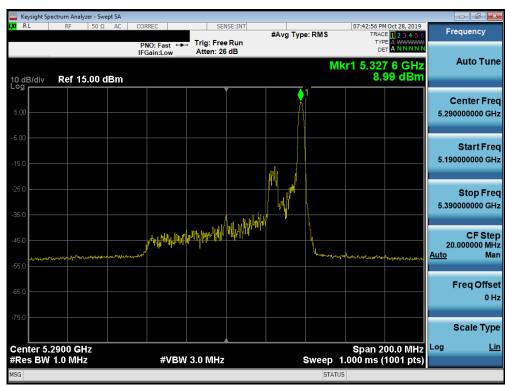


Keysight Spectrum Analyze									
XIRL RF		REC	I	SE:INT	#Avg Typ	e: RMS	TRAC	Oct 28, 2019 E 1 2 3 4 5 6	Frequency
ia John Dof 45	. IFO	NO: Fast ↔→→ Gain:Low	Trig: Free Atten: 26			Mk	^{DE} r1 5.291	9 GHz 11 dBm	Auto Tu
0 dB/div Ref 15.	00 dBm		•						Center F 5.310000000
15.0									Start F 5.260000000
35.0		, M ^W		la Navel Anna Maal	k dh				Stop F 5.360000000 (
45.0 4	and a second and a second and a second			רית שיושיך וייי	WYHNIWN N	Balloni, Martine Martine	₩₽₽₽₩₩₩₩₩₩₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽₽		CF S 10.000000 M <u>Auto</u>
56.0									Freq Off C
75.0									Scale Ty
enter 5.31000 GH Res BW 1.0 MHz	lz	#VBW	3.0 MHz			Sweep 1	Span 1 .000 ms (00.0 MHz 1001 pts)	Log
ISG						STATUS			

Plot 7-119. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax - 26 Tones (UNII Band 2A) - Ch. 62)



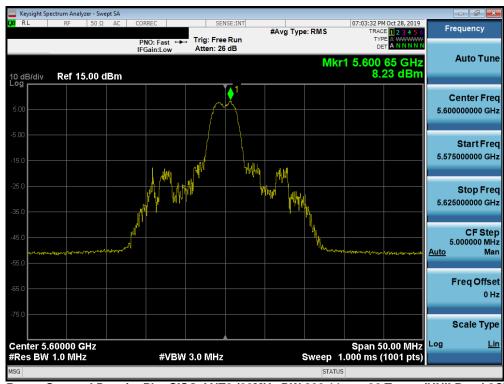
Plot 7-120. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax - 26 Tones (UNII Band 2A) - Ch. 58)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-121. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 100)



Plot 7-122. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 120)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 104 of 266
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Plot 7-123. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 144)



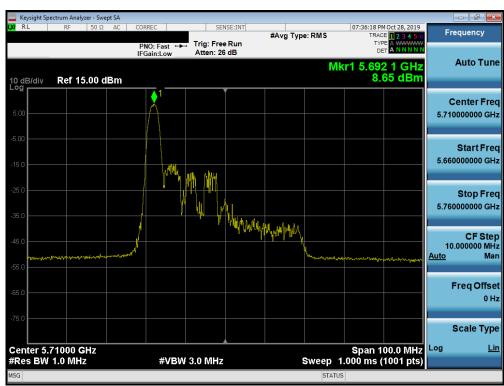
Plot 7-124. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 102)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		D 105
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 105 of 266
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🚾 Keysight Spectrum Analyzer - Sw					
<mark>ΙΧΙ</mark> RL RF 50 Ω	AC CORREC	SENSE:INT	#Avg Type: RMS	07:35:09 PM Oct 28, 2019 TRACE 1 2 3 4 5 6	Frequency
10 dB/div Ref 15.00 d	PNO: Fast ++- IFGain:Low	Trig: Free Run Atten: 26 dB		түре А WWWWW Det A NNNNN (r1 5.572 0 GHz 8.50 dBm	Auto Tune
					Center Freq 5.590000000 GHz
-5.00					Start Frec 5.540000000 GHz
-25.0		NALINA AND AND AND AND AND AND AND AND AND A			Stop Frec 5.640000000 GHz
-45.0	A my request of the	I II. AAAAAAA	4/wilwing. 	ปรัสธิปมาณารู้เราะเหลือการอุญภาพมีนา	CF Step 10.000000 MHz <u>Auto</u> Mar
-65.0					Freq Offse 0 Ha
-75.0					Scale Type
Center 5.59000 GHz #Res BW 1.0 MHz	#VBW	3.0 MHz	Sweep 1	Span 100.0 MHz .000 ms (1001 pts)	Log <u>Lin</u>
MSG			STATU	S	

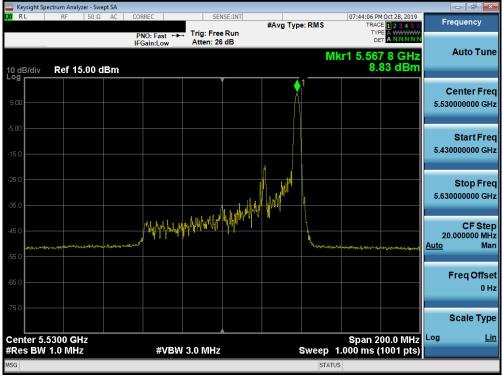
Plot 7-125. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 118)



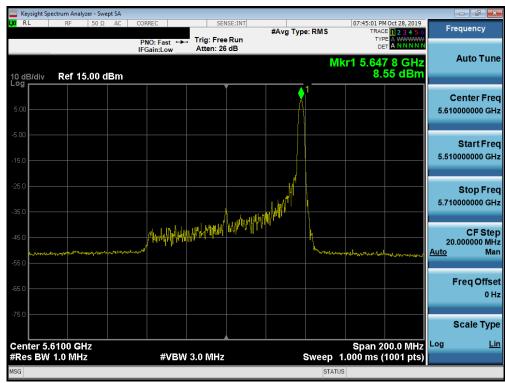
Plot 7-126. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 142)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 100 of 200
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Plot 7-127. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 106)



Plot 7-128. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 122)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 107 of 200
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Keysight Spectrum Analyzer - Swept SA				
KL RF 50 Ω A(PNO: Fast 🛶 Trig: Free Run	#Avg Type: RMS	07:48:11 PM Oct 28, 2019 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	Frequency
10 dB/div Ref 15.00 dBn	IFGain:Low Atten: 26 dB	M	r1 5.727 4 GHz 6.48 dBm	Auto Tune
5.00				Center Fre 5.69000000 GH
15.0		nat dil ^{iti}		Start Fre 5.590000000 GH
35.0				Stop Fre 5.790000000 G⊦
45.0	man have been and have been a second and have been and hav	MI P	and the first free to be a strain of the state of the strain of the stra	CF Ste 20.000000 MH <u>Auto</u> Ma
65.0				Freq Offs 0 H
75.0				Scale Typ
Center 5.6900 GHz #Res BW 510 kHz	#VBW 3.0 MHz	Sweep 1	Span 200.0 MHz .000 ms (1001 pts)	Log <u>L</u>
ISG		STATUS	3	

Plot 7-129. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 138)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 108 of 266
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	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density	Margin [dB]
	5745	149	ax (20MHz)	26T	MCS0	5.83	30.00	-24.17
-	5785	157	ax (20MHz)	26T	MCS0	5.91	30.00	-24.09
1d 3	5825	165	ax (20MHz)	26T	MCS0	5.55	30.00	-24.45
Band	5755	151	ax (40MHz)	26T	MCS0	6.71	30.00	-23.29
	5795	159	ax (40MHz)	26T	MCS0	6.96	30.00	-23.04
	5775	155	ax (80MHz)	26T	MCS0	9.08	30.00	-20.92

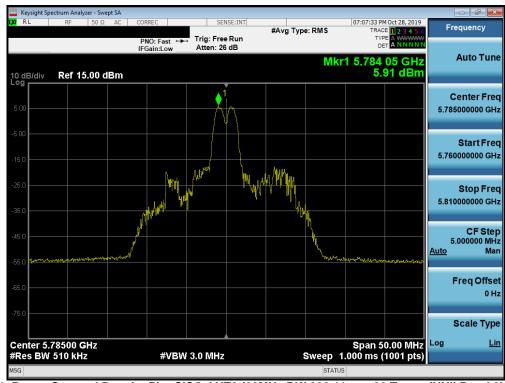
Table 7-56. Band 3 Conducted Power Spectral Density Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMG986JPN	<u> PCTEST'</u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 100 of 266
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 109 of 266
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Plot 7-130. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 149)



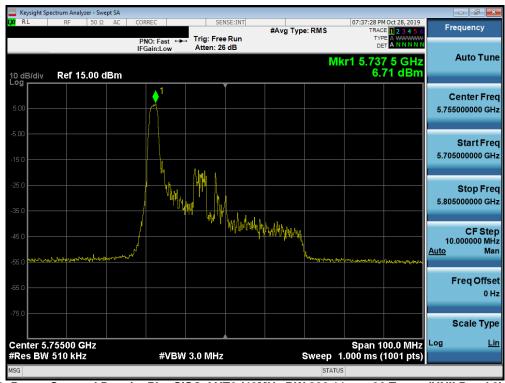
Plot 7-131. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 157)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 110 of 200
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 110 of 266
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Plot 7-132. Power Spectral Density Plot SISO ANT2 (20 MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 165)



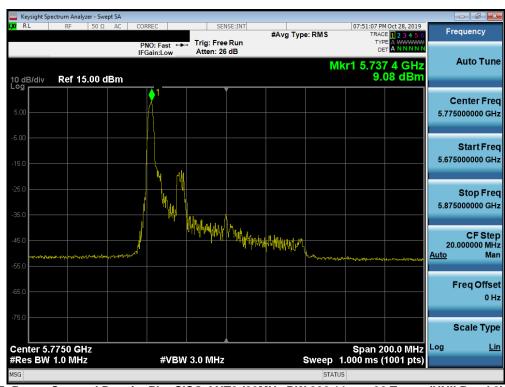
Plot 7-133. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 151)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 111 of 200
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Keysight Spectrum Analyz						
XV RL RF	50 Ω AC	CORREC	SENSE:INT	#Avg Type: RMS	07:38:43 PM Oct 28, 2019 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	Frequency
0 dB/div Ref 15	.00 dBm	IFGain:Low	Atten: 26 dB	N	lkr1 5.794 2 GHz 6.96 dBm	Auto Tur
5.00			1			Center Fre 5.795000000 GH
15.0						Start Fre 5.745000000 GH
35.0				A Mardan In 19		Stop Fre 5.845000000 GH
45.0	an and an and a served			www.sour	สร้าวไว้ระดัง เปรียงหรือเป็นให้เหลือเป็นเหลือ เปรียนหรือเป็นเป็น	CF Ste 10.000000 MH <u>Auto</u> Ma
55.0 75.0						Freq Offs 0 I
Center 5.79500 G	Hz					Scale Typ Log <u>L</u>
Res BW 510 kHz		#VBW	3.0 MHz	Sweep	1.000 ms (1001 pts)	
SG				STAT	US	

Plot 7-134. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 159)



