

|  |  |                                       |                                 |
|--|--|---------------------------------------|---------------------------------|
| FCC ID: BCGA2377<br>IC: 579C-A2377         | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1C2101020001-09-R1.BCG | Test Dates:<br>12/12/2020 - 03/17/2021       | EUT Type:<br>Tablet Device            | Page 114 of 246                 |

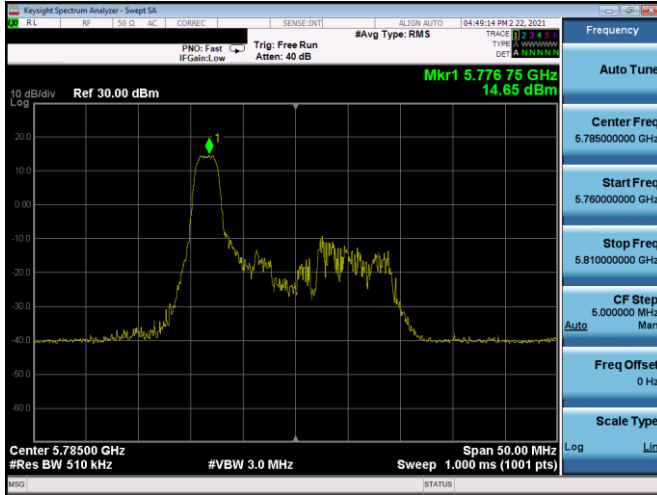
|        | Frequency [MHz] | Channel No. | 802.11 Mode | Mode | RU Size | RU Index | Data Rate [Mbps]  | Antenna 5T Power Density [dBm/500kHz] | Antenna 5B Power Density [dBm/500kHz] | Summed Power Density [dBm/500kHz] | Max Permissible Power Density [dBm/500kHz] | Margin [dB] |
|--------|-----------------|-------------|-------------|------|---------|----------|-------------------|---------------------------------------|---------------------------------------|-----------------------------------|--|-------------|
| Band 3 | 5745            | 149         | ax (20MHz)  | CDD  | 26      | 0        | 270/286.8 (MCS11) | 14.56                                 | 15.10                                 | 17.85                             | 28.29                                      | -10.44      |
|        |                 |             |             |      | 26      | 4        | 270/286.8 (MCS11) | 14.91                                 | 15.50                                 | 18.23                             | 28.29                                      | -10.06      |
|        |                 |             |             |      | 26      | 8        | 270/286.8 (MCS11) | 15.02                                 | 15.55                                 | 18.30                             | 28.29                                      | -9.99       |
|        | 5785            | 157         | ax (20MHz)  | CDD  | 26      | 0        | 270/286.8 (MCS11) | 14.65                                 | 15.38                                 | 18.04                             | 28.29                                      | -10.25      |
|        |                 |             |             |      | 26      | 4        | 270/286.8 (MCS11) | 15.23                                 | 15.63                                 | 18.44                             | 28.29                                      | -9.85       |
|        |                 |             |             |      | 26      | 8        | 270/286.8 (MCS11) | 14.89                                 | 15.78                                 | 18.37                             | 28.29                                      | -9.92       |
|        | 5825            | 165         | ax (20MHz)  | CDD  | 26      | 0        | 270/286.8 (MCS11) | 14.21                                 | 15.17                                 | 17.73                             | 28.29                                      | -10.56      |
|        |                 |             |             |      | 26      | 4        | 270/286.8 (MCS11) | 14.60                                 | 15.55                                 | 18.11                             | 28.29                                      | -10.18      |
|        |                 |             |             |      | 26      | 8        | 270/286.8 (MCS11) | 14.33                                 | 15.45                                 | 17.94                             | 28.29                                      | -10.35      |
|        | 5755            | 151         | ax (40MHz)  | CDD  | 26      | 0        | 542/573.6 (MCS11) | 11.85                                 | 12.48                                 | 15.19                             | 28.29                                      | -13.10      |
|        |                 |             |             |      | 26      | 8        | 542/573.6 (MCS11) | 12.84                                 | 13.46                                 | 16.17                             | 28.29                                      | -12.12      |
|        |                 |             |             |      | 26      | 17       | 542/573.6 (MCS11) | 12.04                                 | 13.09                                 | 15.61                             | 28.29                                      | -12.68      |
|        | 5795            | 159         | ax (40MHz)  | CDD  | 26      | 0        | 542/573.6 (MCS11) | 13.69                                 | 14.28                                 | 17.01                             | 28.29                                      | -11.28      |
|        |                 |             |             |      | 26      | 8        | 542/573.6 (MCS11) | 14.19                                 | 15.02                                 | 17.64                             | 28.29                                      | -10.65      |
|        |                 |             |             |      | 26      | 17       | 542/573.6 (MCS11) | 13.90                                 | 14.63                                 | 17.29                             | 28.29                                      | -11.00      |
|        | 5775            | 155         | ax (80MHz)  | CDD  | 26      | 0        | 1134/1201 (MCS11) | 9.14                                  | 9.79                                  | 12.49                             | 28.29                                      | -15.80      |
|        |                 |             |             |      | 26      | 18       | 1134/1201 (MCS11) | 8.89                                  | 9.99                                  | 12.49                             | 28.29                                      | -15.80      |
|        |                 |             |             |      | 26      | 36       | 1134/1201 (MCS11) | 9.02                                  | 9.87                                  | 12.48                             | 28.29                                      | -15.81      |

Table 7-78. Band 3 Power Spectral Density Measurements CDD (RU26)

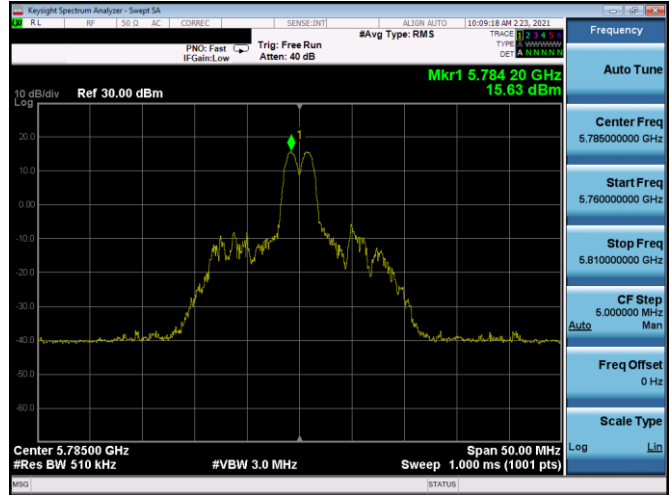
|        | Frequency [MHz] | Channel No. | 802.11 Mode | Mode | RU Size | RU Index | Data Rate [Mbps]  | Antenna 5T Power Density [dBm/MHz] | Antenna 5B Power Density [dBm/MHz] | Summed Power Density [dBm/500kHz] | Max Permissible Power Density [dBm/500kHz] | Margin [dB] |
|--------|-----------------|-------------|-------------|------|---------|----------|-------------------|------------------------------------|------------------------------------|-----------------------------------|--|-------------|
| Band 3 | 5745            | 149         | ax (20MHz)  | CDD  | 242     | 61       | 270/286.8 (MCS11) | 7.08                               | 7.44                               | 10.27                             | 28.29                                      | -18.02      |
|        | 5785            | 157         | ax (20MHz)  | CDD  | 242     | 61       | 270/286.8 (MCS11) | 6.76                               | 7.24                               | 10.02                             | 28.29                                      | -18.27      |
|        | 5825            | 165         | ax (20MHz)  | CDD  | 242     | 61       | 270/286.8 (MCS11) | 6.34                               | 6.94                               | 9.66                              | 28.29                                      | -18.63      |
|        | 5755            | 151         | ax (40MHz)  | CDD  | 484     | 65       | 542/573.6 (MCS11) | 1.75                               | 2.25                               | 5.02                              | 28.29                                      | -23.27      |
|        | 5795            | 159         | ax (40MHz)  | CDD  | 484     | 65       | 542/573.6 (MCS11) | 2.64                               | 3.33                               | 6.01                              | 28.29                                      | -22.28      |
|        | 5775            | 155         | ax (80MHz)  | CDD  | 996     | 67       | 1134/1201 (MCS11) | -4.05                              | -3.50                              | -0.76                             | 28.29                                      | -29.05      |

Table 7-79. Band 3 Power Spectral Density Measurements CDD (Fully-loaded RU)

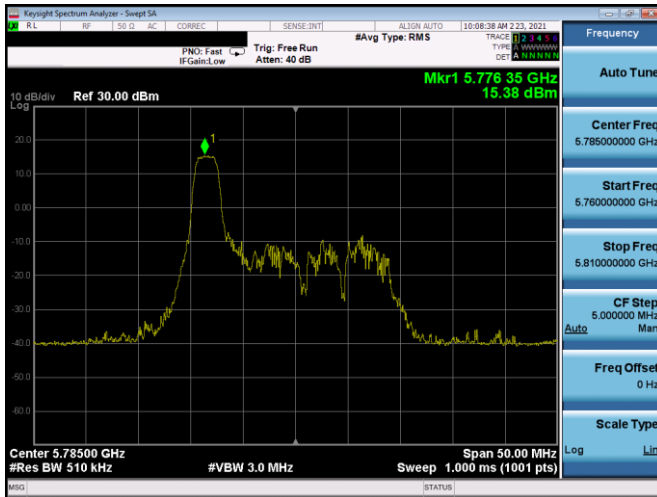
|  |   |                                       |                                 |
|--|---|---------------------------------------|---------------------------------|
| FCC ID: BCGA2377<br>IC: 579C-A2377         |  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1C2101020001-09-R1.BCG | Test Dates:<br>12/12/2020 - 03/17/2021  | EUT Type:<br>Tablet Device            | Page 115 of 246                 |



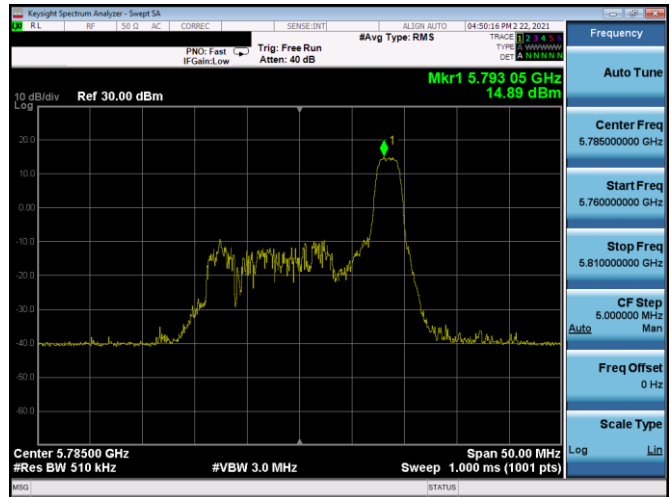
Plot 7-289. PSD CDD Antenna 5T (20MHz BW 11ax Index 0 – RU26 – Ch.157)



Plot 7-292. PSD CDD Antenna 5B (20MHz BW 11ax Index 4 – RU26 – Ch.157)



Plot 7-290. PSD CDD Antenna 5B (20MHz BW 11ax Index 0 – RU26 – Ch.157)



