

## Appendix-2.4G WiFi Test Data

### Conducted Test Data

#### Conducted Output Power

##### Test Result

| Mode            | Channel | Peak Output Power (dBm) | Peak Power Limit (dBm) | EIRP (dBm) | EIRP Limit (dBm) | Result |
|-----------------|---------|-------------------------|------------------------|------------|------------------|--------|
| IEEE 802.11b    | 1       | 17.47                   | ≤30                    | 20.17      | ≤36              | PASS   |
|                 | 6       | 17.62                   | ≤30                    | 20.32      | ≤36              | PASS   |
|                 | 11      | <b>17.80</b>            | ≤30                    | 20.50      | ≤36              | PASS   |
| IEEE 802.11g    | 1       | <b>21.70</b>            | ≤30                    | 24.40      | ≤36              | PASS   |
|                 | 6       | 21.46                   | ≤30                    | 24.16      | ≤36              | PASS   |
|                 | 11      | 21.62                   | ≤30                    | 24.32      | ≤36              | PASS   |
| IEEE 802.11n_20 | 1       | 21.62                   | ≤30                    | 24.32      | ≤36              | PASS   |
|                 | 6       | 21.62                   | ≤30                    | 24.32      | ≤36              | PASS   |
|                 | 11      | <b>21.81</b>            | ≤30                    | 24.51      | ≤36              | PASS   |
| IEEE 802.11n_40 | 3       | 20.39                   | ≤30                    | 23.09      | ≤36              | PASS   |
|                 | 6       | 20.40                   | ≤30                    | 23.10      | ≤36              | PASS   |
|                 | 9       | <b>20.58</b>            | ≤30                    | 23.28      | ≤36              | PASS   |

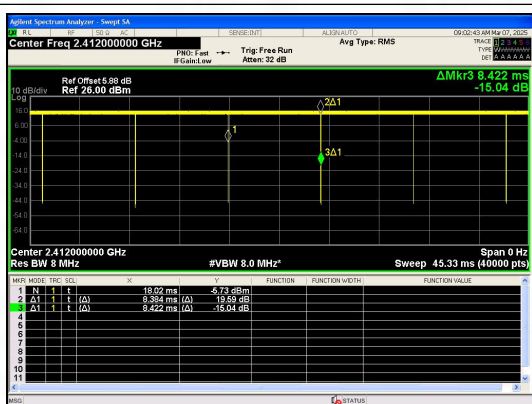
Note:  $EIRP = P_{out} + G_{ant}$ , where  $P_{out}$  is the conducted output power (i.e., the Peak Output Power in the table), and  $G_{ant}$  is the antenna gain equal to 2.7 dBi.

## Duty Cycle

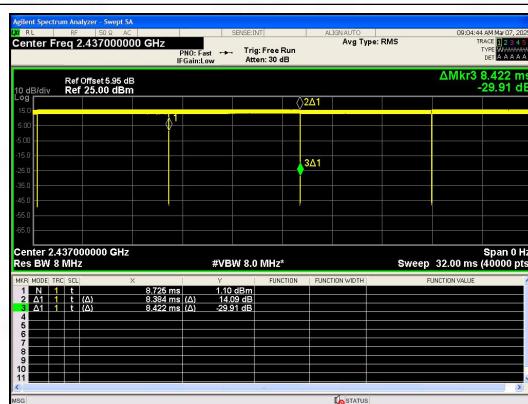
### Test Result

| Mode            | Data rates | Channel | Antenna | On Time (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle (linear) | Duty Cycle Factor (dB) | 1/T    |
|-----------------|------------|---------|---------|--------------|-------------|----------------|---------------------|------------------------|--------|
| IEEE 802.11b    | 1          | 1       | 1       | 8.384        | 8.422       | 99.56          | 0.9956              | 0.0192                 | 0.1193 |
|                 |            | 6       |         | 8.384        | 8.422       | 99.55          | 0.9955              | 0.0196                 | 0.1193 |
|                 |            | 11      |         | 8.384        | 8.421       | 99.56          | 0.9956              | 0.0192                 | 0.1193 |
| IEEE 802.11g    | 6          | 1       |         | 1.396        | 1.438       | 97.08          | 0.9708              | 0.1287                 | 0.7163 |
|                 |            | 6       |         | 1.396        | 1.438       | 97.08          | 0.9708              | 0.1287                 | 0.7163 |
|                 |            | 11      |         | 1.396        | 1.437       | 97.15          | 0.9715              | 0.1256                 | 0.7163 |
| IEEE 802.11n_20 | MCS 0      | 1       |         | 1.303        | 1.345       | 96.91          | 0.9691              | 0.1363                 | 0.7675 |
|                 |            | 6       |         | 1.303        | 1.345       | 96.86          | 0.9686              | 0.1386                 | 0.7675 |
|                 |            | 11      |         | 1.303        | 1.345       | 96.86          | 0.9686              | 0.1386                 | 0.7675 |
| IEEE 802.11n_40 |            | 3       |         | 0.650        | 0.693       | 93.87          | 0.9387              | 0.2747                 | 1.5385 |
|                 |            | 6       |         | 0.651        | 0.693       | 93.94          | 0.9394              | 0.2715                 | 1.5361 |
|                 |            | 9       |         | 0.650        | 0.692       | 93.94          | 0.9394              | 0.2715                 | 1.5385 |

