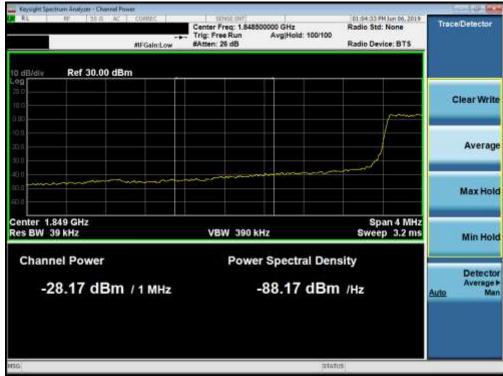


RL MP SOG AC	PNO: Wide CO	Trig: Free Run Atten: 36 dB	#Avg Type: RMS	D1:04:19 PM Jun D0, 2019 TRACE 3 3 4 4 TYPE A MAXAMMAN DET 4 N MIN N N	Frequency
10 dBidiy Ref 25.00 dBm			Mkr	1 1.850 000 GHz -33.18 dBm	Auto Tune
15.0					Center Free 1.85000000 GH
510) 6.01		<u> </u>		and and a constrained and a constrained by a	Start Free 1.848000000 GH
25.0		}		0.1 11 00 00es	Stop Fre 1.852000000 GH
25.0		1			CF Ste 400.000 kH Auto Ma
ē.i					Freq Offse 0 H
Center 1.850000 GHz Res BW 36 kHz	m/B161	120 kHz	Suisan	Span 4.000 MHz 6.667 ms (1001 pts)	Scale Typ Log <u>Li</u>

Plot 7-167. Lower Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)



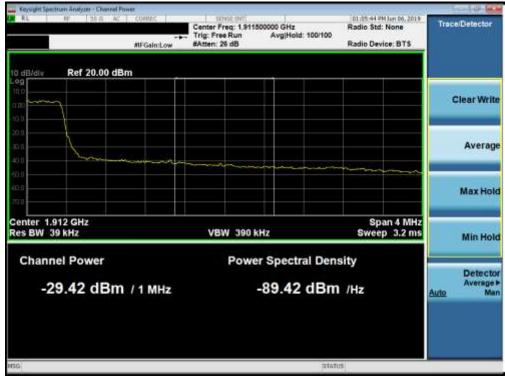
Plot 7-168. Lower Extended Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🛞 LG	Approved by: Quality Manager
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RL NF 136.0 AC CONNEC PNO: W IFGend	ide 😱 Trig: Free F	#Avg Typ Run	e: RMS TRA	PH Jun bd, 2019	Frequency
10 dB/dly Ref 25.00 dBm			Mkr1 1.910 -34	004 GHz .30 dBm	Auto Tune
15.0					Center Free 1.910000000 GH
5.00 angewanger angewanger angewanger angewanger angewanger angewanger angewanger angewanger angewanger angewan 6.00	nentron				Start Fre 1.908000000 GH
±0				541-1100 (Ers.)	Stop Fre 1.912000000 GH
35 n		t	mmin	A	CF Ste 400,000 kH ato Ma
#2.0 #2.0					Freq Offse 0 H
Center 1.910000 GHz Res BW 36 kHz	FVBW 120 kHz		Span - Sweep 6.667 ms	4.000 MHz	Scale Typ

Plot 7-169. Upper Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)



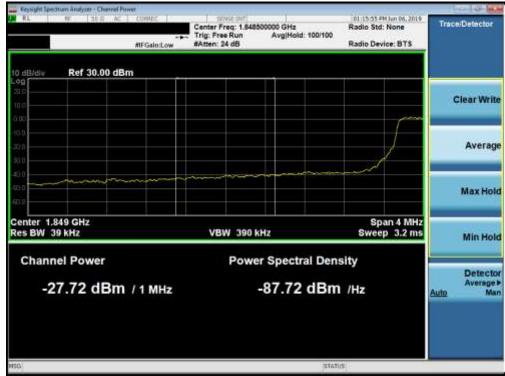
Plot 7-170. Upper Extended Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 107 of 179
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RL NF 30.0 AC	PNO: Wide C	Trig: Free Run Atten: 36 dB	#Avg Type: RMS	01:15:42 PM Jun 06, 2019 TRACE 1 2 0 4 5 Type 5 waterstore DET 6 NUM N	Frequency
ID dBidly Ref 25.00 dBm			Mkr	1 1.849 992 GHz -31.61 dBm	Auto Tun
15.0					Center Fre 1.85000000 GH
5.00		ſ	angless of the second	ang managembang na managembang na manang	Start Fre 1.848000000 GH
150 150				DL 1 11 01 offer	Stop Fre 1.852000000 GH
Eller angenetication and an and and and and and and and and	and the state of the				CF Ste 400,000 kH Auto Ma
5.0 					Freq Offse 0 H
Center 1.850000 GHz	#VBW :			Span 4.000 MHz 6.667 ms (1001 pts)	Scale Typ Log <u>L</u> i

Plot 7-171. Lower Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)



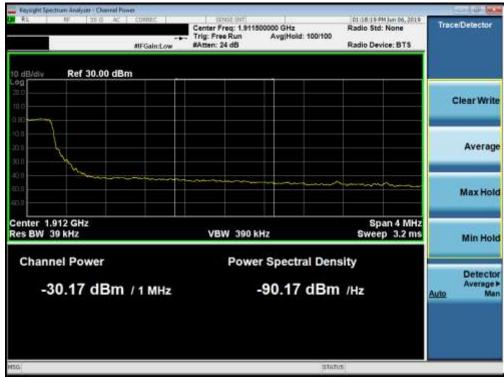
Plot 7-172. Lower Extended Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 109 of 179
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RL NF 20.0 AC	PNO: Wide	Trig: Free Run Atten: 36 dB	#Avg Type: RMS	1011010 PM Jun 04, 2019 TRACE 13 2 4 1 TYPE & WANNING DET & NINNING	Frequency
IO dBidiy Ref 25.00 dBm			Mk	r1 1.910 000 GHz -32.190 dBm	Auto Tune
15.0					Center Fre 1.91000000 GH
5.00	elector in myrtandynja	7			Start Fre 1.908000000 GH
5.0				24.1.1.1.00 offer	Stop Fre 1.912000000 GH
25.1		No march	(have a second a second s	Marine and the state of the state	CF Ste 400,000 kH Auto Ma
ē.n					Freq Offse 0 H
65.11					Scale Typ
Center 1.910000 GHz #Res BW 62 kHz	#VBW :	220 kHz	Sweep	Span 4.000 MHz 6.667 ms (1001 pts)	Log <u>Li</u>

Plot 7-173. Upper Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)



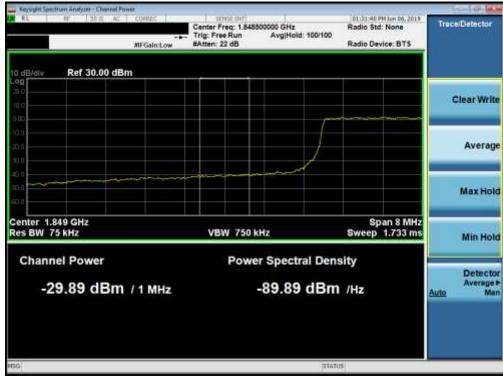
Plot 7-174. Upper Extended Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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RL 87 30.0 AC	PNO: Wide C	Trig: Free Run Atten: 36 dB	#Avg Type: RMS	01:31:23 PM Jun 06, 2019 TRACE 1 3 3 4 5 SyRE & MANAGEME DET A N N N N	Frequency
10 dBidiy Ref 25.00 dBm			Mkr	1 1.850 000 GHz -33.947 dBm	Auto Tune
15.0					Center Fre 1.85000000 GH
5.00 6.00		1		10-bit	Start Fre 1.846000000 GH
15.0 26.0				DL 1 11 01 00 0	Stop Fre 1.85400000 GH
25.11 dr. 0		17			CFSte 800,000 kH Auto Ma
4					Freq Offse
Center 1.850000 GHz Res BW 120 kHz		430 kHz		Span 8.000 MHz 13.33 ms (1001 pts)	Scale Typ Log L

Plot 7-175. Lower Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-176. Lower Extended Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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RL NF 30.0 AC	PNO: Wide	Trig: Free Run Atten: 36 dB	#Avg Type: RM	IS TRACE TYPE		Frequency
10 dBidiy Ref 25.00 dBm			1	Akr1 1.910 00 -36.9	0 GHz 3 dBm	Auto Tune
1510						Center Fre
6.00	te an arth the project of the day)				Start Fre 1.90600000 GH
5.0				b	1.130,004	Stop Fre 1.91400000 GH
¥11		1º		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	- Au	CF Ste 800,000 kH to Ma
<u>絶</u> り 売り						Freq Offse 0 H
Center 1.910000 GHz Res BW 120 KHz	#VBW	120 644		Span 8.0 ep 13.33 ms (1	00 MHz Le	Scale Typ

Plot 7-177. Upper Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)



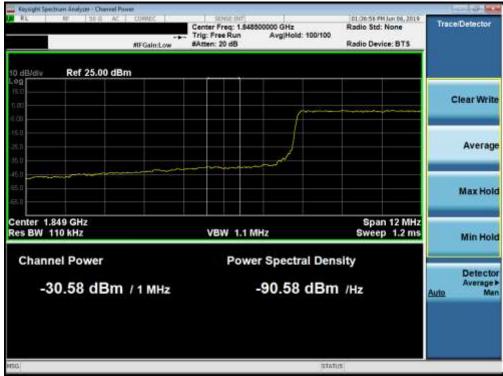
Plot 7-178. Upper Extended Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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RL NF 30.0 AC	PNO: Wide CP	Trig: Free Run Atten: 36 dB	#Avg Type: RMS	01.126.45 PM Jun 06, 2019 TRACE 1 3 1 4 5 Type 5 waterstore DET 6 NUMBER M	Frequency
ID dBidiy Ref 25.00 dBm	99		Mkr	1 1.850 000 GHz -35.10 dBm	Auto Tune
1510					Center Fred 1.85000000 GH
6.00 6.00					Start Free 1,844000000 GH
5.0				DL 1 11 00 (dbs)	Stop Fre 1.85600000 GH
25.0 40.0	ninn				CF Ste 1.200000 MH <u>Auto</u> Ma
ē.1					Freq Offse 0 H
esa Center 1.850000 GHz #Res BW 180 KHz	#VBW (Span 12.00 MHz 1.000 ms (1001 pts)	Scale Type

Plot 7-179. Lower Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)



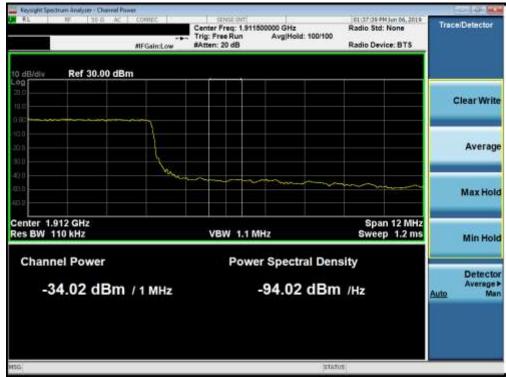
Plot 7-180. Lower Extended Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🛞 LG	Approved by: Quality Manager
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RL NF 20-0 AC	PNO: Wide	Trig: Free Run	#Avg Type: RMS	01:37:31 PM Jun 06, 2019 TRACE 1 2 8 4 8 TYPE 6 90000000	Frequency
0 dB/dly Ref 25.00 dBm	IFGain:Low	Atten: 36 dB	Mkr	1 1.910 048 GHz -37.84 dBm	Auto Tune
150					Center Fre 1.91000000 GH
5 00	H ann a tha ann an a				Start Fre 1,904000000 GH
50 *0				64.1 + 12.01 + db s	Stop Fre 1.91600000 GH
95 D		4 themes	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		CF Ste 1.200000 Mi Auto Ma
₩ # #					Freq Offse 0 H
Center 1.910000 GHz				Span 12.00 MHz	Scale Typ

