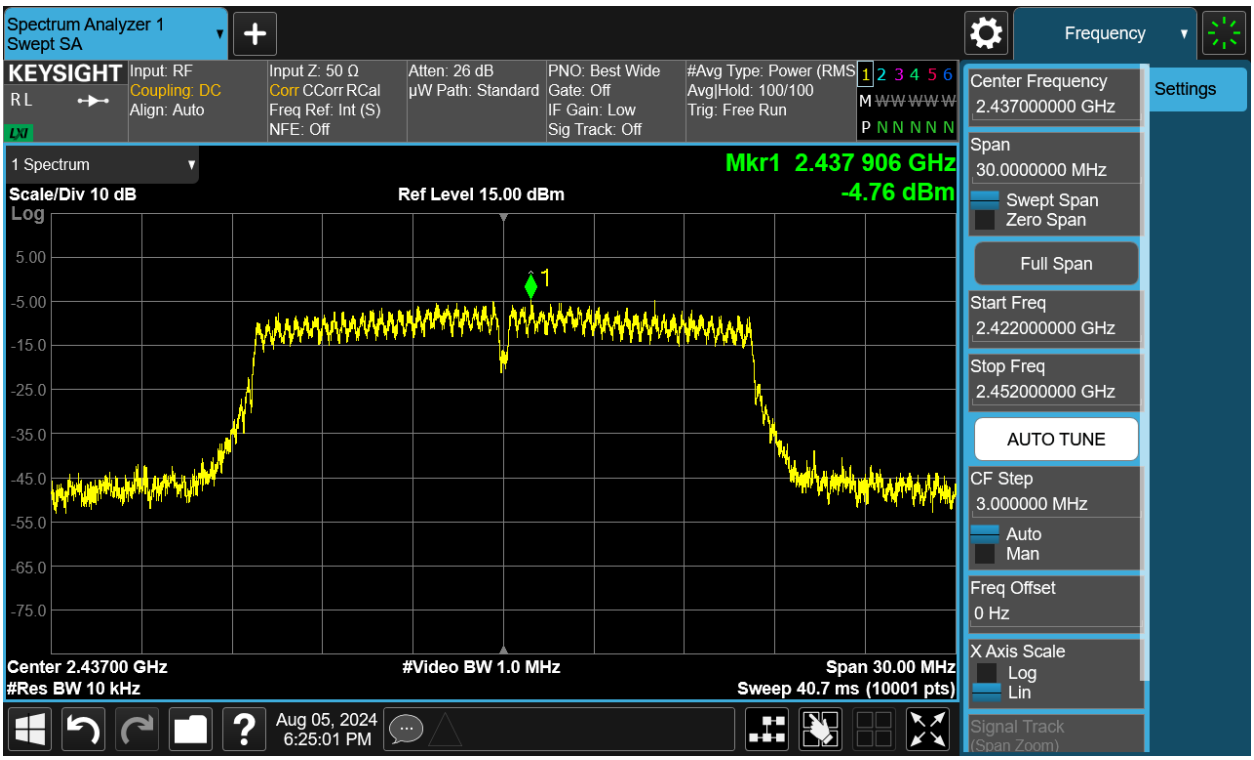
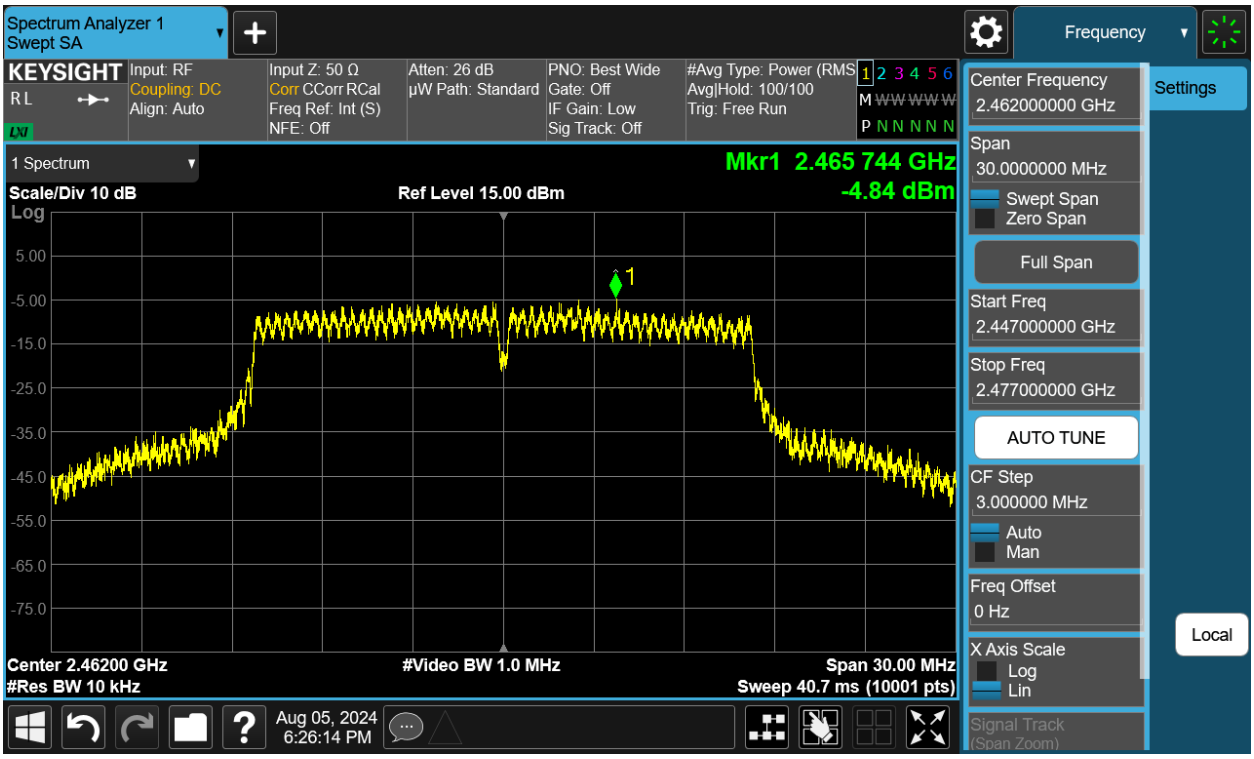
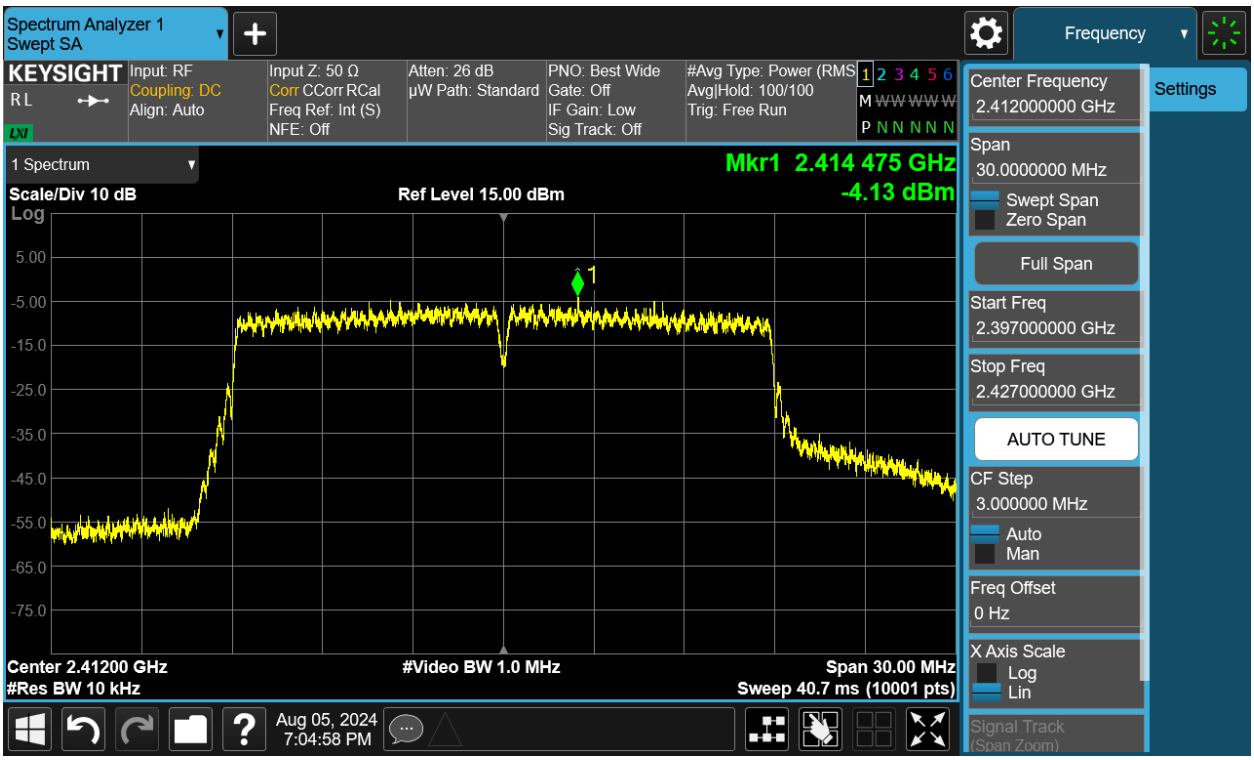


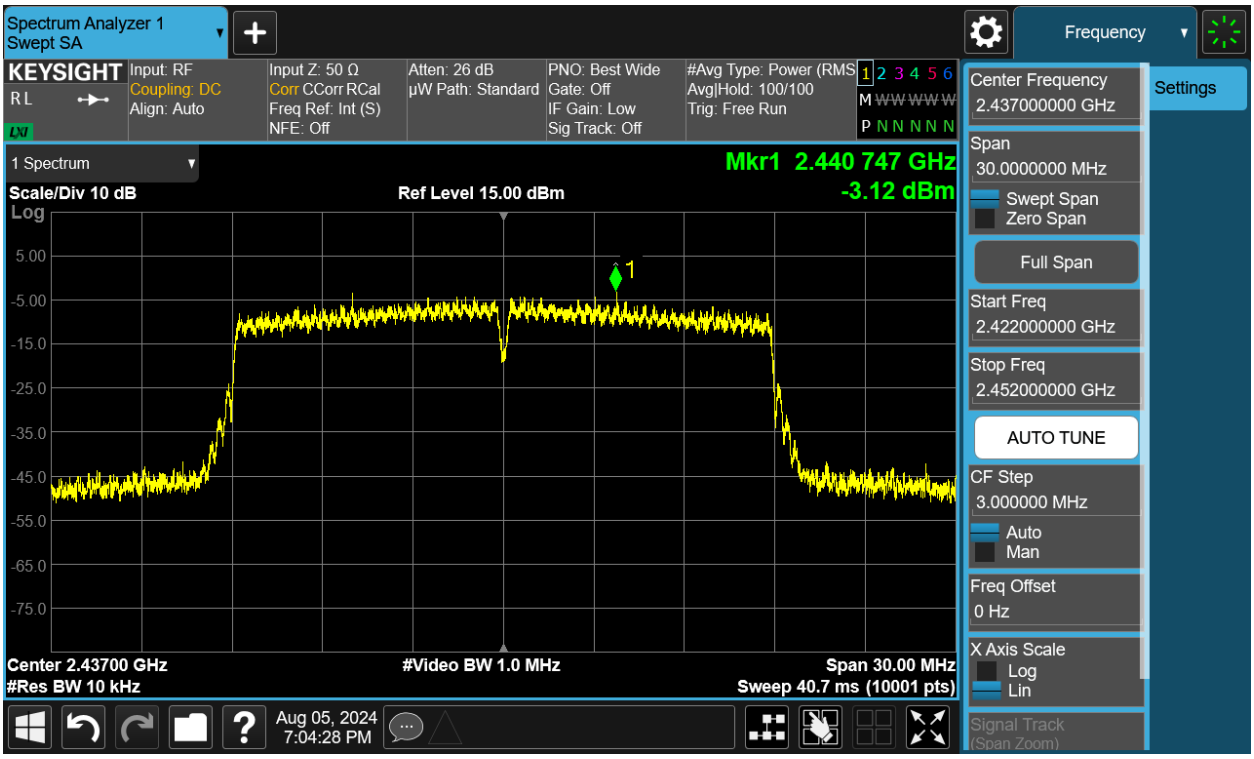
Plot 7-89. Power Spectral Density Plot MIMO ANT2 (802.11g – Ch. 6)



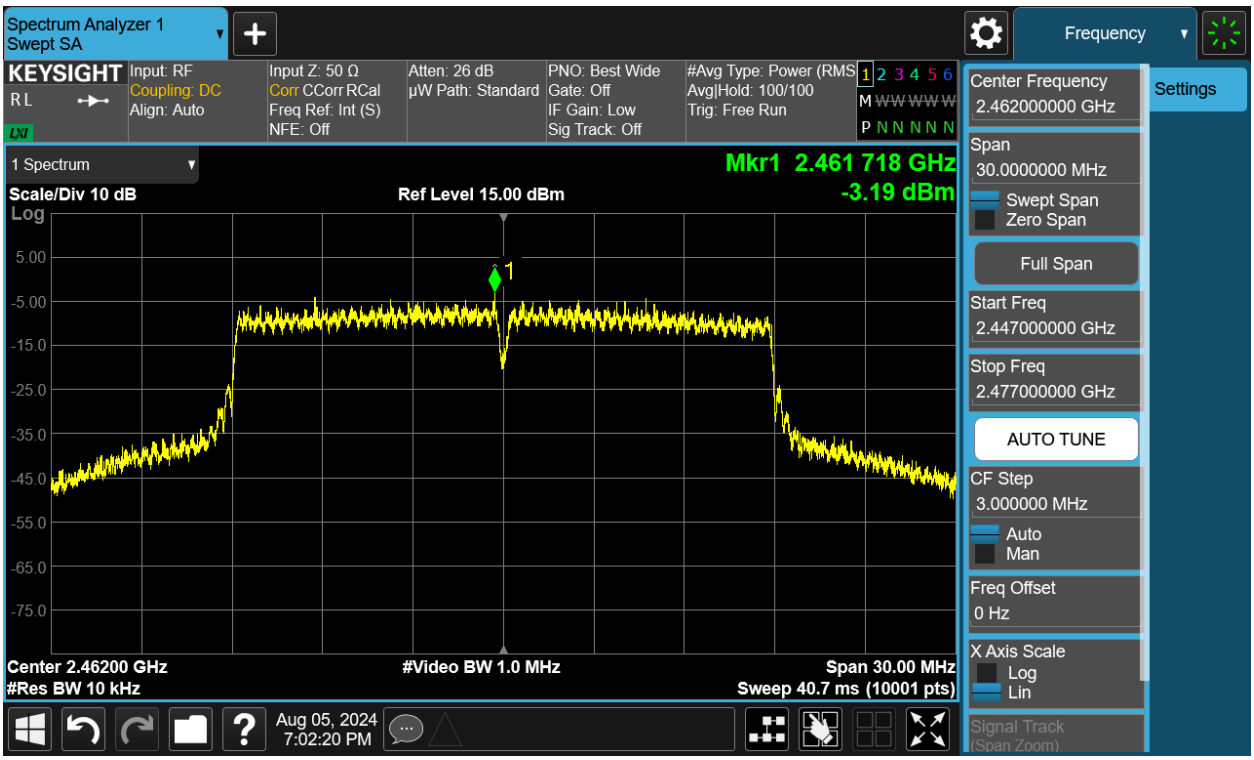
Plot 7-90. Power Spectral Density Plot MIMO ANT2 (802.11g – Ch. 11)



