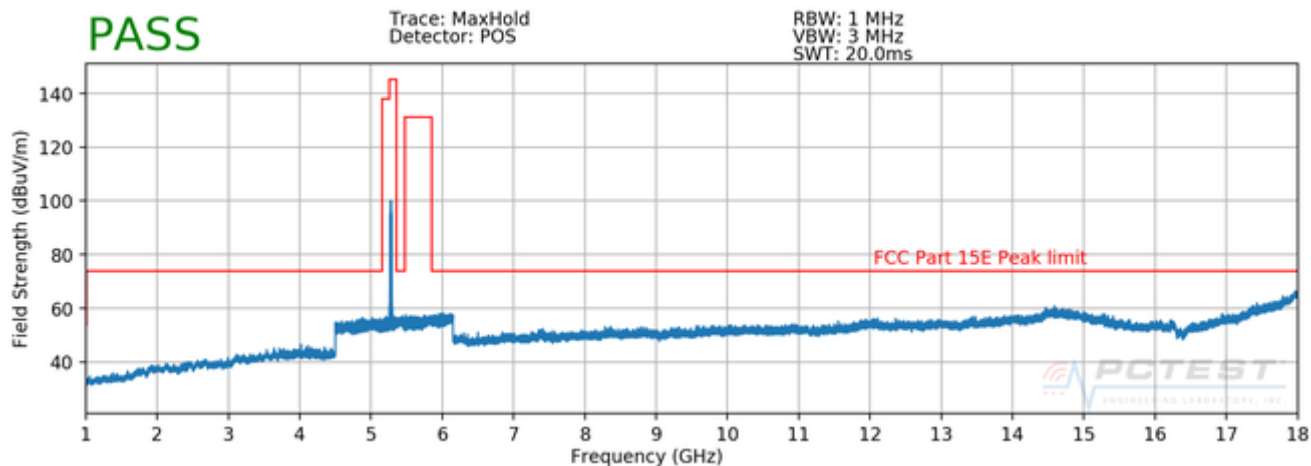
$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + \text{Attenuator}) - \text{Preamplifier Gain}$$

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 111 of 178

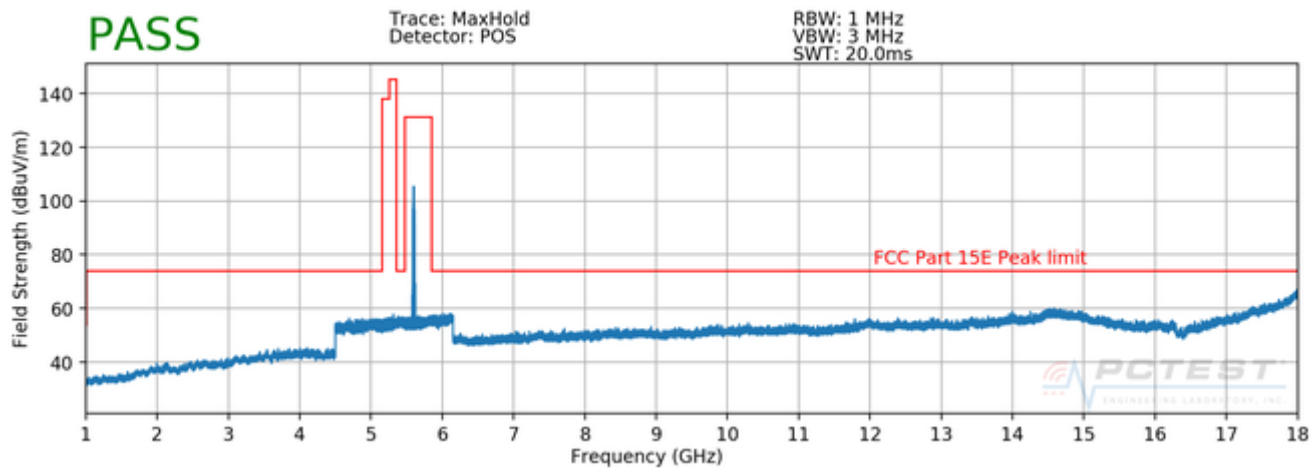
7.7.1 Antenna-1 Radiated Spurious Emission Measurements



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

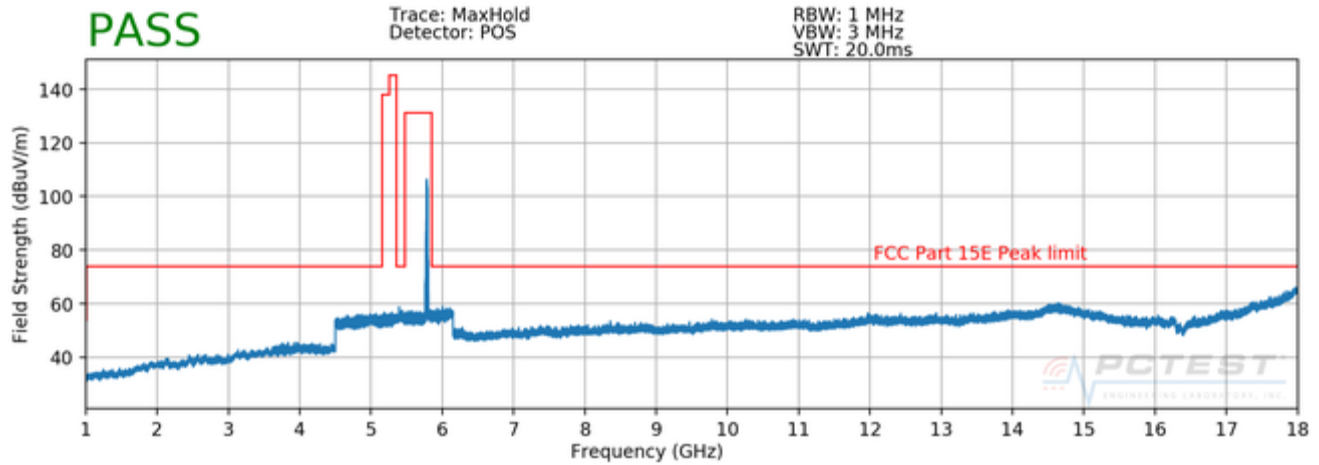


Plot 7-158. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56)



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

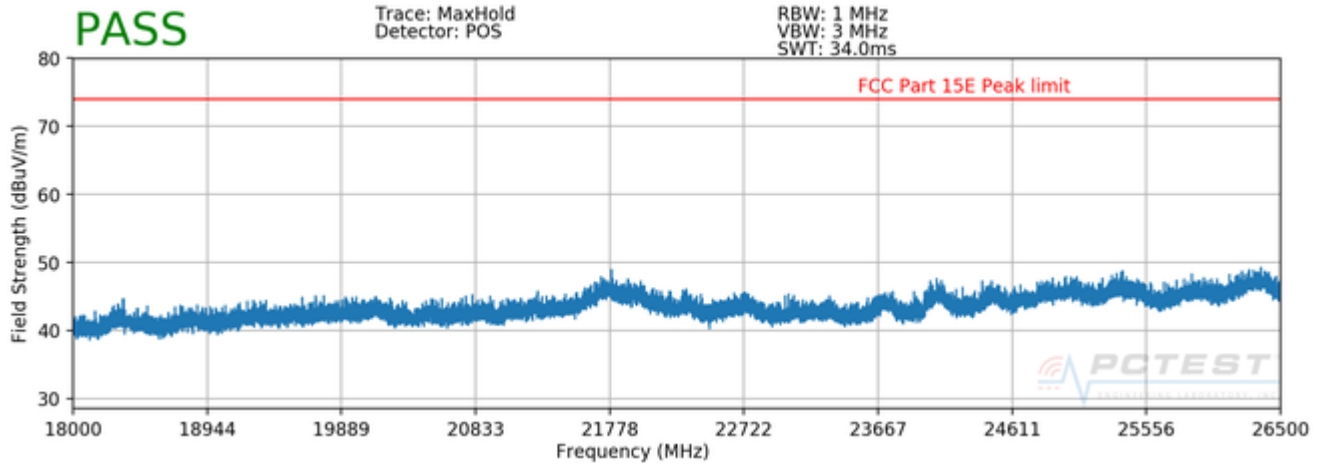
FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 112 of 178



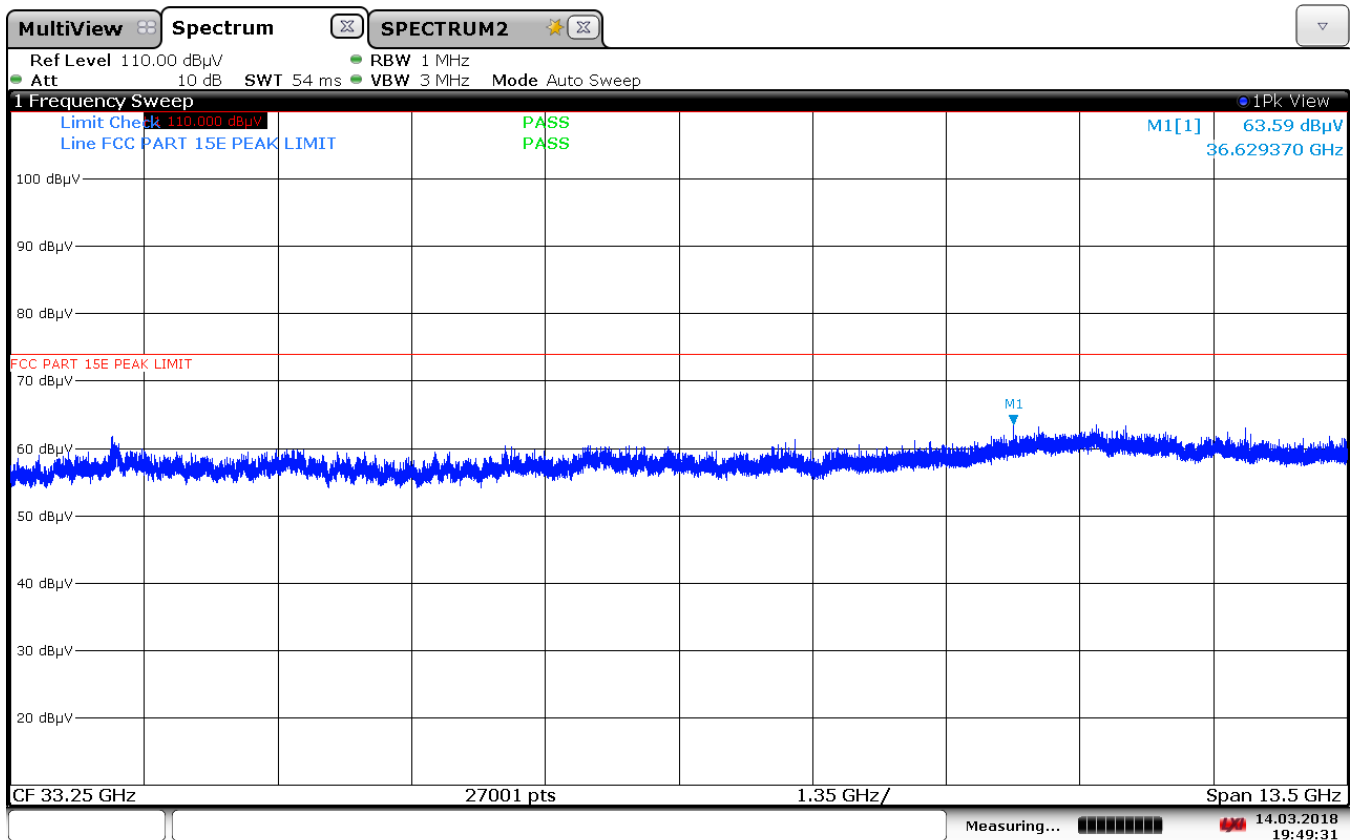
Plot 7-160. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 113 of 178

