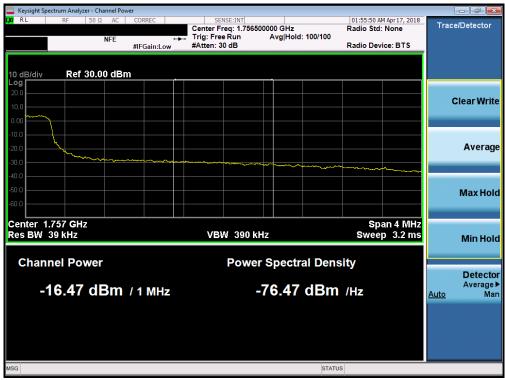


	Spectrum Analyz					1		- 6
X/RL	RF	50 Ω AC	CORREC	SENS	#Av Run	g Type: RMS	01:55:42 AM Apr 17, 2018 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	Frequency
10 dB/div	Ref 25	.00 dBm	IFGain:Low	Atten: 36 c	В	Mkr1	1.755 016 GHz -24.34 dBm	Auto Tun
15.0								Center Fre 1.755000000 GF
5.00	· · · · · · · · · · · · · · · · · · ·	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						Start Fre 1.753000000 GF
25.0					1		DL1 -13.00 dBm	<b>Stop Fre</b> 1.757000000 GH
45.0								CF Ste 400.000 ki <u>Auto</u> Mi
5.0								Freq Offs
	1.755000 (	GHz					Span 4.000 MHz	Scale Typ
	№ 51 kHz		#VBV	V 160 kHz			2.000 ms (1001 pts)	
SG						STATU	S	

Plot 7-105. Upper Band Edge Plot (Band 4 - 5.0MHz QPSK - Full RB Configuration)



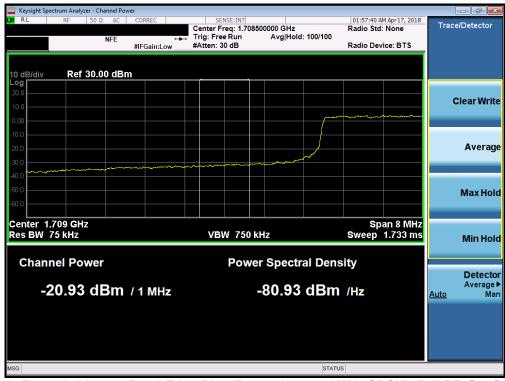
Plot 7-106. Extended Upper Band Edge Plot (Band 4 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 70 of 100
1M1803140041-03-R3.ZNF	3/14 - 5/17/2018	Portable Handset		Page 72 of 123
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RL	RF	50 Ω	AC	CORREC		SE	NSE:INT			01:57:33 /	AM Apr 17, 2018	_	
		١	IFE	PNO: W IFGain:	/ide 🖵	Trig: Fre Atten: 3		#Avg T	ype: RMS	TRA T)	CE 1 2 3 4 5 6 (PE A WWWWW DET A N N N N N	Fr	equency
0 dB/div	Ref 2	5.00 d	Bm	IFGain:	LOW	Atten: 0			Mkr	1 1.709	912 GHz .23 dBm		Auto Tun
15.0													Center Fre
5.00								ny yr meddala	ne-anne-annaith	orogony-afternora	and the second	1.70	<b>Start Fre</b> 6000000 GI
25.0											DL1 -13.00 dBm	1.71	<b>Stop Fr</b> 4000000 GI
35.0 Wmm <sup>Ww</sup> Wm 45.0	wyn, Marw	Str.W. Car	w gran	manghalla	mutantrak	allelle ale d						<u>Auto</u>	CF Ste 800.000 kl M
55.0													Freq Offs 01
65.0													Scale Typ
Center 1.7 <sup>4</sup> Res BW 1					#VBW	300 kHz			Sweep	Span 3 4.000 ms	8.000 MHz (1001 pts)	Log	Ŀ

Plot 7-107. Lower Band Edge Plot (Band 4/66 - 10.0MHz QPSK - Full RB Configuration)



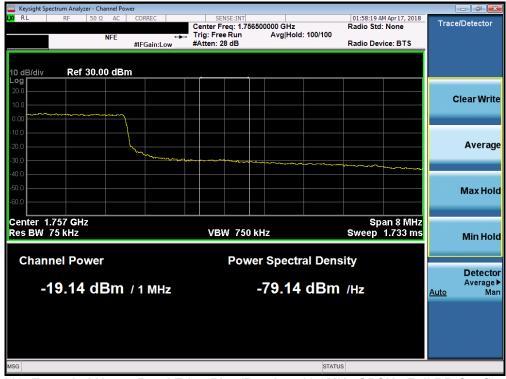
Plot 7-108. Extended Lower Band Edge Plot (Band 4/66 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 72 of 102
1M1803140041-03-R3.ZNF	3/14 - 5/17/2018	Portable Handset		Page 73 of 123
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Keysight Spect												- Ø 🗾
XI RL	RF	50 Ω AC	PNO:	Wide 🕞			#Avg Typ	e:RMS	TRA	M Apr 17, 2018 CE 1 2 3 4 5 6 (PE A WWWWW DET A N N N N N	Fre	equency
0 dB/div	Ref 25.	00 dBn	IFGaiı 1	n:Low	Atten: 3			Mkr1	1.755 (	032 GHz 48 dBm		Auto Tun
15.0												<b>enter Fre</b> 000000 G⊦
5.00	Alterior Agenti	******************	Manhar M	est, n <sup>a</sup> lait <sub>stan</sub>							1.751	Start Fre
25.0					Mulwa	1				DL1 -13.00 dBm	1.759	<b>Stop Fr</b> 000000 GI
15.0								and a stand of the stand	man and	nder-rennender	<u>Auto</u>	CF Ste 800.000 kl M
5.0											F	F <b>req Offs</b> 0
enter 1.75	55000 0								Span			Scale Typ
Res BW 1				#VBW	300 kHz			Sweep 4	span a 1.000 ms	3.000 MHz (1001 pts)		_
SG								STATU	s			

Plot 7-109. Upper Band Edge Plot (Band 4 - 10.0MHz QPSK - Full RB Configuration)



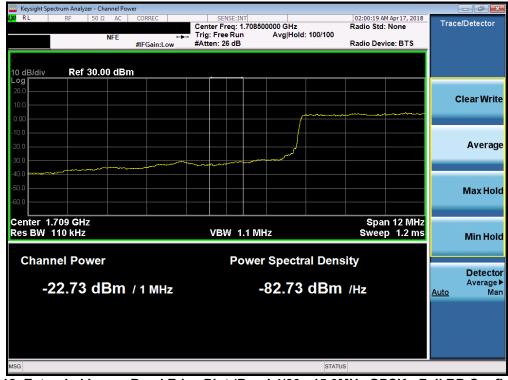
Plot 7-110. Extended Upper Band Edge Plot (Band 4 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕕 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dago 74 of 100
1M1803140041-03-R3.ZNF	3/14 - 5/17/2018	Portable Handset		Page 74 of 123
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U RL	RF	50 Ω	AC	CORREC		SEI	VSE:INT			02:00:14 A	M Apr 17, 2018	-	
		1	NFE	PNO: Wi IFGain:L	de 🖵 ow	Trig: Fre Atten: 36		#Avg Ty	pe:RMS	TRAI TY D	CE 1 2 3 4 5 6 PE A WWWW ET A N N N N N	Frequ	iency
0 dB/div	Ref 2	5.00 d	Bm						Mkr	1 1.709 8 -26.	320 GHz 98 dBm	AL	ito Tun
15.0												Cer 1.71000	i <b>ter Fre</b> 0000 GH
5.00								un and and and and and and and and and an				<b>Si</b> 1.70400	art Fre
25.0							1 .				DL1 -13.00 dBm	<b>S</b> i 1.71600	<b>op Fr</b> 0000 G
15.0 <mark>~~~</mark>		~~~~		~~~~~	~~~~~~								CF Ste 2000 M M
55.0												Fre	<b>q Offs</b> 0
65.0												Sc	ale Ty
enter 1 Res BW				#	VBW 4	470 kHz			Sweep	Span 1 1.000 ms	2.00 MHz (1001 pts)	Log	L

Plot 7-111. Lower Band Edge Plot (Band 4/66 - 15.0MHz QPSK - Full RB Configuration)



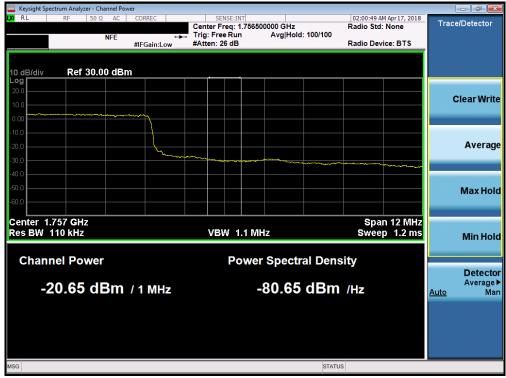
Plot 7-112. Extended Lower Band Edge Plot (Band 4/66 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 75 of 100
1M1803140041-03-R3.ZNF	3/14 - 5/17/2018	Portable Handset		Page 75 of 123
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	pectrum Analyzer									- # <b>*</b>
X/RL	RF	50 Ω AC NFE	CORREC PNO: Wide			#Avg Typ	e: RMS	02:00:42 AM Apr 1 TRACE 2 TYPE A M DET A N	3456	Frequency
10 dB/div	Ref 25.0	00 dBm	IFGain:Low	Atten: 36	ub		Mkr1	1.755 420 -24.77	GHz	Auto Tun
15.0										<b>Center Fre</b> 1.755000000 GH
5.00		**************************************	with man							Start Fre 1.749000000 G⊦
25.0				- how	1				3.00 dBm	<b>Stop Fre</b> 1.761000000 GF
35.0									<u></u>	CF Ste 1.200000 MH <u>uto</u> Ma
55.0										Freq Offs 0 I
	.755000 G	Hz						Span 12.00	MHz La	Scale Typ
<b>#Res B</b> ₩ <sup>ISG</sup>	/ 150 kHz		#VBV	V 470 kHz			Sweep	1.000 ms (100	1 pts)	

