

Plot 7-109. Lower Band Edge Plot (LTE Band 13 - 5MHz QPSK – Full RB)

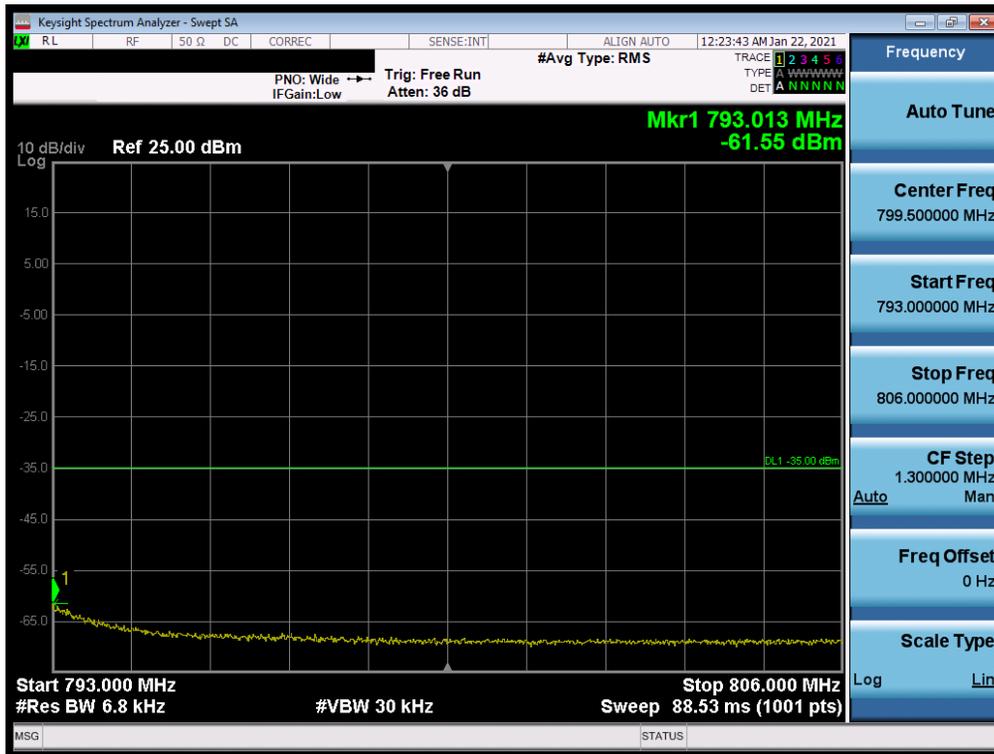


Plot 7-110. Lower Emission Mask Plot (LTE Band 13 - 5MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 72 of 127



Plot 7-111. Upper Band Edge Plot (LTE Band 13 - 5MHz QPSK – Full RB)



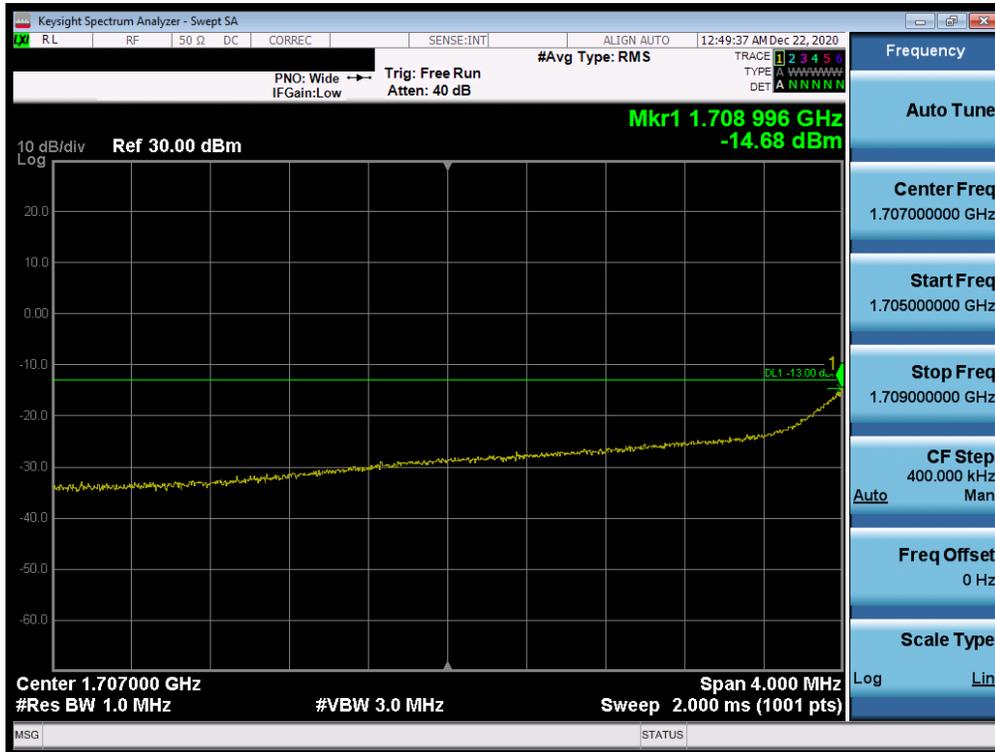
Plot 7-112. Upper Emission Mask Plot (LTE Band 13 - 5MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 73 of 127

WCDMA AWS



Plot 7-113. Lower Band Edge Plot (WCDMA AWS – Ch. 1312)

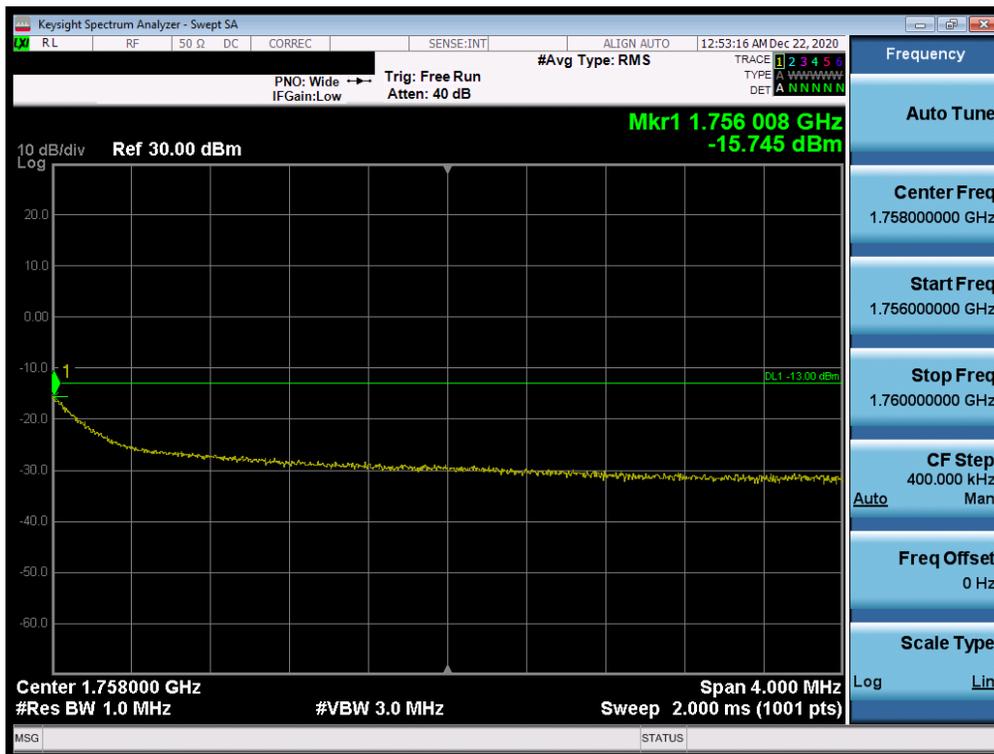


Plot 7-114. Lower Extended Band Edge Plot (WCDMA AWS – Ch. 1312)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 74 of 127

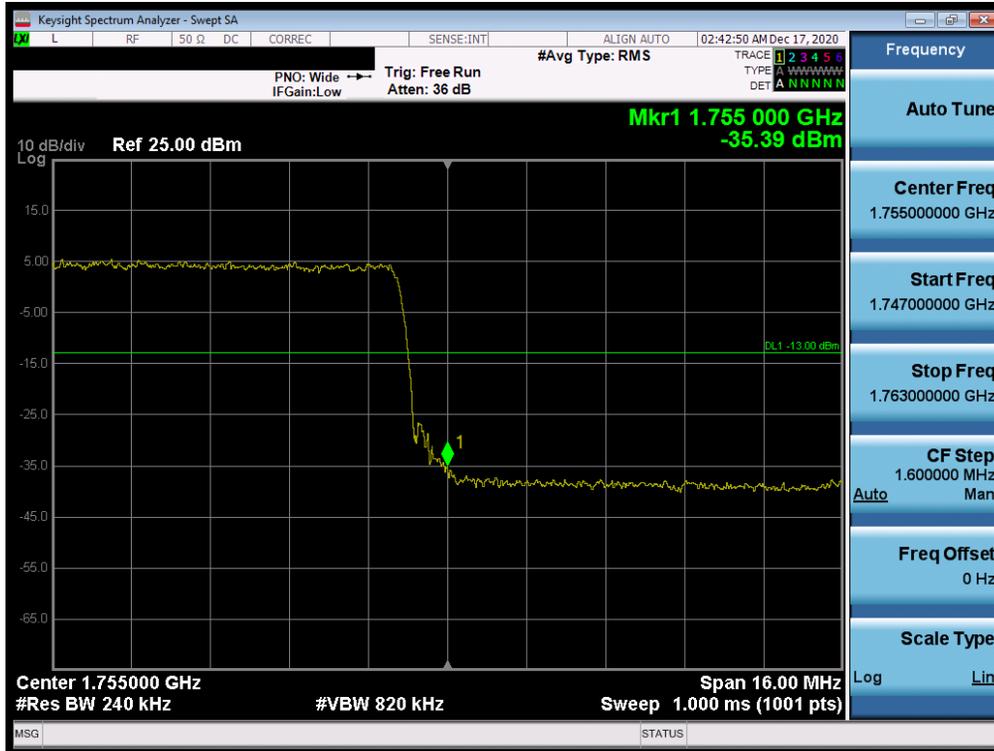


Plot 7-115. Upper Band Edge Plot (WCDMA AWS – Ch. 1513)

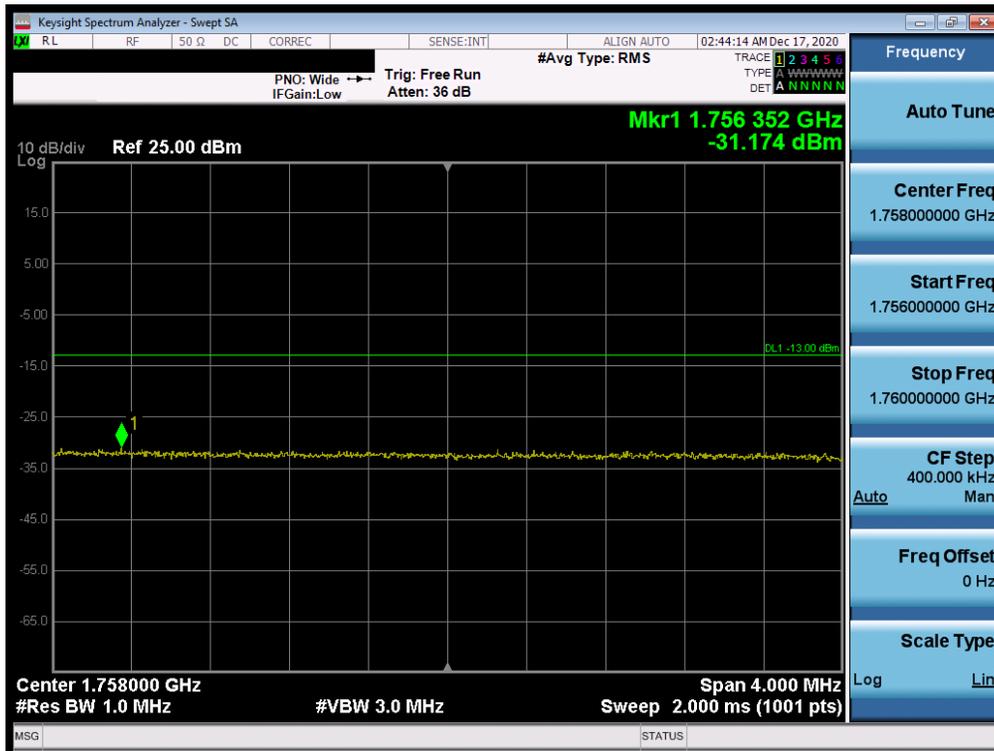


Plot 7-116. Upper Extended Band Edge Plot (WCDMA AWS – Ch. 1513)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 75 of 127

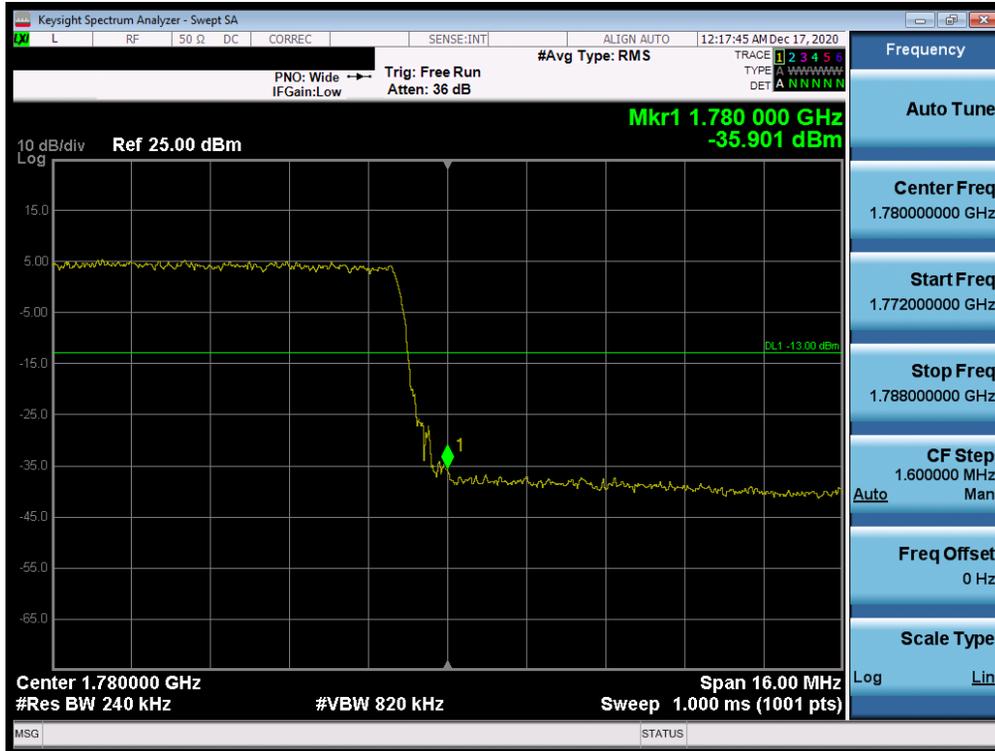


Plot 7-119. Upper Band Edge Plot (LTE Band 4 - 20MHz QPSK – Full RB)

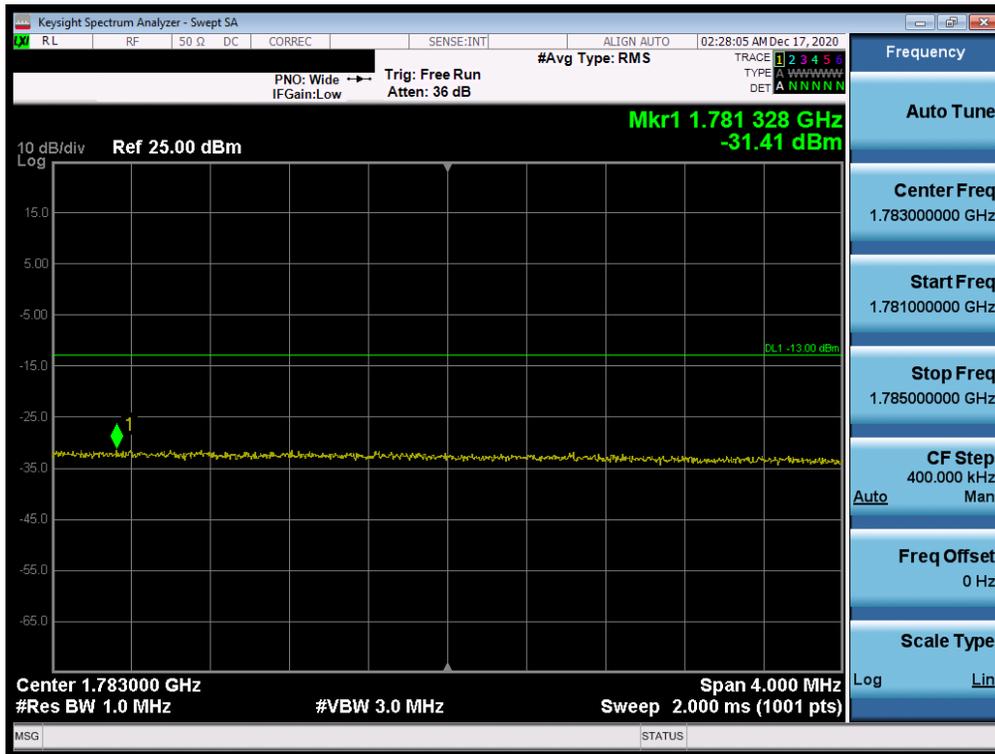


Plot 7-120. Upper Extended Band Edge Plot (LTE Band 4 - 20MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 77 of 127

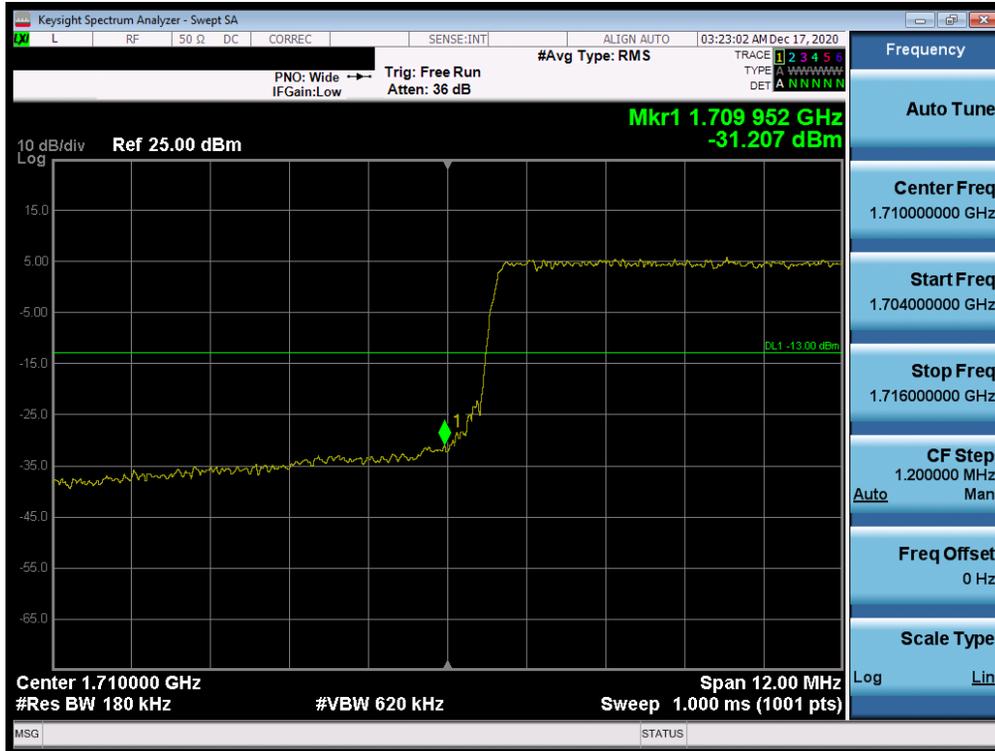


Plot 7-121. Upper Band Edge Plot (LTE Band 66 - 20MHz QPSK – Full RB)

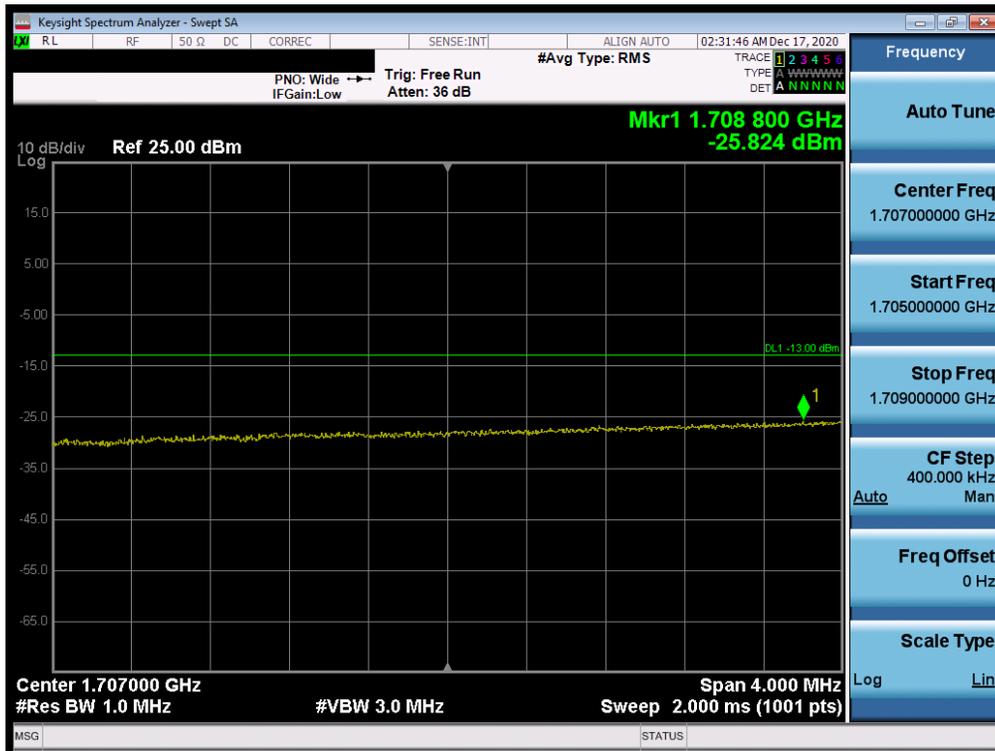


Plot 7-122. Channel Edge Plot (LTE Band 66 - 20MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 78 of 127