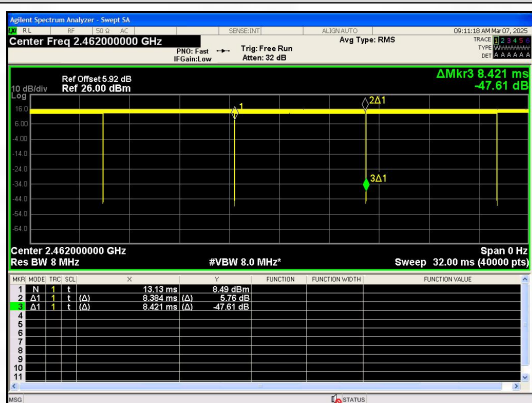
### Test Graphs



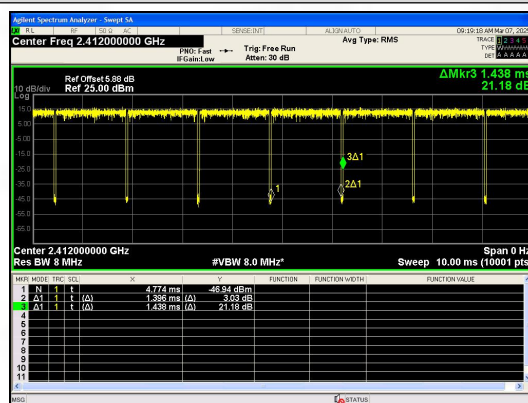
IEEE 802.11b\_20MHz\_Channel 1



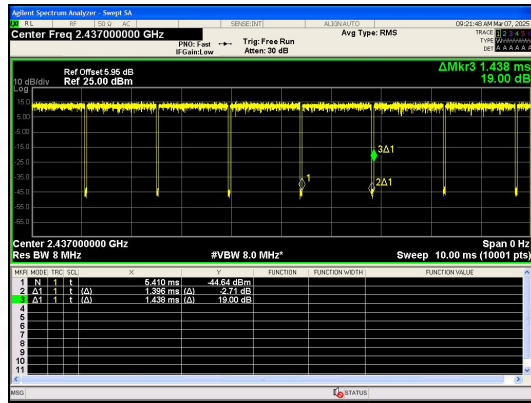
IEEE 802.11b\_20MHz\_Channel 6



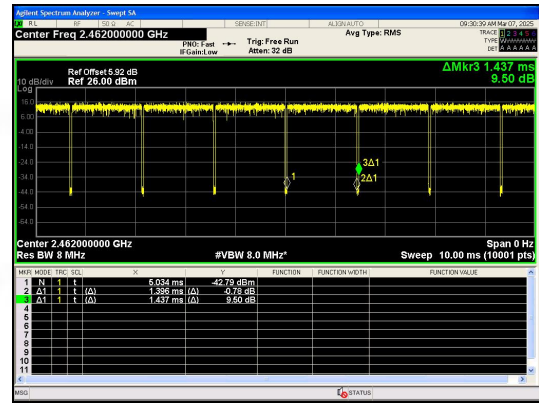
IEEE 802.11b\_20MHz\_Channel 11



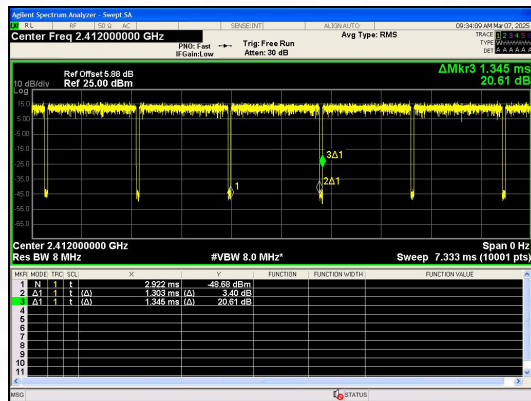
IEEE 802.11g\_20MHz\_Channel 1



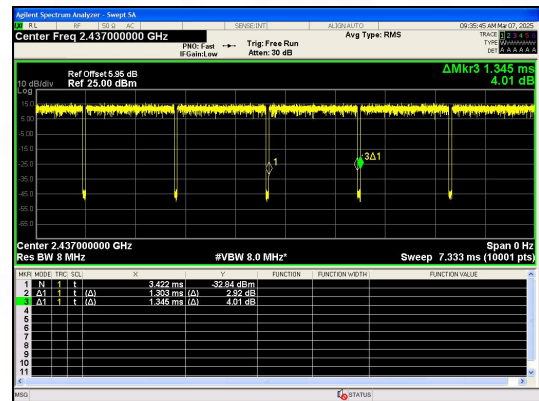
IEEE 802.11g\_20MHz\_Channel 6



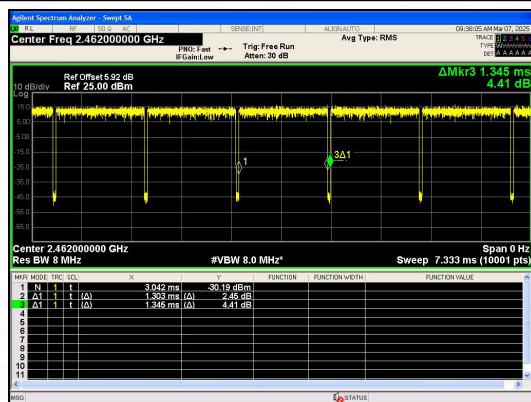
IEEE 802.11g\_20MHz\_Channel 11



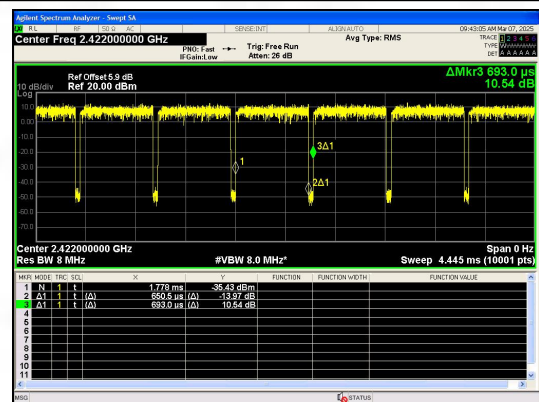
IEEE 802.11n\_20MHz\_Channel 1



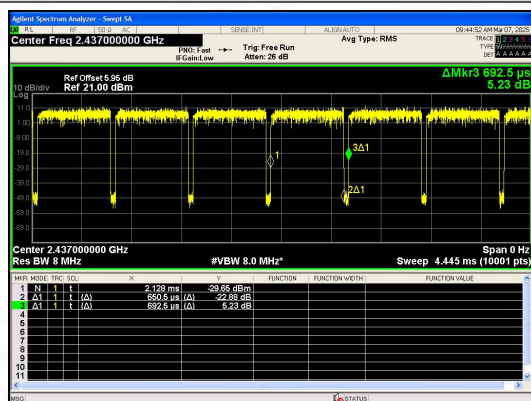
IEEE 802.11n\_20MHz\_Channel 6



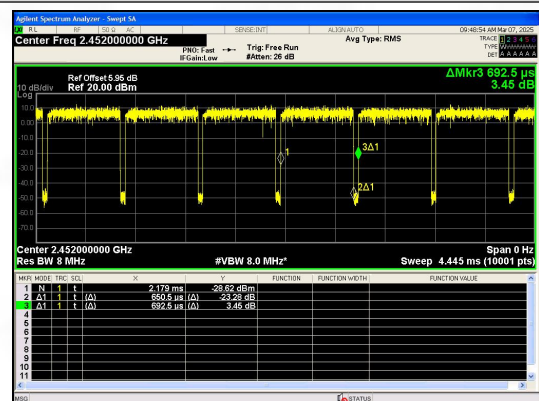
IEEE 802.11n\_20MHz\_Channel 11



IEEE 802.11n\_40MHz\_Channel 3



IEEE 802.11n\_40MHz\_Channel 6



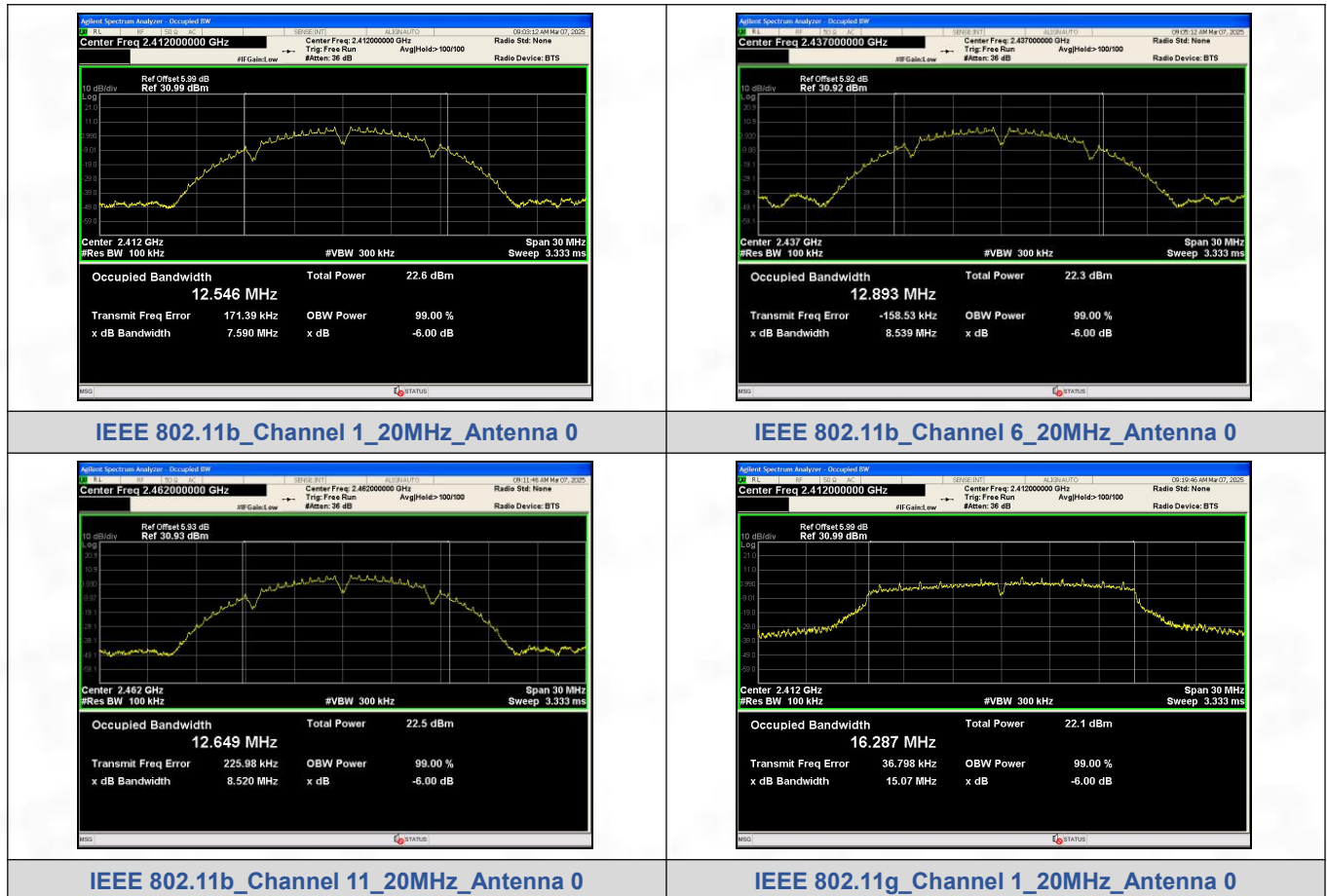
