## 5.6 Number of hopping Frequency

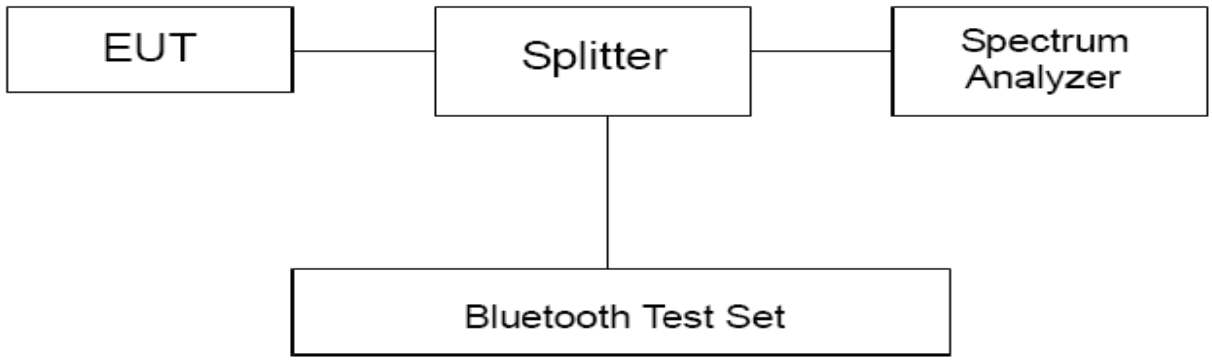
**Ambient condition**

| Temperature | Relative humidity | Pressure |
|---|---|---|
| 23°C ~25°C | 45%~50% | 101.5kPa |

**Method of Measurement**

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. RBW is set to 100kHz and VBW is set to 300kHz on spectrum analyzer. Set EUT on Hopping on mode.

**Test setup**




**Limits**

Rule Part 15.247(a) (1) (iii) specifies that" Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels."

| Limits | ≥ 15 channels |
|---|---|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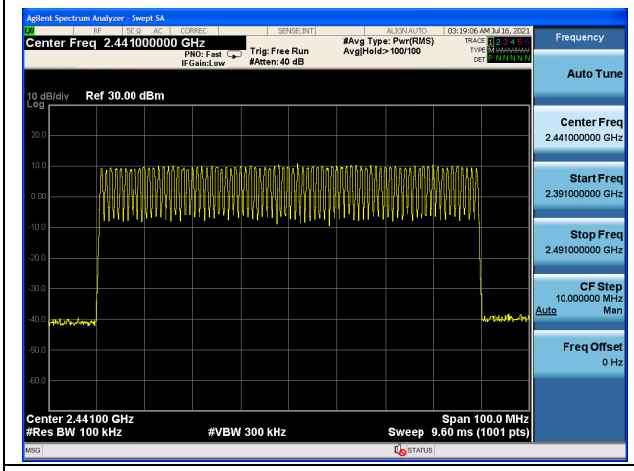
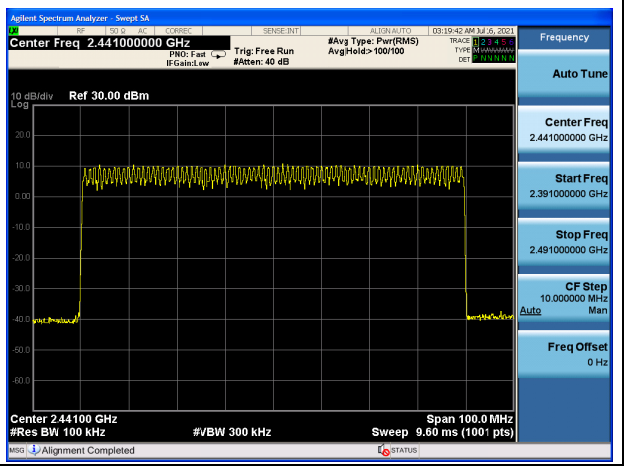
## Test Results:

| Test Mode | | Number of hopping channels | conclusion |
|---|---|---|---|
| BT | DH5 | 79 | PASS |
| | 2DH5 | 79 | PASS |
| | 3DH5 | 79 | PASS |

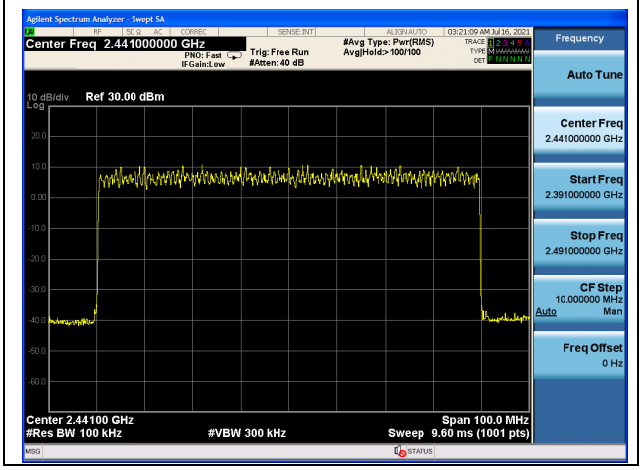
**DH5 2400 MHz – 2483.5 MHz**




**2DH5 2400 MHz – 2483.5 MHz**




**3DH5 2400 MHz – 2483.5 MHz**





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## 5.7 Spurious RF Conducted Emissions

**Ambient condition**

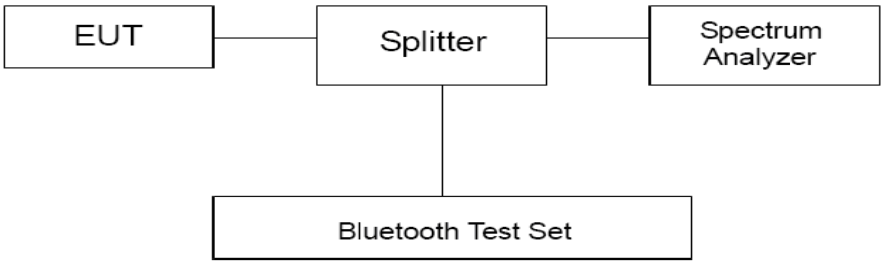
| Temperature | Relative humidity | Pressure |
|---|---|---|
| 23°C ~25°C | 45%~50% | 101.5kPa |

**Method of Measurement**

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. Set RBW 100kHz and VBW 300 kHz, Sweep is set to ATUO.

The test is in transmitting mode.

**Test setup**




**Limits**

Rule Part 15.247(d) pacifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.”

| Test Mode | Carrier frequency (MHz) | Reference value (dBm) | Limit |
|---|---|---|---|
| DH5 | 2402 | 3.69 | -16.31 |
| | 2441 | 3.39 | -16.61 |
| | 2480 | 3.27 | -16.73 |
| 2DH5 | 2402 | 2.25 | -17.75 |
| | 2441 | 2.31 | -17.69 |
| | 2480 | 4.03 | -15.97 |
| 3DH5 | 2402 | 4.93 | -15.07 |
| | 2441 | 6.78 | -13.22 |
| | 2480 | 4.58 | -15.42 |

**Measurement Uncertainty**

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k$ = 1.96.

| Frequency | Uncertainty |
|---|---|
| 100kHz-2GHz | 0.684 dB |
| 2GHz-26GHz | 1.407 dB |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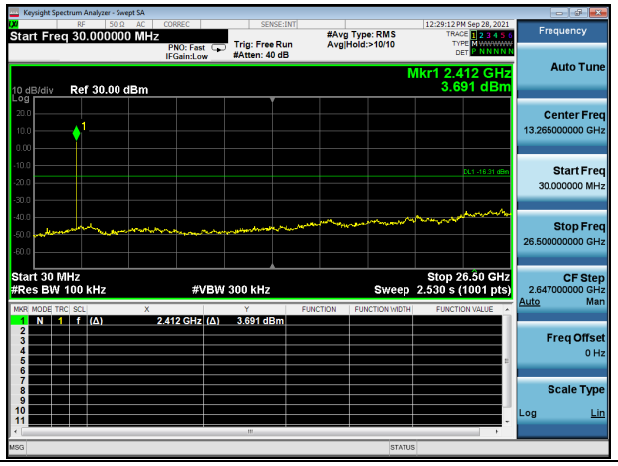
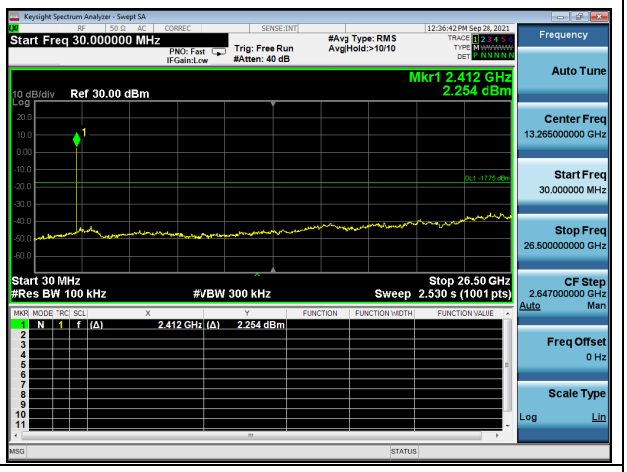
## Test Results:

