

Spect	rum	\neg	Spectrum 2	X								
Ref L	evel	-10.00	dBm	😑 F	RBW 100 kHz							
🗕 Att			0 dB SWT 1	ms 👄 🍾	/BW 300 kHz	Мо	de Swe	ер				
SGL Co	ount 1	100/100	l					-				
😑 1Pk M	ax											
							M	1[1]			-	46.82 dBm
-20 dBn	n										6.74	76120 GHz
20 001	"						0	cc Bw			10.0289	43560 MHz
-30 dBn	n—			<u> </u>		⊢						
-40 dBn	n				M1	-						
					T							
-50 dBn	n—			T100	᠉᠂ᢍᡈᡰᢛ᠕᠊ᡒᠰᠵ᠆᠃᠉	w la	للصدمطع البهر	whym	V			
				ľ					l I			
-60 dBn	n			17		\vdash			+			
70.40-									1			
-70 abri												
-80 dBn	n											
				11					- 1			
-90 dBn	<u>yww</u>	www	vijavihning	<u>//</u>		L			Ե	mont	man	MUM ULM
-100 dB	sm—											
CE 6.7	5 GH:	7			691	nts					Snan	30.0 MHz
Marker							-					
Type	Ref	Trc	X-valu	e	Y-value	1	Func	tion		Fund	tion Result	1
M1		1	6.7476	12 GHz	-46.82 dE	3m						
T1		1	6.74496	38 GHz	-54.18 dB	١m	0	cc Bw			10.028	94356 MHz
T2		1	6.75499	28 GHz	-53.05 dE	۶m						
][Re	ady			10 07)/20/2022 :16:25 PM

Date: 20.0CT.2022 19:16:25





Date: 20.0CT.2022 19:15:40

Plot 7-323. AWGN Signal - UNII 7 - 160MHz - Mid

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dege 107 of 240
1M2209010097-15.A3L	9/3/2022 - 11/17/2022	Portable Handset	Page 197 01 240
© 2022 ELEMENT			V 9.0 02/01/2019



Spectr	um		Spectrum 2	×)								
Ref Le	evel	-10.00	dBm	•	RBW	100 kHz							
🗕 Att		1	DdB SWT:	1 ms 👄	vвw	300 kHz	Mode	swe	ер				
SGL Co	unt	100/100							-				
😑 1Pk Ma	эх												
								M	1[1]			-	47.33 dBm
-20 dBm												6.90	31260 GHz
20 0011								0	cc Bw			10.0723	58900 MHz
-30 dBm	-												
-40 dBm	-						-						
								P					
-50 dBm				T1/0	hours.	www.waywo	A - a a way	Ann M	Kurtu	2			
				1 1						۲.			
-60 dBm				+ -						\mathbf{t}			
70 40										1			
-70 aBm													
-80 dBm	_												
			LA MARCE	. No						- 1	1	A	data in the
-90 dBm	VΨ	wwwy	warn an	40							unnan	and the second	resolver you
-100 dBr	m—						-						
CE 6.9	GHz					69	Ints					Snan	30.0 MHz
Marker												opun	
Type	Ref	Trc	X-valu	e	1	Y-value	1	Funct	tion 1		Fund	tion Result	1
M1		1	6.903	126 GHz		-47.33 d	Bm				. and		
T1		1	6.89496	538 GHz		-54.41 d	Bm	0	cc Bw			10.072	23589 MHz
T2		1	6.90503	362 GHz		-55.20 d	Bm						
)[Re	ady			10 07	/20/2022 :15:01 PM

Date: 20.0CT.2022 19:15:01





Date: 20.0CT.2022 18:46:35

Plot 7-325. AWGN Signal – UNII 8 – 20MHz

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Bage 108 of 240
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Spect	rum	\neg	Spec	trum (2	X										
Ref Le	evel	-10.00	l dBm			•	RBW	100) kHz							
🗕 Att			0 dB	SWT	1 ms	-	vвw	300) kHz	Mod	e Swe	ер				
SGL Co	ount :	100/100)									-				
😑 1Pk Ma	ax															
											M	1[1]				-47.20 dBm
-20 dBm	n														6.9	093490 GHz
20 0.011											0	cc Bw			10.028	943560 MHz
-30 dBm	n															
-40 dBm	n —				_											
-50 dBm	n —					тим	مىرىي ، يە	h	ᠳᡘᠫᢧᢦᡌᠲ	٩٩٠٠٩	- 	pol- towig	<u>72</u>	+	+	
						۲.							۲.			
-60 dBm	n					/				-			+			
					- 1 1	1							1			
-70 dBm	n —									-						
00 40					-17								- {			
-80 dBm	n — —															
mon	m	how	m	www	nu								1	hand	some	Allo Culler
-90 UBII																
-100 dB																
-100 00																
CF 6.9	1 GH:	z							691	l pts					spa	n 30.0 MHz
Marker		1 = 1														
Type	Ref	Trc		X-val	ue	011-		Y-v	alue	0	Func	tion		Fun	ction Resu	t
M1 T1		1		6.005	93491	GHZ	-	-4	7.20 d 5 40 d	BW	0	00 P.W			10.000	
T2		1		6.915	0362	GHZ		-5	а.чо и 4.56 d	Bm	0	CCDW			10.028	79733U IVIHZ
		7		0.9100	0002		1		1.50 u		_		-			10/20/2022
l		Л									Re	eady				7:14:19 PM

