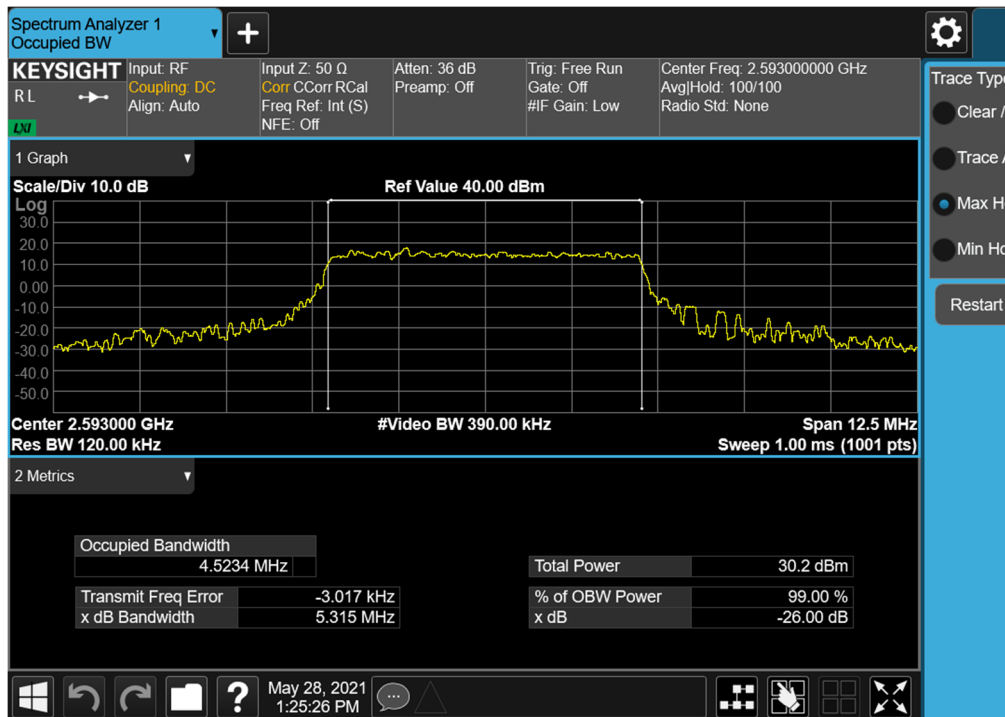


Plot 7-7. Occupied Bandwidth Plot (LTE Band 41(PC3) - 5MHz QPSK - Full RB)



Plot 7-8. Occupied Bandwidth Plot (LTE Band 41(PC3) - 5MHz 16-QAM - Full RB)

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7.3 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.

For Band 41, the minimum permissible attenuation level of any spurious emission is $55 + 10\log_{10}(P_{[Watts]})$.

Test Procedure Used

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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.

