Plot 7-19. Peak Power Plot (Bluetooth (LE), 1Mbps – Ch. 0)

Plot 7-20. Peak Power Plot (Bluetooth (LE), 1Mbps – Ch. 19)

Plot 7-21. Peak Power Plot (Bluetooth (LE), 1Mbps – Ch. 39)

Plot 7-22. Peak Power Plot (Bluetooth (LE), 2Mbps – Ch. 0)

Plot 7-23. Peak Power Plot (Bluetooth (LE), 2Mbps – Ch. 19)

Plot 7-24. Peak Power Plot (Bluetooth (LE), 2Mbps – Ch. 39)

7.4 Power Spectral Density – Bluetooth (LE)

§15.247(e); RSS-247 [5.2]

Test Overview and Limit

The peak power density is 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.

The maximum permissible power spectral density is 8 dBm in any 3 kHz band.

Test Procedure Used

ANSI C63.10-2013 – Section 11.10.2 Method PKPSD
KDB 558074 D01 v05r02 – Section 8.4 DTS Maximum Power Spectral Density level in the fundamental emission

Test Settings

1. Analyzer was set to the center frequency of the DTS channel under investigation
2. Span = 1.5 times the DTS channel bandwidth
3. RBW = 3kHz
4. VBW = 1MHz
5. Detector = peak
6. Sweep time = auto couple
7. Trace mode = max hold
8. 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

None

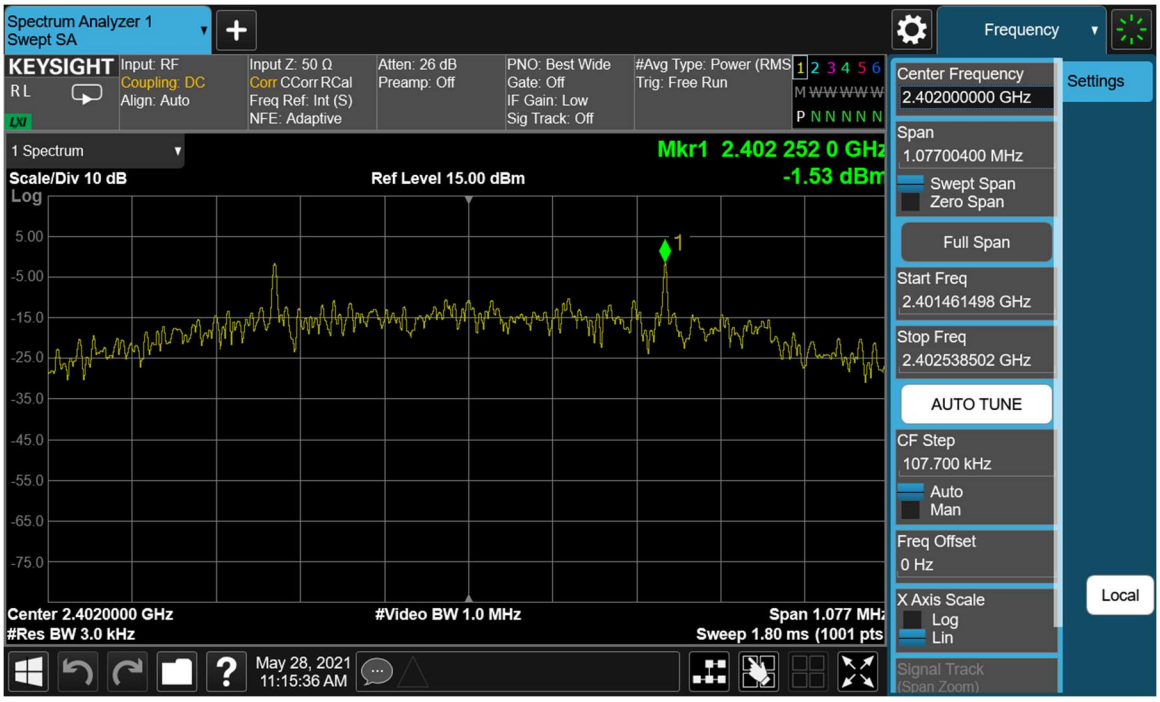
Frequency [MHz]	Data Rate [Mbps]	Channel No.	Bluetooth Mode	Measured Power Spectral Density [dBm]	Maximum Permissible Power Density [dBm / 3kHz]	Margin [dB]
2402	125 kbps	0	LE	-1.32	8.0	-9.32
2440	125 kbps	19	LE	-2.50	8.0	-10.50
2480	125 kbps	39	LE	-0.78	8.0	-8.78
2402	500 kbps	0	LE	-1.53	8.0	-9.53
2440	500 kbps	19	LE	-2.88	8.0	-10.88
2480	500 kbps	39	LE	-1.30	8.0	-9.30
2402	1 Mbps	0	LE	-10.92	8.0	-18.92
2440	1 Mbps	19	LE	-11.98	8.0	-19.98
2480	1 Mbps	39	LE	-10.26	8.0	-18.26
2402	2 Mbps	0	LE	-10.77	8.0	-18.77
2440	2 Mbps	19	LE	-11.83	8.0	-19.83
2480	2 Mbps	39	LE	-10.45	8.0	-18.45

