

7.4 Band Edge Emissions at Antenna Terminal

§2.1051 §22.917(a) §24.238(a) §27.53(c) §27.53(g) §27.53(h) §27.53(m)

Test Overview

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.

The minimum permissible attenuation level for Band 41 is as noted in the Test Notes on the following page.

The minimum permissible attenuation level of any spurious emission is $43 + \log_{10}(P_{[Watts]})$, where P is the transmitter power in Watts.

Test Procedure Used

KDB 971168 D01 v02r02 – Section 6.0

Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW $\geq 1\%$ of the emission bandwidth
4. VBW $\geq 3 \times$ RBW
5. Detector = RMS
6. Number of sweep points $\geq 2 \times$ Span/RBW
7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
8. Sweep time = auto couple
9. The trace was allowed to stabilize

Test Setup

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

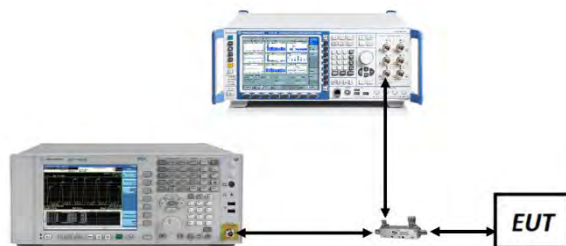


Figure 7-3. Test Instrument & Measurement Setup

Test Notes

Per 22.917(b) 24.238(a) 27.53(h) 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 to demonstrate compliance with the out-of-band emissions limit. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 72 of 166



Per 27.53(g) for operations in the 698-746 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.

Per 27.53(c.5) for operations in the 776-788 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.

For all plots showing emissions in the 763 – 775MHz and 793 – 805MHz band, the FCC limit per 27.53(c.4) is $65 + 10\log_{10}(P) = -35\text{dBm}$ in a 6.25kHz bandwidth.

Per 27.53(m) for operations in the BRS/EBS bands, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz.

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 73 of 166

© 2017 PCTEST Engineering Laboratory, Inc.

V 6.6

06/06/2017

© 2017 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTESTLAB.COM.



Plot 7-107. Lower Band Edge Plot (Band 12 - 1.4MHz QPSK - RB Size 6)



Plot 7-108. Upper Band Edge Plot (Band 12 - 1.4MHz QPSK - RB Size 6)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 74 of 166

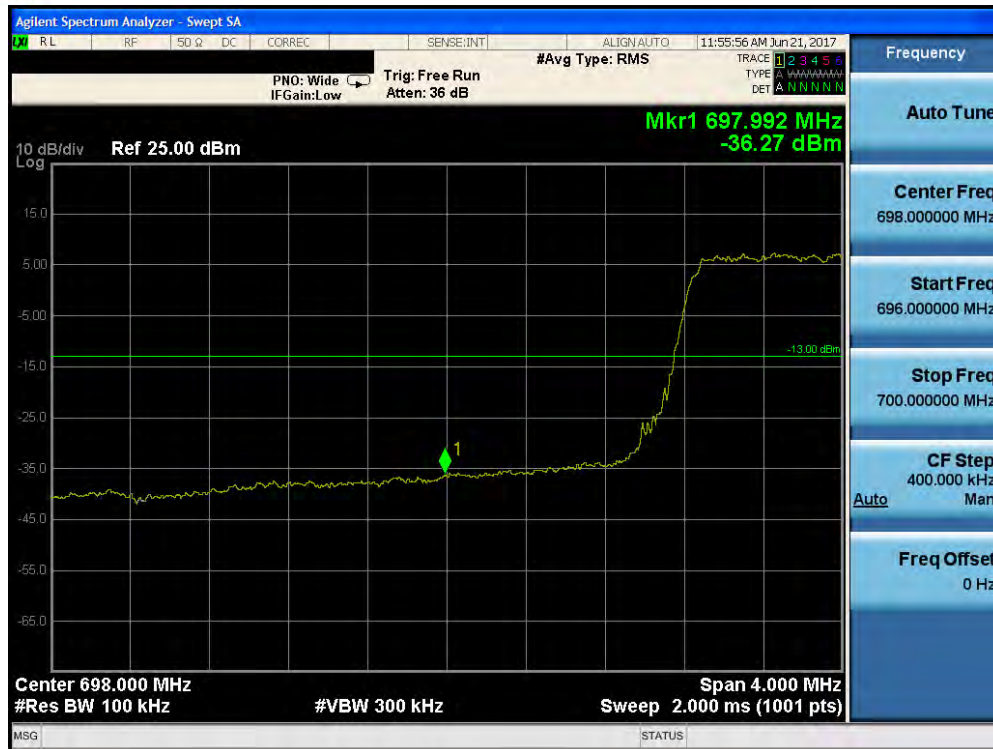


Plot 7-109. Lower Band Edge Plot (Band 12 – 3.0MHz QPSK – RB Size 15)

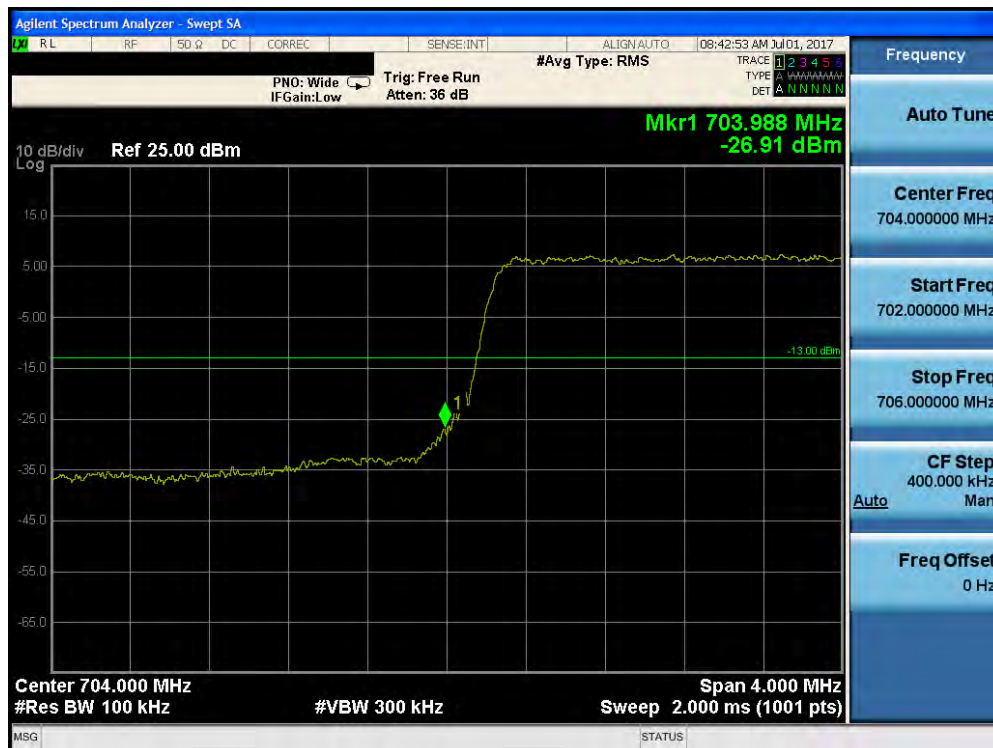


Plot 7-110. Upper Band Edge Plot (Band 12 – 3.0MHz QPSK – RB Size 15)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 75 of 166



Plot 7-111. Lower Band Edge Plot (Band 12 – 5.0MHz QPSK – RB Size 25)



Plot 7-112. Lower Band Edge Plot (Band 17 – 5.0MHz QPSK – RB Size 25)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 76 of 166



Plot 7-113. Upper Band Edge Plot (Band 12/17 - 5.0MHz QPSK - RB Size 25)



Plot 7-114. Lower Band Edge Plot (Band 12 - 10.0MHz QPSK - RB Size 50)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 77 of 166



Plot 7-115. Lower Band Edge Plot (Band 17 – 10.0MHz QPSK – RB Size 50)

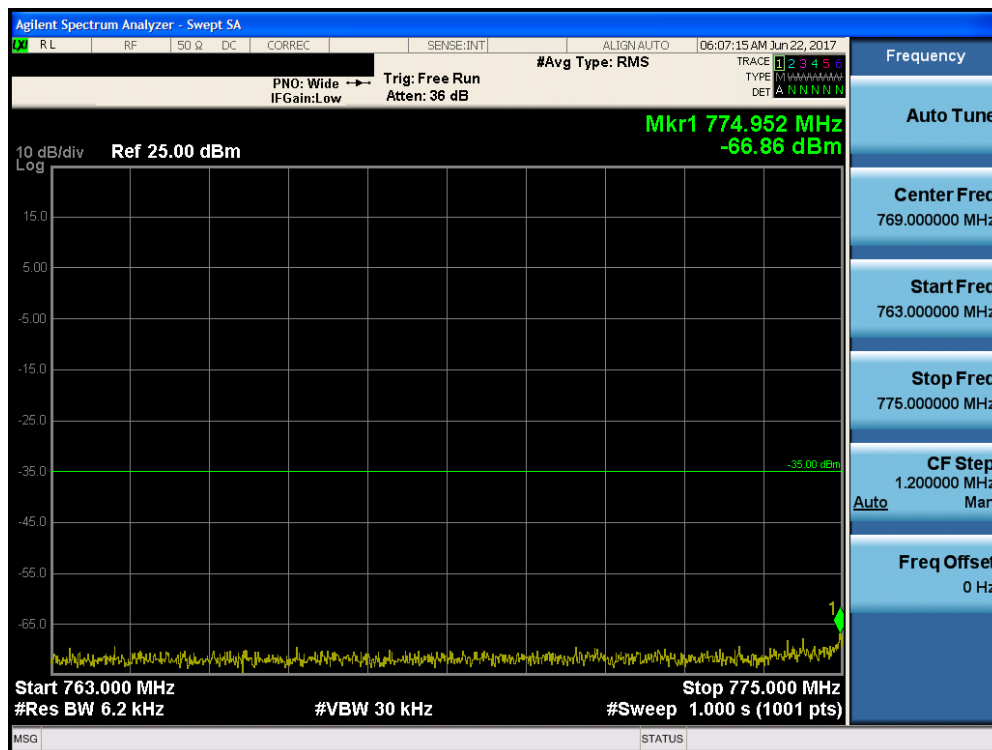


Plot 7-116. Upper Band Edge Plot (Band 12/17 – 10.0MHz QPSK – RB Size 50)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 78 of 166



Plot 7-117. Lower Band Edge Plot (Band 13 – 5.0MHz QPSK – RB Size 25)

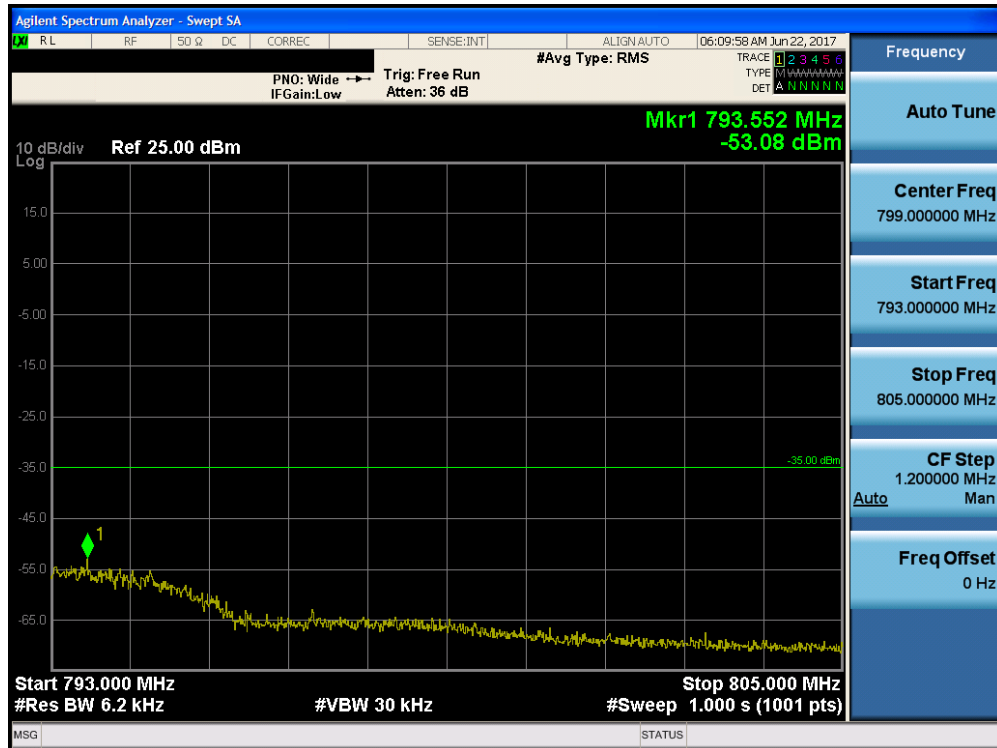


Plot 7-118. Lower Emission Mask Edge Plot (Band 13 – 5.0MHz QPSK – RB Size 25)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 79 of 166



Plot 7-119. Upper Band Edge Plot (Band 13 – 5.0MHz QPSK – RB Size 25)



Plot 7-120. Upper Emission Mask Edge Plot (Band 13 – 5.0MHz QPSK – RB Size 25)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 80 of 166

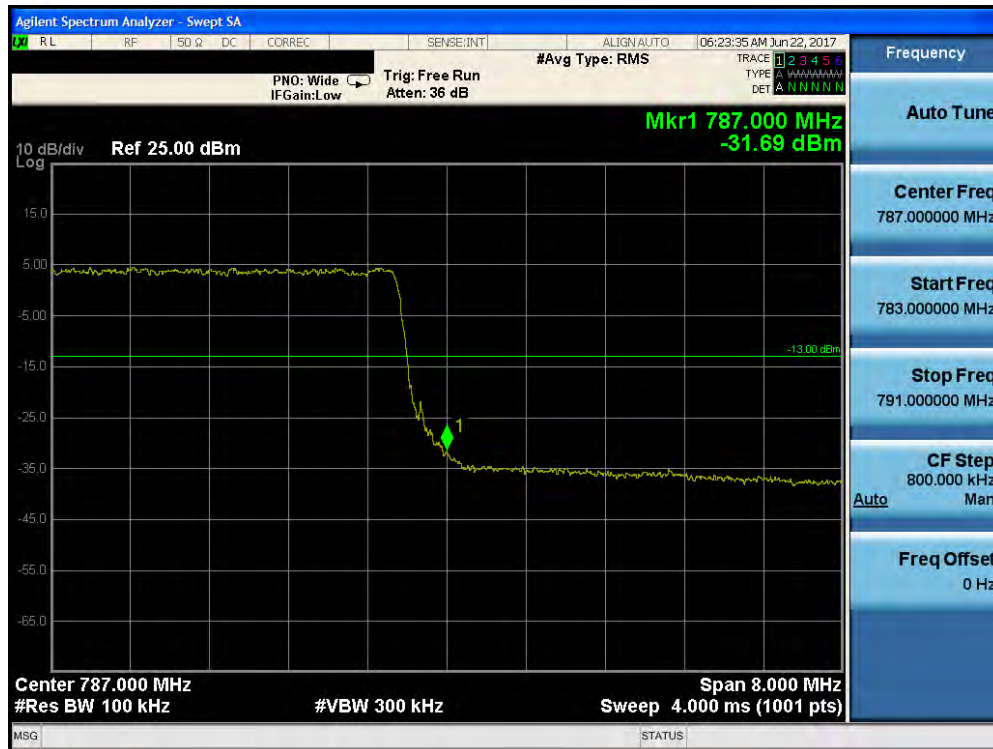


Plot 7-121. Lower Band Edge Plot (Band 13 – 10.0MHz QPSK – RB Size 50)



Plot 7-122. Lower Emission Mask Edge Plot (Band 13 – 10.0MHz QPSK – RB Size 50)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 81 of 166

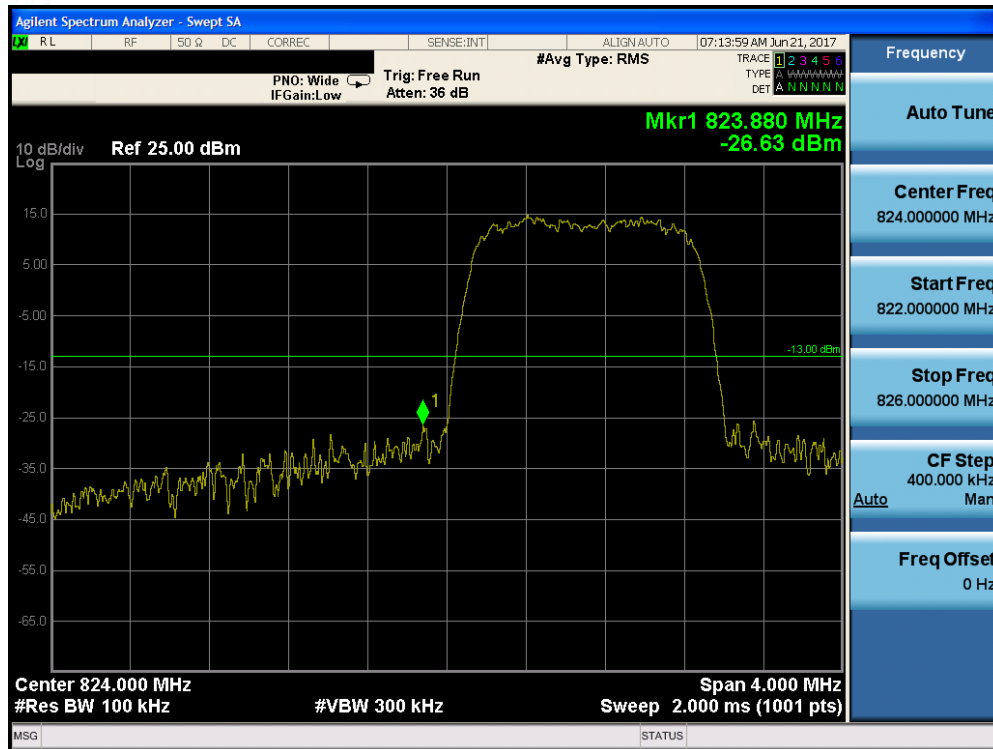


Plot 7-123. Upper Band Edge Plot (Band 13 – 10.0MHz QPSK – RB Size 50)



Plot 7-124. Upper Emission Mask Edge Plot (Band 13 – 10.0MHz QPSK – RB Size 50)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 82 of 166



Plot 7-125. Lower Band Edge Plot (Band 5/26 – 1.4MHz QPSK – RB Size 6)



Plot 7-126. Upper Band Edge Plot (Band 5/26 – 1.4MHz QPSK – RB Size 6)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 83 of 166



Plot 7-127. Lower Band Edge Plot (Band 5/26 – 3.0MHz QPSK – RB Size 15)

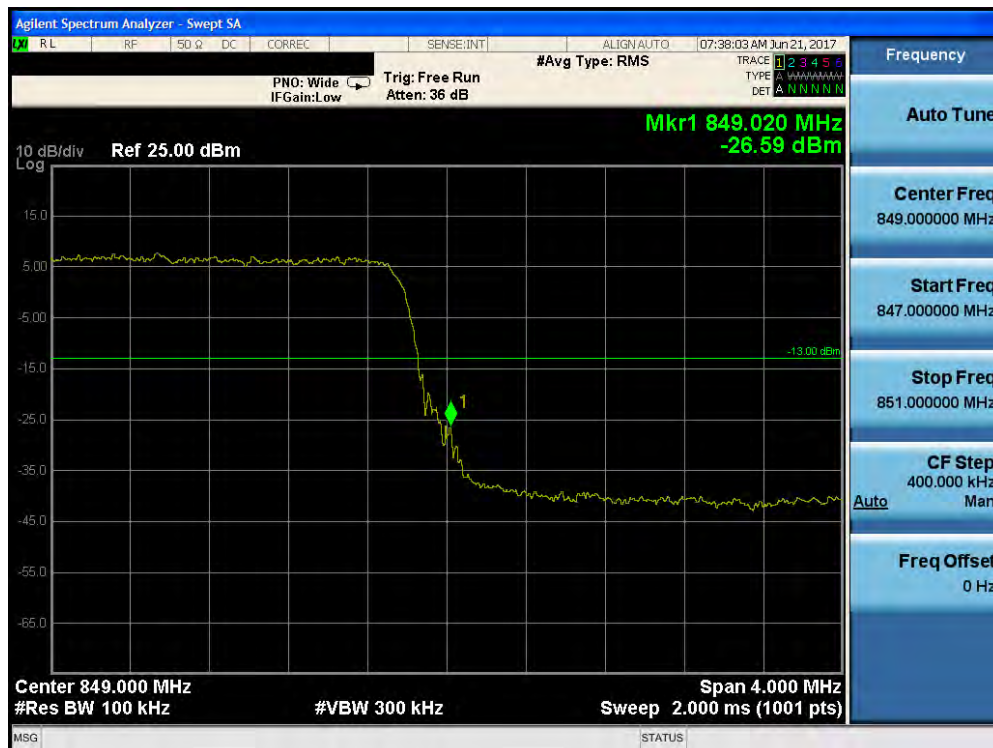


Plot 7-128. Upper Band Edge Plot (Band 5/26 – 3.0MHz QPSK – RB Size 15)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 84 of 166



Plot 7-129. Lower Band Edge Plot (Band 5/26 – 5.0MHz QPSK – RB Size 25)



Plot 7-130. Upper Band Edge Plot (Band 5/26 – 5.0MHz QPSK – RB Size 25)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 85 of 166



Plot 7-131. Lower Band Edge Plot (Band 5/26 – 10.0MHz QPSK – RB Size 50)

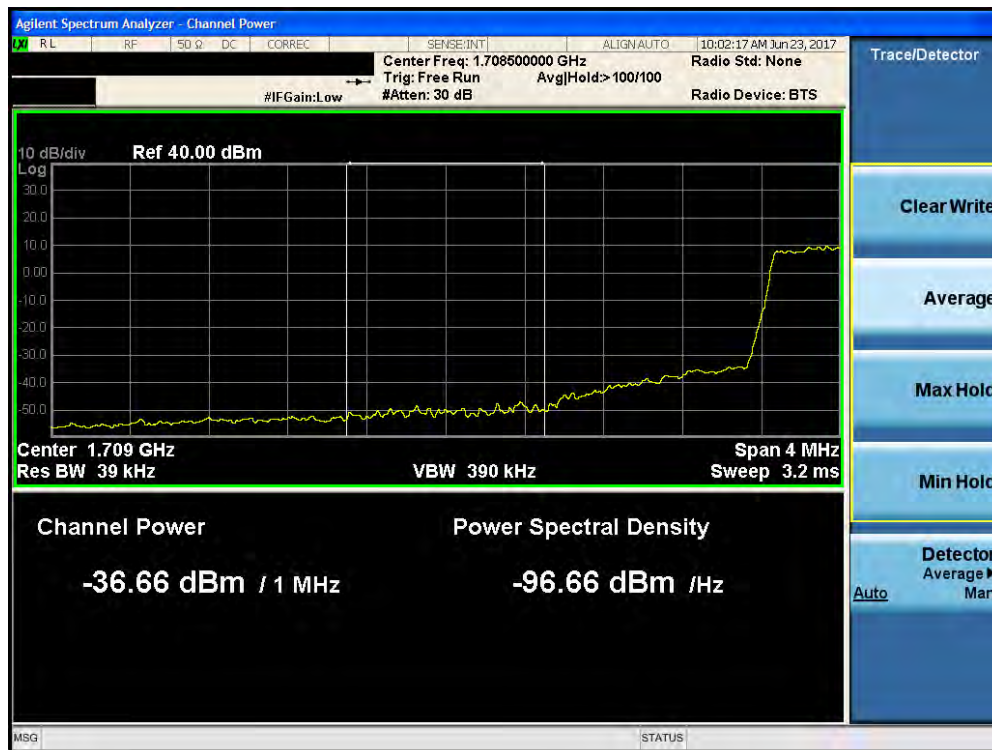


Plot 7-132. Upper Band Edge Plot (Band 5/26 – 10.0MHz QPSK – RB Size 50)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 86 of 166



Plot 7-133. Lower Band Edge Plot (Band 4 – 1.4MHz QPSK – RB Size 6)

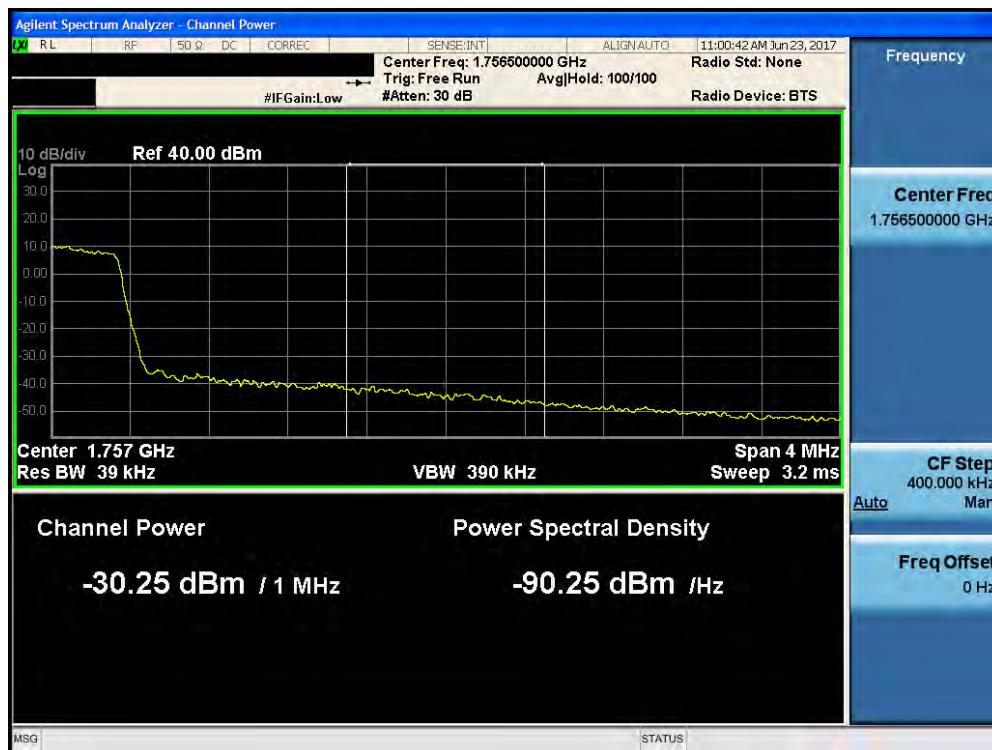


Plot 7-134. Lower Extended Band Edge Plot (Band 4 – 1.4MHz QPSK – RB Size 6)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 87 of 166



Plot 7-135. Upper Band Edge Plot (Band 4 – 1.4MHz QPSK – RB Size 6)



Plot 7-136. Upper Extended Band Edge Plot (Band 4 – 1.4MHz QPSK – RB Size 6)

FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 88 of 166



Plot 7-137. Lower Band Edge Plot (Band 4 – 3.0MHz QPSK – RB Size 15)