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



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



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

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 114 of 178

Antenna-1 Radiated Spurious Emission Measurements

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

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	H	400	22	-70.34	11.39	48.05	68.20	-20.15
* 15540.00	Average	H	392	311	-84.27	13.70	36.43	53.98	-17.55
* 15540.00	Peak	H	392	311	-71.21	13.70	49.49	73.98	-24.49
* 20720.00	Average	H	-	-	-71.29	7.94	43.65	53.98	-10.33
* 20720.00	Peak	H	-	-	-59.29	7.94	55.65	73.98	-18.33
25900.00	Peak	H	-	-	-57.55	8.46	57.91	68.20	-10.29

Table 7-25. Radiated Measurements

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	Peak	H	326	24	-69.78	11.47	48.69	68.20	-19.51
* 15600.00	Average	H	357	160	-84.48	13.41	35.93	53.98	-18.05
* 15600.00	Peak	H	357	160	-71.12	13.41	49.29	73.98	-24.69
* 20800.00	Average	H	-	-	-72.26	7.95	42.69	53.98	-11.28
* 20800.00	Peak	H	-	-	-61.36	7.95	53.59	73.98	-20.38
26000.00	Peak	H	-	-	-58.66	8.60	56.94	68.20	-11.26

Table 7-26. Radiated Measurements

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 115 of 178

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS0
 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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	Peak	H	385	10	-70.32	11.98	48.66	68.20	-19.54
* 15720.00	Average	H	-	-	-84.31	13.52	36.21	53.98	-17.77
* 15720.00	Peak	H	-	-	-71.11	13.52	49.41	73.98	-24.57
* 20960.00	Average	H	-	-	-72.59	7.91	42.32	53.98	-11.66
* 20960.00	Peak	H	-	-	-61.58	7.91	53.33	73.98	-20.65
26200.00	Peak	H	-	-	-57.46	8.62	58.16	68.20	-10.04

Table 7-27. Radiated Measurements

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS0
 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	329	37	-71.10	11.39	0.00	47.29	68.20	-20.91
* 15540.00	Average	H	297	349	-83.66	13.70	0.00	37.04	53.98	-16.94
* 15540.00	Peak	H	297	349	-71.91	13.70	0.00	48.79	73.98	-25.19
* 20720.00	Average	H	-	-	-72.03	7.94	-9.54	33.37	53.98	-20.61
* 20720.00	Peak	H	-	-	-59.68	7.94	-9.54	45.72	73.98	-28.26
25900.00	Peak	H	-	-	-58.53	8.46	-9.54	47.39	68.20	-20.81

Table 7-28. Radiated Measurements with WCP

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 116 of 178

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10520.00	Peak	H	211	140	-70.49	12.15	48.66	68.20	-19.54
* 15780.00	Average	H	-	-	-85.04	13.47	35.43	53.98	-18.55
* 15780.00	Peak	H	-	-	-72.01	13.47	48.46	73.98	-25.52
* 21040.00	Average	H	-	-	-70.74	7.92	44.18	53.98	-9.80
* 21040.00	Peak	H	-	-	-60.09	7.92	54.83	73.98	-19.15
26300.00	Peak	H	-	-	-61.67	8.73	54.06	68.20	-14.14

Table 7-29. Radiated Measurements

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	Peak	H	400	188	-70.35	12.59	49.24	68.20	-18.96
* 15840.00	Average	H	-	-	-83.99	12.49	35.50	53.98	-18.48
* 15840.00	Peak	H	-	-	-70.98	12.49	48.51	73.98	-25.47
* 21120.00	Average	H	-	-	-70.38	7.96	44.58	53.98	-9.40
* 21120.00	Peak	H	-	-	-60.58	7.96	54.38	73.98	-19.60
26400.00	Peak	H	-	-	-57.03	8.94	58.91	68.20	-9.29

Table 7-30. Radiated Measurements

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 117 of 178

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS0
 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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	Average	H	398	227	-82.91	12.53	36.62	53.98	-17.36
* 10640.00	Peak	H	398	227	-69.73	12.53	49.80	73.98	-24.18
* 15960.00	Average	H	396	105	-84.84	13.03	35.19	53.98	-18.79
* 15960.00	Peak	H	396	105	-71.70	13.03	48.33	73.98	-25.65
* 21280.00	Average	H	-	-	-70.21	8.04	44.83	53.98	-9.15
* 21280.00	Peak	H	-	-	-59.27	8.04	55.77	73.98	-18.21
26600.00	Peak	H	-	-	-50.65	-8.30	48.05	68.20	-20.15

Table 7-31. Radiated Measurements

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS0
 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	329	267	-82.35	12.53	0.00	37.18	53.98	-16.80
* 10640.00	Peak	H	329	267	-70.68	12.53	0.00	48.85	73.98	-25.13
* 15960.00	Average	H	389	92	-84.23	13.03	0.00	35.80	53.98	-18.18
* 15960.00	Peak	H	389	92	-72.15	13.03	0.00	47.88	73.98	-26.10
* 21280.00	Average	H	-	-	-71.65	8.04	-9.54	33.85	53.98	-20.13
* 21280.00	Peak	H	-	-	-59.82	8.04	-9.54	45.68	73.98	-28.30
26600.00	Peak	H	-	-	-48.78	-8.30	-9.54	40.37	68.20	-27.83

Table 7-32. Radiated Measurements with WCP

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 118 of 178

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11000.00	Average	H	336	22	-83.57	12.42	35.85	53.98	-18.13
* 11000.00	Peak	H	336	22	-70.31	12.42	49.11	73.98	-24.87
16500.00	Peak	H	-	-	-71.61	12.52	47.91	68.20	-20.29
22000.00	Peak	H	-	-	-58.44	8.43	56.99	68.20	-11.21
27500.00	Peak	H	-	-	-48.05	-8.80	50.15	68.20	-18.05

Table 7-33. Radiated Measurements

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11200.00	Average	H	-	-	-83.68	11.15	34.47	53.98	-19.51
* 11200.00	Peak	H	-	-	-70.64	11.15	47.51	73.98	-26.47
16800.00	Peak	H	-	-	-71.49	13.91	49.42	68.20	-18.78
* 22400.00	Average	H	-	-	-70.27	8.11	44.84	53.98	-9.14
* 22400.00	Peak	H	-	-	-59.22	8.11	55.89	73.98	-18.09
28000.00	Peak	H	-	-	-47.66	-9.26	50.08	68.20	-18.12

Table 7-34. Radiated Measurements

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 119 of 178

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11440.00	Average	H	355	49	-84.02	12.29	35.27	53.98	-18.71
* 11440.00	Peak	H	355	49	-70.44	12.29	48.85	73.98	-25.13
17160.00	Peak	H	-	-	-70.76	16.09	52.33	68.20	-15.87
* 22880.00	Average	H	-	-	-71.20	8.28	44.08	53.98	-9.90
* 22880.00	Peak	H	-	-	-60.49	8.28	54.79	73.98	-19.19
28600.00	Peak	H	-	-	-48.41	-9.08	49.51	68.20	-18.69

Table 7-35. Radiated Measurements

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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	379	59	-82.79	12.42	0.00	36.63	53.98	-17.35
* 11000.00	Peak	H	379	59	-71.34	12.42	0.00	48.08	73.98	-25.90
16500.00	Peak	H	-	-	-72.86	12.52	0.00	46.66	68.20	-21.54
22000.00	Peak	H	-	-	-57.60	8.43	-9.54	48.28	68.20	-19.92
27500.00	Peak	H	-	-	-48.37	-8.80	-9.54	40.29	68.20	-27.91

Table 7-36. Radiated Measurements with WCP

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 120 of 178

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	H	392	73	-84.14	12.24	35.10	53.98	-18.88
* 11490.00	Peak	H	392	73	-70.76	12.24	48.48	73.98	-25.50
17235.00	Peak	H	-	-	-71.52	16.55	52.03	68.20	-16.17
* 22980.00	Average	H	-	-	-70.95	8.16	44.21	53.98	-9.77
* 22980.00	Peak	H	-	-	-60.28	8.16	54.88	73.98	-19.10
28725.00	Peak	H	-	-	-47.39	-9.24	50.37	68.20	-17.83

Table 7-37. Radiated Measurements

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	H	395	241	-83.72	11.96	35.24	53.98	-18.74
* 11570.00	Peak	H	395	241	-70.80	11.96	48.16	73.98	-25.82
17355.00	Peak	H	-	-	-73.39	18.63	52.24	68.20	-15.96
23140.00	Peak	H	-	-	-59.65	8.37	55.72	68.20	-12.48
28925.00	Peak	H	-	-	-47.22	-9.65	50.13	68.20	-18.07

Table 7-38. Radiated Measurements

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 121 of 178

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	H	394	247	-82.02	11.97	36.95	53.98	-17.03
* 11650.00	Peak	H	394	247	-71.34	11.97	47.63	73.98	-26.35
17475.00	Peak	H	-	-	-72.84	19.24	53.40	68.20	-14.80
23300.00	Peak	H	-	-	-58.85	8.50	56.65	68.20	-11.55
29125.00	Peak	H	-	-	-45.29	-9.87	51.84	68.20	-16.36

Table 7-39. Radiated Measurements

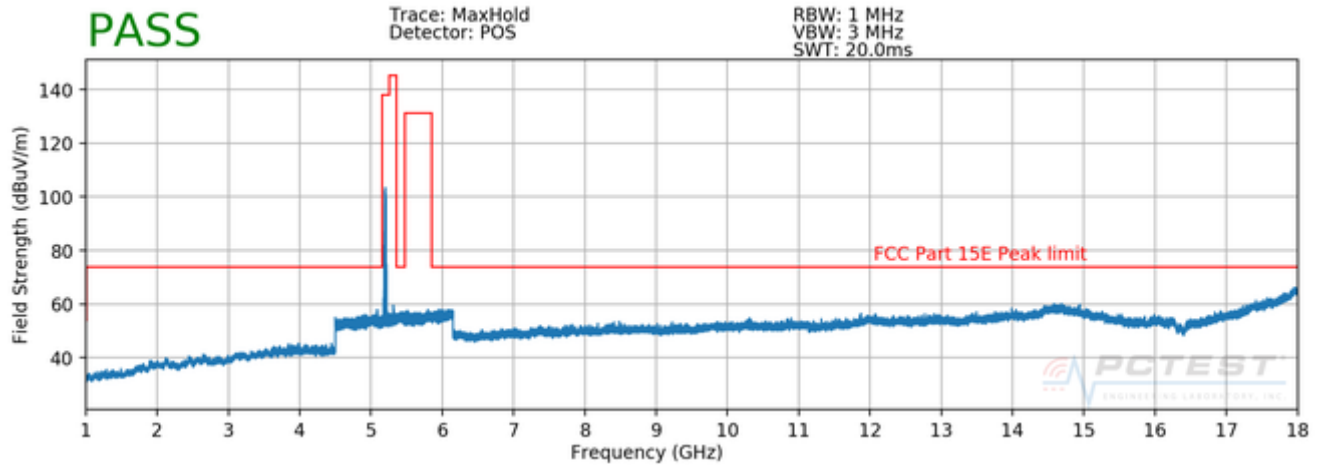
Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5825MHz
Channel: 165