Plot 7-293. PSD CDD Antenna 5T (20MHz BW 11ax Index 8– RU26 – Ch.157)

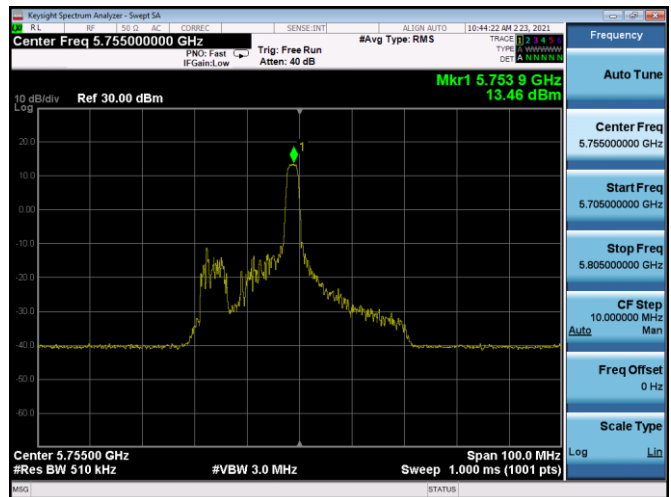
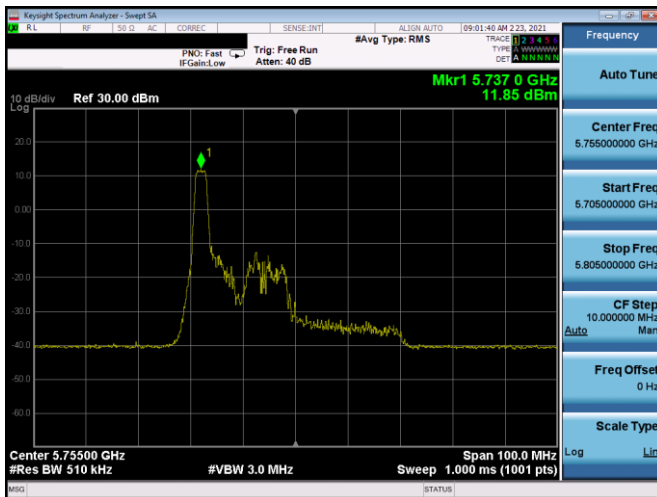
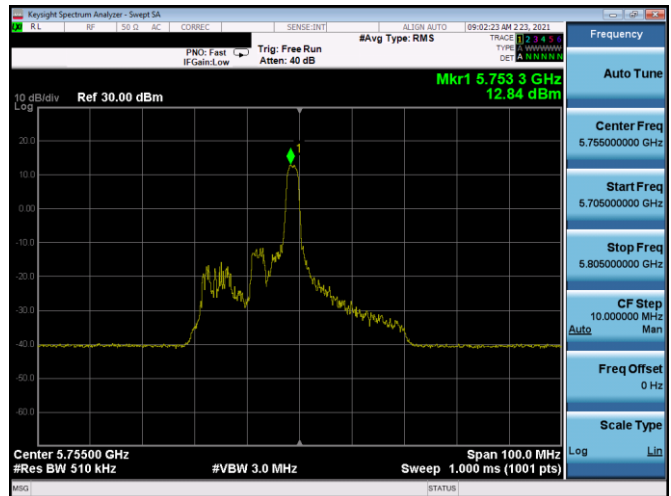
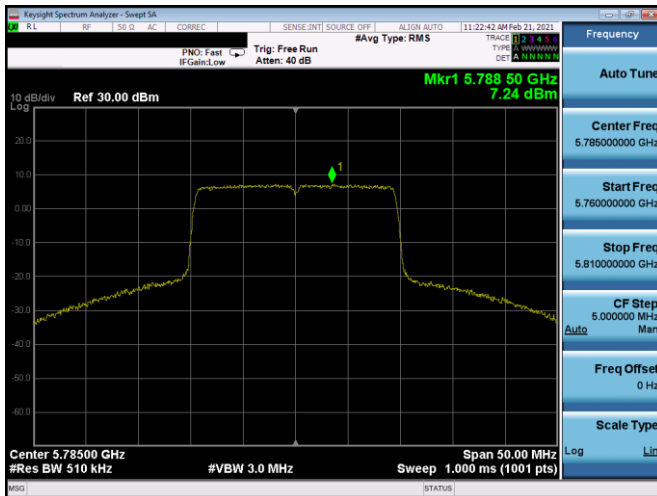
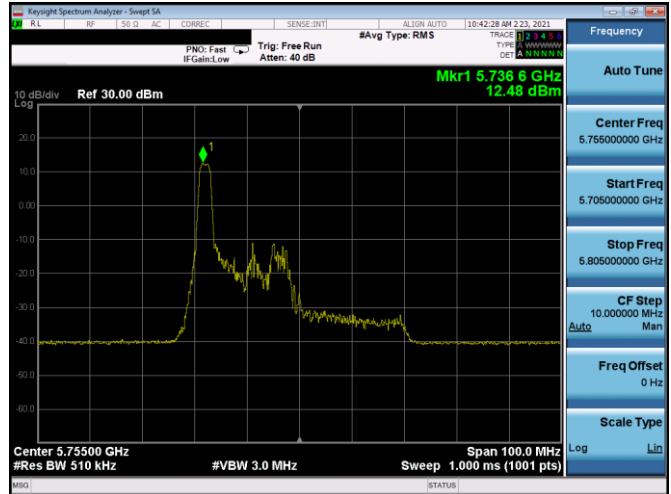
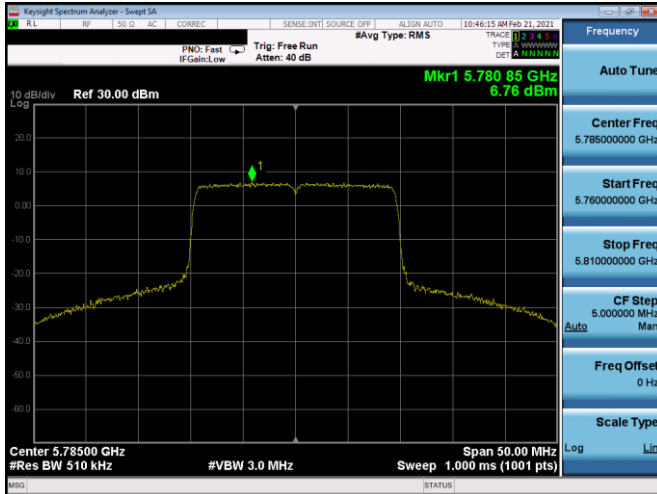


Plot 7-291. PSD CDD Antenna 5T (20MHz BW 11ax Index 4 – RU26 – Ch.157)

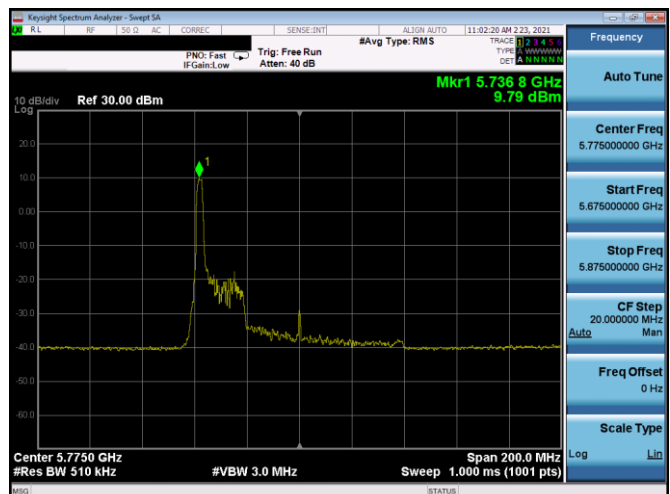
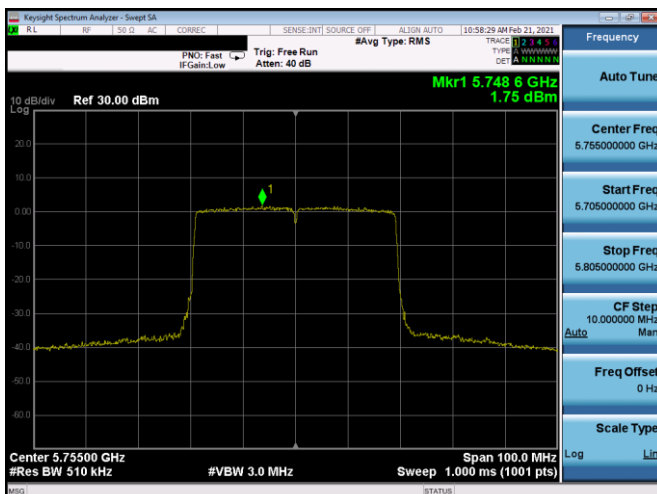
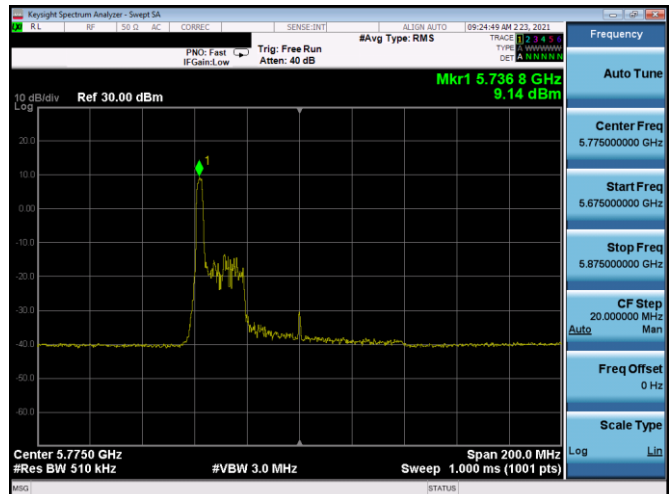
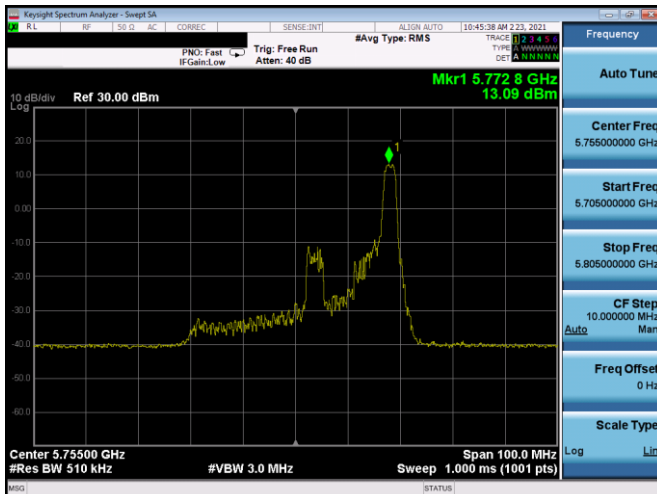
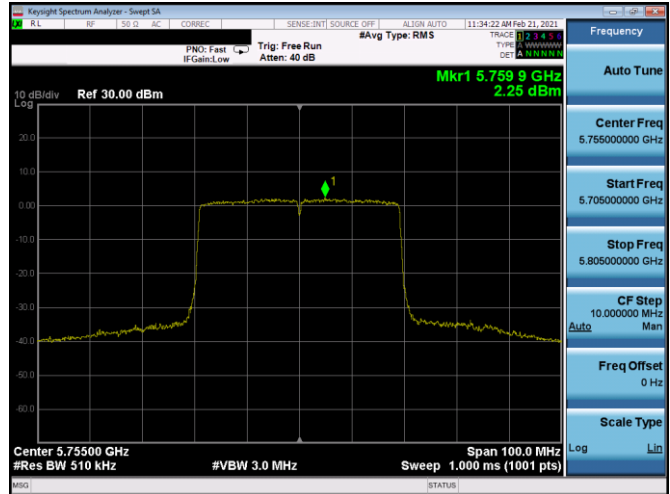
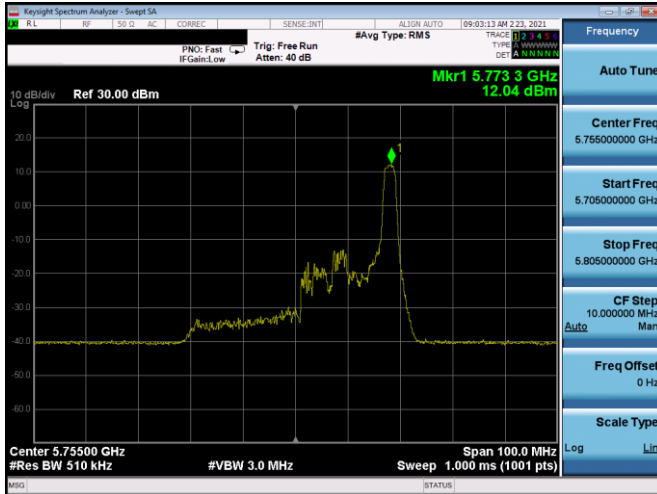


