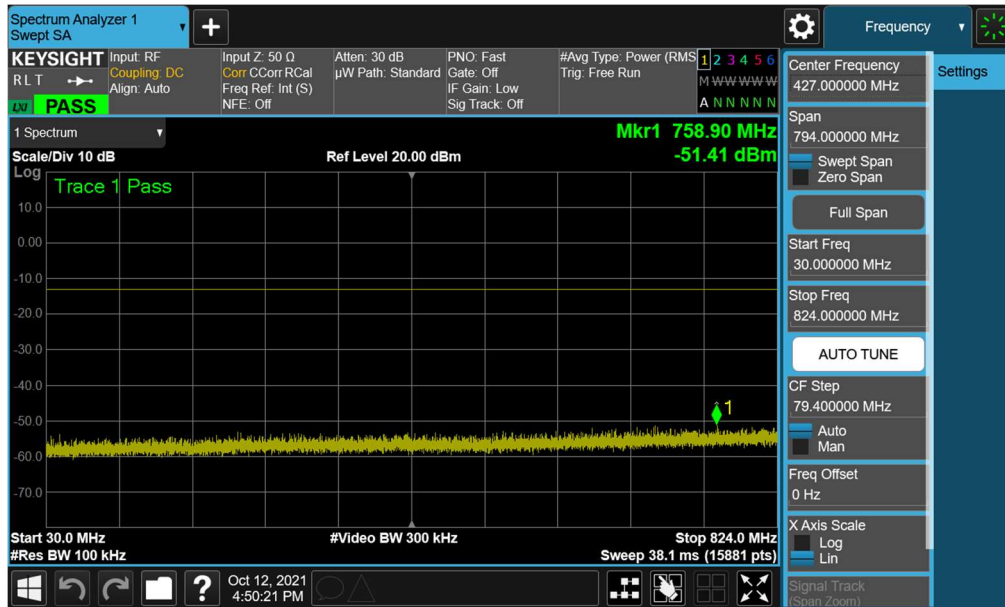
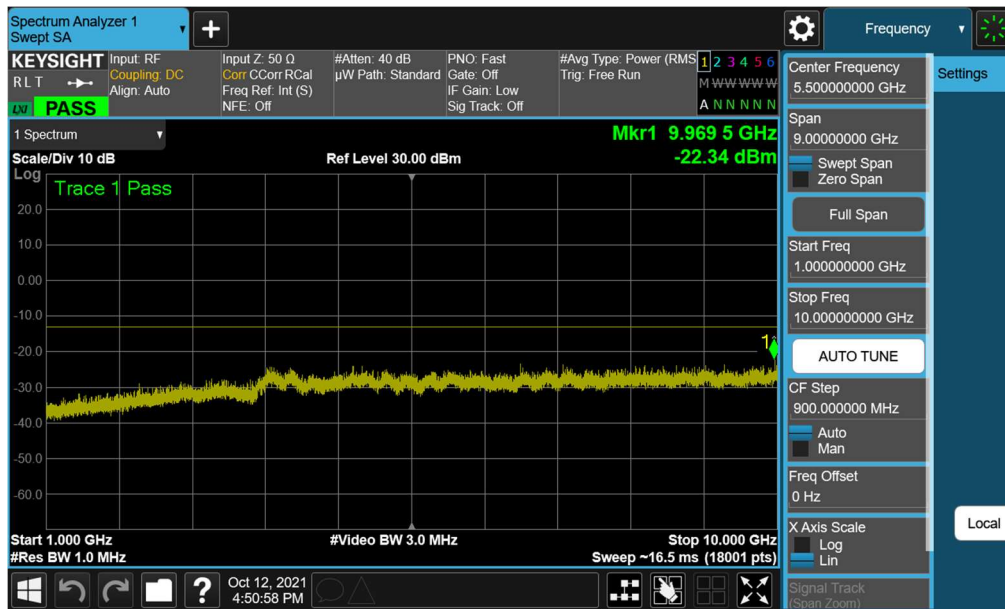
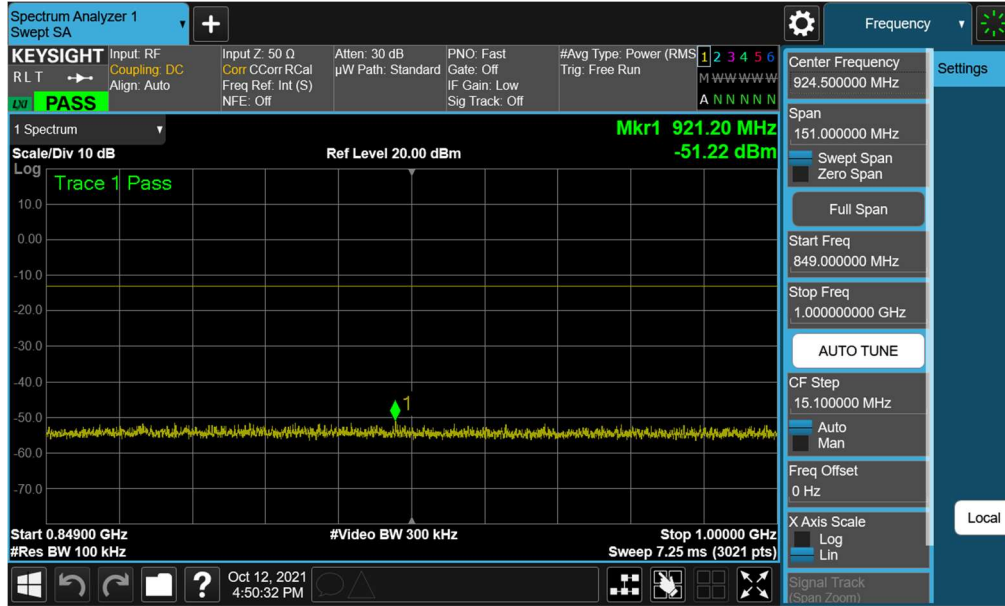


Plot 7-25. Conducted Spurious Plot (GPRS Ch. 128)

