

## 6.5 Conducted Emissions at the Band Edge

§15.247(d)

### Test Overview and Limit

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle (>98%), at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. For the following out of band conducted spurious emissions plots at the band edge, the EUT was set at a data rate of 1Mbps for “b” mode, 6 Mbps for “g” mode, 6 Mbps for “a” mode, 6.5/7.2Mbps for 20MHz BW “n” mode, 13.5/15Mbps for 40MHz “n”, and 29.3/32.5Mbps for 80MHz “ac” mode as these settings produced the worst-case emissions.

***The limit for out-of-band spurious emissions at the band edge is 30dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100kHz bandwidth per the PSD procedure (Section 9.1).***

### Test Procedure Used

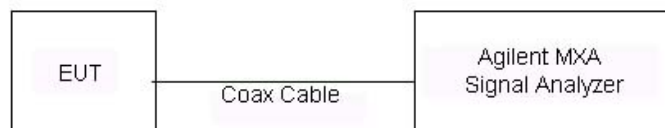
KDB 558074 v03r02 – Section 11.3

### Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW = 100kHz
4. VBW = 1MHz
5. Detector = Peak
6. Number of sweep points  $\geq 2 \times \text{Span/RBW}$
7. Trace mode = max hold
8. Sweep time = auto couple
9. The trace was allowed to stabilize

### Test Setup

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



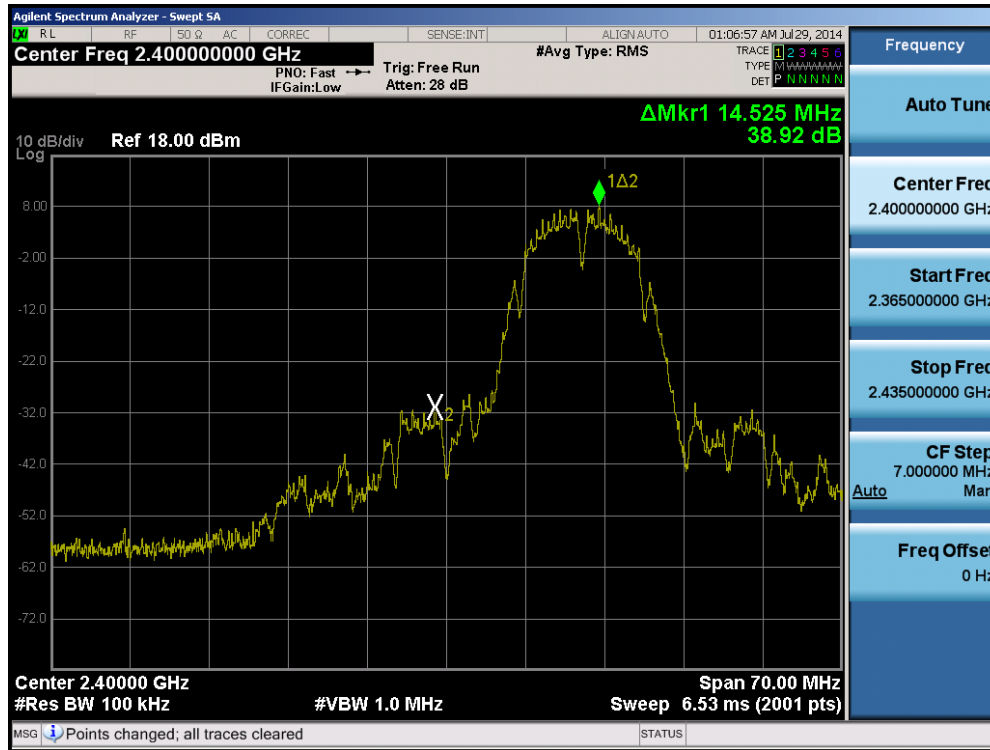
**Figure 6-4. Test Instrument & Measurement Setup**

### Test Notes

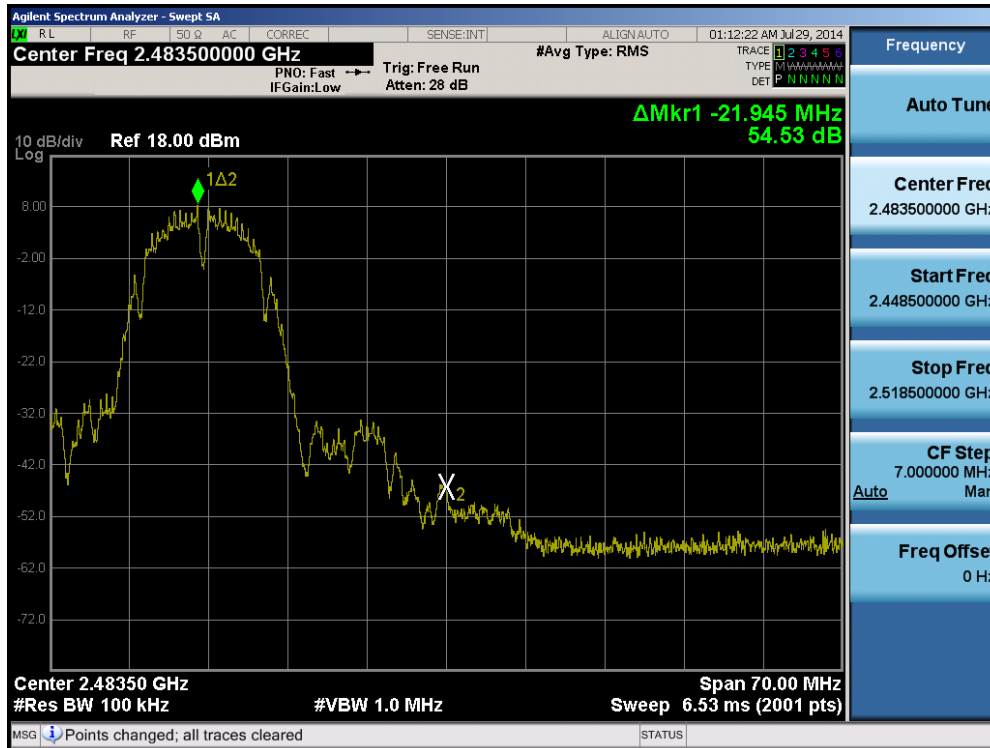
None

|                                      |                                                                                     |                                                                       |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN910C                   |  | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014                                                     | EUT Type:<br>Portable Handset                                         | Page 64 of 121                                                                        |                                 |

## Antenna-1 Conducted Emissions at the Band Edge

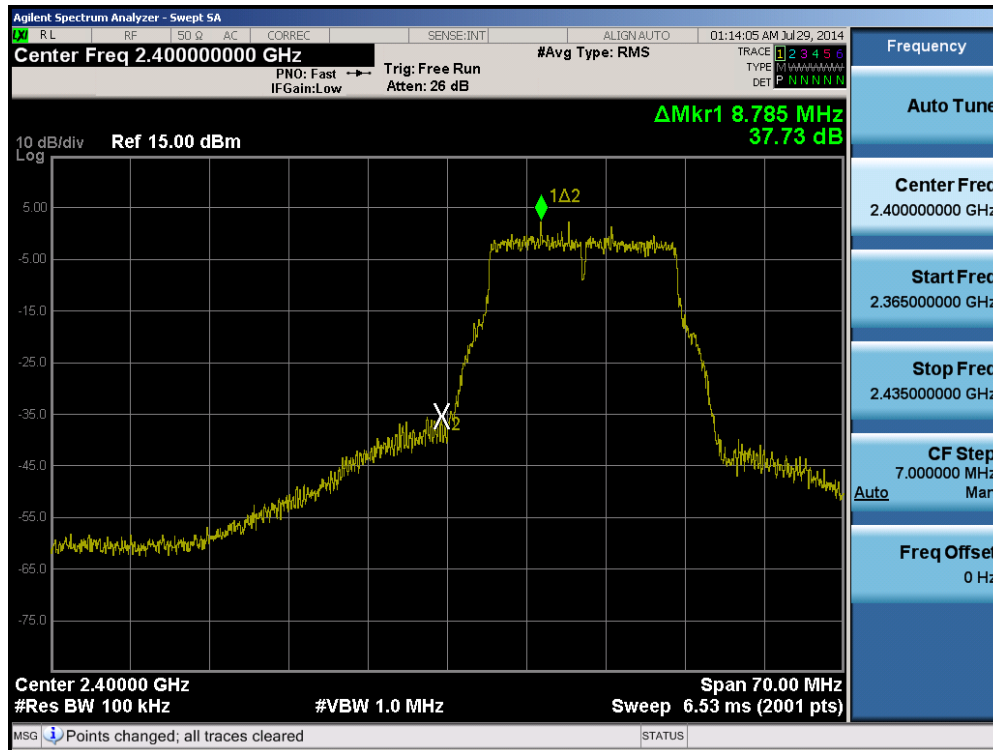


Plot 6-73. Band Edge Plot (802.11b – Ch. 1)

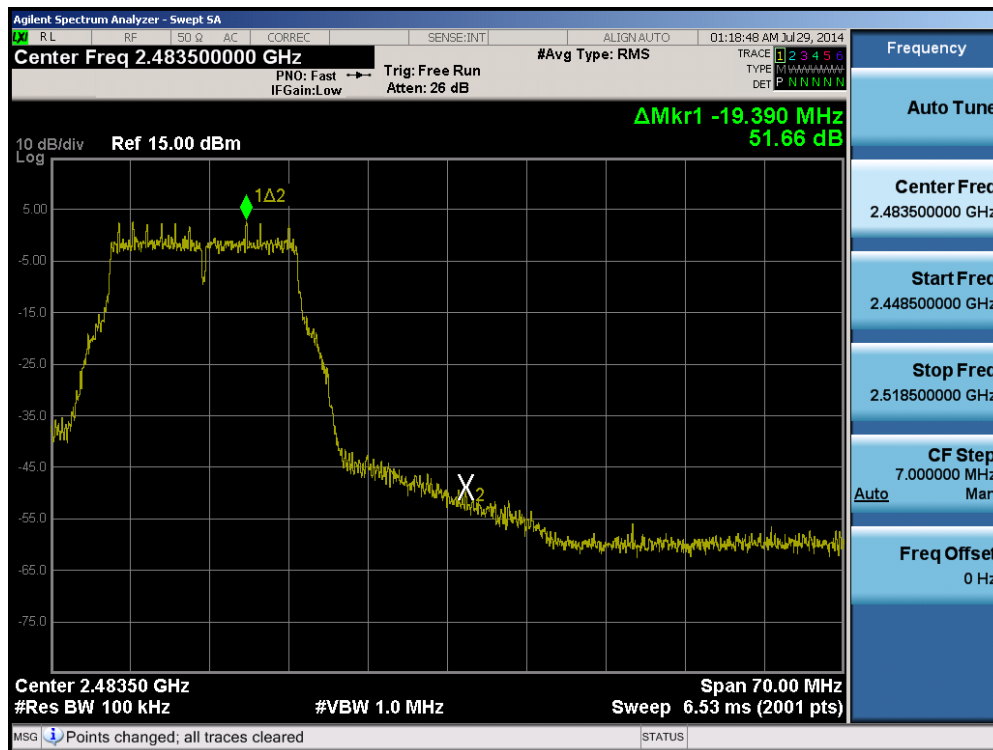


Plot 6-74. Band Edge Plot (802.11b – Ch. 11)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 65 of 121                  |

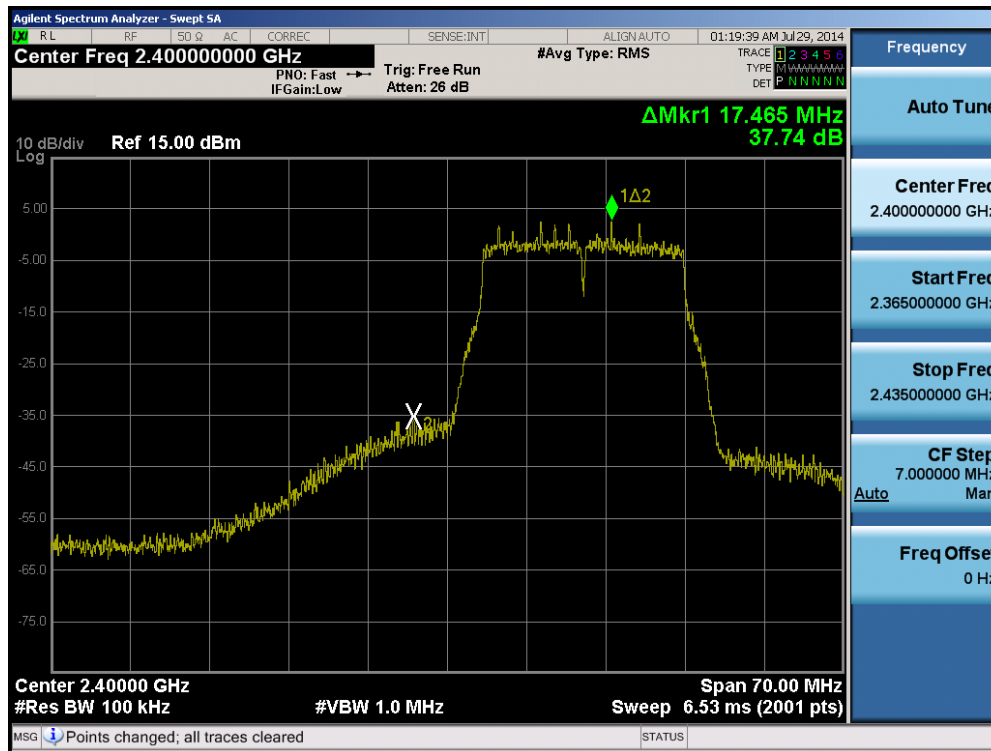


Plot 6-75. Band Edge Plot (802.11g– Ch. 1)

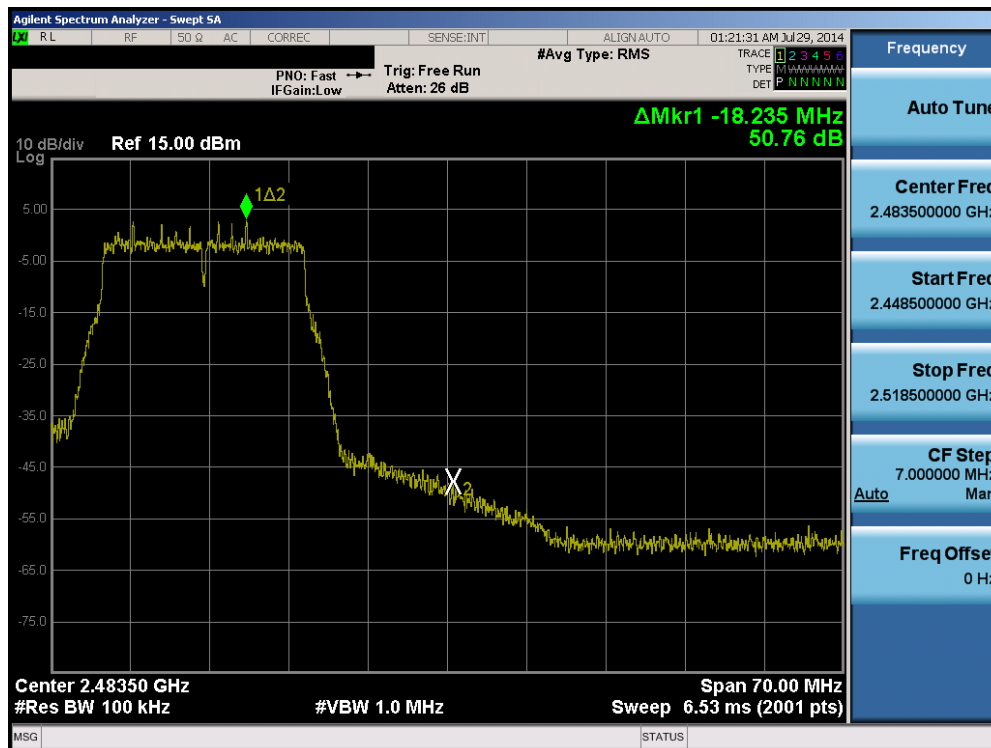


Plot 6-76. Band Edge Plot (802.11g – Ch. 11)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 66 of 121                  |

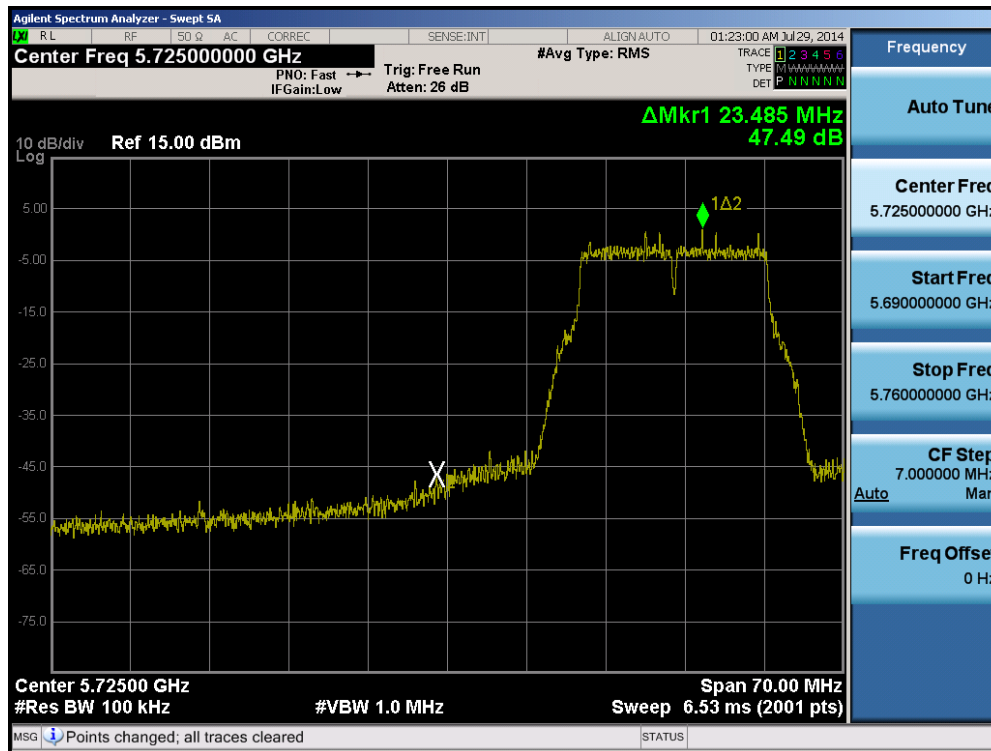


Plot 6-77. Band Edge Plot (802.11n (2.4GHz) – Ch. 1)

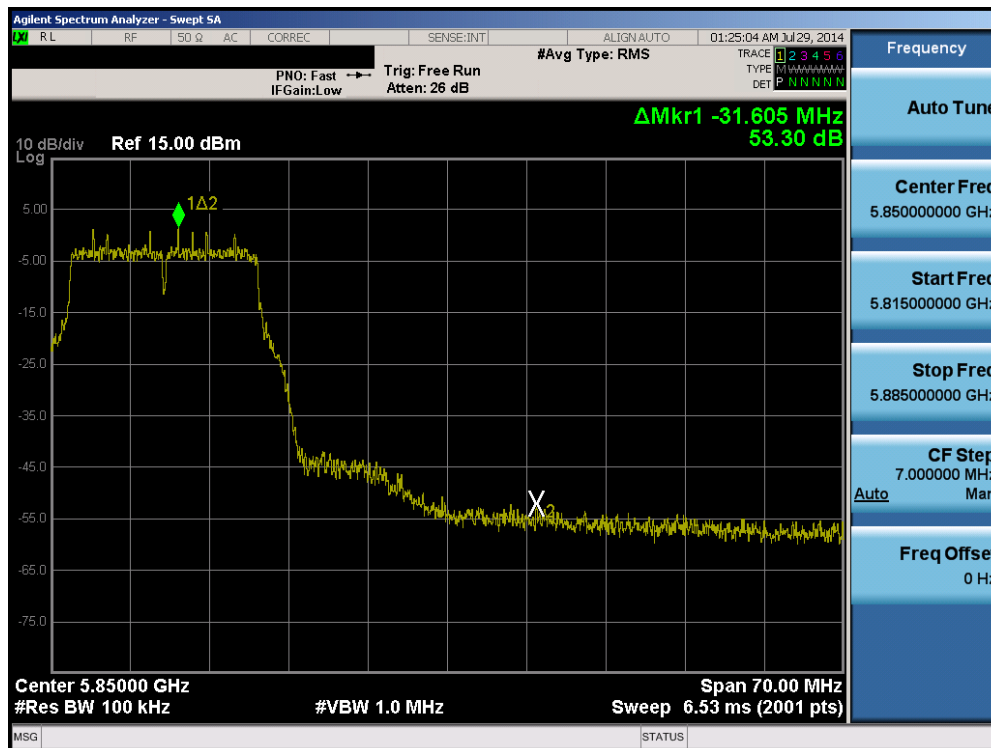


Plot 6-78. Band Edge Plot (802.11n (2.4GHz) – Ch. 11)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 67 of 121                  |

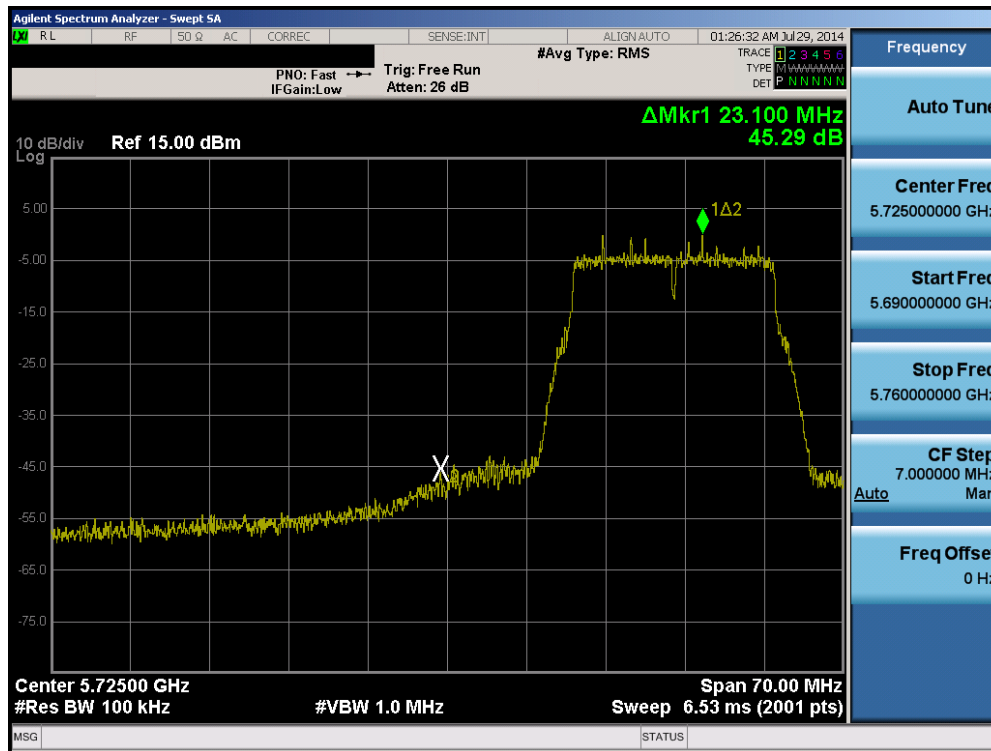


Plot 6-79. Band Edge Plot (802.11a - Ch. 149)

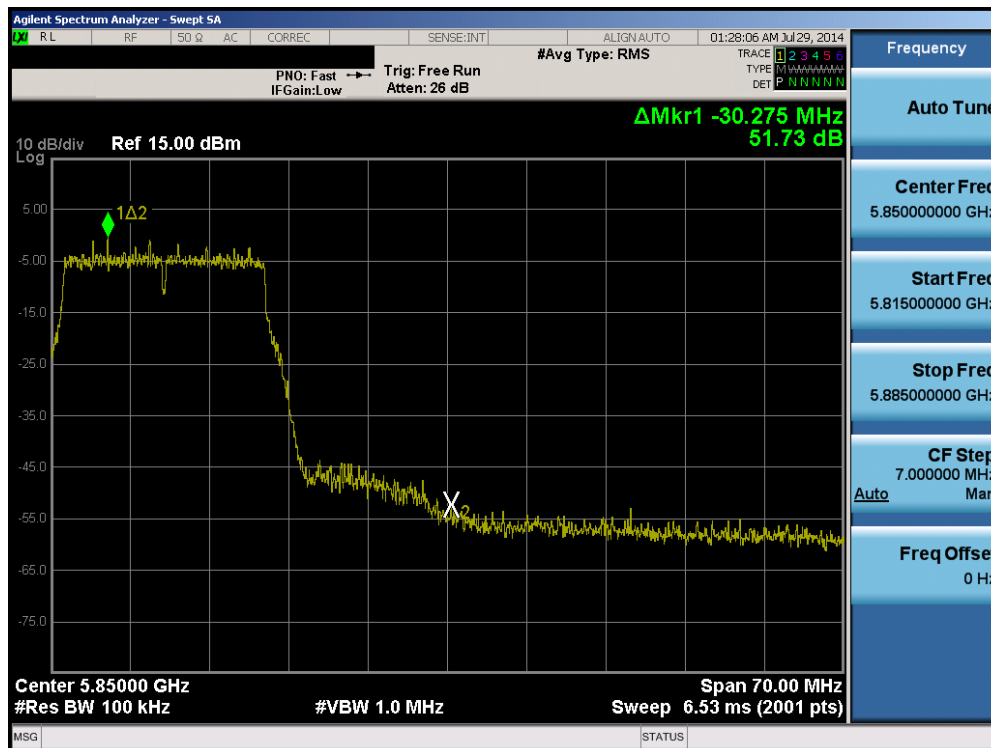


Plot 6-80. Band Edge Plot (802.11a - Ch. 165)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 68 of 121                  |

