
Test_Graph_802.11ac80_ANT1_5775_MCS9_Frequency Band5

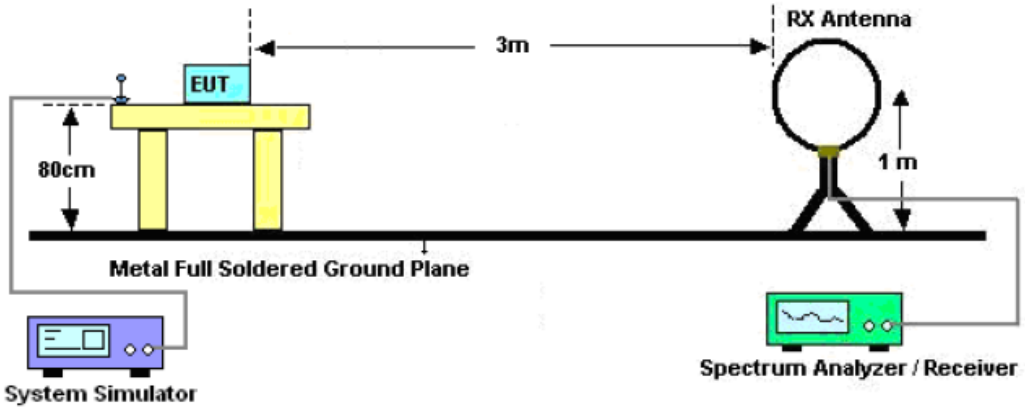
# 11. RADIATED EMISSION

## 11.1. MEASUREMENT PROCEDURE

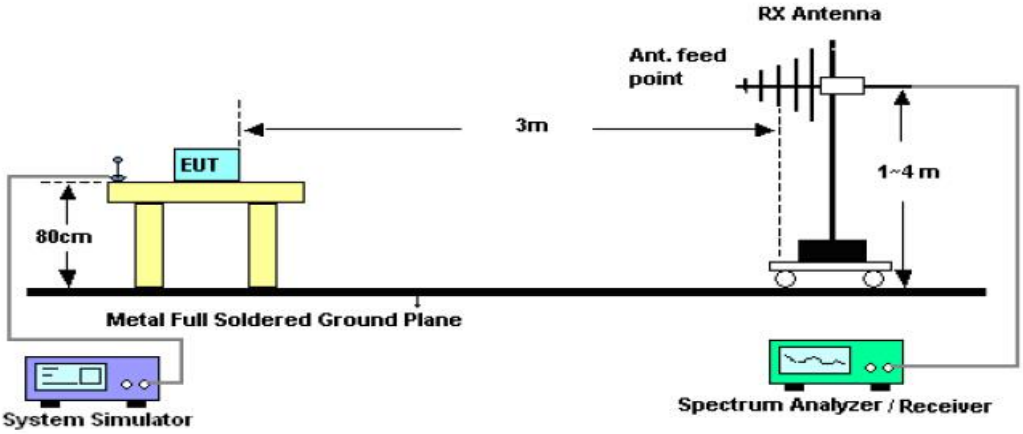
1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emission, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz RBW and 3M VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

## 11.2. TEST SETUP

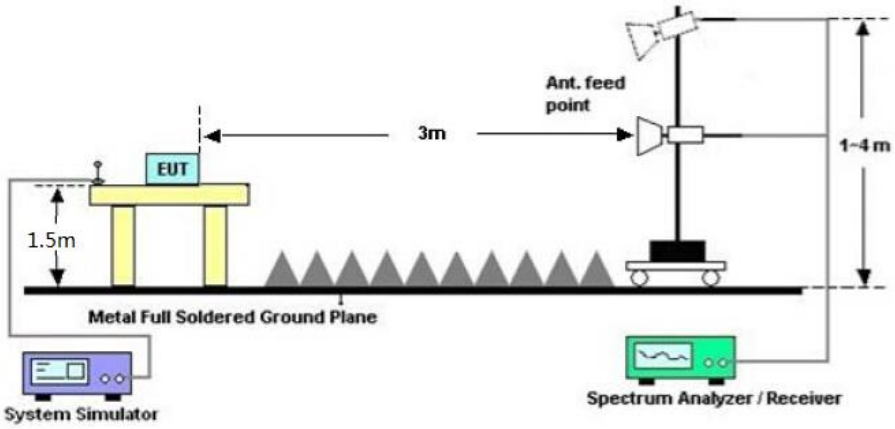
Radiated Emission Test-Setup Frequency Below 30MHz




RADIATED EMISSION TEST SETUP 30MHz-1000MHz




RADIATED EMISSION TEST SETUP ABOVE 1000MHz



## 11.3. LIMITS AND MEASUREMENT RESULT

15.209(a) Limit in the below table has to be followed

| Frequencies (MHz) | Field Strength (microvolts/meter) | Measurement Distance (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: All modes were tested for restricted band radiated emission,
the test records reported below are the worst result compared to other modes.

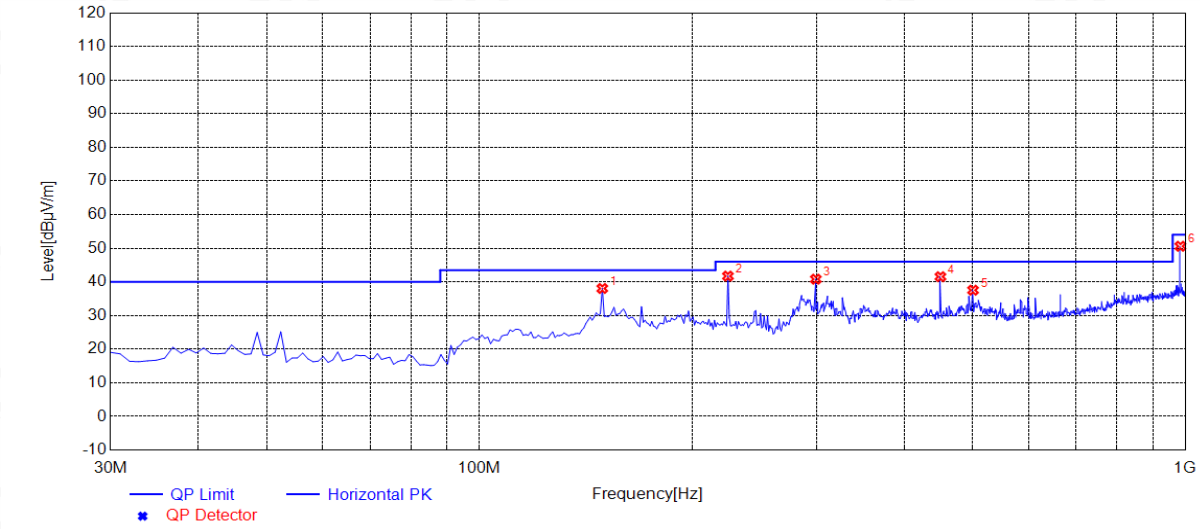
## 11.4. TEST RESULT

**Radiated emission below 30MHz**

The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

**Radiated emission from 30MHz to 1000MHz**

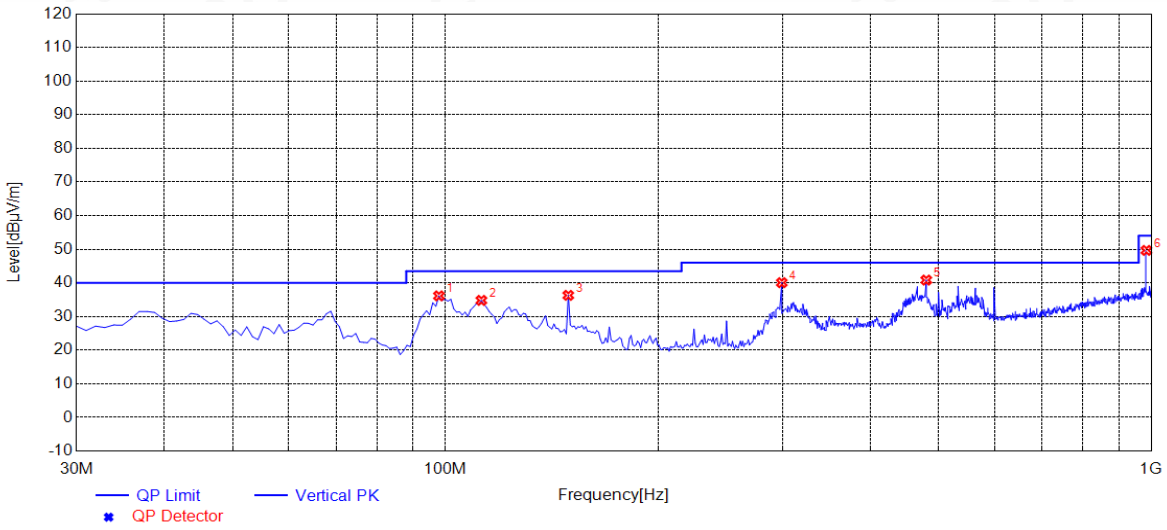
| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5180MHz | Antenna | Horizontal |




| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
|---|---|---|---|---|---|---|---|---|
| 1 | 149.3100 | 38.04 | 14.88 | 43.50 | 5.46 | 100 | 189 | Horizontal |
| 2 | 224.9700 | 41.72 | 13.66 | 46.00 | 4.28 | 100 | 279 | Horizontal |
| 3 | 299.6600 | 40.80 | 15.91 | 46.00 | 5.20 | 100 | 324 | Horizontal |
| 4 | 450.0100 | 41.54 | 20.99 | 46.00 | 4.46 | 100 | 176 | Horizontal |
| 5 | 500.4500 | 37.53 | 22.19 | 46.00 | 8.47 | 100 | 152 | Horizontal |
| 6 | 984.4800 | 50.59 | 31.09 | 54.00 | 3.41 | 100 | 96 | Horizontal |

**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5180MHz | Antenna | Vertical |




| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
|---|---|---|---|---|---|---|---|---|
| 1 | 97.9000 | 36.14 | 10.51 | 43.50 | 7.36 | 100 | 86 | Vertical |
| 2 | 112.4500 | 34.79 | 12.68 | 43.50 | 8.71 | 100 | 293 | Vertical |
| 3 | 149.3100 | 36.29 | 14.88 | 43.50 | 7.21 | 100 | 5 | Vertical |
| 4 | 299.6600 | 40.06 | 15.91 | 46.00 | 5.94 | 100 | 235 | Vertical |
| 5 | 480.0800 | 40.83 | 21.72 | 46.00 | 5.17 | 100 | 94 | Vertical |
| 6 | 984.4800 | 49.66 | 31.09 | 54.00 | 4.34 | 100 | 55 | Vertical |

**RESULT: PASS**

**Note:** All test channels had been tested. The 802.11a20 at 5180MHz is the worst case and recorded in the test report.

Factor = Antenna Factor + Cable loss - Amplifier gain, Margin= Limit-Level.

The “Factor” value can be calculated automatically by software of measurement system.

**Radiated emission above 1GHz**

| | | | |
|---|---|---|---|
| **EUT** | Intelligent conference control tablet | **Model Name** | CP100 |
| **Temperature** | 25℃ | **Relative Humidity** | 60% |
| **Pressure** | 960hPa | **Test Voltage** | Normal Voltage |
| **Test Mode** | 802.11a20 5180MHz | **Antenna** | Horizontal/Vertical |

RADIATED EMISSION ABOVE 1GHZ–Horizontal

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 10360.042 | 47.56 | 9.14 | 56.70 | 68.20 | -11.50 | peak |
| 15540.063 | 41.97 | 10.22 | 52.19 | 74.00 | -21.81 | peak |
| 15540.063 | 32.54 | 10.22 | 42.76 | 54.00 | -11.24 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

RADIATED EMISSION ABOVE 1GHZ–Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 10360.042 | 48.53 | 9.14 | 57.67 | 68.20 | -10.53 | peak |
| 15540.063 | 41.29 | 10.22 | 51.51 | 74.00 | -22.49 | peak |
| 15540.063 | 32.72 | 10.22 | 42.94 | 54.00 | -11.06 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5200MHz | Antenna | Horizontal/Vertical |

RADIATED EMISSION ABOVE 1GHZ–Horizontal

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 10400.042 | 48.67 | 9.14 | 57.81 | 68.20 | -10.39 | peak |
| 15600.063 | 43.18 | 10.22 | 53.40 | 74.00 | -20.60 | peak |
| 15600.063 | 32.94 | 10.22 | 43.16 | 54.00 | -10.84 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

RADIATED EMISSION ABOVE 1GHZ–Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 10400.042 | 46.23 | 9.14 | 55.37 | 68.20 | -12.83 | peak |
| 15600.063 | 40.87 | 10.22 | 51.09 | 74.00 | -22.91 | peak |
| 15600.063 | 31.21 | 10.22 | 41.43 | 54.00 | -12.57 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5240MHz | Antenna | Horizontal/Vertical |

RADIATED EMISSION ABOVE 1GHZ–Horizontal

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 10480.042 | 48.67 | 9.27 | 57.94 | 68.20 | -10.26 | peak |
| 15720.063 | 42.64 | 10.38 | 53.02 | 74.00 | -20.98 | peak |
| 15720.063 | 32.98 | 10.38 | 43.36 | 54.00 | -10.64 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

RADIATED EMISSION ABOVE 1GHZ–Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 10480.042 | 46.53 | 9.27 | 55.80 | 68.20 | -12.40 | peak |
| 15720.063 | 42.35 | 10.38 | 52.73 | 74.00 | -21.27 | peak |
| 15720.063 | 57.00 | 10.38 | 67.38 | 54.00 | 13.38 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25°C | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5260MHz | Antenna | Horizontal/Vertical |

RADIATED EMISSION ABOVE 1GHZ–Horizontal

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 10520.044 | 48.56 | 9.29 | 57.85 | 68.20 | -10.35 | peak |
| 15780.066 | 42.38 | 10.42 | 52.80 | 74.00 | -21.20 | peak |
| 15780.066 | 32.57 | 10.42 | 42.99 | 54.00 | -11.01 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

RADIATED EMISSION ABOVE 1GHZ–Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 10520.044 | 47.59 | 9.29 | 56.88 | 68.20 | -11.32 | peak |
| 15780.066 | 32.61 | 10.42 | 43.03 | 74.00 | -30.97 | peak |
| 15780.066 | 32.57 | 10.42 | 42.99 | 54.00 | -11.01 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25°C | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5300MHz | Antenna | Horizontal/Vertical |

RADIATED EMISSION ABOVE 1GHZ–Horizontal

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 10600.044 | 47.59 | 9.31 | 56.90 | 74.00 | -17.10 | peak |
| 10600.044 | 38.37 | 9.31 | 47.68 | 54.00 | -6.32 | AVG |
| 15900.066 | 42.97 | 10.44 | 53.41 | 74.00 | -20.59 | peak |
| 15900.066 | 33.21 | 10.44 | 43.65 | 54.00 | -10.35 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

RADIATED EMISSION ABOVE 1GHZ–Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 10600.044 | 48.49 | 9.31 | 57.80 | 74.00 | -16.20 | peak |
| 10600.044 | 37.52 | 9.31 | 46.83 | 54.00 | -7.17 | AVG |
| 15780.066 | 43.74 | 10.44 | 54.18 | 74.00 | -19.82 | peak |
| 15780.066 | 34.19 | 10.44 | 44.63 | 54.00 | -9.37 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5320MHz | Antenna | Horizontal/Vertical |

RADIATED EMISSION ABOVE 1GHZ–Horizontal

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 10640.044 | 46.25 | 9.35 | 55.60 | 74.00 | -18.40 | peak |
| 10640.044 | 37.84 | 9.35 | 47.19 | 54.00 | -6.81 | AVG |
| 15960.066 | 40.13 | 10.46 | 50.59 | 74.00 | -23.41 | peak |
| 15960.066 | 31.57 | 10.46 | 42.03 | 54.00 | -11.97 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

RADIATED EMISSION ABOVE 1GHZ–Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 10640.044 | 48.23 | 9.35 | 57.58 | 74.00 | -16.42 | peak |
| 10640.044 | 39.54 | 9.35 | 48.89 | 54.00 | -5.11 | AVG |
| 15960.066 | 42.41 | 10.46 | 52.87 | 74.00 | -21.13 | peak |
| 15960.066 | 32.46 | 10.46 | 42.92 | 54.00 | -11.08 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25°C | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5500MHz | Antenna | Horizontal/Vertical |

RADIATED EMISSION ABOVE 1GHZ–Horizontal

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 11000.044 | 48.56 | 9.37 | 57.93 | 74.00 | -16.07 | peak |
| 11000.044 | 39.57 | 9.37 | 48.94 | 54.00 | -5.06 | AVG |
| 16500.066 | 43.15 | 10.48 | 53.63 | 68.20 | -14.57 | peak |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

