

Keysight Spectrum An										
CRL RF	50 Ω AC	CORREC PNO: Wide			#Avg Typ	e: RMS	TRAC	M Mar 27, 2018 DE <b>1 2 3 4 5 6</b> PE A WWWWW ET A N N N N N	Fr	equency
0 dB/div Ref 2	25.00 dBm	IT Gam. Edw				Mkr1	1.755 0 -29.	00 GHz 02 dBm		Auto Tun
15.0										Center Fre 5000000 G⊦
5.00									1.75	<b>Start Fre</b> 1000000 GH
25.0				1				DL1 -13.00 dBm	1.75	<b>Stop Fre</b> 9000000 Gi
15.0					×~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				<u>Auto</u>	CF Ste 800.000 kl Ma
5.0										F <b>req Offs</b> 0 F
55.0 Center 1.755000	0 GHz						Span 8	.000 MHz	Log	Scale Typ ∟
Res BW 100 kl	Hz	#VBW	300 kHz			Sweep 1	.000 ms (	1001 pts)		
ŝG						STATUS	3			

Plot 7-214. Upper Band Edge Plot (Band 4 - 10.0MHz QPSK - Full RB Configuration)



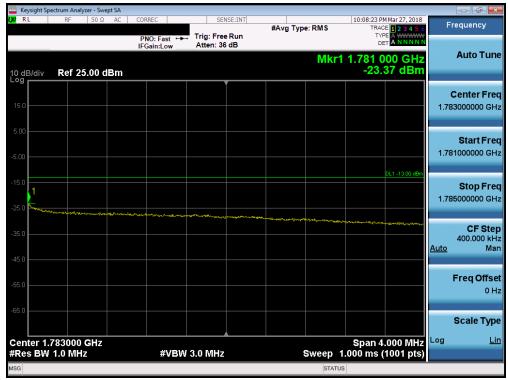
Plot 7-215. Upper Extended Band Edge Plot (Band 4 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 121 of 202
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 131 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			



	Spectrum Analyze										- 0
X/RL	RF	50 Ω AC	CORREC	Trig: Free		#Avg Typ	e: RMS	TRAC	Mar 27, 2018 E 1 2 3 4 5 6 E A WWWW T A N N N N N	Fre	equency
10 dB/div	Ref 25.0	00 dBm	IFGain:Low	Atten: 36	αB		Mkr1	1.780 0			Auto Tun
15.0											enter Fre 000000 G⊦
5.00	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			m						1.776	Start Fre
25.0					1				DL1 -13.00 dBm	1.784	Stop Fre
35.0 <u> </u>						hum			~~~~~	<u>Auto</u>	<b>CF Ste</b> 800.000 kł Ma
5.0										F	F <b>req Offs</b> 0 I
65.0	1.780000 G	Hz						Snan 8	.000 MHz	tog	Scale Typ
	N 100 kHz		#VB\	V 300 kHz			Sweep 1	3paris 1.000 ms (	1001 pts)		
SG							STATU	s			

Plot 7-216. Upper Band Edge Plot (Band 66 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-217. Upper Extended Band Edge Plot (Band 66 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 122 of 202
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 132 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			



	Spectrum Analy												- 6
X/RL	RF	50 Ω	AC	CORREC PNO: W	ide 🖵	SE Trig: Fre Atten: 3		#Avg Typ	e: RMS	TRA	MMar 27, 2018 DE 1 2 3 4 5 6 PE A WWWWW ET A N N N N N	Fre	equency
I0 dB/div	Ref 25	5.00 dE	3m	II Gam.	ow				Mkr	1 1.710 ( -30.	000 GHz 10 dBm		Auto Tun
15.0													enter Fre 000000 G⊦
5.00							$\int$	and the second sec		******		1.704	Start Fre 000000 G⊦
25.0							1				DL1 -13.00 dBm	1.716	<b>Stop Fre</b> 000000 GH
45.0		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~	~~~~	when the start						1. <u>Auto</u>	CF Ste 200000 MH Ma
55.0												F	F <b>req Offs</b> 0 H
	.710000									Span 1	2.00 191112	<b>t</b> og	Scale Typ
	V 150 kH:	z		;	¢VB₩	470 kHz					(1001 pts)		
ŝG									STATU	JS			

Plot 7-218. Lower Band Edge Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)



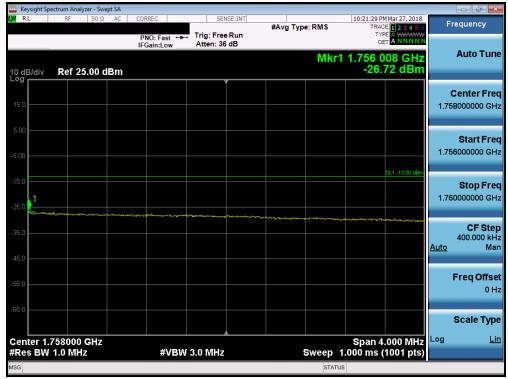
Plot 7-219. Lower Extended Band Edge Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 122 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 133 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			



	pectrum Analyz										
RL	RF	50 Ω AC	CORREC PNO: Wide		Run dB	#Avg Typ	e: RMS	TRACE	Mar 27, 2018           1 2 3 4 5 6           A WWWWW           A N N N N N	Frequ	iency
0 dB/div	Ref 25.	.00 dBm					Mkr1	1.755 0 -28.8	00 GHz 39 dBm	Au	ito Tun
15.0										Cen 1.75500	i <b>ter Fre</b> 0000 G⊦
5.00	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	olmun and and and and and and and and and an	here the second							St 1.74900	t <b>art Fre</b> 0000 GH
25.0					1				0L1 -13.00 dBm	<b>S1</b> 1.76100	t <b>op Fre</b> 0000 G⊦
15.0						~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		·····	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		CF Ste 0000 MI Ma
i5.0										Fre	e <b>q Offs</b> 0 I
65.0	.755000 (	247						Span 4	2.00 MHz	Sca	ale Typ ∟
	/ 55000 C		#VBW	470 kHz			Sweep ′	span 1. 1.000 ms ('	1001 pts)		_
SG							STATU	s			

Plot 7-220. Upper Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)



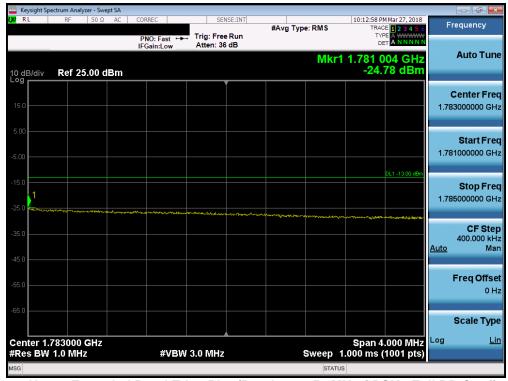
Plot 7-221. Upper Extended Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 124 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 134 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			



	t Spectrum Anal											d X
KU RL	RF	50Ω A	AC COR	IO: Wide G	Trig: Fre	NSE:INT	#Avg Typ	pe:RMS	TRA	M Mar 27, 2018 CE 1 2 3 4 5 6 PE A WWWWW ET A N N N N N	Frequer	псу
I0 dB/div	v Ref 2	5.00 dBr		ain:Low	Atten: 36	5 dB		Mkr1	1.780 (	000 GHz 66 dBm	Auto	Tun
15.0											Cente 1.7800000	
5.00 <b></b>		Manny and	~~~~~~								<b>Sta</b> r 1.7740000	t <b>Fre</b> 00 Gi
25.0					- t	1				DL1 -13.00 dBm	<b>Sto</b> 1.7860000	p Fre
15.0						horan and a second	hann	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Mun	M	C 1.2000 <u>Auto</u>	F Ste 00 MI Mi
i5.0 ——											Freq	Offs 0 I
5.0											Scale	
	1.780000 W 150 kH			#VB\	N 470 kHz			Sweep ′	Span 1 1.000 ms	2.00 MHz (1001 pts)	Log	L
SG								STATU	s			

Plot 7-222. Upper Band Edge Plot (Band 66 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-223. Upper Extended Band Edge Plot (Band 66 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 125 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 135 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			



	Spectrum Analy	/zer - Swep	ot SA										
XI RL	RF	50 Ω	AC	PNO: F	ast 🖵			#Avg Ty	pe: RMS	TRA	PM Mar 27, 2018 CE 1 2 3 4 5 6 PE A WWWWW DET A NNNNN	Free	quency
10 dB/div	Ref 2	5.00 dl	Зm	IFGain:L	LOW	Atten: 3			Mkr	1 1.710	000 GHz .72 dBm	4	Auto Tun
15.0													enter Fre 000000 GH
5.00								~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	www.www.w				Start Fre
25.0							1				DL1 -13.00 dBm		<b>Stop Fre</b> 000000 GH
45.0		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		p	<u>~~~</u> ~~~~	And the second second						1.6 <u>Auto</u>	CF Ste 00000 MH Ma
55.0												FI	r <b>eq Offs</b> 0 I
65.0	1.710000	GH7								Span	16.00 MHz	<b>S</b> Log	cale Typ
	V 200 kH			ţ	#VBW	620 kHz			Sweep	1.000 ms	(1001 pts)		
ISG									STAT	US			

Plot 7-224. Lower Band Edge Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)



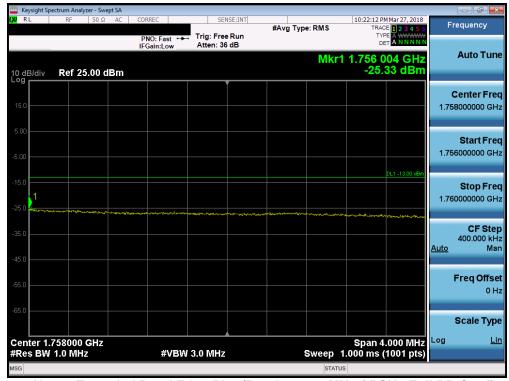
Plot 7-225. Lower Extended Band Edge Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 126 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 136 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			



	pectrum Analy				_								- Ø 론
RL	RF	50 Ω A	F	DRREC PNO: Fa FGain:L	ist 🖵	Trig: Fre Atten: 3		#Avg Typ	e: RMS	TRAC	M Mar 27, 2018 DE <b>1 2 3 4 5 6</b> PE A WWWWW ET A N N N N N	Fre	quency
0 dB/div	Ref 25	5.00 dBr							Mkr1	1.755 ( -29.	00 GHz 10 dBm		Auto Tun
15.0													enter Fre 000000 G⊦
5.00	mfucom		70° C		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~								Start Fre
25.0							1				DL1 -13.00 dBm		<b>Stop Fre</b> 000000 GF
5.0									<u>~~~~~</u> ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	يەر ئىسى ئىسى ئىسى ئىسى ئىسى ئىسى ئىسى ئىس	Margan and Constant	1.0 <u>Auto</u>	CF Ste 500000 MI Mi
5.0												F	<b>req Offs</b> 0 I
epter 1	.755000	CH2								Spand	6.00 MHz	S	cale Typ
	/ 200 kH:			#	VBW	620 kHz			Sweep 1	.000 ms	(1001 pts)		
G									STATU	S			