Table 7-4. Conducted Power Density Measurements

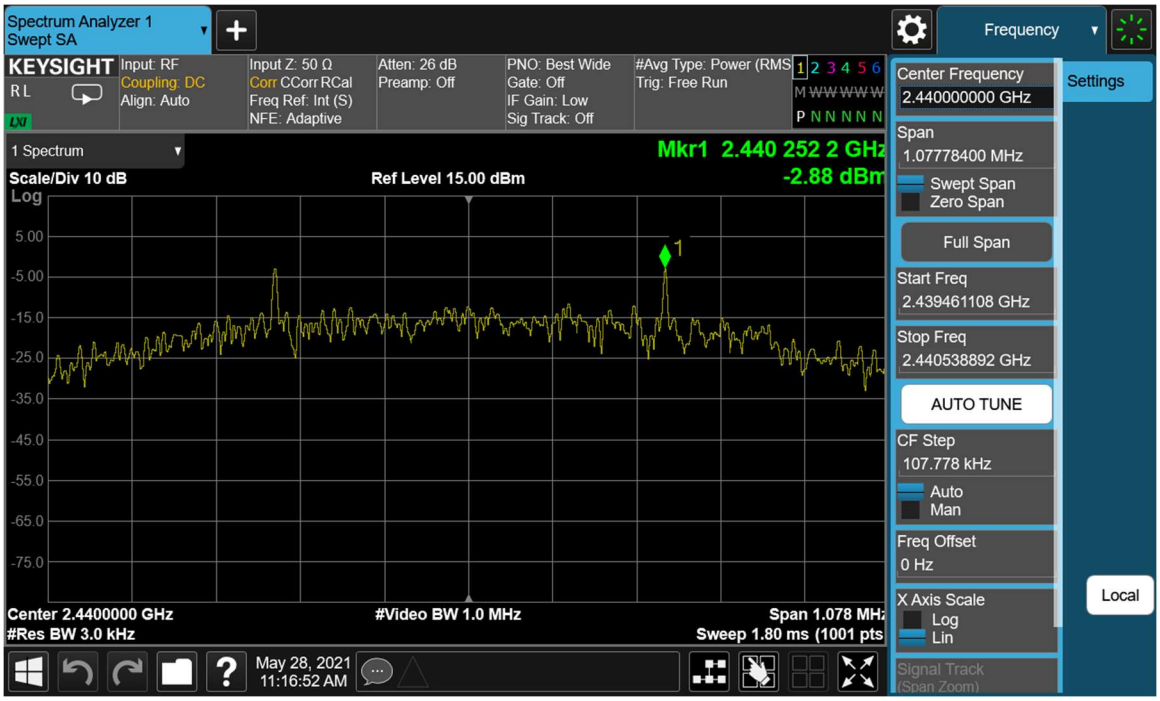
Plot 7-25. Power Spectral Density Plot (Bluetooth (LE), 125kbps – Ch. 0)

Plot 7-26. Power Spectral Density Plot (Bluetooth (LE), 125kbps – Ch. 19)

