## 6.5 Maximum Power Spectral Density – 802.11a/n/ac

**§15.407(a.1)(2.5)**

**Test Overview and Limit**

The spectrum analyzer was connected to the antenna terminal while the EUT was operating at its maximum power control level, as defined in KDB 789033 D02 v01, and at the appropriate frequencies. Method SA-1, as defined in KDB 789033 D02 v01, was used to measure the power spectral density.

***In the 5.15 – 5.25GHz, 5.25 – 5.35GHz, 5.47 – 5.725GHz bands, the maximum permissible power spectral density is 11dBm/MHz.***

***In the 5.725 – 5.850GHz band, the maximum permissible power spectral density is 30dBm/500kHz.***

**Test Procedure Used**

KDB 789033 D02 v01 – Section F
KDB 662911 v02r01 – Section E)2) Measure-and-Sum Technique

**Test Settings**

1. Analyzer was set to the center frequency of the UNII channel under investigation
2. Span was set to encompass the entire emission bandwidth of the signal
3. RBW = 1MHz
4. VBW = 3MHz
5. Number of sweep points ≥ 2 x (span/RBW)
6. Sweep time = auto
7. Detector = power averaging (RMS)
8. Trigger was set to free run
9. Trace was averaged over 100 sweeps
10. The peak search function of the spectrum analyzer was used to find the peak of the spectrum.

**Test Setup**

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

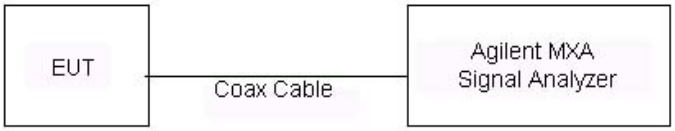



**Figure 6-4. Test Instrument & Measurement Setup**

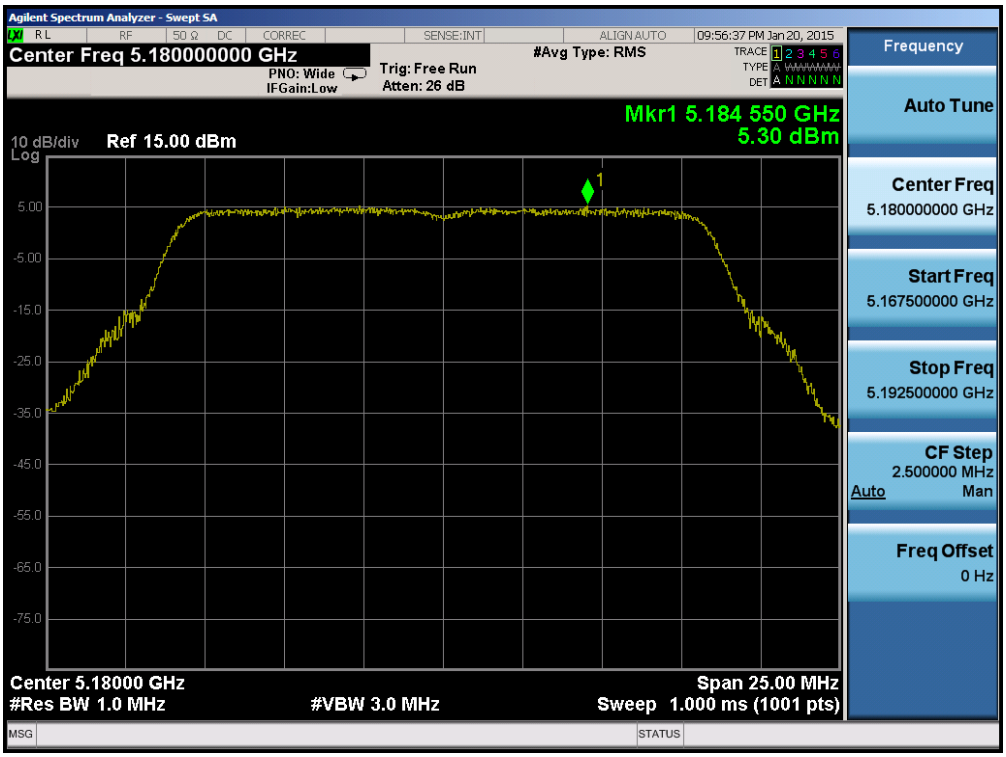
**Test Notes**

None

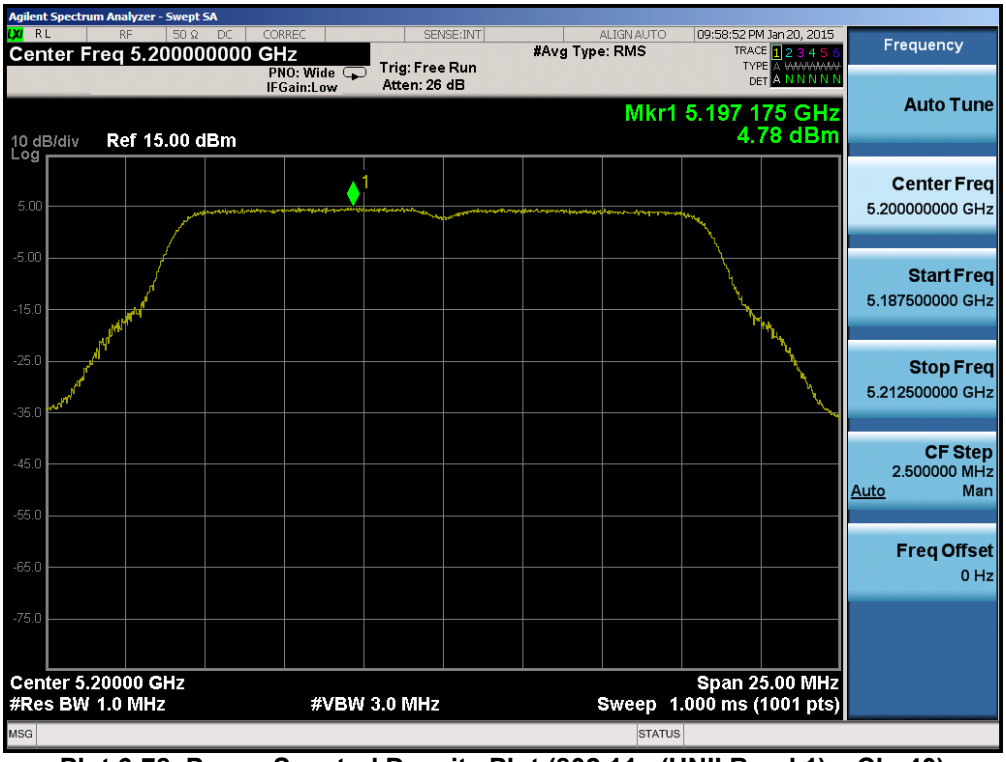
## Antenna-1 Power Spectral Density Measurements

| | Frequency [MHz] | Channel No. | 802.11 Mode | Data Rate [Mbps] | Measured Power Density [dBm] | Max Permissible Power Density [dBm/MHz] | Margin [dB] | Pass / Fail |
|---|---|---|---|---|---|---|---|---|
| Band 1 | 5180 | 36 | a | 6 | 5.30 | 11.0 | -5.70 | Pass |
| | 5200 | 40 | a | 6 | 4.78 | 11.0 | -6.22 | Pass |
| | 5240 | 48 | a | 6 | 5.04 | 11.0 | -5.96 | Pass |
| | 5180 | 36 | n (20MHz) | 6.5/7.2 (MCS0) | 3.39 | 11.0 | -7.61 | Pass |
| | 5200 | 40 | n (20MHz) | 6.5/7.2 (MCS0) | 3.52 | 11.0 | -7.49 | Pass |
| | 5240 | 48 | n (20MHz) | 6.5/7.2 (MCS0) | 3.73 | 11.0 | -7.27 | Pass |
| | 5190 | 38 | n (40MHz) | 13.5/15 (MCS0) | -1.30 | 11.0 | -12.30 | Pass |
| | 5230 | 46 | n (40MHz) | 13.5/15 (MCS0) | -0.46 | 11.0 | -11.46 | Pass |
| | 5210 | 42 | ac (80MHz) | 29.3/32.5 (MCS0) | -4.30 | 11.0 | -15.30 | Pass |
| Band 2A | 5260 | 52 | a | 6 | 5.29 | 11.0 | -5.72 | Pass |
| | 5280 | 56 | a | 6 | 4.84 | 11.0 | -6.16 | Pass |
| | 5320 | 64 | a | 6 | 4.22 | 11.0 | -6.78 | Pass |
| | 5260 | 52 | n (20MHz) | 6.5/7.2 (MCS0) | 3.75 | 11.0 | -7.25 | Pass |
| | 5280 | 56 | n (20MHz) | 6.5/7.2 (MCS0) | 3.72 | 11.0 | -7.28 | Pass |
| | 5320 | 64 | n (20MHz) | 6.5/7.2 (MCS0) | 2.96 | 11.0 | -8.05 | Pass |
| | 5270 | 54 | n (40MHz) | 13.5/15 (MCS0) | -0.21 | 11.0 | -11.21 | Pass |
| | 5310 | 62 | n (40MHz) | 13.5/15 (MCS0) | -0.88 | 11.0 | -11.88 | Pass |
| | 5290 | 58 | ac (80MHz) | 29.3/32.5 (MCS0) | -3.87 | 11.0 | -14.87 | Pass |
| Band 2C | 5500 | 100 | a | 6 | 4.41 | 11.0 | -6.59 | Pass |
| | 5580 | 116 | a | 6 | 3.91 | 11.0 | -7.09 | Pass |
| | 5720 | 144 | a | 6 | 4.23 | 11.0 | -6.77 | Pass |
| | 5500 | 100 | n (20MHz) | 6.5/7.2 (MCS0) | 3.23 | 11.0 | -7.77 | Pass |
| | 5580 | 116 | n (20MHz) | 6.5/7.2 (MCS0) | 2.80 | 11.0 | -8.20 | Pass |
| | 5720 | 144 | n (20MHz) | 6.5/7.2 (MCS0) | 2.57 | 11.0 | -8.43 | Pass |
| | 5510 | 102 | n (40MHz) | 13.5/15 (MCS0) | -0.68 | 11.0 | -11.68 | Pass |
| | 5550 | 110 | n (40MHz) | 13.5/15 (MCS0) | -0.39 | 11.0 | -11.39 | Pass |
| | 5710 | 142 | n (40MHz) | 13.5/15 (MCS0) | -2.27 | 11.0 | -13.27 | Pass |
| | 5530 | 106 | ac (80MHz) | 29.3/32.5 (MCS0) | -4.47 | 11.0 | -15.47 | Pass |
| | 5610 | 122 | ac (80MHz) | 29.3/32.5 (MCS0) | -5.43 | 11.0 | -16.43 | Pass |
| | 5690 | 138 | ac (80MHz) | 29.3/32.5 (MCS0) | -6.65 | 11.0 | -17.65 | Pass |

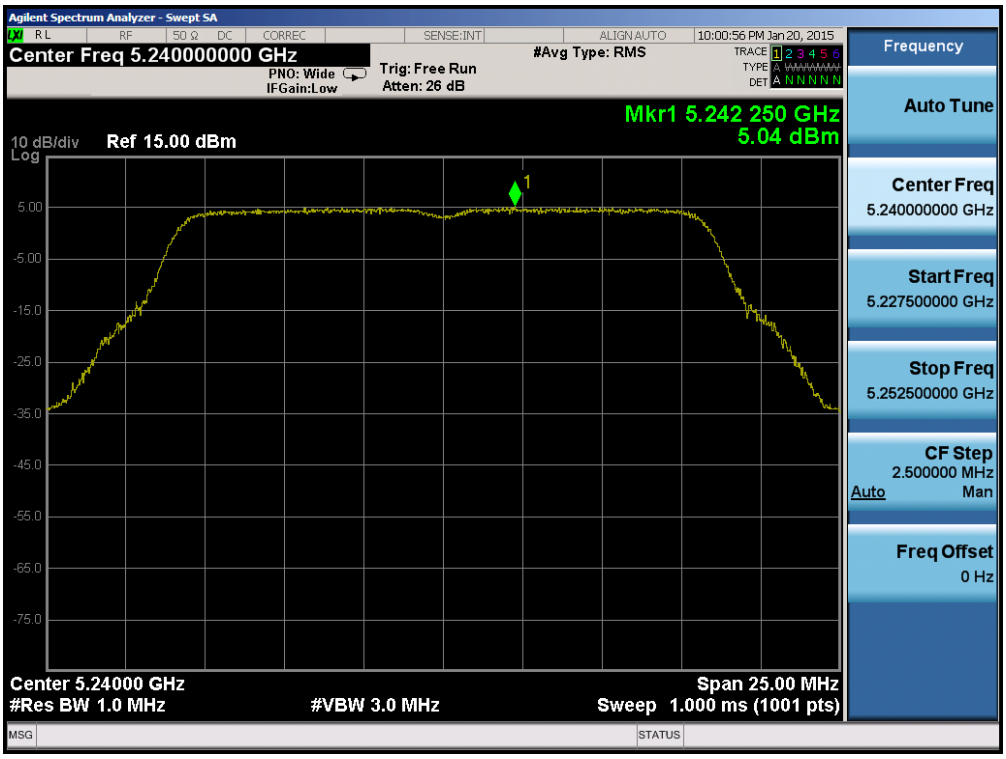
**Table 6-17. Bands 1, 2A, 2C Conducted Power Spectral Density Measurements**