Plot 7-135. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 155)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 110 of 200
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SISO Antenna-2 Power Spectral Density Measurements (Full Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured Power Density [dBm]	Max Power Density [dBm/MHz]	Margin [dB]
	5180	36	ax (20MHz)	242T	MCS0	4.89	11.0	-6.11
_	5200	40	ax (20MHz)	242T	MCS0	5.24	11.0	-5.76
1 pr	5240	48	ax (20MHz)	242T	MCS0	5.18	11.0	-5.82
Band 1	5190	38	ax (40MHz)	242T	MCS0	-0.84	11.0	-11.84
	5230	46	ax (40MHz)	242T	MCS0	-0.73	11.0	-11.73
	5210	42	ax (80MHz)	242T	MCS0	-4.94	11.0	-15.94
	5260	52	ax (20MHz)	242T	MCS0	3.82	11.0	-7.18
⊲	5280	56	ax (20MHz)	242T	MCS0	4.05	11.0	-6.95
Band 2A	5320	64	ax (20MHz)	242T	MCS0	4.40	11.0	-6.60
an	5270	54	ax (40MHz)	242T	MCS0	-0.87	11.0	-11.87
ш	5310	62	ax (40MHz)	242T	MCS0	-0.77	11.0	-11.77
	5290	58	ax (80MHz)	242T	MCS0	-4.31	11.0	-15.31
	5500	100	ax (20MHz)	242T	MCS0	3.85	11.0	-7.15
	5600	120	ax (20MHz)	242T	MCS0	4.15	11.0	-6.85
	5720	144	ax (20MHz)	242T	MCS0	4.11	11.0	-6.89
2C	5510	102	ax (40MHz)	242T	MCS0	-0.80	11.0	-11.80
Band	5590	118	ax (40MHz)	242T	MCS0	-1.08	11.0	-12.08
Ba	5710	142	ax (40MHz)	242T	MCS0	-0.63	11.0	-11.63
	5530	106	ax (80MHz)	242T	MCS0	-4.16	11.0	-15.16
	5610	122	ax (80MHz)	242T	MCS0	-4.19	11.0	-15.19
	5690	138	ax (80MHz)	242T	MCS0	-7.25	11.0	-18.25

Table 7-57. Conducted Power Spectral Density Measurements SISO ANT2 (Full Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	AMSUNG	Approved by: Quality Manager
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wy Keysight Spectrum Analyzer - Swept SA						
		SENSE:INT	#Avg Type:	RMS TF	AM Nov 09, 2019 ACE 1 2 3 4 5 6	Frequency
10 dB/div Ref 15.00 dBm		ree Run : 26 dB		Mkr1 5.18	DETANNNN	Auto Tune
5.00	dente la contractione de la cont	and the second	1 The second se			Center Freq 5.180000000 GHz
-5.00 -15.0						Start Freq 5.155000000 GHz
-25.0				May horas with the stand	where we was the	Stop Freq 5.205000000 GHz
-45.0						CF Step 5.000000 MHz <u>Auto</u> Man
-65.0						Freq Offset 0 Hz
-75.0 Center 5.18000 GHz				Span	50.00 MHz	Scale Type
#Res BW 1.0 MHz	#VBW 3.0 MI	lz		weep 1.000 ms	s (1001 pts)	

Plot 7-136. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 36)



Plot 7-137. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 40)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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	ectrum Analyzer -										×
L <mark>XI</mark> RL	RF 5	0Ω AC	CORREC		SE:INT	#Avg Typ	ALIGN AUTO e: RMS	TRAC	Nov 09, 2019 1 2 3 4 5 6 E A WWWWW	Frequency	1
		NFE	PNO: Fast C IFGain:Low	Atten: 26				DE		Auto T	
10 dB/div Log	Ref 15.0	0 dBm					Mkr	1 5.240 5.′	70 GHz 18 dBm	Auton	une
					▲1					Center F	req
5.00			- marine -	and and a second second second	and the second s	and the second of the second o				5.240000000	GHz
-5.00										Start F	
-15.0										5.215000000	GHz
-25.0		Lanamilaria					huww.	Martin		Stop F	req
-35.0	mhrunohruthinin	1						t sport the when	Mar Martin Martin	5.265000000	GHz
-45.0										CF S	
										5.000000 <u>Auto</u>	MHz Man
-55.0											
-65.0										Freq Of	f set 0 Hz
-75.0											
										Scale T	уре
	24000 GHz	2	#1/0	W 3.0 MHz			Puroon_4	Span 5	0.00 MHz	Log	Lin
#Res BW	T.U MIHZ		#VB	W 3.0 WHZ			Sweep 1	.000 ms (roon pisj		

Plot 7-138. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 48)



Plot 7-139. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 38)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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🔤 Keysight Spectrum Analy	zer - Swept SA					
IXI RL RF	50 Ω AC	PNO: Fast	SENSE:INT	ALIGN AUTO #Avg Type: RMS	10:04:45 AM Nov 09, 2019 TRACE 1 2 3 4 5 6 TYPE A WWWWW	Frequency
10 dB/div Ref 13	5.00 dBm	IFGain:Low	Atten: 26 dB	М	ьет <mark>а NNNNN</mark> kr1 5.235 3 GHz -0.73 dBm	Auto Tune
5.00			1	under week store		Center Freq 5.230000000 GHz
-15.0						Start Freq 5.180000000 GHz
-25.0						Stop Freq 5.280000000 GHz
-45.0	en an	4 ⁰		hyphylup	manthing of the color of the constant of the color of the constant of the color of the constant of the color	CF Step 10.000000 MHz <u>Auto</u> Man
-65.0						Freq Offset 0 Hz
Center 5.23000 G					Span 100.0 MHz	Scale Type
#Res BW 1.0 MH	2	#VBW	3.0 MHz	Sweep	1.000 ms (1001 pts) ^{JS}	

Plot 7-140. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 46)



Plot 7-141. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 42)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Keysight Spectrum Analyzer - S								
LX RL RF 50		PNO: Fast	SENSE:INT	#Avg Typ	ALIGN AUTO e: RMS	TRACE	Nov 09, 2019 1 2 3 4 5 6 A WWWWW	Frequency
10 dB/div Ref 15.00		IFGain:Low	Atten: 26 dB		Mkr1	5.256	90 GHz 32 dBm	Auto Tune
5.00			1					Center Freq 5.260000000 GHz
-5.00								Start Freq 5.235000000 GHz
-25.0 -35.0	antwork and				June how	Hawhaywaangagagagag	ML MUMAN	Stop Freq 5.285000000 GHz
-45.0								CF Step 5.000000 MHz <u>Auto</u> Man
-65.0								Freq Offset 0 Hz
Center 5.26000 GHz		#\/B\M	2.0 8844-			Span 50).00 MHz	Scale Type Log <u>Lin</u>
#Res BW 1.0 MHz		#vBW	3.0 MHz		Sweep 1.	000 ms (1	oon pis)	

Plot 7-142. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 52)



Plot 7-143. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 56)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dogo 117 of 266	
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	n Analyzer - Swept SA					
L <mark>XI</mark> RL F	RF 50Ω AC	CORREC	SENSE:INT	ALIGN AUTO #Avg Type: RMS	TRACE 1 2 3 4 5 6 TYPE A WWWWW	Frequency
10 dB/div Re	ef 15.00 dBm	IFGain:Low	Atten: 26 dB	MI	rr1 5.321 25 GHz 4.40 dBm	Auto Tune
5.00		personal contractions	And a	man aprila		Center Freq 5.320000000 GHz
-5.00						Start Freq 5.295000000 GHz
-25.0	Northolas Mary Mary M. 19	4		- Antony	WWWWWWWWWWWW	Stop Freq 5.345000000 GHz
-45.0						CF Step 5.000000 MHz <u>Auto</u> Man
-65.0						Freq Offset 0 Hz
						Scale Type
Center 5.320 #Res BW 1.0		#VBW	3.0 MHz		Span 50.00 MHz 1.000 ms (1001 pts)	
MSG					rus	

Plot 7-144. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 64)



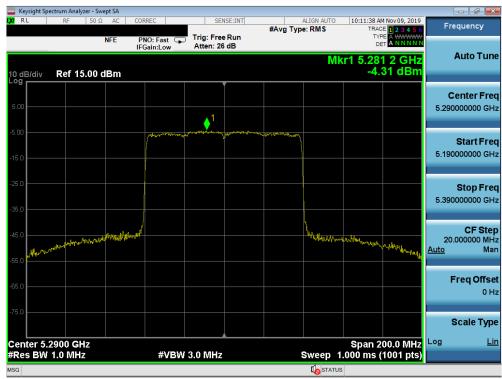
Plot 7-145. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 54)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Keysight Spectrum Analyzer -						
LXV RL RF 5		RREC	SENSE:INT	ALIGN AUTO #Avg Type: RMS	10:05:28 AM Nov 09, 2019 TRACE 1 2 3 4 5 6 TYPE A WWWWW	Frequency
10 dB/div Ref 15.0	, IF	NO: Fast ↔ Gain:Low	Trig: Free Run Atten: 26 dB	M	kr1 5.314 7 GHz -0.77 dBm	Auto Tune
5.00		مومعدمسيسي		an ann an		Center Freq 5.310000000 GHz
-15.0						Start Freq 5.260000000 GHz
-25.0						Stop Freq 5.360000000 GHz
-45.0	try of the first of the stand				and have applying	CF Step 10.000000 MHz <u>Auto</u> Man
-66.0						Freq Offset 0 Hz
						Scale Type
Center 5.31000 GHz #Res BW 1.0 MHz	2	#VBW	3.0 MHz	Sweep 7	Span 100.0 MHz I.000 ms (1001 pts)	Log <u>Lin</u>
MSG					S	

Plot 7-146. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 62)



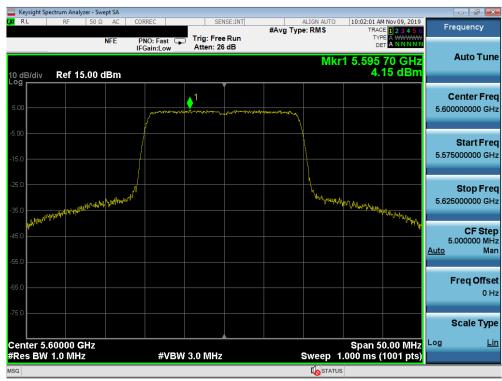
Plot 7-147. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 58)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dogo 110 of 266	
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Keysight Spectrum Analy.								- • • •
LXI R.L RF		DRREC	SENSE:INT	#Avg Typ	ALIGN AUTO e: RMS	TRACE	Nov 09, 2019 1 2 3 4 5 6	Frequency
	NFE	PNO: Fast 😱 FGain:Low	Trig: Free Run Atten: 26 dB			DET	ANNNN	Auto Turo
10 dB/div Ref 15	.00 dBm				Mkr	1 5.497 3.8	45 GHz 85 dBm	Auto Tune
5.00		and the second sec	1 www.en.	- warmany				Center Freq 5.500000000 GHz
-5.00								Start Freq 5.475000000 GHz
-25.0	L. Martinger) With Marilleria	uniter of the first of the state of the stat		Stop Freq 5.525000000 GHz
-35.0 -45.0								CF Step 5.000000 MHz <u>Auto</u> Man
-65.0								Freq Offset 0 Hz
-75.0								Scale Type
Center 5.50000 G #Res BW 1.0 MHz		#VBW :	3.0 MHz		Sweep 1.	Span 50 .000 ms (1).00 MHz 1001 pts)	Log <u>Lin</u>
MSG								