Date: 20.0CT.2022 19:14:18





Date: 20.0CT.2022 19:13:37

Plot 7-327. AWGN Signal - UNII 8 - 160MHz - Mid

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 100 of 240
1M2209010097-15.A3L	9/3/2022 - 11/17/2022	Portable Handset	Fage 199 01 240
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Spect	rum		Spectrum 2	2 🗙)								
Ref L	evel	-10.00	dBm	•	RBW	100 kHz							
🗕 Att			O dB SWT	4 ms 😑	VBW	300 kHz	Mode	Swe	ер				
SGL Co	ount 1	100/100							-				
😑 1Pk M	ax												
								M	1[1]			-	47.89 dBm
-20 dBn	n											7.05	83940 GHz
20 001								0	cc Bw			9.9855	28220 MHz
-30 dBn	n —			_									
-40 dBn	n——												
						M1							
-50 dBn	n			TIA	the	wather	-	- MA	mbling	12			
				7		· · · ·				₹			
-60 dBn	n									t			
				11									
-70 aBh	n												
00 40 4													
-00 UBI													
-91 WAA	Martin	madren	Mary Badwer Upper	m							marcherly our	Marthaling	manne
-100 dB	sm—			_									
CE 7.0	6 GHz	7				691	nts					Snan	30.0 MHz
Marker	2 3.12	-										opun	
Type	Ref		X-valı	10	1	Y-value	1	Fund	tion (Euno	tion Result	1
M1	NO1	1	7.058	394 GHz		-47.89 di	3m	- and			- T unc	alon Result	
T1		1	7.0550	072 GHz		-56.30 di	3m	0	cc Bw			9.985	52822 MHz
T2		1	7.0649	928 GHz		-57.09 di	3m						
								Re	ady	1		10 07	/20/2022 :12:58 PM

Date: 20.0CT.2022 19:12:58

Plot 7-328. AWGN Signal - UNII 8 - 160MHz - High

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 200 of 240
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CBP Timing Plots

Spectrum	ı Sp	ectrum	2 🗴	1							
Ref Level	20.00 dBr	n	- R	BW 20 MHz							
🕳 Att	40 d	B 👄 SWT	40 s 🖌	'BW 20 MHz							
SGL											
●1Pk Max											
and and a second second	الملام المعاملات					D	1[1]	Alaman	بلاهميريال	Mines and a second	-36.63.dB
10.10			MI					1			15.3200 s
10 aBm						M	1[1]				15.49 dBm
0.40											10.8400 s
U aBm											
10 40											
-10 UBIII-											
20 dBm							D1				
-20 ubiii			for succession of the second	۵۹، موده معادر می از بار طبط و ۲۰۰ و و طور از ا	du-svelith.		the second s	~			
-30 dBm											
-50 abiii											
-40 dBm-											
10 0.0.11											
-50 dBm-											
00 00.0											
-60 dBm-					-						
-70 dBm-					-						
					<u> </u>						
CF 6.215 G	iHZ			100	1 pts						4.0 \$7
Marker											
Type Ret	t Trc	X-va	lue	Y-value	0	Func	tion		Fund	tion Result	
M1	1 1		15 22 6	15.49 0	dp.						
	1 1		13.32 5	-30.03	ub						
						Re	ady				1/12/2022 :03:26 PM

Date: 12.NOV.2022 16:03:25



Spectrum	Sp	ectrum 2	×								
Ref Level 3	30.00 dBr	n	e RE	W 20 MHz							
Att	40 d	B 👄 SWT 40	s VE	3W 20 MHz							
SGL											
●1Pk Max											
						D	[1]				-26.21 dB
20 dBm											14.0000 s
20 00.00						M	1[1]				5.86 dBm
40 HBman	فيصحبها وأراست وحد						-	ي	بالاستقادية فالمحال	10,10 April 1	9.9600 s
										hiteshield	anna ann ann an ann ann ann ann ann ann
0 dBm											
-10 dBm											
-20 dBm			news a street	Look the sector of the board		D	1				
-30 dBm											
-40 dBm											
-50 dBm											
-60 dBm											
				1001	nte						40.6/
Manhan				1001	. pts	•					4.0 57
	Tun I		- 1	¥	- 1	F			F	+! Dlt	1
M1	1	x-value	0.06 c	r-value		Func	ion		Fund	tion Result	
D1 M1	1		14.0 s	-26.21 r	HB						
	-		1.005	20,21 (_	_		_		140 (0000
	١					Re	ady			04	:49:45 PM

