

## **Antenna-1 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]
	5180	36	а	6	5.79	11.0	-5.21
	5200	40	а	6	5.80	11.0	-5.20
	5240	48	а	6	5.80	11.0	-5.20
-	5180	36	n (20MHz)	6.5/7.2 (MCS0)	5.54	11.0	-5.46
Band 1	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.27	11.0	-4.73
ä	5240	48	n (20MHz)	6.5/7.2 (MCS0)	5.82	11.0	-5.18
	5190	38	n (40MHz)	13.5/15 (MCS0)	1.68	11.0	-9.32
	5230	46	n (40MHz)	13.5/15 (MCS0)	1.46	11.0	-9.54
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-3.24	11.0	-14.24
	5260	52	а	6	5.94	11.0	-5.06
	5280	56	а	6	6.12	11.0	-4.88
	5320	64	а	6	5.85	11.0	-5.15
2A	5260	52	n (20MHz)	6.5/7.2 (MCS0)	5.83	11.0	-5.17
Band 2A	5280	56	n (20MHz)	6.5/7.2 (MCS0)	6.13	11.0	-4.88
Ba	5320	64	n (20MHz)	6.5/7.2 (MCS0)	6.16	11.0	-4.84
	5270	54	n (40MHz)	13.5/15 (MCS0)	0.36	11.0	-10.64
	5310	62	n (40MHz)	13.5/15 (MCS0)	0.86	11.0	-10.14
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-3.02	11.0	-14.02
	5500	100	а	6	5.60	11.0	-5.40
	5600	120	а	6	5.90	11.0	-5.11
	5720	144	а	6	5.86	11.0	-5.14
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	6.64	11.0	-4.36
U	5600	120	n (20MHz)	6.5/7.2 (MCS0)	6.88	11.0	-4.12
Band 2C	5720	144	n (20MHz)	6.5/7.2 (MCS0)	6.67	11.0	-4.33
an	5510	102	n (40MHz)	13.5/15 (MCS0)	0.78	11.0	-10.22
ш	5590	118	n (40MHz)	13.5/15 (MCS0)	1.41	11.0	-9.60
	5710	142	n (40MHz)	13.5/15 (MCS0)	1.35	11.0	-9.65
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-3.23	11.0	-14.23
	5610	122	ac (80MHz)	29.3/32.5 (MCS0)	-4.23	11.0	-15.23
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-6.85	11.0	-17.85

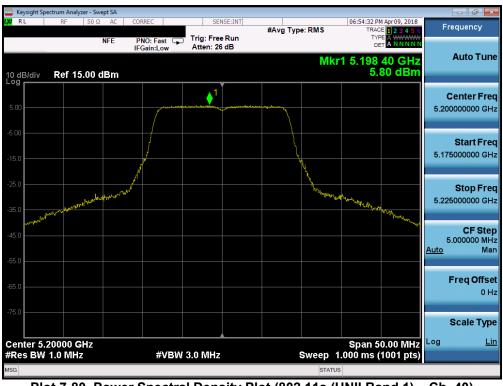
 Table 7-18. Bands 1, 2A, 2C Conducted Power Spectral Density Measurements

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Daga 69 of 190	
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 68 of 189	
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	pectrum Analyzer -							
LXU RL	RF 5	DΩ AC NFE	CORREC PNO: Wide IFGain:Lov	Trig: Fre	#Avg Type: RMS	TRA	M Apr 09, 2018 CE <b>1 2 3 4 5</b> 6 PE A WWWWW ET A N N N N N	Frequency
10 dB/div	Ref 15.0	0 dBm	II Gam.Lov		М	kr1 5.178 ( 5.	325 GHz 79 dBm	Auto Tune
5.00			-,	<b>↓</b> 1	 ett wette decordence to specy one			Center Fred 5.180000000 GHz
-5.00							tu	<b>Start Fred</b> 5.167500000 GHz
-25.0							M. Urble	<b>Stop Fred</b> 5.192500000 GHz
-45.0								CF Step 2.500000 MHz <u>Auto</u> Mar
-65.0								Freq Offset 0 Hz
-75.0	.18000 GHz					Span 2	25.00 MHz	Scale Type
	1.0 MHz		#V	'BW 3.0 MHz		p 1.000 ms	(1001 pts)	

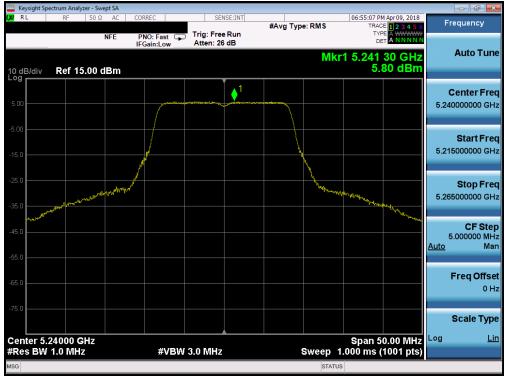
Plot 7-79. Power Spectral Density Plot (802.11a (UNII Band 1) - Ch. 36)



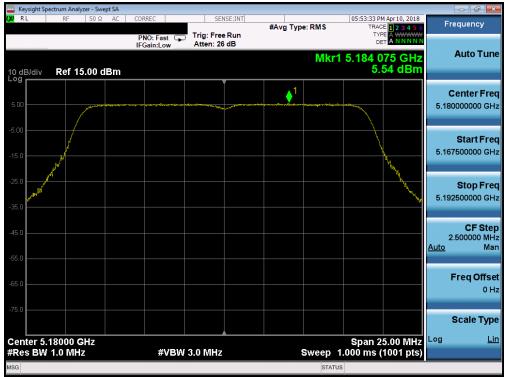
Plot 7-80. Power Spectral Density Plot (802.11a (UNII Band 1) - Ch. 40)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 60 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 69 of 189
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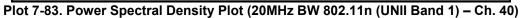


Plot 7-82. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) - Ch. 36)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 70 of 190	
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 70 of 189	
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Keysight Spectrum Analyzer - Swept SA				
<b>LX/</b> RL RF 50Ω AC	CORREC SEN	ISE:INT #Avg Type	05:54:04 PM RMS TRACE	Apr10, 2018 Frequency
10 dB/div Ref 15.00 dBm	PNO: Fast Trig: Free IFGain:Low Atten: 26	Run	TYPE DET	ANNNN
5.00		<b>1</b>		<b>Center Freq</b> 5.200000000 GHz
-15.0			A.	<b>Start Freq</b> 5.175000000 GHz
-25.0			hand an and and and and and and and and a	Stop Freq 5.225000000 GHz
-45.0				CF Step 5.000000 MHz Auto Man
-65.0				Freq Offset 0 Hz
-75.0				Scale Type
Center 5.20000 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz	5	Span 50 Sweep 1.000 ms (1	.00 Will 2
MSG			STATUS	

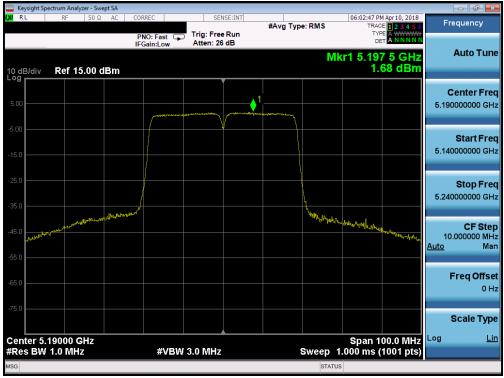




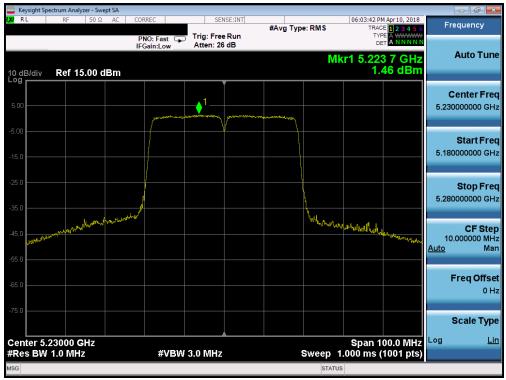
Plot 7-84. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) - Ch. 48)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Daga 71 of 190	
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 71 of 189	
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Plot 7-85. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) - Ch. 38)



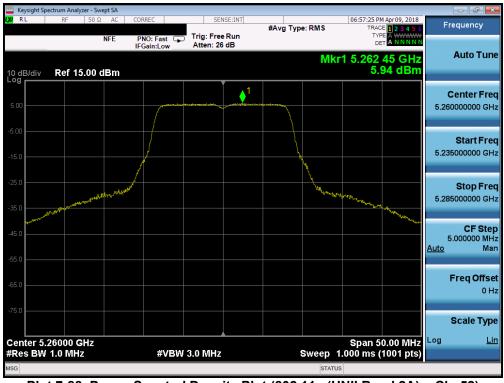
Plot 7-86. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) - Ch. 46)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 70 of 190	
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 72 of 189	
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	ectrum Analyz			000055	_		NOT THE			0.0000000000000000000000000000000000000		- P	×
RL	RF	50 Ω )		CORREC PNO: Fa IFGain:L	ast 😱	Trig: Fro Atten: 2		#Avg Ty	pe: RMS	TRA	PM Apr 10, 2018 CE 1 2 3 4 5 6 (PE A WWWW DET A NNNN	Frequency	/
0 dB/div	Ref Offs Ref 15.		dB	II Gam.E					Μ	kr1 5.22 -3	2 8 GHz 24 dBm	Auto T	ur
<b>og</b>							↓ ↓ <sup>1</sup>					Center F 5.210000000	
5.0							V	**************************************				Start F 5.110000000	
5.0												<b>Stop F</b> 5.310000000	
5.0	- martin and the second se	and a start of the	and the second secon	]							The sound below for an all	CF S 20.000000 <u>Auto</u>	
5.0												Freq Of	ffs 0
<sup>75.0</sup>												Scale T	
	2100 GH 1.0 MHz			#	¢VBW	3.0 MH:	z		Sweep	Span 2 1.000 ms	200.0 MHz (1001 pts)	Log	L
ŝG									STATU	JS			

Plot 7-87. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)



Plot 7-88. Power Spectral Density Plot (802.11a (UNII Band 2A) - Ch. 52)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 72 of 190	
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 73 of 189	
© 2018 PCTEST Engineering La	V 8.0 03/13/2018				



	pectrum Analyze	r - Swept SA					
XU RL	RF	50 Ω AC	CORREC PNO: Fast	SENSE:INT Trig: Free Run Atten: 26 dB	#Avg Type: RMS	06:58:59 PM Apr 09, 2018 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	Frequency
10 dB/div	Ref 15.	00 dBm	IPGain.Low	Allen 20 ab	Mk	r1 5.281 60 GHz 6.12 dBm	Auto Tune
5.00				1			Center Frec 5.280000000 GHz
-5.00							<b>Start Fred</b> 5.255000000 GH2
-25.0	and have been and the	Marthan	/			wanter and and the second	Stop Frec 5.305000000 GHz
-45.0							<b>CF Stej</b> 5.000000 MH <u>Auto</u> Ma
65.0							Freq Offse 0 H
-75.0	22000 81						Scale Type
	.28000 GH / 1.0 MHz	Z	#VBW	3.0 MHz	Sweep	Span 50.00 MHz 1.000 ms (1001 pts)	
MSG					STATU	JS	

Plot 7-89. Power Spectral Density Plot (802.11a (UNII Band 2A) - Ch. 56)



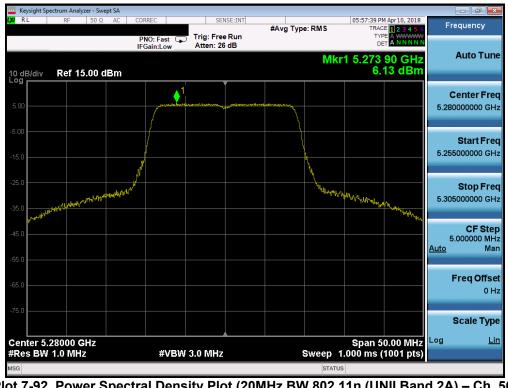
Plot 7-90. Power Spectral Density Plot (802.11a (UNII Band 2A) - Ch. 64)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 74 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 74 of 189
© 2018 PCTEST Engineering La	V 8 0 03/13/2018			



	pectrum Analyzer -										×
L <mark>XI</mark> RL	RF 50	Ω AC	CORREC		VSE:INT	#Avg Typ	e: RMS	TRAC	M Apr 10, 2018 E 1 2 3 4 5 6	Frequency	
			PNO: Fast G	Trig: Free Atten: 26	e Run 6 dB			TYF			
10 dB/div Log	Ref 15.00	) dBm					Mki	1 5.257 5.	30 GHz 83 dBm	Auto Tu	une
5.00			A standing over	<b>↓</b> <sup>1</sup>		Billing als				Center F	
-5.00										5.260000000	GH
										Start F	
-15.0			1				N. N.			3.2330000000	GII
-25.0	n an Brandard	or of the state of	/				hunghung	mall work who are		Stop F 5.285000000	
-35.0	-erver right of								and the shapes	CF S	te
-45.0										5.000000	
-65.0										FreqOff	fse 0 H
75.0											
										Scale Ty	
	.26000 GHz / 1.0 MHz		#VBV	V 3.0 MHz			Sweep 1	Span 5 1.000 ms (	0.00 MHz 1001 pts)	Log	Li
MSG							STATU				

Plot 7-91. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) - Ch. 52)



Plot 7-92. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) - Ch. 56)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 75 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 75 of 189
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Keysight Spectrum Analyzer - Swept S	5A				
<b>X RL</b> RF 50Ω 4	AC CORREC	SENSE:INT	#Avg Type: RMS	05:58:02 PM Apr 10, 2018 TRACE 1 2 3 4 5 6	Frequency
10 dB/div Ref 15.00 dB	IFGain:Low A	rig: Free Run Atten: 26 dB	Mk	r1 5.318 60 GHz 6.16 dBm	Auto Tune
		1			Center Freq 5.320000000 GHz
-5.00					<b>Start Freq</b> 5.295000000 GHz
-25.0	, and full		horar we	worker Mysty work you	Stop Freq 5.345000000 GHz
-45.0					CF Step 5.000000 MH <u>Auto</u> Mar
-65.0					Freq Offse 0 H;
-75.0 Center 5.32000 GHz				Span 50.00 MHz	Scale Type
#Res BW 1.0 MHz	#VBW 3.	0 MHz	Sweep	1.000 ms (1001 pts)	
MSG			STATU	S	





PCTEST Approved by: MEASUREMENT REPORT SAMSUNG FCC ID: A3LSMN960F (CERTIFICATION) **Quality Manager** Test Report S/N: EUT Type: Test Dates: Page 76 of 189 1M1804040063-05.A3L 4/4-5/18/2018 Portable Handset © 2018 PCTEST Engineering Laboratory, Inc. V 8.0 03/13/2018



				- • ×
DRREC SEN				quency
	Run dB	TYP DE		Auto Tune
		Mkr1 5.318 0.8	5 O GHZ	Auto Tune
				enter Freq
mannen			5.310	000000 GHz
				Start Freq
			5.260	000000 GHz
				Stop Free
<b>/</b>			5.360	000000 GHz
		Width Portrande a faller		CF Step
		e rowers) and the	Milly March 10. Auto	000000 MHz Mar
			F	req Offse
				0 H:
			S	Scale Type
		Span 1	00.0 MHz Log	Lir
#VBW 3.0 MHz		Sweep 1.000 ms (	1001 pts)	
	NO: Fast Trig: Free	PNO: Fast Trig: Free Run Atten: 26 dB	PNO: Fast Gain:Low Trig: Free Run Atten: 26 dB Mkr1 5.318 0.3 Mkr1	JRREC       SENSE:INT       06:05:26 PM Apr10, 2018       Fre         PNO: Fast       Trig: Free Run Atten: 26 dB       #Avg Type: RMS       TracE       2.3 4 5 0         Mkr1 5.318 5 GHz 0.86 dBm       0.86 dBm       CC       5.360         5.2600       5.3600       5.3600       5.3600         4       4       4       4       5.3600         5       5.3600       5.3600       5.3600       5.3600         4       4       4       4       4         4       4       4       4       4         5       5.3600       5.3600       5.3600       5.3600         5       5       5.3600       5.3600       5.3600         5       5       5.3600       5.3600       5.3600         4       4       4       4       5.3600       5.3600         5       5       5       5.3600       5.3600       5.3600       5.3600         4       4       4       4       4       5       5.3600       5.3600       5         5       5       5       5       5       5       5       5       5         4       4       4       4<

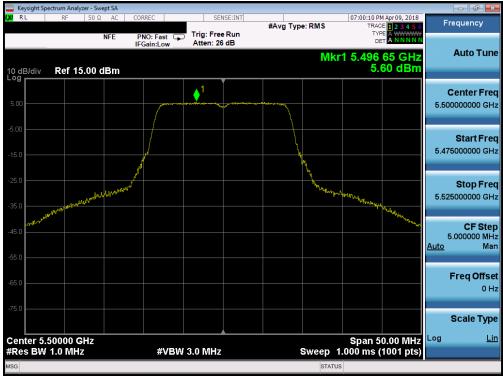


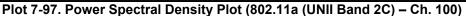


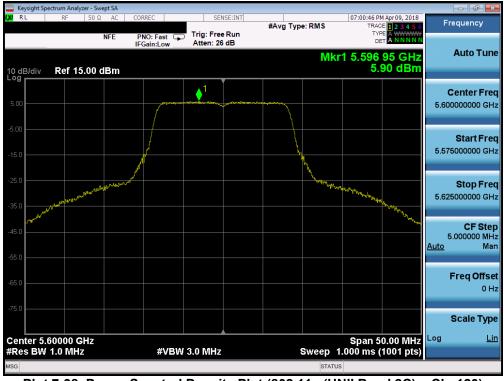
Plot 7-96. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2A) - Ch. 58)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 77 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 77 of 189
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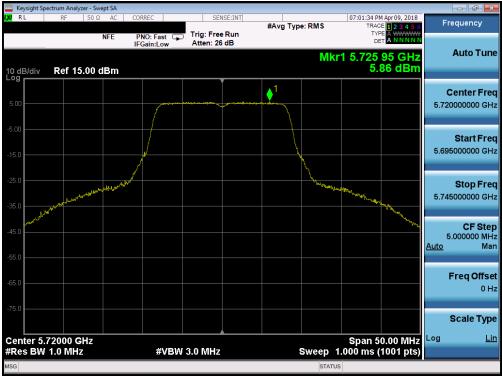




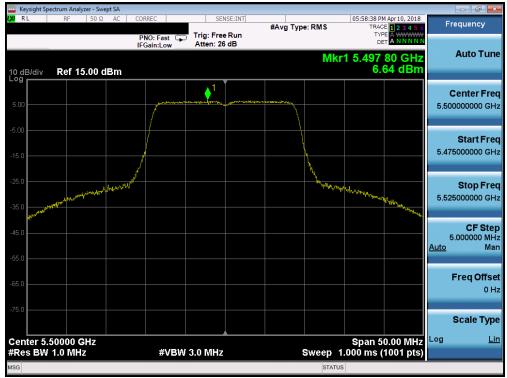
Plot 7-98. Power Spectral Density Plot (802.11a (UNII Band 2C) - Ch. 120)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 79 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 78 of 189
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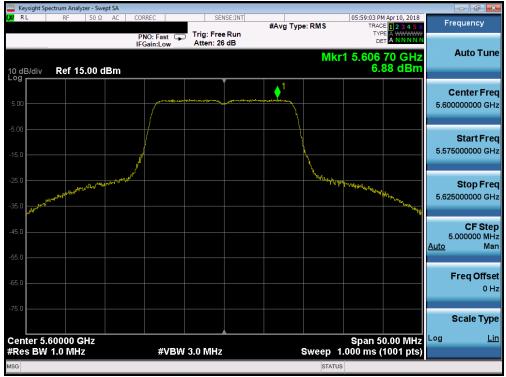
Plot 7-99. Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 144)



