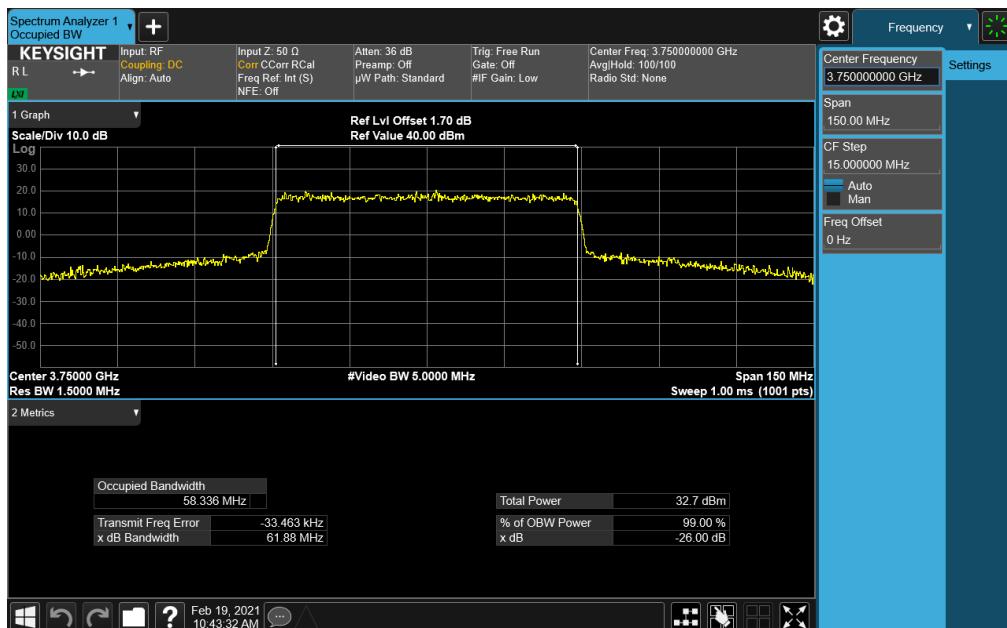
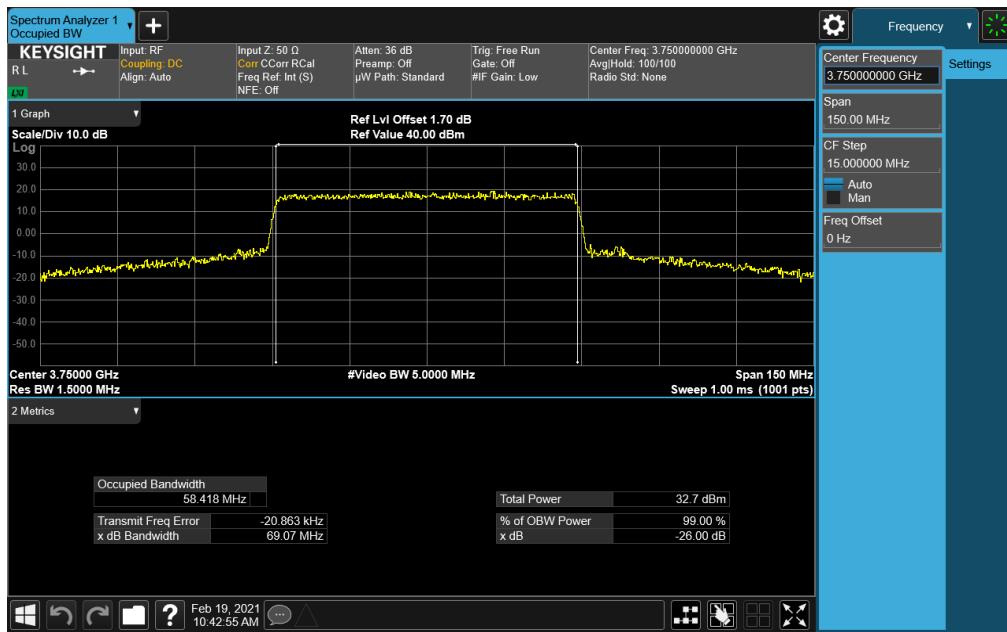


Plot 7-92. Occupied Bandwidth Plot (NR Band n77 - 60MHz CP-OFDM QPSK - Full RB Configuration)

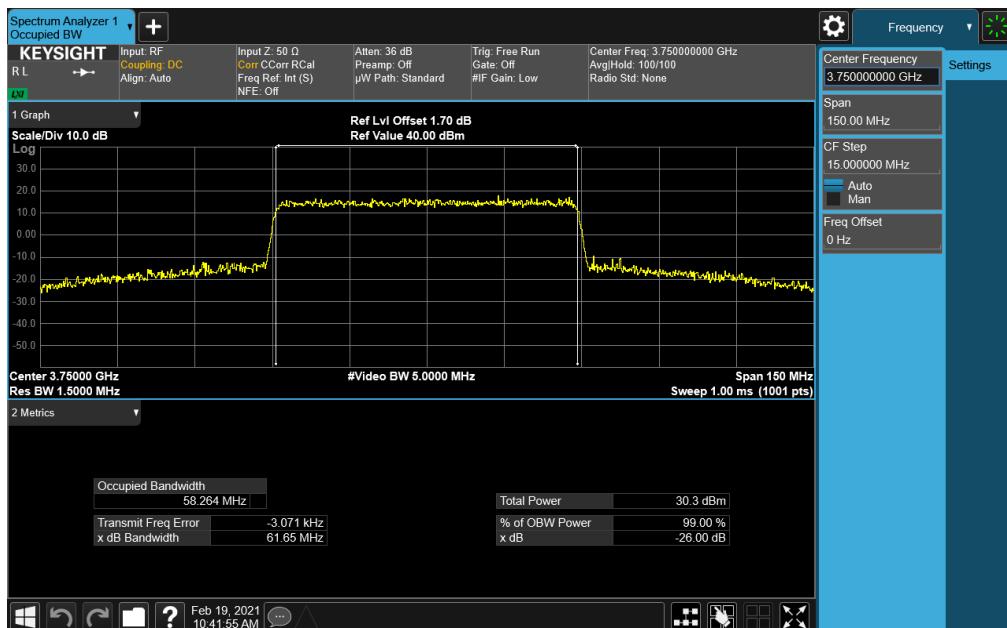


Plot 7-93. Occupied Bandwidth Plot (NR Band n77 - 60MHz CP-OFDM 16-QAM - Full RB Configuration)

FCC ID: BCGA2301	PART 27 MEASUREMENT REPORT			Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device		Page 63 of 221

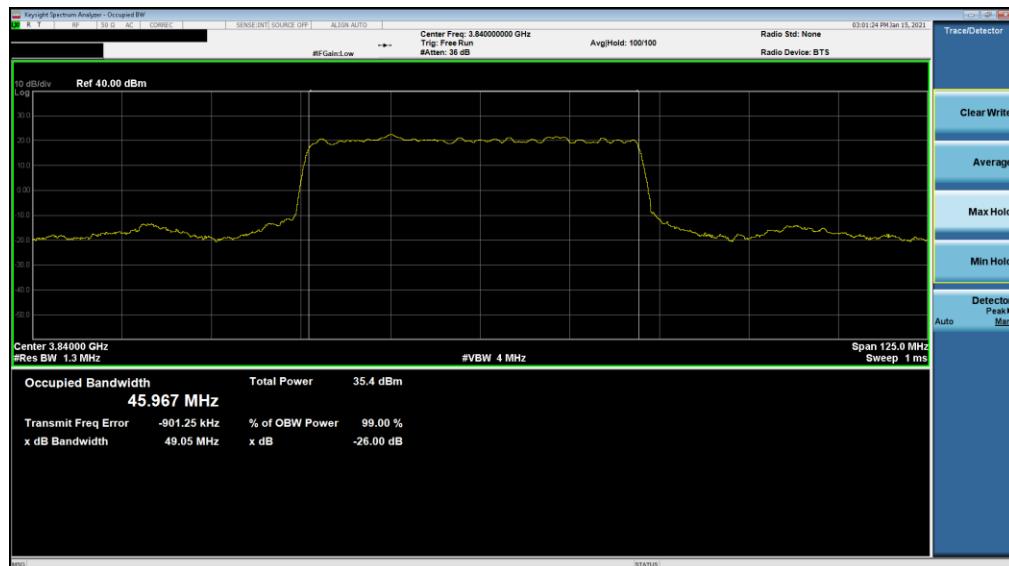


Plot 7-94. Occupied Bandwidth Plot (NR Band n77 - 60MHz CP-OFDM 64-QAM - Full RB Configuration)

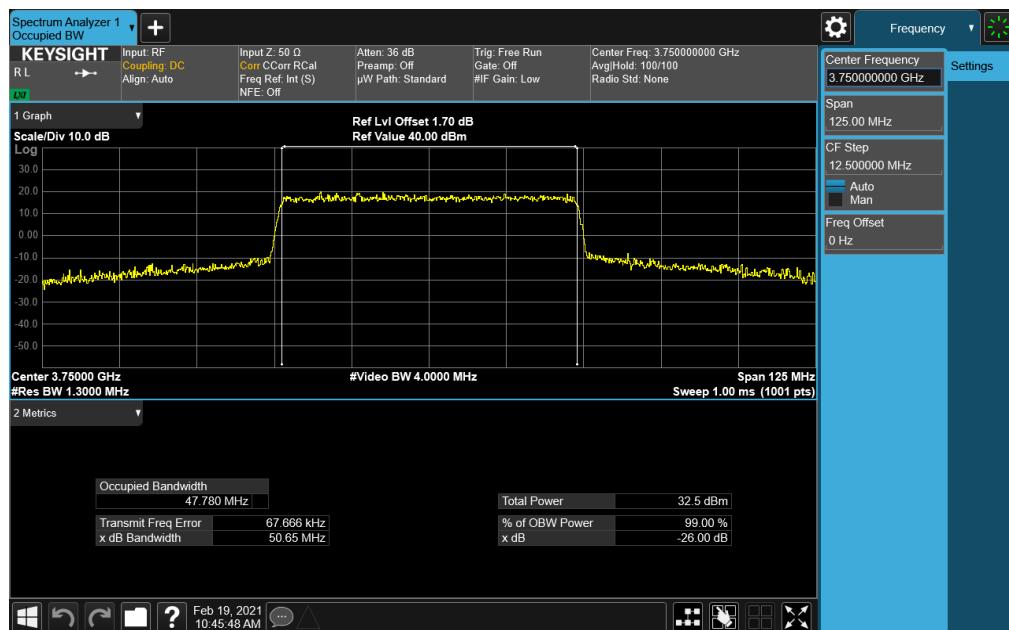


Plot 7-95. Occupied Bandwidth Plot (NR Band n77 - 60MHz CP-OFDM 256-QAM - Full RB Configuration)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
<b>Test Report S/N:</b> 1C2101020002-05-R1.BCG	<b>Test Dates:</b> 12/23/2020 - 03/05/2021	<b>EUT Type:</b> Tablet Device			Page 64 of 221

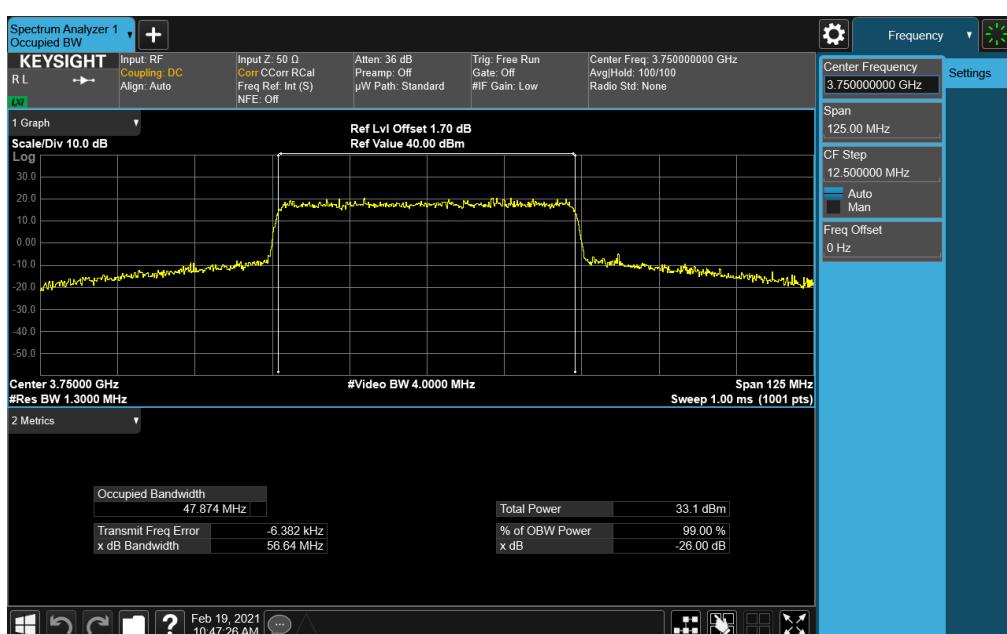
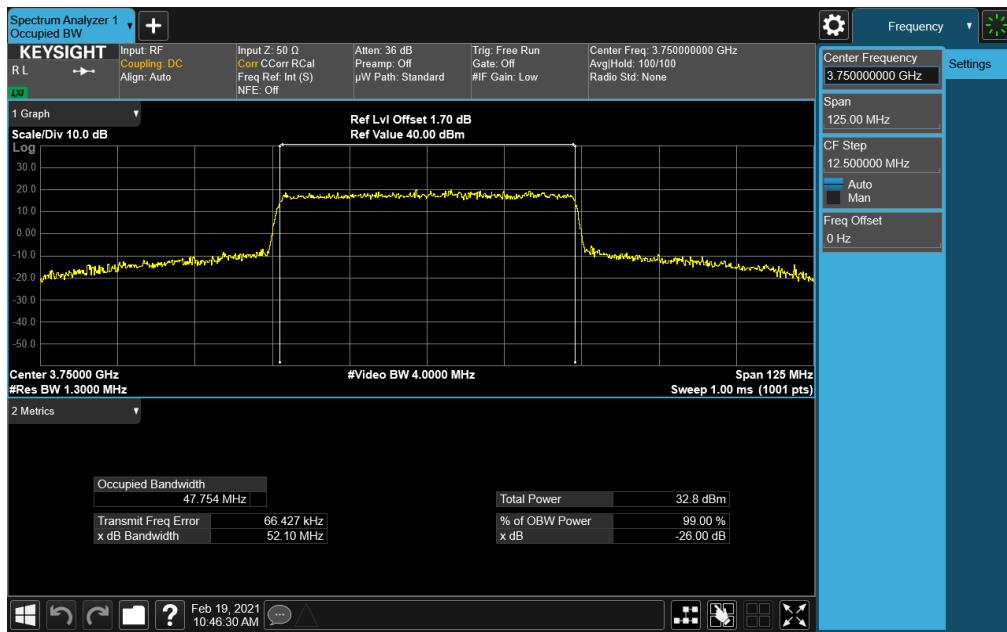


Plot 7-96. Occupied Bandwidth Plot (NR Band n77 - 50MHz DFT-s-OFDM  $\pi/2$  BPSK - Full RB Configuration)

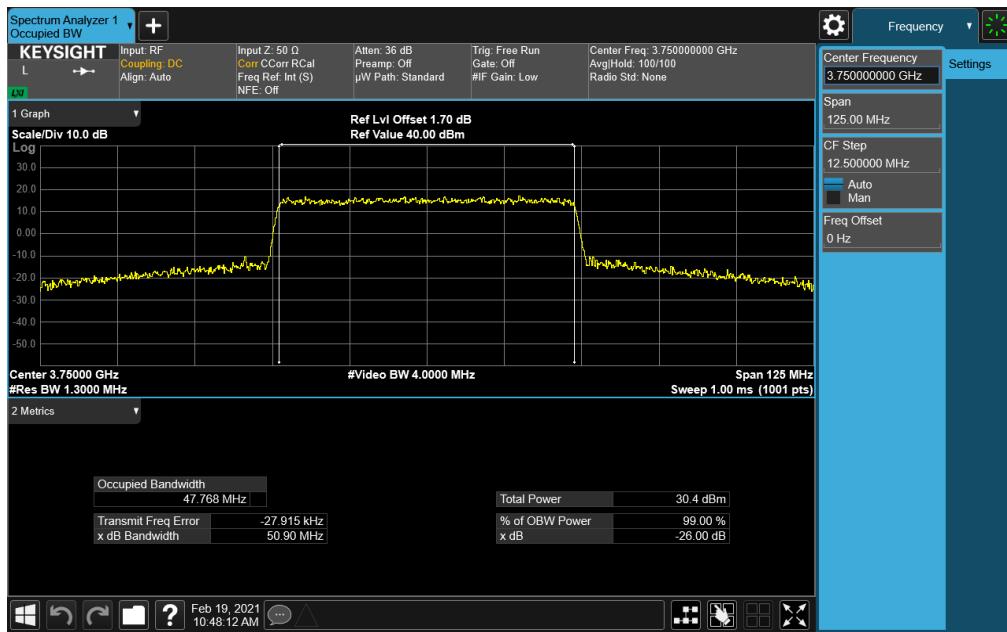


Plot 7-97. Occupied Bandwidth Plot (NR Band n77 - 50MHz CP-OFDM QPSK - Full RB Configuration)

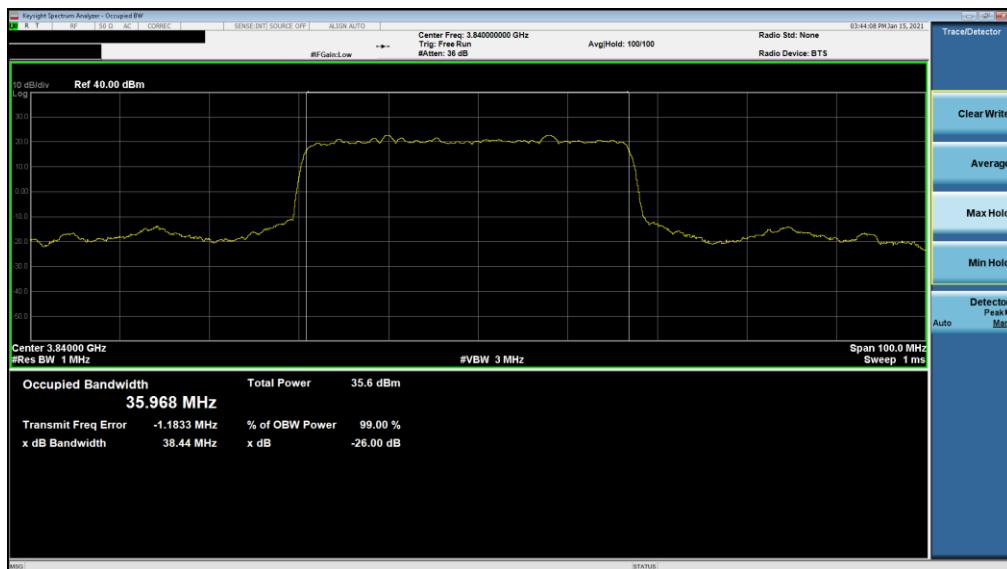
FCC ID: BCGA2301	PART 27 MEASUREMENT REPORT			Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device		Page 65 of 221



FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			<b>PART 27 MEASUREMENT REPORT</b>	Approved by: Quality Manager
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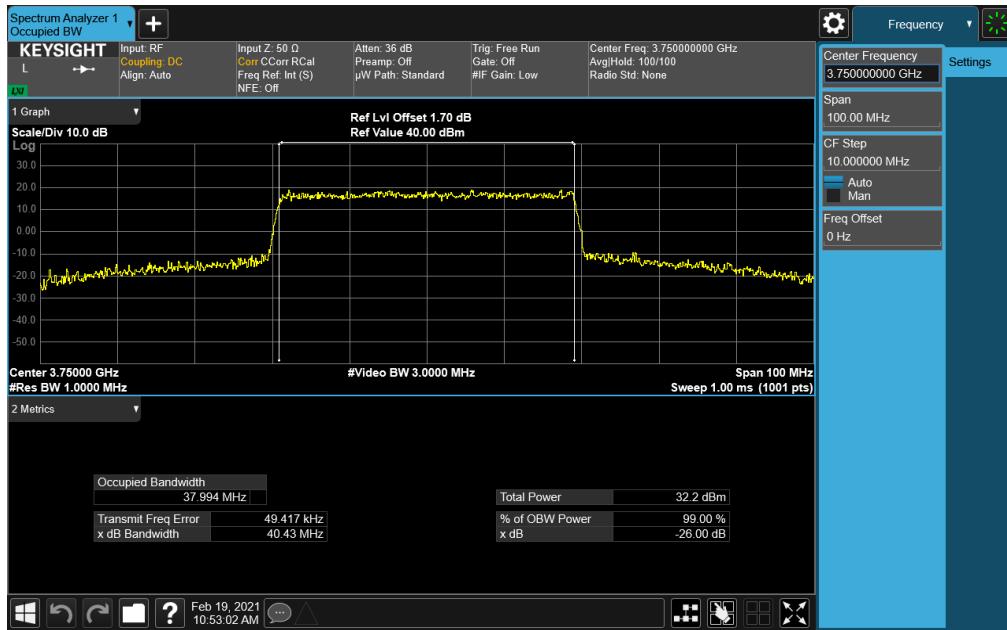


Plot 7-100. Occupied Bandwidth Plot (NR Band n77 - 50MHz CP-OFDM 256-QAM - Full RB Configuration)

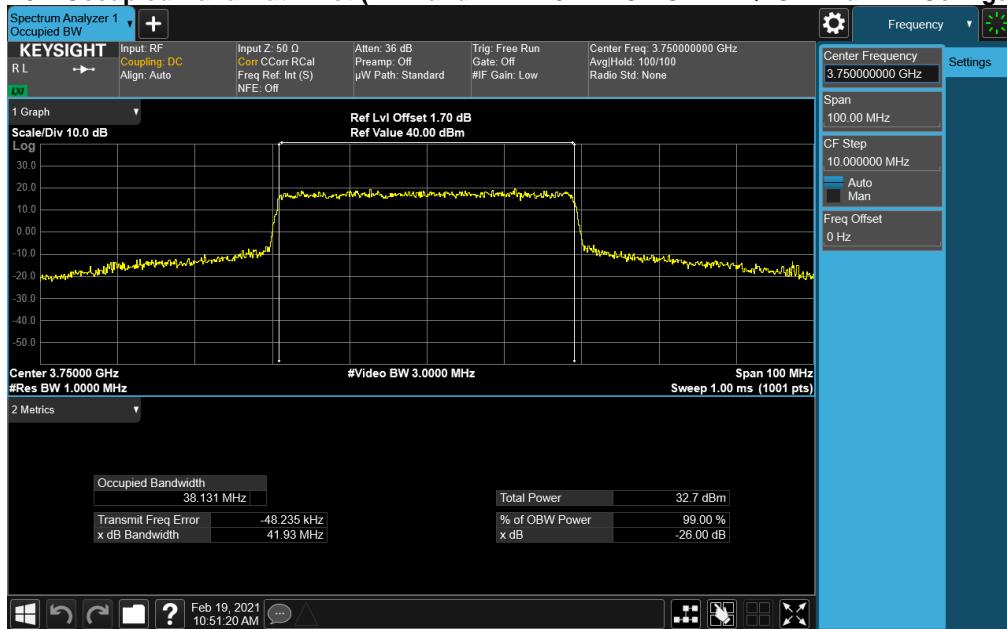


Plot 7-101. Occupied Bandwidth Plot (NR Band n77 - 40MHz DFT-s-OFDM π/2 BPSK - Full RB Configuration)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device			