Plot 7-113. Upper Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)



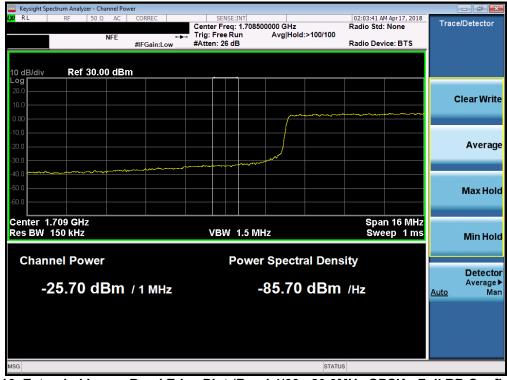
Plot 7-114. Extended Upper Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 76 of 100
1M1803140041-03-R3.ZNF	3/14 - 5/17/2018	Portable Handset		Page 76 of 123
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RL	RF	50 Ω	AC CORF	EC	SEI	NSE:INT	#0	DMC		Apr 17, 2018	Frequ	encv
		NF		): Wide 🕞 ain:Low	Trig: Free Atten: 36		#Avg Typ	6: KIVIS	TYP	1 2 3 4 5 6 A WWWW A N N N N N		
0 dB/div	Ref 2	5.00 dB	m					Mkr1	1.710 0 -29.	00 GHz 59 dBm	Au	to Tur
15.0											Cent 1.710000	e <b>r Fre</b> 000 GH
5.00								~~~~~	<del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Sta 1.702000	art Fre
5.0						1.1				DL1 -13.00 dBm	<b>St</b> 1.718000	o <b>p Fr</b> 000 G
15.0 <b></b>	y y y y y y y y y y y y y y y y y y y	way and	memoria	~~~~	mp							CF Ste 000 M M
5.0											Fre	q Offs 0
5.0											Sca	le Ty
	1.710000 N 200 kH			#VBW	620 kHz			Sweep 1	Span 10 1.000 ms (*	2.00 191112	Log	L

Plot 7-115. Lower Band Edge Plot (Band 4/66 - 20.0MHz QPSK - Full RB Configuration)



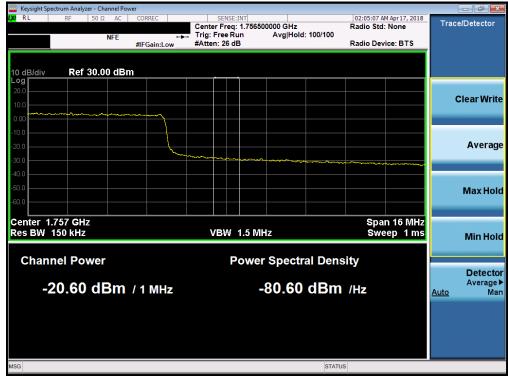
Plot 7-116. Extended Lower Band Edge Plot (Band 4/66 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 77 of 100
1M1803140041-03-R3.ZNF	3/14 - 5/17/2018	Portable Handset		Page 77 of 123
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	Spectrum Analyzer									
XI RL	RF	50 Ω AC NFE	CORREC			#Avg Typ	e:RMS	02:05:02 AM A TRACE TYPE DET	Apr 17, 2018 <b>1 2 3 4 5</b> 6 A WWWWW A N N N N N	Frequency
10 dB/div	Ref 25.0	00 dBm	IFGain:Low	Atten: 36	dB		Mkr1	1.755 54		Auto Tur
15.0										Center Fre 1.755000000 GH
5.00		****							.1 -13.00 dBm	<b>Start Fre</b> 1.747000000 GF
25.0					1 minor	and the second second				<b>Stop Fre</b> 1.763000000 GH
35.0 <b></b> 45.0 <b></b>										CF Ste 1.600000 Mł <u>Auto</u> Ma
55.0										Freq Offs 0 F
-65.0	1.755000 G	Hz						Span 16	.00 MHz	Scale Typ
#Res BV	N 200 kHz		#VBW	/ 620 kHz			Sweep	.000 ms (1	001 pts)	
SG							STATU	5		

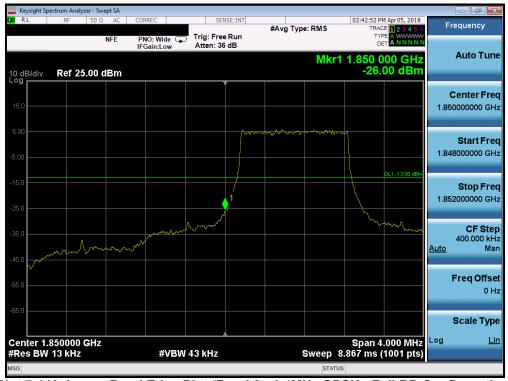
Plot 7-117. Upper Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)



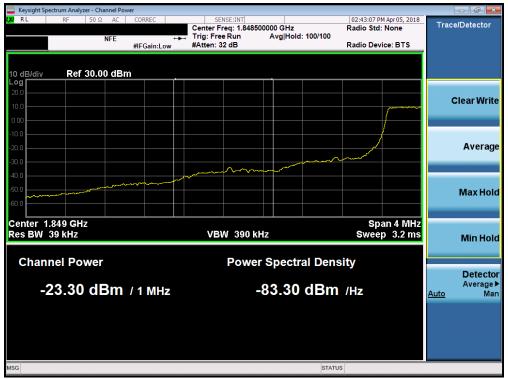
Plot 7-118. Extended Upper Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 79 of 100
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Plot 7-119. Lower Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)



Plot 7-120. Lower Extended Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 70 of 100
1M1803140041-03-R3.ZNF	3/14 - 5/17/2018	Portable Handset		Page 79 of 123
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Keysight S	pectrum Analyzer - Swep		0050		ICE THE			02.42.54.04			
KL	RF 50 Ω	NFE PI	RREC NO: Wide 😱 Gain:Low	Trig: Free Atten: 36		#Avg Typ	e: RMS	TYPE	1 2 3 4 5 6 A WWWWW A N N N N N	F	requency
0 dB/div og	Ref 25.00 d						Mkr1	1.910 00 -24.8	08 GHz 5 dBm		Auto Tur
15.0											Center Fre 0000000 GF
i.00		᠆ᡐ᠊ᠿᡅᡂᢇᡘᢛᡐᡄ								1.90	<b>Start Fre</b> 8000000 Gi
5.0					1				L1 -13.00 dBm	1.91	<b>Stop Fre</b> 2000000 GI
35.0 <b>~~~~</b>	Amm				hore	wwww	burn	m	www	<u>Auto</u>	<b>CF Ste</b> 400.000 kH Ma
i5.0											Freq Offs 0 I
	.910000 GHz							Span <u>4</u> .		Log	Scale Typ
	/ 13 kHz		#VBW	43 kHz				3.867 ms (1	001 pts)		
G							STATUS	S			

Plot 7-121. Upper Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)



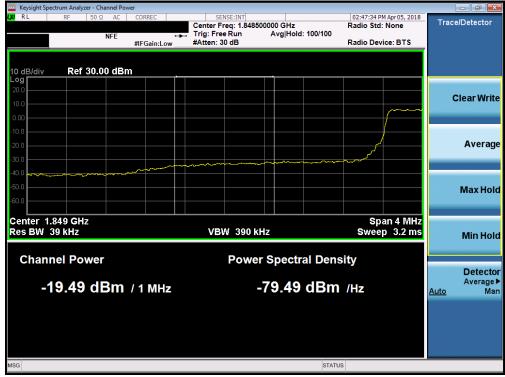
Plot 7-122. Upper Extended Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 90 of 102
1M1803140041-03-R3.ZNF	3/14 - 5/17/2018	Portable Handset		Page 80 of 123
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	Spectrum Analyz	er - Swept SA								
X/RL	RF	50 Ω AC NFE	CORREC PNO: Wide			#Avg Typ	e: RMS	02:47:28 PM Apr 05, 20 TRACE 1 2 3 4 TYPE A WWW DET A N N	5 6	Frequency
10 dB/div	Ref 25	.00 dBm	IFGam:Low	Atten. or			Mkr	1.849 996 GI -24.39 dB	lz m	Auto Tun
15.0									1.8	Center Fre
-5.00								DL1 -13.00		<b>Start Fre</b> 348000000 GH
-15.0					1			0.1-13.00		Stop Fre 352000000 G⊢
35.0 <b></b>		~~~~~							Auto	CF Ste 400.000 kH Ma
55.0										Freq Offso 0 ⊦
-65.0	1.850000 (							Shop 4 000 BA	H7 Log	Scale Typ
	V 30 kHz	σπZ	#VBW	/ 91 kHz			Sweep 2	Span 4.000 M 2.000 ms (1001 p		
ISG							STATU	IS		

Plot 7-123. Lower Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)