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	294	96	-82.60	11.97	0.00	36.37	53.98	-17.61
* 11650.00	Peak	H	294	96	-72.86	11.97	0.00	46.11	73.98	-27.87
17475.00	Peak	H	-	-	-71.63	19.24	0.00	54.61	68.20	-13.59
23300.00	Peak	H	-	-	-59.81	8.50	-9.54	46.14	68.20	-22.06
29125.00	Peak	H	-	-	-47.63	-9.87	-9.54	39.96	68.20	-28.24

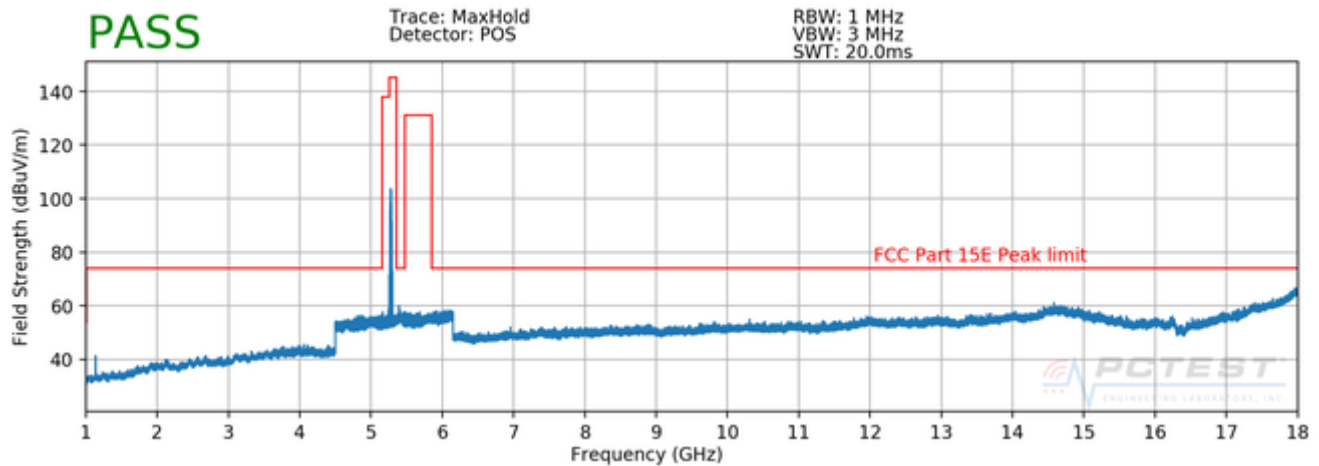
Table 7-40. Radiated Measurements with WCP

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 122 of 178

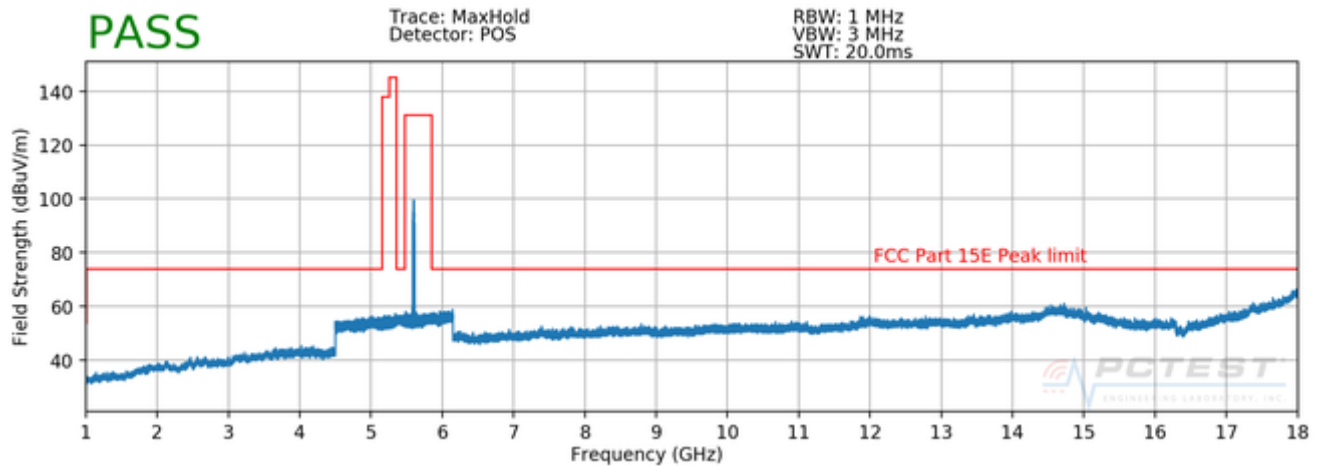
7.7.2 Antenna-2 Radiated Spurious Emission Measurements



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

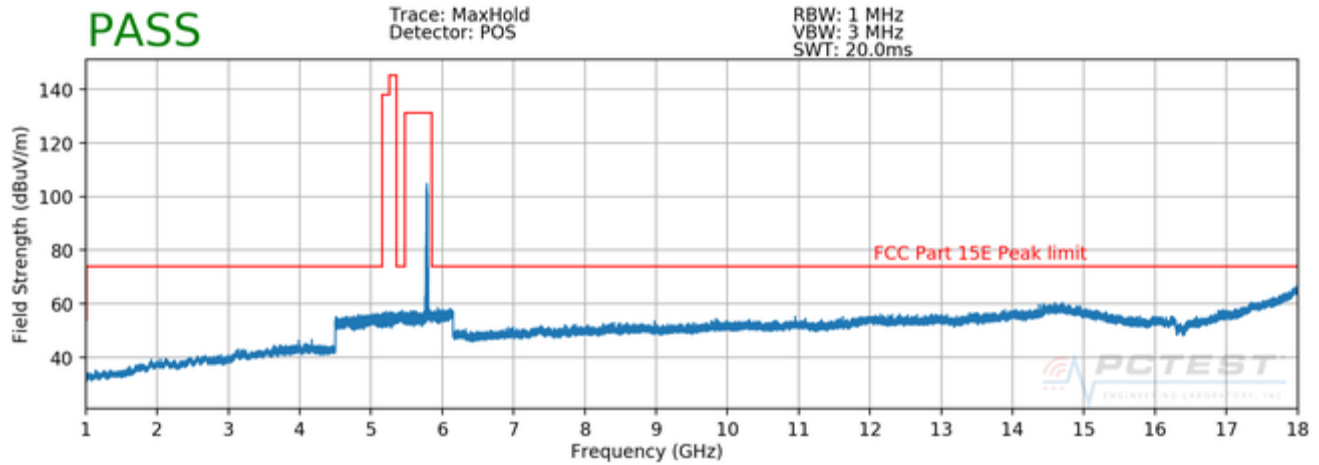


Plot 7-164. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56)



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

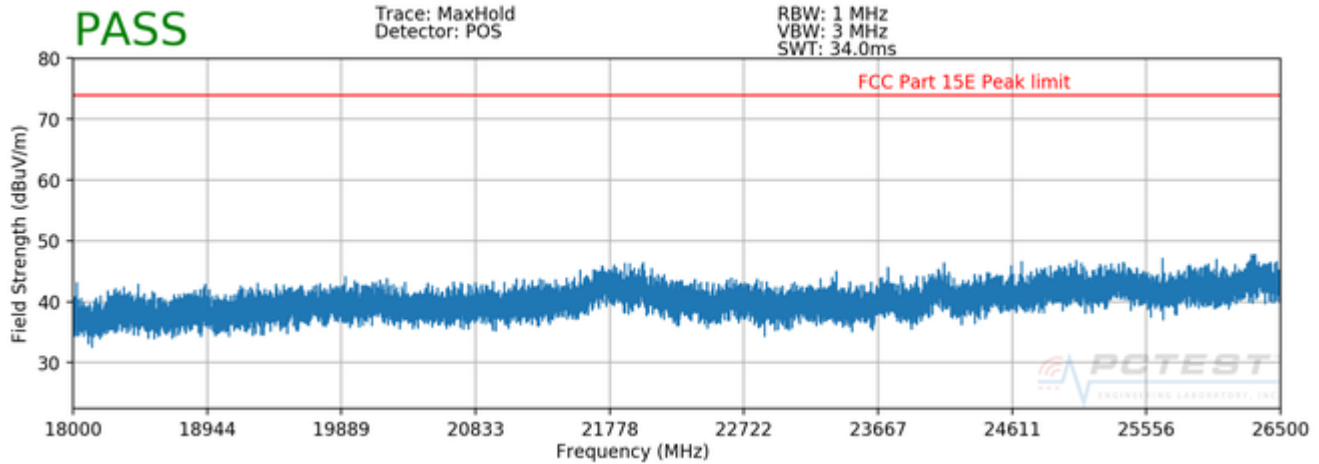
FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 123 of 178



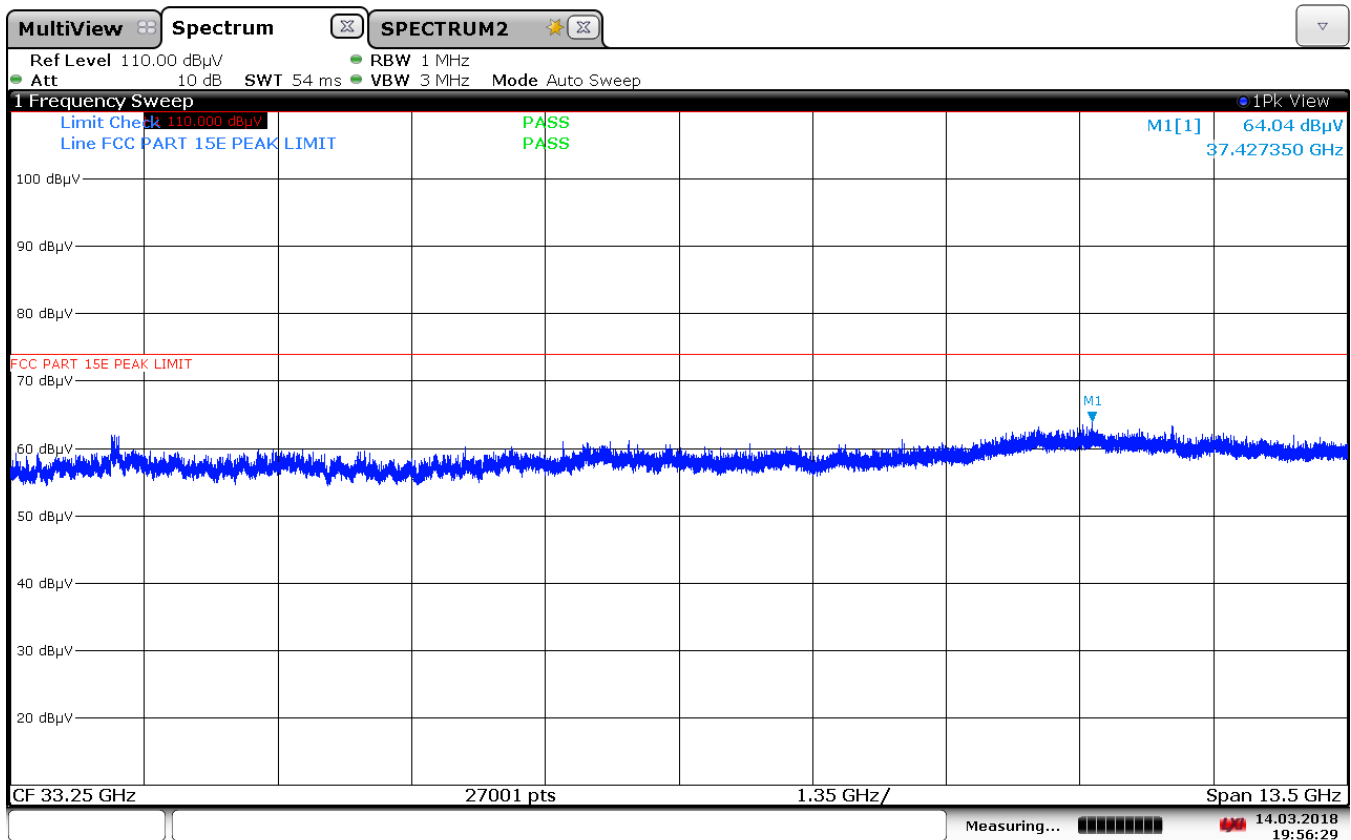
Plot 7-166. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 124 of 178