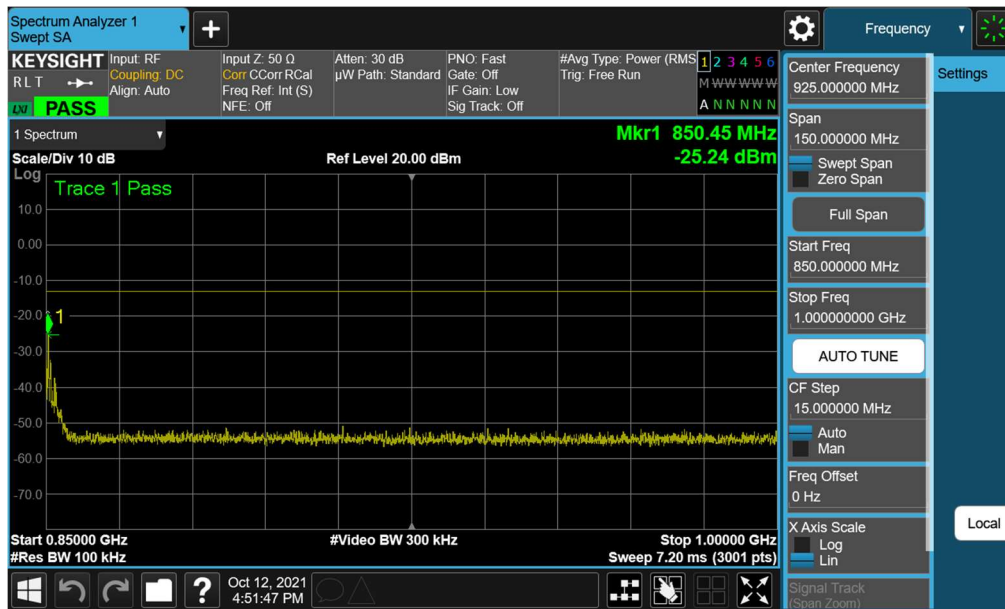
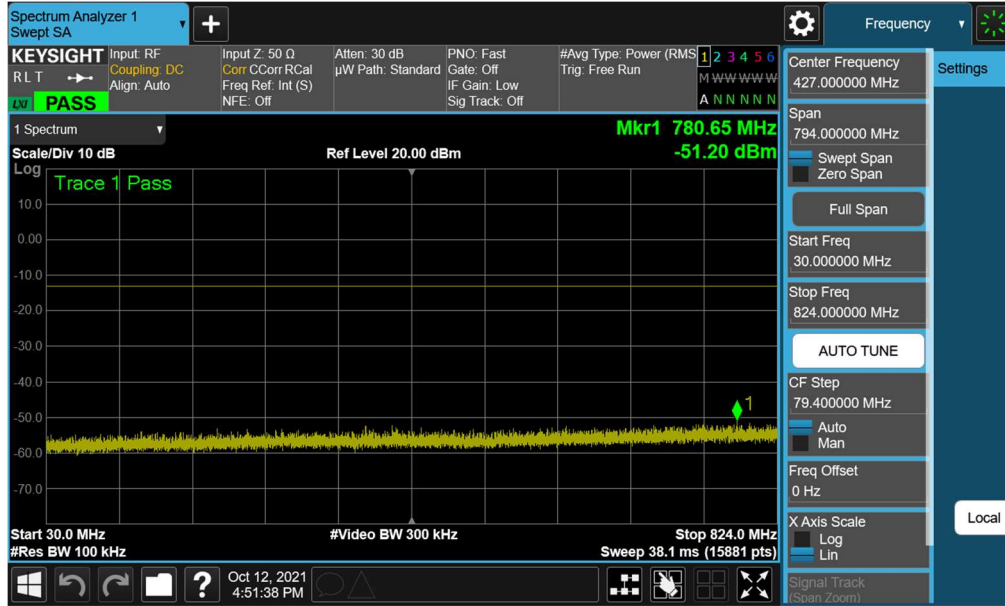


Plot 7-26. Conducted Spurious Plot (GPRS Ch. 190)

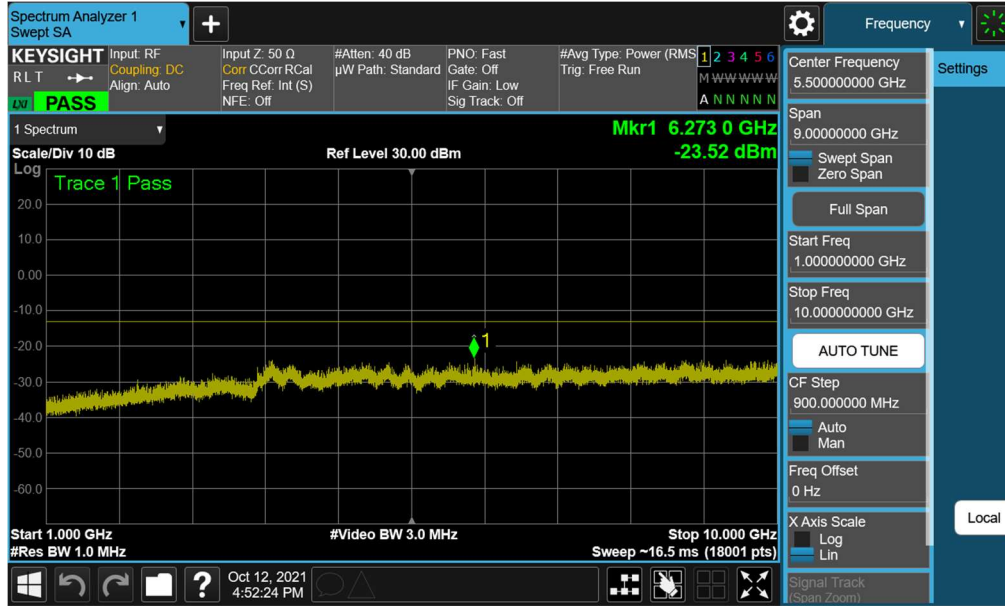
FCC ID: A3LSMS908E	PCTEST Proud to be part of element	PART 22 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109220110-28.A3L	Test Dates: 10/8/2021 - 11/10/2021	EUT Type: Portable Handset		Page 27 of 60



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Test Report S/N: 1M2109220110-28.A3L	Test Dates: 10/8/2021 - 11/10/2021	EUT Type: Portable Handset		Page 28 of 60