Plot 7-124. Lower Extended Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 91 of 102
1M1803140041-03-R3.ZNF	3/14 - 5/17/2018	Portable Handset		Page 81 of 123
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Keysight Sp		zer - Swept SA									
<u> </u>	RF	50 Ω AC	CORREC		NSE:INT	#Avg Typ	e: RMS	TRAC	M Apr 05, 2018	F	equency
		NFE	PNO: Wide 🖵 IFGain:Low	Trig: Free Atten: 36				TYF			
							Mkr1	1.910 0	00 GHz		Auto Tun
I0 dB/div	Ref 2:	5.00 dBm						-23.7	19 dBm		
					ĺ					(	Center Fre
15.0										1.91	0000000 GH
5 00 A											
5.00		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	wanne	$\sim$							Start Fre
5.00										1.90	8000000 GH
									DL1 -13.00 dBm		
15.0					1						Stop Fre
25.0				\ \	2					1.91	2000000 GH
23.0					$\sim\sim\sim$		A-00-00				
35.0								~~~~~	m		CF Ste 400.000 kl
										<u>Auto</u>	Ma
45.0											
5.0											Freq Offs
											01
65.0											
											Scale Typ
enter 1.		GHz						Span 4	.000 MHz	Log	L
Res BW	30 kHz		#VBW	91 kHz			Sweep 2	.000 ms (	1001 pts)		
SG							STATUS				

Plot 7-125. Upper Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)



Plot 7-126. Upper Extended Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	💽 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 92 of 102
1M1803140041-03-R3.ZNF	3/14 - 5/17/2018	Portable Handset		Page 82 of 123
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	pectrum Analyz										
L <mark>XI</mark> RL	RF	50 Ω AC	CORREC		NSE:INT	#Avg Typ	e: RMS		123456	Fr	equency
		NFE	PNO: Wide IFGain:Low	Trig: Free Atten: 36				TYPE	A WWWWW A N N N N N		
							Mkr'	1 1.850 00	00 GHz		Auto Tune
10 dB/div Log	Ref 25	.00 dBm						-26.4	0 dBm		
					Ĭ					c	Center Fred
15.0										1.85	0000000 GH
5.00											
5.00							~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				Start Free
-5.00										1.84	8000000 GH:
								C	L1 -13.00 dBm		
-15.0											Stop Free
-25.0					1					1.85	2000000 GH
20.0					<b>X</b>						
-35.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~^	~~~~~							CF Stej 400.000 kH
										<u>Auto</u>	Mai
-45.0											
-55.0										I	Freq Offse
											он
-65.0											Scale Type
	.850000	GHz	-#\/D\\/				Burnon	Span 4.	000 MHz	Log	<u>Lir</u>
	/ 51 kHz		#VBW	160 kHz			Sweep	2.000 ms (1	oor pts)		
							STATE				

Plot 7-127. Lower Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-128. Lower Extended Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 92 of 102
1M1803140041-03-R3.ZNF	3/14 - 5/17/2018	Portable Handset		Page 83 of 123
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		- Swept SA										
LXVI RL	RF	50 Ω AC NFE	PNO:	Wide 🗔			#Avg Typ	e:RMS	TRA	PM Apr 05, 2018 CE 1 2 3 4 5 6 (PE A WWWWW DET A NNNNN	F	requency
10 dB/div Log	Ref 25.0	00 dBm	IFGair	n:Low	Atten: 36	αB		Mkı	1 1.910	004 GHz .23 dBm		Auto Tune
15.0												Center Fred 0000000 GH
-5.00		van frank	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		~						1.90	Start Free 8000000 GH
-15.0						1				DL1 -13.00 dBm	1.91	<b>Stop Fre</b> 2000000 GH
35.0						~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			·····		<u>Auto</u>	CF Ste 400.000 kH Ma
55.0												FreqOffse 0⊦
-65.0		Hz							Span 4	4.000 MHz		Scale Typ <u>Li</u>
#Res BW 5	1 KHZ			#VBW	160 kHz			Sweep		(1001 pts)		

Plot 7-129. Upper Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)



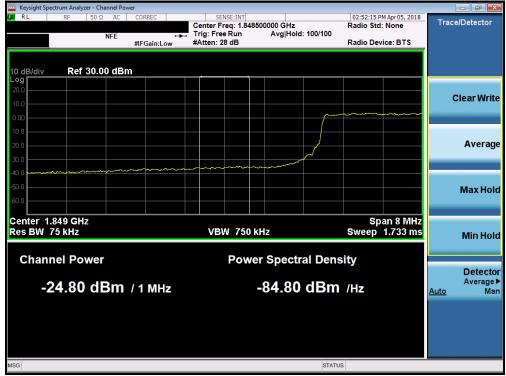
Plot 7-130. Upper Extended Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 94 of 102
1M1803140041-03-R3.ZNF	3/14 - 5/17/2018	Portable Handset		Page 84 of 123
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Keysight S RL	Spectrum Analyz RF	er - Swept SA 50 Ω AC	CORREC	SENSE:I	NT.		02:52:07 PM Apr 05, 2018	
	N	NFE	PNO: Wide		#Avg T	ype: RMS	TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNNN	Frequency
0 dB/div	Ref 25	.00 dBm	II Gain.Low			Mkr	1 1.849 992 GHz -29.45 dBm	Auto Tun
15.0								Center Fre 1.850000000 GF
5.00						n n n n n n n n n n n n n n n n n n n	DL1 -13.00 dBm	Start Fre 1.846000000 GF
25.0				1, d			UL 1 13.00 dbm	<b>Stop Fre</b> 1.854000000 GH
35.0 <b>~~~^</b> 45.0 <b>~~</b>	ريان وروياني مريدين (موروياني) مريدين (موروياني)	and the second	manneradoriale	2 mar and				CF Ste 800.000 kH <u>Auto</u> Ma
5.0								Freq Offs 0 F
65.0								Scale Typ
	I.850000 ( V 100 kHz		#VBW	300 kHz		Sweep	Span 8.000 MHz 4.000 ms (1001 pts)	
SG						STATU	JS	

Plot 7-131. Lower Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)



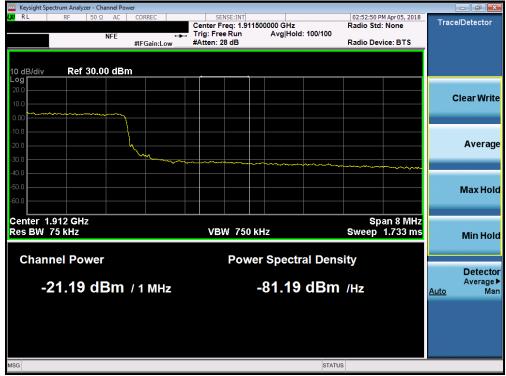
Plot 7-132. Lower Extended Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 95 of 102
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	pectrum Analy										
X/RL	RF	50 Ω AC	CORREC		NSE:INT	#Avg Typ	e: RMS	TRAC	Apr 05, 2018 E 1 2 3 4 5 6	Freq	uency
		NFE	PNO: Wide 🖵 IFGain:Low	Trig: Free Atten: 36				DE			
10 dB/div	Dof 26	i.00 dBm					Mkr'	1 1.910 0 -27	32 GHz 96 dBm	A	uto Tun
	Kel Zu	.oo uBiii		, 	1						
15.0											nter Fre
15.0										1.9100	00000 GH
5.00	water and the street	10 - Martin Mart	W. W	n.							=
											<b>tart Fre</b>
-5.00										1.0000	
15.0									DL1 -13.00 dBm		top Fre
				he	. 1						00000 GH
25.0				1	with the second second						
35.0						MALANANANA	hand alon of	the market was a start of the	- white way we		CF Ste
										Auto	Ma
-45.0											
-55.0										Fr	eq Offse
											0 H
-65.0											ale Typ
	.910000 V 100 kHz		#\/B\A	/ 300 kHz			Cwoon	Span 8 4.000 ms (	.000 MHz	Log	Li
IRCES DV	V 100 KH		#VDV	7 300 KH2			Sweep		TOOT PLS)		

Plot 7-133. Upper Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)



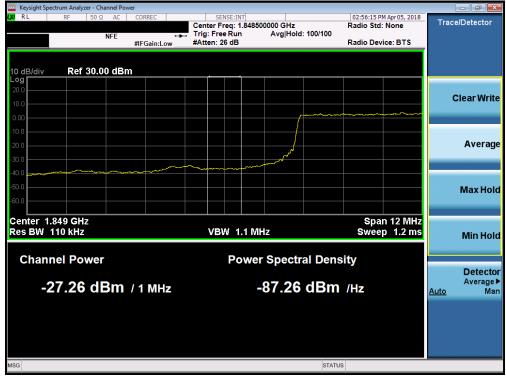
Plot 7-134. Upper Extended Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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RL	RF	zer - Swept 50 Ω	AC	CORREC		SE	NSE:INT			02:56:09	PM Apr 05, 2018		
		NF			ide 🖵	Trig: Fre Atten: 3	e Run	#Avg Ty	/pe: RMS	TRA	CE 1 2 3 4 5 6 PE A WWWWWW A NNNNN	Frequ	iency
0 dB/div	Ref 25	.00 dB	m						Mkr	1 1.850 -30	000 GHz .78 dBm	Αι	ıto Tun
15.0													n <b>ter Fre</b> 0000 GH
5.00									~~~~~	on the second	DL1 -13.00 dBm		t <b>art Fre</b> 0000 G⊦
25.0							1					<b>S</b> 1.85600	top Fre 0000 G⊦
35.0 •	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~	م م	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	*****	- when the							CF Ste 0000 MH Ma
i5.0 ———												Fre	e <b>q Offs</b> 0 F
65.0													ale Typ
	.850000 ( 150 kHz			-	¢VB₩	470 kHz	:		Sweep	Span ′ 1.000 ms	12.00 MHz (1001 pts)	Log	L