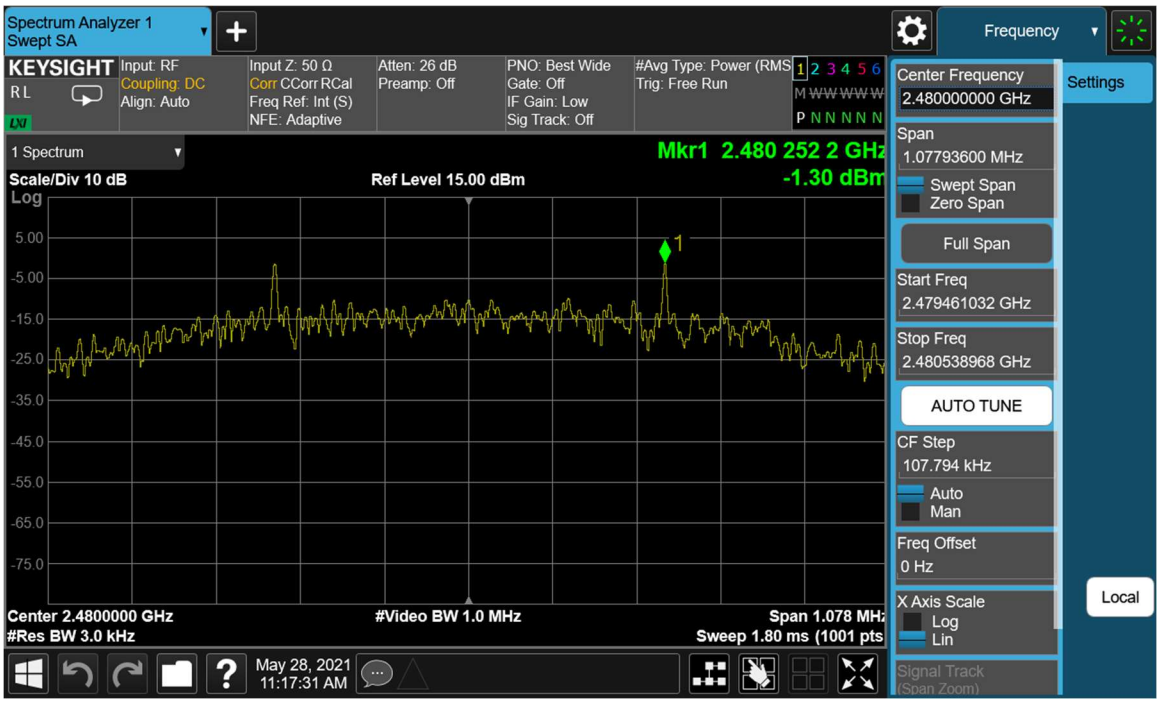
Plot 7-27. Power Spectral Density Plot (Bluetooth (LE), 125kbps – Ch. 39)



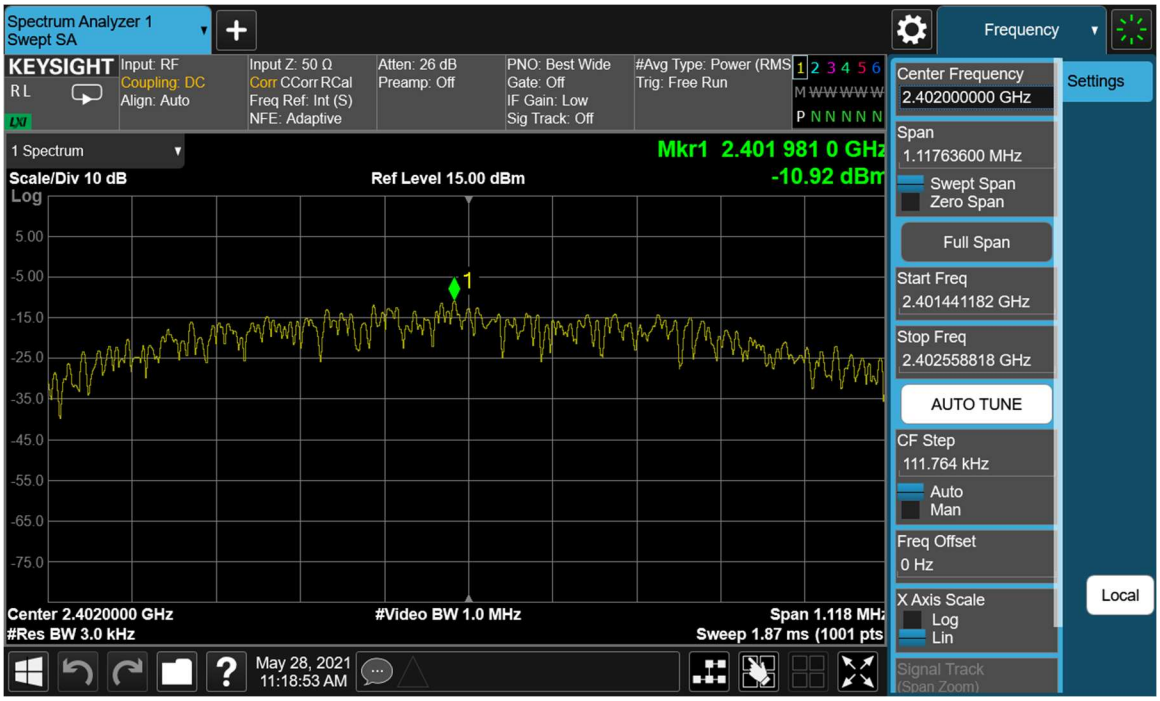
Plot 7-28. Power Spectral Density Plot (Bluetooth (LE), 500kbps – Ch. 0)