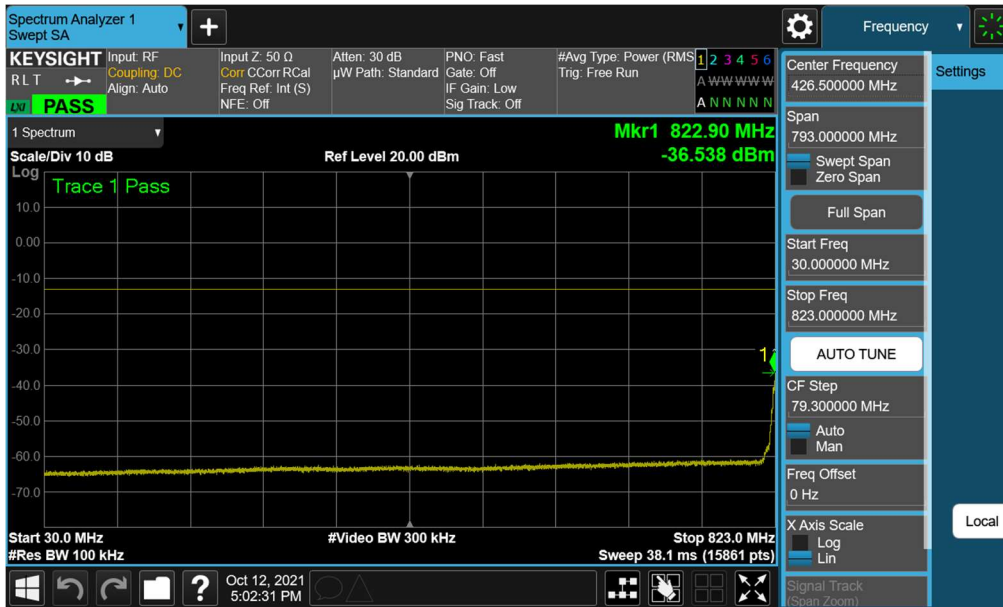
FCC ID: A3LSMS908E	PCTEST Proud to be part of element	PART 22 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109220110-28.A3L	Test Dates: 10/8/2021 - 11/10/2021	EUT Type: Portable Handset		Page 29 of 60



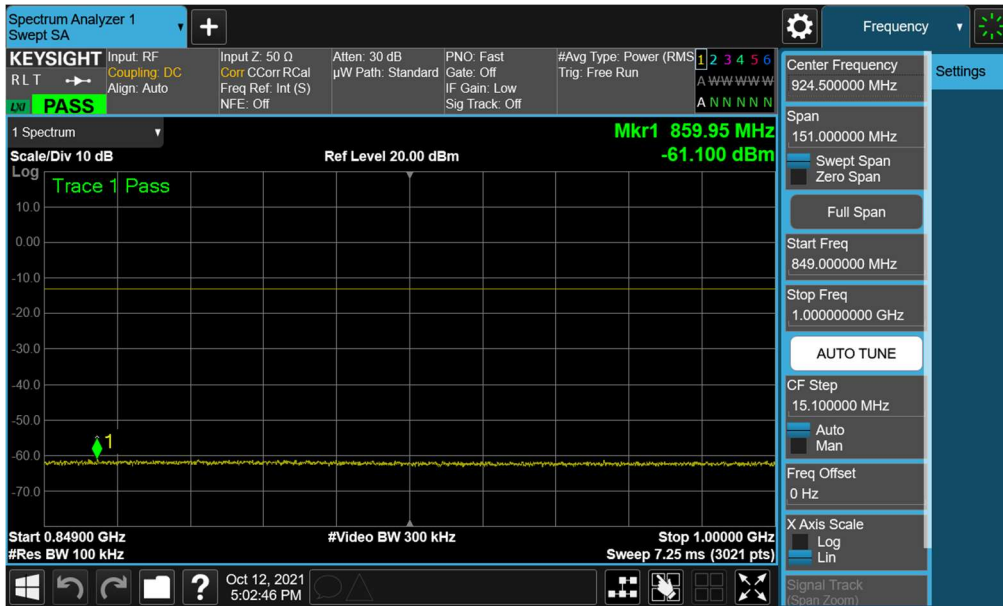
Plot 7-31. Conducted Spurious Plot (GPRS Ch. 251)

<p>FCC ID: A3LSMS908E</p>	<p>PCTEST Proud to be part of element</p>	<p>PART 22 MEASUREMENT REPORT</p>	<p>Approved by: Technical Manager</p>
<p>Test Report S/N: 1M2109220110-28.A3L</p>	<p>Test Dates: 10/8/2021 - 11/10/2021</p>	<p>EUT Type: Portable Handset</p>	<p>Page 30 of 60</p>

WCDMA Cell



Plot 7-32. Conducted Spurious Plot (WCDMA Ch. 4132)

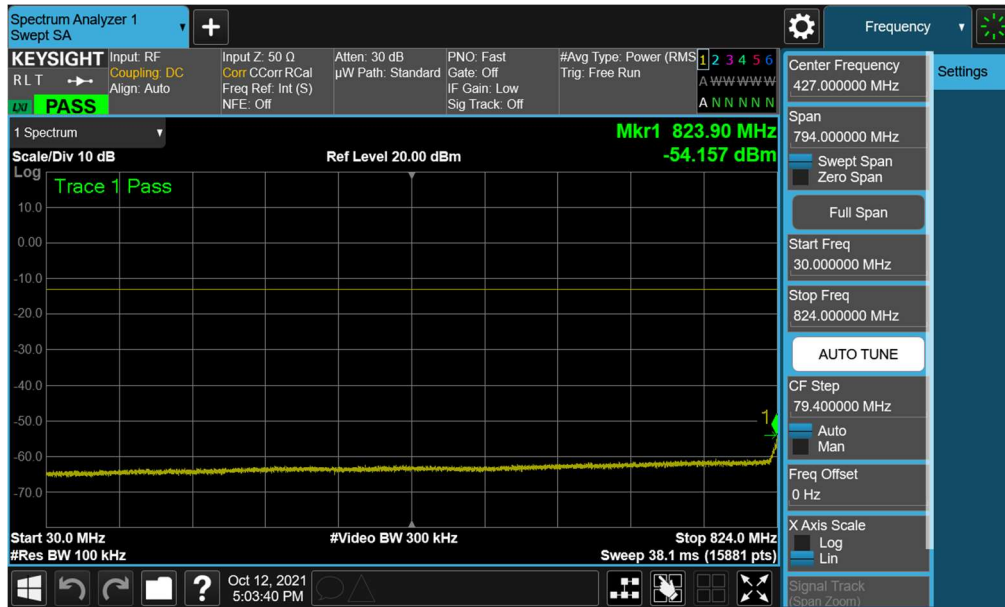


Plot 7-33. Conducted Spurious Plot (WCDMA Ch. 4132)

FCC ID: A3LSMS908E	PCTEST Proud to be part of element	PART 22 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109220110-28.A3L	Test Dates: 10/8/2021 - 11/10/2021	EUT Type: Portable Handset		Page 31 of 60