Plot 7-148. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 100)



Plot 7-149. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 120)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 100 of 200	
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	ctrum Analyzer - Swe										×
L <mark>XI</mark> RL	RF 50 Ω		DRREC		ISE:INT	#Avg Typ	ALIGN AUTO e: RMS	TRAC	M Nov 09, 2019 E 1 2 3 4 5 6 E A WWWWW	Frequency	
10 dB/div	Ref 15.00 c		PNO: Fast 🕞 Gain:Low	Atten: 26			Mkr	DE 1 5.715	65 GHz 11 dBm	Auto Tu	ine
5.00			maning	1	www.					Center Fr 5.720000000 G	
-5.00										Start Fr 5.695000000 G	
-25.0 -35.0	Jer Mar Mar Mar Mar Mar Mar Mar Mar Mar Ma	MAN AND AND A					U U U U U U U U U U U U U U U U U U U	handrown	₽₽ [₽] ₽₽ _{₽₽} ₽₽ _{₽₽} ₽₽	Stop Fr 5.745000000 G	_
-45.0									· 103	CF St 5.000000 M <u>Auto</u> M	
-65.0										Freq Offs 0	set Hz
										Scale Ty	pe
Center 5.7 #Res BW	72000 GHz 1.0 MHz		#VBW	3.0 MHz			Sweep 1	.000 ms (0.00 MHz 1001 pts)		
							- O MARCO				_

Plot 7-150. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 144)



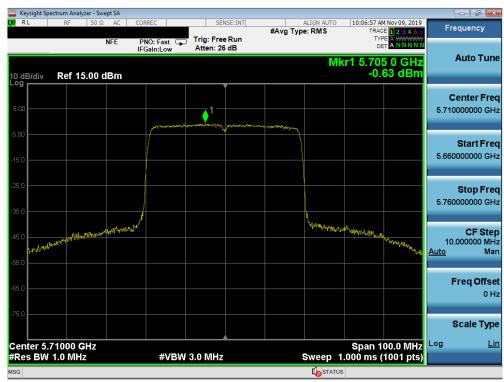
Plot 7-151. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 102)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dama 404 at 000	
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 121 of 266	
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Keysight Spectrum A								
LXU RL RF	50 Ω AC	CORREC	SENSE:INT	#Avg Type	ALIGN AUTO e: RMS	TRACE	Nov 09, 2019 1 2 3 4 5 6 A WWWWW	Frequency
10 dB/div Ref	15.00 dBm	IFGain:Low	Atten: 26 dB		Mk	r1 5.584	9 GHz 8 dBm	Auto Tune
5.00		مهيدمعدم	1					Center Freq 5.59000000 GHz
-15.0								Start Freq 5.540000000 GHz
-25.0								Stop Freq 5.640000000 GHz
-45.0 -55.0	and the former of the property	W			Without	Proventing for the second s	white and the	CF Step 10.000000 MHz <u>Auto</u> Man
-65.0								Freq Offset 0 Hz
								Scale Type
Center 5.59000 #Res BW 1.0 N		#VBW	3.0 MHz			.000 ms (′	00.0 MHz 1001 pts)	Log <u>Lin</u>
MSG					I STATUS			

Plot 7-152. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 118)



Plot 7-153. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 142)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dama 400 at 000	
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 122 of 266	
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	ectrum Analyzer - Swept SA						
LXU RL	RF 50 Ω AC	CORREC	SENSE:INT	#Avg Type		10:12:13 AM Nov 09, 2019 TRACE 1 2 3 4 5 TYPE A WWWWW	Frequency
10 dB/div	NFE Ref 15.00 dBm	PNO: Fast 😱 IFGain:Low	Trig: Free Run Atten: 26 dB		Mkr	1 5.517 4 GHz -4.16 dBm	Auto Tune
5.00			▲1				Center Freq 5.53000000 GHz
-5.00		hand the track of	y - Maline - ann gairt ag y Marair an Annair (menning			Start Freq 5.430000000 GHz
-25.0							Stop Freq 5.630000000 GHz
-45.0 -55.0	alter and the same of the stand	kur-oya			Land and the second states	alana ang ang ang ang ang ang ang ang ang	CF Step 20.000000 MHz <u>Auto</u> Man
-65.0							Freq Offset 0 Hz
-7310							Scale Type
Center 5. #Res BW		#VBW	3.0 MHz	s	Sweep 1.0	Span 200.0 MHz 00 ms (1001 pts	Log <u>Lin</u>
MSG					I STATUS		

Plot 7-154. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 106)



Plot 7-155. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 122)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 400 at 000
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 123 of 266
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	trum Analyzer - Swept	SA								
LXI RL	RF 50 Ω		REC		Run	#Avg Type	ALIGN AUTO e: RMS	TRAC	HNOV 09, 2019 E 1 2 3 4 5 6 E A WWWW	Frequency
10 dB/div Log	Ref 15.00 dB	IFG	iain:Low	Atten: 26			Mk	r1 5.67	3 8 GHz 25 dBm	Auto Tune
5.00				.1						Center Freq 5.69000000 GHz
-5.00			majikitinganat	and the makes	par an Long in a Marine	man work where a				Start Freq 5.59000000 GHz
-25.0										Stop Freq 5.790000000 GHz
-45.0		at when a st					Murtude With March	pression many well	Wayna wali	CF Step 20.000000 MH: <u>Auto</u> Mar
-65.0										Freq Offse 0 Ha
-75.0 Center 5.69	900 GHz							Span 2	00.0 MHz	Scale Type
#Res BW 5	10 kHz		#VBW	3.0 MHz			Sweep 1	1	1001 pts)	

Plot 7-156. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 138)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 104 of 200
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 124 of 266
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	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density	Margin [dB]
	5745	149	ax (20MHz)	242T	MCS0	1.25	30.00	-28.75
<u>س</u>	5785	157	ax (20MHz)	242T	MCS0	1.31	30.00	-28.69
	5825	165	ax (20MHz)	242T	MCS0	1.39	30.00	-28.61
Band	5755	151	ax (40MHz)	242T	MCS0	-3.16	30.00	-33.16
	5795	159	ax (40MHz)	242T	MCS0	-3.38	30.00	-33.38
	5775	155	ax (80MHz)	242T	MCS0	-4.88	30.00	-34.88

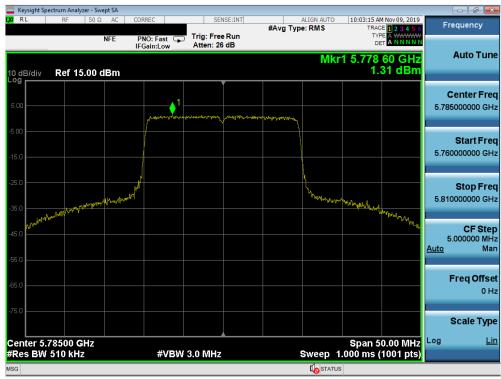
Table 7-58. Band 3 Conducted Power Spectral Density Measurements SISO ANT2 (Full Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 125 of 266
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🔤 Keysight Spectrum Analyzer - S								
LX RL RF 50	Ω AC	CORREC	SENSE:INT	A #Avg Type	LIGN AUTO RMS	10:02:49 AM N TRACE TYPE	ov 09, 2019 1 2 3 4 5 6 A WWWWW	Frequency
10 dB/div Ref 15.00	NFE	PNO: Fast IFGain:Low	Atten: 26 dB		Mkr1	DET	<u>A N N N N N</u>	Auto Tune
5.00		Jumme	and the and a state of the stat	1				Center Freq 5.745000000 GHz
-15.0								Start Freq 5.720000000 GHz
-25.0	Mary Mary				M. M. Marring	an programme	የሳ _{ሙላኪ}	Stop Freq 5.770000000 GHz
-45.0							. www.	CF Step 5.000000 MHz <u>Auto</u> Man
-65.0								Freq Offset 0 Hz
-75.0								Scale Type
Center 5.74500 GHz #Res BW 510 kHz		#VBW	3.0 MHz	s		Span 50. 000 ms (10	00 MHz 001 pts)	Log <u>Lin</u>
MSG					I STATUS			

Plot 7-157. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 149)



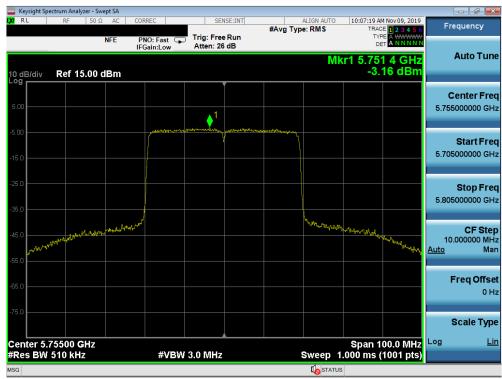
Plot 7-158. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 157)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		D 100 1000
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 126 of 266
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🔤 Keysight Spectrum Analyzer - :							
1)20 RL RF 50	Ω AC	CORREC	SENSE:INT	#Avg Type	ALIGN AUTO E: RMS	10:03:34 AM Nov 09, 20 TRACE 1 2 3 4 TYPE A ******	5 6 Frequency
10 dB/div Ref 15.00	NFE D dBm	PNO: Fast IFGain:Low	Atten: 26 dB		Mkr1	5.821 00 GH 1.39 dB	Auto Tune
5.00		and water and a second	1	monternet			Center Freq 5.825000000 GHz
-15.00							Start Freq 5.800000000 GHz
-25.0	por harring where	n d l			I I I I I I I I I I I I I I I I I I I	all was provided from	Stop Freq 5.850000000 GHz
-45.0						N	CF Step 5.000000 MHz <u>Auto</u> Man
-65.0							Freq Offset 0 Hz
							Scale Type
Center 5.82500 GHz #Res BW 510 kHz		#VBW	3.0 MHz	\$		Span 50.00 Mi 000 ms (1001 pt	Hz ^{Log <u>Lin</u> :s)}
MSG					I STATUS		

Plot 7-159. Power Spectral Density Plot SISO ANT2 (20 MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 165)