Plot 7-294. PSD CDD Antenna 5B (20MHz BW 11ax Index 8– RU26 – Ch.157)

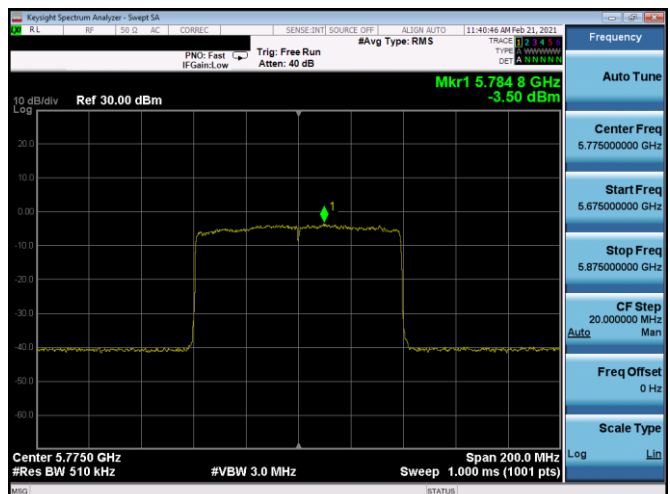
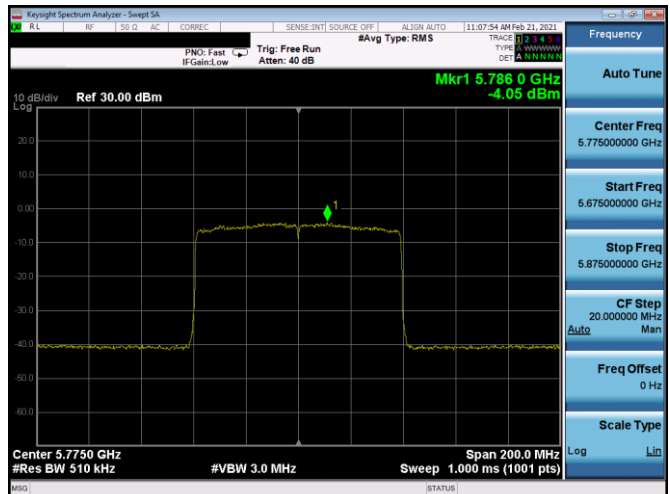
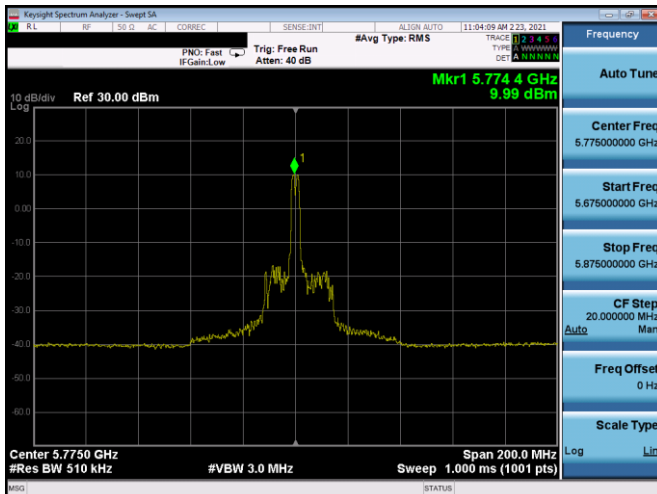
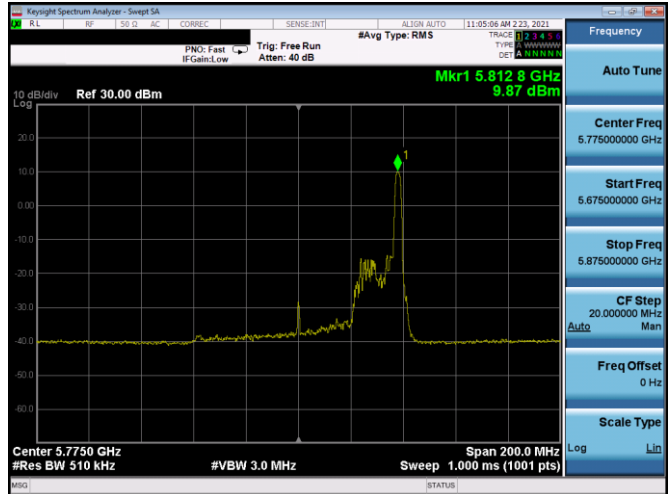
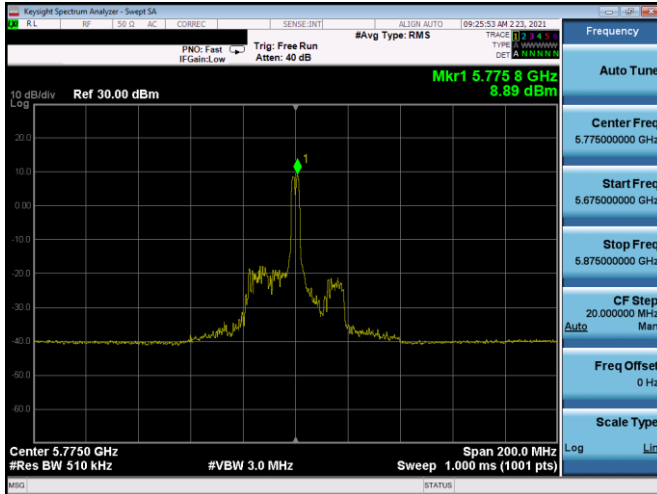
|  |  |                                       |                                 |
|--|--|---------------------------------------|---------------------------------|
| FCC ID: BCGA2377<br>IC: 579C-A2377         | <b>PCTEST</b><br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1C2101020001-09-R1.BCG | Test Dates:<br>12/12/2020 - 03/17/2021       | EUT Type:<br>Tablet Device            | Page 116 of 246                 |



|  |   |                                       |                                 |
|--|---|---------------------------------------|---------------------------------|
| FCC ID: BCGA2377<br>IC: 579C-A2377         |  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1C2101020001-09-R1.BCG | Test Dates:<br>12/12/2020 - 03/17/2021  | EUT Type:<br>Tablet Device            | Page 117 of 246                 |



|  |   |                                       |                                 |
|--|---|---------------------------------------|---------------------------------|
| FCC ID: BCGA2377<br>IC: 579C-A2377         |  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1C2101020001-09-R1.BCG | Test Dates:<br>12/12/2020 - 03/17/2021  | EUT Type:<br>Tablet Device            | Page 118 of 246                 |



|  |  |   |                                 |
|--|--|---|---------------------------------|
| FCC ID: BCGA2377<br>IC: 579C-A2377         | <b>PCTEST</b><br>Proud to be part of element | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1C2101020001-09-R1.BCG | Test Dates:<br>12/12/2020 - 03/17/2021       | EUT Type:<br>Tablet Device                    | Page 119 of 246                 |