Date: 12.NOV.2022 16:49:44

Plot 7-330. Contention Based Protocol Timing Plot – UNII 5 – 160MHz Ch47 – Low

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 201 of 240
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Ref Level 30.00 dBm RBW 20 MHz Att 40 dB SWT 40 s VBW 20 MHz SGL D1[1] -33.62 15,720 12,53 dF PIPk Max D1[1] -33.62 15,720 12,53 dF 20 dBm N1 M1[1] 12,53 dF 12,53 dF 10 dBm N1 M1[1] 12,53 dF 100 dF -20 dBm Mg// max D1 14 mit M	Spectrum	🗡 s	pectrum 2	×								
Att 40 dB SWT 40 s VBW 20 MHz SGL Image: Constraint of the second secon	Ref Level	30.00 de	3m	🔵 RBW	20 MHz							
SGL D1[1] -33.62 20 dBm M1 M1[1] 12.53 dB 10 dBm M1 M1[1] 12.53 dB 0 dBm M1 M1[1] 12.53 dB -10 dBm -0 -0 -0 -20 dBm -0 -0 -0 -30 dBm -0 -0 -0 -40 dBm -0 -0 -0 -50 dBm -0 -0 -0 -60 dBm -0 -0 -0 -50 dBm -0 -0 -0 -60 dBm -0 -0 -0 -10 dBm -0	🕳 Att	40	dB 👄 SWT 40	s VBW	/ 20 MHz							
IPk Max D1[1] 33.62 20 dBm N1 15.720 10.dBm M1[1] 12.53 di -10 dBm	SGL											
20 dBm M1 M1[1] -33.62 10 dBm M1[1] M1[1] 12.53 dB 0 dBm III M1[1] IIII -10 dBm IIII IIIII IIIIII -20 dBm IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	😑 1Pk Max											
20 dBm M1 M1[1] 15.720 10 dBm 12.53 dt 12.53 dt 0 dBm							D1	[1]				-33.62 dB
N1 M1[1] 12.53 dl 10 dBm 1 12.53 dl 0 dBm 1 12.53 dl -10 dBm 1 12.53 dl -20 dBm 1 12.53 dl -20 dBm 1 1 -30 dBm 1 1 -50 dBm 1 1 -60 dBm 1 101 pts 40 dBm 1 1 -10 dBm 1 1 -20 dBm 1 1 -20 dBm 1 1 -20 dBm 1 1 -30 dBm 1 1 -40 dBm 1 1 -50 dBm 1 1 -101 pts 4.0 s Marker 1 1 Type Ref Trc M1 1 1 01 1 1 01 1 1	00 dBm											15.7200 s
10 dBm -10 dBm	20 dBm-		M1				M	l[1]				12.53 dBm
0 dBm	10 dBm		7					بالعر	mhough	maynu	montraliendary	U. 8.1200 £
0 dBm -10 dBm -20 dBm -20 dBm -20 dBm -30 dBm -30 dBm -40 dBm -50 dBm -50 dBm -50 dBm -50 dBm -50 dBm -50 dBm -10 d	Offer Offer Offer Offer Offer Offer	matration Barr	MAX.					. v.				
-10 dBm	0 dBm											
-10 dBm	0 dBill											
-20 dBm -20 dBm -30 dBm -30 dBm -40 dBm -40 dBm -50 dBm -50 dBm -60 dBm -60 dBm -60 dBm -70 dBm -1001 pts 4.0 s -40 dBm -70 dBm -50 dBm -70 dBm -60 dBm -70 dBm -60 dBm -70 dBm -60 dBm -70 dBm -60 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -73.62 dB	-10 dBm											
-20 dBm	10 0.011											
-30 dBm -30 dBm -40 dBm -50 dBm -60 dBm -60 dBm -70 dBm	-20 dBm						D					
-30 dBm	-20 0011		الريمة معرفة والمريز إليانيونا	de-sheletalloudiger.	a san ang ang kalang panalang kang pang pang pang pang pang pang pang p	-dowelle	and differ	eta U				
-40 dBm -50 dBm -50 dBm -60 dBm -60 dBm -60 dBm -60 dBm -60 dBm -60 dBm -70 dBm -70 dBm -70 dBm -70 dBm -733.62 dB	-30 dBm											
-40 dBm	00 00.00											
-50 dBm -50 dBm -60 dBm -70	-40 dBm											
-50 dBm -60 dBm 1001 pts 4.0 s -60 dBm 1 <td< td=""><td>io abiii</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	io abiii											
-60 dBm -60 dBm -60 dBm 4.0 s CF 6.185 GHz 1001 pts 4.0 s Marker Type Ref Trc X-value Y-value Function Function Result M1 1 8.12 s 12.53 dBm 101 m1 15.72 s -33.62 dB	-50 dBm											
-60 dBm 1001 pts 4.0 s CF 6.185 GHz 1001 pts 4.0 s Marker Type Ref Trc X-value Y-value Function Function Result M1 1 8.12 s 12.53 dBm 101 M1 1 15.72 s -33.62 dB												
CF 6.185 GHz 1001 pts 4.0 s Marker Type Ref Trc X-value Y-value Function Function Result M1 1 8.12 s 12.53 dBm 101 M1 1 15.72 s -33.62 dB	-60 dBm											
CF 6.185 GHz 1001 pts 4.0 s Marker Type Ref Trc X-value Y-value Function Function Result M1 1 8.12 s 12.53 dBm 12.53 dBm 12.53 cdB												
Cr 6.185 GH2 1001 pts 4.0 s Marker Type Ref Trc X-value Y-value Function Function Result M1 1 8.12 s 12.53 dBm 1001 pts 1001 pt					100	 						10-1
Marker Type Ref Trc X-value Y-value Function Function Result M1 1 8.12 s 12.53 dBm Image: State	CF 6.185 GF	IZ			1001	l pts						4.U S/
Type Ref Trc X-value Y-value Function Function Result M1 1 8.12 s 12.53 dBm 12.55 dBm 12.55 dBm 12.55 dBm <td>Marker</td> <td><u> </u></td> <td></td>	Marker	<u> </u>										
M1 1 8.12 s 12.53 dBm D1 M1 1 15.72 s -33.62 dB	Type Ref	Trc	X-value	0.10.0	Y-value		Funct	ion		Fun	ction Resu	lt
		1	4	8.12 S	12.53 db	aru ar						
	DI MI	1 1	1	5.72.5	-33,02	ub		_				
Ready 11/12/2022		Л					Re	ady			4/4	11/12/2022 04:46:09 PM