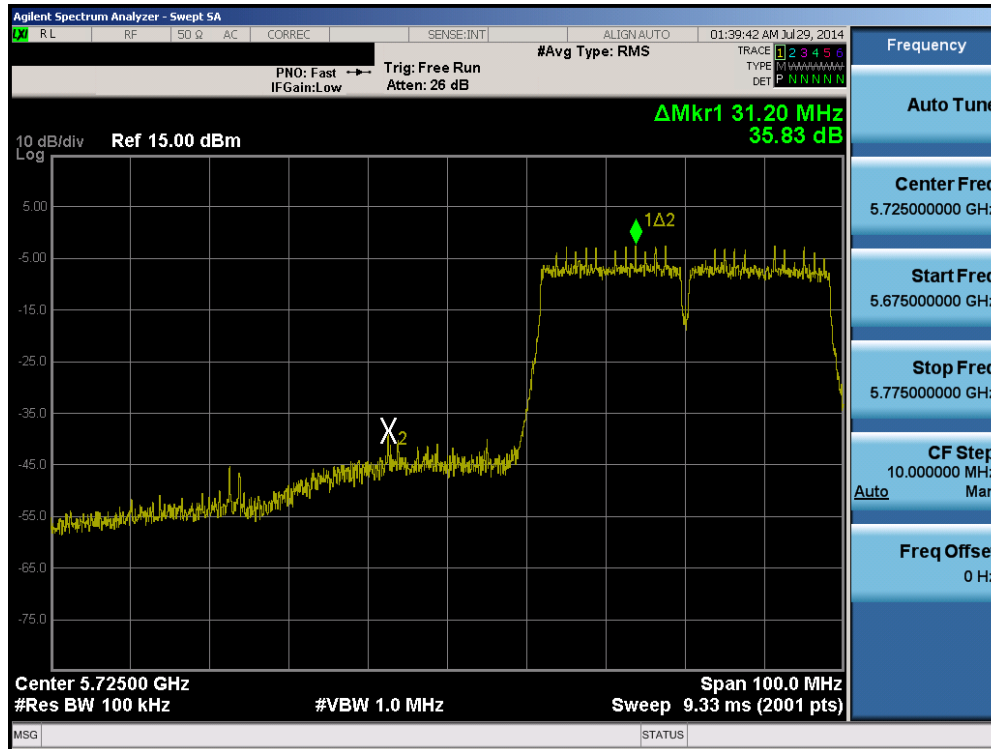


Plot 6-81. Band Edge Plot (20MHz BW 802.11n (5.8GHz) – Ch. 149)

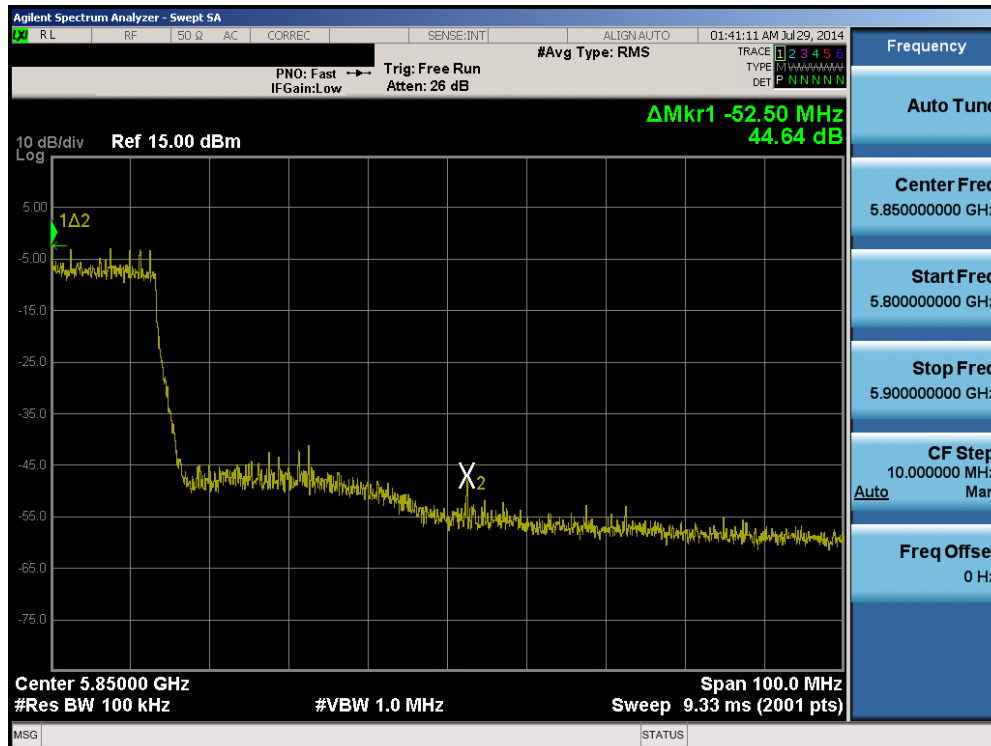


Plot 6-82. Band Edge Plot (20MHz BW 802.11n (5.8GHz) – Ch. 165)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 69 of 121                  |

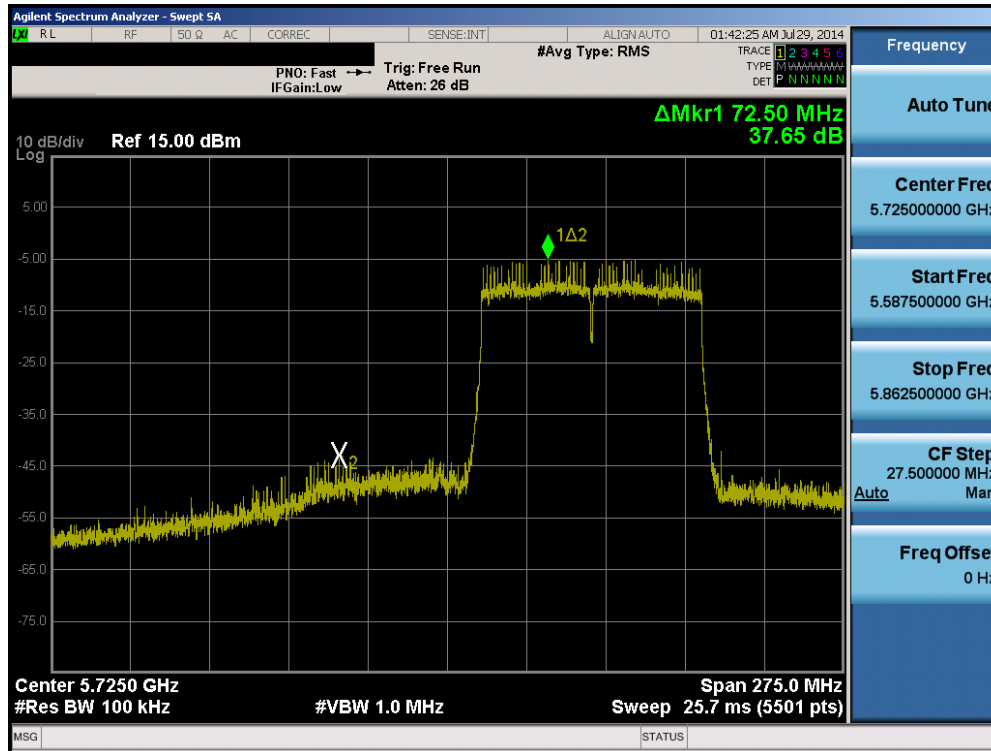


Plot 6-83. Band Edge Plot (40MHz BW 802.11n (5.8GHz) – Ch. 151)

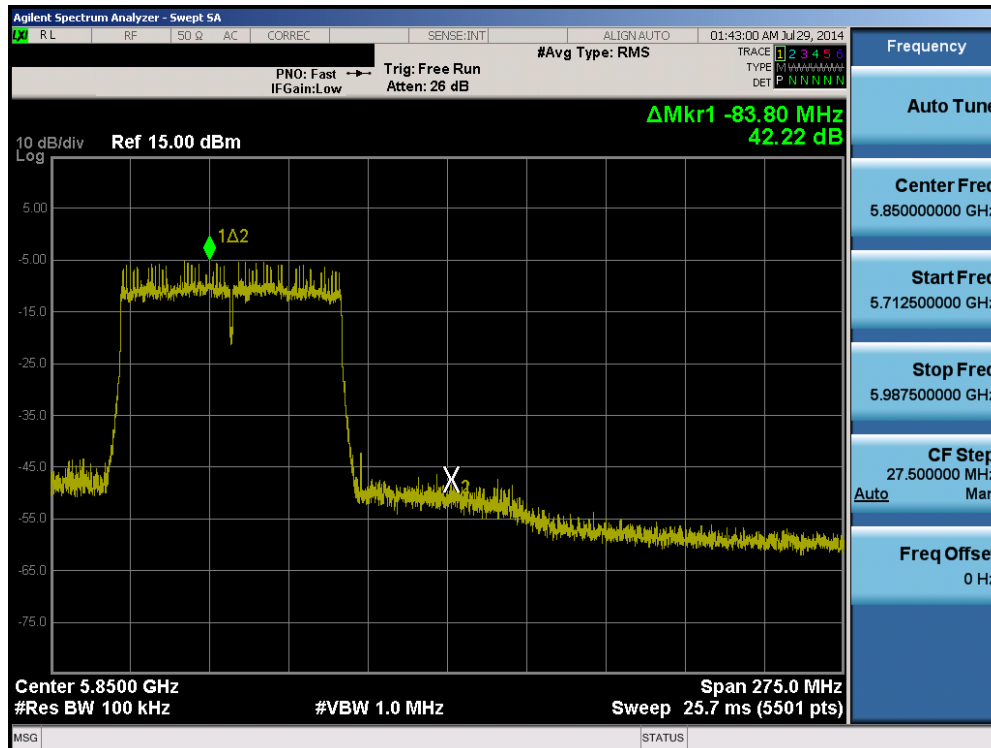


Plot 6-84. Band Edge Plot (40MHz BW 802.11n (5.8GHz) – Ch. 159)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 70 of 121                  |



Plot 6-85. Band Edge Plot (80MHz BW 802.11ac (5.8GHz) – Ch. 155)



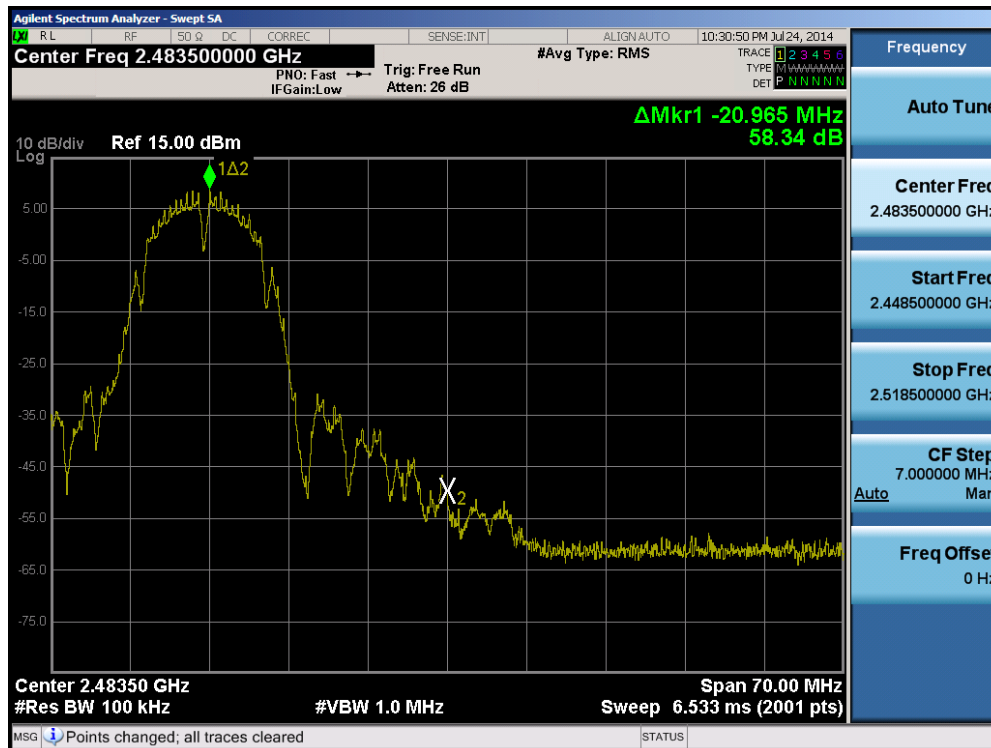
Plot 6-86. Band Edge Plot (80MHz BW 802.11ac (5.8GHz) – Ch. 155)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 71 of 121                  |

## Antenna-2 Conducted Emissions at the Band Edge

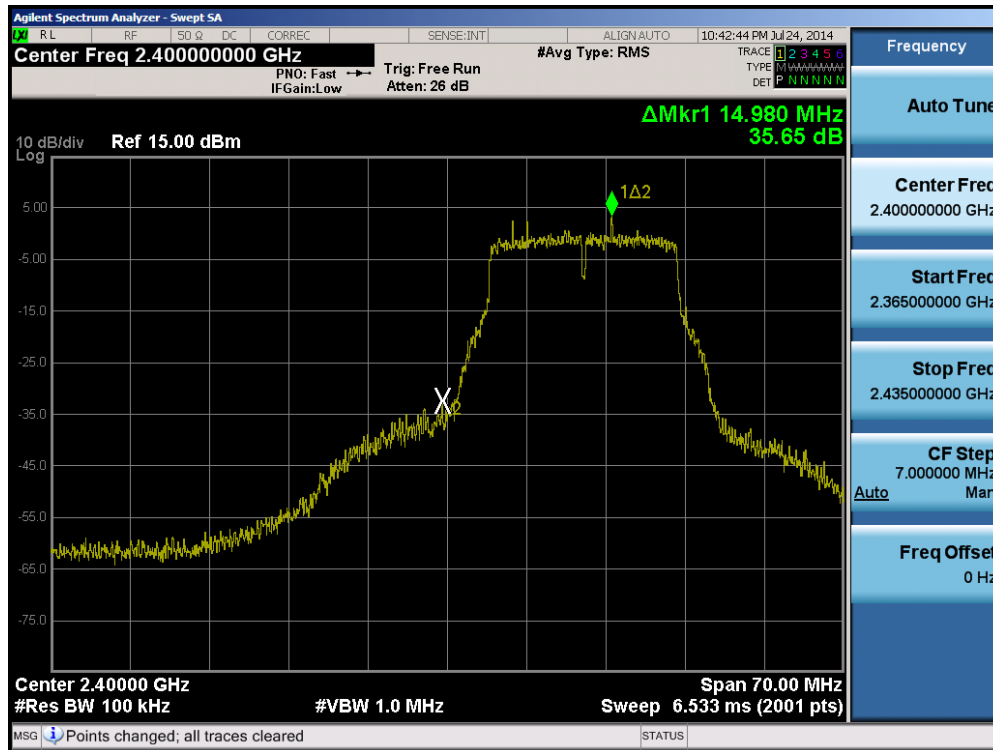


Plot 6-87. Band Edge Plot (802.11b – Ch. 1)

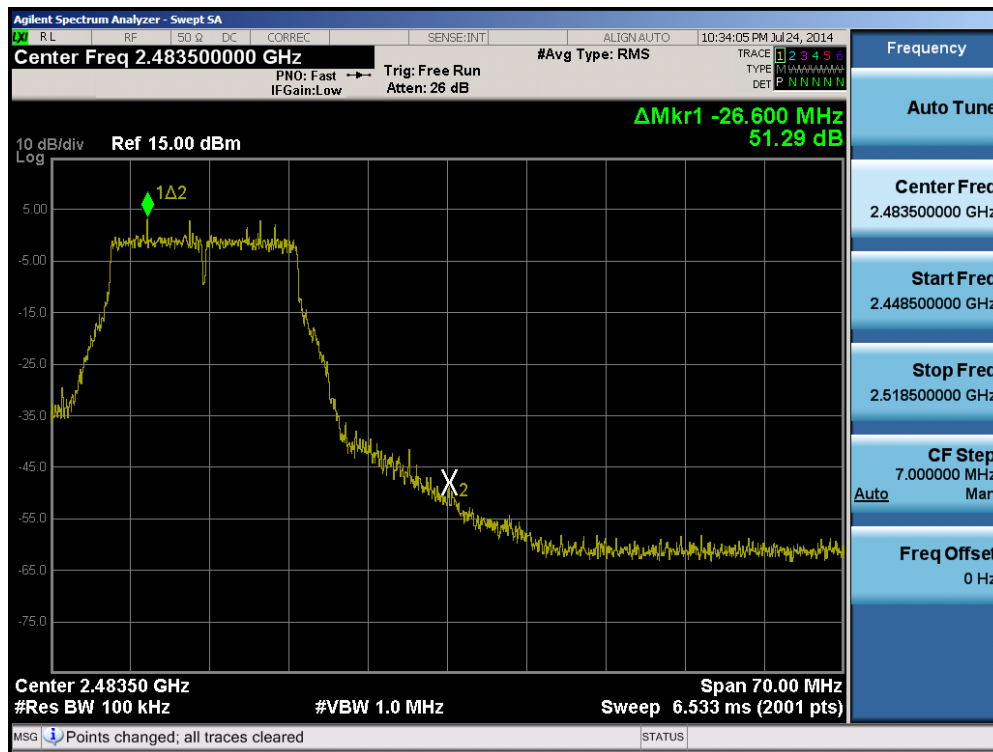


Plot 6-88. Band Edge Plot (802.11b – Ch. 11)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 72 of 121                  |

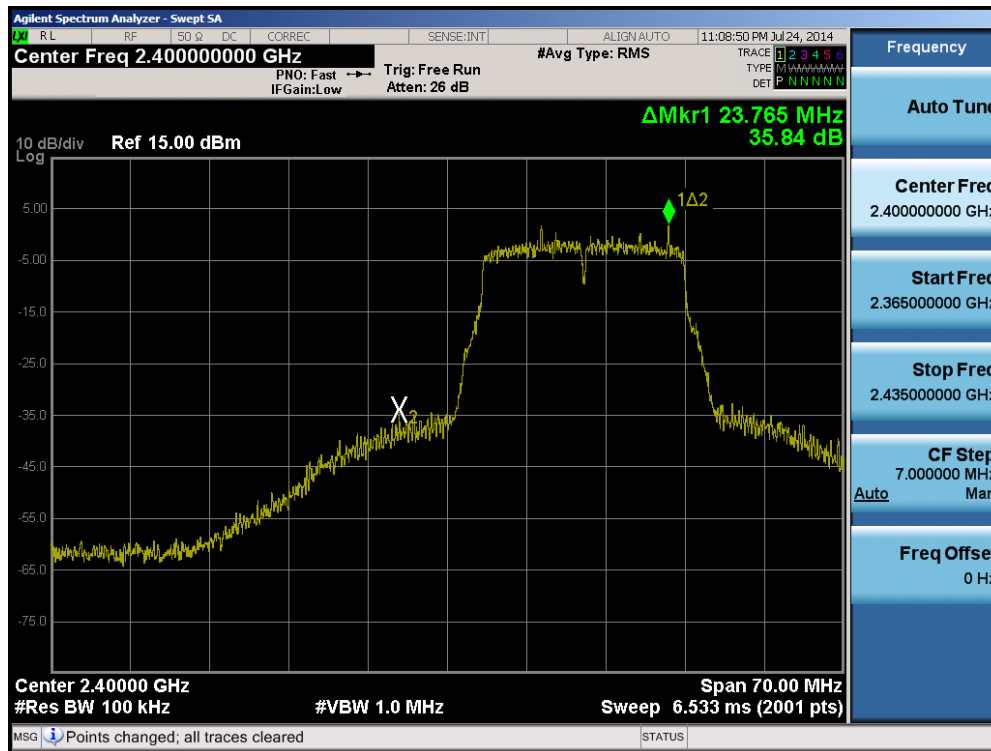


Plot 6-89. Band Edge Plot (802.11g– Ch. 1)

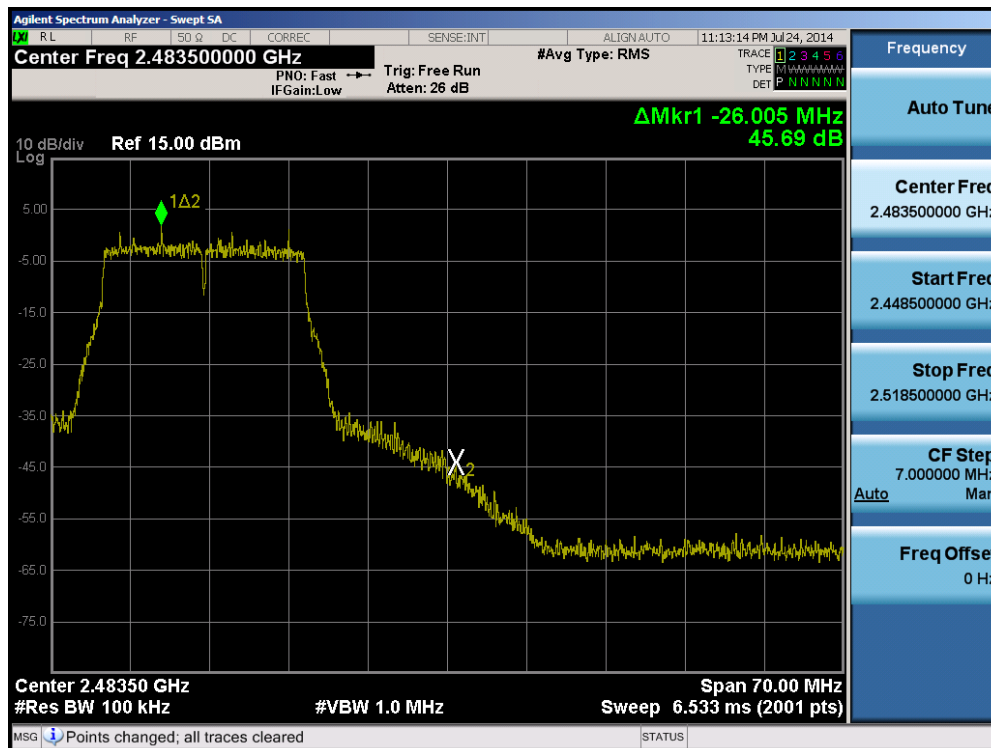


Plot 6-90. Band Edge Plot (802.11g – Ch. 11)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 73 of 121                  |

