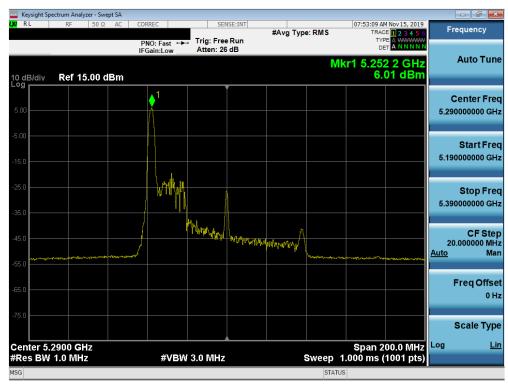


	ctrum Analyzer - Swept S						
LXVI RL	RF 50 Ω A	C CORREC	SENSE	#Av	g Type: RMS	07:46:49 AM Nov 15, 2019 TRACE 1 2 3 4 5	
		PNO: Fast ↔ IFGain:Low	Trig: Free R Atten: 26 d			DET A WWWW	
10 dB/div Log	Ref 15.00 dBn	n			N	lkr1 5.308 5 GH: 5.88 dBn	Auto Tune
			<b>↓</b>				Center Freq
5.00			$\wedge$				5.310000000 GHz
-5.00							Start Freq
-15.0							5.260000000 GHz
-25.0			, "Myny	1X.			Stop Freq
-35.0		<b>/</b> _//////		WALL NO.			5.360000000 GHz
		l liket		- Martin University	man		CF Step
-45.0	يىرىلىرىيەر ئىرىدىكىيىرىيەر يەرىرىيە				A company	hange-alternation-approximation	10.000000 MHz <u>Auto</u> Man
-55.0							
-65.0							Freq Offset 0 Hz
-75.0							
							Scale Type
Center 5.3 #Res BW	31000 GHz 1.0 MHz	#VBW	3.0 MHz		Sweep	Span 100.0 MH 1.000 ms (1001 pts	Log <u>Lin</u>
MSG					STAT	US	

Plot 7-227. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax - 26 Tones (UNII Band 2A) - Ch. 62)



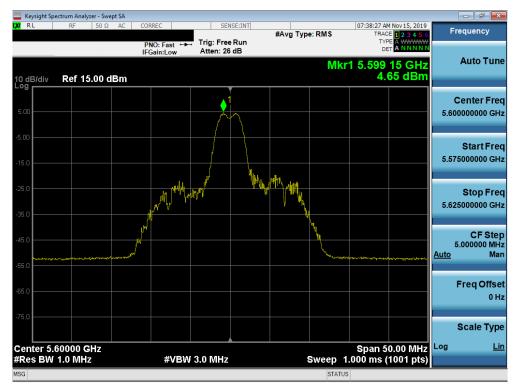
Plot 7-228. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax - 26 Tones (UNII Band 2A) - Ch. 58)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dama 405 at 000	
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Plot 7-229. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 100)



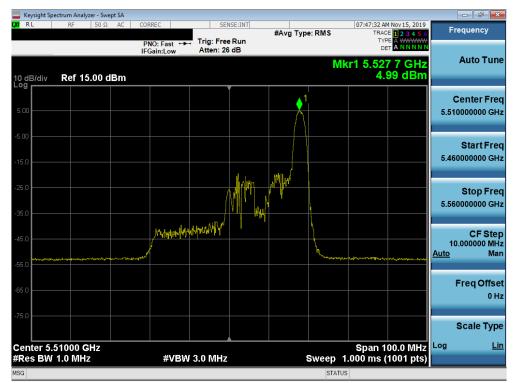
Plot 7-230. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 120)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 100 of 200
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Plot 7-231. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 144)



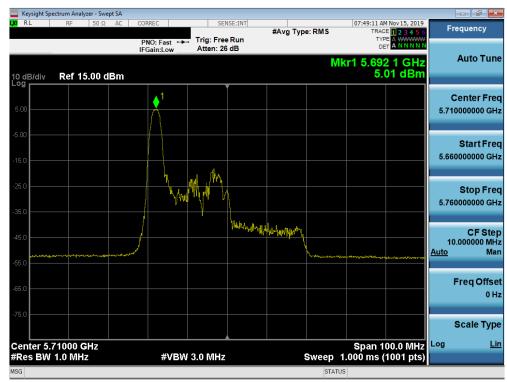
Plot 7-232. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 102)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 167 of 266
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	trum Analyzer - Swept S	A								d X
L <mark>XI</mark> RL	RF 50Ω A	IC CORREC	SENS	E:INT	#Avg T	ype: RMS	TRAC	Nov 15, 2019	Frequ	ency
	<b>Def 45 00 dD</b>	PNO: Fast 🔸	Atten: 26			M	TYP DE		Au	to Tune
10 dB/div Log	Ref 15.00 dBi	m				1				ter Freq 0000 GHz
-5.00										art Freq 1000 GHz
-25.0			L at high							op Freq 1000 GHz
-45.0	Loogle and the state of the sta	MWW	alyye/w	רוע די			germfistersgisterment for flambaces	ater for the formation		CF Step 1000 MHz Man
-65.0									Fre	q Offset 0 Hz
Center 5.5		#VBW	3.0 MHz			Sweep	Span 10 1.000 ms (	00.0 MHz		ıle Type <u>Lin</u>
MSG						STAT		prov		

Plot 7-233. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 118)



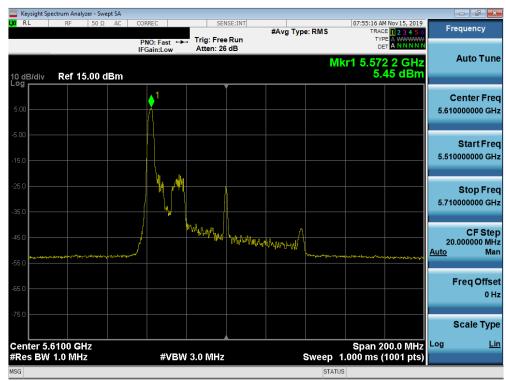
Plot 7-234. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 142)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		D 100 -1000
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 168 of 266
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	ım Analyzer - Swept SA									
L <mark>XI</mark> RL	RF 50 Ω AC	CORREC	SEN	ISE:INT	#Avg Typ	e: RMS		M Nov 15, 2019	Frequ	Jency
10 dB/div 🖪	tef 15.00 dBm	PNO: Fast ↔ IFGain:Low	Trig: Free Atten: 26	e Run i dB		M	kr1 5.49		A	ito Tune
5.00		1								nter Freq 0000 GHz
-5.00										tart Freq 0000 GHz
-25.0										top Freq 0000 GHz
-45.0	and any and a state of the stat	/     '	Hing we get day	Hadly aportopy	www.	homester	<sub>สารส</sub> ารสูดกินคนูเสียงรูนา <sup>กก</sup> างค	yani,ashianganga		CF Step 0000 MHz Man
-65.0									Fre	eq Offset 0 Hz
-75.0 Center 5.530	00 GH7						Snan 2	00.0 MHz		ale Type Lin
#Res BW 1.0		#VBW	3.0 MHz			Sweep	1.000 ms (	1001 pts)		
MSG						STAT	US			

Plot 7-235. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 106)



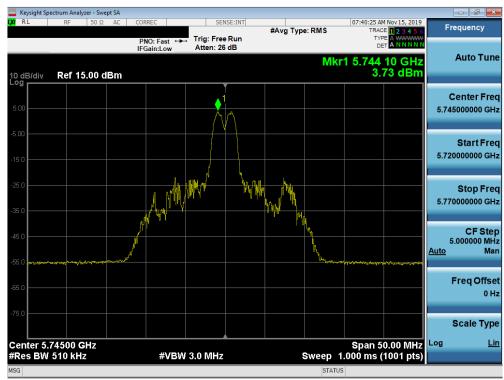
Plot 7-236. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 122)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 160 of 266		
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	m Analyzer - Swept SA									r x
L <mark>XI</mark> RL	RF 50 Ω AC	CORREC	SENS	SE:INT	#Avg Type	e: RMS	TRAC	Nov 15, 2019	Frequen	су
		PNO: Fast ++-	Trig: Free Atten: 26		•		TYP	EAWWWW		
		IFGain:Low	Atten: 20	aв		8.614			Auto	Tune
10 dB/div R	ef 15.00 dBm					IVIN	3 (	l 8 GHz 02 dBm		
	er 15.00 dBm									
		. 1							Center	r Freq
5.00		<u>,</u>							5.6900000	)0 GHz
		{								
-5.00									Start	tFreq
									5.59000000	
-15.0										
-25.0		1.6								
-25.0			(							o Freq
-35.0		, <sub>Nu</sub> (11 )							5.79000000	)0 GHz
00.0		/ "U \								
-45.0			What when the set		h					Step
		1	1" "	Humper Mar	ARE REEDER AND				20.00000 Auto	Man
-55.0	Management and	end				an the way are a	*****	Martin Martin Stranger		
									Freq	Offect
-65.0									Fieqt	0 Hz
										- THE
-75.0									Orala	Trees
									Scale	туре
Center 5.690	0 GHz						Span 2	00.0 MHz	Log	<u>Lin</u>
#Res BW 51	0 kHz	#VBW	3.0 MHz		ş	Sweep 1.	000 ms (	1001 pts)		
MSG						STATUS				

Plot 7-237. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax - 26 Tones (UNII Band 2C) - Ch. 138)



Plot 7-238. Power Spectral Density Plot MIMO ANT2 (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:	Dage 170 of 266		
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	ctrum Analyzer - Swe										
LX/IRL	RF 50 Ω	AC COF	RREC	SEN	ISE:INT	#Avg Typ	e: RMS		Nov 15, 2019	Fi	equency
10 dB/div	Ref 15.00 d	IFO	NO: Fast ↔ Gain:Low	. Trig: Free Atten: 26				TYPE DE1	A WWWWW A N N N N N		Auto Tune
5.00			1								Center Freq 5000000 GHz
-5.00			/ //, //		6.18					5.76	Start Freq 0000000 GHz
-25.0		ļ	<u> </u>	m wh			1			5.81	Stop Freq 0000000 GHz
-45.0 -55.0	alente and the state of the sta	and the second sec					My by	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	<del>ار براید کر ارزد از را بر</del>	Auto (	CF Step 5.000000 MHz Man
-65.0											Freq Offset 0 Hz
Center 5.7 #Res BW	78500 GHz 510 kHz		#VBW	3.0 MHz			Sweep	Span 50 1.000 ms (1	).00 MHz 1001 pts)		Scale Type <u>Lin</u>
MSG							STAT				

Plot 7-239. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 157)



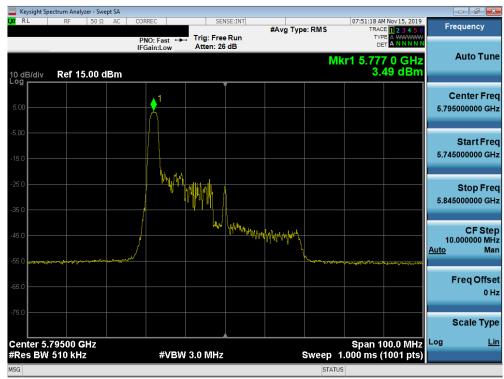
Plot 7-240. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 165)

FCC ID: A3LSMG986JPN	<u><u>PCTEST</u></u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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	ctrum Analyzer - Swept SA					
LX/RL	RF 50 Ω AC	CORREC	SENSE:INT	#Avg Type: RMS	07:50:38 AM Nov 15, 2019 TRACE 1 2 3 4 5 6	Frequency
10 dB/div	Ref 15.00 dBm	PNO: Fast ↔ IFGain:Low	→ Trig: Free Run Atten: 26 dB	М	kr1 5.753 8 GHz 2.85 dBm	Auto Tune
5.00						Center Freq 5.755000000 GHz
-5.00						Start Freq 5.705000000 GHz
-25.0		1 Lu		Lut.		Stop Freq 5.805000000 GHz
-45.0		Mar Mar Mar				CF Step 10.000000 MHz <u>Auto</u> Man
-65.0					9 V 19 / M 19	Freq Offset 0 Hz
-75.0	25500 GHz				Span 100.0 MHz	Scale Type Log <u>Lin</u>
#Res BW		#VBW	( 3.0 MHz	Sweep	1.000 ms (1001 pts)	
MSG				STAT	US	

Plot 7-241. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 151)



Plot 7-242. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 159)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 170 of 200
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	ctrum Analyzer										- 6 -
RL	RF	50 Ω AC	CORRE	:C∣ :Fast ↔	Trig: Fre		#Avg Ty	pe:RMS	TRA	M Nov 15, 2019 CE 1 2 3 4 5 6 (PE A WWWWW ET A N N N N N	Frequency
				n:Low	Atten: 2	6 dB		•	۰ 10.73 Mkr1		Auto Tun
0 dB/div	Ref 15.0	0 dBm							6	.47 dBm	
			•	1		ľ					Center Fre
5.00			Λ								5.775000000 GH
5.00											Start Fre
15.0				M an							5.675000000 GH
25.0											Stop Fre
35.0											5.875000000 GH
55.0					1)- MAYLANNIN	М.L.					CF Ste
45.0			Ť		1 1 1 1 1 1 1 1 1 1	" YAMAYAA	MMMMM				20.000000 MH Auto Ma
55.0	and a second							WH2000 AVE	an a	dit to game the provide state ( 10 mg mg	
65.0											Freq Offso 0 H
75.0											
											Scale Typ
enter 5.7					/ 3.0 MHz				Span 2	200.0 MHz (1001 pts)	Log <u>L</u>
Res BW											

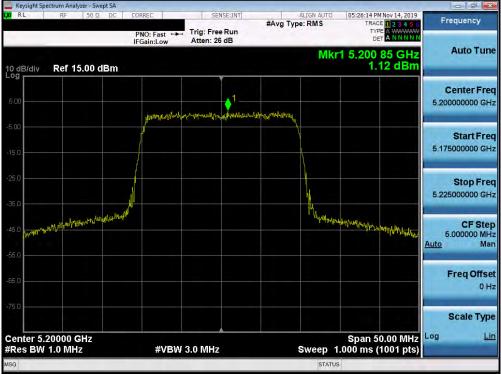
Plot 7-243. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax - 26 Tones (UNII Band 3) - Ch. 155)



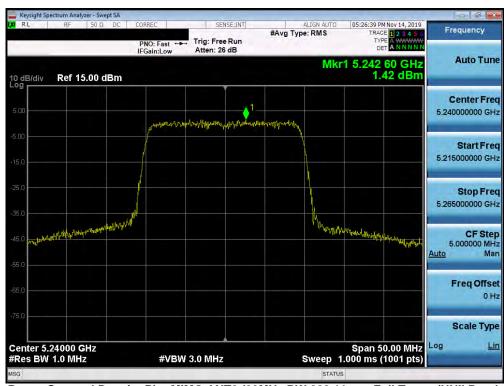
Plot 7-244. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 36)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-245. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 40)



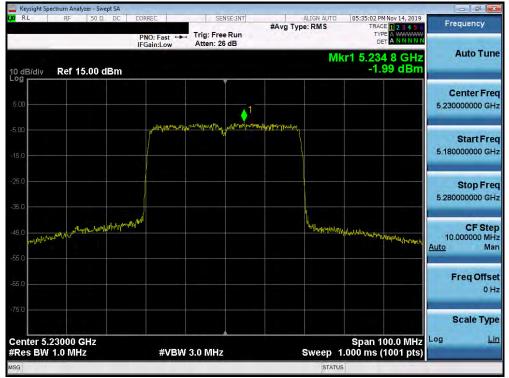
Plot 7-246. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 48)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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🤤 Keysight Spectrum Analyzer - Swept SA 🚽						
💢 RL RF 50Ω DC	CORREC	SENSE:INT	ALIGN A #Avg Type: RMS	S TRACE	123456	Frequency
10 dB/div <b>Ref 15.00 dBm</b>		rig: Free Run Atten: 26 dB		DET Mkr1 5.184	6 GHz 6 dBm	Auto Tune
5.00	Mumerada	1 1	รากะสร้างในสิตาวร			Center Freq 5.190000000 GHz
-5.00			Landa and A.			<b>Start Freq</b> 5.140000000 GHz
-25.0						<b>Stop Freq</b> 5.240000000 GHz
-45.0	1 <sup>10</sup> ~1 <sup>10</sup>		hindys	Hthy Harden geleiter geleiter	At Providently	<b>CF Step</b> 10.000000 MHz <u>Auto</u> Man
-65.0						<b>Freq Offset</b> 0 Hz
-75.0 Center 5.19000 GHz				Span 10	0.0 MHz	Scale Type
#Res BW 1.0 MHz	#VBW 3.0	0 MHz	Swee	ep 1.000 ms (1	001 pts)	
MSG			5	STATUS		

Plot 7-247. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 38)