Plot 7-181. Upper Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)



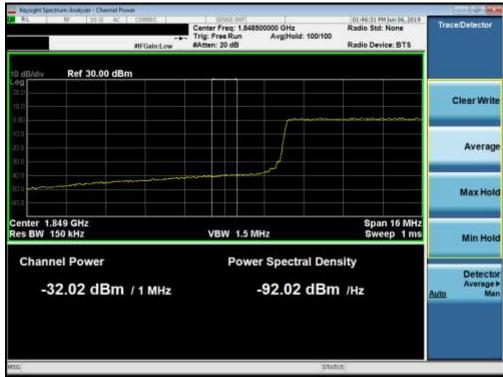
Plot 7-182. Upper Extended Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager		
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RL NF 30.0 AC	PNO: Wide C	Trig: Free Run Atten: 36 dB	#Avg Type: RMS	D146.23 PM Jun 06, 2019 TRACE 1 2 1 4 Type B antonious DET G N DOLMAR	Frequency
10 dBidiy Ref 25.00 dBm			Mkr	1 1.849 936 GHz -35.09 dBm	Auto Tune
15.0					Center Free 1.85000000 GH
6.00				- 17	Start Fre 1.842000000 GH
35.0 26.0				DL 1 - 12 00 0009	Stop Fre 1.858000000 GH
55.0	an anna an	en lik			CF Ste 1.500000 MH <u>Auto</u> Ma
美 邦					Freq Offse 0 H
Center 1.850000 GHz #Res BW 300 kHz	#VBW 1		Sujaan	Span 16.00 MHz 1.000 ms (1001 pts)	Scale Typ Log <u>Li</u>

Plot 7-183. Lower Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)



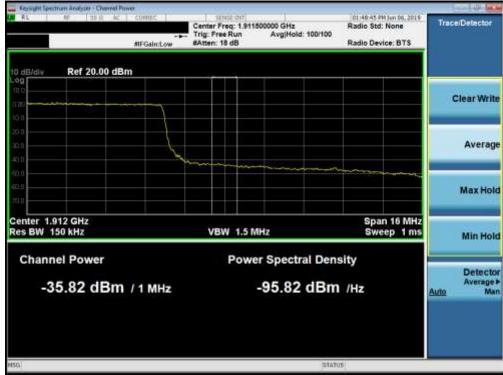
Plot 7-184. Lower Extended Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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RL NF 150.0 AC	PNO: Wide	Trig: Free Run Atten: 36 dB	#Avg Type	e: RMS	0148.35 PM Jun 06, 2019 TRACE 3 3 4 3 TYPE & WWWWWW DET & NWN N	Frequency
IO dBidiy Ref 25.00 dBm				Mkr1	1.910 064 GHz -38.00 dBm	Auto Tune
15.0						Center Fre 1.91000000 GH
6.00						Start Fre 1,902000000 GH
150 260					54.1 13.00 offer	Stop Fre 1.918000000 GH
25.11		Mag 1	- mark - marked has		and the second	CF Ste 1.500000 MH Auto Ma
4						Freq Offse
Center 1.910000 GHz Res BW 300 kHz	#VBW			Sweep_1	Span 16.00 MHz .000 ms (1001 pts)	Scale Typ Log Li

Plot 7-185. Upper Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-186. Upper Extended Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	💽 LG	Approved by: Quality Manager
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Band 7



Plot 7-187. Lower ACP Plot Plot (Band 7 – 5.0MHz QPSK - Full RB Configuration)



Plot 7-188. Upper ACP Plot (Band 7 – 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX525WA		MEASUREMENT REPORT (CERTIFICATION)	🛞 LG	Approved by: Quality Manager
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	None	Radio Std: Radio Devi	GHz	Freq: 2.50490000 Free Run en: 26 dB	G Trig:	IFGain:Low	F (39.0. /		AS
				g		1Bm	Ref 40.00 c	div.	0 dB
Center Free 504900000 GH									00 10 210
			many	production					0.00
									2011
	******	The state of the s	All March 19						40.0 40.0 60.1
							211-	2.475 0	-
CF Step	525 GHz	Stop 2.					anz.	2.4/5	Start
CF Step 800.000 kH 2 Mar		Stop 2.	Amplitude	Frequency	RBW	Stop Freq	Start Freq	Range	Spur
800.000 kH		-	Amplitude 39.38 dBm	Frequency 2 490474167 GH		Stop Freq 2 4905 GHz			
800.000 kH 20 Mar		∆ Limit -14.38 dB -15.98 dB	-39.38 dBm -28.98 dBm	2 490474167 GH	1.000 MHz 1.000 MHz	2.4905 GHz 2.4960 GHz	Start Freq	Range	
800.000 kH 20 Mar Freq Offse		Δ Limit -14.36 dB -15.96 dB -15.80 dB	-39.38 dBm -28.96 dBm -25.80 dBm	2 490474167 GH 2 495890000 GH 2 496885000 GH	1.000 MHz 1.000 MHz 1.000 MHz	2 4905 GHz 2 4960 GHz 2 4990 GHz	Start Freq 2.4750 GHz 2.4905 GHz 2.4960 GHz	Range	
800.000 kH 20 Mar		∆ Limit -14.38 dB -15.98 dB	39 38 dBm 28 96 dBm 25 80 dBm 29 48 dBm	2 490474167 GH	1.000 MHz 1.000 MHz 1.000 MHz 180.0 KHz	2.4905 GHz 2.4960 GHz	Start Freq 2 4750 GHz 2 4905 GHz	Range	Spur 1 2





Plot 7-190. Upper ACP Plot (Band 7 – 10.0MHz QPSK - Full RB Configuration)

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Plot 7-192. Upper ACP Plot (Band 7 – 15.0MHz QPSK - Full RB Configuration)

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	None	Radio Std: Radio Devi	GHz	reniz 111 Freq: 2.504900000 Free Run I: 26 dB	Trig: I	IFGain:Lov	F (39.0. /		ASS
						dBm	Ref 40.00 c	div	0 dB
Center Fre 2.504900000 GH									00 10 10
			andallandaran ministeran min						0.00 t0.0
	g e rogen e er								20 U 20 U 40 B
	525 GHz	Stop 2					SHz	2.475 0	Start
CF Ste							the second s		0.000
CF Ste 1.600000 MH to Ma		∆ Limit	Amplitude	Frequency	RBW	Stop Freq	Start Freq	Range	Spur
1.600000 MH			Amplitude -32.77 dBm	Frequency 2.490448333 GHz		Stop Freq 2.4905 GHz	Start Freq 2.4750 GHz	Range 1	spur
1.600000 MH Ito Ma			-32 77 dBm		1.000 MHz	the second s		and the local data in the second	spur 2
1.600000 MH Ma		-7.773 dB	-32 77 dBm -29 74 dBm	2.490448333 GHz	1.000 MHz	2.4905 GHz	2.4750 GHz	1	
1.600000 MH Ito Ma		-7.773 dB	-32 77 dBm -29 74 dBm -27 96 dBm	2 490448333 GHz 2 495926667 GHz	1.000 MHz 1.000 MHz 1.000 MHz	2.4905 GHz 2.4960 GHz	2.4750 GHz 2.4905 GHz	1 2	2

Plot 7-193. Lower ACP Plot (Band 7 – 20.0MHz QPSK - Full RB Configuration)



Plot 7-194. Upper ACP Plot (Band 7 – 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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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 v03r01 - Section 5.7.1

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.

Test Setup

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



Figure 7-4. Test Instrument & Measurement Setup

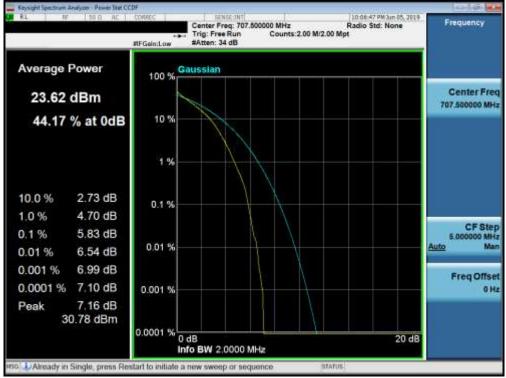
Test Notes

None.

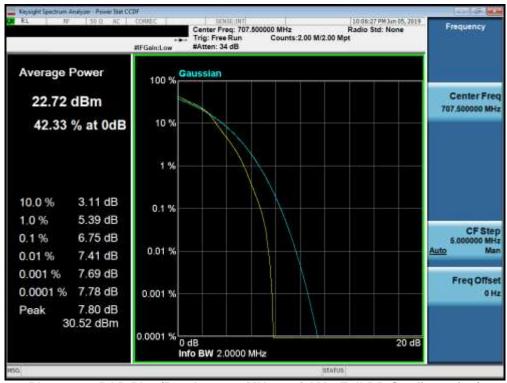
FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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Band 12/17



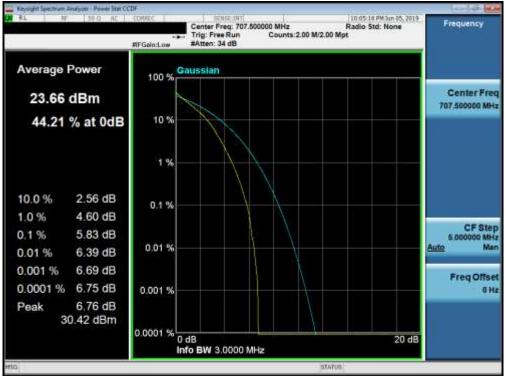
Plot 7-195. PAR Plot (Band 12 - 1.4MHz QPSK - Full RB Configuration)



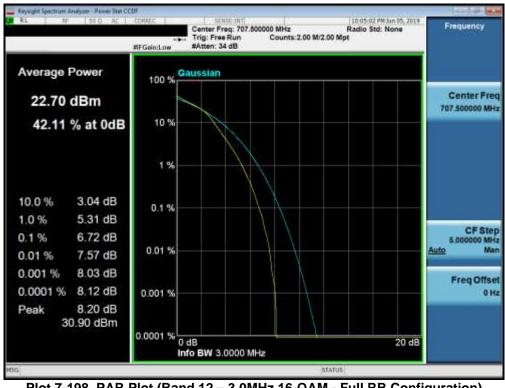
Plot 7-196. PAR Plot (Band 12 - 1.4MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	C LG	Approved by: Quality Manager
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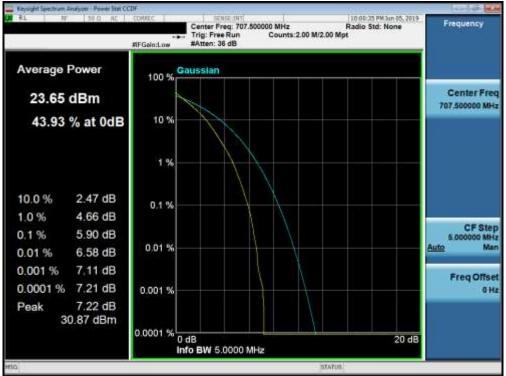