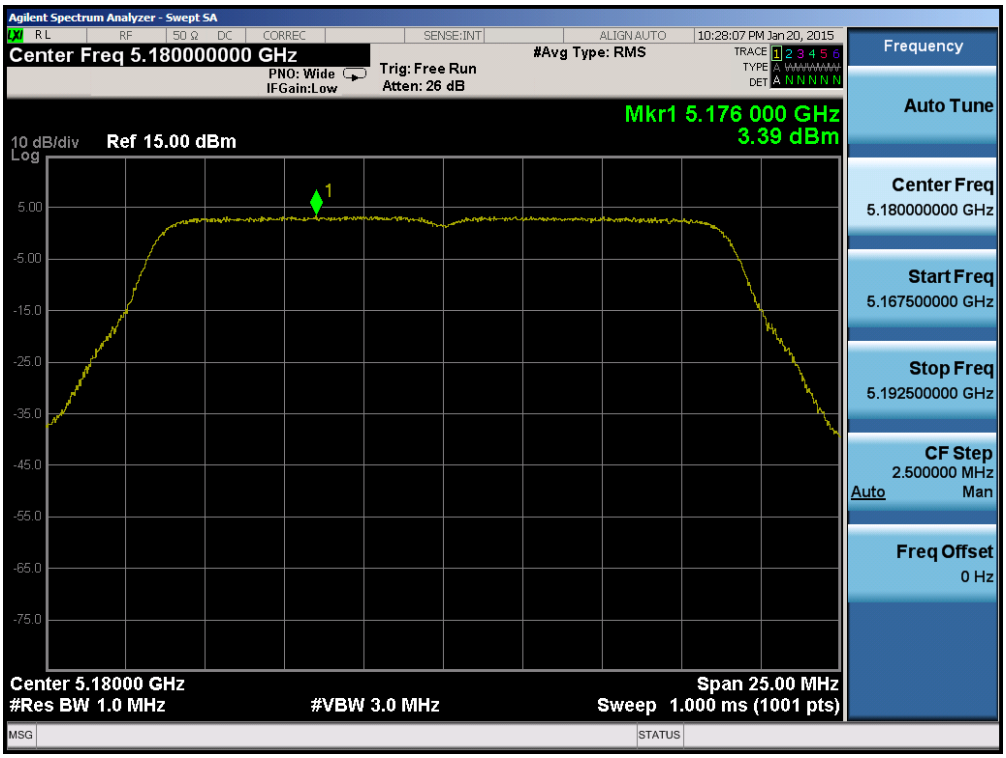

**Plot 6-77. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 36)**



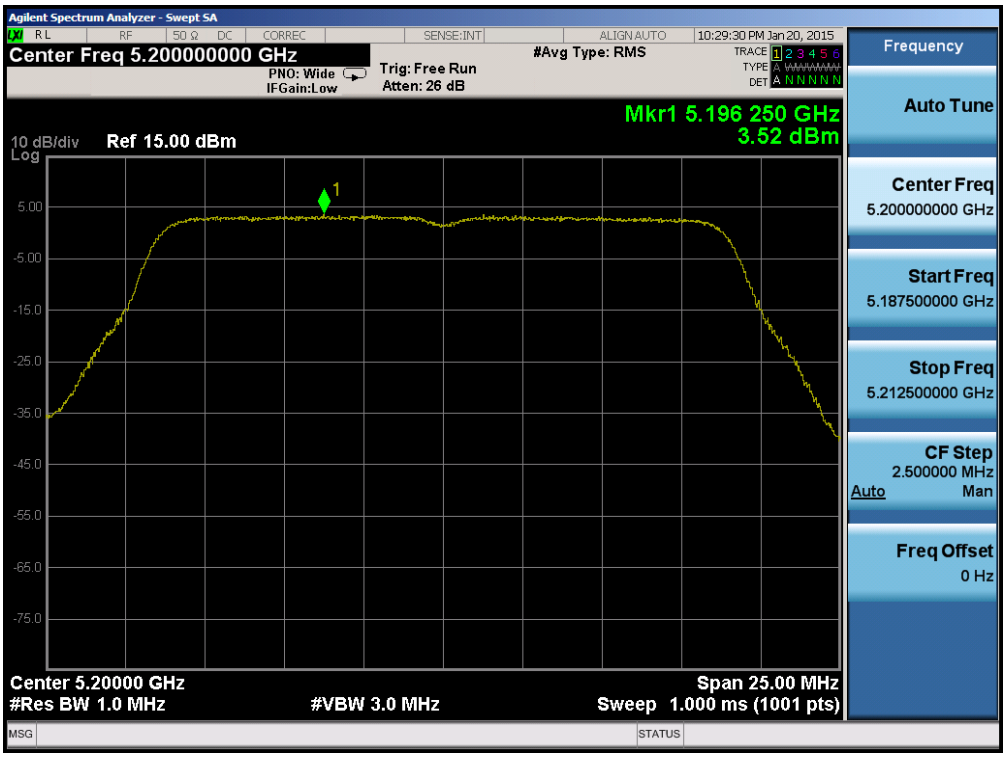

**Plot 6-78. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 40)**



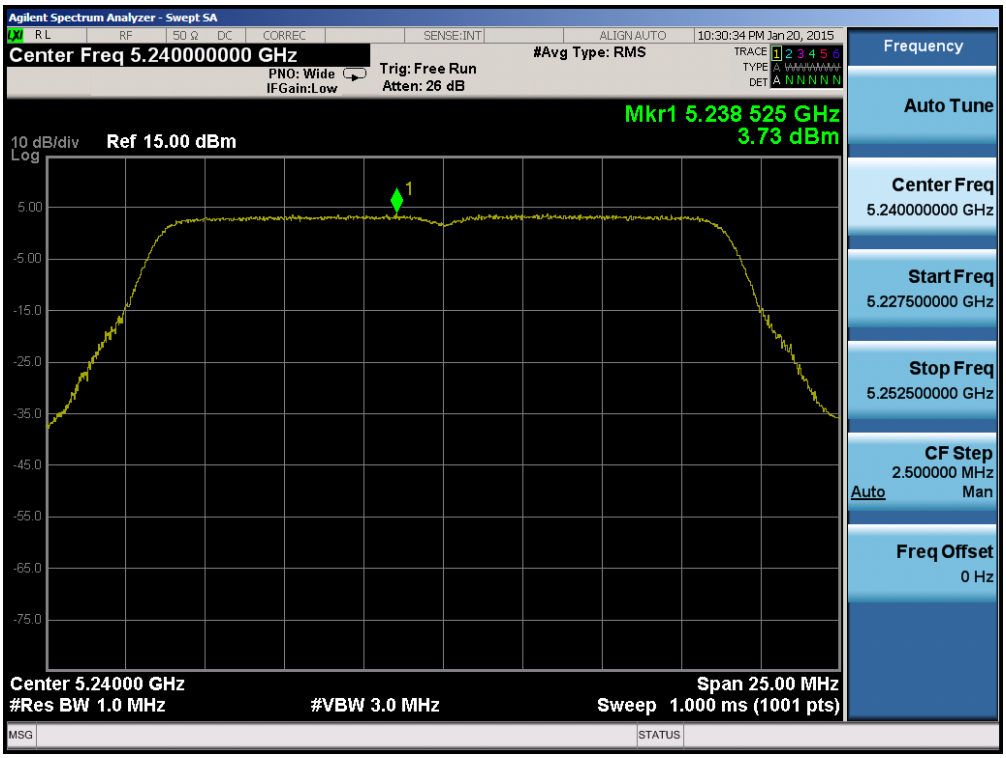

**Plot 6-79. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 48)**



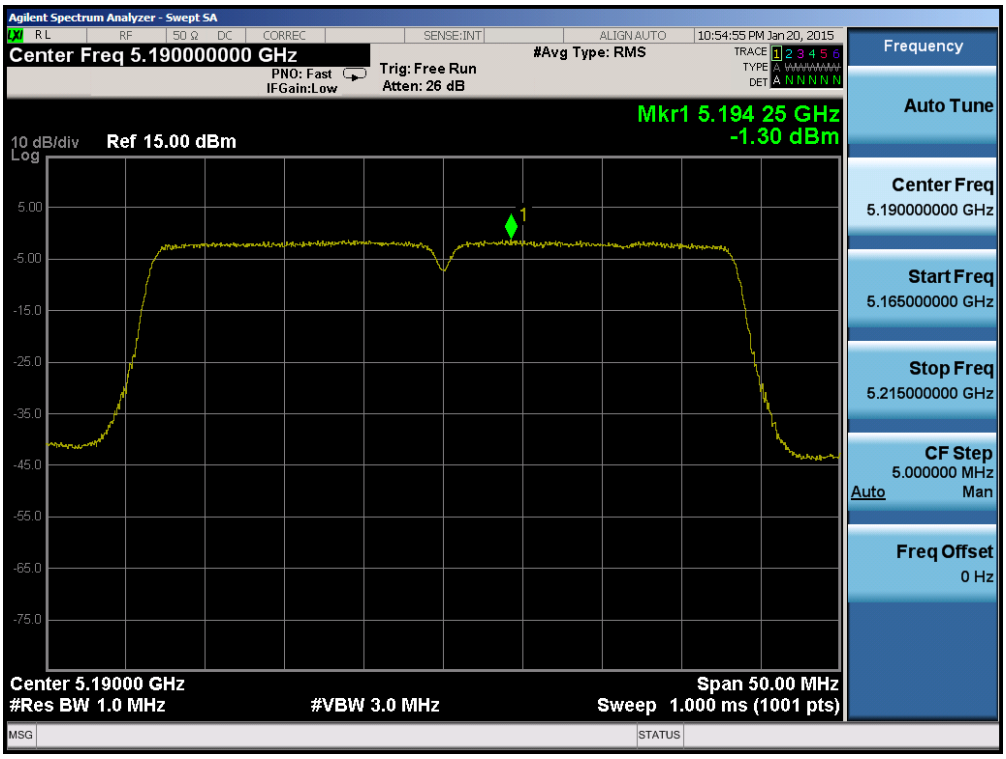

**Plot 6-80. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 36)**



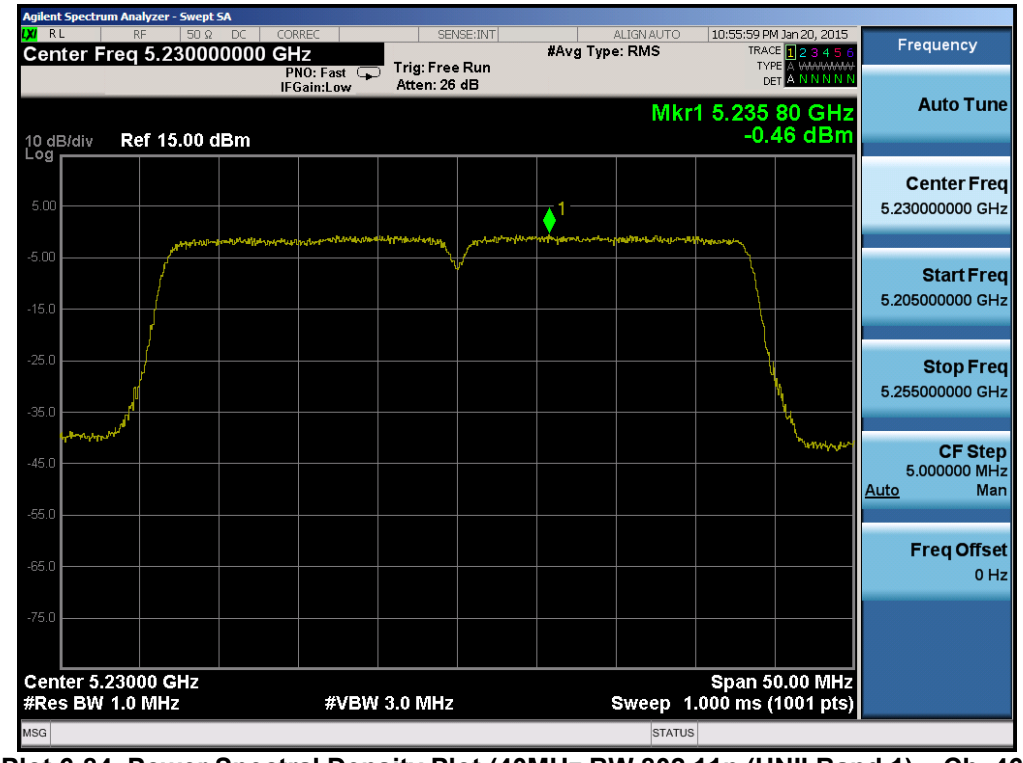

**Plot 6-81. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 40)**



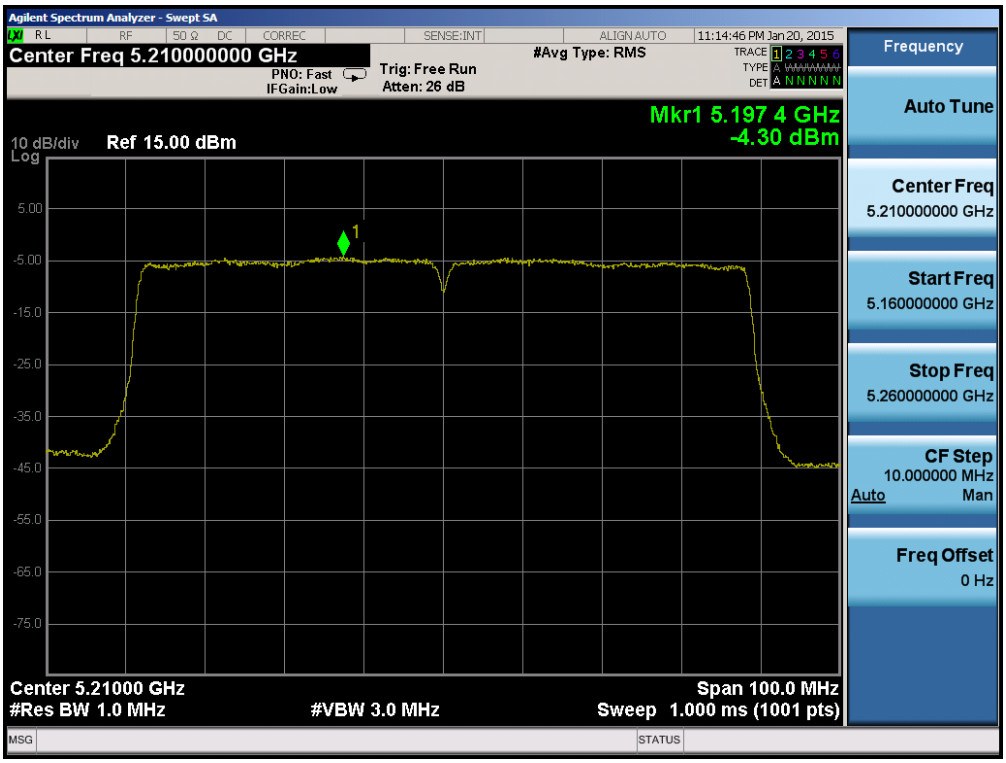

**Plot 6-82. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 48)**




**Plot 6-83. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 38)**

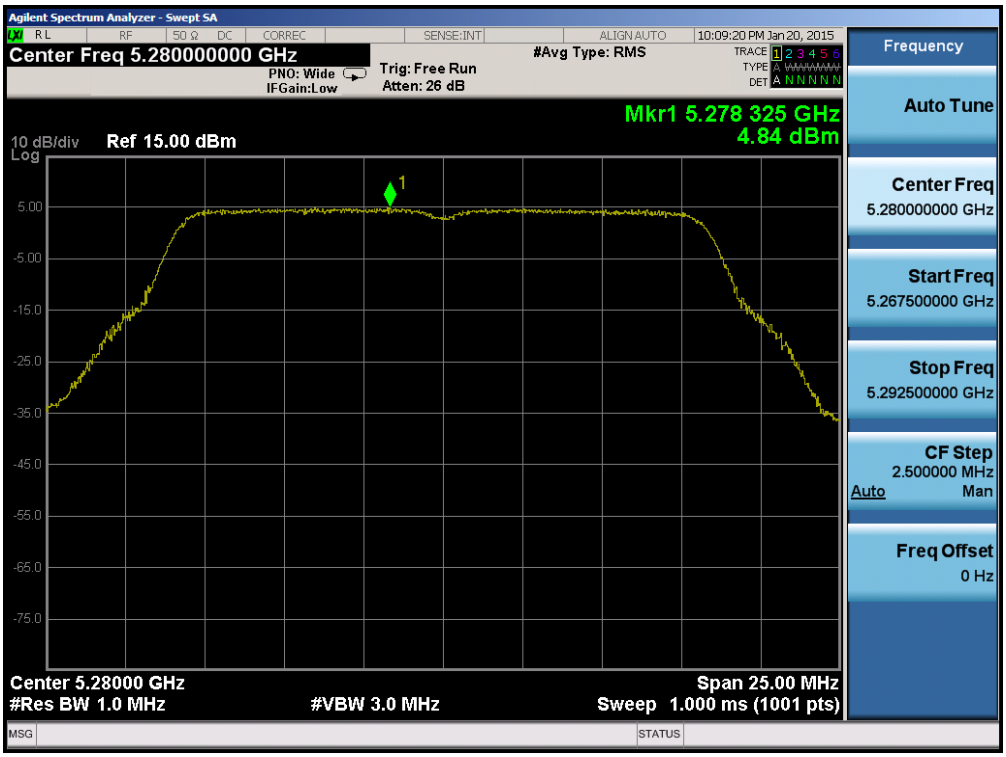



**Plot 6-84. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 46)**

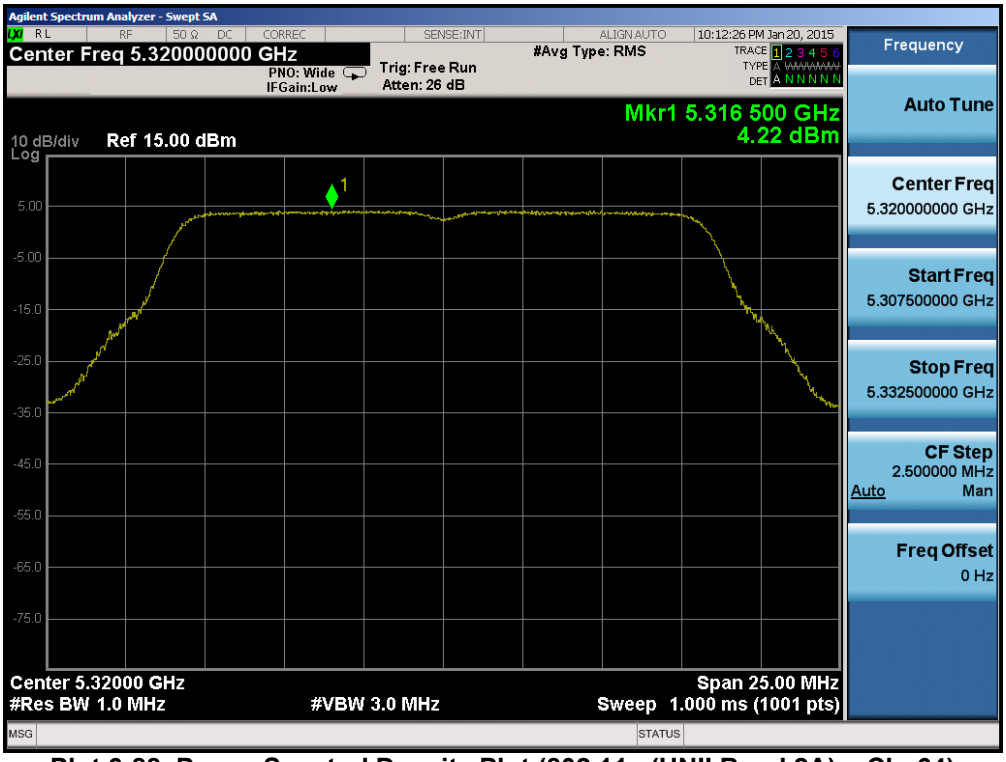



**Plot 6-85. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)**

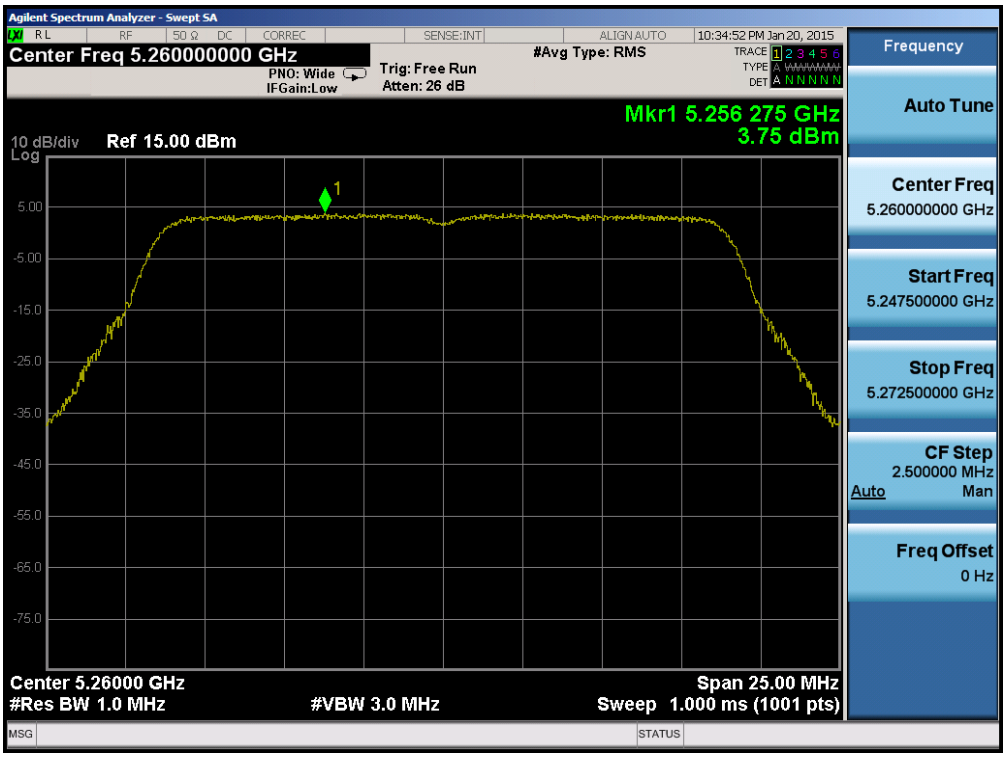

**Plot 6-86. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 52)**



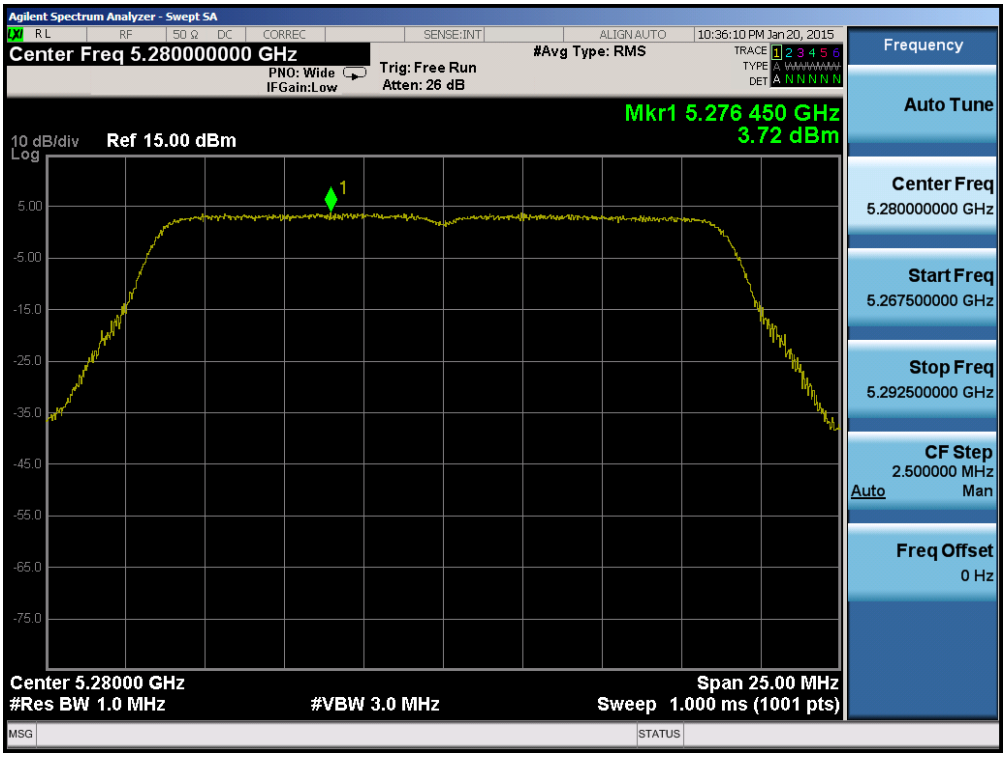

**Plot 6-87. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 56)**



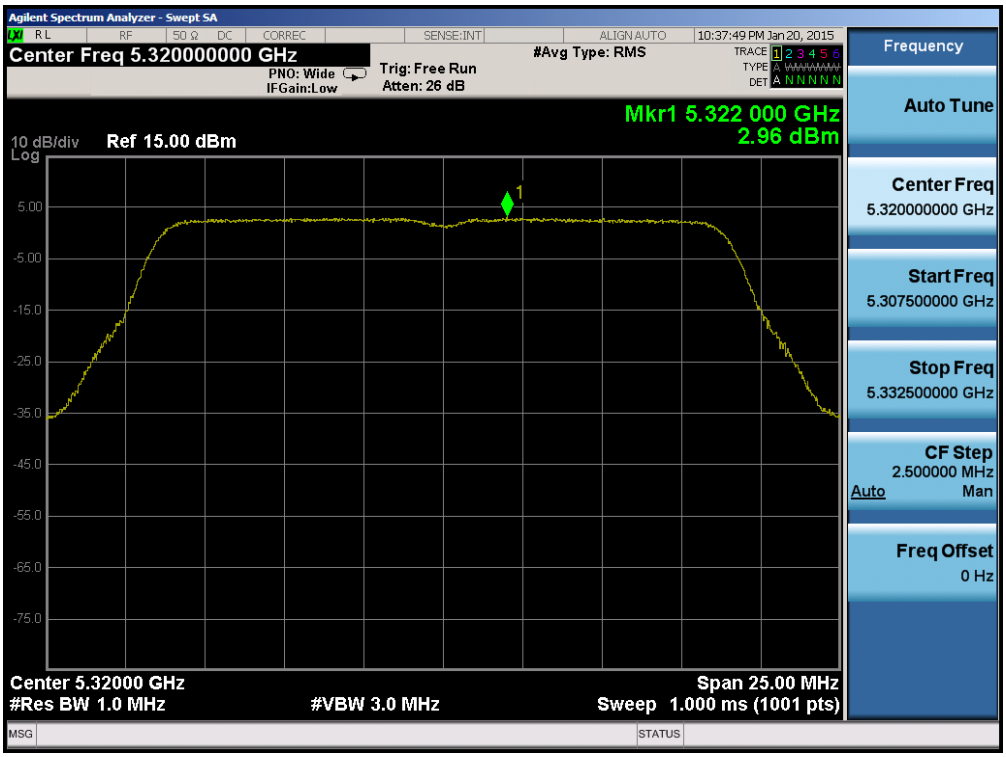

**Plot 6-88. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 64)**



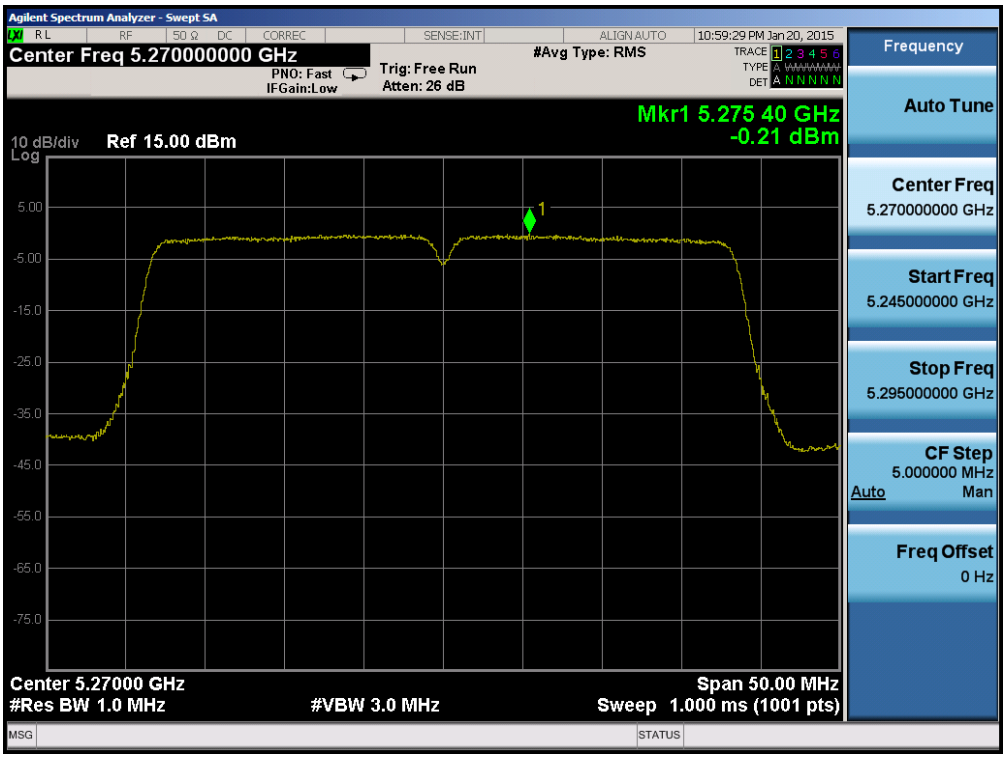

**Plot 6-89. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)**



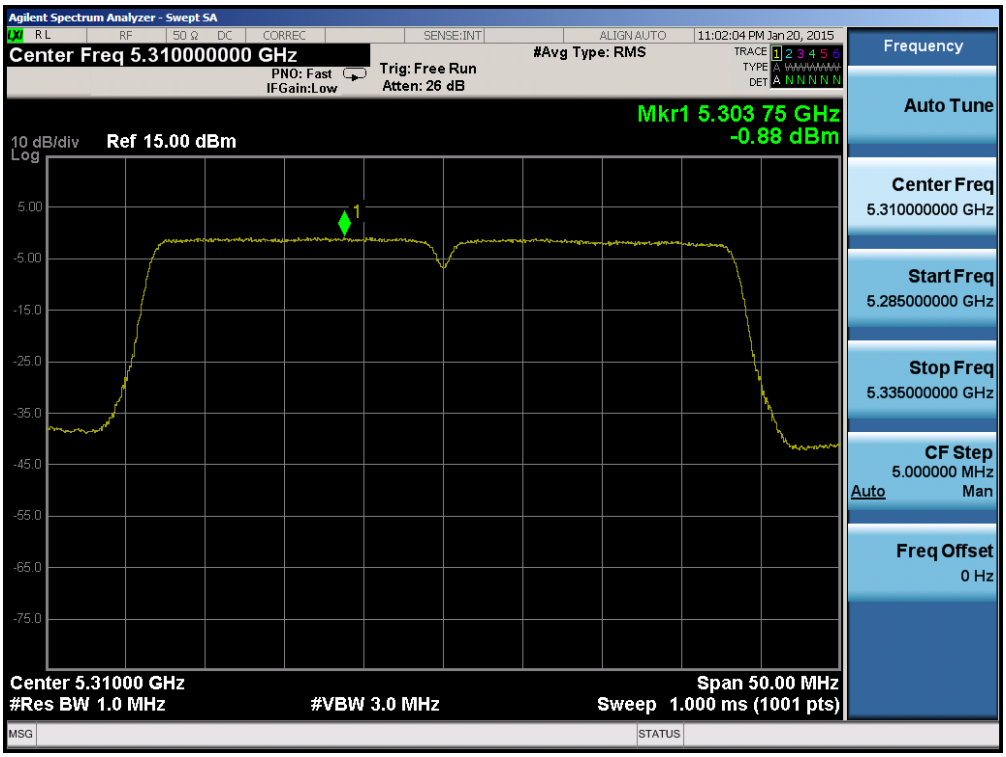

**Plot 6-90. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)**



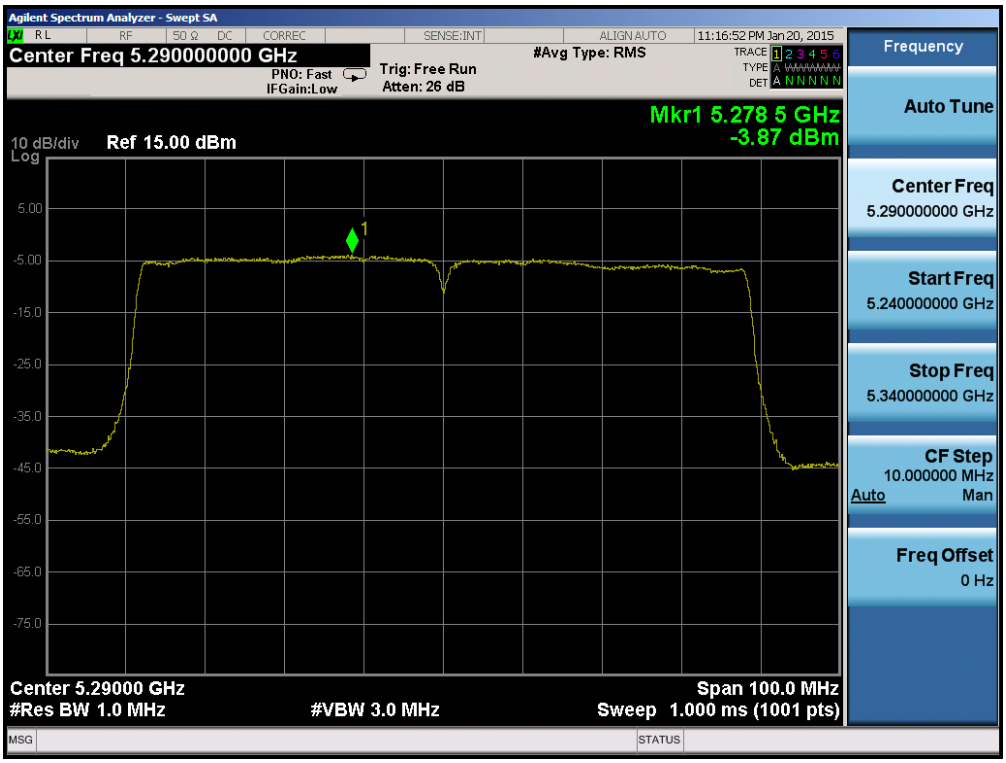

**Plot 6-91. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)**



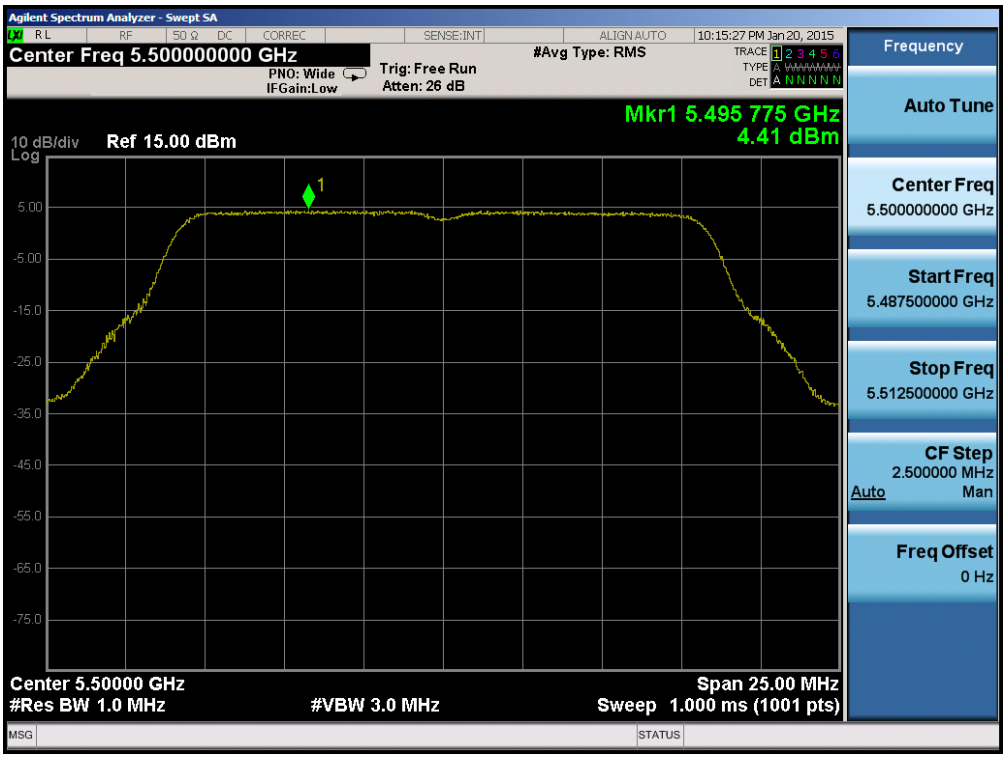

**Plot 6-92. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)**



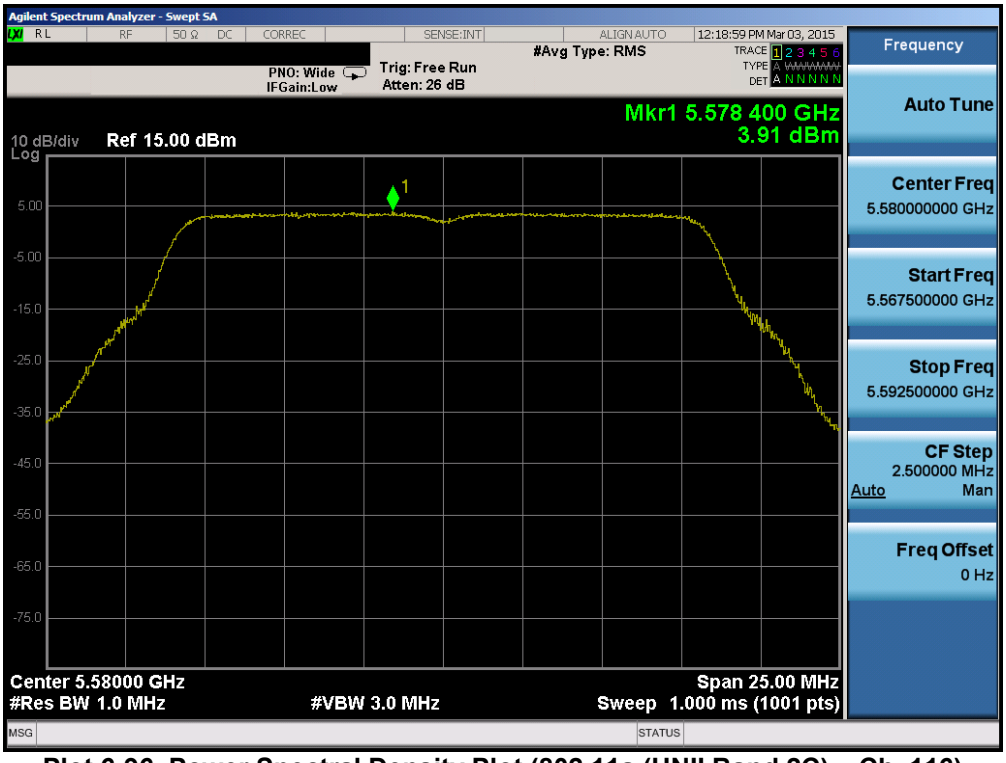

**Plot 6-93. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)**



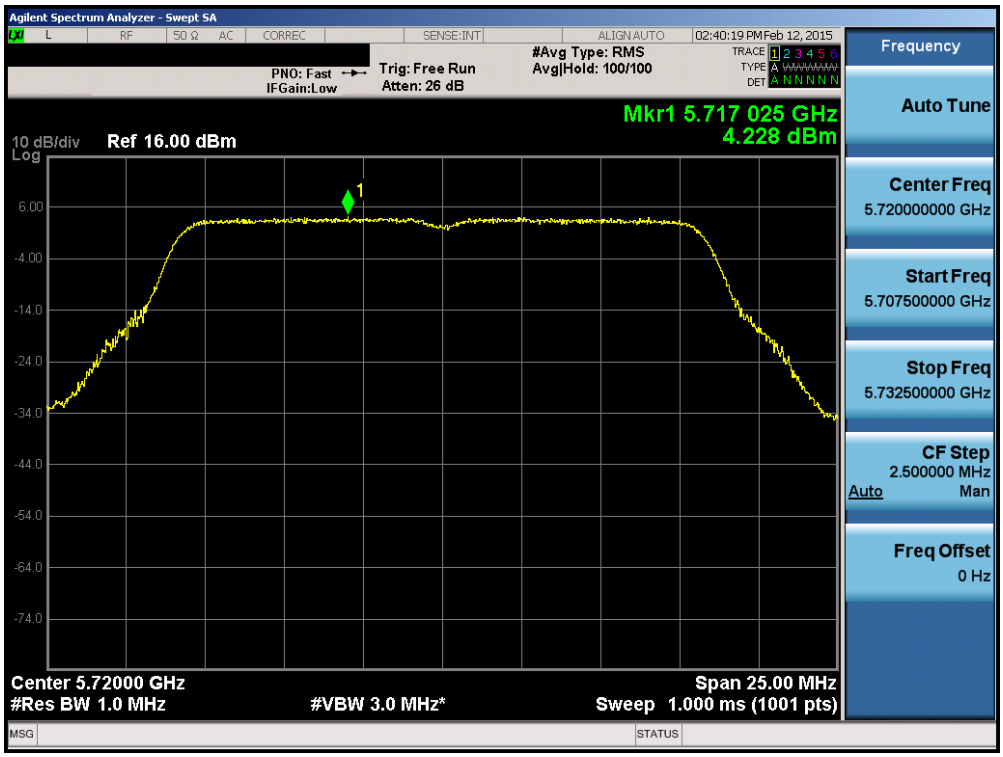

**Plot 6-94. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)**



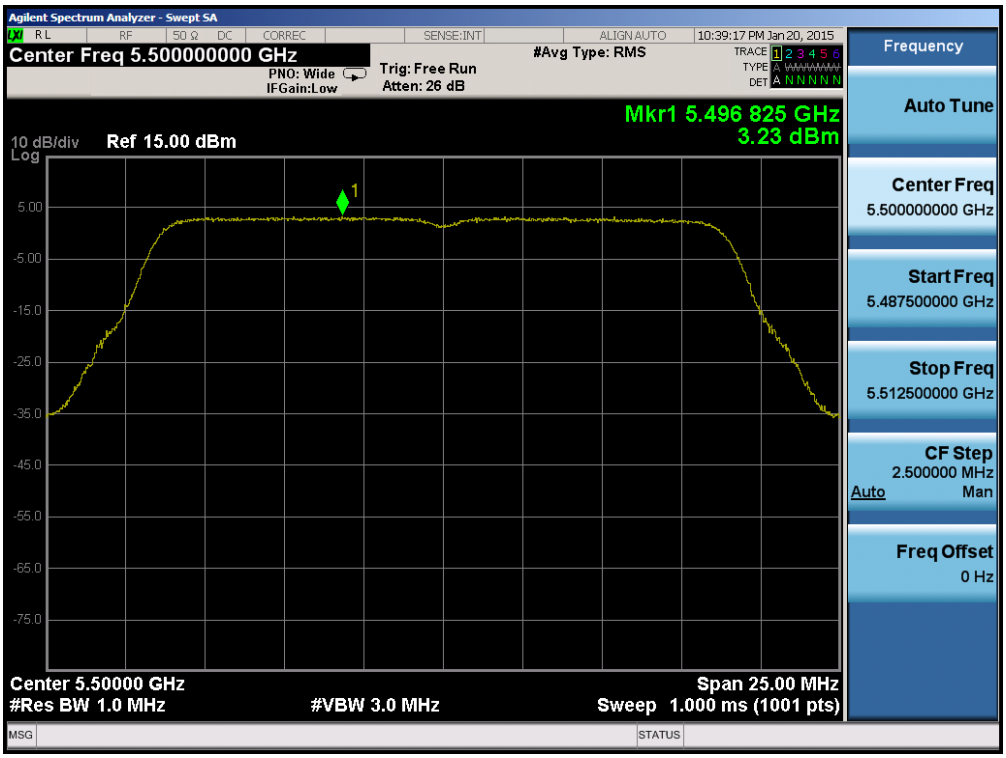

**Plot 6-95. Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 100)**



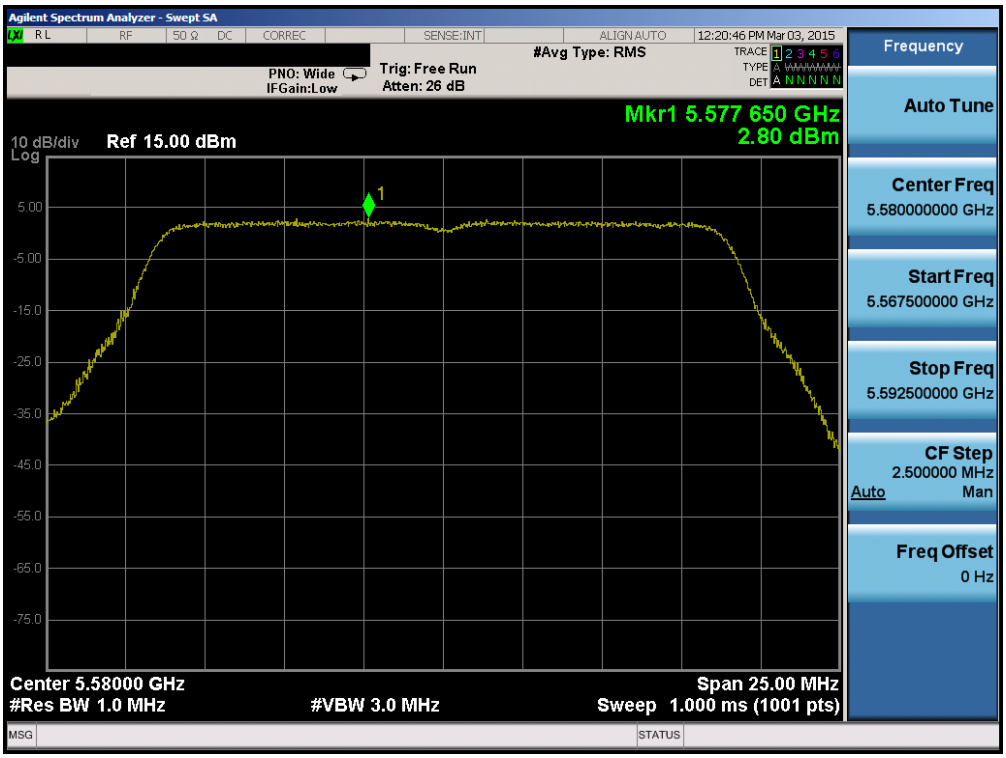

**Plot 6-96. Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 116)**



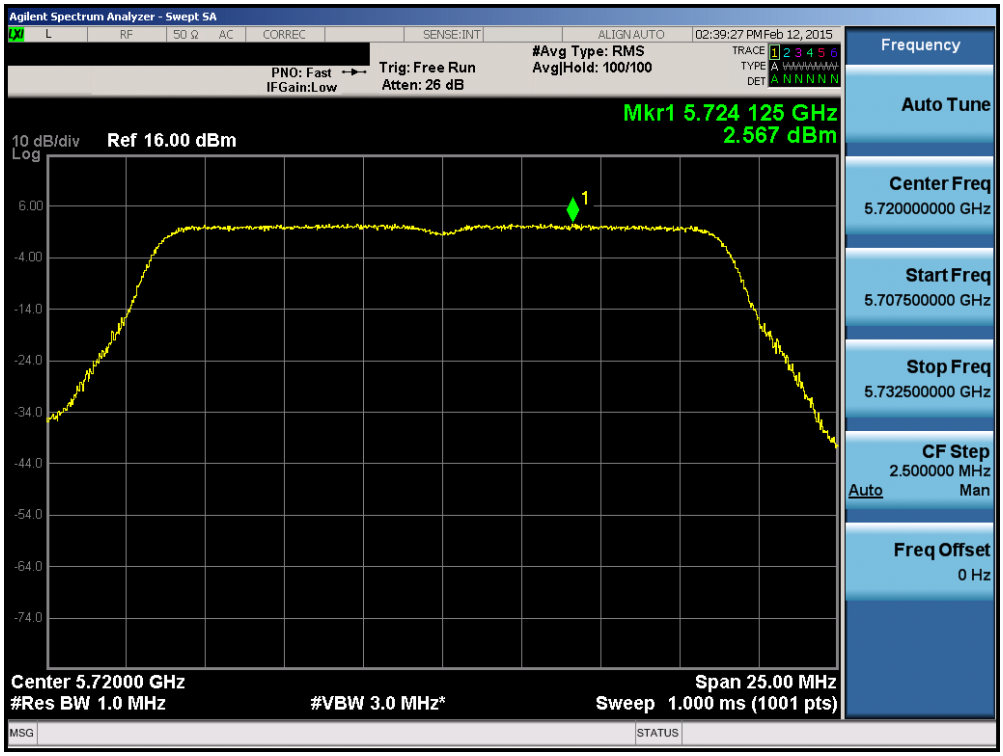

**Plot 6-97. Power Spectral Density Plot (20MHz BW 802.11a (UNII Band 2C) – Ch. 144)**



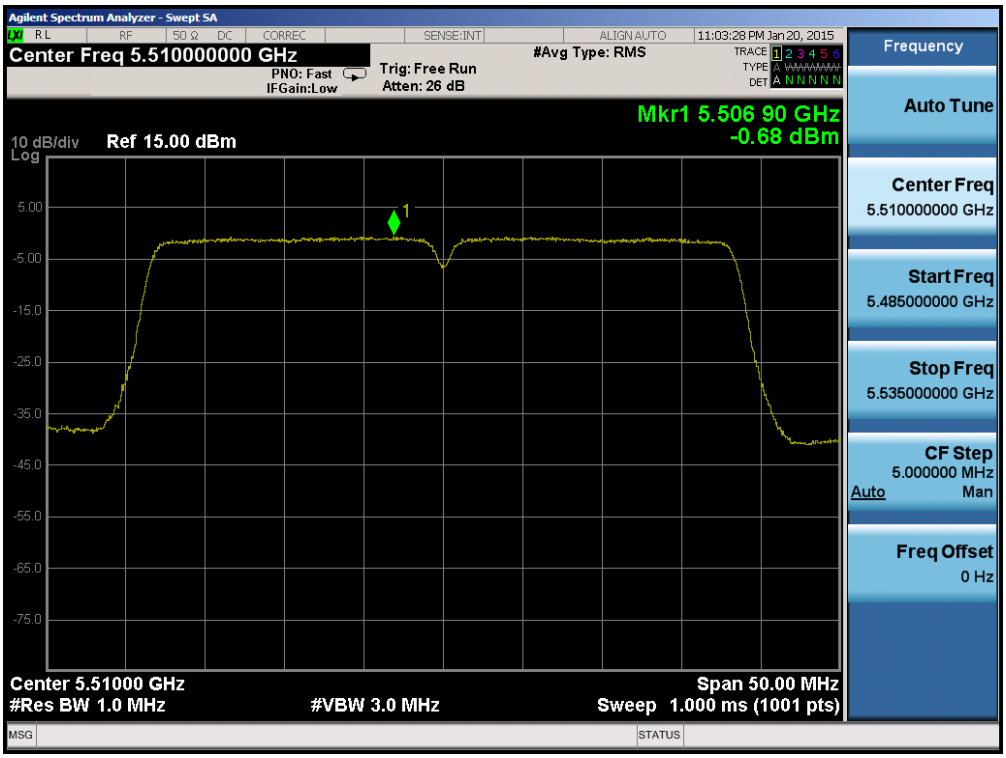

**Plot 6-98. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)**



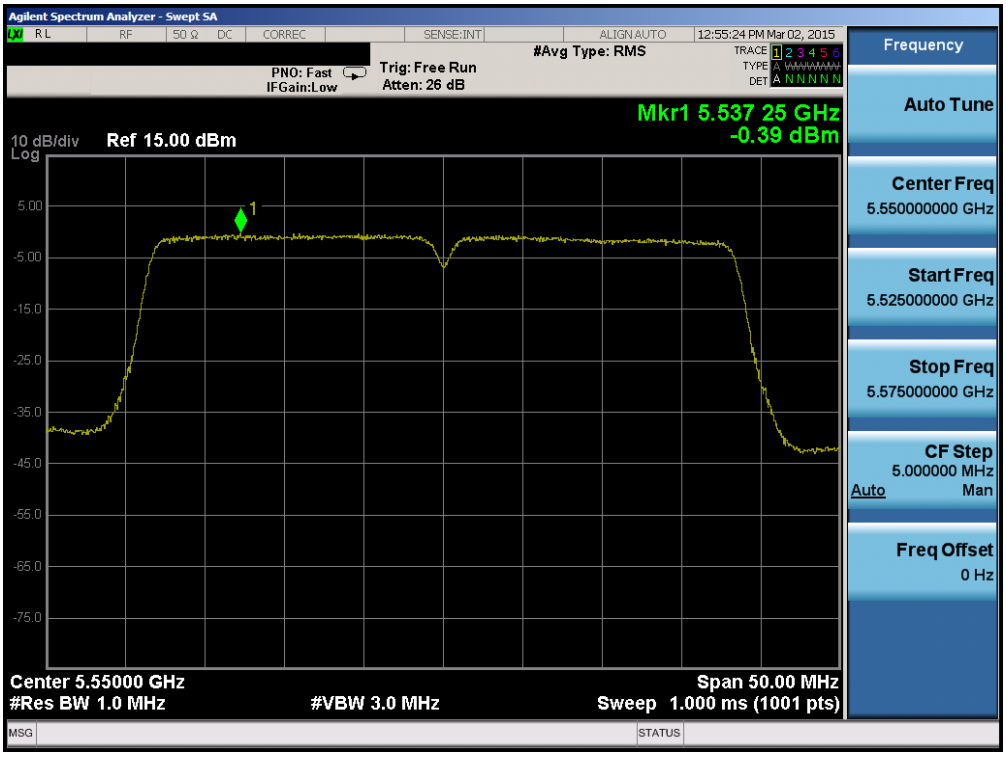

**Plot 6-99. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 116)**



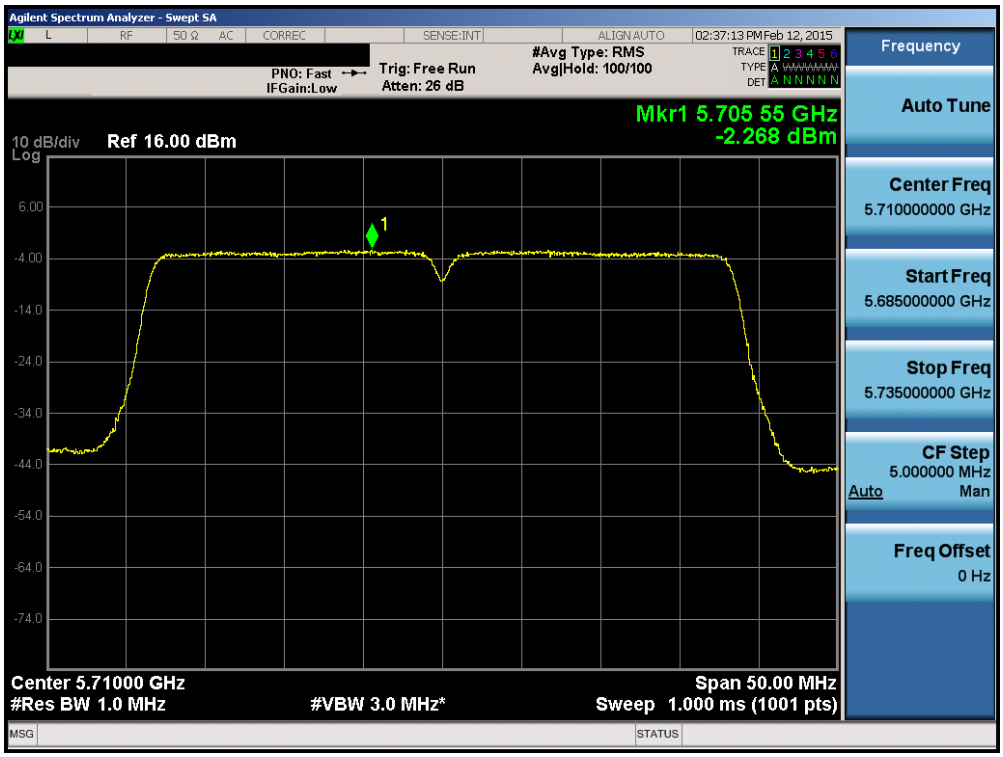

**Plot 6-100. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 144)**



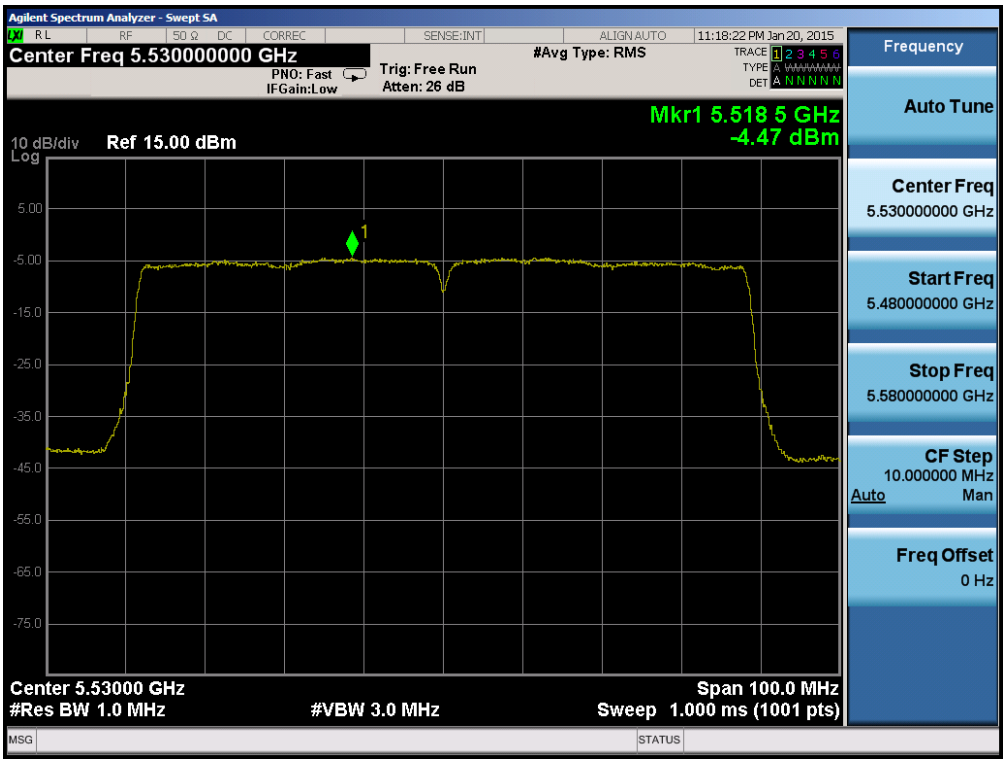

**Plot 6-101. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)**



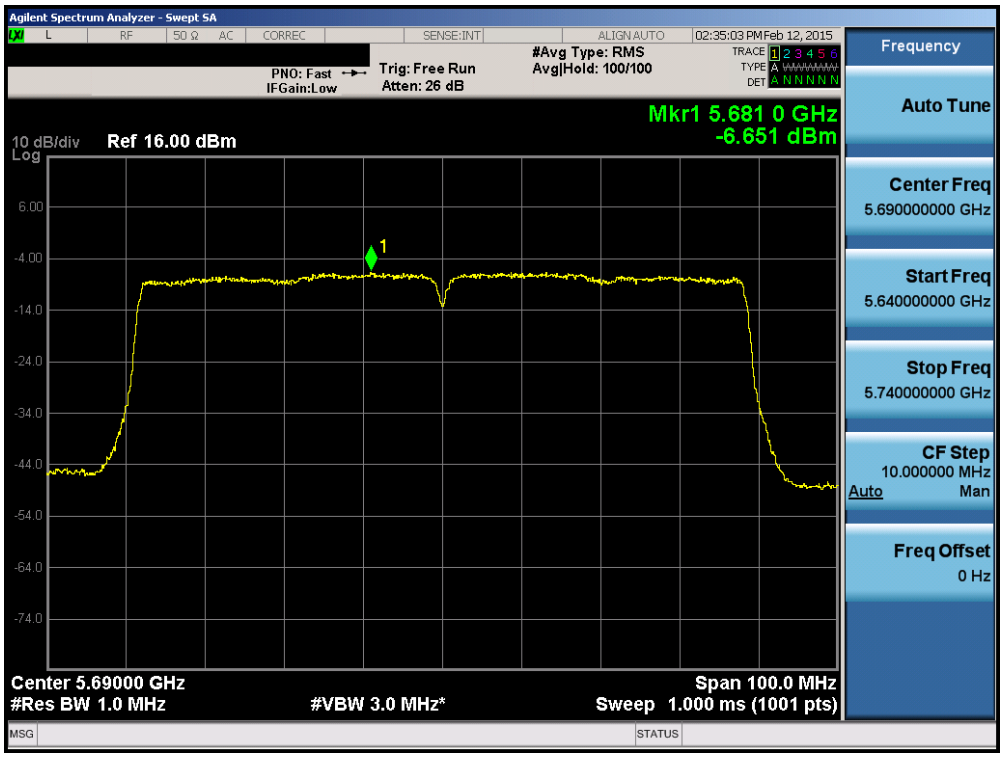

**Plot 6-102. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 110)**




**Plot 6-103. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)**



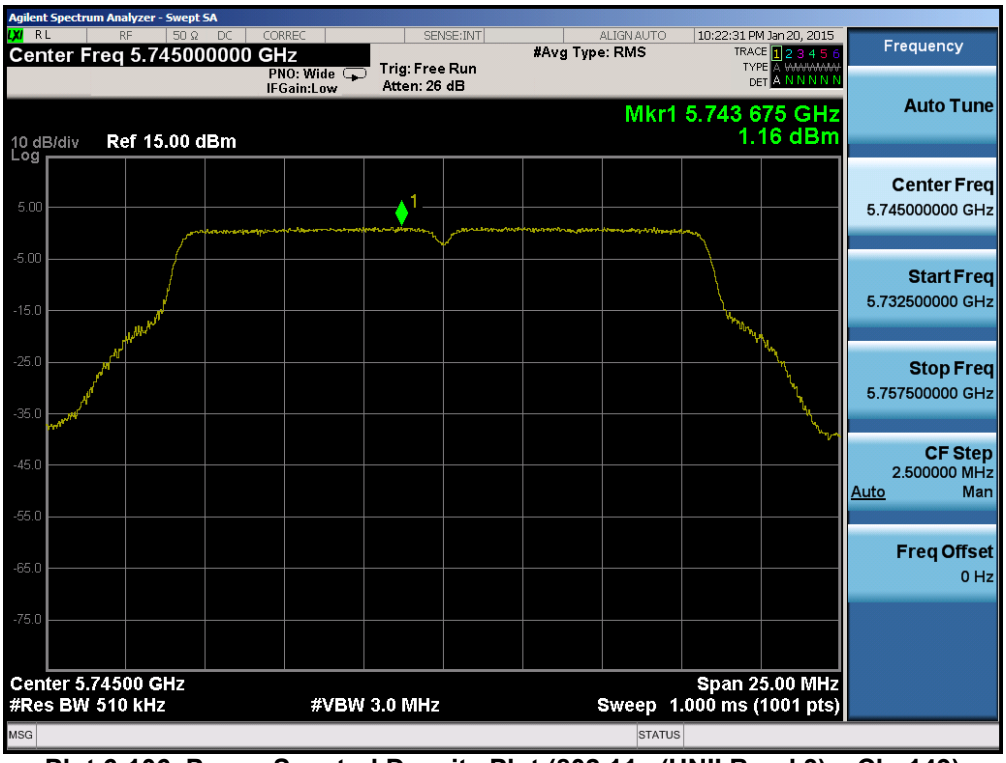

**Plot 6-104. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)**



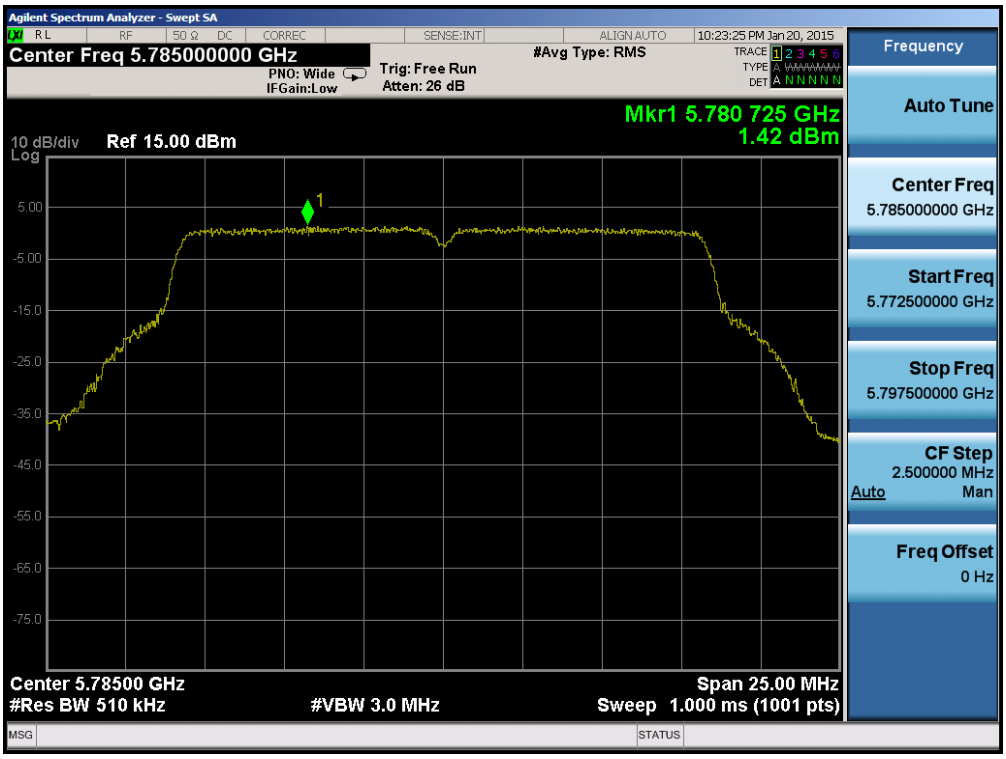

**Plot 6-105. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 138)**

| | Frequency [MHz] | Channel No. | 802.11 Mode | Data Rate [Mbps] | Measured Power Density [dBm] | Max Permissible Power Density [dBm/500kHz] | Margin [dB] | Pass / Fail |
|---|---|---|---|---|---|---|---|---|
| Band 3 | 5745 | 149 | a | 6 | 1.16 | 30.0 | -28.84 | Pass |
| | 5785 | 157 | a | 6 | 1.42 | 30.0 | -28.58 | Pass |
| | 5825 | 165 | a | 6 | 0.65 | 30.0 | -29.35 | Pass |
| | 5745 | 149 | n (20MHz) | 6.5/7.2 (MCS0) | -0.15 | 30.0 | -30.15 | Pass |
| | 5785 | 157 | n (20MHz) | 6.5/7.2 (MCS0) | -0.28 | 30.0 | -30.28 | Pass |
| | 5825 | 165 | n (20MHz) | 6.5/7.2 (MCS0) | -0.83 | 30.0 | -30.83 | Pass |
| | 5755 | 151 | n (40MHz) | 13.5/15 (MCS0) | -3.95 | 30.0 | -33.95 | Pass |
| | 5795 | 159 | n (40MHz) | 13.5/15 (MCS0) | -4.27 | 30.0 | -34.27 | Pass |
| | 5775 | 155 | ac (80MHz) | 29.3/32.5 (MCS0) | -7.50 | 30.0 | -37.50 | Pass |

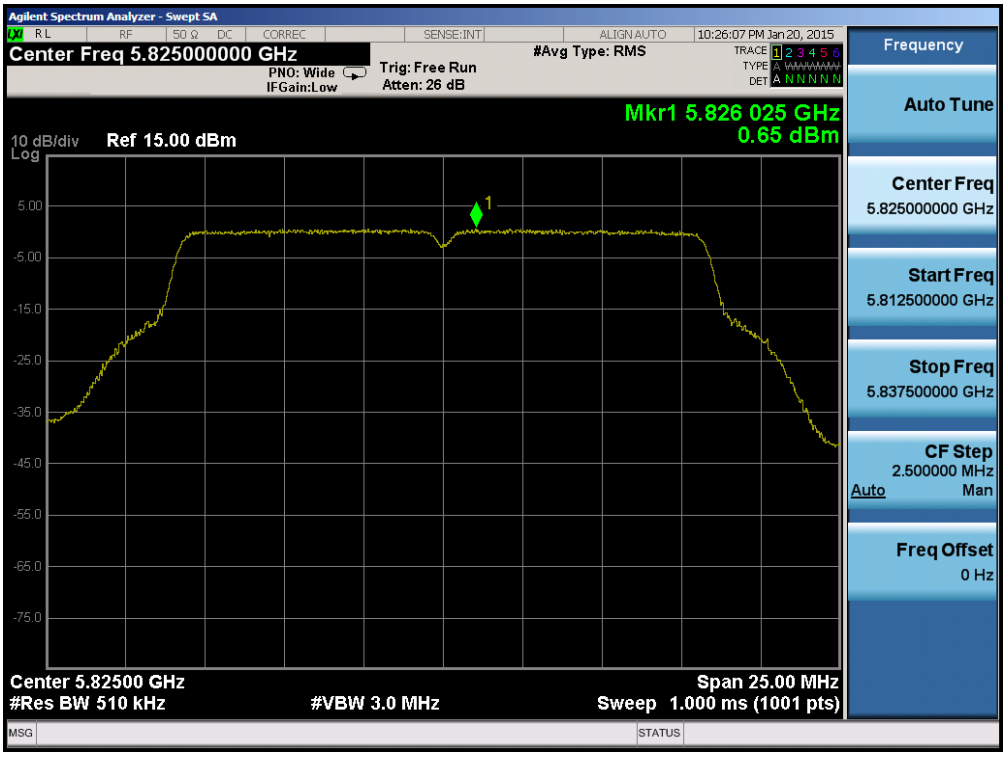
**Table 6-18. Band 3 Conducted Power Spectral Density Measurements**



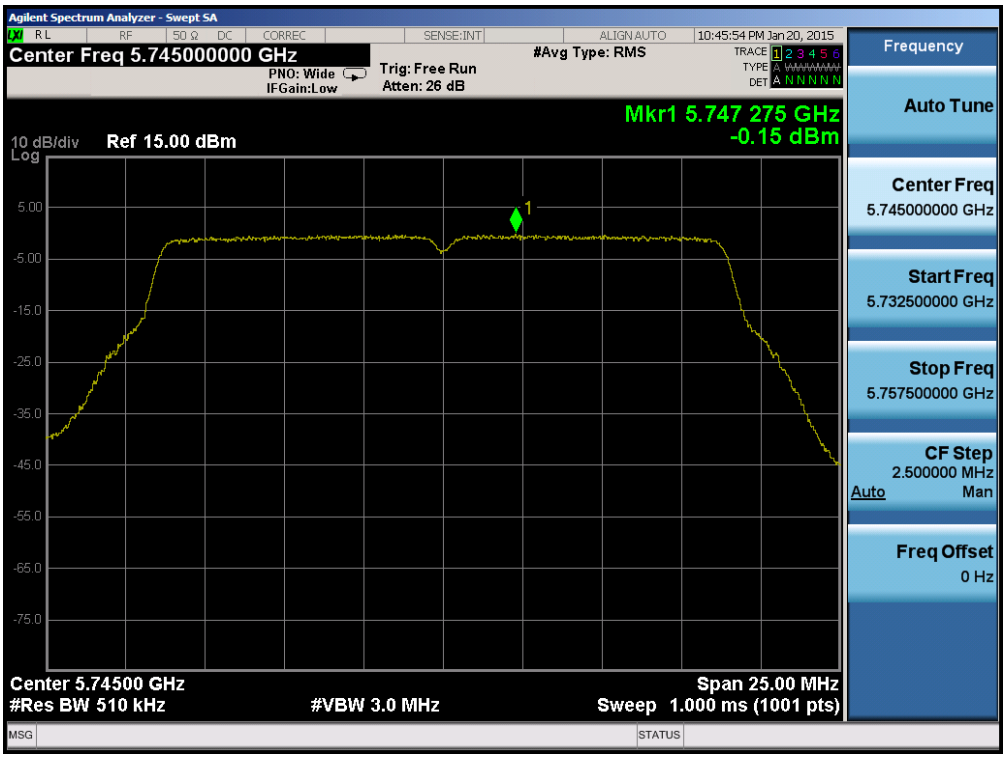

**Plot 6-106. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 149)**



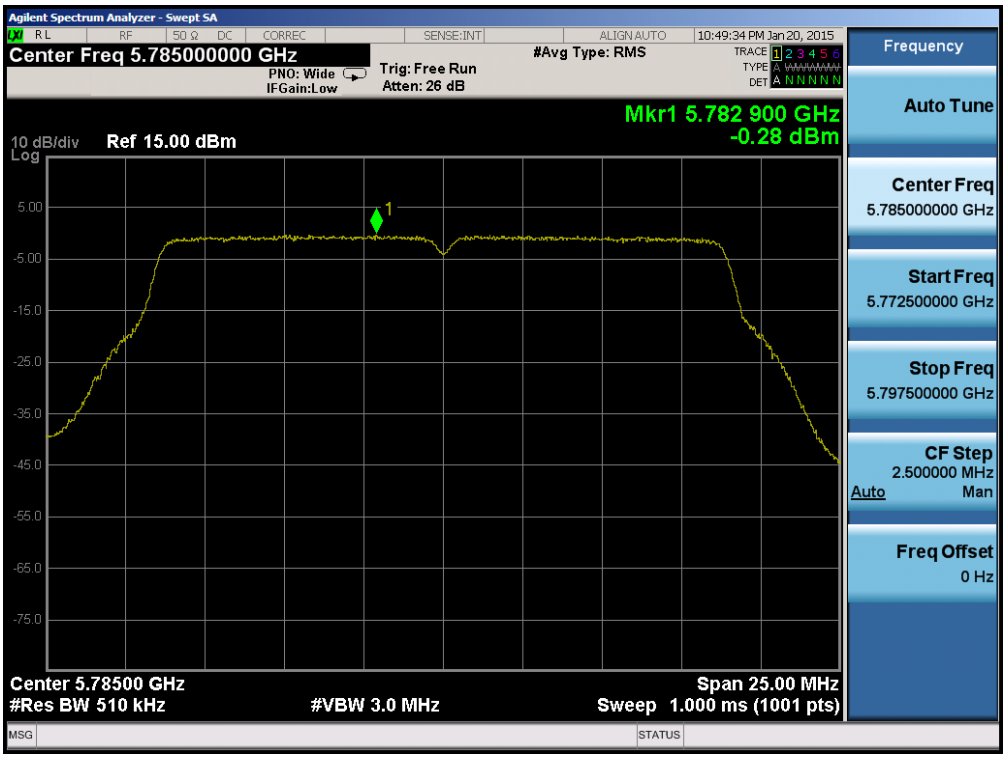

**Plot 6-107. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 157)**



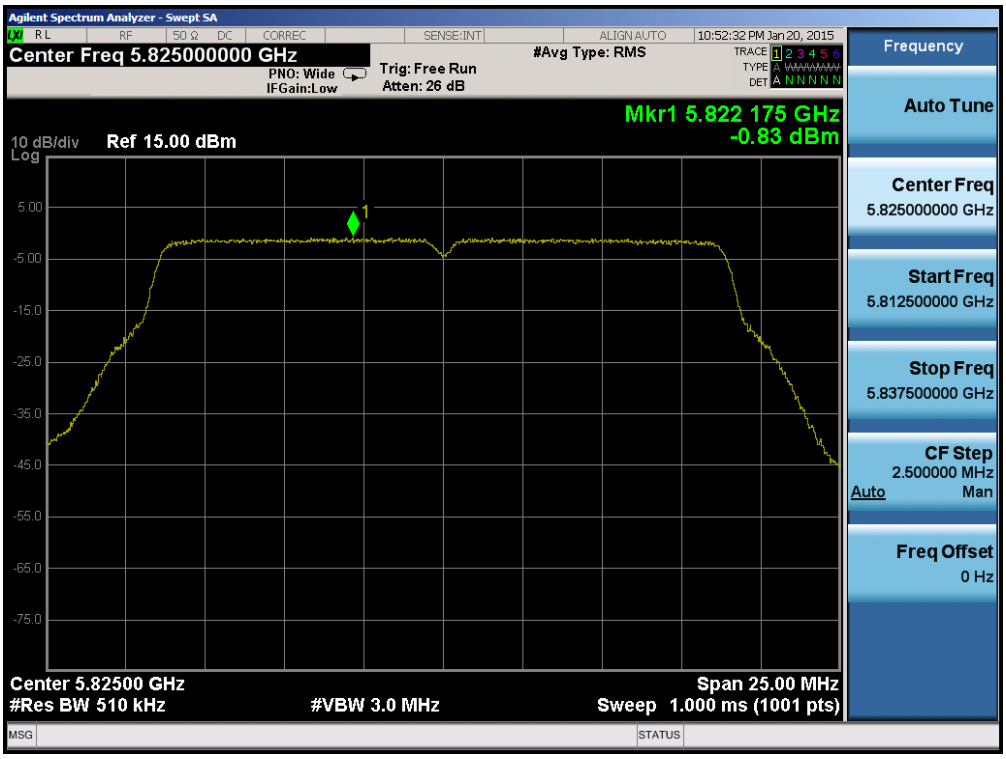

**Plot 6-108. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 165)**



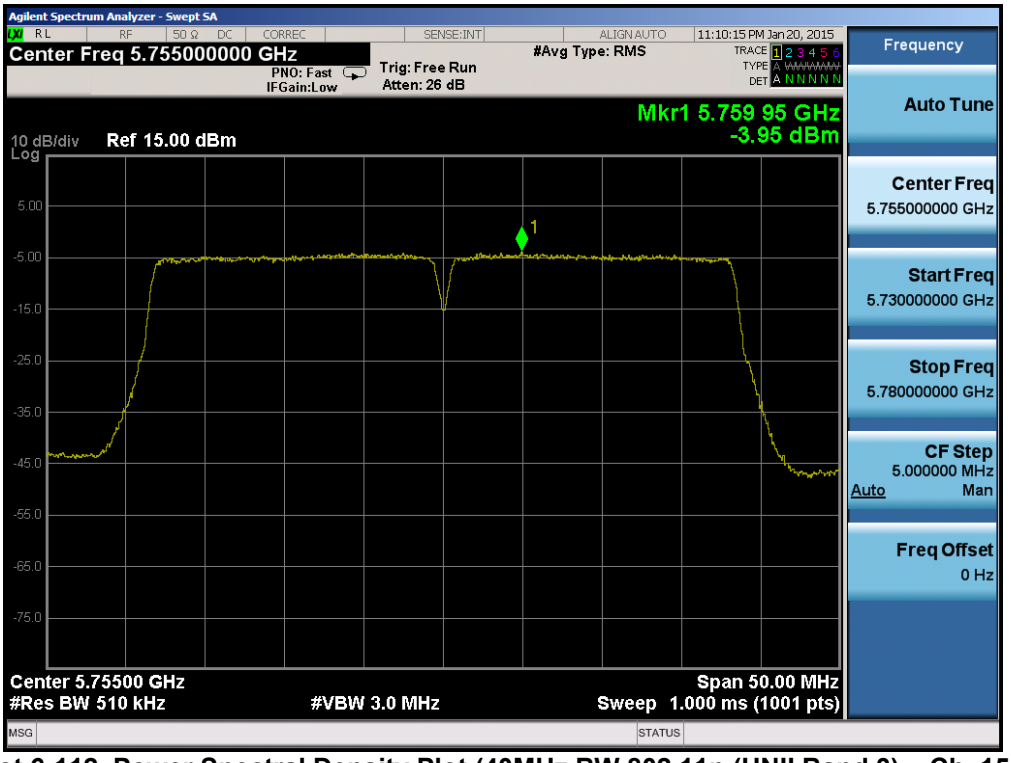

**Plot 6-109. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 149)**



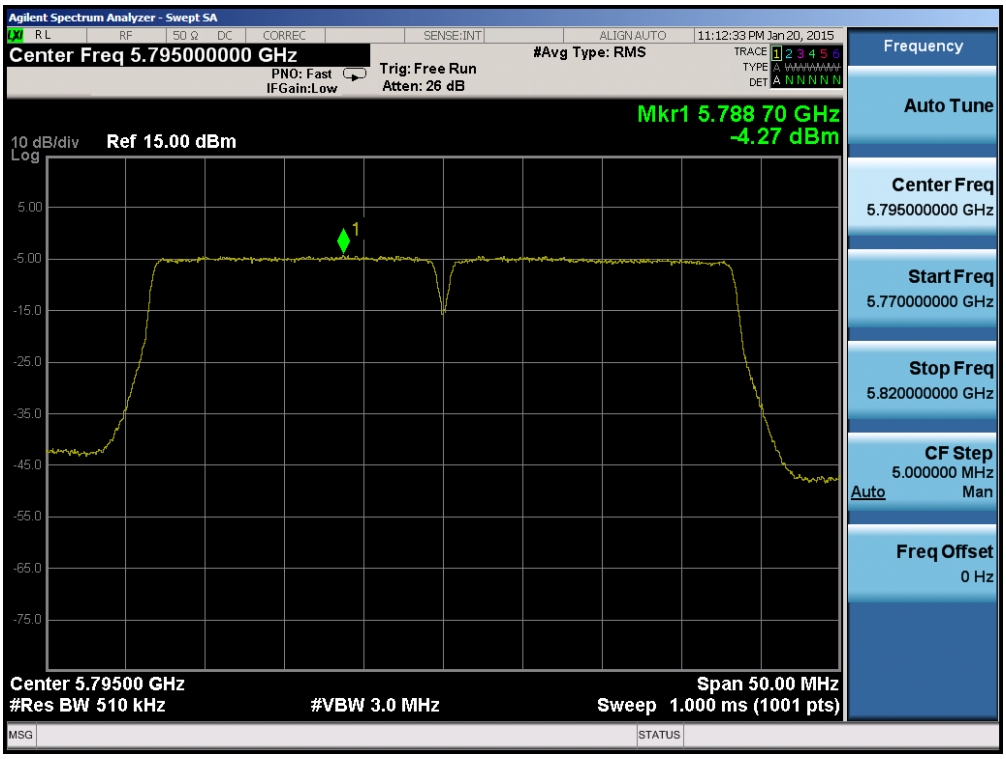

**Plot 6-110. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 157)**



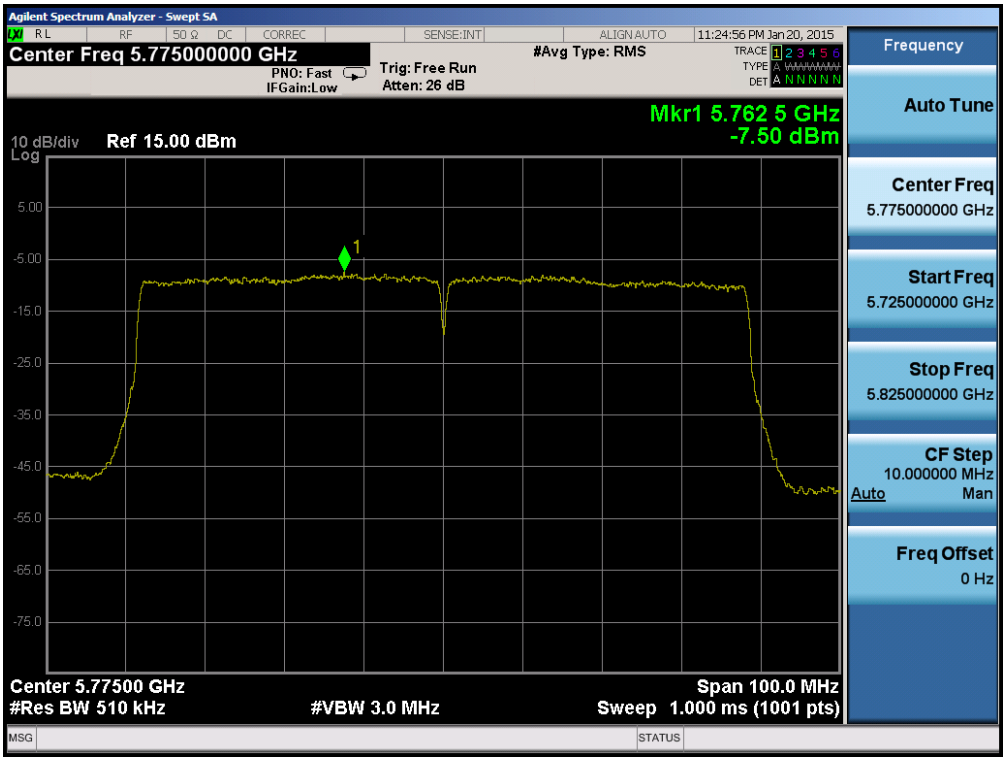

**Plot 6-111. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 165)**




**Plot 6-112. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 151)**




**Plot 6-113. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 159)**

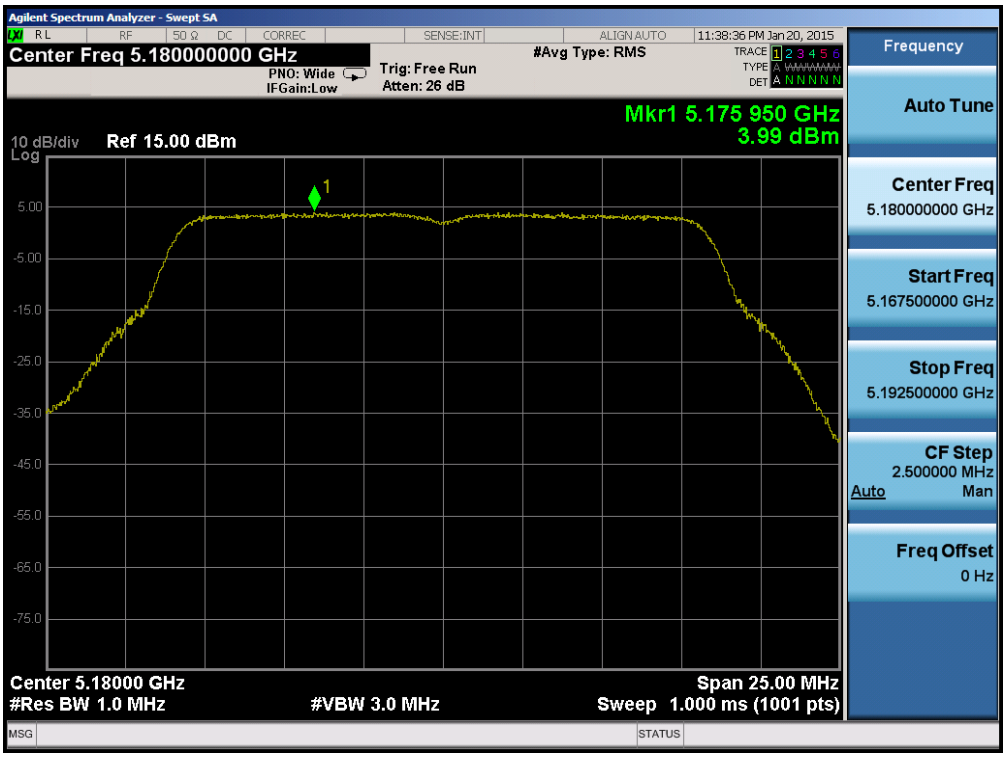



**Plot 6-114. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)**

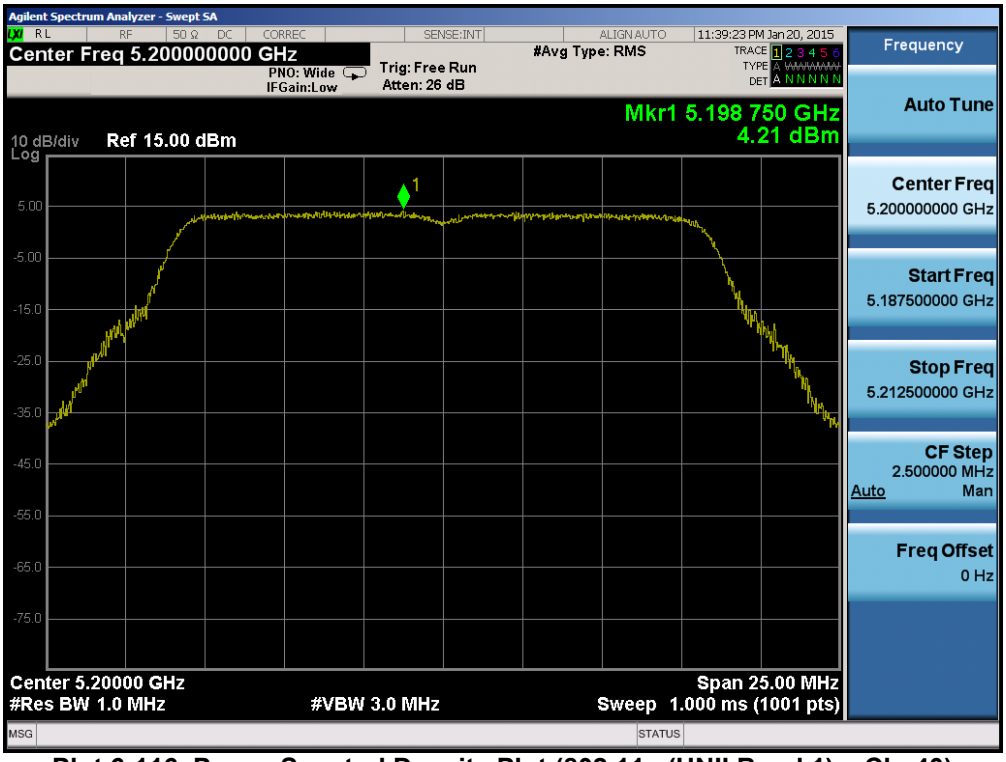
## Antenna-2 Power Spectral Density Measurements

| | Frequency [MHz] | Channel No. | 802.11 Mode | Data Rate [Mbps] | Measured Power Density [dBm] | Max Permissible Power Density [dBm/MHz] | Margin [dB] | Pass / Fail |
|---|---|---|---|---|---|---|---|---|
| Band 1 | 5180 | 36 | a | 6 | 3.99 | 11.0 | -7.01 | Pass |
| | 5200 | 40 | a | 6 | 4.21 | 11.0 | -6.79 | Pass |
| | 5240 | 48 | a | 6 | 4.41 | 11.0 | -6.59 | Pass |
| | 5180 | 36 | n (20MHz) | 6.5/7.2 (MCS0) | 3.54 | 11.0 | -7.46 | Pass |
| | 5200 | 40 | n (20MHz) | 6.5/7.2 (MCS0) | 3.41 | 11.0 | -7.59 | Pass |
| | 5240 | 48 | n (20MHz) | 6.5/7.2 (MCS0) | 3.54 | 11.0 | -7.47 | Pass |
| | 5190 | 38 | n (40MHz) | 13.5/15 (MCS0) | -1.42 | 11.0 | -12.42 | Pass |
| | 5230 | 46 | n (40MHz) | 13.5/15 (MCS0) | -1.29 | 11.0 | -12.29 | Pass |
| | 5210 | 42 | ac (80MHz) | 29.3/32.5 (MCS0) | -4.38 | 11.0 | -15.38 | Pass |
| Band 2A | 5260 | 52 | a | 6 | 4.26 | 11.0 | -6.74 | Pass |
| | 5280 | 56 | a | 6 | 3.75 | 11.0 | -7.26 | Pass |
| | 5320 | 64 | a | 6 | 3.04 | 11.0 | -7.96 | Pass |
| | 5260 | 52 | n (20MHz) | 6.5/7.2 (MCS0) | 3.30 | 11.0 | -7.70 | Pass |
| | 5280 | 56 | n (20MHz) | 6.5/7.2 (MCS0) | 3.25 | 11.0 | -7.75 | Pass |
| | 5320 | 64 | n (20MHz) | 6.5/7.2 (MCS0) | 2.85 | 11.0 | -8.15 | Pass |
| | 5270 | 54 | n (40MHz) | 13.5/15 (MCS0) | -0.98 | 11.0 | -11.98 | Pass |
| | 5310 | 62 | n (40MHz) | 13.5/15 (MCS0) | -1.45 | 11.0 | -12.45 | Pass |
| | 5290 | 58 | ac (80MHz) | 29.3/32.5 (MCS0) | -4.77 | 11.0 | -15.77 | Pass |
| Band 2C | 5500 | 100 | a | 6 | 3.97 | 11.0 | -7.03 | Pass |
| | 5580 | 116 | a | 6 | 3.87 | 11.0 | -7.13 | Pass |
| | 5720 | 144 | a | 6 | 3.32 | 11.0 | -7.68 | Pass |
| | 5500 | 100 | n (20MHz) | 6.5/7.2 (MCS0) | 2.78 | 11.0 | -8.22 | Pass |
| | 5580 | 116 | n (20MHz) | 6.5/7.2 (MCS0) | 1.65 | 11.0 | -9.35 | Pass |
| | 5720 | 144 | n (20MHz) | 6.5/7.2 (MCS0) | 2.10 | 11.0 | -8.90 | Pass |
| | 5510 | 102 | n (40MHz) | 13.5/15 (MCS0) | -1.37 | 11.0 | -12.37 | Pass |
| | 5550 | 110 | n (40MHz) | 13.5/15 (MCS0) | -0.45 | 11.0 | -11.45 | Pass |
| | 5710 | 142 | n (40MHz) | 13.5/15 (MCS0) | -3.09 | 11.0 | -14.09 | Pass |
| | 5530 | 106 | ac (80MHz) | 29.3/32.5 (MCS0) | -5.25 | 11.0 | -16.25 | Pass |
| | 5610 | 122 | ac (80MHz) | 29.3/32.5 (MCS0) | -5.97 | 11.0 | -16.97 | Pass |
| | 5690 | 138 | ac (80MHz) | 29.3/32.5 (MCS0) | -6.38 | 11.0 | -17.38 | Pass |

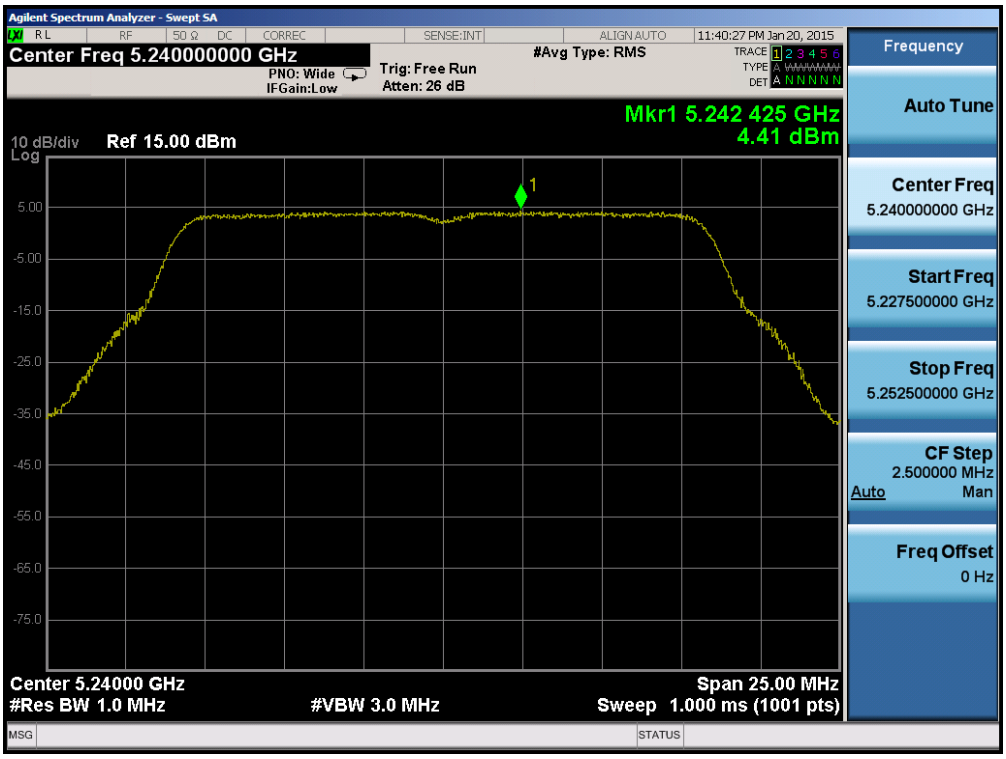
**Table 6-19. Conducted Power Spectral Density Measurements**