Plot 7-135. Lower Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-136. Lower Extended Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 97 of 100
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9       1	Keysight Spectrum Analy									_	-   @
Internet         Mkr1 1.910 024 GHz -26.69 dBm         Auto Tu           0 gB/div         Ref 25.00 dBm         Center Fit         1.9100000 GHz         Center Fit           0 g	RL RF			Trig: Free	Run	#Avg Typ	e: RMS	TRAC	E 1 2 3 4 5 6	Fred	luency
50       Center Fi         50       Center Fi         50       Cut - 1300 dBi         50       <	0 dB/div Ref 25		IFGain:Low	Atten: 36	dB		Mkr1	1.910 0	24 GHz	A	uto Tur
Start Fr           00         011.1300.088           50         011.1300.088 <td>15.0</td> <td></td>	15.0										
6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	.00 <del></del>	han han had	which where the second se	M L							
5.0     Image: Constraint of the second	5.0				1				DL1 -13.00 dBm		-
50 50 enter 1.910000 GHz Span 12.00 MHz Log											CF Ste 00000 M M
enter 1.910000 GHz Scale Ty										Fr	e <b>q Offs</b> 0
Res BW 150 kHz #VBW 470 kHz Sweep 1.000 ms (1001 pts)	enter 1.910000							Span 1	2.00 MHz		cale Typ
	Res BW 150 kH	Z	#VBW	470 kHz			Sweep 1	.000 ms (	1001 pts)		

Plot 7-137. Upper Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)



