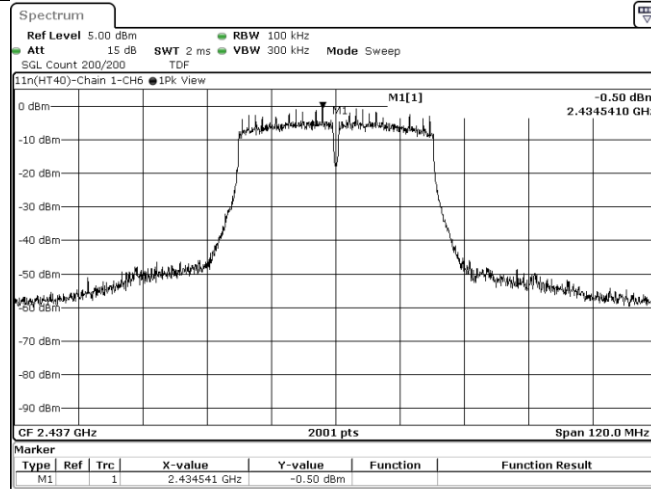
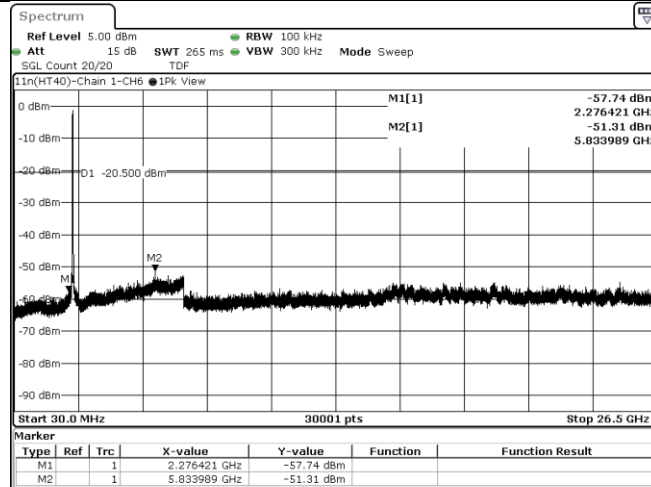


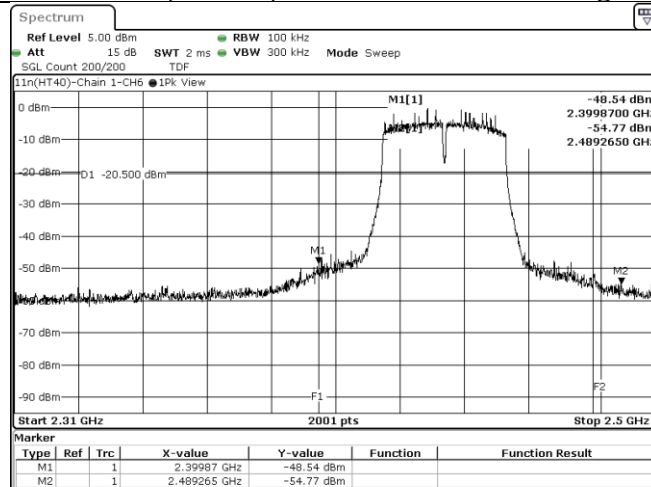
### 802.11ac(VHT40), CH6, Chain 1, Reference



### 802.11ac(VHT40), CH6, Chain 1, Conducted Emission



### 802.11ac(VHT40), CH6, Chain 1, Band edge



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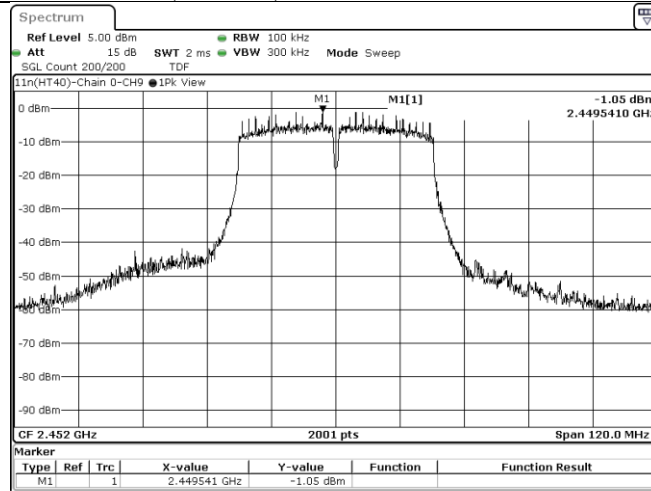
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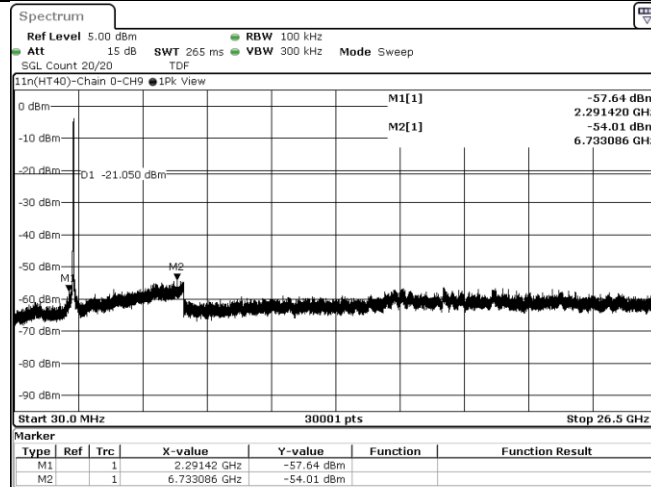
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Doc No: Form-ULID-004737 (DCS:17-EM-F0876) / 6.1

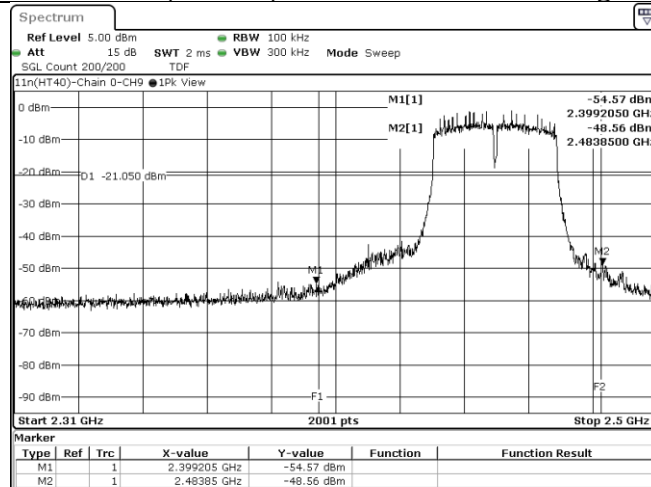
### 802.11ac(VHT40), CH9, Chain 0, Reference



### 802.11ac(VHT40), CH9, Chain 0, Conducted Emission



### 802.11ac(VHT40), CH9, Chain 0, Band edge



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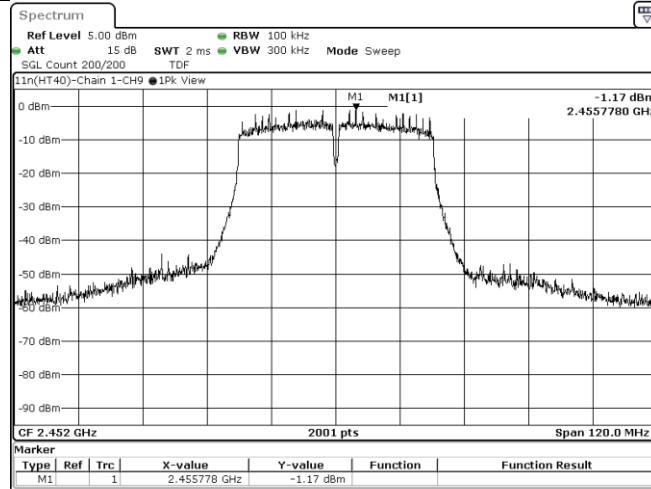
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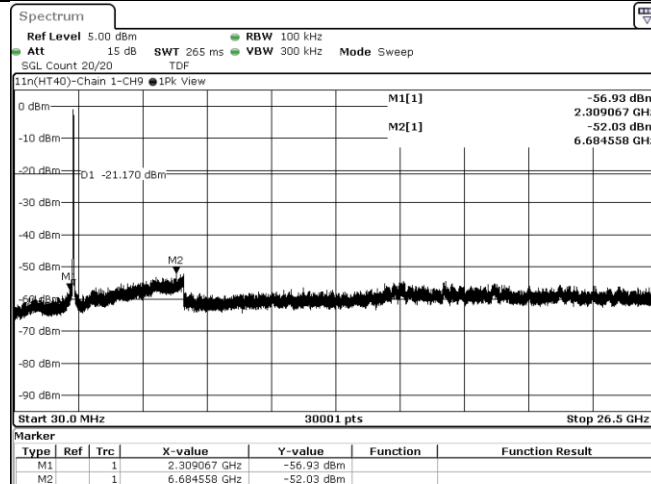
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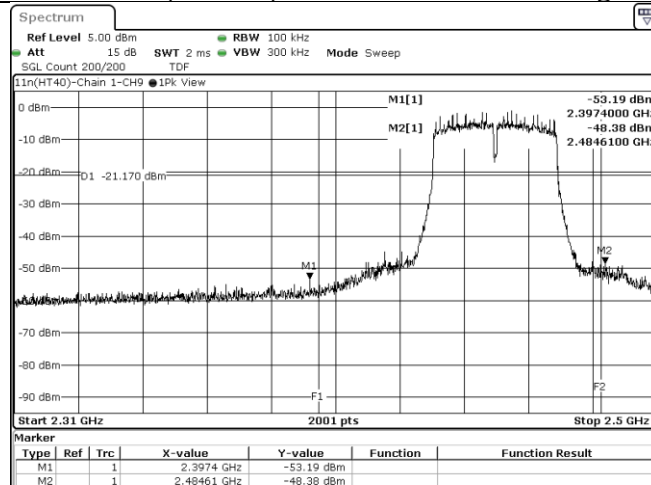
### 802.11ac(VHT40), CH9, Chain 1, Reference



### 802.11ac(VHT40), CH9, Chain 1, Conducted Emission



### 802.11ac(VHT40), CH9, Chain 1, Band edge



## 9.5. Radiated Spurious Emission

### Requirements

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

| Frequency(MHz) | Field strength<br>(microvolts/meter) | Measurement distance<br>(meters) |
|----------------|--------------------------------------|----------------------------------|
| 0.009-0.490    | 2400/F(kHz)                          | 300                              |
| 0.490-1.705    | 24000/F(kHz)                         | 30                               |
| 1.705-30.0     | 30                                   | 30                               |
| 30-88          | 100                                  | 3                                |
| 88-216         | 150                                  | 3                                |
| 216-960        | 200                                  | 3                                |
| Above 960      | 500                                  | 3                                |

**NOTE:**

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

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## **Test Procedures**

[For 9 kHz ~ 30 MHz]

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. For measurement below 30MHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

[For above 30 MHz]

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
- f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

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**Note:**

- a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
- b. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
- c. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle  $< 98\%$ ) or 10Hz (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz.

| Configuration    | Average |                                      |
|------------------|---------|--------------------------------------|
|                  | RBW     | VBW                                  |
| 802.11b          | 1MHz    | Refer to section 6.6 for duty cycle. |
| 802.11g          |         |                                      |
| 802.11ac (VHT20) |         |                                      |
| 802.11ac (VHT40) |         |                                      |

- d. All modes of operation were investigated (includes all external accessories) and the worst-case emissions are reported, the other emission levels were low against the limit.
- e. Test data of Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
- f. Test data of Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
- g. Test data of Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) - Preamp Factor (dB).
- h. Test data of Notation "@" = Fundamental Frequency
- i. Test data of Notation "\*" = The peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.