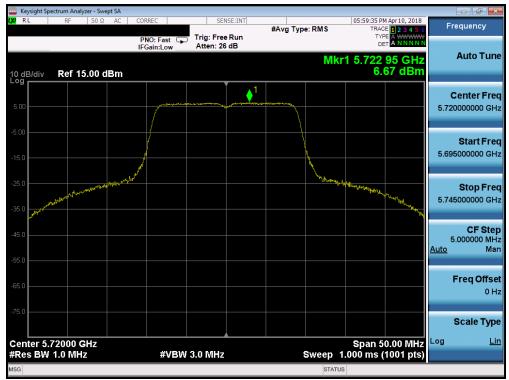
Plot 7-100. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) - Ch. 100)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 70 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 79 of 189
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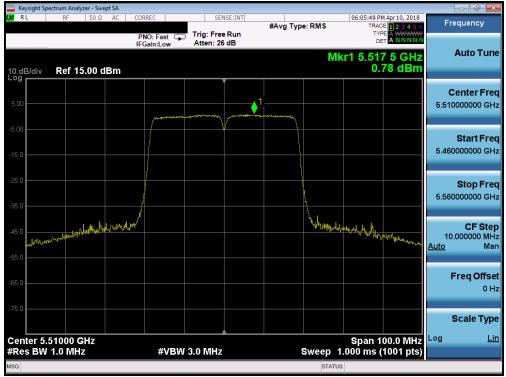
Plot 7-101. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 120)



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

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 90 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 80 of 189
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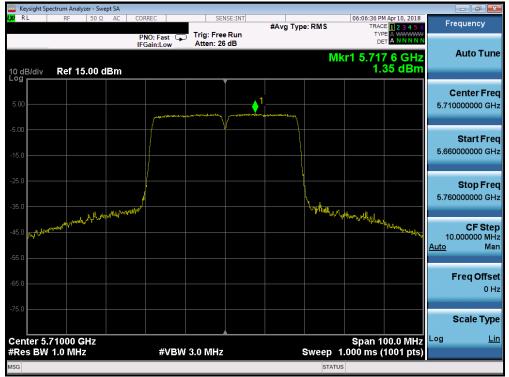
Plot 7-103. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)



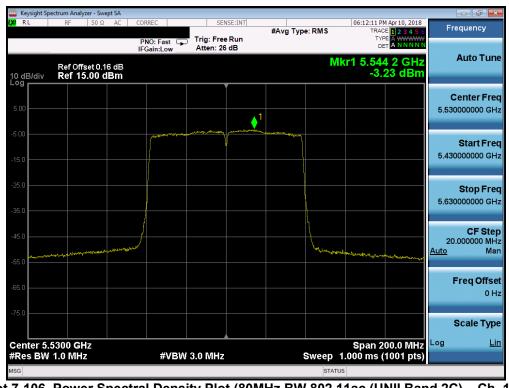
Plot 7-104. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) - Ch. 118)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 91 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 81 of 189
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Plot 7-105. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) - Ch. 142)



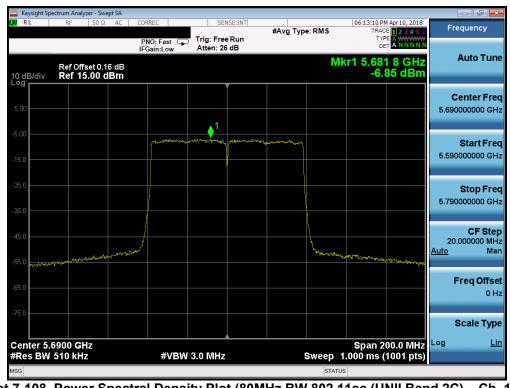
Plot 7-106. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) - Ch. 106)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 92 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 82 of 189
© 2018 PCTEST Engineering La	boratory. Inc.	•		V 8.0 03/13/2018



	Spectrum Analyz												- 0 💌
XU RL	RF	50Ω A	F	PNO: Fast Gain:Lov		SEI Frig: Free Atten: 26		#Avg Ty	pe: RMS	TRA	PM Apr 10, 2018 ACE 1 2 3 4 5 6 YPE A WWWWW DET A NNNNN	Fred	luency
I0 dB/div	Ref Offs Ref 15		в	-Gain.Lov	v .				М	kr1 5.62 -4	22 2 GHz .23 dBm	A	uto Tun
- <b>og</b>							1						<b>nter Fre</b> 00000 GH
5.00								and a second and a s					Start Fre 00000 GH
25.0 35.0													Stop Fre 00000 G⊦
45.0	en lan ala ang ang ang ang ang ang ang ang ang an	n for the second second	arrighter						houliner	an way and a second	r Charakaya	20.0 <u>Auto</u>	CF Ste 00000 MH Ma
65.0												Fr	eq Offs 0 H
75.0													cale Typ
Center : Res BV	5.6100 GH V 1.0 MHz	z		#V	'BW 3.	0 MHz			Sweep	Span 1.000 ms	200.0 MHz (1001 pts)	Log	Li
ISG									STATL	JS			

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: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 92 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 83 of 189
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	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
	5745	149	а	6	3.05	30.0	-26.95
	5785	157	а	6	2.66	30.0	-27.34
	5825	165	а	6	2.75	30.0	-27.25
e	5745	149	n (20MHz)	6.5/7.2 (MCS0)	3.76	30.0	-26.24
Band	5785	157	n (20MHz)	6.5/7.2 (MCS0)	3.79	30.0	-26.21
ä	5825	165	n (20MHz)	6.5/7.2 (MCS0)	3.12	30.0	-26.88
	5755	151	n (40MHz)	13.5/15 (MCS0)	-1.36	30.0	-31.36
	5795	159	n (40MHz)	13.5/15 (MCS0)	-1.63	30.0	-31.63
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-6.04	30.0	-36.04

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



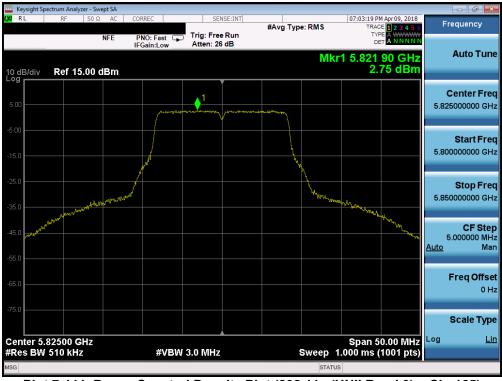
Plot 7-109. Power Spectral Density Plot (802.11a (UNII Band 3) - Ch. 149)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 94 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 84 of 189
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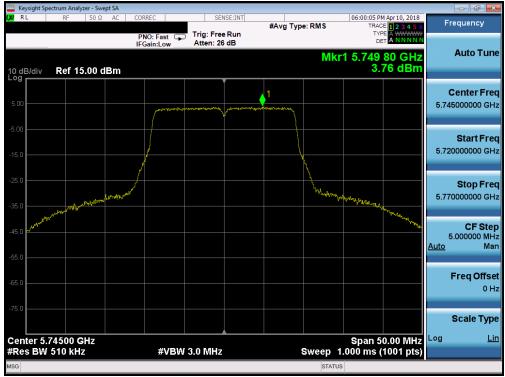




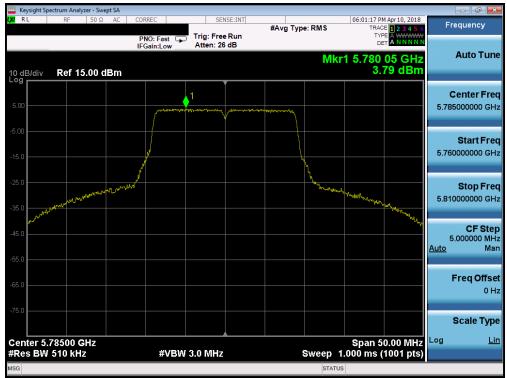
Plot 7-111. Power Spectral Density Plot (802.11a (UNII Band 3) - Ch. 165)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 95 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 85 of 189
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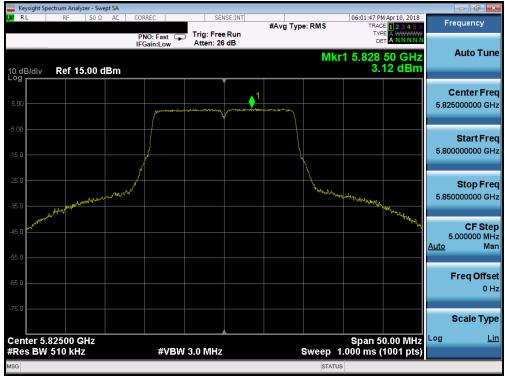
Plot 7-112. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 149)



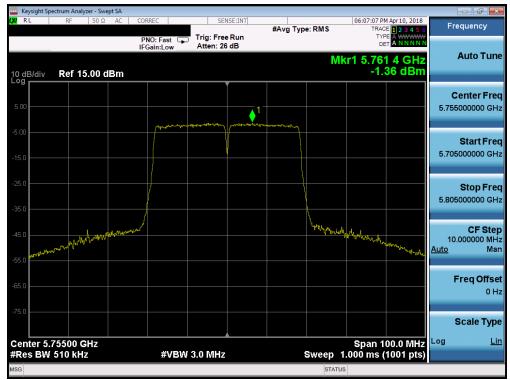
Plot 7-113. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) - Ch. 157)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 96 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 86 of 189
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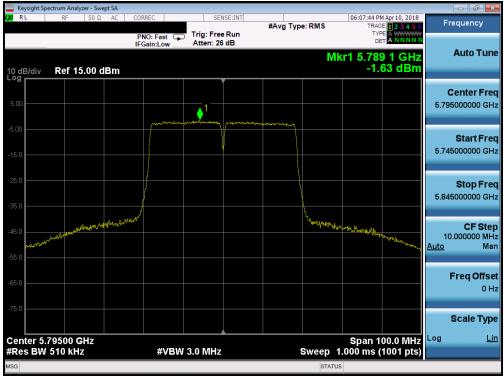
Plot 7-114. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 165)



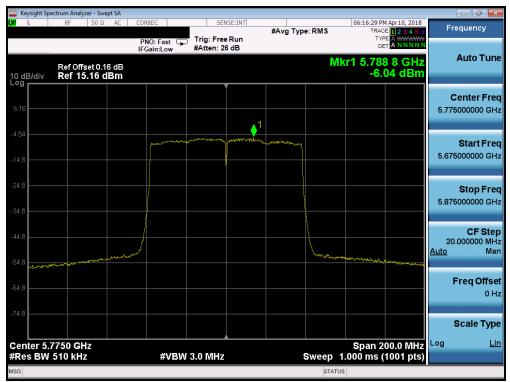
Plot 7-115. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) - Ch. 151)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 97 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 87 of 189
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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: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 99 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 88 of 189
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## **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]
	5180	36	а	6	6.99	11.0	-4.01
	5200	40	а	6	6.90	11.0	-4.10
	5240	48	а	6	6.94	11.0	-4.06
<del>~</del>	5180	36	n (20MHz)	6.5/7.2 (MCS0)	6.34	11.0	-4.66
Band 1	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.54	11.0	-4.46
ä	5240	48	n (20MHz)	6.5/7.2 (MCS0)	6.47	11.0	-4.53
	5190	38	n (40MHz)	13.5/15 (MCS0)	0.97	11.0	-10.03
	5230	46	n (40MHz)	13.5/15 (MCS0)	0.96	11.0	-10.04
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-4.03	11.0	-15.03
	5260	52	а	6	6.35	11.0	-4.65
	5280	56	а	6	6.13	11.0	-4.87
	5320	64	а	6	6.25	11.0	-4.75
ZA	5260	52	n (20MHz)	6.5/7.2 (MCS0)	5.86	11.0	-5.14
Band 2A	5280	56	n (20MHz)	6.5/7.2 (MCS0)	5.88	11.0	-5.12
Ba	5320	64	n (20MHz)	6.5/7.2 (MCS0)	5.73	11.0	-5.28
	5270	54	n (40MHz)	13.5/15 (MCS0)	1.42	11.0	-9.58
	5310	62	n (40MHz)	13.5/15 (MCS0)	1.20	11.0	-9.80
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-3.31	11.0	-14.31
	5500	100	а	6	6.15	11.0	-4.85
	5600	120	а	6	5.29	11.0	-5.71
	5720	144	а	6	4.92	11.0	-6.08
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	4.73	11.0	-6.27
O	5600	120	n (20MHz)	6.5/7.2 (MCS0)	5.04	11.0	-5.96
Band 2C	5720	144	n (20MHz)	6.5/7.2 (MCS0)	4.64	11.0	-6.36
an	5510	102	n (40MHz)	13.5/15 (MCS0)	0.35	11.0	-10.65
ш	5590	118	n (40MHz)	13.5/15 (MCS0)	-1.06	11.0	-12.06
	5710	142	n (40MHz)	13.5/15 (MCS0)	0.22	11.0	-10.78
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-4.12	11.0	-15.12
	5610	122	ac (80MHz)	29.3/32.5 (MCS0)	-4.48	11.0	-15.48
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-8.37	11.0	-19.37

Table 7-20. Conducted Power Spectral Density Measurements

FCC ID: A3LSMN960F	CALEST'	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:		Dage 80 of 190		
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 89 of 189		
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	ectrum Analyze						
LXI RL	RF	50 Ω AC	CORREC PNO: Fast	Trig: Free Run Atten: 26 dB	#Avg Type: RMS	06:20:00 PM Apr 10, 2018 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	Frequency
10 dB/div	Ref 15.	00 dBm		Atten 10 db	N	lkr1 5.177 15 GHz 6.99 dBm	Auto Tune
5.00				appendix and a second			Center Fred 5.18000000 GH:
-5.00			A A A A A A A A A A A A A A A A A A A				Start Free 5.155000000 GH:
-25.0	pot all the second data	The ashrony and a firm	A <sup>rr</sup>			make well when the she was a she was	<b>Stop Free</b> 5.205000000 GH:
45.0							CF Ste 5.000000 MH <u>Auto</u> Ma
-65.0							Freq Offse 0 H
-75.0							Scale Type
	18000 GH 1.0 MHz	z	#VBV	V 3.0 MHz	Sweep	Span 50.00 MHz 1.000 ms (1001 pts)	Log <u>Lir</u>
MSG					ST	ATUS	

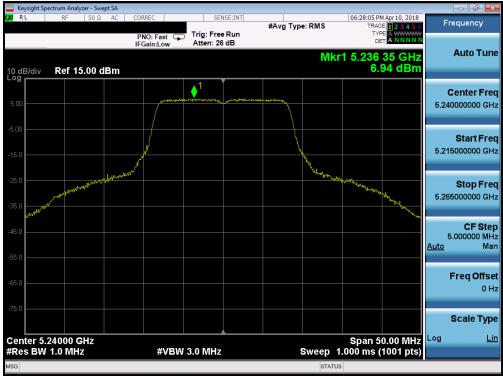
Plot 7-118. Power Spectral Density Plot (802.11a (UNII Band 1) - Ch. 36)



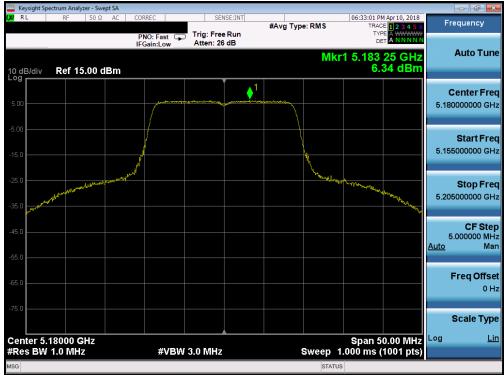
Plot 7-119. Power Spectral Density Plot (802.11a (UNII Band 1) - Ch. 40)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 00 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 90 of 189
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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: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 01 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 91 of 189
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	pectrum Analyze										
LXI RL	RF	50 Ω AC	CORREC	SEI	NSE:INT	#Avg Type:		06:33:30 PM TRACE	Apr10, 2018	Fre	quency
			PNO: Fast C	Trig: Free Atten: 26		•		TYPE	A WWWWW A N N N N N		
10 dB/div Log	Ref 15.	00 dBm					Mkr1	5.194 9 6.5	95 GHz 4 dBm		Auto Tune
5.00					and the second second						enter Freq 000000 GHz
-5.00						- A					Start Freq 000000 GHz
-25.0	www.nethodewarand	Land All and a start of the sta	407 <sup>40</sup>				"WESTAN CONSIDER	Shiple All of the Unit	Marylow way and the		Stop Fred 000000 GH2
-45.0										5.( <u>Auto</u>	CF Step 000000 MH: Mar
-65.0										F	<b>req Offse</b> 0 Ha
-75.0										s	cale Type
	.20000 GH	lz	#VB	W 3.0 MHz		Sv	weep 1.0	Span 50 00 ms (1	100 Mil 12	Log	Lin
MSG							STATUS				

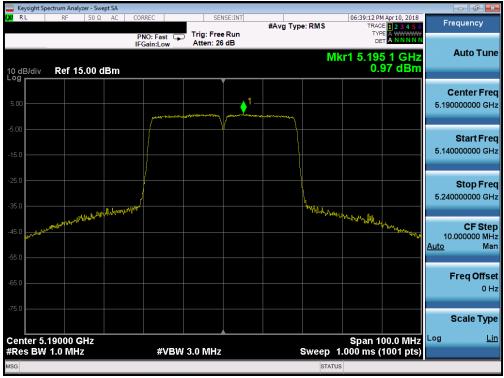
Plot 7-122. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) - Ch. 40)



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

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 02 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 92 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			





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



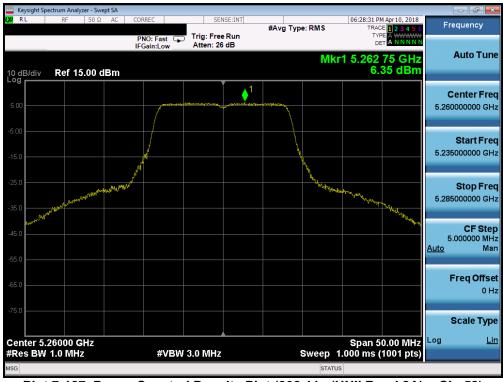
Plot 7-125. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) - Ch. 46)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 02 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 93 of 189
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Keysight	Spectrum Anal	yzer - Swep 50 Ω		CORREC			NSE:INT			05-44-45 0	M Apr 10, 2018		
KL	KF	50 Ω	AC	PNO: Fa	st 🖵	Trig: Fre	e Run	#Avg Typ	e:RMS	TRA	M Apr 10, 2018 CE 1 2 3 4 5 6 PE A WWWW ET A N N N N N	Free	quency
0 dB/div	Ref Of Ref 1	fset 0.18 5.00 dl	dB Bm	IFGain:Lo	ow	Atten: 20			MI	(r1 5.19	8 2 GHz 03 dBm	ļ	luto Tur
5.00						<b>↓</b> <sup>1</sup>							enter Fre 000000 G⊦
15.0					and the second second		/, <b></b> ,						Start Fre
25.0													Stop Fre
15.0	ang the man benefit	ne and a start	ranana						Muskyn	-idreby-loghtyribythyr	-	20.0 <u>Auto</u>	CF Ste 00000 MI Mi
i5.0 ——												Fi	r <b>eq Offs</b> 0 I
75.0													cale Typ
	5.2100 G W 1.0 MH			#	VBW	3.0 MHz			Sweep 1	Span 2 .000 ms	200.0 MHz (1001 pts)	Log	L
SG									STATU	5			

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: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 04 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 94 of 189
© 2018 PCTEST Engineering La	boratory Inc			V 8 0 03/13/2018



	Spectrum Analyz	er - Swept SA								
I <mark>XI</mark> RL	RF	50 Ω AC	CORREC	Trig: Fre		#Avg Typ	e: RMS	TRAC	Apr 10, 2018 <b>1 2 3 4 5 6</b> E A WWWWW T A N N N N N	Frequency
10 dB/div	Ref 15	.00 dBm	IFGain:Low	Atten: 26	a a B		Mkı	1 5.276		Auto Tune
5.00				1						Center Fred 5.280000000 GHz
-5.00										Start Free 5.255000000 GH:
-25.0	Martun	www.whereader	All and a second s				Nr.	hpidementer	lot with a	Stop Free 5.305000000 GH
-45.0									"Redrawdy	CF Step 5.000000 MH <u>Auto</u> Mar
-65.0										Freq Offse 0 H
Center 5	5.28000 G	Hz						Span 5	0.00 MHz	Scale Type
#Res BV	V 1.0 MHz		#VB\	V 3.0 MHz				1.000 ms ('	1001 pts)	
ISG							STATU	s		