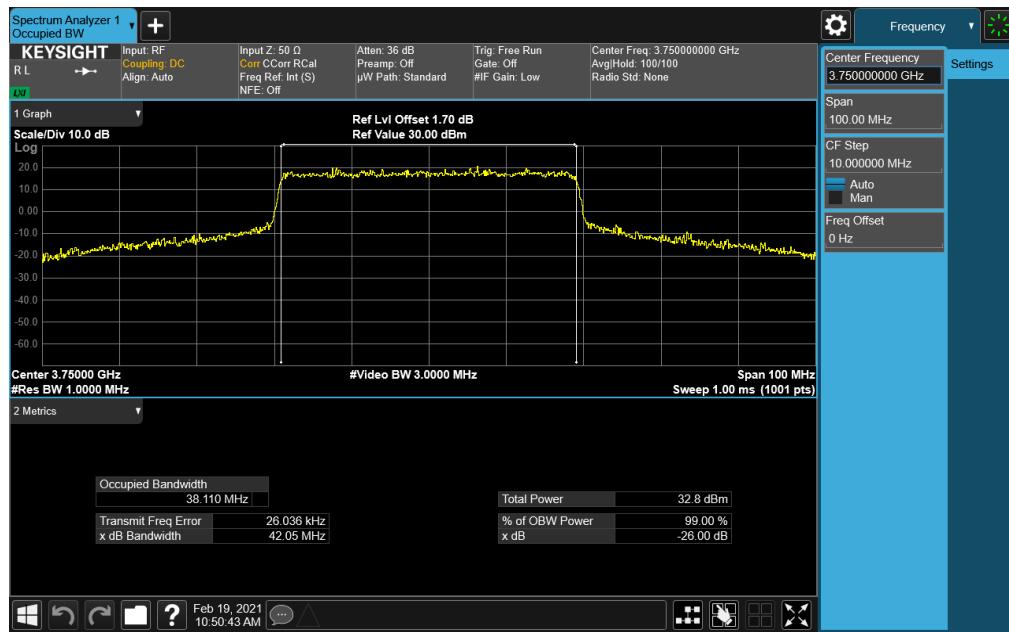


Plot 7-102. Occupied Bandwidth Plot (NR Band n77 - 40MHz CP-OFDM QPSK - Full RB Configuration)

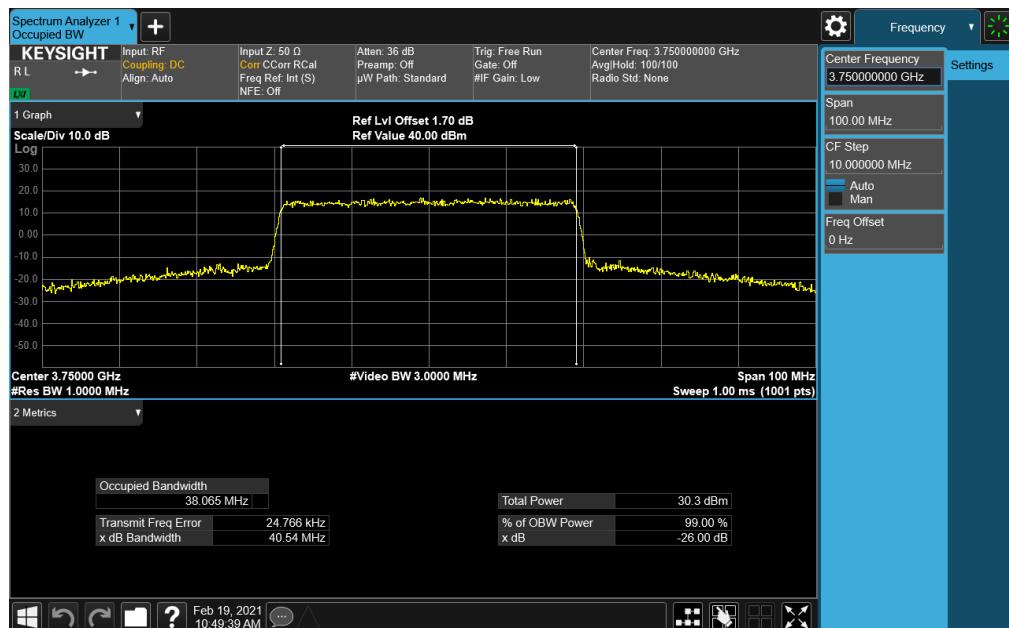


Plot 7-103. Occupied Bandwidth Plot (NR Band n77 - 40MHz CP-OFDM 16-QAM - Full RB Configuration)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			<b>PART 27 MEASUREMENT REPORT</b>	Approved by: Quality Manager
<b>Test Report S/N:</b> 1C2101020002-05-R1.BCG	<b>Test Dates:</b> 12/23/2020 - 03/05/2021	<b>EUT Type:</b> Tablet Device			

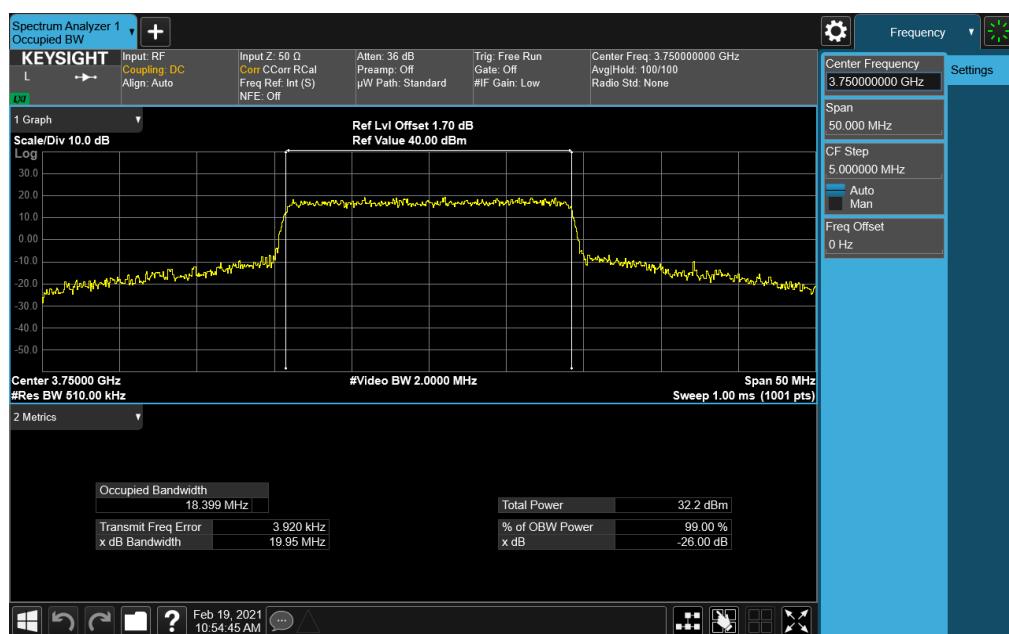


Plot 7-104. Occupied Bandwidth Plot (NR Band n77 - 40MHz CP-OFDM 64-QAM - Full RB Configuration)

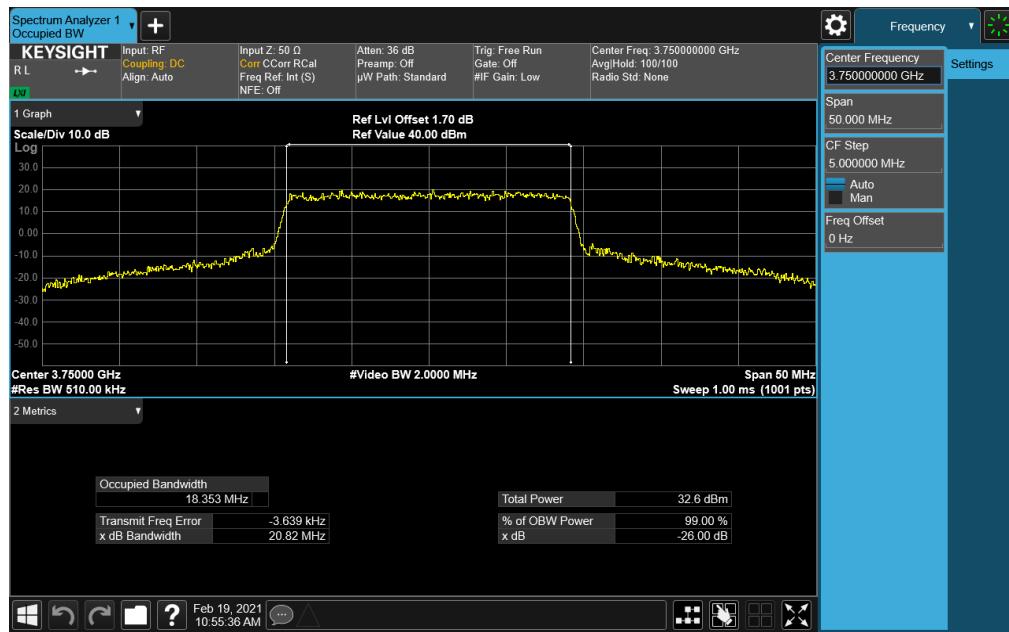


Plot 7-105. Occupied Bandwidth Plot (NR Band n77 - 40MHz CP-OFDM 256-QAM - Full RB Configuration)

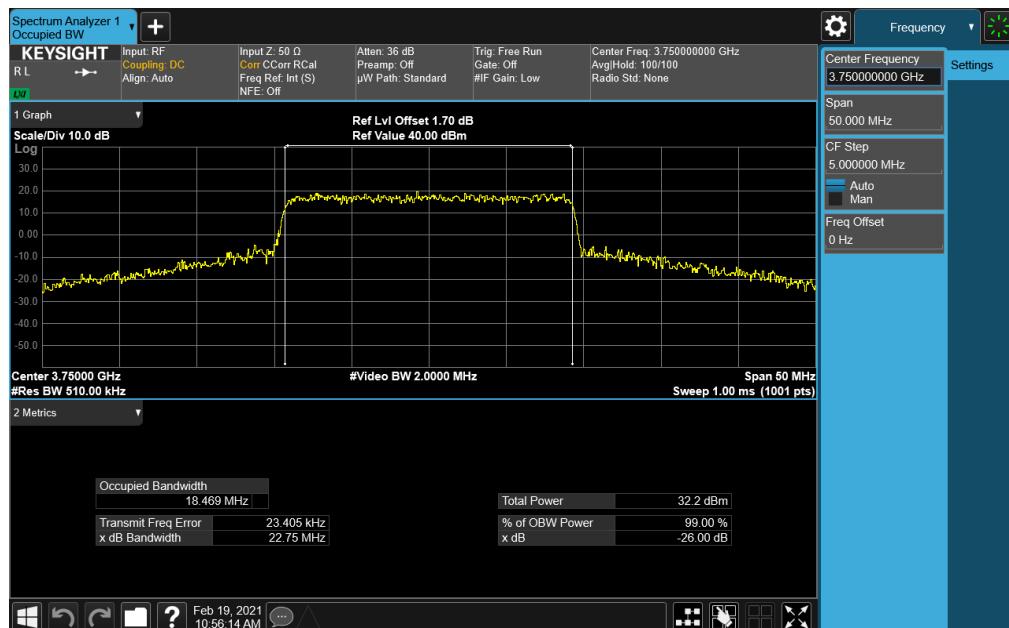
FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			<b>PART 27 MEASUREMENT REPORT</b>	Approved by: Quality Manager
<b>Test Report S/N:</b> 1C2101020002-05-R1.BCG	<b>Test Dates:</b> 12/23/2020 - 03/05/2021	<b>EUT Type:</b> Tablet Device			Page 69 of 221



FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
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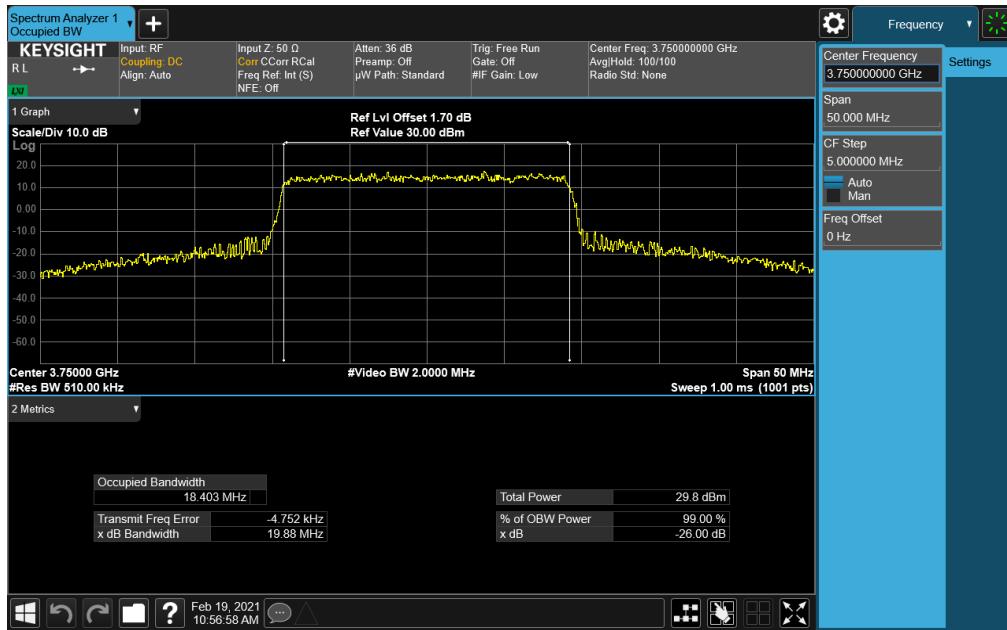


Plot 7-108. Occupied Bandwidth Plot (NR Band n77 - 20MHz CP-OFDM 16-QAM - Full RB Configuration)



Plot 7-109. Occupied Bandwidth Plot (NR Band n77 - 20MHz CP-OFDM 64-QAM - Full RB Configuration)

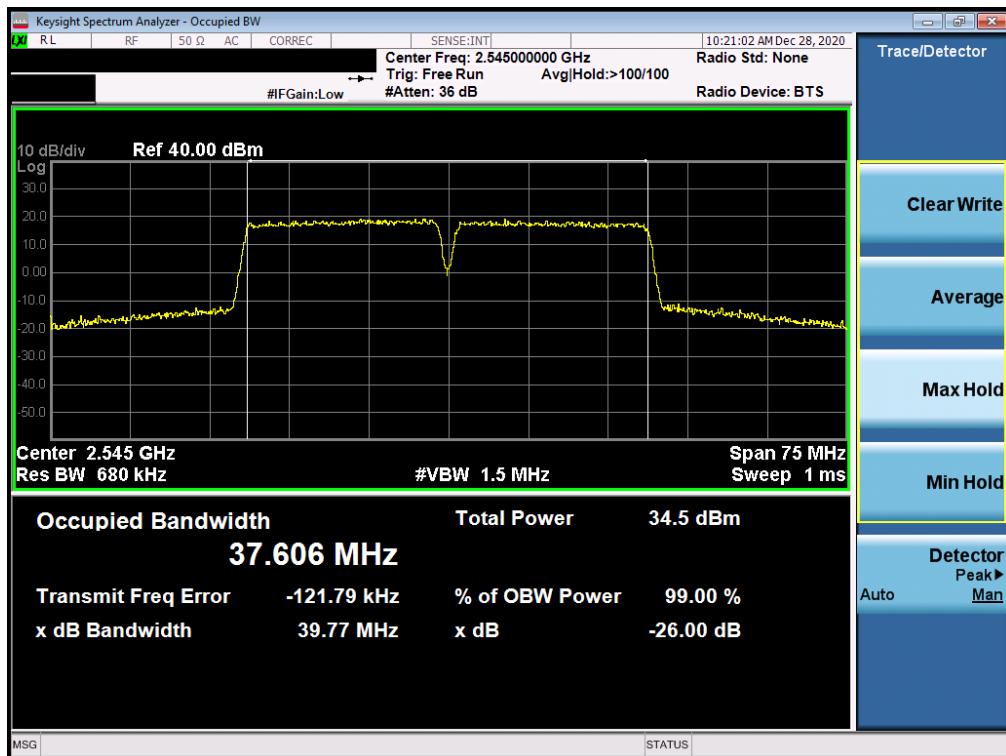
FCC ID: BCGA2301	PART 27 MEASUREMENT REPORT			Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device		Page 71 of 221



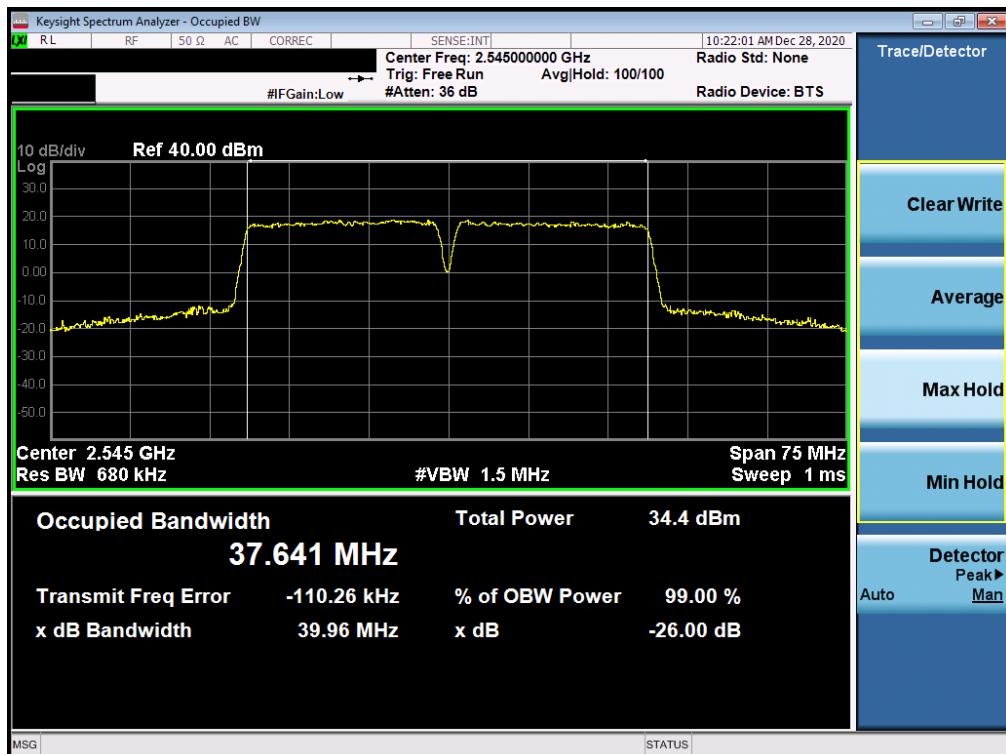
Plot 7-110. Occupied Bandwidth Plot (NR Band n77 - 20MHz CP-OFDM 256-QAM - Full RB Configuration)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			<b>PART 27 MEASUREMENT REPORT</b>	Approved by: Quality Manager
<b>Test Report S/N:</b> 1C2101020002-05-R1.BCG	<b>Test Dates:</b> 12/23/2020 - 03/05/2021	<b>EUT Type:</b> Tablet Device			

## ULCA - LTE Band 7

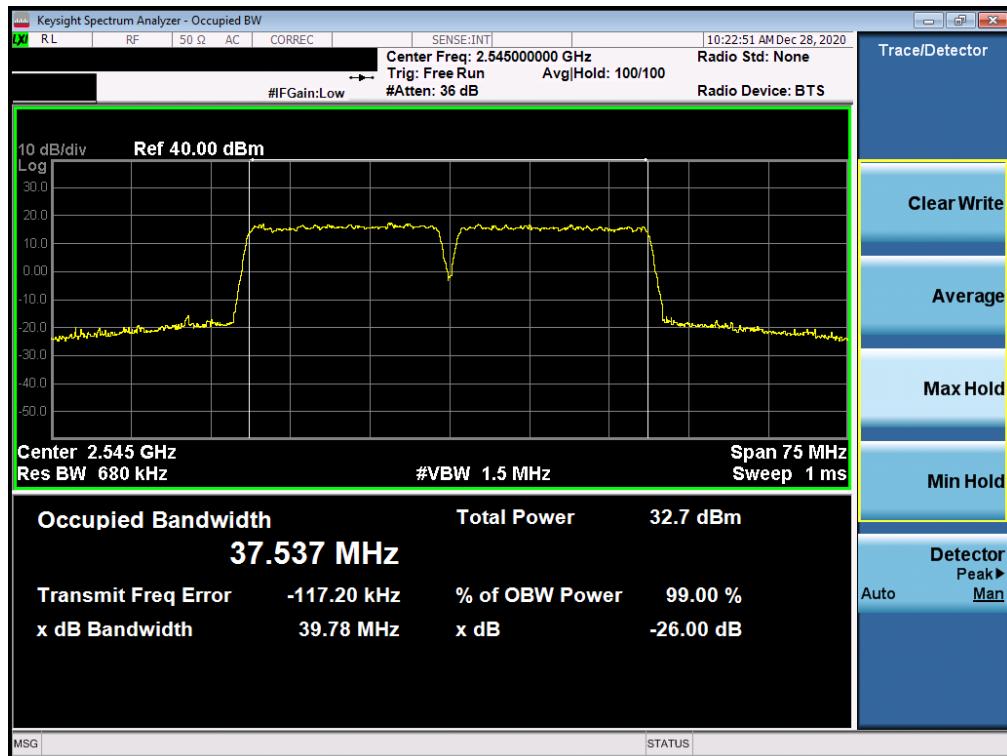


Plot 7-111. Occupied Bandwidth Plot (ULCA - LTE Band 7 - (20 + 20)MHz QPSK - Full RB Configuration)

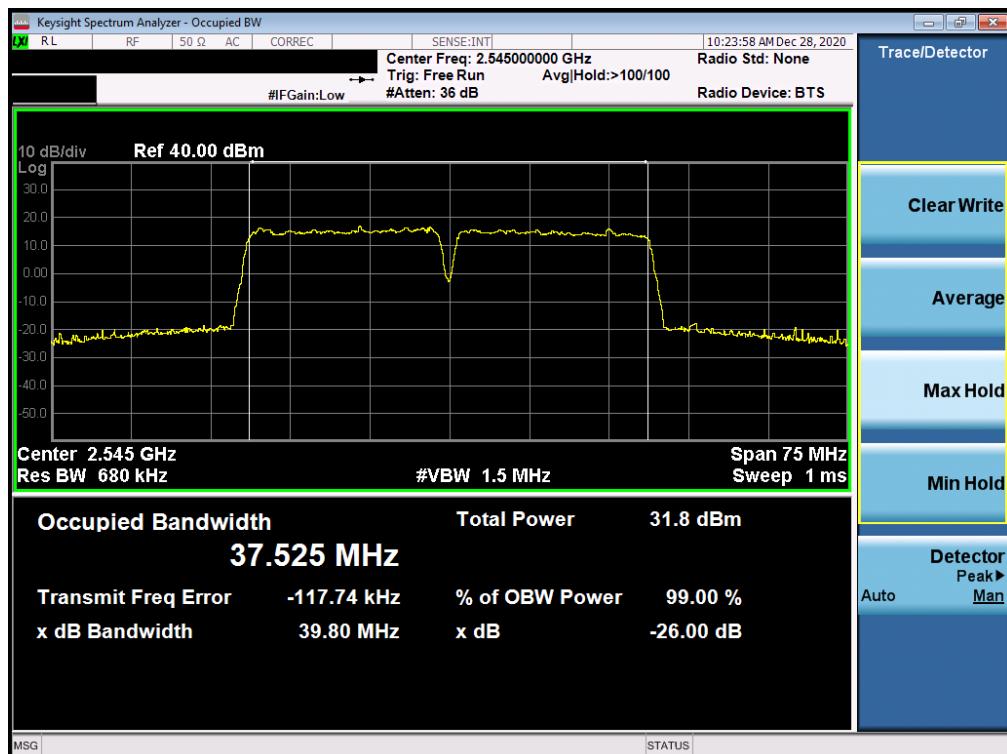


Plot 7-112. Occupied Bandwidth Plot (ULCA - LTE Band 7 - (20 + 20)MHz 16-QAM - Full RB Configuration)

FCC ID: BCGA2301	 <b>PCTEST</b> Proud to be part of	<b>PART 27 MEASUREMENT REPORT</b>	Approved by: Quality Manager
<b>Test Report S/N:</b> 1C2101020002-05-R1.BCG	<b>Test Dates:</b> 12/23/2020 - 03/05/2021	<b>EUT Type:</b> Tablet Device	Page 73 of 221