RADIATED EMISSION ABOVE 1GHZ–Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 11000.044 | 48.52 | 9.37 | 57.89 | 74.00 | -16.11 | peak |
| 11000.044 | 40.57 | 9.37 | 49.94 | 54.00 | -4.06 | AVG |
| 16500.066 | 42.16 | 10.48 | 52.64 | 68.20 | -15.56 | peak |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5600MHz | Antenna | Horizontal/Vertical |

RADIATED EMISSION ABOVE 1GHZ–Horizontal

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 11200.044 | 48.34 | 9.38 | 57.72 | 74.00 | -16.28 | peak |
| 11200.044 | 40.24 | 9.38 | 49.62 | 54.00 | -4.38 | AVG |
| 16800.066 | 43.97 | 10.49 | 54.46 | 68.20 | -13.74 | peak |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

RADIATED EMISSION ABOVE 1GHZ–Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 11200.044 | 48.25 | 9.38 | 57.63 | 74.00 | -16.37 | peak |
| 11200.044 | 40.23 | 9.38 | 49.61 | 54.00 | -4.39 | AVG |
| 16800.066 | 42.37 | 10.49 | 52.86 | 68.20 | -15.34 | peak |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25°C | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5700MHz | Antenna | Horizontal/Vertical |

RADIATED EMISSION ABOVE 1GHZ–Horizontal

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 11400.044 | 42.15 | 9.39 | 51.54 | 74.00 | -22.46 | peak |
| 11400.044 | 37.54 | 9.39 | 46.93 | 54.00 | -7.07 | AVG |
| 17100.066 | 39.66 | 10.49 | 50.15 | 68.20 | -18.05 | peak |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

RADIATED EMISSION ABOVE 1GHZ–Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 11400.044 | 49.57 | 9.39 | 58.96 | 74.00 | -15.04 | peak |
| 11400.044 | 40.34 | 9.39 | 49.73 | 54.00 | -4.27 | AVG |
| 17100.066 | 42.15 | 10.49 | 52.64 | 68.20 | -15.56 | peak |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25°C | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5745MHz | Antenna | Horizontal/Vertical |

RADIATED EMISSION ABOVE 1GHZ–Horizontal

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 11490.042 | 46.23 | 9.42 | 55.65 | 74.00 | -18.35 | peak |
| 11490.042 | 37.54 | 9.42 | 46.96 | 54.00 | -7.04 | AVG |
| 17235.063 | 40.15 | 10.51 | 50.66 | 68.20 | -17.54 | peak |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

RADIATED EMISSION ABOVE 1GHZ–Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 11490.042 | 45.16 | 9.42 | 54.58 | 74.00 | -19.42 | peak |
| 11490.042 | 36.57 | 9.42 | 45.99 | 54.00 | -8.01 | AVG |
| 17235.063 | 40.28 | 10.51 | 50.79 | 68.20 | -17.41 | peak |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25°C | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5785MHz | Antenna | Horizontal/Vertical |

RADIATED EMISSION ABOVE 1GHZ–Horizontal

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 11570.042 | 46.25 | 9.42 | 55.67 | 74.00 | -18.33 | peak |
| 11570.042 | 35.74 | 9.42 | 45.16 | 54.00 | -8.84 | AVG |
| 17355.063 | 41.97 | 10.51 | 52.48 | 68.20 | -15.72 | peak |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

RADIATED EMISSION ABOVE 1GHZ–Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 11570.042 | 47.59 | 9.42 | 57.01 | 74.00 | -16.99 | peak |
| 11570.042 | 37.84 | 9.42 | 47.26 | 54.00 | -6.74 | AVG |
| 17355.063 | 42.16 | 10.51 | 52.67 | 68.20 | -15.53 | peak |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25°C | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5825MHz | Antenna | Horizontal/Vertical |

RADIATED EMISSION ABOVE 1GHZ–Horizontal

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 11650.042 | 48.63 | 9.62 | 52.98 | 74.00 | -21.02 | peak |
| 11650.042 | 39.54 | 9.62 | 45.05 | 54.00 | -8.95 | AVG |
| 17475.063 | 42.18 | 10.75 | 47.61 | 68.20 | -26.39 | peak |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

RADIATED EMISSION ABOVE 1GHZ–Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 11650.042 | 48.24 | 9.62 | 53.55 | 74.00 | -20.45 | peak |
| 11650.042 | 37.59 | 9.62 | 47.64 | 54.00 | -6.36 | AVG |
| 17475.063 | 42.14 | 10.75 | 48.61 | 68.20 | -25.39 | peak |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

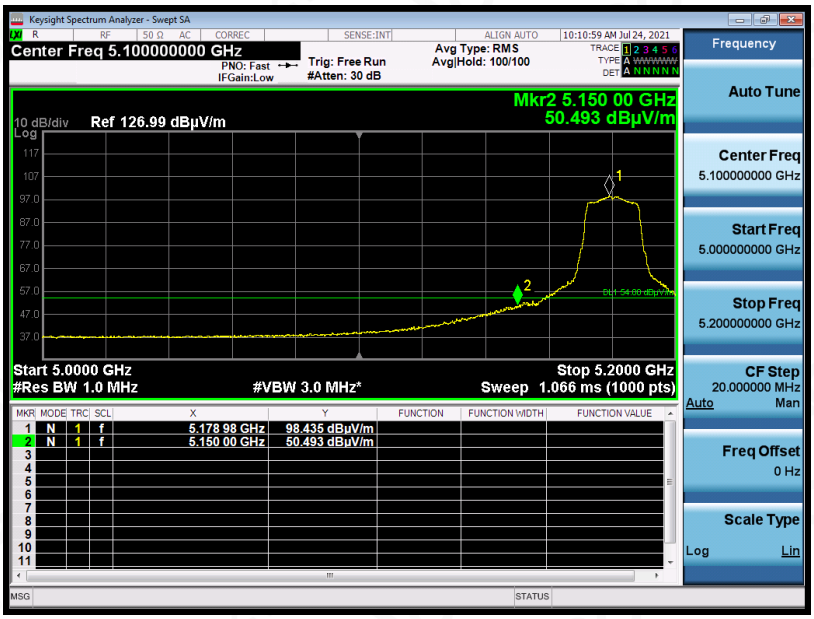
**Note:** All test channels had been tested. The 802.11a20 is the worst case and recorded in the test report.
Other frequencies radiation emission from 1GHz to 40GHz at least have 20dB margin and not recorded in the test report.
Factor = Antenna Factor + Cable loss - Amplifier gain, Margin= Limit-Level.
The “Factor” value can be calculated automatically by software of measurement system.

**Test result for band edge emission at restricted bands**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5180MHz | Antenna | Horizontal |