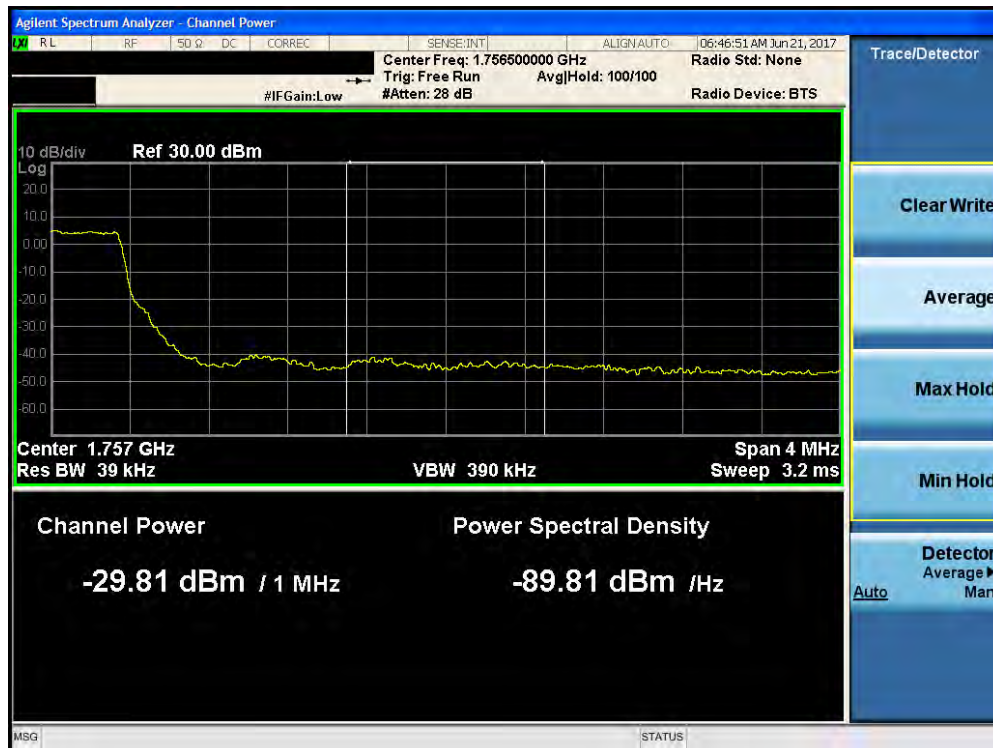


Plot 7-138. Lower Extended Band Edge Plot (Band 4 – 3.0MHz QPSK – RB Size 15)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 89 of 166

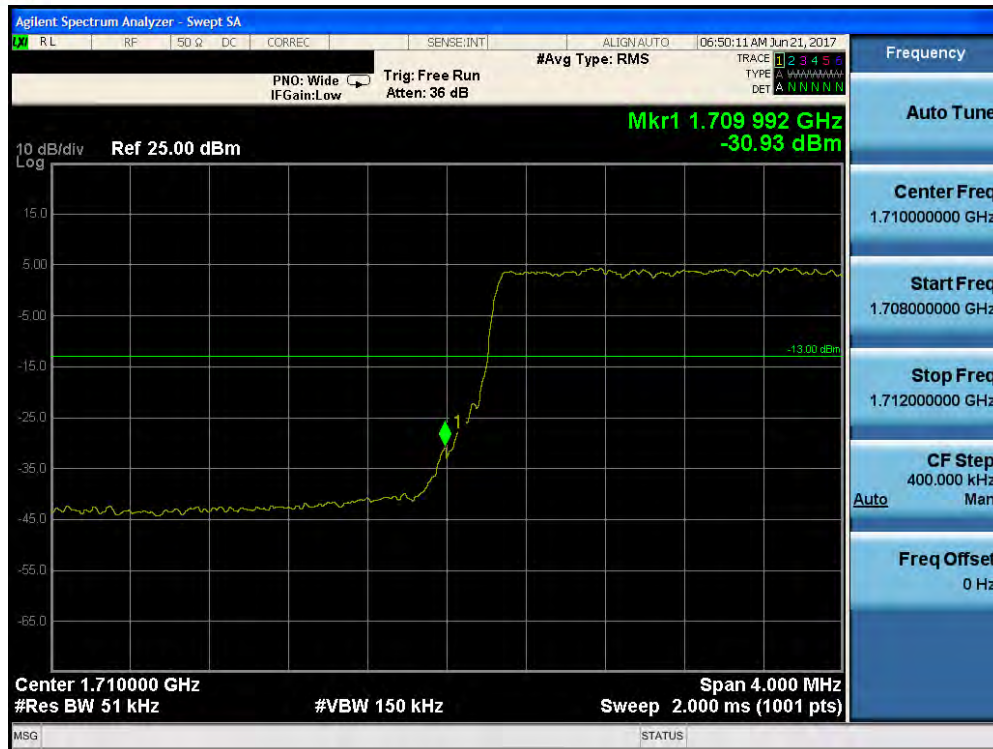


Plot 7-139. Upper Band Edge Plot (Band 4 – 3.0MHz QPSK – RB Size 15)

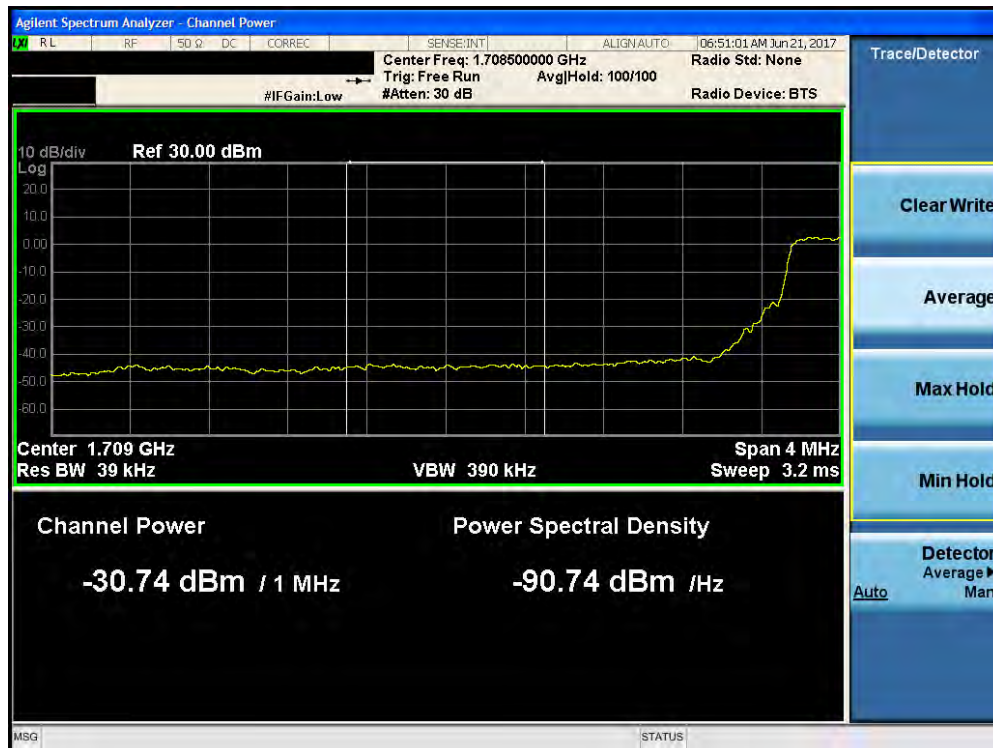


Plot 7-140. Upper Extended Band Edge Plot (Band 4 – 3.0MHz QPSK – RB Size 15)

FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 90 of 166



Plot 7-141. Lower Band Edge Plot (Band 4 – 5.0MHz QPSK – RB Size 25)

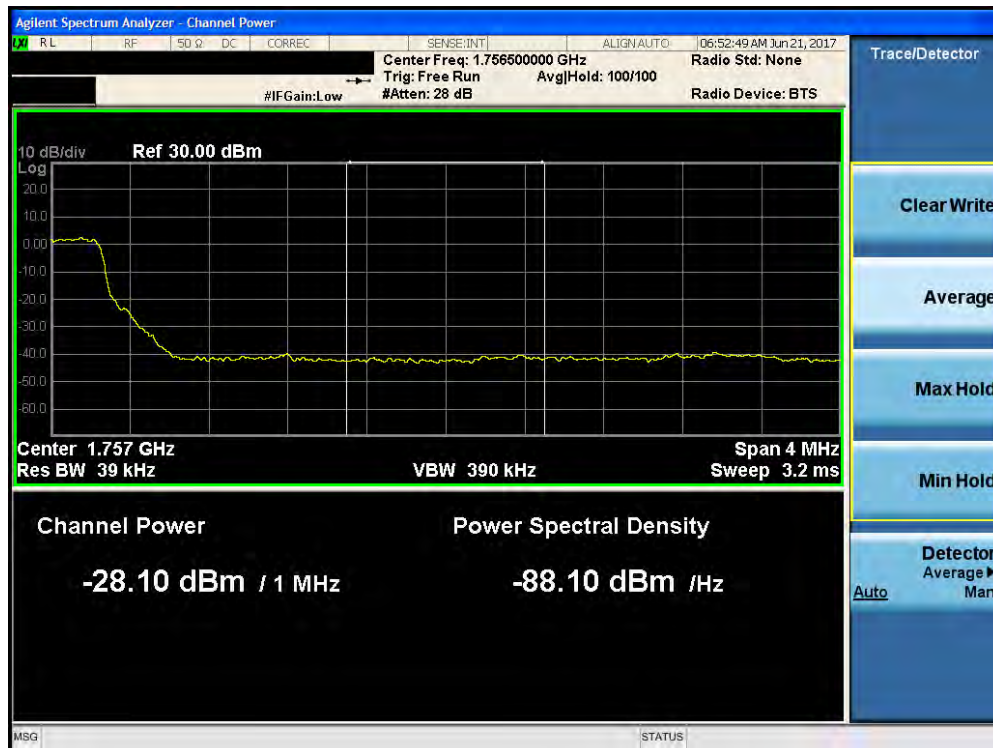


Plot 7-142. Lower Extended Band Edge Plot (Band 4 – 5.0MHz QPSK – RB Size 25)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 91 of 166

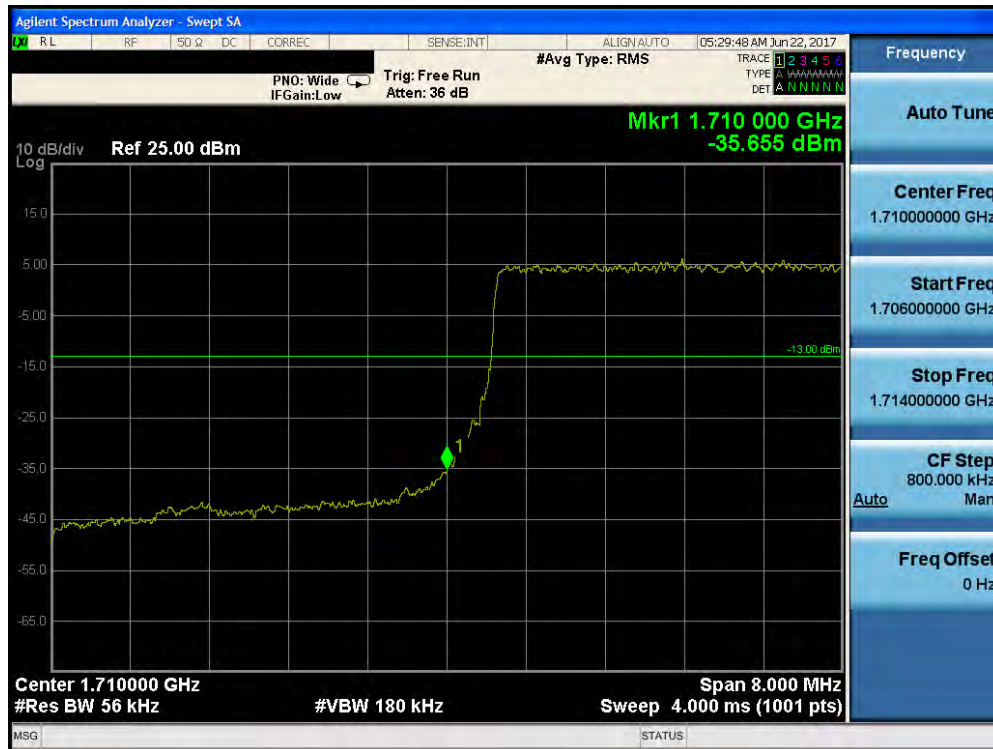


Plot 7-143. Upper Band Edge Plot (Band 4 – 5.0MHz QPSK – RB Size 25)

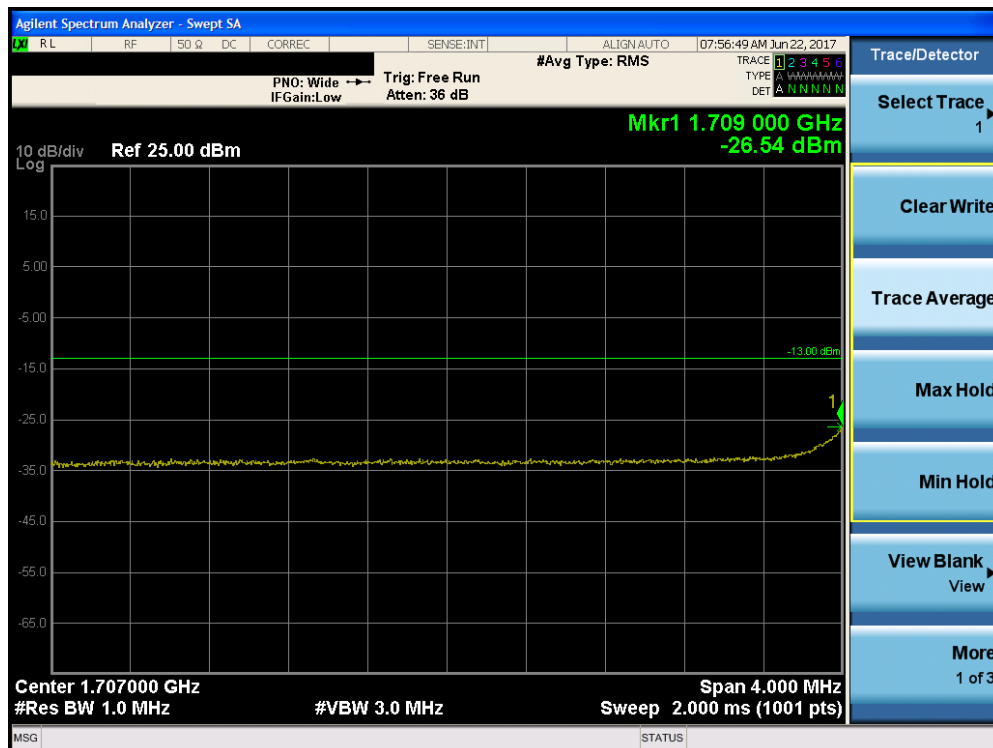


Plot 7-144. Upper Extended Band Edge Plot (Band 4 – 5.0MHz QPSK – RB Size 25)

FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 92 of 166



Plot 7-145. Lower Band Edge Plot (Band 4 – 10.0MHz QPSK – RB Size 50)

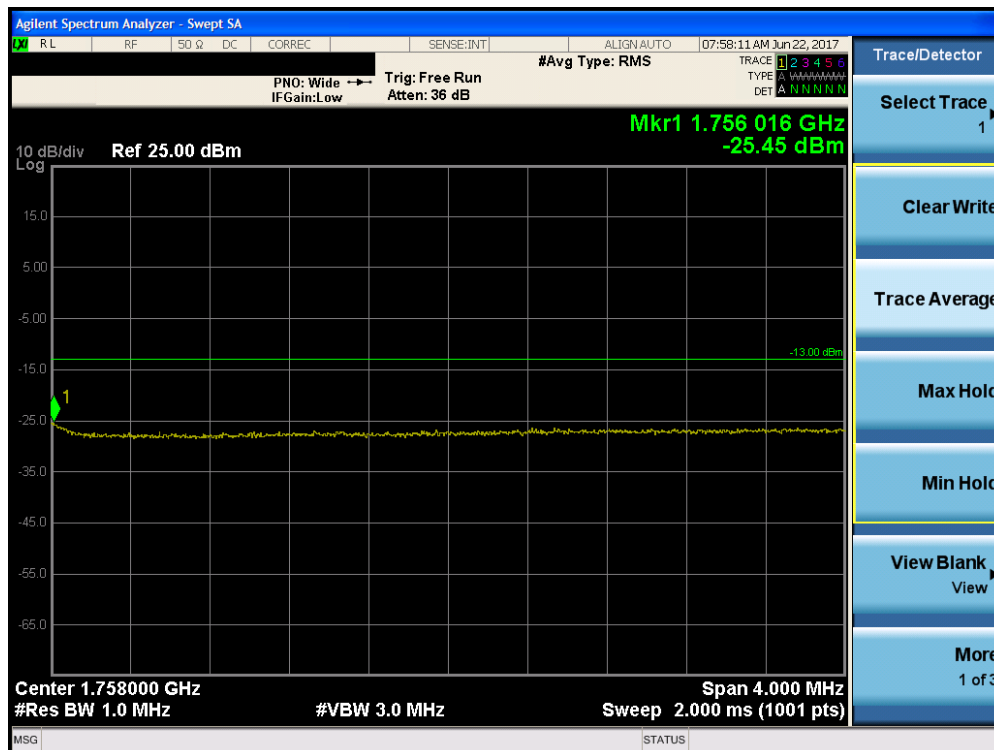


Plot 7-146. Lower Extended Band Edge Plot (Band 4 – 10.0MHz QPSK – RB Size 50)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 93 of 166

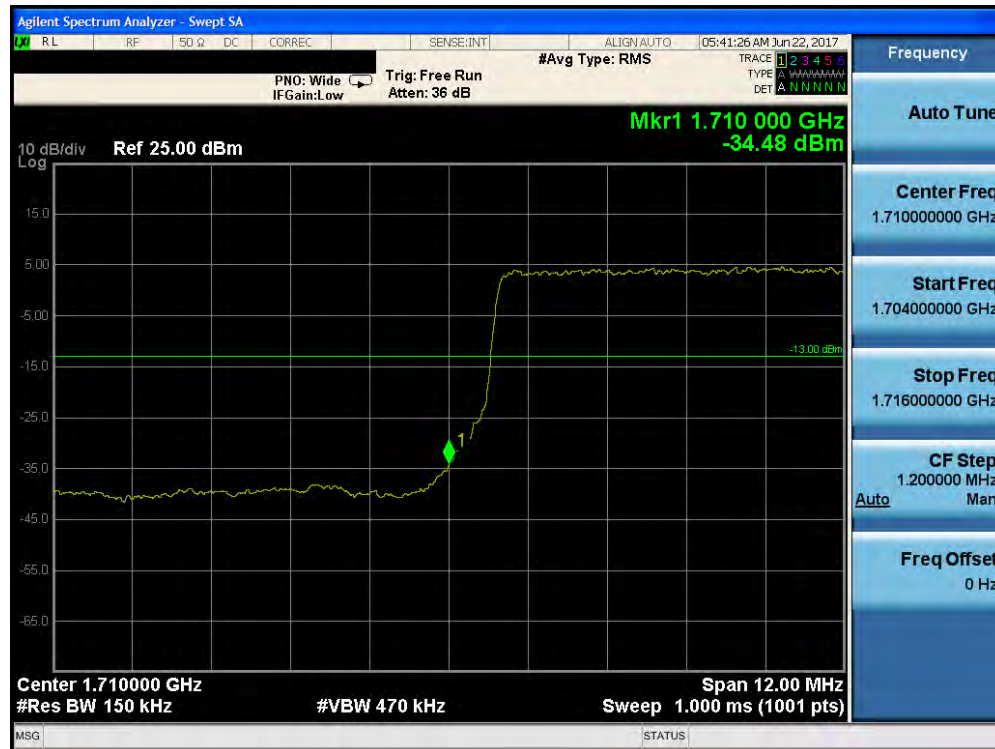


Plot 7-147. Upper Band Edge Plot (Band 4 – 10.0MHz QPSK – RB Size 50)

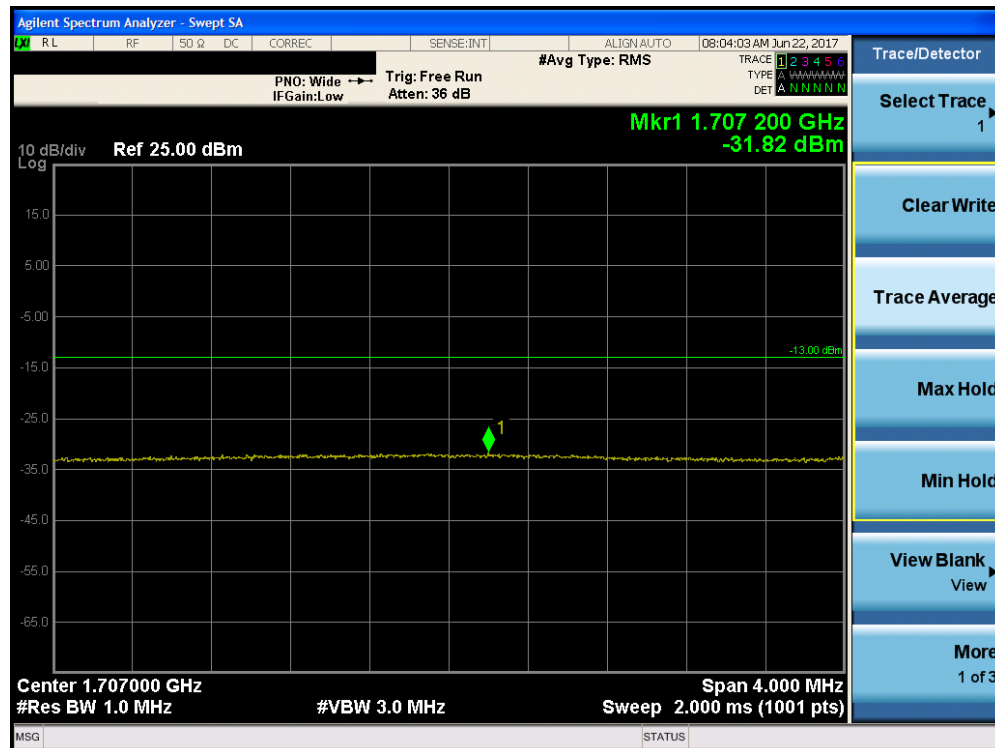


Plot 7-148. Upper Extended Band Edge Plot (Band 4 – 10.0MHz QPSK – RB Size 50)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 94 of 166

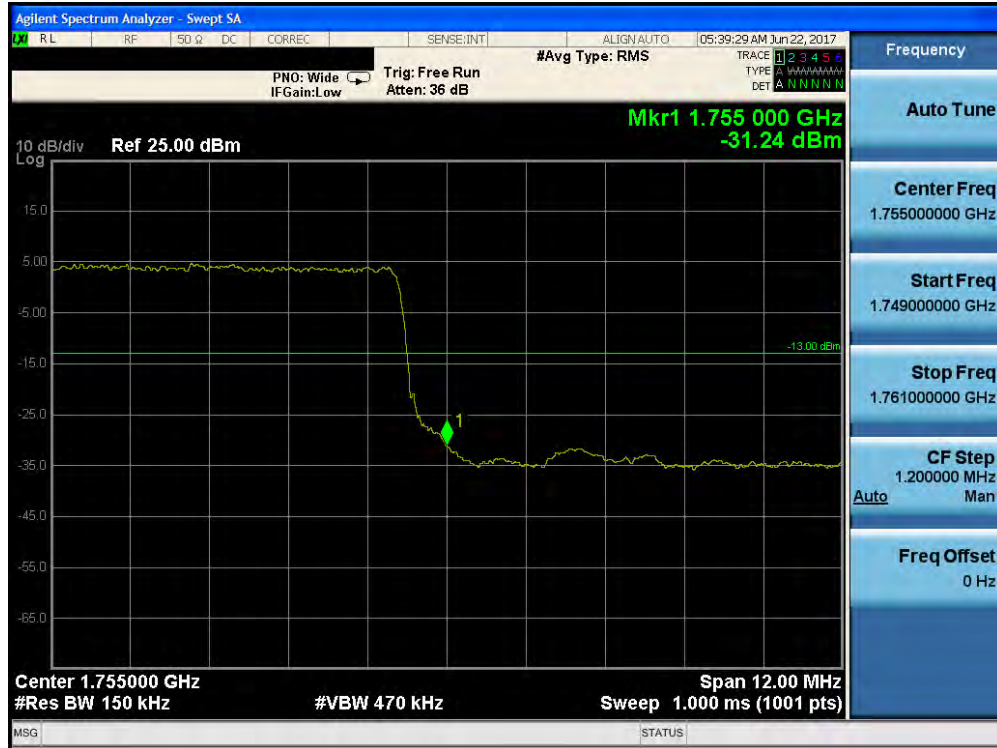


Plot 7-149. Lower Band Edge Plot (Band 4 – 15.0MHz QPSK – RB Size 75)

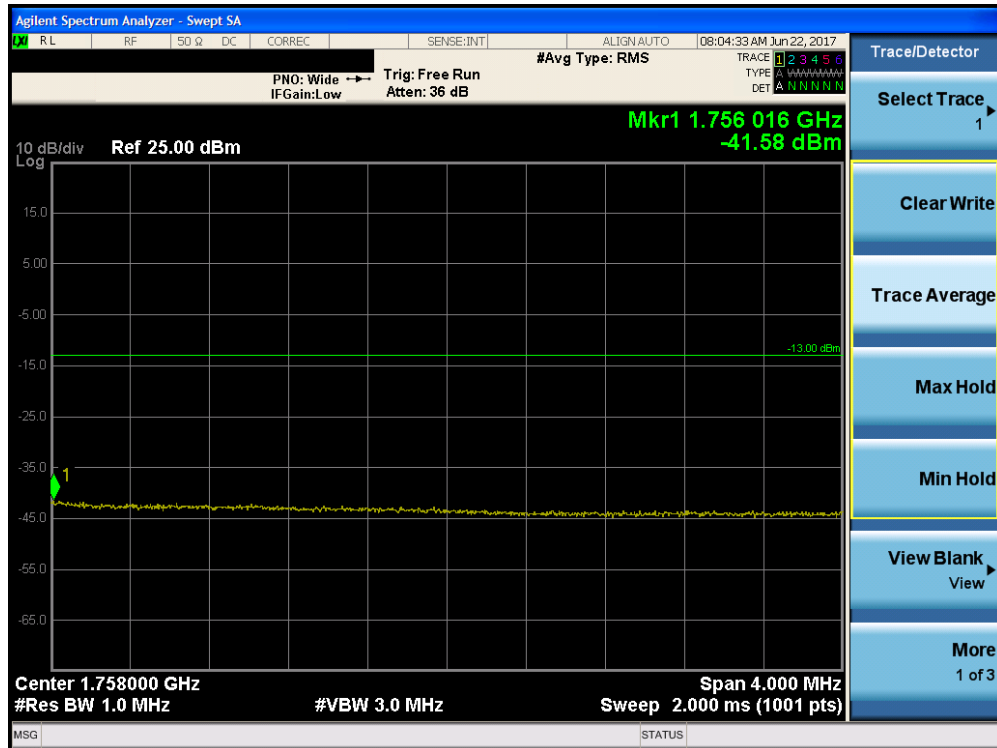


Plot 7-150. Lower Extended Band Edge Plot (Band 4 – 15.0MHz QPSK – RB Size 75)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 95 of 166

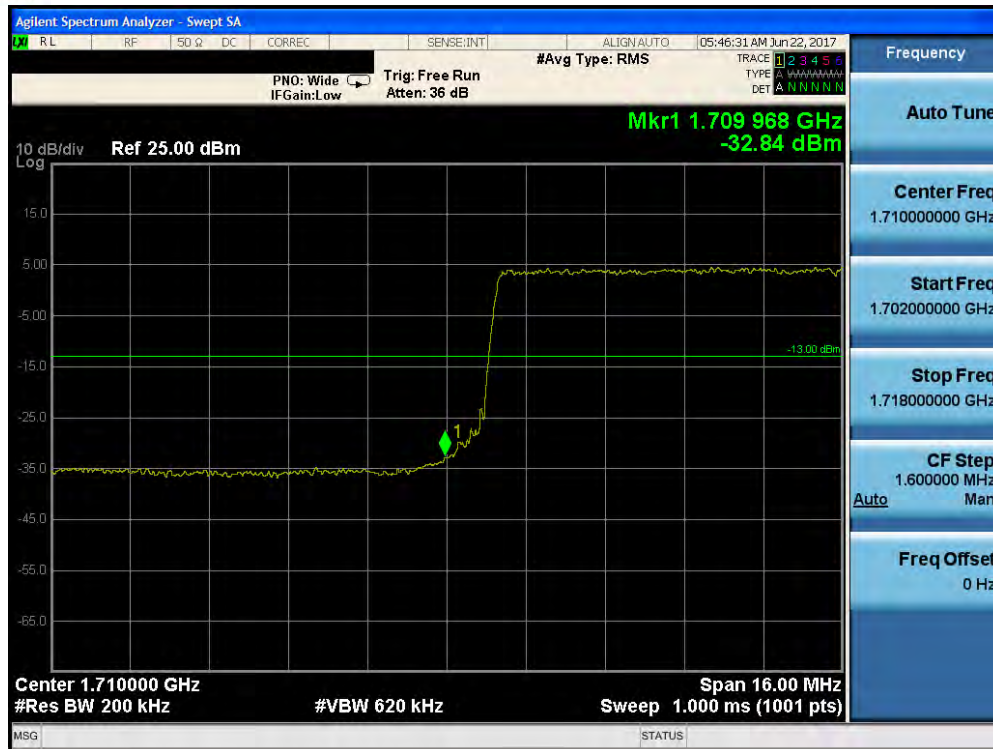


Plot 7-151. Upper Band Edge Plot (Band 4 – 15.0MHz QPSK – RB Size 75)