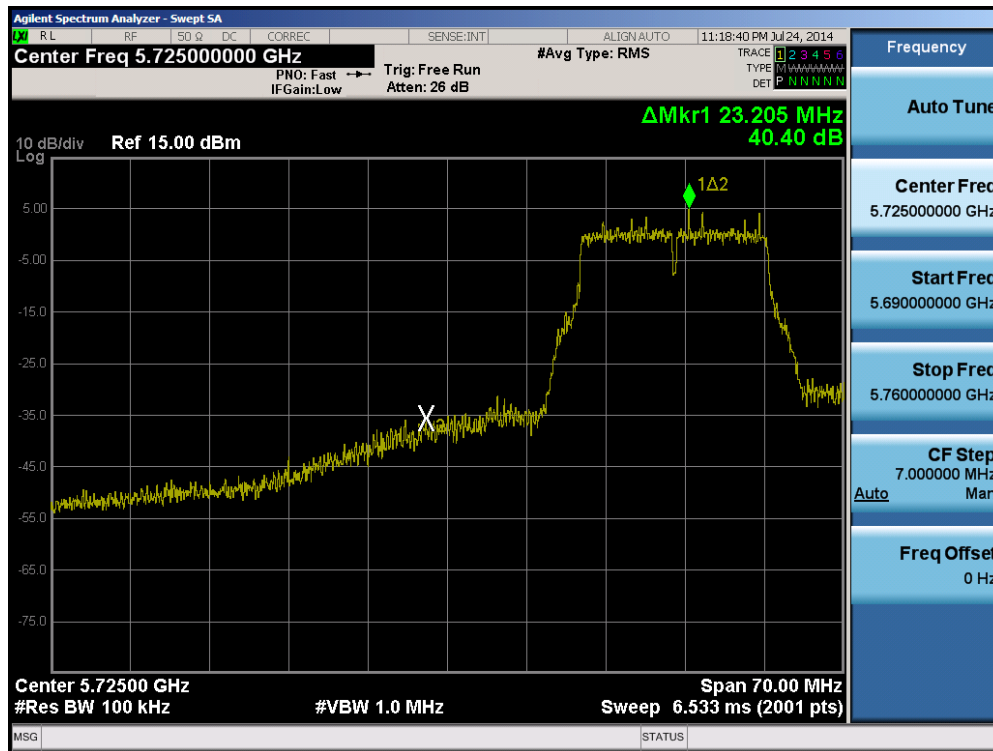


Plot 6-91. Band Edge Plot (802.11n (2.4GHz) – Ch. 1)

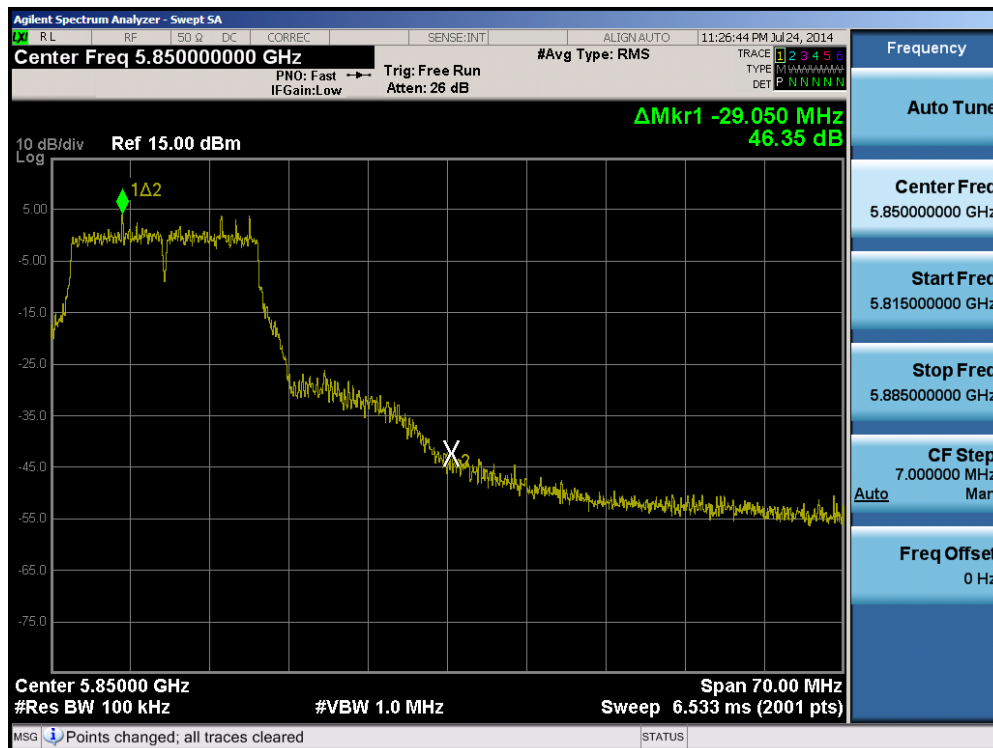


Plot 6-92. Band Edge Plot (802.11n (2.4GHz) – Ch. 11)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 74 of 121                  |

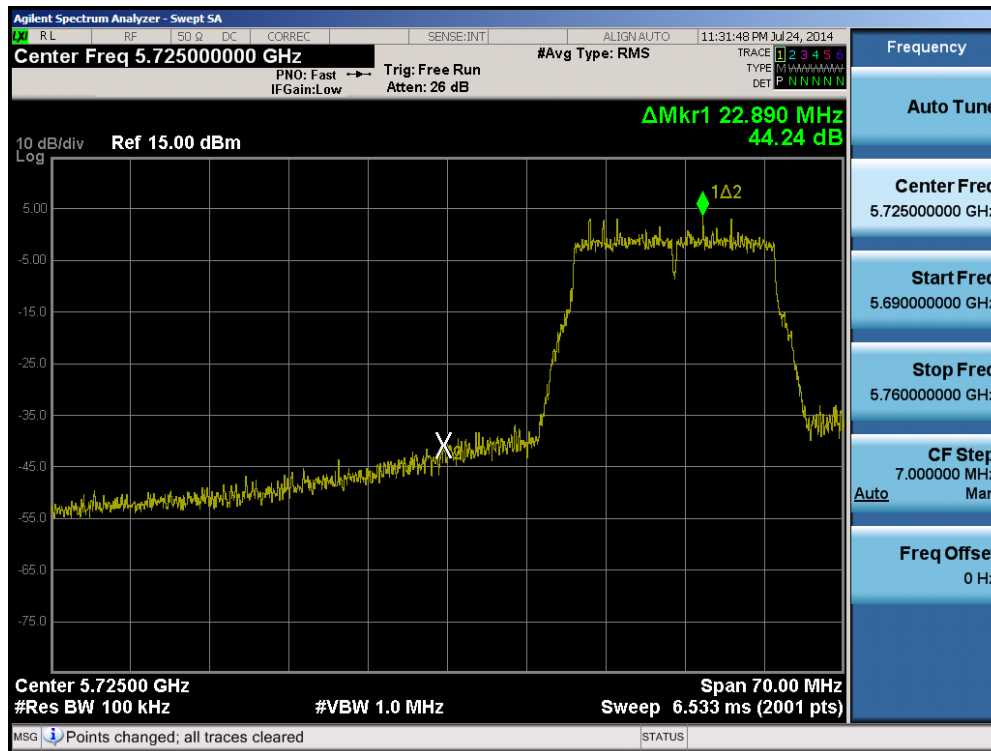


Plot 6-93. Band Edge Plot (802.11a – Ch. 149)

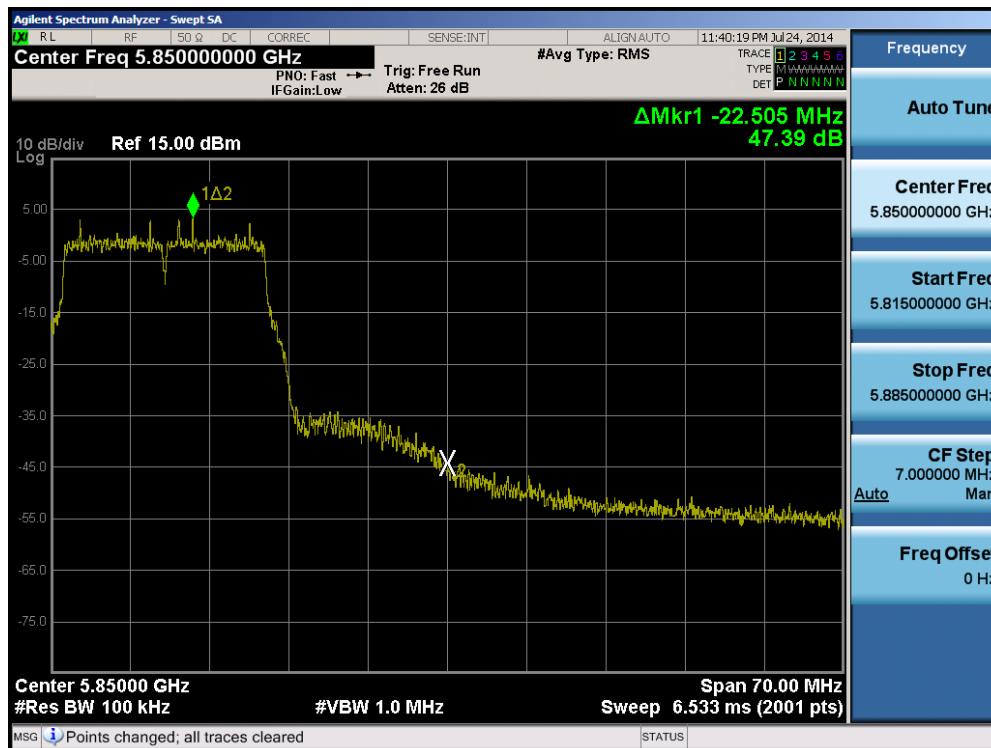


Plot 6-94. Band Edge Plot (802.11a – Ch. 165)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 75 of 121                  |

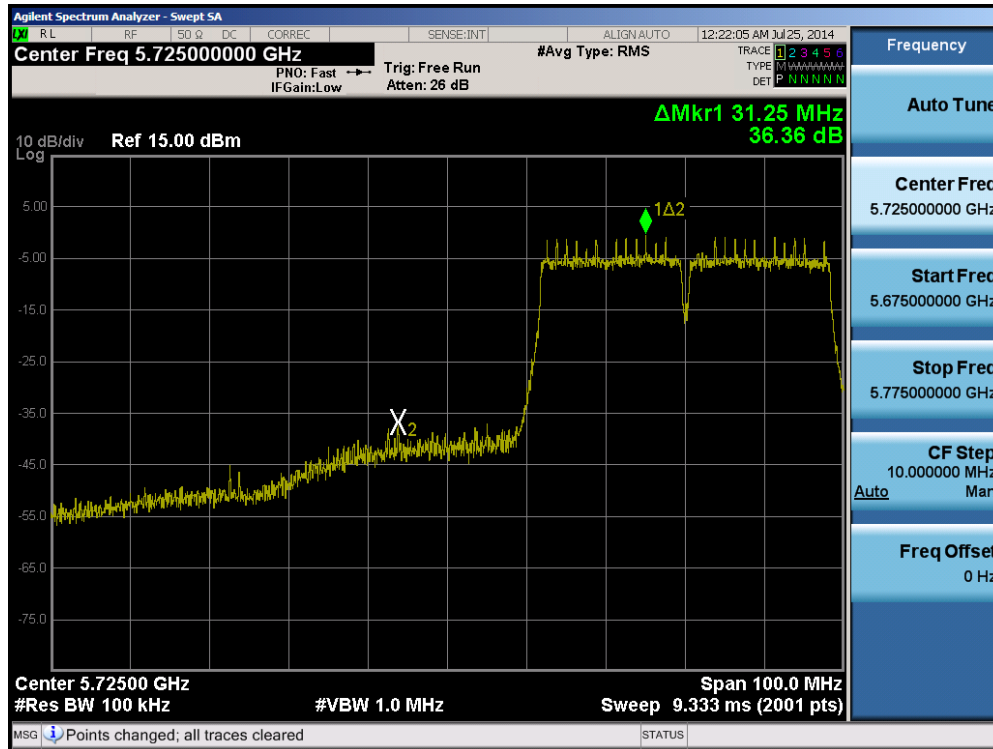


Plot 6-95. Band Edge Plot (20MHz BW 802.11n (5.8GHz) – Ch. 149)

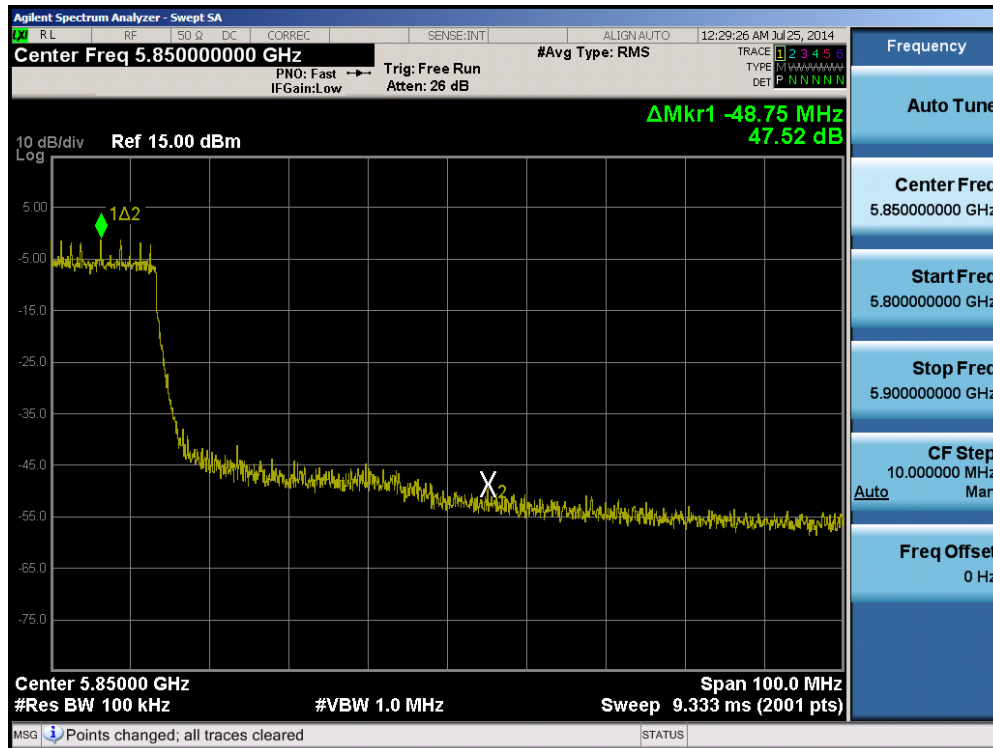


Plot 6-96. Band Edge Plot (20MHz BW 802.11n (5.8GHz) – Ch. 165)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 76 of 121                  |

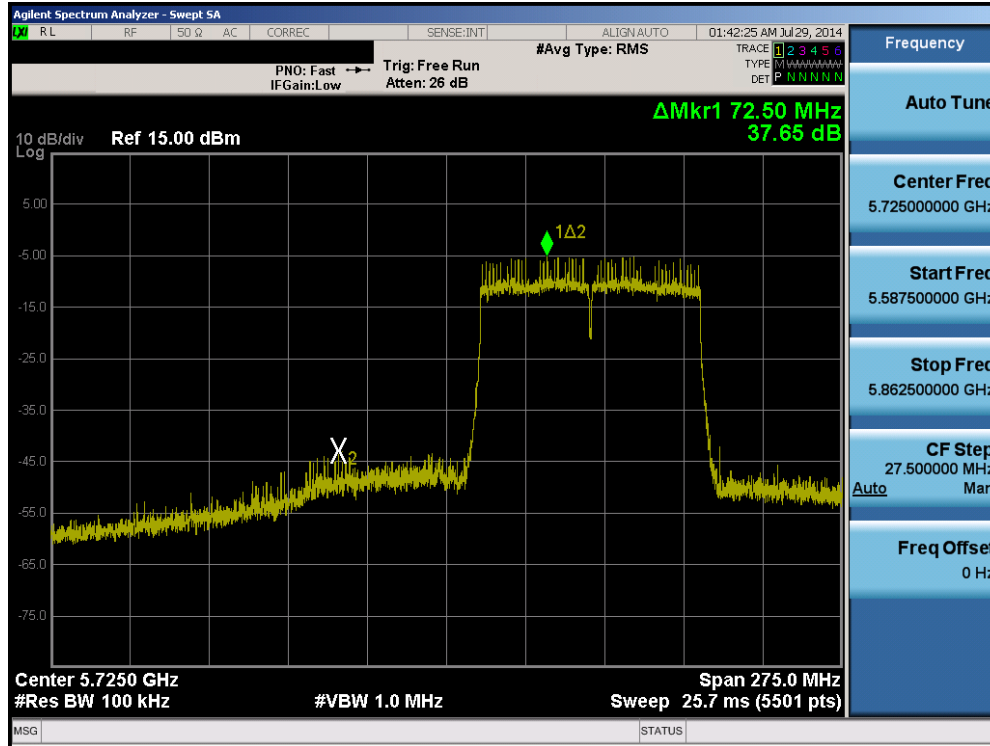


Plot 6-97. Band Edge Plot (40MHz BW 802.11n (5.8GHz) – Ch. 151)

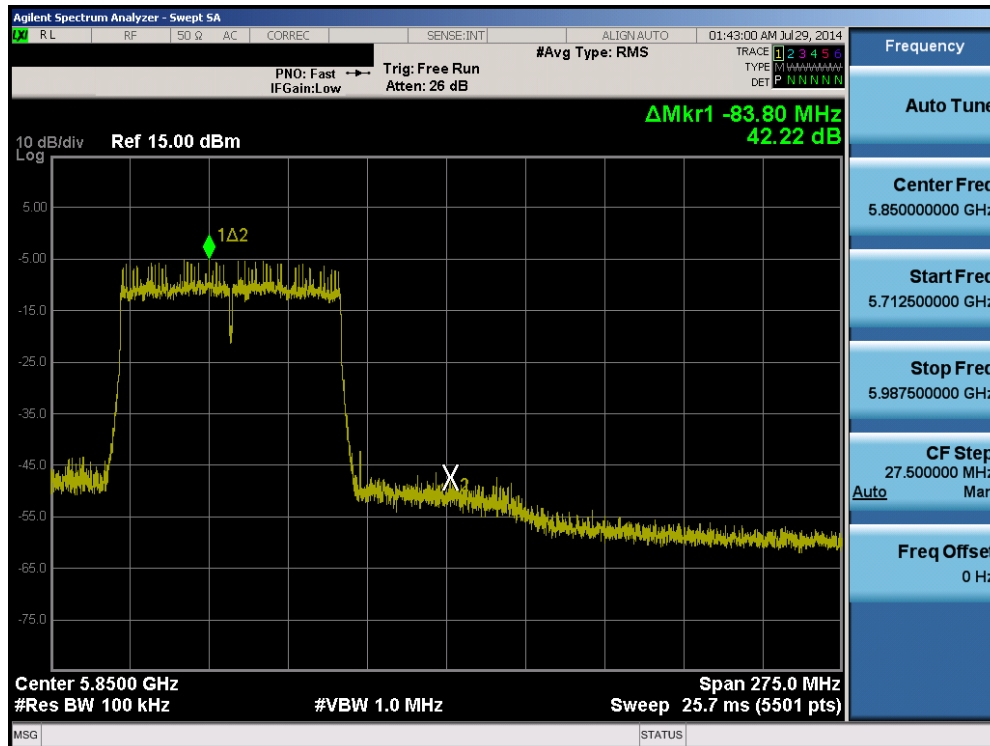


Plot 6-98. Band Edge Plot (40MHz BW 802.11n (5.8GHz) – Ch. 159)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 77 of 121                  |



Plot 6-99. Band Edge Plot (80MHz BW 802.11ac (5.8GHz) – Ch. 155)



Plot 6-100. Band Edge Plot (80MHz BW 802.11ac (5.8GHz) – Ch. 155)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 78 of 121                  |

## 6.6 Conducted Spurious Emissions

§15.247(d)

### Test Overview and Limit

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle (>98%), at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. For the following out of band conducted spurious emissions plots, the EUT was investigated in all available data rates for “b”, “g”, “a”, “n”, and “ac” modes. The worst case spurious emissions for the 2.4GHz band were found while transmitting in “b” mode at 1 Mbps and are shown in the plots below. The worst case spurious emissions for the 5.8GHz band were found while transmitting in “a” mode at 6 Mbps and are shown in the plots below.

***The limit for out-of-band spurious emissions at the band edge is 30dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100kHz bandwidth per the procedure in Section 11.1 of KDB 558074 v03r02.***

### Test Procedure Used

KDB 558074 v03r02 – Section 11.3

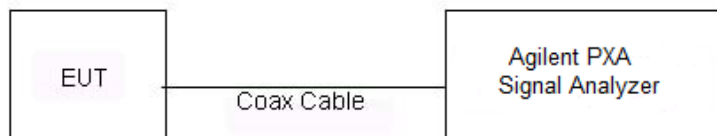
KDB 662911 v02r01 – Section E)3)b)

### Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to 25GHz for 2.4GHz frequencies and 40GHz for 5GHz frequencies (separated into two plots per channel)
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = Peak
5. Trace mode = max hold
6. Sweep time = auto couple
7. The 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**

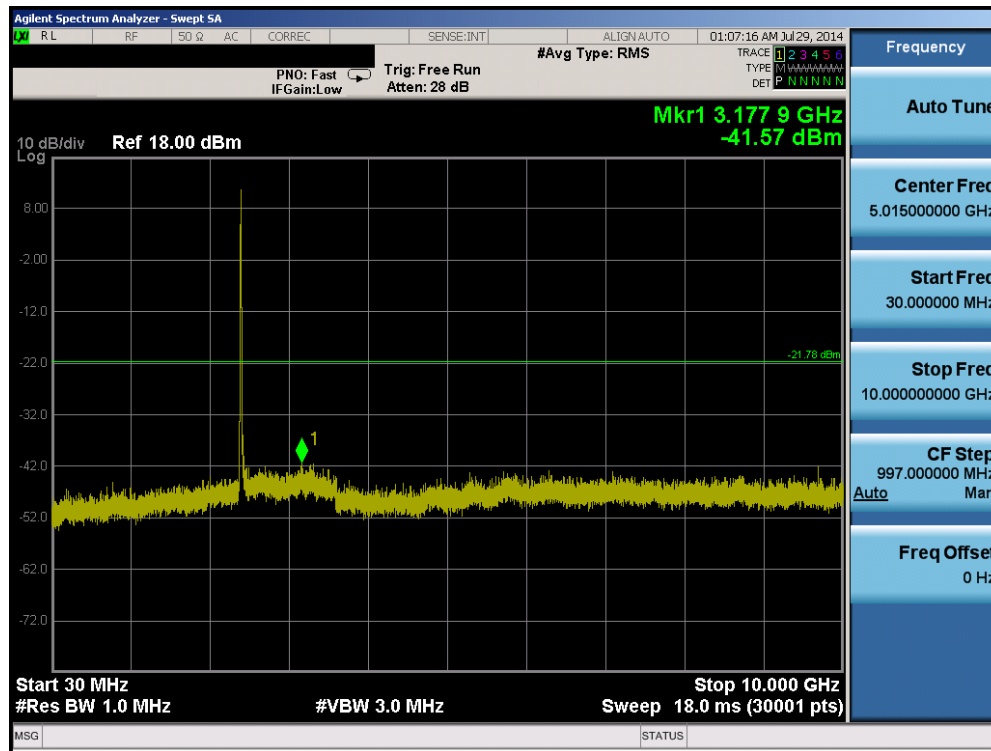
|                                      |                                                                                     |                                                                       |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN910C                   |  | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014                                                     | EUT Type:<br>Portable Handset                                         |                                                                                       | Page 79 of 121                  |

## **Test Notes**

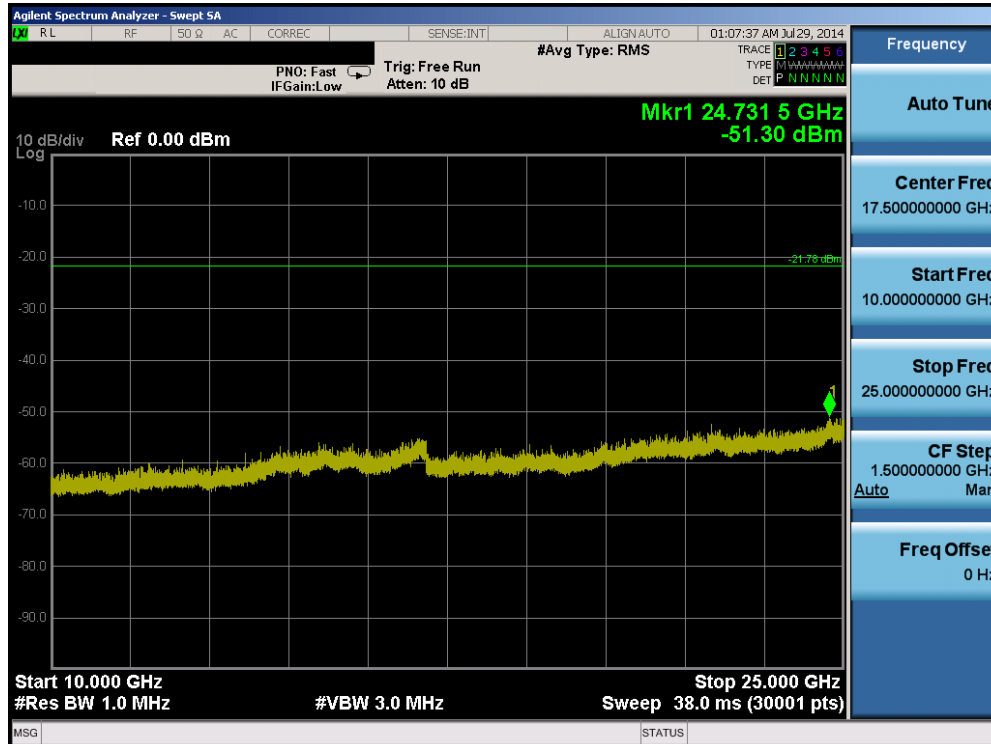
1. RBW was set to 1MHz rather than 100kHz in order to increase the measurement speed.
2. The display line shown in the following plots denotes the limit at 30dB below the fundamental emission level measured in a 100kHz bandwidth. However, since the traces in the following plots are measured with a 1MHz RBW, the display line may not necessarily appear to be 30dB below the level of the fundamental in a 1MHz bandwidth.
3. For plots showing conducted spurious emissions near the limit, the frequencies were investigated with a reduced RBW to ensure that no emissions were present.
4. The conducted spurious emissions were measured to relative limits. Therefore, in accordance with KDB 662911 v02r01 Section E)3)b), it was unnecessary to show compliance through the summation of test results of the individual outputs.