IEEE 802.11n\_40MHz\_Channel 9

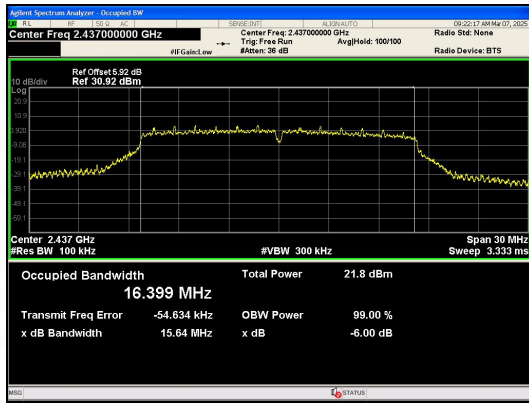
## 6dB Bandwidth

### Test Result

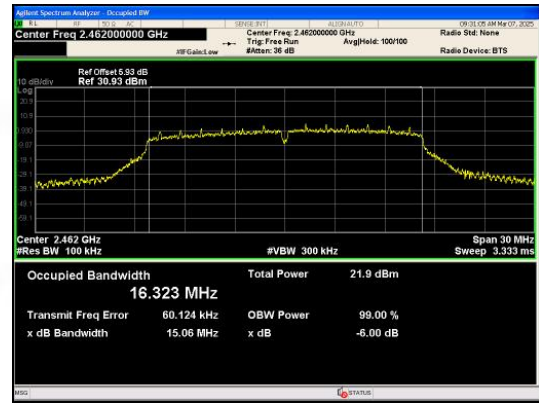
| Mode            | Channel | Ant. | Center Frequency (MHz) | 6 dB Bandwidth (MHz) | Limit (MHz) | Result |
|-----------------|---------|------|------------------------|----------------------|-------------|--------|
| IEEE 802.11b    | 1       | 0    | 2412                   | 7.590                | ≥0.5        | PASS   |
|                 | 6       |      | 2437                   | 8.539                |             | PASS   |
|                 | 11      |      | 2462                   | 8.520                |             | PASS   |
| IEEE 802.11g    | 1       |      | 2412                   | 15.07                |             | PASS   |
|                 | 6       |      | 2437                   | 15.64                |             | PASS   |
|                 | 11      |      | 2462                   | 15.06                |             | PASS   |
| IEEE 802.11n_20 | 1       |      | 2412                   | 15.09                |             | PASS   |
|                 | 6       |      | 2437                   | 16.27                |             | PASS   |
|                 | 11      |      | 2462                   | 15.09                |             | PASS   |
| IEEE 802.11n_40 | 3       |      | 2422                   | 31.29                |             | PASS   |
|                 | 6       |      | 2437                   | 35.68                |             | PASS   |
|                 | 9       |      | 2452                   | 35.69                |             | PASS   |