**The signal beyond the limit is carrier.**

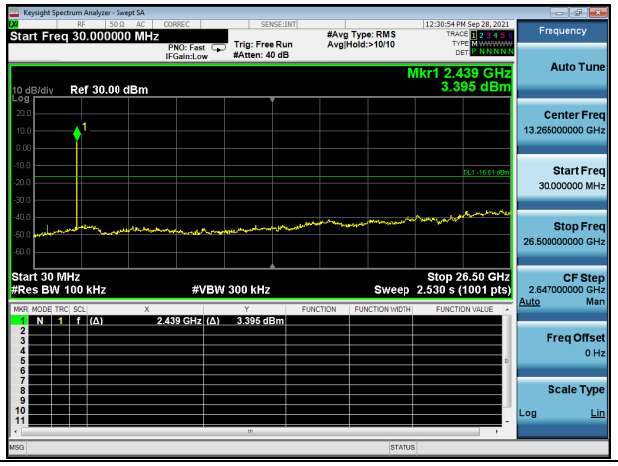
DH5-CH0 30MHz to 26.5GHz



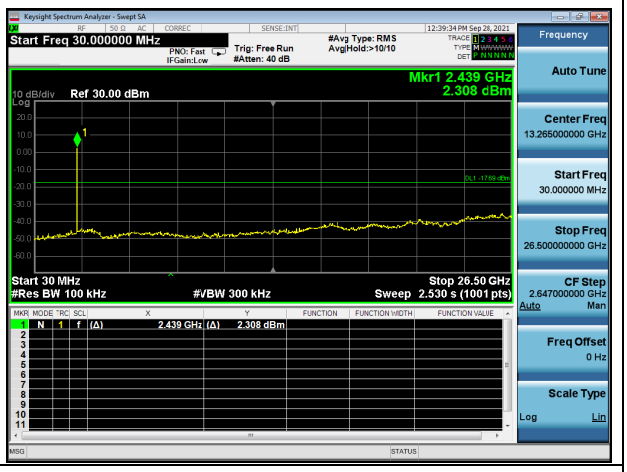

2DH5-CH0 30MHz to 26.5GHz



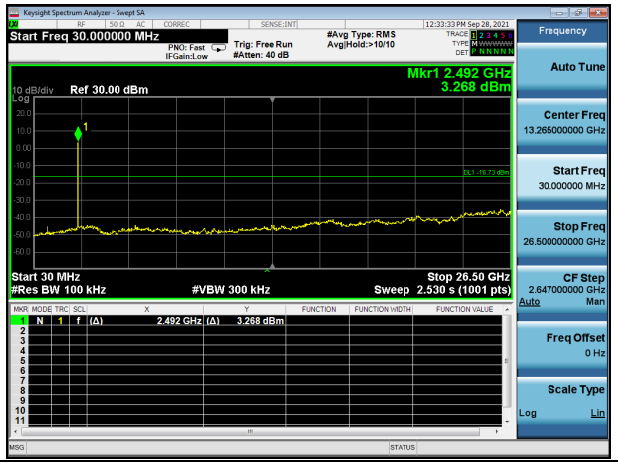

DH5-CH39 30MHz to 26.5GHz



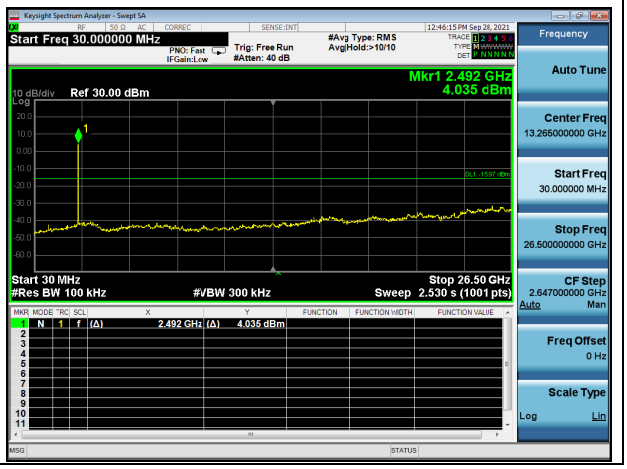

2DH5-CH39 30MHz to 26.5GHz




DH5-CH78 30MHz to 26.5GHz




2DH5-CH78 30MHz to 26.5GHz





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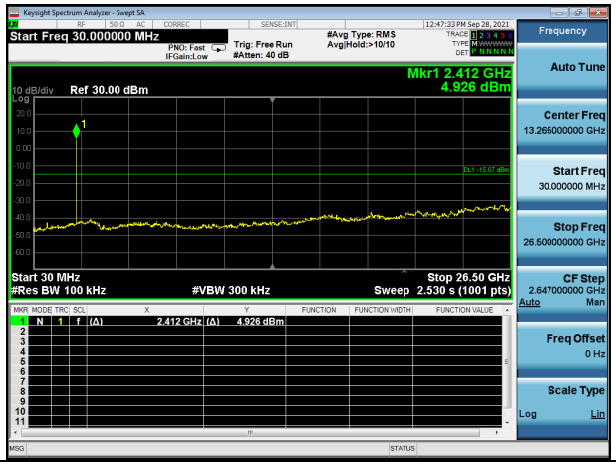
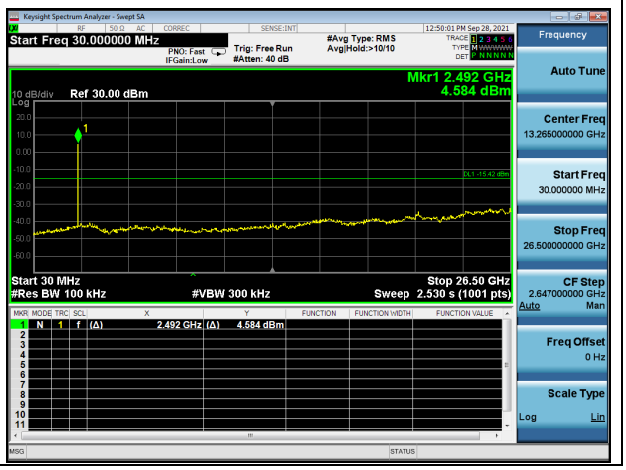
3DH5-CH0 30MHz to 26.5GHz




3DH5-CH39 30MHz to 26.5GHz


3DH5-CH78 30MHz to 26.5GHz





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## 5.8 Unwanted Emission

**Ambient condition**

| Temperature | Relative humidity | Pressure |
|---|---|---|
| 23°C ~25°C | 45%~50% | 101.5kPa |

**Method of Measurement**

The test set-up was made in accordance to the general provisions of ANSI C63.10. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration.
Sweep the whole frequency band through the range from 9 kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.
During the test, below 30MHz, the center of the loop shall be 1 meters; above 30MHz, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.
Set the spectrum analyzer in the following:
9kHz~150 kHz
RBW=200Hz, VBW=1kHz/ Sweep=AUTO
150 kHz~30MHz
RBW=9KHz, VBW=30KHz,/ Sweep=AUTO
Below 1GHz
RBW=100kHz / VBW=300kHz / Sweep=AUTO
Above 1GHz
(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO
(b) AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO
detector; The measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a “duty cycle correction factor”, derived from 20log(dwell time/100 ms), in an effort to demonstrate compliance with the 15.209 limit.
If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak- average correction factor, derived form the appropriate duty cycle calculation.
This setting method can refer to **KDB 558074 D01.**
This mode was measured in the following mode: EUT with cradle and EUT without cradle. The worst emission was found in EUT with cradle mode and the worst case was recorded.
The test is in transmitting mode.


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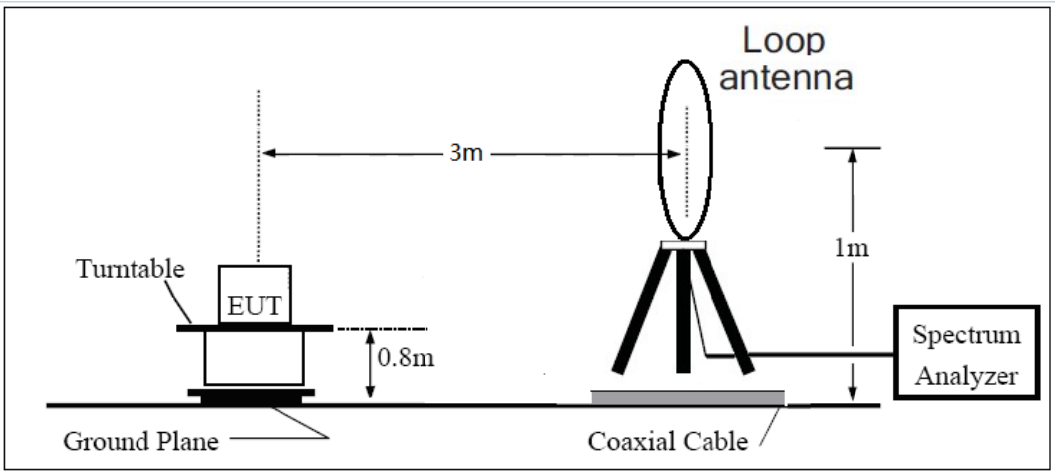
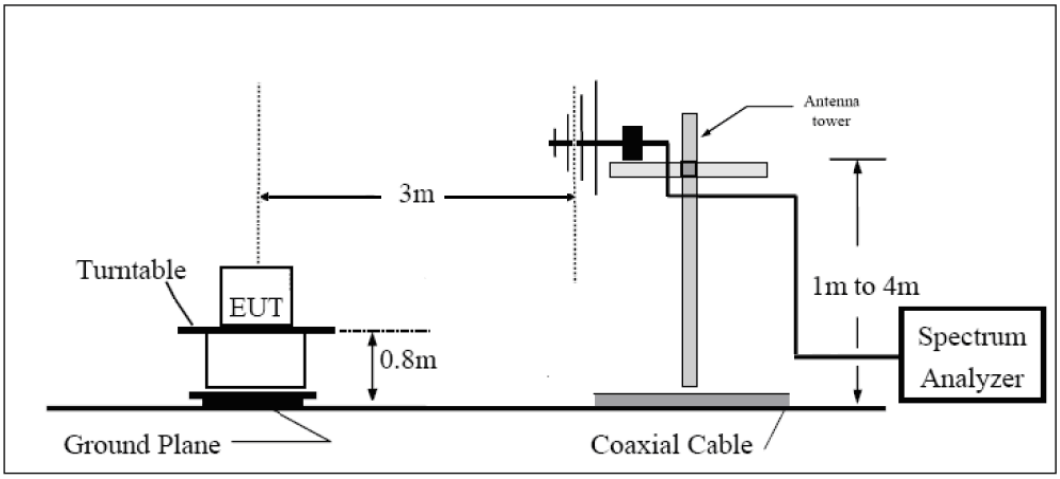
**Test setup**