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



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



19:56:30 14.03.2018

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

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 125 of 178

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V 7.5 2/14/2018

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Antenna-2 Radiated Spurious Emission Measurements

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

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
10360.00	Peak	H	-	-	-69.37	11.39	49.02	68.20	-19.18
* 15540.00	Average	H	-	-	-82.70	13.70	38.00	53.98	-15.98
* 15540.00	Peak	H	-	-	-69.38	13.70	51.32	73.98	-22.66
* 20720.00	Average	H	-	-	-71.03	7.94	43.91	53.98	-10.07
* 20720.00	Peak	H	-	-	-58.88	7.94	56.06	73.98	-17.92
25900.00	Peak	H	-	-	-56.47	8.46	58.99	68.20	-9.21

Table 7-41. Radiated Measurements

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
10400.00	Peak	H	-	-	-69.16	11.47	49.31	68.20	-18.89
* 15600.00	Average	H	-	-	-82.10	13.41	38.31	53.98	-15.67
* 15600.00	Peak	H	-	-	-69.05	13.41	51.36	73.98	-22.62
* 20800.00	Average	H	-	-	-70.84	7.95	44.11	53.98	-9.86
* 20800.00	Peak	H	-	-	-59.03	7.95	55.92	73.98	-18.05
26000.00	Peak	H	-	-	-57.25	8.60	58.35	68.20	-9.85

Table 7-42. Radiated Measurements

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 126 of 178

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	Peak	H	-	-	-69.23	11.98	49.75	68.20	-18.45
* 15720.00	Average	H	209	85	-81.69	13.52	38.83	53.98	-15.15
* 15720.00	Peak	H	209	85	-68.53	13.52	51.99	73.98	-21.99
* 20960.00	Average	H	-	-	-71.07	7.91	43.84	53.98	-10.14
* 20960.00	Peak	H	-	-	-59.41	7.91	55.50	73.98	-18.48
26200.00	Peak	H	-	-	-56.23	8.62	59.39	68.20	-8.81

Table 7-43. Radiated Measurements

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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	-	-	-70.56	11.98	0.00	48.42	68.20	-19.78
* 15720.00	Average	H	266	52	-82.62	13.52	0.00	37.90	53.98	-16.08
* 15720.00	Peak	H	266	52	-70.34	13.52	0.00	50.18	73.98	-23.80
* 20960.00	Average	H	-	-	-71.68	7.91	-9.54	33.69	53.98	-20.29
* 20960.00	Peak	H	-	-	-58.75	7.91	-9.54	46.62	73.98	-27.36
26200.00	Peak	H	-	-	-57.83	8.62	-9.54	48.25	68.20	-19.95

Table 7-44. Radiated Measurements with WCP

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 127 of 178

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS0
 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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10520.00	Peak	H	-	-	-69.36	12.15	49.79	68.20	-18.41
* 15780.00	Average	H	100	40	-82.48	13.47	37.99	53.98	-15.99
* 15780.00	Peak	H	100	40	-69.19	13.47	51.28	73.98	-22.70
* 21040.00	Average	H	-	-	-70.71	7.92	44.21	53.98	-9.77
* 21040.00	Peak	H	-	-	-58.81	7.92	56.11	73.98	-17.87
26300.00	Peak	H	-	-	-56.11	8.73	59.62	68.20	-8.58

Table 7-45. Radiated Measurements

Worst Case Mode: 802.11n
 Worst Case Transfer Rate: MCS0
 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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	Peak	H	242	226	-69.03	12.59	50.56	68.20	-17.64
* 15840.00	Average	H	-	-	-81.96	12.49	37.53	53.98	-16.45
* 15840.00	Peak	H	-	-	-68.66	12.49	50.83	73.98	-23.15
* 21120.00	Average	H	-	-	-70.49	7.96	44.47	53.98	-9.51
* 21120.00	Peak	H	-	-	-59.28	7.96	55.68	73.98	-18.30
26400.00	Peak	H	-	-	-55.77	8.94	60.17	68.20	-8.03

Table 7-46. Radiated Measurements

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 128 of 178

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	Average	H	-	-	-82.20	12.53	37.33	53.98	-16.65
* 10640.00	Peak	H	-	-	-68.95	12.53	50.58	73.98	-23.40
* 15960.00	Average	H	-	-	-82.19	13.03	37.84	53.98	-16.14
* 15960.00	Peak	H	-	-	-68.82	13.03	51.21	73.98	-22.77
* 21280.00	Average	H	-	-	-70.09	8.04	44.95	53.98	-9.03
* 21280.00	Peak	H	-	-	-58.75	8.04	56.29	73.98	-17.69
26600.00	Peak	H	-	-	-49.50	-8.30	49.20	68.20	-19.00

Table 7-47. Radiated Measurements

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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	-	-	-70.12	12.15	0.00	49.03	68.20	-19.17
* 15780.00	Average	H	129	87	-82.96	13.47	0.00	37.51	53.98	-16.47
* 15780.00	Peak	H	129	87	-70.15	13.47	0.00	50.32	73.98	-23.66
* 21040.00	Average	H	-	-	-71.66	7.92	-9.54	33.72	53.98	-20.26
* 21040.00	Peak	H	-	-	-59.81	7.92	-9.54	45.57	73.98	-28.41
26300.00	Peak	H	-	-	-58.84	8.73	-9.54	47.35	68.20	-20.85

Table 7-48. Radiated Measurements with WCP

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 129 of 178

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11000.00	Average	H	199	213	-81.03	12.42	38.39	53.98	-15.59
* 11000.00	Peak	H	199	213	-67.70	12.42	51.72	73.98	-22.26
16500.00	Peak	H	-	-	-67.96	12.52	51.56	68.20	-16.64
22000.00	Peak	H	-	-	-57.08	8.43	58.35	68.20	-9.85
27500.00	Peak	H	-	-	-48.26	-8.80	49.94	68.20	-18.26

Table 7-49. Radiated Measurements

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11200.00	Average	H	203	221	-80.78	11.15	37.37	53.98	-16.61
* 11200.00	Peak	H	203	221	-67.39	11.15	50.76	73.98	-23.22
16800.00	Peak	H	-	-	-68.10	13.91	52.81	68.20	-15.39
* 22400.00	Average	H	-	-	-70.25	8.11	44.86	53.98	-9.12
* 22400.00	Peak	H	-	-	-58.64	8.11	56.47	73.98	-17.51
28000.00	Peak	H	-	-	-48.08	-9.26	49.66	68.20	-18.54

Table 7-50. Radiated Measurements

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 130 of 178

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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	113	149	-82.15	12.29	0.00	37.14	53.98	-16.84
* 11440.00	Peak	H	113	149	-69.40	12.29	0.00	49.89	73.98	-24.09
17160.00	Peak	H	-	-	-68.15	16.09	0.00	54.94	68.20	-13.26
* 22880.00	Average	H	-	-	-71.16	8.28	-9.54	34.58	53.98	-19.40
* 22880.00	Peak	H	-	-	-59.60	8.28	-9.54	46.14	73.98	-27.84
28600.00	Peak	H	-	-	-48.06	-9.08	-9.54	40.32	68.20	-27.88

Table 7-51. Radiated Measurements

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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	284	149	-81.46	12.42	0.00	37.96	53.98	-16.02
* 11000.00	Peak	H	284	149	-70.63	12.42	0.00	48.79	73.98	-25.19
16500.00	Peak	H	-	-	-68.76	12.52	0.00	50.76	68.20	-17.44
22000.00	Peak	H	-	-	-58.63	8.43	-9.54	47.25	68.20	-20.95
27500.00	Peak	H	-	-	-48.37	-8.80	-9.54	40.29	68.20	-27.91

Table 7-52. Radiated Measurements with WCP

FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 131 of 178

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	H	161	108	-82.37	12.24	36.87	53.98	-17.11
* 11490.00	Peak	H	161	108	-69.41	12.24	49.83	73.98	-24.15
17235.00	Peak	H	-	-	-68.69	16.55	54.86	68.20	-13.34
* 22980.00	Average	H	-	-	-71.11	8.16	44.05	53.98	-9.93
* 22980.00	Peak	H	-	-	-59.56	8.16	55.60	73.98	-18.38
28725.00	Peak	H	-	-	-48.52	-9.24	49.24	68.20	-18.96

Table 7-53. Radiated Measurements

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	H	155	115	-82.23	11.96	36.73	53.98	-17.25
* 11570.00	Peak	H	155	115	-70.13	11.96	48.83	73.98	-25.15
17355.00	Peak	H	-	-	-68.22	18.63	57.41	68.20	-10.79
23140.00	Peak	H	-	-	-58.83	8.37	56.54	68.20	-11.66
28925.00	Peak	H	-	-	-48.91	-9.65	48.44	68.20	-19.76

Table 7-54. Radiated Measurements

FCC ID: ZNFG710VM	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset	Page 132 of 178

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	H	153	119	-82.67	11.97	36.30	53.98	-17.68
* 11650.00	Peak	H	153	119	-71.34	11.97	47.63	73.98	-26.35
17475.00	Peak	H	-	-	-67.89	19.24	58.35	68.20	-9.85
23300.00	Peak	H	-	-	-58.75	8.50	56.75	68.20	-11.45
29125.00	Peak	H	-	-	-47.50	-9.87	49.63	68.20	-18.57

Table 7-55. Radiated Measurements

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
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	235	81	-82.38	12.24	0.00	36.86	53.98	-17.12
* 11490.00	Peak	H	235	81	-70.86	12.24	0.00	48.38	73.98	-25.60
17235.00	Peak	H	-	-	-70.68	16.55	0.00	52.87	68.20	-15.33
* 22980.00	Average	H	-	-	-72.83	8.16	-9.54	32.79	53.98	-21.19
* 22980.00	Peak	H	-	-	-58.35	8.16	-9.54	47.27	73.98	-26.71
28725.00	Peak	H	-	-	-47.90	-9.24	-9.54	40.32	68.20	-27.88

