

	rum Analyzer - S	wept SA									-	- • • ×
L <mark>XI</mark> RL	RF 50	Ω AC	CORREC		SEI	NSE:INT	#Avg Typ	ALIGN AUTO		MJun 19, 2023	Freq	uency
PASS			PNO: Wid IFGain:Lo		Trig: Free #Atten: 3				TYF DE			uto Tune
10 dB/div	Ref 20.00	dBm						Mkr1	793.061 -56.	75 MHz 14 dBm	<u> </u>	uto rune
Log Trace	1 Pass				,						Ce	nter Freg
10.0												00000 MHz
0.00												
0.00												tart Freq
-10.0											793.0	00000 MHz
-20.0												
-20.0												top Freq
-30.0											000.00	0000 10112
-40.0												CF Step
-40.0											1.30 Auto	00000 MHz Man
-50.0 1												
-60.0	with the state of	ل مسجد									Fr	eq Offset
-80.0		and the second second	Huarse Weiners	************	New Manual Area and	ter and the s						0 Hz
-70.0						Abole and by Ability	erinangagiti panganga	****	Telistoper for states of the	*****		
												ale Type
Center 799 #Res BW 6				(D)AL	30 kHz			Swoon_(Span 1	3.00 MHz 4001 pts)	Log	<u>Lin</u>
#Res BW 0	ю NПZ		#		JU KHZ			Sweep a	_	400 T pts)		

Plot 7-100. Upper Emission Mask Plot (LTE Band 13 - 5MHz QPSK - Full RB - Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT					
Test Report S/N:	Test Dates:	EUT Type:	Page 83 of 142				
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Fage 65 01 142				
© 2023 ELEMENT	·		V3.0 1/5/202				



WCDMA AWS - Ant1

Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
		Low	Band Edge	-19.30	-13	-6.30
WCDMA1700	N/A	Low	Extended	-15.04	-13	-2.04
WCDMAT700		High	Band Edge	-31.02	-13	-18.02
		High	Extended	-18.41	-13	-5.41



Plot 7-101. Lower Band Edge Plot (WCDMA AWS - Ch. 1312 - Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 94 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 84 of 142
© 2023 ELEMENT	•		V3.0 1/5/20



	ectrum Analyze												
XU RL	RF	50 Ω D(C COR	RREC		S	ENSE:INT	#Av	ALIGN AUTO Type: RMS		MJun 26, 2023	F	requency
PASS			PN IFC	IO: Wide Gain:Lov	e ↔ v	Trig: Fr #Atten:				TY D			
10 dB/div	Ref 25.	00 dBn	n						Mkr1	1.709 (-15.0	000 GHz 40 dBm		Auto Tun
15.0	e 1 Pass												Center Fre
5.00											1,	1.70	Start Fre 5000000 GH
-15.0									مريد مريد مريد مريد مريد مريد مريد مريد			1.70	Stop Fre 9000000 GH
45.0		ng. by optimizer of the low of th	and a second		and a	ومسامي ملحسيهم						<u>Auto</u>	CF Ste 400.000 k⊢ Ma
55.0													FreqOffs 0⊦
65.0													Scale Typ
Center 1.7 Res BW		Hz		#\	/BW :	3.0 MH	z		Sweep 6	Span 4 .667 ms	.000 MHz (1001 pts)	Log	Li
ISG									STATUS	;			

Plot 7-102. Lower Extended Band Edge Plot (WCDMA AWS - Ch. 1312 - Ant1)



Plot 7-103. Upper Band Edge Plot (WCDMA AWS - Ch. 1513 - Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 95 of 140
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 85 of 142
© 2023 ELEMENT	•		V3.0 1/5/202



Keysight Spe	ectrum Analyz												
LXI RL	RF	50 Ω	DC	CORREC		SEI	ISE:INT	#Avg Typ	ALIGN AUTO		MJun 26, 2023	F	requency
PASS				PNO: W IFGain:L	ide ↔ .ow	Trig: Free #Atten: 3		#Avg Typ	Je. RIVIS	TYF	A WWWWW A WWWWW A NNNNN		
10 dB/div Log	Ref 25	.00 dE	3m						Mkr1	1.756 0 -18.4	00 GHz 11 dBm		Auto Tune
15.0 Trace	e 1 Pass												Center Freq 8000000 GHz
-5.00												1.75	Start Freq 6000000 GHz
-15.0	the state of the s			**************************************								1.76	Stop Freq 0000000 GHz
-35.0									horebondulandomos		an a	<u>Auto</u>	CF Step 400.000 kHz Mar
-55.0													Freq Offse 0 Hz
-65.0												Log	Scale Type
Center 1.7 #Res BW				;	≠vBW	3.0 MHz			Sweep 6	Span 4 .667 ms (.000 MHz 1001 pts)		
MSG									STATUS				

Plot 7-104. Upper Extended Band Edge Plot (WCDMA AWS - Ch. 1513- Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT					
Test Report S/N:	Test Dates:	EUT Type:	Page 86 of 142				
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Fage 00 01 142				
© 2023 ELEMENT	<u>.</u>		V3.0 1/5/2				



LTE Band 66/4 - Ant1

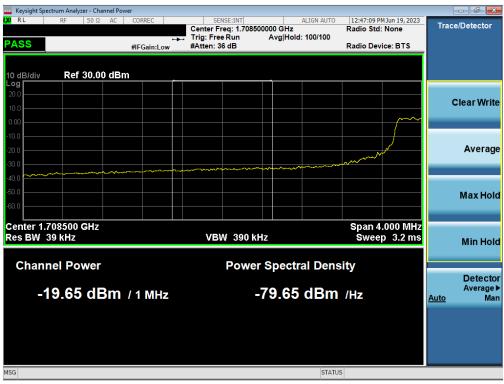
Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
		Low	Band Edge	-22.42	-13	-9.42
		Low	Extended	-22.10	-13	-9.10
	20MHz	High (B4)	Band Edge	-25.79	-13	-12.79
		High (B4)	Extended	-25.44	-13	-12.44
		High (B66)	Band Edge	-25.78	-13	-12.78
		High (B66)	Extended	-24.26	-13	-11.26
		Low	Band Edge	-21.19	-13	-8.19
		Low	Extended	-18.91	-13	-5.91
		High (B4)	Band Edge	-23.68	-13	-10.68
	15MHz	High (B4)	Extended	-23.27	-13	-10.27
		High (B66)	Band Edge	-22.21	-13	-9.21
		High (B66)	Extended	-21.40	-13	-8.40
		Low	Band Edge	-22.33	-13	-9.33
		Low	Extended	-20.87	-13	-7.87
	10MHz	High (B4)	Band Edge	-21.31	-13	-8.31
		High (B4)	Extended	-21.31	-13	-8.31
		High (B66)	Band Edge	-24.47	-13	-11.47
LTE Band 66/4		High (B66)	Extended	-20.16	-13	-7.16
		Low	Band Edge	-18.51	-13	-5.51
		Low	Extended	-19.65	-13	-6.65
	5MHz	High (B4)	Band Edge	-20.46	-13	-7.46
		High (B4)	Extended	-22.05	-13	-9.05
		High (B66)	Band Edge	-19.84	-13	-6.84
		High (B66)	Extended	-19.63	-13	-6.63
		Low	Band Edge	-18.49	-13	-5.49
		Low	Extended	-19.19	-13	-6.19
	3MHz	High (B4)	Band Edge	-19.32	-13	-6.32
		High (B4)	Extended	-20.62	-13	-7.62
		High (B66)	Band Edge	-19.30	-13	-6.30
		High (B66)	Extended	-18.08	-13	-5.08
		Low	Band Edge	-21.40	-13	-8.40
		Low	Extended	-25.71	-13	-12.71
	1.4MHz	High (B4)	Band Edge	-22.96	-13	-9.96
	1. 4 1011 IZ	High (B4)	Extended	-25.68	-13	-12.68
	E	High (B66)	Band Edge	-21.86	-13	-8.86
		High (B66)	Extended Edge Test Results	-25.40	-13	-12.40

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 97 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 87 of 142
© 2023 ELEMENT			\/3.0.1/5/



	ectrum Analyze											_	
XU RL	RF	50 Ω	AC	CORREC		SEI	ISE:INT	#Avg Typ	ALIGN AUTO		MJun 19, 2023	Fi	requency
PASS				PNO: Wi IFGain:L		Trig: Free #Atten: 3		0 //		TY D			Auto Tune
10 dB/div Log	Ref 25.	00 dE	Зm							-18.	51 dBm		
15.0	e 1 Pass												Center Freq 0000000 GHz
5.00								~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		m			
-5.00												1.70	Start Freq 3750000 GHz
-15.0							1						Stop Freq
-25.0				~~~	ww	s mer					when the the	1.71	6250000 GHz
-35.0	~~~~~~~											Auto	CF Step I.250000 MHz Man
-55.0													Freq Offset 0 Hz
-65.0													Scale Type
Center 1. #Res BW				#	VBW	390 kHz			Sweep '	Span 1 1.000 ms (2.50 MHz (1001 pts)	Log	Lin
MSG									STATU				

Plot 7-105. Lower Band Edge Plot (LTE Band 66/4 - 5MHz QPSK - Full RB - Ant1)



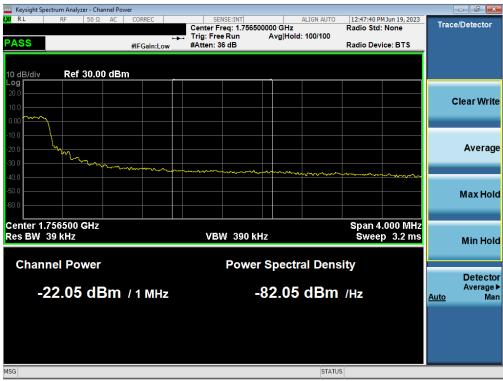
Plot 7-106. Lower Extended Band Edge Plot (LTE Band 66/4 - 5MHz QPSK - Full RB - Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 88 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Fage 66 01 142
© 2023 ELEMENT	•		V3.0 1/5/20



🔤 Keysight Spec		er - Swep	t SA										
X/RL	RF	50 Ω	AC	CORREC		SE	NSE:INT	#Avg ⁻	ALIGN AUTO Type: RMS	TRA	MJun 19, 2023	Fr	equency
PASS				PNO: Wi IFGain:L	de ↔ ow	Trig: Fre #Atten: 3		-	Mkr1	۔ 1.755 11			Auto Tune
10 dB/div Log	Ref 25.	.00 dE	3m							-20	.46 dBm		
15.0	e 1 Pass					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~							Center Freq 5000000 GHz
-5.00												1.74	Start Freq 8750000 GHz
-15.0							1					1.76	Stop Freq 1250000 GHz
-35.0	V							vann		way m	mon ~	1 <u>Auto</u>	CF Step .250000 MHz Man
-55.0													Freq Offset 0 Hz
-65.0													Scale Type
Center 1.7 #Res BW 1				#	VBW	390 kHz			Sweep	Span ′ 1.000 ms	12.50 MHz (1001 pts)	Log	Lin
MSG									STATI		(incer pro)		

Plot 7-107. Upper Band Edge Plot (LTE Band 4 - 5MHz QPSK - Full RB - Ant1)



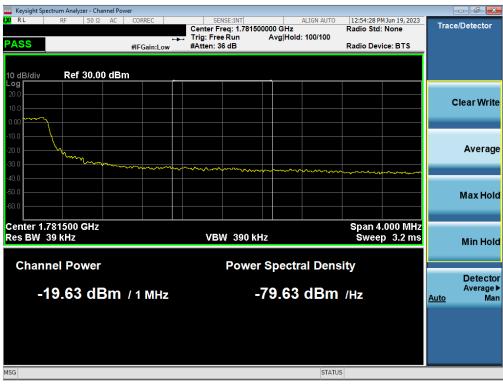
Plot 7-108. Upper Extended Band Edge Plot (LTE Band 4 - 5MHz QPSK – Full RB - Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 89 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Fage 09 01 142
© 2023 ELEMENT			V3.0 1/5/20



		n Analyzer - Sv										_	
LXI RL	R	F 50 Ω	2 AC	CORREC		SE	NSE:INT	#Ava '	ALIGN AUTO Type: RMS		MJun 19, 2023 CE 1 2 3 4 5 6	F	requency
PASS				PNO: W IFGain:L	ide ↔ ow	Trig: Fre #Atten: 3				T) E			Auto Tune
10 dB/c		ef 25.00	dBm						MKr1	1.780 01 -19	2 5 GHz .84 dBm		Auto Tune
	Frace 1 I	Pass					Í					(Center Freq
15.0 —												1.78	0000000 GHz
5.00		fmm	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~							
-5.00												1.77	Start Freq 3750000 GHz
-5.00													
-15.0 —		/					1						Stop Freq
-25.0 —	^	(ĺ					1.78	6250000 GHz
~	~~~~~~						~~~~	mm	m	m			CF Step
-35.0 —											m	<u>Auto</u>	1.250000 MHz Man
-45.0 —													
-55.0 —													Freq Offset 0 Hz
-65.0													0112
-09.0													Scale Type
		000 GHz								Span '	12.50 MHz	Log	Lin
	BW 120	kHz		#	¢VB₩	390 kHz					(1001 pts)		
MSG									STAT	US			