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



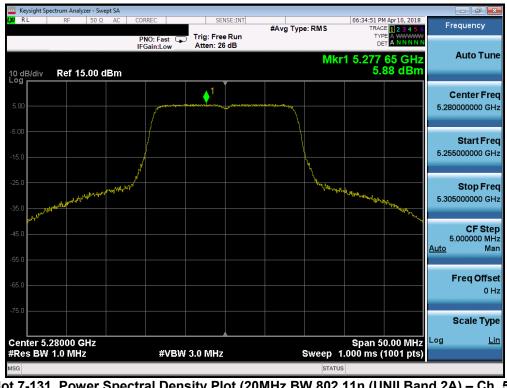
Plot 7-129. Power Spectral Density Plot (802.11a (UNII Band 2A) - Ch. 64)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 05 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 95 of 189
© 2018 PCTEST Engineering Laboratory. Inc.				V 8.0 03/13/2018



🔤 Keysight Spectrum Analyzer - :					- 6 -
🗶 RL RF 50	Ω AC CORREC	SENSE:INT	#Avg Type: RMS	06:34:27 PM Apr 10, 2018 TRACE 1 2 3 4 5 6	Frequency
10 dB/div Ref 15.00	PNO: Fast G	○ Trig: Free Run Atten: 26 dB	Mkr	1 5.258 15 GHz 5.86 dBm	Auto Tune
5.00		<b>↓</b> 1			Center Freq 5.26000000 GHz
-5.00					Start Fred 5.235000000 GHz
-25.0	warsward -		United and the second s	Anara de ante and an and an and an an and an	<b>Stop Freq</b> 5.285000000 GHz
-45.0					CF Step 5.000000 MH: <u>Auto</u> Mar
-65.0					Freq Offse 0 H
-75.0				Shon 50 00 Mile	Scale Type
Center 5.26000 GHz #Res BW 1.0 MHz		V 3.0 MHz	Sweep 1	Span 50.00 MHz .000 ms (1001 pts)	
MSG			STATUS	3	

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



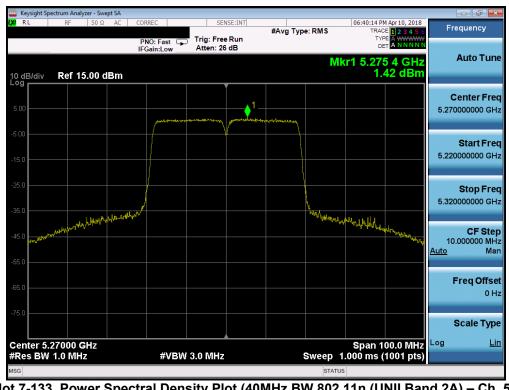
Plot 7-131. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) - Ch. 56)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dago 06 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 96 of 189
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Keysight Spectrum Analyzer - Swept SA				
KL RF 50Ω AC		#Avg Type		2 3 4 5 6 Frequency
	PNO: Fast Trig: Free IFGain:Low Atten: 26		DET /	
10 dB/div Ref 15.00 dBm			Mkr1 5.324 3 5.73	0 GHz Auto Tune 6 dBm
		<b>↓</b> 1		Center Fred
5.00		and the second s		5.320000000 GHz
-5.00				Start Fred
-15.0			<b>V</b>	5.295000000 GHz
-25.0	2 <sup>4</sup>		Huter war war war we	Stop Fred
-35.0			wardy water	5.345000000 GHz
-45.0				CF Step
-55.0				5.000000 MH <u>Auto</u> Mar
-65.0				FreqOffse
				0 H
-75.0				Scale Type
Center 5.32000 GHz	#\/D\%/ 2 0.54U-		Span 50.0	00 MHz
#Res BW 1.0 MHz	#VBW 3.0 MHz		Sweep 1.000 ms (10	

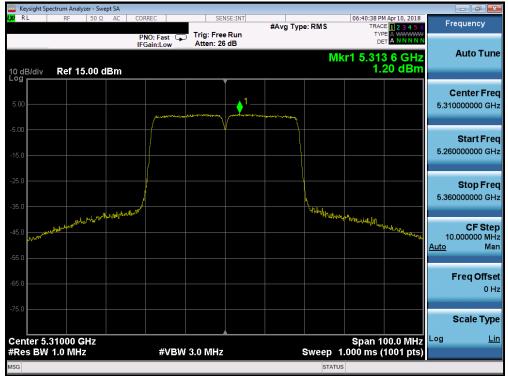
Plot 7-132. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) - Ch. 64)



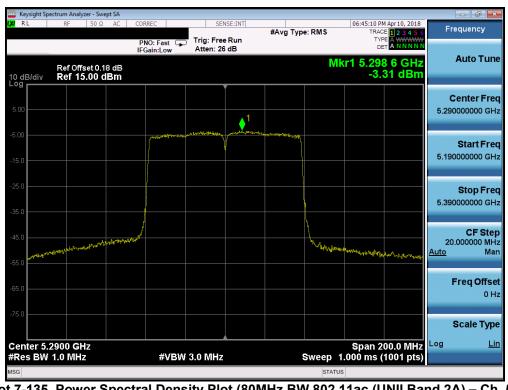
Plot 7-133. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) - Ch. 54)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dago 07 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset	Page 97 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018		





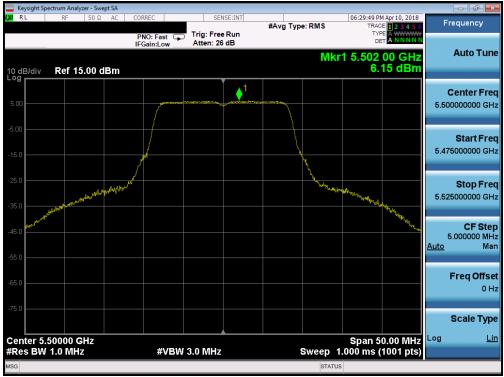
Plot 7-134. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) - Ch. 62)



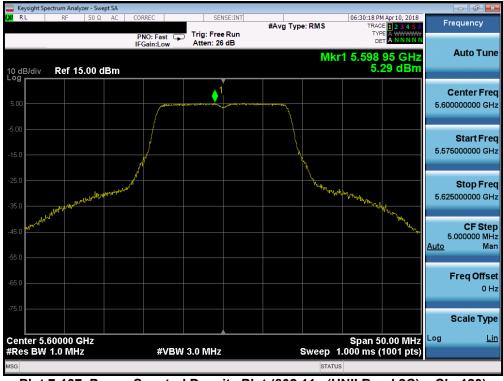
Plot 7-135. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2A) - Ch. 58)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 08 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 98 of 189
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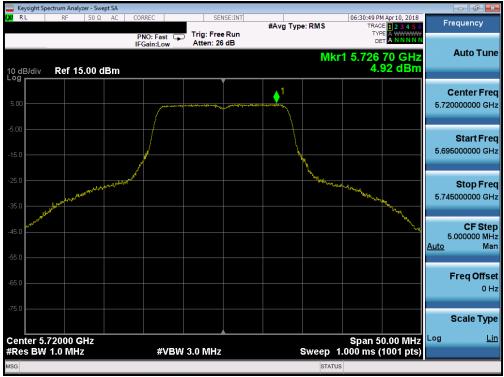




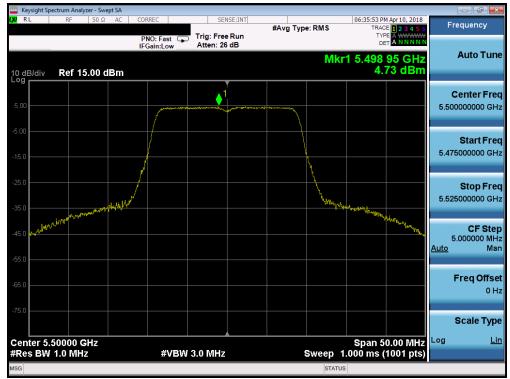
Plot 7-137. Power Spectral Density Plot (802.11a (UNII Band 2C) - Ch. 120)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 00 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 99 of 189
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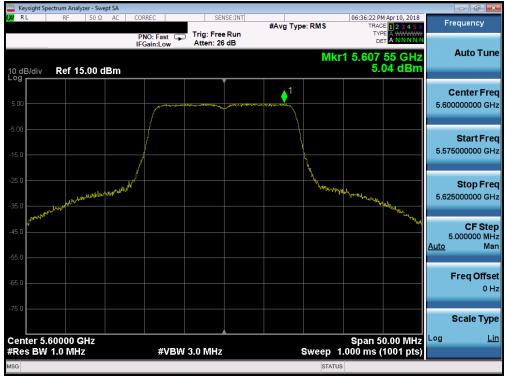




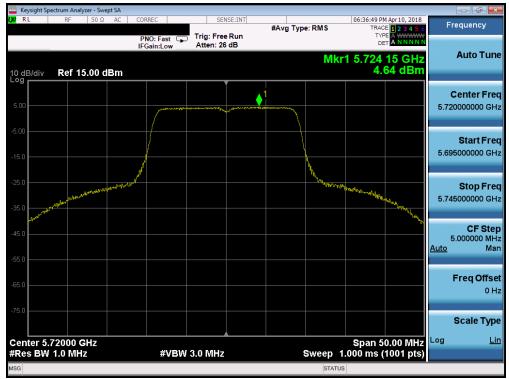
Plot 7-139. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) - Ch. 100)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 100 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 100 of 189
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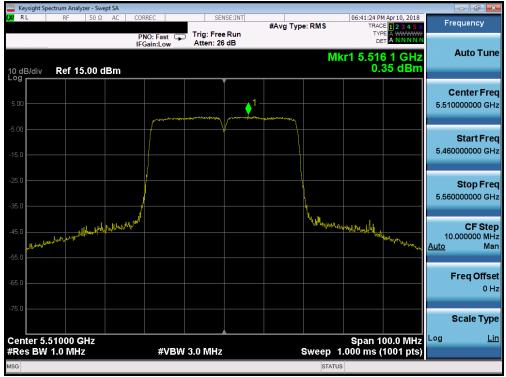
Plot 7-140. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 120)



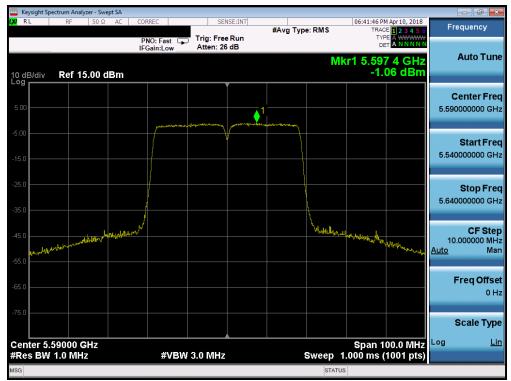
Plot 7-141. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) - Ch. 144)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 101 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 101 of 189
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Plot 7-142. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)



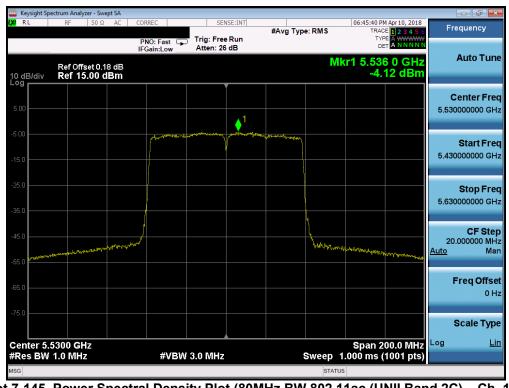
Plot 7-143. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) - Ch. 118)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 102 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 102 of 189
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Plot 7-144. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) - Ch. 142)



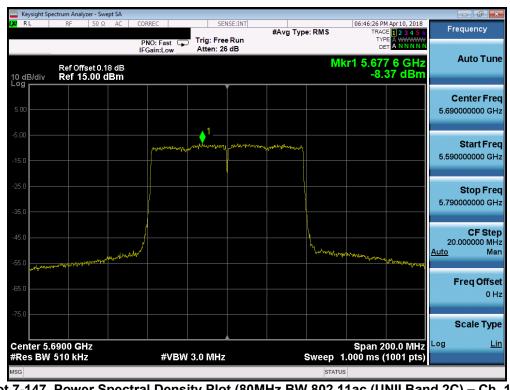
Plot 7-145. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) - Ch. 106)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 102 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 103 of 189
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🔤 Keysight Spectrum Analy								
<b>lxi</b> RL RF	50 Ω AC COF	REC Trig: Fi IO: Fast Atten:		#Avg Type	:RMS	06:46:05 PM A TRACE TYPE DET	pr 10, 2018 2 3 4 5 6 4 4 4 4 4 4 5 6 4 4 4 4 4 4 5 6 4 4 4 4 4 5 6 4 4 4 5 6 4 4 5 6 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Frequency
	set 0.18 dB 5.00 dBm	ain:Low Atten.	20 08		Mk	r1 5.622		Auto Tun
5.00			↓ ↓1					<b>Center Fre</b> 5.610000000 GH
-5.00			a personal and a second	and the second				<b>Start Fre</b> 5.510000000 GH
-25.0								<b>Stop Fre</b> 5.710000000 GH
45.0 55.0	man same grander and				honoranomo	Vanderstanderen solar Augusten	Nr. Angle John gings	<b>CF Ste</b> 20.000000 MH <u>Auto</u> Ma
65.0								Freq Offso 0 ⊦
-75.0 Center 5.6100 GI	łz					Span 200	.v 1911 12	Scale Typ
#Res BW 1.0 MH	2	#VBW 3.0 MH	Z		Sweep 1.	000 ms (10	iut pts)	

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



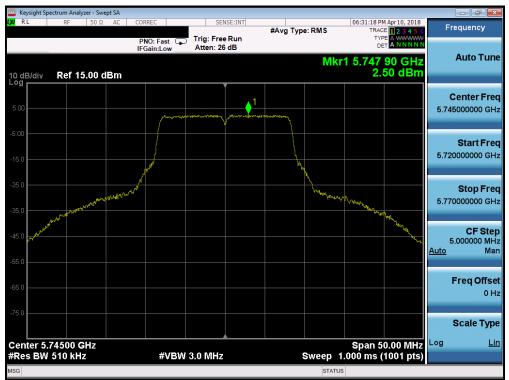
Plot 7-147. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) - Ch. 138)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 104 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 104 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			



	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
	5745	149	а	6	2.50	30.0	-27.50
	5785	157	а	6	1.97	30.0	-28.03
	5825	165	а	6	2.00	30.0	-28.00
e	5745	149	n (20MHz)	6.5/7.2 (MCS0)	2.45	30.0	-27.55
Band	5785	157	n (20MHz)	6.5/7.2 (MCS0)	1.70	30.0	-28.30
ä	5825	165	n (20MHz)	6.5/7.2 (MCS0)	2.20	30.0	-27.80
	5755	151	n (40MHz)	13.5/15 (MCS0)	-2.46	30.0	-32.46
	5795	159	n (40MHz)	13.5/15 (MCS0)	-3.40	30.0	-33.40
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-4.95	30.0	-34.95

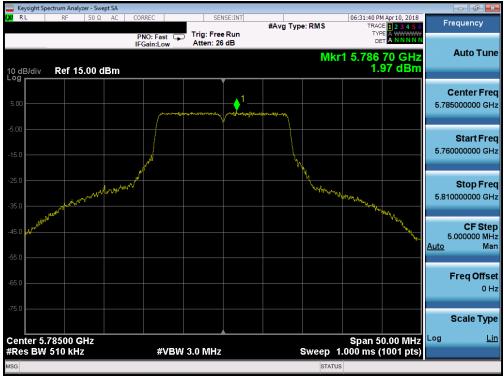
Table 7-21. Band 3 Conducted Power Spectral Density Measurements



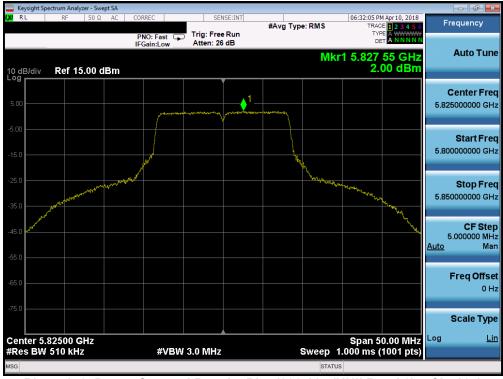
Plot 7-148. Power Spectral Density Plot (802.11a (UNII Band 3) - Ch. 149)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 105 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 105 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			





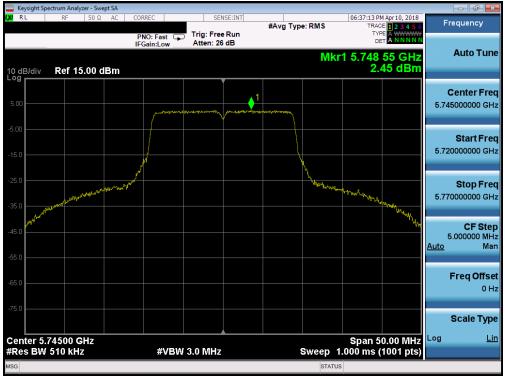




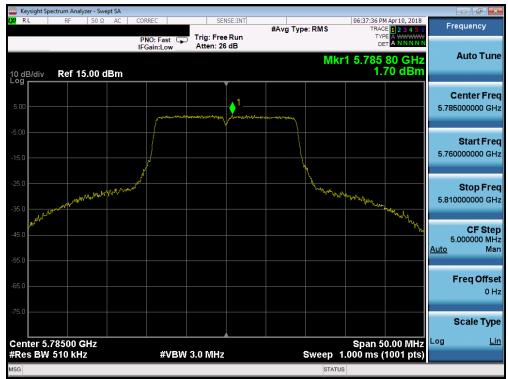
Plot 7-150. Power Spectral Density Plot (802.11a (UNII Band 3) - Ch. 165)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 106 of 180
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 106 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			





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



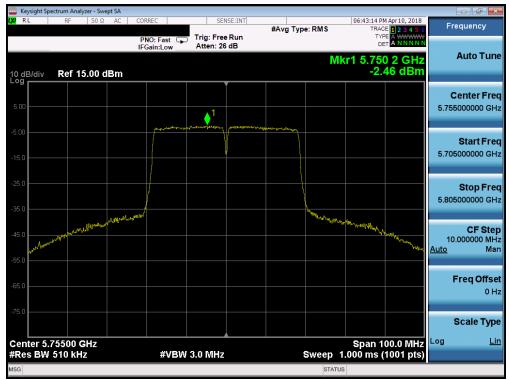
Plot 7-152. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) - Ch. 157)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 107 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 107 of 189
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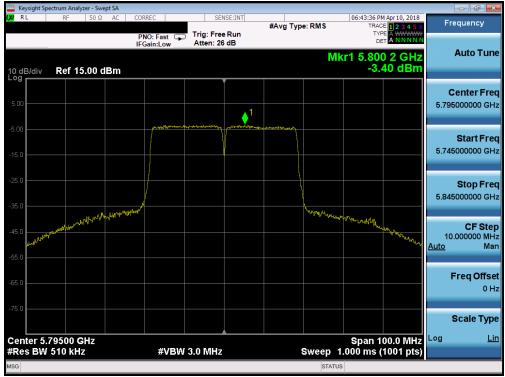
Plot 7-153. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 165)



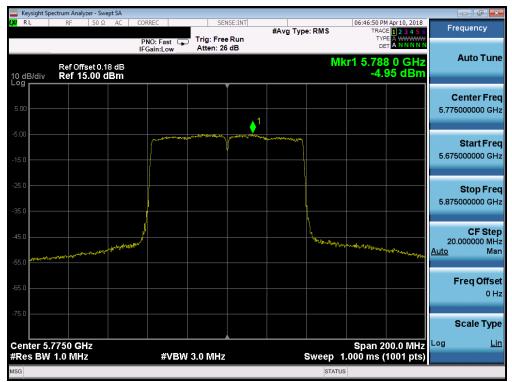
Plot 7-154. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) - Ch. 151)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 109 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 108 of 189
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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: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 100 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 109 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			