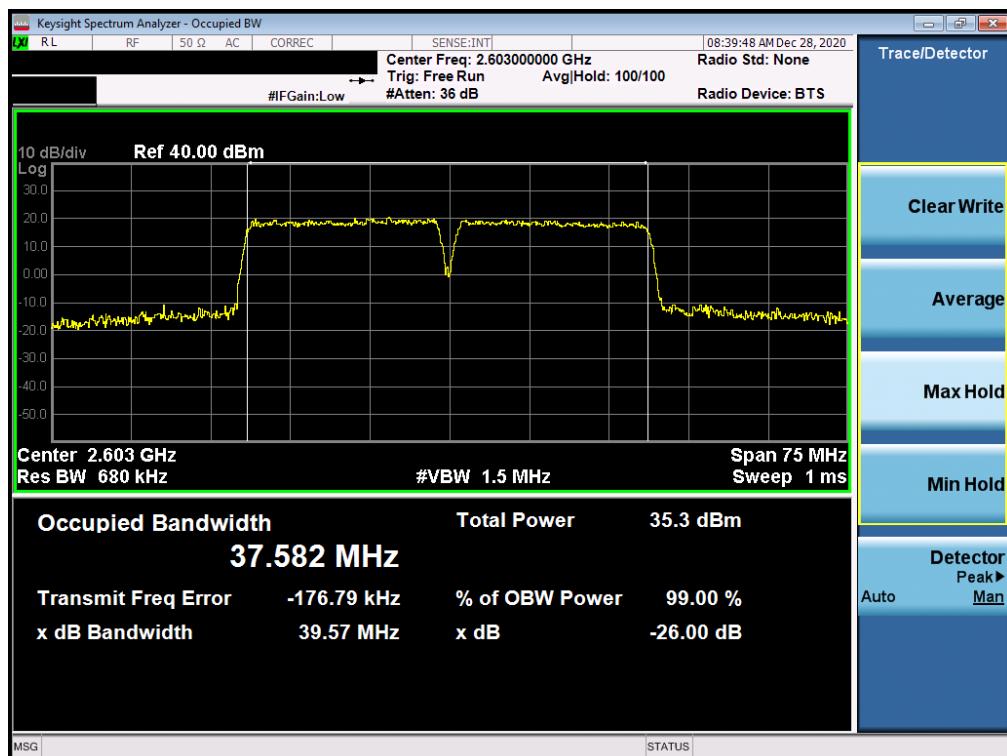
Plot 7-113. Occupied Bandwidth Plot (ULCA - LTE Band 7 - (20 + 20)MHz 64-QAM - Full RB Configuration)



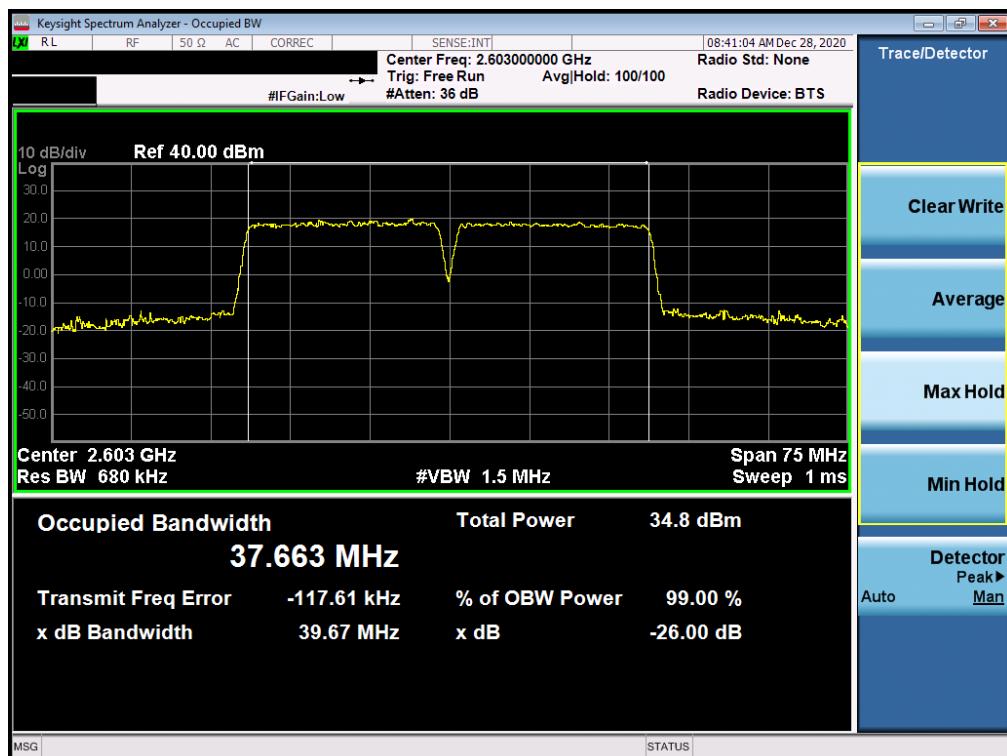
Plot 7-114. Occupied Bandwidth Plot (ULCA - LTE Band 7 - (20 + 20)MHz 256-QAM - Full RB Configuration)

FCC ID: BCGA2301	 <b>PCTEST</b> Proud to be part of element			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device			Page 74 of 221

## ULCA - LTE Band 41

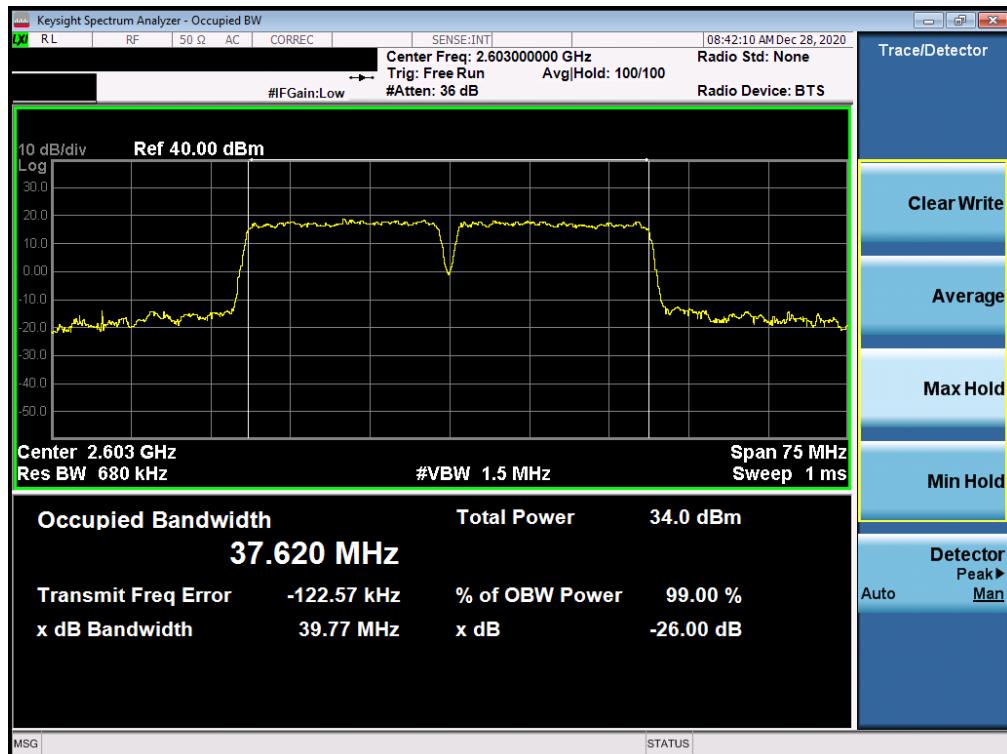


Plot 7-115. h Occupied Bandwidth Plot (LTE Band 41 - (20 + 20)MHz QPSK - Full RB Configuration)

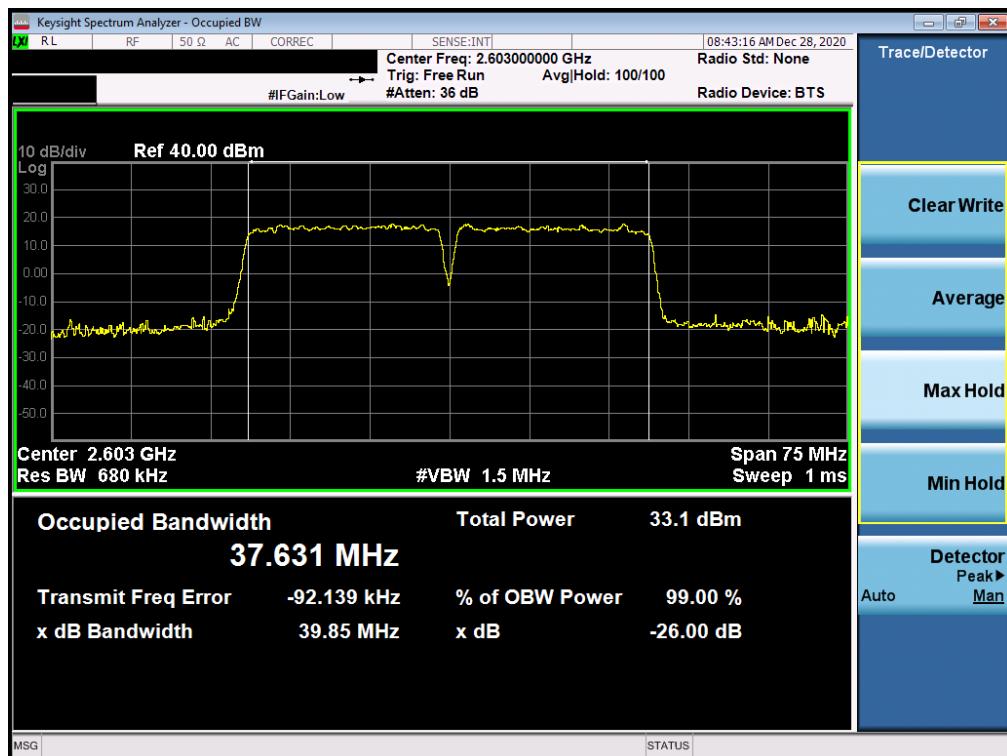


Plot 7-116. Occupied Bandwidth Plot (LTE Band 41 - (20 + 20)MHz 16-QAM - Full RB Configuration)

FCC ID: BCGA2301	 <b>PART 27 MEASUREMENT REPORT</b>			Approved by: Quality Manager
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Plot 7-117. Occupied Bandwidth Plot (LTE Band 41 - (20 + 20)MHz 64-QAM - Full RB Configuration)



Plot 7-118. Occupied Bandwidth Plot (LTE Band 41 – (20 + 20)MHz 256-QAM - Full RB Configuration)

FCC ID: BCGA2301	 <b>PART 27 MEASUREMENT REPORT</b>			Approved by: Quality Manager
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## 7.3 Spurious and Harmonic Emissions at Antenna Terminal

§2.1051, §27.53(a), §27.53(m)

### Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10<sup>th</sup> harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at 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. All ports were tested and only the worst case data were reported.

**For Band 30, the minimum permissible attenuation level of any spurious emission <2288MHz and >2365MHz is  $70 + 10 \log_{10}(P[\text{Watts}])$ .**

**For LTE Bands 7, 41, and NR FR1 Band n41 the minimum permissible, n41 the minimum permissible attenuation level of any spurious emission is  $55 + 10\log_{10}(P[\text{Watts}])$ .**

**For NR FR1 Band n77, The minimum permissible attenuation level of any spurious emission is  $43 + 10 \log_{10}(P[\text{Watts}])$ , where P is the transmitter power in Watts.**

### Test Procedure Used

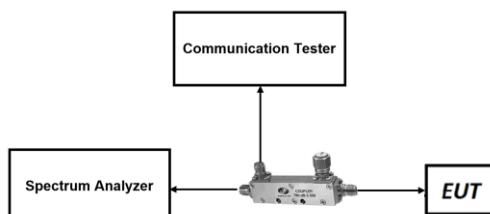
KDB 971168 D01 v03r01 – Section 6.0

### Test Settings

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

### Test Setup

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



**Figure 7-2. Test Instrument & Measurement Setup**

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## Test Notes

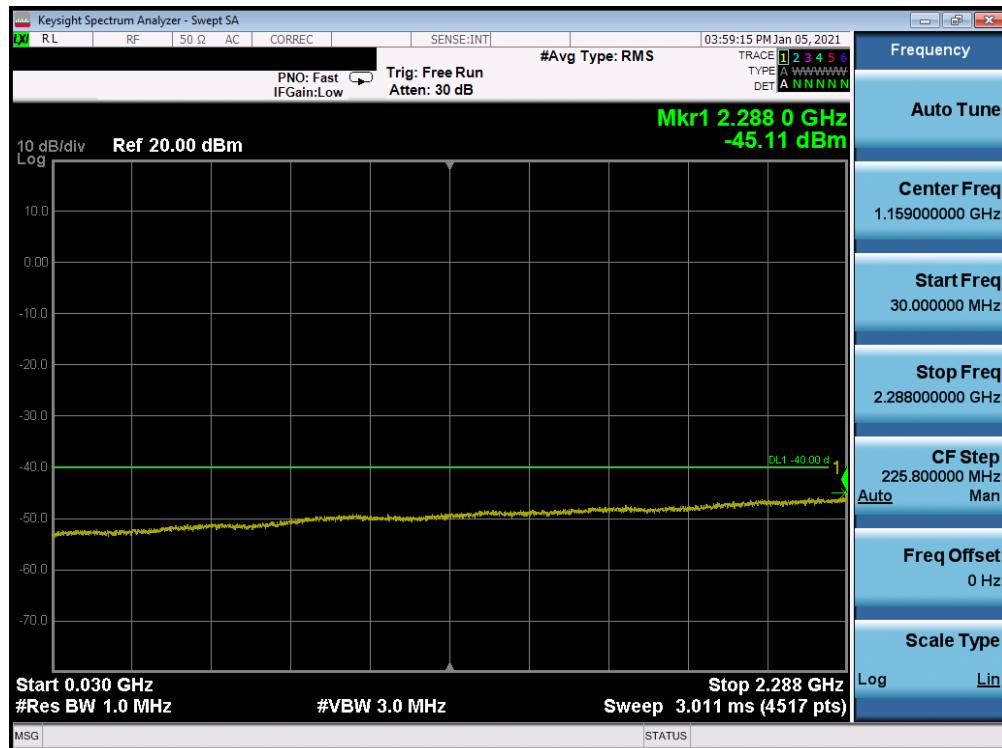
1. Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth 100 kHz or greater for measurements below 1GHz. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. 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.
2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) 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.
3. Uplink carrier aggregation for LTE Band 7 is only supported in this EUT while operating in Power Class 3.
4. Uplink carrier aggregation for LTE Band 41 is supported in this EUT while operating in Power Class 2 and Power Class 3.
5. Uplink carrier aggregation intra-band conducted spurious emissions were evaluated for the two contiguous channels using various combinations of RB size, RB offset, modulation, and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device. The worst case (highest) powers were found while operating with QPSK modulation, as shown in the tables below, with both carriers set to transmit using 1RB.
6. Uplink carrier aggregation inter-band emission was investigated and found to not be the worst case

FCC ID: BCGA2301	 <b>PCTEST</b> <small>Proud to be part of element</small>		<b>PART 27 MEASUREMENT REPORT</b>	Approved by: Quality Manager
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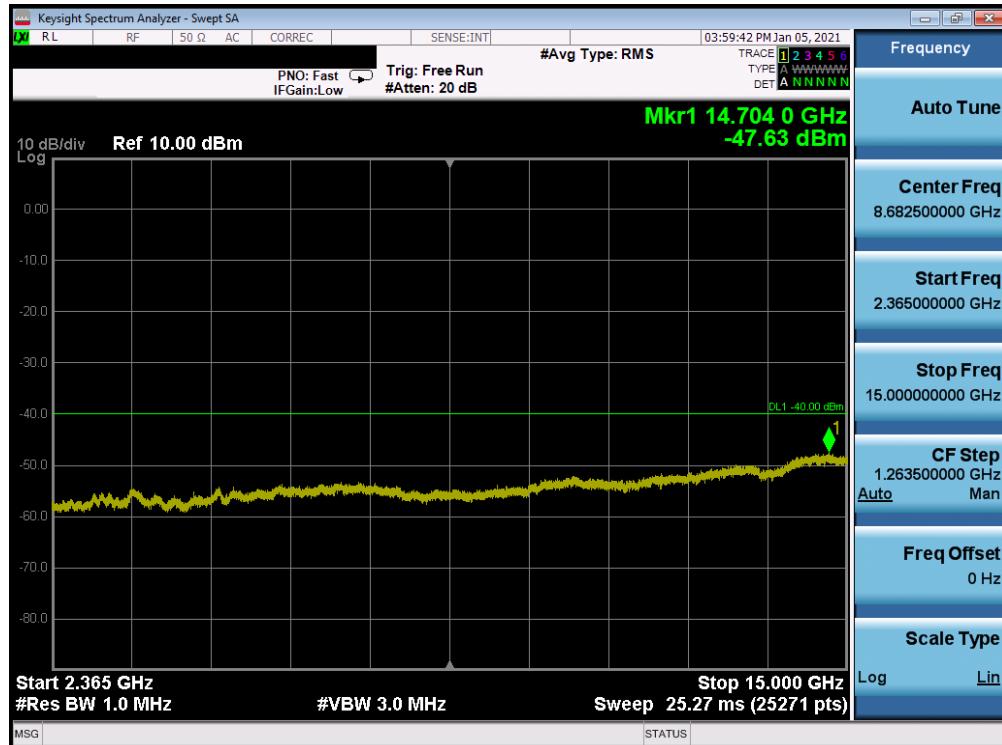
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## Band 30



Plot 7-119. CSE (Band 30 - 5.0MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)



Plot 7-120. CSE (Band 30 - 5.0MHz QPSK - RB Size 1, RB Offset 0 – Low Channel)

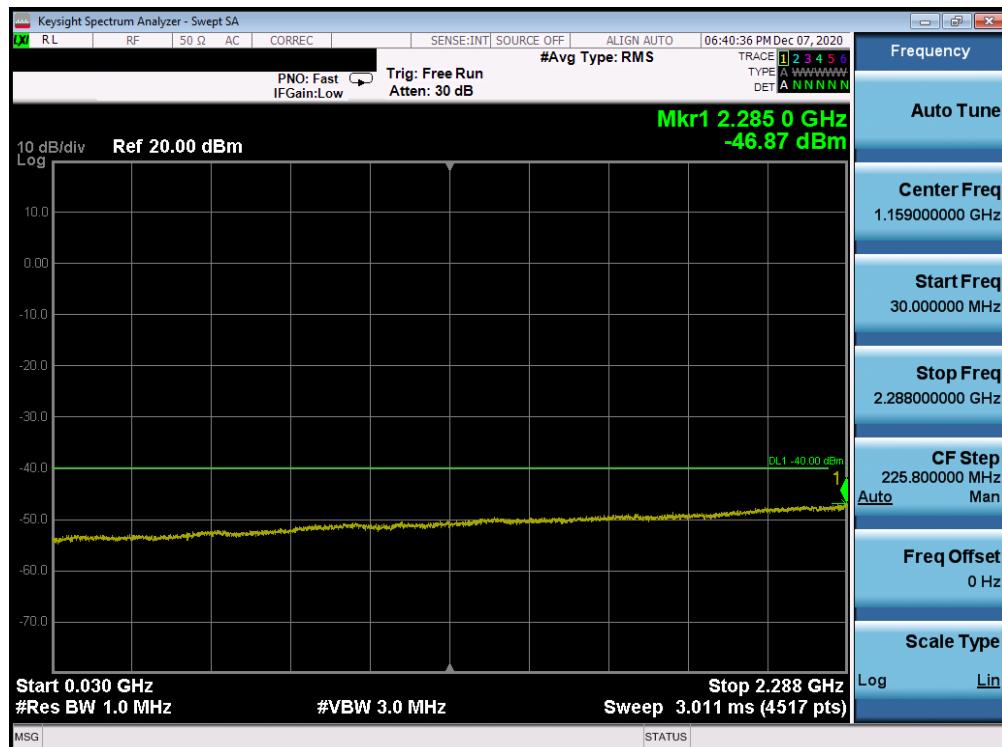
FCC ID: BCGA2301	 <b>PART 27 MEASUREMENT REPORT</b>			Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device		Page 79 of 221

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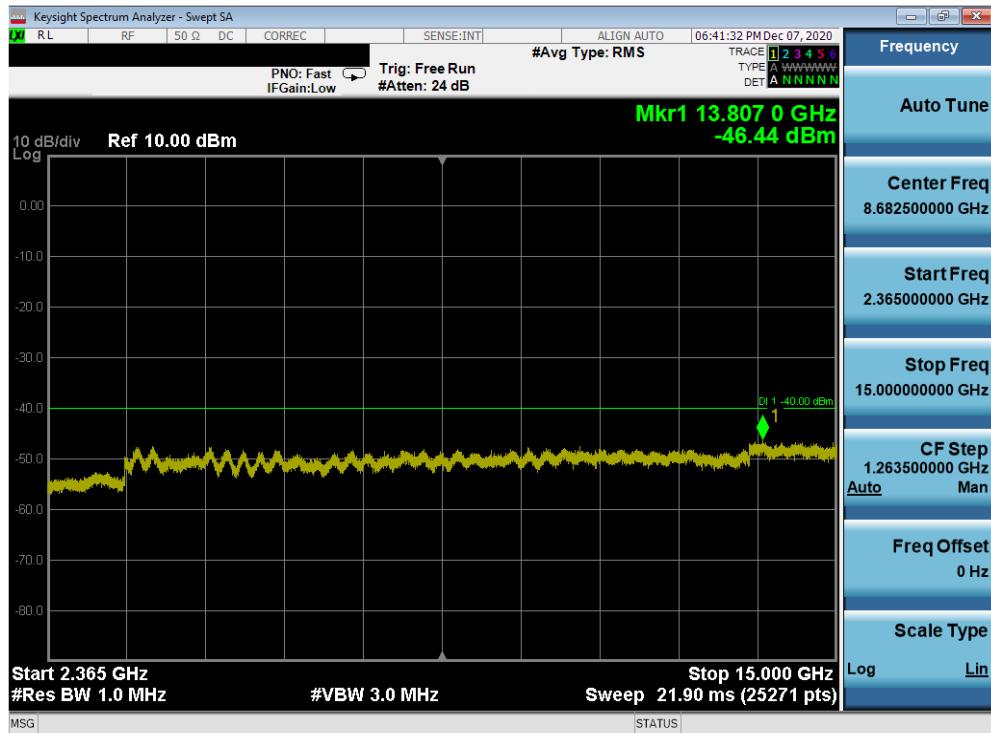


Plot 7-121. CSE (Band 30 - 5.0MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)



Plot 7-122. CSE (Band 30 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
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Plot 7-123. CSE (Band 30 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



Plot 7-124. CSE (Band 30 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
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Plot 7-125. CSE (Band 30 - 5.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-126. CSE (Band 30 - 5.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 		PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
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Plot 7-127. CSE (Band 30 - 5.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
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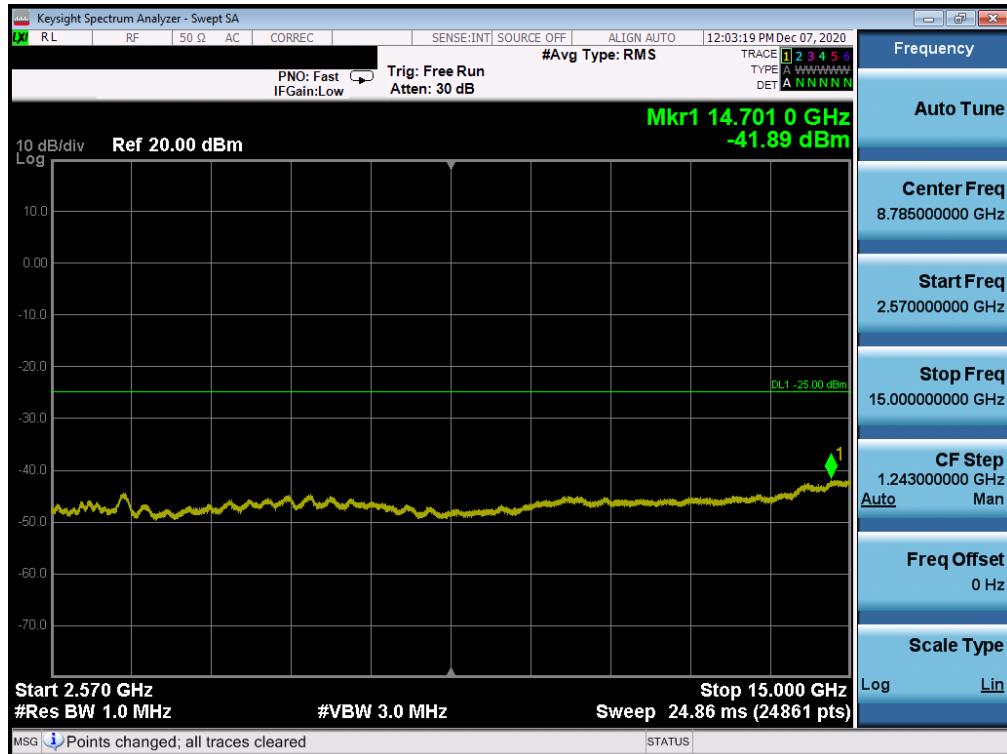
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## LTE Band 7



