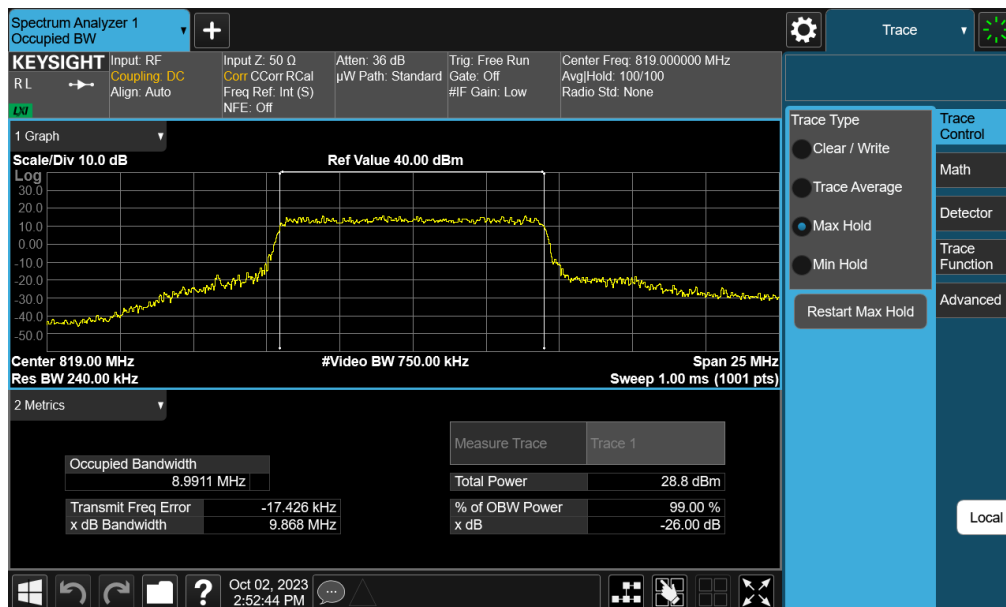
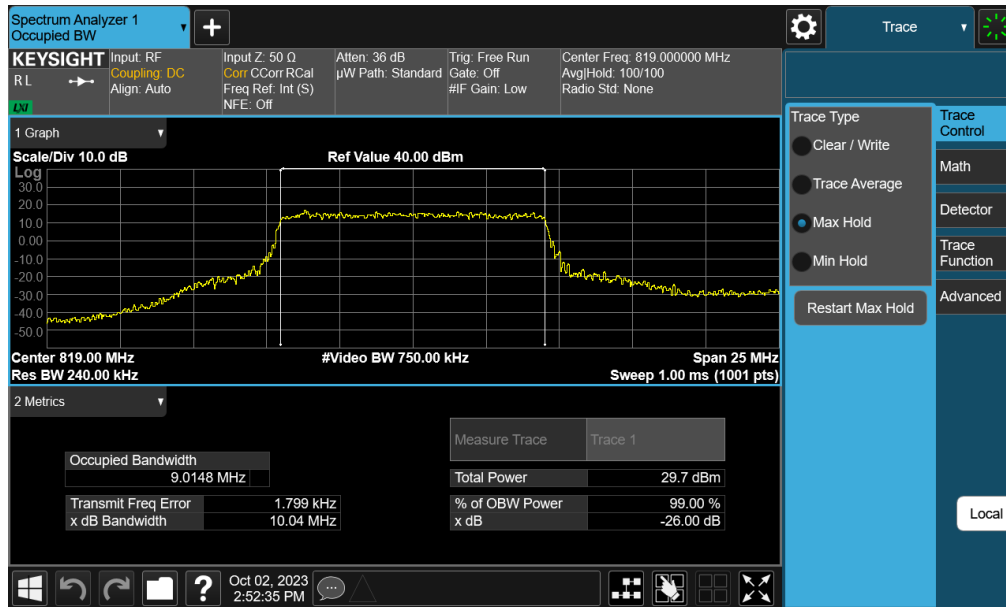
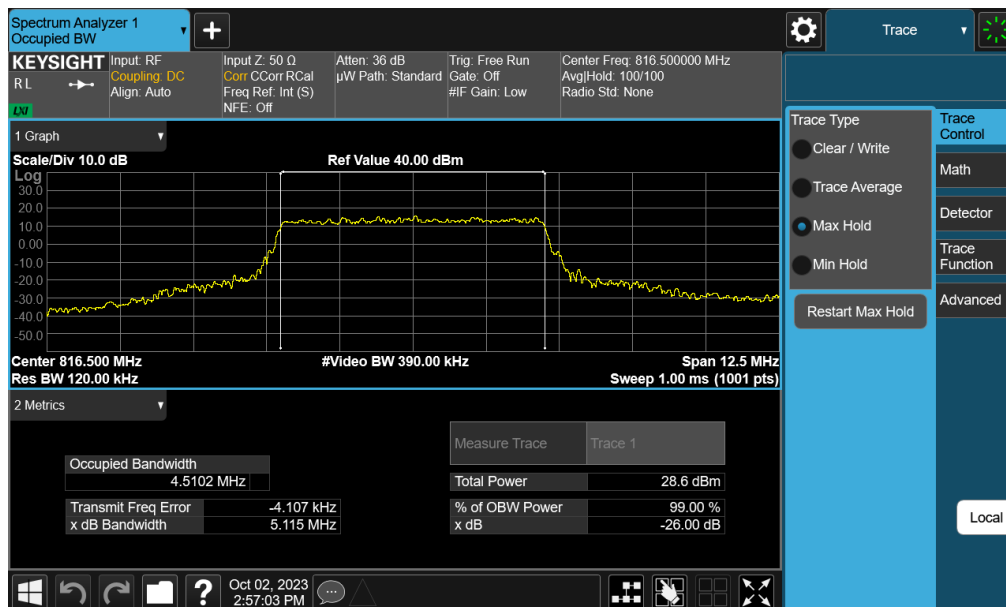
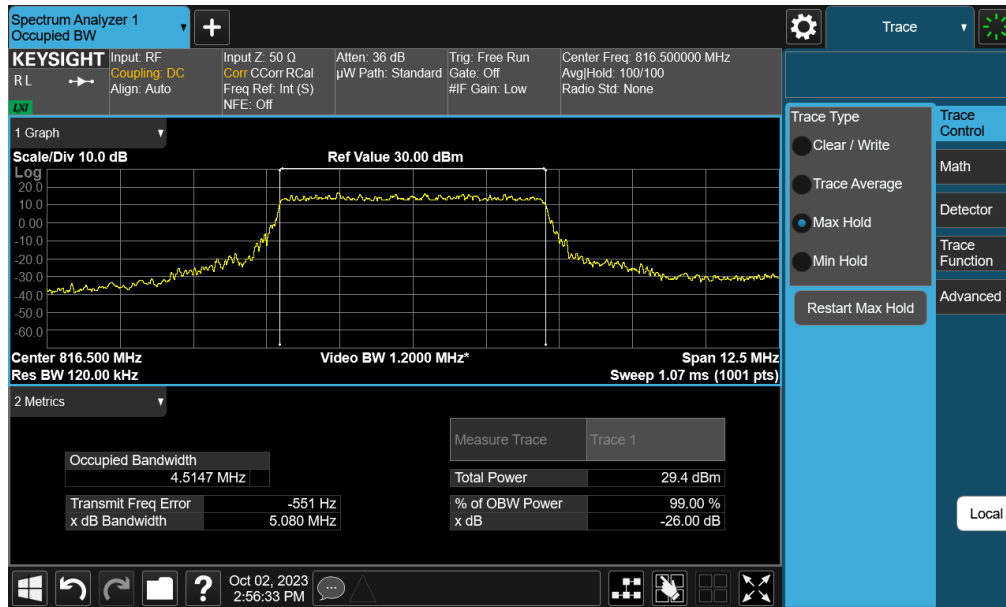
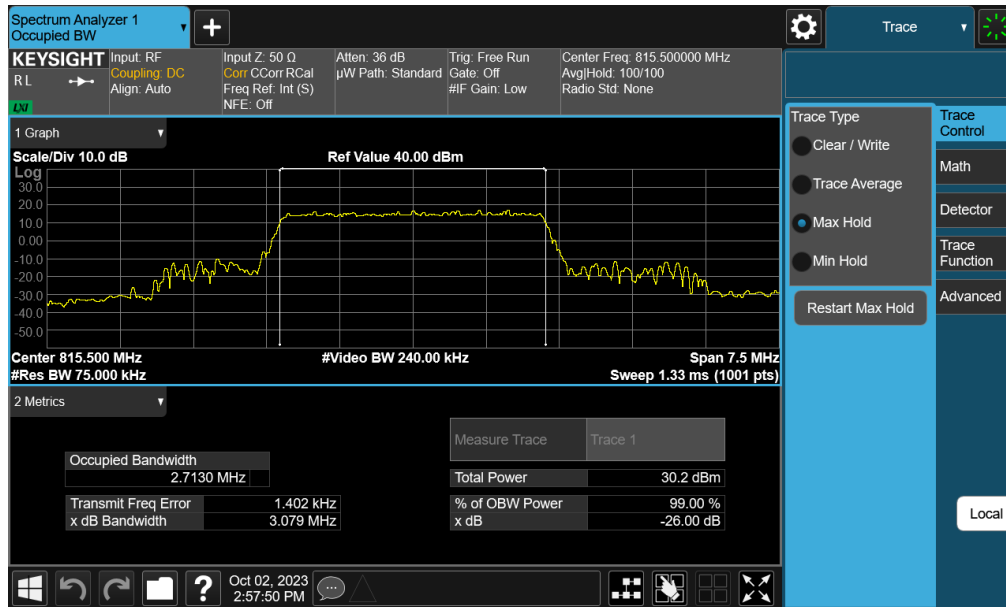




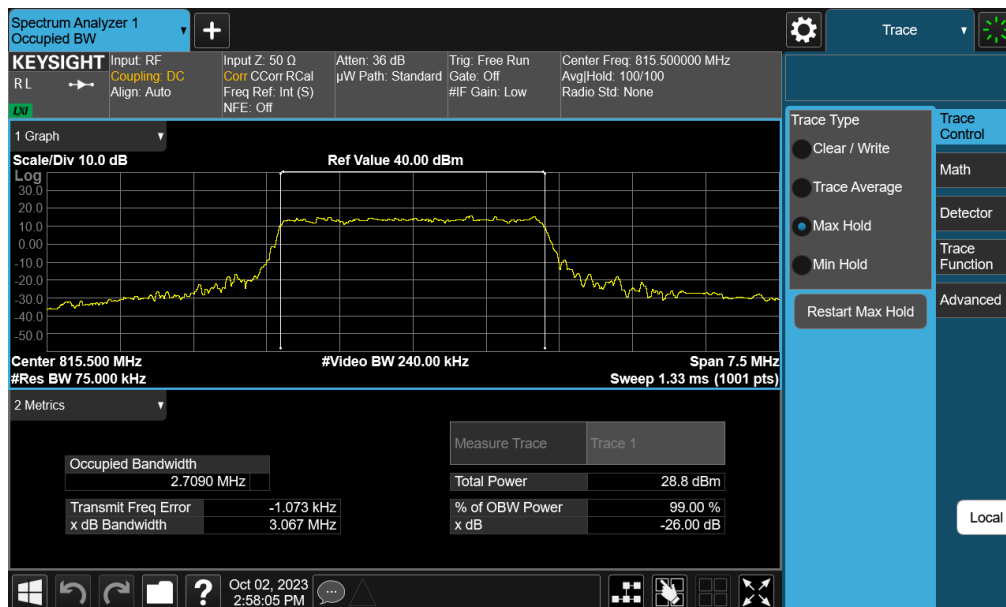
FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 36 of 96



FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 37 of 96

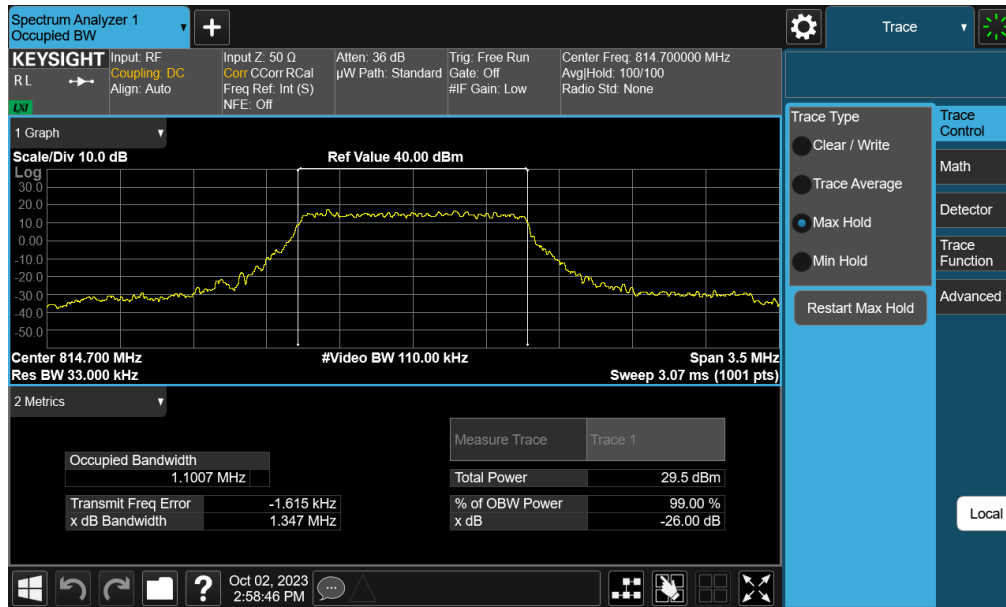


Plot 7-37. Occupied Bandwidth Plot (LTE Band 26 - 3MHz QPSK - Full RB Configuration – Ant E)

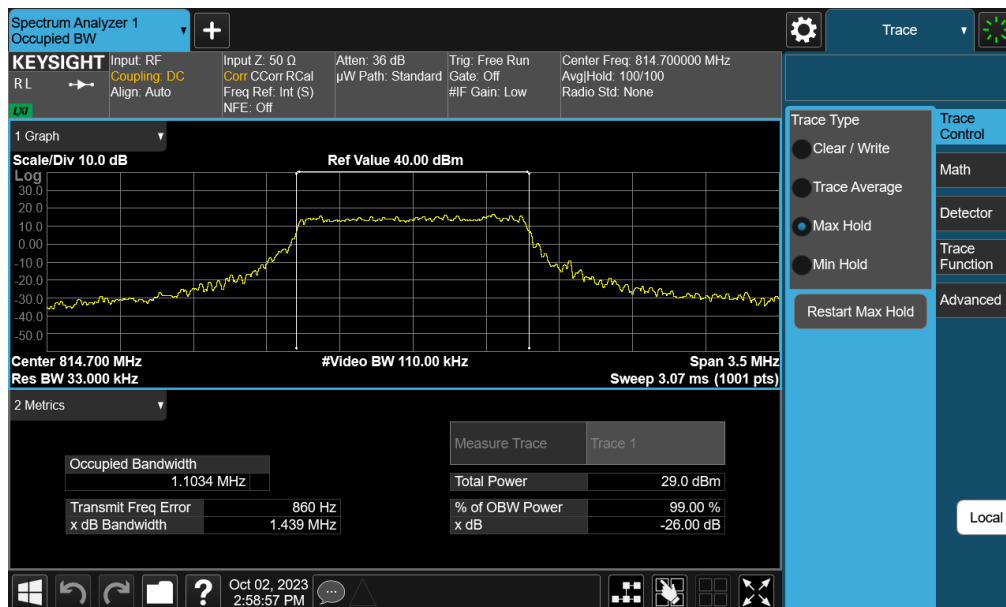


Plot 7-38. Occupied Bandwidth Plot (LTE Band 26 - 3MHz 16-QAM - Full RB Configuration – Ant E)

FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 38 of 96



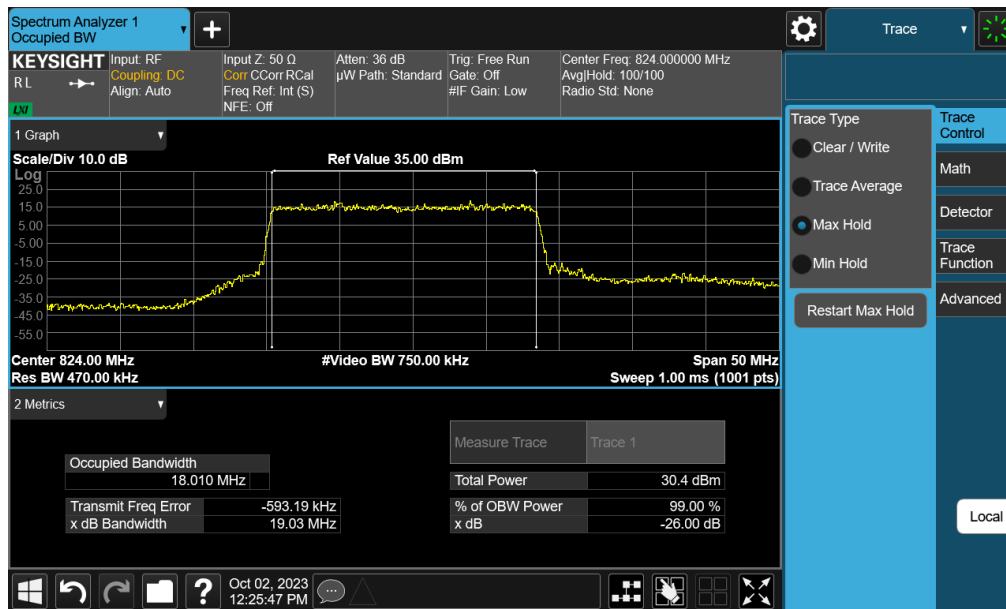
Plot 7-39. Occupied Bandwidth Plot (LTE Band 26 - 1.4MHz QPSK - Full RB Configuration – Ant E)



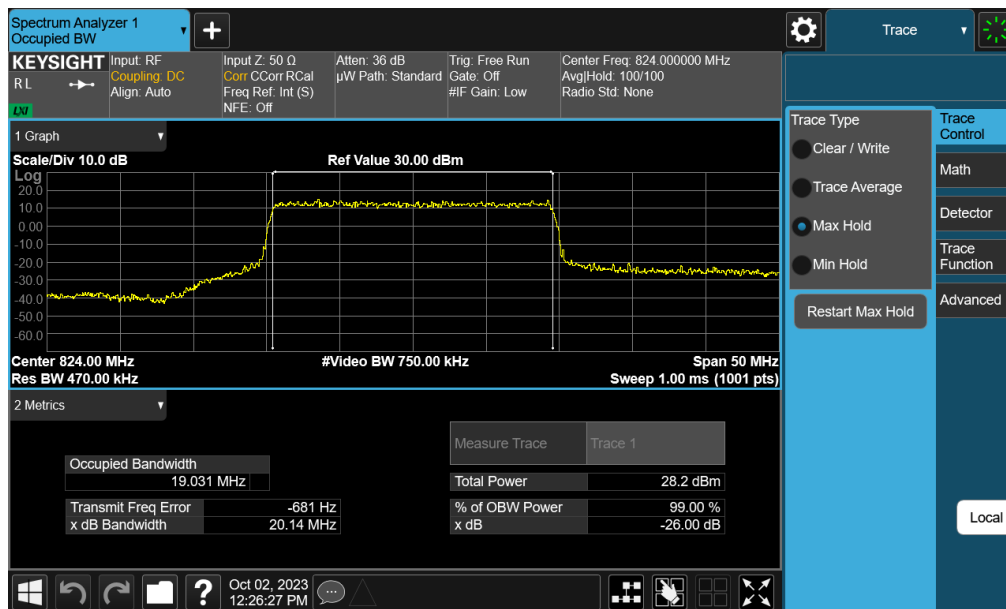
Plot 7-40. Occupied Bandwidth Plot (LTE Band 26 - 1.4MHz 16-QAM - Full RB Configuration – Ant E)

FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 39 of 96

NR Band n26 – Ant E

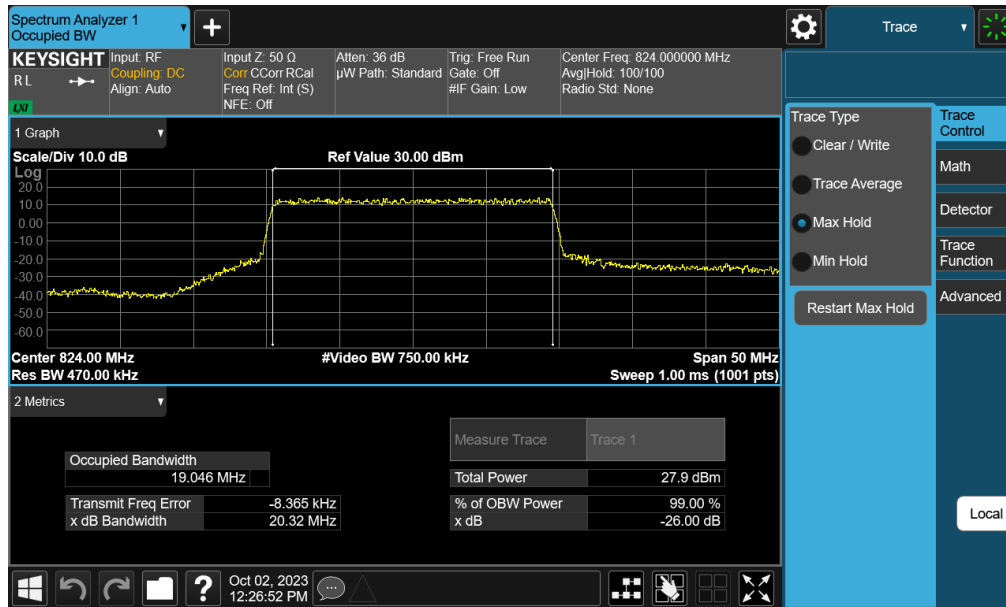


Plot 7-41. Occupied Bandwidth Plot (NR Band n26 - 20MHz $\pi/2$ BPSK - Full RB Configuration – Ant E)

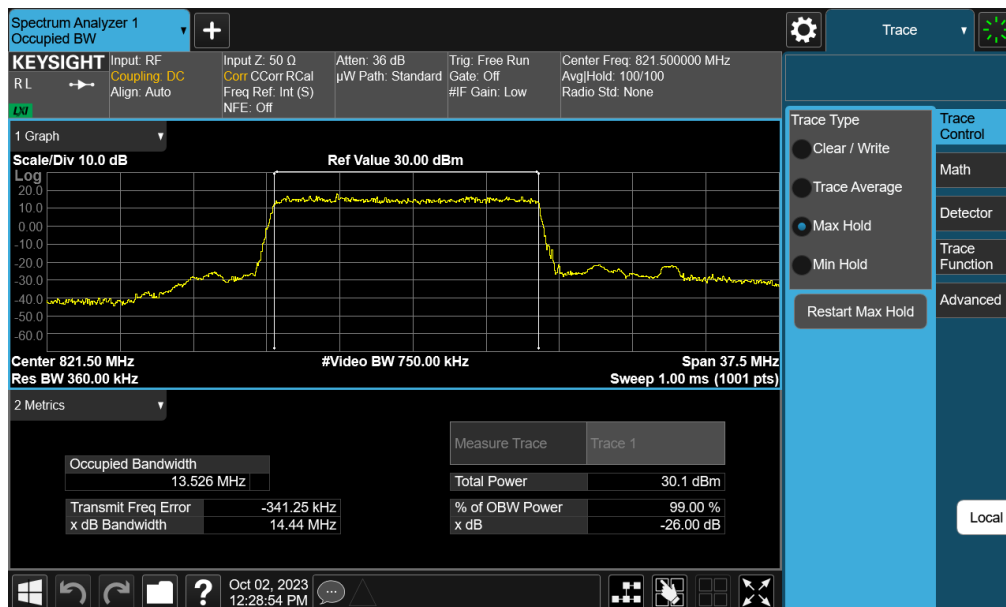


Plot 7-42. Occupied Bandwidth Plot (NR Band n26 - 20MHz QPSK - Full RB Configuration – Ant E)

FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 40 of 96

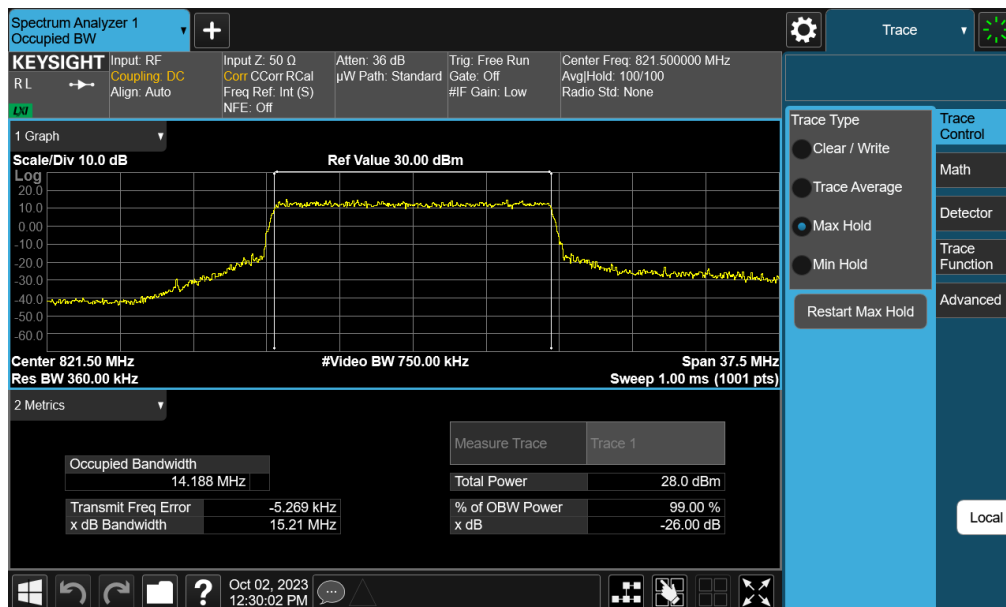
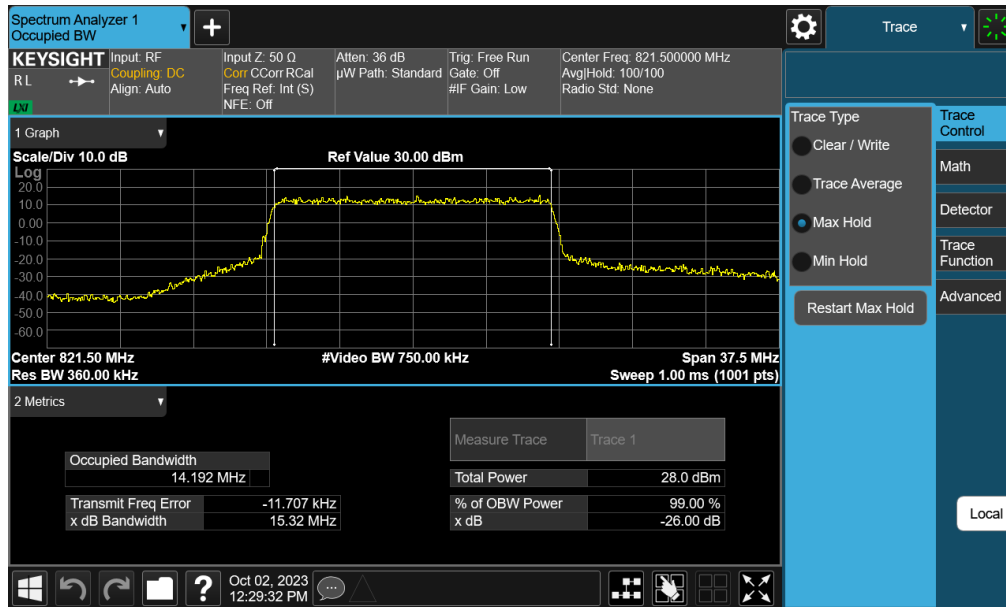


Plot 7-43. Occupied Bandwidth Plot (NR Band n26 - 20MHz 16-QAM - Full RB Configuration – Ant E)

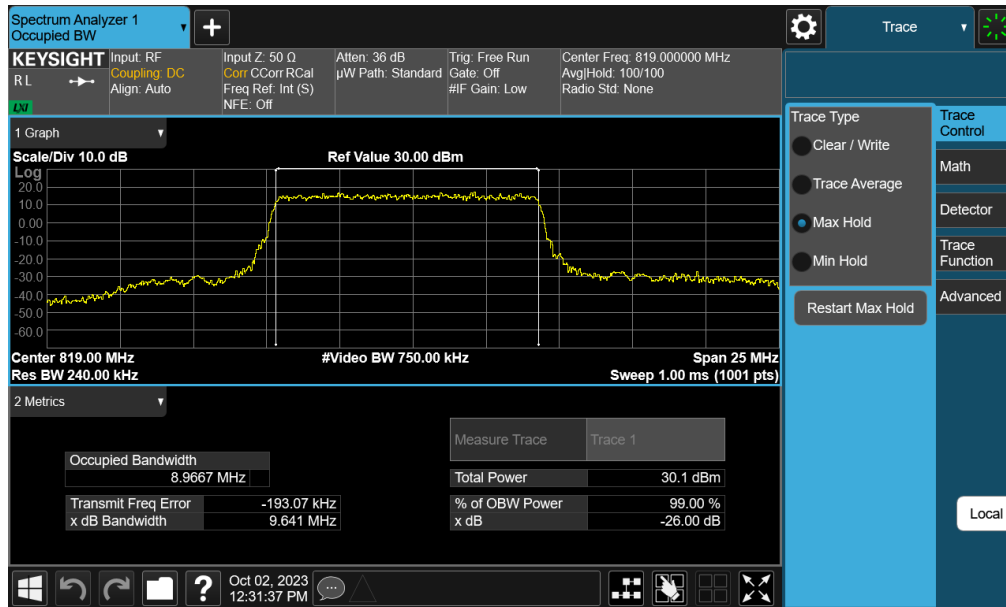


Plot 7-44. Occupied Bandwidth Plot (NR Band n26 - 15MHz $\pi/2$ BPSK - Full RB Configuration – Ant E)

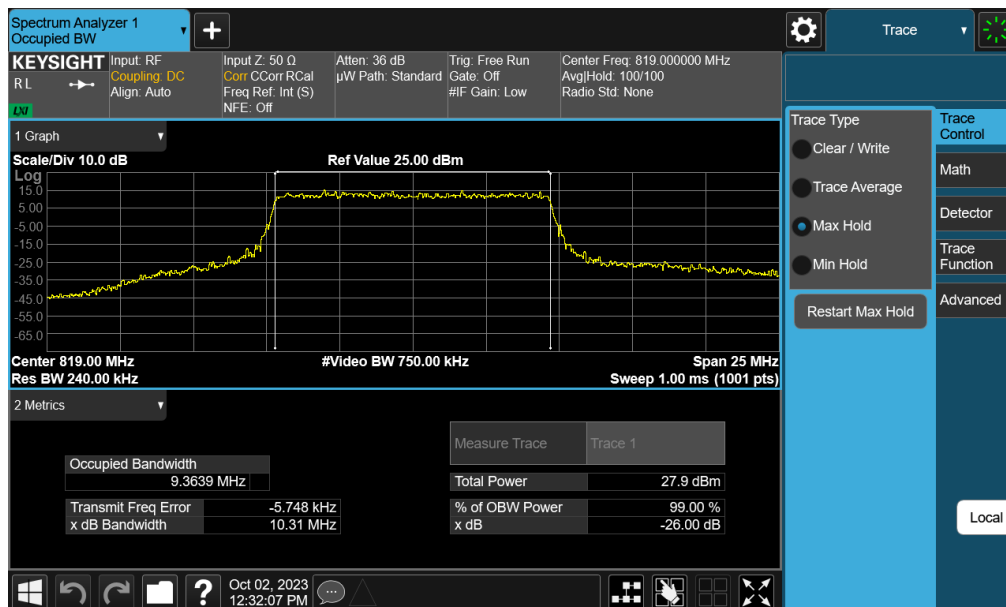
FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 41 of 96



FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 42 of 96

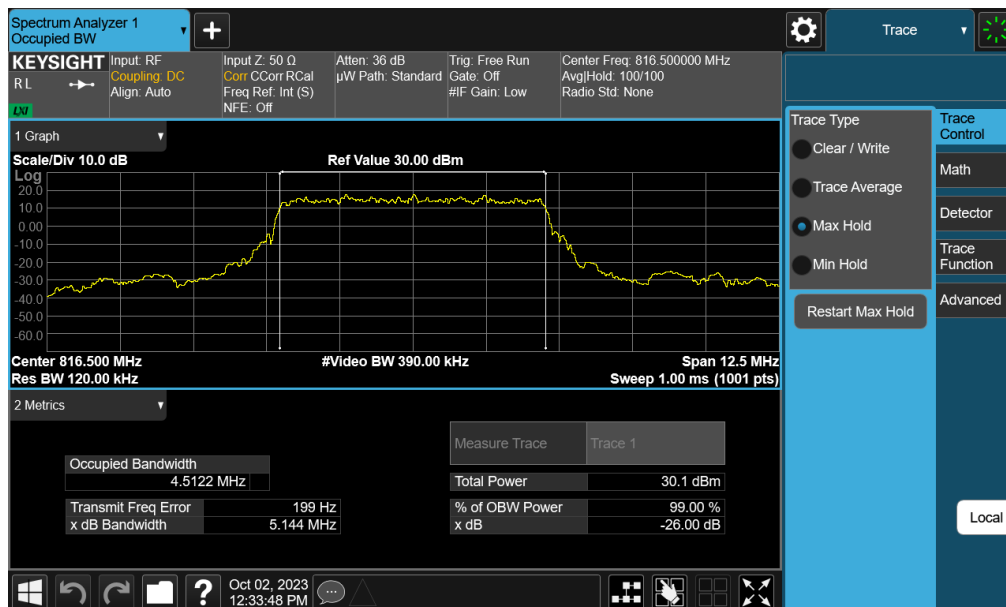
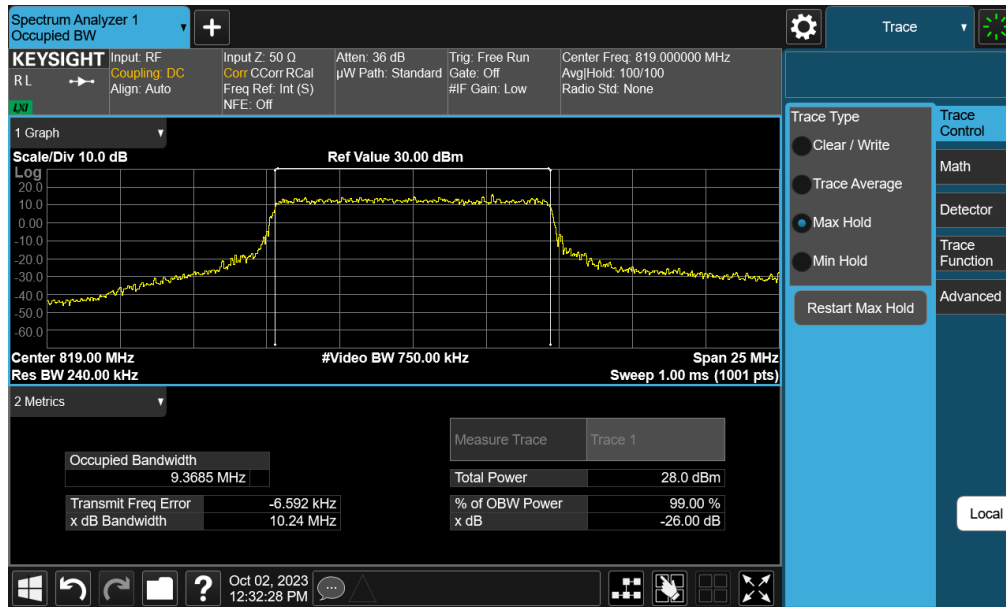