Plot 7-226. Upper Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)



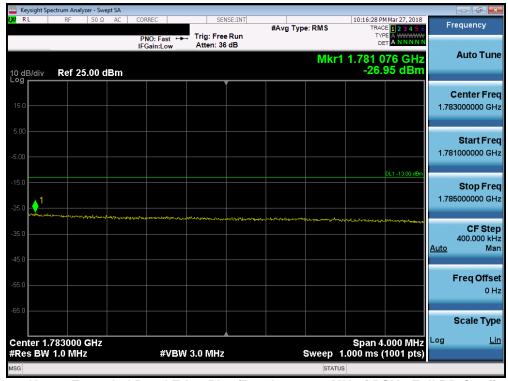
Plot 7-227. Upper Extended Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕑 LG	Approved by: Quality Manager			
Test Report S/N:	Test Dates:	EUT Type:		Dego 127 of 262			
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 137 of 263			
© 2018 PCTEST Engineering Laboratory, Inc. V 7.5 2							



	t Spectrum Analy											
X/RL	RF	50 Ω A	PN	REC			#Avg Typ	e: RMS	TRAC	Mar 27, 2018 E 1 2 3 4 5 6 E A WWWWWWW T A N N N N N	Frequ	lency
10 dB/div	Ref 2	5.00 dBr		ain:Low	Atten: 5	J UB		Mkr1	1.780 0		Aı	uto Tun
15.0												nter Fre 0000 GH
-5.00		and a contraction	1	v								tart Fre 0000 GH
-15.0						1				DL1 -13.00 dBm		top Fre 0000 G⊦
35.0						a company	a and a second sec	mer hour	A may want	mun		CF Ste 0000 M⊦ Ma
55.0											Fre	e <b>q Offs</b> o 0 ⊦
-65.0											Sc	ale Typ
	1.780000 W 200 kH			#VBV	V 620 kHz			Sweep 1	Span 1 1.000 ms (	6.00 MHz 1001 pts)	Log	Li
ISG								STATU	S			

Plot 7-228. Upper Band Edge Plot (Band 66 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-229. Upper Extended Band Edge Plot (Band 66 - 20.0MHz QPSK - Full RB Configuration)

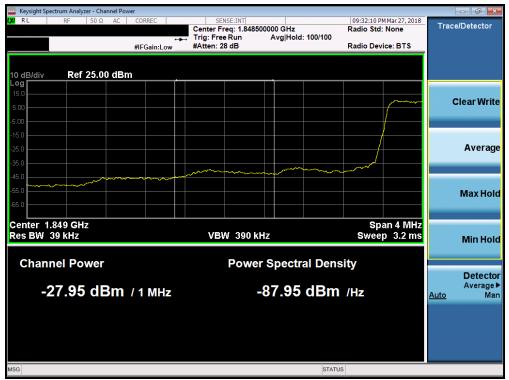
FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕑 LG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dogo 129 of 262	
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 138 of 263	
© 2018 PCTEST Engineering La	V 7.5 2/26/2018				



# Band 25/2



Plot 7-230. Lower Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)



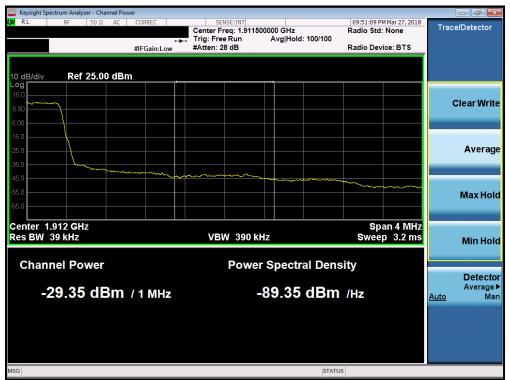
Plot 7-231. Lower Extended Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 120 of 262	
1M1803120039-03.ZNF	March 15 - April 4, 2018	018 Portable Handset		Page 139 of 263	
© 2018 PCTEST Engineering La	horatory Inc			V 7 5 2/26/2018	



	ctrum Analyzer - Swept SA			1		
U RL	RF 50 Ω AC	PNO: Wide	SENSE:INT	#Avg Type: RMS	09:50:52 PM Mar 27, 2018 TRACE <b>1 2 3 4 5 6</b> TYPE A WWWW DET A N N N N N	Frequency
		IFGain:Low	Atten: 36 dB	Mkr	1 1.910 004 GHz -39.63 dBm	Auto Tur
0 dB/div og r	Ref 25.00 dBm				-59.65 UBIII	
15.0						Center Fre 1.910000000 Gi
.00	- Marine Contraction of the second se	www.swww.c.ek				<b>Start Fr</b> 1.908000000 G
5.0					DL1 -13.00 dBm	<b>Stop Fr</b> 1.912000000 G
5.0 5.0	man		1-			<b>CF St</b> e 400.000 k <u>Auto</u> M
5.0					a and the second and the second and the second s	Freq Offs 0
5.0						Scale Ty
enter 1.9 Res BW	910000 GHz 12 kHz	#VBW	39 kHz	Sweep	Span 4.000 MHz 34.13 ms (1001 pts)	Log <u>l</u>
SG				STATU		

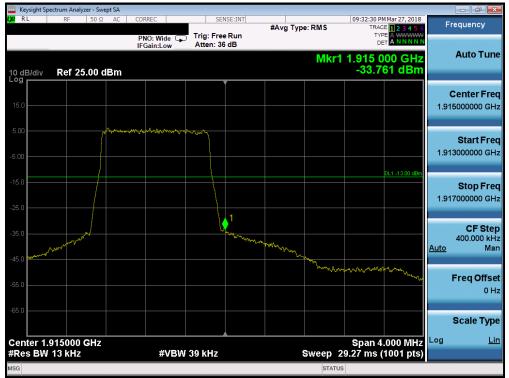
Plot 7-232. Upper Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)



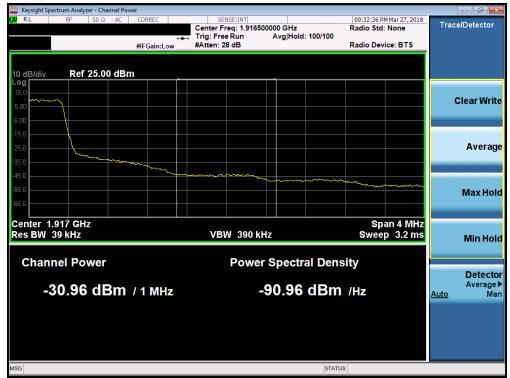
Plot 7-233. Upper Extended Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager			
Test Report S/N:	Test Dates:	EUT Type:		Dage 140 of 262			
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 140 of 263			
© 2018 PCTEST Engineering Laboratory, Inc. V 7.5 2/26/2018							





Plot 7-234. Upper Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)



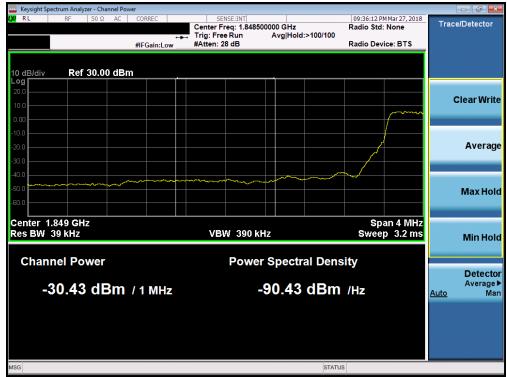
Plot 7-235. Upper Extended Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager			
Test Report S/N:	Test Dates:	EUT Type:		Dage 141 of 262			
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 141 of 263			
2018 PCTEST Engineering Laboratory, Inc. V 7.5 2/26/2018							



Keysight:	Spectrum Analyz RF	er - Swept SA 50 Ω AC	CORREC	CEN.	ISE:INT			00.26.00.01	1 Mar 27, 2018	_	
KL		JU 32 AC	PNO: Wide		Run	#Avg Type	RMS	TRAC	E 1 2 3 4 5 6 E A WWWWW A N N N N N	F	requency
I0 dB/div	Ref 25	.00 dBm					Mkr	1 1.850 0 -25.9	00 GHz 91 dBm		Auto Tun
15.0											Center Fre 0000000 GH
5.00						m m m m m m m m m m m m m m m m m m m	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		taten y com y	1.84	Start Fre 8000000 G⊦
25.0					1				DL1 -13.00 dBm	1.85	<b>Stop Fre</b> 2000000 GH
35.0	in in the second second	~	, marine marine and marine and marine and marine and market a	$\sim$						<u>Auto</u>	CF Ste 400.000 kH Ma
55.0											Freq Offs 0 F
65.0	1.850000 (	2H7						Snan 4	000 MHz		Scale Typ L
	N 30 kHz	9112	#VBV	¥ 91 kHz		s	weep	5.533 ms (	1001 pts)		
SG							STATU	JS			

Plot 7-236. Lower Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)



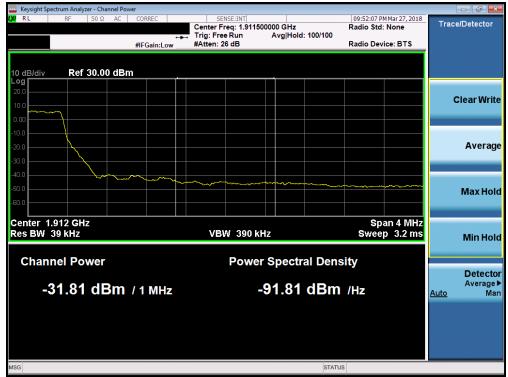
Plot 7-237. Lower Extended Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager			
Test Report S/N:	Test Dates:	EUT Type:		Dage 142 of 262			
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 142 of 263			
2018 PCTEST Engineering Laboratory, Inc. V 7.5 2/26/2018							



Keysight Spectrum Analyzer - Swept SA				
RL RF 50 Ω AC	CORREC SENSE:INT PNO: Wide Trig: Free Run IFGain:Low Atten: 36 dB	#Avg Type: RMS	09:52:01 PM Mar 27, 2018 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	Frequency
dB/div Ref 25.00 dBm	IFGain:Low Atten. 60 dB	Mkr	1.910 000 GHz -25.35 dBm	Auto Tun
5.0				Center Fre 1.910000000 G⊦
.00			DL1 -13.00 dBm	<b>Start Fre</b> 1.908000000 GF
5.0				<b>Stop Fre</b> 1.912000000 GF
5.0		1 million and and and and and and and and and an	man and a second	CF Ste 400.000 kH <u>Auto</u> Ma
5.0				Freq Offs 0 ⊦
enter 1.910000 GHz				Scale Typ
Res BW 30 kHz	#VBW 91 kHz	Sweep :	5.533 ms (1001 pts)	

Plot 7-238. Upper Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)