Date: 12.NOV.2022 16:46:08

Plot 7-331. Contention Based Protocol Timing Plot – UNII 5 – 160MHz Ch47 – Mid



Plot 7-332. Contention Based Protocol Timing Plot - UNII 5 - 160MHz Ch47 - High

FCC: A3LSMS916U		Approved by: Technical Manager		
Test Report S/N:	Test Dates:	EUT Type:	Dage 202 of 240	
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Spect	rum		Spect	trum	2	×									
Ref Le	evel	30.00 d	Bm			● RBW	/ 20) MHz							
👄 Att		40	dB 😑	SWT	40 s	VBW	V 20) MHz							
SGL															
😑 1Pk Ma	ах														
										D	1[1]				-35.53 di
20 d8m															13.2000
20 ubiii	M1									M	1[1]	 			13.47 dBn
10 dBm							1	vilanily-machine		haddland lana	man	 u alson	a suppose	-monore-street	3:1200
10 000															
0 dBm—															
0.00															
-10 dBm	ר,		-										_		
-20 dBm	1	a navi teksto a a			late de la de au a	8	•1		+				_		
-30 dBm	<u>ו</u> רי		+				-		+		-				
-40 dBm	ו		+						+		<u> </u>				
-50 dBm									-						
-60 dBm	ד י														
CF 6.4	55 GH	lz						100	1 pts	;					4.0 s/
Marker															
Туре	Ref	Trc		X-va	lue		Y	-value		Fund	tion	F	unctio	on Resu	ılt
M1		1			3.1	2 5		13.47 d	Bm						
D1	M1	1			13.	2 s		-35.53	dB						
										Re	ady			•	11/12/2022 05:59:07 PM

Date: 12.NOV.2022 17:59:06





Date: 12.NOV.2022 17:02:04

Plot 7-334. Contention Based Protocol Timing Plot – UNII 6 – 160MHz Ch111 – Low

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)						
Test Report S/N:	Test Dates:	EUT Type:	Dage 202 of 240					
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Spectrum	Sp	ectrum 2	×					
Ref Level	30.00 dBr	n	🖷 RBW	20 MHz				· · · · · · · · · · · · · · · · · · ·
Att	40 d	B 👄 SWT 40 s	VBW	20 MHz				
SGL								
⊖1Pk Max								
						D1[1]		-31.63 dB
20 dBm								14.2800 s
20 ubiii						M1[1]		9.94 dBm
A Cool Filment		hadden where det				_		11.2400 ع مالالدانية محمد معرف المراجع
0 dBm						_		
-10 dBm								
-20 dBm		Linn	بسرانا معتبيني إملاقهم	montation	an all and the second	D1		
-30 dBm						+		
-40 dBm								
-50 dBm								
60 dBm								
-00 UBIII								
CF 6.505 GI	lz			1001	pts			4.0 s/
Marker								
Type Ref	Trc	X-value		Y-value	Fur	iction	Fun	ction Result
M1	1	11.	24 5	9.94 dBr	n			
MI		14.	205	-31.03 0				
	Л					Ready		11/12/2022 04:57:46 PM

Date: 12.NOV.2022 16:57:45

Plot 7-335. Contention Based Protocol Timing Plot – UNII 6 – 160MHz Ch111 – Mid



Plot 7-336. Contention Based Protocol Timing Plot – UNII 6 – 160MHz Ch111 - High

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)						
Test Report S/N:	Test Dates:	EUT Type:	Dega 204 of 240					
1M2209010097-15.A3L	9/3/2022 - 11/17/2022	Portable Handset	Page 204 of 240					
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Spectrun	n s	pectrum	2 🗶							
Ref Leve	l 20.00 de	m	e Ri	3W 20 MHz						
🕳 Att	40 (ib 😑 SWT	40 s V	BW 20 MHz						
SGL										
😑 1Pk Max										
anny shares and	-	man man	M1			D	1[1]		-	
10 dBm										17.0800 s
TO UBIII						M	1[1]			16.67 dBm
0 dBm										13.1600 s
o abiii										
-10 dBm					<u> </u>					
-20 dBm			where	manulation	-	andutal	and the second	D1		
-30 dBm										
-40 dBm			_		+					
-50 dBm		+			-					
-60 dBm					\vdash					
70 40										
-70 aBm										
CF 6.695 (GHz			100	1 pts					4.0 s/
Marker										
Type Re	f Trc	X-val	ue	Y-value		Func	tion	F	unction	Result
M1	1		13.16 s	16.67 di	3m					
	11 1		17.08 s	-37.69	ав			l]
						Re	ady			11/12/2022 04:27:10 PM