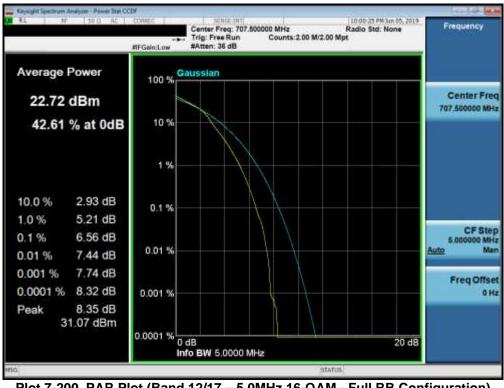
Plot 7-198. PAR Plot (Band 12 – 3.0MHz 16-QAM - Full RB Configuration)

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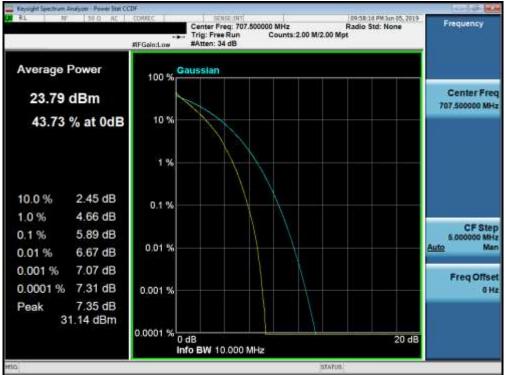


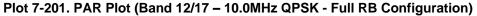


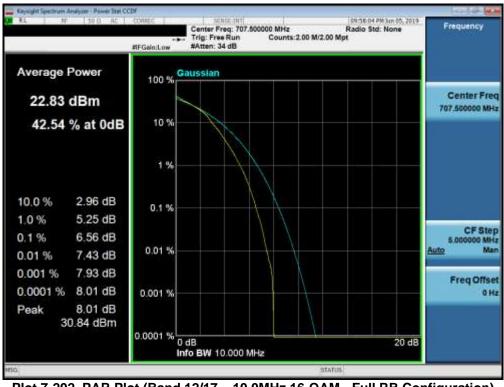
Plot 7-200. PAR Plot (Band 12/17 – 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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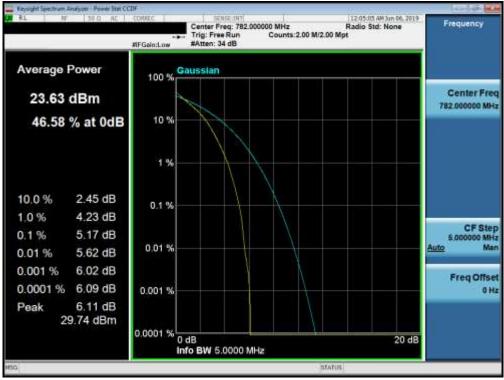


Plot 7-202. PAR Plot (Band 12/17 – 10.0MHz 16-QAM - Full RB Configuration)

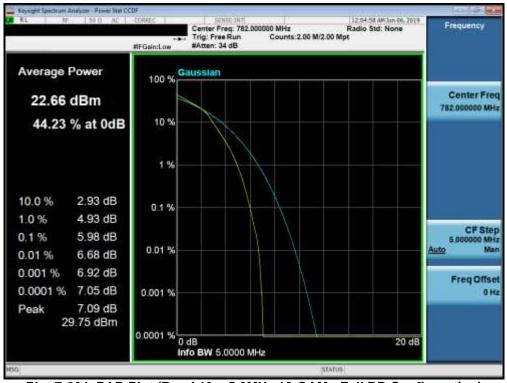
FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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Band 13



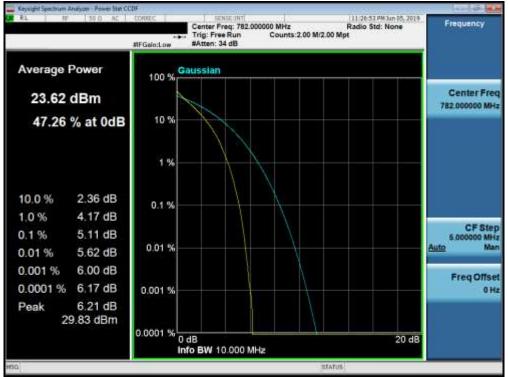
Plot 7-203. PAR Plot (Band 13 – 5.0MHz QPSK - Full RB Configuration)



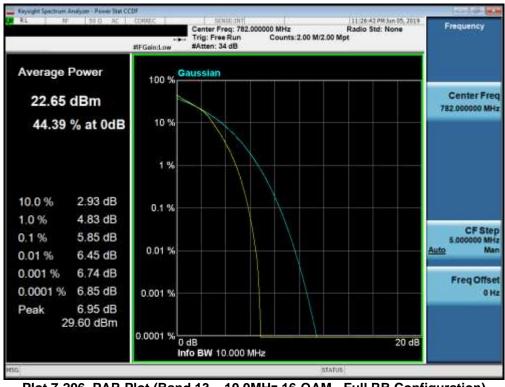
Plot 7-204. PAR Plot (Band 13 – 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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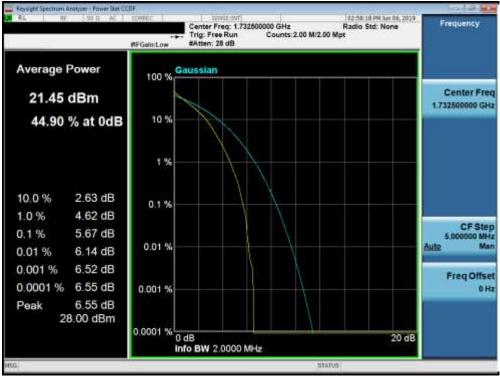


Plot 7-206. PAR Plot (Band 13 – 10.0MHz 16-QAM - Full RB Configuration)

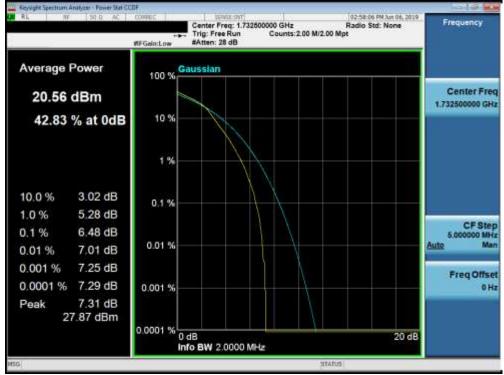
FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🕞 LG	Approved by: Quality Manager
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Band 66/4



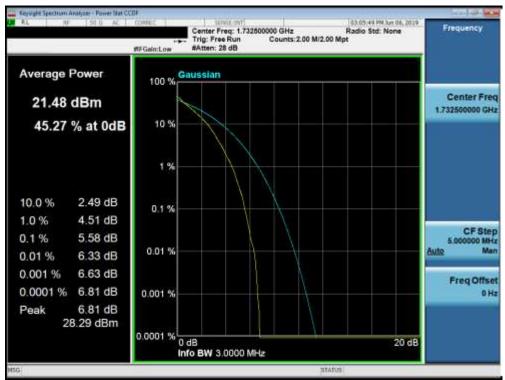
Plot 7-207. PAR Plot (Band 66/4 - 1.4MHz QPSK - Full RB Configuration)



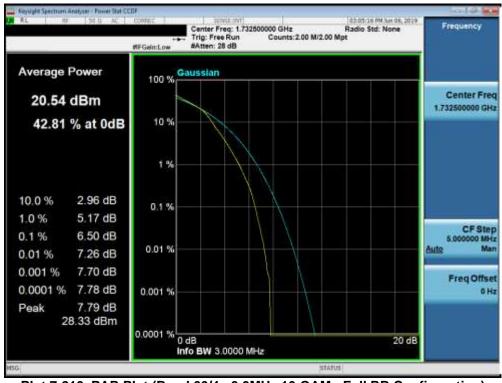
Plot 7-208. PAR Plot (Band 66/4 - 1.4MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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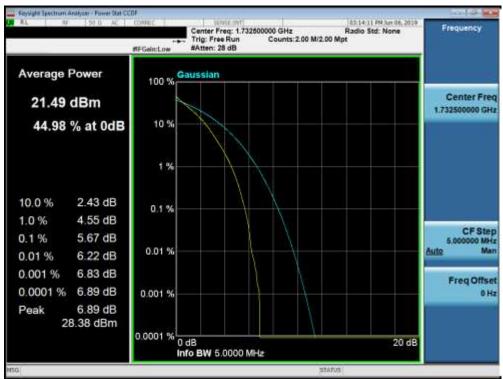




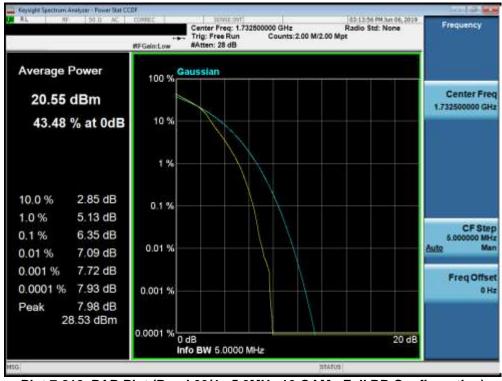
Plot 7-210. PAR Plot (Band 66/4 - 3.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🛞 LG	Approved by: Quality Manager
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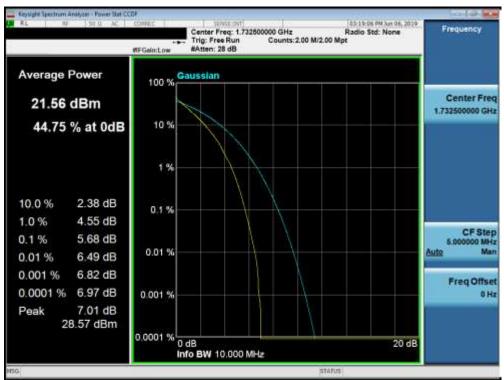




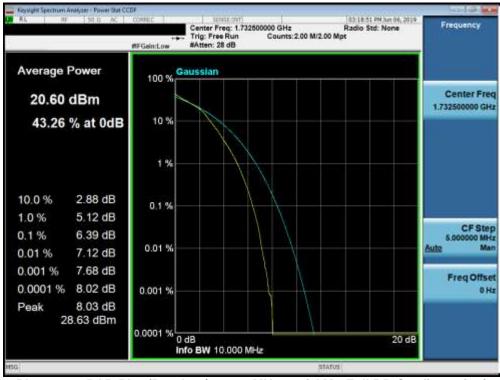
Plot 7-212. PAR Plot (Band 66/4 - 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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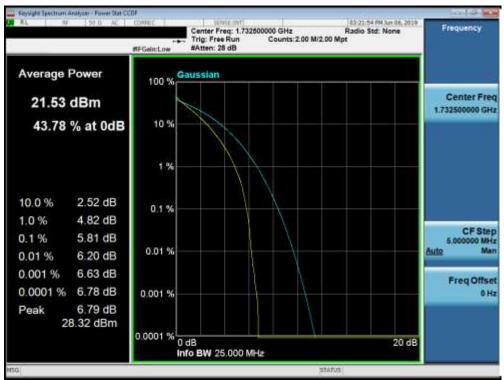