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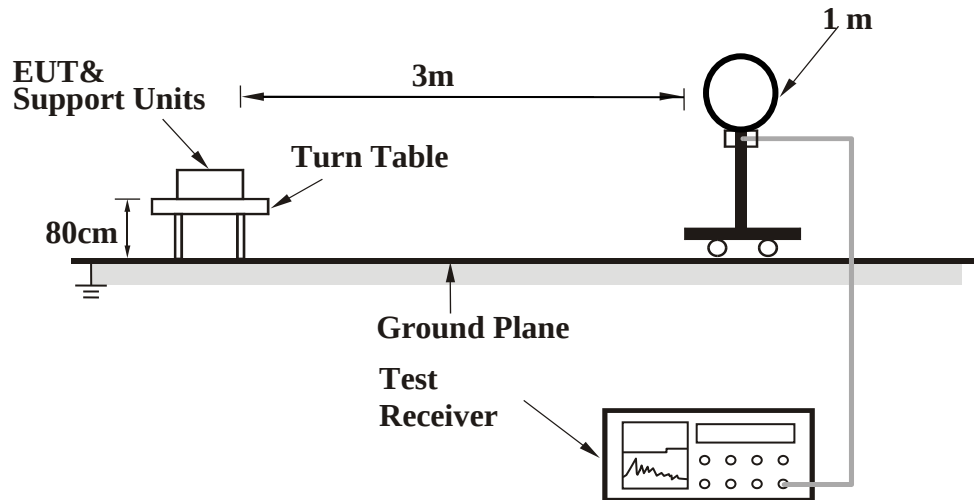
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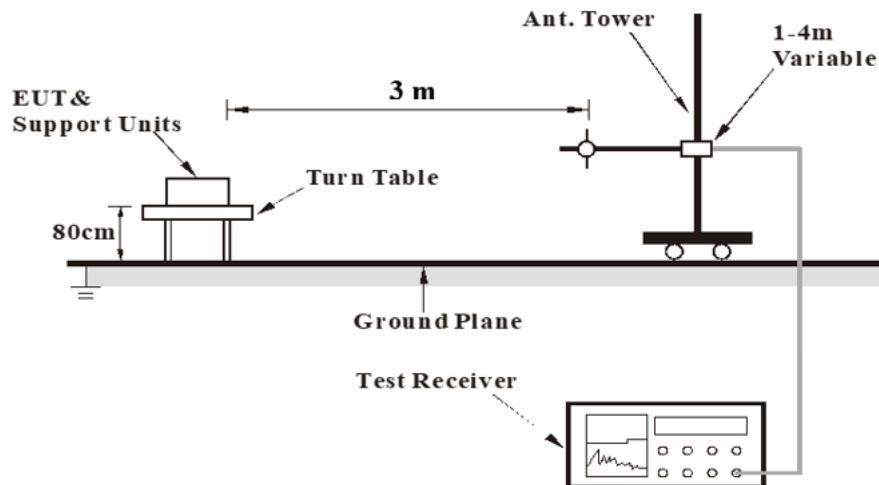
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### Test Setup

<Frequency Range 9 kHz ~ 30 MHz>



<Frequency Range 30 MHz ~ 1 GHz >



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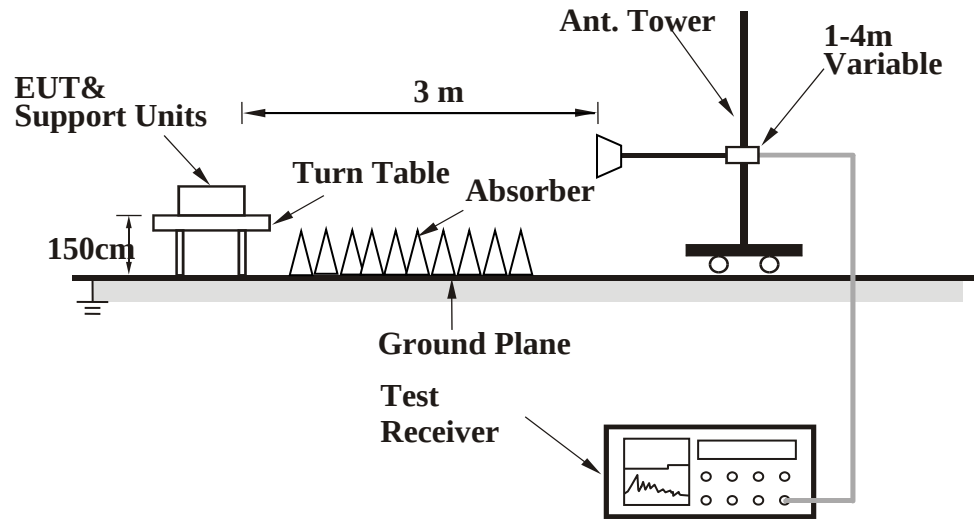
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<Frequency Range above 1 GHz>



For the actual test configuration, please refer to the Setup Configurations.

## Test Data

### Above 1 GHz

|      |         |         |   |
|------|---------|---------|---|
| Mode | 802.11b | Channel | 1 |
|------|---------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 2331.28            | 40.32             | 15.88             | 56.2               | 74                | -17.8          | PK     |
|              |          | 2333.94            | 29.08             | 15.88             | 44.96              | 54                | -9.04          | AVG    |
|              | @        | 2412               | 84.73             | 15.83             | 100.56             | N/A               | N/A            | PK     |
|              | @        | 2412               | 80.91             | 15.83             | 96.74              | N/A               | N/A            | AVG    |
|              | *        | 4824               | 36.84             | 2.35              | 39.19              | 74                | -34.81         | PK     |
| Vertical     |          | 2331.66            | 28.99             | 15.88             | 44.87              | 54                | -9.13          | AVG    |
|              |          | 2358.07            | 41.55             | 15.89             | 57.44              | 74                | -16.56         | PK     |
|              | @        | 2412               | 81.31             | 15.83             | 97.14              | N/A               | N/A            | PK     |
|              | @        | 2412               | 77.65             | 15.83             | 93.48              | N/A               | N/A            | AVG    |
|              | *        | 4824               | 37.09             | 2.35              | 39.44              | 74                | -34.56         | PK     |

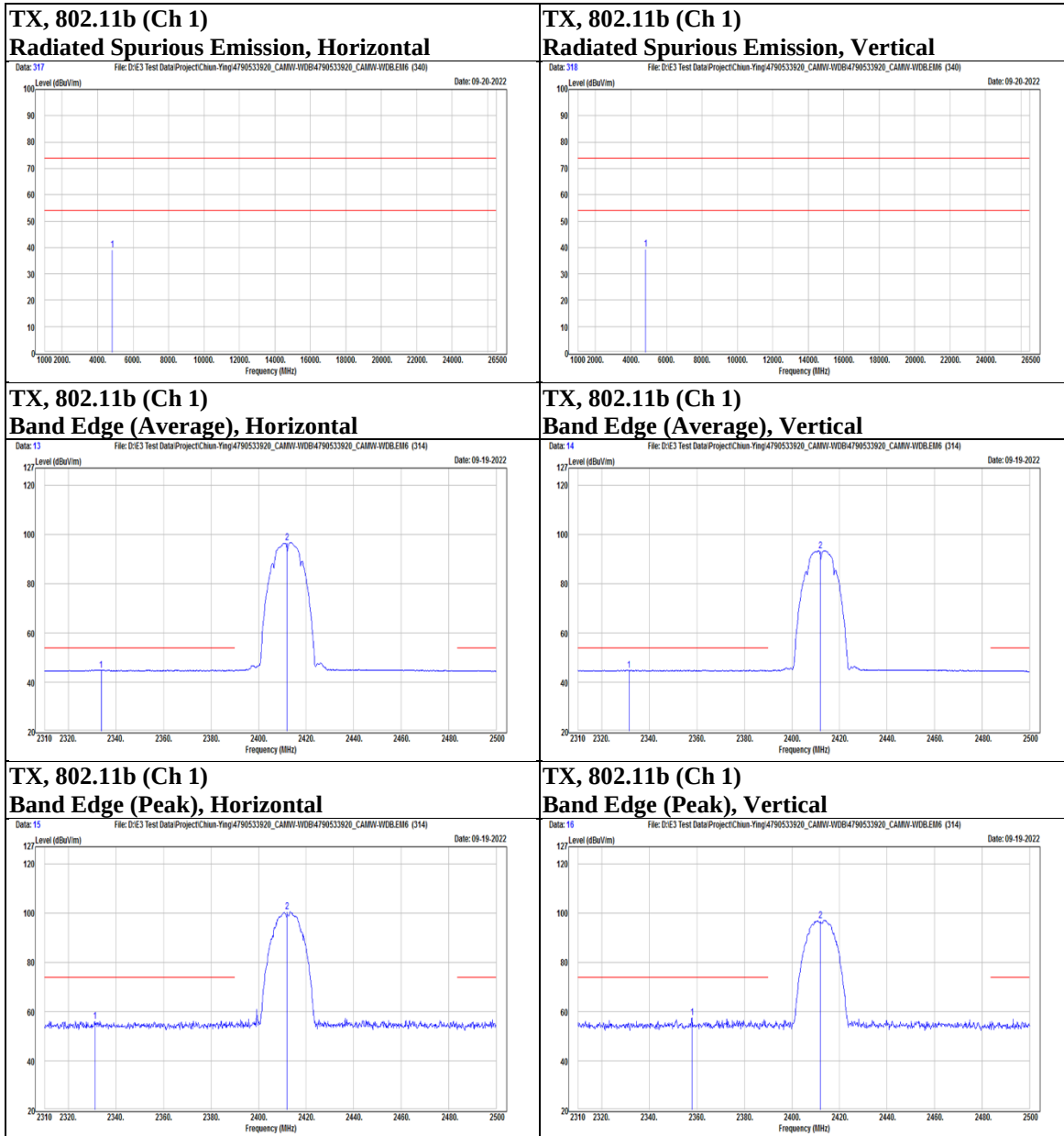
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|      |         |         |   |
|------|---------|---------|---|
| Mode | 802.11b | Channel | 6 |
|------|---------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 2360.73            | 28.9              | 15.88             | 44.78              | 54                | -9.22          | AVG    |
|              |          | 2370.23            | 40.46             | 15.86             | 56.32              | 74                | -17.68         | PK     |
|              | @        | 2437               | 84.64             | 15.92             | 100.56             | N/A               | N/A            | PK     |
|              | @        | 2437               | 80.96             | 15.92             | 96.88              | N/A               | N/A            | AVG    |
|              |          | 2488.79            | 28.94             | 15.64             | 44.58              | 54                | -9.42          | AVG    |
|              |          | 2499.81            | 40.3              | 15.55             | 55.85              | 74                | -18.15         | PK     |
|              | *        | 4874               | 36.33             | 2.4               | 38.73              | 74                | -35.27         | PK     |
| Vertical     |          | 2352.94            | 28.96             | 15.9              | 44.86              | 54                | -9.14          | AVG    |
|              |          | 2361.49            | 41.13             | 15.87             | 57                 | 74                | -17            | PK     |
|              | @        | 2437               | 80.95             | 15.92             | 96.87              | N/A               | N/A            | PK     |
|              | @        | 2437               | 77.58             | 15.92             | 93.5               | N/A               | N/A            | AVG    |
|              |          | 2488.22            | 28.96             | 15.65             | 44.61              | 54                | -9.39          | AVG    |
|              |          | 2493.73            | 40.25             | 15.6              | 55.85              | 74                | -18.15         | PK     |
|              | *        | 4874               | 35.83             | 2.4               | 38.23              | 74                | -35.77         | PK     |