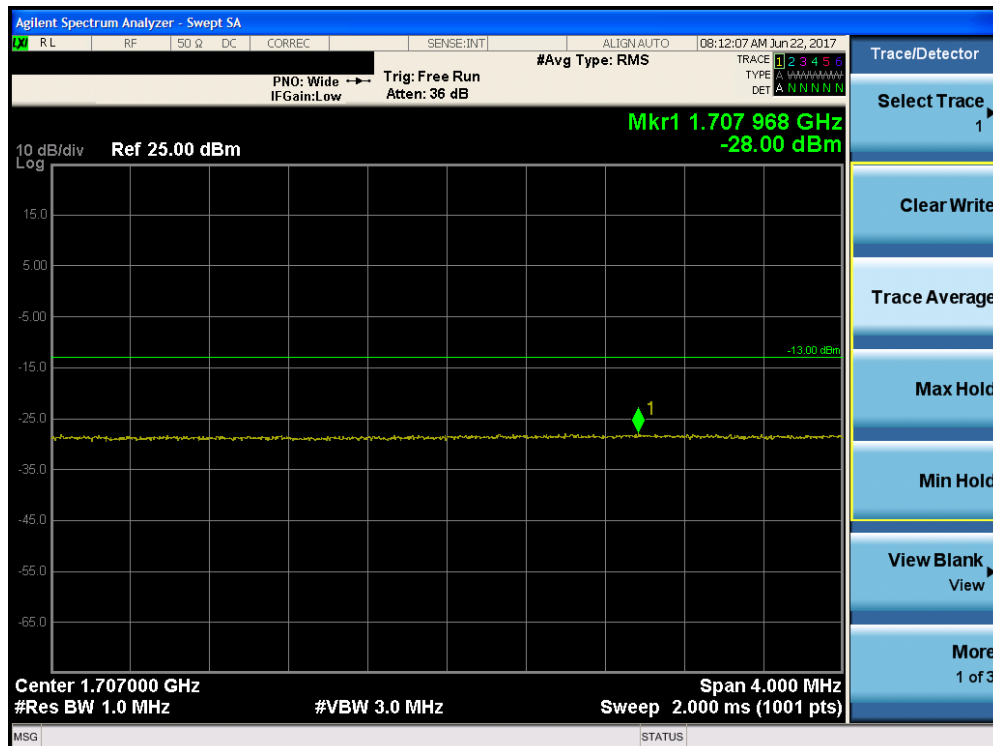


Plot 7-152. Upper Extended Band Edge Plot (Band 4 – 15.0MHz QPSK – RB Size 75)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 96 of 166



Plot 7-153. Lower Band Edge Plot (Band 4 – 20.0MHz QPSK – RB Size 100)

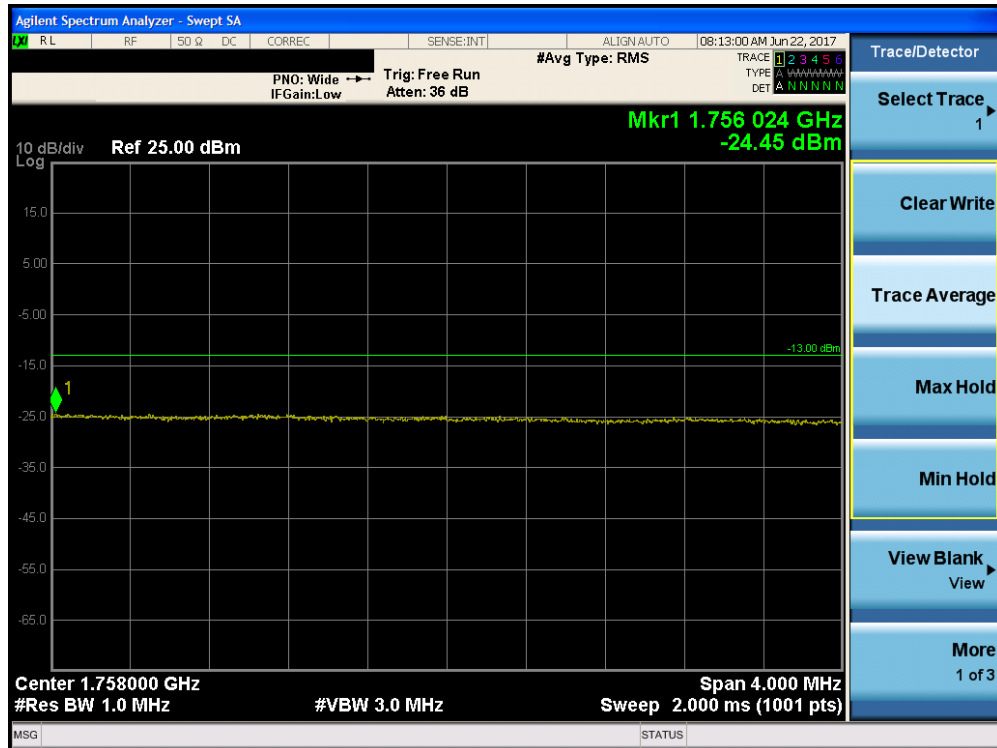


Plot 7-154. Lower Extended Band Edge Plot (Band 4 – 20.0MHz QPSK – RB Size 100)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 97 of 166

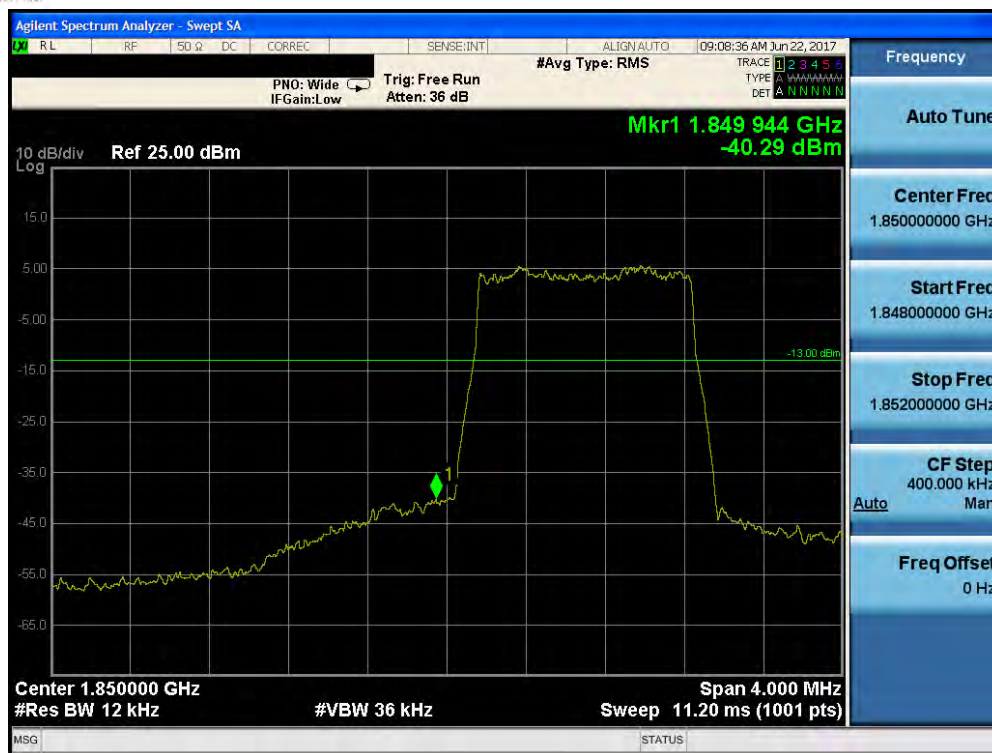


Plot 7-155. Upper Band Edge Plot (Band 4 – 20.0MHz QPSK – RB Size 100)

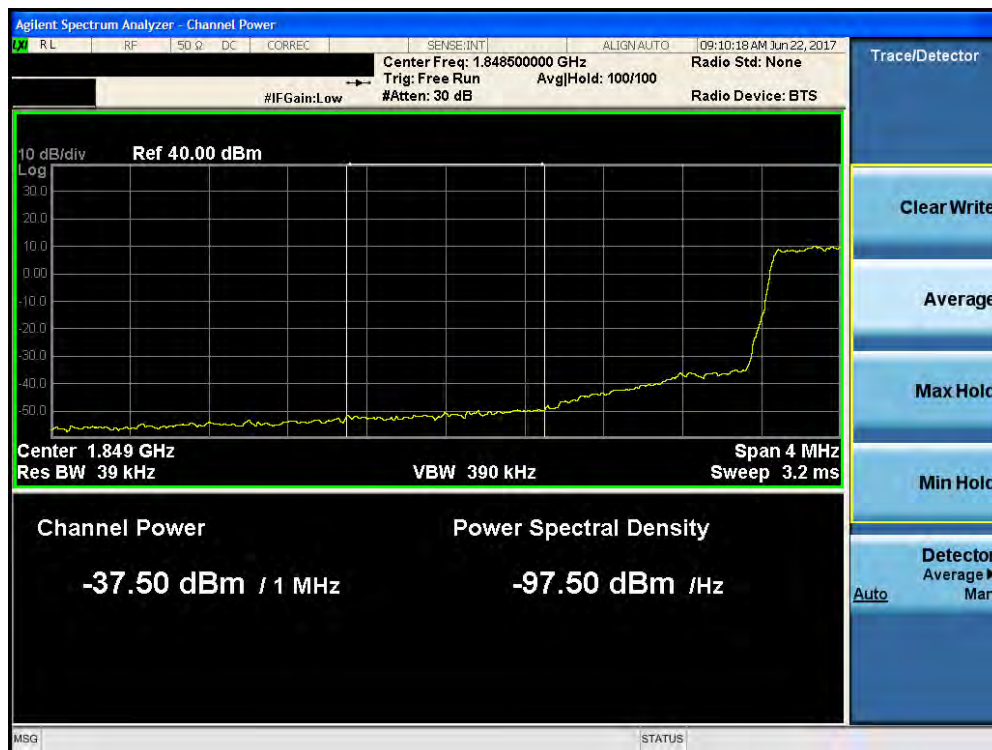


Plot 7-156. Upper Extended Band Edge Plot (Band 4 – 20.0MHz QPSK – RB Size 100)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 98 of 166



Plot 7-157. Lower Band Edge Plot (Band 2/25 – 1.4MHz QPSK – RB Size 6)

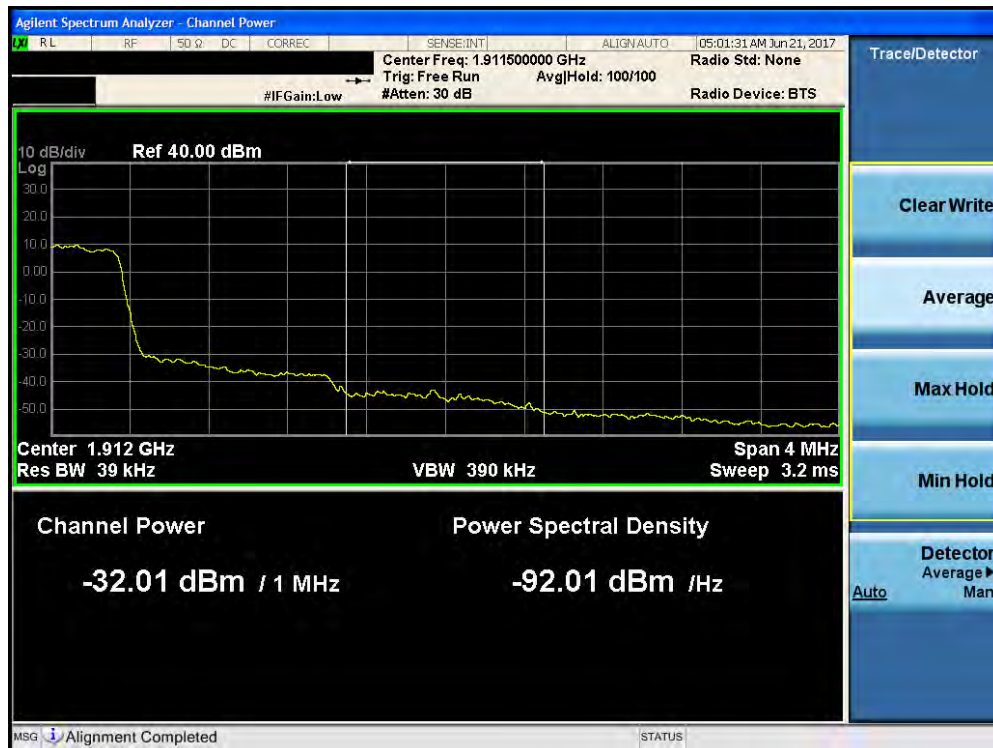


Plot 7-158. Lower Extended Band Edge Plot (Band 2/25 – 1.4MHz QPSK – RB Size 6)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 99 of 166



Plot 7-159. Upper Band Edge Plot (Band 2 – 1.4MHz QPSK – RB Size 6)

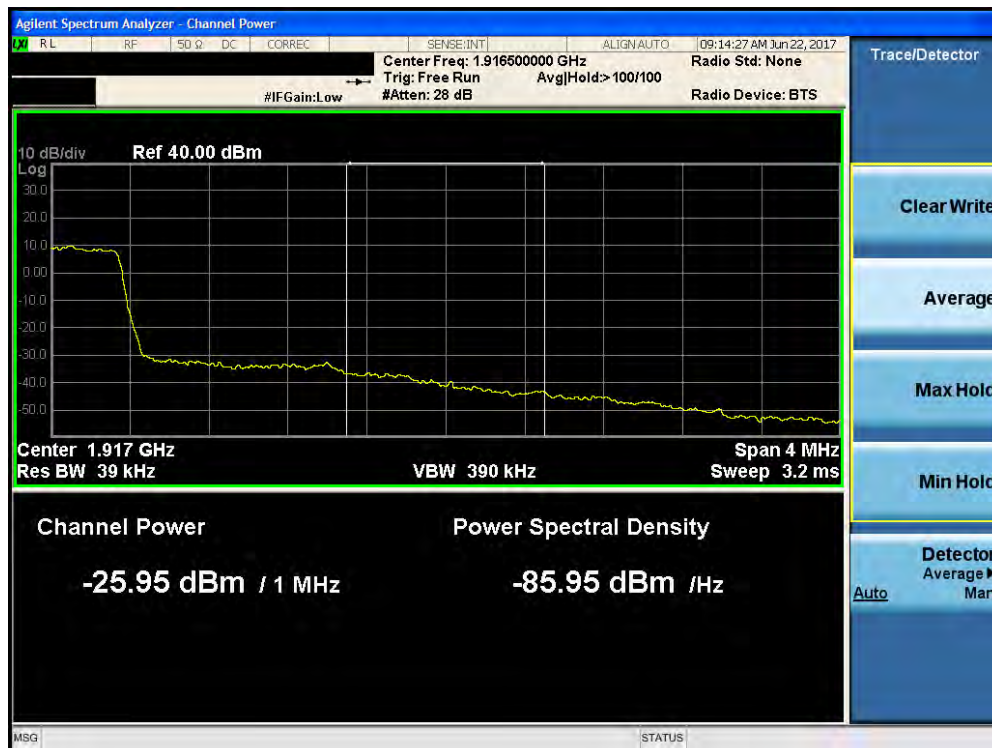


Plot 7-160. Upper Extended Band Edge Plot (Band 2 – 1.4MHz QPSK – RB Size 6)

FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 100 of 166

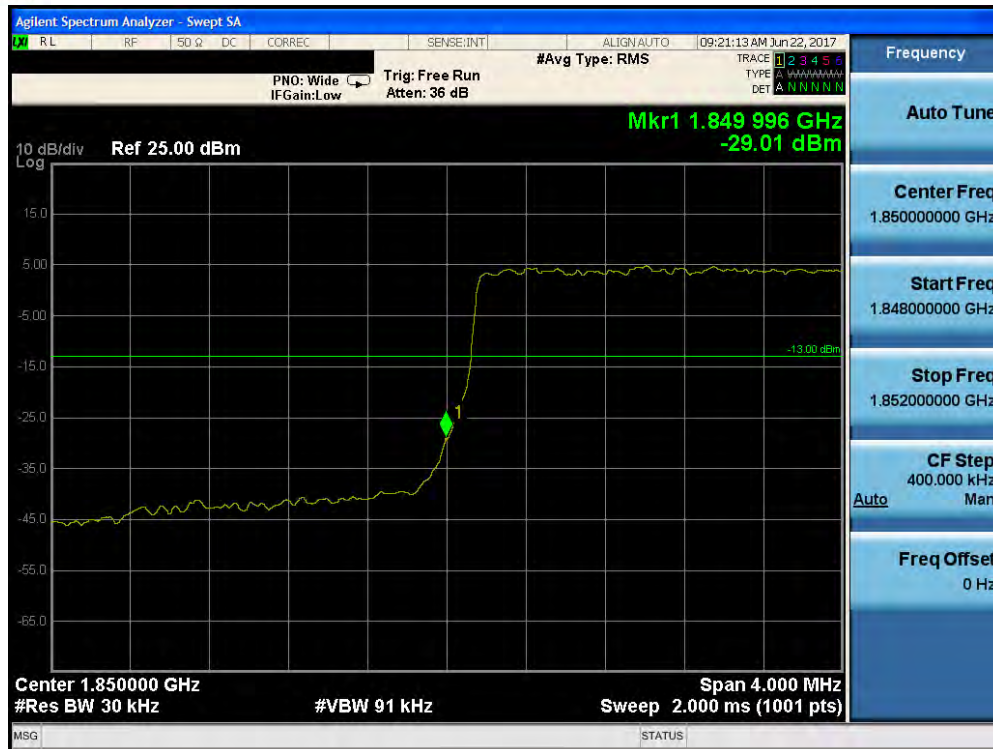


Plot 7-161. Upper Band Edge Plot (Band 25 – 1.4MHz QPSK – RB Size 6)

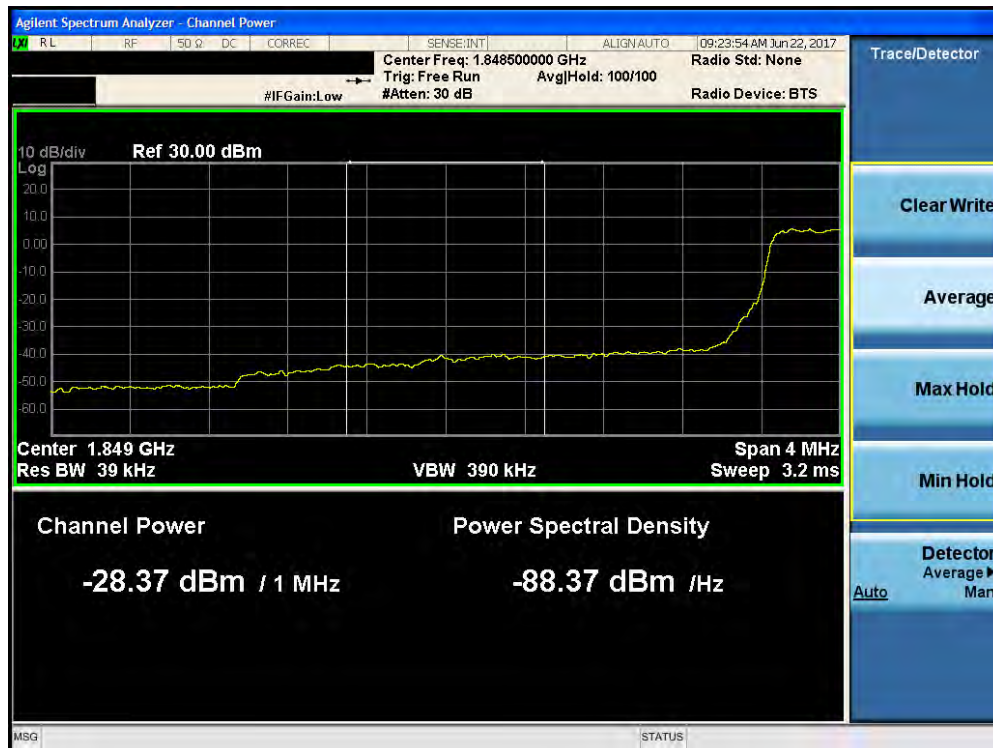


Plot 7-162. Upper Extended Band Edge Plot (Band 25 – 1.4MHz QPSK – RB Size 6)

FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 101 of 166



Plot 7-163. Lower Band Edge Plot (Band 2/25 – 3.0MHz QPSK – RB Size 15)

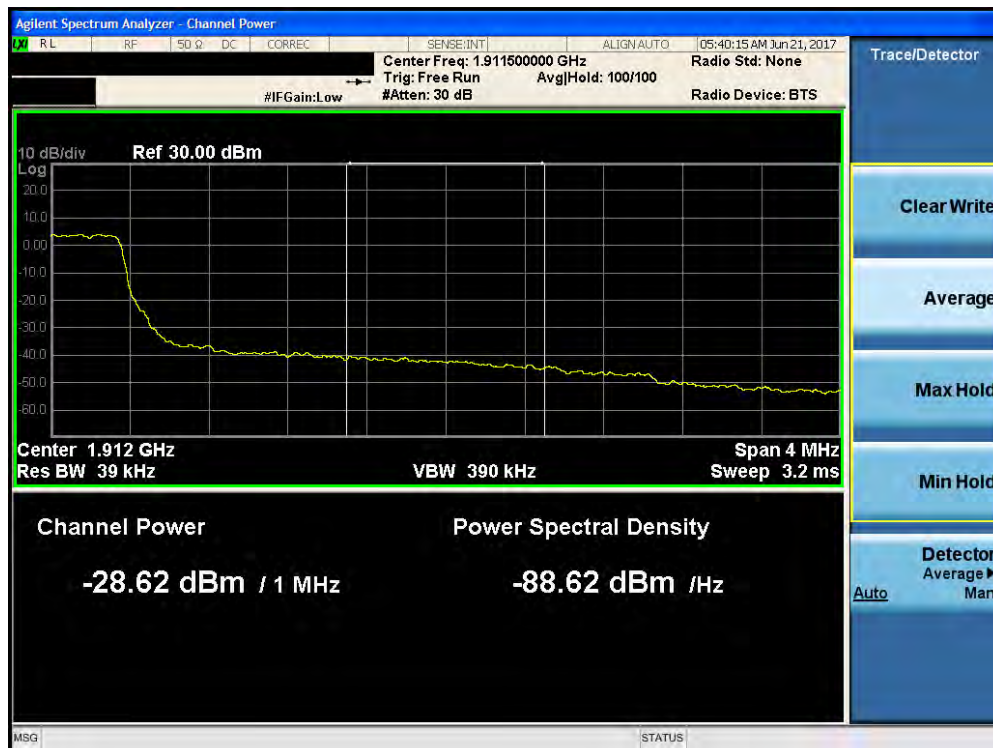


Plot 7-164. Lower Extended Band Edge Plot (Band 2/25 – 3.0MHz QPSK – RB Size 15)

FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 102 of 166



Plot 7-165. Upper Band Edge Plot (Band 2 – 3.0MHz QPSK – RB Size 15)

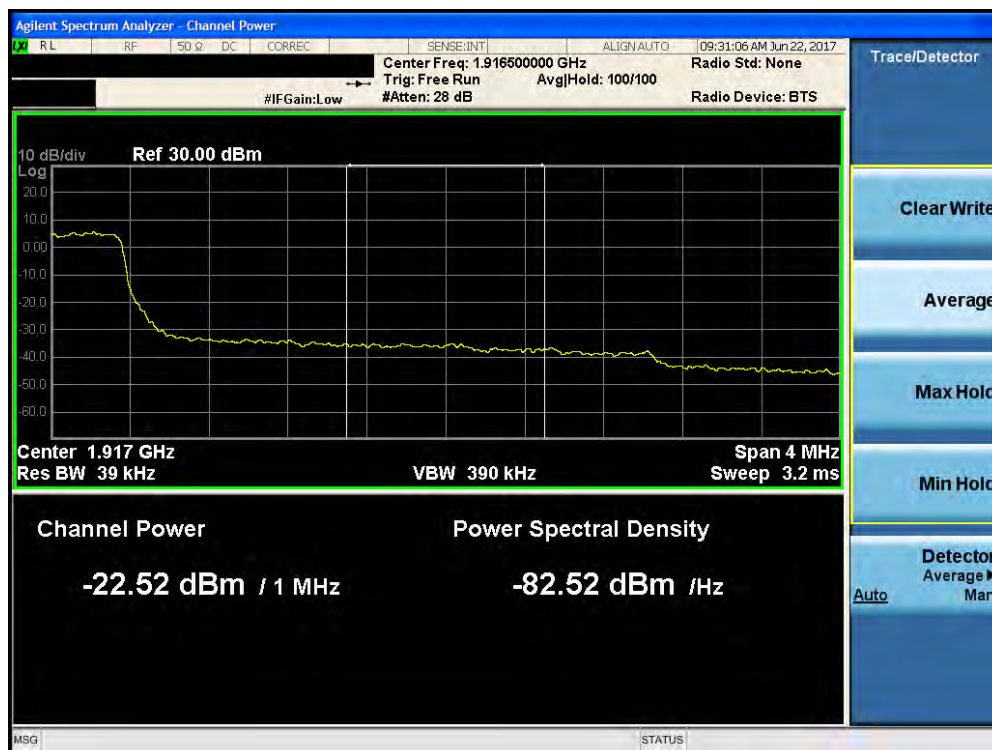


Plot 7-166. Upper Extended Band Edge Plot (Band 2 – 3.0MHz QPSK – RB Size 15)

FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 103 of 166

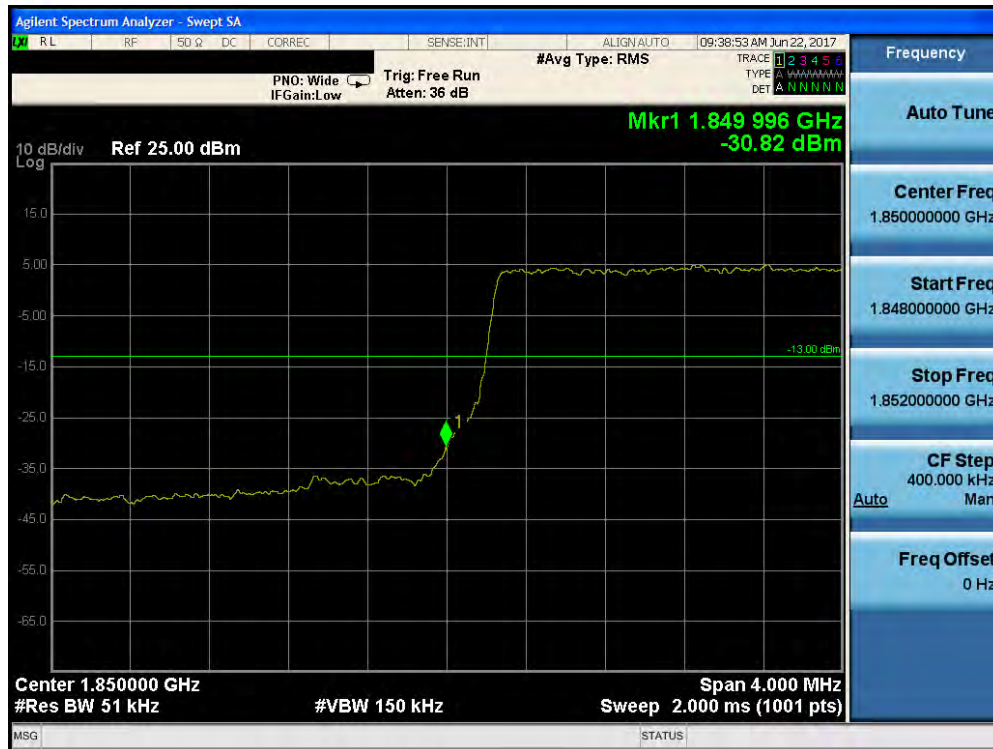


Plot 7-167. Upper Band Edge Plot (Band 25 – 3.0MHz QPSK – RB Size 15)