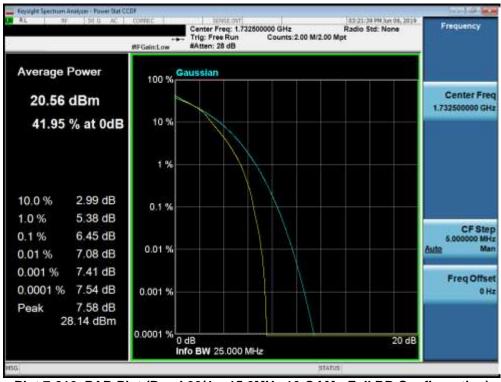
Plot 7-214. PAR Plot (Band 66/4 - 10.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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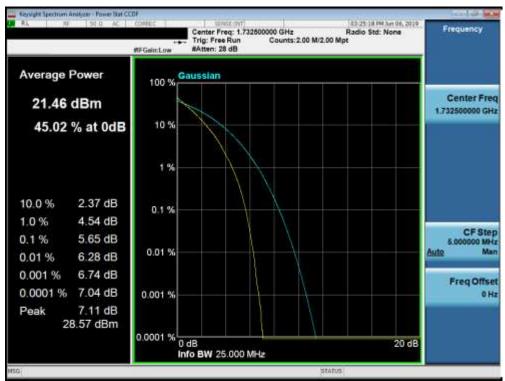
Plot 7-215. PAR Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)



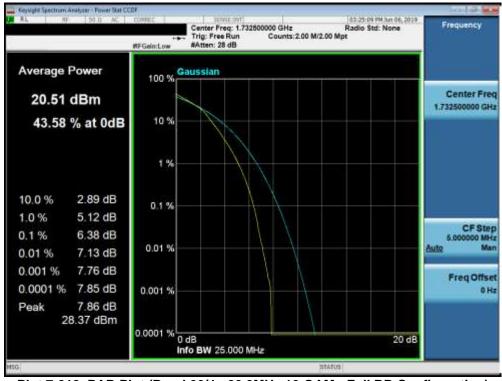
Plot 7-216. PAR Plot (Band 66/4 - 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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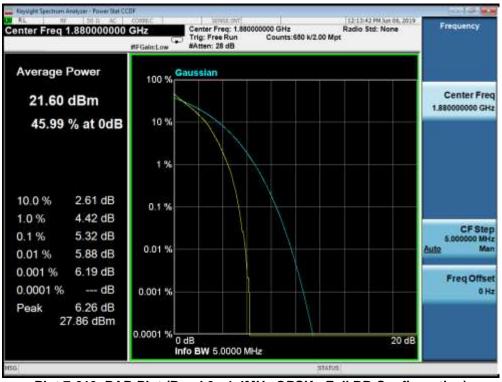




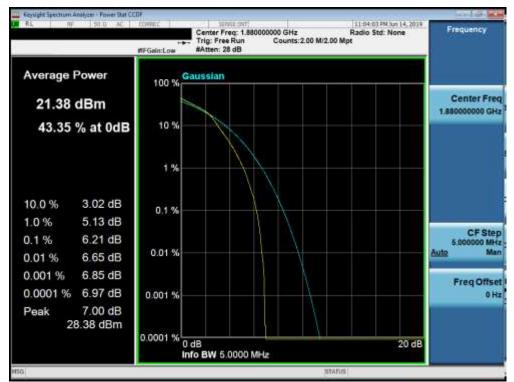
Plot 7-218. PAR Plot (Band 66/4 - 20.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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Plot 7-219. PAR Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

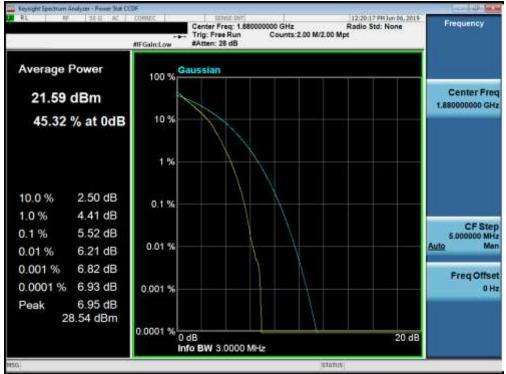


Plot 7-220. PAR Plot (Band 2 - 1.4MHz 16-QAM - Full RB Configuration)

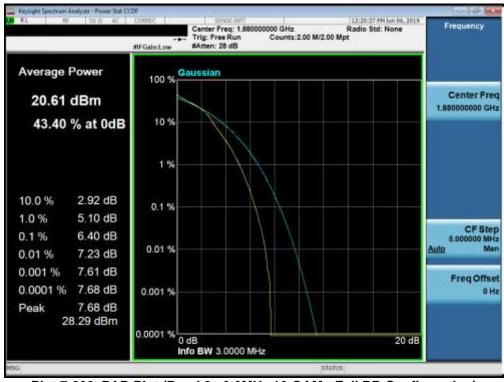
FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🛞 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 122 of 179
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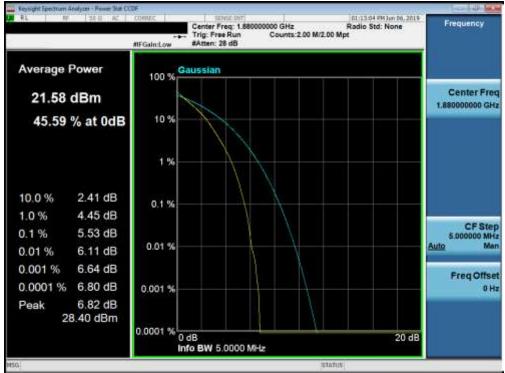




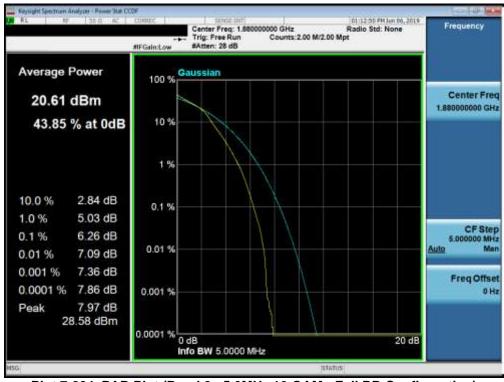
Plot 7-222. PAR Plot (Band 2 - 3.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🛞 LG	Approved by: Quality Manager
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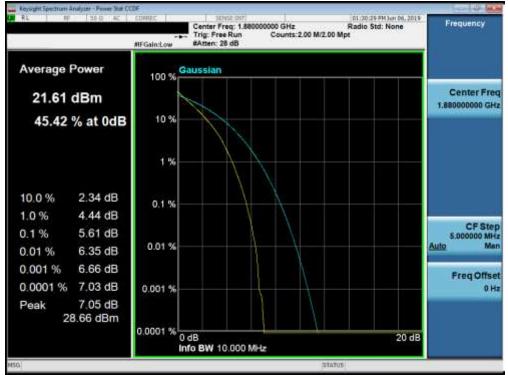




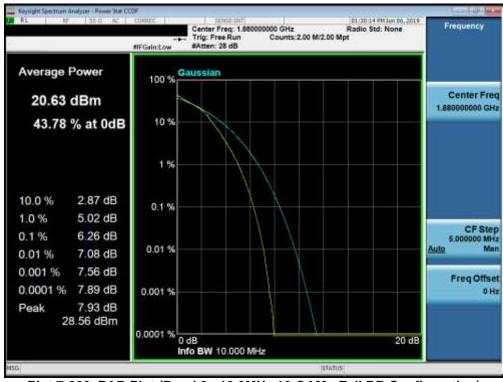
Plot 7-224. PAR Plot (Band 2 - 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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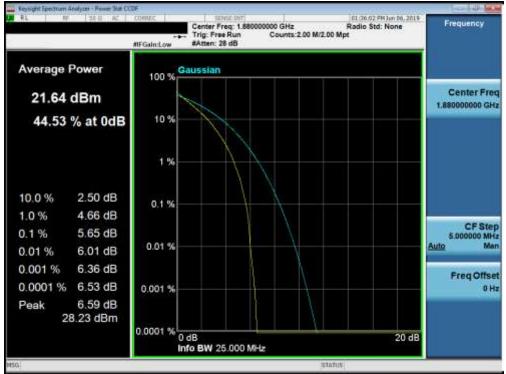




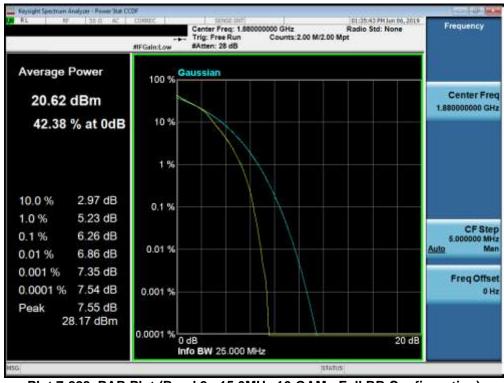
Plot 7-226. PAR Plot (Band 2 - 10.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🛞 LG	Approved by: Quality Manager
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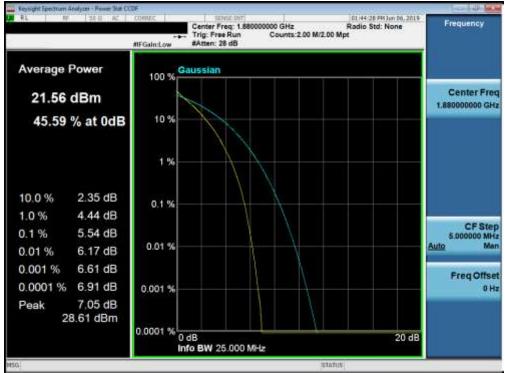




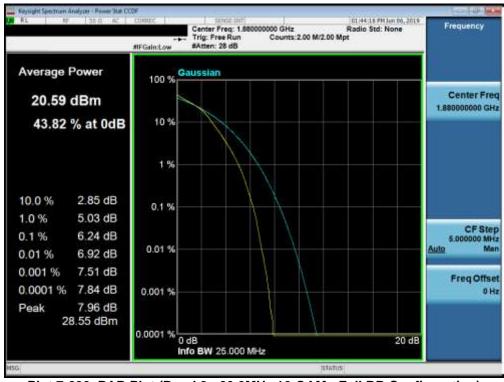
Plot 7-228. PAR Plot (Band 2 - 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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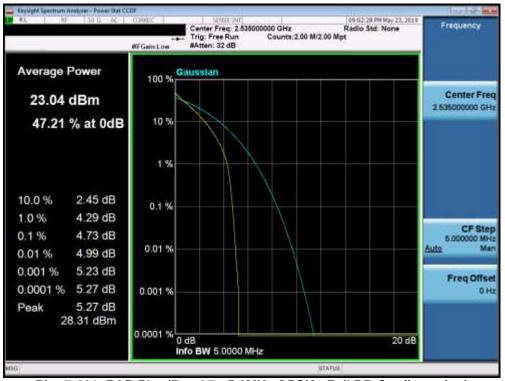




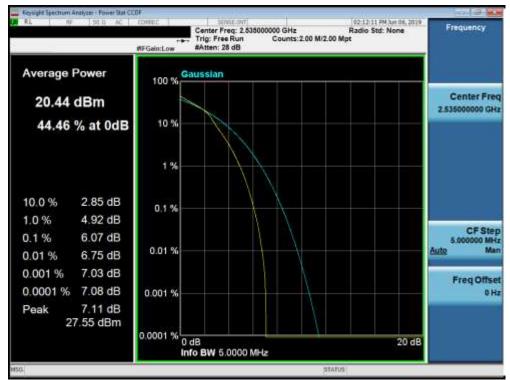
Plot 7-230. PAR Plot (Band 2 - 20.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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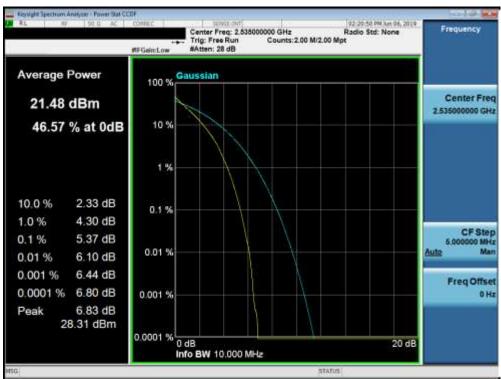