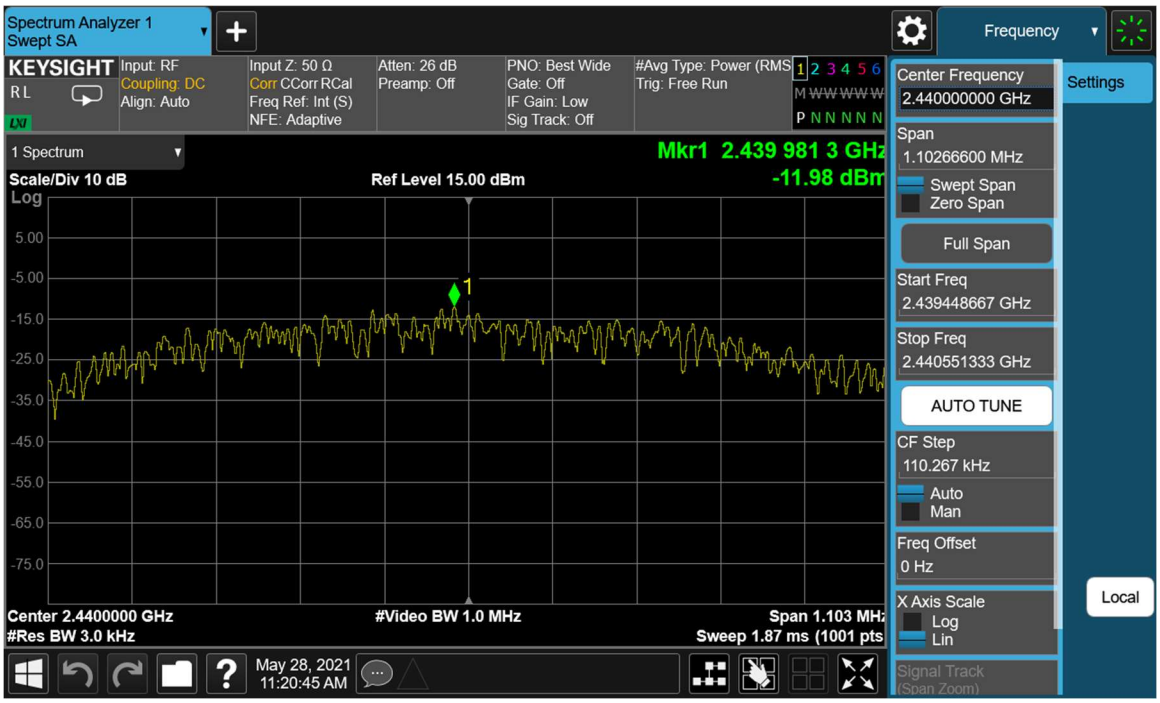
Plot 7-29. Power Spectral Density Plot (Bluetooth (LE), 500kbps – Ch. 19)