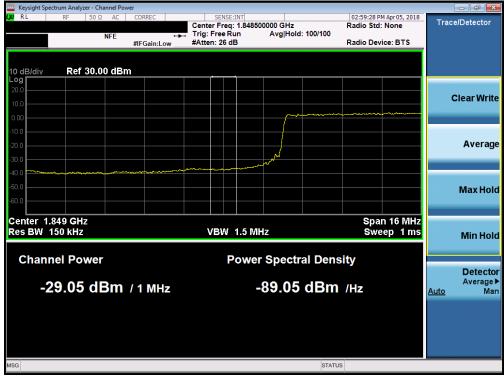
Plot 7-138. Upper Extended Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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	pectrum Analy									
L <mark>XI</mark> RL	RF	50 Ω AC	CORREC	SENSE		#Avg Typ	e: RMS	02:59:22 PM Apr 05 TRACE 1 2	3456	Frequency
		NFE	PNO: Wide 🖵 IFGain:Low	Trig: Free R Atten: 36 d					NNNN	
10 dB/div	Ref 25	.00 dBm					Mkr	1 1.849 968 ( -32.48 d	GHz IBm	Auto Tune
				Ť						Center Free
15.0									1	.850000000 GH
5.00					_^^	-	warmen war		~~~~	
-5.00									1	Start Free .842000000 GH
-5.00					1			DL1 -13	.00 dBm	
-15.0										Stop Fre
-25.0									1	.858000000 GH
-35.0					<sup>ل</sup> کړ					CF Ste
~~~~	march	A Terrin Maril	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	have such that					Aut	1.600000 MH <u>to</u> Ma
-45.0										
-55.0										Freq Offse 0 H
-65.0										
										Scale Typ
	.850000							Span 16.00	MHz Log	a <u>Li</u>
#Res BW	/ 200 kHz	4	#VBW	620 kHz			Sweep Statu	1.000 ms (1001	pts)	

Plot 7-139. Lower Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)



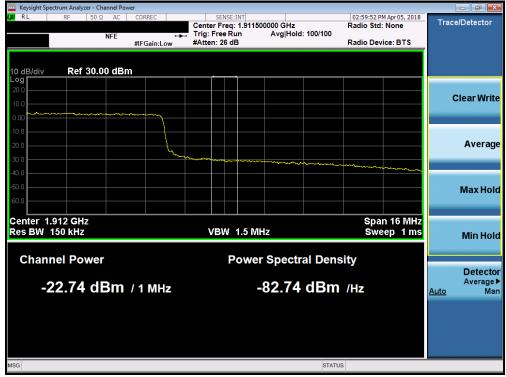
Plot 7-140. Lower Extended Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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	pectrum Analy	zer - Swept SA									
X/RL	RF	50 Ω AC	CORREC	Trig: Free		#Avg Typ	e: RMS	TRAC	M Apr 05, 2018 E 1 2 3 4 5 6 PE A WWWW T A N N N N N	Freq	uency
10 dB/div	Ref 25	i.00 dBm	IFGain:Low	Atten: 36	dB		Mkr1	1.910 0		A	uto Tun
15.0											nter Fre 100000 GH
5.00		and the second	and a second	$\sim$							tart Fre
25.0					1				DL1 -13.00 dBm		t <b>op Fre</b> 10000 GH
35.0 <b></b>						man	and the second s	A. Marthan	www.www.		CF Ste 10000 Mł Ma
55.0										Fre	e <b>q Offs</b> 0 I
65.0	.910000	GHz						Span 1	6.00 MHz	Sc Log	ale Typ L
	/ 200 kHz		#VBW	620 kHz			Sweep	1.000 ms (	1001 pts)		
SG							STATU	IS			

Plot 7-141. Upper Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-142. Upper Extended Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 00 of 102
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# 7.5 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**

KDB 971168 D01 v03 - Section 5.7.1

#### **Test Settings**

- 1. The signal analyzer's CCDF measurement profile is enabled
- 2. Frequency = carrier center frequency
- 3. Measurement BW > Emission bandwidth of signal
- 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.

#### Test Setup

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



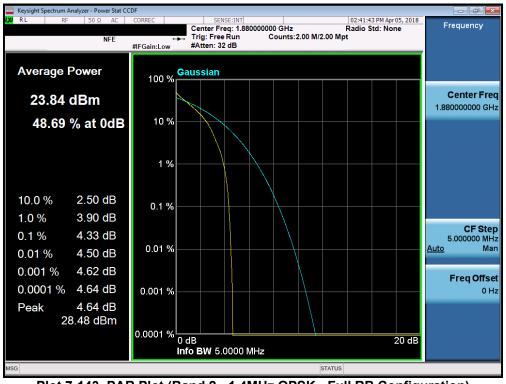
Figure 7-4. Test Instrument & Measurement Setup

### Test Notes

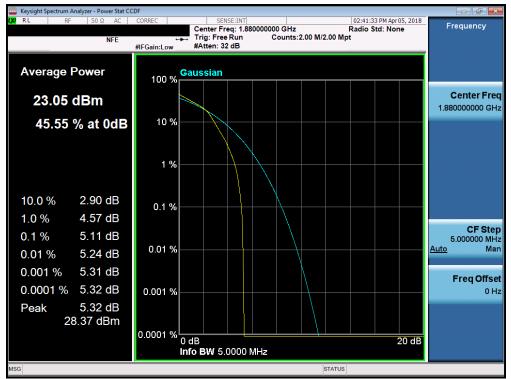
None.

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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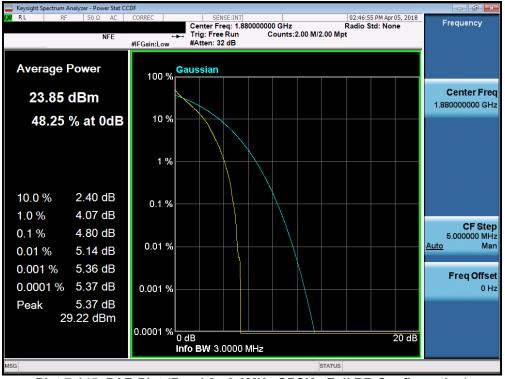




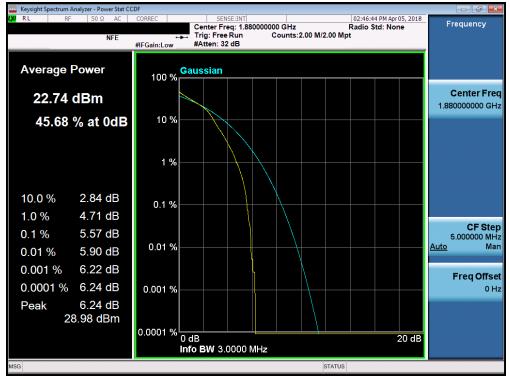
### Plot 7-144. PAR Plot (Band 2 - 1.4MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕞 LG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 02 of 102	
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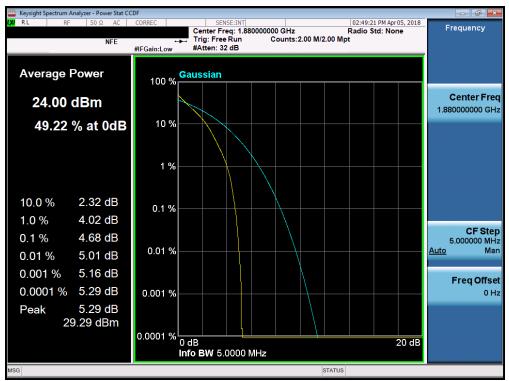




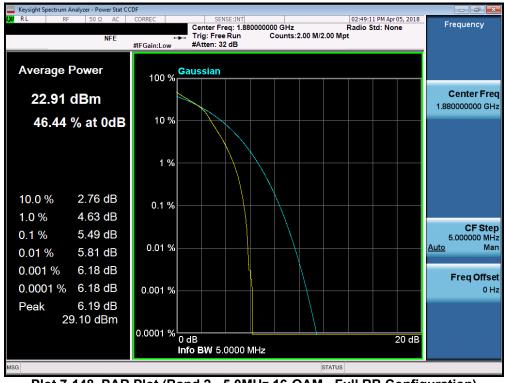
Plot 7-146. PAR Plot (Band 2 - 3.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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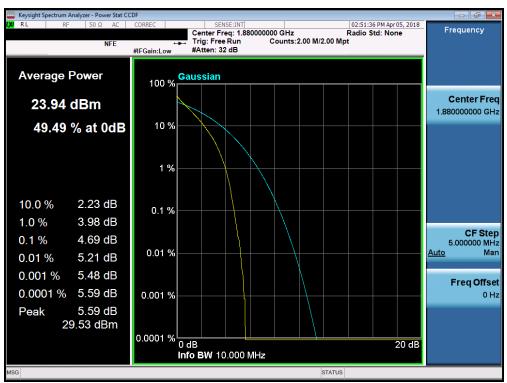




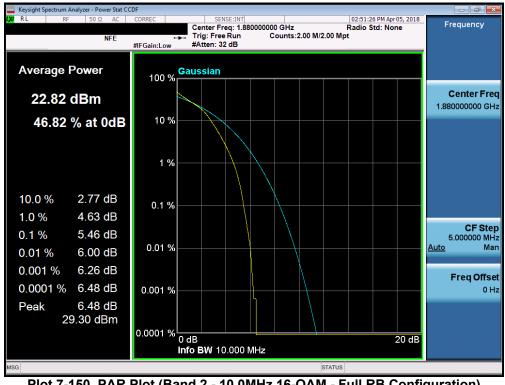
Plot 7-148. PAR Plot (Band 2 - 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 04 of 102
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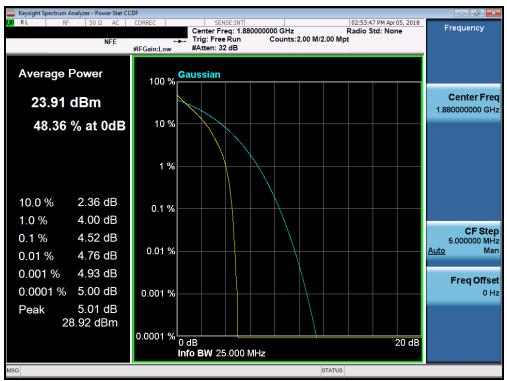




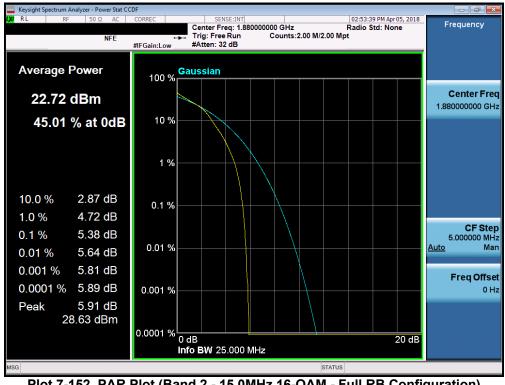
Plot 7-150. PAR Plot (Band 2 - 10.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 05 of 102	
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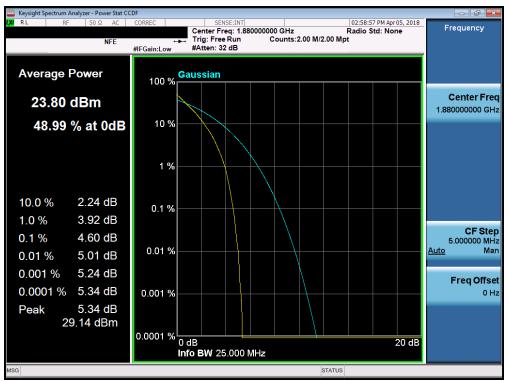




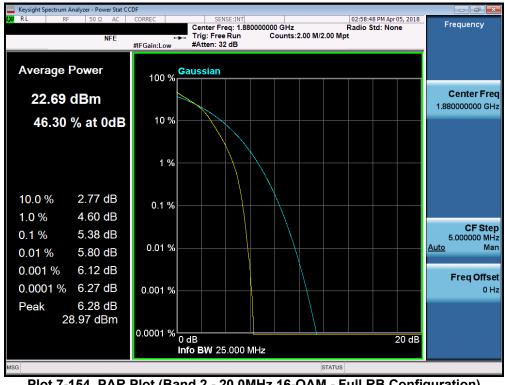
Plot 7-152. PAR Plot (Band 2 - 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 06 of 102
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Plot 7-154. PAR Plot (Band 2 - 20.0MHz 16-QAM - Full RB Configuration)

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# 7.6 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/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

#### Test Procedures Used

KDB 971168 D01 v03 - Section 5.2.1

ANSI/TIA-603-E-2016 - Section 2.2.17

#### 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 > 2 x span / 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

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## Test Setup

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

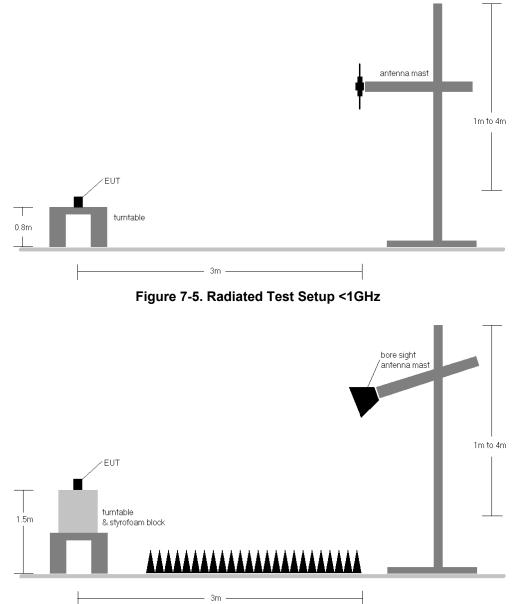


Figure 7-6. Radiated Test Setup >1GHz

## 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.

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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
699.70	1.4	QPSK	н	150	6	1/0	18.63	1.96	18.44	0.070	34.77	-16.33	20.59	0.115	36.99	-16.40
707.50	1.4	QPSK	н	150	13	1/3	18.81	1.97	18.63	0.073	34.77	-16.15	20.78	0.120	36.99	-16.21
715.30	1.4	QPSK	н	150	20	1/3	19.73	1.97	19.55	0.090	34.77	-15.23	21.70	0.148	36.99	-15.29
699.70	1.4	16-QAM	н	150	6	1/0	16.61	1.96	16.42	0.044	34.77	-18.35	18.57	0.072	36.99	-18.42
707.50	1.4	16-QAM	н	150	13	1/3	17.63	1.97	17.45	0.056	34.77	-17.33	19.60	0.091	36.99	-17.39
715.30	1.4	16-QAM	н	150	20	1/3	17.74	1.97	17.56	0.057	34.77	-17.22	19.71	0.093	36.99	-17.28
700.50	3	QPSK	н	150	6	1/7	18.43	1.97	18.25	0.067	34.77	-16.53	20.40	0.110	36.99	-16.59
707.50	3	QPSK	н	150	18	1/7	18.79	1.97	18.61	0.073	34.77	-16.17	20.76	0.119	36.99	-16.23
714.50	3	QPSK	н	150	14	1 / 14	20.03	1.97	19.85	0.097	34.77	-14.93	22.00	0.158	36.99	-14.99
700.50	3	16-QAM	н	150	6	1/7	16.86	1.97	16.68	0.047	34.77	-18.10	18.83	0.076	36.99	-18.16
707.50	3	16-QAM	н	150	18	1/7	17.48	1.97	17.30	0.054	34.77	-17.48	19.45	0.088	36.99	-17.54
714.50	3	16-QAM	н	150	14	1 / 14	18.11	1.97	17.93	0.062	34.77	-16.85	20.08	0.102	36.99	-16.91
701.50	5	QPSK	Н	150	13	1 / 24	18.18	1.97	18.00	0.063	34.77	-16.78	20.15	0.103	36.99	-16.84
707.50	5	QPSK	Н	150	22	1 / 24	18.99	1.97	18.81	0.076	34.77	-15.97	20.96	0.125	36.99	-16.03
713.50	5	QPSK	Н	150	7	1 / 12	19.36	1.97	19.18	0.083	34.77	-15.60	21.33	0.136	36.99	-15.66
701.50	5	16-QAM	н	150	13	1 / 24	16.39	1.97	16.21	0.042	34.77	-18.57	18.36	0.068	36.99	-18.63
707.50	5	16-QAM	н	150	22	1 / 24	17.43	1.97	17.25	0.053	34.77	-17.53	19.40	0.087	36.99	-17.59
713.50	5	16-QAM	Н	150	7	1 / 12	18.00	1.97	17.82	0.060	34.77	-16.96	19.97	0.099	36.99	-17.02