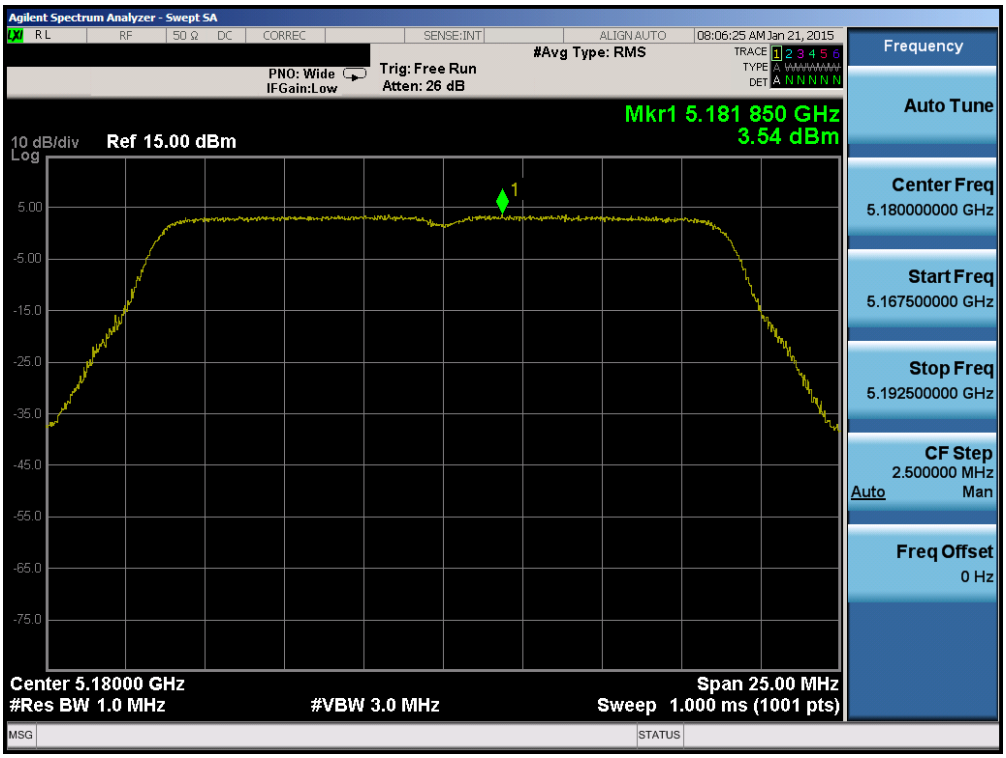

**Plot 6-115. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 36)**



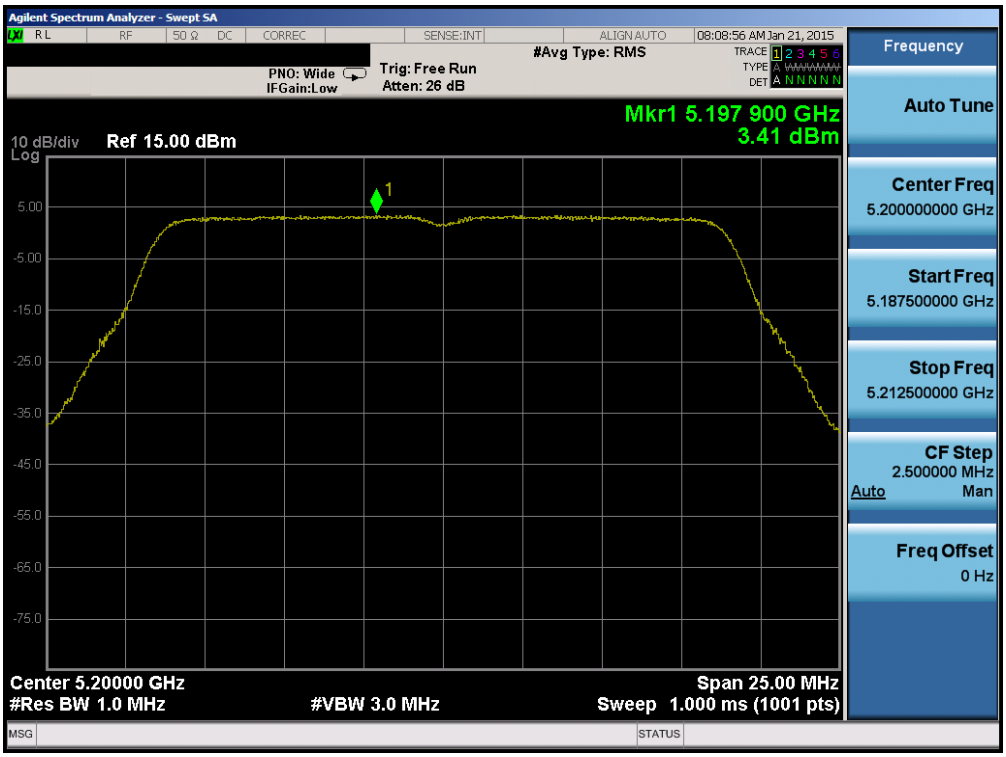

**Plot 6-116. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 40)**



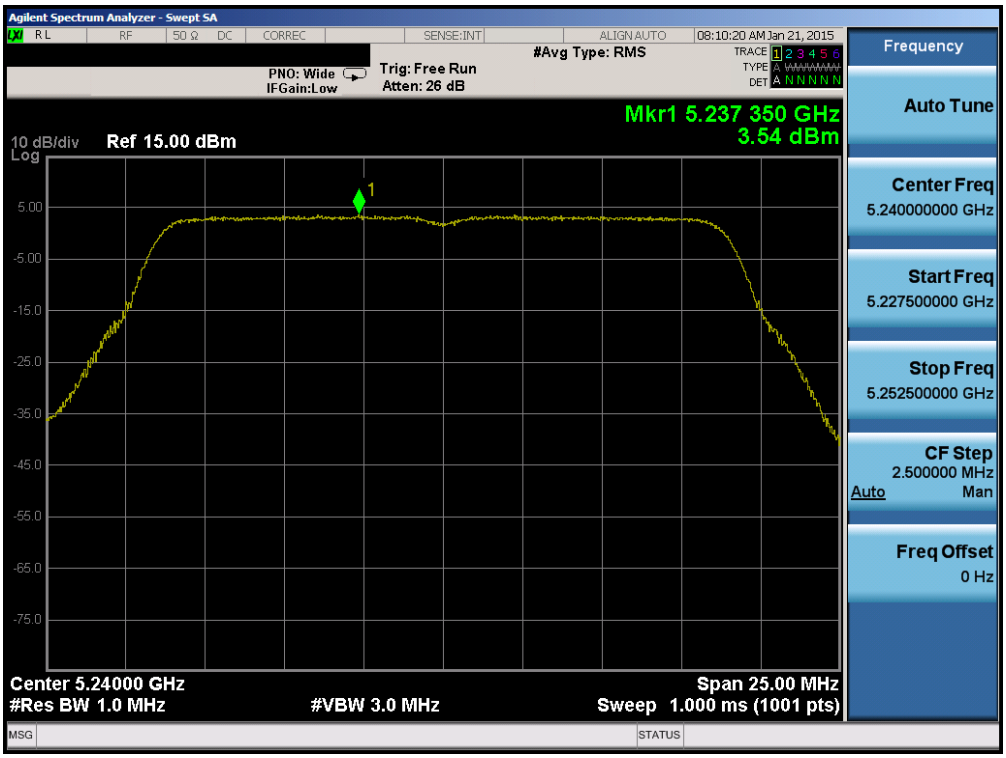

**Plot 6-117. Power Spectral Density Plot (802.11a (UNII Band 1) – Ch. 48)**



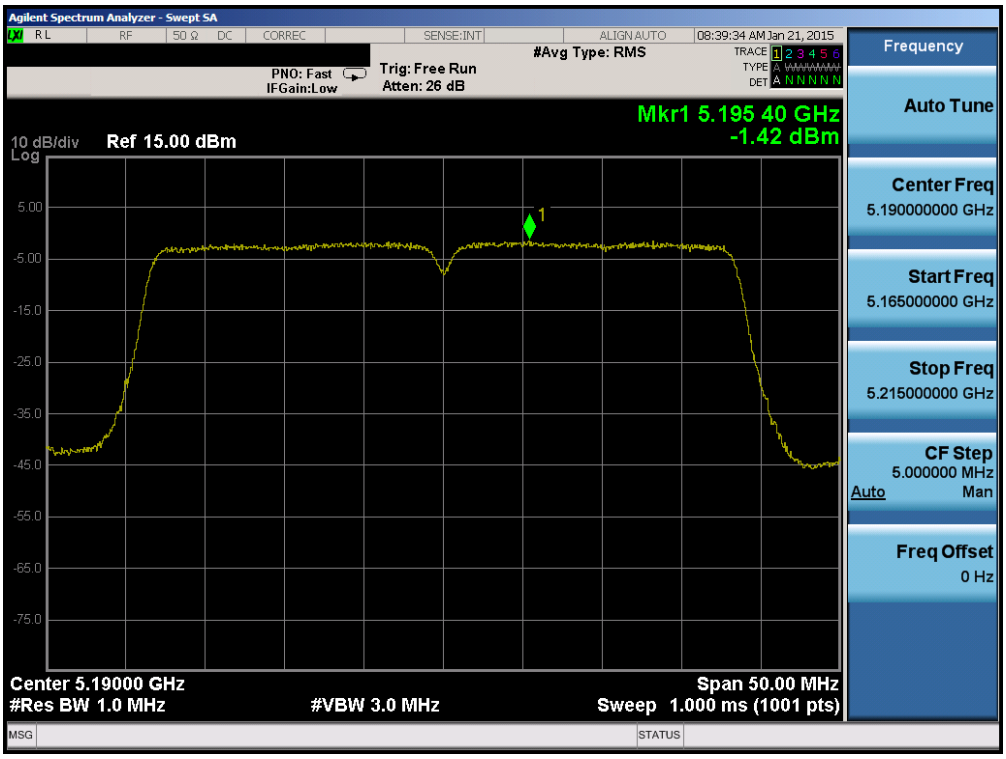

**Plot 6-118. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 36)**



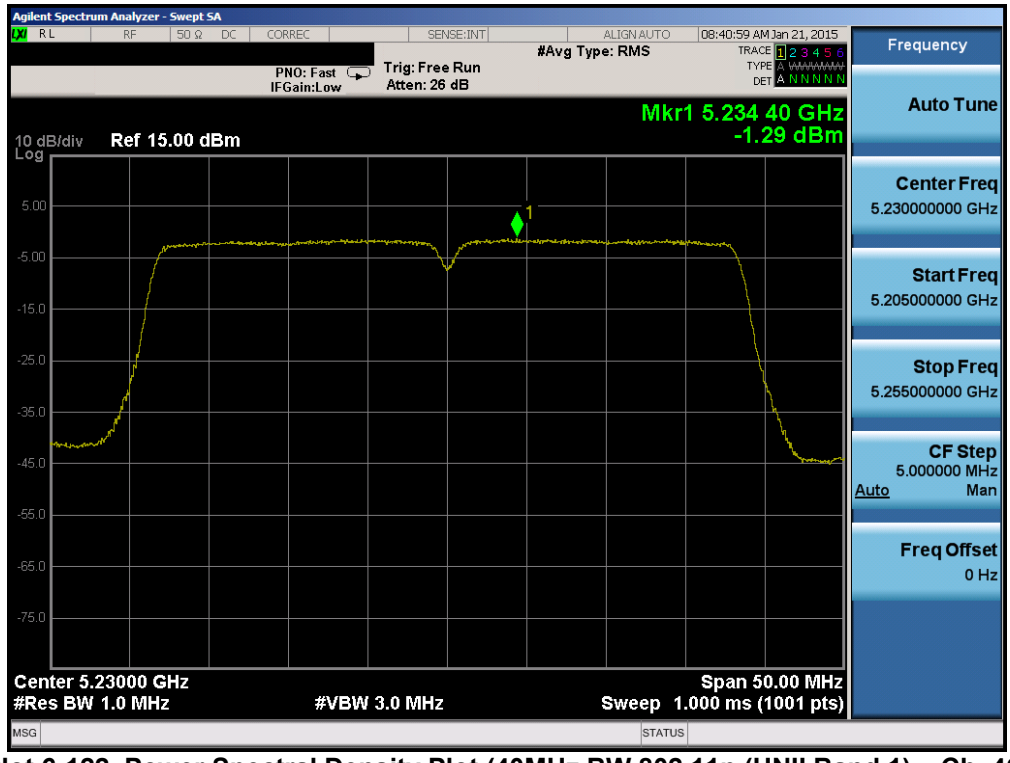

**Plot 6-119. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 40)**



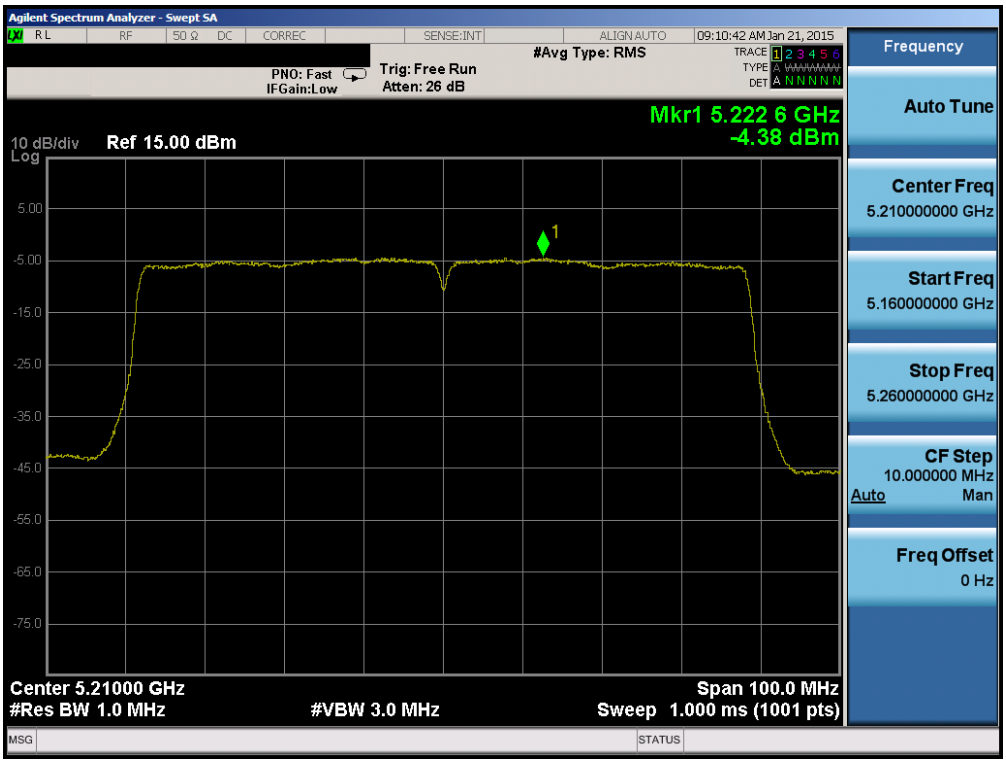

**Plot 6-120. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 48)**




**Plot 6-121. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 38)**

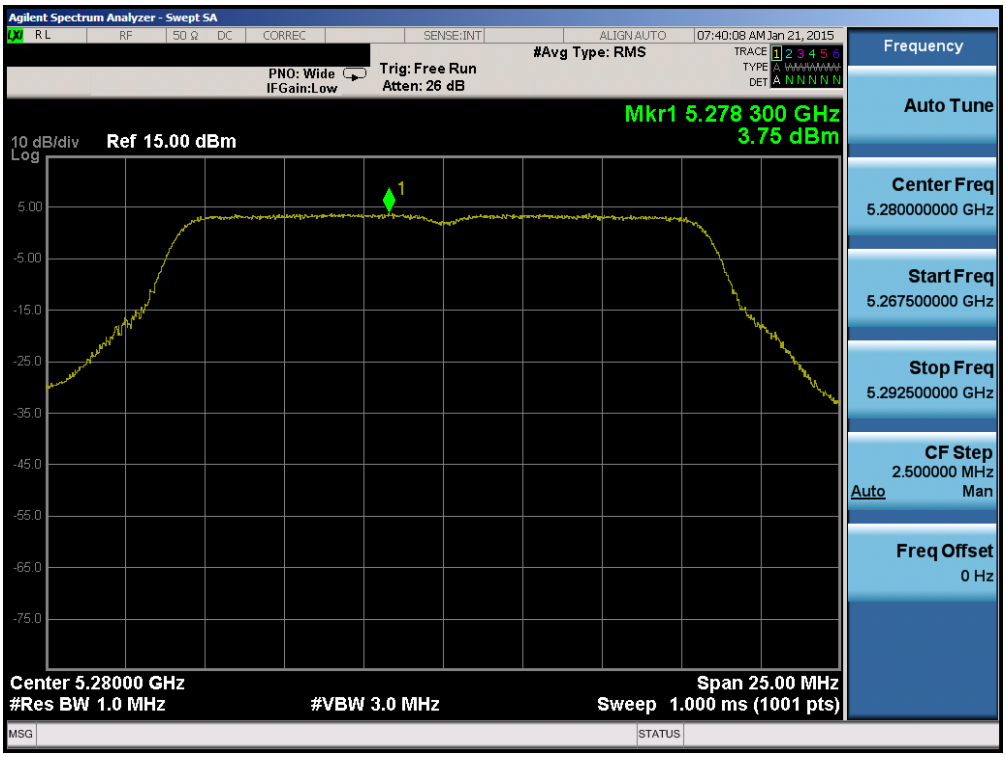



**Plot 6-122. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 46)**

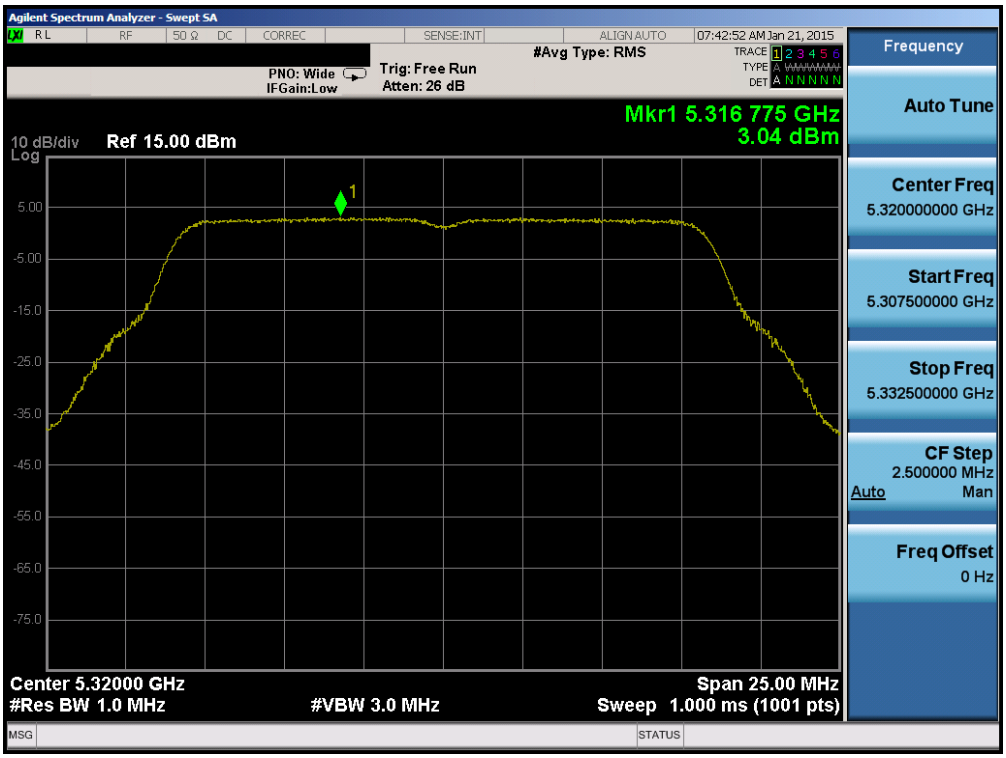



**Plot 6-123. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 1) – Ch. 42)**

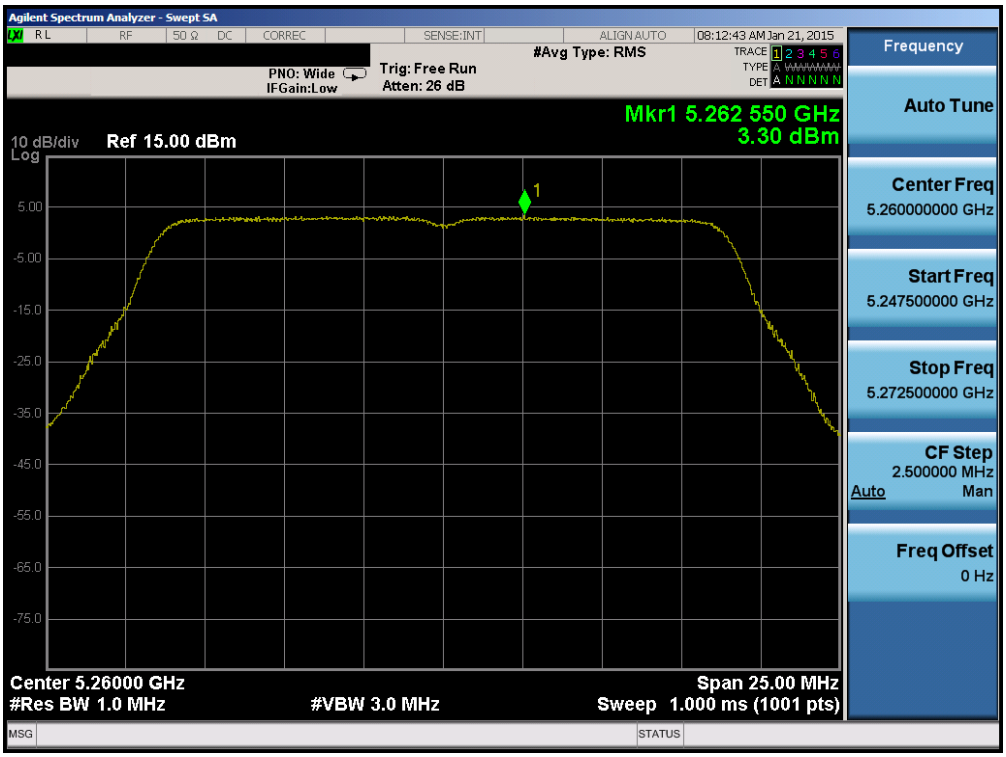

**Plot 6-124. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 52)**



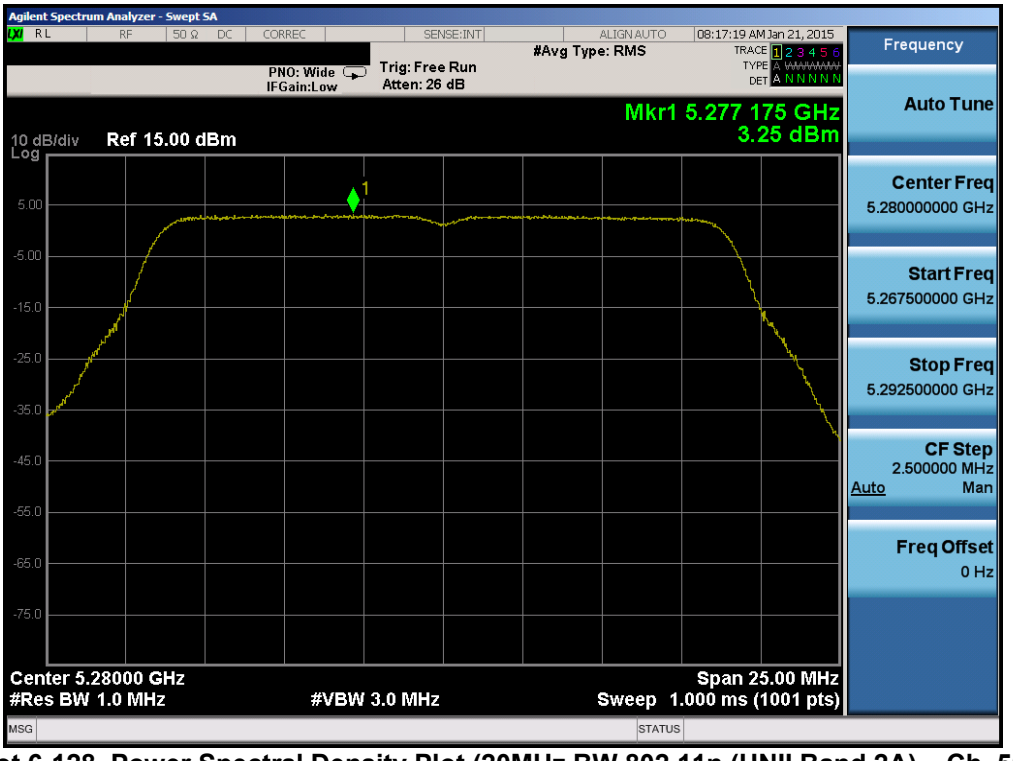

**Plot 6-125. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 56)**



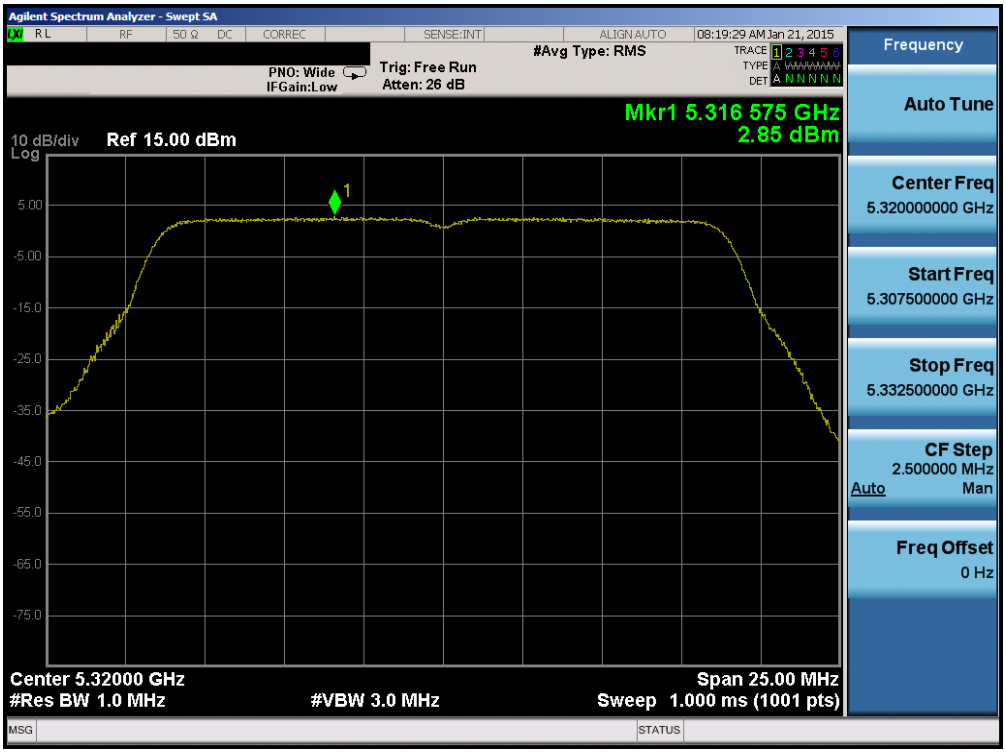

**Plot 6-126. Power Spectral Density Plot (802.11a (UNII Band 2A) – Ch. 64)**



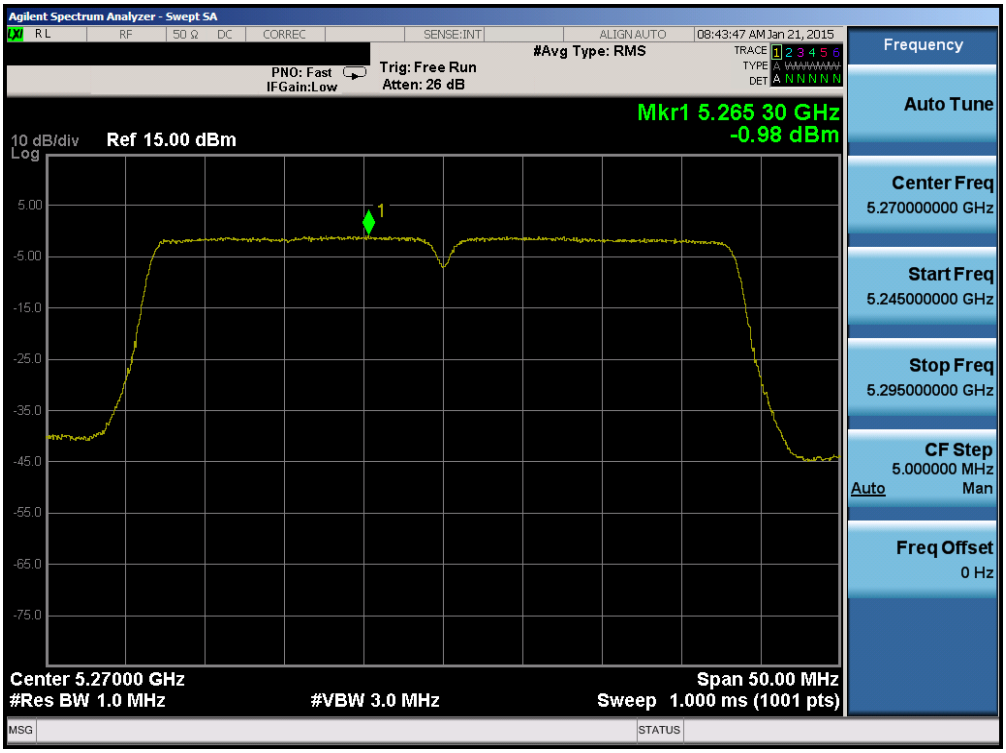

**Plot 6-127. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)**



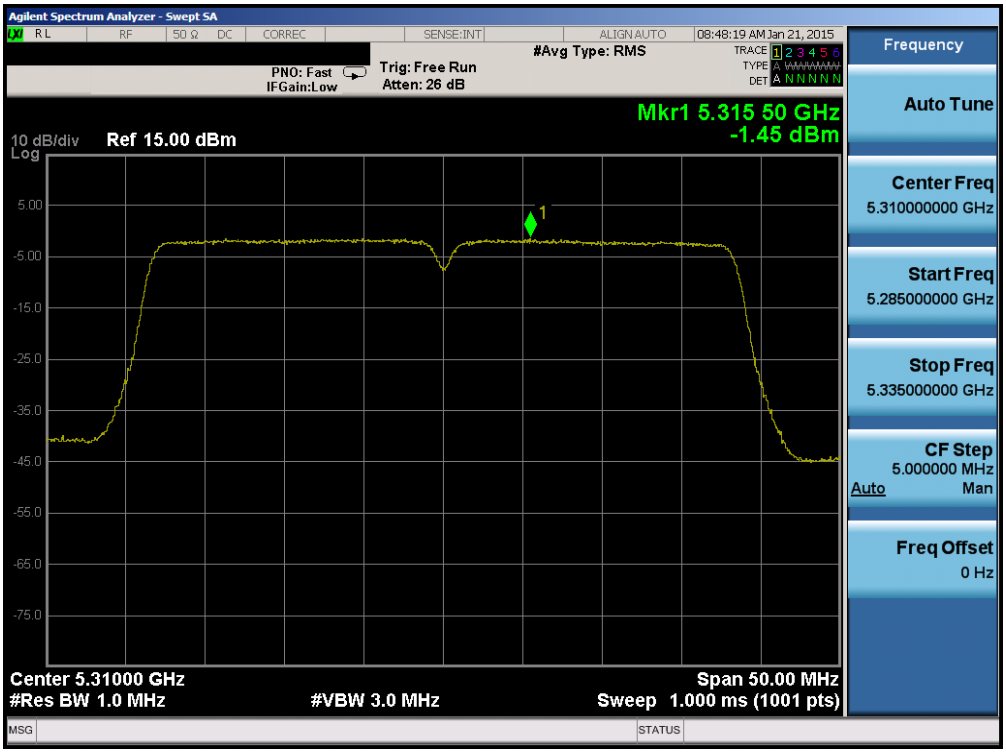

**Plot 6-128. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)**



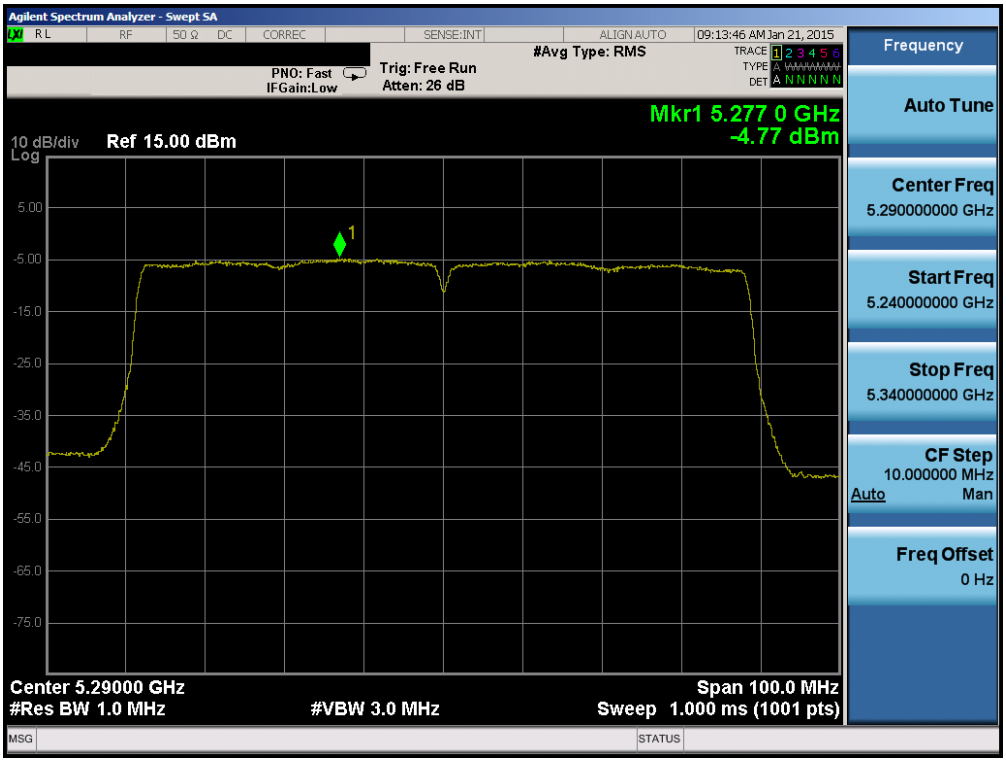

**Plot 6-129. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)**



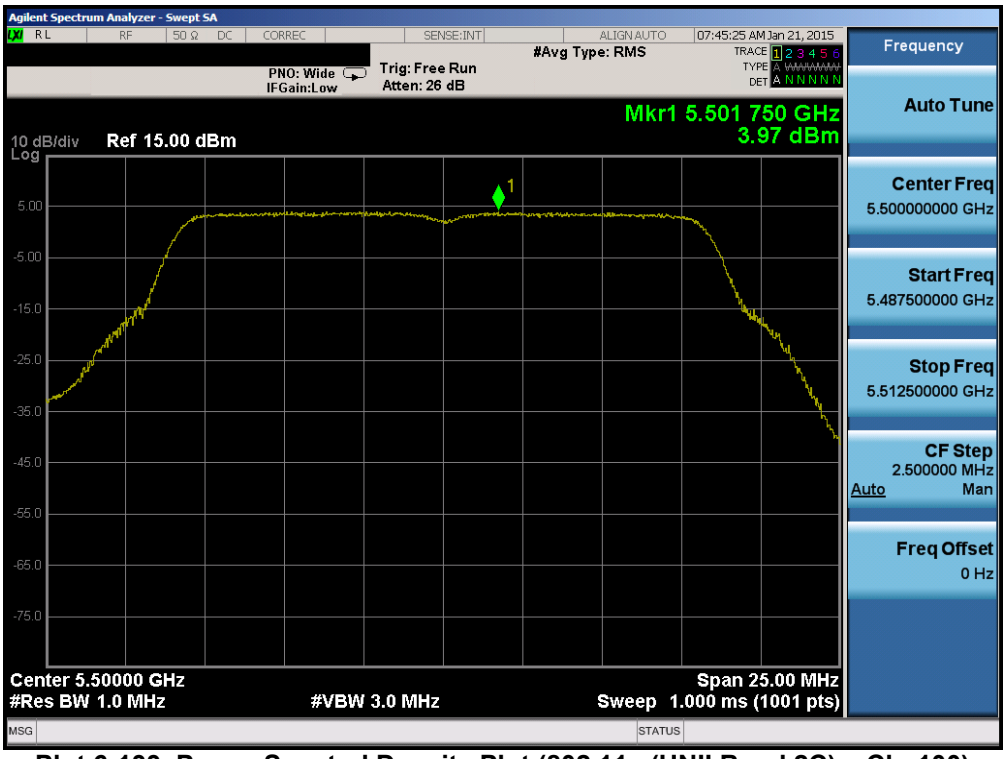

**Plot 6-130. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)**



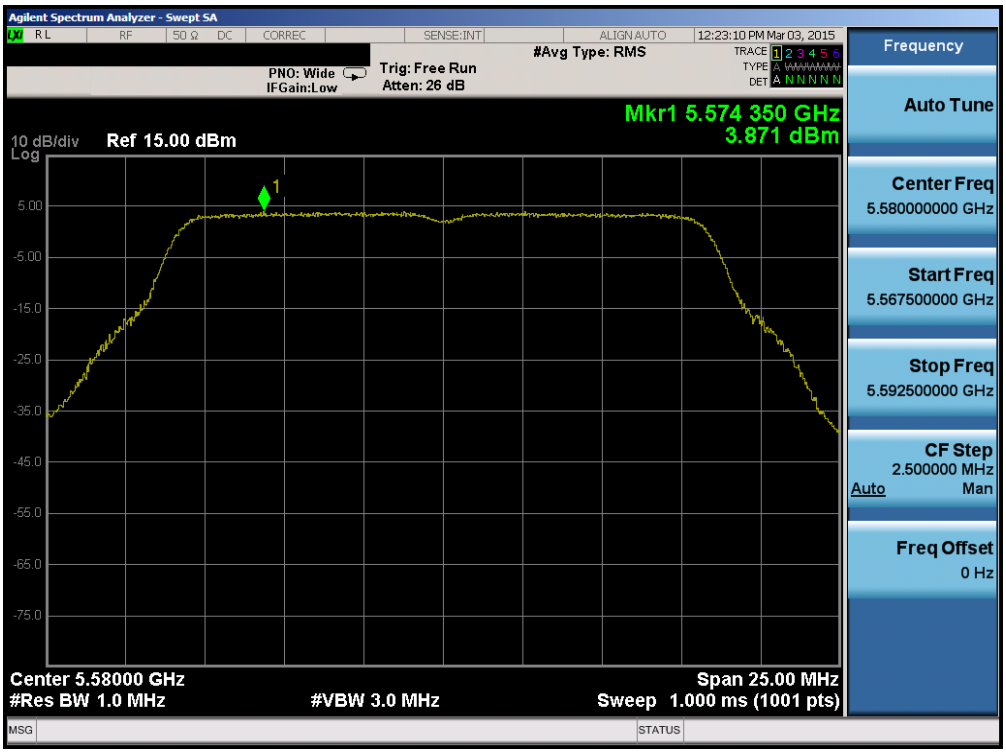

**Plot 6-131. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)**



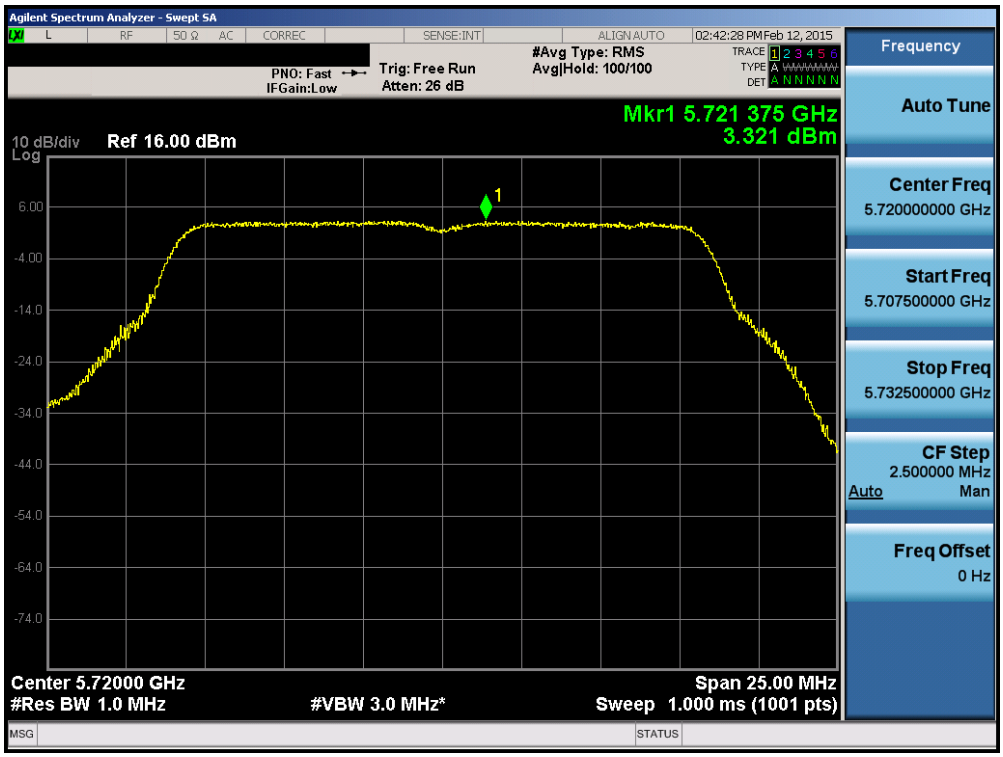

**Plot 6-132. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)**



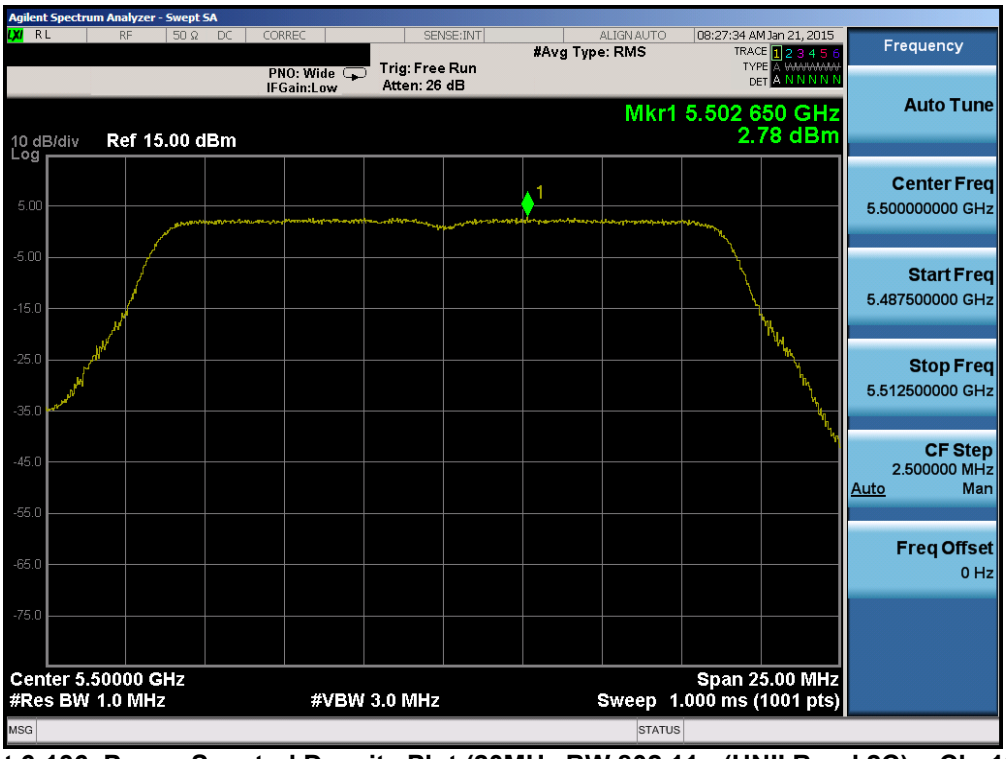

**Plot 6-133. Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 100)**



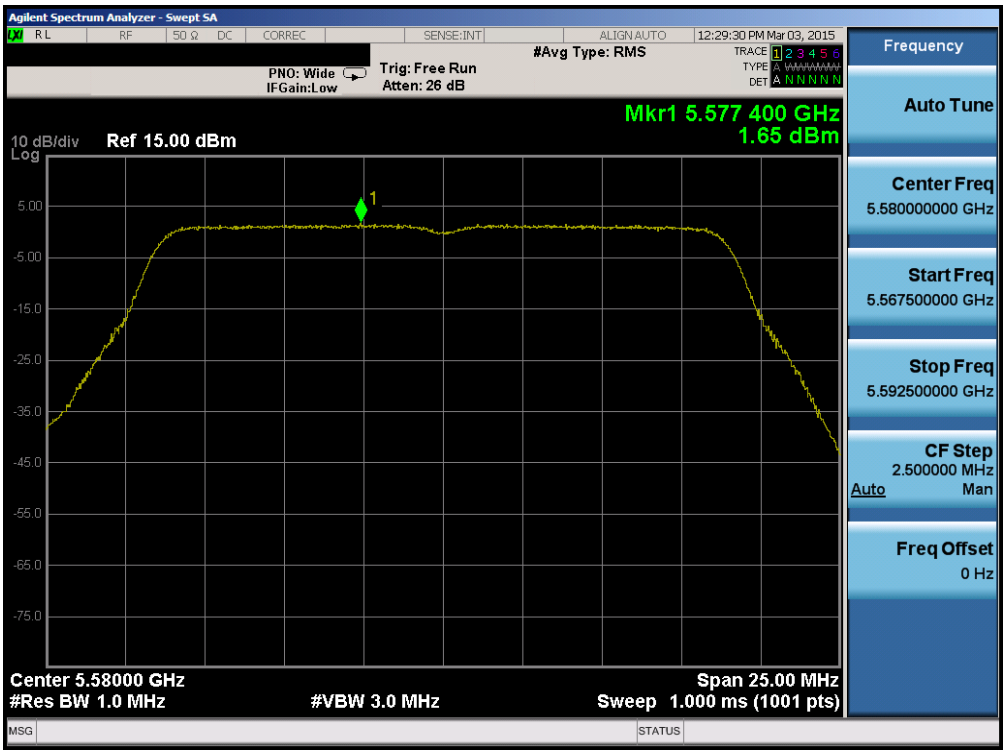

**Plot 6-134. Power Spectral Density Plot (802.11a (UNII Band 2C) – Ch. 116)**



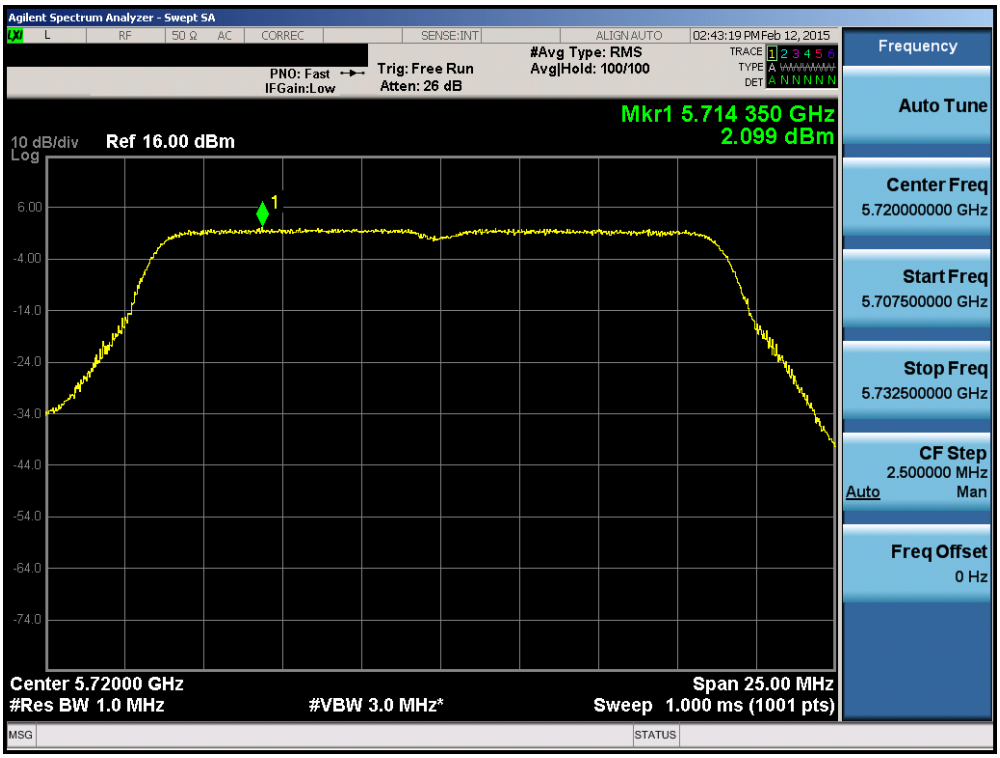

**Plot 6-135. Power Spectral Density Plot (20MHz BW 802.11a (UNII Band 2C) – Ch. 144)**



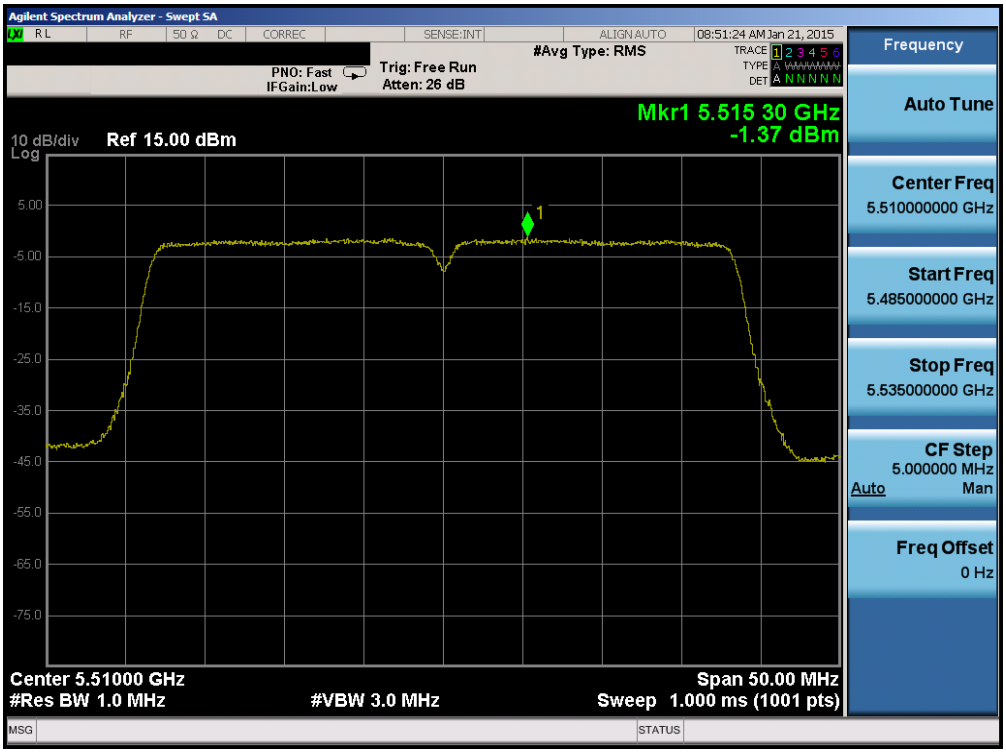

**Plot 6-136. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)**



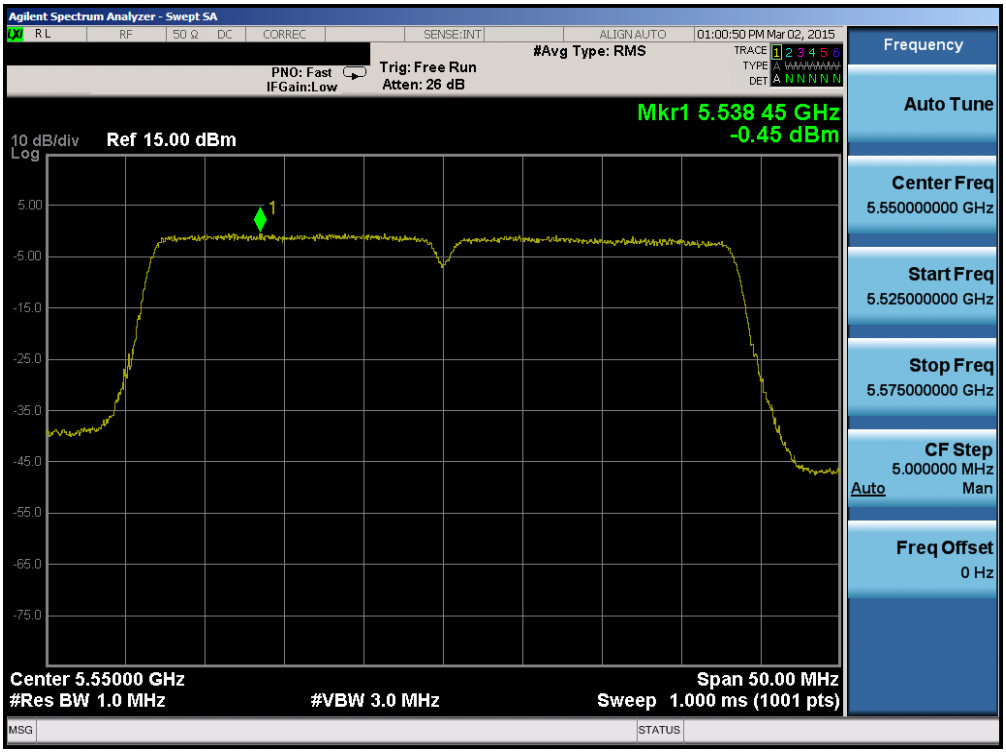

**Plot 6-137. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 116)**



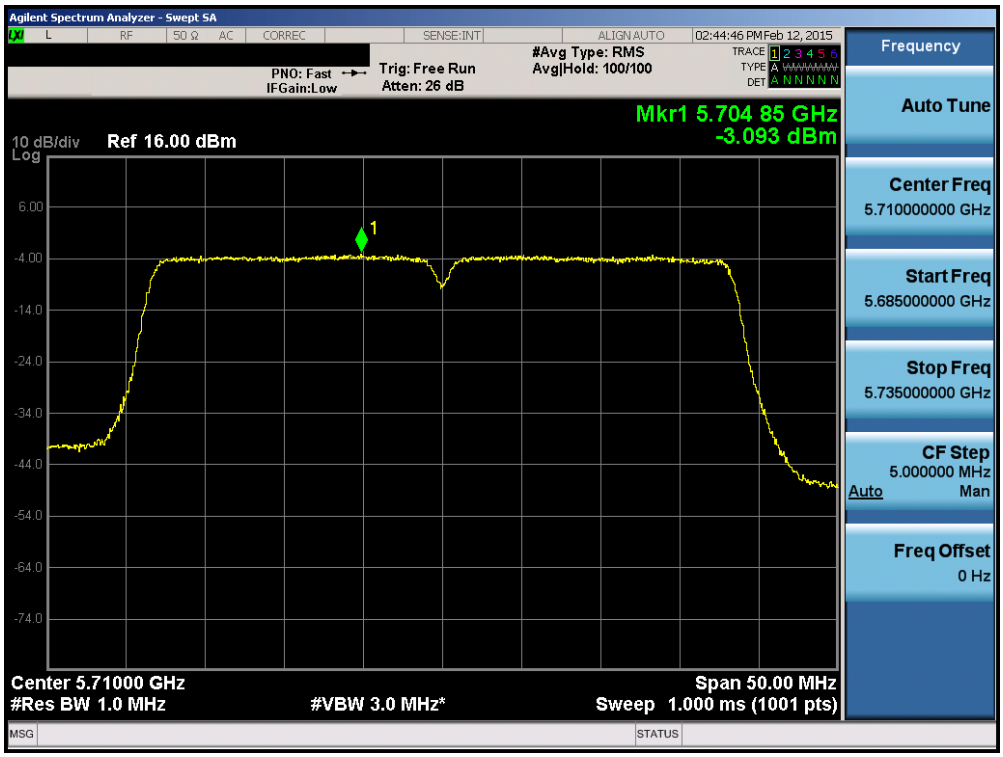

**Plot 6-138. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 144)**



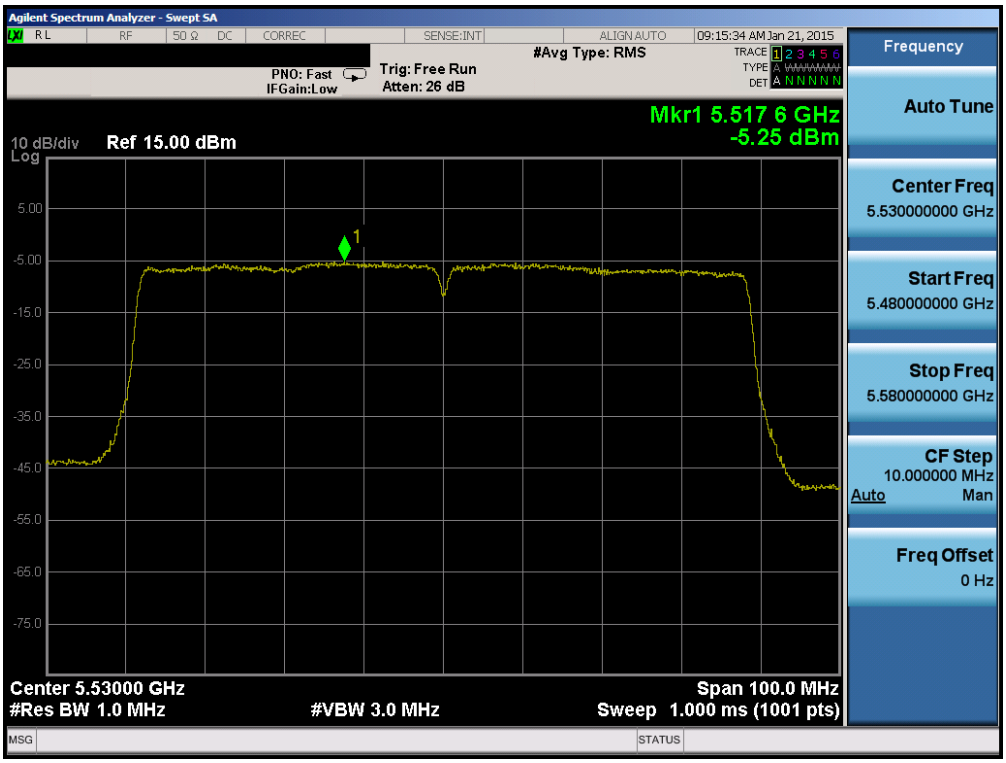

**Plot 6-139. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)**



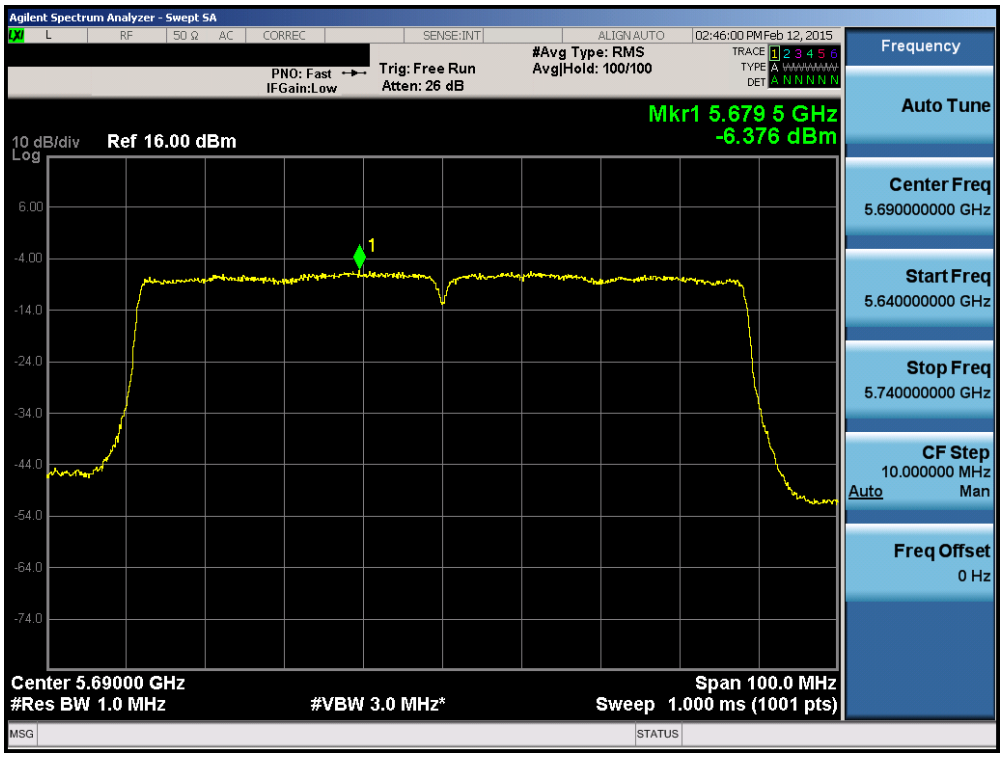

**Plot 6-140. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 110)**




**Plot 6-141. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 142)**




**Plot 6-142. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)**

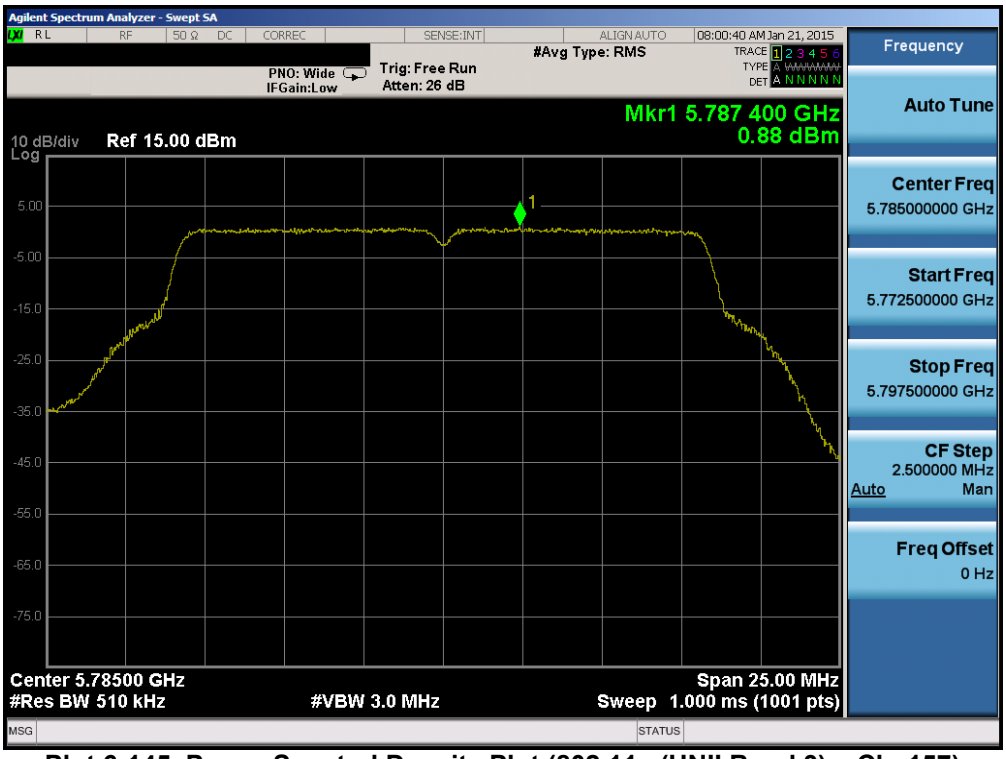



**Plot 6-143. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 138)**

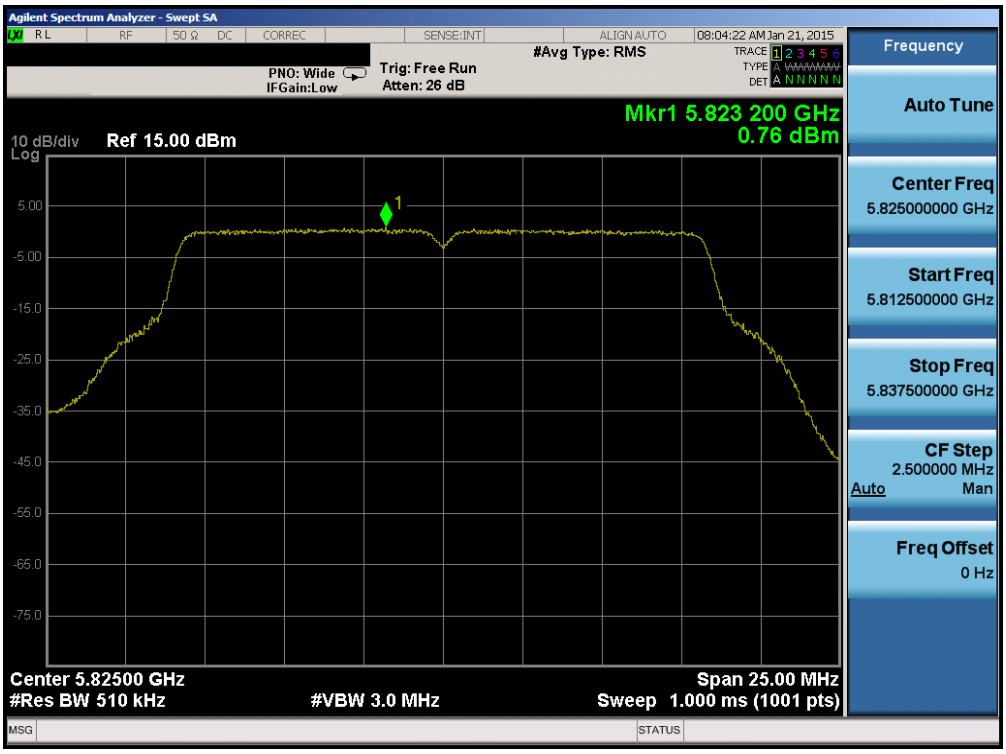
| | Frequency [MHz] | Channel No. | 802.11 Mode | Data Rate [Mbps] | Measured Power Density [dBm] | Max Permissible Power Density [dBm/500kHz] | Margin [dB] | Pass / Fail |
|---|---|---|---|---|---|---|---|---|
| Band 3 | 5745 | 149 | a | 6 | 1.27 | 30.0 | -28.73 | Pass |
| | 5785 | 157 | a | 6 | 0.88 | 30.0 | -29.12 | Pass |
| | 5825 | 165 | a | 6 | 0.76 | 30.0 | -29.24 | Pass |
| | 5745 | 149 | n (20MHz) | 6.5/7.2 (MCS0) | -0.22 | 30.0 | -30.22 | Pass |
| | 5785 | 157 | n (20MHz) | 6.5/7.2 (MCS0) | -0.41 | 30.0 | -30.41 | Pass |
| | 5825 | 165 | n (20MHz) | 6.5/7.2 (MCS0) | -0.16 | 30.0 | -30.16 | Pass |
| | 5755 | 151 | n (40MHz) | 13.5/15 (MCS0) | -3.77 | 30.0 | -33.77 | Pass |
| | 5795 | 159 | n (40MHz) | 13.5/15 (MCS0) | -4.51 | 30.0 | -34.51 | Pass |
| | 5775 | 155 | ac (80MHz) | 29.3/32.5 (MCS0) | -8.41 | 30.0 | -38.41 | Pass |

**Table 6-20. Band 3 Conducted Power Spectral Density Measurements**

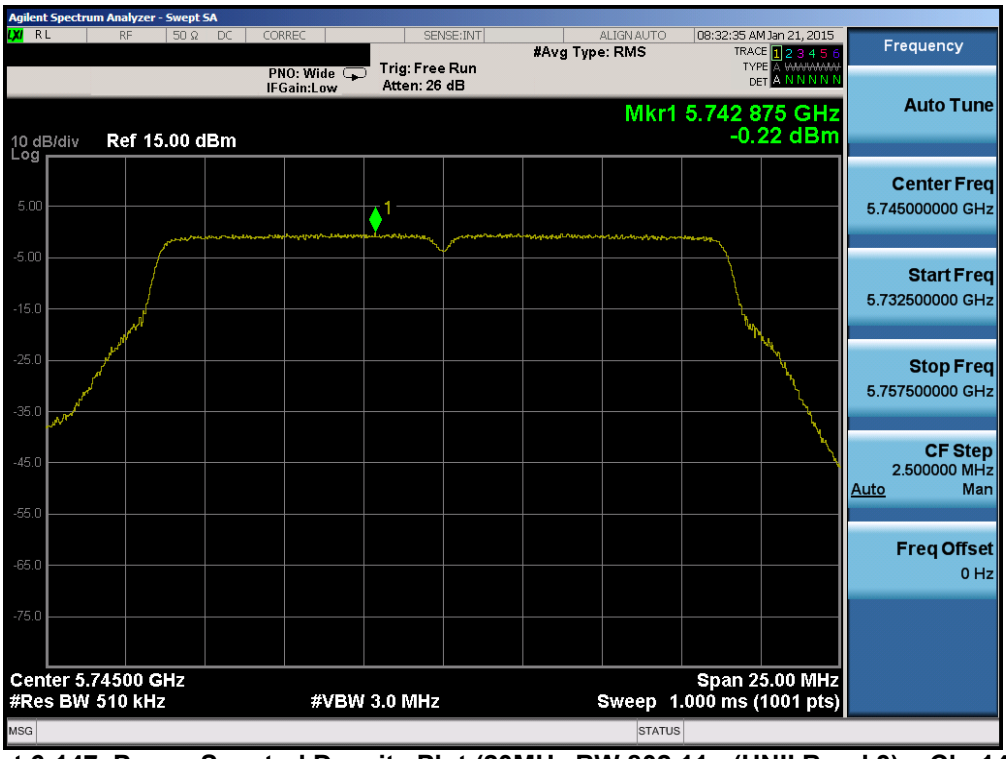

**Plot 6-144. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 149)**



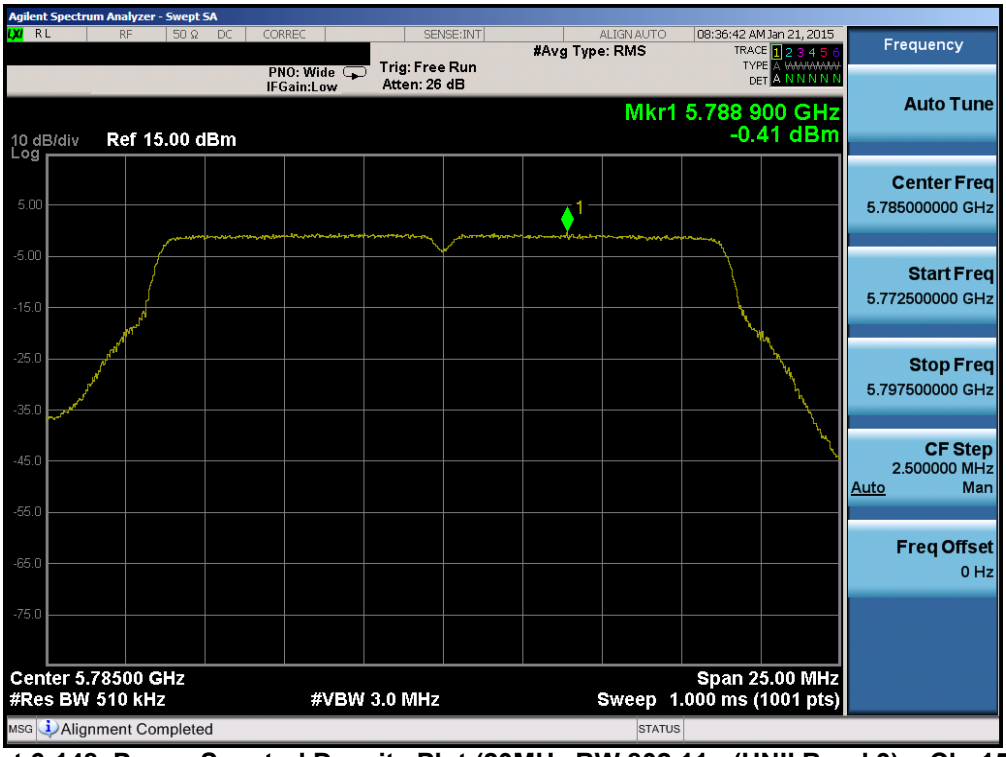

**Plot 6-145. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 157)**



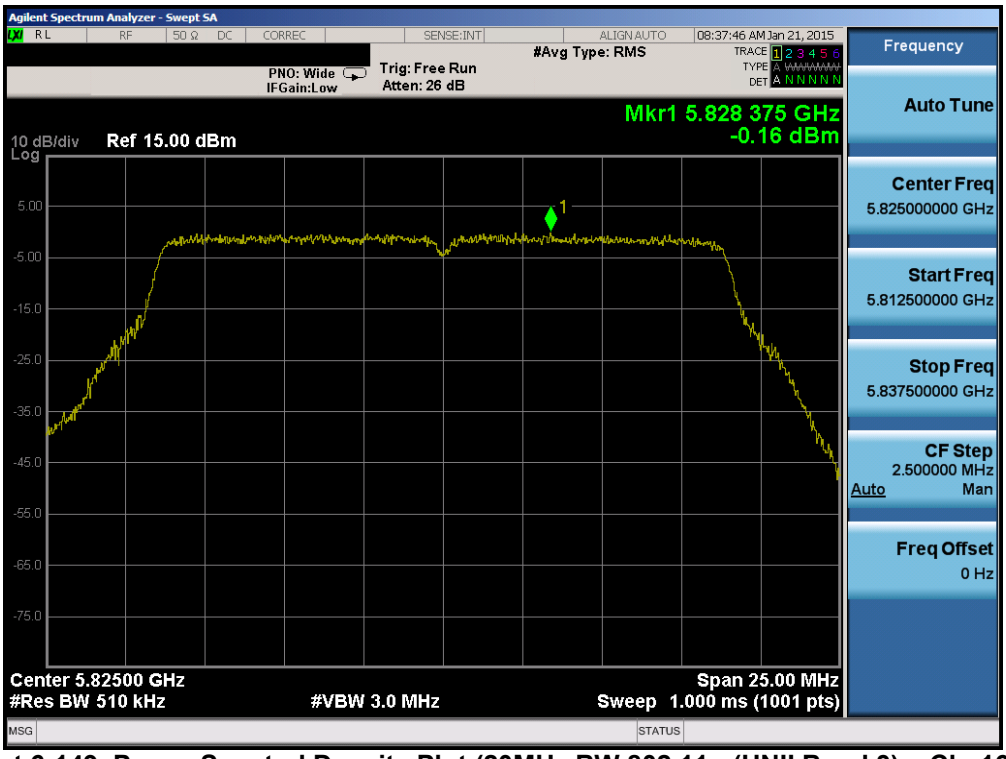

**Plot 6-146. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 165)**



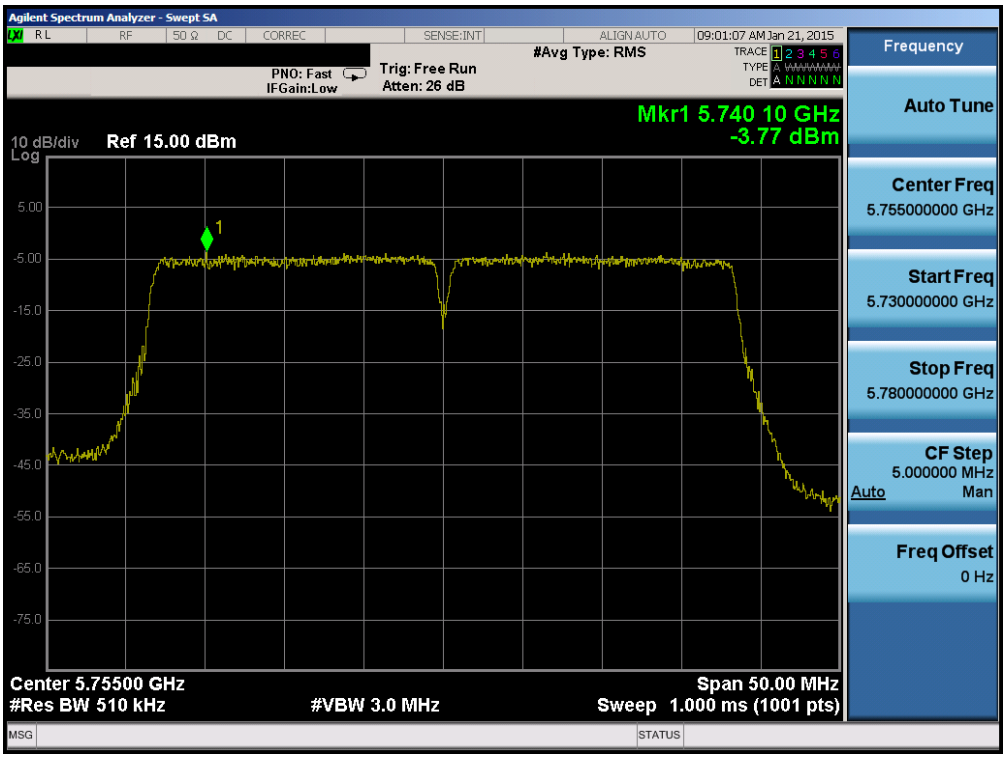

**Plot 6-147. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 149)**



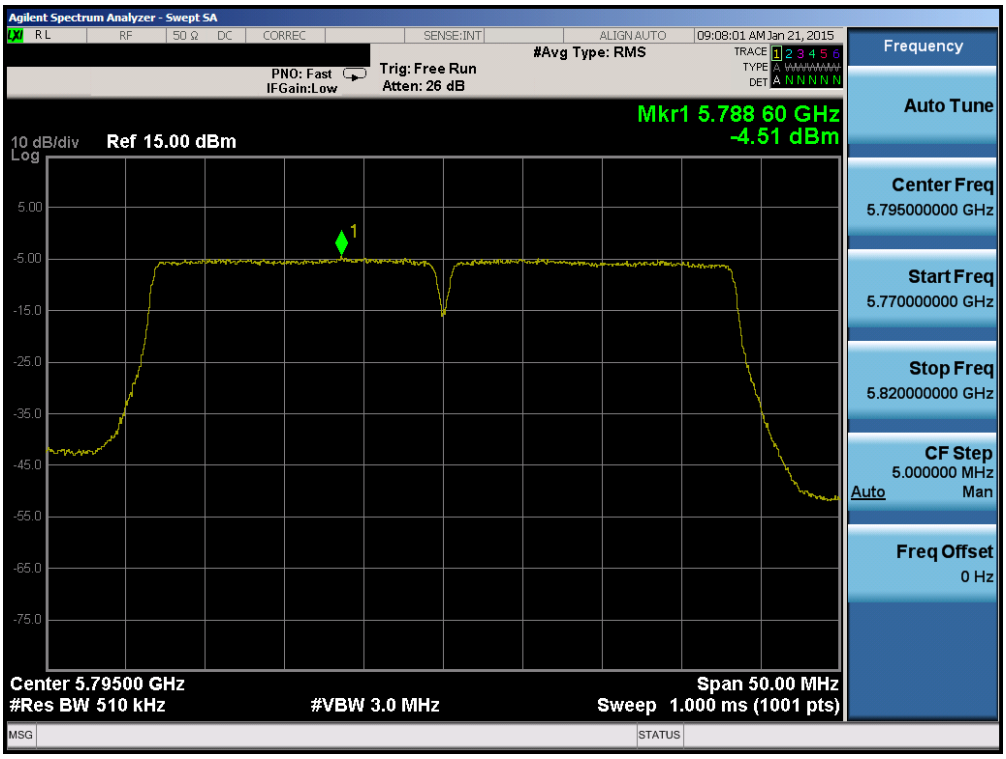

**Plot 6-148. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 157)**



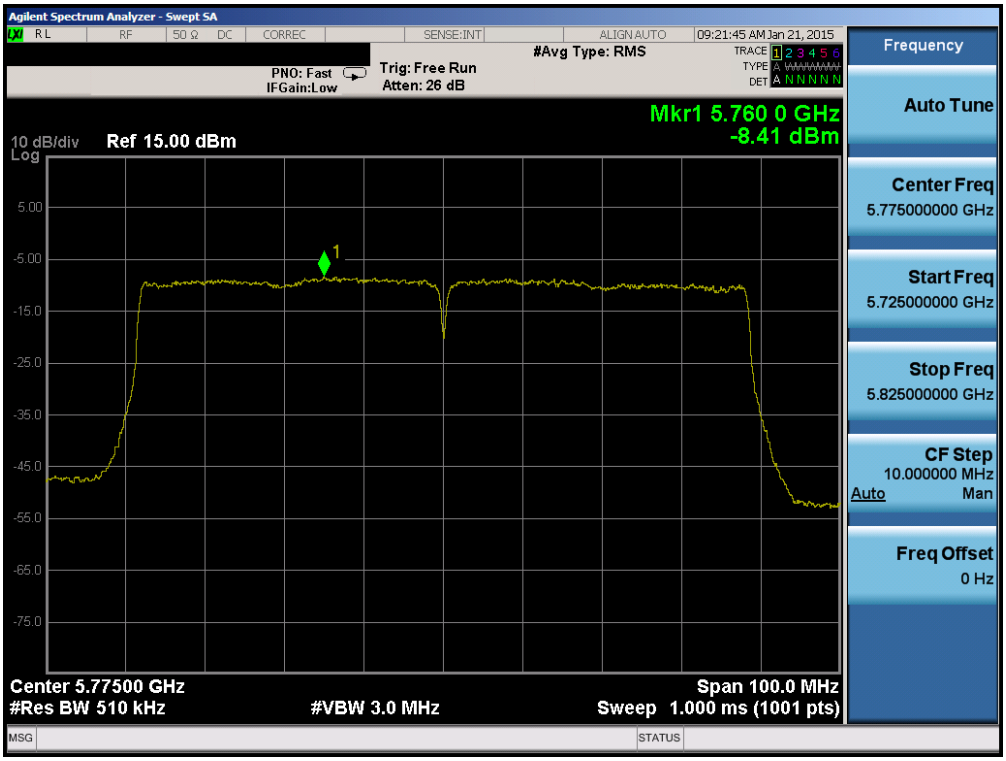

**Plot 6-149. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 165)**




**Plot 6-150. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 151)**




**Plot 6-151. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 159)**




**Plot 6-152. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)**

## Summed MIMO Power Spectral Density Measurements

| | Frequency [MHz] | Channel No. | 802.11 Mode | Data Rate [Mbps] | Antenn-1 Power Density [dBm] | Antenn-2 Power Density [dBm] | Summed MIMO Power Density [dBm] | Max Permissible Power Density [dBm/MHz] | Margin [dB] | Pass / Fail |
|---|---|---|---|---|---|---|---|---|---|---|
| Band 1 | 5180 | 36 | n (20MHz) | 6.5/7.2 (MCS0) | 3.39 | 3.54 | 6.47 | 11.0 | -4.53 | Pass |
| | 5200 | 40 | n (20MHz) | 6.5/7.2 (MCS0) | 3.52 | 3.41 | 6.47 | 11.0 | -4.53 | Pass |
| | 5240 | 48 | n (20MHz) | 6.5/7.2 (MCS0) | 3.73 | 3.54 | 6.64 | 11.0 | -4.36 | Pass |
| | 5190 | 38 | n (40MHz) | 13.5/15 (MCS0) | -1.30 | -1.42 | 1.65 | 11.0 | -9.35 | Pass |
| | 5230 | 46 | n (40MHz) | 13.5/15 (MCS0) | -0.46 | -1.29 | 2.16 | 11.0 | -8.84 | Pass |
| | 5210 | 42 | ac (80MHz) | 29.3/32.5 (MCS0) | -4.30 | -4.38 | -1.33 | 11.0 | -12.33 | Pass |
| Band 2A | 5260 | 52 | n (20MHz) | 6.5/7.2 (MCS0) | 3.75 | 3.30 | 6.54 | 11.0 | -4.46 | Pass |
| | 5280 | 56 | n (20MHz) | 6.5/7.2 (MCS0) | 3.72 | 3.25 | 6.50 | 11.0 | -4.50 | Pass |
| | 5320 | 64 | n (20MHz) | 6.5/7.2 (MCS0) | 2.96 | 2.85 | 5.91 | 11.0 | -5.09 | Pass |
| | 5270 | 54 | n (40MHz) | 13.5/15 (MCS0) | -0.21 | -0.98 | 2.43 | 11.0 | -8.57 | Pass |
| | 5310 | 62 | n (40MHz) | 13.5/15 (MCS0) | -0.88 | -1.45 | 1.85 | 11.0 | -9.15 | Pass |
| | 5290 | 58 | ac (80MHz) | 29.3/32.5 (MCS0) | -3.87 | -4.77 | -1.28 | 11.0 | -12.28 | Pass |
| Band 2C | 5500 | 100 | n (20MHz) | 6.5/7.2 (MCS0) | 3.23 | 2.78 | 6.02 | 11.0 | -4.98 | Pass |
| | 5580 | 116 | n (20MHz) | 6.5/7.2 (MCS0) | 2.80 | 1.65 | 5.27 | 11.0 | -5.73 | Pass |
| | 5720 | 144 | n (20MHz) | 6.5/7.2 (MCS0) | 2.57 | 2.10 | 5.35 | 11.0 | -5.65 | Pass |
| | 5510 | 102 | n (40MHz) | 13.5/15 (MCS0) | -0.68 | -1.37 | 2.00 | 11.0 | -9.00 | Pass |
| | 5590 | 118 | n (40MHz) | 13.5/15 (MCS0) | -0.39 | -0.45 | 2.59 | 11.0 | -8.41 | Pass |
| | 5710 | 142 | n (40MHz) | 13.5/15 (MCS0) | -2.27 | -3.09 | 0.35 | 11.0 | -10.65 | Pass |
| | 5530 | 106 | ac (80MHz) | 29.3/32.5 (MCS0) | -4.47 | -5.25 | -1.83 | 11.0 | -12.83 | Pass |
| | 5610 | 122 | ac (80MHz) | 29.3/32.5 (MCS0) | -5.43 | -5.97 | -2.68 | 11.0 | -13.68 | Pass |
| | 5690 | 138 | ac (80MHz) | 29.3/32.5 (MCS0) | -6.65 | -6.38 | -3.50 | 11.0 | -14.50 | Pass |

**Table 6-21. Bands 1, 2A, 2C MIMO Conducted Power Spectral Density Measurements**

| | Frequency [MHz] | Channel No. | 802.11 Mode | Data Rate [Mbps] | Antenn-1 Power Density [dBm] | Antenn-2 Power Density [dBm] | Summed MIMO Power Density [dBm] | Max Permissible Power Density [dBm/500kHz] | Margin [dB] | Pass / Fail |
|---|---|---|---|---|---|---|---|---|---|---|
| Band 3 | 5745 | 149 | n (20MHz) | 6.5/7.2 (MCS0) | -0.15 | -0.22 | 2.82 | 30.0 | -27.18 | Pass |
| | 5785 | 157 | n (20MHz) | 6.5/7.2 (MCS0) | -0.28 | -0.41 | 2.66 | 30.0 | -27.34 | Pass |
| | 5825 | 165 | n (20MHz) | 6.5/7.2 (MCS0) | -0.83 | -0.16 | 2.53 | 30.0 | -27.47 | Pass |
| | 5755 | 151 | n (40MHz) | 13.5/15 (MCS0) | -3.95 | -3.77 | -0.85 | 30.0 | -30.85 | Pass |
| | 5795 | 159 | n (40MHz) | 13.5/15 (MCS0) | -4.27 | -4.52 | -1.38 | 30.0 | -31.38 | Pass |
| | 5775 | 155 | ac (80MHz) | 29.3/32.5 (MCS0) | -7.50 | -8.41 | -4.92 | 30.0 | -34.92 | Pass |

**Table 6-22. Band 3 MIMO Conducted Power Spectral Density Measurements**

**Note:**

Per KDB 662911 v02r01 Section E)2), 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 5180MHz the average conducted power spectral density was measured to be 3.39 dBm for Antenna-1 and 3.54 dBm for Antenna-2.