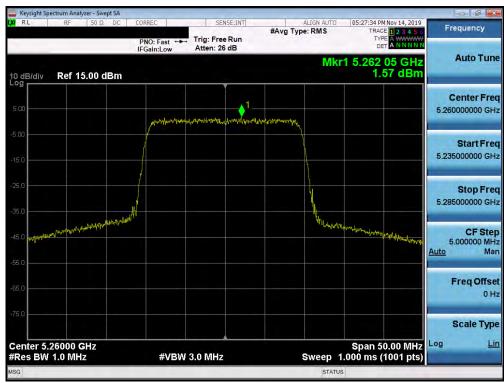
Plot 7-248. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 46)

FCC ID: A3LSMG986JPN	<u><u>PCTEST</u></u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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				and the second		n Analyzer - Swept SA	
Frequency	05:40:42 PM Nov 14, 2019 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	ALIGN AUTO e: RMS	#Avg Type	SENSE:INT Trig: Free Run Atten: 26 dB	CORREC PNO: Fast	RF 50 Ω DC	RL
Auto Tune	r1 5.203 8 GHz -6.96 dBm	Mk			I Guilleow	ef 15.00 dBm	dB/div
Center Freq 5.210000000 GHz				41			00
Start Freq 5.110000000 GHz			and have a free of the second s	NEWSAU CALL AND A CALL	Mary Jacob Mary		.0
Stop Freq 5,310000000 GHz							i.0
CF Step 20.000000 MHz <u>Auto</u> Mar	Inter annound annual	h. Monte and producted			and	n and the second states the second states and the second states an	i.0 powedwayw
Freq Offset 0 Hz							i.0)
Scale Type Log <u>Lin</u>	Span 200.0 MHz .000 ms (1001 pts)	Sween 1		3.0 MHz	#\/B)A(		enter 5.21 tes BW 1.
		STATUS		0.0 10112	7 V D V V	141112	

Plot 7-249. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax - Full Tones (UNII Band 1) - Ch. 42)



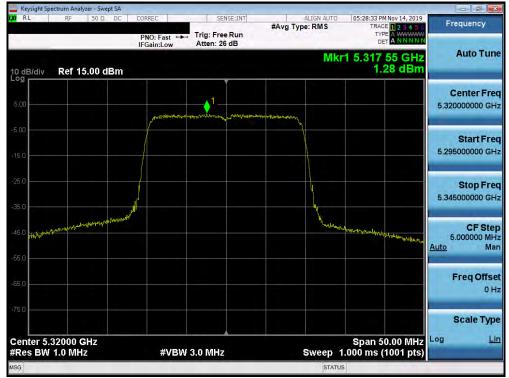
Plot 7-250. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 52)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Keysight Spectrum Analyzer - Swept SA RL RF 50 Ω DC C	ORREC	SENSE:INT	1	ALIGN AUTO	05:28:00 PM	Nov 14, 2019	
		ig: Free Run tten: 26 dB	#Avg Typ	e: RMS	TRAC TYP	<b>1 2 3 4 5 6</b> A WWWWWWW A N N N N N	Frequency
0 dB/div Ref 15.00 dBm	FGam:Low A	11011.20 UD		Mkr	1 5.286 1.4	05 GHz 47 dBm	Auto Tune
<b>5</b> .00	pulsturaquint	and the state of the	1				Center Fred 5.280000000 GH2
5.0							Start Fred 5.255000000 GH2
5.0							Stop Free 5.305000000 GH
5.0 avantikan				Hormony	Warner Horse	And	CF Step 5.000000 MH <u>Auto</u> Mar
5.0							Freq Offse 0 H
<sup>25.0</sup>					Onon-F		Scale Type
Res BW 1.0 MHz	#VBW 3.0	MHz		Sweep 1	.000 ms (	0.00 MHz 1001 pts)	
SG				STATUS	5		

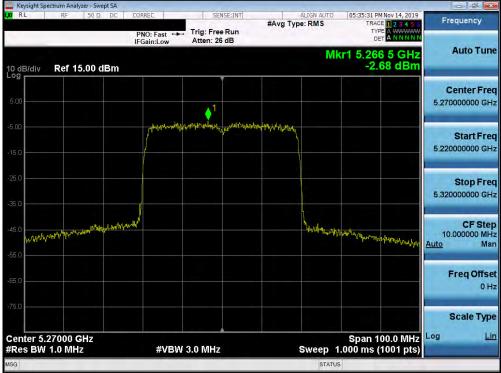
Plot 7-251. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 56)



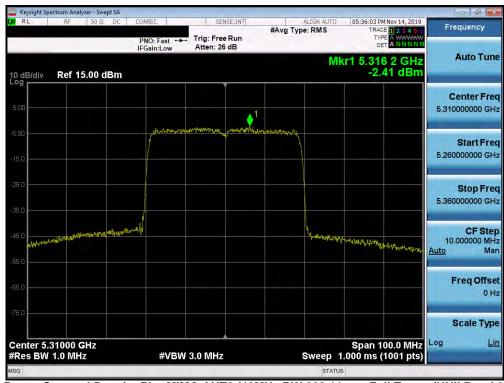
Plot 7-252. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 64)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-253. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 54)



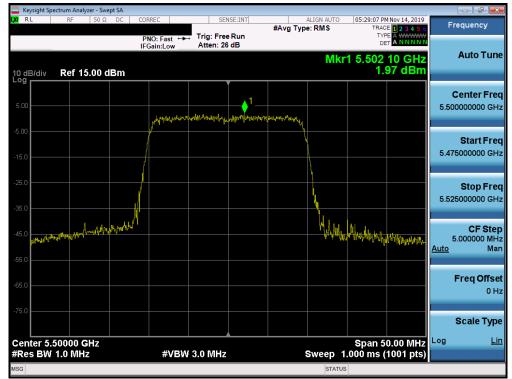
Plot 7-254. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 62)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 470 at 000
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RL RF 50Ω DC	CORREC	SENSE:INT		ALIGN AUTO		Nov 14, 2019	Farmers
	PNO: Fast ↔→	Trig: Free Run Atten: 26 dB	#Avg Typ	e:RMS	TYP	123456 A WWWWWW A N N N N N	Frequency
0 dB/div Ref 15.00 dBm	IFGam.Low	Allen 20 0D		Mk	r1 5.279 -6.	4 GHz 61 dBm	Auto Tune
<b>og</b> 5.00							Center Fred 5.290000000 GH;
5.0	poursermingraph	in her my many has	ing and have a super				Start Free 5.190000000 GH:
15.0							Stop Free 5.390000000 GH
15.0	البيي			alanstaheseyaa	<sup>en a</sup> thriften a	Wayedogewie	CF Step 20.000000 MH <u>Auto</u> Ma
35.0							Freq Offse 0 H
75 0 Center 5.2900 GHz Res BW 1.0 MHz	#VBW :	3 û MHz		Sweep 1.	Span 20	00.0 MHz	Scale Type Log <u>Li</u> i
SG	<i>"</i> , , , , , , , , , , , , , , , , , , ,			STATUS	000 1115 (	100 F pt.0)	

Plot 7-255. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax - Full Tones (UNII Band 2A) - Ch. 58)



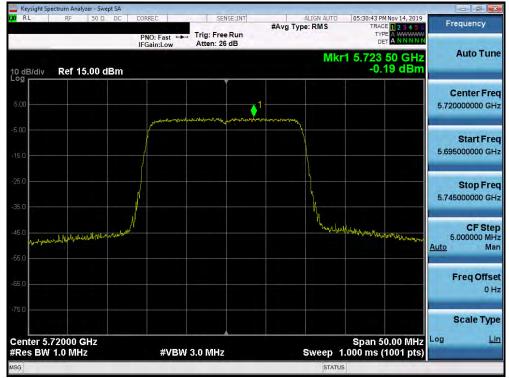
Plot 7-256. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 100)

FCC ID: A3LSMG986JPN	<u><u>PCTEST</u></u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 170 of 200	
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Keysight Spectrum Analyzer - Swept SA RF 50 Ω DC CC	RREC	SENSE:INT		ALIGN AUTO	05:29:40 PM Nov 1	4 2010	
	NO: Fast	Frig: Free Run Atten: 26 dB	#Avg Typ		TRACE 2 TYPE A W DET A N	3 4 5 6 www.	Frequency
10 dB/div Ref 15.00 dBm	Guineon			Mkr	1 5.596 40 0.63	GHz dBm	Auto Tun
5.00	hermonynana	1	vermetrosoftwaters				Center Fre 5,60000000 GH
15.0							<b>Start Fre</b> 5.575000000 GH
25.0							<b>Stop Fre</b> 5.625000000 GH
45.0 April 1990 And Andrew				n Ningl		WWW A	CF Ste 5.000000 MH <u>uto</u> Ma
85.0							Freq Offs 0 H
75.0 Center 5.60000 GHz					Smam 50.00		Scale Typ
#Res BW 1.0 MHz	#VBW 3	0 MHz		Sweep 1	Span 50.00 .000 ms (100	191112	-a _
ISG				STATUS	3		

Plot 7-257. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 120)



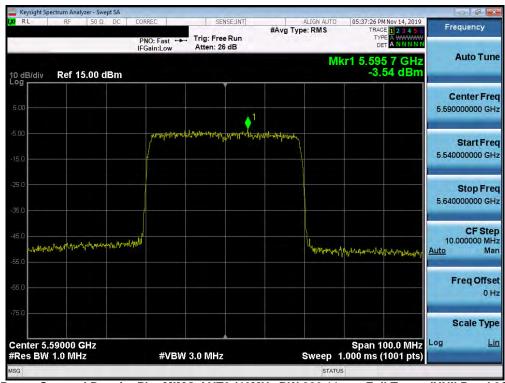
Plot 7-258. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 144)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 180 of 200	
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Keysight Spectrum Analyzer - Swept SA					No. of Lot of Lot of Lot	- ē 🔀
XIRL RF 50Ω DC	CORREC PNO: Fast ↔→ IFGain:Low	SENSE(INT Trig: Free Run Atten: 26 dB	#Avg Typ	ALIGN AUTO e: RMS	05:36:57 PM Nov 14, 2019 TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N	Frequency
10 dB/div Ref 15.00 dBm	I Guillieow			Mł	r1 5.517 9 GHz -3.10 dBm	Auto Tune
5.00			1			Center Fred 5.510000000 GHz
-5.00	//shing/assiation	ษข <sub>าสอง<sup>จารส</sup>ถาร<sub>ัต</sub>สุรังการสถารสิ</sub>	uniter for the second sec			Start Fred 5.460000000 GH:
35.0						Stop Free 5.560000000 GH
45.0 ในกลังคณุษณฑุษย์ให้ทางมาในจะเป็นจะทุโปจา 55.0	pethol			In yourned	MVMM-Huymphismuturhum	CF Step 10.000000 MH Auto Mar
.66.0						Freq Offse 0 H
-75.0 Center 5.51000 GHz #Res BW 1.0 MHz	#\/B)//	3.0 MHz		Sween 1	Span 100.0 MHz .000 ms (1001 pts)	Scale Type Log <u>Lir</u>
ASG	# V D V V	5.0 10112-		STATUS	Y	

Plot 7-259. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 102)



Plot 7-260. Power Spectral Density Plot MIMO ANT2 (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 404 at 000	
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 181 of 266	
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Keysight Spectrum Analyzer - Swept SA RL RF 50 Ω DC	CORDED	artice aug					- ē 💌
KE KF 2032 DC	CORREC PNO: Fast ↔ Trig:	SENSE(INT	#Avg Typ	ALIGN AUTO e: RMS		23456	Frequency
dB/div Ref 15.00 dBm	IFGain:Low Atte	n: 26 dB		Mk	r1 5.712 4	GHz dBm	Auto Tun
							Center Fre 5.710000000 GH
.0		ingen gereikterheren de	Marine Wellinson				<b>Start Fre</b> 5.66000000 GH
							Stop Fre 5.76000000 GH
.0 minutual flations and investigation	law M			hendermonet	artanthonountrappedige	WW Land Man	<b>CF Ste</b> 10.000000 Mi <u>Auto</u> Ma
.0							Freq Offs 0 F
enter 5.71000 GHz					Span 100		Scale Typ
es BW 1.0 MHz	#VBW 3.0 N	IHz		Sweep 1	.000 ms (10	01 pts)	

Plot 7-261. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 142)



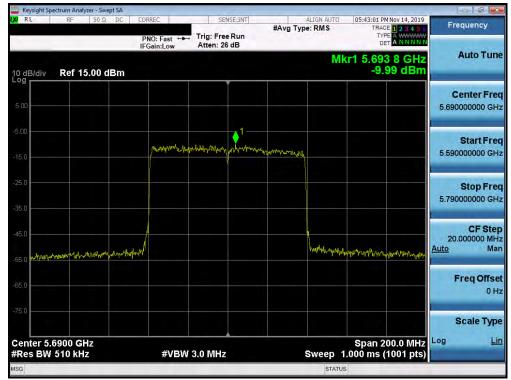
Plot 7-262. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 106)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 182 of 200	
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CRL RF 50Ω DC	CORREC PNO: Fast	SENSE:INT Trig: Free Run Atten: 26 dB	#Avg Typ	ALIGN AUTO e:RMS	05:42:34 PM Nov 14, 2019 TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N	Frequency
0 dB/div Ref 15.00 dBm				Mk	r1 5.582 6 GHz -7.38 dBm	Auto Tune
5.00						Center Fred 5,610000000 GH;
15.0	personal and the second	hours for any marked based	harmonitary			Start Free 5.510000000 GH:
35.0						Stop Free 5.710000000 GH
45.0 สุดภาพแหลงสามาราชเกาไปสามาริเป็นหมู	M			Japan Artonia	ullantere merce and	CF Stej 20.000000 MH Auto Ma
65.0						Freq Offse 0 H
75.0 Center 5.6100 GHz #Res BW 1.0 MHz		3.0 MHz			Span 200.0 MHz .000 ms (1001 pts)	Scale Type

Plot 7-263. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 122)



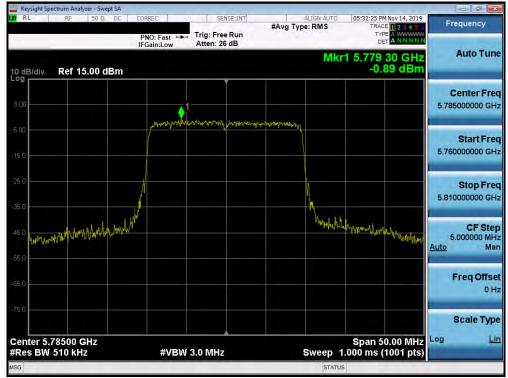
Plot 7-264. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax - Full Tones (UNII Band 2C) - Ch. 138)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 182 of 200	
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 183 of 266	
© 2020 PCTEST				V 9.0 02/01/2019	



() RL	RF 50 Ω	DC COR	REC		SE:INT	#Avg Typ	ALIGN AUTO	TRAC	MNov 14, 2019 E <b>1 2 3 4 5 6</b>	Frequency	
			IO: Fast ↔↔ ain:Low	Trig: Free Atten: 26							
0 dB/div	Ref 15.00 dB	m					Mkr	1 5.749 -0.	80 GHz 87 dBm	Auto Tu	Ine
5.00						1				Center Fr 5.745000000 G	
5.00		_	portention	harmany	Andrewsky	ghorn my					
15,0										Start Fr 5.720000000 G	
25.0							4			Stop Fr 5.770000000 G	
45.0 45.0	n,helphixahiana.he	ANNO A					hornely	approximption of the second	#HADAN AND	CF St 5.000000 M Auto M	
65,0										Freq Off 0	se H
75.0										Scale Ty	/pe
Center 5.74 Res BW 5			#VBW :	3.0 MHz			Sweep 1	Span 5 .000 ms (	0.00 MHz 1001 pts)	Log	Lir
ISG							STATUS				-

Plot 7-265. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 149)



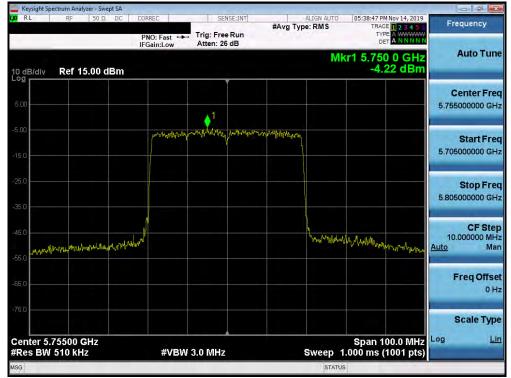
Plot 7-266. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 157)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 194 of 200	
1M2001240012-06.A3L	10/11/19 - 03/05/2020	ortable Handset		Page 184 of 266	
© 2020 PCTEST				V 9.0 02/01/2019	



