

## 6.5 Peak Excursion Ratio – 802.11a/n/ac §15.407(a.6)

### Test Overview and Limit

The spectrum analyzer was connected to the antenna terminal while the EUT was operating at its maximum duty cycle (>98%), at its maximum power control level, as defined in KDB 789033 v01r03, and at the appropriate frequencies. Method SA-1, as defined in KDB 789033 v01r03, was used to capture the average trace used to make the peak excursion measurement.

***The largest permissible difference between the modulation envelope (measured using a peak hold function) and the maximum power spectral density is 13 dBm/MHz.***

### Test Procedure Used

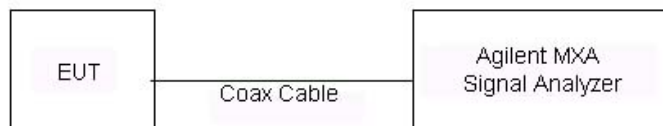
KDB 789033 v01r03 – Section G

### Test Settings

1. Analyzer was set to the center frequency of the UNII channel under investigation
2. Span was set to encompass the entire emission bandwidth of the signal
3. RBW = 1MHz
4. VBW = 3MHz
5. Detector = peak
6. Trace mode = max hold
7. Trace was allowed to stabilize
8. The peak search function of the spectrum analyzer was used to find the peak of the spectrum. This level was compared to the peak power density level found from the previous section to determine the peak excursion.

### 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

The peak excursion was investigated for all signal types, modulation types, channel bandwidths, and variations in signal parameters and the worst case data is shown below. Only the worst case modulation mode on a single channel among all bands is reported since that is sufficient to demonstrate compliance to the peak excursion requirement per KDB 789033 v01r03.

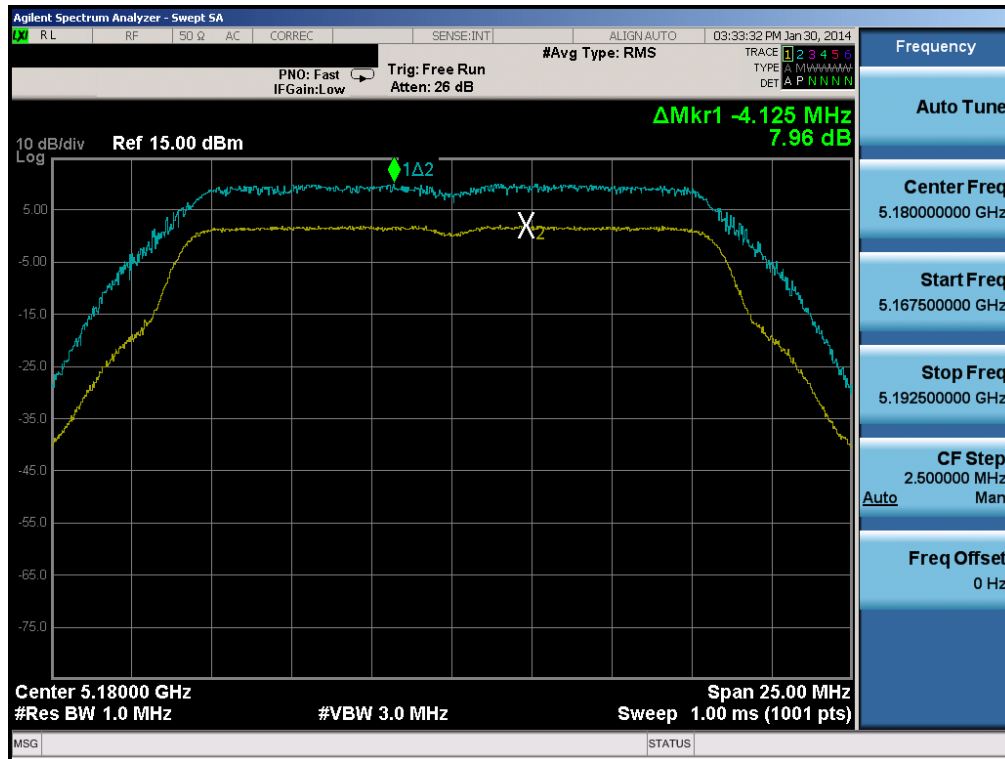
|                                      |                                                                                     |                                                                        |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMG900R7                  |  | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                                                      | EUT Type:<br>Portable Handset                                          |                                                                                       | Page 88 of 207                  |

## Antenna-1 Peak Excursion Ratio – 802.11a/n/ac

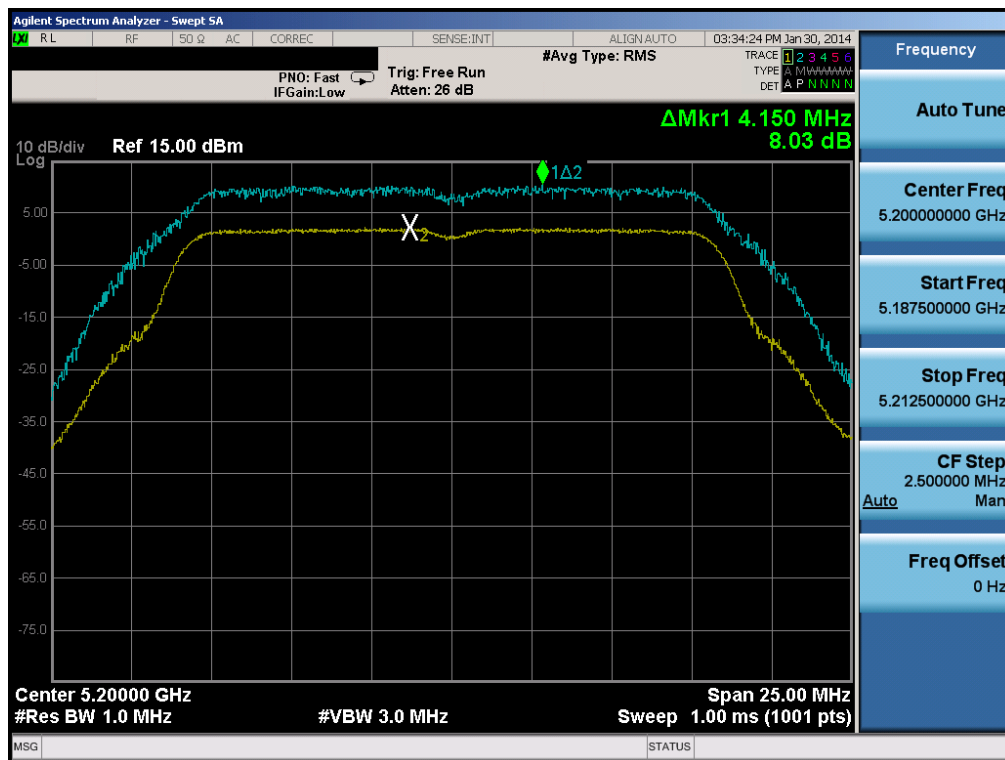
|         | Frequency [MHz] | Channel No. | 802.11 Mode | Data Rate [Mbps] | Measured Peak Excursion Ratio [dBm] | Max Permissible Peak Excursion Ratio [dBm/MHz] | Margin [dB] | Pass / Fail |
|---------|-----------------|-------------|-------------|------------------|-------------------------------------|------------------------------------------------|-------------|-------------|
| Band 1  | 5180            | 36          | a           | 6                | 7.96                                | 13.0                                           | -5.04       | Pass        |
|         | 5200            | 40          | a           | 6                | 8.03                                | 13.0                                           | -4.97       | Pass        |
|         | 5240            | 48          | a           | 6                | 7.91                                | 13.0                                           | -5.09       | Pass        |
|         | 5180            | 36          | n (20MHz)   | 6.5/7.2 (MCS0)   | 8.38                                | 13.0                                           | -4.62       | Pass        |
|         | 5200            | 40          | n (20MHz)   | 6.5/7.2 (MCS0)   | 7.95                                | 13.0                                           | -5.05       | Pass        |
|         | 5240            | 48          | n (20MHz)   | 6.5/7.2 (MCS0)   | 8.00                                | 13.0                                           | -5.00       | Pass        |
|         | 5190            | 38          | n (40MHz)   | 13.5/15 (MCS0)   | 7.99                                | 13.0                                           | -5.01       | Pass        |
|         | 5230            | 46          | n (40MHz)   | 13.5/15 (MCS0)   | 8.24                                | 13.0                                           | -4.76       | Pass        |
|         | 5210            | 42          | ac (80MHz)  | 29.3/32.5 (MCS0) | 8.69                                | 13.0                                           | -4.31       | Pass        |
| Band 2A | 5260            | 52          | a           | 6                | 8.23                                | 13.0                                           | -4.77       | Pass        |
|         | 5280            | 56          | a           | 6                | 8.03                                | 13.0                                           | -4.97       | Pass        |
|         | 5320            | 64          | a           | 6                | 7.87                                | 13.0                                           | -5.13       | Pass        |
|         | 5260            | 52          | n (20MHz)   | 6.5/7.2 (MCS0)   | 8.57                                | 13.0                                           | -4.43       | Pass        |
|         | 5280            | 56          | n (20MHz)   | 6.5/7.2 (MCS0)   | 7.97                                | 13.0                                           | -5.03       | Pass        |
|         | 5320            | 64          | n (20MHz)   | 6.5/7.2 (MCS0)   | 7.79                                | 13.0                                           | -5.21       | Pass        |
|         | 5270            | 54          | n (40MHz)   | 13.5/15 (MCS0)   | 8.18                                | 13.0                                           | -4.82       | Pass        |
|         | 5310            | 62          | n (40MHz)   | 13.5/15 (MCS0)   | 8.21                                | 13.0                                           | -4.79       | Pass        |
|         | 5290            | 58          | ac (80MHz)  | 29.3/32.5 (MCS0) | 8.14                                | 13.0                                           | -4.86       | Pass        |
| Band 2C | 5500            | 100         | a           | 6                | 7.74                                | 13.0                                           | -5.26       | Pass        |
|         | 5580            | 116         | a           | 6                | 8.06                                | 13.0                                           | -4.94       | Pass        |
|         | 5700            | 140         | a           | 6                | 8.01                                | 13.0                                           | -4.99       | Pass        |
|         | 5500            | 100         | n (20MHz)   | 6.5/7.2 (MCS0)   | 8.21                                | 13.0                                           | -4.79       | Pass        |
|         | 5580            | 116         | n (20MHz)   | 6.5/7.2 (MCS0)   | 8.04                                | 13.0                                           | -4.96       | Pass        |
|         | 5700            | 140         | n (20MHz)   | 6.5/7.2 (MCS0)   | 8.69                                | 13.0                                           | -4.31       | Pass        |
|         | 5510            | 102         | n (40MHz)   | 13.5/15 (MCS0)   | 7.97                                | 13.0                                           | -5.04       | Pass        |
|         | 5550            | 110         | n (40MHz)   | 13.5/15 (MCS0)   | 8.39                                | 13.0                                           | -4.61       | Pass        |
|         | 5670            | 134         | n (40MHz)   | 13.5/15 (MCS0)   | 8.03                                | 13.0                                           | -4.97       | Pass        |
|         | 5530            | 106         | ac (80MHz)  | 29.3/32.5 (MCS0) | 8.95                                | 13.0                                           | -4.05       | Pass        |

**Table 6-26. Conducted Peak Excursion Ratio Measurements**

|                                      |                                                                                     |                                                                     |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMG900R7                  |  | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                                                      | EUT Type:<br>Portable Handset                                       | Page 89 of 207                                                                        |                                 |

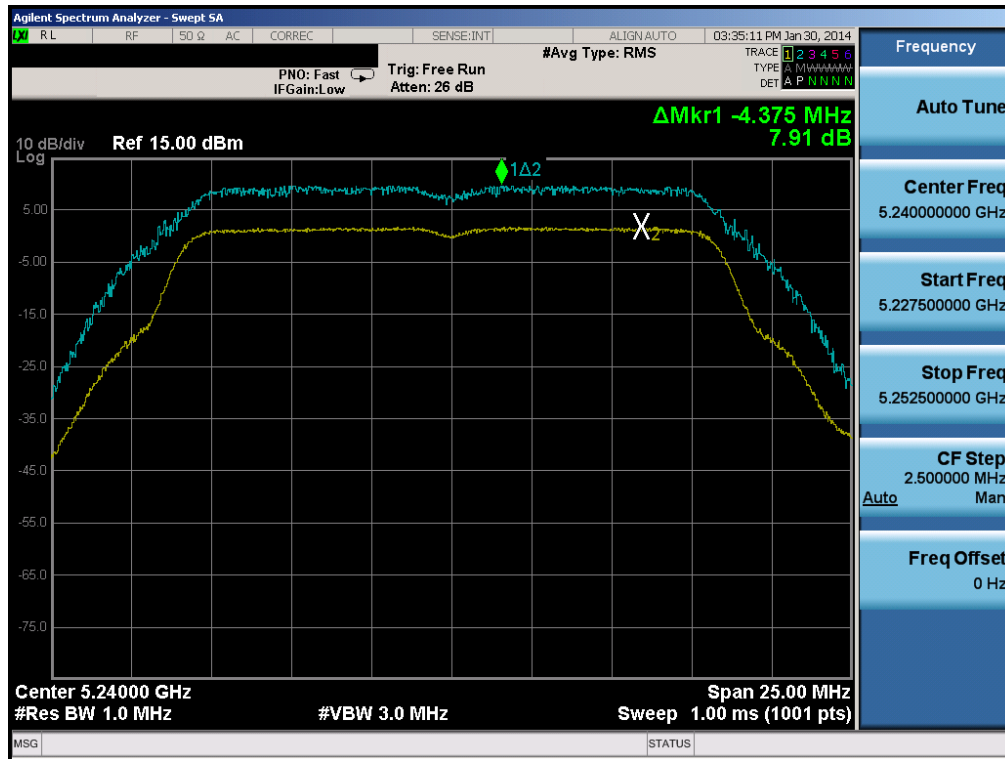


Plot 6-123. Peak Excursion Ratio Plot (802.11a (UNII Band 1) – Ch. 36)

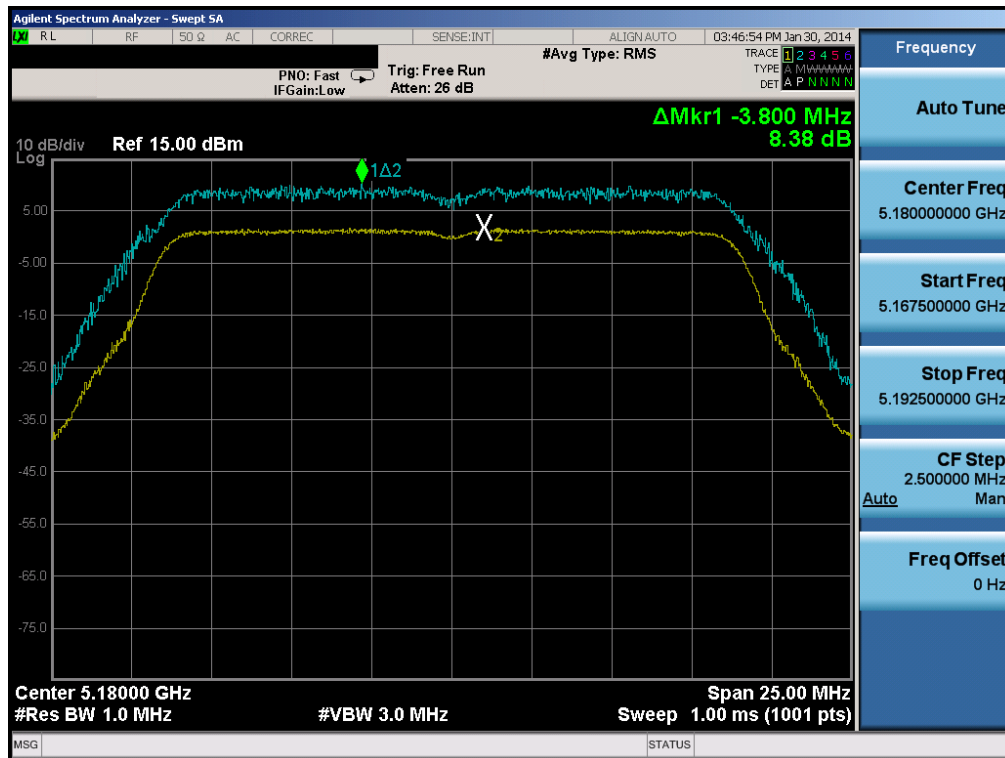


Plot 6-124. Peak Excursion Ratio Plot (802.11a (UNII Band 1) – Ch. 40)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 90 of 207                  |

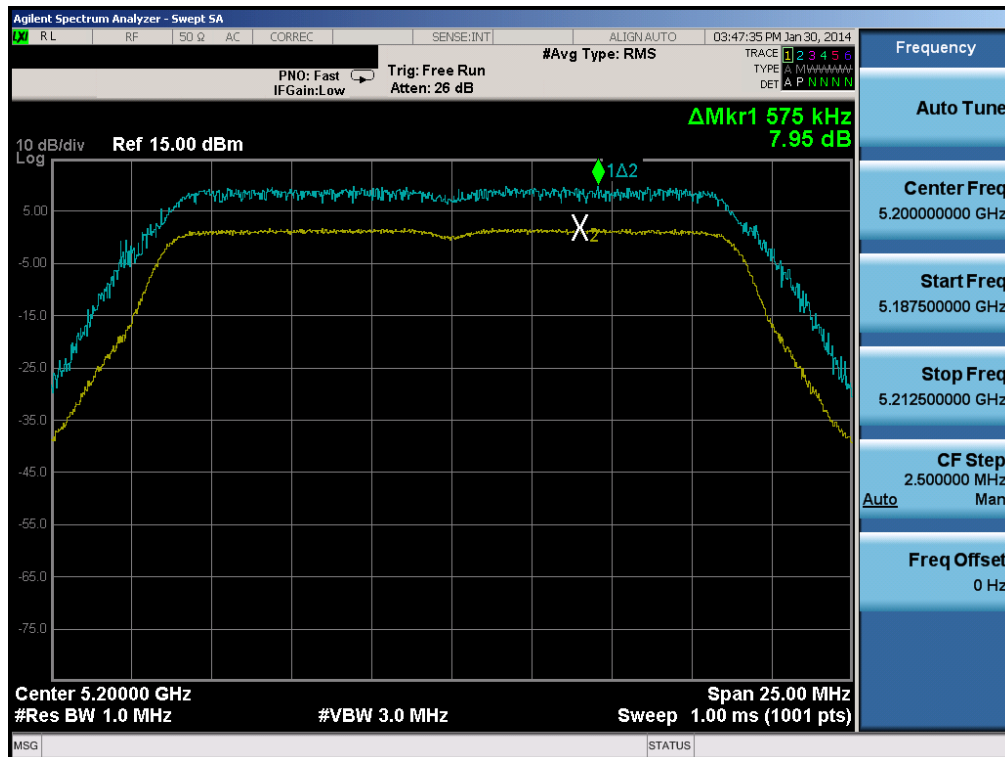


Plot 6-125. Peak Excursion Ratio Plot (802.11a (UNII Band 1) – Ch. 48)

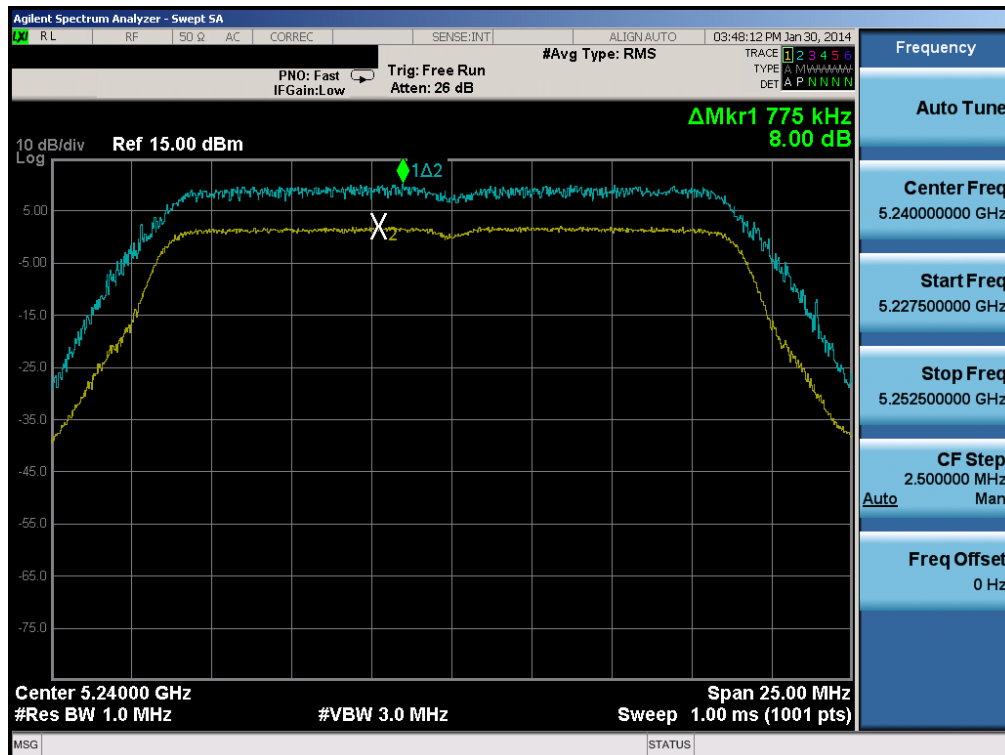


Plot 6-126. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 91 of 207                  |

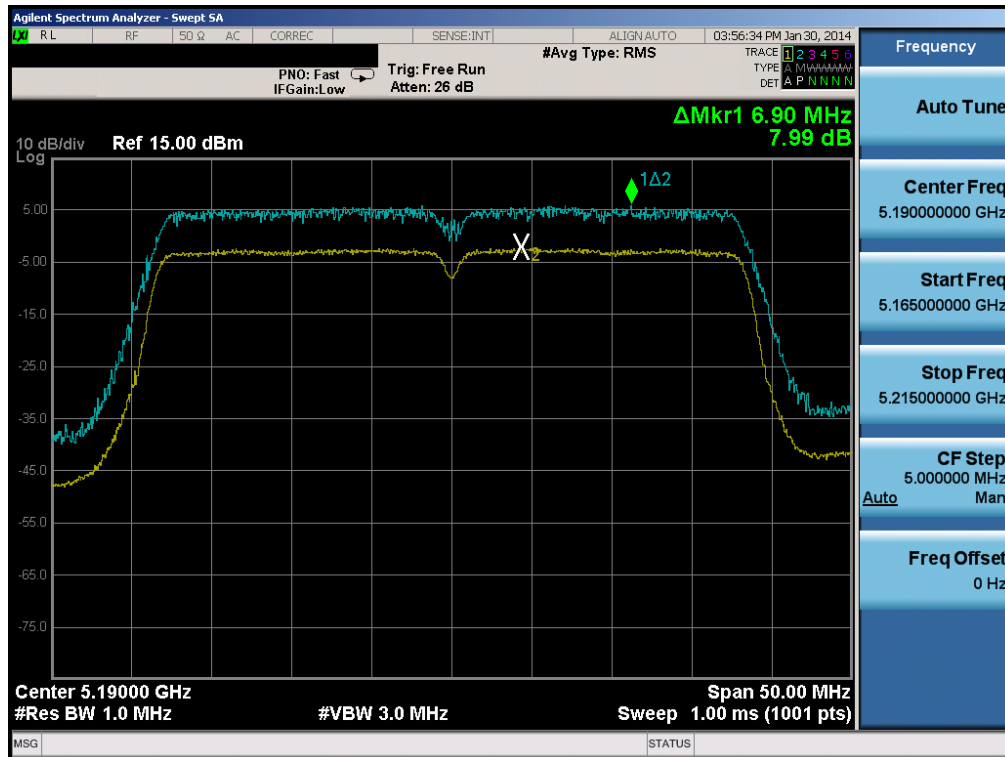


Plot 6-127. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

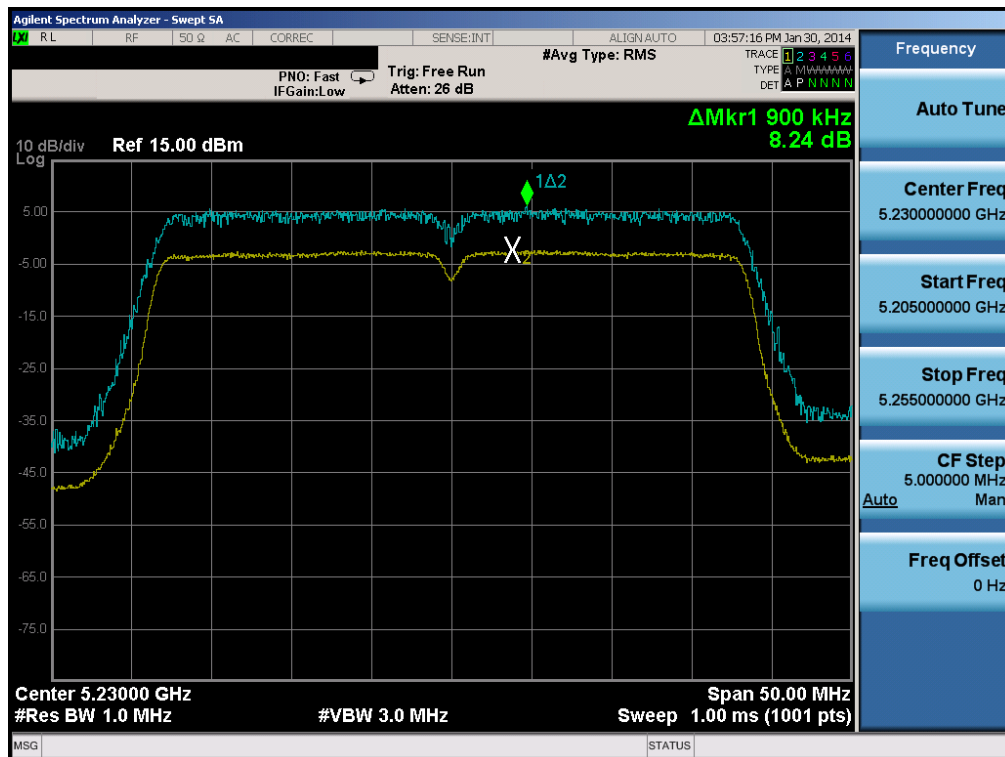


Plot 6-128. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 92 of 207                  |



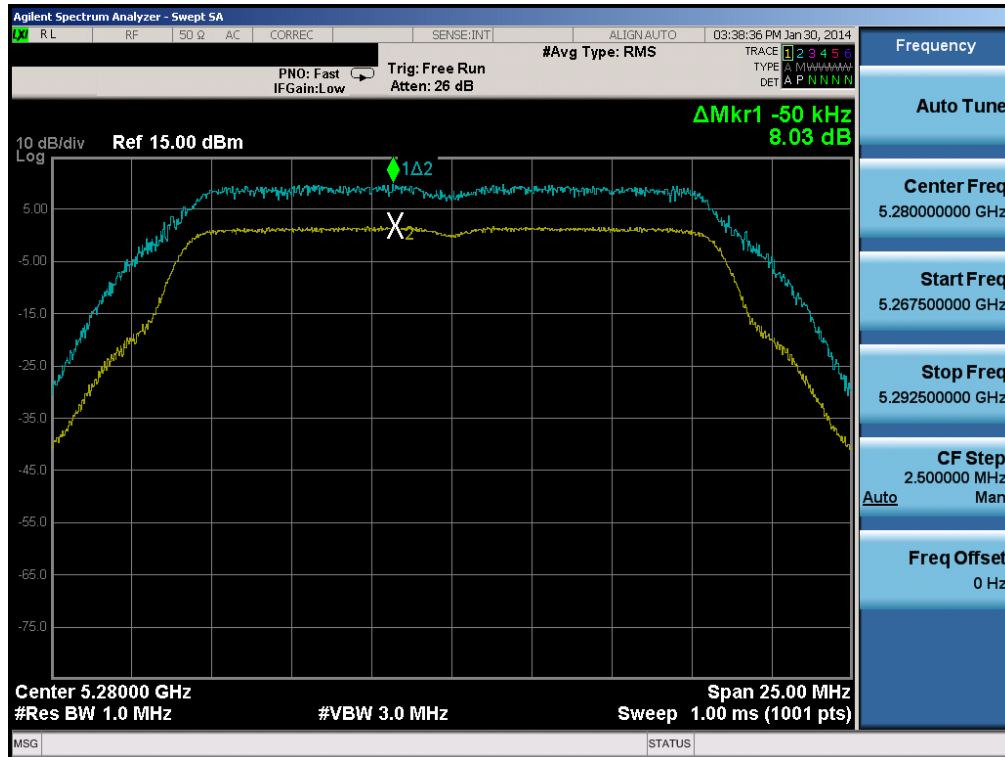
Plot 6-129. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 38)



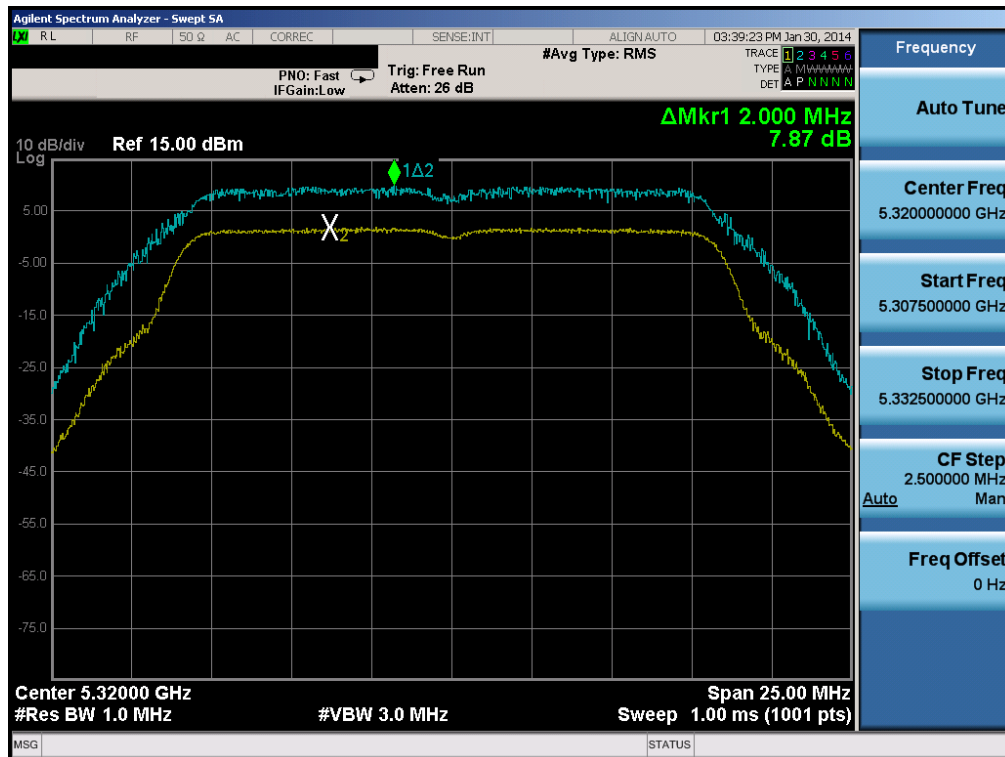
Plot 6-130. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 93 of 207                  |



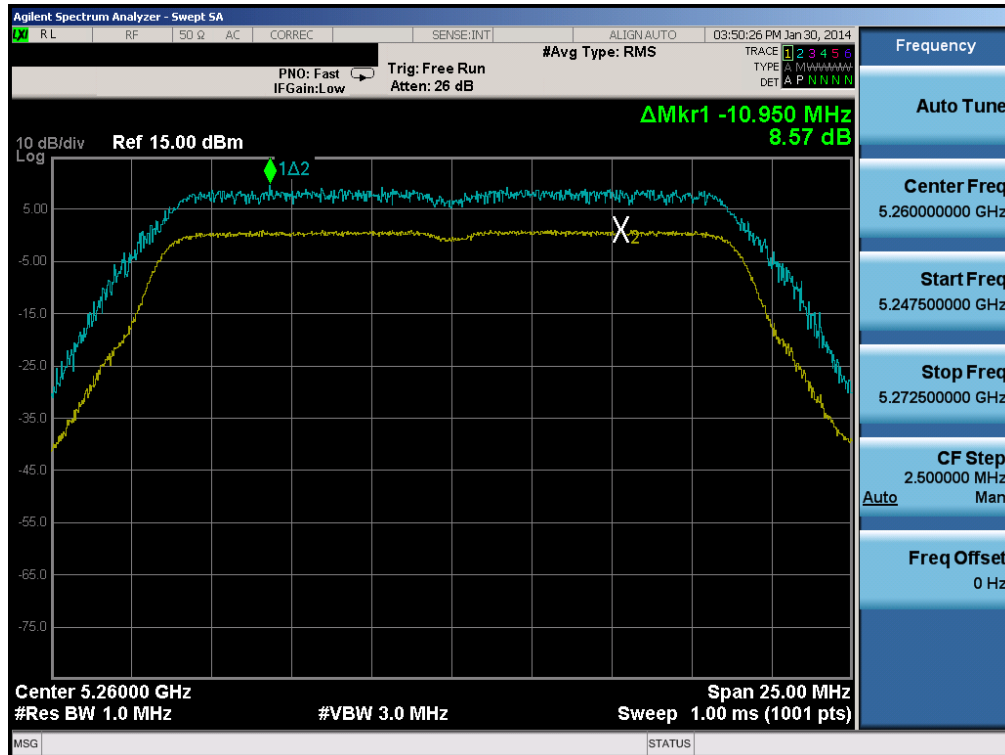


Plot 6-133. Peak Excursion Ratio Plot (802.11a (UNII Band 2A) – Ch. 56)

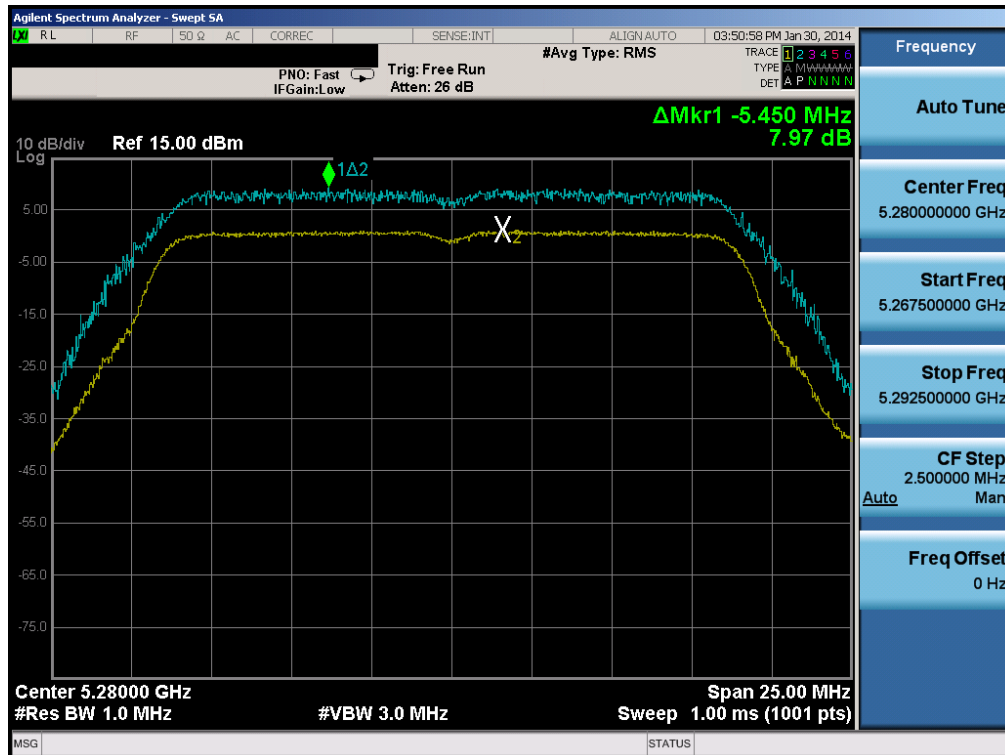


Plot 6-134. Peak Excursion Ratio Plot (802.11a (UNII Band 2A) – Ch. 64)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 95 of 207                  |

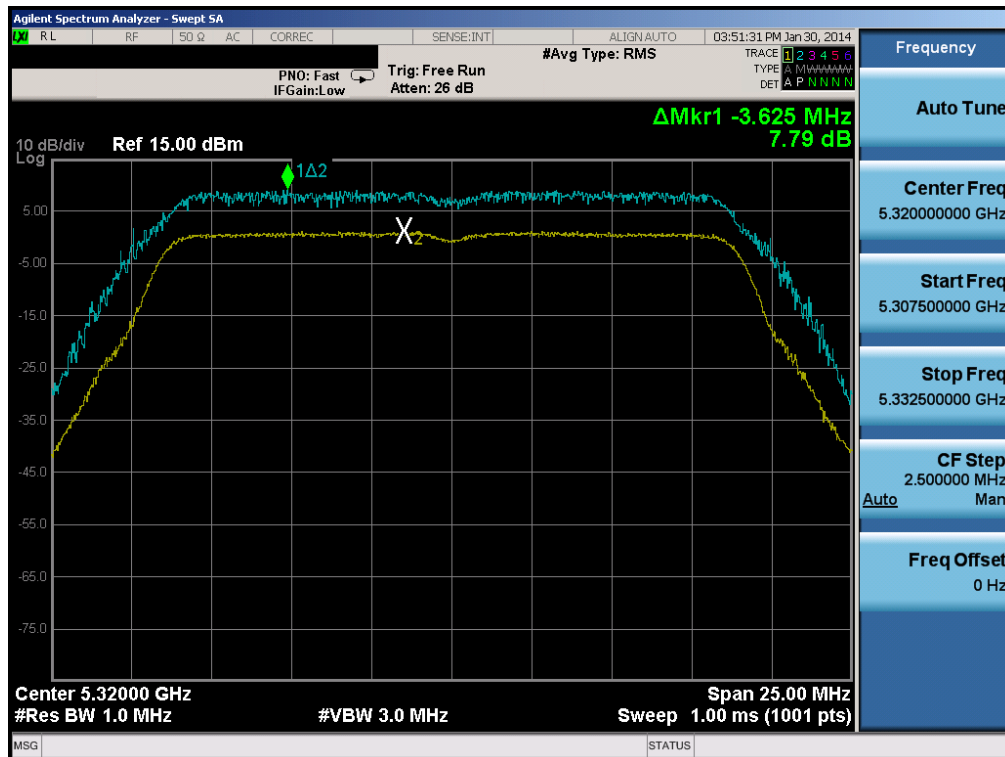


Plot 6-135. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

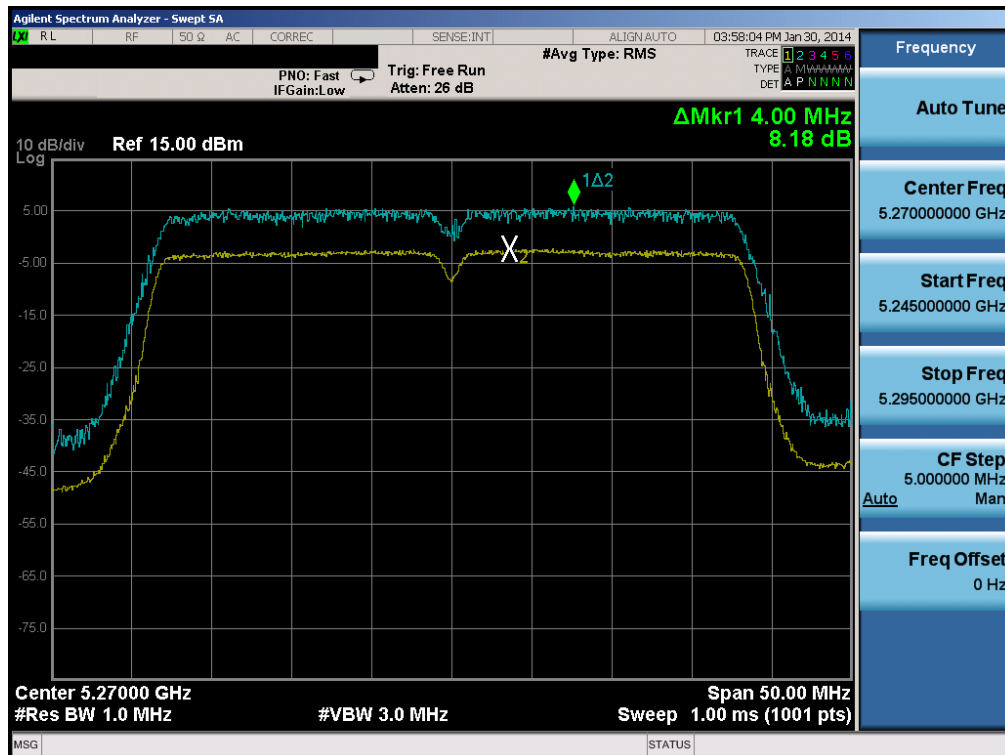


Plot 6-136. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 96 of 207                  |

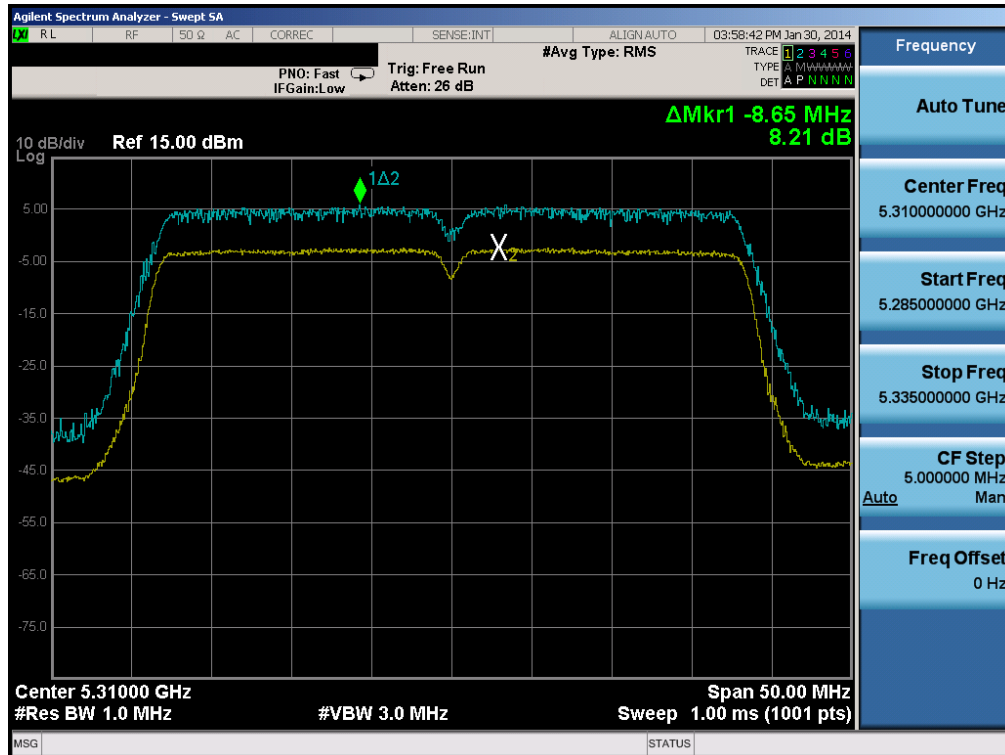


Plot 6-137. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

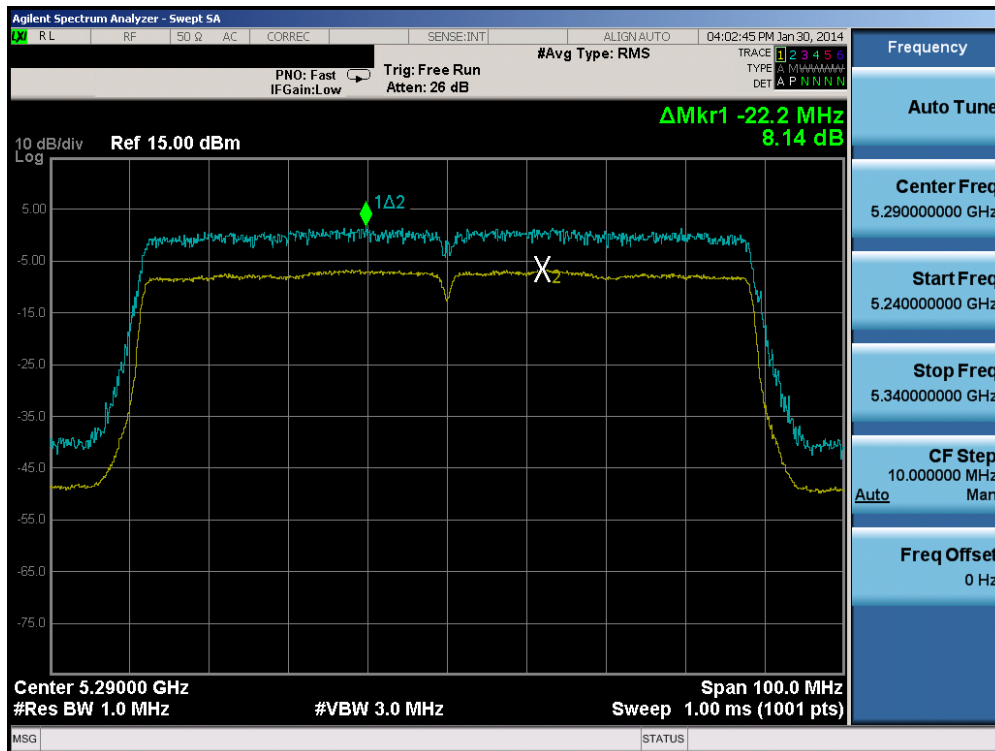


Plot 6-138. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 97 of 207                  |