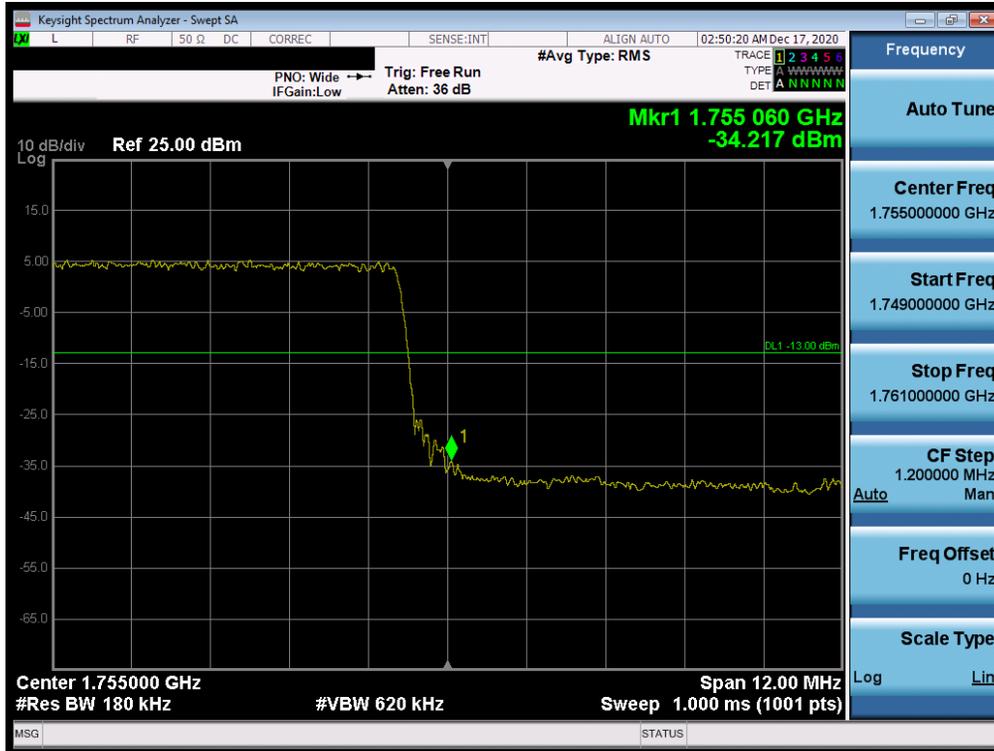


Plot 7-123. Lower Band Edge Plot (LTE Band 66/4 - 15MHz QPSK – Full RB)

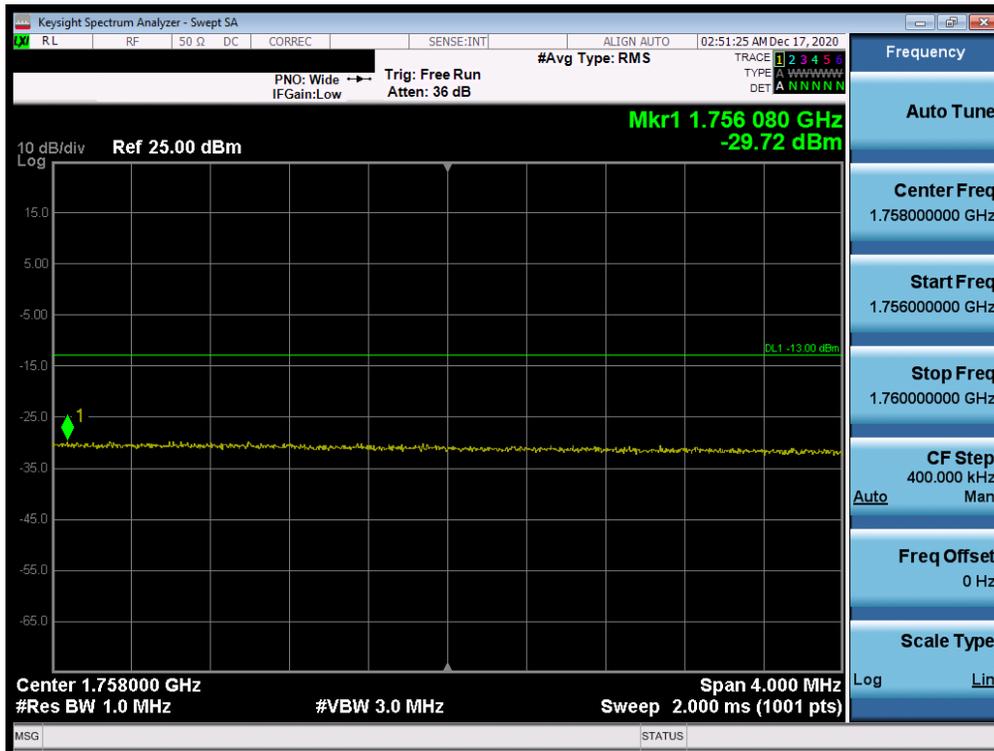


Plot 7-124. Lower Extended Band Edge Plot (LTE Band 66/4 - 15MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 79 of 127

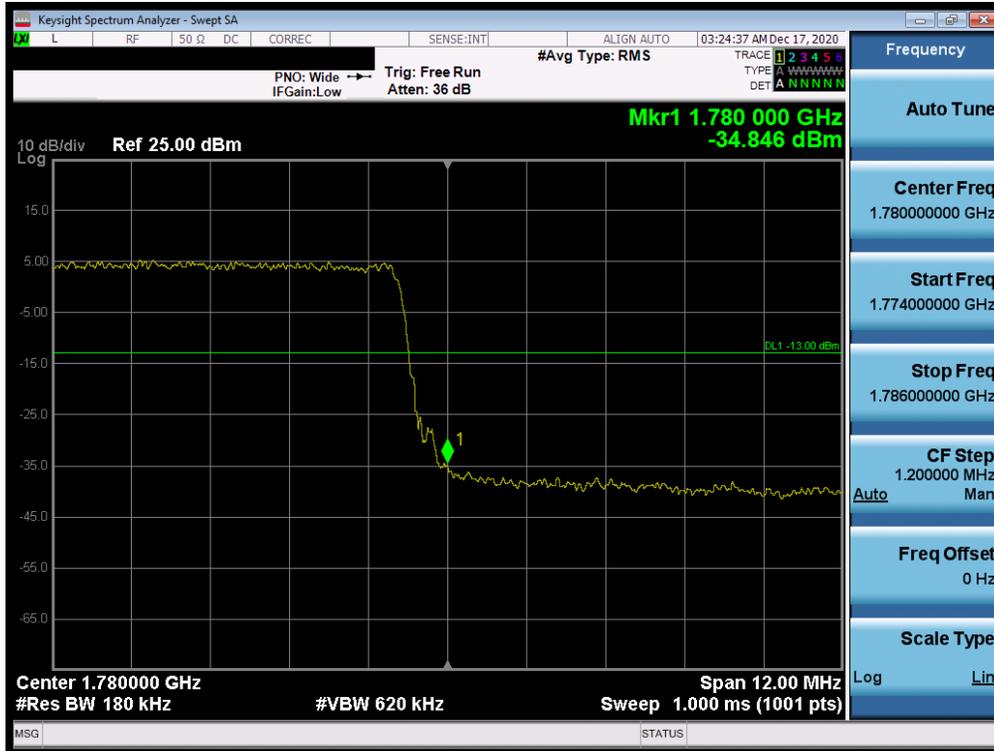


Plot 7-125. Upper Band Edge Plot (LTE Band 4 - 15MHz QPSK – Full RB)



Plot 7-126. Upper Extended Band Edge Plot (LTE Band 4 - 15MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 80 of 127

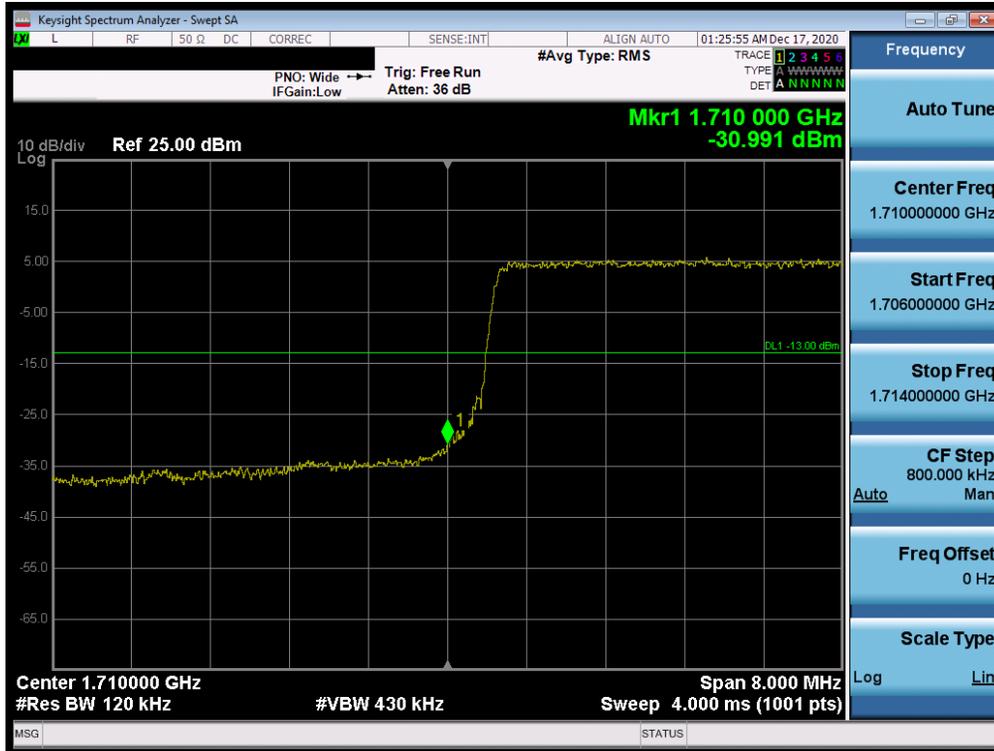


Plot 7-127. Upper Band Edge Plot (LTE Band 66 - 15MHz QPSK – Full RB)

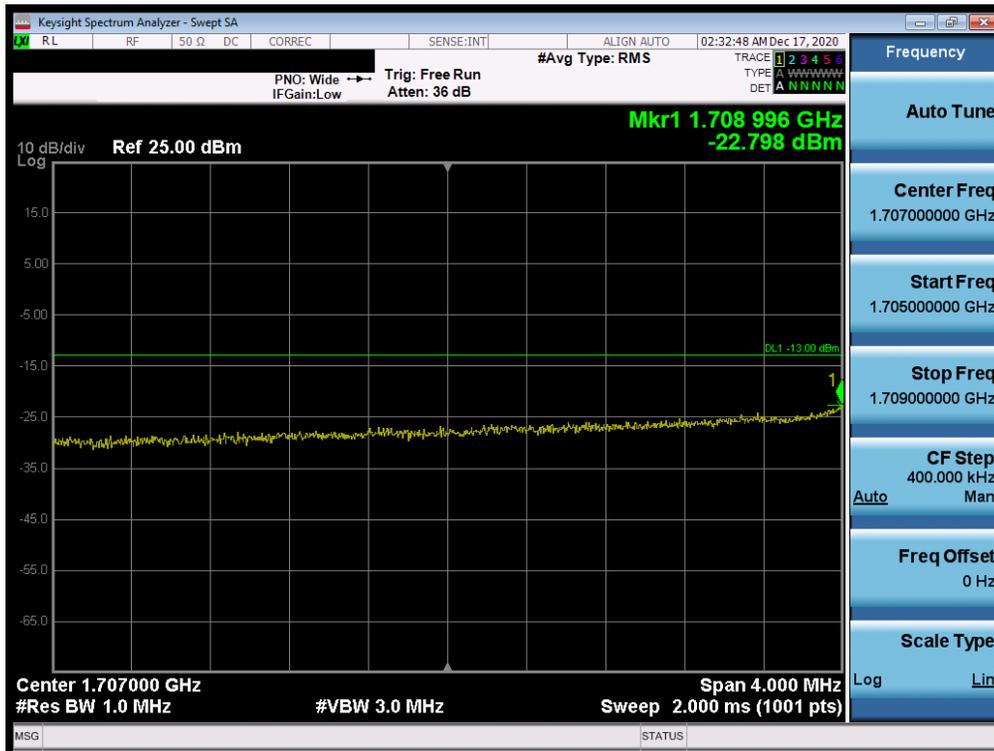


Plot 7-128. Upper Extended Band Edge Plot (LTE Band 66 - 15MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 81 of 127



Plot 7-129. Lower Band Edge Plot (LTE Band 66/4 - 10MHz QPSK – Full RB)

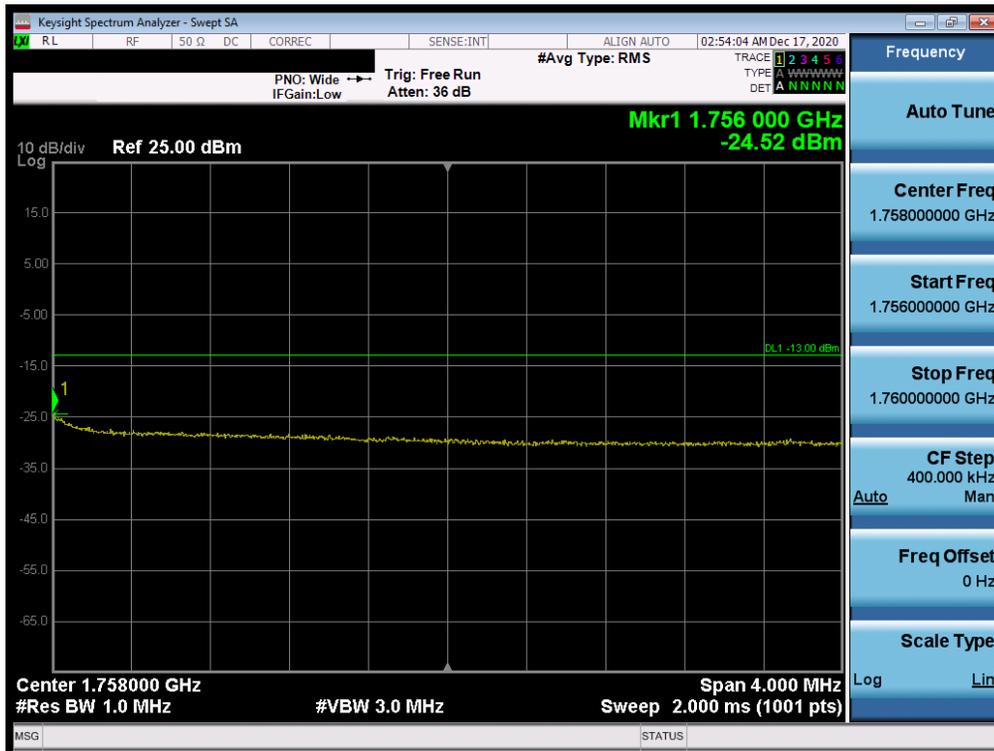


Plot 7-130. Lower Extended Band Edge Plot (LTE Band 66/4 - 10MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 82 of 127

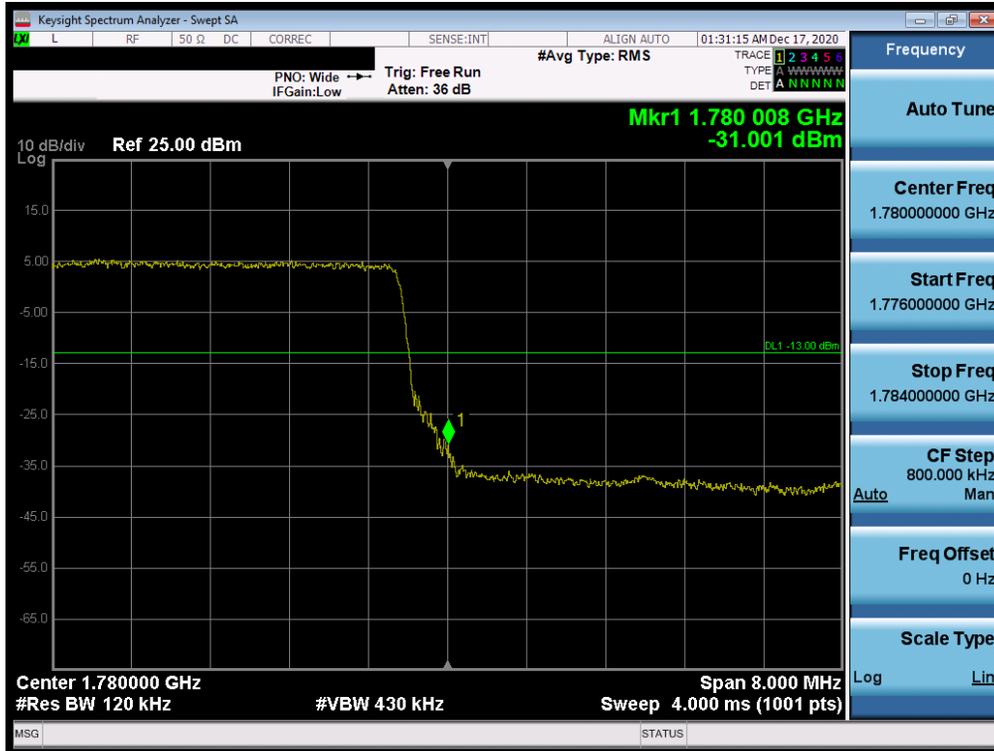


Plot 7-131. Upper Band Edge Plot (LTE Band 4 - 10MHz QPSK – Full RB)

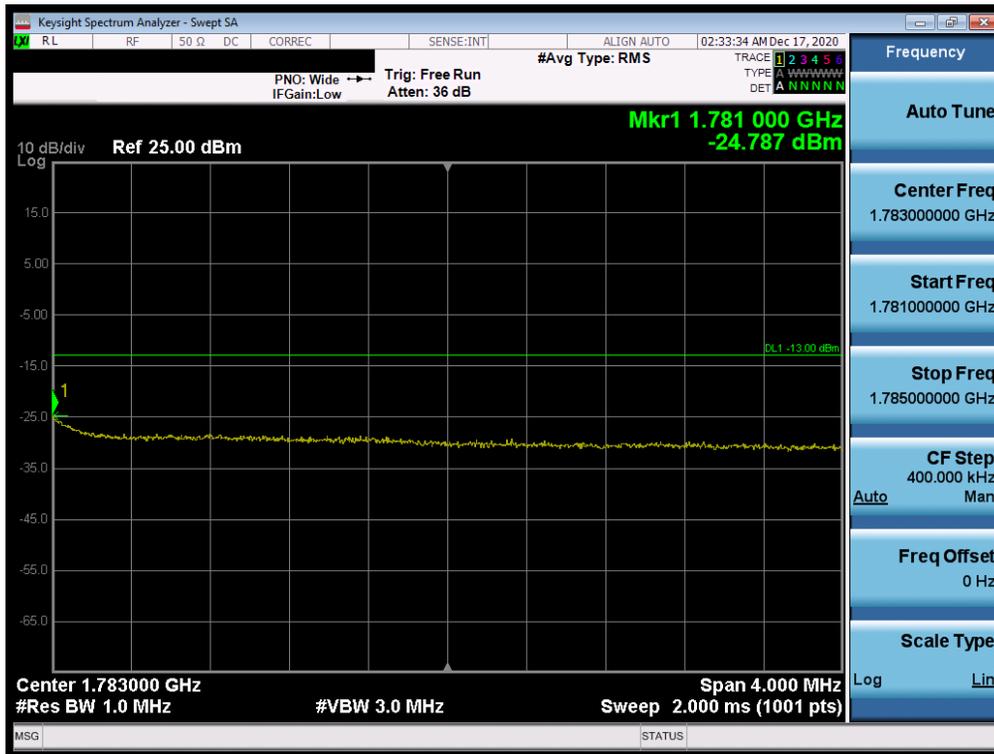


Plot 7-132. Upper Extended Band Edge Plot (LTE Band 4 - 10MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 83 of 127

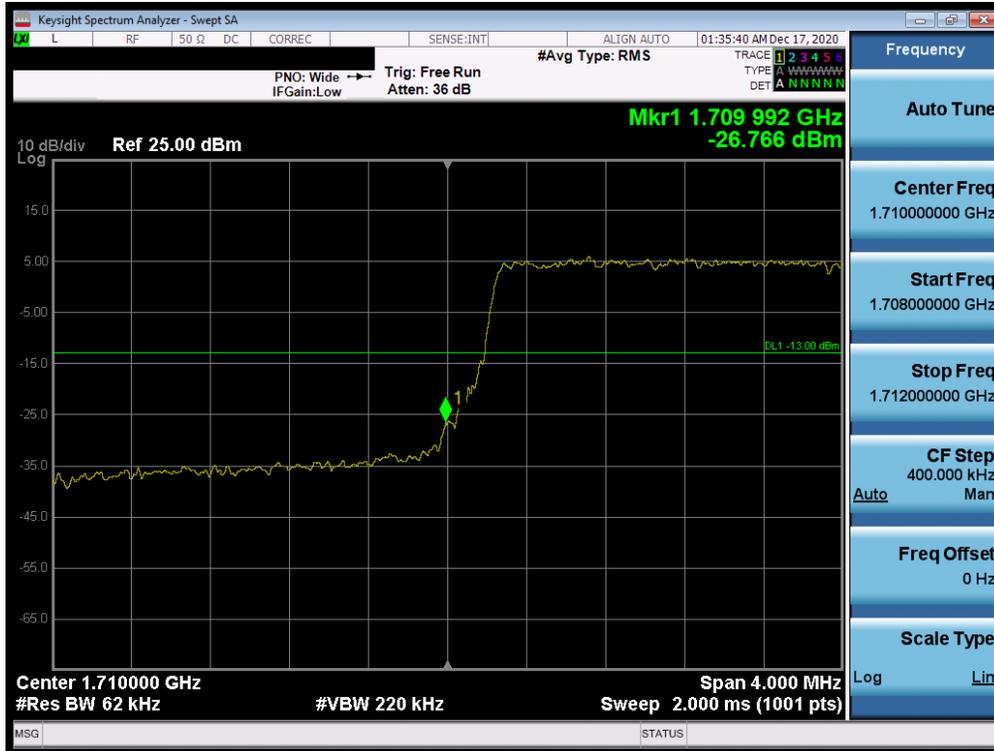


Plot 7-133. Upper Band Edge Plot (LTE Band 66 - 10MHz QPSK – Full RB)

