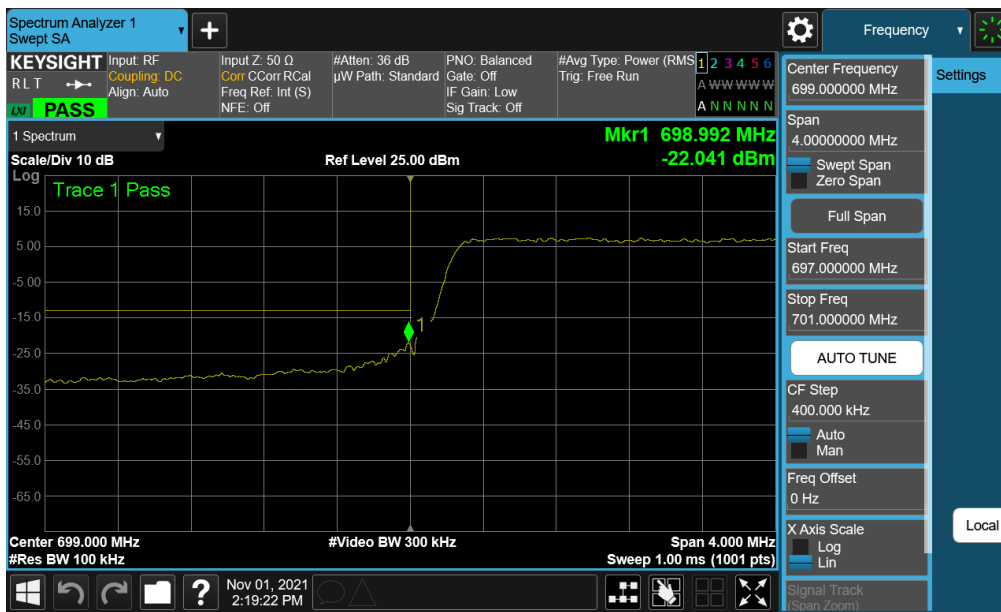
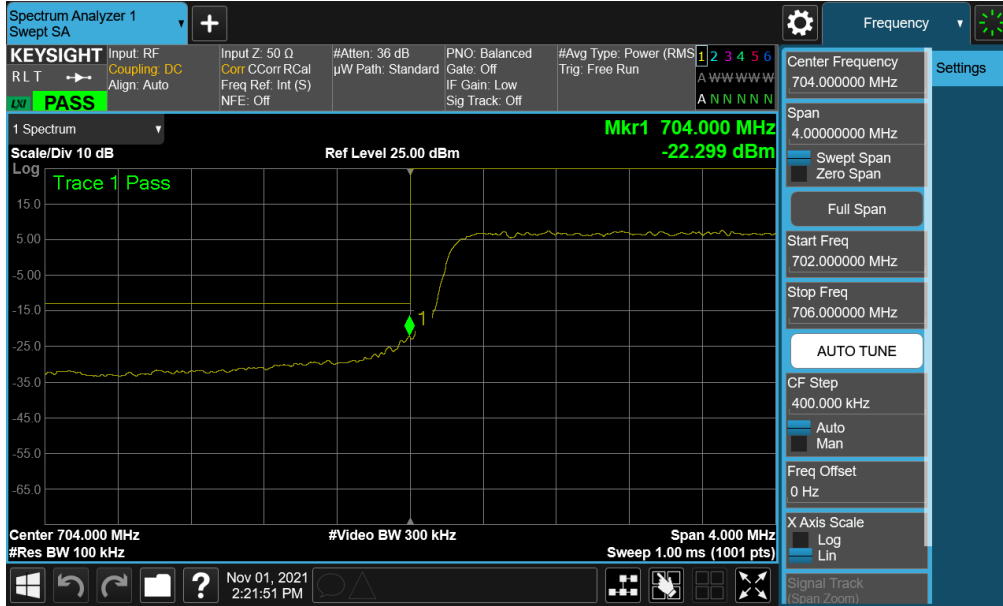


Plot 7-58. Upper Band Edge Plot (LTE Band 12/17 - 10MHz QPSK – Full RB)



Plot 7-59. Lower Band Edge Plot (LTE Band 12 - 5MHz QPSK – Full RB)

FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset		Page 47 of 102

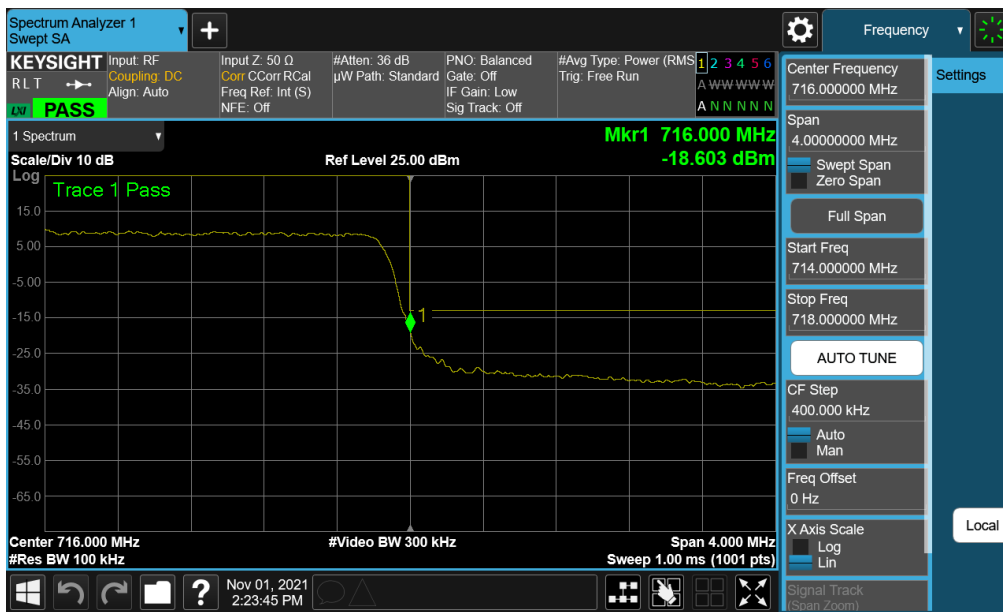
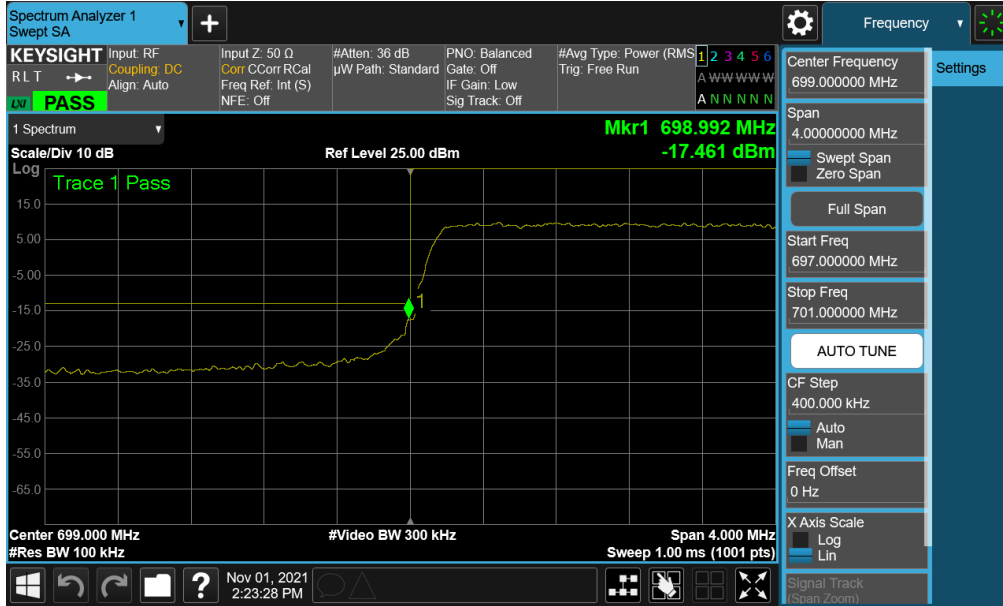


Plot 7-60. Lower Band Edge Plot (LTE Band 17 - 5MHz QPSK – Full RB)

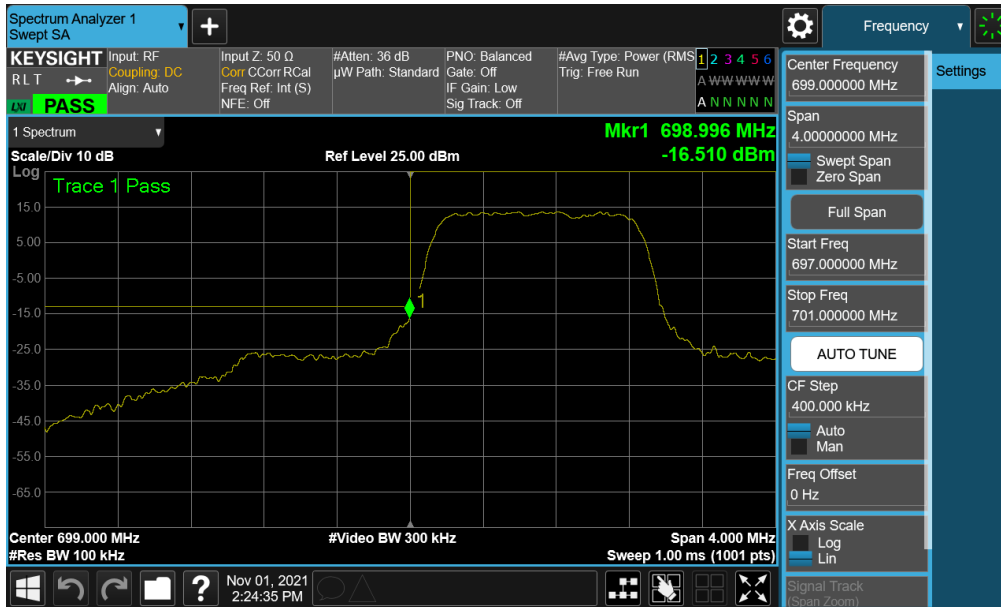


Plot 7-61. Upper Band Edge Plot (LTE Band 12/17 - 5MHz QPSK – Full RB)

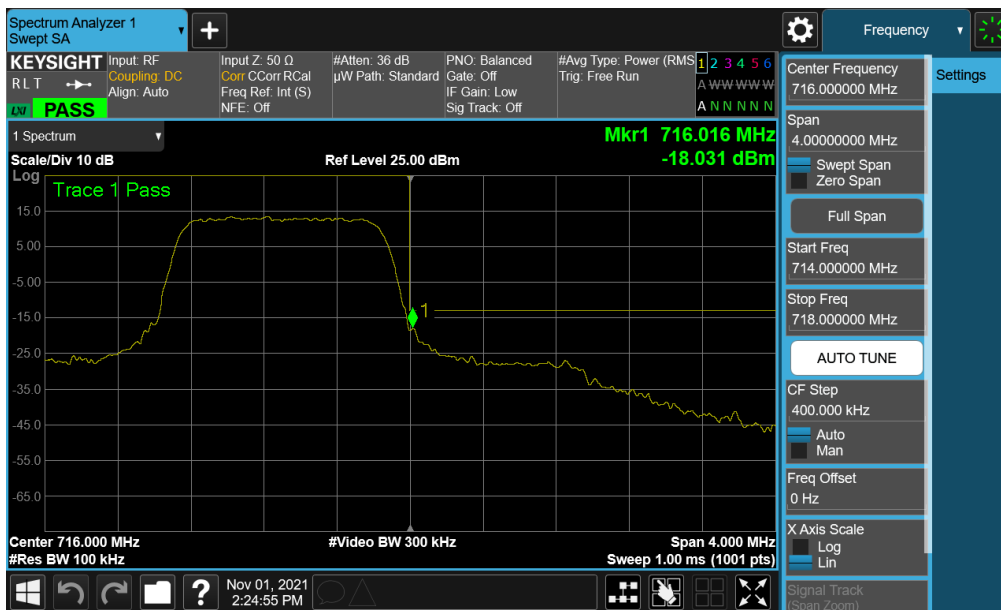
FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset		Page 48 of 102



FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>Approved by:</b> Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset	Page 49 of 102