Plot 7-128. CSE (LTE Band 7 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

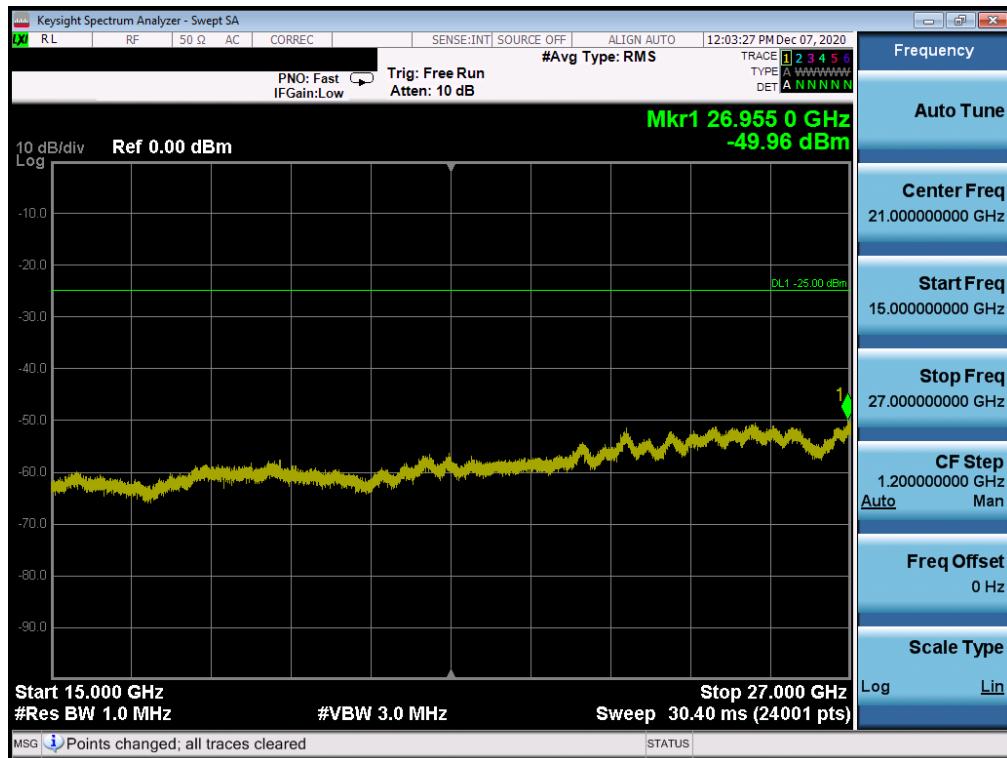


Plot 7-129. CSE (LTE Band 7 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

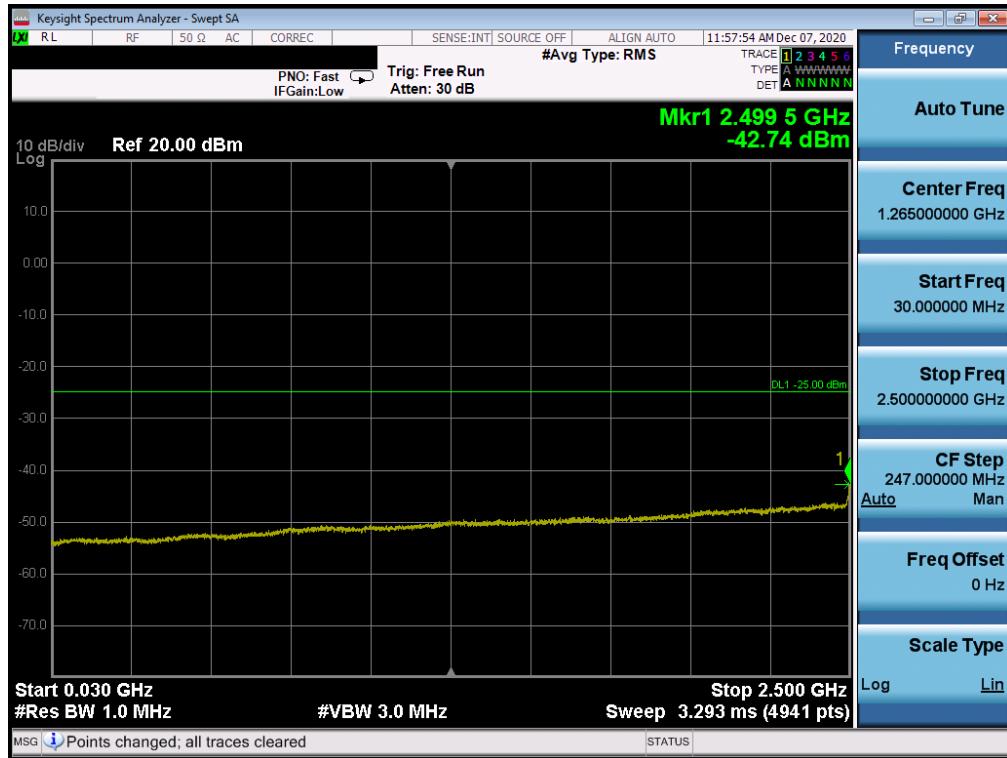
FCC ID: BCGA2301	 <b>PCTEST</b> Proud to be part of 		PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device		Page 84 of 221

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Plot 7-130. CSE (LTE Band 7 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

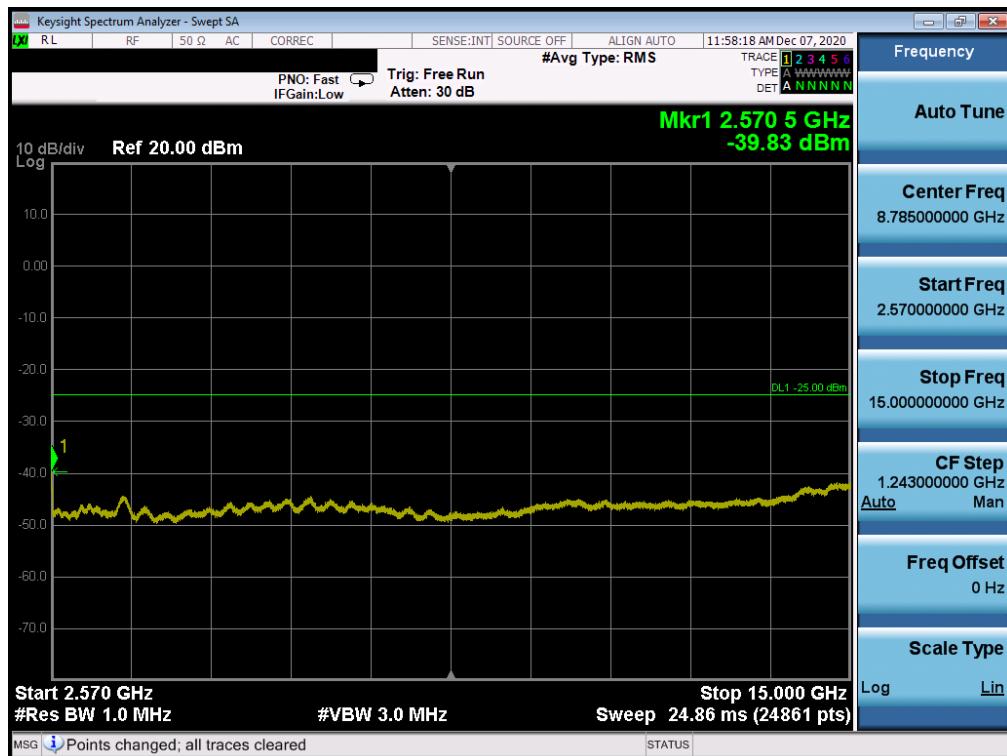


Plot 7-131. CSE (LTE Band 7 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

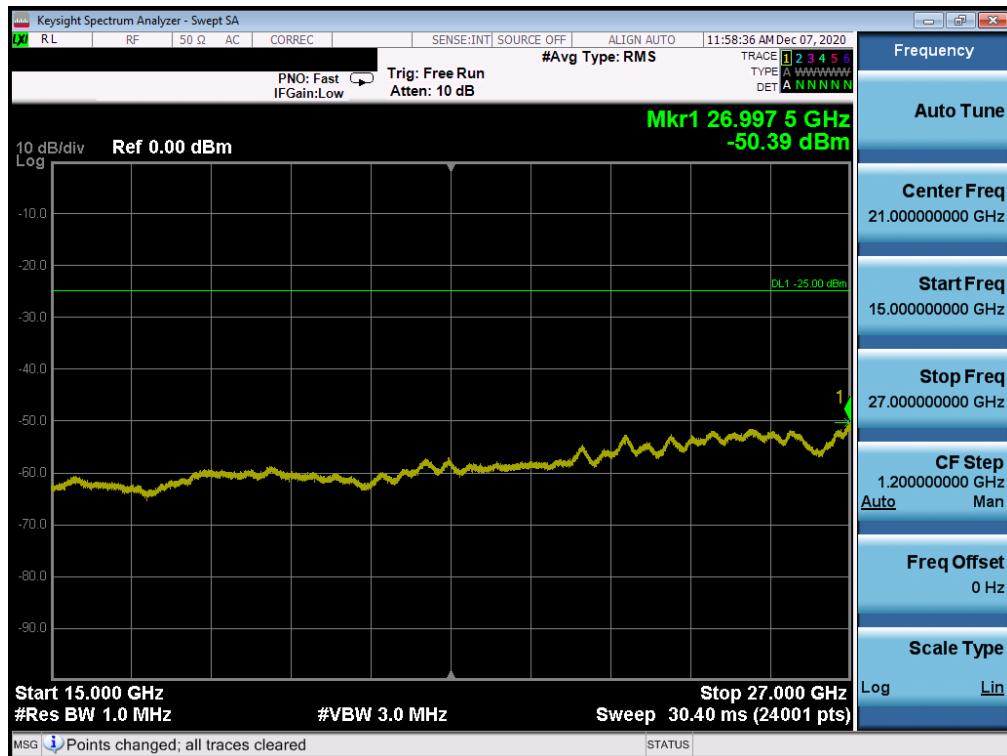
FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device			Page 85 of 221

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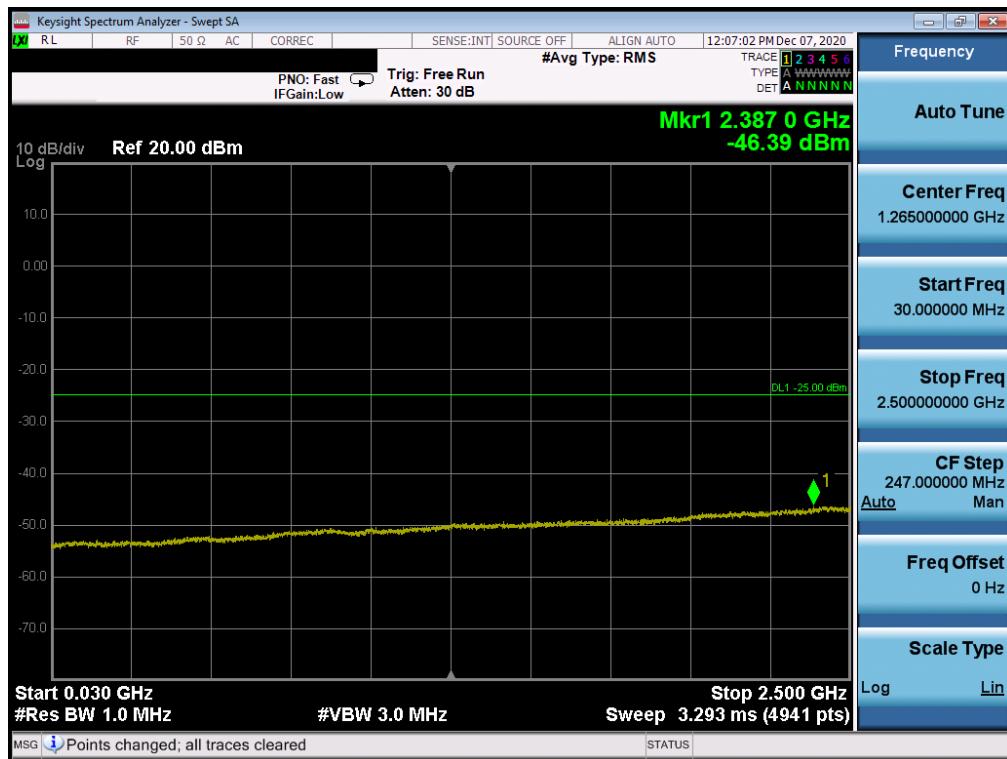


Plot 7-132. CSE (LTE Band 7 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

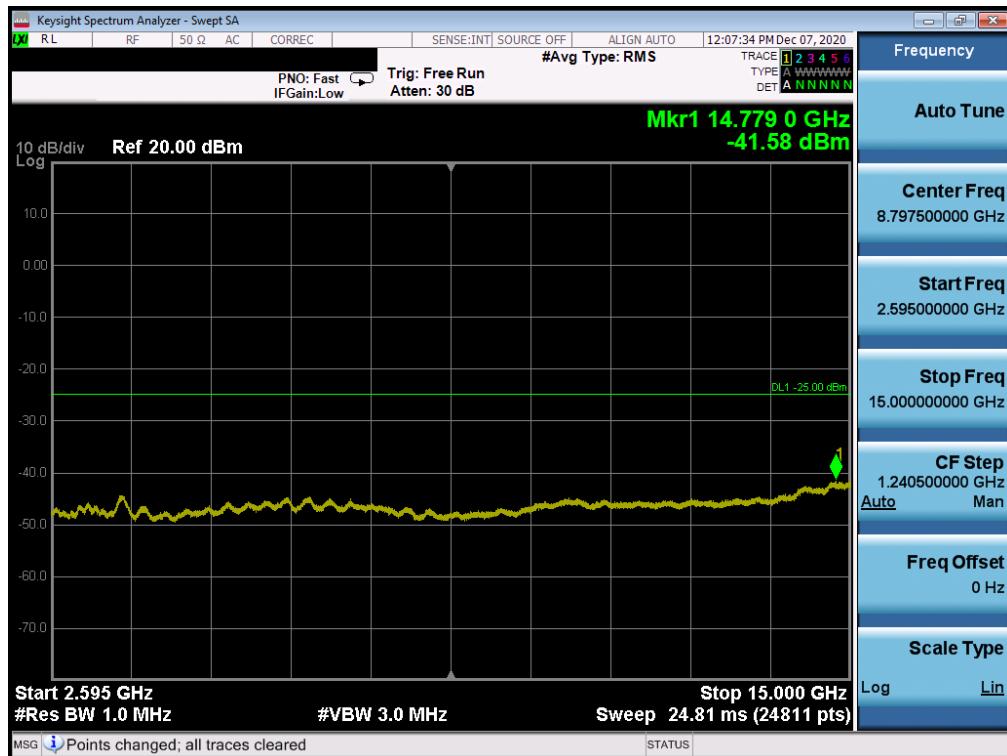


Plot 7-133. CSE (LTE Band 7 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device			Page 86 of 221

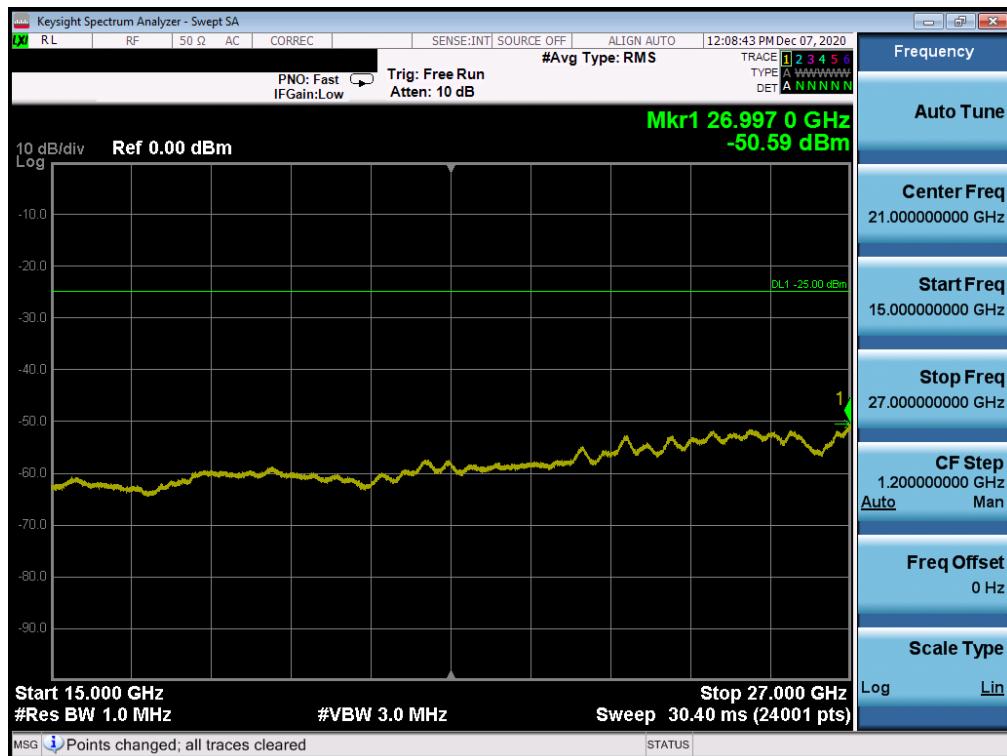


Plot 7-134. CSE (LTE Band 7 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-135. CSE (LTE Band 7 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device			Page 87 of 221



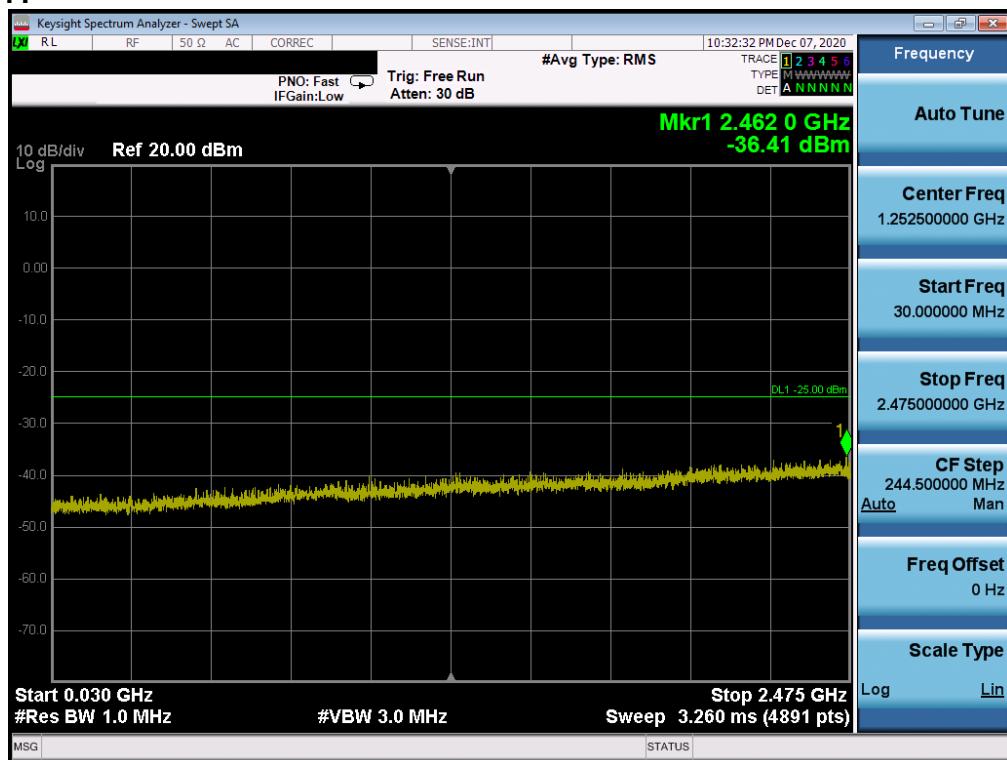
Plot 7-136. CSE (LTE Band 7 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device			Page 88 of 221

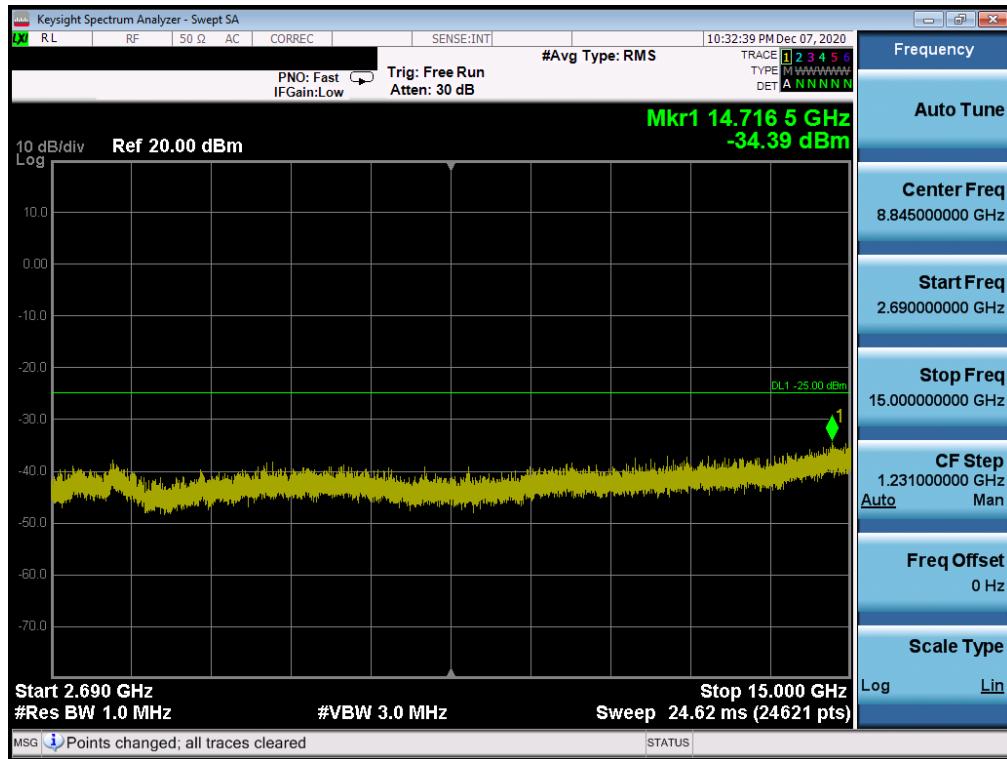
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## LTE Band 41



Plot 7-137. CSE (LTE Band 41 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