Plot 7-47. Occupied Bandwidth Plot (NR Band n26 - 10MHz $\pi/2$ BPSK - Full RB Configuration – Ant E)

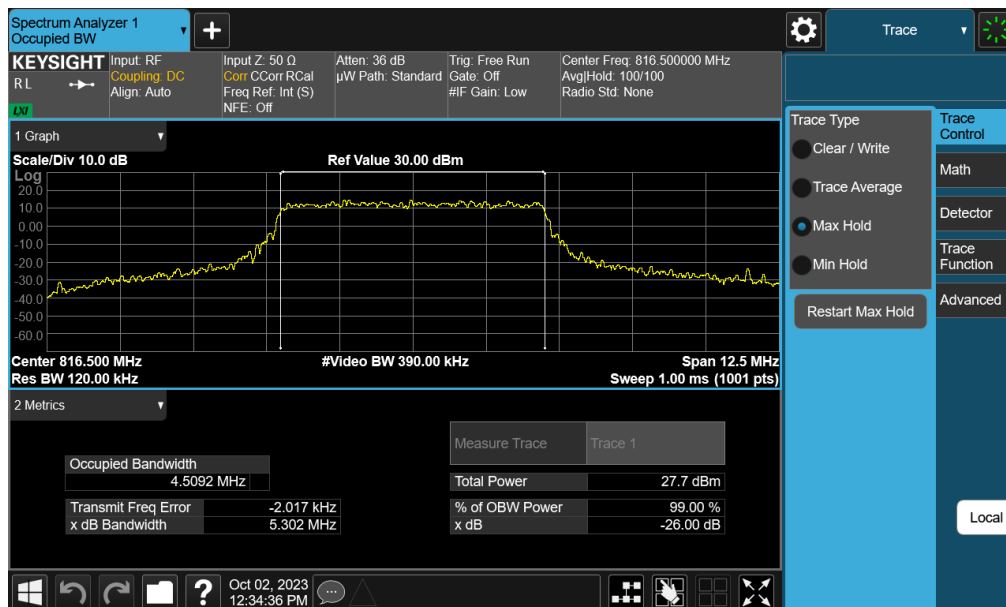


Plot 7-48. Occupied Bandwidth Plot (NR Band n26 - 10MHz QPSK - Full RB Configuration – Ant E)

FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 43 of 96



FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 44 of 96



FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 45 of 96

7.4 Spurious and Harmonic Emissions at Antenna Terminal

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 10th 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.

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

ANSI C63.26-2015 – Section 5.7.4

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. RBW $\geq$ 100kHz
3. VBW $\geq$ 3 x RBW
4. Detector = RMS
5. Trace mode = max hold
6. Sweep time = auto couple
7. The trace was allowed to stabilize

Test Setup

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

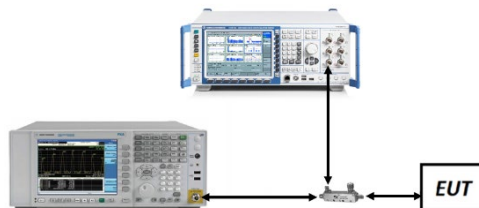


Figure 7-3. Test Instrument & Measurement Setup

Test Notes

1. Per Part 22H and 90, compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater.
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.

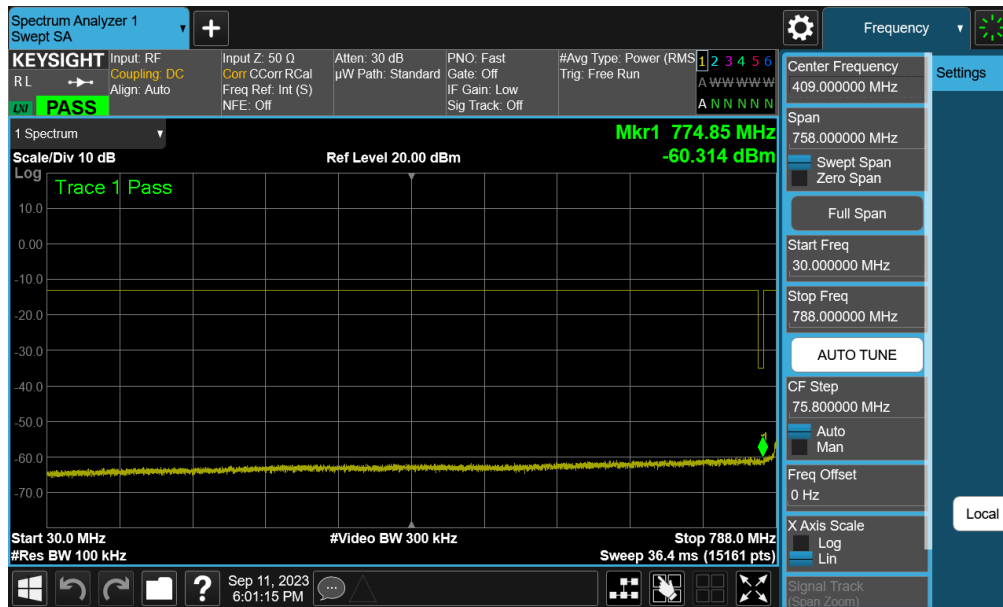
FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 46 of 96

Mode	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
LTE-B26	15 MHz	Mid	30.0 - 814.0	-49.24	-13	-36.23
		Mid	824.0 - 1000.0	-32.44	-13	-19.44
		Mid	1000.0 - 10000.0	-39.87	-13	-26.87
LTE-B14	10 MHz	Mid	30.0 - 788.0	-60.31	-35	-25.31
		Mid	798.0 - 1000.0	-57.50	-35	-22.50
		Mid	1000.0 - 10000.0	-39.51	-13	-26.51
NR-n26	20 MHz	Mid	30.0 - 814.0	-58.80	-13	-45.80
		Mid	824.0 - 1000.0	-48.83	-13	-35.83
		Mid	1000.0 - 10000.0	-39.20	-13	-26.20

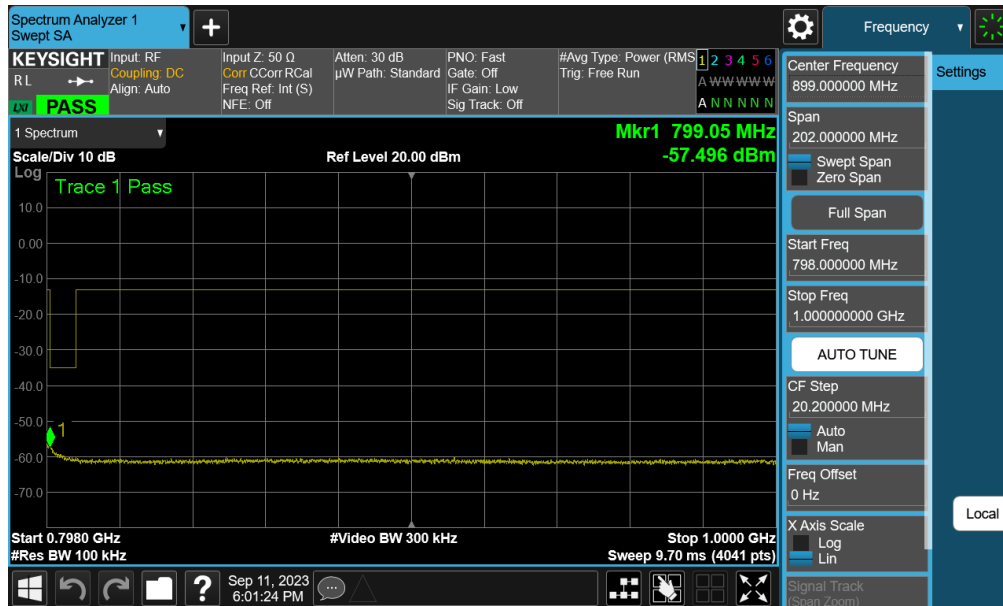
Table 7-10. Conducted Spurious Emission Results – Ant A

FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 47 of 96

LTE Band 14 – Ant A

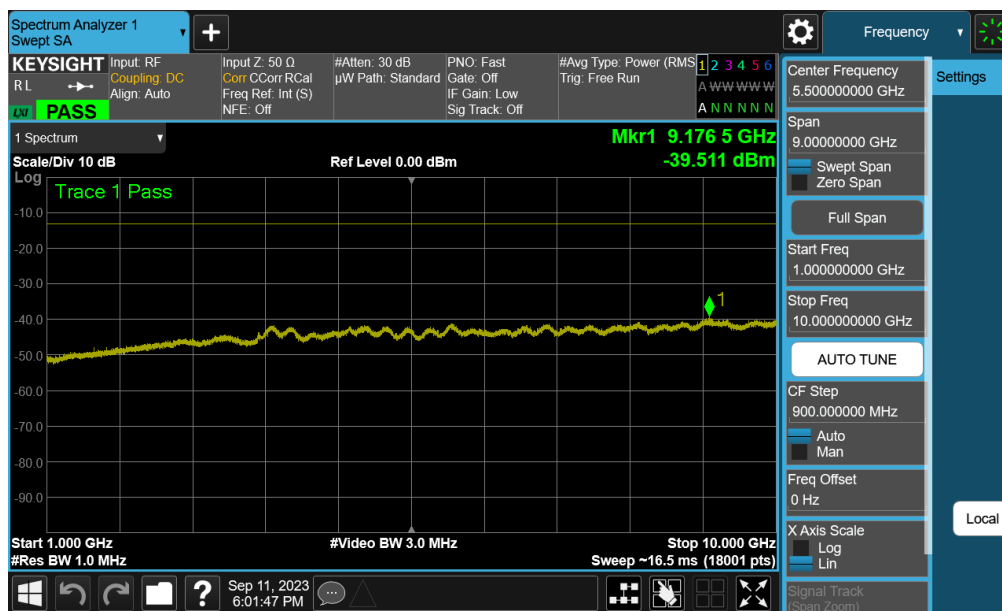


Plot 7-53. Conducted Spurious Plot (LTE Band 14 - 10MHz QPSK - RB Size 1, RB Offset 0 – Ant A)



Plot 7-54. Conducted Spurious Plot (LTE Band 14 - 10MHz QPSK - RB Size 1, RB Offset 0 – Ant A)