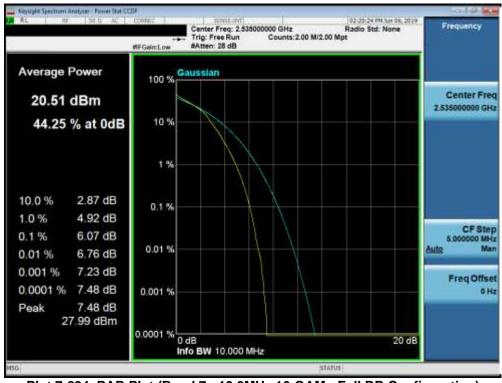
Plot 7-232. PAR Plot (Band 7 - 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	C LG	Approved by: Quality Manager
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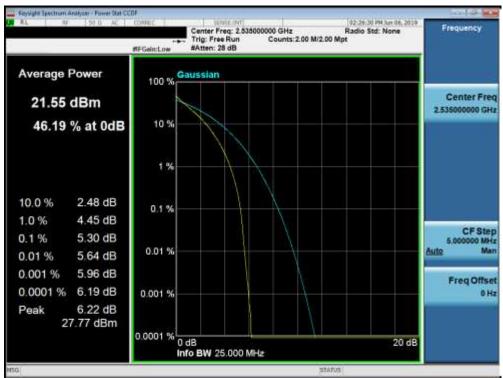




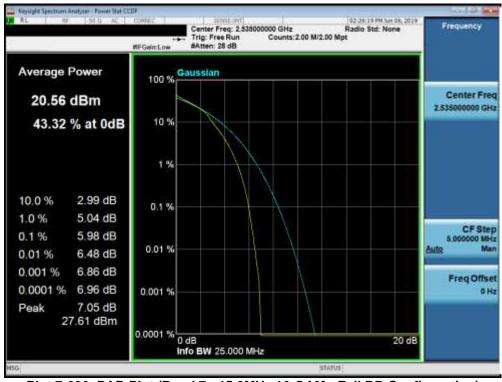
Plot 7-234. PAR Plot (Band 7 - 10.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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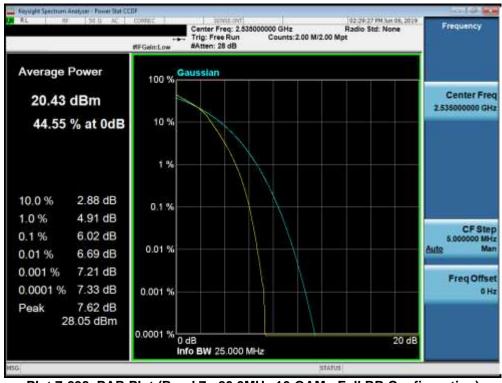
Plot 7-236. PAR Plot (Band 7 - 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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Plot 7-237. PAR Plot (Band 7 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-238. PAR Plot (Band 7 - 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 polarized tuned 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 v03r01 - 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 $\geq 2 \times \text{span} / \text{RBW}$
- 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

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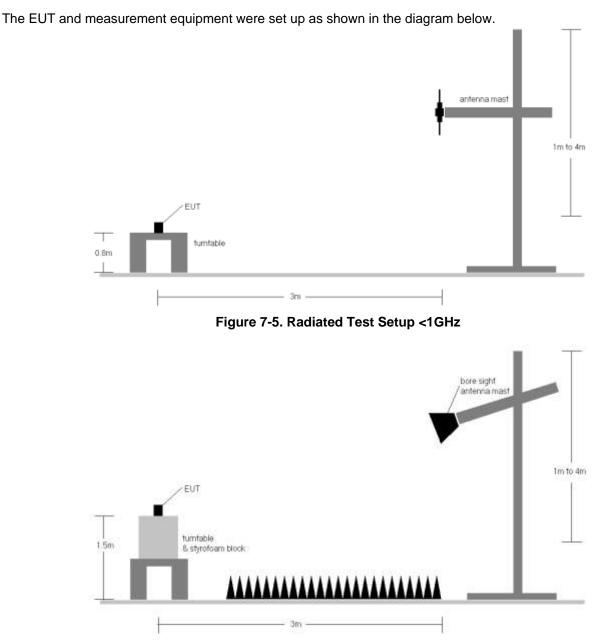


Figure 7-6. Radiated Test Setup >1GHz

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]
699.70	1.4	QPSK	Н	113	262	1 / 5	17.61	1.40	16.86	0.049	34.77	-17.91
707.50	1.4	QPSK	Н	120	263	1 / 5	18.37	1.43	17.65	0.058	34.77	-17.12
715.30	1.4	QPSK	н	123	112	1 / 5	19.22	1.46	18.53	0.071	34.77	-16.24
715.30	1.4	16-QAM	н	123	112	1 / 5	18.30	1.46	17.61	0.058	34.77	-17.16
700.50	3	QPSK	Н	118	261	1 / 14	17.92	1.40	17.17	0.052	34.77	-17.60
707.50	3	QPSK	н	123	277	1 / 14	18.18	1.43	17.46	0.056	34.77	-17.31
714.50	3	QPSK	Н	124	112	1 / 14	19.35	1.46	18.66	0.073	34.77	-16.11
714.50	3	16-QAM	Н	124	112	1 / 14	18.50	1.46	17.81	0.060	34.77	-16.96

Table 7-3. ERP Data (Band 12)

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]
701.50	5	QPSK	н	121	71	1 / 24	18.78	1.41	18.04	0.064	34.77	-16.73
707.50	5	QPSK	н	125	58	1 / 24	19.35	1.43	18.63	0.073	34.77	-16.14
713.50	5	QPSK	н	123	62	1 / 24	19.96	1.46	19.27	0.084	34.77	-15.50
713.50	5	16-QAM	н	123	62	1 / 24	19.13	1.46	18.44	0.070	34.77	-16.33
704.00	10	QPSK	н	123	66	1 / 49	19.96	1.42	19.23	0.084	34.77	-15.54
707.50	10	QPSK	н	127	68	1 / 49	19.95	1.43	19.23	0.084	34.77	-15.54
711.00	10	QPSK	н	124	68	1 / 49	20.08	1.45	19.38	0.087	34.77	-15.39
711.00	10	16-QAM	Н	124	68	1 / 49	19.20	1.45	18.50	0.071	34.77	-16.27
711.00	10	Н	V	154	53	1 / 49	19.42	1.45	18.72	0.074	34.77	-16.05

Table 7-4. ERP Data (Band 12/17)

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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]
779.50	5	QPSK	н	103	106	1 / 0	20.98	1.72	20.55	0.114	34.77	-14.22
782.00	5	QPSK	н	101	102	1 / 0	20.81	1.73	20.39	0.109	34.77	-14.38
784.50	5	QPSK	н	102	101	1 / 0	20.22	1.74	19.81	0.096	34.77	-14.96
779.50	5	16-QAM	н	103	106	1 / 0	20.23	1.72	19.80	0.096	34.77	-14.97
782.00	10	QPSK	н	103	84	1 / 0	20.52	1.73	20.10	0.102	34.77	-14.67
782.00	10	16-QAM	н	103	84	1 / 0	19.44	1.73	19.02	0.080	34.77	-15.75
779.50	5	QPSK	V	105	267	1/0	20.25	1.72	19.82	0.096	34.77	-14.95

Table 7-5. ERP Data (Band 13)

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	v	120	256	1 / 5	19.02	1.65	18.52	0.071	38.45	-19.94	20.67	0.117	40.61	-19.94
836.50	1.4	QPSK	V	111	259	1 / 5	20.23	1.57	19.65	0.092	38.45	-18.80	21.80	0.151	40.61	-18.80
848.30	1.4	QPSK	V	113	74	1 / 5	21.44	1.50	20.79	0.120	38.45	-17.66	22.94	0.197	40.61	-17.67
848.30	1.4	16-QAM	V	113	74	1 / 5	20.24	1.50	19.59	0.091	38.45	-18.86	21.74	0.149	40.61	-18.87
825.50	3	QPSK	V	116	263	1 / 14	18.82	1.64	18.31	0.068	38.45	-20.14	20.46	0.111	40.61	-20.15
836.50	3	QPSK	V	116	261	1 / 14	20.74	1.57	20.16	0.104	38.45	-18.29	22.31	0.170	40.61	-18.29
847.50	3	QPSK	V	114	66	1 / 14	21.63	1.51	20.99	0.125	38.45	-17.46	23.14	0.206	40.61	-17.47
847.50	3	16-QAM	V	114	66	1 / 14	20.43	1.51	19.79	0.095	38.45	-18.66	21.94	0.156	40.61	-18.67
826.50	5	QPSK	V	191	102	1 / 24	21.24	1.63	20.72	0.118	38.45	-17.73	22.87	0.194	40.61	-17.73
836.50	5	QPSK	V	106	118	1 / 24	21.49	1.57	20.91	0.123	38.45	-17.54	23.06	0.202	40.61	-17.54
846.50	5	QPSK	V	103	113	1 / 24	21.08	1.51	20.44	0.111	38.45	-18.01	22.59	0.182	40.61	-18.01
836.50	5	16-QAM	V	106	118	1 / 24	20.55	1.57	19.97	0.099	38.45	-18.48	22.12	0.163	40.61	-18.48
829.00	10	QPSK	V	118	126	1 / 49	21.89	1.62	21.36	0.137	38.45	-17.09	23.51	0.224	40.61	-17.10
836.50	10	QPSK	V	115	141	1 / 49	22.42	1.57	21.84	0.153	38.45	-16.61	23.99	0.251	40.61	-16.61
844.00	10	QPSK	V	113	71	1 / 49	21.60	1.53	20.98	0.125	38.45	-17.47	23.13	0.205	40.61	-17.48
836.50	10	16-QAM	V	115	141	1 / 49	21.38	1.57	20.80	0.120	38.45	-17.65	22.95	0.197	40.61	-17.65
836.50	10	QPSK	н	102	287	1 / 49	19.90	1.57	19.32	0.086	38.45	-19.13	21.47	0.140	40.61	-19.13