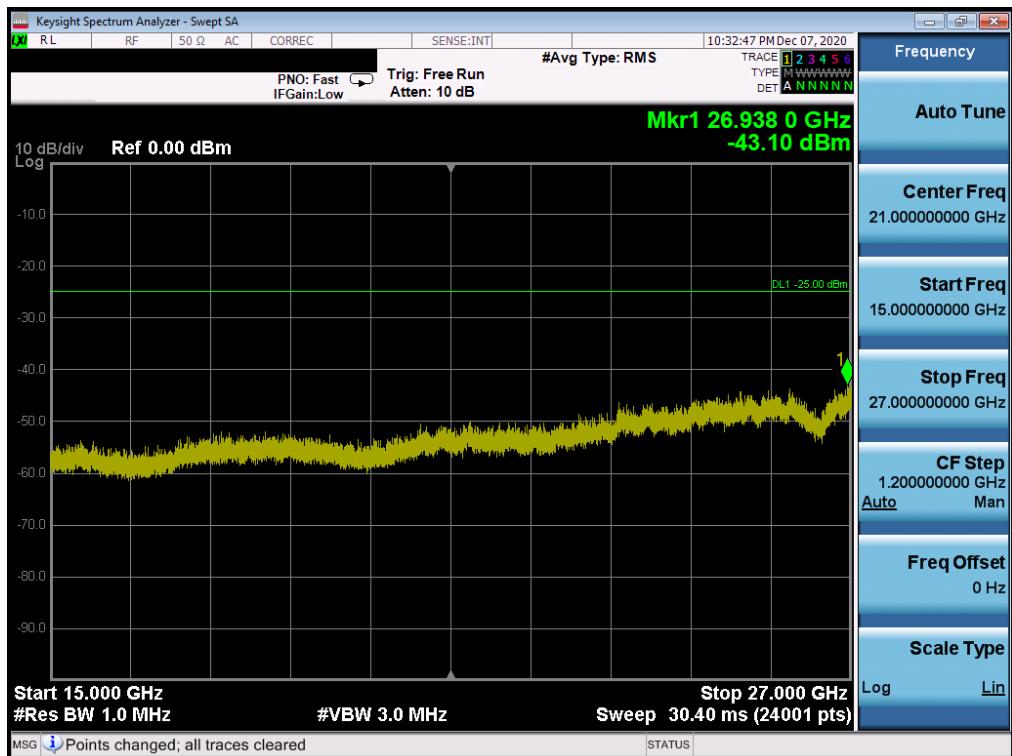


Plot 7-138. CSE (LTE Band 41 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

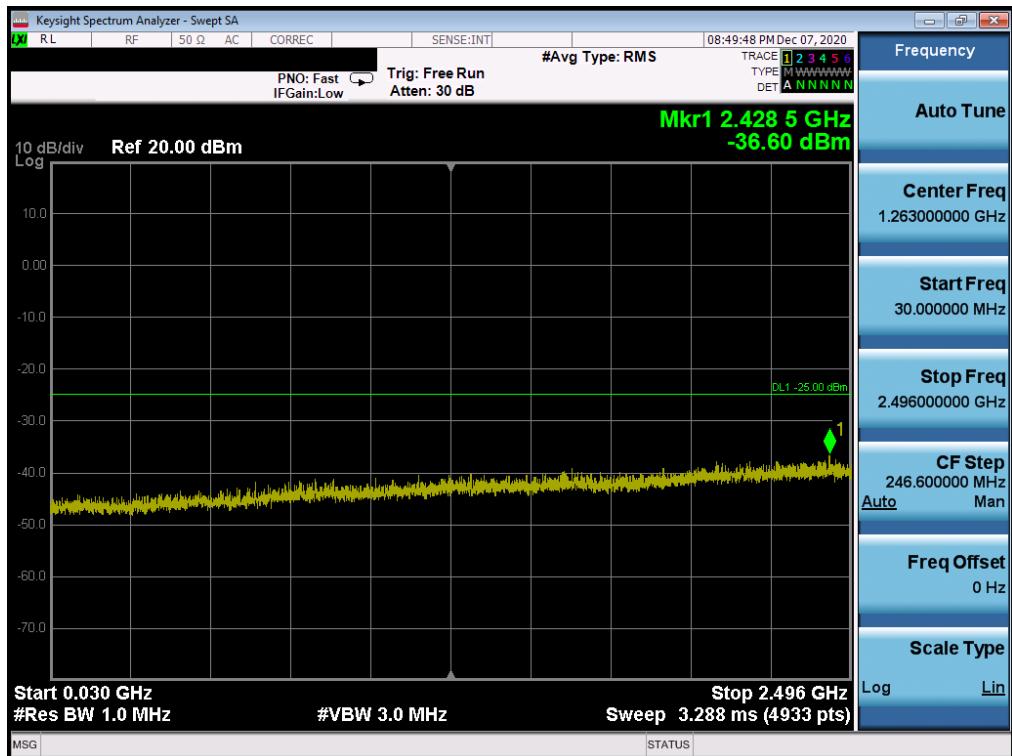
FCC ID: BCGA2301	 <b>PART 27 MEASUREMENT REPORT</b>			Approved by: Quality Manager
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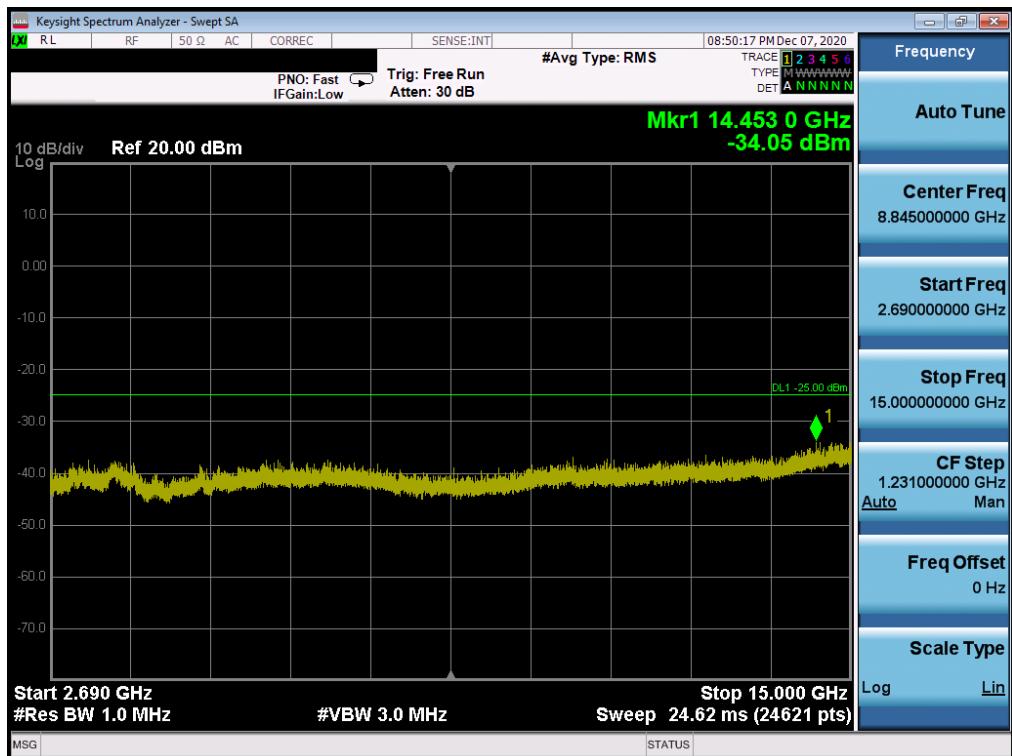


Plot 7-139. CSE (LTE Band 41 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

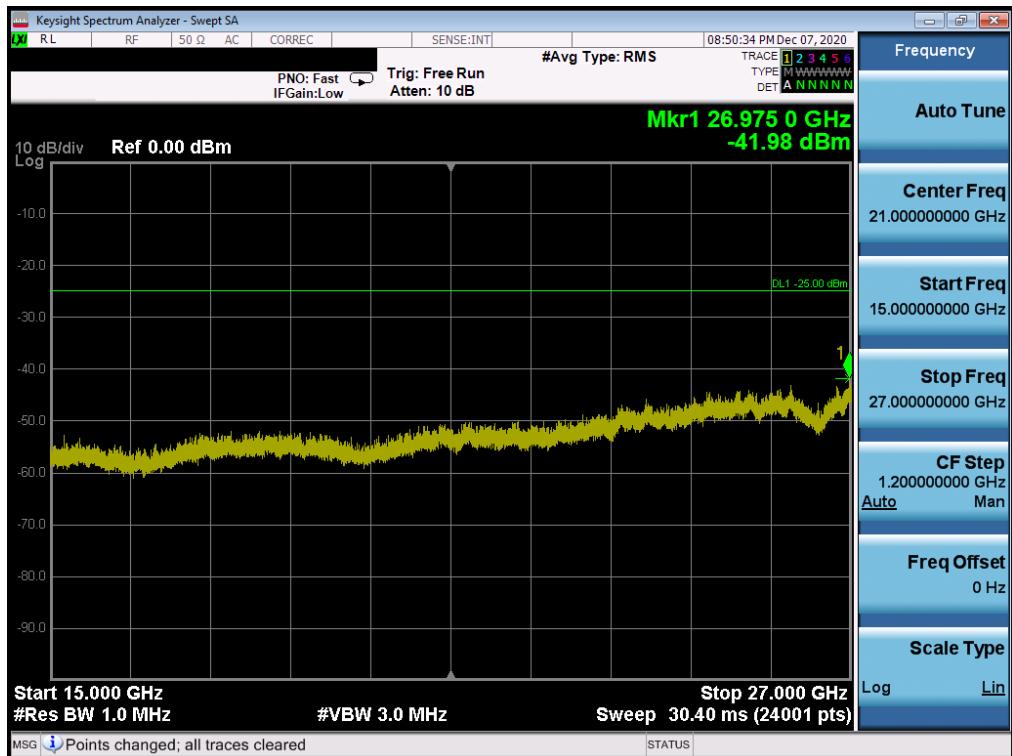


Plot 7-140. CSE (LTE Band 41 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
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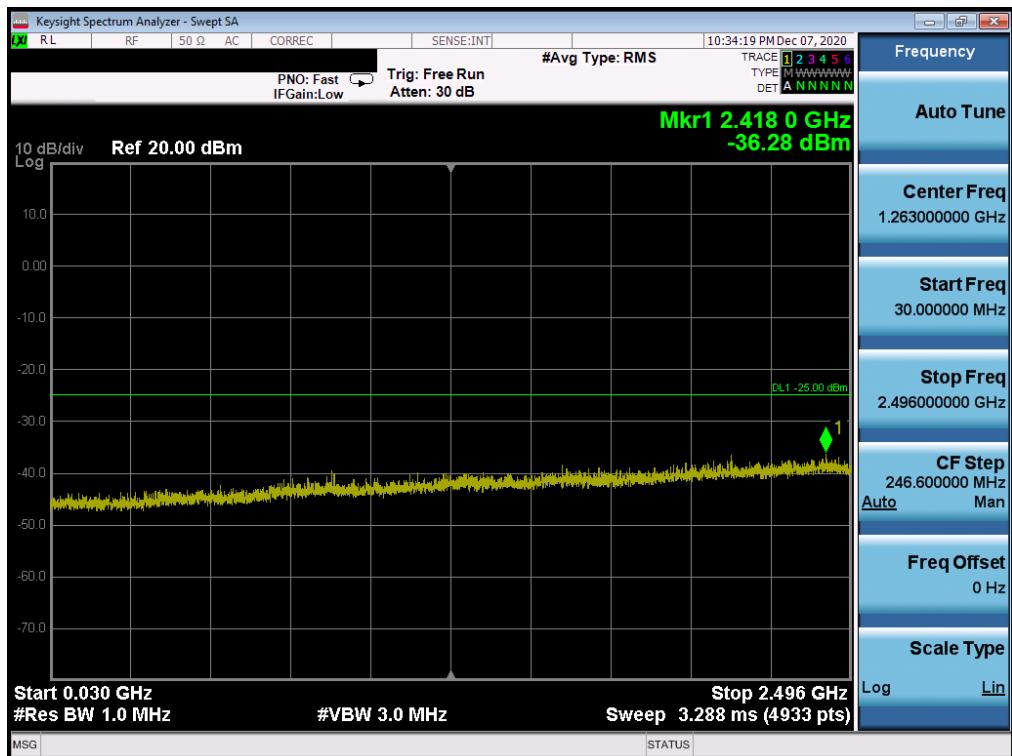


Plot 7-141. CSE (LTE Band 41 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

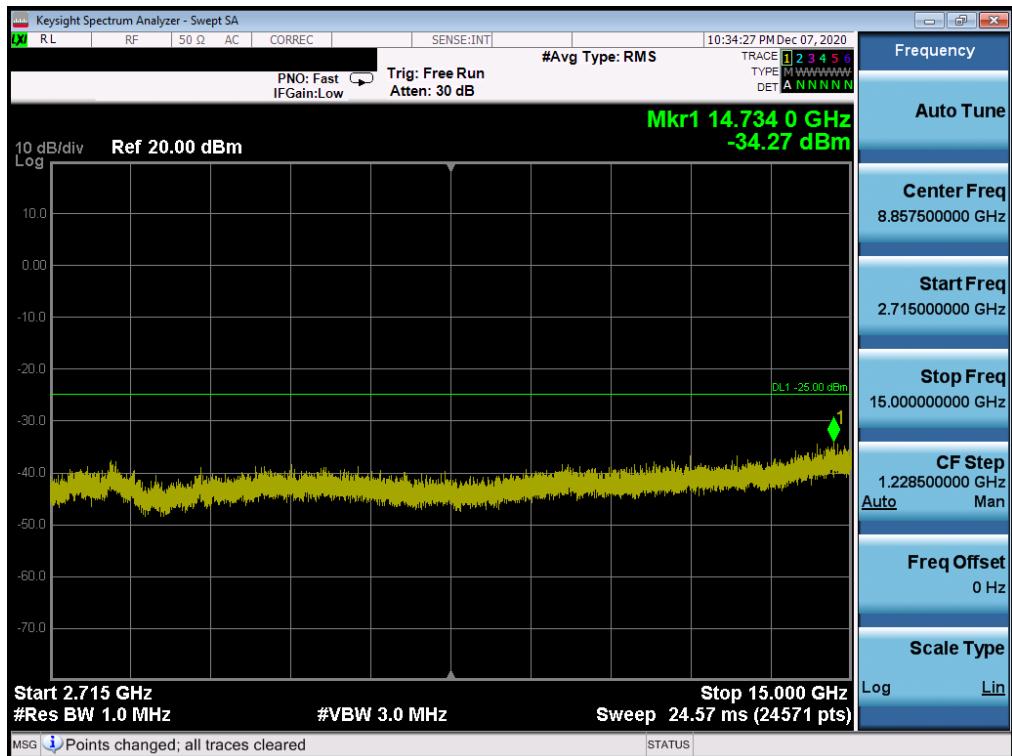


Plot 7-142. CSE (LTE Band 41 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
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Plot 7-143. CSE (LTE Band 41 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

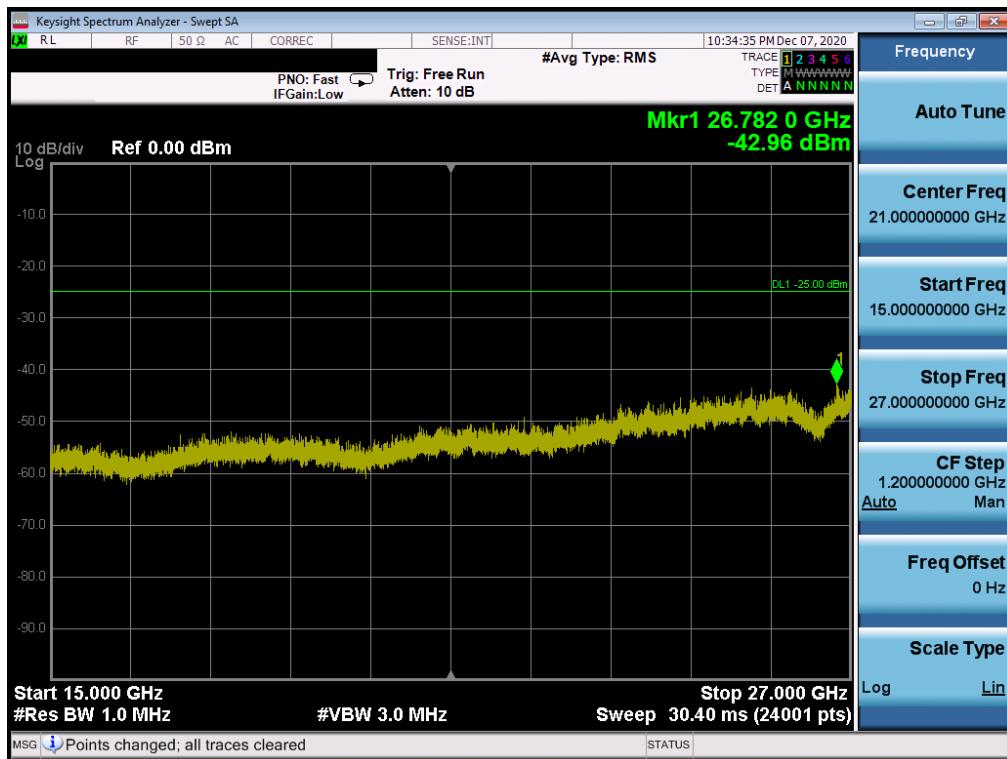


Plot 7-144. CSE (LTE Band 41 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device			Page 92 of 221

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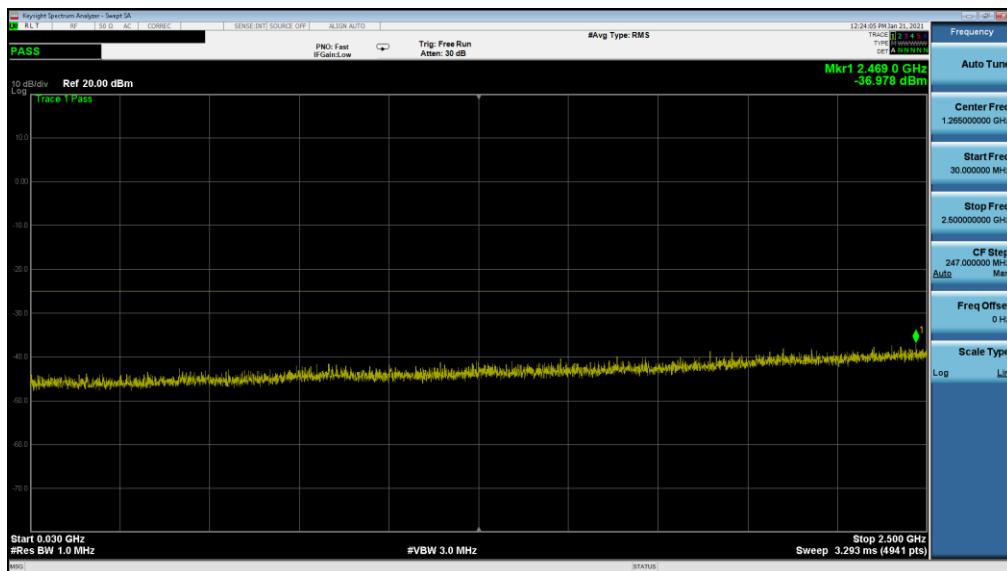
Plot 7-145. CSE (LTE Band 41 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device			Page 93 of 221

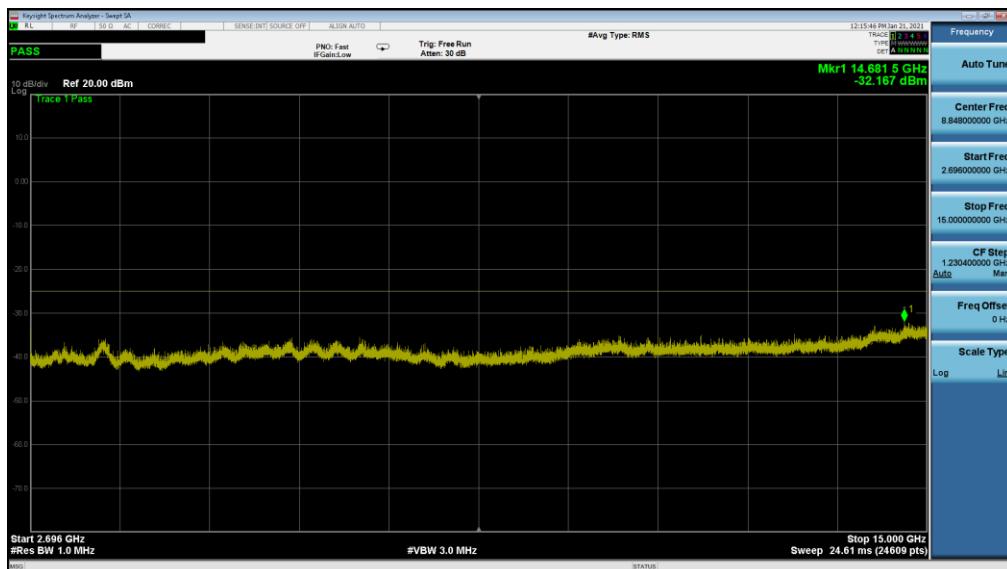
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## NR Band n41

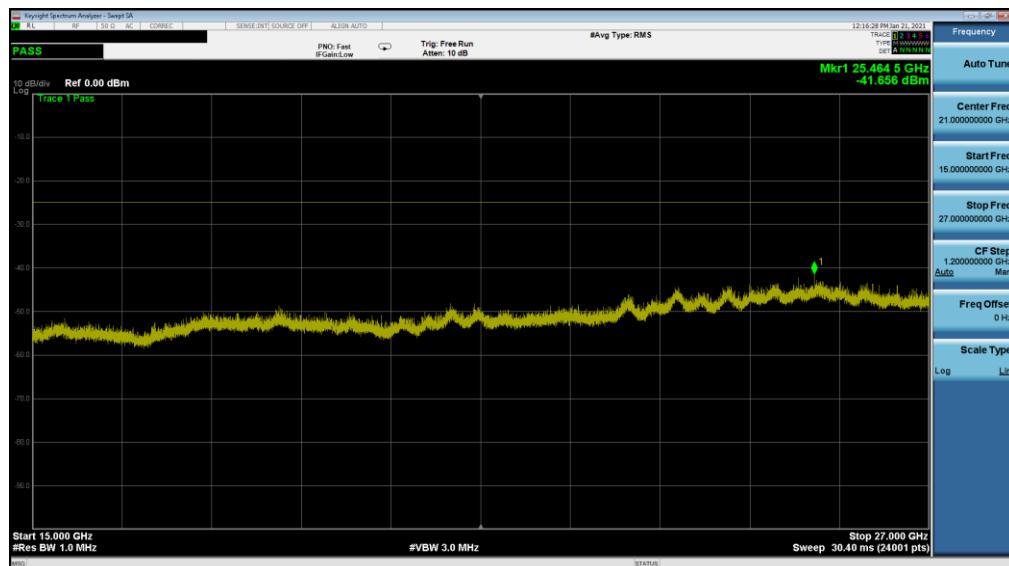


Plot 7-146. CSE (NR Band n41 - 100MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)

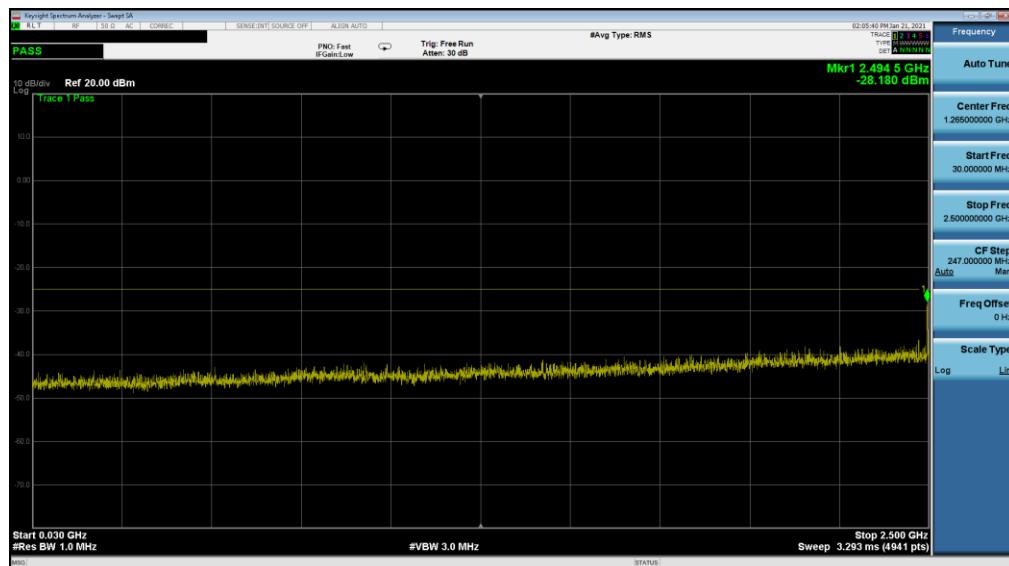


Plot 7-147. CSE (NR Band n41 - 100MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device			Page 94 of 221