704.00	10	QPSK	н	150	23	1 / 25	19.04	1.97	18.86	0.077	34.77	-15.92	21.01	0.126	36.99	-15.98
707.50	10	QPSK	н	150	22	1 / 49	19.26	1.97	19.08	0.081	34.77	-15.70	21.23	0.133	36.99	-15.76
711.00	10	QPSK	н	150	18	1 / 25	19.32	1.97	19.14	0.082	34.77	-15.64	21.29	0.134	36.99	-15.70
704.00	10	16-QAM	Н	150	23	1 / 25	17.75	1.97	17.57	0.057	34.77	-17.21	19.72	0.094	36.99	-17.27
707.50	10	16-QAM	н	150	22	1 / 49	18.78	1.97	18.60	0.072	34.77	-16.18	20.75	0.119	36.99	-16.24
711.00	10	16-QAM	н	150	18	1 / 25	18.24	1.97	18.06	0.064	34.77	-16.72	20.21	0.105	36.99	-16.78
714.50	3	QPSK	V	150	117	1 / 14	18.18	1.97	18.00	0.063	34.77	-16.78	20.15	0.103	36.99	-16.84

Table 7-3. ERP Data (Band 12)

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ENGINEERING LA										-						-
Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	н	150	353	1/0	22.43	2.58	22.86	0.193	38.45	-15.59	25.01	0.317	40.61	-15.60
836.50	1.4	QPSK	н	150	10	1/0	21.99	2.77	22.61	0.183	38.45	-15.84	24.76	0.300	40.61	-15.84
848.30	1.4	QPSK	н	150	359	1/3	22.67	2.97	23.49	0.223	38.45	-14.96	25.64	0.366	40.61	-14.97
824.70	1.4	16-QAM	н	150	353	1/0	21.55	2.58	21.98	0.158	38.45	-16.47	24.13	0.259	40.61	-16.48
836.50	1.4	16-QAM	н	150	10	1/0	20.96	2.77	21.58	0.144	38.45	-16.87	23.73	0.236	40.61	-16.87
848.30	1.4	16-QAM	н	150	359	1/3	21.74	2.97	22.56	0.180	38.45	-15.89	24.71	0.296	40.61	-15.90
825.50	3	QPSK	н	150	350	15 / 0	21.71	2.59	22.15	0.164	38.45	-16.30	24.30	0.269	40.61	-16.31
836.50	3	QPSK	н	150	355	1 / 7	22.12	2.77	22.74	0.188	38.45	-15.71	24.89	0.309	40.61	-15.71
847.50	3	QPSK	н	150	5	1 / 7	22.81	2.95	23.61	0.230	38.45	-14.84	25.76	0.377	40.61	-14.84
825.50	3	16-QAM	н	150	350	15 / 0	20.79	2.59	21.23	0.133	38.45	-17.22	23.38	0.218	40.61	-17.23
836.50	3	16-QAM	н	150	355	1 / 7	21.70	2.77	22.32	0.171	38.45	-16.13	24.47	0.280	40.61	-16.13
847.50	3	16-QAM	н	150	5	1 / 7	21.88	2.95	22.68	0.186	38.45	-15.77	24.83	0.304	40.61	-15.77
826.50	5	QPSK	н	150	2	1/0	22.57	2.61	23.03	0.201	38.45	-15.42	25.18	0.329	40.61	-15.43
836.50	5	QPSK	н	150	8	1 / 24	22.58	2.77	23.20	0.209	38.45	-15.25	25.35	0.343	40.61	-15.25
846.50	5	QPSK	н	150	10	1 / 12	23.02	2.94	23.81	0.240	38.45	-14.64	25.96	0.394	40.61	-14.65
826.50	5	16-QAM	н	150	2	1/0	21.13	2.61	21.59	0.144	38.45	-16.86	23.74	0.237	40.61	-16.87
836.50	5	16-QAM	н	150	8	1 / 24	21.54	2.77	22.16	0.165	38.45	-16.29	24.31	0.270	40.61	-16.29
846.50	5	16-QAM	н	150	10	1 / 12	22.36	2.94	23.15	0.206	38.45	-15.30	25.30	0.339	40.61	-15.31
829.00	10	QPSK	н	150	3	1 / 25	22.35	2.65	22.85	0.193	38.45	-15.60	25.00	0.316	40.61	-15.61
836.50	10	QPSK	н	150	352	50 / 0	21.99	2.77	22.61	0.183	38.45	-15.84	24.76	0.300	40.61	-15.84
844.00	10	QPSK	н	150	6	1/0	22.74	2.90	23.49	0.223	38.45	-14.96	25.64	0.366	40.61	-14.97
829.00	10	16-QAM	н	150	3	1 / 25	22.04	2.65	22.54	0.179	38.45	-15.91	24.69	0.294	40.61	-15.92
836.50	10	16-QAM	н	150	352	50 / 0	20.89	2.77	21.51	0.142	38.45	-16.94	23.66	0.232	40.61	-16.94
844.00	10	16-QAM	н	150	6	1/0	22.11	2.90	22.86	0.193	38.45	-15.59	25.01	0.317	40.61	-15.60
846.50	5	QPSK	V	150	86	1 / 12	20.82	2.94	21.61	0.145	38.45	-16.84	23.76	0.238	40.61	-16.85

Table 7-4. ERP Data (Band 5)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 101 of 102
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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1710.70	1.4	QPSK	v	150	356	1/0	17.19	4.33	21.52	0.142	30.00	-8.48
1732.50	1.4	QPSK	V	150	1	1/0	17.17	4.26	21.43	0.139	30.00	-8.57
1754.30	1.4	QPSK	V	150	6	1 / 0	17.33	4.17	21.50	0.141	30.00	-8.50
1710.70	1.4	16-QAM	V	150	356	1 / 0	16.38	4.33	20.71	0.118	30.00	-9.29
1732.50	1.4	16-QAM	V	150	1	1 / 0	16.13	4.26	20.39	0.109	30.00	-9.61
1754.30	1.4	16-QAM	v	150	6	1 / 0	16.56	4.17	20.73	0.118	30.00	-9.27
1711.50	3	QPSK	V	150	2	1 / 0	17.23	4.32	21.55	0.143	30.00	-8.45
1732.50	3	QPSK	V	150	351	1 / 0	17.38	4.26	21.64	0.146	30.00	-8.36
1753.50	3	QPSK	v	150	358	1 / 0	17.29	4.18	21.47	0.140	30.00	-8.53
1711.50	3	16-QAM	v	150	2	1 / 0	16.33	4.32	20.65	0.116	30.00	-9.35
1732.50	3	16-QAM	v	150	351	1 / 0	16.50	4.26	20.76	0.119	30.00	-9.24
1753.50	3	16-QAM	v	150	358	1 / 0	16.30	4.18	20.48	0.112	30.00	-9.52
1712.50	5	QPSK	v	150	356	1/0	17.16	4.32	21.48	0.141	30.00	-8.52
1732.50	5	QPSK	v	150	355	1/0	17.35	4.26	21.61	0.145	30.00	-8.39
1752.50	5	QPSK	v	150	346	1 / 0	17.39	4.18	21.57	0.144	30.00	-8.43
1712.50	5	16-QAM	v	150	356	1 / 0	16.19	4.32	20.51	0.112	30.00	-9.49
1732.50	5	16-QAM	v	150	355	1/0	16.59	4.26	20.85	0.122	30.00	-9.15
1752.50	5	16-QAM	v	150	346	1/0	16.42	4.18	20.60	0.115	30.00	-9.40
1715.00	10	QPSK	v	150	355	1 / 0	17.25	4.31	21.56	0.143	30.00	-8.44
1732.50	10	QPSK	v	150	348	1/0	17.39	4.26	21.65	0.146	30.00	-8.35
1750.00	10	QPSK	v	150	348	1 / 49	17.42	4.20	21.62	0.145	30.00	-8.38
1715.00	10	16-QAM	v	150	355	1/0	16.34	4.31	20.65	0.116	30.00	-9.35
1732.50	10	16-QAM	v	150	348	1/0	16.49	4.26	20.75	0.119	30.00	-9.25
1750.00	10	16-QAM	v	150	348	1 / 49	16.59	4.20	20.79	0.120	30.00	-9.21
1717.50	15	QPSK	v	150	345	1/0	17.23	4.30	21.53	0.142	30.00	-8.47
1732.50	15	QPSK	v	150	350	1/0	17.43	4.26	21.69	0.147	30.00	-8.31
1747.50	15	QPSK	v	150	343	1 / 74	17.47	4.21	21.68	0.147	30.00	-8.32
1717.50	15	16-QAM	v	150	345	1/0	16.42	4.30	20.72	0.118	30.00	-9.28
1732.50	15	16-QAM	v	150	350	1/0	16.50	4.26	20.76	0.119	30.00	-9.24
1747.50	15	16-QAM	v	150	343	1 / 74	16.73	4.21	20.94	0.124	30.00	-9.06
1720.00	20	QPSK	v	150	347	1 / 50	17.10	4.30	21.40	0.138	30.00	-8.60
1732.50	20	QPSK	v	150	272	1 / 50	17.58	4.26	21.84	0.153	30.00	-8.16
1745.00	20	QPSK	v	150	10	1 / 99	17.16	4.22	21.38	0.137	30.00	-8.62
1720.00	20	16-QAM	v	150	347	1 / 50	15.94	4.30	20.24	0.106	30.00	-9.76
1732.50	20	16-QAM	v	150	272	1 / 50	15.95	4.26	20.21	0.105	30.00	-9.79
1745.00	20	16-QAM	v	150	10	1 / 99	16.02	4.22	20.24	0.106	30.00	-9.76
1732.50	20	QPSK	н	150	291	1 / 50	16.27	4.26	20.53	0.113	30.00	-9.47
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# Table 7-5. EIRP Data (Band 4)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	💽 LG	Approved by: Quality Manager
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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	н	150	5	1/0	18.88	3.73	22.61	0.182	33.01	-10.40
1880.00	1.4	QPSK	н	150	0	1/3	18.46	3.72	22.18	0.165	33.01	-10.83
1909.30	1.4	QPSK	н	150	359	1/0	19.29	3.65	22.94	0.197	33.01	-10.07
1850.70	1.4	16-QAM	н	150	5	1 / 0	18.08	3.73	21.81	0.152	33.01	-11.20
1880.00	1.4	16-QAM	н	150	0	1/3	17.45	3.72	21.17	0.131	33.01	-11.84
1909.30	1.4	16-QAM	н	150	359	1 / 0	17.78	3.65	21.43	0.139	33.01	-11.58