Plot 7-109. Upper Band Edge Plot (LTE Band 66 - 5MHz QPSK - Full RB - Ant1)



Plot 7-110. Upper Extended Band Edge Plot (LTE Band 66 - 5MHz QPSK - Full RB - Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 00 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 90 of 142
© 2023 ELEMENT			V3.0 1/5/2



NR Band n66 – Ant1

Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
		Low	Band Edge	-23.06	-13	-10.06
	40 MHz	Low	Extended	-25.40	-13	-12.40
	40 MHZ	High	Band Edge	-24.39	-13	-11.39
		High	Extended	-25.99	-13	-12.99
		Low	Band Edge	-25.78	-13	-12.78
	30 MHz	Low	Extended	-23.99	-13	-10.99
		High	Band Edge	-22.89	-13	-9.89
		High	Extended	-25.53	-13	-12.53
		Low	Band Edge	-26.63	-13	-13.63
		Low	Extended	-22.53	-13	-9.53
	20 MHz	High	Band Edge	-26.85	-13	-13.85
NR Band n66		High	Extended	-23.87	-13	-10.87
INK Danu noo		Low	Band Edge	-27.02	-13	-14.02
	15 MHz	Low	Extended	-21.12	-13	-8.12
		High	Band Edge	-27.93	-13	-14.93
			High	Extended	-22.48	-13
		Low	Band Edge	-25.52	-13	-12.52
	10 MHz	Low	Extended	-17.76	-13	-4.76
		High	Band Edge	-27.77	-13	-14.77
		High	Extended	-18.80	-13	-5.80
		Low	Band Edge	-25.32	-13	-12.32
	5 MHz	Low	Extended	-22.14	-13	-9.14
		High	Band Edge	-24.17	-13	-11.17
		High	Extended	-21.68	-13	-8.68

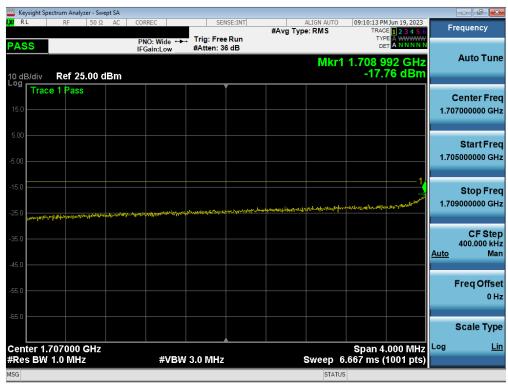
Table 7-16. Band Edge Test Results – Ant1

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 91 of 142	
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Fage 91 01 142	ı
© 2023 ELEMENT	•		V3.0 1/5/	/2022



	jht Spectr	um Analyz		pt SA										_	
LXI RL		RF	50 Ω	AC	CORR	EC		SENSE:INT	#Av		ALIGN AUTO e: RMS		MJun 19, 2023	Fr	equency
PASS						:Wide ↔ in:Low		Free Run n: 36 dB	<i>#</i>	9.16		T` [975 GHz		Auto Tune
10 dB/d Log	liv	Ref 25	.00 d	Bm								-25	.51 dBm		
15.0 —	race '	1 Pass													enter Freq
5.00 — -5.00 —									when the the	·~~~		······		1.697	Start Freq 500000 GHz
-15.0								 ↓1						1.72	Stop Freq 2500000 GHz
-35.0			<u></u>	m	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	,	~					hours	2 <u>Auto</u>	CF Step 500000 MHz Man
-55.0														'	Freq Offset 0 Hz
-65.0	- 4 74														Scale Type Lin
Center #Res I						#VBV	V 430 k	Hz			Sweep	span 1.000 ms	25.00 MHz (1001 pts)	209	
MSG											STATU	JS			

Plot 7-111. Lower Band Edge Plot (NR Band n66 - 10.0MHz - Full RB - Ant1)



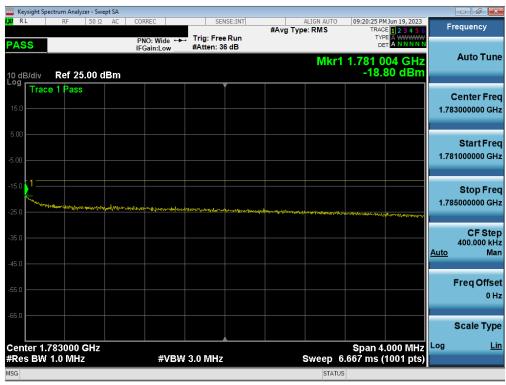
Plot 7-112. Lower Extended Band Edge Plot (NR Band n66 - 10.0MHz - Full RB - Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 02 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 92 of 142
© 2023 ELEMENT		•	V3.0 1/5/202



	sight Spect															
LXI RL		RF	50 Ω	AC	CORF	EC		S	ENSE:INT	#A1		ALIGN AUTO e: RMS		PM Jun 19, 2023	F	requency
PAS	S): Wide ain:Low		Trig: Fr #Atten:			.916		T) [
10 dBi Log n	/div	Ref 2	5.00 c	IBm								Mkr1	1.780 -27	025 GHz .77 dBm		Auto Tune
15.0	Trace	1 Pas	S						Ĭ							Center Freq 80000000 GHz
5.00 - -5.00 -			~~~~	~~~~	~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	·····							1.76	Start Freq 57500000 GHz
-15.0 -									1						1.79	Stop Freq 2500000 GHz
-35.0 =	~~~~~	<i>\</i>							han		<u>~~</u> ~~~	www.		~	Auto	CF Step 2.500000 MHz Man
-45.0 -																Freq Offset 0 Hz
-65.0																Scale Type
	er 1.78 BW 1					#V	BW	430 kH	z			Sweep 1	Span : .000 ms	25.00 MHz (1001 pts)	Log	Lin
MSG												STATUS	5			

Plot 7-113. Upper Band Edge Plot (NR Band n66 - 10.0MHz - Full RB - Ant1)



Plot 7-114. Upper Extended Band Edge Plot (NR Band n66 - 10.0MHz - Full RB - Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 02 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 93 of 142
© 2023 ELEMENT			V3.0 1/5/202



LTE Band 66/4 – Ant2

Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
		Low	Band Edge	-26.89	-13	-13.89
		Low	Extended	-26.78	-13	-13.78
	201411-	High (B4)	Band Edge	-27.94	-13	-14.94
	20MHz	High (B4)	Extended	-29.29	-13	-16.29
		High (B66)	Band Edge	-27.91	-13	-14.91
		High (B66)	Extended	-29.00	-13	-16.00
		Low	Band Edge	-26.46	-13	-13.46
		Low	Extended	-25.45	-13	-12.45
	15MHz	High (B4)	Band Edge	-25.01	-13	-12.01
		High (B4)	Extended	-27.31	-13	-14.31
		High (B66)	Band Edge	-28.24	-13	-15.24
		High (B66)	Extended	-27.51	-13	-14.51
		Low	Band Edge	-24.96	-13	-11.96
		Low	Extended	-21.49	-13	-8.49
	10MHz	High (B4)	Band Edge	-23.99	-13	-10.99
	TOIVINZ	High (B4)	Extended	-22.71	-13	-9.71
		High (B66)	Band Edge	-23.99	-13	-10.99
LTE Band 66/4		High (B66)	Extended	-22.52	-13	-9.52
		Low	Band Edge	-20.76	-13	-7.76
		Low	Extended	-23.74	-13	-10.74
	5MHz	High (B4)	Band Edge	-20.32	-13	-7.32
		High (B4)	Extended	-24.83	-13	-11.83
		High (B66)	Band Edge	-21.79	-13	-8.79
		High (B66)	Extended	-28.37	-13	-15.37
		Low	Band Edge	-19.83	-13	-6.83
		Low	Extended	-23.03	-13	-10.03
	3MHz	High (B4)	Band Edge	-19.00	-13	-6.00
		High (B4)	Extended	-23.61	-13	-10.61
		High (B66)	Band Edge	-19.76	-13	-6.76
		High (B66)	Extended	-27.30	-13	-14.30
		Low	Band Edge	-24.12	-13	-11.12
		Low	Extended	-27.90	-13	-14.90
	1.4MHz	High (B4)	Band Edge	-24.74	-13	-11.74
		High (B4)	Extended	-29.48	-13	-16.48
		High (B66)	Band Edge	-25.04	-13	-12.04
		High (B66)	Extended	-30.08	-13	-17.08

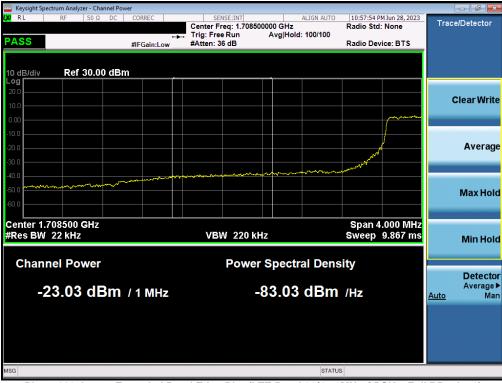
Table 7-17. Band Edge Test Results – Ant2

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 04 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 94 of 142
© 2023 ELEMENT			\/3.0.1/5/



Keysight Spe	ectrum Analyze	r - Swept S	A									
LXI RL	RF	50 Ω D	C COR	REC	SEI	ISE:INT	#Avg Typ	ALIGN AUTO		MJun 28, 2023	F	requency
PASS				IO: Wide ↔ Gain:Low	Trig: Free #Atten: 3		" 8)P		TY			
10 dB/div Log	Ref 25.	00 dBr	m					Mkr1 1	.709 99. -19.	2 5 GHz 82 dBm		Auto Tune
15.0 Trac	e 1 Pass					مروفر والمهرم	مىلىرولۇمۇر، يۇرمۇر، يەر	10-1040-03-04000	a han an a			Center Freq 0000000 GHz
-5.00											1.70	Start Freq 6250000 GHz
-15.0					ـــــــــــــــــــــــــــــــــــــ	1				14 61 14 000	1.71	Stop Freq 3750000 GHz
-35.0	warman and a start of the	and the factor	amer ward	Herror Marie	mayerson					The second se	<u>Auto</u>	CF Step 750.000 kHz Man
-55.0												Freq Offset 0 Hz
-65.0												Scale Type
Center 1.7 #Res BW		Hz		#VBW	240 kHz			Sweep 1	Span 7 2.53 ms	.500 MHz (1001 pts)	Log	Lin
MSG								STATU	5			

Plot 7-115. Lower Band Edge Plot (LTE Band 66/4 - 3MHz QPSK – Full RB - Ant2)



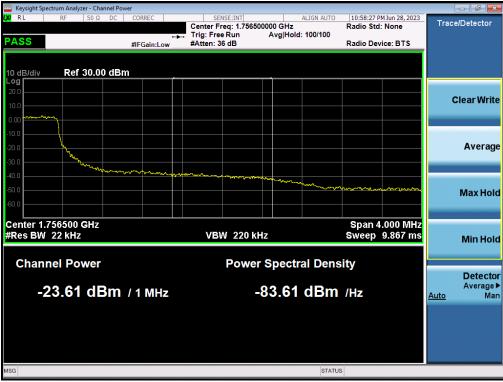
Plot 7-116. Lower Extended Band Edge Plot (LTE Band 66/4 - 3MHz QPSK – Full RB - Ant2)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 05 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 95 of 142
© 2023 ELEMENT	•	·	V3.0 1/5/2022





Plot 7-117. Upper Band Edge Plot (LTE Band 4 - 3MHz QPSK - Full RB - Ant2)



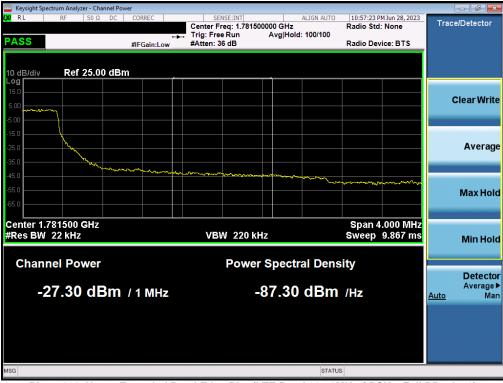
Plot 7-118. Upper Extended Band Edge Plot (LTE Band 4 - 3MHz QPSK – Full RB - Ant2)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Daga 06 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 96 of 142
© 2023 ELEMENT		·	V3.0 1/5/2



	ectrum Analyzer - Sw										
LXI RL	RF 50 Ω	2 DC C	ORREC	SEN	SE:INT	#Avg Typ	ALIGN AUTO		4 Jun 28, 2023 E 1 2 3 4 5 6	F	requency
PASS			PNO: Wide ↔ IFGain:Low	Trig: Free #Atten: 36				TYP De			A
10 dB/div Log	Ref 25.00	dBm					Mkr1 ′	1.780 01 -19.	5 0 GHz 76 dBm		Auto Tune
15.0 Trac	e 1 Pass	ala aliang ang ang ang ang ang ang ang ang ang	eyezq€aqL12∰eyezqaγTextgenaty	******							Center Freq 0000000 GHz
-5.00										1.77	Start Freq 6250000 GHz
-15.0										1.78	Stop Freq 3750000 GHz
-35.0					h.	When I with the	W& Muller W	Million Hanner	ht.,	<u>Auto</u>	CF Step 750.000 kHz Man
-55.0											Freq Offset 0 Hz
-65.0											Scale Type
Center 1. #Res BW	780000 GHz 75 kHz		#VBW	240 kHz			Sweep	Span 7 12.53 ms (Log	<u>Lin</u>
MSG							STATU				