Test Graph for Peak Measurement


Test Graph for Average Measurement

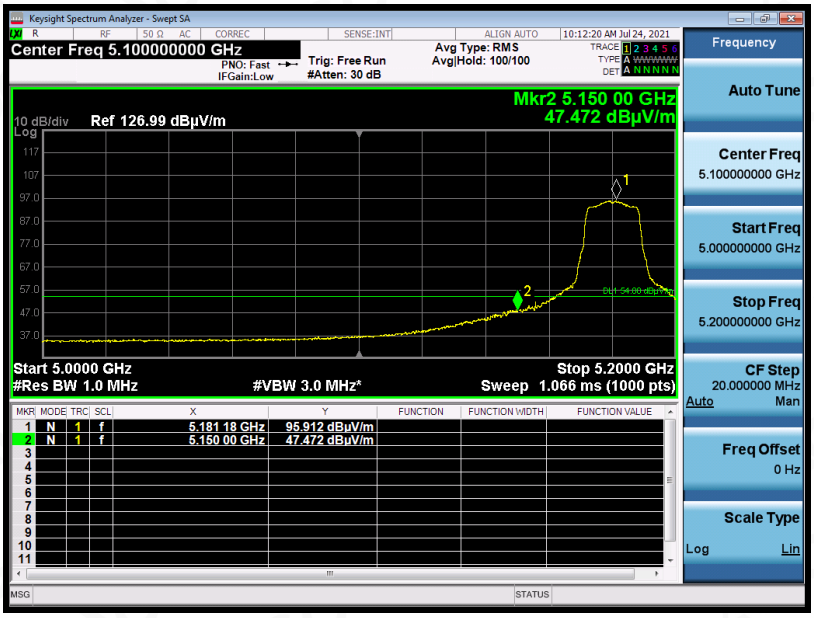



**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5180MHz | Antenna | Vertical |

Test Graph for Peak Measurement


Test Graph for Average Measurement

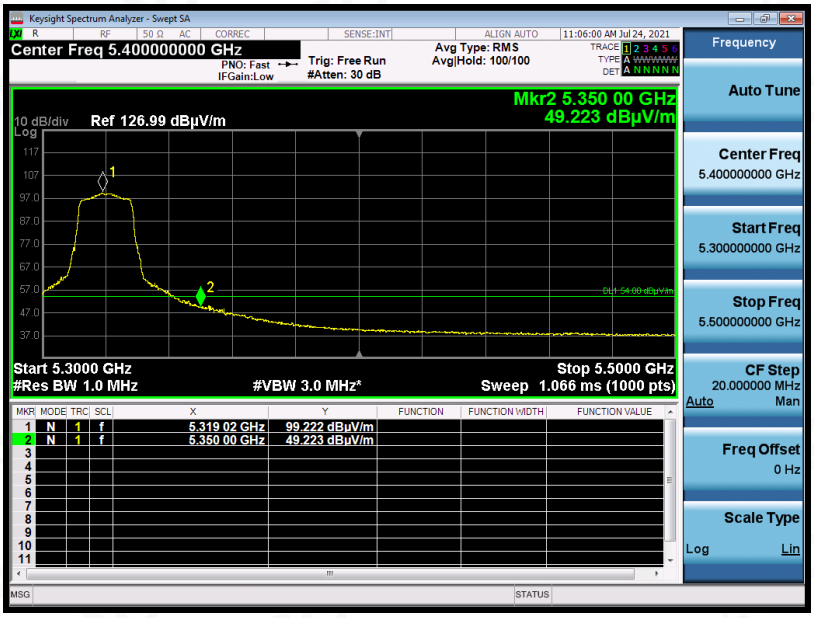



**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5320MHz | Antenna | Horizontal |

Test Graph for Peak Measurement


Test Graph for Average Measurement

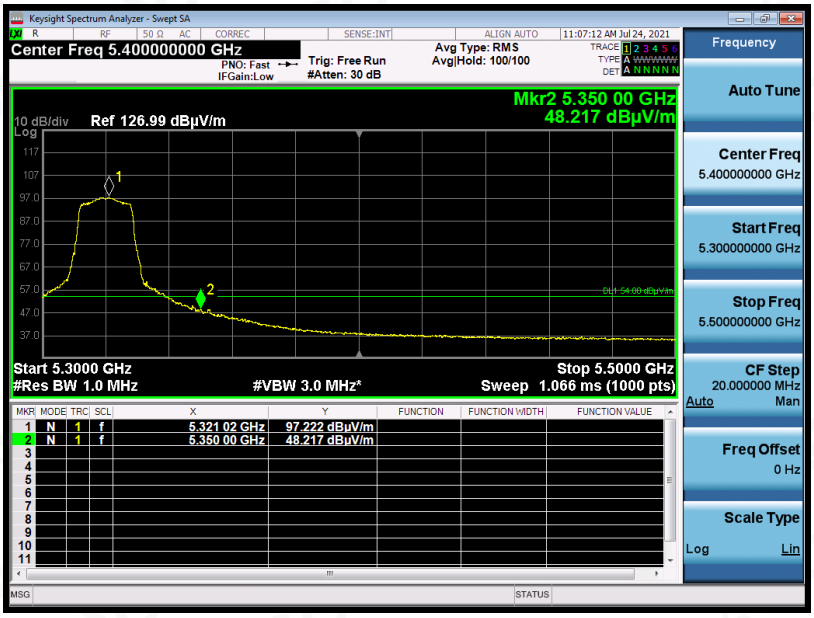



**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5320MHz | Antenna | Vertical |

Test Graph for Peak Measurement


Test Graph for Average Measurement

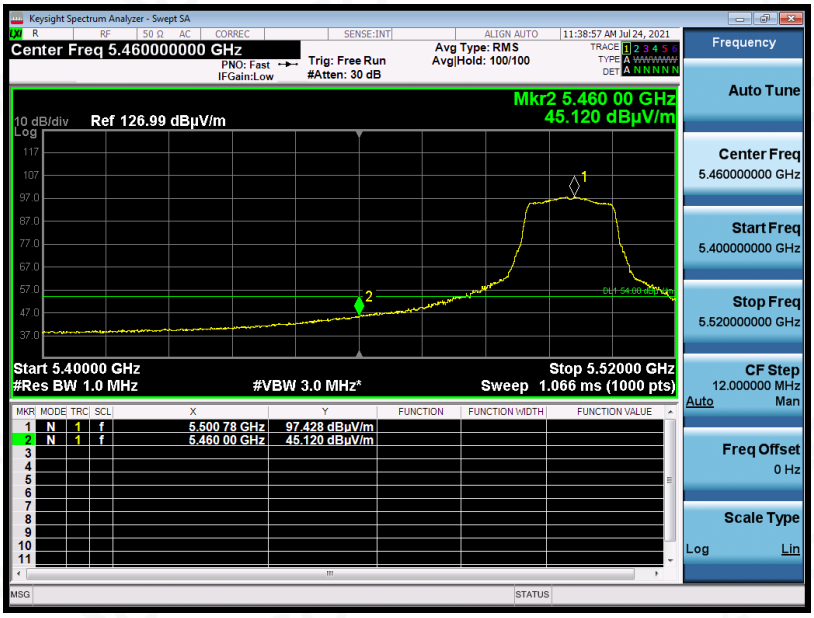



**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5500MHz | Antenna | Horizontal |

Test Graph for Peak Measurement


Test Graph for Average Measurement

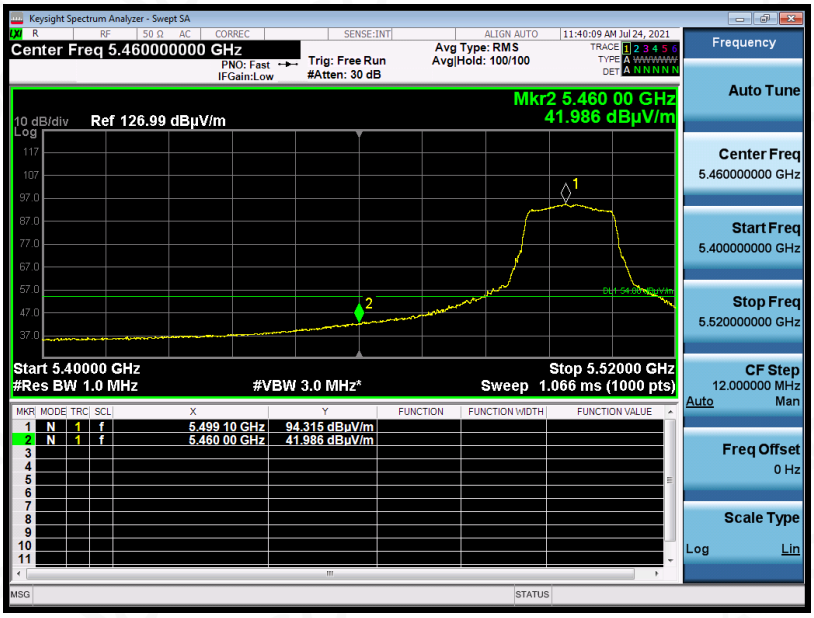



**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5500MHz | Antenna | Vertical |

Test Graph for Peak Measurement

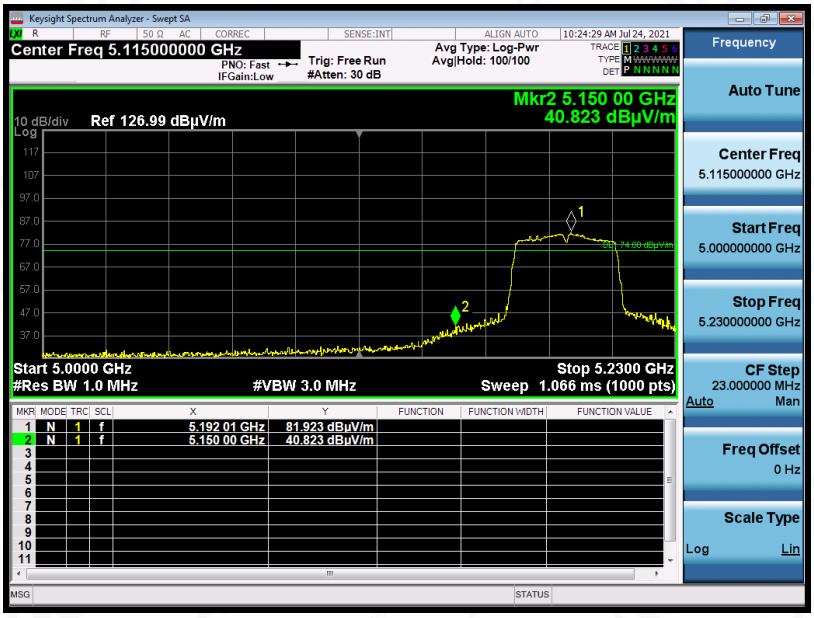

Test Graph for Average Measurement



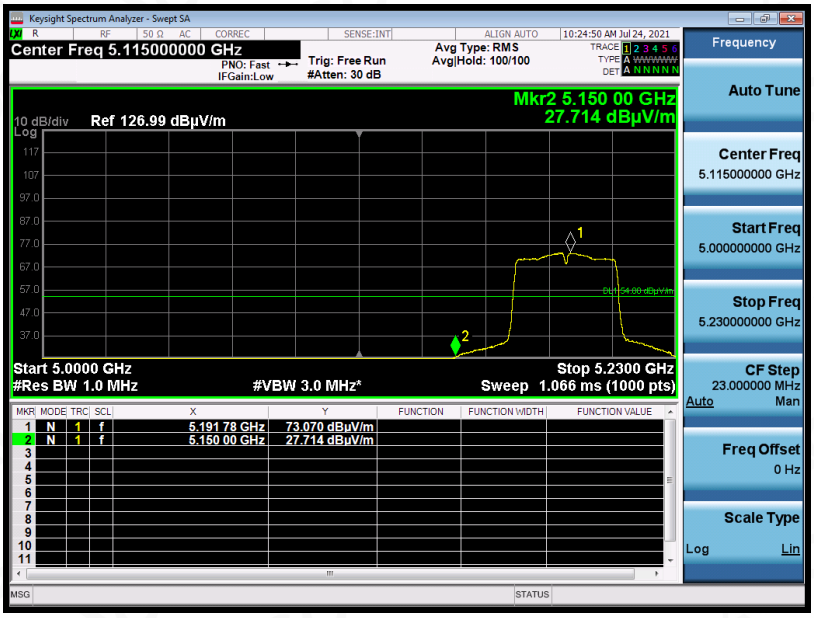