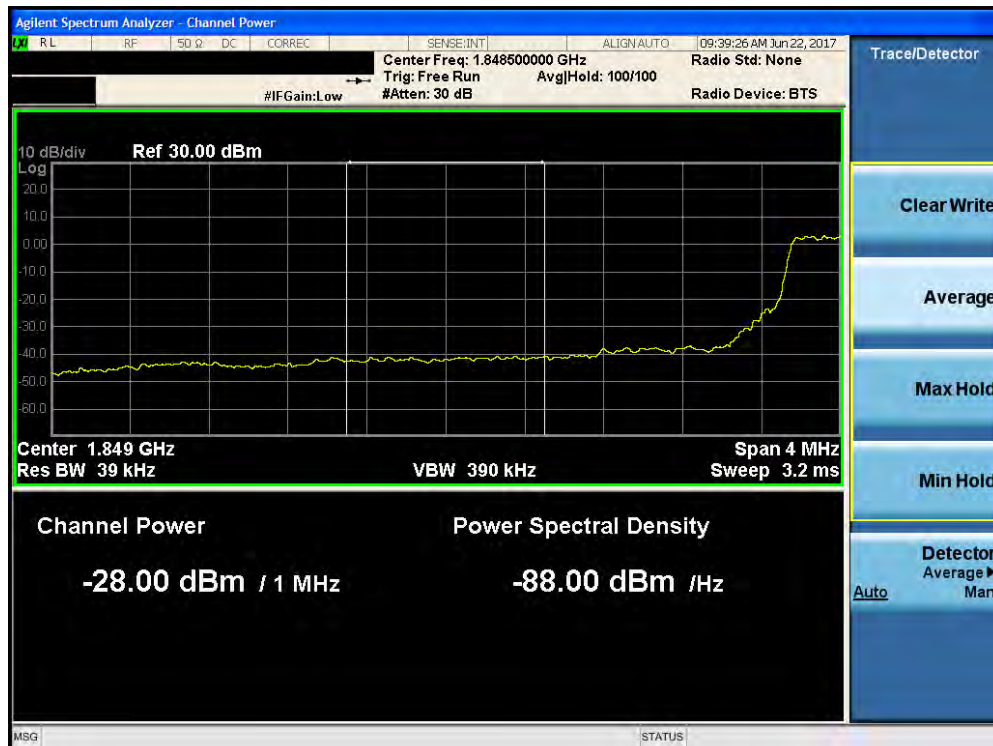


Plot 7-168. Upper Extended Band Edge Plot (Band 25 – 3.0MHz QPSK – RB Size 15)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 104 of 166



Plot 7-169. Lower Band Edge Plot (Band 2/25 – 5.0MHz QPSK – RB Size 25)

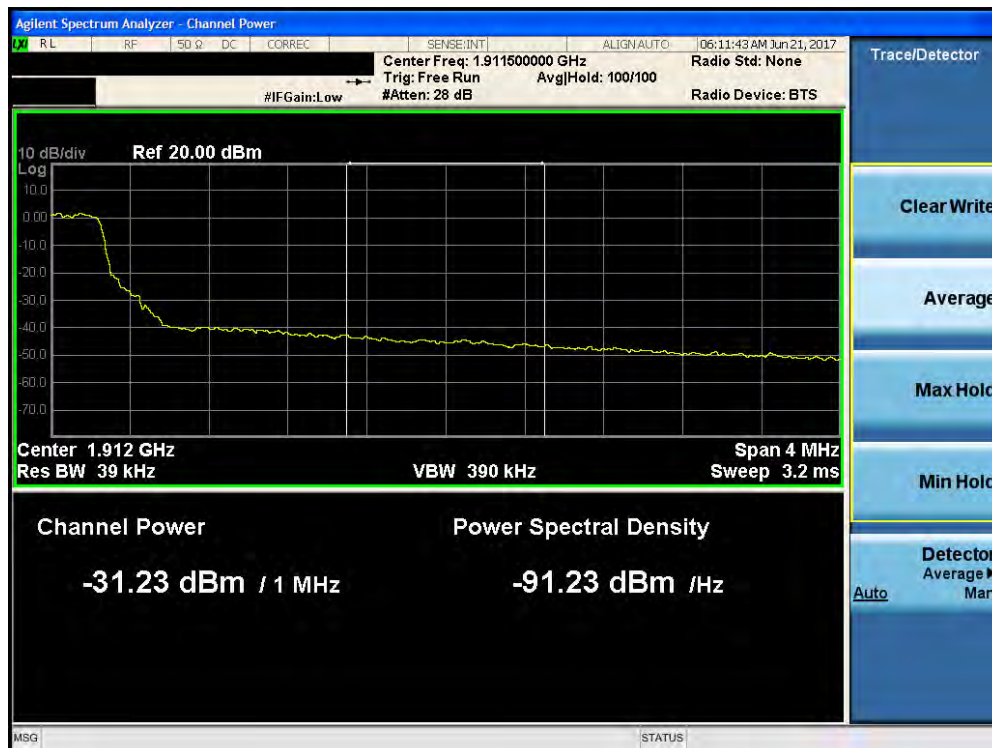


Plot 7-170. Lower Extended Band Edge Plot (Band 2/25 – 5.0MHz QPSK – RB Size 25)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 105 of 166



Plot 7-171. Upper Band Edge Plot (Band 2 – 5.0MHz QPSK – RB Size 25)

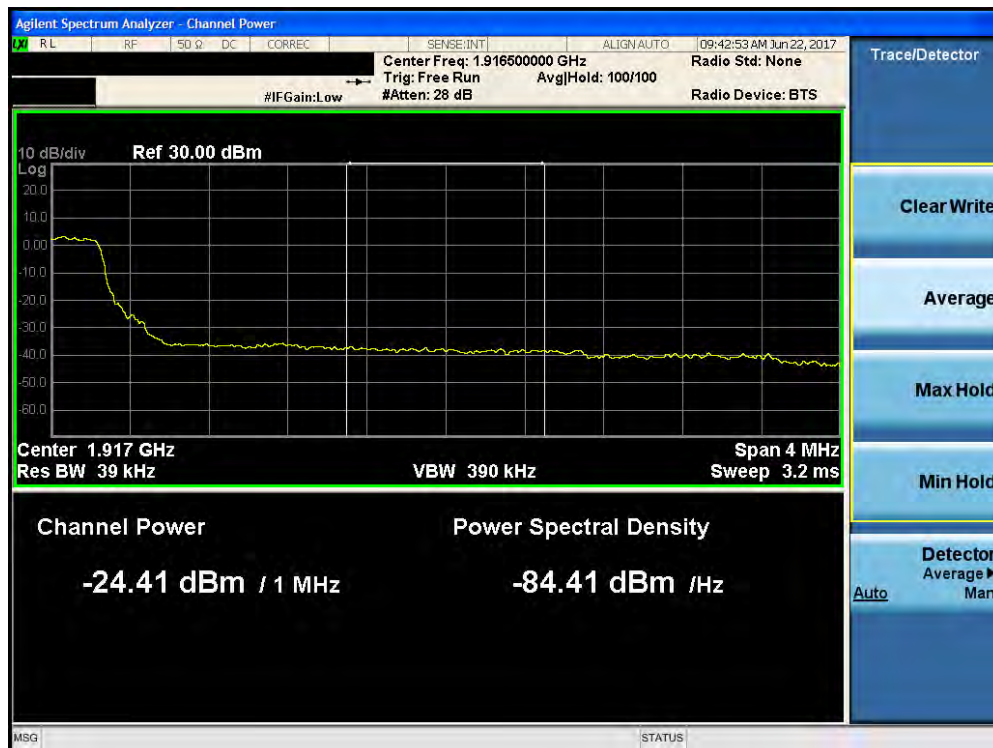


Plot 7-172. Upper Extended Band Edge Plot (Band 2 – 5.0MHz QPSK – RB Size 25)

FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 106 of 166



Plot 7-173. Upper Band Edge Plot (Band 25 – 5.0MHz QPSK – RB Size 25)

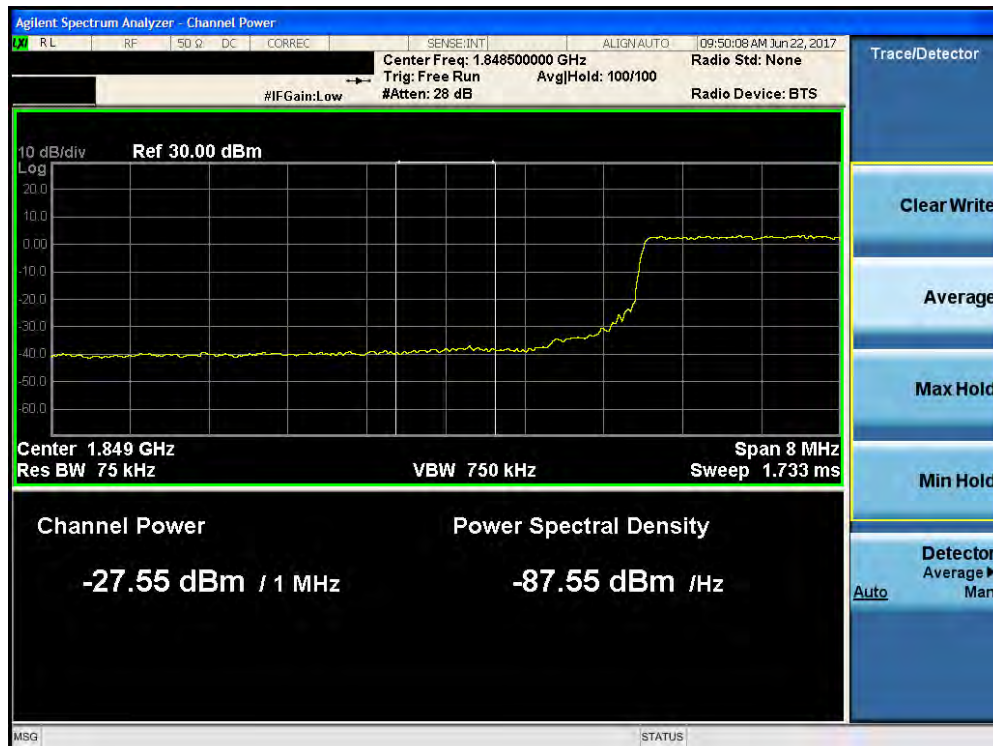


Plot 7-174. Upper Extended Band Edge Plot (Band 25 – 5.0MHz QPSK – RB Size 25)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 107 of 166

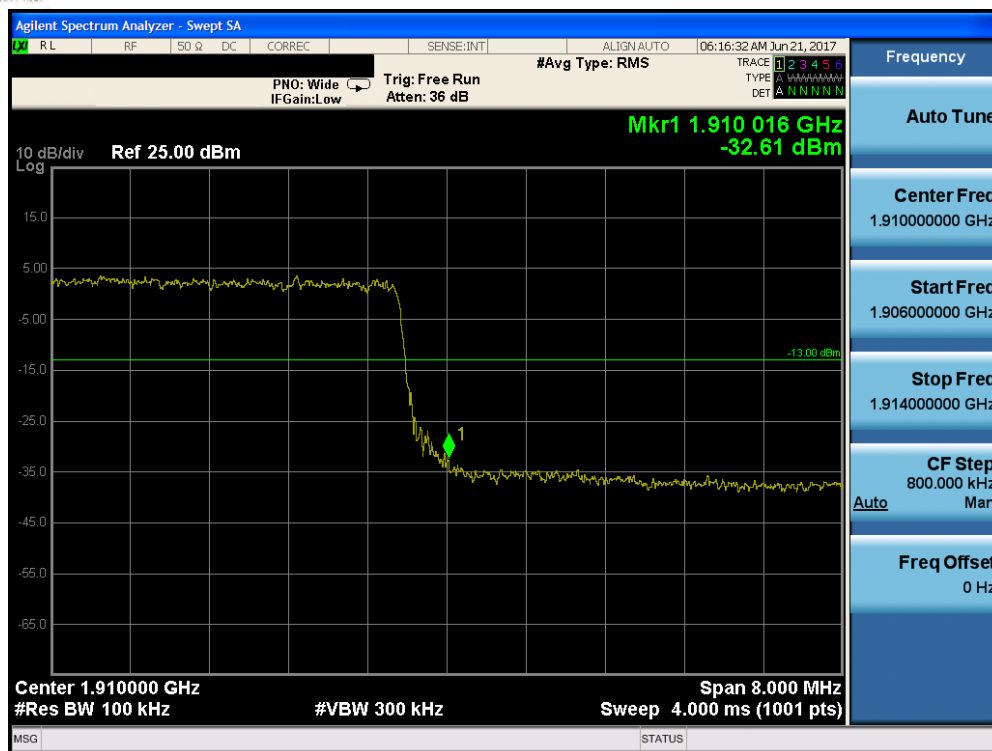


Plot 7-175. Lower Band Edge Plot (Band 2/25 – 10.0MHz QPSK – RB Size 50)

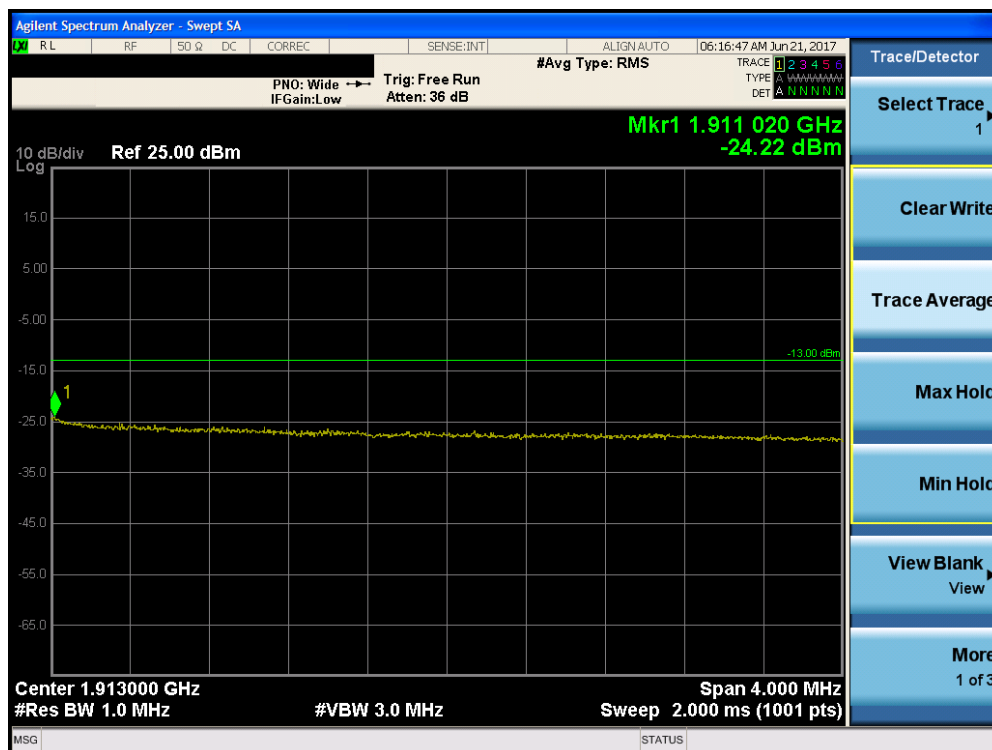


Plot 7-176. Lower Extended Band Edge Plot (Band 2/25 – 10.0MHz QPSK – RB Size 50)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 108 of 166



Plot 7-177. Upper Band Edge Plot (Band 2 – 10.0MHz QPSK – RB Size 50)

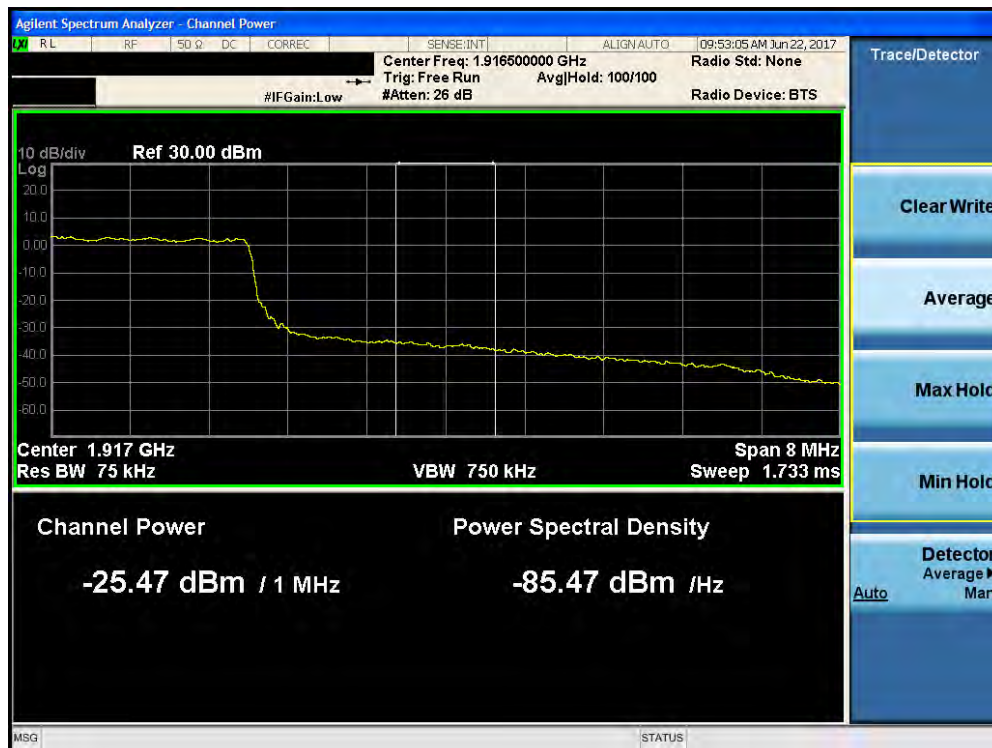


Plot 7-178. Upper Extended Band Edge Plot (Band 2 – 10.0MHz QPSK – RB Size 50)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 109 of 166

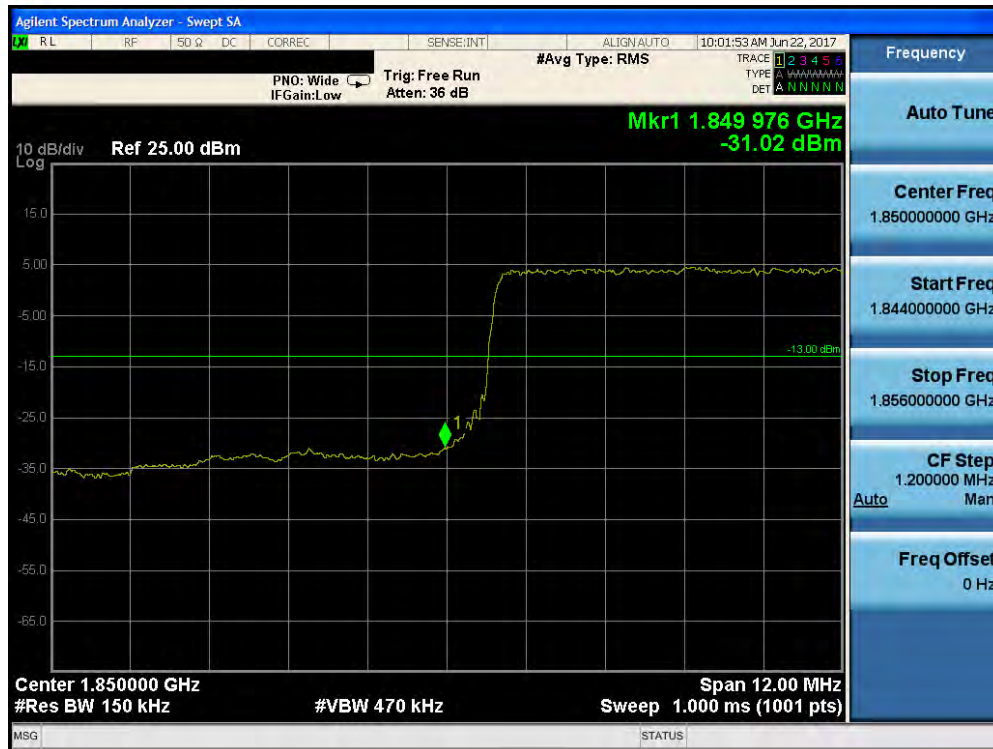


Plot 7-179. Upper Band Edge Plot (Band 25 – 10.0MHz QPSK – RB Size 50)

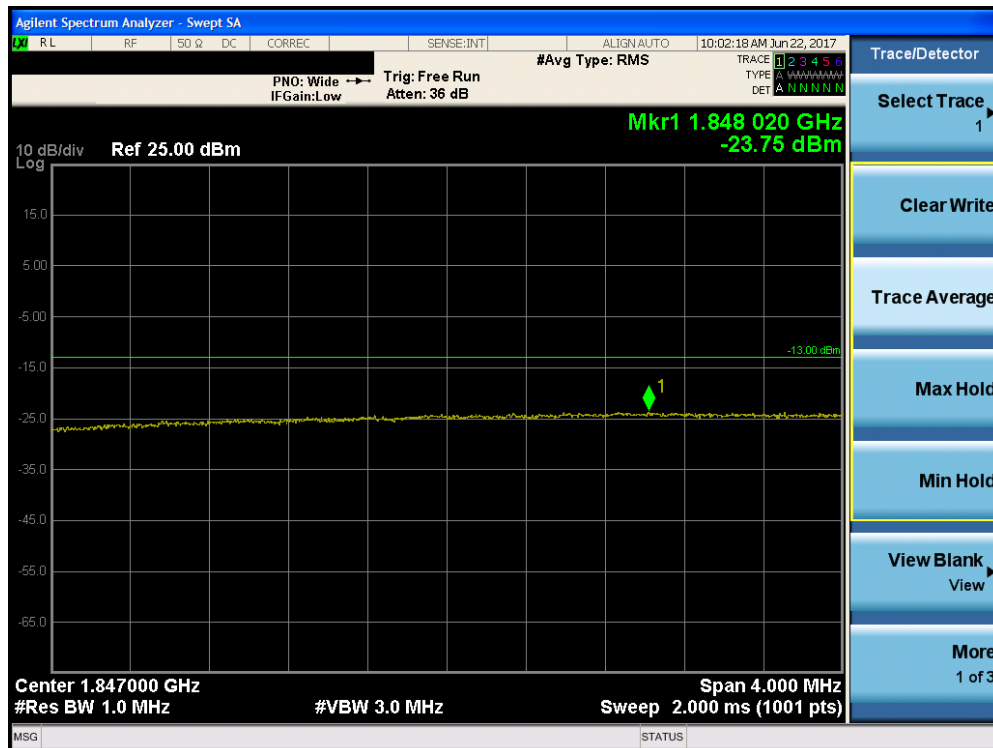


Plot 7-180. Upper Extended Band Edge Plot (Band 25 – 10.0MHz QPSK – RB Size 50)

FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 110 of 166



Plot 7-181. Lower Band Edge Plot (Band 2/25 – 15.0MHz QPSK – RB Size 75)

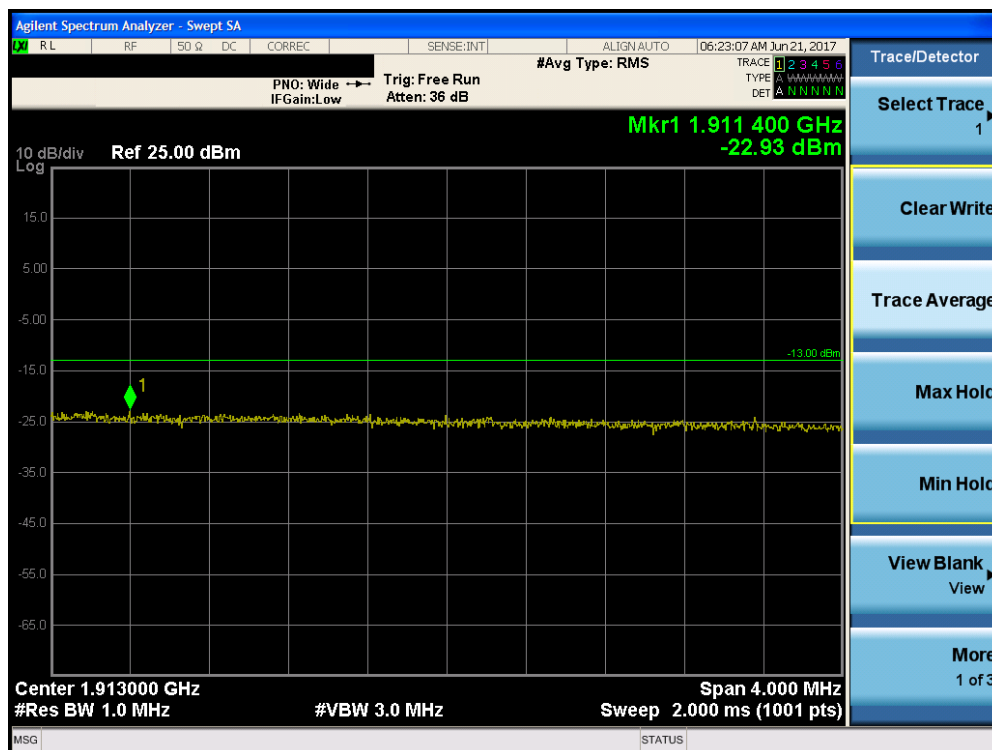


Plot 7-182. Lower Extended Band Edge Plot (Band 2/25 – 15.0MHz QPSK – RB Size 75)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 111 of 166



Plot 7-183. Upper Band Edge Plot (Band 2 – 15.0MHz QPSK – RB Size 75)

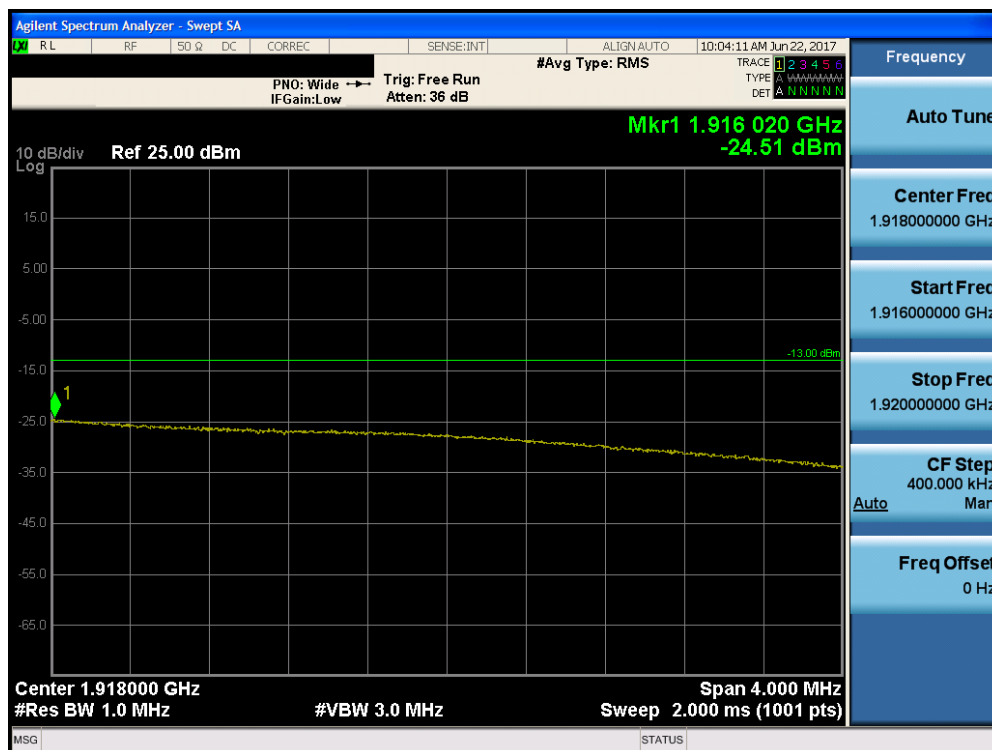


Plot 7-184. Upper Extended Band Edge Plot (Band 2 – 15.0MHz QPSK – RB Size 75)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 112 of 166