Antenna 1 + Antenna 2 = MIMO

(3.39 dBm + 3.54 dBm) = (2.18 mW + 2.26 mW) = 4.44 mW = 6.47 dBm

## 6.6 Frequency Stability

**§15.407(g)**

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30°C and +50°C. The temperature was incremented by 10° intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded. Data for the worst case channel is shown below.

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 5,180,000,000 | Hz |
| CHANNEL: | 36 | |
| REFERENCE VOLTAGE: | 3.85 | VDC |

| VOLTAGE (%) | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|---|---|---|---|---|---|
| 100 % | 3.85 | + 20 (Ref) | 5,179,999,653 | -347 | -0.00000670 |
| 100 % | | - 30 | 5,180,000,043 | 43 | 0.00000083 |
| 100 % | | - 20 | 5,179,999,867 | -133 | -0.00000257 |
| 100 % | | - 10 | 5,180,000,282 | 282 | 0.00000544 |
| 100 % | | 0 | 5,179,999,880 | -120 | -0.00000232 |
| 100 % | | + 10 | 5,180,000,073 | 73 | 0.00000141 |
| 100 % | | + 20 | 5,180,000,350 | 350 | 0.00000676 |
| 100 % | | + 30 | 5,180,000,394 | 394 | 0.00000761 |
| 100 % | | + 40 | 5,180,000,099 | 99 | 0.00000191 |
| 100 % | | + 50 | 5,179,999,986 | -14 | -0.00000027 |
| BATT. ENDPOINT | 3.40 | + 20 | 5,180,000,144 | 144 | 0.00000278 |

**Table 6-23. Frequency Stability Measurements for UNII Band 1 (Ch. 36)**

**Note:**

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

## Frequency Stability
**§15.407(g)**

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30°C and +50°C. The temperature was incremented by 10° intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded. Data for the worst case channel is shown below.

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 5,260,000,000 | Hz |
| CHANNEL: | 52 | |
| REFERENCE VOLTAGE: | 3.85 | VDC |

| VOLTAGE (%) | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|---|---|---|---|---|---|
| 100 % | 3.85 | + 20 (Ref) | 5,259,999,796 | -204 | -0.00000388 |
| 100 % | | - 30 | 5,259,999,895 | -105 | -0.00000200 |
| 100 % | | - 20 | 5,260,000,070 | 70 | 0.00000133 |
| 100 % | | - 10 | 5,260,000,304 | 304 | 0.00000578 |
| 100 % | | 0 | 5,260,000,087 | 87 | 0.00000165 |
| 100 % | | + 10 | 5,260,000,263 | 263 | 0.00000500 |
| 100 % | | + 20 | 5,260,000,036 | 36 | 0.00000068 |
| 100 % | | + 30 | 5,259,999,704 | -296 | -0.00000563 |
| 100 % | | + 40 | 5,260,000,154 | 154 | 0.00000293 |
| 100 % | | + 50 | 5,259,999,900 | -100 | -0.00000190 |
| BATT. ENDPOINT | 3.40 | + 20 | 5,259,999,999 | -1 | -0.00000002 |

**Table 6-24. Frequency Stability Measurements for UNII Band 2A (Ch. 52)**

**Note:**

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

## Frequency Stability
**§15.407(g)**

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30°C and +50°C. The temperature was incremented by 10° intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded. Data for the worst case channel is shown below.

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 5,500,000,000 | Hz |
| CHANNEL: | 100 | |
| REFERENCE VOLTAGE: | 3.85 | VDC |

| VOLTAGE (%) | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|---|---|---|---|---|---|
| 100 % | 3.85 | + 20 (Ref) | 5,500,000,136 | 136 | 0.00000247 |
| 100 % | | - 30 | 5,500,000,267 | 267 | 0.00000485 |
| 100 % | | - 20 | 5,500,000,125 | 125 | 0.00000227 |
| 100 % | | - 10 | 5,500,000,016 | 16 | 0.00000029 |
| 100 % | | 0 | 5,500,000,298 | 298 | 0.00000542 |
| 100 % | | + 10 | 5,500,000,028 | 28 | 0.00000051 |
| 100 % | | + 20 | 5,500,000,297 | 297 | 0.00000540 |
| 100 % | | + 30 | 5,499,999,743 | -257 | -0.00000467 |
| 100 % | | + 40 | 5,500,000,343 | 343 | 0.00000624 |
| 100 % | | + 50 | 5,499,999,952 | -48 | -0.00000087 |
| BATT. ENDPOINT | 3.40 | + 20 | 5,500,000,001 | 1 | 0.00000002 |

**Table 6-25. Frequency Stability Measurements for UNII Band 2C (Ch. 100)**

**Note:**

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

## Frequency Stability
**§15.407(g)**

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30°C and +50°C. The temperature was incremented by 10° intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded. Data for the worst case channel is shown below.

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 5,745,000,000 | Hz |
| CHANNEL: | 149 | |
| REFERENCE VOLTAGE: | 3.85 | VDC |

| VOLTAGE (%) | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|---|---|---|---|---|---|
| 100 % | 3.85 | + 20 (Ref) | 5,744,999,628 | -372 | -0.00000648 |
| 100 % | | - 30 | 5,744,999,987 | -13 | -0.00000023 |
| 100 % | | - 20 | 5,745,000,184 | 184 | 0.00000320 |
| 100 % | | - 10 | 5,744,999,854 | -146 | -0.00000254 |
| 100 % | | 0 | 5,744,999,816 | -184 | -0.00000320 |
| 100 % | | + 10 | 5,744,999,647 | -353 | -0.00000614 |
| 100 % | | + 20 | 5,745,000,000 | 0 | 0.00000000 |
| 100 % | | + 30 | 5,745,000,224 | 224 | 0.00000390 |
| 100 % | | + 40 | 5,745,000,290 | 290 | 0.00000505 |
| 100 % | | + 50 | 5,745,000,058 | 58 | 0.00000101 |
| BATT. ENDPOINT | 3.40 | + 20 | 5,744,999,987 | -13 | -0.00000023 |

**Table 6-26. Frequency Stability Measurements for UNII Band 3 (Ch. 149)**

**Note:**

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

## 6.7 Radiated Spurious Emission Measurements

**§15.407(b.1)(b.6) §15.205 §15.209**

**Test Overview and Limit**

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum power control level, as defined in KDB 789033 D02 v01, and at the appropriate frequencies. All channels, modes (e.g. 802.11a, 802.11n (20MHz BW) and 802.11n (40MHz BW)), and modulations/data rates were investigated among all UNII bands. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

***All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table 6-27 per Section 15.209.***

| Frequency | Field Strength [μV/m] | Measured Distance [Meters] |
|---|---|---|
| Above 960.0 MHz | 500 | 3 |

**Table 6-27. Radiated Limits**

**Test Procedures Used**

KDB 789033 D02 v01 – Section G

**Test Settings**

**Average Measurements above 1GHz (Method AD)**

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = power average (RMS)
5. Number of measurement points = 1001 (Number of points must be ≥ 2 x span/RBW)
6. Averaging type = power (RMS)
7. Sweep time = auto couple
8. Trace was averaged over 100 sweeps

**Peak Measurements above 1GHz**

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

**Peak Measurements below 1GHz**

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = 120kHz
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

**Test Setup**

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

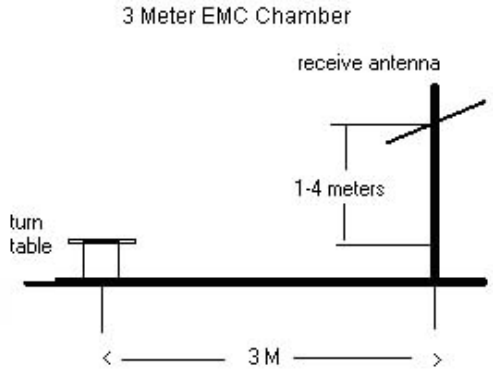



**Figure 6-5. Test Instrument & Measurement Setup**

**Test Notes**

1. All radiated spurious emissions levels were measured in a radiated test setup per the guidance of KDB 789033 D02 v01 Section H.
2. All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-27.
3. All spurious emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 6-11. All spurious emissions that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dBμV/m.
4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
5. This unit was tested with its standard battery.
6. The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. Above 1 GHz, average and peak

measurements were taken using linearly polarized horn antennas. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.

7. Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
8. Radiated spurious emissions were investigated while operating in MIMO mode, however, it was determined that single antenna operation produced the worst case emissions. Since the emissions produced from MIMO operation were found to be more than 20dB below the limit, the MIMO emissions are not reported.
9. Radiated spurious emissions pre-scan plots are also reported at the beginning of the next section. The plots apply the appropriate system corrections, however, they do not show the fully maximized spectrum. The plots are only included for the purposes of identifying spurious emissions requiring further investigation. Rohde & Schwarz EMC32, Version 9.15.00 automated test software was used to perform the Radiated Spurious Emissions Pre-Scan testing.

## Sample Calculations

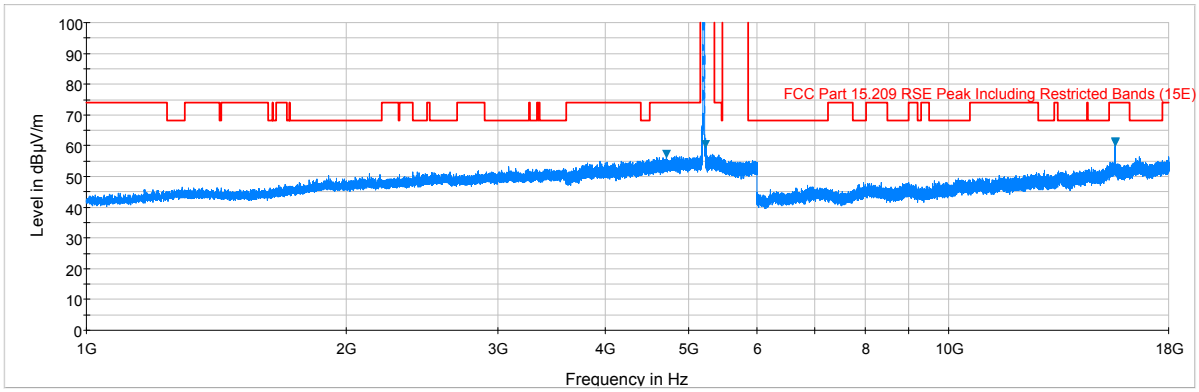
### Determining Spurious Emissions Levels

- Field Strength Level $_{[dB\mu V/m]}$ = Analyzer Level $_{[dBm]}$ + 107 + AFCL $_{[dB/m]}$
- AFCL $_{[dB/m]}$ = Antenna Factor $_{[dB/m]}$ + Cable Loss $_{[dB]}$
- Margin $_{[dB]}$ = Field Strength Level $_{[dB\mu V/m]}$ – Limit $_{[dB\mu V/m]}$

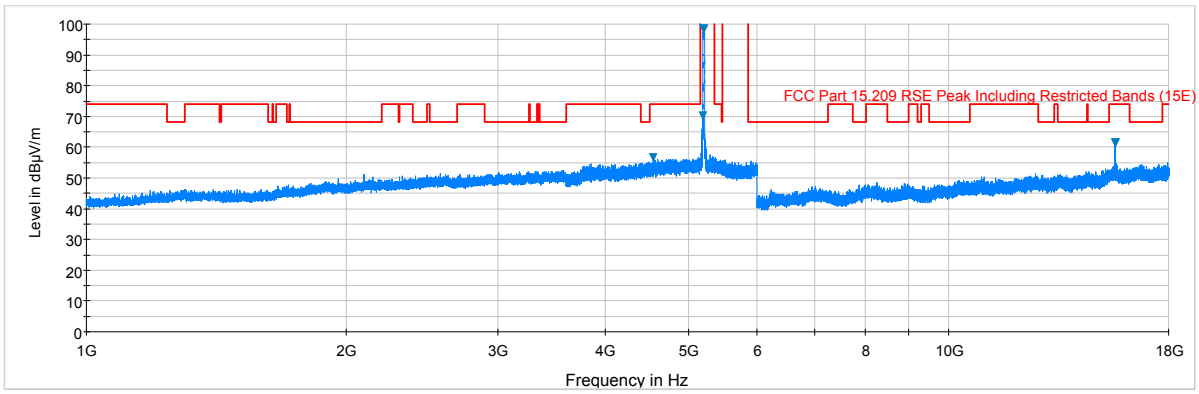
### Radiated Band Edge Measurement Offset

- The amplitude offset shown in the radiated restricted band edge plots in Section 6.8 was calculated using the formula:
  Offset (dB) = (Antenna Factor + Cable Loss + 10 dB Attenuator) – Preamplifier Gain

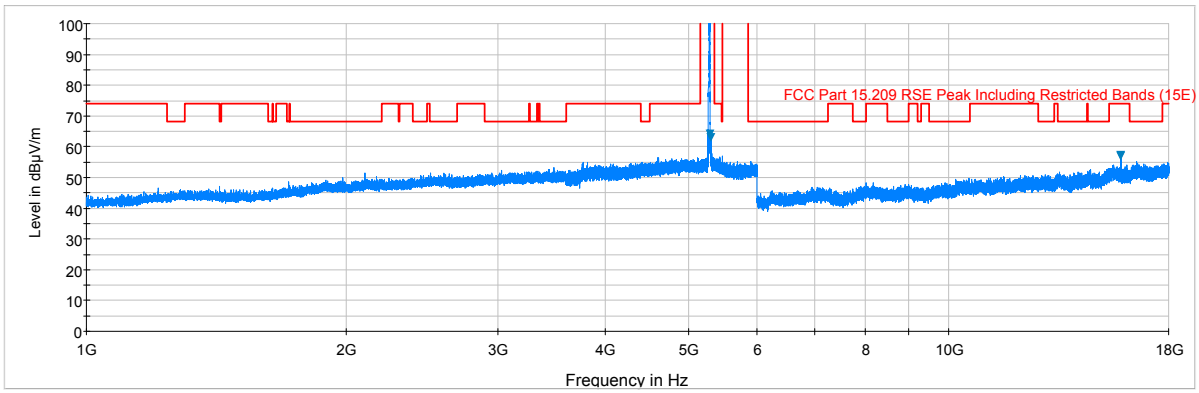
## 6.7.1 Antenna-1 Radiated Spurious Emission Measurements



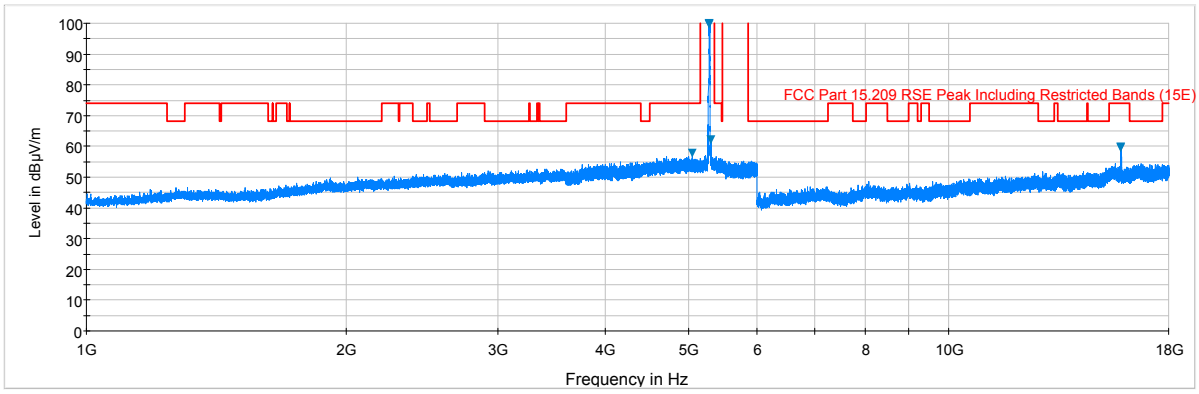

**Plot 6-153. Radiated Spurious Plot above 1GHz (802.11a – U1, Ant. Pol. H)**



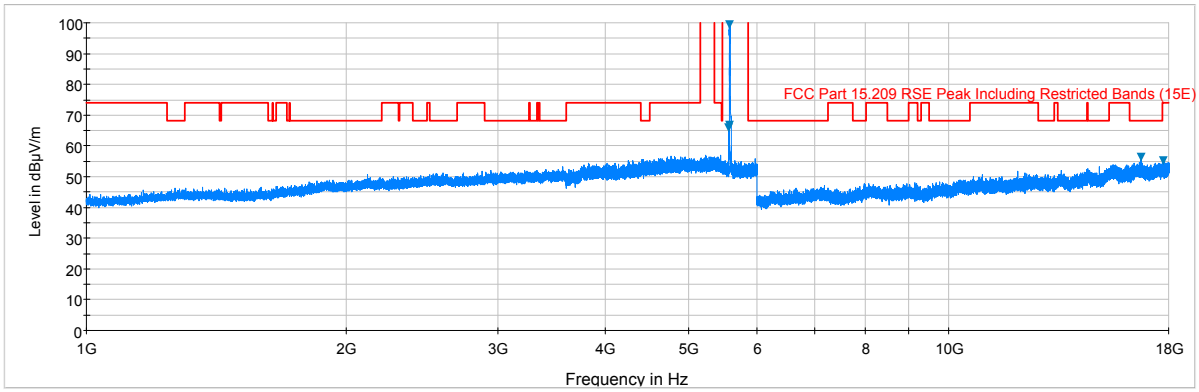

**Plot 6-154. Radiated Spurious Plot above 1GHz (802.11a – U1, Ant. Pol. V)**



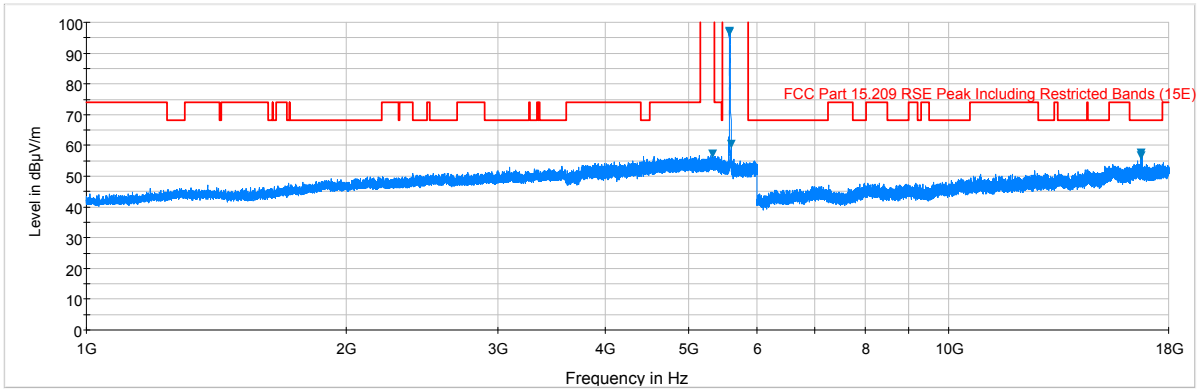

**Plot 6-155. Radiated Spurious Plot above 1GHz (802.11a – U2A, Ant. Pol. H)**



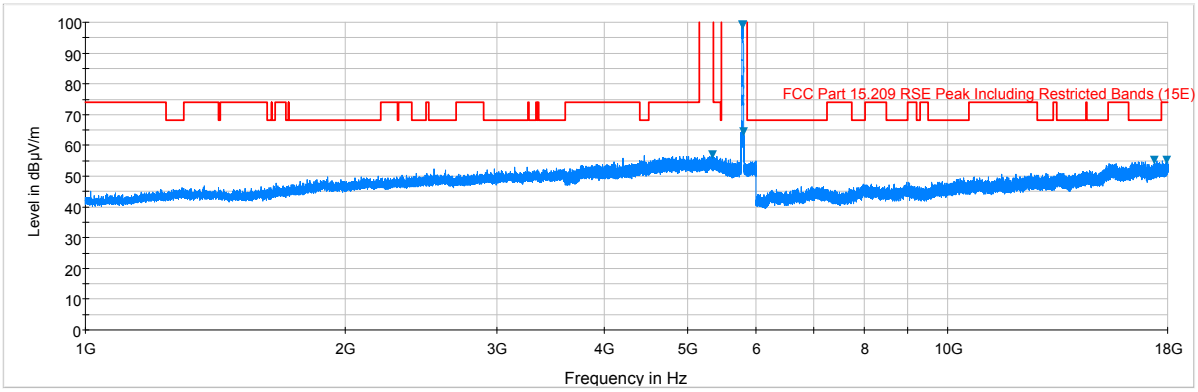

**Plot 6-156. Radiated Spurious Plot above 1GHz (802.11a – U2A, Ant. Pol. V)**



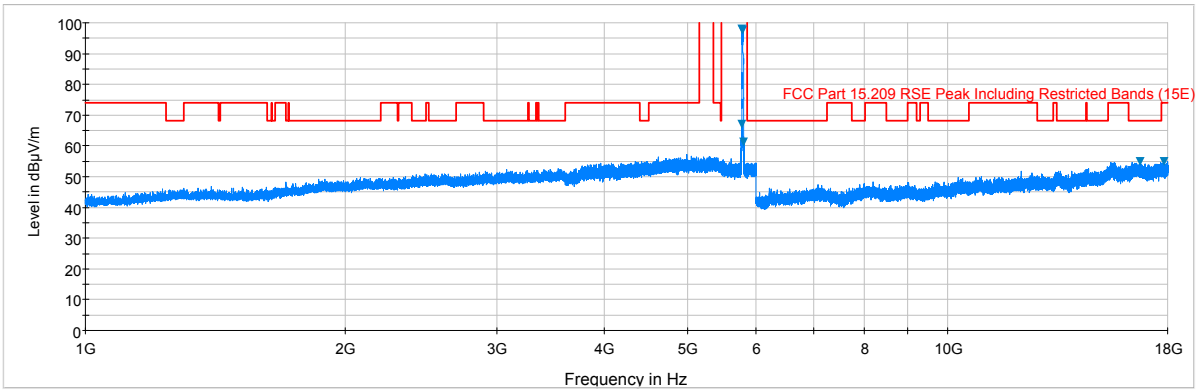

**Plot 6-157. Radiated Spurious Plot above 1GHz (802.11a – U2C, Ant. Pol. H)**




**Plot 6-158. Radiated Spurious Plot above 1GHz (802.11a – U2C, Ant. Pol. V)**



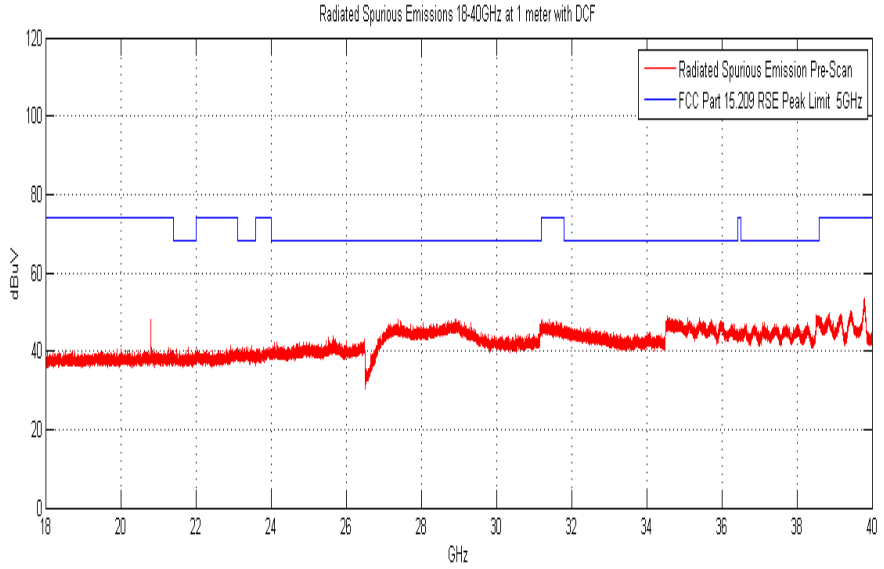

**Plot 6-159. Radiated Spurious Plot above 1GHz (802.11a – U3, Ant. Pol. H)**



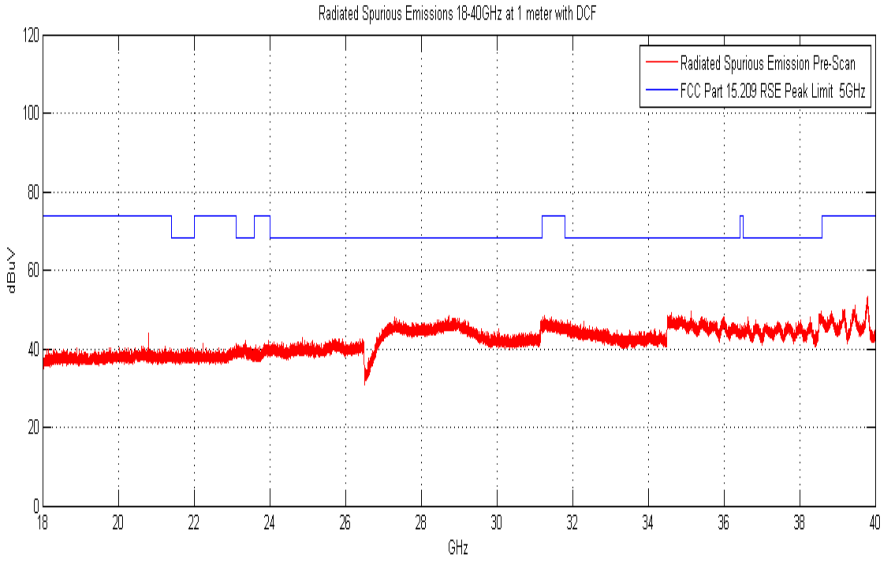

**Plot 6-160. Radiated Spurious Plot above 1GHz (802.11a – U3, Ant. Pol. V)**

## Antenna-1 Radiated Spurious Emissions Measurements (Above 18GHz)

**§15.209**




**Plot 6-161. Radiated Spurious Plot above 18GHz (802.11a – Ant. Pol. H)**




**Plot 6-162. Radiated Spurious Plot above 18GHz (802.11a – Ant. Pol. V)**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5180MHz |
| Channel: | 36 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| | 10360.00 | -103.03 | Peak | V | 44.78 | 0.00 | 48.75 | 68.20 | -19.45 |
| * | 15540.00 | -113.15 | Average | V | 49.27 | 0.00 | 43.12 | 53.98 | -10.86 |
| * | 15540.00 | -99.52 | Peak | V | 49.27 | 0.00 | 56.75 | 73.98 | -17.23 |
| * | 20720.00 | -97.44 | Average | V | 44.20 | -9.54 | 44.21 | 53.98 | -9.77 |
| * | 20720.00 | -93.79 | Peak | V | 44.20 | -9.54 | 47.86 | 73.98 | -26.12 |
| | 25900.00 | -99.27 | Peak | V | 45.08 | -9.54 | 43.26 | 68.20 | -24.94 |

**Table 6-28. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5200MHz |
| Channel: | 40 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| | 10400.00 | -104.18 | Peak | V | 44.87 | 0.00 | 47.70 | 68.20 | -20.50 |
| * | 15600.00 | -112.59 | Average | V | 49.29 | 0.00 | 43.70 | 53.98 | -10.28 |
| * | 15600.00 | -99.50 | Peak | V | 49.29 | 0.00 | 56.80 | 73.98 | -17.18 |
| * | 20800.00 | -94.37 | Average | V | 44.20 | -9.54 | 47.29 | 53.98 | -6.69 |
| * | 20800.00 | -92.10 | Peak | V | 44.20 | -9.54 | 49.56 | 73.98 | -24.42 |
| | 26000.00 | -99.33 | Peak | V | 45.11 | -9.54 | 43.24 | 68.20 | -24.96 |

**Table 6-29. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5240MHz |
| Channel: | 48 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| | 10480.00 | -103.69 | Peak | V | 45.08 | 0.00 | 48.39 | 68.20 | -19.81 |
| * | 15720.00 | -112.57 | Average | V | 49.40 | 0.00 | 43.83 | 53.98 | -10.15 |
| * | 15720.00 | -99.11 | Peak | V | 49.40 | 0.00 | 57.29 | 73.98 | -16.69 |
| * | 20960.00 | -95.71 | Average | V | 44.19 | -9.54 | 45.93 | 53.98 | -8.05 |
| * | 20960.00 | -92.72 | Peak | V | 44.19 | -9.54 | 48.92 | 73.98 | -25.06 |
| | 26200.00 | -99.68 | Peak | V | 44.95 | -9.54 | 42.73 | 68.20 | -25.47 |

**Table 6-30. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5240MHz |
| Channel: | 48 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| | 10480.00 | -104.29 | Peak | H | 45.08 | 0.00 | 47.79 | 68.20 | -20.41 |
| * | 15720.00 | -113.81 | Average | H | 49.40 | 0.00 | 42.59 | 53.98 | -11.39 |
| * | 15720.00 | -100.63 | Peak | H | 49.40 | 0.00 | 55.77 | 73.98 | -18.21 |
| * | 20800.00 | -105.30 | Average | H | 44.20 | -9.54 | 36.36 | 53.98 | -17.62 |
| * | 20800.00 | -99.28 | Peak | H | 44.20 | -9.54 | 42.38 | 73.98 | -31.60 |
| | 26000.00 | -99.42 | Peak | H | 45.11 | -9.54 | 43.15 | 68.20 | -25.05 |

**Table 6-31. Radiated Measurements w/ WCP**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5260MHz |
| Channel: | 52 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| | 10520.00 | -102.62 | Peak | V | 45.13 | 0.00 | 49.52 | 68.20 | -18.68 |
| * | 15780.00 | -113.21 | Average | V | 49.45 | 0.00 | 43.24 | 53.98 | -10.74 |
| * | 15780.00 | -99.78 | Peak | V | 49.45 | 0.00 | 56.67 | 73.98 | -17.31 |
| * | 21040.00 | -96.15 | Average | V | 44.18 | -9.54 | 45.48 | 53.98 | -8.49 |
| * | 21040.00 | -92.90 | Peak | V | 44.18 | -9.54 | 48.73 | 73.98 | -25.24 |
| | 26300.00 | -98.93 | Peak | V | 44.95 | -9.54 | 43.47 | 68.20 | -24.73 |

**Table 6-32. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5280MHz |
| Channel: | 56 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| | 10560.00 | -103.33 | Peak | V | 45.14 | 0.00 | 48.80 | 68.20 | -19.40 |
| * | 15840.00 | -110.71 | Average | V | 49.53 | 0.00 | 45.83 | 53.98 | -8.15 |
| * | 15840.00 | -96.67 | Peak | V | 49.53 | 0.00 | 59.87 | 73.98 | -14.11 |
| * | 21120.00 | -96.25 | Average | V | 44.17 | -9.54 | 45.38 | 53.98 | -8.60 |
| * | 21120.00 | -94.06 | Peak | V | 44.17 | -9.54 | 47.57 | 73.98 | -26.41 |
| | 26400.00 | -98.58 | Peak | V | 45.01 | -9.54 | 43.88 | 68.20 | -24.32 |

**Table 6-33. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5320MHz |
| Channel: | 64 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 10640.00 | -115.04 | Average | V | 45.17 | 0.00 | 37.13 | 53.98 | -16.85 |
| * | 10640.00 | -102.76 | Peak | V | 45.17 | 0.00 | 49.41 | 73.98 | -24.57 |
| * | 15960.00 | -111.64 | Average | V | 49.72 | 0.00 | 45.08 | 53.98 | -8.90 |
| * | 15960.00 | -98.44 | Peak | V | 49.72 | 0.00 | 58.28 | 73.98 | -15.70 |
| * | 21280.00 | -97.37 | Average | V | 44.18 | -9.54 | 44.26 | 53.98 | -9.71 |
| * | 21280.00 | -93.43 | Peak | V | 44.18 | -9.54 | 48.20 | 73.98 | -25.77 |
| | 26600.00 | -103.01 | Peak | V | 47.61 | -9.54 | 42.06 | 68.20 | -26.14 |

**Table 6-34. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5280MHz |
| Channel: | 56 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| | 10560.00 | -103.49 | Peak | H | 45.14 | 0.00 | 48.64 | 68.20 | -19.56 |
| * | 15840.00 | -111.77 | Average | H | 49.53 | 0.00 | 44.77 | 53.98 | -9.21 |
| * | 15840.00 | -98.28 | Peak | H | 49.53 | 0.00 | 58.26 | 73.98 | -15.72 |
| * | 21120.00 | -98.64 | Average | H | 44.17 | -9.54 | 42.99 | 53.98 | -10.99 |
| * | 21120.00 | -94.42 | Peak | H | 44.17 | -9.54 | 47.21 | 73.98 | -26.77 |
| | 26400.00 | -99.37 | Peak | H | 45.01 | -9.54 | 43.09 | 68.20 | -25.11 |

**Table 6-35. Radiated Measurements w/ WCP**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5500MHz |
| Channel: | 100 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 11000.00 | -115.23 | Average | V | 45.24 | 0.00 | 37.01 | 53.98 | -16.97 |
| * | 11000.00 | -102.74 | Peak | V | 45.24 | 0.00 | 49.50 | 73.98 | -24.48 |
| | 16500.00 | -99.58 | Peak | V | 50.35 | 0.00 | 57.77 | 68.20 | -10.43 |
| | 22000.00 | -90.08 | Peak | V | 44.47 | -9.54 | 51.85 | 68.20 | -16.35 |
| | 27500.00 | -103.23 | Peak | V | 47.92 | -9.54 | 42.15 | 68.20 | -26.05 |

**Table 6-36. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5580MHz |
| Channel: | 116 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 11160.00 | -114.30 | Average | V | 45.22 | 0.00 | 37.93 | 53.98 | -16.05 |
| * | 11160.00 | -102.74 | Peak | V | 45.22 | 0.00 | 49.49 | 73.98 | -24.49 |
| | 16740.00 | -101.75 | Peak | V | 50.47 | 0.00 | 55.73 | 68.20 | -12.47 |
| * | 22320.00 | -98.59 | Average | V | 44.59 | -9.54 | 43.46 | 53.98 | -10.52 |
| * | 22320.00 | -89.67 | Peak | V | 44.59 | -9.54 | 52.38 | 73.98 | -21.60 |
| | 27900.00 | -99.78 | Peak | V | 48.09 | -9.54 | 45.77 | 68.20 | -22.43 |

**Table 6-37. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5720MHz |
| Channel: | 144 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 11440.00 | -109.66 | Average | V | 45.37 | 0.00 | 42.71 | 53.98 | -11.27 |
| * | 11440.00 | -97.14 | Peak | V | 45.37 | 0.00 | 55.23 | 73.98 | -18.75 |
| | 17160.00 | -101.45 | Peak | V | 50.51 | 0.00 | 56.05 | 68.20 | -12.15 |
| * | 22880.00 | -99.45 | Average | V | 44.62 | -9.54 | 42.63 | 53.98 | -11.35 |
| * | 22880.00 | -88.89 | Peak | V | 44.62 | -9.54 | 53.19 | 73.98 | -20.79 |
| | 28600.00 | -100.04 | Peak | V | 48.35 | -9.54 | 45.77 | 68.20 | -22.43 |

**Table 6-38. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5500MHz |
| Channel: | 100 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 11000.00 | -115.41 | Average | H | 45.24 | 0.00 | 36.83 | 53.98 | -17.15 |
| * | 11000.00 | -102.66 | Peak | H | 45.24 | 0.00 | 49.58 | 73.98 | -24.40 |
| | 16500.00 | -99.98 | Peak | H | 50.35 | 0.00 | 57.37 | 68.20 | -10.83 |
| | 22000.00 | -90.72 | Peak | H | 44.47 | -9.54 | 51.21 | 68.20 | -16.99 |
| | 27500.00 | -103.82 | Peak | H | 47.92 | -9.54 | 41.56 | 68.20 | -26.64 |

**Table 6-39. Radiated Measurements w/ WCP**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5745MHz |
| Channel: | 149 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 11490.00 | -109.90 | Average | V | 45.46 | 0.00 | 42.56 | 53.98 | -11.42 |
| * | 11490.00 | -96.83 | Peak | V | 45.46 | 0.00 | 55.63 | 73.98 | -18.35 |
| | 17235.00 | -98.44 | Peak | V | 50.68 | 0.00 | 59.24 | 68.20 | -8.96 |
| * | 22980.00 | -106.72 | Average | V | 44.64 | -9.54 | 35.37 | 53.98 | -18.61 |
| * | 22980.00 | -95.20 | Peak | V | 44.64 | -9.54 | 46.89 | 68.20 | -21.31 |
| | 28725.00 | -130.52 | Peak | V | 48.26 | -9.54 | 15.20 | 68.20 | -53.00 |

**Table 6-40. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5785MHz |
| Channel: | 157 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 11570.00 | -107.16 | Average | V | 45.56 | 0.00 | 45.40 | 53.98 | -8.58 |
| * | 11570.00 | -94.69 | Peak | V | 45.56 | 0.00 | 57.87 | 73.98 | -16.11 |
| | 17355.00 | -94.79 | Peak | V | 51.04 | 0.00 | 63.24 | 68.20 | -4.96 |
| | 23140.00 | -92.93 | Peak | V | 44.73 | -9.54 | 49.26 | 68.20 | -18.94 |
| | 28925.00 | -129.07 | Peak | V | 48.28 | -9.54 | 16.66 | 68.20 | -51.54 |

**Table 6-41. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5825MHz |
| Channel: | 165 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 11650.00 | -110.39 | Average | V | 45.68 | 0.00 | 42.29 | 53.98 | -11.68 |
| * | 11650.00 | -98.27 | Peak | V | 45.68 | 0.00 | 54.41 | 73.98 | -19.56 |
| | 17475.00 | -102.26 | Peak | V | 51.35 | 0.00 | 56.10 | 68.20 | -12.10 |
| | 23300.00 | -93.68 | Peak | V | 44.73 | -9.54 | 48.51 | 68.20 | -19.69 |
| | 29125.00 | -130.48 | Peak | V | 48.24 | -9.54 | 15.22 | 68.20 | -52.98 |

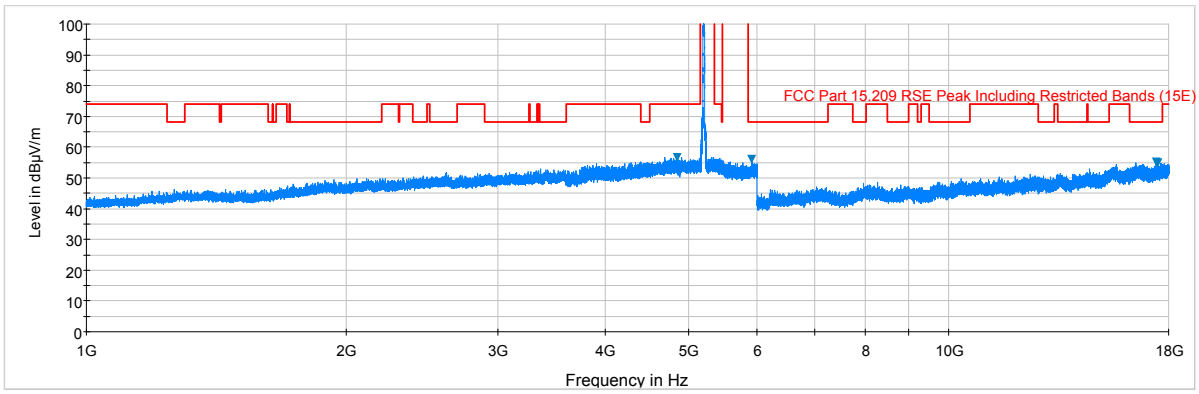
**Table 6-42. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5825MHz |
| Channel: | 165 |

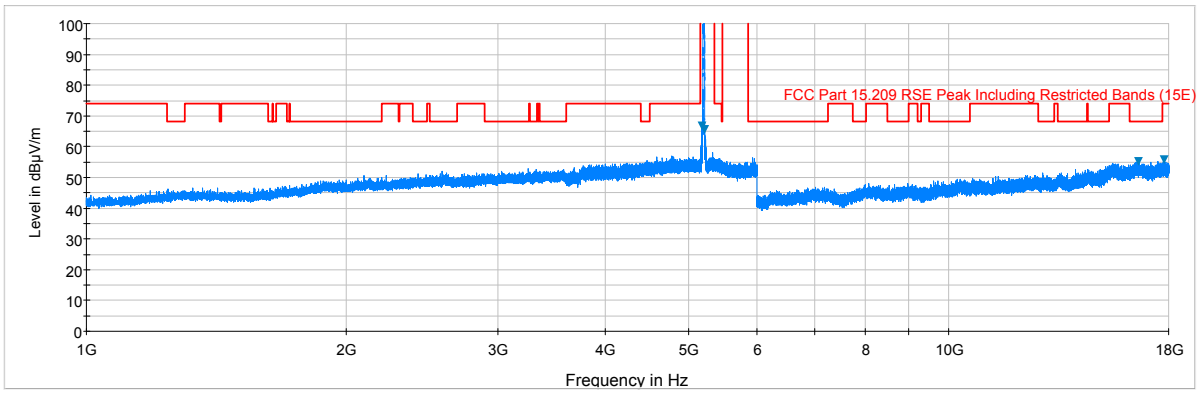
| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 11570.00 | -108.23 | Average | H | 45.56 | 0.00 | 44.33 | 53.98 | -9.65 |
| * | 11570.00 | -95.40 | Peak | H | 45.56 | 0.00 | 57.16 | 73.98 | -16.82 |
| | 17355.00 | -97.12 | Peak | H | 51.04 | 0.00 | 60.91 | 68.20 | -7.29 |
| | 23140.00 | -93.70 | Peak | H | 44.73 | -9.54 | 48.49 | 68.20 | -19.71 |
| | 28925.00 | -128.82 | Peak | H | 48.28 | -9.54 | 16.91 | 68.20 | -51.29 |

**Table 6-43. Radiated Measurements w/ WCP**

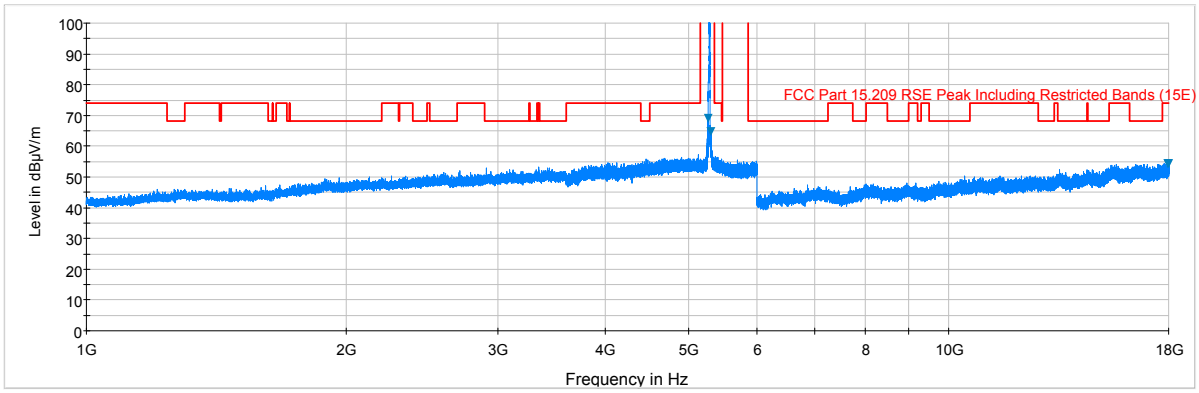
## 6.7.2 Antenna-2 Radiated Spurious Emission Measurements



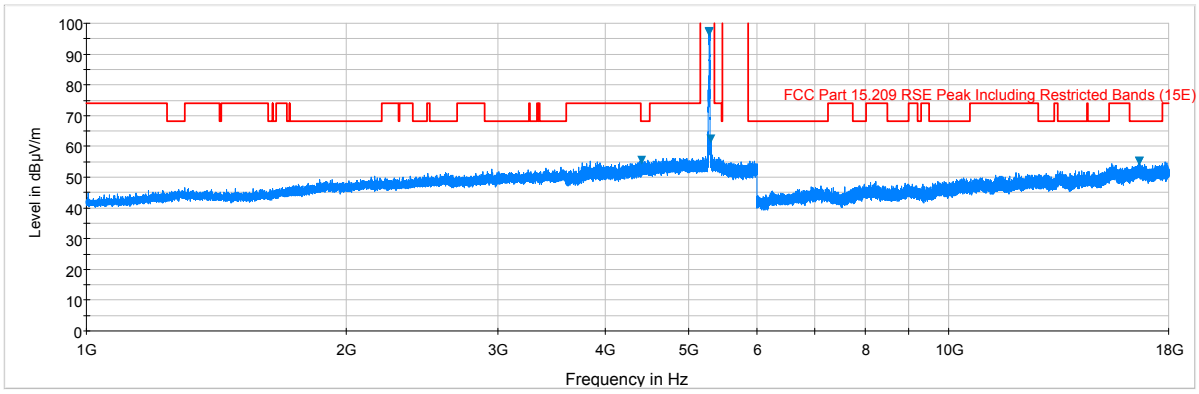

**Plot 6-163. Radiated Spurious Plot above 1GHz (802.11a – U1, Ant. Pol. H)**



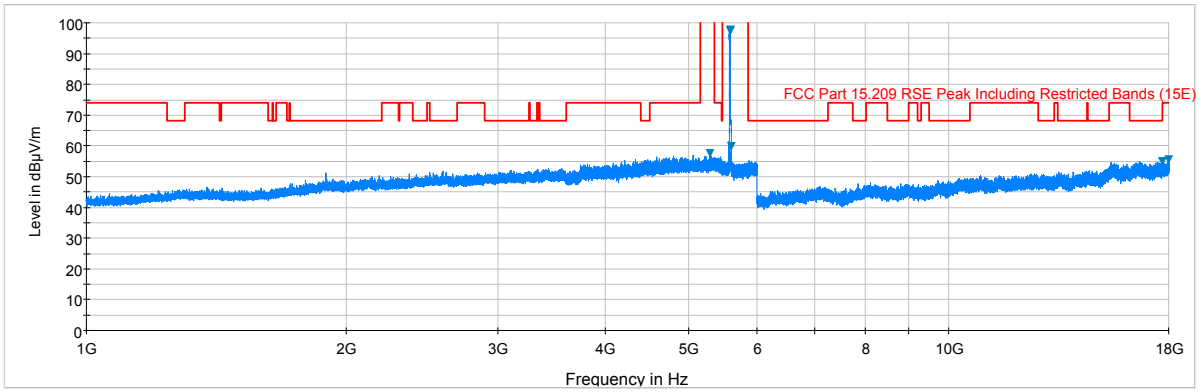

**Plot 6-164. Radiated Spurious Plot above 1GHz (802.11a – U1, Ant. Pol. V)**



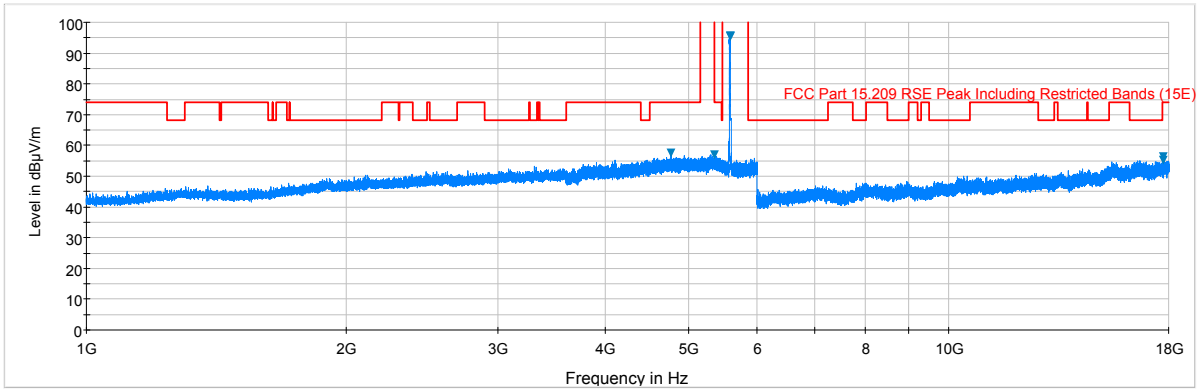

**Plot 6-165. Radiated Spurious Plot above 1GHz (802.11a – U2A, Ant. Pol. H)**



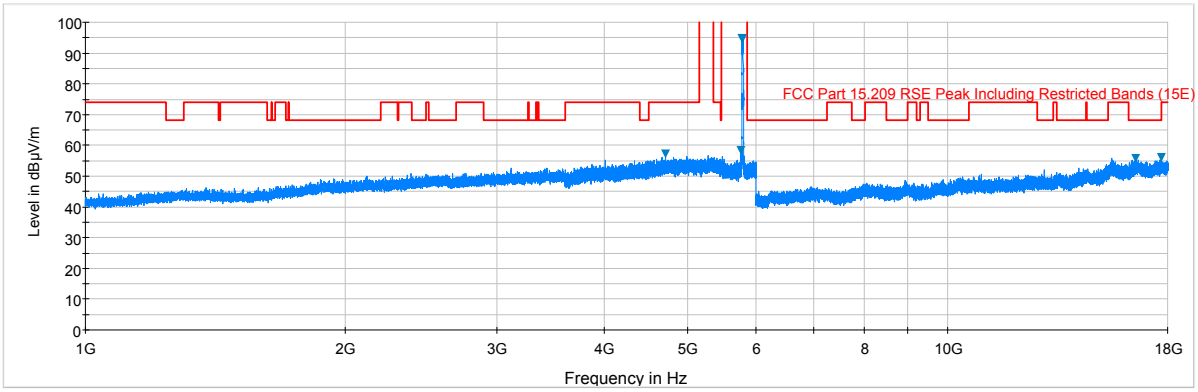

**Plot 6-166. Radiated Spurious Plot above 1GHz (802.11a – U2A, Ant. Pol. V)**



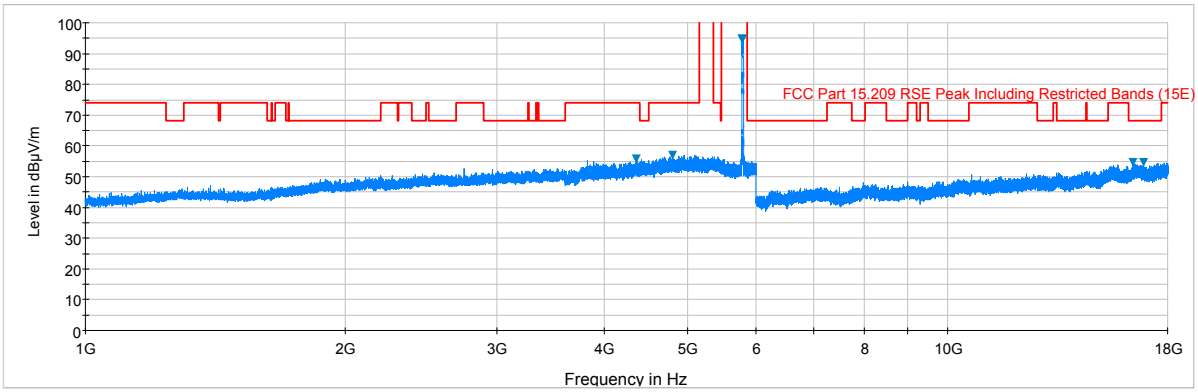

**Plot 6-167. Radiated Spurious Plot above 1GHz (802.11a – U2C, Ant. Pol. H)**




**Plot 6-168. Radiated Spurious Plot above 1GHz (802.11a – U2C, Ant. Pol. V)**



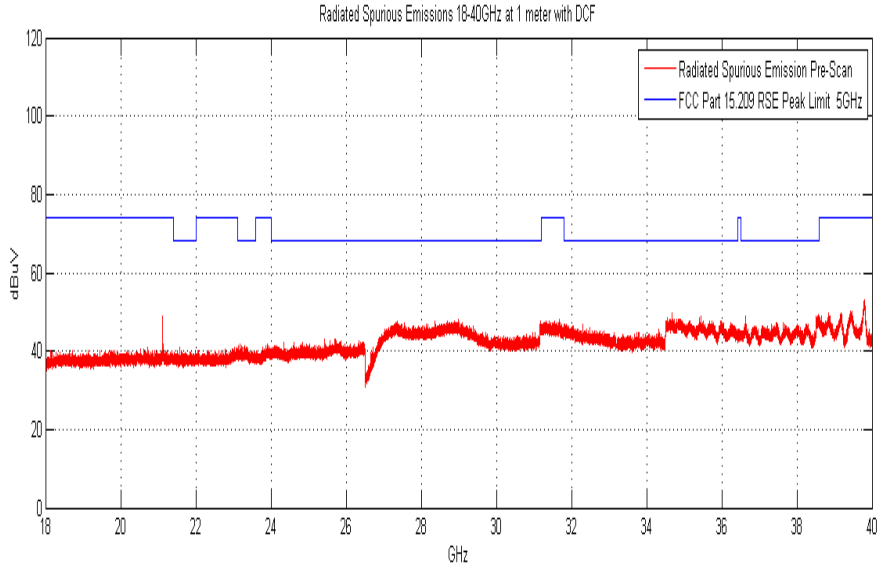

**Plot 6-169. Radiated Spurious Plot above 1GHz (802.11a – U3, Ant. Pol. H)**



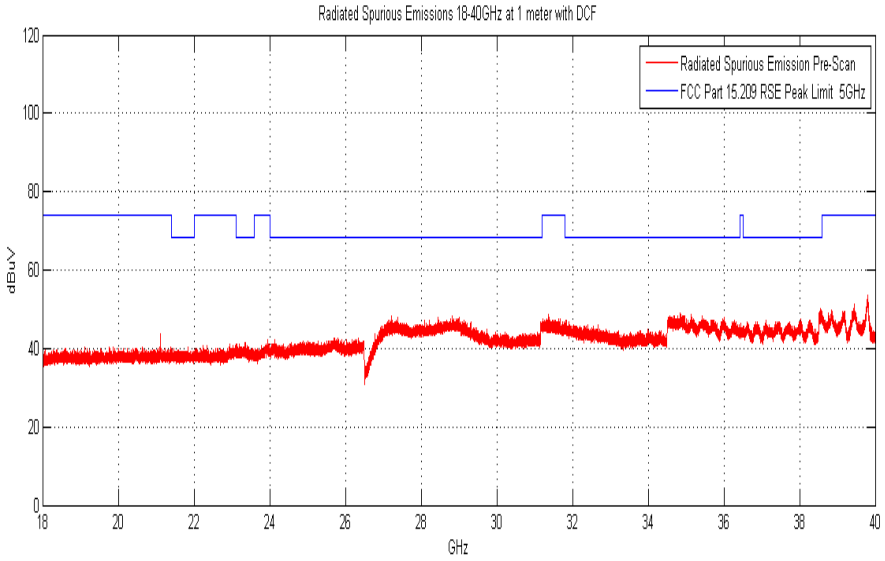

**Plot 6-170. Radiated Spurious Plot above 1GHz (802.11a – U3, Ant. Pol. V)**

## Antenna-2 Radiated Spurious Emissions Measurements (Above 18GHz)

**§15.209**




**Plot 6-171. Radiated Spurious Plot above 18GHz (802.11a – Ant. Pol. H)**




**Plot 6-172. Radiated Spurious Plot above 18GHz (802.11a – Ant. Pol. V)**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5180MHz |
| Channel: | 36 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| | 10360.00 | -103.80 | Peak | V | 44.78 | 0.00 | 47.98 | 68.20 | -20.22 |
| * | 15540.00 | -117.39 | Average | V | 49.27 | 0.00 | 38.88 | 53.98 | -15.10 |
| * | 15540.00 | -105.48 | Peak | V | 49.27 | 0.00 | 50.79 | 73.98 | -23.19 |
| * | 20720.00 | -107.01 | Average | V | 44.20 | -9.54 | 34.64 | 53.98 | -19.34 |
| * | 20720.00 | -98.84 | Peak | V | 44.20 | -9.54 | 42.81 | 73.98 | -31.17 |
| | 25900.00 | -101.09 | Peak | V | 45.08 | -9.54 | 41.44 | 68.20 | -26.76 |