**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11n40 5190MHz | Antenna | Horizontal |

Test Graph for Peak Measurement



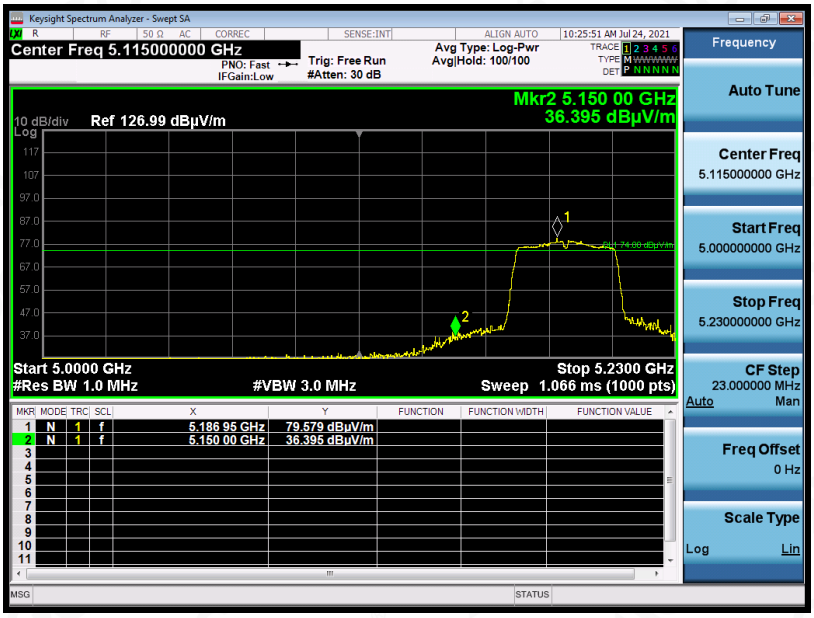

Test Graph for Average Measurement



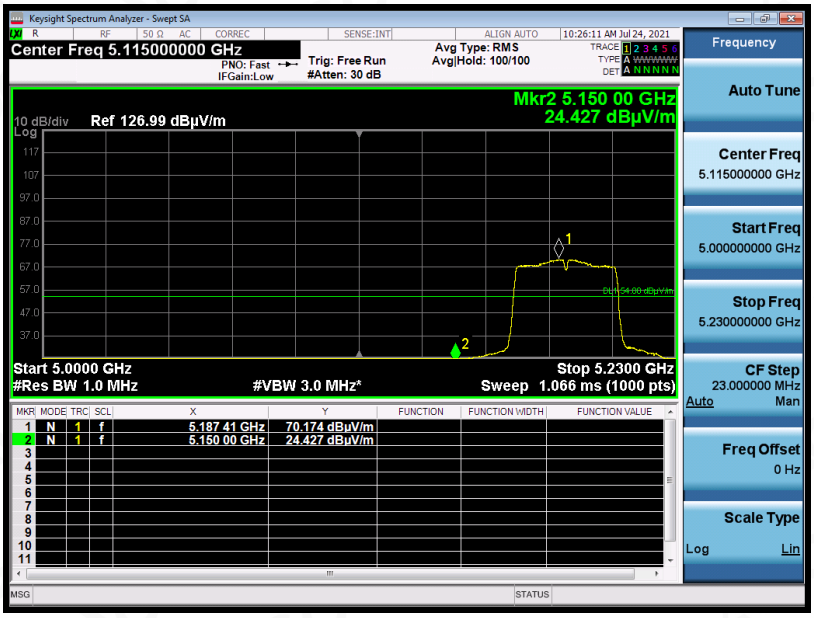

**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11n40 5190MHz | Antenna | Vertical |

Test Graph for Peak Measurement




Test Graph for Average Measurement

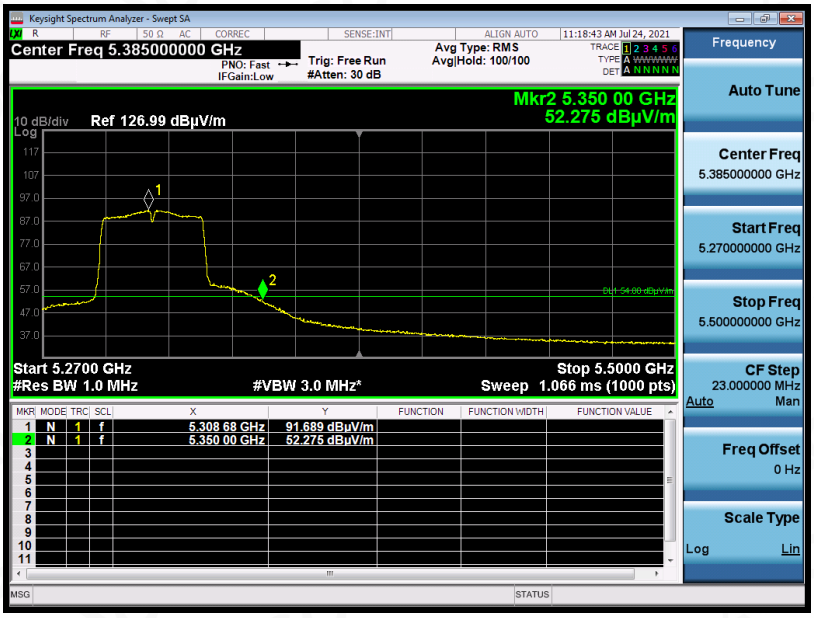



**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11n40 5310MHz | Antenna | Horizontal |

Test Graph for Peak Measurement


Test Graph for Average Measurement

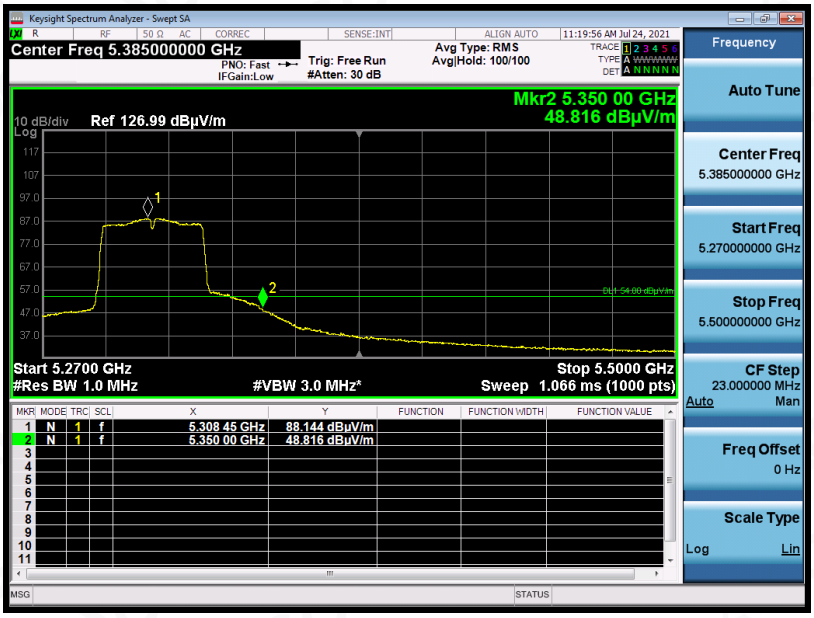



**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11n40 5310MHz | Antenna | Vertical |

Test Graph for Peak Measurement

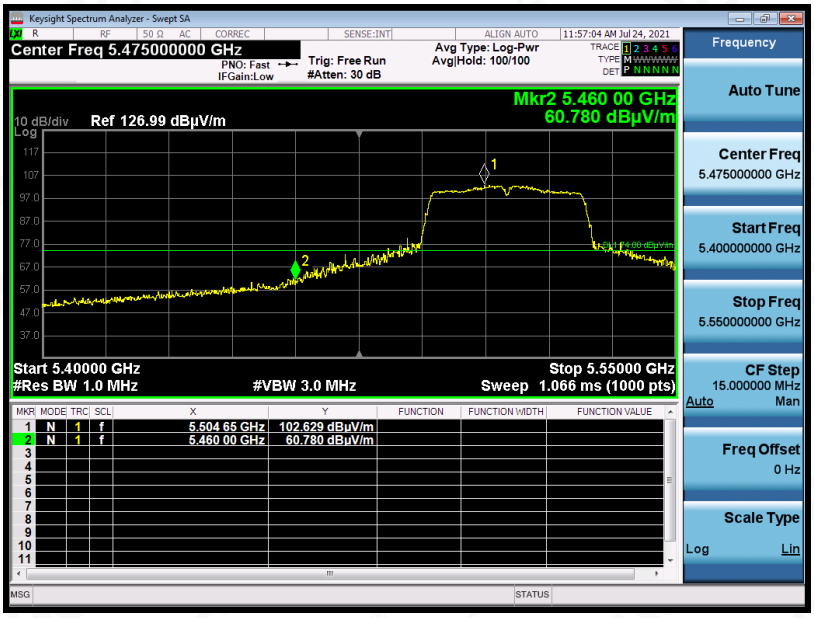

Test Graph for Average Measurement



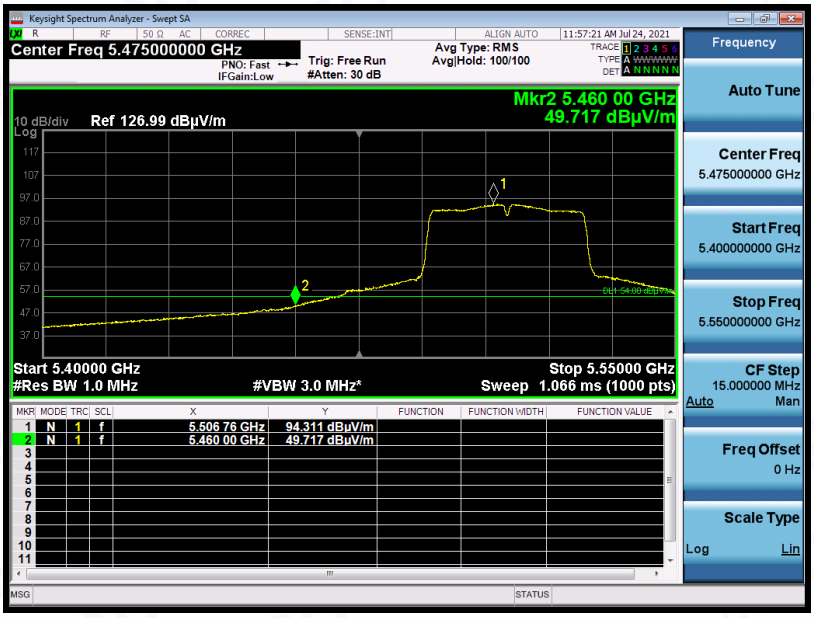

**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11n40 5510MHz | Antenna | Horizontal |

Test Graph for Peak Measurement




Test Graph for Average Measurement

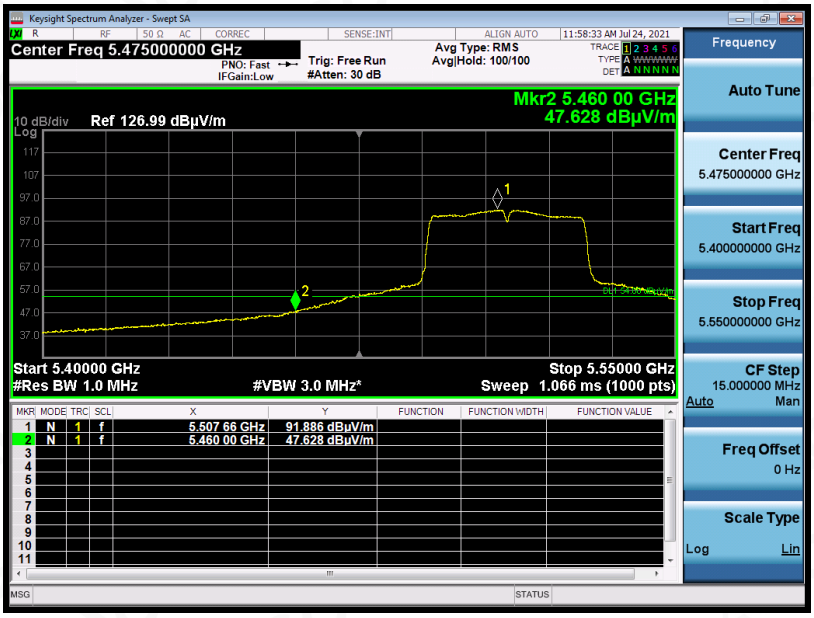