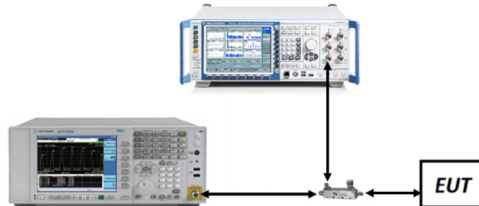


Figure 7-2. Test Instrument & Measurement Setup

Test Notes

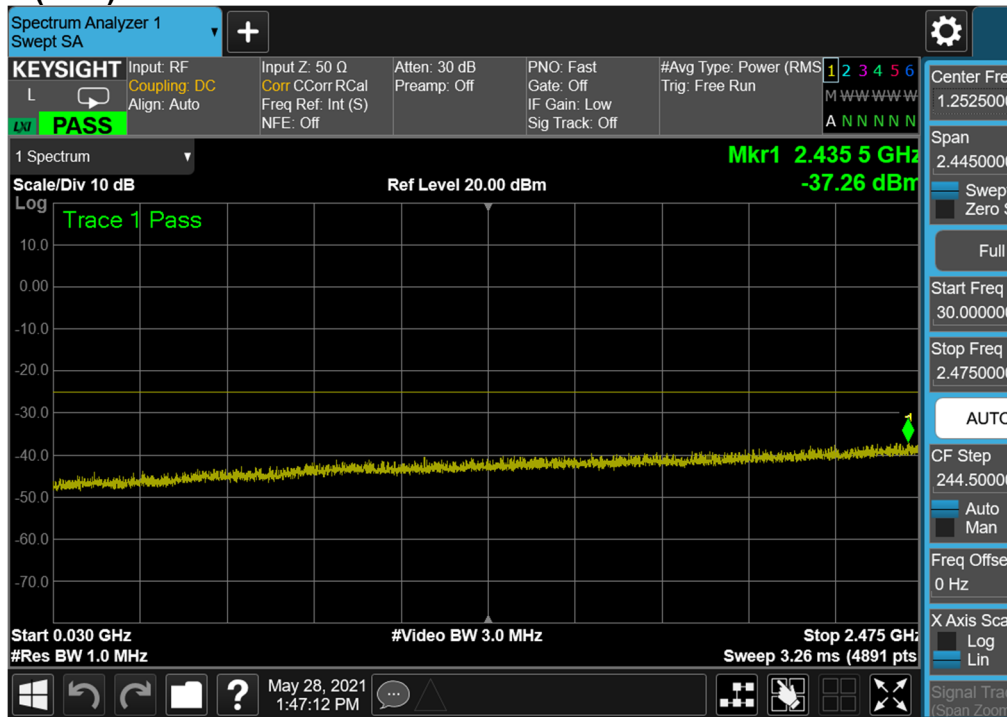
Per Part 27 and RSS-199, compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth 100 kHz or greater for measurements below 1GHz. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth 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.

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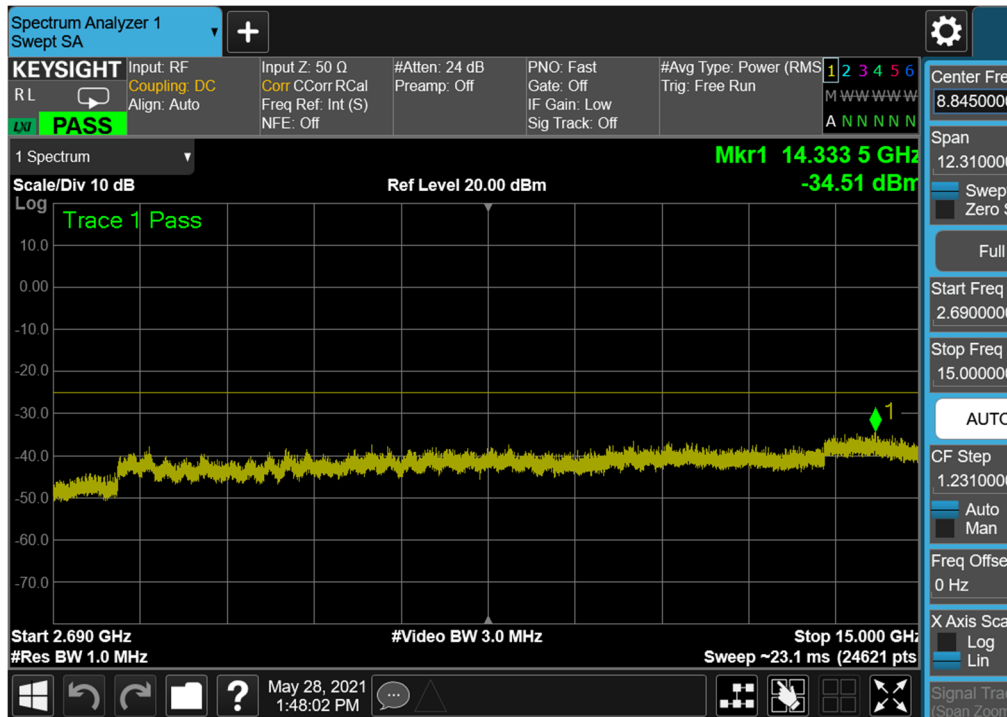
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LTE Band 41(PC3)