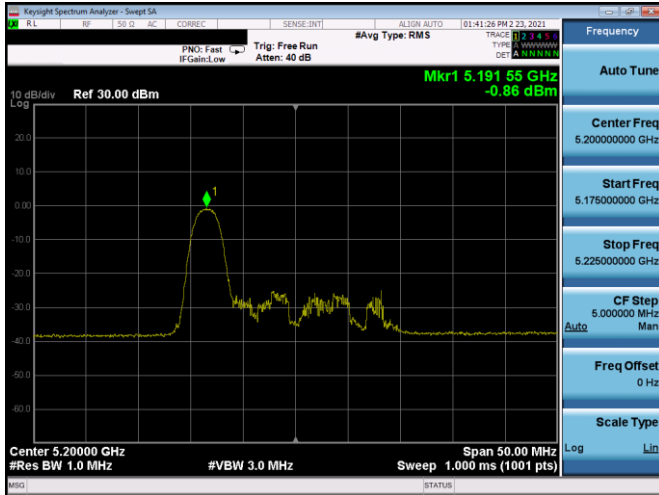
|        | Frequency [MHz] | Channel No. | 802.11 Mode | Mode | RU Size | RU Index | Data Rate [Mbps]  | Antenna 5T Power Density [dBm/MHz] | Antenna 5B Power Density [dBm/MHz] | Summed Power Density [dBm/MHz] | Directional Antenna Gain [dBi] | e.i.r.p. Power Density [dBm/MHz] | ISED Max e.i.r.p. Power Density [dBm/MHz] | Margin [dB] |
|--------|-----------------|-------------|-------------|------|---------|----------|-------------------|------------------------------------|------------------------------------|--------------------------------|--------------------------------|----------------------------------|---|-------------|
| Band 1 | 5180            | 36          | ax (20MHz)  | SDM  | 26      | 0        | 270/286.8 (MCS11) | -0.88                              | -0.55                              | 2.30                           | 3.45                           | 5.75                             | 10.0                                      | -4.25       |
|        |                 |             |             |      | 26      | 4        | 270/286.8 (MCS11) | -1.07                              | -0.82                              | 2.07                           | 3.45                           | 5.52                             | 10.0                                      | -4.48       |
|        |                 |             |             |      | 26      | 8        | 270/286.8 (MCS11) | -0.73                              | -0.32                              | 2.49                           | 3.45                           | 5.94                             | 10.0                                      | -4.06       |
|        | 5200            | 40          | ax (20MHz)  | SDM  | 26      | 0        | 270/286.8 (MCS11) | -0.86                              | -0.49                              | 2.34                           | 3.45                           | 5.79                             | 10.0                                      | -4.21       |
|        |                 |             |             |      | 26      | 4        | 270/286.8 (MCS11) | -1.30                              | -1.13                              | 1.80                           | 3.45                           | 5.25                             | 10.0                                      | -4.75       |
|        |                 |             |             |      | 26      | 8        | 270/286.8 (MCS11) | -0.66                              | -0.54                              | 2.41                           | 3.45                           | 5.86                             | 10.0                                      | -4.14       |
|        | 5240            | 48          | ax (20MHz)  | SDM  | 26      | 0        | 270/286.8 (MCS11) | -0.85                              | -0.12                              | 2.54                           | 3.45                           | 5.99                             | 10.0                                      | -4.01       |
|        |                 |             |             |      | 26      | 4        | 270/286.8 (MCS11) | -0.93                              | -0.59                              | 2.25                           | 3.45                           | 5.71                             | 10.0                                      | -4.29       |
|        |                 |             |             |      | 26      | 8        | 270/286.8 (MCS11) | -0.34                              | 0.06                               | 2.87                           | 3.45                           | 6.33                             | 10.0                                      | -3.67       |
|        | 5190            | 38          | ax (40MHz)  | SDM  | 26      | 0        | 542/573.6 (MCS11) | -1.00                              | -0.87                              | 2.08                           | 3.45                           | 5.53                             | 10.0                                      | -4.47       |
|        |                 |             |             |      | 26      | 8        | 542/573.6 (MCS11) | -0.05                              | -0.04                              | 2.97                           | 3.45                           | 6.42                             | 10.0                                      | -3.58       |
|        |                 |             |             |      | 26      | 17       | 542/573.6 (MCS11) | -0.87                              | -0.76                              | 2.20                           | 3.45                           | 5.65                             | 10.0                                      | -4.35       |
|        | 5230            | 46          | ax (40MHz)  | SDM  | 26      | 0        | 542/573.6 (MCS11) | -0.75                              | -0.43                              | 2.42                           | 3.45                           | 5.88                             | 10.0                                      | -4.12       |
|        |                 |             |             |      | 26      | 8        | 542/573.6 (MCS11) | 0.10                               | 0.43                               | 3.28                           | 3.45                           | 6.73                             | 10.0                                      | -3.27       |
|        |                 |             |             |      | 26      | 17       | 542/573.6 (MCS11) | -0.56                              | -0.10                              | 2.69                           | 3.45                           | 6.14                             | 10.0                                      | -3.86       |
|        | 5210            | 42          | ax (80MHz)  | SDM  | 26      | 0        | 1134/1201 (MCS11) | -1.73                              | -1.03                              | 1.64                           | 3.45                           | 5.10                             | 10.0                                      | -4.90       |
|        |                 |             |             |      | 26      | 18       | 1134/1201 (MCS11) | -0.56                              | -0.35                              | 2.56                           | 3.45                           | 6.01                             | 10.0                                      | -3.99       |
|        |                 |             |             |      | 26      | 36       | 1134/1201 (MCS11) | -0.76                              | -0.37                              | 2.45                           | 3.45                           | 5.90                             | 10.0                                      | -4.10       |

Table 7-80. ISED Band 1 e.i.r.p. Power Spectral Density Measurements SDM (RU26)

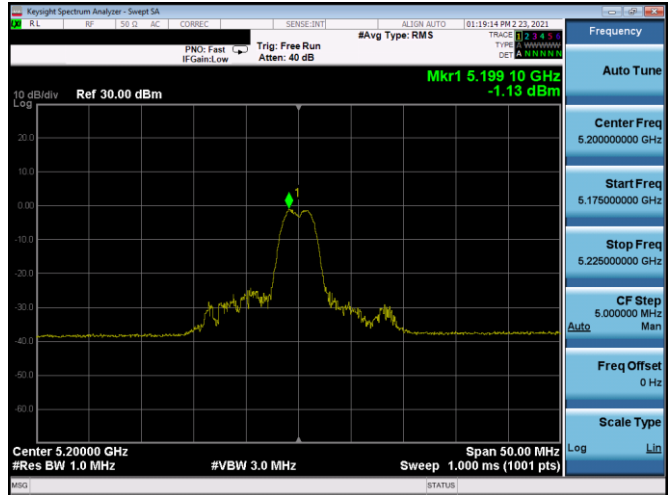
|        | Frequency [MHz] | Channel No. | 802.11 Mode | Mode | RU Size | RU Index | Data Rate [Mbps]  | Antenna 5T Power Density [dBm/MHz] | Antenna 5B Power Density [dBm/MHz] | Summed Power Density [dBm/MHz] | Directional Antenna Gain [dBi] | e.i.r.p. Power Density [dBm/MHz] | ISED Max e.i.r.p. Power Density [dBm/MHz] | Margin [dB] |
|--------|-----------------|-------------|-------------|------|---------|----------|-------------------|------------------------------------|------------------------------------|--------------------------------|--------------------------------|----------------------------------|---|-------------|
| Band 1 | 5180            | 36          | ax (20MHz)  | SDM  | 242     | 61       | 270/286.8 (MCS11) | -1.21                              | -1.31                              | 1.75                           | 3.45                           | 5.20                             | 10.0                                      | -4.80       |
|        | 5200            | 40          | ax (20MHz)  | SDM  | 242     | 61       | 270/286.8 (MCS11) | -1.17                              | -1.23                              | 1.81                           | 3.45                           | 5.26                             | 10.0                                      | -4.74       |
|        | 5240            | 48          | ax (20MHz)  | SDM  | 242     | 61       | 270/286.8 (MCS11) | -1.25                              | -0.93                              | 1.92                           | 3.45                           | 5.38                             | 10.0                                      | -4.62       |
|        | 5190            | 38          | ax (40MHz)  | SDM  | 484     | 65       | 542/573.6 (MCS11) | -2.67                              | -2.44                              | 0.46                           | 3.45                           | 3.91                             | 10.0                                      | -6.09       |
|        | 5230            | 46          | ax (40MHz)  | SDM  | 484     | 65       | 542/573.6 (MCS11) | -0.94                              | -0.73                              | 2.18                           | 3.45                           | 5.63                             | 10.0                                      | -4.37       |
|        | 5210            | 42          | ax (80MHz)  | SDM  | 996     | 67       | 1134/1201 (MCS11) | -6.83                              | -7.11                              | -3.96                          | 3.45                           | -0.50                            | 10.0                                      | -10.50      |

Table 7-81. ISED Band 1 e.i.r.p. Power Spectral Density Measurements CDD/SDM (Fully-loaded RU)

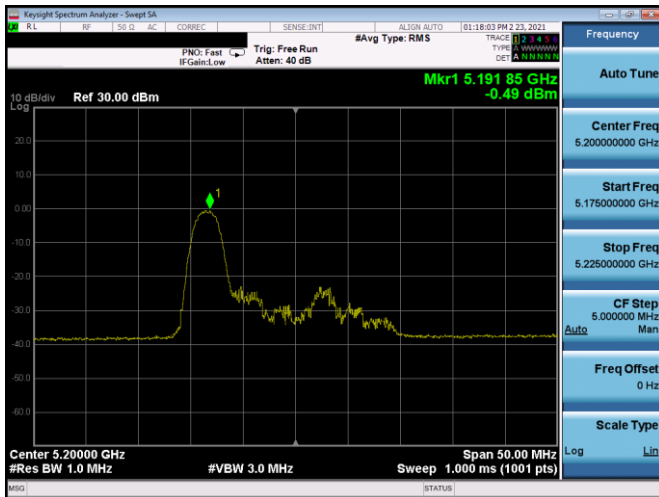
|  |  |                                       |                                 |
|--|--|---------------------------------------|---------------------------------|
| FCC ID: BCGA2377<br>IC: 579C-A2377         |  PCTEST®<br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1C2101020001-09-R1.BCG | Test Dates:<br>12/12/2020 - 03/17/2021   | EUT Type:<br>Tablet Device            | Page 120 of 246                 |



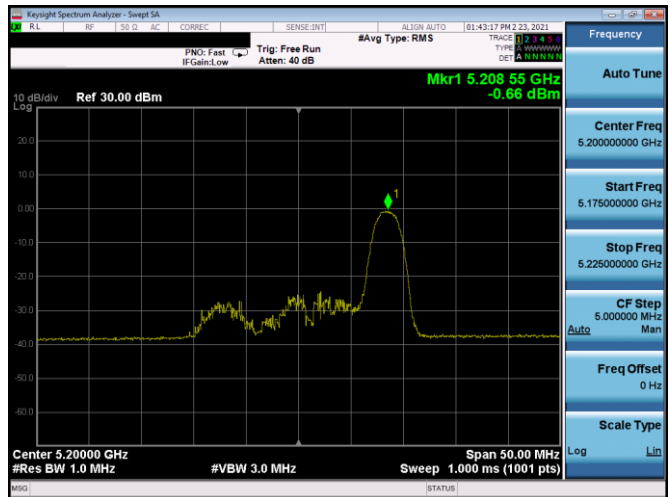
Plot 7-313. ISED PSD SDM Antenna 5T (20MHz BW 11ax Index 0 - RU26 - Ch.40)



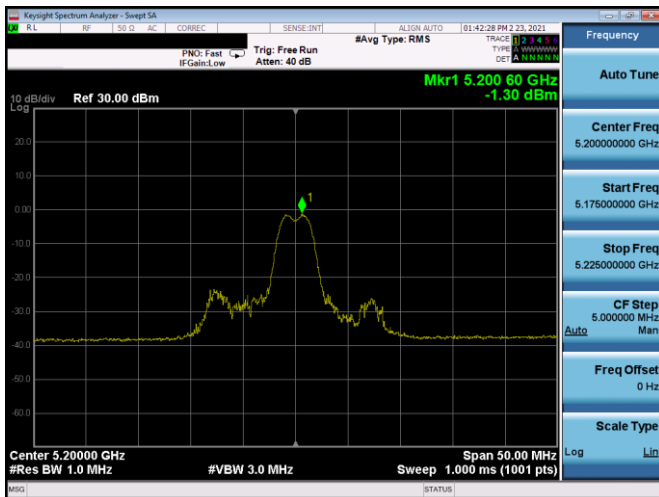
Plot 7-316. ISED PSD SDM Antenna 5B (20MHz BW 11ax Index 4 - RU26 - Ch.40)



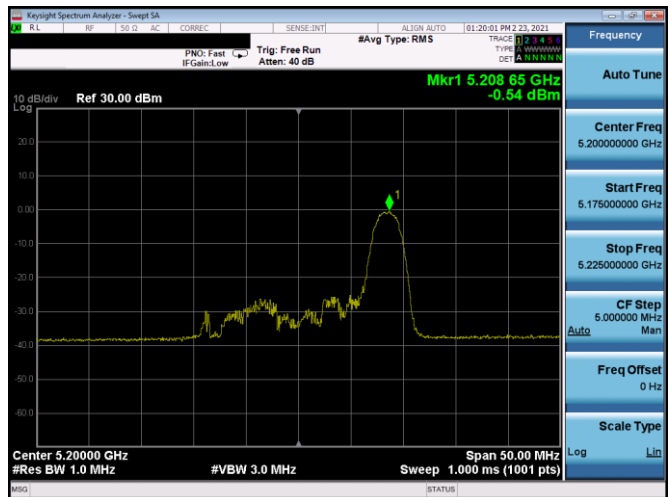
Plot 7-314. ISED PSD SDM Antenna 5B (20MHz BW 11ax Index 0 - RU26 - Ch.40)