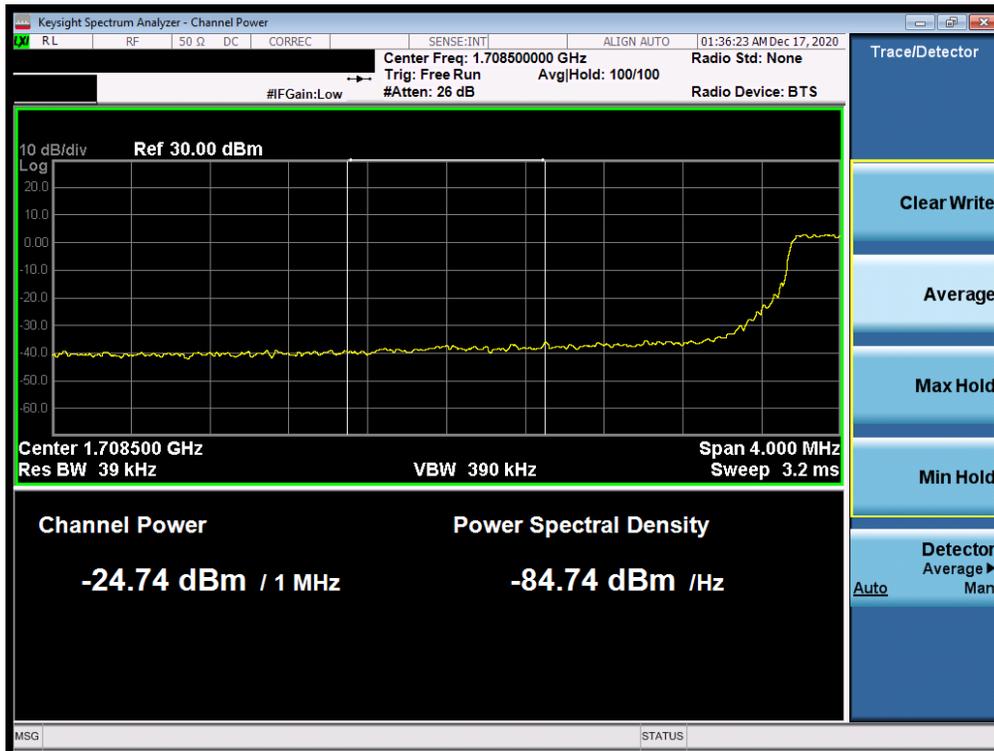


Plot 7-134. Upper Extended Band Edge Plot (LTE Band 66 - 10MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 84 of 127

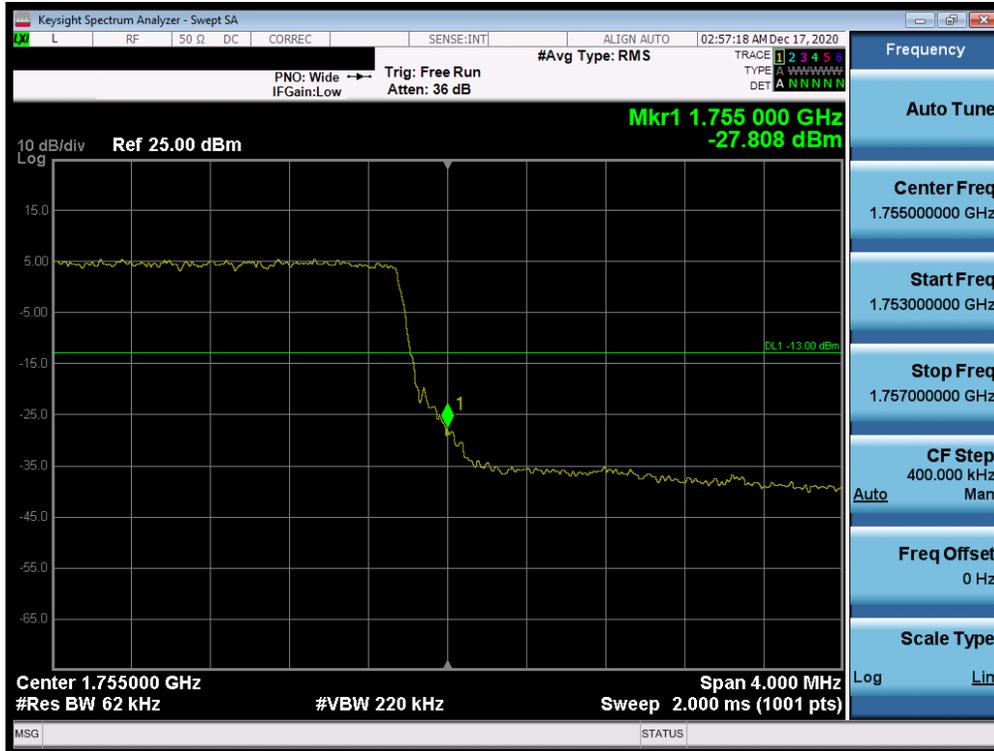


Plot 7-135. Lower Band Edge Plot (LTE Band 66/4 - 5MHz QPSK – Full RB)

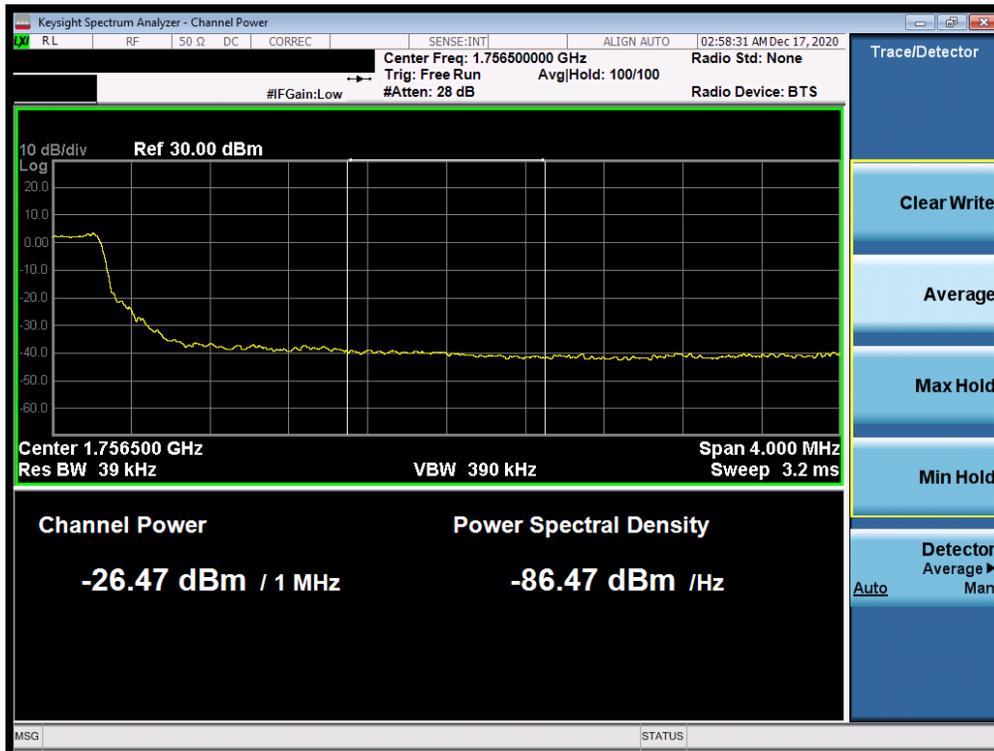


Plot 7-136. Lower Extended Band Edge Plot (LTE Band 66/4 - 5MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 85 of 127

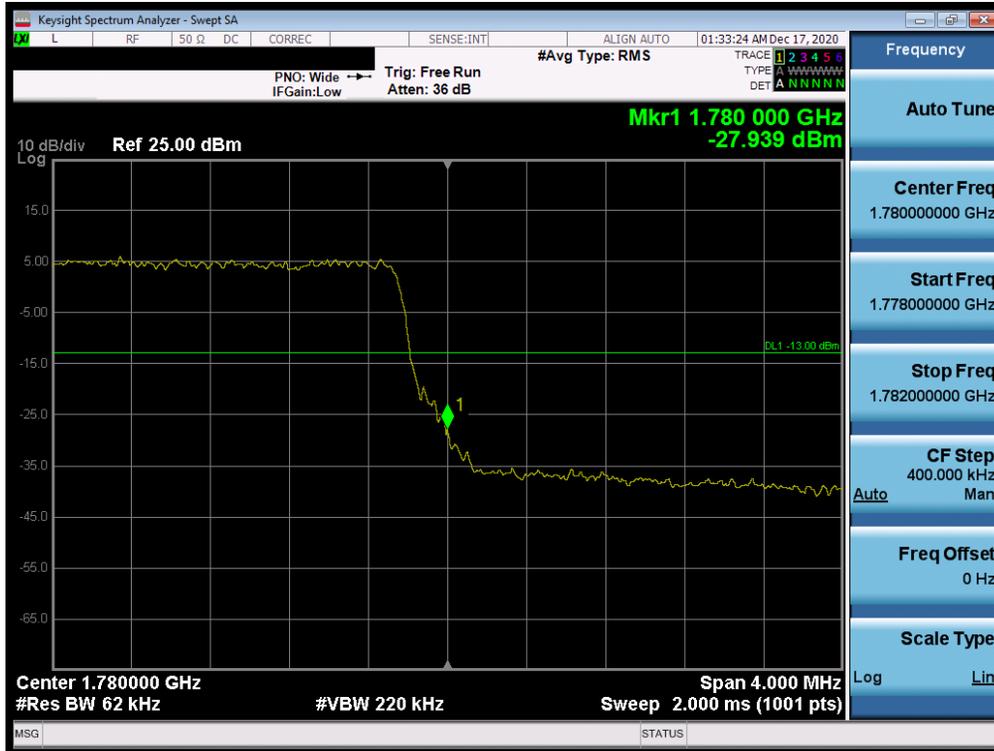


Plot 7-137. Upper Band Edge Plot (LTE Band 4 - 5MHz QPSK – Full RB)

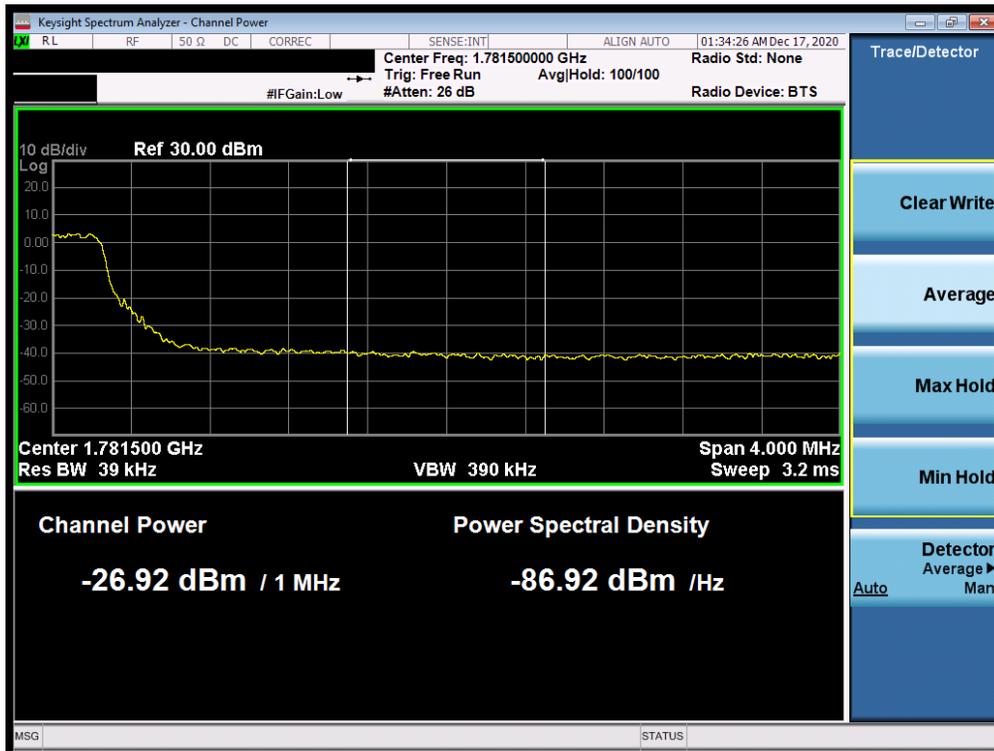


Plot 7-138. Upper Extended Band Edge Plot (LTE Band 4 - 5MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 86 of 127

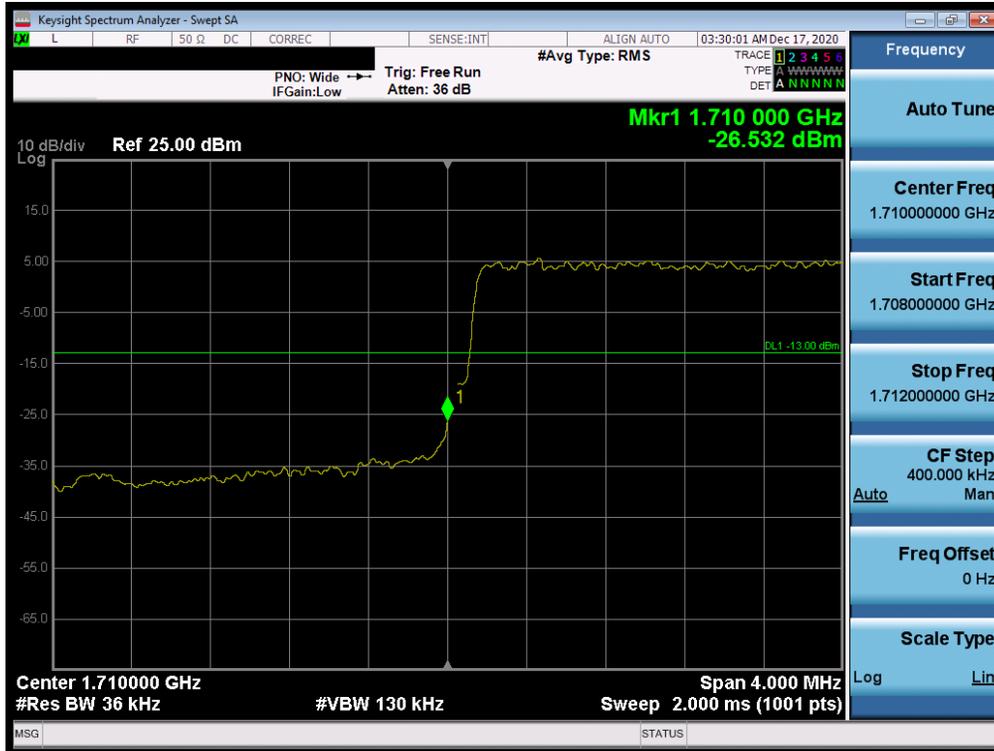


Plot 7-139. Upper Band Edge Plot (LTE Band 66 - 5MHz QPSK – Full RB)

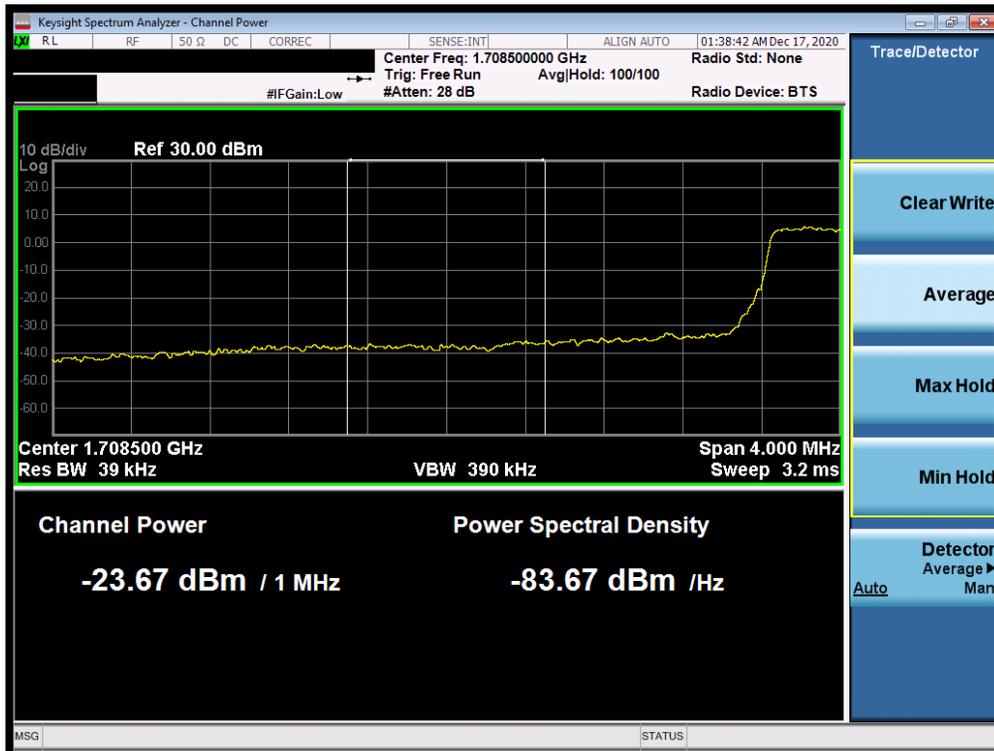


Plot 7-140. Upper Extended Band Edge Plot (LTE Band 66 - 5MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 87 of 127

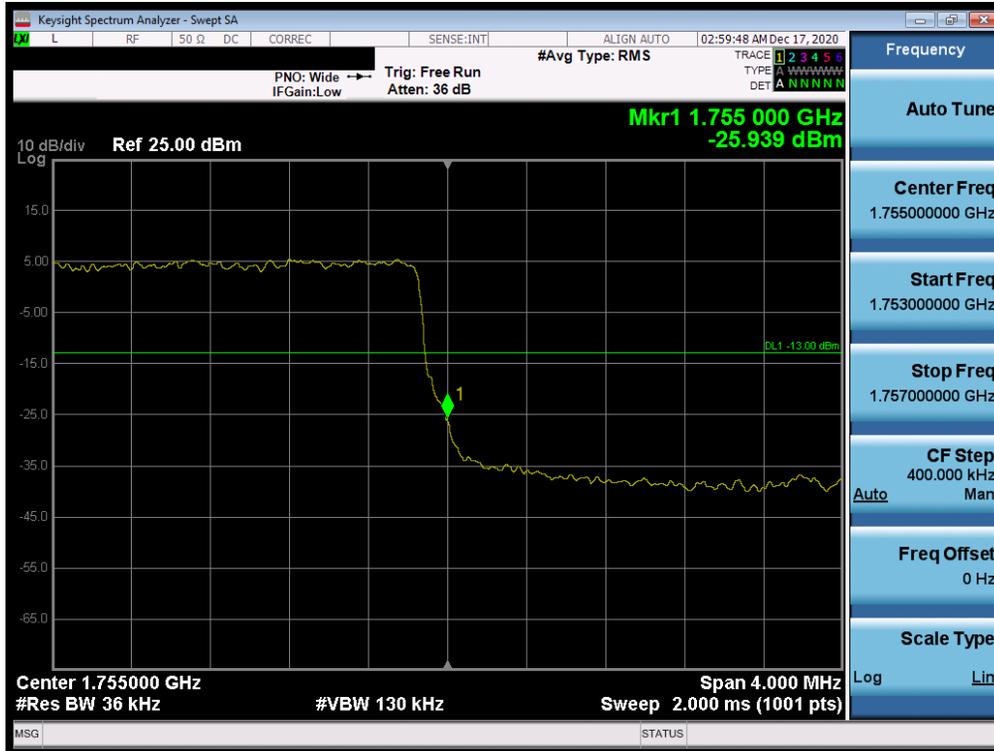


Plot 7-141. Lower Band Edge Plot (LTE Band 66/4 - 3MHz QPSK – Full RB)

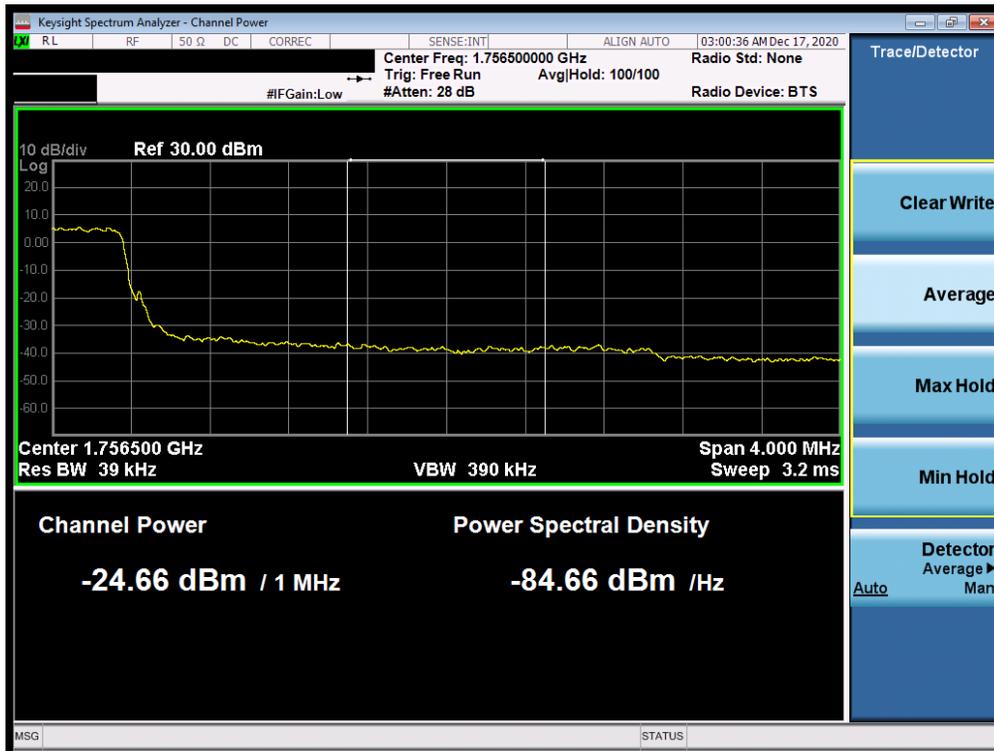


Plot 7-142. Lower Extended Band Edge Plot (LTE Band 66/4 - 3MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 88 of 127