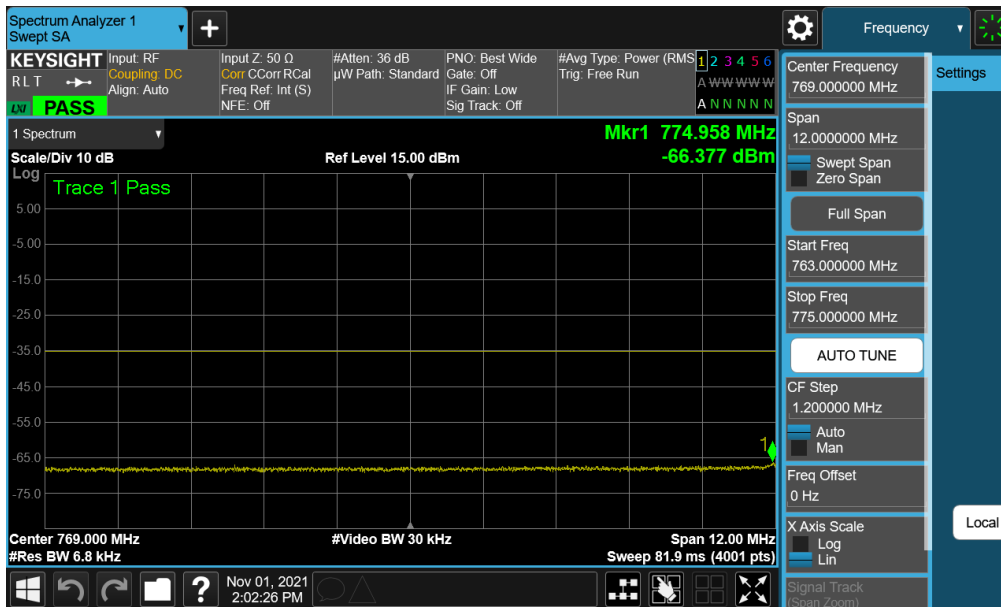
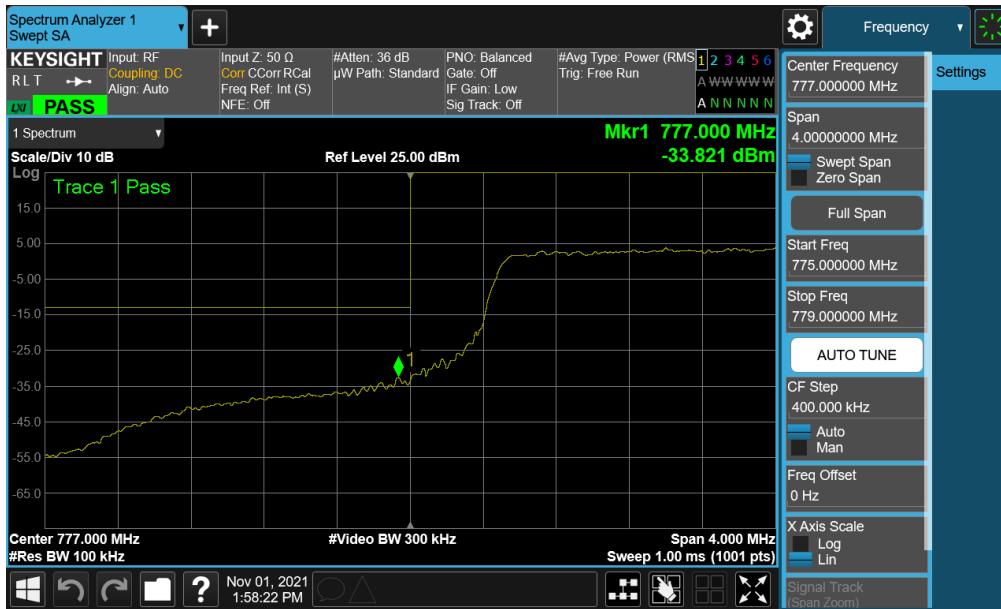
Plot 7-64. Lower Band Edge Plot (LTE Band 12 – 1.4MHz QPSK – Full RB)



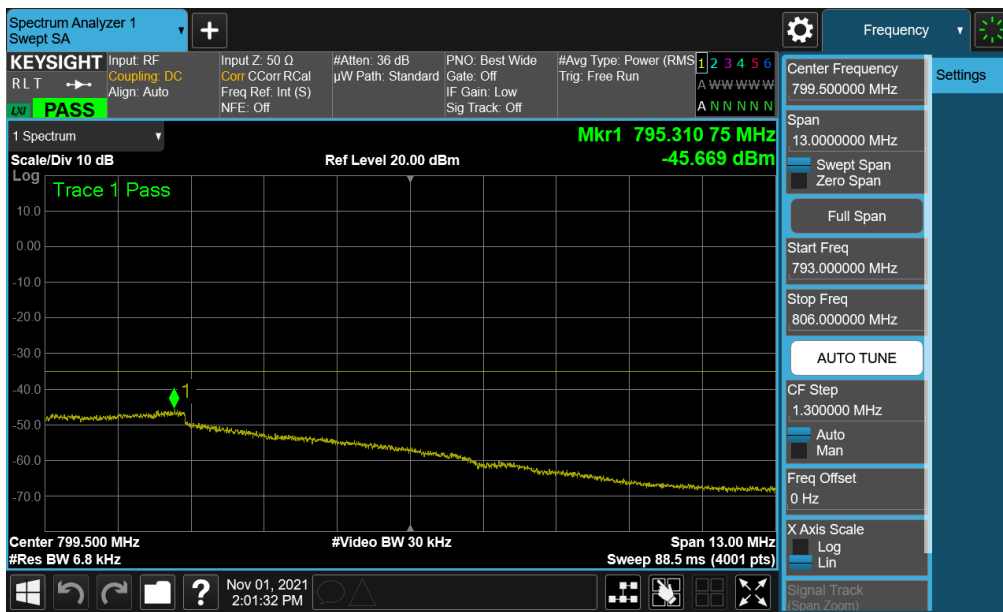
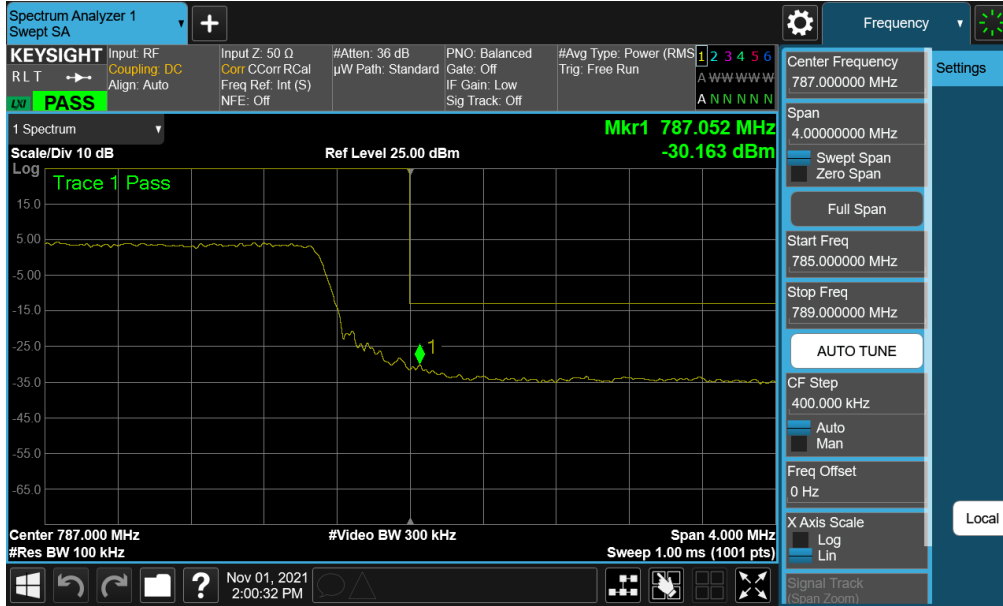
Plot 7-65. Upper Band Edge Plot (LTE Band 12 – 1.4MHz QPSK – Full RB)

FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of  element	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset		Page 50 of 102

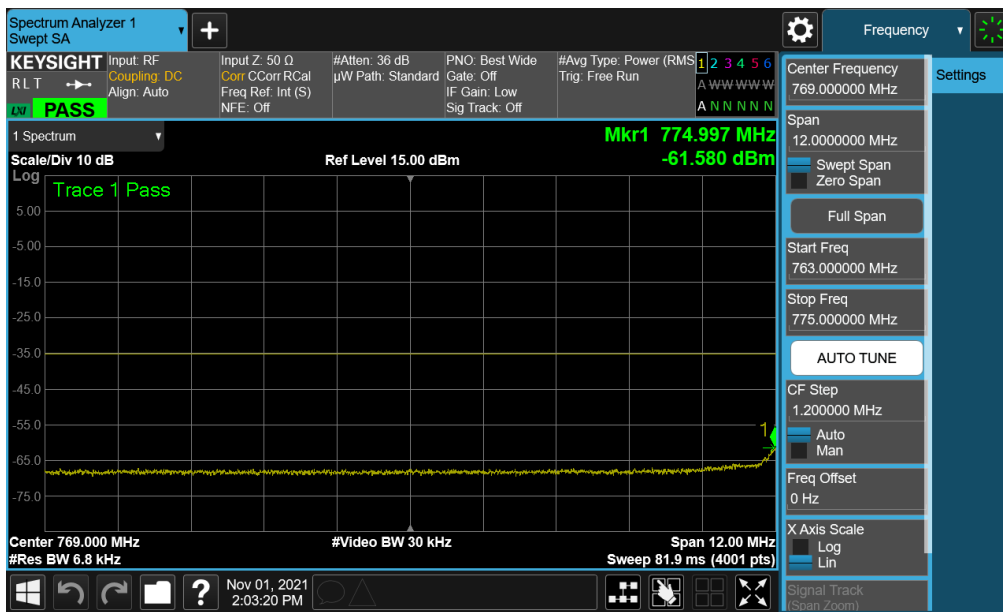
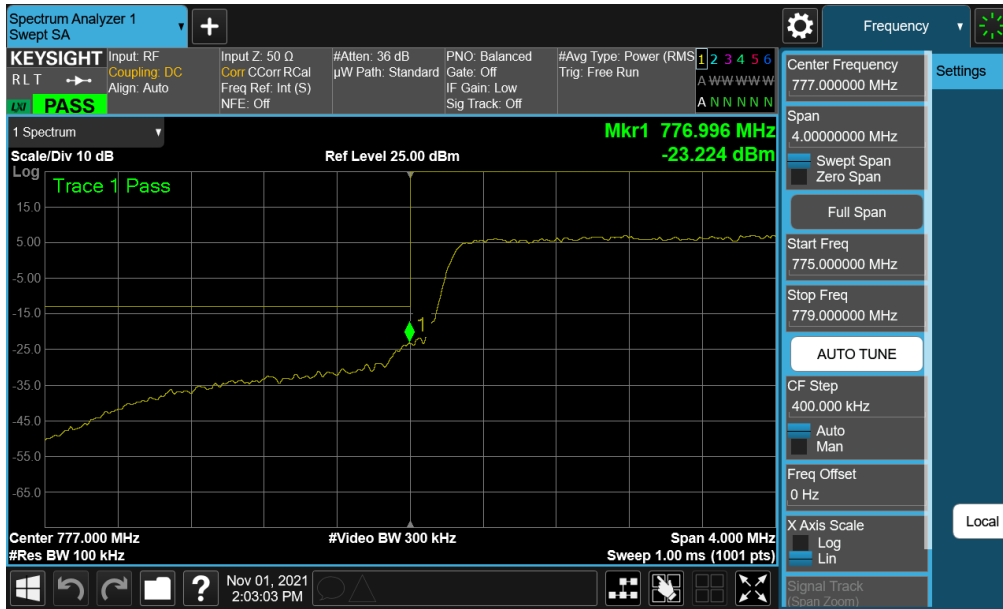
## LTE Band 13



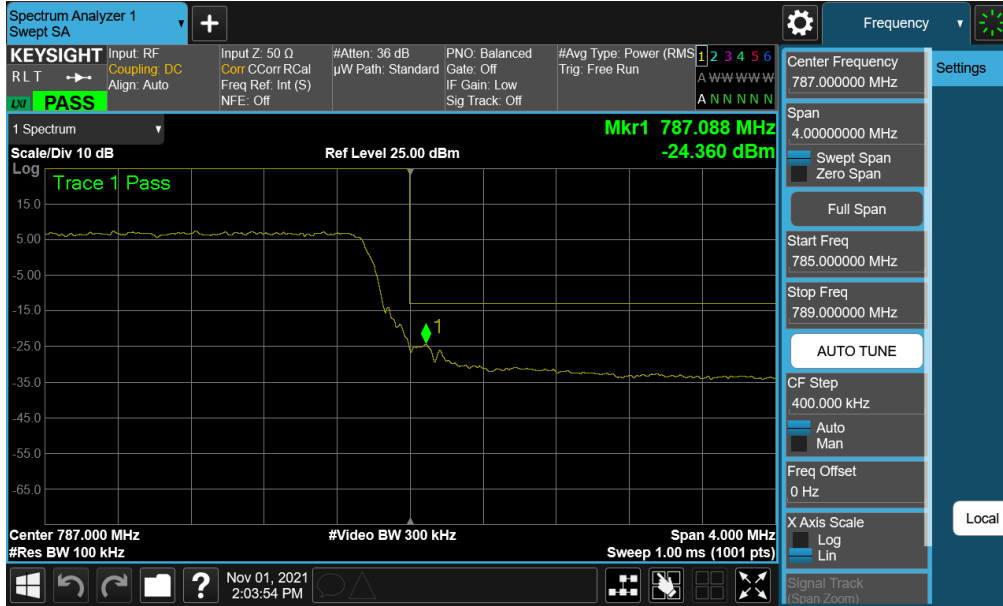
FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>Approved by:</b> Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset	Page 51 of 102