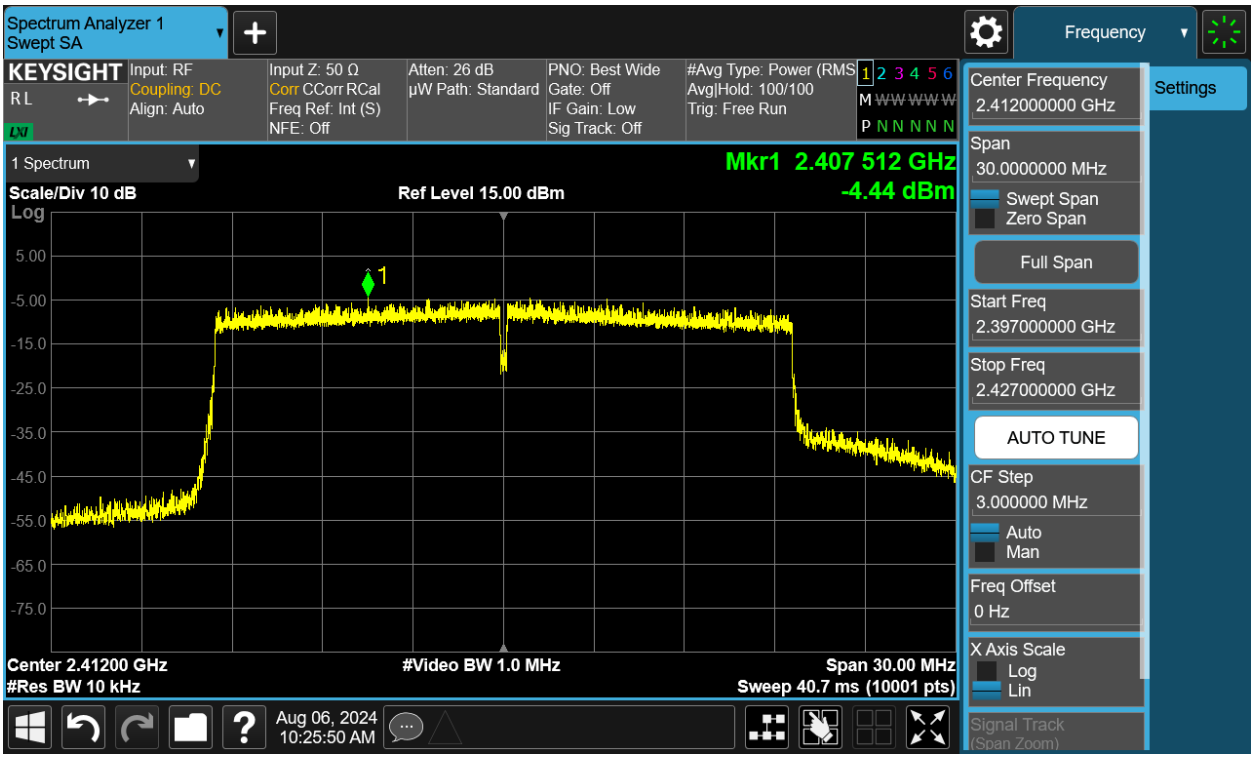
Plot 7-91. Power Spectral Density Plot MIMO ANT2 (802.11n (2.4GHz) – Ch. 1)



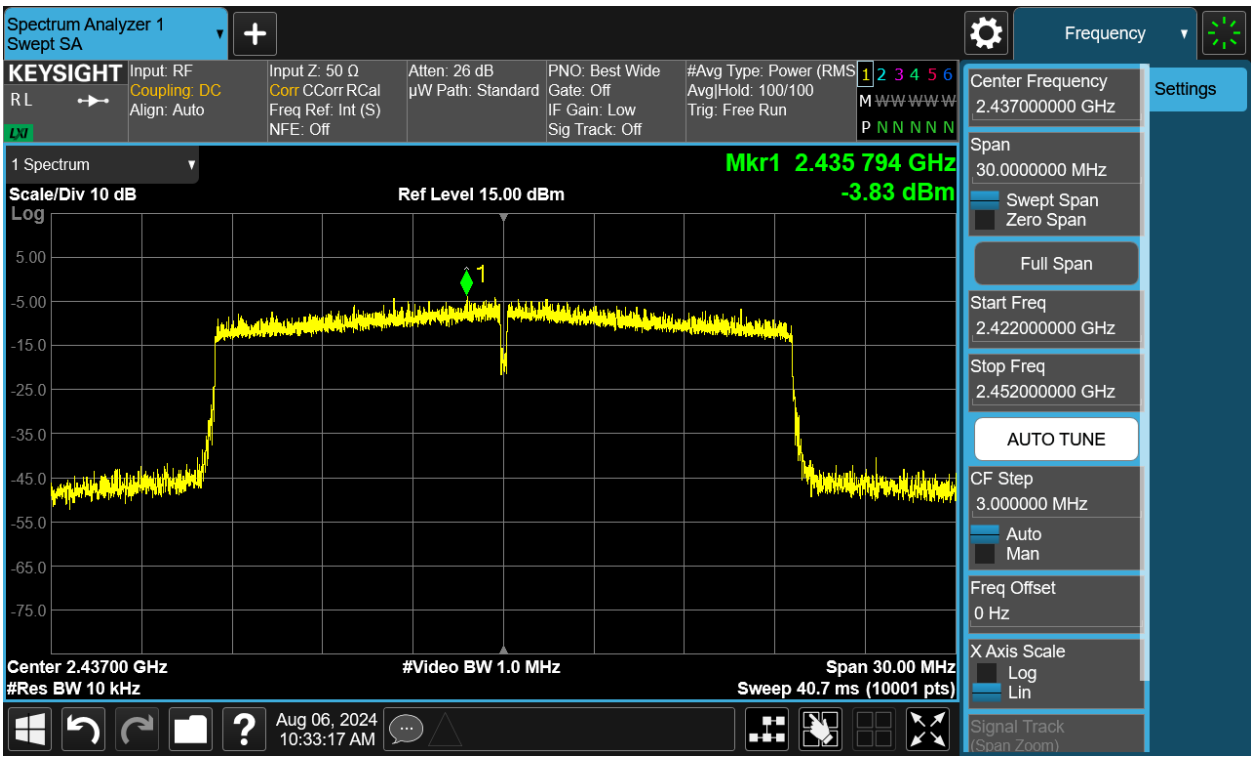
Plot 7-92. Power Spectral Density Plot MIMO ANT2 (802.11n (2.4GHz) – Ch. 6)



Plot 7-93. Power Spectral Density Plot MIMO ANT2 (802.11n (2.4GHz) – Ch. 11)



Plot 7-94. Power Spectral Density Plot MIMO ANT2 (802.11be (2.4GHz) – Ch. 1)



Plot 7-95. Power Spectral Density Plot MIMO ANT2 (802.11be (2.4GHz) – Ch. 6)

Plot 7-96. Power Spectral Density Plot MIMO ANT2 (802.11be (2.4GHz) – Ch. 11)

Note:

Per ANSI C63.10-2013 Section 14.3.1, the power spectral density at Antenna 1 and Antenna 2 were first measured separately as shown in the section above. The measured values were then summed in linear power units then converted back to dBm.

Sample MIMO Calculation:

At 2412MHz the average conducted power spectral density was measured to be -3.30 dBm for Antenna 1 and -4.80 dBm for Antenna 2.

Antenna 1 + Antenna 2 = MIMO

(-3.30 dBm + (-4.80) dBm) = (0.47 mW + 0.33 mW) = 0.80 mW = -0.98 dBm

7.5 Conducted Band Edge Emissions

Test Overview and Limit

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 its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst-case configuration. For the following out of band conducted spurious emissions plots at the band edge, the EUT was set at a data rate of 1Mbps for “b” mode, 6 Mbps for “g” mode, 6.5\\7.2Mbps for “n” mode, and 8.6Mbps for “be” mode as 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 per the PSD procedure (Section 7.4).

Test Procedure Used

ANSI C63.10-2013 – Section 11.11.3

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 = 1MHz
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

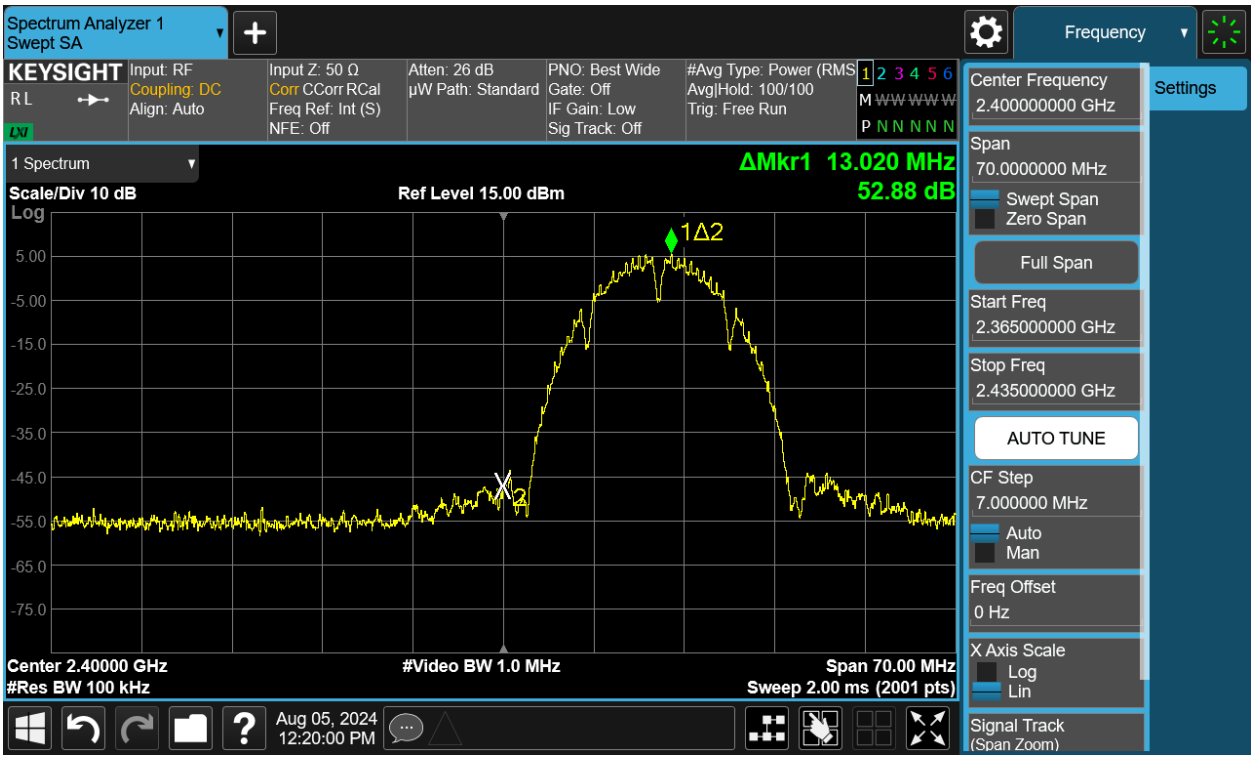
The EUT and measurement equipment were set up as shown in the diagram below.

Figure 7-4. Test Instrument & Measurement Setup

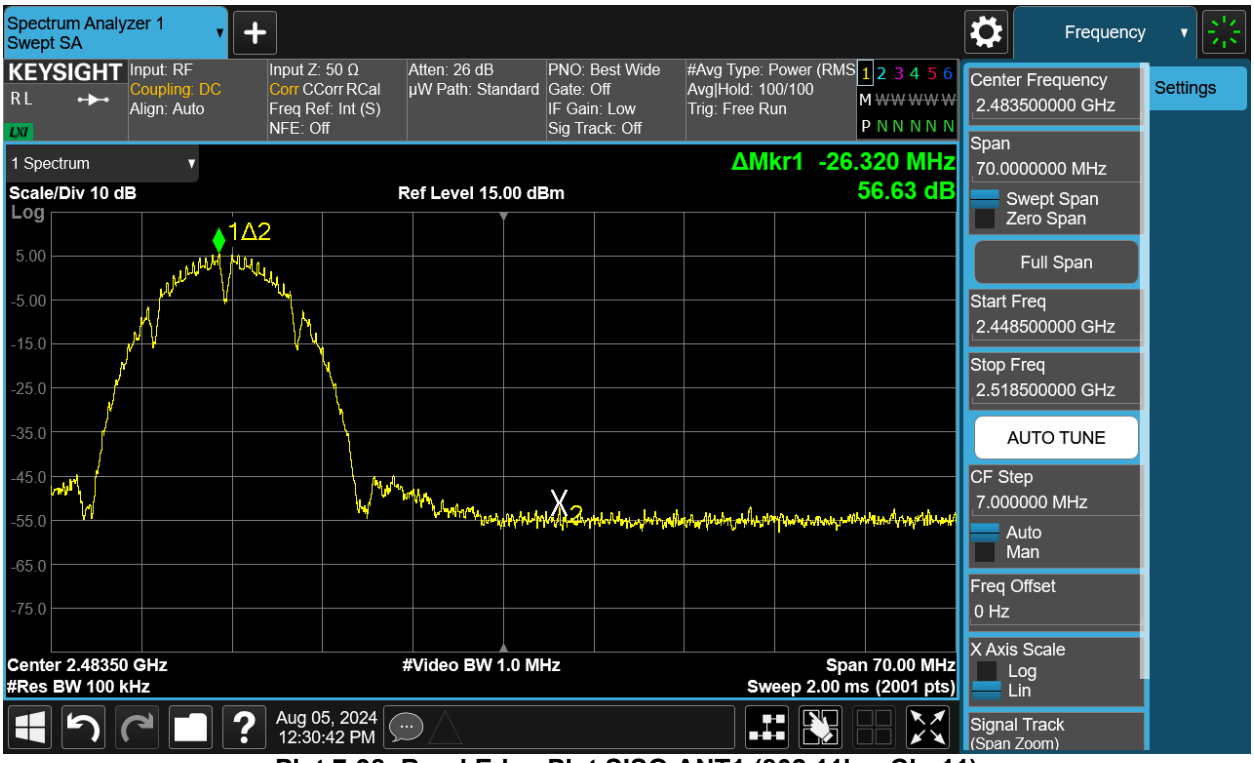
Test Notes

None.

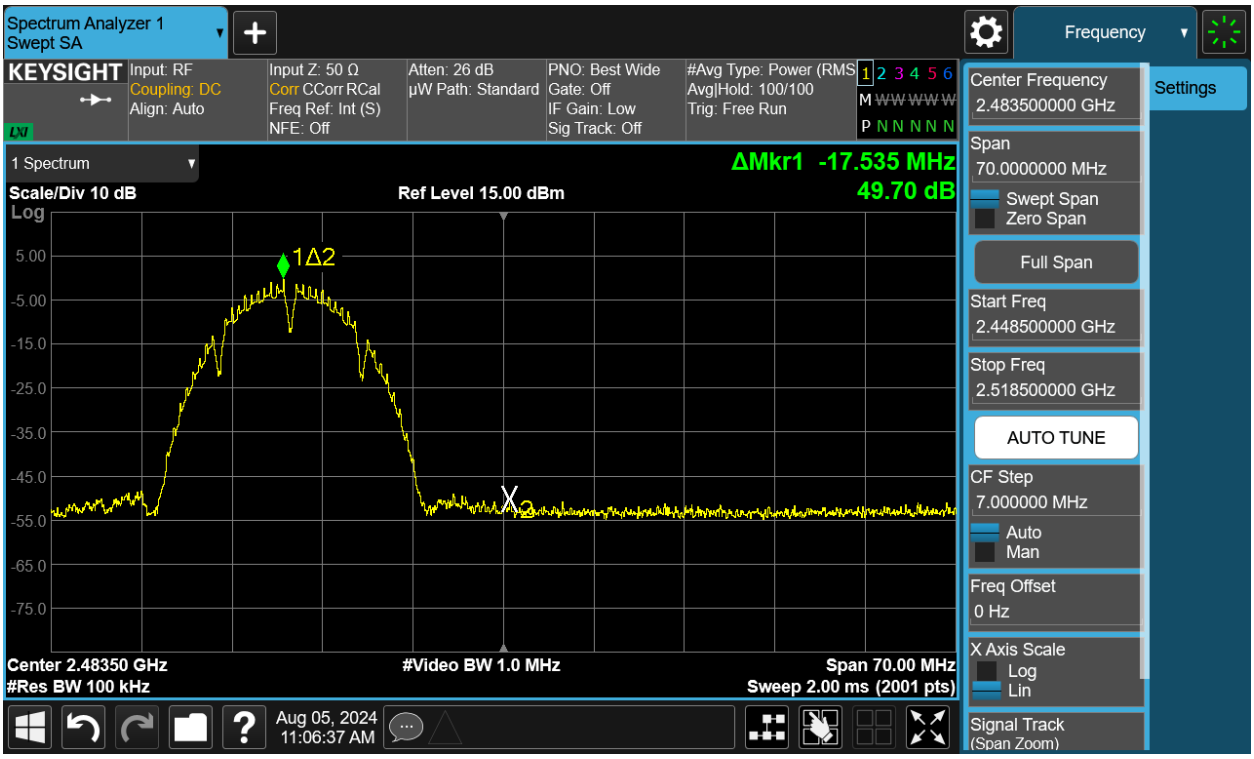
7.5.1 SISO Antenna-1 Conducted Band Edge Emissions