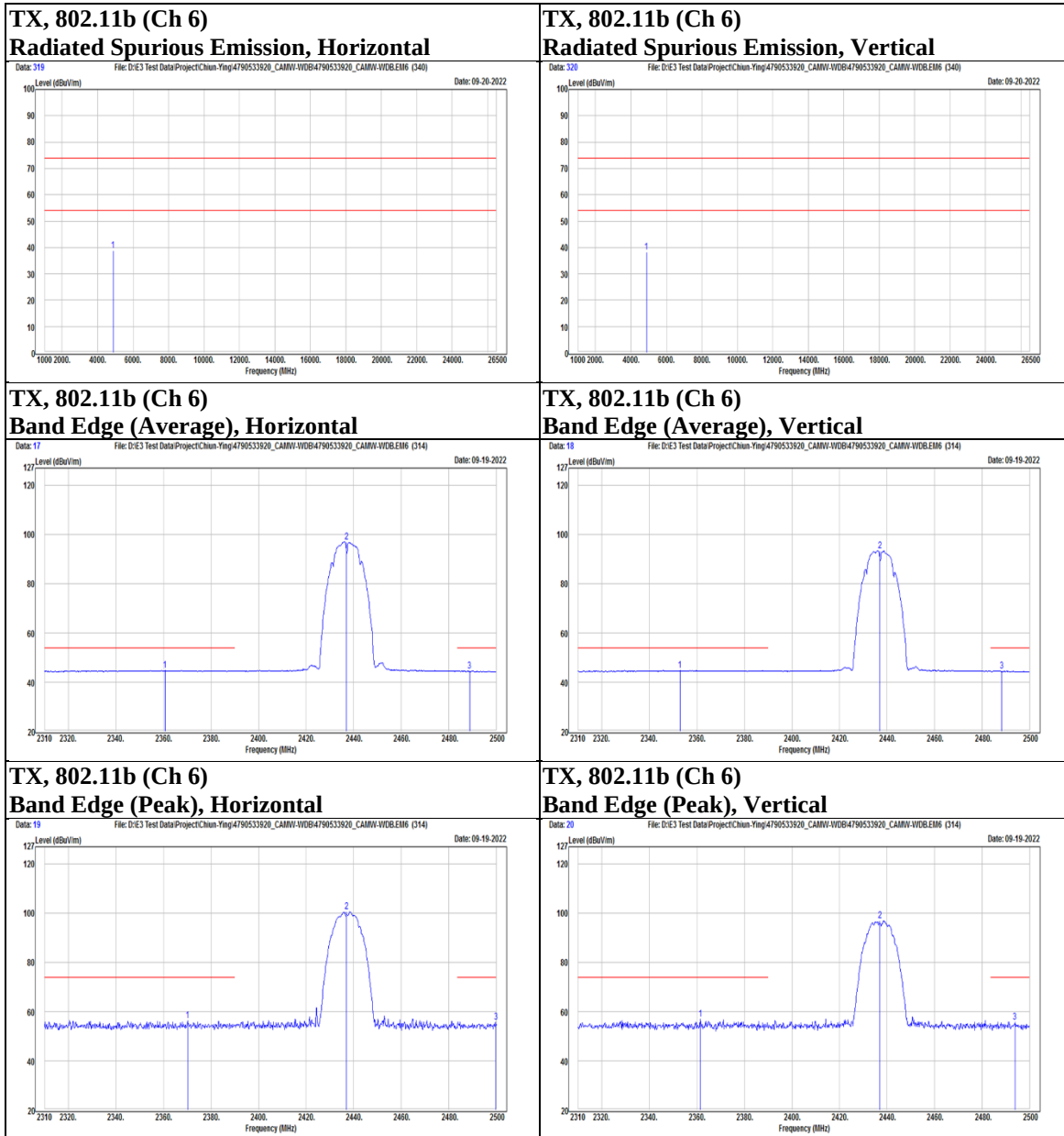
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|      |         |         |    |
|------|---------|---------|----|
| Mode | 802.11b | Channel | 11 |
|------|---------|---------|----|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | @        | 2462               | 86.18             | 15.87             | 102.05             | N/A               | N/A            | PK     |
|              | @        | 2462               | 83.16             | 15.87             | 99.03              | N/A               | N/A            | AVG    |
|              |          | 2484.8             | 29.15             | 15.67             | 44.82              | 54                | -9.18          | AVG    |
|              |          | 2489.74            | 40.65             | 15.63             | 56.28              | 74                | -17.72         | PK     |
|              | *        | 4924               | 36.85             | 2.4               | 39.25              | 74                | -34.75         | PK     |
| Vertical     | @        | 2462               | 82.28             | 15.87             | 98.15              | N/A               | N/A            | PK     |
|              | @        | 2462               | 78.95             | 15.87             | 94.82              | N/A               | N/A            | AVG    |
|              |          | 2485.94            | 40.23             | 15.67             | 55.9               | 74                | -18.1          | PK     |
|              |          | 2493.35            | 28.96             | 15.61             | 44.57              | 54                | -9.43          | AVG    |
|              | *        | 4924               | 36.72             | 2.4               | 39.12              | 74                | -34.88         | PK     |

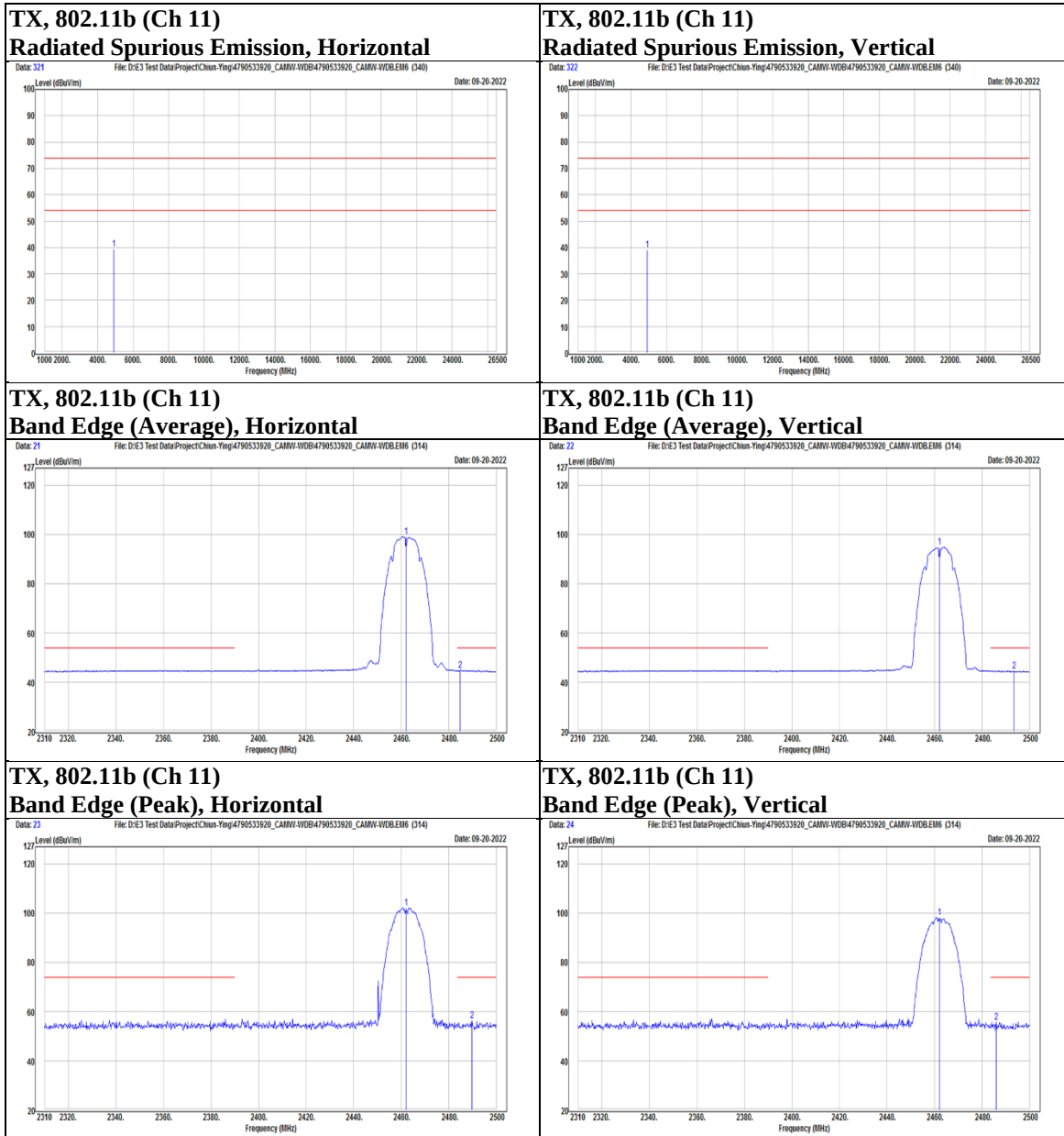
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|      |         |         |   |
|------|---------|---------|---|
| Mode | 802.11g | Channel | 1 |
|------|---------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 2382.39            | 41.01             | 15.83             | 56.84              | 74                | -17.16         | PK     |
|              |          | 2389.99            | 29.59             | 15.82             | 45.41              | 54                | -8.59          | AVG    |
|              | @        | 2412               | 89.54             | 15.83             | 105.37             | N/A               | N/A            | PK     |
|              | @        | 2412               | 80.55             | 15.83             | 96.38              | N/A               | N/A            | AVG    |
|              | *        | 4824               | 36.81             | 2.35              | 39.16              | 74                | -34.84         | PK     |
| Vertical     |          | 2381.06            | 41.12             | 15.84             | 56.96              | 74                | -17.04         | PK     |
|              |          | 2389.04            | 29.09             | 15.81             | 44.9               | 54                | -9.1           | AVG    |
|              | @        | 2412               | 85.65             | 15.83             | 101.48             | N/A               | N/A            | PK     |
|              | @        | 2412               | 77.48             | 15.83             | 93.31              | N/A               | N/A            | AVG    |
|              | *        | 4824               | 36.98             | 2.35              | 39.33              | 74                | -34.67         | PK     |