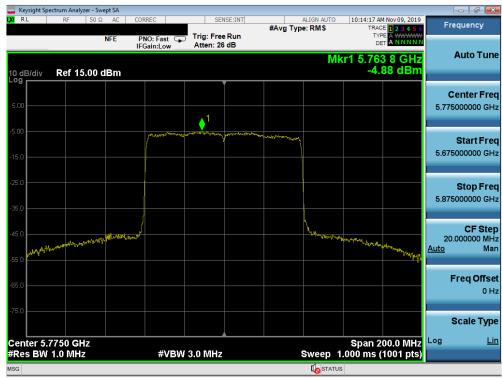
Plot 7-160. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 151)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 407 af 000
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 127 of 266
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	trum Analyzer - Sw										
LXU RL	RF 50 Ω	AC C	CORREC	SEI	ISE:INT	#Avg Typ	ALIGN AUTO		MNov 09, 2019	Frequ	uency
			PNO: Fast 🕞	Trig: Free Atten: 26		•		TYP			
			Gum.cow				M	(r1 5.78	87GHz	Αι	ito Tune
10 dB/div Log	Ref 15.00 (lBm						-3.	38 dBm		
209										Cer	nter Freg
5.00											0000 GHz
-5.00			a production of the		A Conception of a const					S	tart Freq
-15.0										5.74500	0000 GHz
-25.0			, 							S	top Freq
-35.0										5.84500	0000 GHz
-33.0			ſ				hurles				
-45.0	and the growth and	WHY WIN	N				a same	and the second second			CF Step 0000 MHz
where and they	kerter.									Auto	Man
-55.0											
-65.0										Fre	eq Offset
											0 Hz
-75.0											ala Tan
										Sc	ale Type
Center 5.7								Span 1	00.0 MHz	Log	<u>Lin</u>
#Res BW :	510 kHz		#VBW	3.0 MHz					1001 pts)		
MSG								5			

Plot 7-161. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 159)



Plot 7-162. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 155)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		D 100
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Summed MIMO Power Spectral Density Measurements (26 Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	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	ax (20MHz)	26T	MCS0	5.16	6.17	8.70	11.00	-2.30
	5200	40	ax (20MHz)	26T	MCS0	5.07	6.33	8.76	11.00	-2.24
p p	5240	48	ax (20MHz)	26T	MCS0	5.83	6.50	9.19	11.00	-1.81
Band 1	5190	38	ax (40MHz)	26T	MCS0	5.92	6.01	8.97	11.00	-2.03
	5230	46	ax (40MHz)	26T	MCS0	6.29	6.29	9.30	11.00	-1.70
	5210	42	ax (80MHz)	26T	MCS0	6.36	6.32	9.35	11.00	-1.65
	5260	52	ax (20MHz)	26T	MCS0	4.36	5.04	7.72	11.00	-3.28
⊲	5280	56	ax (20MHz)	26T	MCS0	4.44	4.88	7.67	11.00	-3.33
Band 2A	5320	64	ax (20MHz)	26T	MCS0	5.28	5.61	8.46	11.00	-2.54
gan	5270	54	ax (40MHz)	26T	MCS0	5.18	5.03	8.12	11.00	-2.88
	5310	62	ax (40MHz)	26T	MCS0	5.85	5.88	8.87	11.00	-2.13
	5290	58	ax (80MHz)	26T	MCS0	5.53	6.01	8.79	11.00	-2.21
	5500	100	ax (20MHz)	26T	MCS0	4.92	4.30	7.63	11.00	-3.37
	5600	120	ax (20MHz)	26T	MCS0	4.18	4.65	7.43	11.00	-3.57
	5720	144	ax (20MHz)	26T	MCS0	4.68	4.90	7.80	11.00	-3.20
SC	5510	102	ax (40MHz)	26T	MCS0	5.59	4.99	8.31	11.00	-2.69
Band 2C	5590	118	ax (40MHz)	26T	MCS0	6.72	5.68	9.24	11.00	-1.76
Ba	5710	142	ax (40MHz)	26T	MCS0	5.91	5.01	8.49	11.00	-2.51
	5530	106	ax (80MHz)	26T	MCS0	6.66	5.47	9.12	11.00	-1.88
	5610	122	ax (80MHz)	26T	MCS0	6.79	5.45	9.18	11.00	-1.82
	5690	138	ax (80MHz)	26T	MCS0	4.37	3.02	6.76	11.00	-4.24

 Table 7-59. Bands 1, 2A, 2C MIMO Conducted Power Spectral Density Measurements MIMO (26 Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density	Margin [dB]
	5745	149	ax (20MHz)	26T	MCS0	2.69	3.73	6.25	30.00	-23.75
	5785	157	ax (20MHz)	26T	MCS0	2.67	3.04	5.87	30.00	-24.13
	5825	165	ax (20MHz)	26T	MCS0	2.29	2.91	5.62	30.00	-24.38
Band	5755	151	ax (40MHz)	26T	MCS0	2.67	2.85	5.77	30.00	-24.23
	5795	159	ax (40MHz)	26T	MCS0	2.85	3.49	6.19	30.00	-23.81
	5775	155	ax (80MHz)	26T	MCS0	6.10	6.47	9.30	30.00	-20.70

Table 7-60. Band 3 MIMO Conducted Power Spectral Density Measurements MIMO (26 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 120 of 200	
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	Frequency [MHz]	Channel No.	802.11 Mode	Tones	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	ax (20MHz)	242T	MCS0	0.62	0.89	3.77	11.00	-7.23
	5200	40	ax (20MHz)	242T	MCS0	0.77	1.12	3.96	11.00	-7.04
Band 1	5240	48	ax (20MHz)	242T	MCS0	1.68	1.42	4.56	11.00	-6.44
Bar	5190	38	ax (40MHz)	484T	MCS0	-1.84	-1.46	1.36	11.00	-9.64
	5230	46	ax (40MHz)	484T	MCS0	-2.44	-1.99	0.80	11.00	-10.20
	5210	42	ax (80MHz)	996T	MCS0	-6.16	-6.96	-3.53	11.00	-14.53
	5260	52	ax (20MHz)	242T	MCS0	2.15	1.57	4.88	11.00	-6.12
	5280	56	ax (20MHz)	242T	MCS0	3.00	1.47	5.31	11.00	-5.69
Band 2A	5320	64	ax (20MHz)	242T	MCS0	2.78	1.28	5.10	11.00	-5.90
Bano	5270	54	ax (40MHz)	484T	MCS0	-2.97	-2.68	0.19	11.00	-10.81
	5310	62	ax (40MHz)	484T	MCS0	-2.15	-2.41	0.73	11.00	-10.27
	5290	58	ax (80MHz)	996T	MCS0	-6.02	-6.61	-3.29	11.00	-14.29
	5500	100	ax (20MHz)	242T	MCS0	2.35	1.97	5.17	11.00	-5.83
	5600	120	ax (20MHz)	242T	MCS0	1.78	0.63	4.25	11.00	-6.75
	5720	144	ax (20MHz)	242T	MCS0	1.17	-0.19	3.55	11.00	-7.45
Ŋ	5510	102	ax (40MHz)	484T	MCS0	-2.67	-3.10	0.13	11.00	-10.87
Band 2	5590	118	ax (40MHz)	484T	MCS0	-3.10	-3.54	-0.30	11.00	-11.30
Ba	5710	142	ax (40MHz)	484T	MCS0	-1.51	-2.22	1.16	11.00	-9.84
	5530	106	ax (80MHz)	996T	MCS0	-6.41	-6.83	-3.61	11.00	-14.61
	5610	122	ax (80MHz)	996T	MCS0	-7.14	-7.38	-4.25	11.00	-15.25
	5690	138	ax (80MHz)	996T	MCS0	-9.58	-9.99	-6.77	11.00	-17.77

Table 7-61. Bands 1, 2A, 2C MIMO Conducted Power Spectral Density Measurements MIMO (Full Tones)

	Frequency [MHz]	Channel No.	802.11 Mode	Tones	Data Rate [Mbps]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density	Margin [dB]
	5745	149	ax (20MHz)	242T	MCS0	-0.88	-0.87	2.13	30.00	-27.87
	5785	157	ax (20MHz)	242T	MCS0	-1.36	-0.89	1.89	30.00	-28.11
1d 3	5825	165	ax (20MHz)	242T	MCS0	-1.33	-1.57	1.56	30.00	-28.44
Band	5755	151	ax (40MHz)	484T	MCS0	-4.52	-4.22	-1.36	30.00	-31.36
	5795	159	ax (40MHz)	484T	MCS0	-5.82	-6.07	-2.93	30.00	-32.93
	5775	155	ax (80MHz)	996T	MCS0	-7.66	-6.62	-4.10	30.00	-34.10

Table 7-62. Band 3 MIMO Conducted Power Spectral Density Measurements MIMO (Full Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 120 of 200
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 130 of 266
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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 with reduced Antenna 1 and Antenna 2 powers per manufacture's tune-up document. The measured values were then summed in linear power units then converted back to dBm.

Sample MIMO Calculation:

Assuming the average conducted power spectral density was measured to be 5.88 dBm for Antenna-1 and 6.27 dBm for Antenna-2.

Antenna 1 + Antenna 2 = MIMO

(5.88 dBm + 6.27 dBm) = (3.87 mW + 4.24 mW) = 8.11mW = 9.09 dBm

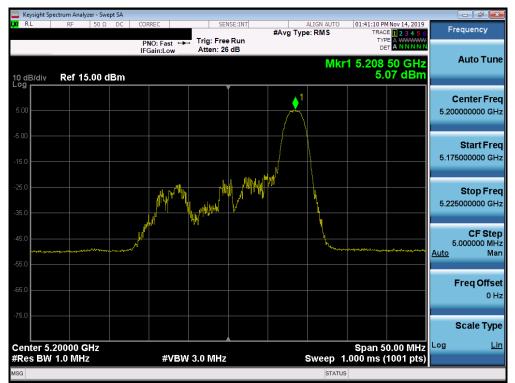
FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 121 of 266
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MIMO Antenna-1 Power Spectral Density Measurements (26 Tones)



Plot 7-163. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - 26 Tones (UNII Band 1) - Ch. 36)



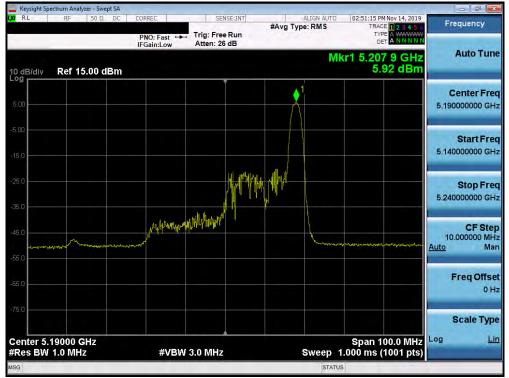
Plot 7-164. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - 26 Tones (UNII Band 1) - Ch. 40)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 122 of 266	
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 132 of 266	
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	Spectrum Analyzer - Sv									
L XI RL	RF 50 S	2 DC CC	ORREC	SEN	ISE:INT	#Avg Typ	ALIGN AUTO e: RMS		Nov 14, 2019	Frequency
			PNO: Fast ↔ Gain:Low	Trig: Free Atten: 26				TYPI DE		A
10 dB/div Log	Ref 15.00	dBm					Mkr	1 5.248 5.8	55 GHz 33 dBm	Auto Tuno
						♦1				Center Free
5.00						\square				5.240000000 GH
-5.00										Start Free
-15.0										5.215000000 GH
-25.0					ļ	16704				Stop Free
-35.0			/W	al.	LANNIN M		l l			5.265000000 GH
-33.0			MAN WAN	(m)	. 11					CF Ste
-45.0	ner marting the state of the st	-					the war	hyserca-leanantaract	~ _અ ન્નીન્ફાઇન્ફ્રેન્ઝેન્ઝે	5.000000 MH <u>Auto</u> Ma
-65.0										Freq Offse
										0 H
-75.0										Scale Typ
	.24000 GHz							Span 50	2.00 191112	Log <u>Li</u> i
#Res BV	V 1.0 MHz		#VBW	3.0 MHz			Sweep 1	.000 ms (′	1001 pts)	