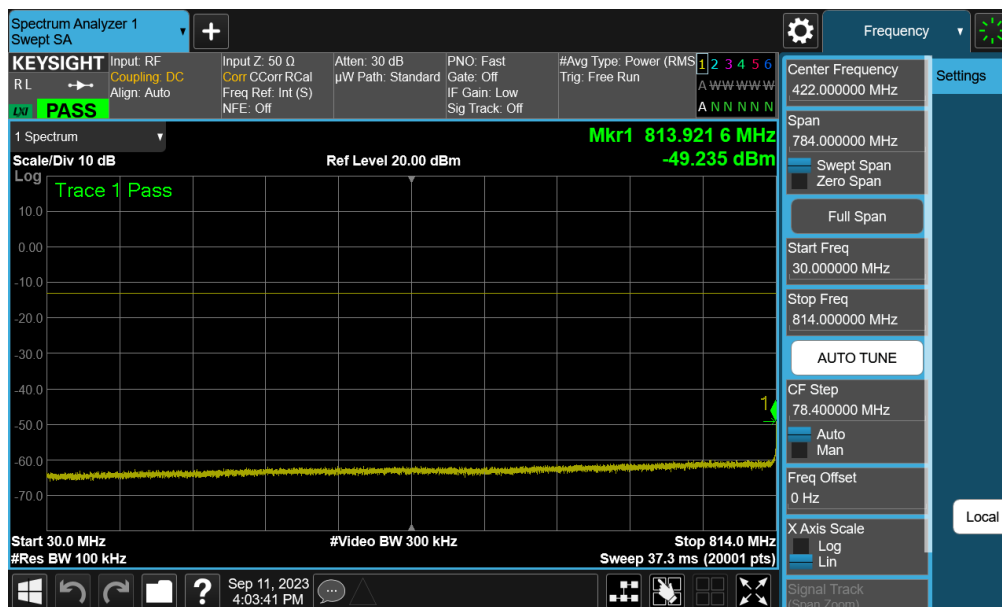
FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 48 of 96



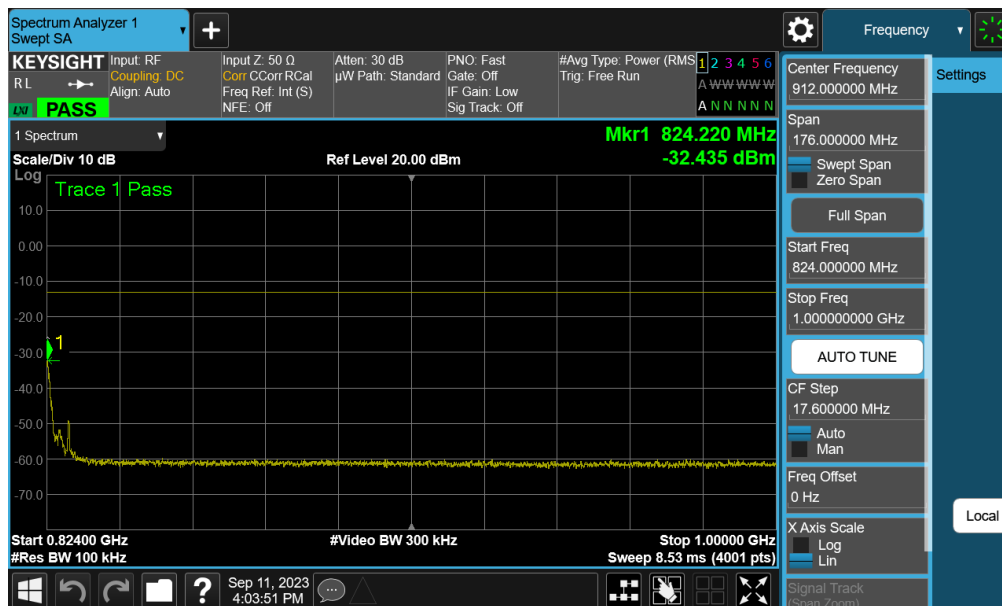
Plot 7-55. Conducted Spurious Plot (LTE Band 14 - 10MHz QPSK - RB Size 1, RB Offset 0 – Ant A)

FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 49 of 96

LTE Band 26 – Ant A

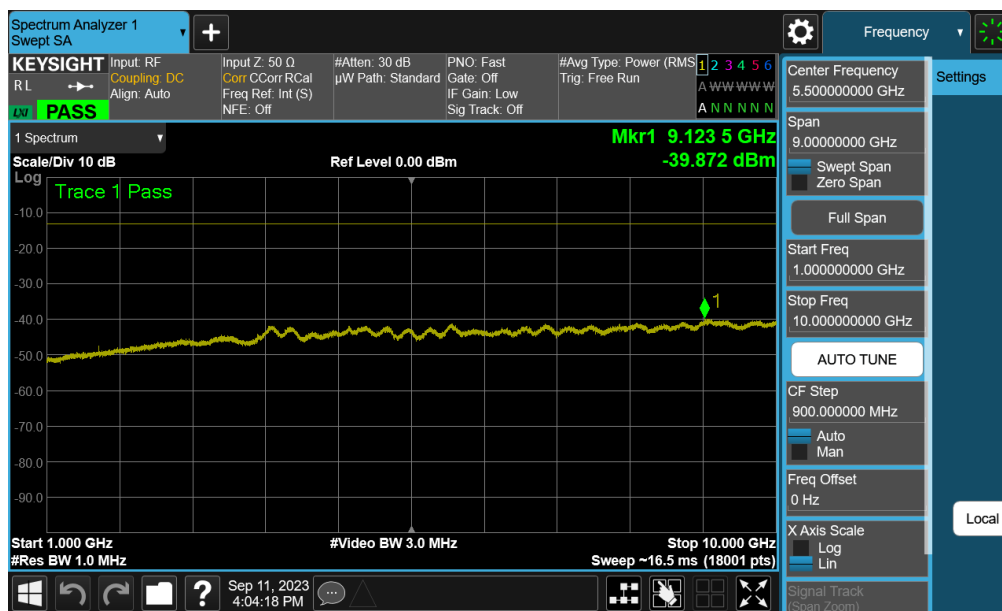


Plot 7-56. Conducted Spurious Plot (LTE Band 26 - 15MHz QPSK - RB Size 1, RB Offset 0 – Ant A)



Plot 7-57. Conducted Spurious Plot (LTE Band 26 - 15MHz QPSK - RB Size 1, RB Offset 0 – Ant A)

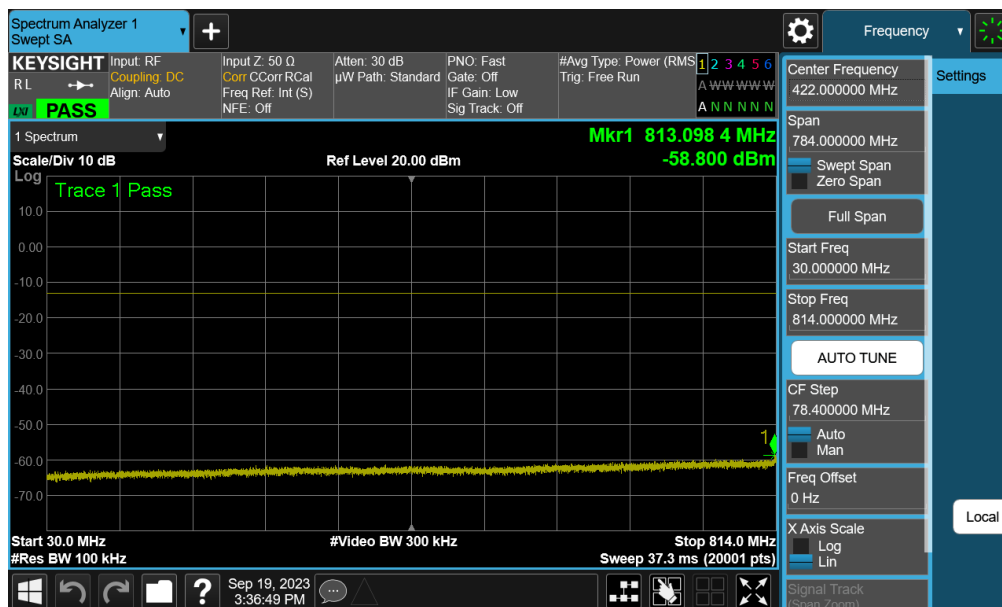
FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 50 of 96



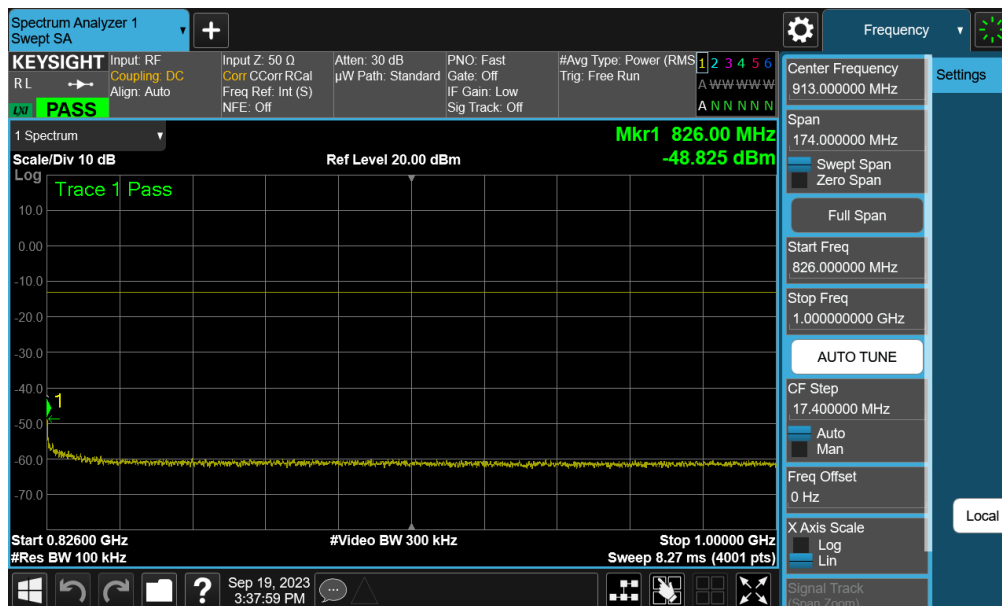
Plot 7-58. Conducted Spurious Plot (LTE Band 26 - 15MHz QPSK - RB Size 1, RB Offset 0 – Ant A)

FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 51 of 96

NR Band n26 – Ant A

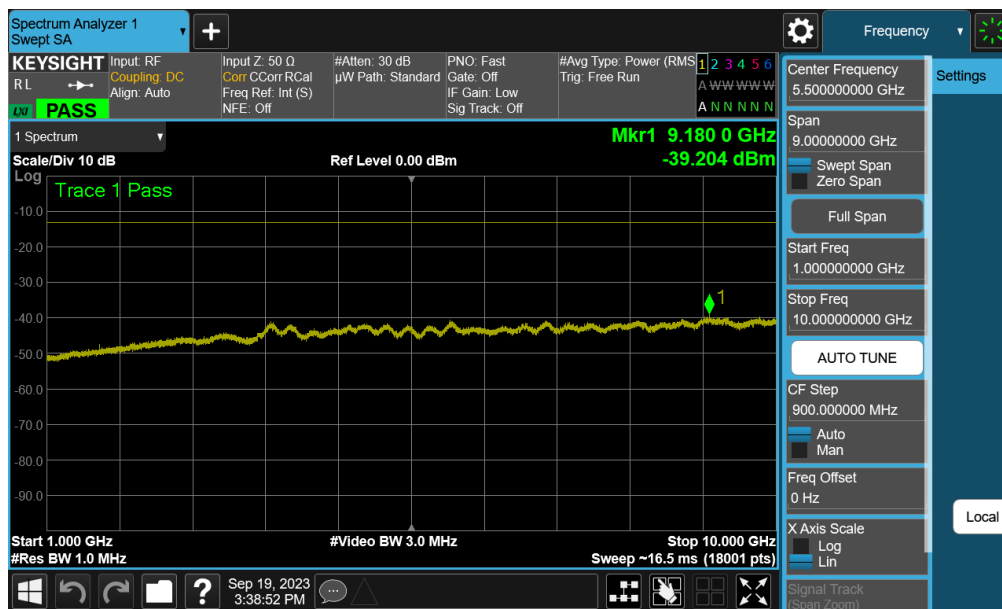


Plot 7-59. Conducted Spurious Plot (NR Band n26 - 20MHz QPSK - RB Size 1, RB Offset 0 – Ant A)