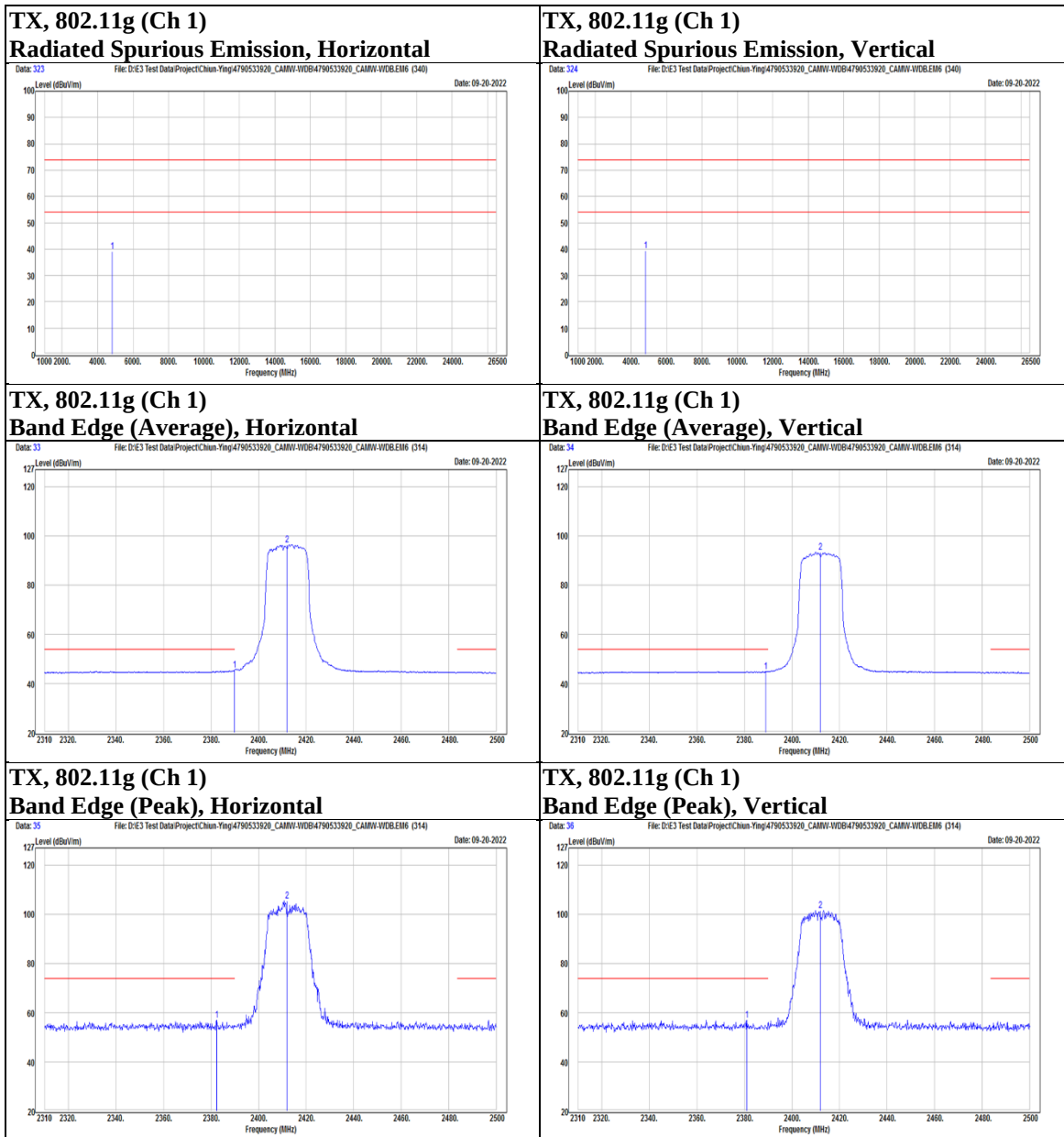
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|      |         |         |   |
|------|---------|---------|---|
| Mode | 802.11g | Channel | 6 |
|------|---------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 2339.07            | 28.98             | 15.89             | 44.87              | 54                | -9.13          | AVG    |
|              |          | 2348               | 41.37             | 15.9              | 57.27              | 74                | -16.73         | PK     |
|              | @        | 2437               | 89.18             | 15.92             | 105.1              | N/A               | N/A            | PK     |
|              | @        | 2437               | 81                | 15.92             | 96.92              | N/A               | N/A            | AVG    |
|              |          | 2483.85            | 28.92             | 15.68             | 44.6               | 54                | -9.4           | AVG    |
|              |          | 2493.35            | 41.01             | 15.61             | 56.62              | 74                | -17.38         | PK     |
|              | *        | 4874               | 36.85             | 2.4               | 39.25              | 74                | -34.75         | PK     |
| Vertical     |          | 2339.45            | 40.63             | 15.89             | 56.52              | 74                | -17.48         | PK     |
|              |          | 2362.82            | 28.89             | 15.88             | 44.77              | 54                | -9.23          | AVG    |
|              | @        | 2437               | 85.47             | 15.92             | 101.39             | N/A               | N/A            | PK     |
|              | @        | 2437               | 76.37             | 15.92             | 92.29              | N/A               | N/A            | AVG    |
|              |          | 2492.78            | 28.98             | 15.61             | 44.59              | 54                | -9.41          | AVG    |
|              |          | 2496.58            | 40.51             | 15.57             | 56.08              | 74                | -17.92         | PK     |
|              | *        | 4874               | 36.81             | 2.4               | 39.21              | 74                | -34.79         | PK     |

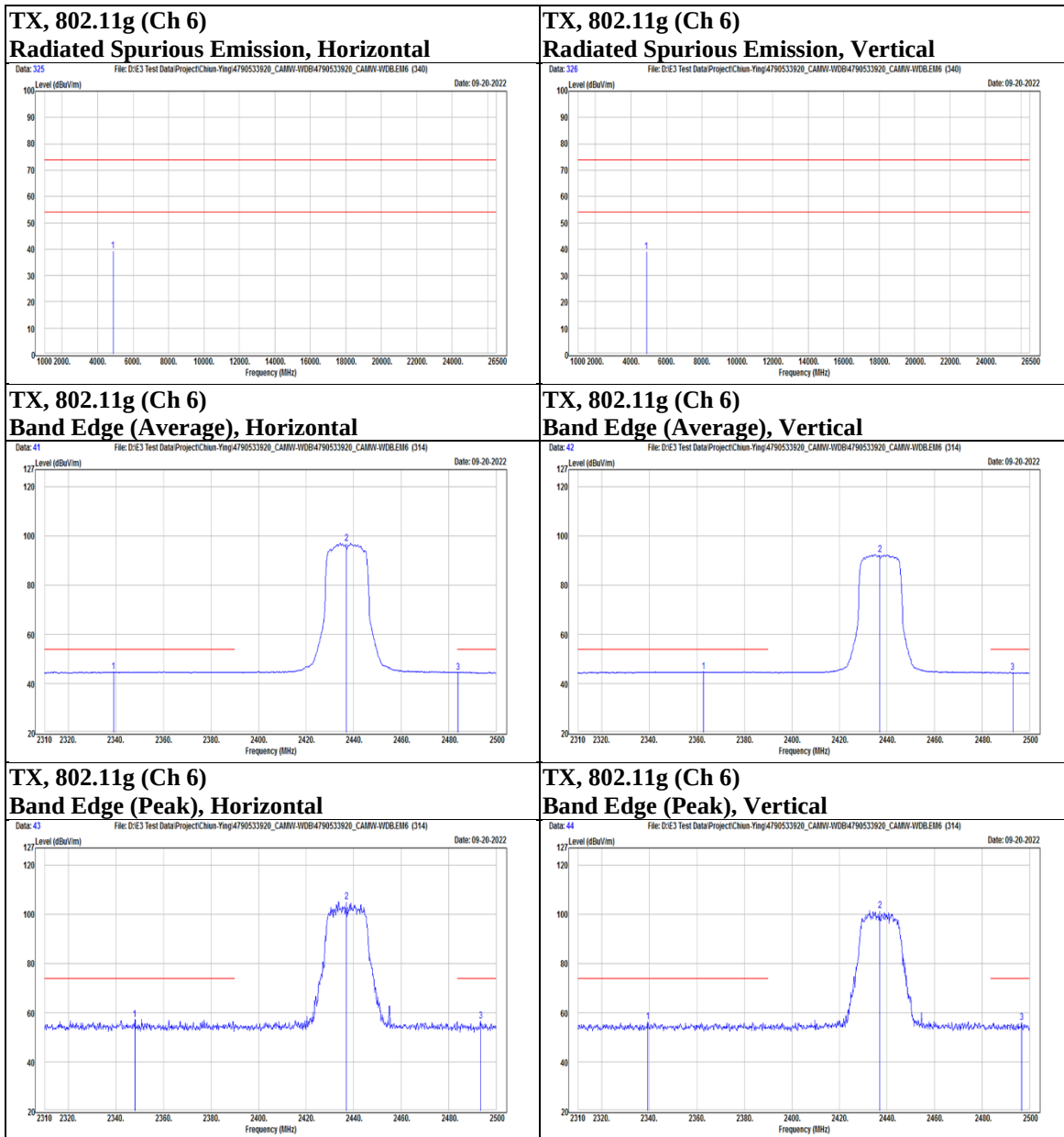
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|      |         |         |    |
|------|---------|---------|----|
| Mode | 802.11g | Channel | 11 |
|------|---------|---------|----|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | @        | 2462               | 90.84             | 15.87             | 106.71             | N/A               | N/A            | PK     |
|              | @        | 2462               | 80.78             | 15.87             | 96.65              | N/A               | N/A            | AVG    |
|              |          | 2484.04            | 29.19             | 15.68             | 44.87              | 54                | -9.13          | AVG    |
|              |          | 2486.51            | 41.28             | 15.66             | 56.94              | 74                | -17.06         | PK     |
|              | *        | 4924               | 36.5              | 2.4               | 38.9               | 74                | -35.1          | PK     |
| Vertical     | @        | 2462               | 86.3              | 15.87             | 102.17             | N/A               | N/A            | PK     |
|              | @        | 2462               | 76.43             | 15.87             | 92.3               | N/A               | N/A            | AVG    |
|              |          | 2485.37            | 28.95             | 15.67             | 44.62              | 54                | -9.38          | AVG    |
|              |          | 2495.82            | 40.36             | 15.58             | 55.94              | 74                | -18.06         | PK     |
|              | *        | 4924               | 36.87             | 2.4               | 39.27              | 74                | -34.73         | PK     |