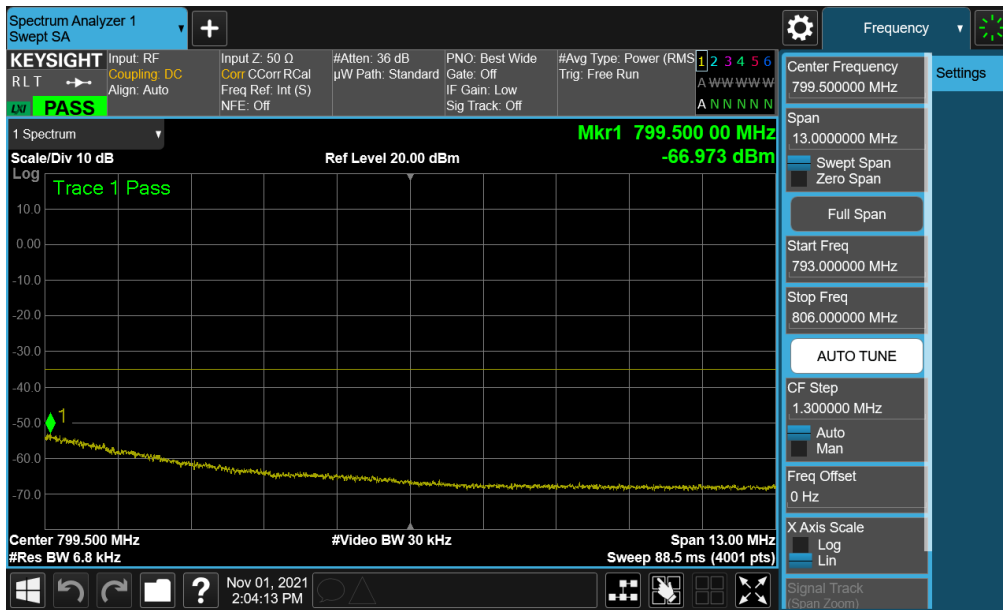
FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset		Page 52 of 102



FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset		Page 53 of 102



Plot 7-72. Upper Band Edge Plot (LTE Band 13 - 5MHz QPSK – Full RB)

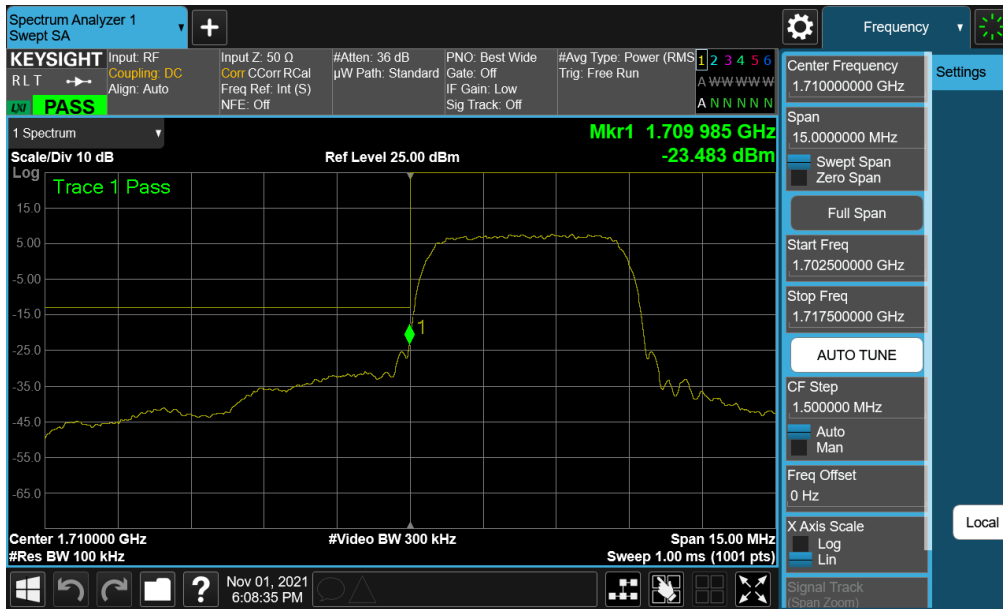


Plot 7-73. Upper Emission Mask Plot (LTE Band 13 - 5MHz QPSK – Full RB)

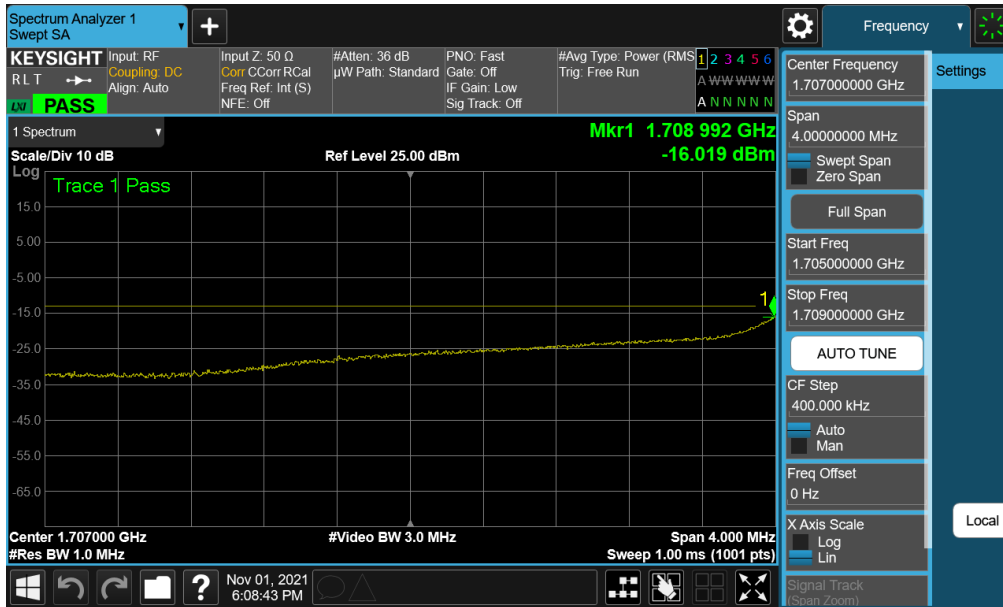
FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>Approved by:</b> Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset	Page 54 of 102



# WCDMA AWS



Plot 7-74. Lower Band Edge Plot (WCDMA AWS – Ch. 1312)

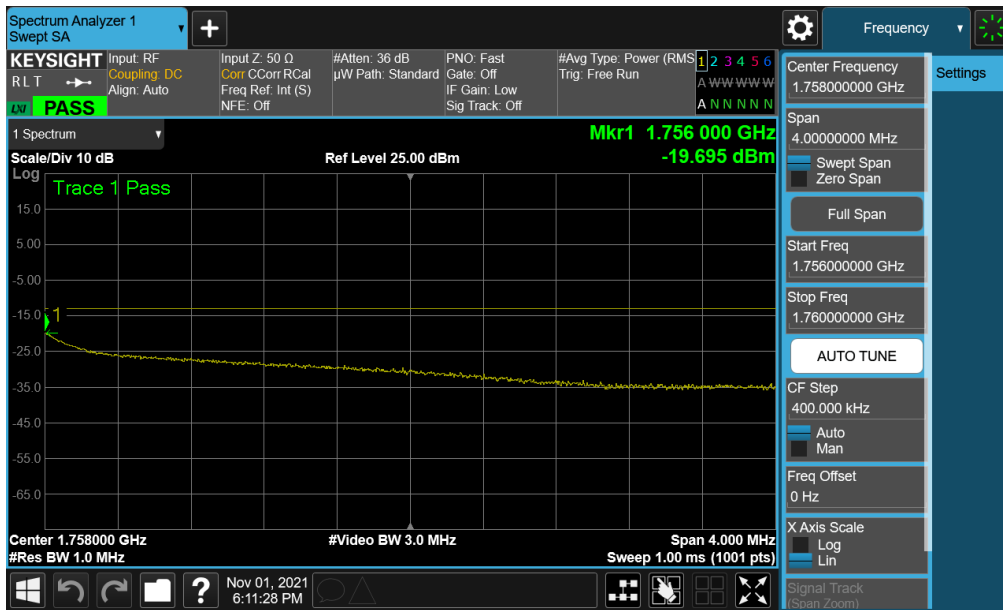


Plot 7-75. Lower Extended Band Edge Plot (WCDMA AWS – Ch. 1312)

FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset		Page 55 of 102



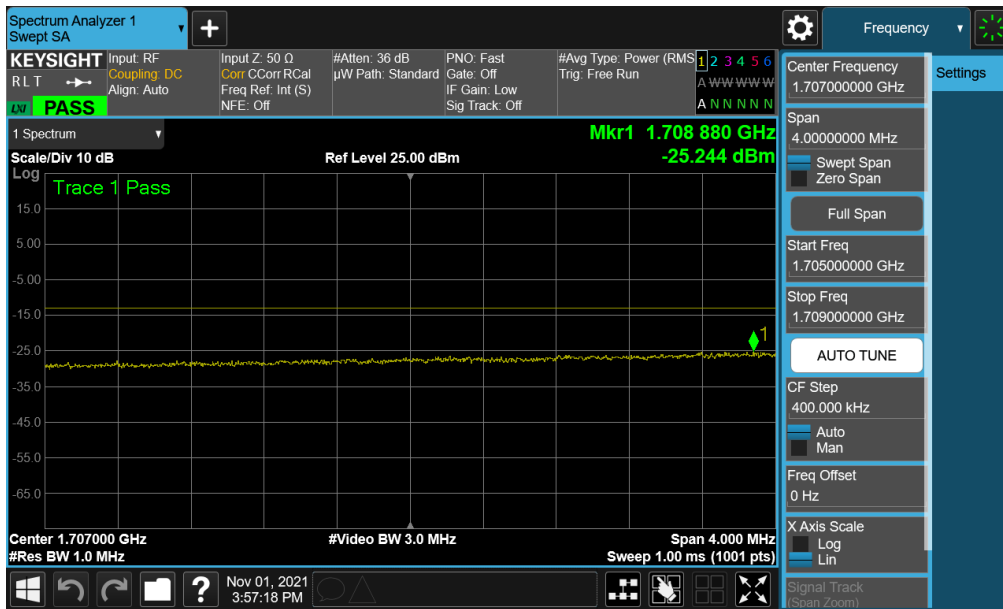
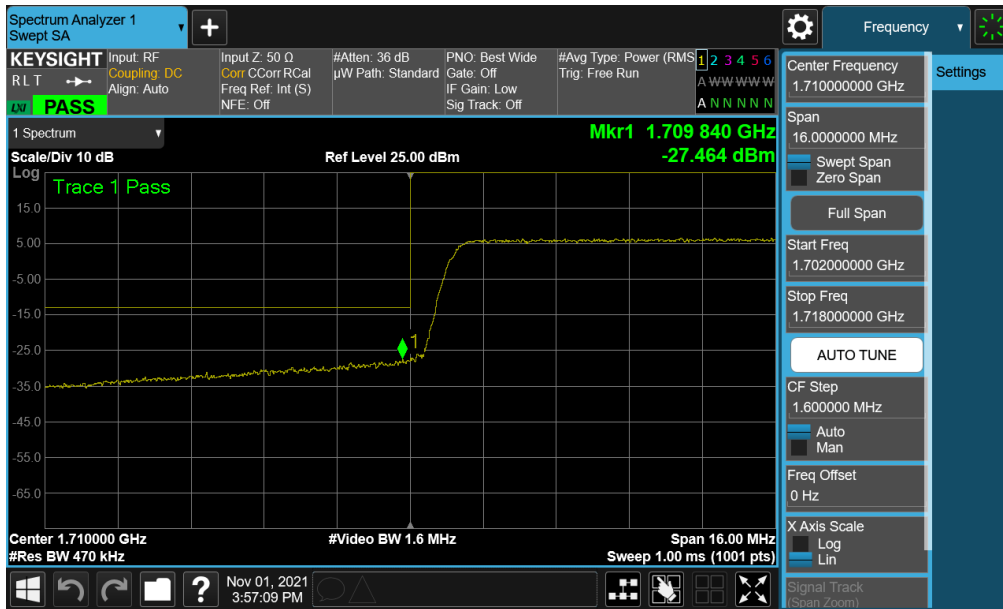
Plot 7-76. Upper Band Edge Plot (WCDMA AWS – Ch. 1513)