Date: 12.NOV.2022 16:27:09





Plot 7-338. Contention Based Protocol Timing Plot – UNII 7 – 160MHz Ch175 – Low

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)						
Test Report S/N:	Test Dates:	EUT Type:	Dage 205 of 240					
1M2209010097-15.A3L	9/3/2022 - 11/17/2022	Portable Handset	Page 205 of 240					
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Spectr	um	*	Spectrum	2 🛛 🗴								
Ref Le	vel	30.00 d	Bm	e RB	W 20 MHz							
👄 Att		40	dB 👄 SWT	40 s VB	W 20 MHz							
SGL												
😑 1Pk Ma	ж											
							D	1[1]				-32.48 dB
20 d8m-												13.4000 s
20 ubiii			M1				M	1[1]				12.03 dBm
u halestelet		بيلطسيه عليه	uter T				al	لأكساهمه	بەيوالىرىيا	high and the second second	al glast The section	8.4400 s
								0				
0 dBm—						<u> </u>		ļ				
-10 dBm	_			_								
-20 dBm	_		- downations	and the second second	and the second second second	-						
-30 dBm	-					+						
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Date: 12.NOV.2022 17:09:52

Plot 7-339. Contention Based Protocol Timing Plot – UNII 7 – 160MHz Ch175 – Mid



Plot 7-340. Contention Based Protocol Timing Plot – UNII 7 – 160MHz Ch175 - High

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)					
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Spectrum	s	pectr	um	2	×								
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SGL													
😑 1Pk Max													
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)[]							Rea	ady			444	11/12/2022 05:53:24 PM

Date: 12.NOV.2022 17:53:24





Plot 7-342. Contention Based Protocol Timing Plot - UNII 8 - 160MHz Ch207 - Low

FCC: A3LSMS916U		Approved by: Technical Manager	
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Plot 7-343. Contention Based Protocol Timing Plot – UNII 8 – 160MHz Ch207 – Mid



Plot 7-344. Contention Based Protocol Timing Plot - UNII 8 - 160MHz Ch207 - High

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)						
Test Report S/N:	Test Dates:	EUT Type:	Dage 200 of 240					
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7.7 Radiated Spurious Emission Measurements – Above 1GHz §15.205, §15.209, §15.407(b)(6)

Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at its maximum power control level, as defined in ANSI C63.10-2013 and KDB 789033 D02 v02r01, and at the appropriate frequencies. All channels, modes (e.g. 802.11a, 802.11ax (20/40/80/160MHz), 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 5.925-7.125 GHz band: All emissions outside of the 5.925-7.125 GHz band shall not exceed an EIRP of -27dBm/MHz (68.2dBuV/m at a 3m distance). Emissions found in a restricted band are subject to the limits of 15.209 as shown in the table below.

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

Table 7-11. 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

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

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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 7-6. Test Instrument & Measurement Setup

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Test Notes

- All spurious emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 7-11. All spurious emissions that do not lie in a restricted band are subject to an average 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.
- All spurious emissions that do not lie in a restricted band are subject to a peak limit not to exceed 20dB of the average limit [68.2dBµV/m]. If a peak measurement passes the average limit it was determined no further investigation is necessary.
- 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. In the case where a peak-detector measurement passed the given RMS limit it was determined sufficient to demonstrate compliance.

Sample Calculations

Determining Spurious Emissions Levels

- Field Strength Level $[dB_{\mu}V/m]$ = Analyzer Level [dBm] + 107 + AFCL [dB/m]
- AFCL [dB/m] = Antenna Factor [dB/m] + Cable Loss [dB]
- Margin [dB] = Field Strength Level $[dB\mu V/m]$ Limit $[dB\mu V/m]$

Radiated Band Edge Measurement Offset

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

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

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7.7.1 MIMO Radiated Spurious Emission Measurements







Plot 7-346. Radiated Spurious Plot above 18GHz - 26.5GHz - CH 45 - MIMO (802.11ax)





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MIMO Radiated Spurious Emission Measurements

§15.407(b) §15.205 & §15.209

Worst Case Mode:	802.11ax		
Worst Case Transfer Rate:	MCS0		
Distance of Measurements:	1 & 3 Meters		
Operating Frequency:	5935MHz		
Channel:	2		

	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]
*	11870.00	Average	Н	-	-	-78.24	11.97	0.00	40.73	53.98	-13.25
*	11870.00	Peak	Н	-	-	-65.62	11.97	0.00	53.35	73.98	-20.63
*	17805.00	Average	Н	-	-	-77.11	19.16	0.00	49.05	53.98	-4.93
*	17805.00	Peak	Н	-	-	-64.58	19.16	0.00	61.58	73.98	-12.40
*	23740.00	Average	Н	-	-	-66.56	3.89	-9.54	34.79	53.98	-19.19
*	23740.00	Peak	Н	-	-	-57.92	3.89	-9.54	43.43	73.98	-30.55
	29675.00	Peak	Н	-	-	-58.12	6.04	-9.54	45.38	68.20	-22.82

Table 7-12. Radiated Measurements MIMO (UNII Band 5 – Low Channel – 20MHz)

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

802.11ax	
MCS0	
1 & 3 Meters	
6175MHz	
45	

	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]
*	12350.00	Average	Н	-	-	-78.16	12.08	0.00	40.92	53.98	-13.06
*	12350.00	Peak	Н	-	-	-66.34	12.08	0.00	52.74	73.98	-21.24
*	18525.00	Average	н	-	-	-74.03	1.68	-9.54	25.11	53.98	-28.87
*	18525.00	Peak	н	-	-	-64.22	1.68	-9.54	34.92	73.98	-39.06
	24700.00	Peak	Н	-	-	-57.86	4.25	-9.54	43.85	68.20	-24.35
	30875.00	Peak	н	-	-	-57.23	6.73	-9.54	46.96	68.20	-21.24

Table 7-13. Radiated Measurements MIMO (UNII Band 5 – Mid Channel – 20MHz)