Plot 7-119. Upper Band Edge Plot (LTE Band 66 - 3MHz QPSK - Full RB - Ant2)



Plot 7-120. Upper Extended Band Edge Plot (LTE Band 66 - 3MHz QPSK - Full RB - Ant2)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 07 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 97 of 142
© 2023 ELEMENT			V3.0 1/5/20



NR Band n66 - Ant2

Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
		Low	Band Edge	-22.99	-13	-9.99
	40 MHz	Low	Extended	-26.28	-13	-13.28
		High	Band Edge	-20.63	-13	-7.63
		High	Extended	-25.80	-13	-12.80
		Low	Band Edge	-23.38	-13	-10.38
	30 MHz	Low	Extended	-24.63	-13	-11.63
		High	Band Edge	-23.44	-13	-10.44
		High	Extended	-25.47	-13	-12.47
		Low	Band Edge	-27.90	-13	-14.90
	20 MH-	Low	Extended	-25.01	-13	-12.01
	20 MHz	High	Band Edge	-28.45	-13	-15.45
NR Band n66		High	Extended	-25.82	-13	-12.82
INK DAHU HOO		Low	Band Edge	-27.79	-13	-14.79
		Low	Extended	-22.09	-13	-9.09
	15 MHz	High	Band Edge	-28.96	-13	-15.96
		High	Extended	-24.92	-13	-11.92
		Low	Band Edge	-25.07	-13	-12.07
	10 MHz	Low	Extended	-17.56	-13	-4.56
		High	Band Edge	-33.07	-13	-20.07
		High	Extended	-28.45	-13	-15.45
		Low	Band Edge	-24.11	-13	-11.11
	5 MHz	Low	Extended	-24.55	-13	-11.55
		High	Band Edge	-21.88	-13	-8.88
		High	Extended	-23.91	-13	-10.91

Table 7-18. Band Edge Test Results – Ant2

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager	I
Test Report S/N:	Test Dates:	EUT Type:	Page 98 of 142	1
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Faye 90 01 142	
© 2023 ELEMENT	•		V3.0 1/5	/2022





Plot 7-121. Lower Band Edge Plot (NR Band n66 - 10.0MHz - Full RB - Ant2)

Spectrum Analyzer 1 Swept SA	+			Frequency v
KEYSIGHT Input: RF RL → Coupling: DC Align: Auto	Input Z: 50 Ω #Atten: 3 Corrections: On Freq Ref: Int (S) NFF ⁻ Off	6 dB PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off	#Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run A WW WW W A N N N N N	Center Frequency 1.707000000 GHz
1 Spectrum v Scale/Div 10 dB		1 25.00 dBm	Mkr1 1.709 000 GHz -17,559 dBm	4.00000000 Milliz
Log Trace 1 Pass				Zero Span
5.00				Full Span Start Freg
-5.00				1.705000000 GHz
-15.0			1	Stop Freq 1.709000000 GHz
-25.0			and a second and a	AUTO TUNE
35.0				CF Step 400.000 kHz
.45.0				Auto Man
-65.0				Freq Offset 0 Hz
Center 1.707000 GHz	#Video I	BW 3.0 MHz	Span 4.000 MHz	X Axis Scale
#Res BW 1.0 MHz	? Jul 03, 2023 4:52:06 PM		Sweep ~6.97 ms (1001 pts)	Lin Signal Track (Span Zoom)

Plot 7-122. Lower Extended Band Edge Plot (NR Band n66 - 10.0MHz - Full RB - Ant2)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 99 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Fage 99 01 142
© 2023 ELEMENT			V3.0 1/5/20





Plot 7-123. Upper Band Edge Plot (NR Band n66 - 10.0MHz - Full RB - Ant2)

Spectrum Analyzer 1 Swept SA	+					Frequency	▼景
KEYSIGHT Input: RF L -→- Align: Auto	Input Z: 50 Ω Corrections: On Freq Ref: Int (S) NEF ⁻ Off	#Atten: 36 dB	PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off		123456 A WW WW W A N N N N N	Center Frequency 1.783000000 GHz	Settings
1 Spectrum V		Ref Level 25.00 c		Mkr1 1.781 -28.4	048 GHz 450 dBm	Span 4.00000000 MHz Swept Span	
Log Trace 1 Pass						Zero Span	
5.00						Full Span Start Freg	
5.00						1.781000000 GHz	
-15.0						Stop Freq 1.785000000 GHz	
25.0 1			alere des recentered and a series of the ser			AUTO TUNE	
35.0						CF Step 400.000 kHz	
55.0						Auto Man	
.65.0						Freq Offset 0 Hz	
Center 1.783000 GHz #Res BW 1.0 MHz		#Video BW 3.0 N	1Hz	Spa Sweep ~6.97 m	n 4.000 MHz s (1001 pts)	X Axis Scale	
	? Jul 03, 2023 4:54:21 PM					Signal Track (Span Zoom)	

Plot 7-124. Upper Extended Band Edge Plot (NR Band n66 – 10.0MHz - Full RB - Ant2)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 100 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 100 of 142
© 2023 ELEMENT	•	•	V3.0 1/5/202



7.6 Peak-Average Ratio

Test Overview

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

Test Procedure Used

ANSI C63.26-2015 - Section 5.2.3.4

Test Settings

- 1. The signal analyzer's CCDF measurement profile is enabled
- 2. Frequency = carrier center frequency
- 3. Measurement BW ≥ OBW or specified reference bandwidth
- 4. The signal analyzer was set to collect one million samples to generate the CCDF curve
- 5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

Test Setup

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



Figure 7-5. Test Instrument & Measurement Setup

Test Notes

None.

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 101 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 101 of 142
© 2023 ELEMENT	•	·	V3.0 1/5/2



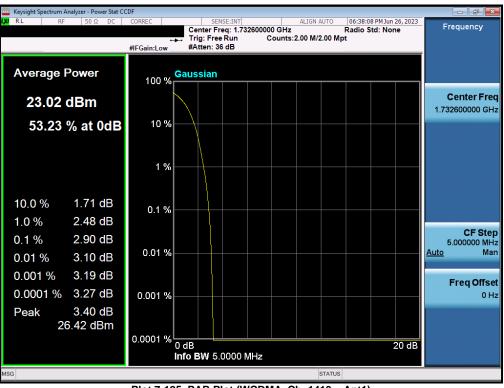
Mode	Bandwidth	Modulation	Average Power [dBm]	PAR at 0.1% [dB]	PAR Limit [dB]	Margin [dB]
WCDMA1700	N/A	Spread Spectrum	23.02	2.90	13	-10.10
		QPSK	23.09	5.20	13	-7.80
	20 MHz	256QAM	19.14	6.87	13	-6.13
	15 MHz	QPSK	23.17	5.40	13	-7.60
	15 MHZ	256QAM	19.10	6.81	13	-6.19
		QPSK	23.17	5.26	13	-7.74
	10 MHz	256QAM	19.20	6.79	13	-6.21
LTE Band 66/4		QPSK	23.06	5.26	13	-7.74
	5 MHz	256QAM	19.49	7.48	13	-5.52
		QPSK	23.07	5.25	13	-7.75
	3 MHz	256QAM	19.14	6.87	13	-6.13
		QPSK	23.05	5.18	13	-7.82
	1.4 MHz	256QAM	19.11	6.83	13	-6.17
		π/2 BPSK	23.62	4.86	13	-8.14
	40 MHz	QPSK	21.12	7.96	13	-5.04
		256QAM	17.63	8.61	13	-4.39
	30 MHz	π/2 BPSK	23.15	5.43	13	-7.57
		QPSK	21.18	8.00	13	-5.00
		256QAM	17.70	8.51	13	-4.49
		π/2 BPSK	23.73	4.34	13	-8.66
	20 MHz	QPSK	23.23	5.26	13	-7.74
NR Band n66		256QAM	19.72	6.69	13	-6.31
NIX Danu 100		π/2 BPSK	23.72	4.25	13	-8.75
	15 MHz	QPSK	21.18	7.93	13	-5.07
		256QAM	17.68	8.52	13	-4.48
		π/2 BPSK	23.70	4.31	13	-8.69
	10 MHz	QPSK	21.21	7.90	13	-5.10
		256QAM	17.71	8.56	13	-4.44
		π/2 BPSK	23.69	4.23	13	-8.77
	5 MHz	QPSK	21.19	7.82	13	-5.18
		256QAM	17.66	8.50	13	-4.50

Table 7-19. Peak-Average Ratio – Ant1

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dega 102 of 142	
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 102 of 142	
© 2023 ELEMENT			V3.0 1/5/2	2022



WCDMA AWS - Ant1

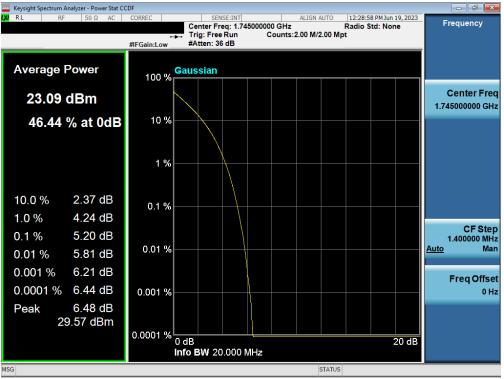


Plot 7-125. PAR Plot (WCDMA, Ch. 1413 - Ant1)

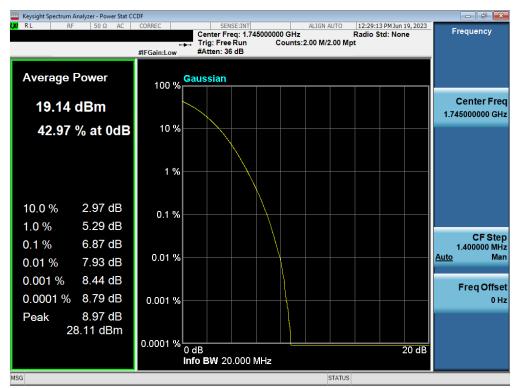
FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 103 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Fage 103 01 142
© 2023 ELEMENT			V3.0 1/5/20



LTE Band 66/4 - Ant1



Plot 7-126. PAR Plot (LTE Band 66/4 - 20MHz QPSK - Full RB - Ant1)



Plot 7-127. PAR Plot (LTE Band 66/4 - 20MHz 256-QAM - Full RB - Ant1)

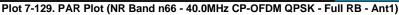
FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dege 104 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 104 of 142
© 2023 ELEMENT			V3.0 1/5/2



NR Band n66 – Ant1







FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 105 of 112
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 105 of 142
© 2023 ELEMENT	•	· · ·	V3.0 1/5/2





Plot 7-130. PAR Plot (NR Band n66 - 40.0MHz CP-OFDM 256-QAM - Full RB - Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 106 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Fage 106 01 142
© 2023 ELEMENT		· · ·	V3.0 1/5/



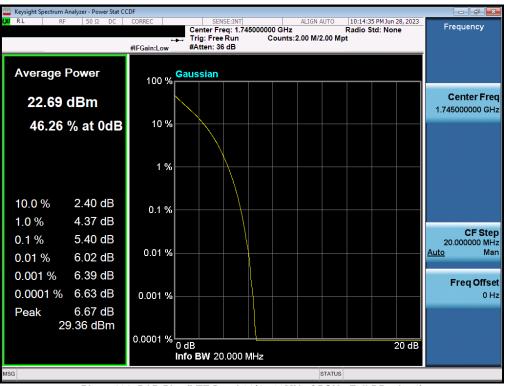
Mode	Bandwidth	Modulation	Average Power [dBm]	PAR at 0.1% [dB]	PAR Limit [dB]	Margin [dB]
	20 MHz	QPSK	22.69	5.40	13.00	-7.60
		256QAM	18.59	6.60	13.00	-6.40
	15 MHz -	QPSK	22.70	5.35	13.00	-7.65
		256QAM	18.71	6.54	13.00	-6.46
	40 MU-	QPSK	22.76	5.56	13.00	-7.44
	10 MHz	256QAM	18.73	6.57	13.00	-6.43
LTE Band 66/4		QPSK	22.70	5.48	13.00	-7.52
	5 MHz	256QAM	18.71	6.56	13.00	-6.44
		QPSK	22.65	5.64	13.00	-7.36
	3 MHz	256QAM	18.67	6.58	13.00	-6.42
	4 4 5 41 1-	QPSK	22.58	5.48	13.00	-7.52
	1.4 MHz	256QAM	18.65	6.65	13.00	-6.35
		π/2 BPSK	23.32	4.82	13.00	-8.18
	40 MHz	QPSK	22.80	5.44	13.00	-7.56
		256QAM	19.30	6.46	13.00	-6.54
	30 MHz	π/2 BPSK	23.33	4.22	13.00	-8.78
		QPSK	22.84	5.33	13.00	-7.67
		256QAM	19.31	6.34	13.00	-6.66
		π/2 BPSK	23.31	4.20	13.00	-8.80
	20 MHz	QPSK	20.82	7.82	13.00	-5.18
NR Band n66		256QAM	17.31	8.31	13.00	-4.69
NIX Band noo		π/2 BPSK	23.33	4.10	13.00	-8.90
	15 MHz	QPSK	20.82	7.81	13.00	-5.19
10 MHz		256QAM	17.34	8.34	13.00	-4.66
		π/2 BPSK	23.30	4.23	13.00	-8.77
	10 MHz	QPSK	20.83	7.86	13.00	-5.14
		256QAM	17.33	8.19	13.00	-4.81
		π/2 BPSK	23.32	4.21	13.00	-8.79
	5 MHz	QPSK	20.83	7.77	13.00	-5.23
		256QAM	17.30	8.23	13.00	-4.77