|                                             |                                                                                     |                                                                               |                                                                                       |                                        |
|---------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMN910C                   |  | <b>FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Reviewed by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>0Y1407241462.A3L | <b>Test Dates:</b><br>7/24 - 8/11/2014                                              | <b>EUT Type:</b><br>Portable Handset                                          |                                                                                       | Page 80 of 121                         |

## Antenna-1 Conducted Spurious Emissions

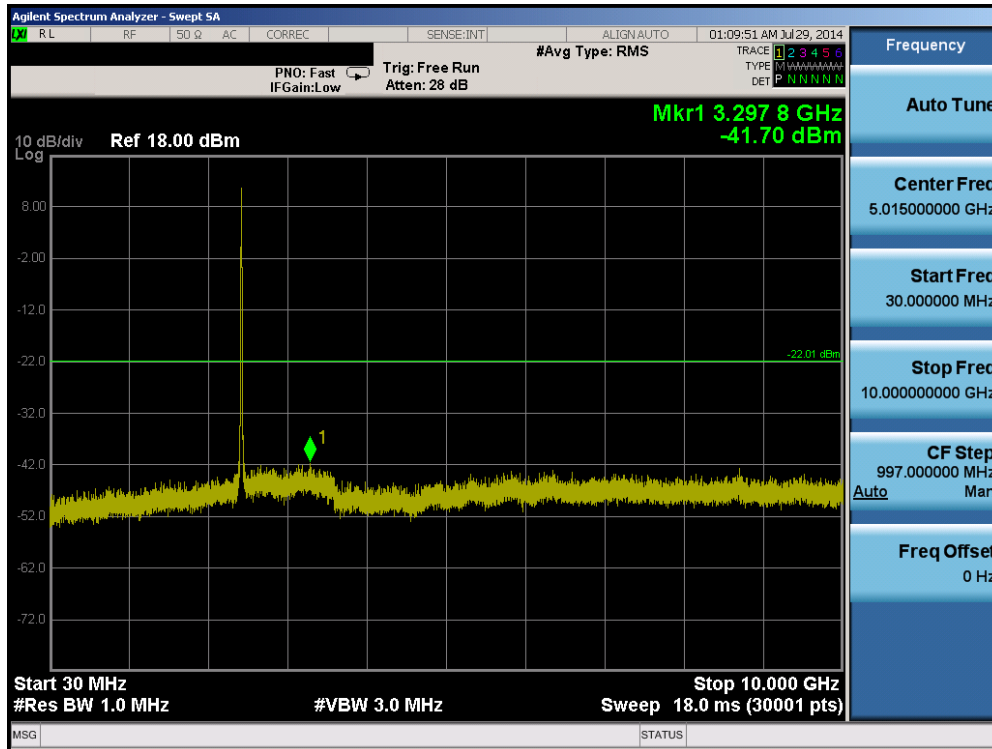


Plot 6-101. Conducted Spurious Plot (802.11b – Ch. 1)

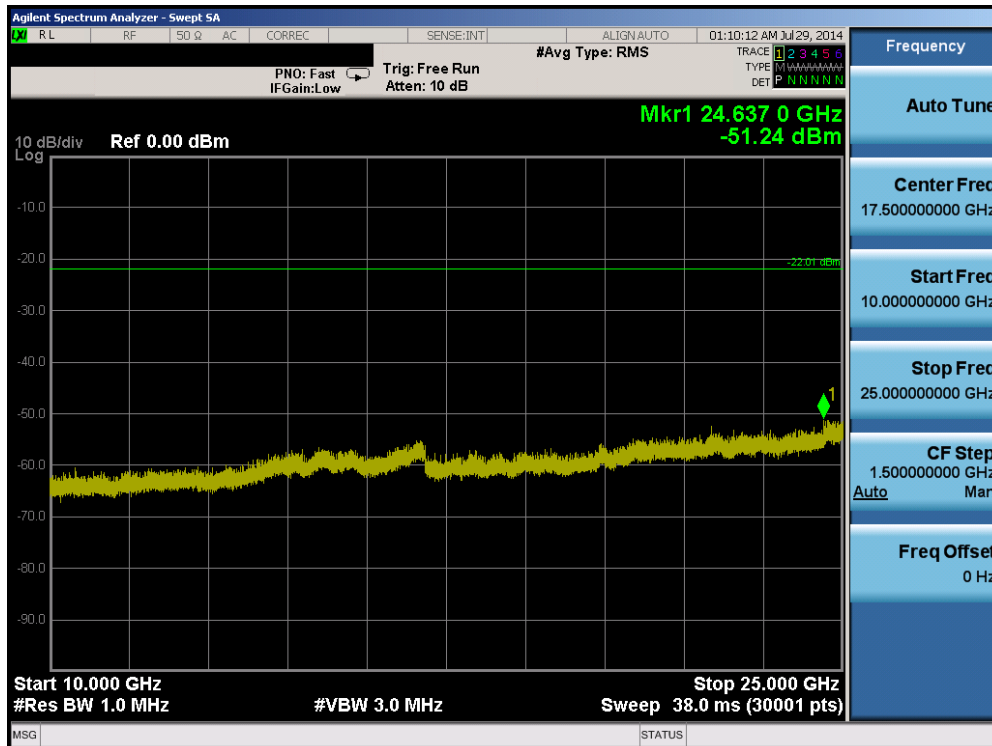


Plot 6-102. Conducted Spurious Plot (802.11b – Ch. 1)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 81 of 121                  |

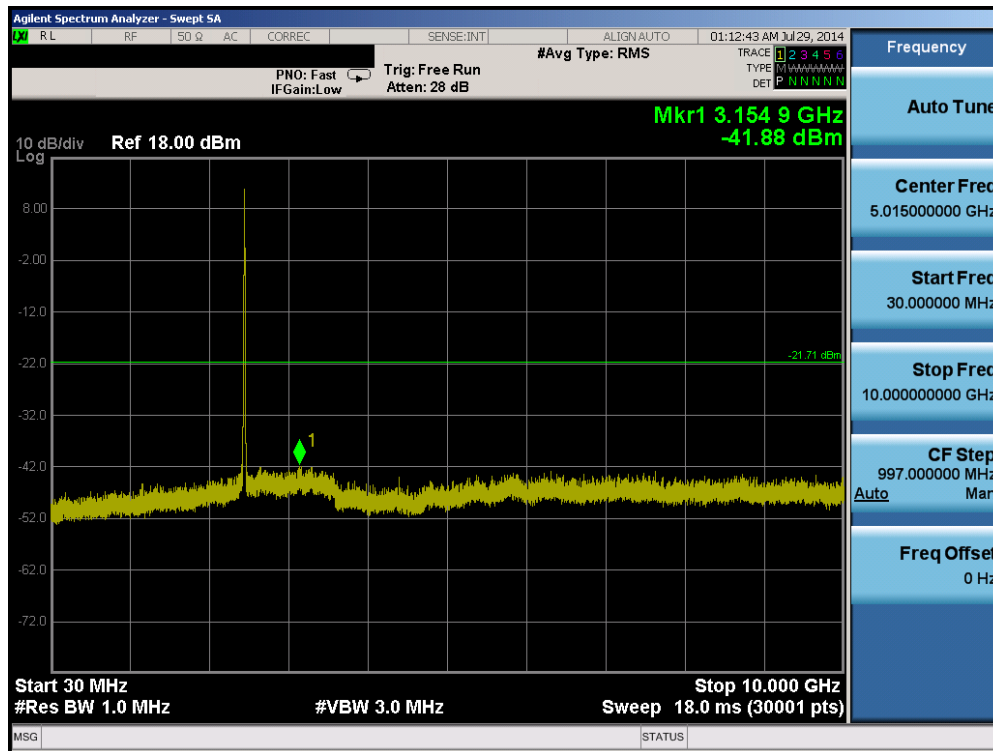


Plot 6-103. Conducted Spurious Plot (802.11b – Ch. 6)

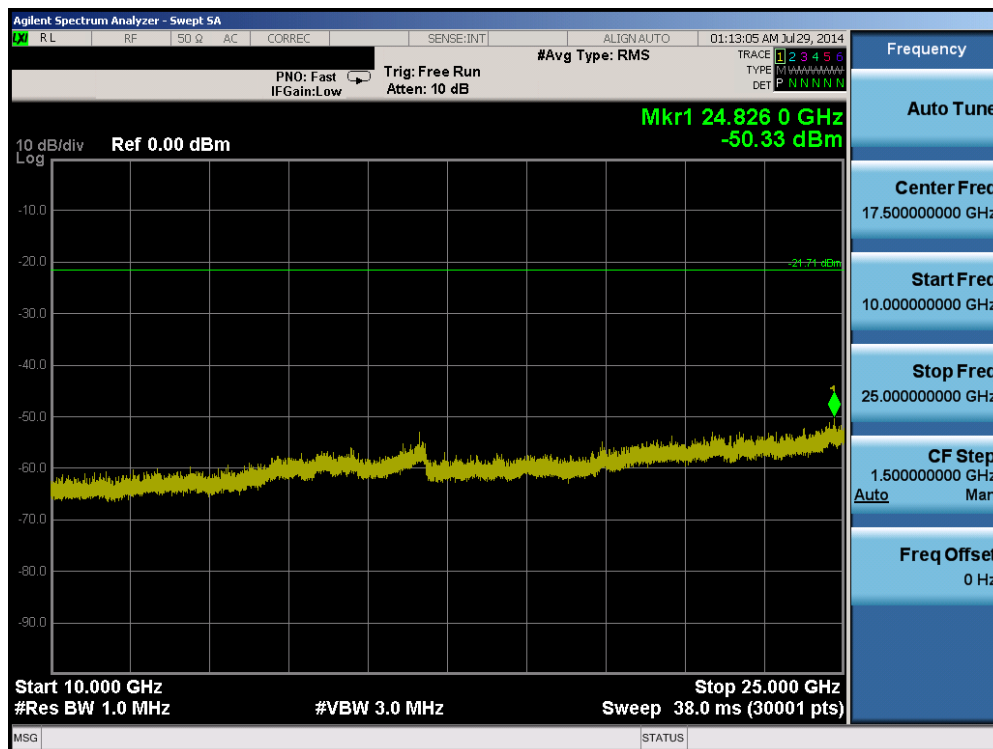


Plot 6-104. Conducted Spurious Plot (802.11b – Ch. 6)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 82 of 121                  |

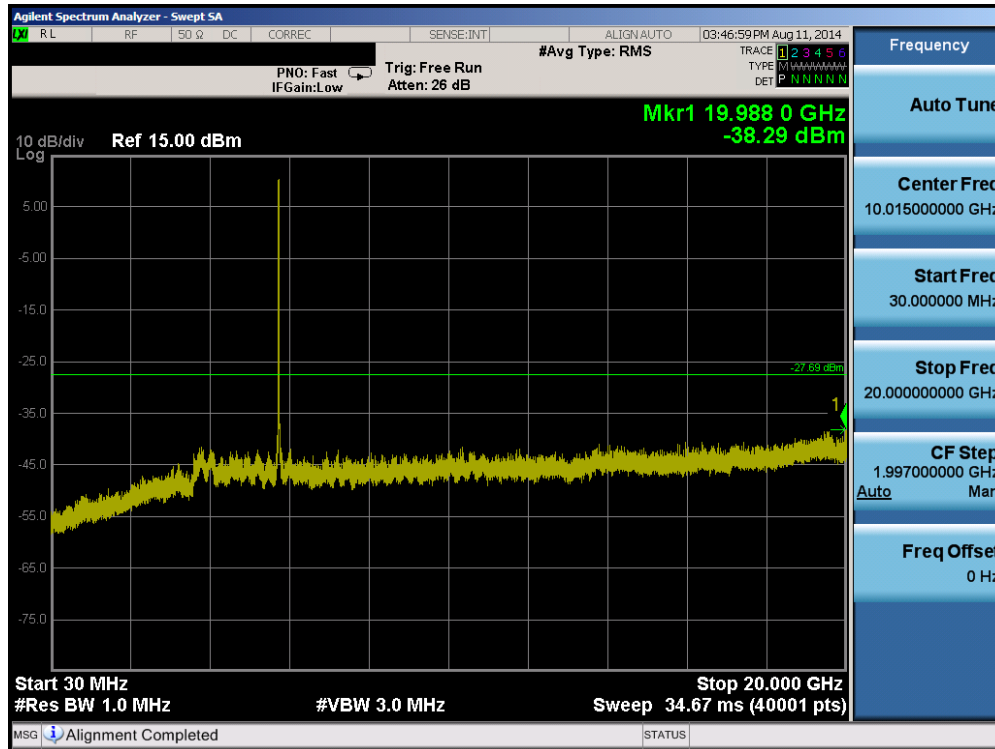


Plot 6-105. Conducted Spurious Plot (802.11b – Ch. 11)

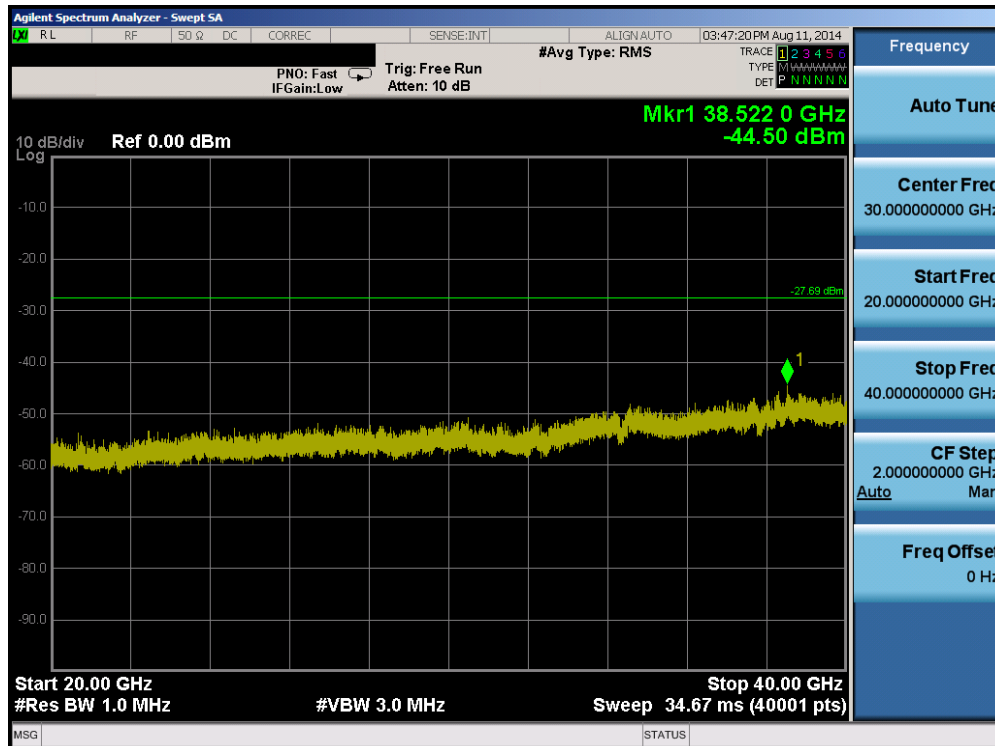


Plot 6-106. Conducted Spurious Plot (802.11b – Ch. 11)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 83 of 121                  |

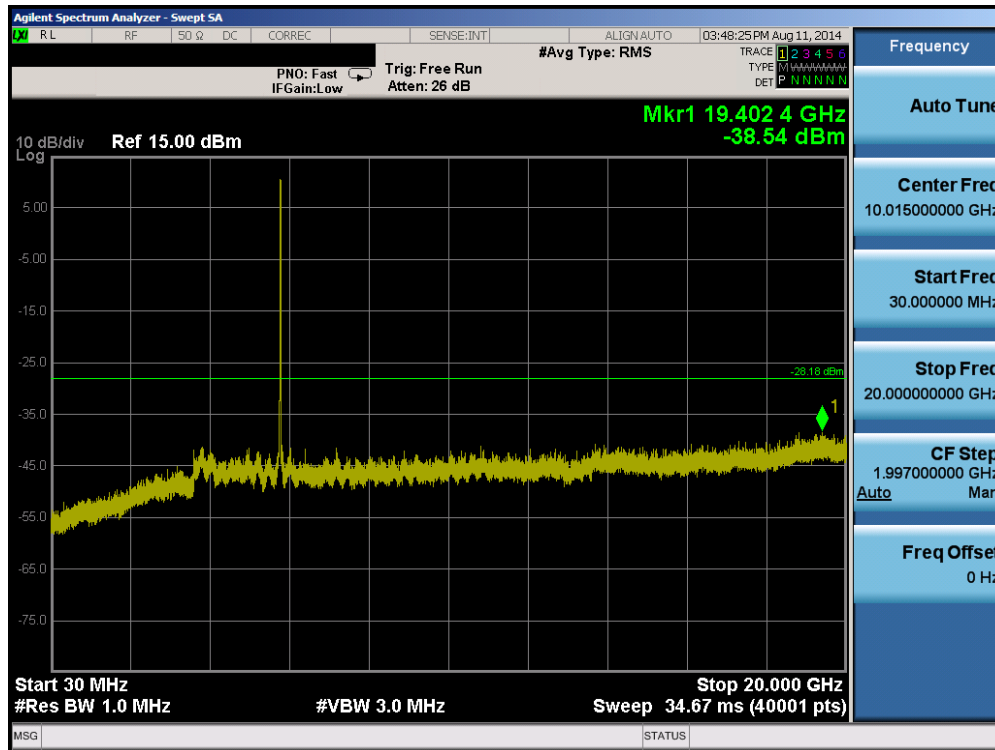


Plot 6-107. Conducted Spurious Plot (802.11a – Ch. 149)

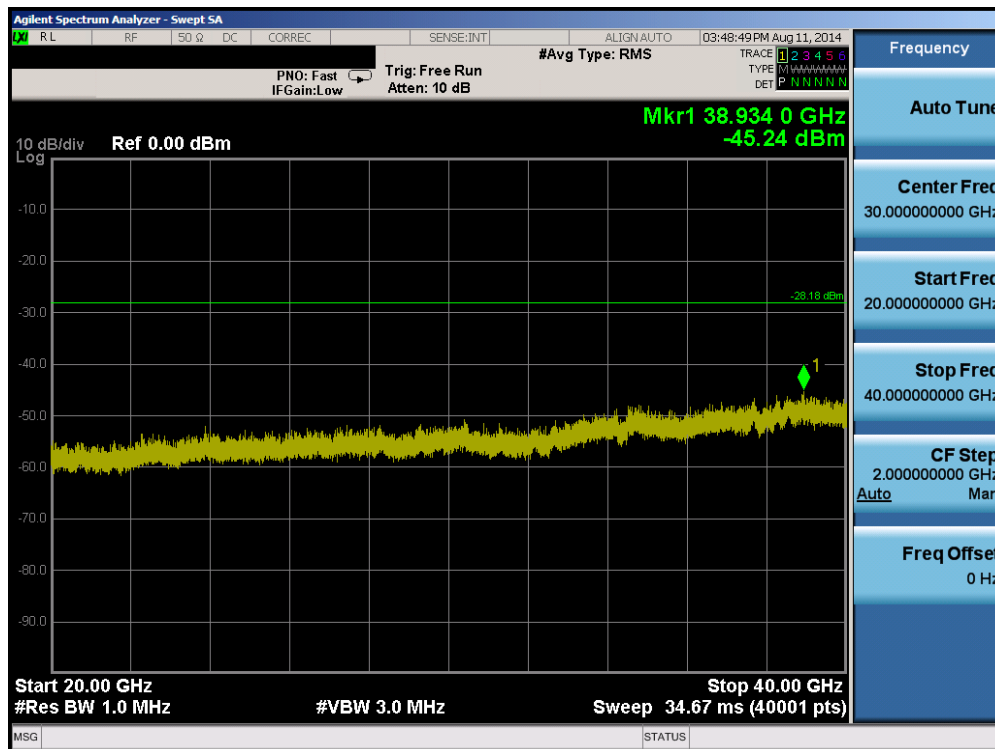


Plot 6-108. Conducted Spurious Plot (802.11a – Ch. 149)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 84 of 121                  |

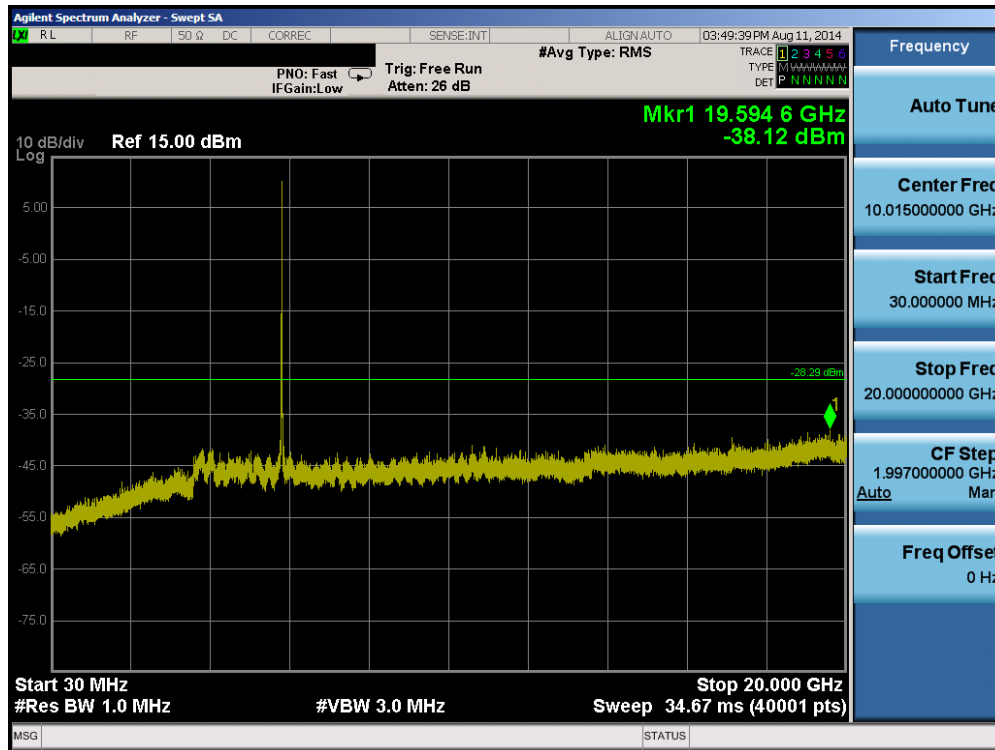


Plot 6-109. Conducted Spurious Plot (802.11a – Ch. 157)

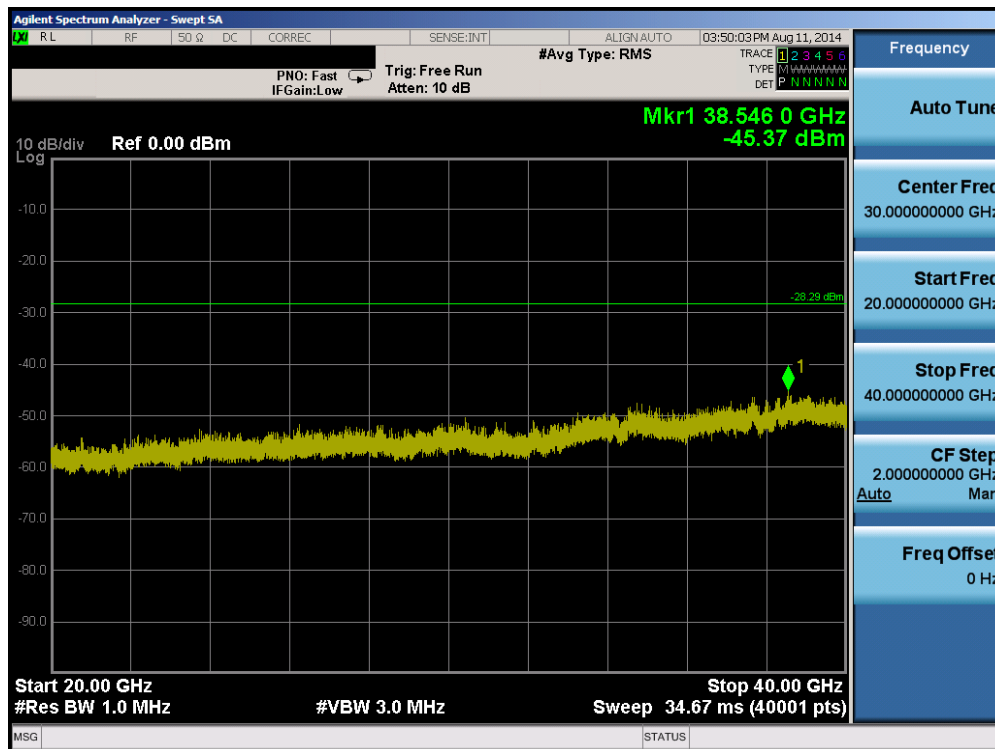


Plot 6-110. Conducted Spurious Plot (802.11a – Ch. 157)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 85 of 121                  |