### Test Graphs

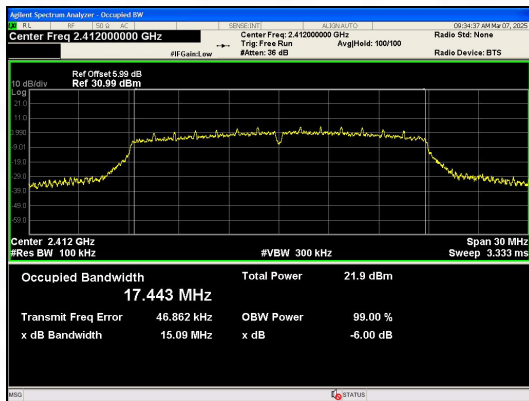




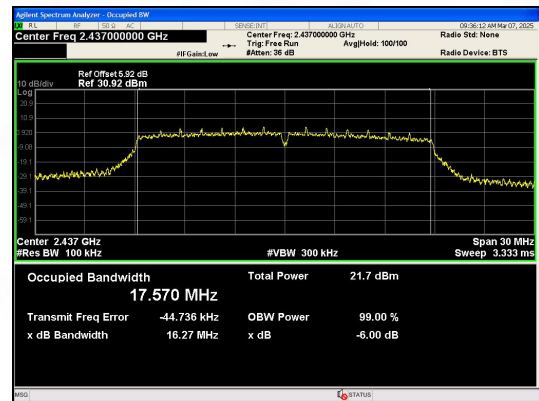
IEEE 802.11g\_Channel 6\_20MHz\_Antenna 0



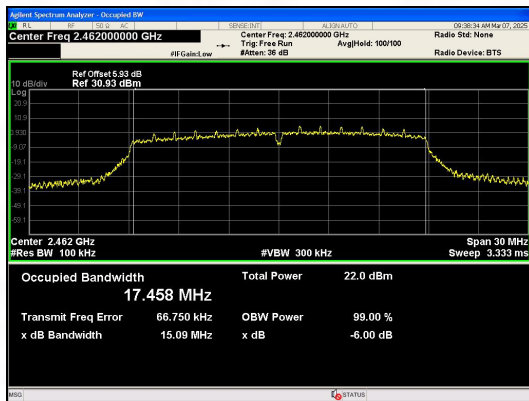
IEEE 802.11g\_Channel 11\_20MHz\_Antenna 0



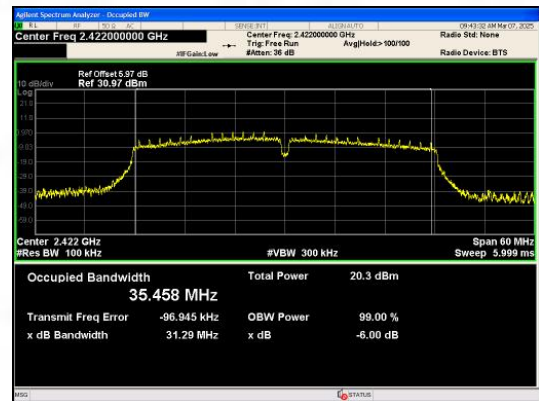
IEEE 802.11n\_Channel 1\_20MHz\_Antenna 0



IEEE 802.11n\_Channel 6\_20MHz\_Antenna 0



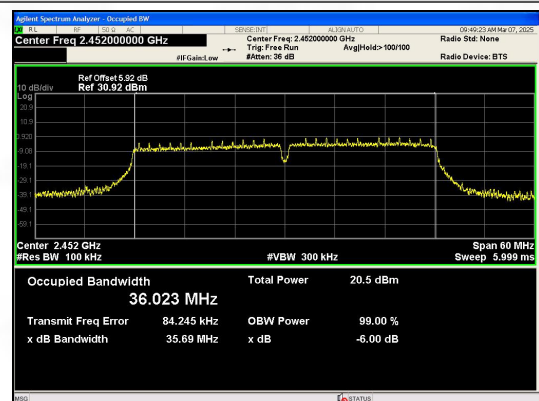
IEEE 802.11n\_Channel 11\_20MHz\_Antenna 0



IEEE 802.11n\_Channel 3\_40MHz\_Antenna 0



IEEE 802.11n\_Channel 6\_40MHz\_Antenna 0



IEEE 802.11n\_Channel 9\_40MHz\_Antenna 0

## 99% Bandwidth

### Test Result

| Mode            | Channel | Ant. | Center Frequency (MHz) | 99% BW (MHz) |
|-----------------|---------|------|------------------------|--------------|
| IEEE 802.11b    | 1       | 0    | 2412                   | 12.546       |
|                 | 6       |      | 2437                   | 12.907       |
|                 | 11      |      | 2462                   | 12.666       |
| IEEE 802.11g    | 1       |      | 2412                   | 16.438       |
|                 | 6       |      | 2437                   | 16.628       |
|                 | 11      |      | 2462                   | 16.482       |
| IEEE 802.11n_20 | 1       |      | 2412                   | 17.538       |
|                 | 6       |      | 2437                   | 17.734       |
|                 | 11      |      | 2462                   | 17.584       |
| IEEE 802.11n_40 | 3       |      | 2422                   | 35.662       |
|                 | 6       |      | 2437                   | 36.234       |
|                 | 9       |      | 2452                   | 36.275       |