Plot 7-185. Upper Band Edge Plot (Band 25 – 15.0MHz QPSK – RB Size 75)

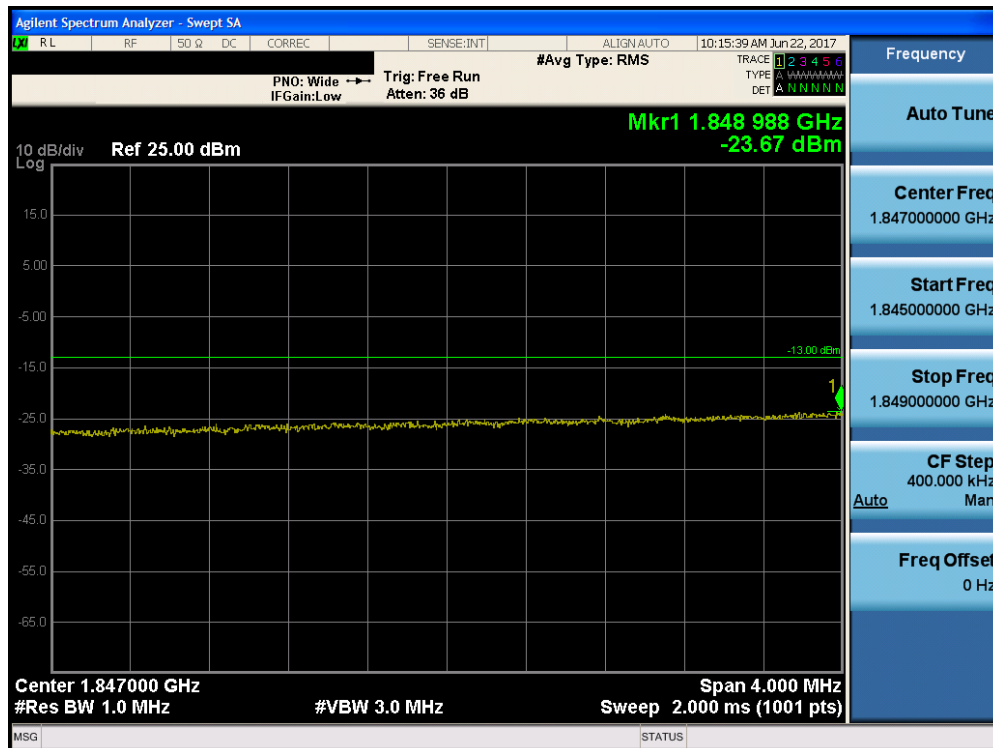


Plot 7-186. Upper Extended Band Edge Plot (Band 25 – 15.0MHz QPSK – RB Size 75)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 113 of 166

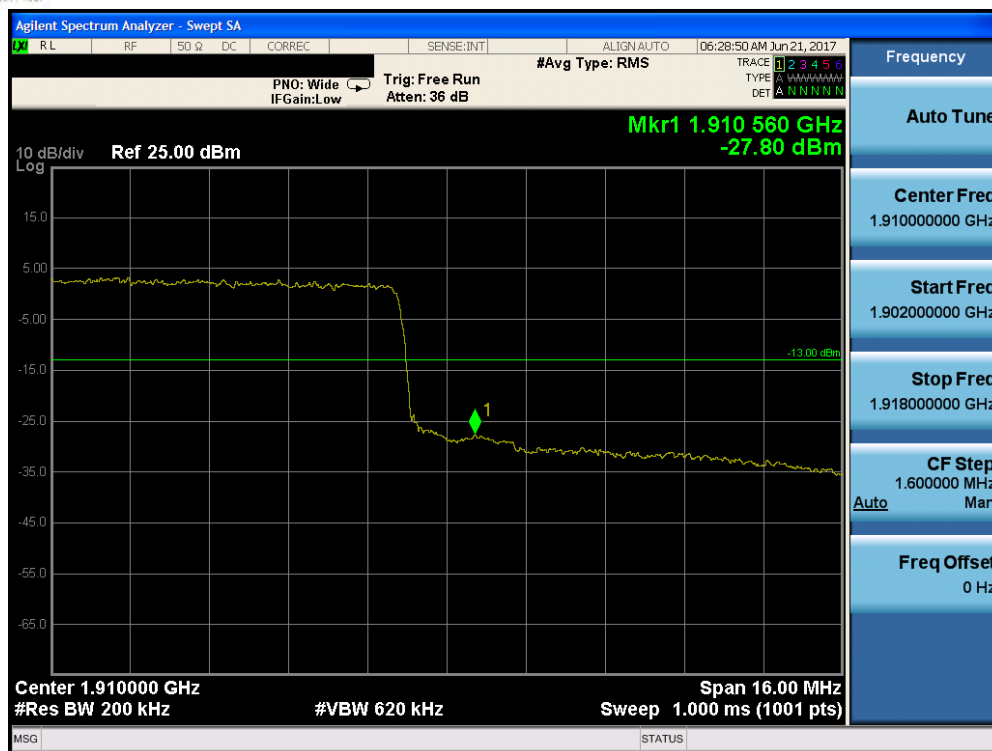


Plot 7-187. Lower Band Edge Plot (Band 2/25 – 20.0MHz QPSK – RB Size 100)

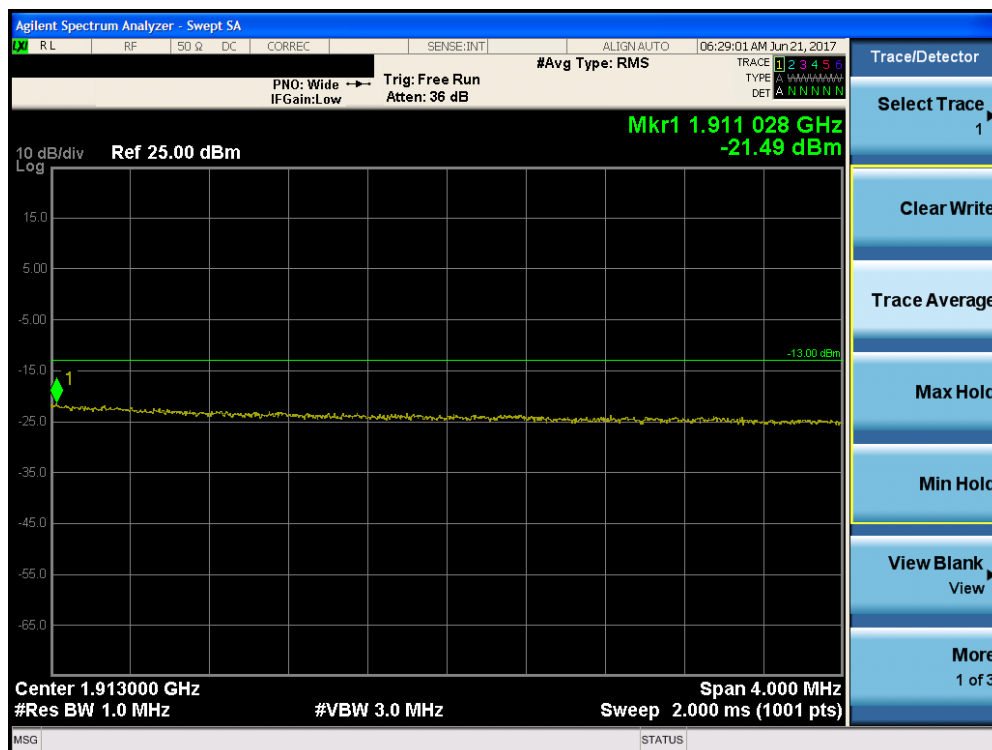


Plot 7-188. Lower Extended Band Edge Plot (Band 2/25 – 20.0MHz QPSK – RB Size 100)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 114 of 166



Plot 7-189. Upper Band Edge Plot (Band 2 – 20.0MHz QPSK – RB Size 100)



Plot 7-190. Upper Extended Band Edge Plot (Band 2 – 20.0MHz QPSK – RB Size 100)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 115 of 166

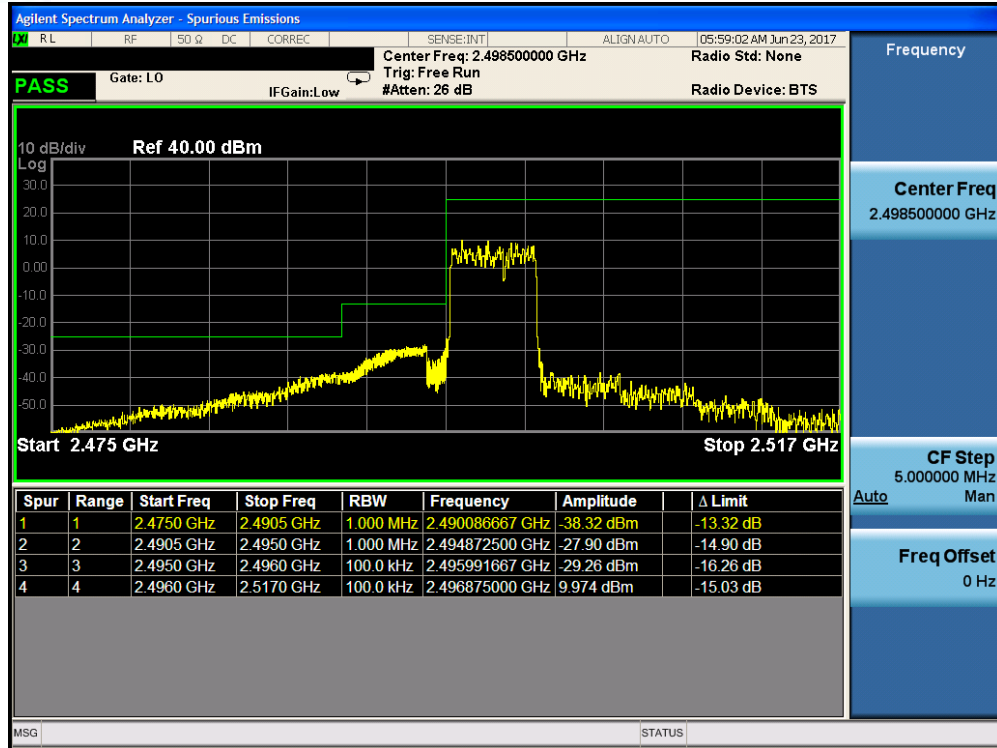


Plot 7-191. Upper Band Edge Plot (Band 25 – 20.0MHz QPSK – RB Size 100)

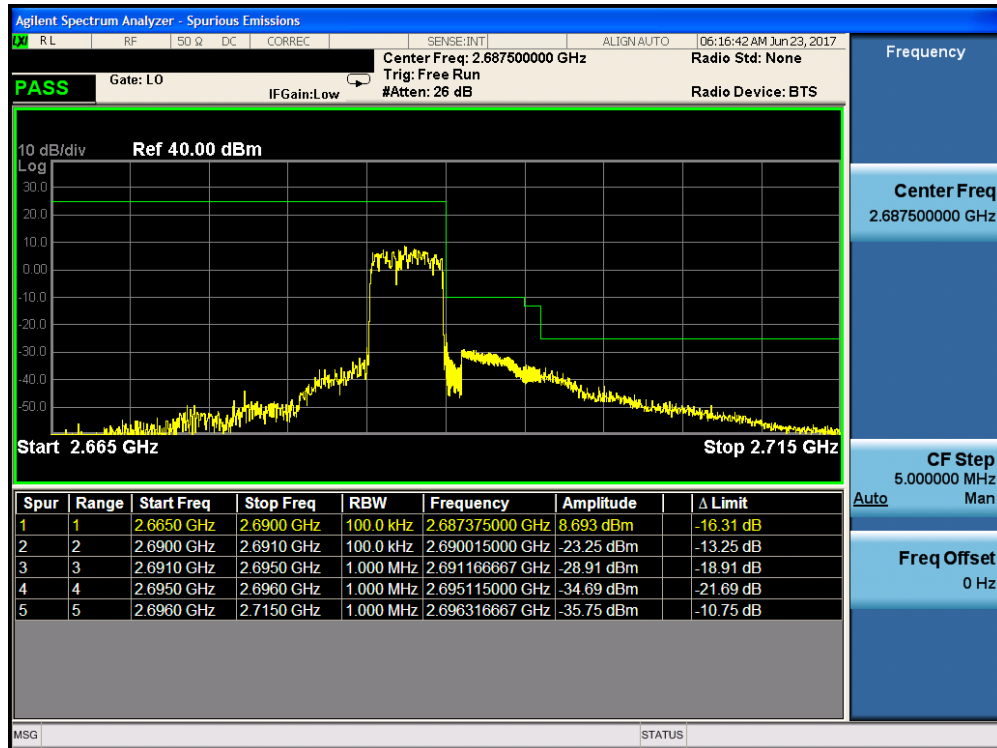


Plot 7-192. Upper Extended Band Edge Plot (Band 25 – 20.0MHz QPSK – RB Size 100)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 116 of 166

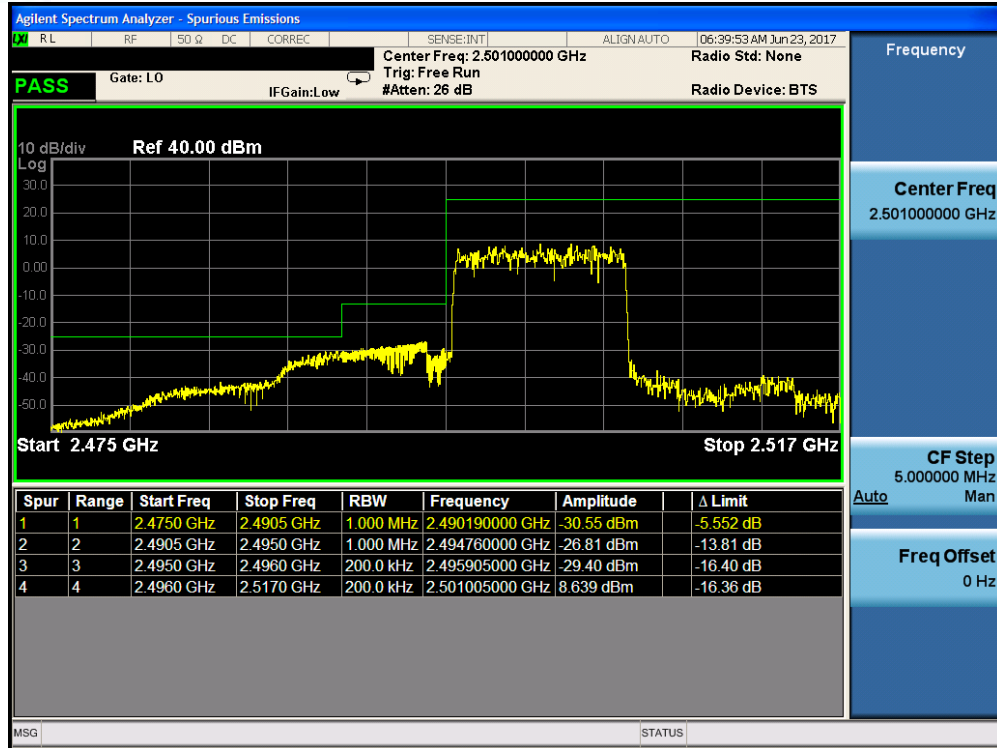


Plot 7-193. Lower ACP Plot (Band 41 – 5.0MHz QPSK – RB Size 25)

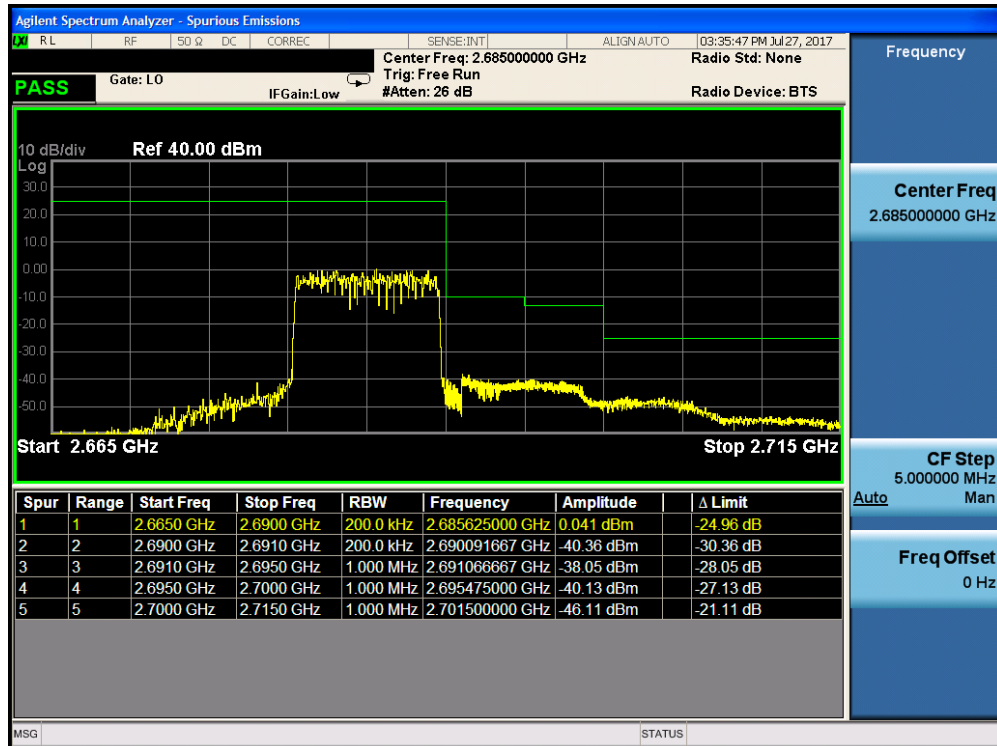


Plot 7-194. Upper ACP Plot (Band 41 – 5.0MHz QPSK – RB Size 25)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 117 of 166

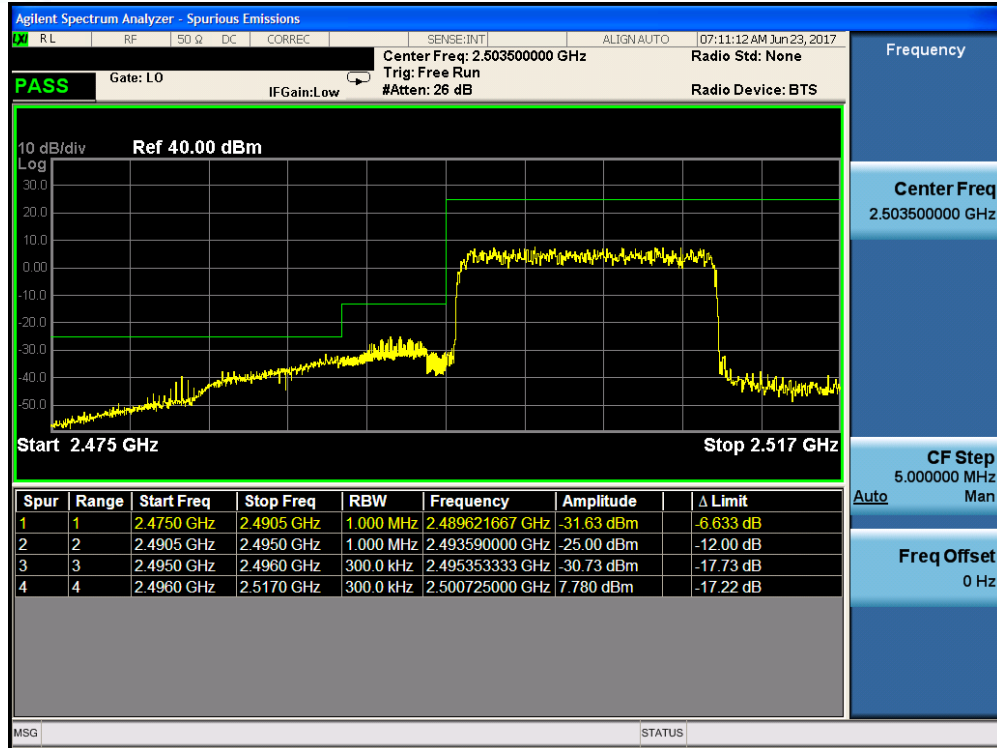


Plot 7-195. Lower ACP Plot (Band 41 – 10.0MHz QPSK – RB Size 50)

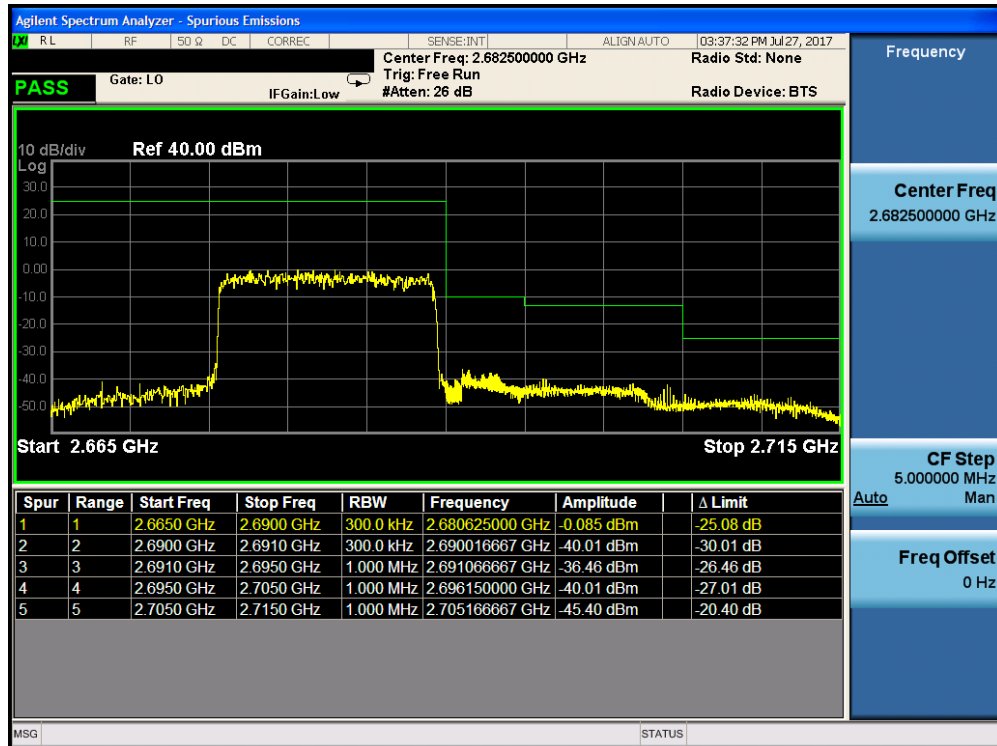


Plot 7-196. Upper ACP Plot (Band 41 – 10.0MHz QPSK – RB Size 50)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 118 of 166

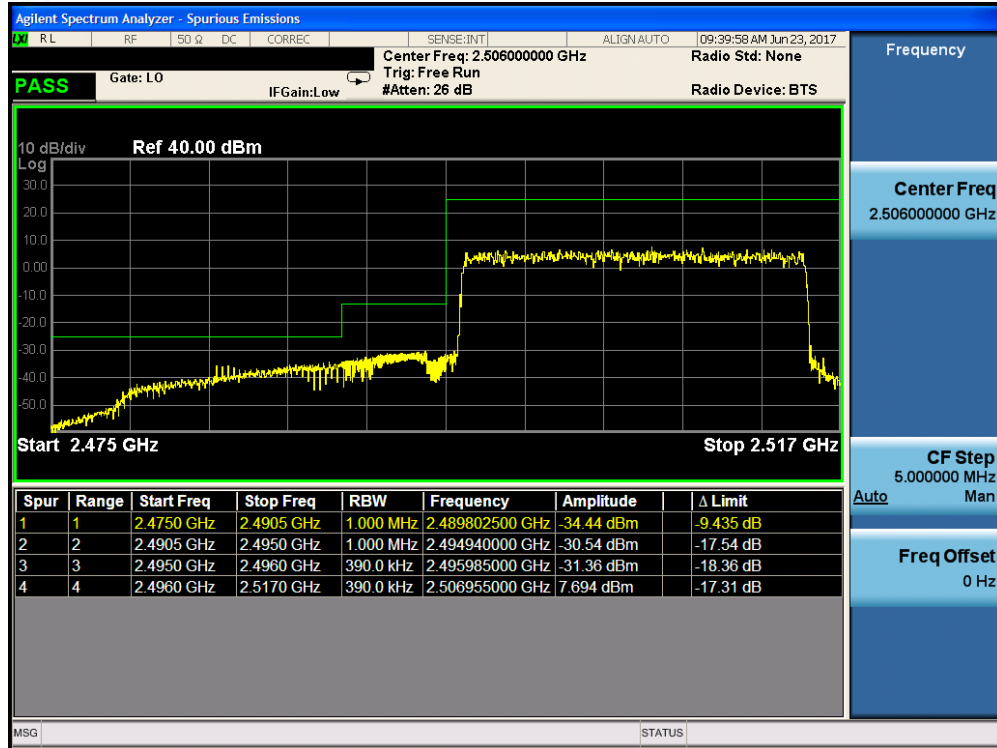


Plot 7-197. Lower ACP Plot (Band 41 – 15.0MHz QPSK – RB Size 75)

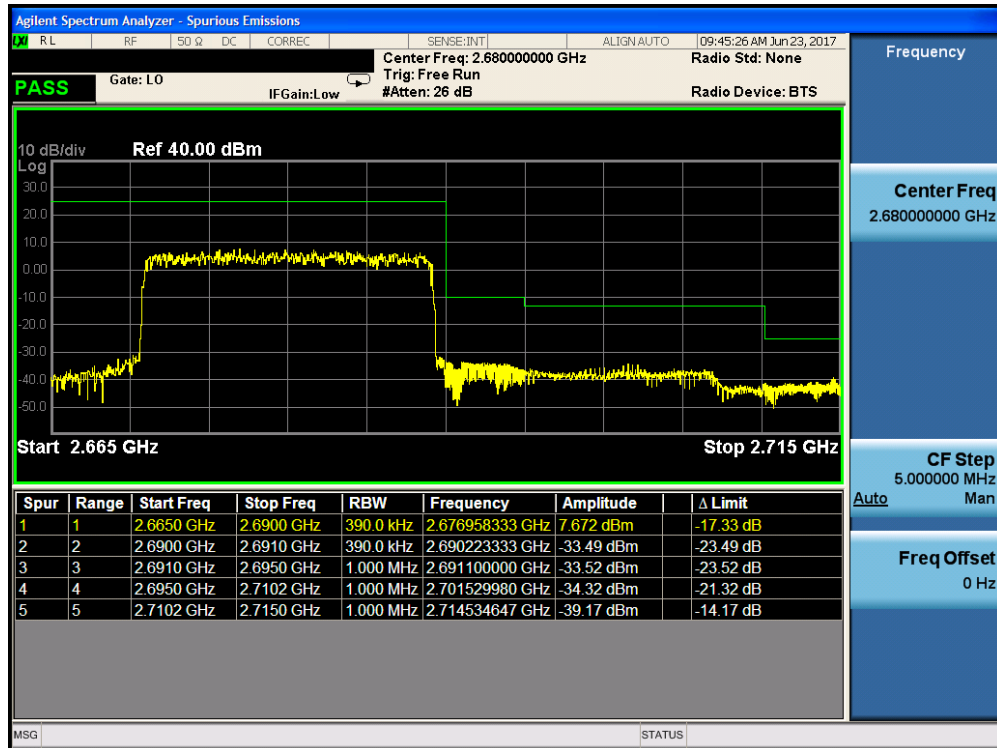


Plot 7-198. Upper ACP Plot (Band 41 – 15.0MHz QPSK – RB Size 75)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 119 of 166



Plot 7-199. Lower ACP Plot (Band 41 – 20.0MHz QPSK – RB Size 100)



Plot 7-200. Upper ACP Plot (Band 41 – 20.0MHz QPSK – RB Size 100)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 120 of 166

7.5 Peak-Average Ratio

§24.232(d)

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 v02r02 – 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.