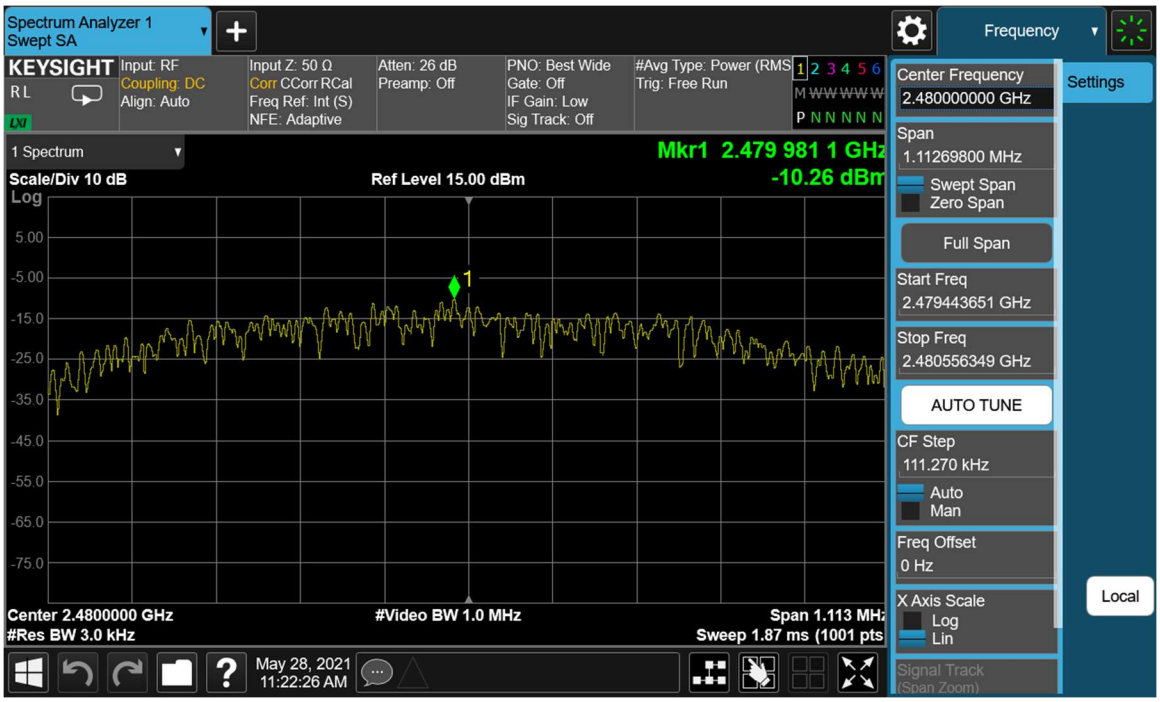
Plot 7-30. Power Spectral Density Plot (Bluetooth (LE), 500kbps – Ch. 39)



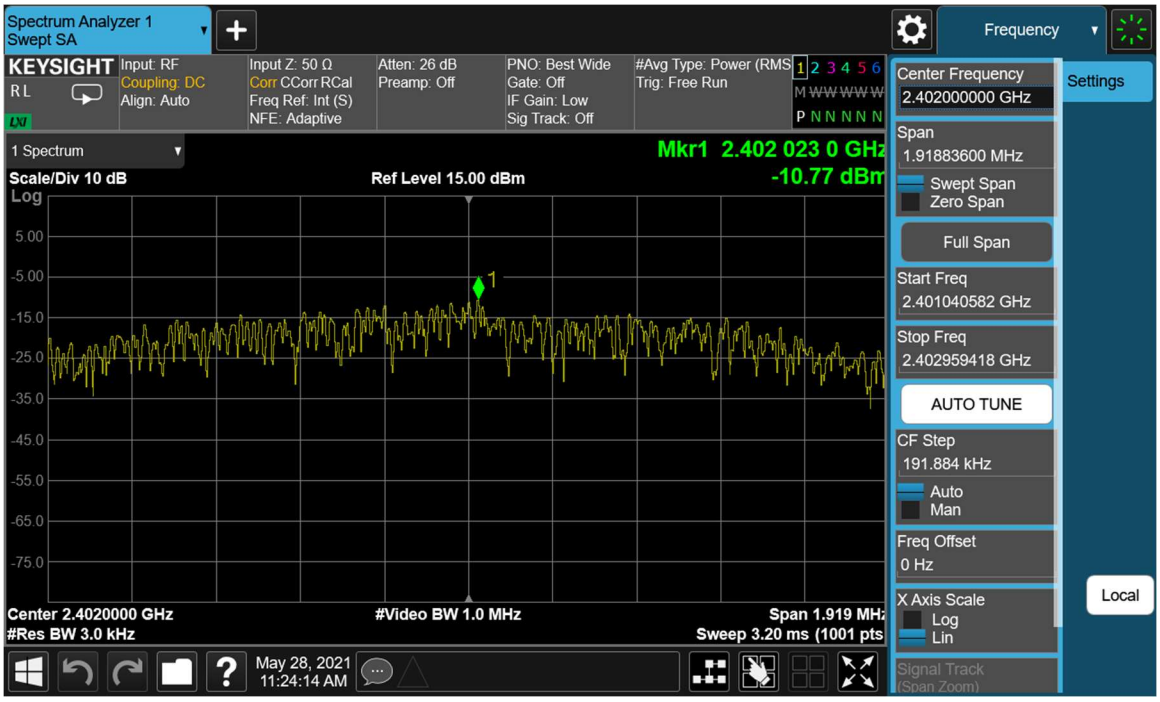
Plot 7-31. Power Spectral Density Plot (Bluetooth (LE), 1Mbps – Ch. 0)