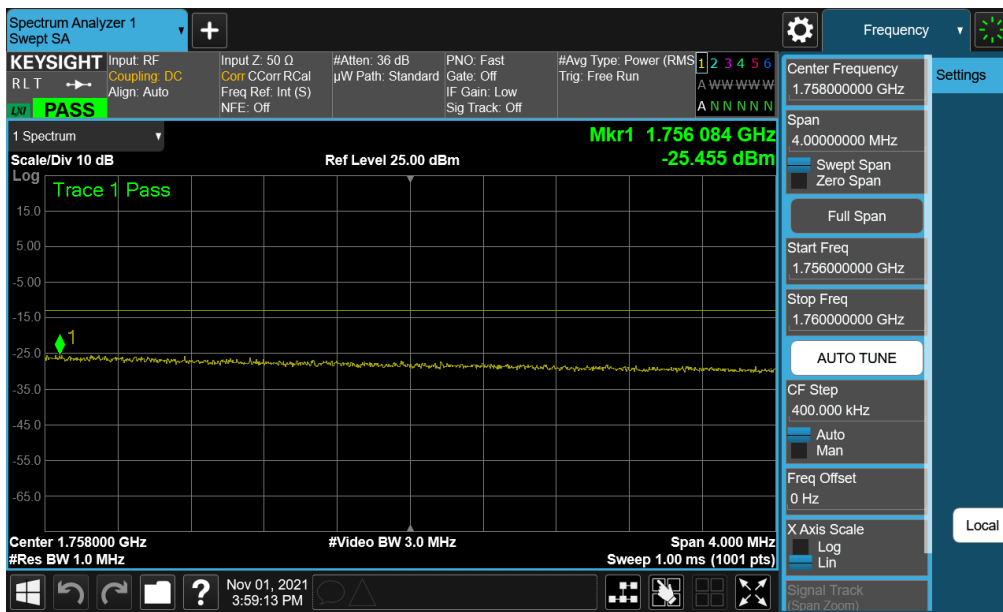
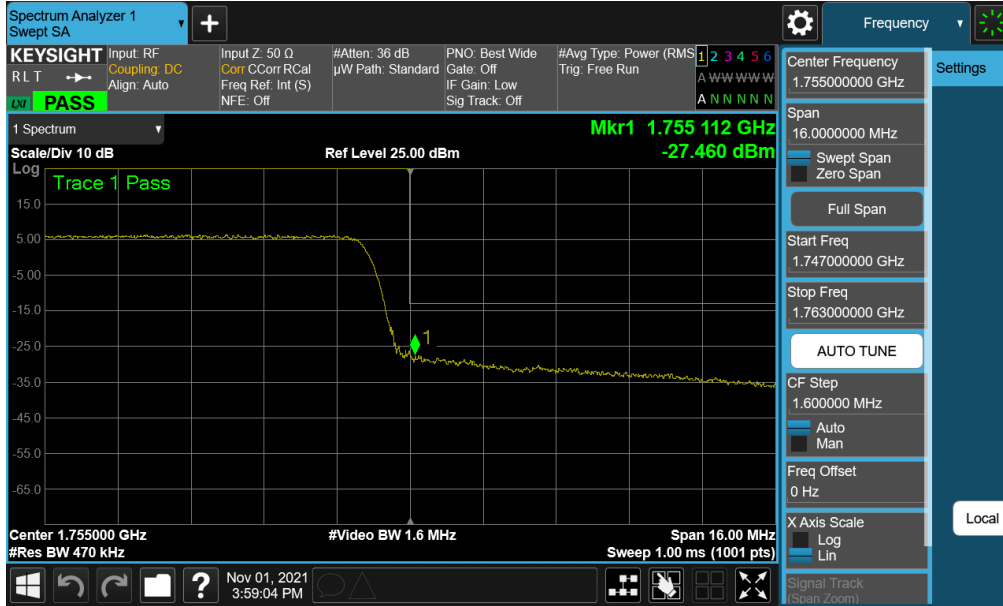
Plot 7-77. Upper Extended Band Edge Plot (WCDMA AWS – Ch. 1513)



FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset		Page 56 of 102

## LTE Band 66/4



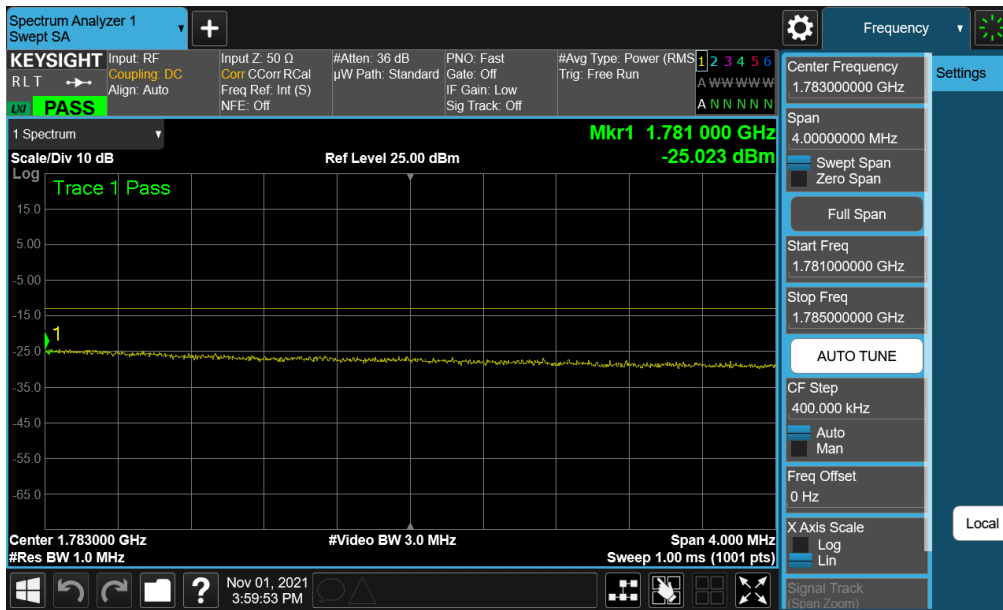
FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset		Page 57 of 102



FCC ID: A3LSMS906E	 <b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset		Page 58 of 102

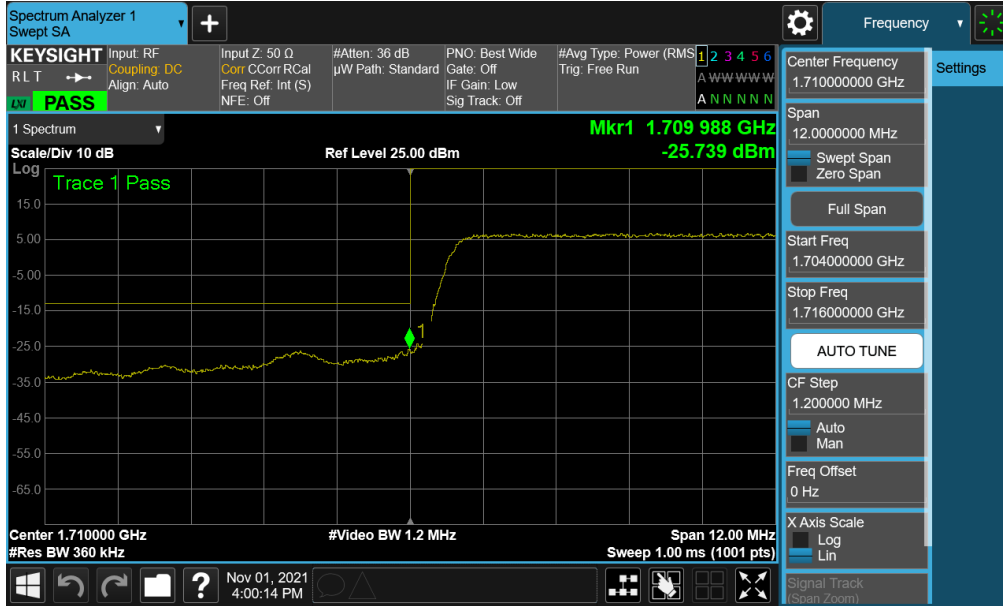


Plot 7-82. Upper Band Edge Plot (LTE Band 66 - 20MHz QPSK – Full RB)

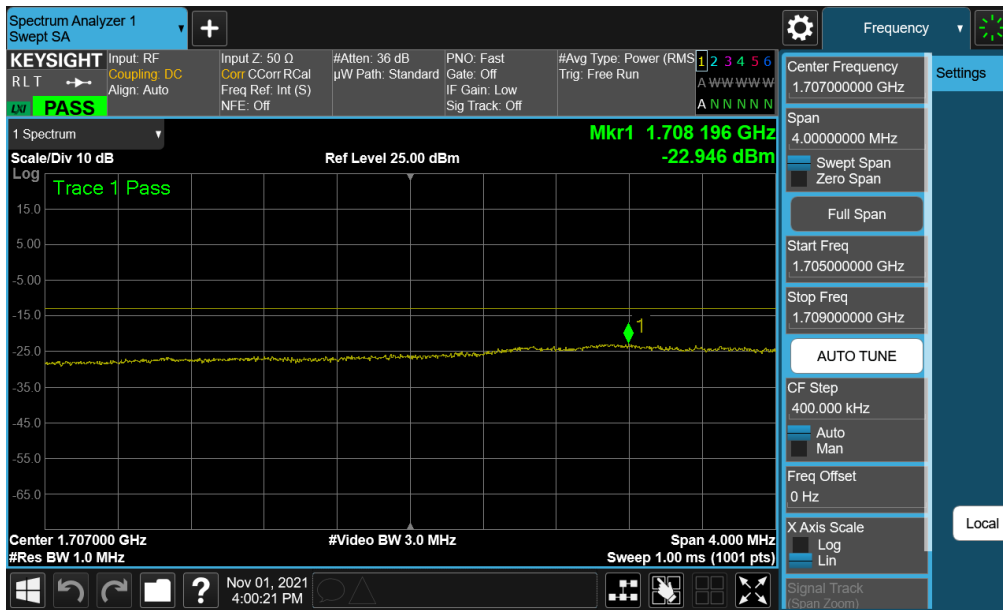


Plot 7-83. Channel Edge Plot (LTE Band 66 - 20MHz QPSK – Full RB)

FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset		Page 59 of 102

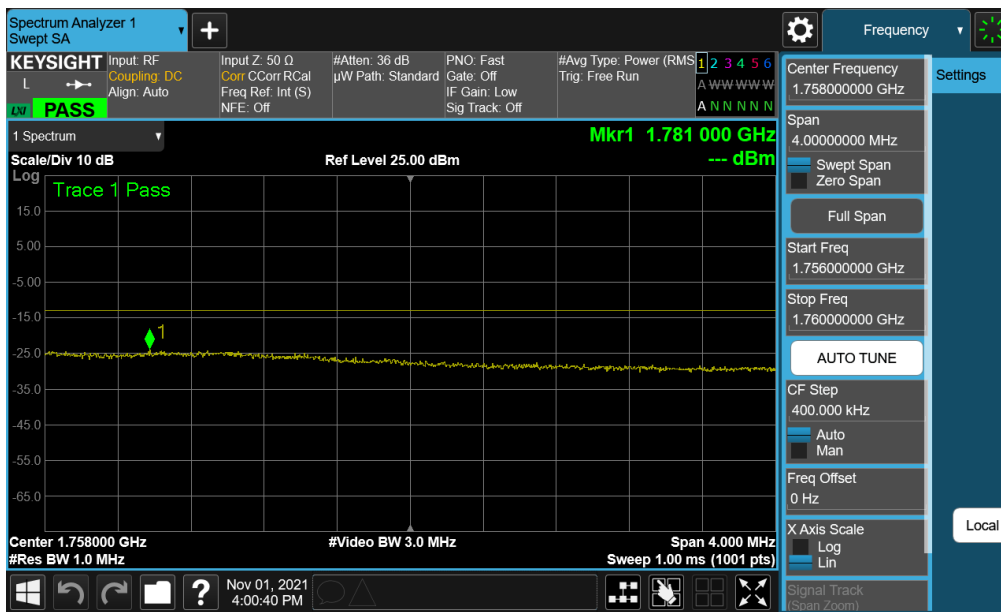
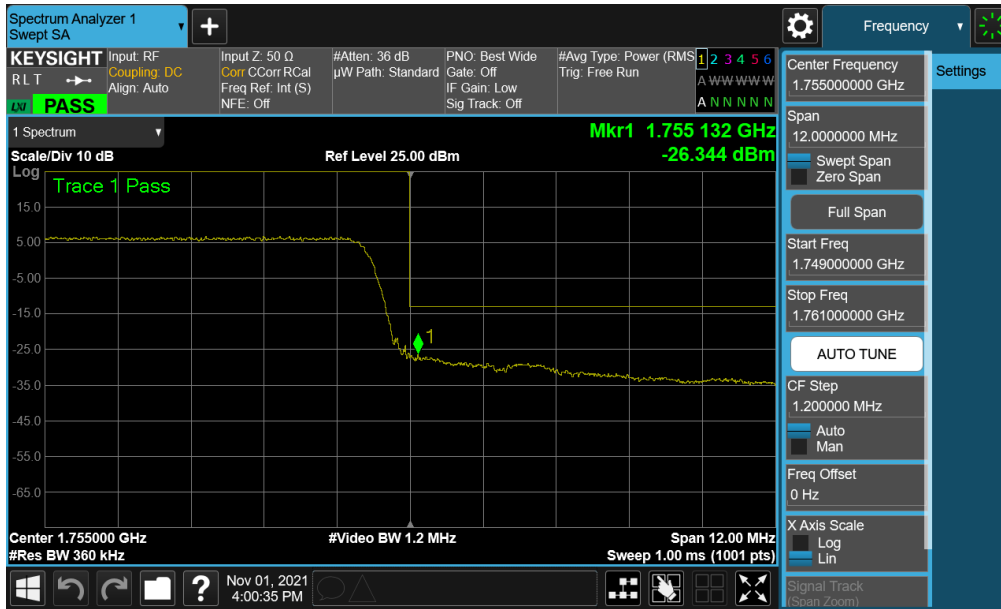


Plot 7-84. Lower Band Edge Plot (LTE Band 66/4 - 15MHz QPSK – Full RB)