Table 7-6. ERP Data (Band 5)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🛞 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Degs 146 of 170
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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	Н	125	19	1 / 5	15.74	8.43	24.17	0.261	30.00	-5.83
1745.00	1.4	QPSK	Н	129	10	1 / 5	17.49	7.92	25.41	0.347	30.00	-4.59
1779.30	1.4	QPSK	Н	167	6	1 / 5	16.30	8.07	24.37	0.274	30.00	-5.63
1745.00	1.4	16-QAM	Н	129	10	1 / 5	16.72	7.92	24.64	0.291	30.00	-5.36
1711.50	3	QPSK	н	175	11	1 / 14	16.12	8.42	24.54	0.284	30.00	-5.46
1745.00	3	QPSK	Н	131	9	1 / 14	17.20	7.92	25.12	0.325	30.00	-4.88
1778.50	3	QPSK	Н	168	3	1 / 14	16.65	8.07	24.72	0.296	30.00	-5.28
1745.00	3	16-QAM	Н	131	9	1 / 14	16.42	7.92	24.34	0.272	30.00	-5.66
1712.50	5	QPSK	Н	130	12	1 / 24	15.53	8.41	23.94	0.247	30.00	-6.06
1745.00	5	QPSK	Н	129	8	1 / 24	17.28	7.92	25.20	0.331	30.00	-4.80
1777.50	5	QPSK	Н	166	4	1 / 24	16.28	8.06	24.34	0.272	30.00	-5.66
1712.50	5	16-QAM	н	130	12	1 / 24	15.78	8.41	24.19	0.262	30.00	-5.81
1715.00	10	QPSK	Н	175	8	1 / 49	15.48	8.37	23.85	0.243	30.00	-6.15
1745.00	10	QPSK	Н	128	11	1 / 49	16.52	7.92	24.44	0.278	30.00	-5.56
1775.00	10	QPSK	н	168	3	1 / 49	16.80	8.04	24.84	0.305	30.00	-5.16
1775.00	10	16-QAM	н	168	3	1 / 49	15.88	8.04	23.92	0.247	30.00	-6.08
1717.50	15	QPSK	н	168	3	1 / 74	15.05	8.33	23.38	0.218	30.00	-6.62
1745.00	15	QPSK	Н	132	6	1 / 74	16.92	7.92	24.84	0.305	30.00	-5.16
1772.50	15	QPSK	Н	167	4	1 / 74	16.53	8.02	24.55	0.285	30.00	-5.45
1745.00	15	16-QAM	Н	132	6	1 / 74	16.23	7.92	24.15	0.260	30.00	-5.85
1720.00	20	QPSK	Н	130	12	1 / 99	16.03	8.29	24.32	0.271	30.00	-5.68
1745.00	20	QPSK	Н	129	3	1 / 99	15.76	7.92	23.68	0.233	30.00	-6.32
1770.00	20	QPSK	Н	166	4	1 / 99	15.97	8.00	23.97	0.250	30.00	-6.03
1720.00	20	16-QAM	Н	130	12	1 / 99	15.43	8.29	23.72	0.236	30.00	-6.28
1745.00	1.4	QPSK	V	113	4	1 / 5	14.25	7.92	22.17	0.165	30.00	-7.83

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Table 7-7. EIRP Data (Band 66/4)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	💽 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Degs 147 of 170
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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	144	122	1 / 0	16.50	8.42	24.92	0.310	33.01	-8.09
1880.00	1.4	QPSK	Н	148	184	1 / 0	16.61	8.26	24.87	0.307	33.01	-8.14
1909.30	1.4	QPSK	Н	157	189	1 / 0	16.70	8.16	24.86	0.306	33.01	-8.15
1850.70	1.4	16-QAM	н	144	122	1 / 0	15.83	8.42	24.25	0.266	33.01	-8.76
1851.50	3	QPSK	Н	156	156	1 / 0	16.65	8.42	25.07	0.321	33.01	-7.94
1880.00	3	QPSK	Н	162	174	1 / 0	16.66	8.26	24.92	0.310	33.01	-8.09
1908.50	3	QPSK	Н	141	188	1 / 0	16.70	8.16	24.86	0.306	33.01	-8.15
1851.50	3	16-QAM	Н	156	156	1 / 0	15.73	8.42	24.15	0.260	33.01	-8.86
1852.50	5	QPSK	Н	144	191	1 / 0	16.56	8.41	24.97	0.314	33.01	-8.04
1880.00	5	QPSK	Н	148	188	1 / 0	15.62	8.26	23.88	0.244	33.01	-9.13
1907.50	5	QPSK	Н	157	184	1 / 0	15.92	8.16	24.08	0.256	33.01	-8.93
1852.50	5	16-QAM	Н	144	191	1 / 0	15.82	8.41	24.23	0.265	33.01	-8.78
1855.00	10	QPSK	Н	152	178	1 / 0	16.28	8.40	24.68	0.294	33.01	-8.33
1880.00	10	QPSK	Н	147	181	1 / 0	15.75	8.26	24.01	0.252	33.01	-9.00
1905.00	10	QPSK	Н	156	183	1 / 0	14.96	8.15	23.11	0.205	33.01	-9.90
1855.00	10	16-QAM	Н	152	178	1 / 0	15.50	8.40	23.90	0.245	33.01	-9.11
1857.50	15	QPSK	Н	143	187	1 / 0	16.42	8.38	24.80	0.302	33.01	-8.21
1880.00	15	QPSK	Н	136	182	1 / 0	15.50	8.26	23.76	0.237	33.01	-9.25
1902.50	15	QPSK	Н	157	206	1 / 0	14.51	8.15	22.66	0.184	33.01	-10.35
1857.50	15	16-QAM	Н	143	187	1/0	15.60	8.38	23.98	0.250	33.01	-9.03
1860.00	20	QPSK	Н	141	200	1/0	15.58	8.37	23.95	0.248	33.01	-9.06
1880.00	20	QPSK	Н	156	196	1/0	15.27	8.26	23.53	0.225	33.01	-9.48
1900.00	20	QPSK	Н	136	197	1/0	16.38	8.15	24.53	0.283	33.01	-8.48
1860.00	20	16-QAM	Н	141	200	1/0	14.83	8.37	23.20	0.209	33.01	-9.81
1852.50	5	Н	V	124	137	1 / 0	15.72	8.42	24.14	0.259	33.01	-8.87

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Table 7-8. EIRP Data (Band 2)

FCC ID: ZNFX525WA	A PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Degs 140 of 170
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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]
2502.50	5	QPSK	н	108	221	1 / 0	13.95	9.43	23.38	0.218	33.01	-9.63
2535.00	5	QPSK	н	106	201	1 / 24	-9.43	9.39	22.78	0.190	33.01	-10.23
2567.50	5	QPSK	н	112	214	1 / 0	-9.43	9.45	23.22	0.210	33.01	-9.79
2502.50	5	16-QAM	Н	108	221	1 / 0	-9.43	9.43	22.69	0.186	33.01	-10.32
2505.00	10	QPSK	Н	102	209	1 / 0	-9.43	9.43	23.47	0.222	33.01	-9.54
2535.00	10	QPSK	Н	105	217	1 / 49	-9.43	9.39	22.91	0.195	33.01	-10.10
2565.00	10	QPSK	Н	100	215	1 / 0	-9.43	9.44	23.38	0.218	33.01	-9.63
2505.00	10	16-QAM	Н	102	209	1 / 0	-9.43	9.43	22.77	0.189	33.01	-10.24
2507.50	15	QPSK	Н	102	209	1 / 0	-9.43	9.42	23.37	0.217	33.01	-9.64
2535.00	15	QPSK	Н	105	217	1 / 74	-9.43	9.39	22.84	0.192	33.01	-10.17
2562.50	15	QPSK	Н	100	215	1 / 0	-9.43	9.43	23.28	0.213	33.01	-9.73
2507.50	15	16-QAM	Н	102	209	1 / 0	-9.43	9.42	22.60	0.182	33.01	-10.41
2510.00	20	QPSK	Н	102	209	1 / 0	14.04	9.42	23.46	0.222	33.01	-9.55
2535.00	20	QPSK	Н	105	217	1 / 99	13.78	9.39	23.17	0.208	33.01	-9.84
2560.00	20	QPSK	Н	100	215	1 / 0	13.72	9.42	23.14	0.206	33.01	-9.87
2510.00	20	16-QAM	н	102	209	1 / 0	13.30	9.42	22.72	0.187	33.01	-10.29
10.00	QPSK	Н	V	198	321	1 / 0	10.77	9.43	20.20	0.105	33.01	-12.81

Table 7-9. EIRP Data (Band 7)

FCC ID: ZNFX525WA	A PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 140 of 170
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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 v03r01 - 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 1m to 4m EUT tumtable 1.5m & styrofoam block 3m

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

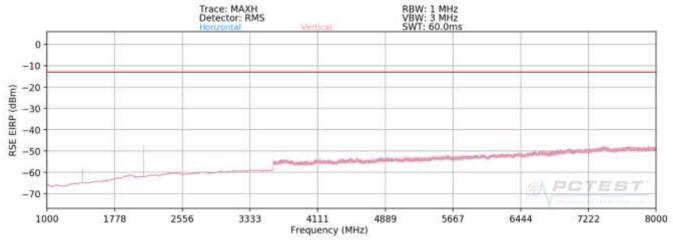
Figure 7-7. Test Instrument & Measurement Setup

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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Plot 7-239. Radiated Spurious Plot above 1GHz (Band 12/17)

704	4.00 MHz
QPSK	
10.0	MHz
3	meters
-13	dBm
	QPSK 10.0 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]
1408.00	Н	165	214	-67.80	7.99	-59.80	-46.8
2112.00	Н	169	134	-47.69	9.11	-38.58	-25.6
2816.00	Н	-	-	-68.77	10.11	-58.66	-45.7
3520.00	Н	-	-	-72.34	9.73	-62.60	-49.6

Table 7-10. Radiated Spurious Data (Band 12/17 – Low Channel)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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OPERATING FREQUENCY:	707	MHz	
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	10.0	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]
1415.00	Н	116	342	-69.25	8.09	-61.16	-48.2
2122.50	Н	108	148	-46.61	9.11	-37.50	-24.5
2830.00	Н	-	-	-70.96	10.14	-60.82	-47.8
3537.50	Н	-	-	-72.41	9.76	-62.65	-49.7

Table 7-11. Radiated Spurious Data (Band 12/17 – Mid Channel)

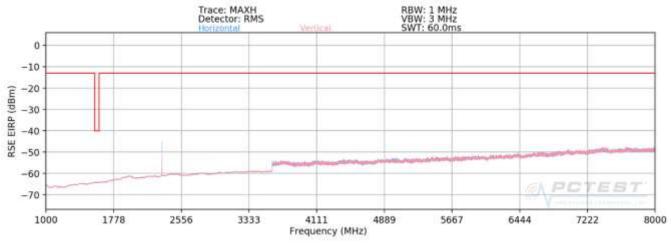
OPERATING FREQUENCY:	71	1.00	MHz
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	10.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

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]
1422.00	Н	200	305	-69.22	8.18	-61.04	-48.0
2133.00	Н	110	141	-50.97	9.11	-41.86	-28.9
2844.00	Н	-	-	-70.44	10.17	-60.27	-47.3
3555.00	Н	-	-	-73.41	9.80	-63.61	-50.6

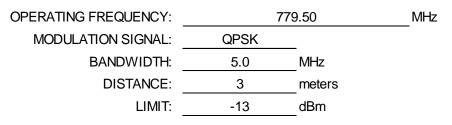
Table 7-12. Radiated Spurious Data (Band 12/17 – High Channel)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Degs 152 of 170	
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Plot 7-240. Radiated Spurious Plot above 1GHz (Band 13)



[H/V]	Height [cm]	Azimuth [degree]	Level at Antenna Terminals [dBm]	Antenna Gain [dBi]	Emission Level [dBm]	Margin [dB]
Н	-	-	-69.65	9.47	-60.18	-47.2
Н	160	188	-48.09	9.51	-38.58	-25.6
Н	-	-	-67.41	9.25	-58.16	-45.2
Н	-	-	-70.62	11.40	-59.21	-46.2
	H H H	[H/V] [cm] H - H 160 H - H - H - H -	H/V] [cm] [degree] H - - H 160 188 H - - H - - H - - H - - H - -	[H/V] [cm] [degree] Terminals [dBm] H - - -69.65 H 160 188 -48.09 H - - -67.41 H - - -70.62	[H/V] [cm] [degree] lerminals [dBm] [dBi] H - - -69.65 9.47 H 160 188 -48.09 9.51 H - - -67.41 9.25 H - - -70.62 11.40	[H/V][cm][degree]lerminals [dBm][dBi][dBm]H69.659.47-60.18H160188-48.099.51-38.58H67.419.25-58.16H70.6211.40-59.21