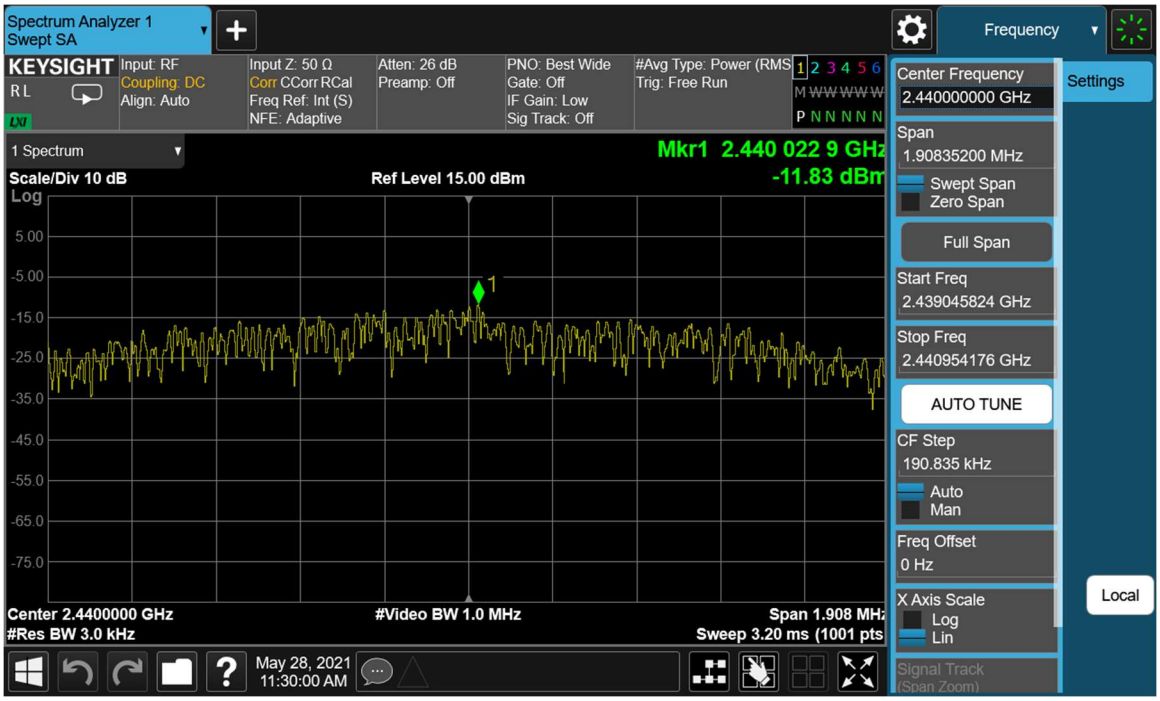
Plot 7-32. Power Spectral Density Plot (Bluetooth (LE), 1Mbps – Ch. 19)