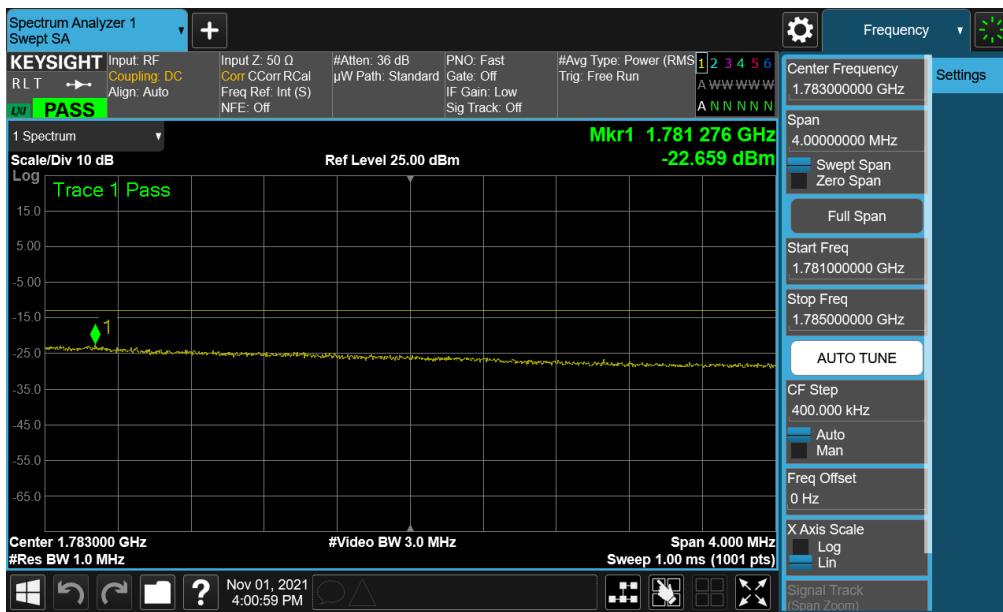
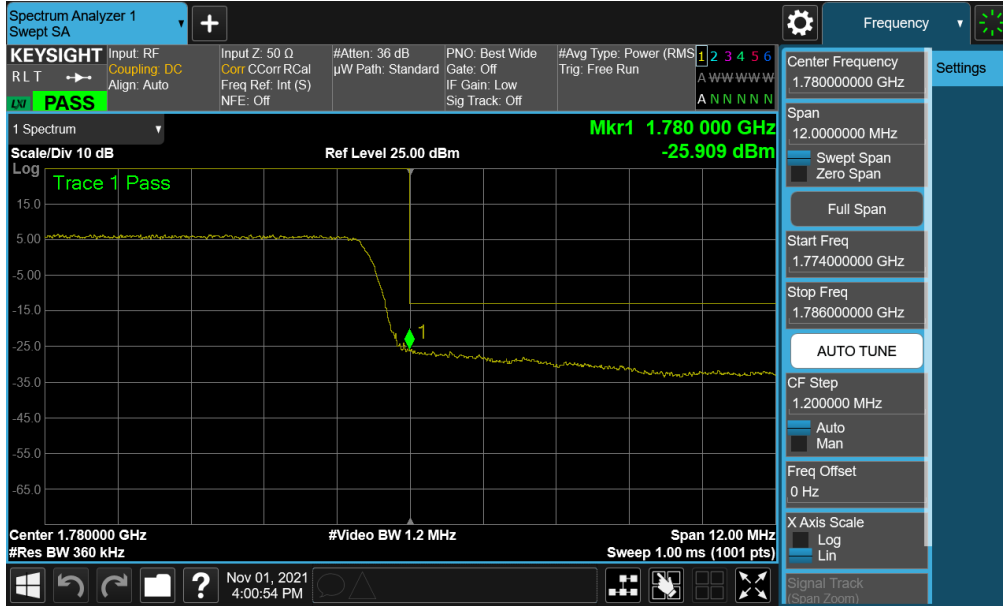


Plot 7-85. Lower Extended Band Edge Plot (LTE Band 66/4 - 15MHz QPSK – Full RB)

FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>Approved by:</b> Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset	Page 60 of 102



FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset		Page 61 of 102

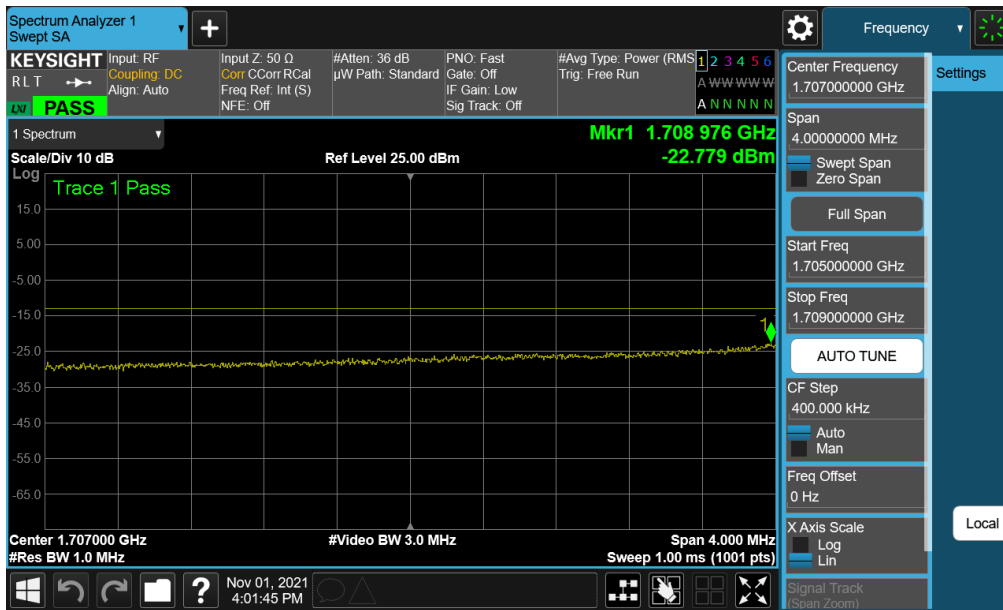


FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset		Page 62 of 102



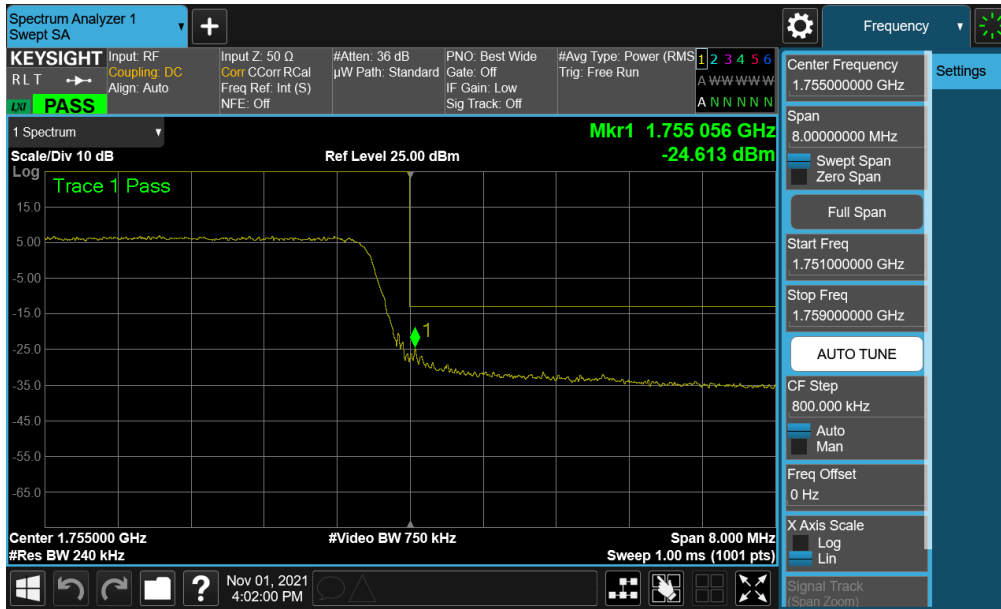


Plot 7-90. Lower Band Edge Plot (LTE Band 66/4 - 10MHz QPSK – Full RB)

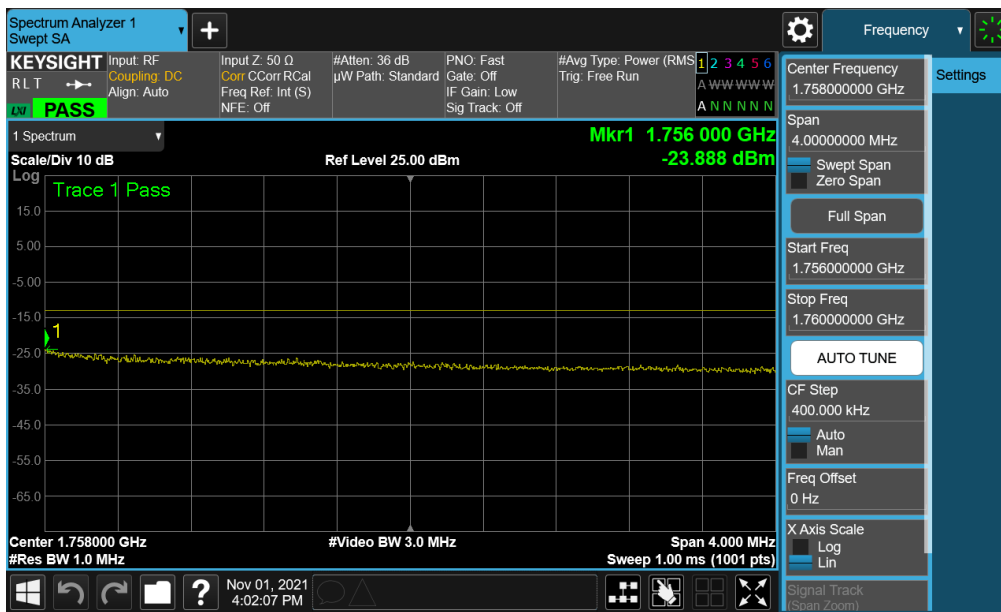


Plot 7-91. Lower Extended Band Edge Plot (LTE Band 66/4 - 10MHz QPSK – Full RB)

FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>Approved by:</b> Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset	Page 63 of 102



Plot 7-92. Upper Band Edge Plot (LTE Band 4 - 10MHz QPSK – Full RB)

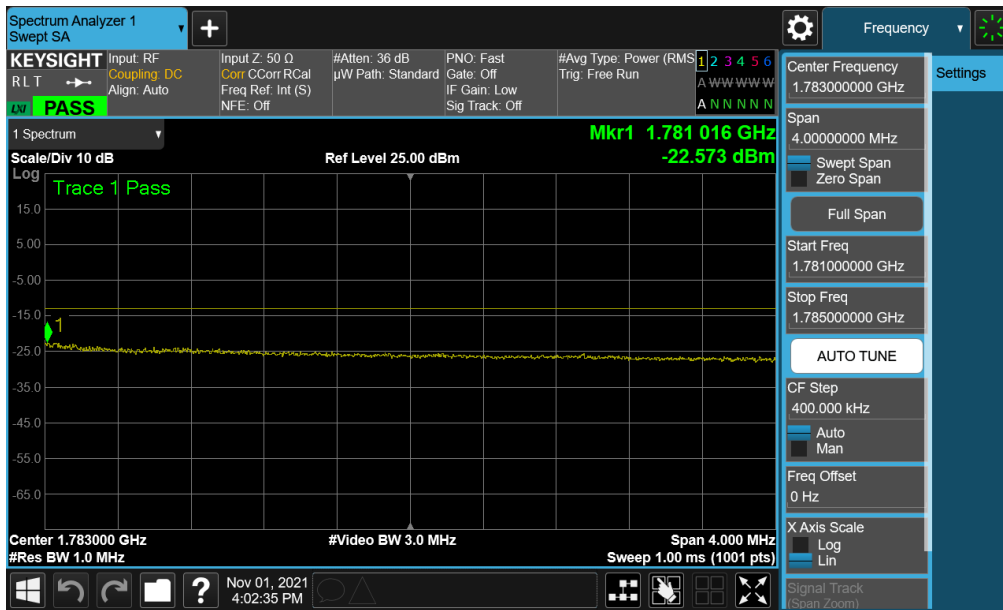


Plot 7-93. Upper Extended Band Edge Plot (LTE Band 4 - 10MHz QPSK – Full RB)



FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset		Page 64 of 102

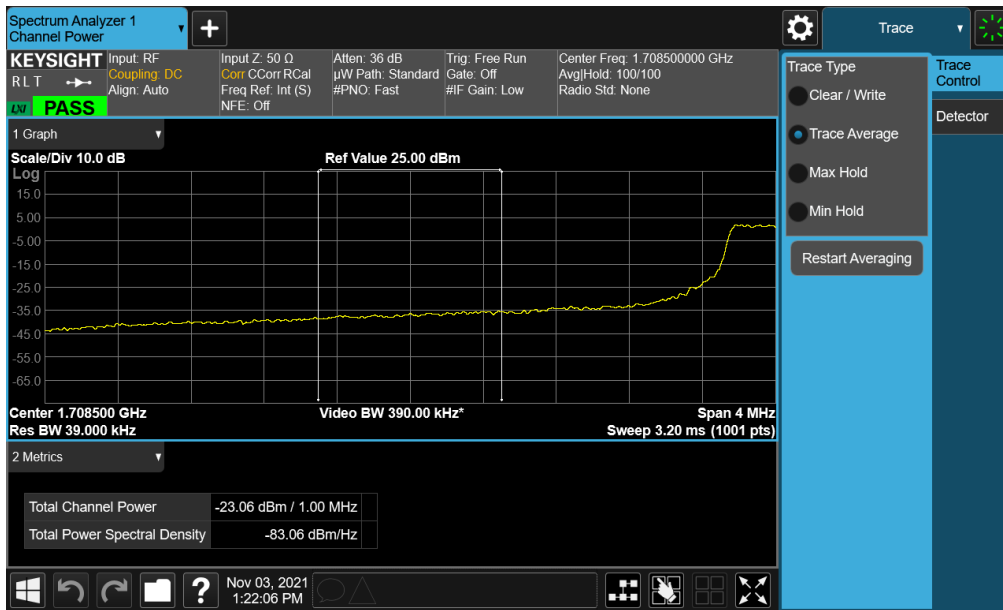
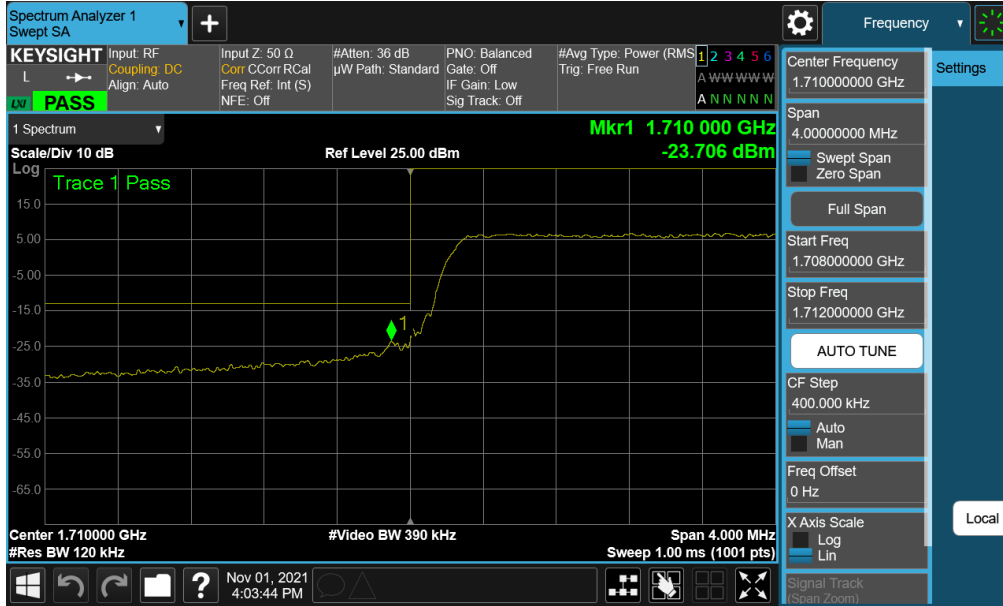