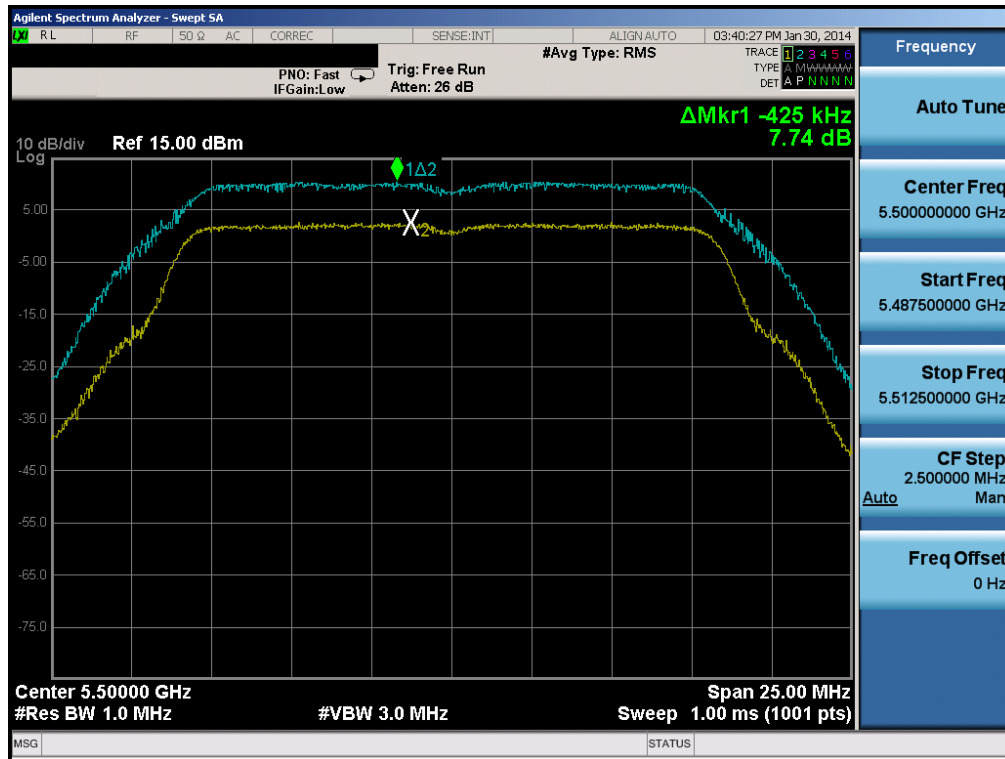


Plot 6-139. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

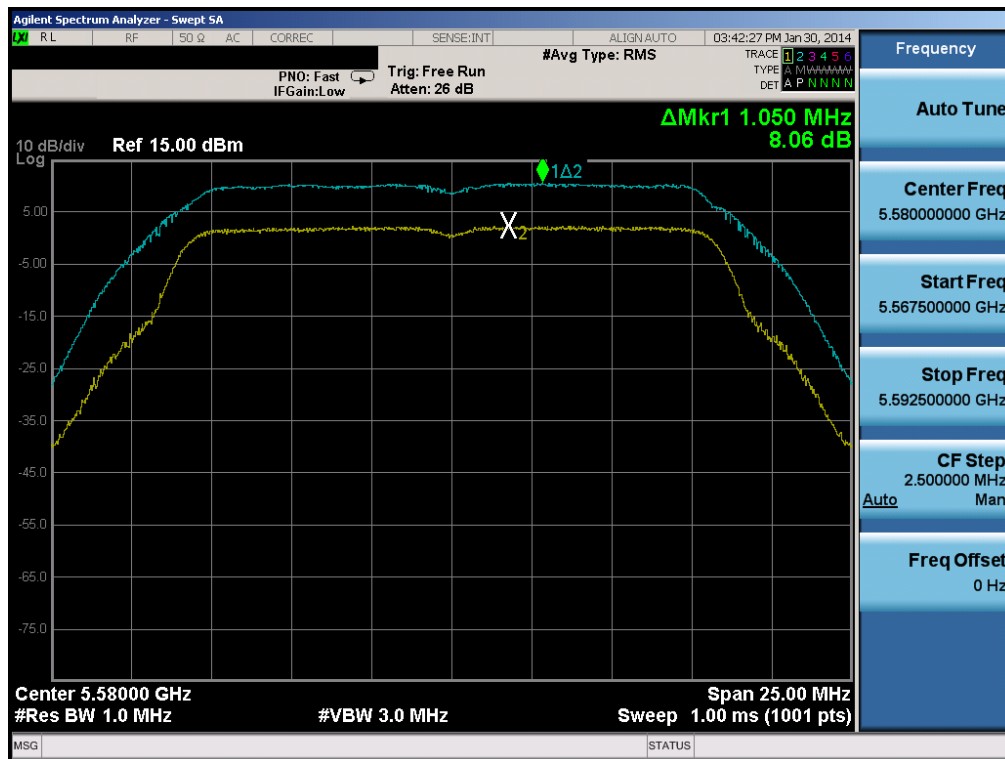


Plot 6-140. Peak Excursion Ratio Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 98 of 207                  |

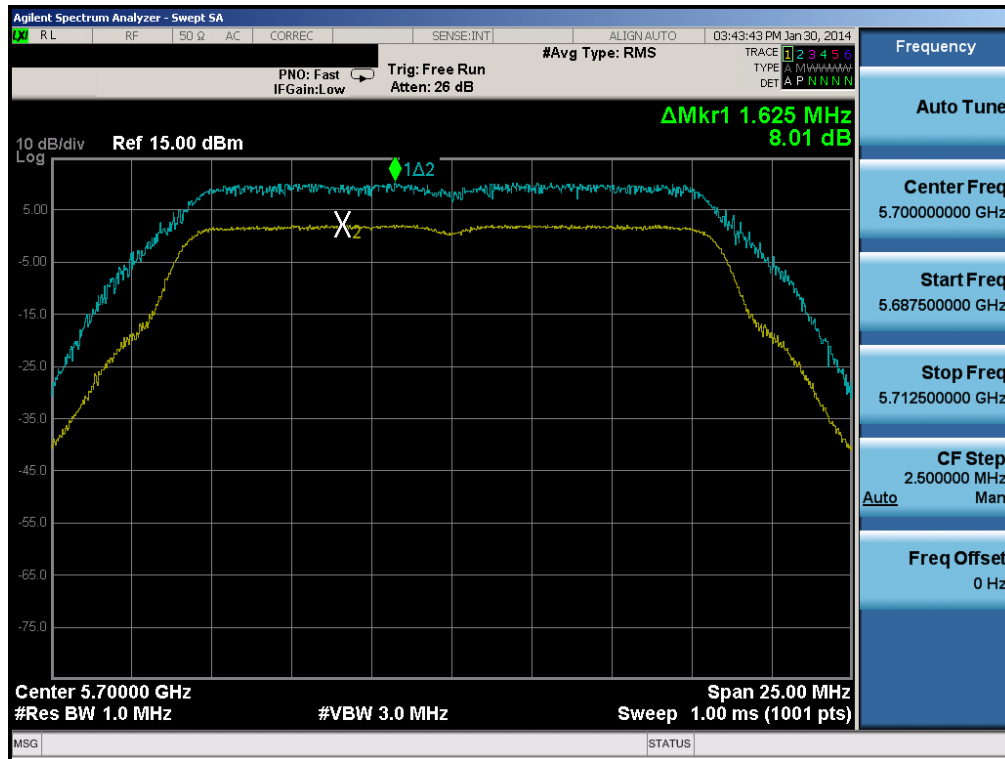


Plot 6-141. Peak Excursion Ratio Plot (802.11a (UNII Band 2C) – Ch. 100)

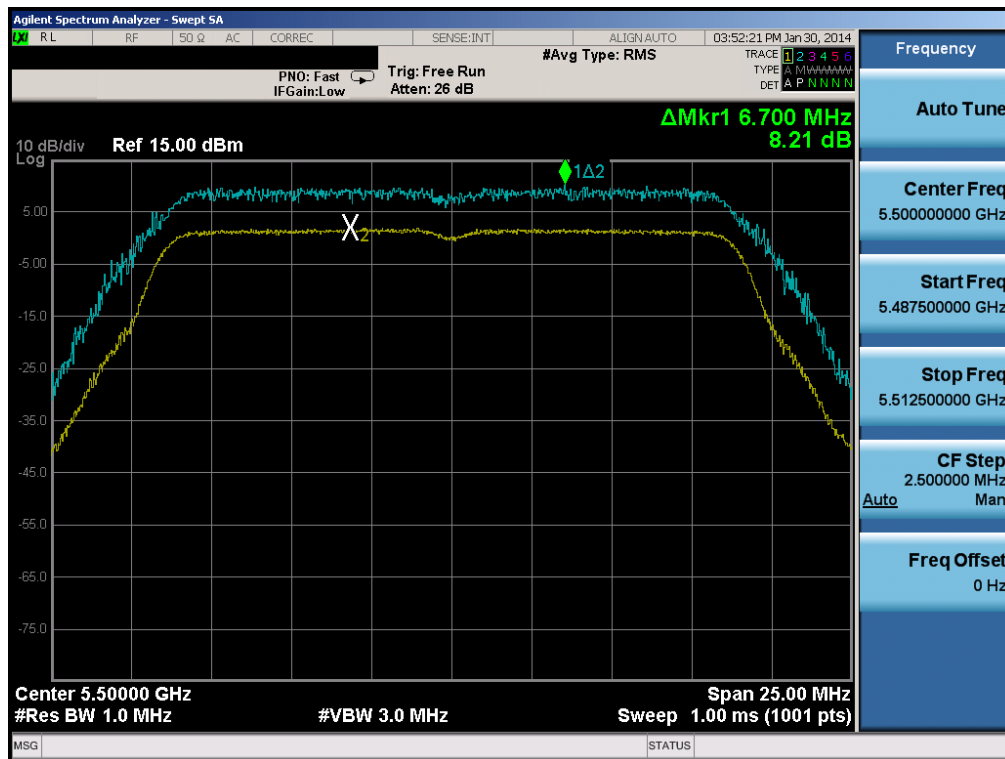


Plot 6-142. Peak Excursion Ratio Plot (802.11a (UNII Band 2C) – Ch. 116)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 99 of 207                  |

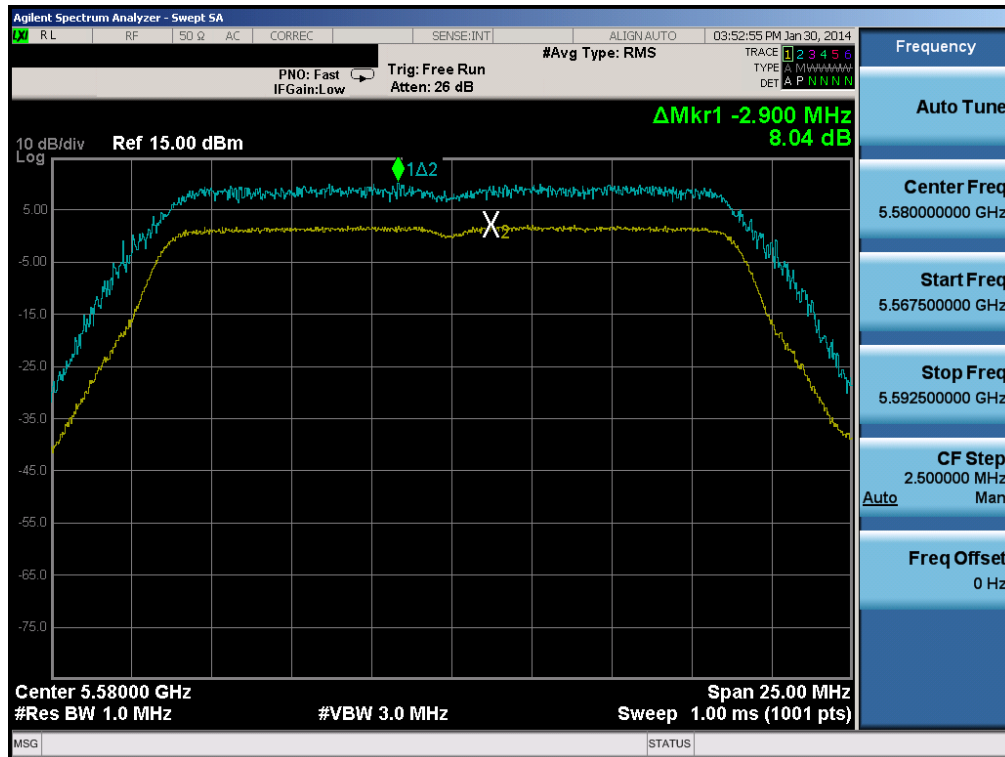


Plot 6-143. Peak Excursion Ratio Plot (802.11a (UNII Band 2C) – Ch. 140)

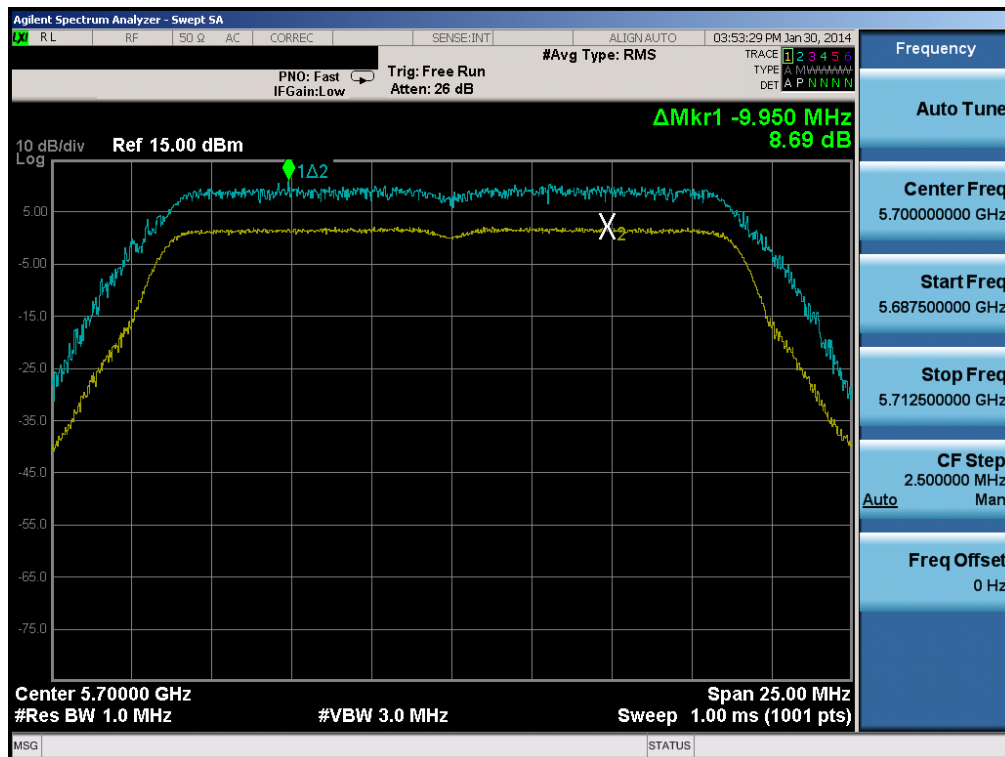


Plot 6-144. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 100 of 207                 |

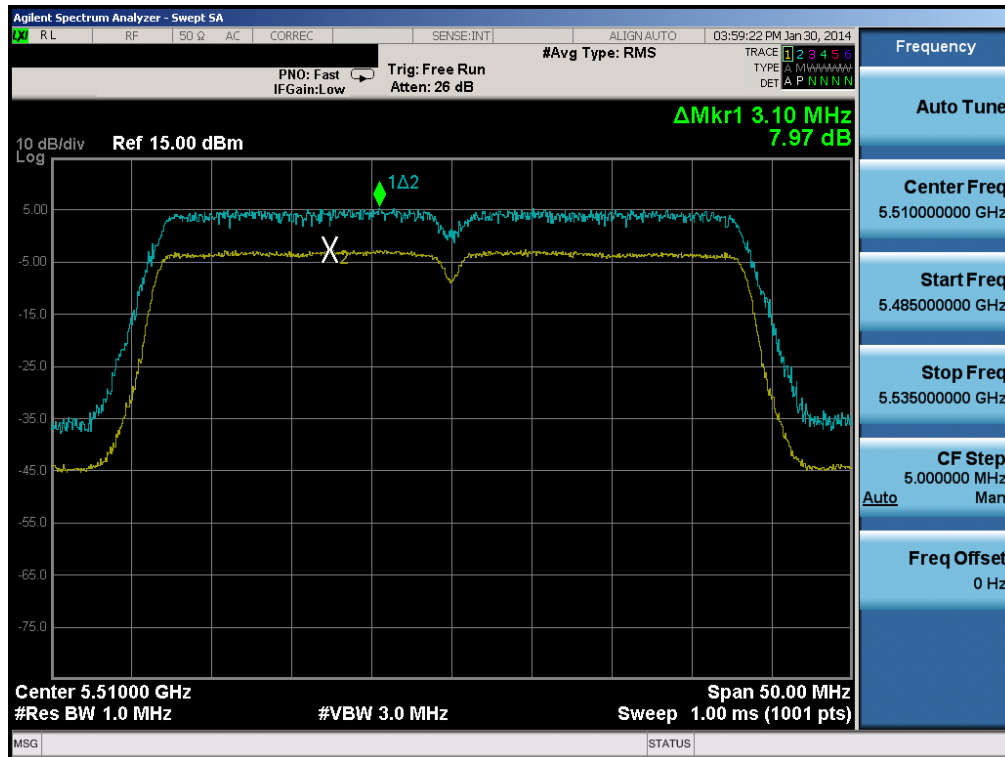


Plot 6-145. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 116)

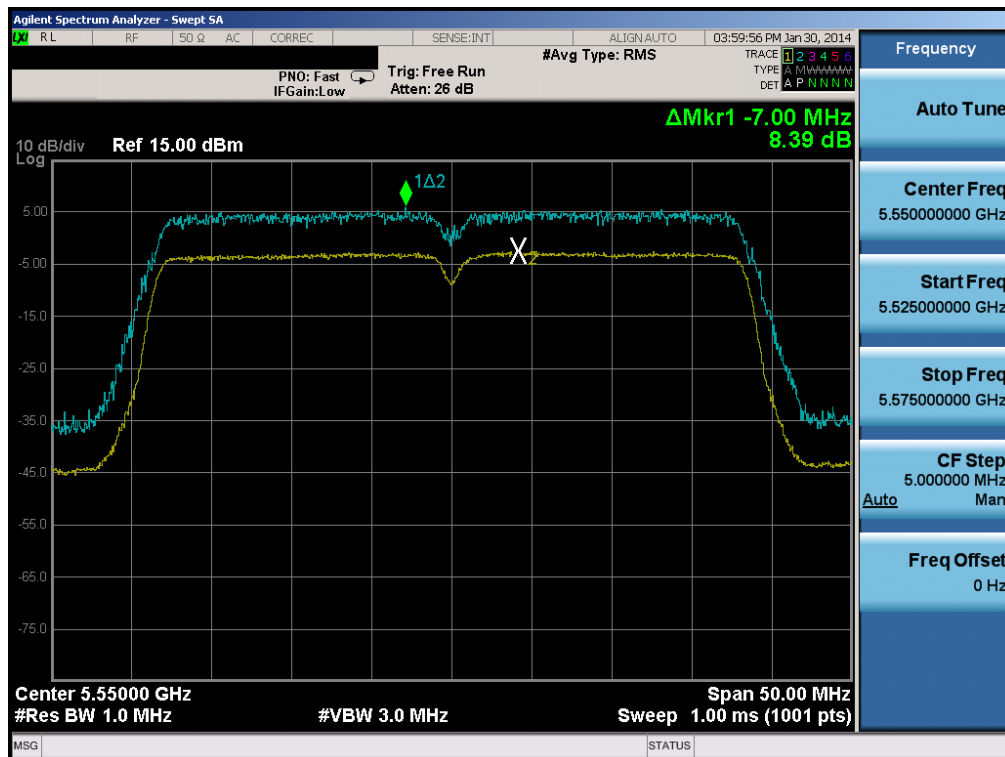


Plot 6-146. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 140)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 101 of 207                 |

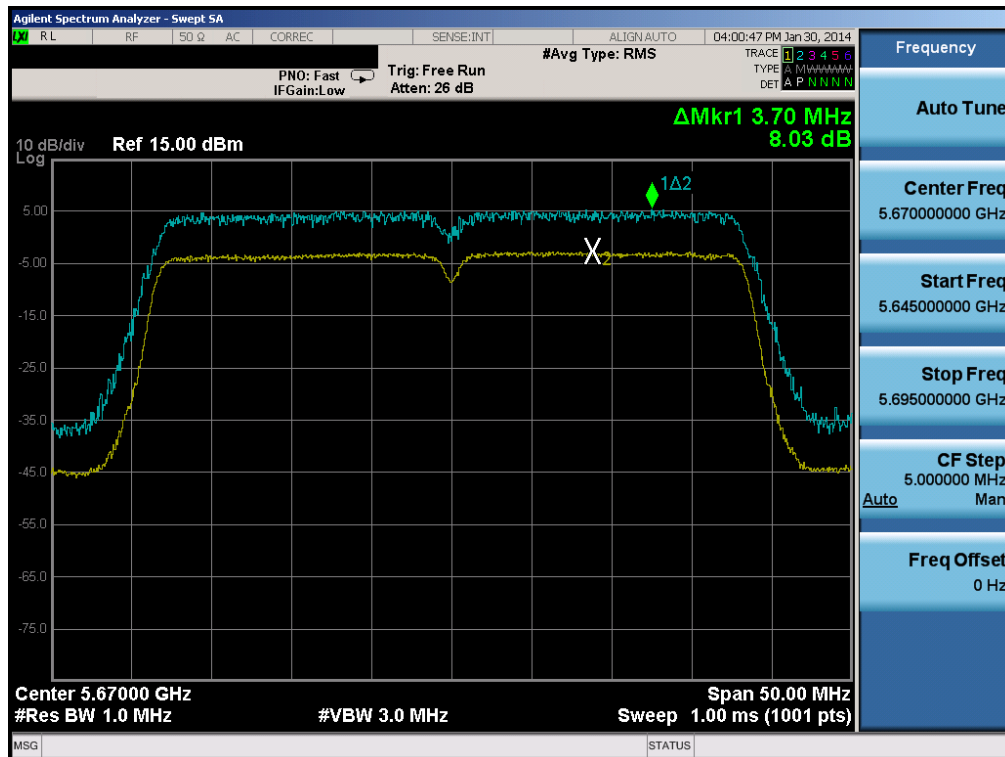


Plot 6-147. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)

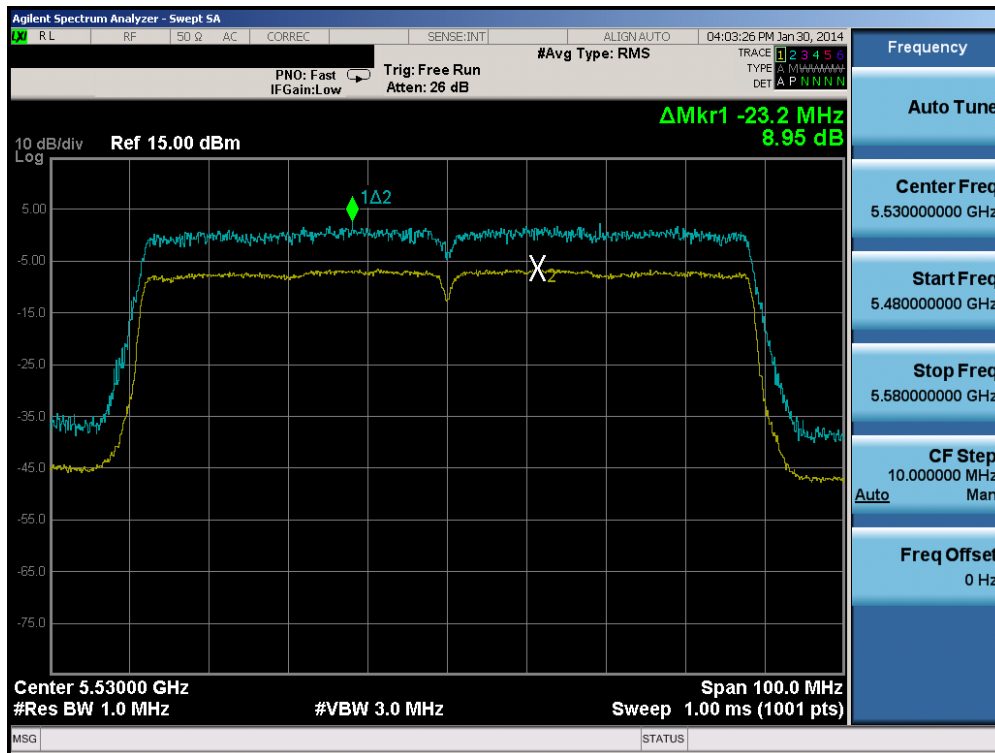


Plot 6-148. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 110)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 102 of 207                 |



Plot 6-149. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 134)



Plot 6-150. Peak Excursion Ratio Plot (80MHz BW 802.11ac (UNII Band 2C) – Ch. 106)

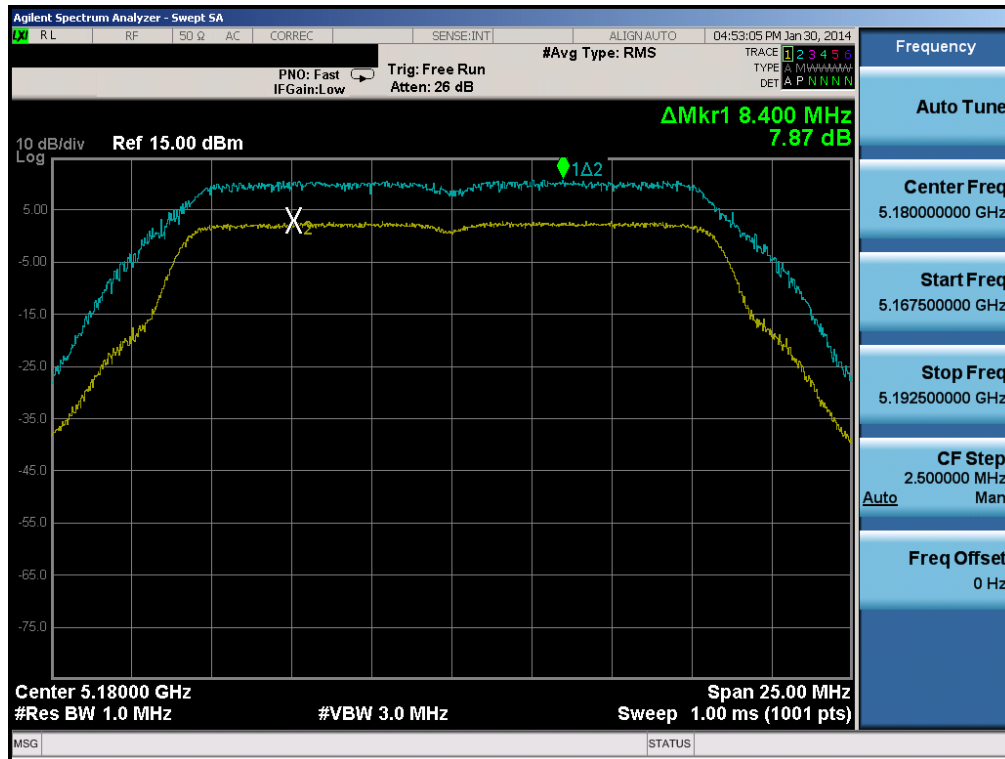
|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 103 of 207                 |

## Antenna-2 Peak Excursion Ratio – 802.11a/n/ac

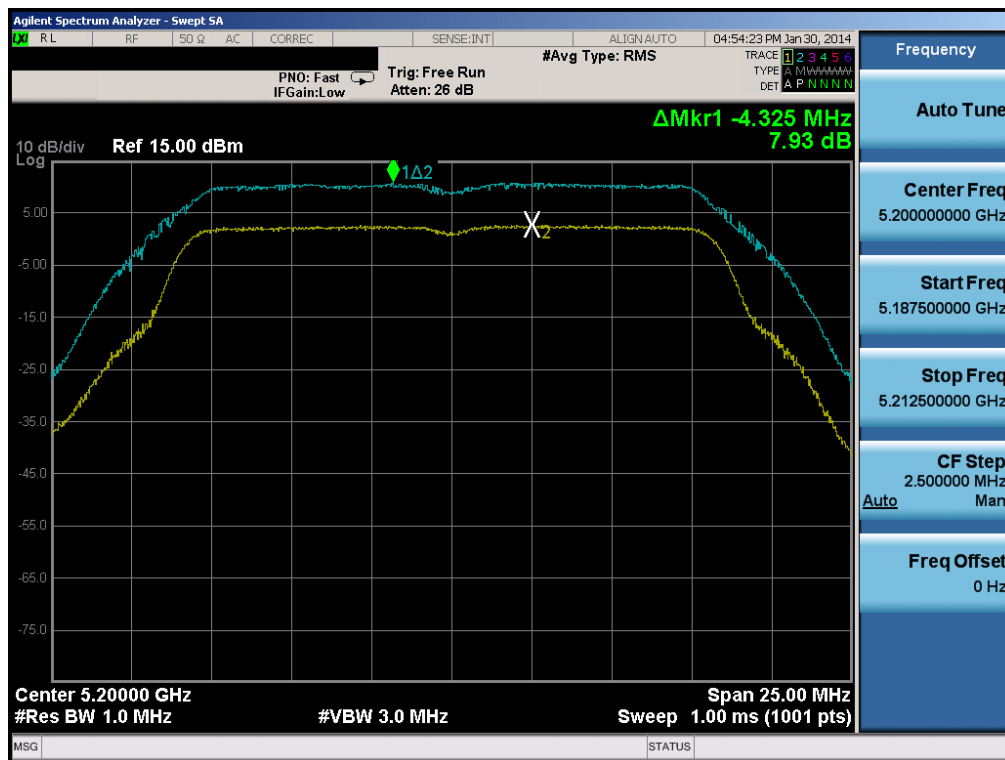
|         | Frequency [MHz] | Channel No. | 802.11 Mode | Data Rate [Mbps] | Measured Peak Excursion Ratio [dBm] | Max Permissible Peak Excursion Ratio [dBm/MHz] | Margin [dB] | Pass / Fail |
|---------|-----------------|-------------|-------------|------------------|-------------------------------------|------------------------------------------------|-------------|-------------|
| Band 1  | 5180            | 36          | a           | 6                | 7.87                                | 13.0                                           | -5.13       | Pass        |
|         | 5200            | 40          | a           | 6                | 7.93                                | 13.0                                           | -5.07       | Pass        |
|         | 5240            | 48          | a           | 6                | 7.90                                | 13.0                                           | -5.10       | Pass        |
|         | 5180            | 36          | n (20MHz)   | 6.5/7.2 (MCS0)   | 8.81                                | 13.0                                           | -4.19       | Pass        |
|         | 5200            | 40          | n (20MHz)   | 6.5/7.2 (MCS0)   | 8.11                                | 13.0                                           | -4.89       | Pass        |
|         | 5240            | 48          | n (20MHz)   | 6.5/7.2 (MCS0)   | 8.79                                | 13.0                                           | -4.21       | Pass        |
|         | 5190            | 38          | n (40MHz)   | 13.5/15 (MCS0)   | 8.31                                | 13.0                                           | -4.70       | Pass        |
|         | 5230            | 46          | n (40MHz)   | 13.5/15 (MCS0)   | 8.28                                | 13.0                                           | -4.72       | Pass        |
|         | 5210            | 42          | ac (80MHz)  | 29.3/32.5 (MCS0) | 8.71                                | 13.0                                           | -4.29       | Pass        |
| Band 2A | 5260            | 52          | a           | 6                | 7.92                                | 13.0                                           | -5.08       | Pass        |
|         | 5280            | 56          | a           | 6                | 7.89                                | 13.0                                           | -5.11       | Pass        |
|         | 5320            | 64          | a           | 6                | 7.85                                | 13.0                                           | -5.15       | Pass        |
|         | 5260            | 52          | n (20MHz)   | 6.5/7.2 (MCS0)   | 9.24                                | 13.0                                           | -3.76       | Pass        |
|         | 5280            | 56          | n (20MHz)   | 6.5/7.2 (MCS0)   | 8.55                                | 13.0                                           | -4.45       | Pass        |
|         | 5320            | 64          | n (20MHz)   | 6.5/7.2 (MCS0)   | 9.10                                | 13.0                                           | -3.90       | Pass        |
|         | 5270            | 54          | n (40MHz)   | 13.5/15 (MCS0)   | 8.59                                | 13.0                                           | -4.41       | Pass        |
|         | 5310            | 62          | n (40MHz)   | 13.5/15 (MCS0)   | 8.52                                | 13.0                                           | -4.48       | Pass        |
|         | 5290            | 58          | ac (80MHz)  | 29.3/32.5 (MCS0) | 8.39                                | 13.0                                           | -4.62       | Pass        |
| Band 2C | 5500            | 100         | a           | 6                | 7.84                                | 13.0                                           | -5.16       | Pass        |
|         | 5580            | 116         | a           | 6                | 7.98                                | 13.0                                           | -5.02       | Pass        |
|         | 5700            | 140         | a           | 6                | 7.90                                | 13.0                                           | -5.10       | Pass        |
|         | 5500            | 100         | n (20MHz)   | 6.5/7.2 (MCS0)   | 8.92                                | 13.0                                           | -4.09       | Pass        |
|         | 5580            | 116         | n (20MHz)   | 6.5/7.2 (MCS0)   | 9.06                                | 13.0                                           | -3.94       | Pass        |
|         | 5700            | 140         | n (20MHz)   | 6.5/7.2 (MCS0)   | 8.94                                | 13.0                                           | -4.06       | Pass        |
|         | 5510            | 102         | n (40MHz)   | 13.5/15 (MCS0)   | 8.15                                | 13.0                                           | -4.85       | Pass        |
|         | 5550            | 110         | n (40MHz)   | 13.5/15 (MCS0)   | 8.44                                | 13.0                                           | -4.56       | Pass        |
|         | 5670            | 134         | n (40MHz)   | 13.5/15 (MCS0)   | 8.38                                | 13.0                                           | -4.62       | Pass        |
|         | 5530            | 106         | ac (80MHz)  | 29.3/32.5 (MCS0) | 8.20                                | 13.0                                           | -4.80       | Pass        |

**Table 6-27. Conducted Peak Excursion Ratio Measurements**

|                                      |                                                                                     |                                                                     |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMG900R7                  |  | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                                                      | EUT Type:<br>Portable Handset                                       | Page 104 of 207                                                                       |                                 |

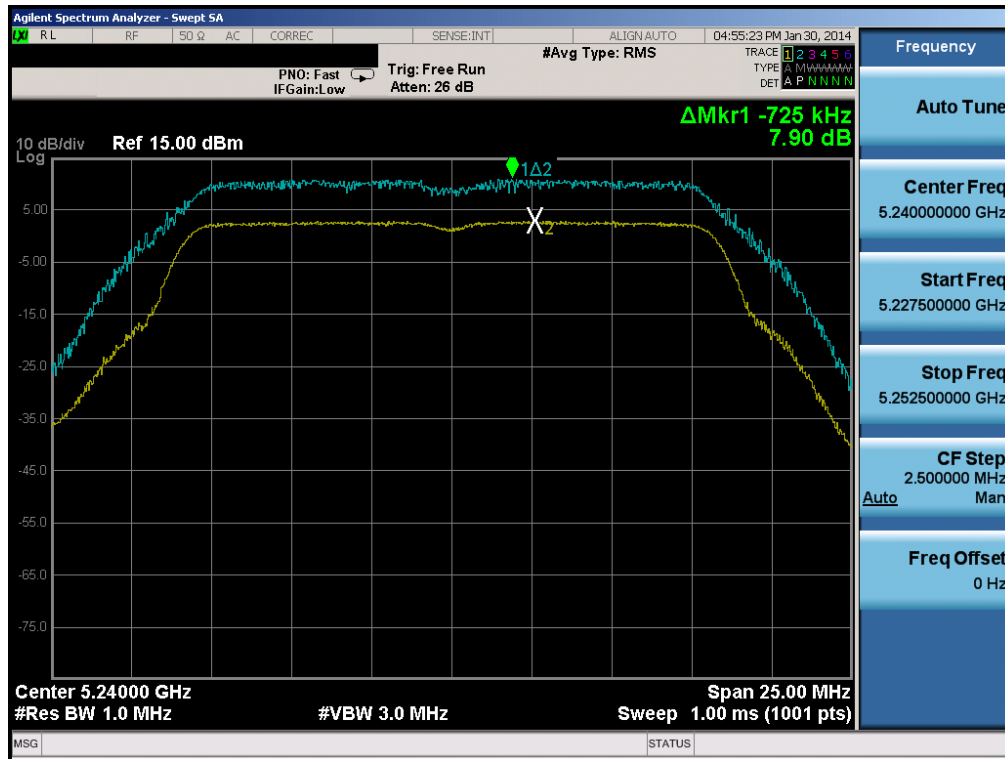


Plot 6-151. Peak Excursion Ratio Plot (802.11a (UNII Band 1) – Ch. 36)

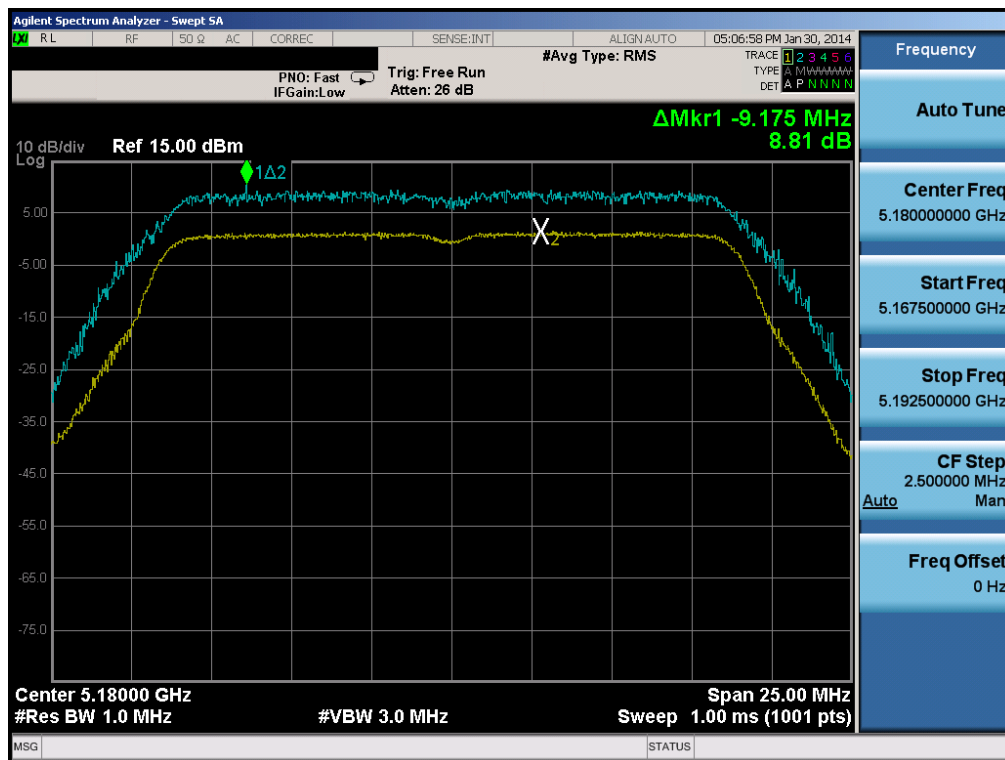


Plot 6-152. Peak Excursion Ratio Plot (802.11a (UNII Band 1) – Ch. 40)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 105 of 207                 |

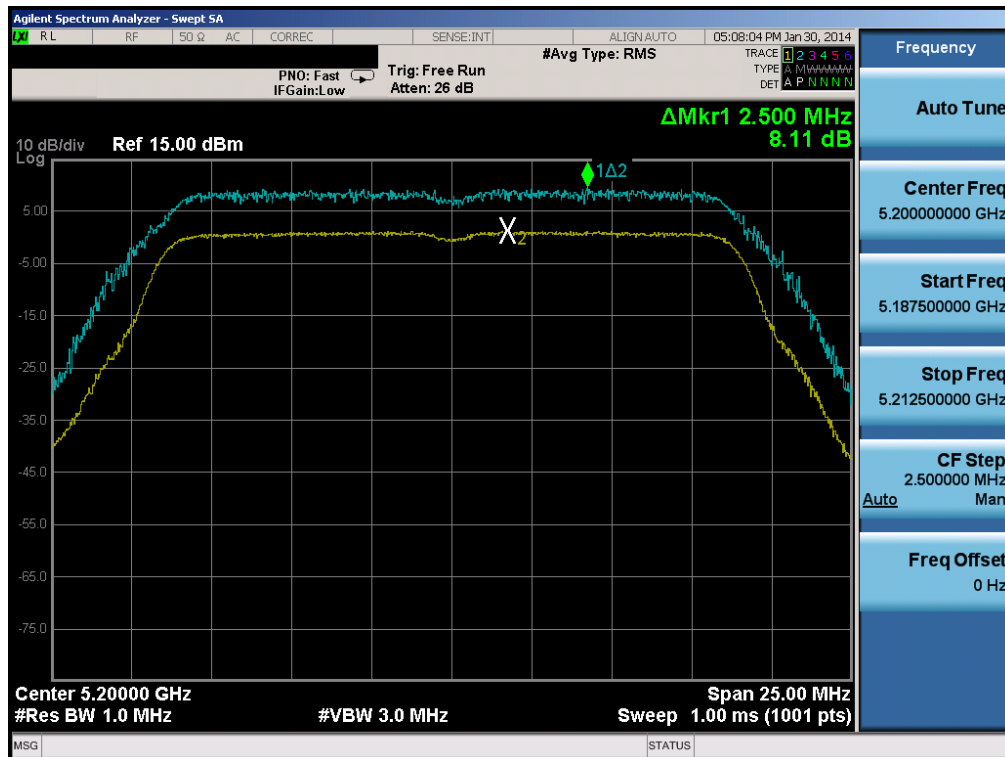


Plot 6-153. Peak Excursion Ratio Plot (802.11a (UNII Band 1) – Ch. 48)

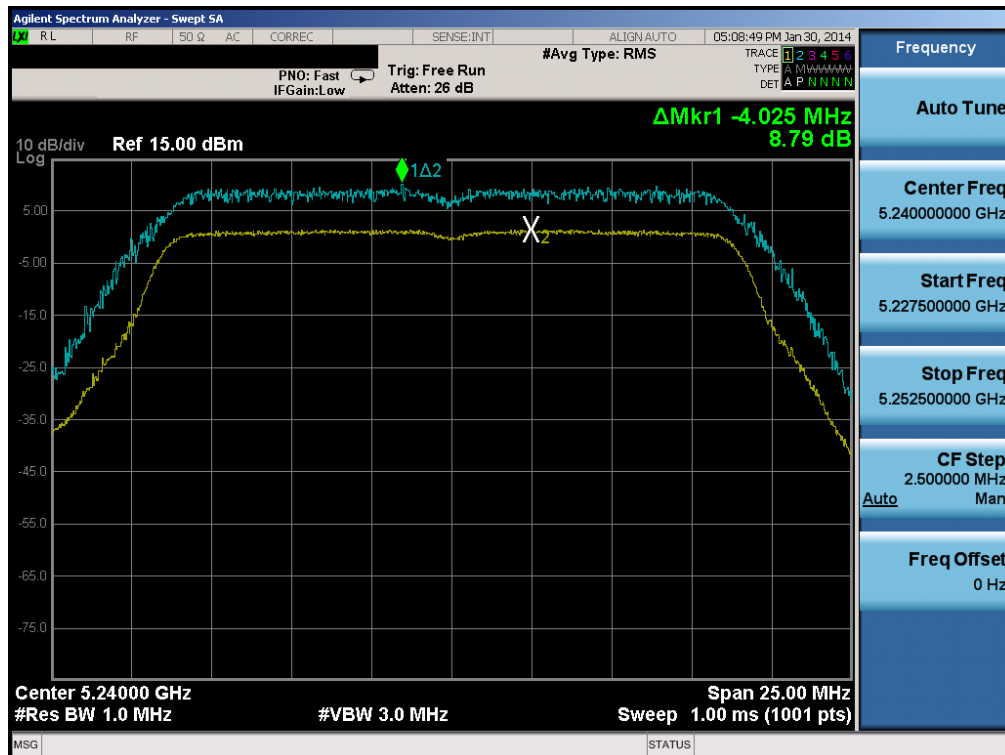


Plot 6-154. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 106 of 207                 |

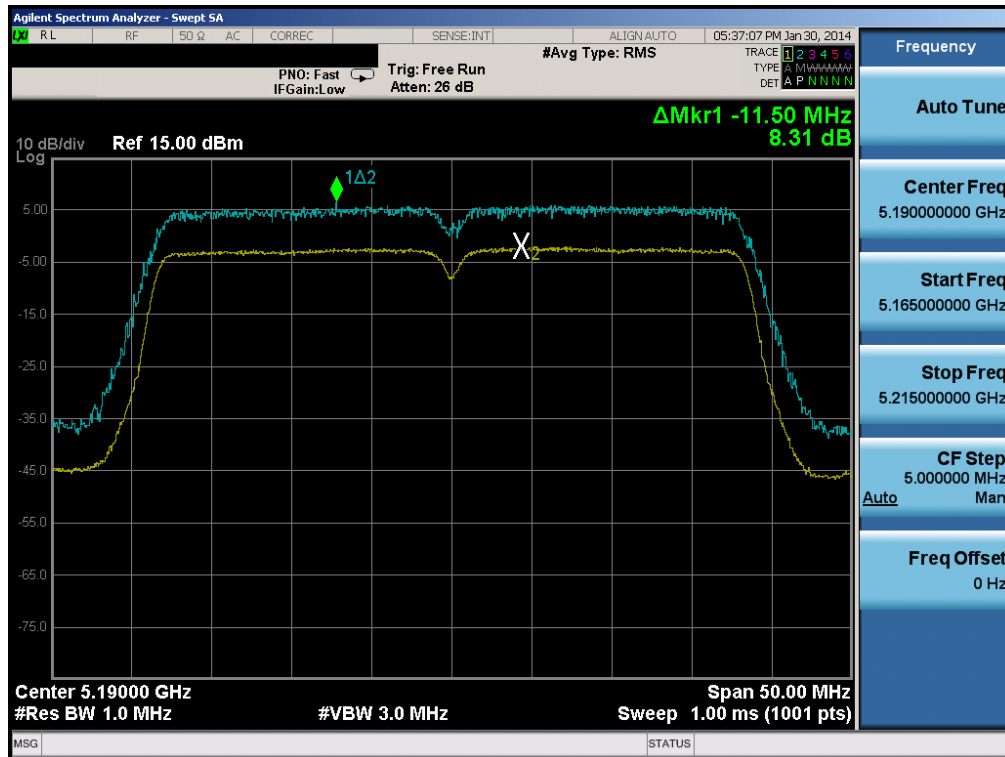


Plot 6-155. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

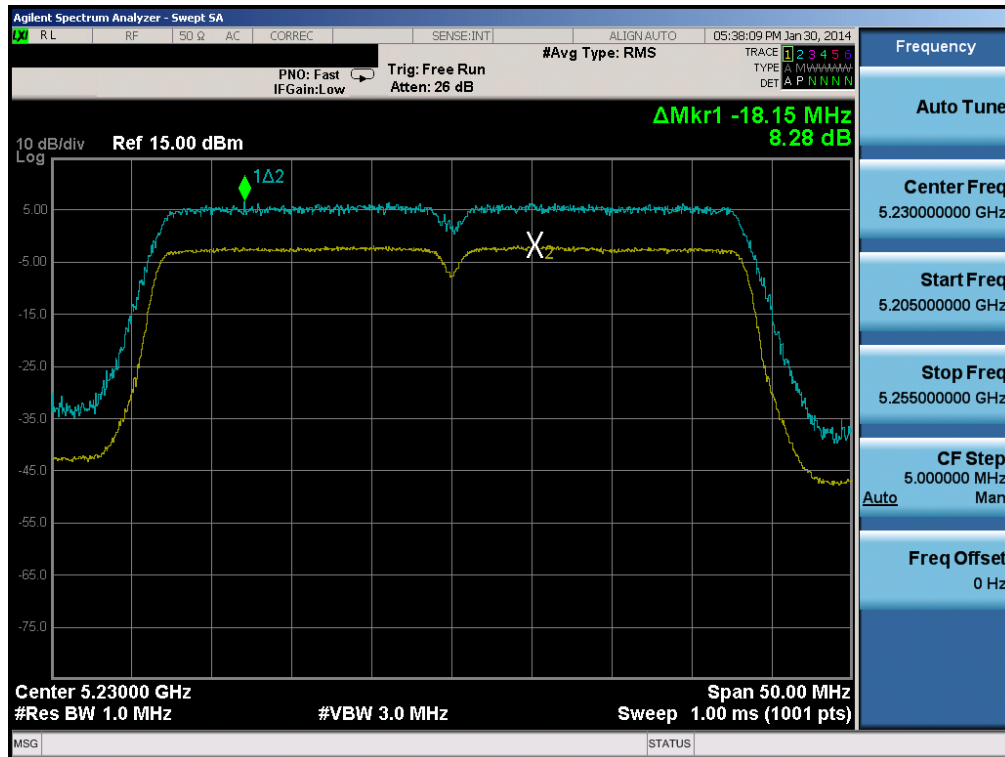


Plot 6-156. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 107 of 207                 |