Plot 7-317. ISED PSD SDM Antenna 5T (20MHz BW 11ax Index 8 - RU26 - Ch.40)



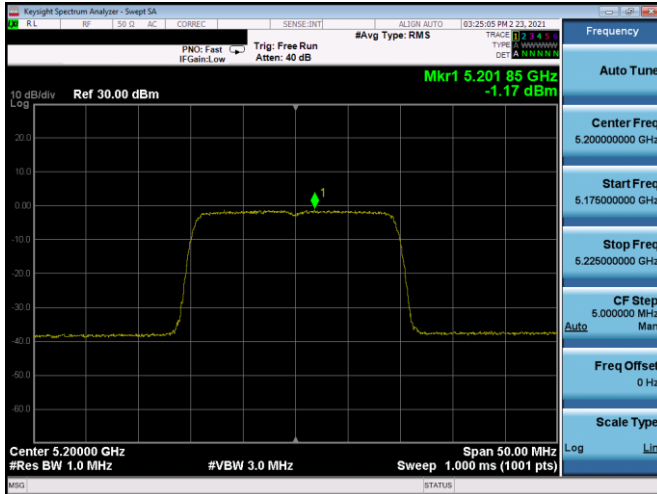
Plot 7-315. ISED PSD SDM Antenna 5T (20MHz BW 11ax Index 4 - RU26 - Ch.40)



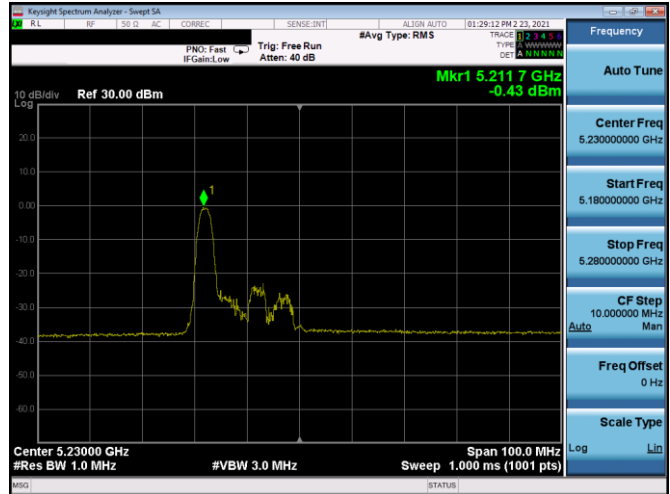
Plot 7-318. ISED PSD SDM Antenna 5B (20MHz BW 11ax Index 8 - RU26 - Ch.40)

|  |   |                                 |
|--|---|---------------------------------|
| FCC ID: BCGA2377<br>IC: 579C-A2377         |  MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1C2101020001-09-R1.BCG | Test Dates:<br>12/12/2020 - 03/17/2021  | EUT Type:<br>Tablet Device      |
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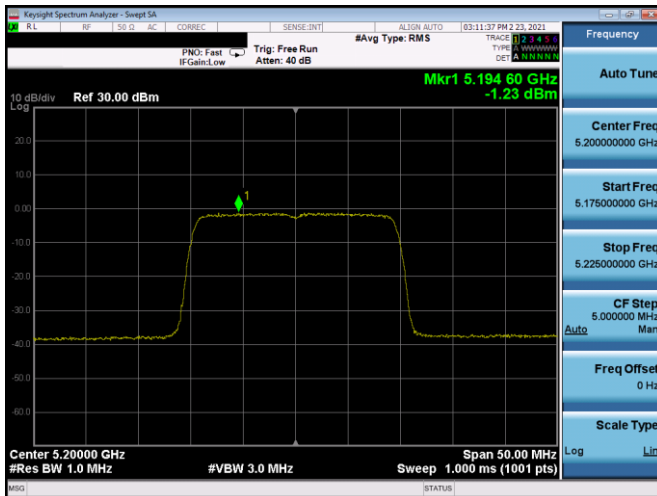




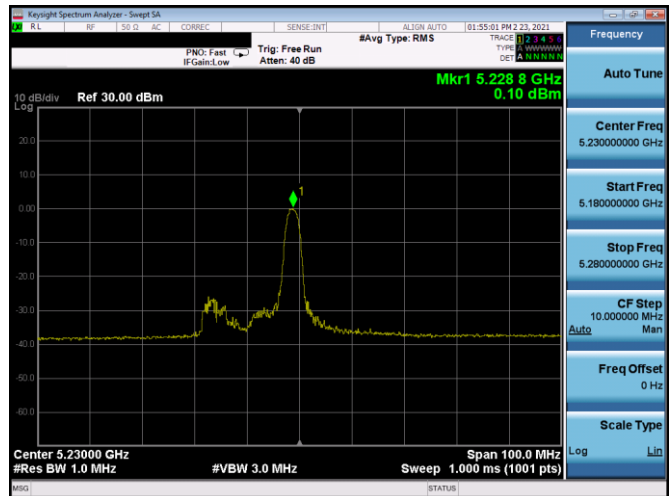
Plot 7-319. ISED PSD SDM Antenna 5T (20MHz BW 11ax- RU242 - Ch.40)



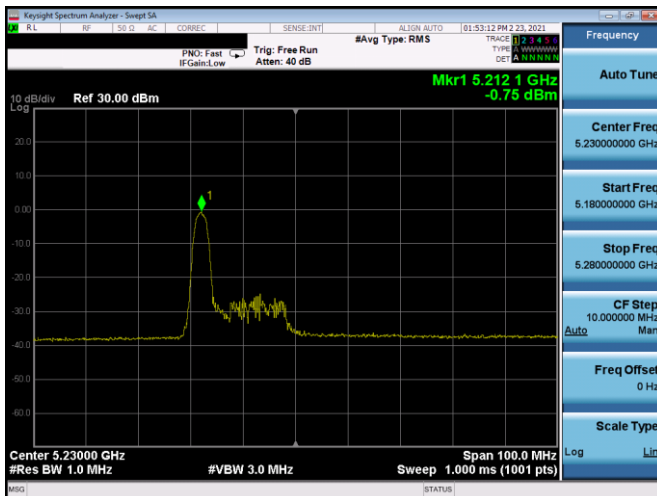
Plot 7-322. ISED PSD SDM Antenna 5B (40MHz BW 11ax Index 0 - RU26 - Ch.46)



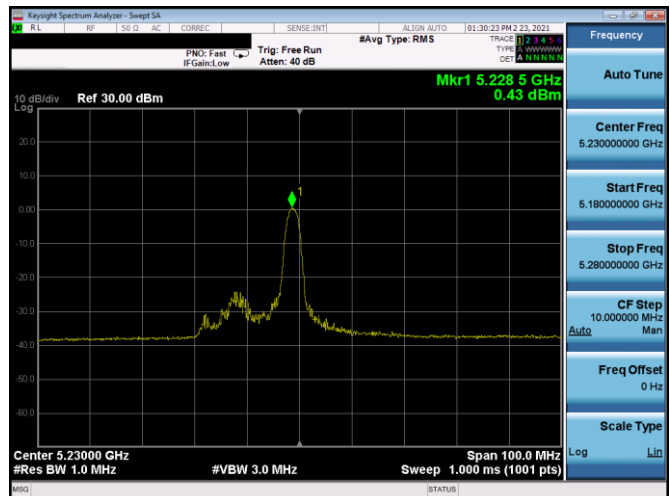
Plot 7-320. ISED PSD SDM Antenna 5B (20MHz BW 11ax- RU242 - Ch.40)



Plot 7-323. ISED PSD SDM Antenna 5T (40MHz BW 11ax Index 8 - RU26 - Ch.46)

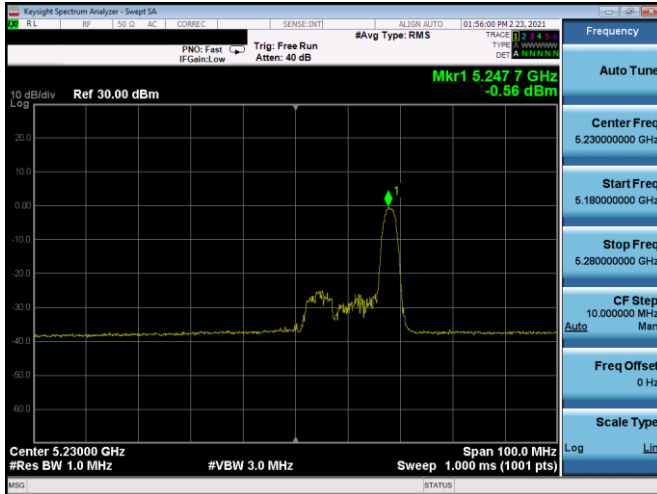


Plot 7-321. ISED PSD SDM Antenna 5T (40MHz BW 11ax Index 0 - RU26 - Ch.46)

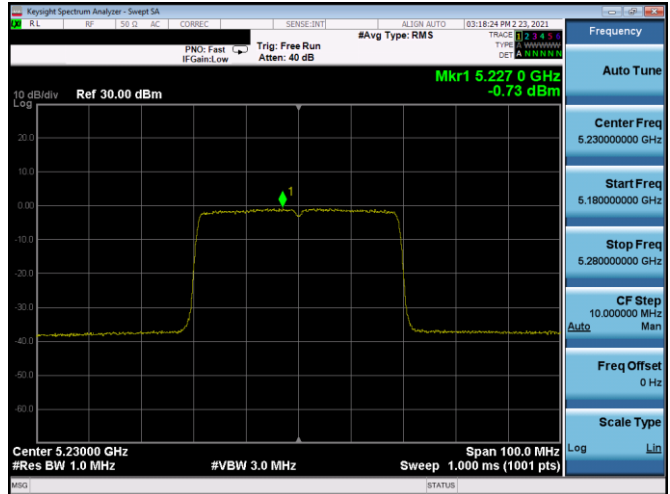


Plot 7-324. ISED PSD SDM Antenna 5B (40MHz BW 11ax Index 8 - RU26 - Ch.46)

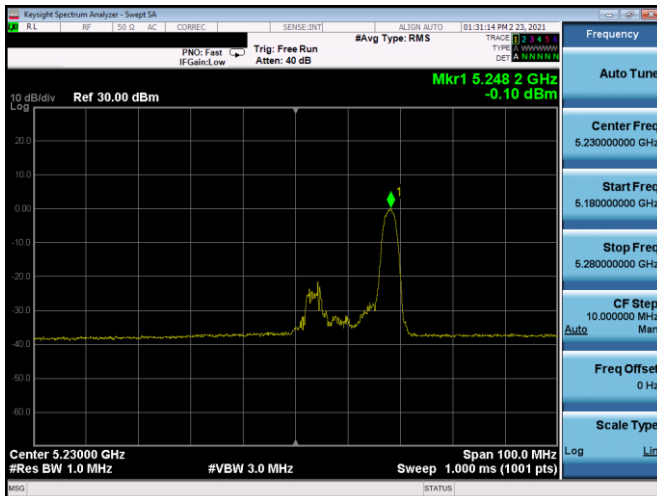
|  |   |   |                                 |
|--|---|---|---------------------------------|
| FCC ID: BCGA2377<br>IC: 579C-A2377         |  | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1C2101020001-09-R1.BCG | Test Dates:<br>12/12/2020 - 03/17/2021  | EUT Type:<br>Tablet Device                    | Page 122 of 246                 |