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Worst Case Mode:	802.11ax		
Worst Case Transfer Rate:	MCS0		
Distance of Measurements:	1 & 3 Meters		
Operating Frequency:	6415MHz		
Channel:	93		

	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]
	12830.00	Peak	Н	-	-	-66.55	12.39	0.00	52.84	68.20	-15.36
*	19245.00	Average	Н	-	-	-65.97	2.45	-9.54	33.94	53.98	-20.04
*	19245.00	Peak	н	-	-	-56.22	2.45	-9.54	43.69	73.98	-30.29
	25660.00	Peak	н	-	-	-57.07	4.57	-9.54	44.96	68.20	-23.24
	32075.00	Peak	Н	-	-	-58.59	6.88	-9.54	45.74	68.20	-22.46

Table 7-14. Radiated Measurements MIMO (UNII Band 5 – High Channel – 20MHz)

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

802.11ax	
MCS0	
1 & 3 Meters	
6175MHz	
45	

	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]
*	12350.00	Average	Н	-	-	-78.59	12.08	0.00	40.49	53.98	-13.49
*	12350.00	Peak	Н	-	-	-65.64	12.08	0.00	53.44	73.98	-20.54
*	18525.00	Average	Н	-	-	-66.29	1.68	-9.54	32.84	53.98	-21.14
*	18525.00	Peak	Н	-	-	-57.09	1.68	-9.54	42.05	73.98	-31.93
	24700.00	Peak	Н	-	-	-56.99	4.25	-9.54	44.71	68.20	-23.49
	30875.00	Peak	Н	-	-	-56.91	6.73	-9.54	47.28	68.20	-20.92

Table 7-15. Radiated Measurements MIMO (UNII Band 5 – Mid Channel – 20MHz) With WCP

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)					
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Plot 7-350. Radiated Spurious Plot 26.5GHz - 40GHz - CH 105 - MIMO (802.11ax)

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)					
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MIMO Radiated Spurious Emission Measurements §15.407(b) §15.205 & §15.209

Worst Case Mode:	802.11ax		
Worst Case Transfer Rate:	MCS0		
Distance of Measurements:	1 & 3 Meters		
Operating Frequency:	6435MHz		
Channel:	97		

	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]
	12870.00	Peak	Н	-	-	-65.90	12.51	0.00	53.61	68.20	-14.59
*	19305.00	Average	Н	-	-	-66.32	2.29	-9.54	33.43	53.98	-20.55
*	19305.00	Peak	Н	-	-	-56.49	2.29	-9.54	43.26	73.98	-30.72
	25740.00	Peak	Н	-	-	-57.27	4.49	-9.54	44.67	68.20	-23.53
	32175.00	Peak	н	-	-	-57.89	7.04	-9.54	46.61	68.20	-21.59

Table 7-16. Radiated Measurements MIMO (UNII Band 6 – Low Channel – 20MHz)

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

802.11ax MCS0 1 & 3 Meters 6475MHz 105

	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]
	12950.00	Peak	Н	117	67	-66.28	12.67	0.00	53.39	68.20	-14.81
*	19425.00	Average	н	-	-	-66.63	2.36	-9.54	33.19	53.98	-20.79
*	19425.00	Peak	Н	-	-	-57.11	2.36	-9.54	42.71	73.98	-31.27
	25900.00	Peak	Н	-	-	-58.25	4.84	-9.54	44.04	68.20	-24.16
	32375.00	Peak	н	-	-	-59.57	6.78	-9.54	44.67	68.20	-23.53

Table 7-17. Radiated Measurements MIMO (UNII Band 6 – Mid Channel – 20MHz)

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)					
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802.11ax			
MCS0			
1 & 3 Meters			
6515MHz			
113			

	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]
	13030.00	Peak	Н	155	65	-65.31	12.83	0.00	54.52	68.20	-13.68
*	19545.00	Average	н	-	-	-68.12	2.31	-9.54	31.65	53.98	-22.33
*	19545.00	Peak	Н	-	-	-56.11	2.31	-9.54	43.66	73.98	-30.32
	26060.00	Peak	Н	-	-	-58.44	4.92	-9.54	43.94	68.20	-24.26
	32575.00	Peak	Н	-	-	-57.41	6.55	-9.54	46.60	68.20	-21.60

Table 7-18. Radiated Measurements MIMO (UNII Band 6 – High Channel – 20MHz)

Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: Operating Frequency: Channel: 802.11ax MCS0 1 & 3 Meters 6475MHz 105

	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]
	12950.00	Peak	Н	-	-	-65.82	12.67	0.00	53.85	68.20	-14.35
*	19425.00	Average	Н	-	-	-66.05	2.36	-9.54	33.77	53.98	-20.21
*	19425.00	Peak	Н	-	-	-56.43	2.36	-9.54	43.39	73.98	-30.59
	25900.00	Peak	Н	-	-	-65.47	4.84	-9.54	36.82	68.20	-31.38
	32375.00	Peak	Н	-	-	-56.41	6.78	-9.54	47.83	68.20	-20.37

Table 7-19. Radiated Measurements MIMO (UNII Band 6 – Mid Channel – 20MHz) With WCP

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)					
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Plot 7-353. Radiated Spurious Plot 26.5GHz - 40GHz - CH 149 - MIMO (802.11ax)

FCC: A3LSMS916U		Approved by: Technical Manager		
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MIMO Radiated Spurious Emission Measurements §15.407(b) §15.205 & §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	6535MHz
Channel:	117