Plot 7-165. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - 26 Tones (UNII Band 1) - Ch. 48)



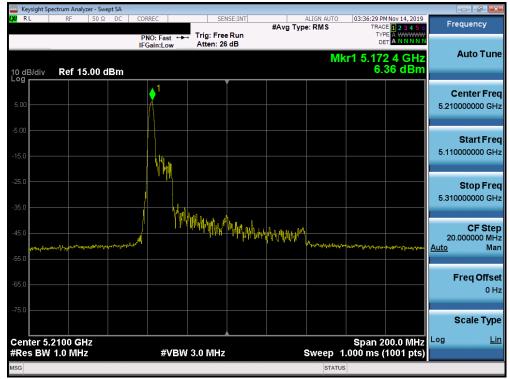
Plot 7-166. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax - 26 Tones (UNII Band 1) - Ch. 38)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 100 of 000
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 133 of 266
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Keysight Spectrum Analyzer - Swept		ALIGN AUTO 02:52:36 PM Nov 14, 201	
	PNO: Fast +++ Trig: Free Run	#Avg Type: RMS TRACE 12345 TYPE A WWWW	Frequency
10 dB/div Ref 15.00 dB	IFGain:Low Atten: 26 dB	Mkr1 5.247 9 GH 6.29 dBr	Auto Tune
5.00			Center Fre 5.230000000 GH
15.0			Start Fre 5.180000000 GH
35.0			Stop Fre 5.280000000 GH
45.0	munal improperties to applie		CF Ste 10.000000 MH <u>Auto</u> Ma
65,0			Freq Offs 0 H
^{75.0} Center 5.23000 GHz ≭Res BW 1.0 MHz	#VBW 3.0 MHz	Span 100.0 MH Sweep 1.000 ms (1001 pt:	Scale Typ z Log <u>L</u>
ISG		STATUS	

Plot 7-167. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax - 26 Tones (UNII Band 1) - Ch. 46)



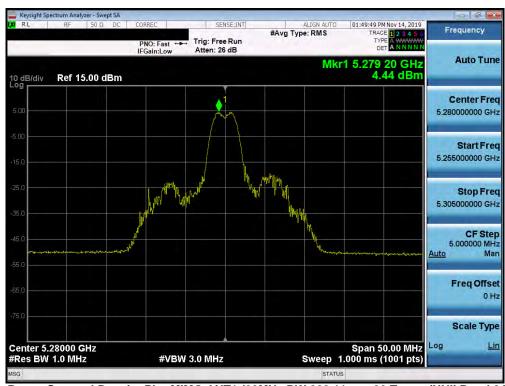
Plot 7-168. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax - 26 Tones (UNII Band 1) - Ch. 42)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 124 of 266	
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Plot 7-169. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - 26 Tones (UNII Band 2A) - Ch. 52)



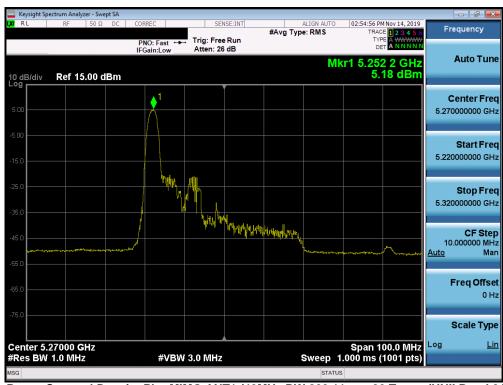
Plot 7-170. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - 26 Tones (UNII Band 2A) - Ch. 56)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 125 of 266
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Plot 7-171. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - 26 Tones (UNII Band 2A) - Ch. 64)



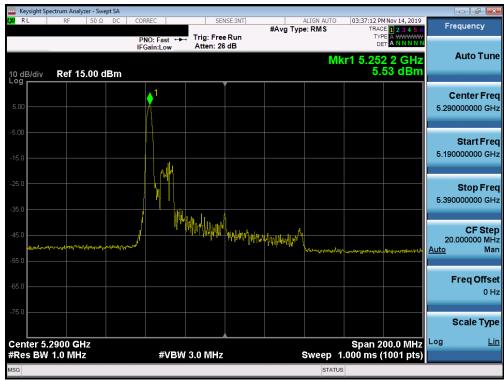
Plot 7-172. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax - 26 Tones (UNII Band 2A) - Ch. 54)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Daga 126 at 266	
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 136 of 266	
© 2020 PCTEST				V 9.0 02/01/2019	



Keysight Spectrum Analyzer - Swept SA					- ē 🔀
XURL RF 50Ω DC	PNO East ++ Tr	ig: Free Run tten: 26 dB	ALIGN AUTO #Avg Type: RMS	02:56:14 PM Nov 14, 2019 TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNNN	Frequency
IO dB/div Ref 15.00 dBm			M	r1 5.308 5 GHz 5.85 dBm	Auto Tun
5.00		1			Center Fre 5.310000000 GH
15.0					Start Fre 5.260000000 GH
35.0	Manhund M	44 hay had and had and had and had had had had had had had had had ha	Muca		Stop Fre 5.360000000 GH
15.0	winnel of		Martin Martin	an san that has going a source in the same	CF Ste 10.000000 MH Auto Ma
36.0					Freq Offs 0 F
75.0 Center 5.31000 GHz #Res BW 1.0 MHz	#VBW 3.0	MHz	Sweep 1	Span 100.0 MHz .000 ms (1001 pts)	Scale Typ
ISG			STATUS	V	

Plot 7-173. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 62)



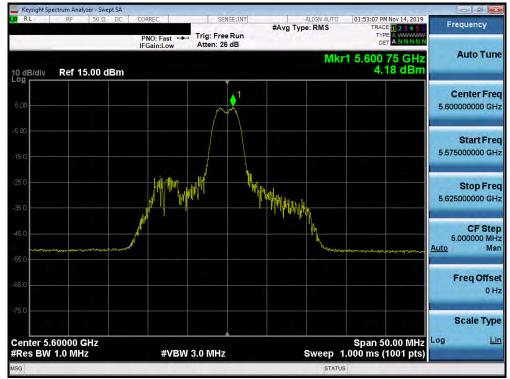
Plot 7-174. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax - 26 Tones (UNII Band 2A) - Ch. 58)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Page 137 of 266	
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset			
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Plot 7-175. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 100)



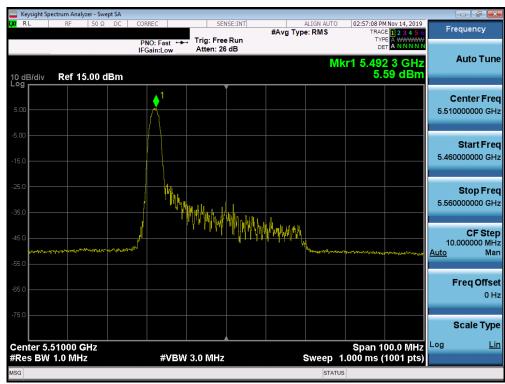
Plot 7-176. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 120)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dogo 120 of 200	
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 138 of 266	
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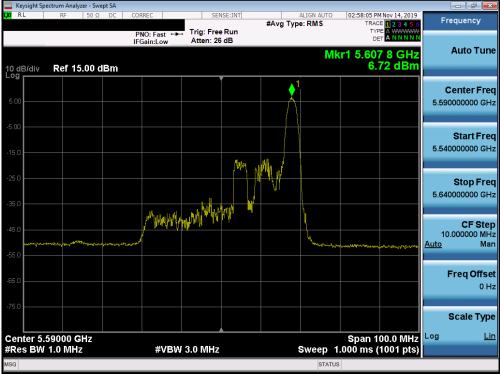
Plot 7-177. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 144)



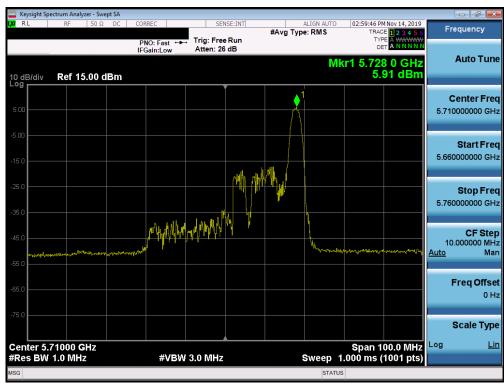
Plot 7-178. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 102)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 400 at 000
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 139 of 266
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Plot 7-179. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 118)



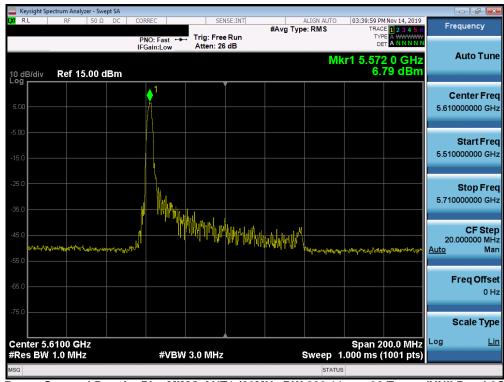
Plot 7-180. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 142)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 140 of 200
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	ectrum Analyzer - Swe										
LXI RL	RF 50 Ω	DC CC	RREC	SEN	ISE:INT	#Avg Ty	ALIGN AUTO		Nov 14, 2019	Frequenc	cy
10 dB/div	Ref 15.00 c	IF	PNO: Fast ↔ Gain:Low	. Trig: Free Atten: 26				TYP DE		Auto	Tune
5.00							1			Center 5.53000000	
-5.00										Start 5.43000000	: Freq 0 GHz
-25.0					t h.					Stop 5.63000000	Freq 0 GHz
-45.0	an an faith and a state of the	_{ให้} ในสารประกันสาร	, Attributes	opphymetryklyd	Yayaya Ya		howwww	J. M. J. of Margin per states	-M-MM-s-Quar	CF 20.00000 <u>Auto</u>	Step 0 MHz Man
-65.0										Freq C	Offset 0 Hz
-75.0										Scale	Туре
Center 5. #Res BW			#VBW	3.0 MHz			Sweep 1	Span 20 .000 ms (′	00.0 MHz 1001 pts)	Log	Lin
MSG							STATUS	;			

Plot 7-181. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 106)