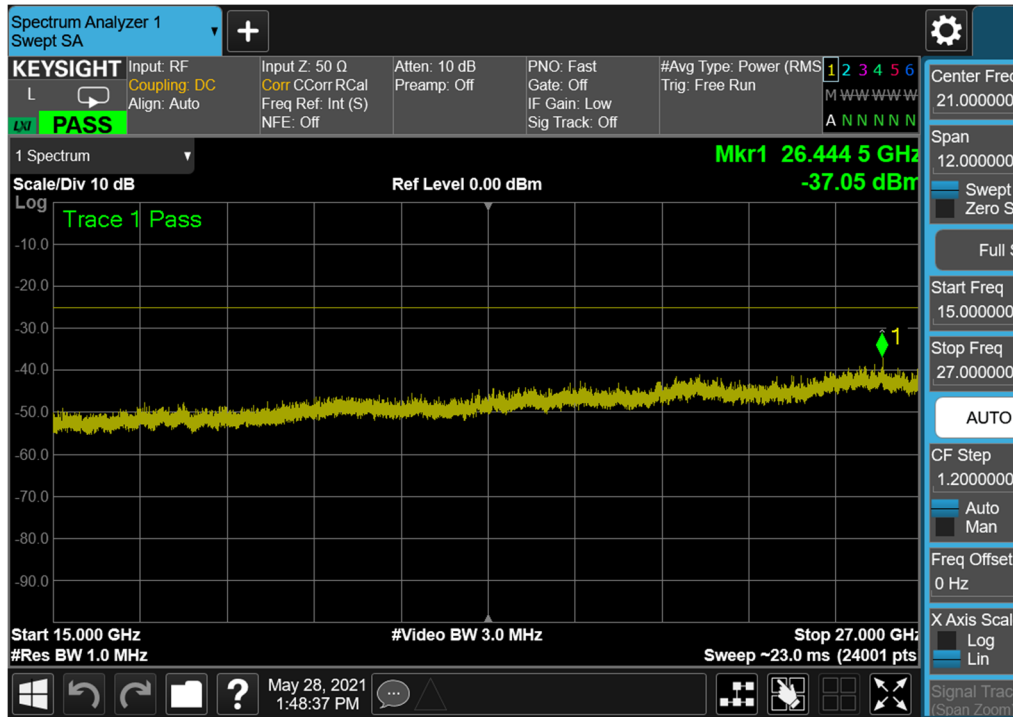


Plot 7-9. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

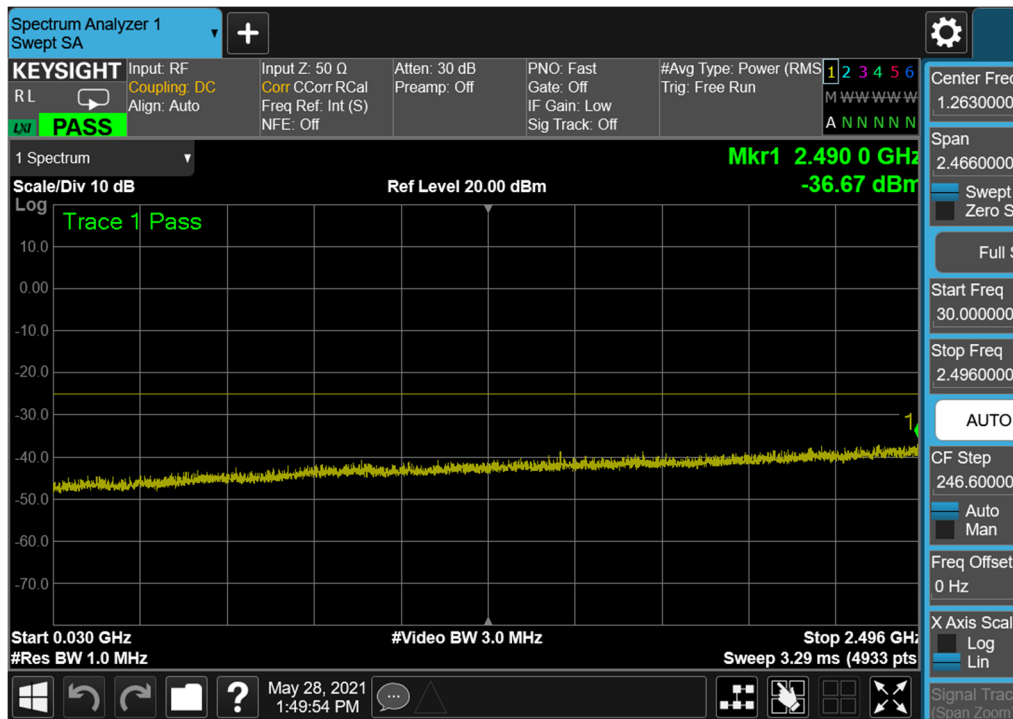