 Table 7-20. Peak-Average Ratio – Ant2

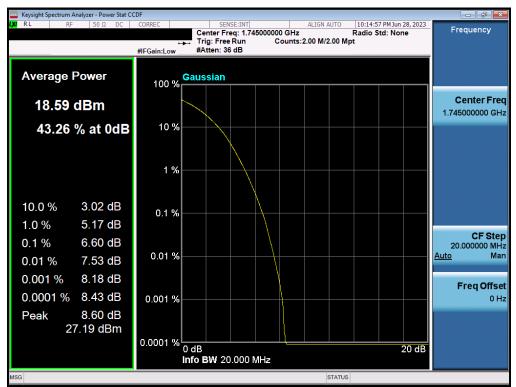
FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 107 of 142	
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 107 of 142	
© 2023 ELEMENT	-	•	V3.0 1/5	/2022



LTE Band 66/4 – Ant2



Plot 7-131. PAR Plot (LTE Band 66/4 - 20MHz QPSK - Full RB - Ant2)

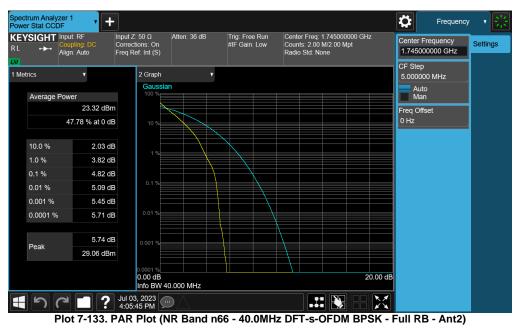


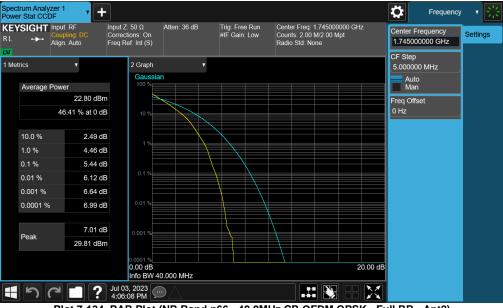
Plot 7-132. PAR Plot (LTE Band 66/4 - 20MHz 256-QAM - Full RB - Ant2)

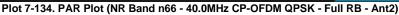
FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 100 of 140
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 108 of 142
© 2023 ELEMENT			V3.0 1/5/20



NR Band n66 – Ant2







FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 100 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 109 of 142
© 2023 ELEMENT	•		V3.0 1/5/2





Plot 7-135. PAR Plot (NR Band n66 - 40.0MHz CP-OFDM 256-QAM - Full RB - Ant2)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 110 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 110 of 142
© 2023 ELEMENT	·	·	V3.0 1/5/202



7.7 Radiated Power (ERP/EIRP)

Test Overview

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

ANSI C63.26-2015 - Section 5.2.4.4

Test Settings

- 1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
- 2. RBW = 1 5% of the expected OBW, not to exceed 1MHz
- 3. VBW \geq 3 x RBW
- 4. Span = 1.5 times the OBW
- 5. No. of sweep points $\geq 2 \times \text{span} / \text{RBW}$
- 6. Detector = RMS
- 7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto".
- 8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
- 9. Trace mode = trace averaging (RMS) over 100 sweeps
- 10. The trace was allowed to stabilize

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 111 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 111 of 142
© 2023 ELEMENT	•	•	V3.0 1/5/

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Test Setup

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

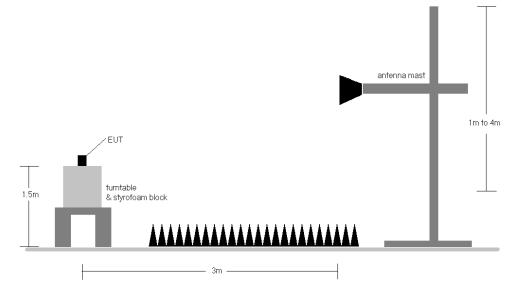


Figure 7-6. Radiated Test Setup <1GHz

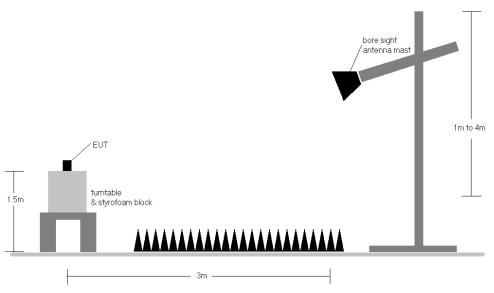


Figure 7-7. Radiated Test Setup >1GHz

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT			
Test Report S/N:	Test Dates:	EUT Type:	Page 112 of 142		
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 112 of 142		
© 2023 ELEMENT	•		V3.0 1/5/202		



Test Notes

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 113 of 142	ł
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Fage 115 01 142	l
© 2023 ELEMENT			V3.0 1/5	/2022



Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
z	QPSK	704.0	Н	131	280	1.14	1 / 49	19.73	20.87	0.122	36.99	-16.12	18.72	0.074	34.77	-16.05
MHz	QPSK	707.5	Н	144	287	1.16	1/0	19.71	20.87	0.122	36.99	-16.12	18.72	0.074	34.77	-16.05
101	QPSK	711.0	Н	130	284	1.17	1 / 49	20.26	21.43	0.139	36.99	-15.56	19.28	0.085	34.77	-15.49
-	16-QAM	711.0	Н	130	284	1.17	1 / 49	18.03	19.20	0.083	36.99	-17.79	17.05	0.051	34.77	-17.72
N	QPSK	701.5	Н	131	280	1.13	1/0	19.83	20.96	0.125	36.99	-16.03	18.81	0.076	34.77	-15.96
MHz	QPSK	707.5	Н	144	287	1.16	1/0	19.63	20.79	0.120	36.99	-16.20	18.64	0.073	34.77	-16.13
5 M	QPSK	713.5	Н	130	284	1.19	1 / 12	20.17	21.36	0.137	36.99	-15.63	19.21	0.083	34.77	-15.56
	16-QAM	713.5	Н	130	284	1.19	1 / 12	18.40	19.59	0.091	36.99	-17.40	17.44	0.055	34.77	-17.33
N	QPSK	700.5	Н	131	280	1.12	1/0	19.86	20.98	0.125	36.99	-16.01	18.83	0.076	34.77	-15.94
MHz	QPSK	707.5	Н	144	287	1.16	1 / 14	19.73	20.89	0.123	36.99	-16.10	18.74	0.075	34.77	-16.03
3 M	QPSK	714.5	Н	130	284	1.19	1/7	20.10	21.29	0.135	36.99	-15.70	19.14	0.082	34.77	-15.63
	16-QAM	714.5	Н	130	284	1.19	1/7	18.00	19.19	0.083	36.99	-17.80	17.04	0.051	34.77	-17.73
z	QPSK	699.7	Н	131	280	1.12	1/5	19.72	20.83	0.121	36.99	-16.16	18.68	0.074	34.77	-16.09
MHz	QPSK	707.5	Н	144	287	1.16	1/5	19.63	20.79	0.120	36.99	-16.20	18.64	0.073	34.77	-16.13
4	QPSK	715.3	Н	130	284	1.20	1/3	20.13	21.33	0.136	36.99	-15.66	19.18	0.083	34.77	-15.59
-	16-QAM	699.7	Н	131	280	1.12	1/3	18.05	19.16	0.082	36.99	-17.83	17.01	0.050	34.77	-17.76
10 MHz	Opposite Pol.	711.0	V	174	319	1.17	1 / 49	18.66	19.83	0.096	36.99	-17.16	17.68	0.059	34.77	-17.09
	WCP	711.0	V	123	246	1.17	1 / 49	17.44	18.61	0.073	36.99	-18.38	16.46	0.044	34.77	-18.31

Table 7-21. ERP Data (LTE Band 12/17 – Ant1)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
10 MHz	QPSK	782.0	Н	105	287	1.09	1/0	20.88	21.97	0.157	36.99	-15.02	19.82	0.096	34.77	-14.96
	16-QAM	782.0	Н	105	287	1.09	1/0	18.53	19.62	0.092	36.99	-17.37	17.47	0.056	34.77	-17.31
	QPSK	779.5	Н	105	287	1.11	1/0	21.01	22.12	0.163	36.99	-14.87	19.97	0.099	34.77	-14.80
5 MHz	QPSK	782.0	Н	105	287	1.09	1/0	21.01	22.09	0.162	36.99	-14.90	19.94	0.099	34.77	-14.83
JINHZ	QPSK	784.5	Н	105	287	1.06	1/0	21.22	22.29	0.169	36.99	-14.70	20.14	0.103	34.77	-14.63
	16-QAM	784.5	Н	105	287	1.06	1 / 24	19.16	20.22	0.105	36.99	-16.77	18.07	0.064	34.77	-16.70
10 MHz	Opposite Pol.	782.0	V	154	217	1.09	1/0	19.82	20.91	0.123	36.99	-16.08	18.76	0.075	34.77	-16.01
	WCP	782.0	V	123	246	1.09	1/0	16.67	17.76	0.060	36.99	-19.23	15.61	0.036	34.77	-19.16

Table 7-22. ERP Data (LTE Band 13 – Ant1)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1712.40	WCDMA1700	V	156.00	315.00	19.34	2.88	22.22	0.167	30.00	-7.78
1732.60	WCDMA1700	V	148.00	325.00	17.45	2.92	20.37	0.109	30.00	-9.63
1752.60	WCDMA1700	V	139.00	238.00	15.39	2.96	18.35	0.068	30.00	-11.65
1712.40	WCDMA1700 (WCP)	V	124.00	21.00	14.85	2.92	17.77	0.060	30.00	-12.23

Table 7-23. EIRP Data (WCDMA AWS – Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT				
Test Report S/N:	Test Dates:	EUT Type:	Page 114 of 142			
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 114 01 142			
© 2023 ELEMENT	-	·	V3.0 1/5/2			



Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
Z	QPSK	1720.0	Н	102	200	2.88	1 / 0	19.46	22.34	0.171	30.00	-7.66
20 MHz	QPSK	1745.0	Н	129	200	2.84	1 / 99	19.18	22.02	0.159	30.00	-7.98
0	QPSK	1770.0	Н	123	199	2.79	1 / 0	18.62	21.41	0.138	30.00	-8.59
2	16-QAM	1720.0	Н	102	200	2.88	1 / 0	18.29	21.17	0.131	30.00	-8.83
Z	QPSK	1717.5	Н	102	200	2.88	1 / 37	19.36	22.24	0.168	30.00	-7.76
H	QPSK	1745.0	Н	129	200	2.84	1 / 37	19.17	22.01	0.159	30.00	-7.99
15 MHz	QPSK	1772.5	Н	123	199	2.78	1 / 37	18.57	21.36	0.137	30.00	-8.64
-	16-QAM	1717.5	Н	102	200	2.88	1 / 37	18.53	21.42	0.139	30.00	-8.58
z	QPSK	1715.0	Н	102	200	2.88	1 / 49	19.22	22.11	0.162	30.00	-7.89
Ŧ	QPSK	1745.0	Н	129	200	2.84	1 / 25	18.96	21.80	0.151	30.00	-8.20
10 MHz	QPSK	1775.0	Н	123	199	2.78	1 / 49	18.51	21.29	0.135	30.00	-8.71
-	16-QAM	1715.0	Н	102	200	2.88	1 / 25	18.34	21.22	0.133	30.00	-8.78
N	QPSK	1712.5	Н	102	200	2.89	1 / 24	19.14	22.02	0.159	30.00	-7.98
Ľ Ľ	QPSK	1745.0	Н	129	200	2.84	1 / 0	19.06	21.91	0.155	30.00	-8.09
5 MHz	QPSK	1777.5	Н	123	199	2.77	1 / 12	18.53	21.30	0.135	30.00	-8.70
	16-QAM	1712.5	Н	102	200	2.89	1 / 12	18.40	21.28	0.134	30.00	-8.72
N	QPSK	1711.5	Н	102	200	2.89	1 / 7	19.13	22.02	0.159	30.00	-7.98
3 MHz	QPSK	1745.0	Н	129	200	2.84	1 / 7	19.18	22.02	0.159	30.00	-7.98
2	QPSK	1778.5	Н	123	199	2.77	1 / 14	18.50	21.27	0.134	30.00	-8.73
	16-QAM	1711.5	Н	102	200	2.89	1 / 0	18.17	21.05	0.127	30.00	-8.95
Z	QPSK	1710.7	Н	102	200	2.89	1/5	19.20	22.09	0.162	30.00	-7.91
1.4 MHz	QPSK	1745.0	Н	129	200	2.84	1/5	18.83	21.67	0.147	30.00	-8.33
4	QPSK	1779.3	Н	123	199	2.77	1/5	18.48	21.24	0.133	30.00	-8.76
—	16-QAM	1710.7	Н	102	200	2.89	1/3	18.13	21.02	0.126	30.00	-8.98
20 MHz	Opposite Pol.	1720.0	V	130	324	2.88	1 / 0	19.37	22.25	0.168	30.00	-7.75
	WCP	1720.0	V	124	279	2.88	1 / 0	18.43	21.31	0.135	30.00	-8.69