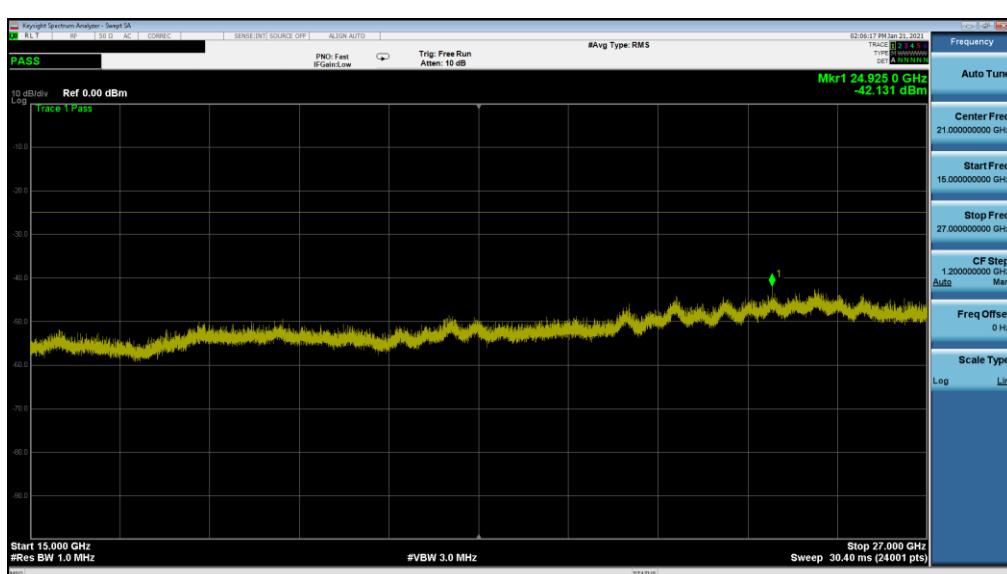
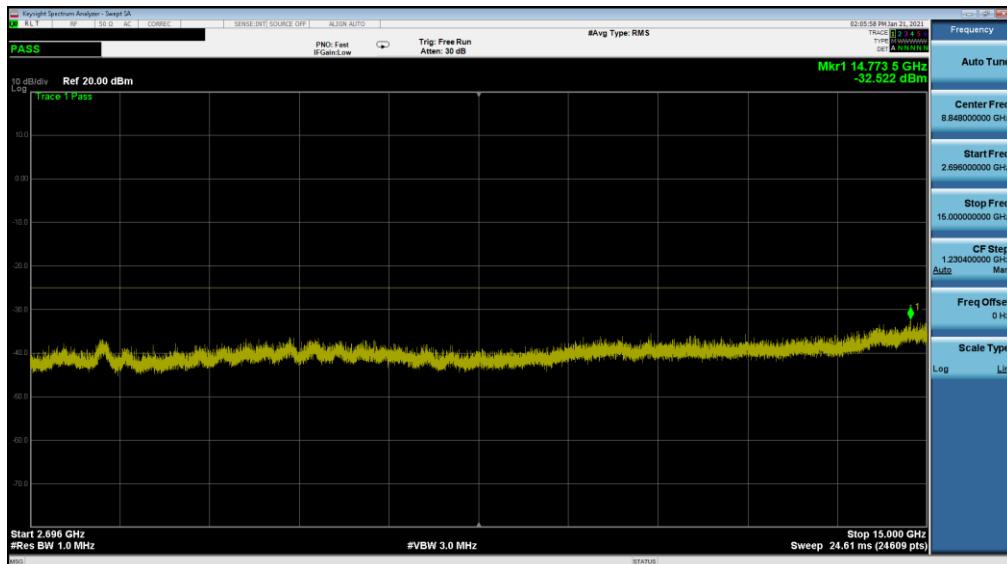


Plot 7-148. CSE (NR Band n41 - 100MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)

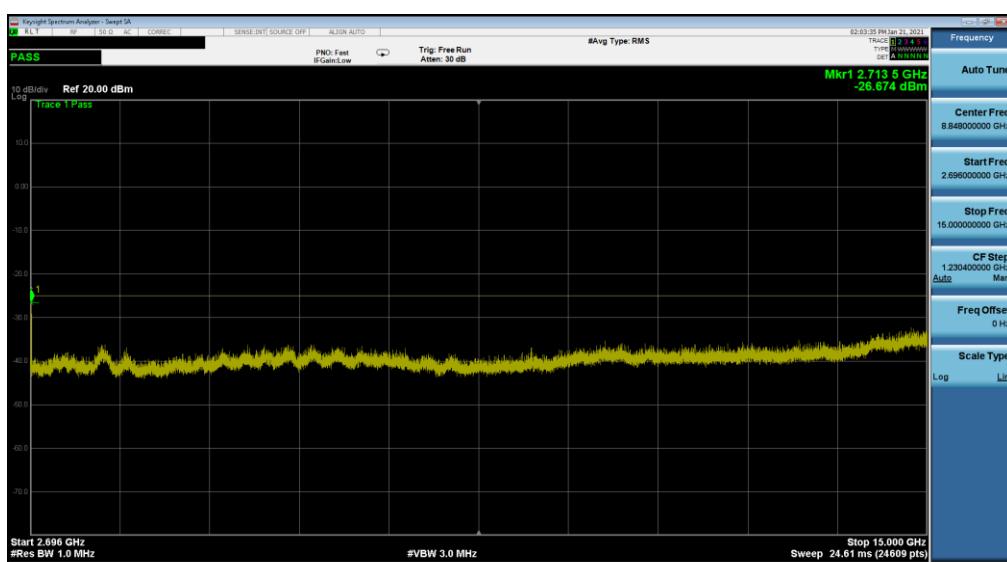
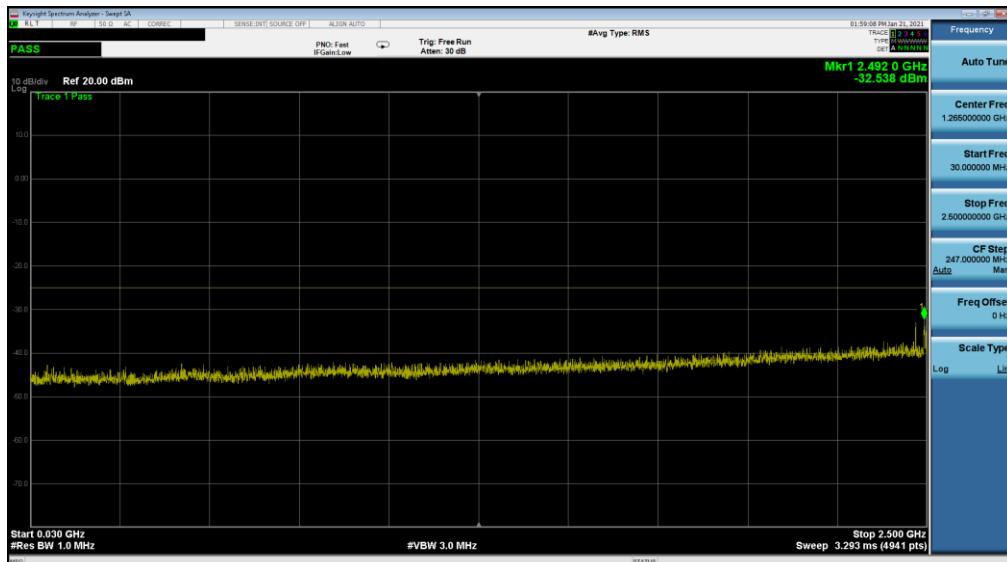


Plot 7-149. CSE (NR Band n41 - 100MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)

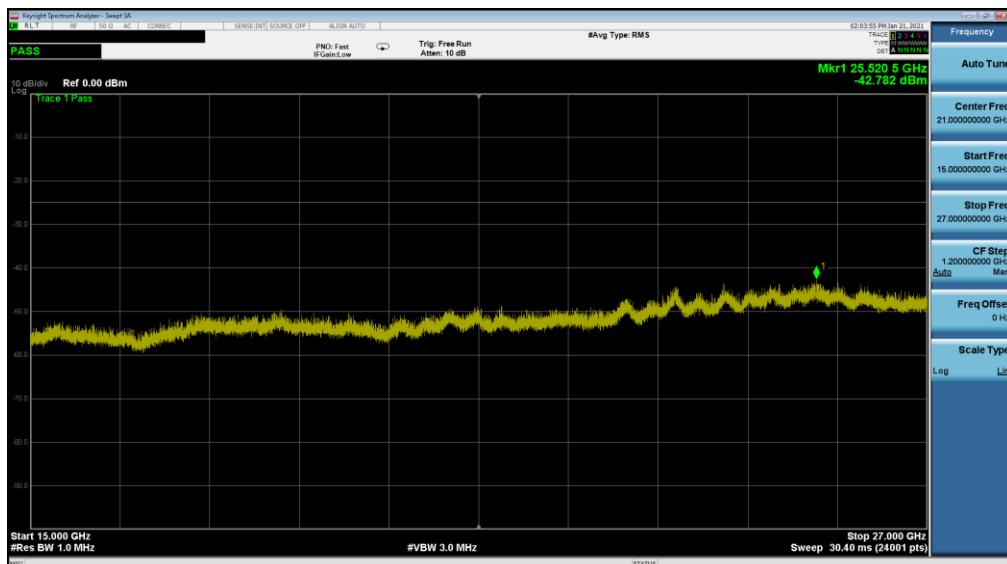
FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device			Page 95 of 221



FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device			Page 96 of 221



FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 		<b>PART 27 MEASUREMENT REPORT</b>	Approved by: Quality Manager
<b>Test Report S/N:</b> 1C2101020002-05-R1.BCG	<b>Test Dates:</b> 12/23/2020 - 03/05/2021	<b>EUT Type:</b> Tablet Device		Page 97 of 221

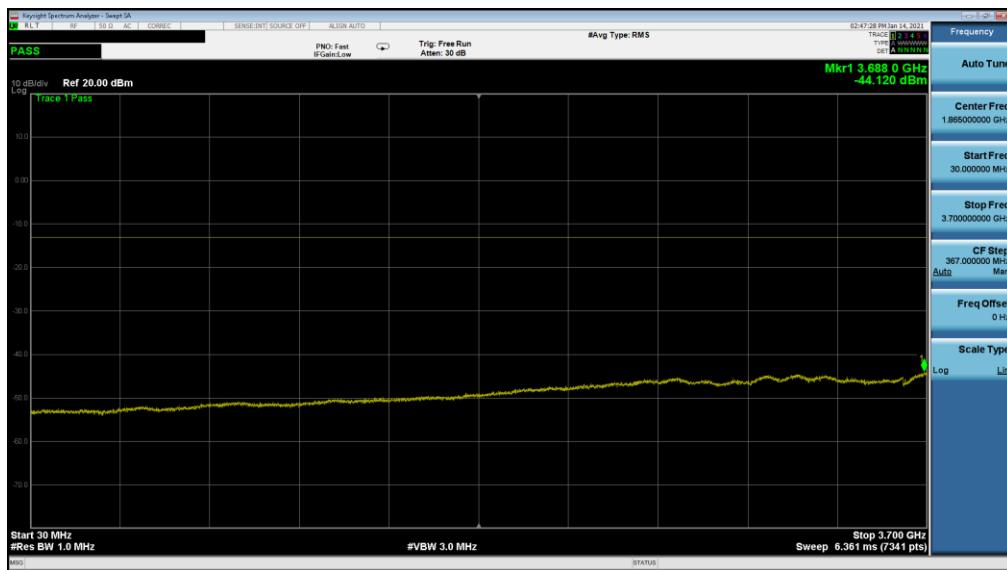


FCC ID: BCGA2301	<b>PART 27 MEASUREMENT REPORT</b>			Approved by: Quality Manager
<b>Test Report S/N:</b> 1C2101020002-05-R1.BCG	<b>Test Dates:</b> 12/23/2020 - 03/05/2021	<b>EUT Type:</b> Tablet Device		Page 98 of 221

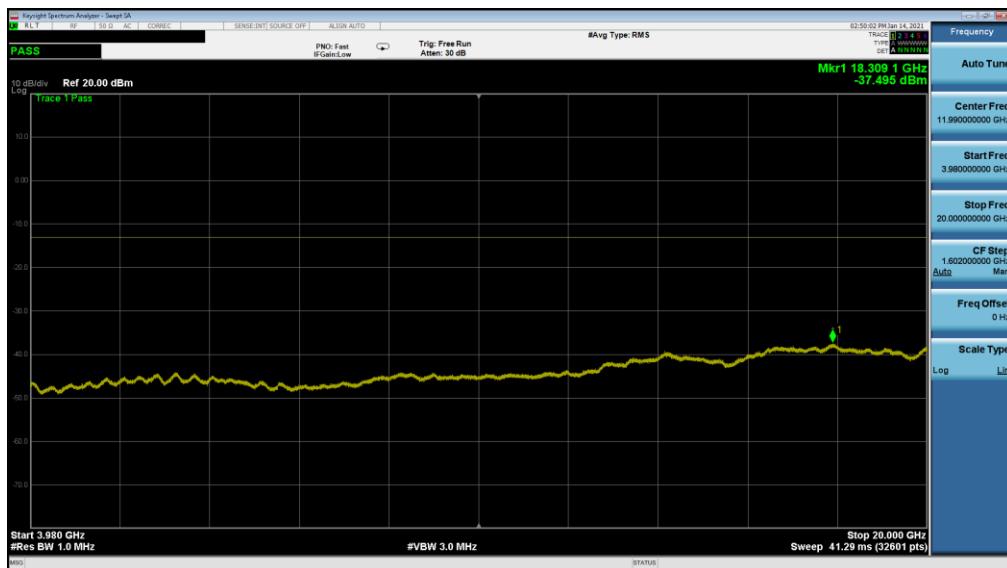
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## NR Band n77



Plot 7-155. CSE (NR Band n77 - 100MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)

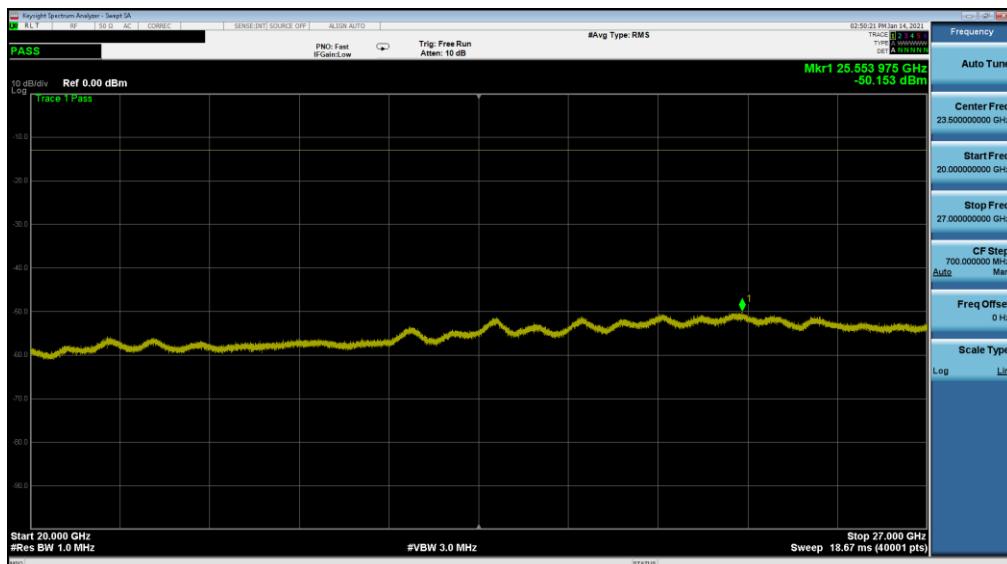


Plot 7-156. CSE (NR Band n77 - 100MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)

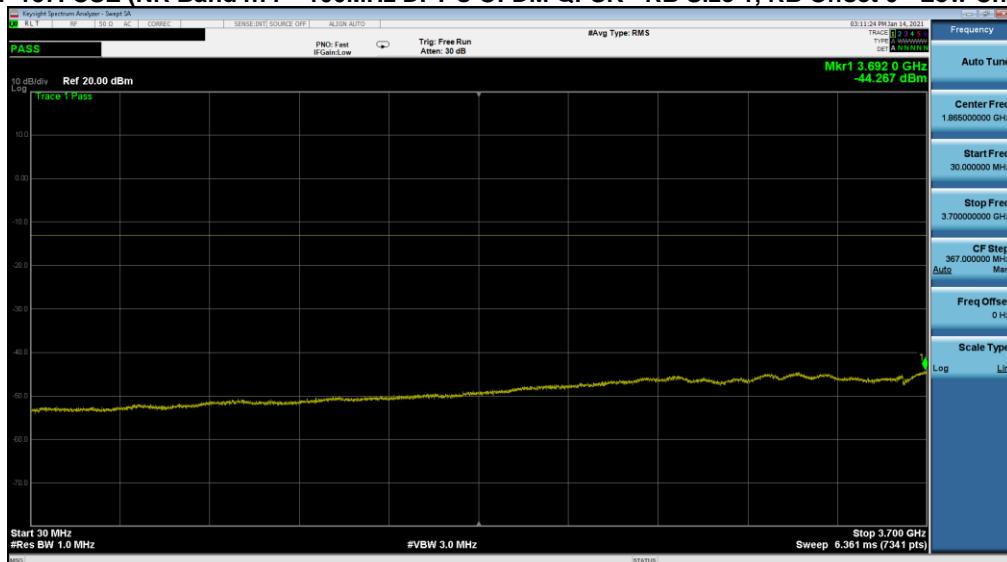
FCC ID: BCGA2301	 <b>PART 27 MEASUREMENT REPORT</b>			Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device		Page 99 of 221

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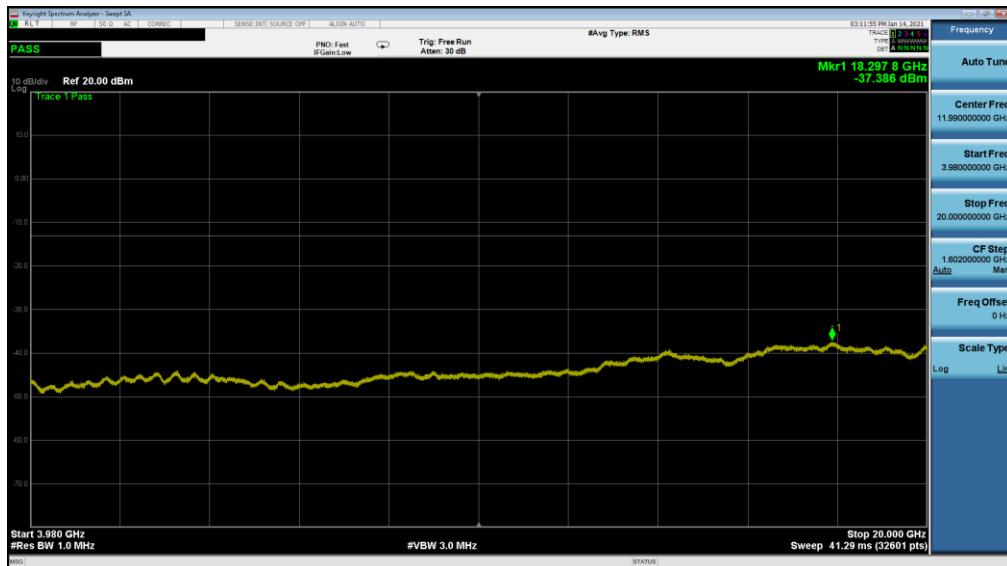


Plot 7-157. CSE (NR Band n77 - 100MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)

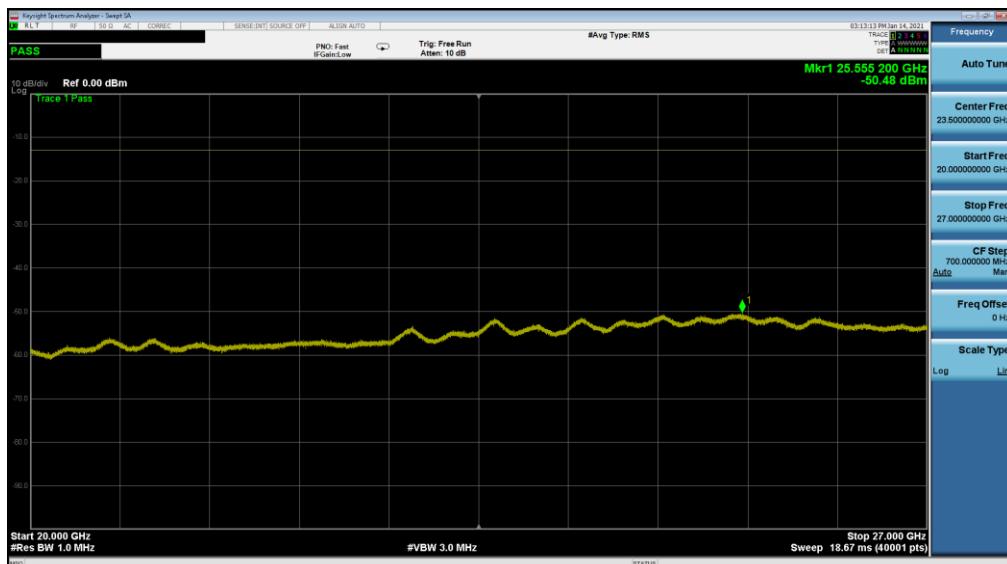


Plot 7-158. CSE (NR Band n77 - 100MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device			Page 100 of 221

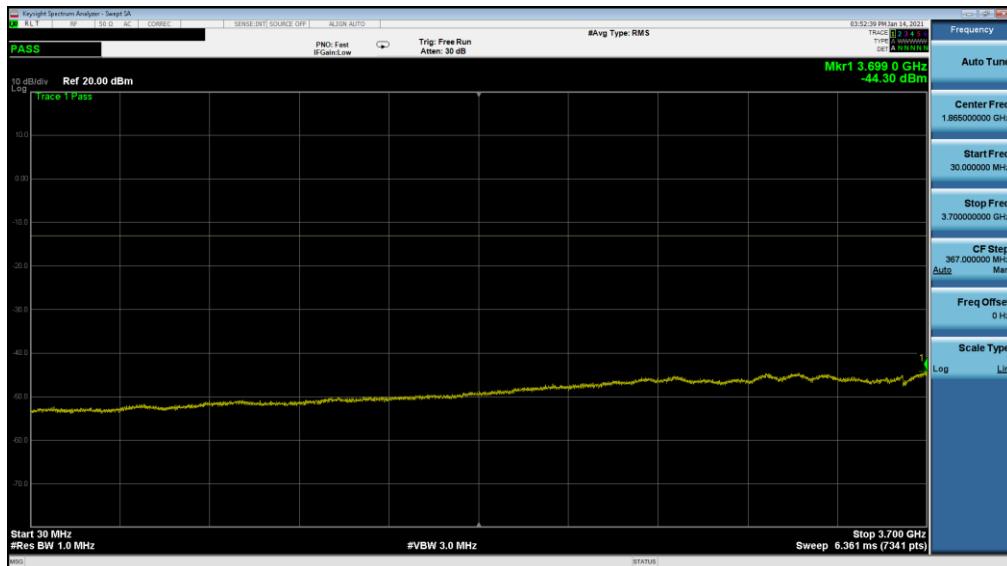


Plot 7-159. CSE (NR Band n77 - 100MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)