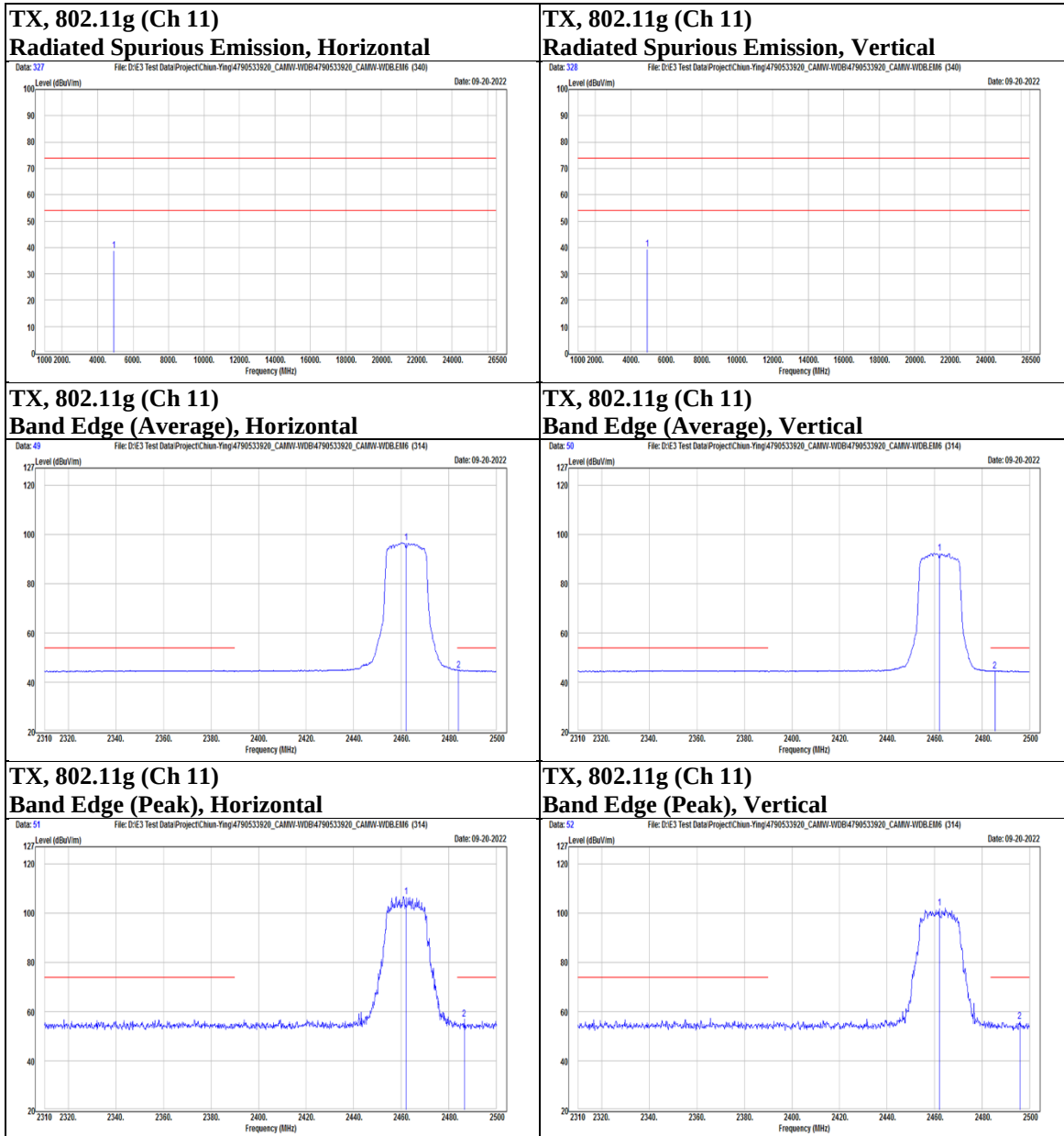
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|      |                 |         |   |
|------|-----------------|---------|---|
| Mode | 802.11ac(VHT20) | Channel | 1 |
|------|-----------------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 2383.91            | 41.32             | 15.83             | 57.15              | 74                | -16.85         | PK     |
|              |          | 2389.99            | 30.59             | 15.82             | 46.41              | 54                | -7.59          | AVG    |
|              | @        | 2412               | 89.32             | 15.83             | 105.15             | N/A               | N/A            | PK     |
|              | @        | 2412               | 80.79             | 15.83             | 96.62              | N/A               | N/A            | AVG    |
|              | *        | 4824               | 36.68             | 2.35              | 39.03              | 74                | -34.97         | PK     |
| Vertical     |          | 2350.85            | 41.52             | 15.91             | 57.43              | 74                | -16.57         | PK     |
|              |          | 2389.99            | 29.35             | 15.82             | 45.17              | 54                | -8.83          | AVG    |
|              | @        | 2412               | 84.14             | 15.83             | 99.97              | N/A               | N/A            | PK     |
|              | @        | 2412               | 75.83             | 15.83             | 91.66              | N/A               | N/A            | AVG    |
|              | *        | 4824               | 36.86             | 2.35              | 39.21              | 74                | -34.79         | PK     |

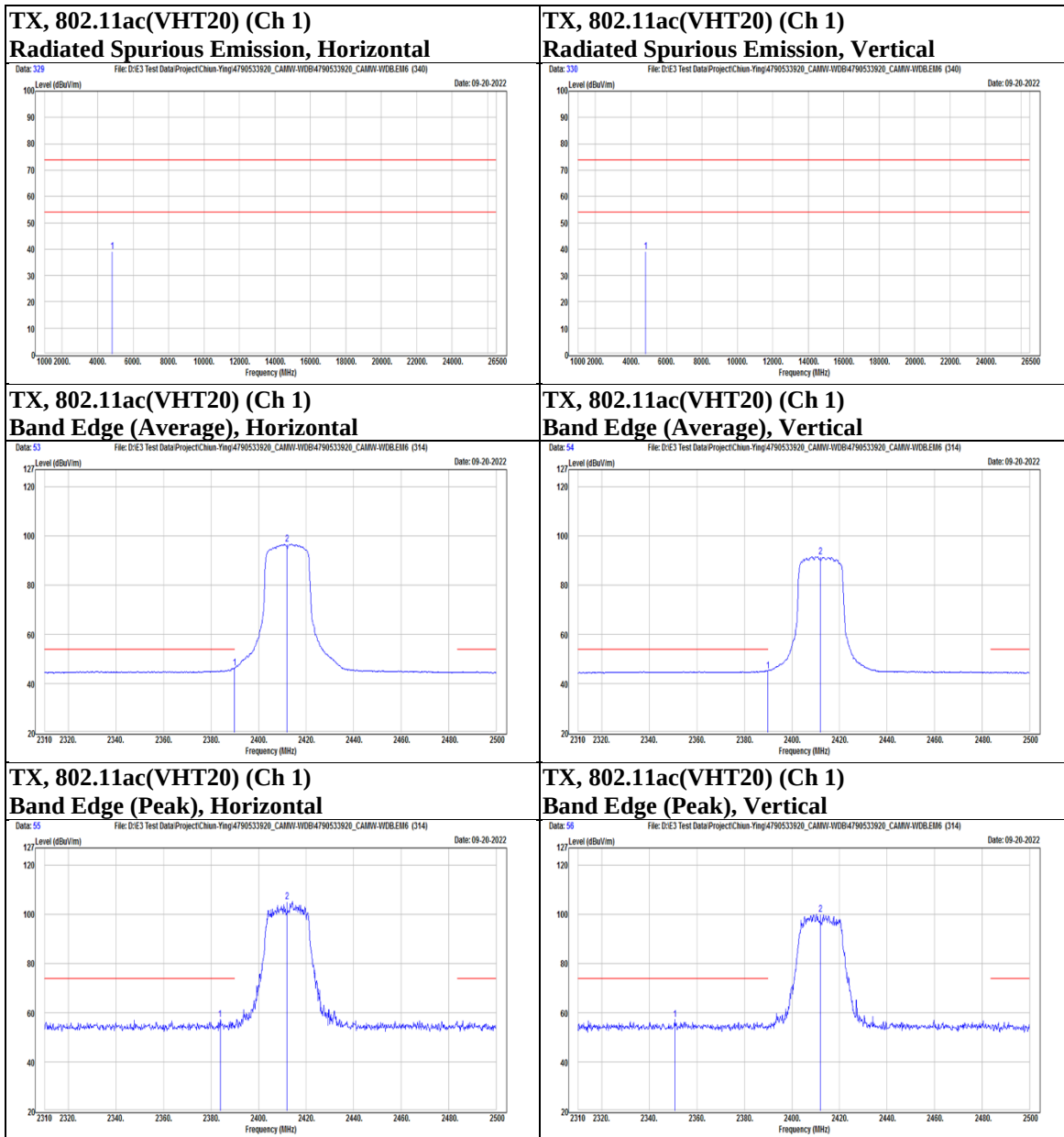
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Doc No: Form-ULID-004737 (DCS:17-EM-F0876) / 6.1



|      |                 |         |   |
|------|-----------------|---------|---|
| Mode | 802.11ac(VHT20) | Channel | 6 |
|------|-----------------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 2337.17            | 41.01             | 15.89             | 56.9               | 74                | -17.1          | PK     |
|              |          | 2383.15            | 29.01             | 15.83             | 44.84              | 54                | -9.16          | AVG    |
|              | @        | 2437               | 89.17             | 15.92             | 105.09             | N/A               | N/A            | PK     |
|              | @        | 2437               | 80.92             | 15.92             | 96.84              | N/A               | N/A            | AVG    |
|              |          | 2489.74            | 29.08             | 15.63             | 44.71              | 54                | -9.29          | AVG    |
|              |          | 2492.59            | 40.45             | 15.61             | 56.06              | 74                | -17.94         | PK     |
|              | *        | 4874               | 36.65             | 2.4               | 39.05              | 74                | -34.95         | PK     |
| Vertical     |          | 2341.73            | 28.85             | 15.9              | 44.75              | 54                | -9.25          | AVG    |
|              |          | 2368.33            | 41.3              | 15.87             | 57.17              | 74                | -16.83         | PK     |
|              | @        | 2437               | 83.99             | 15.92             | 99.91              | N/A               | N/A            | PK     |
|              | @        | 2437               | 75.13             | 15.92             | 91.05              | N/A               | N/A            | AVG    |
|              |          | 2493.54            | 28.93             | 15.6              | 44.53              | 54                | -9.47          | AVG    |
|              |          | 2496.77            | 41.25             | 15.57             | 56.82              | 74                | -17.18         | PK     |
|              | *        | 4874               | 36.75             | 2.4               | 39.15              | 74                | -34.85         | PK     |

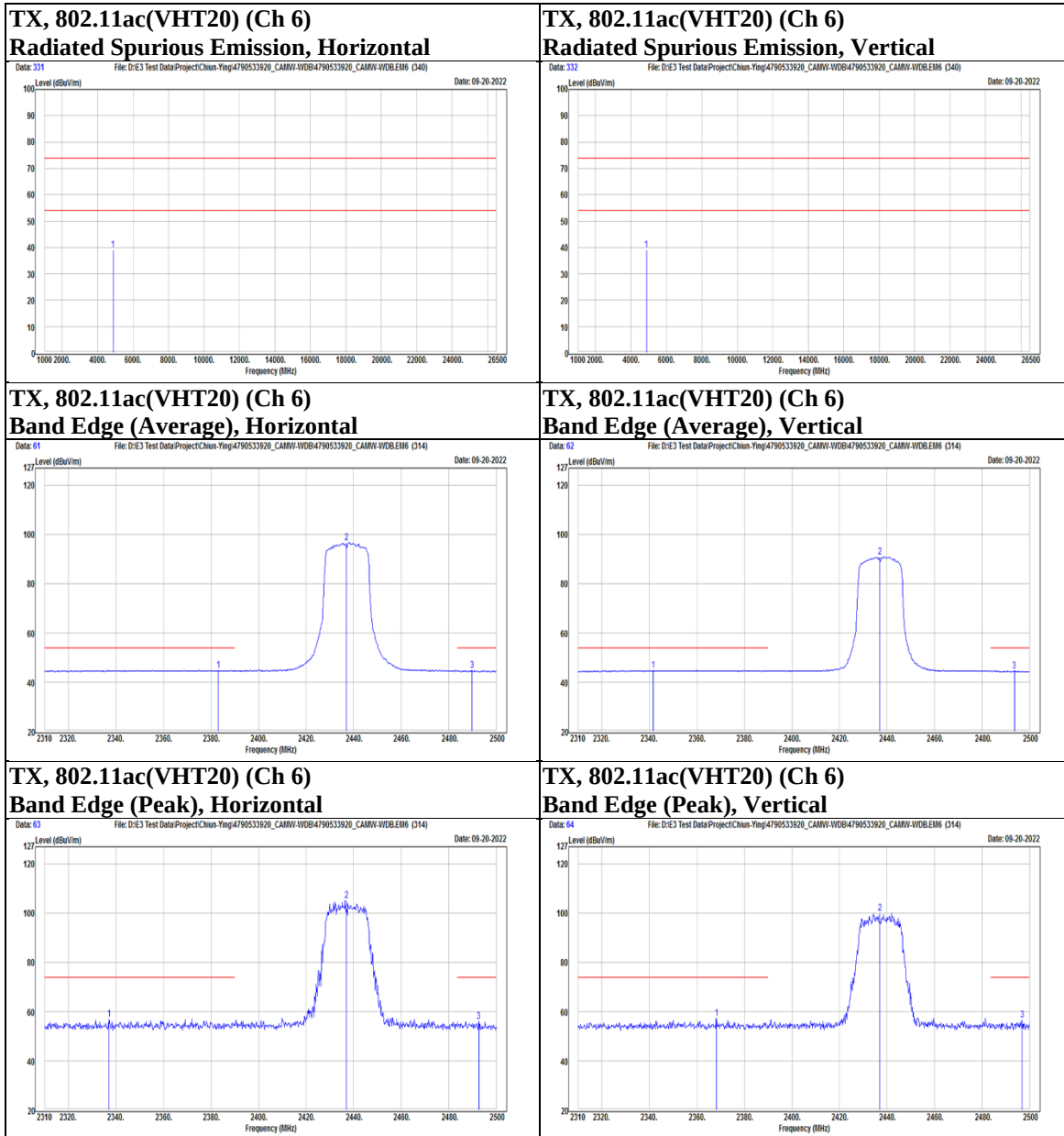
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|      |                 |         |    |
|------|-----------------|---------|----|
| Mode | 802.11ac(VHT20) | Channel | 11 |
|------|-----------------|---------|----|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | @        | 2462               | 89.44             | 15.87             | 105.31             | N/A               | N/A            | PK     |
|              | @        | 2462               | 80.53             | 15.87             | 96.4               | N/A               | N/A            | AVG    |
|              |          | 2483.85            | 29.34             | 15.68             | 45.02              | 54                | -8.98          | AVG    |
|              |          | 2485.75            | 40.98             | 15.67             | 56.65              | 74                | -17.35         | PK     |
|              | *        | 4924               | 37.19             | 2.4               | 39.59              | 74                | -34.41         | PK     |
| Vertical     | @        | 2462               | 82.87             | 15.87             | 98.74              | N/A               | N/A            | PK     |
|              | @        | 2462               | 74.03             | 15.87             | 89.9               | N/A               | N/A            | AVG    |
|              |          | 2484.61            | 28.96             | 15.67             | 44.63              | 54                | -9.37          | AVG    |
|              |          | 2489.36            | 40.46             | 15.64             | 56.1               | 74                | -17.9          | PK     |
|              | *        | 4924               | 36.53             | 2.4               | 38.93              | 74                | -35.07         | PK     |