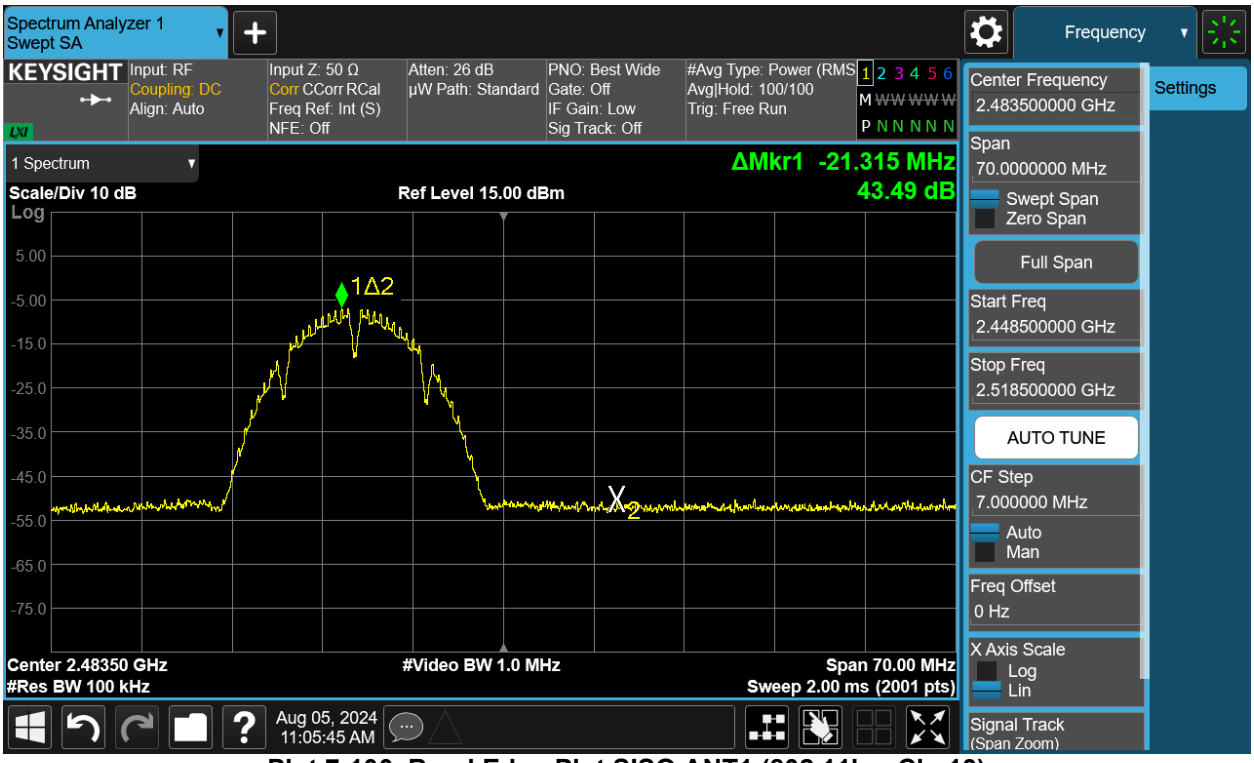
Plot 7-97. Band Edge Plot SISO ANT1 (802.11b – Ch. 1)



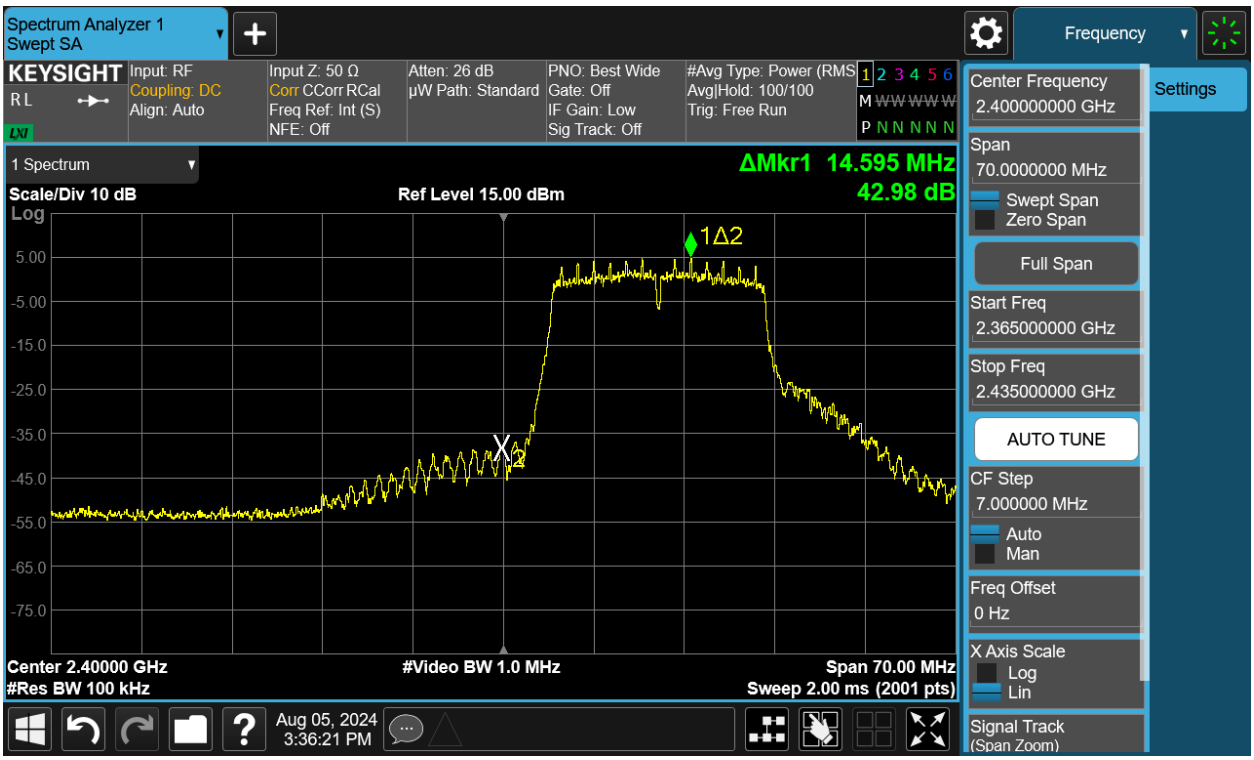
Plot 7-98. Band Edge Plot SISO ANT1 (802.11b – Ch. 11)



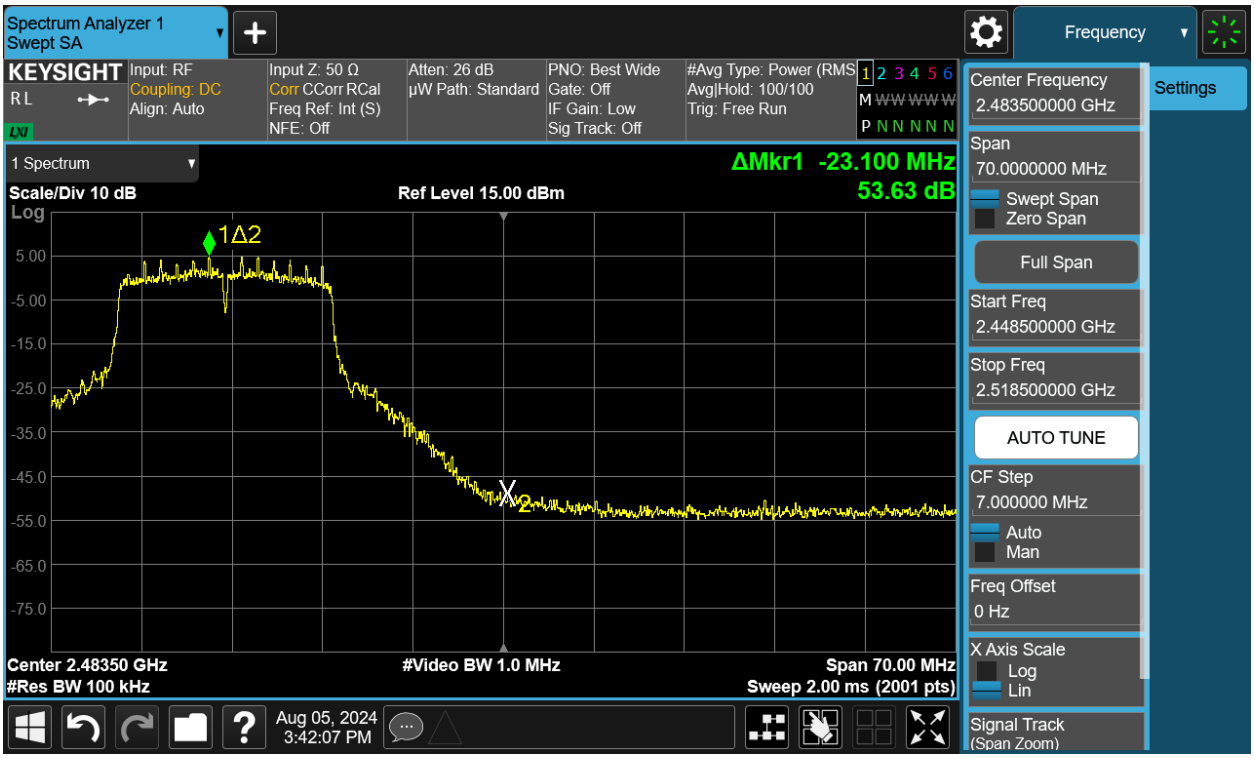
Plot 7-99. Band Edge Plot SISO ANT1 (802.11b – Ch. 12)



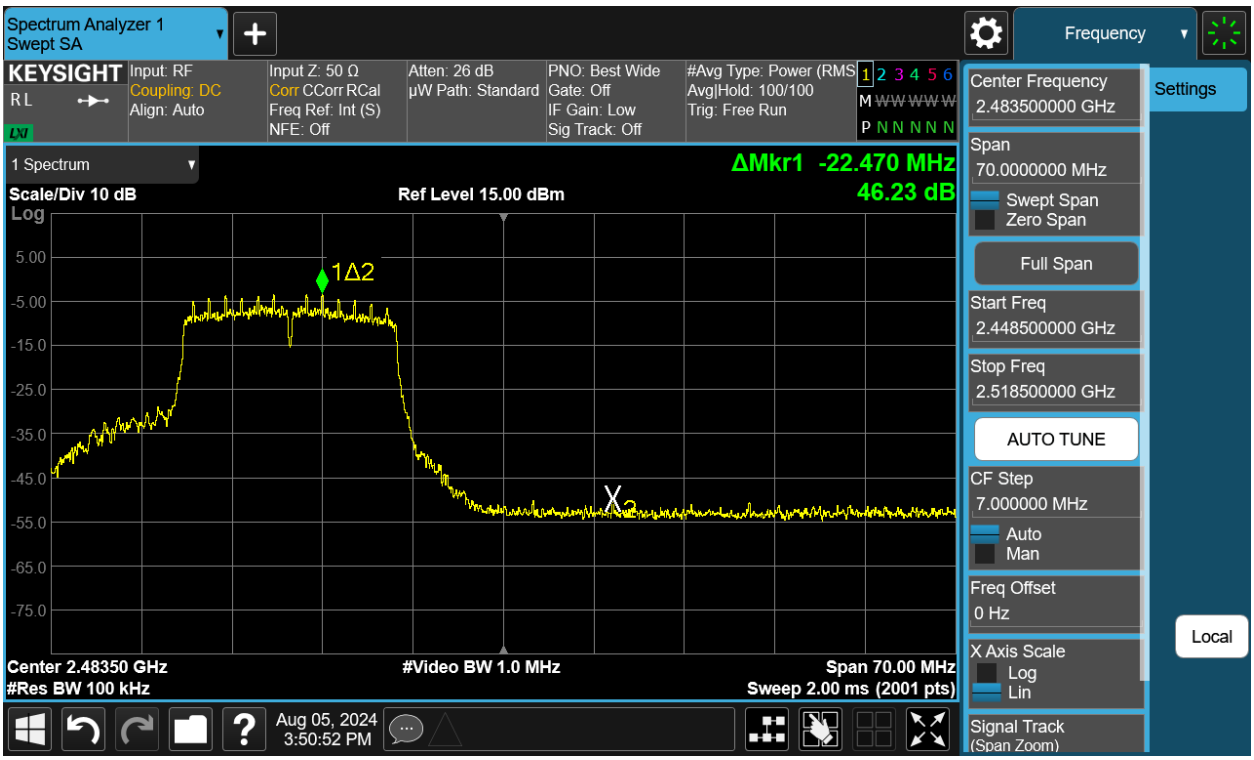
Plot 7-100. Band Edge Plot SISO ANT1 (802.11b – Ch. 13)



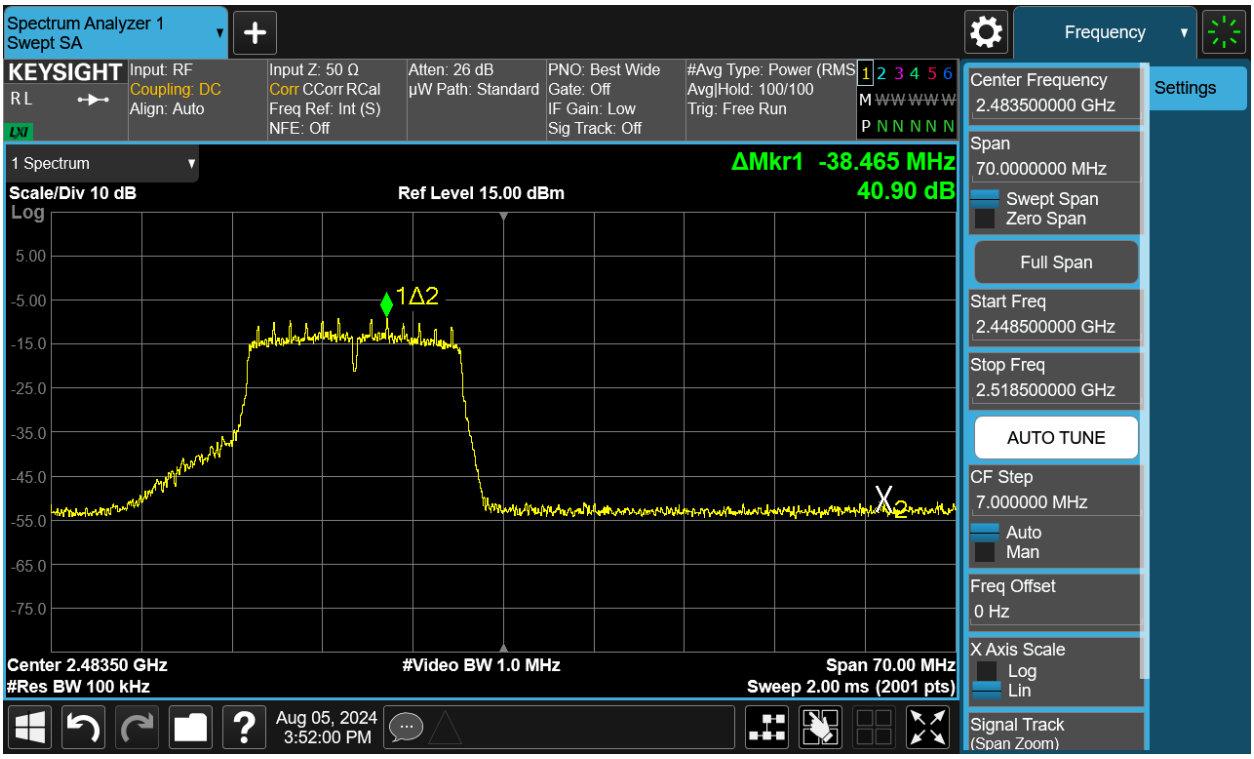
Plot 7-101. Band Edge Plot SISO ANT1 (802.11g– Ch. 1)