**Table 6-44. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5200MHz |
| Channel: | 40 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| | 10400.00 | -104.61 | Peak | V | 44.87 | 0.00 | 47.27 | 68.20 | -20.93 |
| * | 15600.00 | -116.30 | Average | V | 49.29 | 0.00 | 39.99 | 53.98 | -13.99 |
| * | 15600.00 | -104.07 | Peak | V | 49.29 | 0.00 | 52.22 | 73.98 | -21.76 |
| * | 20800.00 | -102.57 | Average | V | 44.20 | -9.54 | 39.09 | 53.98 | -14.89 |
| * | 20800.00 | -97.08 | Peak | V | 44.20 | -9.54 | 44.58 | 73.98 | -29.40 |
| | 26000.00 | -99.71 | Peak | V | 45.11 | -9.54 | 42.86 | 68.20 | -25.34 |

**Table 6-45. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5240MHz |
| Channel: | 48 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| | 10480.00 | -104.73 | Peak | V | 45.08 | 0.00 | 47.35 | 68.20 | -20.85 |
| * | 15720.00 | -115.93 | Average | V | 49.40 | 0.00 | 40.47 | 53.98 | -13.51 |
| * | 15720.00 | -103.35 | Peak | V | 49.40 | 0.00 | 53.05 | 73.98 | -20.93 |
| * | 20960.00 | -102.55 | Average | V | 44.19 | -9.54 | 39.09 | 53.98 | -14.89 |
| * | 20960.00 | -97.25 | Peak | V | 44.19 | -9.54 | 44.39 | 73.98 | -29.59 |
| | 26200.00 | -98.93 | Peak | V | 44.95 | -9.54 | 43.48 | 68.20 | -24.72 |

**Table 6-46. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5240MHz |
| Channel: | 48 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| | 10480.00 | -104.87 | Peak | H | 45.08 | 0.00 | 47.21 | 68.20 | -20.99 |
| * | 15720.00 | -115.81 | Average | H | 49.40 | 0.00 | 40.59 | 53.98 | -13.39 |
| * | 15720.00 | -103.52 | Peak | H | 49.40 | 0.00 | 52.88 | 73.98 | -21.10 |
| * | 20960.00 | -103.82 | Average | H | 44.19 | -9.54 | 37.82 | 53.98 | -16.16 |
| * | 20960.00 | -99.37 | Peak | H | 44.19 | -9.54 | 42.27 | 73.98 | -31.71 |
| | 26200.00 | -99.11 | Peak | H | 44.95 | -9.54 | 43.30 | 68.20 | -24.90 |

**Table 6-47. Radiated Measurements w/ WCP**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5260MHz |
| Channel: | 52 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| | 10520.00 | -104.96 | Peak | V | 45.13 | 0.00 | 47.18 | 68.20 | -21.02 |
| * | 15780.00 | -116.37 | Average | V | 49.45 | 0.00 | 40.08 | 53.98 | -13.90 |
| * | 15780.00 | -104.62 | Peak | V | 49.45 | 0.00 | 51.83 | 73.98 | -22.15 |
| * | 21040.00 | -101.74 | Average | V | 44.18 | -9.54 | 39.89 | 53.98 | -14.08 |
| * | 21040.00 | -95.98 | Peak | V | 44.18 | -9.54 | 45.65 | 73.98 | -28.32 |
| | 26300.00 | -98.30 | Peak | V | 44.95 | -9.54 | 44.10 | 68.20 | -24.10 |

**Table 6-48. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5280MHz |
| Channel: | 56 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| | 10560.00 | -104.49 | Peak | V | 45.14 | 0.00 | 47.64 | 68.20 | -20.56 |
| * | 15840.00 | -116.48 | Average | V | 49.53 | 0.00 | 40.06 | 53.98 | -13.92 |
| * | 15840.00 | -104.76 | Peak | V | 49.53 | 0.00 | 51.78 | 73.98 | -22.20 |
| * | 21120.00 | -101.33 | Average | V | 44.17 | -9.54 | 40.30 | 53.98 | -13.68 |
| * | 21120.00 | -96.07 | Peak | V | 44.17 | -9.54 | 45.56 | 73.98 | -28.42 |
| | 26400.00 | -97.31 | Peak | V | 45.01 | -9.54 | 45.15 | 68.20 | -23.05 |

**Table 6-49. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5320MHz |
| Channel: | 64 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 10640.00 | -115.91 | Average | V | 45.17 | 0.00 | 36.26 | 53.98 | -17.72 |
| * | 10640.00 | -103.39 | Peak | V | 45.17 | 0.00 | 48.78 | 73.98 | -25.20 |
| * | 15960.00 | -116.56 | Average | V | 49.72 | 0.00 | 40.16 | 53.98 | -13.82 |
| * | 15960.00 | -104.63 | Peak | V | 49.72 | 0.00 | 52.09 | 73.98 | -21.89 |
| * | 21280.00 | -102.67 | Average | V | 44.18 | -9.54 | 38.96 | 53.98 | -15.01 |
| * | 21280.00 | -97.51 | Peak | V | 44.18 | -9.54 | 44.12 | 73.98 | -29.85 |
| | 26600.00 | -104.15 | Peak | V | 47.61 | -9.54 | 40.92 | 68.20 | -27.28 |

**Table 6-50. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5320MHz |
| Channel: | 64 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 10640.00 | -116.11 | Average | H | 45.17 | 0.00 | 36.06 | 53.98 | -17.92 |
| * | 10640.00 | -103.55 | Peak | H | 45.17 | 0.00 | 48.62 | 73.98 | -25.36 |
| * | 15960.00 | -116.52 | Average | H | 49.72 | 0.00 | 40.20 | 53.98 | -13.78 |
| * | 15960.00 | -104.77 | Peak | H | 49.72 | 0.00 | 51.95 | 73.98 | -22.03 |
| * | 21280.00 | -103.36 | Average | H | 44.18 | -9.54 | 38.27 | 53.98 | -15.70 |
| * | 21280.00 | -98.83 | Peak | H | 44.18 | -9.54 | 42.80 | 73.98 | -31.17 |
| | 26600.00 | -105.84 | Peak | H | 47.61 | -9.54 | 39.23 | 68.20 | -28.97 |

**Table 6-51. Radiated Measurements w/ WCP**

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5500MHz
Channel: 100

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 11000.00 | -115.56 | Average | V | 45.24 | 0.00 | 36.68 | 53.98 | -17.30 |
| * | 11000.00 | -103.57 | Peak | V | 45.24 | 0.00 | 48.67 | 73.98 | -25.31 |
| | 16500.00 | -105.20 | Peak | V | 50.35 | 0.00 | 52.15 | 68.20 | -16.05 |
| | 22000.00 | -97.55 | Peak | V | 44.47 | -9.54 | 44.38 | 68.20 | -23.82 |
| | 27500.00 | -129.42 | Peak | V | 47.92 | -9.54 | 15.96 | 68.20 | -52.24 |

**Table 6-52. Radiated Measurements**

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5580MHz
Channel: 116

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 11160.00 | -115.55 | Average | V | 45.22 | 0.00 | 36.68 | 53.98 | -17.30 |
| * | 11160.00 | -103.36 | Peak | V | 45.22 | 0.00 | 48.87 | 73.98 | -25.11 |
| | 16740.00 | -104.31 | Peak | V | 50.47 | 0.00 | 53.17 | 68.20 | -15.03 |
| * | 22320.00 | -104.48 | Average | V | 44.59 | -9.54 | 37.57 | 53.98 | -16.41 |
| * | 22320.00 | -97.92 | Peak | V | 44.59 | -9.54 | 44.13 | 73.98 | -29.85 |
| | 27900.00 | -104.39 | Peak | V | 48.09 | -9.54 | 41.16 | 68.20 | -27.04 |

**Table 6-53. Radiated Measurements**

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5720MHz
Channel: 144

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 11440.00 | -115.99 | Average | V | 45.37 | 0.00 | 36.38 | 53.98 | -17.60 |
| * | 11440.00 | -103.91 | Peak | V | 45.37 | 0.00 | 48.46 | 73.98 | -25.52 |
| | 17160.00 | -105.41 | Peak | V | 50.51 | 0.00 | 52.09 | 68.20 | -16.11 |
| * | 22880.00 | -104.72 | Average | V | 44.62 | -9.54 | 37.36 | 53.98 | -16.62 |
| * | 22880.00 | -99.13 | Peak | V | 44.62 | -9.54 | 42.95 | 73.98 | -31.03 |
| | 28600.00 | -105.81 | Peak | V | 48.35 | -9.54 | 40.00 | 68.20 | -28.20 |

**Table 6-54. Radiated Measurements**

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5580MHz
Channel: 116

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 11160.00 | -115.49 | Average | H | 45.22 | 0.00 | 36.74 | 53.98 | -17.24 |
| * | 11160.00 | -103.25 | Peak | H | 45.22 | 0.00 | 48.98 | 73.98 | -25.00 |
| | 16740.00 | -104.27 | Peak | H | 50.47 | 0.00 | 53.21 | 68.20 | -14.99 |
| * | 22320.00 | -104.78 | Average | H | 44.59 | -9.54 | 37.27 | 53.98 | -16.71 |
| * | 22320.00 | -98.91 | Peak | H | 44.59 | -9.54 | 43.14 | 73.98 | -30.84 |
| | 27900.00 | -105.69 | Peak | H | 48.09 | -9.54 | 39.86 | 68.20 | -28.34 |

**Table 6-55. Radiated Measurements w/ WCP**

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5745MHz
Channel: 149

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 11490.00 | -115.52 | Average | V | 45.46 | 0.00 | 36.94 | 53.98 | -17.04 |
| * | 11490.00 | -103.19 | Peak | V | 45.46 | 0.00 | 49.27 | 73.98 | -24.71 |
| | 17235.00 | -104.73 | Peak | V | 50.68 | 0.00 | 52.95 | 68.20 | -15.25 |
| * | 22980.00 | -104.36 | Average | V | 44.64 | -9.54 | 37.73 | 53.98 | -16.25 |
| * | 22980.00 | -92.65 | Peak | V | 44.64 | -9.54 | 49.44 | 68.20 | -18.76 |
| | 28725.00 | -130.05 | Peak | V | 48.26 | -9.54 | 15.67 | 68.20 | -52.53 |

**Table 6-56. Radiated Measurements**

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5785MHz
Channel: 157

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 11570.00 | -114.81 | Average | V | 45.56 | 0.00 | 37.75 | 53.98 | -16.23 |
| * | 11570.00 | -102.18 | Peak | V | 45.56 | 0.00 | 50.38 | 73.98 | -23.60 |
| | 17355.00 | -103.95 | Peak | V | 51.04 | 0.00 | 54.08 | 68.20 | -14.12 |
| | 23140.00 | -95.73 | Peak | V | 44.73 | -9.54 | 46.46 | 68.20 | -21.74 |
| | 28925.00 | -130.26 | Peak | V | 48.28 | -9.54 | 15.47 | 68.20 | -52.73 |

**Table 6-57. Radiated Measurements**

Worst Case Mode: 802.11a

| | |
|---|---|
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5825MHz |
| Channel: | 165 |

| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 11650.00 | -115.31 | Average | V | 45.68 | 0.00 | 37.37 | 53.98 | -16.60 |
| * | 11650.00 | -102.95 | Peak | V | 45.68 | 0.00 | 49.73 | 73.98 | -24.24 |
| | 17475.00 | -105.30 | Peak | V | 51.35 | 0.00 | 53.06 | 68.20 | -15.14 |
| | 23300.00 | -93.44 | Peak | V | 44.76 | -9.54 | 48.78 | 68.20 | -19.42 |
| | 29125.00 | -130.03 | Peak | V | 48.24 | -9.54 | 15.67 | 68.20 | -52.53 |

**Table 6-58. Radiated Measurements**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 1 & 3 Meters |
| Operating Frequency: | 5785MHz |
| Channel: | 157 |

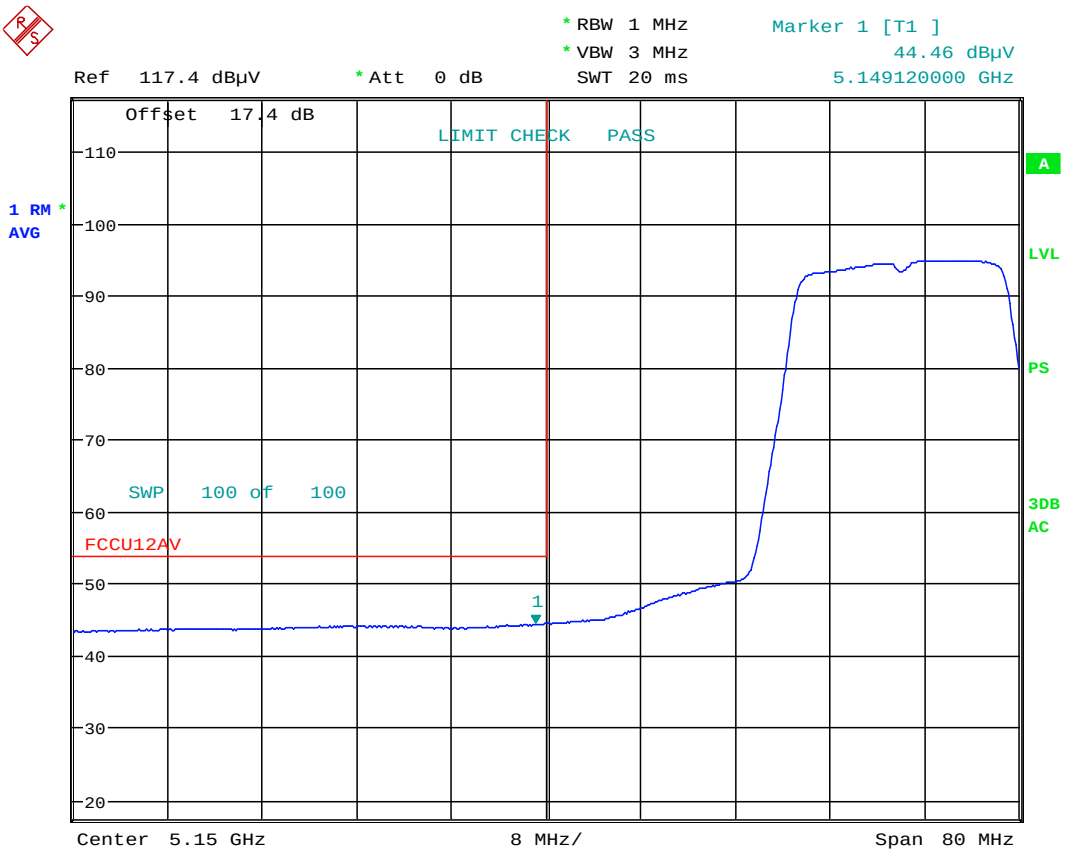
| | Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBµV/m] | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|
| * | 11570.00 | -114.92 | Average | H | 45.56 | 0.00 | 37.64 | 53.98 | -16.34 |
| * | 11570.00 | -102.13 | Peak | H | 45.56 | 0.00 | 50.43 | 73.98 | -23.55 |
| | 17355.00 | -103.95 | Peak | H | 51.04 | 0.00 | 54.08 | 68.20 | -14.12 |
| | 23140.00 | -95.61 | Peak | H | 44.73 | -9.54 | 46.58 | 68.20 | -21.62 |
| | 28925.00 | -130.51 | Peak | H | 48.28 | -9.54 | 15.22 | 68.20 | -52.98 |

**Table 6-59. Radiated Measurements w/ WCP**

## 6.7.3 Antenna-1 Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5180MHz |
| Channel: | 36 |

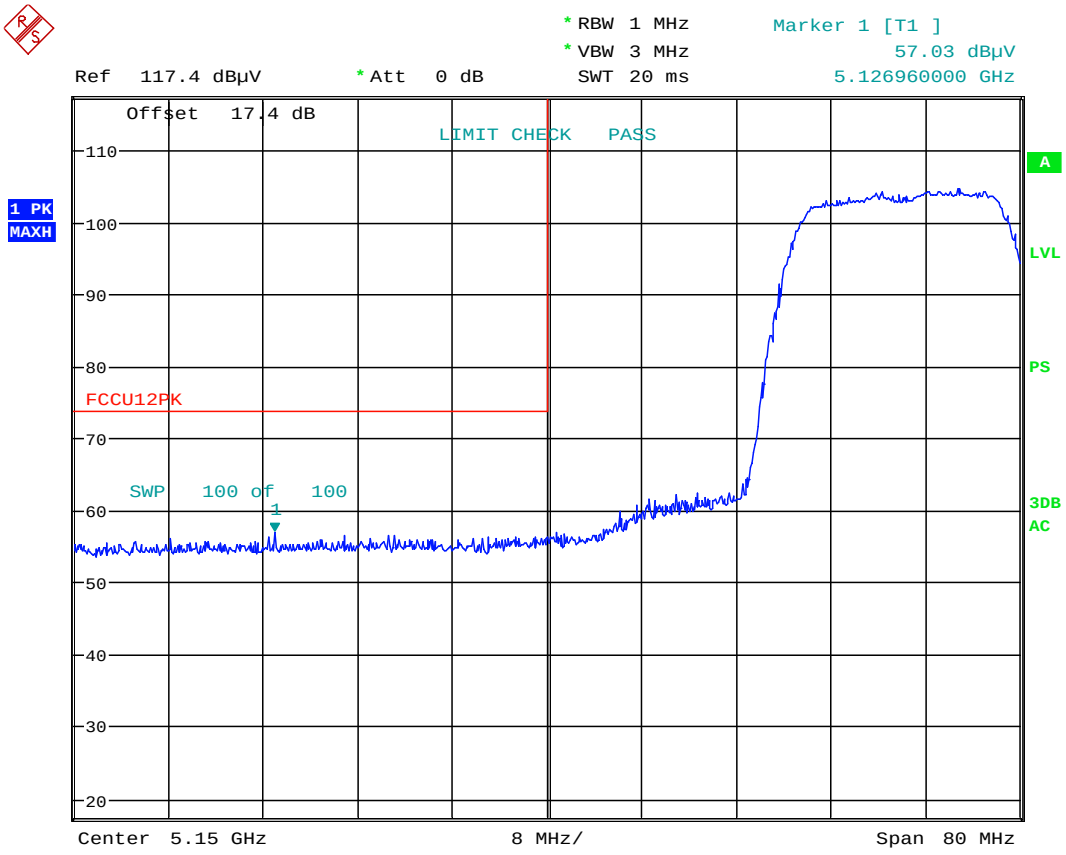



Date: 22.JAN.2015 12:13:03

**Plot 6-173. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

# Antenna-1 Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



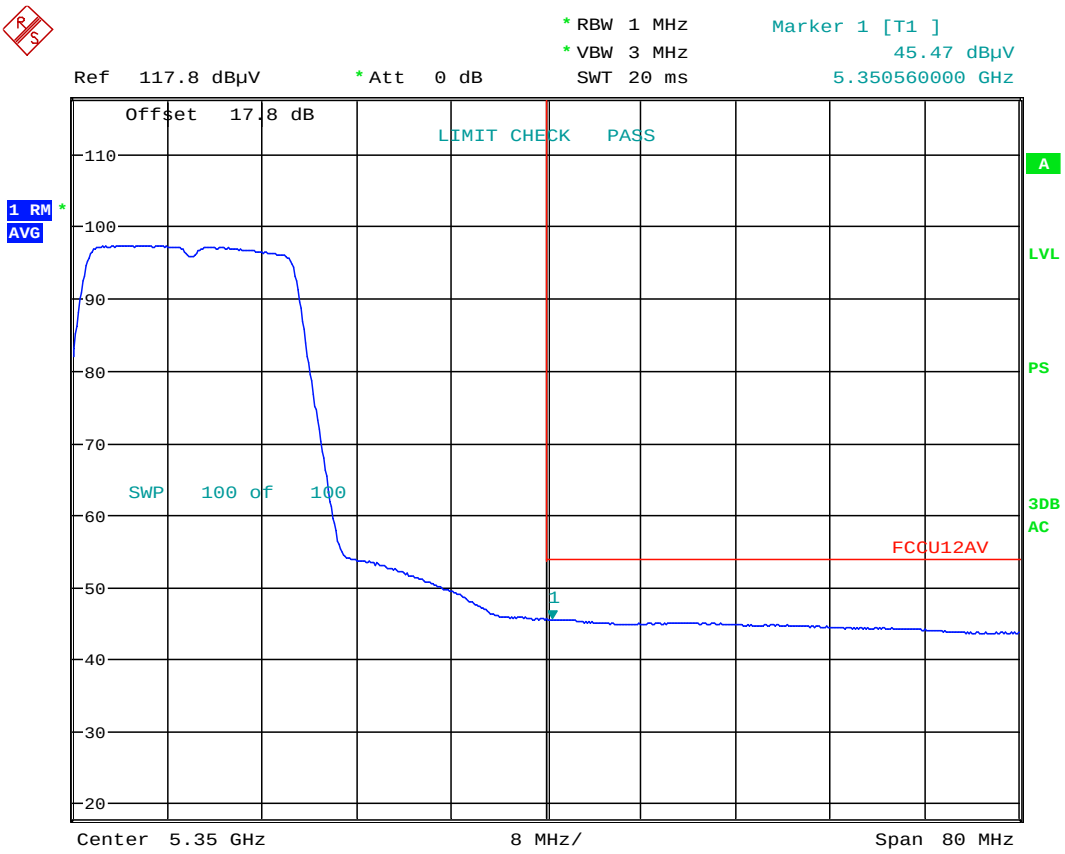

Date: 22.JAN.2015 12:14:46

**Plot 6-174. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

## Antenna-1 Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5320MHz |
| Channel: | 64 |

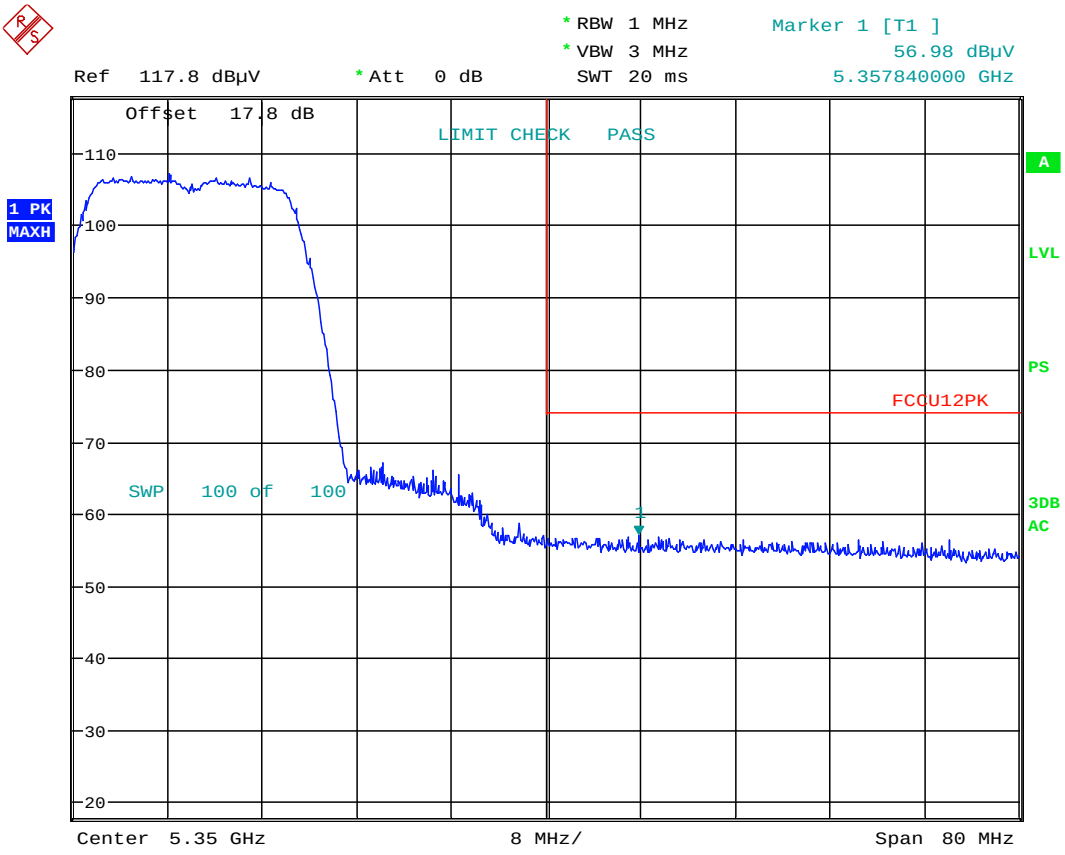



Date: 22.JAN.2015 12:55:39

**Plot 6-175. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

## Antenna-1 Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



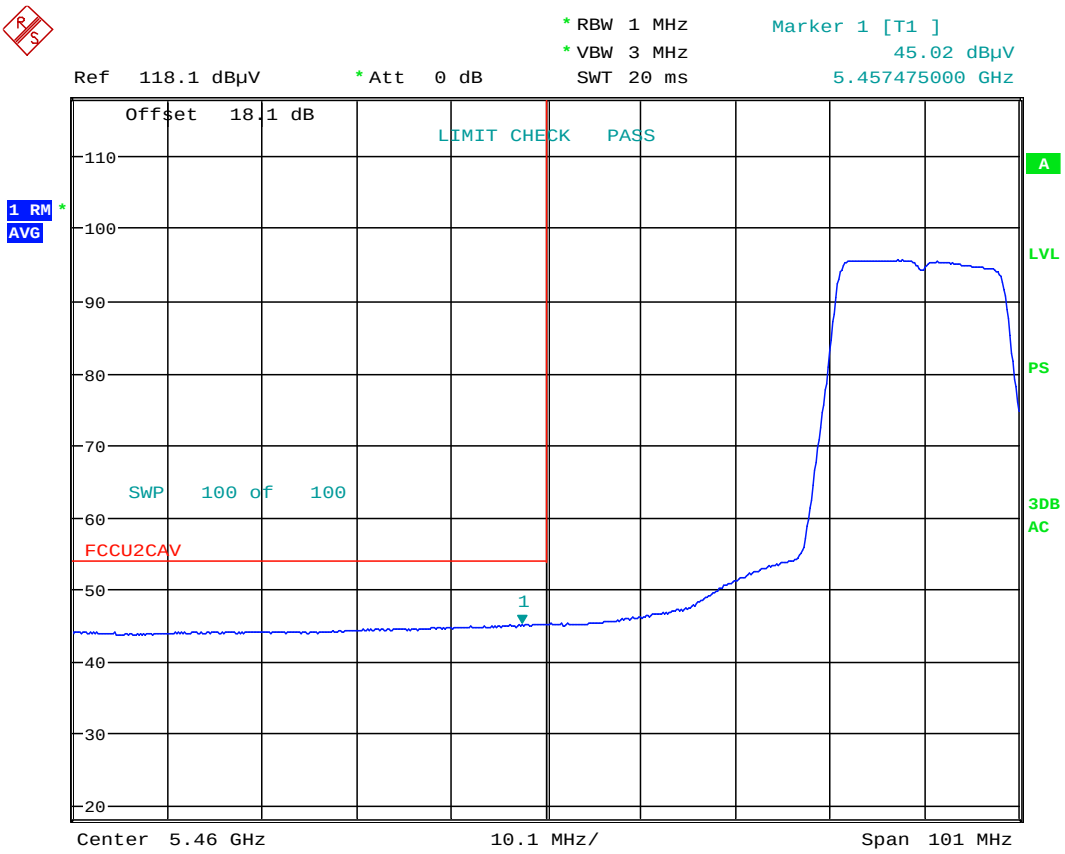

Date: 22.JAN.2015 12:56:04

**Plot 6-176. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

## Antenna-1 Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5500MHz |
| Channel: | 100 |

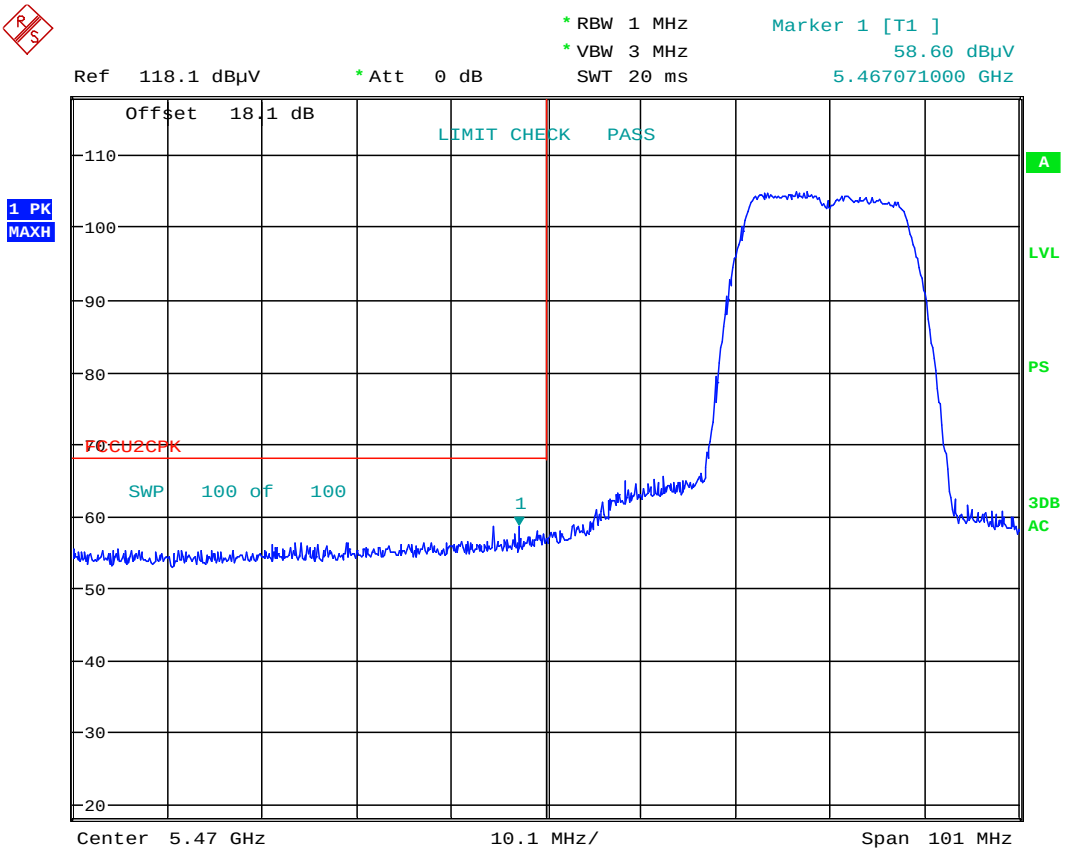



Date: 22.JAN.2015 13:10:19

**Plot 6-177. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)**

## Antenna-1 Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



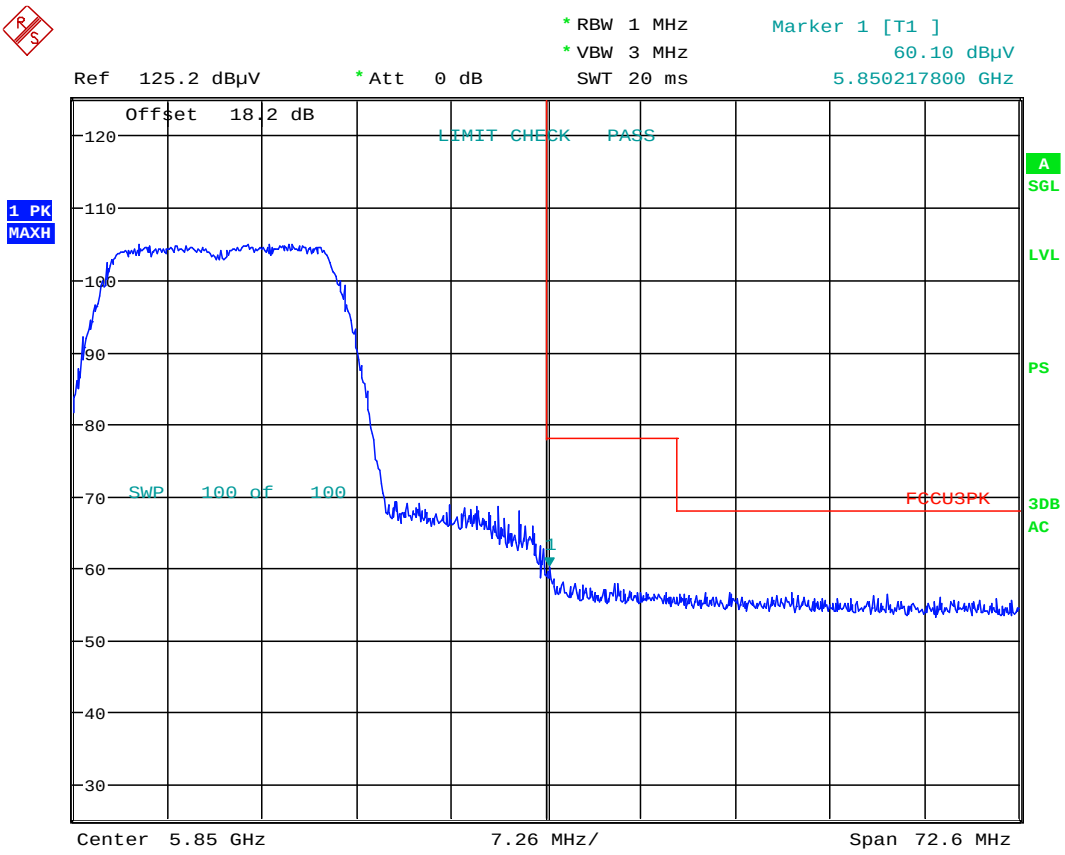

Date: 22.JAN.2015 13:10:56

**Plot 6-178. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)**

## Antenna-1 Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5825MHz |
| Channel: | 165 |



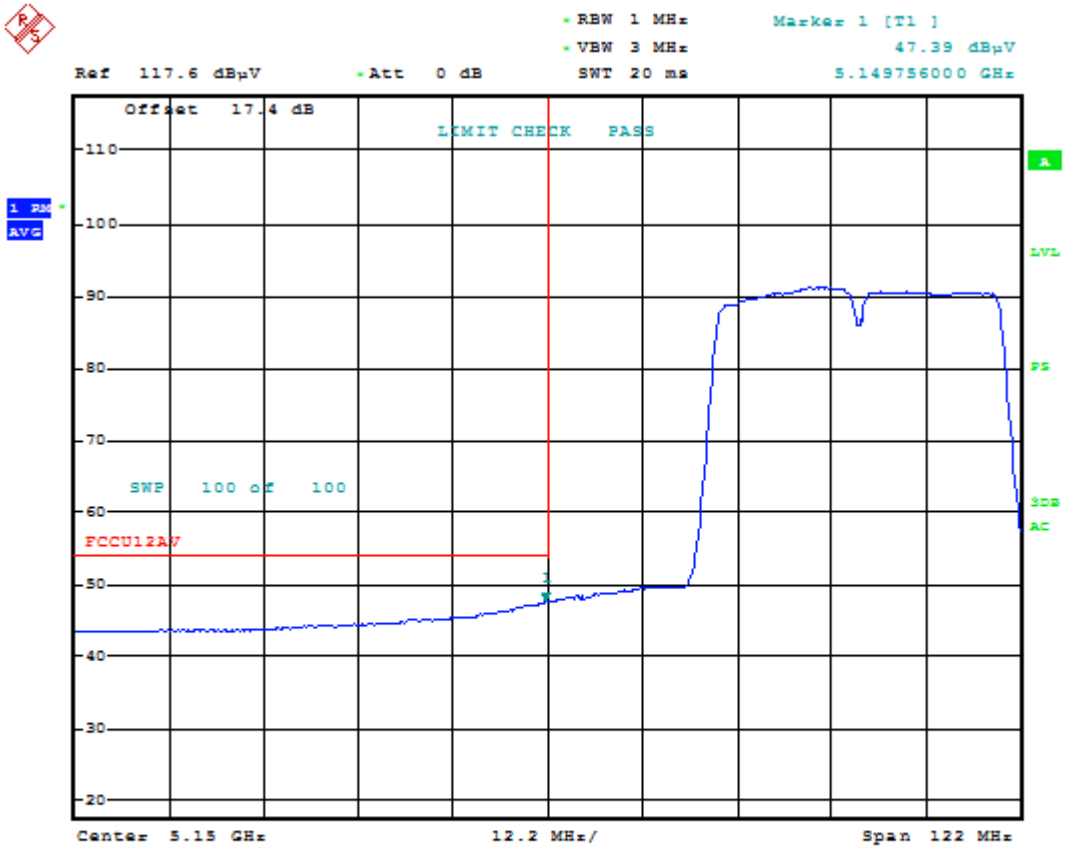

Date: 22.JAN.2015 13:52:37

**Plot 6-179. Radiated Upper Band Edge Plot (Peak – UNII Band 3)**

## 6.7.4 Antenna-1 Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11n (40MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5190MHz |
| Channel: | 38 |

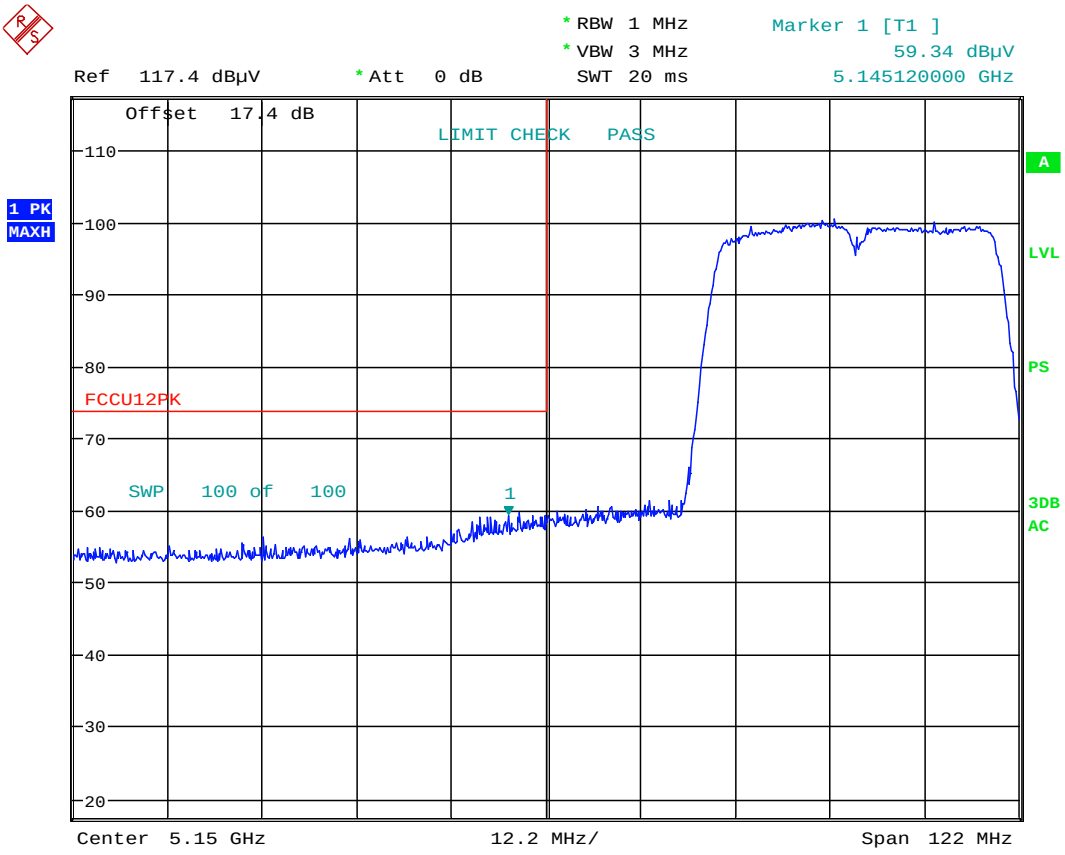



Date: 22.JAN.2015 12:25:09

**Plot 6-180. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

# Antenna-1 Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



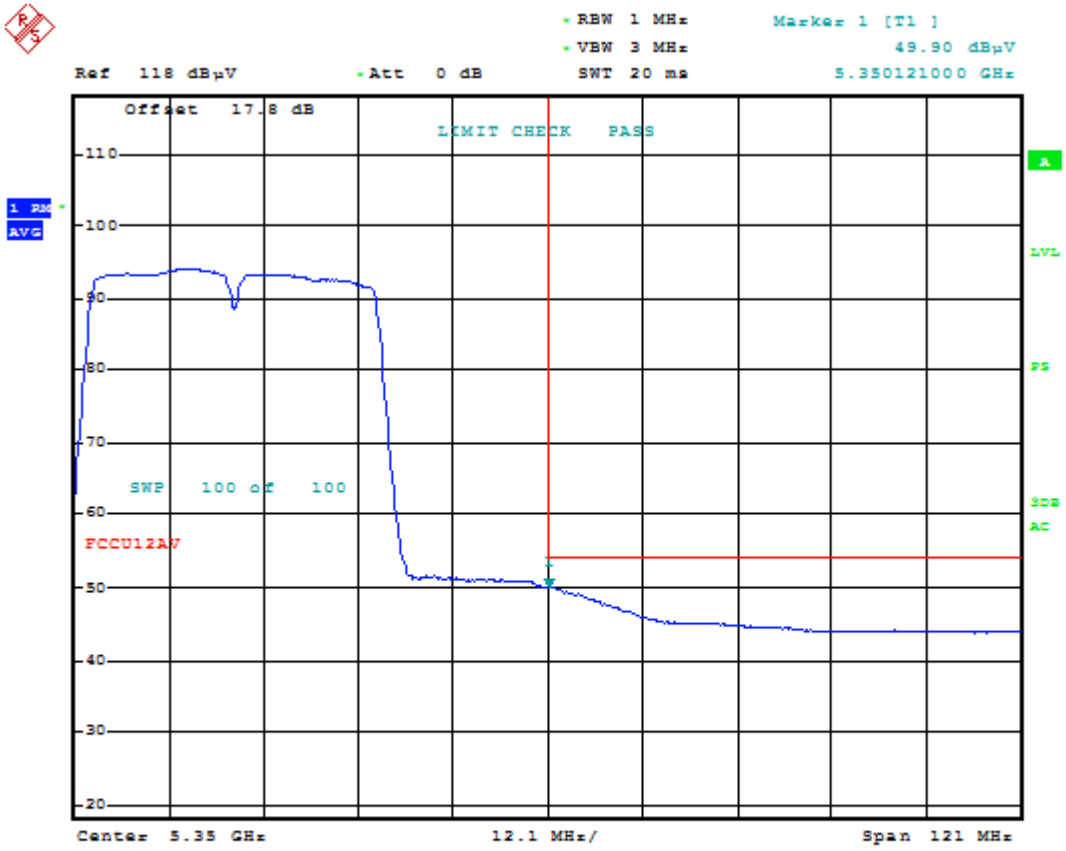

Date: 22.JAN.2015 12:25:46

**Plot 6-181. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

## Antenna-1 Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11n (40MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5310MHz |
| Channel: | 62 |

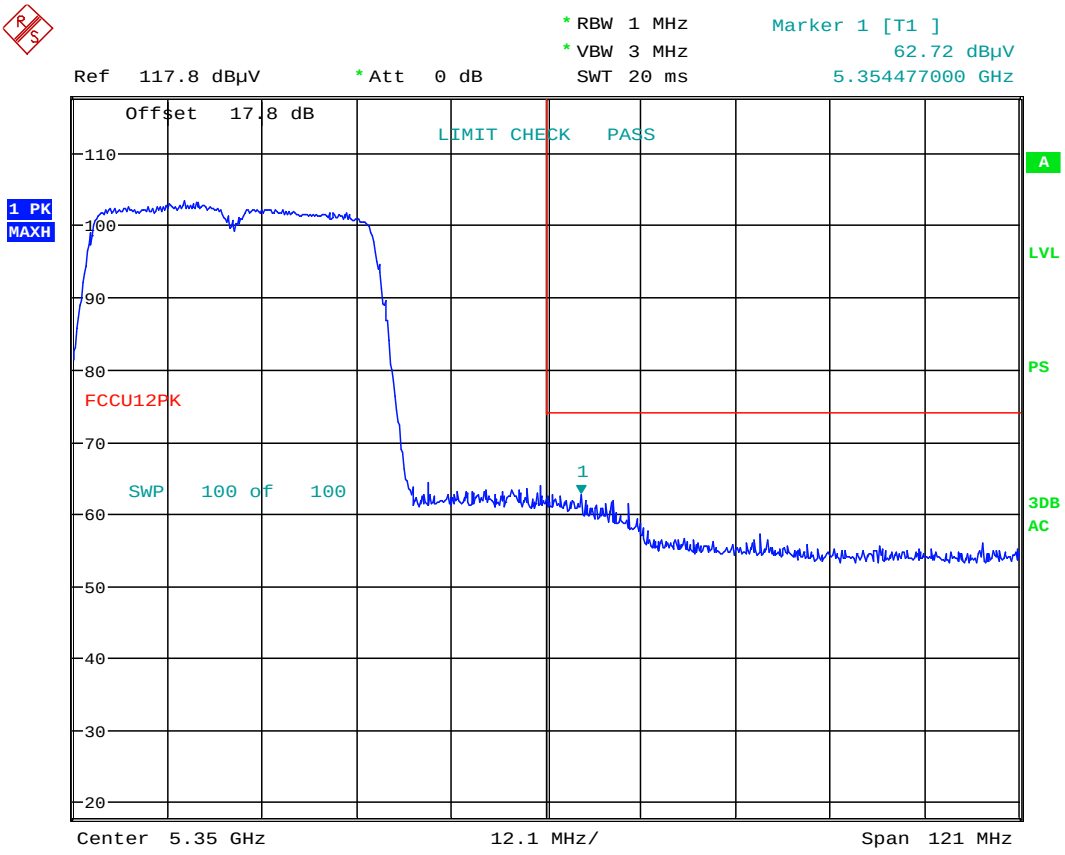



Date: 22.JAN.2015 12:58:27

**Plot 6-182. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

# Antenna-1 Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



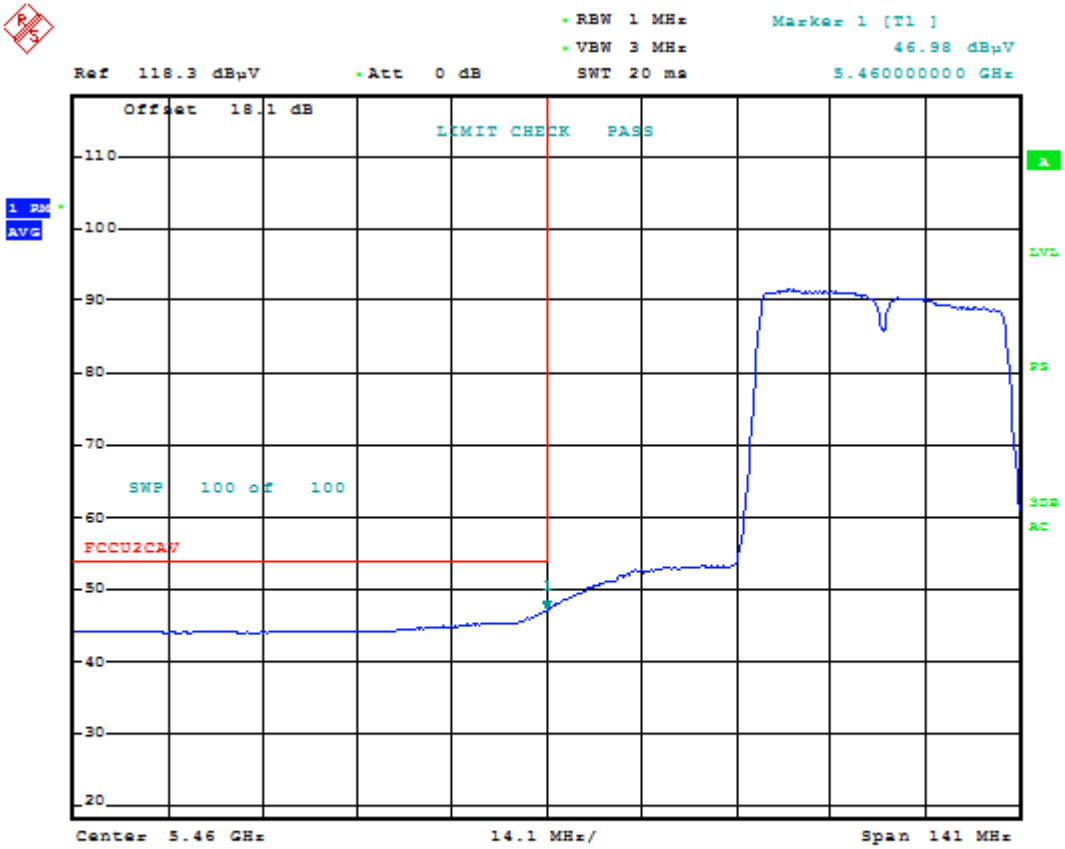

Date: 22.JAN.2015 12:59:39

**Plot 6-183. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

## Antenna-1 Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11n (40MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5510MHz |
| Channel: | 102 |

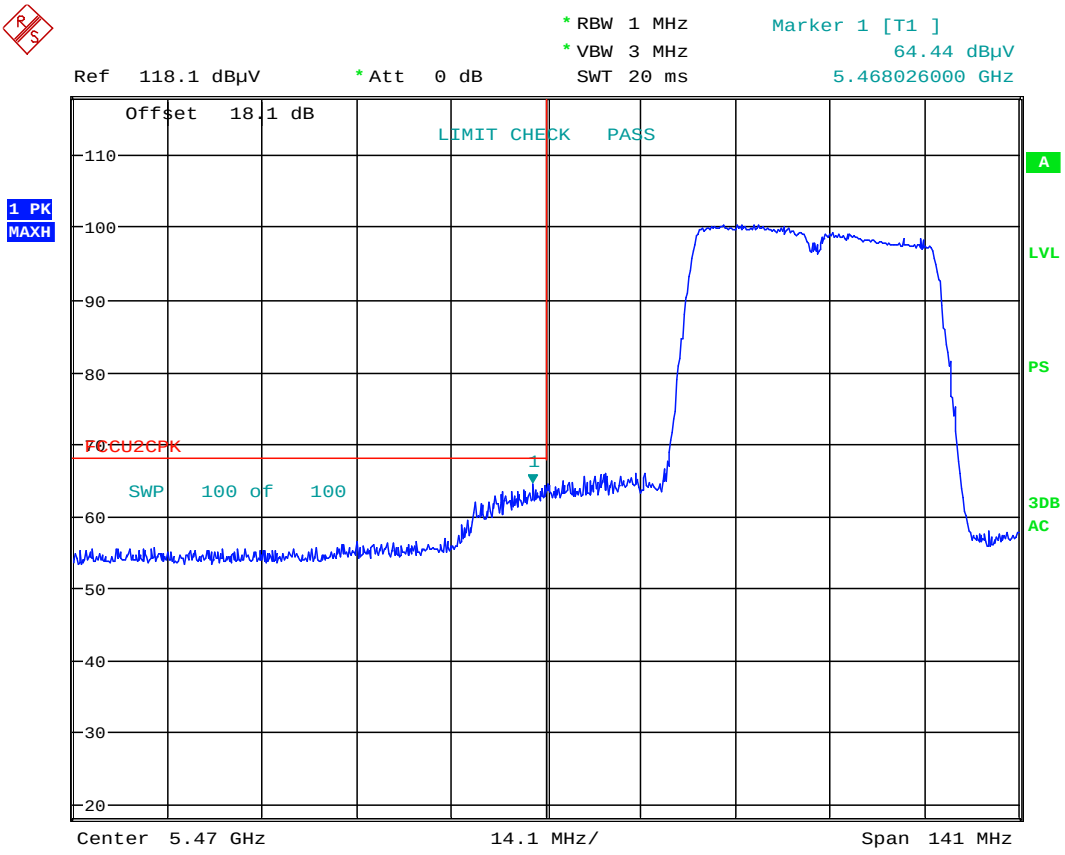



Date: 22.JAN.2015 13:13:03

**Plot 6-184. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)**

# Antenna-1 Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



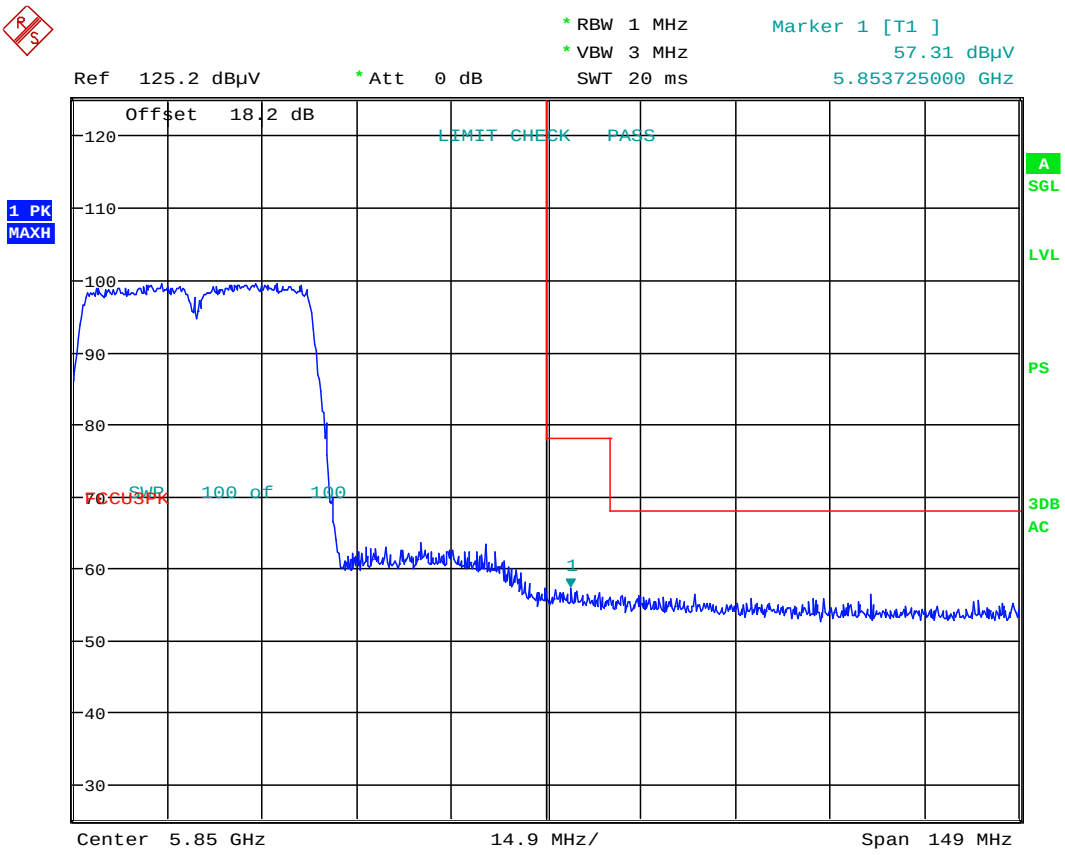

Date: 22.JAN.2015 13:13:43

**Plot 6-185. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)**

## Antenna-1 Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11n (40MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5815MHz |
| Channel: | 163 |

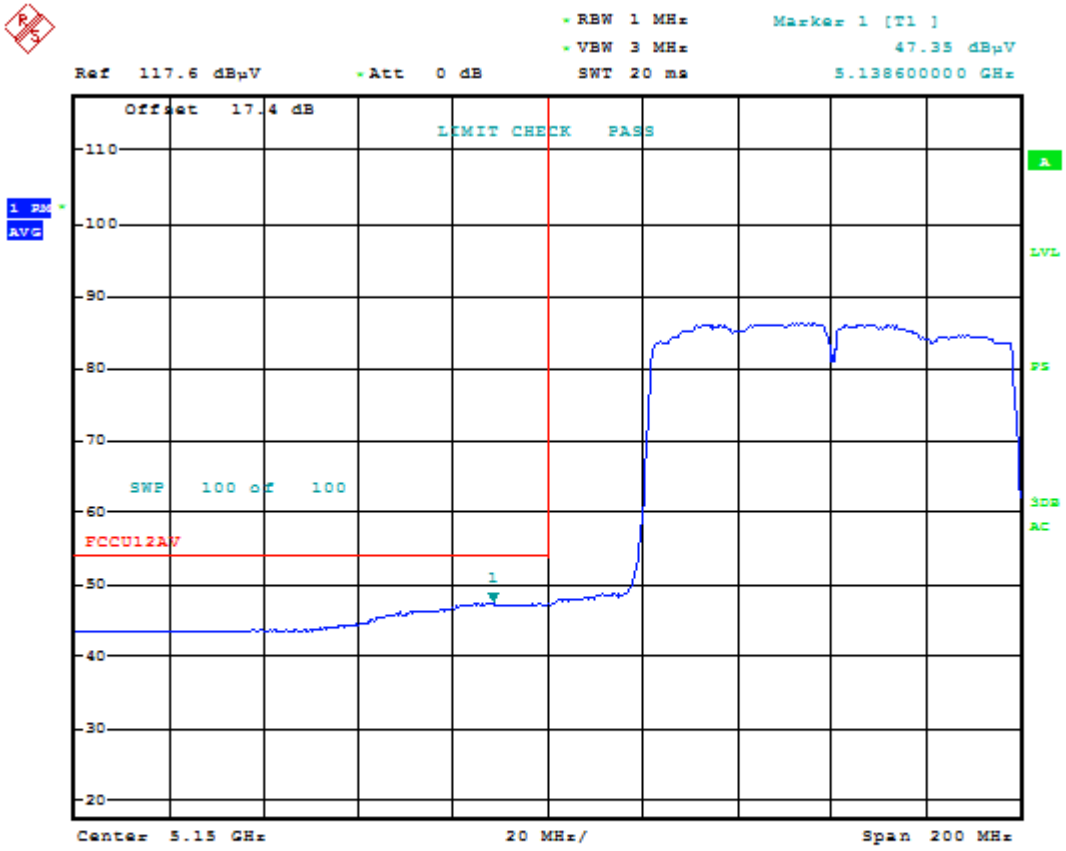



**Plot 6-186. Radiated Upper Band Edge Plot (Peak – UNII Band 3)**

## 6.7.5 Antenna-1 Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

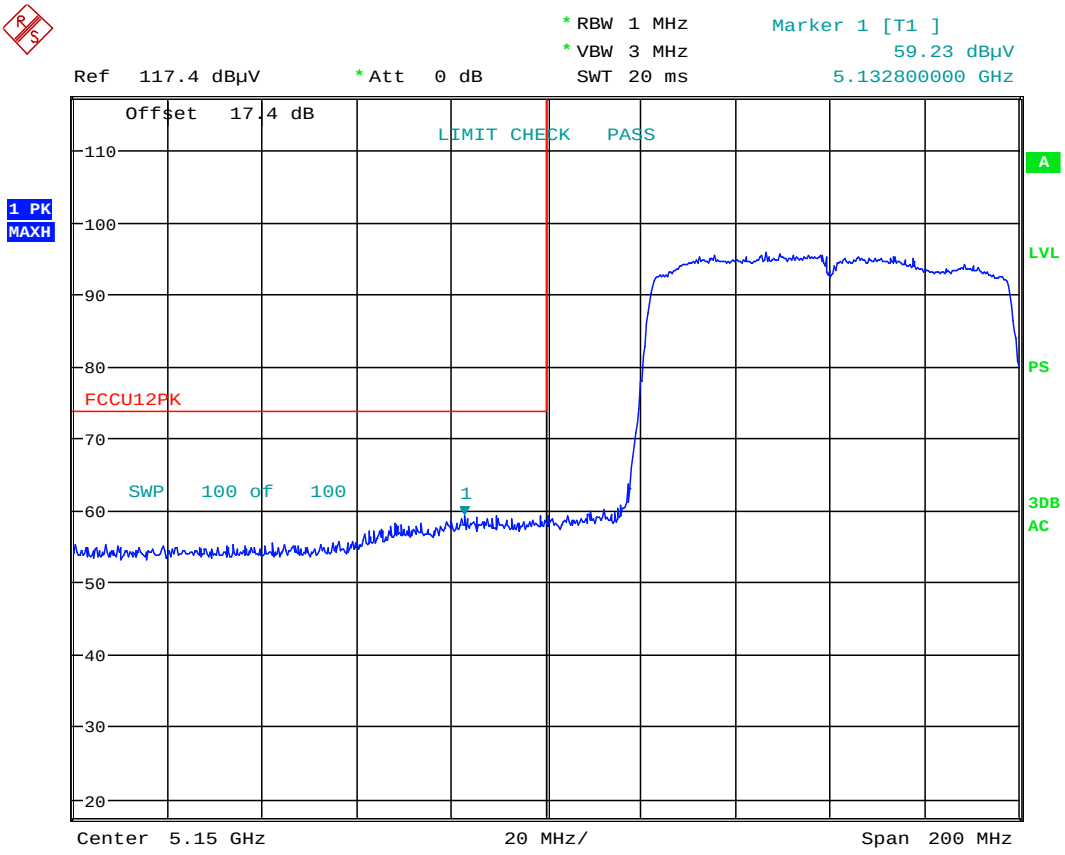
| | |
|---|---|
| Worst Case Mode: | 802.11n (80MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5210MHz |
| Channel: | 42 |