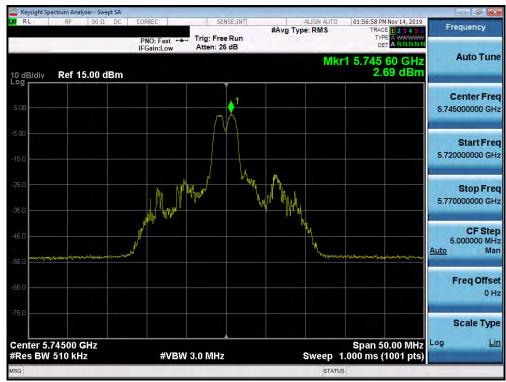
Plot 7-182. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 122)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 141 of 266
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 141 of 266
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Keysight Spectrum Analyzer - Swept SA		-			
XURL RF 50ΩDC	CORREC PNO: Fast ↔ Trig	SENSE(INT)	#Avg Type: RMS	03:40:39 PM Nov 14, 2019 TRACE 1 2 3 4 5 6 TYPE A WWWWW	Frequency
0 dB/div Ref 15.00 dBm	IFGain:Low Att	en: 26 dB	M	cr1 5.727 6 GHz 4.37 dBm	Auto Tune
5.00			1		Center Free 5,69000000 GH
15.0					Start Free 5.590000000 GH
35.0					Stop Free 5.790000000 GH
45.0	week Minder Minder Minder	icynd Prodeball	MARY Common	Milinghamana	CF Stej 20.000000 MH <u>Auto</u> Ma
65.0					Freq Offse 0 H
75 0 Center 5.6900 GHz #Res BW 510 kHz	#VBW 3.0	MHz	Sweep 1	Span 200.0 MHz .000 ms (1001 pts)	Scale Type Log <u>Li</u> i
SG			STATU	7	

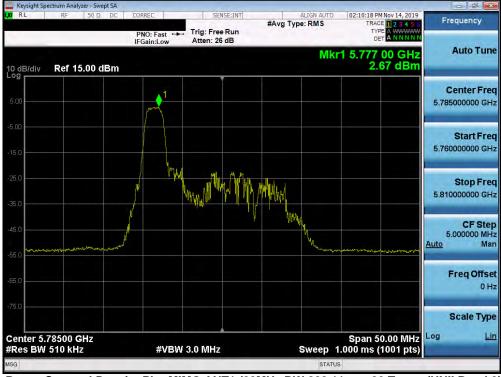
Plot 7-183. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 138)



Plot 7-184. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 149)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 140 at 200
1M2001240012-06.A3L 10/11/19 – 03/05/2020		Portable Handset		Page 142 of 266
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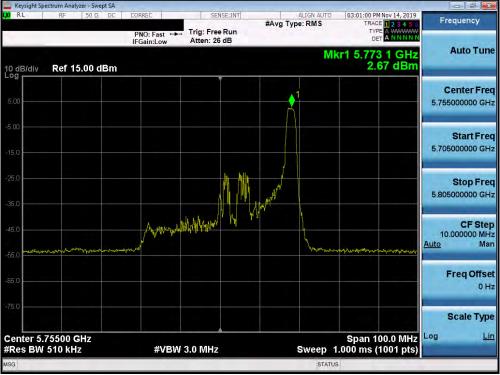
Plot 7-185. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 157)



Plot 7-186. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 165)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 142 of 266
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Plot 7-187. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 151)



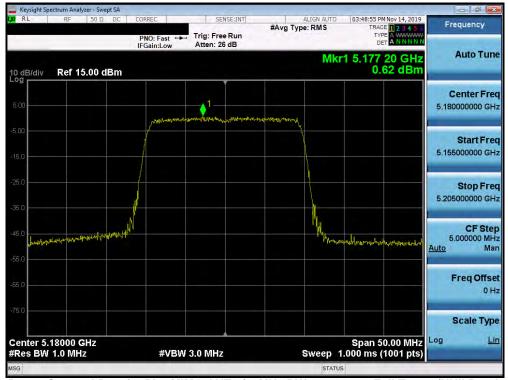
Plot 7-188. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 159)

FCC ID: A3LSMG986JPN	<u>PCTEST</u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		D
1M2001240012-06.A3L 10/11/19 - 03/05/202		Portable Handset		Page 144 of 266
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Keysight Spectrum Analyzer - Swept SA RL RF 50 Ω DC	CORREC	SENSE(INT	#Avg Type	IGN AUTO	03:42:19 PM Nov 14, 2019 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast +++	Trig: Free Run Atten: 26 dB	#Avg Type	. KINI S	TYPE A WARAWAY DET A NNNNN	
10 dB/div Ref 15.00 dBm				Mkr	1 5.737 2 GHz 6.10 dBm	Auto Tune
5.00	1					Center Free 5.775000000 GH
15.0	Aldera					Start Fre 5.675000000 GH
35.0						Stop Fre 5.875000000 GH
45.0	we wat	and the second	homenant	Name	and a second	CF Ste 20.000000 M⊦ <u>Auto</u> Ma
66.0						Freq Offs 0 H
-75.0 Center 5.7750 GHz					Span 200.0 MHz	Scale Typ
#Res BW 1.0 MHz	#VBW :	3.0 MHz	S	weep 1.0	00 ms (1001 pts)	

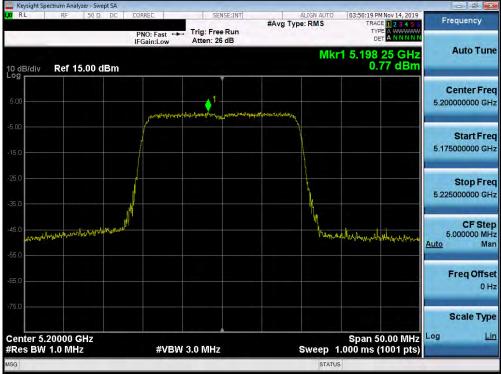
Plot 7-189. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 155)



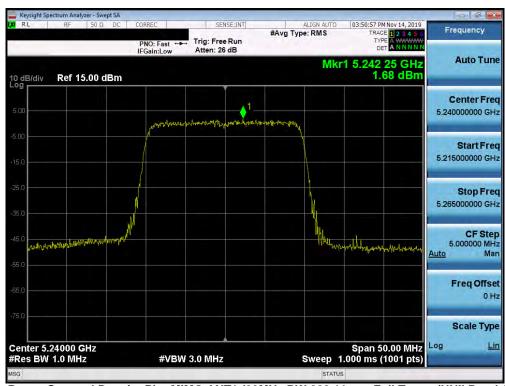
Plot 7-190. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 36)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 145 of 200
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 145 of 266
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Plot 7-191. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 40)



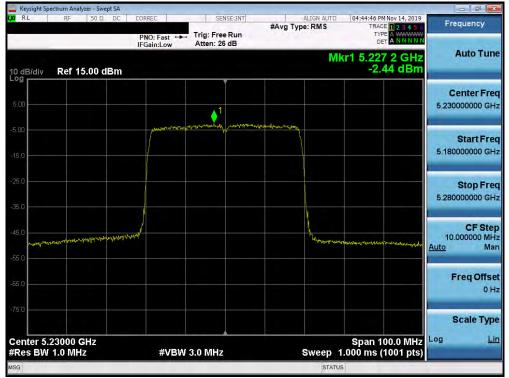
Plot 7-192. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 48)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 146 of 266
1M2001240012-06.A3L 10/11/19 - 03/05/2020		Portable Handset		Page 146 of 266
© 2020 PCTEST		·		V 9.0 02/01/2019



Keysight Spectrum Analyzer - Swept SA RL RF 50 Ω DC	CORREC	SENSE:INT		ALIGN AUTO	04:43:11 PM Nov	14 2010	
NC 14 3032 DC	PNO: Fast Trig:	Free Run	#Avg Typ				Frequency
0 dB/div Ref 15.00 dBm	IFGain:Low Atter	: 26 dB		Mk	r1 5.196 7 -1.84	GHz	Auto Tune
5.00							Center Fre 5.190000000 GH
15.0	alardyahardingania (ufi watalikarika		and over the state of the				Start Fre 5.140000000 GH
95.0							Stop Fre 5.240000000 GF
15.0	would			Wenter Madage	merum room room how have be	whether A	CF Ste 10.000000 Mi uto Mi
5.0							Freq Offs 01
250 Center 5.19000 GHz Res BW 1.0 MHz	#VBW 3.0 M	H7		Sween 1	Span 100. .000 ms (100	0 191112	Scale Typ
SG	# * 13 * * 3:0 1			STATUS	Y.		

Plot 7-193. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 38)



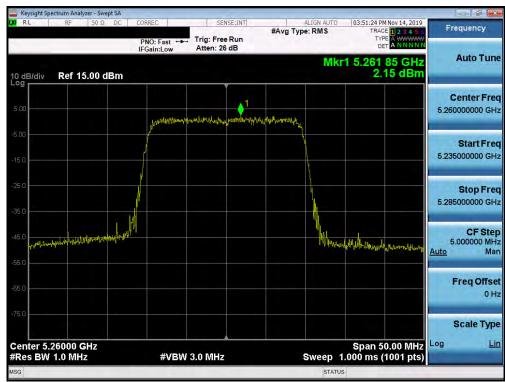
Plot 7-194. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 46)

FCC ID: A3LSMG986JPN	<u>PCTEST</u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 147 of 266
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	um Analyzer - Swe	pt SA									- •
LXU RL	RF 50 Ω	DC CO	RREC	SEI	NSE:INT	#Avg Typ	ALIGN AUTO e: RMS		Nov 14, 2019	Freq	uency
10 dB/div	Ref 15.00 d	IF	NO: Fast ↔ Gain:Low	. Trig: Free Atten: 26				TYP DE	8 8 GHz 16 dBm	A	uto Tune
5.00					<u> </u>						n ter Freq 00000 GHz
-5.00			pandpaminalay	/myhownahindy/si	July Arming	genetel (Maladi					tart Freq 00000 GHz
-25.0											top Freq 00000 GHz
-45.0 มูลฟูปุ่งกุมไข -55.0	where the second	il the second and	5 4 				h Marson was been been been been been been been bee	haventhoust	whether yesturdige	20.00 <u>Auto</u>	CF Step 00000 MHz Man
-65.0										Fr	e q Offset 0 Hz
-75.0											ale Type
Center 5.21 #Res BW 1.			#VBW	3.0 MHz			Sweep 1	Span 2 .000 ms (00.0 MHz 1001 pts)	Log	<u>Lin</u>
MSG							STATUS				

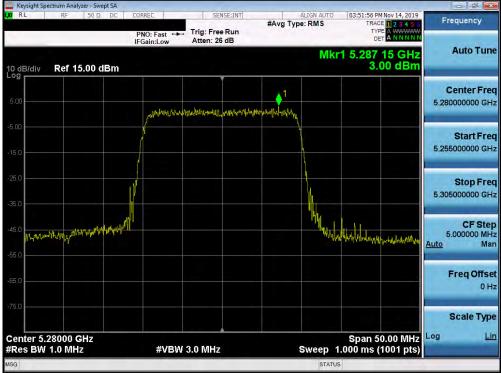
Plot 7-195. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 42)



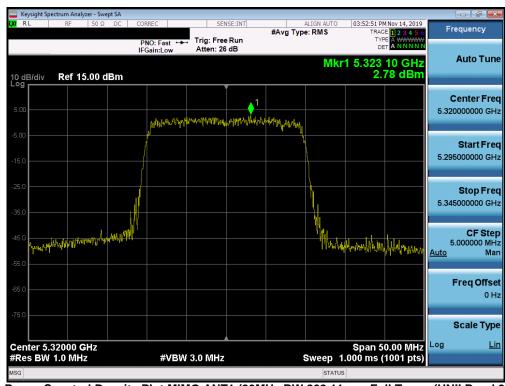
Plot 7-196. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 52)