1851.50	3	QPSK	н	150	1	1 / 14	19.08	3.73	22.81	0.191	33.01	-10.20
1880.00	3	QPSK	н	150	353	1 / 7	18.53	3.72	22.25	0.168	33.01	-10.76
1908.50	3	QPSK	н	150	2	1 / 0	19.36	3.65	23.01	0.200	33.01	-10.00
1851.50	3	16-QAM	н	150	1	1 / 14	17.66	3.73	21.39	0.138	33.01	-11.62
1880.00	3	16-QAM	н	150	353	1 / 7	17.25	3.72	20.97	0.125	33.01	-12.04
1908.50	3	16-QAM	н	150	2	1 / 0	17.85	3.65	21.50	0.141	33.01	-11.51
1852.50	5	QPSK	н	150	2	1 / 24	19.03	3.73	22.76	0.189	33.01	-10.25
1880.00	5	QPSK	н	150	0	1 / 12	19.73	3.72	23.45	0.221	33.01	-9.56
1907.50	5	QPSK	н	150	3	1 / 12	18.92	3.66	22.58	0.181	33.01	-10.43
1852.50	5	16-QAM	н	150	2	1 / 24	17.69	3.73	21.42	0.139	33.01	-11.59
1880.00	5	16-QAM	н	150	0	1 / 12	19.17	3.72	22.89	0.194	33.01	-10.12
1907.50	5	16-QAM	н	150	3	1 / 12	17.44	3.66	21.10	0.129	33.01	-11.91
1855.00	10	QPSK	н	150	5	1 / 49	19.00	3.73	22.73	0.187	33.01	-10.28
1880.00	10	QPSK	н	150	358	1 / 25	19.44	3.72	23.16	0.207	33.01	-9.85
1905.00	10	QPSK	н	150	355	1 / 25	18.94	3.67	22.61	0.183	33.01	-10.40
1855.00	10	16-QAM	н	150	5	1 / 49	17.86	3.73	21.59	0.144	33.01	-11.42
1880.00	10	16-QAM	н	150	358	1 / 25	17.93	3.72	21.65	0.146	33.01	-11.36
1905.00	10	16-QAM	н	150	355	1 / 25	17.70	3.67	21.37	0.137	33.01	-11.64
1857.50	15	QPSK	н	150	2	1 / 74	18.96	3.73	22.69	0.186	33.01	-10.32
1880.00	15	QPSK	н	150	2	1 / 37	19.35	3.72	23.07	0.203	33.01	-9.94
1902.50	15	QPSK	н	150	357	1/0	18.89	3.69	22.58	0.181	33.01	-10.43
1857.50	15	16-QAM	н	150	2	1 / 74	17.88	3.73	21.61	0.145	33.01	-11.40
1880.00	15	16-QAM	н	150	2	1 / 37	18.16	3.72	21.88	0.154	33.01	-11.13
1902.50	15	16-QAM	н	150	357	1/0	17.79	3.69	21.48	0.141	33.01	-11.53
1860.00	20	QPSK	н	150	351	1 / 50	19.06	3.73	22.79	0.190	33.01	-10.22
1880.00	20	QPSK	н	150	352	1 / 50	19.19	3.72	22.91	0.195	33.01	-10.10
1900.00	20	QPSK	н	150	350	1/0	18.79	3.70	22.50	0.178	33.01	-10.52
1860.00	20	16-QAM	н	150	351	1 / 50	18.01	3.73	21.74	0.149	33.01	-11.27
1880.00	20	16-QAM	н	150	352	1 / 50	18.97	3.72	22.69	0.186	33.01	-10.32
1900.00	20	16-QAM	н	150	350	1/0	17.91	3.70	21.62	0.145	33.01	-11.40
1880.00	5	QPSK	V	150	61	1 / 12	18.31	3.72	22.03	0.159	33.01	-10.98

# Table 7-6. EIRP Data (Band 2)

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# 7.7 Radiated Spurious Emissions Measurements

### **Test Overview**

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas.

#### **Test Procedures Used**

KDB 971168 D01 v03 - Section 5.8

ANSI/TIA-603-E-2016 - Section 2.2.12

#### **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

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bore sight antenna mast I.5m EUT turntable & styrofoam block 3m

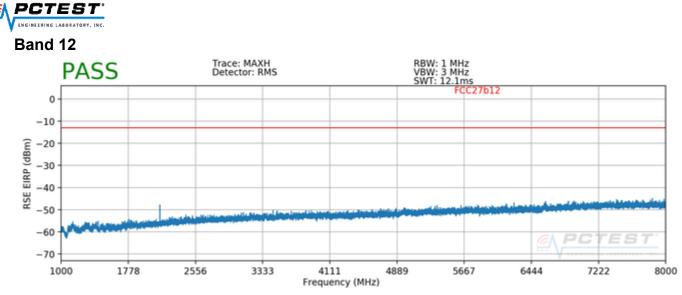
The EUT and measurement equipment were set up as shown in the diagram below.

Figure 7-7. Test Instrument & Measurement Setup

#### 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) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 4) 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.
- 5) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

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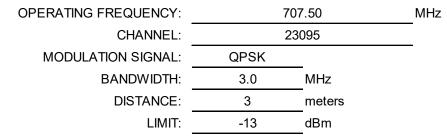
OPERATING FREQUENCY:	70	0.50	MHz
CHANNEL:	23	3025	
MODULATION SIGNAL:	QPSK		
BANDWIDTH:	3.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1401.00	Н	150	353	-60.82	3.78	-57.03	-44.0
2101.50	Н	150	134	-54.46	4.80	-49.66	-36.7
2802.00	Н	-	-	-63.05	5.64	-57.41	-44.4

Table 7-7. Radiated Spurious Data (Band 12 – Low Channel)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1415.00	Н	150	356	-61.75	3.90	-57.85	-44.8
2122.50	Н	150	137	-55.81	4.78	-51.03	-38.0
2830.00	Н	-	-	-63.27	5.73	-57.54	-44.5

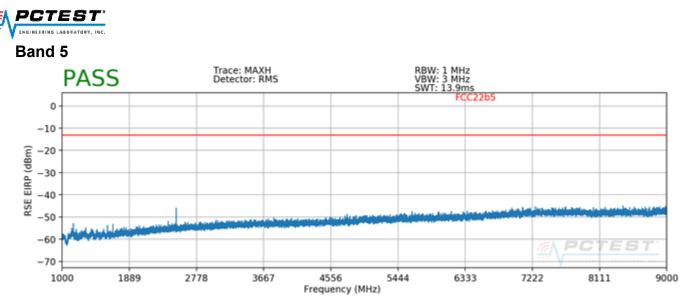
Table 7-8. Radiated Spurious Data (Band 12 – Mid Channel)

714.50		Hz
23165		
QPSK		
3.0	MHz	
3	meters	
-13	dBm	
	23 QPSK 3.0 3	23165 QPSK 3.0 MHz 3 meters

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1429.00	Н	150	358	-62.50	4.03	-58.47	-45.5
2143.50	Н	150	134	-55.53	4.77	-50.76	-37.8
2858.00	Н	-	-	-63.64	5.79	-57.85	-44.9

Table 7-9. Radiated Spurious Data (Band 12 – High Channel)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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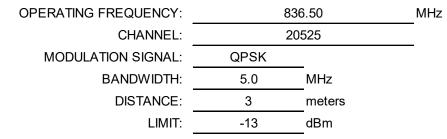
OPERATING FREQUENCY:	82	6.50 MH	Ηz
CHANNEL:	20425		
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	5.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	
		_	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1653.00	Н	150	354	-63.00	4.82	-58.18	-45.2
2479.50	Н	150	357	-52.26	5.01	-47.25	-34.3
3306.00	Н	-	-	-61.68	6.25	-55.42	-42.4

Table 7-10. Radiated Spurious Data (Band 5 – Low Channel)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager		
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Frequency [MHz]	Ant. Pol. [H/V]	Height	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.00	Н	150	2	-62.56	4.86	-57.69	-44.7
2509.50	Н	150	350	-53.08	5.10	-47.98	-35.0
3346.00	Н	-	-	-62.04	6.25	-55.78	-42.8

Table 7-11. Radiated Spurious Data (Band 5 – Mid Channel)

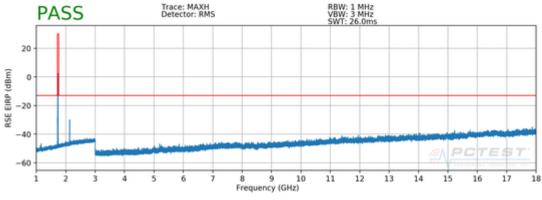
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1693.00	Н	150	355	-62.24	4.90	-57.34	-44.3
2539.50	Н	150	359	-51.72	5.25	-46.48	-33.5
3386.00	Н	-	-	-61.71	6.36	-55.34	-42.3

Table 7-12. Radiated Spurious Data (Band 5 – High Channel)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager		
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FCC27b4
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Plot 7-157. Radiated Spurious Plot above 1GHz (Band 4)

OPERATING FREQUENCY:	172	20.00 I	MHz
CHANNEL:	20	050	
MODULATION SIGNAL:	QPSK		
BANDWIDTH:	20.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	
		_	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3440.00	Н	150	221	-56.51	6.51	-49.99	-37.0
5160.00	Н	150	51	-62.56	8.44	-54.12	-41.1
6880.00	Н	-	-	-63.99	8.71	-55.27	-42.3

 Table 7-13. Radiated Spurious Data (Band 4 – Low Channel)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 110 of 100
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MHz	50	173	OPERATING FREQUENCY:
_	75	20	CHANNEL:
_		QPSK	MODULATION SIGNAL:
	MHz	20.0	BANDWIDTH:
	meters	3	DISTANCE:
	dBm	-13	LIMIT:
		-15	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3465.00	Н	150	216	-58.46	6.56	-51.90	-38.9
5197.50	Н	150	62	-61.58	8.45	-53.13	-40.1
6930.00	Н	-	-	-64.49	8.67	-55.82	-42.8

Table 7-14. Radiated Spurious Data (Band 4 – Mid Channel)

174	5.00 MHz
203	300
QPSK	
20.0	MHz
3	meters
-13	dBm
	203 QPSK 20.0 3