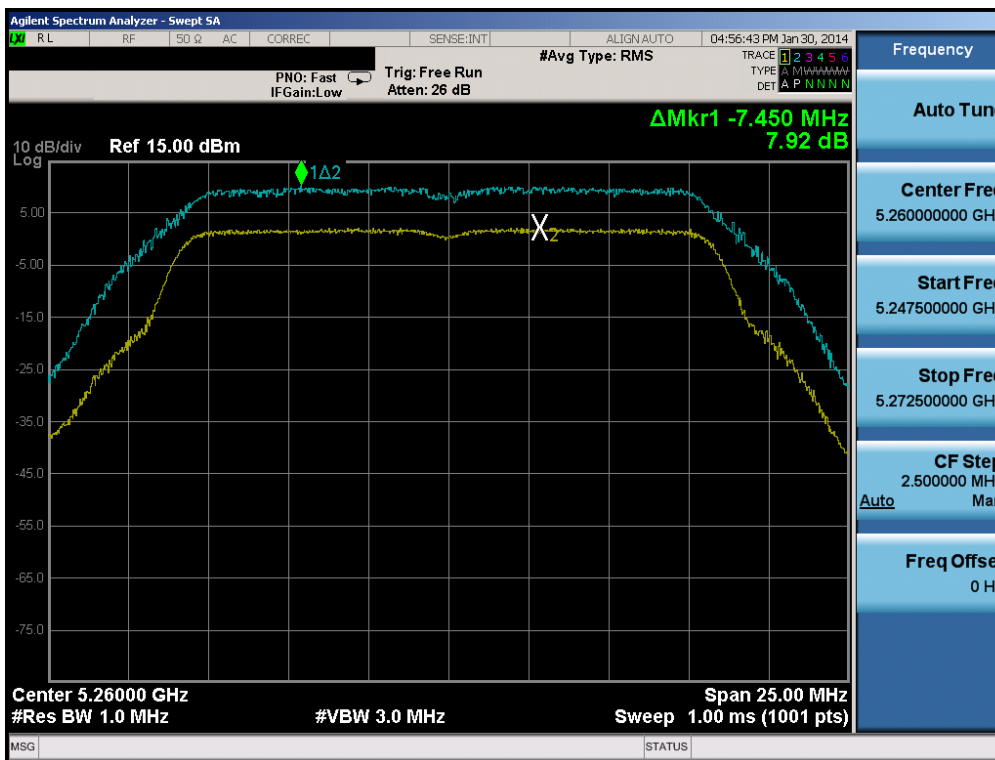
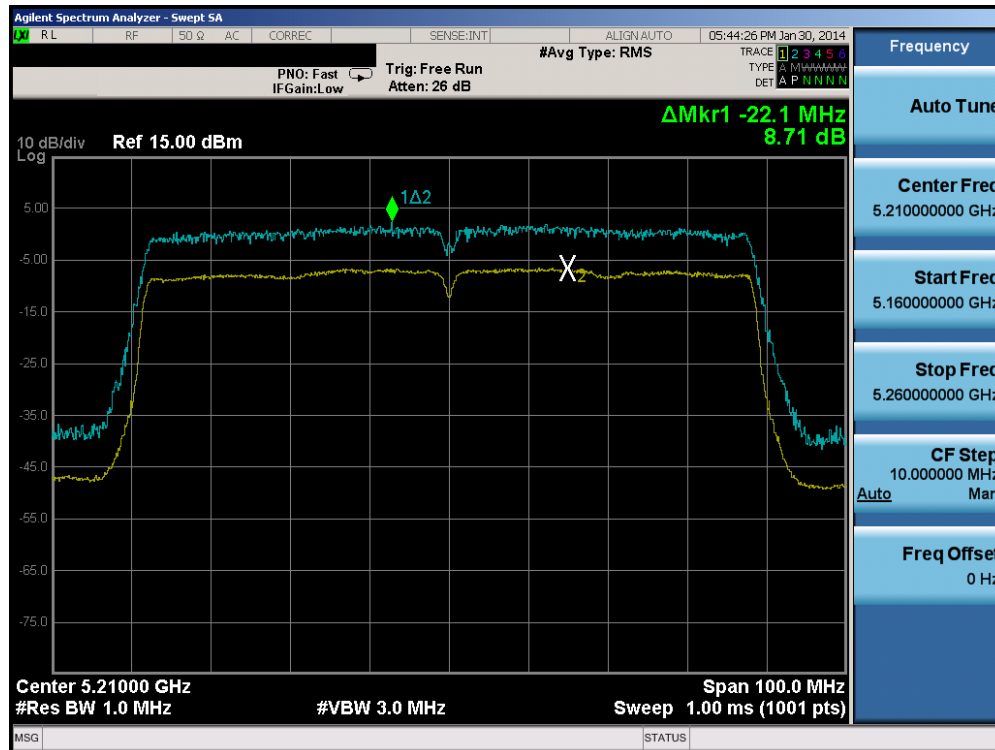


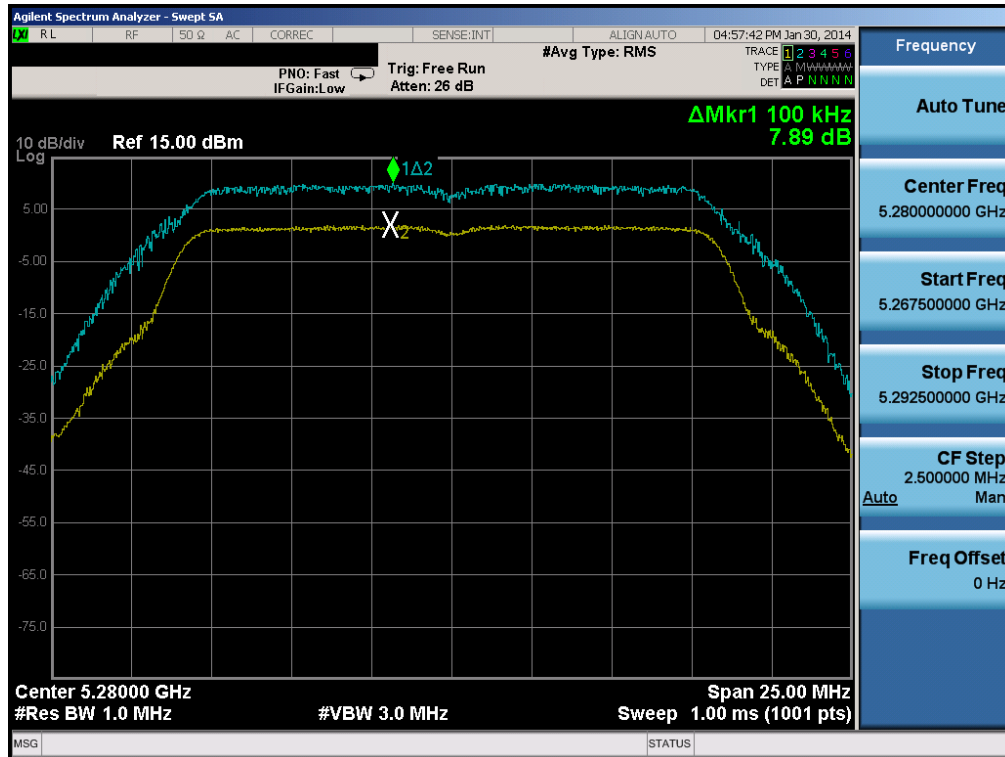
Plot 6-157. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 38)



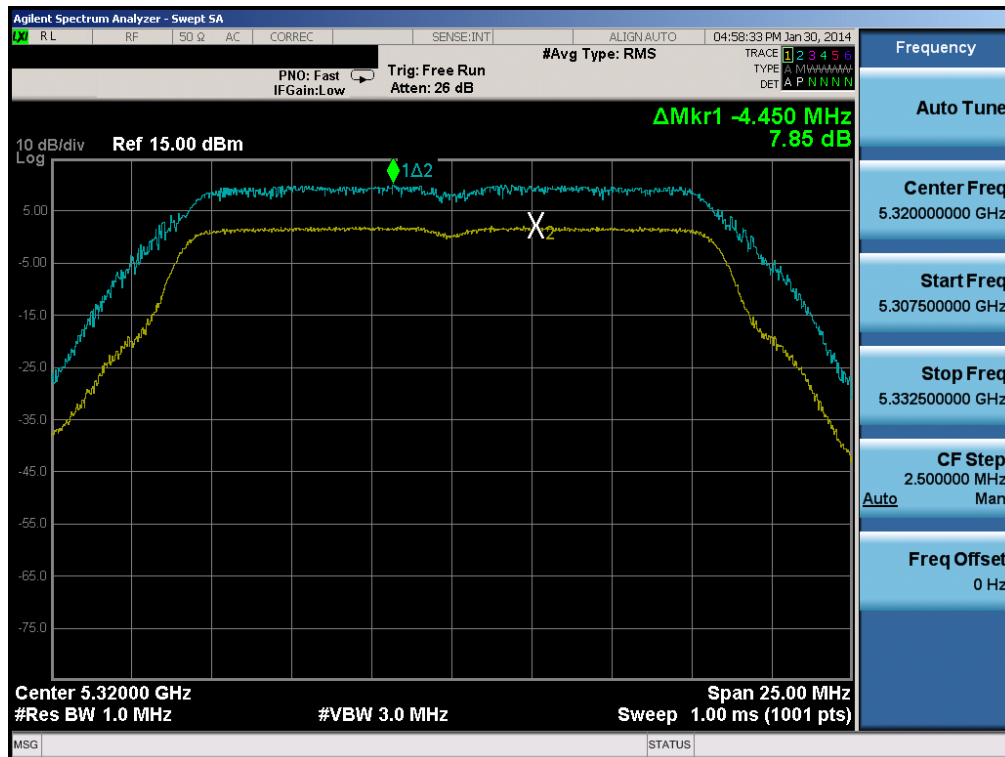
Plot 6-158. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 1) – Ch. 46)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 108 of 207                 |



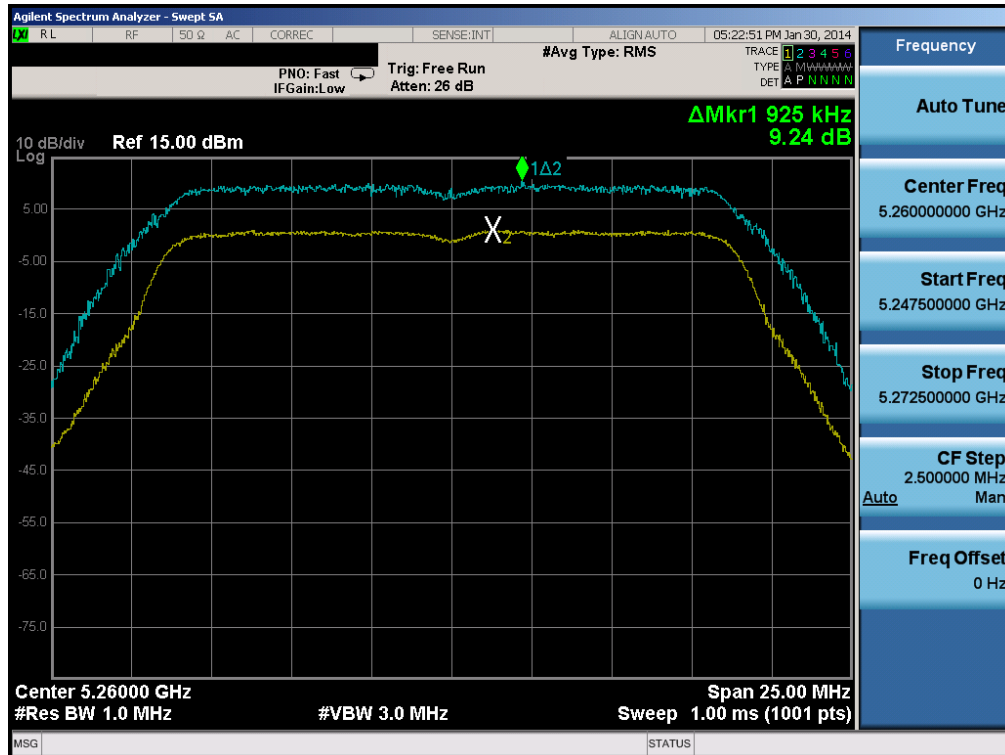


Plot 6-161. Peak Excursion Ratio Plot (802.11a (UNII Band 2A) – Ch. 56)

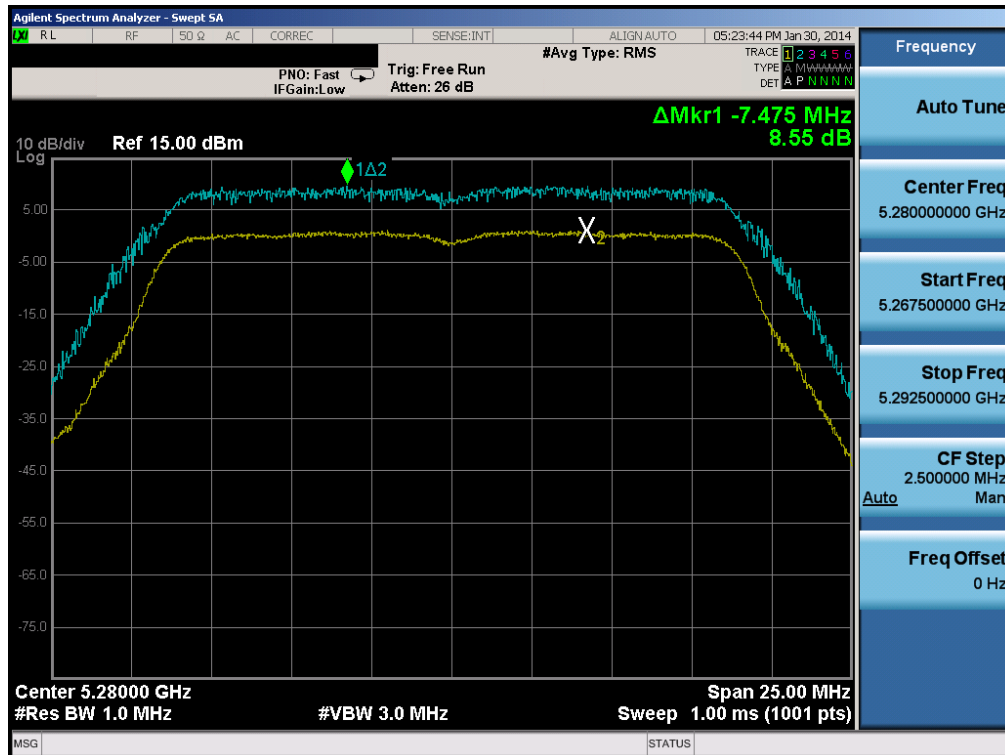


Plot 6-162. Peak Excursion Ratio Plot (802.11a (UNII Band 2A) – Ch. 64)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 110 of 207                 |

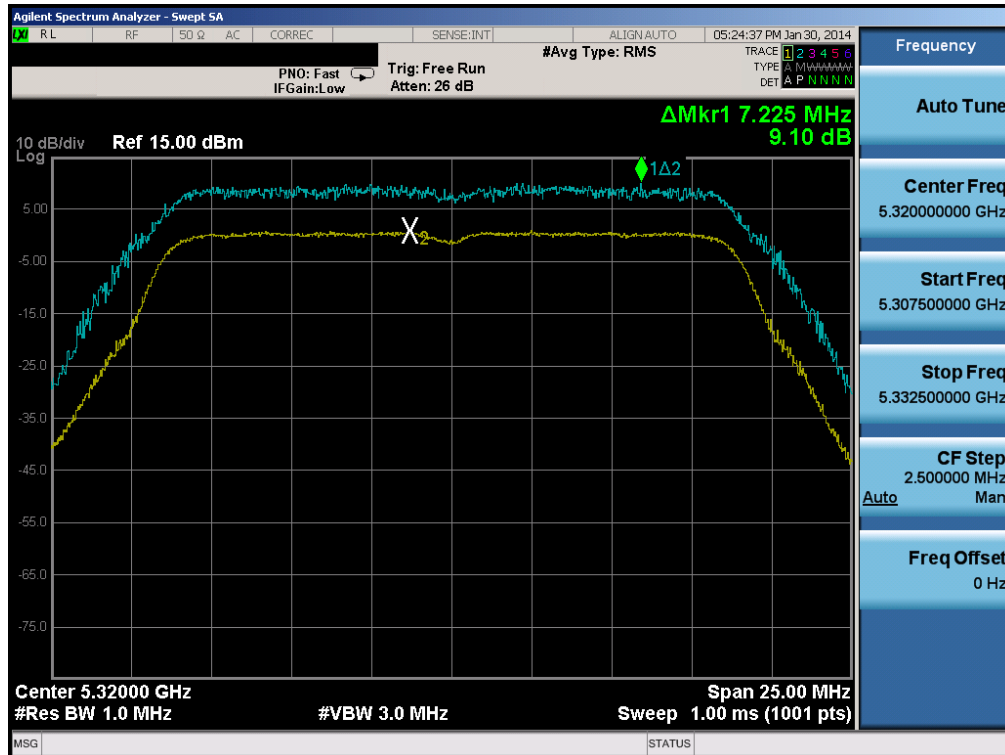


Plot 6-163. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 52)

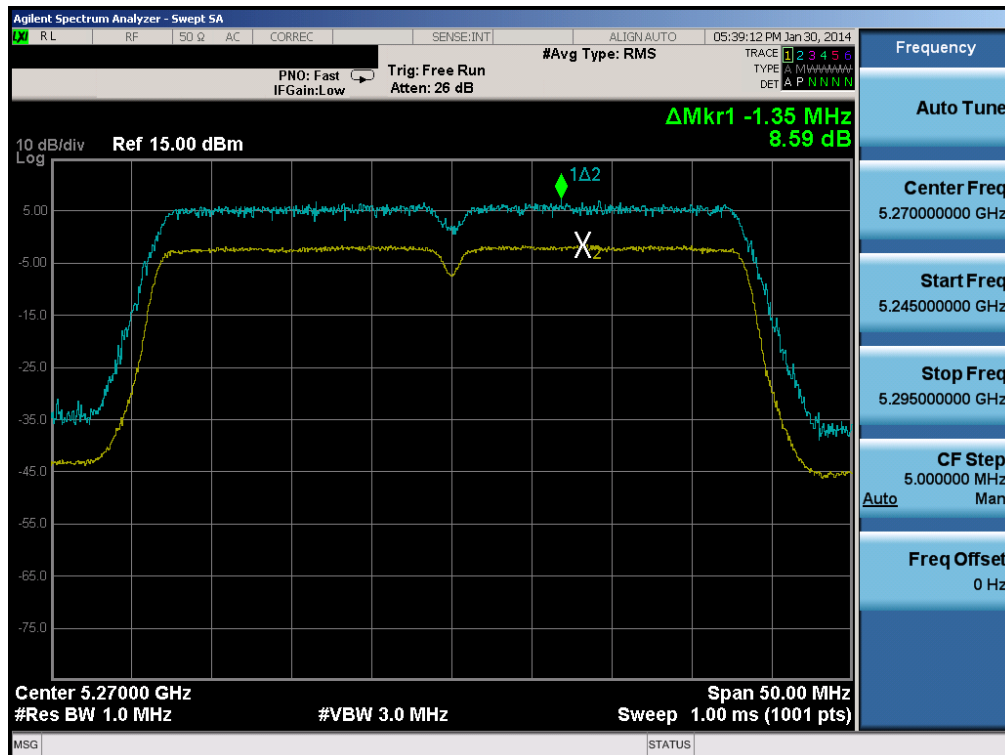


Plot 6-164. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 56)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 111 of 207                 |

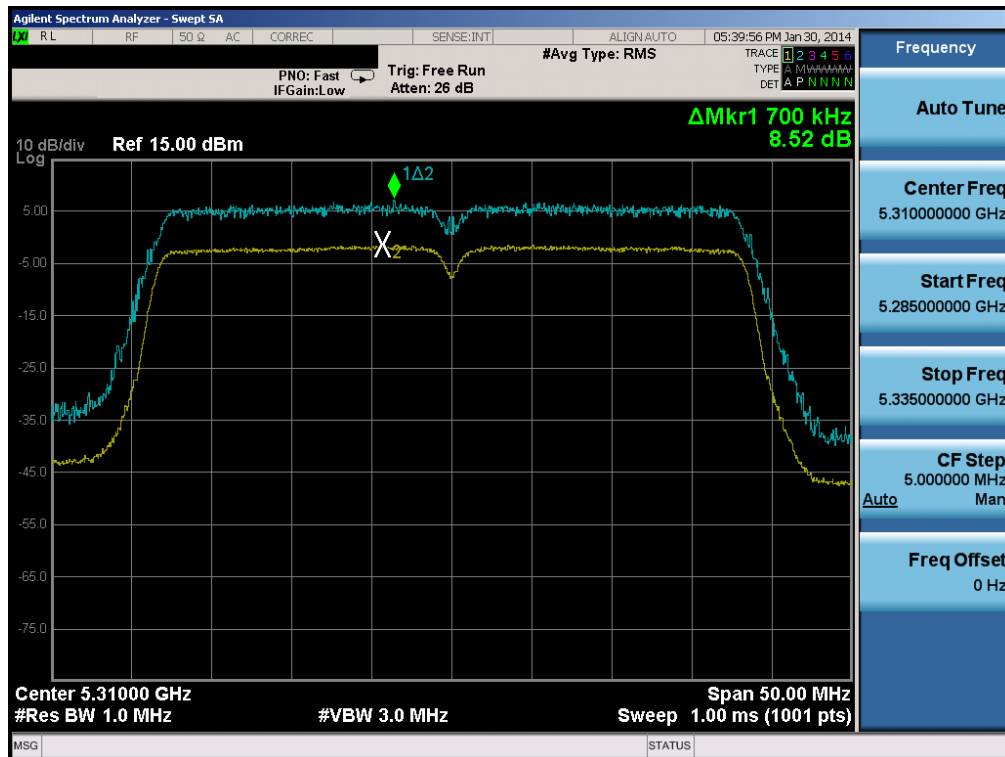


Plot 6-165. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2A) – Ch. 64)

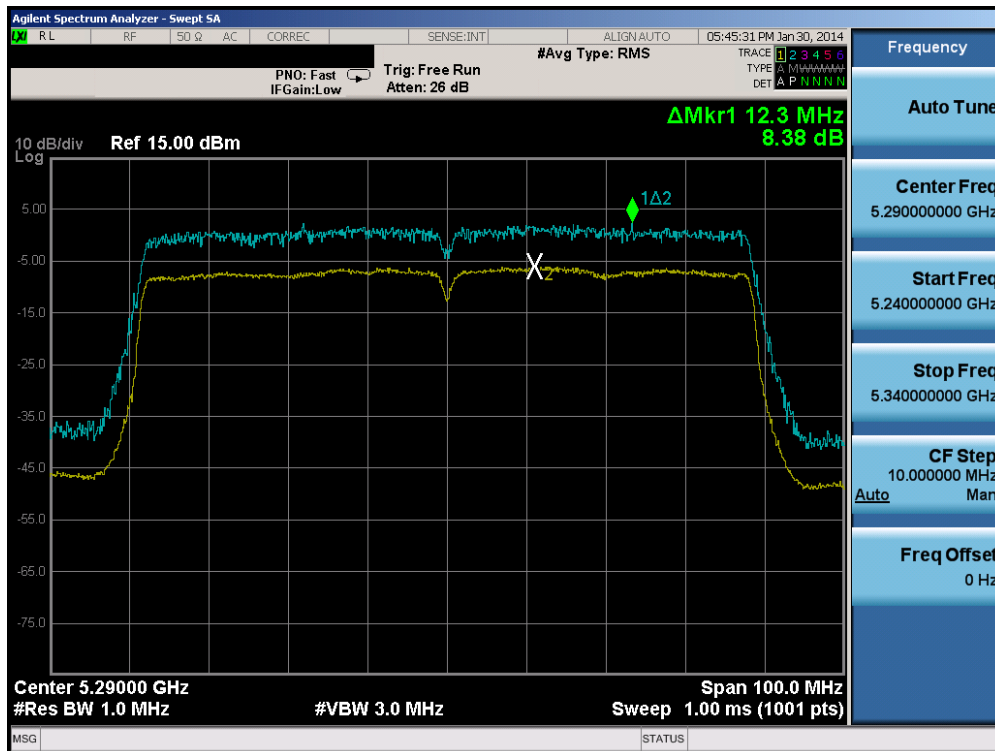


Plot 6-166. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 54)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 112 of 207                 |

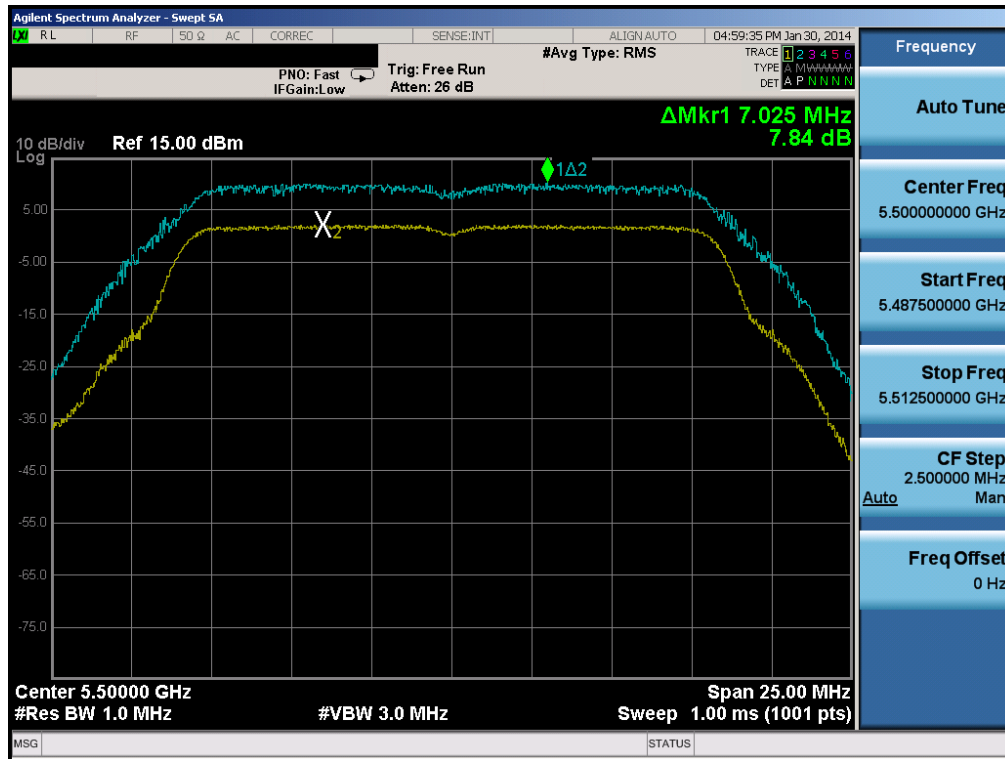


Plot 6-167. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 2A) – Ch. 62)

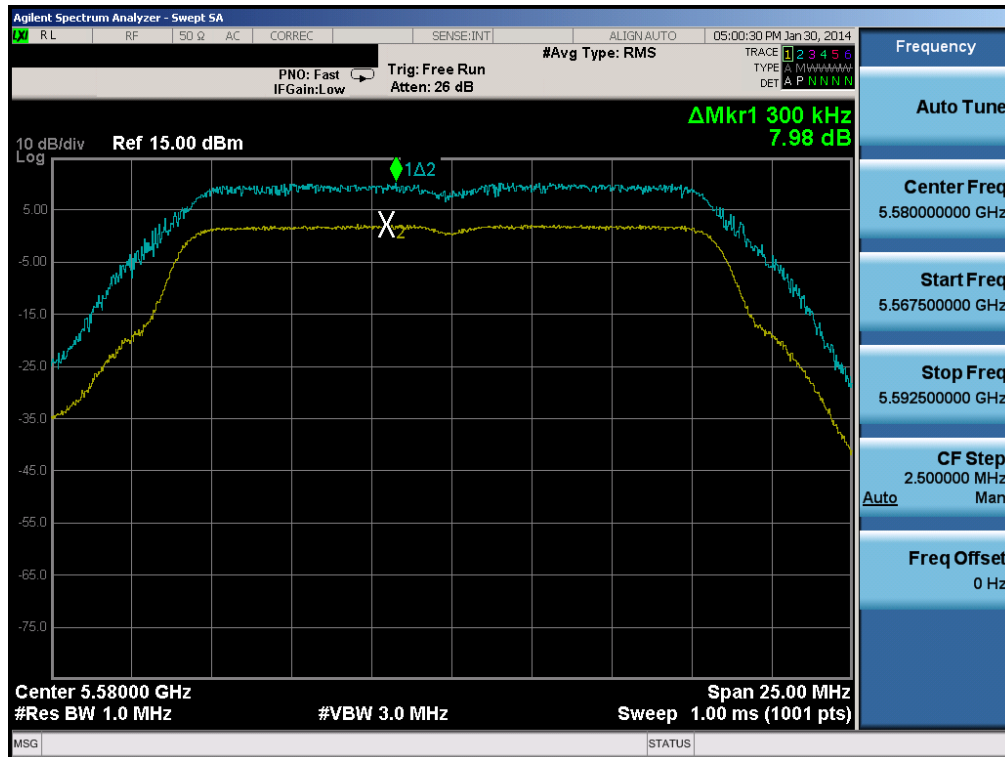


Plot 6-168. Peak Excursion Ratio Plot (80MHz BW 802.11ac (UNII Band 2A) – Ch. 58)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 113 of 207                 |

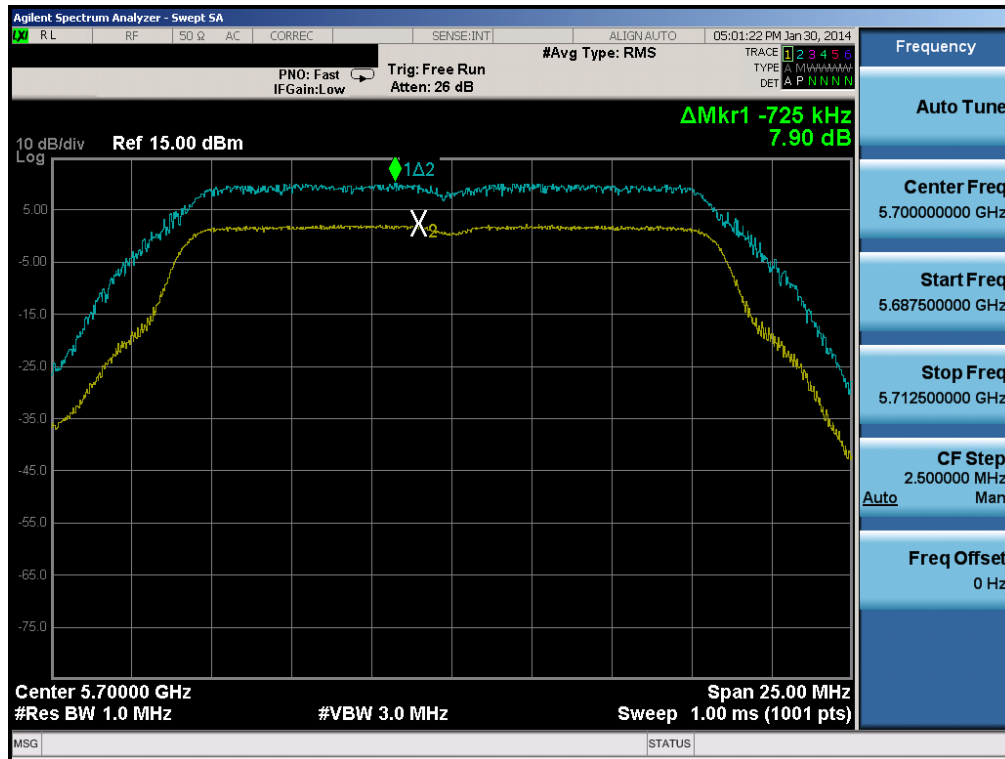


Plot 6-169. Peak Excursion Ratio Plot (802.11a (UNII Band 2C) – Ch. 100)

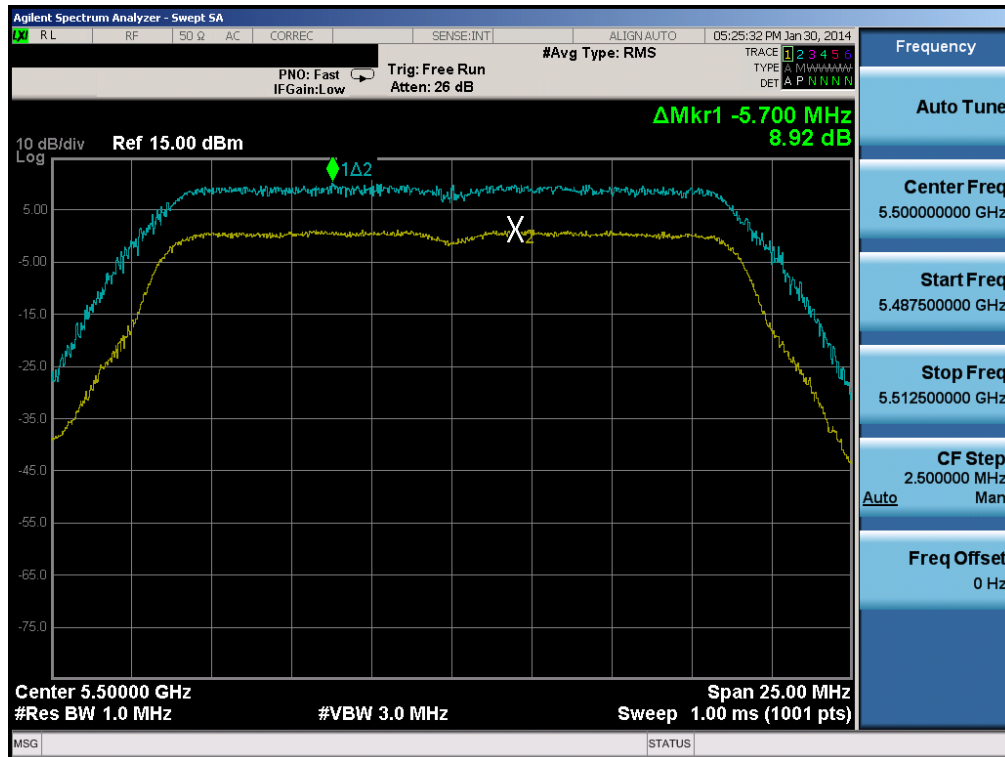


Plot 6-170. Peak Excursion Ratio Plot (802.11a (UNII Band 2C) – Ch. 116)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 114 of 207                 |

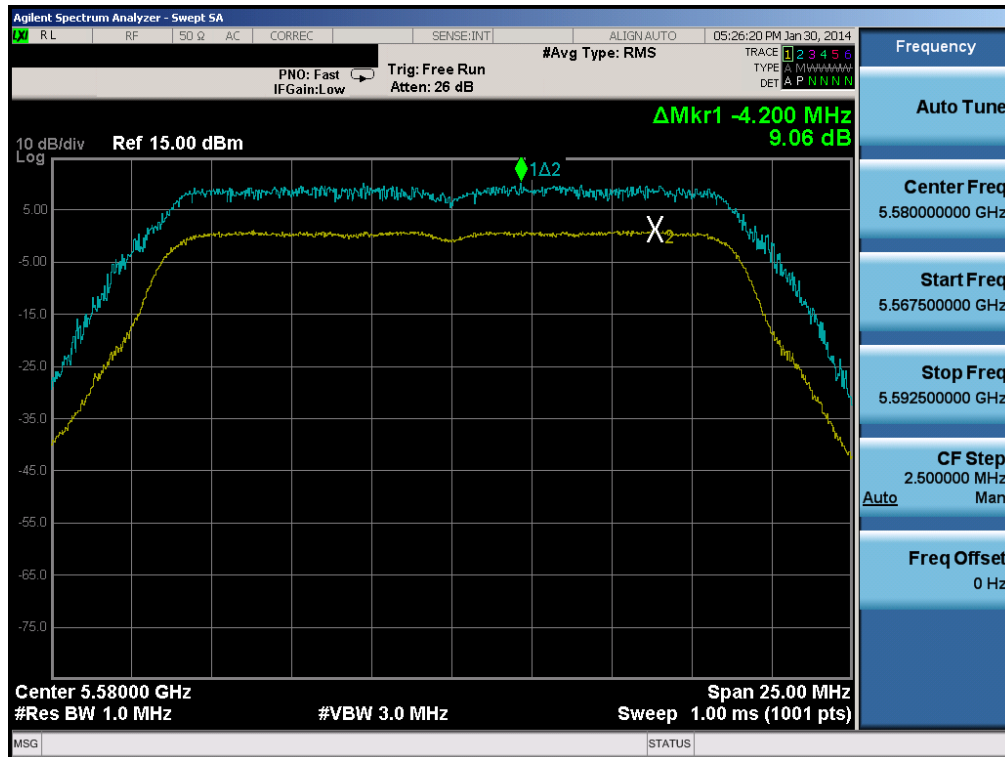


Plot 6-171. Peak Excursion Ratio Plot (802.11a (UNII Band 2C) – Ch. 140)

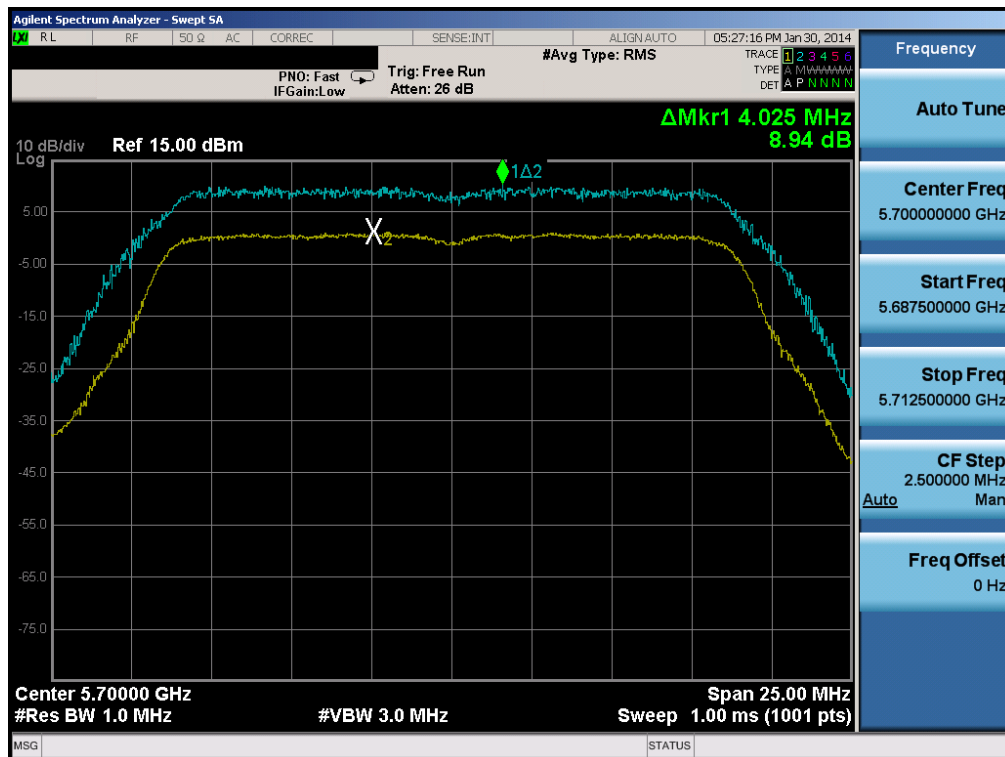


Plot 6-172. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 100)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 115 of 207                 |

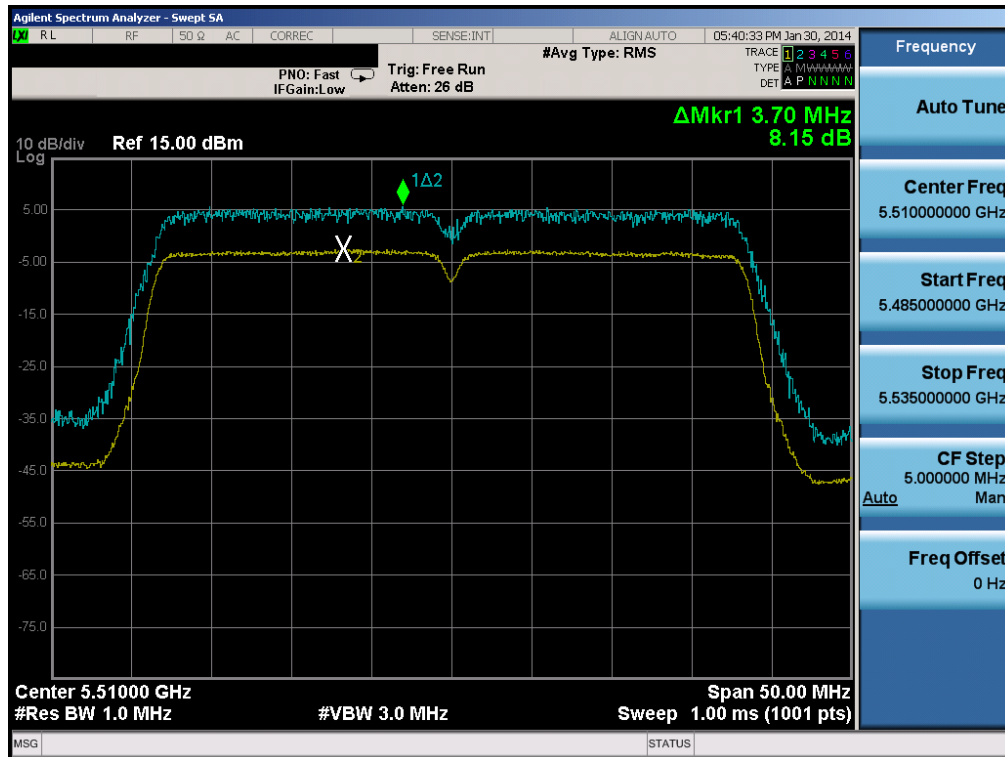


Plot 6-173. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 116)

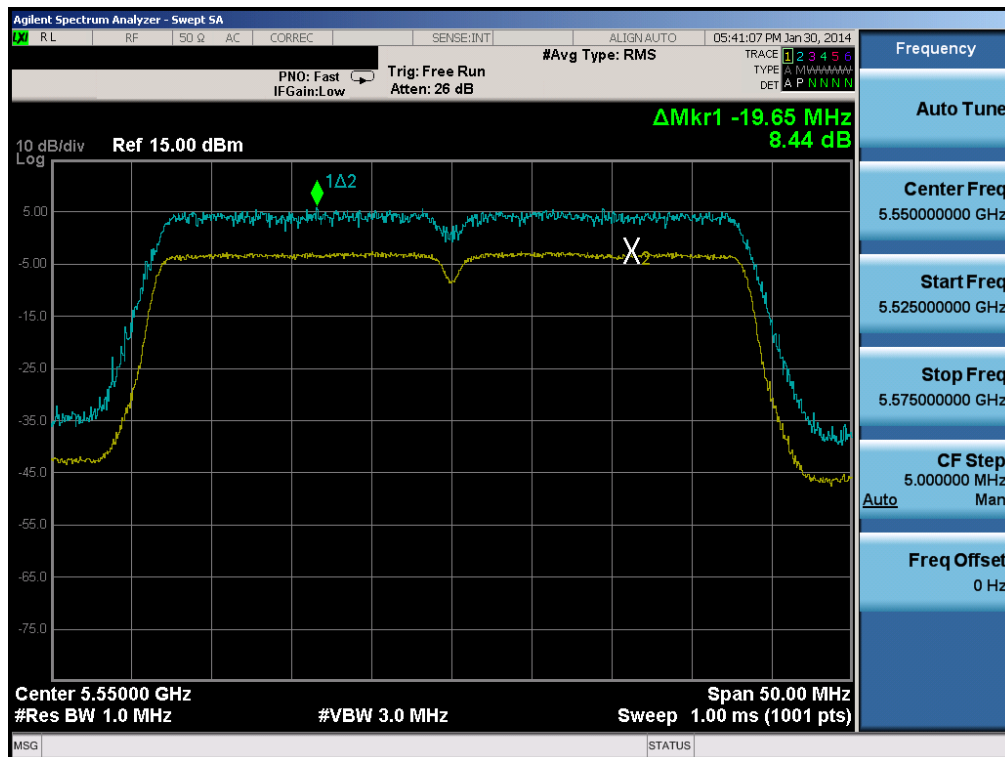


Plot 6-174. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2C) – Ch. 140)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 116 of 207                 |

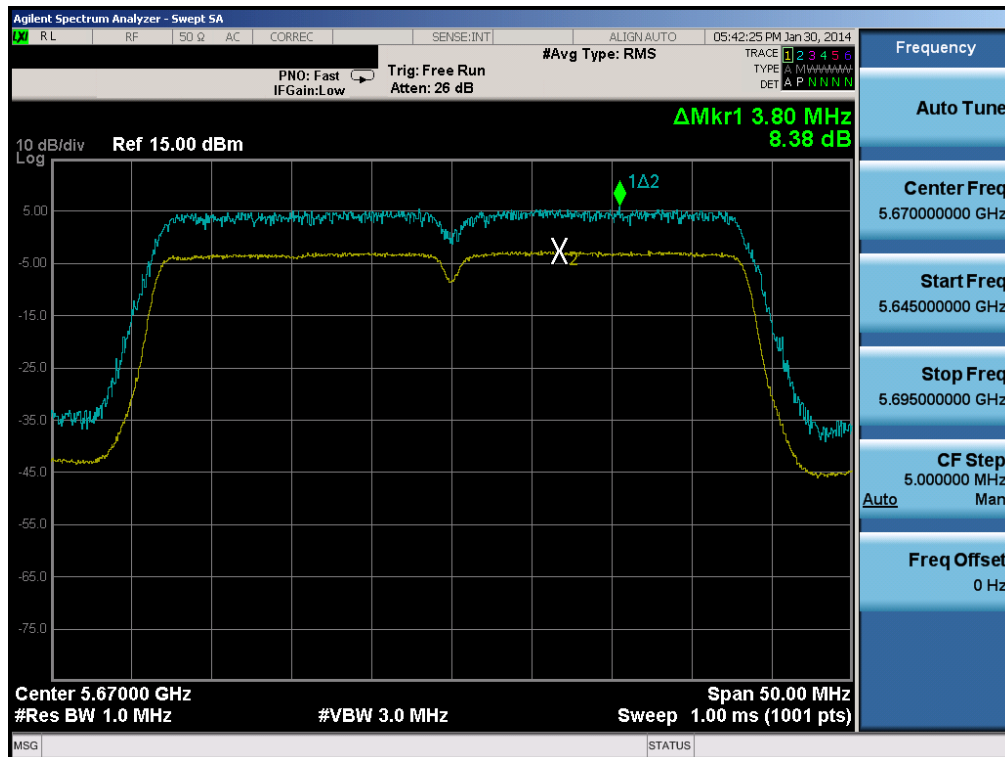


Plot 6-175. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 102)



Plot 6-176. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 110)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 117 of 207                 |



Plot 6-177. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 2C) – Ch. 134)

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 118 of 207                 |