	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]
	13070.00	Peak	Н	-	-	-66.11	12.94	0.00	53.83	68.20	-14.37
۰	19605.00	Average	Н	-	-	-69.58	2.79	-9.54	30.67	53.98	-23.31
۲	19605.00	Peak	Н	-	-	-57.57	2.79	-9.54	42.68	73.98	-31.30
	26140.00	Peak	Н	-	-	-58.62	4.83	-9.54	43.67	68.20	-24.53
	32675.00	Peak	Н	-	-	-59.31	6.85	-9.54	45.00	68.20	-23.20

Table 7-20. Radiated Measurements MIMO (UNII Band 7 – Low Channel – 20MHz)

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

802.11ax
MCS0
1 & 3 Meters
6695MHz
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]
*	13390.00	Average	Н	138	344	-77.29	12.97	0.00	42.68	53.98	-11.30
*	13390.00	Peak	н	138	344	-65.24	12.97	0.00	54.73	73.98	-19.25
*	20085.00	Average	Н	-	-	-72.48	3.04	-9.54	28.02	53.98	-25.96
*	20085.00	Peak	Н	-	-	-61.46	3.04	-9.54	39.04	73.98	-34.94
	26780.00	Peak	Н	-	-	-58.40	5.16	-9.54	44.22	68.20	-23.98
	33475.00	Peak	Н	-	-	-58.02	7.26	-9.54	46.70	68.20	-21.50

Table 7-21. Radiated Measurements MIMO (UNII Band 7 – Mid Channel – 20MHz)

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)			
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Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	6875MHz
Channel:	185

	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]
	13750.00	Peak	Н	273	75	-66.05	13.83	0.00	54.78	68.20	-13.42
*	20625.00	Average	н	-	-	-68.60	3.28	-9.54	32.14	53.98	-21.84
*	20625.00	Peak	Н	-	-	-58.72	3.28	-9.54	42.02	73.98	-31.96
	27500.00	Peak	Н	-	-	-59.89	4.79	-9.54	42.35	68.20	-25.85
	34375.00	Peak	Н	-	-	-58.69	7.69	-9.54	46.46	68.20	-21.74

Table 7-22. Radiated Measurements MIMO (UNII Band 7 – High Channel – 20MHz)

Worst Case Mode: Worst Case Transfer Rate: Distance of Measurements: Operating Frequency: Channel: 802.11ax MCS0 1 & 3 Meters 6695MHz 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]
*	13390.00	Average	Н	-	-	-78.51	12.97	0.00	41.46	53.98	-12.52
*	13390.00	Peak	Н	-	-	-65.56	12.97	0.00	54.41	73.98	-19.57
*	20085.00	Average	Н	-	-	-66.40	3.04	-9.54	34.09	53.98	-19.89
*	20085.00	Peak	Н	-	-	-56.02	3.04	-9.54	44.48	73.98	-29.50
	26780.00	Peak	Н	-	-	-56.72	5.16	-9.54	45.90	68.20	-22.30
	33475.00	Peak	Н	-	-	-56.92	7.26	-9.54	47.80	68.20	-20.40

Table 7-23. Radiated Measurements MIMO (UNII Band 7 – Mid Channel – 20MHz) With WCP

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Plot 7-356. Radiated Spurious Plot 26.5GHz - 40GHz - CH 209 - MIMO (802.11ax)

FCC: A3LSMS916U		Approved by: Technical Manager		
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MIMO Radiated Spurious Emission Measurements §15.407(b) §15.205 & §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	6895MHz
Channel:	189

	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]
	13790.00	Peak	Н	208	316	-65.53	13.66	0.00	55.13	68.20	-13.07
*	20685.00	Average	Н	-	-	-69.39	3.27	-9.54	31.34	53.98	-22.64
*	20685.00	Peak	Н	-	-	-58.41	3.27	-9.54	42.32	73.98	-31.66
	27580.00	Peak	Н	-	-	-58.58	5.23	-9.54	44.11	68.20	-24.09
	34475.00	Peak	н	-	-	-57.63	7.64	-9.54	47.46	68.20	-20.74

Table 7-24. Radiated Measurements MIMO (UNII Band 8 – Low Channel – 20MHz)

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

802.11ax MCS0 1 & 3 Meters 6995MHz 209

	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]
	13990.00	Peak	Н	-	-	-64.79	13.89	0.00	56.10	68.20	-12.10
*	20985.00	Average	Н	-	-	-69.87	3.46	-9.54	31.05	53.98	-22.93
*	20985.00	Peak	Н	-	-	-58.23	3.46	-9.54	42.69	73.98	-31.29
	27980.00	Peak	Н	-	-	-58.42	5.02	-9.54	44.05	68.20	-24.15
	34975.00	Peak	Н	-	-	-59.21	7.91	-9.54	46.15	68.20	-22.05

Table 7-25. Radiated Measurements MIMO (UNII Band 8 – Mid Channel – 20MHz)

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)		
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Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	1 & 3 Meters
Operating Frequency:	7115MHz
Channel:	233

	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]
	14230.00	Peak	Н	-	-	-65.03	14.92	0.00	56.89	68.20	-11.31
*	21345.00	Average	н	-	-	-69.53	3.78	-9.54	31.71	53.98	-22.27
*	21345.00	Peak	Н	-	-	-58.00	3.78	-9.54	43.24	73.98	-30.74
	28460.00	Peak	Н	-	-	-59.01	5.45	-9.54	43.90	68.20	-24.30
	35575.00	Peak	Н	-	-	-58.57	7.65	-9.54	46.54	68.20	-21.66