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3490.00	Н	150	230	-56.50	6.59	-49.91	-36.9
5235.00	Н	150	70	-63.05	8.42	-54.63	-41.6
6980.00	Н	-	-	-64.37	8.60	-55.76	-42.8

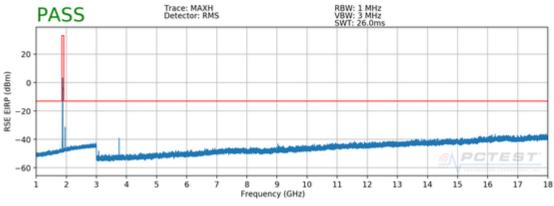
Table 7-15. Radiated Spurious Data (Band 4 – High Channel)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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FCC24b2

MHz



Plot 7-158. Radiated Spurious Plot above 1GHz (Band 2)

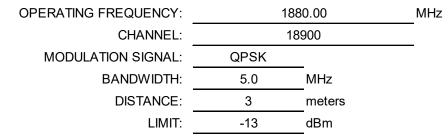
OPERATING FREQUENCY:	185	2.50	
CHANNEL:	18625		
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	5.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3705.00	Н	150	200	-54.64	6.77	-47.87	-34.9
5557.50	Н	150	60	-64.18	8.44	-55.75	-42.7
7410.00	Н	-	-	-62.49	8.28	-54.22	-41.2

Table 7-16. Radiated Spurious Data (Band 2 – Low Channel)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3760.00	Н	150	206	-53.15	6.84	-46.31	-33.3
5640.00	Н	150	52	-59.10	8.52	-50.59	-37.6
7520.00	Н	-	-	-62.50	8.44	-54.06	-41.1

Table 7-17. Radiated Spurious Data (Band 2 – Mid Channel)

MHz
N

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3815.00	Н	150	210	-52.75	6.98	-45.77	-32.8
5722.50	Н	150	326	-60.51	8.58	-51.93	-38.9
7630.00	Н	-	-	-62.35	8.55	-53.80	-40.8

Table 7-18. Radiated Spurious Data (Band 2 – High Channel)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕕 LG	Approved by: Quality Manager
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# 7.8 Frequency Stability / Temperature Variation

### **Test Overview and Limit**

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. 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 22, the frequency stability of the transmitter shall be maintained within  $\pm 0.00025\%$  ( $\pm 2.5$  ppm) of the center frequency. For Part 24, Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

#### Test Procedure Used

ANSI/TIA-603-E-2016

#### 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

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# **Band 12 Frequency Stability Measurements**

OPERATING FREQUENCY:	707,500,000	Hz
CHANNEL:	23790	_
REFERENCE VOLTAGE:	3.80	VDC

VOLTAGE (%)	POWER (VDC)	<b>ТЕМР</b> (°С)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	707,500,067	67	0.0000095
100 %		- 30	707,500,143	143	0.0000202
100 %		- 20	707,499,802	-198	-0.0000280
100 %		- 10	707,499,964	-36	-0.0000051
100 %		0	707,500,137	137	0.0000194
100 %		+ 10	707,500,354	354	0.0000500
100 %		+ 20	707,500,424	424	0.0000599
100 %		+ 30	707,499,940	-60	-0.0000085
100 %		+ 40	707,500,125	125	0.0000177
100 %		+ 50	707,499,988	-12	-0.0000017
BATT. ENDPOINT	3.05	+ 20	707,500,308	308	0.0000435

 Table 7-19. Frequency Stability Data (Band 12)

### Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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**Band 12 Frequency Stability Measurements** 

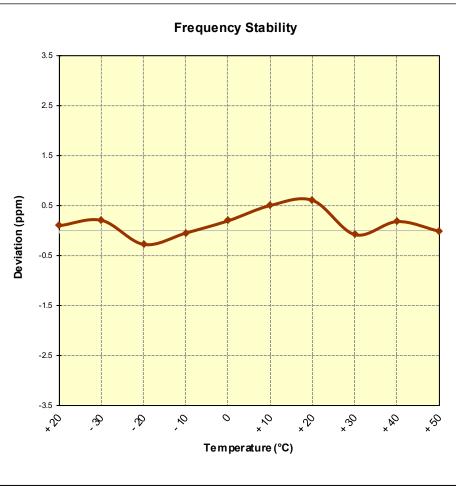


Figure 7-8. Frequency Stability Graph (Band 12)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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# **Band 5 Frequency Stability Measurements**

OPERATING FREQUENCY:	836,500,000	Hz
CHANNEL:	20525	
REFERENCE VOLTAGE:	3.80	VDC
DEVIATION LIMIT:	± 0.00025 % or 2.5 ppm	

VOLTAGE (%)	POWER (VDC)	<b>ТЕМР</b> ( <sup>°</sup> С)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	836,499,976	-24	-0.0000029
100 %		- 30	836,500,126	126	0.0000151
100 %		- 20	836,499,834	-166	-0.0000198
100 %		- 10	836,500,184	184	0.0000220
100 %		0	836,499,741	-259	-0.0000310
100 %		+ 10	836,500,011	11	0.0000013
100 %		+ 20	836,500,017	17	0.0000020
100 %		+ 30	836,500,076	76	0.0000091
100 %		+ 40	836,500,327	327	0.0000391
100 %		+ 50	836,500,284	284	0.0000340
BATT. ENDPOINT	3.05	+ 20	836,499,582	-418	-0.0000500

 Table 7-20. Frequency Stability Data (Band 5)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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**Band 5 Frequency Stability Measurements** 

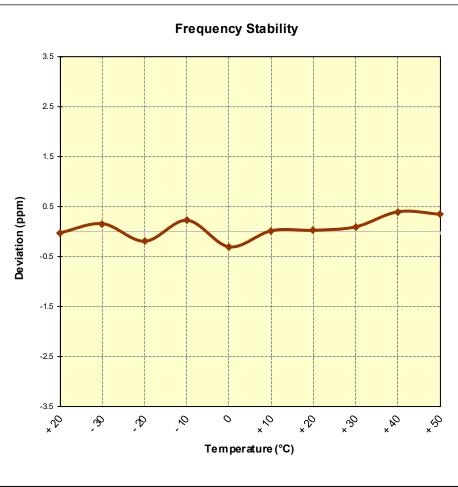


Figure 7-9. Frequency Stability Graph (Band 5)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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## **Band 4 Frequency Stability Measurements**

OPERATING FREQUENCY:	1,732,500,000	Hz
CHANNEL:	20175	
REFERENCE VOLTAGE:	3.80	VDC

VOLTAGE (%)	POWER (VDC)	<b>ТЕМР</b> ( <sup>°</sup> С)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	1,732,499,753	-247	-0.0000143
100 %		- 30	1,732,499,862	-138	-0.0000080
100 %		- 20	1,732,499,938	-62	-0.0000036
100 %		- 10	1,732,499,975	-25	-0.0000014
100 %		0	1,732,499,967	-33	-0.0000019
100 %		+ 10	1,732,500,031	31	0.0000018
100 %		+ 20	1,732,500,105	105	0.0000061
100 %		+ 30	1,732,500,082	82	0.0000047
100 %		+ 40	1,732,500,389	389	0.0000225
100 %		+ 50	1,732,499,973	-27	-0.0000016
BATT. ENDPOINT	3.05	+ 20	1,732,500,017	17	0.0000010

 Table 7-21. Frequency Stability Data (Band 4)

## Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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# **Band 4 Frequency Stability Measurements**

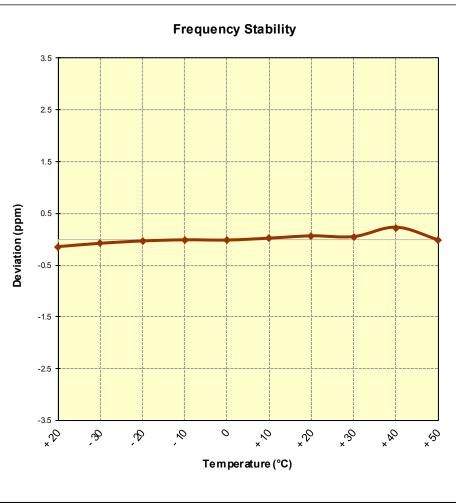


Figure 7-10. Frequency Stability Graph (Band 4)

FCC ID: ZNFX410AS		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
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## **Band 2 Frequency Stability Measurements**

OPERATING FREQUENCY:	1,880,000,000	Hz
CHANNEL:	18900	
REFERENCE VOLTAGE:	3.80	VDC
DEVIATION LIMIT:	± 0.00025 % or 2.5 ppm	

VOLTAGE (%)	POWER (VDC)	<b>ТЕМР</b> ( <sup>°</sup> С)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	1,880,000,021	21	0.0000011
100 %		- 30	1,879,999,904	-96	-0.0000051
100 %		- 20	1,879,999,980	-20	-0.0000011
100 %		- 10	1,880,000,044	44	0.0000023
100 %		0	1,880,000,082	82	0.0000044
100 %		+ 10	1,880,000,107	107	0.0000057
100 %		+ 20	1,880,000,240	240	0.0000128
100 %		+ 30	1,880,000,067	67	0.0000036
100 %		+ 40	1,880,000,138	138	0.0000073
100 %		+ 50	1,880,000,033	33	0.0000018
BATT. ENDPOINT	3.05	+ 20	1,879,999,946	-54	-0.0000029

 Table 7-22. Frequency Stability Data (Band 2)

## Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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# **Band 2 Frequency Stability Measurements**

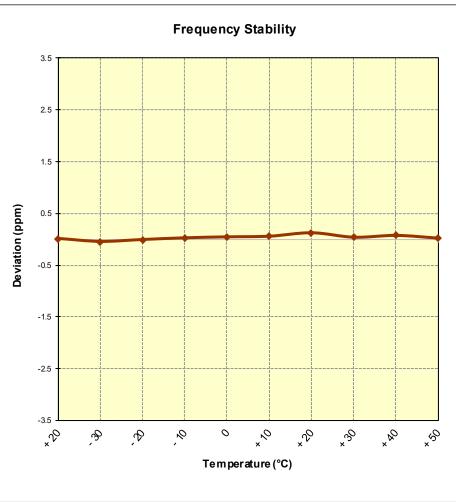


Figure 7-11. Frequency Stability Graph (Band 2)

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# 8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFX410AS** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.

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