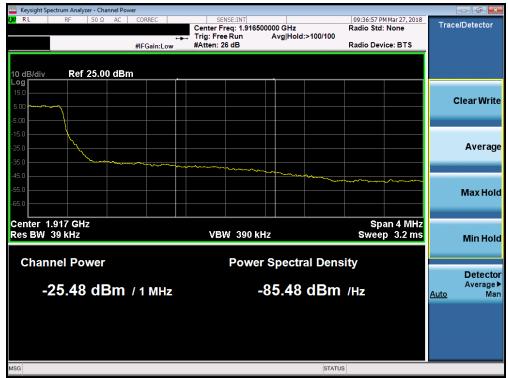
Plot 7-239. Upper Extended Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager			
Test Report S/N:	Test Dates:	EUT Type:		Dage 142 of 262			
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 143 of 263			
© 2018 PCTEST Engineering Laboratory, Inc. V 7.5 2/26/2018							



	Spectrum Analy										d X
KU RL	RF	50 Ω AC	CORREC PNO: Wide			#Avg Typ	e: RMS	09:36:52 PMN TRACE TYPE DET	lar 27, 2018 <b>1 2 3 4 5 6</b> A WWWWWW A NNNNN	Frequer	псу
10 dB/div	Ref 25	i.00 dBm	IFGain:Low	Atten: 30			Mkr1	1.915 00		Auto	Tun
- <b>og</b>										Cente 1.9150000	
5.00										<b>Sta</b> i 1.9130000	rtFre 00 G⊦
25.0					1				L1 -13.00 dBm	<b>Sto</b> 1.9170000	p Fre
35.0					L	Annon the second		······	mm	C 400.0 <u>Auto</u>	F Ste 100 kH Ma
55.0										Freq	Offs 0 I
	1.915000	GHz						Span 4.0		Scale	е Тур Ц
	W 30 kHz		#VBV	V 91 kHz				.533 ms (1	001 pts)		
SG							STATUS	\$			

Plot 7-240. Upper Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)



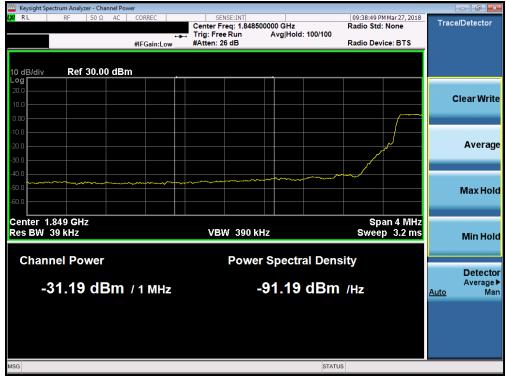
Plot 7-241. Upper Extended Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager				
Test Report S/N:	Test Dates:	EUT Type:		Dega 144 of 262				
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 144 of 263				
© 2018 PCTEST Engineering Laboratory, Inc. V 7.5 2/26/2018								



10 dB/div Ref	50 Ω AC	CORREC PNO: Wide			#Avg Typ	e: RMS	TRAC	Mar 27, 2018 E 1 2 3 4 5 6 PE A WWWWW T A NNNN	Fr	equency
	25.00 dBm	IFGain:Low	Atten: 30	ub .						
						Mkr1	1.850 0 -27.	00 GHz 72 dBm		Auto Tun
										Center Fre 0000000 GH
5.00						~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		1.84	<b>Start Fre</b> 8000000 G⊦
25.0				1				DL1 -13.00 dBm	1.85	<b>Stop Fre</b> 2000000 G⊦
45.0	·····	~~~~~	$\sim$						<u>Auto</u>	CF Ste 400.000 kH Ma
55.0										Freq Offs 0 H
center 1.85000							Span 4	.000 MHz	Log	Scale Typ
Res BW 51 kl	Hz	#VBW	160 kHz			Sweep 1		1001 pts)		

Plot 7-242. Lower Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)



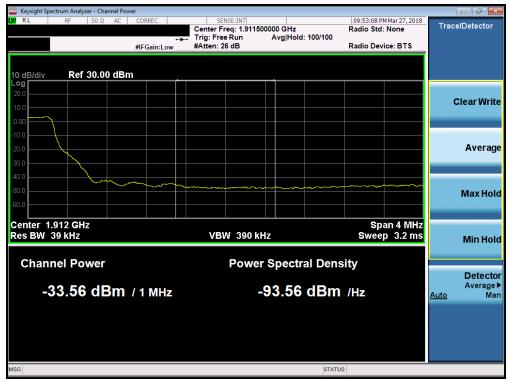
Plot 7-243. Lower Extended Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager				
Test Report S/N:	Test Dates:	EUT Type:		Dama 445 at 202				
1M1803120039-03.ZNF		Page 145 of 263						
© 2018 PCTEST Engineering Laboratory, Inc. V 7.5 2/26/2018								



	pectrum Analy												
K <mark>U</mark> RL	RF	50 Ω	AC	CORREC	ide 🖵	Trig: Free Atten: 36		#Avg Typ	e:RMS	TRAC	MMar 27, 2018 DE <b>1 2 3 4 5 6</b> PE A WWWWW ET A N N N N N	F	requency
0 dB/div	Ref 25	.00 dE	3m	IFGain:L	LOW	Atten: 36	dB		Mkr1	1.910 (			Auto Tun
15.0													Center Fre 0000000 G⊦
5.00		~~~	~~~~~		~~~~~~	~~~						1.90	<b>Start Fre</b> 8000000 GH
25.0							1				DL1 -13.00 dBm	1.91	<b>Stop Fre</b> 2000000 Gi
35.0 <u> </u>								·				<u>Auto</u>	CF Ste 400.000 kl M
i5.0													Freq Offs 0 I
enter 1.	.910000	GHz								Span 4	.000 MHz	Log	Scale Typ
	51 kHz			ţ	#VBW	160 kHz			Sweep	1.933 ms (	(1001 pts)		
SG									STATU	IS			

Plot 7-244. Upper Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)



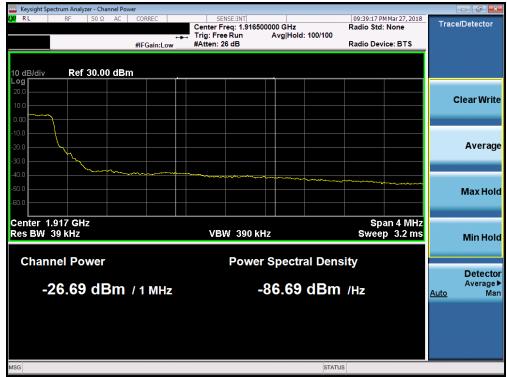
Plot 7-245. Upper Extended Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	💽 LG	Approved by: Quality Manager				
Test Report S/N:	Test Dates:	EUT Type:		Dage 146 of 262				
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 146 of 263				
© 2018 PCTEST Engineering Laboratory, Inc. V 7.5 2/26/2018								



	pectrum Analy												
X <mark>U</mark> RL	RF	50 Ω /		CORREC PNO: W IFGain:L	ide 🖵	Trig: Free Atten: 36		#Avg Typ	e: RMS	TRAC	M Mar 27, 2018 DE 1 2 3 4 5 6 DE A WWWWW A N N N N N	Fi	requency
I0 dB/div	Ref 25	.00 dB		IFGain:L	ow	Atten: 30	, ab		Mkr1	1.915 0	04 GHz 74 dBm		Auto Tun
15.0													Center Fre 5000000 GH
5.00			A									1.91	<b>Start Fre</b> 3000000 GH
25.0							1				DL1 -13.00 dBm	1.91	<b>Stop Fre</b> 7000000 GH
15.0									~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		<u>Auto</u>	CF Ste 400.000 kl Ma
i5.0													Freq Offs 0 I
65.0	.915000	GH7								Snan 4	.000 MHz	Log	Scale Typ L
	51 kHz	-1112		#	VBW	160 kHz			Sweep 1	1.933 ms (	(1001 pts)		
SG									STATU	S			

Plot 7-246. Upper Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-247. Upper Extended Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager				
Test Report S/N:	Test Dates:	EUT Type:		Dega 147 of 262				
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 147 of 263				
© 2018 PCTEST Engineering Laboratory, Inc. V 7.5 2/26/2018								



PNO: Wide Pice Run Atten: 36 dB Tryce Run Center Frequency Atten: 36 dB Tryce Run Center Frequency Atten: 36 dB Center FreqUen		Spectrum An											_	
Mkr1 1.850 000 GHz 2.29.64 dBm Center Fre 1.8500000 GHz Center Tre 1.8500000 GHz Center Tre 1.8500000 GHz Center Tre 1.8500000 GHz Center Tre 1.8500000 GHz Center Tre 1.8500000 GHz CF Ste 800.000 kHz Span 8.000 MHz Center Tre 1.8500000 GHz CF Ste 800.000 kHz Span 8.000 MHz Sweep 1.000 ms (1001 pts)	<mark>0</mark> RL	RF	50 Ω	AC	PNO: W	/ide 🖵	Trig: Fre	e Run	#Avg Typ	pe: RMS	TRAC	E 1 2 3 4 5 6	F	requency
5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	0 dB/div	Ref	25.00 d	Bm						Mkr	1 1.850 ( -29.	000 GHz 64 dBm		Auto Tur
Start Fre Start Fre	15.0													
5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	5.00								~~~~~		<u> </u>	~~~~~	1.84	Start Fre
Auto 800.000 kH 50 50 50 50 50 50 50 50 50 50	25.0							1				DL1 -13:00 dBm	1.85	<b>Stop Fre</b> 4000000 Gi
enter 1.850000 GHz Res BW 100 kHz #VBW 300 kHz Sweep 1.000 ms (1001 pts)	15.0	~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~	~~~							Auto	800.000 kl
enter 1.850000 GHz Res BW 100 kHz #VBW 300 kHz Sweep 1.000 ms (1001 pts)	i5.0													•
											Span 8	.000 191112		
		V 100 k	Hz			#VBW	300 kHz					1001 pts)		

Plot 7-248. Lower Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-249. Lower Extended Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 149 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 148 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			



Keysight Spectrum Analyz							
XIRL RF	50 Ω AC	CORREC PNO: Wide	SENSE: Trig: Free Ru Atten: 36 dB	#Avg Ty	pe: RMS	09:53:55 PM Mar 27, 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	II Gall.EOW			Mkr1	1.910 000 GHz -29.12 dBm	Auto Tun
15.0							Center Fre 1.91000000 GH
5.00		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					<b>Start Fre</b> 1.906000000 GH
25.0						DL1 -13.00 dBm	<b>Stop Fre</b> 1.914000000 G⊦
45.0				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		CF Ste 800.000 kH <u>Auto</u> Ma
55.0							Freq Offso 0 ⊦
65.0	GHz					Span 8.000 MHz	Scale Typ
Res BW 100 kHz		#VBW	300 kHz		Sweep 1	.000 ms (1001 pts)	
ISG					STATUS	8	

Plot 7-250. Upper Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-251. Upper Extended Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 140 of 202
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 149 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			