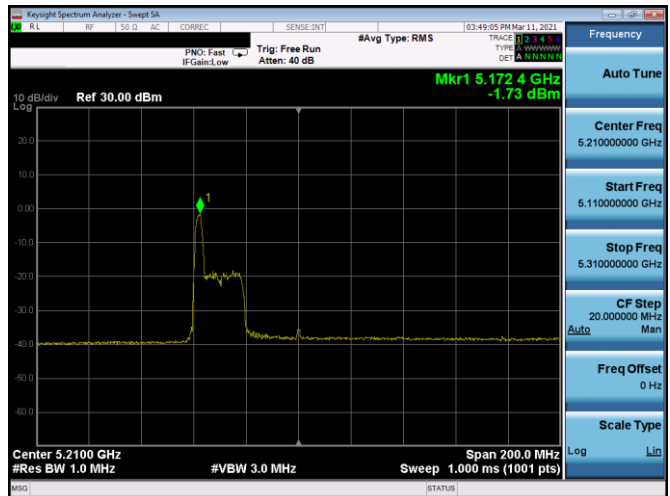
Plot 7-325. ISED PSD SDM Antenna 5T (40MHz BW 11ax Index 17 - RU26 - Ch.46)



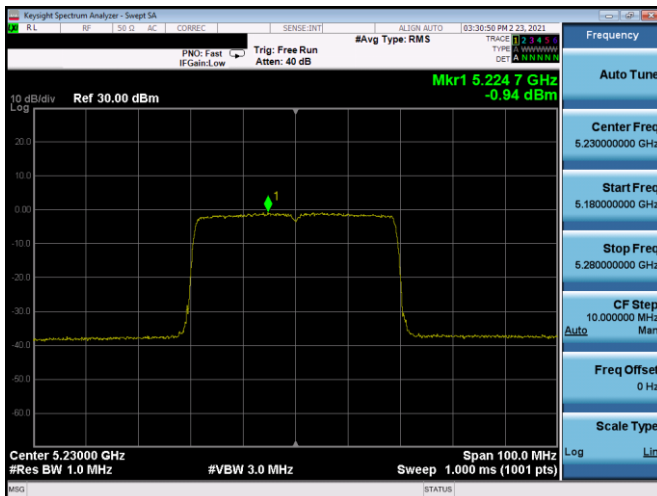
Plot 7-328. ISED PSD SDM Antenna 5B (40MHz BW 11ax - RU484 - Ch.46)



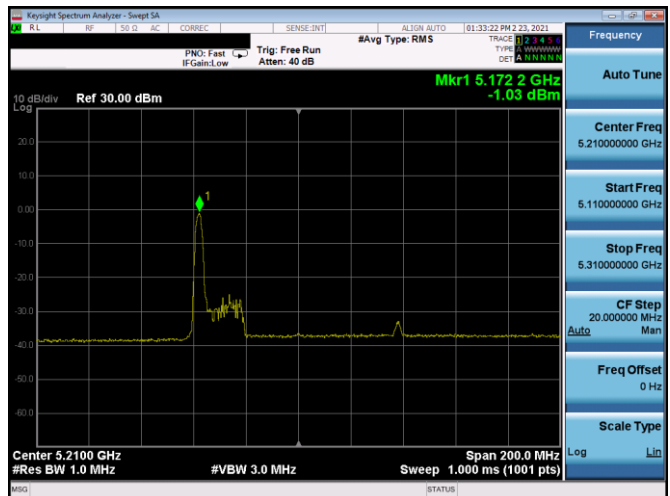
Plot 7-326. ISED PSD SDM Antenna 5B (40MHz BW 11ax Index 17 - RU26 - Ch.46)



Plot 7-329. ISED PSD SDM Antenna 5T (80MHz BW 11ax Index 0 - RU26 - Ch.42)

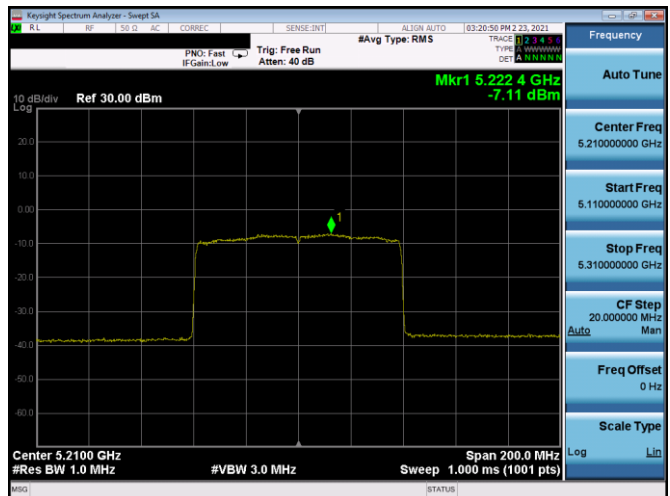
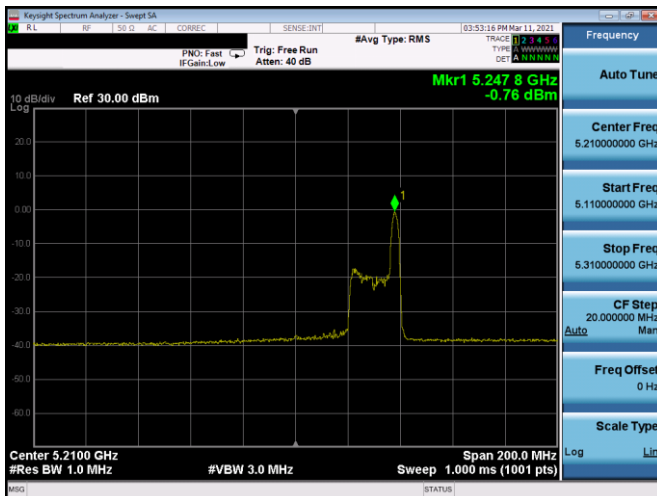
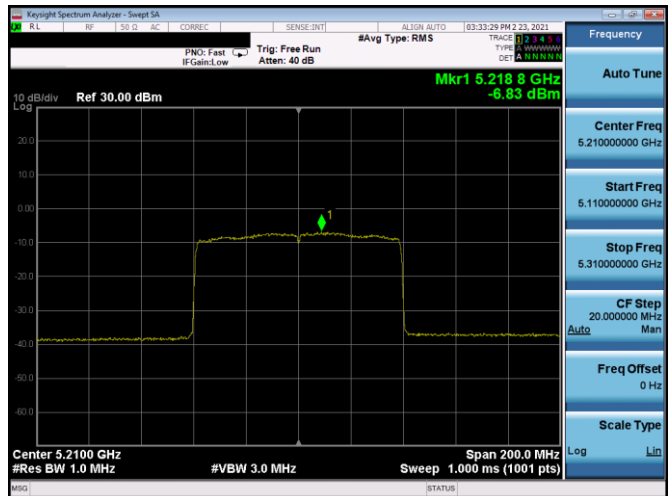
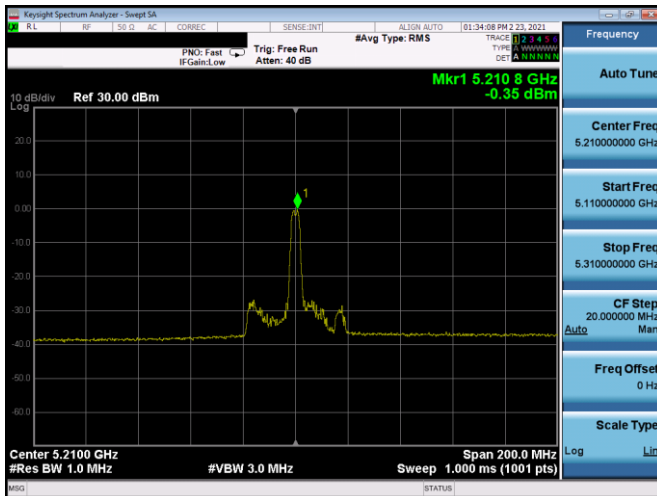
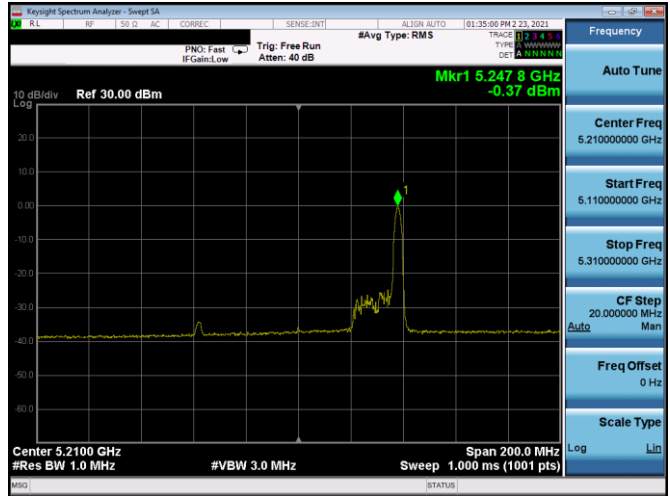
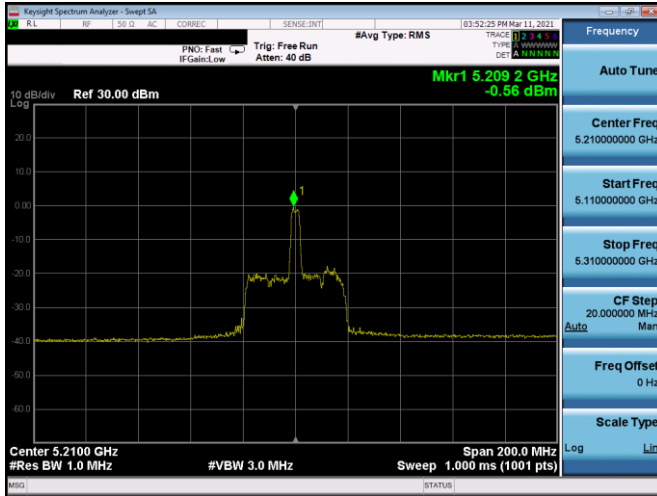


Plot 7-327. ISED PSD SDM Antenna 5T (40MHz BW 11ax - RU484 - Ch.46)



Plot 7-330. ISED PSD SDM Antenna 5B (80MHz BW 11ax Index 0 - RU26 - Ch.42)

|  |   |                                       |                                 |
|--|---|---------------------------------------|---------------------------------|
| FCC ID: BCGA2377<br>IC: 579C-A2377         |  PCTEST<br>Proud to be part of element | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1C2101020001-09-R1.BCG | Test Dates:<br>12/12/2020 - 03/17/2021  | EUT Type:<br>Tablet Device            | Page 123 of 246                 |



|  |   |                                       |                                 |
|--|---|---------------------------------------|---------------------------------|
| FCC ID: BCGA2377<br>IC: 579C-A2377         |  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1C2101020001-09-R1.BCG | Test Dates:<br>12/12/2020 - 03/17/2021  | EUT Type:<br>Tablet Device            | Page 124 of 246                 |

**Note:**

Per ANSI C63.10-2013 Section 14.3.2.2 and KDB 662911 v02r01 Section E)2), the power spectral density at Antenna 5T and Antenna 5B were first measured separately during CDD/SDM transmission as shown in the section above. The measured values were then summed in linear power units then converted back to dBm.