RL RF 50Ω DC	CORREC	SENSE:INT		ALIGN AUTO	05:32:56 PM Nov 14		requency
		ig: Free Run Iten: 26 dB	#Avg Typ	e:RMS	TRACE 1 2 2 TYPE A WY DET A N	www.	requeriey
dB/div Ref 15.00 dBm				Mkr	1 5.819 65 d -1.57 d	GHz Bm	Auto Tune
5.00	1						Center Freq 25000000 GHz
5.0	Name of the state	nthy lighting particular distance with				5.8	Start Freq
5.0	J.					5.8	Stop Frec
5.0 10744-000-00-00-00-00-00-00-00-00-00-00-00-	uhu <sup>m</sup>			Winnerson	hungungadyaning and a star	Miluri Auto	CF Step 5.000000 MHz Mar
5.0							Freq Offset 0 Hz
5.0							Scale Type
enter 5.82500 GHz Res BW 510 kHz	#VBW 3.0	MHz		Sweep 1	Span 50.00 .000 ms (1001	MHz Log pts)	Lin
G				STATUS			

Plot 7-267. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 165)



Plot 7-268. Power Spectral Density Plot MIMO ANT2 (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
Test Report S/N:	Test Dates:	EUT Type:		Dega 195 of 266
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RL RF 50 Ω DC	CORREC	SENSE(INT	#Avg Typ	ALIGN AUTO	05:39:27 PM Nov 14, 20: TRACE 1 2 3 4 5 TYPE A WWWW	Frequency
dB/div Ref 15.00 dBm	IFGain:Low	Atten: 26 dB		Mk	r1 5.791 6 GH -6.07 dBr	z Auto Tune
<b>D</b> g						Center Free 5.795000000 GH
5.0	- Jahn Marina Mari	an and the property of the second	or Marshing			Start Fre 5.745000000 GH
5.0						Stop Fre 5.845000000 GH
5.0 5.0 mpp/p/ml/www.mpp/ml/ml/ml/ml/ml/ml/ml/ml/ml/ml/ml/ml/ml/	ww			the war would	warallapara al have an also	CF Ste 10.000000 MH <u>Auto</u> Ma
5.0						Freq Offse 0 H
enter 5.79500 GHz Res BW 510 kHz	<i>4</i> ) ( <b>5</b> )	3.0 MHz			Span 100.0 MH .000 ms (1001 pt	Scale Typ

Plot 7-269. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 159)



Plot 7-270. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax - Full Tones (UNII Band 3) - Ch. 155)

FCC ID: A3LSMG986JPN	<u><i>CPCTEST</i></u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 186 of 266
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# 7.6 Radiated Spurious Emission Measurements – Above 1GHz §15.407(b) §15.205 §15.209; RSS-Gen [8.9]

# Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at its maximum power control level, as defined in ANSI C63.10-2013 and KDB 789033 D02 v02r01, and at the appropriate frequencies. All channels, modes (e.g. 26 Tones, 52 Tones, 106 Tones, 242 Tones, 484 Tones and 996 Tones), and modulations/data rates were investigated among all UNII bands. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

For transmitters operating in the 5.15-5.25 GHz and 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of −27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of −27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR and Table 6 of RSS-Gen (8.10) must not exceed the limits shown in Table 7-30 per Section 15.209 and RSS-Gen (8.9).

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

Table 7-63. Radiated Limits

# Test Procedures Used

ANSI C63.10-2013 – Sections 12.7.7.2, 12.7.6, 12.7.5 KDB 789033 D02 v02r01 – Section G

#### Test Settings

#### Average Measurements above 1GHz (Method AD)

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW = 3MHz
- 4. Detector = power average (RMS)
- 5. Number of measurement points = 1001 (Number of points must be  $\geq 2 \times \text{span/RBW}$ )
- 6. Averaging type = power (RMS)
- 7. Sweep time = auto couple
- 8. Trace was averaged over 100 sweeps

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# Peak Measurements above 1GHz

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

#### Peak Measurements below 1GHz

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. Span was set greater than 1MHz
- 3. RBW = 120kHz
- 4. Detector = CISPR quasi-peak
- 5. Sweep time = auto couple
- 6. Trace was allowed to stabilize

# Test Setup

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

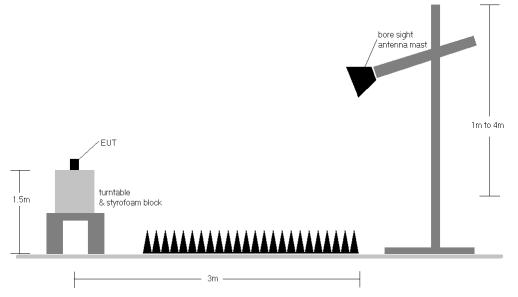


Figure 7-5. Test Instrument & Measurement Setup

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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- 1. All emissions that lie in the restricted bands (denoted by a \* next to the frequency) specified in §15.205 and Section 8.10 of RSS-Gen are below the limit shown in Table 7-30.
- 2. All spurious emissions lying in restricted bands specified in §15.205 and Section 8.10 of RSS-Gen are below the limit shown in Table 7-30. All spurious emissions that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBµV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dBµV/m.
- 3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- 4. This unit was tested with its standard battery.
- 5. The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. Above 1 GHz, average and peak measurements were taken using linearly polarized horn antennas. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
- 6. Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 7. The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. Any emissions found to be within 20dB of the limit are fully investigated and the results are shown in this section.
- 8. The "-" shown in the following RSE tables are used to denote a noise floor measurement.
- 9. For radiated measurements, emissions were investigated for the fully-loaded RU configuration and for all of the partially-loaded RU configurations. Among all of the available partially-loaded RU configurations, only the configuration with the worst case emissions is reported.

# Sample Calculations

# Determining Spurious Emissions Levels

- 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 Radiated Spurious
 Emission Measurements – Above 1GHz was calculated using the formula:

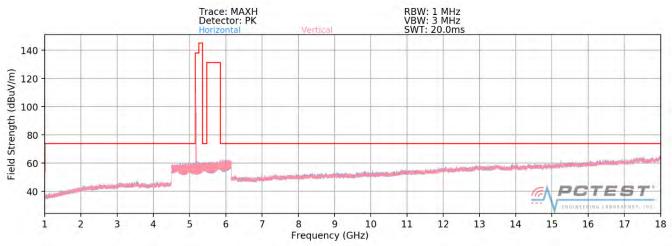
Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

FCC ID: A3LSMG986JPN	<u>PCTEST</u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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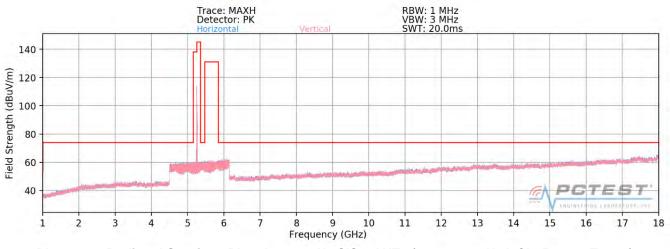


7.6.1 SISO Antenna-1 Radiated Spurious Emission Measurements

# 26 Tones



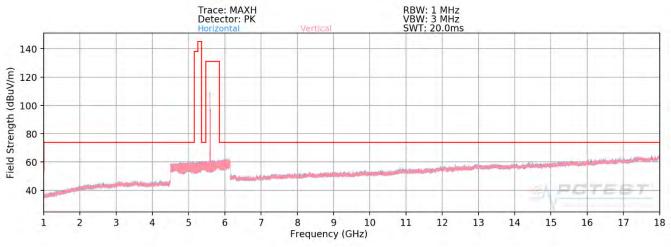
Plot 7-271. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax - U1 Ch. 40 - 26 Tones)



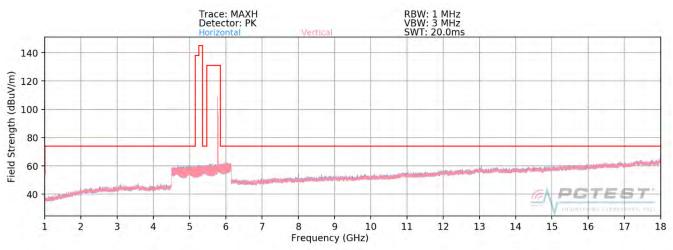
Plot 7-272. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax - U2A Ch. 56 - 26 Tones)

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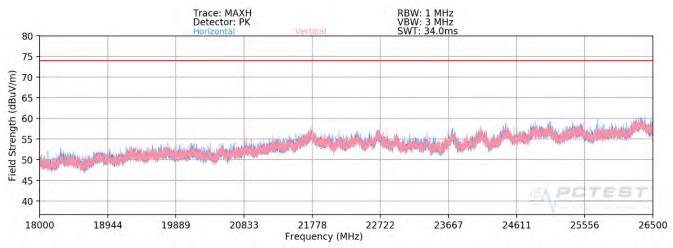


Plot 7-274. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax - U3 Ch. 157 - 26 Tones)

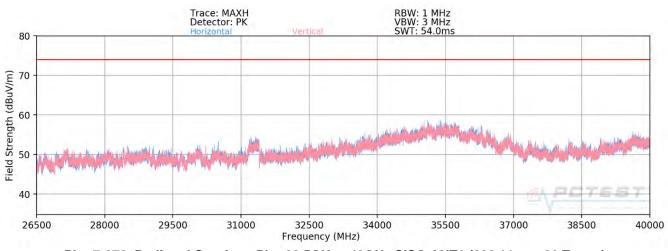
FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		De 22 404 ef 000
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# SISO Antenna-1 Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-275. Radiated Spurious Plot 18GHz - 26.5GHz SISO ANT1 (802.11ax – 26 Tones)



Plot 7-276. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT1 (802.11ax - 26 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
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# SISO Antenna-1 Radiated Spurious Emission Measurements (26 Tones) §15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

	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	-	-	-69.75	15.23	0.00	52.48	68.20	-15.72
*	15540.00	Average	V	120	331	-81.91	22.71	0.00	47.80	53.98	-6.18
*	15540.00	Peak	V	120	331	-68.03	22.71	0.00	61.68	73.98	-12.30
*	20720.00	Average	V	-	-	-78.06	17.51	-9.54	36.91	53.98	-17.07
*	20720.00	Peak	V	-	-	-67.90	17.51	-9.54	47.07	73.98	-26.91
	25900.00	Peak	V	-	-	-65.24	19.88	-9.54	52.10	68.20	-16.10

Table 7-64. Radiated Measurements SISO ANT1 (26 Tones)

Worst Case Mode:	8
Worst Case Transfer Rate:	
RU Index:	
Distance of Measurements:	
Operating Frequency:	Į
Channel:	

802.11ax (20MHz BW)
MCS0
54
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	-	-	-69.95	15.67	0.00	52.72	68.20	-15.48
*	15600.00	Average	V	119	335	-81.14	22.46	0.00	48.32	53.98	-5.66
*	15600.00	Peak	V	119	335	-64.43	22.46	0.00	65.03	73.98	-8.95
*	20800.00	Average	V	-	-	-77.84	17.87	-9.54	37.49	53.98	-16.49
*	20800.00	Peak	V	-	-	-68.12	17.87	-9.54	47.21	73.98	-26.77
	26000.00	Peak	V	-	-	-66.31	20.15	-9.54	51.30	68.20	-16.90

Table 7-65. Radiated Measurements SISO ANT1 (26 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 102 of 200
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802.11ax (20MHz BW)
MCS0
54
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	-	-	-70.92	15.49	0.00	51.57	68.20	-16.63
*	15720.00	Average	V	164	325	-81.74	22.45	0.00	47.71	53.98	-6.27
*	15720.00	Peak	V	164	325	-65.02	22.45	0.00	64.43	73.98	-9.55
*	20960.00	Average	V	-	-	-78.03	18.06	-9.54	37.49	53.98	-16.49
*	20960.00	Peak	V	-	-	-67.45	18.06	-9.54	48.07	73.98	-25.91
	26200.00	Peak	V	-	-	-65.78	20.23	-9.54	51.91	68.20	-16.29

# Table 7-66. Radiated Measurements SISO ANT1 (26 Tones)

802.11ax (20MHz BW)
MCS0
54
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	-	-	-70.29	15.86	0.00	52.57	68.20	-15.63
*	15780.00	Average	V	109	329	-82.27	22.77	0.00	47.50	53.98	-6.48
*	15780.00	Peak	V	109	329	-67.47	22.77	0.00	62.30	73.98	-11.68
*	21040.00	Average	V	-	-	-77.81	18.36	-9.54	38.01	53.98	-15.97
*	21040.00	Peak	V	-	-	-67.41	18.36	-9.54	48.41	73.98	-25.57
	26300.00	Peak	V	-	-	-65.64	20.96	-9.54	52.78	68.20	-15.42

Table 7-67. Radiated Measurements SISO ANT1 (26 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5280MHz
Channel:	56

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10560.00	Peak	V	-	-	-69.67	15.70	0.00	53.03	68.20	-15.17
*	15840.00	Average	V	196	331	-82.74	22.66	0.00	46.92	53.98	-7.06
*	15840.00	Peak	V	196	331	-66.19	22.66	0.00	63.47	73.98	-10.51
*	21120.00	Average	V	-	-	-77.51	18.17	-9.54	38.12	53.98	-15.86
*	21120.00	Peak	V	-	-	-66.47	18.17	-9.54	49.16	73.98	-24.82
	26400.00	Peak	V	-	-	-66.01	20.65	-9.54	52.10	68.20	-16.10

# Table 7-68. Radiated Measurements SISO ANT1 (26 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	-	-	-82.52	16.03	0.00	40.51	53.98	-13.47
*	10640.00	Peak	V	-	-	-70.31	16.03	0.00	52.72	73.98	-21.26
*	15960.00	Average	V	115	331	-82.88	23.09	0.00	47.21	53.98	-6.77
*	15960.00	Peak	V	115	331	-68.00	23.09	0.00	62.09	73.98	-11.89
*	21280.00	Average	V	-	-	-77.38	18.57	-9.54	38.65	53.98	-15.33
*	21280.00	Peak	V	-	-	-66.82	18.57	-9.54	49.21	73.98	-24.77
	26600.00	Peak	V	-	-	-53.47	5.16	-9.54	49.15	68.20	-19.05

Table 7-69. Radiated Measurements SISO ANT1 (26 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	-	-	-82.31	16.51	0.00	41.20	53.98	-12.78
*	11000.00	Peak	V	-	-	-69.47	16.51	0.00	54.04	73.98	-19.94
	16500.00	Peak	V	-	-	-70.39	24.17	0.00	60.78	68.20	-7.42
	22000.00	Peak	V	-	-	-67.29	19.12	-9.54	49.29	68.20	-18.91
	27500.00	Peak	V	-	-	-51.12	3.98	-9.54	50.32	68.20	-17.88

# Table 7-70. Radiated Measurements SISO ANT1 (26 Tones)

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

802.11ax (20MHz BW)
MCS0
54
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	-	-	-82.46	16.73	0.00	41.27	53.98	-12.71
*	11200.00	Peak	V	-	-	-70.28	16.73	0.00	53.45	73.98	-20.53
	16800.00	Peak	V	-	-	-70.36	24.00	0.00	60.64	68.20	-7.56
*	22400.00	Average	V	-	-	-77.74	20.03	-9.54	39.75	53.98	-14.23
*	22400.00	Peak	V	-	-	-67.07	20.03	-9.54	50.42	73.98	-23.56
	28000.00	Peak	V	-	-	-51.86	4.70	-9.54	50.30	68.20	-17.90

Table 7-71. Radiated Measurements SISO ANT1 (26 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	NG	Approved by: Quality Manager
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	241	341	-80.78	17.29	0.00	43.51	53.98	-10.47
*	11440.00	Peak	V	241	341	-65.98	17.29	0.00	58.31	73.98	-15.67
	17160.00	Peak	V	-	-	-70.70	24.37	0.00	60.67	68.20	-7.53
*	22880.00	Average	V	-	-	-78.15	19.50	-9.54	38.81	53.98	-15.17
*	22880.00	Peak	V	-	-	-67.37	19.50	-9.54	49.59	73.98	-24.39
	28600.00	Peak	V	-	-	-52.84	5.14	-9.54	49.76	68.20	-18.44

Table 7-72. Radiated Measurements SISO ANT1 (26 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	104	328	-79.96	17.63	0.00	44.67	53.98	-9.30
*	11490.00	Peak	V	104	328	-66.67	17.63	0.00	57.96	73.98	-16.01
	17235.00	Peak	V	-	-	-70.98	25.01	0.00	61.03	68.20	-7.17
*	22980.00	Average	V	-	-	-78.27	19.89	-9.54	39.08	53.98	-14.90
*	22980.00	Peak	V	-	-	-67.73	19.89	-9.54	49.62	73.98	-24.36
	28725.00	Peak	V	-	-	-52.35	4.66	-9.54	49.77	68.20	-18.43

Table 7-73. Radiated Measurements SISO ANT1 (26 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5785MHz
Channel:	157