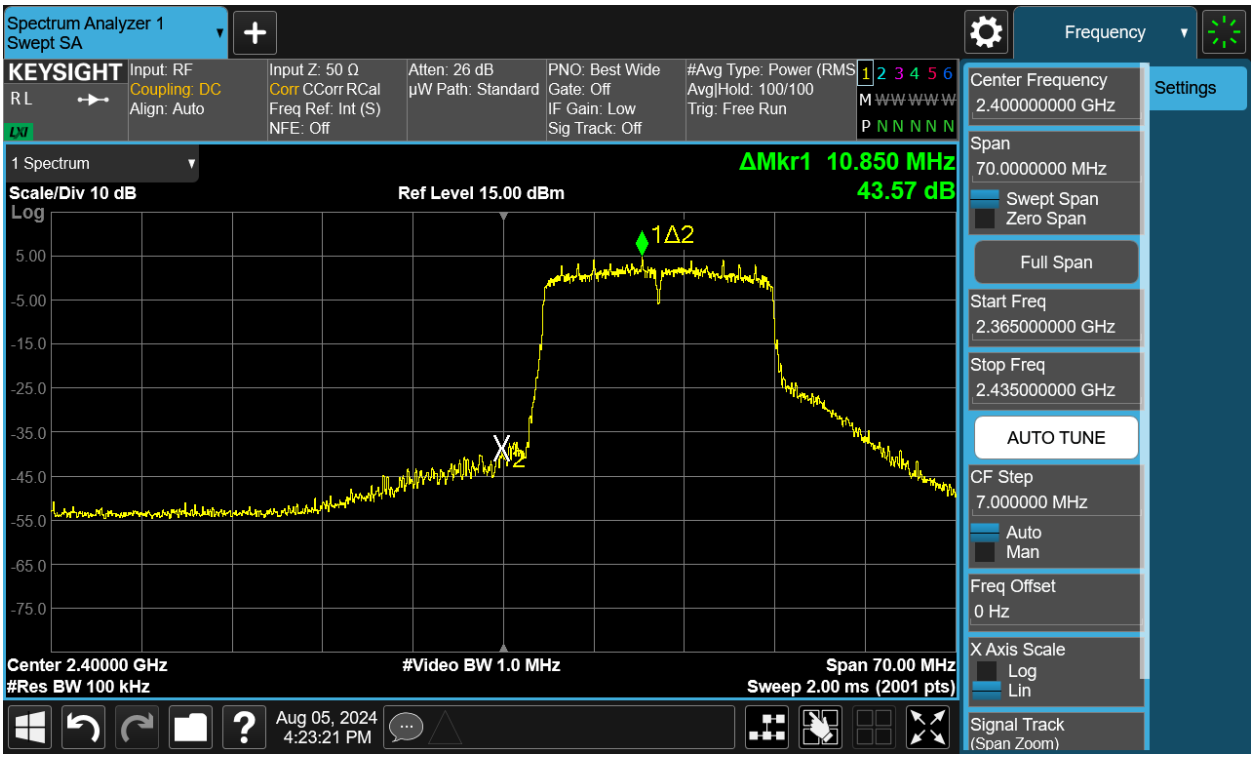
Plot 7-102. Band Edge Plot SISO ANT1 (802.11g – Ch. 11)



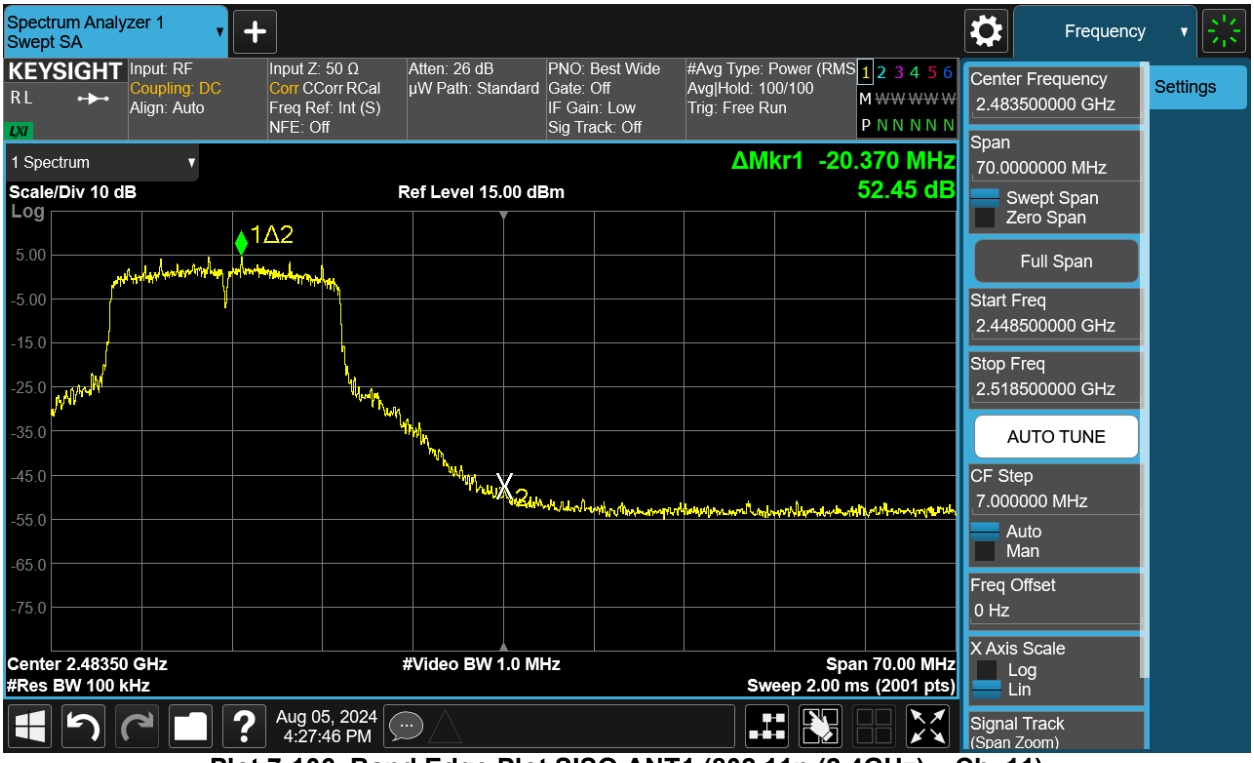
Plot 7-103. Band Edge Plot SISO ANT1 (802.11g– Ch. 12)



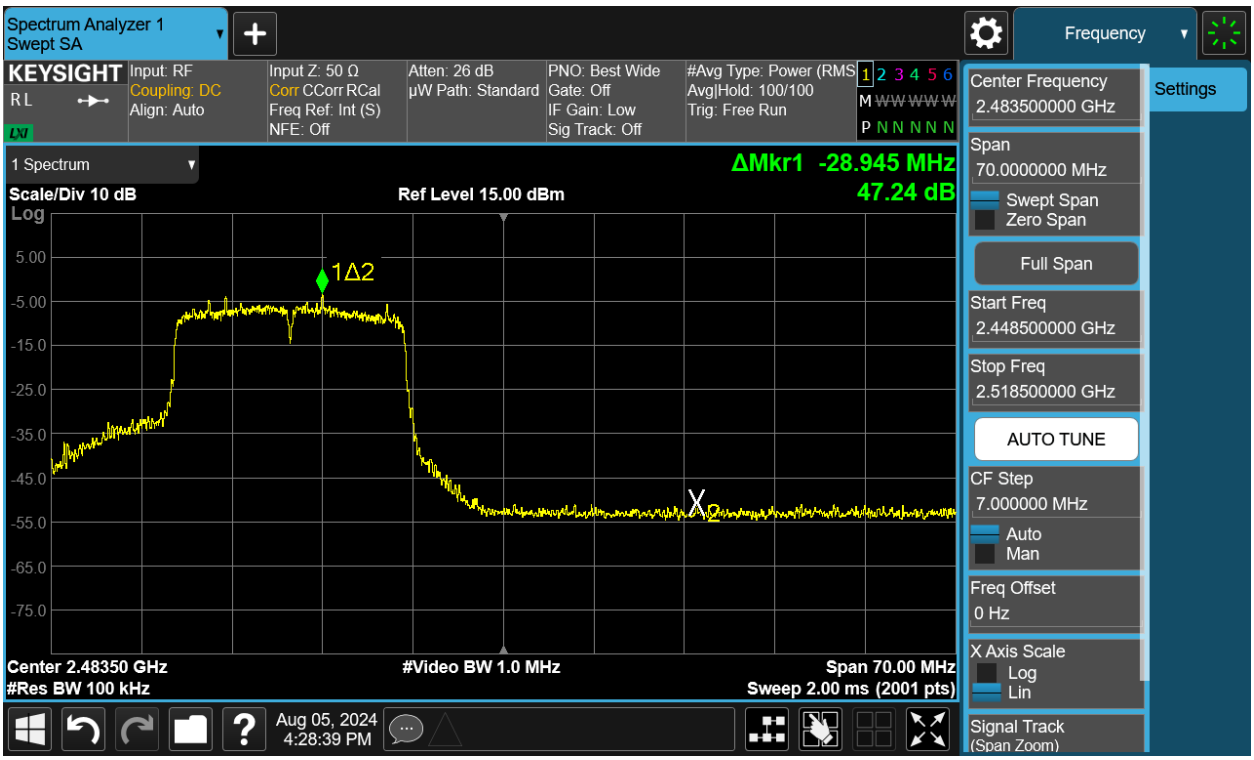
Plot 7-104. Band Edge Plot SISO ANT1 (802.11g – Ch. 13)



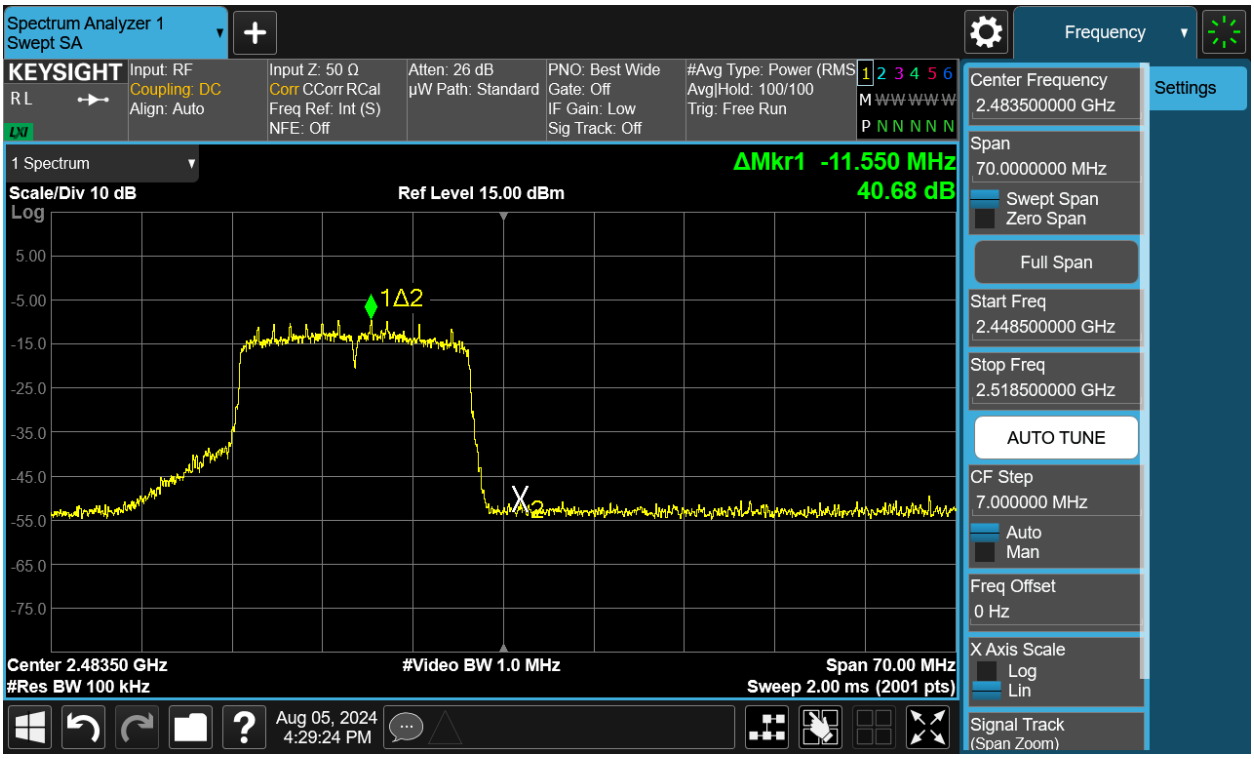
Plot 7-105. Band Edge Plot SISO ANT1 (802.11n (2.4GHz) – Ch. 1)



Plot 7-106. Band Edge Plot SISO ANT1 (802.11n (2.4GHz) – Ch. 11)



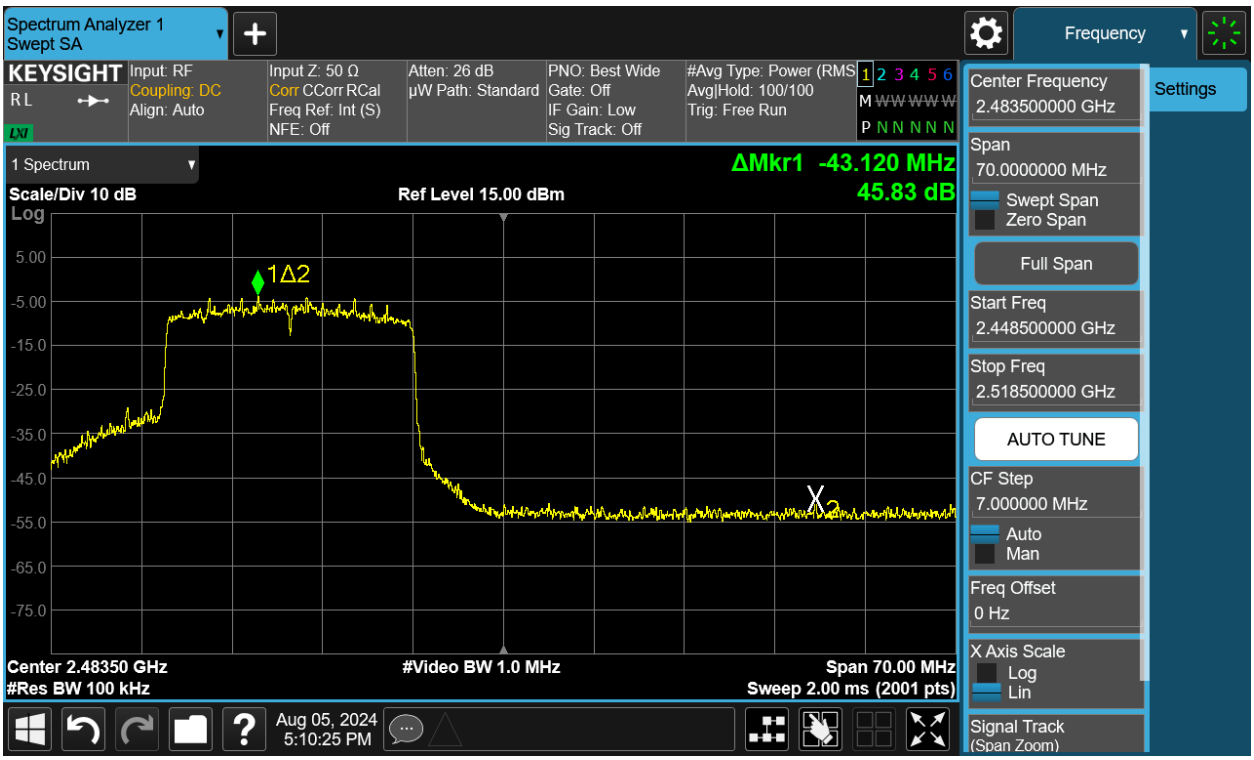
Plot 7-107. Band Edge Plot SISO ANT1 (802.11n (2.4GHz) – Ch. 12)