## 6.6 Frequency Stability

### §15.407(g)

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

OPERATING FREQUENCY: 5,180,000,000 Hz  
 CHANNEL: 36  
 REFERENCE VOLTAGE: 3.80 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C)  | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|------------|----------------|-----------------|---------------|
| 100 %          | 3.80        | + 20 (Ref) | 5,179,999,989  | -11             | -0.00000021   |
| 100 %          |             | - 30       | 5,180,000,025  | 25              | 0.00000048    |
| 100 %          |             | - 20       | 5,179,999,974  | -26             | -0.00000050   |
| 100 %          |             | - 10       | 5,180,000,005  | 5               | 0.00000010    |
| 100 %          |             | 0          | 5,179,999,986  | -14             | -0.00000027   |
| 100 %          |             | + 10       | 5,180,000,020  | 20              | 0.00000039    |
| 100 %          |             | + 20       | 5,179,999,971  | -29             | -0.00000056   |
| 100 %          |             | + 30       | 5,180,000,017  | 17              | 0.00000033    |
| 100 %          |             | + 40       | 5,180,000,005  | 5               | 0.00000010    |
| 100 %          |             | + 50       | 5,179,999,973  | -27             | -0.00000052   |
| 85 %           | 3.23        | + 20       | 5,179,999,991  | -9              | -0.00000017   |
| 115 %          | 4.37        | + 20       | 5,180,000,020  | 20              | 0.00000039    |
| BATT. ENDPOINT | 3.50        | + 20       | 5,179,999,985  | -15             | -0.00000029   |

**Table 6-28. Frequency Stability Measurements for UNII Band 1 (Ch. 36)**

#### **Note:**

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

|                                      |                                                                                     |                                                                        |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMG900R7                  |  | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                                                      | EUT Type:<br>Portable Handset                                          | Page 119 of 207                                                                       |                                 |

## Frequency Stability (Cont'd)

### §15.407(g)

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

OPERATING FREQUENCY: 5,260,000,000 Hz  
 CHANNEL: 52  
 REFERENCE VOLTAGE: 3.80 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C)  | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|------------|----------------|-----------------|---------------|
| 100 %          | 3.80        | + 20 (Ref) | 5,260,000,010  | 10              | 0.00000019    |
| 100 %          |             | - 30       | 5,260,000,007  | 7               | 0.00000013    |
| 100 %          |             | - 20       | 5,259,999,973  | -27             | -0.00000051   |
| 100 %          |             | - 10       | 5,260,000,000  | 0               | 0.00000000    |
| 100 %          |             | 0          | 5,260,000,008  | 8               | 0.00000015    |
| 100 %          |             | + 10       | 5,259,999,984  | -16             | -0.00000030   |
| 100 %          |             | + 20       | 5,260,000,004  | 4               | 0.00000008    |
| 100 %          |             | + 30       | 5,260,000,009  | 9               | 0.00000017    |
| 100 %          |             | + 40       | 5,259,999,982  | -18             | -0.00000034   |
| 100 %          |             | + 50       | 5,260,000,020  | 20              | 0.00000038    |
| 85 %           | 3.23        | + 20       | 5,259,999,988  | -12             | -0.00000023   |
| 115 %          | 4.37        | + 20       | 5,260,000,003  | 3               | 0.00000006    |
| BATT. ENDPOINT | 3.50        | + 20       | 5,260,000,004  | 4               | 0.00000008    |

**Table 6-29. Frequency Stability Measurements for UNII Band 2A (Ch. 52)**

#### **Note:**

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

|                                      |                                                                                     |                                                                        |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMG900R7                  |  | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                                                      | EUT Type:<br>Portable Handset                                          | Page 120 of 207                                                                       |                                 |

## Frequency Stability (Cont'd)

### §15.407(g)

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

OPERATING FREQUENCY: 5,500,000,000 Hz  
 CHANNEL: 100  
 REFERENCE VOLTAGE: 3.80 VDC

| VOLTAGE (%)    | POWER (VDC) | TEMP (°C)  | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|------------|----------------|-----------------|---------------|
| 100 %          | 3.80        | + 20 (Ref) | 5,499,999,975  | -25             | -0.00000045   |
| 100 %          |             | - 30       | 5,500,000,022  | 22              | 0.00000040    |
| 100 %          |             | - 20       | 5,499,999,979  | -21             | -0.00000038   |
| 100 %          |             | - 10       | 5,499,999,999  | -1              | -0.00000002   |
| 100 %          |             | 0          | 5,500,000,007  | 7               | 0.00000013    |
| 100 %          |             | + 10       | 5,500,000,022  | 22              | 0.00000040    |
| 100 %          |             | + 20       | 5,500,000,002  | 2               | 0.00000004    |
| 100 %          |             | + 30       | 5,500,000,019  | 19              | 0.00000035    |
| 100 %          |             | + 40       | 5,499,999,985  | -15             | -0.00000027   |
| 100 %          |             | + 50       | 5,500,000,018  | 18              | 0.00000033    |
| 85 %           | 3.23        | + 20       | 5,500,000,002  | 2               | 0.00000004    |
| 115 %          | 4.37        | + 20       | 5,499,999,982  | -18             | -0.00000033   |
| BATT. ENDPOINT | 3.50        | + 20       | 5,499,999,982  | -18             | -0.00000033   |

**Table 6-30. Frequency Stability Measurements for UNII Band 2C (Ch. 100)**

#### **Note:**

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

|                                      |                                                                                     |                                                                        |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMG900R7                  |  | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                                                      | EUT Type:<br>Portable Handset                                          | Page 121 of 207                                                                       |                                 |

## 6.7 Radiated Spurious Emission Measurements

**§15.407(b.1)(b.6) §15.205 §15.209**

### **Test Overview and Limit**

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle (>98%), at its maximum power control level, as defined in KDB 789033 v01r03, and at the appropriate frequencies. All channels, modes (e.g. 802.11a, 802.11n (20MHz BW), 802.11n (40MHz BW), and 802.11ac (80MHz BW)), and modulations/data rates were investigated among all UNII bands. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

***All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table 6-31 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 789033 v01r03 – Section H

### **Test Settings**

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

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

|                                             |                                                                                     |                                                                                |                                                                                       |                                        |
|---------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMG900R7                  |  | <b>FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Reviewed by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>0Y1403190582.A3L | <b>Test Dates:</b><br>01/29-2/20/2014                                               | <b>EUT Type:</b><br>Portable Handset                                           |                                                                                       | Page 122 of 207                        |

### Peak Measurements above 1GHz

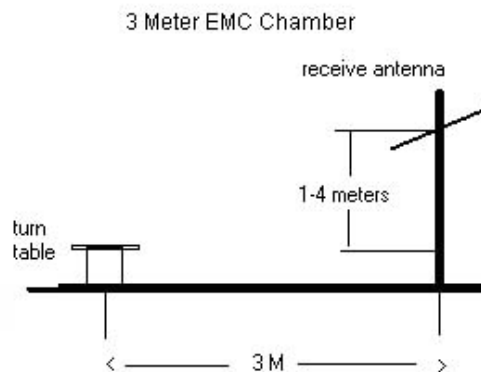
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

### Peak Measurements below 1GHz

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

### Test Setup

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



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

|                                             |                                               |                                                                               |                |                                        |
|---------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------|----------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | <b>FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT</b><br>(CERTIFICATION) | <b>SAMSUNG</b> | <b>Reviewed by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>0Y1403190582.A3L | <b>Test Dates:</b><br>01/29-2/20/2014         | <b>EUT Type:</b><br>Portable Handset                                          |                | Page 123 of 207                        |

## **Test Notes**

1. All radiated spurious emissions levels were measured in a radiated test setup per the guidance of KDB 789033 v01r03 Section H.
2. All emissions that lie in the restricted bands (denoted by a \* next to the frequency) specified in §15.205 are below the limit shown in Table 6-31.
3. All spurious emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 6-11. All spurious emissions that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dBμV/m.
4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
5. The EUT is supplied with a new/fully-recharged battery. The battery for this model EB-BG900BBE contains an embedded NFC antenna.
6. The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. Above 1 GHz, average and peak measurements were taken using linearly polarized horn antennas. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
7. Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
8. Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
9. Significant radiated spurious emissions levels were not found for MIMO test configurations.

## **Sample Calculations**

### **Determining Spurious Emissions Levels**

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

### **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> A3LSMG900R7                  |  | <b>FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Reviewed by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>0Y1403190582.A3L | <b>Test Dates:</b><br>01/29-2/20/2014                                               | <b>EUT Type:</b><br>Portable Handset                                           |                                                                                       | Page 124 of 207                        |

## Antenna-1 Radiated Spurious Emission Measurements

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

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

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| 10360.00        | -125.00              | Peak     | H          | 46.44       | 28.44                   | 68.20          | -39.76      |
| * 15540.00      | -135.00              | Average  | H          | 51.12       | 23.12                   | 53.98          | -30.86      |
| * 15540.00      | -125.00              | Peak     | H          | 51.12       | 33.12                   | 73.98          | -40.86      |
| * 20720.00      | -135.00              | Average  | H          | 44.00       | 16.00                   | 53.98          | -37.98      |
| * 20720.00      | -125.00              | Peak     | H          | 44.00       | 26.00                   | 73.98          | -47.98      |
| 25900.00        | -125.00              | Peak     | H          | 44.87       | 26.87                   | 68.20          | -41.33      |

**Table 6-32. Radiated Measurements**

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

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| 10400.00        | -125.00              | Peak     | H          | 46.65       | 28.65                   | 68.20          | -39.55      |
| * 15600.00      | -135.00              | Average  | H          | 51.11       | 23.11                   | 53.98          | -30.87      |
| * 15600.00      | -125.00              | Peak     | H          | 51.11       | 33.11                   | 73.98          | -40.87      |
| * 20800.00      | -135.00              | Average  | H          | 43.99       | 15.99                   | 53.98          | -37.99      |
| * 20800.00      | -125.00              | Peak     | H          | 43.99       | 25.99                   | 73.98          | -47.99      |
| 26000.00        | -125.00              | Peak     | H          | 44.97       | 26.97                   | 68.20          | -41.23      |

**Table 6-33. Radiated Measurements**

|                                      |                                                                                     |                                                                     |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMG900R7                  |  | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                                                      | EUT Type:<br>Portable Handset                                       |                                                                                       | Page 125 of 207                 |

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

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| 10480.00        | -125.00              | Peak     | H          | 46.65       | 28.65                   | 68.20          | -39.55      |
| * 15720.00      | -135.00              | Average  | H          | 51.40       | 23.40                   | 53.98          | -30.58      |
| * 15720.00      | -125.00              | Peak     | H          | 51.40       | 33.40                   | 73.98          | -40.58      |
| * 20960.00      | -135.00              | Average  | H          | 43.90       | 15.90                   | 53.98          | -38.08      |
| * 20960.00      | -125.00              | Peak     | H          | 43.90       | 25.90                   | 73.98          | -48.08      |
| 26200.00        | -125.00              | Peak     | H          | 44.76       | 26.76                   | 68.20          | -41.44      |

**Table 6-34. Radiated Measurements**

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

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| 10520.00        | -125.00              | Peak     | H          | 46.71       | 28.71                   | 68.20          | -39.49      |
| * 15780.00      | -135.00              | Average  | H          | 51.48       | 23.48                   | 53.98          | -30.50      |
| * 15780.00      | -125.00              | Peak     | H          | 51.48       | 33.48                   | 73.98          | -40.50      |
| * 21040.00      | -135.00              | Average  | H          | 43.84       | 15.84                   | 53.98          | -38.14      |
| * 21040.00      | -125.00              | Peak     | H          | 43.84       | 25.84                   | 73.98          | -48.14      |
| 26300.00        | -125.00              | Peak     | H          | 44.78       | 26.78                   | 68.20          | -41.42      |

**Table 6-35. Radiated Measurements**

|                                      |                                                                                     |                                                                     |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMG900R7                  |  | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                                                      | EUT Type:<br>Portable Handset                                       |                                                                                       | Page 126 of 207                 |

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

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| 10560.00        | -125.00              | Peak     | H          | 46.84       | 28.84                   | 68.20          | -39.36      |
| * 15840.00      | -135.00              | Average  | H          | 51.38       | 23.38                   | 53.98          | -30.60      |
| * 15840.00      | -125.00              | Peak     | H          | 51.38       | 33.38                   | 73.98          | -40.60      |
| * 21120.00      | -135.00              | Average  | H          | 43.74       | 15.74                   | 53.98          | -38.24      |
| * 21120.00      | -125.00              | Peak     | H          | 43.74       | 25.74                   | 73.98          | -48.24      |
| 26400.00        | -125.00              | Peak     | H          | 44.72       | 26.72                   | 68.20          | -41.48      |

**Table 6-36. Radiated Measurements**

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

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| * 10640.00      | -167.65              | Average  | H          | 46.94       | 18.94                   | 53.98          | -35.04      |
| * 10640.00      | -125.00              | Peak     | H          | 46.94       | 28.94                   | 73.98          | -45.04      |
| * 15960.00      | -135.00              | Average  | H          | 51.55       | 23.55                   | 53.98          | -30.43      |
| * 15960.00      | -125.00              | Peak     | H          | 51.55       | 33.55                   | 73.98          | -40.43      |
| * 21280.00      | -135.00              | Average  | H          | 43.64       | 15.64                   | 53.98          | -38.34      |
| * 21280.00      | -125.00              | Peak     | H          | 43.64       | 25.64                   | 73.98          | -48.34      |
| 26600.00        | -125.00              | Peak     | H          | 47.28       | 29.28                   | 68.20          | -38.92      |

**Table 6-37. Radiated Measurements**

|                                      |                                                                                     |                                                                     |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMG900R7                  |  | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                                                      | EUT Type:<br>Portable Handset                                       |                                                                                       | Page 127 of 207                 |

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

|   | Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|---|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| * | 11000.00        | -135.00              | Average  | H          | 46.89       | 18.89                   | 53.98          | -35.09      |
| * | 11000.00        | -125.00              | Peak     | H          | 46.89       | 28.89                   | 73.98          | -45.09      |
|   | 16500.00        | -125.00              | Peak     | H          | 52.96       | 34.96                   | 68.20          | -33.24      |
|   | 22000.00        | -125.00              | Peak     | H          | 43.92       | 25.92                   | 68.20          | -42.28      |
|   | 27500.00        | -125.00              | Peak     | H          | 48.51       | 30.51                   | 68.20          | -37.69      |

**Table 6-38. Radiated Measurements**

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

|   | Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|---|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| * | 11160.00        | -135.00              | Average  | H          | 47.07       | 19.07                   | 53.98          | -34.91      |
| * | 11160.00        | -125.00              | Peak     | H          | 47.07       | 29.07                   | 73.98          | -44.91      |
|   | 16740.00        | -125.00              | Peak     | H          | 53.12       | 35.12                   | 68.20          | -33.08      |
| * | 22320.00        | -135.00              | Average  | H          | 44.40       | 16.40                   | 53.98          | -37.58      |
| * | 22320.00        | -125.00              | Peak     | H          | 44.40       | 26.40                   | 73.98          | -47.58      |
|   | 27900.00        | -125.00              | Peak     | H          | 48.13       | 30.13                   | 68.20          | -38.07      |

**Table 6-39. Radiated Measurements**

|                                      |                                                                                     |                                                                     |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMG900R7                  |  | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                                                      | EUT Type:<br>Portable Handset                                       |                                                                                       | Page 128 of 207                 |

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6 Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5700MHz  
 Channel: 140

|   | Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|---|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| * | 11400.00        | -135.00              | Average  | H          | 47.30       | 19.30                   | 53.98          | -34.68      |
| * | 11400.00        | -125.00              | Peak     | H          | 47.30       | 29.30                   | 73.98          | -44.68      |
|   | 17100.00        | -125.00              | Peak     | H          | 53.07       | 35.07                   | 68.20          | -33.13      |
| * | 22800.00        | -135.00              | Average  | H          | 44.39       | 16.39                   | 53.98          | -37.59      |
| * | 22800.00        | -125.00              | Peak     | H          | 44.39       | 26.39                   | 73.98          | -47.59      |
|   | 28500.00        | -125.00              | Peak     | H          | 48.03       | 30.03                   | 68.20          | -38.17      |

**Table 6-40. Radiated Measurements**

|                                             |                                                                                     |                                                                            |                                                                                       |                                        |
|---------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMG900R7                  |  | <b>FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)</b> |  | <b>Reviewed by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>0Y1403190582.A3L | <b>Test Dates:</b><br>01/29-2/20/2014                                               | <b>EUT Type:</b><br>Portable Handset                                       |                                                                                       | Page 129 of 207                        |

## Antenna-2 Radiated Spurious Emission Measurements

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

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

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| 10360.00        | -125.00              | Peak     | H          | 46.44       | 28.44                   | 68.20          | -39.76      |
| * 15540.00      | -135.00              | Average  | H          | 51.12       | 23.12                   | 53.98          | -30.86      |
| * 15540.00      | -125.00              | Peak     | H          | 51.12       | 33.12                   | 73.98          | -40.86      |
| * 20720.00      | -135.00              | Average  | H          | 44.00       | 16.00                   | 53.98          | -37.98      |
| * 20720.00      | -125.00              | Peak     | H          | 44.00       | 26.00                   | 73.98          | -47.98      |
| 25900.00        | -125.00              | Peak     | H          | 44.87       | 26.87                   | 68.20          | -41.33      |

**Table 6-41. Radiated Measurements**

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

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| 10400.00        | -125.00              | Peak     | H          | 46.65       | 28.65                   | 68.20          | -39.55      |
| * 15600.00      | -135.00              | Average  | H          | 51.11       | 23.11                   | 53.98          | -30.87      |
| * 15600.00      | -125.00              | Peak     | H          | 51.11       | 33.11                   | 73.98          | -40.87      |
| * 20800.00      | -135.00              | Average  | H          | 43.99       | 15.99                   | 53.98          | -37.99      |
| * 20800.00      | -125.00              | Peak     | H          | 43.99       | 25.99                   | 73.98          | -47.99      |
| 26000.00        | -125.00              | Peak     | H          | 44.97       | 26.97                   | 68.20          | -41.23      |

**Table 6-42. Radiated Measurements**

|                                      |                                                                                     |                                                                     |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMG900R7                  |  | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                                                      | EUT Type:<br>Portable Handset                                       |                                                                                       | Page 130 of 207                 |

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

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| 10480.00        | -125.00              | Peak     | H          | 46.65       | 28.65                   | 68.20          | -39.55      |
| * 15720.00      | -135.00              | Average  | H          | 51.40       | 23.40                   | 53.98          | -30.58      |
| * 15720.00      | -125.00              | Peak     | H          | 51.40       | 33.40                   | 73.98          | -40.58      |
| * 20960.00      | -135.00              | Average  | H          | 43.90       | 15.90                   | 53.98          | -38.08      |
| * 20960.00      | -125.00              | Peak     | H          | 43.90       | 25.90                   | 73.98          | -48.08      |
| 26200.00        | -125.00              | Peak     | H          | 44.76       | 26.76                   | 68.20          | -41.44      |

**Table 6-43. Radiated Measurements**

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

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| 10520.00        | -125.00              | Peak     | H          | 46.71       | 28.71                   | 68.20          | -39.49      |
| * 15780.00      | -135.00              | Average  | H          | 51.48       | 23.48                   | 53.98          | -30.50      |
| * 15780.00      | -125.00              | Peak     | H          | 51.48       | 33.48                   | 73.98          | -40.50      |
| * 21040.00      | -135.00              | Average  | H          | 43.84       | 15.84                   | 53.98          | -38.14      |
| * 21040.00      | -125.00              | Peak     | H          | 43.84       | 25.84                   | 73.98          | -48.14      |
| 26300.00        | -125.00              | Peak     | H          | 44.78       | 26.78                   | 68.20          | -41.42      |

**Table 6-44. Radiated Measurements**

|                                      |                                                                                     |                                                                     |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMG900R7                  |  | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                                                      | EUT Type:<br>Portable Handset                                       |                                                                                       | Page 131 of 207                 |

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

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| 10560.00        | -125.00              | Peak     | H          | 46.84       | 28.84                   | 68.20          | -39.36      |
| * 15840.00      | -135.00              | Average  | H          | 51.38       | 23.38                   | 53.98          | -30.60      |
| * 15840.00      | -125.00              | Peak     | H          | 51.38       | 33.38                   | 73.98          | -40.60      |
| * 21120.00      | -135.00              | Average  | H          | 43.74       | 15.74                   | 53.98          | -38.24      |
| * 21120.00      | -125.00              | Peak     | H          | 43.74       | 25.74                   | 73.98          | -48.24      |
| 26400.00        | -125.00              | Peak     | H          | 44.72       | 26.72                   | 68.20          | -41.48      |

**Table 6-45. Radiated Measurements**

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

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| * 10640.00      | -135.00              | Average  | H          | 46.94       | 18.94                   | 53.98          | -35.04      |
| * 10640.00      | -125.00              | Peak     | H          | 46.94       | 28.94                   | 73.98          | -45.04      |
| * 15960.00      | -135.00              | Average  | H          | 51.55       | 23.55                   | 53.98          | -30.43      |
| * 15960.00      | -125.00              | Peak     | H          | 51.55       | 33.55                   | 73.98          | -40.43      |
| * 21280.00      | -135.00              | Average  | H          | 43.64       | 15.64                   | 53.98          | -38.34      |
| * 21280.00      | -125.00              | Peak     | H          | 43.64       | 25.64                   | 73.98          | -48.34      |
| 26600.00        | -125.00              | Peak     | H          | 47.28       | 29.28                   | 68.20          | -38.92      |

**Table 6-46. Radiated Measurements**

|                                      |                                                                                     |                                                                     |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMG900R7                  |  | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                                                      | EUT Type:<br>Portable Handset                                       |                                                                                       | Page 132 of 207                 |

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

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| * 11000.00      | -135.00              | Average  | H          | 46.89       | 18.89                   | 53.98          | -35.09      |
| * 11000.00      | -125.00              | Peak     | H          | 46.89       | 28.89                   | 73.98          | -45.09      |
| 16500.00        | -125.00              | Peak     | H          | 52.96       | 34.96                   | 68.20          | -33.24      |
| 22000.00        | -125.00              | Peak     | H          | 43.92       | 25.92                   | 68.20          | -42.28      |
| 27500.00        | -125.00              | Peak     | H          | 48.51       | 30.51                   | 68.20          | -37.69      |

**Table 6-47. Radiated Measurements**

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

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| * 11160.00      | -135.00              | Average  | H          | 47.07       | 19.07                   | 53.98          | -34.91      |
| * 11160.00      | -125.00              | Peak     | H          | 47.07       | 29.07                   | 73.98          | -44.91      |
| 16740.00        | -125.00              | Peak     | H          | 53.12       | 35.12                   | 68.20          | -33.08      |
| * 22320.00      | -135.00              | Average  | H          | 44.40       | 16.40                   | 53.98          | -37.58      |
| * 22320.00      | -125.00              | Peak     | H          | 44.40       | 26.40                   | 73.98          | -47.58      |
| 27900.00        | -125.00              | Peak     | H          | 48.13       | 30.13                   | 68.20          | -38.07      |

**Table 6-48. Radiated Measurements**

|                                      |                                                                                     |                                                                     |                                                                                       |                                 |
|--------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMG900R7                  |  | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                                                      | EUT Type:<br>Portable Handset                                       |                                                                                       | Page 133 of 207                 |

Worst Case Mode: 802.11a  
 Worst Case Transfer Rate: 6 Mbps  
 Distance of Measurements: 1 & 3 Meters  
 Operating Frequency: 5700MHz  
 Channel: 140

|   | Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|---|-----------------|----------------------|----------|------------|-------------|-------------------------|----------------|-------------|
| * | 11400.00        | -135.00              | Average  | H          | 47.30       | 19.30                   | 53.98          | -34.68      |
| * | 11400.00        | -125.00              | Peak     | H          | 47.30       | 29.30                   | 73.98          | -44.68      |
|   | 17100.00        | -125.00              | Peak     | H          | 53.07       | 35.07                   | 68.20          | -33.13      |
| * | 22800.00        | -135.00              | Average  | H          | 44.39       | 16.39                   | 53.98          | -37.59      |
| * | 22800.00        | -125.00              | Peak     | H          | 44.39       | 26.39                   | 73.98          | -47.59      |
|   | 28500.00        | -125.00              | Peak     | H          | 48.03       | 30.03                   | 68.20          | -38.17      |

**Table 6-49. Radiated Measurements**

|                                             |                                                                                     |                                                                            |                                                                                       |                                        |
|---------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMG900R7                  |  | <b>FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)</b> |  | <b>Reviewed by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>0Y1403190582.A3L | <b>Test Dates:</b><br>01/29-2/20/2014                                               | <b>EUT Type:</b><br>Portable Handset                                       |                                                                                       | Page 134 of 207                        |

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

\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



**MARKER 1**  
5.14974359 GHz

\* RBW 1 MHz

Marker 1 [T2]

\* VBW 3 MHz

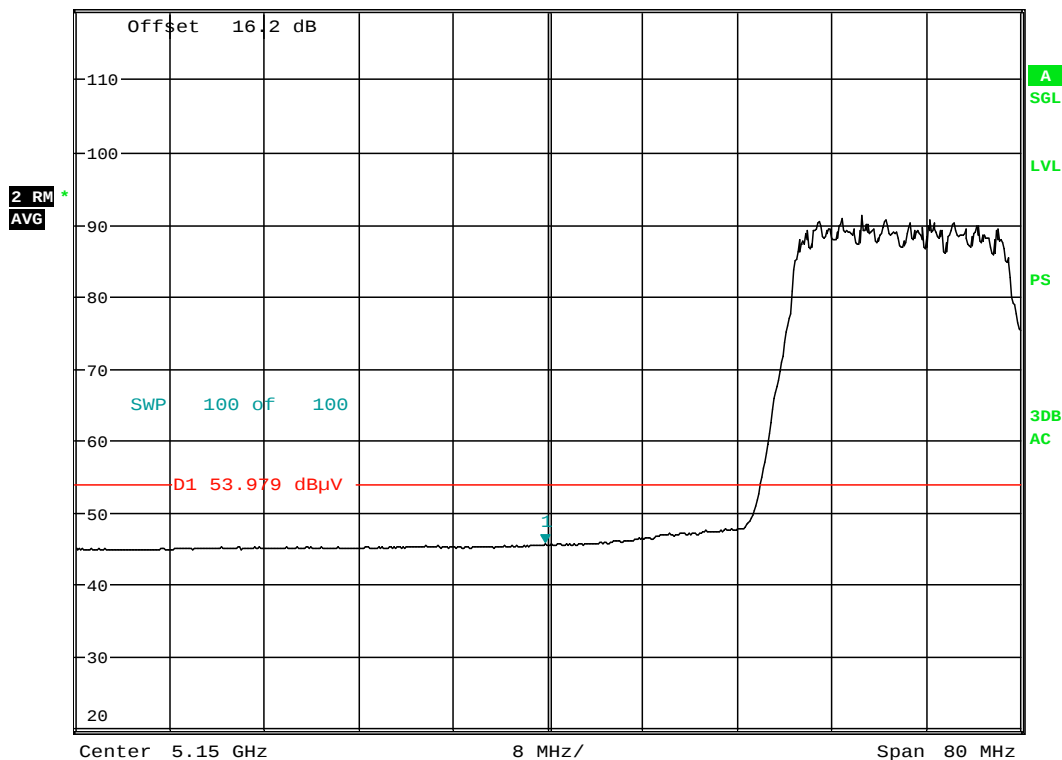
45.55 dBμV

Ref 119.7 dBμV

\* Att 10 dB

SWT 20 ms

5.149743590 GHz



Date: 4.FEB.2014 17:10:16

**Plot 6-178. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 135 of 207                 |

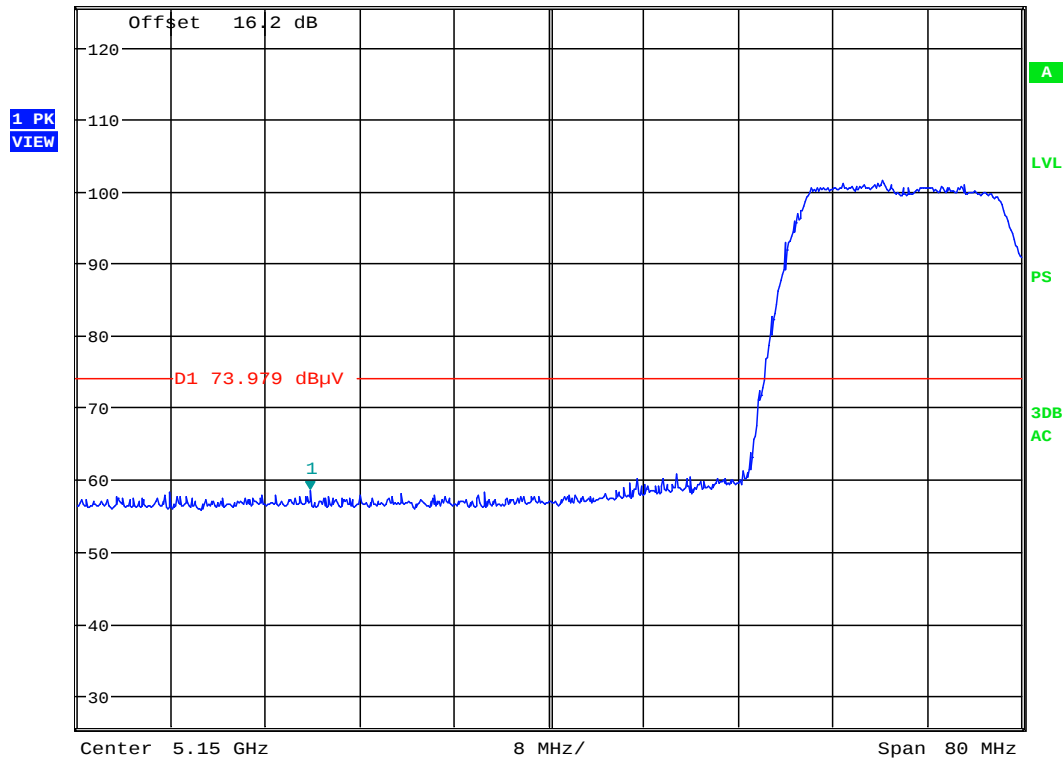
# Radiated Band Edge Measurements (20MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**  
5.12974359 GHz  
Ref 125.6 dBμV \*Att 10 dB

\*RBW 1 MHz  
\*VBW 3 MHz  
SWT 20 ms

Marker 1 [T1]  
58.43 dBμV  
5.129743590 GHz



Date: 4.FEB.2014 17:11:31

**Plot 6-179. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 136 of 207                 |

# Radiated Band Edge Measurements (20MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64

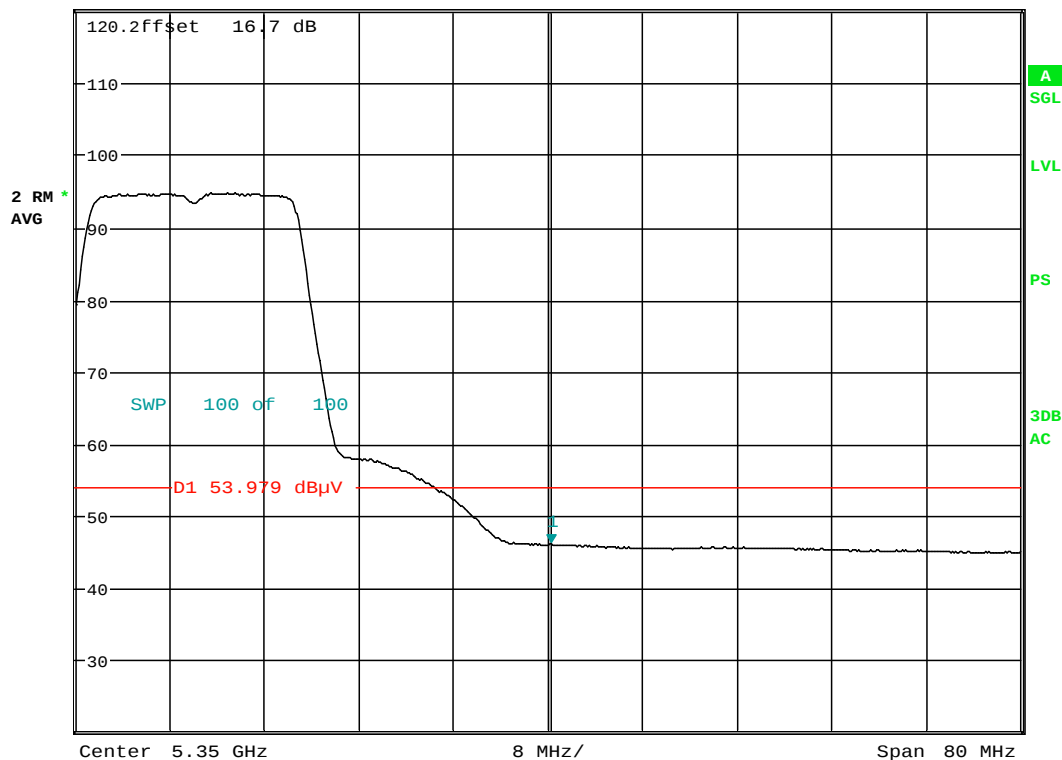


**MARKER 1**  
5.35025641 GHz

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T2]  
46.08 dBμV  
5.350256410 GHz

Ref 120.2 dBμV \* Att 10 dB



Date: 5.FEB.2014 09:54:33

**Plot 6-180. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 137 of 207                 |

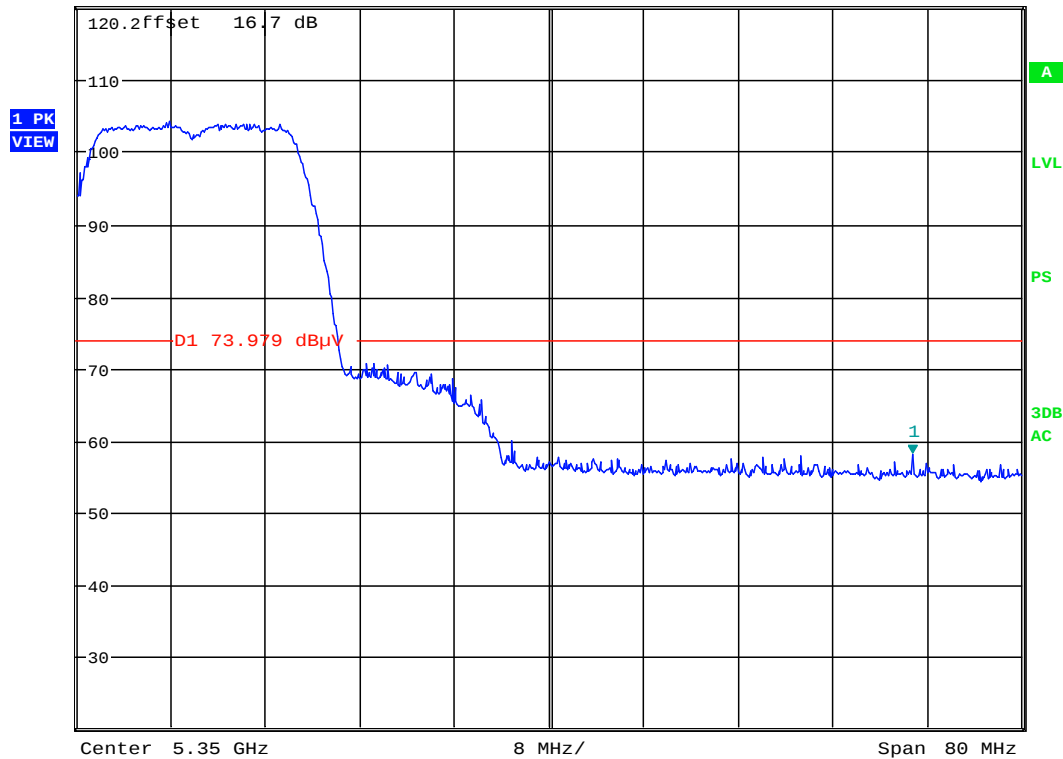
# Radiated Band Edge Measurements (20MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**  
5.380769231 GHz  
Ref 120.2 dBμV \* Att 10 dB

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T1]  
58.14 dBμV  
5.380769231 GHz



Date: 5.FEB.2014 09:55:12

**Plot 6-181. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 138 of 207                 |

# Radiated Band Edge Measurements (20MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100



**MARKER 1**  
5.459519231 GHz

\* RBW 1 MHz

Marker 1 [T2 ]

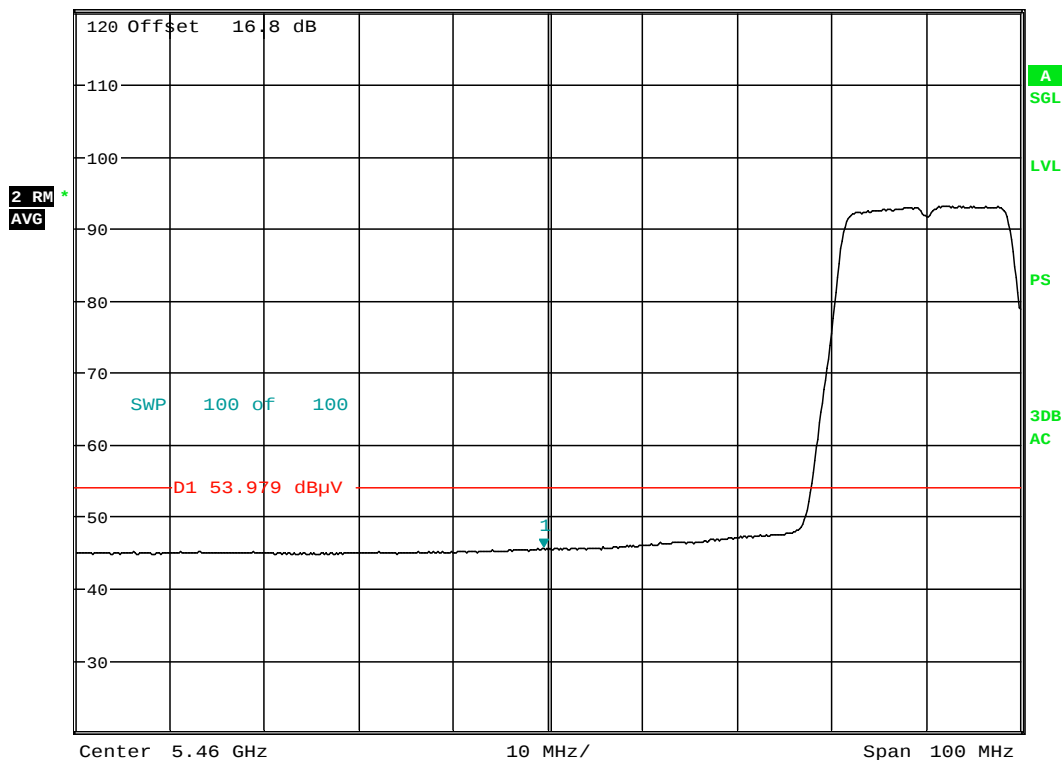
\* VBW 3 MHz

45.56 dBμV

Ref 120.3 dBμV \* Att 10 dB

SWT 20 ms

5.459519231 GHz



Date: 5.FEB.2014 10:43:49

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

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 139 of 207                 |

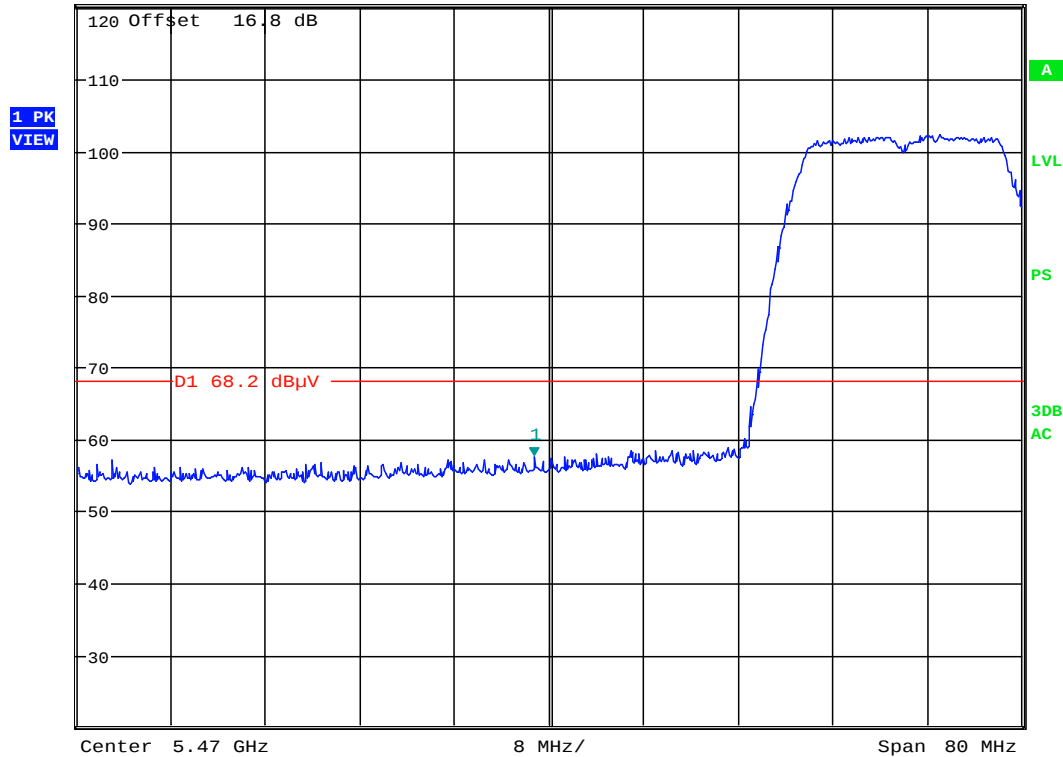
# Radiated Band Edge Measurements (20MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**  
5.468717949 GHz  
Ref 120.3 dBμV \* Att 10 dB

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T1]  
57.66 dBμV  
5.468717949 GHz



Date: 5.FEB.2014 10:44:04

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

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 140 of 207                 |

# Radiated Band Edge Measurements (20MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

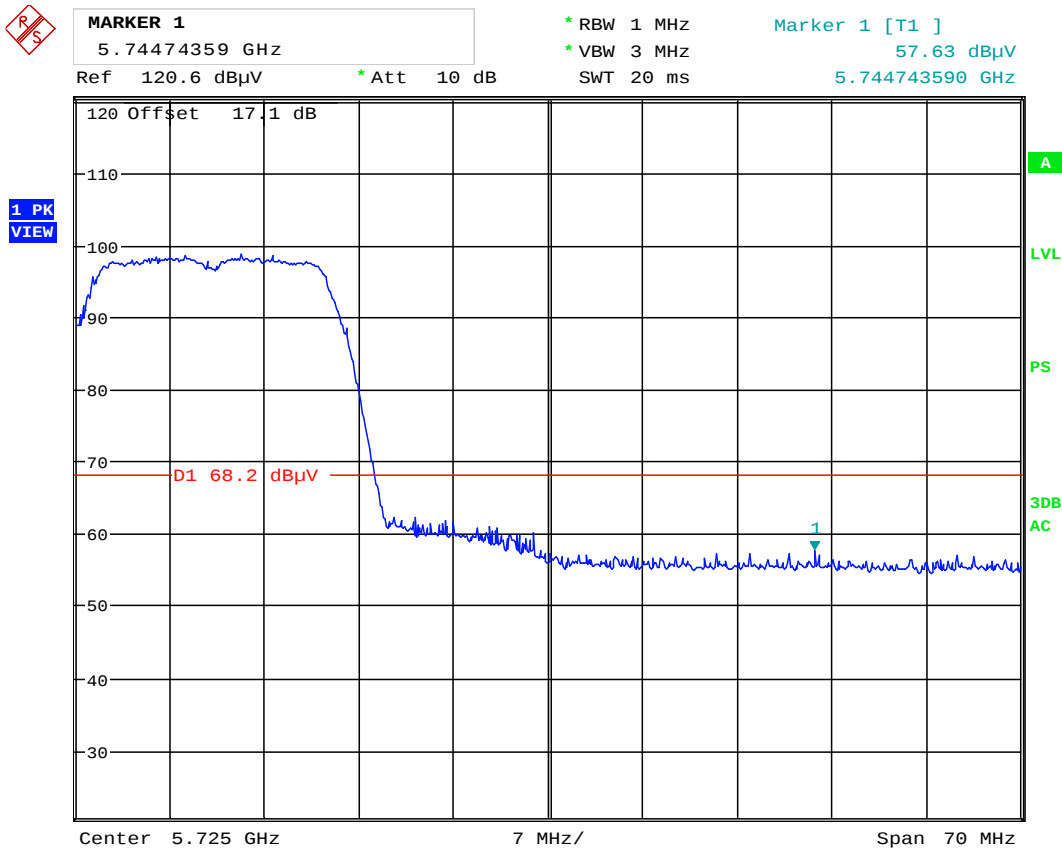
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5700MHz

Channel: 140



Date: 5.FEB.2014 11:21:56

**Plot 6-184. Radiated Upper Band Edge Plot (Peak – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 141 of 207                 |

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

\$15.407(b.1)(b.2) \$15.205 \$15.209

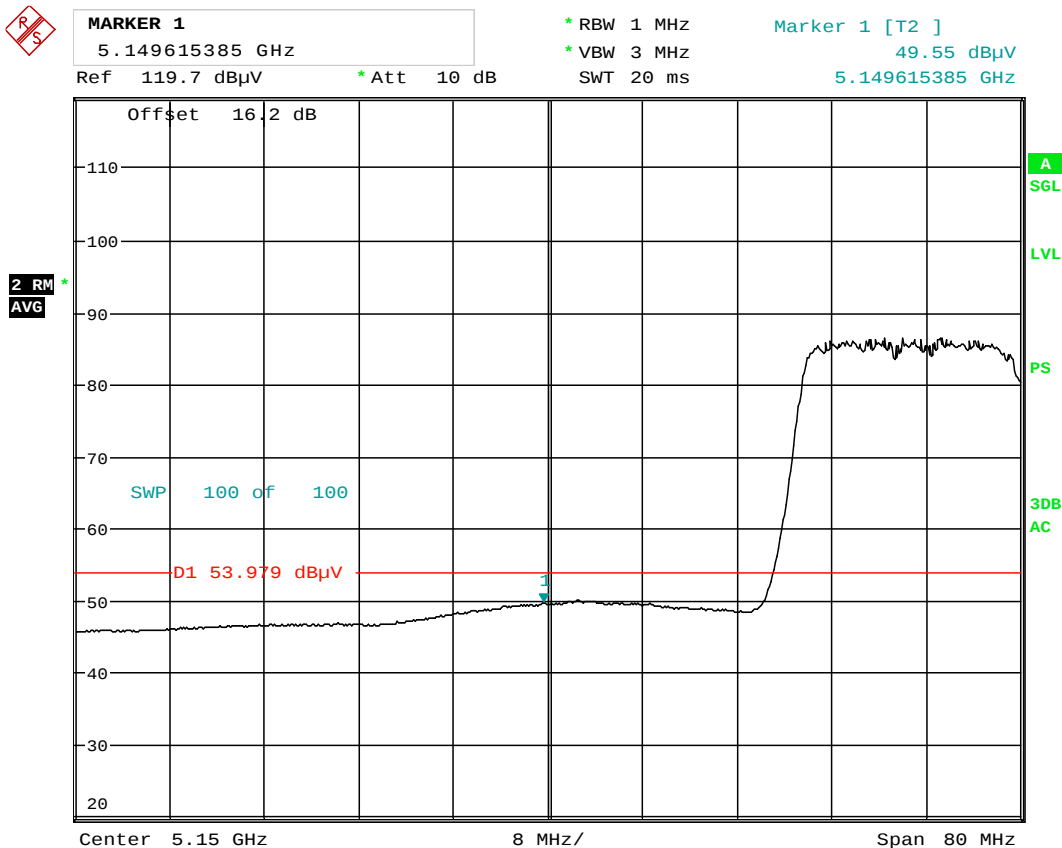
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38