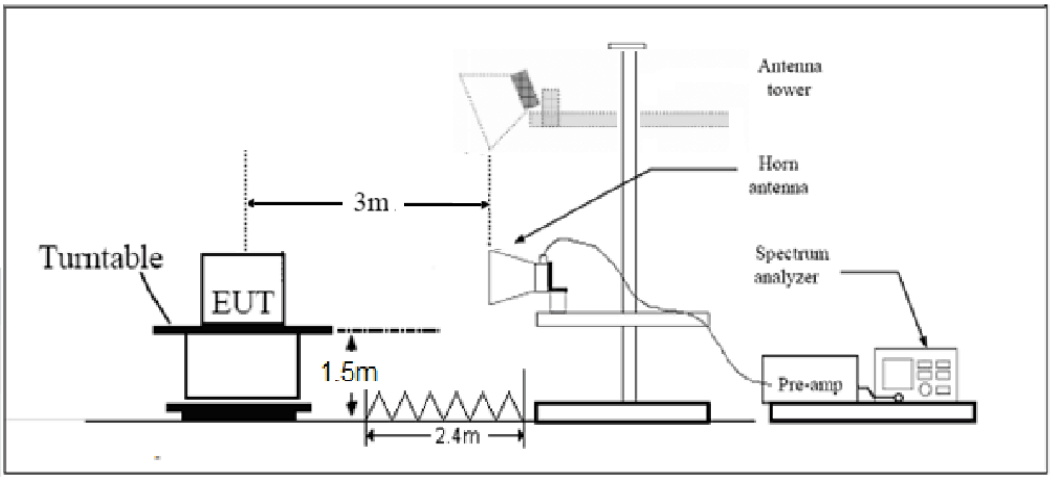
**9KHz ~ 30MHz**




**30MHz ~ 1GHz**




**Above 1GHz**





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**Limits**

Rule Part 15.247(d) specifies that “In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).”

Limit in restricted band

| Frequency of emission (MHz) | Field strength(uV/m) | Field strength(dBuV/m) |
|---|---|---|
| 0.009–0.490 | 2400/F(kHz) | / |
| 0.490–1.705 | 24000/F(kHz) | / |
| 1.705–30.0 | 30 | / |
| 30-88 | 100 | 40 |
| 88-216 | 150 | 43.5 |
| 216-960 | 200 | 46 |
| Above960 | 500 | 54 |

§15.35(b)

There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

Peak Limit=74dBuV/m

Average Limit=54dBuV/m

Spurious Radiated Emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090 - 0.110 | 16.42 - 16.423 | 399.9 - 410 | 4.5 - 5.15 |
| [1]0.495 - 0.505 | 16.69475 - 16.69525 | 608 - 614 | 5.35 - 5.46 |
| 2.1735 - 2.1905 | 16.80425 - 16.80475 | 960 - 1240 | 7.25 - 7.75 |
| 4.125 - 4.128 | 25.5 - 25.67 | 1300 - 1427 | 8.025 - 8.5 |
| 4.17725 - 4.17775 | 37.5 - 38.25 | 1435 - 1626.5 | 9.0 - 9.2 |
| 4.20725 - 4.20775 | 73 - 74.6 | 1645.5 - 1646.5 | 9.3 - 9.5 |
| 6.215 - 6.218 | 74.8 - 75.2 | 1660 - 1710 | 10.6 - 12.7 |
| 6.26775 - 6.26825 | 108 - 121.94 | 1718.8 - 1722.2 | 13.25 - 13.4 |
| 6.31175 - 6.31225 | 123 - 138 | 2200 - 2300 | 14.47 - 14.5 |
| 8.291 - 8.294 | 149.9 - 150.05 | 2310 - 2390 | 15.35 - 16.2 |
| 8.362 - 8.366 | 156.52475 - 156.52525 | 2483.5 - 2500 | 17.7 - 21.4 |
| 8.37625 - 8.38675 | 156.7 - 156.9 | 2690 - 2900 | 22.01 - 23.12 |
| 8.41425 - 8.41475 | 162.0125 - 167.17 | 3260 - 3267 | 23.6 - 24.0 |
| 12.29 - 12.293 | 167.72 - 173.2 | 3332 - 3339 | 31.2 - 31.8 |
| 12.51975 - 12.52025 | 240 - 285 | 3345.8 - 3358 | 36.43 - 36.5 |
| 12.57675 - 12.57725 | 322 - 335.4 | 3600 - 4400 | [2] |
| 13.36 - 13.41 | | | |


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**Measurement Uncertainty**

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor *k* = 1.96.

| Frequency | Uncertainty |
|---|---|
| 9KHz-30MHz | 3.55 dB |
| 30MHz-200MHz | 4.17 dB |
| 200MHz-1GHz | 4.84 dB |
| 1-18GHz | 4.35 dB |
| 18-26.5GHz | 5.90 dB |
| 26.5GHz~40GHz | 5.92 dB |


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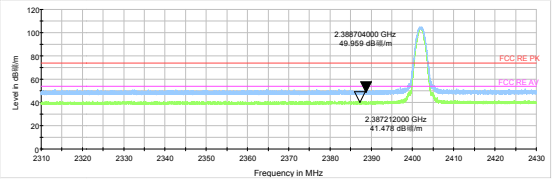
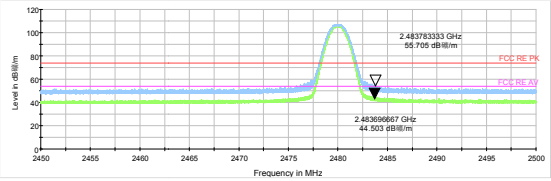
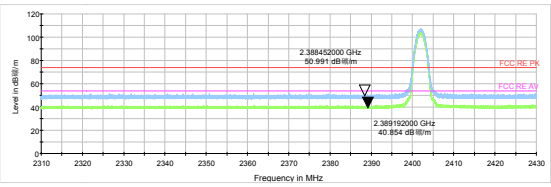
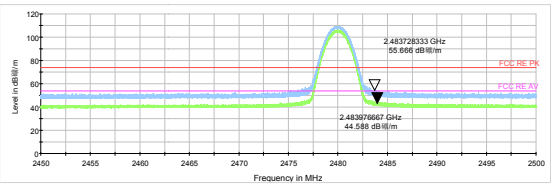
**Test Results:**

**The signal beyond the limit is carrier.**

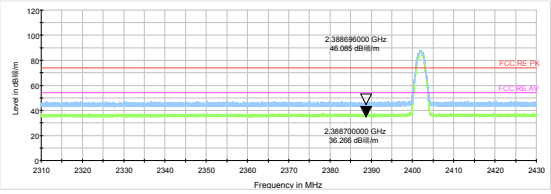
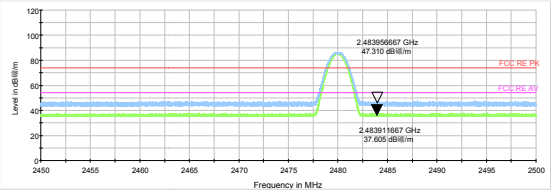
**ESP32-PICO-MINI-02**

| DH5-Channel 0: Peak& Average | DH5-Channel 78: Peak& Average |
|---|---|
|  |  |

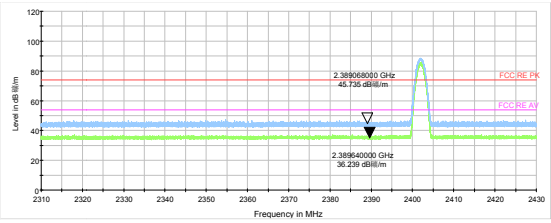
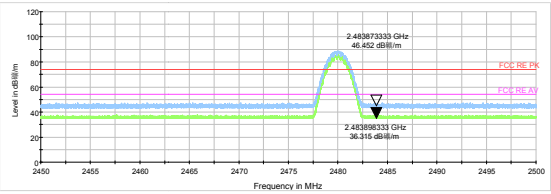
The bandage was performed in all EDR mode(2DH5 and 3DH5), 3DH5 was selected as the worse condition. The test data of the worst-case condition was recorded in this report.

| 3DH5-Channel 0: Peak& Average | 3DH5-Channel 78: Peak& Average |
|---|---|
|  |  |

**ESP32-PICO-MINI-02U**

| DH5-Channel 0: Peak& Average | DH5-Channel 78: Peak& Average |
|---|---|
|  |  |

The bandage was performed in all EDR mode(2DH5 and 3DH5), 3DH5 was selected as the worse condition. The test data of the worst-case condition was recorded in this report.

| 3DH5-Channel 0: Peak& Average | 3DH5-Channel 78: Peak& Average |
|---|---|
|  |  |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**Result of RE**

**Test result**

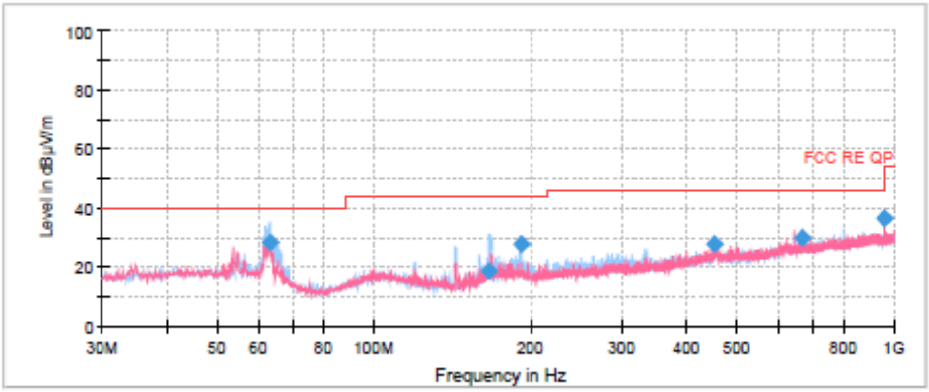
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the Emissions in the frequency band 9kHz-30MHz and 18GHz -26.5GHz are more than 20dB below the limit are not reported.