FCC ID: A3LSMG986JPN	<u>PCTEST</u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 149 of 200	
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Plot 7-197. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 56)



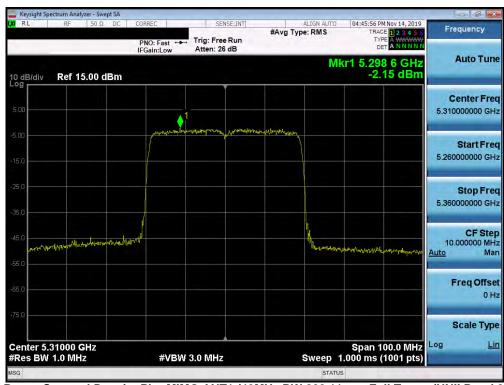
Plot 7-198. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 64)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		D
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Keysight Spectrum Analyzer - Swept SA			and the second se	- ē ×
P	NO: Fast +++ Trig: Free	#Avg Typ Run	e: RMS TRACE	Nov 14, 2019 12 3 4 5 6 A WWWWW A NNNNN
10 dB/div Ref 15.00 dBm	Gain:Low Atten: 26	dB	Mkr1 5.258	
5.00	▲1			Center Freq 5.270000000 GHz
-5.00	and a first of the second state of the second	personal and a second and a second		Start Free 5.220000000 GHz
-25.0				Stop Freq 5.32000000 GHz
-45.0			Maringarounageas	CF Step 10.000000 MHz <u>Auto</u> Mar
-65.0				Freq Offset 0 Hz
-75.0 Center 5.27000 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz		Span 10 Sweep 1.000 ms (7	Scale Type D0.0 MHz Log <u>Lin</u> 1001 pts)
MSG			STATUS	

Plot 7-199. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 54)



Plot 7-200. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 62)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dogo 150 of 266	
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Keysight Spectrum Analyzer - Swept SA RF 50 Ω DC	CORREC	SENSE:INT		ALIGN AUTO	05:08:32 PM Nov 14, 2019	
		Trig: Free Run	#Avg Typ	e:RMS	TRACE 1 2 3 4 5 6 TYPE A WAAWAA	Frequency
	IFGain:Low	Atten: 26 dB		M	r1 5.285 8 GHz	Auto Tune
0 dB/div Ref 15.00 dBm			_		-6.01 dBm	
						Center Free
5.00						5.290000000 GH
5.00	Manualthrough	white and more	shipmanthant			Start Fred
15.0			1			5.19000000 GHz
25.0						Otor Error
						Stop Free 5.390000000 GH
35.0						
45.0	out			Donation of 1		CF Step 20.000000 MH:
55.0				· wronwelly fr	ected reserves for the second second	<u>Auto</u> Mar
65.0						Freq Offse
						0 Ha
75.0						Scale Type
Center 5.2900 GHz					Span 200.0 MHz	Log <u>Lin</u>
Res BW 1.0 MHz	#VBW 3	3.0 MHz		10	.000 ms (1001 pts)	1.1.1
G				STATUS		

Plot 7-201. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 58)



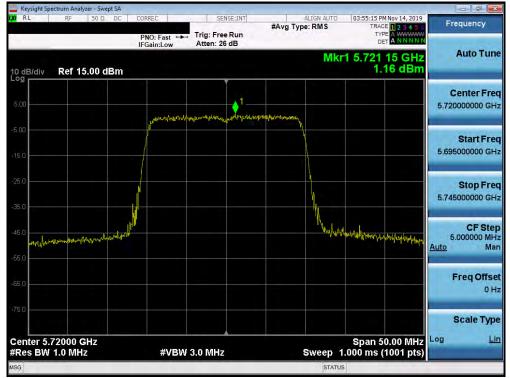
Plot 7-202. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 100)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 451 of 266
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Keysight Spectrum Analyzer - Swept SA RL RF 50 Ω DC C	ORREC	SENSE:INT		ALIGN AUTO	02/54/22 04	Nov 14, 2019	
	PNO: Fast	g: Free Run	#Avg Typ		TRAC TYP	E A WWWWW	Frequency
) dB/div Ref 15.00 dBm	IFGain:Low Att	en: 26 dB		Mkr	1 5.603	30 GHz 78 dBm	Auto Tune
.00	Martinessonapleting	unnin upodovy sta	Mathalananana				Center Fred 5.600000000 GH:
5,0							Start Free 5.575000000 GH
5.0							Stop Free 5.625000000 GH
5.0 Jument Martin Alt				William	the structure	a Mayaphilika	CF Step 5.000000 MH <u>Auto</u> Ma
5,0							Freq Offse 0 H
					0		Scale Type
enter 5.60000 GHz Res BW 1.0 MHz	#VBW 3.0	MHz		Sweep 1	.000 ms (0.00 191112	
SG				STATUS	Y		

Plot 7-203. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 120)



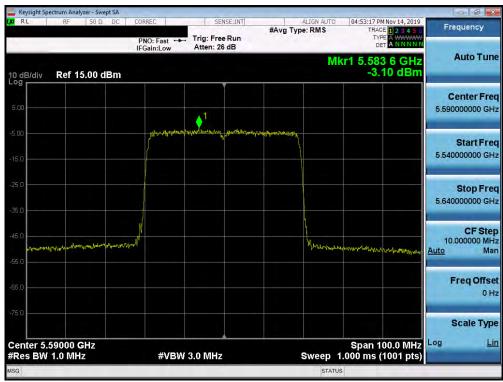
Plot 7-204. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 144)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 150 of 266
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Keysight Spectrum Analyzer - Swept SA		The second second			
XIRL RF 50Ω DC	CORREC PNO: Fast ↔→→ IFGain:Low	SENSE(INT Trig: Free Run Atten: 26 dB	ALIGN #Avg Type: RN	IS TRACE	V 14,2019 2 3 4 5 6 WWWWW NNNNN
10 dB/div Ref 15.00 dBm	II Gam.Eow			Mkr1 5.512 3 -2.67	3 GHz Auto Tun 7 dBm
5.00		↓1			Center Fre 5.510000000 GH
-5.00		and an other and a second second			Start Fre 5.460000000 GH
35.0					Stop Fre 5.560000000 GH
45.0 			how	alleren for an and a start of the second start	CF Ste 10.000000 MH <u>Auto</u> Ma
65.0			· · · · · · · · · · · · · · · · · · ·		Freq Offse 0 H
-75.0 Center 5.51000 GHz #Res BW 1.0 MHz	#VBW :	3.0 MHz	Swe	Span 100 ep 1.000 ms (10	.0 MHz ^{Log Li} 01 pts)
MSG				STATUS	

Plot 7-205. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 102)



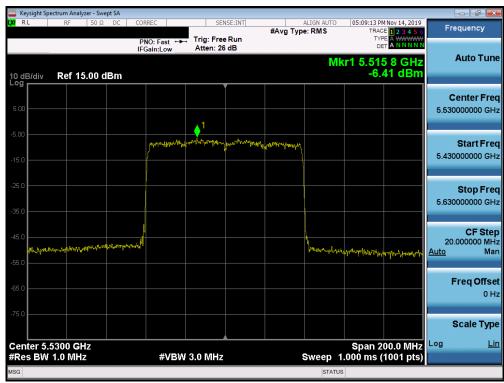
Plot 7-206. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 118)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 450 at 000
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 153 of 266
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Keysight Spectrum Analyzer - Swept SA					
X RL RF 50Ω DC	CORREC	SENSE:INT	#Avg Type: RMS	0 04:53:58 PM Nov 14, 2019 TRACE 1 2 3 4 5 6 TYPE A WWWWW	Frequency
10 dB/div Ref 15.00 dBm	PNO: Fast ↔ IFGain:Low	Atten: 26 dB	P	Akr1 5.712 5 GHz -1.51 dBm	Auto Tune
5.00		Januar Ja	ik da 10 a. a sum		Center Fred 5.710000000 GH
15.0			holymenia		Start Free 5.660000000 GH
35.0					Stop Free 5.760000000 GH
45.0 	m ¹			Hall have supply the service and service and services	CF Stej 10.000000 MH <u>Auto</u> Ma
56.0					Freq Offse 0 H
75.0 Center 5.71000 GHz #Res BW 1.0 MHz	#VBW	3.0 MHz	Sweep	Span 100.0 MHz 1.000 ms (1001 pts)	Scale Type Log <u>Li</u> i
ISG				TUS	

Plot 7-207. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 142)



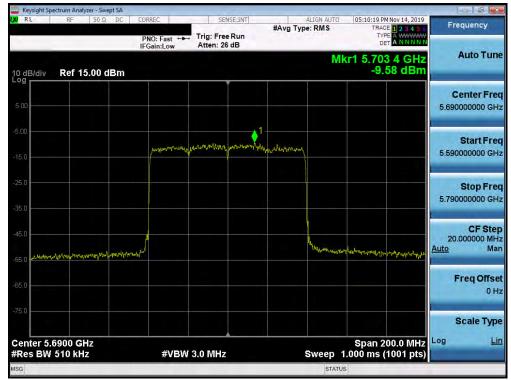
Plot 7-208. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 106)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 454 at 000
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 154 of 266
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Frequency	05:09:50 PM Nov 14, 2019 TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNNN	ALIGN AUTO e: RMS	#Avg Typ			RREC NO: Fast ↔ →→ Gain:Low	P	RF 50 Ω	RL
Auto Tune	r1 5.613 8 GHz -7.14 dBm	М						Ref 15.00 (IB/div
Center Fred 5.610000000 GH;									
Start Fred 5.510000000 GHz			and the second second	priver and the second	Aplownhury	Margar Harmon Balanta)
Stop Fred 5.710000000 GH;									
CF Step 20.000000 MH: Auto Mar	Myrapithandyllica,magalywr	Hersperson					and an Alexandra and a second	apoposta maglage to) -Winnerver
Freq Offse 0 Ha									
Scale Type Log <u>Lir</u>	Span 200.0 MHz .000 ms (1001 pts)				3.0 MHz				nter 5.61 es BW 1.