Table 7-56. Radiated Measurements with WCP

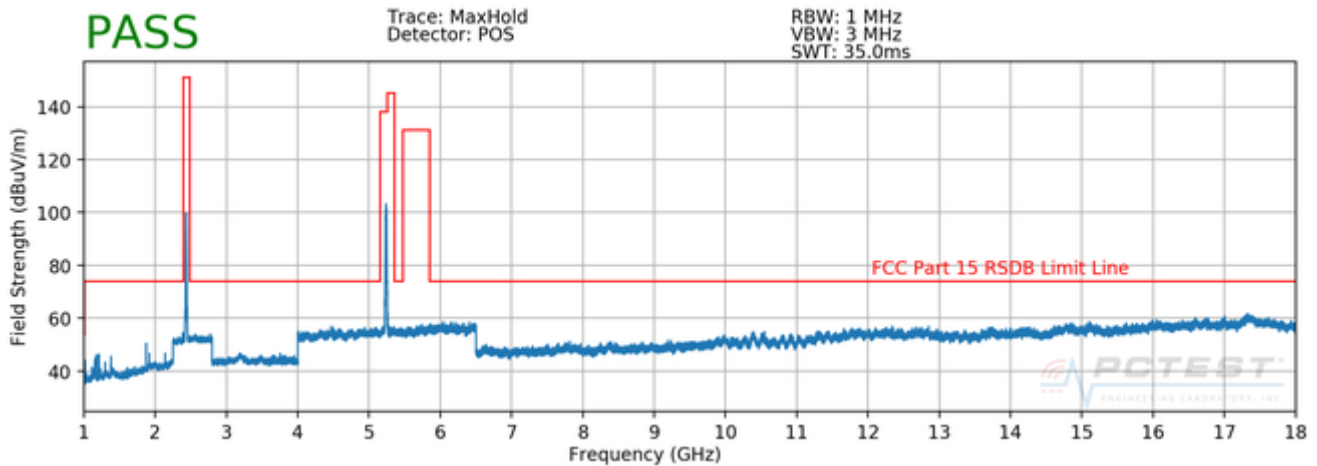
FCC ID: ZNFG710VM		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 133 of 178

7.7.3 Simultaneous Tx Radiated Spurious Emissions Measurements

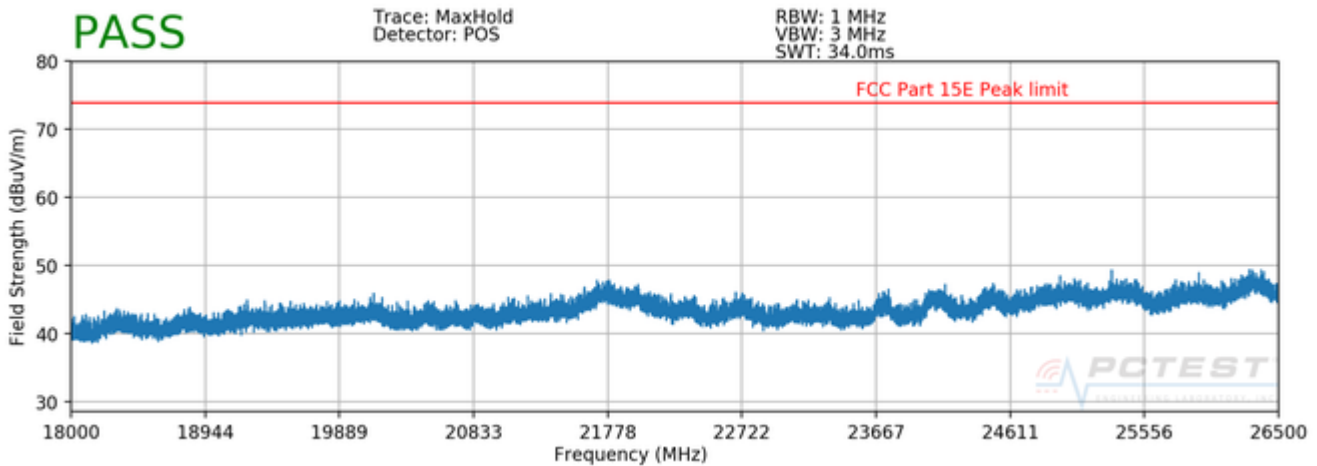
§15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Description	2.4 GHz Emission	5 GHz Emission
Antenna	1	2
Channel	6	48
Operating Frequency (MHz)	2437	5240
Data Rate (Mbps)	1	MCS0
Mode	802.11b	802.11n

Table 7-57. Simultaneous Transmission Config-1

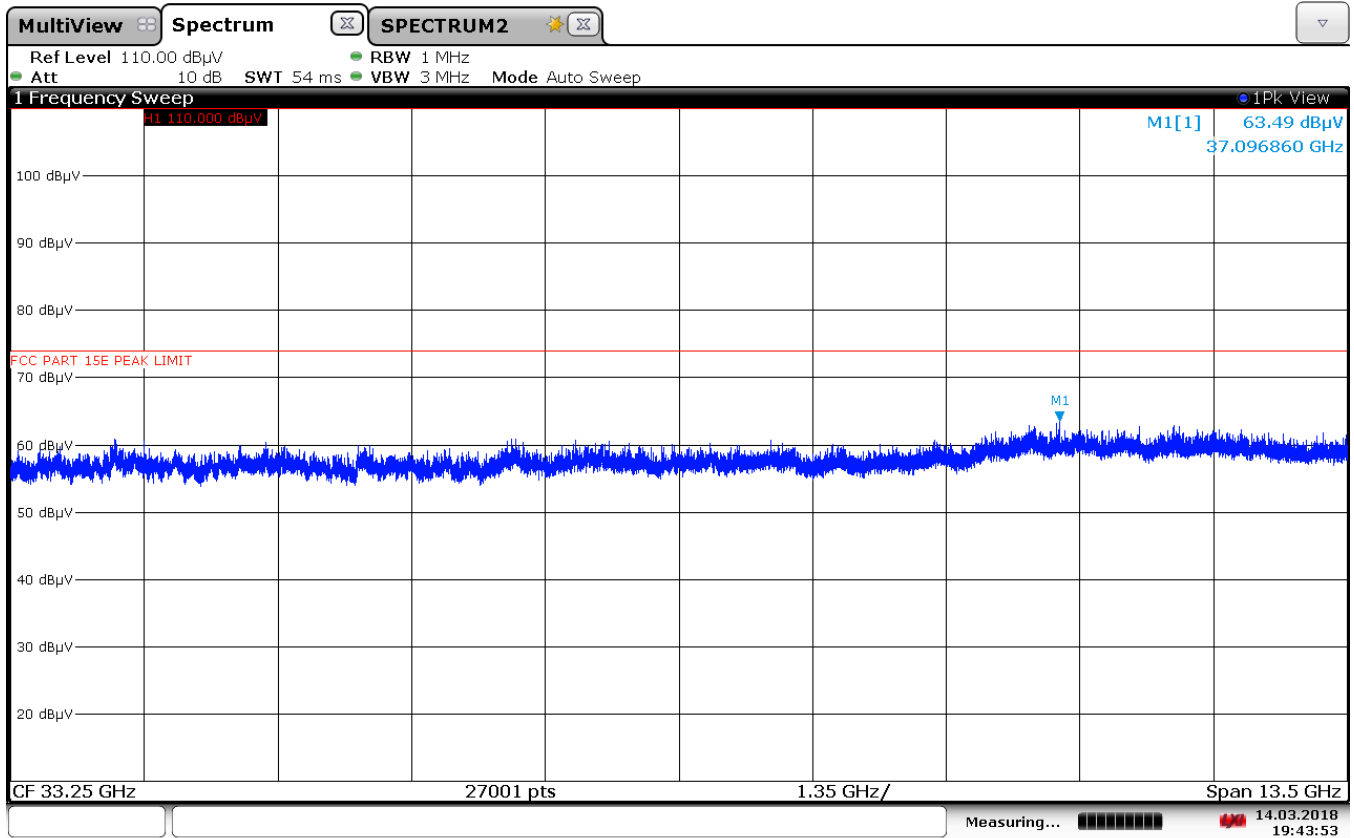


Plot 7-169. Radiated Spurious Plot above 1GHz (2.4GHz – 5GHz)



Plot 7-170. Radiated Spurious Plot 18GHz – 26.5GHz (2.4GHz – 5GHz)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 134 of 178



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Plot 7-171. Radiated Spurious Plot above 26.5GHz (2.4GHz – 5GHz)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 135 of 178

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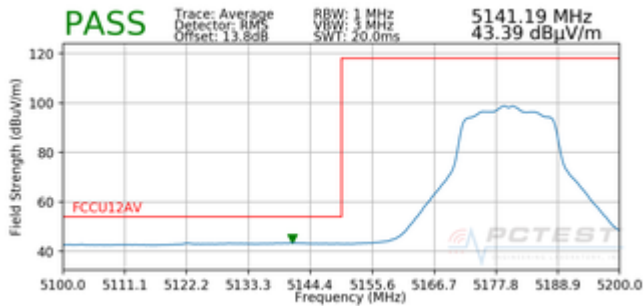
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V 7.5 2/14/2018

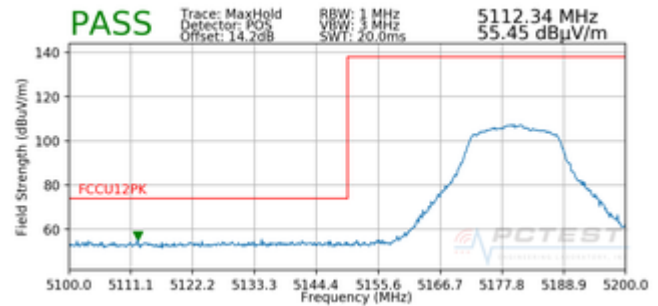
7.7.4 Antenna-1 Radiated Band Edge Measurements (20MHz BW)

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

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



Plot 7-172. Radiated Lower Band Edge Plot (Average – UNII Band 1)



Plot 7-173. Radiated Lower Band Edge Plot (Peak – UNII Band 1)

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



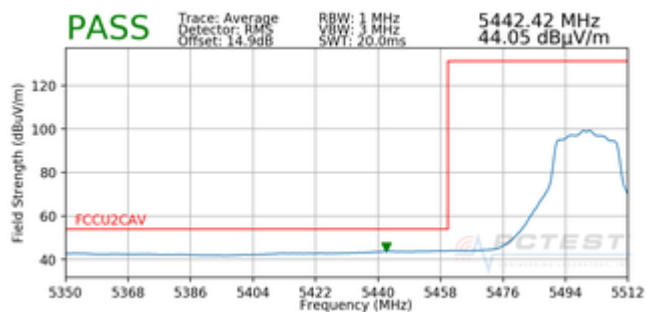
Plot 7-174. Radiated Upper Band Edge Plot (Average – UNII Band 2A)



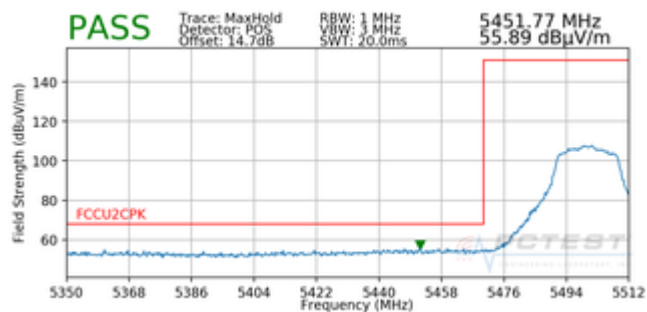
Plot 7-175. Radiated Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 136 of 178