Plot 7-143. Upper Band Edge Plot (LTE Band 4 - 3MHz QPSK – Full RB)

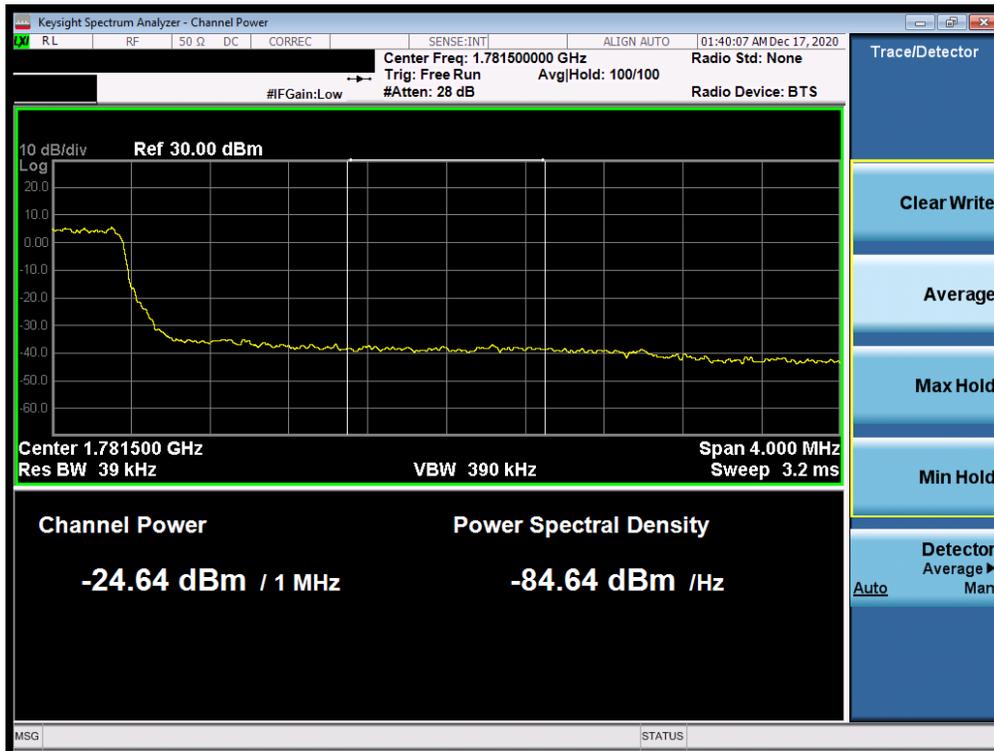


Plot 7-144. Upper Extended Band Edge Plot (LTE Band 4 - 3MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 89 of 127

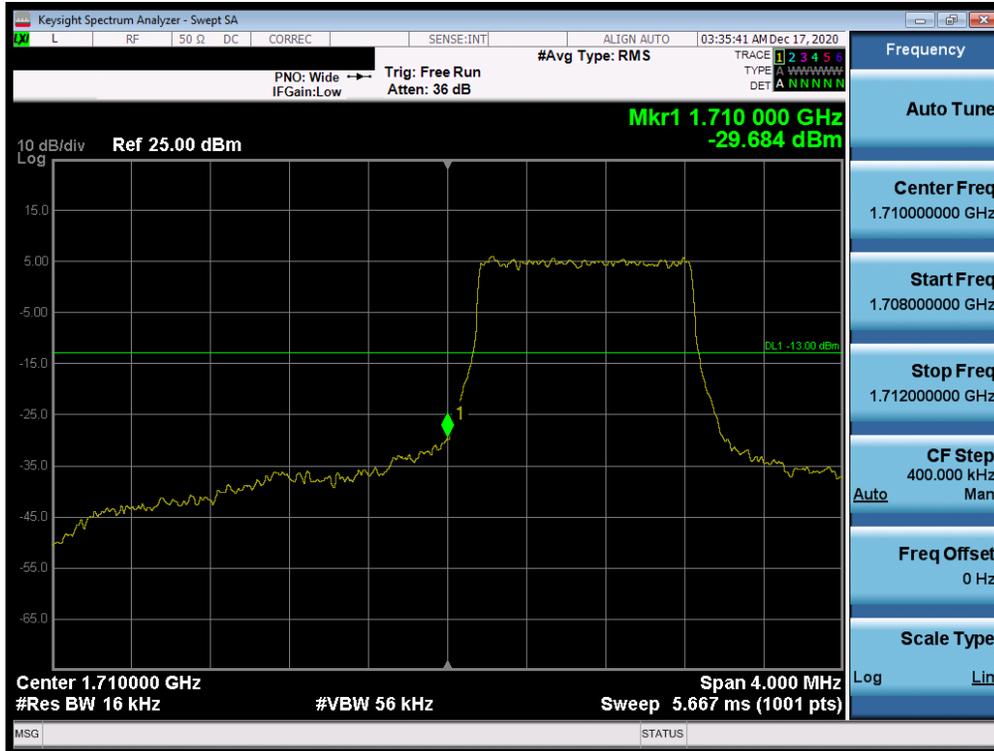


Plot 7-145. Upper Band Edge Plot (LTE Band 66 - 3MHz QPSK – Full RB)

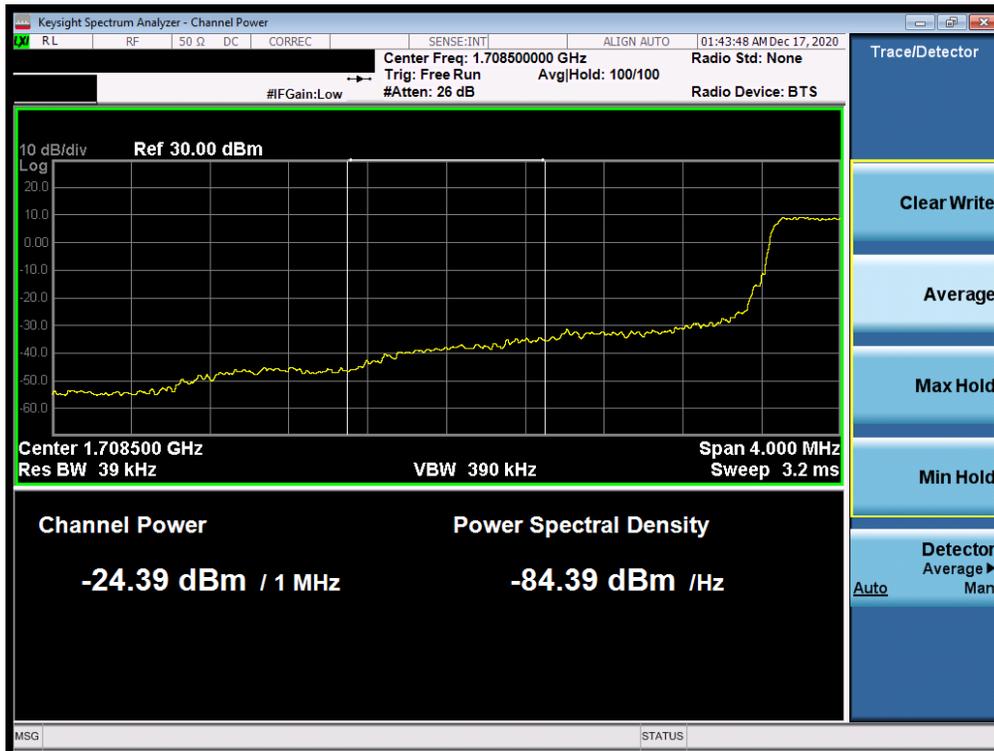


Plot 7-146. Upper Extended Band Edge Plot (LTE Band 66 - 3MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 90 of 127



Plot 7-147. Lower Band Edge Plot (LTE Band 66/4 – 1.4MHz QPSK – Full RB)

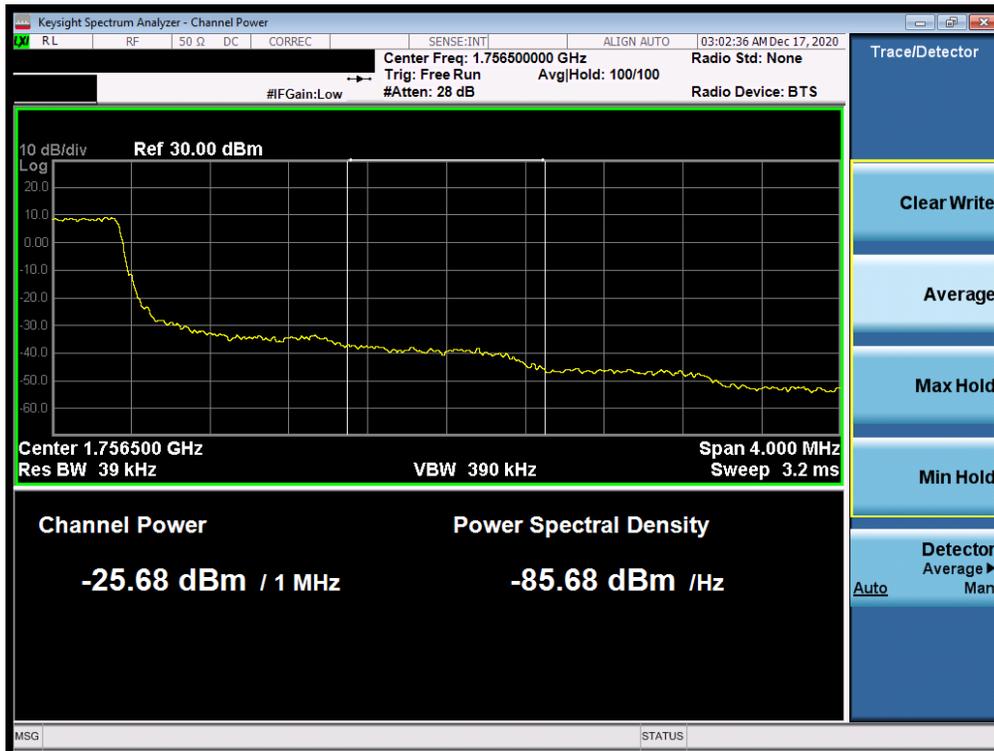


Plot 7-148. Lower Extended Band Edge Plot (LTE Band 66/4 – 1.4MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 91 of 127

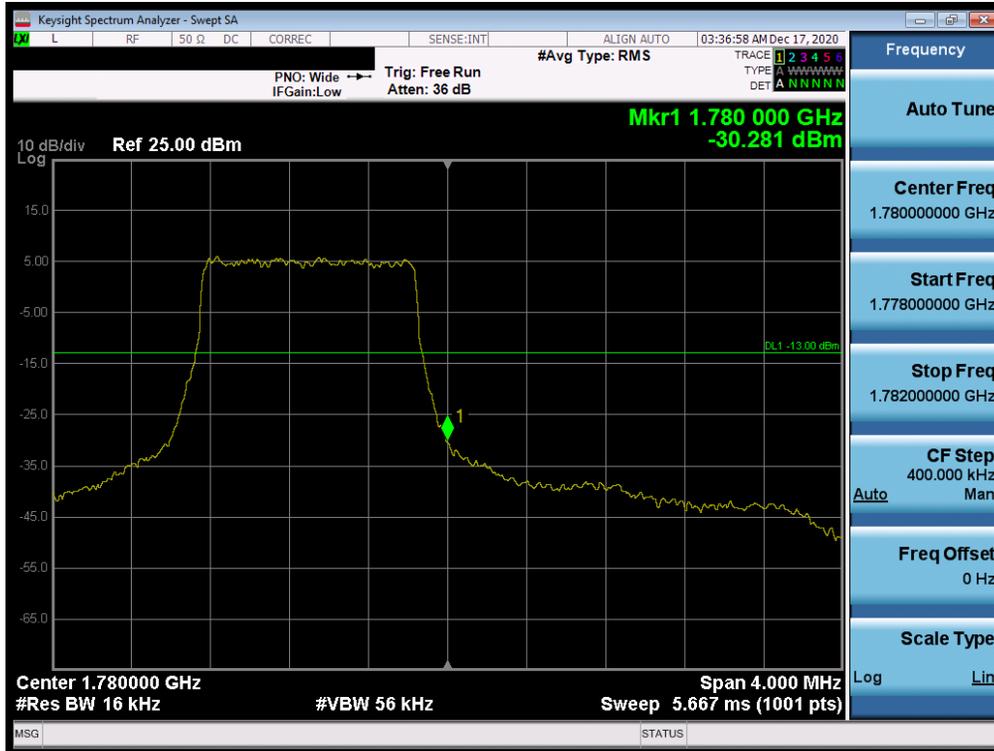


Plot 7-149. Upper Band Edge Plot (LTE Band 4 – 1.4MHz QPSK – Full RB)

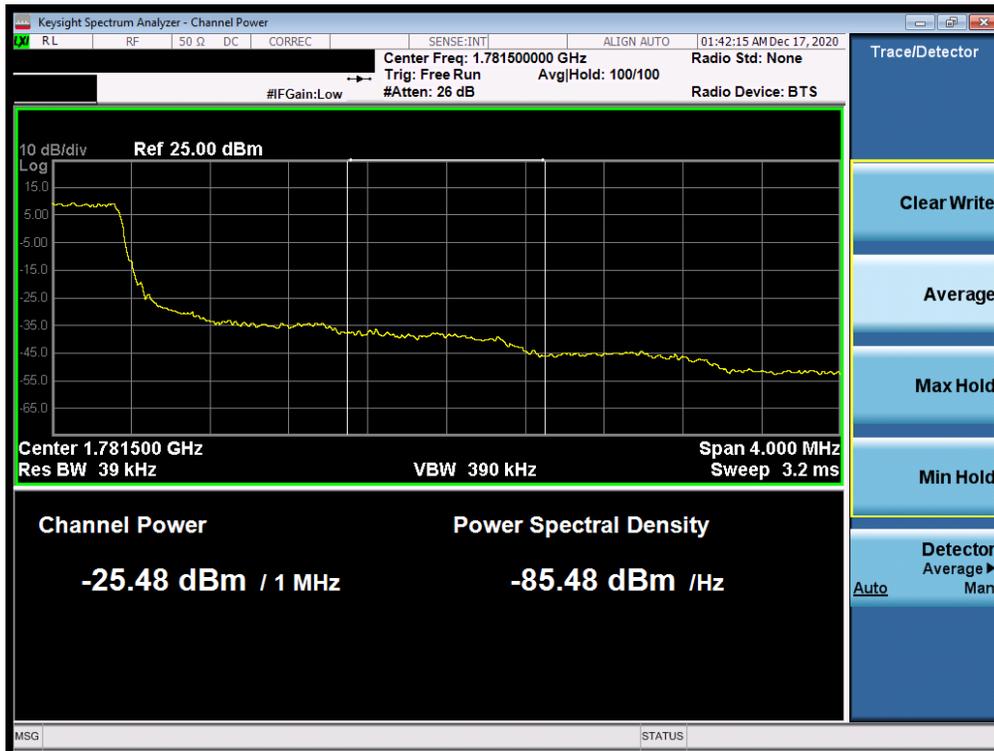


Plot 7-150. Upper Extended Band Edge Plot (LTE Band 4 – 1.4MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 92 of 127



Plot 7-151. Upper Band Edge Plot (LTE Band 66 – 1.4MHz QPSK – Full RB)



Plot 7-152. Upper Extended Band Edge Plot (LTE Band 66 – 1.4MHz QPSK – Full RB)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 93 of 127

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 \geq OBW or specified reference bandwidth
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal “RF Burst” trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the “on time” of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

Test Setup

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

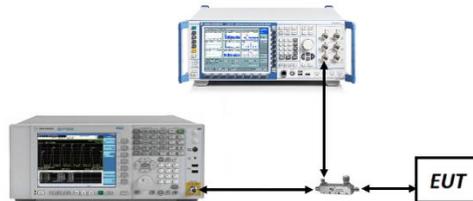


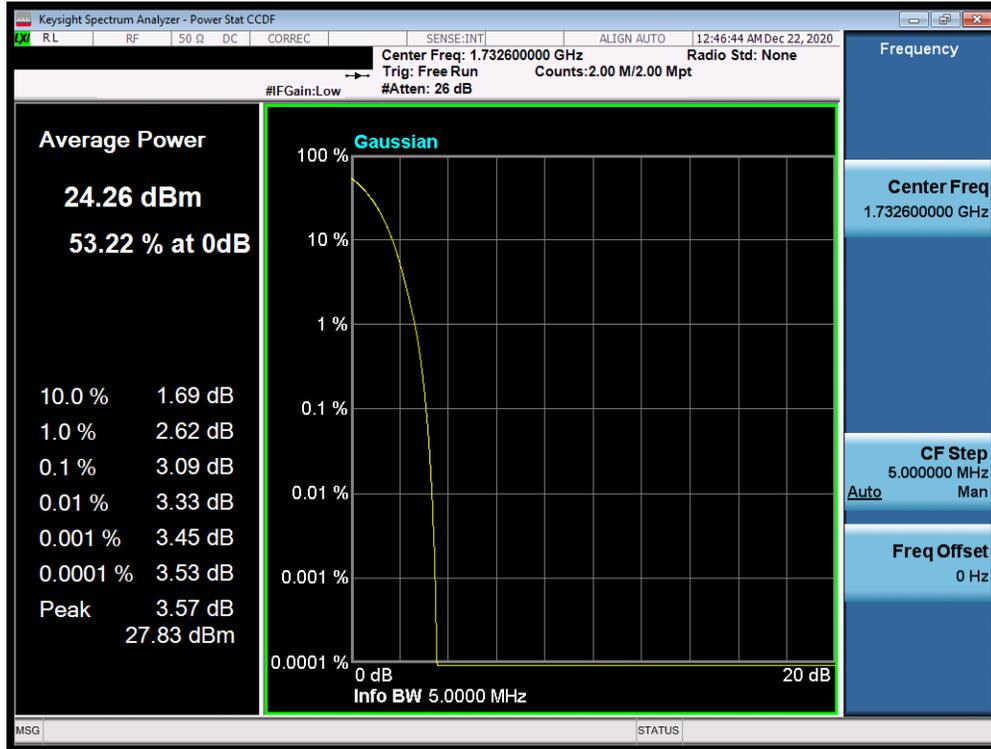
Figure 7-4. Test Instrument & Measurement Setup

Test Notes

None.