**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11n40 5510MHz | Antenna | Vertical |

Test Graph for Peak Measurement


Test Graph for Average Measurement

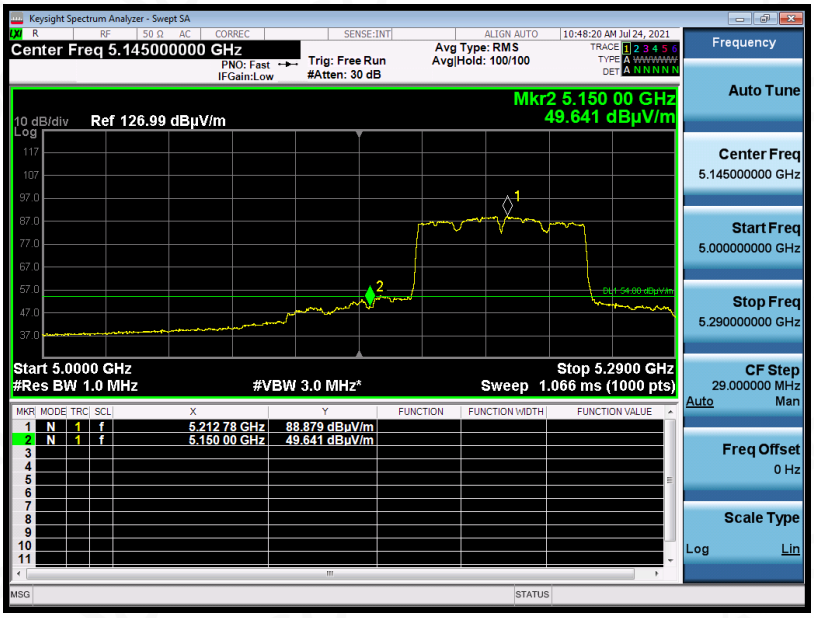



**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11ac80 5210MHz | Antenna | Horizontal |

Test Graph for Peak Measurement


Test Graph for Average Measurement

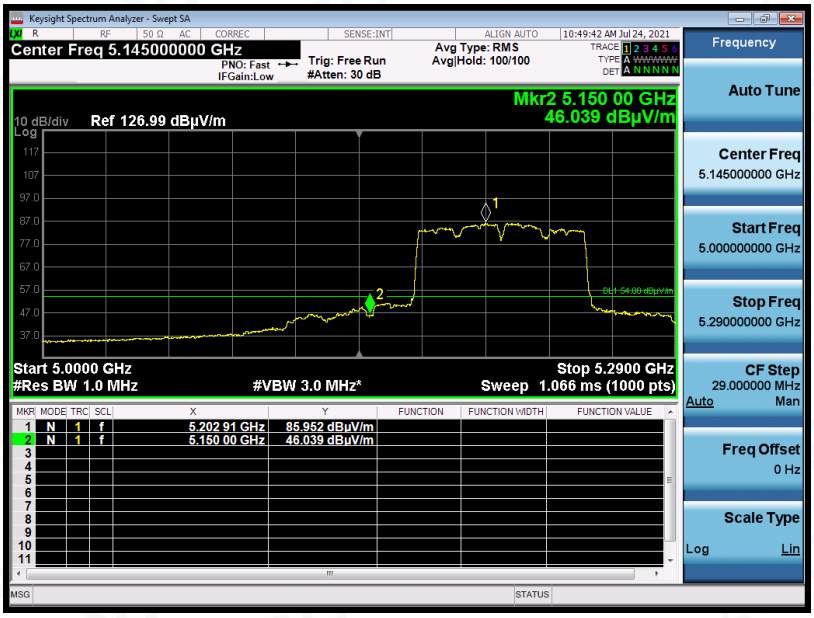



**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11ac80 5210MHz | Antenna | Vertical |

Test Graph for Peak Measurement


Test Graph for Average Measurement

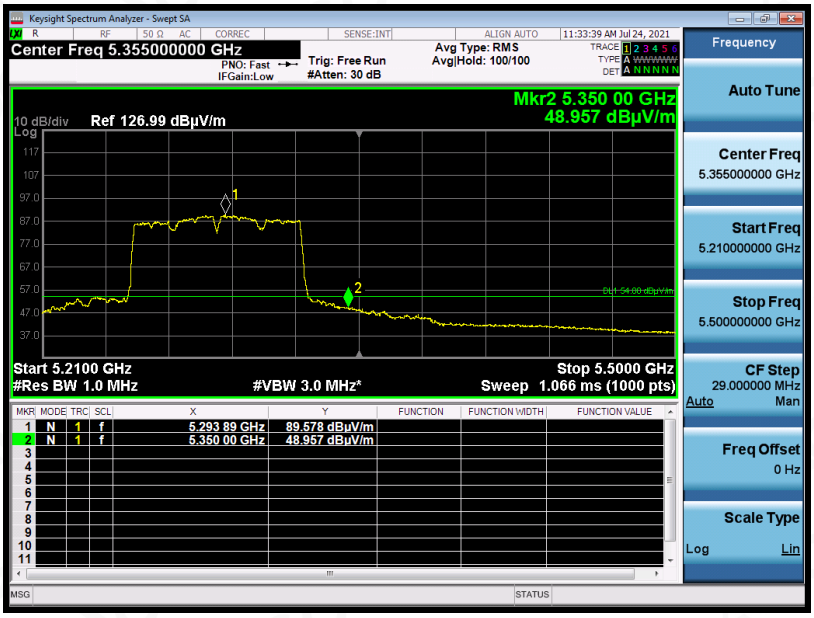



**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11ac80 5290MHz | Antenna | Horizontal |

Test Graph for Peak Measurement


Test Graph for Average Measurement

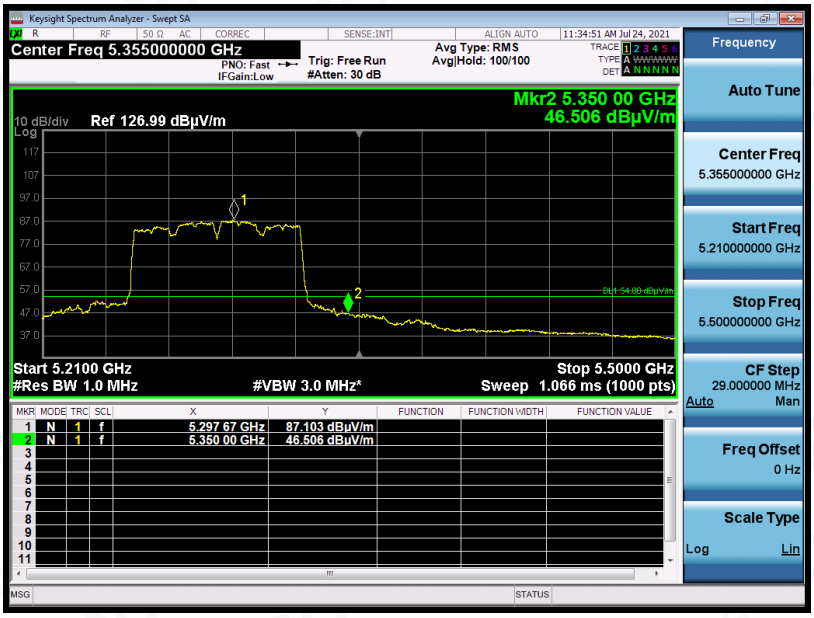



**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11ac80 5290MHz | Antenna | Vertical |

Test Graph for Peak Measurement


Test Graph for Average Measurement




**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11ac80 5530MHz | Antenna | Horizontal |

Test Graph for Peak Measurement