The following graphs display the maximum values of horizontal and vertical by software.
For above 1GHz, Blue trace uses the peak detection, Green trace uses the average detection.

**ESP32-PICO-MINI-02**

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, BT DH5-Channel 0 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

**Continuous TX mode:**




Radiates Emission from 30MHz to 1GHz

| Frequency (MHz) | Quasi-Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|
| 63.302500 | 28.08 | 225.0 | H | 4.0 | 12 | 11.92 | 40.00 |
| 166.245000 | 18.23 | 225.0 | H | 230.0 | 10 | 25.27 | 43.50 |
| 191.947500 | 27.83 | 125.0 | H | 225.0 | 12 | 15.67 | 43.50 |
| 450.823750 | 27.46 | 100.0 | V | 322.0 | 18 | 18.54 | 46.00 |
| 664.223750 | 29.79 | 225.0 | H | 255.0 | 22 | 16.21 | 46.00 |
| 959.988750 | 36.34 | 100.0 | H | 0.0 | 25 | 9.66 | 46.00 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)**
**2. Margin = Limit – Quasi-Peak**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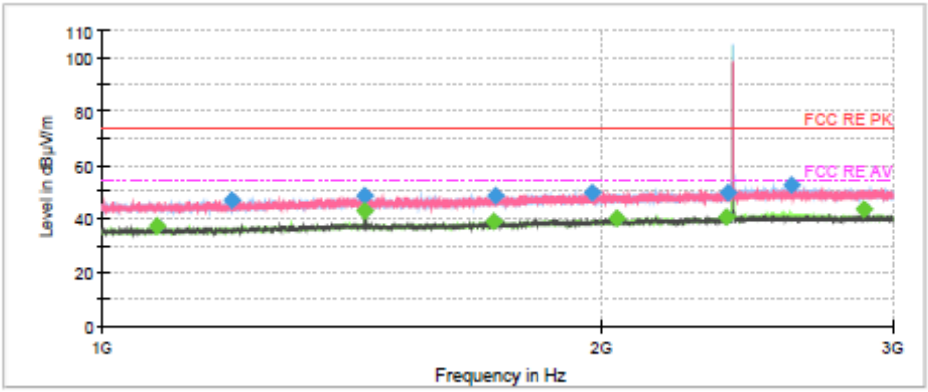
DH5-Channel 0




Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 1080.200000 | --- | 37.37 | 54.00 | 16.63 | 200.0 | H | 324.0 | -9 |
| 1196.400000 | 46.74 | --- | 74.00 | 27.26 | 100.0 | V | 256.0 | -9 |
| 1439.000000 | 48.27 | --- | 74.00 | 25.73 | 200.0 | H | 0.0 | -7 |
| 1440.600000 | --- | 42.65 | 54.00 | 11.35 | 100.0 | V | 256.0 | -7 |
| 1723.933333 | --- | 38.72 | 54.00 | 15.28 | 200.0 | V | 152.0 | -6 |
| 1727.933333 | 48.30 | --- | 74.00 | 25.70 | 200.0 | H | 334.0 | -6 |
| 1973.266667 | 49.38 | --- | 74.00 | 24.62 | 200.0 | V | 0.0 | -5 |
| 2044.133333 | --- | 39.85 | 54.00 | 14.15 | 100.0 | V | 284.0 | -5 |
| 2382.400000 | --- | 40.37 | 54.00 | 13.63 | 200.0 | H | 303.0 | -4 |
| 2383.733333 | 49.84 | --- | 74.00 | 24.16 | 100.0 | H | 80.0 | -4 |
| 2602.933333 | 52.21 | --- | 74.00 | 21.79 | 100.0 | H | 201.0 | -4 |
| 2881.466667 | --- | 43.63 | 54.00 | 10.37 | 100.0 | V | 88.0 | -3 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**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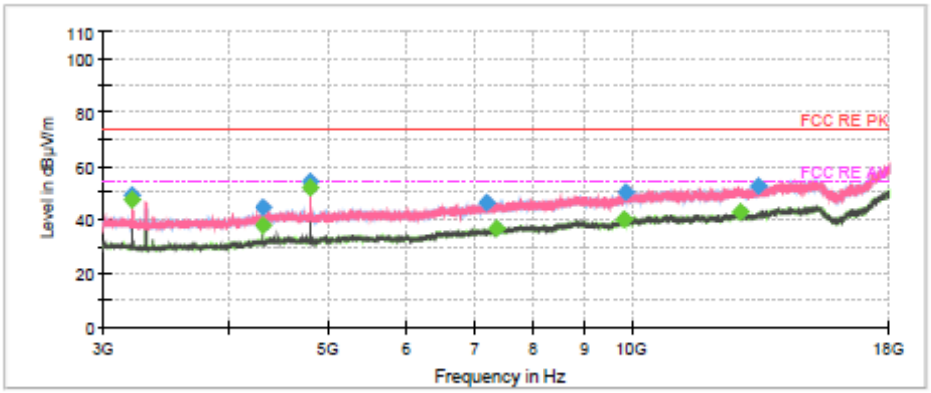


Note: The signal beyond the limit is carrier.

Radiates Emission from 3GHz to 18GHz

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 3202.500000 | --- | 47.39 | 54.00 | 6.61 | 100.0 | V | 105.0 | -13 |
| 3202.500000 | 49.16 | --- | 74.00 | 24.84 | 100.0 | V | 105.0 | -13 |
| 4322.000000 | --- | 37.70 | 54.00 | 16.30 | 200.0 | H | 42.0 | -10 |
| 4322.000000 | 44.64 | --- | 74.00 | 29.36 | 100.0 | H | 42.0 | -10 |
| 4803.500000 | --- | 51.86 | 54.00 | 2.14 | 200.0 | V | 236.0 | -9 |
| 4803.500000 | 53.95 | --- | 74.00 | 20.05 | 200.0 | V | 236.0 | -9 |
| 7199.000000 | 46.25 | --- | 74.00 | 27.75 | 100.0 | V | 326.0 | -4 |
| 7347.500000 | --- | 36.72 | 54.00 | 17.28 | 100.0 | V | 128.0 | -3 |
| 9843.500000 | --- | 40.31 | 54.00 | 13.70 | 200.0 | H | 196.0 | -1 |
| 9855.000000 | 50.14 | --- | 74.00 | 23.86 | 100.0 | H | 229.0 | -1 |
| 12816.000000 | --- | 42.85 | 54.00 | 11.15 | 200.0 | V | 247.0 | 2 |
| 13340.500000 | 52.45 | --- | 74.00 | 21.55 | 100.0 | H | 64.0 | 3 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**


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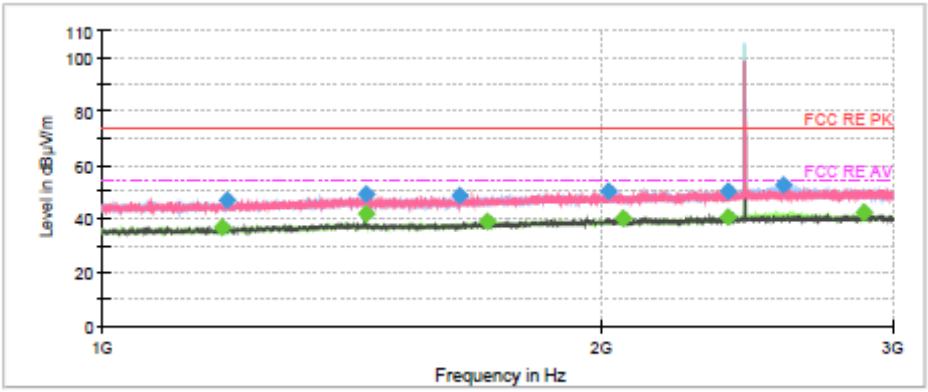
DH5-Channel 39




Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 1181.666667 | --- | 36.77 | 54.00 | 17.23 | 200.0 | V | 62.0 | -9 |
| 1188.933333 | 46.57 | --- | 74.00 | 27.43 | 100.0 | H | 28.0 | -9 |
| 1440.733333 | 49.25 | --- | 74.00 | 24.75 | 100.0 | V | 256.0 | -7 |
| 1440.733333 | --- | 41.91 | 54.00 | 12.09 | 100.0 | V | 256.0 | -7 |
| 1644.733333 | 48.38 | --- | 74.00 | 25.62 | 100.0 | H | 7.0 | -6 |
| 1707.000000 | --- | 38.69 | 54.00 | 15.31 | 100.0 | V | 0.0 | -6 |
| 2022.466667 | 50.05 | --- | 74.00 | 23.95 | 200.0 | V | 188.0 | -5 |
| 2059.866667 | --- | 40.20 | 54.00 | 13.80 | 100.0 | V | 133.0 | -5 |
| 2384.066667 | 50.15 | --- | 74.00 | 23.85 | 100.0 | H | 68.0 | -4 |
| 2384.666667 | --- | 40.60 | 54.00 | 13.40 | 200.0 | H | 198.0 | -4 |
| 2577.733333 | 52.29 | --- | 74.00 | 21.71 | 200.0 | H | 320.0 | -4 |
| 2881.400000 | --- | 42.45 | 54.00 | 11.55 | 100.0 | V | 184.0 | -3 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**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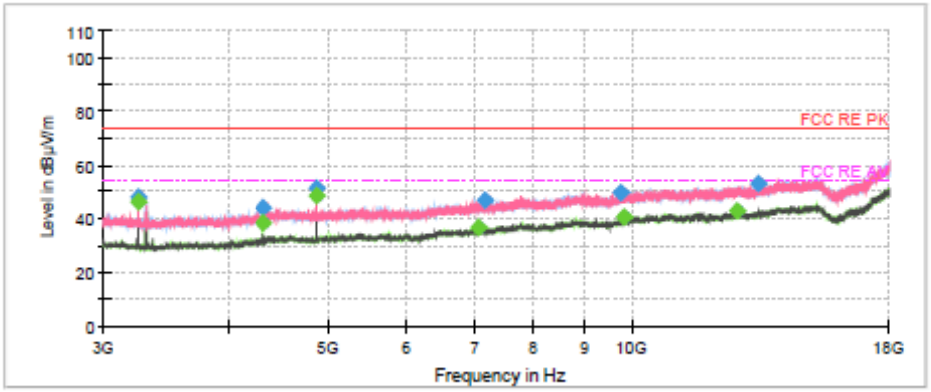


Radiates Emission from 3GHz to 18GHz

Note: The signal beyond the limit is carrier.

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 3254.500000 | --- | 46.26 | 54.00 | 7.74 | 200.0 | V | 69.0 | -13 |
| 3254.500000 | 48.07 | --- | 74.00 | 25.93 | 200.0 | V | 69.0 | -13 |
| 4321.500000 | 43.92 | --- | 74.00 | 30.08 | 100.0 | H | 0.0 | -10 |
| 4322.000000 | --- | 38.30 | 54.00 | 15.70 | 200.0 | H | 12.0 | -10 |
| 4882.000000 | 51.20 | --- | 74.00 | 22.80 | 100.0 | H | 188.0 | -9 |
| 4882.000000 | --- | 48.25 | 54.00 | 5.75 | 100.0 | H | 188.0 | -9 |
| 7046.500000 | --- | 36.70 | 54.00 | 17.30 | 200.0 | V | 280.0 | -3 |
| 7155.500000 | 46.91 | --- | 74.00 | 27.09 | 100.0 | V | 147.0 | -4 |
| 9775.500000 | 49.82 | --- | 74.00 | 24.18 | 100.0 | V | 350.0 | -2 |
| 9841.000000 | --- | 40.66 | 54.00 | 13.34 | 200.0 | V | 225.0 | -1 |
| 12717.500000 | --- | 42.82 | 54.00 | 11.18 | 100.0 | V | 214.0 | 3 |
| 13342.000000 | 53.15 | --- | 74.00 | 20.85 | 200.0 | H | 111.0 | 3 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**


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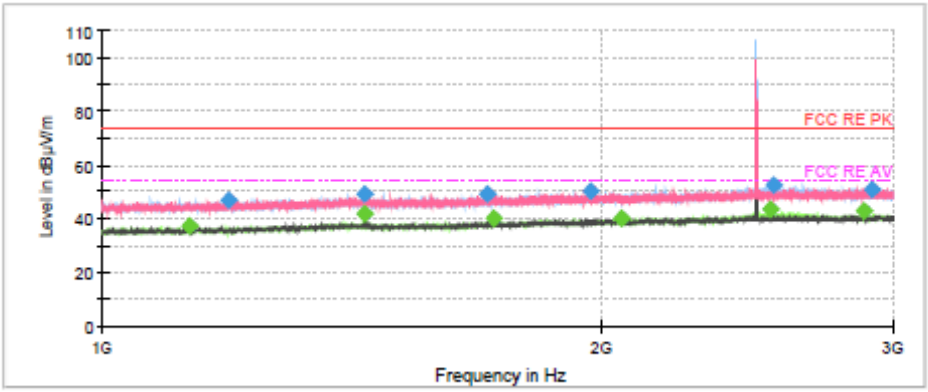
DH5-Channel 78




Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 1128.866667 | --- | 37.12 | 54.00 | 16.88 | 200.0 | H | 168.0 | -9 |
| 1190.800000 | 46.61 | --- | 74.00 | 27.39 | 100.0 | V | 314.0 | -9 |
| 1440.600000 | --- | 41.95 | 54.00 | 12.05 | 100.0 | V | 244.0 | -7 |
| 1440.600000 | 48.86 | --- | 74.00 | 25.14 | 100.0 | V | 244.0 | -7 |
| 1706.133333 | 48.84 | --- | 74.00 | 25.16 | 200.0 | V | 64.0 | -6 |
| 1722.533333 | --- | 39.78 | 54.00 | 14.22 | 200.0 | V | 190.0 | -6 |
| 1972.933333 | 49.97 | --- | 74.00 | 24.03 | 100.0 | H | 140.0 | -5 |
| 2058.266667 | --- | 40.21 | 54.00 | 13.79 | 100.0 | V | 203.0 | -5 |
| 2527.733333 | --- | 43.36 | 54.00 | 10.64 | 100.0 | H | 201.0 | -4 |
| 2542.666667 | 52.23 | --- | 74.00 | 21.77 | 200.0 | H | 337.0 | -4 |
| 2881.333333 | --- | 42.72 | 54.00 | 11.28 | 100.0 | V | 121.0 | -3 |
| 2914.000000 | 50.64 | --- | 74.00 | 23.36 | 200.0 | V | 44.0 | -3 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**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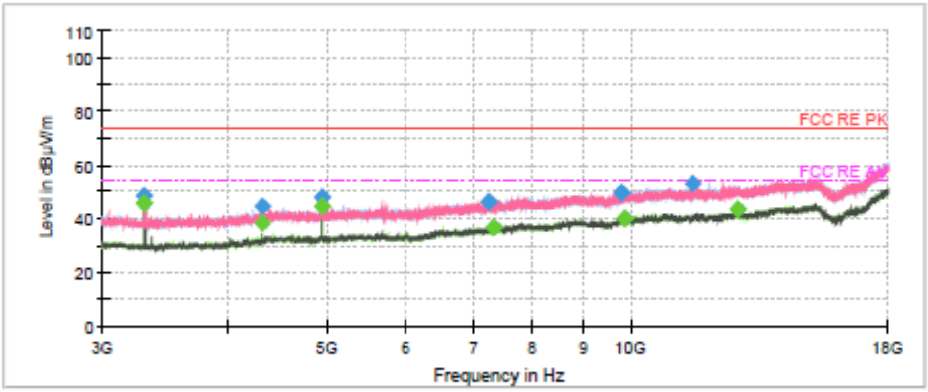


Radiates Emission from 3GHz to 18GHz

Note: The signal beyond the limit is carrier.

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 3306.500000 | --- | 45.95 | 54.00 | 8.05 | 100.0 | V | 103.0 | -13 |
| 3306.500000 | 48.30 | --- | 74.00 | 25.70 | 200.0 | H | 30.0 | -13 |
| 4321.000000 | 44.31 | --- | 74.00 | 29.69 | 100.0 | H | 7.0 | -10 |
| 4321.500000 | --- | 38.48 | 54.00 | 15.52 | 200.0 | H | 12.0 | -10 |
| 4959.500000 | --- | 44.54 | 54.00 | 9.46 | 100.0 | V | 279.0 | -8 |
| 4959.500000 | 47.92 | --- | 74.00 | 26.08 | 100.0 | V | 279.0 | -8 |
| 7234.000000 | 45.99 | --- | 74.00 | 28.01 | 200.0 | V | 349.0 | -4 |
| 7330.000000 | --- | 36.75 | 54.00 | 17.25 | 100.0 | V | 203.0 | -3 |
| 9791.500000 | 49.68 | --- | 74.00 | 24.32 | 100.0 | H | 0.0 | -2 |
| 9855.500000 | --- | 40.17 | 54.00 | 13.83 | 200.0 | H | 63.0 | -1 |
| 11539.500000 | 52.84 | --- | 74.00 | 21.16 | 100.0 | V | 114.0 | 1 |
| 12788.500000 | --- | 43.17 | 54.00 | 10.83 | 100.0 | V | 170.0 | 2 |
| 3306.500000 | --- | 45.95 | 54.00 | 8.05 | 100.0 | V | 103.0 | -13 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**


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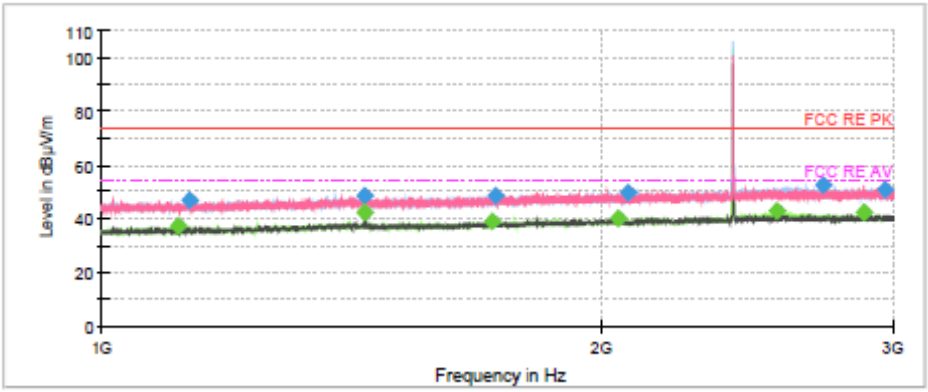
The Radiates Emission was performed in all EDR mode(2DH5 and 3DH5), 3DH5 was selected as the worse condition. The test data of the worst-case condition was recorded in this report.