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
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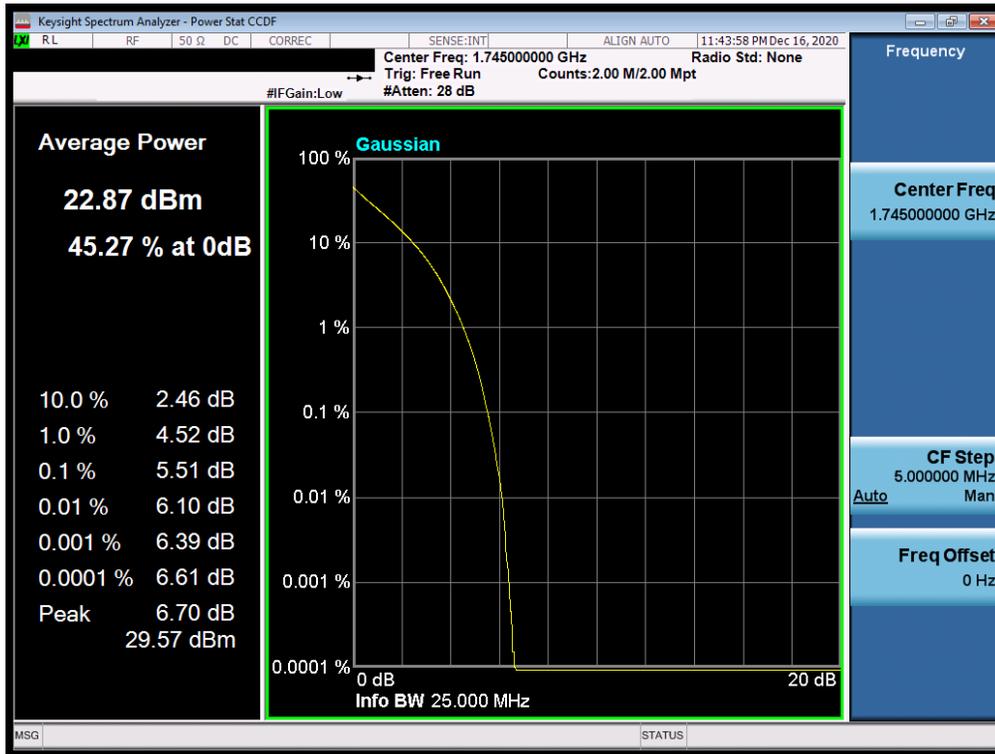
WCDMA AWS



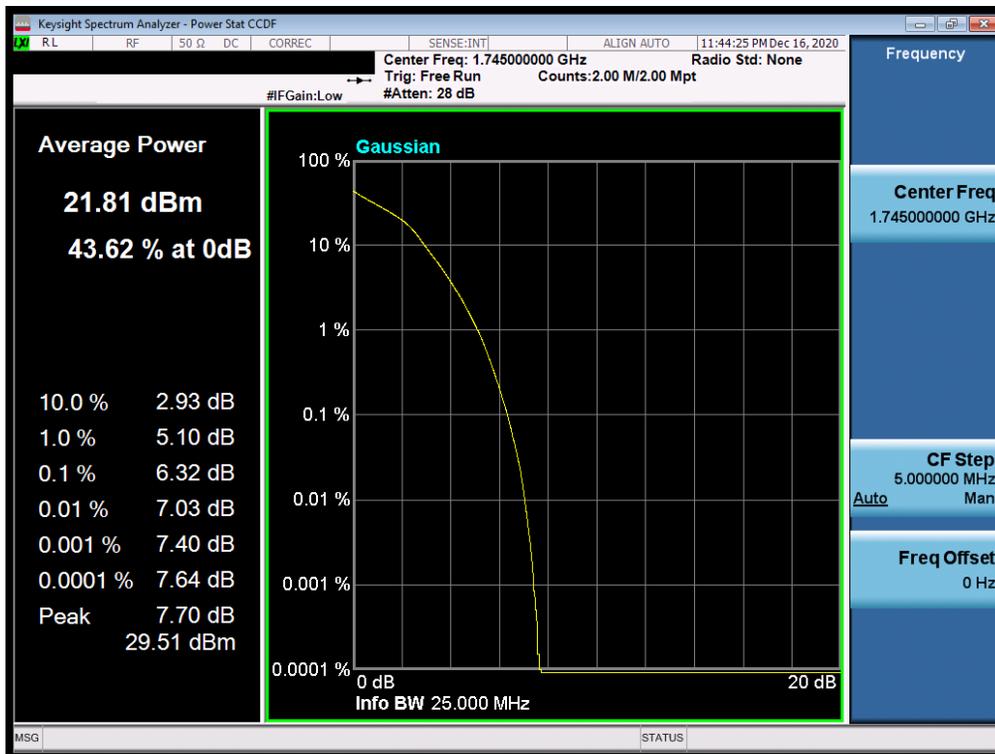
Plot 7-153. PAR Plot (WCDMA, Ch.1413)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 95 of 127

LTE Band 66/4

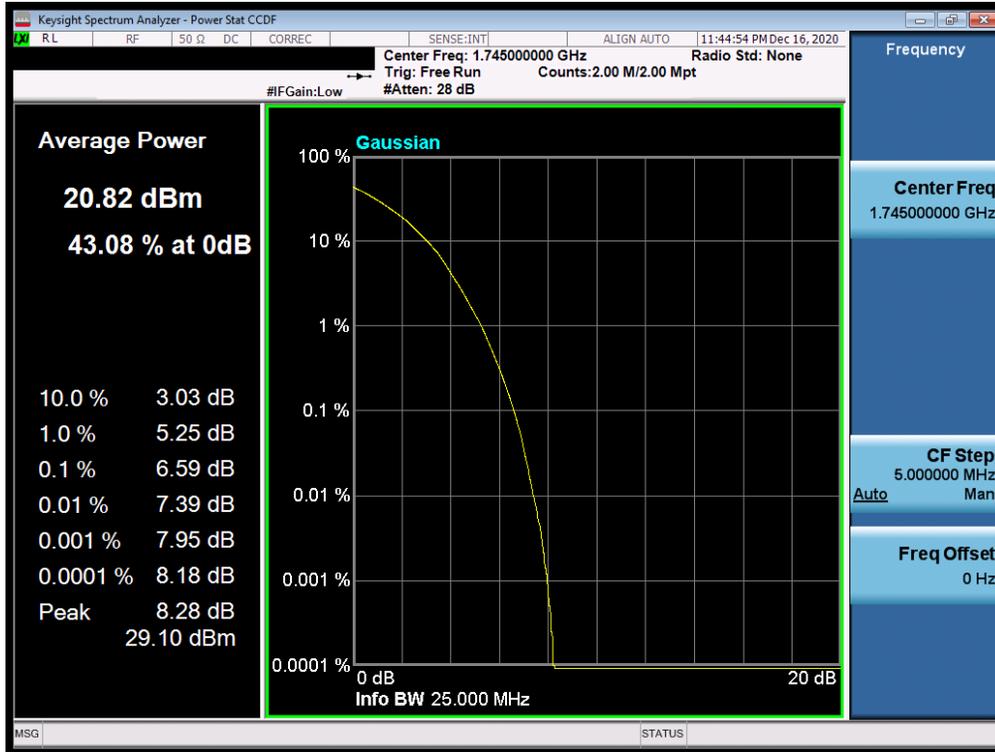


Plot 7-154. PAR Plot (LTE Band 66/4 - 20MHz QPSK - Full RB Configuration)

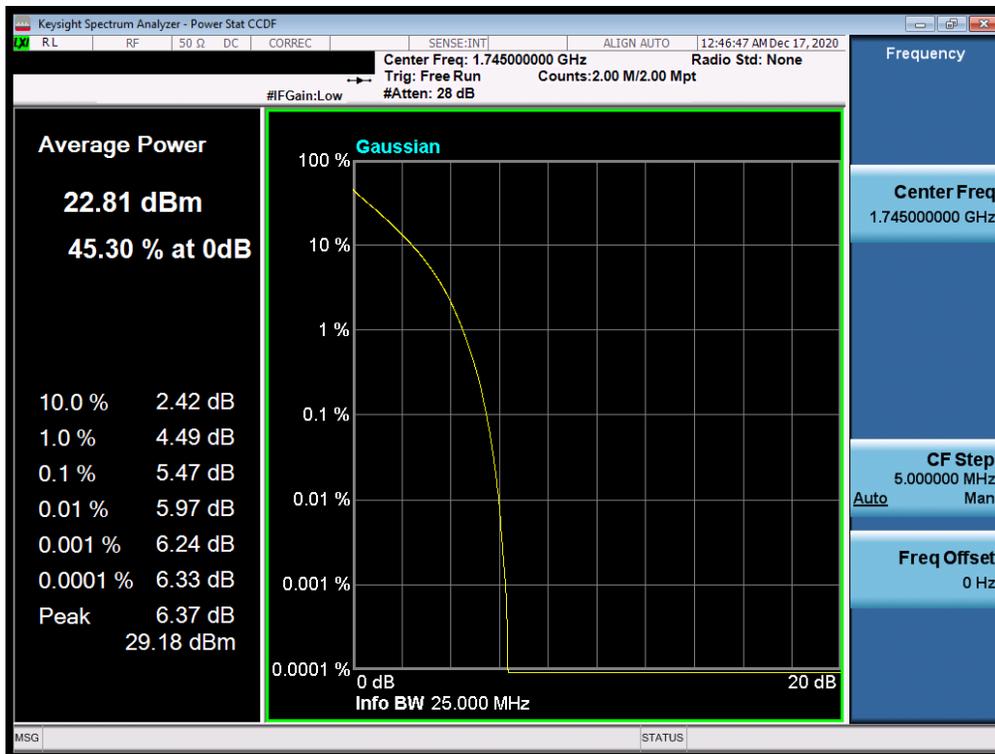


Plot 7-155. PAR Plot (LTE Band 66/4 - 20MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 96 of 127

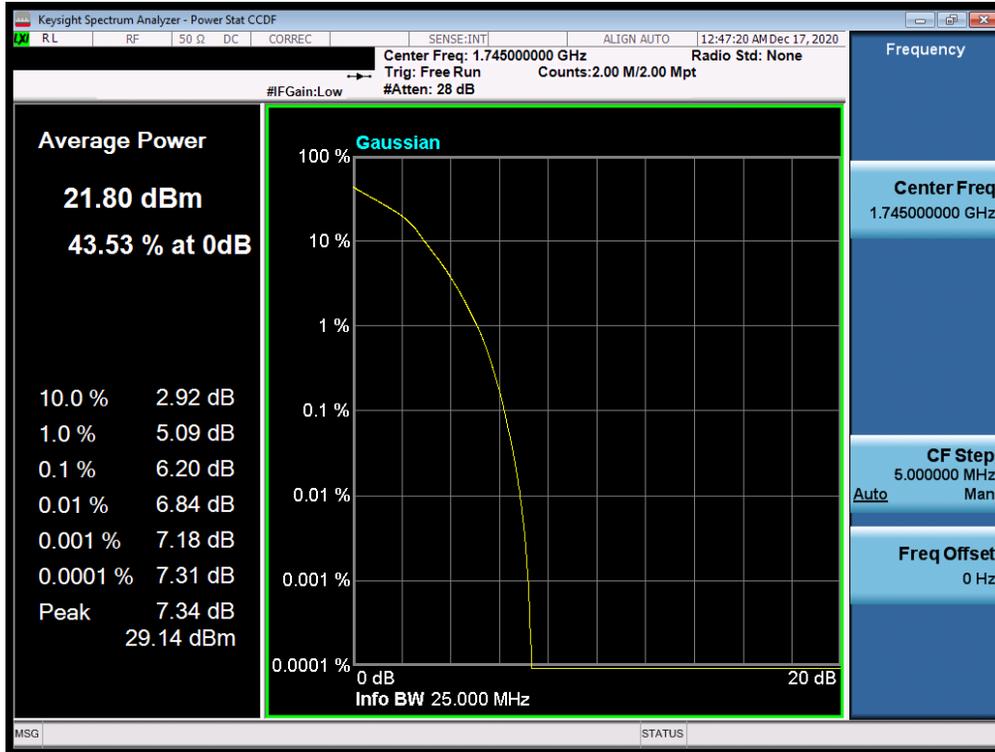


Plot 7-156. PAR Plot (LTE Band 66/4 - 20MHz 64-QAM - Full RB Configuration)

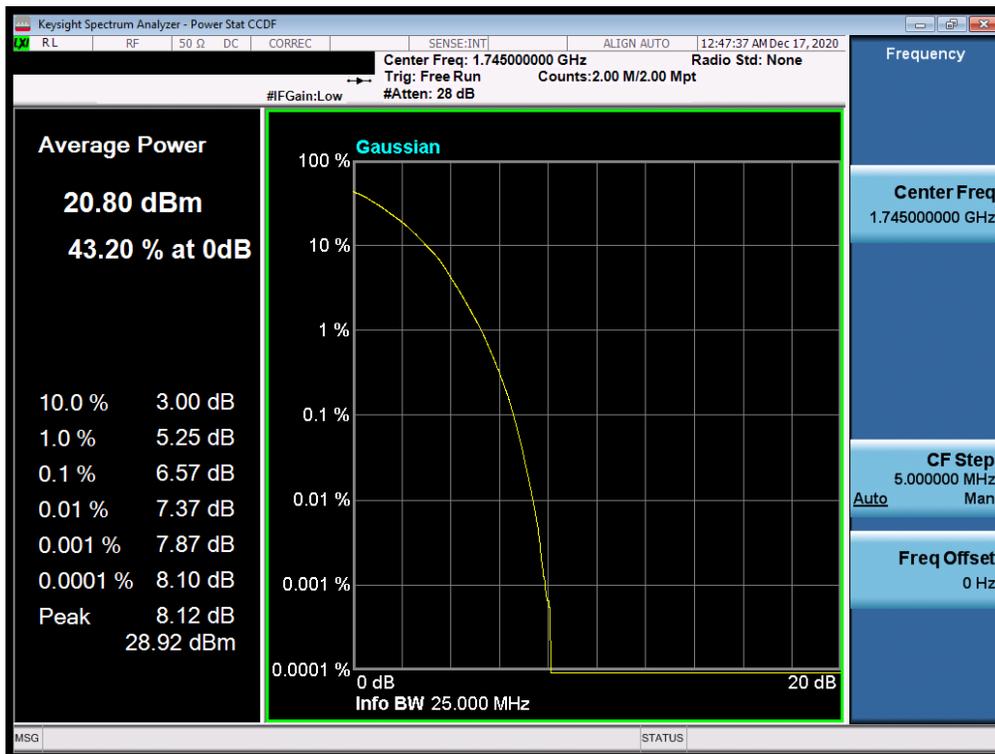


Plot 7-157. PAR Plot (LTE Band 66/4 - 15MHz QPSK - Full RB Configuration)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 97 of 127

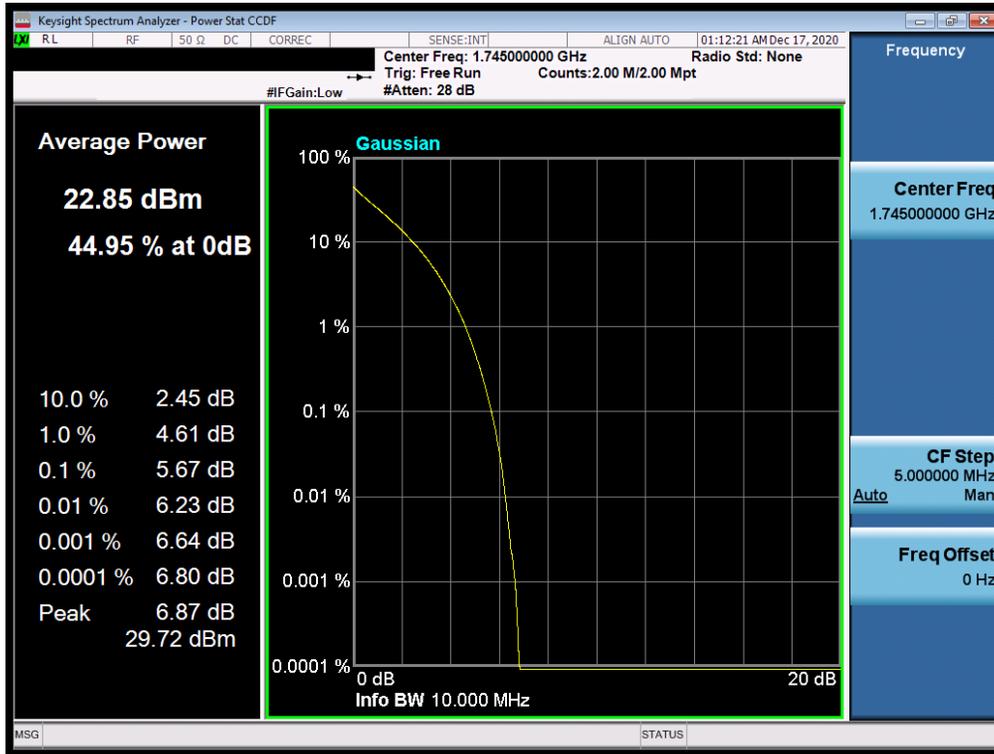


Plot 7-158. PAR Plot (LTE Band 66/4 - 15MHz 16-QAM - Full RB Configuration)

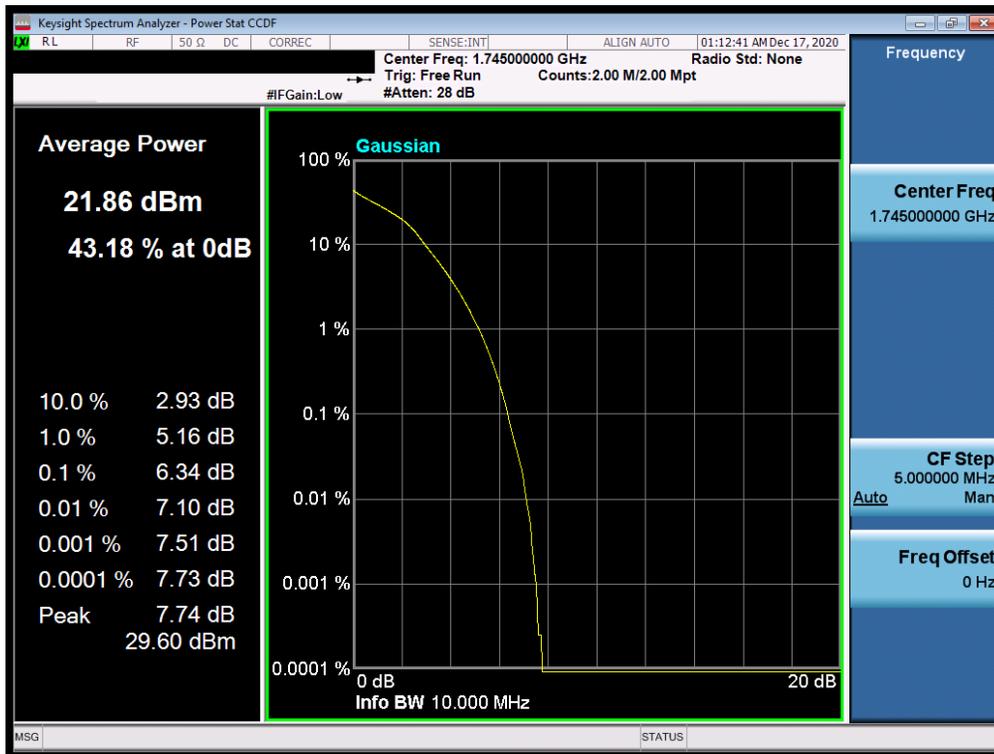


Plot 7-159. PAR Plot (LTE Band 66/4 - 15MHz 64-QAM - Full RB Configuration)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
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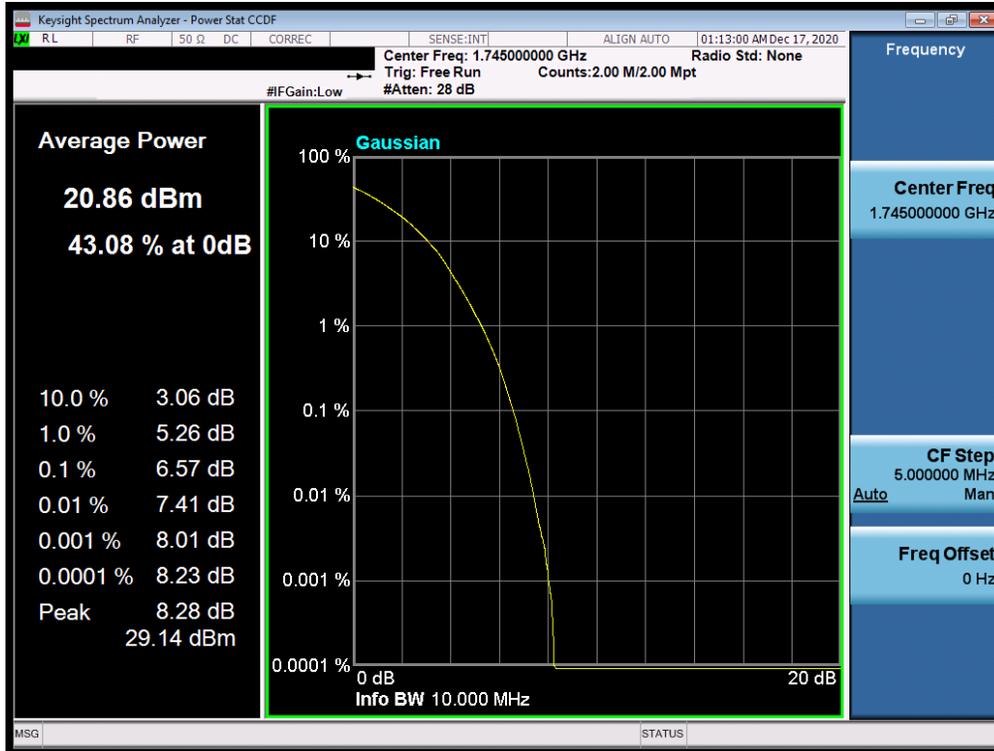


Plot 7-160. PAR Plot (LTE Band 66/4 - 10MHz QPSK - Full RB Configuration)

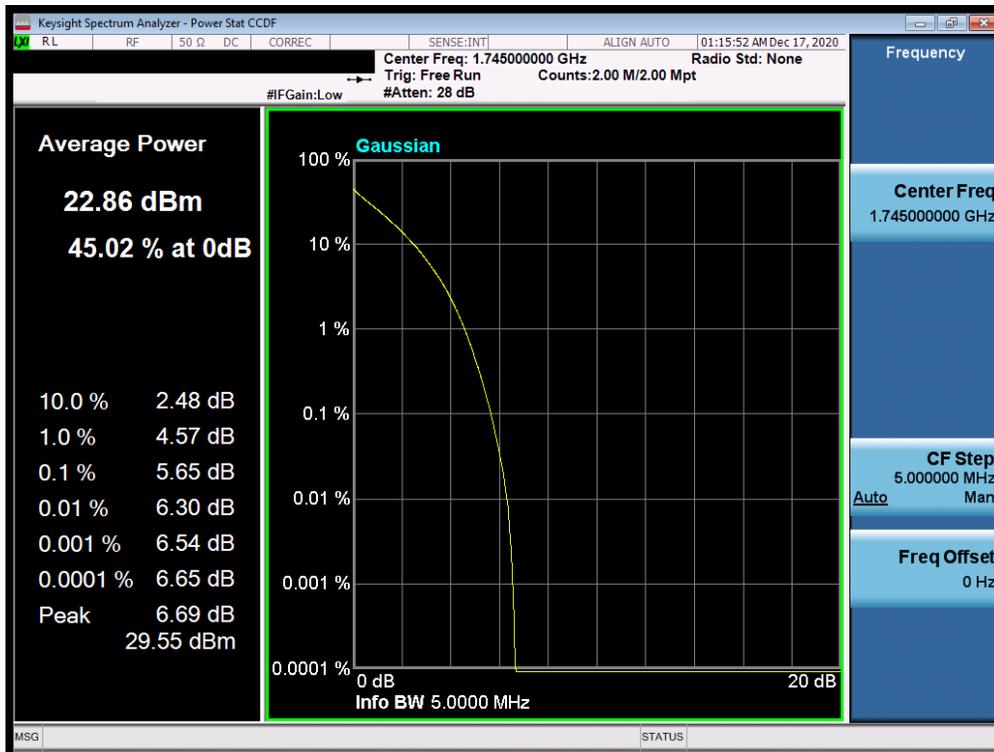


Plot 7-161. PAR Plot (LTE Band 66/4 - 10MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 99 of 127