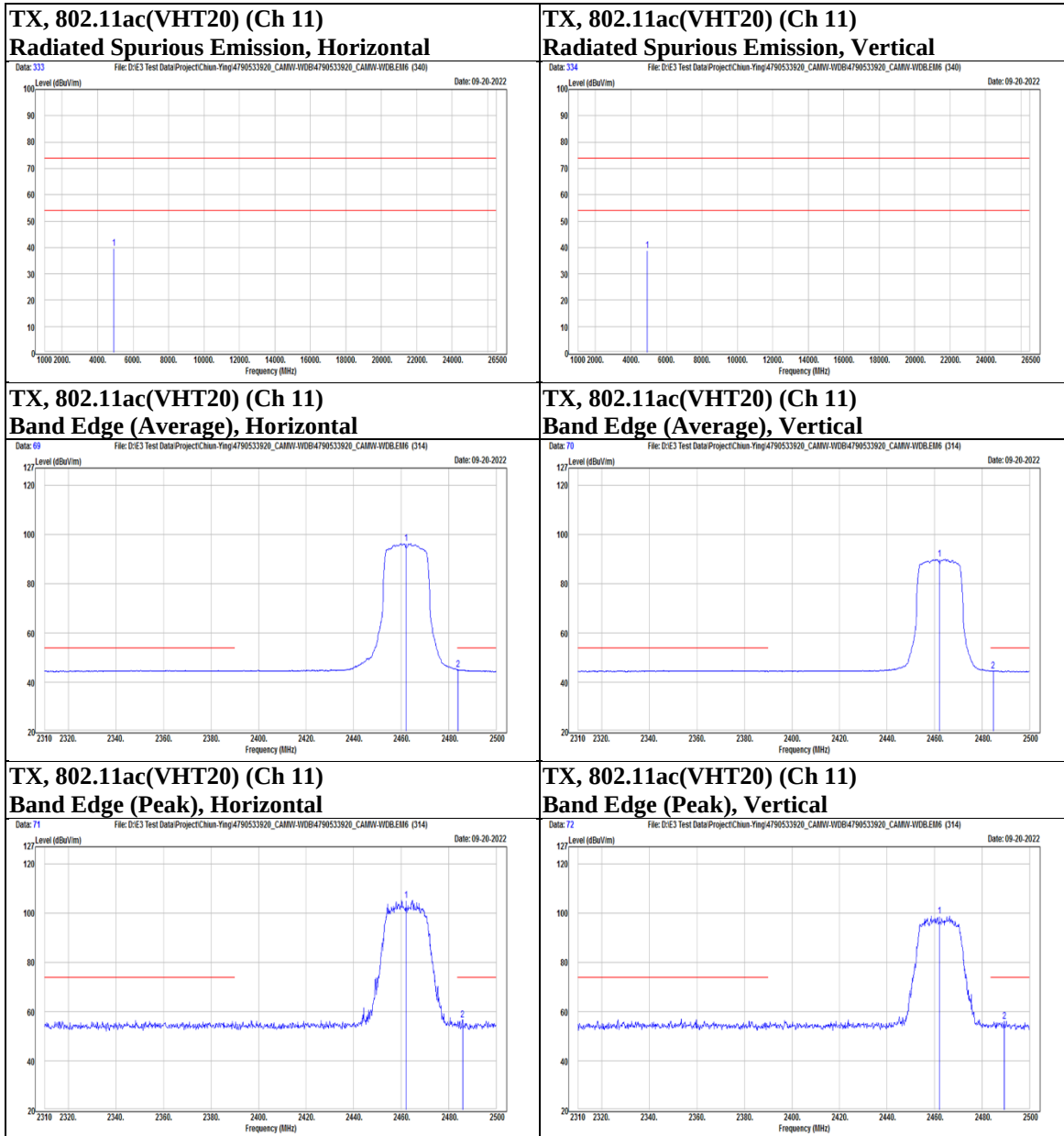
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|      |                 |         |   |
|------|-----------------|---------|---|
| Mode | 802.11ac(VHT40) | Channel | 3 |
|------|-----------------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 2385.24            | 41.03             | 15.83             | 56.86              | 74                | -17.14         | PK     |
|              |          | 2389.42            | 31.32             | 15.82             | 47.14              | 54                | -6.86          | AVG    |
|              | @        | 2422               | 86.73             | 15.86             | 102.59             | N/A               | N/A            | PK     |
|              | @        | 2422               | 77.28             | 15.86             | 93.14              | N/A               | N/A            | AVG    |
|              | *        | 4844               | 36.38             | 2.38              | 38.76              | 74                | -35.24         | PK     |
| Vertical     |          | 2388.47            | 41.36             | 15.82             | 57.18              | 74                | -16.82         | PK     |
|              |          | 2389.23            | 29.97             | 15.82             | 45.79              | 54                | -8.21          | AVG    |
|              | @        | 2422               | 81.24             | 15.86             | 97.1               | N/A               | N/A            | PK     |
|              | @        | 2422               | 72.26             | 15.86             | 88.12              | N/A               | N/A            | AVG    |
|              | *        | 4844               | 37.14             | 2.38              | 39.52              | 74                | -34.48         | PK     |

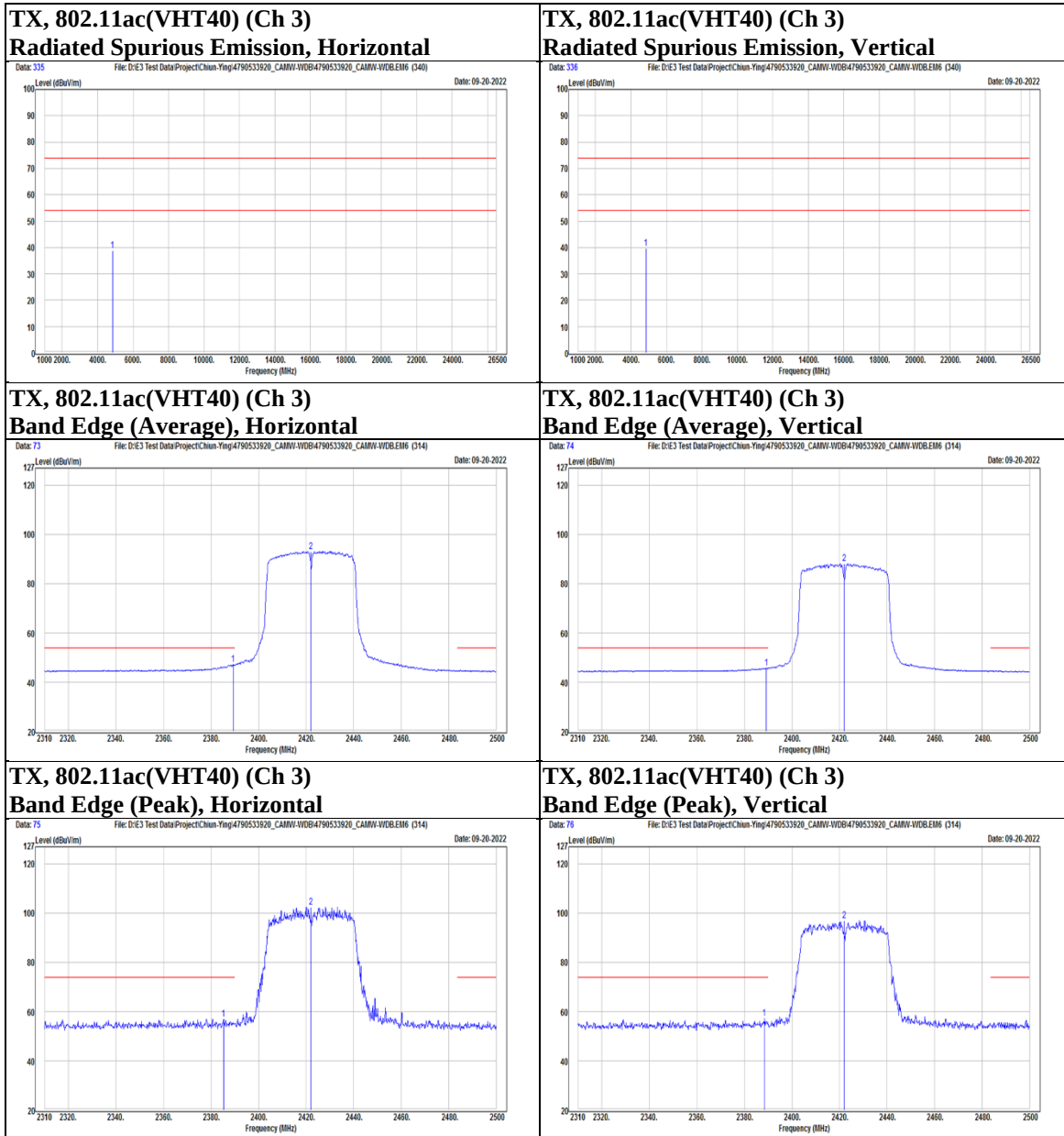
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|      |                 |         |   |
|------|-----------------|---------|---|
| Mode | 802.11ac(VHT40) | Channel | 6 |
|------|-----------------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 2336.41            | 40.36             | 15.89             | 56.25              | 74                | -17.75         | PK     |
|              |          | 2389.42            | 29.17             | 15.82             | 44.99              | 54                | -9.01          | AVG    |
|              | @        | 2437               | 87.42             | 15.92             | 103.34             | N/A               | N/A            | PK     |
|              | @        | 2437               | 77.7              | 15.92             | 93.62              | N/A               | N/A            | AVG    |
|              |          | 2485.56            | 29.1              | 15.67             | 44.77              | 54                | -9.23          | AVG    |
|              |          | 2495.25            | 40.63             | 15.59             | 56.22              | 74                | -17.78         | PK     |
|              | *        | 4874               | 36.53             | 2.4               | 38.93              | 74                | -35.07         | PK     |
| Vertical     |          | 2333.37            | 40.75             | 15.88             | 56.63              | 74                | -17.37         | PK     |
|              |          | 2350.66            | 28.92             | 15.91             | 44.83              | 54                | -9.17          | AVG    |
|              | @        | 2437               | 81.4              | 15.92             | 97.32              | N/A               | N/A            | PK     |
|              | @        | 2437               | 71.76             | 15.92             | 87.68              | N/A               | N/A            | AVG    |
|              |          | 2487.84            | 41.15             | 15.65             | 56.8               | 74                | -17.2          | PK     |
|              |          | 2491.83            | 28.94             | 15.62             | 44.56              | 54                | -9.44          | AVG    |
|              | *        | 4874               | 36.4              | 2.4               | 38.8               | 74                | -35.2          | PK     |