**Plot 6-187. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

# Antenna-1 Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



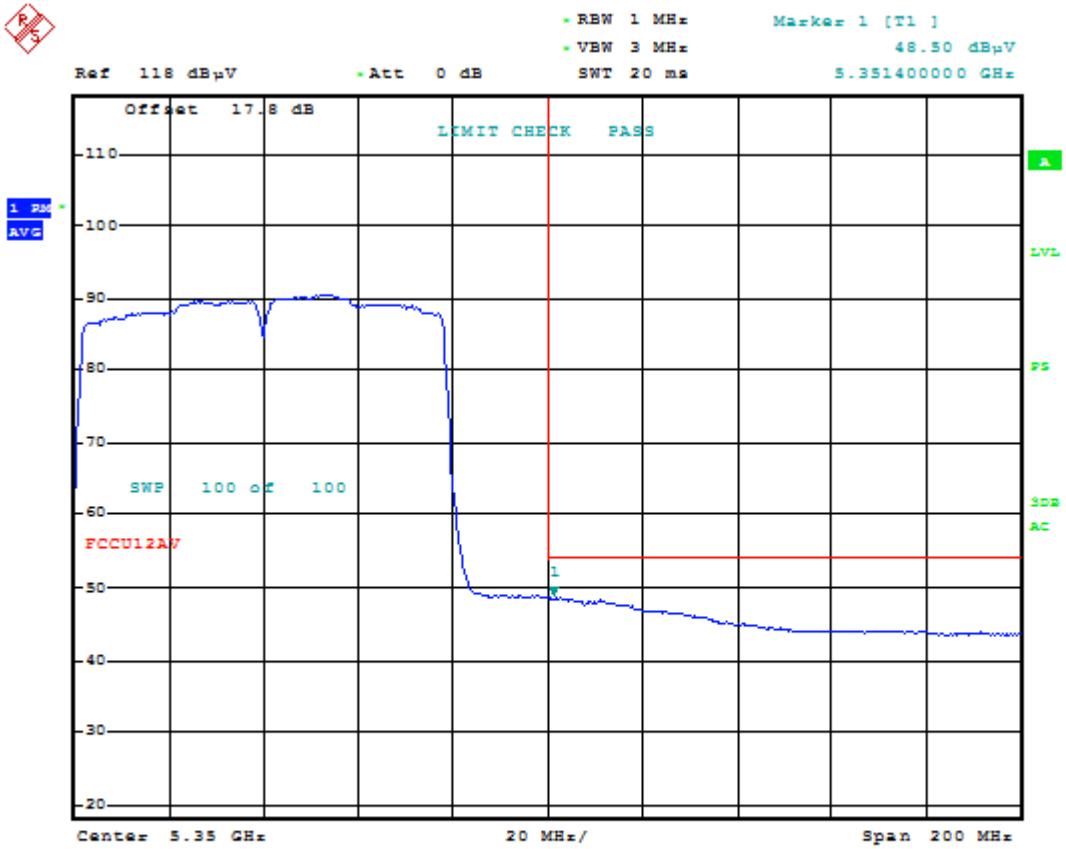

Date: 22.JAN.2015 12:42:40

**Plot 6-188. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

## Antenna-1 Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

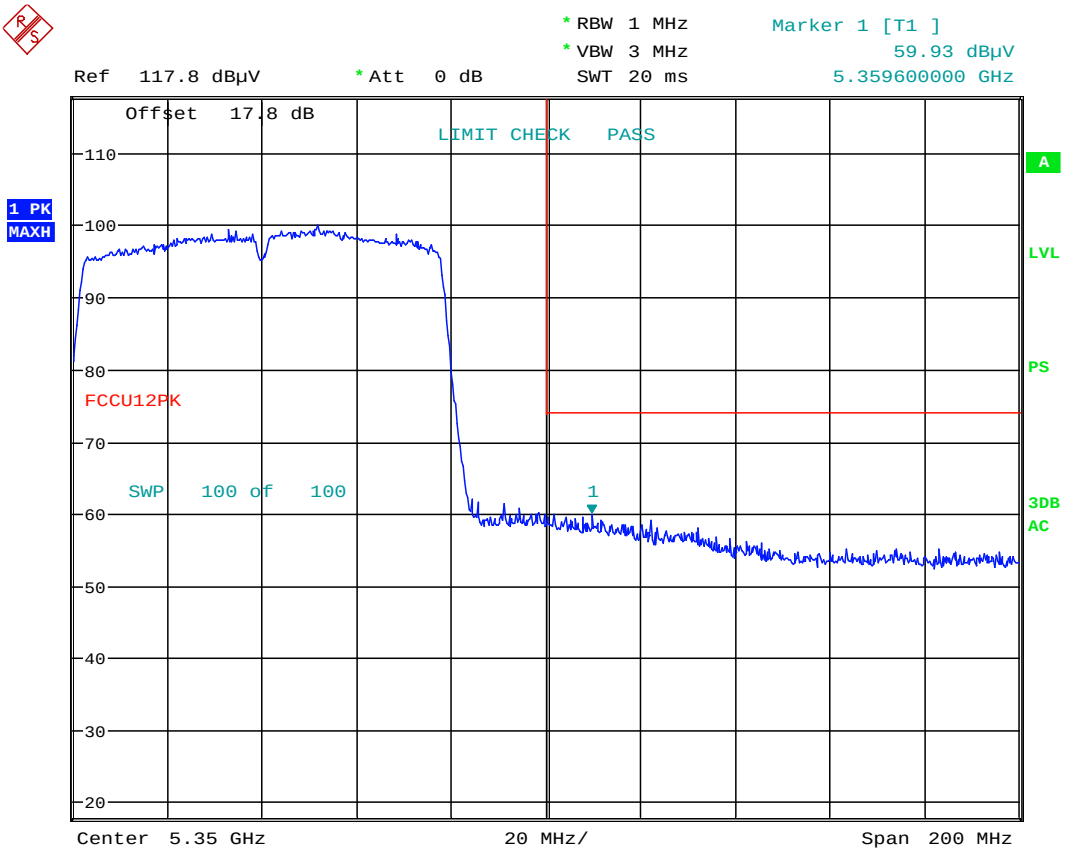
| | |
|---|---|
| Worst Case Mode: | 802.11ac (80MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5290MHz |
| Channel: | 58 |




**Plot 6-189. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

## Antenna-1 Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



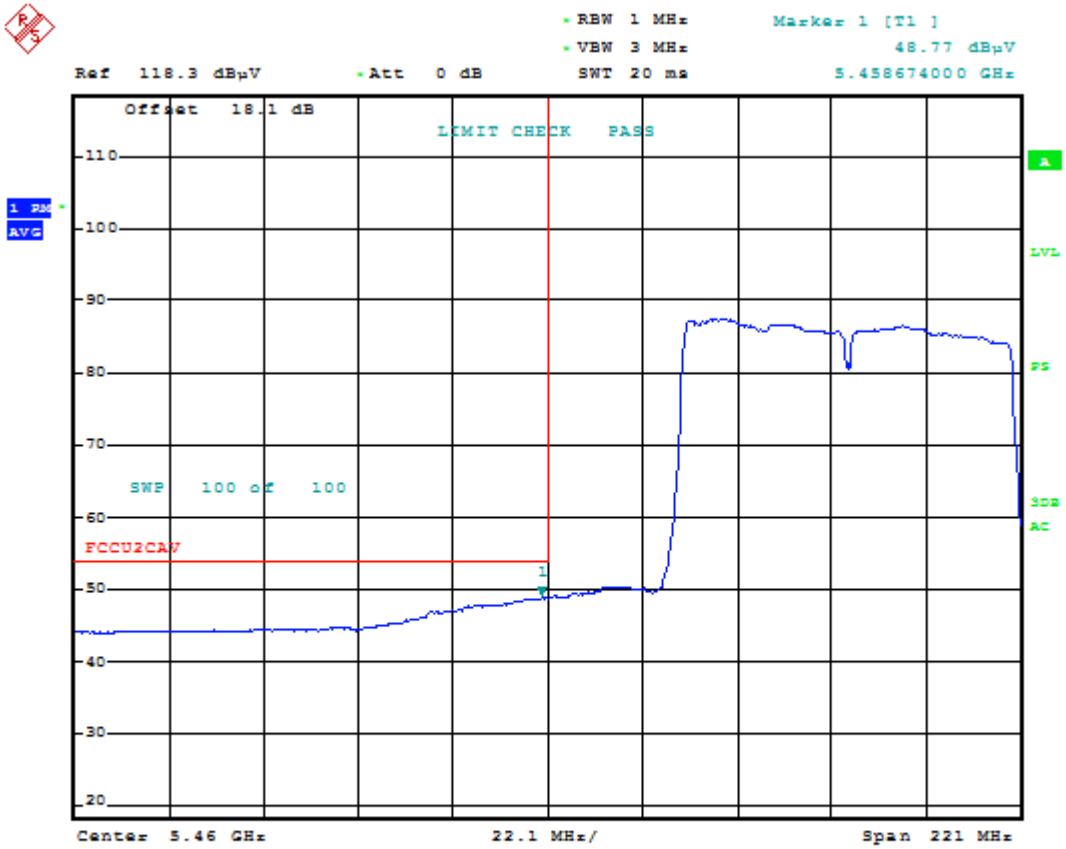

Date: 22.JAN.2015 13:03:33

**Plot 6-190. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

## Antenna-1 Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

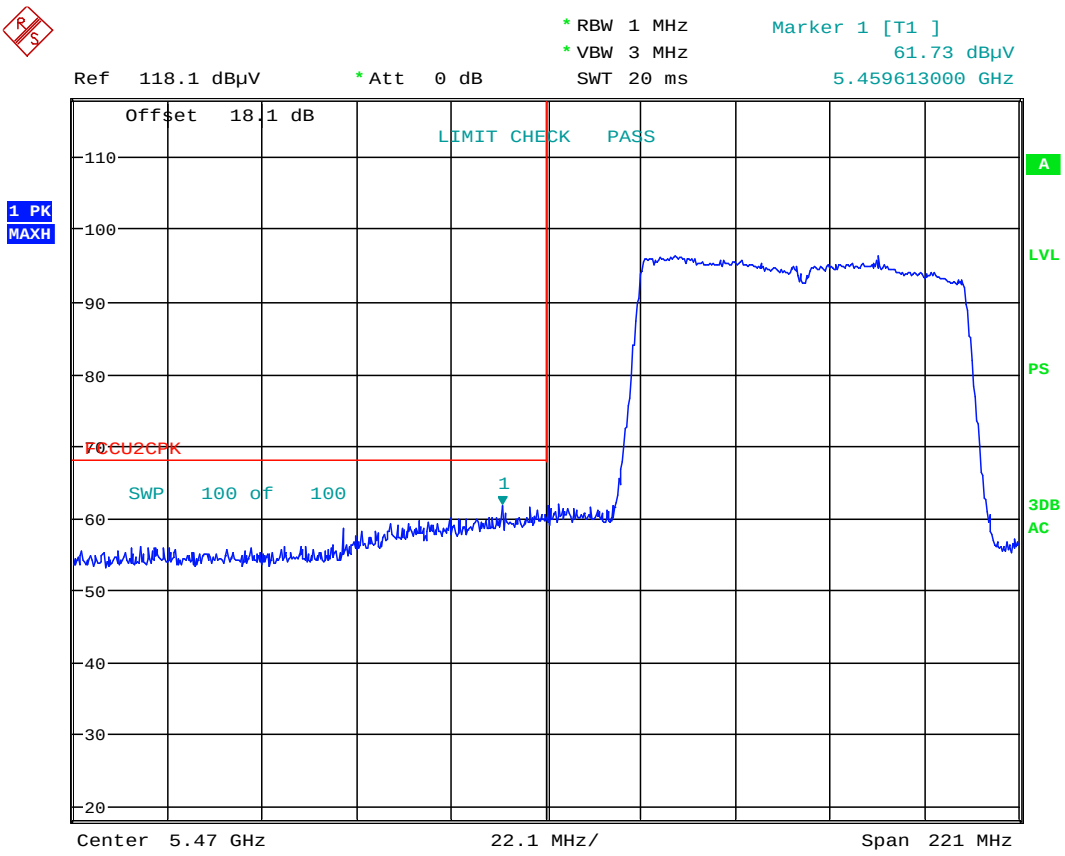
| | |
|---|---|
| Worst Case Mode: | 802.11ac (80MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5530MHz |
| Channel: | 106 |




**Plot 6-191. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)**

## Antenna-1 Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



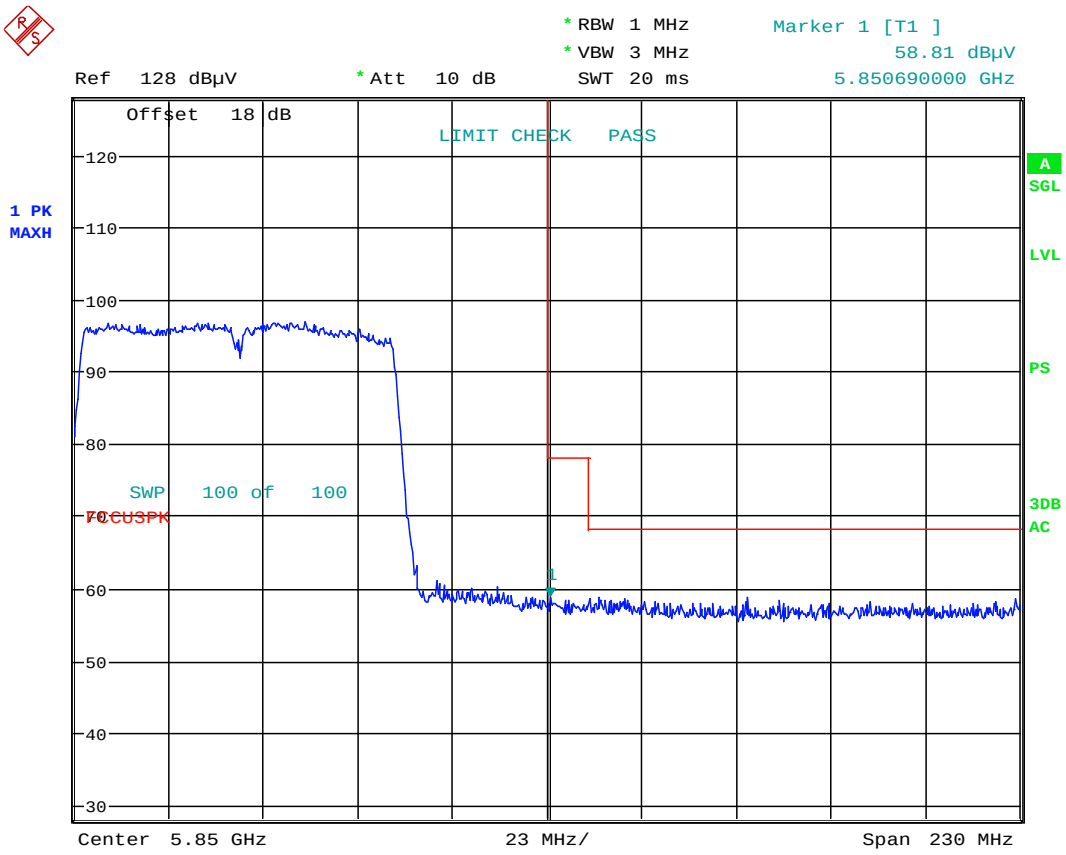

Date: 22.JAN.2015 13:26:02

**Plot 6-192. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)**

## Antenna-1 Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11ac (80MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5775MHz |
| Channel: | 155 |



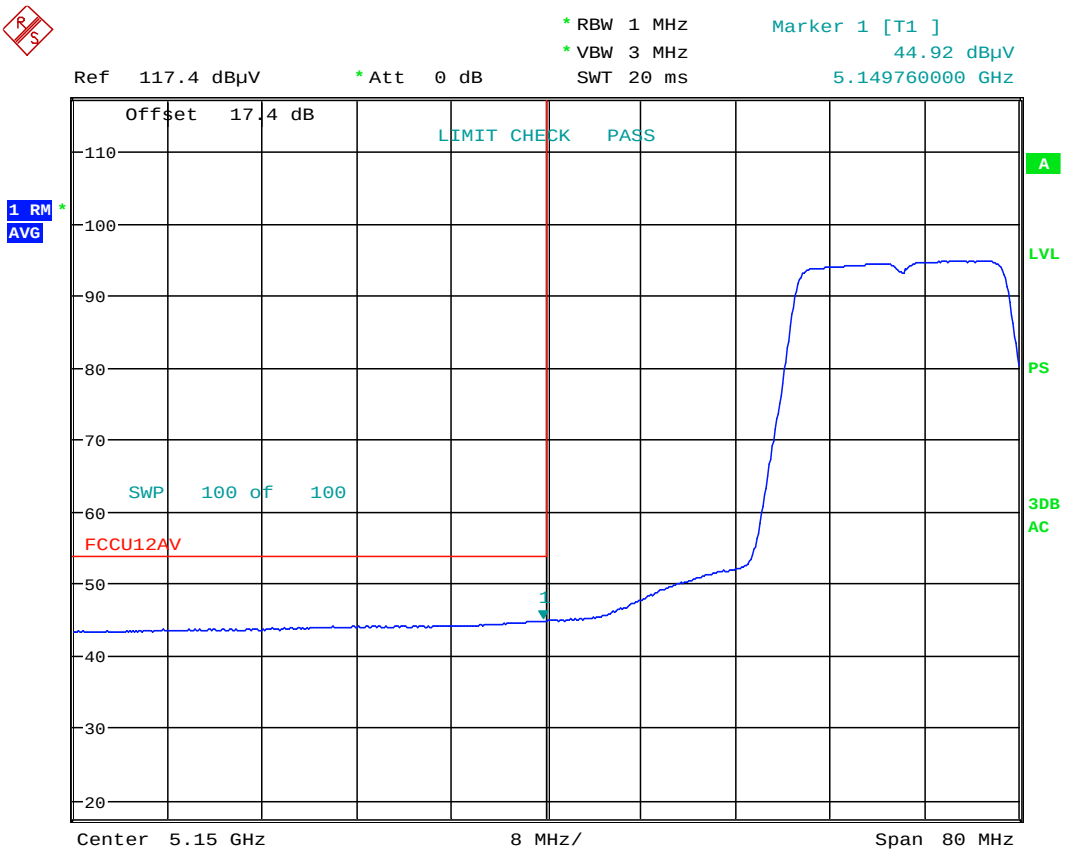

Date: 22.JAN.2015 13:45:41

**Plot 6-193. Radiated Upper Band Edge Plot (Peak – UNII Band 3)**

## 6.7.6 Antenna-2 Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5180MHz |
| Channel: | 36 |

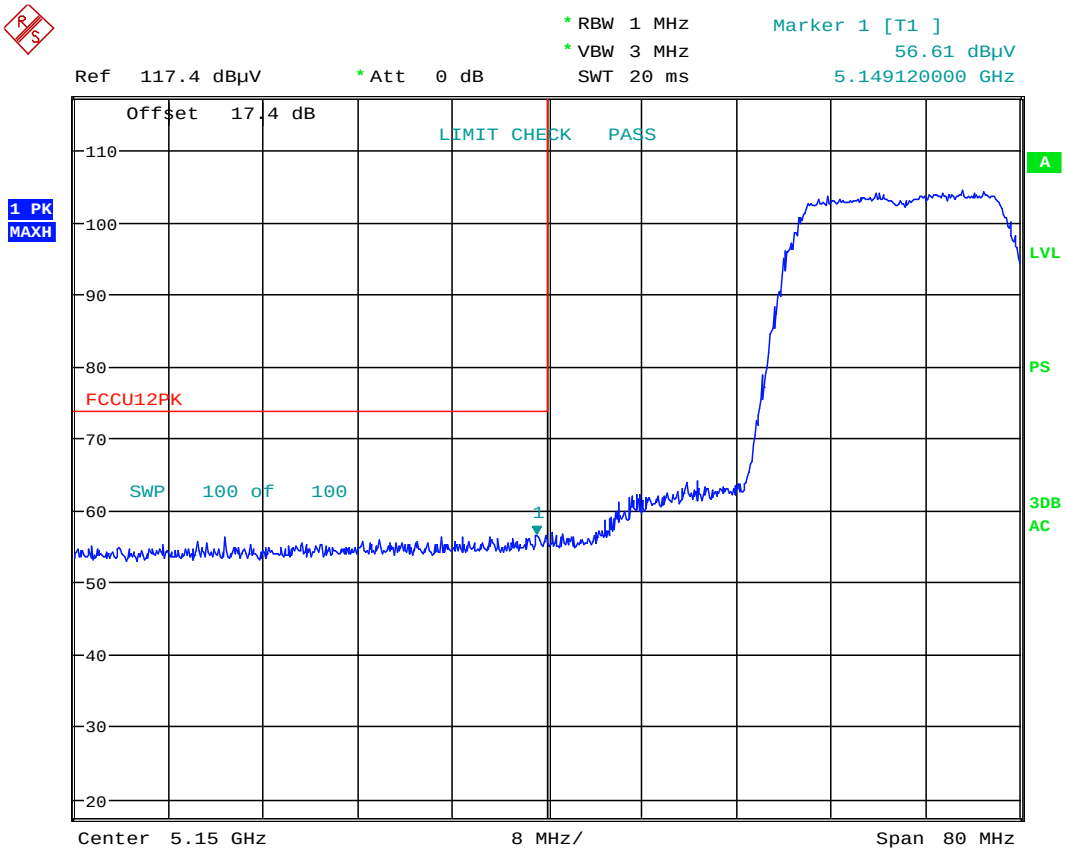



Date: 23.JAN.2015 14:25:39

**Plot 6-194. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

# Antenna-2 Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



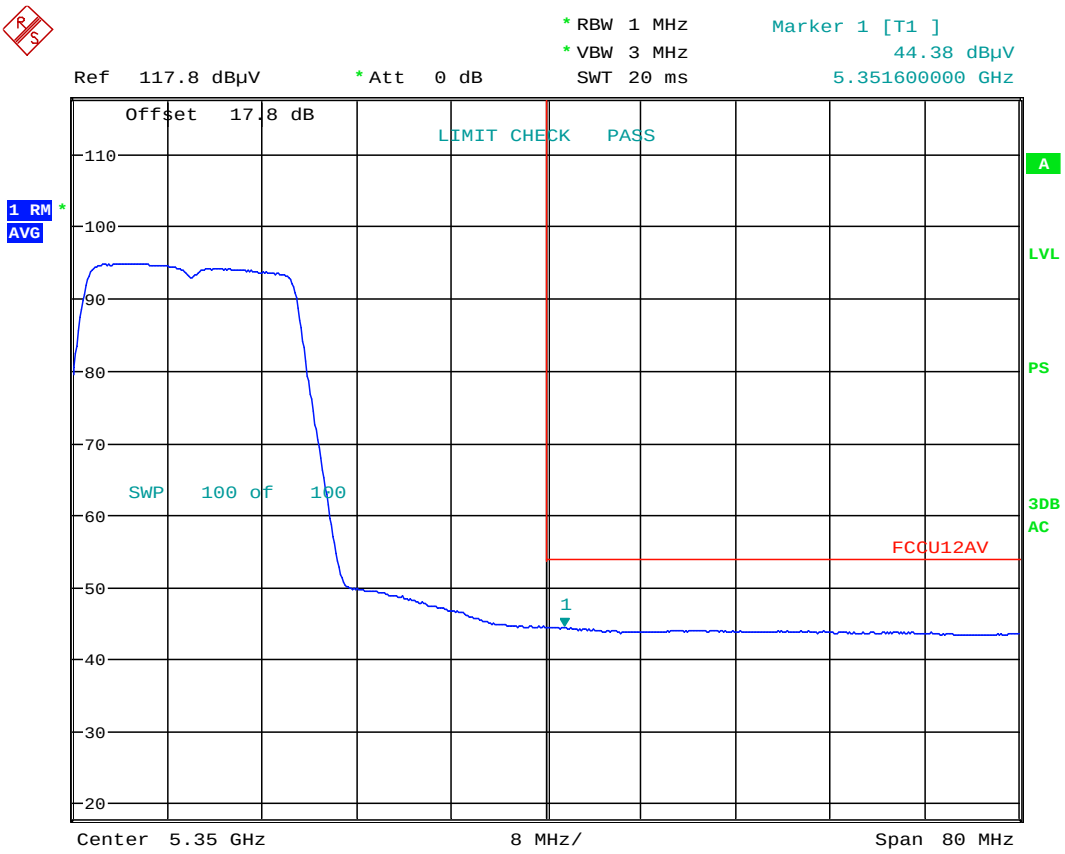

Date: 23.JAN.2015 14:26:04

**Plot 6-195. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

## Antenna-2 Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5320MHz |
| Channel: | 64 |

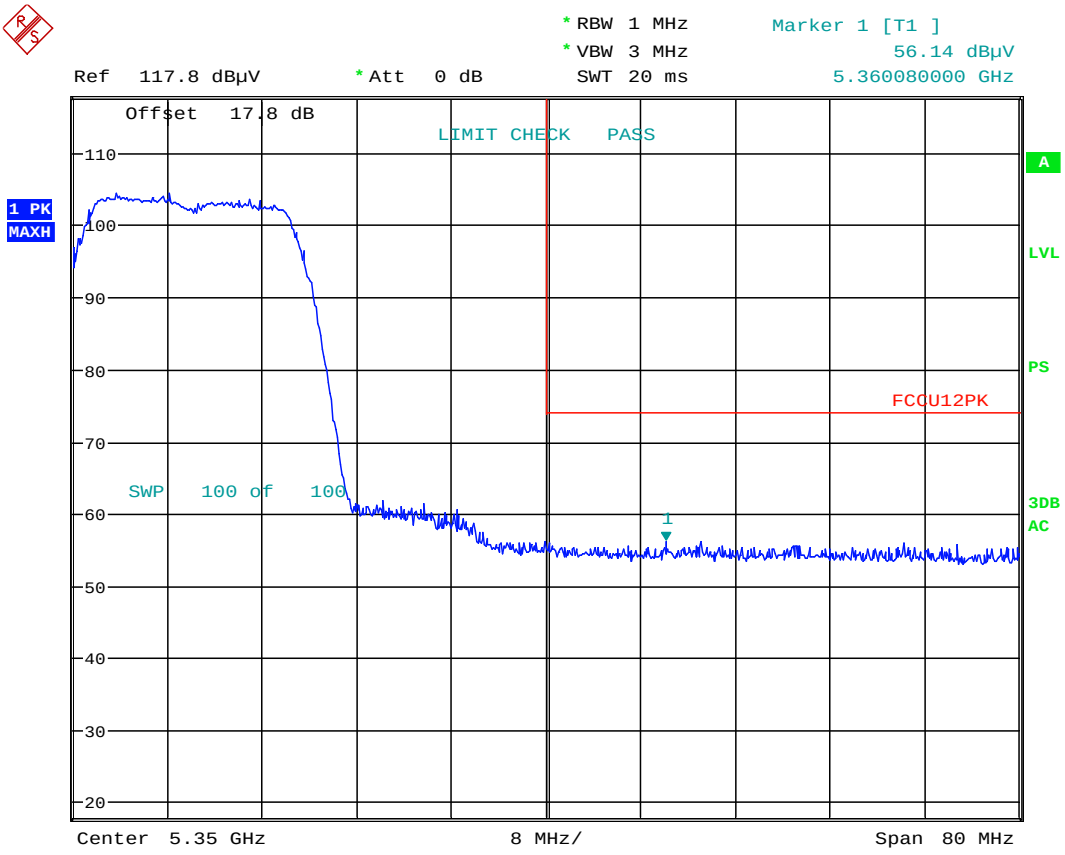



Date: 23.JAN.2015 14:54:56

**Plot 6-196. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

## Antenna-2 Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



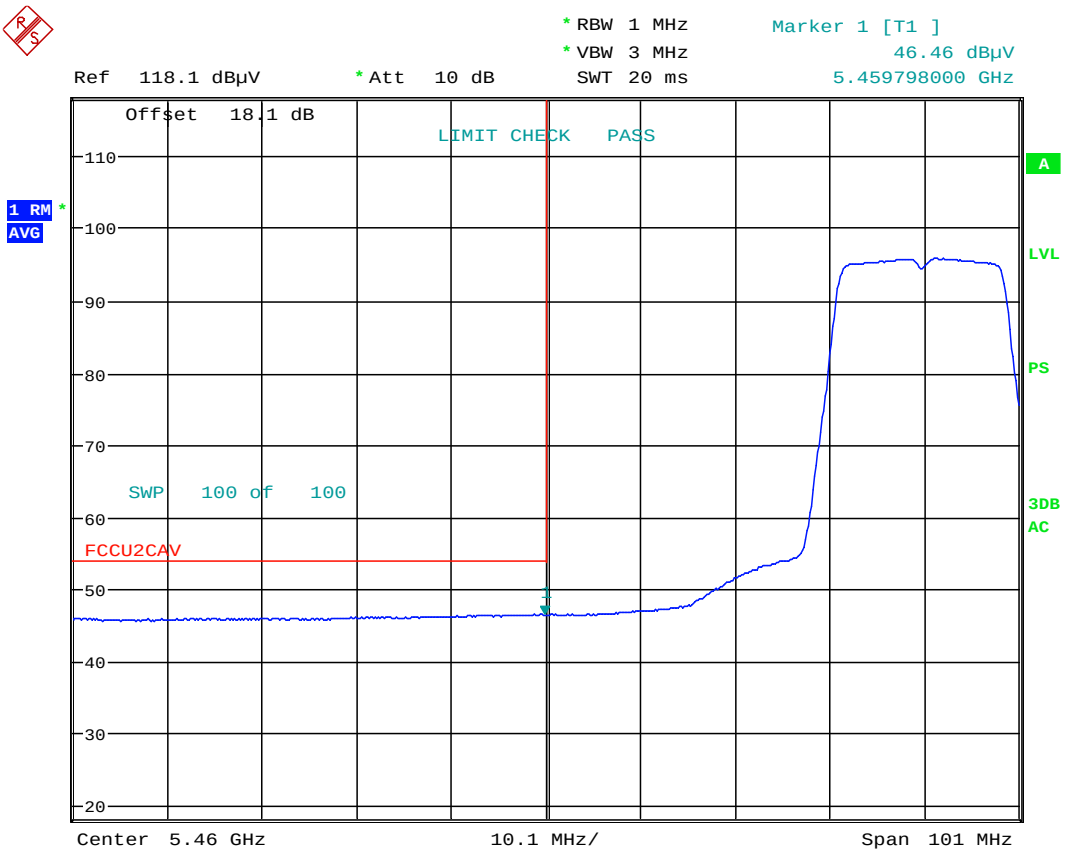

Date: 23.JAN.2015 14:55:20

**Plot 6-197. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

## Antenna-2 Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5500MHz |
| Channel: | 100 |

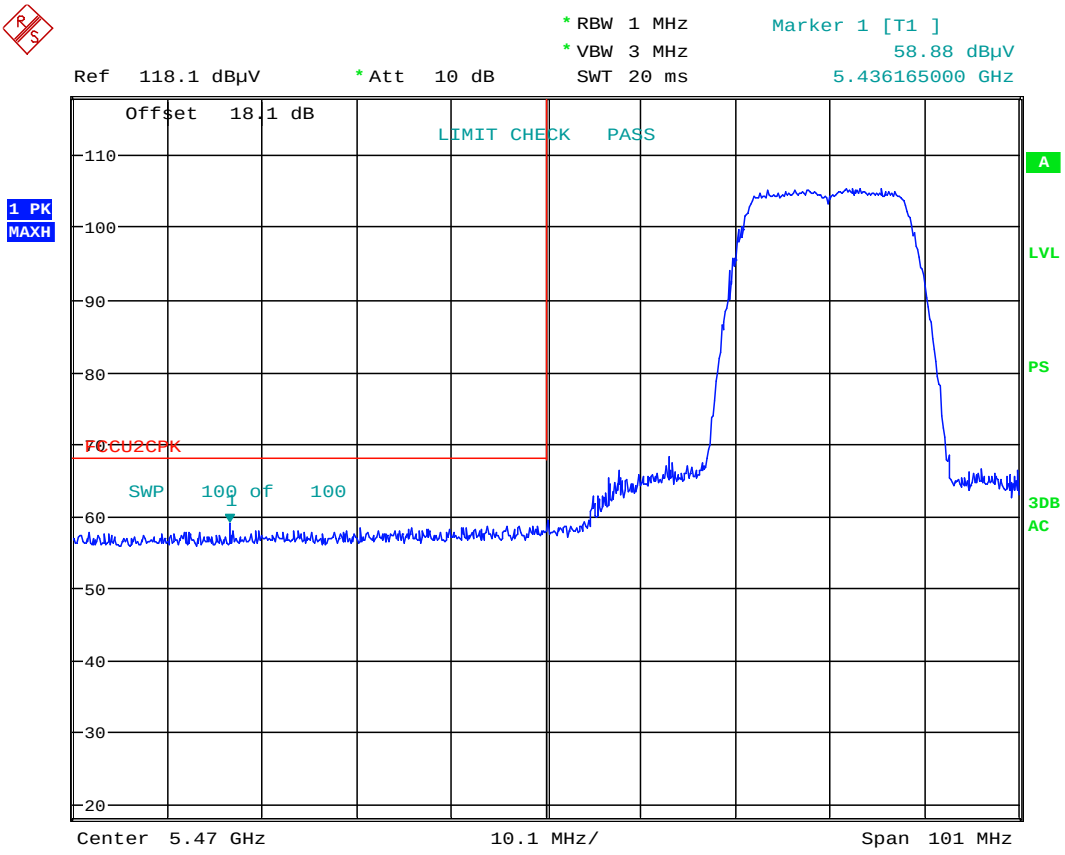



Date: 23.JAN.2015 15:10:22

**Plot 6-198. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)**

## Antenna-2 Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



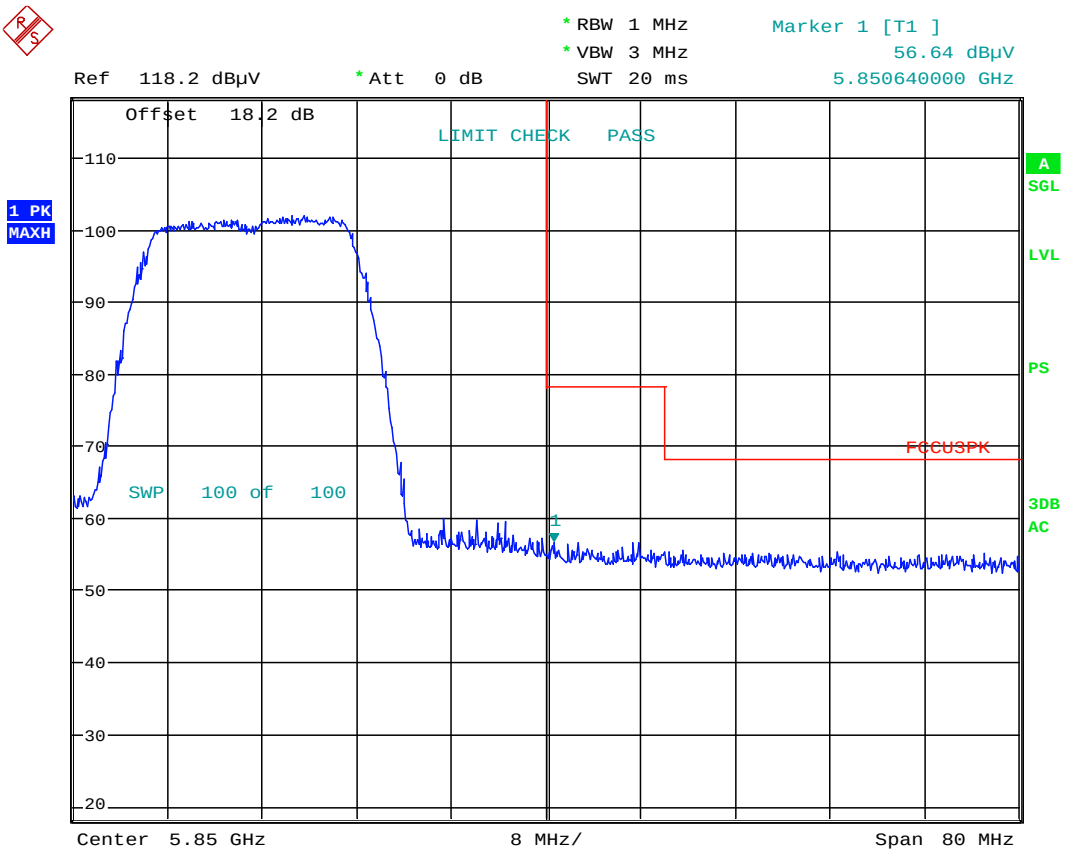

Date: 23.JAN.2015 15:11:46

**Plot 6-199. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)**

## Antenna-2 Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11a |
| Worst Case Transfer Rate: | 6 Mbps |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5825MHz |
| Channel: | 165 |



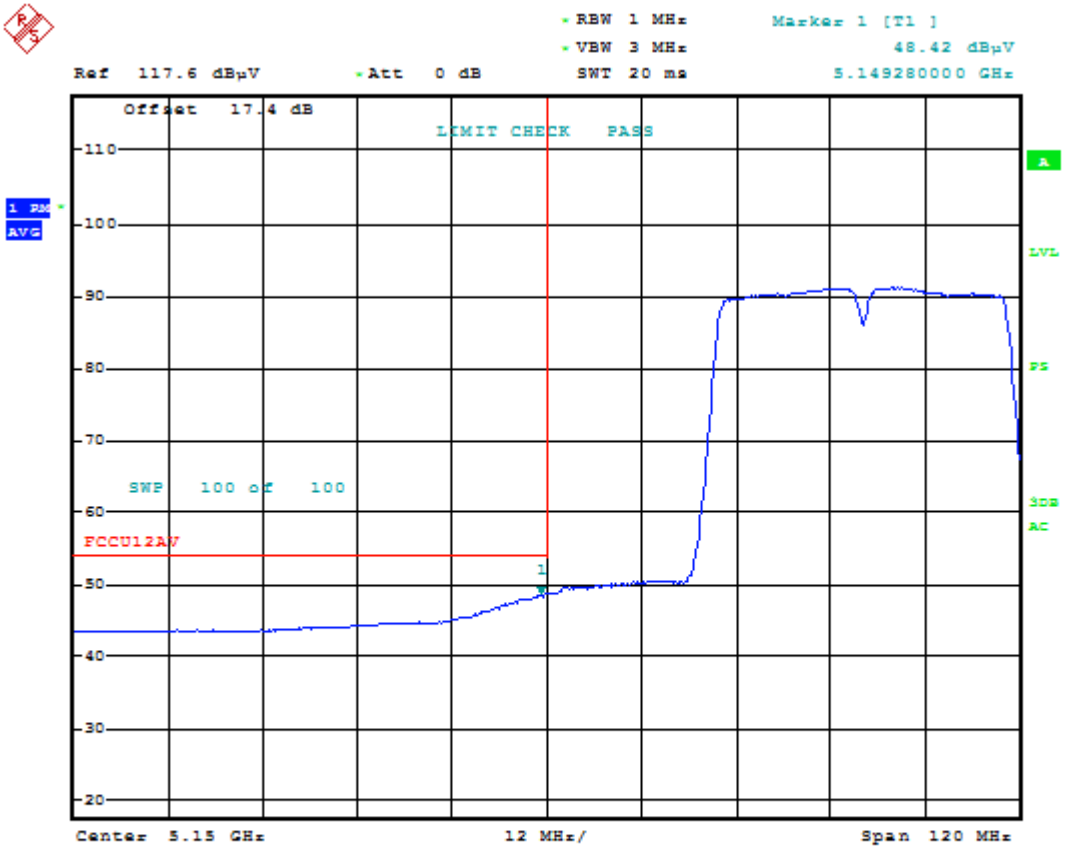

Date: 23.JAN.2015 15:47:48

**Plot 6-200. Radiated Upper Band Edge Plot (Peak – UNII Band 3)**

## 6.7.7 Antenna-2 Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

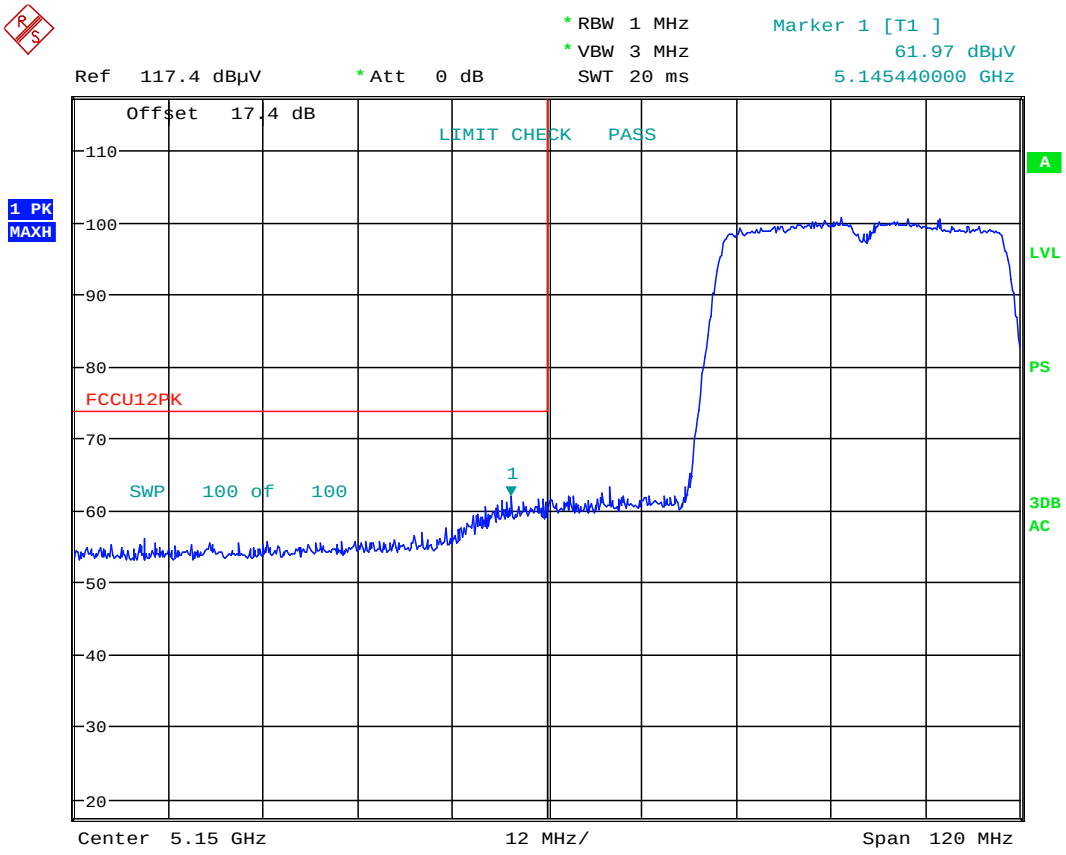
| | |
|---|---|
| Worst Case Mode: | 802.11n (40MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5190MHz |
| Channel: | 38 |




**Plot 6-201. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

# Antenna-2 Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



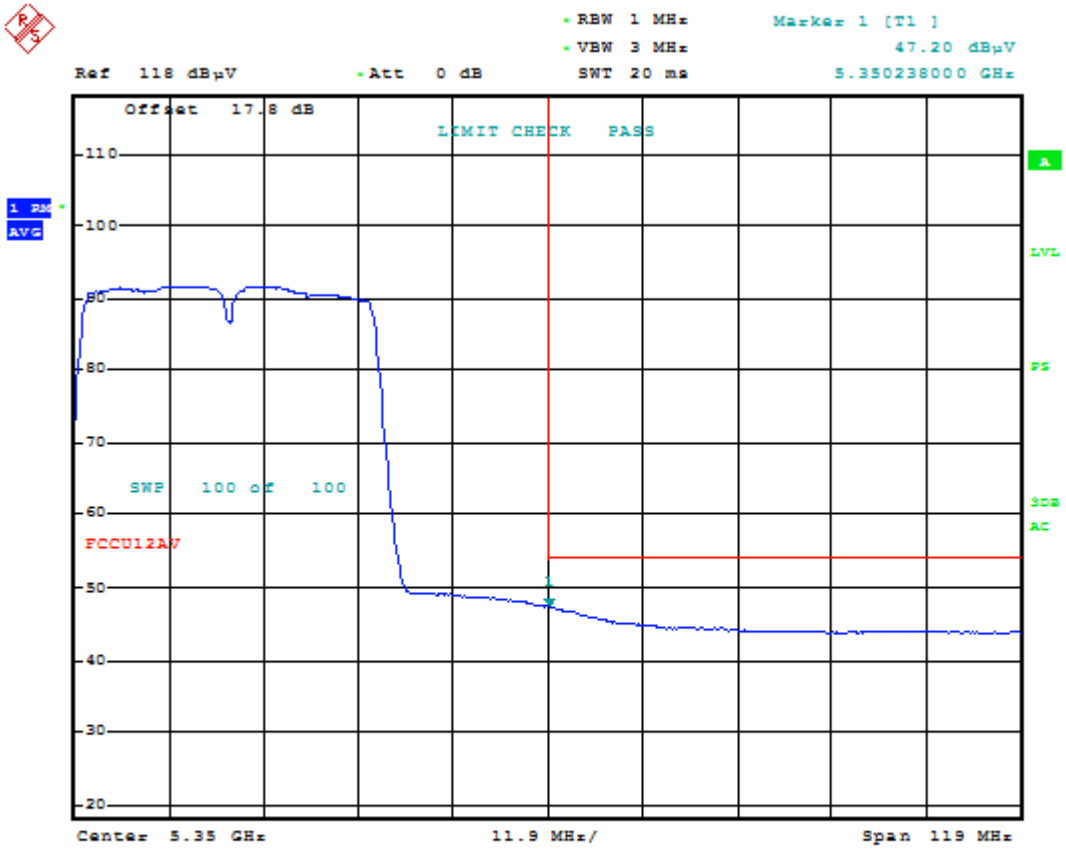

Date: 23.JAN.2015 14:33:53

**Plot 6-202. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

## Antenna-2 Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11n (40MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5310MHz |
| Channel: | 62 |

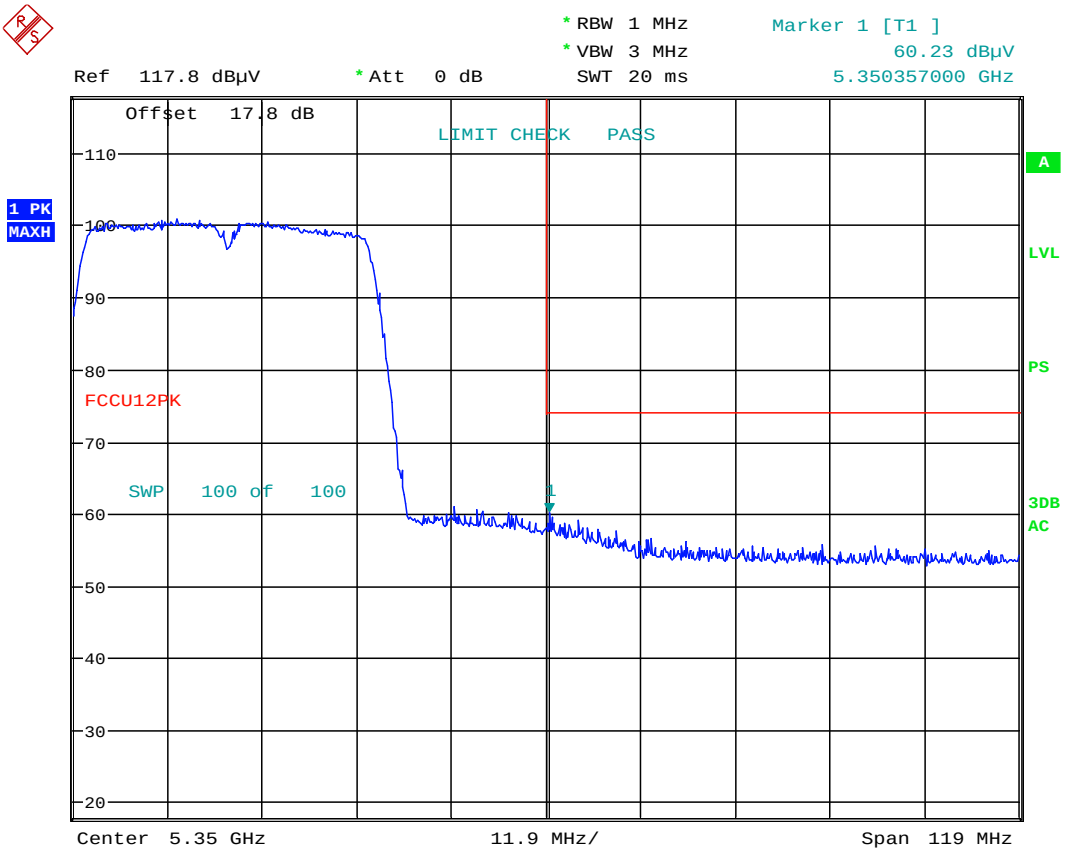



Date: 23.JAN.2015 14:57:52

**Plot 6-203. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

# Antenna-2 Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



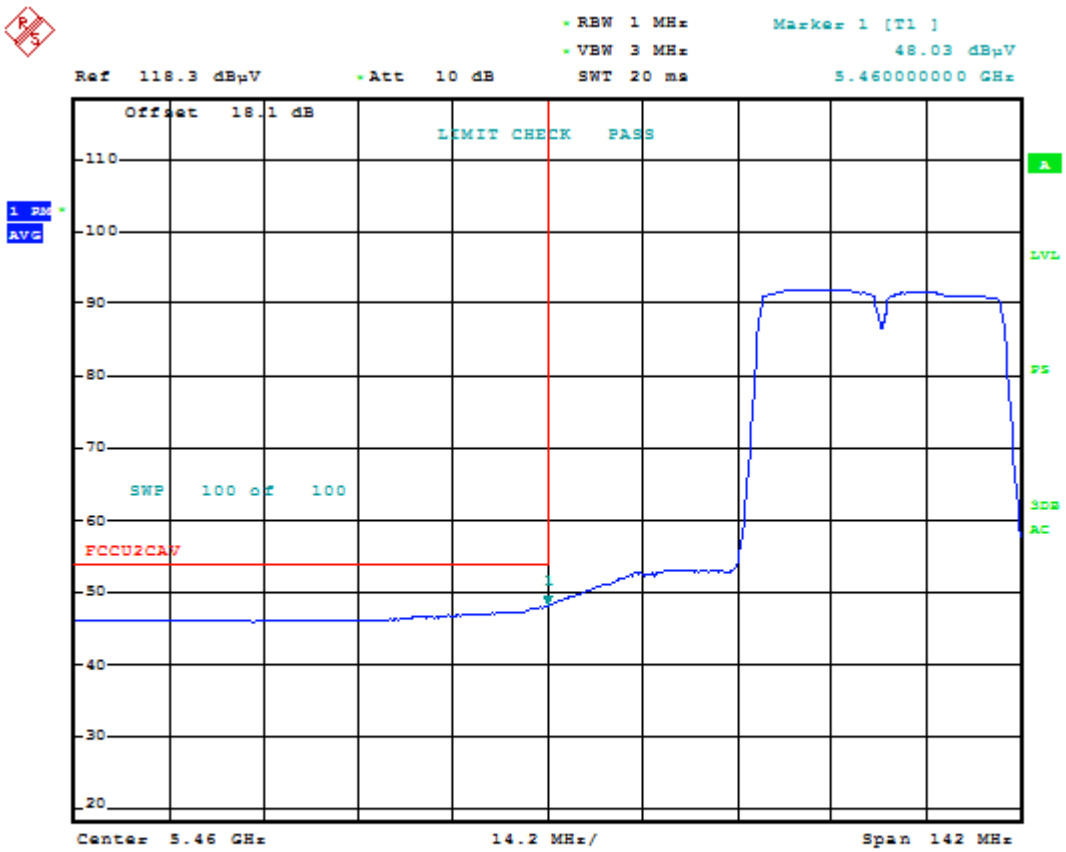

Date: 23.JAN.2015 14:58:25

**Plot 6-204. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

## Antenna-2 Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11n (40MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5510MHz |
| Channel: | 102 |

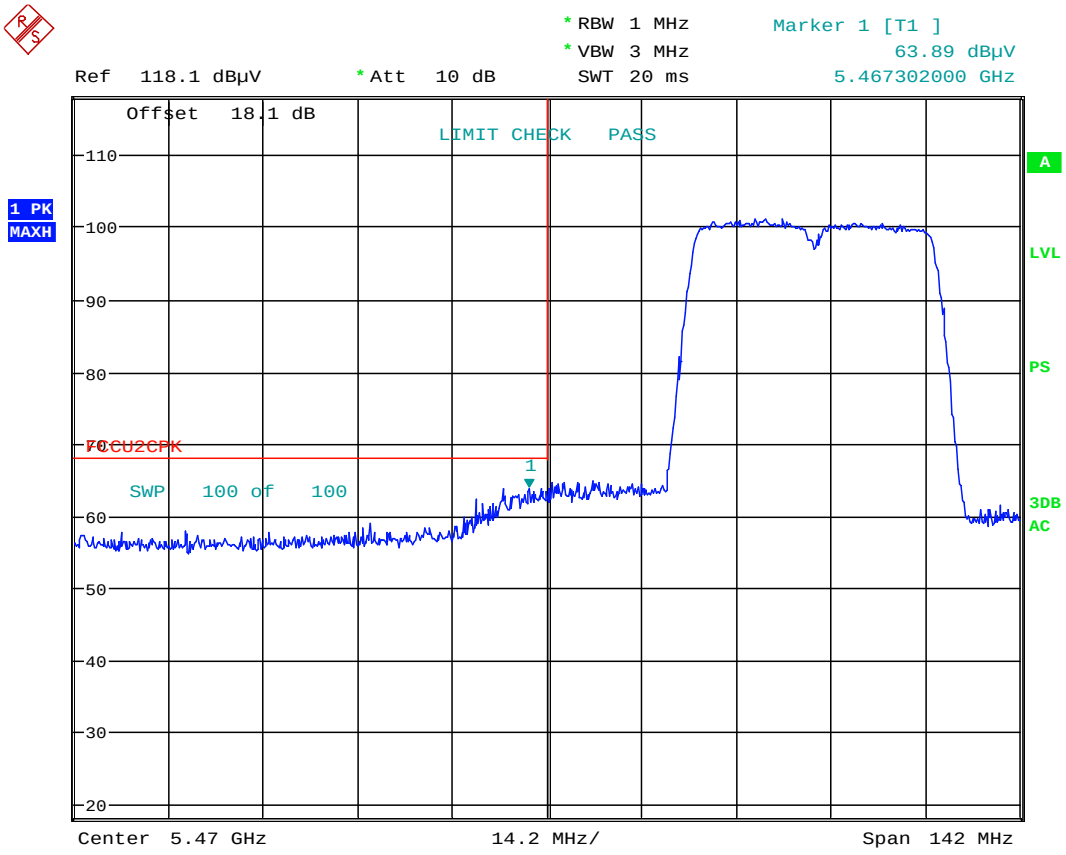



Date: 23.JAN.2015 15:13:53

**Plot 6-205. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)**

# Antenna-2 Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



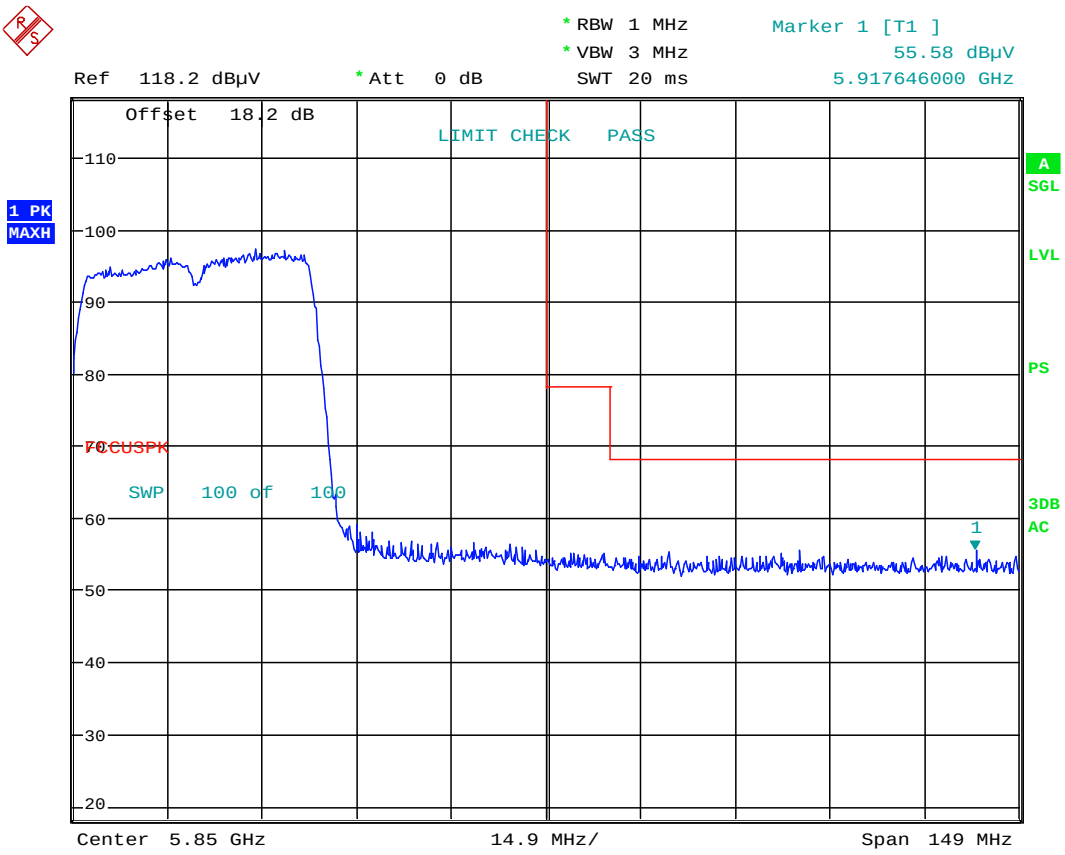

Date: 23.JAN.2015 15:14:38

**Plot 6-206. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)**

## Antenna-2 Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11n (40MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5815MHz |
| Channel: | 163 |



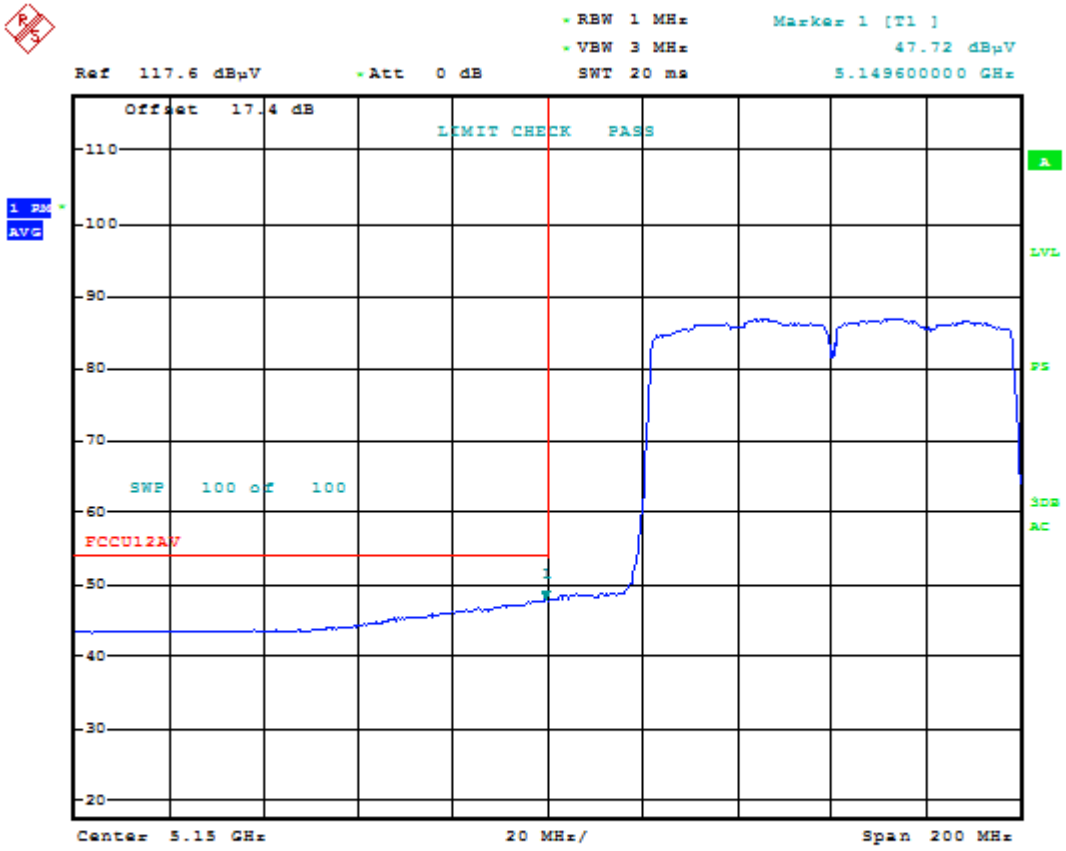

Date: 23.JAN.2015 15:49:48

**Plot 6-207. Radiated Upper Band Edge Plot (Peak – UNII Band 3)**

## 6.7.8 Antenna-2 Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

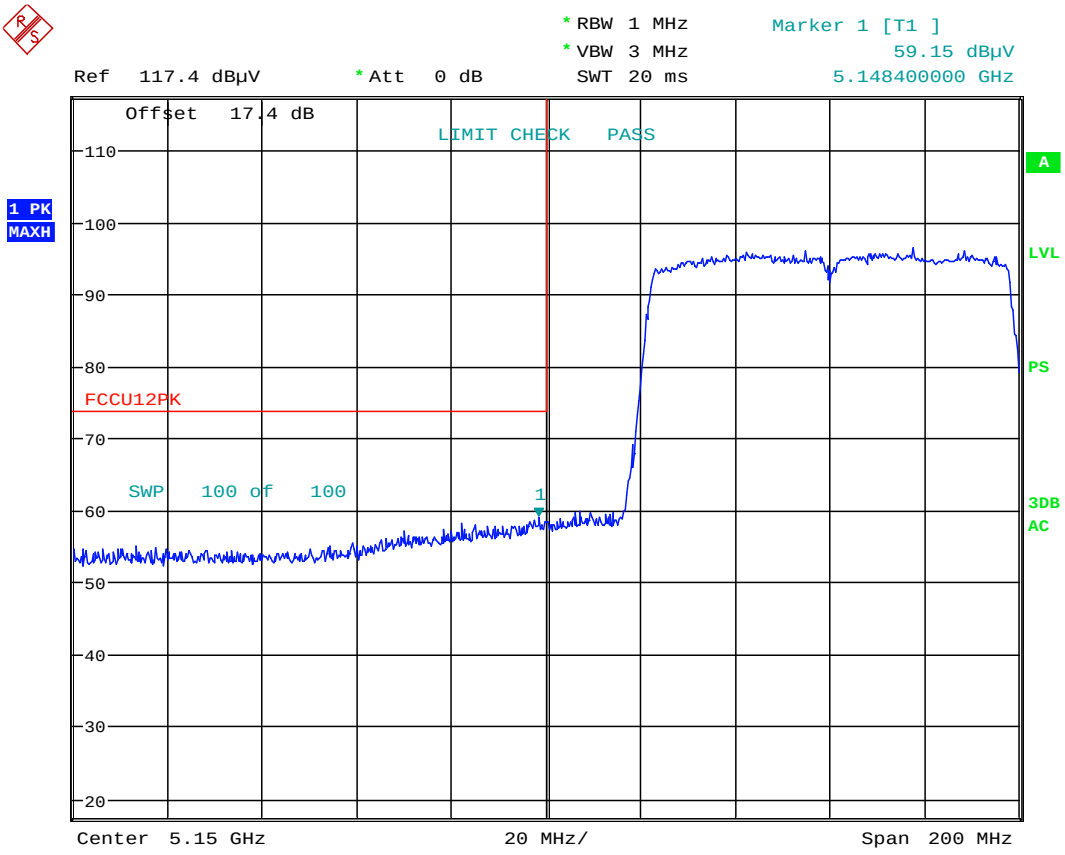
| | |
|---|---|
| Worst Case Mode: | 802.11n (80MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5210MHz |
| Channel: | 42 |