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

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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OPERATING FREQUENCY:	782	MHz	
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]
2346.00	Н	117	58	-67.86	9.44	-58.43	-45.4
3128.00	Н	187	177	-57.56	9.48	-48.08	-35.1
3910.00	Н	-	-	-68.12	9.26	-58.86	-45.9
4692.00	Н	-	-	-73.39	11.43	-61.95	-49.0

Table 7-14. Radiated Spurious Data (Band 13 – Mid Channel)

784	4.50 MHz	
QPSK	_	
5.0	MHz	
3	meters	
-13	dBm	
	QPSK 5.0 3	QPSK 5.0 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]
2353.50	Н	127	244	-69.51	9.40	-60.11	-47.1
3138.00	Н	198	128	-52.52	9.45	-43.06	-30.1
3922.50	Н	-	-	-68.50	9.26	-59.23	-46.2
4707.00	Н	-	-	-70.56	11.45	-59.11	-46.1

Table 7-15. Radiated Spurious Data (Band 13 – High Channel)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🕞 LG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 155 of 179	
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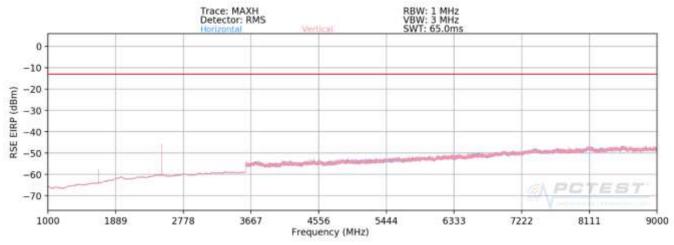
MODULATION SIGNAL:	QPSK	_
BANDWIDTH:	5.00	MHz
DISTANCE:	3	meters
NARROWBAND EMISSION LIMIT:	-50	dBm
WIDEBAND EMISSION LIMIT:	-40	dBm/MHz

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]
1559.00	Н	278	190	-54.23	3.53	-50.70	-10.7
1564.00	Н	309	192	-56.95	3.53	-53.42	-13.4
1569.00	н	299	182	-56.99	3.53	-53.46	-13.5

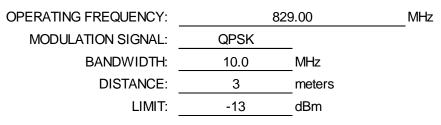
Table 7-16. Radiated Spurious Data (Band 13 – 1559-1610MHz Band)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 156 of 179
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Plot 7-241. Radiated Spurious Plot above 1GHz (Band 5)



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]
V	131	13	-67.12	8.88	-58.24	-45.2
V	104	361	-51.36	9.23	-42.13	-29.1
V	-	-	-60.86	9.43	-51.42	-38.4
V	-	-	-60.64	10.13	-50.51	-37.5
	Pol. [H/V] V V	Pol. Height [cm] V 131 V 104 V - V -	Pol. [H/V] Height [cm] Azimuth [degree] V 131 13 V 104 361 V - - V - -	Pol. [H/V] Height [cm] Azimuth [degree] Level at Antenna Terminals [dBm] V 131 13 -67.12 V 104 361 -51.36 V - - -60.86 V - - -60.64	Pol. [H/V] Height [cm] Azimuth [degree] Level at Antenna Terminals [dBm] Antenna Gain [dBi] V 131 13 -67.12 8.88 V 104 361 -51.36 9.23 V - - -60.86 9.43 V - - -60.64 10.13	Pol. [H/V]Height [cm]Azimuth [degree]Level at Antenna Terminals [dBm]Antenna Gain [dBi]Emission Level [dBm]V13113-67.128.88-58.24V104361-51.369.23-42.13V60.869.43-51.42

Table 7-17. Radiated Spurious Data (Band 5 – Low Channel)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🕞 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 157 of 179
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OPERATING FREQUENCY:	830	MHz	
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	10.0	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]
1673.00	V	195	146	-66.06	8.78	-57.28	-44.3
2509.50	V	156	324	-52.28	9.27	-43.00	-30.0
3346.00	V	-	-	-62.13	9.44	-52.69	-39.7
4182.50	V	-	-	-63.18	10.34	-52.83	-39.8

Table 7-18. Radiated Spurious Data (Band 5 – Mid Channel)

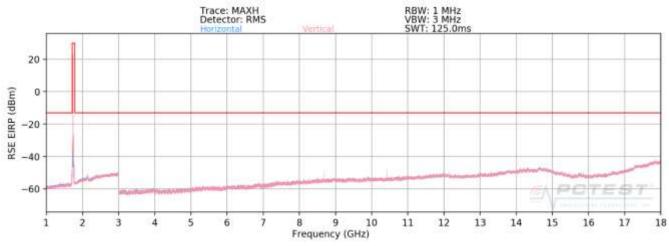
	4.00	MHz
QPSK	_	
10.0	MHz	
3	meters	
-13	dBm	
	QPSK 10.0 3	QPSK 10.0 MHz 3 meters

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]
1688.00	V	131	219	-66.11	8.68	-57.44	-44.4
2532.00	V	104	183	-50.47	9.28	-41.19	-28.2
3376.00	V	-	-	-62.75	9.50	-53.24	-40.2
4220.00	V	-	-	-61.60	10.53	-51.07	-38.1

Table 7-19. Radiated Spurious Data (Band 5 – High Channel)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 158 of 178
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Plot 7-242. Radiated Spurious Plot above 1GHz (Band 66/4)

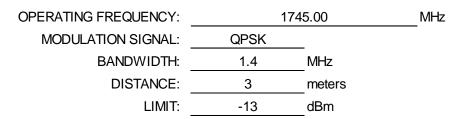
171	0.70	MHz
QPSK	_	
1.4	MHz	
3	meters	
-13	dBm	
	QPSK 1.4 3	1.4 MHz 3 meters

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]
3421.40	Н	195	351	-61.24	9.61	-51.63	-38.6
5132.10	Н	104	33	-57.68	11.06	-46.62	-33.6
6842.80	Н	-	-	-57.49	10.93	-46.56	-33.6
8553.50	Н	-	-	-58.89	11.79	-47.09	-34.1

Table 7-20. Radiated Spurious Data (Band 66/4 – Low Channel)

FCC ID: ZNFX525WA	PCTEST	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]
3490.00	Н	169	339	-59.61	9.70	-49.91	-36.9
5235.00	Н	168	329	-55.47	11.08	-44.39	-31.4
6980.00	Н	-	-	-59.29	11.04	-48.25	-35.2
8725.00	Н	-	-	-59.13	11.88	-47.25	-34.2

Table 7-21. Radiated Spurious Data (Band 66/4 – Mid Channel)

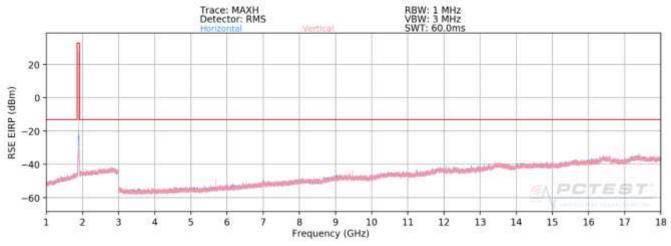
OPERATING FREQUENCY:	177	9.30	MHz
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	1.4	MHz	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

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]
3558.60	Н	166	349	-60.83	9.81	-51.02	-38.0
5337.90	Н	-	-	-60.66	11.13	-49.52	-36.5
7117.20	Н	-	-	-57.47	11.07	-46.40	-33.4

Table 7-22. Radiated Spurious Data (Band 66/4 – High Channel)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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Plot 7-243. Radiated Spurious Plot above 1GHz (Band 2)

185	2.50 MH	z
QPSK	_	
5.0	MHz	
3	meters	
-13	dBm	
	QPSK 5.0 3	5.0 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]
3705.00	Н	184	28	-57.51	9.83	-47.68	-34.7
5557.50	Н	-	-	-60.77	11.19	-49.58	-36.6
7410.00	Н	-	-	-58.40	10.88	-47.53	-34.5

Table 7-23. Radiated Spurious Data (Band 2 – Low Channel)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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OPERATING FREQUENCY:	188	30.00	MHz
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]
3760.00	Н	159	255	-53.74	9.59	-44.15	-31.2
5640.00	Н	-	-	-64.20	11.30	-52.89	-39.9
7520.00	Н	-	-	-59.73	11.08	-48.65	-35.6

Table 7-24. Radiated Spurious Data (Band 2 – Mid Channel)

OPERATING FREQUENCY:

1907.50 QPSK

MHz

MODULATION SIGNAL:

BANDWIDTH: 5.0 MHz

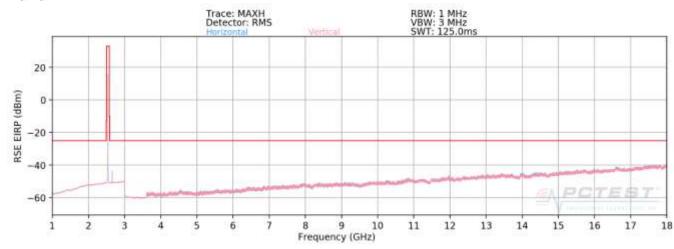
DISTANCE: 3 meters LIMIT: -13 dBm

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]
3815.00	H	154	107	-55.80	9.28	-46.52	-33.5
5722.50	Н	120	362	-58.13	11.40	-46.73	-33.7
7630.00	Н	-	-	-58.65	11.33	-47.32	-34.3
9537.50	Н	-	-	-58.55	12.41	-46.14	-33.1

Table 7-25. Radiated Spurious Data (Band 2 – High Channel)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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OPERATING FREQUENCY:	250	5.00	MHz
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	10.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-25	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]
5010.00	Н	153	47	-61.26	11.39	-49.87	-24.9
7515.00	Н	166	216	-57.99	11.39	-46.60	-21.6
10020.00	Н	-	-	-57.08	12.31	-44.77	-19.8
12525.00	Н	-	-	-54.54	12.85	-41.70	-16.7

Table 7-26. Radiated Spurious Data (Band 7 – Low Channel)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	🕞 LG	Approved by: Quality Manager
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OPERATING FREQUENCY:	253	5.00	MHz
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	10.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-25	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]
5070.00	Н	142	222	-61.24	11.21	-50.03	-25.0
7605.00	Н	155	217	-57.18	11.29	-45.89	-20.9
10140.00	Н	-	-	-56.94	12.41	-44.53	-19.5
12675.00	Н	-	-	-53.49	12.85	-40.64	-15.6

Table 7-27. Radiated Spurious Data (Band 7 – Mid Channel)

256	35.00	MHz
QPSK	_	
10.0	MHz	
3	meters	
-25	dBm	
	QPSK 10.0 3	10.0 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]
5130.00	Н	147	246	-62.17	11.06	-51.10	-26.1
7695.00	Н	166	216	-58.76	11.43	-47.33	-22.3
10260.00	Н	-	-	-55.92	11.43	-44.48	-19.5
12825.00	Н	-	-	-51.64	12.55	-39.09	-14.1

Table 7-28. Radiated Spurious Data (Band 7 – High Channel)

FCC ID: ZNFX525WA	PCTEST	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 $\pm 0.00025\%$ (± 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 12/17 Frequency Stability Measurements