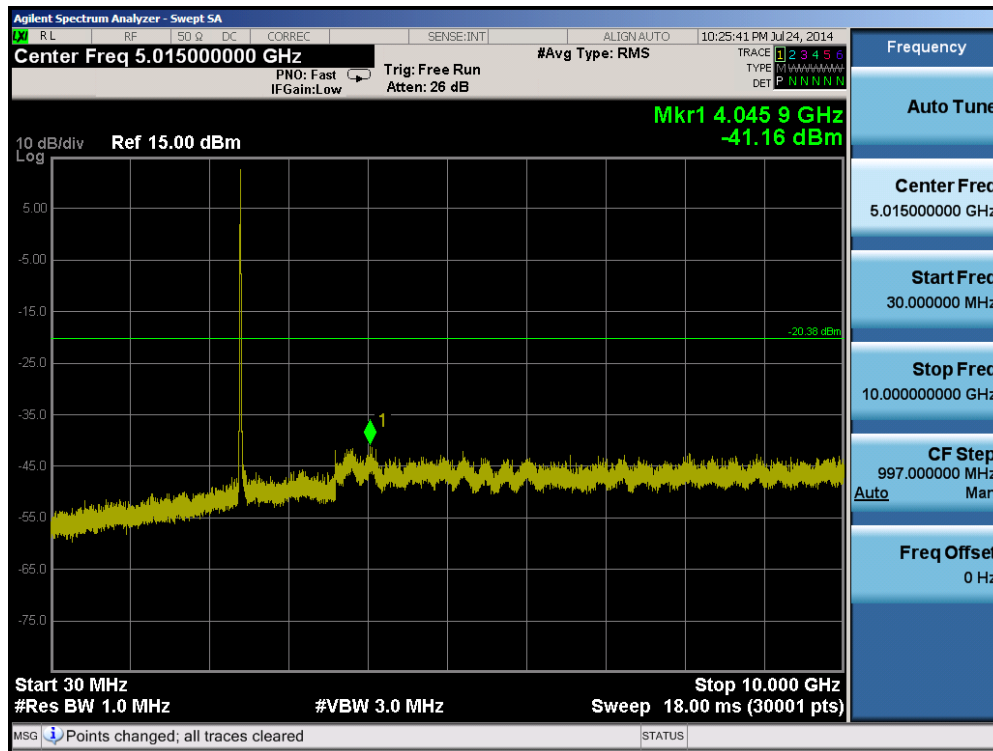
Plot 6-111. Conducted Spurious Plot (802.11a – Ch. 165)



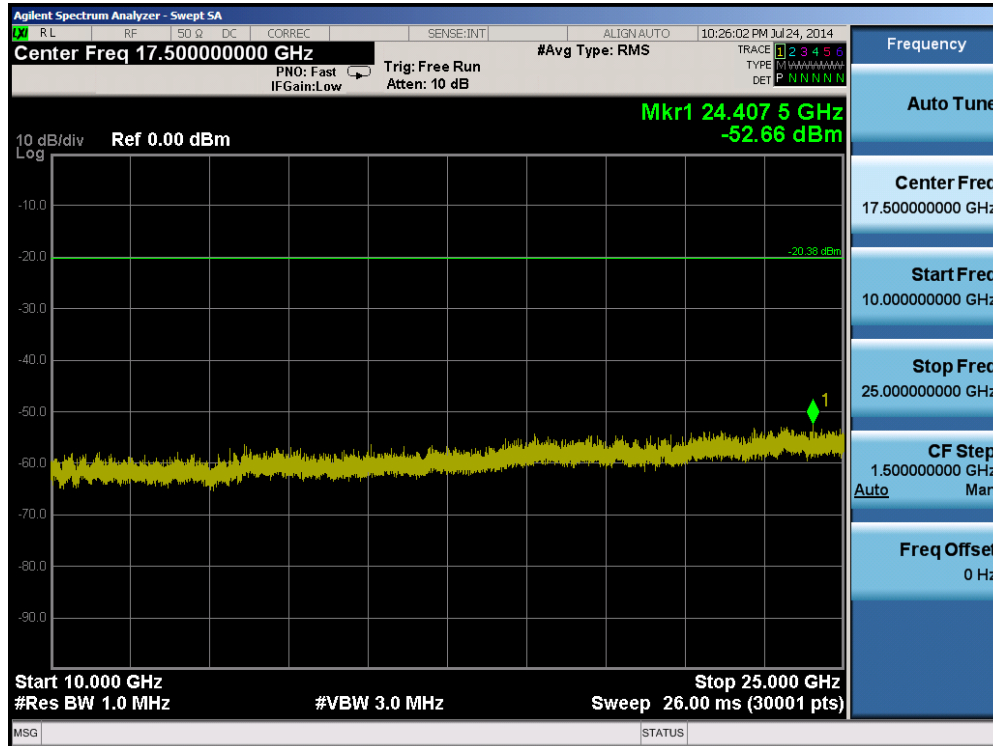
Plot 6-112. Conducted Spurious Plot (802.11a – Ch. 165)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 86 of 121                  |

## Antenna-2 Conducted Spurious Emissions

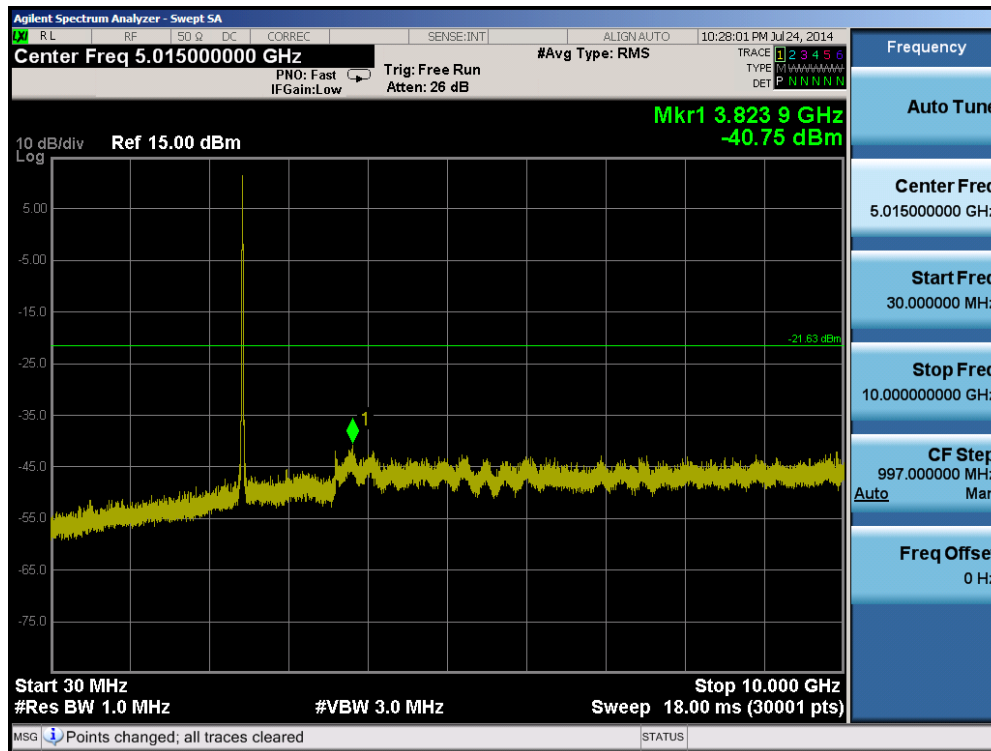


Plot 6-113. Conducted Spurious Plot (802.11b – Ch. 1)

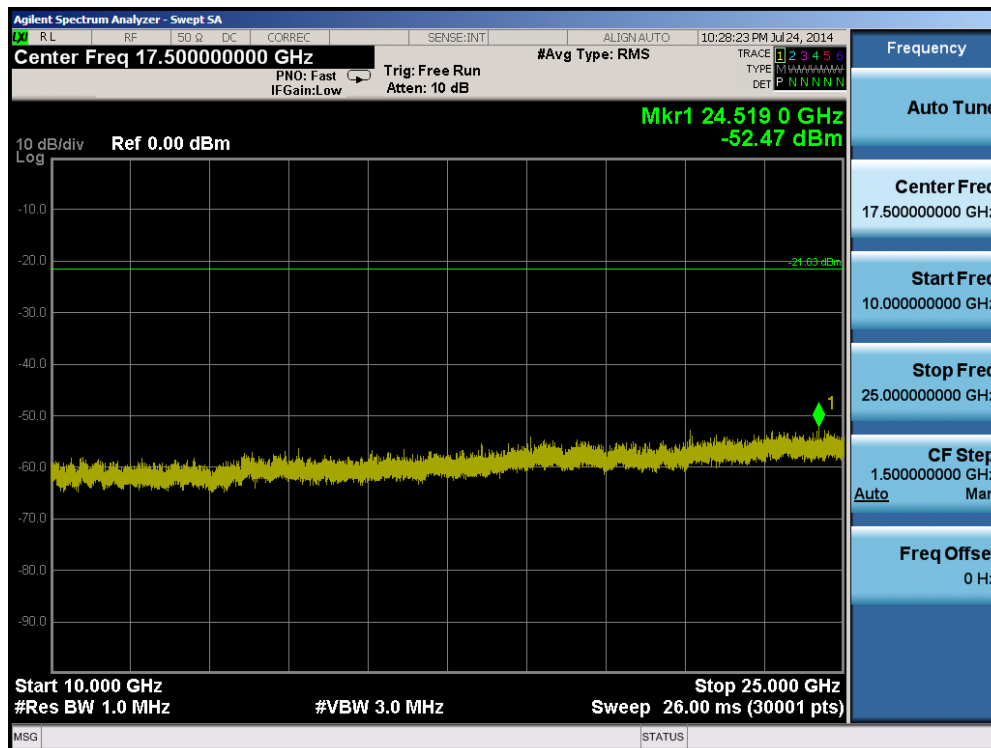


Plot 6-114. Conducted Spurious Plot (802.11b – Ch. 1)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 87 of 121                  |

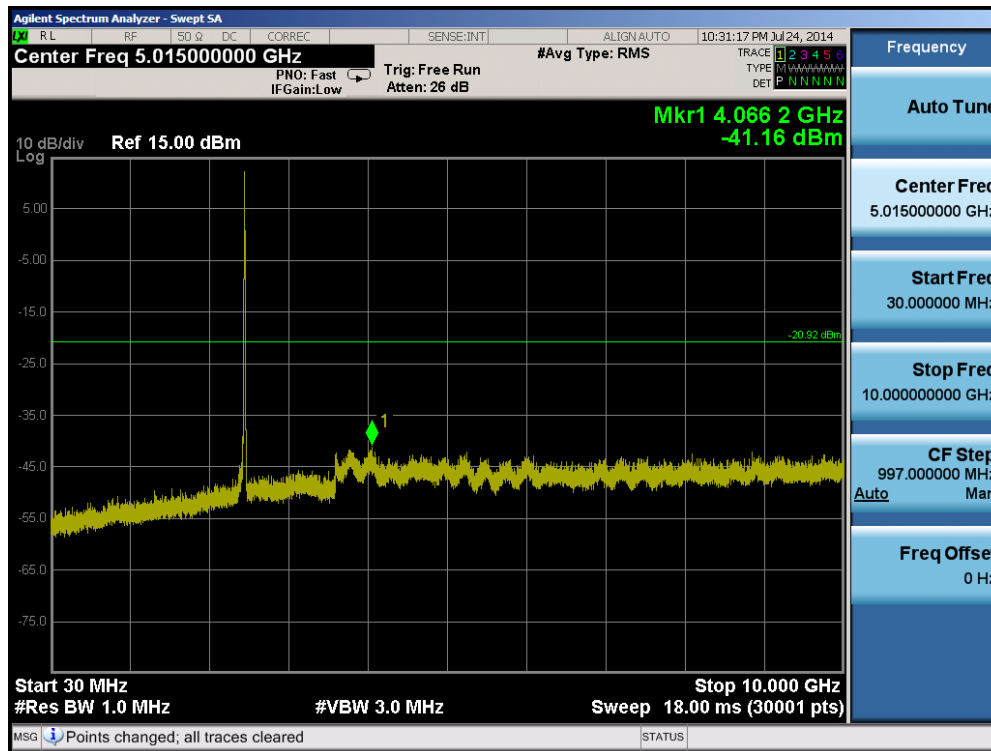


Plot 6-115. Conducted Spurious Plot (802.11b – Ch. 6)

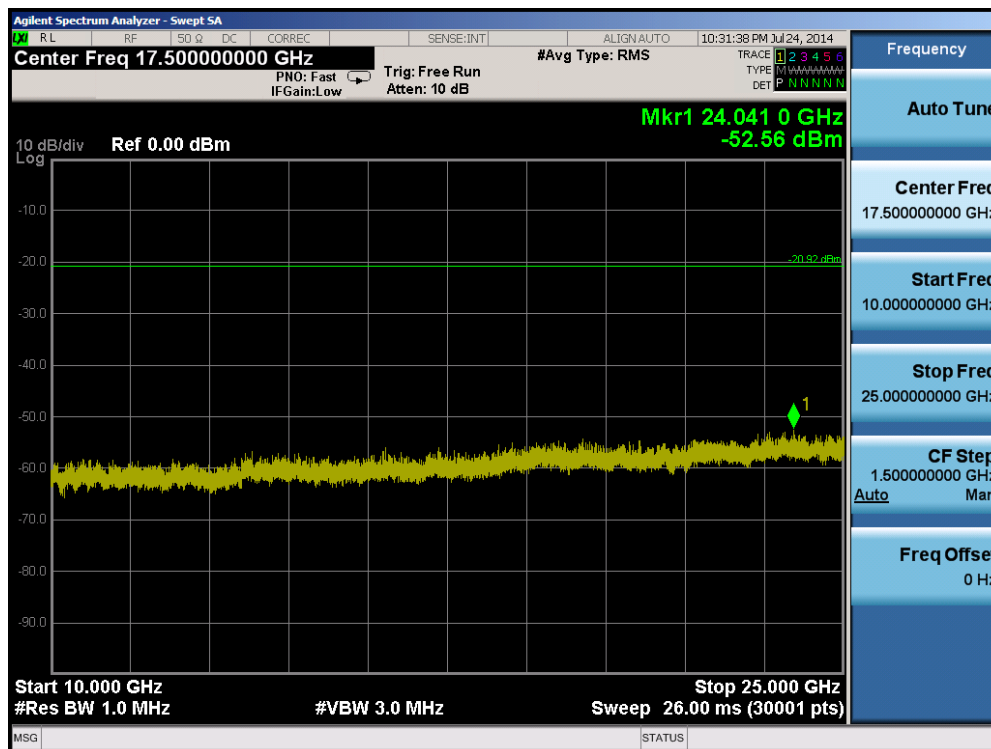


Plot 6-116. Conducted Spurious Plot (802.11b – Ch. 6)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 88 of 121                  |

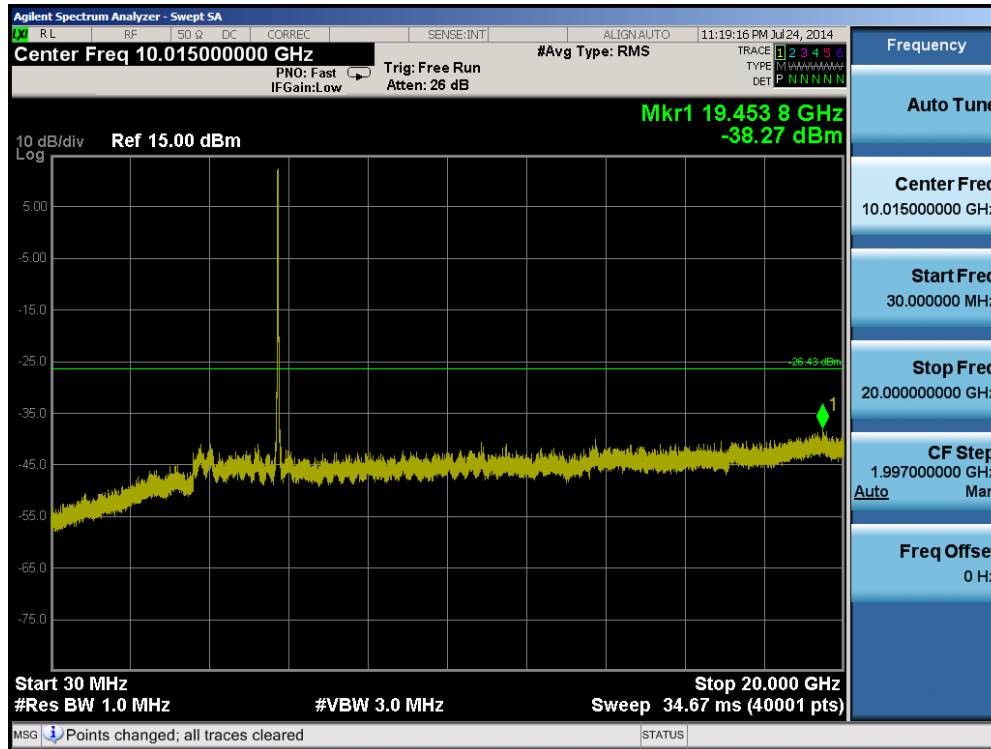


Plot 6-117. Conducted Spurious Plot (802.11b – Ch. 11)

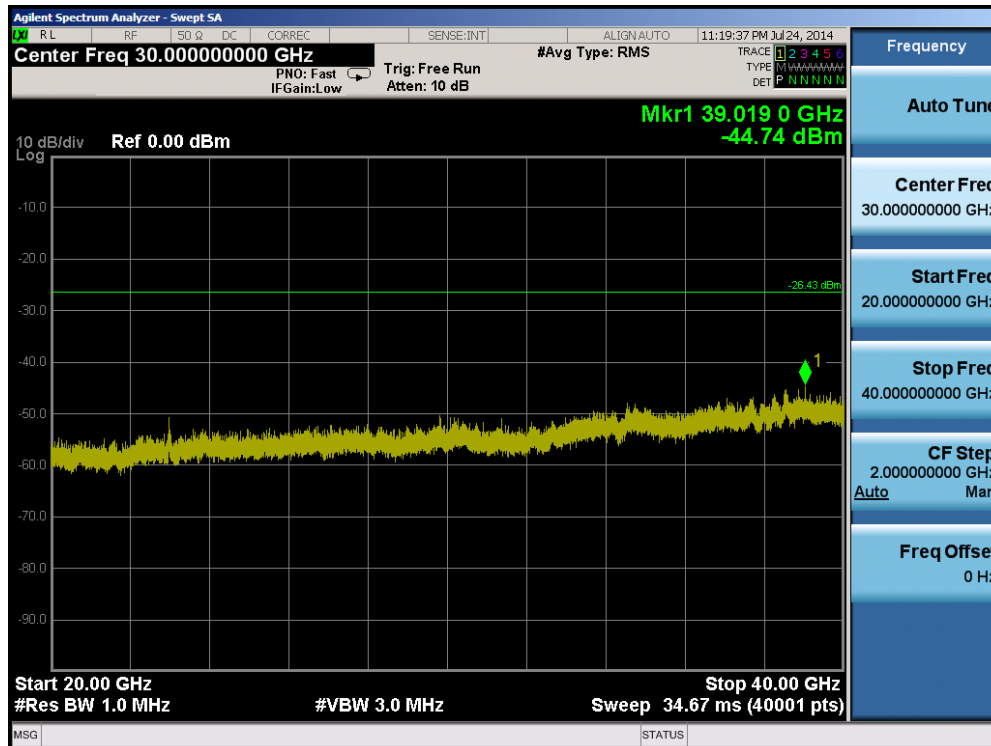


Plot 6-118. Conducted Spurious Plot (802.11b – Ch. 11)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 89 of 121                  |

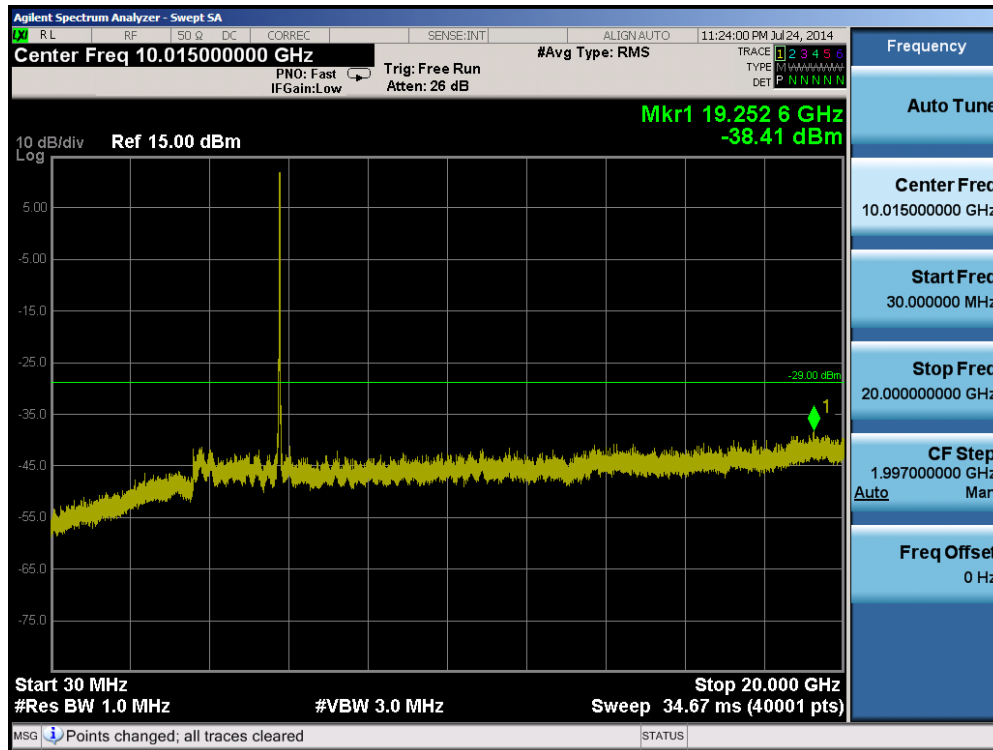


Plot 6-119. Conducted Spurious Plot (802.11a – Ch. 149)

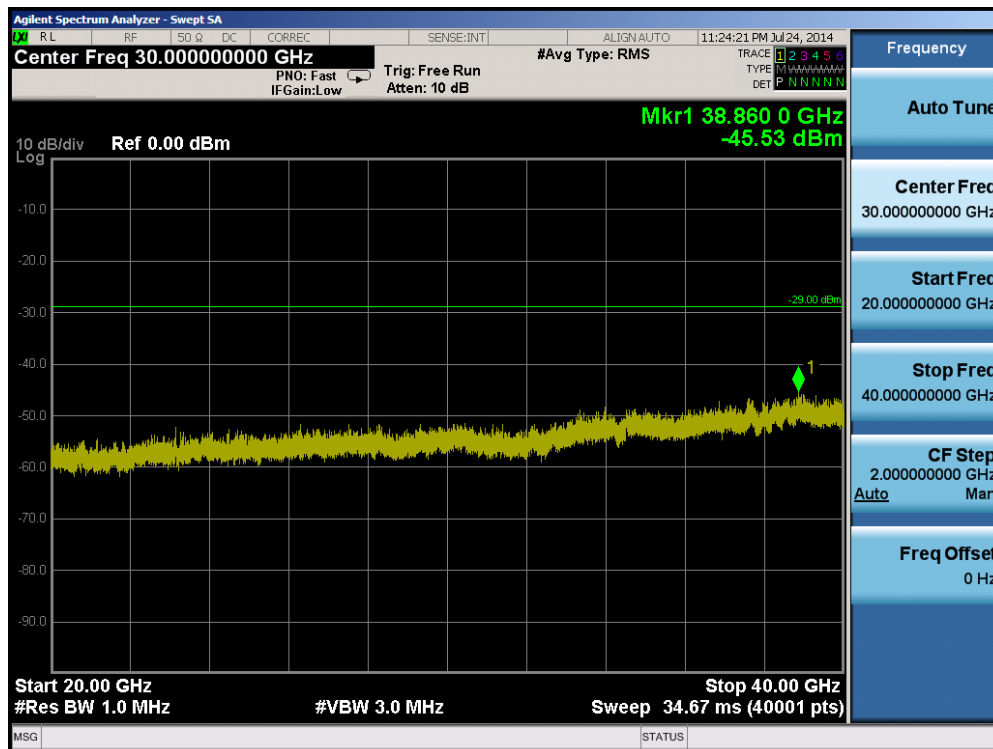


Plot 6-120. Conducted Spurious Plot (802.11a – Ch. 149)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 90 of 121                  |