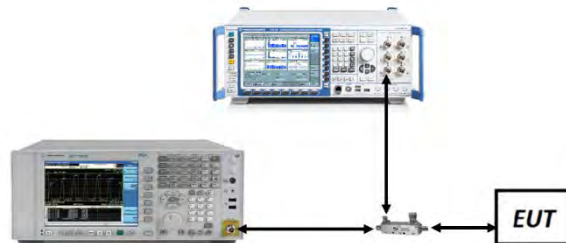
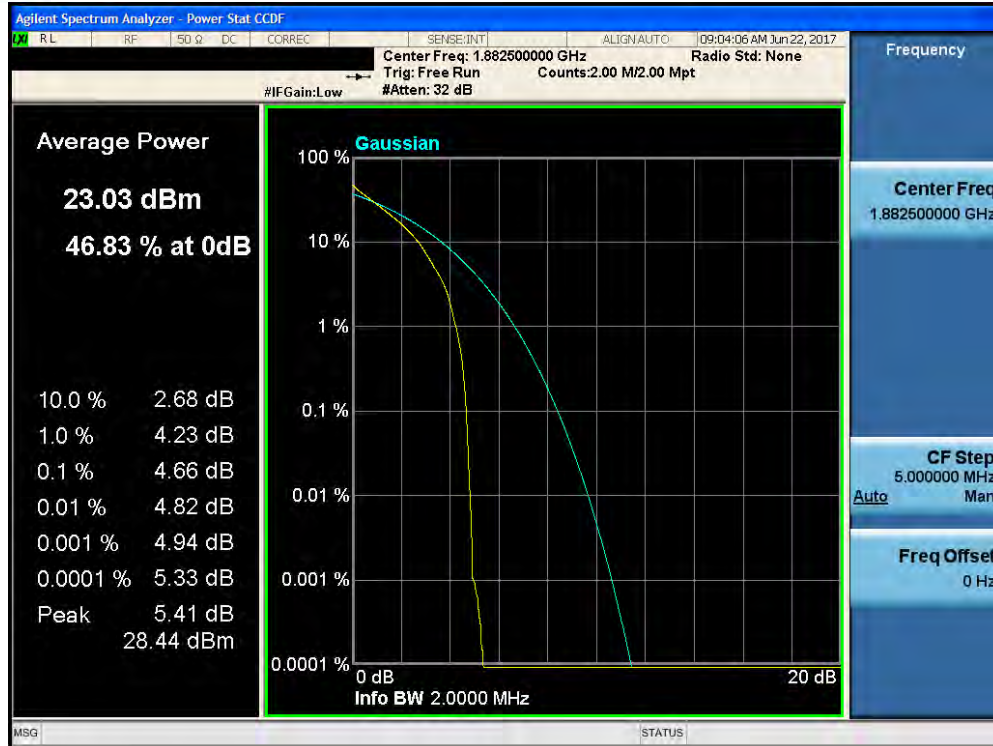


Figure 7-4. Test Instrument & Measurement Setup

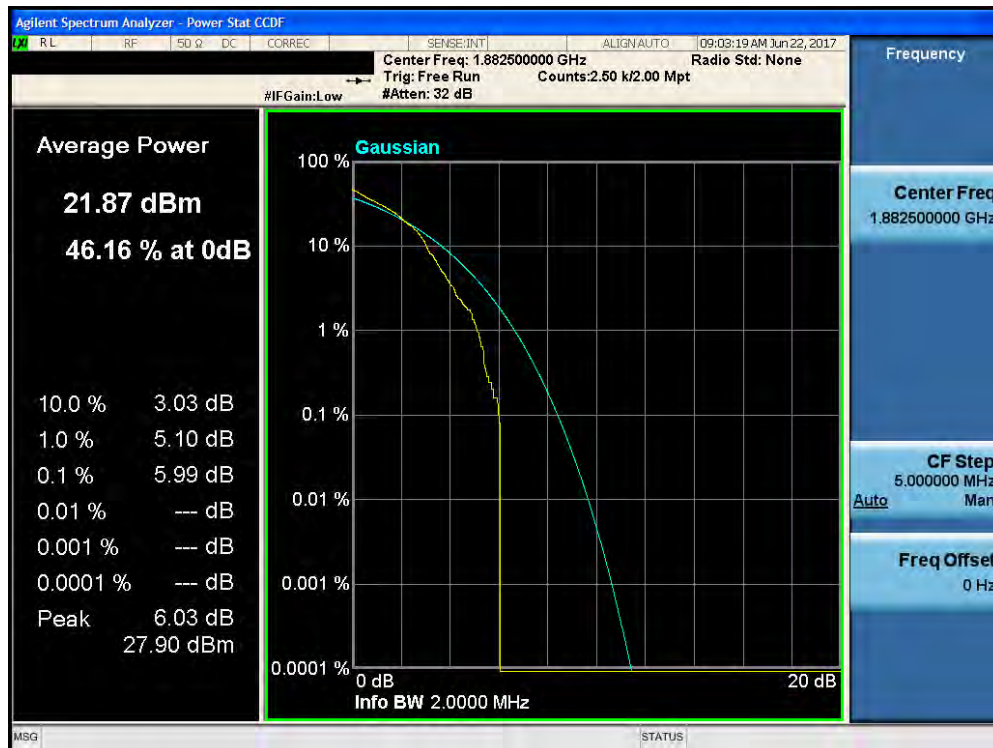
Test Notes

None.

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 121 of 166

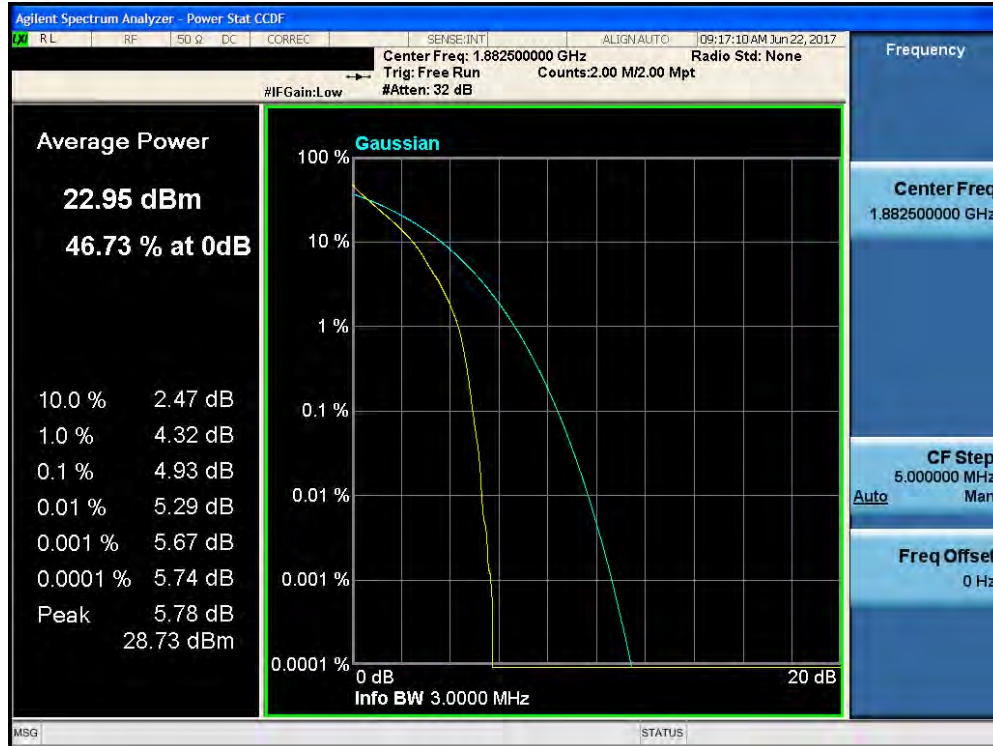


Plot 7-201. PAR Plot (Band 2/25 – 1.4MHz QPSK – RB Size 6)



Plot 7-202. PAR Plot (Band 2/25 – 1.4MHz 16-QAM – RB Size 6)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 122 of 166

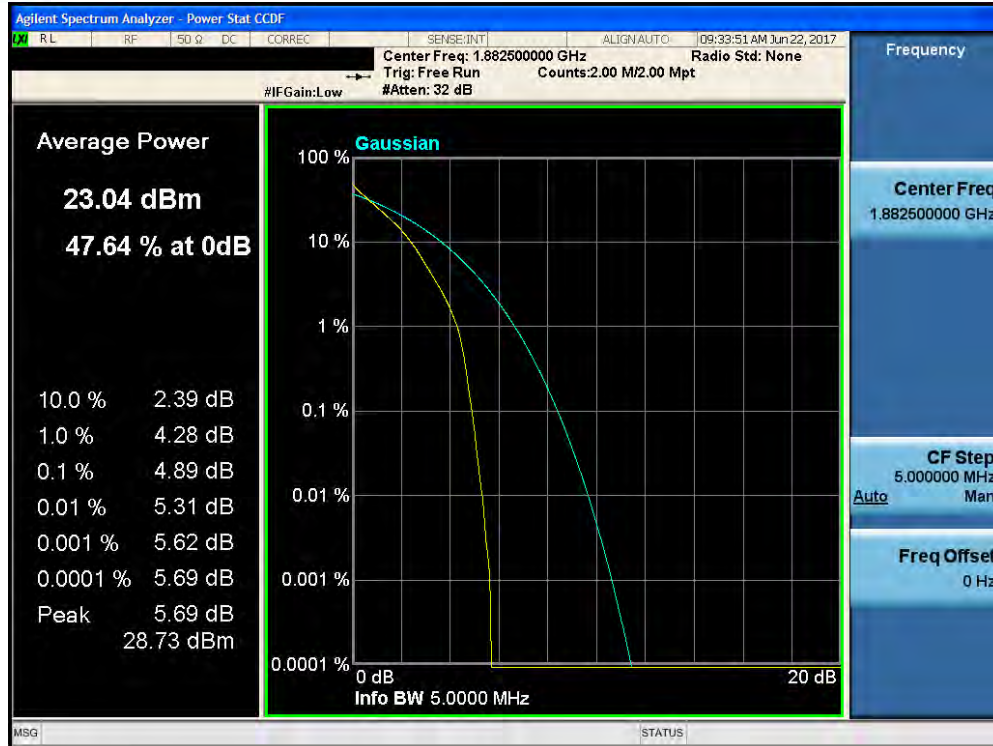


Plot 7-203. PAR Plot (Band 2/25 – 3.0MHz QPSK – RB Size 15)

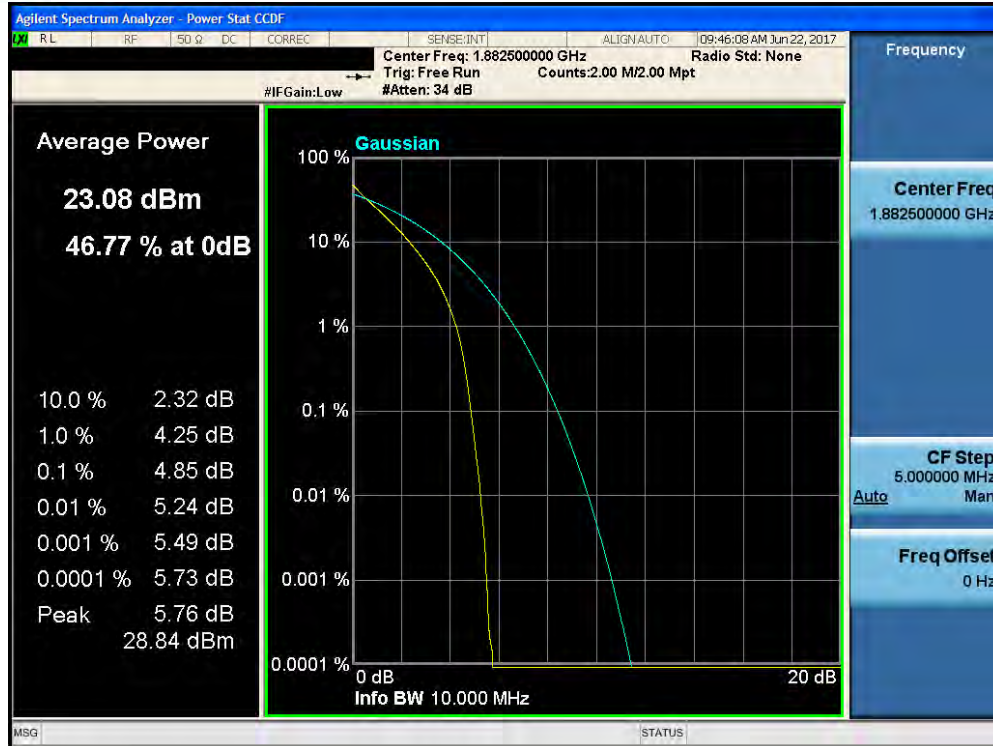


Plot 7-204. PAR Plot (Band 2/25 – 3.0MHz 16-QAM – RB Size 15)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 123 of 166



FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 124 of 166

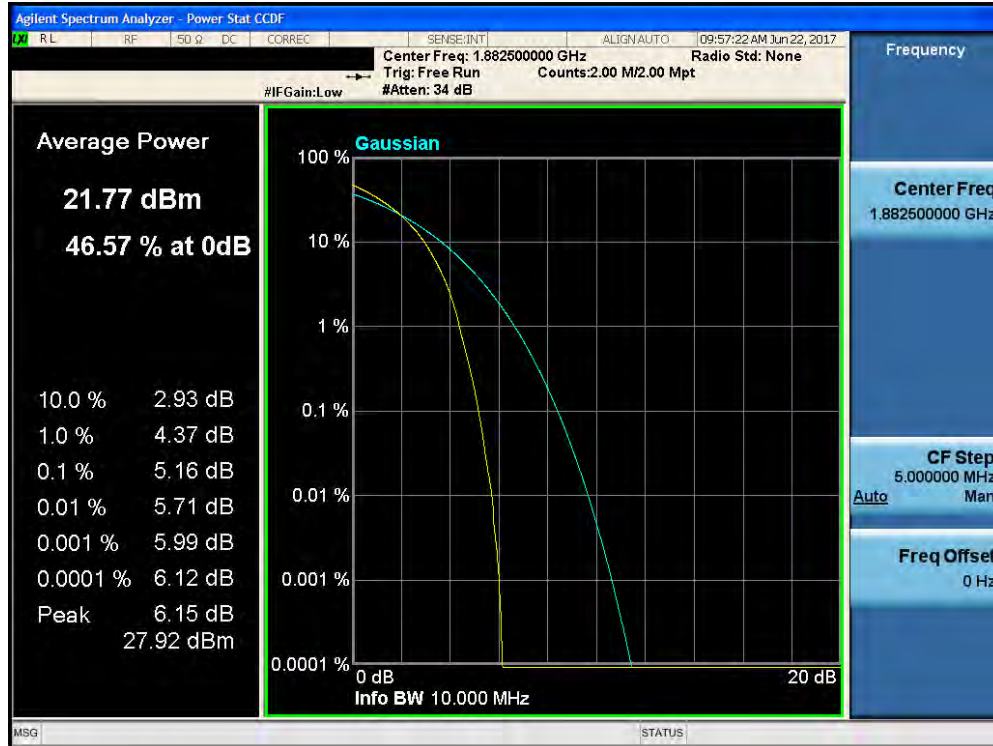


Plot 7-207. PAR Plot (Band 2/25 – 10.0MHz QPSK – RB Size 50)



Plot 7-208. PAR Plot (Band 2/25 – 10.0MHz 16-QAM – RB Size 50)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 125 of 166

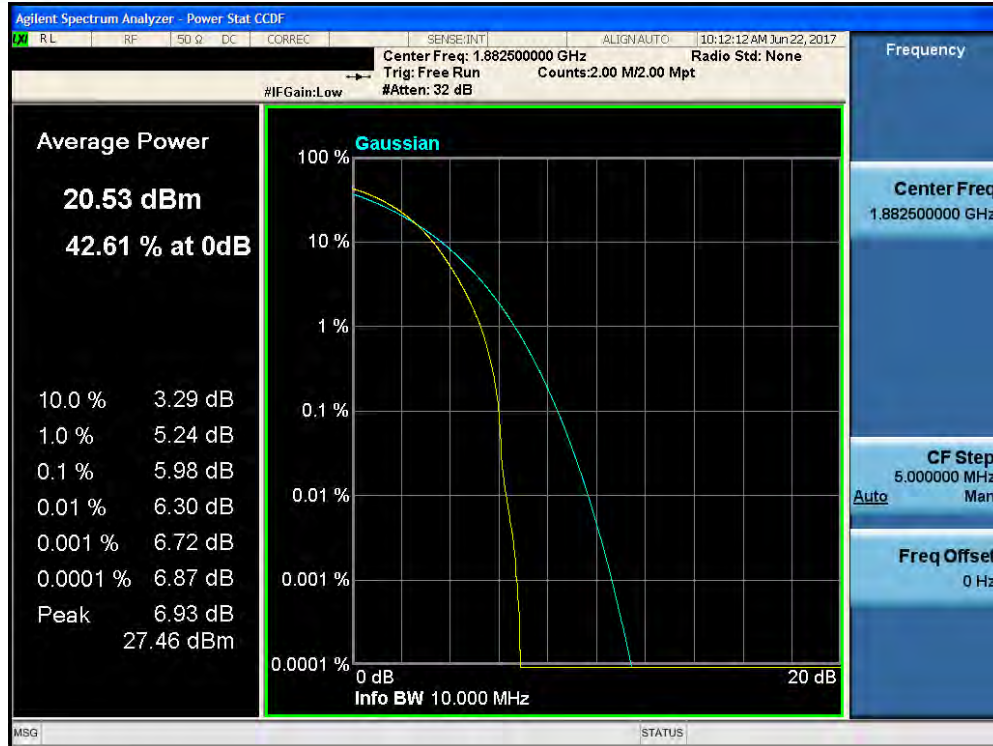


Plot 7-209. PAR Plot (Band 2/25 – 15.0MHz QPSK – RB Size 75)

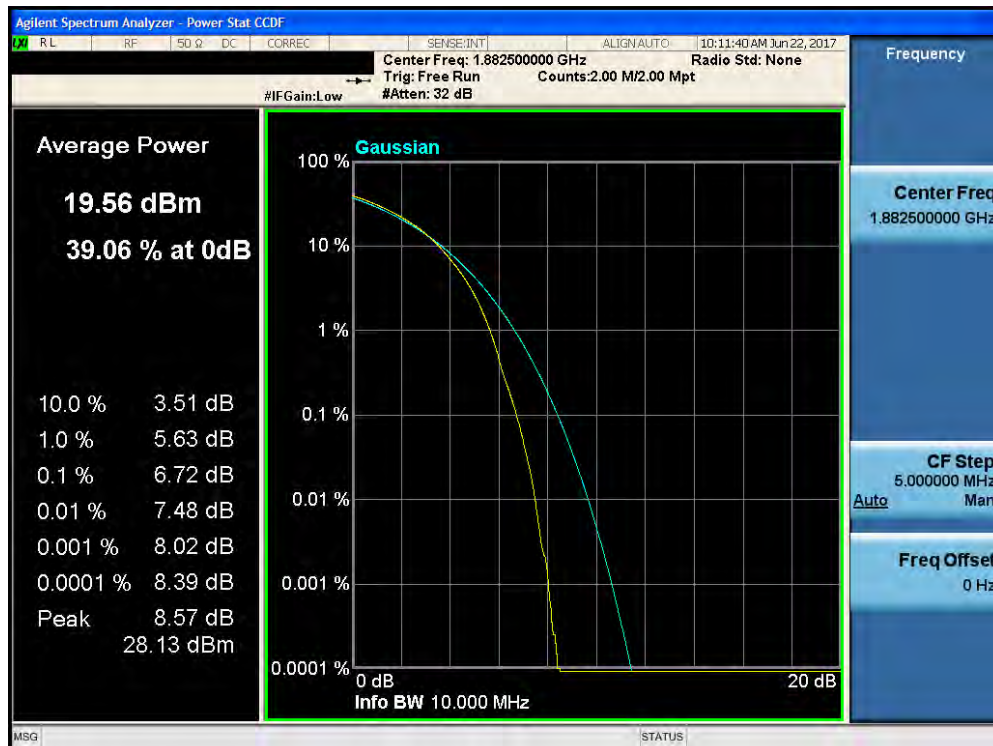


Plot 7-210. PAR Plot (Band 2/25 – 15.0MHz 16-QAM – RB Size 75)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 126 of 166



Plot 7-211. PAR Plot (Band 2/25 – 20.0MHz QPSK – RB Size 100)



Plot 7-212. PAR Plot (Band 2/25 – 20.0MHz 16-QAM – RB Size 100)

FCC ID: BCG-A1861	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 127 of 166

7.6 ERP/EIRP

§22.913(a.2) §24.232(c.2) §27.50(h.2) §27.50(b.10) §27.50(c.10) §27.50(d.4)

Test Overview

Effective Radiated Power (ERP) is specified when the operating frequency is less than or equal to 1 GHz and Equivalent Isotropic Radiated Power (EIRP) is specified when the operating frequency is greater than 1 GHz. Both are determined by adding the transmit antenna gain to the conducted RF output power with the primary difference between the two being that when determining the ERP, the transmit antenna gain is referenced to a dipole antenna (i.e., dBd) whereas when determining the EIRP, the transmit antenna gain is referenced to an isotropic antenna (dBi)

Test Procedures Used

KDB 971168 D01 v02r02 – Section 5.6

Test Settings

The relevant equation for determining the ERP or EIRP from the conducted RF output power measured is:

$$\text{ERP/EIRP} = \text{PMeas} - \text{LC} + \text{GT}$$

where:

ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);

PMeas = measured transmitter output power or PSD, in dBm or dBW;

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

Test Setup

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



Figure 7-5. ERP/EIRP Measurement Setup

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 128 of 166

Test Notes

- 1) The worst case emissions are reported with the EUT modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) The Level (dBm) readings in the table were taken with a correction table loaded into the base station simulator. The correction table was used to account for the signal attenuation in the connecting cable between the transmitter and antenna.
- 4) The Ant. Gains (GT) are listed in dBi.
- 5) The final ERP/EIRP values in dBm values were calculated in column 5.
- 6) The cable loss factor is already included in the measurement system and the conducted power in the tables already includes this factor.

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 129 of 166

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Conducted Power [dBm]	Ant. Gain [dBd]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]
699.70	1.4	QPSK	23.86	-25.25	-1.39	34.77	-36.16
707.50	1.4	QPSK	23.88	-25.25	-1.37	34.77	-36.14
715.30	1.4	QPSK	23.72	-25.25	-1.53	34.77	-36.30
699.70	1.4	16-QAM	23.00	-25.25	-2.25	34.77	-37.02
700.50	3	QPSK	23.90	-25.25	-1.35	34.77	-36.12
707.50	3	QPSK	23.80	-25.25	-1.45	34.77	-36.22
714.50	3	QPSK	23.78	-25.25	-1.47	34.77	-36.24
700.50	3	16-QAM	23.00	-25.25	-2.25	34.77	-37.02
701.50	5	QPSK	23.83	-25.25	-1.42	34.77	-36.19
707.50	5	QPSK	23.69	-25.25	-1.56	34.77	-36.33
713.50	5	QPSK	23.83	-25.25	-1.42	34.77	-36.19
701.50	5	16-QAM	23.00	-25.25	-2.25	34.77	-37.02
704.00	10	QPSK	23.58	-25.25	-1.67	34.77	-36.44
707.50	10	QPSK	23.63	-25.25	-1.62	34.77	-36.39
711.00	10	QPSK	23.30	-25.25	-1.95	34.77	-36.72
707.50	10	16-QAM	23.00	-25.25	-2.25	34.77	-37.02

Table 7-2. ERP Data (Band 12)

FCC ID: BCG-A1861		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 130 of 166

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Conducted Power [dBm]	Ant. Gain [dBd]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]
706.50	5	QPSK	23.63	-25.25	-1.62	34.77	-36.39
710.00	5	QPSK	23.69	-25.25	-1.56	34.77	-36.33
713.50	5	QPSK	23.54	-25.25	-1.71	34.77	-36.48
710.00	5	16-QAM	22.87	-25.25	-2.38	34.77	-37.15
709.00	10	QPSK	23.52	-25.25	-1.73	34.77	-36.50
710.00	10	QPSK	23.67	-25.25	-1.58	34.77	-36.35
711.00	10	QPSK	23.62	-25.25	-1.63	34.77	-36.40
710.00	10	16-QAM	22.94	-25.25	-2.31	34.77	-37.08

Table 7-3. ERP Data (Band 17)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Conducted Power [dBm]	Ant. Gain [dBd]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]
779.50	5	QPSK	23.64	-22.92	0.72	34.77	-34.05
782.00	5	QPSK	23.63	-22.92	0.71	34.77	-34.06
784.50	5	QPSK	23.59	-22.92	0.67	34.77	-34.10
784.50	5	16-QAM	23.25	-22.92	0.33	34.77	-34.44
782.00	10	QPSK	23.52	-22.92	0.60	34.77	-34.17
782.00	10	16-QAM	22.80	-22.92	-0.12	34.77	-34.89

Table 7-4. ERP Data (Band 13)

FCC ID: BCG-A1861		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 131 of 166

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Conducted Power [dBm]	Ant. Gain [dBd]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	23.88	-22.48	1.40	38.45	-37.05
836.50	1.4	QPSK	23.65	-22.48	1.17	38.45	-37.28
848.30	1.4	QPSK	23.60	-22.48	1.12	38.45	-37.33
836.50	1.4	16-QAM	22.97	-22.48	0.49	38.45	-37.96
825.50	3	QPSK	23.80	-22.48	1.32	38.45	-37.13
836.50	3	QPSK	23.71	-22.48	1.23	38.45	-37.22
847.50	3	QPSK	23.73	-22.48	1.25	38.45	-37.20
836.50	3	16-QAM	23.00	-22.48	0.52	38.45	-37.93
826.50	5	QPSK	23.71	-22.48	1.23	38.45	-37.22
836.50	5	QPSK	23.62	-22.48	1.14	38.45	-37.31
846.50	5	QPSK	23.59	-22.48	1.11	38.45	-37.34
826.50	5	16-QAM	23.00	-22.48	0.52	38.45	-37.93
829.00	10	QPSK	23.17	-22.48	0.69	38.45	-37.76
836.50	10	QPSK	23.65	-22.48	1.17	38.45	-37.28
844.00	10	QPSK	23.79	-22.48	1.31	38.45	-37.14
829.00	10	16-QAM	23.17	-22.48	0.69	38.45	-37.76

Table 7-5. ERP Data (Band 5)

FCC ID: BCG-A1861		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 132 of 166