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11570.00	Average	V	125	338	-77.80	17.35	0.00	46.55	53.98	-7.43
*	11570.00	Peak	V	125	338	-65.09	17.35	0.00	59.26	73.98	-14.72
	17355.00	Peak	V	-	-	-71.32	26.08	0.00	61.76	68.20	-6.44
	23140.00	Peak	V	-	-	-68.15	19.59	-9.54	48.90	68.20	-19.30
	28925.00	Peak	V	-	-	-51.15	4.43	-9.54	50.74	68.20	-17.46

Table 7-74. Radiated Measurements SISO ANT1 (26 Tones)

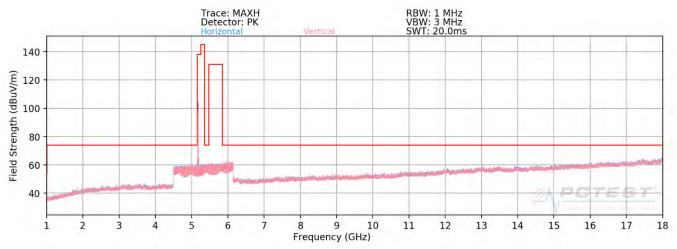
Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5825MHz
Channel:	165

	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	115	321	-78.31	17.57	0.00	46.26	53.98	-7.71
*	11650.00	Peak	V	115	321	-63.80	17.57	0.00	60.77	73.98	-13.20
	17475.00	Peak	V	-	-	-70.80	26.23	0.00	62.43	68.20	-5.77
	23300.00	Peak	V	-	-	-66.61	18.93	-9.54	49.78	68.20	-18.42
	29125.00	Peak	V	-	-	-51.23	3.48	-9.54	49.71	68.20	-18.49

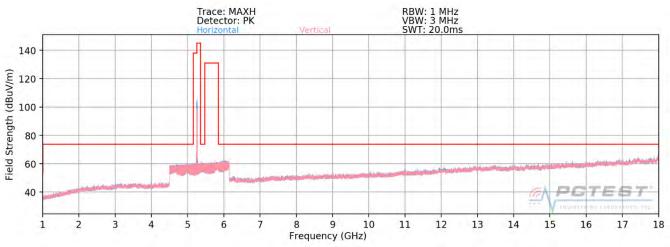
Table 7-75. Radiated Measurements SISO ANT1 (26 Tones)

FCC ID: A3LSMG986JPN	<u>PCTEST</u>	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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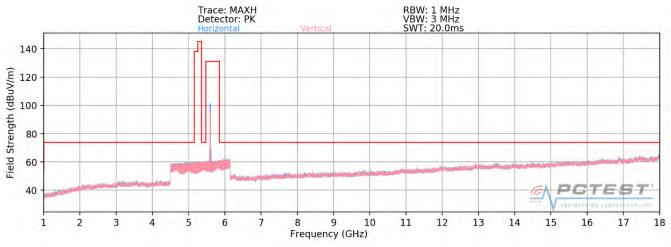
Plot 7-277. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax - U1 Ch. 40 - 242 Tones)



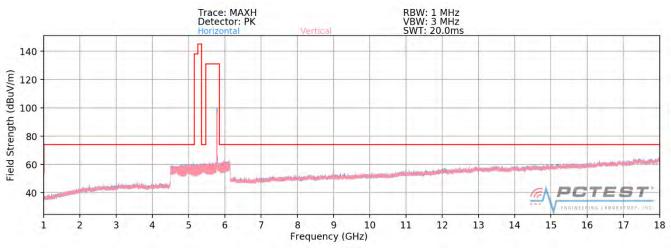
Plot 7-278. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax - U2A Ch. 56 - 242 Tones)

FCC ID: A3LSMG986JPN	<u><u><u></u><u>PCTEST</u></u></u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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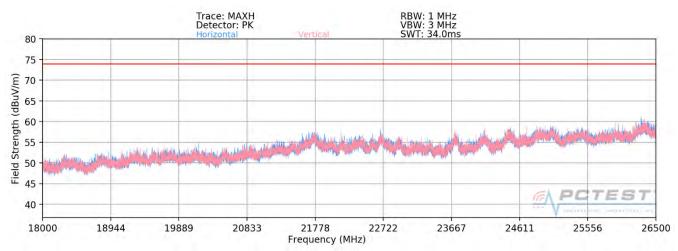


Plot 7-280. Radiated Spurious Plot above 1GHz SISO ANT1 (802.11ax - U3 Ch. 157 - 242 Tones)

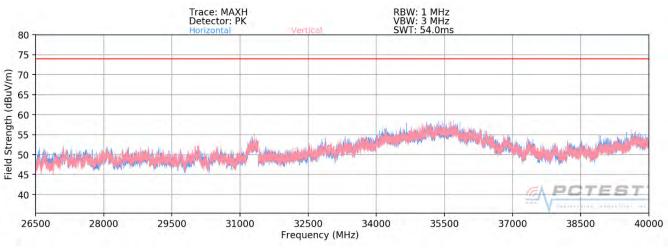
FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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# SISO Antenna-1 Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-281. Radiated Spurious Plot 18GHz - 26.5GHz SISO ANT1 (802.11ax – 242 Tones)



Plot 7-282. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT1 (802.11ax - 242 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
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# SISO Antenna-1 Radiated Spurious Emission Measurements (242 Tones) §15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

802.11ax (20MHz BW)
MCS0
61
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	-	-	-70.63	15.23	0.00	51.60	68.20	-16.60
*	15540.00	Average	V	141	323	-82.32	22.71	0.00	47.39	53.98	-6.59
*	15540.00	Peak	V	141	323	-68.39	22.71	0.00	61.32	73.98	-12.66
*	20720.00	Average	V	-	-	-77.53	17.51	-9.54	37.44	53.98	-16.54
*	20720.00	Peak	V	-	-	-66.92	17.51	-9.54	48.05	73.98	-25.93
	25900.00	Peak	V	-	-	-65.67	19.88	-9.54	51.67	68.20	-16.53

Table 7-76. Radiated Measurements SISO ANT1 (242 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5200MHz
Channel:	40

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
ſ	10400.00	Peak	V	-	-	-70.07	15.67	0.00	52.60	68.20	-15.60
*	15600.00	Average	V	125	327	-81.79	22.46	0.00	47.67	53.98	-6.31
*	15600.00	Peak	V	125	327	-67.94	22.46	0.00	61.52	73.98	-12.46
*	20800.00	Average	V	-	-	-77.41	17.87	-9.54	37.92	53.98	-16.06
*	20800.00	Peak	V	-	-	-67.41	17.87	-9.54	47.92	73.98	-26.06
	26000.00	Peak	V	-	-	-66.07	20.15	-9.54	51.54	68.20	-16.66

Table 7-77. Radiated Measurements SISO ANT1 (242 Tones)

FCC ID: A3LSMG986JPN	<u><u>PCTEST</u></u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5240MHz
Channel:	48

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10480.00	Peak	V	-	-	-70.73	15.49	0.00	51.76	68.20	-16.44
*	15720.00	Average	V	119	322	-81.87	22.45	0.00	47.58	53.98	-6.40
*	15720.00	Peak	V	119	322	-67.59	22.45	0.00	61.86	73.98	-12.12
*	20960.00	Average	V	-	-	-78.00	18.06	-9.54	37.52	53.98	-16.46
*	20960.00	Peak	V	-	-	-67.93	18.06	-9.54	47.59	73.98	-26.39
	26200.00	Peak	V	-	-	-66.06	20.23	-9.54	51.63	68.20	-16.57

Table 7-78. Radiated Measurements SISO ANT1 (242 Tones)

Worst Case Mode: 802.11ax (20MHz BW) Worst Case Transfer Rate: RU Index: 61 Distance of Measurements:

**Operating Frequency:** 

Channel:

MCS0 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	-	-	-71.05	15.86	0.00	51.81	68.20	-16.39
*	15780.00	Average	V	-	-	-83.17	22.77	0.00	46.60	53.98	-7.38
*	15780.00	Peak	V	-	-	-70.68	22.77	0.00	59.09	73.98	-14.89
*	21040.00	Average	V	-	-	-77.49	18.36	-9.54	38.33	53.98	-15.65
*	21040.00	Peak	V	-	-	-67.46	18.36	-9.54	48.36	73.98	-25.62
[	26300.00	Peak	V	-	-	-65.42	20.96	-9.54	53.00	68.20	-15.20

Table 7-79. Radiated Measurements SISO ANT1 (242 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5280MHz
Channel:	56

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10560.00	Peak	V	-	-	-70.03	15.70	0.00	52.67	68.20	-15.53
*	15840.00	Average	V	-	-	-82.78	22.66	0.00	46.88	53.98	-7.10
*	15840.00	Peak	V	-	-	-70.01	22.66	0.00	59.65	73.98	-14.33
*	21120.00	Average	V	-	-	-77.41	18.17	-9.54	38.22	53.98	-15.76
*	21120.00	Peak	V	-	-	-67.44	18.17	-9.54	48.19	73.98	-25.79
	26400.00	Peak	V	-	-	-65.37	20.65	-9.54	52.74	68.20	-15.46

Table 7-80. Radiated Measurements SISO ANT1 (242 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5320MHz
Channel:	64

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	10640.00	Average	V	-	-	-82.55	16.03	0.00	40.48	53.98	-13.50
*	10640.00	Peak	V	-	-	-70.90	16.03	0.00	52.13	73.98	-21.85
*	15960.00	Average	V	-	-	-83.45	23.09	0.00	46.64	53.98	-7.34
*	15960.00	Peak	V	-	-	-70.16	23.09	0.00	59.93	73.98	-14.05
*	21280.00	Average	V	-	-	-77.31	18.57	-9.54	38.72	53.98	-15.26
*	21280.00	Peak	V	-	-	-66.52	18.57	-9.54	49.51	73.98	-24.47
	26600.00	Peak	V	-	-	-53.21	5.16	-9.54	49.41	68.20	-18.79

Table 7-81. Radiated Measurements SISO ANT1 (242 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5500MHz
Channel:	100

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11000.00	Average	V	-	-	-81.55	16.51	0.00	41.96	53.98	-12.02
*	11000.00	Peak	V	-	-	-69.72	16.51	0.00	53.79	73.98	-20.19
	16500.00	Peak	V	-	-	-70.82	24.17	0.00	60.35	68.20	-7.85
	22000.00	Peak	V	-	-	-67.07	19.12	-9.54	49.51	68.20	-18.69
	27500.00	Peak	V	-	-	-52.02	3.98	-9.54	49.42	68.20	-18.78

#### Table 7-82. Radiated Measurements SISO ANT1 (242 Tones)

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

802.11ax (20MHz BW)
MCS0
61
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	-	-	-81.64	16.73	0.00	42.09	53.98	-11.89
*	11200.00	Peak	V	-	-	-69.66	16.73	0.00	54.07	73.98	-19.91
	16800.00	Peak	V	-	-	-70.26	24.00	0.00	60.74	68.20	-7.46
*	22400.00	Average	V	-	-	-77.89	20.03	-9.54	39.60	53.98	-14.38
*	22400.00	Peak	V	-	-	-67.58	20.03	-9.54	49.91	73.98	-24.07
	28000.00	Peak	V	-	-	-52.35	4.70	-9.54	49.81	68.20	-18.39

Table 7-83. Radiated Measurements SISO ANT1 (242 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5720MHz
Channel:	144

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11440.00	Average	V	191	314	-80.75	17.29	0.00	43.54	53.98	-10.44
*	11440.00	Peak	V	191	314	-67.87	17.29	0.00	56.42	73.98	-17.56
	17160.00	Peak	V	-	-	-70.20	24.37	0.00	61.17	68.20	-7.03
*	22880.00	Average	V	-	-	-78.29	19.50	-9.54	38.67	53.98	-15.31
*	22880.00	Peak	V	-	-	-67.80	19.50	-9.54	49.16	73.98	-24.82
	28600.00	Peak	V	-	-	-51.81	5.14	-9.54	50.79	68.20	-17.41

# Table 7-84. Radiated Measurements SISO ANT1 (242 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5745MHz
Channel:	149

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11490.00	Average	V	137	323	-80.74	17.63	0.00	43.89	53.98	-10.08
*	11490.00	Peak	V	137	323	-67.77	17.63	0.00	56.86	73.98	-17.11
	17235.00	Peak	V	-	-	-70.60	25.01	0.00	61.41	68.20	-6.79
*	22980.00	Average	V	-	-	-78.21	19.89	-9.54	39.14	53.98	-14.84
*	22980.00	Peak	V	-	-	-67.56	19.89	-9.54	49.79	73.98	-24.19
	28725.00	Peak	V	-	-	-51.89	4.66	-9.54	50.23	68.20	-17.97

Table 7-85. Radiated Measurements SISO ANT1 (242 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5785MHz
Channel:	157

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11570.00	Average	V	196	330	-78.99	17.35	0.00	45.36	53.98	-8.62
*	11570.00	Peak	V	196	330	-66.40	17.35	0.00	57.95	73.98	-16.03
	17355.00	Peak	V	-	-	-70.87	26.08	0.00	62.21	68.20	-5.99
	23140.00	Peak	V	-	-	-66.11	19.59	-9.54	50.94	68.20	-17.26
	28925.00	Peak	V	-	-	-52.16	4.43	-9.54	49.73	68.20	-18.47

Table 7-86. Radiated Measurements SISO ANT1 (242 Tones)

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

	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	143	328	-78.41	17.57	0.00	46.16	53.98	-7.81
*	11650.00	Peak	V	143	328	-65.91	17.57	0.00	58.66	73.98	-15.31
	17475.00	Peak	V	-	-	-70.54	26.23	0.00	62.69	68.20	-5.51
	23300.00	Peak	V	-	-	-67.83	18.93	-9.54	48.56	68.20	-19.64
	29125.00	Peak	V	-	-	-50.88	3.48	-9.54	50.06	68.20	-18.14

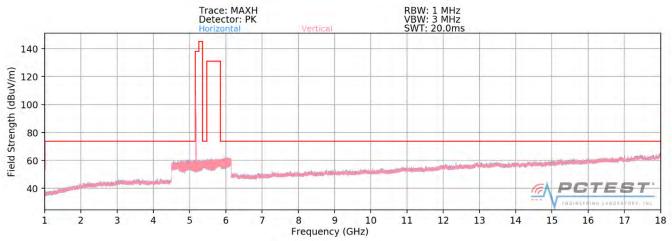
Table 7-87. Radiated Measurements SISO ANT1 (242 Tones)

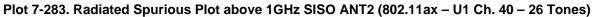
FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 207 of 200	
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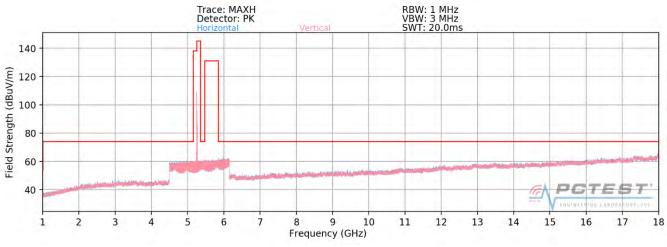


SISO Antenna-2 Radiated Spurious Emission Measurements

# 26 Tones



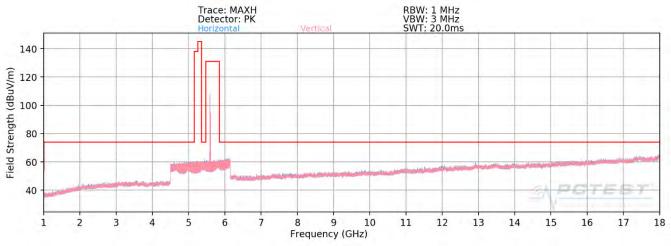




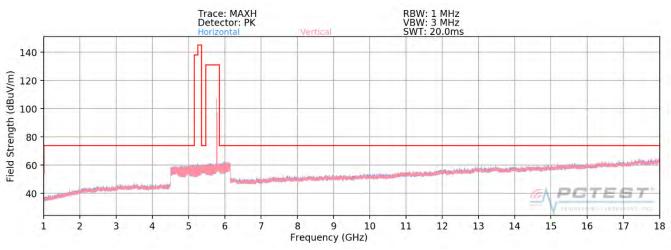
Plot 7-284. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax - U2A Ch. 56 - 26 Tones)

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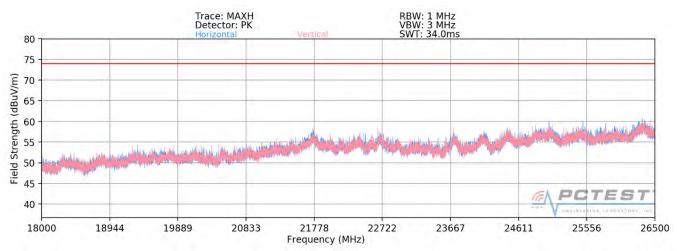