3DH5-Channel 0




Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 1110.800000 | --- | 36.96 | 54.00 | 17.04 | 200.0 | H | 348.0 | -9 |
| 1127.866667 | 46.99 | --- | 74.00 | 27.01 | 100.0 | H | 128.0 | -9 |
| 1440.466667 | --- | 42.20 | 54.00 | 11.80 | 100.0 | V | 224.0 | -7 |
| 1440.600000 | 48.71 | --- | 74.00 | 25.29 | 200.0 | V | 0.0 | -7 |
| 1719.733333 | --- | 38.78 | 54.00 | 15.22 | 100.0 | V | 1.0 | -6 |
| 1727.733333 | 48.46 | --- | 74.00 | 25.54 | 100.0 | H | 4.0 | -6 |
| 2047.533333 | --- | 40.00 | 54.00 | 14.00 | 200.0 | H | 322.0 | -5 |
| 2075.800000 | 49.86 | --- | 74.00 | 24.14 | 100.0 | H | 87.0 | -5 |
| 2553.933333 | --- | 42.87 | 54.00 | 11.13 | 100.0 | H | 187.0 | -4 |
| 2722.533333 | 52.38 | --- | 74.00 | 21.62 | 200.0 | H | 322.0 | -4 |
| 2881.333333 | --- | 42.26 | 54.00 | 11.74 | 100.0 | V | 111.0 | -3 |
| 2965.266667 | 50.66 | --- | 74.00 | 23.34 | 100.0 | V | 90.0 | -3 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**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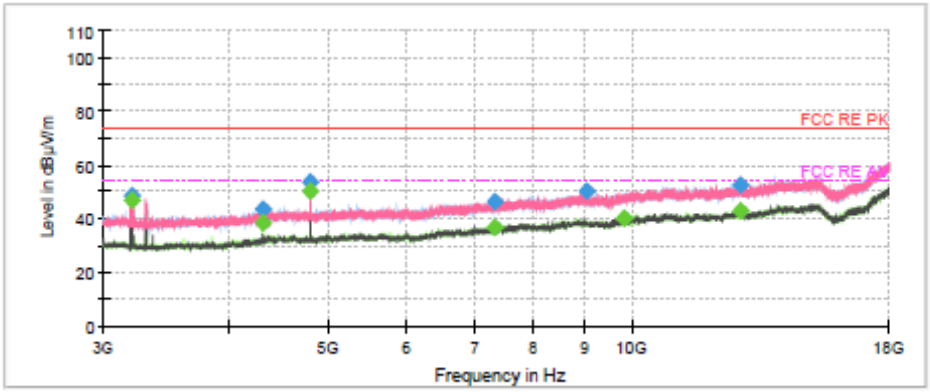


Radiates Emission from 3GHz to 18GHz

Note: The signal beyond the limit is carrier.

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 3202.500000 | --- | 46.80 | 54.00 | 7.20 | 100.0 | V | 117.0 | -13 |
| 3202.500000 | 48.24 | --- | 74.00 | 25.76 | 100.0 | V | 117.0 | -13 |
| 4321.500000 | 43.57 | --- | 74.00 | 30.43 | 200.0 | H | 0.0 | -10 |
| 4322.000000 | --- | 38.11 | 54.00 | 15.89 | 200.0 | H | 2.0 | -10 |
| 4804.000000 | 53.72 | --- | 74.00 | 20.28 | 100.0 | V | 0.0 | -9 |
| 4804.000000 | --- | 50.39 | 54.00 | 3.61 | 100.0 | V | 0.0 | -9 |
| 7320.500000 | --- | 36.81 | 54.00 | 17.19 | 200.0 | V | 195.0 | -3 |
| 7326.000000 | 46.23 | --- | 74.00 | 27.77 | 100.0 | V | 71.0 | -3 |
| 9043.000000 | 50.02 | --- | 74.00 | 23.98 | 200.0 | H | 0.0 | -2 |
| 9845.500000 | --- | 40.13 | 54.00 | 13.87 | 200.0 | V | 338.0 | -1 |
| 12813.500000 | 52.37 | --- | 74.00 | 21.64 | 100.0 | V | 260.0 | 2 |
| 12835.000000 | --- | 42.62 | 54.00 | 11.38 | 100.0 | V | 356.0 | 2 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**


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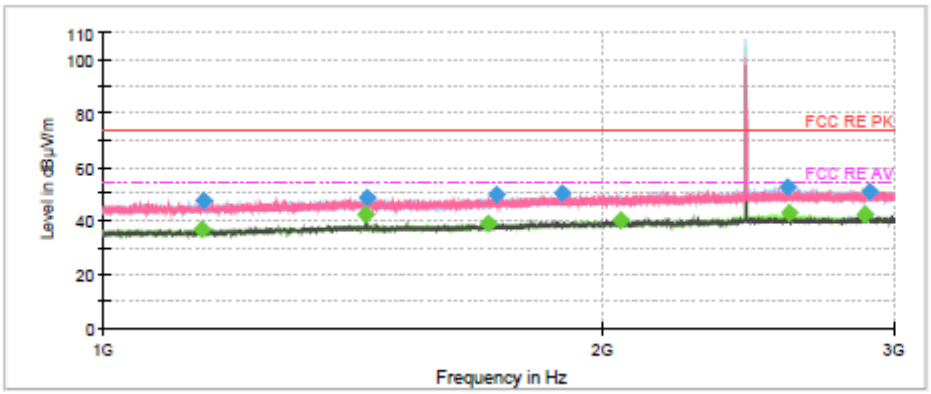
3DH5-Channel 39




Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 1147.600000 | --- | 36.94 | 54.00 | 17.06 | 200.0 | V | 96.0 | -9 |
| 1149.933333 | 47.35 | --- | 74.00 | 26.65 | 100.0 | H | 60.0 | -9 |
| 1440.533333 | --- | 42.25 | 54.00 | 11.75 | 100.0 | V | 230.0 | -7 |
| 1440.800000 | 48.47 | --- | 74.00 | 25.53 | 100.0 | H | 50.0 | -7 |
| 1705.066667 | --- | 38.75 | 54.00 | 15.25 | 100.0 | H | 169.0 | -7 |
| 1726.733333 | 49.40 | --- | 74.00 | 24.60 | 200.0 | V | 283.0 | -6 |
| 1894.733333 | 50.05 | --- | 74.00 | 23.95 | 200.0 | V | 65.0 | -5 |
| 2053.600000 | --- | 40.18 | 54.00 | 13.82 | 100.0 | H | 50.0 | -5 |
| 2589.000000 | 52.46 | --- | 74.00 | 21.54 | 200.0 | H | 181.0 | -4 |
| 2592.200000 | --- | 42.76 | 54.00 | 11.24 | 200.0 | H | 341.0 | -4 |
| 2881.266667 | --- | 42.24 | 54.00 | 11.76 | 100.0 | V | 33.0 | -3 |
| 2899.800000 | 50.95 | --- | 74.00 | 23.06 | 200.0 | H | 130.0 | -3 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**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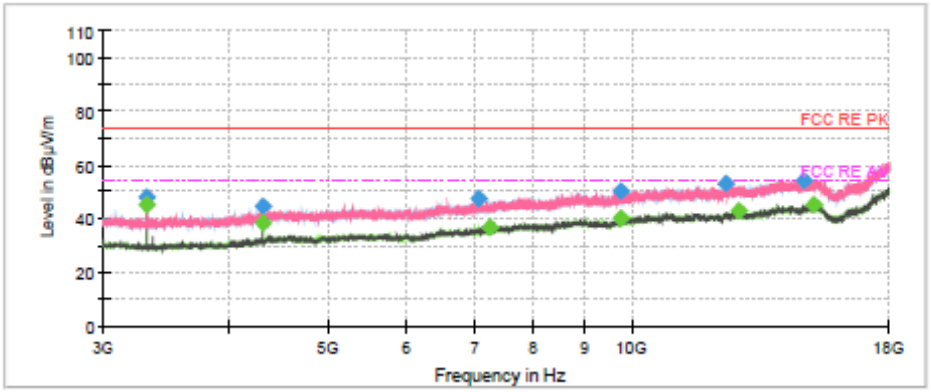


Radiates Emission from 3GHz to 18GHz

Note: The signal beyond the limit is carrier.