Date: 4.FEB.2014 17:25:57

**Plot 6-185. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 142 of 207                 |

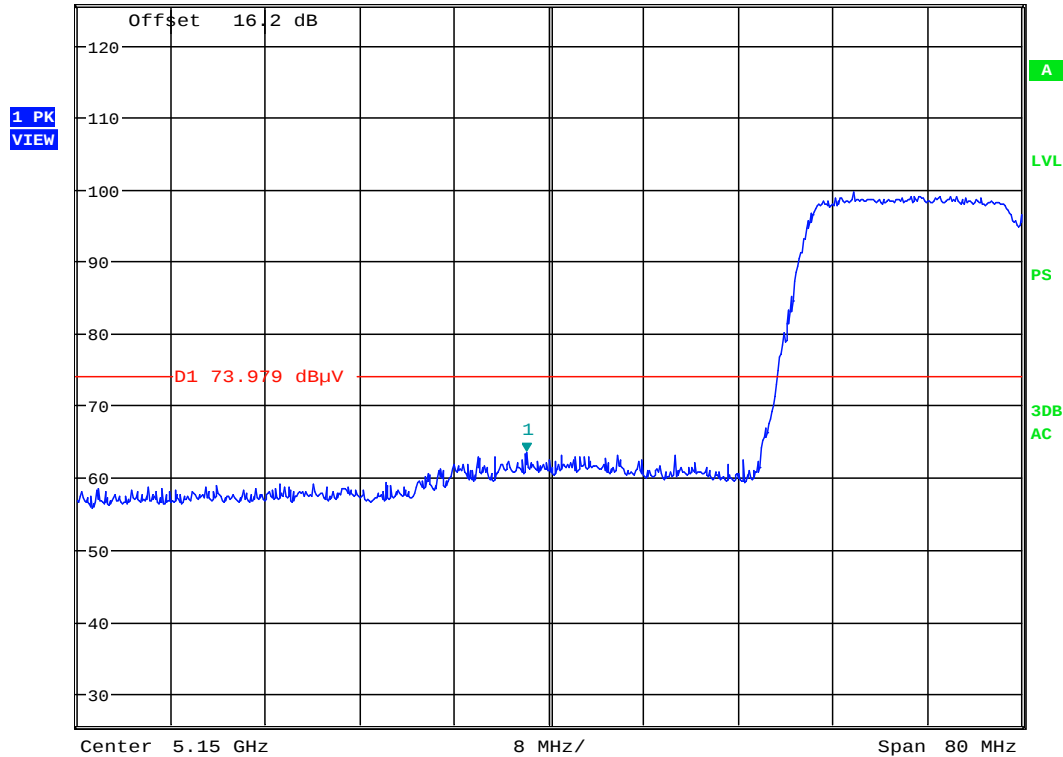
# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**  
5.148076923 GHz  
Ref 125.6 dBµV \*Att 10 dB

\*RBW 1 MHz  
\*VBW 3 MHz  
SWT 20 ms

Marker 1 [T1]  
63.50 dBµV  
5.148076923 GHz



Date: 4.FEB.2014 17:26:16

**Plot 6-186. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 143 of 207                 |

# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

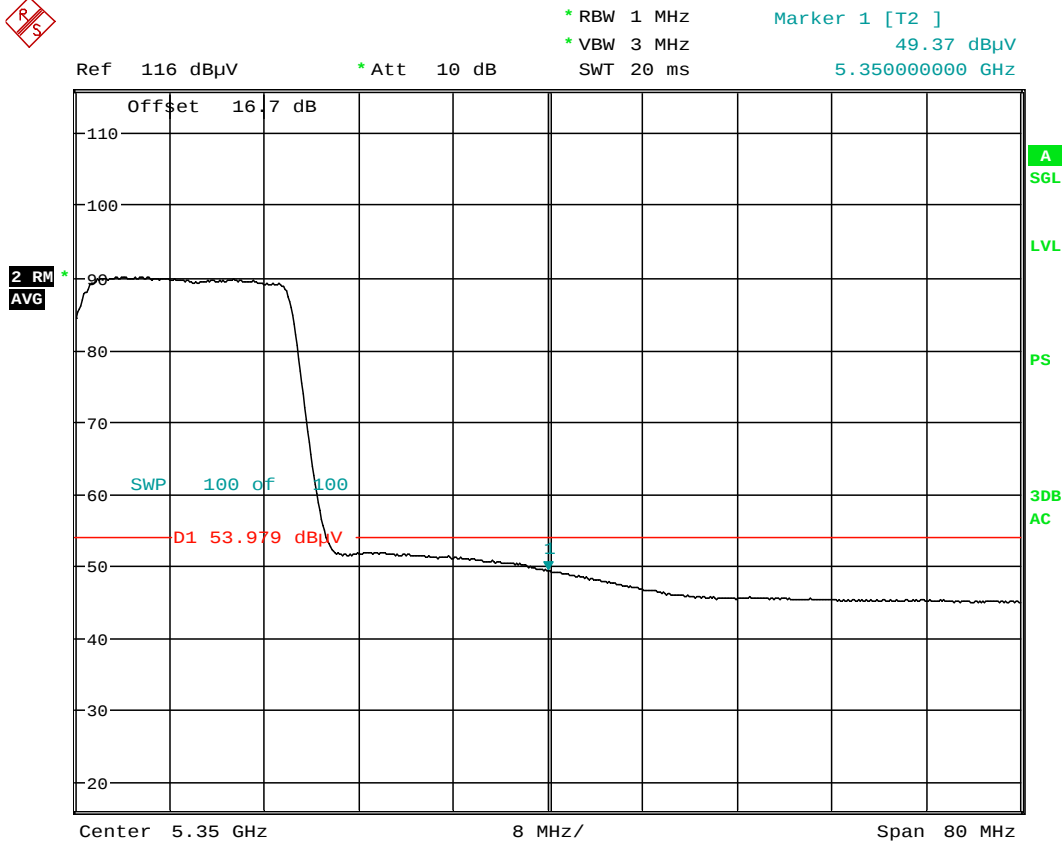
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5310MHz

Channel: 62

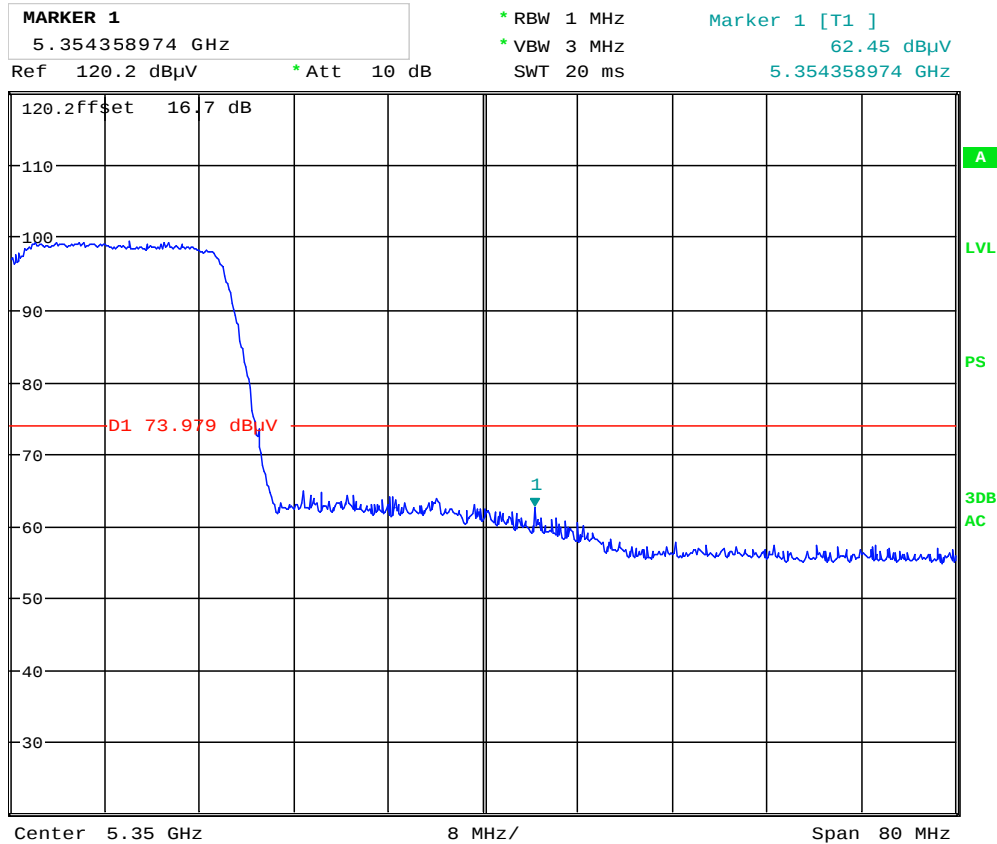


Date: 5.FEB.2014 10:21:42

**Plot 6-187. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 144 of 207                 |

# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



Date: 5.FEB.2014 10:22:11

**Plot 6-188. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 145 of 207                 |

# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5510MHz

Channel: 102



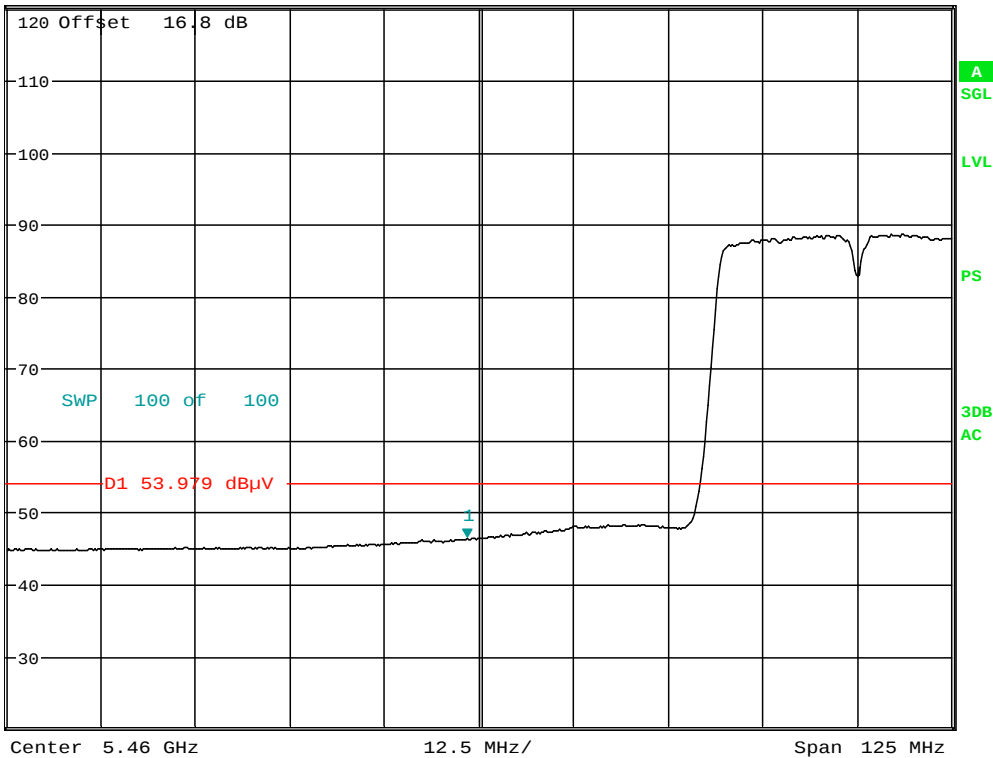
**MARKER 1**  
5.458397436 GHz

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T2]  
46.54 dBμV  
5.458397436 GHz

Ref 120.3 dBμV \* Att 10 dB

2 RM  
AVG



Date: 5.FEB.2014 10:47:10

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

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 146 of 207                 |

# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

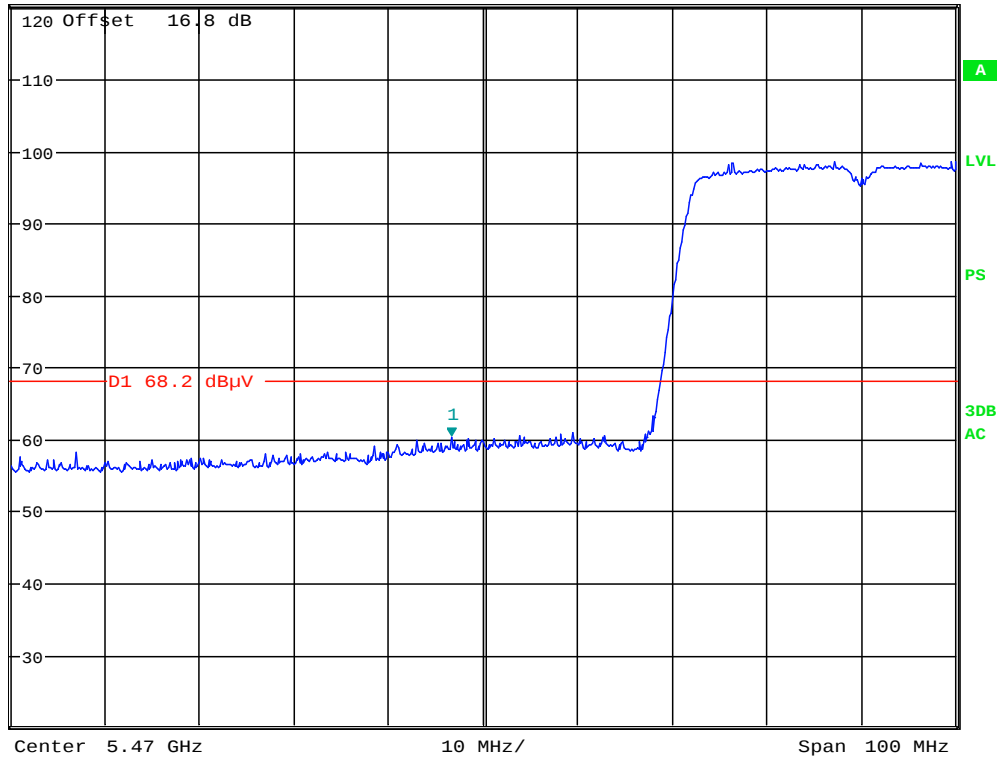


**MARKER 1**  
5.466634615 GHz  
Ref 120.3 dBμV \* Att 10 dB

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T1]  
60.37 dBμV  
5.466634615 GHz

1 PK  
VIEW



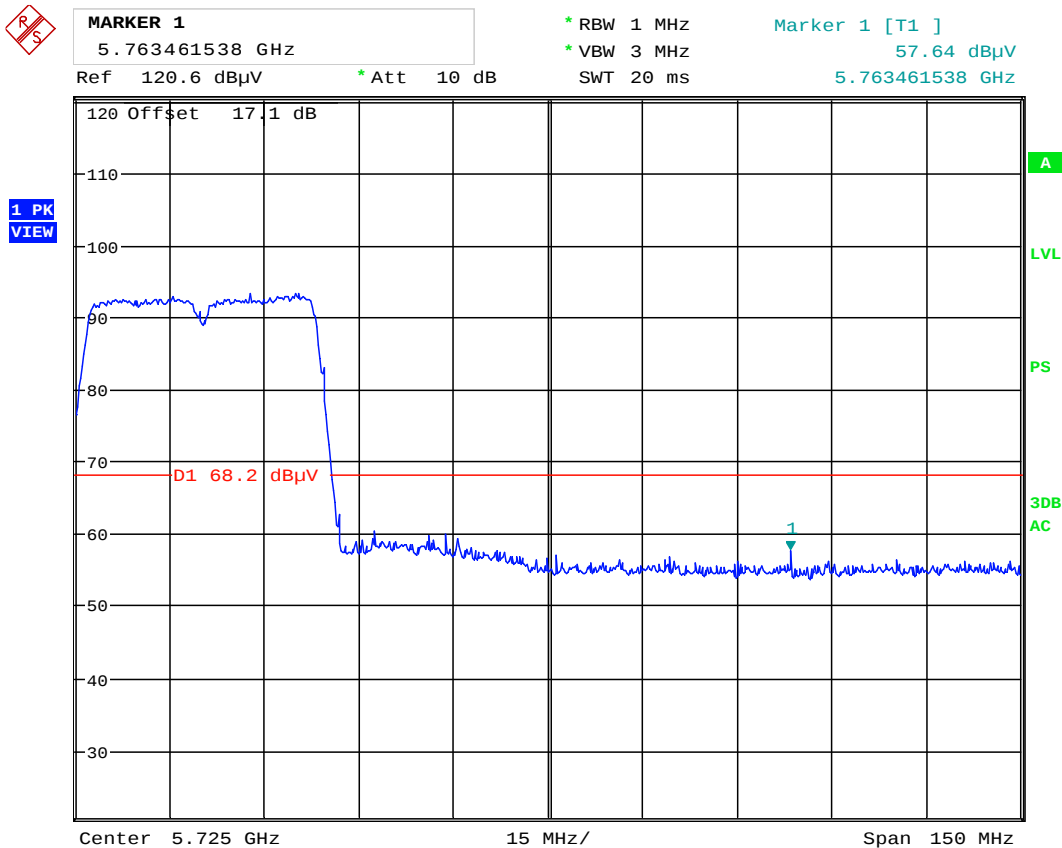
Date: 5.FEB.2014 10:46:45

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

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 147 of 207                 |

# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (40MHz)  
Worst Case Transfer Rate: MCS0  
Distance of Measurements: 3 Meters  
Operating Frequency: 5670MHz  
Channel: 134



Date: 5.FEB.2014 11:23:54

**Plot 6-191. Radiated Upper Band Edge Plot (Peak – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 148 of 207                 |

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

\$15.407(b.1)(b.2) \$15.205 \$15.209

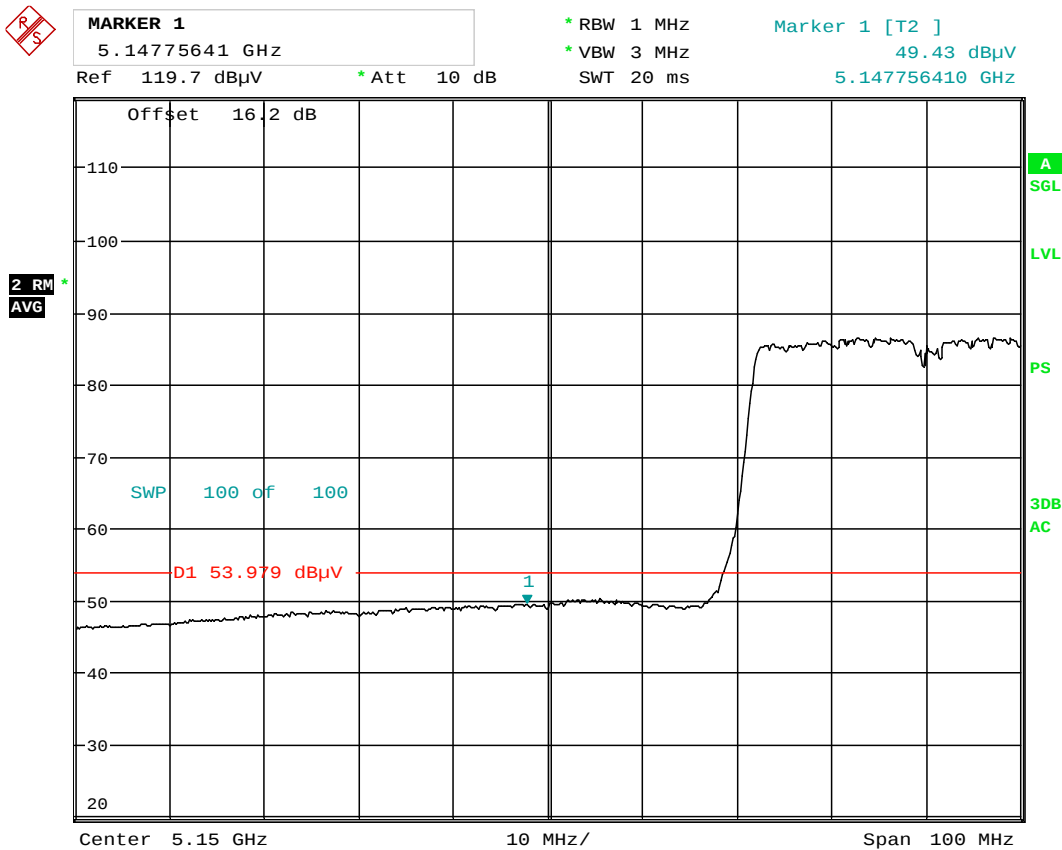
Worst Case Mode: 802.11n (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42



Date: 4.FEB.2014 17:31:12

**Plot 6-192. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 149 of 207                 |

# Radiated Band Edge Measurements (80MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**

5.13974359 GHz

Ref 125.6 dBμV

\* Att 10 dB

\* RBW 1 MHz

\* VBW 3 MHz

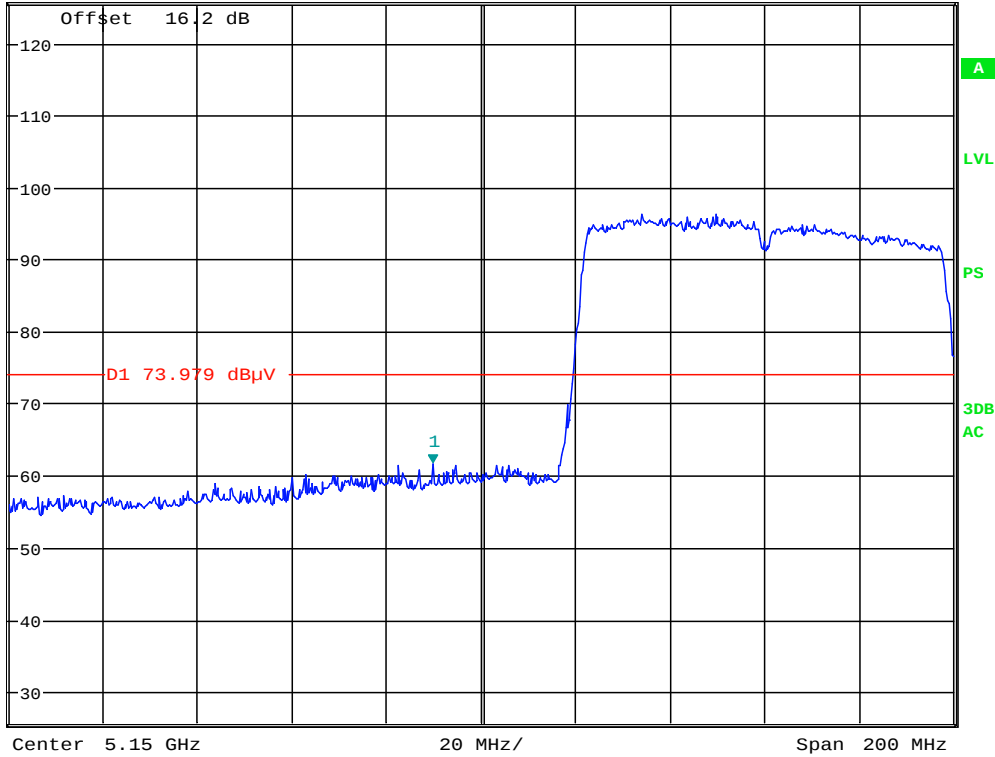
SWT 20 ms

Marker 1 [T1]

61.67 dBμV

5.139743590 GHz

**1 PK  
VIEW**



Date: 4.FEB.2014 17:32:05

**Plot 6-193. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 150 of 207                 |

# Radiated Band Edge Measurements (80MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5290MHz

Channel: 58

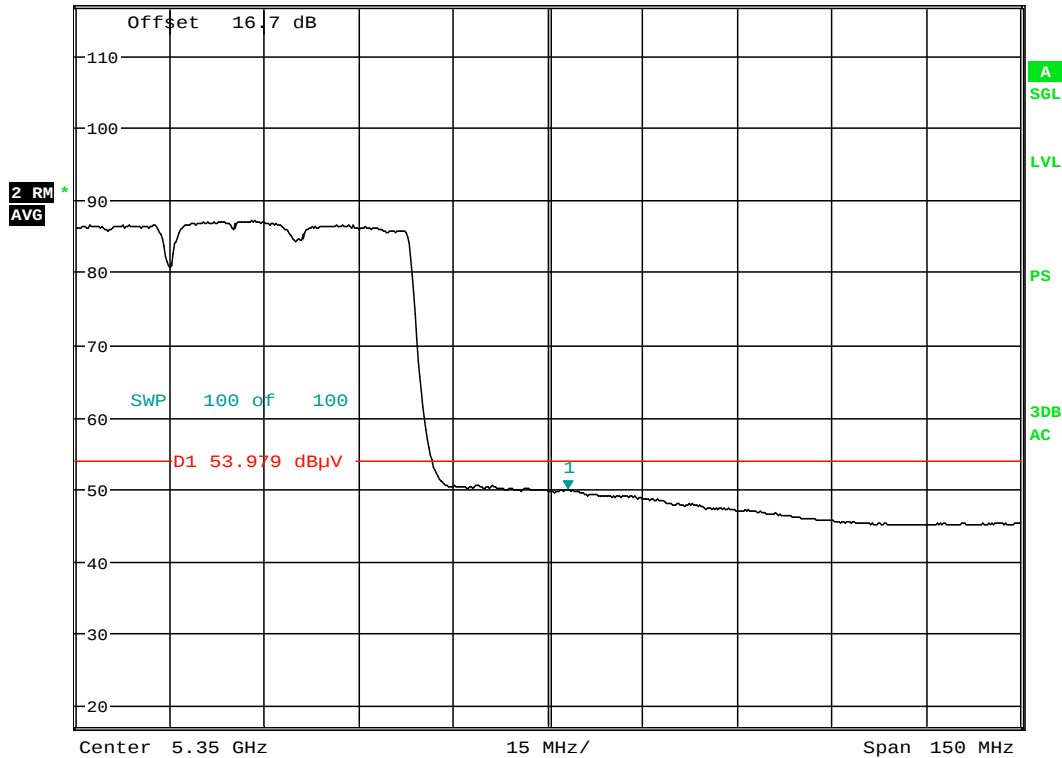


**MARKER 1**  
5.353125 GHz

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T2]  
49.92 dBμV  
5.353125000 GHz

Ref 117 dBμV \* Att 10 dB



Date: 5.FEB.2014 10:29:23

**Plot 6-194. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 151 of 207                 |

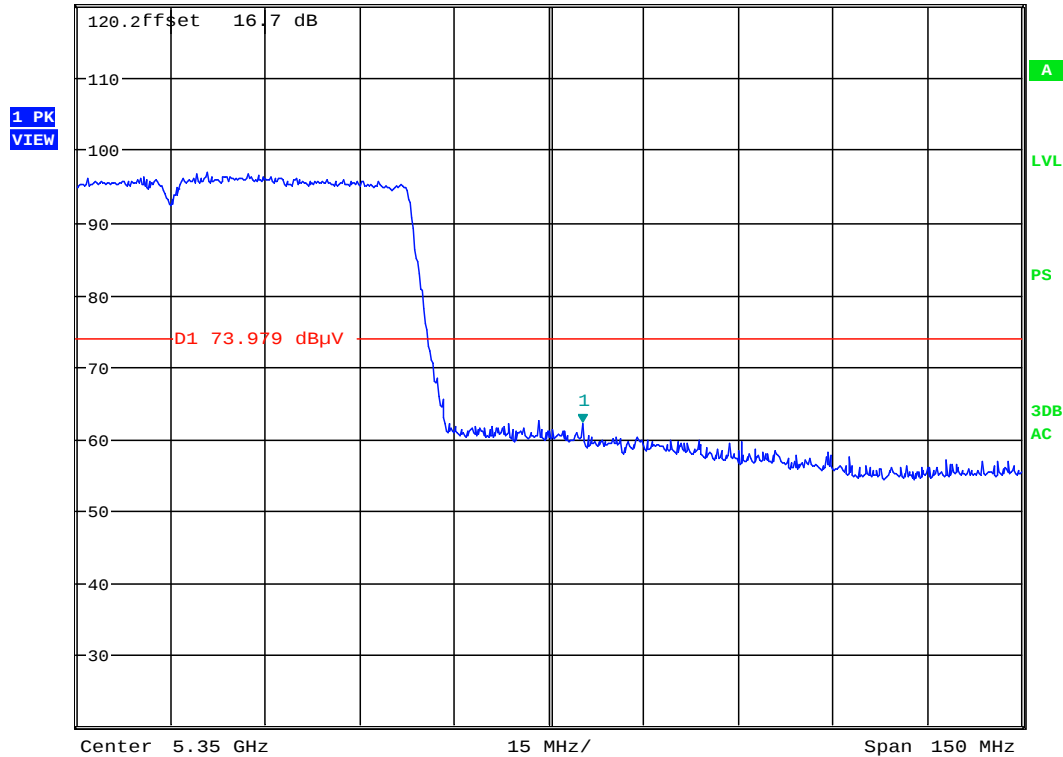
# Radiated Band Edge Measurements (80MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**  
5.355288462 GHz  
Ref 120.2 dBμV \*Att 10 dB

\*RBW 1 MHz  
\*VBW 3 MHz  
SWT 20 ms

Marker 1 [T1]  
62.04 dBμV  
5.355288462 GHz



Date: 5.FEB.2014 10:29:47

**Plot 6-195. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 152 of 207                 |

# Radiated Band Edge Measurements (80MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

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



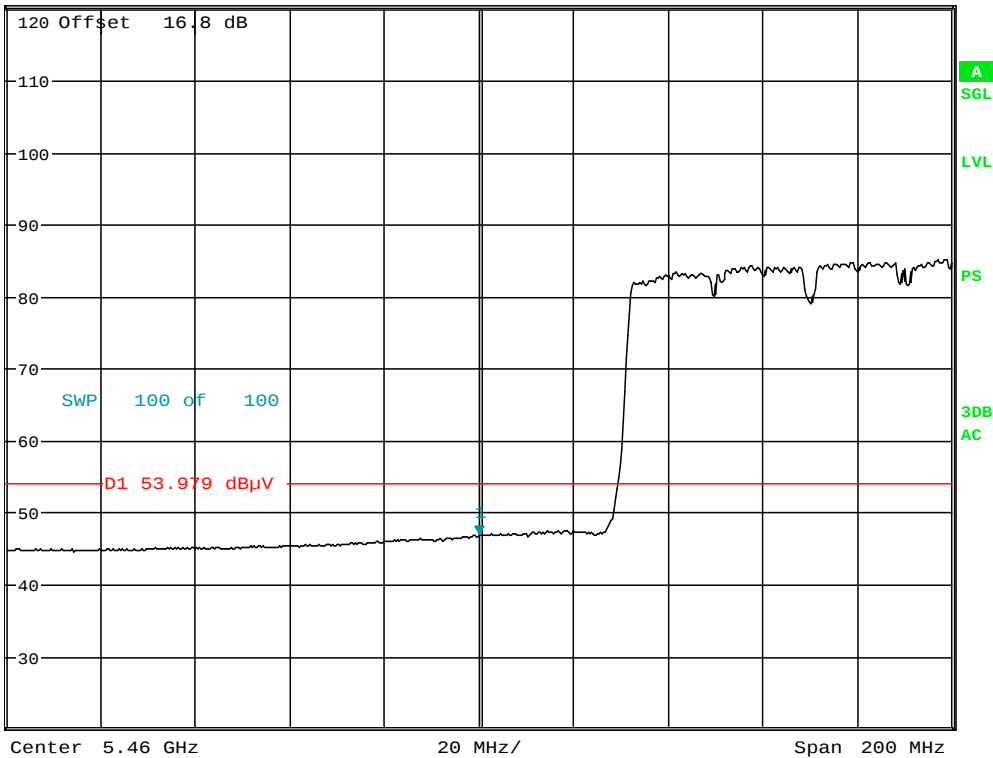
**MARKER 1**  
5.46 GHz

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T2]  
46.89 dBμV  
5.460000000 GHz

Ref 120.3 dBμV \* Att 10 dB

2 RM  
AVG



Date: 5.FEB.2014 10:49:17

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

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 153 of 207                 |

## Radiated Band Edge Measurements (80MHz BW) (Cont'd)

\$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**

5.435865385 GHz

\* RBW 1 MHz

\* VBW 3 MHz

SWT 20 ms

Marker 1 [T1]

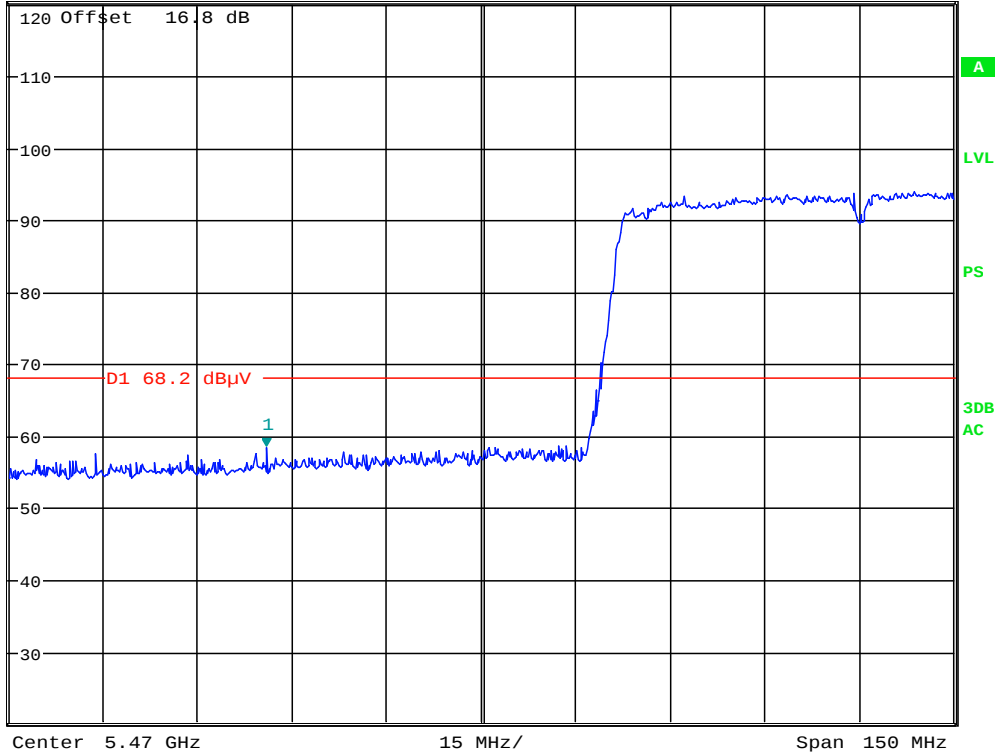
58.43 dBμV

5.435865385 GHz

Ref 120.3 dBμV

\* Att 10 dB

1 PK  
VIEW



Date: 5.FEB.2014 10:49:41

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

|                                      |                                |                                                                        |  |                                 |
|--------------------------------------|--------------------------------|------------------------------------------------------------------------|--|---------------------------------|
| FCC ID: A3LSMG900R7                  |                                | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) |  | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014 | EUT Type:<br>Portable Handset                                          |  | Page 154 of 207                 |

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

\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

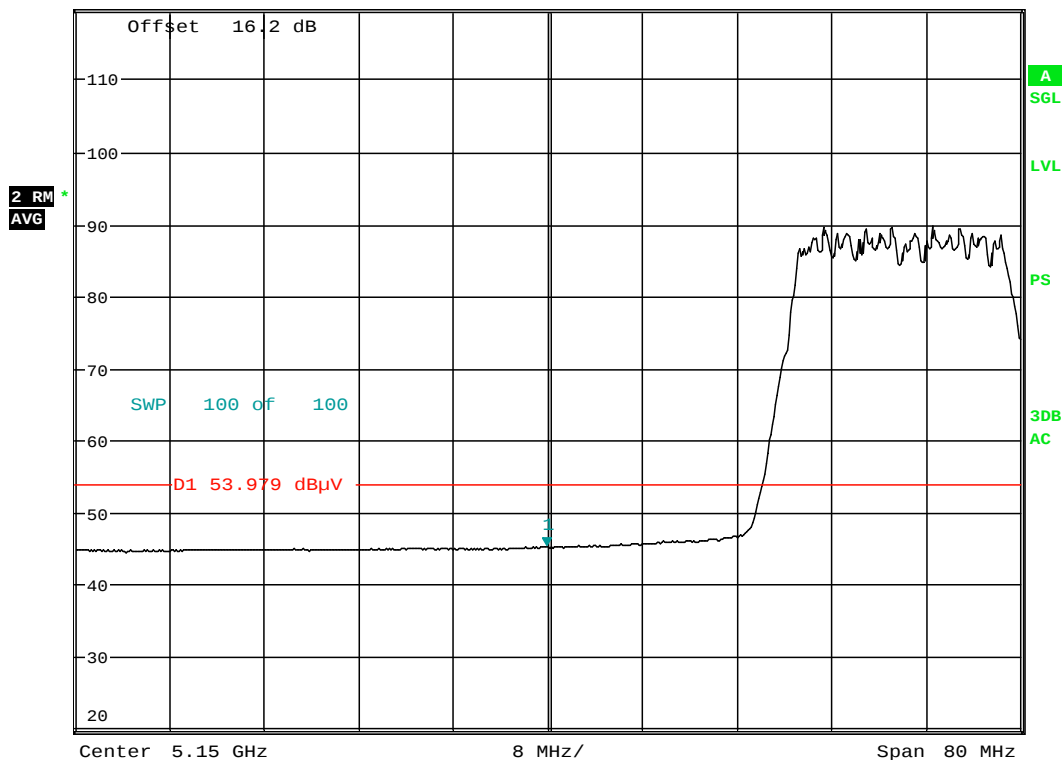
Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



**MARKER 1**  
5.149871795 GHz  
Ref 119.7 dBμV \* Att 10 dB \* RBW 1 MHz \* VBW 3 MHz \* Marker 1 [T2 ] 45.23 dBμV 5.149871795 GHz  
SWT 20 ms

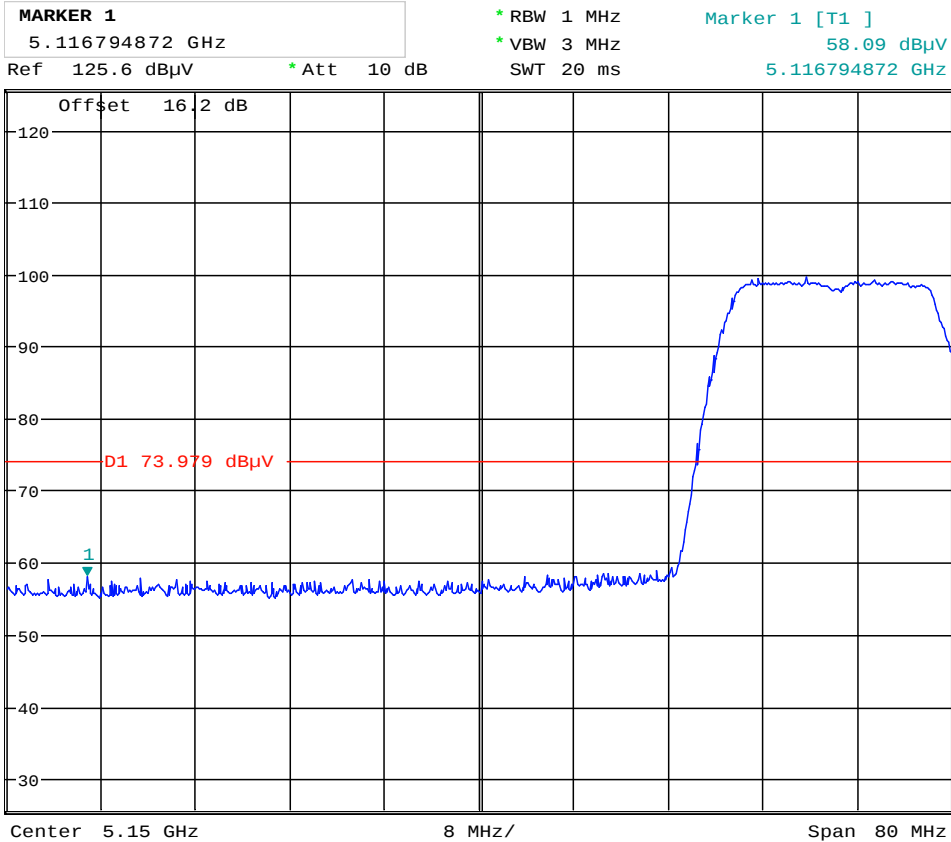


Date: 4.FEB.2014 17:15:59

**Plot 6-198. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 155 of 207                 |

# Radiated Band Edge Measurements (20MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



Date: 4.FEB.2014 17:15:26

**Plot 6-199. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 156 of 207                 |

## Radiated Band Edge Measurements (20MHz BW) (Cont'd)

\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64

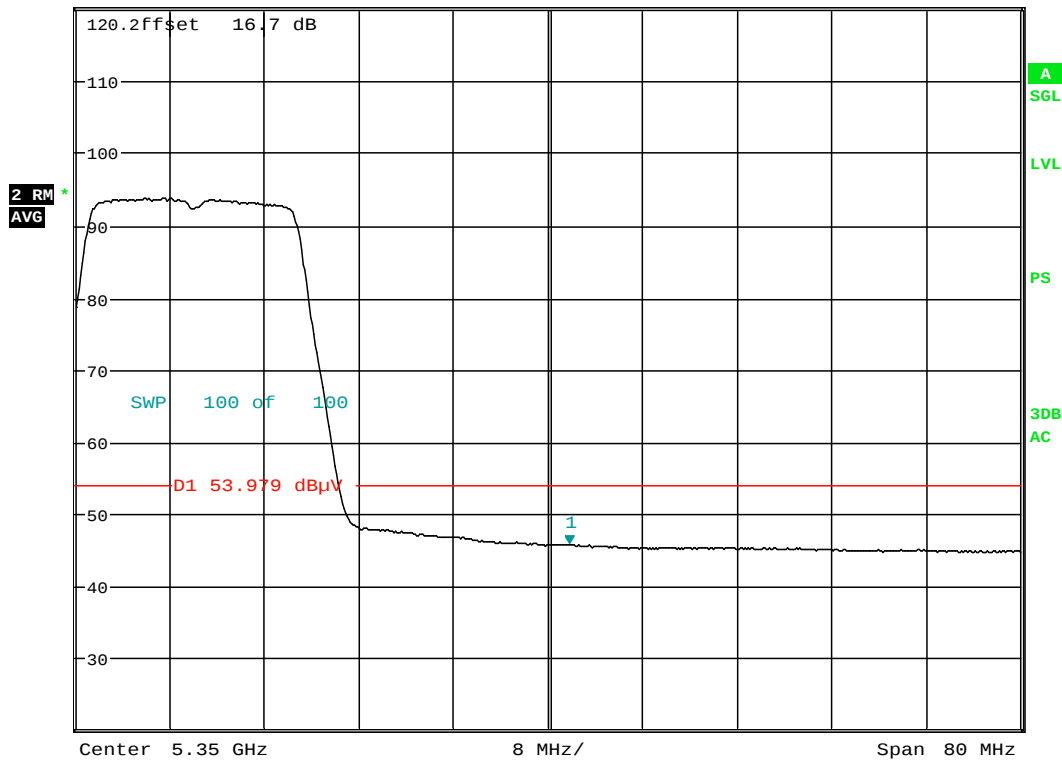


**MARKER 1**  
5.351794872 GHz

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T2]  
45.82 dBμV  
5.351794872 GHz

Ref 120.2 dBμV \* Att 10 dB



Date: 5.FEB.2014 10:03:55

**Plot 6-200. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 157 of 207                 |

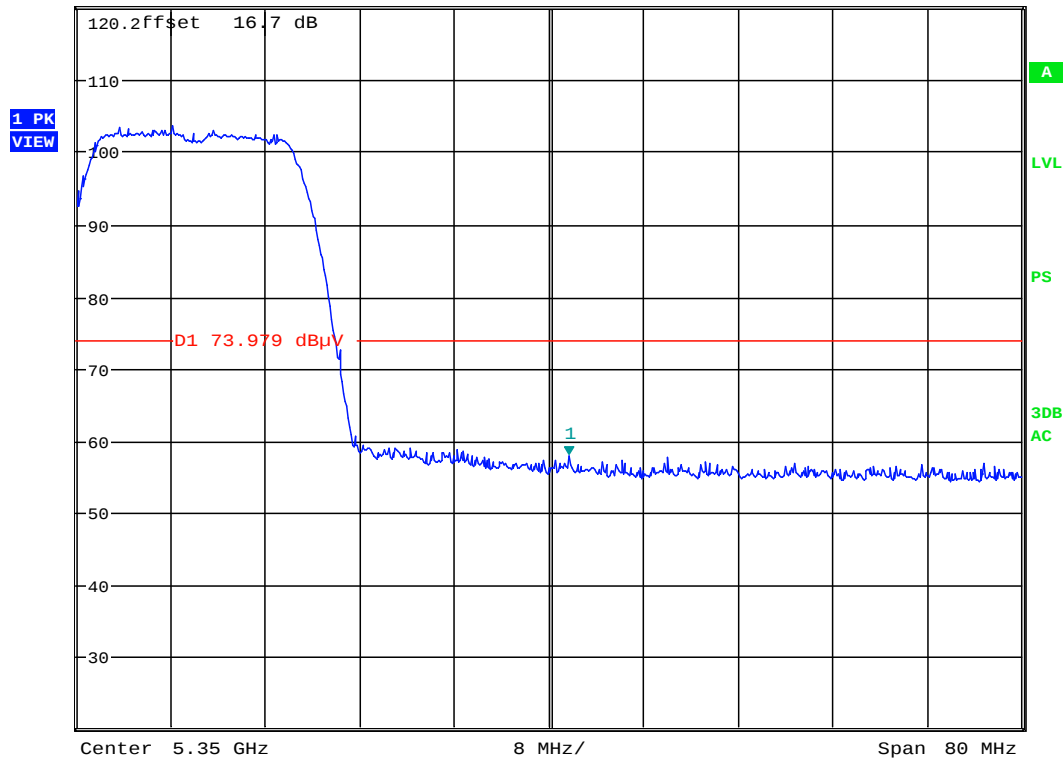
# Radiated Band Edge Measurements (20MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**  
5.351666667 GHz  
Ref 120.2 dBμV \* Att 10 dB

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T1]  
57.89 dBμV  
5.351666667 GHz



Date: 5.FEB.2014 10:04:14

**Plot 6-201. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

|                                             |                                       |                                                                            |  |                                        |
|---------------------------------------------|---------------------------------------|----------------------------------------------------------------------------|--|----------------------------------------|
| <b>FCC ID:</b> A3LSMG900R7                  |                                       | <b>FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)</b> |  | <b>Reviewed by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>0Y1403190582.A3L | <b>Test Dates:</b><br>01/29-2/20/2014 | <b>EUT Type:</b><br>Portable Handset                                       |  | Page 158 of 207                        |