Plot 7-286. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax - U3 Ch. 157 - 26 Tones)

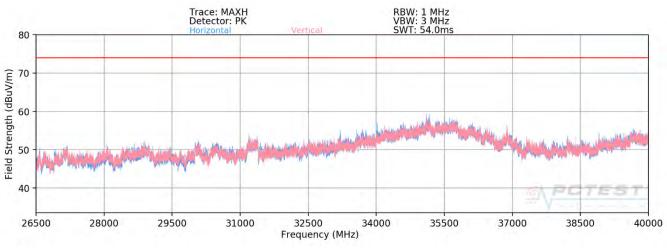
FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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# SISO Antenna-2 Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-287. Radiated Spurious Plot 18GHz - 26.5GHz SISO ANT2 (802.11ax - 26 Tones)



Plot 7-288. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT2 (802.11ax - 26 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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# SISO Antenna-2 Radiated Spurious Emission Measurements §15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	Н	103	277	-72.06	18.27	0.00	53.21	68.20	-14.99
*	15540.00	Average	Н	-	-	-86.23	28.22	0.00	48.99	53.98	-4.99
*	15540.00	Peak	Н	-	-	-74.38	28.22	0.00	60.84	73.98	-13.14
*	20720.00	Average	Н	-	-	-77.97	17.51	-9.54	37.00	53.98	-16.98
*	20720.00	Peak	Н	-	-	-68.02	17.51	-9.54	46.95	73.98	-27.03
	25900.00	Peak	Н	-	-	-65.65	19.88	-9.54	51.69	68.20	-16.51

Table 7-88. Radiated Measurements SISO ANT2 (26 Tones)

Worst Case Mode:	8
Worst Case Transfer Rate:	Ν
RU Index:	5
Distance of Measurements:	1
Operating Frequency:	5
Channel:	4

802.11ax (20MHz BW)
MCS0
54
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	н	-	-	-73.71	18.76	0.00	52.05	68.20	-16.15
*	15600.00	Average	Н	-	-	-86.32	27.97	0.00	48.65	53.98	-5.33
*	15600.00	Peak	н	-	-	-75.35	27.97	0.00	59.62	73.98	-14.36
*	20800.00	Average	н	-	-	-77.91	17.87	-9.54	37.42	53.98	-16.56
*	20800.00	Peak	н	-	-	-67.10	17.87	-9.54	48.23	73.98	-25.75
	26000.00	Peak	Н	-	-	-65.70	20.15	-9.54	51.91	68.20	-16.29

Table 7-89. Radiated Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMG986JPN	<u><u><u></u><u>PCTEST</u></u></u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	Н	-	-	-74.43	19.02	0.00	51.59	68.20	-16.61
*	15720.00	Average	Н	-	-	-86.43	27.74	0.00	48.31	53.98	-5.67
*	15720.00	Peak	Н	-	-	-74.53	27.74	0.00	60.21	73.98	-13.77
*	20960.00	Average	Н	-	-	-78.10	18.06	-9.54	37.42	53.98	-16.56
*	20960.00	Peak	Н	-	-	-67.09	18.06	-9.54	48.43	73.98	-25.55
	26200.00	Peak	Н	-	-	-66.51	20.23	-9.54	51.18	68.20	-17.02

Table 7-90. Radiated Measurements SISO ANT2 (26 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	Н	-	-	-73.54	18.89	0.00	52.35	68.20	-15.85
*	15780.00	Average	Н	-	-	-86.34	27.43	0.00	48.09	53.98	-5.89
*	15780.00	Peak	Н	-	-	-74.47	27.43	0.00	59.96	73.98	-14.02
*	21040.00	Average	Н	-	-	-77.70	18.36	-9.54	38.12	53.98	-15.86
*	21040.00	Peak	Н	-	-	-67.06	18.36	-9.54	48.76	73.98	-25.22
[	26300.00	Peak	Н	-	-	-65.58	20.96	-9.54	52.84	68.20	-15.36

Table 7-91. Radiated Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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802.11ax (20MHz BW)
MCS0
54
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	Н	-	-	-73.66	18.87	0.00	52.21	68.20	-15.99
*	15840.00	Average	Н	-	-	-86.38	28.80	0.00	49.42	53.98	-4.56
*	15840.00	Peak	Н	-	-	-75.35	28.80	0.00	60.45	73.98	-13.53
*	21120.00	Average	Н	-	-	-77.41	18.17	-9.54	38.22	53.98	-15.76
*	21120.00	Peak	Н	-	-	-67.30	18.17	-9.54	48.33	73.98	-25.65
	26400.00	Peak	Н	-	-	-64.56	20.65	-9.54	53.55	68.20	-14.65

Table 7-92. Radiated Measurements SISO ANT2 (26 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	Н	-	-	-85.03	19.05	0.00	41.02	53.98	-12.96
*	10640.00	Peak	Н	-	-	-74.01	19.05	0.00	52.04	73.98	-21.94
*	15960.00	Average	Н	-	-	-86.37	27.12	0.00	47.75	53.98	-6.23
*	15960.00	Peak	Н	-	-	-75.75	27.12	0.00	58.37	73.98	-15.61
*	21280.00	Average	Н	-	-	-77.31	18.57	-9.54	38.72	53.98	-15.26
*	21280.00	Peak	Н	-	-	-66.71	18.57	-9.54	49.32	73.98	-24.66
	26600.00	Peak	Н	-	-	-52.18	5.16	-9.54	50.44	68.20	-17.76

Table 7-93. Radiated Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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802.11ax (20MHz BW)
MCS0
54
1 & 3 Meters
5500MHz
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	Н	-	-	-85.18	19.60	0.00	41.42	53.98	-12.56
*	11000.00	Peak	Н	-	-	-73.94	19.60	0.00	52.66	73.98	-21.32
	16500.00	Peak	Н	-	-	-75.09	28.33	0.00	60.24	68.20	-7.96
	22000.00	Peak	Н	-	-	-67.51	19.12	-9.54	49.07	68.20	-19.13
	27500.00	Peak	Н	-	-	-51.88	3.98	-9.54	49.56	68.20	-18.64

Table 7-94. Radiated Measurements SISO ANT2 (26 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5600MHz
Channel:	120

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11200.00	Average	Н	-	-	-85.30	19.94	0.00	41.64	53.98	-12.34
*	11200.00	Peak	Н	-	-	-73.89	19.94	0.00	53.05	73.98	-20.93
	16800.00	Peak	Н	-	-	-74.62	30.43	0.00	62.81	68.20	-5.39
*	22400.00	Average	Н	-	-	-78.05	20.03	-9.54	39.44	53.98	-14.54
*	22400.00	Peak	Н	-	-	-67.43	20.03	-9.54	50.06	73.98	-23.92
	28000.00	Peak	Н	-	-	-52.08	4.70	-9.54	50.08	68.20	-18.12

Table 7-95. Radiated Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMG986JPN	<u>PCTEST</u>	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	Н	-	-	-84.80	19.66	0.00	41.86	53.98	-12.12
*	11440.00	Peak	Н	-	-	-73.63	19.66	0.00	53.03	73.98	-20.95
	17160.00	Peak	Н	-	-	-74.20	30.32	0.00	63.12	68.20	-5.08
*	22880.00	Average	Н	-	-	-78.24	19.50	-9.54	38.72	53.98	-15.26
*	22880.00	Peak	Н	-	-	-67.16	19.50	-9.54	49.80	73.98	-24.18
	28600.00	Peak	Н	-	-	-52.37	5.14	-9.54	50.23	68.20	-17.97

Table 7-96. Radiated Measurements SISO ANT2 (26 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	Н	-	-	-84.63	20.22	0.00	42.59	53.98	-11.39
*	11490.00	Peak	Н	-	-	-73.37	20.22	0.00	53.85	73.98	-20.13
	17235.00	Peak	Н	-	-	-74.17	29.88	0.00	62.71	68.20	-5.49
*	22980.00	Average	Н	-	-	-78.23	19.89	-9.54	39.12	53.98	-14.86
*	22980.00	Peak	Н	-	-	-67.30	19.89	-9.54	50.05	73.98	-23.93
	28725.00	Peak	Н	-	-	-52.21	4.66	-9.54	49.91	68.20	-18.29

Table 7-97. Radiated Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 215 of 200	
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5785MHz
Channel:	157

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11570.00	Average	Н	-	-	-84.77	21.58	0.00	43.81	53.98	-10.17
*	11570.00	Peak	Н	-	-	-73.30	21.58	0.00	55.28	73.98	-18.70
	17355.00	Peak	Н	-	-	-74.89	29.28	0.00	61.39	68.20	-6.81
	23140.00	Peak	Н	-	-	-67.11	19.59	-9.54	49.94	68.20	-18.26
	28925.00	Peak	Н	-	-	-53.20	4.43	-9.54	48.69	68.20	-19.51

Table 7-98. Radiated Measurements SISO ANT2 (26 Tones)

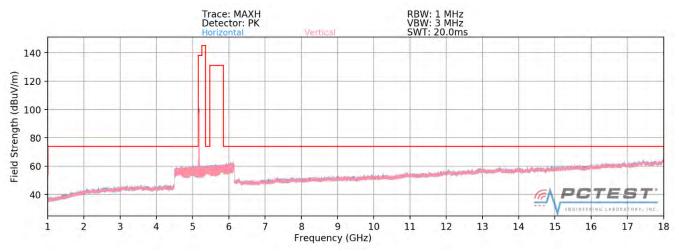
Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5825MHz
Channel:	165

	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	Н	-	-	-84.67	21.22	0.00	43.55	53.98	-10.43
*	11650.00	Peak	Н	-	-	-73.69	21.22	0.00	54.53	73.98	-19.45
	17475.00	Peak	Н	-	-	-75.43	30.91	0.00	62.48	68.20	-5.72
	23300.00	Peak	Н	-	-	-66.60	18.93	-9.54	49.79	68.20	-18.41
	29125.00	Peak	Н	-	-	-51.50	3.48	-9.54	49.44	68.20	-18.76

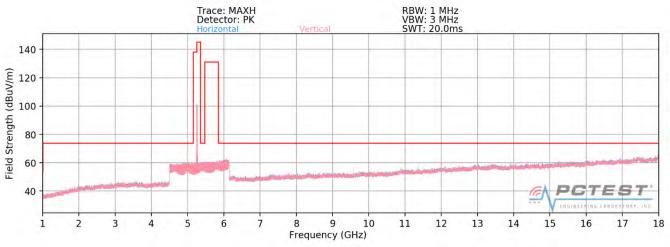
Table 7-99. Radiated Measurements SISO ANT2 (26 Tones)

FCC ID: A3LSMG986JPN	<u>PCTEST</u>	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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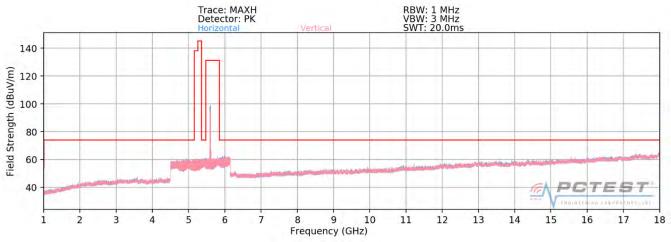
Plot 7-289. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax - U1 Ch. 40 - 242 Tones)



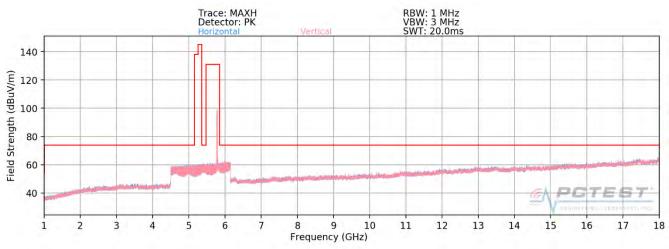
Plot 7-290. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax - U2A Ch. 56 - 242 Tones)

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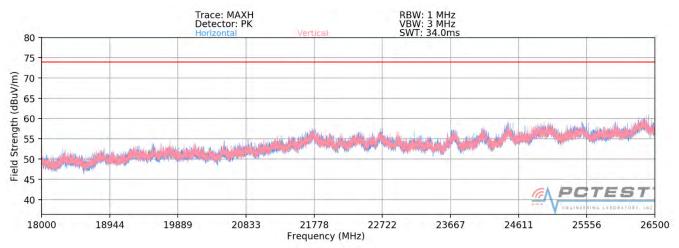


Plot 7-292. Radiated Spurious Plot above 1GHz SISO ANT2 (802.11ax - U3 Ch. 157 - 242 Tones)

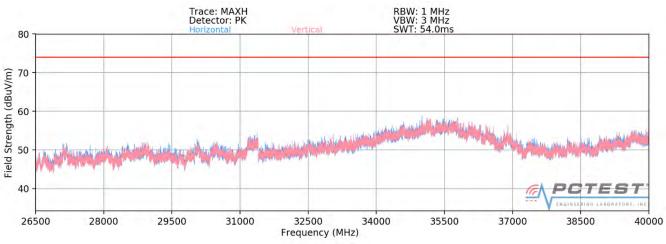
FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 249 at 200
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# SISO Antenna-2 Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-293. Radiated Spurious Plot 18GHz - 26.5GHz SISO ANT2 (802.11ax – 242 Tones)



Plot 7-294. Radiated Spurious Plot 26.5GHz - 40GHz SISO ANT2 (802.11ax - 242 Tones)

FCC ID: A3LSMG986JPN	<u><i>CPCTEST</i></u>	MEASUREMENT REPORT (CERTIFICATION)	UNG	Approved by: Quality Manager
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### SISO Antenna-2 Radiated Spurious Emission Measurements §15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5180MHz
Channel:	36

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10360.00	Peak	Н	-	-	-73.62	18.27	0.00	51.65	68.20	-16.55
*	15540.00	Average	Н	-	-	-85.76	28.22	0.00	49.46	53.98	-4.52
*	15540.00	Peak	Н	-	-	-75.85	28.22	0.00	59.37	73.98	-14.61
*	20720.00	Average	Н	-	-	-77.99	17.51	-9.54	36.98	53.98	-17.00
*	20720.00	Peak	Н	-	-	-67.77	17.51	-9.54	47.20	73.98	-26.78
	25900.00	Peak	Н	-	-	-66.36	19.88	-9.54	50.98	68.20	-17.22

Table 7-100. Radiated Measurements SISO ANT2 (242 Tones)

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

802.11ax (20MHz BW)
MCS0
61
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	Н	-	-	-72.81	18.76	0.00	52.95	68.20	-15.25
*	15600.00	Average	н	-	-	-86.05	27.97	0.00	48.92	53.98	-5.06
*	15600.00	Peak	н	-	-	-74.31	27.97	0.00	60.66	73.98	-13.32
*	20800.00	Average	н	-	-	-77.94	17.87	-9.54	37.39	53.98	-16.59
*	20800.00	Peak	н	-	-	-66.59	17.87	-9.54	48.74	73.98	-25.24
	26000.00	Peak	н	-	-	-66.43	20.15	-9.54	51.18	68.20	-17.02

Table 7-101. Radiated Measurements SISO ANT2 (242 Tones)

FCC ID: A3LSMG986JPN	<u><u>PCTEST</u></u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5240MHz
Channel:	48

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10480.00	Peak	Н	-	-	-73.92	19.02	0.00	52.10	68.20	-16.10
*	15720.00	Average	н	-	-	-86.23	27.74	0.00	48.51	53.98	-5.47
*	15720.00	Peak	н	-	-	-74.98	27.74	0.00	59.76	73.98	-14.22
*	20960.00	Average	н	-	-	-77.99	18.06	-9.54	37.53	53.98	-16.45
*	20960.00	Peak	н	-	-	-67.70	18.06	-9.54	47.82	73.98	-26.16
	26200.00	Peak	н	-	-	-66.49	20.23	-9.54	51.20	68.20	-17.00

Table 7-102. Radiated Measurements SISO ANT2 (242 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5260MHz
Channel:	52

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
ſ	10520.00	Peak	н	-	-	-73.75	18.89	0.00	52.14	68.20	-16.06
*	15780.00	Average	н	-	-	-86.08	27.43	0.00	48.35	53.98	-5.63
*	15780.00	Peak	н	-	-	-74.85	27.43	0.00	59.58	73.98	-14.40
*	21040.00	Average	н	-	-	-77.84	18.36	-9.54	37.98	53.98	-16.00
*	21040.00	Peak	н	-	-	-67.91	18.36	-9.54	47.91	73.98	-26.07
Ī	26300.00	Peak	Н	-	-	-64.99	20.96	-9.54	53.43	68.20	-14.77

Table 7-103. Radiated Measurements SISO ANT2 (242 Tones)

FCC ID: A3LSMG986JPN	PCTEST'	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5280MHz
Channel:	56