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

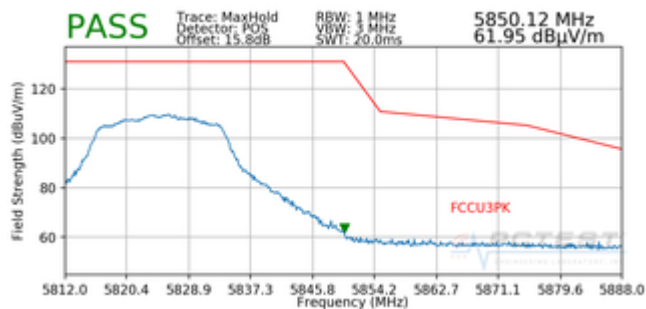


Plot 7-176. Radiated Lower Band Edge Plot (Average – UNII Band 2C)



Plot 7-177. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

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



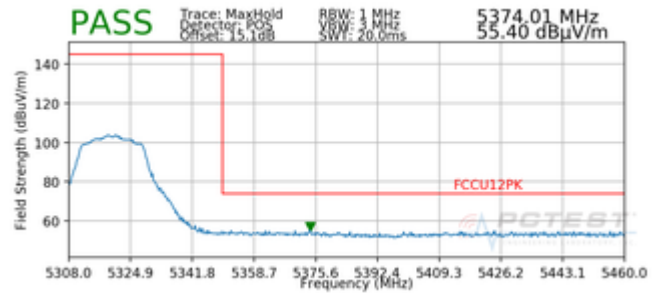
Plot 7-178. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 137 of 178

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



Plot 7-179. Radiated Band Edge Plot (Average – WCP)

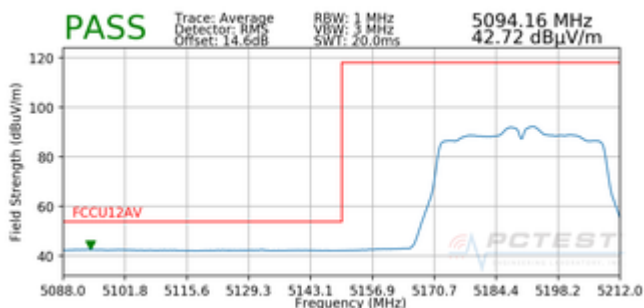


Plot 7-180. Radiated Band Edge Plot (Peak – WCP)

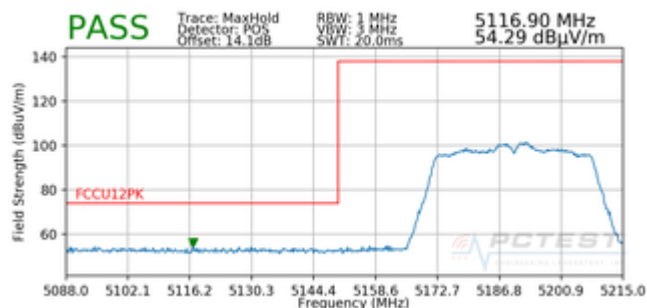
FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 138 of 178

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

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

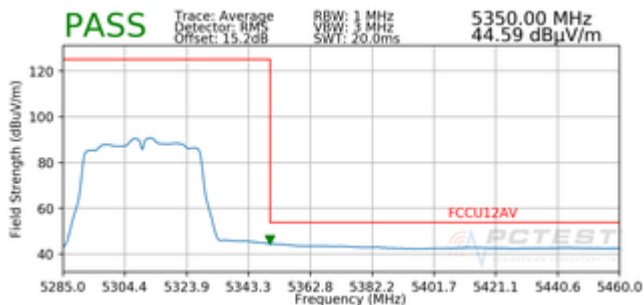


**Plot 7-181. Radiated Lower Band Edge Plot
(Average – UNII Band 1)**

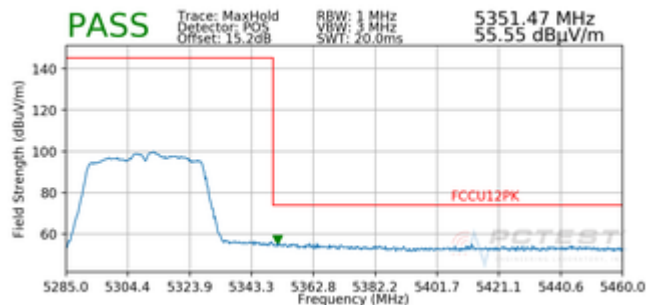


**Plot 7-182. Radiated Lower Band Edge Plot (Peak –
UNII Band 1)**

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



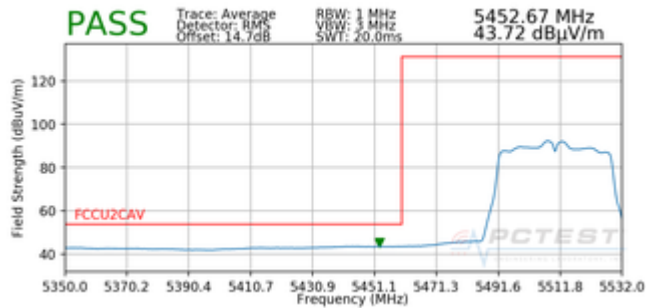
**Plot 7-183. Radiated Upper Band Edge Plot
(Average – UNII Band 2A)**



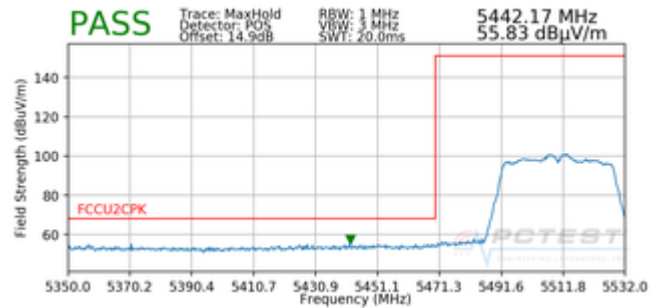
**Plot 7-184. Radiated Upper Band Edge Plot (Peak –
UNII Band 2A)**

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 139 of 178

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

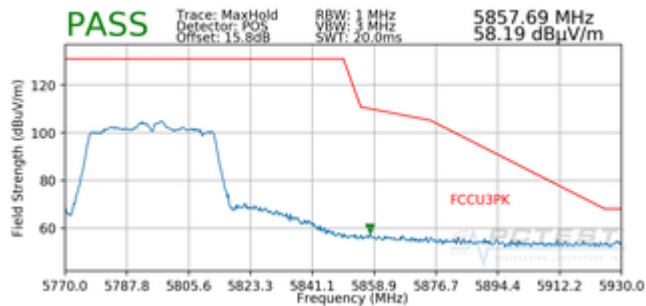


Plot 7-185. Radiated Lower Band Edge Plot (Average – UNII Band 2C)



Plot 7-186. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

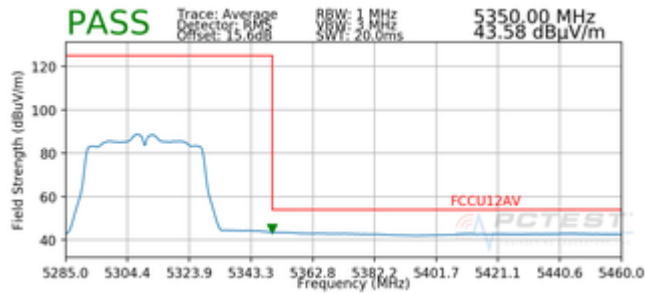
Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5795MHz
Channel: 159



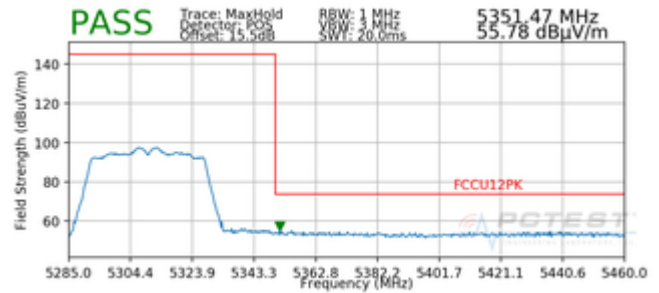
Plot 7-187. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 140 of 178

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



Plot 7-188. Radiated Band Edge Plot (Average – WCP)



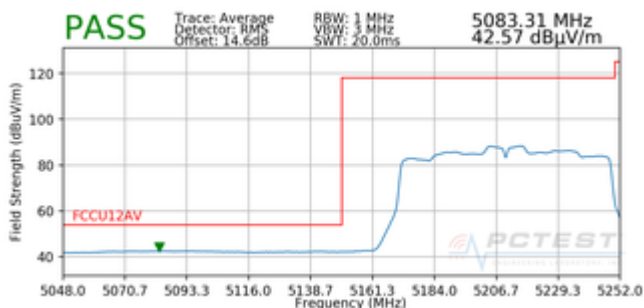
Plot 7-189. Radiated Band Edge Plot (Peak – WCP)

FCC ID: ZNFG710VM	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset	Page 141 of 178

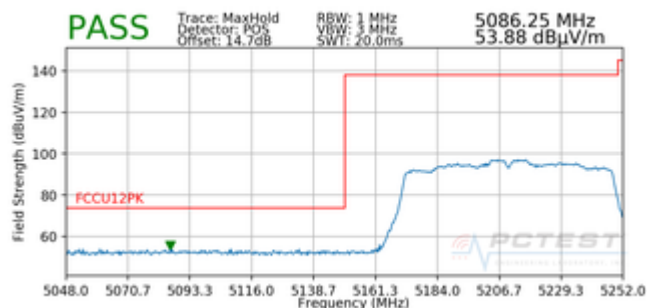
7.7.6 Antenna-1 Radiated Band Edge Measurements (80MHz BW)

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

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

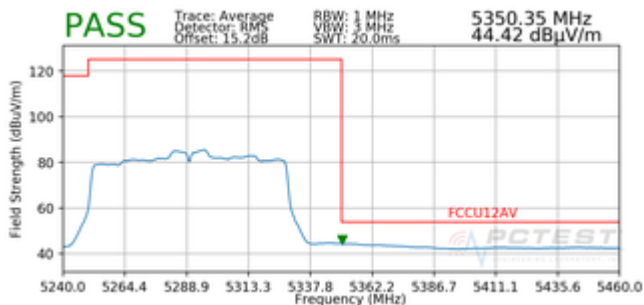


Plot 7-190. Radiated Lower Band Edge Plot (Average – UNII Band 1)

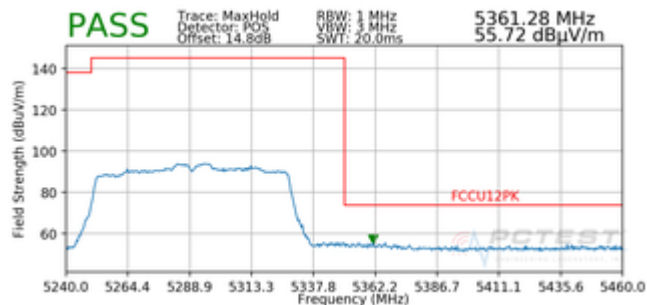


Plot 7-191. Radiated Lower Band Edge Plot (Peak – UNII Band 1)