**Plot 6-208. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

# Antenna-2 Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



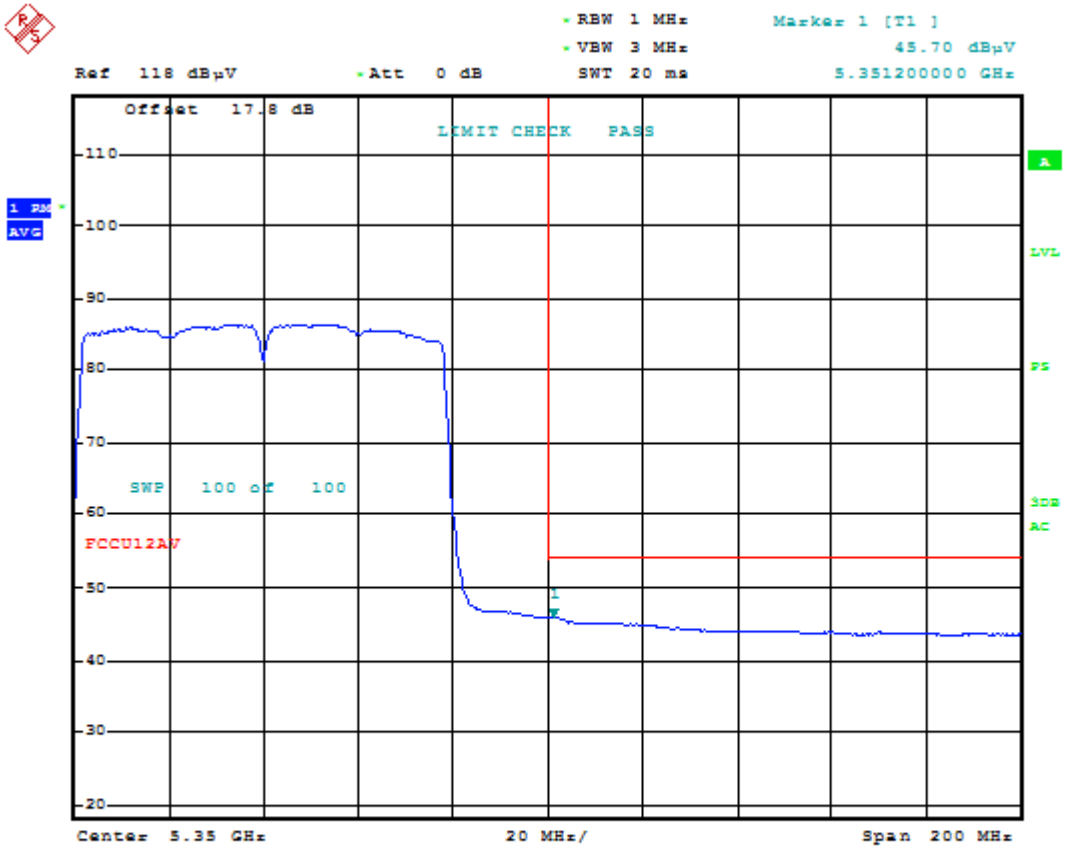

Date: 23.JAN.2015 14:42:34

**Plot 6-209. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

## Antenna-2 Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11ac (80MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5290MHz |
| Channel: | 58 |

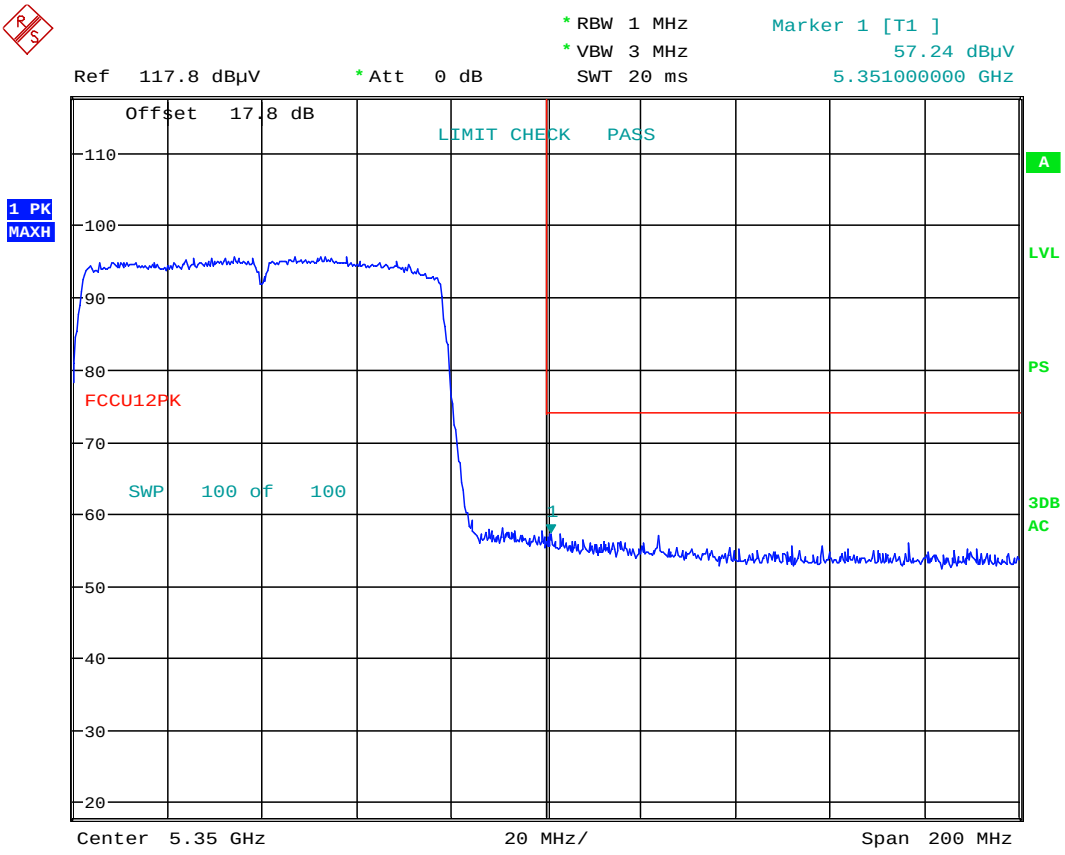



Date: 23.JAN.2015 15:01:13

**Plot 6-210. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

# Antenna-2 Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



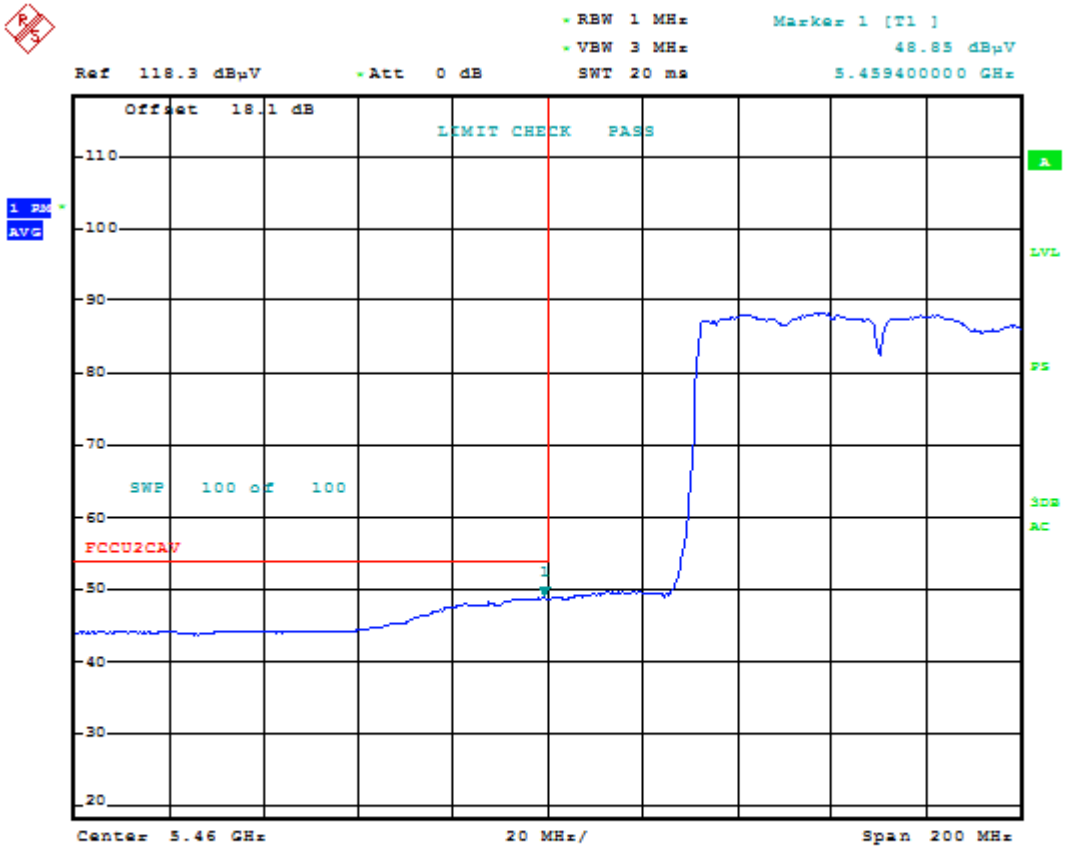

Date: 23.JAN.2015 15:02:55

**Plot 6-211. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

## Antenna-2 Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

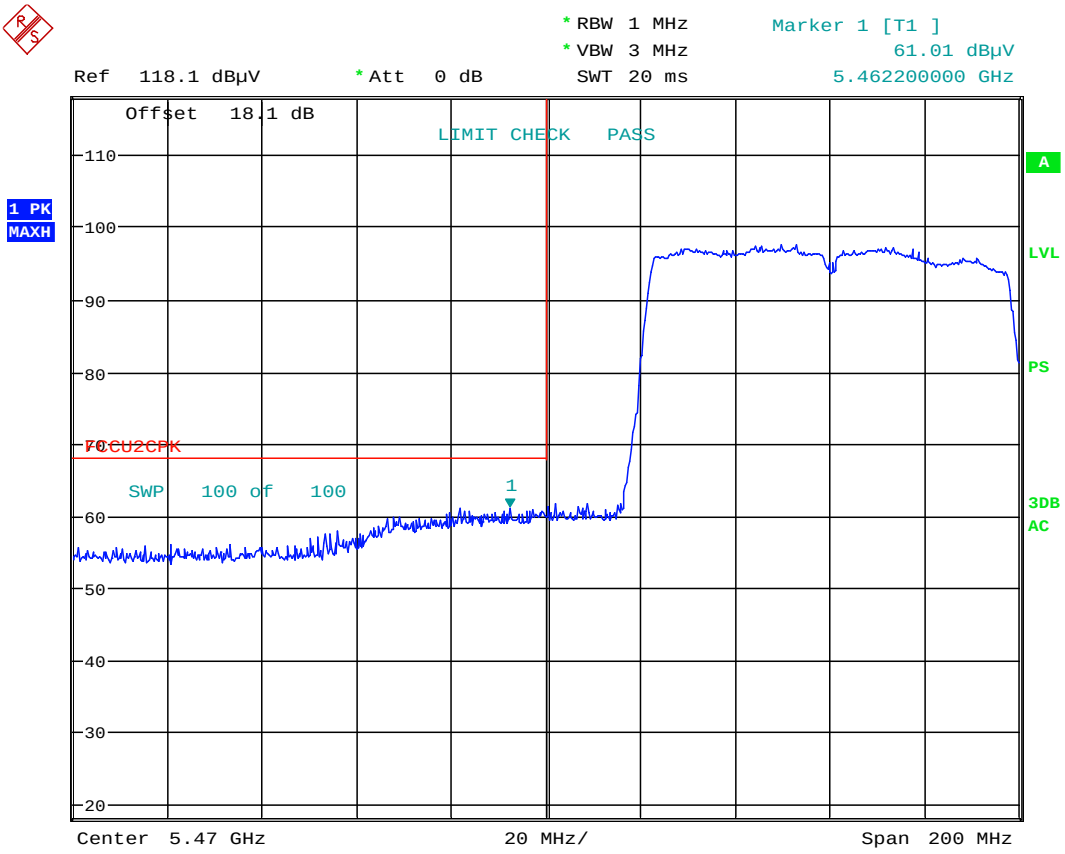
| | |
|---|---|
| Worst Case Mode: | 802.11ac (80MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5530MHz |
| Channel: | 106 |




**Plot 6-212. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)**

# Antenna-2 Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



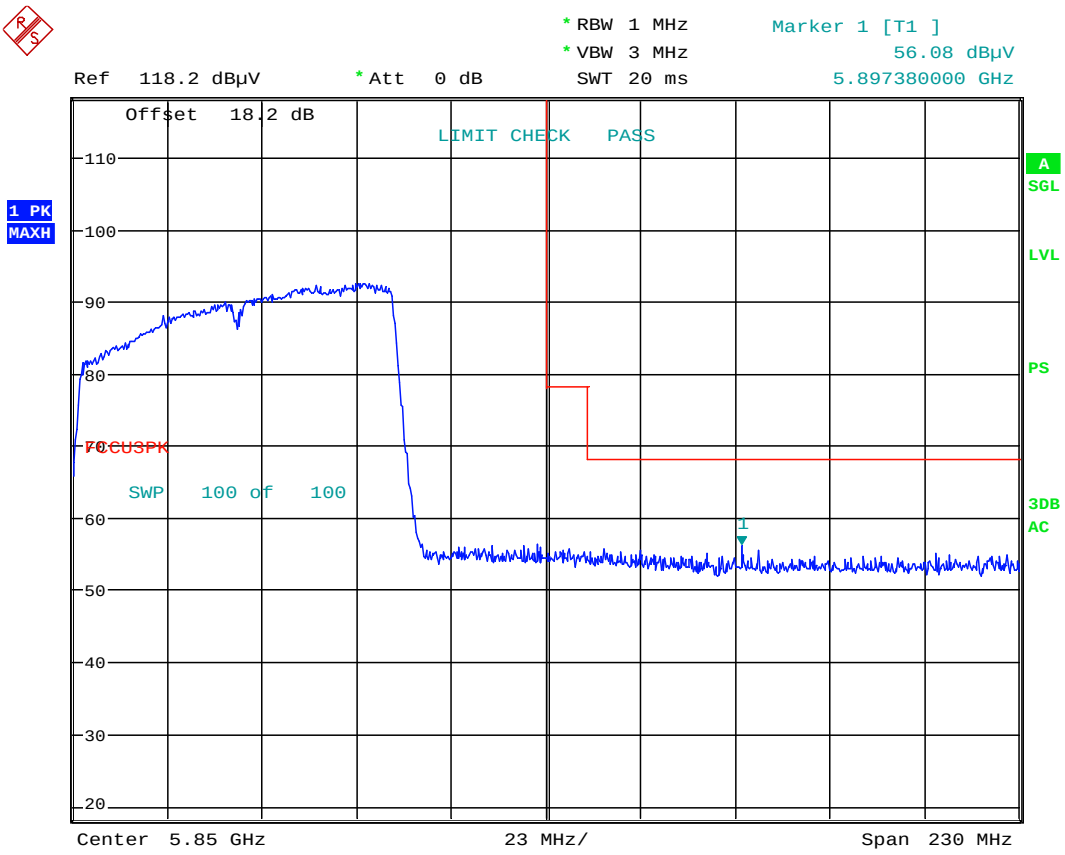

Date: 23.JAN.2015 15:18:49

**Plot 6-213. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)**

## Antenna-2 Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11ac (80MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5775MHz |
| Channel: | 155 |

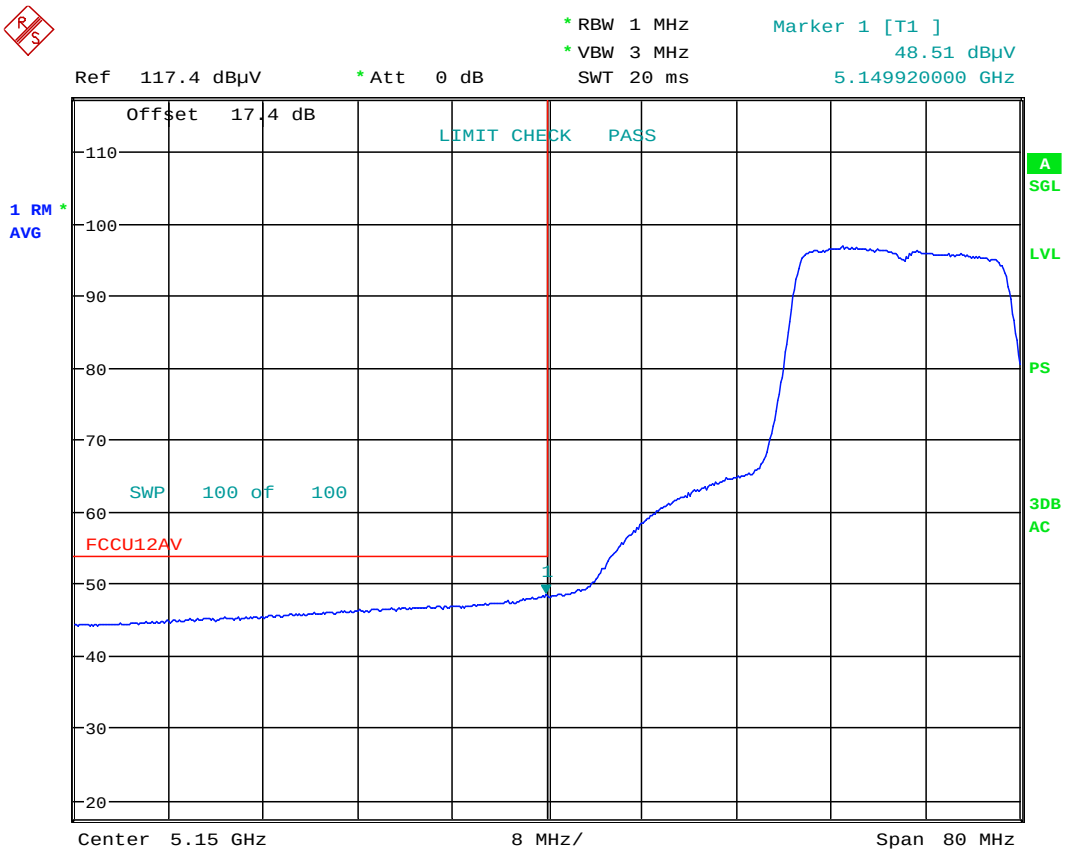



**Plot 6-214. Radiated Upper Band Edge Plot (Peak – UNII Band 3)**

## 6.7.9 MIMO Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

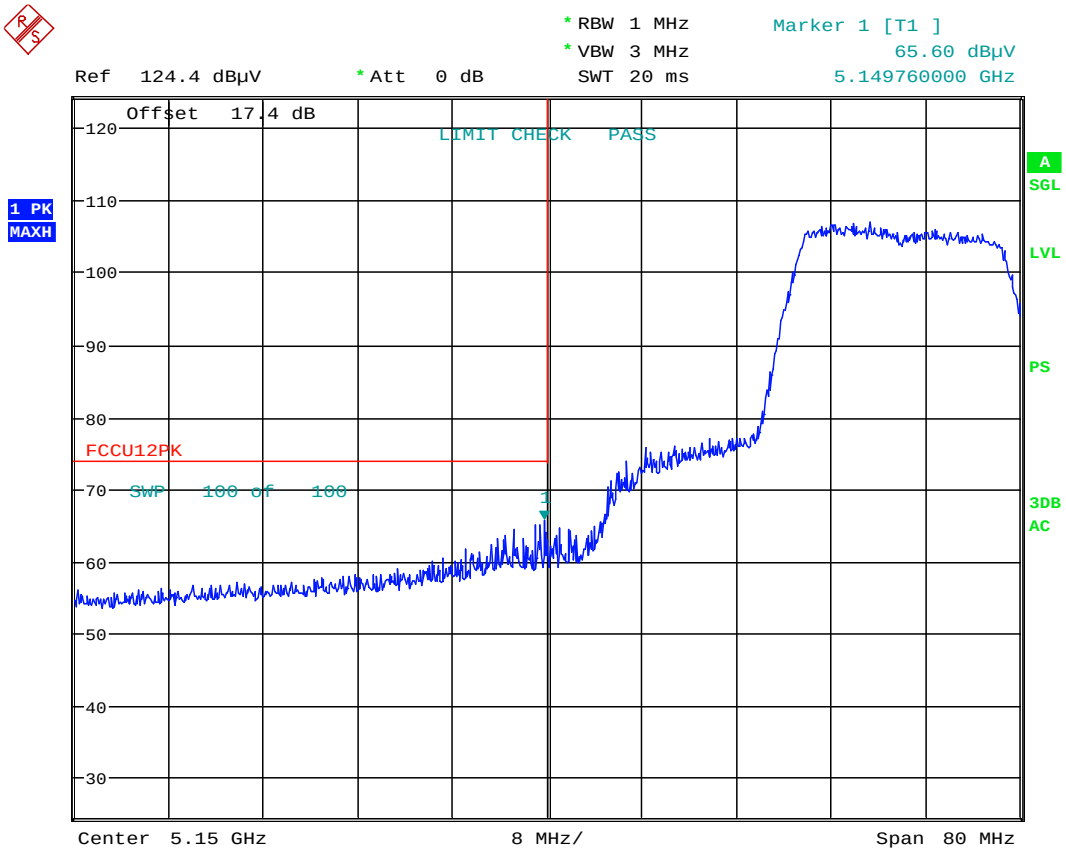
| | |
|---|---|
| Worst Case Mode: | 802.11n (20MHz) |
| Worst Case Transfer Rate: | MCS8 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5180MHz |
| Channel: | 36 |




**Plot 6-215. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

# MIMO Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



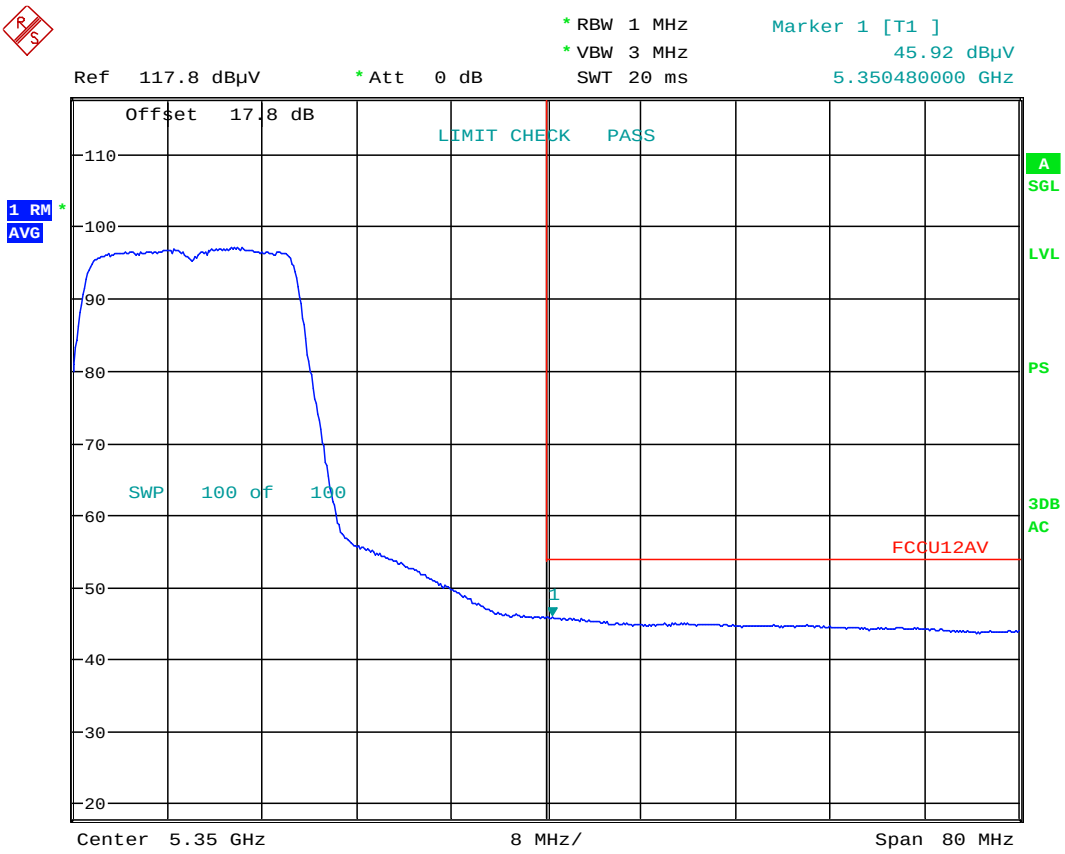

Date: 26.JAN.2015 11:38:47

**Plot 6-216. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

## MIMO Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11n (20MHz) |
| Worst Case Transfer Rate: | MCS8 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5320MHz |
| Channel: | 64 |

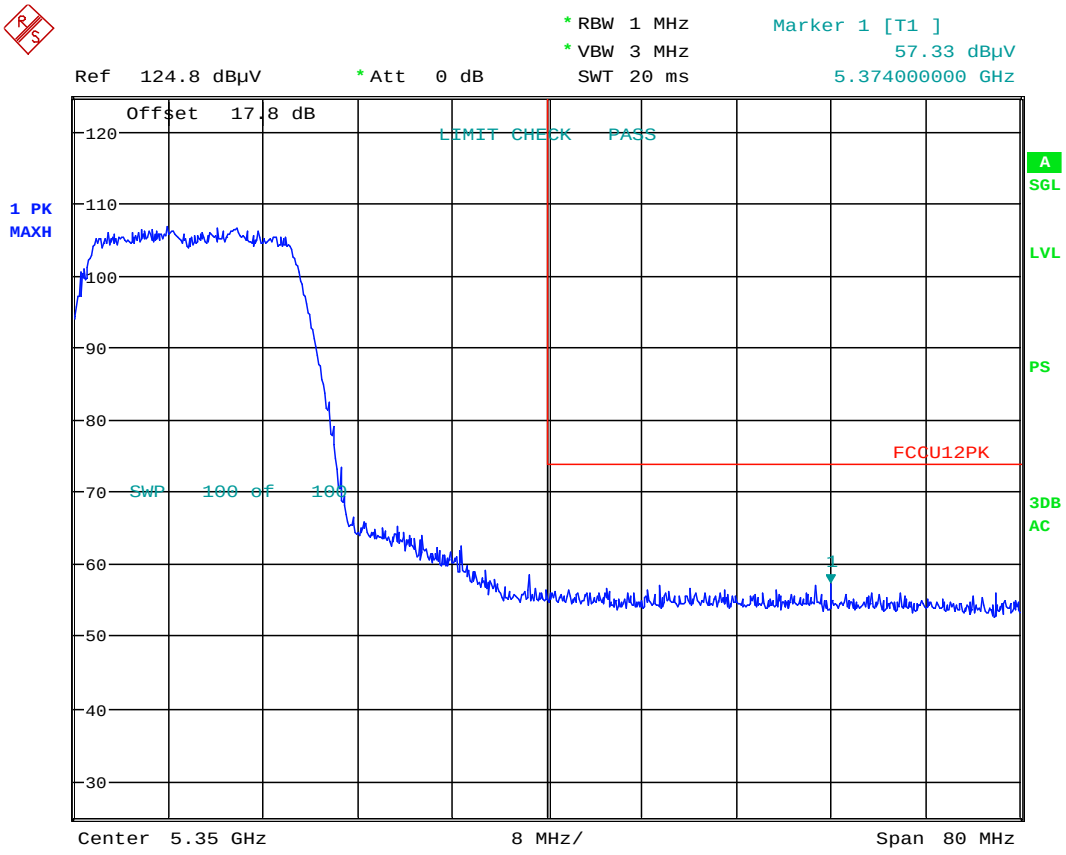



Date: 26.JAN.2015 11:43:54

**Plot 6-217. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

# MIMO Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



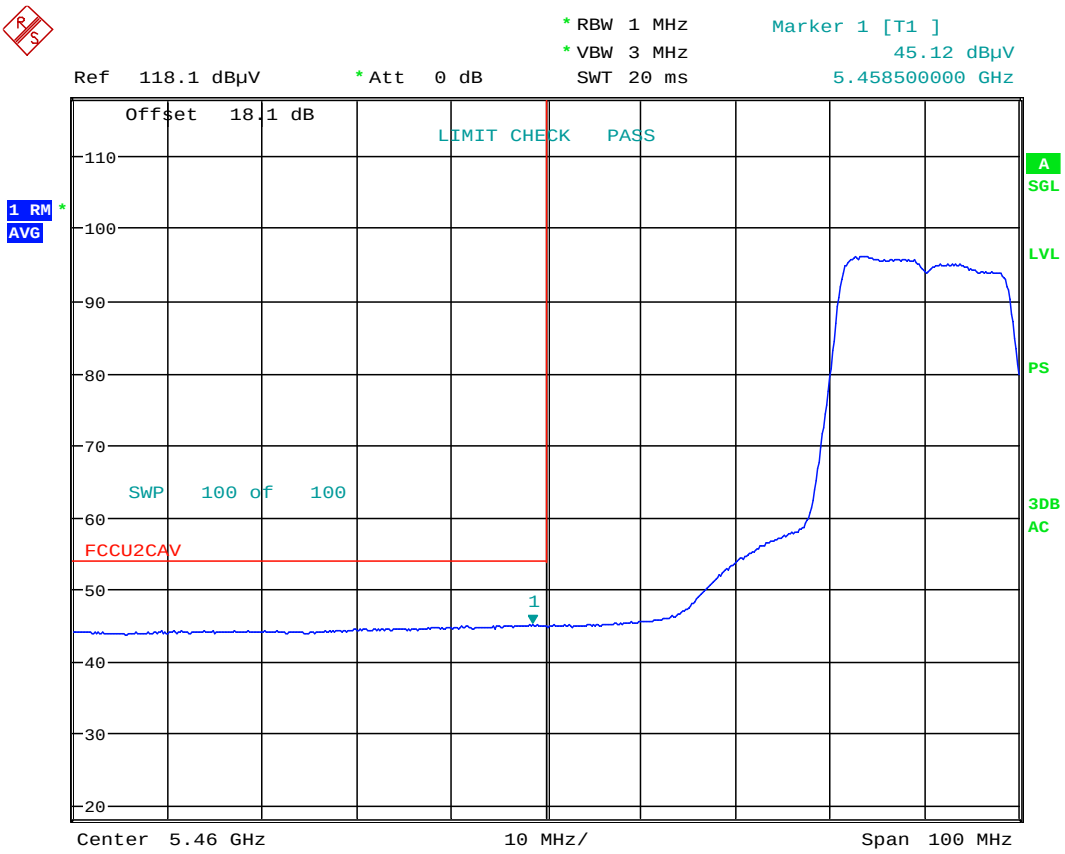

Date: 26.JAN.2015 12:06:55

**Plot 6-218. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

## MIMO Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11n (20MHz) |
| Worst Case Transfer Rate: | MCS8 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5500MHz |
| Channel: | 100 |

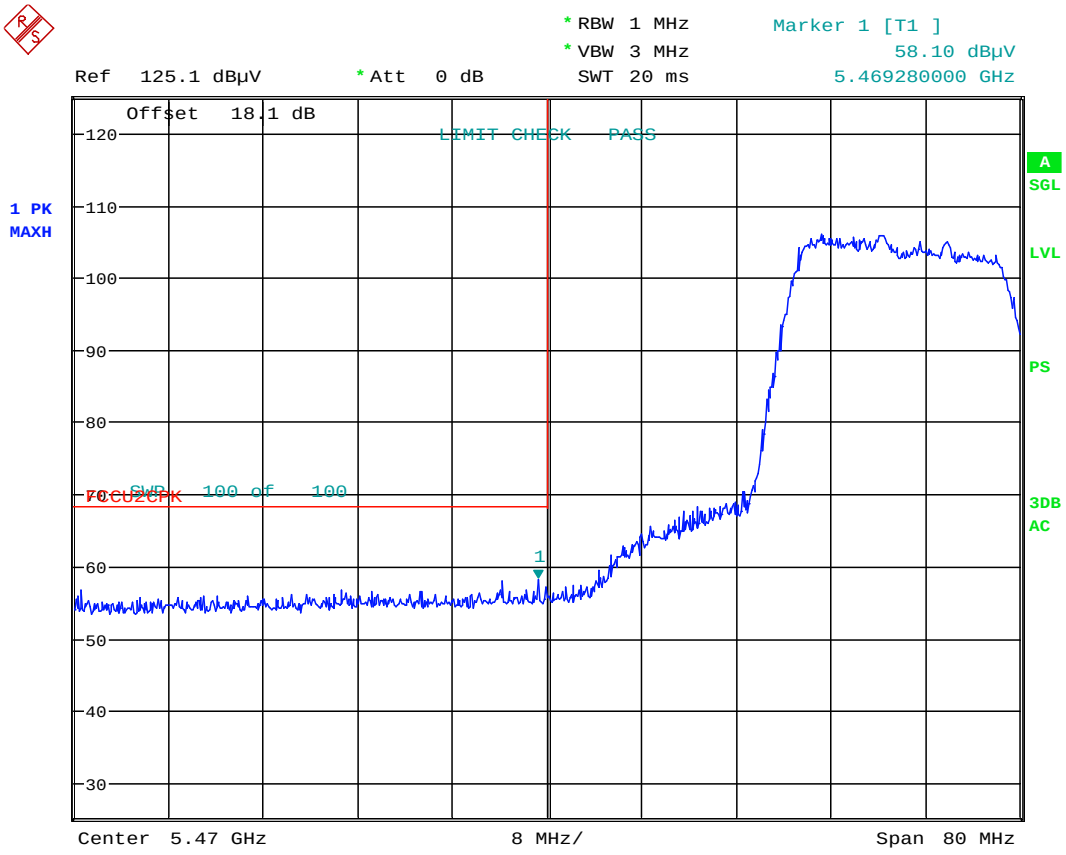



Date: 26.JAN.2015 12:13:17

**Plot 6-219. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)**

# MIMO Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



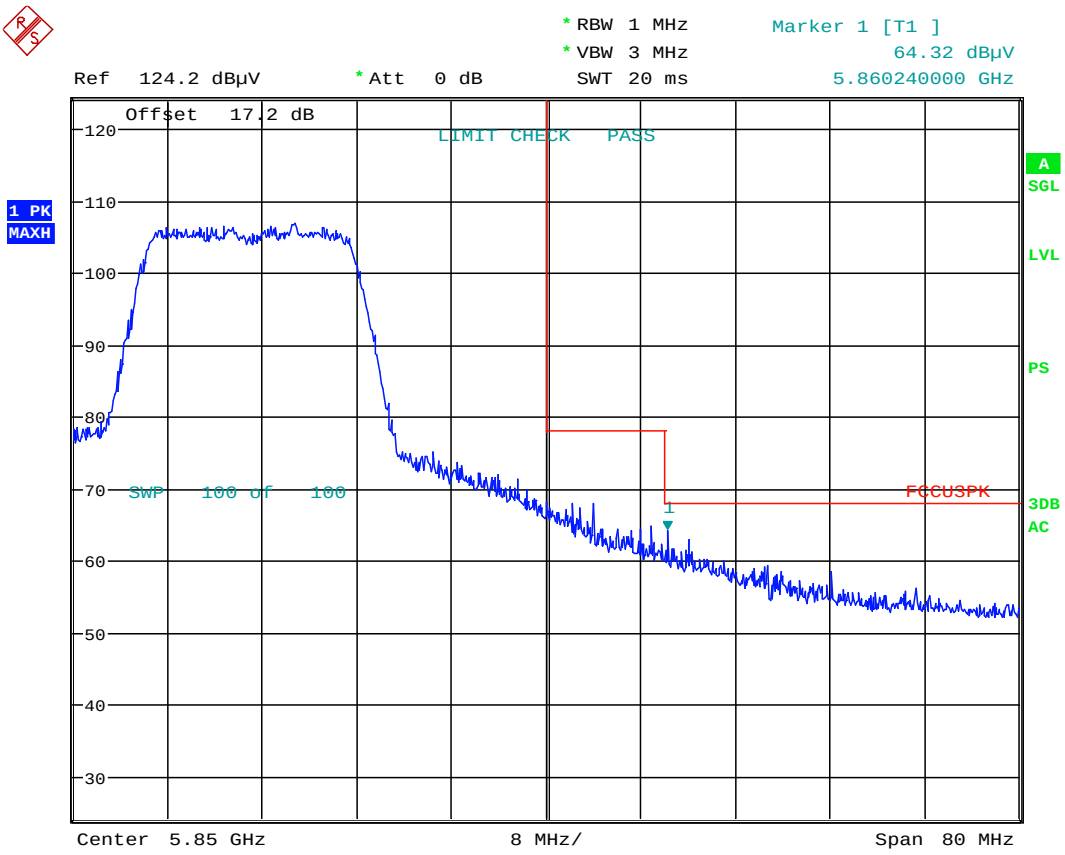

Date: 26.JAN.2015 12:25:46

**Plot 6-220. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)**

## MIMO Radiated Band Edge Measurements (20MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11n (20MHz) |
| Worst Case Transfer Rate: | MCS8 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5825MHz |
| Channel: | 165 |



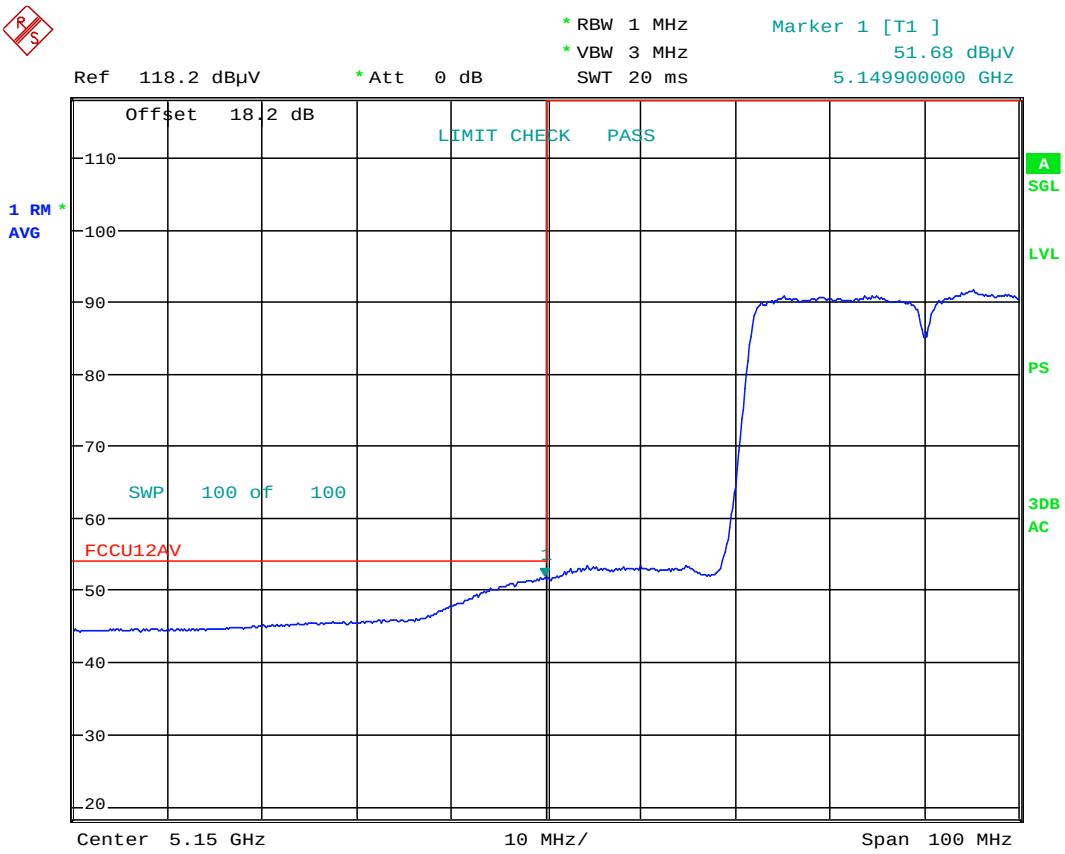

Date: 7.FEB.2015 00:22:30

**Plot 6-221. Radiated Upper Band Edge Plot (Peak – UNII Band 3)**

## 6.7.10 MIMO Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

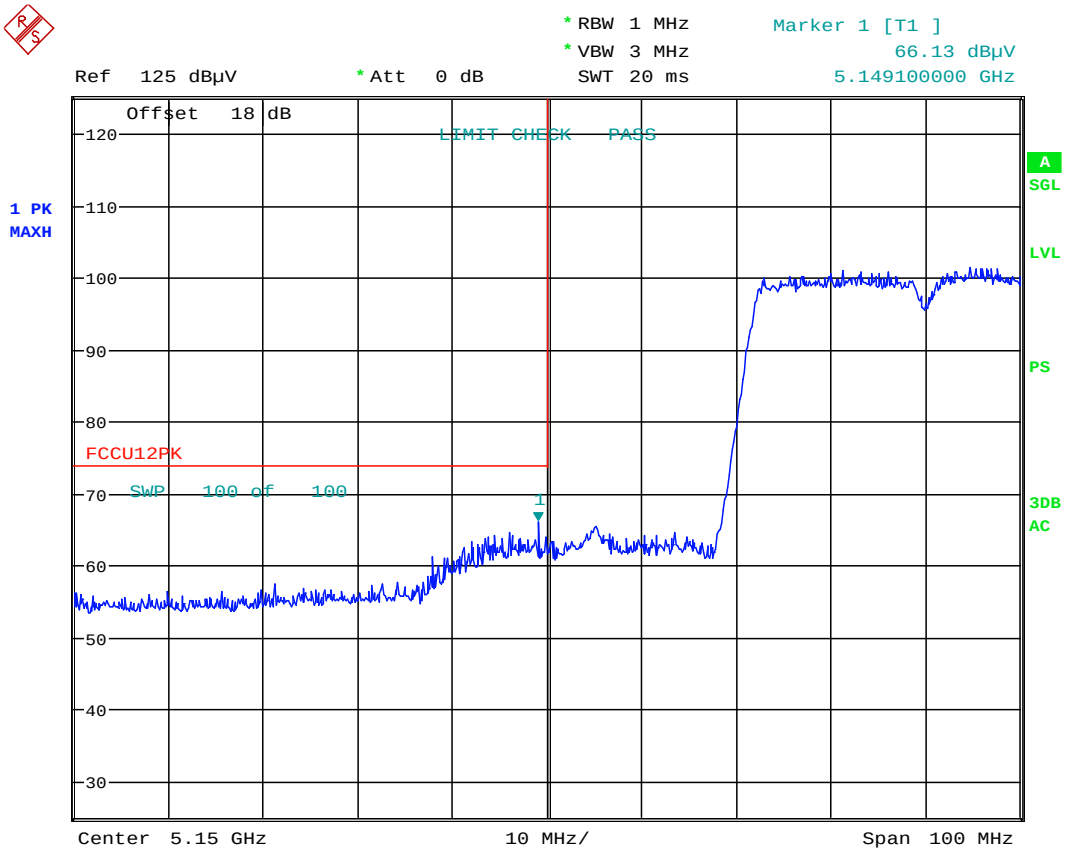
| | |
|---|---|
| Worst Case Mode: | 802.11n (40MHz) |
| Worst Case Transfer Rate: | MCS8 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5190MHz |
| Channel: | 38 |




**Plot 6-222. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

# MIMO Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



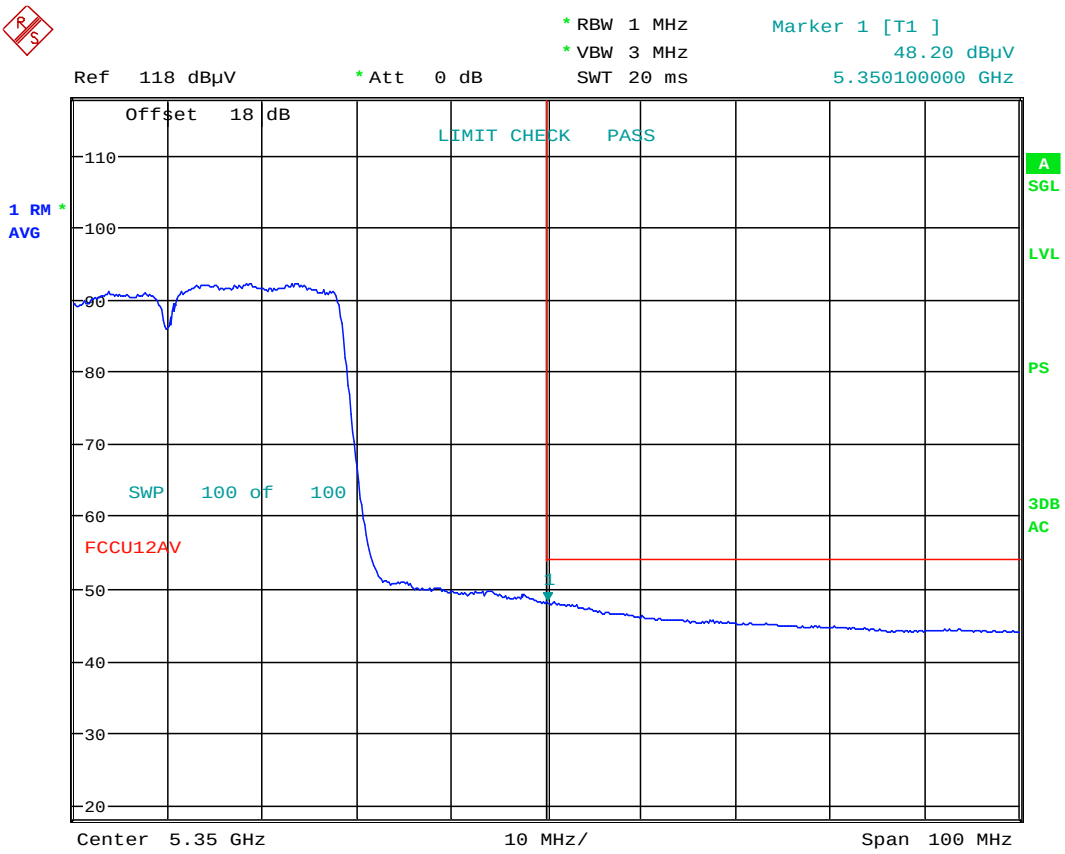

Date: 26.JAN.2015 12:44:57

**Plot 6-223. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

## MIMO Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11n (40MHz) |
| Worst Case Transfer Rate: | MCS8 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5310MHz |
| Channel: | 62 |

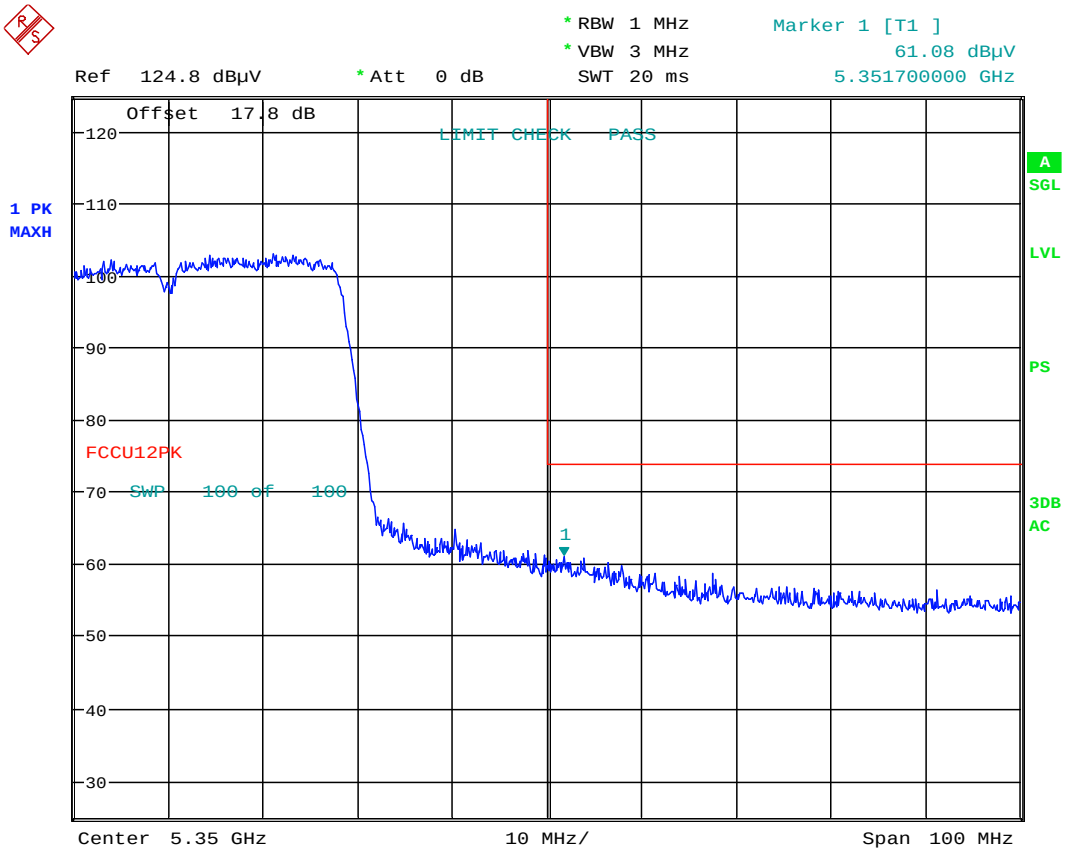



Date: 26.JAN.2015 11:53:09

**Plot 6-224. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

# MIMO Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



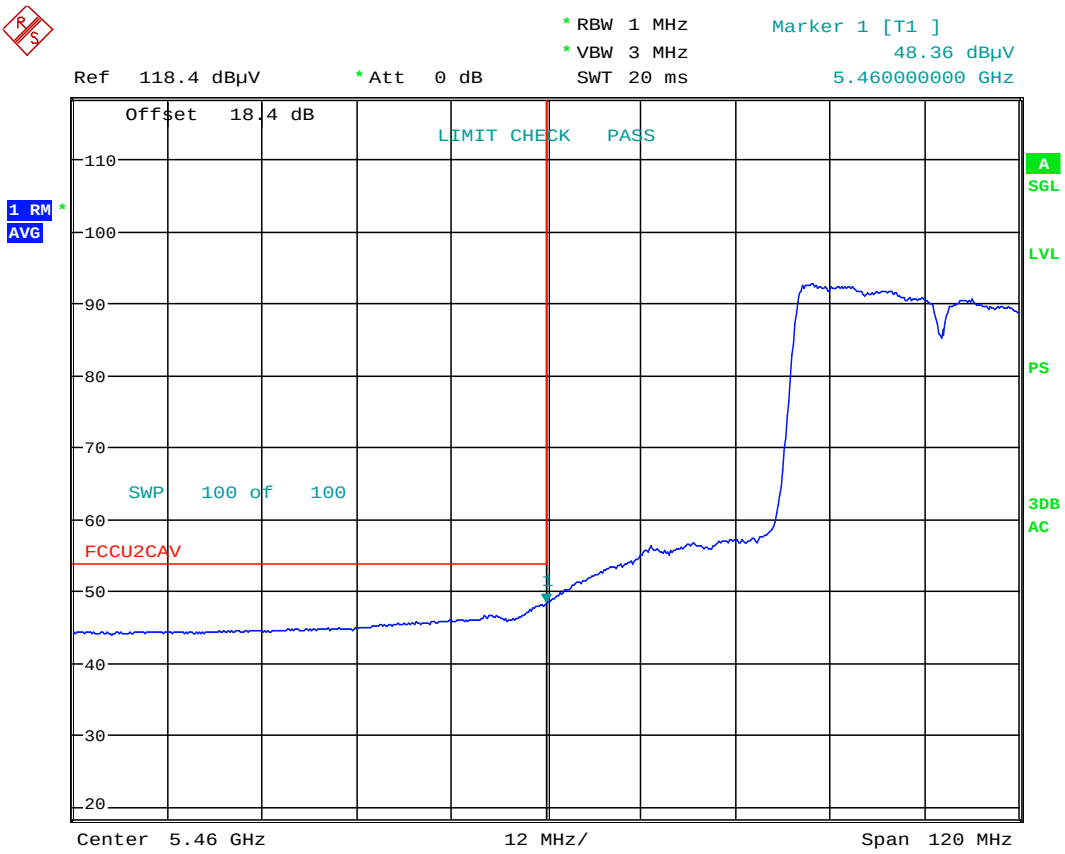

Date: 26.JAN.2015 12:05:17

**Plot 6-225. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

## MIMO Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11n (40MHz) |
| Worst Case Transfer Rate: | MCS8 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5510MHz |
| Channel: | 102 |

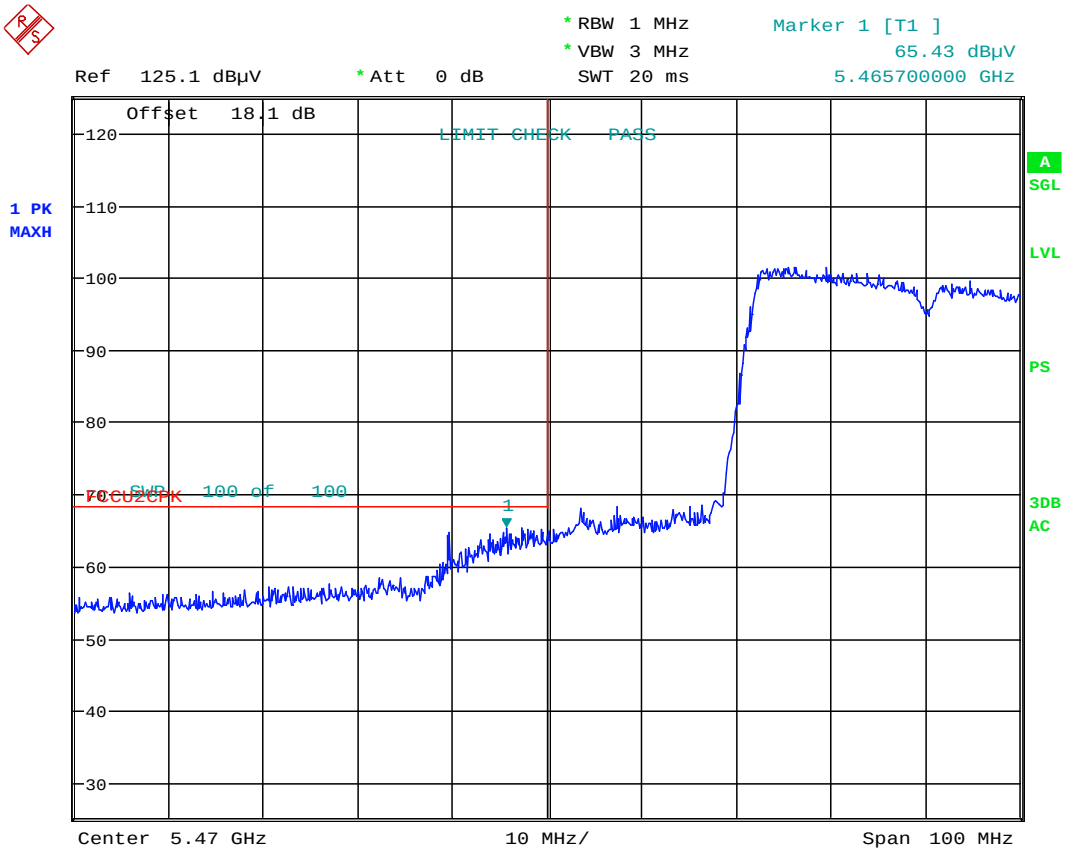



Date: 26.JAN.2015 12:15:50

**Plot 6-226. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)**

# MIMO Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



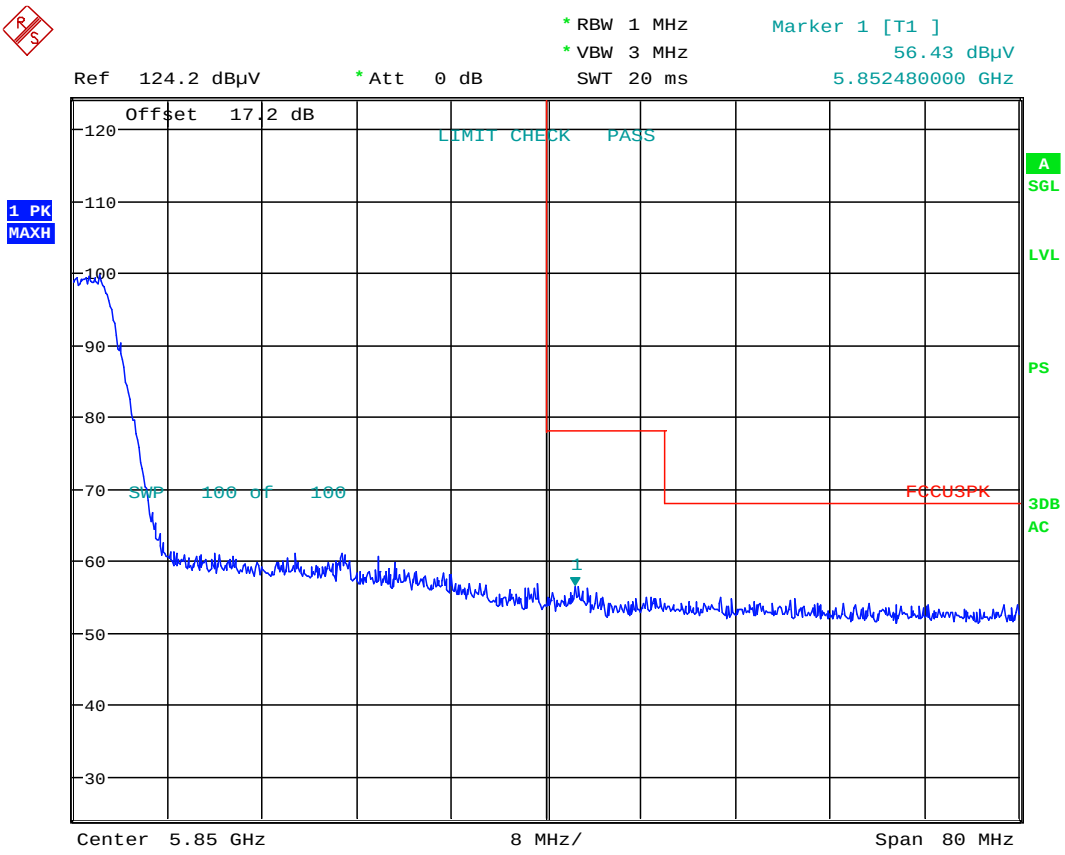

Date: 26.JAN.2015 12:23:57

**Plot 6-227. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)**

## MIMO Radiated Band Edge Measurements (40MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11n (40MHz) |
| Worst Case Transfer Rate: | MCS8 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5815MHz |
| Channel: | 163 |

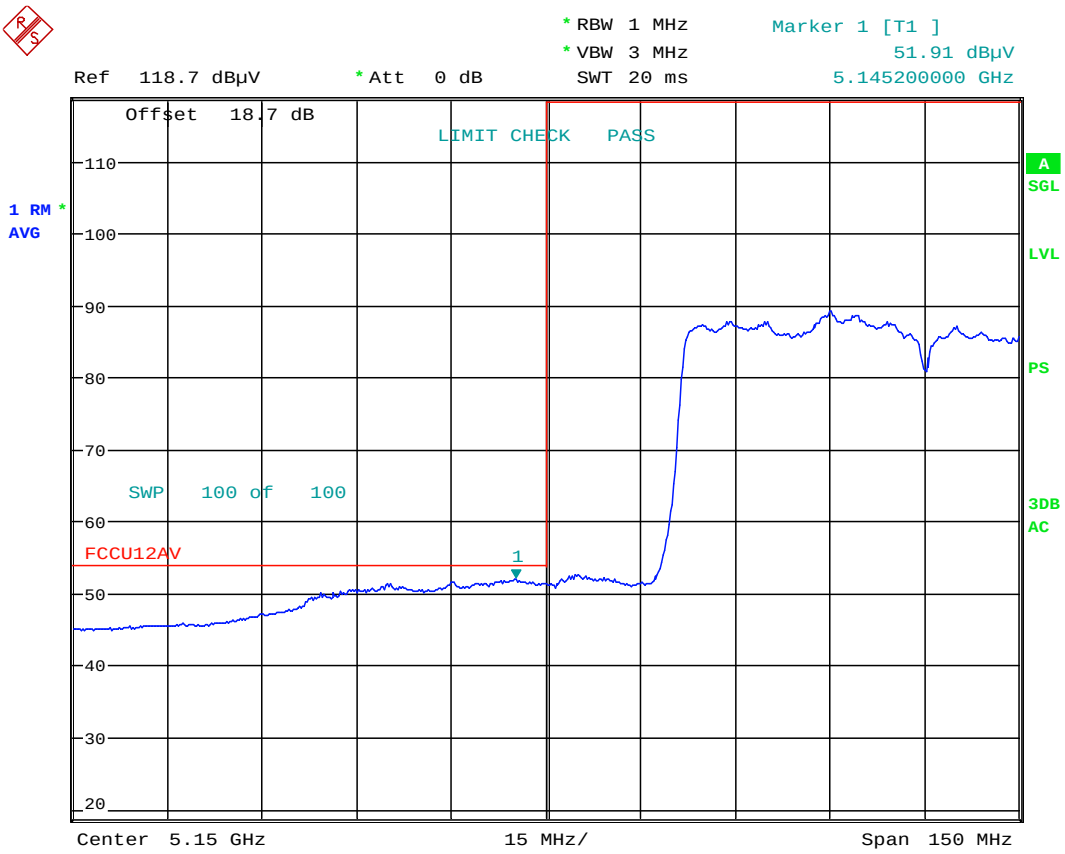



**Plot 6-228. Radiated Upper Band Edge Plot (Peak – UNII Band 3)**

## 6.7.11 MIMO Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11ac (80MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5210MHz |
| Channel: | 42 |