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10560.00	Peak	Н	-	-	-73.62	18.87	0.00	52.25	68.20	-15.95
*	15840.00	Average	Н	-	-	-86.23	28.80	0.00	49.57	53.98	-4.41
*	15840.00	Peak	Н	-	-	-74.63	28.80	0.00	61.17	73.98	-12.81
*	21120.00	Average	Н	-	-	-77.44	18.17	-9.54	38.19	53.98	-15.79
*	21120.00	Peak	Н	-	-	-66.83	18.17	-9.54	48.80	73.98	-25.18
	26400.00	Peak	Н	-	-	-65.21	20.65	-9.54	52.90	68.20	-15.30

Table 7-104. Radiated Measurements SISO ANT2 (242 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5320MHz
Channel:	64

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	10640.00	Average	Н	-	-	-84.83	19.05	0.00	41.22	53.98	-12.76
*	10640.00	Peak	Н	-	-	-73.04	19.05	0.00	53.01	73.98	-20.97
*	15960.00	Average	Н	-	-	-86.77	27.12	0.00	47.35	53.98	-6.63
*	15960.00	Peak	Н	-	-	-74.73	27.12	0.00	59.39	73.98	-14.59
*	21280.00	Average	Н	-	-	-77.23	18.57	-9.54	38.80	53.98	-15.18
*	21280.00	Peak	Н	-	-	-66.68	18.57	-9.54	49.35	73.98	-24.63
	26600.00	Peak	Н	-	-	-53.32	5.16	-9.54	49.30	68.20	-18.90

Table 7-105. Radiated Measurements SISO ANT2 (242 Tones)

FCC ID: A3LSMG986JPN	<u>PCTEST</u>	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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11ax (20MHz BW)
S0
3 Meters
OMHz

	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	Н	-	-	-85.13	19.60	0.00	41.47	53.98	-12.51
*	11000.00	Peak	Н	-	-	-73.56	19.60	0.00	53.04	73.98	-20.94
	16500.00	Peak	Н	-	-	-73.88	28.33	0.00	61.45	68.20	-6.75
	22000.00	Peak	Н	-	-	-66.91	19.12	-9.54	49.67	68.20	-18.53
	27500.00	Peak	Н	-	-	-51.66	3.98	-9.54	49.78	68.20	-18.42

Table 7-106. Radiated Measurements SISO ANT2 (242 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5600MHz
Channel:	120

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11200.00	Average	Н	-	-	-85.07	19.94	0.00	41.87	53.98	-12.11
*	11200.00	Peak	Н	-	-	-73.58	19.94	0.00	53.36	73.98	-20.62
	16800.00	Peak	Н	-	-	-74.71	30.43	0.00	62.72	68.20	-5.48
*	22400.00	Average	Н	-	-	-77.84	20.03	-9.54	39.65	53.98	-14.33
*	22400.00	Peak	Н	-	-	-67.34	20.03	-9.54	50.15	73.98	-23.83
	28000.00	Peak	Н	-	-	-52.34	4.70	-9.54	49.82	68.20	-18.38

Table 7-107. Radiated Measurements SISO ANT2 (242 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Worst Case Mode:	802.11ax (20MHz BW)				
Worst Case Transfer Rate:	MCS0				
RU Index:	61				
Distance of Measurements:	1 & 3 Meters				
Operating Frequency:	5720MHz				
Channel:	144				

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11440.00	Average	Н	-	-	-84.61	19.66	0.00	42.05	53.98	-11.93
*	11440.00	Peak	Н	-	-	-73.67	19.66	0.00	52.99	73.98	-20.99
	17160.00	Peak	Н	-	-	-74.94	30.32	0.00	62.38	68.20	-5.82
*	22880.00	Average	Н	-	-	-78.18	19.50	-9.54	38.78	53.98	-15.20
*	22880.00	Peak	Н	-	-	-67.61	19.50	-9.54	49.35	73.98	-24.63
	28600.00	Peak	Н	-	-	-52.15	5.14	-9.54	50.45	68.20	-17.75

Table 7-108. Radiated Measurements SISO ANT2 (242 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5745MHz
Channel:	149

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11490.00	Average	Н	-	-	-84.66	20.22	0.00	42.56	53.98	-11.42
*	11490.00	Peak	Н	-	-	-73.56	20.22	0.00	53.66	73.98	-20.32
	17235.00	Peak	Н	-	-	-74.46	29.88	0.00	62.42	68.20	-5.78
*	22980.00	Average	Н	-	-	-78.14	19.89	-9.54	39.21	53.98	-14.77
*	22980.00	Peak	Н	-	-	-67.88	19.89	-9.54	49.47	73.98	-24.51
	28725.00	Peak	Н	-	-	-52.21	4.66	-9.54	49.91	68.20	-18.29

Table 7-109. Radiated Measurements SISO ANT2 (242 Tones)

FCC ID: A3LSMG986JPN	PCTEST'	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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802.11ax (20MHz BW)				
MCS0				
61				
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	Н	-	-	-84.96	21.58	0.00	43.62	53.98	-10.36
*	11570.00	Peak	Н	-	-	-73.90	21.58	0.00	54.68	73.98	-19.30
	17355.00	Peak	Н	-	-	-74.63	29.28	0.00	61.65	68.20	-6.55
	23140.00	Peak	Н	-	-	-67.61	19.59	-9.54	49.44	68.20	-18.76
	28925.00	Peak	Н	-	-	-52.21	4.43	-9.54	49.68	68.20	-18.52

Table 7-110. Radiated Measurements SISO ANT2 (242 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5825MHz
Channel:	165

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11650.00	Average	Н	-	-	-85.05	21.22	0.00	43.17	53.98	-10.81
*	11650.00	Peak	Н	-	-	-74.24	21.22	0.00	53.98	73.98	-20.00
	17475.00	Peak	Н	-	-	-75.57	30.91	0.00	62.34	68.20	-5.86
	23300.00	Peak	Н	-	-	-66.54	18.93	-9.54	49.85	68.20	-18.35
	29125.00	Peak	Н	-	-	-51.49	3.48	-9.54	49.45	68.20	-18.75

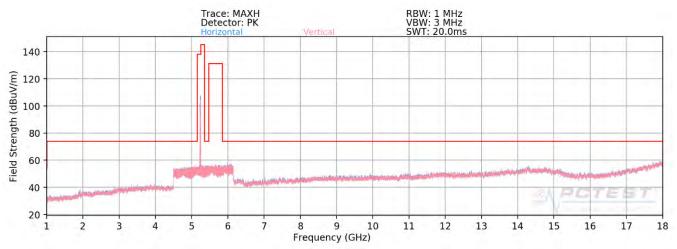
Table 7-111. Radiated Measurements SISO ANT2 (242 Tones)

FCC ID: A3LSMG986JPN	<u>PCTEST</u>	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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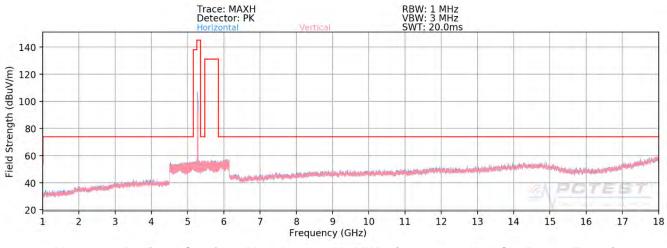


.3 MIMO Radiated Spurious Emission Measurements

# 26 Tones



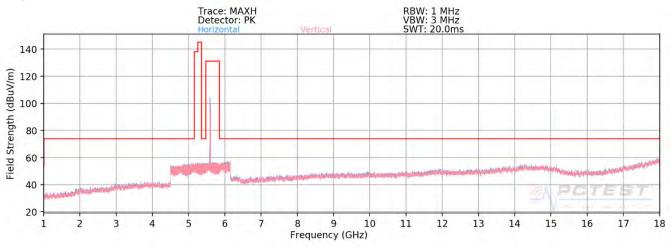




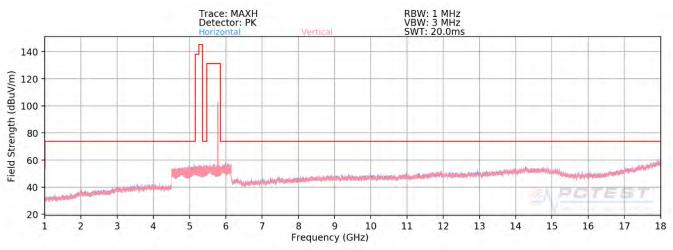
Plot 7-296. Radiated Spurious Plot above 1GHz MIMO (802.11ax - U2A Ch. 56 - 26 Tones)

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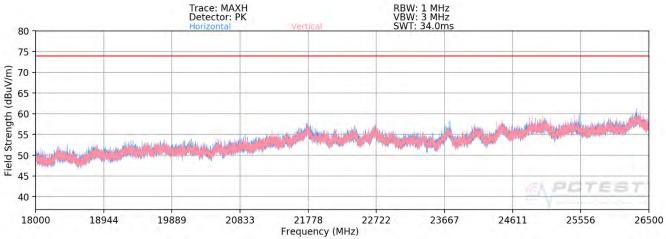


Plot 7-298. Radiated Spurious Plot above 1GHz MIMO (802.11ax - U3 Ch. 157 - 26 Tones)

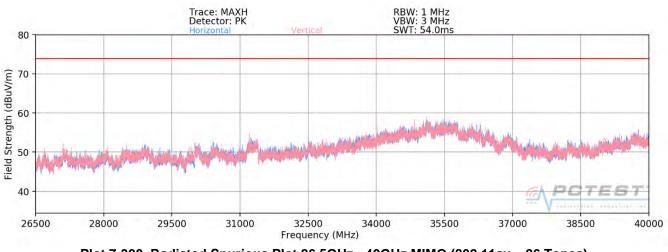
FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 207 of 200
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# MIMO Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-299. Radiated Spurious Plot 18GHz - 26.5GHz MIMO (802.11ax – 26 Tones)



Plot 7-300. Radiated Spurious Plot 26.5GHz - 40GHz MIMO (802.11ax - 26 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 000 at 000
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# MIMO Radiated Spurious Emission Measurements (26 Tones) §15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	-	-	-69.38	15.23	0.00	52.85	68.20	-15.35
*	15540.00	Average	V	-	-	-83.03	22.71	0.00	46.68	53.98	-7.30
*	15540.00	Peak	V	-	-	-70.30	22.71	0.00	59.41	73.98	-14.57
*	20720.00	Average	V	-	-	-79.60	17.51	-9.54	35.37	53.98	-18.61
*	20720.00	Peak	V	-	-	-67.67	17.51	-9.54	47.30	73.98	-26.68
	25900.00	Peak	V	-	-	-66.19	19.88	-9.54	51.15	68.20	-17.05

Table 7-112. Radiated Measurements MIMO (26 Tones)

Worst Case Mode: Worst Case Transfer Rate: RU Index: Distance of Measurements: Operating Frequency: Channel: 802.11ax (20MHz BW) MCS0 54 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	-	-	-70.20	15.67	0.00	52.47	68.20	-15.73
*	15600.00	Average	V	-	-	-82.69	22.46	0.00	46.77	53.98	-7.21
*	15600.00	Peak	V	-	-	-69.72	22.46	0.00	59.74	73.98	-14.24
*	20800.00	Average	V	-	-	-79.06	17.87	-9.54	36.27	53.98	-17.71
*	20800.00	Peak	V	-	-	-66.31	17.87	-9.54	49.02	73.98	-24.96
	26000.00	Peak	V	-	-	-66.04	20.15	-9.54	51.57	68.20	-16.63

Table 7-113. Radiated Measurements MIMO (26 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	-	-	-69.88	15.49	0.00	52.61	68.20	-15.59
*	15720.00	Average	V	-	-	-82.93	22.45	0.00	46.52	53.98	-7.46
*	15720.00	Peak	V	-	-	-70.47	22.45	0.00	58.98	73.98	-15.00
*	20960.00	Average	V	-	-	-78.30	18.06	-9.54	37.22	53.98	-16.76
*	20960.00	Peak	V	-	-	-67.23	18.06	-9.54	48.29	73.98	-25.69
	26200.00	Peak	V	-	-	-66.28	20.23	-9.54	51.41	68.20	-16.79

Table 7-114. Radiated Measurements MIMO (26 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	-	-	-69.93	15.86	0.00	52.93	68.20	-15.27
*	15780.00	Average	V	-	-	-83.21	22.77	0.00	46.56	53.98	-7.42
*	15780.00	Peak	V	-	-	-70.26	22.77	0.00	59.51	73.98	-14.47
*	21040.00	Average	V	-	-	-77.81	18.36	-9.54	38.01	53.98	-15.97
*	21040.00	Peak	V	-	-	-66.04	18.36	-9.54	49.78	73.98	-24.20
	26300.00	Peak	V	-	-	-65.95	20.96	-9.54	52.47	68.20	-15.73

Table 7-115. Radiated Measurements MIMO (26 Tones)

FCC ID: A3LSMG986JPN	PCTEST'	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5280MHz
Channel:	56

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10560.00	Peak	V	-	-	-69.73	15.70	0.00	52.97	68.20	-15.23
*	15840.00	Average	V	-	-	-83.08	22.66	0.00	46.58	53.98	-7.40
*	15840.00	Peak	V	-	-	-70.16	22.66	0.00	59.50	73.98	-14.48
*	21120.00	Average	V	-	-	-77.66	18.17	-9.54	37.97	53.98	-16.01
*	21120.00	Peak	V	-	-	-66.06	18.17	-9.54	49.57	73.98	-24.41
	26400.00	Peak	V	-	-	-66.35	20.65	-9.54	51.76	68.20	-16.44

Table 7-116. Radiated Measurements MIMO (26 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	-	-	-82.56	16.03	0.00	40.47	53.98	-13.51
*	10640.00	Peak	V	-	-	-69.93	16.03	0.00	53.10	73.98	-20.88
*	15960.00	Average	V	-	-	-83.49	23.09	0.00	46.60	53.98	-7.38
*	15960.00	Peak	V	-	-	-70.19	23.09	0.00	59.90	73.98	-14.08
*	21280.00	Average	V	-	-	-77.60	18.57	-9.54	38.43	53.98	-15.55
*	21280.00	Peak	V	-	-	-66.57	18.57	-9.54	49.46	73.98	-24.52
	26600.00	Peak	V	-	-	-50.86	5.16	-9.54	51.76	68.20	-16.44

Table 7-117. Radiated Measurements MIMO (26 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	-	-	-81.59	16.51	0.00	41.92	53.98	-12.06
*	11000.00	Peak	V	-	-	-69.91	16.51	0.00	53.60	73.98	-20.38
	16500.00	Peak	V	-	-	-70.56	24.17	0.00	60.61	68.20	-7.59
	22000.00	Peak	V	-	-	-66.07	19.12	-9.54	50.51	68.20	-17.69
	27500.00	Peak	V	-	-	-49.71	3.98	-9.54	51.73	68.20	-16.47

#### Table 7-118. Radiated Measurements MIMO (26 Tones)

802.11ax (20MHz BW)
MCS0
54
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	-	-	-81.68	16.73	0.00	42.05	53.98	-11.93
*	11200.00	Peak	V	-	-	-69.65	16.73	0.00	54.08	73.98	-19.90
	16800.00	Peak	V	-	-	-70.15	24.00	0.00	60.85	68.20	-7.35
*	22400.00	Average	V	-	-	-78.35	20.03	-9.54	39.14	53.98	-14.84
*	22400.00	Peak	V	-	-	-67.32	20.03	-9.54	50.17	73.98	-23.81
	28000.00	Peak	V	-	-	-50.35	4.70	-9.54	51.81	68.20	-16.39

Table 7-119. Radiated Measurements MIMO (26 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	199	316	-80.63	17.29	0.00	43.66	53.98	-10.32
*	11440.00	Peak	V	199	316	-65.98	17.29	0.00	58.31	73.98	-15.67
	17160.00	Peak	V	-	-	-70.19	24.37	0.00	61.18	68.20	-7.02
*	22880.00	Average	V	-	-	-78.59	19.50	-9.54	38.37	53.98	-15.61
*	22880.00	Peak	V	-	-	-67.12	19.50	-9.54	49.84	73.98	-24.14
	28600.00	Peak	V	-	-	-50.68	5.14	-9.54	51.92	68.20	-16.28

Table 7-120. Radiated Measurements MIMO (26 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
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	115	339	-81.09	17.63	0.00	43.54	53.98	-10.43
*	11490.00	Peak	V	115	339	-67.79	17.63	0.00	56.84	73.98	-17.13
	17235.00	Peak	V	-	-	-70.53	25.01	0.00	61.48	68.20	-6.72
*	22980.00	Average	V	-	-	-78.34	19.89	-9.54	39.01	53.98	-14.97
*	22980.00	Peak	V	-	-	-66.28	19.89	-9.54	51.07	73.98	-22.91
	28725.00	Peak	V	-	-	-51.06	4.66	-9.54	51.06	68.20	-17.14