Table 7-26. Radiated Measurements MIMO (UNII Band 8 – High Channel – 20MHz)

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

802.11ax MCS0 1 & 3 Meters 6995MHz 209

	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	13990.00	Peak	Н	-	-	-65.45	13.89	0.00	55.44	68.20	-12.76
*	20985.00	Average	н	-	-	-67.19	3.46	-9.54	33.73	53.98	-20.25
*	20985.00	Peak	н	-	-	-56.83	3.46	-9.54	44.09	73.98	-29.89
	27980.00	Peak	н	-	-	-57.16	5.02	-9.54	45.32	68.20	-22.88
Ī	34975.00	Peak	Н	-	-	-57.69	7.91	-9.54	47.68	68.20	-20.52

Table 7-27. Radiated Measurements MIMO (UNII Band 8 – Mid Channel – 20MHz) With WCP

FCC: A3LSMS916U		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
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7.7.2 MIMO Radiated Band Edge Measurements (20MHz BW) §15.407(b)(6) §15.205 §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5935MHz
Channel:	2



Plot 7-357. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	7115MHz
Channel:	233



Plot 7-359. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8)



Plot 7-358. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 5)



Plot 7-360. Radiated Upper Band Edge Plot MIMO (Peak - UNII Band 8)

ECC: A2I SMS01611		MEASUREMENT REPORT	Approved by:	
FCC. ASLSW09100		Technical Manager		
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Worst Case Mode:802.11axWorst Case Transfer Rate:MCS0Distance of Measurements:3 MetersOperating Frequency:5935MHzChannel:2



Plot 7-361. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5) with WCP

Worst Case Mode:	802.11a
Worst Case Transfer Rate:	6Mbps
Distance of Measurements:	3 Meters
Operating Frequency:	7115MHz
Channel:	233



Plot 7-363. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8) with WCP



Plot 7-362. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 5) with WCP



Plot 7-364. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8) with WCP

FCC: A3LSMS916U		Approved by: Technical Manager		
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7.7.3 MIMO Radiated Band Edge Measurements (40MHz BW) §15.407(b.5) §15.205 §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5965MHz
Channel:	3



Plot 7-365. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)



Plot 7-366. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 5)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	7085MHz
Channel:	227



Plot 7-367. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8)



Plot 7-368. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

FCC: A3I SMS916U	CC: A3LSMS916U MEASUREMENT REPORT (CERTIFICATION)		Approved by:	
			Technical Manager	
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MIMO Radiated Band Edge Measurements (80MHz BW) 7.7.4 §15.407(b.5) §15.205 §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	5985MHz
Channel:	7



Plot 7-369. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)



Plot 7-370. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 5)

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	7025MHz
Channel:	215



Plot 7-371. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8)



Plot 7-372. Radiated Upper Band Edge Plot MIMO (Peak - UNII Band 8)

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100. ASLONIO 9100			Technical Manager	
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Warst Case Made

7.7.5 MIMO Radiated Band Edge Measurements (160MHz BW) §15.407(b.5) §15.205 §15.209

Worst Case Mode:	802.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	6025MHz
Channel:	15



Plot 7-373. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 5)



Plot 7-374. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 5)

WOISI Gase Mode.	002.11ax
Worst Case Transfer Rate:	MCS0
Distance of Measurements:	3 Meters
Operating Frequency:	6985MHz
Channel:	207

000 1104



Plot 7-375. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 8)



Plot 7-376. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 8)

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7.8 Radiated Spurious Emissions Measurements – Below 1GHz §15.209

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 emissions < 960MHz must not exceed the limit shown in Table 7-28 per Section 15.209

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 7-28. 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.





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Test Notes

- 1. All emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 7-28.
- 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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7.8 Radiated Spurious Emissions Measurements (Below 1GHz) $\underline{\$15.209}$



Plot 7-377. Radiated Spurious Plot below 1GHz

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
876.20	Quasi-Peak	Н	-	-	-95.73	31.04	42.31	43.52	-1.21

Plot 7-378. Radiated Spurious Data below 1GHz

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7.9 Line-Conducted Test Data §15.407(b)(9)

Test Overview and Limit

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

All conducted emissions must not exceed the limits shown in the table below, per Section 15.207.

Frequency of emission	Conducted	Limit (dBµV)
(11172)	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

Table 7-29. Conducted Limits

*Decreases with the logarithm of the frequency.

Test Procedures Used

ANSI C63.10-2013, Section 6.2

Test Settings

Quasi-Peak Field Strength Measurements

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

Average Field Strength Measurements

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

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





Test Notes

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

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Plot 7-379. Line Conducted Plot with 802.11a UNII Band 5 (L1)





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Plot 7-381. Line Conducted Plot with 802.11a UNII Band 6 (L1)





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Plot 7-383. Line Conducted Plot with 802.11a UNII Band 7 (L1)





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Plot 7-385. Line Conducted Plot with 802.11a UNII Band 8 (L1)





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Plot 7-387. Line Conducted Plot with 802.11a UNII Band 5 (L1) with WCP





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8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC: A3LSMS916U** is in compliance with FCC Part Subpart E (15.407) of the FCC rules for operation as a client device.

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