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]
	5180	36	а	6.5/7.2 (MCS0)	5.79	6.99	9.44	11.0	-1.56
	5200	40	а	6.5/7.2 (MCS0)	5.80	6.90	9.39	11.0	-1.61
	5240	48	а	6.5/7.2 (MCS0)	5.80	6.94	9.42	11.0	-1.58
-	5180	36	n (20MHz)	6.5/7.2 (MCS0)	5.54	6.34	8.97	11.0	-2.03
Band	5200	40	n (20MHz)	6.5/7.2 (MCS0)	6.27	6.54	9.42	11.0	-1.58
ä	5240	48	n (20MHz)	6.5/7.2 (MCS0)	5.82	6.47	9.17	11.0	-1.83
	5190	38	n (40MHz)	13.5/15 (MCS0)	1.68	0.97	4.35	11.0	-6.65
	5230	46	n (40MHz)	13.5/15 (MCS0)	1.46	0.96	4.23	11.0	-6.77
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	-3.24	-4.03	-0.61	11.0	-11.61
	5260	52	а	6.5/7.2 (MCS0)	5.94	6.35	9.16	11.0	-1.84
	5280	56	а	6.5/7.2 (MCS0)	6.12	6.13	9.13	11.0	-1.87
	5320	64	а	6.5/7.2 (MCS0)	5.85	6.25	9.06	11.0	-1.94
2A	5260	52	n (20MHz)	6.5/7.2 (MCS0)	5.83	5.86	8.85	11.0	-2.15
Band 2A	5280	56	n (20MHz)	6.5/7.2 (MCS0)	6.13	5.88	9.02	11.0	-1.98
Ba	5320	64	n (20MHz)	6.5/7.2 (MCS0)	6.16	5.73	8.96	11.0	-2.04
	5270	54	n (40MHz)	13.5/15 (MCS0)	0.36	1.42	3.93	11.0	-7.07
	5310	62	n (40MHz)	13.5/15 (MCS0)	0.86	1.20	4.04	11.0	-6.96
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	-3.02	-3.31	-0.15	11.0	-11.15
	5500	100	а	6.5/7.2 (MCS0)	5.60	6.15	8.89	11.0	-2.11
	5600	120	а	6.5/7.2 (MCS0)	5.90	5.29	8.61	11.0	-2.39
	5720	144	а	6.5/7.2 (MCS0)	5.86	4.92	8.43	11.0	-2.57
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	6.64	4.73	8.80	11.0	-2.20
0	5600	120	n (20MHz)	6.5/7.2 (MCS0)	6.88	5.04	9.07	11.0	-1.93
Band 2C	5720	144	n (20MHz)	6.5/7.2 (MCS0)	6.67	4.64	8.78	11.0	-2.22
an	5510	102	n (40MHz)	13.5/15 (MCS0)	0.78	0.35	3.58	11.0	-7.42
	5590	118	n (40MHz)	13.5/15 (MCS0)	1.41	-1.06	3.36	11.0	-7.64
	5710	142	n (40MHz)	13.5/15 (MCS0)	1.35	0.22	3.83	11.0	-7.17
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	-3.23	-4.12	-0.64	11.0	-11.64
	5610	122	ac (80MHz)	29.3/32.5 (MCS0)	-4.23	-4.48	-1.34	11.0	-12.34
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	-6.85	-8.37	-4.53	11.0	-15.53

Table 7-22. 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]		Summed MIMO Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]
	5745	149	а	6.5/7.2 (MCS0)	3.05	2.50	5.79	30.0	-24.21
	5785	157	а	6.5/7.2 (MCS0)	2.66	1.97	5.34	30.0	-24.66
	5825	165	а	6.5/7.2 (MCS0)	2.75	2.00	5.40	30.0	-24.60
<b>m</b>	5745	149	n (20MHz)	6.5/7.2 (MCS0)	3.76	2.45	6.16	30.0	-23.84
Band	5785	157	n (20MHz)	6.5/7.2 (MCS0)	3.79	1.70	5.88	30.0	-24.12
ä	5825	165	n (20MHz)	6.5/7.2 (MCS0)	3.12	2.20	5.69	30.0	-24.31
	5755	151	n (40MHz)	13.5/15 (MCS0)	-1.36	-2.46	1.13	30.0	-28.87
	5795	159	n (40MHz)	13.5/15 (MCS0)	-1.63	-3.40	0.58	30.0	-29.42
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	-6.04	-4.95	-2.45	30.0	-32.45

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

FCC ID: A3LSMN960F	<u> <u> <u> </u> <u> PCTEST</u> </u></u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 110 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 110 of 189
© 2018 PCTEST Engineering La	horatory Inc			V 8 0 03/13/2018



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 5.54 dBm for Antenna-1 and 6.34 dBm for Antenna-2.

Antenna 1 + Antenna 2 = MIMO

(5.54 dBm + 6.34 dBm) = (3.58 mW + 4.30 mW) = 7.88 mW = 8.97 dBm

FCC ID: A3LSMN960F	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 111 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 111 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			



# 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 5 MHz above or below 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 [μV/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: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 112 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 112 of 189
© 2018 PCTEST Engineering La	V 8 0 03/13/2018			



### 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.

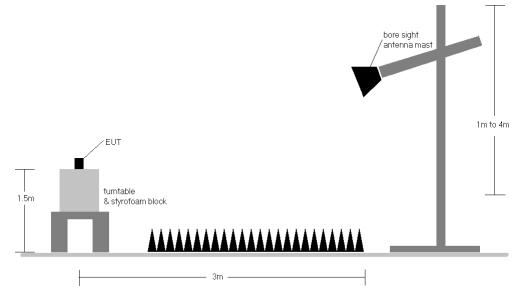


Figure 7-5. Test Instrument & Measurement Setup

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 112 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 113 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			



### **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**

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

### Radiated Band Edge Measurement Offset

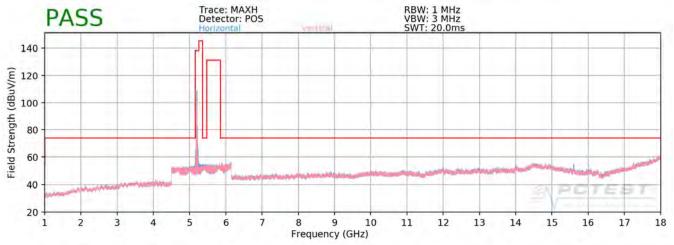
• The amplitude offset shown in the radiated restricted band edge plots in Section 7.6 was calculated using the formula:

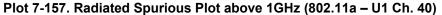
Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

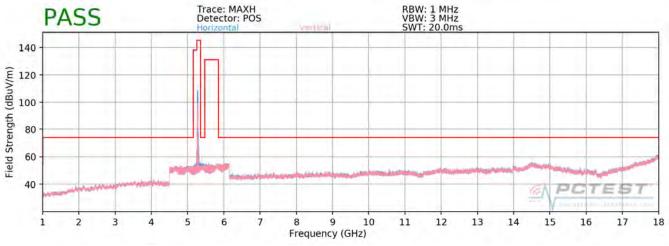
FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 111 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 114 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			

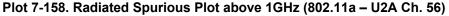


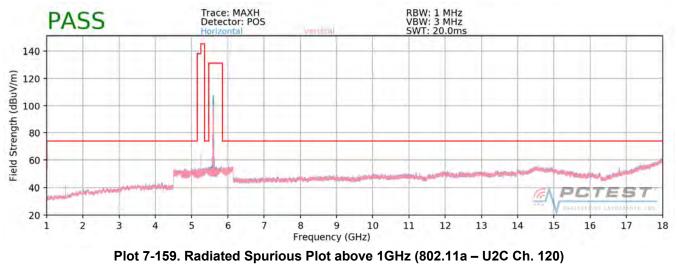
# 7.6.1 Antenna-1 Radiated Spurious Emission Measurements







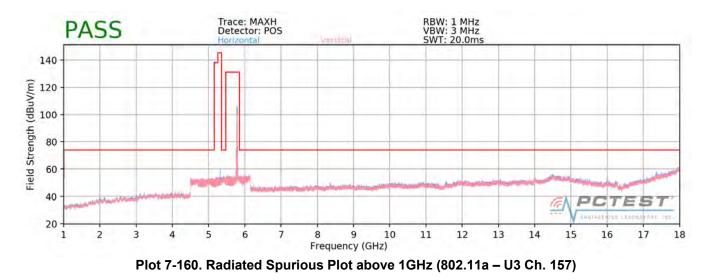




FCC ID: A3LSMN960F	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 115 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 115 of 189
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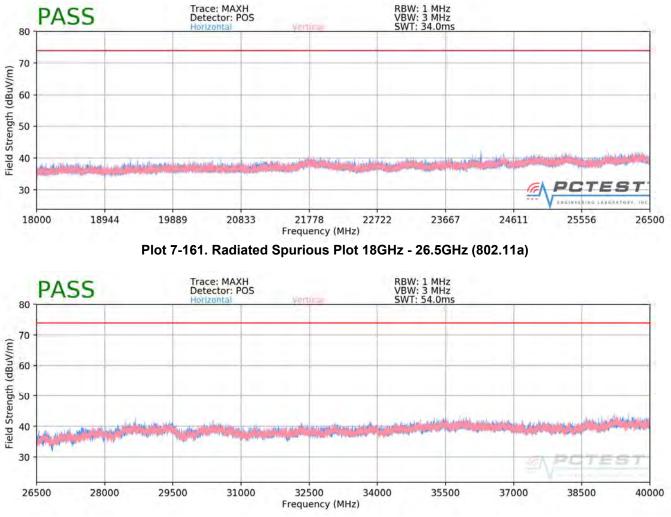




FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 116 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 116 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			



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



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

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 117 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 117 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			



## 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	-	-	-59.30	11.49	0.00	50.64	68.20	-17.56
*	15540.00	Average	V	288	255	-78.37	13.64	0.00	42.27	53.98	-11.71
*	15540.00	Peak	V	288	255	-67.61	13.64	0.00	53.03	73.98	-20.95
*	20720.00	Average	V	-	-	-77.01	7.94	-9.54	28.39	53.98	-25.59
*	20720.00	Peak	V	-	-	-66.24	7.94	-9.54	39.16	73.98	-34.82
	25900.00	Peak	V	-	-	-65.05	8.46	-9.54	40.87	68.20	-27.33

## Table 7-25. Radiated Measurements

Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: Operating Frequency: Channel:

802.11a	
6Mbps	
1 & 3 Meters	
5200MHz	
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	-	-	-67.98	11.65	0.00	50.67	68.20	-17.53
*	15600.00	Average	V	-	-	-79.18	13.30	0.00	41.12	53.98	-12.86
*	15600.00	Peak	V	-	-	-66.75	13.30	0.00	53.55	73.98	-20.43
*	20800.00	Average	V	-	-	-77.26	7.95	-9.54	28.15	53.98	-25.82
*	20800.00	Peak	V	-	-	-65.46	7.95	-9.54	39.95	73.98	-34.02
	26000.00	Peak	V	-	-	-64.46	8.60	-9.54	41.60	68.20	-26.60

### Table 7-26. Radiated Measurements

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 119 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 118 of 189
© 2018 PCTEST Engineering La	V 8 0 03/13/2018			



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	109	370	-67.41	11.69	0.00	51.28	68.20	-16.92
*	15720.00	Average	V	104	346	-79.08	12.81	0.00	40.73	53.98	-13.25
*	15720.00	Peak	V	104	346	-66.98	12.81	0.00	52.83	73.98	-21.15
*	20960.00	Average	V	-	-	-77.22	7.91	-9.54	28.15	53.98	-25.83
*	20960.00	Peak	V	-	-	-66.63	7.91	-9.54	38.74	73.98	-35.24
	26200.00	Peak	V	-	-	-64.81	8.62	-9.54	41.27	68.20	-26.93

# Table 7-27. Radiated Measurements

Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: Operating Frequency: Channel: 802.11a 6Mbps 1 & 3 Meters 5180MHz 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	-	-	-69.23	13.17	0.00	50.94	68.20	-17.26
*	15540.00	Average	V	-	-	-81.91	14.08	0.00	39.17	53.98	-14.81
*	15540.00	Peak	V	-	-	-70.15	14.08	0.00	50.93	73.98	-23.05
*	20720.00	Average	V	100	19	-76.09	7.94	-9.54	29.31	53.98	-24.67
*	20720.00	Peak	V	100	19	-65.82	7.94	-9.54	39.58	73.98	-34.40
	25900.00	Peak	V	-	-	-63.80	8.46	-9.54	42.12	68.20	-26.08

Table 7-28. Radiated Measurements with WCP

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: Test Dates:		EUT Type:		Dage 110 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 119 of 189
© 2018 PCTEST Engineering La	V 8 0 03/13/2018			



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	400	1	-67.25	11.69	0.00	51.44	68.20	-16.76
*	15780.00	Average	V	111	345	-79.02	12.87	0.00	40.85	53.98	-13.12
*	15780.00	Peak	V	111	345	-67.65	12.87	0.00	52.22	73.98	-21.75
*	21040.00	Average	V	-	-	-77.07	7.92	-9.54	28.31	53.98	-25.67
*	21040.00	Peak	V	-	-	-66.43	7.92	-9.54	38.95	73.98	-35.03
	26300.00	Peak	V	-	-	-64.11	8.73	-9.54	42.08	68.20	-26.12

 Table 7-29. Radiated Measurements

Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: Operating Frequency: Channel: 802.11a 6Mbps 1 & 3 Meters 5280MHz 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	113	4	-66.97	11.55	0.00	51.58	68.20	-16.62
*	15840.00	Average	V	109	359	-78.95	12.86	0.00	40.91	53.98	-13.07
*	15840.00	Peak	V	109	359	-66.69	12.86	0.00	53.17	73.98	-20.81
*	21120.00	Average	V	-	-	-76.70	7.96	-9.54	28.72	53.98	-25.26
*	21120.00	Peak	V	-	-	-65.91	7.96	-9.54	39.51	73.98	-34.47
	26400.00	Peak	V	-	-	-64.95	8.94	-9.54	41.45	68.20	-26.75

Table 7-30. Radiated Measurements

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 120 of 180
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 120 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			



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	174	24	-78.11	11.81	0.00	40.70	53.98	-13.28
*	10640.00	Peak	V	174	24	-66.72	11.81	0.00	52.09	73.98	-21.89
*	15960.00	Average	V	105	359	-78.91	13.29	0.00	41.38	53.98	-12.60
*	15960.00	Peak	V	105	359	-66.21	13.29	0.00	54.08	73.98	-19.90
*	21280.00	Average	V	-	-	-76.60	8.04	-9.54	28.90	53.98	-25.08
*	21280.00	Peak	V	-	-	-66.04	8.04	-9.54	39.46	73.98	-34.52
	26600.00	Peak	V	-	-	-47.34	-8.30	-9.54	41.82	68.20	-26.38

# Table 7-31. Radiated Measurements

Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: Operating Frequency: Channel:

802.11a	
6Mbps	
1 & 3 Meters	
5320MHz	
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	110	353	-80.02	13.53	0.00	40.51	53.98	-13.47
*	10640.00	Peak	V	110	353	-68.80	13.53	0.00	51.73	73.98	-22.25
*	15960.00	Average	V	121	316	-81.53	15.18	0.00	40.65	53.98	-13.33
*	15960.00	Peak	V	121	316	-69.99	15.18	0.00	52.19	73.98	-21.79
*	21280.00	Average	V	100	313	-76.36	8.04	-9.54	29.14	53.98	-24.84
*	21280.00	Peak	V	100	313	-65.31	8.04	-9.54	40.19	73.98	-33.79
	26600.00	Peak	V	-	-	-47.98	-8.30	-9.54	41.18	68.20	-27.02

## Table 7-32. Radiated Measurements with WCP

FCC ID: A3LSMN960F	CALEST'	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager			
Test Report S/N:	Test Dates:	EUT Type:		Dage 121 of 190			
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 121 of 189			



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	132	32	-76.94	12.00	0.00	42.06	53.98	-11.92
*	11000.00	Peak	V	132	32	-65.42	12.00	0.00	53.58	73.98	-20.40
	16500.00	Peak	V	105	1	-65.77	12.13	0.00	53.36	68.20	-14.84
	22000.00	Peak	V	-	-	-65.35	8.43	-9.54	40.54	68.20	-27.66
	27500.00	Peak	V	-	-	-45.70	-8.80	-9.54	42.96	68.20	-25.24

Table 7-33. Radiated M	leasurements
------------------------	--------------

Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: Operating Frequency: Channel: 802.11a 6Mbps 1 & 3 Meters 5600MHz 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	V	160	20	-76.15	11.34	0.00	42.19	53.98	-11.79
*	11200.00	Peak	V	160	20	-64.51	11.34	0.00	53.83	73.98	-20.15
	16800.00	Peak	V	132	0	-66.42	13.98	0.00	54.56	68.20	-13.64
*	22400.00	Average	V	-	-	-77.18	8.11	-9.54	28.39	53.98	-25.59
*	22400.00	Peak	V	-	-	-66.96	8.11	-9.54	38.61	73.98	-35.37
	28000.00	Peak	V	-	-	-46.45	-9.26	-9.54	41.75	68.20	-26.45

Table 7-34. Radiated Measurements

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 122 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset	Page 122 of 189	
© 2018 PCTEST Engineering La	V 8 0 03/13/2018			



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	105	20	-77.17	11.69	0.00	41.52	53.98	-12.46
*	11440.00	Peak	V	105	20	-65.18	11.69	0.00	53.51	73.98	-20.47
	17160.00	Peak	V	-	-	-67.21	15.49	0.00	55.28	68.20	-12.92
*	22880.00	Average	V	-	-	-77.23	8.28	-9.54	28.51	53.98	-25.47
*	22880.00	Peak	V	-	-	-66.90	8.28	-9.54	38.84	73.98	-35.14
	28600.00	Peak	V	-	-	-46.86	-9.08	-9.54	41.52	68.20	-26.68

# Table 7-35. Radiated Measurements

Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: Operating Frequency: Channel: 802.11a 6Mbps 1 & 3 Meters 5600MHz 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	119	348	-79.57	14.64	0.00	42.07	53.98	-11.91
*	11200.00	Peak	V	119	348	-67.84	14.64	0.00	53.80	73.98	-20.18
	16800.00	Peak	V	112	302	-70.67	16.54	0.00	52.87	68.20	-15.33
*	22400.00	Average	V	100	339	-75.96	8.11	-9.54	29.61	53.98	-24.37
*	22400.00	Peak	V	100	339	-65.60	8.11	-9.54	39.97	73.98	-34.01
	28000.00	Peak	V	100	320	-47.19	-9.26	-9.54	41.01	68.20	-27.19

Table 7-36. Radiated Measurements with WCP

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 102 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 123 of 189
© 2018 PCTEST Engineering La	V 8 0 03/13/2018			



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	105	24	-77.89	11.71	0.00	40.82	53.98	-13.16
*	11490.00	Peak	V	105	24	-66.52	11.71	0.00	52.19	73.98	-21.79
	17235.00	Peak	V	100	336	-67.27	16.95	0.00	56.68	68.20	-11.52
*	22980.00	Average	V	-	-	-76.89	8.16	-9.54	28.73	53.98	-25.25
*	22980.00	Peak	V	-	-	-66.48	8.16	-9.54	39.14	73.98	-34.84
	28725.00	Peak	V	-	-	-46.04	-9.24	-9.54	42.18	68.20	-26.02

# Table 7-37. Radiated Measurements

Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: Operating Frequency: Channel: 802.11a 6Mbps 1 & 3 Meters 5785MHz 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	110	314	-80.87	14.64	0.00	40.77	53.98	-13.21
*	11570.00	Peak	V	110	314	-68.76	14.64	0.00	52.88	73.98	-21.10
	17355.00	Peak	V	-	-	-73.11	23.38	0.00	57.27	68.20	-10.93
	23140.00	Peak	V	-	-	-65.94	8.37	-9.54	39.89	68.20	-28.31
	28925.00	Peak	V	-	-	-45.23	-9.65	-9.54	42.58	68.20	-25.62