Keysight Spectrum Analyzer - Swept SA				
RL RF 50Ω AC	CORREC SENSE:INT PNO: Wide Trig: Free Run IFGain:Low Atten: 36 dB	#Avg Type: RMS	09:41:11 PM Mar 27, 2018 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN	Frequency
0 dB/div Ref 25.00 dBm		Mkr	1 1.915 000 GHz -27.24 dBm	Auto Tun
15.0				Center Fre 1.915000000 G⊦
5.00				<b>Start Fre</b> 1.911000000 GF
26.0			DL1 -13.00 dBm	<b>Stop Fre</b> 1.91900000 GF
45.0			- Marine Ma Marine Marine Mari	<b>CF Ste</b> 800.000 kł <u>Auto</u> Ma
55.0				Freq Offs 0 F
55.0 Senter 1.915000 GHz			<b>Opan 0.000 Min 12</b>	Scale Tyr <sup>Log <u>L</u></sup>
Res BW 100 kHz	#VBW 300 kHz	Sweep	1.000 ms (1001 pts)	

Plot 7-252. Upper Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-253. Upper Extended Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 150 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 150 of 263
© 2018 PCTEST Engineering La	boratory, Inc.			V 7.5 2/26/2018



	Spectrum Anal										_	
0 RL	RF	50 Ω	CORREC PNO: W IFGain:L	ide 🖵			#Avg Ty	ype: RMS	TRA	M Mar 27, 2018 DE <b>1 2 3 4 5 6</b> PE A WWWWW ET A N N N N N	Fred	quency
0 dB/div	Ref 2	5.00 dB						Mkr	1 1.850 ( -30.	000 GHz 36 dBm	4	uto Tur
15.0												enter Fre
5.00							mar and a second se					Start Fre
25.0										DL1 -13.00 dBm		<b>Stop Fr</b> 00000 GI
15.0 15.0	~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	mm	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	·····						1.2 <u>Auto</u>	CF Ste 00000 MI M
i5.0 ——											Fr	r <b>eq Offs</b> 0 I
enter 1	1.850000	GH7							Span 1	2.00 MHz	S Log	cale Typ L
	V 150 kH		7	¢VB₩	470 kH	z		Sweep	1.000 ms	(1001 pts)		
SG								STAT	US			

Plot 7-254. Lower Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-255. Lower Extended Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 151 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 151 of 263
© 2018 PCTEST Engineering La	boratory, Inc.	•		V 7.5 2/26/2018



	ectrum Analyz									-0-	
RL	RF	50 Ω AC	PNO: Wid	e 🕞 Trig: Fre	e Run	#Avg Typ	e: RMS	TRAC	Mar 27, 2018 E 1 2 3 4 5 6 E A MANNA T A NNNN	Frequ	ency
0 dB/div	Ref 25.	.00 dBm		w Atten: 3	6 dB		Mkr1	1.910 0		Au	to Tun
15.0										Cent 1.910000	t <b>er Fre</b> 1000 GH
5.00		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~							Sta 1.904000	art Fre
25.0					<b>↓</b> 1				DL1 -13.00 dBm	<b>St</b> o 1.916000	<b>op Fre</b> 1000 GH
5.0					M	~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	·····	m		CF Ste 000 Mi Ma
i5.0										Free	q Offs 0 I
55.0										Sca	le Typ
	910000 ( 150 kHz		#\	/BW 470 kHz	2		Sweep ′	(1.000 Span 1.000 ms	2.00 MHz 1001 pts)	LUg	Li
SG							STATU	IS			

Plot 7-256. Upper Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-257. Upper Extended Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕑 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 150 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 152 of 263
© 2018 PCTEST Engineering La	boratory, Inc.			V 7.5 2/26/2018



	Spectrum Analy									
X/ RL	RF	50 Ω AC	PNO: Wide C			#Avg Typ	e: RMS	09:46:45 PM Mar 27, TRACE 1 2 3 TYPE A WW DET A NN	456 Fr	requency
10 dB/div	Ref 25	.00 dBm	IFGain:Low _	Atten: 30			Mkr1	1.915 012 0 -28.63 d	Hz	Auto Tun
- <b>og</b>										Center Fre 5000000 GH
5.00		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~								<b>Start Fre</b> 9000000 G⊦
25.0				- to	1			DL1 -13.		<b>Stop Fre</b> 1000000 GH
45.0						www.	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	······	<u>Auto</u>	CF Ste 1.200000 MH Ma
55.0										Freq Offs 0 F
es.o	1.915000	GHz						Span 12.00 l		Scale Typ L
	N 150 kHz		#VB	W 470 kHz			Sweep	1.000 ms (1001	pts)	
ISG							STATU	S		

Plot 7-258. Upper Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-259. Upper Extended Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 152 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 153 of 263
© 2018 PCTEST Engineering La	boratory, Inc.			V 7.5 2/26/2018



PNO: Fast         Trig: Free Run Atten: 36 dB         #Avg Type: RMS         Trace Trace         B 3 4 st Trace         Frequency           Auto Tur         Mkr1 1.850 000 GHz         Store         St		Spectrum Anal												- 6 🛃
Mkr1 1.850 000 GHz 30 0 dBm Center Fr 1.8500000 GHz 4 Uo Tur Center Fr 1.8500000 GHz CF Sto CF Sto	X/RL	RF	50 Ω	AC	PNO: Fa	ast 🖵	Trig: Fre	e Run	#Avg Typ	e: RMS	TRA	CE 1 2 3 4 5 6	Fre	equency
Center Fr Center Fr 1.85000000 G Cut -1300 den Cut -1300 den	I0 dB/div	Ref 2	5.00 dB	3m						Mkr	1 1.850 -30	000 GHz .09 dBm		Auto Tun
Start From 1.850000 GHz Start From 1.85000 GHZ Start From 1.850	15.0													
50       1	5.00								 ∿_~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			Landa Macadara	1.842	Start Fre
000       1.600000 M         000       1.600000 M         000       1.600000 M         000       1.600000 M         000       1.60000 M         000       1.600 M	25.0							1.1				DL1 -13.00 dBm	1.858	<b>Stop Fre</b> 8000000 GH
enter 1.850000 GHz Res BW 200 kHz #VBW 620 kHz BW 200 kHz CO CO CO CO CO CO CO CO CO CO	35.0	un			~~~~	Mr. marine								CF Ste 600000 MI Mi
enter 1.850000 GHz Res BW 200 kHz #VBW 620 kHz Sweep 1.000 ms (1001 pts)	55.0												F	F <b>req Offs</b> 0 I
	enter 1	1.850000	GHz								Span	10.00 10112		Scale Typ
	Res BV	V 200 kH	z		#	≠VBW	620 kHz			Sweep		(1001 pts)		

Plot 7-260. Lower Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)



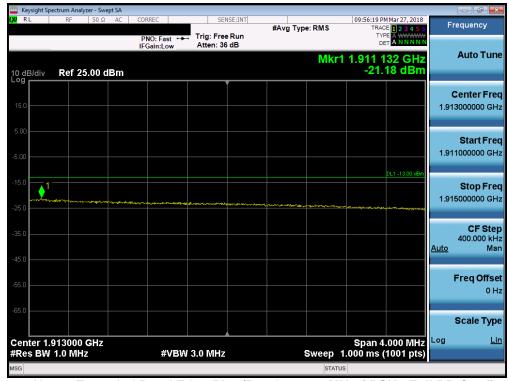
Plot 7-261. Lower Extended Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 154 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 154 of 263
© 2018 PCTEST Engineering La	boratory, Inc.			V 7.5 2/26/2018



	pectrum Analy												- 0
<mark>0</mark> RL	RF	50 Ω /	AC	CORREC PNO: Fa	ast 🖵	Trig: Free Atten: 36		#Avg Typ	e: RMS	TRA	M Mar 27, 2018 DE 1 2 3 4 5 6 PE A WWWWW ET A N N N N N	Fre	quency
0 dB/div	Ref 25	i.00 dB	m	IF Galli.L	.0w	, Allen, etc.			Mkr1	1.910 ( -28.	000 GHz 15 dBm		Auto Tun
15.0													enter Fre 000000 G⊦
5.00	919-2	······································	harmer brand a	~~~~	~~~~~	$\sim$							Start Fre
25.0							1				DL1 -13.00 dBm		<b>Stop Fre</b> 000000 GH
15.0								www.	e and a second		Marine Connect	1.6 <u>Auto</u>	CF Ste 500000 MI Ma
i5.0												F	r <b>eq Offs</b> 0 I
55.0												S	cale Typ ∟
	.910000 200 kHz			#	¢VBW	620 kHz			Sweep 1	Span 1 1.000 ms	6.00 MHz (1001 pts)	209	<u> </u>
SG									STATU	S			

Plot 7-262. Upper Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-263. Upper Extended Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 155 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 155 of 263
© 2018 PCTEST Engineering La	aboratory, Inc.			V 7.5 2/26/2018



	pectrum Anal												×
X/ RL	RF	50 Ω	AC	PNO: F	ast 🖵			#Avg Ty	pe: RMS	TRA	PM Mar 27, 2018 CE 1 2 3 4 5 6 PE A WWWWW DET A NNNNN	Frequenc	У
0 dB/div	Ref 2	5.00 dE	3m						Mkr	1.915 -26	000 GHz .15 dBm	Auto 1	ſun
15.0												Center 1.915000000	
5.00		~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	v.m.~~~	V <sup>a</sup> land Yuur							Start   1.907000000	
25.0							•1				DL1 -13.00 dBm	<b>Stop</b>   1.923000000	
45.0								Www.	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	- Munther	www.www.www	CF 1.600000 Auto	Ste Mi Mi
55.0												Freq O	offs 0 I
65.0	.915000	GHz								Span '	0.00 191112	Scale T	Typ ∟
Res BW	V 200 kH	z		-	#VBW	620 kH	z		Sweep	1.000 ms	(1001 pts)		
SG									STATU	S			

Plot 7-264. Upper Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)

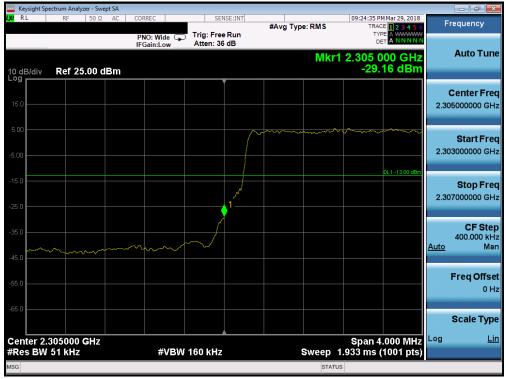


Plot 7-265. Upper Extended Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 156 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 156 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			



# Band 30



Plot 7-266. Lower Band Edge Plot (Band 30 - 5.0MHz QPSK - Full RB Configuration)