Plot 7-94. Upper Band Edge Plot (LTE Band 66 - 10MHz QPSK – Full RB)

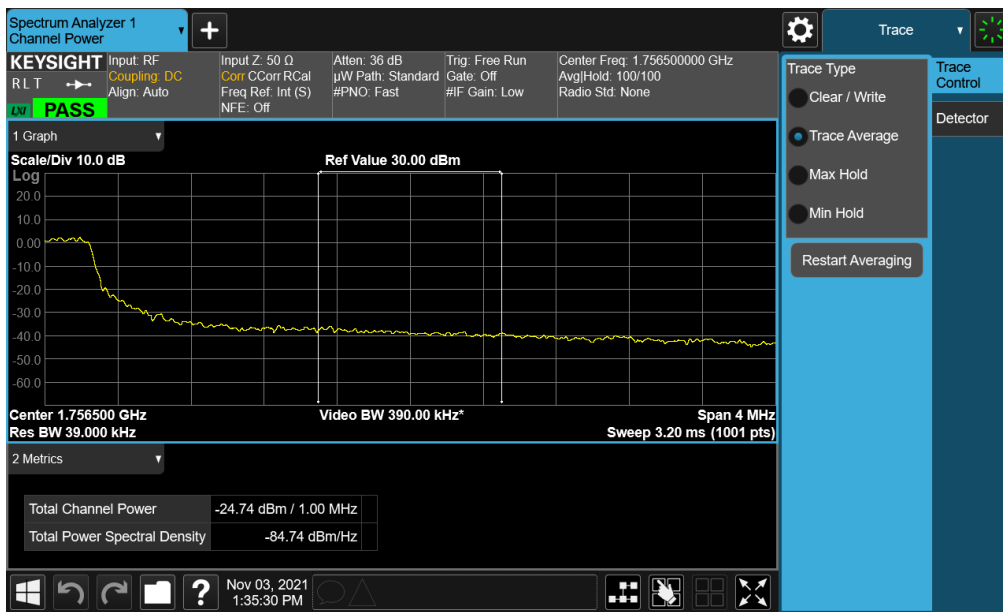


Plot 7-95. Upper Extended Band Edge Plot (LTE Band 66 - 10MHz QPSK – Full RB)

FCC ID: A3LSMS906E	 <b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset		Page 65 of 102



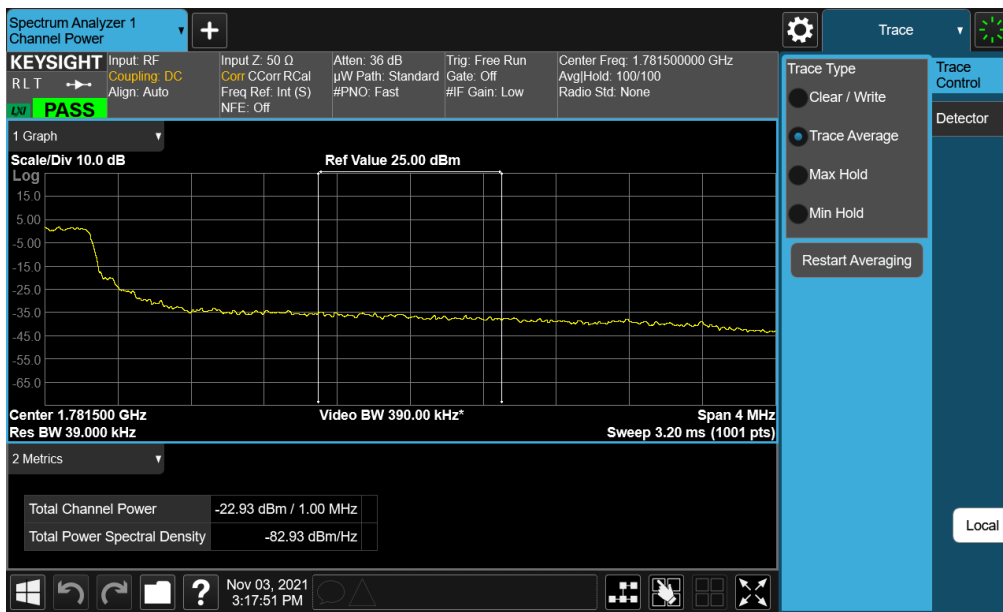
FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>Approved by:</b> Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset	Page 66 of 102



FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
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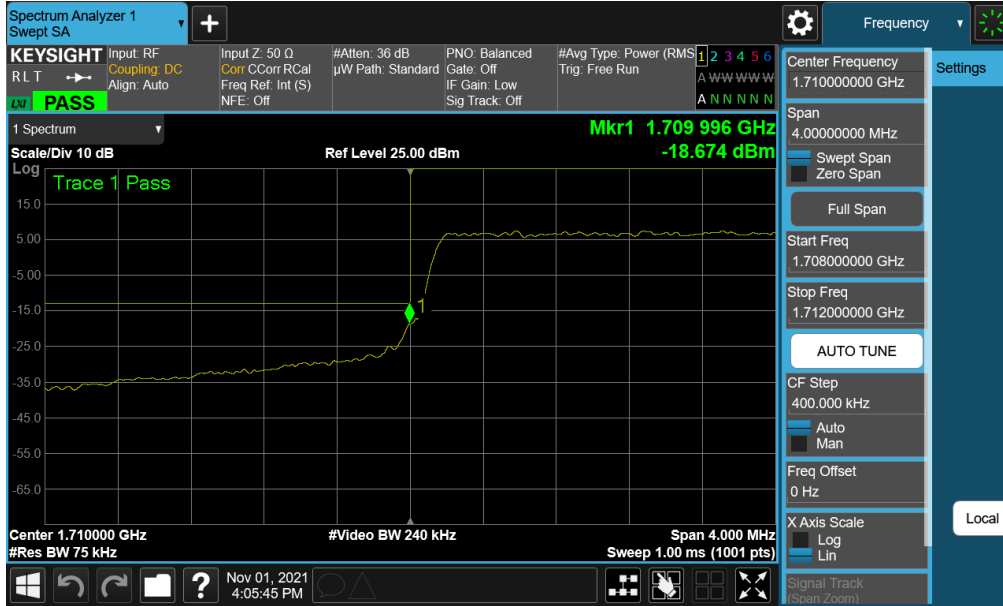


Plot 7-100. Upper Band Edge Plot (LTE Band 66 - 5MHz QPSK – Full RB)

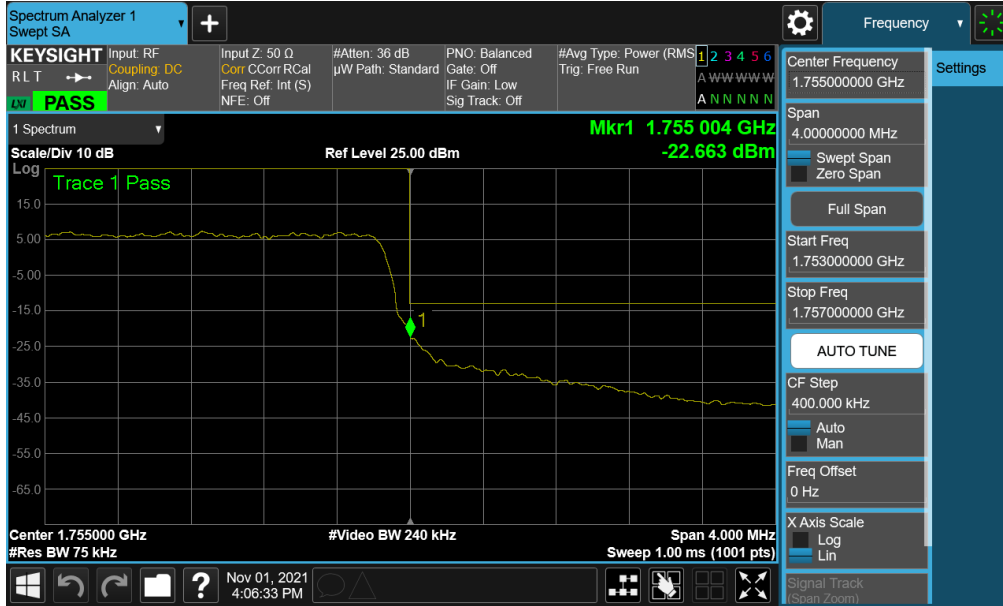


Plot 7-101. Upper Extended Band Edge Plot (LTE Band 66 - 5MHz QPSK – Full RB)

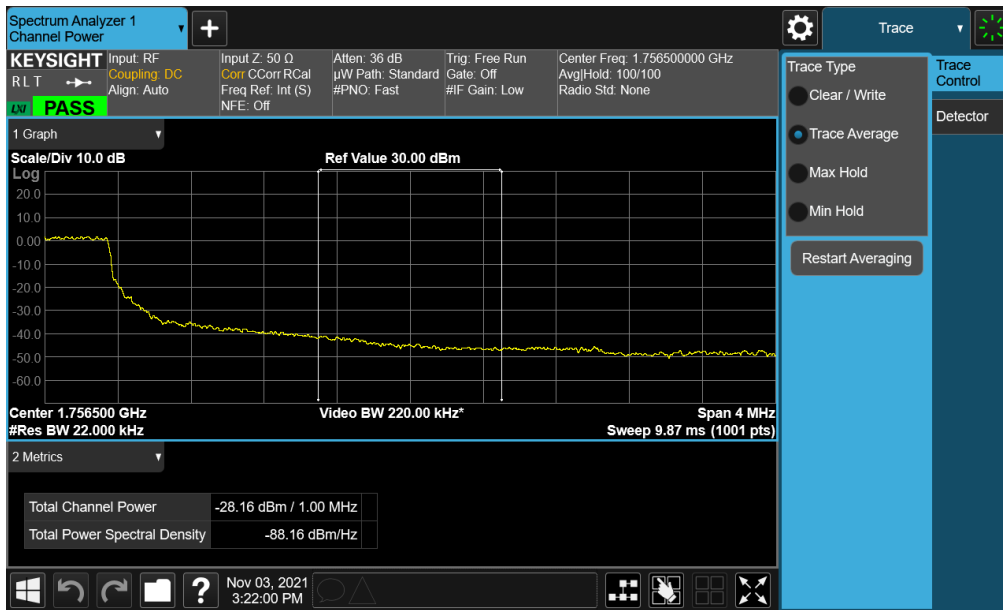
FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>Approved by:</b> Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset	Page 68 of 102



FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>Approved by:</b> Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset	Page 69 of 102