Plot 7-60. Conducted Spurious Plot (NR Band n26 - 20MHz QPSK - RB Size 1, RB Offset 0 – Ant A)

FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 52 of 96



Plot 7-61. Conducted Spurious Plot (NR Band n26 - 20MHz QPSK - RB Size 1, RB Offset 0 – Ant A)

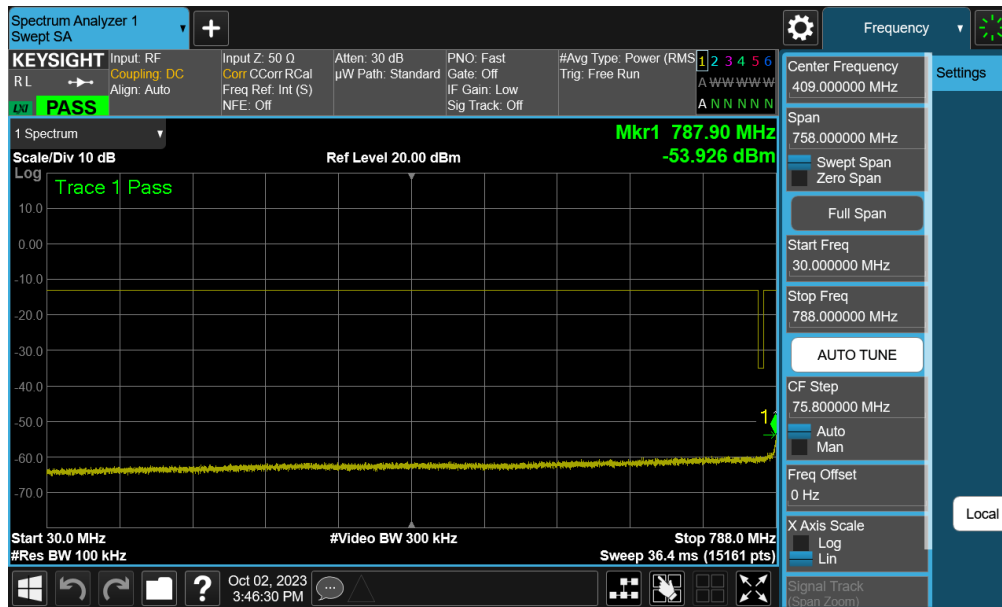
FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 53 of 96

Mode	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
LTE-B26	15 MHz	Mid	30.0 - 814.0	-49.80	-13	-36.80
		Mid	824.0 - 1000.0	-30.63	-13	-17.63
		Mid	1000.0 - 10000.0	-38.66	-13	-25.66
LTE-B14	10 MHz	Mid	30.0 - 788.0	-53.93	-13	-40.93
		Mid	798.0 - 1000.0	-56.50	-35	-21.50
		Mid	1000.0 - 10000.0	-38.70	-13	-25.70
NR-n26	20 MHz	Mid	30.0 - 814.0	-58.96	-13	-45.95
		Mid	824.0 - 1000.0	-52.13	-13	-39.13
		Mid	1000.0 - 10000.0	-38.88	-13	-25.88

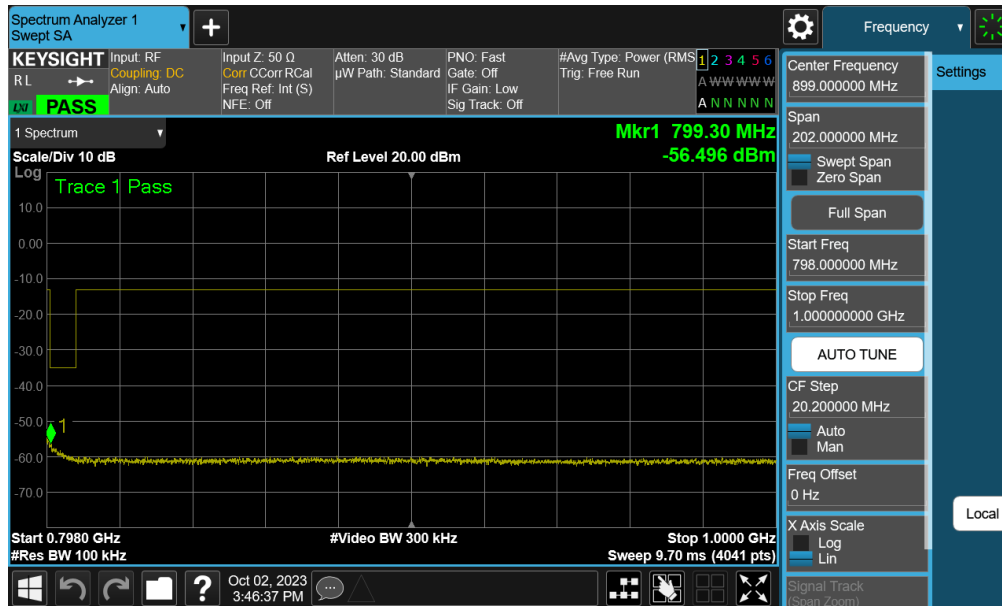
Table 7-11. Conducted Spurious Emission Results – Ant E

FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 54 of 96

LTE Band 14 – Ant E

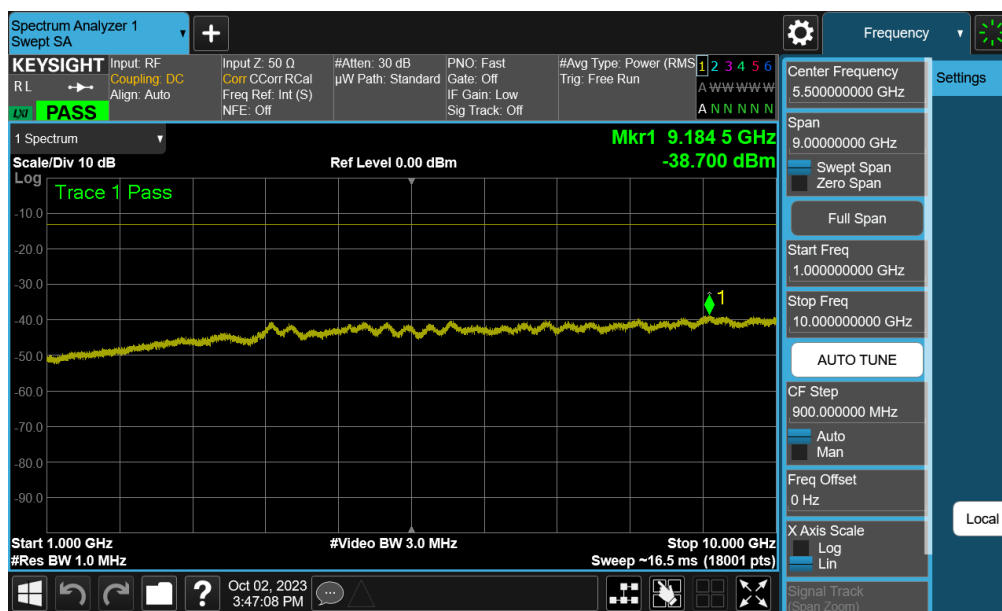


Plot 7-62. Conducted Spurious Plot (LTE Band 14 - 10MHz QPSK - RB Size 1, RB Offset 0 – Ant E)



Plot 7-63. Conducted Spurious Plot (LTE Band 14 - 10MHz QPSK - RB Size 1, RB Offset 0 – Ant E)

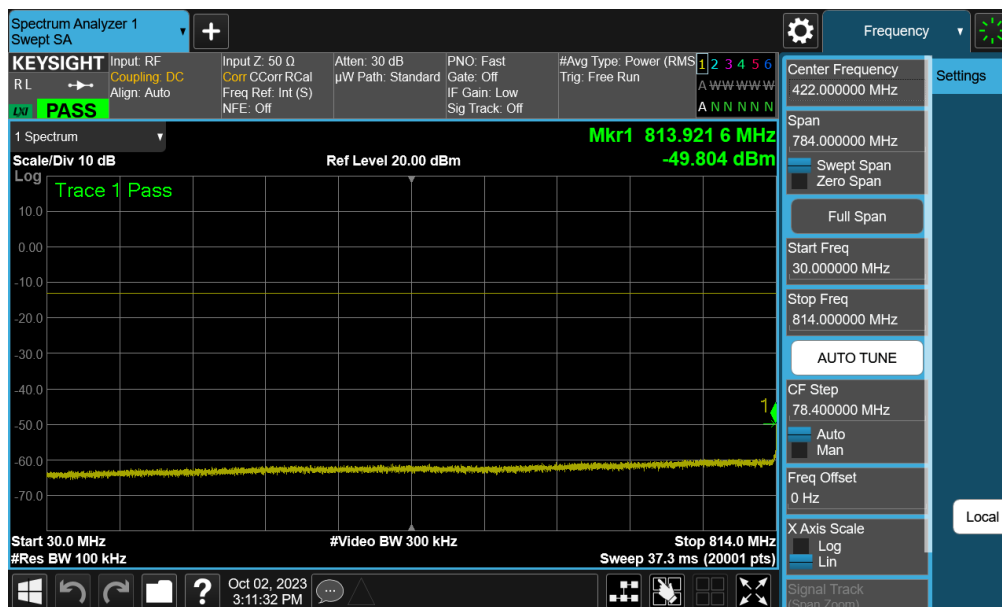
FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 55 of 96



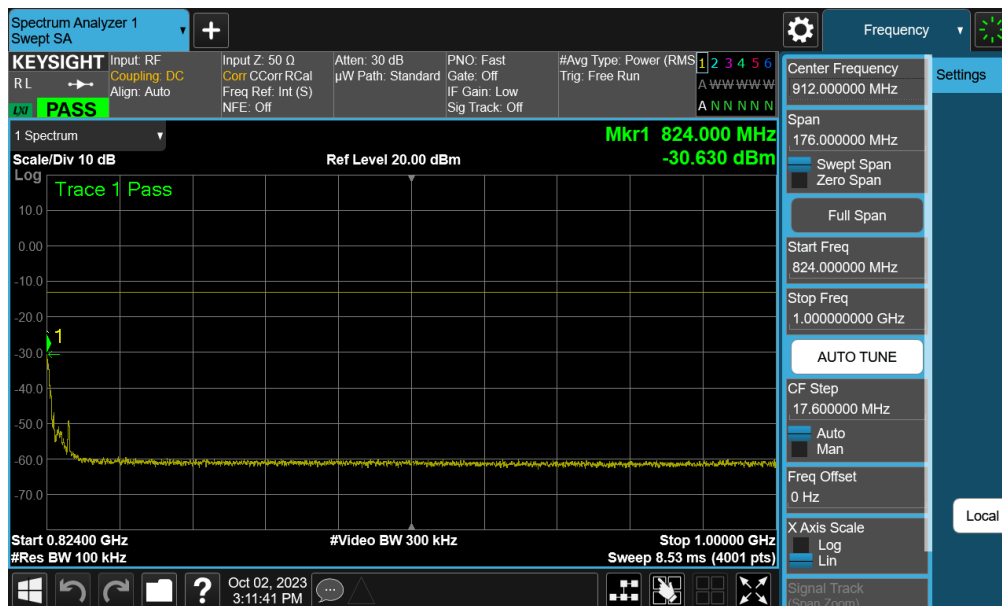
Plot 7-64. Conducted Spurious Plot (LTE Band 14 - 10MHz QPSK - RB Size 1, RB Offset 0 – Ant E)

FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 56 of 96

LTE Band 26 – Ant E

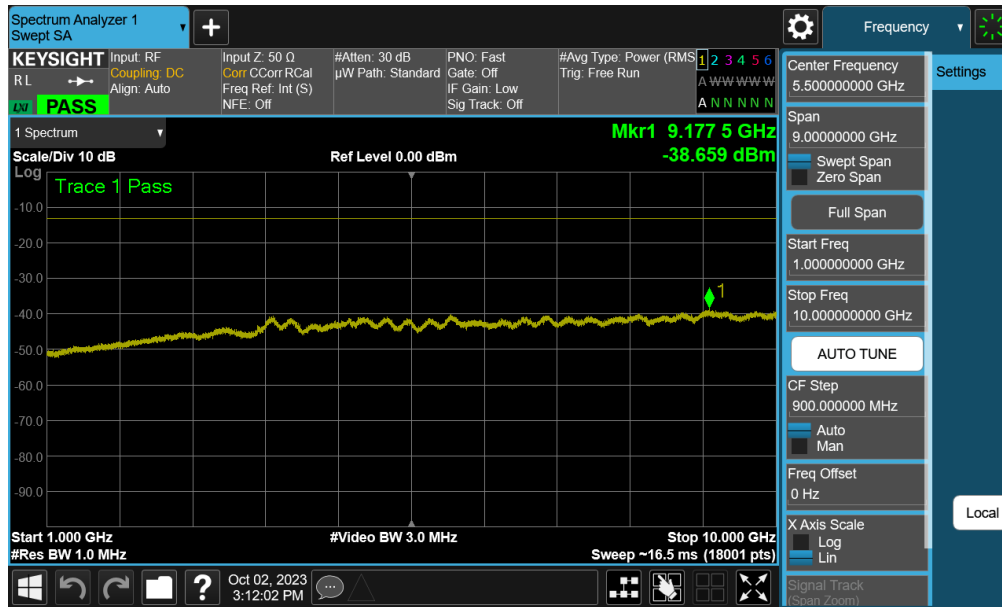


Plot 7-65. Conducted Spurious Plot (LTE Band 26 - 15MHz QPSK - RB Size 1, RB Offset 0 – Ant E)



Plot 7-66. Conducted Spurious Plot (LTE Band 26 - 15MHz QPSK - RB Size 1, RB Offset 0 – Ant E)

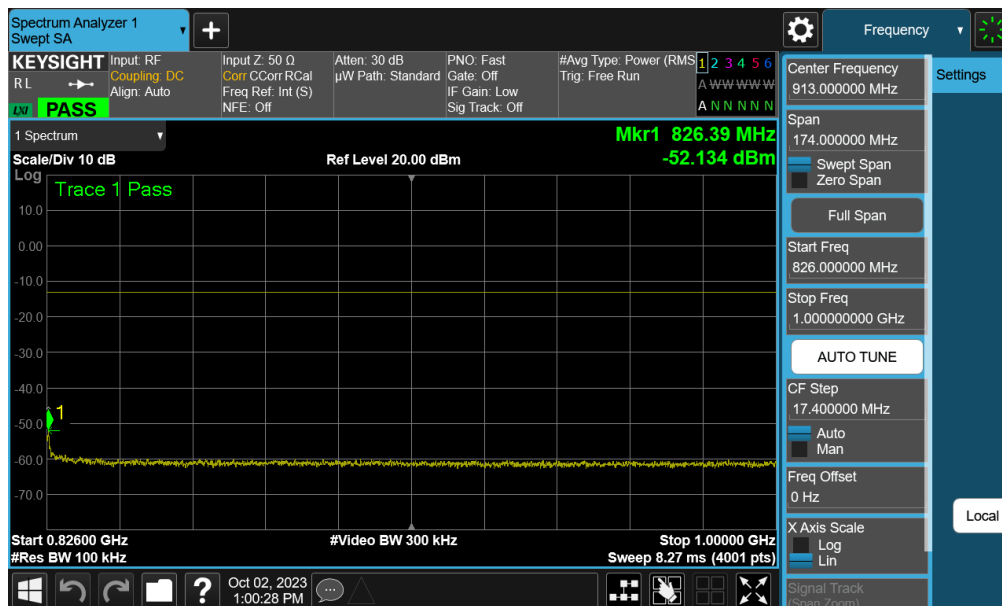
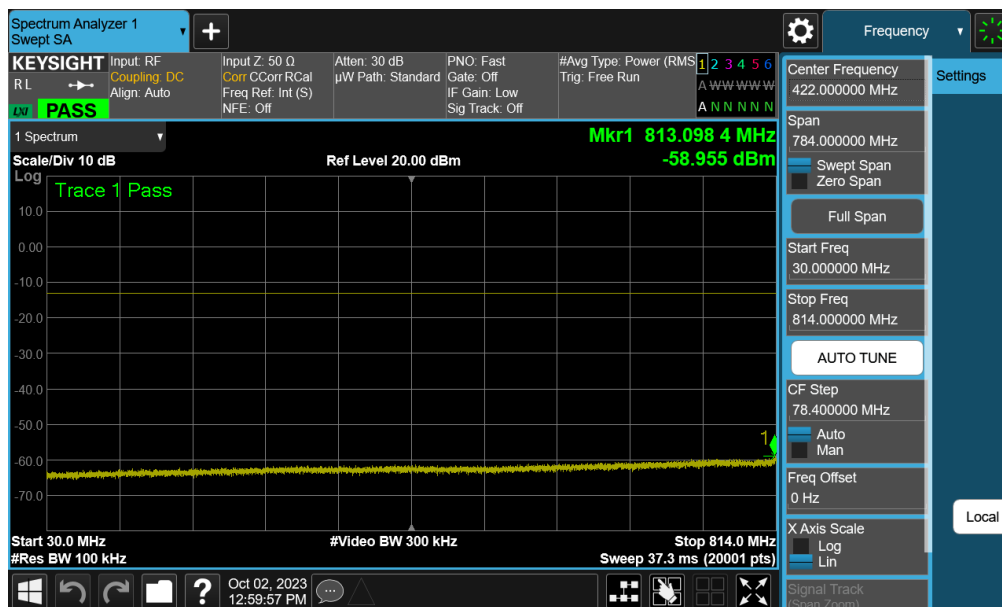
FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 57 of 96



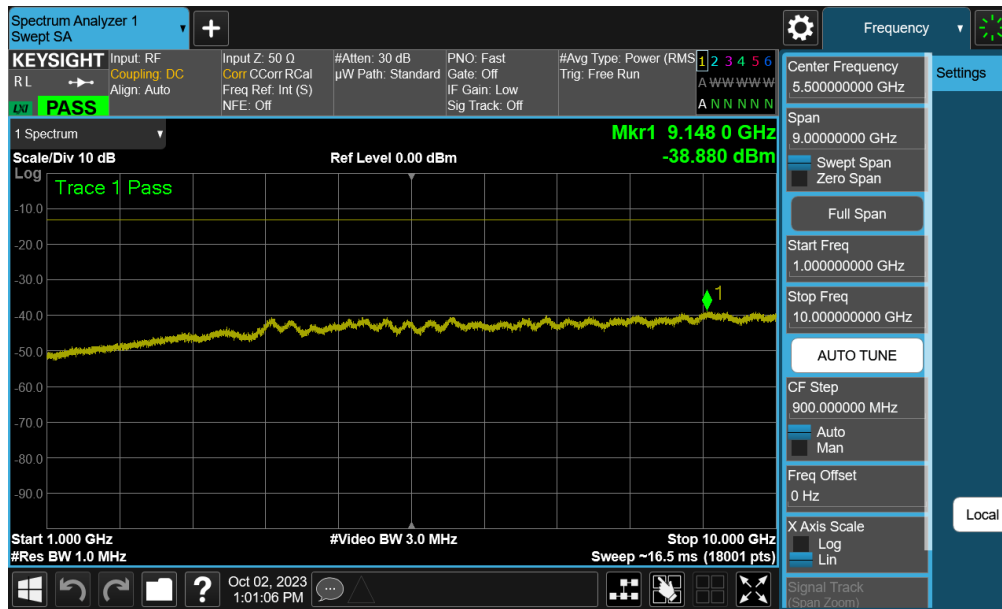
Plot 7-67. Conducted Spurious Plot (LTE Band 26 - 15MHz QPSK - RB Size 1, RB Offset 0 – Ant E)

FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 58 of 96

NR Band n26 – Ant E



FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 59 of 96



Plot 7-70. Conducted Spurious Plot (NR Band n26 - 20MHz QPSK - RB Size 1, RB Offset 0 – Ant E)

FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 60 of 96

7.5 Band Edge Emissions at Antenna Terminal

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.

For LTE B26 operation under Part 90.691, the minimum permissible attenuation level of any spurious emission removed from the EA licensee's frequency block by greater than 37.5 kHz is $43 + 10\log_{10}(P_{\text{Watts}})$, where P is the transmitter power in Watts. The minimum permissible attenuation level of any spurious emission removed from the EA licensee's frequency block by up to and including 37.5 kHz is $50 + 10\log_{10}(P_{\text{Watts}})$, where P is the transmitter power in Watts.

For LTE Band 14 operation under Part 90.543, the power of any emission must be reduced below the mean output power (P) by at least $43 + 10\log(P)$ dB measured in a 100 kHz bandwidth for frequencies less than 1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

Additionally, for LTE Band 14 operation, on all frequencies between 769-775 MHz and 799-805 MHz, the power of any emission shall be attenuated by a factor not less than $65 + 10\log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.

Test Procedure Used

ANSI C63.26-2015 – Section 5.7.3

Test Settings

1. Span was set large enough so as to capture all out of band emissions near the band edge
2. RBW = 100 kHz
3. VBW = 300 kHz
4. Detector = RMS
5. Trace mode = trace average
6. Sweep time = auto couple
7. The trace was allowed to stabilize

Test Setup

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

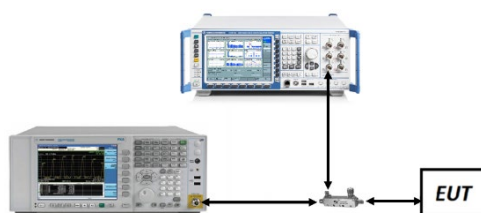


Figure 7-4. Test Instrument & Measurement Setup

FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 61 of 96

Test Notes

1. For channel edge emission, the signal analyzer's "ACP" measurement capability is used.
2. Per 22.917(b) 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.
3. 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.