**Sample Directional Gain Calculation:**

For correlated signals, assuming the antenna gain is 3.3 dBi for Antenna 5T and 3.6 dBi for Antenna 5B.

$$\begin{aligned} \text{Directional gain} &= 10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{\text{ANT}}] \text{ dBi} \\ &= 10 \log[(10^{3.3/20} + 10^{3.6/20} / 2)] \text{ dBi} \\ &= 6.46 \text{ dBi} \end{aligned}$$

For uncorrelated signals, assuming the antenna gain is 3.3 dBi for Antenna 5T and 3.6 dBi for Antenna 5B.

$$\begin{aligned} \text{Directional gain} &= 10 \log[(10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_N/10}) / N_{\text{ANT}}] \text{ dBi} \\ &= 10 \log[(10^{3.3/10} + 10^{3.6/10} / 2)] \text{ dBi} \\ &= 3.45 \text{ dBi} \end{aligned}$$

**Sample CDD Calculation:**

Assuming the average conducted power spectral density was measured to be -0.88 dBm for Antenna 5T and -0.55 dBm for Antenna 5B.

$$\text{Antenna 5T} + \text{Antenna 5B} = \text{CDD/SDM}$$

$$(-0.88 \text{ dBm} + -0.55 \text{ dBm}) = (0.82 \text{ mW} + 0.88 \text{ mW}) = 1.7 \text{ mW} = 2.30 \text{ dBm}$$

**Sample e.i.r.p Power Spectral Density Calculation:**

Assuming the average CDD/SDM power density was calculated to be 2.30 dBm with directional gain of 3.45 dBi.

$$\text{e.i.r.p. Power Spectral Density(dBm)} = \text{Power Spectral Density (dBm)} + \text{directional gain (dBi)}$$

$$2.30 \text{ dBm} + 3.45 \text{ dBi} = 5.75 \text{ dBm}$$

|   |   |  |
|---|---|--|
| <b>FCC ID:</b> BCGA2377<br><b>IC:</b> 579C-A2377  |  <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1C2101020001-09-R1.BCG | <b>Test Dates:</b><br>12/12/2020 - 03/17/2021   | <b>EUT Type:</b><br>Tablet Device      |
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## 7.6 Radiated Spurious Emission – Above 1GHz

§15.407(b) §15.205 §15.209; RSS-Gen [8.9]

### 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, at its maximum power control level, as defined in ANSI C63.10-2013 and KDB 789033 D02 v02r01, and at the appropriate frequencies. All channels, modes (e.g. RU26, 52 Tones, RU106, RU242, RU484 and RU996), 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.

***For transmitters operating in the 5.15-5.25 GHz and 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.***

***For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.***

***For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.***

***All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR and Table 7 of RSS-Gen (8.10) must not exceed the limits shown in Table 7-82 per Section 15.209 and RSS-Gen (8.9).***

| Frequency       | Field Strength<br>[ $\mu$ V/m] | Measured Distance<br>[Meters] |
|-----------------|--------------------------------|-------------------------------|
| Above 960.0 MHz | 500                            | 3                             |

Table 7-82. Radiated Limits

### Test Procedures Used

ANSI C63.10-2013 – Sections 12.7.7.2, 12.7.6, 12.7.5  
KDB 789033 D02 v02r01 – Section G

### Test Settings

#### Average Field Strength Measurements

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

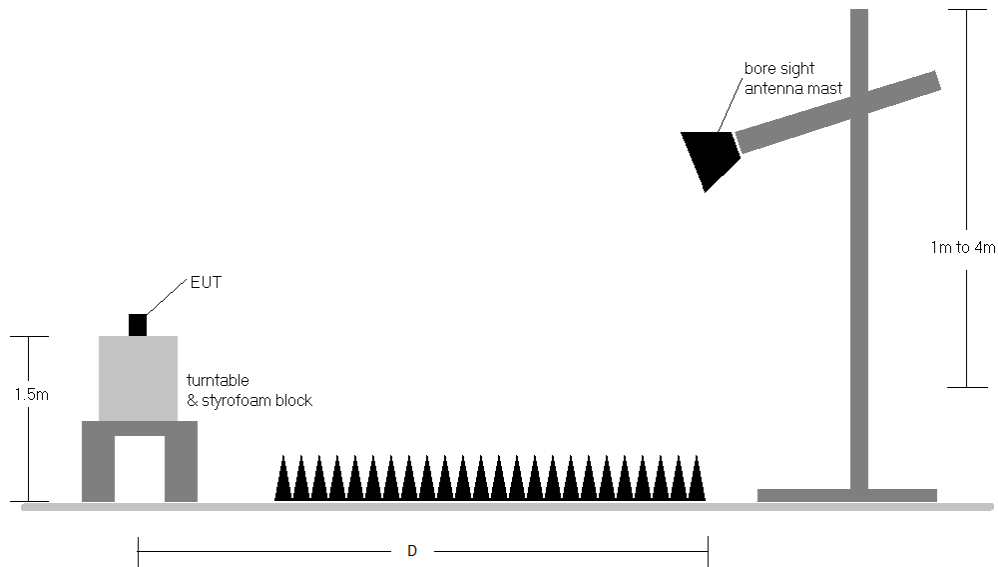
|  |   |                                       |                                 |
|--|---|---------------------------------------|---------------------------------|
| FCC ID: BCGA2377<br>IC: 579C-A2377         |  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1C2101020001-09-R1.BCG | Test Dates:<br>12/12/2020 - 03/17/2021  | EUT Type:<br>Tablet Device            | Page 126 of 246                 |

**Peak Field Strength Measurements**

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

**Test Setup**

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



**Figure 7-5. Test Instrument & Measurement Setup**

|   |   |   |  |
|---|---|---|--|
| <b>FCC ID:</b> BCGA2377<br><b>IC:</b> 579C-A2377  |  | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1C2101020001-09-R1.BCG | <b>Test Dates:</b><br>12/12/2020 - 03/17/2021                                       | <b>EUT Type:</b><br>Tablet Device             | Page 127 of 246                        |

## Test Notes

1. All emissions that lie in the restricted bands (denoted by a \* next to the frequency) specified in §15.205 and Section 8.10 of RSS-Gen are below the limit shown in Table 7-82.
2. All spurious emissions lying in restricted bands specified in §15.205 and Section 8.10 of RSS-Gen are below the limit shown in Table 7-82. 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 dB $\mu$ V/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 68.2dB $\mu$ V/m.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. This unit was tested with its standard battery.
5. The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. Above 1 GHz, average and peak measurements were taken using linearly polarized horn antennas.
6. D is the measurement test distance and emissions 1-18GHz were measured at a 3 meters test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
7. The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. Any emissions found to be within 20dB of the limit are fully investigated and the results are shown in this section.
8. The "-" shown in the following RSE tables are used to denote a noise floor measurement.
9. Per RSS-247 Section 6.2.3, transmission on channels which overlap the 5600-5650 MHz is prohibited. This device operates under these frequencies only under the control of a certified master device and does not support active scanning on these channels. This device does not transmit any beacons or initiate any transmissions in UNII Bands 2A or 2C.
10. For radiated measurements, emissions were investigated for the fully-loaded RU configuration and for all of the partially-loaded RU configurations. Among all of the available partially-loaded RU configurations, only the configuration with the worst case emissions is reported.

|   |  |   |  |
|---|--|---|--|
| <b>FCC ID:</b> BCGA2377<br><b>IC:</b> 579C-A2377  |  <b>PCTEST</b><br>Proud to be part of  element | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1C2101020001-09-R1.BCG | <b>Test Dates:</b><br>12/12/2020 - 03/17/2021  | <b>EUT Type:</b><br>Tablet Device             | Page 128 of 246                        |

## Sample Calculations

### Determining Spurious Emissions Levels

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

### Radiated Band Edge Measurement Offset

- The amplitude offset shown in the radiated restricted band edge plots in Section 0 was calculated using the formula:

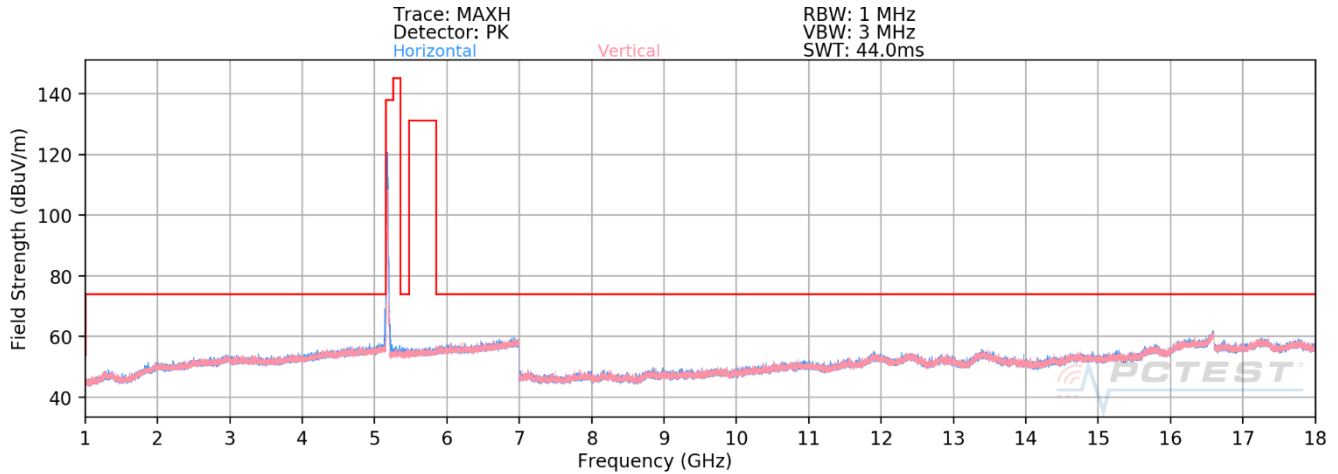
$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + \text{Attenuator}) - \text{Preamplifier Gain}$$

|   |   |  |
|---|---|--|
| <b>FCC ID:</b> BCGA2377<br><b>IC:</b> 579C-A2377  |  <b>MEASUREMENT REPORT</b><br><b>(CERTIFICATION)</b> | <b>Approved by:</b><br>Quality Manager                   |
| <b>Test Report S/N:</b><br>1C2101020001-09-R1.BCG | <b>Test Dates:</b><br>12/12/2020 - 03/17/2021   | <b>EUT Type:</b><br>Tablet Device<br><br>Page 129 of 246 |