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



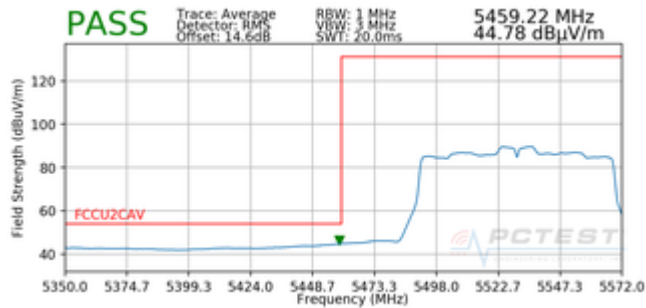
Plot 7-192. Radiated Upper Band Edge Plot (Average – UNII Band 2A)



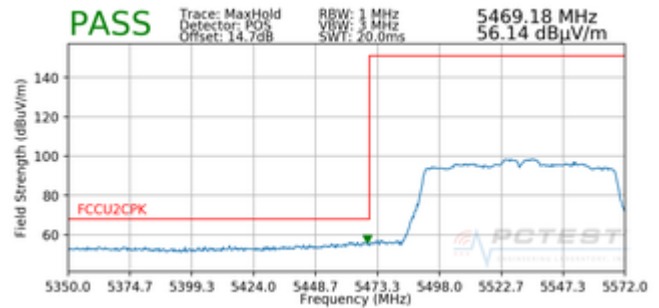
Plot 7-193. Radiated Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 142 of 178

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

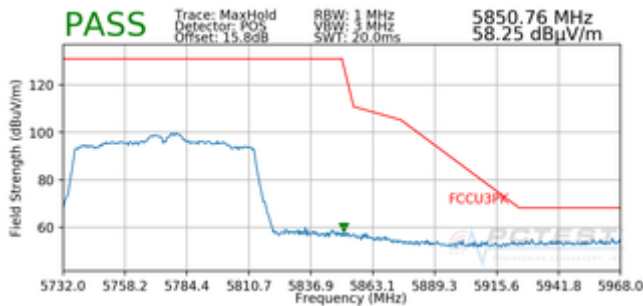


Plot 7-194. Radiated Lower Band Edge Plot (Average – UNII Band 2C)



Plot 7-195. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

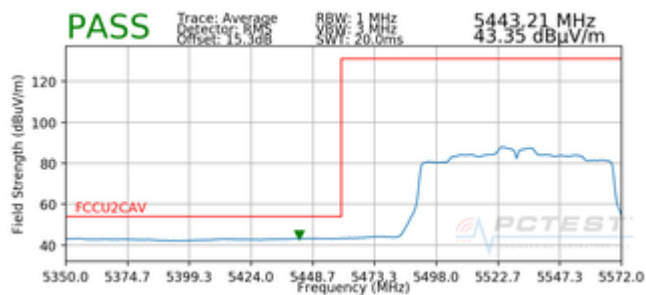
Worst Case Mode: 802.11ac
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5775MHz
Channel: 155



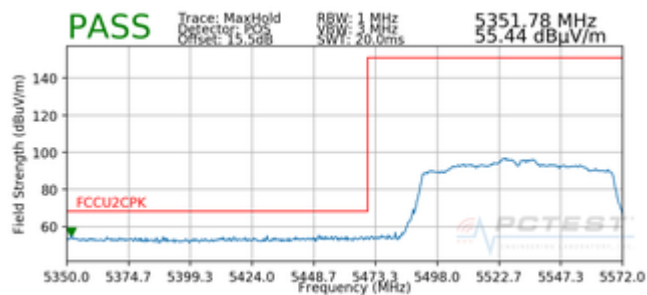
Plot 7-196. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 143 of 178

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



Plot 7-197. Radiated Band Edge Plot (Average – WCP)

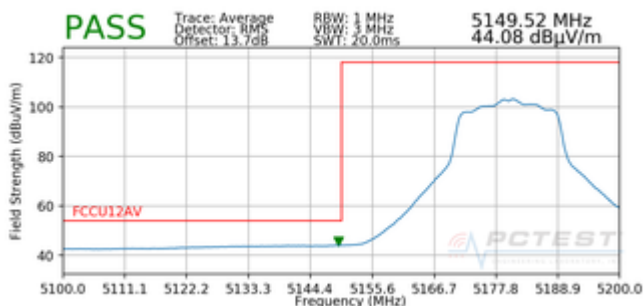


Plot 7-198. Radiated Band Edge Plot (Peak – WCP)

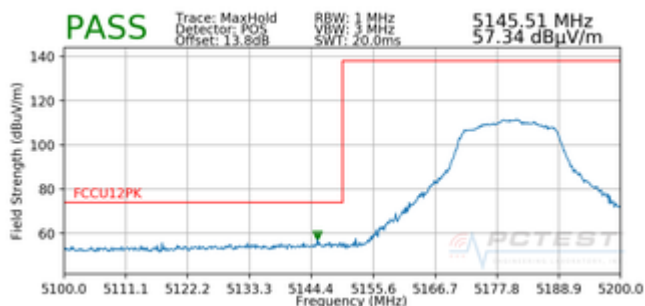
FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 144 of 178

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

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



**Plot 7-199. Radiated Lower Band Edge Plot
(Average – UNII Band 1)**



**Plot 7-200. Radiated Lower Band Edge Plot (Peak –
UNII Band 1)**

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



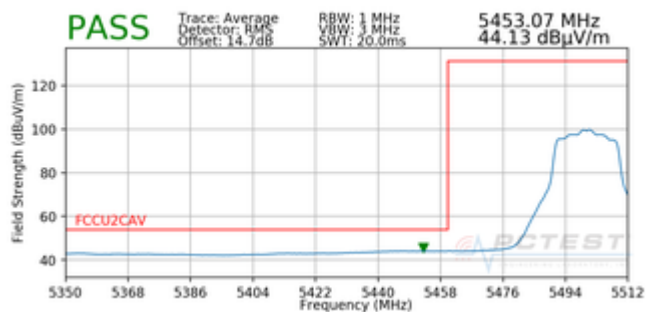
**Plot 7-201. Radiated Upper Band Edge Plot
(Average – UNII Band 2A)**



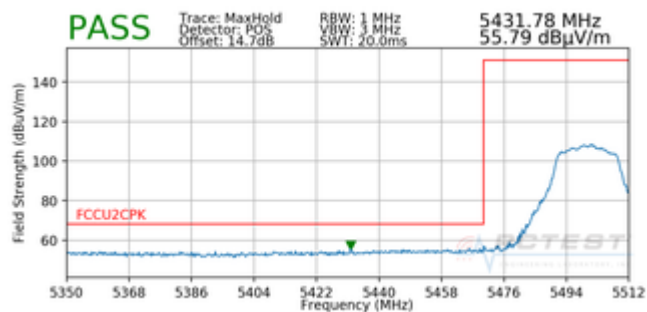
**Plot 7-202. Radiated Upper Band Edge Plot (Peak –
UNII Band 2A)**

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1.ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 145 of 178

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

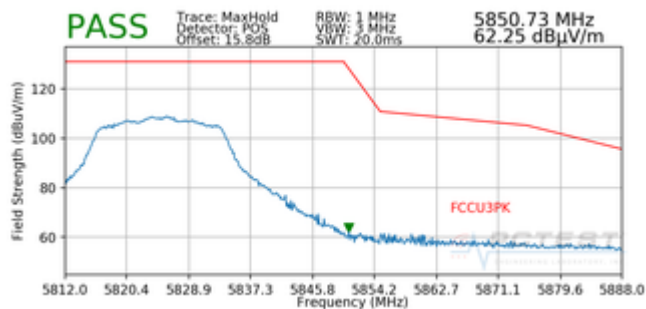


Plot 7-203. Radiated Lower Band Edge Plot (Average – UNII Band 2C)



Plot 7-204. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

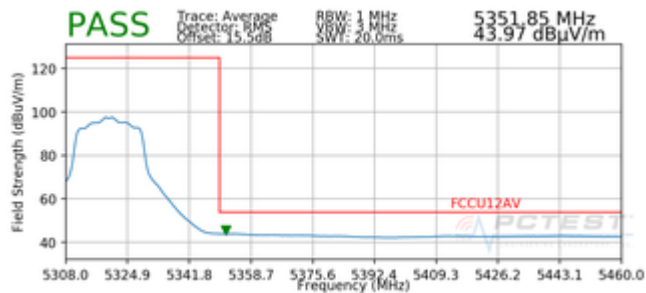
Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5825MHz
Channel: 165



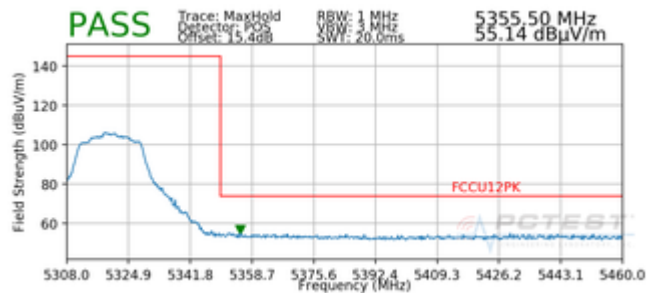
Plot 7-205. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: ZNFG710VM	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset	Page 146 of 178

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



Plot 7-206. Radiated Band Edge Plot (Average – WCP)

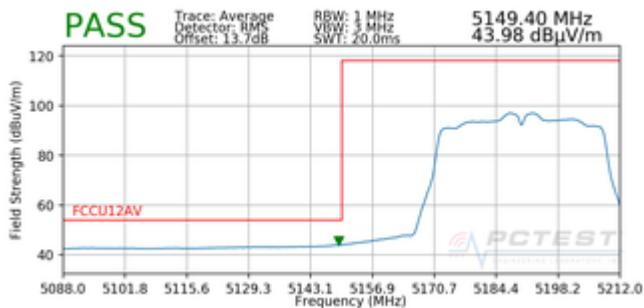


Plot 7-207. Radiated Band Edge Plot (Peak – WCP)

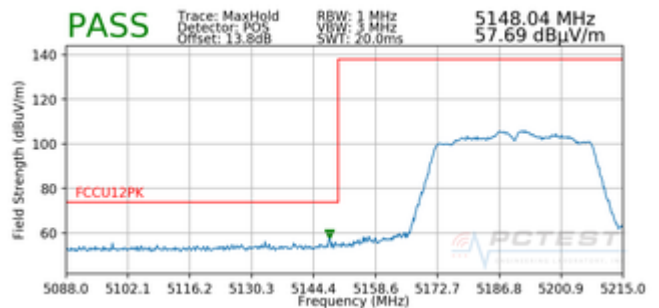
FCC ID: ZNFG710VM	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset	Page 147 of 178