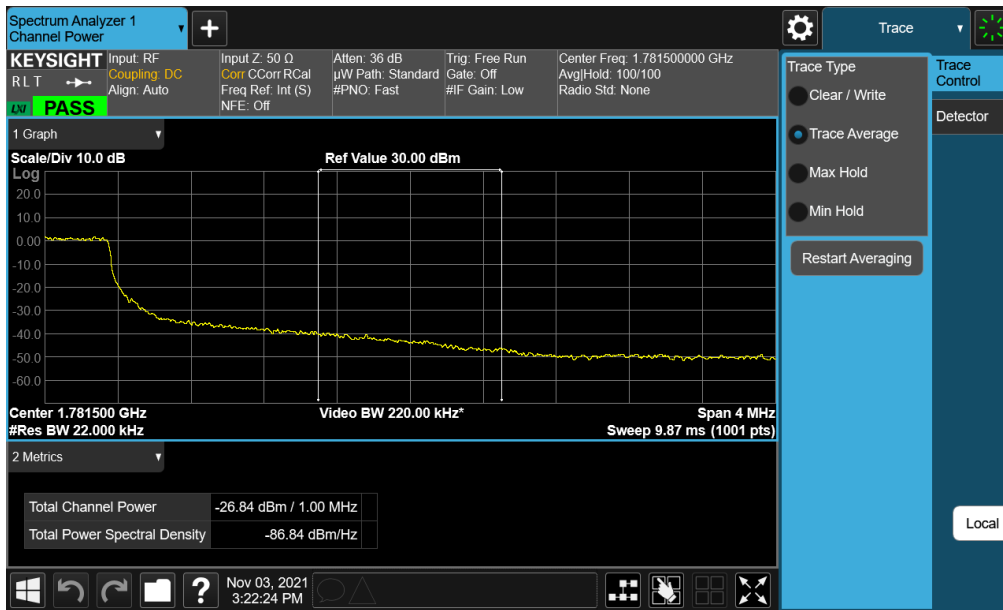
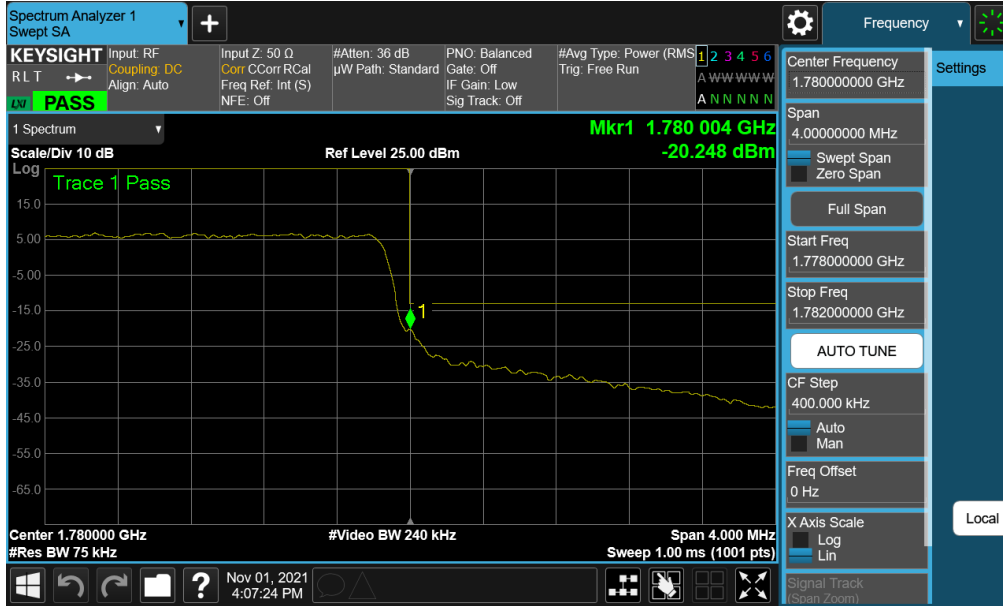
Plot 7-104. Upper Band Edge Plot (LTE Band 4 - 3MHz QPSK – Full RB)



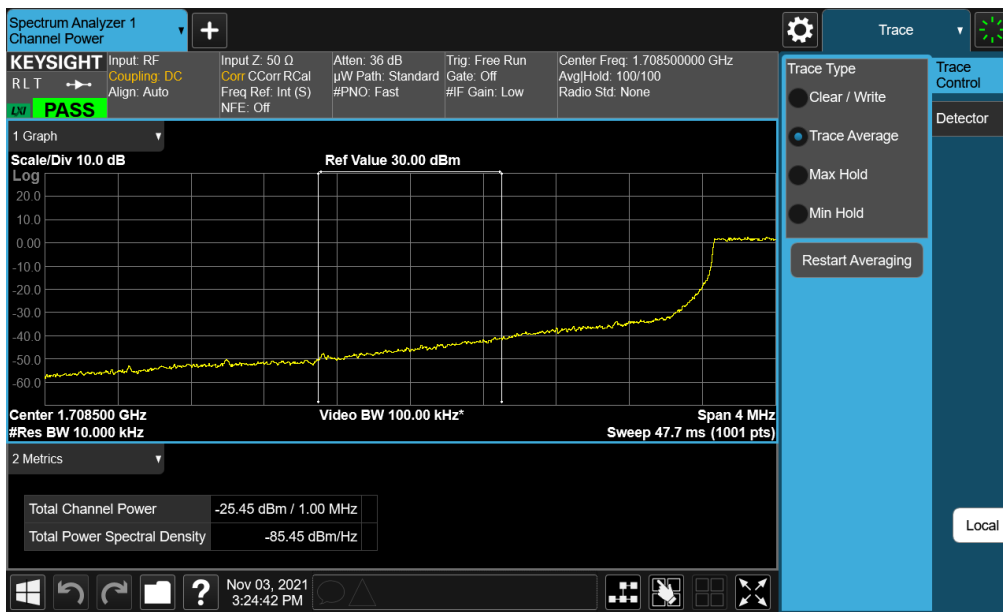
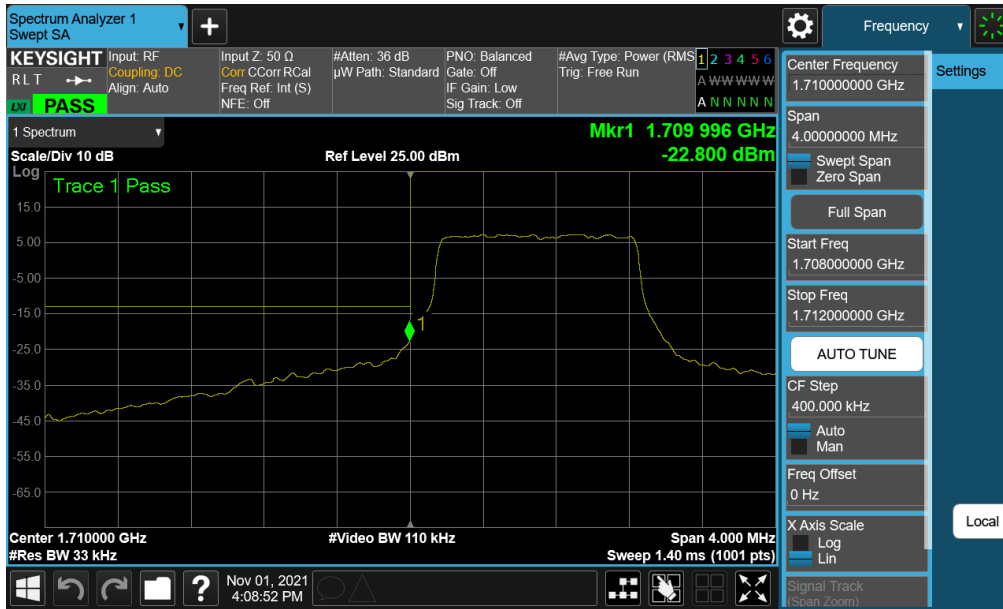
Plot 7-105. Upper Extended Band Edge Plot (LTE Band 4 - 3MHz QPSK – Full RB)

FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>Approved by:</b> Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset	Page 70 of 102

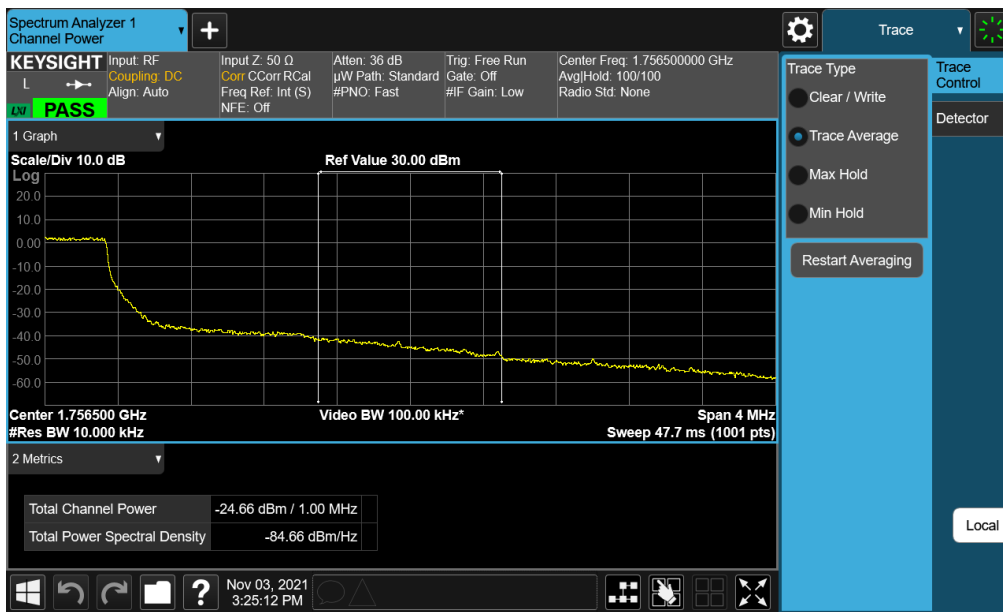




FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>Approved by:</b> Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset	Page 71 of 102



FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>Approved by:</b> Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset	Page 72 of 102



FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>Approved by:</b> Technical Manager
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Plot 7-112. Upper Band Edge Plot (LTE Band 66 – 1.4MHz QPSK – Full RB)



Plot 7-113. Upper Extended Band Edge Plot (LTE Band 66 – 1.4MHz QPSK – Full RB)

FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>Approved by:</b> Technical Manager
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## 7.5 Peak-Average Ratio

### Test Overview

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

### Test Procedure Used

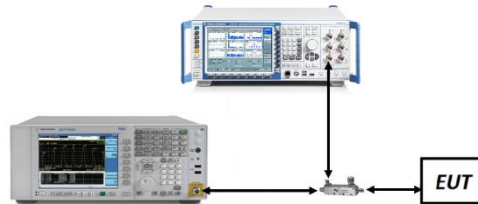
KDB 971168 D01 v03r01 – Section 5.7.1

### Test Settings

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

### Test Setup

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



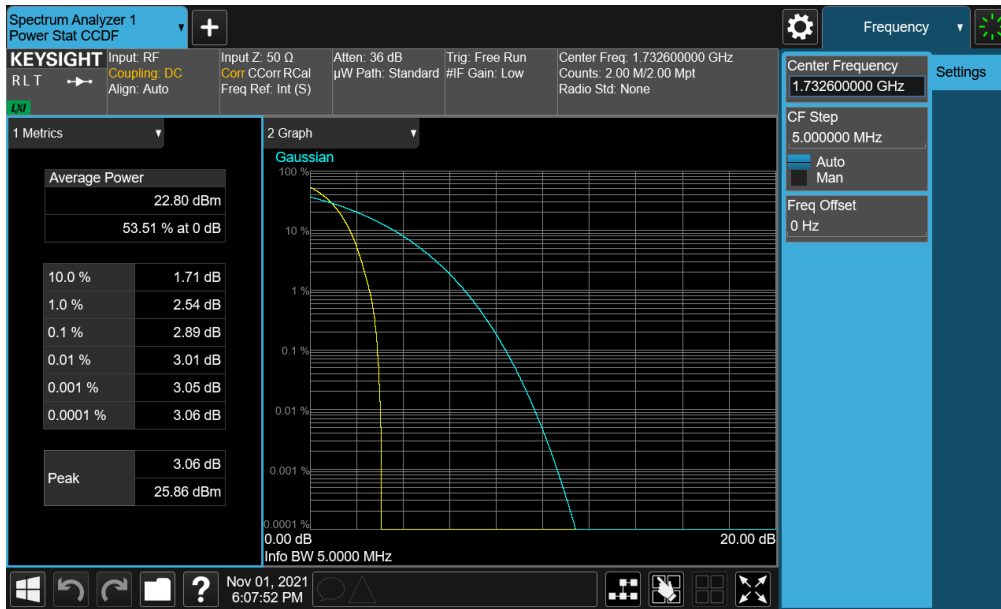
**Figure 7-4. Test Instrument & Measurement Setup**

### Test Notes

None.

FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset		Page 75 of 102

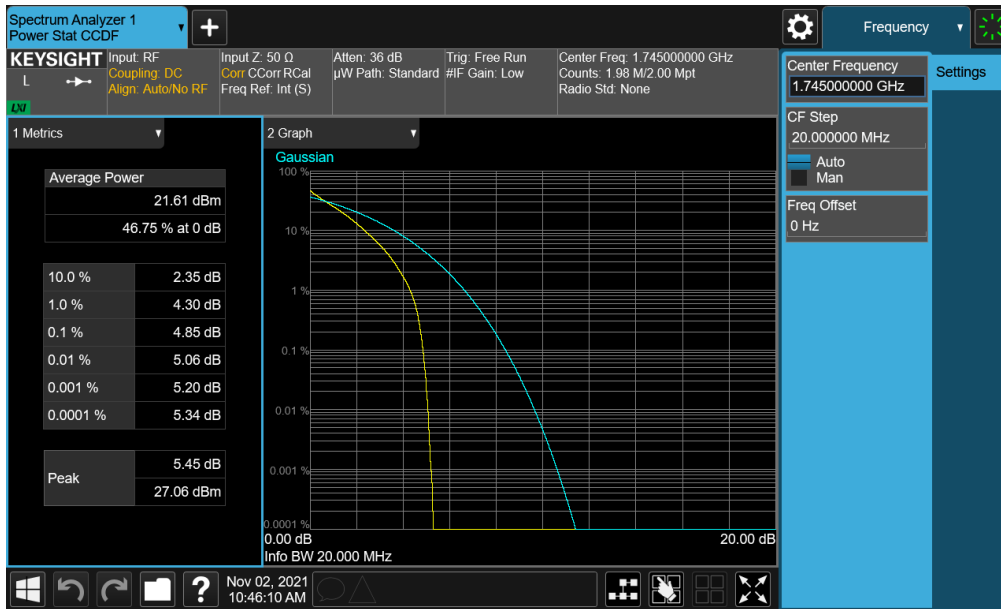
# WCDMA AWS



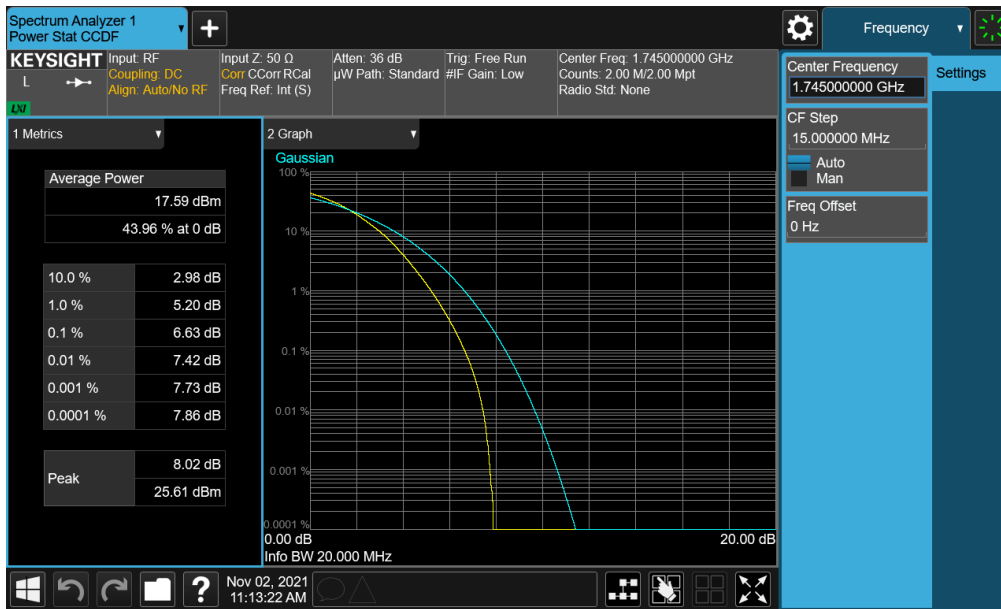
Plot 7-114. PAR Plot (WCDMA, Ch. 1413)

FCC ID: A3LSMS906E	<b>PART 27 MEASUREMENT REPORT</b>	Approved by: Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset
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# LTE Band 66/4

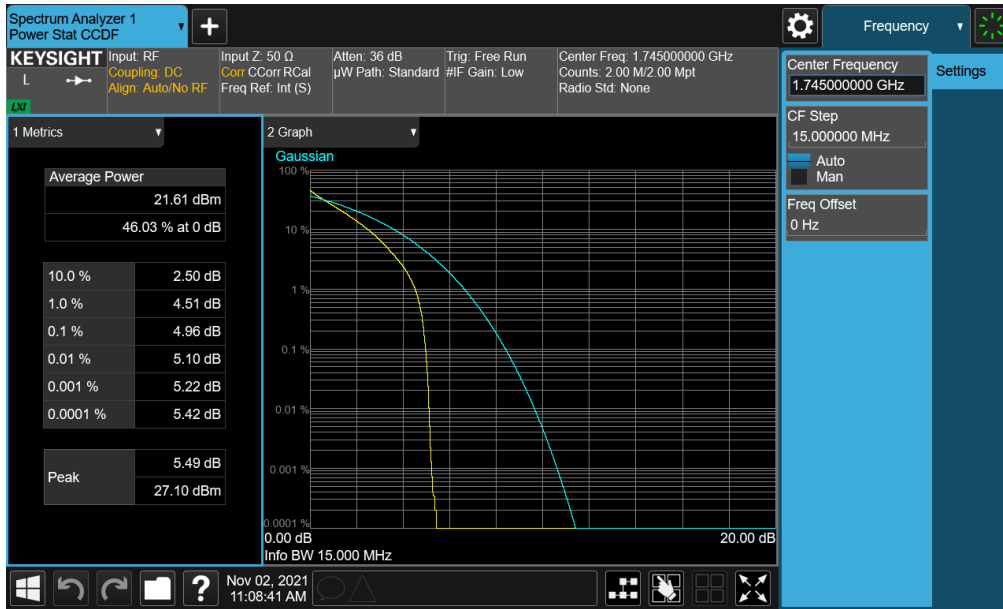


Plot 7-115. PAR Plot (LTE Band 66/4 - 20MHz QPSK - Full RB)

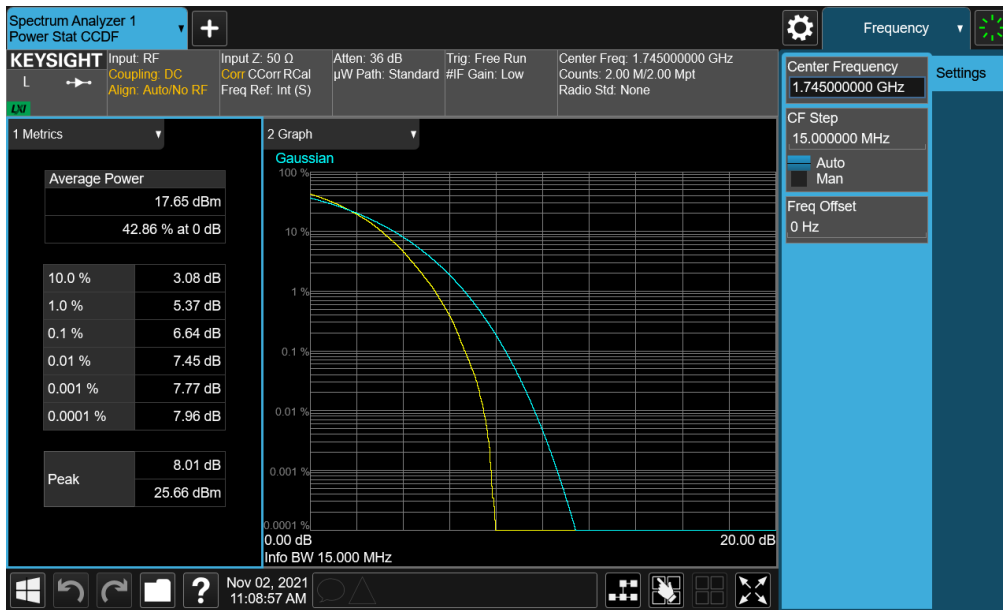


Plot 7-116. PAR Plot (LTE Band 66/4 - 20MHz 256-QAM - Full RB)

FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>Approved by:</b> Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset	Page 77 of 102



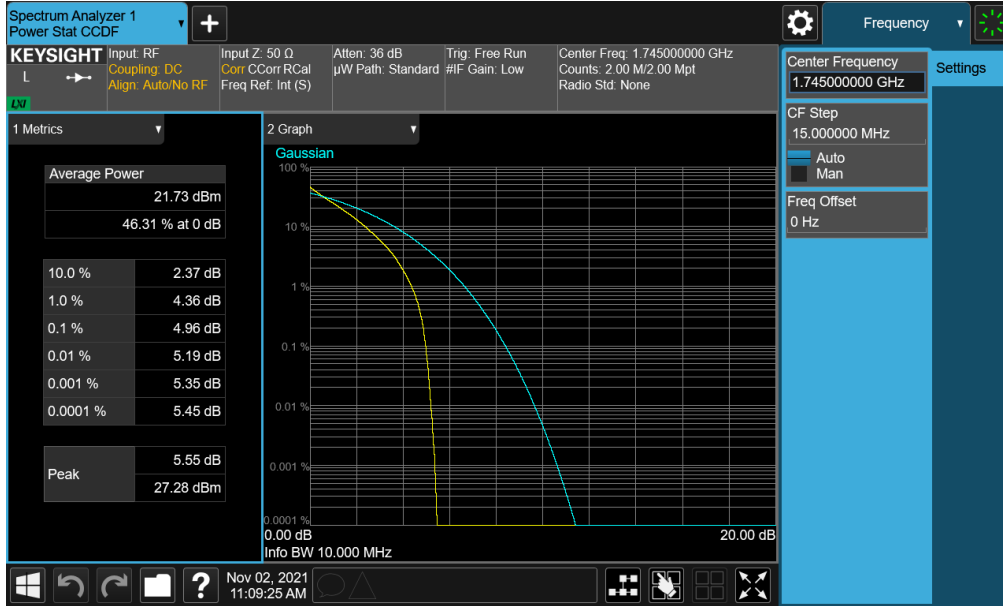
Plot 7-117. PAR Plot (LTE Band 66/4 - 15MHz QPSK - Full RB)



Plot 7-118. PAR Plot (LTE Band 66/4 - 15MHz 256-QAM - Full RB)

FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>Approved by:</b> Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset	Page 78 of 102



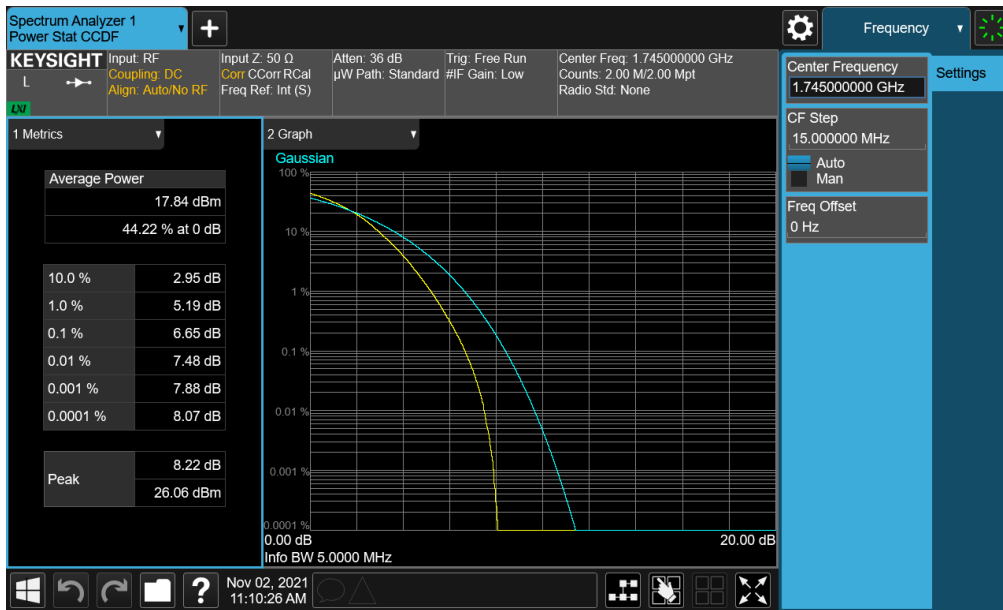
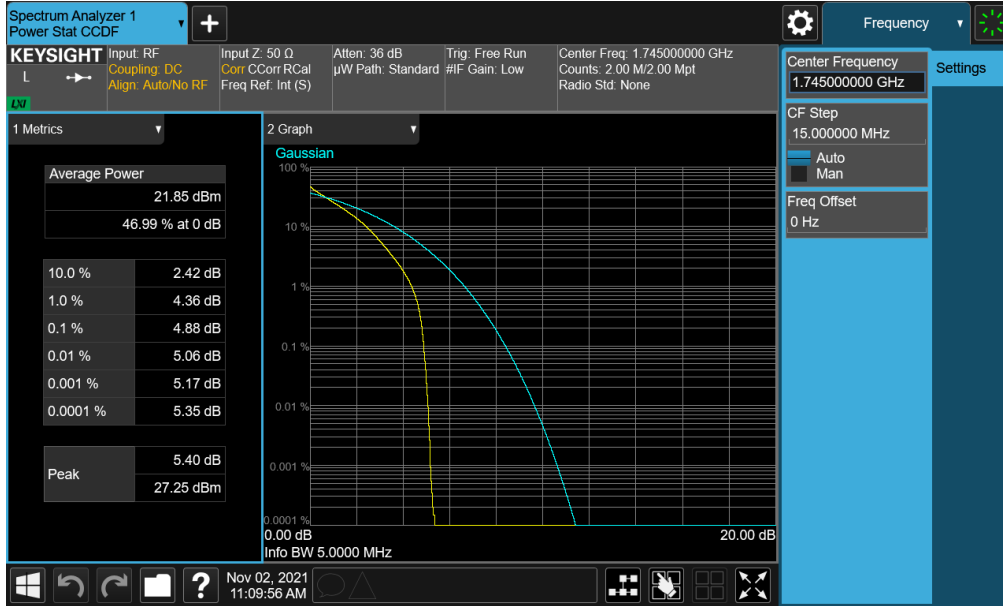


Plot 7-119. PAR Plot (LTE Band 66/4 - 10MHz QPSK - Full RB)



Plot 7-120. PAR Plot (LTE Band 66/4 - 10MHz 256-QAM - Full RB)

FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>Approved by:</b> Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset	Page 79 of 102



FCC ID: A3LSMS906E	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>Approved by:</b> Technical Manager
Test Report S/N: 1M2110010116-29.A3L	Test Dates: 11/15/2021 - 12/03/2021	EUT Type: Portable Handset	Page 80 of 102