# Radiated Band Edge Measurements (20MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100

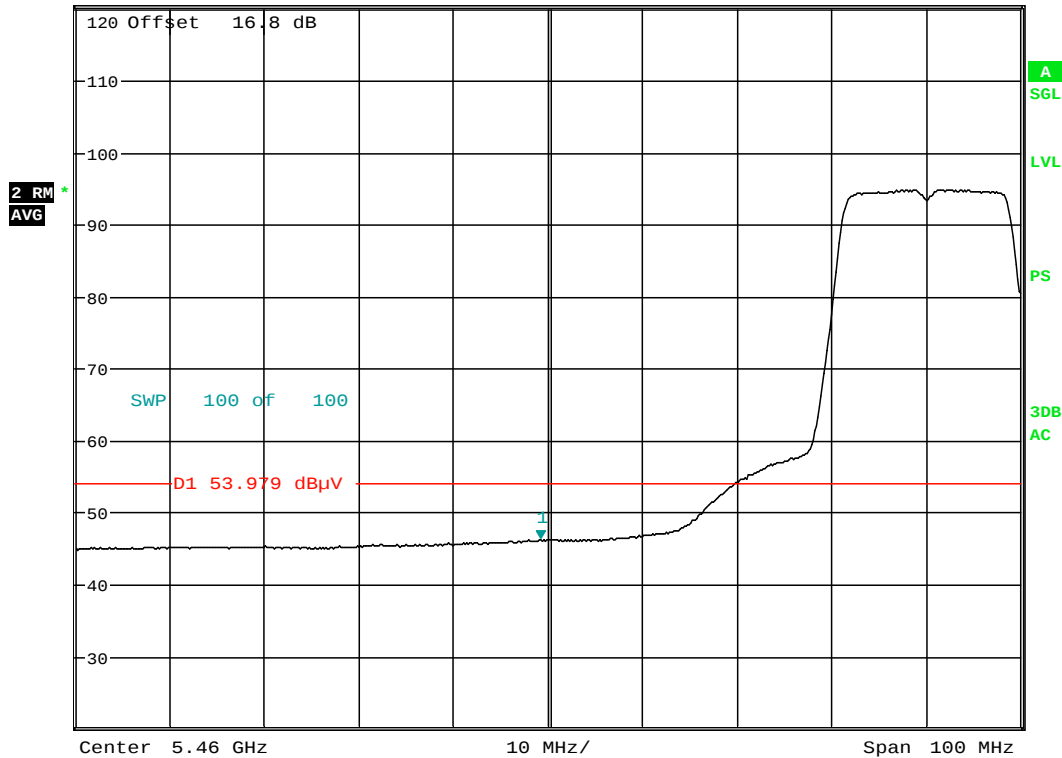


**MARKER 1**  
5.459198718 GHz

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T2]  
46.23 dBμV  
5.459198718 GHz

Ref 120.3 dBμV \* Att 10 dB



Date: 5.FEB.2014 10:54:59

**Plot 6-202. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 159 of 207                 |

# Radiated Band Edge Measurements (20MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**

5.466282051 GHz

Ref 120.3 dBμV

\* Att 10 dB

\* RBW 1 MHz

\* VBW 3 MHz

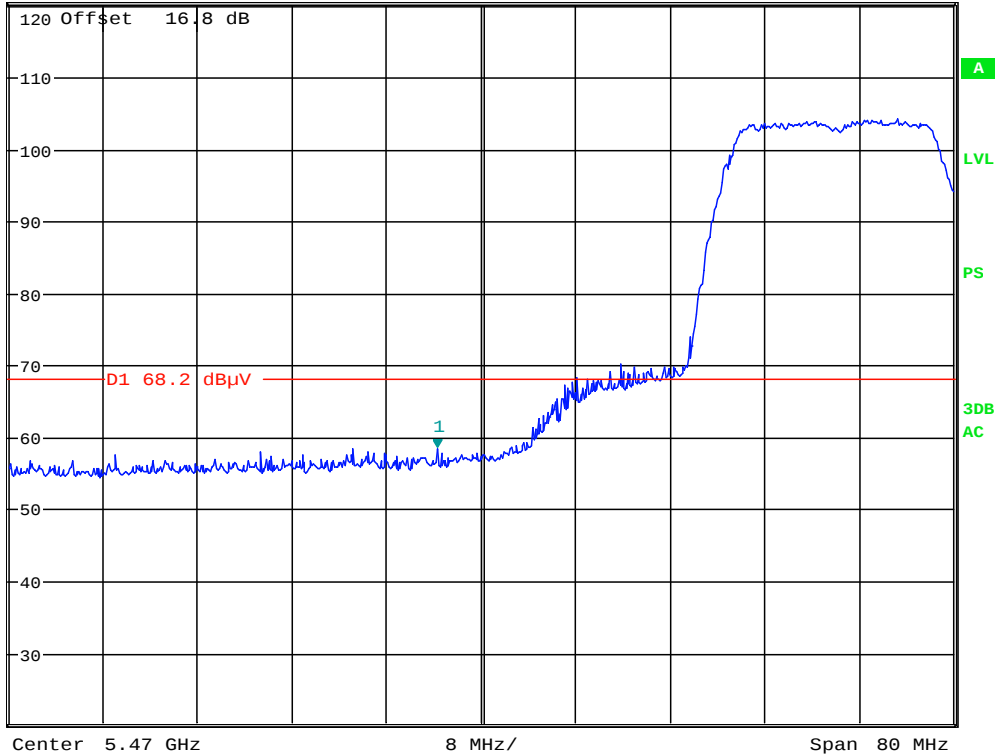
SWT 20 ms

Marker 1 [T1]

58.53 dBμV

5.466282051 GHz

1 PK  
VIEW



Date: 5.FEB.2014 10:55:15

**Plot 6-203. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 160 of 207                 |

## Radiated Band Edge Measurements (20MHz BW) (Cont'd)

\$15.407(b.1)(b.2) \$15.205 \$15.209

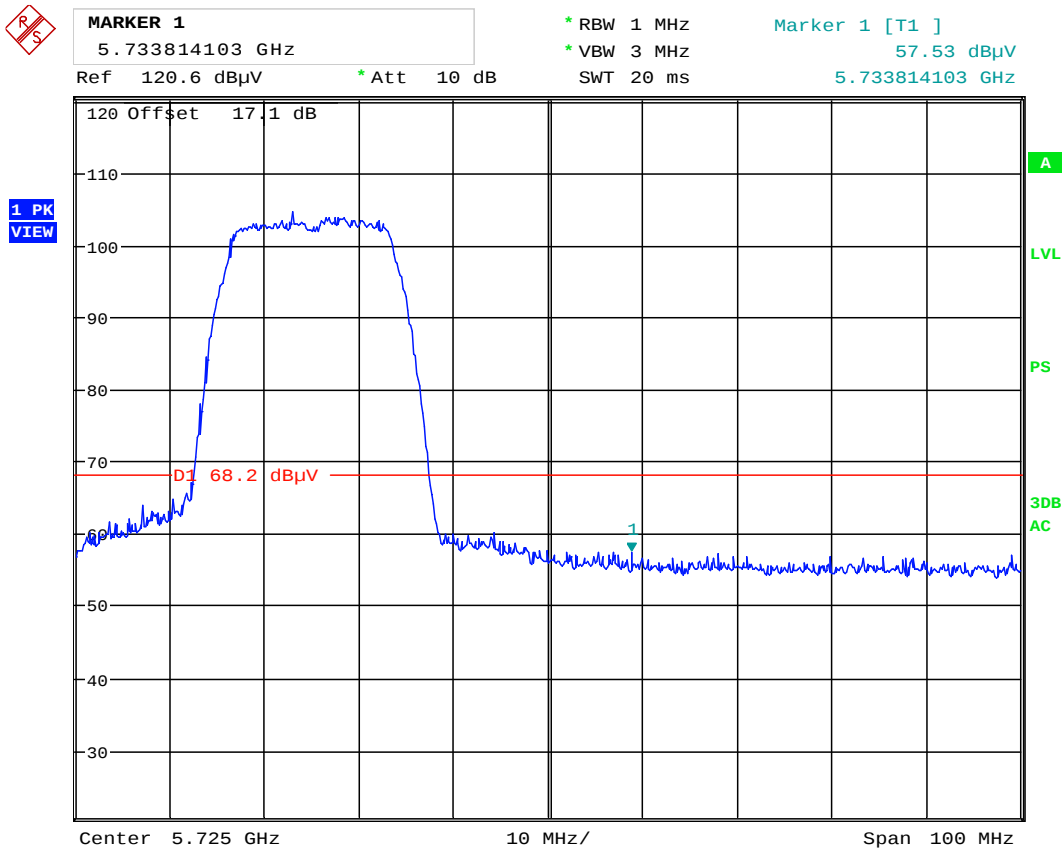
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5700MHz

Channel: 140



Date: 5.FEB.2014 11:25:28

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

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 161 of 207                 |

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

\$15.407(b.1)(b.2) \$15.205 \$15.209

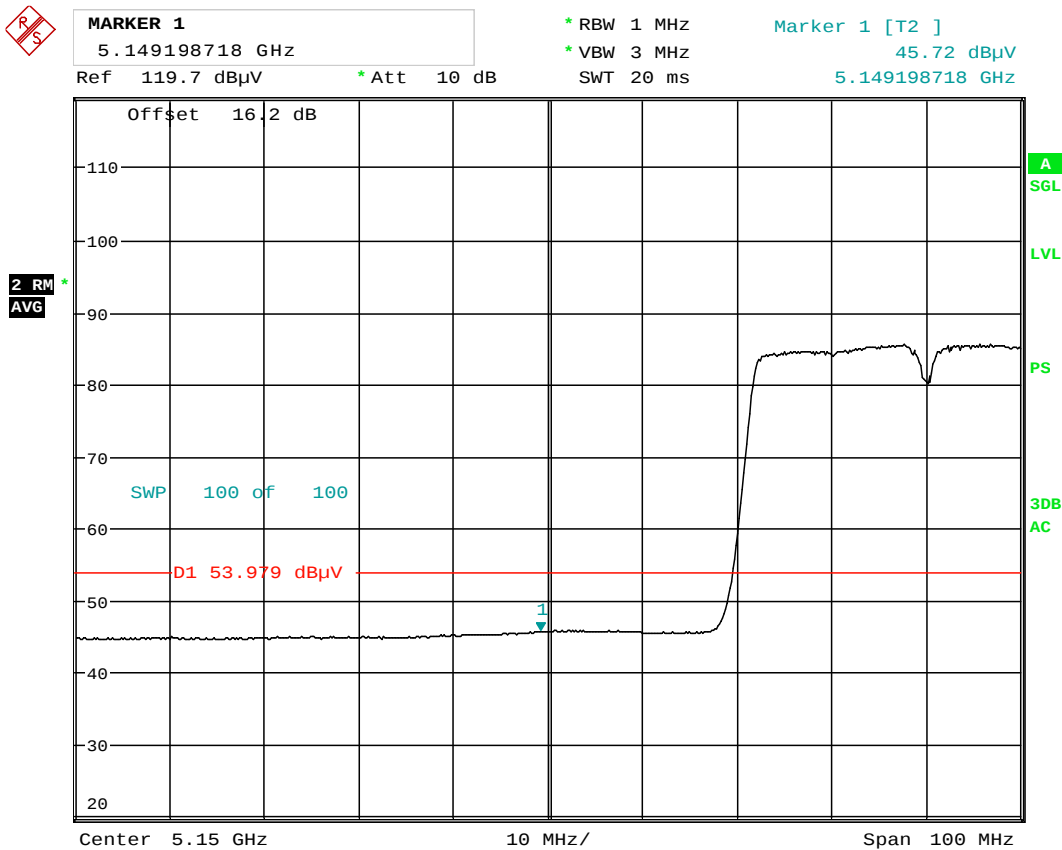
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38



Date: 4.FEB.2014 17:34:30

**Plot 6-205. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 162 of 207                 |

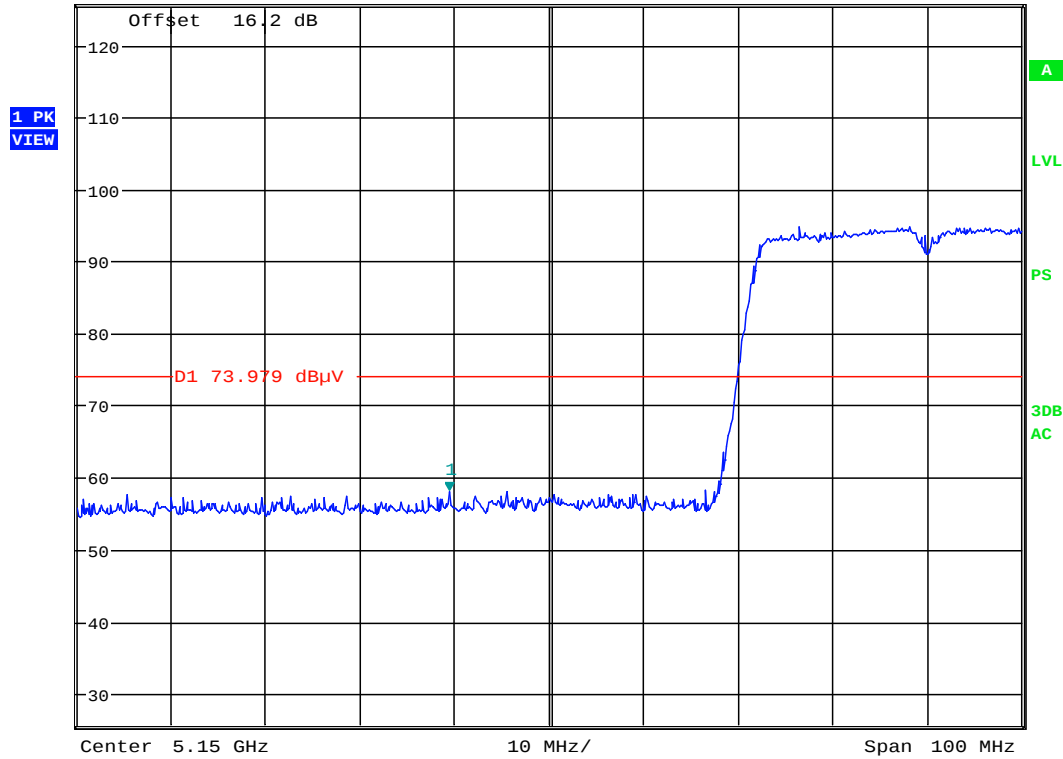
# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**  
5.139423077 GHz  
Ref 125.6 dBμV \*Att 10 dB

\*RBW 1 MHz  
\*VBW 3 MHz  
SWT 20 ms

Marker 1 [T1]  
58.09 dBμV  
5.139423077 GHz



Date: 4.FEB.2014 17:34:52

**Plot 6-206. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 163 of 207                 |

# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5310MHz

Channel: 62



**MARKER 1**  
5.35 GHz

\* RBW 1 MHz

Marker 1 [T2]

\* VBW 3 MHz

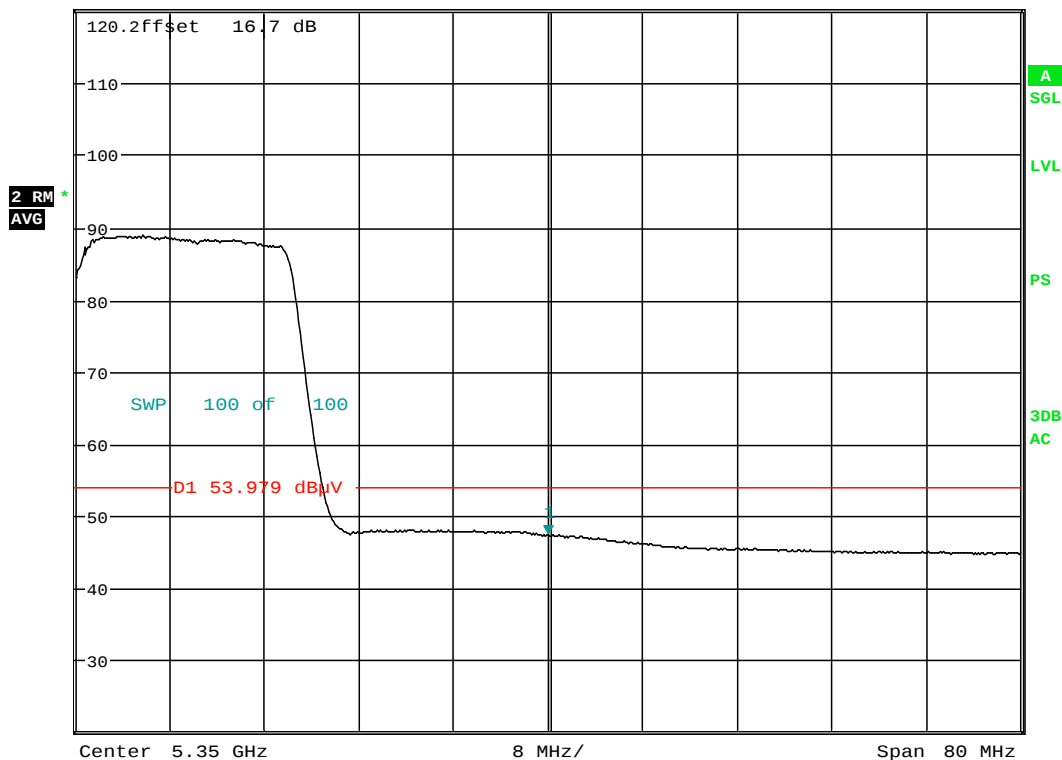
47.39 dBμV

Ref 120.2 dBμV

\* Att 10 dB

SWT 20 ms

5.350000000 GHz



Date: 5.FEB.2014 10:06:28

**Plot 6-207. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 164 of 207                 |

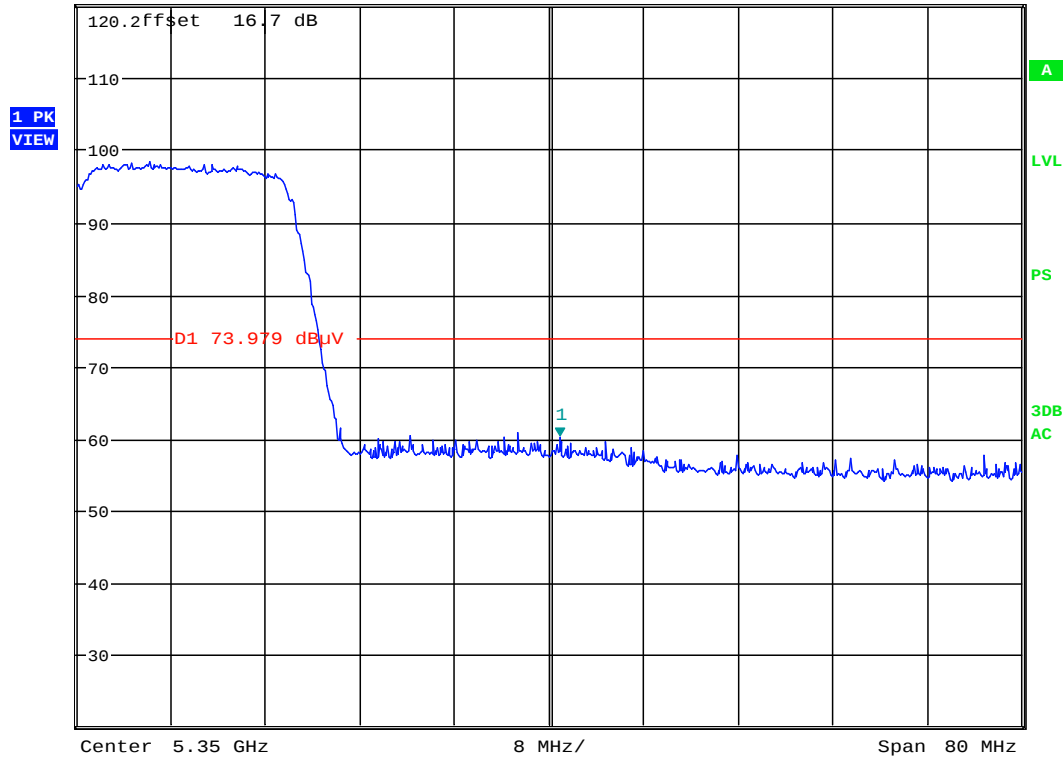
# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**  
5.350897436 GHz  
Ref 120.2 dBμV \* Att 10 dB

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T1]  
60.30 dBμV  
5.350897436 GHz



Date: 5.FEB.2014 10:06:45

**Plot 6-208. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 165 of 207                 |

# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5510MHz

Channel: 102



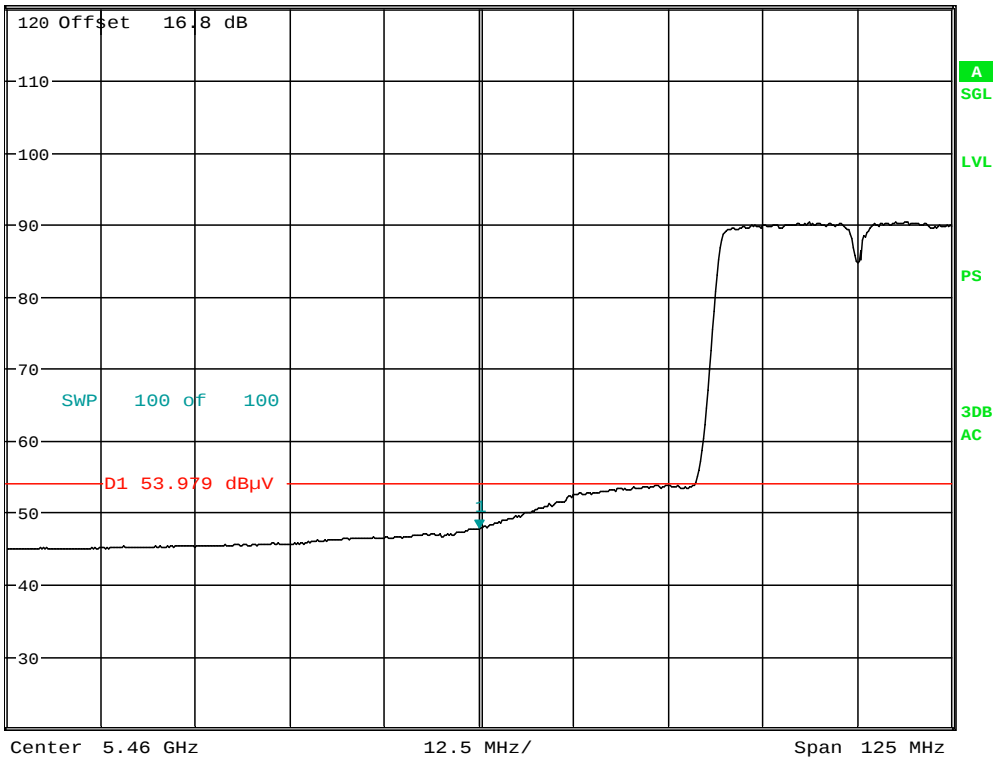
**MARKER 1**  
5.46 GHz

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T2]  
47.76 dBμV  
5.460000000 GHz

Ref 120.3 dBμV \* Att 10 dB

2 RM  
AVG



Date: 5.FEB.2014 10:57:22

**Plot 6-209. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 166 of 207                 |

# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**

5.468557692 GHz

Ref 120.3 dBμV

\* Att 10 dB

\* RBW 1 MHz

\* VBW 3 MHz

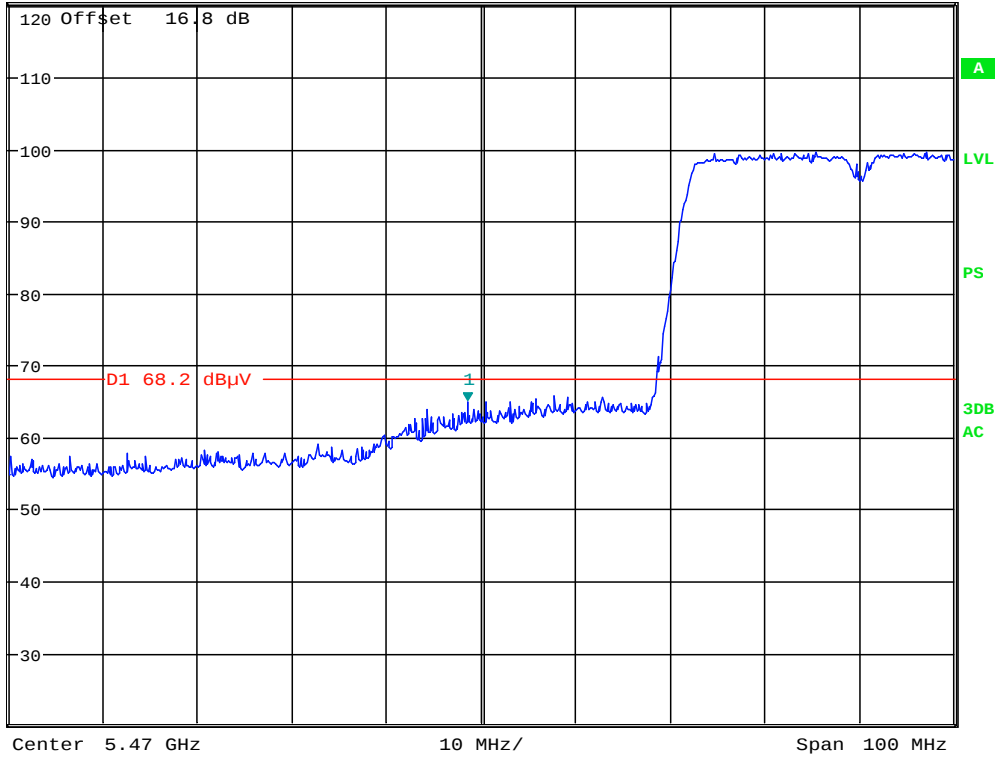
SWT 20 ms

Marker 1 [T1]

64.86 dBμV

5.468557692 GHz

**1 PK  
VIEW**



Date: 5.FEB.2014 10:56:55

**Plot 6-210. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 167 of 207                 |

## Radiated Band Edge Measurements (40MHz BW) (Cont'd)

\$15.407(b.1)(b.2) \$15.205 \$15.209

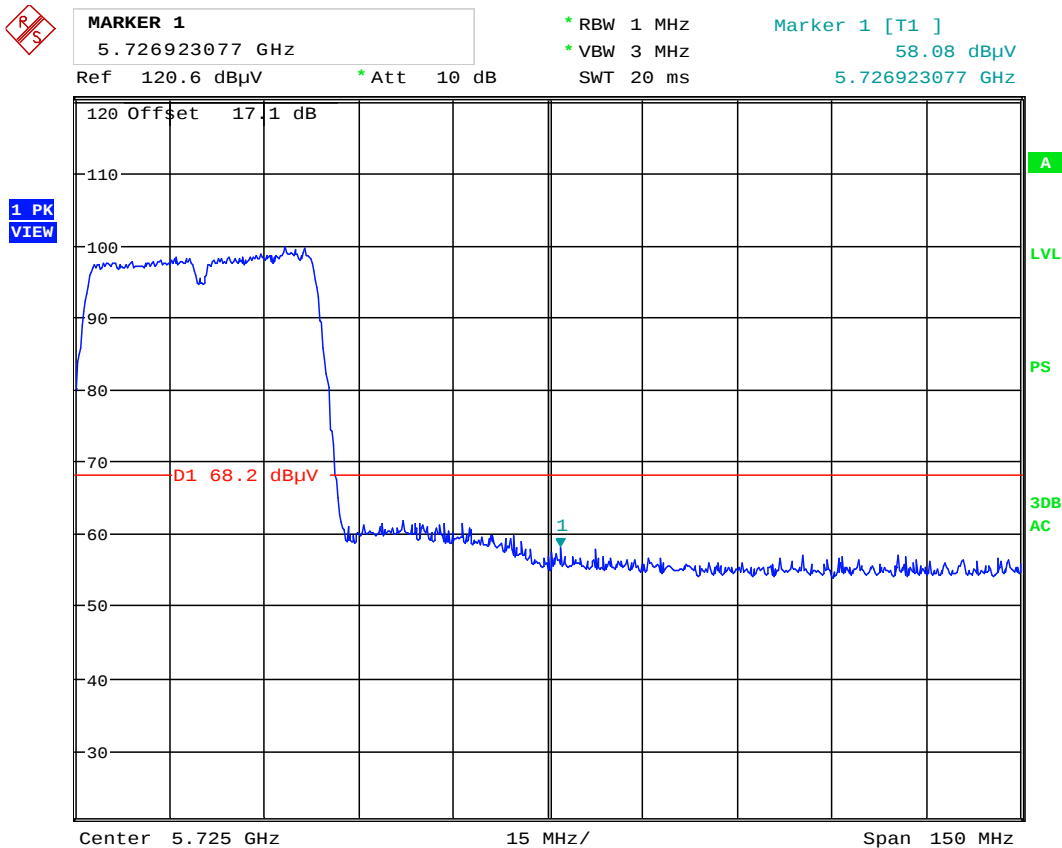
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5670MHz

Channel: 134



Date: 5.FEB.2014 11:26:47

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

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 168 of 207                 |

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

\$15.407(b.1)(b.2) \$15.205 \$15.209

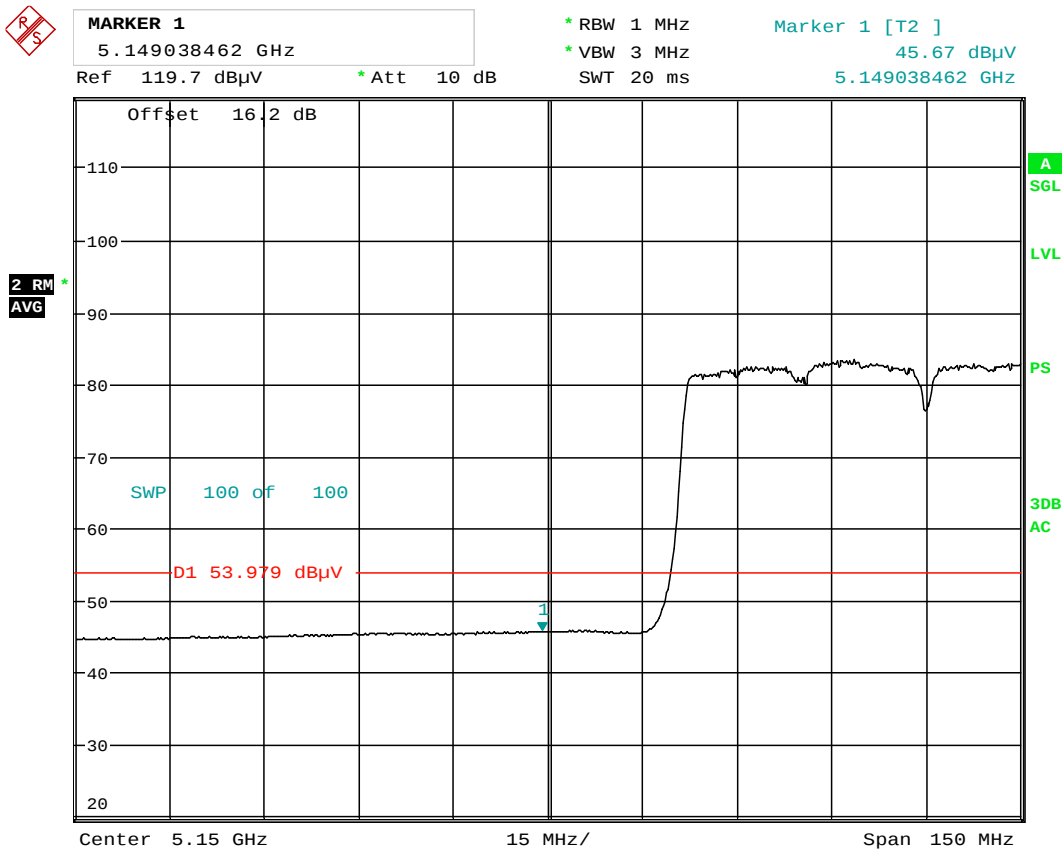
Worst Case Mode: 802.11n (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42

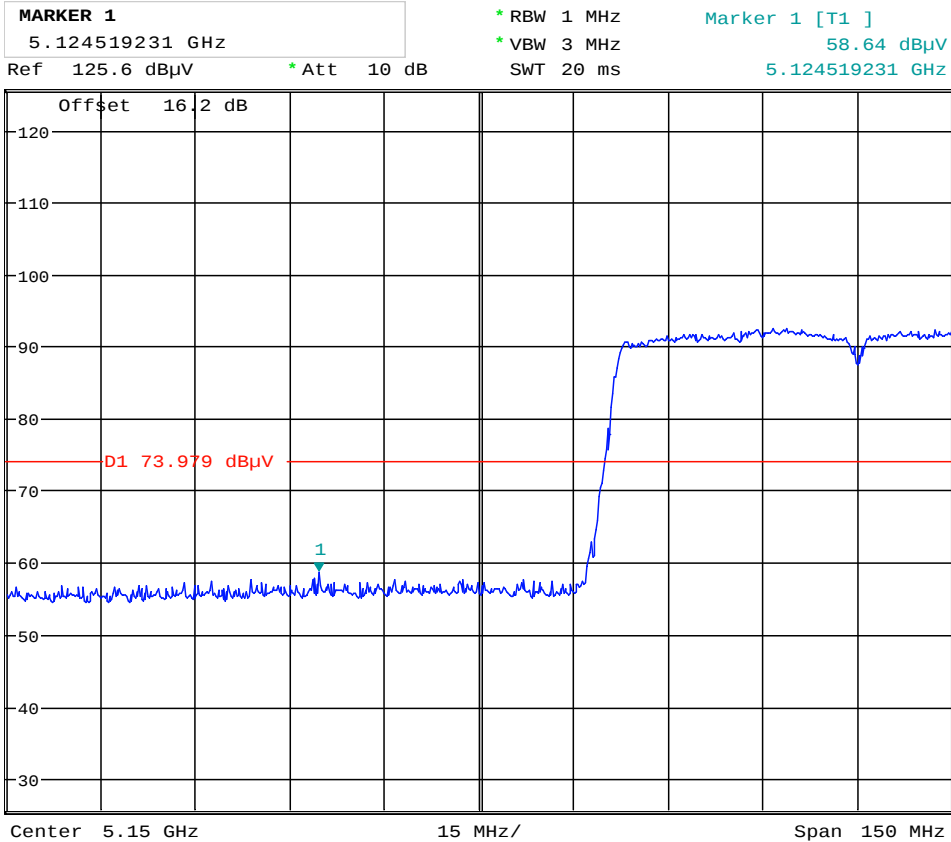


Date: 4.FEB.2014 17:36:51

**Plot 6-212. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 169 of 207                 |

# Radiated Band Edge Measurements (80MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



Date: 4.FEB.2014 17:37:19

**Plot 6-213. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 170 of 207                 |

# Radiated Band Edge Measurements (80MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5290MHz

Channel: 58



**MARKER 1**  
5.353205128 GHz

\* RBW 1 MHz

Marker 1 [T2 ]

\* VBW 3 MHz

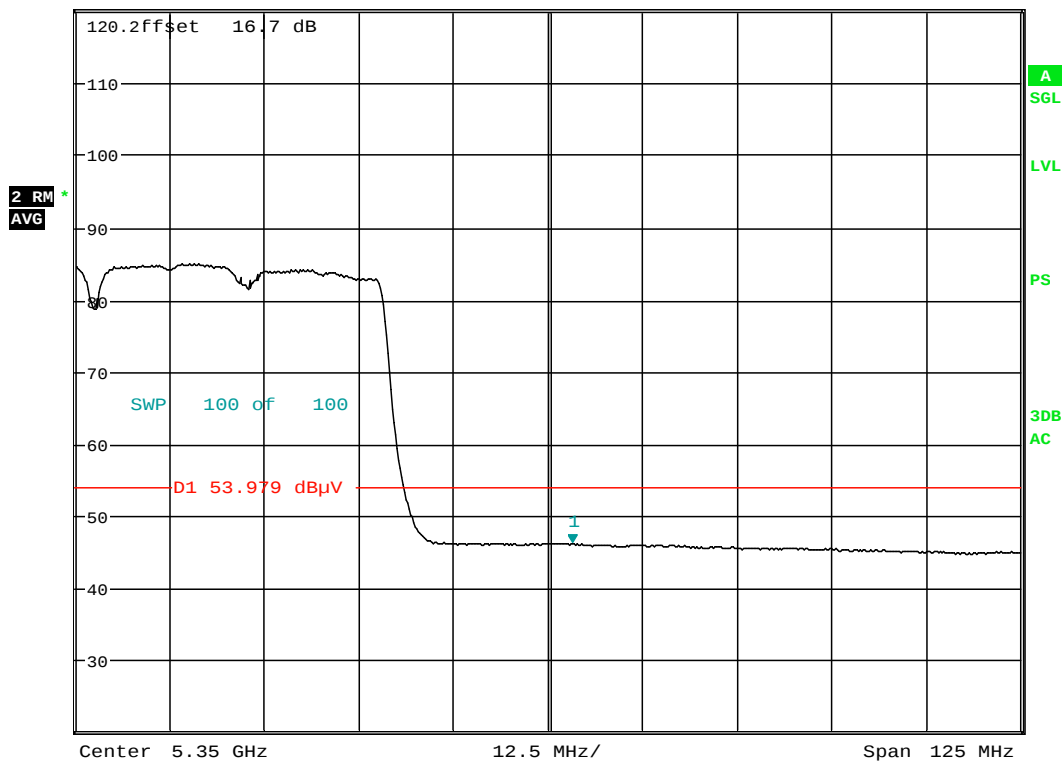
46.18 dBμV

Ref 120.2 dBμV

\* Att 10 dB

SWT 20 ms

5.353205128 GHz

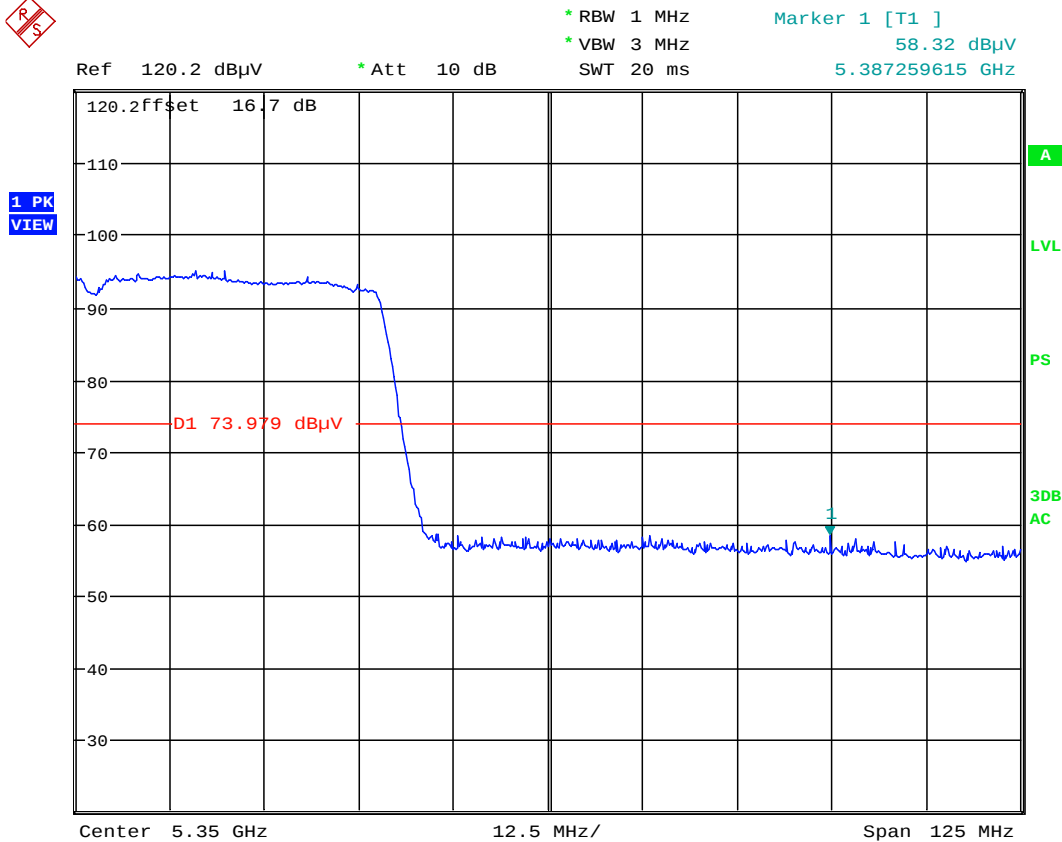


Date: 5.FEB.2014 10:10:08

**Plot 6-214. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 171 of 207                 |

# Radiated Band Edge Measurements (80MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



Date: 5.FEB.2014 10:09:27

**Plot 6-215. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 172 of 207                 |

# Radiated Band Edge Measurements (80MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

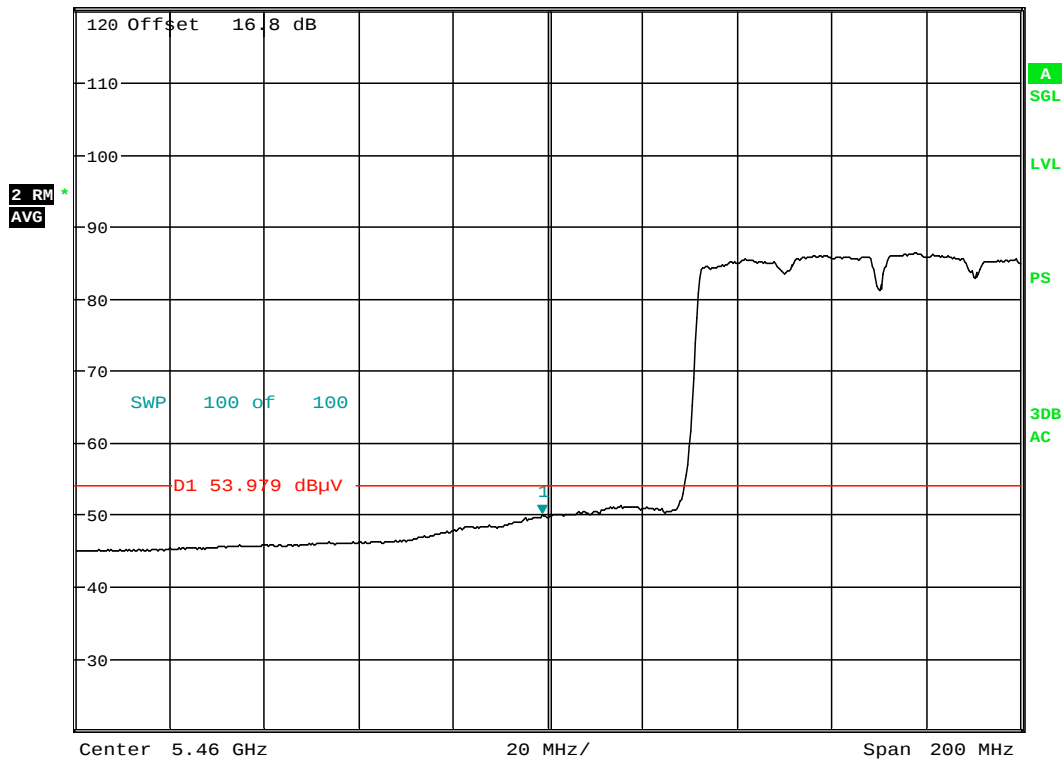
Worst Case Mode: 802.11ac (80MHz)  
Worst Case Transfer Rate: MCS0  
Distance of Measurements: 3 Meters  
Operating Frequency: 5530MHz  
Channel: 106



**MARKER 1**  
5.458717949 GHz  
Ref 120.3 dBμV \* Att 10 dB

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T2]  
49.95 dBμV  
5.458717949 GHz



Date: 5.FEB.2014 10:58:46

**Plot 6-216. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 173 of 207                 |

# Radiated Band Edge Measurements (80MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

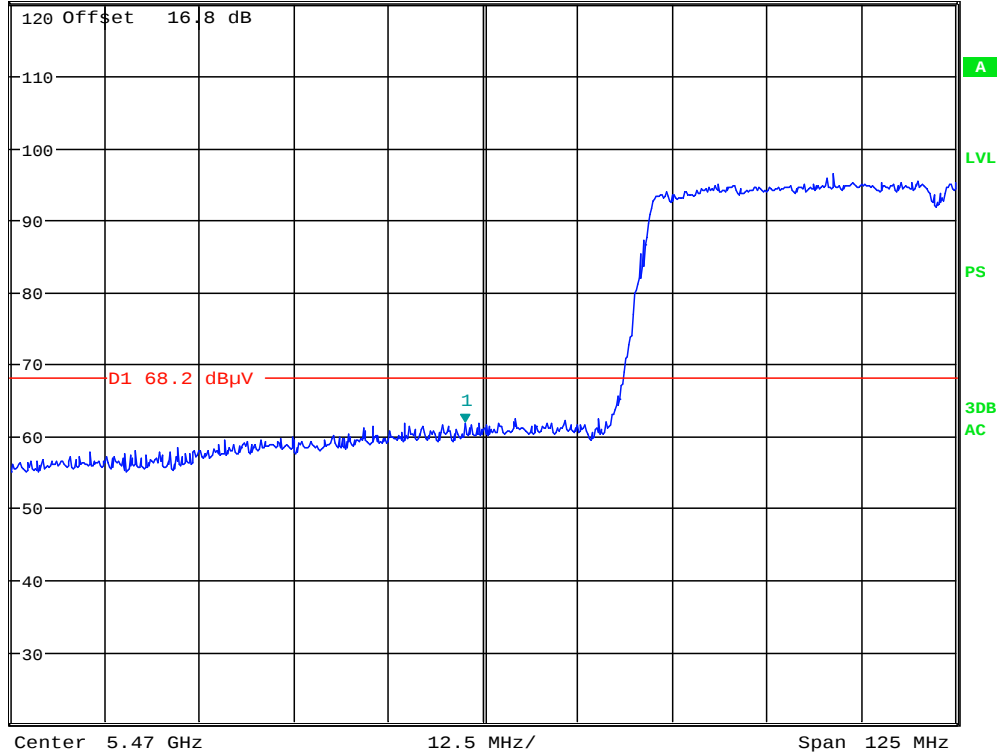


**MARKER 1**  
5.467596154 GHz  
Ref 120.3 dBμV \* Att 10 dB

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T1]  
61.87 dBμV  
5.467596154 GHz