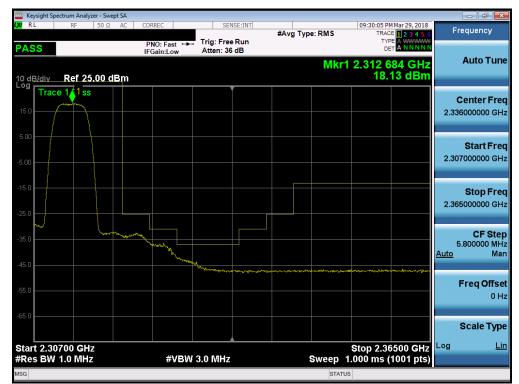
Plot 7-267. Lower Extended Band Edge Plot (Band 30 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕕 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 4EZ of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 157 of 263
© 2018 PCTEST Engineering La	boratory, Inc.	·		V 7.5 2/26/2018



RL	RF	zer - Swep 50 Ω	AC	CORREC			SENSE:INT			09:29:49 P	M Mar 29, 2018	
					ide 🖵		ree Run	#Avg T	ype: RMS	TRA	CE 1 2 3 4 5 6 PE A WWWWW ET A N N N N N	Frequency
dB/div	Ref 25	.00 <u>d</u> l	Bm	IFGain:L	_OW	Atten:	30 UD		Mk	r1 2.315	00 GHz 17 dBm	Auto Tu
5.0												Center Fi 2.315000000 G
	tomero tre	~~~~		proceed from	<u></u>	A. C. Marine and a second					DL1 -13.00 dBm	Start Fr 2.310000000 G
5.0							1					Stop Fr 2.320000000 G
5.0							h	m	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		-	CF St 1.000000 M <u>Auto</u> M
5.0												Freq Off 0
5.0												Scale Ty
enter 2.3 Res BW :		GHz		1	#VBW	160 kH	Iz		Sweep	Span 1 4.733 ms	0.00 MHz (1001 pts)	Log

Plot 7-268. Upper Band Edge Plot (Band 30 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-269. Upper Extended Band Edge Plot (Band 30 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 159 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 158 of 263
© 2018 PCTEST Engineering La	aboratory. Inc.	•		V 7.5 2/26/2018



	Spectrum Analy	zer - Swept	SA										
XI RL	RF	50 Ω		ORREC PNO: Wide FGain:Loy		rig: Free Atten: 36		#Avg Typ	e: RMS	TRA	PM Mar 29, 2018 CE 1 2 3 4 5 6 (PE A WWWWW DET A NNNNN	F	requency
10 dB/div	Ref 25	.00 dB		FGaln:Lov	<u>,</u>	titen. oo			Mkr	1 2.305 -30	000 GHz .78 dBm		Auto Tune
15.0													Center Free 05000000 GH
-5.00											DL1 -13.00 dBm	2.30	<b>Start Fre</b> 01000000 GH
-15.0							1					2.30	<b>Stop Fre</b> 09000000 GH
35.0			~~~	~~~~		$\sim$						<u>Auto</u>	<b>CF Ste</b> 800.000 k⊦ Ma
55.0													Freq Offs 0 ⊦
Center :	2.305000	GHz								Span	3.000 MHz	Log	Scale Typ <u>Li</u>
	W 100 kHz			#\	/BW 30	)0 kHz			Sweep	1.000 ms	(1001 pts)		
ISG									STAT	US			

Plot 7-270. Lower Band Edge Plot (Band 30 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-271. Lower Extended Band Edge Plot (Band 30 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 150 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 159 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			



	ectrum Analy											_	
RL	RF	50 Ω	AC	CORREC	/ide 🖵		sense:INT	#Avg Ty	pe: RMS	TRA	PM Mar 29, 2018 ACE 1 2 3 4 5 6 APE A WWWWW DET A NNNNN	Fr	equency
0 dB/div	Ref 25	i.00 dE	3m	IFGain:	Low	Atten	36 dB		M	kr1 2.315	5 00 GHz .68 dBm		Auto Tur
15.0													Center Fre 5000000 GH
.00		~~~~			~~~~~							2.31	<b>Start Fr</b> 0000000 G
5.0							1				DL1 -13.00 dBm	2.32	<b>Stop Fr</b> 0000000 G
5.0							h	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		1 <u>Auto</u>	CF Ste .000000 M M
5.0													F <b>req Offs</b> 0
5.0													Scale Ty
enter 2.3 Res BW					#VBW	300 ki	Iz		Sweep	Span <sup>-</sup> 1.267 <u>ms</u>	10.00 MHz (1001 pts)	Log	L
G									STAT				

Plot 7-272. Upper Band Edge Plot (Band 30 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 160 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 160 of 263
© 2018 PCTEST Engineering La	boratory. Inc.	·		V 7.5 2/26/2018



### Band 7



Plot 7-3. Lower ACP Plot (Band 7 – 5.0MHz QPSK – RB Size 25)



Plot 7-4. Upper ACP Plot (Band 7 – 5.0MHz QPSK – RB Size 25)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 161 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 161 of 263
© 2018 PCTEST Engineering La	boratory. Inc.			V 7.5 2/26/2018



KU <mark>RL</mark>	,	F 50 Ω	AC CORREC		SENSE:INT r Freq: 2.53500000 Free Run	0 GHz	10:44:37 PM Mar 27 Radio Std: None	, 2018 Frequency
PAS	S		IFGain:Lo		n: 26 dB		Radio Device: B1	rs
10 dB	//div	Ref 40.00	dBm					
Log 30.0								Center Fre
20.0								2.535000000 GH
10.0								2.00000000000
					MUNHMAN	replie well		
0.00								
10.0								
20.0								
30.0 F					· · ·	<u>\</u>		
40.0				Laura de la contra d		What has been a set of the set	alandraffanger landraffan franse	
40.0			Local Balling of the		<mark>Щ</mark>	112.1	A MARKAN AND A CAN WE AND A MARK	
50 O			A CONTRACT OF					i nati
50.0	an hirigina haafiista	welness for the second	proper of the line					
<sup>50.0</sup>   Start	2.475 0	<mark>∼daraaliyaanaanaanaanaanaanaanaanaanaanaanaanaan</mark>	Automatica and a second					CH2
Start	: 2.475 C	∖ <del>//</del>	and and a second second				Stop 2.525	GHz CF Ste
			Stop Freq	RBW	Frequency	Amplitude		GHz CF Ste 5.000000 MH
	Range	Start Freq 2.4750 GHz	Stop Freq 2.4905 GHz	RBW 1.000 MHz	Frequency 2.489725000 GHz	Amplitude	Stop 2.525 ▲ Limit -14.37 dB	GHz CF Ste 5.000000 MH
Spur 1	Range	Start Freq	Stop Freq 2.4905 GHz	RBW 1.000 MHz 1.000 MHz	Frequency 2.489725000 GHz 2.495321667 GHz	Amplitude z -39.37 dBm z -32.01 dBm	Stop 2.525	GHz CF Ste 5.000000 MH Auto Ma
50.0 Start Spur 1 2 3	Range           1           2           3	<b>Start Freq</b> 2.4750 GHz 2.4905 GHz 2.4960 GHz	Stop Freq           2.4905 GHz           2.4960 GHz           2.4990 GHz	RBW 1.000 MHz 1.000 MHz 1.000 MHz	Frequency 2.489725000 GHz 2.495321667 GHz 2.496950000 GHz	Amplitude 2 -39.37 dBm 2 -32.01 dBm 2 -27.84 dBm	Stop 2.525	GHZ CF Ste 5.00000 MH Auto Freq Offso
<b>Spur</b>   2   3	Range           1           2           3           4	<b>Start Freq</b> 2.4750 GHz 2.4905 GHz 2.4960 GHz 2.4990 GHz	Stop Freq           2.4905 GHz           2.4960 GHz           2.4990 GHz           2.4990 GHz           2.5000 GHz	RBW 1.000 MHz 1.000 MHz 1.000 MHz 180.0 kHz	<b>Frequency</b> 2.489725000 GHz 2.495321667 GHz 2.496950000 GHz 2.499998333 GHz	Amplitude - 39.37 dBm - 32.01 dBm - 27.84 dBm - 28.11 dBm	Stop 2.525 (	GHz CF Ste 5.000000 MH Auto Ma
<b>Spur</b> 1 2	Range           1           2           3	<b>Start Freq</b> 2.4750 GHz 2.4905 GHz 2.4960 GHz	Stop Freq           2.4905 GHz           2.4960 GHz           2.4990 GHz	RBW 1.000 MHz 1.000 MHz 1.000 MHz 180.0 kHz	Frequency 2.489725000 GHz 2.495321667 GHz 2.496950000 GHz	Amplitude - 39.37 dBm - 32.01 dBm - 27.84 dBm - 28.11 dBm	Stop 2.525	GHZ CF Ste 5.00000 MH Auto Freq Offs
<b>Spur</b>   2   3	Range           1           2           3           4	<b>Start Freq</b> 2.4750 GHz 2.4905 GHz 2.4960 GHz 2.4990 GHz	Stop Freq           2.4905 GHz           2.4960 GHz           2.4990 GHz           2.4990 GHz           2.5000 GHz	RBW 1.000 MHz 1.000 MHz 1.000 MHz 180.0 kHz	<b>Frequency</b> 2.489725000 GHz 2.495321667 GHz 2.496950000 GHz 2.499998333 GHz	Amplitude - 39.37 dBm - 32.01 dBm - 27.84 dBm - 28.11 dBm	Stop 2.525 (	GHZ CF Ste 5.00000 MH Auto Freq Offs

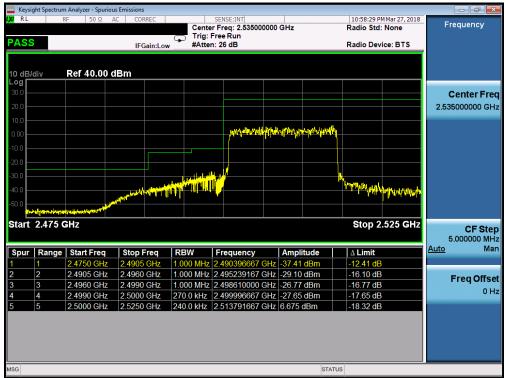
Plot 7-5. Lower ACP Plot (Band 7 – 10.0MHz QPSK – RB Size 50)



Plot 7-6. Upper ACP Plot (Band 7 – 10.0MHz QPSK – RB Size 50)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 162 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 162 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			





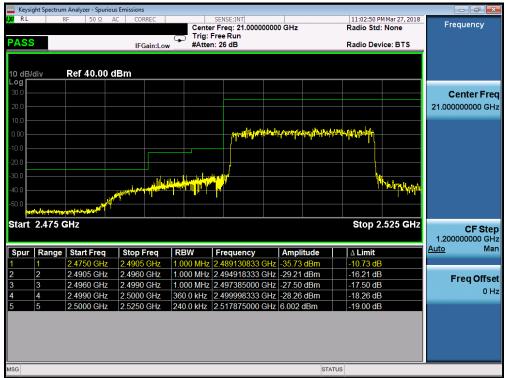
Plot 7-7. Lower ACP Plot (Band 7 – 15.0MHz QPSK – RB Size 75)