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Conducted Power [dBm]	Ant. Gain [dBd]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	23.57	-22.48	1.09	38.45	-37.36
836.50	1.4	QPSK	23.61	-22.48	1.13	38.45	-37.32
848.30	1.4	QPSK	23.61	-22.48	1.13	38.45	-37.32
848.30	1.4	16-QAM	22.85	-22.48	0.37	38.45	-38.08
825.50	3	QPSK	23.82	-22.48	1.34	38.45	-37.11
836.50	3	QPSK	23.53	-22.48	1.05	38.45	-37.40
847.50	3	QPSK	23.67	-22.48	1.19	38.45	-37.26
836.50	3	16-QAM	23.00	-22.48	0.52	38.45	-37.93
826.50	5	QPSK	23.59	-22.48	1.11	38.45	-37.34
836.50	5	QPSK	23.40	-22.48	0.92	38.45	-37.53
846.50	5	QPSK	23.53	-22.48	1.05	38.45	-37.40
826.50	5	16-QAM	22.88	-22.48	0.40	38.45	-38.05
829.00	10	QPSK	23.59	-22.48	1.11	38.45	-37.34
836.50	10	QPSK	23.48	-22.48	1.00	38.45	-37.45
844.00	10	QPSK	23.48	-22.48	1.00	38.45	-37.45
836.50	10	16-QAM	23.00	-22.48	0.52	38.45	-37.93

Table 7-6. ERP Data (Band 26)

FCC ID: BCG-A1861		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 133 of 166

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
1710.70	1.4	QPSK	23.77	-13.37	10.40	30.00	-19.60
1732.50	1.4	QPSK	23.97	-13.37	10.60	30.00	-19.40
1754.30	1.4	QPSK	23.67	-13.37	10.30	30.00	-19.70
1754.30	1.4	16-QAM	23.00	-13.37	9.63	30.00	-20.37
1711.50	3	QPSK	23.87	-13.37	10.50	30.00	-19.50
1732.50	3	QPSK	23.91	-13.37	10.54	30.00	-19.46
1753.50	3	QPSK	23.75	-13.37	10.38	30.00	-19.62
1753.50	3	16-QAM	23.00	-13.37	9.63	30.00	-20.37
1712.50	5	QPSK	23.84	-13.37	10.47	30.00	-19.53
1732.50	5	QPSK	23.81	-13.37	10.44	30.00	-19.56
1752.50	5	QPSK	23.62	-13.37	10.25	30.00	-19.75
1732.50	5	16-QAM	22.97	-13.37	9.60	30.00	-20.40
1715.00	10	QPSK	23.92	-13.37	10.55	30.00	-19.45
1732.50	10	QPSK	24.00	-13.37	10.63	30.00	-19.37
1750.00	10	QPSK	23.83	-13.37	10.46	30.00	-19.54
1732.50	10	16-QAM	23.00	-13.37	9.63	30.00	-20.37
1717.50	15	QPSK	23.98	-13.37	10.61	30.00	-19.39
1732.50	15	QPSK	24.00	-13.37	10.63	30.00	-19.37
1747.50	15	QPSK	23.93	-13.37	10.56	30.00	-19.44
1732.50	15	16-QAM	23.00	-13.37	9.63	30.00	-20.37
1720.00	20	QPSK	24.00	-13.37	10.63	30.00	-19.37
1732.50	20	QPSK	24.00	-13.37	10.63	30.00	-19.37
1745.00	20	QPSK	24.00	-13.37	10.63	30.00	-19.37
1745.00	20	16-QAM	23.16	-13.37	9.79	30.00	-20.21

Table 7-7. EIRP Data (Band 4)

FCC ID: BCG-A1861		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 134 of 166

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	23.55	-12.47	11.08	33.01	-21.93
1880.00	1.4	QPSK	23.77	-12.47	11.30	33.01	-21.71
1909.30	1.4	QPSK	23.85	-12.47	11.38	33.01	-21.63
1909.30	1.4	16-QAM	23.00	-12.47	10.53	33.01	-22.48
1851.50	3	QPSK	23.73	-12.47	11.26	33.01	-21.75
1880.00	3	QPSK	23.78	-12.47	11.31	33.01	-21.70
1908.50	3	QPSK	23.96	-12.47	11.49	33.01	-21.52
1908.50	3	16-QAM	23.00	-12.47	10.53	33.01	-22.48
1852.50	5	QPSK	23.67	-12.47	11.20	33.01	-21.81
1880.00	5	QPSK	23.63	-12.47	11.16	33.01	-21.85
1907.50	5	QPSK	23.95	-12.47	11.48	33.01	-21.53
1907.50	5	16-QAM	23.00	-12.47	10.53	33.01	-22.48
1855.00	10	QPSK	23.76	-12.47	11.29	33.01	-21.72
1880.00	10	QPSK	23.82	-12.47	11.35	33.01	-21.66
1905.00	10	QPSK	23.91	-12.47	11.44	33.01	-21.57
1905.00	10	16-QAM	22.96	-12.47	10.49	33.01	-22.52
1857.50	15	QPSK	23.75	-12.47	11.28	33.01	-21.73
1880.00	15	QPSK	23.88	-12.47	11.41	33.01	-21.60
1902.50	15	QPSK	23.96	-12.47	11.49	33.01	-21.52
1902.50	15	16-QAM	23.00	-12.47	10.53	33.01	-22.48
1860.00	20	QPSK	23.85	-12.47	11.38	33.01	-21.63
1880.00	20	QPSK	23.95	-12.47	11.48	33.01	-21.53
1900.00	20	QPSK	24.00	-12.47	11.53	33.01	-21.48
1900.00	20	16-QAM	23.00	-12.47	10.53	33.01	-22.48

Table 7-8. EIRP Data (Band 2)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch		Page 135 of 166

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	23.61	-12.47	11.14	33.01	-21.87
1882.50	1.4	QPSK	23.67	-12.47	11.20	33.01	-21.81
1914.30	1.4	QPSK	23.72	-12.47	11.25	33.01	-21.76
1850.70	1.4	16-QAM	22.75	-12.47	10.28	33.01	-22.73
1851.50	3	QPSK	23.84	-12.47	11.37	33.01	-21.64
1882.50	3	QPSK	23.70	-12.47	11.23	33.01	-21.78
1913.50	3	QPSK	23.75	-12.47	11.28	33.01	-21.73
1882.50	3	16-QAM	23.26	-12.47	10.79	33.01	-22.22
1852.50	5	QPSK	23.64	-12.47	11.17	33.01	-21.84
1882.50	5	QPSK	23.63	-12.47	11.16	33.01	-21.85
1912.50	5	QPSK	23.75	-12.47	11.28	33.01	-21.73
1912.50	5	16-QAM	23.00	-12.47	10.53	33.01	-22.48
1855.00	10	QPSK	23.74	-12.47	11.27	33.01	-21.74
1882.50	10	QPSK	23.80	-12.47	11.33	33.01	-21.68
1910.00	10	QPSK	23.72	-12.47	11.25	33.01	-21.76
1910.00	10	16-QAM	23.00	-12.47	10.53	33.01	-22.48
1857.50	15	QPSK	23.84	-12.47	11.37	33.01	-21.64
1882.50	15	QPSK	23.89	-12.47	11.42	33.01	-21.59
1907.50	15	QPSK	23.98	-12.47	11.51	33.01	-21.50
1907.50	15	16-QAM	23.00	-12.47	10.53	33.01	-22.48
1860.00	20	QPSK	23.98	-12.47	11.51	33.01	-21.50
1882.50	20	QPSK	23.99	-12.47	11.52	33.01	-21.49
1905.00	20	QPSK	23.94	-12.47	11.47	33.01	-21.54
1860.00	20	16-QAM	23.00	-12.47	10.53	33.01	-22.48

Table 7-9. EIRP Data (Band 25)

FCC ID: BCG-A1861		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 136 of 166

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
2498.50	5	QPSK	23.89	-9.56	14.33	33.01	-18.68
2593.00	5	QPSK	23.77	-9.56	14.21	33.01	-18.80
2687.50	5	QPSK	23.85	-9.56	14.29	33.01	-18.72
2593.00	5	16-QAM	22.81	-9.56	13.25	33.01	-19.76
2501.00	10	QPSK	23.92	-9.56	14.36	33.01	-18.65
2593.00	10	QPSK	23.74	-9.56	14.18	33.01	-18.83
2685.00	10	QPSK	23.77	-9.56	14.21	33.01	-18.80
2593.00	10	16-QAM	22.81	-9.56	13.25	33.01	-19.76
2503.50	15	QPSK	24.00	-9.56	14.44	33.01	-18.57
2593.00	15	QPSK	23.80	-9.56	14.24	33.01	-18.77
2682.50	15	QPSK	23.89	-9.56	14.33	33.01	-18.68
2593.00	15	16-QAM	22.91	-9.56	13.35	33.01	-19.66
2506.00	20	QPSK	24.00	-9.56	14.44	33.01	-18.57
2593.00	20	QPSK	23.99	-9.56	14.43	33.01	-18.58
2680.00	20	QPSK	23.99	-9.56	14.43	33.01	-18.58
2506.00	20	16-QAM	23.00	-9.56	13.44	33.01	-19.57

Table 7-10. EIRP Data (Band 41)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 137 of 166

7.7 Radiated Spurious Emissions Measurements – Above 1GHz

§2.1053 §22.917(a) §24.238(a) §27.53(c) §27.53(f) §27.53(g) §27.53(h) §27.53(m)

Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-D-2010 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas.

Test Procedures Used

KDB 971168 D01 v02r02 – Section 5.8

ANSI/TIA-603-D-2010 – Section 2.2.12

Test Settings

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

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 138 of 166

Test Setup

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

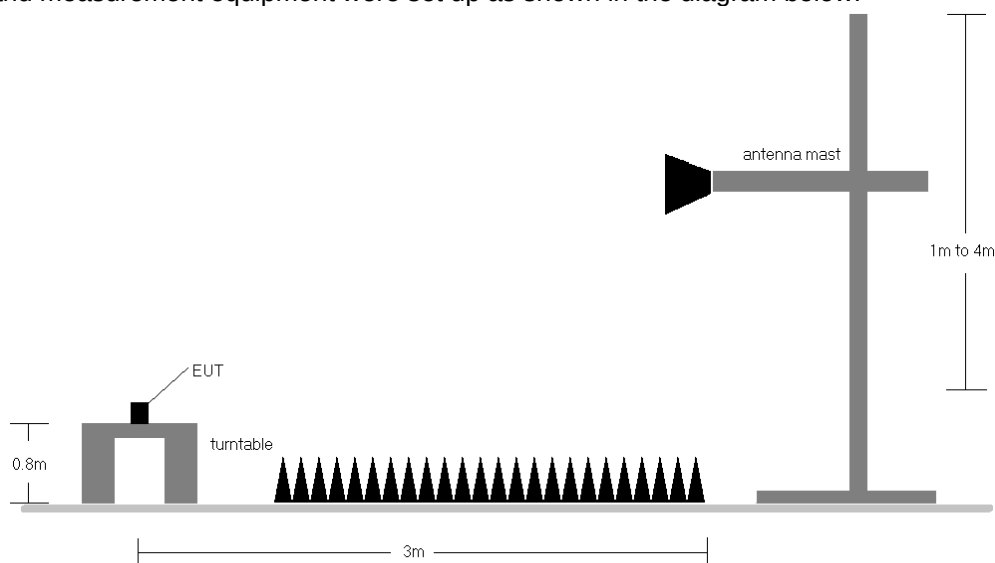


Figure 7-6. Test Instrument & Measurement Setup

Test Notes

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 4) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 5) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 139 of 166

OPERATING FREQUENCY: 701.50 MHz
 CHANNEL: 23035
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
1403.00	H	183.00	9.00	-80.96	6.79	-74.17	-61.2
2104.50	H	102.00	154.00	-72.73	6.39	-66.34	-53.3
2806.00	H	-	-	-76.55	7.98	-68.57	-55.6

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

OPERATING FREQUENCY: 707.50 MHz
 CHANNEL: 23095
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
1415.00	H	100	44	-79.97	6.79	-73.18	-60.2
2122.50	H	167	52	-70.56	6.31	-64.25	-51.2
2830.00	H	-	-	-76.28	8.01	-68.27	-55.3
3537.50	H	100	169	-77.53	9.65	-67.89	-54.9
4245.00	H	-	-	-78.47	10.73	-67.74	-54.7

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

FCC ID: BCG-A1861		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch		Page 140 of 166

OPERATING FREQUENCY: 713.50 MHz
 CHANNEL: 23155
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
1427.00	H	100	0	-77.83	6.86	-70.97	-58.0
2140.50	H	159	162	-69.18	6.27	-62.91	-49.9
2854.00	H	-	-	-76.02	8.02	-68.00	-55.0

Table 7-13. Radiated Spurious Data (Band 12/17 – High Channel)

OPERATING FREQUENCY: 779.50 MHz
 CHANNEL: 23205
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
2338.50	H	169	70	-75.22	6.77	-68.45	-55.5
3118.00	H	100	159	-78.83	8.85	-69.98	-57.0
3897.50	H	100	178	-79.07	10.19	-68.88	-55.9
4677.00	H	-	-	-79.09	11.07	-68.02	-55.0

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

FCC ID: BCG-A1861		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch		Page 141 of 166

OPERATING FREQUENCY: 782.00 MHz
 CHANNEL: 23230
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
2346.00	H	100	0	-73.01	6.72	-66.30	-53.3
3128.00	H	-	-	-76.97	8.88	-68.10	-55.1
3910.00	H	100	275	-76.76	10.19	-66.57	-53.6
4692.00	H	-	-	-77.32	11.10	-66.22	-53.2

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

OPERATING FREQUENCY: 784.50 MHz
 CHANNEL: 23255
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
2353.50	H	100	0	-72.19	6.70	-65.49	-52.5
3138.00	H	-	-	-76.82	8.91	-67.91	-54.9
3922.50	H	100	27	-76.31	10.20	-66.11	-53.1
4707.00	H	-	-	-77.42	11.12	-66.30	-53.3

Table 7-16. Radiated Spurious Data (Band 13 – High Channel)

FCC ID: BCG-A1861		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch		Page 142 of 166

MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.00 MHz
 DISTANCE: 3 meters
 NARROWBAND EMISSION LIMIT: -50 dBm
 WIDEBAND EMISSION LIMIT: -40 dBm/MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1559.00	H	-	-	-81.93	9.19	-72.74	-32.7
1564.00	H	-	-	-81.90	9.21	-72.69	-32.7
1569.00	H	-	-	-81.98	9.24	-72.75	-32.7

Table 7-17. Radiated Spurious Data (Band 13 – 1559-1610MHz Band)

OPERATING FREQUENCY: 825.50 MHz
 CHANNEL: 26805
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
1651.00	H	202	90	-73.29	7.01	-66.28	-53.3
2476.50	H	201	89	-69.96	6.95	-63.01	-50.0
3302.00	H	-	-	-80.75	9.15	-71.61	-58.6

Table 7-18. Radiated Spurious Data (Band 5/26 – Low Channel)

FCC ID: BCG-A1861		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch		Page 143 of 166

OPERATING FREQUENCY: 836.50 MHz
 CHANNEL: 26915
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
1673.00	H	115	40	-81.04	6.85	-74.20	-61.2
2509.50	H	220	39	-72.13	7.07	-65.05	-52.1
3346.00	H	-	-	-81.03	9.26	-71.77	-58.8

Table 7-19. Radiated Spurious Data (Band 5/26 – Mid Channel)

OPERATING FREQUENCY: 847.50 MHz
 CHANNEL: 27025
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
1695.00	H	135	0	-72.55	6.85	-65.70	-52.7
2542.50	H	139	355	-73.32	7.25	-66.07	-53.1
3390.00	H	-	-	-81.21	9.37	-71.83	-58.8

Table 7-20. Radiated Spurious Data (Band 5/26 – High Channel)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch		Page 144 of 166

OPERATING FREQUENCY: 1712.50 MHz
 CHANNEL: 19975
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
3425.00	H	-	-	-76.31	11.57	-64.74	-51.7
5137.50	H	-	-	-77.30	13.74	-63.56	-50.6

Table 7-21. Radiated Spurious Data (Band 4 – Low Channel)

OPERATING FREQUENCY: 1732.50 MHz
 CHANNEL: 20175
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
3465.00	H	-	-	-76.67	11.62	-65.06	-52.1
5197.50	H	-	-	-77.23	13.84	-63.39	-50.4

Table 7-22. Radiated Spurious Data (Band 4 – Mid Channel)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch		Page 145 of 166

OPERATING FREQUENCY: 1752.50 MHz
 CHANNEL: 20375
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
3505.00	H	-	-	-76.71	11.71	-65.00	-52.0
5257.50	H	-	-	-77.58	13.93	-63.66	-50.7

Table 7-23. Radiated Spurious Data (Band 4 – High Channel)

OPERATING FREQUENCY: 1852.50 MHz
 CHANNEL: 26065
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
3705.00	H	-	-	-78.66	12.00	-66.66	-53.7

Table 7-24. Radiated Spurious Data (Band 2/25 – Low Channel)

OPERATING FREQUENCY: 1882.50 MHz
 CHANNEL: 26365
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
3765.00	H	-	-	-78.05	12.17	-65.88	-52.9

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

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch		Page 146 of 166

OPERATING FREQUENCY: 1912.50 MHz
 CHANNEL: 26665
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
3825.00	H	-	-	-79.81	12.33	-67.49	-54.5

Table 7-26. Radiated Spurious Data (Band 2/25 – High Channel)

OPERATING FREQUENCY: 2498.50 MHz
 CHANNEL: 39675
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
4997.00	H	100.00	328.00	-76.13	13.50	-62.63	-37.6
7495.50	H	-	-	-73.07	14.32	-58.76	-33.8

Table 7-27. Radiated Spurious Data (Band 41 – Low Channel)

OPERATING FREQUENCY: 2593.00 MHz
 CHANNEL: 40620
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
5186.00	H	-	-	-75.81	13.82	-61.99	-37.0

Table 7-28. Radiated Spurious Data (Band 41 – Mid Channel)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch		Page 147 of 166

OPERATING FREQUENCY: 2687.50 MHz
 CHANNEL: 41565
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
5375.00	H	-	-	-77.46	13.98	-63.48	-38.5

Table 7-29. Radiated Spurious Data (Band 41 – High Channel)

FCC ID: BCG-A1861		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch		Page 148 of 166

7.8 Radiated Spurious Emissions Measurements – Below 1GHz

\$2.1053 \$22.917(a) \$24.238(a) \$27.53(c) \$27.53(f) \$27.53(g) \$27.53(h) \$27.53(m)

Test Overview

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

Test Procedures Used

KDB 971168 D01 v02r02 – Section 5.8

ANSI/TIA-603-E-2016 – Section 2.2.12

Test Settings

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

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 149 of 166

Test Setup

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

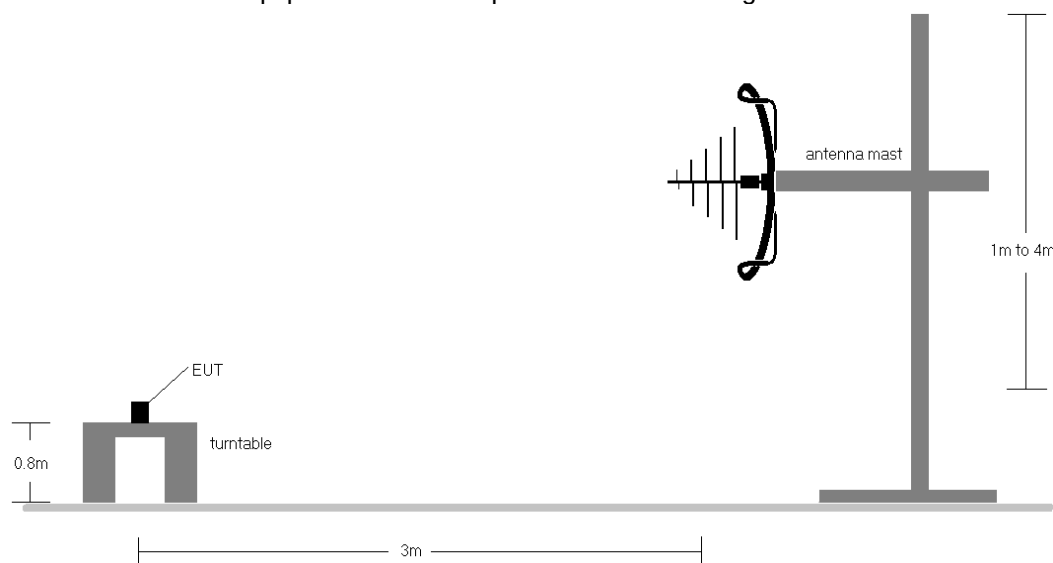
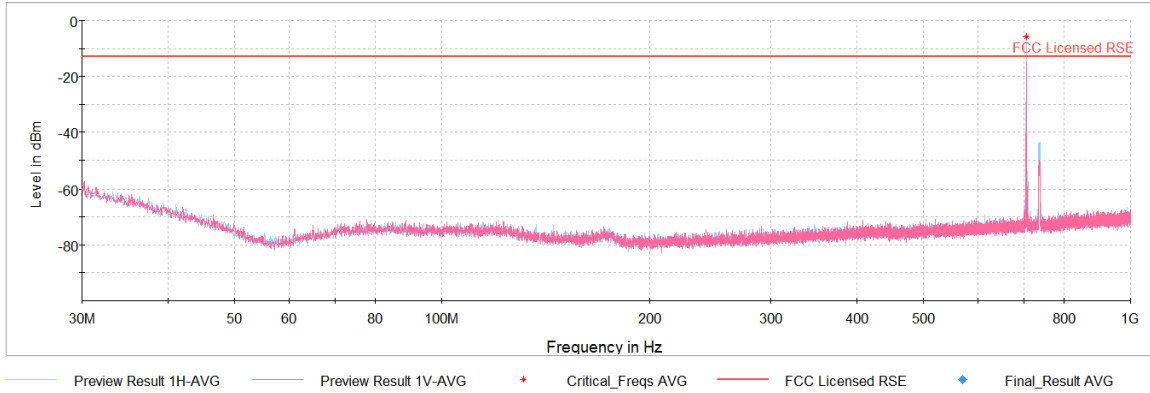


Figure 7-7. Test Instrument & Measurement Setup

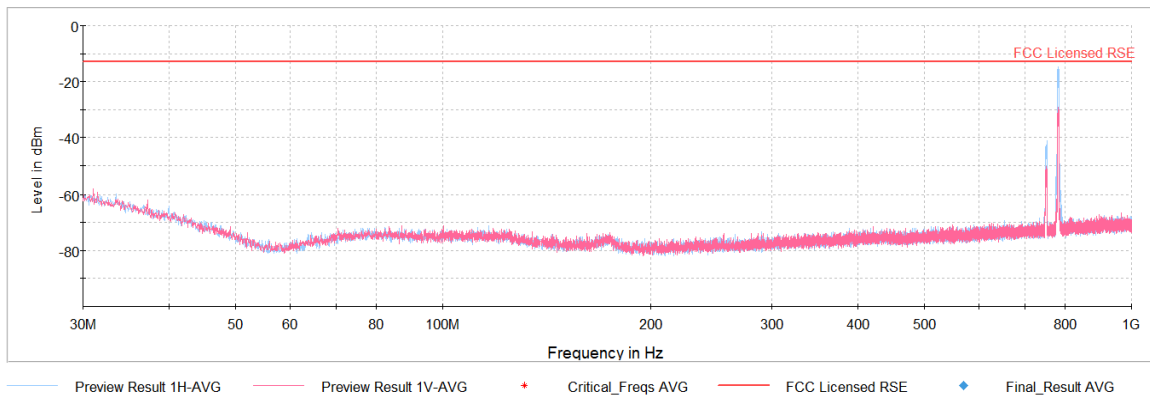
Test Notes

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 4) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 5) The spurious emissions 20dB below the limit is not reported.

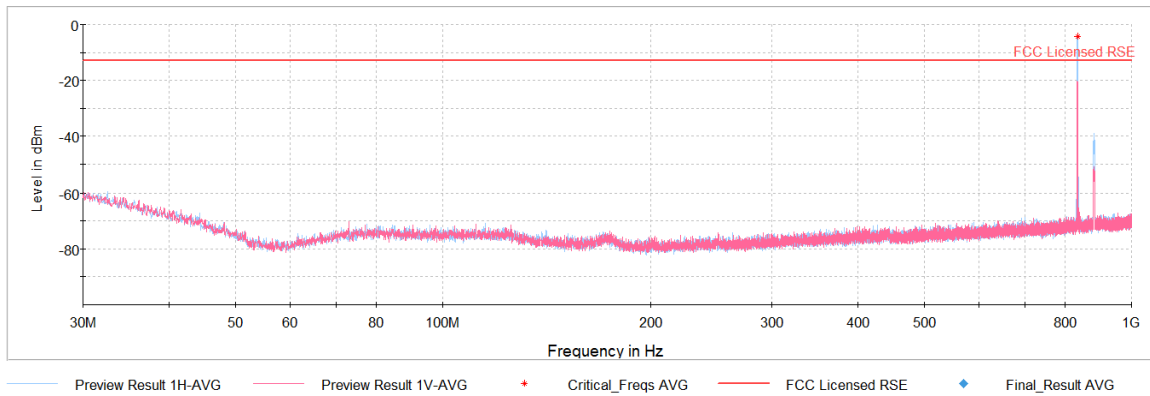
FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 150 of 166



Plot 7-213. Radiated Spurious Plot (Band 12/17 – 5.0MHz QPSK – RB Size 1)

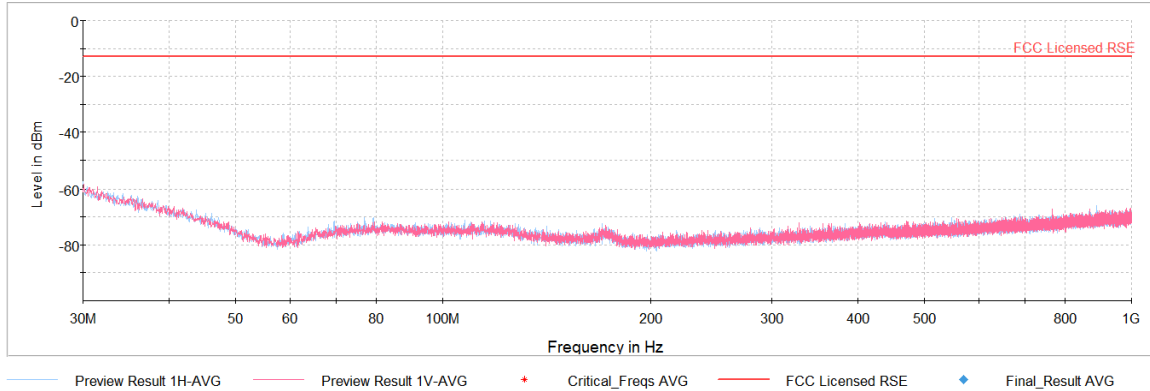


Plot 7-214. Radiated Spurious Plot (Band 13 – 5.0MHz QPSK – RB Size 1)

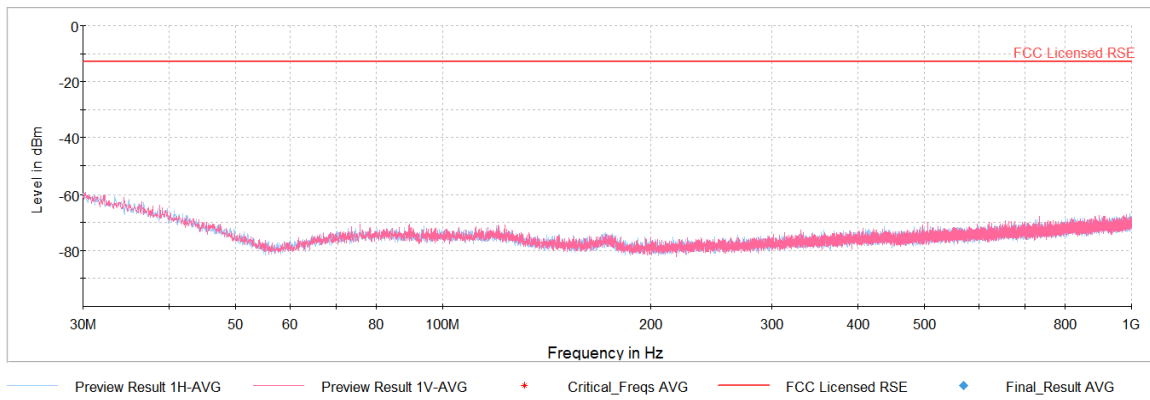


Plot 7-215. Radiated Spurious Plot (Band 5/26 – 3.0MHz QPSK – RB Size 1)