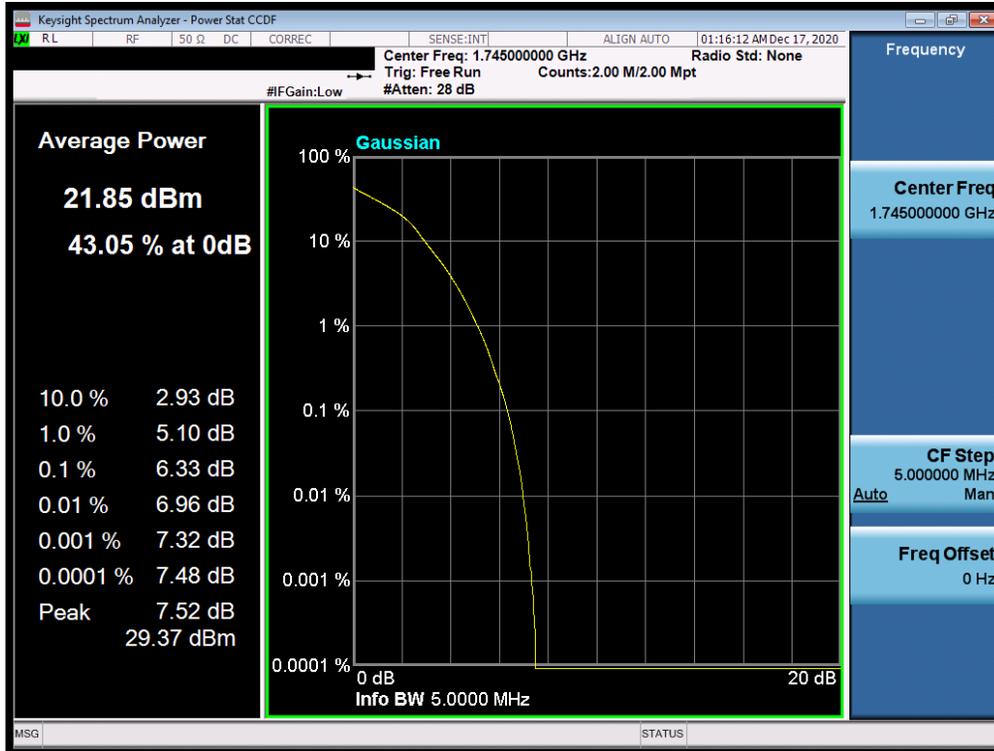


Plot 7-162. PAR Plot (LTE Band 66/4 - 10MHz 64-QAM - Full RB Configuration)

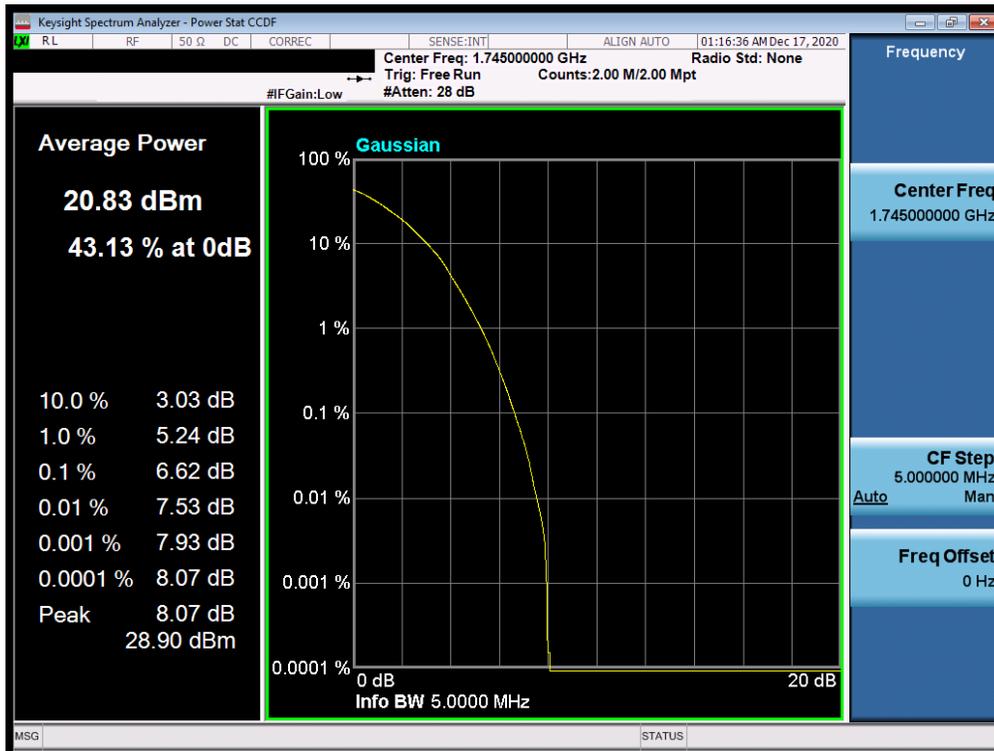


Plot 7-163. PAR Plot (LTE Band 66/4 - 5MHz QPSK - Full RB Configuration)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 100 of 127

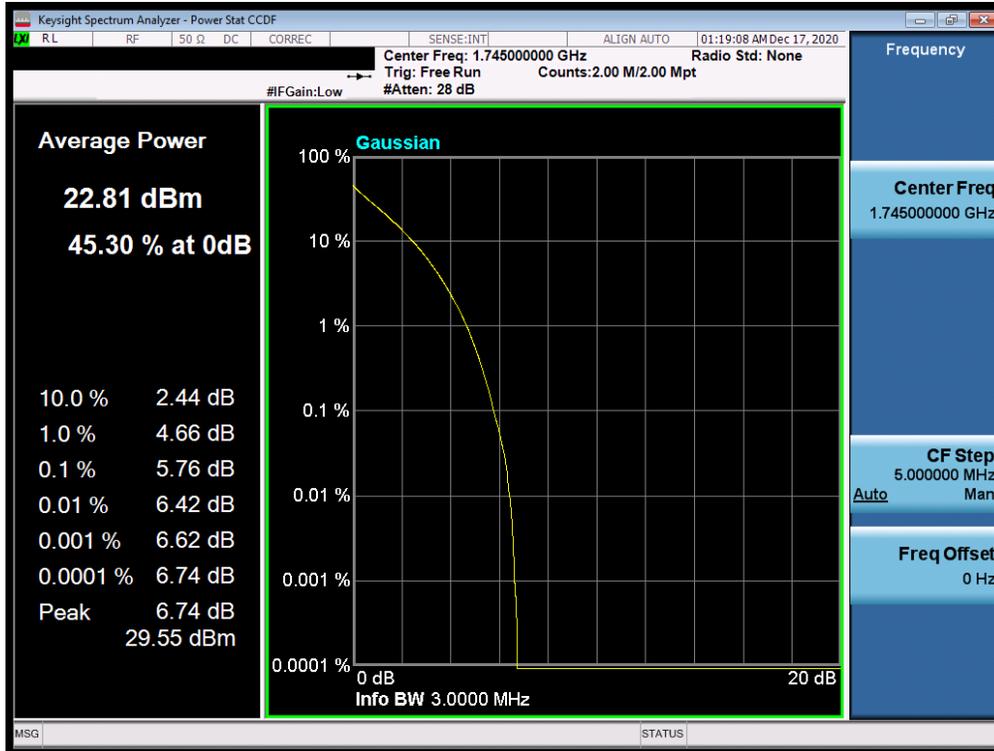


Plot 7-164. PAR Plot (LTE Band 66/4 - 5MHz 16-QAM - Full RB Configuration)

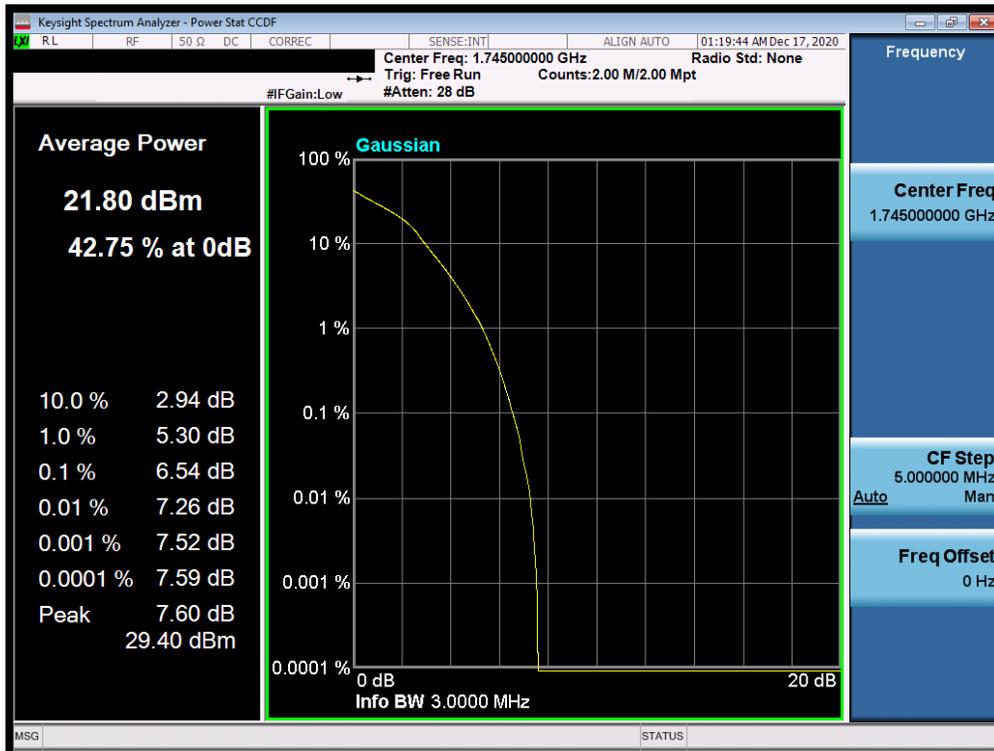


Plot 7-165. PAR Plot (LTE Band 66/4 - 5MHz 64-QAM - Full RB Configuration)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 101 of 127

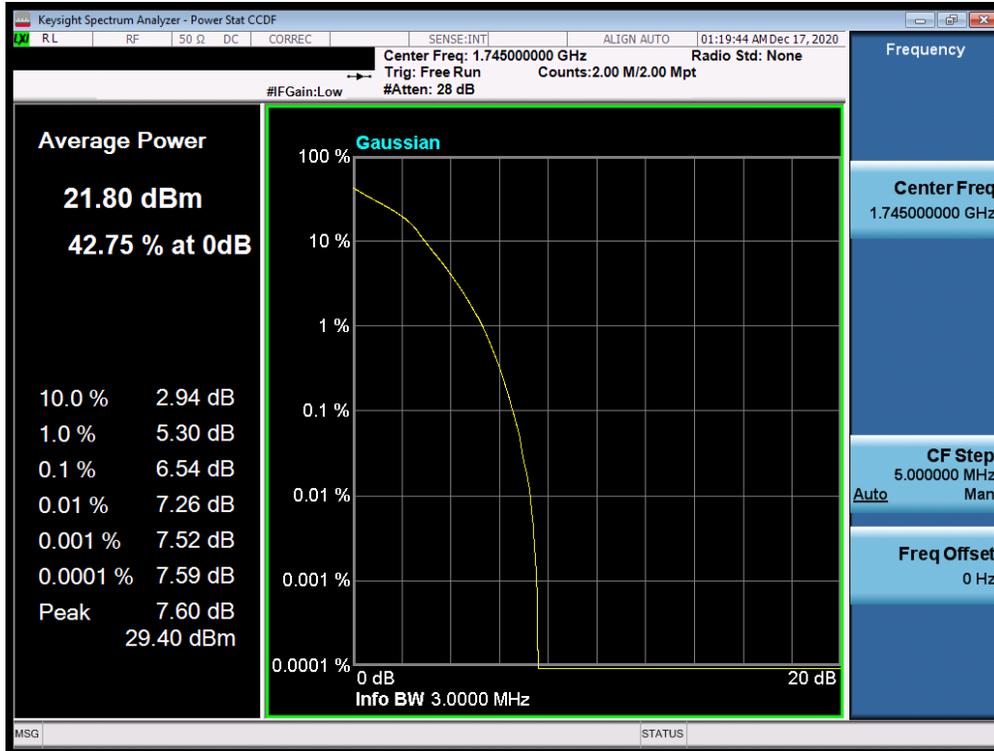


Plot 7-166. PAR Plot (LTE Band 66/4 - 3MHz QPSK - Full RB Configuration)

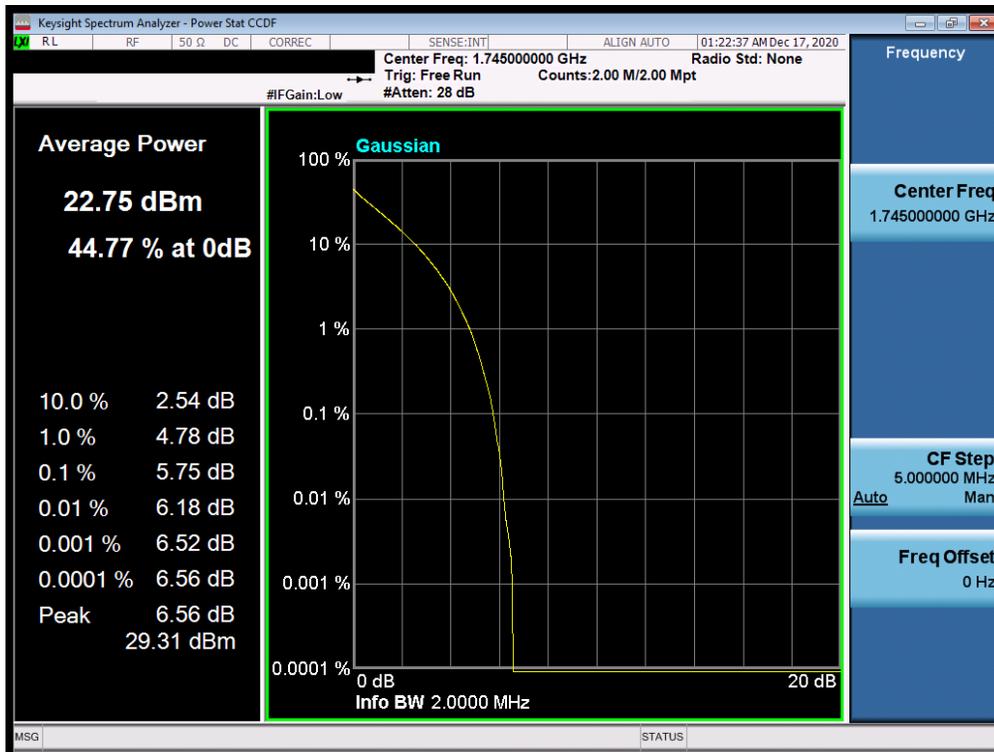


Plot 7-167. PAR Plot (LTE Band 66/4 - 3MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 102 of 127

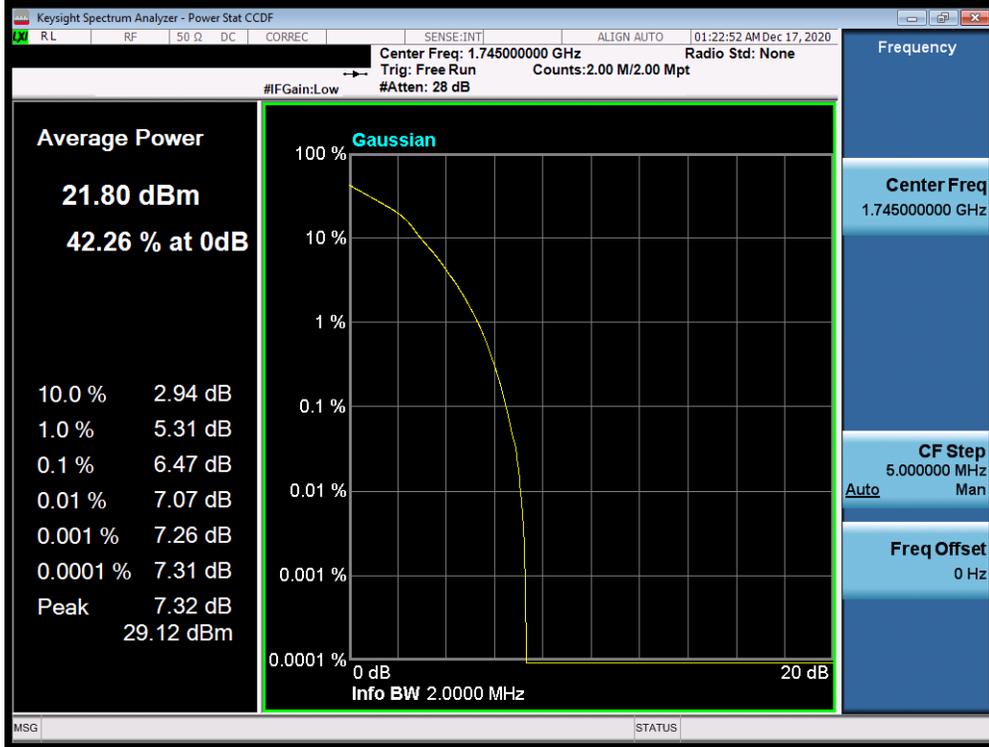


Plot 7-168. PAR Plot (LTE Band 66/4 - 3MHz 64-QAM - Full RB Configuration)

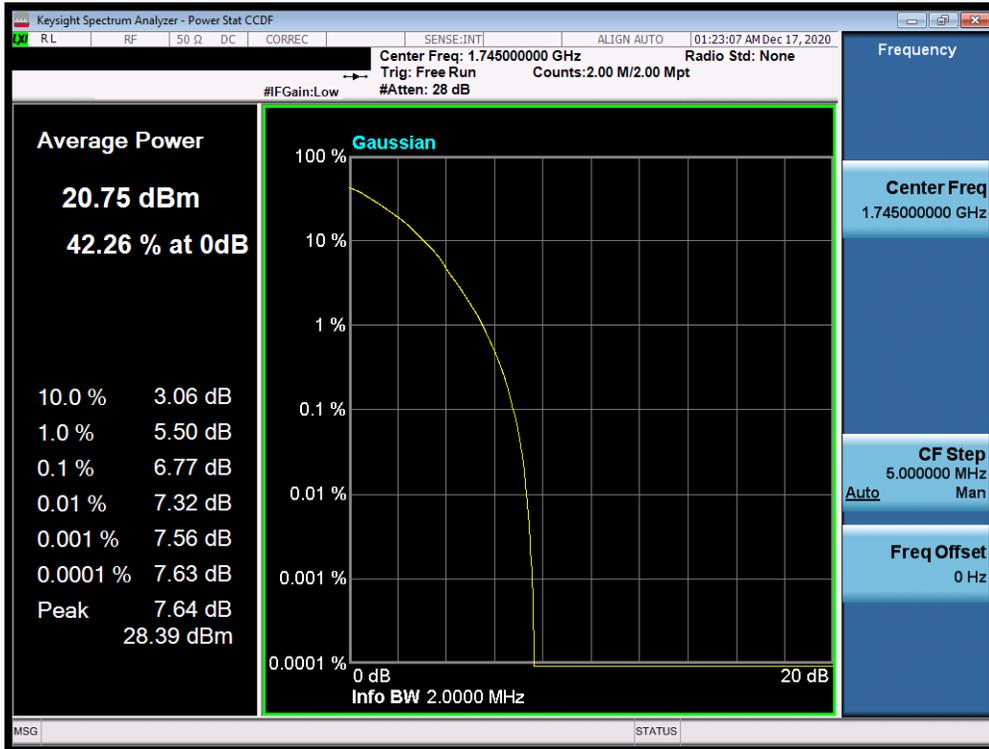


Plot 7-169. PAR Plot (LTE Band 66/4 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 103 of 127



Plot 7-170. PAR Plot (LTE Band 66/4 - 1.4MHz 16-QAM - Full RB Configuration)



Plot 7-171. PAR Plot (LTE Band 66/4 - 1.4MHz 64-QAM - Full RB Configuration)

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 104 of 127

7.6 Radiated Power (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. 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 x span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

FCC ID: ZNFK735MM	 PCTEST® Proud to be part of element	PART 27 MEASUREMENT REPORT	 LG	Approved by: Technical Manager
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Test Setup

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

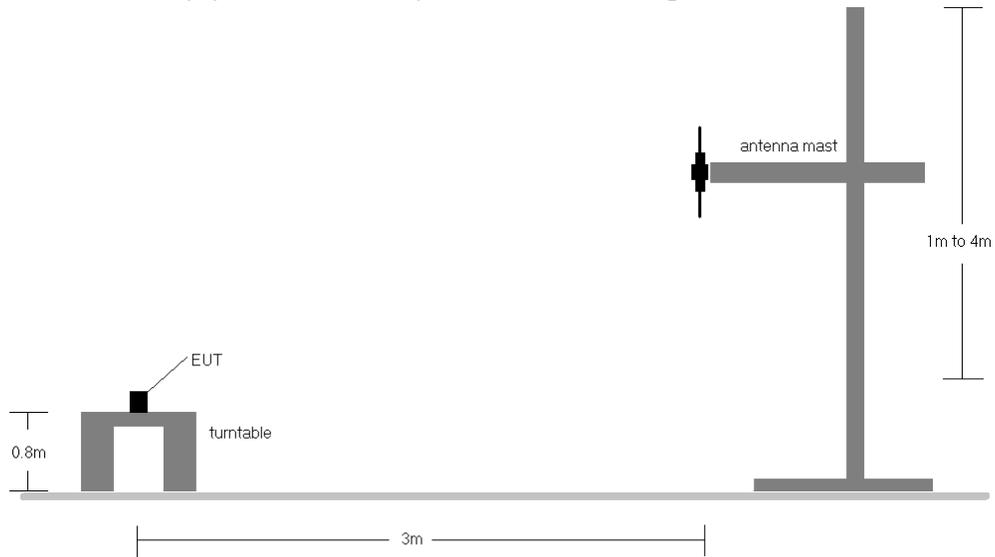


Figure 7-5. Radiated Test Setup <1GHz

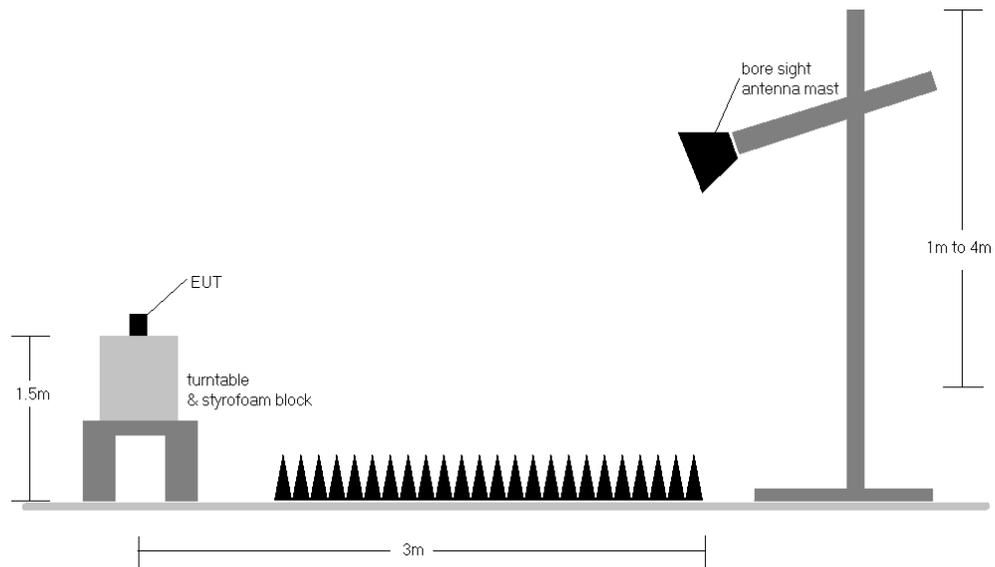


Figure 7-6. Radiated Test Setup >1GHz

<p>FCC ID: ZNFK735MM</p>		<p>PART 27 MEASUREMENT REPORT</p>	<p>Approved by: Technical Manager</p>
<p>Test Report S/N: 1M2012100195-15.ZNF</p>	<p>Test Dates: 12/10/2020 - 01/22/2021</p>	<p>EUT Type: Portable Handset</p>	<p>Page 106 of 127</p>

Test Notes

- 1) This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to “1”.
- 2) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 3) This unit was tested with its standard battery.
- 4) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.