Plot 7-10. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

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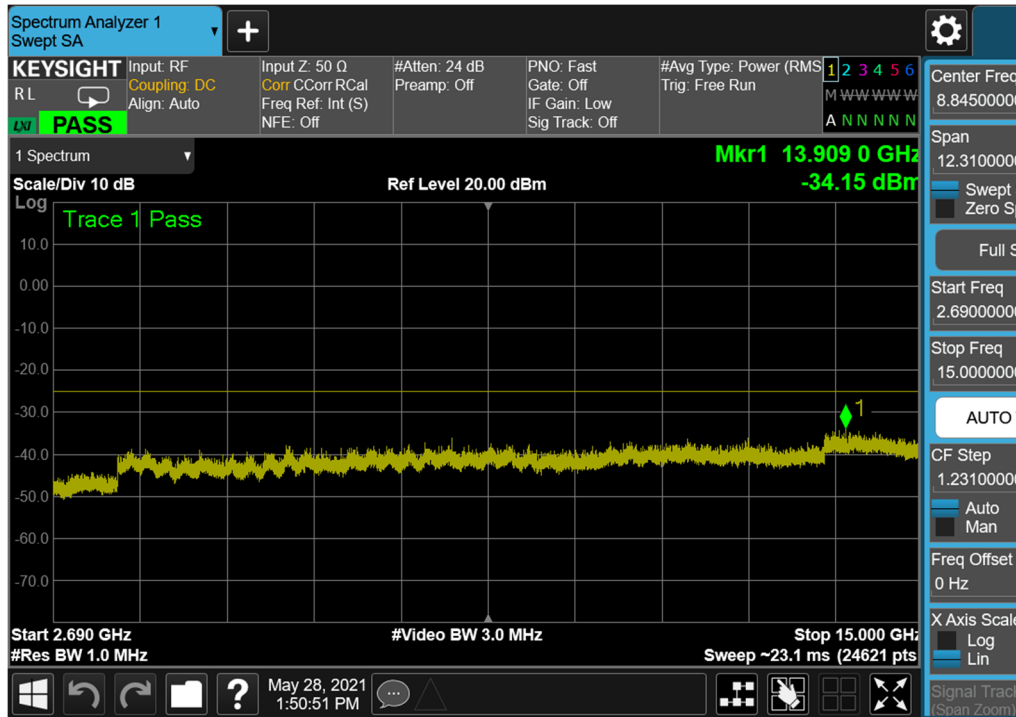