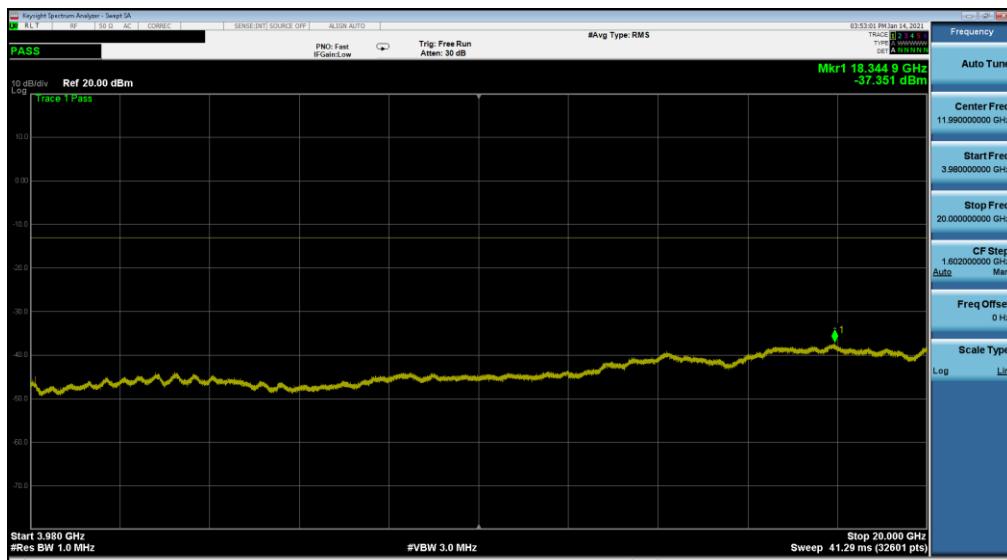


Plot 7-160. CSE (NR Band n77 - 100MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: BCGA2301	 <b>PCTEST</b> Proud to be part of 	<b>PART 27 MEASUREMENT REPORT</b>	Approved by: Quality Manager
<b>Test Report S/N:</b> 1C2101020002-05-R1.BCG	<b>Test Dates:</b> 12/23/2020 - 03/05/2021	<b>EUT Type:</b> Tablet Device	Page 101 of 221

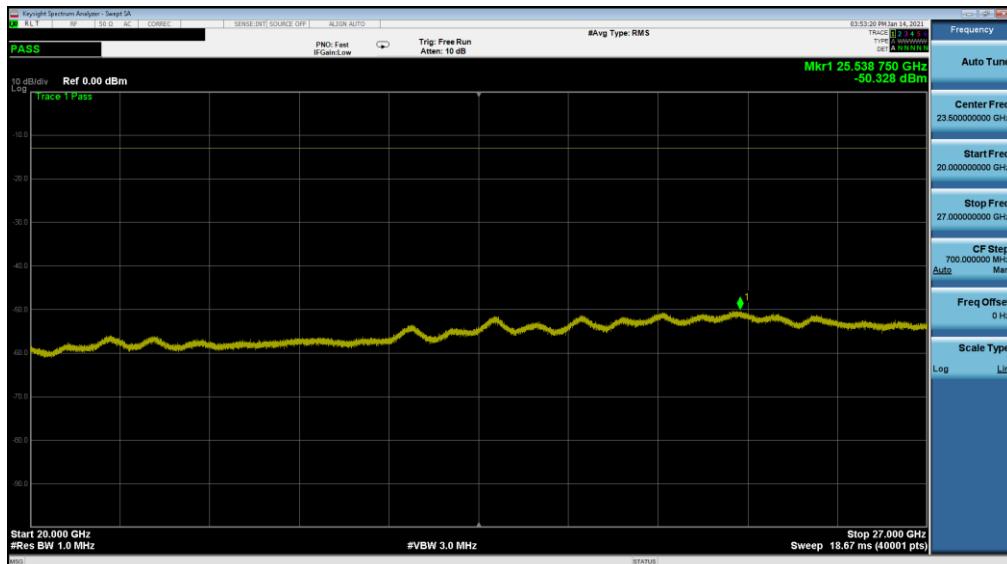


Plot 7-161. CSE (NR Band n77 - 100MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-162. CSE (NR Band n77 - 100MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device			Page 102 of 221

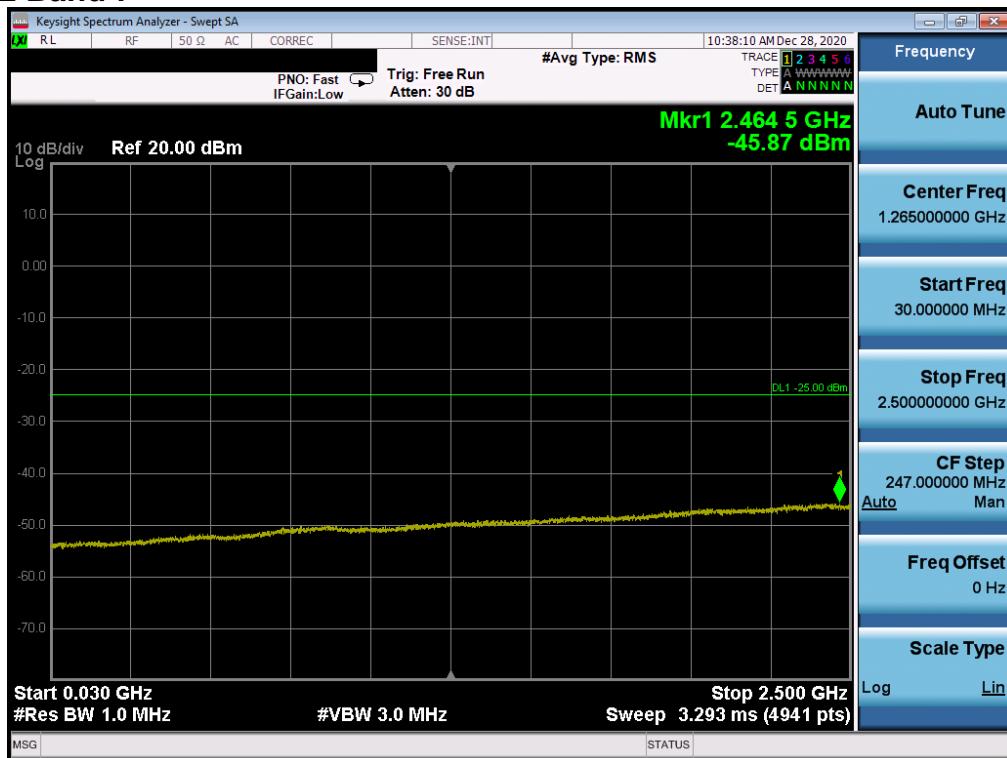


FCC ID: BCGA2301	PART 27 MEASUREMENT REPORT			Approved by: Quality Manager
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## ULCA - LTE Band 7



Plot 7-164. CSE (ULCA LTE Band 7 – (20 + 20)MHz QPSK - PCC 1/99 SCC 1/0, - Mid Channel)



Plot 7-165. CSE (ULCA LTE Band 7 - (20 + 20)MHz QPSK - PCC 1/99 SCC 1/0, - Mid Channel)

FCC ID: BCGA2301	 <b>PART 27 MEASUREMENT REPORT</b>			Approved by: Quality Manager
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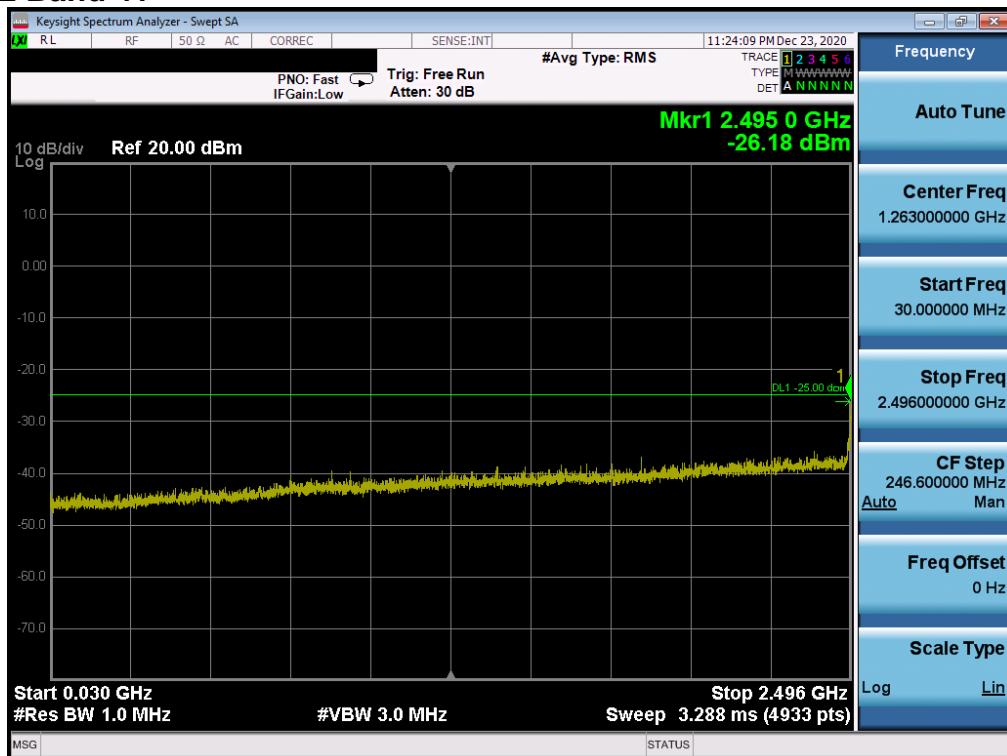
Plot 7-166. CSE (ULCA LTE Band 7 - (20 + 20)MHz QPSK - PCC 1/99 SCC 1/0, - Mid Channel)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 		<b>PART 27 MEASUREMENT REPORT</b>	Approved by: Quality Manager
<b>Test Report S/N:</b> 1C2101020002-05-R1.BCG	<b>Test Dates:</b> 12/23/2020 - 03/05/2021	<b>EUT Type:</b> Tablet Device		Page 105 of 221

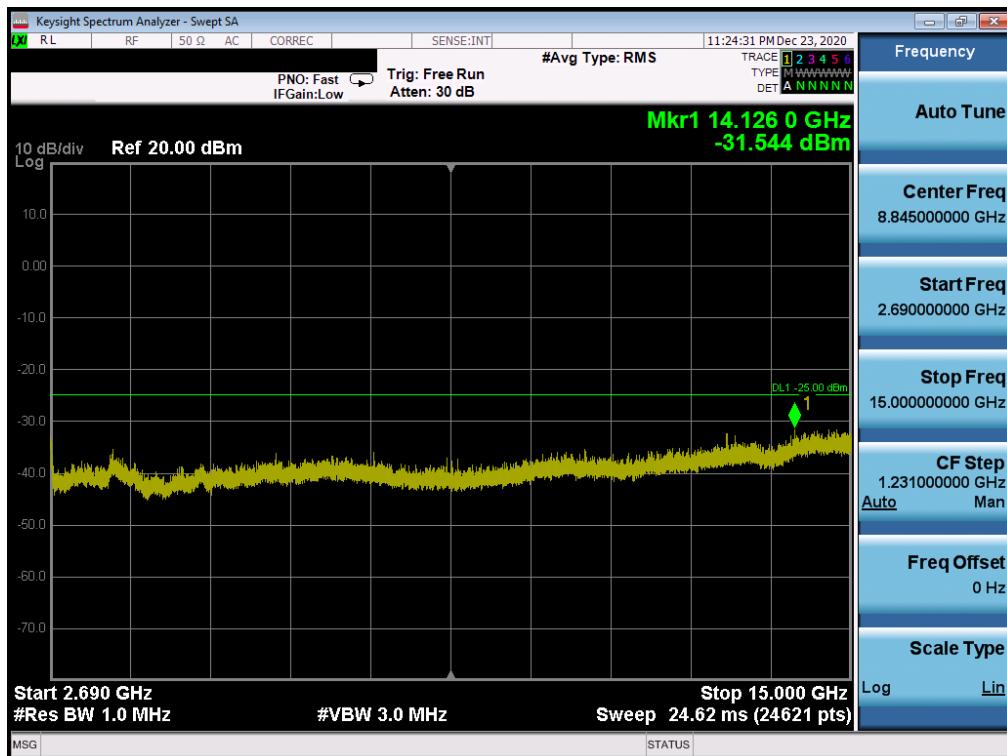
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## ULCA - LTE Band 41

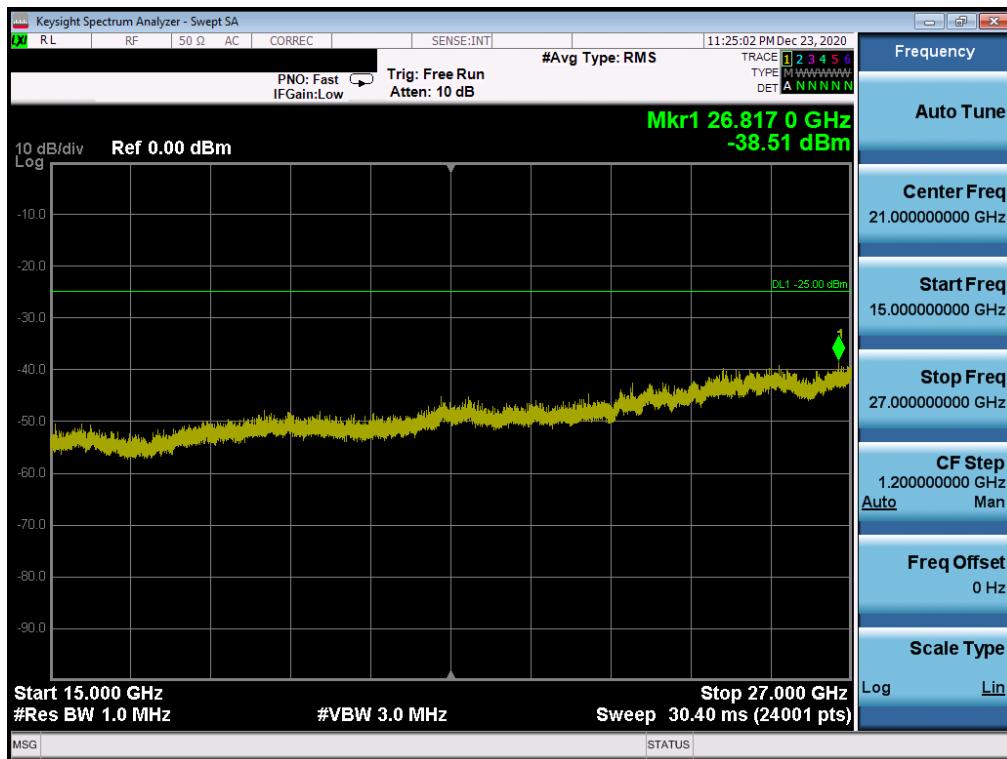


Plot 7-167. CSE (ULCA LTE Band 41 - (20 + 20)MHz QPSK - PCC 1/99 SCC 1/0, - Mid Channel)



Plot 7-168. CSE (ULCA LTE Band 41 - (20 + 20)MHz QPSK - PCC 1/99 SCC 1/0, - Mid Channel)

FCC ID: BCGA2301	 <b>PART 27 MEASUREMENT REPORT</b>			Approved by: Quality Manager
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Plot 7-169. CSE (ULCA LTE Band 41 - (20 + 20)MHz QPSK - PCC 1/99 SCC 1/0, - Mid Channel)

FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
Test Report S/N: 1C2101020002-05-R1.BCG	Test Dates: 12/23/2020 - 03/05/2021	EUT Type: Tablet Device			Page 107 of 221

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## 7.4 Band Edge Emissions at Antenna Terminal

§2.1051, §27.53(a), §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 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. All ports were tested and only the worst case data was reported.

**For NR FR1 Band n77, the minimum permissible attenuation level of any spurious emission is  $43 + 10 \log_{10}(P[\text{Watts}])$ , where P is the transmitter power in Watts.**

**The minimum permissible attenuation level for Band 30 is  $> 43 + 10 \log_{10}(P[\text{Watts}])$  at 2300-2305MHz & 2345-2360MHz,  $> 55 + 10 \log_{10}(P[\text{Watts}])$  at 2320-2324MHz & 2341-2345MHz,  $> 61 + 10 \log_{10}(P[\text{Watts}])$  at 2324-2328MHz & 2337-2341MHz,  $> 67 + 10 \log_{10}(P[\text{Watts}])$  at 2288-2292MHz & 2328-2337MHz, and  $> 70 + 10 \log_{10}(P[\text{Watts}])$  at frequencies  $< 2288\text{MHz}$  &  $> 2365\text{MHz}$ .**

**For LTE Bands 7, 41, and NR FR1 Band n41 the minimum permissible attenuation level is noted in the Test Notes on the following page.**

### Test Procedure Used

KDB 971168 D01 v03r01 – 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  $\geq 3 \times \text{RBW}$
5. Detector = RMS
6. Number of sweep points  $\geq 2 \times \text{Span}/\text{RBW}$
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.

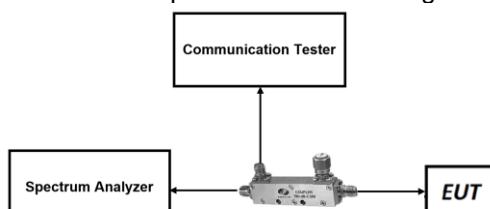


Figure 7-3. Test Instrument & Measurement Setup

FCC ID: BCGA2301	 <b>PCTEST</b> Proud to be part of element		PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
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## Test Notes

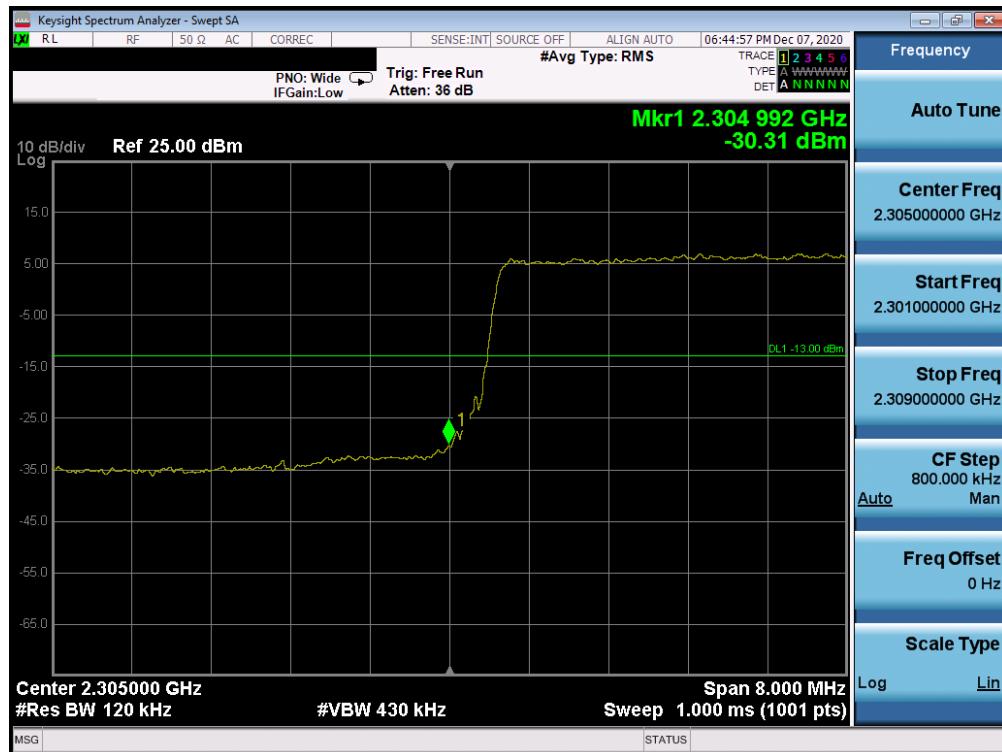
1. Per 27.53(h), in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to demonstrate compliance with the out-of-band emissions limit. The emission 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.
2. Per 27.53(a)(5) in the 1 MHz bands immediately outside and adjacent to the channel blocks at 2305, 2310, 2315, 2320, 2345, 2350, 2355, and 2360 MHz, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e., 1 MHz). 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 emissions are attenuated at least 26 dB below the transmitter power.
3. 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.
4. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) 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.

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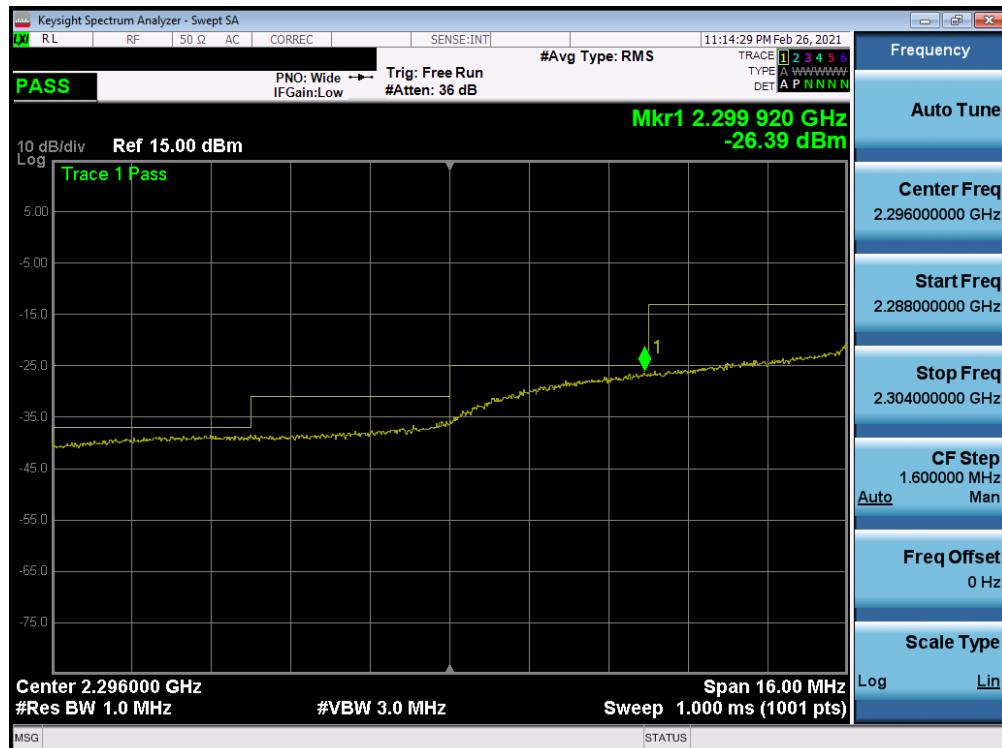
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## Band 30



Plot 7-170. Lower Band Edge Plot (Band 30 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-171. Lower Extended Band Edge Plot (Band 30 - 10.0MHz QPSK - Full RB Configuration)