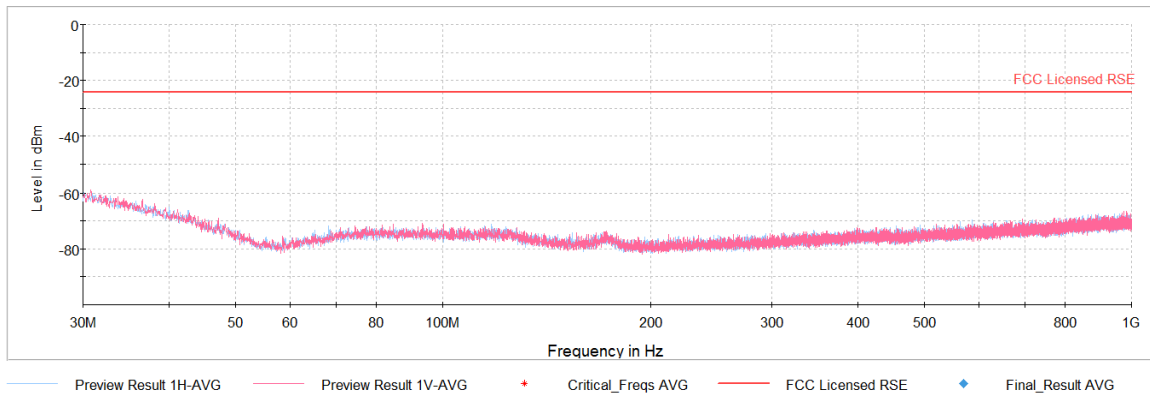
FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch		Page 151 of 166



Plot 7-216. Radiated Spurious Plot (Band 4 – 10.0MHz QPSK – RB Size 1)



Plot 7-217. Radiated Spurious Plot (Band 2/25 – 20.0MHz QPSK – RB Size 1)



Plot 7-218. Radiated Spurious Plot (Band 41 – 15.0MHz QPSK – RB Size 1)

FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 152 of 166

7.9 Frequency Stability / Temperature Variation

\$2.1055 \$22.355 \$24.235 \$27.54

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-D-2010. The frequency stability of the transmitter is measured by:

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

For Part 22, the frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 2.5 ppm) of the center frequency. For Part 24 and 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-D-2010

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: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 153 of 166

Band 12/17 Frequency Stability Measurements

\$2.1055 \$27.54

OPERATING FREQUENCY: 707500000 Hz
 CHANNEL: 23790.00
 REFERENCE VOLTAGE: 3.82 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.82	+ 20	707,500,144	144	0.0000204
100 %		- 30	707,500,052	52	0.0000073
100 %		- 20	707,500,044	44	0.0000062
100 %		- 10	707,499,619	-381	-0.0000539
100 %		0	707,500,140	140	0.0000198
100 %		+ 10	707,499,871	-129	-0.0000182
100 %		+ 20	707,500,068	68	0.0000096
100 %		+ 30	707,500,159	159	0.0000225
100 %		+ 40	707,499,834	-166	-0.0000235
100 %		+ 50	707,500,056	56	0.0000079
BATT. ENDPOINT	3.42	+ 20	707,499,551	-449	-0.0000635

Table 7-30. Frequency Stability Data (Band 12/17)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 154 of 166

Band 12/17 Frequency Stability Measurements

§2.1055 §27.54

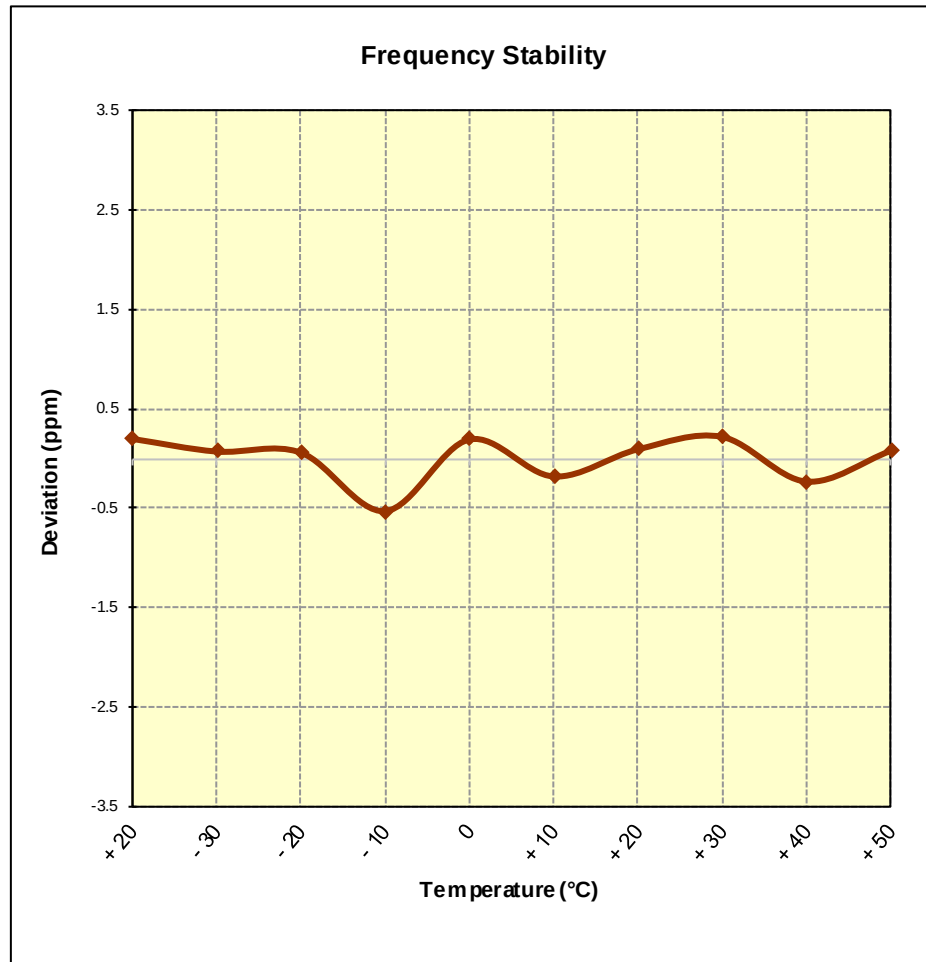


Figure 7-8. Frequency Stability Graph (Band 12/17)

FCC ID: BCG-A1861		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 155 of 166

© 2017 PCTEST Engineering Laboratory, Inc.

V 6.6
06/06/2017

© 2017 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTESTLAB.COM.

Band 13 Frequency Stability Measurements

\$2.1055 \$27.54

OPERATING FREQUENCY: 782000000.00 Hz
 CHANNEL: 23230.00
 REFERENCE VOLTAGE: 3.82 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.82	+ 20	782,000,090	90	0.0000115
100 %		- 30	782,000,065	65	0.0000083
100 %		- 20	782,000,283	283	0.0000362
100 %		- 10	782,000,165	165	0.0000211
100 %		0	782,000,068	68	0.0000087
100 %		+ 10	782,000,047	47	0.0000060
100 %		+ 20	781,999,803	-197	-0.0000252
100 %		+ 30	782,000,359	359	0.0000459
100 %		+ 40	782,000,006	6	0.0000008
100 %		+ 50	782,000,110	110	0.0000141
BATT. ENDPOINT	3.42	+ 20	781,999,998	-2	-0.0000003

Table 7-31. Frequency Stability Data (Band 13)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 156 of 166

Band 13 Frequency Stability Measurements

§2.1055 §27.54

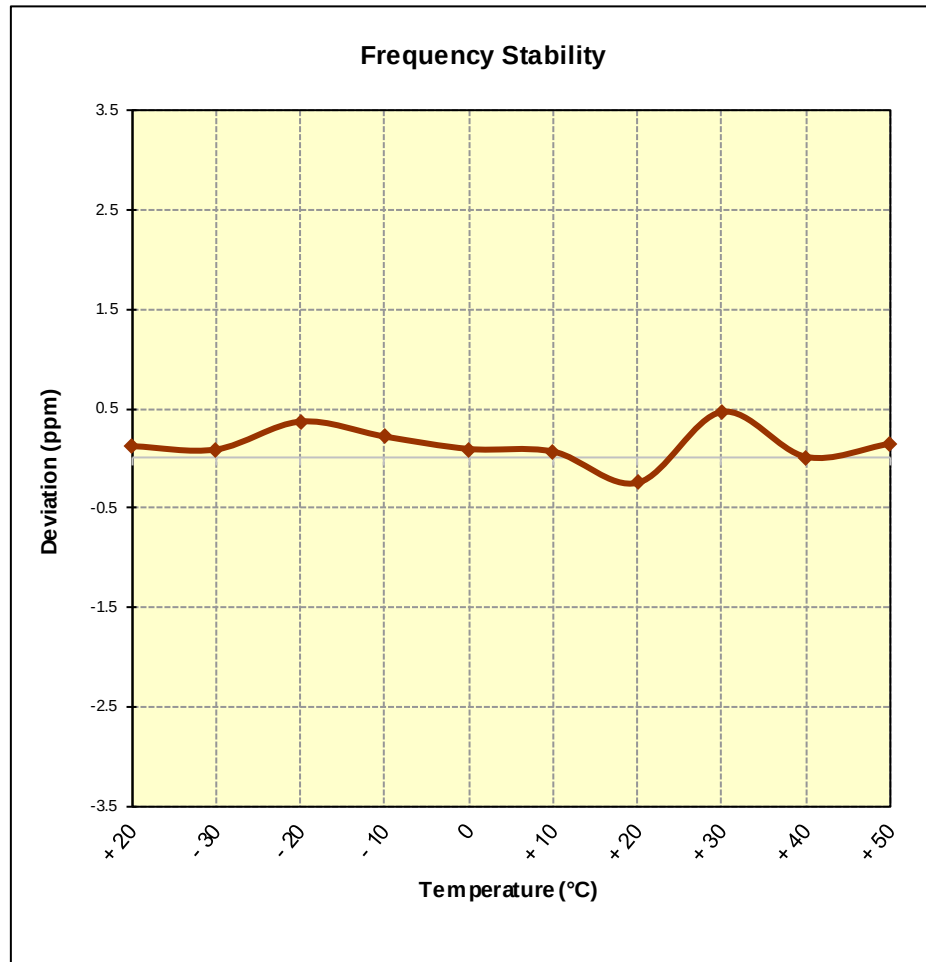


Figure 7-9. Frequency Stability Graph (Band 13)

FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 157 of 166

Band 5/26 Frequency Stability Measurements

\$2.1055 \$22.355

OPERATING FREQUENCY: 831500000 Hz
 CHANNEL: 26865.00
 REFERENCE VOLTAGE: 3.82 VDC
 DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.82	+ 20	831,499,991	-9	-0.0000011
100 %		- 30	831,500,082	82	0.0000099
100 %		- 20	831,500,173	173	0.0000208
100 %		- 10	831,500,137	137	0.0000165
100 %		0	831,499,829	-171	-0.0000206
100 %		+ 10	831,499,793	-207	-0.0000249
100 %		+ 20	831,500,009	9	0.0000011
100 %		+ 30	831,500,196	196	0.0000236
100 %		+ 40	831,500,185	185	0.0000222
100 %		+ 50	831,500,095	95	0.0000114
BATT. ENDPOINT	3.42	+ 20	831,500,197	197	0.0000237

Table 7-32. Frequency Stability Data (Band 5/26)

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 158 of 166

Band 5/26 Frequency Stability Measurements

§2.1055 §22.355

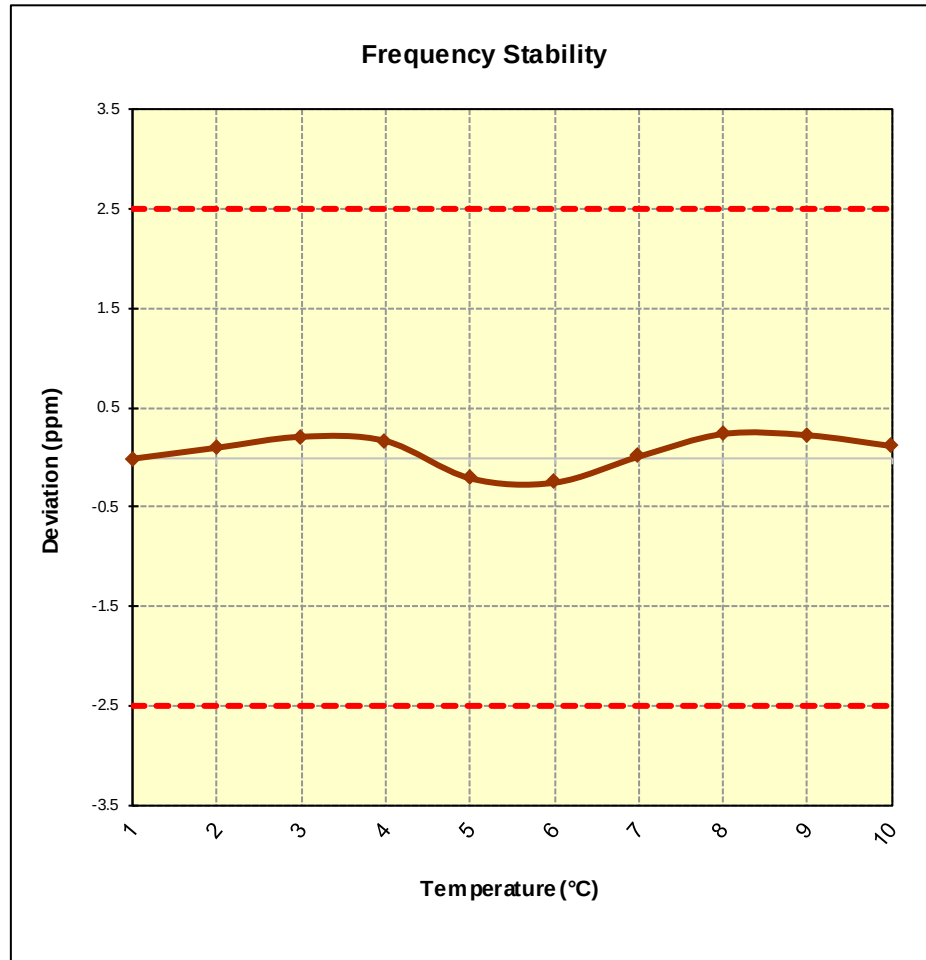


Figure 7-10. Frequency Stability Graph (Band 5/26)

FCC ID: BCG-A1861		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 159 of 166

Band 4 Frequency Stability Measurements

\$2.1055 \$27.54

OPERATING FREQUENCY: 1732500000.00 Hz
 CHANNEL: 20175.00
 REFERENCE VOLTAGE: 3.82 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.82	+ 20	1,732,499,976	-24	-0.0000014
100 %		- 30	1,732,499,877	-123	-0.0000071
100 %		- 20	1,732,499,988	-12	-0.0000007
100 %		- 10	1,732,499,936	-64	-0.0000037
100 %		0	1,732,500,060	60	0.0000035
100 %		+ 10	1,732,499,935	-65	-0.0000038
100 %		+ 20	1,732,499,826	-174	-0.0000100
100 %		+ 30	1,732,500,071	71	0.0000041
100 %		+ 40	1,732,500,287	287	0.0000166
100 %		+ 50	1,732,500,397	397	0.0000229
BATT. ENDPOINT	3.42	+ 20	1,732,499,919	-81	-0.0000047

Table 7-33. Frequency Stability Data (Band 4)

Note:

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

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 160 of 166

Band 4 Frequency Stability Measurements

§2.1055 §§27.54

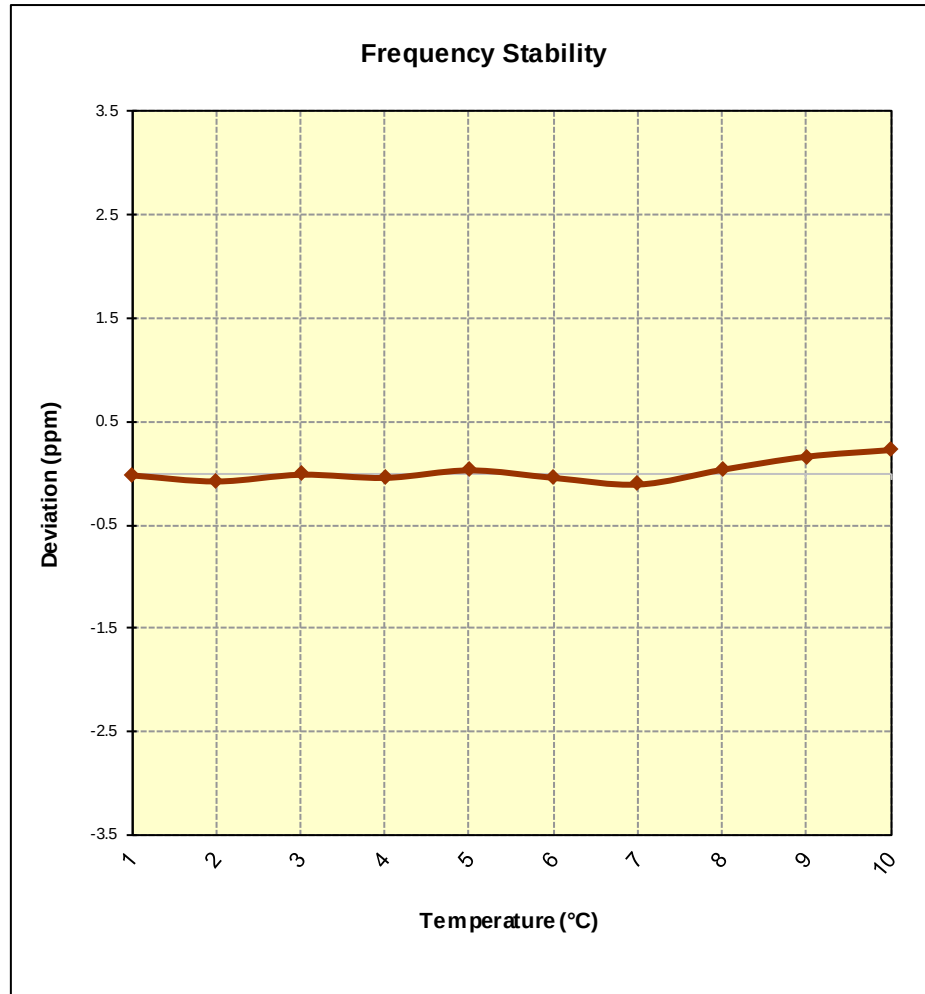


Figure 7-11. Frequency Stability Graph (Band 4)

FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch		Page 161 of 166

Band 2/25 Frequency Stability Measurements

§2.1055 §24.235

OPERATING FREQUENCY: 1,882,500,000 Hz

CHANNEL: 26365

REFERENCE VOLTAGE: 3.82 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.82	+ 20	1,882,500,115	115	0.0000061
100 %		- 30	1,882,499,928	-72	-0.0000038
100 %		- 20	1,882,499,981	-19	-0.0000010
100 %		- 10	1,882,500,080	80	0.0000042
100 %		0	1,882,499,928	-72	-0.0000038
100 %		+ 10	1,882,499,778	-222	-0.0000118
100 %		+ 20	1,882,500,221	221	0.0000117
100 %		+ 30	1,882,500,401	401	0.0000213
100 %		+ 40	1,882,499,961	-39	-0.0000021
100 %		+ 50	1,882,500,044	44	0.0000023
BATT. ENDPOINT	3.42	+ 20	1,882,499,728	-272	-0.0000144

Table 7-34. Frequency Stability Data (Band 2/25)

Note:

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

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 162 of 166

Band 2/25 Frequency Stability Measurements

§2.1055 §24.235

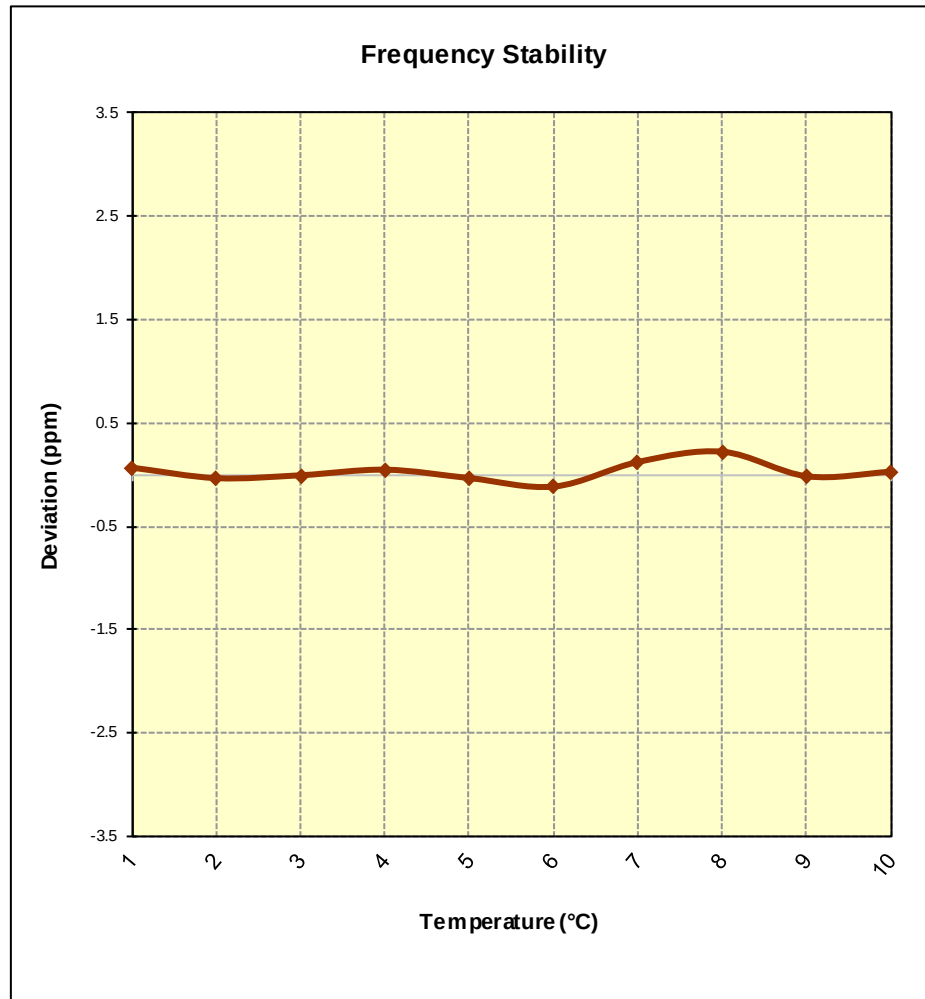


Figure 7-12. Frequency Stability Graph (Band 2/25)

FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 163 of 166

Band 41 Frequency Stability Measurements

\$2.1055 \$27.54

OPERATING FREQUENCY: 2,593,000,000 Hz
 CHANNEL: 40620
 REFERENCE VOLTAGE: 3.82 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.82	+20	2,593,000,007	7	0.0000003
100 %		- 30	2,593,000,137	137	0.0000053
100 %		- 20	2,592,999,873	-127	-0.0000049
100 %		- 10	2,593,000,020	20	0.0000008
100 %		0	2,592,999,926	-74	-0.0000029
100 %		+ 10	2,593,000,055	55	0.0000021
100 %		+ 20	2,592,999,978	-22	-0.0000008
100 %		+ 30	2,593,000,114	114	0.0000044
100 %		+ 40	2,592,999,723	-277	-0.0000107
100 %		+ 50	2,592,999,981	-19	-0.0000007
BATT. ENDPOINT	3.42	+ 20	2,592,999,703	-297	-0.0000115

Table 7-35. Frequency Stability Data (Band 41)

Note:

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

FCC ID: BCG-A1861	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 164 of 166

Band 41 Frequency Stability Measurements

\$2.1055 \$27.54

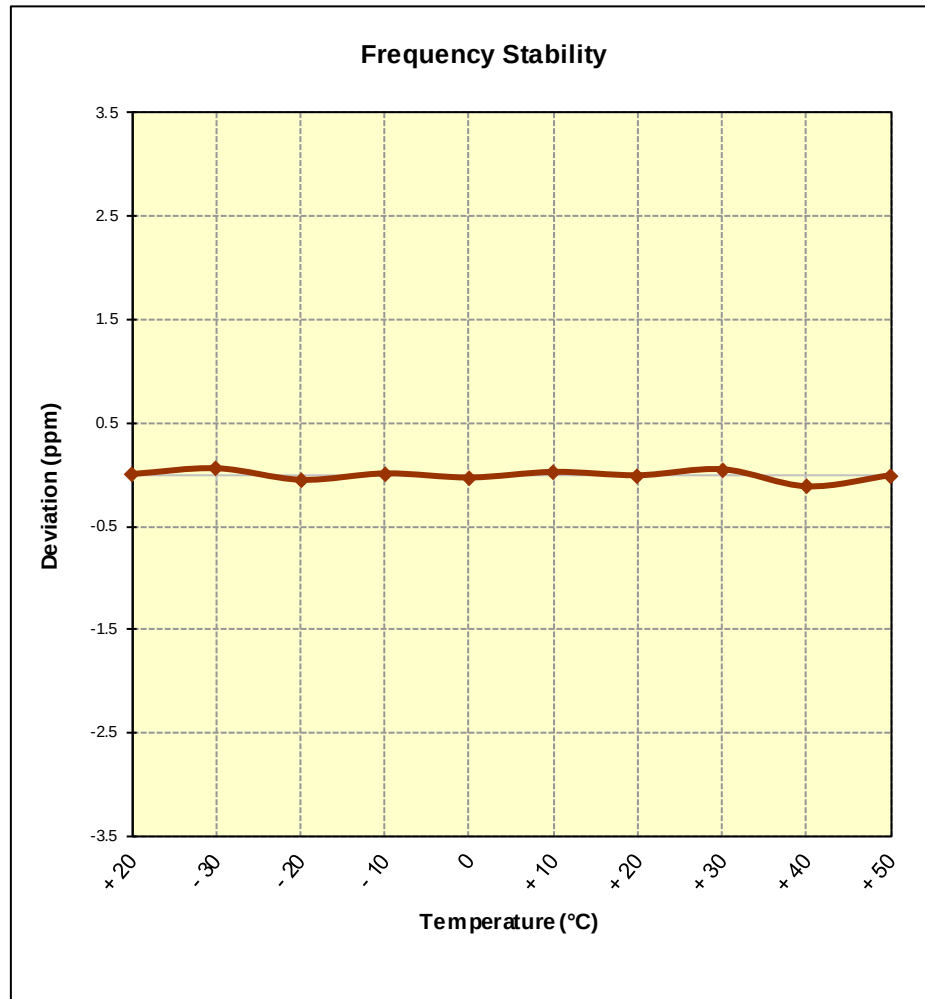


Figure 7-13. Frequency Stability Graph (Band 41)

FCC ID: BCG-A1861	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 165 of 166

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Apple Watch**

FCC ID: BCG-A1861 complies with all the requirements of Parts 22, 24, & 27 of the FCC rules for LTE operation only.

FCC ID: BCG-A1861		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1C1706160002-61-03-R4.BCG	Test Dates: 6/7-8/18/2017	EUT Type: Watch	Page 166 of 166

© 2017 PCTEST Engineering Laboratory, Inc.

V 6.6
06/06/2017

© 2017 PCTEST Engineering Laboratory, Inc. All rights reserved. Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from PCTEST Engineering Laboratory, Inc. If you have any questions about this international copyright or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact INFO@PCTESTLAB.COM.