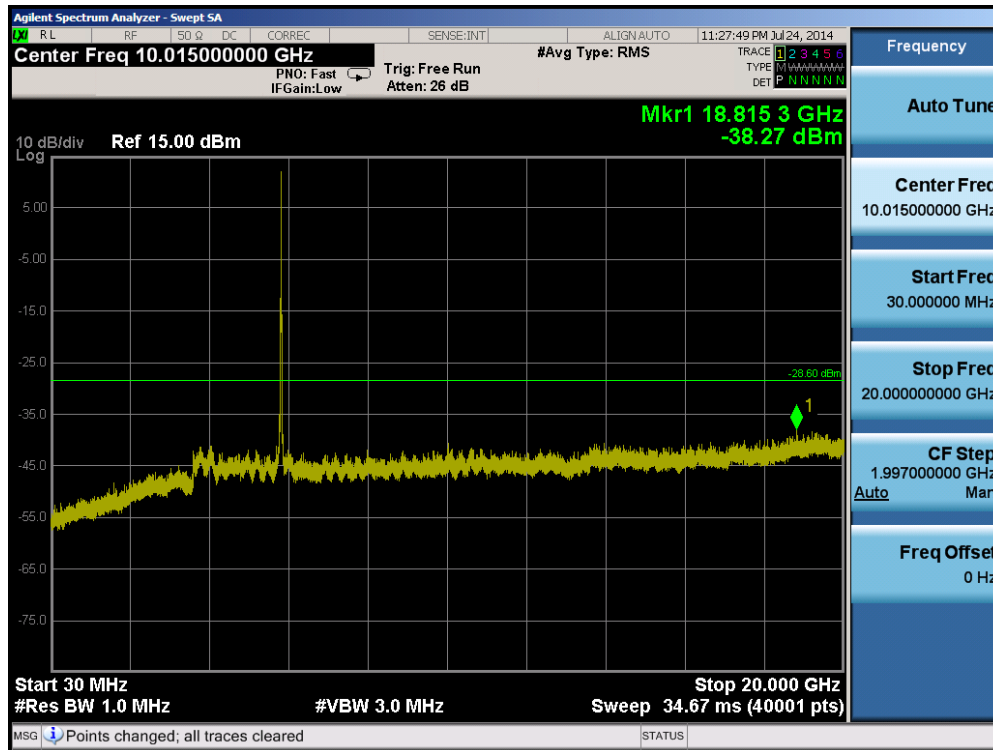


Plot 6-121. Conducted Spurious Plot (802.11a – Ch. 157)

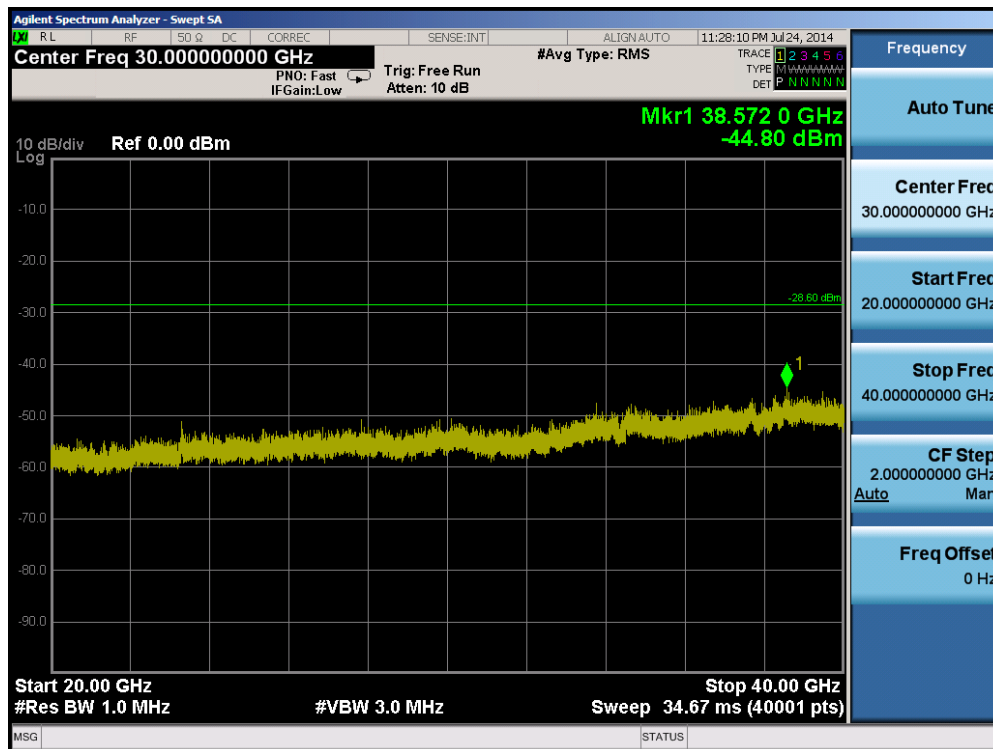


Plot 6-122. Conducted Spurious Plot (802.11a – Ch. 157)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 91 of 121                  |



Plot 6-123. Conducted Spurious Plot (802.11a – Ch. 165)



Plot 6-124. Conducted Spurious Plot (802.11a – Ch. 165)

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 92 of 121                  |

## 6.7 Radiated Spurious Emission Measurements

§15.247(d) §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 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 6-31 per Section 15.209.*

| Frequency         | Field Strength<br>[μV/m] | Measured Distance<br>[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 6-31. Radiated Limits

### Test Procedures Used

KDB 558074 v03r02 – Section 12.1, 12.2.7

### Test Settings

#### Average Field Strength Measurements per Section 12.2.5.1 of KDB 558074 v03r02

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  $\geq 2 \times \text{span/RBW}$ )
6. Sweep time = auto
7. Trace (RMS) averaging was performed over at least 100 traces

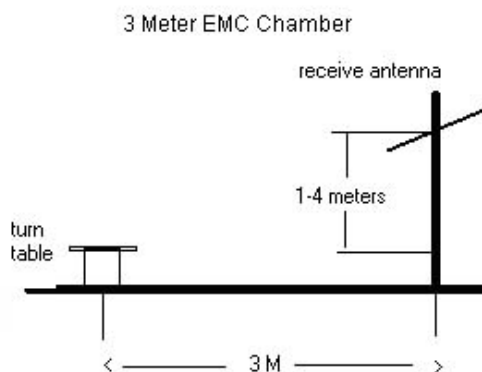
|                                      |                                                                                     |                                                                       |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN910C                   |  | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014                                                     | EUT Type:<br>Portable Handset                                         |                                                                                       | Page 93 of 121                  |

### Peak Field Strength Measurements per Section 12.2.4 of KDB 558074 v03r02

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

### Test Setup

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



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

|                                      |                                                                                     |                                                                       |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN910C                   |  | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014                                                     | EUT Type:<br>Portable Handset                                         |                                                                                       | Page 94 of 121                  |

## **Test Notes**

1. The optional test procedures for antenna port conducted measurements of unwanted emissions per the guidance of KDB 558074 v03r02 were not used to evaluate this device for compliance to radiated limits. All radiated spurious emissions levels were measured in a radiated test setup.
2. All emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 6-10.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. The battery used with this device for testing (Model: EB-BN910BBE) contains an embedded NFC antenna.
5. 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.
6. 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.

## **Sample Calculations**

### **Determining Spurious Emissions Levels**

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

### **Radiated Band Edge Measurement Offset**

- o The amplitude offset shown in the radiated restricted band edge plots in Section 6.8 was calculated using the formula:

$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + 10 \text{ dB Attenuator}) - \text{Preamplifier Gain}$$

|                                             |                                                                                     |                                                                           |                                                                                       |                                        |
|---------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMN910C                   |  | <b>FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION)</b> |  | <b>Reviewed by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>0Y1407241462.A3L | <b>Test Dates:</b><br>7/24 - 8/11/2014                                              | <b>EUT Type:</b><br>Portable Handset                                      |                                                                                       | Page 95 of 121                         |

## Antenna-1 Radiated Spurious Emission Measurements

§15.247(d) §15.205 & §15.209

Worst Case Mode: 802.11b  
Worst Case Transfer Rate: 1 Mbps  
Distance of Measurements: 3 Meters  
Operating Frequency: 2412MHz  
Channel: 01

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|-------------------------|----------------|-------------|
| 4824.00         | -109.38              | Avg      | V               | V                 | 40.99       | 38.61                   | 53.98          | -15.37      |
| 4824.00         | -98.69               | Peak     | V               | V                 | 40.99       | 49.30                   | 73.98          | -24.68      |
| 12060.00        | -115.49              | Avg      | V               | V                 | 45.98       | 37.48                   | 53.98          | -16.50      |
| 12060.00        | -103.55              | Peak     | V               | V                 | 45.98       | 49.42                   | 73.98          | -24.56      |

**Table 6-32. Radiated Measurements**

Worst Case Mode: 802.11b  
Worst Case Transfer Rate: 1 Mbps  
Distance of Measurements: 3 Meters  
Operating Frequency: 2437MHz  
Channel: 06

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|-------------------------|----------------|-------------|
| 4874.00         | -110.09              | Avg      | V               | V                 | 41.02       | 37.93                   | 53.98          | -16.05      |
| 4874.00         | -100.77              | Peak     | V               | V                 | 41.02       | 47.25                   | 73.98          | -26.73      |
| 7311.00         | -115.12              | Avg      | V               | V                 | 41.32       | 33.21                   | 53.98          | -20.77      |
| 7311.00         | -103.55              | Peak     | V               | V                 | 41.32       | 44.78                   | 73.98          | -29.20      |
| 12185.00        | -115.48              | Avg      | V               | V                 | 46.06       | 37.57                   | 53.98          | -16.41      |
| 12185.00        | -104.22              | Peak     | V               | V                 | 46.06       | 48.83                   | 73.98          | -25.15      |

**Table 6-33. Radiated Measurements**

|                                      |                                                                                     |                                                                    |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN910C                   |  | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014                                                     | EUT Type:<br>Portable Handset                                      |                                                                                       | Page 96 of 121                  |

Worst Case Mode: 802.11b  
 Worst Case Transfer Rate: 1 Mbps  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2462MHz  
 Channel: 11

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|-------------------------|----------------|-------------|
| 4924.00         | -113.71              | Avg      | V               | V                 | 41.04       | 34.32                   | 53.98          | -19.66      |
| 4924.00         | -103.12              | Peak     | V               | V                 | 41.04       | 44.91                   | 73.98          | -29.07      |
| 7386.00         | -115.20              | Avg      | V               | V                 | 41.23       | 33.03                   | 53.98          | -20.95      |
| 7386.00         | -104.21              | Peak     | V               | V                 | 41.23       | 44.02                   | 73.98          | -29.96      |
| 12310.00        | -115.52              | Avg      | V               | V                 | 46.11       | 37.60                   | 53.98          | -16.38      |
| 12310.00        | -104.52              | Peak     | V               | V                 | 46.11       | 48.60                   | 73.98          | -25.38      |

Table 6-34. Radiated Measurements

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] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|---------------------------------|-------------------------|----------------|-------------|
| 11490.00        | -115.63              | Avg      | V               | V                 | 47.54       | 0.00                            | 38.92                   | 53.98          | -15.06      |
| 11490.00        | -103.20              | Peak     | V               | V                 | 47.54       | 0.00                            | 51.35                   | 73.98          | -22.63      |
| 22980.00        | -95.96               | Avg      | V               | V                 | 44.60       | -9.54                           | 46.10                   | 53.98          | -7.88       |
| 22980.00        | -88.20               | Peak     | V               | V                 | 44.60       | -9.54                           | 53.85                   | 73.98          | -20.13      |

Table 6-35. Radiated Measurements

|                                      |                                                                                     |                                                                    |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN910C                   |  | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014                                                     | EUT Type:<br>Portable Handset                                      |                                                                                       | Page 97 of 121                  |

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] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|-------------------------|----------------|-------------|
| 11570.00        | -115.26              | Avg      | V               | V                 | 47.89       | 39.63                   | 53.98          | -14.35      |
| 11570.00        | -103.10              | Peak     | V               | V                 | 47.89       | 51.79                   | 73.98          | -22.19      |

Table 6-36. 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] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|-------------------------|----------------|-------------|
| 11650.00        | -114.56              | Avg      | V               | V                 | 48.17       | 40.61                   | 53.98          | -13.37      |
| 11650.00        | -101.90              | Peak     | V               | V                 | 48.17       | 53.27                   | 73.98          | -20.71      |

Table 6-37. Radiated Measurements

|                                      |                                                                                     |                                                                    |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN910C                   |  | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014                                                     | EUT Type:<br>Portable Handset                                      |                                                                                       | Page 98 of 121                  |

## Antenna-2 Radiated Spurious Emission Measurements

§15.247(d) §15.205 & §15.209

Worst Case Mode: 802.11b  
 Worst Case Transfer Rate: 1 Mbps  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2412MHz  
 Channel: 01

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|-------------------------|----------------|-------------|
| 4824.00         | -111.44              | Avg      | H               | H2                | 40.98       | 36.54                   | 53.98          | -17.44      |
| 4824.00         | -102.53              | Peak     | H               | H2                | 40.98       | 45.45                   | 73.98          | -28.53      |
| 12060.00        | -115.46              | Avg      | H               | H2                | 45.97       | 37.50                   | 53.98          | -16.47      |
| 12060.00        | -104.00              | Peak     | H               | H2                | 45.97       | 48.96                   | 73.98          | -25.01      |

**Table 6-38. Radiated Measurements**

Worst Case Mode: 802.11b  
 Worst Case Transfer Rate: 1 Mbps  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2437MHz  
 Channel: 06

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|-------------------------|----------------|-------------|
| 4874.00         | -108.47              | Avg      | H               | H2                | 41.02       | 39.55                   | 53.98          | -14.43      |
| 4874.00         | -100.62              | Peak     | H               | H2                | 41.02       | 47.40                   | 73.98          | -26.58      |
| 7311.00         | -107.11              | Avg      | H               | H2                | 41.31       | 41.20                   | 53.98          | -12.77      |
| 7311.00         | -99.75               | Peak     | H               | H2                | 41.31       | 48.56                   | 73.98          | -25.41      |
| 12185.00        | -115.32              | Avg      | H               | H2                | 46.04       | 37.72                   | 53.98          | -16.26      |
| 12185.00        | -104.33              | Peak     | H               | H2                | 46.04       | 48.71                   | 73.98          | -25.27      |

**Table 6-39. Radiated Measurements**

|                                      |                                                                                     |                                                                    |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN910C                   |  | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014                                                     | EUT Type:<br>Portable Handset                                      |                                                                                       | Page 99 of 121                  |

Worst Case Mode: 802.11b  
 Worst Case Transfer Rate: 1 Mbps  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2462MHz  
 Channel: 11

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|-------------------------|----------------|-------------|
| 4924.00         | -110.94              | Avg      | H               | H2                | 41.04       | 37.10                   | 53.98          | -16.88      |
| 4924.00         | -102.17              | Peak     | H               | H2                | 41.04       | 45.87                   | 73.98          | -28.11      |
| 7386.00         | -109.90              | Avg      | H               | H2                | 41.21       | 38.31                   | 53.98          | -15.67      |
| 7386.00         | -100.90              | Peak     | H               | H2                | 41.21       | 47.31                   | 73.98          | -26.67      |
| 12310.00        | -115.62              | Avg      | H               | H2                | 46.10       | 37.49                   | 53.98          | -16.49      |
| 12310.00        | -103.90              | Peak     | H               | H2                | 46.10       | 49.21                   | 73.98          | -24.77      |

**Table 6-40. Radiated Measurements**

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] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|---------------------------------|-------------------------|----------------|-------------|
| 11490.00        | -107.66              | Avg      | H               | H                 | 47.54       | 0.00                            | 46.89                   | 53.98          | -7.09       |
| 11490.00        | -95.49               | Peak     | H               | H                 | 47.54       | 0.00                            | 59.06                   | 73.98          | -14.92      |
| 22980.00        | -103.36              | Avg      | H               | V                 | 44.60       | -9.54                           | 38.70                   | 53.98          | -15.28      |
| 22980.00        | -92.62               | Peak     | H               | V                 | 44.60       | -9.54                           | 49.43                   | 73.98          | -24.55      |

**Table 6-41. Radiated Measurements**

|                                      |                                                                                     |                                                                    |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN910C                   |  | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014                                                     | EUT Type:<br>Portable Handset                                      |                                                                                       | Page 100 of 121                 |

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] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|-------------------------|----------------|-------------|
| 11570.00        | -107.68              | Avg      | H               | H                 | 47.89       | 47.21                   | 53.98          | -6.77       |
| 11570.00        | -95.64               | Peak     | H               | H                 | 47.89       | 59.25                   | 73.98          | -14.73      |

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] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|-------------------------|----------------|-------------|
| 11650.00        | -112.30              | Avg      | H               | H                 | 48.18       | 42.88                   | 53.98          | -11.10      |
| 11650.00        | -99.98               | Peak     | H               | H                 | 48.18       | 55.20                   | 73.98          | -18.78      |

Table 6-43. Radiated Measurements

## MIMO Radiated Spurious Emission Measurements

§15.247(d) §15.205 & §15.209

Worst Case Mode: 802.11n  
Worst Case Transfer Rate: MCS8  
Distance of Measurements: 3 Meters  
Operating Frequency: 2412MHz  
Channel: 01

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|-------------------------|----------------|-------------|
| 4824.00         | -114.69              | Avg      | H               | H2                | 40.98       | 33.29                   | 53.98          | -20.69      |
| 4824.00         | -103.14              | Peak     | H               | H2                | 40.98       | 44.84                   | 73.98          | -29.14      |
| 12060.00        | -115.58              | Avg      | H               | H2                | 45.97       | 37.38                   | 53.98          | -16.59      |
| 12060.00        | -103.96              | Peak     | H               | H2                | 45.97       | 49.00                   | 73.98          | -24.97      |

Table 6-44. Radiated Measurements

Worst Case Mode: 802.11n  
Worst Case Transfer Rate: MCS8  
Distance of Measurements: 3 Meters  
Operating Frequency: 2437MHz  
Channel: 06

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|-------------------------|----------------|-------------|
| 4874.00         | -114.68              | Avg      | H               | H2                | 41.02       | 33.34                   | 53.98          | -20.64      |
| 4874.00         | -102.97              | Peak     | H               | H2                | 41.02       | 45.05                   | 73.98          | -28.93      |
| 7311.00         | -115.36              | Avg      | H               | H2                | 41.31       | 32.95                   | 53.98          | -21.02      |
| 7311.00         | -103.54              | Peak     | H               | H2                | 41.31       | 44.77                   | 73.98          | -29.20      |

Table 6-45. Radiated Measurements

|                                      |                                                                                     |                                                                    |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN910C                   |  | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014                                                     | EUT Type:<br>Portable Handset                                      |                                                                                       | Page 102 of 121                 |

Worst Case Mode: 802.11n  
 Worst Case Transfer Rate: MCS8  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2462MHz  
 Channel: 11

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|-------------------------|----------------|-------------|
| 4924.00         | -114.92              | Avg      | H               | H2                | 41.04       | 33.12                   | 53.98          | -20.86      |
| 4924.00         | -102.84              | Peak     | H               | H2                | 41.04       | 45.20                   | 73.98          | -28.78      |
| 7386.00         | -114.33              | Avg      | H               | H2                | 41.21       | 33.88                   | 53.98          | -20.10      |
| 7386.00         | -103.44              | Peak     | H               | H2                | 41.21       | 44.77                   | 73.98          | -29.21      |

**Table 6-46. Radiated Measurements**

Worst Case Mode: 802.11n  
 Worst Case Transfer Rate: MCS8  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5745MHz  
 Channel: 149

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|---------------------------------|-------------------------|----------------|-------------|
| 11490.00        | -110.05              | Avg      | V               | V                 | 47.54       | 0.00                            | 44.50                   | 53.98          | -9.48       |
| 11490.00        | -97.67               | Peak     | V               | V                 | 47.54       | 0.00                            | 56.88                   | 73.98          | -17.10      |
| 22980.00        | -99.86               | Avg      | V               | V                 | 44.60       | -9.54                           | 42.19                   | 53.98          | -11.79      |
| 22980.00        | -88.77               | Peak     | V               | V                 | 44.60       | -9.54                           | 53.28                   | 73.98          | -20.70      |

**Table 6-47. Radiated Measurements**

|                                      |                                                                                     |                                                                    |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN910C                   |  | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014                                                     | EUT Type:<br>Portable Handset                                      |                                                                                       | Page 103 of 121                 |

Worst Case Mode: 802.11n  
 Worst Case Transfer Rate: MCS8  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5785MHz  
 Channel: 157

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|-------------------------|----------------|-------------|
| 11570.00        | -110.90              | Avg      | V               | V                 | 47.89       | 43.99                   | 53.98          | -9.99       |
| 11570.00        | -98.30               | Peak     | V               | V                 | 47.89       | 56.59                   | 73.98          | -17.39      |

Table 6-48. Radiated Measurements

Worst Case Mode: 802.11n  
 Worst Case Transfer Rate: MCS8  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5825MHz  
 Channel: 165

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Ant. Pol. [H/V] | EUT Pol. [H/H2/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------------|-------------------|-------------|-------------------------|----------------|-------------|
| 11650.00        | -109.65              | Avg      | V               | V                 | 48.17       | 45.52                   | 53.98          | -8.46       |
| 11650.00        | -96.83               | Peak     | V               | V                 | 48.17       | 58.34                   | 73.98          | -15.64      |