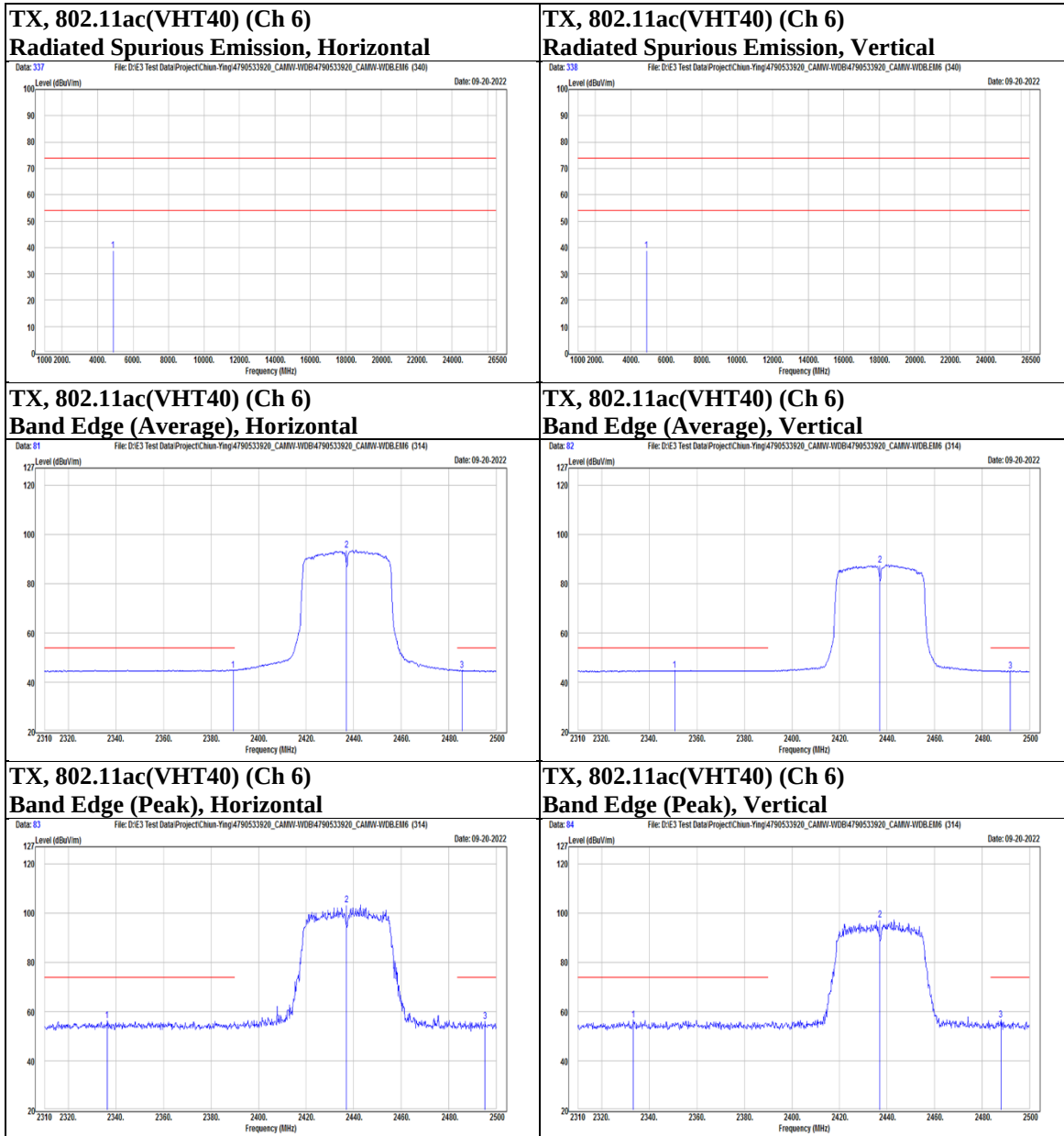
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|      |                 |         |   |
|------|-----------------|---------|---|
| Mode | 802.11ac(VHT40) | Channel | 9 |
|------|-----------------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | @        | 2452               | 86.71             | 15.96             | 102.67             | N/A               | N/A            | PK     |
|              | @        | 2452               | 77.33             | 15.96             | 93.29              | N/A               | N/A            | AVG    |
|              |          | 2485.18            | 42.9              | 15.67             | 58.57              | 74                | -15.43         | PK     |
|              |          | 2485.18            | 30.5              | 15.67             | 46.17              | 54                | -7.83          | AVG    |
|              | *        | 4904               | 36.52             | 2.42              | 38.94              | 74                | -35.06         | PK     |
| Vertical     | @        | 2452               | 80.68             | 15.96             | 96.64              | N/A               | N/A            | PK     |
|              | @        | 2452               | 71.35             | 15.96             | 87.31              | N/A               | N/A            | AVG    |
|              |          | 2484.04            | 29.54             | 15.68             | 45.22              | 54                | -8.78          | AVG    |
|              |          | 2489.17            | 42.88             | 15.64             | 58.52              | 74                | -15.48         | PK     |
|              | *        | 4904               | 36.17             | 2.42              | 38.59              | 74                | -35.41         | PK     |

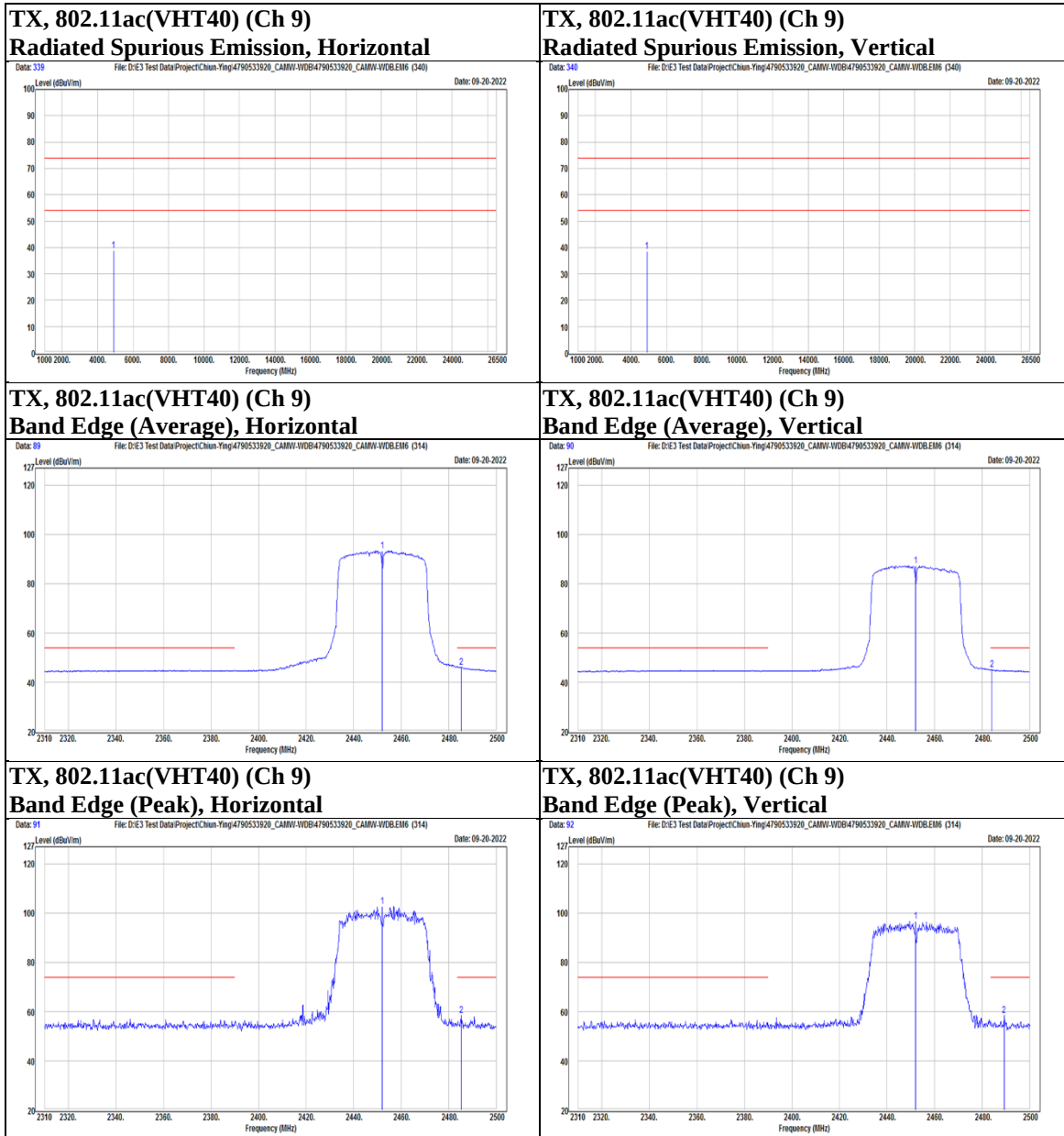
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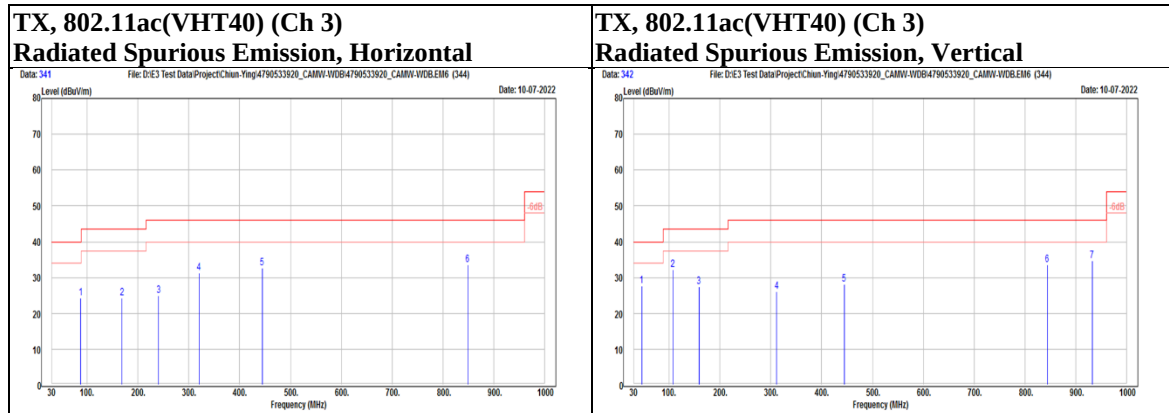
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### Below 1 GHz

|      |         |         |   |
|------|---------|---------|---|
| Mode | 802.11g | Channel | 1 |
|------|---------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 87.23              | 42                | -17.81            | 24.19              | 40                | -15.81         | PK     |
|              |          | 168.71             | 35.9              | -11.75            | 24.15              | 43.5              | -19.35         | PK     |
|              |          | 240.49             | 37.56             | -12.64            | 24.92              | 46                | -21.08         | PK     |
|              |          | 320.03             | 41.54             | -10.26            | 31.28              | 46                | -14.72         | PK     |
|              |          | 444.19             | 38.99             | -6.42             | 32.57              | 46                | -13.43         | PK     |
|              |          | 848.68             | 32.46             | 1.12              | 33.58              | 46                | -12.42         | PK     |
| Vertical     |          | 46.49              | 39.57             | -11.95            | 27.62              | 40                | -12.38         | PK     |
|              |          | 107.6              | 47.33             | -15.16            | 32.17              | 43.5              | -11.33         | PK     |
|              |          | 159.01             | 38.74             | -11.42            | 27.32              | 43.5              | -16.18         | PK     |
|              |          | 311.3              | 36.49             | -10.47            | 26.02              | 46                | -19.98         | PK     |
|              |          | 444.19             | 34.59             | -6.42             | 28.17              | 46                | -17.83         | PK     |
|              |          | 843.83             | 32.6              | 1.04              | 33.64              | 46                | -12.36         | PK     |
|              |          | 932.1              | 31.95             | 2.68              | 34.63              | 46                | -11.37         | PK     |



**9 kHz ~ 30 MHz Data:**

For 9 kHz to 30 MHz radiated emission have performed all modes of operation were investigated. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

No non-compliance noted:

**KDB 414788 D01 OATS and Chamber Correlation Justification**

- Base on FCC 15.31 (f) (2); measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

- OATs and chamber correlation testing had been performed and chamber measured test results is the worst case test result.