Table 7-121. Radiated Measurements MIMO (26 Tones)

FCC ID: A3LSMG986JPN	<u> PCTEST</u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5785MHz
Channel:	157

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11570.00	Average	V	252	323	-80.14	17.35	0.00	44.21	53.98	-9.77
*	11570.00	Peak	V	252	323	-66.71	17.35	0.00	57.64	73.98	-16.34
	17355.00	Peak	V	-	-	-71.04	26.08	0.00	62.04	68.20	-6.16
	23140.00	Peak	V	-	-	-66.83	19.59	-9.54	50.22	68.20	-17.98
	28925.00	Peak	V	-	-	-49.95	4.43	-9.54	51.94	68.20	-16.26

# Table 7-122. Radiated Measurements MIMO (26 Tones)

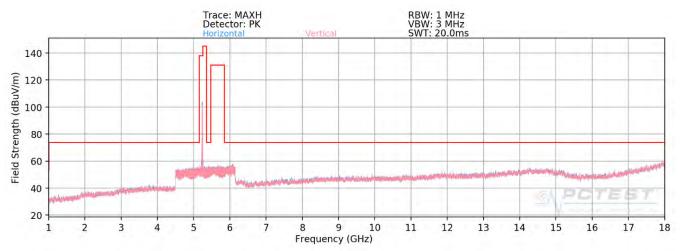
Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	54
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5825MHz
Channel:	165

	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	262	328	-80.56	17.57	0.00	44.01	53.98	-9.96
*	11650.00	Peak	V	262	328	-67.76	17.57	0.00	56.81	73.98	-17.16
	17475.00	Peak	V	-	-	-70.24	26.23	0.00	62.99	68.20	-5.21
	23300.00	Peak	V	-	-	-65.80	18.93	-9.54	50.59	68.20	-17.61
	29125.00	Peak	V	-	-	-50.89	3.48	-9.54	50.05	68.20	-18.15

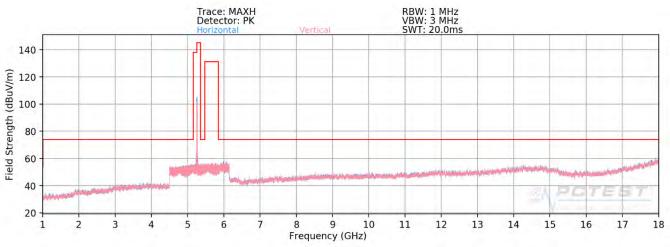
 Table 7-123. Radiated Measurements MIMO (26 Tones)

FCC ID: A3LSMG986JPN	<u>PCTEST</u>	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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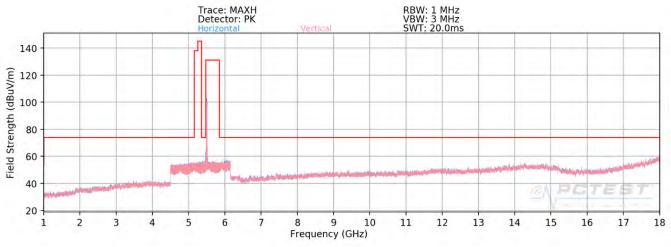
Plot 7-301. Radiated Spurious Plot above 1GHz MIMO (802.11ax - U1 Ch. 40 - 242 Tones)

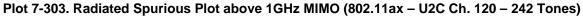


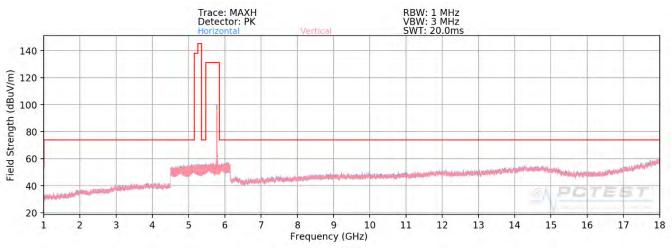
Plot 7-302. Radiated Spurious Plot above 1GHz MIMO (802.11ax – U2A Ch. 56 – 242 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 225 of 266	
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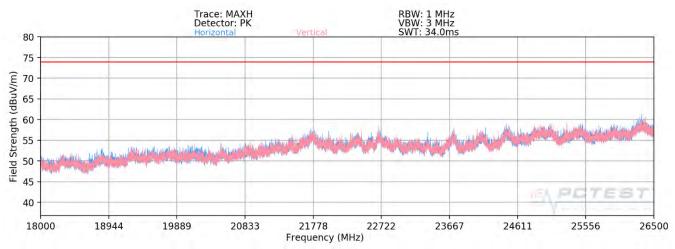


Plot 7-304. Radiated Spurious Plot above 1GHz MIMO (802.11ax - U3 Ch. 157 - 242 Tones)

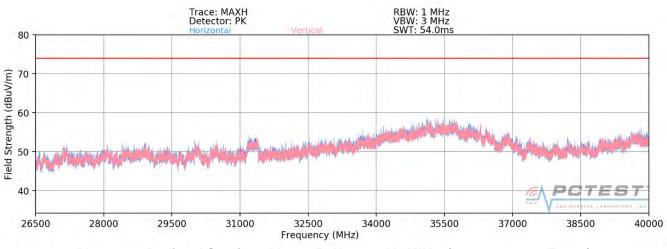
FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		D	
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# MIMO Radiated Spurious Emissions Measurements (Above 18GHz)



Plot 7-305. Radiated Spurious Plot 18GHz - 26.5GHz MIMO (802.11ax – 242 Tones)



Plot 7-306. Radiated Spurious Plot 26.5GHz - 40GHz MIMO (802.11ax - 242 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 227 of 266
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## MIMO Radiated Spurious Emission Measurements (242 Tones) §15.407(b) §15.205 & §15.209; RSS-Gen [8.9]

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5180MHz
Channel:	36

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10360.00	Peak	V	-	-	-70.44	15.23	0.00	51.79	68.20	-16.41
*	15540.00	Average	V	-	-	-83.10	22.71	0.00	46.61	53.98	-7.37
*	15540.00	Peak	V	-	-	-70.40	22.71	0.00	59.31	73.98	-14.67
*	20720.00	Average	V	-	-	-77.87	17.51	-9.54	37.10	53.98	-16.88
*	20720.00	Peak	V	-	-	-67.61	17.51	-9.54	47.36	73.98	-26.62
	25900.00	Peak	V	-	-	-66.19	19.88	-9.54	51.15	68.20	-17.05

Table 7-124. Radiated Measurements MIMO (242 Tones)

Worst Case Mode: Worst Case Transfer Rate: RU Index: Distance of Measurements: Operating Frequency: Channel: 802.11ax (20MHz BW) MCS0 61 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]
ſ	10400.00	Peak	V	-	-	-69.98	15.67	0.00	52.69	68.20	-15.51
*	15600.00	Average	V	-	-	-82.85	22.46	0.00	46.61	53.98	-7.37
*	15600.00	Peak	V	-	-	-69.61	22.46	0.00	59.85	73.98	-14.13
*	20800.00	Average	V	-	-	-77.99	17.87	-9.54	37.34	53.98	-16.64
*	20800.00	Peak	V	-	-	-67.02	17.87	-9.54	48.31	73.98	-25.67
ſ	26000.00	Peak	V	-	-	-65.81	20.15	-9.54	51.80	68.20	-16.40

Table 7-125. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 220 of 200
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5240MHz
Channel:	48

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10480.00	Peak	V	-	-	-70.03	15.49	0.00	52.46	68.20	-15.74
*	15720.00	Average	V	-	-	-82.88	22.45	0.00	46.57	53.98	-7.41
*	15720.00	Peak	V	-	-	-70.10	22.45	0.00	59.35	73.98	-14.63
*	20960.00	Average	V	-	-	-78.07	18.06	-9.54	37.45	53.98	-16.53
*	20960.00	Peak	V	-	-	-67.88	18.06	-9.54	47.64	73.98	-26.34
	26200.00	Peak	V	-	-	-66.34	20.23	-9.54	51.35	68.20	-16.85

Table 7-126. Radiated Measurements MIMO (242 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5260MHz
Channel:	52

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10520.00	Peak	V	-	-	-70.22	15.86	0.00	52.64	68.20	-15.56
*	15780.00	Average	V	-	-	-83.04	22.77	0.00	46.73	53.98	-7.25
*	15780.00	Peak	V	-	-	-70.18	22.77	0.00	59.59	73.98	-14.39
*	21040.00	Average	V	-	-	-77.58	18.36	-9.54	38.24	53.98	-15.74
*	21040.00	Peak	V	-	-	-67.49	18.36	-9.54	48.33	73.98	-25.65
	26300.00	Peak	V	-	-	-65.19	20.96	-9.54	53.23	68.20	-14.97

Table 7-127. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 239 of 266
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5280MHz
Channel:	56

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10560.00	Peak	V	-	-	-69.73	15.70	0.00	52.97	68.20	-15.23
*	15840.00	Average	V	-	-	-83.17	22.66	0.00	46.49	53.98	-7.49
*	15840.00	Peak	V	-	-	-70.75	22.66	0.00	58.91	73.98	-15.07
*	21120.00	Average	V	-	-	-77.64	18.17	-9.54	37.99	53.98	-15.99
*	21120.00	Peak	V	-	-	-67.27	18.17	-9.54	48.36	73.98	-25.62
	26400.00	Peak	V	-	-	-66.71	20.65	-9.54	51.40	68.20	-16.80

Table 7-128. Radiated Measurements MIMO (242 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5320MHz
Channel:	64

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	10640.00	Average	V	-	-	-82.54	16.03	0.00	40.49	53.98	-13.49
*	10640.00	Peak	V	-	-	-70.01	16.03	0.00	53.02	73.98	-20.96
*	15960.00	Average	V	-	-	-83.53	23.09	0.00	46.56	53.98	-7.42
*	15960.00	Peak	V	-	-	-70.82	23.09	0.00	59.27	73.98	-14.71
*	21280.00	Average	V	-	-	-77.28	18.57	-9.54	38.75	53.98	-15.23
*	21280.00	Peak	V	-	-	-66.78	18.57	-9.54	49.25	73.98	-24.73
	26600.00	Peak	V	-	-	-53.17	5.16	-9.54	49.45	68.20	-18.75

Table 7-129. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSMG986JPN	<u><i>CPCTEST</i></u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 240 of 200
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5500MHz
Channel:	100

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11000.00	Average	V	-	-	-81.71	16.51	0.00	41.80	53.98	-12.18
*	11000.00	Peak	V	-	-	-69.89	16.51	0.00	53.62	73.98	-20.36
	16500.00	Peak	V	-	-	-70.54	24.17	0.00	60.63	68.20	-7.57
	22000.00	Peak	V	-	-	-67.25	19.12	-9.54	49.33	68.20	-18.87
	27500.00	Peak	V	-	-	-51.58	3.98	-9.54	49.86	68.20	-18.34

## Table 7-130. Radiated Measurements MIMO (242 Tones)

802.11ax (20MHz BW)
MCS0
61
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	-	-	-81.77	16.73	0.00	41.96	53.98	-12.02
*	11200.00	Peak	V	-	-	-69.87	16.73	0.00	53.86	73.98	-20.12
	16800.00	Peak	V	-	-	-71.34	24.00	0.00	59.66	68.20	-8.54
*	22400.00	Average	V	-	-	-77.95	20.03	-9.54	39.54	53.98	-14.44
*	22400.00	Peak	V	-	-	-67.10	20.03	-9.54	50.39	73.98	-23.59
	28000.00	Peak	V	-	-	-52.68	4.70	-9.54	49.48	68.20	-18.72

Table 7-131. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 241 of 266
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5720MHz
Channel:	144

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11440.00	Average	V	-	-	-82.76	17.29	0.00	41.53	53.98	-12.45
*	11440.00	Peak	V	-	-	-69.44	17.29	0.00	54.85	73.98	-19.13
	17160.00	Peak	V	-	-	-70.21	24.37	0.00	61.16	68.20	-7.04
*	22880.00	Average	V	-	-	-78.25	19.50	-9.54	38.71	53.98	-15.27
*	22880.00	Peak	V	-	-	-67.81	19.50	-9.54	49.15	73.98	-24.83
	28600.00	Peak	V	-	-	-51.29	5.14	-9.54	51.31	68.20	-16.89

Table 7-132. Radiated Measurements MIMO (242 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5745MHz
Channel:	149

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11490.00	Average	V	-	-	-82.98	17.63	0.00	41.65	53.98	-12.32
*	11490.00	Peak	V	-	-	-71.26	17.63	0.00	53.37	73.98	-20.60
	17235.00	Peak	V	-	-	-70.79	25.01	0.00	61.22	68.20	-6.98
*	22980.00	Average	V	-	-	-78.04	19.89	-9.54	39.31	53.98	-14.67
*	22980.00	Peak	V	-	-	-67.02	19.89	-9.54	50.33	73.98	-23.65
	28725.00	Peak	V	-	-	-51.32	4.66	-9.54	50.80	68.20	-17.40

Table 7-133. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 242 of 266
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Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5785MHz
Channel:	157

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11570.00	Average	V	226	338	-81.48	17.35	0.00	42.87	53.98	-11.11
*	11570.00	Peak	V	226	338	-68.26	17.35	0.00	56.09	73.98	-17.89
	17355.00	Peak	V	-	-	-71.47	26.08	0.00	61.61	68.20	-6.59
	23140.00	Peak	V	-	-	-68.16	19.59	-9.54	48.89	68.20	-19.31
	28925.00	Peak	V	-	-	-51.35	4.43	-9.54	50.54	68.20	-17.66

## Table 7-134. Radiated Measurements MIMO (242 Tones)

Worst Case Mode:	802.11ax (20MHz BW)
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	5825MHz
Channel:	165

	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11650.00	Average	V	107	318	-81.35	17.57	0.00	43.22	53.98	-10.75
*	11650.00	Peak	V	107	318	-68.43	17.57	0.00	56.14	73.98	-17.83
	17475.00	Peak	V	-	-	-70.84	26.23	0.00	62.39	68.20	-5.81
	23300.00	Peak	V	-	-	-66.61	18.93	-9.54	49.78	68.20	-18.42
	29125.00	Peak	V	-	-	-50.26	3.48	-9.54	50.68	68.20	-17.52

 Table 7-135. Radiated Measurements MIMO (242 Tones)

FCC ID: A3LSMG986JPN	<u>PCTEST</u>	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 040 of 066
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# 7.6.4 SISO Antenna-1 Radiated Band Edge Measurements (20MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]; RSS-Gen [8.9]

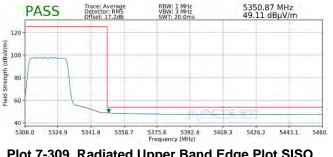
## 242 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

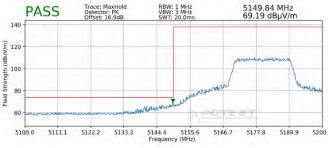


Plot 7-307. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 242 Tones)

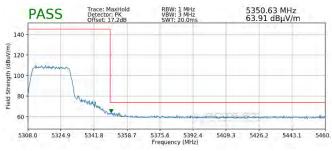
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5320MHz
Channel:	64
-	







Plot 7-308. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1 – 242 Tones)

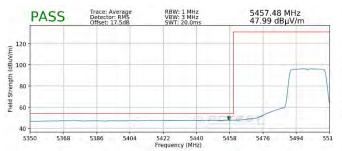


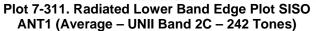
Plot 7-310. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 242 Tones)

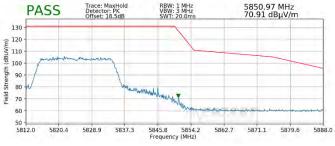
FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 244 of 266
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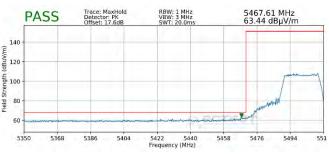
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100











Plot 7-312. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 2C – 242 Tones)

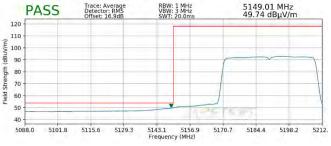
FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 245 of 266
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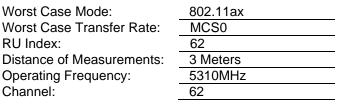
#### 7.6.5 SISO Antenna-1 Radiated Band Edge Measurements (40MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

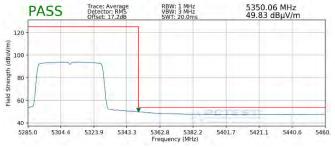
#### 484 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	62
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

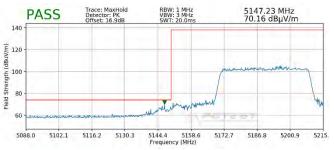


Plot 7-314. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 484 Tones)

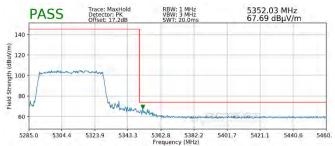








Plot 7-315. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1 – 484 Tones)