### Test Graphs



IEEE 802.11b\_Channel 1\_20MHz\_Antenna 0



IEEE 802.11b\_Channel 6\_20MHz\_Antenna 0



IEEE 802.11b\_Channel 11\_20MHz\_Antenna 0



IEEE 802.11g\_Channel 1\_20MHz\_Antenna 0



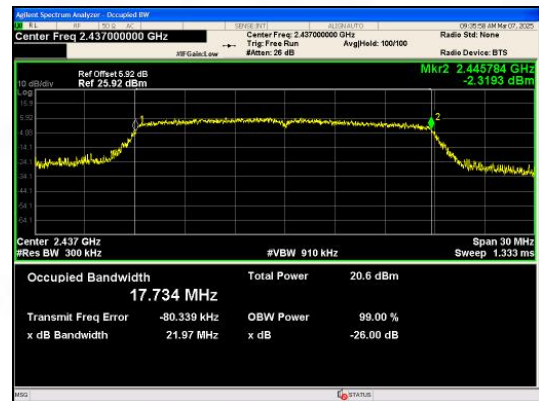
IEEE 802.11g\_Channel 6\_20MHz\_Antenna 0



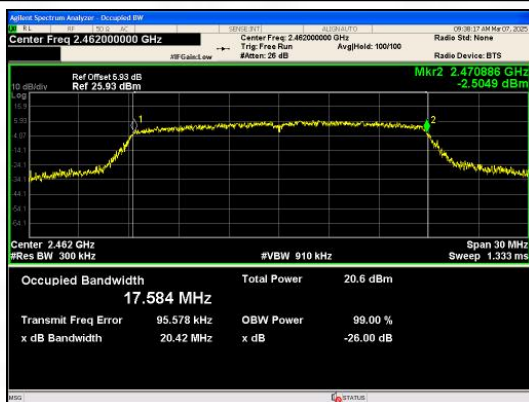
IEEE 802.11g\_Channel 11\_20MHz\_Antenna 0



IEEE 802.11n\_Channel 1\_20MHz\_Antenna 0



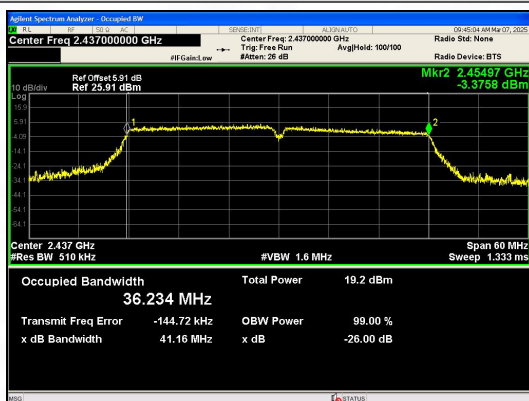
IEEE 802.11n\_Channel 6\_20MHz\_Antenna 0