Plot 7-11. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

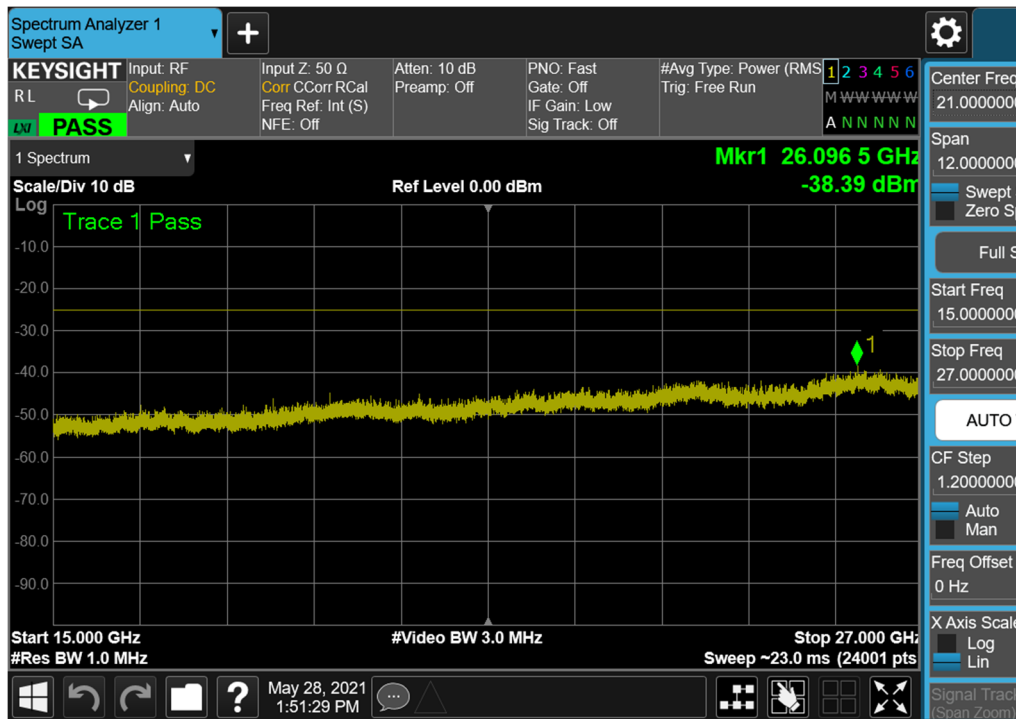


Plot 7-12. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

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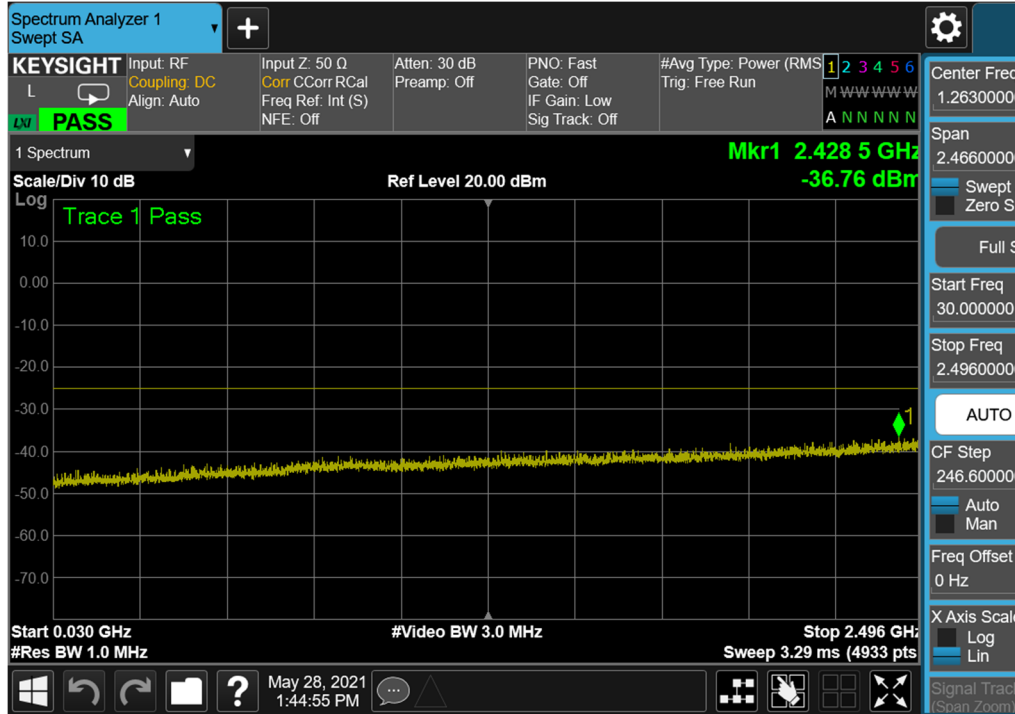