Table 7-24. EIRP Data (LTE Band 66 – Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT				
Test Report S/N:	Test Dates:	EUT Type:	Page 115 of 142			
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Fage 115 01 142			
© 2023 ELEMENT			V3.0 1/5	/2022		



Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
	π/2 BPSK	1730.0	V	163	315	2.92	1 / 54	20.04	22.96	0.198	30.00	-7.04
	π/2 BPSK	1745.0	V	139	327	2.94	1 / 54	19.39	22.33	0.171	30.00	-7.67
	π/2 BPSK	1760.0	V	139	323	2.99	1 / 108	19.19	22.18	0.165	30.00	-7.82
40 MHz	QPSK	1730.0	V	163	315	2.92	1 / 54	19.98	22.90	0.195	30.00	-7.10
	QPSK	1745.0	V	139	327	2.94	1 / 54	19.36	22.30	0.170	30.00	-7.70
	QPSK	1760.0	V	139	323	2.99	1 / 108	19.04	22.03	0.159	30.00	-7.97
	16-QAM	1730.0	V	163	315	2.92	1 / 54	19.05	21.97	0.157	30.00	-8.03
	π/2 BPSK	1725.0	V	163	315	2.91	1 / 80	19.99	22.90	0.195	30.00	-7.10
	π/2 BPSK	1745.0	V	139	327	2.94	1 / 40	19.53	22.47	0.177	30.00	-7.53
00 MUL-	π/2 BPSK	1765.0	V	139	323	3.00	1 / 80	19.27	22.28	0.169	30.00	-7.72
30 MHz	QPSK	1725.0	V	163	315	2.91	1 / 80	19.87	22.78	0.190	30.00	-7.22
	QPSK	1745.0	V V	139	327	2.94	1 / 40	19.47	22.42	0.174	30.00	-7.58
	QPSK 10 OAM	1765.0		139	323	3.00	1 / 80	19.19	22.19	0.166	30.00	-7.81
	16-QAM	1725.0	V V	163	315	2.91 2.90	1 / 80	19.39	22.30	0.170	30.00	-7.70
	π/2 BPSK	1720.0	V	163 139	315 327	2.90	1 / 53 1 / 53	20.04 19.56	22.94 22.50	0.197	30.00 30.00	-7.06 -7.50
	π/2 BPSK π/2 BPSK	1745.0 1770.0	V	139	323	3.02	1 / 26	19.50	22.30	0.170	30.00	-7.50
20 MHz	QPSK	1720.0	V	163	315	2.90	1 / 53	19.20	22.83	0.170	30.00	-7.17
	QPSK	1720.0	V	139	315	2.90	1 / 53	19.93	22.83	0.192	30.00	-7.68
	QPSK	1745.0	V	139	323	3.02	1 / 26	18.91	22.32	0.170	30.00	-7.06
	16-QAM	1720.0	V	163	315	2.90	1 / 53	19.43	21.94	0.130	30.00	-7.67
	π/2 BPSK	1720.0	V	163	315	2.89	1 / 39	20.12	22.00	0.200	30.00	-6.98
	π/2 BPSK	1745.0	V	139	313	2.03	1 / 58	19,49	22.43	0.200	30.00	-7.57
	π/2 BPSK	1743.0	V	139	323	3.03	1 / 58	19.45	22.43	0.175	30.00	-7.80
15 MHz	QPSK	1717.5	V	163	315	2.89	1 / 58	19.80	22.70	0.186	30.00	-7.30
13 11112	QPSK	1745.0	V	139	327	2.94	1 / 58	19.33	22.27	0.169	30.00	-7.73
	QPSK	1772.5	V	139	323	3.03	1/58	18.86	21.89	0.154	30.00	-8.11
	16-QAM	1717.5	V	163	315	2.89	1 / 58	19.37	22.26	0.168	30.00	-7.74
	π/2 BPSK	1715.0	V	163	315	2.89	1/38	19.97	22.86	0.193	30.00	-7.14
	π/2 BPSK	1745.0	V	139	327	2.94	1 / 26	19.66	22.60	0.182	30.00	-7.40
	π/2 BPSK	1775.0	V	139	323	3.04	1 / 26	19.16	22.20	0.166	30.00	-7.80
10 MHz	QPSK	1715.0	V	163	315	2.89	1/38	19.79	22.68	0.185	30.00	-7.32
	QPSK	1745.0	V	139	327	2.94	1 / 26	19.51	22.46	0.176	30.00	-7.54
	QPSK	1775.0	V	139	323	3.04	1/26	18.85	21.89	0.154	30.00	-8.11
	16-QAM	1715.0	V	163	315	2.89	1 / 38	19.26	22.15	0.164	30.00	-7.85
	π/2 BPSK	1712.5	V	163	315	2.88	1 / 12	19.99	22.88	0.194	30.00	-7.12
	π/2 BPSK	1745.0	V	139	327	2.94	1 / 12	19.62	22.57	0.181	30.00	-7.43
	π/2 BPSK	1777.5	V	139	323	3.05	1 / 18	19.17	22.22	0.167	30.00	-7.78
5 MHz	QPSK	1712.5	V	163	315	2.88	1 / 12	19.89	22.77	0.189	30.00	-7.23
	QPSK	1745.0	V	139	327	2.94	1 / 12	19.55	22.49	0.177	30.00	-7.51
	QPSK	1777.5	V	139	323	3.05	1 / 18	18.89	21.94	0.156	30.00	-8.06
	16-QAM	1712.5	V	163	315	2.88	1 / 12	19.23	22.11	0.163	30.00	-7.89
40 MU-	QPSK (CP-OFDM)	1730.0	V	163	333	2.92	1/6	18.20	21.12	0.129	30.00	-8.88
40 MHz	QPSK (WCP)	1730.0	V	156	48	2.92	1 / 18	15.33	18.25	0.067	30.00	-11.75

Table 7-25. EIRP Data (NR Band n66 - Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT				
Test Report S/N:	Test Dates:	EUT Type:	Dega 116 of 140			
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 116 of 142			
© 2023 ELEMENT			V3.0 1/5/2	2022		



Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
z	QPSK	1720.0	V	201	141	2.90	1 / 99	16.65	19.55	0.090	30.00	-10.45
НИ	QPSK	1745.0	V	192	145	2.94	1 / 50	17.81	20.75	0.119	30.00	-9.25
20 MHz	QPSK	1770.0	V	186	156	3.02	1 / 0	16.32	19.34	0.086	30.00	-10.66
2	16-QAM	1745.0	V	192	145	2.94	1 / 50	17.71	20.65	0.116	30.00	-9.35
Z	QPSK	1717.5	V	201	141	2.89	1 / 0	16.55	19.44	0.088	30.00	-10.56
15 MHz	QPSK	1745.0	V	192	145	2.94	1 / 37	17.81	20.75	0.119	30.00	-9.25
2	QPSK	1772.5	V	186	156	3.03	75 / 0	16.34	19.37	0.086	30.00	-10.63
L	16-QAM	1745.0	V	192	145	2.94	1 / 37	17.69	20.63	0.116	30.00	-9.37
N	QPSK	1715.0	V	201	141	2.89	1 / 0	16.75	19.64	0.092	30.00	-10.36
НИ	QPSK	1745.0	V	192	145	2.94	50 / 0	17.79	20.73	0.118	30.00	-9.27
10 MHz	QPSK	1775.0	V	186	156	3.04	1 / 0	16.40	19.43	0.088	30.00	-10.57
1	16-QAM	1745.0	V	192	145	2.94	1/0	17.75	20.70	0.117	30.00	-9.30
Z	QPSK	1712.5	V	201	141	2.88	25 / 0	16.68	19.57	0.090	30.00	-10.43
1Hi	QPSK	1745.0	V	192	145	2.94	25 / 0	17.73	20.67	0.117	30.00	-9.33
5 MHz	QPSK	1777.5	V	186	156	3.05	1 / 0	16.35	19.40	0.087	30.00	-10.60
	16-QAM	1745.0	V	192	145	2.94	1 / 12	17.65	20.60	0.115	30.00	-9.40
N	QPSK	1711.5	V	201	141	2.88	1 / 0	16.67	19.55	0.090	30.00	-10.45
3 MHz	QPSK	1745.0	V	192	145	2.94	15 / 0	17.72	20.67	0.117	30.00	-9.33
3 N	QPSK	1778.5	V	186	156	3.05	1 / 14	16.03	19.08	0.081	30.00	-10.92
	16-QAM	1745.0	V	192	145	2.94	1 / 14	17.63	20.58	0.114	30.00	-9.42
z	QPSK	1710.7	V	201	141	2.88	1/5	16.62	19.50	0.089	30.00	-10.50
MF	QPSK	1745.0	V	192	145	2.94	1 / 0	17.74	20.68	0.117	30.00	-9.32
1.4 MHz	QPSK	1779.3	V	186	156	3.05	1/5	16.01	19.06	0.081	30.00	-10.94
1	16-QAM	1745.0	V	192	145	2.94	1 / 0	17.67	20.61	0.115	30.00	-9.39
20 MHz	Opposite Pol.	1745.0	Н	175	310	2.84	1 / 50	17.35	20.19	0.105	30.00	-9.81
	WCP	1745.0	V	192	175	2.94	1 / 0	13.38	16.32	0.043	30.00	-13.68

Table 7-26. EIRP Data (LTE Band 66 – Ant2)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT				
Test Report S/N:	Test Dates:	EUT Type:	Page 117 of 142			
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Fage 117 01 142			
© 2023 ELEMENT			V3.0 1/5	/2022		



Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
40 MHz	π/2 BPSK	1730.0	V	114	16	2.92	1 / 54	17.60	20.52	0.113	30.00	-9.48
	π/2 BPSK	1745.0	V	111	21	2.94	1 / 108	18.13	21.07	0.128	30.00	-8.93
	π/2 BPSK	1760.0	V	114	17	2.99	1 / 54	18.56	21.55	0.143	30.00	-8.45
	QPSK	1730.0	V	114	16	2.92	1 / 54	16.54	19.46	0.088	30.00	-10.54
	QPSK	1745.0	V	111	21	2.94	1 / 108	18.07	21.01	0.126	30.00	-8.99
	QPSK	1760.0	V	114	17	2.99	1 / 54	18.40	21.39	0.138	30.00	-8.61
	16-QAM	1760.0	V	114	17	2.99	1 / 54	17.53	20.52	0.113	30.00	-9.48
30 MHz	π/2 BPSK	1725.0	V	114	16	2.91	1 / 80	17.58	20.48	0.112	30.00	-9.52
	π/2 BPSK	1745.0	V	111	21	2.94	1 / 80	18.13	21.07	0.128	30.00	-8.93
	π/2 BPSK	1765.0	V V	114	17	3.00	1 / 80	18.57	21.58	0.144	30.00	-8.42
	QPSK QPSK	1725.0 1745.0	V	114 111	16 21	2.91 2.94	1 / 80 1 / 80	16.52 18.07	19.42 21.02	0.088	30.00	-10.58 -8.98
	QPSK	1745.0	V	114	17	3.00	1 / 80	18.07	21.02	0.126	30.00 30.00	-8.66
	16-QAM	1765.0	V	114	17	3.00	1 / 80	17.72	20.72	0.130	30.00	-9.28
	π/2 BPSK	1703.0	V	114	16	2.90	1 / 79	17.55	20.72	0.113	30.00	-9.56
	π/2 BPSK	1720.0	V	114	21	2.90	1 / 53	18.10	21.04	0.127	30.00	-8.96
	π/2 BPSK	1740.0	V	114	17	3.02	1 / 26	18.45	21.47	0.140	30.00	-8.53
20 MHz	QPSK	1720.0	V	114	16	2.90	1 / 79	16.55	19.45	0.088	30.00	-10.55
20 101112	QPSK	1720.0	V	111	21	2.94	1 / 53	18.06	21.01	0.126	30.00	-8.99
	QPSK	1770.0	V	114	17	3.02	1 / 26	18.31	21.33	0.136	30.00	-8.67
	16-QAM	1770.0	V	114	17	3.02	1 / 26	17.64	20.66	0.116	30.00	-9.34
	π/2 BPSK	1717.5	V	114	16	2.89	1 / 58	17.33	20.22	0.105	30.00	-9.78
	π/2 BPSK	1745.0	V	111	21	2.94	1 / 39	18.06	21.00	0.126	30.00	-9.00
15 MHz	π/2 BPSK	1772.5	V	114	17	3.03	1 / 20	18.51	21.54	0.142	30.00	-8.46
	QPSK	1717.5	V	114	16	2.89	1 / 58	16.43	19.32	0.086	30.00	-10.68
	QPSK	1745.0	V	111	21	2.94	1 / 39	18.06	21.00	0.126	30.00	-9.00
	QPSK	1772.5	V	114	17	3.03	1 / 20	18.32	21.35	0.136	30.00	-8.65
	16-QAM	1772.5	V	114	17	3.03	1 / 20	17.27	20.30	0.107	30.00	-9.70
	π/2 BPSK	1715.0	V	114	16	2.89	1 / 38	17.26	20.15	0.104	30.00	-9.85
	π/2 BPSK	1745.0	V	111	21	2.94	1 / 26	18.03	20.97	0.125	30.00	-9.03
	π/2 BPSK	1775.0	V	114	17	3.04	1 / 13	18.49	21.53	0.142	30.00	-8.47
10 MHz	QPSK	1715.0	V	114	16	2.89	1 / 38	16.36	19.25	0.084	30.00	-10.75
	QPSK	1745.0	V	111	21	2.94	1 / 26	18.00	20.94	0.124	30.00	-9.06
	QPSK	1775.0	V	114	17	3.04	1 / 13	18.36	21.39	0.138	30.00	-8.61
	16-QAM	1775.0	V	114	17	3.04	1 / 13	17.64	20.68	0.117	30.00	-9.32
5 MHz	π/2 BPSK	1712.5	V	114	16	2.88	1/6	17.22	20.10	0.102	30.00	-9.90
	π/2 BPSK	1745.0	V	111	21	2.94	1 / 12	18.06	21.00	0.126	30.00	-9.00
	π/2 BPSK	1777.5	V	114	17	3.05	1 / 12	18.44	21.49	0.141	30.00	-8.51
	QPSK	1712.5	V	114	16	2.88	1/6	16.28	19.16	0.082	30.00	-10.84
	QPSK	1745.0	V	111	21	2.94	1 / 12	18.03	20.97	0.125	30.00	-9.03
	QPSK	1777.5	V	114	17	3.05	1 / 12	18.16	21.20	0.132	30.00	-8.80
	16-QAM	1745.0	V	111	21	2.94	1 / 12	17.22	20.17	0.104	30.00	-9.83
40 MHz	QPSK (CP-OFDM)	1760.0	V	114	17	2.99	1 / 54	17.02	20.01	0.100	30.00	-9.99
	QPSK (WCP)	1760.0		114	17	2.99	1/54	15.79	18.78	0.075	30.00	-11.22

Table 7-27. EIRP Data (NR Band n66 – Ant2)

FCC ID: A3LSMS711B		Approved by: Technical Manager		
Test Report S/N:	Test Dates:	EUT Type:	Page 118 of 142	
1M2304260063-06.A3L	5/30 - 8/4/2023	0 - 8/4/2023 Portable Handset		
© 2023 ELEMENT			V3.0 1/5/2	2022



7.8 Radiated Spurious Emissions Measurements

Test Overview

Radiated spurious emissions measurements are performed using the field strength conversion method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using hybrid (biconical/log) antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

ANSI C63.26-2015 - Section 5.5.4

Test Settings

- 1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
- 2. VBW \geq 3 x RBW
- 3. Span = 1.5 times the OBW
- 4. No. of sweep points > 2 x span / RBW
- 5. Detector = RMS
- 6. Trace mode = Average (Max Hold for pulsed emissions)
- 7. The trace was allowed to stabilize

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 110 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 119 of 142
© 2023 ELEMENT	·	· · · · · · · · · · · · · · · · · · ·	V3.0 1/5/20



Test Setup

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

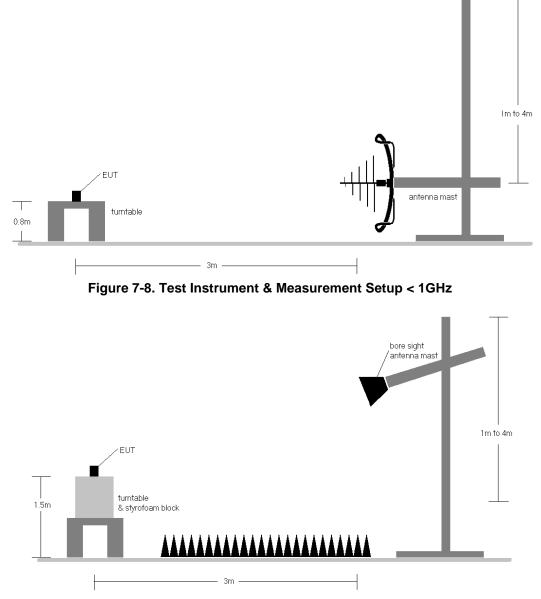


Figure 7-9. Test Instrument & Measurement Setup > 1GHz

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT		
Test Report S/N:	Test Dates:	EUT Type:	Page 120 of 142	
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 120 of 142	
© 2023 ELEMENT	÷		V3.0 1/5/20	



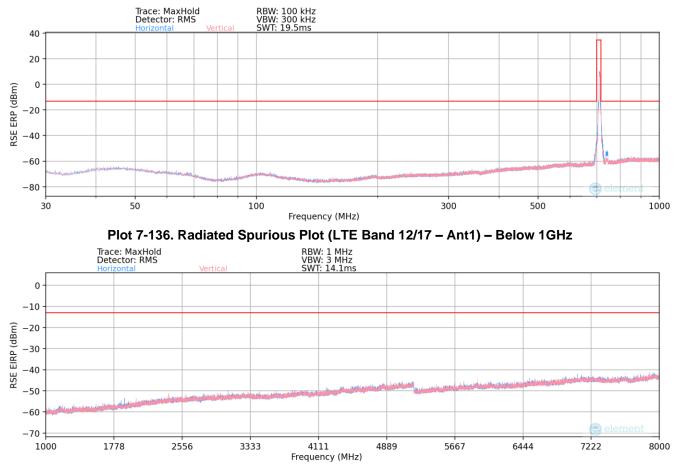
Test Notes

- 1) Field strengths are calculated using the Measurement quantity conversions in ANSI C63.26-2015 Section 5.2.7:
 - a) $E(dB\mu V/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m)$ $b) EIRP (dBm) = E(dB\mu V/m) + 20logD - 104.8; where D is the measurement distance in meters.$
- 2) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 3) This unit was tested with its standard battery.
- 4) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 5) 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.
- 6) The "-" shown in the following RSE tables are used to denote a noise floor measurement.
- 7) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.
- 8) Spurious emission in EN-DC Operating mode with Sub 6GHz NR carrier as well as an LTE carrier (anchor) has been checked and was found to not to be the worst case.

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 121 of 142	
1M2304260063-06.A3L	5/30 - 8/4/2023	0 - 8/4/2023 Portable Handset		
© 2023 ELEMENT			V3.0 1/5	/2022



LTE Band 12/17 – Ant1





Bandwidth (MHz):	10
Frequency (MHz):	707.5
RB / Offset:	1/25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
40.52	Н	-	-	-64.77	-10.11	32.12	-63.13	-13.00	-50.13
149.02	Н	-	-	-67.64	-14.61	24.75	-70.51	-13.00	-57.51
420.67	Н	-	-	-67.50	-5.20	34.30	-60.96	-13.00	-47.96
434.76	н	-	-	-67.88	-5.08	34.04	-61.22	-13.00	-48.22
809.07	Н	-	-	-67.83	0.77	39.94	-55.32	-13.00	-42.32

Table 7-28. Radiates Spurious Data (LTE Band 12/17 – Below 1GHz – Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager				
Test Report S/N:	Test Dates:	EUT Type:	Page 122 of 142				
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Fage 122 01 142				
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Bandwidth (MHz):				-					
Frequency (MHz):		704		1					
RB / Offset:		1 / 25							
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1408.00	H	152.00	35.00	-73.30	-1.53	32.17	-63.09	-13.00	-50.09
2112.00	Н	120.00	204.00	-77.32	2.65	32.33	-62.93	-13.00	-49.93
2816.00	Н	-		-79.22	5.01	32.79	-62.47	-13.00	-49.47
3520.00	Н	-	-	-79.83	6.66	33.83	-61.42	-13.00	-48.42
4224.00	Н	2	324	-80.58	8.25	34.67	-60.59	-13.00	-47.59

Table 7-29. Radiated Spurious Data (LTE Band 12/17 – Low Channel – Ant1)

Field

Strength

[dBµV/m]

30.26

27.64

26.25

25 54

25.11

AFCL

[dB/m]

-1.53

-1.53

-1.53

-1.53

-1.53

EIRP Spurious

Emission Level

[dBm]

-65.00

-67.62

-69.01

-69.72

-70.15

EIRP Spurious

Emission Level

[dBm]

-68.64

-69.12

-69.79

Limit

[dBm]

-13.00

-13.00

-13.00

-13.00

-13.00

Limit

[dBm]

-13.00

-13.00

-13.00

-13.00

Margin

[dB]

-52.00

-54.62

-56.01

-56.72

-57.15

Margin

[dB]

-52.07

-55.64

-56.12

-56.79

Bandwidth (MHz) Frequency (MHz)		10 707.5			
RB / Offset		1/25]	
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	80
1415.00	Н	153.00	189.00	-75.21	T
2122.50	Н	150.00	207.00	-77.83	T
2830.00	Н	-		-79.22	T
3537.50	Н	-	14	-79.93	t
4245 00	Н	-	12	-80.36	t

Table 7-30. Radiated Spurious Data (LTE Band 12/17 – Mid Channel – Ant1)

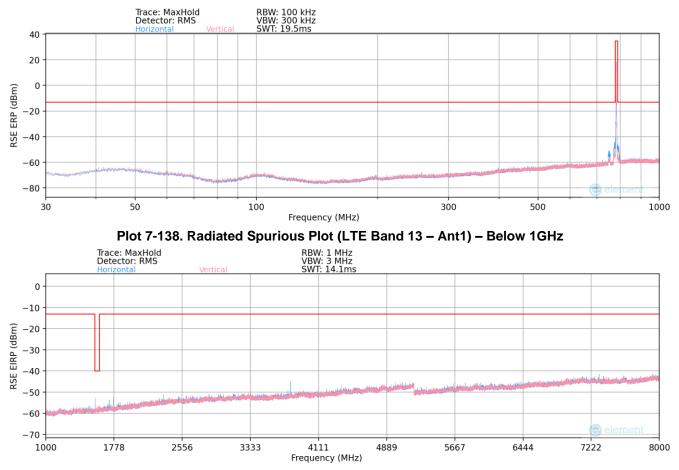
Bandwidth (MHz):		10					
Frequency (MHz):		711					
RB / Offset:		1 / 25					
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	E
1422.00	Н	105.00	184.00	-75.28	-1.53	30.19	
2133.00	Н	-	87	-78.85	-1.53	26.62	
2844.00	Н	-		-79.33	-1.53	26.14	
3555.00	Н	-	12	-80.00	-1.53	25.47	

Table 7-31. Radiated Spurious Data (LTE Band 12/17 – High Channel – Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 123 of 142	ł
1M2304260063-06.A3L 5/30 - 8/4/2023 Portable Handset		Portable Handset	Fage 125 01 142	1
© 2023 ELEMENT			V3.0 1/5	/2022



LTE Band 13 – Ant1





Bandwidth (MHz):	10
Frequency (MHz):	782
RB / Offset:	1/25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
42.07	Н	-	-	-63.94	-9.66	33.40	-61.86	-13.00	-48.86
130.67	Н	-	-	-67.82	-14.00	25.18	-70.07	-13.00	-57.07
280.81	н	-	-	-68.84	-9.22	28.94	-66.31	-13.00	-53.31
447.34	Н	-	-	-67.97	-5.61	33.42	-61.84	-13.00	-48.84
689.24	Н	-	-	-68.05	-1.20	37.75	-57.51	-13.00	-44.51

Table 7-32. Radiated Spurious Data (LTE Band 13 – Below 1GHz – Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT				
Test Report S/N:	Test Dates:	EUT Type:	Page 124 of 142			
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 124 01 142			
© 2023 ELEMENT	•		V3.0 1/5/20			