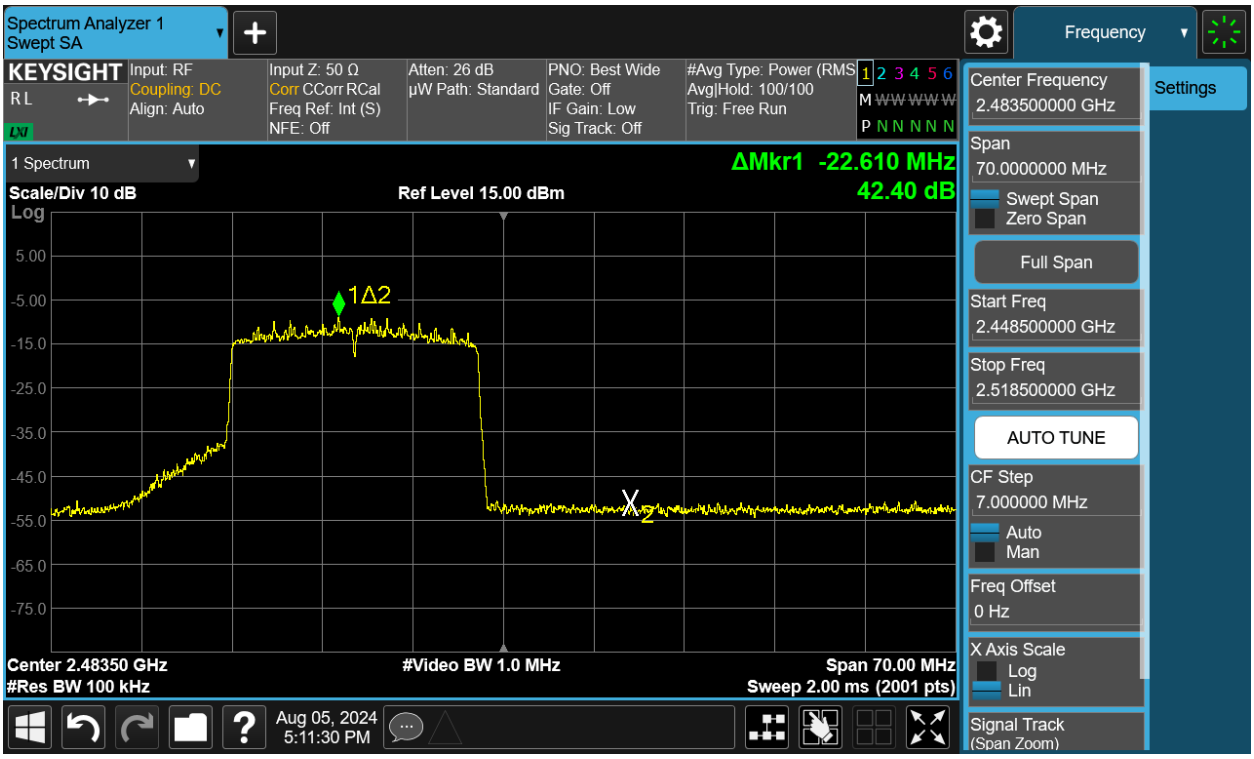
Plot 7-108. Band Edge Plot SISO ANT1 (802.11n (2.4GHz) – Ch. 13)

Plot 7-109. Band Edge Plot SISO ANT1 (802.11be (2.4GHz) – Ch. 1)

Plot 7-110. Band Edge Plot SISO ANT1 (802.11be (2.4GHz) – Ch. 11)

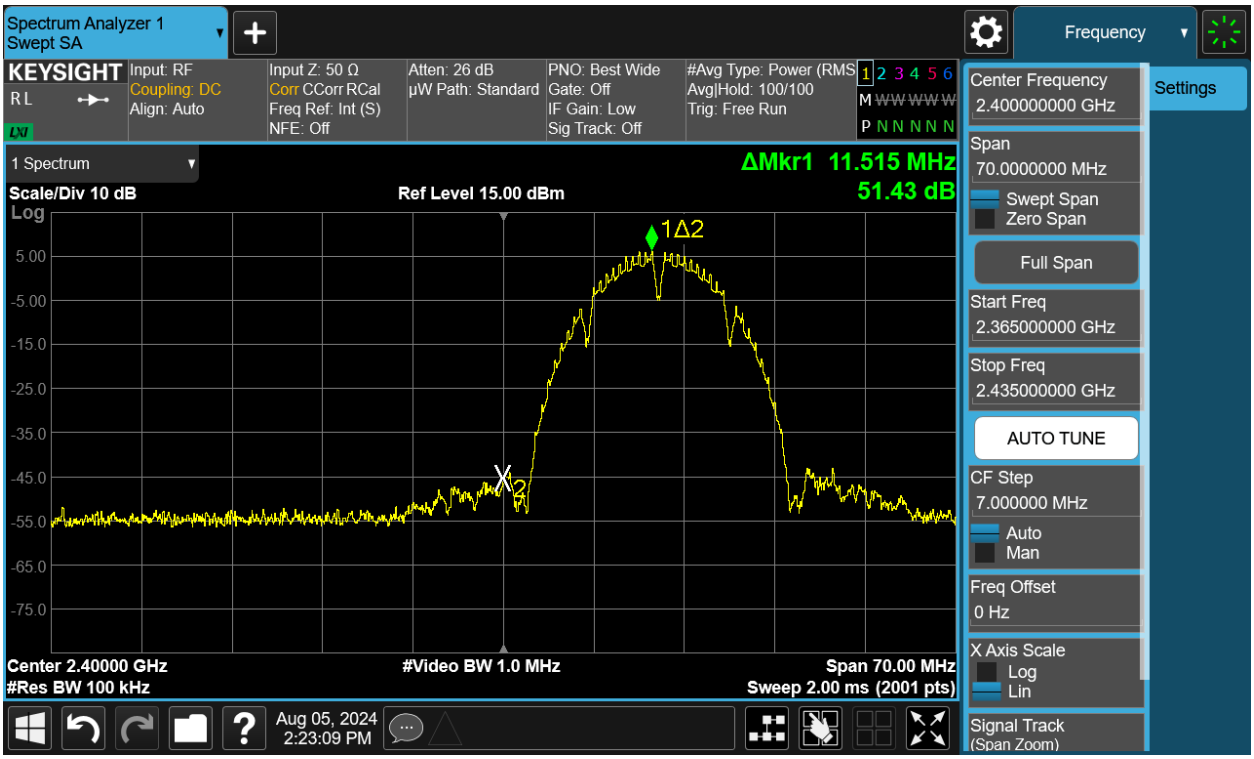


Plot 7-111. Band Edge Plot SISO ANT1 (802.11be (2.4GHz) – Ch. 12)

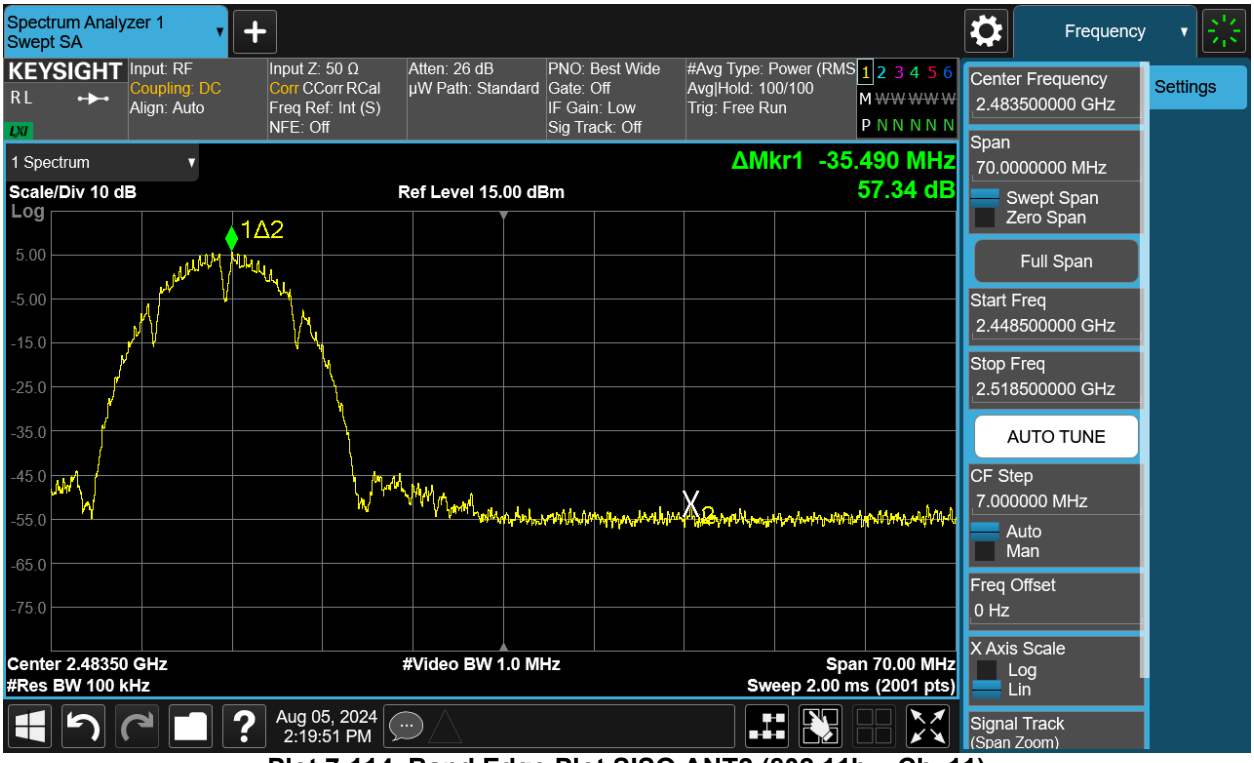


Plot 7-112. Band Edge Plot SISO ANT1 (802.11be (2.4GHz) – Ch. 13)

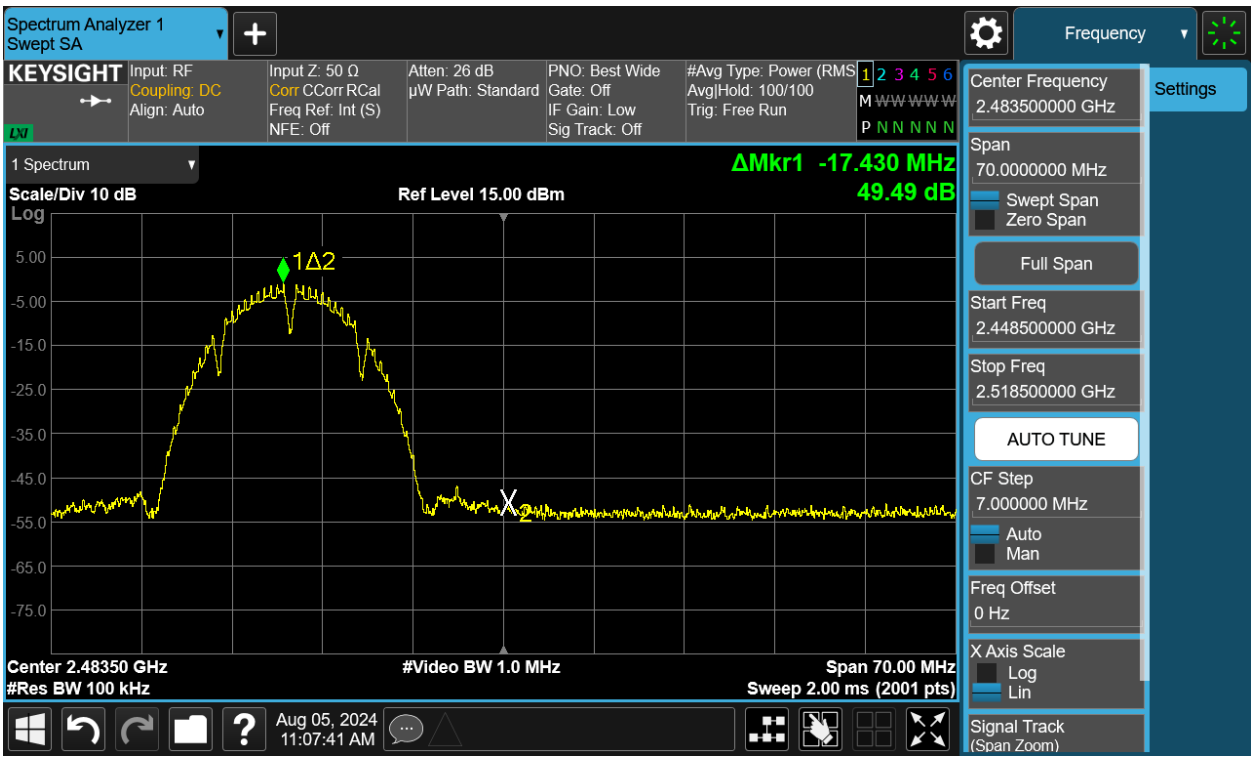
7.5.2 SISO Antenna-2 Conducted Band Edge Emissions



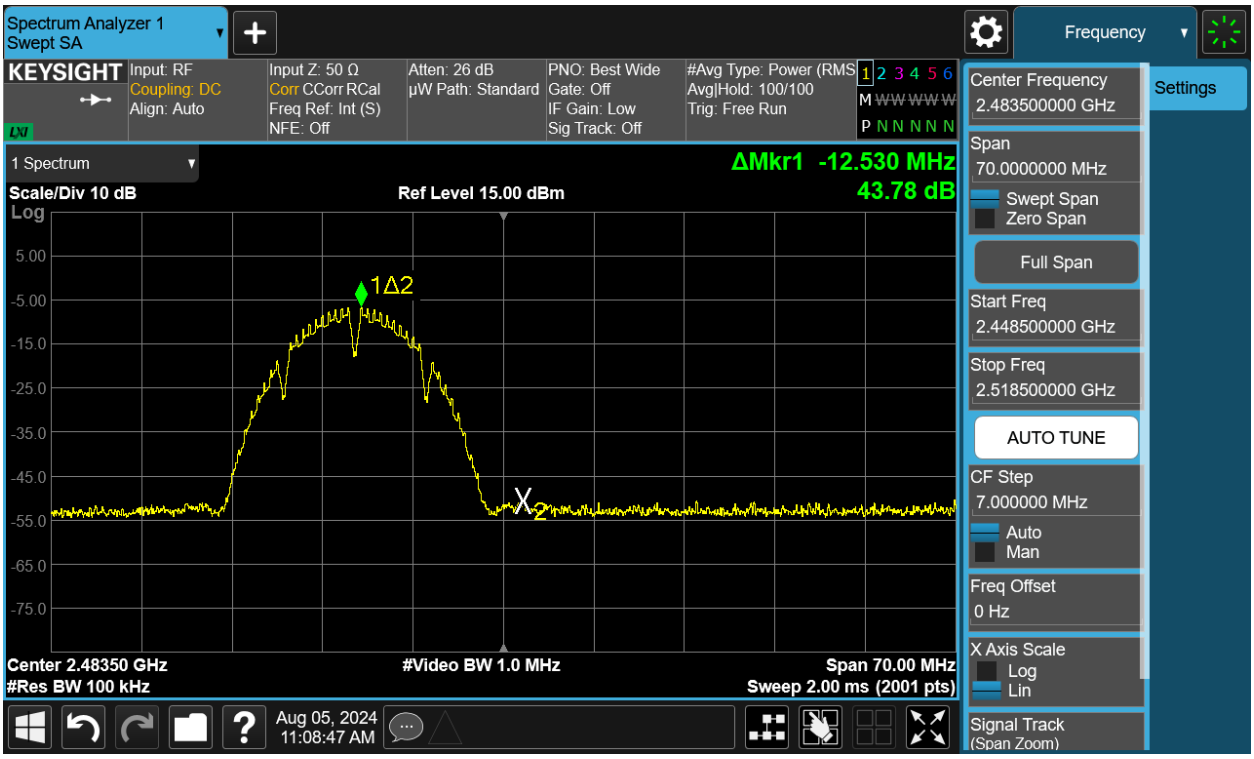
Plot 7-113. Band Edge Plot SISO ANT2 (802.11b – Ch. 1)