Table 6-49. Radiated Measurements

## 6.8 Antenna-1 Radiated Restricted Band Edge Measurements

\$15.205 \$15.209

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

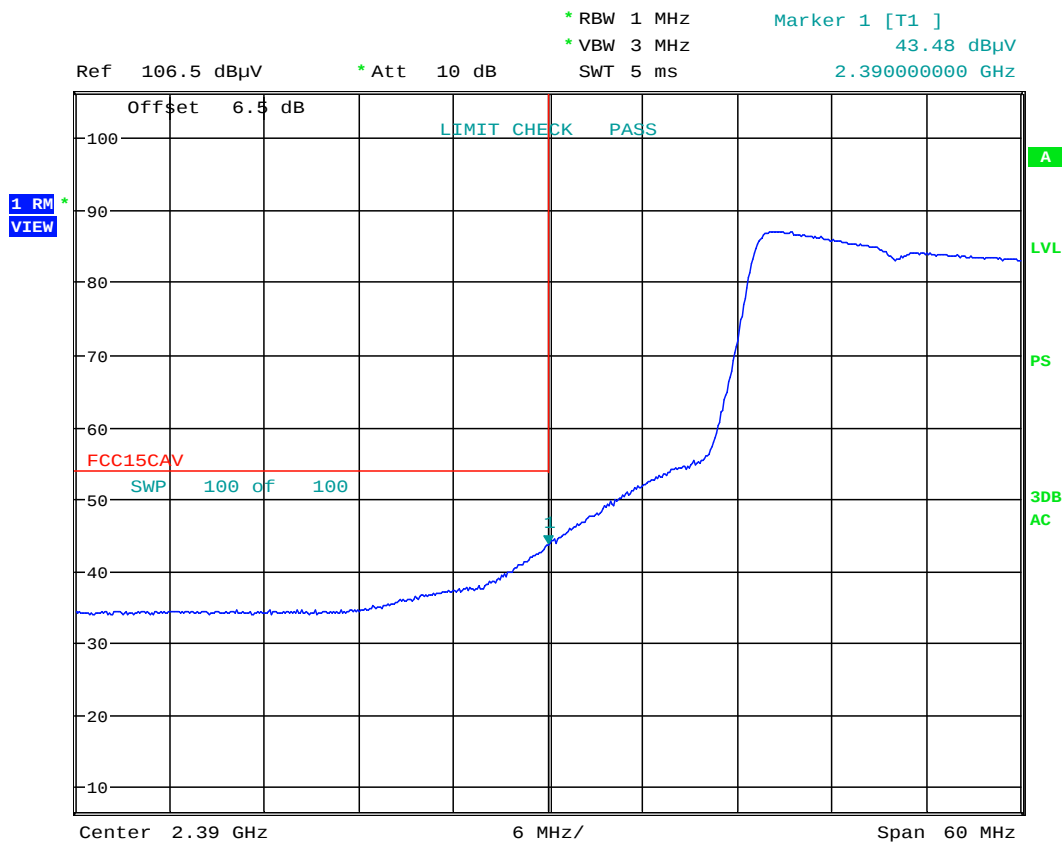
Worst Case Mode: 802.11g

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 2412MHz

Channel: 1



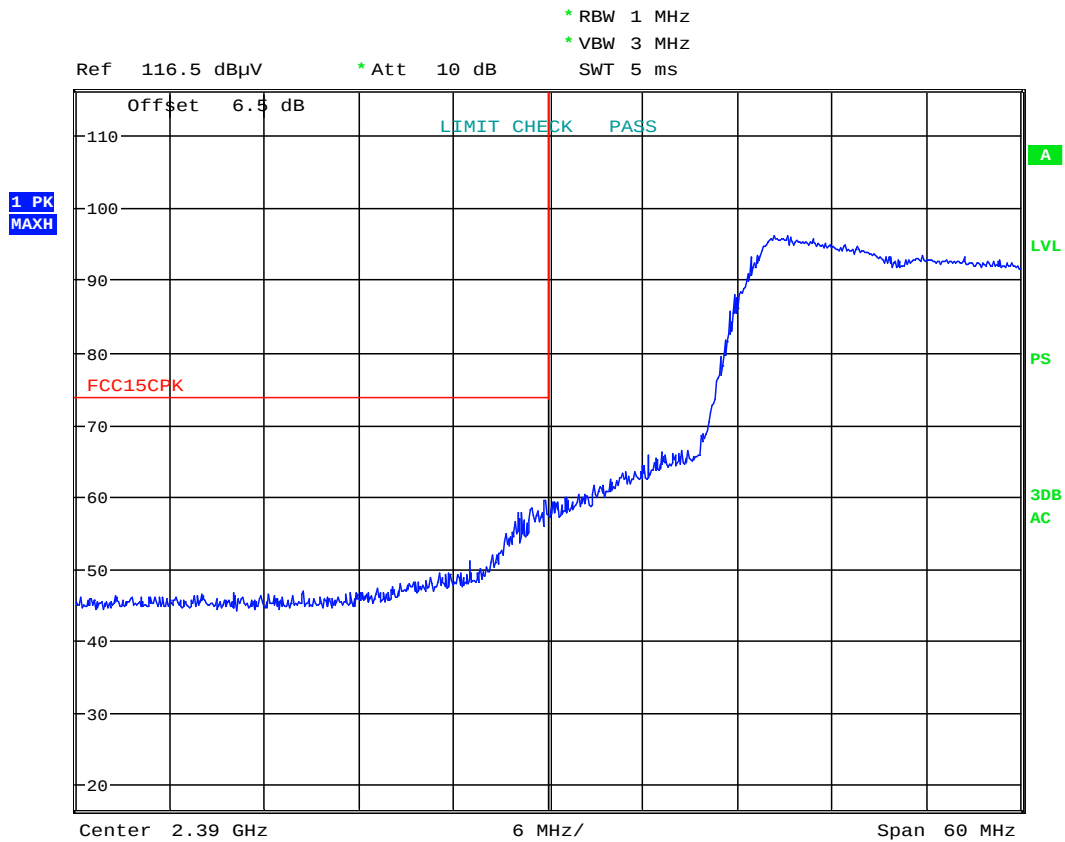
Date: 29.JUL.2014 04:39:06

**Plot 6-125. Radiated Restricted Lower Band Edge Measurement (Average)**

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 105 of 121                 |

## Radiated Restricted Band Edge Measurements

§15.205 §15.209



Date: 29.JUL.2014 04:39:46

**Plot 6-126. Radiated Restricted Lower Band Edge Measurement (Peak)**

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 106 of 121                 |

## Radiated Restricted Band Edge Measurements

§15.205 §15.209

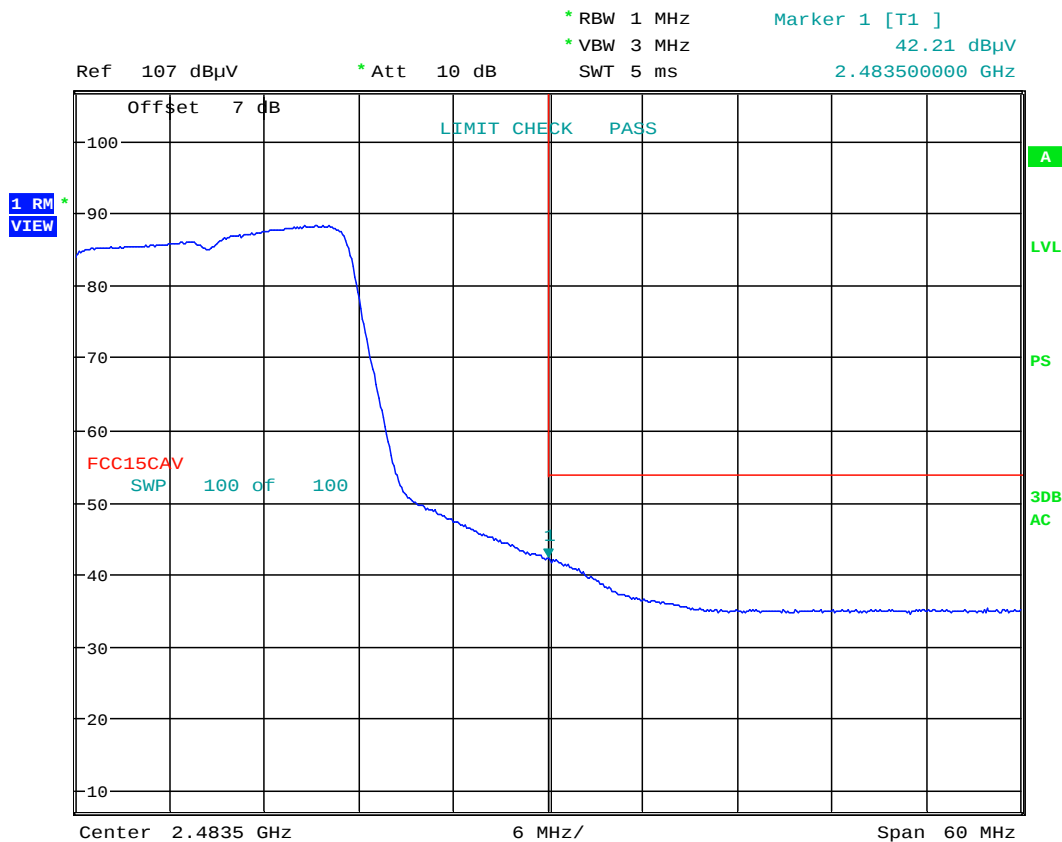
Worst Case Mode: 802.11g

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 2462MHz

Channel: 11



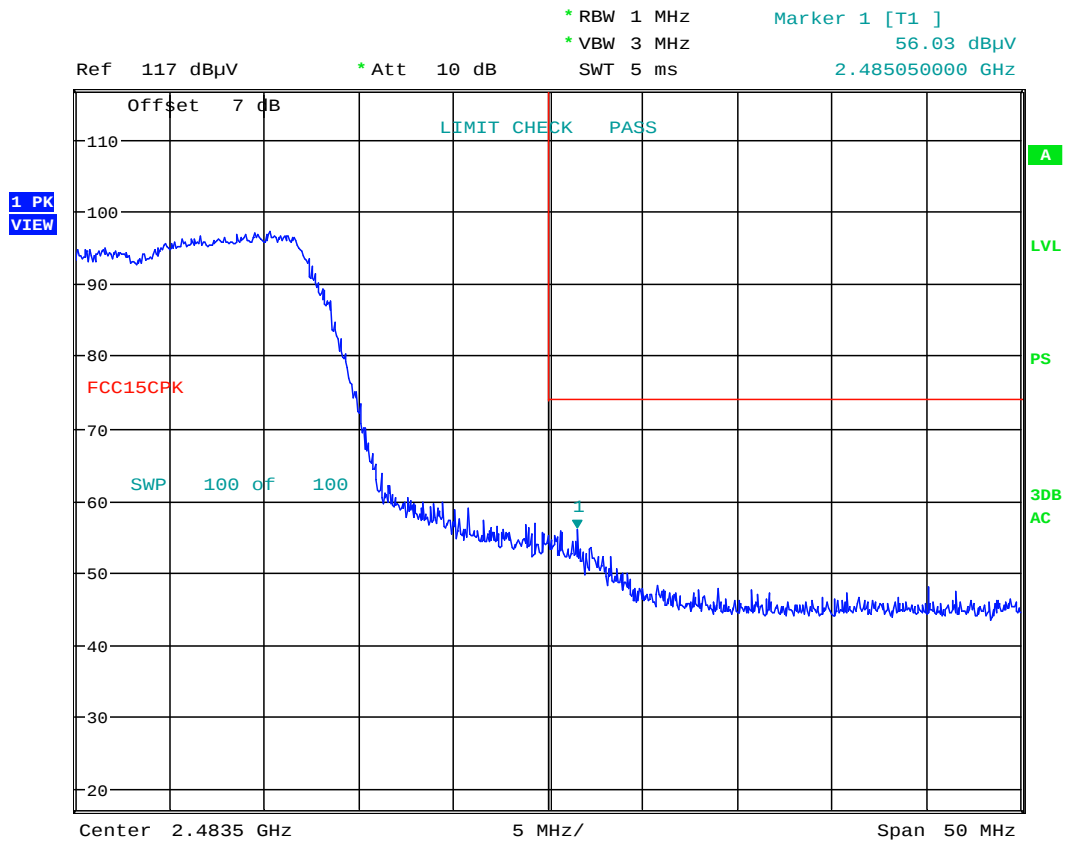
Date: 29.JUL.2014 05:21:19

**Plot 6-127. Radiated Restricted Upper Band Edge Measurement (Average)**

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 107 of 121                 |

## Radiated Restricted Band Edge Measurements

§15.205 §15.209



Date: 29.JUL.2014 05:20:20

**Plot 6-128. Radiated Restricted Upper Band Edge Measurement (Peak)**

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 108 of 121                 |

## 6.9 Antenna-2 Radiated Restricted Band Edge Measurements

**\$15.205 \$15.209**

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

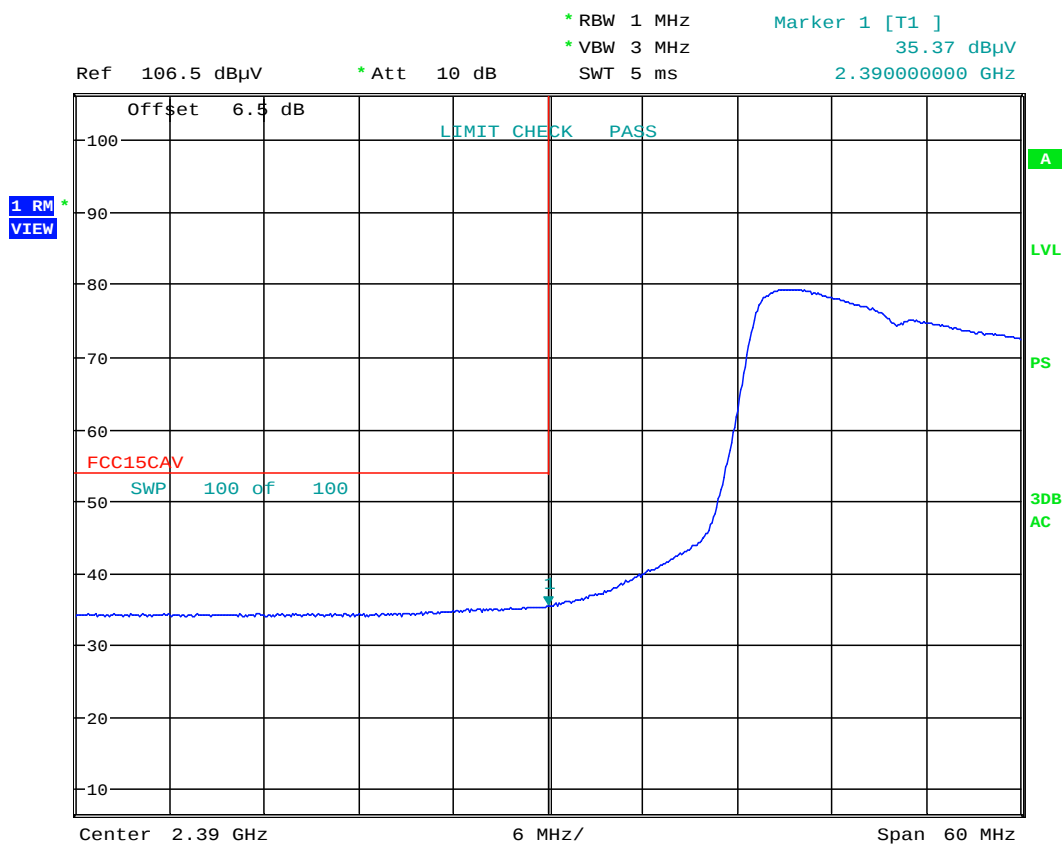
Worst Case Mode: 802.11g

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 2412MHz

Channel: 1



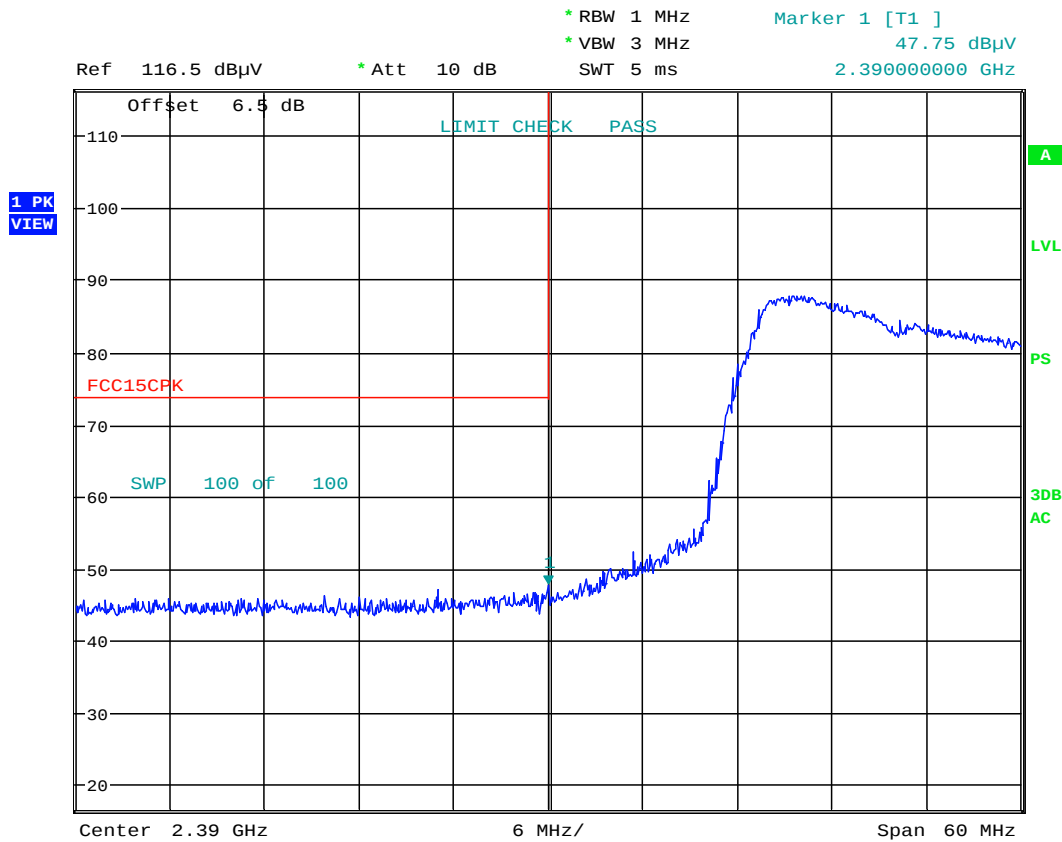
Date: 29.JUL.2014 05:52:48

**Plot 6-129. Radiated Restricted Lower Band Edge Measurement (Average)**

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 109 of 121                 |

# Radiated Restricted Band Edge Measurements

## \$15.205 \$15.209



Date: 29.JUL.2014 05:55:40

**Plot 6-130. Radiated Restricted Lower Band Edge Measurement (Peak)**

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 110 of 121                 |

## Radiated Restricted Band Edge Measurements

\$15.205 \$15.209

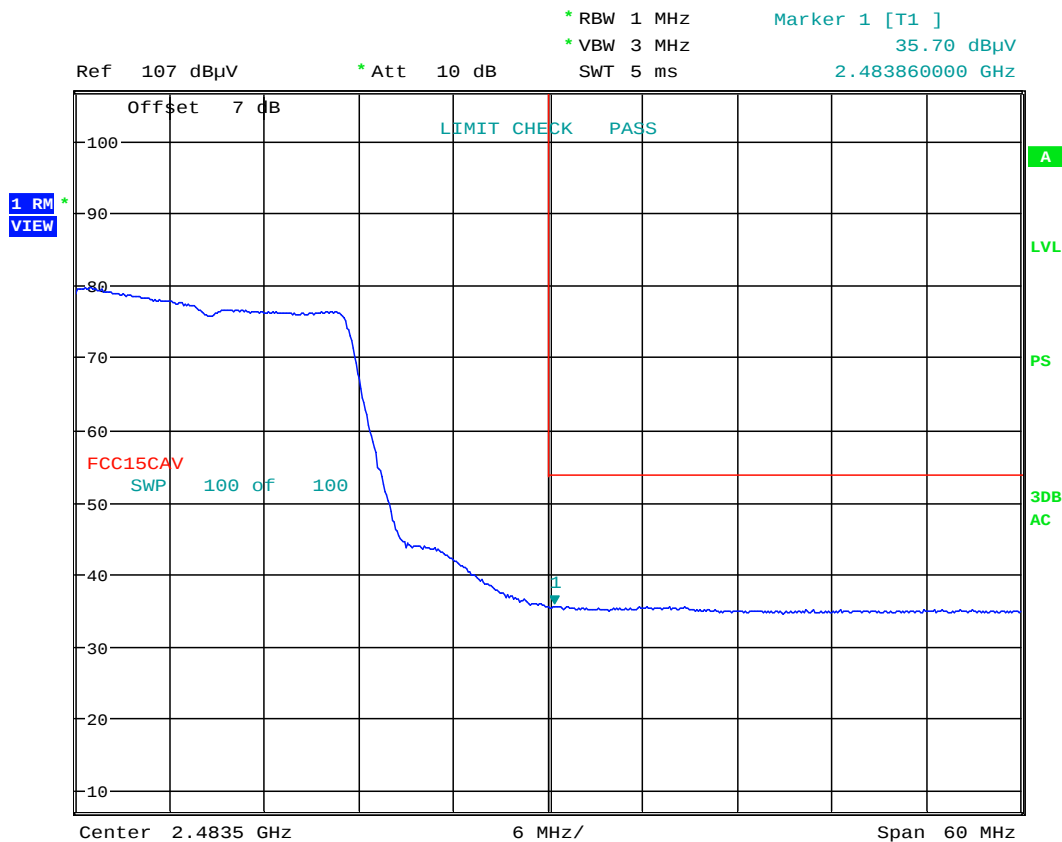
Worst Case Mode: 802.11g

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 2462MHz

Channel: 11



Date: 29.JUL.2014 06:05:09

**Plot 6-131. Radiated Restricted Upper Band Edge Measurement (Average)**

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 111 of 121                 |



## 6.10 MIMO Radiated Restricted Band Edge Measurements

### §15.205 §15.209

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

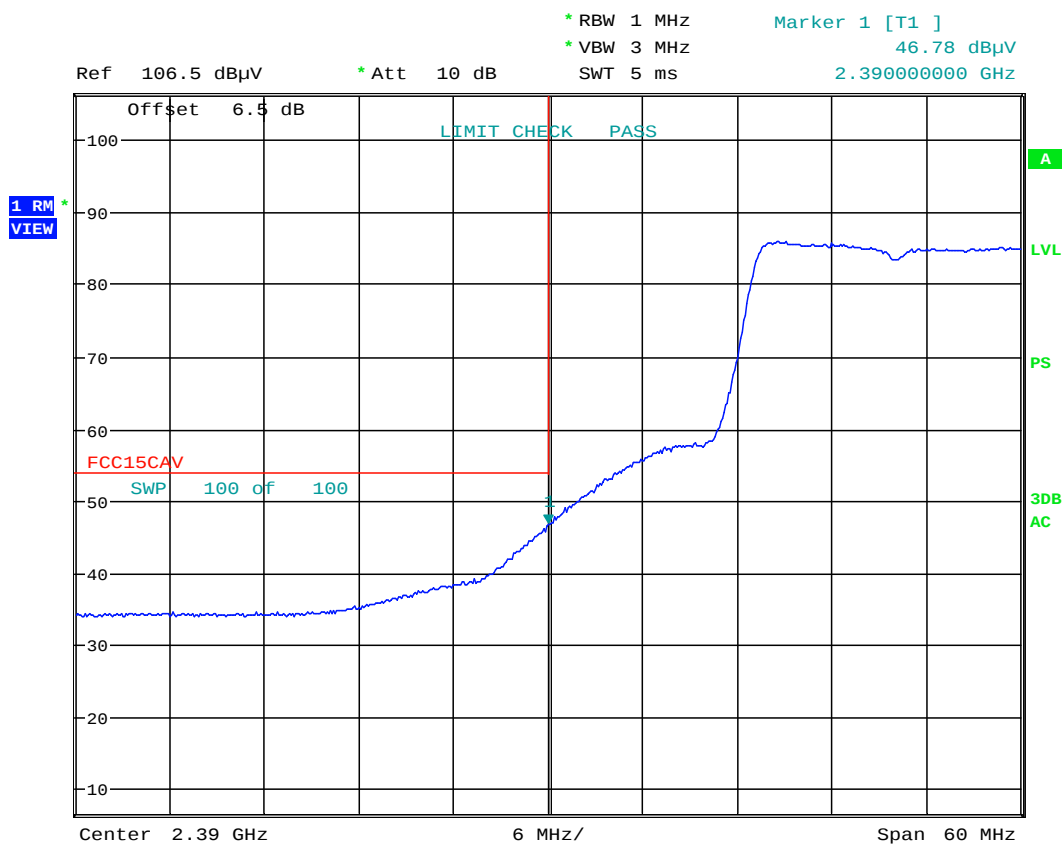
Worst Case Mode: 802.11n

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 2412MHz

Channel: 1



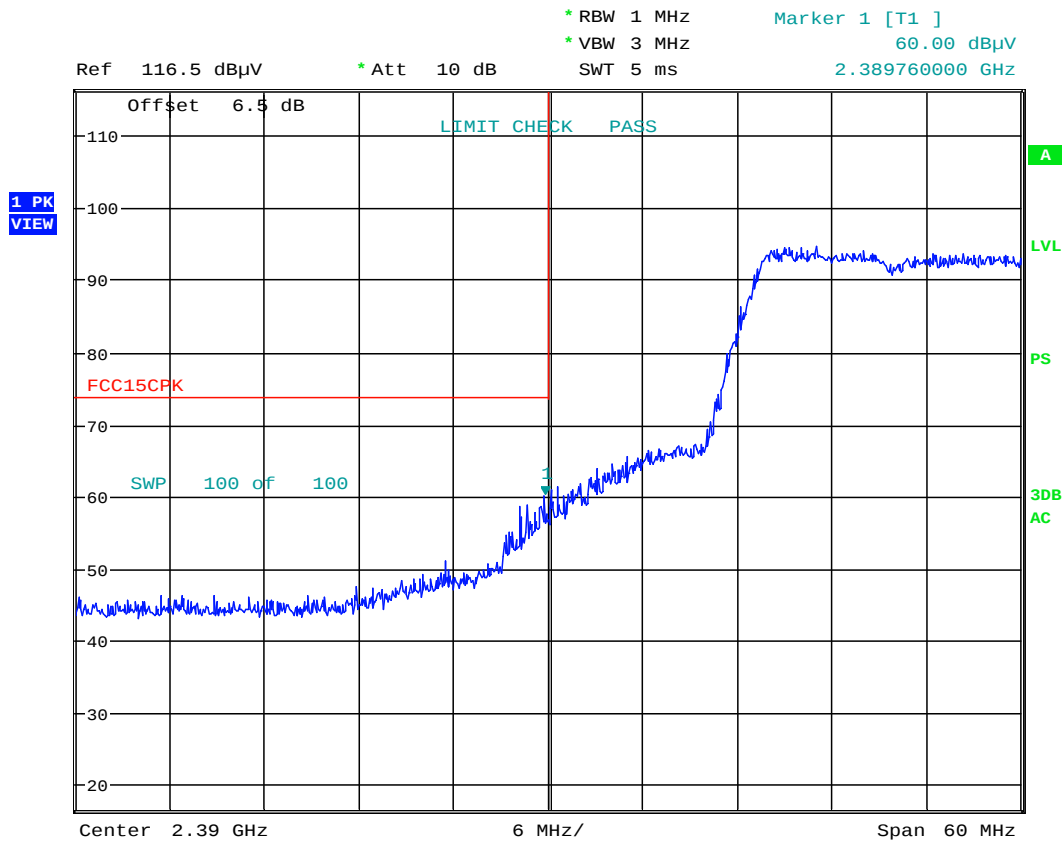
Date: 29.JUL.2014 07:46:06

**Plot 6-133. Radiated Restricted Lower Band Edge Measurement (Average)**

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 113 of 121                 |