 Table 7-38. Radiated Measurements

FCC ID: A3LSMN960F	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 124 of 190
1M1804040063-05.A3L 4/4-5/18/2018		Portable Handset	Page 124 of 189	
© 2018 PCTEST Engineering La	V 8 0 03/13/2018			



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	117	303	-79.96	16.13	0.00	43.17	53.98	-10.81
*	11650.00	Peak	V	117	303	-68.85	16.13	0.00	54.28	73.98	-19.70
	17475.00	Peak	V	-	-	-70.81	22.25	0.00	58.44	68.20	-9.76
	23300.00	Peak	V	-	-	-66.04	8.50	-9.54	39.92	68.20	-28.28
	29125.00	Peak	V	-	-	-44.74	-9.87	-9.54	42.85	68.20	-25.35

 Table 7-39. Radiated Measurements

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

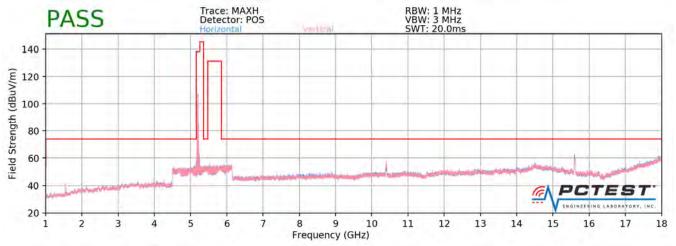
	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11650.00	Average	V	169	308	-80.48	16.13	0.00	42.65	53.98	-11.33
*	11650.00	Peak	V	169	308	-70.04	16.13	0.00	53.09	73.98	-20.89
	17475.00	Peak	V	-	-	-72.00	22.25	0.00	57.25	68.20	-10.95
	23300.00	Peak	V	100	301	-61.53	8.50	-9.54	44.43	68.20	-23.77
	29125.00	Peak	V	-	-	-44.41	-9.87	-9.54	43.18	68.20	-25.02

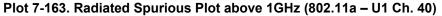
Table 7-40. Radiated Measurements with WCP

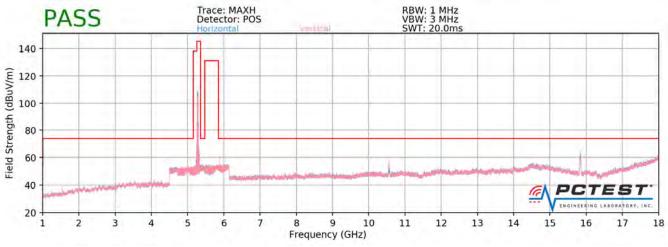
FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 125 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 125 of 189
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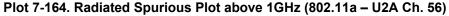


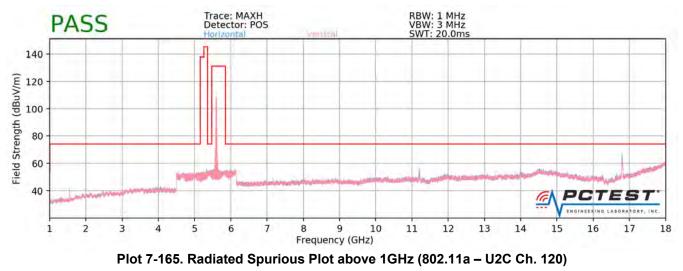
# 7.6.2 Antenna-2 Radiated Spurious Emission Measurements





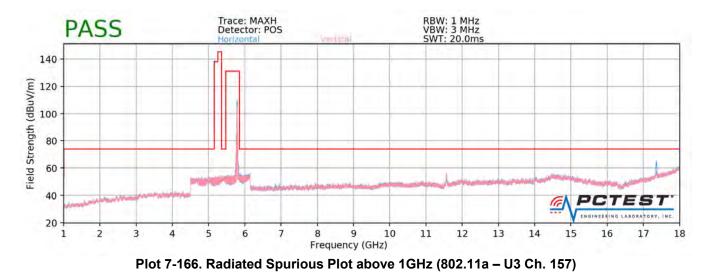






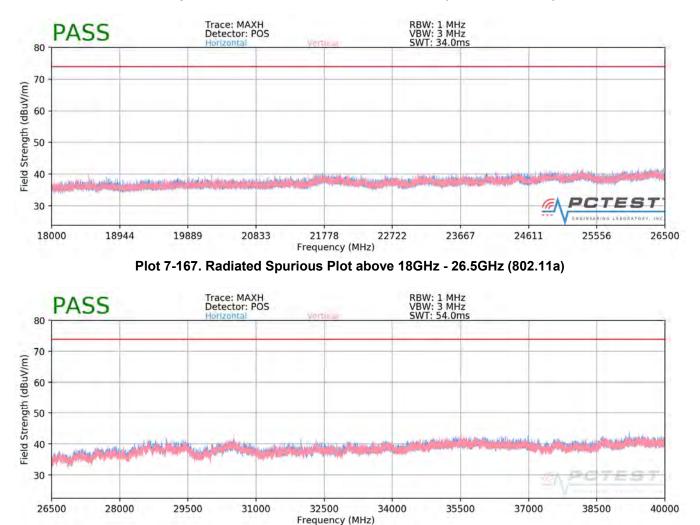
FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 126 of 180
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset	Page 126 of 189	
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FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 127 of 189	
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		
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Plot 7-168. Radiated Spurious Plot 26.5GHz - 40GHz (802.11a)

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

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 128 of 180
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset	Page 128 of 189
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## Antenna-2 Radiated Spurious Emission Measurements §15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Worst Case Mode:	802.11a			
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	-	-	-68.29	11.49	0.00	50.20	68.20	-18.00
*	15540.00	Average	V	149	341	-76.76	13.64	0.00	43.88	53.98	-10.10
*	15540.00	Peak	V	149	341	-63.93	13.64	0.00	56.71	73.98	-17.27
*	20720.00	Average	V	-	-	-77.11	7.94	-9.54	28.29	53.98	-25.69
*	20720.00	Peak	V	-	-	-68.58	7.94	-9.54	36.82	73.98	-37.16
	25900.00	Peak	V	-	-	-66.27	8.46	-9.54	39.65	68.20	-28.55

## Table 7-41. Radiated Measurements

Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: Operating Frequency: Channel:

802.11a	
6Mbps	
1 & 3 Meters	
5200MHz	
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	-	-	-67.51	11.65	0.00	51.14	68.20	-17.06
*	15600.00	Average	V	145	341	-75.28	13.30	0.00	45.02	53.98	-8.96
*	15600.00	Peak	V	145	341	-61.45	13.30	0.00	58.85	73.98	-15.13
*	20800.00	Average	V	-	-	-76.90	7.95	-9.54	28.51	53.98	-25.46
*	20800.00	Peak	V	-	-	-68.34	7.95	-9.54	37.07	73.98	-36.90
	26000.00	Peak	V	-	-	-63.61	8.60	-9.54	42.45	68.20	-25.75

### Table 7-42. Radiated Measurements

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 120 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset	Page 129 of 189	
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802.11a
6Mbps
1 & 3 Meters
5240MHz
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	-	-	-67.99	11.69	0.00	50.70	68.20	-17.50
*	15720.00	Average	V	131	340	-74.41	12.81	0.00	45.40	53.98	-8.58
*	15720.00	Peak	V	131	340	-60.85	12.81	0.00	58.96	73.98	-15.02
*	20960.00	Average	V	-	-	-77.40	7.91	-9.54	27.97	53.98	-26.01
*	20960.00	Peak	V	-	-	-66.59	7.91	-9.54	38.78	73.98	-35.20
	26200.00	Peak	V	-	-	-64.78	8.62	-9.54	41.30	68.20	-26.90

# Table 7-43. Radiated Measurements

Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: Operating Frequency: Channel: 802.11a 6Mbps 1 & 3 Meters 5240MHz 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	-	-	-69.50	12.01	0.00	49.51	68.20	-18.69
*	15720.00	Average	V	113	329	-79.17	15.79	0.00	43.62	53.98	-10.36
*	15720.00	Peak	V	113	329	-65.98	15.79	0.00	56.81	73.98	-17.17
*	20960.00	Average	V	-	-	-76.90	7.91	-9.54	28.47	53.98	-25.51
*	20960.00	Peak	V	-	-	-65.54	7.91	-9.54	39.84	73.98	-34.14
	26200.00	Peak	V	-	-	-64.26	8.62	-9.54	41.82	68.20	-26.38

Table 7-44. Radiated Measurements with WCP

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 120 of 180
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 130 of 189
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802.11a
6Mbps
1 & 3 Meters
5260MHz
52

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10520.00	Peak	V	-	-	-67.79	11.69	0.00	50.90	68.20	-17.30
*	15780.00	Average	V	112	344	-74.87	12.87	0.00	45.00	53.98	-8.97
*	15780.00	Peak	V	112	344	-61.66	12.87	0.00	58.21	73.98	-15.76
*	21040.00	Average	V	-	-	-77.20	7.92	-9.54	28.18	53.98	-25.80
*	21040.00	Peak	V	-	-	-66.83	7.92	-9.54	38.55	73.98	-35.43
	26300.00	Peak	V	-	-	-64.38	8.73	-9.54	41.81	68.20	-26.39

# Table 7-45. Radiated Measurements

Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: Operating Frequency: Channel: 802.11a 6Mbps 1 & 3 Meters 5280MHz 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	-	-	-68.32	11.55	0.00	50.23	68.20	-17.97
*	15840.00	Average	V	113	356	-74.66	12.86	0.00	45.20	53.98	-8.78
*	15840.00	Peak	V	113	356	-61.01	12.86	0.00	58.85	73.98	-15.13
*	21120.00	Average	V	-	-	-76.77	7.96	-9.54	28.65	53.98	-25.33
*	21120.00	Peak	V	-	-	-66.12	7.96	-9.54	39.30	73.98	-34.68
	26400.00	Peak	V	-	-	-64.76	8.94	-9.54	41.64	68.20	-26.56

Table 7-46. Radiated Measurements

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 121 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 131 of 189
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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	-	-	-79.59	11.81	0.00	39.22	53.98	-14.76
*	10640.00	Peak	V	-	-	-67.78	11.81	0.00	51.03	73.98	-22.95
*	15960.00	Average	V	117	360	-73.92	13.29	0.00	46.37	53.98	-7.61
*	15960.00	Peak	V	117	360	-60.05	13.29	0.00	60.24	73.98	-13.74
*	21280.00	Average	V	-	-	-76.49	8.04	-9.54	29.01	53.98	-24.97
*	21280.00	Peak	V	-	-	-66.09	8.04	-9.54	39.41	73.98	-34.57
	26600.00	Peak	V	-	-	-47.01	-8.30	-9.54	42.15	68.20	-26.05

## Table 7-47. Radiated Measurements

Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: Operating Frequency: Channel:

802.11a
6Mbps
1 & 3 Meters
5320MHz
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	-	-	-81.48	11.81	0.00	37.33	53.98	-16.65
*	10640.00	Peak	V	-	-	-68.96	11.81	0.00	49.85	73.98	-24.13
*	15960.00	Average	V	117	322	-76.71	13.29	0.00	43.58	53.98	-10.40
*	15960.00	Peak	V	117	322	-62.92	13.29	0.00	57.37	73.98	-16.61
*	21280.00	Average	V	-	-	-76.42	8.04	-9.54	29.08	53.98	-24.90
*	21280.00	Peak	V	-	-	-65.39	8.04	-9.54	40.11	73.98	-33.87
	26600.00	Peak	V	-	-	-48.47	-8.30	-9.54	40.69	68.20	-27.51

## Table 7-48. Radiated Measurements with WCP

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 122 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset	Page 132 of 189
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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	241	1	-77.79	12.00	0.00	41.21	53.98	-12.77
*	11000.00	Peak	V	241	1	-66.00	12.00	0.00	53.00	73.98	-20.98
	16500.00	Peak	V	139	362	-59.13	12.13	0.00	60.00	68.20	-8.20
	22000.00	Peak	V	-	-	-65.70	8.43	-9.54	40.19	68.20	-28.01
	27500.00	Peak	V	-	-	-47.14	-8.80	-9.54	41.52	68.20	-26.68

Table 7-49. Radiated M	leasurements
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Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: Operating Frequency: Channel: 802.11a 6Mbps 1 & 3 Meters 5600MHz 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	278	192	-78.96	11.34	0.00	39.38	53.98	-14.60
*	11200.00	Peak	V	278	192	-66.56	11.34	0.00	51.78	73.98	-22.20
	16800.00	Peak	V	126	358	-64.26	13.98	0.00	56.72	68.20	-11.48
*	22400.00	Average	V	-	-	-77.26	8.11	-9.54	28.31	53.98	-25.67
*	22400.00	Peak	V	-	-	-66.99	8.11	-9.54	38.58	73.98	-35.40
	28000.00	Peak	V	-	-	-47.26	-9.26	-9.54	40.94	68.20	-27.26

Table 7-50. Radiated Measurements

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 122 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 133 of 189
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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	144	9	-78.18	11.69	0.00	40.51	53.98	-13.47
*	11440.00	Peak	V	144	9	-66.62	11.69	0.00	52.07	73.98	-21.91
	17160.00	Peak	V	163	287	-68.24	15.49	0.00	54.25	68.20	-13.95
*	22880.00	Average	V	-	-	-77.31	8.28	-9.54	28.43	53.98	-25.55
*	22880.00	Peak	V	-	-	-65.84	8.28	-9.54	39.90	73.98	-34.08
	28600.00	Peak	V	-	-	-46.44	-9.08	-9.54	41.94	68.20	-26.26

## Table 7-51. Radiated Measurements

Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: **Operating Frequency:** Channel:

	802.11a
	6Mbps
51	1 & 3 Meters
	5500MHz
	100
	· · · · · · · · · · · · · · · · · · ·

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	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	-	-	-81.19	11.69	0.00	37.50	53.98	-16.48
*	11000.00	Peak	V	-	-	-69.21	11.69	0.00	49.48	73.98	-24.50
	16500.00	Peak	V	128	321	-64.08	15.49	0.00	58.41	68.20	-9.79
	22000.00	Peak	V	-	-	-64.60	8.43	-9.54	41.29	68.20	-26.91
	27500.00	Peak	V	-	-	-47.20	-8.80	-9.54	41.46	68.20	-26.74

Table 7-52. Radiated Measurements with WCP

FCC ID: A3LSMN960F	PCTEST'	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N: Test Dates:		EUT Type:		Dage 124 of 190	
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 134 of 189	
© 2018 PCTEST Engineering La	V 8 0 03/13/2018				



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	159	9	-78.33	11.71	0.00	40.38	53.98	-13.60
*	11490.00	Peak	V	159	9	-66.36	11.71	0.00	52.35	73.98	-21.63
	17235.00	Peak	V	109	356	-66.39	16.95	0.00	57.56	68.20	-10.64
*	22980.00	Average	V	-	-	-77.12	8.16	-9.54	28.50	53.98	-25.48
*	22980.00	Peak	V	-	-	-66.27	8.16	-9.54	39.35	73.98	-34.63
	28725.00	Peak	V	-	-	-46.55	-9.24	-9.54	41.67	68.20	-26.53

Table 7-53. Radiated Measurements

Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: Operating Frequency: Channel: 802.11a 6Mbps 1 & 3 Meters 5785MHz 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	109	7	-77.81	11.93	0.00	41.12	53.98	-12.86
*	11570.00	Peak	V	109	7	-65.95	11.93	0.00	52.98	73.98	-21.00
	17355.00	Peak	V	109	354	-67.17	18.62	0.00	58.45	68.20	-9.75
	23140.00	Peak	V	-	-	-66.60	8.37	-9.54	39.23	68.20	-28.97
	28925.00	Peak	V	-	-	-45.48	-9.65	-9.54	42.33	68.20	-25.87

Table 7-54. Radiated Measurements

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: Test Dates:		EUT Type:		Dage 125 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 135 of 189
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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	149	4	-78.15	12.15	0.00	41.00	53.98	-12.98
*	11650.00	Peak	V	149	4	-66.23	12.15	0.00	52.92	73.98	-21.06
	17475.00	Peak	V	177	149	-67.19	18.61	0.00	58.42	68.20	-9.78
	23300.00	Peak	V	-	-	-66.13	8.50	-9.54	39.83	68.20	-28.37
	29125.00	Peak	V	-	-	-44.90	-9.87	-9.54	42.69	68.20	-25.51

Table 7-55. Radiated Me	easurements
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Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: Operating Frequency: Channel: 802.11a 6Mbps 1 & 3 Meters 5785MHz 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	110	62	-81.33	14.64	0.00	40.31	53.98	-13.67
*	11570.00	Peak	V	110	62	-68.87	14.64	0.00	52.77	73.98	-21.21
	17355.00	Peak	V	-	-	-72.18	23.38	0.00	58.20	68.20	-10.00
	23140.00	Peak	V	-	-	-65.07	8.37	-9.54	40.76	68.20	-27.44
	28925.00	Peak	V	-	-	-50.20	-9.65	-9.54	37.61	68.20	-30.59

Table 7-56. Radiated Measurements with WCP

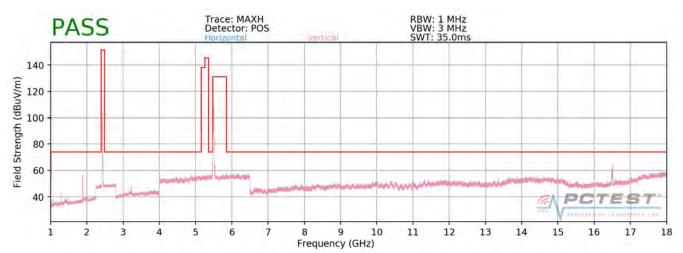
FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager				
Test Report S/N: Test Dates:		EUT Type:		Dega 126 of 190				
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 136 of 189				
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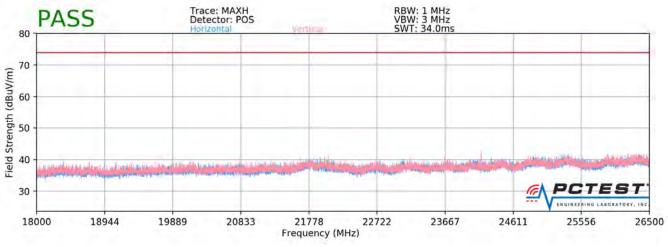
# 7.6.3 Simultaneous Tx Radiated Spurious Emissions Measurements §15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Description	2.4 GHz Emission	5 GHz Emission
Antenna	1	2
Channel	6	100
Operating Frequency (MHz)	2437	5500
Data Rate (Mbps)	1	6
Mode	802.11b	802.11a

Table 7-57. Simultaneous Transmission Config-1



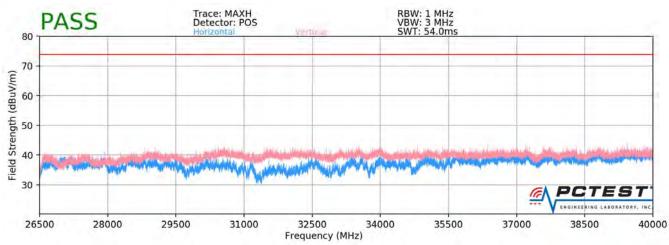
Plot 7-169. Radiated Spurious Plot above 1GHz (2.4GHz – 5GHz)



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

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 127 of 190	
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 137 of 189	
© 2018 PCTEST Engineering La	V 8.0 03/13/2018				