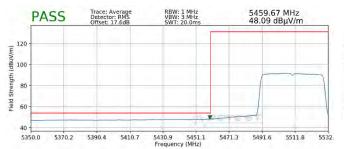


Plot 7-317. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 484 Tones)

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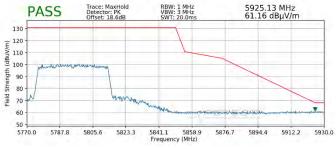


Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	62
Distance of Measurements:	3 Meters
Operating Frequency:	5510MHz
Channel:	102

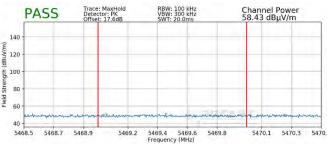


#### Plot 7-318. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 2C – 484 Tones)

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



Plot 7-320. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3 – 484 Tones)





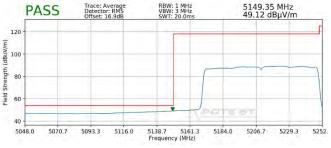
FCC ID: A3LSMG986JPN	<u>PCTEST</u>	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 247 of 266
1M2001240012-06.A3L	10/11/19 - 03/05/2020	Portable Handset		Page 247 of 266
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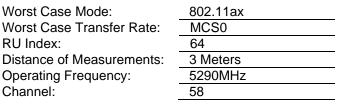
#### 7.6.6 SISO Antenna-1 Radiated Band Edge Measurements (80MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

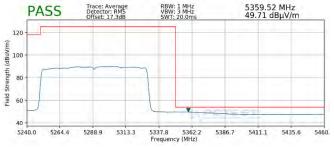
#### 996 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	64
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

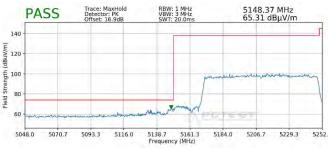


Plot 7-321. Radiated Lower Band Edge Plot SISO ANT1 (Average – UNII Band 1 – 996 Tones)

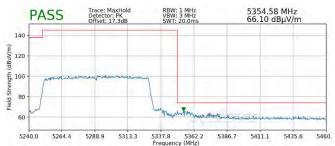








Plot 7-322. Radiated Lower Band Edge Plot SISO ANT1 (Peak – UNII Band 1 – 996 Tones)

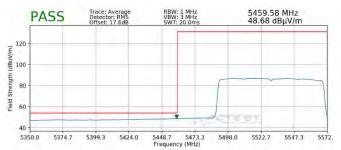


Plot 7-324. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 2A – 996 Tones)

FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 249 of 266
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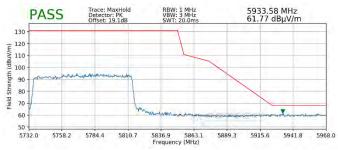


Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	64
Distance of Measurements:	3 Meters
Operating Frequency:	5530MHz
Channel:	106

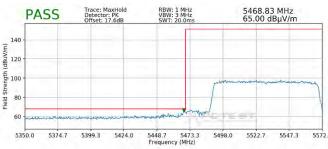




Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	64
Distance of Measurements:	3 Meters
Operating Frequency:	5775MHz
Channel:	155



Plot 7-327. Radiated Upper Band Edge Plot SISO ANT1 (Peak – UNII Band 3 – 996 Tones)





FCC ID: A3LSMG986JPN	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 240 of 266
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#### 7.6.7 SISO Antenna-2 Radiated Band Edge Measurements (20MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

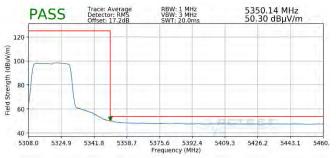
## 242 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

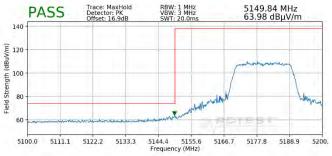


Plot 7-328. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1 – 242 Tones)

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







Plot 7-329. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1 – 242 Tones)

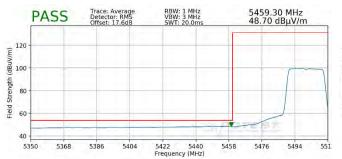


Plot 7-331. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A – 242 Tones)

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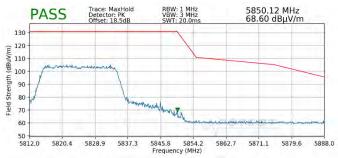


Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100

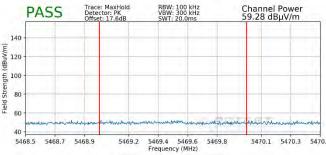


Plot 7-332. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 2C – 242 Tones)

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



Plot 7-334. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 242 Tones)



Plot 7-333. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C – 242 Tones)

FCC ID: A3LSMG986JPN		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 251 of 266
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#### 7.6.8 SISO Antenna-2 Radiated Band Edge Measurements (40MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

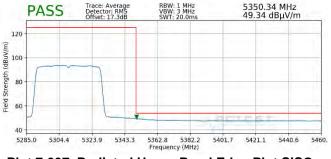
#### 484 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	62
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

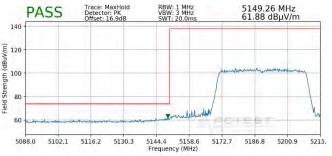


Plot 7-335. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1 – 484 Tones)

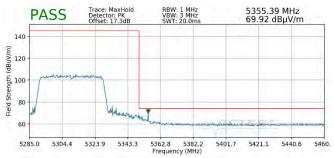
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	62
Distance of Measurements:	3 Meters
Operating Frequency:	5310MHz
Channel:	62
onanner.	02







Plot 7-336. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1 – 484 Tones)



Plot 7-338. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A – 484 Tones)

FCC ID: A3LSMG986JPN		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 252 of 266
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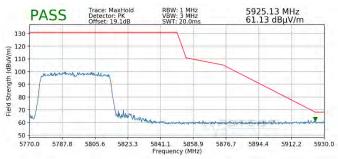


Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	62
Distance of Measurements:	3 Meters
Operating Frequency:	5510MHz
Channel:	102

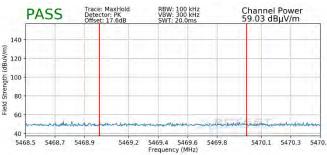




Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	62
Distance of Measurements:	3 Meters
Operating Frequency:	5795MHz
Channel:	159



Plot 7-341. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 484 Tones)



Plot 7-340. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C – 484 Tones)

FCC ID: A3LSMG986JPN		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 252 of 266
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## 7.6.9 SISO Antenna-2 Radiated Band Edge Measurements (80MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

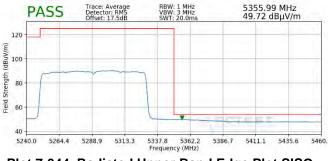
#### 996 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	64
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

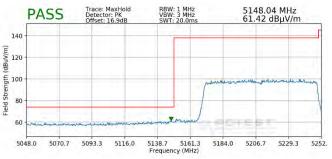


Plot 7-342. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1 – 996 Tones)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	64
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58







Plot 7-343. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1 – 996 Tones)



Plot 7-345. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A – 996 Tones)

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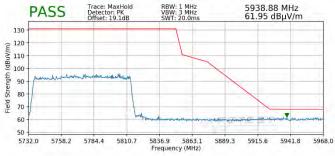


Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	64
Distance of Measurements:	3 Meters
Operating Frequency:	5530MHz
Channel:	106

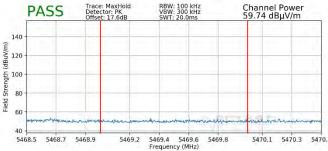




Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	64
Distance of Measurements:	3 Meters
Operating Frequency:	5775MHz
Channel:	155
-	



Plot 7-348. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 3 – 996 Tones)



Plot 7-347. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 2C – 996 Tones)

FCC ID: A3LSMG986JPN		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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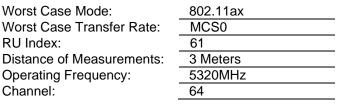
#### 7.6.10 MIMO Radiated Band Edge Measurements (20MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

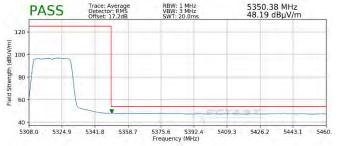
### 242 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5180MHz
Channel:	36

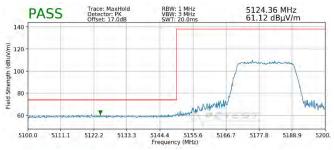


Plot 7-349. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1 – 242 Tones)

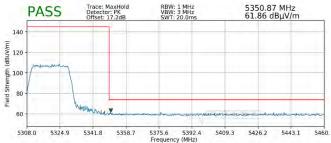




Plot 7-351. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A – 242 Tones)



Plot 7-350. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1 – 242 Tones)

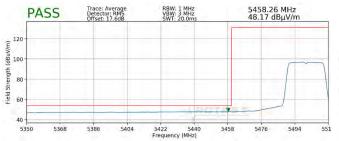


Plot 7-352. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A – 242 Tones)

FCC ID: A3LSMG986JPN		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 256 of 266
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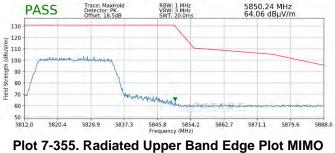


Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5500MHz
Channel:	100

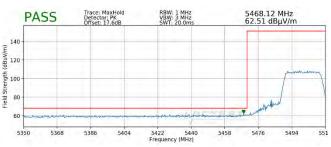




Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	61
Distance of Measurements:	3 Meters
Operating Frequency:	5825MHz
Channel:	165



(Peak – UNII Band 3 – 242 Tones)



Plot 7-354. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 2C – 242 Tones)

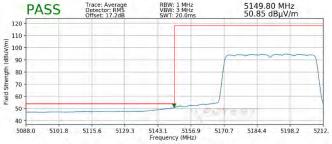
FCC ID: A3LSMG986JPN		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 257 of 266
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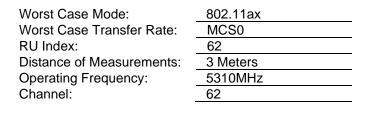
#### 7.6.11 MIMO Radiated Band Edge Measurements (40MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

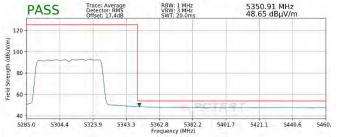
#### 484 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	62
Distance of Measurements:	3 Meters
Operating Frequency:	5190MHz
Channel:	38

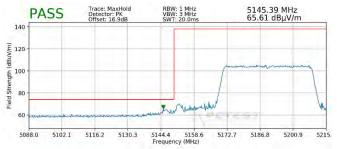


Plot 7-356. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1 – 484 Tones)

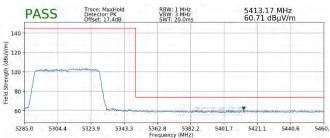




Plot 7-358. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A – 484 Tones)



Plot 7-357. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1 – 484 Tones)

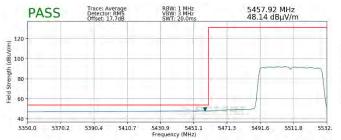


Plot 7-359. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A – 484 Tones)

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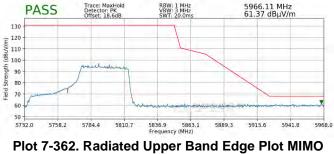


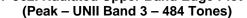
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	62
Distance of Measurements:	3 Meters
Operating Frequency:	5510MHz
Channel:	102

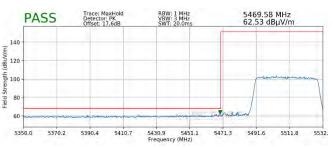


#### Plot 7-360. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 2C – 484 Tones)

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







Plot 7-361. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 2C – 484 Tones)

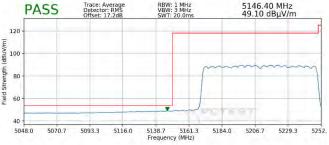
FCC ID: A3LSMG986JPN		MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 250 of 266
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#### 7.6.12 MIMO Radiated Band Edge Measurements (80MHz BW) §15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

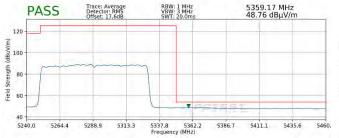
#### 996 Tones

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	64
Distance of Measurements:	3 Meters
Operating Frequency:	5210MHz
Channel:	42

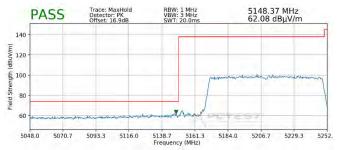


Plot 7-363. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1 – 996 Tones)

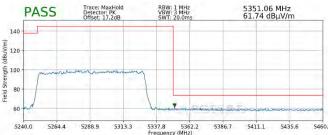
Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	64
Distance of Measurements:	3 Meters
Operating Frequency:	5290MHz
Channel:	58
-	



Plot 7-365. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A – 996 Tones)



Plot 7-364. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1 – 996 Tones)

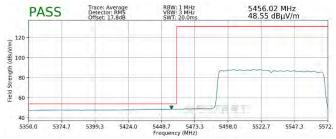


Plot 7-366. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A – 996 Tones)

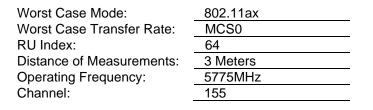
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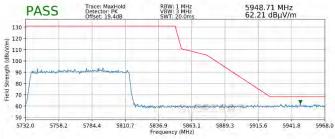


Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
RU Index:	64
Distance of Measurements:	3 Meters
Operating Frequency:	5530MHz
Channel:	106

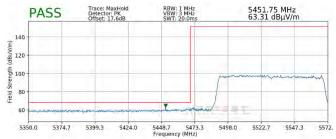








Plot 7-369. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 3 – 996 Tones)



Plot 7-368. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 2C – 996 Tones)

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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 7-65 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 7-136. 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

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

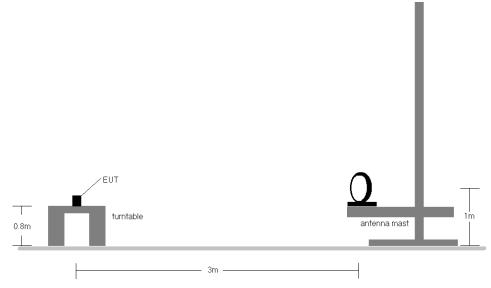
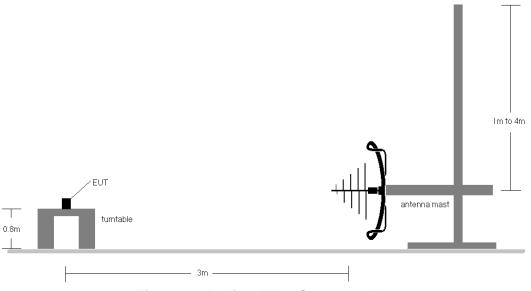
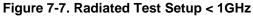


Figure 7-6. Radiated Test Setup < 30MHz





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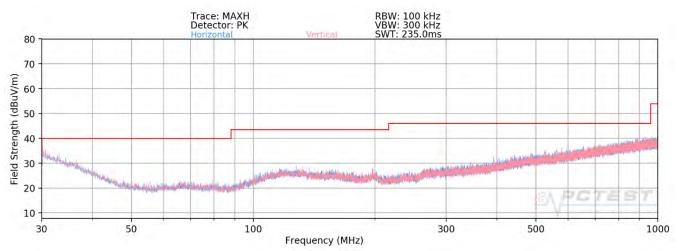
- 1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen (8.10) are below the limit shown in Table 7-65.
- 2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
- 3. 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.

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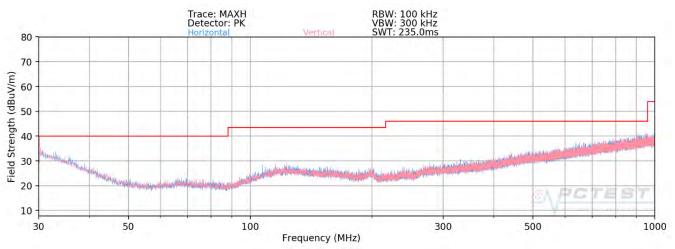
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## MIMO Radiated Spurious Emissions Measurements (Below 1GHz) §15.209; RSS-Gen [8.9]



Plot 7-370. Radiated Spurious Plot below 1GHz MIMO (802.11ax - 26 Tones - U3 Ch. 157)



Plot 7-371. Radiated Spurious Plot below 1GHz MIMO (802.11ax - 242 Tones - U3 Ch. 157)

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# 8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMG986JPN** is in compliance with Part 15 Subpart E (15.407) of the FCC Rules.

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