Bandwidth (MHz):	10
Frequency (MHz):	782
RB / Offset:	1/25

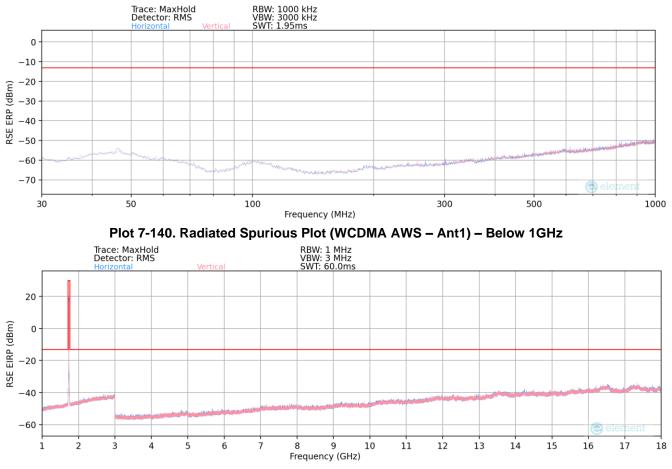
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1564.00	Н	129.00	185.00	-71.63	-1.02	34.35	-60.90	-40.00	-20.90
2346.00	Н	107.00	50.00	-74.97	3.49	35.52	-59.74	-13.00	-46.74
3128.00	Н	-	-	-79.52	5.84	33.32	-61.94	-13.00	-48.94
3910.00	Н	-	-	-80.34	8.32	34.98	-60.28	-13.00	-47.28
4692.00	Н	-	-	-80.80	9.80	36.00	-59.26	-13.00	-46.26

Table 7-33. Radiated Spurious Data (LTE Band 13 – Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT				
Test Report S/N:	Test Dates:	EUT Type:	Dage 125 of 142			
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 125 of 142			
© 2023 ELEMENT			V3.0 1/5	/2022		



WCDMA AWS - Ant1





Mode:	WCDMA RMC								
Channel:	1413								
Frequency (MHz):	1732.6								
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
614.15	Н	-	-	-76.57	-2.09	28.34	-66.91	-13.00	-53.91

Table 7-34. Radiated Spurious Data (WCDMA AWS – Below 1GHz – Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT				
Test Report S/N:	Test Dates:	EUT Type:	Dogo 100 of 140			
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 126 of 142			
© 2023 ELEMENT			V3.0 1/5/202			



Mode:	WCDMA RMC
Channel:	1312
Frequency (MHz):	1712.4

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3424.80	Н	-	-	-79.51	6.90	34.39	-60.87	-13.00	-47.87
5137.20	Н	-	-	-81.24	10.58	36.34	-58.92	-13.00	-45.92
6849.60	Н	-	-	-81.84	13.90	39.06	-56.20	-13.00	-43.20

7-35. Radiated Spurious Data (WCDMA AWS – Low Channel – Ant1)

Mode:	WCDMA RMC
Channel:	1413
Frequency (MHz):	1732.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3465.20	Н	-	-	-79.66	6.81	34.15	-61.10	-13.00	-48.10
5197.80	Н	-	-	-81.04	10.18	36.14	-59.12	-13.00	-46.12
6930.40	Н	-	-	-81.89	13.64	38.75	-56.51	-13.00	-43.51

Table 7-36. Radiated Spurious Data (WCDMA AWS – Mid Channel – Ant1)

Mode:	WCDMA RMC
Channel:	1513
Frequency (MHz):	1752.6

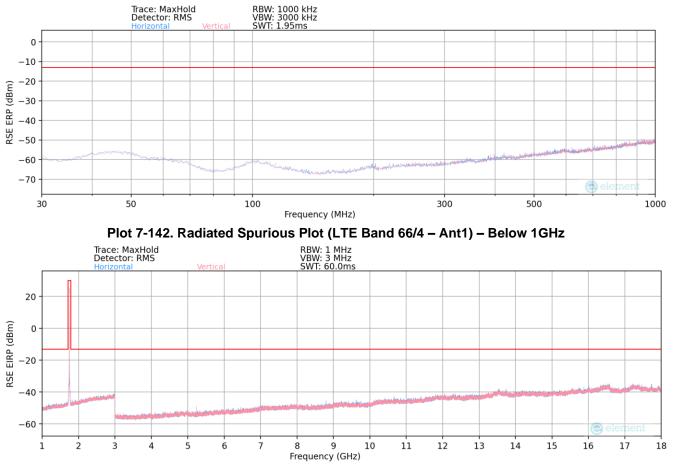
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3505.20	Н	-	-	-79.86	6.93	34.07	-61.18	-13.00	-48.18
5257.80	Н	-	-	-81.11	10.04	35.93	-59.33	-13.00	-46.33
7010.40	Н	-	-	-82.00	14.41	39.41	-55.85	-13.00	-42.85

Table 7-37. Radiated Spurious Data (WCDMA AWS – High Channel – Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 127 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 127 01 142
© 2023 ELEMENT		•	V3.0 1/5/20



LTE Band 66/4 – Ant1





Bandwidth (MHz):		20							
Frequency (MHz):	1770								
RB / Offset:	1 / 50								
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
382.74	V	-	-	-74.82	-6.55	25.63	-69.62	-13.00	-56.62

Table 7-38. Radiated Spurious Data (LTE Band 66/4 – Below 1GHz – Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT			
Test Report S/N:	Test Dates:	EUT Type:	Dage 129 of 142		
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 128 of 142		
© 2023 ELEMENT			V3.0 1/5/202		



Bandwidth (MHz):	20
Frequency (MHz):	1720
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3440.00	V	-	-	-79.67	6.66	33.99	-61.27	-13.00	-48.27
5160.00	V	104.00	36.00	-78.85	9.98	38.13	-57.13	-13.00	-44.13
6880.00	V	-	-	-81.79	12.91	38.12	-57.14	-13.00	-44.14
8600.00	V	-	-	-82.86	16.33	40.47	-54.79	-13.00	-41.79
10320.00	V	-	-	-83.04	19.41	43.37	-51.89	-13.00	-38.89

Table 7-39. Radiated Spurious Data (LTE Band 66/4 – Low Channel – Ant1)

Bandwidth (MHz):	20
Frequency (MHz):	1745
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3490.00	V	-	-	-80.98	6.56	32.58	-62.68	-13.00	-49.68
5235.00	V	291.00	358.00	-77.14	9.50	39.36	-55.90	-13.00	-42.90
6980.00	V	-	-	-81.76	12.83	38.07	-57.19	-13.00	-44.19
8725.00	V	-	-	-82.74	16.27	40.53	-54.72	-13.00	-41.72
10470.00	V	-	-	-83.00	19.66	43.66	-51.60	-13.00	-38.60

Table 7-40. Radiated Spurious Data (LTE Band 66/4 – Mid Channel – Ant1)

Bandwidth (MHz):	20
Frequency (MHz):	1770
RB / Offset:	1 / 50

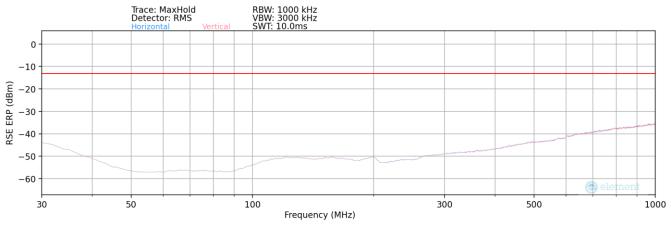
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3540.00	V	-	-	-79.99	6.65	33.66	-61.60	-13.00	-48.60
5310.00	V	108.00	352.00	-76.87	9.97	40.10	-55.16	-13.00	-42.16
7080.00	V	-	-	-81.89	13.08	38.19	-57.06	-13.00	-44.06
8850.00	V	-	-	-82.90	16.82	40.92	-54.34	-13.00	-41.34
10620.00	V	-	-	-83.04	20.03	43.99	-51.27	-13.00	-38.27

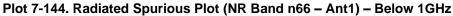
Table 7-41. Radiated Spurious Data (LTE Band 66/4 – High Channel – Ant1)

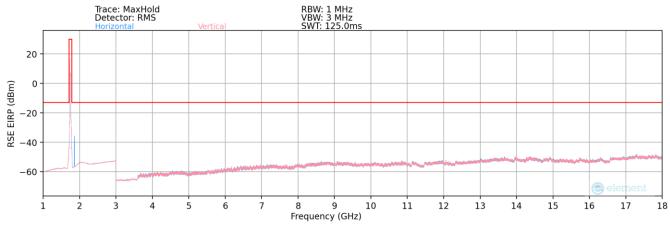
FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT			
Test Report S/N:	Test Dates:	EUT Type:	Page 129 of 142		
1M2304260063-06.A3L	260063-06.A3L 5/30 - 8/4/2023 Portable Handset		Fage 129 01 142		
© 2023 ELEMENT		•	V3.0 1/5	/2022	



NR Band n66 – Ant1









Bandwidth (MHz):	40	
Frequency (MHz):	1745	
RB / Offset:	1/108	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
400.00	Н	-	-	-83.24	23.32	47.08	-48.18	-13.00	-35.18
550.00	Н	-	-	-81.06	26.28	52.22	-43.04	-13.00	-30.04

Table 7-42. Radiated Spurious Data (NR Band n66 – Below 1GHz – Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT			
Test Report S/N:	Test Dates:	EUT Type:	Page 130 of 142		
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 130 01 142		
© 2023 ELEMENT	•		V3.0 1/5/202		



Bandwidth (MHz):	40
Frequency (MHz):	1730
RB / Offset:	1 / 108
Mode:	Stand Alone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3460.00	Н	-	-	-77.65	0.95	30.30	-64.96	-13.00	-51.96
5190.00	Н	-	-	-79.62	4.18	31.56	-63.70	-13.00	-50.70
6920.00	Н	-	-	-80.22	8.70	35.48	-59.78	-13.00	-46.78

Table 7-43. Radiated Spurious Data (NR Band n66 – Low Channel – Ant1)

Frequency [MHz]	Ant. Pol.	Antenna Height [cm]	Turntable Azimuth			
Mode:		Stand Alone				
RB / Offset:	1 / 108					
Frequency (MHz):		1745				
Bandwidth (MHz):		40				

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3490.00	Н	-	-	-78.41	0.97	29.56	-65.70	-13.00	-52.70
5235.00	Н	-	-	-78.47	4.29	32.82	-62.44	-13.00	-49.44
6980.00	Н	-	-	-78.43	8.91	37.48	-57.78	-13.00	-44.78

Table 7-44. Radiated Spurious Data (NR Band n66 – Mid Channel – Ant1)

Bandwidth (MHz):	40
Frequency (MHz):	1760
RB / Offset:	1 / 108
Mode:	Stand Alone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3520.00	Н	-	-	-77.90	0.95	30.05	-65.21	-13.00	-52.21
5280.00	Н	-	-	-79.11	4.12	32.01	-63.25	-13.00	-50.25
7040.00	Н	-	-	-80.13	9.32	36.19	-59.07	-13.00	-46.07

Table 7-45. Radiated Spurious Data (NR Band n66 – High Channel – Ant1)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT			
Test Report S/N:	Test Dates:	EUT Type:	Page 131 of 142		
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Fage 131 01 142		
© 2023 ELEMENT			V3.0 1/5/20		



LTE Band 66/4 - Ant2

2

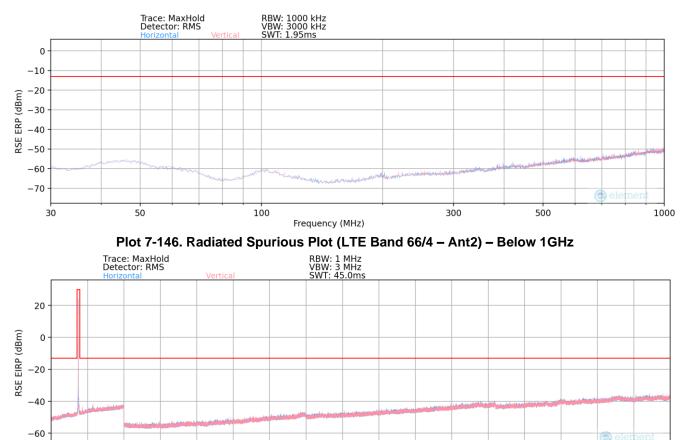
1

. 3 4

5

. 6 7

8





9

Frequency (GHz)

. 10 11

12

. 13 . 14 15

16

17

18

Bandwidth (MHz):		20							
Frequency (MHz):		1745							
RB / Offset:	1/50								
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
40.02	Н	-	-	-64.24	-9.99	32.77	-62.49	-13.00	-49.49
71.47	Н	-	-	-65.54	-13.65	27.81	-67.44	-13.00	-54.44
324.83	Н	-	-	-68.76	-7.83	30.41	-64.85	-13.00	-51.85
546.69	Н	-	-	-67.59	-3.51	35.90	-59.36	-13.00	-46.36
794.34	Н	-	-	-67.35	0.08	39.73	-55.53	-13.00	-42.53

Table 7-46. Radiate Spurious Data (LTE Band 66/4 – Below 1GHz – Ant2)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT				
Test Report S/N:	Test Dates:	EUT Type:	Page 132 of 142			
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Fage 152 01 142			
© 2023 ELEMENT		•	V3.0 1/5/20			



Bandwidth (MHz):	20
Frequency (MHz):	1720
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3440.00	Н	-	-	-78.74	5.31	33.57	-61.68	-13.00	-48.68
5160.00	Н	-	-	-79.37	7.59	35.22	-60.04	-13.00	-47.04
6880.00	Н	-	-	-80.70	11.55	37.85	-57.40	-13.00	-44.40

Table 7-47. Radiated Spurious Data (LTE Band 66/4 – Low Channel – Ant2)