Plot 7-8. Upper ACP Plot (Band 7 – 15.0MHz QPSK – RB Size 75)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 162 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 163 of 263
© 2018 PCTEST Engineering Laboratory, Inc.			V 7.5 2/26/2018	





Plot 7-9. Lower ACP Plot (Band 7 - 20.0MHz QPSK - RB Size 100)

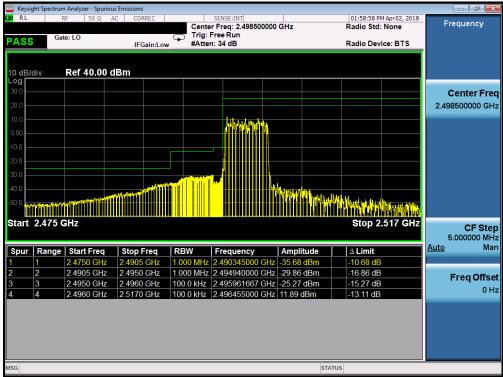


Plot 7-10. Upper ACP Plot (Band 7 – 20.0MHz QPSK – RB Size 100)

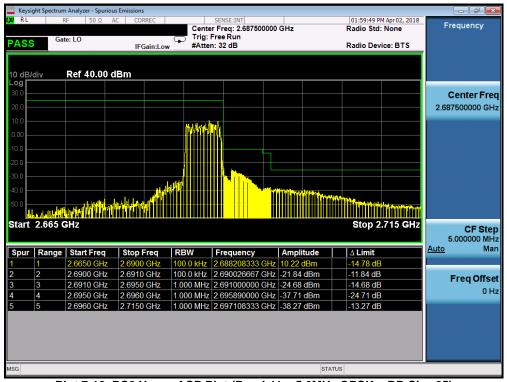
FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 164 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 164 of 263
© 2018 PCTEST Engineering Laboratory, Inc.			V 7.5 2/26/2018	



# Band 41



Plot 7-11. PC2 Lower ACP Plot (Band 41 – 5.0MHz QPSK – RB Size 25)

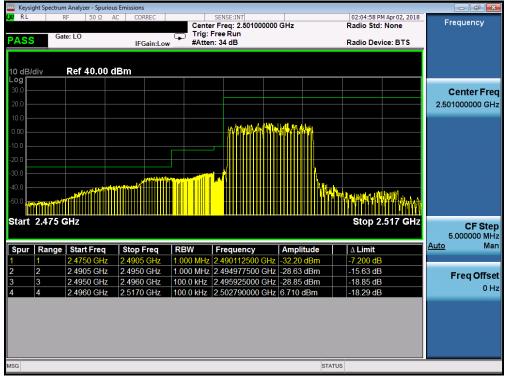


#### Plot 7-12. PC2 Upper ACP Plot (Band 41 – 5.0MHz QPSK – RB Size 25)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 165 of 263
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		
© 2018 PCTEST Engineering Laboratory, Inc.			V 7.5 2/26/2018	

V 7.5 2/26/2018





Plot 7-13. PC2 Lower ACP Plot (Band 41 – 10.0MHz QPSK – RB Size 50)



Plot 7-14. PC2 Upper ACP Plot (Band 41 – 10.0MHz QPSK – RB Size 50)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 166 of 263
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		
© 2018 PCTEST Engineering Laboratory, Inc.			V 7.5 2/26/2018	





Plot 7-15. PC2 Lower ACP Plot (Band 41 – 15.0MHz QPSK – RB Size 75)



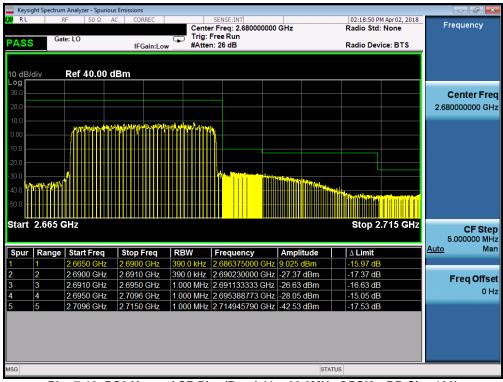
Plot 7-16. PC2 Upper ACP Plot (Band 41 – 15.0MHz QPSK – RB Size 75)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	💽 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 167 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 167 of 263
2018 PCTEST Engineering Laboratory, Inc.				V 7.5 2/26/2018





Plot 7-17. PC2 Lower ACP Plot (Band 41 - 20.0MHz QPSK - RB Size 100)



Plot 7-18. PC2 Upper ACP Plot (Band 41 – 20.0MHz QPSK – RB Size 100)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	💽 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 169 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 168 of 263
2018 PCTEST Engineering Laboratory, Inc.			V 7.5 2/26/2018	



# 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. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

### Test Setup

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

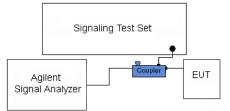


Figure 7-4. Test Instrument & Measurement Setup

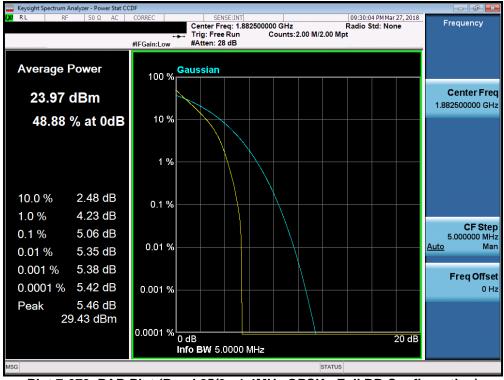
### Test Notes

None.

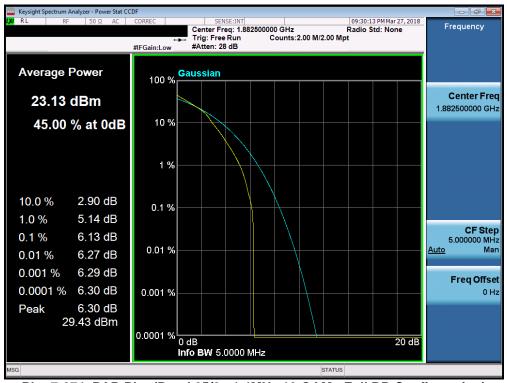
FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕕 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 160 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 169 of 263
© 2018 PCTEST Engineering Laboratory, Inc.				V 7.5 2/26/2018



# Band 25/2



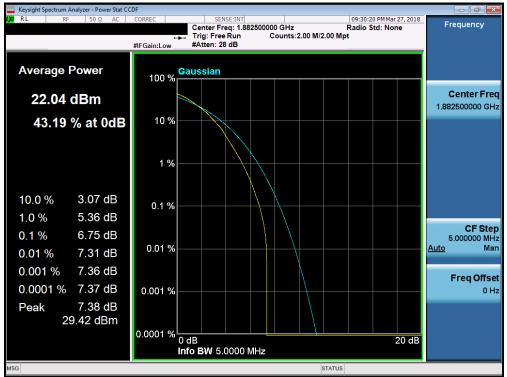
Plot 7-273. PAR Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)



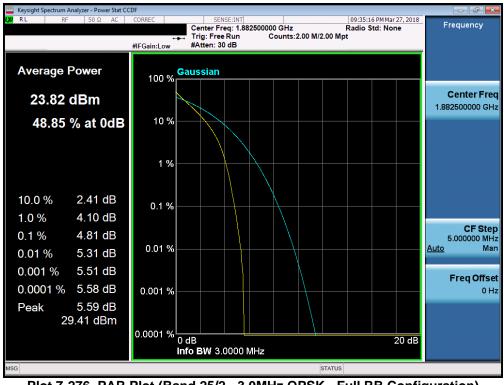
Plot 7-274. PAR Plot (Band 25/2 - 1.4MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 170 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 170 of 263
© 2018 PCTEST Engineering Laboratory. Inc.			V 7.5 2/26/2018	





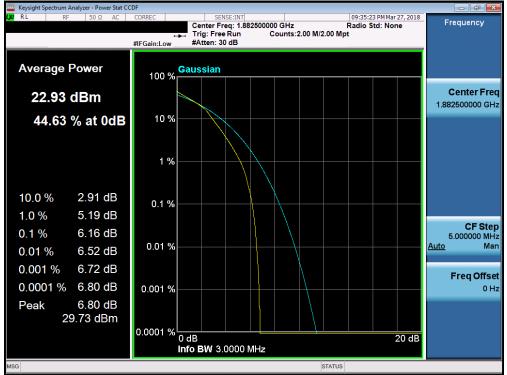
Plot 7-275. PAR Plot (Band 25/2 - 1.4MHz 64-QAM - Full RB Configuration)



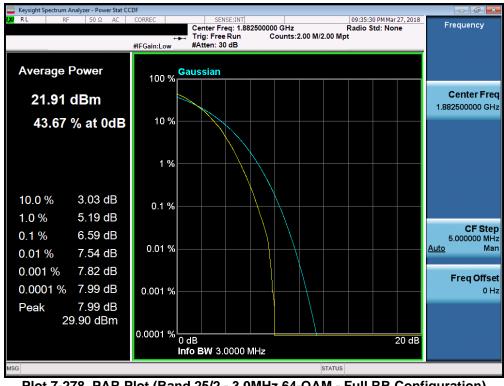
Plot 7-276. PAR Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 171 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 171 of 263
© 2018 PCTEST Engineering Laboratory, Inc.				V 7.5 2/26/2018





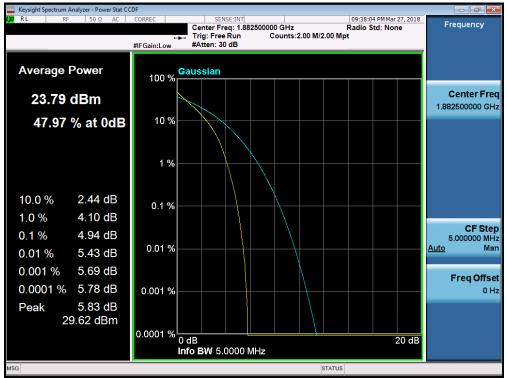
Plot 7-277. PAR Plot (Band 25/2 - 3.0MHz 16-QAM - Full RB Configuration)



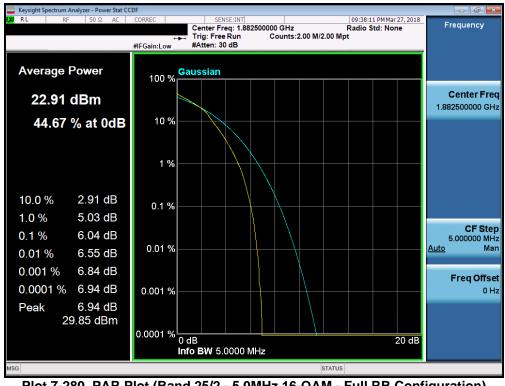
Plot 7-278. PAR Plot (Band 25/2 - 3.0MHz 64-QAM - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 170 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 172 of 263
© 2018 PCTEST Engineering Laboratory, Inc.				V 7.5 2/26/2018