IEEE 802.11n\_Channel 11\_20MHz\_Antenna 0



IEEE 802.11n\_Channel 3\_40MHz\_Antenna 0



IEEE 802.11n\_Channel 6\_40MHz\_Antenna 0



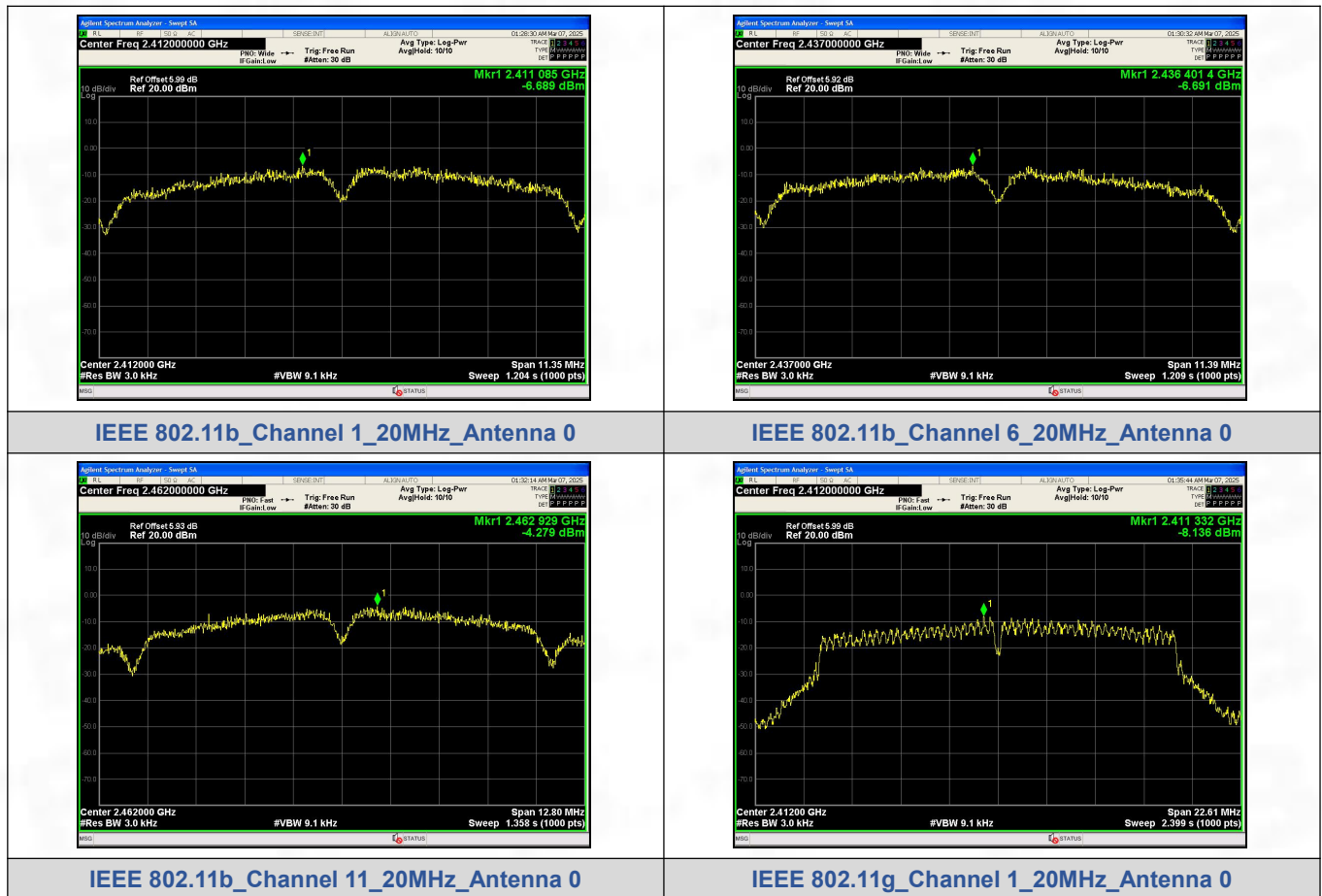
IEEE 802.11n\_Channel 9\_40MHz\_Antenna 0

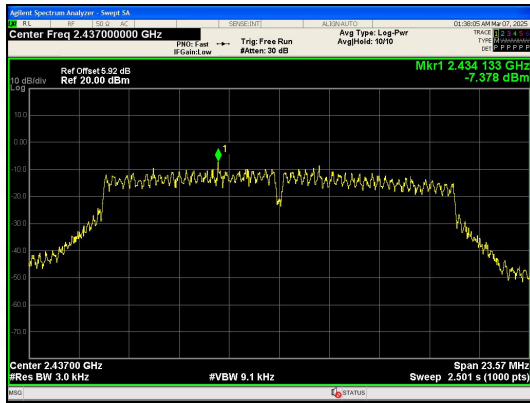
## Power Spectral Density

### Test Result

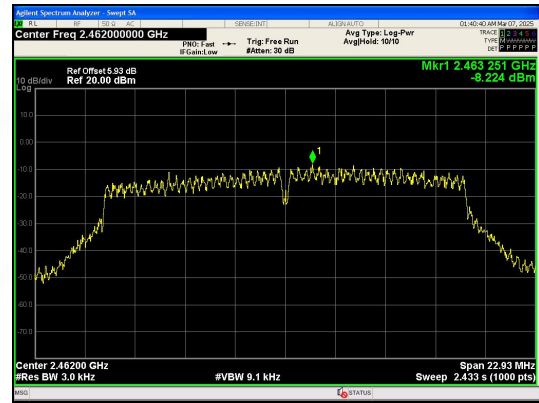
| Mode            | Channel | PSD<br>(dBm/3kHz)<br>Ant. 0 | Limit<br>(dBm/3kHz) | Result |
|-----------------|---------|-----------------------------|---------------------|--------|
| IEEE 802.11b    | 1       | -6.689                      | ≤8                  | PASS   |
|                 | 6       | -6.691                      |                     | PASS   |
|                 | 11      | -4.279                      |                     | PASS   |
| IEEE 802.11g    | 1       | -8.136                      |                     | PASS   |
|                 | 6       | -7.378                      |                     | PASS   |
|                 | 11      | -8.224                      |                     | PASS   |
| IEEE 802.11n_20 | 1       | -8.869                      |                     | PASS   |
|                 | 6       | -8.388                      |                     | PASS   |
|                 | 11      | -9.422                      |                     | PASS   |
| IEEE 802.11n_40 | 3       | -11.211                     |                     | PASS   |
|                 | 6       | -11.387                     |                     | PASS   |
|                 | 9       | -13.085                     |                     | PASS   |