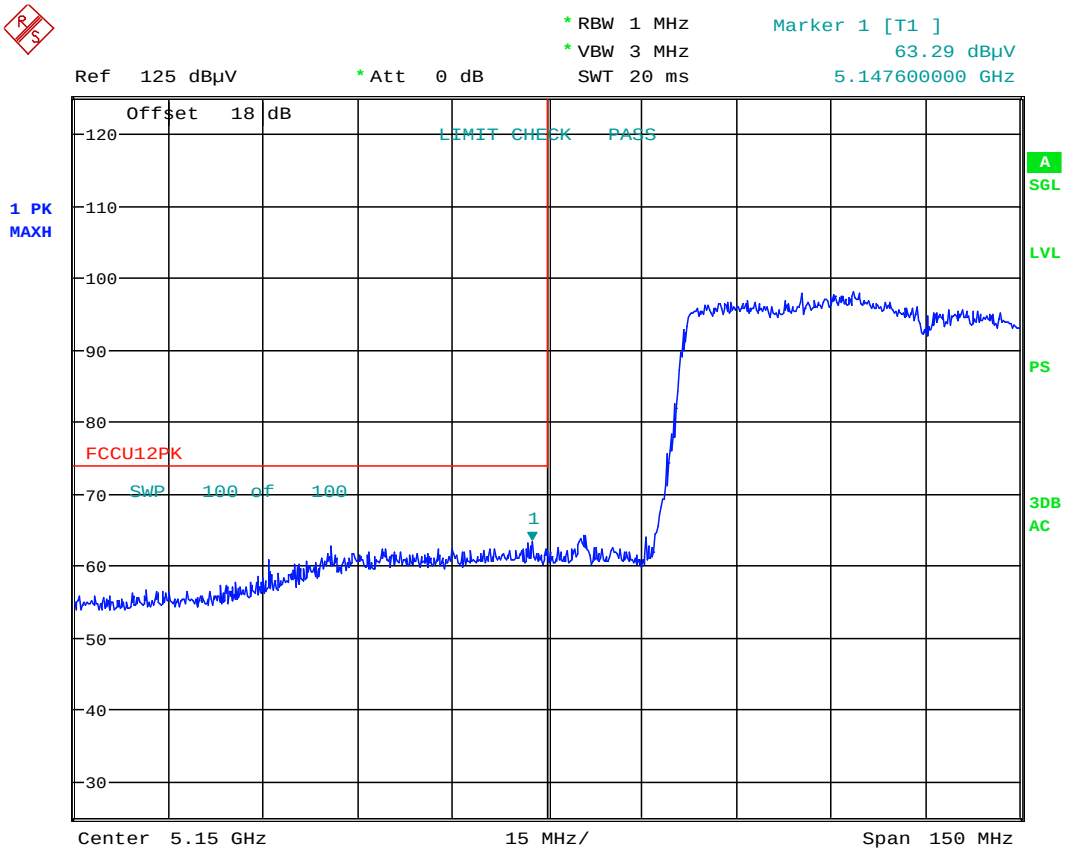



Date: 26.JAN.2015 12:41:58

**Plot 6-229. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

# MIMO Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



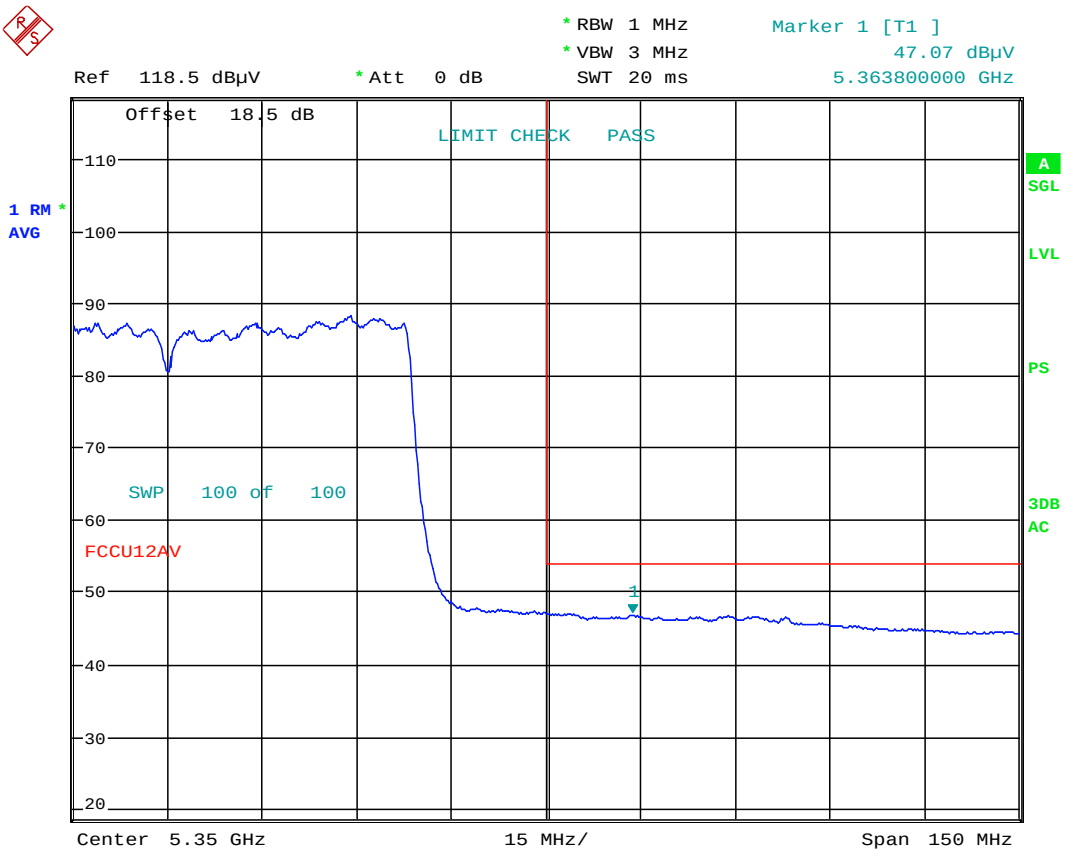

Date: 26.JAN.2015 12:43:18

**Plot 6-230. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

## MIMO Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11ac (80MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5290MHz |
| Channel: | 58 |

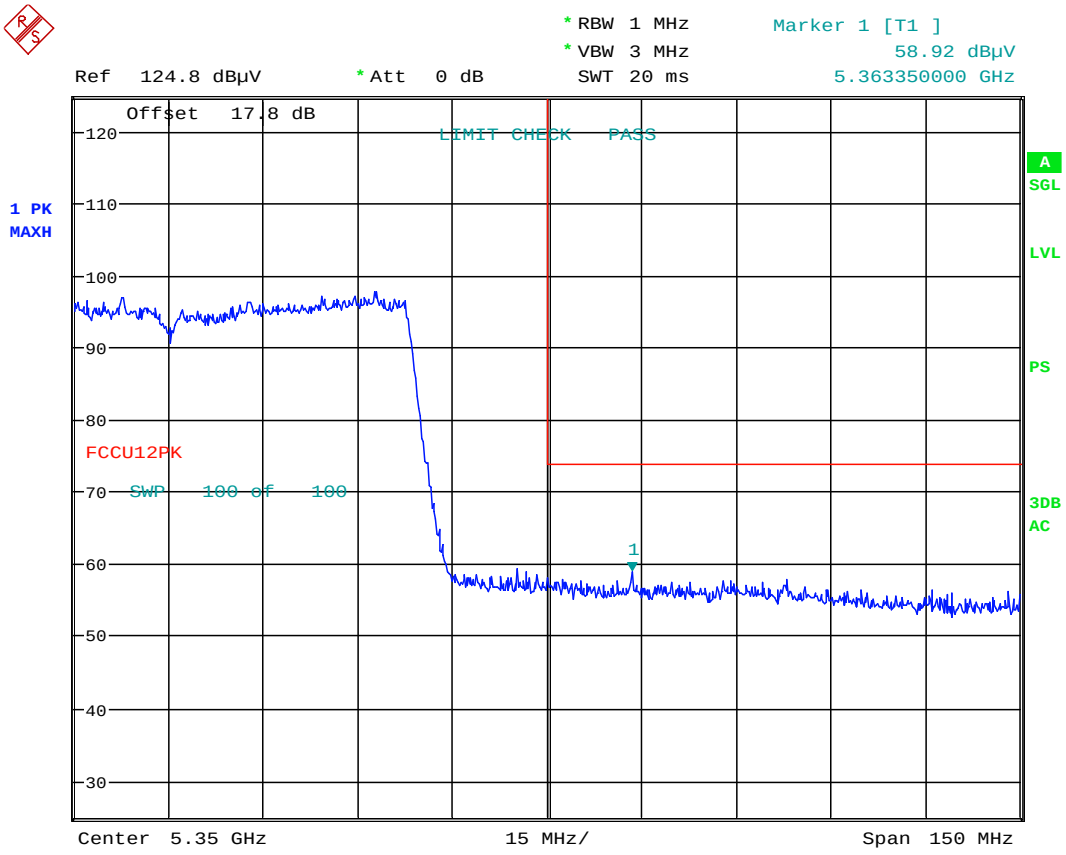



Date: 26.JAN.2015 12:00:36

**Plot 6-231. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

# MIMO Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



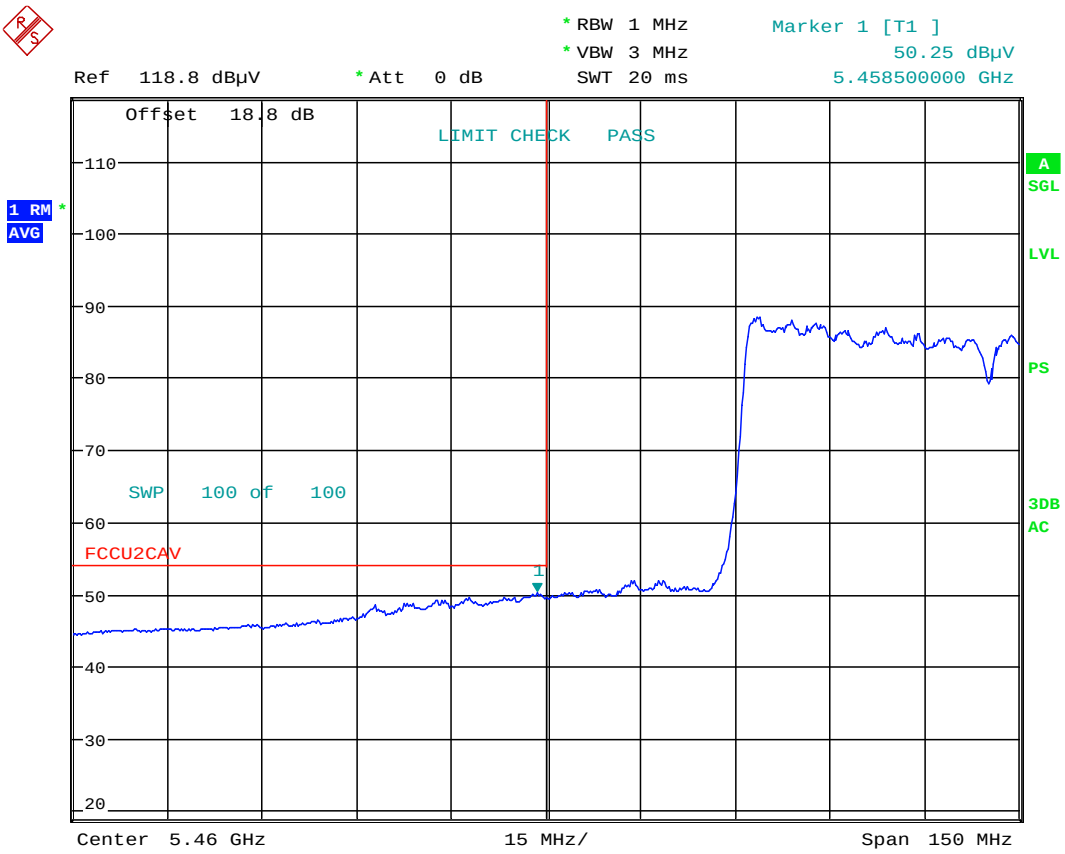

Date: 26.JAN.2015 12:02:07

**Plot 6-232. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

## MIMO Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11ac (80MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5530MHz |
| Channel: | 106 |

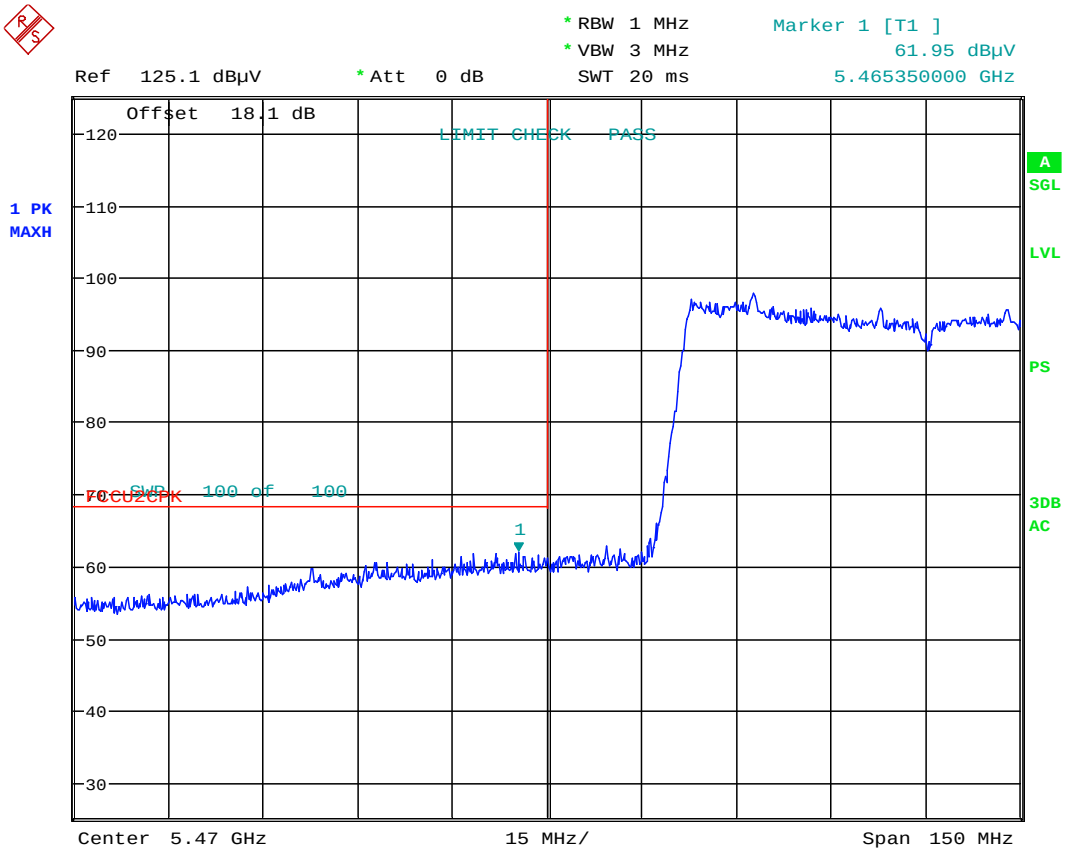



Date: 26.JAN.2015 12:19:57

**Plot 6-233. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)**

# MIMO Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**



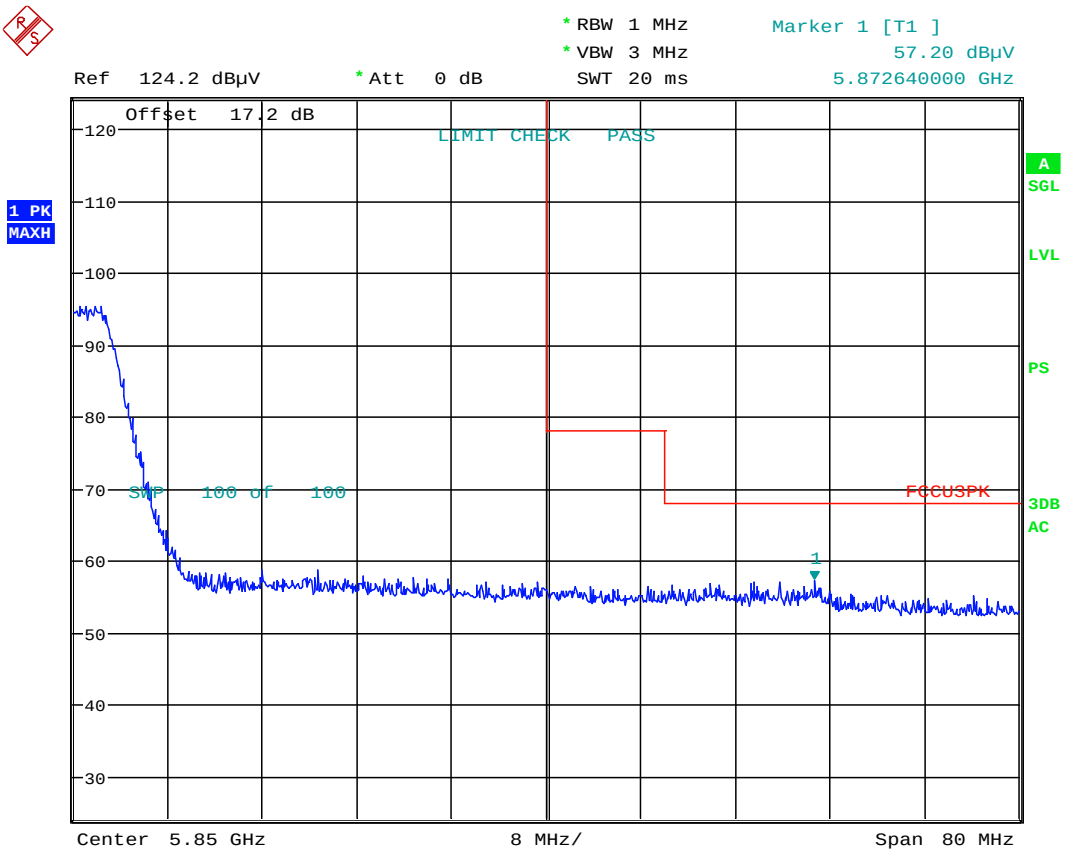

Date: 26.JAN.2015 12:21:41

**Plot 6-234. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)**

## MIMO Radiated Band Edge Measurements (80MHz BW)

**§15.407(b.1)(b.2) §15.205 §15.209**

| | |
|---|---|
| Worst Case Mode: | 802.11ac (80MHz) |
| Worst Case Transfer Rate: | MCS0 |
| Distance of Measurements: | 3 Meters |
| Operating Frequency: | 5775MHz |
| Channel: | 155 |




Date: 7.FEB.2015 00:25:12

**Plot 6-235. Radiated Upper Band Edge Plot (Peak – UNII Band 3)**

## 6.8 Radiated Spurious Emissions Measurements – Below 1GHz

**§15.209**

**Test Overview and Limit**

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle (>98%), at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

***All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table 6-60 per Section 15.209.***

| Frequency | Field Strength [μV/m] | Measured Distance [Meters] |
|---|---|---|
| 0.009 – 0.490 MHz | 2400/F (kHz) | 300 |
| 0.490 – 1.705 MHz | 24000/F (kHz) | 30 |
| 1.705 – 30.00 MHz | 30 | 30 |
| 30.00 – 88.00 MHz | 100 | 3 |
| 88.00 – 216.0 MHz | 150 | 3 |
| 216.0 – 960.0 MHz | 200 | 3 |
| Above 960.0 MHz | 500 | 3 |

**Table 6-60. Radiated Limits**

**Test Procedures Used**

ANSI C63.4-2009

**Test Settings**

**Quasi-Peak Field Strength Measurements**

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 120kHz (for emissions from 30MHz – 1GHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

## Test Setup

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

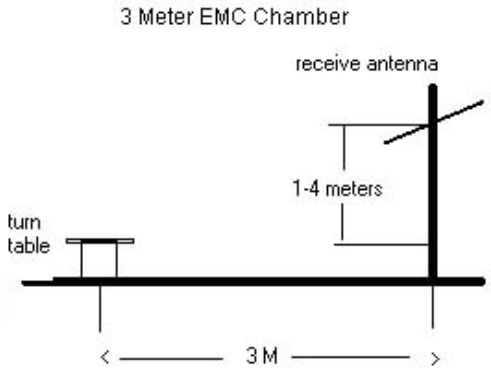


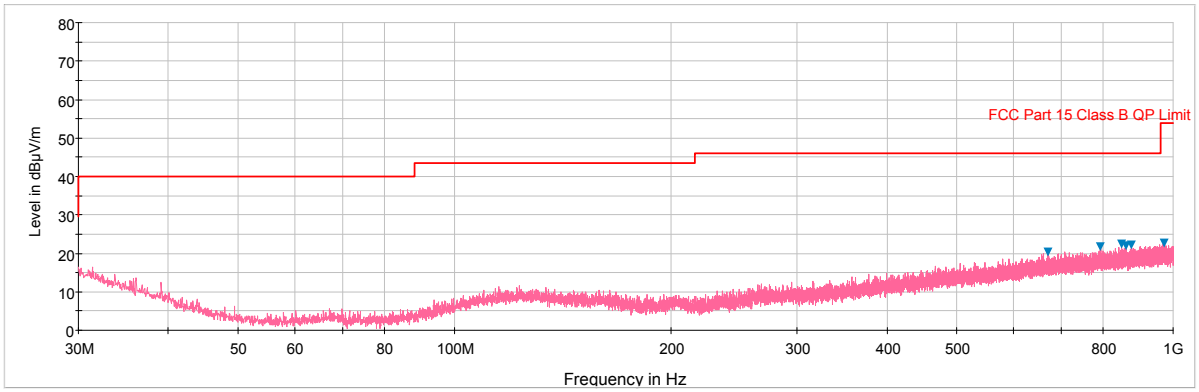

**Figure 6-6. Test Instrument & Measurement Setup**

## Test Notes

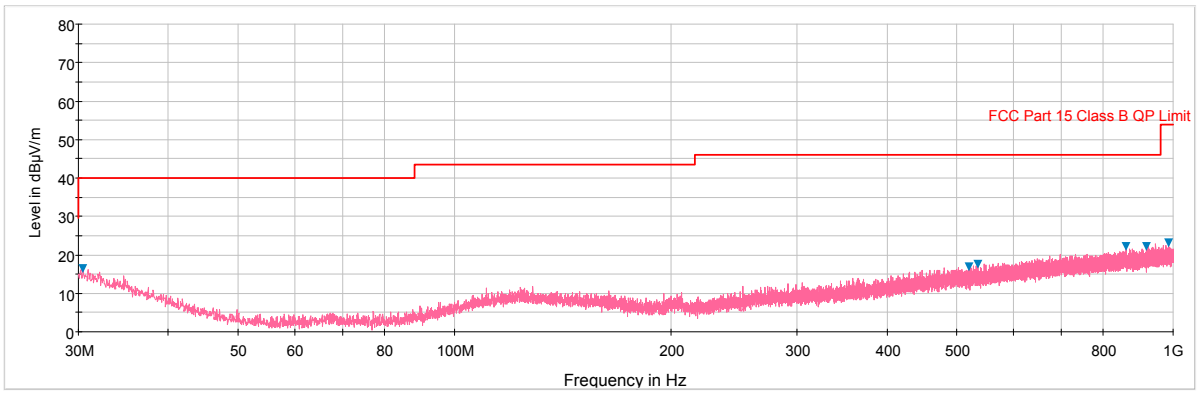
1. All emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 6-10.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
3. This unit was tested with its standard battery.
4. The spectrum is investigated using a peak detector and final measurements are recorded using CISPR quasi peak detector. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
5. Emissions were measured at a 3 meter test distance.
6. Emissions are investigated while operating on the center channel of the mode, band, and modulation that produced the worst case results during the transmitter spurious emissions testing.
7. No spurious emissions were detected within 20dB of the limit below 30MHz.
8. The results recorded using the broadband antenna is known to correlate with the results obtained by using a tuned dipole with an acceptable degree of accuracy. The VSWR for the measurement antenna was found to be less than 2:1.

# Antenna-1 Radiated Spurious Emissions Measurements (Below 1GHz)

**§15.209**

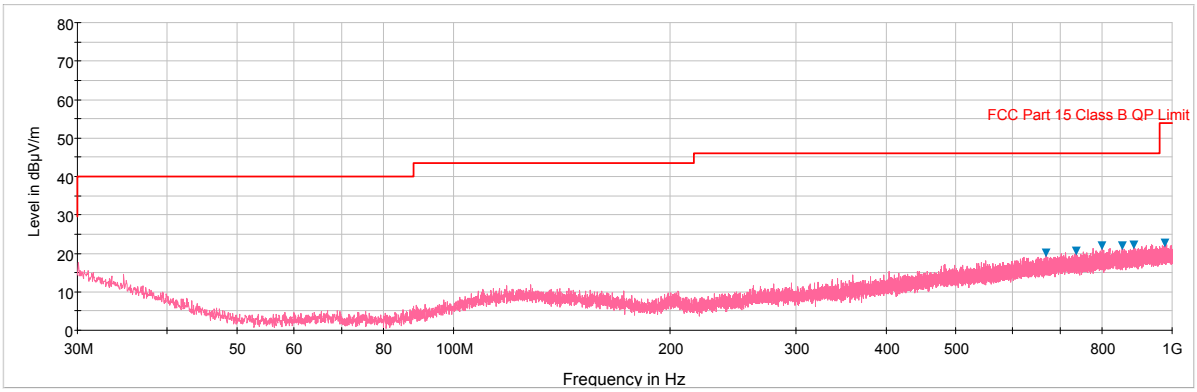



**Plot 6-236. Radiated Spurious Plot below 1GHz (802.11a – U3, Ant. Pol. H)**

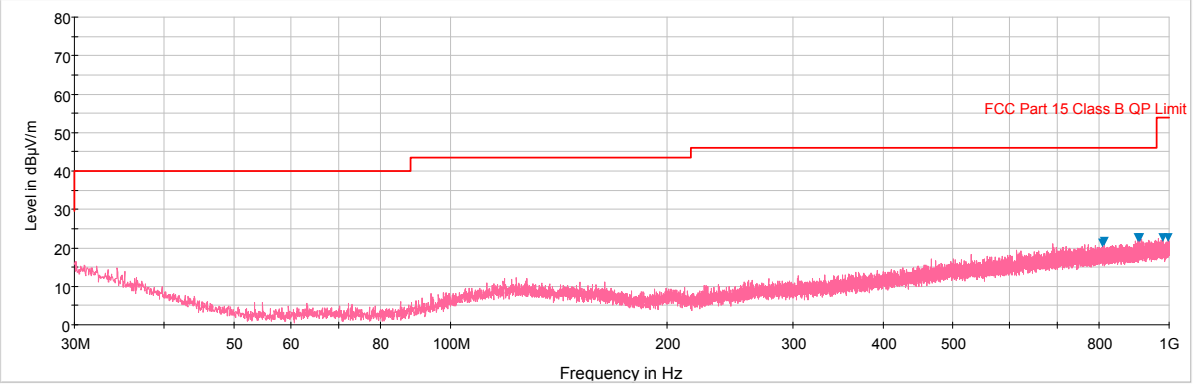



**Plot 6-237. Radiated Spurious Plot below 1GHz (802.11a – U3, Ant. Pol. V)**

## Antenna-2 Radiated Spurious Emissions Measurements (Below 1GHz)
**§15.209**



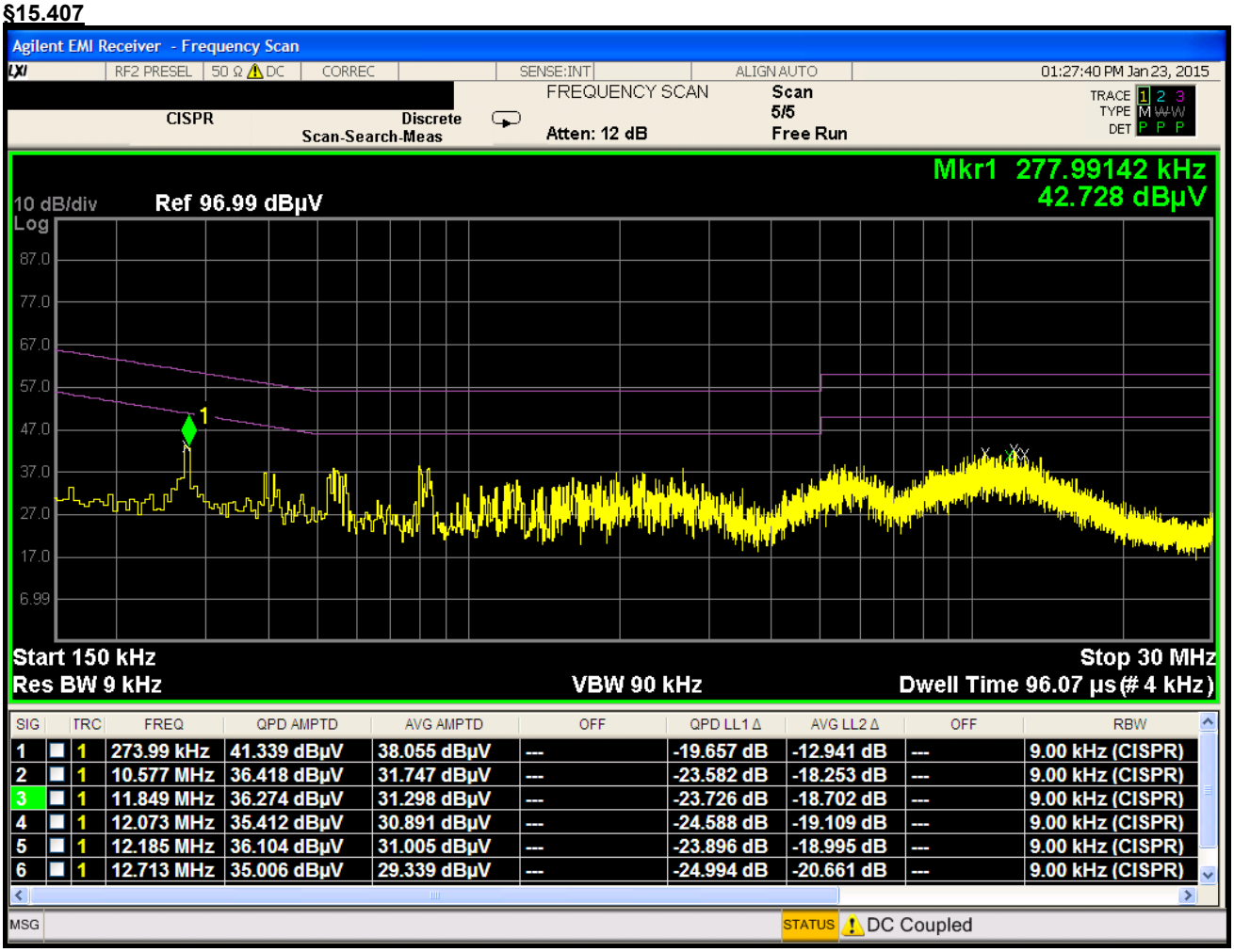

**Plot 6-238. Radiated Spurious Plot below 1GHz (802.11a – U3, Ant. Pol. H)**




**Plot 6-239. Radiated Spurious Plot below 1GHz (802.11a – U3, Ant. Pol. V)**

## 6.9 Line-Conducted Test Data

**§15.407**




| SIG | | TRC | FREQ | QPD AMPTD | AVG AMPTD | OFF | QPD LL1 Δ | AVG LL2 Δ | OFF | RBW |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 1 | 273.99 kHz | 41.339 dBµV | 38.055 dBµV | --- | -19.657 dB | -12.941 dB | --- | 9.00 kHz (CISPR) |
| 2 | | 1 | 10.577 MHz | 36.418 dBµV | 31.747 dBµV | --- | -23.582 dB | -18.253 dB | --- | 9.00 kHz (CISPR) |
| 3 | | 1 | 11.849 MHz | 36.274 dBµV | 31.298 dBµV | --- | -23.726 dB | -18.702 dB | --- | 9.00 kHz (CISPR) |
| 4 | | 1 | 12.073 MHz | 35.412 dBµV | 30.891 dBµV | --- | -24.588 dB | -19.109 dB | --- | 9.00 kHz (CISPR) |
| 5 | | 1 | 12.185 MHz | 36.104 dBµV | 31.005 dBµV | --- | -23.896 dB | -18.995 dB | --- | 9.00 kHz (CISPR) |
| 6 | | 1 | 12.713 MHz | 35.006 dBµV | 29.339 dBµV | --- | -24.994 dB | -20.661 dB | --- | 9.00 kHz (CISPR) |

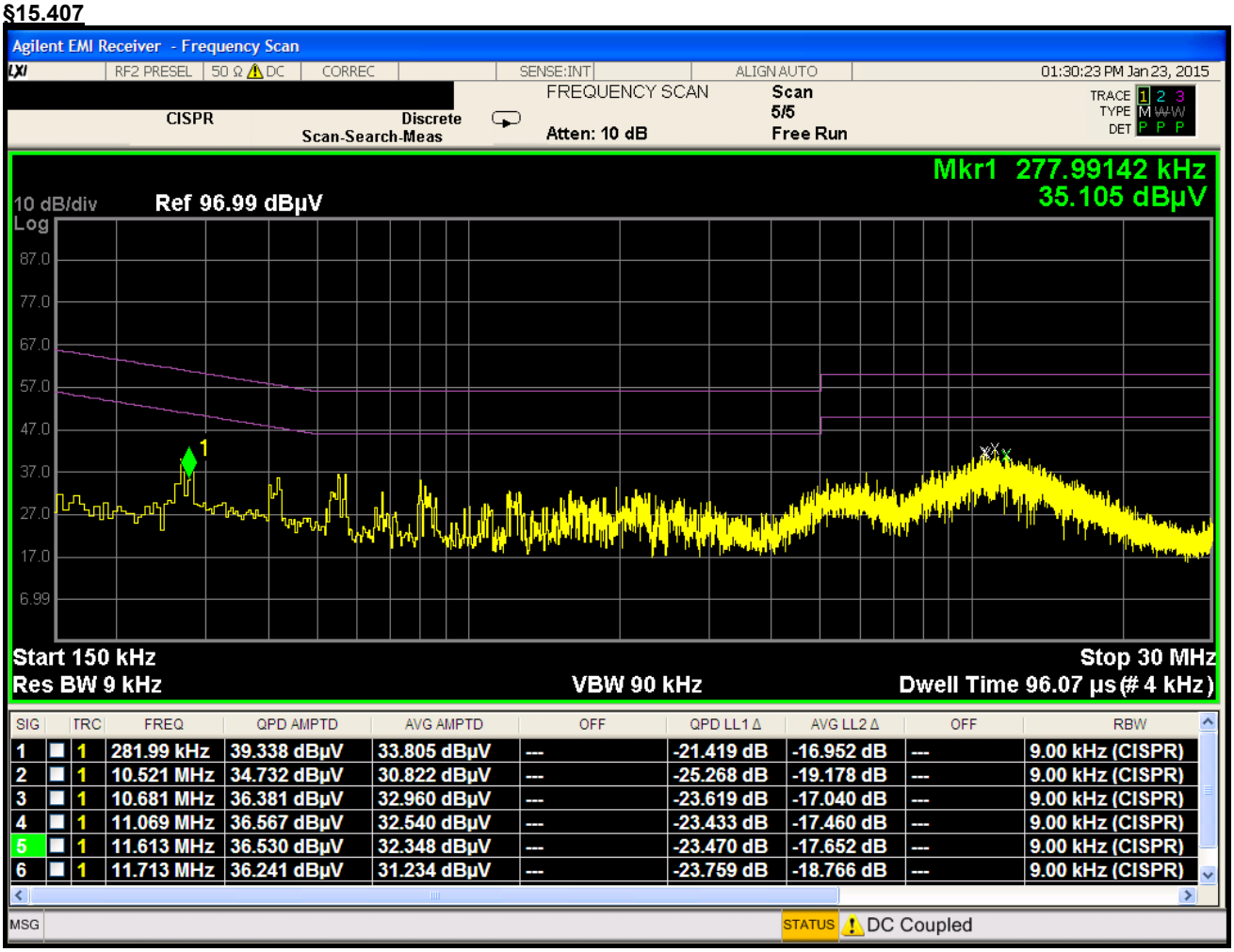
**Plot 6-240. Line Conducted Plot with 802.11a UNII Band 1 (L1)**

**Notes:**

1. All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 36. The emissions found were not affected by the choice of channel used during testing.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. L1 = Phase; N = Neutral
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
6. Margin (dB) = QP/AVLimit (dBµV) - QP/AV Level (dBµV)
7. Traces shown in plot are made using a peak detector.
8. Deviations to the Specifications: None.

## Line-Conducted Test Data

**§15.407**




| SIG | | TRC | FREQ | QPD AMPTD | AVG AMPTD | OFF | QPD LL1 Δ | AVG LL2 Δ | OFF | RBW |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 1 | 281.99 kHz | 39.338 dBµV | 33.805 dBµV | --- | -21.419 dB | -16.952 dB | --- | 9.00 kHz (CISPR) |
| 2 | | 1 | 10.521 MHz | 34.732 dBµV | 30.822 dBµV | --- | -25.268 dB | -19.178 dB | --- | 9.00 kHz (CISPR) |
| 3 | | 1 | 10.681 MHz | 36.381 dBµV | 32.960 dBµV | --- | -23.619 dB | -17.040 dB | --- | 9.00 kHz (CISPR) |
| 4 | | 1 | 11.069 MHz | 36.567 dBµV | 32.540 dBµV | --- | -23.433 dB | -17.460 dB | --- | 9.00 kHz (CISPR) |
| 5 | | 1 | 11.613 MHz | 36.530 dBµV | 32.348 dBµV | --- | -23.470 dB | -17.652 dB | --- | 9.00 kHz (CISPR) |
| 6 | | 1 | 11.713 MHz | 36.241 dBµV | 31.234 dBµV | --- | -23.759 dB | -18.766 dB | --- | 9.00 kHz (CISPR) |

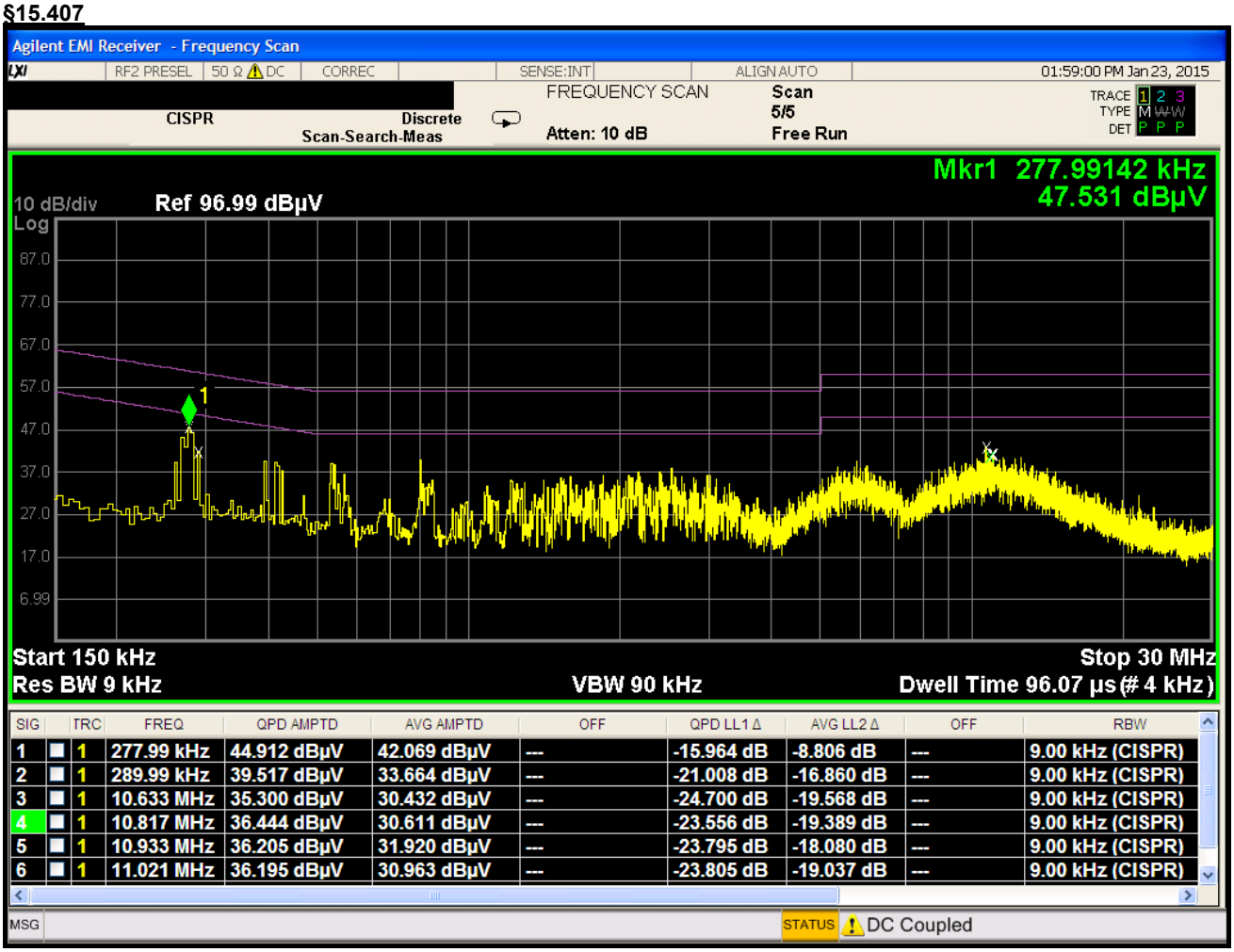
**Plot 6-241. Line Conducted Plot with 802.11a UNII Band 1 (N)**

**Notes:**

1. All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 36. The emissions found were not affected by the choice of channel used during testing.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. L1 = Phase; N = Neutral
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
6. Margin (dB) = QP/AVLimit (dBµV) - QP/AV Level (dBµV)
7. Traces shown in plot are made using a peak detector.
8. Deviations to the Specifications: None.

# Line-Conducted Test Data

**§15.407**



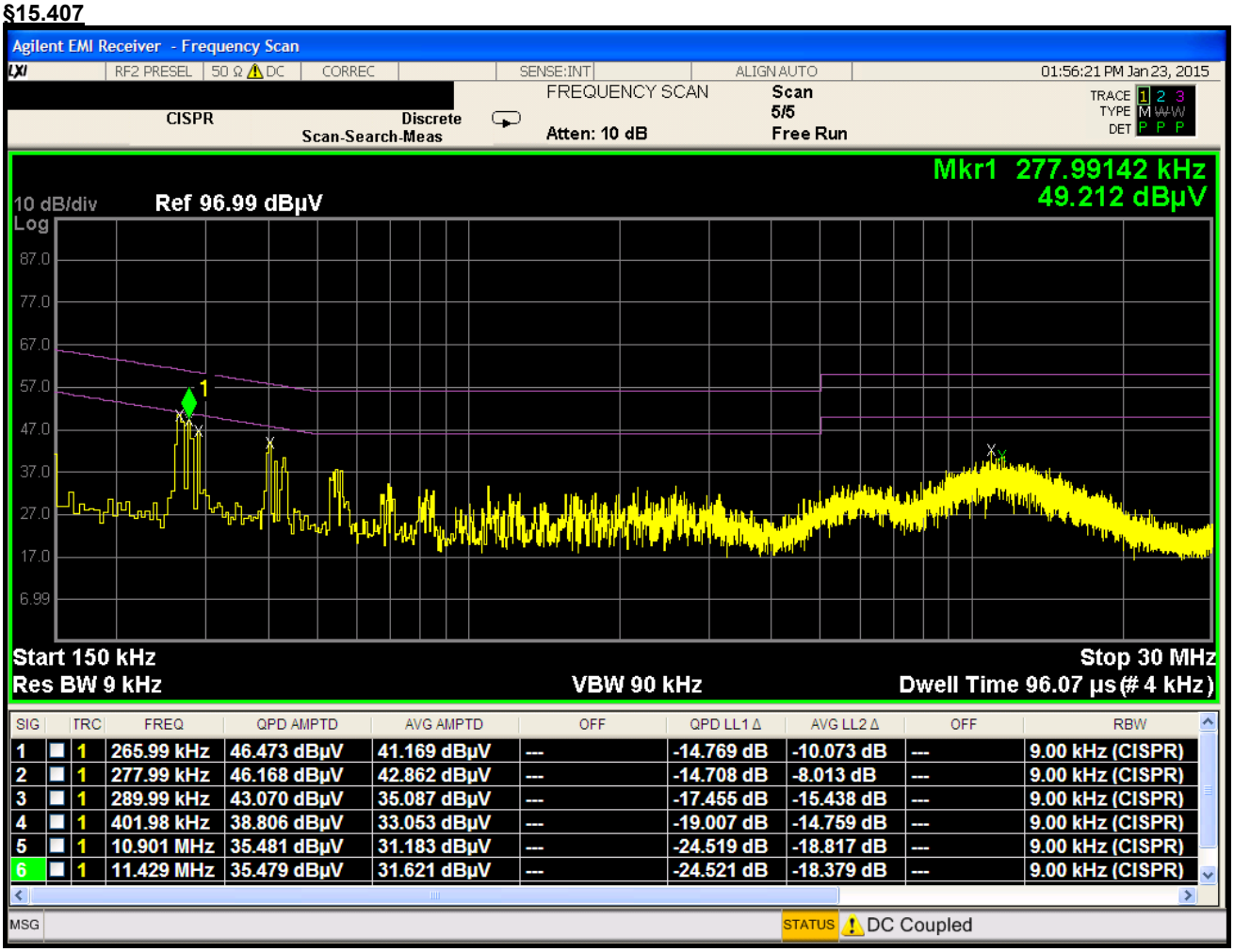

**Plot 6-242. Line Conducted Plot with 802.11a UNII Band 2A (L1)**

**Notes:**

1. All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 52. The emissions found were not affected by the choice of channel used during testing.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. L1 = Phase; N = Neutral
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
6. Margin (dB) = QP/AVLimit (dBµV) - QP/AV Level (dBµV)
7. Traces shown in plot are made using a peak detector.
8. Deviations to the Specifications: None.

# Line-Conducted Test Data

**§15.407**



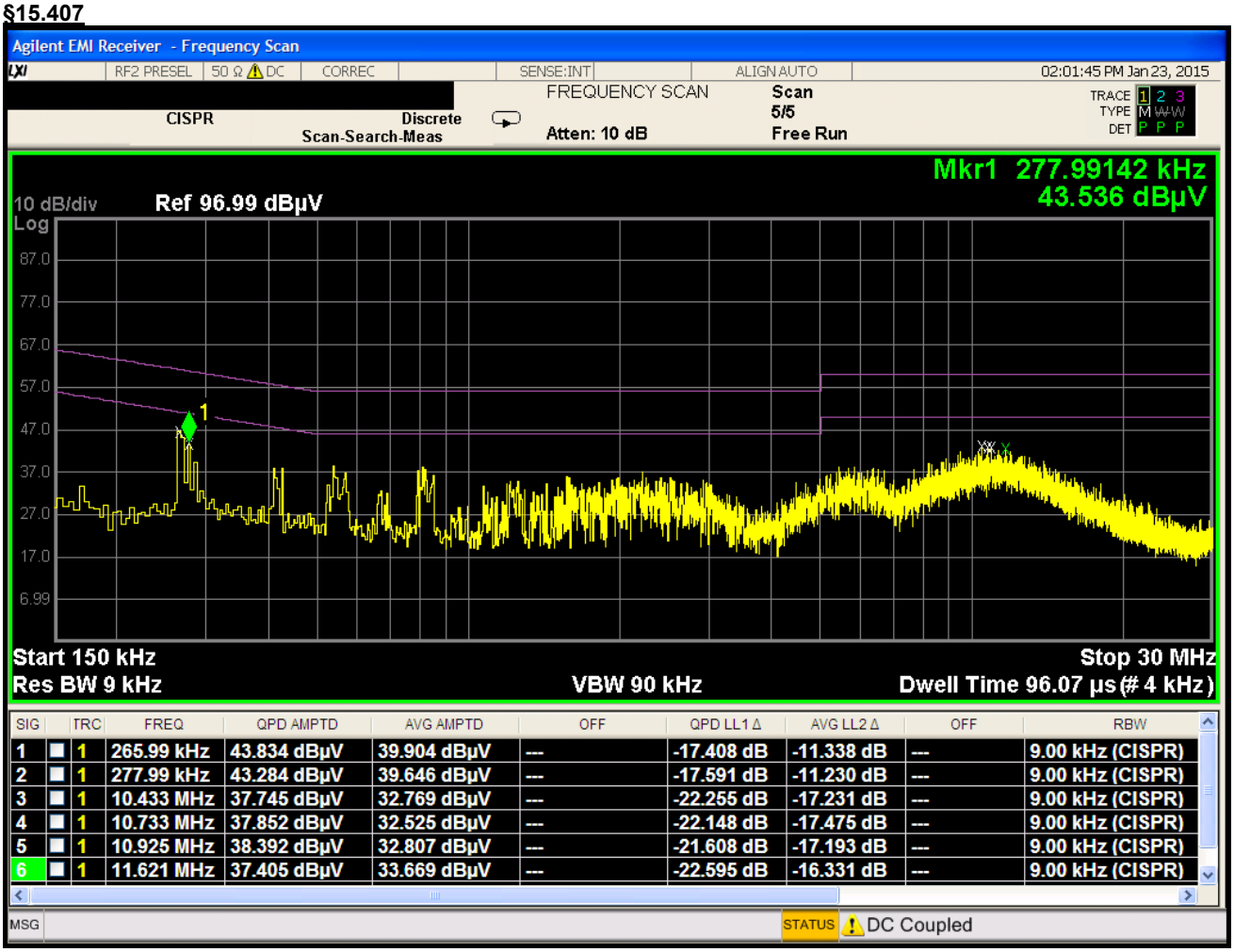

**Plot 6-243. Line Conducted Plot with 802.11a UNII Band 2A (N)**

**Notes:**

1. All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 52. The emissions found were not affected by the choice of channel used during testing.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. L1 = Phase; N = Neutral
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
6. Margin (dB) = QP/AVLimit (dBµV) - QP/AV Level (dBµV)
7. Traces shown in plot are made using a peak detector.
8. Deviations to the Specifications: None.

# Line-Conducted Test Data

**§15.407**




| SIG | TRC | FREQ | QPD AMPTD | AVG AMPTD | OFF | QPD LL1 Δ | AVG LL2 Δ | OFF | RBW |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 265.99 kHz | 43.834 dBµV | 39.904 dBµV | --- | -17.408 dB | -11.338 dB | --- | 9.00 kHz (CISPR) |
| 2 | 1 | 277.99 kHz | 43.284 dBµV | 39.646 dBµV | --- | -17.591 dB | -11.230 dB | --- | 9.00 kHz (CISPR) |
| 3 | 1 | 10.433 MHz | 37.745 dBµV | 32.769 dBµV | --- | -22.255 dB | -17.231 dB | --- | 9.00 kHz (CISPR) |
| 4 | 1 | 10.733 MHz | 37.852 dBµV | 32.525 dBµV | --- | -22.148 dB | -17.475 dB | --- | 9.00 kHz (CISPR) |
| 5 | 1 | 10.925 MHz | 38.392 dBµV | 32.807 dBµV | --- | -21.608 dB | -17.193 dB | --- | 9.00 kHz (CISPR) |
| 6 | 1 | 11.621 MHz | 37.405 dBµV | 33.669 dBµV | --- | -22.595 dB | -16.331 dB | --- | 9.00 kHz (CISPR) |

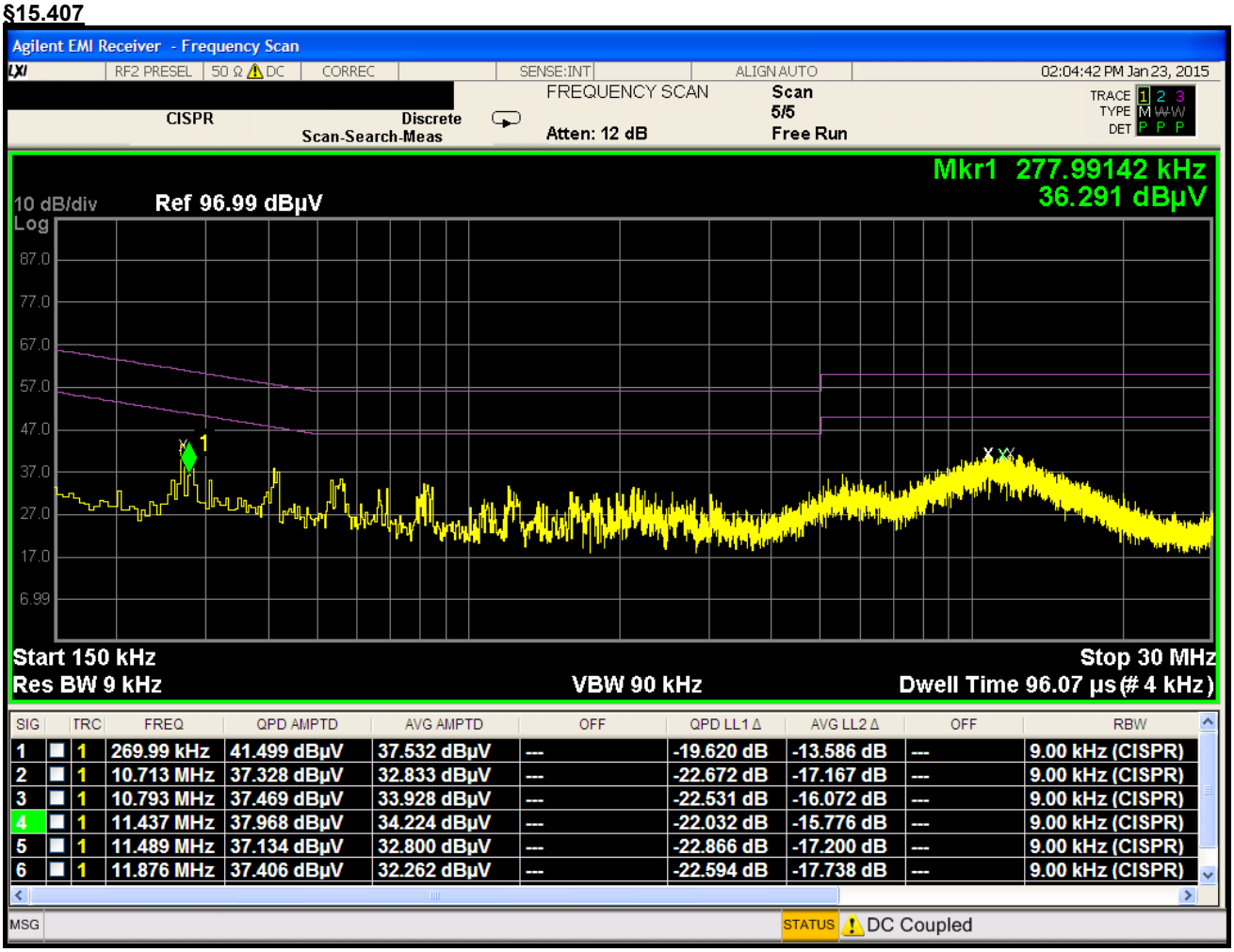
**Plot 6-244. Line Conducted Plot with 802.11a UNII Band 2C (L1)**

**Notes:**

1. All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 100. The emissions found were not affected by the choice of channel used during testing.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. L1 = Phase; N = Neutral
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
6. Margin (dB) = QP/AVLimit (dBµV) - QP/AV Level (dBµV)
7. Traces shown in plot are made using a peak detector.
8. Deviations to the Specifications: None.

# Line-Conducted Test Data

**§15.407**



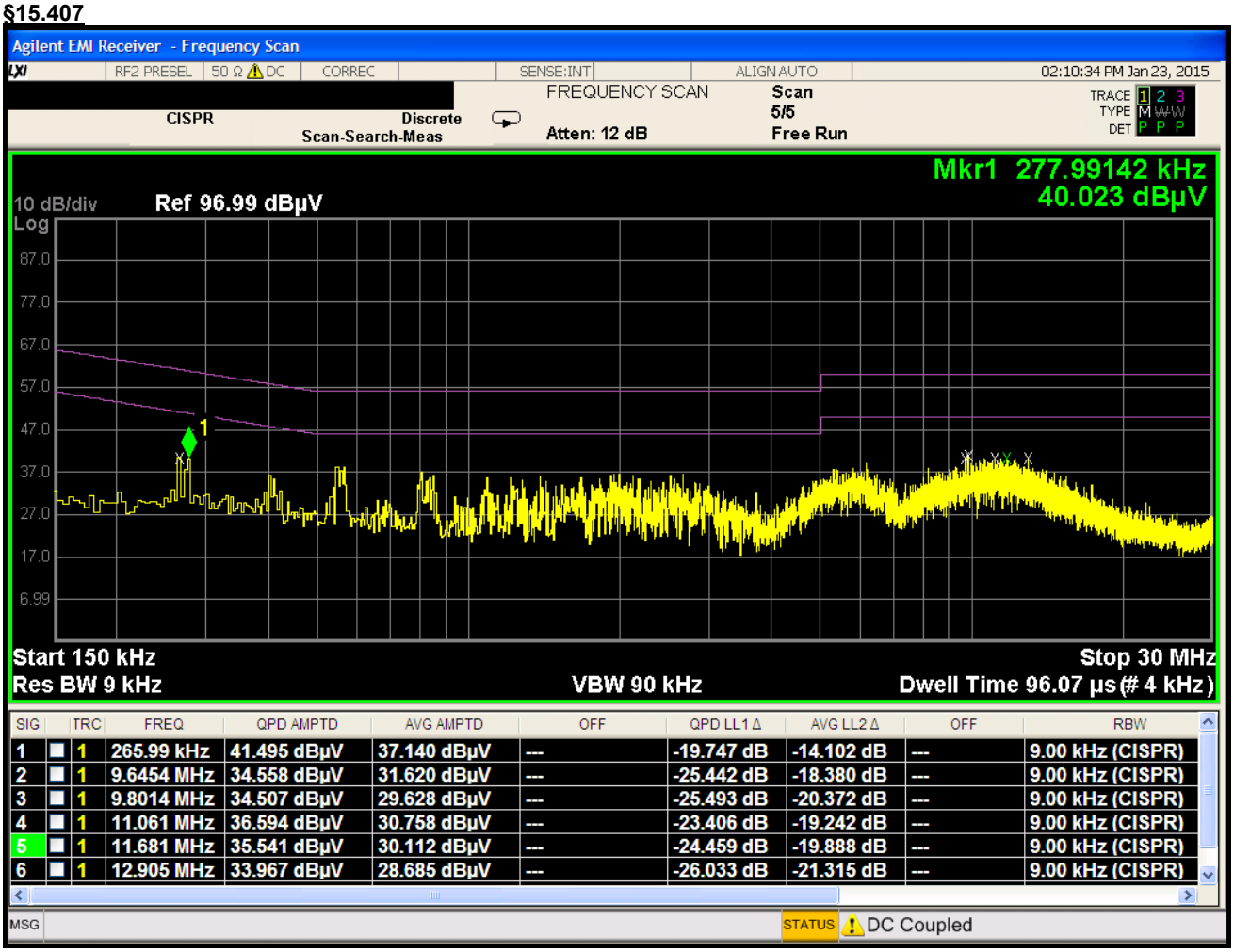

**Plot 6-245. Line Conducted Plot with 802.11a UNII Band 2C (N)**

**Notes:**

1. All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 100. The emissions found were not affected by the choice of channel used during testing.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. L1 = Phase; N = Neutral
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
6. Margin (dB) = QP/AVLimit (dBµV) - QP/AV Level (dBµV)
7. Traces shown in plot are made using a peak detector.
8. Deviations to the Specifications: None.

# Line-Conducted Test Data

**§15.407**



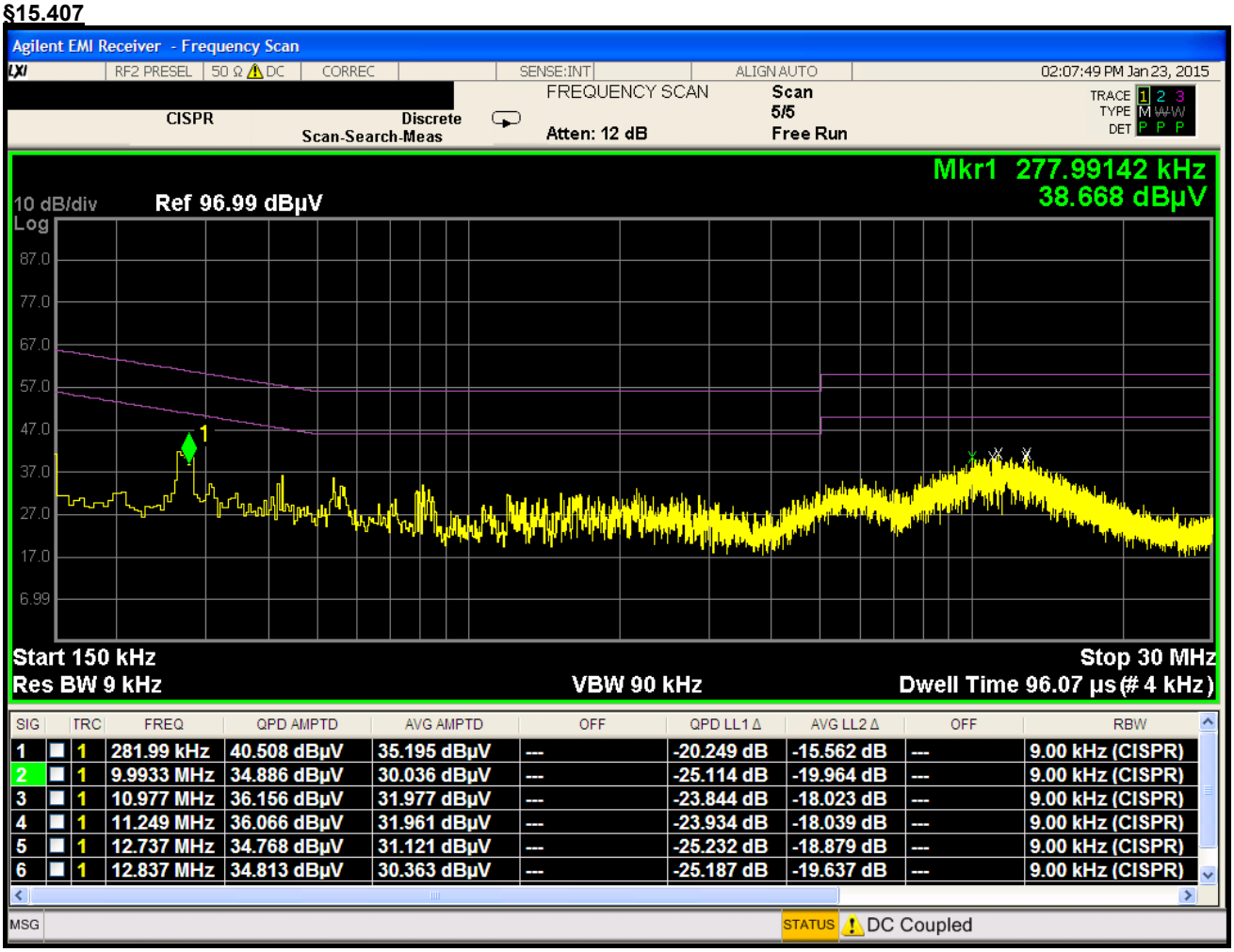

**Plot 6-246. Line Conducted Plot with 802.11a UNII Band 3 (L1)**

**Notes:**

1. All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 100. The emissions found were not affected by the choice of channel used during testing.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. L1 = Phase; N = Neutral
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
6. Margin (dB) = QP/AVLimit (dBµV) - QP/AV Level (dBµV)
7. Traces shown in plot are made using a peak detector.
8. Deviations to the Specifications: None.

## Line-Conducted Test Data

**§15.407**




**Plot 6-247. Line Conducted Plot with 802.11a UNII Band 3 (N)**

**Notes:**

1. All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 100. The emissions found were not affected by the choice of channel used during testing.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. L1 = Phase; N = Neutral
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
6. Margin (dB) = QP/AVLimit (dBµV) - QP/AV Level (dBµV)
7. Traces shown in plot are made using a peak detector.
8. Deviations to the Specifications: None.

# 7.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMG925P** is in compliance with Part 15E of the FCC Rules.