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

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



**Plot 7-208. Radiated Lower Band Edge Plot
(Average – UNII Band 1)**

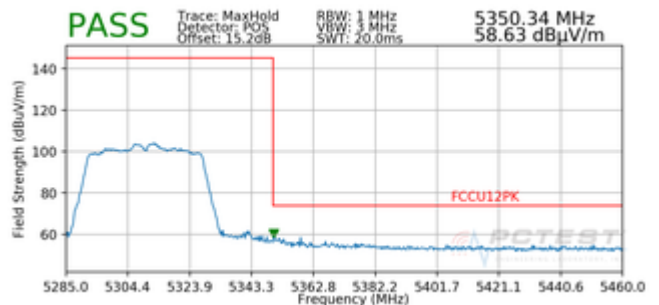


**Plot 7-209. Radiated Lower Band Edge Plot (Peak –
UNII Band 1)**

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



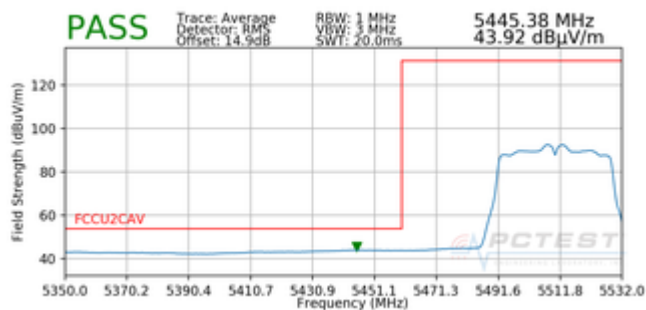
**Plot 7-210. Radiated Upper Band Edge Plot
(Average – UNII Band 2A)**



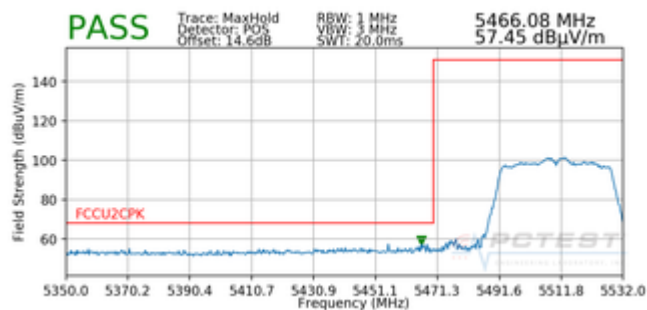
**Plot 7-211. Radiated Upper Band Edge Plot (Peak –
UNII Band 2A)**

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 148 of 178

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

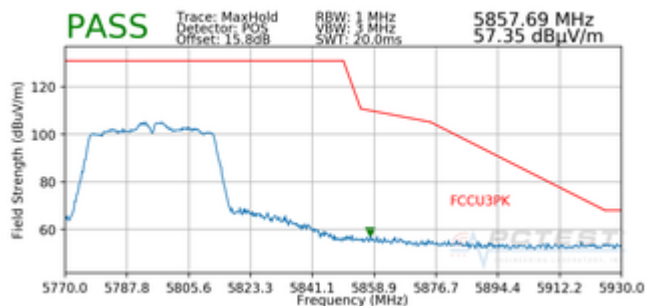


Plot 7-212. Radiated Lower Band Edge Plot (Average – UNII Band 2C)



Plot 7-213. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

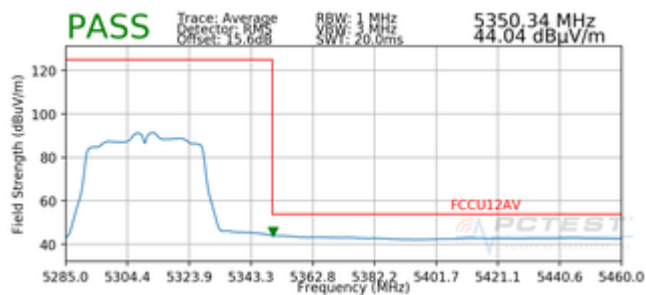
Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5795MHz
Channel: 159



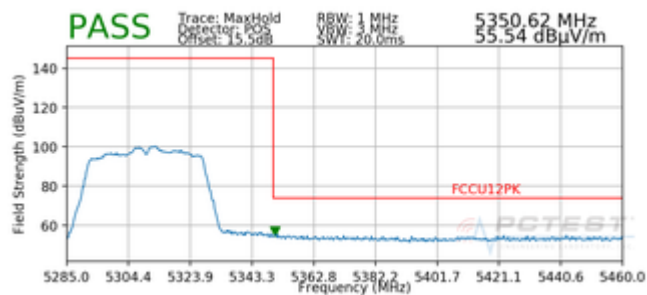
Plot 7-214. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: ZNFG710VM	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset	Page 149 of 178

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



Plot 7-215. Radiated Band Edge Plot (Average – WCP)

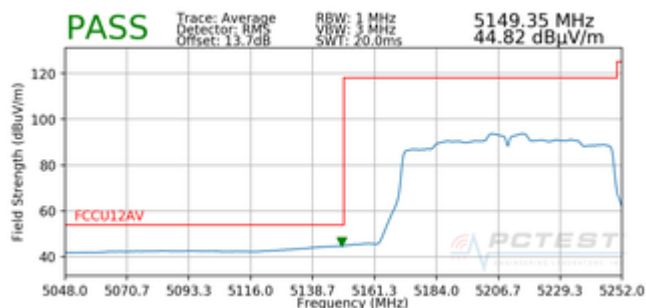


Plot 7-216. Radiated Band Edge Plot (Peak – WCP)

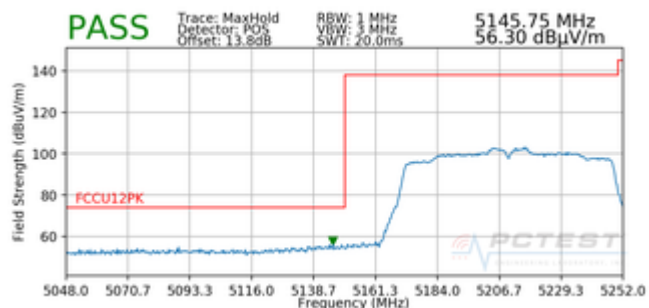
FCC ID: ZNFG710VM	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 150 of 178

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

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

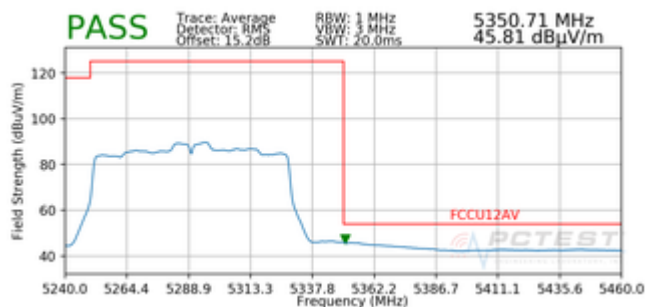


**Plot 7-217. Radiated Lower Band Edge Plot
(Average – UNII Band 1)**

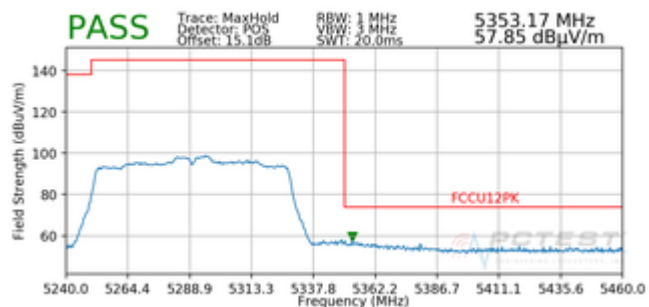


**Plot 7-218. Radiated Lower Band Edge Plot (Peak –
UNII Band 1)**

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



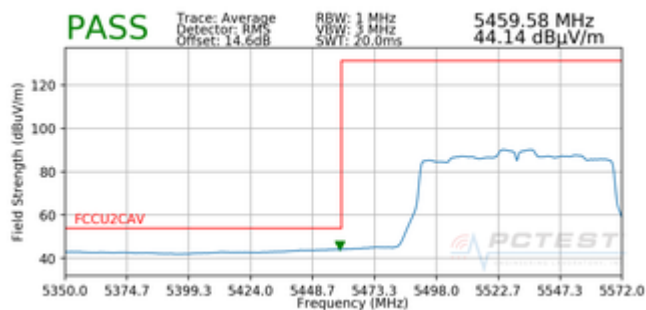
**Plot 7-219. Radiated Upper Band Edge Plot
(Average – UNII Band 2A)**



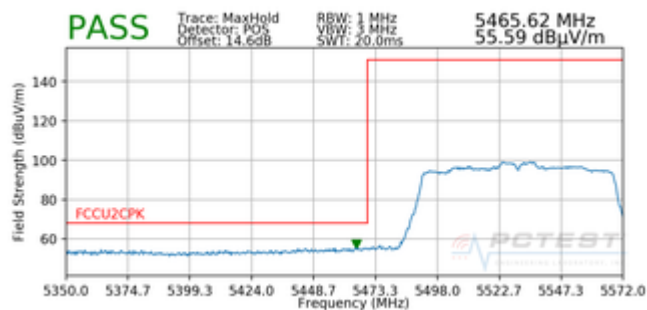
**Plot 7-220. Radiated Upper Band Edge Plot (Peak –
UNII Band 2A)**

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 151 of 178

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

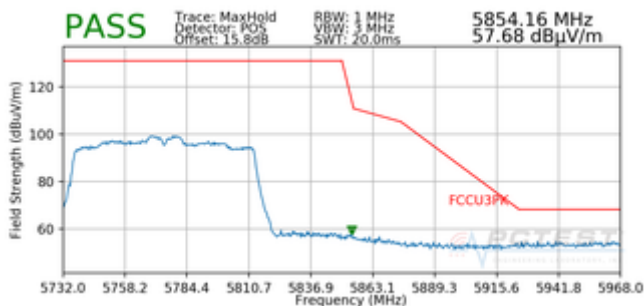


Plot 7-221. Radiated Lower Band Edge Plot (Average – UNII Band 2C)



Plot 7-222. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

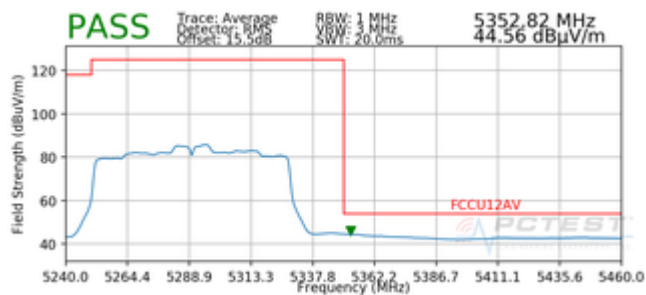
Worst Case Mode: 802.11ac
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5775MHz
Channel: 155



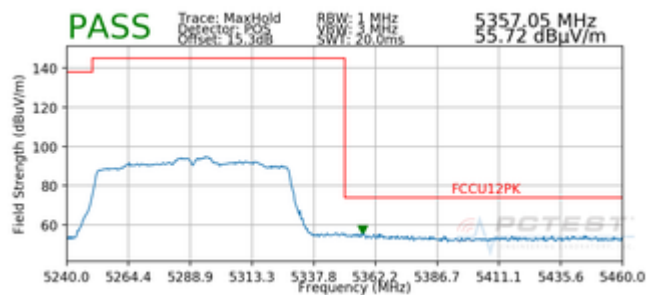
Plot 7-223. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 152 of 178

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



Plot 7-224. Radiated Band Edge Plot (Average – WCP)



Plot 7-225. Radiated Band Edge Plot (Peak – WCP)

FCC ID: ZNFG710VM	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1802260032-05-R1-ZNF	Test Dates: 2/26 - 3/29/2018	EUT Type: Portable Handset		Page 153 of 178