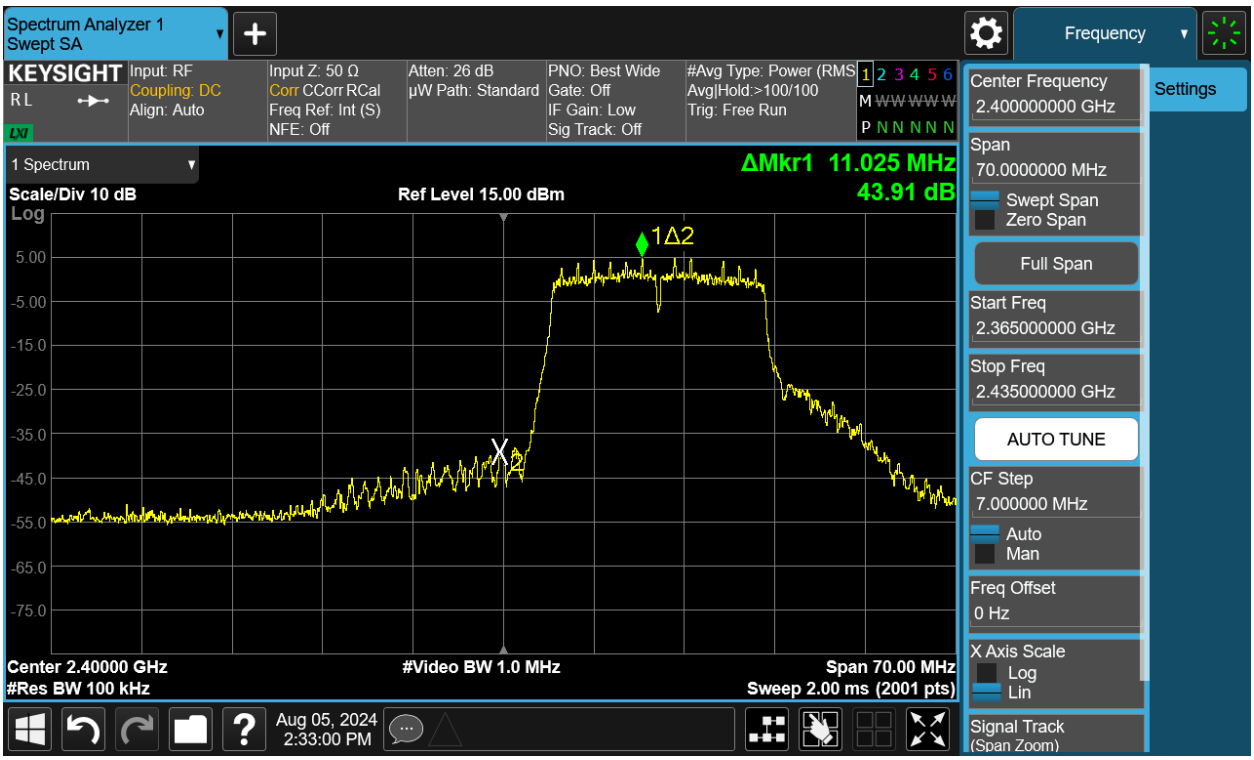
Plot 7-114. Band Edge Plot SISO ANT2 (802.11b – Ch. 11)



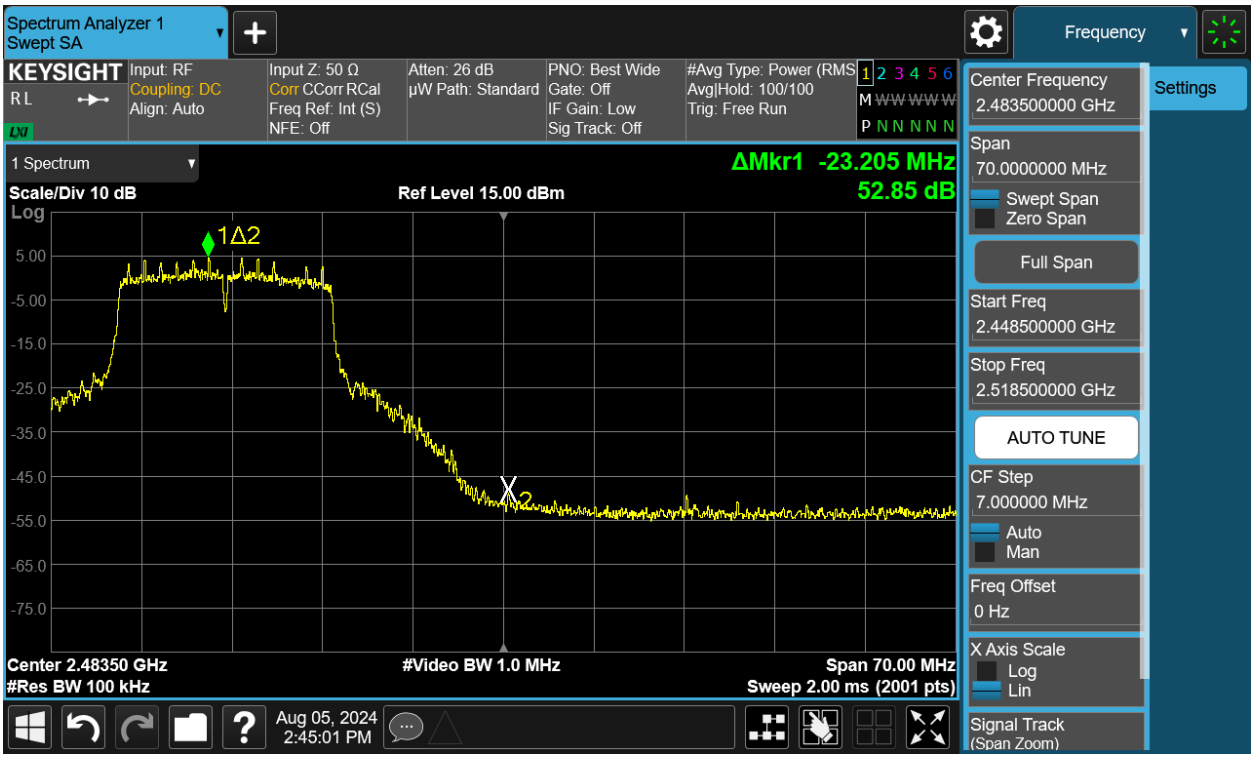
Plot 7-115. Band Edge Plot SISO ANT2 (802.11b – Ch. 12)



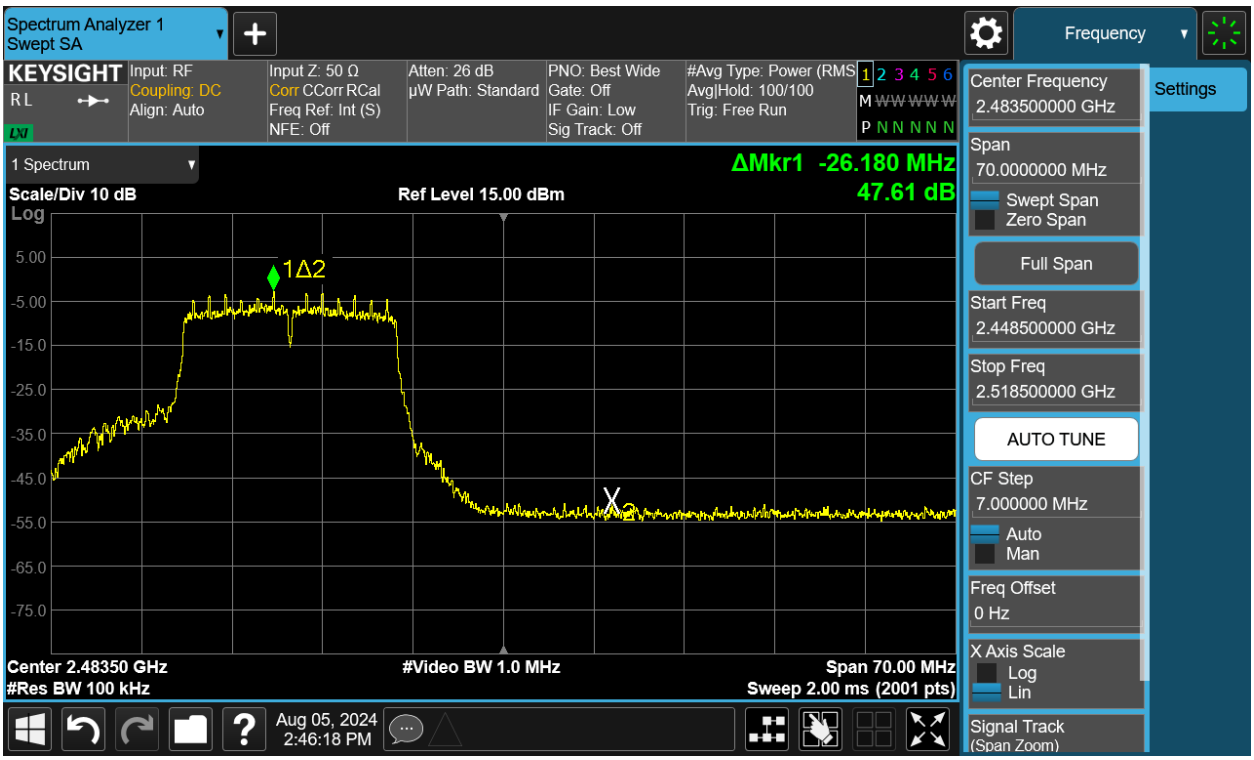
Plot 7-116. Band Edge Plot SISO ANT2 (802.11b – Ch. 13)



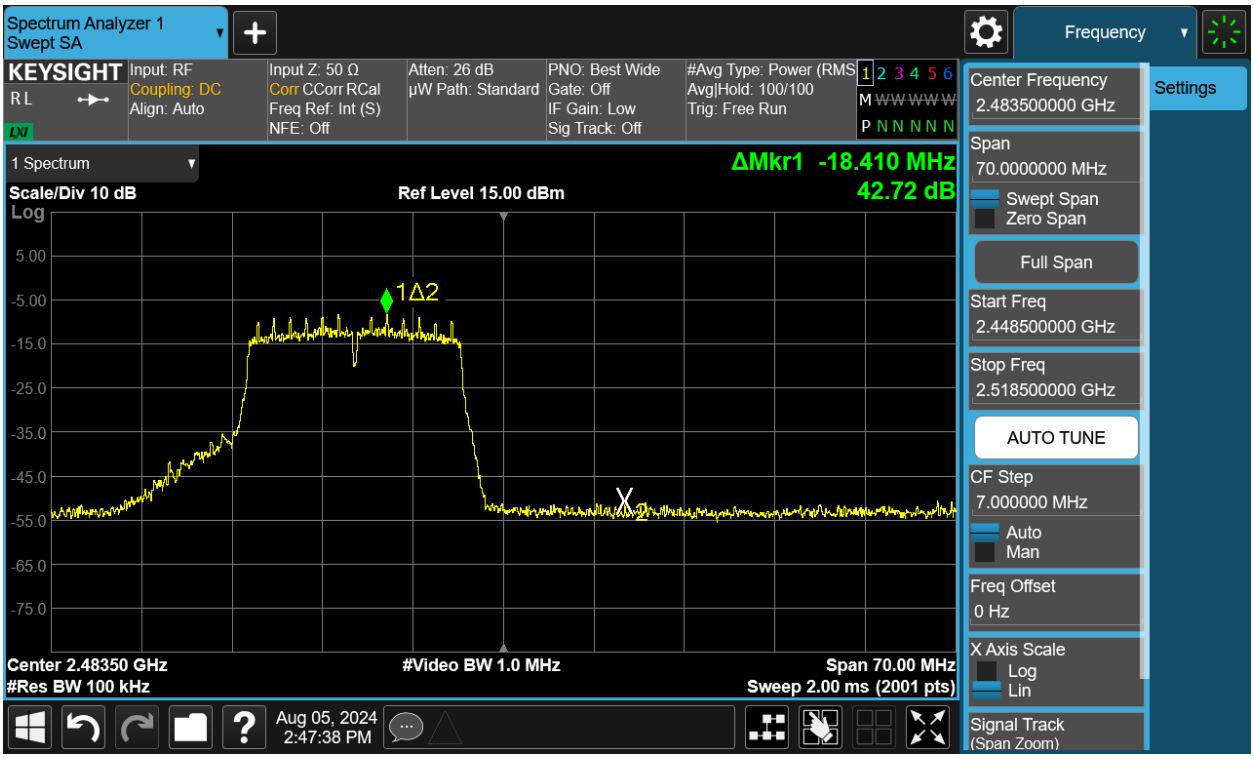
Plot 7-117. Band Edge Plot SISO ANT2 (802.11g– Ch. 1)



Plot 7-118. Band Edge Plot SISO ANT2 (802.11g – Ch. 11)

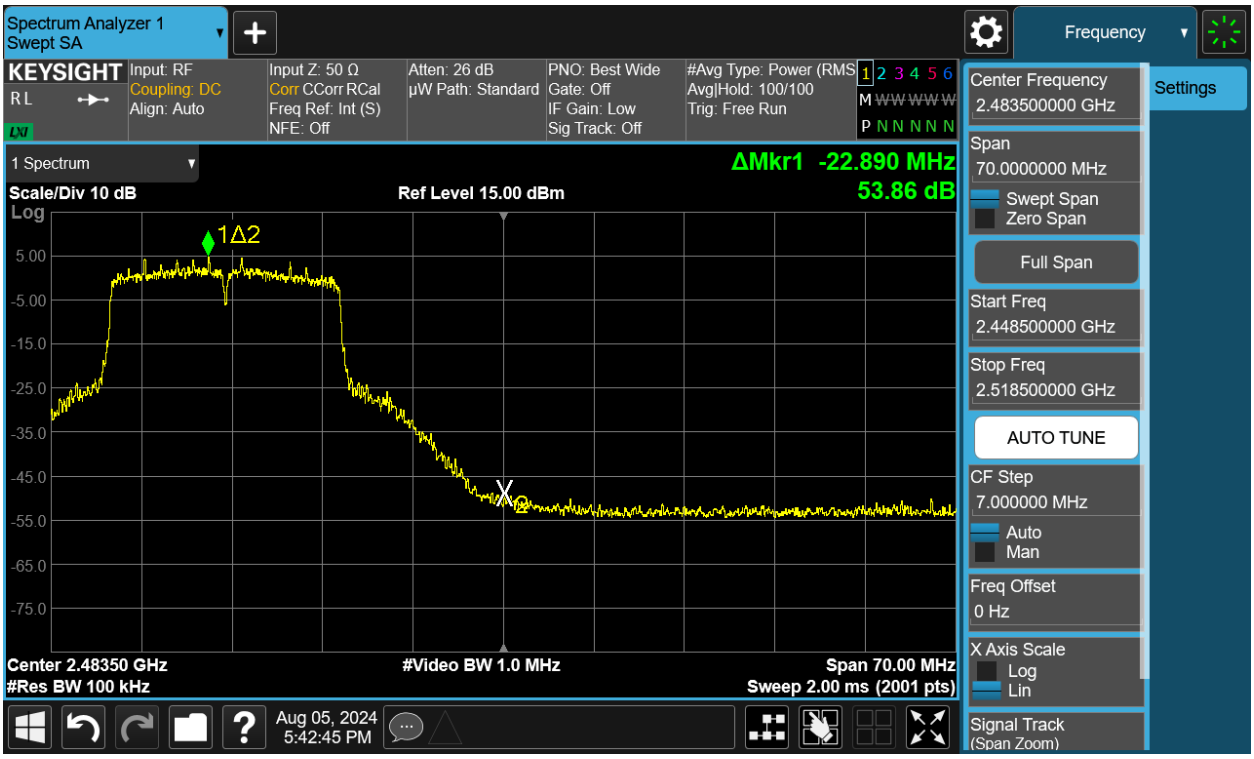


Plot 7-119. Band Edge Plot SISO ANT2 (802.11g– Ch. 12)