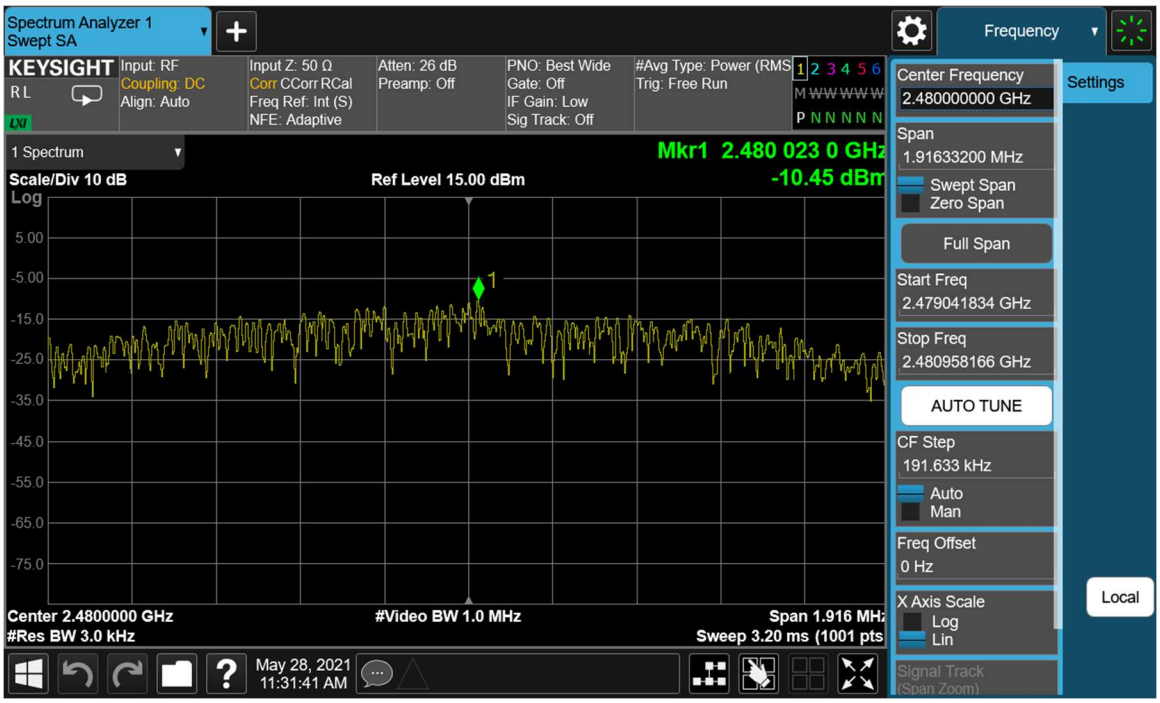
Plot 7-33. Power Spectral Density Plot (Bluetooth (LE), 1Mbps – Ch. 39)



Plot 7-34. Power Spectral Density Plot (Bluetooth (LE), 2Mbps – Ch. 0)



Plot 7-35. Power Spectral Density Plot (Bluetooth (LE), 2Mbps – Ch. 19)



Plot 7-36. Power Spectral Density Plot (Bluetooth (LE), 2Mbps – Ch. 39)

7.5 Conducted Emissions at the Band Edge

§15.247(d); RSS-247 [5.5]

Test Overview and Limit

For the following out of band conducted spurious emissions plots at the band edge, the EUT was set to transmit at maximum power with the largest packet size available. These settings produced the worst-case emissions.

The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100kHz bandwidth.

Test Procedure Used

ANSI C63.10-2013 – Section 11.11.3
KDB 558074 D01 v05r02 – Section 8.7.2

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 = 100kHz
4. VBW = 300kHz
5. Detector = Peak
6. Number of sweep points ≥ 2 x Span/RBW
7. Trace mode = max hold
8. Sweep time = auto couple
9. The trace was allowed to stabilize

Test Setup

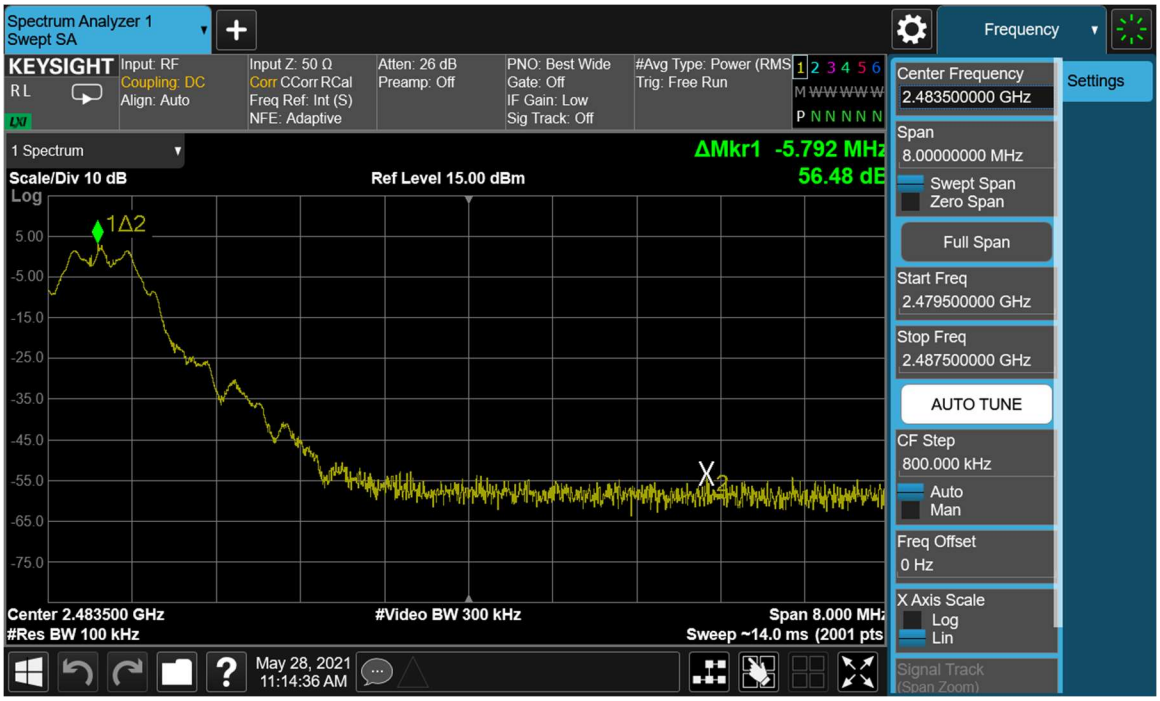
The EUT and measurement equipment were set up as shown in the diagram below.