### Test Graphs

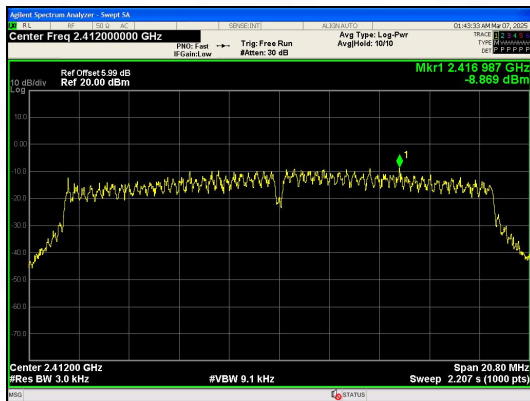




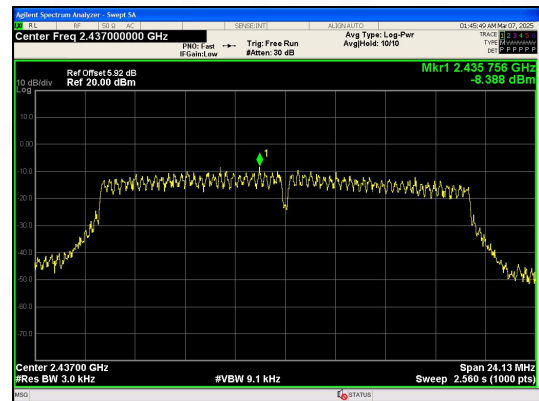
IEEE 802.11g\_Channel 6\_20MHz\_Antenna 0



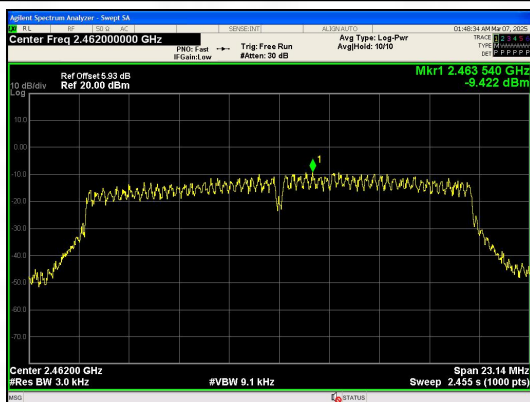
IEEE 802.11g\_Channel 11\_20MHz\_Antenna 0



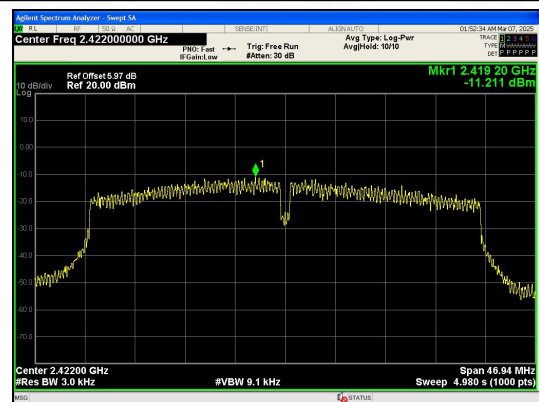
IEEE 802.11n\_Channel 1\_20MHz\_Antenna 0



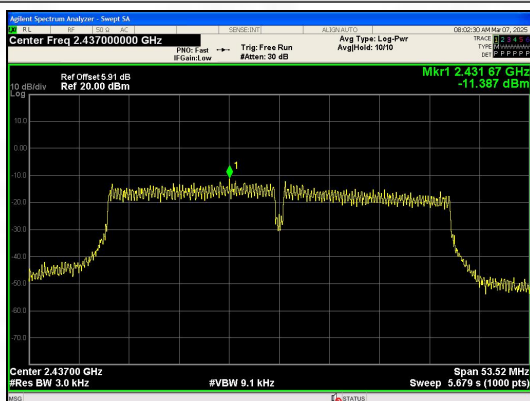
IEEE 802.11n\_Channel 6\_20MHz\_Antenna 0



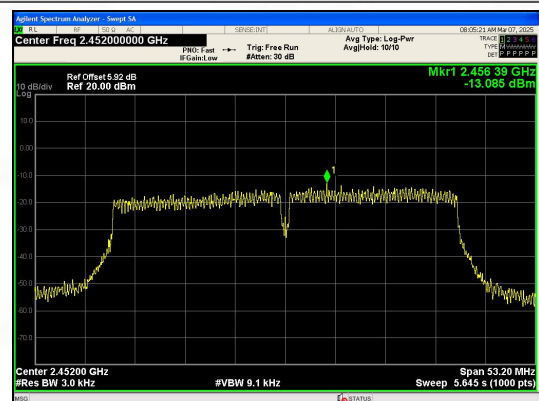
IEEE 802.11n\_Channel 11\_20MHz\_Antenna 0



IEEE 802.11n\_Channel 3\_40MHz\_Antenna 0



IEEE 802.11n\_Channel 6\_40MHz\_Antenna 0



IEEE 802.11n\_Channel 9\_40MHz\_Antenna 0