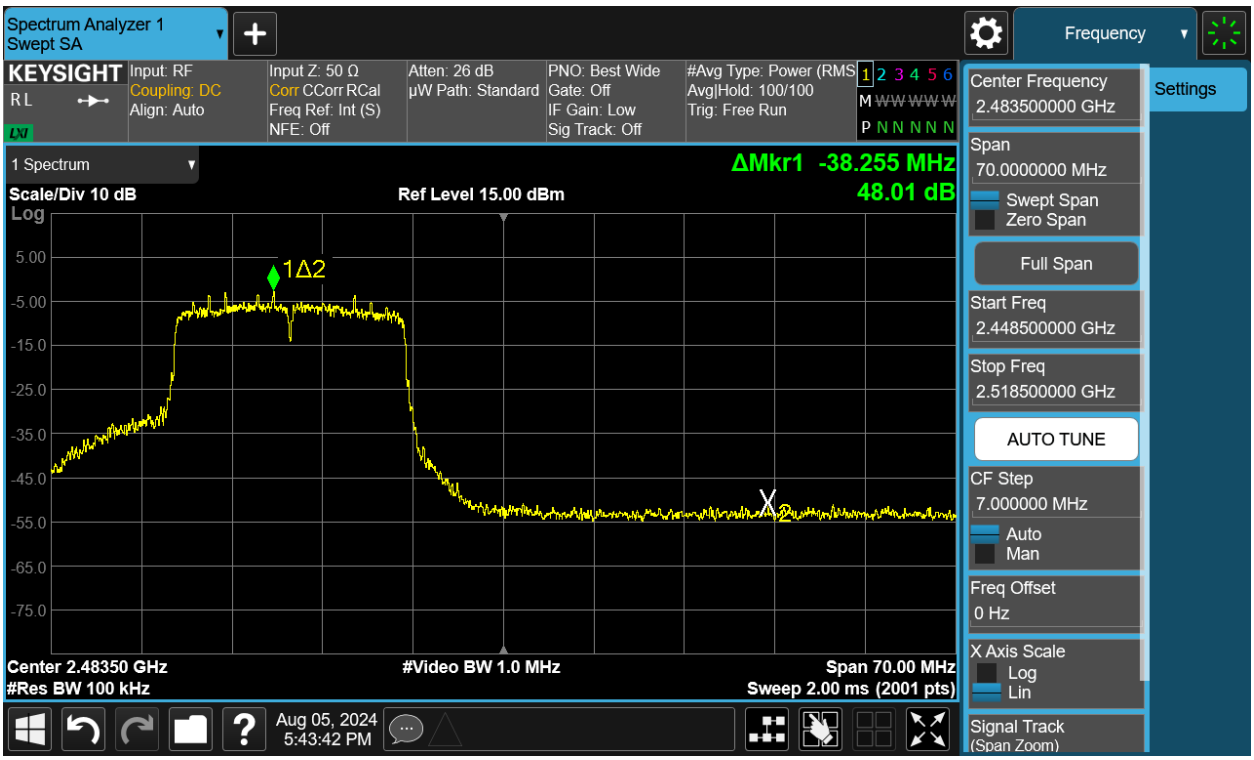


Plot 7-120. Band Edge Plot SISO ANT2 (802.11g – Ch. 13)

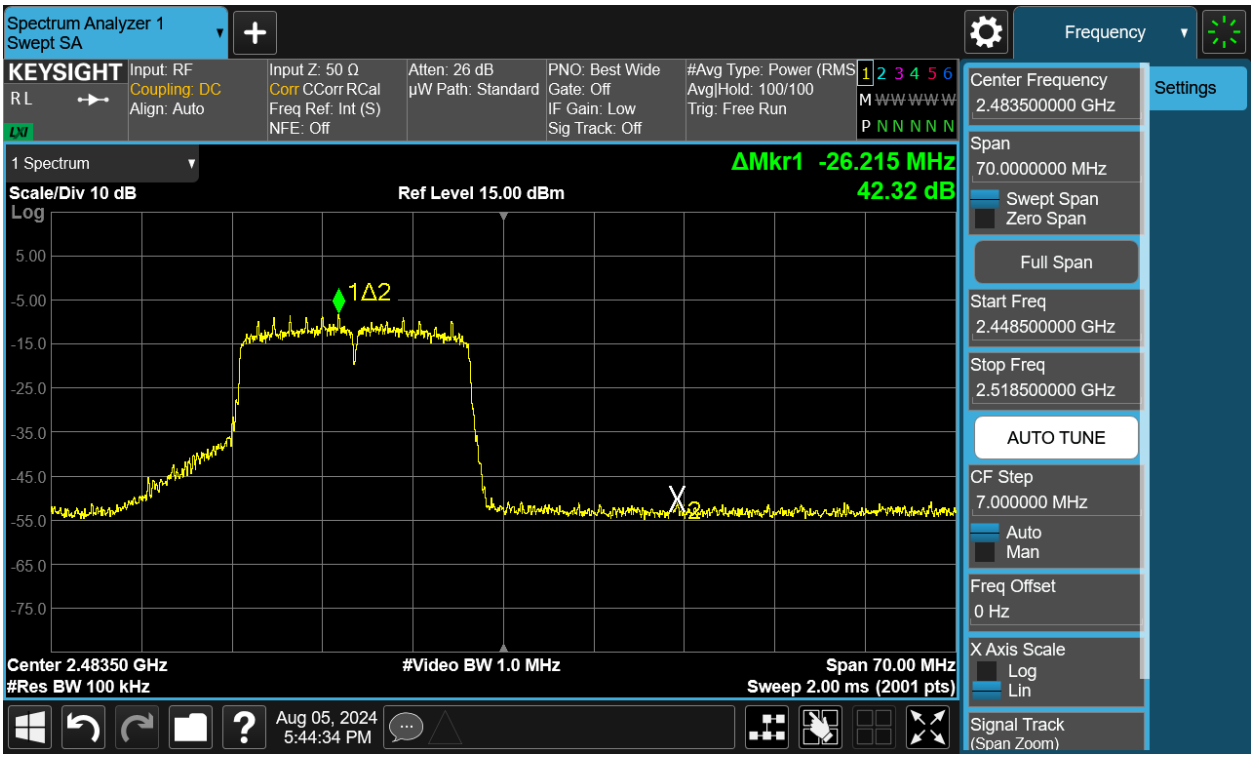
Plot 7-121. Band Edge Plot SISO ANT2 (802.11n (2.4GHz) – Ch. 1)



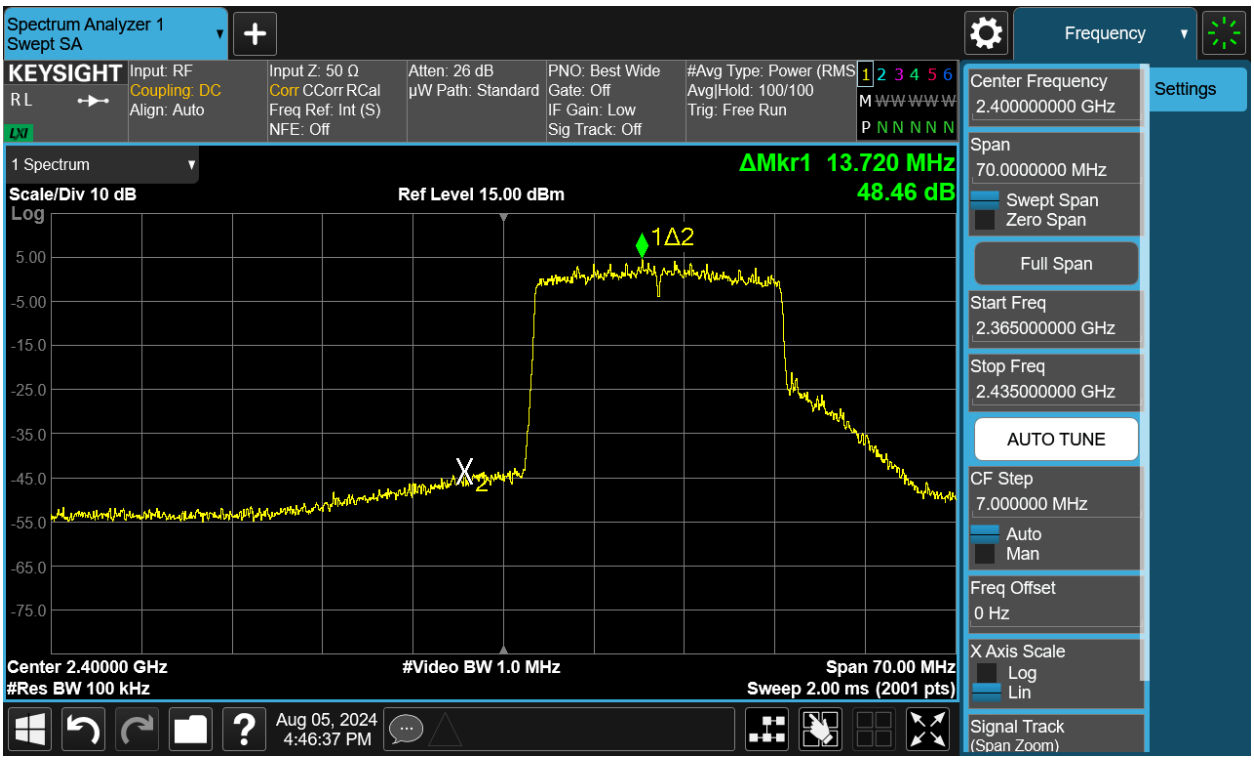
Plot 7-122. Band Edge Plot SISO ANT2 (802.11n (2.4GHz) – Ch. 11)



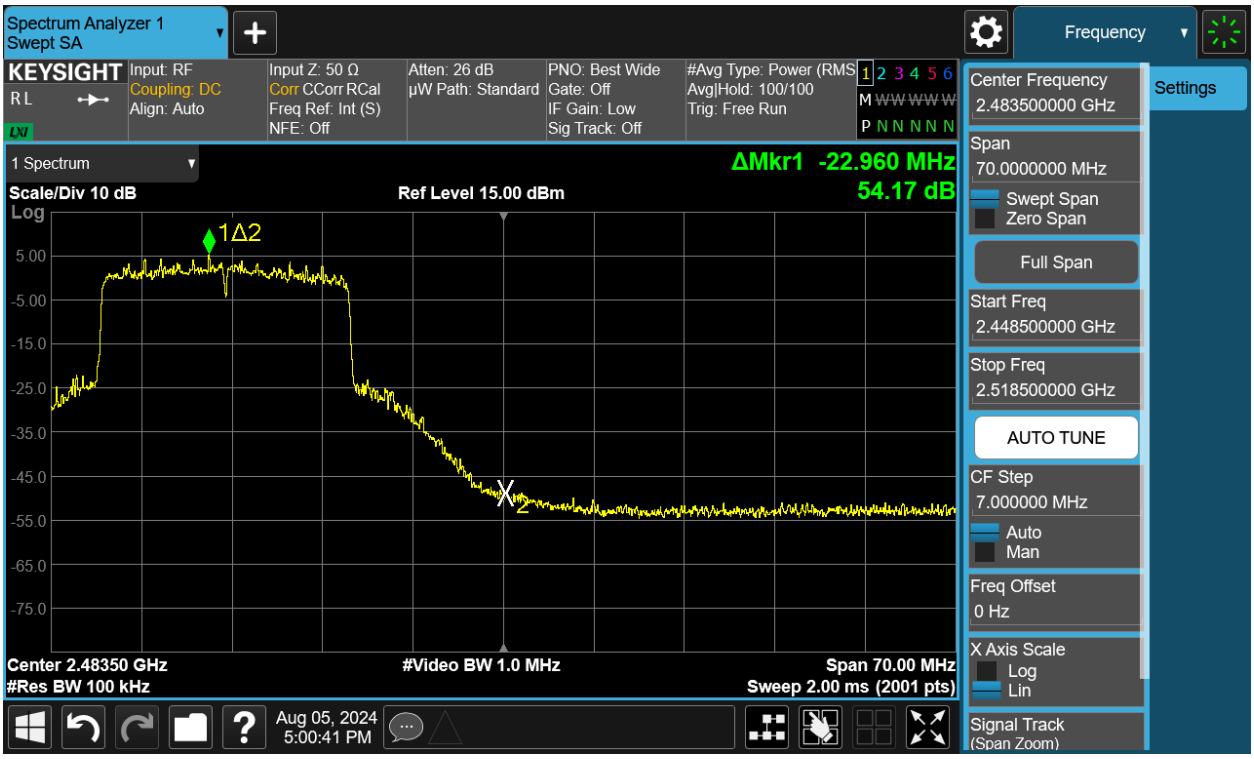
Plot 7-123. Band Edge Plot SISO ANT2 (802.11n (2.4GHz) – Ch. 12)



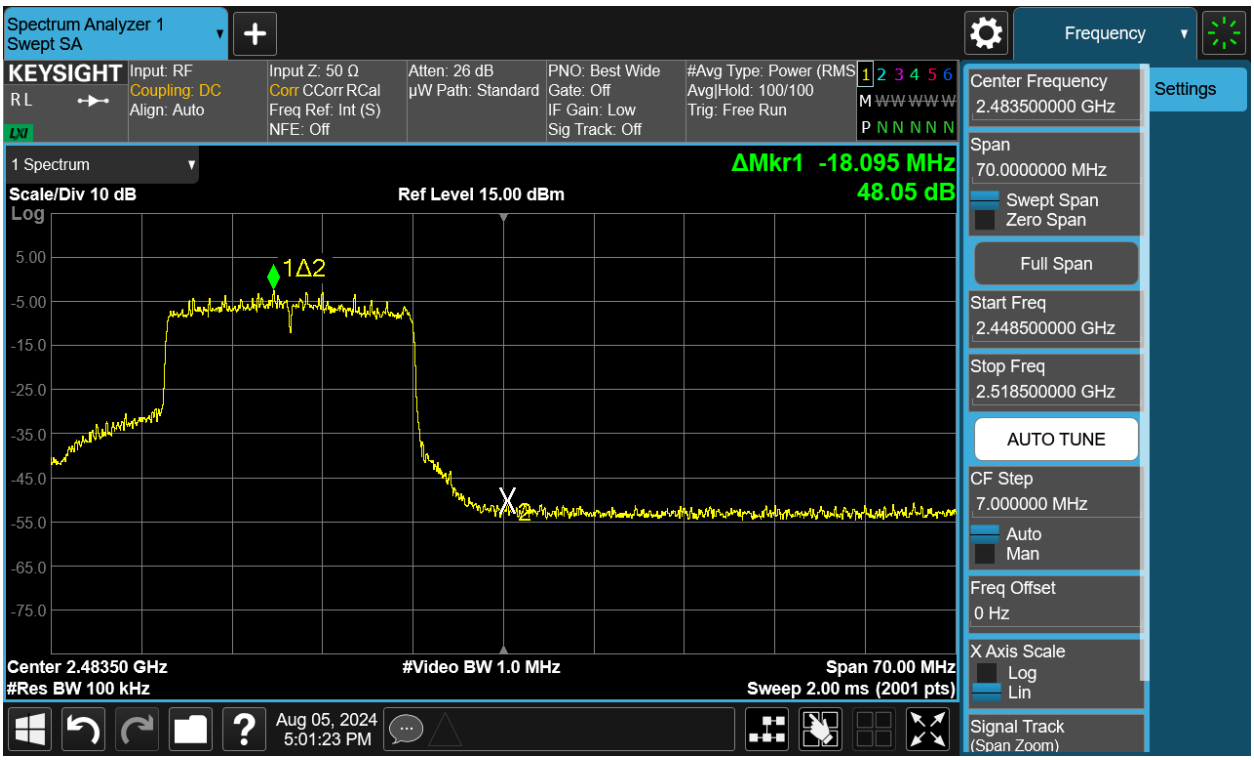
Plot 7-124. Band Edge Plot SISO ANT2 (802.11n (2.4GHz) – Ch. 13)