1 PK  
VIEW



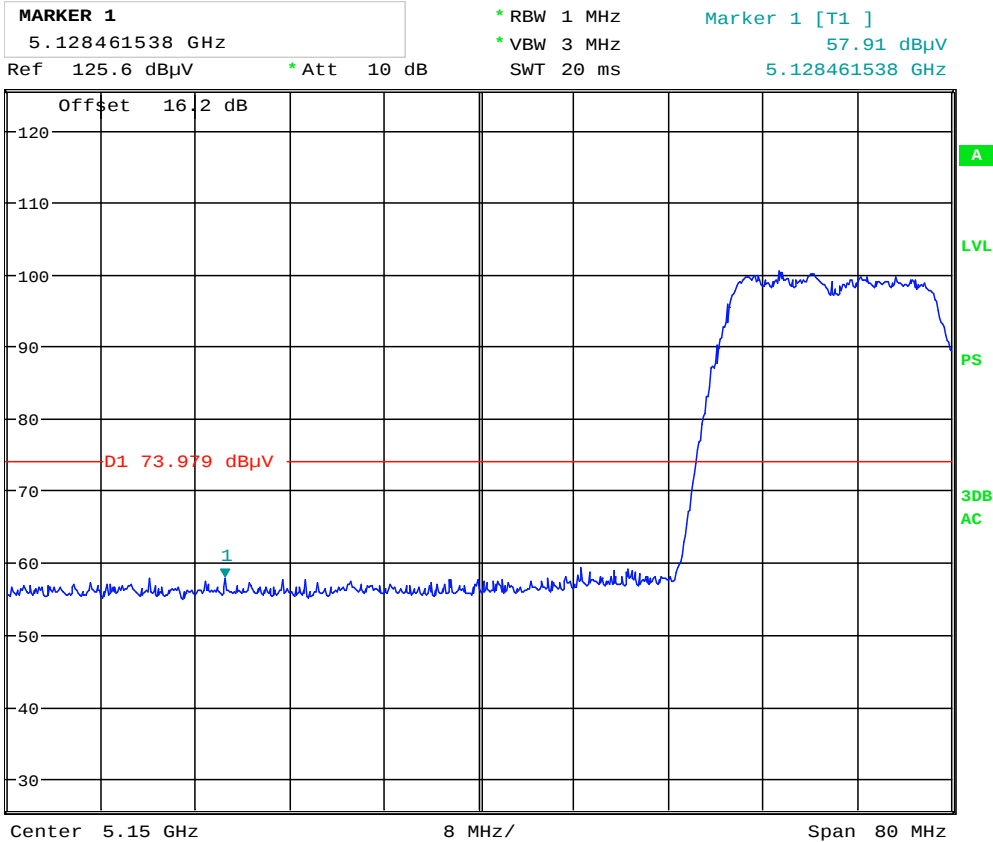
Date: 5.FEB.2014 10:59:09

**Plot 6-217. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 174 of 207                 |



# Radiated Band Edge Measurements (20MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



Date: 4.FEB.2014 17:21:06

**Plot 6-219. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 176 of 207                 |

# Radiated Band Edge Measurements (20MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64

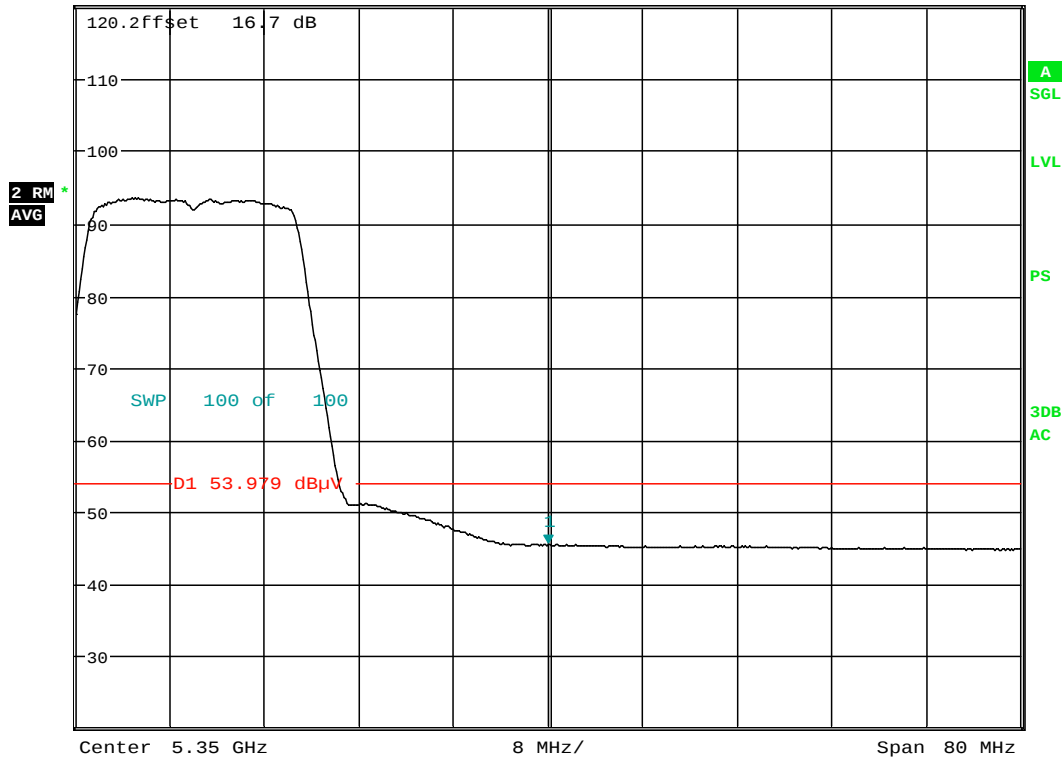


**MARKER 1**  
5.35 GHz

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T2]  
45.51 dBμV  
5.350000000 GHz

Ref 120.2 dBμV \* Att 10 dB



Date: 5.FEB.2014 10:32:58

**Plot 6-220. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 177 of 207                 |

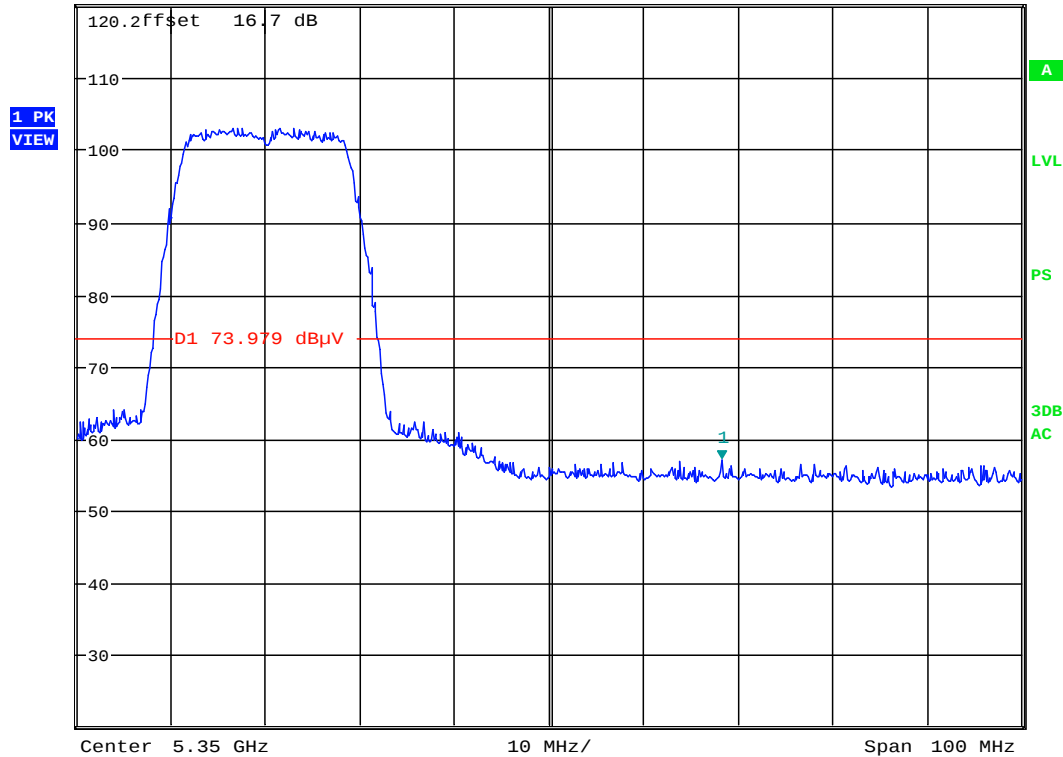
# Radiated Band Edge Measurements (20MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**  
5.368269231 GHz  
Ref 120.2 dBμV \*Att 10 dB

\*RBW 1 MHz  
\*VBW 3 MHz  
SWT 20 ms

Marker 1 [T1]  
57.13 dBμV  
5.368269231 GHz



Date: 5.FEB.2014 10:32:27

**Plot 6-221. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 178 of 207                 |

# Radiated Band Edge Measurements (20MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100



## MARKER 1

5.420536859 GHz

Ref 120.3 dBμV

\* Att 10 dB

\* RBW 1 MHz

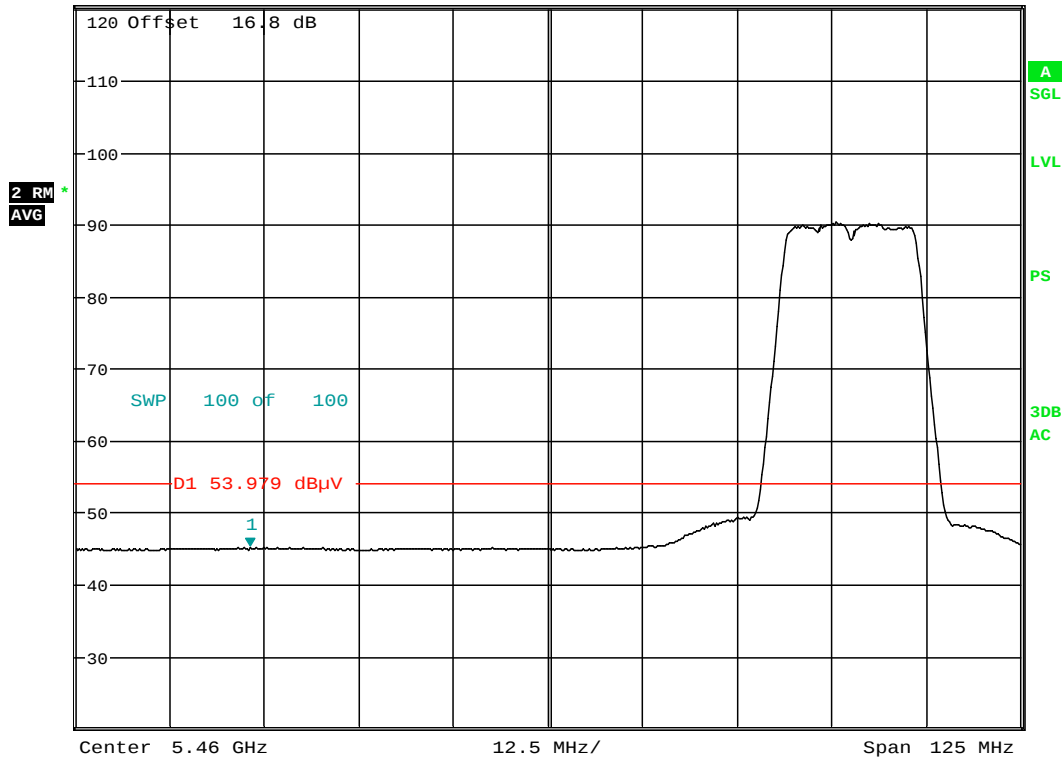
\* VBW 3 MHz

SWT 20 ms

Marker 1 [T2]

45.16 dBμV

5.420536859 GHz

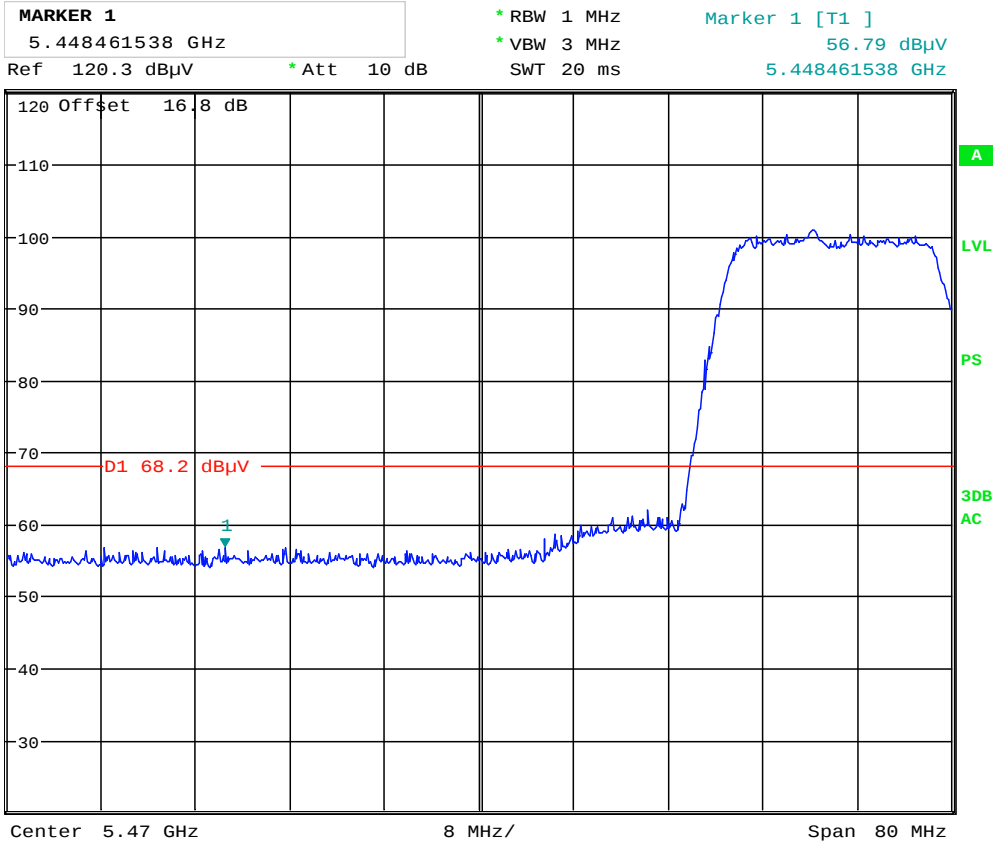


Date: 5.FEB.2014 11:14:15

**Plot 6-222. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 179 of 207                 |

# Radiated Band Edge Measurements (20MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



Date: 5.FEB.2014 11:14:31

**Plot 6-223. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 180 of 207                 |

## Radiated Band Edge Measurements (20MHz BW) (Cont'd)

\$15.407(b.1)(b.2) \$15.205 \$15.209

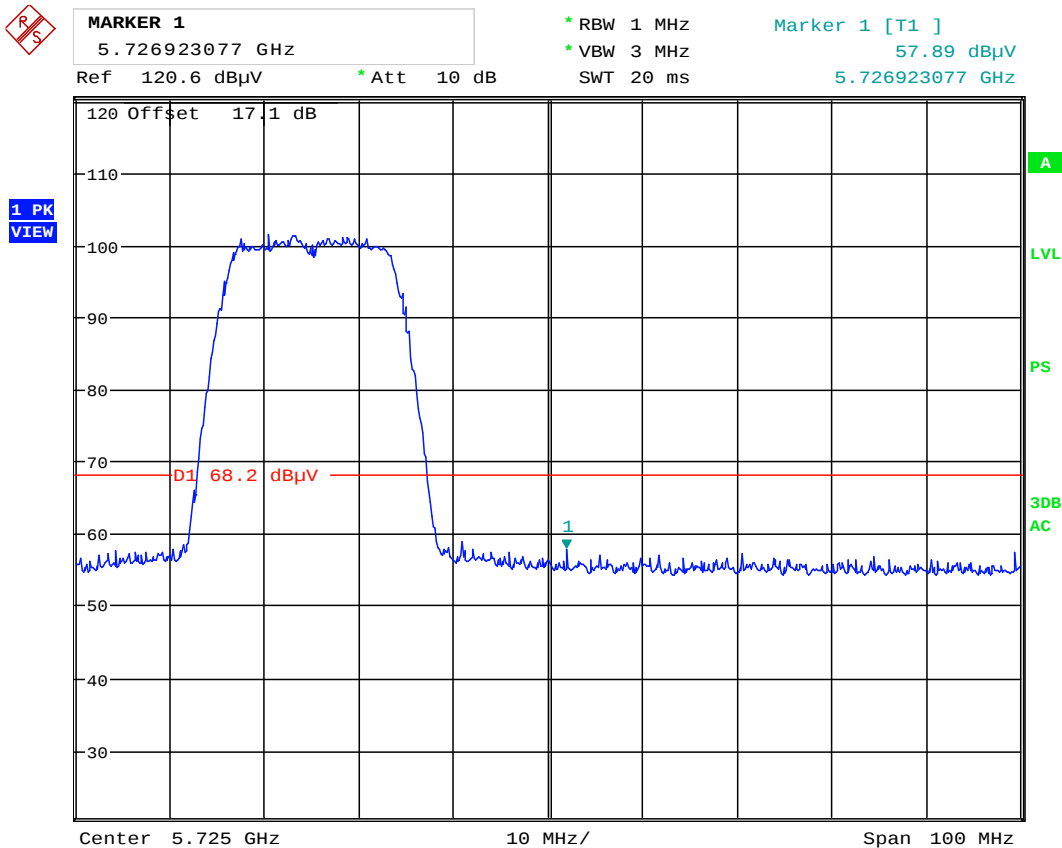
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5700MHz

Channel: 140



Date: 5.FEB.2014 11:28:08

**Plot 6-224. Radiated Upper Band Edge Plot (Peak – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 181 of 207                 |

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

\$15.407(b.1)(b.2) \$15.205 \$15.209

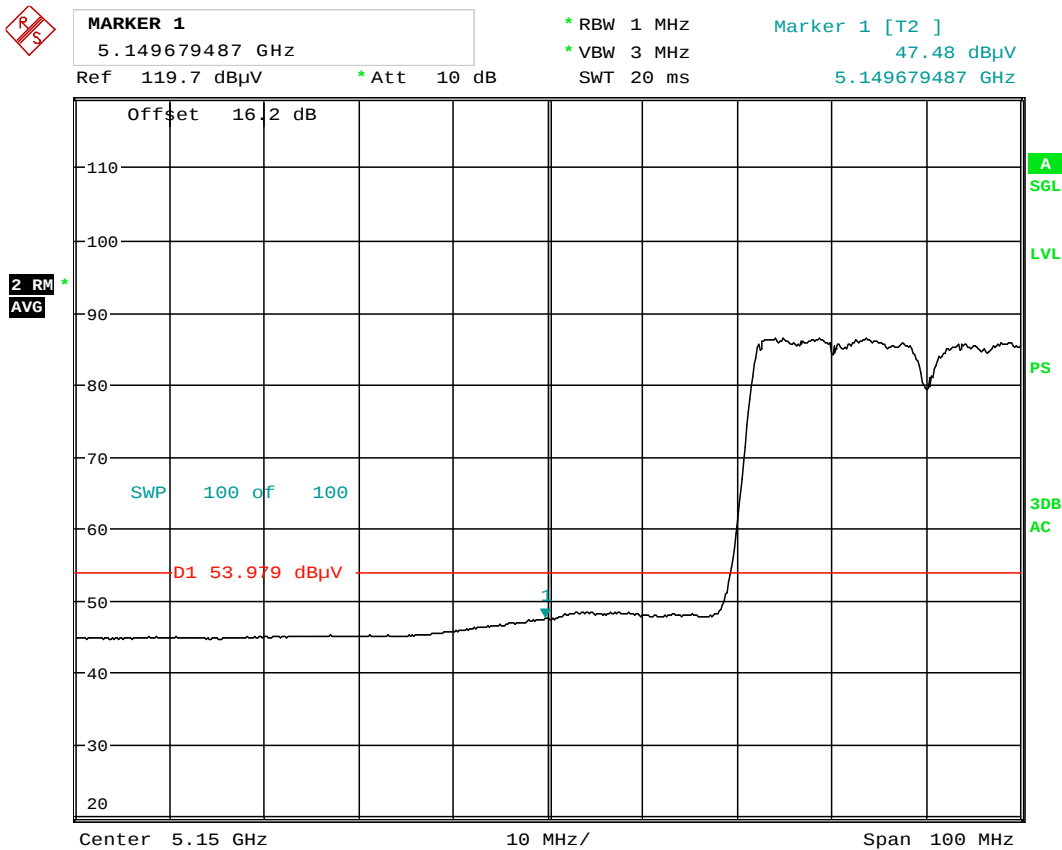
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38



Date: 4.FEB.2014 17:40:20

**Plot 6-225. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 182 of 207                 |

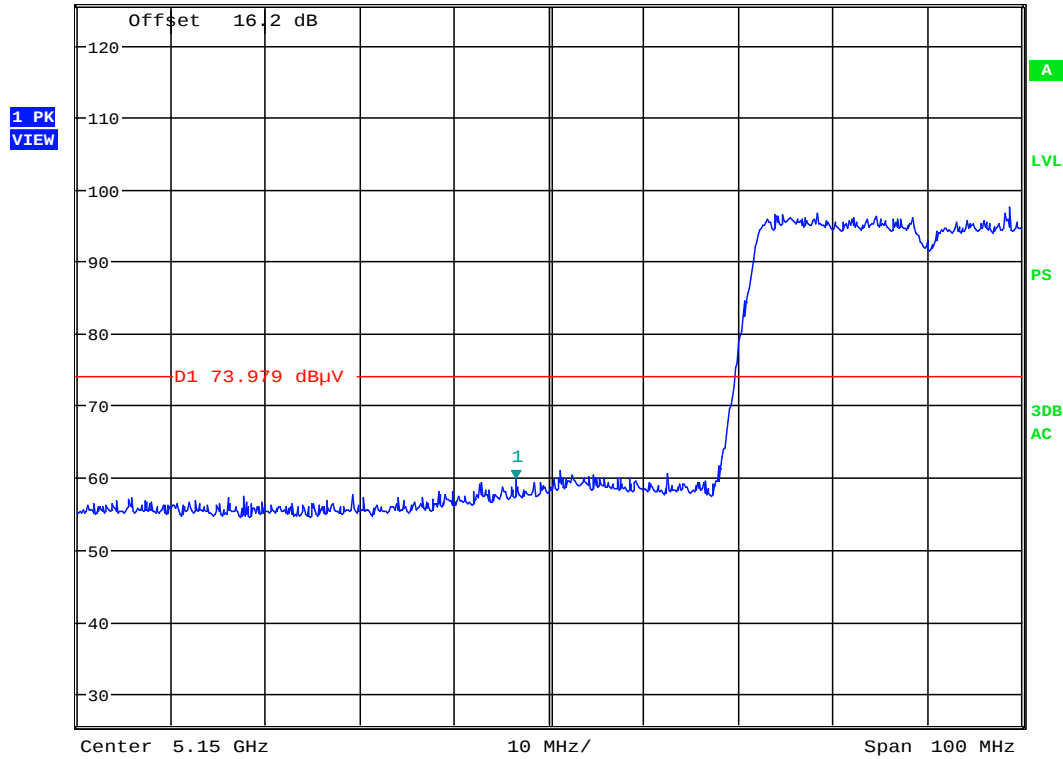
# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**  
5.146474359 GHz  
Ref 125.6 dBμV \* Att 10 dB

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T1]  
59.75 dBμV  
5.146474359 GHz



Date: 4.FEB.2014 17:40:45

**Plot 6-226. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 183 of 207                 |

# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5310MHz

Channel: 62



**MARKER 1**  
5.35 GHz

\* RBW 1 MHz

\* VBW 3 MHz

SWT 20 ms

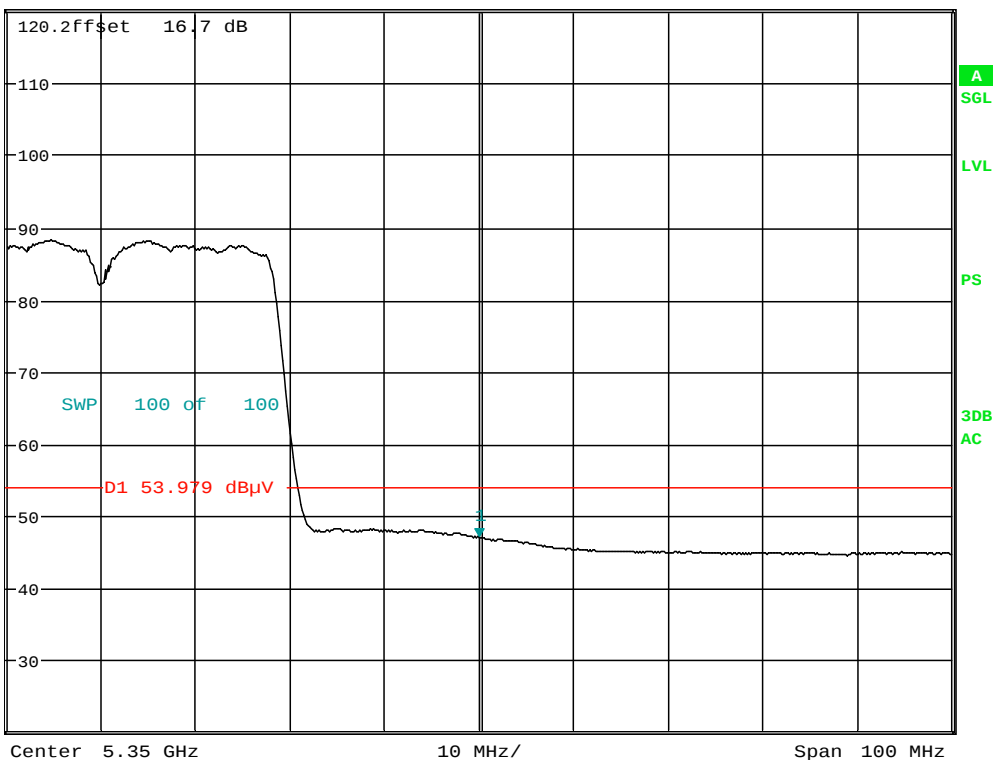
Marker 1 [T2]

47.00 dBμV

5.350000000 GHz

Ref 120.2 dBμV \* Att 10 dB

2 RM  
AVG

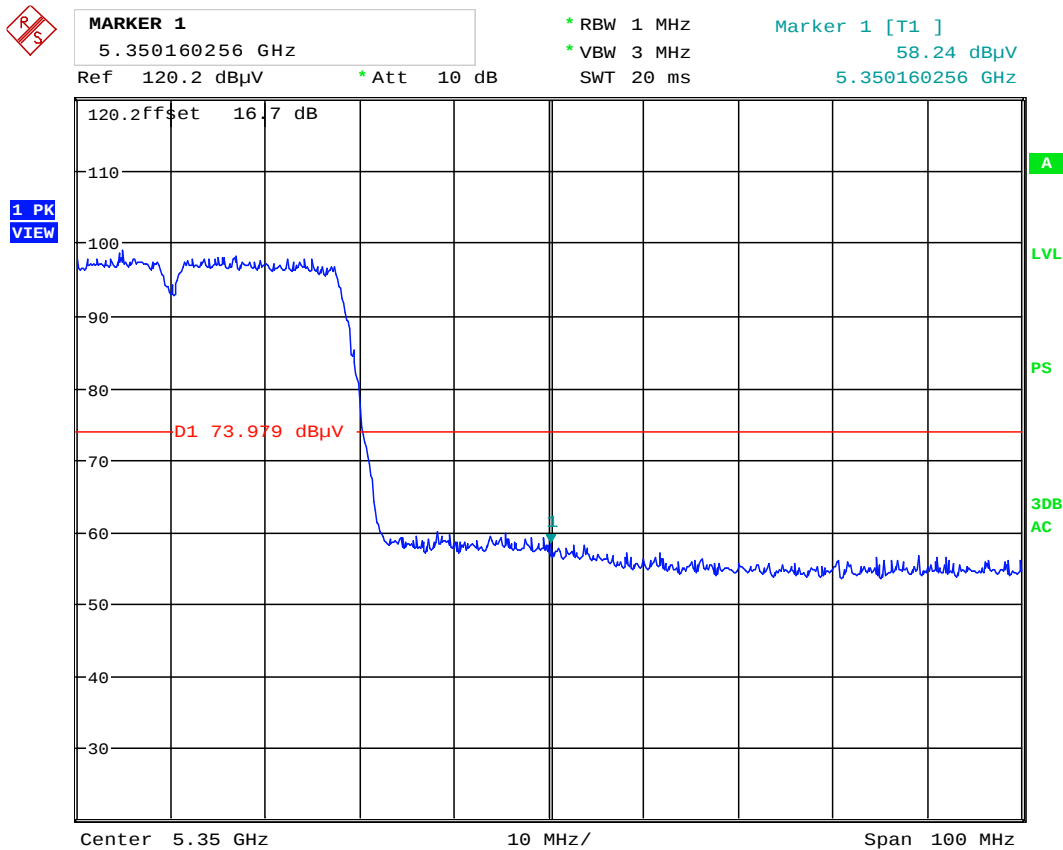


Date: 5.FEB.2014 10:35:10

**Plot 6-227. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 184 of 207                 |

# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



Date: 5.FEB.2014 10:35:29

**Plot 6-228. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 185 of 207                 |

# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

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

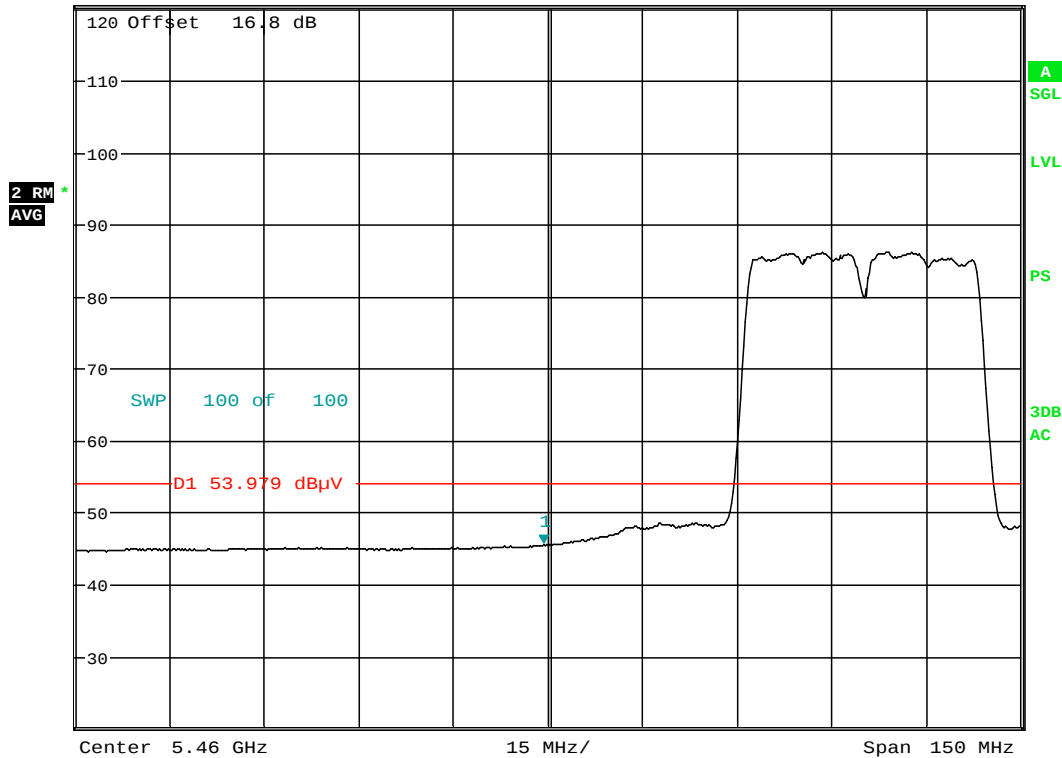


**MARKER 1**  
5.459278846 GHz

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T2]  
45.54 dBμV  
5.459278846 GHz

Ref 120.3 dBμV \* Att 10 dB



Date: 5.FEB.2014 11:16:15

**Plot 6-229. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 186 of 207                 |

# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

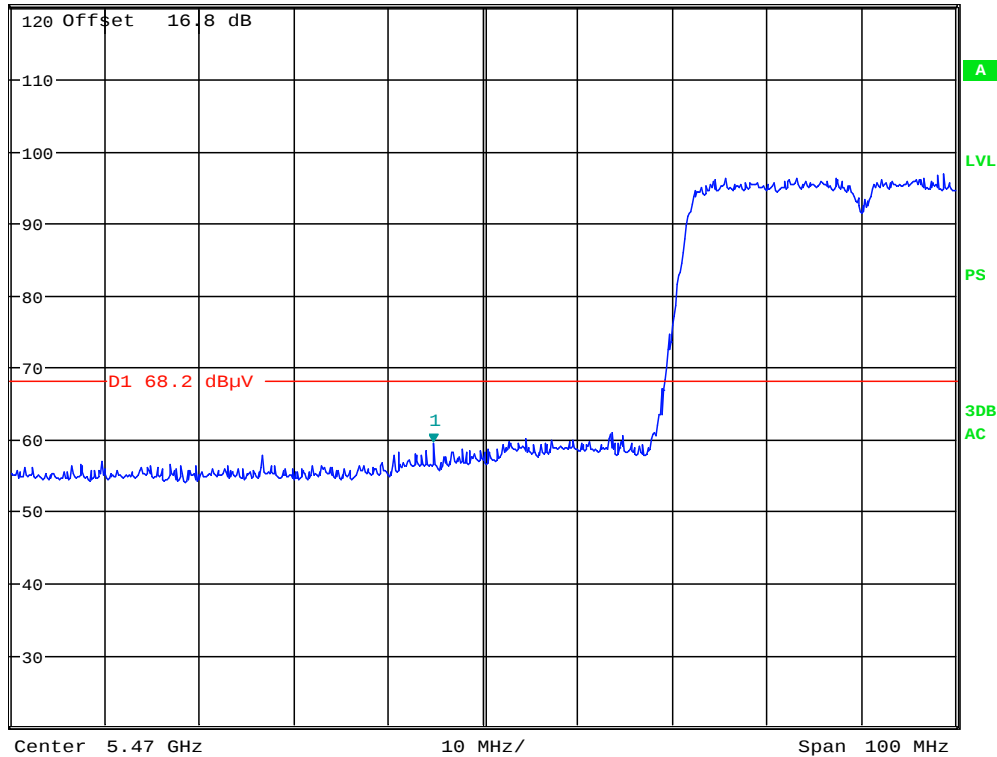


**MARKER 1**  
5.464711538 GHz  
Ref 120.3 dBμV \* Att 10 dB

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T1]  
59.56 dBμV  
5.464711538 GHz

1 PK  
VIEW



Date: 5.FEB.2014 11:15:53

**Plot 6-230. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 187 of 207                 |

# Radiated Band Edge Measurements (40MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

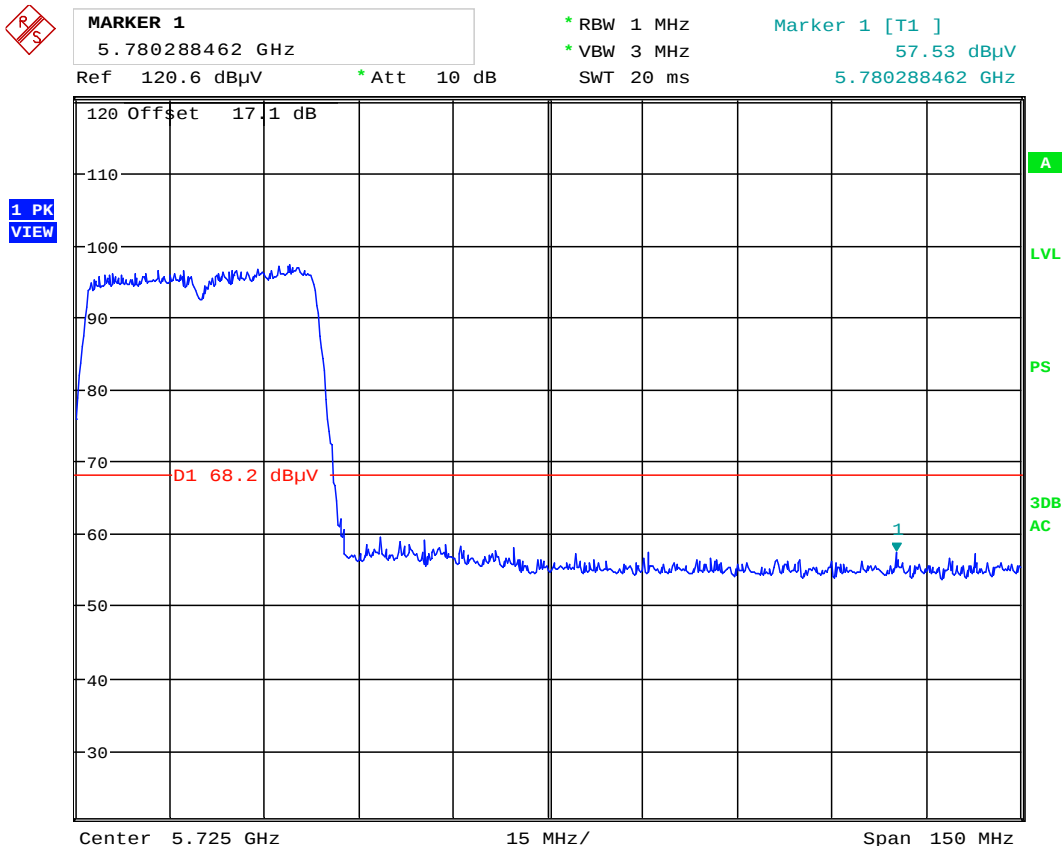
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5670MHz

Channel: 134



Date: 5.FEB.2014 11:29:07

**Plot 6-231. Radiated Upper Band Edge Plot (Peak – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 188 of 207                 |

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

\$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

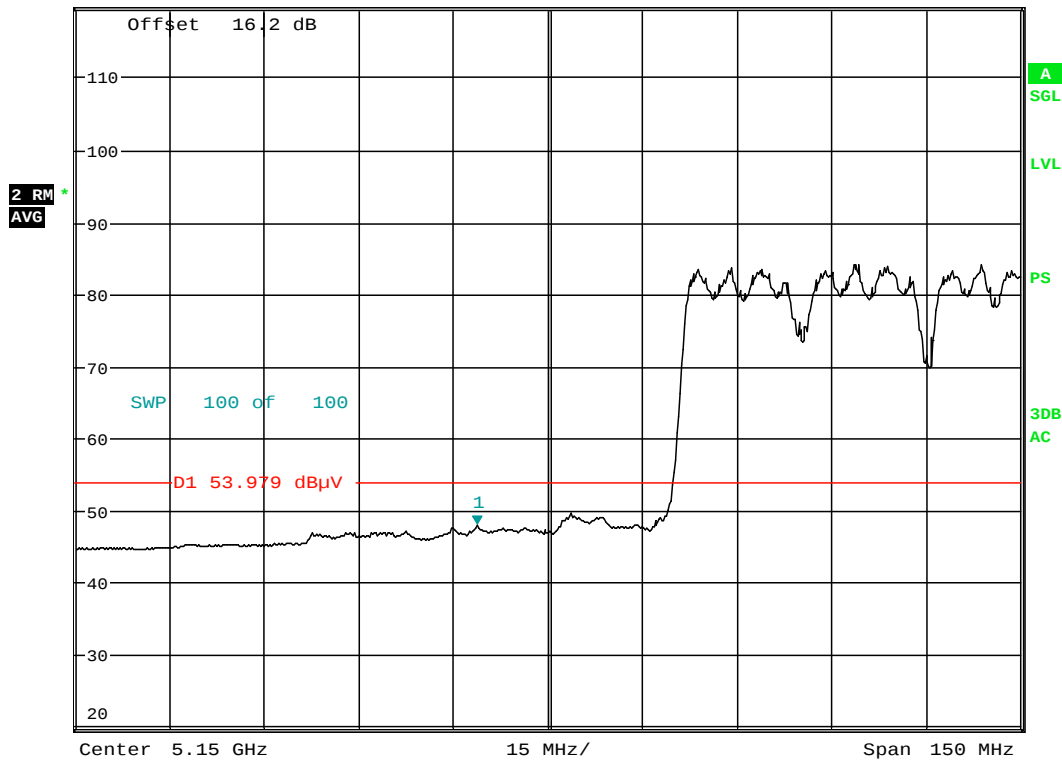
Channel: 42



**MARKER 1**  
5.138701923 GHz  
Ref 119.7 dBμV \* Att 10 dB

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T2 ]  
48.04 dBμV  
5.138701923 GHz



Date: 4.FEB.2014 17:43:07

**Plot 6-232. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 189 of 207                 |

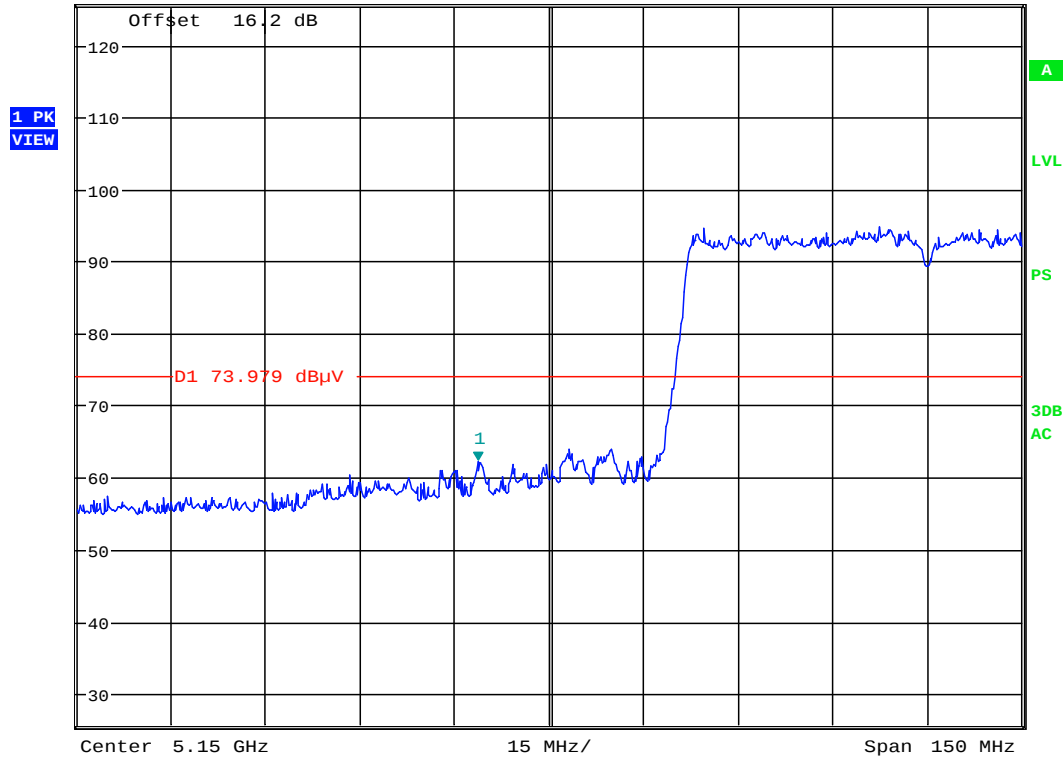
# Radiated Band Edge Measurements (80MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**  
5.138701923 GHz  
Ref 125.6 dBμV \*Att 10 dB

\*RBW 1 MHz  
\*VBW 3 MHz  
SWT 20 ms

Marker 1 [T1]  
62.18 dBμV  
5.138701923 GHz



Date: 4.FEB.2014 17:43:32

**Plot 6-233. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 190 of 207                 |

# Radiated Band Edge Measurements (80MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5290MHz

Channel: 58



**MARKER 1**  
5.354487179 GHz

\* RBW 1 MHz

Marker 1 [T2]

\* VBW 3 MHz

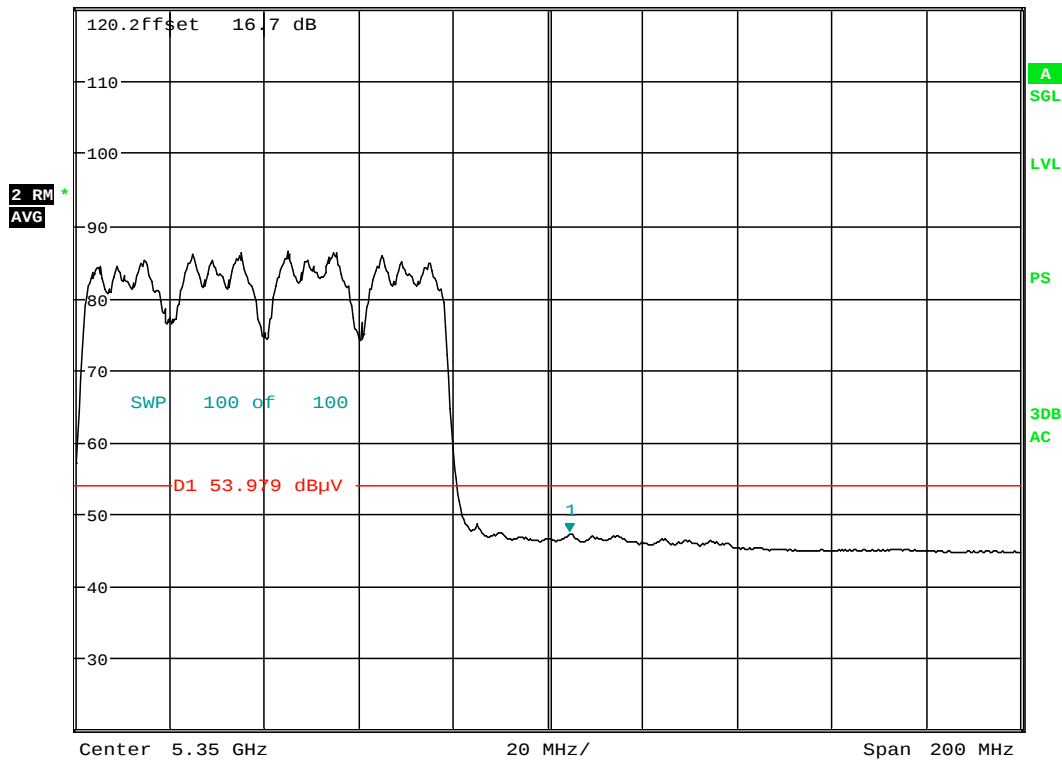
47.34 dBμV

Ref 120.2 dBμV

\* Att 10 dB

SWT 20 ms

5.354487179 GHz



Date: 5.FEB.2014 10:37:47

**Plot 6-234. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 191 of 207                 |

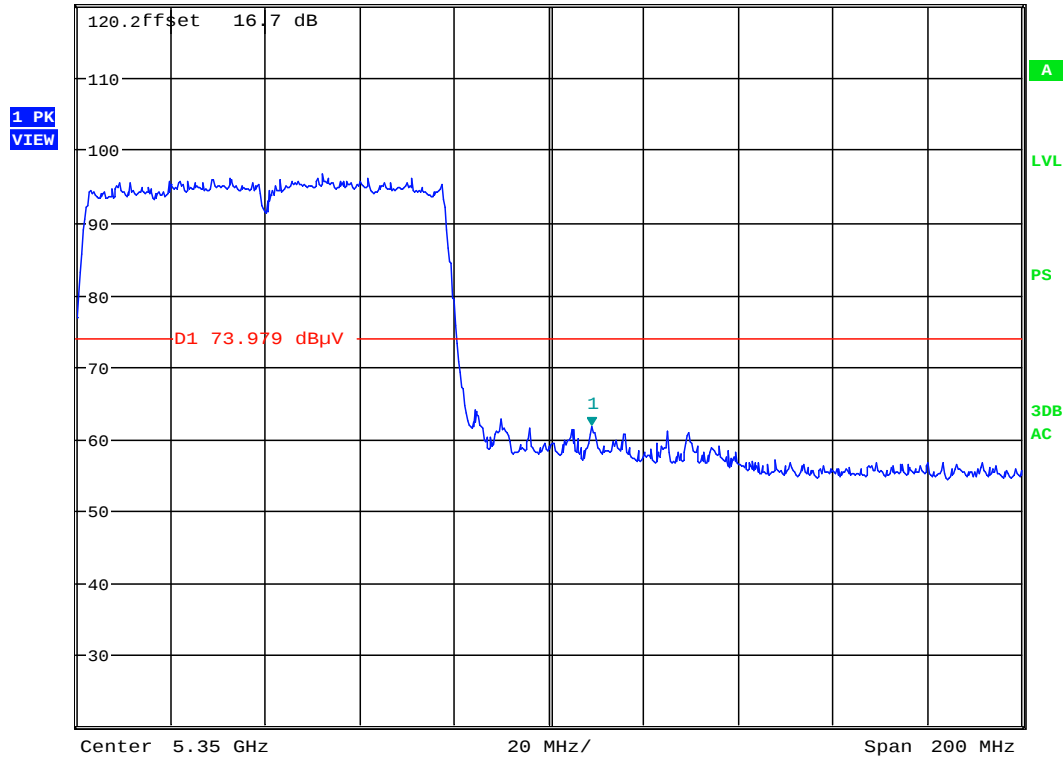
# Radiated Band Edge Measurements (80MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**  
5.358974359 GHz  
Ref 120.2 dBμV \*Att 10 dB