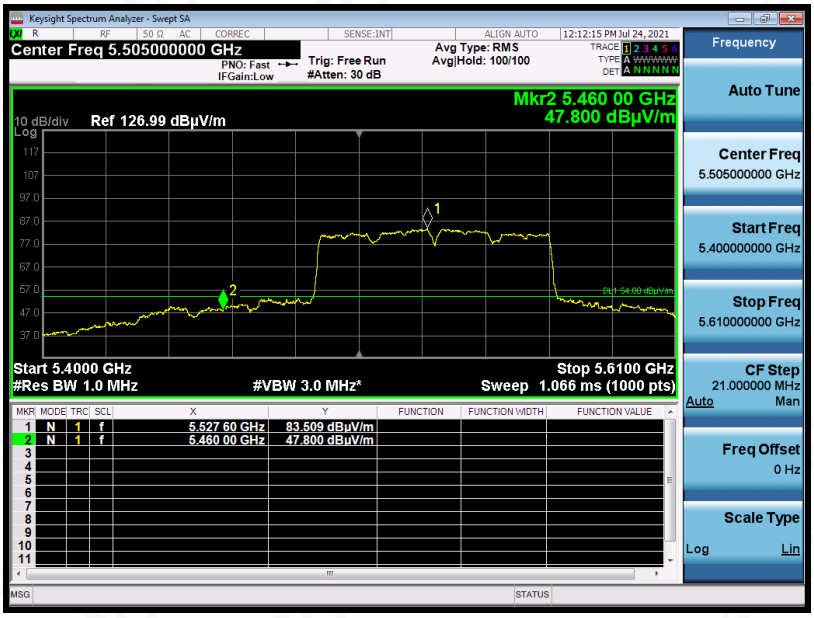

Test Graph for Average Measurement


**RESULT: PASS**

| EUT | Intelligent conference control tablet | Model Name | CP100 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 60% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11ac80 5530MHz | Antenna | Vertical |

Test Graph for Peak Measurement


Test Graph for Average Measurement




**RESULT: PASS**

Note: 1. All the 20MHz bandwidth modulation had been tested, the 802.11a20 at 5180MHz, 5320 MHz, 5500MHz was the worst case and record in his test report. All the 40MHz bandwidth modulation had been tested, the 802.11N40 at 5190MHz, 5310MHz, 5510MHz was the worst case and record in his test report. All the 80MHz bandwidth modulation had been tested, the 802.11AC80 at 5210MHz, 5290MHz, 5530MHz was the worst case and record in his test report.

2. The factor had been edited in the “Input Correction” of the Spectrum Analyzer.

3. Only the data of band edge emission at the restricted band 4.5GHz-5.15GHz and 5.35GHz-5.46GHz record in the report. Other restricted band 7.25GHz-7.77GHz were considered as ambient noise. No recording in the test report.