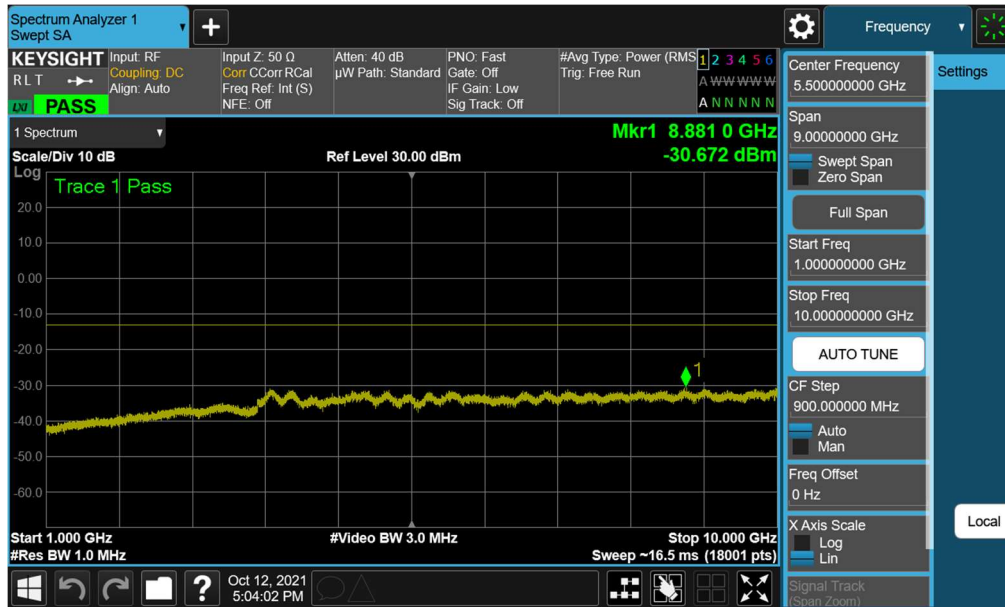
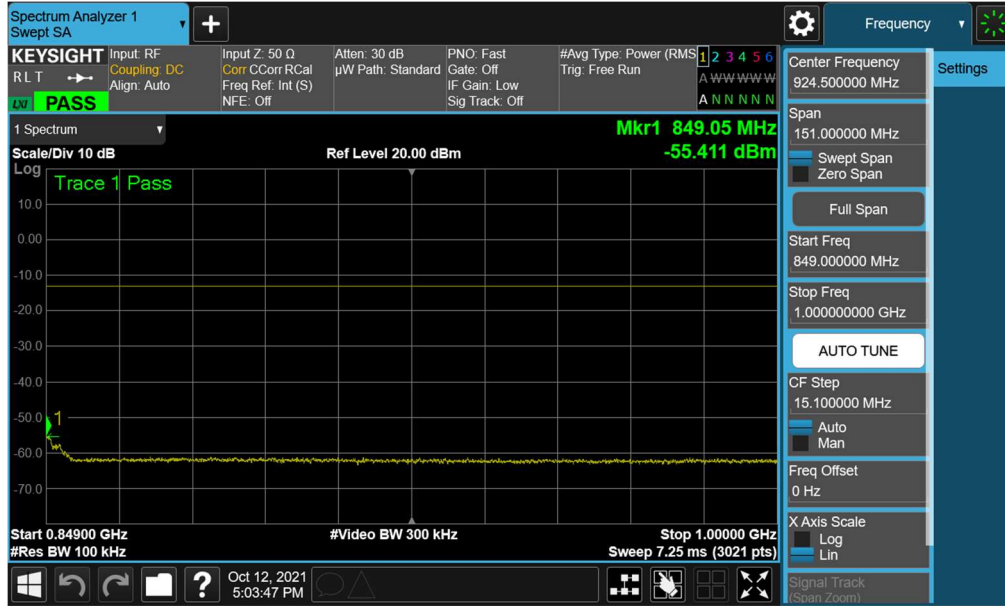


Plot 7-34. Conducted Spurious Plot (WCDMA Ch. 4132)

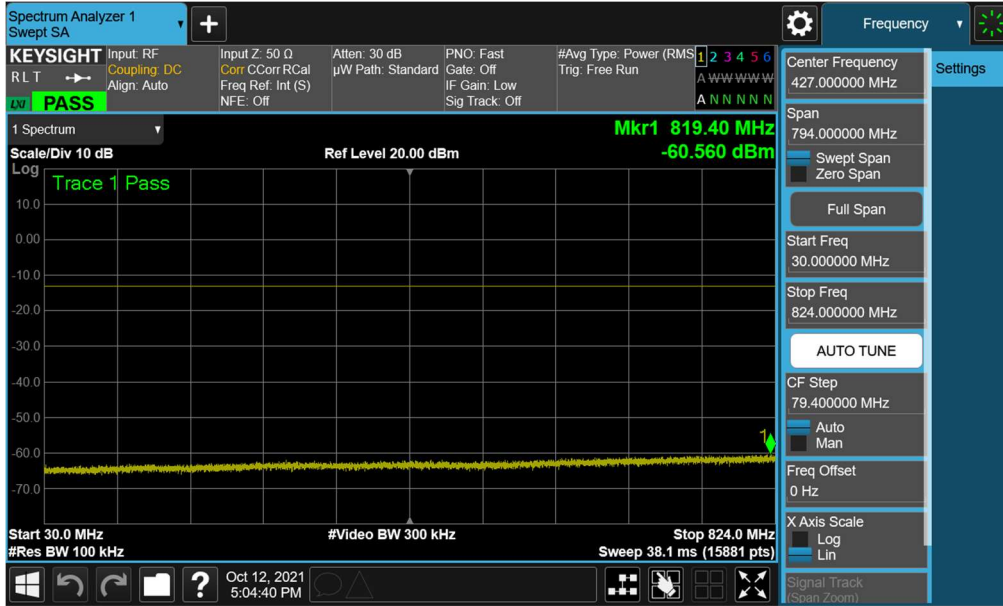


Plot 7-35. Conducted Spurious Plot (WCDMA Ch. 4183)

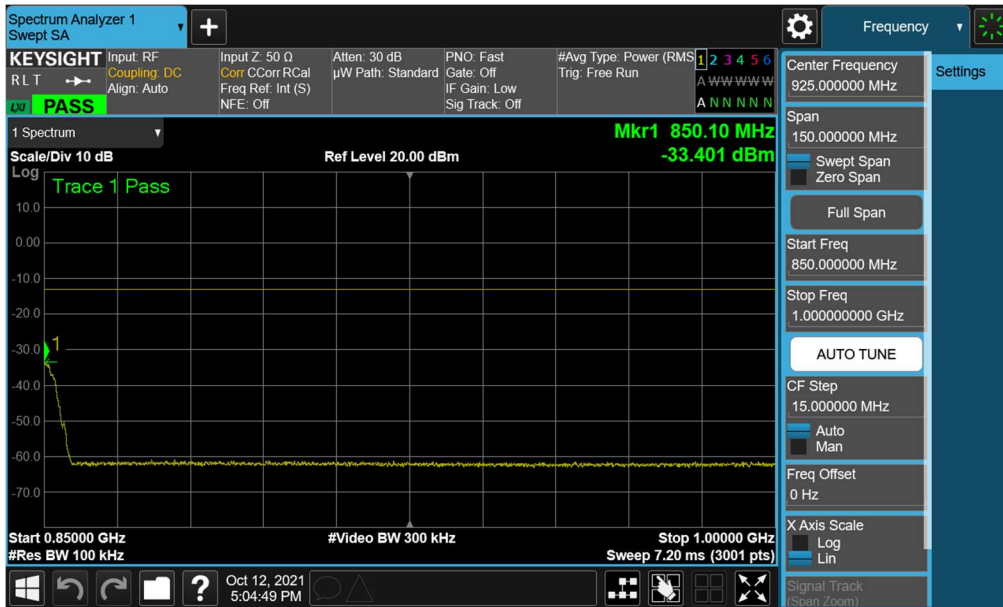
FCC ID: A3LSMS908E	PCTEST Proud to be part of element	PART 22 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109220110-28.A3L	Test Dates: 10/8/2021 - 11/10/2021	EUT Type: Portable Handset		Page 32 of 60