	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]
*	3689.00	Average	Н	-	-	-77.95	0.90	29.95	53.98	-24.03
*	3689.00	Peak	Н	-	-	-66.54	0.90	41.36	73.98	-32.62
*	6752.00	Average	Н	-	-	-79.16	7.85	35.69	53.98	-18.29
	6752.00	Peak	Н	-	-	-67.95	7.85	46.90	68.20	-21.30
*	8563.00	Average	Н	-	-	-80.52	9.78	36.26	53.98	-17.72
	8563.00	Peak	Н	-	-	-69.21	9.78	47.57	68.20	-20.63
*	9815.00	Average	Н	-	-	-81.03	11.58	37.55	53.98	-16.43
	9815.00	Peak	Н	-	-	-69.30	11.58	49.28	68.20	-18.92
*	11626.00	Average	Н	-	-	-81.47	12.11	37.64	53.98	-16.34
*	11626.00	Peak	Н	-	-	-69.95	12.11	49.16	73.98	-24.82
*	14689.00	Average	Н	-	-	-82.03	18.12	43.09	53.98	-10.89
*	14689.00	Peak	Н	-	-	-70.91	18.12	54.21	68.20	-13.99
	16500.00	Peak	Н	139	340	-59.63	16.06	63.43	68.20	-4.77
*	17752.00	Average	Н	-	-	-82.29	21.11	45.82	53.98	-8.16
*	17752.00	Peak	Н	-	-	-71.71	21.11	56.40	73.98	-17.58

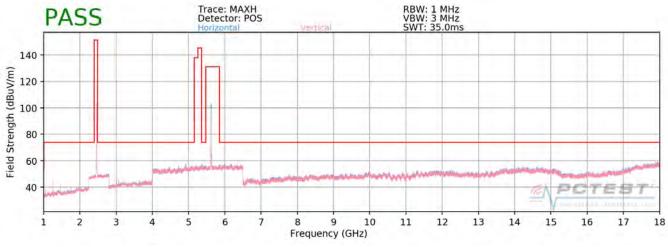
Table 7-58. Radiated Measurements (ANT1 2.4GHz - ANT2 5GHz)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 129 of 190	
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 138 of 189	
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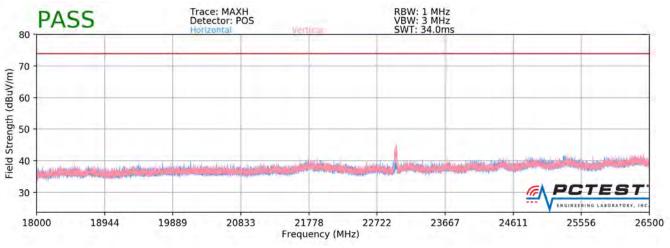


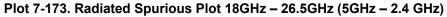
Description	2.4 GHz Emission	5 GHz Emission
Antenna	2	1
Channel	11	124
Operating Frequency (MHz)	2462	5620
Data Rate (Mbps)	1	6
Mode	802.11b	802.11a

Table 7-59. Simultaneous Transmission Config-2



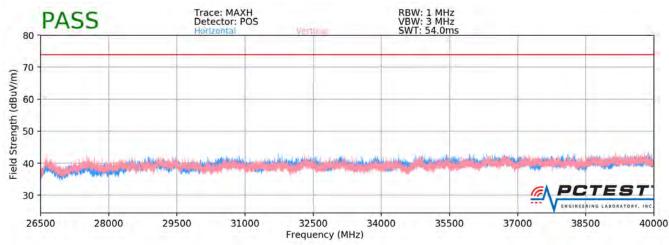






FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Daga 120 of 180	
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 139 of 189	
© 2018 PCTEST Engineering La	V 8.0 03/13/2018				







	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]
*	3854.00	Average	Н	358	298	-77.78	1.89	31.11	53.98	-22.87
*	3854.00	Peak	Н	358	298	-65.33	1.89	43.56	73.98	-30.42
	7012.00	Peak	Н	-	-	-67.19	8.52	48.33	68.20	-19.87
	8778.00	Peak	Н	-	-	-68.11	10.71	49.60	68.20	-18.60
	10170.00	Peak	Н	-	-	-69.47	11.67	49.20	68.20	-19.00
*	11936.00	Average	Н	-	-	-82.14	13.44	38.30	53.98	-15.68
*	11936.00	Peak	Н	-	-	-69.74	13.44	50.70	73.98	-23.28
	15094.00	Peak	Н	-	-	-70.22	15.26	52.04	68.20	-16.16

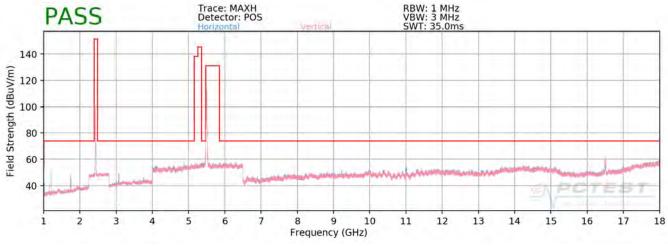
Table 7-60. Radiated Measurements (ANT1 5GHz – ANT2 2.4GHz)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 140 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 140 of 189
© 2018 PCTEST Engineering La	V 8 0 03/13/2018			

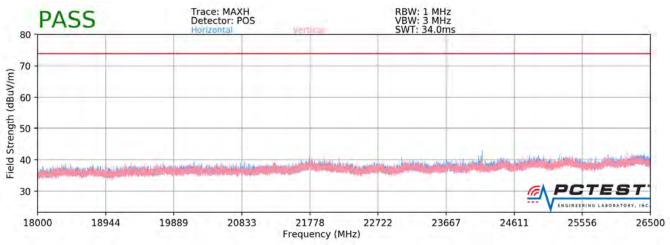


Description	2.4 GHz Emission	5 GHz Emission
Antenna	1, 2	1, 2
Channel	6	100
Operating Frequency (MHz)	2437	5500
Data Rate (Mbps)	6	6
Mode	802.11g	802.11a

Table 7-61. Dual Band Simultaneous Transmission



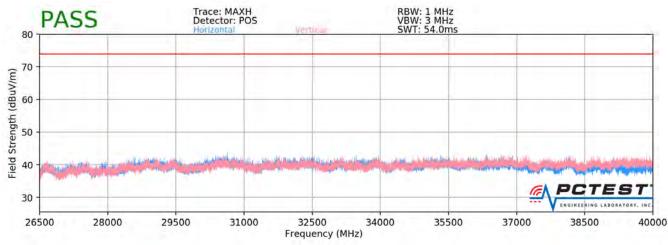
Plot 7-175. Radiated Spurious Plot above 1GHz (Dual Band Simult. Tx)



Plot 7-176. Radiated Spurious Plot 18GHz – 26.5GHz (Dual Band Simult. Tx)

FCC ID: A3LSMN960F	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 141 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 141 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			





Plot 7-177. Radiated Spurious Plot above 26.5GHz (Dual Band Simult. Tx)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 142 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 142 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			



	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]
*	3689.00	Average	Н	-	-	-78.07	0.90	29.83	53.98	-24.15
*	3689.00	Peak	Н	-	-	-65.73	0.90	42.17	73.98	-31.81
*	6752.00	Average	н	-	-	-78.77	7.85	36.08	53.98	-17.90
	6752.00	Peak	н	-	-	-66.83	7.85	48.02	68.20	-20.18
*	8563.00	Average	Н	-	-	-80.10	9.78	36.68	53.98	-17.30
	8563.00	Peak	н	-	-	-67.80	9.78	48.98	68.20	-19.22
*	9815.00	Average	н	-	-	-80.91	11.58	37.67	53.98	-16.31
	9815.00	Peak	н	-	-	-68.90	11.58	49.68	68.20	-18.52
*	11626.00	Average	Н	-	-	-81.40	12.11	37.71	53.98	-16.27
*	11626.00	Peak	н	-	-	-69.44	12.11	49.67	73.98	-24.31
*	14689.00	Average	н	-	-	-82.31	18.12	42.81	53.98	-11.17
*	14689.00	Peak	н	-	-	-70.97	18.12	54.15	73.98	-19.83
	16500.00	Peak	н	140	344	-60.48	16.06	62.58	68.20	-5.62
*	17752.00	Average	н	-	-	-82.35	21.11	45.76	53.98	-8.22
*	17752.00	Peak	Н	-	-	-71.02	21.11	57.09	73.98	-16.89

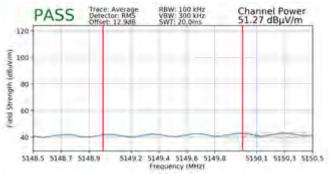
Table 7-62. Radiated Measurements (Dual Band Simult. Tx)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 142 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 143 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			

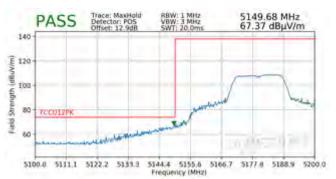


# 7.6.4 Antenna-1 Radiated Band Edge Measurements (20MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]; RSS-Gen [8.9]

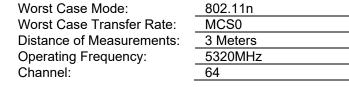
Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

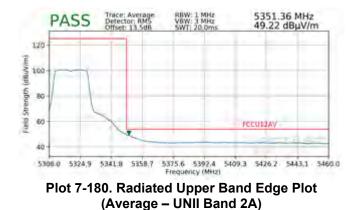


Plot 7-178. Radiated Lower Band Edge Plot (Average – UNII Band 1)









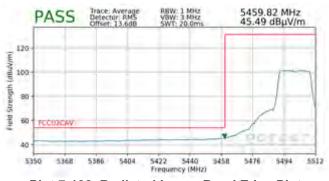




FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 111 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 144 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			

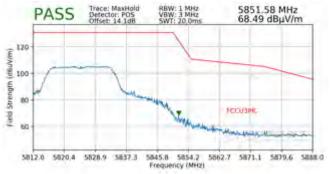


Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100

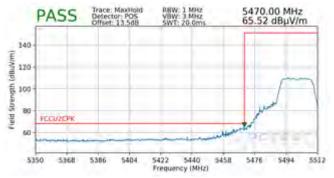


Plot 7-182. Radiated Lower Band Edge Plot (Average – UNII Band 2C)

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



Plot 7-184. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

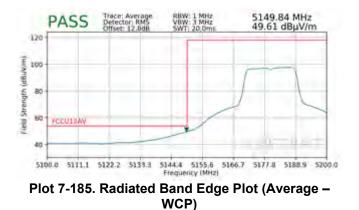


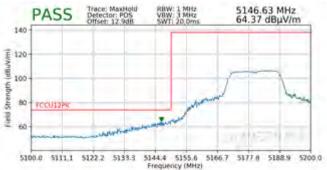
Plot 7-183. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 145 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 145 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			



Worst Case Mode:802.11nWorst Case Transfer Rate:MCS0Distance of Measurements:3 MetersOperating Frequency:5180MHzChannel:36





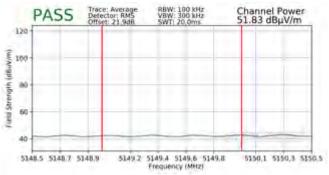
Plot 7-186. Radiated Band Edge Plot (Peak – WCP)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 146 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 146 of 189
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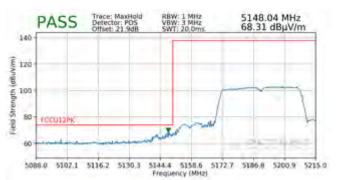


# 7.6.5 Antenna-1 Radiated Band Edge Measurements (40MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

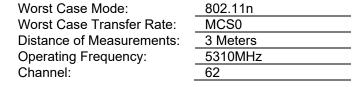
Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

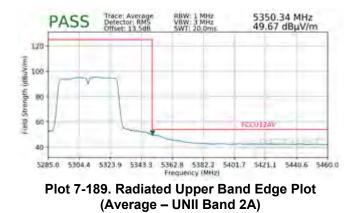


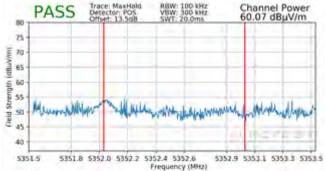
Plot 7-187. Radiated Lower Band Edge Plot (Average – UNII Band 1)



Plot 7-188. Radiated Lower Band Edge Plot (Peak – UNII Band 1)





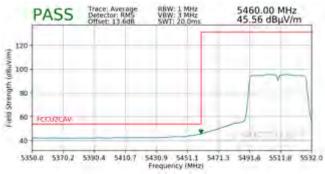




FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 147 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 147 of 189
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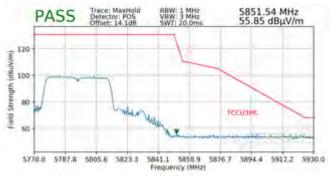


Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5510MHz
Channel:	102

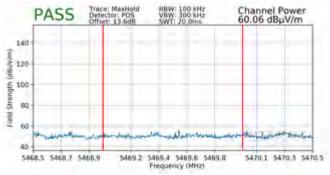


Plot 7-191. Radiated Lower Band Edge Plot (Average – UNII Band 2C)

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



Plot 7-193. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

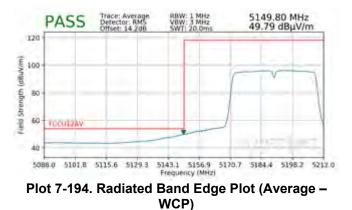


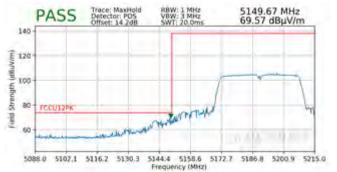
Plot 7-192. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 149 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 148 of 189
© 2018 PCTEST Engineering Laboratory, Inc.				V 8.0 03/13/2018



Worst Case Mode:802.11nWorst Case Transfer Rate:MCS0Distance of Measurements:3 MetersOperating Frequency:5190MHzChannel:38





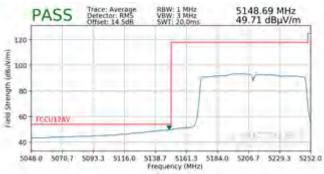
Plot 7-195. Radiated Band Edge Plot (Peak – WCP)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 140 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 149 of 189
© 2018 PCTEST Engineering Laboratory Inc.				V 8 0 03/13/2018

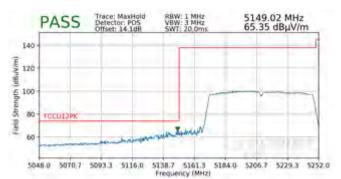


# 7.6.6 Antenna-1 Radiated Band Edge Measurements (80MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

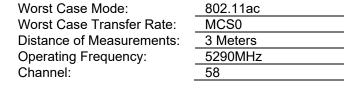
802.11ac
MCS0
3 Meters
5210MHz
42

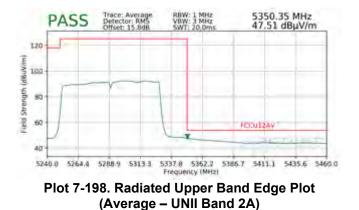


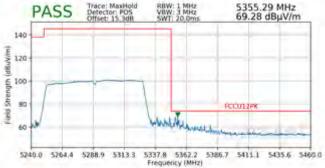
Plot 7-196. Radiated Lower Band Edge Plot (Average – UNII Band 1)









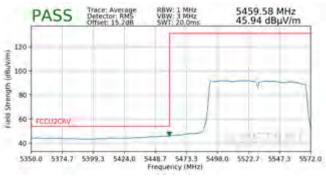


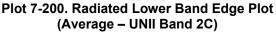


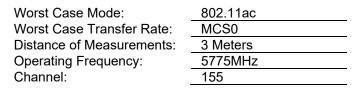
FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 150 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 150 of 189
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Worst Case Mode:802.11acWorst Case Transfer Rate:MCS0Distance of Measurements:3 MetersOperating Frequency:5530MHzChannel:106

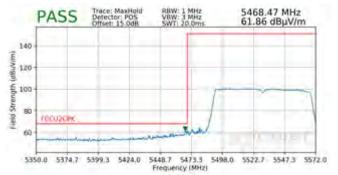








Plot 7-202. Radiated Upper Band Edge Plot (Peak – UNII Band 3)



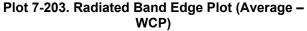
Plot 7-201. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

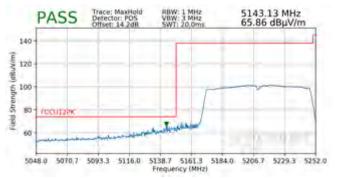
FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 151 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 151 of 189
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Worst Case Mode:802.11acWorst Case Transfer Rate:MCS0Distance of Measurements:3 MetersOperating Frequency:5210MHzChannel:42







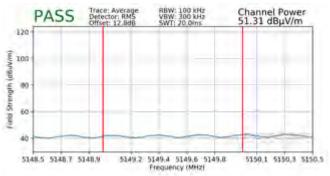
Plot 7-204. Radiated Band Edge Plot (Peak – WCP)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 152 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 152 of 189
© 2018 PCTEST Engineering Laboratory Inc				V 8 0 03/13/2018

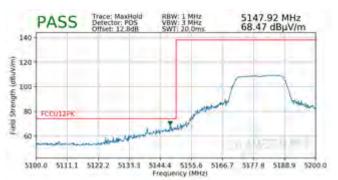


# 7.6.7 Antenna-2 Radiated Band Edge Measurements (20MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

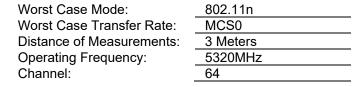
Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

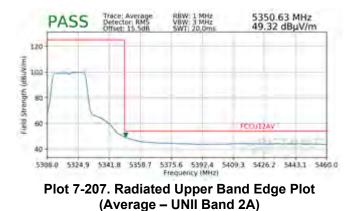


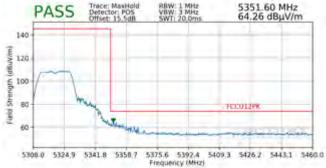
Plot 7-205. Radiated Lower Band Edge Plot (Average – UNII Band 1)



Plot 7-206. Radiated Lower Band Edge Plot (Peak -UNII Band 1)





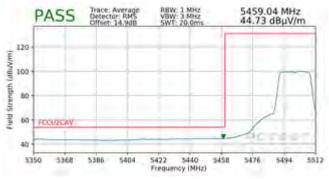




FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Degra 152 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 153 of 189
© 2018 PCTEST Engineering Laboratory. Inc.				V 8.0 03/13/2018

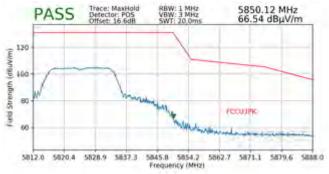


Worst Case Mode:802.11nWorst Case Transfer Rate:MCS0Distance of Measurements:3 MetersOperating Frequency:5500MHzChannel:100

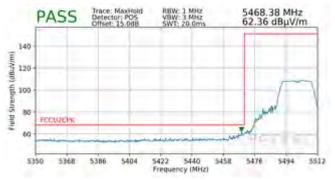


Plot 7-209. Radiated Lower Band Edge Plot (Average – UNII Band 2C)

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



Plot 7-211. Radiated Upper Band Edge Plot (Peak – UNII Band 3)



Plot 7-210. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

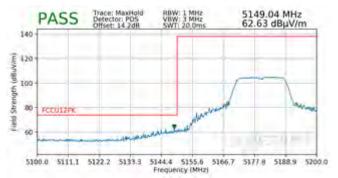
FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 154 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 154 of 189
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Worst Case Mode:802.11nWorst Case Transfer Rate:MCS0Distance of Measurements:3 MetersOperating Frequency:5180MHzChannel:36







Plot 7-213. Radiated Band Edge Plot (Peak – WCP)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 155 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 155 of 189
© 2018 PCTEST Engineering Laboratory. Inc.			V 8.0 03/13/2018	

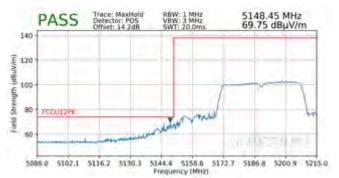


# 7.6.8 Antenna-2 Radiated Band Edge Measurements (40MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

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

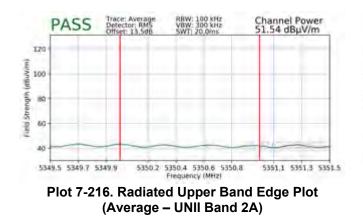


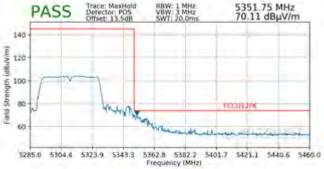
Plot 7-214. Radiated Lower Band Edge Plot (Average – UNII Band 1)