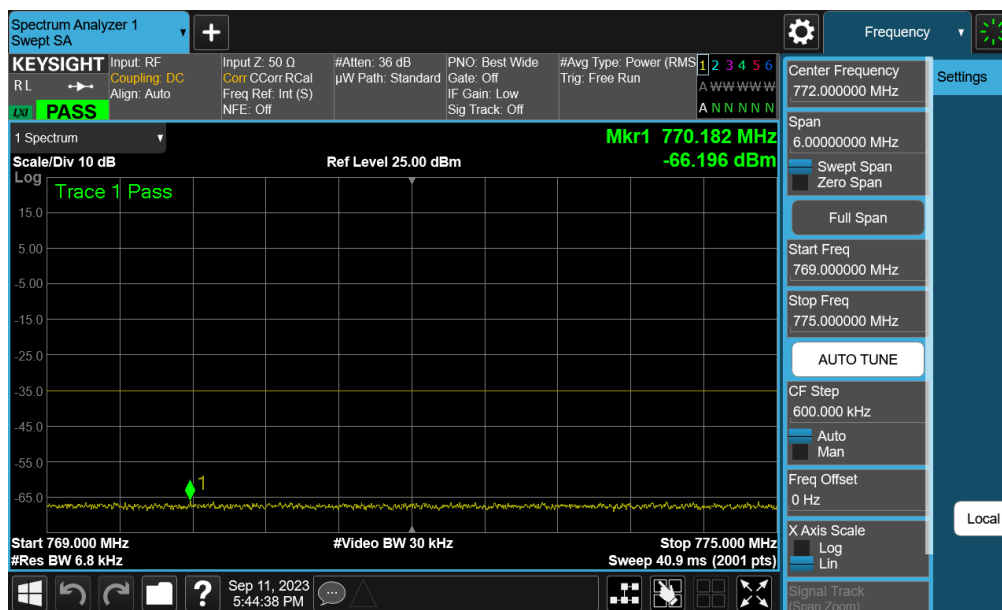
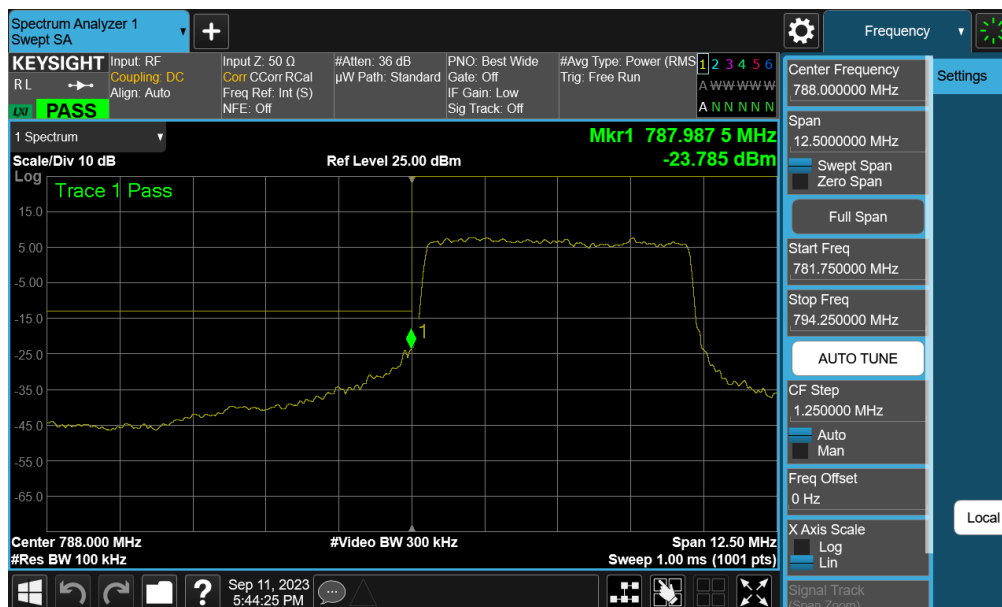
FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 62 of 96

Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
LTE-B26	15 MHz	Mid	Band Edge	-34.80	-20	-14.80
	10 MHz	Mid	Band Edge	-33.92	-20	-13.92
	5 MHz	Low	Band Edge	-28.74	-20	-8.74
		High	Band Edge	-28.21	-20	-8.21
	3 MHz	Low	Band Edge	-25.78	-20	-5.78
		High	Band Edge	-25.68	-20	-5.68
	1.4 MHz	Low	Band Edge	-25.53	-20	-5.53
		High	Band Edge	-23.72	-20	-3.72
LTE-B14	10 MHz	Low	Band Edge	-28.08	-13	-15.08
		Low EmMask	Band Edge	-66.27	-35	-31.27
		High	Band Edge	-28.15	-13	-15.15
		High EmMask	Band Edge	-43.96	-35	-8.95
	5 MHz	Low	Band Edge	-23.79	-13	-10.78
		Low EmMask	Band Edge	-66.20	-35	-31.20
		High	Band Edge	-22.18	-13	-9.18
		High EmMask	Band Edge	-43.84	-35	-8.84
NR-n26	20 MHz	Mid	Band Edge	-38.07	-20	-18.07
	15 MHz	Mid	Band Edge	-35.89	-20	-15.89
	10 MHz	Mid	Band Edge	-32.84	-20	-12.84
	5 MHz	Low	Band Edge	-27.43	-20	-7.43
		High	Band Edge	-27.23	-20	-7.23

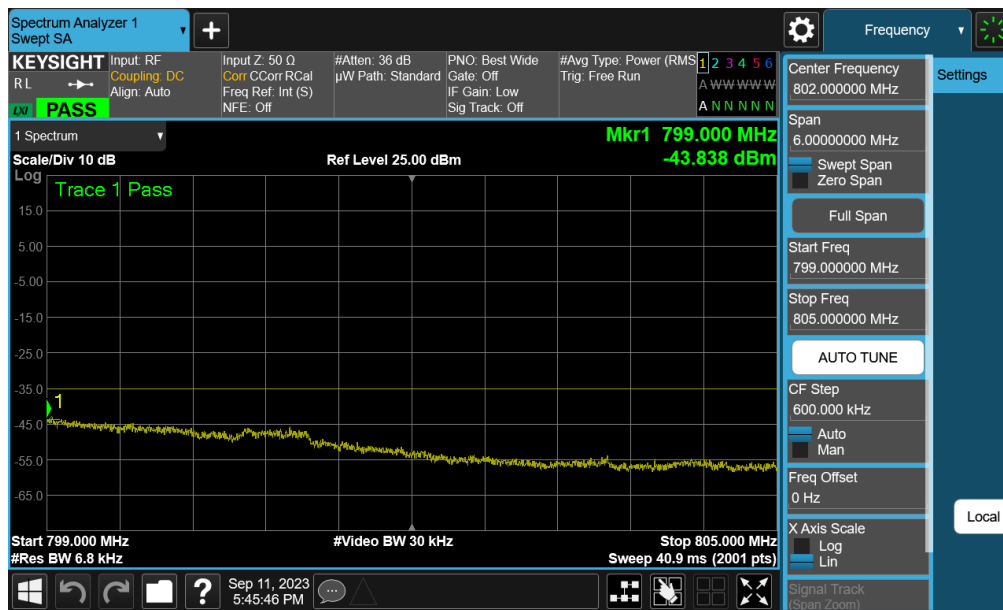
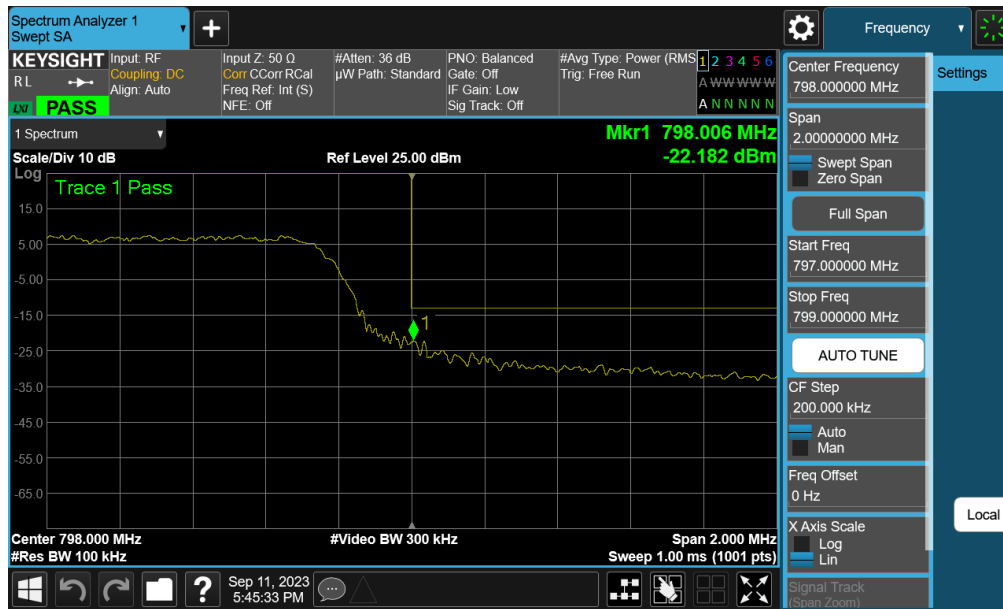
Table 7-12. Band Edge Test Results – Ant A

FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 63 of 96

LTE Band 14 – Ant A

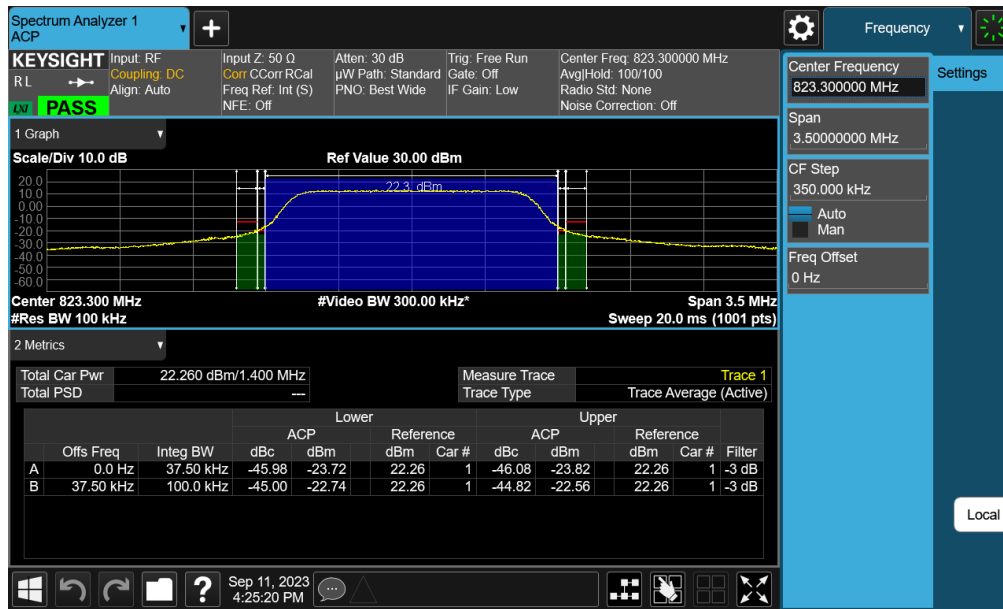
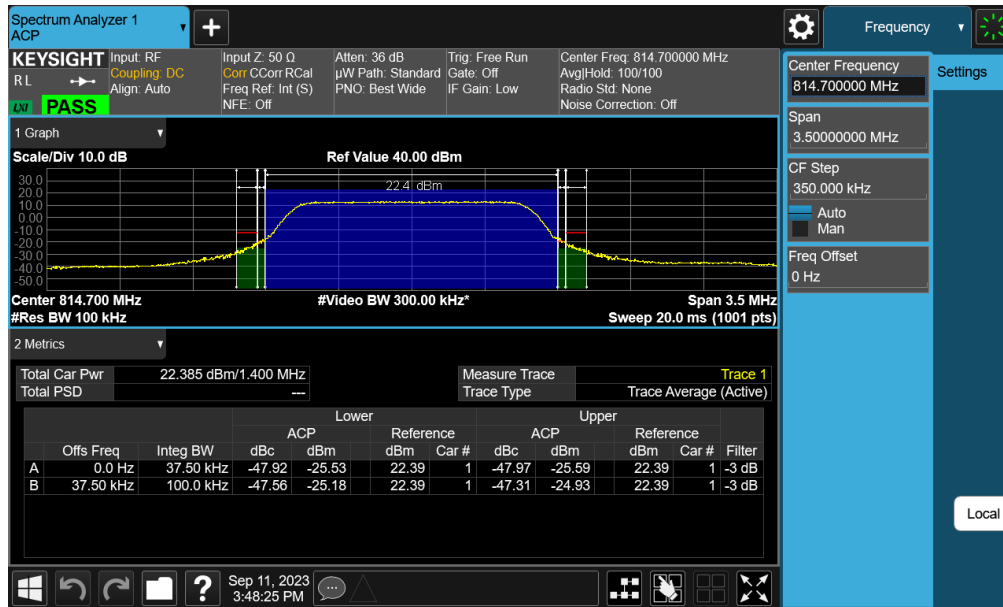


FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 64 of 96



FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 65 of 96

LTE Band 26 – Ant A



FCC ID: A3LSMS928U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308210092-07.A3L	Test Dates: 9/11/2023 - 10/11/2023	EUT Type: Portable Handset	Page 66 of 96