FCC ID: A3LSMS908E	PCTEST Proud to be part of element	PART 22 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109220110-28.A3L	Test Dates: 10/8/2021 - 11/10/2021	EUT Type: Portable Handset		Page 33 of 60

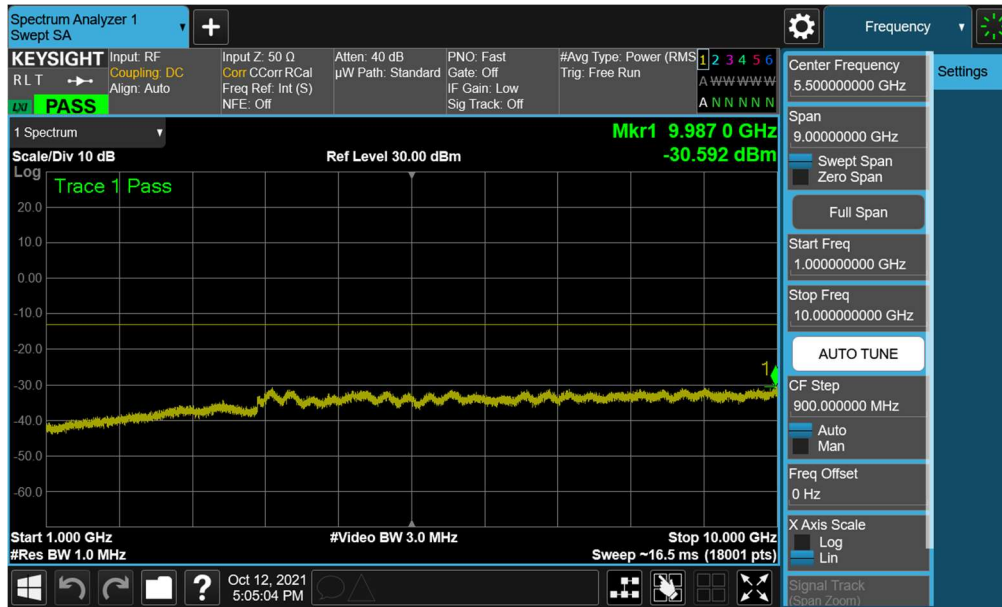


Plot 7-38. Conducted Spurious Plot (WCDMA Ch. 4233)



Plot 7-39. Conducted Spurious Plot (WCDMA Ch. 4233)

FCC ID: A3LSMS908E	PCTEST Proud to be part of element	PART 22 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Plot 7-40. Conducted Spurious Plot (WCDMA Ch. 4233)

FCC ID: A3LSMS908E		PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109220110-28.A3L	Test Dates: 10/8/2021 - 11/10/2021	EUT Type: Portable Handset	Page 35 of 60	

7.4 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.

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

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 x RBW
5. Detector = RMS
6. Number of sweep points \geq 2 x Span/RBW
7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
8. Sweep time = auto couple
9. The trace was allowed to stabilize

Test Setup

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

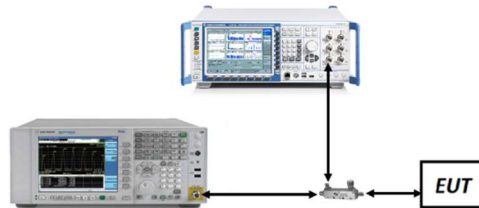




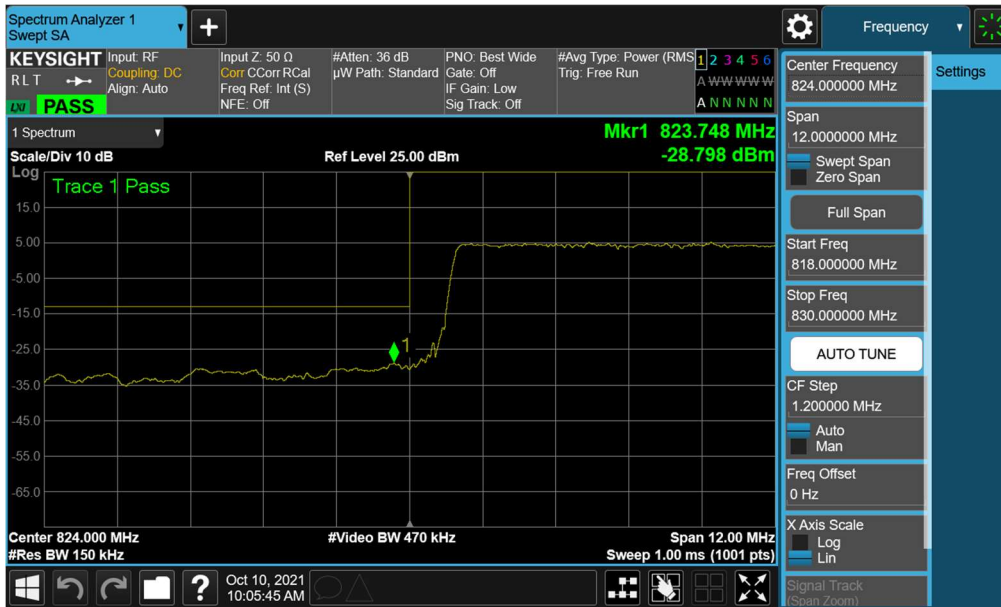
Figure 7-3. Test Instrument & Measurement Setup