Plot 7-209. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 122)



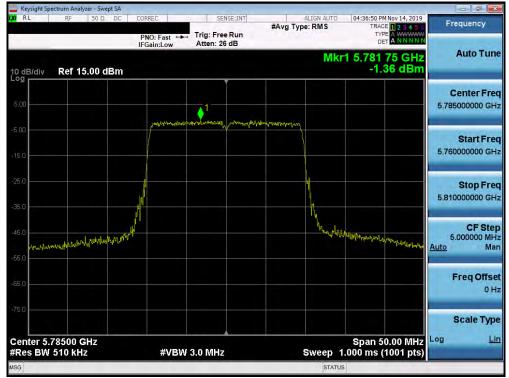
Plot 7-210. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 138)

FCC ID: A3LSMG986JPN	<u><u>PCTEST</u></u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 155 of 266
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Keysight Spectrum Analyzer - Swep	t SA DC CORREC	SENSE:INT	1	ALIGN AUTO	04:36:08 PM Nov 14	2010
NE NF 2032		and the second second	#Avg Typ		TRACE 1 2 3 TYPE A WM	456 Frequency
	PNO: Fast ++++ IFGain:Low	Trig: Free Run Atten: 26 dB			DET A N N	NNN
0 dB/div Ref 15.00 dE	Зm			Mkr	1 5.746 70 0 -0.88 d	Hz Auto Tun Bm
		Í				Center Fre
5,00	Manna	momonones methoden	polyman union			5.745000000 GH
5.00						Start Fre
15.0						5.720000000 GH
25.0				۱.		Stop Fre
35.0				1		5.770000000 GH
45.0	N			N.		CF Ste
45.0 Magaining musel Month of the 55.0	sharpatha			and the cont	studymethownershoul	5.000000 MH Auto Ma
						Freq Offse
65.0						OH
75.0						Scale Typ
Center 5.74500 GHz	1				Span 50.00 I	
Res BW 510 kHz	#VBW 3	B.0 MHz		Sweep 1	.000 ms (1001	pts)
ISG				STATUS		

Plot 7-211. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 149)



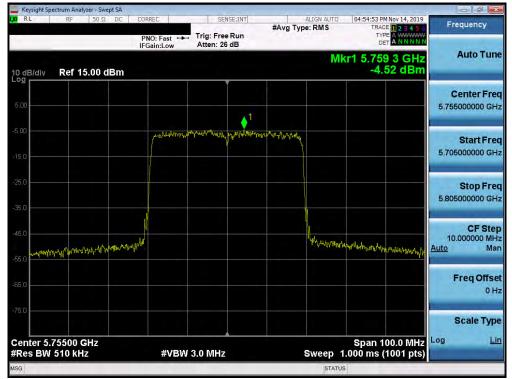
Plot 7-212. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 157)

FCC ID: A3LSMG986JPN	<u>PCTEST</u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 456 of 266
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RL RF 50 Ω	DC CORREC	SENSE:INT	#Avg Typ	ALIGN AUTO	04:37:34 PM Nov 14, 20 TRACE 1 2 3 4	
	PNO: Fast ↔↔ IFGain:Low	Trig: Free Run Atten: 26 dB	#A48 19P	e. 14113	TYPE A WWWA DET A N N N	N N
0 dB/div Ref 15.00 dB	m			Mkr	1 5.826 55 GH -1.33 dB	z Auto Tune m
5.00						Center Fred 5.825000000 GH:
15.0		Andrew and a subset of the sub	and a second a second a			Start Free 5.800000000 GH
36.0						Stop Fre 5.850000000 GH
15.0 	novem ^{pt}			U walked	whown who who have a series of the series of	CF Step 5.000000 MH Auto Ma
35.0						Freq Offse 0 H
enter 5.82500 GHz		<u>.</u>			Span 50.00 MI	Scale Typ
Res BW 510 kHz	#VBW :	3.0 MHz		Sweep 1	.000 ms (1001 pt	s)
SG				STATUS		

Plot 7-213. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 165)



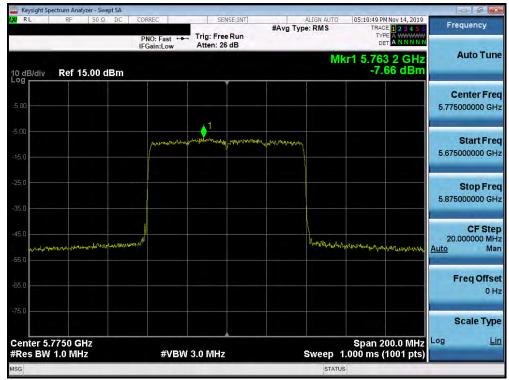
Plot 7-214. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 151)

FCC ID: A3LSMG986JPN	<u>PCTEST</u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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CRL RF 50Ω DC	PNO: Fast ↔ Trig: Free IFGain:Low Atten: 26	Run	ALIGN AUTO 04: /pe: RMS	55:25 PM Nov 14, 2019 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	Frequency
0 dB/div Ref 15.00 dBm			Mkr1	5.799 8 GHz -5.82 dBm	Auto Tune
5.00		41			Center Free 5.795000000 GH
15.0	- Manuar Manager and Manager	anad porado war map	1		Start Fre 5.745000000 GH
25.0					Stop Fre 5.845000000 GH
45.0 55.0 WAWAMMANAMAJURAANINA	with		Marrie Maran Mar	nontran particularly	CF Ste 10.000000 MH <u>Auto</u> Ma
65.0					Freq Offse 0 H
750			S	oan 100.0 MHz	Scale Typ
Res BW 510 kHz	#VBW 3.0 MHz			ms (1001 pts)	

Plot 7-215. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 159)



Plot 7-216. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 155)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 159 of 200
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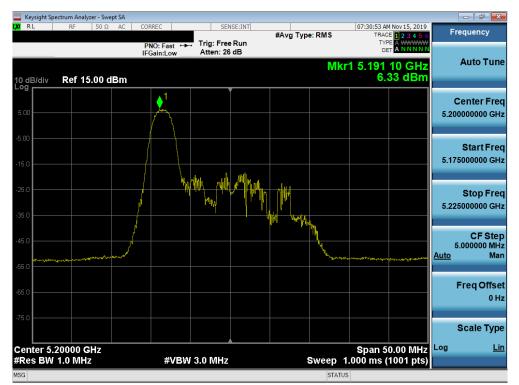
FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 150 of 266
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MIMO Antenna-2 Power Spectral Density Measurements (26 Tones)



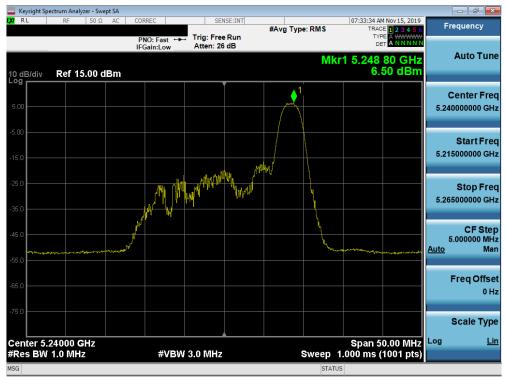
Plot 7-217. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - 26 Tones (UNII Band 1) - Ch. 36)



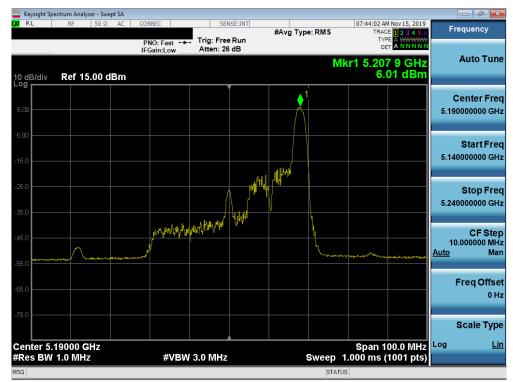
Plot 7-218. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - 26 Tones (UNII Band 1) - Ch. 40)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-219. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - 26 Tones (UNII Band 1) - Ch. 48)



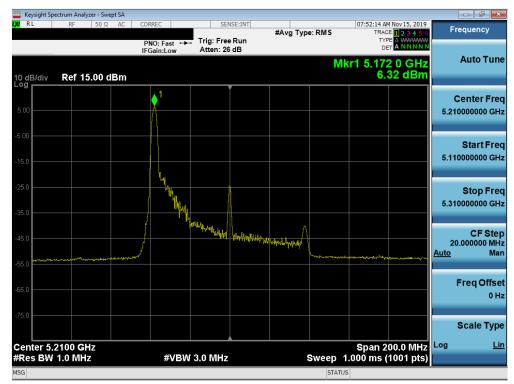
Plot 7-220. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax - 26 Tones (UNII Band 1) - Ch. 38)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Keysight Spe													
XI RL	RF	50 Ω		PNO: Fa		Trig: Free		#Avg Ty	pe:RMS	TRAC	M Nov 15, 2019 CE 1 2 3 4 5 6 PE A WWWWW T A N N N N N	F	requency
10 dB/div	Ref 1	5.00 d		IFGain:L	ow	Atten: 26	dB		Μ	kr1 5.24			Auto Tune
5.00						`			1				Center Free 0000000 GH
-5.00												5 18	Start Free
-15.0								MM.				5.10	Stop Fre
35.0				alithu		datyrtltyltyl	/ //// /					5.28	0000000 GH CF Ste
45.0 55.0		1981-6-8-47-98- ⁰⁰⁴ 0	August Marine Mari	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	ulla				h horanna		an under Rummer and Ph	10 <u>Auto</u>	0.000000 MH Ma
65.0													Freq Offs 0 H
75.0													Scale Typ
Center 5.3 Res BW				#	VBW	3.0 MHz			Sweep	Span 1 1.000 ms (00.0 MHz 1001 pts)	Log	Li
ISG									STAT		(10)		

Plot 7-221. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax - 26 Tones (UNII Band 1) - Ch. 46)



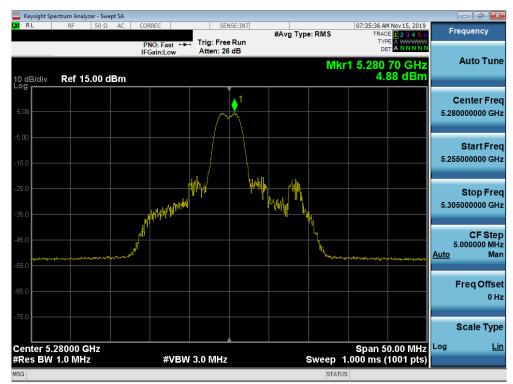
Plot 7-222. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax - 26 Tones (UNII Band 1) - Ch. 42)

FCC ID: A3LSMG986JPN	<u><u>PCTEST</u></u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-223. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - 26 Tones (UNII Band 2A) - Ch. 52)



Plot 7-224. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - 26 Tones (UNII Band 2A) - Ch. 56)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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	ctrum Analyzer - Swe										- •
LXI RL	RF 50 Ω	AC CO	RREC	SEN	ISE:INT	#Avg Typ	e: RMS		Nov 15, 2019	Fr	equency
			NO: Fast ↔ Gain:Low	Trig: Free Atten: 26				TYP DE	A WWWWW A N N N N N		Auto Tune
10 dB/div Log	Ref 15.00 d	Bm					Mkr	1 5.328 5.0	65 GHz 61 dBm		Auto Tulle
						∮ 1					enter Freq
5.00						\square	Y			5.32	000000 GHz
-5.00											Start Freq
-15.0										5.29	5000000 GHz
-25.0			N MW	%	<u></u>	M	\ \{				Stop Freq
-35.0					W.					5.34	5000000 GHz
-45.0		N		1			U V				CF Step
et an angel	water water and the second	- Antonio -					a mar		www.c.shawee	5 <u>Auto</u>	.000000 MHz Man
-55.0											
-65.0											req Offset ⁼ 0 Hz
-75.0											Scale Type
								A			<u>Lin</u>
Center 5.3 #Res BW	32000 GHz 1.0 MHz		#VBW	/ 3.0 MHz			Sweep 1	Span 50 /.000 ms ().00 MHz 1001 pts)	209	<u></u>
MSG							STATUS	5			

Plot 7-225. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - 26 Tones (UNII Band 2A) - Ch. 64)



Plot 7-226. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax - 26 Tones (UNII Band 2A) - Ch. 54)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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