Plot 7-215. 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



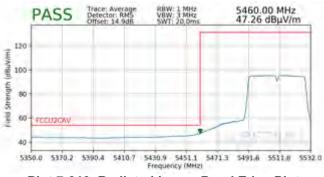




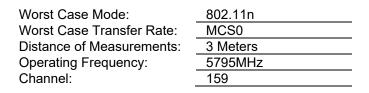
FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 156 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 156 of 189
© 2018 PCTEST Engineering Laboratory, Inc.			V 8.0 03/13/2018	



Worst Case Mode:802.11nWorst Case Transfer Rate:MCS0Distance of Measurements:3 MetersOperating Frequency:5510MHzChannel:102

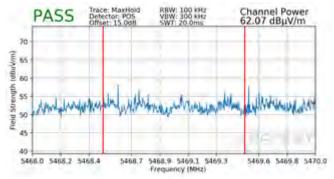


Plot 7-218. Radiated Lower Band Edge Plot (Average – UNII Band 2C)





Plot 7-220. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

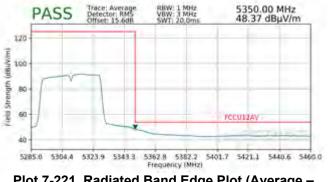


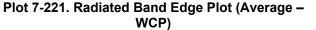
Plot 7-219. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMN960F	CALEST'	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 157 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 157 of 189
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Worst Case Mode:802.11nWorst Case Transfer Rate:MCS0Distance of Measurements:3 MetersOperating Frequency:5310MHzChannel:62







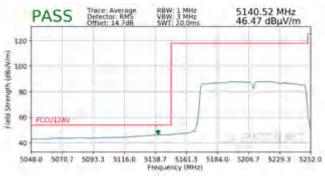
Plot 7-222. Radiated Band Edge Plot (Peak – WCP)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 159 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 158 of 189
© 2018 PCTEST Engineering Laboratory Inc.				V 8 0 03/13/2018

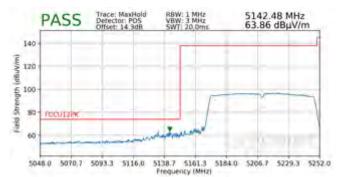


# 7.6.9 Antenna-2 Radiated Band Edge Measurements (80MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

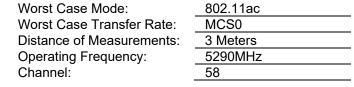
802.11ac
MCS0
3 Meters
5210MHz
42

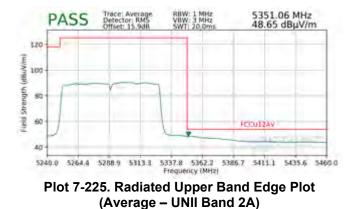


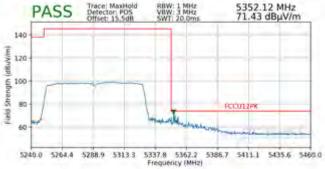
Plot 7-223. Radiated Lower Band Edge Plot (Average – UNII Band 1)



Plot 7-224. Radiated Lower Band Edge Plot (Peak – UNII Band 1)





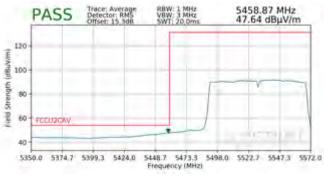


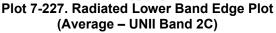


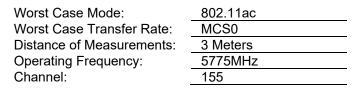
FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 150 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 159 of 189
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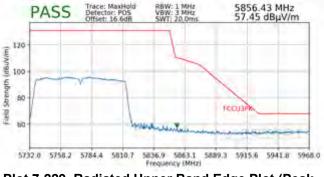


Worst Case Mode:802.11acWorst Case Transfer Rate:MCS0Distance of Measurements:3 MetersOperating Frequency:5530MHzChannel:106

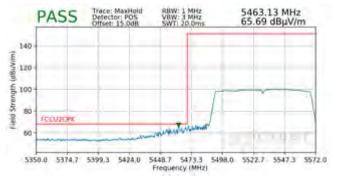








Plot 7-229. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

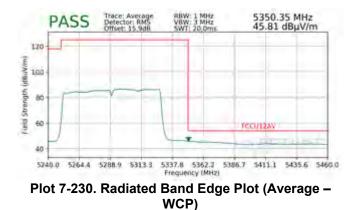


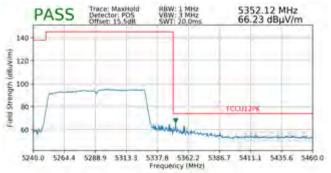
Plot 7-228. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 160 of 180
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 160 of 189
© 2018 PCTEST Engineering Laboratory. Inc.			V 8.0 03/13/2018	



Worst Case Mode:802.11acWorst Case Transfer Rate:MCS0Distance of Measurements:3 MetersOperating Frequency:5290MHzChannel:58





Plot 7-231. Radiated Band Edge Plot (Peak – WCP)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 161 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 161 of 189
© 2018 PCTEST Engineering La	V 8 0 03/13/2018			

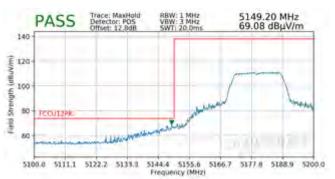


# 7.6.10 MIMO Radiated Band Edge Measurements (20MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

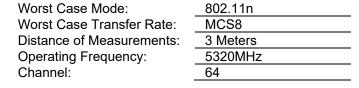
Worst Case Mode:	802.11n
Worst Case Transfer Rate:	MCS8
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

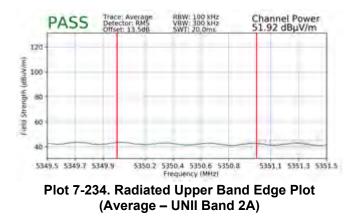


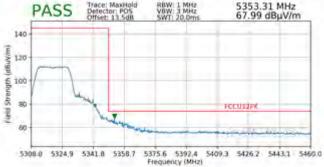
Plot 7-232. Radiated Lower Band Edge Plot (Average – UNII Band 1)



Plot 7-233. Radiated Lower Band Edge Plot (Peak – UNII Band 1)





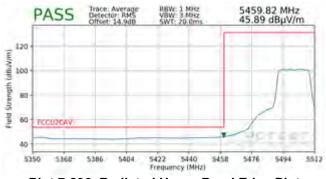


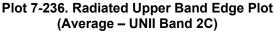


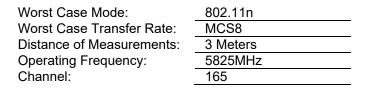
FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 162 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 162 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			

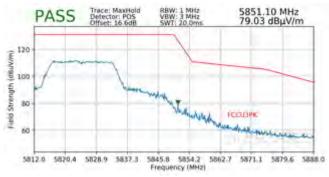


Worst Case Mode:802.11nWorst Case Transfer Rate:MCS8Distance of Measurements:3 MetersOperating Frequency:5500MHzChannel:100

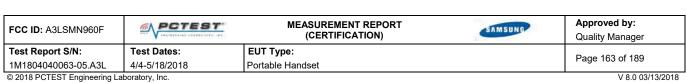


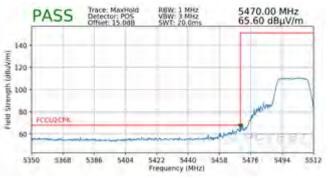






Plot 7-238. Radiated Upper Band Edge Plot (Peak – UNII Band 3)





Plot 7-237. Radiated Upper Band Edge Plot (Peak – UNII Band 2C)



Worst Case Mode:802.11nWorst Case Transfer Rate:MCS8Distance of Measurements:3 MetersOperating Frequency:5320MHzChannel:64



Plot 7-239. Radiated Band Edge Plot (Average – WCP)



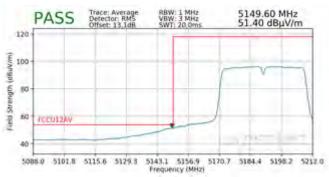
Plot 7-240. Radiated Band Edge Plot (Peak – WCP)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 404 of 400
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 164 of 189
© 2018 PCTEST Engineering Laboratory. Inc.				V 8.0 03/13/2018

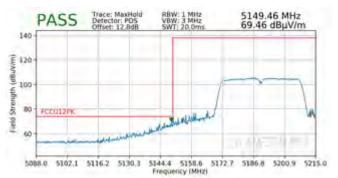


# 7.6.11 MIMO Radiated Band Edge Measurements (40MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

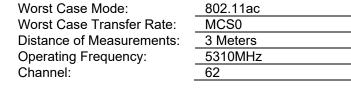
2.11ac
CS0
leters
90MHz

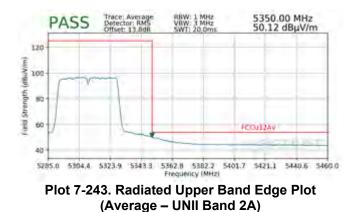


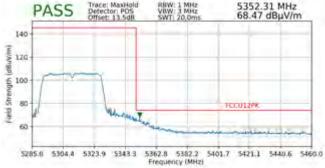
Plot 7-241. Radiated Lower Band Edge Plot (Average – UNII Band 1)



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





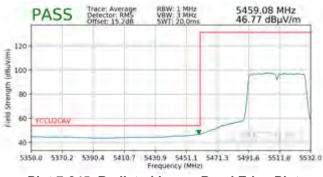




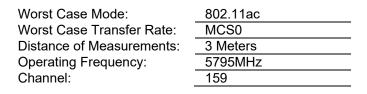
FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 165 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 165 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			

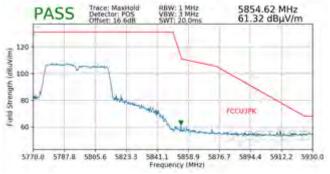


Worst Case Mode:802.11acWorst Case Transfer Rate:MCS0Distance of Measurements:3 MetersOperating Frequency:5510MHzChannel:102

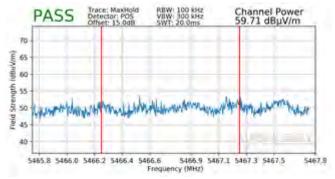


Plot 7-245. Radiated Lower Band Edge Plot (Average – UNII Band 2C)





Plot 7-247. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

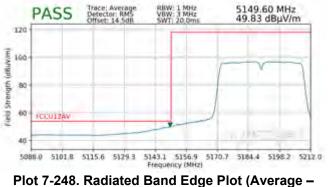


Plot 7-246. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

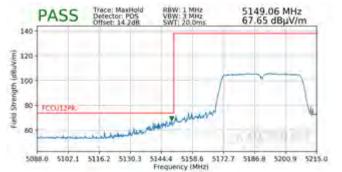
FCC ID: A3LSMN960F	PCTEST'	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 166 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 166 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			



Worst Case Mode:802.11acWorst Case Transfer Rate:MCS0Distance of Measurements:3 MetersOperating Frequency:5190MHzChannel:38



WCP)



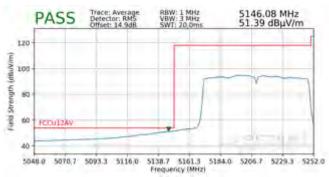
Plot 7-249. Radiated Band Edge Plot (Peak – WCP)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 167 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 167 of 189
© 2018 PCTEST Engineering La	V 8 0 03/13/2018			

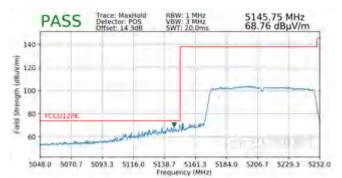


# 7.6.12 MIMO Radiated Band Edge Measurements (80MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

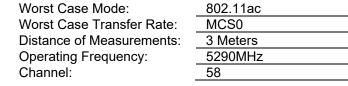
802.11ac
MCS0
3 Meters
5210MHz
42

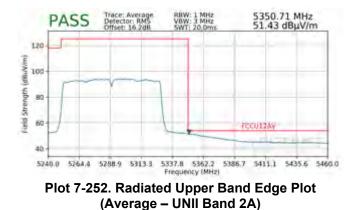


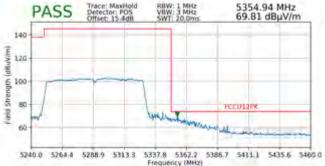
Plot 7-250. Radiated Lower Band Edge Plot (Average – UNII Band 1)









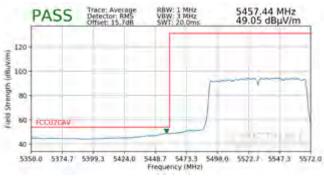




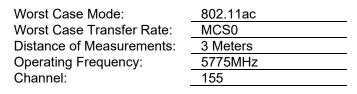
FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 169 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 168 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			

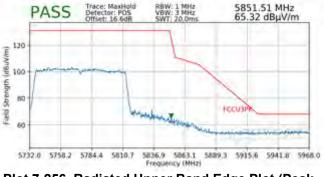


Worst Case Mode:802.11acWorst Case Transfer Rate:MCS0Distance of Measurements:3 MetersOperating Frequency:5530MHzChannel:106

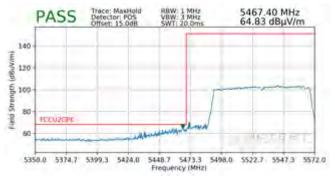


Plot 7-254. Radiated Lower Band Edge Plot (Average – UNII Band 2C)





Plot 7-256. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

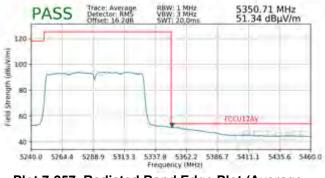


Plot 7-255. Radiated Lower Band Edge Plot (Peak – UNII Band 2C)

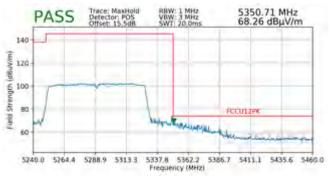
FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 160 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 169 of 189
© 2018 PCTEST Engineering La	V 8.0 03/13/2018			



Worst Case Mode:802.11acWorst Case Transfer Rate:MCS0Distance of Measurements:3 MetersOperating Frequency:5290MHzChannel:58



Plot 7-257. Radiated Band Edge Plot (Average – WCP)

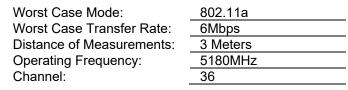


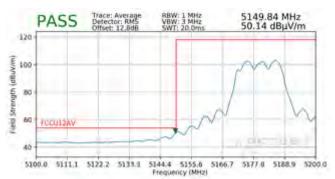
Plot 7-258. Radiated Band Edge Plot (Peak – WCP)

FCC ID: A3LSMN960F	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 170 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 170 of 189
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# 7.6.13 CDD Radiated Band Edge Measurements (20MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

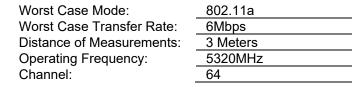


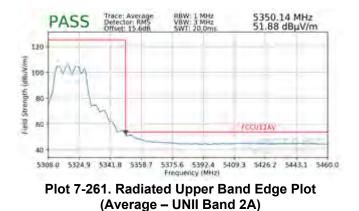


Plot 7-259. Radiated Lower Band Edge Plot (Average – UNII Band 1)











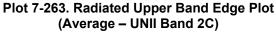


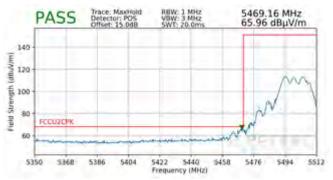
FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 171 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 171 of 189
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Worst Case Mode:	802.11a
Worst Case Transfer Rate:	6Mbps
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100

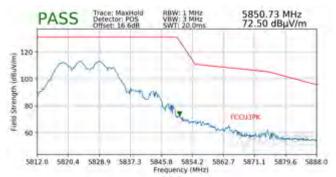






Plot 7-264. Radiated Upper Band Edge Plot (Peak – UNII Band 2C)

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



Plot 7-265. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 172 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 172 of 189
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Worst Case Mode:802.11aWorst Case Transfer Rate:6MbpsDistance of Measurements:3 MetersOperating Frequency:5320MHzChannel:64







Plot 7-267. Radiated Band Edge Plot (Peak – WCP)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 172 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 173 of 189
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# 7.7 Radiated Spurious Emissions Measurements – Below 1GHz §15.209; RSS-Gen [8.9]

# **Test Overview and Limit**

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

# All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR and Table 6 of RSS-Gen (8.10) must not exceed the limits shown in Table 7-63 per Section 15.209 and RSS-Gen (8.9).

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

Table 7-63. Radiated Limits

#### **Test Procedures Used**

ANSI C63.10-2013

#### **Test Settings**

#### **Quasi-Peak Field Strength Measurements**

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

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 174 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 174 of 189
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# Test Setup

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

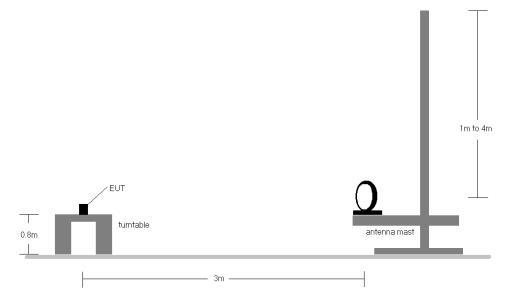
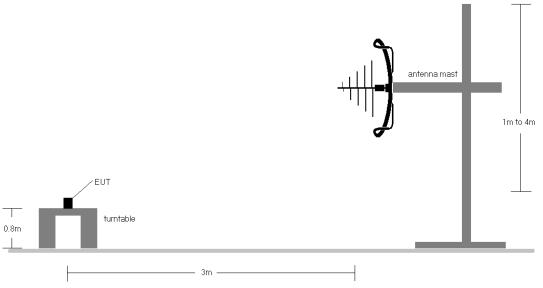
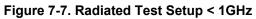


Figure 7-6. Radiated Test Setup < 30MHz





FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 175 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 175 of 189
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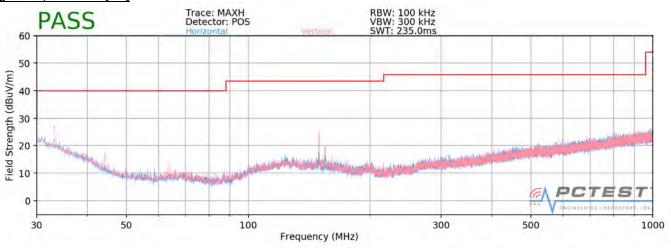


- 1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen (8.10) are below the limit shown in Table 7-63.
- 2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
- 3. This unit was tested with its standard battery.
- 4. The spectrum is investigated using a peak detector and final measurements are recorded using CISPR quasi peak detector. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
- 5. Emissions were measured at a 3 meter test distance.
- 6. Emissions are investigated while operating on the center channel of the mode, band, and modulation that produced the worst case results during the transmitter spurious emissions testing.
- 7. No spurious emissions were detected within 20dB of the limit below 30MHz.
- 8. The results recorded using the broadband antenna is known to correlate with the results obtained by using a tuned dipole with an acceptable degree of accuracy. The VSWR for the measurement antenna was found to be less than 2:1.
- The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. There were no emissions detected in the 30MHz – 1GHz frequency range, as shown in the subsequent plots.