Test Notes

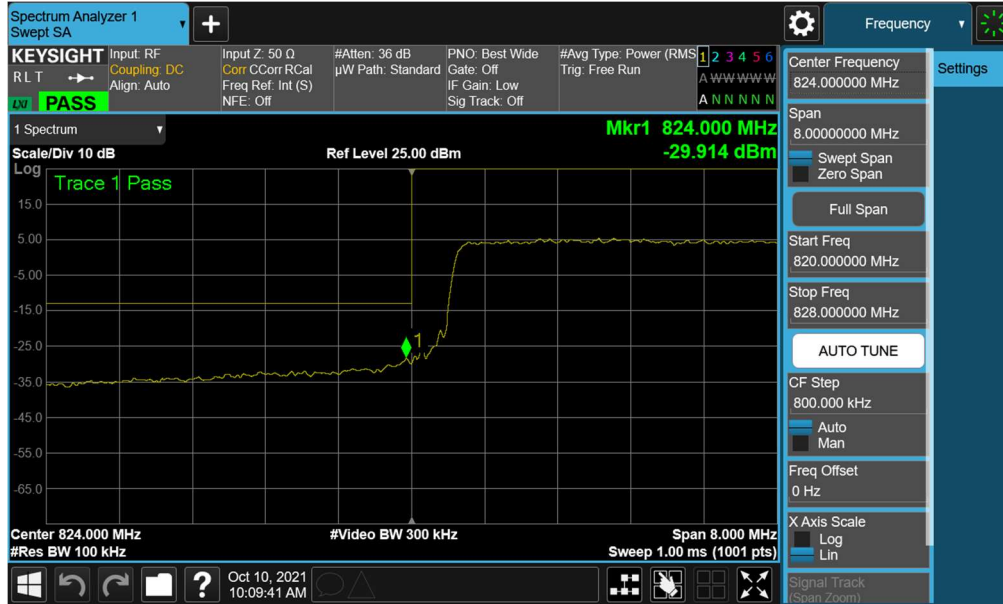
Per 22.917(b) and RSS-132(5.5), in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to demonstrate compliance with the out-of-band emissions limit. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

FCC ID: A3LSMS908E	 PART 22 MEASUREMENT REPORT 	Approved by: Technical Manager
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LTE Band 26/5



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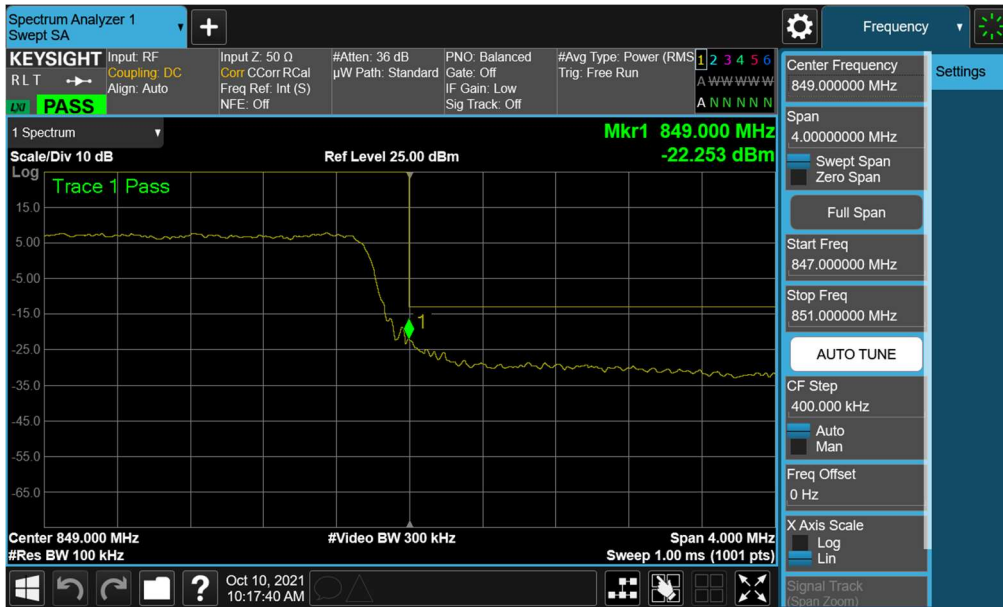
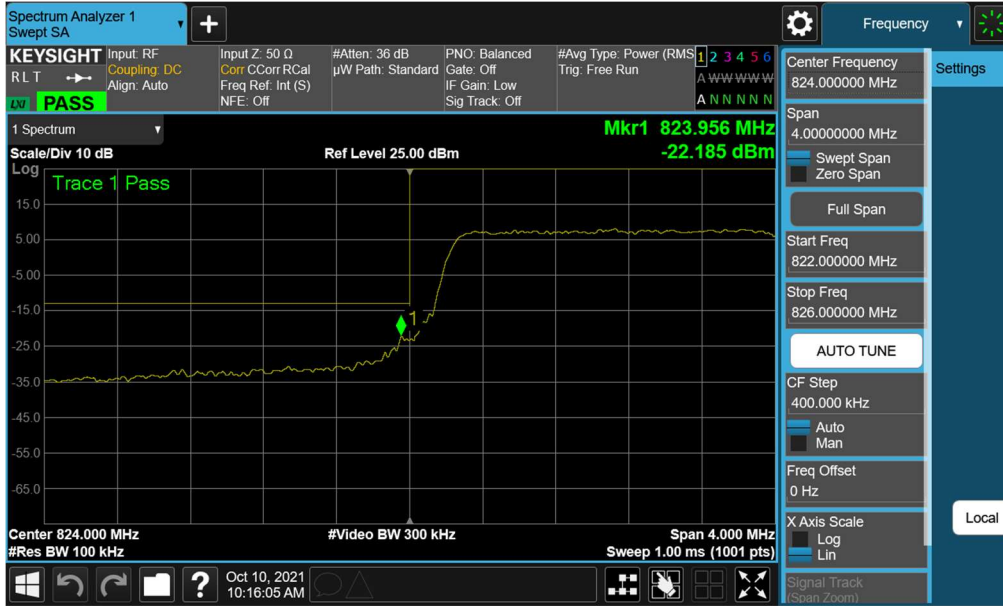


Plot 7-43. Lower Band Edge Plot (LTE Band 26/5 - 10MHz QPSK – Full RB)