FCC ID: ZNFK735MM	 PART 27 MEASUREMENT REPORT 		Approved by: Technical Manager
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Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
20 MHz	QPSK	673.0	H	300.0	273.0	3.09	1 / 50	16.99	17.93	0.062	34.77	-16.84
		680.5	H	297.0	274.0	3.19	1 / 50	17.92	18.96	0.079	34.77	-15.82
		688.0	H	292.0	275.0	3.28	1 / 50	18.10	19.23	0.084	34.77	-15.54
	64-QAM	688.0	H	292.0	275.0	3.28	1 / 50	17.11	18.24	0.067	34.77	-16.53
15 MHz	QPSK	670.5	H	300.0	273.0	3.06	1/0	16.96	17.87	0.061	34.77	-16.90
		680.5	H	297.0	274.0	3.19	1/0	17.86	18.90	0.078	34.77	-15.88
		690.5	H	292.0	275.0	3.31	1/0	18.01	19.17	0.083	34.77	-15.60
	64-QAM	690.5	H	292.0	275.0	3.31	1/0	17.15	18.31	0.068	34.77	-16.46
10 MHz	QPSK	668.0	H	300.0	273.0	3.02	1/49	16.92	17.80	0.060	34.77	-16.97
		680.5	H	297.0	274.0	3.19	1/0	17.88	18.92	0.078	34.77	-15.86
		693.0	H	292.0	275.0	3.34	1/0	17.99	19.18	0.083	34.77	-15.59
	64-QAM	693.0	H	292.0	275.0	3.34	1/0	17.31	18.50	0.071	34.77	-16.27
5 MHz	QPSK	665.5	H	300.0	273.0	2.99	1/24	16.80	17.64	0.058	34.77	-17.13
		680.5	H	297.0	274.0	3.19	1/0	17.68	18.72	0.074	34.77	-16.06
		695.5	H	292.0	275.0	3.38	1/0	17.89	19.11	0.081	34.77	-15.66
	64-QAM	695.5	H	292.0	275.0	3.38	1/0	16.70	17.92	0.062	34.77	-16.85
Opposite Pol.	680.5	V	104.0	288.0	4.24	1 / 50	15.91	18.00	0.063	34.77	-16.78	

Table 7-2. ERP Data (LTE Band 71)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
10 MHz	QPSK	704.0	V	176.0	245.0	4.58	1 / 25	15.00	17.43	0.055	34.77	-17.34
		707.5	V	170.0	235.0	4.62	1 / 0	15.30	17.77	0.060	34.77	-17.00
		711.0	V	168.0	233.0	4.67	1 / 0	14.48	17.00	0.050	34.77	-17.77
	64-QAM	707.5	V	170.0	235.0	4.62	1 / 0	14.78	17.25	0.053	34.77	-17.52
5 MHz	QPSK	701.5	V	176.0	245.0	4.60	1/12	14.74	17.19	0.052	34.77	-17.58
		707.5	V	170.0	235.0	4.62	1/0	14.97	17.44	0.056	34.77	-17.33
		713.5	V	168.0	233.0	4.70	1/0	14.15	16.70	0.047	34.77	-18.07
	64-QAM	707.5	V	170.0	235.0	4.62	1/0	14.54	17.01	0.050	34.77	-17.76
3 MHz	QPSK	700.5	V	176.0	245.0	4.59	1/7	14.68	17.12	0.052	34.77	-17.65
		707.5	V	170.0	235.0	4.62	1/7	15.07	17.54	0.057	34.77	-17.23
		714.5	V	168.0	233.0	4.71	1/0	14.19	16.75	0.047	34.77	-18.02
	64-QAM	707.5	V	170.0	235.0	4.62	1/7	14.72	17.19	0.052	34.77	-17.58
1.4 MHz	QPSK	699.7	V	176.0	245.0	4.56	1/0	14.72	17.13	0.052	34.77	-17.64
		707.5	V	170.0	235.0	4.62	1/0	15.04	17.51	0.056	34.77	-17.26
		715.3	V	168.0	233.0	4.72	1/0	14.17	16.74	0.047	34.77	-18.03
	64-QAM	707.5	V	170.0	235.0	4.62	1/0	14.74	17.21	0.053	34.77	-17.56
Opposite Pol.	707.5	H	145.0	271.0	3.72	1 / 0	15.47	17.04	0.051	34.77	-17.73	

Table 7-3. ERP Data (LTE Band 12)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
10 MHz	QPSK	782.0	H	240.0	292.0	5.89	1 / 0	14.61	18.35	0.068	34.77	-16.42
	16-QAM	782.0	H	240.0	292.0	5.89	1 / 0	13.83	17.57	0.057	34.77	-17.20
	64-QAM	782.0	H	240.0	292.0	5.89	1 / 0	12.77	16.51	0.045	34.77	-18.26
5 MHz	QPSK	779.5	H	240.0	292.0	5.82	1 / 24	14.87	18.54	0.071	34.77	-16.24
		782.0	H	240.0	292.0	5.89	1 / 12	14.54	18.28	0.067	34.77	-16.49
		784.5	H	240.0	292.0	5.92	1 / 12	14.27	18.04	0.064	34.77	-16.73
	64-QAM	782.0	H	240.0	292.0	5.89	1 / 12	13.49	17.23	0.053	34.77	-17.54
Opposite Pol.	779.5	V	158.0	282.0	5.77	1 / 24	12.64	16.26	0.042	34.77	-18.52	

Table 7-4. ERP Data (LTE Band 13)

FCC ID: ZNFK735MM		PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1712.40	WCDMA1700	V	149	50	12.16	9.37	21.53	0.142	30.00	-8.47
1732.60	WCDMA1700	V	134	96	12.45	9.22	21.67	0.147	30.00	-8.33
1752.60	WCDMA1700	V	113	48	12.42	9.11	21.53	0.142	30.00	-8.47
1732.60	WCDMA1700	H	139	1	11.92	9.22	21.14	0.130	30.00	-8.86

Table 7-5. EIRP Data (WCDMA AWS)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	QPSK	1720.0	V	112.0	53.0	9.31	1 / 0	11.04	20.35	0.108	30.00	-9.65
		1745.0	V	102.0	50.0	9.14	1 / 50	12.02	21.16	0.131	30.00	-8.84
		1770.0	V	121.0	56.0	9.17	1 / 50	11.07	20.24	0.106	30.00	-9.76
	16-QAM	1745.0	V	102.0	50.0	9.14	1 / 99	10.85	19.99	0.100	30.00	-10.01
	64-QAM	1745.0	V	102.0	50.0	9.14	1 / 99	9.77	18.91	0.078	30.00	-11.09
15 MHz	QPSK	1717.5	V	112.0	53.0	9.33	1/74	11.01	20.34	0.108	30.00	-9.66
		1745.0	V	102.0	50.0	9.14	1/74	11.85	20.99	0.126	30.00	-9.01
		1772.5	V	121.0	56.0	9.18	1/74	10.83	20.01	0.100	30.00	-9.99
	16-QAM	1745.0	V	102.0	50.0	9.14	1/74	10.56	19.70	0.093	30.00	-10.30
	64-QAM	1745.0	V	102.0	50.0	9.14	1/74	9.44	18.58	0.072	30.00	-11.42
10 MHz	QPSK	1715.0	V	112.0	53.0	9.35	1/49	11.10	20.45	0.111	30.00	-9.55
		1745.0	V	102.0	50.0	9.14	1/49	12.06	21.20	0.132	30.00	-8.80
		1775.0	V	121.0	56.0	9.18	1/25	11.04	20.23	0.105	30.00	-9.77
	16-QAM	1745.0	V	102.0	50.0	9.14	1/25	10.95	20.09	0.102	30.00	-9.91
	64-QAM	1745.0	V	102.0	50.0	9.14	1/25	9.85	18.99	0.079	30.00	-11.01
5 MHz	QPSK	1712.5	V	112.0	53.0	9.37	1/0	11.03	20.39	0.109	30.00	-9.61
		1745.0	V	102.0	50.0	9.14	1/0	12.07	21.21	0.132	30.00	-8.79
		1777.5	V	121.0	56.0	9.19	1/0	11.05	20.24	0.106	30.00	-9.76
	16-QAM	1745.0	V	102.0	50.0	9.14	1/0	10.92	20.06	0.101	30.00	-9.94
	64-QAM	1745.0	V	102.0	50.0	9.14	1/0	9.90	19.04	0.080	30.00	-10.96
3 MHz	QPSK	1711.5	V	112.0	53.0	9.37	1/7	10.97	20.34	0.108	30.00	-9.66
		1745.0	V	102.0	50.0	9.14	1/0	12.00	21.14	0.130	30.00	-8.86
		1778.5	V	121.0	56.0	9.20	1/7	10.91	20.11	0.103	30.00	-9.89
	16-QAM	1745.0	V	102.0	50.0	9.14	1/7	10.90	20.04	0.101	30.00	-9.96
	64-QAM	1745.0	V	102.0	50.0	9.14	1/7	9.86	19.00	0.079	30.00	-11.00
1.4 MHz	QPSK	1710.7	V	112.0	53.0	9.38	1/5	10.75	20.13	0.103	30.00	-9.87
		1745.0	V	102.0	50.0	9.14	1/5	11.89	21.03	0.127	30.00	-8.97
		1779.3	V	121.0	56.0	9.20	1/5	10.79	19.99	0.100	30.00	-10.01
	16-QAM	1745.0	V	102.0	50.0	9.14	1/0	10.73	19.87	0.097	30.00	-10.13
	64-QAM	1745.0	V	102.0	50.0	9.14	1/0	9.72	18.86	0.077	30.00	-11.14
	Opposite Pol.	1745.0	H	245.0	10.0	9.14	1/50	9.28	18.42	0.069	30.00	-11.58

Table 7-6. EIRP Data (LTE Band 66/4)

FCC ID: ZNFK735MM	 PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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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 horizontally and vertically polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as peak measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

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 \geq 2 x span / RBW
5. Detector = RMS
6. Trace mode = Average (Max Hold for pulsed emissions)
7. The trace was allowed to stabilize

FCC ID: ZNFK735MM	 PART 27 MEASUREMENT REPORT 		Approved by: Technical Manager
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Test Setup

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

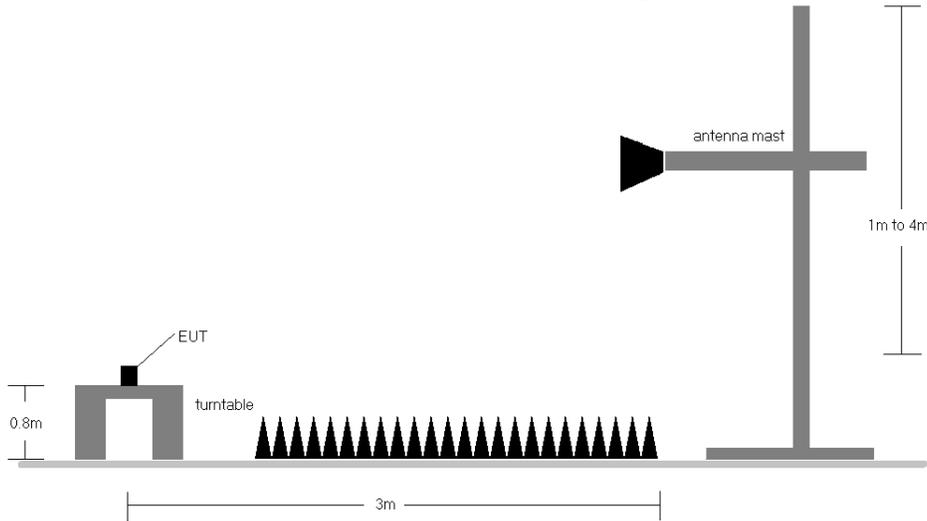


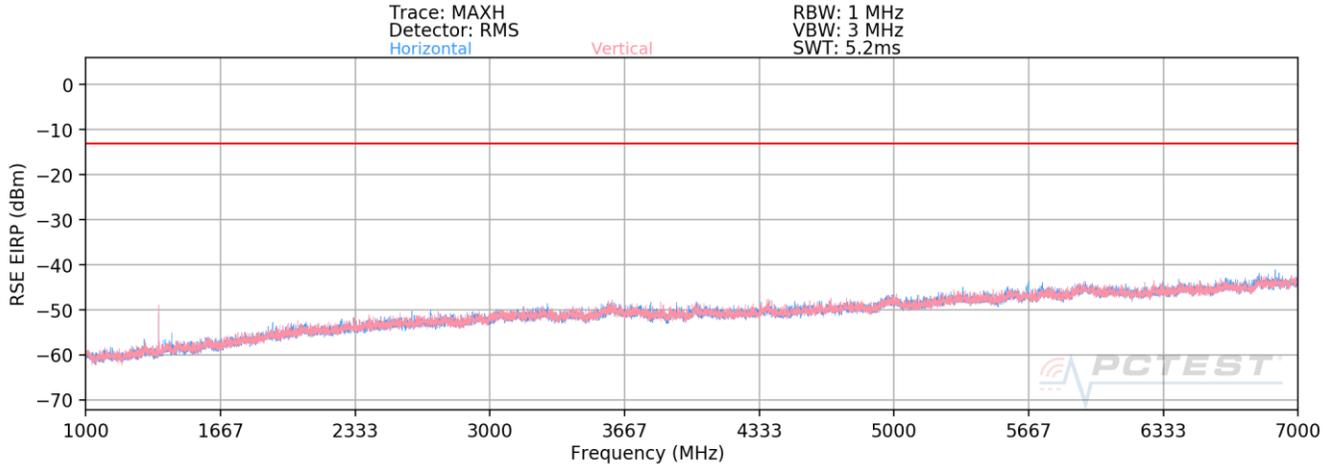
Figure 7-7. Test Instrument & Measurement Setup

Test Notes

- 1) Field strengths are calculated using the Measurement quantity conversions in KDB 971168 Section 5.8.4.
 - b) $E(\text{dB}\mu\text{V}/\text{m}) = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$
 - d) $\text{EIRP (dBm)} = E(\text{dB}\mu\text{V}/\text{m}) + 20\log D - 104.8$; where D is the measurement distance in meters.
- 2) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 3) This unit was tested with its standard battery.
- 4) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.
- 5) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 6) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 7) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 71



Plot 7-172. Radiated Spurious Plot (LTE Band 71)

Bandwidth (MHz):	20
Frequency (MHz):	673.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1346.0	V	145	61	-62.36	-1.84	42.80	-52.46	-13.00	-39.46
2019.0	V	100	180	-67.33	2.05	41.72	-53.54	-13.00	-40.54
2692.0	V	-	-	-80.01	3.67	30.66	-64.59	-13.00	-51.59
3365.0	V	-	-	-80.57	5.28	31.71	-63.55	-13.00	-50.55
4038.0	V	-	-	-81.22	5.92	31.70	-63.56	-13.00	-50.56

Table 7-7. Radiated Spurious Data (LTE Band 71 – Low Channel)

FCC ID: ZNFK735MM		PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 112 of 127

Bandwidth (MHz):	20
Frequency (MHz):	680.5
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1361.0	V	113	63	-68.76	-1.96	36.28	-58.98	-13.00	-45.98
2041.5	V	115	141	-66.81	1.79	41.98	-53.28	-13.00	-40.28
2722.0	V	-	-	-80.12	3.95	30.83	-64.43	-13.00	-51.43
3402.5	V	-	-	-81.01	4.90	30.89	-64.37	-13.00	-51.37
4083.0	V	-	-	-81.11	5.85	31.74	-63.52	-13.00	-50.52

Table 7-8. Radiated Spurious Data (LTE Band 71 – Mid Channel)

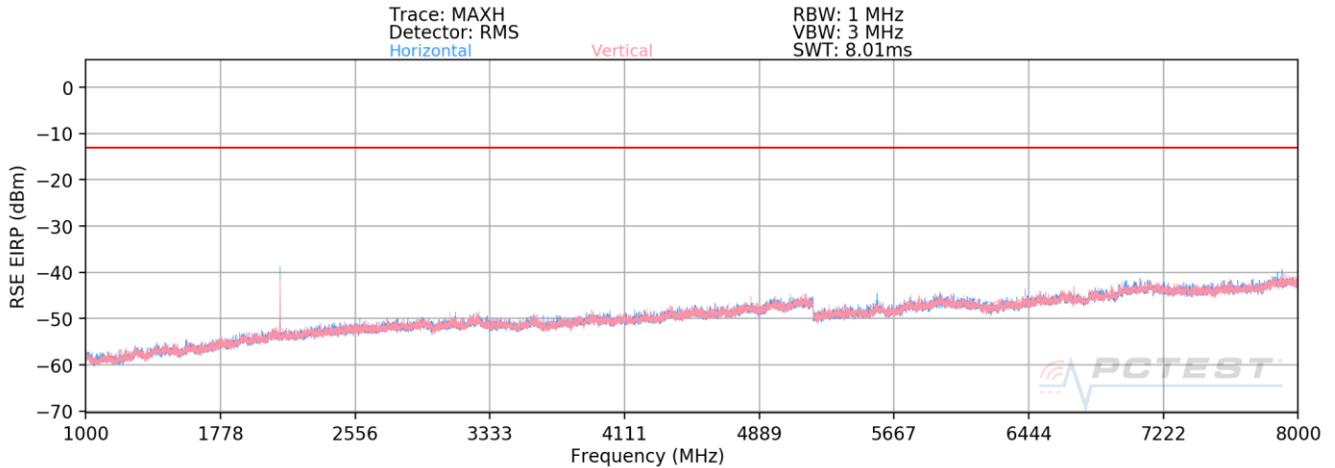
Bandwidth (MHz):	20
Frequency (MHz):	688.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1376.0	V	204	221	-69.48	-1.72	35.80	-59.46	-13.00	-46.46
2064.0	V	100	151	-64.26	1.91	44.65	-50.61	-13.00	-37.61
2752.0	V	-	-	-80.41	4.43	31.02	-64.24	-13.00	-51.24
3440.0	V	-	-	-80.83	4.73	30.90	-64.36	-13.00	-51.36
4128.0	V	-	-	-81.17	5.84	31.67	-63.59	-13.00	-50.59

Table 7-9. Radiated Spurious Data (LTE Band 71 – High Channel)

FCC ID: ZNFK735MM	 PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 113 of 127

LTE Band 12



Plot 7-173. Radiated Spurious Plot (LTE Band 12)

Bandwidth (MHz):	10
Frequency (MHz):	704.0
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1408.0	H	133	336	-75.17	-5.29	26.54	-68.71	-13.00	-55.71
2112.0	H	382	349	-68.19	-2.85	35.96	-59.29	-13.00	-46.29
2816.0	H	-	-	-76.54	-1.28	29.18	-66.08	-13.00	-53.08
3520.0	H	-	-	-77.88	1.37	30.49	-64.76	-13.00	-51.76

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

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 114 of 127

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1415.0	H	122	7	-75.48	-5.37	26.15	-69.11	-13.00	-56.11
2122.5	H	350	9	-69.52	-2.88	34.60	-60.66	-13.00	-47.66
2830.0	H	-	-	-77.04	-1.15	28.81	-66.45	-13.00	-53.45
3537.5	H	-	-	-77.82	1.53	30.71	-64.55	-13.00	-51.55

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

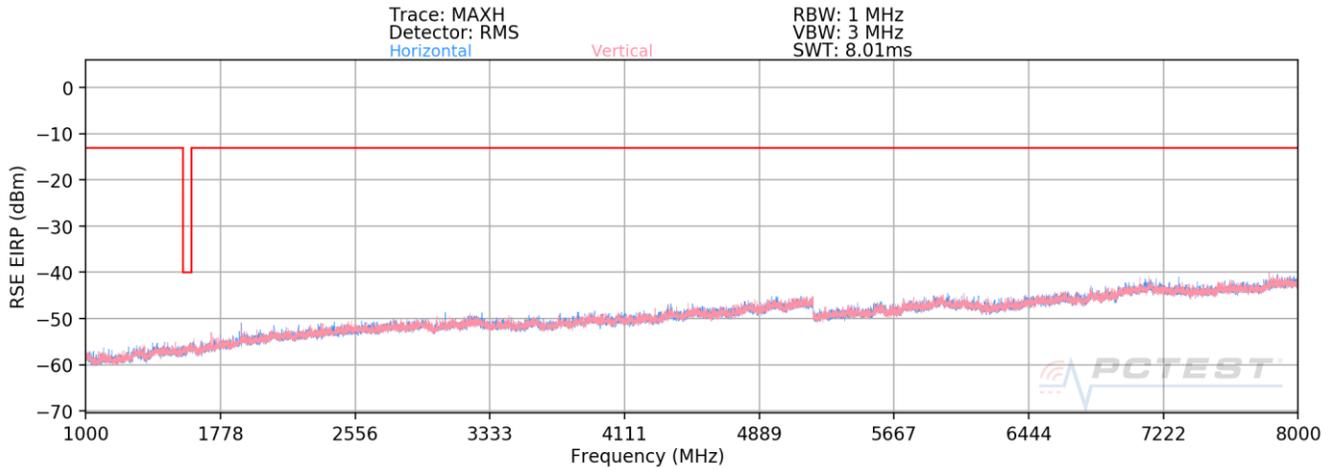
Bandwidth (MHz):	10
Frequency (MHz):	711.0
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1422.0	H	137	340	-70.13	-5.35	31.52	-63.74	-13.00	-50.74
2133.0	H	368	9	-68.10	-2.88	36.02	-59.23	-13.00	-46.23
2844.0	H	-	-	-77.08	-1.09	28.83	-66.43	-13.00	-53.43
3555.0	H	-	-	-78.55	1.45	29.90	-65.36	-13.00	-52.36