Bandwidth (MHz):	20	
Frequency (MHz):	1745	
RB / Offset:	1 / 50	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3490.00	Н	-	-	-78.46	5.26	33.80	-61.46	-13.00	-48.46
5235.00	Н	-	-	-79.23	7.40	35.17	-60.08	-13.00	-47.08
6980.00	Н	-	-	- <mark>80.05</mark>	11.15	38.10	-57.15	-13.00	-44.15

Table 7-48. Radiated Spurious Data (LTE Band 66/4 – Mid Channel – Ant2)

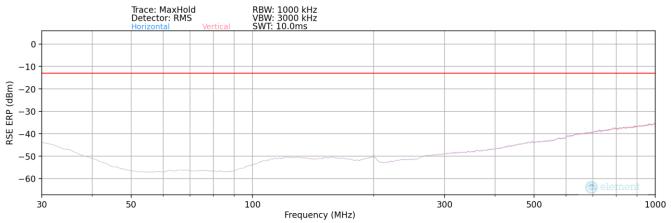
Bandwidth (MHz):		20							
Frequency (MHz):	1770								
RB / Offset:		1 / 50							
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3540.00	Н	-	-	-78.61	5.20	33.59	-61.67	-13.00	-48.67
5310.00	Н	-	-	-79.33	7.76	35.43	-59.83	-13.00	-46.83
7080.00	Н	-	-	-80.40	11.71	38.31	-56.95	-13.00	-43.95

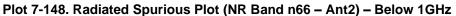
Table 7-49. Radiated Spurious Data (LTE Band 66/4 – High Channel – Ant2)

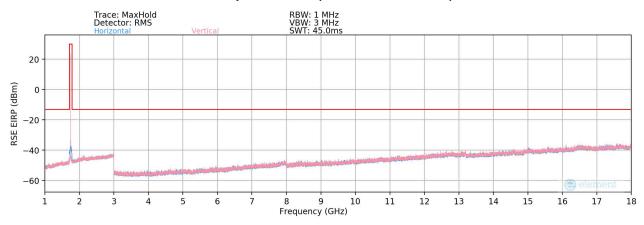
FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 133 of 142	
1M2304260063-06.A3L	0063-06.A3L 5/30 - 8/4/2023 Portable Handset		Fage 155 01 142	
© 2023 ELEMENT			V3.0 1/5/	/2022



NR Band n66 – Ant2









Bandwidth (MHz):		40					
Frequency (MHz):		1745					
RB / Offset:		1/108					
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]
420.00	V	-	-	-85.26	24.08	45.82	-49.44
510.00	V	-	-	-82.63	26.16	50.53	-44.72

Table 7-50. Radiated Spurious Data (NR Band n66 - Below 1GHz - Ant2)

Limit

[dBm]

-13.00

-13.00

Margin

[dB]

-36.44

-31.72

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager				
Test Report S/N:	Test Dates:	EUT Type:	Dogo 124 of 142				
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 134 of 142				
© 2023 ELEMENT V3.0 1/5/20							



Bandwidth (MHz):	40
Frequency (MHz):	1730
RB / Offset:	1 / 108
Mode:	SA

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3460.00	V	-	-	-78.99	5.15	33.16	-62.10	-13.00	-49.10
5190.00	V	-	-	-79.46	7.24	34.78	-60.48	-13.00	-47.48
6920.00	V	-	-	-80.53	11.40	37.87	-57.39	-13.00	-44.39

Table 7-51. Radiated Spurious Data (NR Band n66 – Low Channel – Ant2)

Bandwidth (MHz):	40
Frequency (MHz):	1745
RB / Offset:	1 / 108
Mode:	SA

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3490.00	V	-	-	-78.84	5.26	33.42	-61.84	-13.00	-48.84
5235.00	V	-	-	-79.44	7.40	34.96	-60.29	-13.00	-47.29
6980.00	V	-	-	-80.24	11.15	37.91	-57.34	-13.00	-44.34

Table 7-52. Radiated Spurious Data (NR Band n66 – Mid Channel – Ant2)

RB / Offset:	1 / 108					
Frequency (MHz): RB / Offset:						
Bandwidth (MHz):		40				

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3520.00	V	-	-	-78.75	5.22	33.47	-61.79	-13.00	-48.79
5280.00	V	-	-	-79.27	7.18	34.91	-60.35	-13.00	-47.35
7040.00	V	-	-	-80.35	11.34	37.99	-57.27	-13.00	-44.27

Table 7-53. Radiated Spurious Data (NR Band n66 – High Channel – Ant2)

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	
Test Report S/N:	Test Dates:	EUT Type:	Page 135 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Fage 155 01 142
© 2023 ELEMENT			V3.0 1/5/20



Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Procedure Used

ANSI C63.26-2015 – Section 5.6

Test Settings

- 1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
- 2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
- 3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

Test Notes

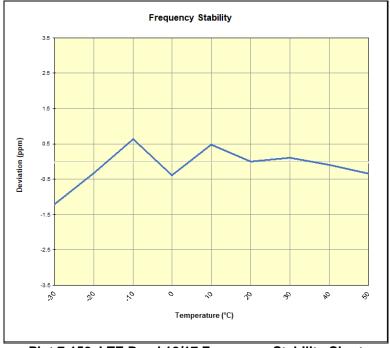
None

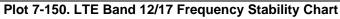
FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	
Test Report S/N:	Test Dates:	EUT Type:	Dage 136 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 136 of 142
© 2023 ELEMENT			V3.0 1/5/20



LTE Band 12/17					
	Operating F	requency (Hz):	707,50	00,000]
	Ref.	Voltage (VDC):	4.	43	1
		Deviation Limit:	± 0.00025%	or 2.5 ppm	
					-
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
		- 30	707,784,031	- <mark>8</mark> 51	-0.0001202
		- 20	707,784,654	-228	-0.0000322
		- 10	707,785,333	451	0.0000637
		0	707,784,605	-277	-0.0000391
100 %	4.43	+ 10	707,785,222	340	0.0000480
		+ 20 (Ref)	707,784,882	0	0.0000000
		+ 30	707,784,954	72	0.0000102
		+ 40	707,784,818	-64	-0.0000090
		+ 50	707,784,644	-238	-0.0000336
Battery Endpoint	3.27	+ 20	707,784,596	- <mark>28</mark> 6	-0.0000404

Table 7-54. LTE Band 12/17 Frequency Stability Data



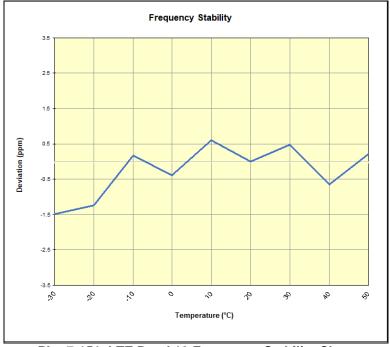


FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	
Test Report S/N:	Test Dates:	EUT Type:	Dage 127 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 137 of 142
© 2023 ELEMENT			V3.0 1/5/20



LTE Band 13						
	Operating F	requency (Hz):	782,00	00,000]	
	Ref.	Voltage (VDC):	4.	43		
		Deviation Limit:	± 0.00025%	or 2.5 ppm		
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)	
		- 30	782,284,819	-1,157	-0.0001479	
		- 20	782,285,011	-965	-0.0001234	
		- 10	782,286,111	135	0.0000173	
		0	782,285,678	-298	-0.0000381	
100 %	4.43	+ 10	782,286,444	468	0.0000598	
		+ 20 (Ref)	782,285,976	0	0.0000000	
		+ 30	782,286,354	378	0.0000483	
		+ 40	782,285,472	-504	-0.0000644	
		+ 50	782,286,147	171	0.0000219	
Battery Endpoint	3.27	+ 20	782,285,999	23	0.0000029	

Table 7-55. LTE Band 13 Frequency Stability Data



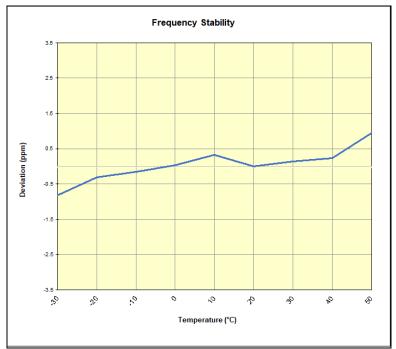


FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	
Test Report S/N:	Test Dates:	EUT Type:	Dama 129 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 138 of 142
© 2023 ELEMENT		·	V3.0 1/5/202



WCDMA /	AWS				_
	Operating F	requency (Hz):	1,732,6	00,000	
	Ref.	Voltage (VDC):	4.4	43	1
		Deviation Limit:	± 0.00025%	or 2.5 ppm	
					-
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
		- 30	1,732,607,141	-1,425	-0.0000822
		- 20	1,732,608,033	-533	-0.0000308
		- 10	1,732,608,287	-279	-0.0000161
		0	1,732,608,618	52	0.0000030
100 %	4.43	+ 10	1,732,609,132	566	0.0000327
		+ 20 (Ref)	1,732,608,566	0	0.0000000
		+ 30	1,732,608,813	247	0.0000143
		+ 40	1,732,608,977	411	0.0000237
		+ 50	1,732,610,201	1,635	0.0000944
Battery Endpoint	3.27	+ 20	1,732,608,169	-397	-0.0000229

Table 7-56. WCDMA AWS Frequency Stability Data



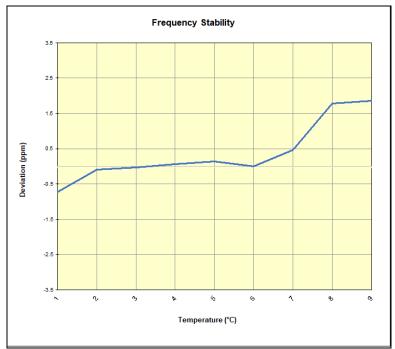
Plot 7-152. WCDMA AWS Frequency Stability Chart

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	
Test Report S/N:	Test Dates:	EUT Type:	Page 139 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Fage 139 01 142
© 2023 ELEMENT			V3.0 1/5/2022



LTE Band 66/4					
	Operating F	requency (Hz):	1,745,0	00,000]
	Ref.	Voltage (VDC):	4.4	43	
		Deviation Limit:	± 0.00025%	or 2.5 ppm	
					-
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
		- 30	1,745,281,596	-1,260	-0.0000722
		- 20	1,745,282,699	-157	-0.0000090
		- 10	1,745,282,789	-67	-0.000038
		0	1,745,282,977	121	0.0000069
100 %	4.43	+ 10	1,745,283,111	255	0.0000146
		+ 20 (Ref)	1,745,282,856	0	0.0000000
		+ 30	1,745,283,666	810	0.0000464
		+ 40	1,745,285,975	3,119	0.0001787
		+ 50	1,745,286,111	3,255	0.0001865
Battery Endpoint	3.27	+ 20	1,745,283,156	300	0.0000172

Table 7-57. LTE Band 66/4 Frequency Stability Data



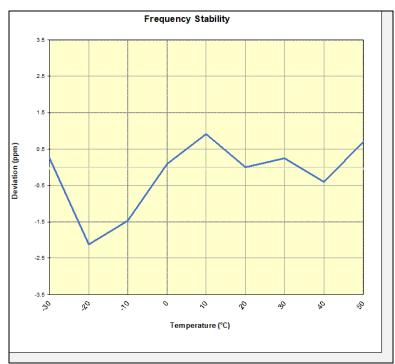


FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	
Test Report S/N:	Test Dates:	EUT Type:	Dage 140 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 140 of 142
© 2023 ELEMENT		·	V3.0 1/5/2



NR Band n66					
	Operating F	requency (Hz):	1,745,0	00,000]
	Ref.	Voltage (VDC):	4.4	43	1
		Deviation Limit:	± 0.00025%	or 2.5 ppm	
-					-
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
		- 30	1,745,013,023	457	0.0000262
		- 20	1,745,008,871	-3,695	-0.0002117
		- 10	1,745,010,002	-2,564	-0.0001469
		0	1,745,012,718	152	0.0000087
100 %	4.43	+ 10	1,745,014,164	1,598	0.0000916
		+ 20 (Ref)	1,745,012,566	0	0.0000000
		+ 30	1,745,012,993	427	0.0000245
		+ 40	1,745,011,868	-698	-0.0000400
		+ 50	1,745,013,777	1,211	0.0000694
Battery Endpoin	3.27	+ 20	1,745,017,311	4,745	0.0002719

Table 7-58. NR Band n66 Frequency Stability Data



Plot 7-154. NR Band n66 Frequency Stability Chart

FCC ID: A3LSMS711B		PART 27 MEASUREMENT REPORT	
Test Report S/N:	Test Dates:	EUT Type:	Dage 141 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 141 of 142
© 2023 ELEMENT		·	V3.0 1/5/20



8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMS711B** complies with all the requirements of Part 27 of the FCC rules.

FCC ID: A3LSMS711B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 142 of 142
1M2304260063-06.A3L	5/30 - 8/4/2023	Portable Handset	Page 142 of 142
© 2023 ELEMENT			V3.0 1/5/2022