Plot 7-13. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

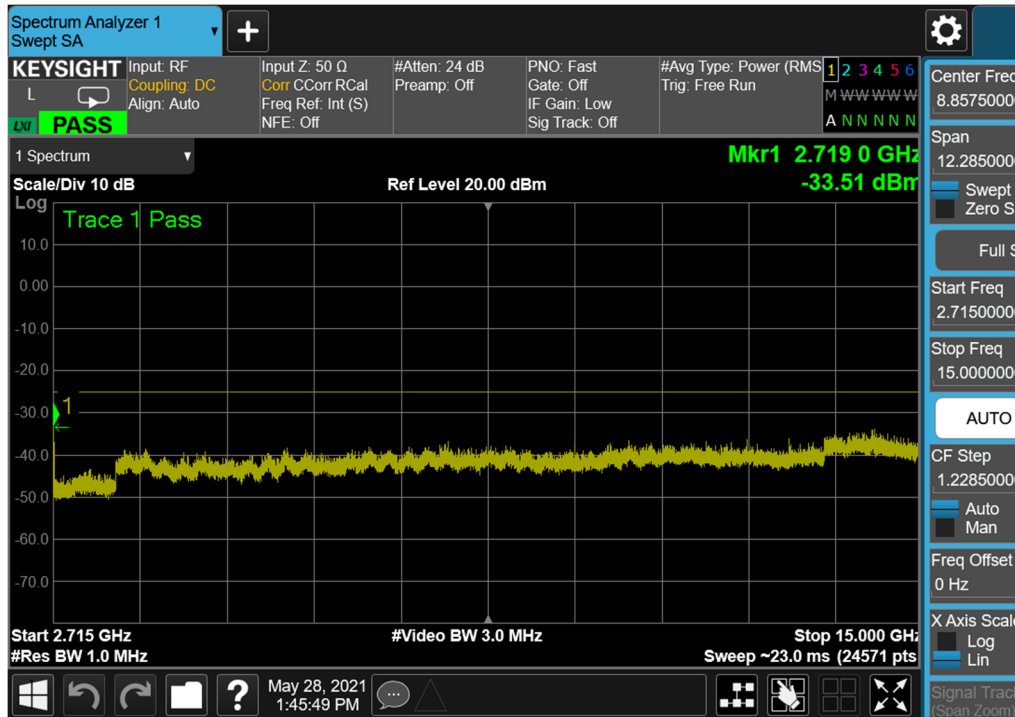


Plot 7-14. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMA127FN	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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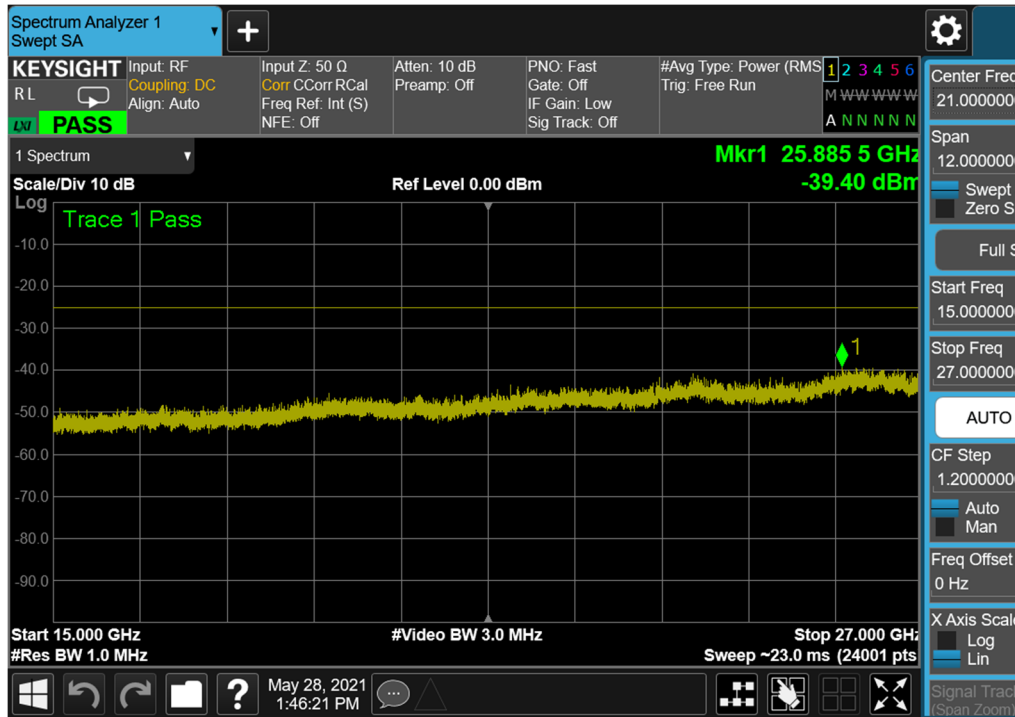


Plot 7-15. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-16. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

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Plot 7-17. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

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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 for Band 41 is as noted in the Test Notes on the following page.

Test Procedure Used

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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.