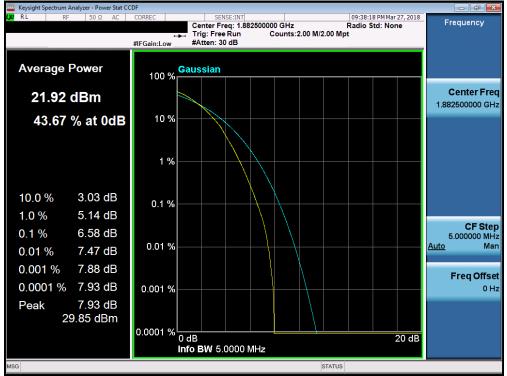
Plot 7-279. PAR Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)



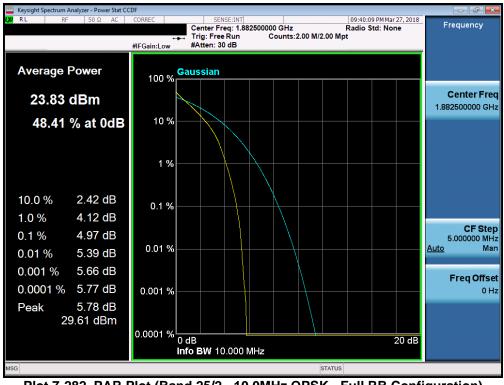
Plot 7-280. PAR Plot (Band 25/2 - 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 172 of 202
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 173 of 263
© 2018 PCTEST Engineering Laboratory, Inc.				V 7.5 2/26/2018





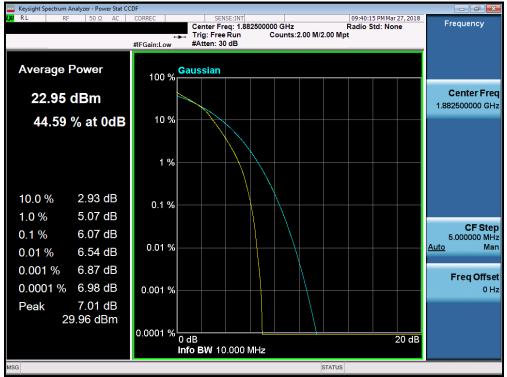
Plot 7-281. PAR Plot (Band 25/2 - 5.0MHz 64-QAM - Full RB Configuration)



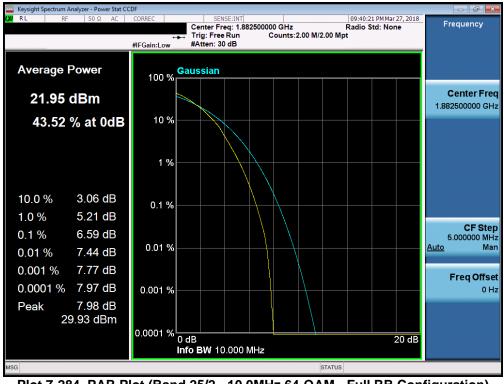
Plot 7-282. PAR Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 174 of 202
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 174 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			





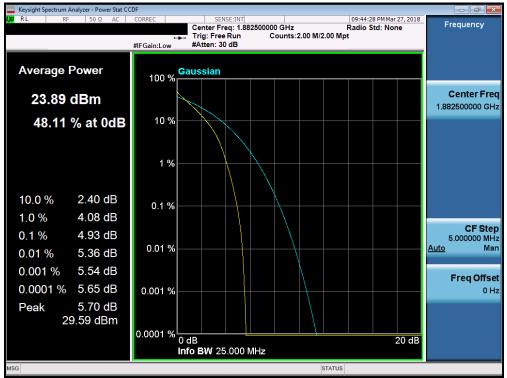




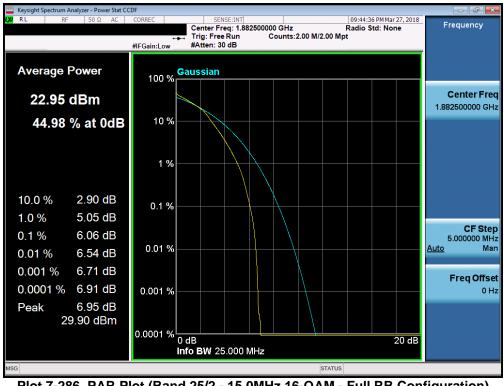
Plot 7-284. PAR Plot (Band 25/2 - 10.0MHz 64-QAM - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 175 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 175 of 263
© 2018 PCTEST Engineering Laboratory, Inc.				V 7.5 2/26/2018





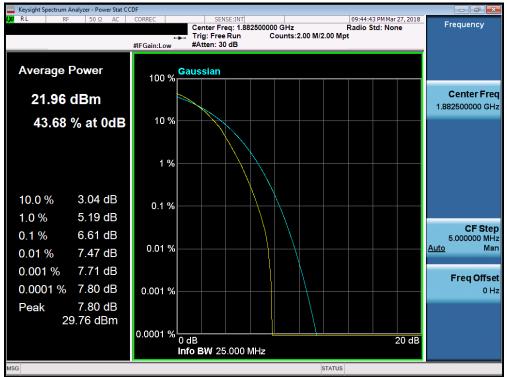
Plot 7-285. PAR Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)



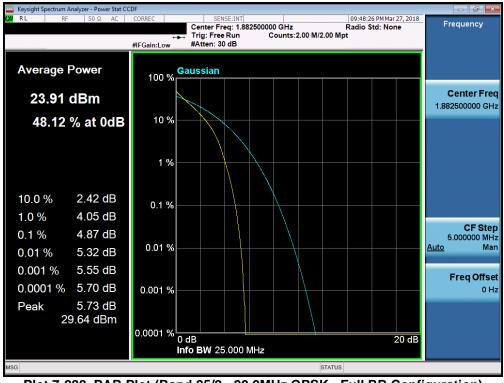
Plot 7-286. PAR Plot (Band 25/2 - 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 176 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 176 of 263
© 2018 PCTEST Engineering Laboratory, Inc.				V 7.5 2/26/2018





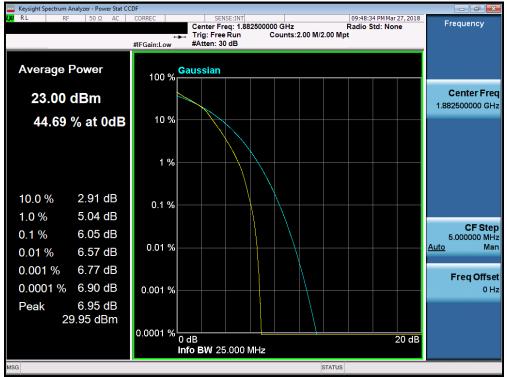




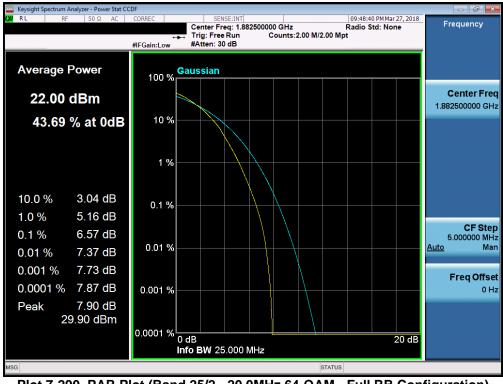
Plot 7-288. PAR Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dece 177 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 177 of 263
© 2018 PCTEST Engineering Laboratory, Inc.				V 7.5 2/26/2018









Plot 7-290. PAR Plot (Band 25/2 - 20.0MHz 64-QAM - Full RB Configuration)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 179 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 178 of 263
© 2018 PCTEST Engineering Laboratory, Inc.				V 7.5 2/26/2018



# 7.6 Uplink Carrier Aggregation Band 41 §27.53(m)

## **Test Overview**

The EUT is set up to transmit two contiguous LTE channels. The power level of both carriers and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10<sup>th</sup> harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

## For Band 41, the minimum permissible attenuation level of any spurious emission is 55 + log<sub>10</sub>(P<sub>[Watts]</sub>).

## Test Procedure Used

KDB 971168 D01 v03 - Section 6.0

### Test Settings

- 1. Start frequency was set to 30MHz and stop frequency was set to at least 10 \* the fundamental frequency (separated into at least two plots per channel)
- 2. Detector = RMS
- 3. Trace mode = trace average for continuous emissions, max hold for pulse emissions
- 4. Sweep time = auto couple
- 5. The trace was allowed to stabilize
- 6. Please see test notes below for RBW and VBW settings

### Test Setup

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

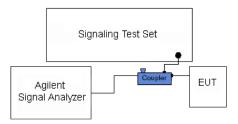


Figure 7-5. Test Instrument & Measurement Setup

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 170 of 060
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 179 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			



- 1. Uplink carrier aggregation is only supported in this EUT while operating in Power Class 3.
- 2. Conducted power and spurious emissions measurements were evaluated for the two contiguous channels using various combinations of RB size, RB offset, modulation, and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device. The worst case (highest) powers were found while operating with QPSK modulation, as shown in Table 7-503 and 7-504 below, with both carriers set to transmit using 1RB.
- 3. Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 1 GHz and 1 MHz or greater for frequencies greater than 1 GHz. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

				PCC		-	-				SCC				Power
Power State	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	ULCA Tx.Power (dBm)
Max	LTE B41	10	39700	2501	QPSK	1	49	LTE B41	20	39844	2515.4	QPSK	1	0	23.60
Max	LTE B41	10	40620	2593	QPSK	1	49	LTE B41	20	40764	2607.4	QPSK	1	0	23.45
Max	LTE B41	20	41396	2670.6	QPSK	1	99	LTE B41	10	41540	2685	QPSK	1	0	23.23
Max	LTE B41	15	39725	2503.5	QPSK	1	74	LTE B41	15	39875	2518.5	QPSK	1	0	23.60
Max	LTE B41	15	39725	2503.5	QPSK	1	74	LTE B41	20	39896	2520.6	QPSK	1	0	23.51
Max	LTE B41	15	40620	2593	QPSK	1	74	LTE B41	15	40770	2608	QPSK	1	0	23.55
Max	LTE B41	15	40620	2593	QPSK	1	74	LTE B41	20	40791	2610.1	QPSK	1	0	23.47
Max	LTE B41	15	41365	2667.5	QPSK	1	74	LTE B41	15	41515	2682.5	QPSK	1	0	23.50
Max	LTE B41	20	41344	2665.4	QPSK	1	99	LTE B41	15	41515	2682.5	QPSK	1	0	23.46
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	10	39894	2520.4	QPSK	1	0	23.53
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	15	39921	2523.1	QPSK	1	0	23.44
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	20	39948	2525.8	QPSK	1	0	23.56
Max	LTE B41	20	40620	2593	QPSK	1	99	LTE B41	10	40764	2607.4	QPSK	1	0	23.52
Max	LTE B41	20	40620	2593	QPSK	1	99	LTE B41	15	40791	2610.1	QPSK	1	0	23.50
Max	LTE B41	20	40620	2593	QPSK	1	99	LTE B41	20	40818	2612.8	QPSK	1	0	23.59
Max	LTE B41	10	41346	2665.6	QPSK	1	49	LTE B41	20	41490	2680	QPSK	1	0	23.58
Max	LTE B41	15	41319	2662.9	QPSK	1	74	LTE B41	20	41490	2680	QPSK	1	0	23.51
Max	LTE B41	20	41292	2660.2	QPSK	1	99	LTE B41	20	41490	2680	QPSK	1	0	23.09