Figure 7-4. Test Instrument & Measurement Setup

Test Notes

None

Plot 7-37. Band Edge Plot (Bluetooth (LE), 125kbps – Ch. 0)

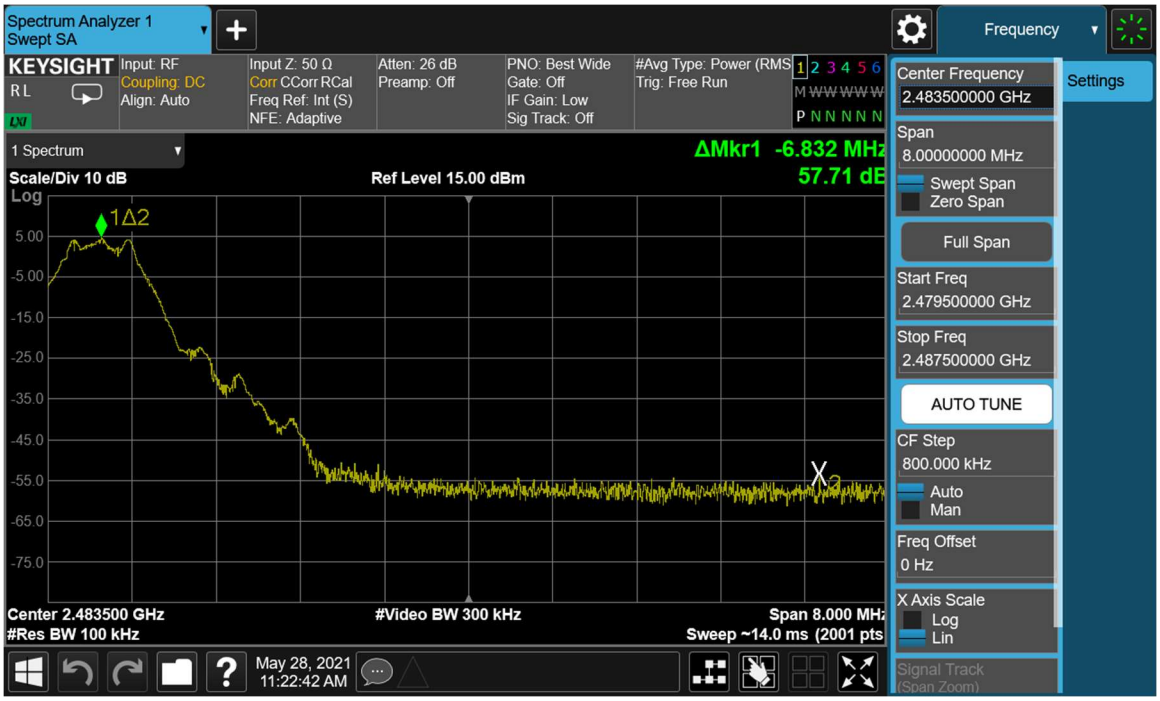


Plot 7-38. Band Edge Plot (Bluetooth (LE), 125kbps – Ch. 39)

Plot 7-39. Band Edge Plot (Bluetooth (LE), 500kbps – Ch. 0)

Plot 7-40. Band Edge Plot (Bluetooth (LE), 500kbps – Ch. 39)

Plot 7-41. Band Edge Plot (Bluetooth (LE), 1Mbps – Ch. 0)



Plot 7-42. Band Edge Plot (Bluetooth (LE), 1Mbps – Ch. 39)