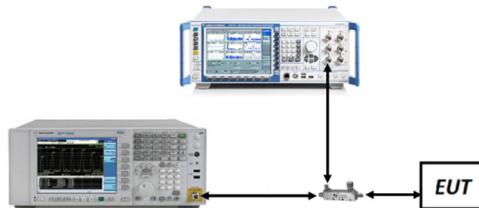




Figure 7-3. Test Instrument & Measurement Setup



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Test Notes

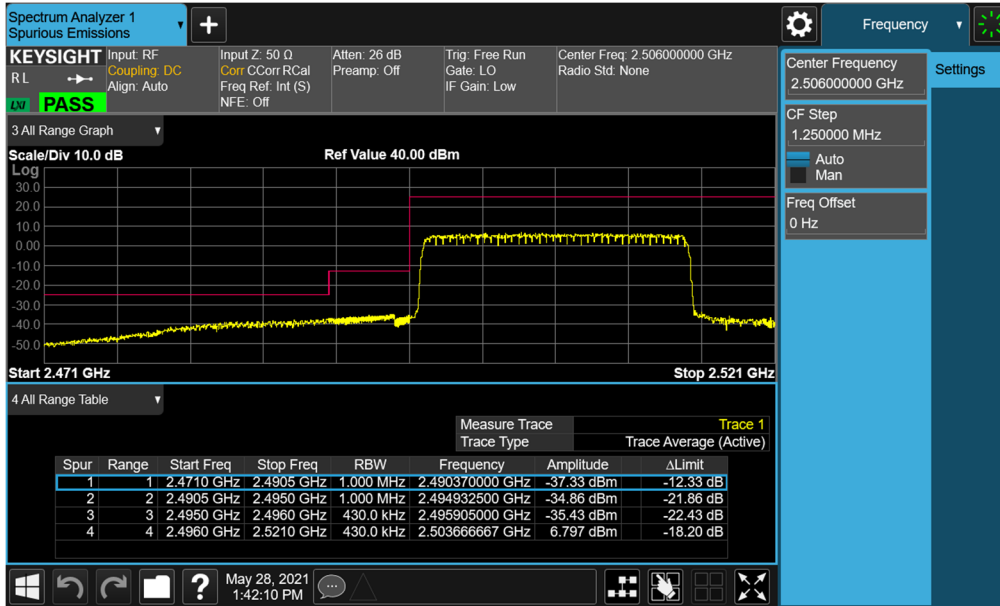
Per 27.53(m) for operations in the BRS/EBS bands, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, 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.

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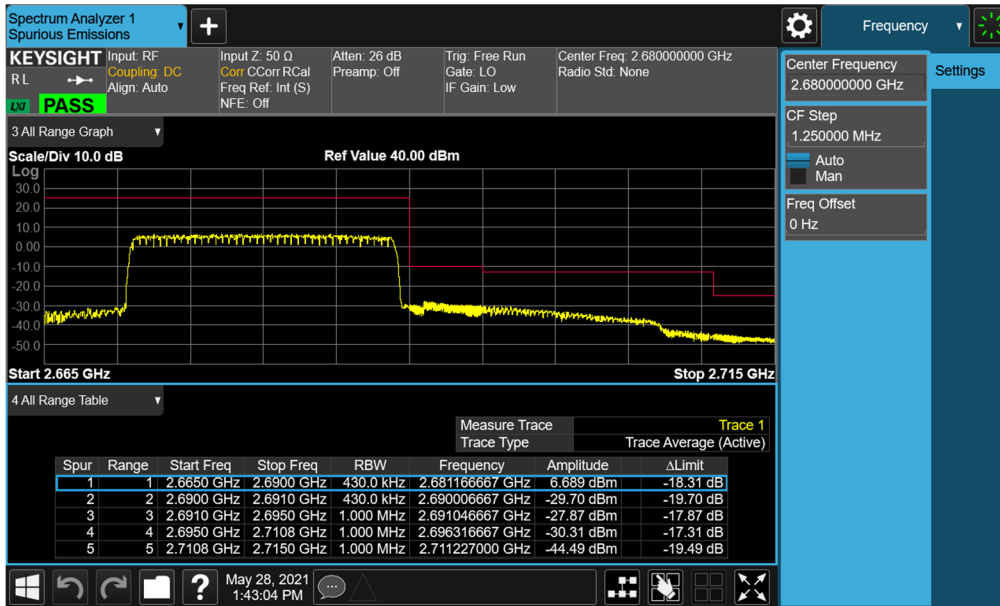
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LTE Band 41(PC3)



Plot 7-18. Lower ACP Plot (LTE Band 41(PC3) - 20MHz QPSK – Full RB)



Plot 7-19. Upper ACP Plot (LTE Band 41(PC3) - 20MHz QPSK – Full RB)

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