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 3311.500000 | 48.16 | --- | 74.00 | 25.84 | 200.0 | V | 324.0 | -13 |
| 3312.000000 | --- | 44.99 | 54.00 | 9.01 | 200.0 | V | 324.0 | -13 |
| 4322.000000 | --- | 38.14 | 54.00 | 15.86 | 100.0 | H | 5.0 | -10 |
| 4322.500000 | 44.52 | --- | 74.00 | 29.48 | 100.0 | H | 10.0 | -10 |
| 7058.500000 | 47.54 | --- | 74.00 | 26.46 | 200.0 | V | 303.0 | -3 |
| 7240.500000 | --- | 36.68 | 54.00 | 17.32 | 100.0 | H | 178.0 | -4 |
| 9772.500000 | --- | 40.31 | 54.00 | 13.69 | 200.0 | V | 0.0 | -2 |
| 9777.000000 | 50.38 | --- | 74.00 | 23.62 | 200.0 | V | 344.0 | -2 |
| 12402.000000 | 52.77 | --- | 74.00 | 21.23 | 100.0 | H | 5.0 | 2 |
| 12791.500000 | --- | 42.90 | 54.00 | 11.10 | 100.0 | H | 48.0 | 2 |
| 14810.500000 | 53.88 | --- | 74.00 | 20.12 | 200.0 | V | 359.0 | 5 |
| 15148.500000 | --- | 45.13 | 54.00 | 8.87 | 200.0 | V | 324.0 | 5 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**


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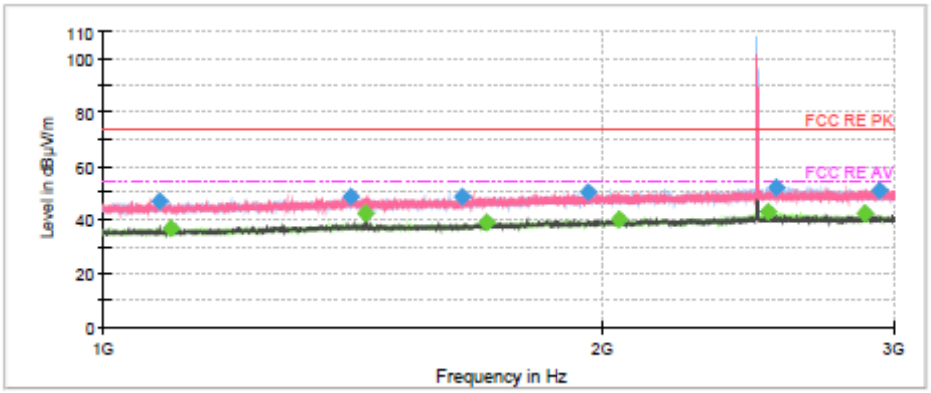
3DH5-Channel 78




Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 1081.000000 | 46.93 | --- | 74.00 | 27.07 | 200.0 | H | 266.0 | -9 |
| 1099.933333 | --- | 36.66 | 54.00 | 17.34 | 200.0 | H | 246.0 | -9 |
| 1410.066667 | 48.41 | --- | 74.00 | 25.59 | 100.0 | H | 128.0 | -7 |
| 1440.533333 | --- | 42.17 | 54.00 | 11.83 | 100.0 | V | 119.0 | -7 |
| 1646.466667 | 48.66 | --- | 74.00 | 25.34 | 200.0 | V | 80.0 | -6 |
| 1702.466667 | --- | 38.65 | 54.00 | 15.35 | 100.0 | V | 345.0 | -6 |
| 1963.600000 | 50.11 | --- | 74.00 | 23.89 | 100.0 | H | 85.0 | -5 |
| 2048.400000 | --- | 40.09 | 54.00 | 13.91 | 200.0 | H | 76.0 | -5 |
| 2520.000000 | --- | 42.70 | 54.00 | 11.30 | 200.0 | H | 316.0 | -4 |
| 2543.800000 | 52.12 | --- | 74.00 | 21.88 | 100.0 | H | 199.0 | -4 |
| 2881.466667 | --- | 42.44 | 54.00 | 11.56 | 100.0 | V | 87.0 | -3 |
| 2940.733333 | 50.56 | --- | 74.00 | 23.44 | 200.0 | H | 86.0 | -3 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**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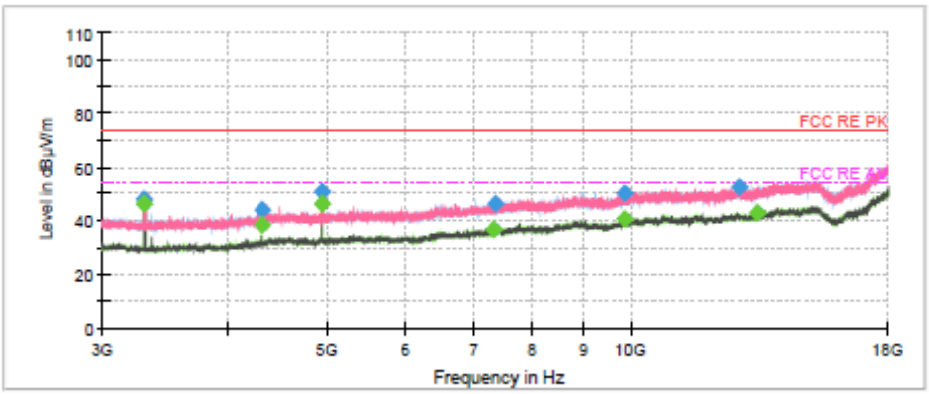


Radiates Emission from 3GHz to 18GHz

Note: The signal beyond the limit is carrier.

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 3306.500000 | --- | 46.02 | 54.00 | 7.98 | 100.0 | V | 327.0 | -13 |
| 3306.500000 | 48.00 | --- | 74.00 | 26.00 | 100.0 | V | 327.0 | -13 |
| 4321.500000 | --- | 38.24 | 54.00 | 15.76 | 200.0 | H | 358.0 | -10 |
| 4322.000000 | 44.06 | --- | 74.00 | 29.94 | 100.0 | H | 9.0 | -10 |
| 4960.000000 | --- | 46.28 | 54.00 | 7.72 | 200.0 | H | 189.0 | -8 |
| 4960.000000 | 50.71 | --- | 74.00 | 23.29 | 200.0 | H | 189.0 | -8 |
| 7323.000000 | --- | 36.69 | 54.00 | 17.31 | 100.0 | V | 338.0 | -3 |
| 7340.500000 | 46.33 | --- | 74.00 | 27.67 | 100.0 | V | 0.0 | -3 |
| 9880.000000 | 50.38 | --- | 74.00 | 23.62 | 200.0 | H | 156.0 | -1 |
| 9880.500000 | --- | 40.79 | 54.00 | 13.21 | 100.0 | H | 0.0 | -1 |
| 12807.500000 | 52.24 | --- | 74.00 | 21.76 | 200.0 | H | 2.0 | 2 |
| 13342.000000 | --- | 42.84 | 54.00 | 11.16 | 100.0 | V | 352.0 | 3 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**


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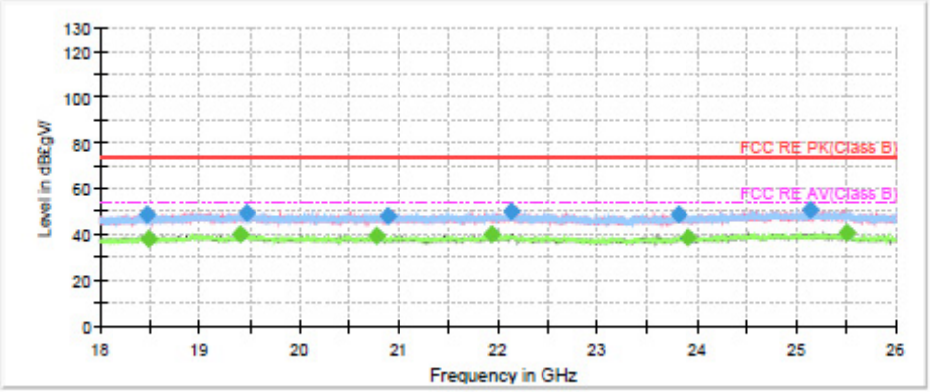
During the test, the Radiates Emission from 18GHz to 26.5GHz was performed in all modes with all channels, DH5-Channel 0 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.




Radiates Emission from 18GHz to 26.5GHz

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 18475.200000 | 48.57 | --- | 74.00 | 25.43 | 100.0 | V | 281.0 | -4.3 |
| 18487.733333 | --- | 38.32 | 54.00 | 15.68 | 200.0 | V | 119.0 | -4.3 |
| 19407.466667 | --- | 39.86 | 54.00 | 14.14 | 200.0 | V | 164.0 | -3.3 |
| 19465.600000 | 49.31 | --- | 74.00 | 24.69 | 100.0 | H | 61.0 | -3.3 |
| 20773.600000 | --- | 39.52 | 54.00 | 14.48 | 200.0 | V | 32.0 | -2.3 |
| 20890.933333 | 48.03 | --- | 74.00 | 25.97 | 100.0 | V | 281.0 | -2.3 |
| 21928.800000 | --- | 39.96 | 54.00 | 14.04 | 200.0 | H | 161.0 | -1.3 |
| 22130.666667 | 49.74 | --- | 74.00 | 24.26 | 100.0 | H | 0.0 | -1.1 |
| 23810.133333 | 48.65 | --- | 74.00 | 25.35 | 200.0 | V | 32.0 | -0.5 |
| 23903.200000 | --- | 38.87 | 54.00 | 15.13 | 200.0 | V | 132.0 | -0.4 |
| 25132.533333 | 50.72 | --- | 74.00 | 23.28 | 100.0 | H | 168.0 | 1.0 |
| 25505.866667 | --- | 40.86 | 54.00 | 13.14 | 100.0 | H | 28.0 | 0.7 |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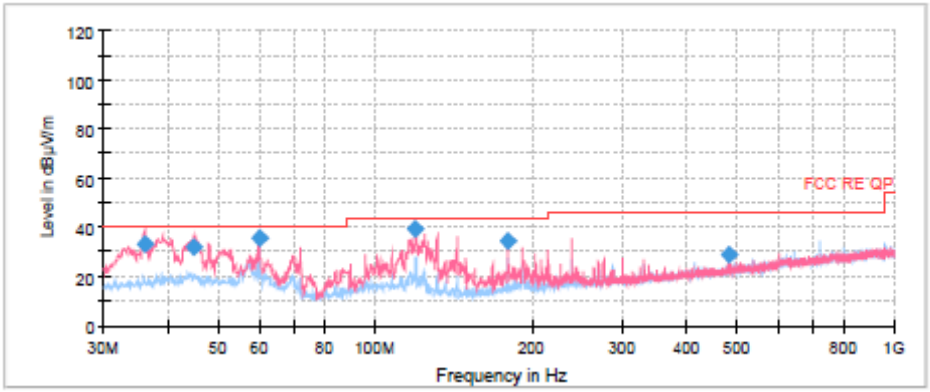
**ESP32-PICO-MINI-02U**