\*RBW 1 MHz  
\*VBW 3 MHz  
SWT 20 ms

Marker 1 [T1]  
61.65 dBμV  
5.358974359 GHz



Date: 5.FEB.2014 10:36:54

**Plot 6-235. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 192 of 207                 |

# Radiated Band Edge Measurements (80MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

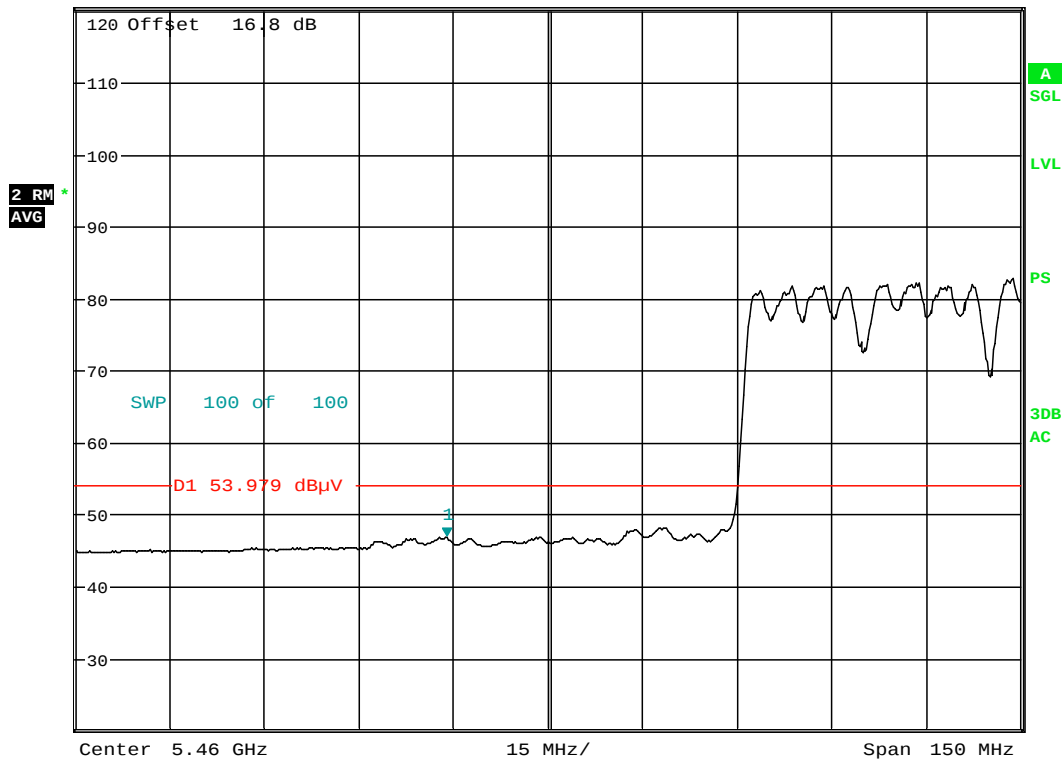
Worst Case Mode: 802.11ac (80MHz)  
Worst Case Transfer Rate: MCS0  
Distance of Measurements: 3 Meters  
Operating Frequency: 5530MHz  
Channel: 106



**MARKER 1**  
5.443894231 GHz  
Ref 120.3 dBμV \* Att 10 dB

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T2 ]  
46.98 dBμV  
5.443894231 GHz



Date: 5.FEB.2014 11:18:04

**Plot 6-236. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 193 of 207                 |

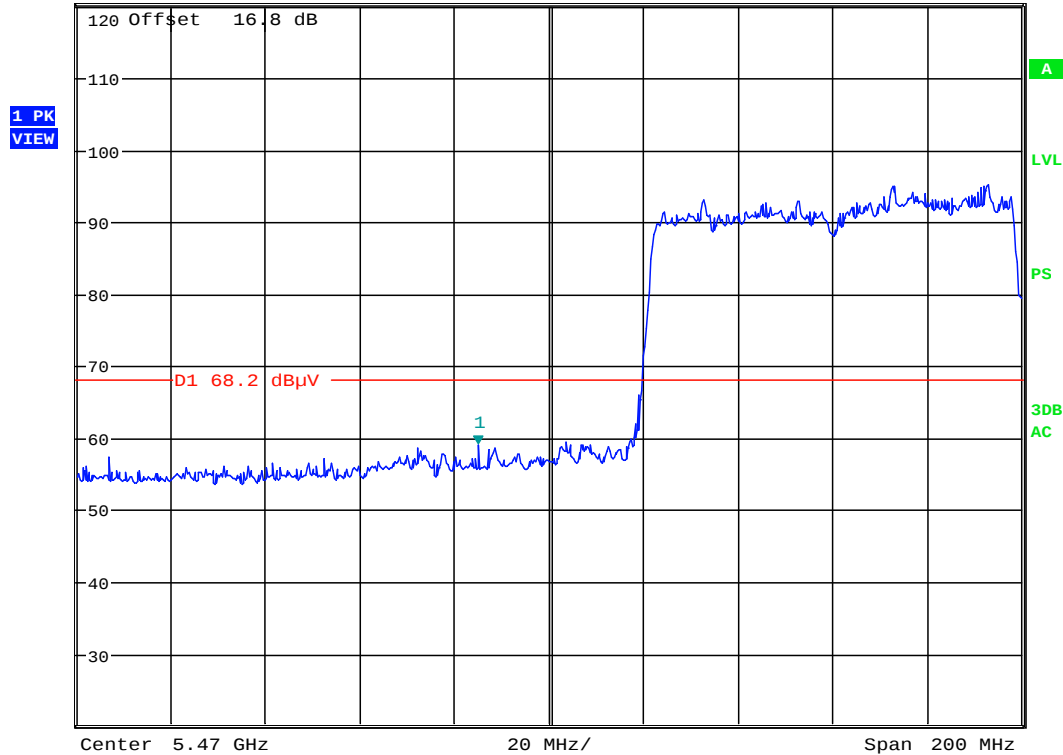
# Radiated Band Edge Measurements (80MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**  
5.454935897 GHz  
Ref 120.3 dBμV \* Att 10 dB

\* RBW 1 MHz  
\* VBW 3 MHz  
SWT 20 ms

Marker 1 [T1]  
59.00 dBμV  
5.454935897 GHz



Date: 5.FEB.2014 11:18:33

**Plot 6-237. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 194 of 207                 |

## 6.17 WCC Radiated Band Edge Measurements

\$15.407(b.1)(b.2) \$15.205 \$15.209

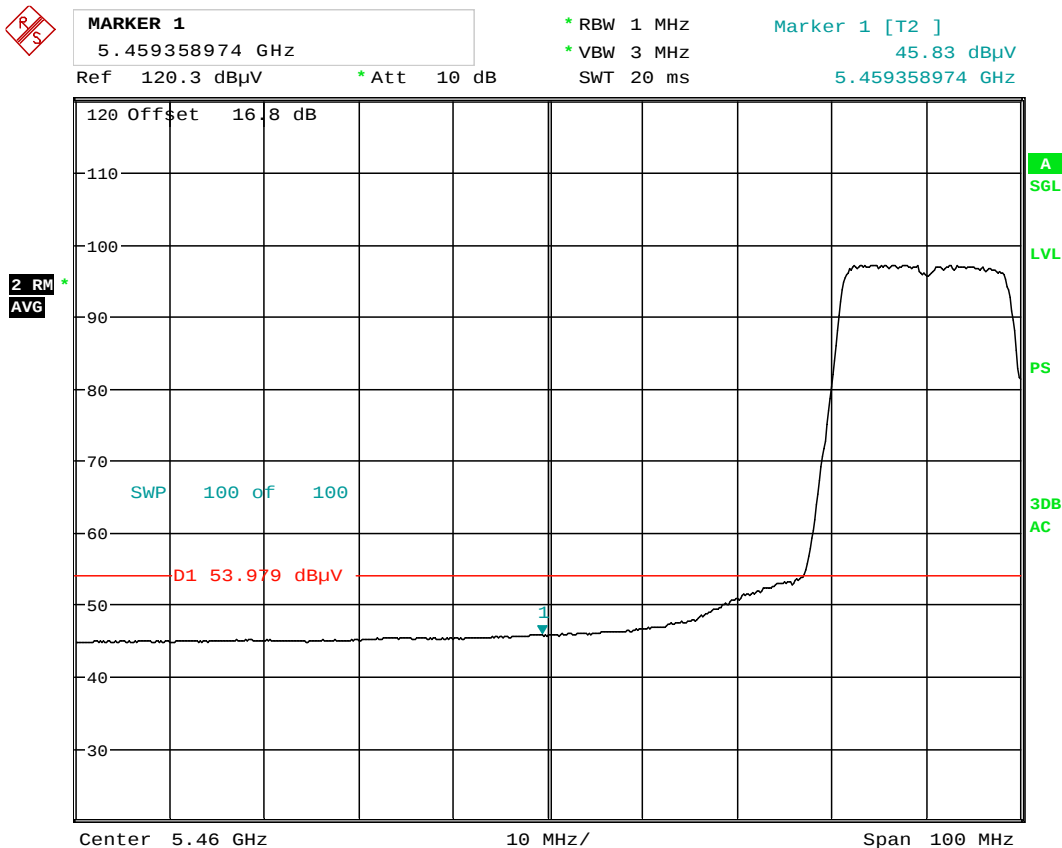
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100



Date: 13.FEB.2014 20:37:17

**Plot 6-238. Radiated Restricted Lower Band Edge Plot with WCC (Average – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 195 of 207                 |

## WCC Radiated Band Edge Measurements (20MHz BW) (Cont'd)

\$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**

5.467051282 GHz

Ref 120.3 dBμV

\* Att 10 dB

\* RBW 1 MHz

\* VBW 3 MHz

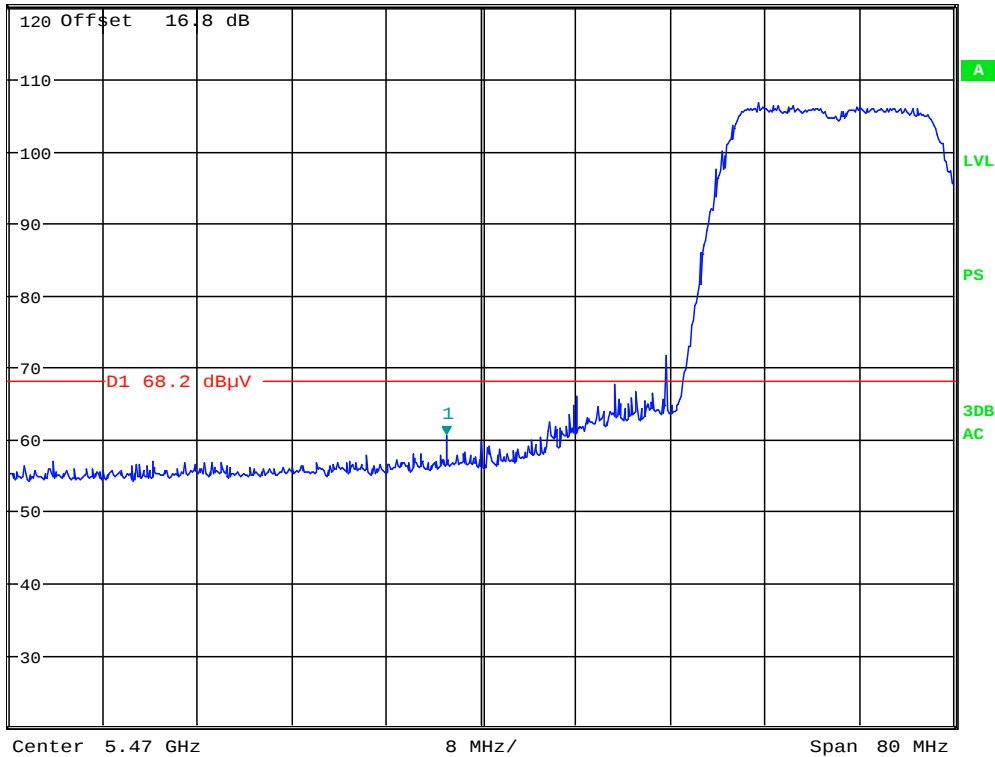
SWT 20 ms

Marker 1 [T1]

60.48 dBμV

5.467051282 GHz

**1 PK  
VIEW**



Date: 13.FEB.2014 20:36:51

**Plot 6-239. Radiated Restricted Lower Band Edge Plot with WCC (Peak – UNII Band 2C)**

|                                             |                                       |                                                                                |  |                                        |
|---------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------|--|----------------------------------------|
| <b>FCC ID:</b> A3LSMG900R7                  |                                       | <b>FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Reviewed by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>0Y1403190582.A3L | <b>Test Dates:</b><br>01/29-2/20/2014 | <b>EUT Type:</b><br>Portable Handset                                           |  | Page 196 of 207                        |

# **WCC Radiated Band Edge Measurements (40MHz BW) (Cont'd)** **\$15.407(b.1)(b.2) \$15.205 \$15.209**

Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38



**MARKER 1**  
5.149038462 GHz

\* RBW 1 MHz

\* VBW 3 MHz

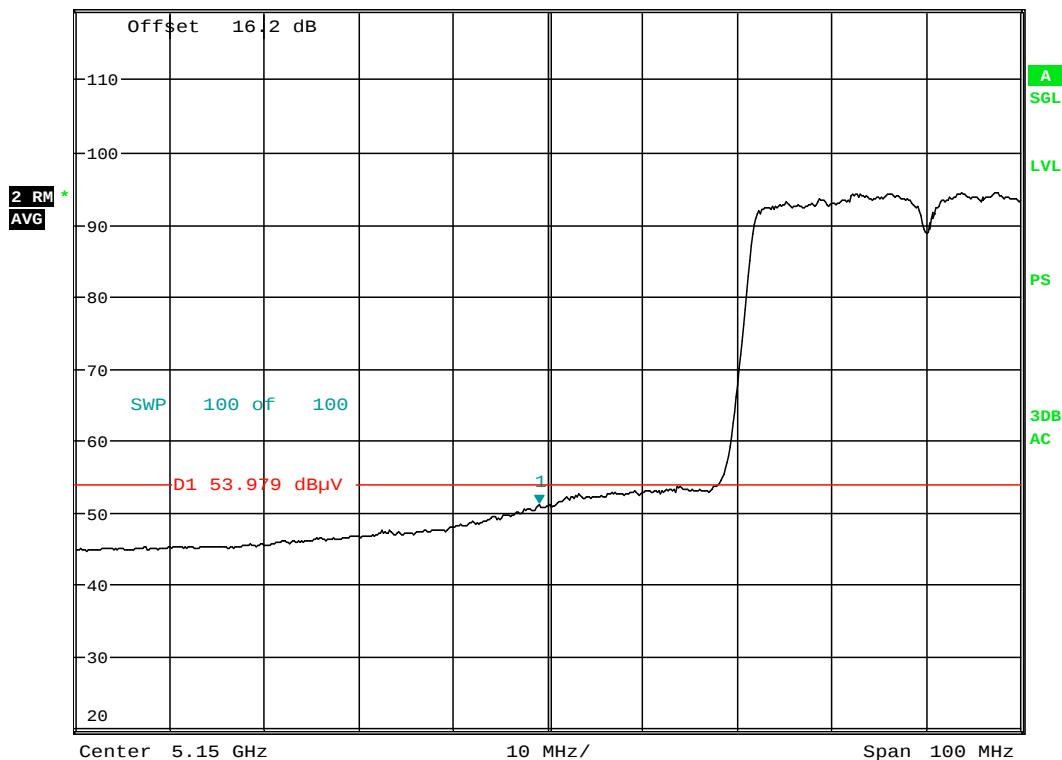
SWT 20 ms

Marker 1 [T2 ]

51.03 dBμV

5.149038462 GHz

Ref 119.7 dBμV \* Att 10 dB



Date: 13.FEB.2014 20:42:15

**Plot 6-240. Radiated Restricted Lower Band Edge Plot with WCC (Average – UNII Band 1)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 197 of 207                 |

# **WCC Radiated Band Edge Measurements (40MHz BW) (Cont'd)** **\$15.407(b.1)(b.2) \$15.205 \$15.209**

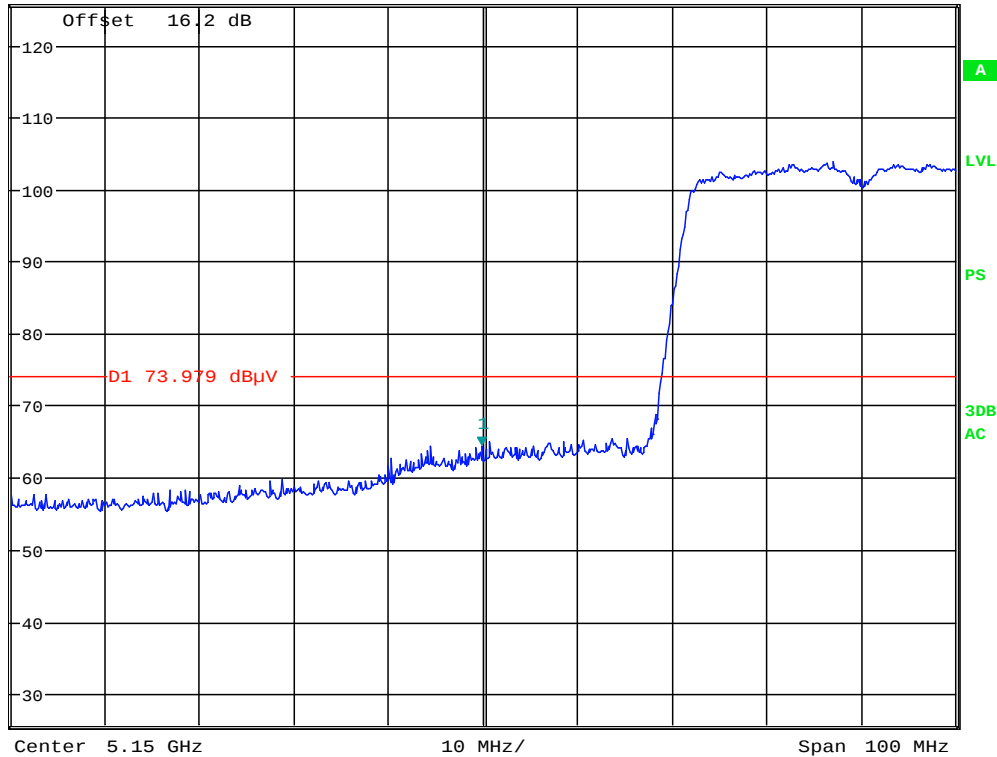


**MARKER 1**  
 5.149839744 GHz  
 Ref 125.6 dBμV \*Att 10 dB

\*RBW 1 MHz  
 \*VBW 3 MHz  
 SWT 20 ms

Marker 1 [T1]  
 64.38 dBμV  
 5.149839744 GHz

**1 PK  
VIEW**



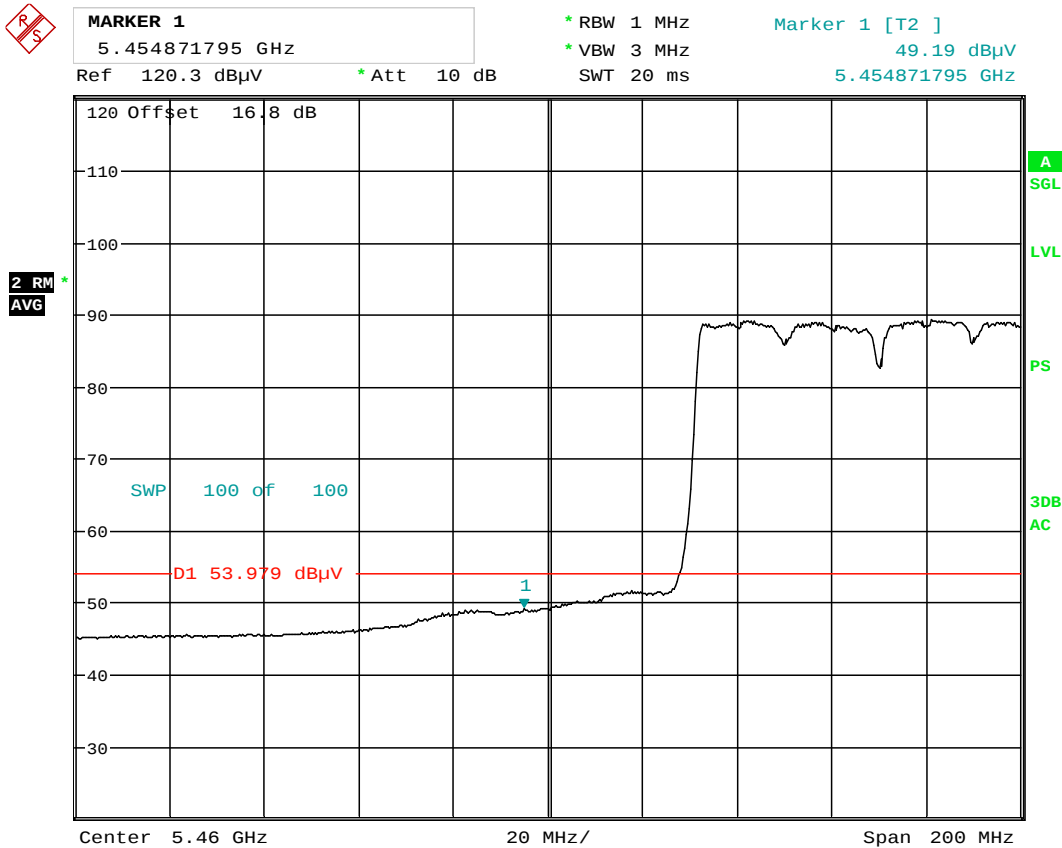
Date: 13.FEB.2014 20:43:29

**Plot 6-241. Radiated Restricted Lower Band Edge Plot with WCC (Peak – UNII Band 1)**

|                                             |                                               |                                                                               |                |                                        |
|---------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------|----------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | <b>FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT</b><br>(CERTIFICATION) | <b>SAMSUNG</b> | <b>Reviewed by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>0Y1403190582.A3L | <b>Test Dates:</b><br>01/29-2/20/2014         | <b>EUT Type:</b><br>Portable Handset                                          |                | Page 198 of 207                        |

# Radiated Band Edge Measurements with WCC (80MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11ac (80MHz)  
Worst Case Transfer Rate: MCS8  
Distance of Measurements: 3 Meters  
Operating Frequency: 5530MHz  
Channel: 106



Date: 13.FEB.2014 20:49:37

**Plot 6-242. Radiated Restricted Lower Band Edge Plot with WCC (Average – UNII Band 2C)**

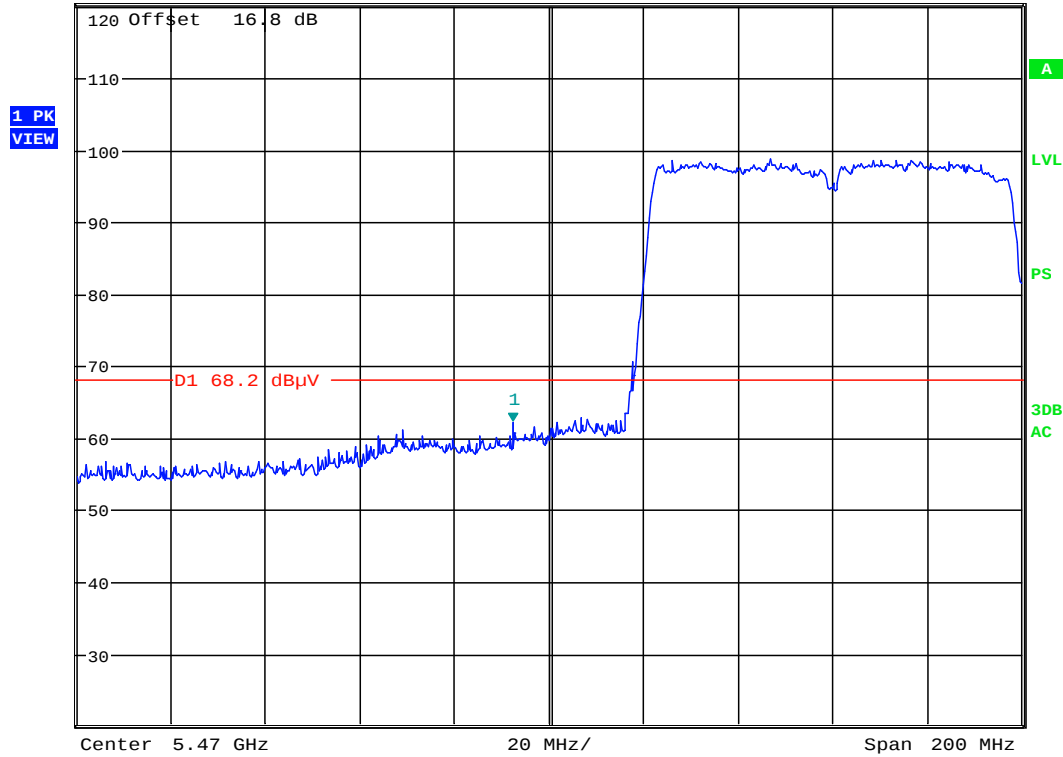
|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 199 of 207                 |

# Radiated Band Edge Measurements with WCC (80MHz BW) (Cont'd) \$15.407(b.1)(b.2) \$15.205 \$15.209



**MARKER 1**  
5.462307692 GHz  
Ref 120.3 dBμV \*Att 10 dB

\*RBW 1 MHz \*VBW 3 MHz SWT 20 ms  
Marker 1 [T1] 62.12 dBμV  
5.462307692 GHz



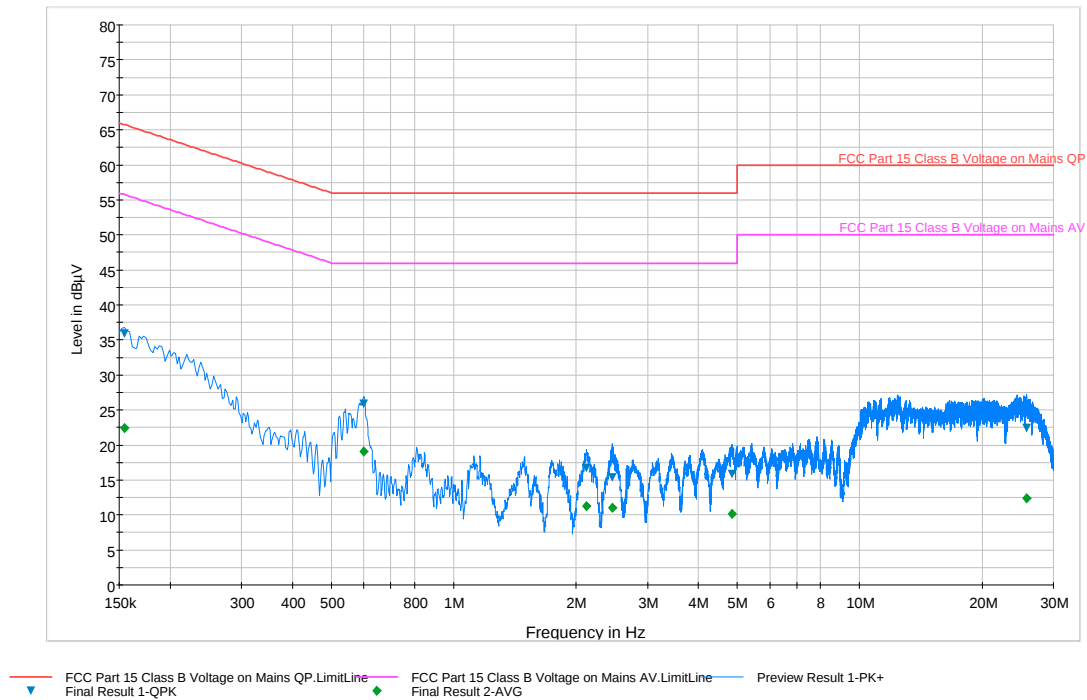
Date: 13.FEB.2014 20:50:03

**Plot 6-243. Radiated Restricted Lower Band Edge Plot with WCC (Peak – UNII Band 2C)**

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 200 of 207                 |

## 6.18 Line-Conducted Test Data

**\$15.407**



**Plot 6-244. Line Conducted Plot with 802.11a UNII Band 1 (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 |
|------------------|------|-------------|-------------------|---------------|--------------|-----------------|---------------|--------------|
| 0.155            | L1   | 0.2         | 35.90             | 65.80         | 29.80        | 22.40           | 55.80         | 33.30        |
| 0.600            | L1   | 0.1         | 25.90             | 56.00         | 30.10        | 19.10           | 46.00         | 26.90        |
| 2.123            | L1   | 0.1         | 16.70             | 56.00         | 39.30        | 11.30           | 46.00         | 34.70        |
| 2.454            | L1   | 0.1         | 15.40             | 56.00         | 40.60        | 11.00           | 46.00         | 35.00        |
| 4.839            | L1   | 0.2         | 15.90             | 56.00         | 40.10        | 10.20           | 46.00         | 35.80        |
| 25.762           | L1   | 0.8         | 22.40             | 60.00         | 37.60        | 12.40           | 50.00         | 37.60        |

**Table 6-50. Line Conducted Data with 802.11a UNII Band 1 (L1)**

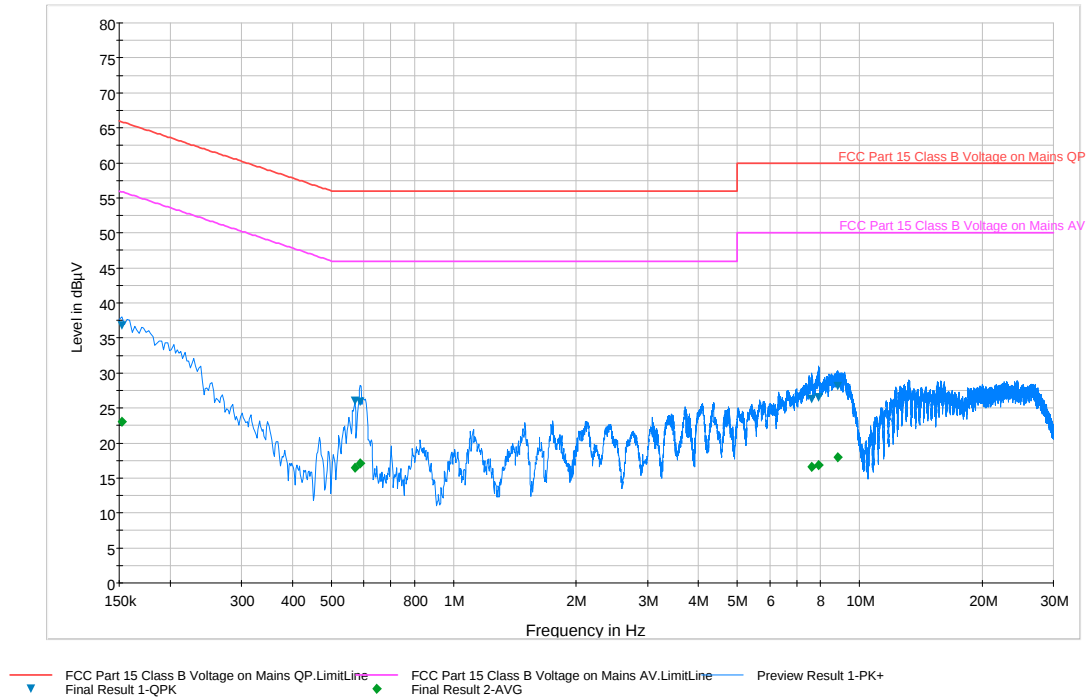
**Notes:**

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

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
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## Line-Conducted Test Data (Cont'd)

**\$15.407**



**Plot 6-245. Line Conducted Plot with 802.11a UNII Band 1 (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 |
|------------------|------|-------------|-------------------|---------------|--------------|-----------------|---------------|--------------|
| 0.152            | N    | 0.3         | 36.80             | 65.90         | 29.10        | 23.00           | 55.90         | 32.90        |
| 0.571            | N    | 0.1         | 26.00             | 56.00         | 30.00        | 16.50           | 46.00         | 29.50        |
| 0.589            | N    | 0.1         | 25.90             | 56.00         | 30.10        | 17.10           | 46.00         | 28.90        |
| 7.607            | N    | 0.3         | 26.20             | 60.00         | 33.80        | 16.50           | 50.00         | 33.50        |
| 7.924            | N    | 0.3         | 26.50             | 60.00         | 33.50        | 16.90           | 50.00         | 33.10        |
| 8.804            | N    | 0.3         | 28.10             | 60.00         | 31.90        | 18.00           | 50.00         | 32.00        |

**Table 6-51. Line Conducted Data with 802.11a UNII Band 1 (N)**

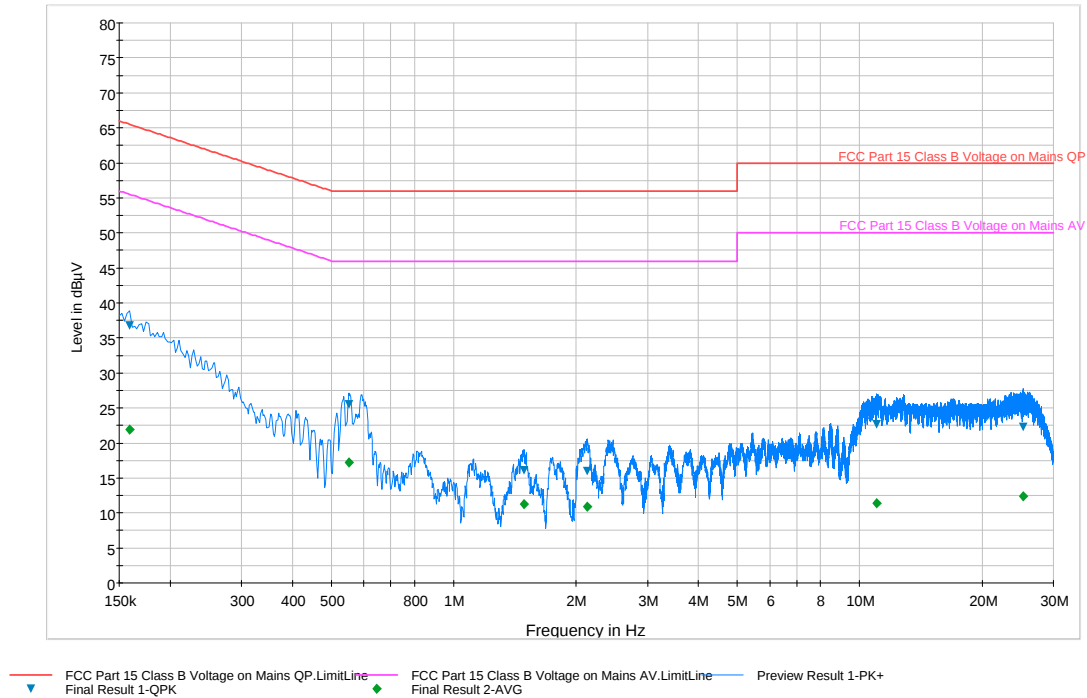
**Notes:**

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

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
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| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 202 of 207                 |

## Line-Conducted Test Data (Cont'd)

**\$15.407**



**Plot 6-246. Line Conducted Plot with 802.11a UNII Band 2A (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 |
|------------------|------|-------------|-------------------|---------------|--------------|-----------------|---------------|--------------|
| 0.159            | L1   | 0.2         | 36.70             | 65.50         | 28.80        | 21.90           | 55.50         | 33.60        |
| 0.551            | L1   | 0.1         | 25.60             | 56.00         | 30.40        | 17.20           | 46.00         | 28.80        |
| 1.491            | L1   | 0.1         | 16.10             | 56.00         | 39.90        | 11.30           | 46.00         | 34.70        |
| 2.132            | L1   | 0.1         | 16.00             | 56.00         | 40.00        | 10.90           | 46.00         | 35.10        |
| 11.009           | L1   | 0.4         | 22.70             | 60.00         | 37.30        | 11.40           | 50.00         | 38.60        |
| 25.307           | L1   | 0.8         | 22.30             | 60.00         | 37.70        | 12.40           | 50.00         | 37.60        |

**Table 6-52. Line Conducted Data with 802.11a UNII Band 2A (L1)**

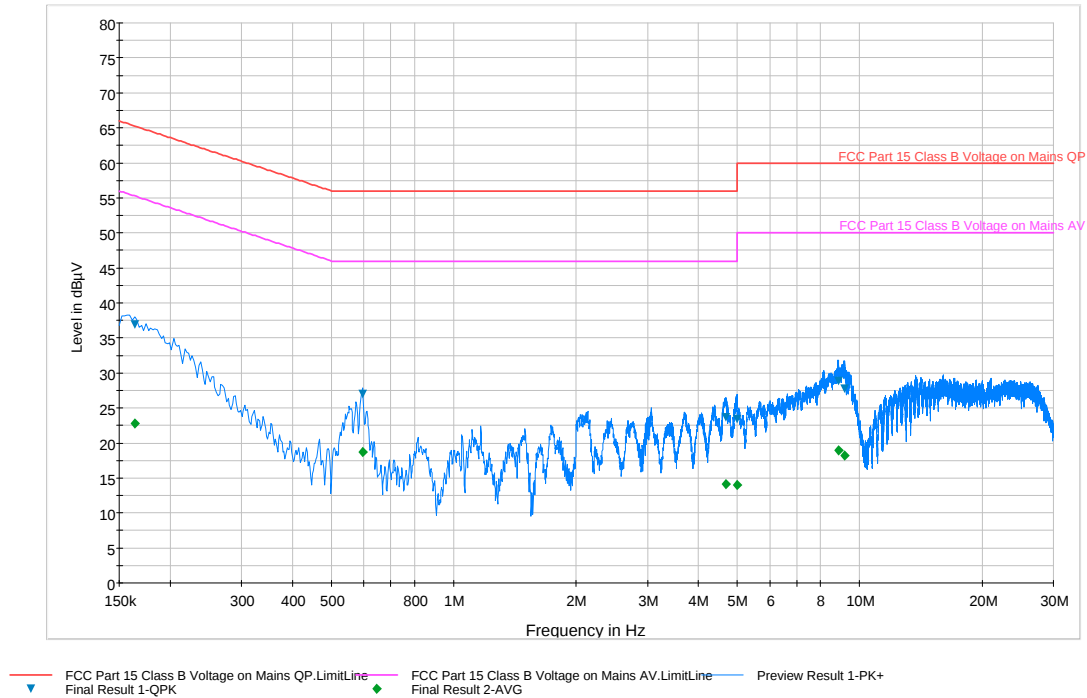
**Notes:**

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

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
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| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 203 of 207                 |

## Line-Conducted Test Data (Cont'd)

**\$15.407**



**Plot 6-247. Line Conducted Plot with 802.11a UNII Band 2A (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 |
|------------------|------|-------------|-------------------|---------------|--------------|-----------------|---------------|--------------|
| 0.164            | N    | 0.3         | 36.90             | 65.30         | 28.40        | 22.70           | 55.30         | 32.60        |
| 0.596            | N    | 0.1         | 27.00             | 56.00         | 29.00        | 18.70           | 46.00         | 27.40        |
| 4.670            | N    | 0.2         | 23.60             | 56.00         | 32.40        | 14.10           | 46.00         | 31.90        |
| 4.992            | N    | 0.2         | 23.40             | 56.00         | 32.60        | 14.00           | 46.00         | 32.00        |
| 8.851            | N    | 0.3         | 28.90             | 60.00         | 31.10        | 19.00           | 50.00         | 31.00        |
| 9.173            | N    | 0.3         | 27.70             | 60.00         | 32.30        | 18.20           | 50.00         | 31.80        |

**Table 6-53. Line Conducted Data with 802.11a UNII Band 2A (N)**

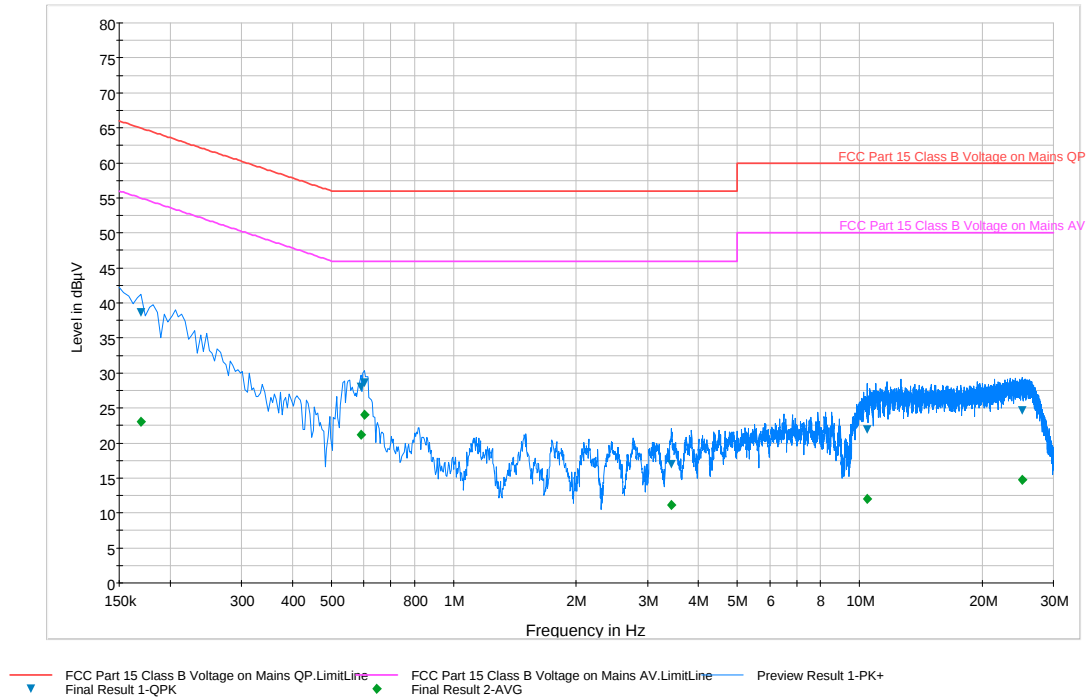
### Notes:

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

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
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| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 204 of 207                 |

## Line-Conducted Test Data (Cont'd)

**\$15.407**



**Plot 6-248. Line Conducted Plot with 802.11a UNII Band 2C (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 |
|------------------|------|-------------|-------------------|---------------|--------------|-----------------|---------------|--------------|
| 0.170            | L1   | 0.2         | 38.60             | 65.00         | 26.30        | 23.00           | 55.00         | 31.90        |
| 0.590            | L1   | 0.1         | 28.00             | 56.00         | 28.00        | 21.10           | 46.00         | 24.90        |
| 0.602            | L1   | 0.1         | 28.60             | 56.00         | 27.40        | 24.10           | 46.00         | 21.90        |
| 3.430            | L1   | 0.2         | 17.00             | 56.00         | 39.00        | 11.20           | 46.00         | 34.80        |
| 10.434           | L1   | 0.4         | 21.90             | 60.00         | 38.10        | 12.10           | 50.00         | 37.90        |
| 25.110           | L1   | 0.8         | 24.70             | 60.00         | 35.30        | 14.80           | 50.00         | 35.20        |

**Table 6-54. Line Conducted Plot with 802.11a UNII Band 2C (L1)**

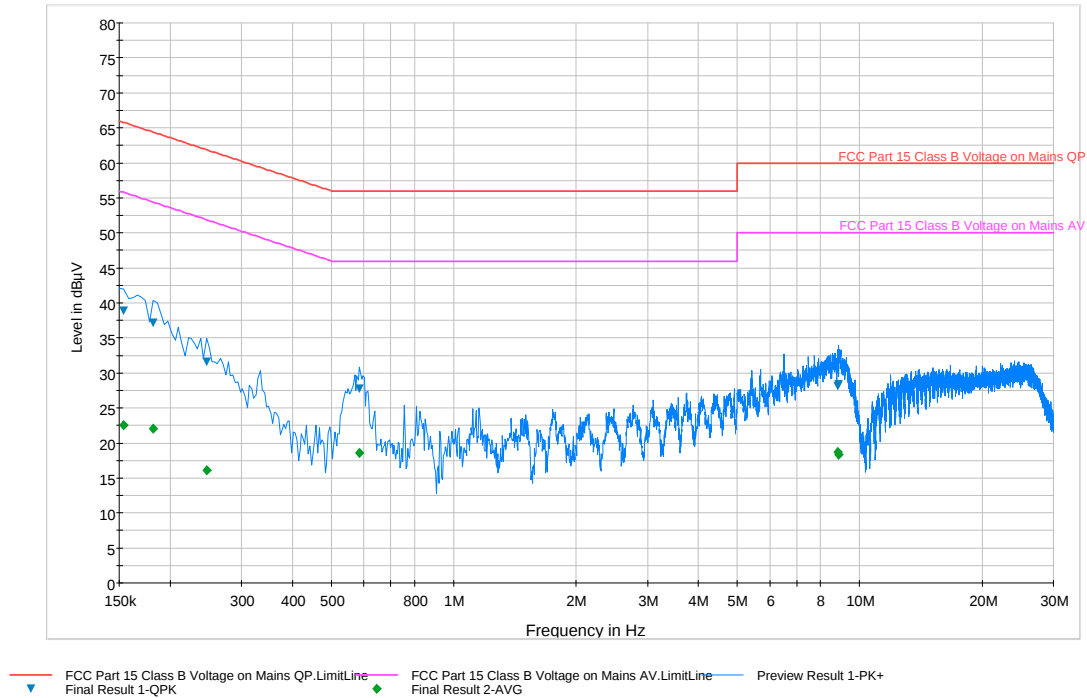
### Notes:

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

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
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## Line-Conducted Test Data (Cont'd)

**\$15.407**



**Plot 6-249. Line Conducted Plot with 802.11a UNII Band 2C (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 |
|------------------|------|-------------|-------------------|---------------|--------------|-----------------|---------------|--------------|
| 0.154            | N    | 0.3         | 38.90             | 65.80         | 26.80        | 22.60           | 55.80         | 33.20        |
| 0.182            | N    | 0.2         | 37.20             | 64.40         | 27.20        | 22.00           | 54.40         | 32.40        |
| 0.246            | N    | 0.2         | 31.60             | 61.90         | 30.30        | 16.10           | 51.90         | 35.80        |
| 0.586            | N    | 0.1         | 27.80             | 56.00         | 28.20        | 18.60           | 46.00         | 27.40        |
| 8.830            | N    | 0.3         | 28.10             | 60.00         | 31.90        | 18.70           | 50.00         | 31.30        |
| 8.874            | N    | 0.3         | 28.30             | 60.00         | 31.70        | 18.30           | 50.00         | 31.70        |

### Conducted Data with 802.11a UNII Band 2C (N)

#### Notes:

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

|                                      |                                               |                                                                        |                |                                 |
|--------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMG900R7                  | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Reviewed by:<br>Quality Manager |
| Test Report S/N:<br>0Y1403190582.A3L | Test Dates:<br>01/29-2/20/2014                | EUT Type:<br>Portable Handset                                          |                | Page 206 of 207                 |

## 7.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMG900R7** is in compliance with Part 15E of the FCC Rules.

|                                             |                                                                                     |                                                                                |                                                                                       |                                        |
|---------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| <b>FCC ID:</b> A3LSMG900R7                  |  | <b>FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |  | <b>Reviewed by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>0Y1403190582.A3L | <b>Test Dates:</b><br>01/29-2/20/2014                                               | <b>EUT Type:</b><br>Portable Handset                                           | Page 207 of 207                                                                       |                                        |