OPERATING FREQUENCY:	707,500,000	Hz
CHANNEL:	23790	_
REFERENCE VOLTAGE:	3.82	VDC

VOLTAGE (%)	POWER (VDC)	ТЕМР ([°] С)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.82	- 30	707,499,709	-291	-0.0000411
100 %		- 20	707,500,292	292	0.0000413
100 %		- 10	707,499,759	-241	-0.0000341
100 %		0	707,499,766	-234	-0.0000331
100 %		+ 10	707,500,088	88	0.0000124
100 %		+ 20	707,500,121	121	0.0000171
100 %		+ 30	707,500,224	224	0.0000317
100 %		+ 40	707,499,980	-20	-0.0000028
100 %		+ 50	707,499,805	-195	-0.0000276
BATT. ENDPOINT	3.21	+ 20	707,500,137	137	0.0000194

Table 7-29. Frequency Stability Data (Band 12/17)

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 12/17 Frequency Stability Measurements

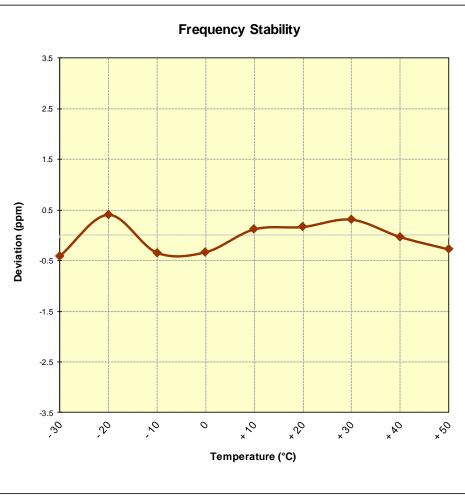


Figure 7-8. Frequency Stability Graph (Band 12/17)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🛞 LG	Approved by: Quality Manager
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Band 13 Frequency Stability Measurements

OPERATING FREQUENCY:	782,000,000	Hz
CHANNEL:	23230	-
REFERENCE VOLTAGE:	3.82	VDC

VOLTAGE (%)	POWER (VDC)	ТЕМР (°С)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.82	- 30	782,000,025	25	0.0000032
100 %		- 20	782,000,102	102	0.0000130
100 %		- 10	782,000,046	46	0.0000059
100 %		0	781,999,959	-41	-0.0000052
100 %		+ 10	781,999,815	-185	-0.0000237
100 %		+ 20	782,000,088	88	0.0000113
100 %		+ 30	782,000,040	40	0.0000051
100 %		+ 40	782,000,066	66	0.0000084
100 %		+ 50	782,000,010	10	0.0000013
BATT. ENDPOINT	3.21	+ 20	782,000,306	306	0.0000391

Table 7-30. Frequency Stability Data (Band 13)

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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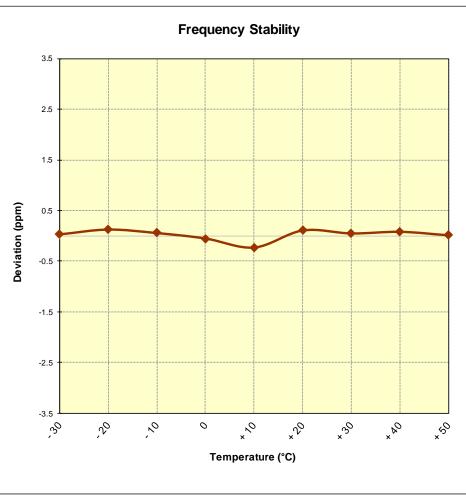


Figure 7-9. Frequency Stability Graph (Band 13)

FCC ID: ZNFX525WA	APCTEST	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:	3.82	_ VDC
DEVIATION LIMIT:	± 0.00025 % or 2.5 ppm	_

VOLTAGE (%)	POWER (VDC)	ТЕМР (°С)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.82	- 30	836,500,191	191	0.0000228
100 %		- 20	836,499,633	-367	-0.0000439
100 %		- 10	836,500,258	258	0.0000308
100 %		0	836,500,300	300	0.0000359
100 %		+ 10	836,499,891	-109	-0.0000130
100 %		+ 20	836,500,264	264	0.0000316
100 %		+ 30	836,500,423	423	0.0000506
100 %		+ 40	836,500,214	214	0.0000256
100 %		+ 50	836,499,985	-15	-0.0000018
BATT. ENDPOINT	3.21	+ 20	836,499,958	-42	-0.0000050

Table 7-31. Frequency Stability Data (Band 5)

FCC ID: ZNFX525WA	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	C LG	Approved by: Quality Manager
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Band 5 Frequency Stability Measurements

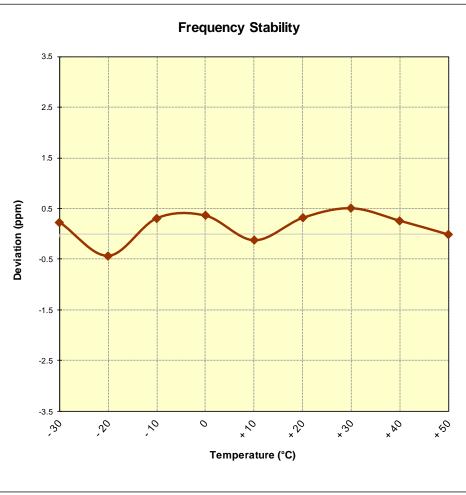


Figure 7-10. Frequency Stability Graph (Band 5)

FCC ID: ZNFX525WA	AVPCTEST	MEASUREMENT REPORT (CERTIFICATION)	🚯 LG	Approved by: Quality Manager
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Band 66/4 Frequency Stability Measurements

OPERATING FREQUENCY:	1,745,000,000	Hz
CHANNEL:	132322	_
REFERENCE VOLTAGE:	3.82	VDC

VOLTAGE (%)	POWER (VDC)	ТЕМР (°С)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.82	- 30	1,744,999,837	-163	-0.0000093
100 %		- 20	1,744,999,948	-52	-0.000030
100 %		- 10	1,745,000,122	122	0.0000070
100 %		0	1,745,000,014	14	0.000008
100 %		+ 10	1,745,000,151	151	0.000087
100 %		+ 20	1,745,000,004	4	0.0000002
100 %		+ 30	1,744,999,730	-270	-0.0000155
100 %		+ 40	1,744,999,703	-297	-0.0000170
100 %		+ 50	1,744,999,960	-40	-0.0000023
BATT. ENDPOINT	3.21	+ 20	1,744,999,781	-219	-0.0000126

Table 7-32. Frequency Stability Data (Band 66/4)

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 66/4 Frequency Stability Measurements

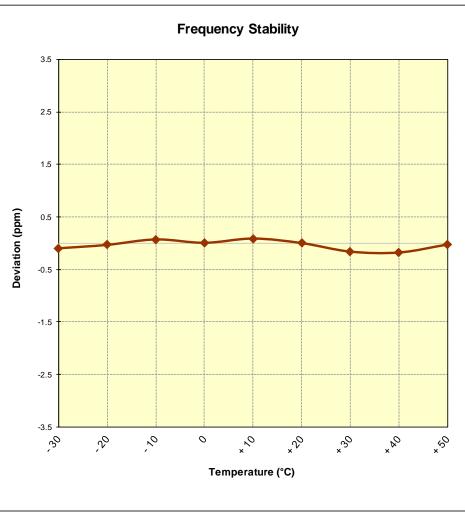


Figure 7-11. Frequency Stability Graph (Band 66/4)

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Band 2 Frequency Stability Measurements

 OPERATING FREQUENCY:
 1,880,000,000
 Hz

 CHANNEL:
 18900
 Hz

 REFERENCE VOLTAGE:
 3.82
 VDC

 DEVIATION LIMIT:
 ± 0.00025 % or 2.5 ppm
 VDC

VOLTAGE (%)	POWER (VDC)	ТЕМР (°С)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.82	- 30	1,879,999,798	-202	-0.0000107
100 %		- 20	1,880,000,059	59	0.0000031
100 %		- 10	1,879,999,972	-28	-0.0000015
100 %		0	1,879,999,805	-195	-0.0000104
100 %		+ 10	1,879,999,911	-89	-0.0000047
100 %		+ 20	1,879,999,650	-350	-0.0000186
100 %		+ 30	1,879,999,541	-459	-0.0000244
100 %		+ 40	1,879,999,665	-335	-0.0000178
100 %		+ 50	1,880,000,089	89	0.0000047
BATT. ENDPOINT	3.21	+ 20	1,879,999,941	-59	-0.0000031

Table 7-33. Frequency Stability Data (Band 2)

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Band 2 Frequency Stability Measurements

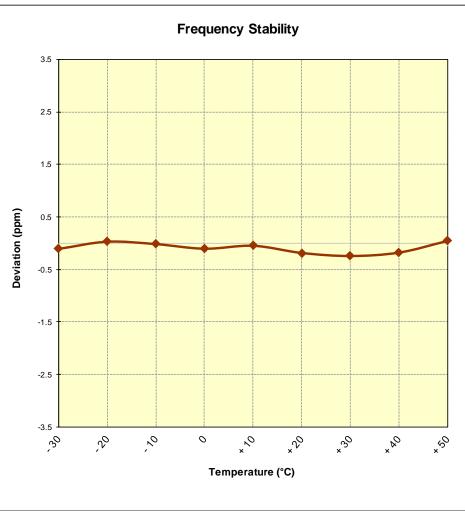


Figure 7-12. Frequency Stability Graph (Band 2)

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Band 7 Frequency Stability Measurements

OPERATING FREQUENCY:	2,535,000,000	Hz
CHANNEL:	21100	_
REFERENCE VOLTAGE:	3.82	VDC

VOLTAGE (%)	POWER (VDC)	ТЕМР (°С)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.82	- 30	2,535,000,132	132	0.0000052
100 %		- 20	2,534,999,986	-14	-0.0000006
100 %		- 10	2,534,999,892	-108	-0.0000043
100 %		0	2,535,000,113	113	0.0000045
100 %		+ 10	2,535,000,345	345	0.0000136
100 %		+ 20	2,534,999,995	-5	-0.0000002
100 %		+ 30	2,535,000,113	113	0.0000045
100 %		+ 40	2,535,000,138	138	0.0000054
100 %		+ 50	2,535,000,099	99	0.0000039
BATT. ENDPOINT	3.21	+ 20	2,534,999,933	-67	-0.0000026

Table 7-34. Frequency Stability Data (Band 7)

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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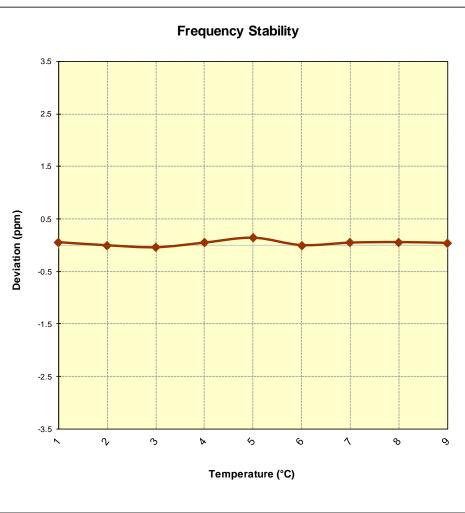


Figure 7-13. Frequency Stability Graph (Band 7)

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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: ZNFX525WA** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules and RSS-130, RSS-132, RSS-133, RSS-139, RSS-139 of the Innovation, Science and Economic Development Canada Rules for LTE operation only.

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