## 7.6.1 Antenna 5T Radiated Spurious Emission

### RU26



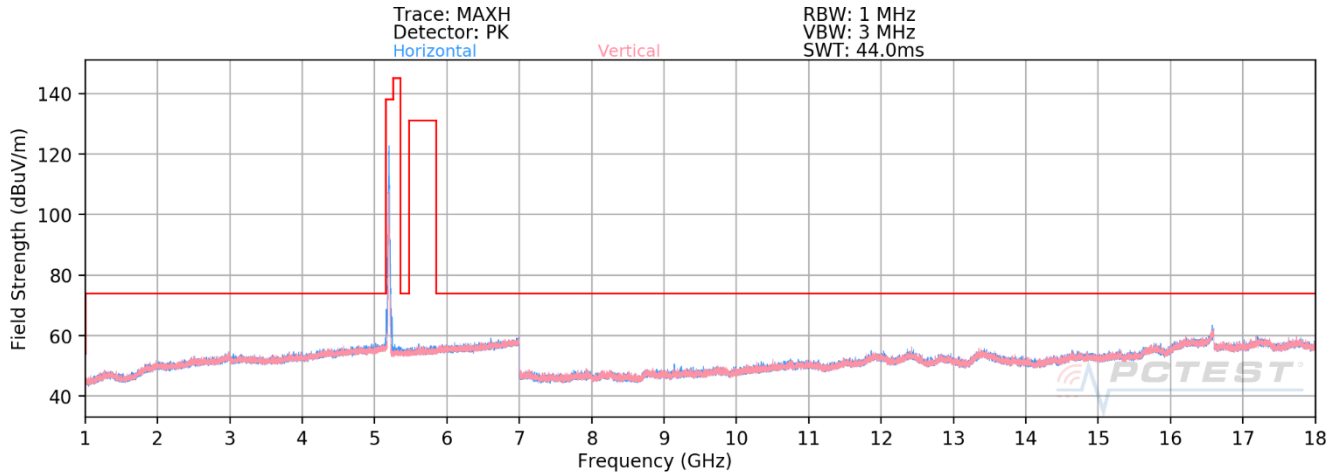
Plot 7-337. RSE above 1GHz Antenna 5T (11ax - Ch.36 - RU26)

Mode: 802.11ax (20MHz BW)  
 Data Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5180MHz  
 Channel: 36

| Frequency [MHz] | Detector | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------|-----------------|---------------------|----------------------------|----------------------|-------------|-------------------------|----------------|-------------|
| 10360.00        | Peak     | H               | -                   | -                          | -75.72               | 17.80       | 49.08                   | 68.20          | -19.12      |
| * 15540.00      | Average  | H               | -                   | -                          | -86.70               | 22.33       | 42.63                   | 53.98          | -11.35      |
| * 15540.00      | Peak     | H               | -                   | -                          | -75.84               | 22.33       | 53.49                   | 73.98          | -20.49      |

Table 7-83. Radiated Measurements Antenna 5T (RU26)

|  |   |                                       |                                 |
|--|---|---------------------------------------|---------------------------------|
| FCC ID: BCGA2377<br>IC: 579C-A2377         |  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1C2101020001-09-R1.BCG | Test Dates:<br>12/12/2020 - 03/17/2021  | EUT Type:<br>Tablet Device            | Page 130 of 246                 |



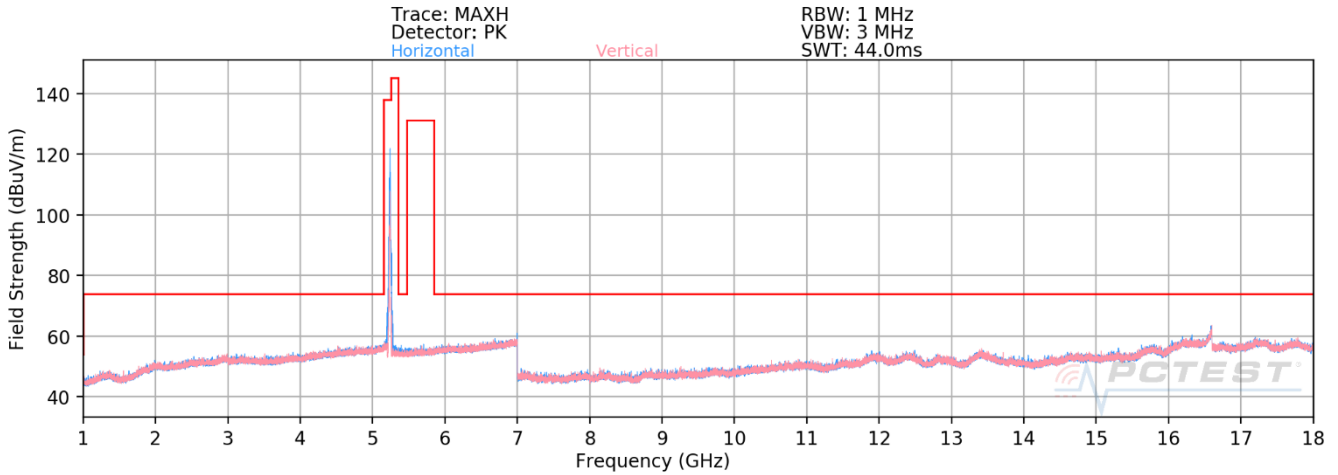
**Plot 7-338. RSE above 1GHz Antenna 5T (11ax – Ch.40 – RU26)**

Mode: 802.11ax (20MHz BW)  
 Data Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5200MHz  
 Channel: 40

| Frequency [MHz] | Detector | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dB $\mu$ V/m] | Limit [dB $\mu$ V/m] | Margin [dB] |
|-----------------|----------|-----------------|---------------------|----------------------------|----------------------|-------------|-------------------------------|----------------------|-------------|
| 10400.00        | Peak     | H               | -                   | -                          | -75.23               | 17.83       | 49.60                         | 68.20                | -18.60      |
| * 15600.00      | Average  | H               | -                   | -                          | -86.79               | 22.38       | 42.59                         | 53.98                | -11.39      |
| * 15600.00      | Peak     | H               | -                   | -                          | -76.17               | 22.38       | 53.21                         | 73.98                | -20.77      |

**Table 7-84. Radiated Measurements Antenna 5T (RU26)**

|  |   |   |                                 |
|--|---|---|---------------------------------|
| FCC ID: BCGA2377<br>IC: 579C-A2377         |  | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1C2101020001-09-R1.BCG | Test Dates:<br>12/12/2020 - 03/17/2021  | EUT Type:<br>Tablet Device                    | Page 131 of 246                 |



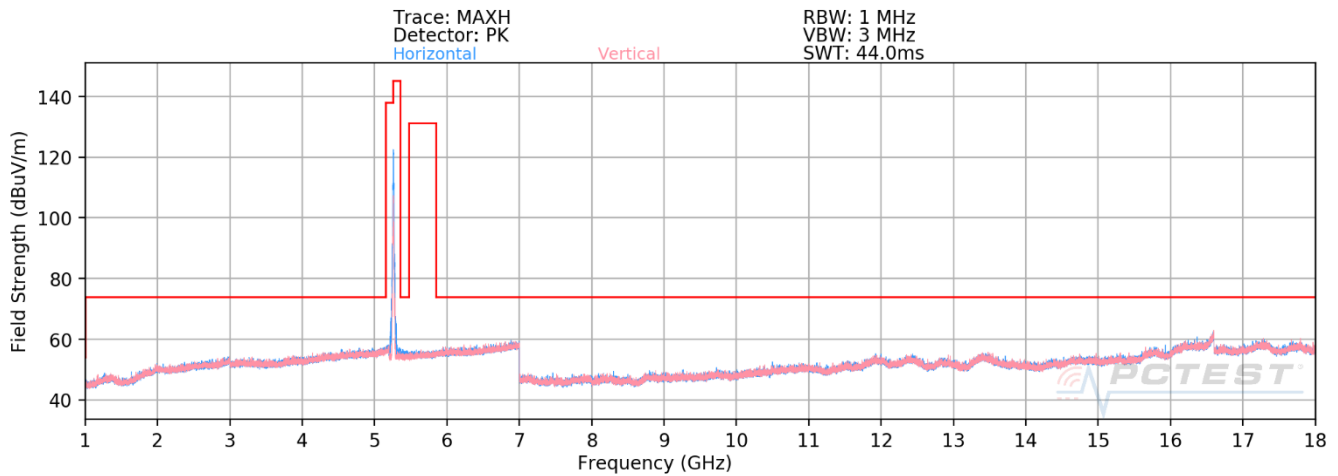
**Plot 7-339. RSE above 1GHz Antenna 5T (11ax – Ch.48 – RU26)**

|                           |                            |
|---------------------------|----------------------------|
| Mode:                     | <u>802.11ax (20MHz BW)</u> |
| Data Rate:                | <u>MCS0</u>                |
| RU Index:                 | <u>4</u>                   |
| Distance of Measurements: | <u>3 Meters</u>            |
| Operating Frequency:      | <u>5240MHz</u>             |
| Channel:                  | <u>48</u>                  |

| Frequency [MHz] | Detector | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBuV/m] | Limit [dBuV/m] | Margin [dB] |
|-----------------|----------|-----------------|---------------------|----------------------------|----------------------|-------------|-------------------------|----------------|-------------|
| 10480.00        | Peak     | H               | -                   | -                          | -74.78               | 17.96       | 50.18                   | 68.20          | -18.02      |
| * 15720.00      | Average  | H               | -                   | -                          | -86.81               | 23.77       | 43.96                   | 53.98          | -10.02      |
| * 15720.00      | Peak     | H               | -                   | -                          | -75.42               | 23.77       | 55.35                   | 73.98          | -18.63      |

**Table 7-85. Radiated Measurements Antenna 5T (RU26)**

|  |   |   |                                 |
|--|---|---|---------------------------------|
| FCC ID: BCGA2377<br>IC: 579C-A2377         |  | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1C2101020001-09-R1.BCG | Test Dates:<br>12/12/2020 - 03/17/2021  | EUT Type:<br>Tablet Device                    | Page 132 of 246                 |



Plot 7-340. RSE above 1GHz Antenna 5T (11ax – Ch.52 – RU26)

Mode: 802.11ax (20MHz BW)  
 Data Rate: MCS0  
 RU Index: 4  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5260MHz  
 Channel: 52

| Frequency [MHz] | Detector | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBuV/m] | Limit [dBuV/m] | Margin [dB] |
|-----------------|----------|-----------------|---------------------|----------------------------|----------------------|-------------|-------------------------|----------------|-------------|
| 10520.00        | Peak     | H               | -                   | -                          | -75.94               | 18.11       | 49.17                   | 68.20          | -19.03      |
| * 15780.00      | Average  | H               | -                   | -                          | -86.49               | 24.12       | 44.63                   | 53.98          | -9.35       |
| * 15780.00      | Peak     | H               | -                   | -                          | -75.94               | 24.12       | 55.18                   | 73.98          | -18.80      |

Table 7-86. Radiated Measurements Antenna 5T (RU26)

|  |   |                                       |                                 |
|--|---|---------------------------------------|---------------------------------|
| FCC ID: BCGA2377<br>IC: 579C-A2377         |  | MEASUREMENT REPORT<br>(CERTIFICATION) | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1C2101020001-09-R1.BCG | Test Dates:<br>12/12/2020 - 03/17/2021  | EUT Type:<br>Tablet Device            | Page 133 of 246                 |