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

FCC ID: ZNFK735MM	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset	Page 115 of 127

LTE Band 13



Plot 7-174. Radiated Spurious Plot (LTE Band 13)

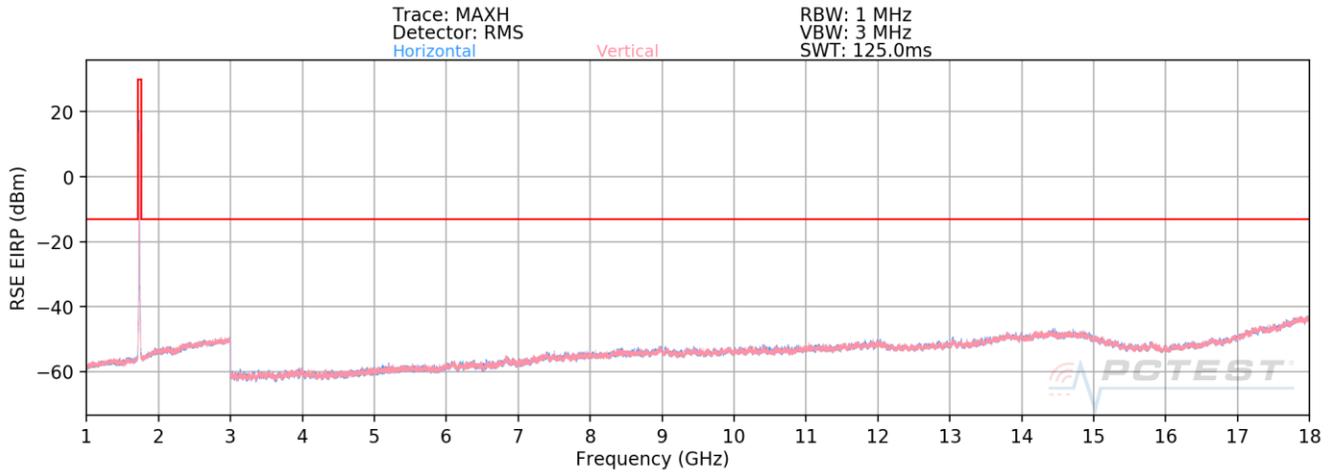
Bandwidth (MHz):	10
Frequency (MHz):	782.0
RB / Offset:	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1564.0	H	-	-	-76.76	0.39	30.63	-64.63	-40.00	-24.63
2346.0	H	-	-	-77.11	4.40	34.29	-60.97	-13.00	-47.97

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

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 116 of 127

WCDMA AWS



Plot 7-175. Radiated Spurious Plot (WCDMA AWS)

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3424.8	V	-	-	-78.43	1.98	30.55	-64.71	-13.00	-51.71
5137.2	V	-	-	-78.65	4.30	32.65	-62.61	-13.00	-49.61
6849.6	V	-	-	-80.33	8.54	35.21	-60.05	-13.00	-47.05

7-14. Radiated Spurious Data (WCDMA AWS – Low Channel)

FCC ID: ZNFK735MM	 PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 117 of 127

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3465.2	V	145	141	-77.04	1.28	31.24	-64.01	-13.00	-51.01
5197.8	V	381	75	-75.32	4.89	36.57	-58.69	-13.00	-45.69
6930.4	V	-	-	-79.87	7.39	34.52	-60.73	-13.00	-47.73
8663.0	V	-	-	-81.41	11.40	36.99	-58.27	-13.00	-45.27

Table 7-15. Radiated Spurious Data (WCDMA AWS – Mid Channel)

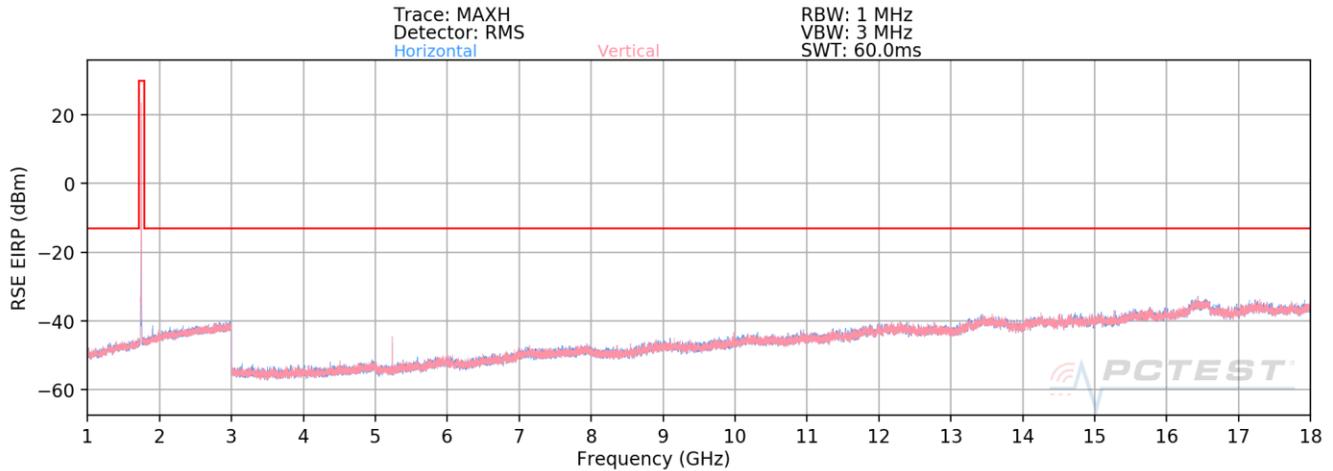
Mode:	WCDMA RMC
Channel:	1513
Frequency (MHz):	1752.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3505.2	V	-	-	-78.14	1.42	30.28	-64.97	-13.00	-51.97
5257.8	V	-	-	-78.43	4.28	32.85	-62.41	-13.00	-49.41
7010.4	V	-	-	-79.63	6.81	34.18	-61.08	-13.00	-48.08

Table 7-16. Radiated Spurious Data (WCDMA AWS – High Channel)

FCC ID: ZNFK735MM	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 66/4



Plot 7-176. Radiated Spurious Plot (LTE Band 66/4)

Bandwidth (MHz):	20
Frequency (MHz):	1720.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3440.0	V	-	-	-78.10	7.73	36.63	-58.63	-13.00	-45.63
5160.0	V	122	84	-74.01	10.51	43.50	-51.76	-13.00	-38.76
6880.0	V	-	-	-78.99	14.12	42.13	-53.13	-13.00	-40.13
8600.0	V	-	-	-80.37	17.14	43.77	-51.49	-13.00	-38.49

Table 7-17. Radiated Spurious Data (LTE Band 66/4 – Low Channel)

FCC ID: ZNFK735MM	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset	Page 119 of 127

Bandwidth (MHz):	20
Frequency (MHz):	1745.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3490.0	V	-	-	-78.33	7.58	36.25	-59.01	-13.00	-46.01
5235.0	V	101	187	-68.63	10.31	48.68	-46.58	-13.00	-33.58
6980.0	V	-	-	-78.75	14.68	42.93	-52.33	-13.00	-39.33
8725.0	V	-	-	-79.58	17.57	44.99	-50.27	-13.00	-37.27

Table 7-18. Radiated Spurious Data (LTE Band 66/4 – Mid Channel)

Bandwidth (MHz):	20
Frequency (MHz):	1770.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3540.00	V	-	-	-78.27	7.91	36.64	-58.62	-13.00	-45.62
5310.00	V	109	188	-66.86	11.13	51.27	-43.99	-13.00	-30.99
7080.00	V	-	-	-78.68	15.03	43.35	-51.91	-13.00	-38.91
8850.00	V	-	-	-79.22	17.07	44.85	-50.41	-13.00	-37.41

Table 7-19. Radiated Spurious Data (LTE Band 66/4 – High Channel)

FCC ID: ZNFK735MM	 PART 27 MEASUREMENT REPORT		Approved by: Technical 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 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

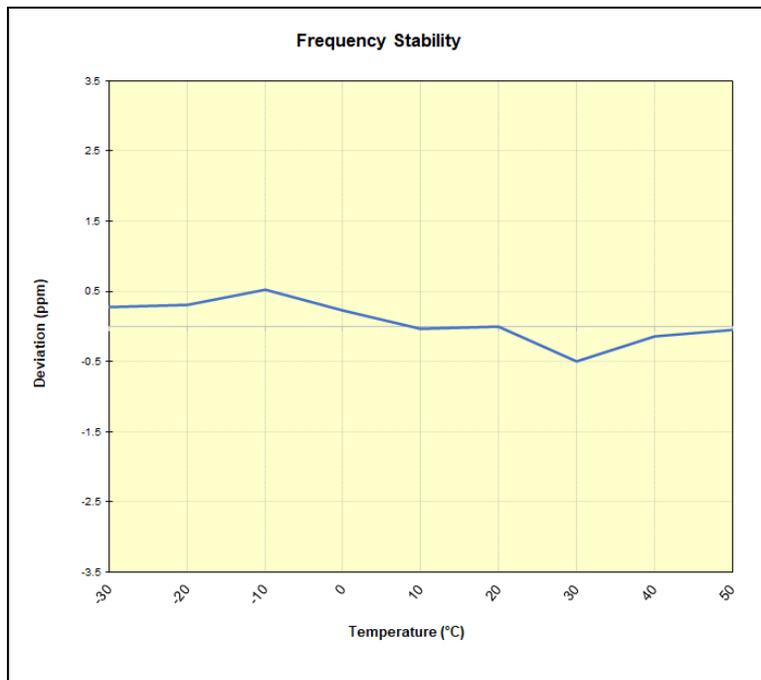
None

FCC ID: ZNFK735MM	 PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	 LG	Approved by: Technical Manager
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Frequency Stability / Temperature Variation

LTE Band 71							
		Operating Frequency (Hz):		680,500,000			
		Ref. Voltage (VDC):		4.50			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)		
100 %	4.50	- 30	680,500,228	190	0.0000279		
		- 20	680,500,245	207	0.0000304		
		- 10	680,500,397	359	0.0000528		
		0	680,500,200	162	0.0000238		
		+ 10	680,500,012	-26	-0.0000038		
		+ 20 (Ref)	680,500,038	0	0.0000000		
		+ 30	680,499,705	-333	-0.0000489		
		+ 40	680,499,938	-100	-0.0000147		
Battery Endpoint	2.90	+ 20	680,500,011	-27	-0.0000040		
				+ 20	680,500,090	52	0.0000076

Table 7-20. LTE Band 71 Frequency Stability Data



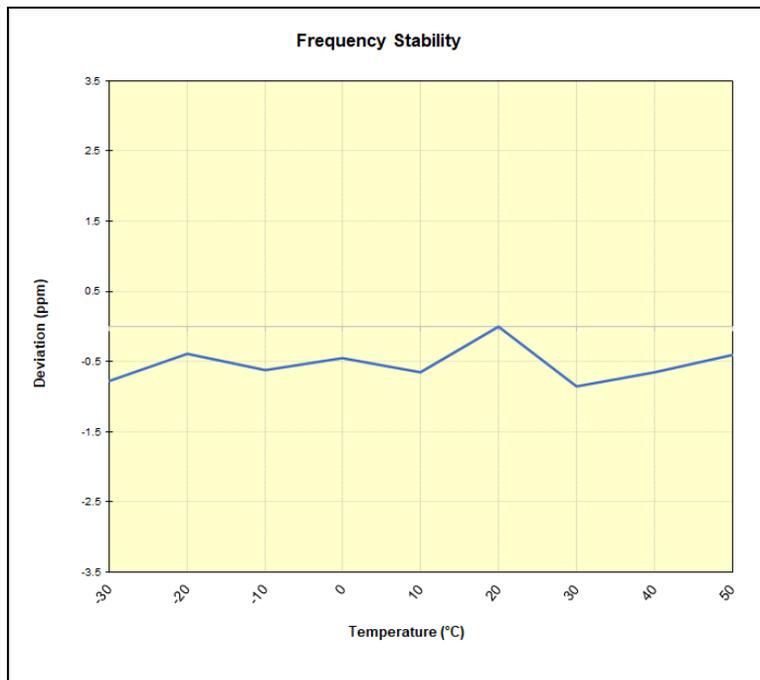
Plot 7-177. LTE Band 71 Frequency Stability Chart

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 122 of 127

Frequency Stability / Temperature Variation

LTE Band 12					
		Operating Frequency (Hz):		707,500,000	
		Ref. Voltage (VDC):		4.50	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.50	- 30	707,499,689	-544	-0.0000769
		- 20	707,499,961	-272	-0.0000384
		- 10	707,499,800	-433	-0.0000612
		0	707,499,910	-323	-0.0000457
		+ 10	707,499,769	-464	-0.0000656
		+ 20 (Ref)	707,500,233	0	0.0000000
		+ 30	707,499,631	-602	-0.0000851
		+ 40	707,499,768	-465	-0.0000657
Battery Endpoint	2.90	+ 20	707,499,953	-280	-0.0000396
		+ 20	707,499,756	-477	-0.0000674

Table 7-21. LTE Band 12 Frequency Stability Data



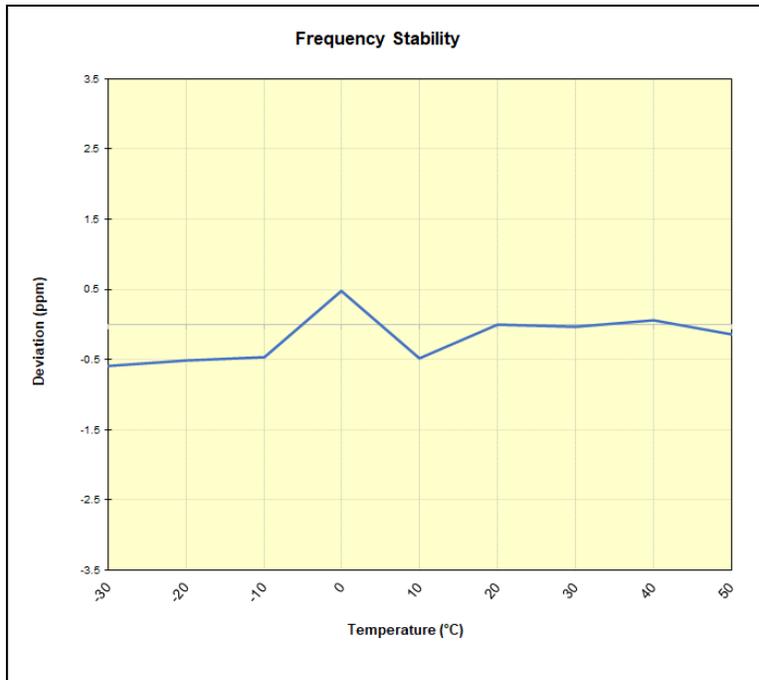
Plot 7-178. LTE Band 12 Frequency Stability Chart

FCC ID: ZNFK735MM	 PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	 LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 123 of 127

Frequency Stability / Temperature Variation

LTE Band 13					
		Operating Frequency (Hz):		782,000,000	
		Ref. Voltage (VDC):		4.50	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.50	- 30	781,999,555	-456	-0.0000583
		- 20	781,999,613	-398	-0.0000509
		- 10	781,999,644	-367	-0.0000469
		0	782,000,383	372	0.0000476
		+ 10	781,999,632	-379	-0.0000485
		+ 20 (Ref)	782,000,011	0	0.0000000
		+ 30	781,999,982	-29	-0.0000037
		+ 40	782,000,063	52	0.0000066
Battery Endpoint	2.90	+ 20	781,999,842	-169	-0.0000216

Table 7-22. LTE Band 13 Frequency Stability Data



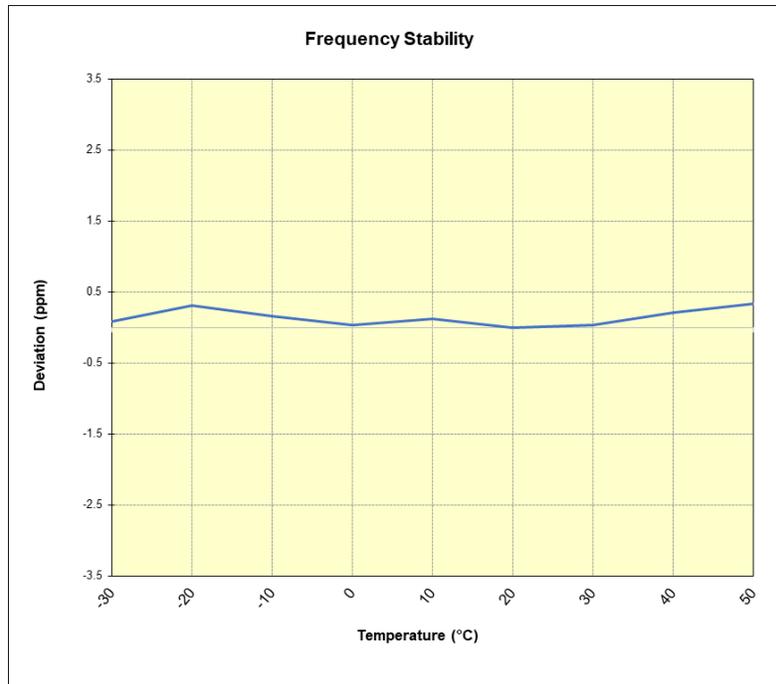
Plot 7-179. LTE Band 13 Frequency Stability Chart

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
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Frequency Stability / Temperature Variation

WCDMA AWS					
		Operating Frequency (Hz):		1,732,600,000	
		Ref. Voltage (VDC):		4.50	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.50	- 30	1,732,599,879	150	0.0000087
		- 20	1,732,600,272	543	0.0000313
		- 10	1,732,600,020	291	0.0000168
		0	1,732,599,793	64	0.0000037
		+ 10	1,732,599,950	221	0.0000128
		+ 20 (Ref)	1,732,599,729	0	0.0000000
		+ 30	1,732,599,800	71	0.0000041
		+ 40	1,732,600,099	370	0.0000214
Battery Endpoint	2.90	+ 20	1,732,600,372	643	0.0000371

Table 7-23. WCDMA AWS Frequency Stability Data



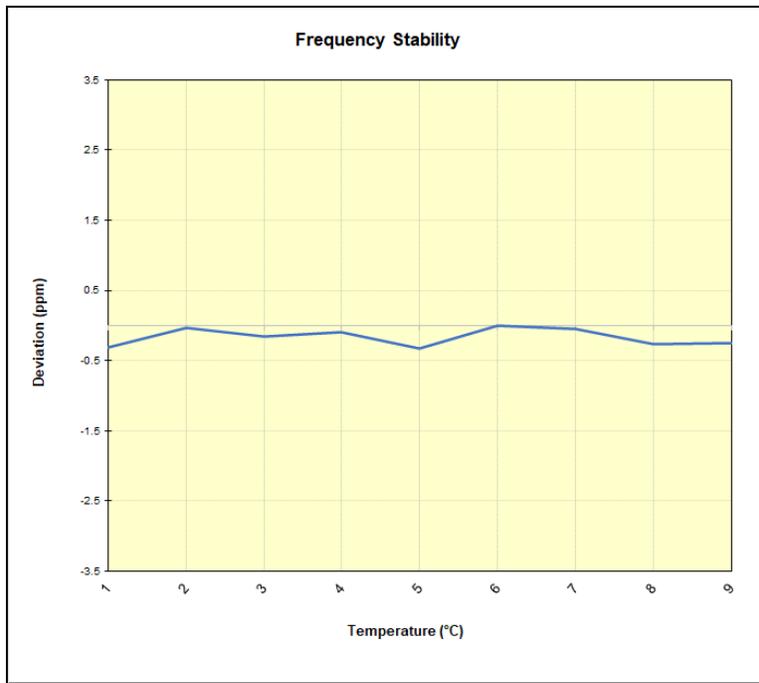
Plot 7-180. WCDMA AWS Frequency Stability Chart

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	LG	Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 125 of 127

Frequency Stability / Temperature Variation

LTE Band 66/4					
Operating Frequency (Hz):		1,745,000,000			
Ref. Voltage (VDC):		4.50			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.50	- 30	1,744,999,673	-532	-0.0000305
		- 20	1,745,000,162	-43	-0.0000025
		- 10	1,744,999,923	-282	-0.0000162
		0	1,745,000,033	-172	-0.0000099
		+ 10	1,744,999,641	-564	-0.0000323
		+ 20 (Ref)	1,745,000,205	0	0.0000000
		+ 30	1,745,000,128	-77	-0.0000044
		+ 40	1,744,999,757	-448	-0.0000257
		+ 50	1,744,999,760	-445	-0.0000255
Battery Endpoint	2.90	+ 20	1,745,000,153	-52	-0.0000030

Table 7-24. LTE Band 66/4 Frequency Stability Data



Plot 7-181. LTE Band 66/4 Frequency Stability Chart

FCC ID: ZNFK735MM	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 126 of 127

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFK735MM** complies with all the requirements of Part 27 of the FCC rules.

FCC ID: ZNFK735MM		PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2012100195-15.ZNF	Test Dates: 12/10/2020 - 01/22/2021	EUT Type: Portable Handset		Page 127 of 127