# 12. LINE CONDUCTED EMISSION TEST

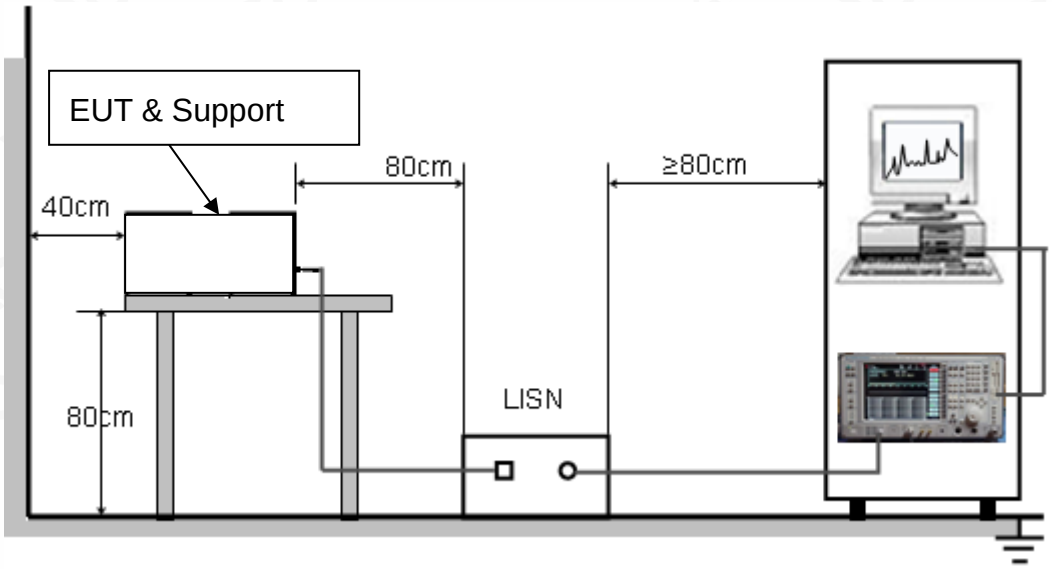
## 12.1. LIMITS OF LINE CONDUCTED EMISSION TEST

| Frequency | Maximum RF Line Voltage | |
|---|---|---|
| | Q.P (dBμV) | Average (dBμV) |
| 150kHz~500kHz | 66-56 | 56-46 |
| 500kHz~5MHz | 56 | 46 |
| 5MHz~30MHz | 60 | 50 |

Note:

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

## 12.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



## 12.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.10.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4. All support equipment received AC120V/60Hz power from a LISN, if any.
5. The EUT received charging voltage by adapter which received 120V/60Hzpower by a LISN.
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 Ohm load; the second scan had Line 1 connected to a 50 Ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

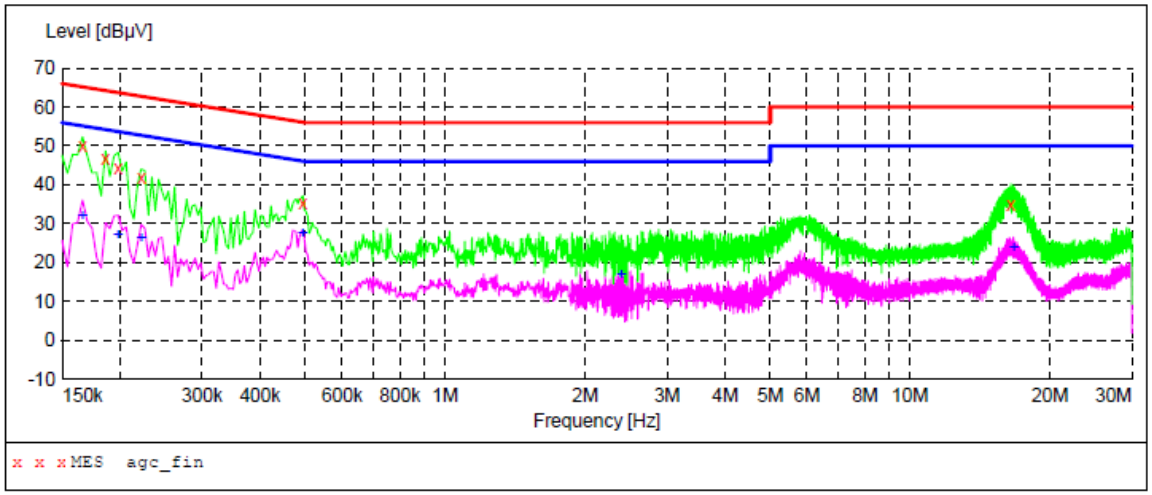
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

## 12.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case was reported on the Summary Data page.

## 12.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

LINE CONDUCTED EMISSION TEST-L




***MEASUREMENT RESULT: "agc_fin"***

2021/6/22 22:30

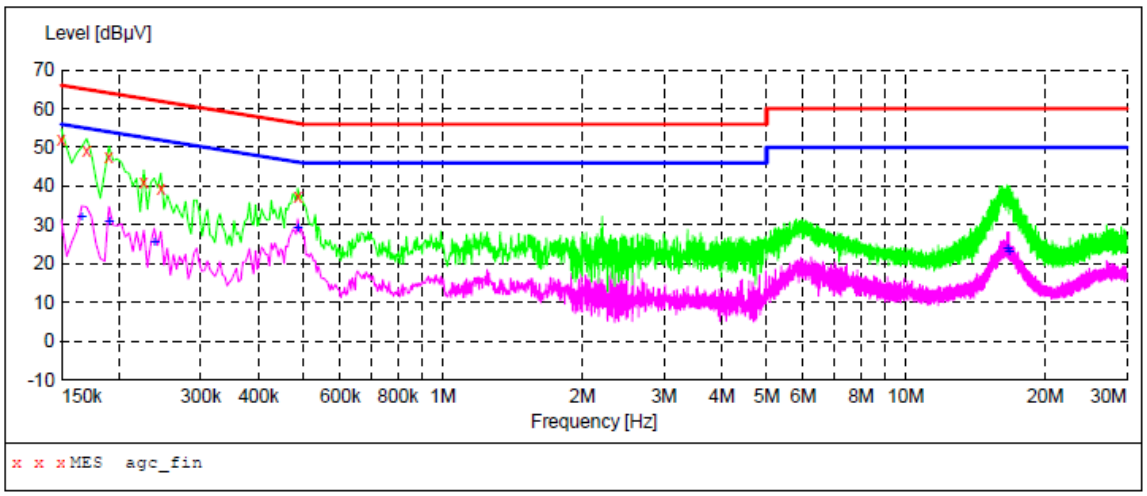
| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line |
|---|---|---|---|---|---|---|
| 0.166000 | 50.20 | 12.4 | 65 | 15.0 | QP | L1 |
| 0.186000 | 46.80 | 12.4 | 64 | 17.4 | QP | L1 |
| 0.198000 | 44.40 | 12.4 | 64 | 19.3 | QP | L1 |
| 0.222000 | 41.70 | 12.4 | 63 | 21.0 | QP | L1 |
| 0.494000 | 35.30 | 12.4 | 56 | 20.8 | QP | L1 |
| 16.478000 | 34.70 | 14.5 | 60 | 25.3 | QP | L1 |

***MEASUREMENT RESULT: "agc_fin2"***

2021/6/22 22:30

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line |
|---|---|---|---|---|---|---|
| 0.166000 | 31.90 | 12.4 | 55 | 23.3 | AV | L1 |
| 0.198000 | 27.10 | 12.4 | 54 | 26.6 | AV | L1 |
| 0.222000 | 26.20 | 12.4 | 53 | 26.5 | AV | L1 |
| 0.494000 | 27.70 | 12.4 | 46 | 18.4 | AV | L1 |
| 2.394000 | 17.00 | 12.5 | 46 | 29.0 | AV | L1 |
| 16.694000 | 24.00 | 14.5 | 50 | 26.0 | AV | L1 |

LINE CONDUCTED EMISSION TEST-N




***MEASUREMENT RESULT: "agc_fin"***

2021/6/22 22:14

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line |
|---|---|---|---|---|---|---|
| 0.150000 | 51.90 | 12.4 | 66 | 14.1 | QP | N |
| 0.170000 | 49.10 | 12.4 | 65 | 15.9 | QP | N |
| 0.190000 | 47.40 | 12.4 | 64 | 16.6 | QP | N |
| 0.226000 | 41.00 | 12.4 | 63 | 21.6 | QP | N |
| 0.246000 | 39.50 | 12.4 | 62 | 22.4 | QP | N |
| 0.486000 | 37.20 | 12.4 | 56 | 19.0 | QP | N |

***MEASUREMENT RESULT: "agc_fin2"***

2021/6/22 22:14

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line |
|---|---|---|---|---|---|---|
| 0.166000 | 32.10 | 12.4 | 55 | 23.1 | AV | N |
| 0.190000 | 30.70 | 12.4 | 54 | 23.3 | AV | N |
| 0.238000 | 25.60 | 12.4 | 52 | 26.6 | AV | N |
| 0.486000 | 29.20 | 12.4 | 46 | 17.0 | AV | N |
| 16.566000 | 23.80 | 14.5 | 50 | 26.2 | AV | N |
| 16.706000 | 23.10 | 14.5 | 50 | 26.9 | AV | N |

**RESULT: PASS**

# APPENDIX A: PHOTOGRAPHS OF TEST SETUP

LINE CONDUCTED EMISSION TEST SETUP

RADIATED EMISSION TEST SETUP BELOW 1GHZ