Table 7-19. Conducted Powers (B41 – PCC: RB Size 1 Offset Max SCC: RB Size 1 Offset 0)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕕 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 190 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 180 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			



				PCC							SCC				Power
Power State	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	ULCA Tx.Power (dBm)
Max	LTE B41	20	39750	2506	QPSK	1	0	LTE B41	20	39948	2525.8	QPSK	1	0	19.22
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	20	39948	2525.8	QPSK	1	99	17.21
Max	LTE B41	20	39750	2506	QPSK	1	0	LTE B41	20	39948	2525.8	QPSK	1	99	13.13
Max	LTE B41	20	39750	2506	QPSK	1	50	LTE B41	20	39948	2525.8	QPSK	1	50	18.29
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	20	39948	2525.8	QPSK	1	0	23.54
Max	LTE B41	20	39750	2506	QPSK	100	0	LTE B41	20	39948	2525.8	QPSK	100	0	20.54
Max	LTE B41	20	39750	2506	16-QAM	100	0	LTE B41	20	39948	2525.8	16-QAM	100	0	19.49
Max	LTE B41	20	39750	2506	64-QAM	100	0	LTE B41	20	39948	2525.8	64-QAM	100	0	18.44

Table 7-20. Conducted Powers (B41 with Various Combinations for 20MHz Channel Bandwidth)

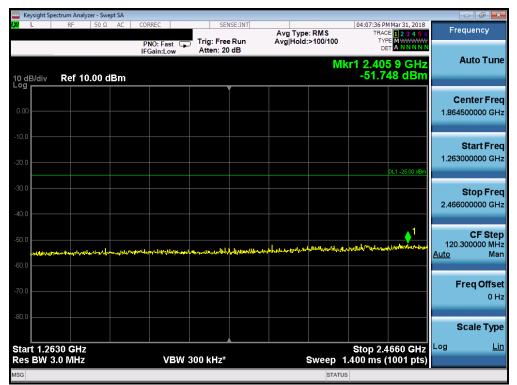


Table 7-291. Conducted Spurious Plot (Band 41 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🔁 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 191 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 181 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			



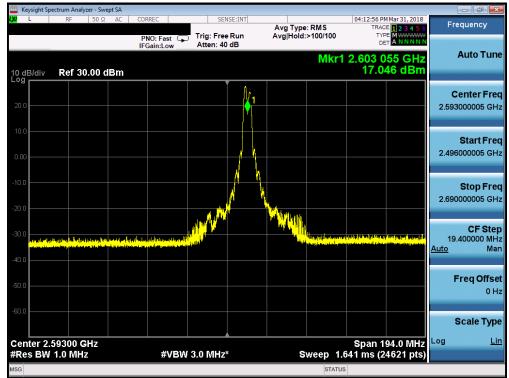


Table 7-292. Conducted Spurious Plot (Band 41 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

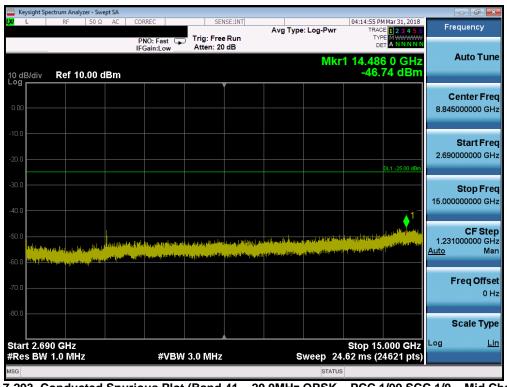


Table 7-293. Conducted Spurious Plot (Band 41 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 182 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 182 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			



🔤 Keysight Sp	ectrum Analy										-	
L <mark>XI</mark> L	RF	50 Ω		ORREC	SET	NSE:INT	Avg Type	: Log-Pwr	TRAC	M Mar 31, 2018 E 1 2 3 4 5 6 E M WWWWW	Freq	uency
				PNO: Fast G FGain:Low	Atten: 10				DI			
10 dB/div Log	Ref 0.	00 dB	m					Mkr	1 24.81 -48.	6 9 GHz 57 dBm	A	uto Tune
											Ce	nter Fred
-10.0											21.0000	00000 GH
-20.0												· · · · ·
-30.0										DL1 -25.00 dBm		tart Free
-40.0									<b>▲</b> 1			Stop Free
-50.0								, a <sub>nan</sub> asir birin t	yan yeri anin dalar	a de la section de	27.0000	00000 GH
-60.0	ա <mark>սկերիությու</mark>	and the second	ding the states	n an	a (a polybeller <sup>an h</sup> ear an faile La constantion	netsche Alberta enstantenetsente,	n anto sundanan Arrentera		antine dan palitikanak	i da Ataka santangan		CF Step
fillen still	and the second		gi Mangatakat Jacan	a k <sub>ali</sub> gabellista bileteri.	and the late						1.20000 <u>Auto</u>	00000 GH Ma
-70.0											_	
-80.0											Fr	e <b>q Offse</b> 0 H
-90.0												
											Sc	ale Type
Start 15.0 #Res BW				#\/B\	/ 3.0 MHz			woon 24	Stop 27	.000 GHz 4621 pts)	Log	Lir
#Res DW		2		#VBV	7 <b>3.0</b> WIHZ		3	status		402 T pts)		

Table 7-294. Conducted Spurious Plot (Band 41 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

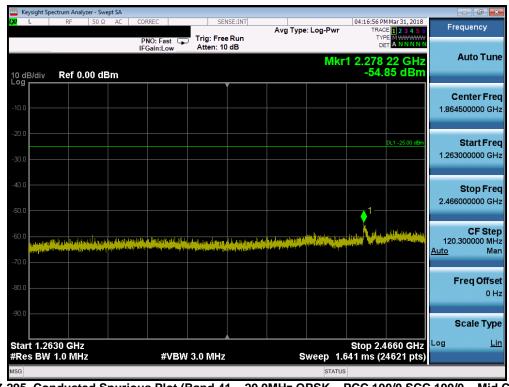


Table 7-295. Conducted Spurious Plot (Band 41 – 20.0MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕕 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 192 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 183 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			



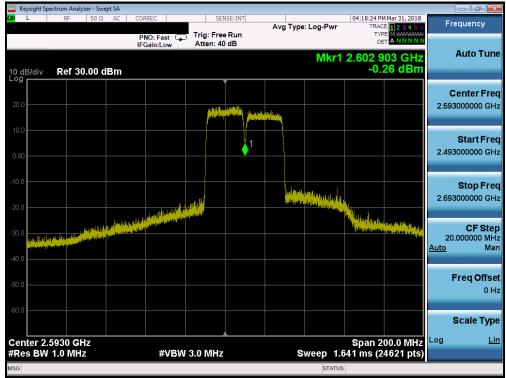


Table 7-296. Conducted Spurious Plot (Band 41 – 20.0MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

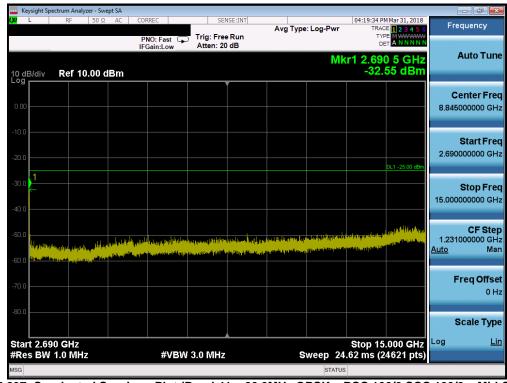


Table 7-297. Conducted Spurious Plot (Band 41 – 20.0MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 194 of 202
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 184 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			



🔤 Keysight S	pectrum Analy.											
L <mark>XI</mark> L	RF	50 Ω		PNO: Fast		Run	Avg Type	: Log-Pwr	TRAC	MMar 31, 2018 DE <b>1 2 3 4 5</b> 6 PE M WWWWW ET A N N N N N	Freque	ncy
10 dB/div	Ref 0.0	00 dB		FGain:Low	Atten: 10	) dB		Mk	r1 26.75		Auto	o Tune
-10.0											Cento 21.0000000	e <b>r Fre</b> 000 GH
-20.0										DL1 -25.00 dBm	Sta 15.0000000	<b>rt Fre</b> 000 GH
-40.0								ul kara Birakida		· ····································	Sto 27.0000000	<b>p Fre</b> 000 GH
-60.0	alan <sub>geng</sub> i <mark>Agapat<sup>an</sup> Milangan (Internetion</mark>	al ford and the second	e (negeneration) ed Kapani (nefettella	l <mark>yn (<sub>Pey</sub>n (mei Penny</mark> ski <sup>e</sup> le) Hel penn klimi (menniki men	(Harden Allen and All	ne portun en provinción Las trapadestes de las y				villepolitien <sub>em</sub> menspie	C 1.2000000 <u>Auto</u>	F Ste 000 G⊢ Ma
-80.0											Freq	<b>Offs</b> e 0 ⊢
	000 GHz									1000 GHZ	Scal	le Typ <u>Li</u>
#Res BW	/ 1.0 MHz			#VBV	V 3.0 MHz		s	weep 3	1.19 ms (2	4621 pts)		

Table 7-298. Conducted Spurious Plot (Band 41 – 20.0MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

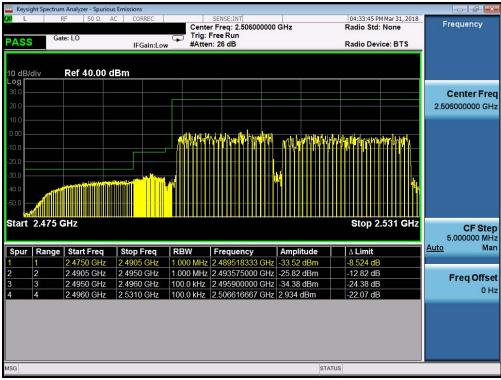


Table 7-299. Lower ACP Plot (Band 41 QPSK – PCC:15 MHz SCC:20 MHz – Full RB)

FCC ID: ZNFV350A		MEASUREMENT REPORT (CERTIFICATION)	🕒 LG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 195 of 262
1M1803120039-03.ZNF	March 15 - April 4, 2018	Portable Handset		Page 185 of 263
© 2018 PCTEST Engineering La	V 7.5 2/26/2018			