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30m open area test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

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## 9.6. AC Power Line Conducted Emission

### Requirements

| Frequency (MHz) | Conducted limit (dBμV) |         |
|-----------------|------------------------|---------|
|                 | Quasi-peak             | Average |
| 0.15 - 0.5      | 66 - 56                | 56 - 46 |
| 0.50 - 5.0      | 56                     | 46      |
| 5.0 - 30        | 60                     | 50      |

Note:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

### Test Procedures

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.
2. All modes of operation were investigated (includes all external accessories) and the worst-case emissions are reported, the other emission levels were low against the limit.
3. Test data of Result value (dBuV) = Reading value (dBuV) + Correction Factor (dB).
4. Test data of Margin(dB) = Result value (dBuV) - Limit value (dBuV).
5. Test data of Correction Factor (dB) = Insertion loss(dB) + Cable loss(dB).

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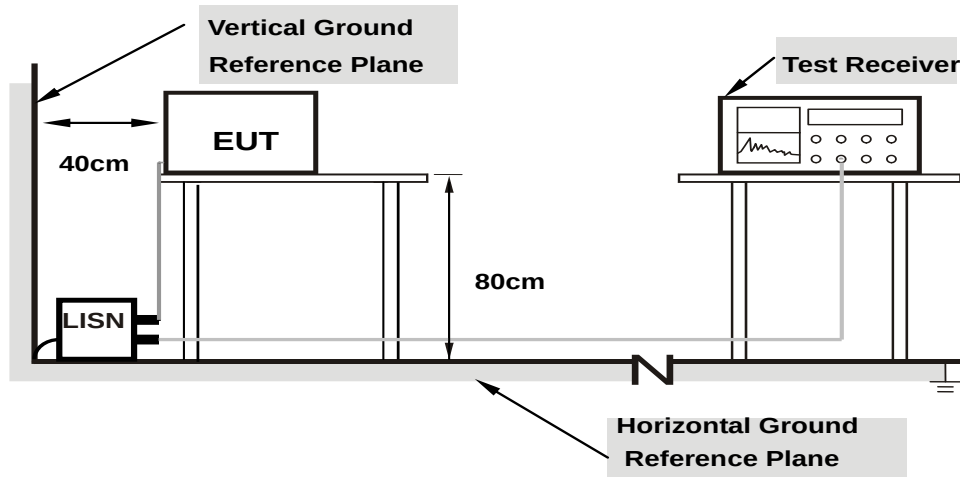
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### Test Setup

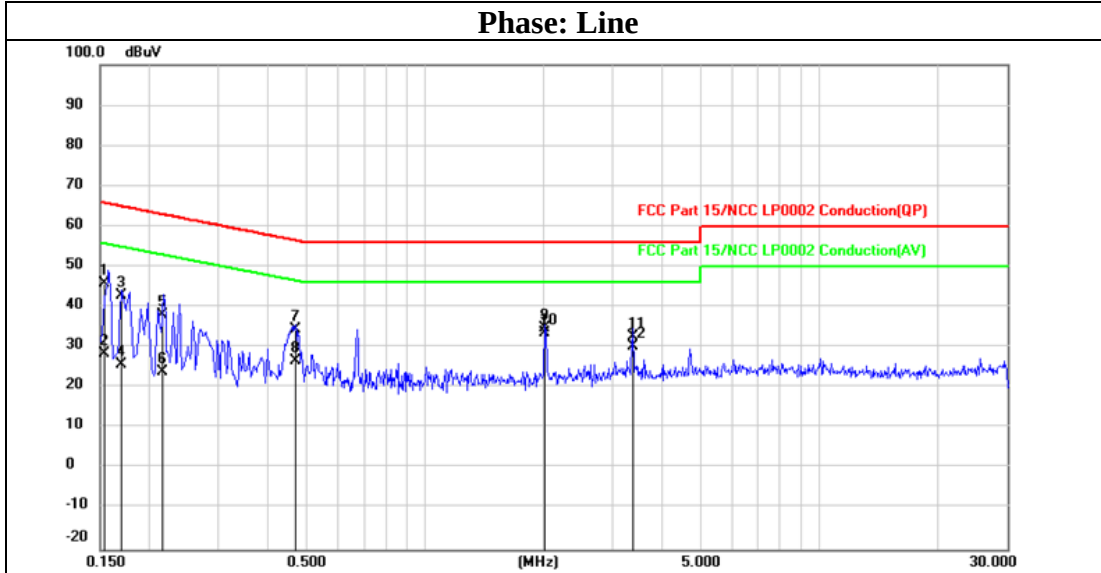


**Note: 1.Support units were connected to second LISN.**

For the actual test configuration, please refer to the Setup Configurations.

## Test Data

|      |         |         |   |
|------|---------|---------|---|
| Mode | 802.11g | Channel | 1 |
|------|---------|---------|---|



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB) | Result<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-----------------|------------------|-----------------|----------------|--------|
| 1   | 0.1530             | 26.47             | 19.53           | 46.00            | 65.84           | -19.84         | QP     |
| 2   | 0.1530             | 8.99              | 19.53           | 28.52            | 55.84           | -27.32         | AVG    |
| 3   | 0.1702             | 23.26             | 19.53           | 42.79            | 64.95           | -22.16         | QP     |
| 4   | 0.1702             | 6.28              | 19.53           | 25.81            | 54.95           | -29.14         | AVG    |
| 5   | 0.2145             | 18.58             | 19.53           | 38.11            | 63.03           | -24.92         | QP     |
| 6   | 0.2145             | 4.28              | 19.53           | 23.81            | 53.03           | -29.22         | AVG    |
| 7   | 0.4689             | 14.92             | 19.54           | 34.46            | 56.53           | -22.07         | QP     |
| 8   | 0.4689             | 7.22              | 19.54           | 26.76            | 46.53           | -19.77         | AVG    |
| 9   | 2.0202             | 15.08             | 19.58           | 34.66            | 56.00           | -21.34         | QP     |
| 10  | 2.0202             | 13.95             | 19.58           | 33.53            | 46.00           | -12.47         | AVG    |
| 11  | 3.3658             | 13.07             | 19.61           | 32.68            | 56.00           | -23.32         | QP     |
| 12  | 3.3658             | 10.71             | 19.61           | 30.32            | 46.00           | -15.68         | AVG    |

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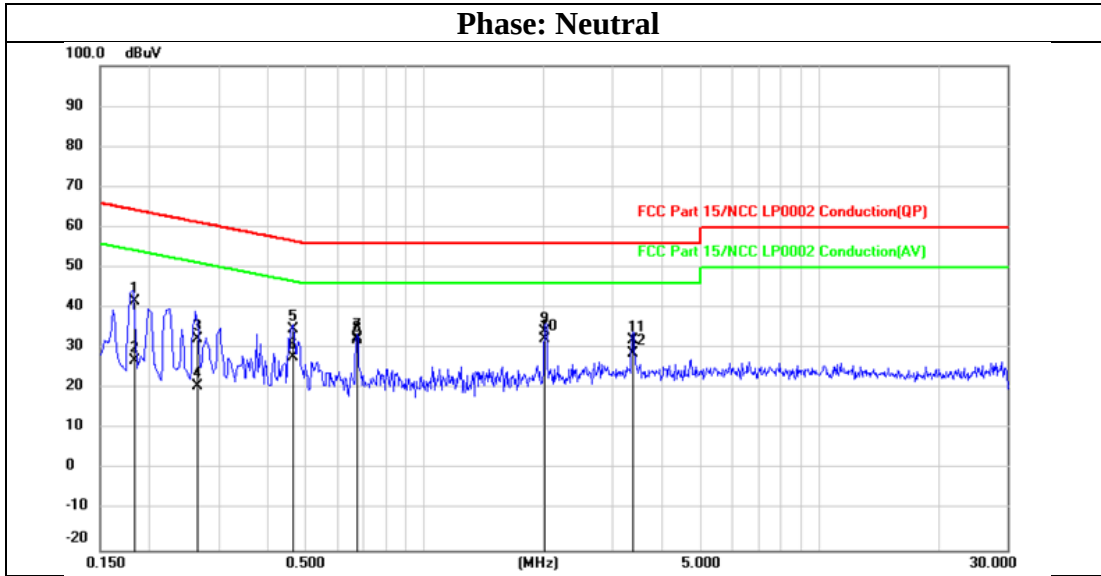
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Doc No: Form-ULID-004737 (DCS:17-EM-F0876) / 6.1

|      |         |         |   |
|------|---------|---------|---|
| Mode | 802.11g | Channel | 1 |
|------|---------|---------|---|



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB) | Result<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-----------------|------------------|-----------------|----------------|--------|
| 1   | 0.1839             | 22.13             | 19.54           | 41.67            | 64.31           | -22.64         | QP     |
| 2   | 0.1839             | 7.38              | 19.54           | 26.92            | 54.31           | -27.39         | AVG    |
| 3   | 0.2649             | 12.96             | 19.54           | 32.50            | 61.28           | -28.78         | QP     |
| 4   | 0.2649             | 1.22              | 19.54           | 20.76            | 51.28           | -30.52         | AVG    |
| 5   | 0.4623             | 15.34             | 19.55           | 34.89            | 56.65           | -21.76         | QP     |
| 6   | 0.4623             | 8.18              | 19.55           | 27.73            | 46.65           | -18.92         | AVG    |
| 7   | 0.6727             | 12.99             | 19.55           | 32.54            | 56.00           | -23.46         | QP     |
| 8   | 0.6727             | 12.41             | 19.55           | 31.96            | 46.00           | -14.04         | AVG    |
| 9   | 2.0187             | 14.71             | 19.58           | 34.29            | 56.00           | -21.71         | QP     |
| 10  | 2.0187             | 12.86             | 19.58           | 32.44            | 46.00           | -13.56         | AVG    |
| 11  | 3.3630             | 12.46             | 19.61           | 32.07            | 56.00           | -23.93         | QP     |
| 12  | 3.3630             | 9.21              | 19.61           | 28.82            | 46.00           | -17.18         | AVG    |

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