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 176 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 176 of 189
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## Antenna-1 Radiated Spurious Emissions Measurements (Below 1GHz) §15.209; RSS-Gen [8.9]

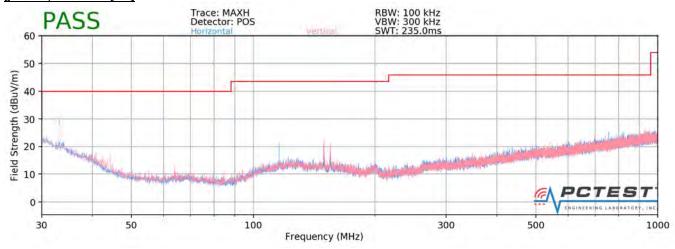


Plot 7-268. Radiated Spurious Plot below 1GHz (802.11a - U3 Ch. 157)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 177 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 177 of 189
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# Antenna-2 Radiated Spurious Emissions Measurements (Below 1GHz) §15.209; RSS-Gen [8.9]



Plot 7-269. Radiated Spurious Plot below 1GHz (802.11a - U3 Ch. 157)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 179 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 178 of 189
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#### 7.8 Line-Conducted Test Data §15.407; RSS-Gen [8.8]

#### **Test Overview and Limit**

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

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

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

Table 7-64. Conducted Limits

\*Decreases with the logarithm of the frequency.

#### **Test Procedures Used**

ANSI C63.10-2013, Section 6.2

#### **Test Settings**

#### **Quasi-Peak Field Strength Measurements**

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

#### Average Field Strength Measurements

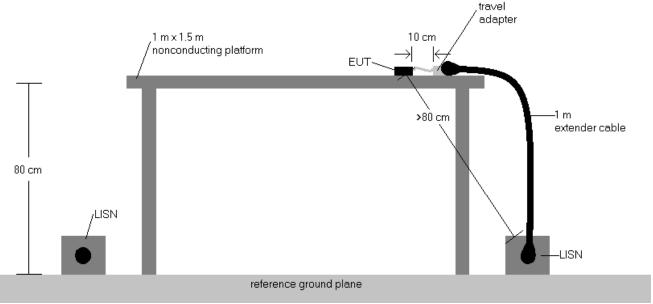
- 1. Analyzer center frequency was set to the frequency of the spurious emission of interest
- 2. RBW = 9kHz (for emissions from 150kHz 30MHz)
- 3. Detector = RMS
- 4. Sweep time = auto couple
- 5. Trace mode = max hold
- 6. Trace was allowed to stabilize

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 170 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 179 of 189
© 2018 PCTEST Engineering La	boratory Inc	•		V 8 0 03/13/2018



## Test Setup

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



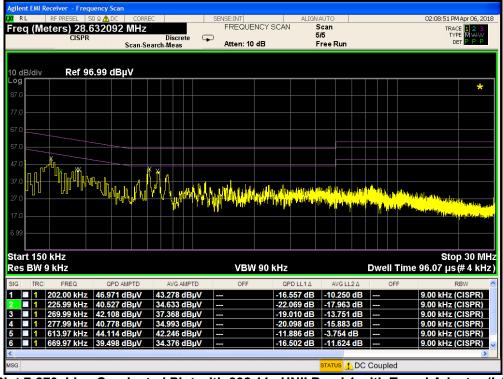


### Test Notes

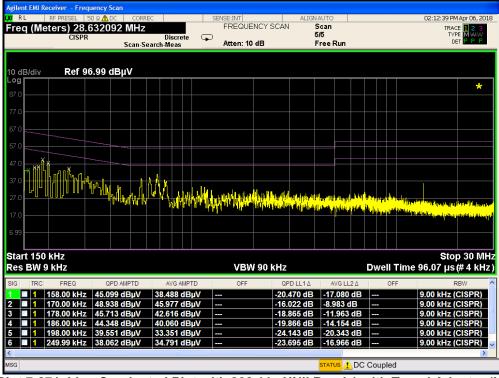
- 1. All modes of operation were investigated and the worst-case emissions are reported using mid channel. The emissions found were not affected by the choice of channel used during testing.
- 2. The limit for an intentional radiator from 150kHz to 30MHz are specified in 15.207 and RSS-Gen (8.8).
- 3.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

FCC ID: A3LSMN960F	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 190 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 180 of 189
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Plot 7-270. Line Conducted Plot with 802.11a UNII Band 1 with Travel Adapter (L1)



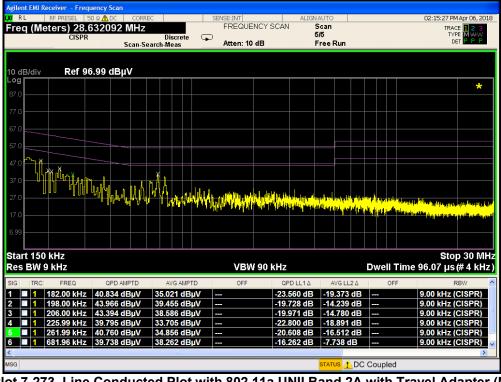
Plot 7-271. Line Conducted Plot with 802.11a UNII Band 1 with Travel Adapter (N)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 191 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 181 of 189
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Plot 7-272. Line Conducted Plot with 802.11a UNII Band 2A with Travel Adapter (L1)



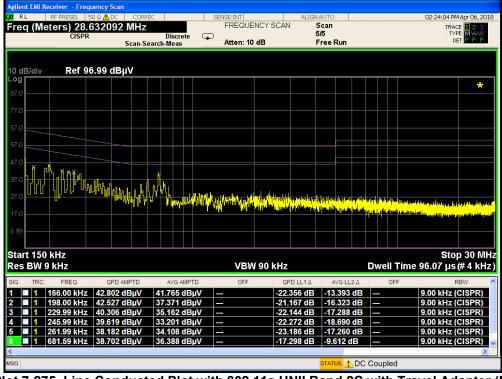
Plot 7-273. Line Conducted Plot with 802.11a UNII Band 2A with Travel Adapter (N)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 192 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 182 of 189
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art 150 es BW 9 IRC 1	FREQ 158.00 kHz 170.00 kHz	44.8 <sup>4</sup>	18 dB 04 dB	BμV BμV	42	9.29 2.86	4 dE 7 dE	BμV BμV		VBI		KHz QP -20.1	D LL1 A 750 dE 557 dE	3 -11 3 -11	AVG LL 6.274 2.093	L2 A I dB I dB	Dw 	rell	Tim	ne 91	6.07 .00 kl	µs ( R Hz (0 Hz (0	# 4 kH sw CISPR) CISPR)
art 150 es BW 9 TRC 1 1	FREQ 158.00 kHz	44.8 <sup>4</sup> 46.30 44.54	18 dB	BμV BμV BμV	42	9.29 2.86 8.38	4 dE	BμV BμV BμV		VBI		KHz QP -20.1 -18.0 -20.0	D LL1A 750 de	3 -11 3 -11 3 -11	AVG LI 6.274	L2A I dB I dB	Dw 	rell	Tim	ne 91 9. 9. 9.	6.07 .00 kl .00 kl	µs ( R Hz (0 Hz (0 Hz (0	# 4 kH sw :ISPR)
art 150 es BW 9 Inc. 1 1 1 1 1 1 1 1 1 1 1	FREQ 158.00 kHz 170.00 kHz 178.00 kHz	44.81 46.30 44.54 40.21	18 dB 04 dB 46 dB 10 dB	3μV 3μV 3μV 3μV	42 38 38	9.29 2.86 8.38 5.78	4 dE 7 dE 8 dE	3μV 3μV 3μV 3μV		VBI		KHz -20.1 -18.1 -20.1 -23.1	D LL1A 750 dE 657 dE 032 dE	3 -11 3 -11 3 -11 3 -11 3 -11	AVG LL 6.274 2.093 6.191	L2 A dB dB dB dB	Dw 	rell	Tim	ne 91 9. 9. 9.	6.07 .00 kl .00 kl .00 kl	μs ( R Hz (0 Hz (0 Hz (0 Hz (0	# 4 kH w XISPR) XISPR) XISPR)
art 150 es BW 9 5 TRC 1 1 1 1 1 1 1 1 1 1	FREQ FREQ 158.00 kHz 170.00 kHz 178.00 kHz 190.00 kHz	44.81 46.30 44.54 40.21 41.93	18 dB 04 dB 46 dB 10 dB 32 dB	BμV BμV BμV BμV BμV	42 38 38 38	9.29 2.86 8.38 5.78 8.40	4 dE 7 dE 8 dE 8 dE	3μV 3μV 3μV 3μV 3μV		VBI		KHz -20.1 -18.1 -23.1 -23.1 -21.4	D LL1A 750 dE 557 dE 322 dE 327 dE	3 -10 3 -11 3 -11 3 -11 3 -11 3 -11 3 -14	AVG LI 6.274 2.093 6.191 8.249	L2A dB dB dB dB	Dw  	rell	Tim	ne 91	6.07 .00 kl .00 kl .00 kl .00 kl	μs ( R Hz (0 Hz (0 Hz (0 Hz (0	# 4 kH ISPR) ISPR) ISPR) ISPR)

Plot 7-274. Line Conducted Plot with 802.11a UNII Band 2C with Travel Adapter (L1)



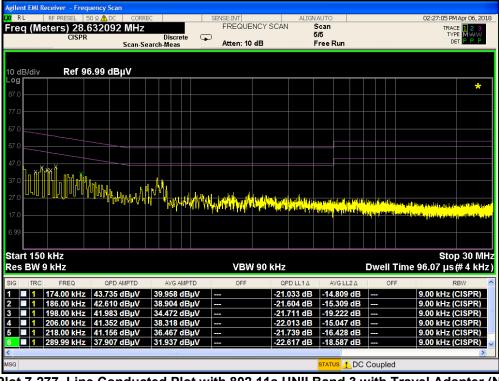
Plot 7-275. Line Conducted Plot with 802.11a UNII Band 2C with Travel Adapter (N)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 192 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 183 of 189
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art 150 s BW 9		Q	PD AMF	ΥTD			AMPT					kHz	Lu <sup>1</sup> μμ		AVG L			/ell		in di Laina	hi	Sto 7 µs		
art 150 s BW 9	FREQ 162.00 kHz	45.3	89 dE	βµV		AVG 351	AMPT	D.		VB		KHz	D LL1A 972 dE	3 -1	AVG L 2.009	L2 A 9 dB		/ell	Tin	ne 9	)6.07 ).00	Sto 7 µs F kHz (	(#4k RBW CISPF	(H 2)
.0 39 art 150 s BW 9 i rrc 1 1 1	FREQ 162.00 kHz 170.00 kHz	45.3 43.6	89 dE 63 dE	BμV BμV	35	AVG .351 .649	AMPT dBj dBj	D JV JV		VB		kHz QP -19.1	D LL1 A 972 dE 297 dE	3 -1 3 -1	AVG L 2.009 9.312	L2 A 9 dB 2 dB	Dw	/ell	Tin	ne 9	)6.07 ).00   ).00	Sto 7 µs F kHz ( kHz (	(# 4 k RBW CISPF	(H २) २)
.0 art 150 es BW 9 i IRC 1 1 1 1	FREQ 162.00 kHz	45.3 43.6 43.1	89 dE	BμV BμV BμV	35. 39.	AVG .351 .649 .181	AMPT	D JV JV		VB		KHz -19.1 -21.2 -21.2	D LL1A 972 dE	B -1 B -1 B -1 B -1	AVG L 2.009	L2 A 9 dB 2 dB 3 dB	Dw	/ell	Tin	ne 9	16.07 9.00   9.00   9.00	Sto 7 µs F kHz ( kHz (	(#4k RBW CISPF	(H 2) 2) 2)
art 150 s BW 9	FREQ 162.00 kHz 170.00 kHz 182.00 kHz 194.00 kHz 229.99 kHz	45.3 43.6 43.1 42.8 38.6	89 dB 63 dB 73 dB 73 dB 50 dB	BμV BμV BμV BμV BμV	35. 39. 38. 34.	AVG .351 .649 .181 .591 .796	AMPT dBi dBi dBi dBi dBi	D 1V 1V 1V 1V 1V		VB		kHz -19. -21. -21. -20. -23.	D LL1A 972 dE 297 dE 221 dE 991 dE 800 dE	3 -1 3 -1 3 -1 3 -1 3 -1 3 -1	AVG L 2.009 9.312 5.213 5.273 7.654	L2A 9 dB 2 dB 3 dB 3 dB 4 dB	Dw	/ell	Tin	ne 9	9.00   9.00   9.00   9.00   9.00   9.00	<b>Sto</b> 7 μs kHz ( kHz ( kHz ( kHz (	(# 4 k RBW CISPR CISPR CISPR CISPR	र। २) २) २) २)
art 150 s BW 9	FREQ FREQ 162.00 kHz 170.00 kHz 182.00 kHz 194.00 kHz	45.3 43.6 43.1 42.8 38.6	89 dE 63 dE 73 dE 73 dE	BμV BμV BμV BμV BμV	35. 39. 38. 34.	AVG .351 .649 .181 .591 .796	AMPT dBj dBj dBj dBj	D 1V 1V 1V 1V 1V		VB		kHz -19. -21. -21. -20. -23.	D LL1A 972 dE 297 dE 221 dE 991 dE	3 -1 3 -1 3 -1 3 -1 3 -1 3 -1	AVG L 2.009 9.312 5.213 5.273	L2A 9 dB 2 dB 3 dB 3 dB 4 dB	Dw	/ell	Tin	ne 9	9.00   9.00   9.00   9.00   9.00   9.00	<b>Sto</b> 7 μs kHz ( kHz ( kHz ( kHz (	(# 4 k RBW CISPR CISPR CISPR CISPR	(H २) २) २) २) २)

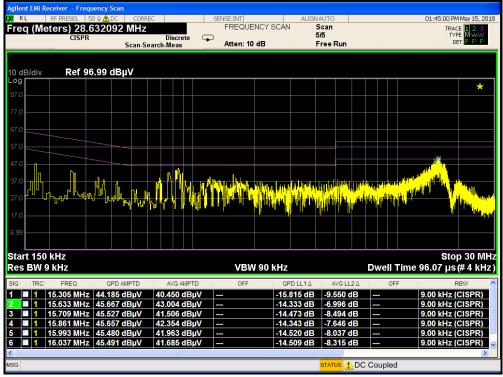
Plot 7-276. Line Conducted Plot with 802.11a UNII Band 3 with Travel Adapter (L1)



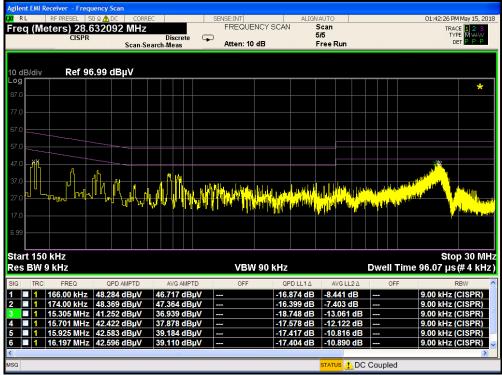
Plot 7-277. Line Conducted Plot with 802.11a UNII Band 3 with Travel Adapter (N)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 194 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 184 of 189
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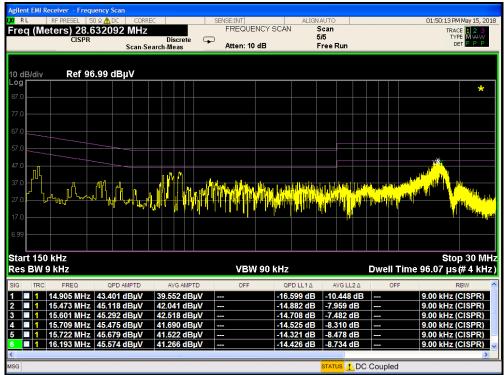
Plot 7-278. Line Conducted Plot with 802.11a UNII Band 1 with Wireless Charging Pad (L1)



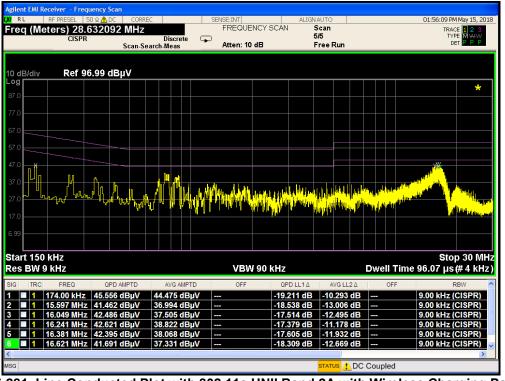
Plot 7-279. Line Conducted Plot with 802.11a UNII Band 1 with Wireless Charging Pad (N)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 195 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 185 of 189
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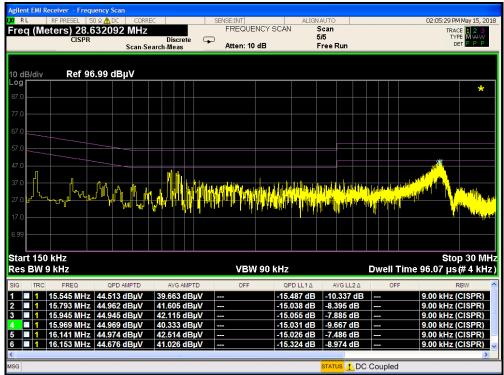
Plot 7-280. Line Conducted Plot with 802.11a UNII Band 2A with Wireless Charging Pad (L1)



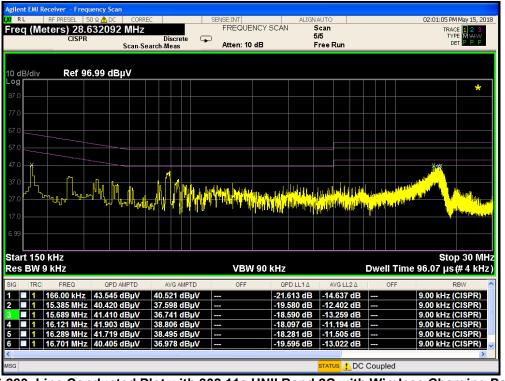
Plot 7-281. Line Conducted Plot with 802.11a UNII Band 2A with Wireless Charging Pad (N)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 196 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 186 of 189
© 2018 PCTEST Engineering Laboratory, Inc.			V 8.0 03/13/2018	





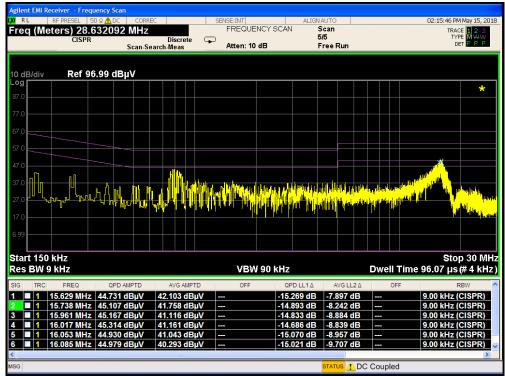
Plot 7-282. Line Conducted Plot with 802.11a UNII Band 2C with Wireless Charging Pad (L1)



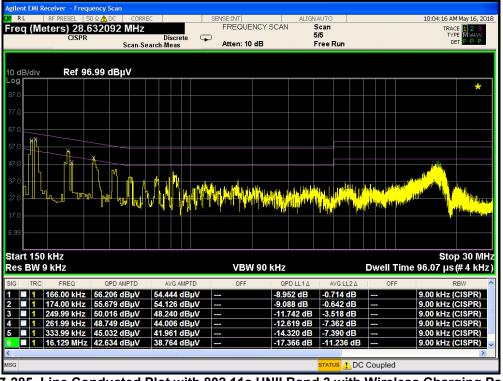
Plot 7-283. Line Conducted Plot with 802.11a UNII Band 2C with Wireless Charging Pad (N)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 197 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 187 of 189
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Plot 7-284. Line Conducted Plot with 802.11a UNII Band 3 with Wireless Charging Pad (L1)



Plot 7-285. Line Conducted Plot with 802.11a UNII Band 3 with Wireless Charging Pad (N)

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 199 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 188 of 189
© 2018 PCTEST Engineering Laboratory, Inc.				V 8.0 03/13/2018



## 8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMN960F** is in compliance with Part 15 Subpart E (15.407) of the FCC Rules.

FCC ID: A3LSMN960F		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 190 of 190
1M1804040063-05.A3L	4/4-5/18/2018	Portable Handset		Page 189 of 189
© 2018 PCTEST Engineering Laboratory, Inc.				V 8.0 03/13/2018