# Radiated Restricted Band Edge Measurements

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Date: 29.JUL.2014 07:46:40

**Plot 6-134. Radiated Restricted Lower Band Edge Measurement (Peak)**

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 114 of 121                 |

## Radiated Restricted Band Edge Measurements

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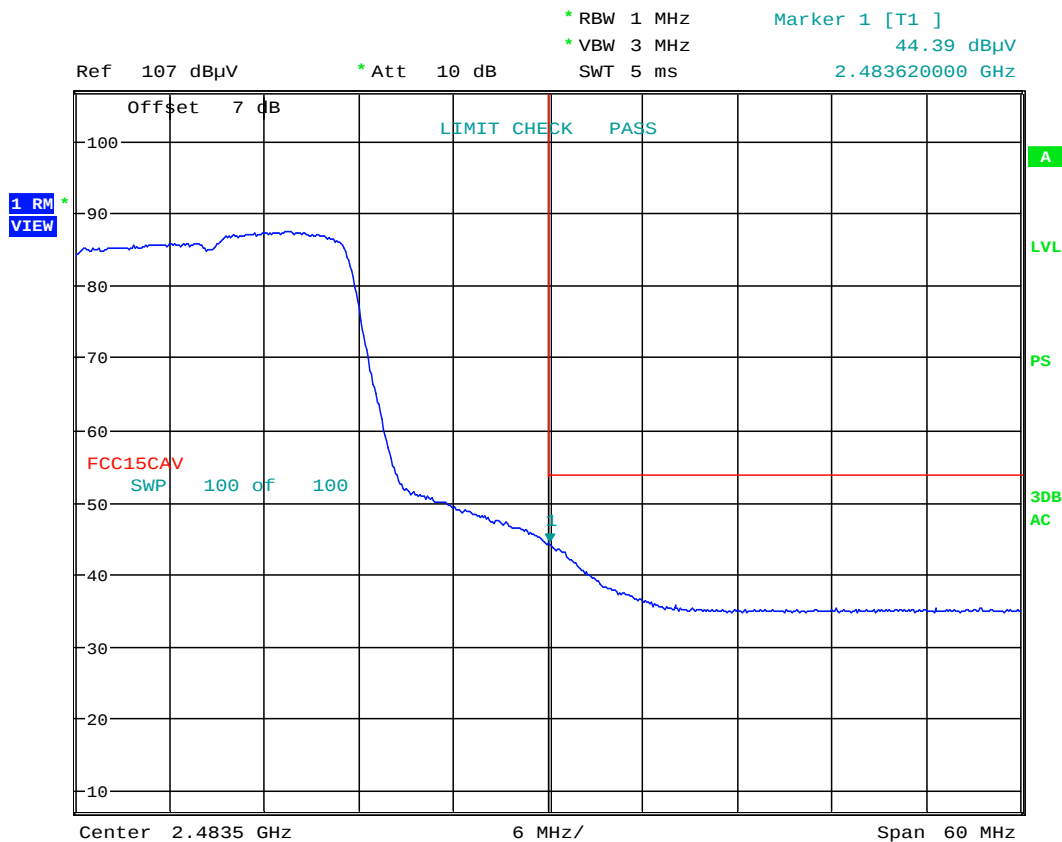
Worst Case Mode: 802.11n

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 2462MHz

Channel: 11



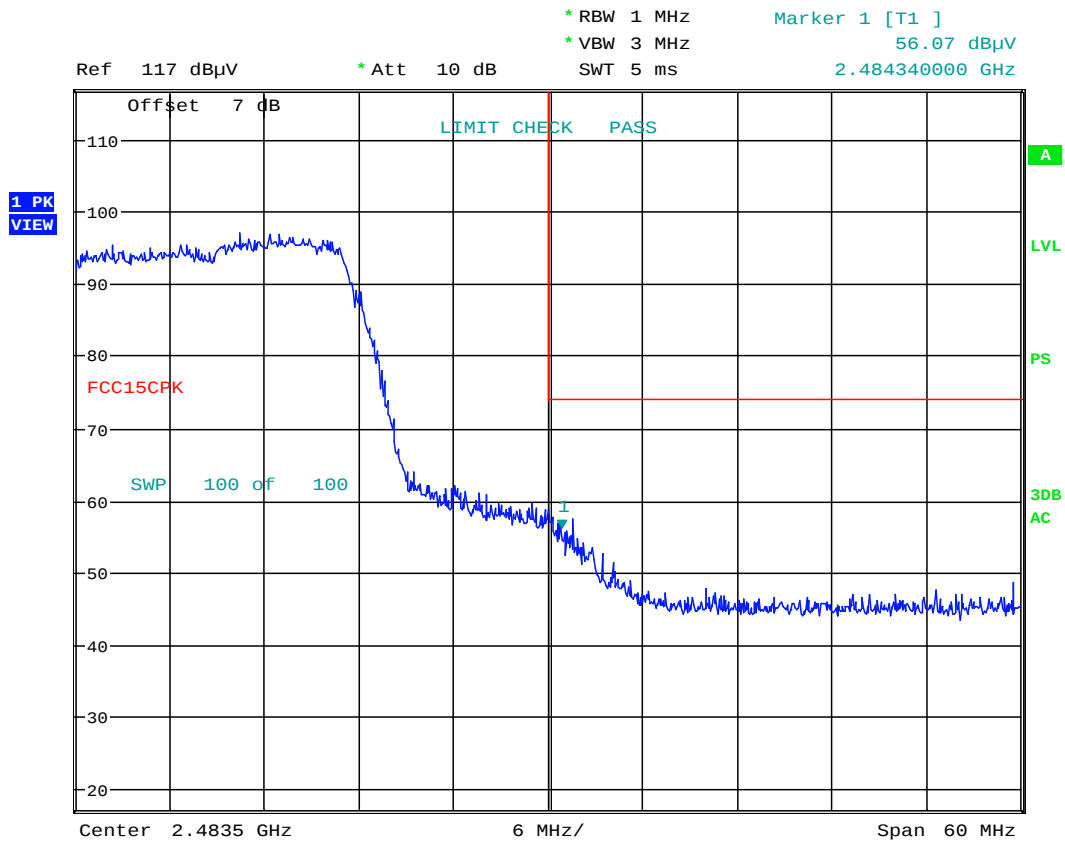
Date: 29.JUL.2014 07:42:50

**Plot 6-135. Radiated Restricted Upper Band Edge Measurement (Average)**

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 115 of 121                 |

# Radiated Restricted Band Edge Measurements

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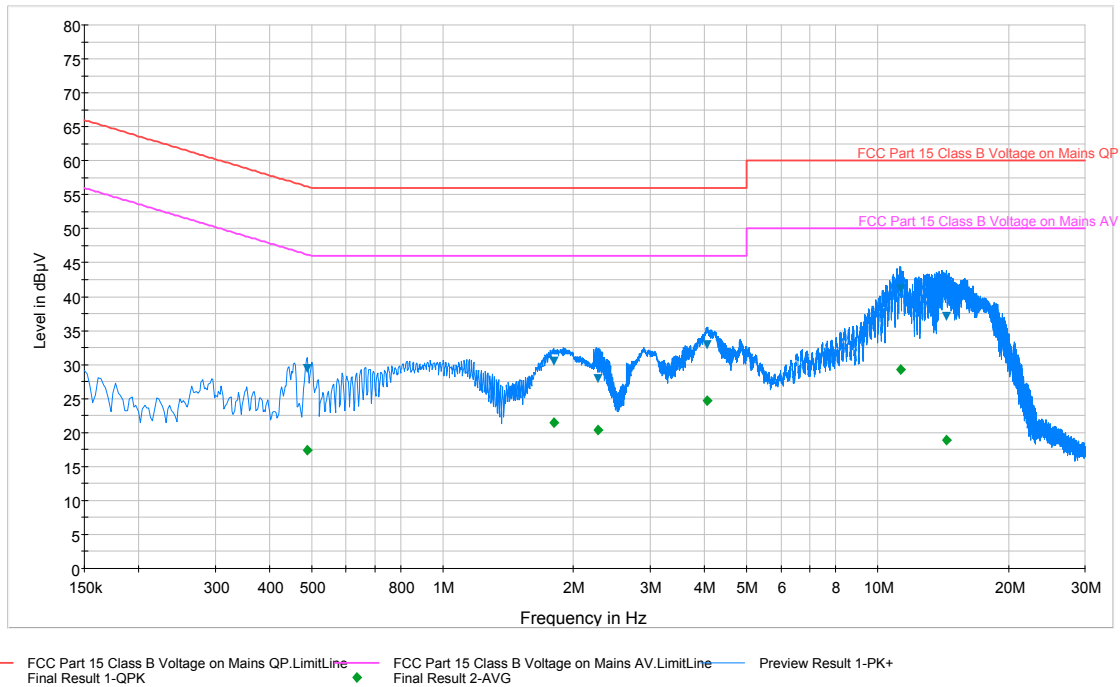
Date: 29.JUL.2014 07:42:02

**Plot 6-136. Radiated Restricted Upper Band Edge Measurement (Peak)**

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 116 of 121                 |

## 6.11 Line-Conducted Test Data

### §15.207



**Plot 6-137. Line Conducted Plot with 802.11b (L1)**

| Frequency<br>MHz | Line | Corr.<br>dB | QuasiPeak<br>dBµV | Limit<br>dBµV | Margin<br>dB | Average<br>dBµV | Limit<br>dBµV | Margin<br>dB |
|------------------|------|-------------|-------------------|---------------|--------------|-----------------|---------------|--------------|
| 0.488            | L1   | 0.1         | 29.40             | 56.20         | 26.80        | 17.40           | 46.20         | 28.80        |
| 1.799            | L1   | 0.1         | 30.50             | 56.00         | 25.50        | 21.50           | 46.00         | 24.50        |
| 2.272            | L1   | 0.1         | 27.90             | 56.00         | 28.10        | 20.40           | 46.00         | 25.60        |
| 4.065            | L1   | 0.2         | 32.90             | 56.00         | 23.10        | 24.70           | 46.00         | 21.30        |
| 11.283           | L1   | 0.4         | 41.10             | 60.00         | 18.90        | 29.30           | 50.00         | 20.70        |
| 14.377           | L1   | 0.5         | 37.20             | 60.00         | 22.80        | 18.90           | 50.00         | 31.10        |

**Table 6-50. Line Conducted Data with 802.11b (L1)**

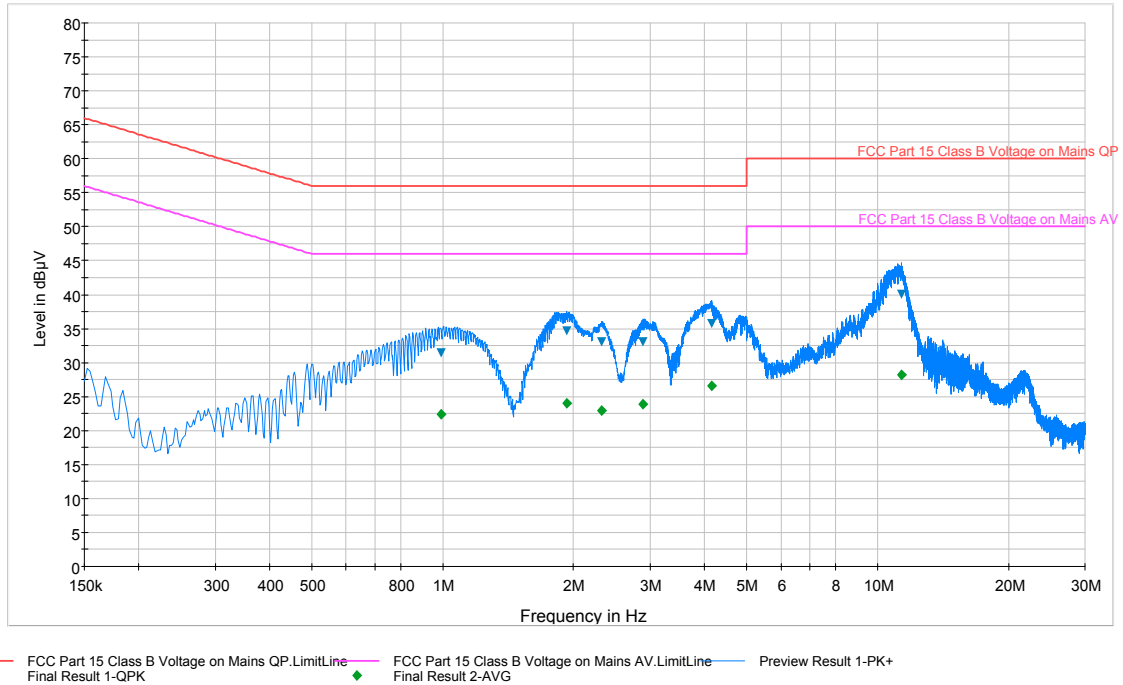
#### Notes:

1. All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11b mode using 1Mbps on Channel 6. 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. Factor (dB) = Cable loss (dB) + LISN insertion factor (dB)
4. QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Factor (dB)
5. Margin (dB) = QP/AV Limit (dBµV) – QP/AV Level (dBµV)
6. Traces shown in plot are made using a peak detector.
7. Deviations to the Specifications: None.

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 117 of 121                 |

## Line-Conducted Test Data

### §15.207



**Plot 6-138. Line Conducted Plot with 802.11b (N)**

| Frequency<br>MHz | Line | Corr.<br>dB | QuasiPeak<br>dBµV | Limit<br>dBµV | Margin<br>dB | Average<br>dBµV | Limit<br>dBµV | Margin<br>dB |
|------------------|------|-------------|-------------------|---------------|--------------|-----------------|---------------|--------------|
| 0.992            | N    | 0.1         | 31.50             | 56.00         | 24.50        | 22.40           | 46.00         | 23.60        |
| 1.930            | N    | 0.2         | 34.60             | 56.00         | 21.40        | 24.00           | 46.00         | 22.00        |
| 2.321            | N    | 0.2         | 33.10             | 56.00         | 22.90        | 22.90           | 46.00         | 23.10        |
| 2.891            | N    | 0.2         | 33.00             | 56.00         | 23.00        | 23.90           | 46.00         | 22.10        |
| 4.157            | N    | 0.2         | 35.70             | 56.00         | 20.30        | 26.60           | 46.00         | 19.40        |
| 11.357           | N    | 0.4         | 40.10             | 60.00         | 19.90        | 28.10           | 50.00         | 21.90        |

**Table 6-51. Line Conducted Data with 802.11b (N)**

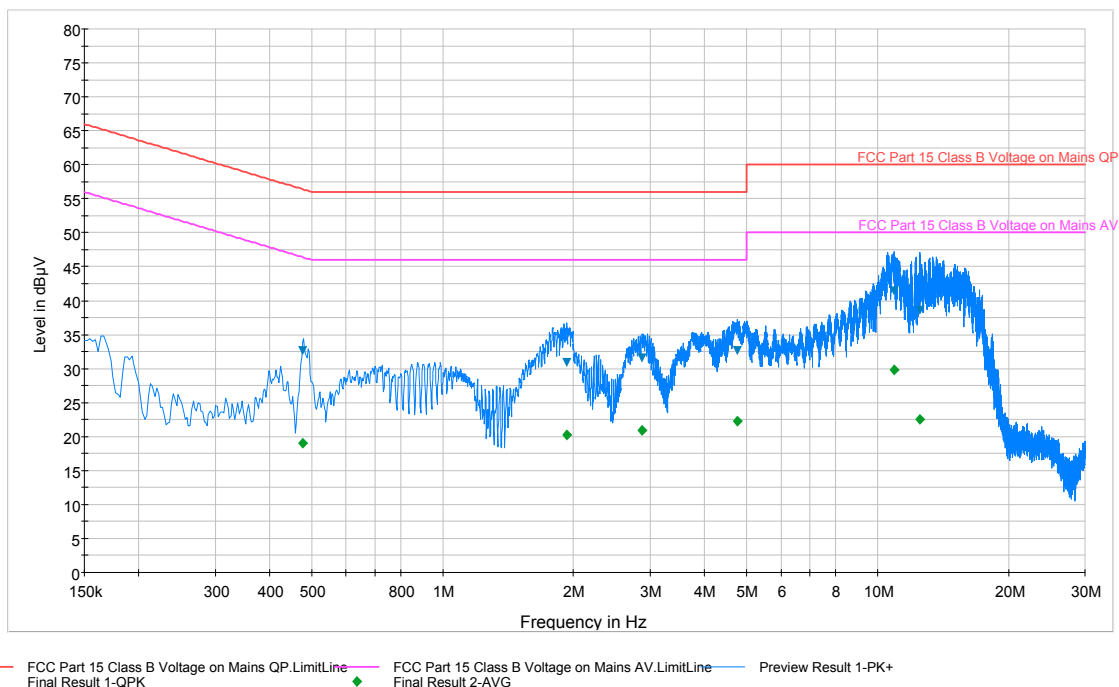
#### Notes:

1. All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11b mode using 1Mbps on Channel 6. 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. Factor (dB) = Cable loss (dB) + LISN insertion factor (dB)
4. QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Factor (dB)
5. Margin (dB) = QP/AV Limit (dBµV) – QP/AV Level (dBµV)
6. Traces shown in plot are made using a peak detector.
7. Deviations to the Specifications: None.

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 118 of 121                 |

## Line-Conducted Test Data

### §15.207



**Plot 6-139. Line Conducted Plot with 802.11a (L1)**

| Frequency<br>MHz | Line | Corr.<br>dB | QuasiPeak<br>dBµV | Limit<br>dBµV | Margin<br>dB | Average<br>dBµV | Limit<br>dBµV | Margin<br>dB |
|------------------|------|-------------|-------------------|---------------|--------------|-----------------|---------------|--------------|
| 0.476            | L1   | 0.1         | 32.70             | 56.40         | 23.70        | 19.10           | 46.40         | 27.30        |
| 1.932            | L1   | 0.1         | 30.80             | 56.00         | 25.20        | 20.30           | 46.00         | 25.70        |
| 2.879            | L1   | 0.2         | 31.60             | 56.00         | 24.40        | 21.00           | 46.00         | 25.00        |
| 4.767            | L1   | 0.2         | 32.60             | 56.00         | 23.40        | 22.30           | 46.00         | 23.70        |
| 10.941           | L1   | 0.4         | 41.40             | 60.00         | 18.60        | 29.80           | 50.00         | 20.20        |
| 12.541           | L1   | 0.4         | 38.50             | 60.00         | 21.50        | 22.50           | 50.00         | 27.50        |

**Table 6-52. Line Conducted Data with 802.11a (L1)**

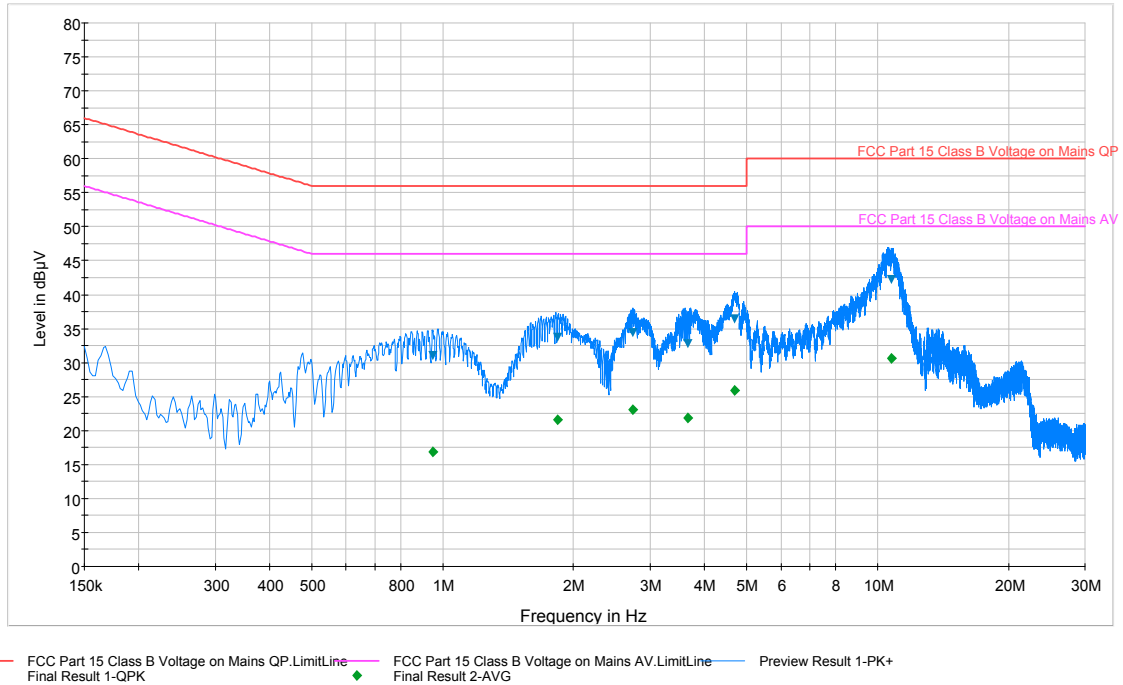
#### Notes:

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 157. 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. Factor (dB) = Cable loss (dB) + LISN insertion factor (dB)
4. QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Factor (dB)
5. Margin (dB) = QP/AV Limit (dBµV) – QP/AV Level (dBµV)
6. Traces shown in plot are made using a peak detector.
7. Deviations to the Specifications: None.

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 119 of 121                 |

## Line-Conducted Test Data

### §15.207



**Plot 6-140. Line Conducted Plot with 802.11a (N)**

| Frequency<br>MHz | Line | Corr.<br>dB | QuasiPeak<br>dBµV | Limit<br>dBµV | Margin<br>dB | Average<br>dBµV | Limit<br>dBµV | Margin<br>dB |
|------------------|------|-------------|-------------------|---------------|--------------|-----------------|---------------|--------------|
| 0.949            | N    | 0.1         | 31.00             | 56.00         | 25.00        | 16.90           | 46.00         | 29.10        |
| 1.842            | N    | 0.2         | 33.70             | 56.00         | 22.30        | 21.60           | 46.00         | 24.40        |
| 2.735            | N    | 0.2         | 34.40             | 56.00         | 21.60        | 23.10           | 46.00         | 22.90        |
| 3.671            | N    | 0.2         | 32.80             | 56.00         | 23.20        | 21.90           | 46.00         | 24.10        |
| 4.693            | N    | 0.2         | 36.40             | 56.00         | 19.60        | 25.90           | 46.00         | 20.10        |
| 10.788           | N    | 0.4         | 42.30             | 60.00         | 17.70        | 30.60           | 50.00         | 19.40        |

**Table 6-53. Line Conducted Data with 802.11a (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 157. 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. Factor (dB) = Cable loss (dB) + LISN insertion factor (dB)
4. QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Factor (dB)
5. Margin (dB) = QP/AV Limit (dBµV) – QP/AV Level (dBµV)
6. Traces shown in plot are made using a peak detector.
7. Deviations to the Specifications: None.

|                                      |                                               |                                                                       |                |                                 |
|--------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN910C                   | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1407241462.A3L | Test Dates:<br>7/24 - 8/11/2014               | EUT Type:<br>Portable Handset                                         |                | Page 120 of 121                 |

## 7.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMN910C** is in compliance with Part 15C of the FCC Rules.

|                                             |                                                                                     |                                                                               |                                                                                       |                                        |
|---------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMN910C                   |  | <b>FCC Pt. 15.247 802.11a/b/g/n/ac MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Reviewed by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>0Y1407241462.A3L | <b>Test Dates:</b><br>7/24 - 8/11/2014                                              | <b>EUT Type:</b><br>Portable Handset                                          |                                                                                       | Page 121 of 121                        |