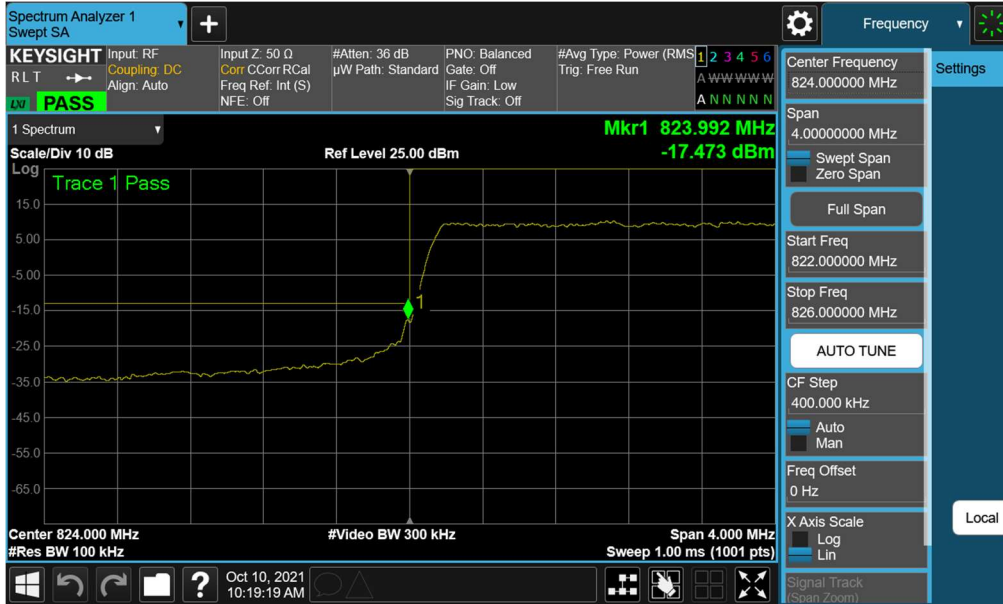


Plot 7-44. Upper Band Edge Plot (LTE Band 26/5 - 10MHz QPSK – Full RB)

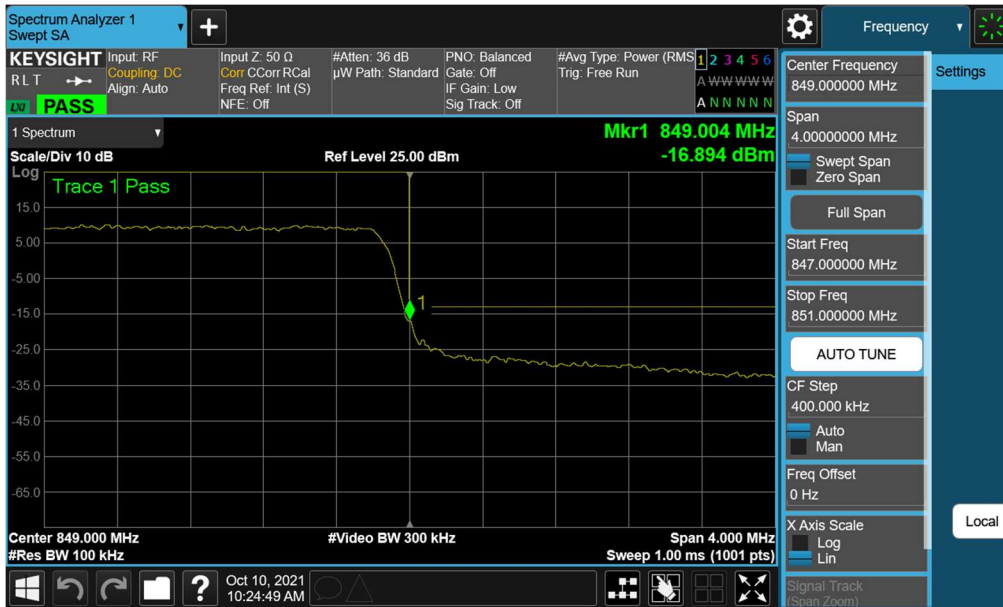
FCC ID: A3LSMS908E	PCTEST Proud to be part of element	PART 22 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109220110-28.A3L	Test Dates: 10/8/2021 - 11/10/2021	EUT Type: Portable Handset		Page 38 of 60



FCC ID: A3LSMS908E	PCTEST Proud to be part of element	PART 22 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109220110-28.A3L	Test Dates: 10/8/2021 - 11/10/2021	EUT Type: Portable Handset		Page 39 of 60

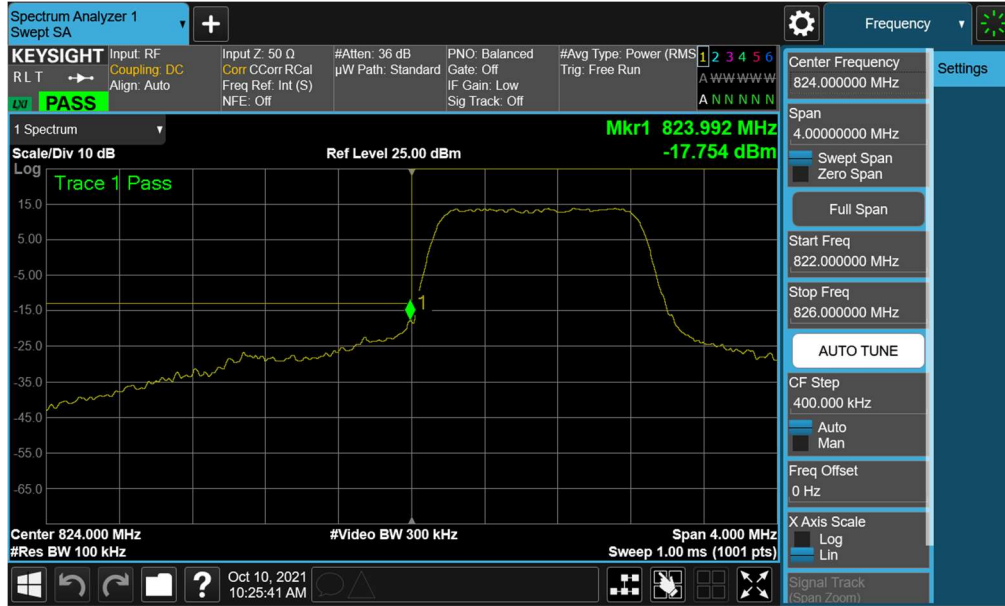


Plot 7-47. Lower Band Edge Plot (LTE Band 26/5 - 3MHz QPSK – Full RB)



Plot 7-48. Upper Band Edge Plot (LTE Band 26/5 - 3MHz QPSK – Full RB)

FCC ID: A3LSMS908E	PCTEST Proud to be part of element	PART 22 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109220110-28.A3L	Test Dates: 10/8/2021 - 11/10/2021	EUT Type: Portable Handset		Page 40 of 60