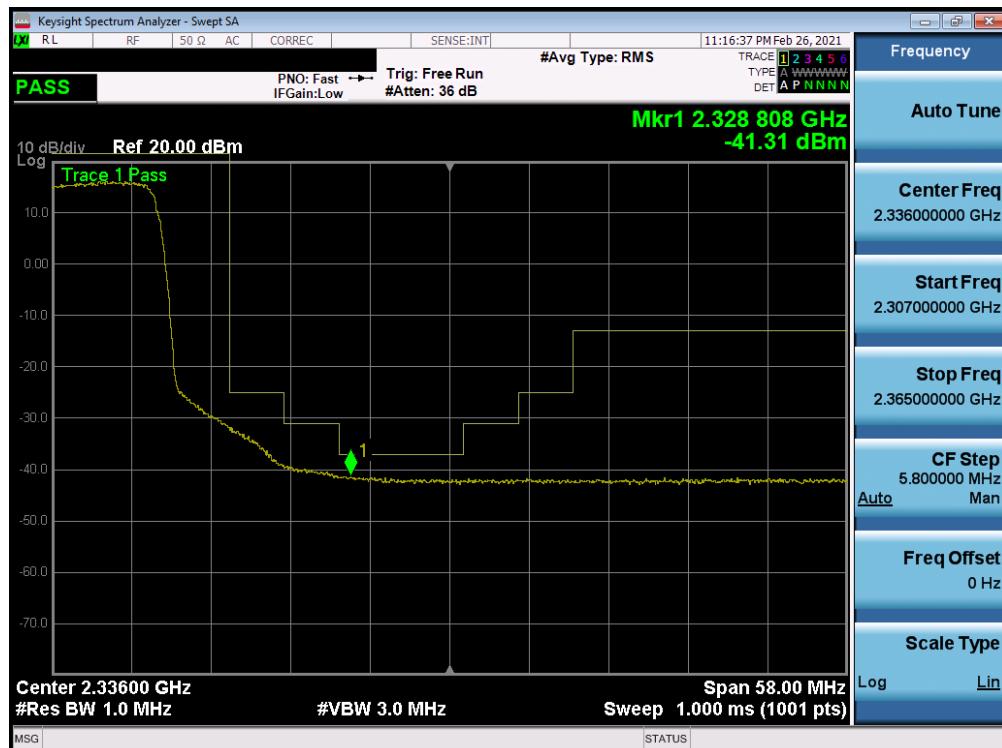
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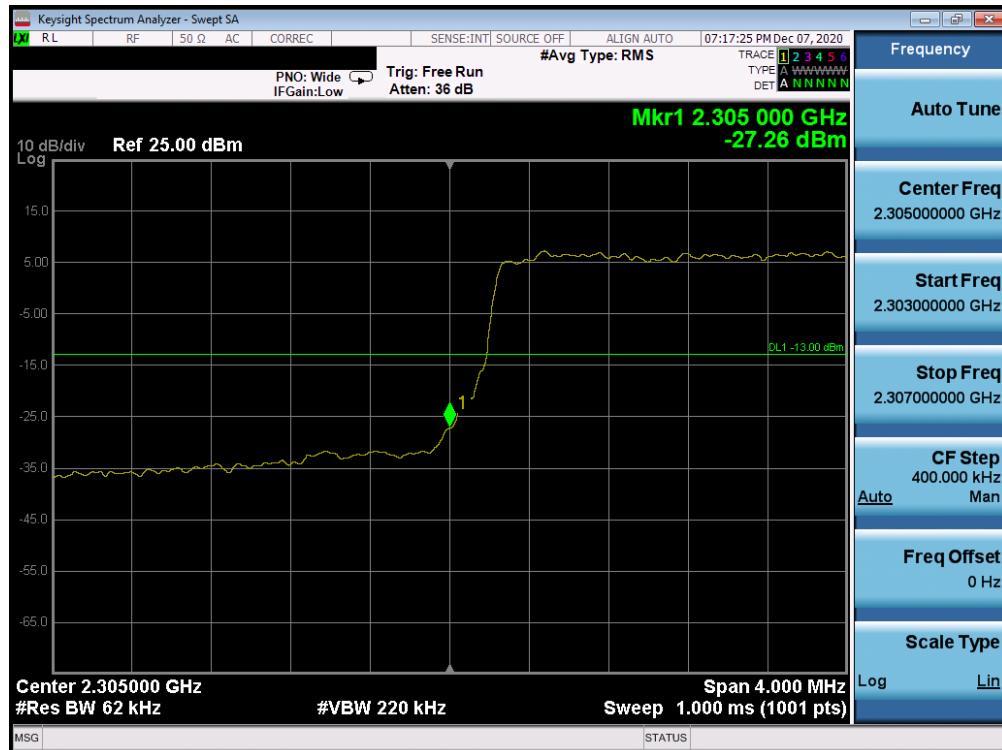


Plot 7-172. Upper Band Edge Plot (Band 30 - 10.0MHz QPSK - Full RB Configuration)

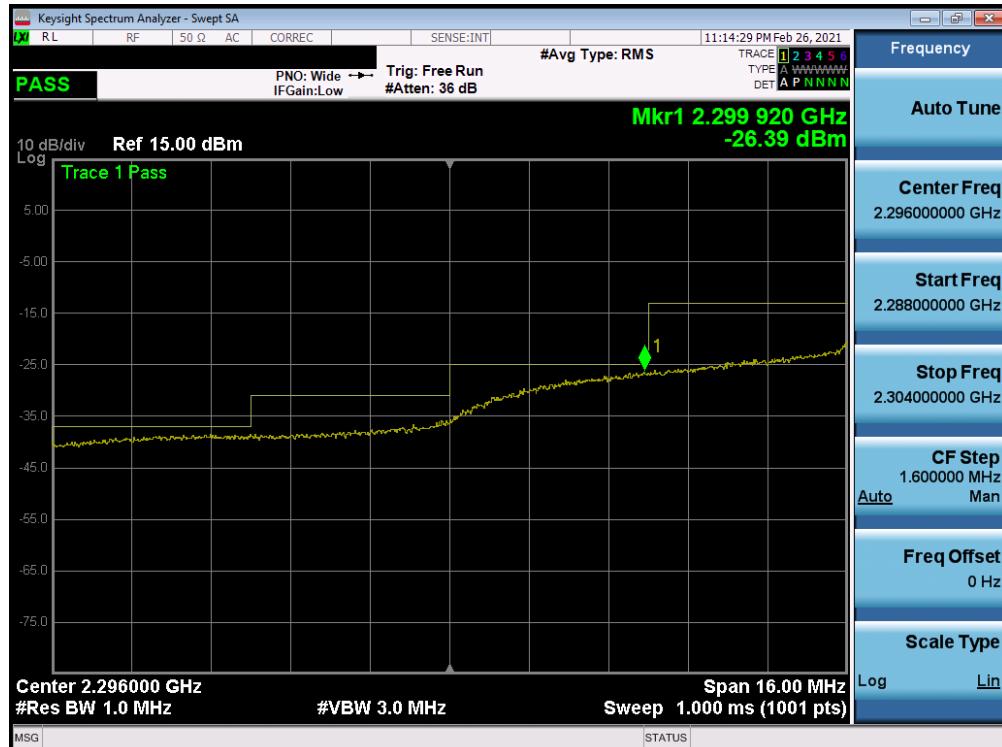


Plot 7-173. Upper Extended Band Edge Plot (Band 30 - 10.0MHz QPSK - Full RB Configuration)

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Plot 7-174. Lower Band Edge Plot (Band 30 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-175. Lower Extended Band Edge Plot (Band 30 - 5.0MHz QPSK - Full RB Configuration)

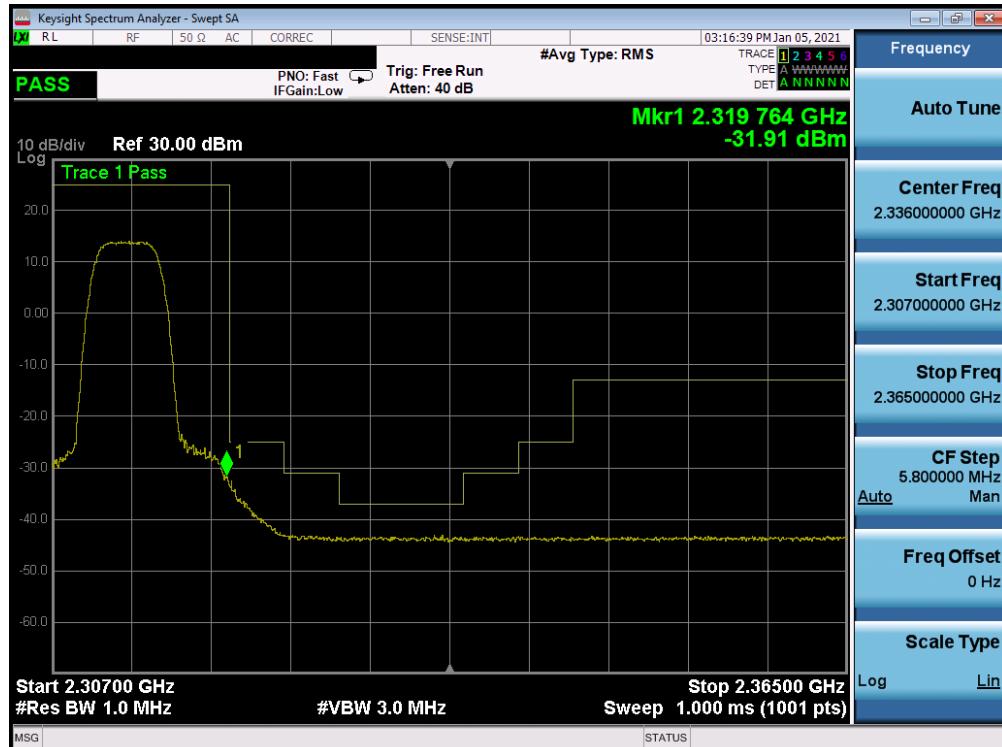
FCC ID: BCGA2301	<b>PCTEST</b> Proud to be part of 			PART 27 MEASUREMENT REPORT	Approved by: Quality Manager
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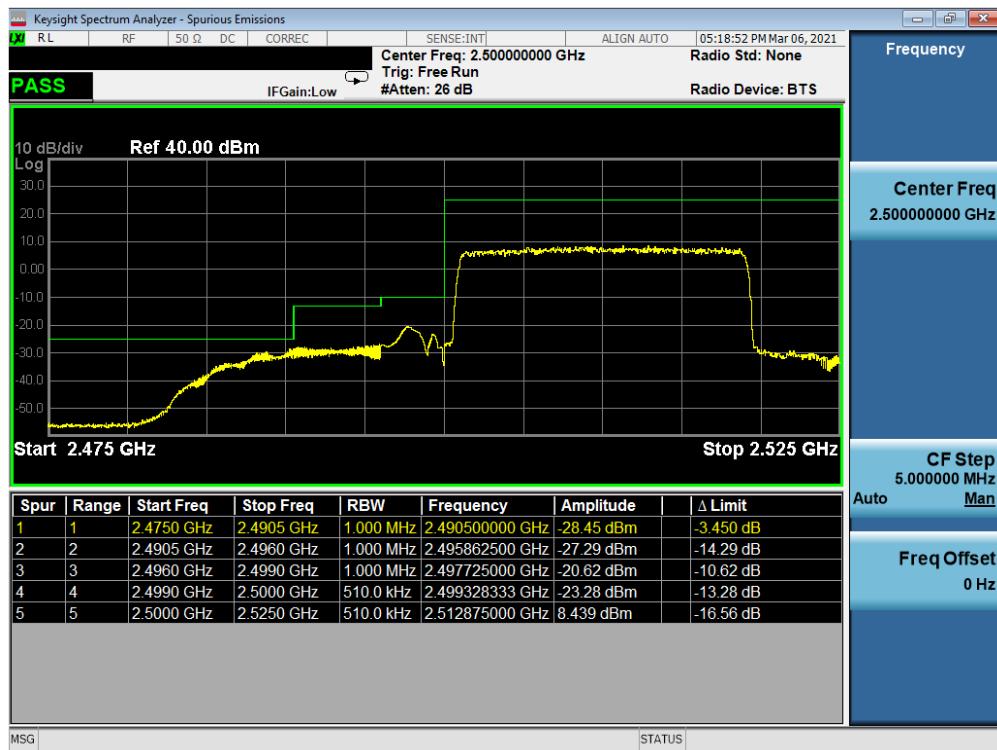
Plot 7-176. Upper Band Edge Plot (Band 30 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-177. Upper Extended Band Edge Plot (Band 30 - 5.0MHz QPSK - Full RB Configuration)

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## LTE Band 7



Plot 7-178. Lower ACP Plot (LTE Band 7 - 20MHz QPSK – Full RB Configuration)



Plot 7-179. Upper ACP Plot (LTE Band 7 - 20MHz QPSK – Full RB Configuration)

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Plot 7-180. Lower ACP Plot (LTE Band 7 - 15MHz QPSK – Full RB Configuration)

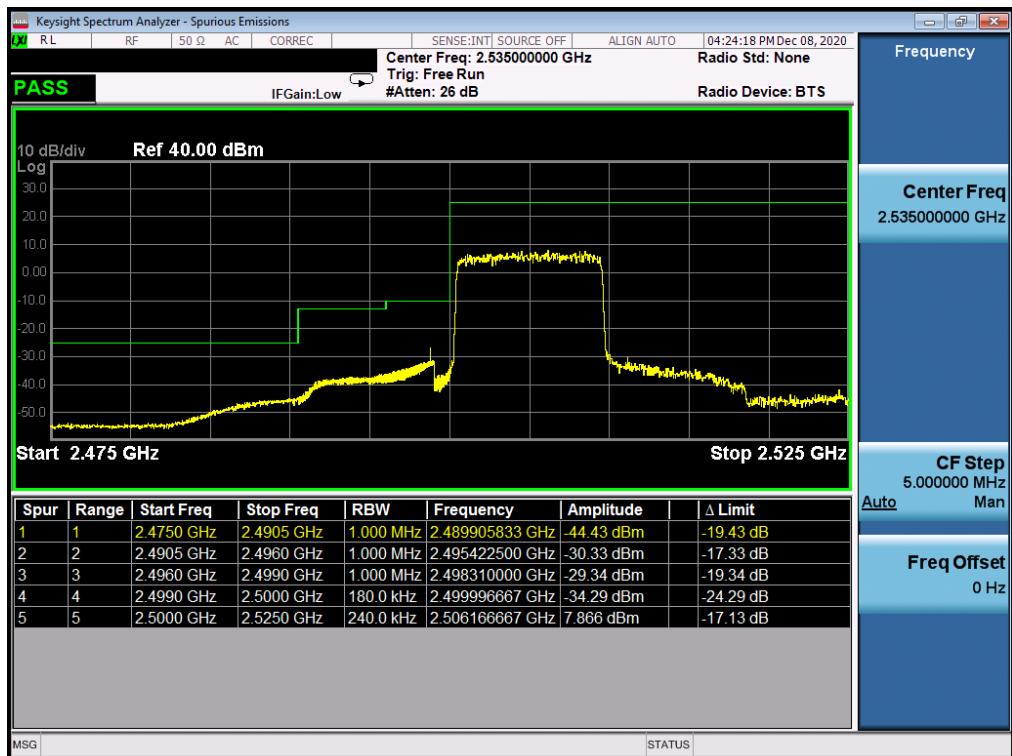


Plot 7-181. Upper ACP Plot (LTE Band 7 - 15MHz QPSK – Full RB Configuration)

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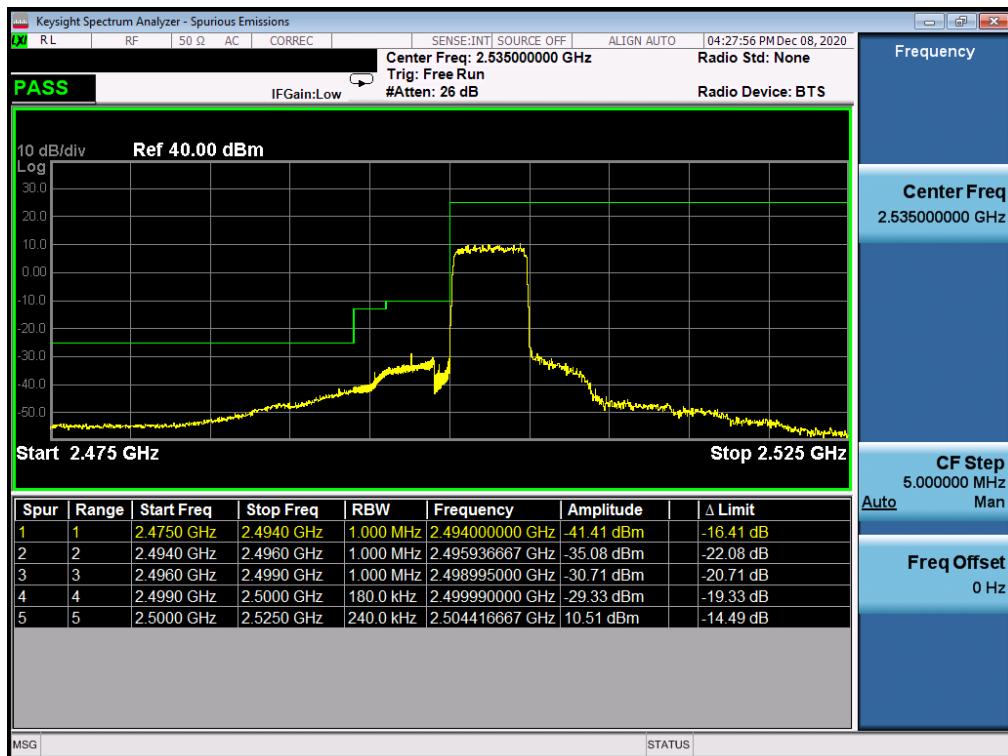


Plot 7-182. Lower ACP Plot (LTE Band 7 - 10MHz QPSK – Full RB Configuration)

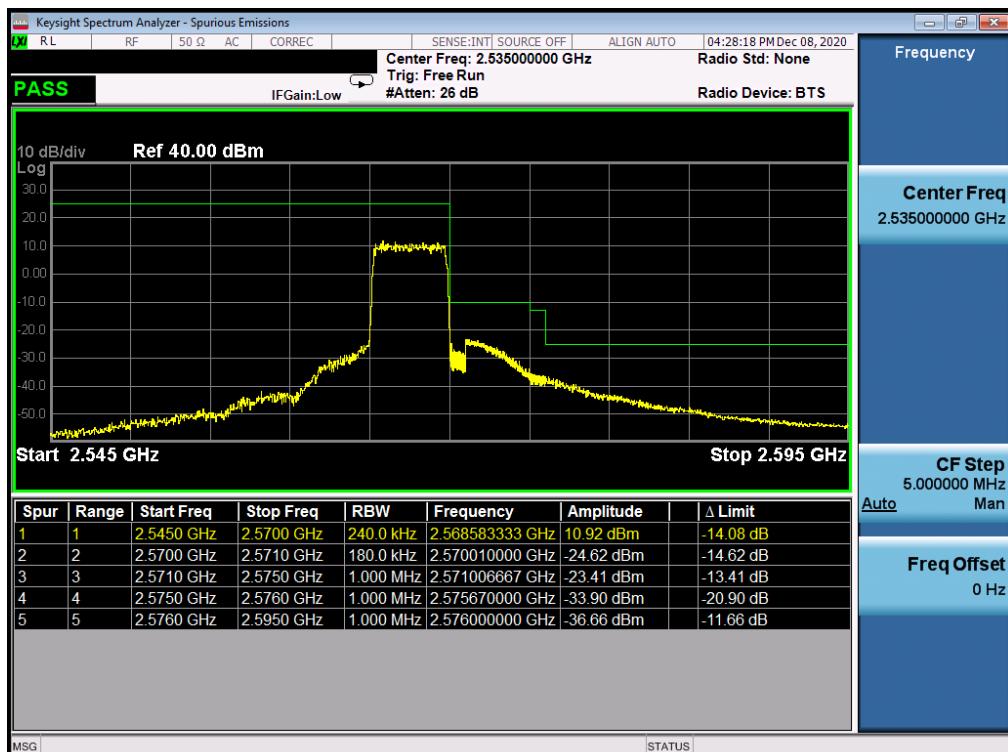


Plot 7-183. Upper ACP Plot (LTE Band 7 - 10MHz QPSK – Full RB Configuration)

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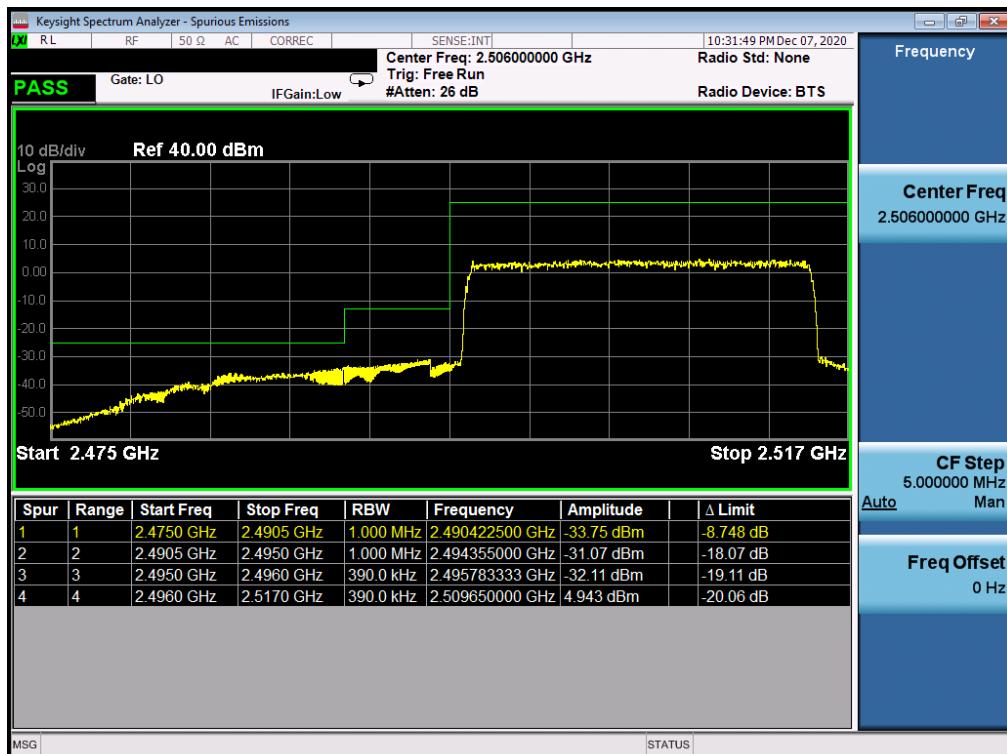
Plot 7-184. Lower ACP Plot (LTE Band 7 - 5MHz QPSK – Full RB Configuration)



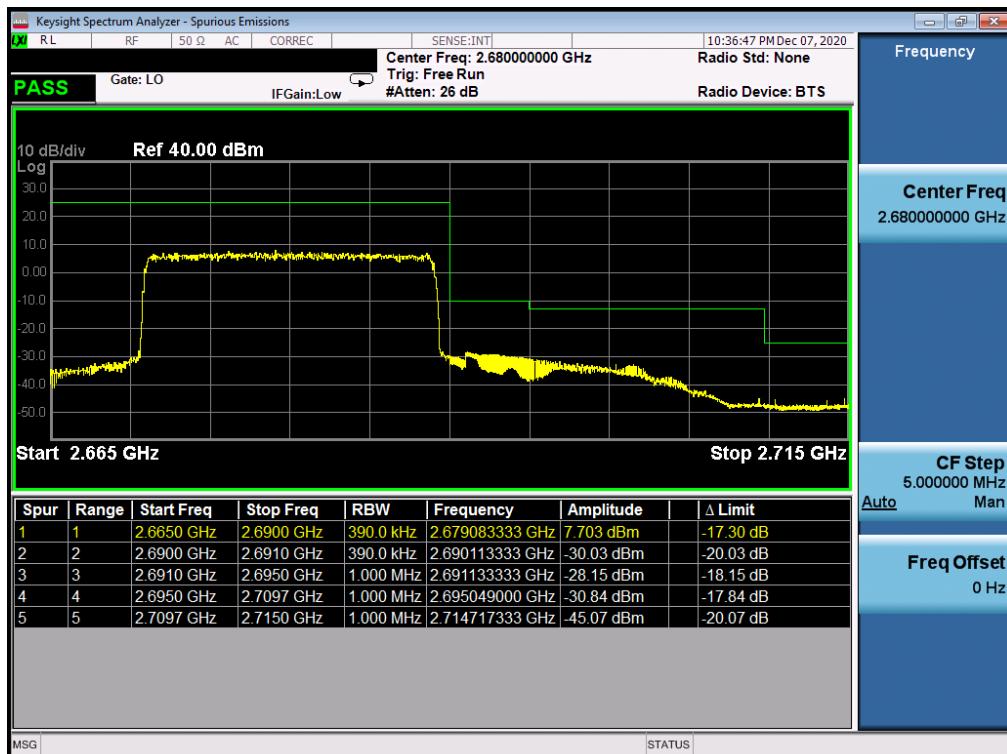
Plot 7-185. Upper ACP Plot (LTE Band 7 - 5MHz QPSK – Full RB Configuration)

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## LTE Band 41



Plot 7-186. Lower ACP Plot (LTE Band 41 - 20MHz QPSK – Full RB Configuration)



Plot 7-187. Upper ACP Plot (LTE Band 41 - 20MHz QPSK – Full RB Configuration)

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