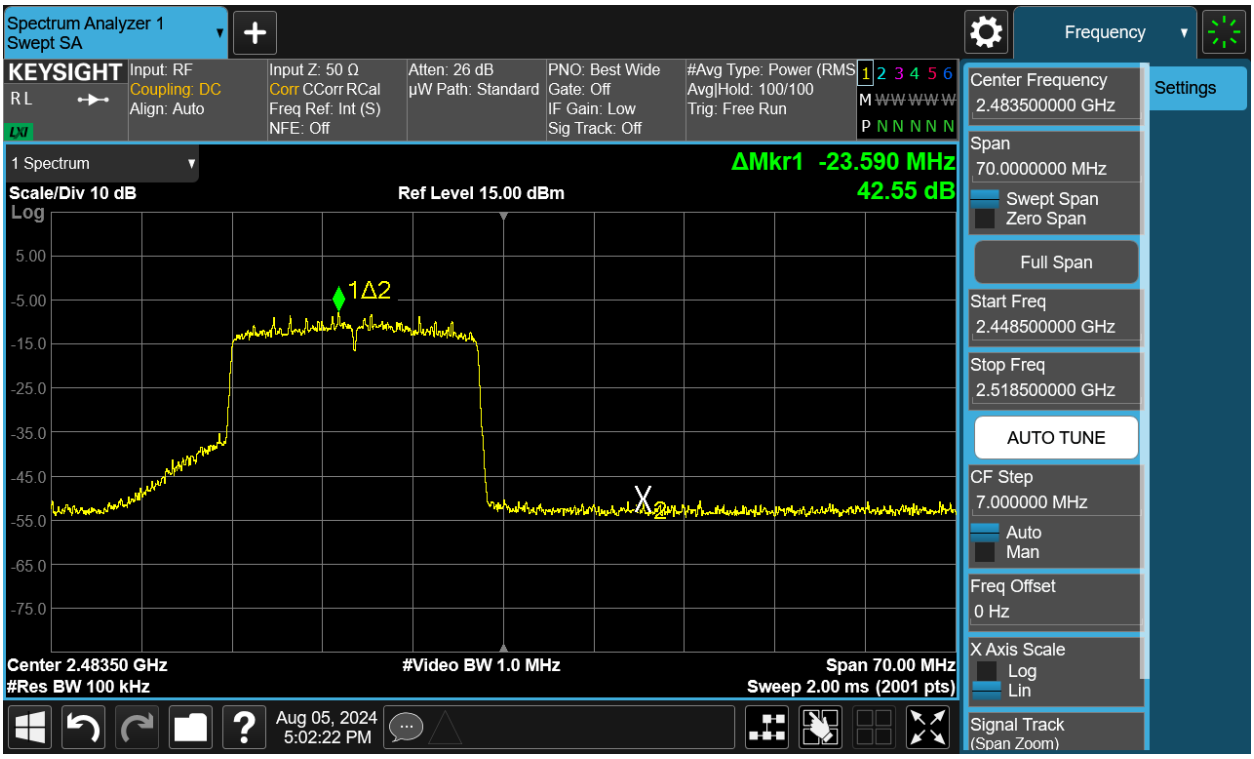
Plot 7-125. Band Edge Plot SISO ANT2 (802.11be (2.4GHz) – Ch. 1)



Plot 7-126. Band Edge Plot SISO ANT2 (802.11be (2.4GHz) – Ch. 11)

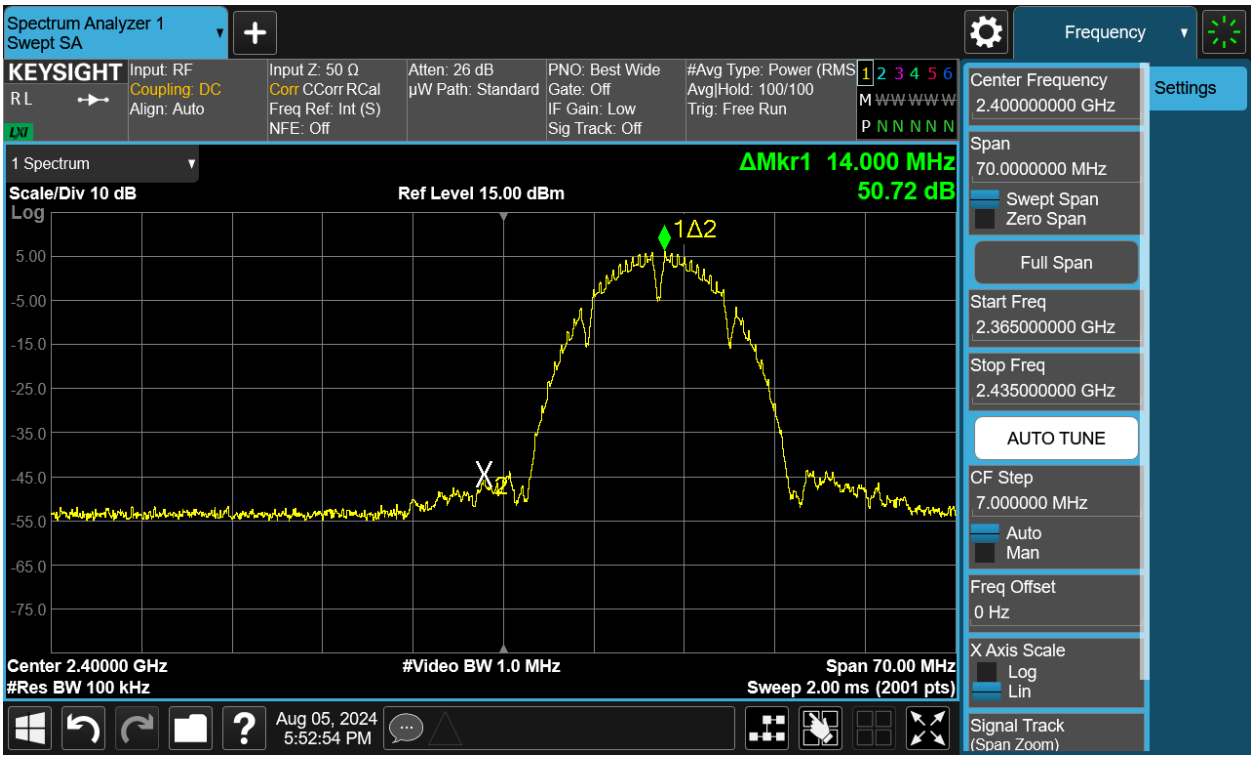


Plot 7-127. Band Edge Plot SISO ANT2 (802.11be (2.4GHz) – Ch. 12)

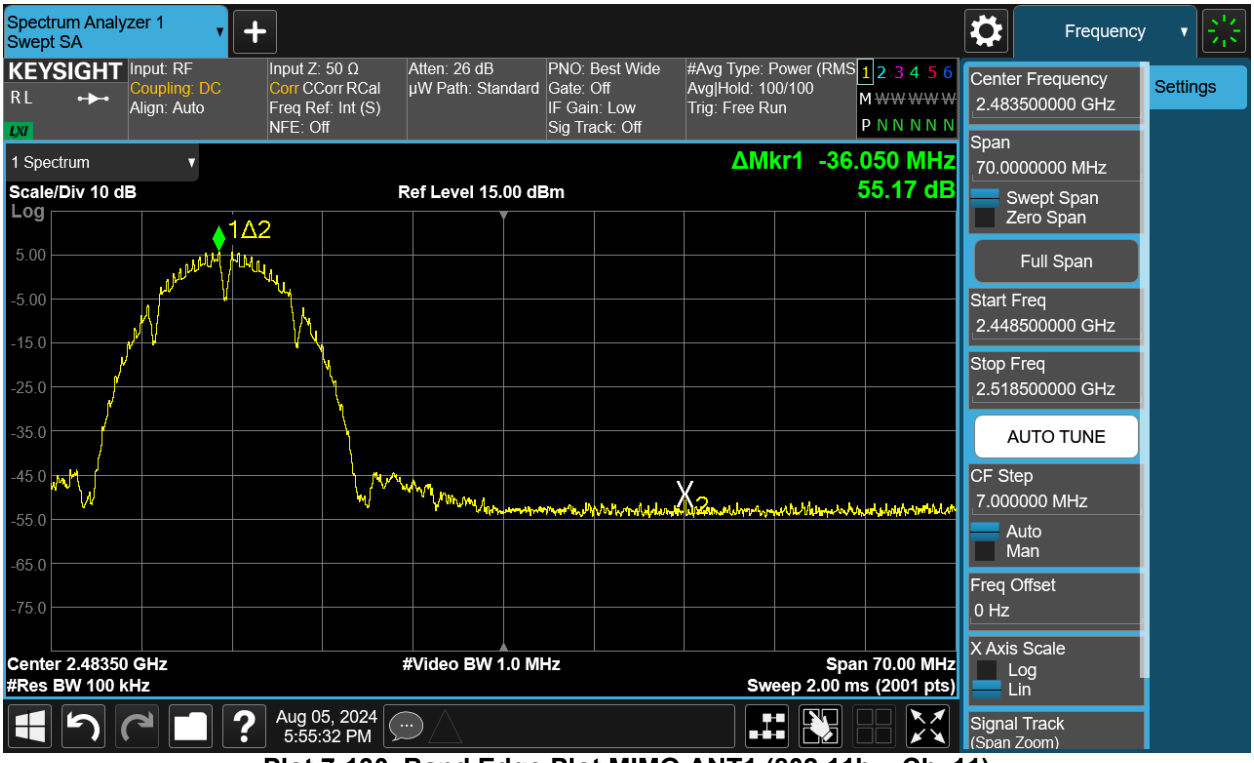


Plot 7-128. Band Edge Plot SISO ANT2 (802.11be (2.4GHz) – Ch. 13)

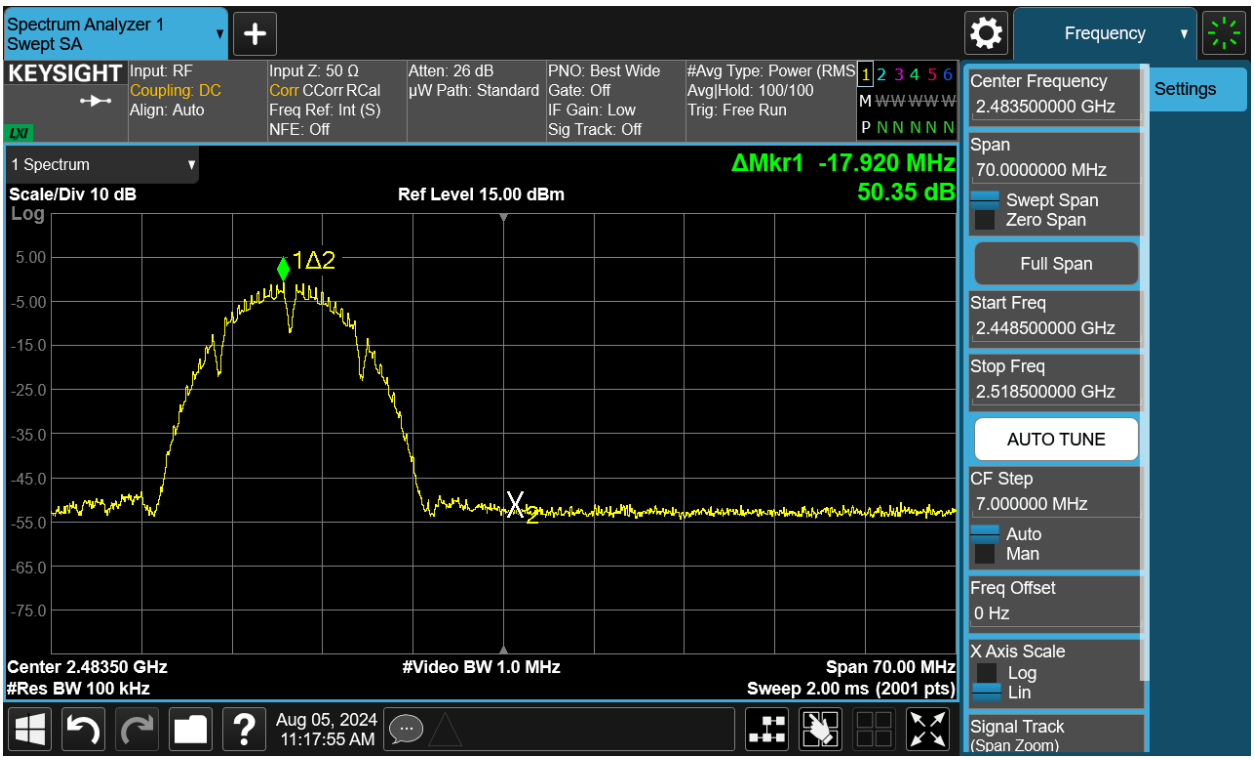
7.5.3 MIMO Conducted Band Edge Emissions



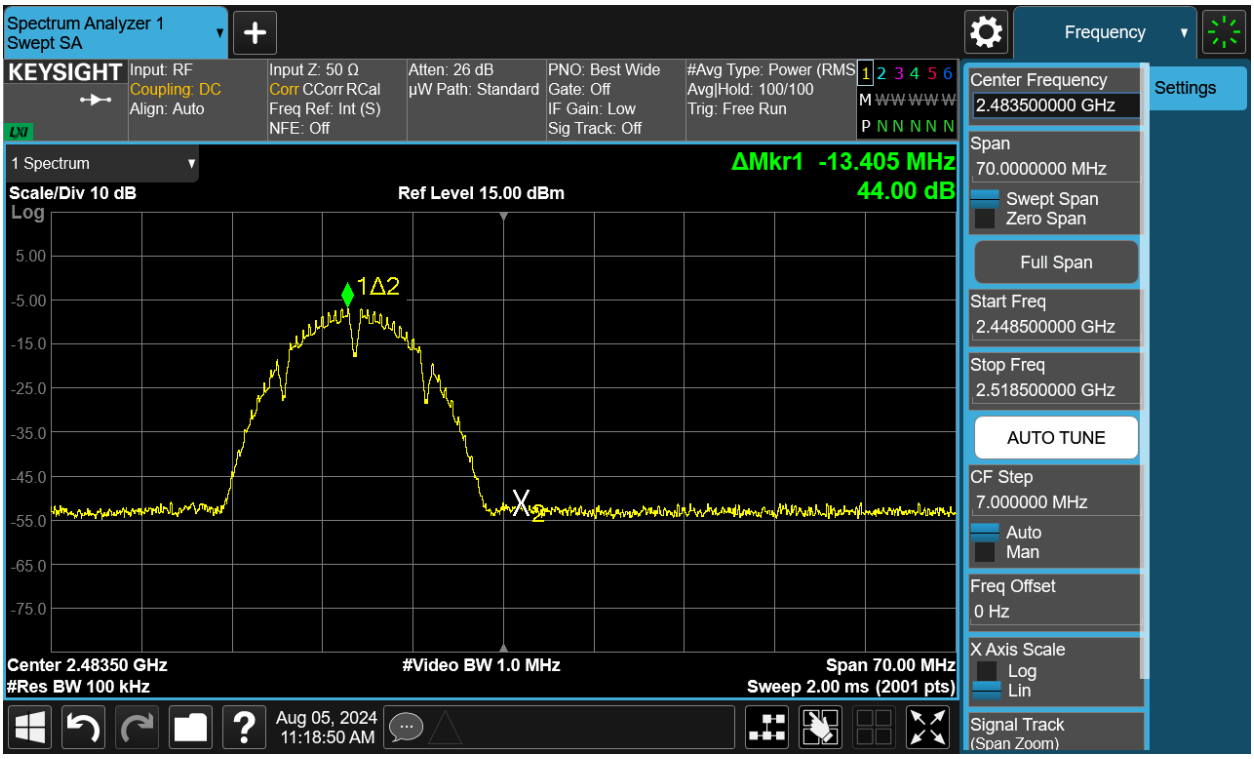
Plot 7-129. Band Edge Plot MIMO ANT1 (802.11b – Ch. 1)



Plot 7-130. Band Edge Plot MIMO ANT1 (802.11b – Ch. 11)



Plot 7-131. Band Edge Plot MIMO ANT1 (802.11b – Ch. 12)



Plot 7-132. Band Edge Plot MIMO ANT1 (802.11b – Ch. 13)