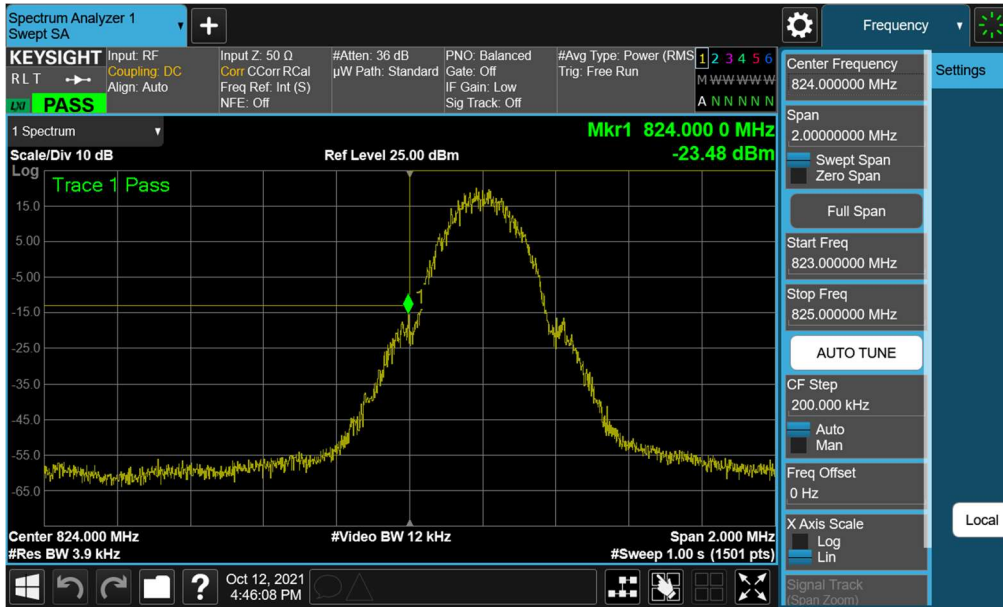
Plot 7-49. Lower Band Edge Plot (LTE Band 26/5 – 1.4MHz QPSK – Full RB)



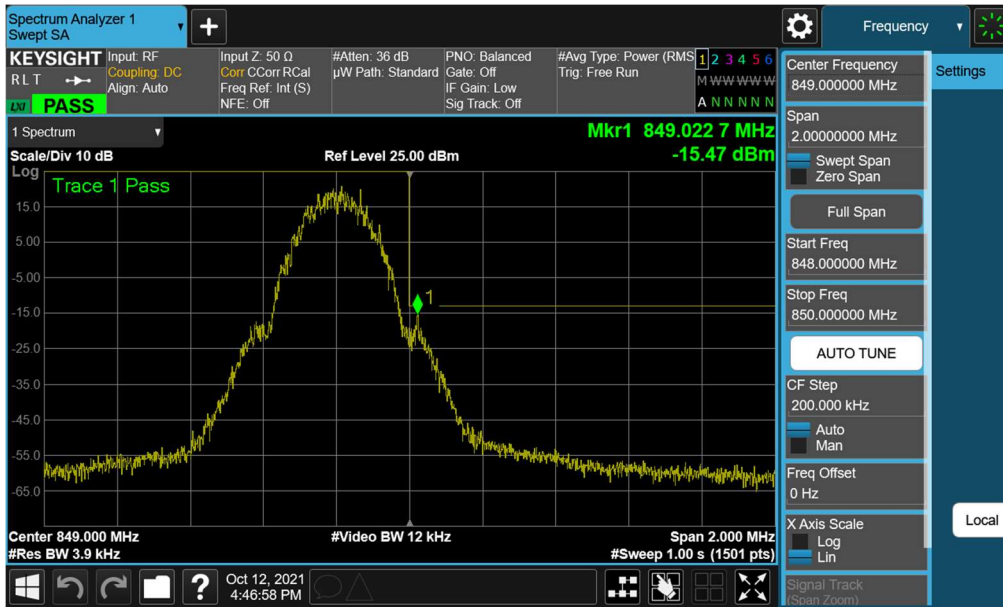
Plot 7-50. Upper Band Edge Plot (LTE Band 26/5 – 1.4MHz QPSK – Full RB)

FCC ID: A3LSMS908E	PCTEST Proud to be part of element	PART 22 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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GSM/GPRS Cell



Plot 7-51. Lower Band Edge Plot (GPRS Cell – Ch. 128)



Plot 7-52. Upper Band Edge Plot (GPRS Cell – Ch. 251)

FCC ID: A3LSMS908E	PCTEST Proud to be part of element	PART 22 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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WCDMA Cell



FCC ID: A3LSMS908E	PCTEST Proud to be part of element	PART 22 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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7.5 Radiated Power (ERP)

Test Overview

Effective Radiated Power (ERP) measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at maximum power, and at the appropriate frequencies.



Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

Test Settings

1. Radiated power measurements are performed using the signal analyzer’s “channel power” measurement capability for signals with continuous operation. For signals with burst transmission, the signal analyzer’s “time domain power” measurement capability is used
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW \geq 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points \geq 2 x span / RBW
6. Detector = RMS
7. Trigger is set to “free run” for signals with continuous operation with the sweep times set to “auto”. Trigger is set to enable triggering only on full power bursts with the sweep time set less than or equal to the transmission burst duration
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation. For signals with burst transmission, the “gating” function was enabled to ensure that measurements are performed during times in which the transmitter is operating at its maximum power
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

FCC ID: A3LSMS908E	 PCTEST Proud to be part of element	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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Test Setup

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

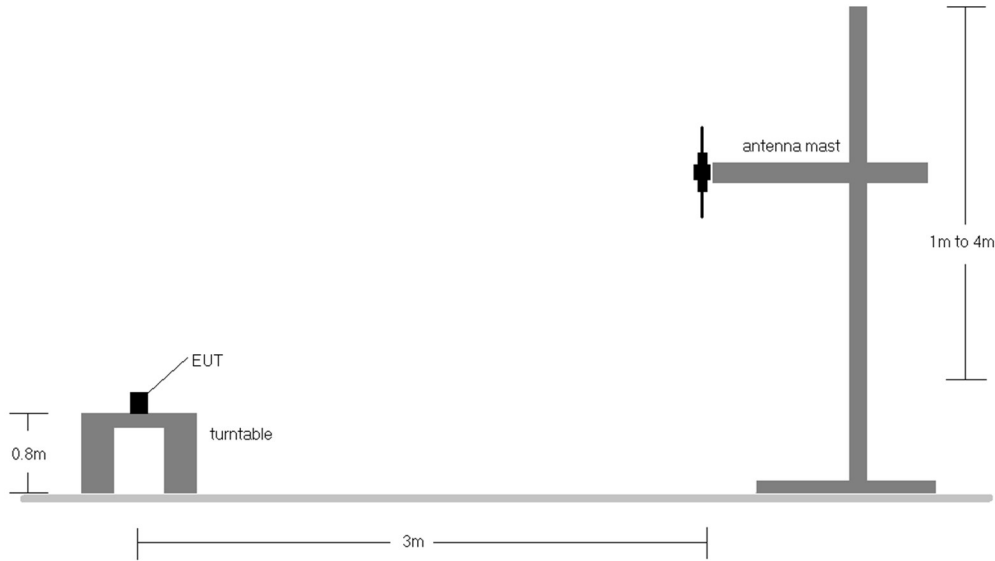


Figure 7-4. Radiated Test Setup <1GHz

Test Notes

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

FCC ID: A3LSMS908E		PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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