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, BT 3DH5-Channel 39 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

**Continuous TX mode:**




Radiates Emission from 30MHz to 1GHz

| Frequency (MHz) | Quasi-Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|
| 36.062500 | 33.37 | 105.0 | V | 95.0 | 13.1 | 6.63 | 40.00 |
| 44.913750 | 32.09 | 100.0 | V | 120.0 | 14.1 | 7.91 | 40.00 |
| 59.988750 | 35.79 | 100.0 | V | 216.0 | 13.6 | 4.21 | 40.00 |
| 120.128750 | 39.27 | 100.0 | V | 156.0 | 10.9 | 4.23 | 43.50 |
| 180.067500 | 34.75 | 100.0 | V | 172.0 | 10.6 | 8.75 | 43.50 |
| 480.000000 | 28.89 | 175.0 | H | 155.0 | 19.1 | 17.11 | 46.00 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)**

**2. Margin = Limit – Quasi-Peak**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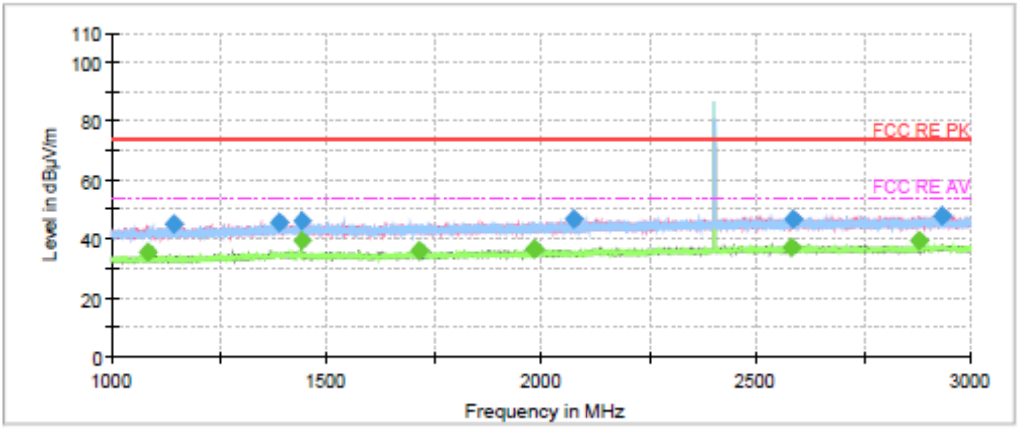
DH5-Channel 0




Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 1080.600000 | --- | 35.32 | 54.00 | 18.68 | 200.0 | V | 283.0 | -11.1 |
| 1143.600000 | 44.90 | --- | 74.00 | 29.10 | 100.0 | V | 237.0 | -10.8 |
| 1387.400000 | 45.67 | --- | 74.00 | 28.33 | 200.0 | V | 342.0 | -9.4 |
| 1440.466667 | --- | 39.56 | 54.00 | 14.44 | 100.0 | V | 278.0 | -9.2 |
| 1443.266667 | 46.03 | --- | 74.00 | 27.97 | 100.0 | V | 28.0 | -9.2 |
| 1713.666667 | --- | 36.02 | 54.00 | 17.98 | 200.0 | H | 52.0 | -8.9 |
| 1983.333333 | --- | 36.54 | 54.00 | 17.46 | 100.0 | H | 299.0 | -8.0 |
| 2074.866667 | 46.62 | --- | 74.00 | 27.38 | 200.0 | H | 11.0 | -7.7 |
| 2583.800000 | --- | 37.35 | 54.00 | 16.65 | 100.0 | V | 6.0 | -6.1 |
| 2588.666667 | 46.87 | --- | 74.00 | 27.13 | 200.0 | H | 6.0 | -6.1 |
| 2881.266667 | --- | 39.32 | 54.00 | 14.68 | 100.0 | V | 334.0 | -5.9 |
| 2933.333333 | 48.21 | --- | 74.00 | 25.79 | 200.0 | H | 17.0 | -5.9 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**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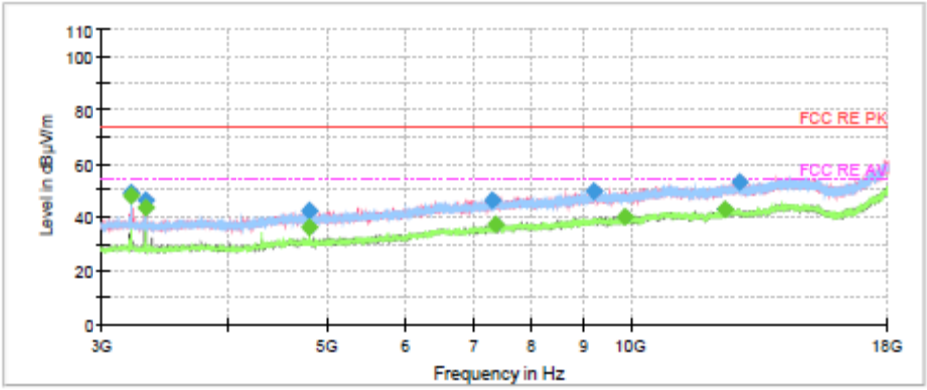


Radiates Emission from 3GHz to 18GHz

Note: The signal beyond the limit is carrier.

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 3202.500000 | 49.19 | --- | 74.00 | 24.81 | 200.0 | V | 153.0 | -15.3 |
| 3202.500000 | --- | 47.89 | 54.00 | 6.11 | 200.0 | V | 153.0 | -15.3 |
| 3312.000000 | 46.20 | --- | 74.00 | 27.80 | 100.0 | V | 295.0 | -15.2 |
| 3312.000000 | --- | 43.51 | 54.00 | 10.49 | 100.0 | V | 295.0 | -15.2 |
| 4804.000000 | 42.14 | --- | 74.00 | 31.86 | 200.0 | H | 296.0 | -10.3 |
| 4804.000000 | --- | 35.98 | 54.00 | 18.02 | 100.0 | V | 109.0 | -10.3 |
| 7305.500000 | 46.46 | --- | 74.00 | 27.54 | 200.0 | V | 125.0 | -3.5 |
| 7343.000000 | --- | 37.27 | 54.00 | 16.73 | 200.0 | V | 167.0 | -3.4 |
| 9214.000000 | 49.80 | --- | 74.00 | 24.20 | 100.0 | V | 281.0 | -2.3 |
| 9874.000000 | --- | 40.00 | 54.00 | 14.00 | 200.0 | H | 282.0 | -1.2 |
| 12417.000000 | --- | 43.12 | 54.00 | 10.88 | 200.0 | H | 254.0 | 1.6 |
| 12821.000000 | 52.80 | --- | 74.00 | 21.20 | 100.0 | V | 253.0 | 2.5 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**


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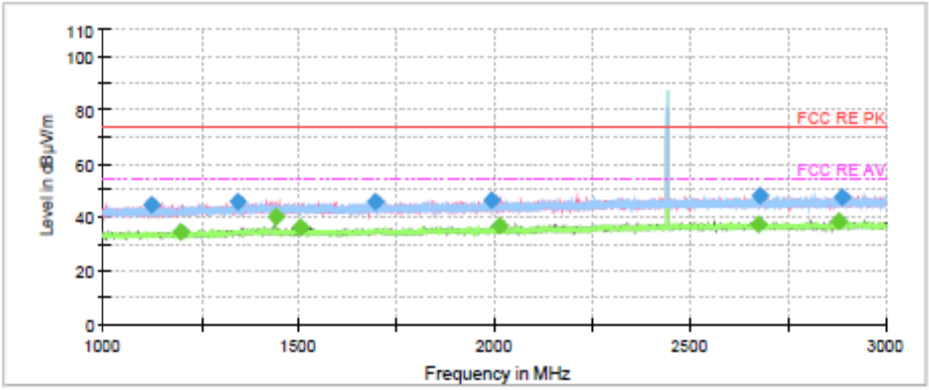
DH5-Channel 39




Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 1125.133333 | 44.41 | --- | 74.00 | 29.59 | 100.0 | V | 223.0 | -10.9 |
| 1196.400000 | --- | 34.63 | 54.00 | 19.37 | 100.0 | V | 7.0 | -10.7 |
| 1342.266667 | 45.92 | --- | 74.00 | 28.08 | 200.0 | H | 170.0 | -9.6 |
| 1440.666667 | --- | 39.78 | 54.00 | 14.22 | 200.0 | V | 139.0 | -9.2 |
| 1502.333333 | --- | 36.00 | 54.00 | 18.00 | 200.0 | H | 184.0 | -9.1 |
| 1694.666667 | 45.68 | --- | 74.00 | 28.32 | 200.0 | H | 292.0 | -8.9 |
| 1991.533333 | 46.19 | --- | 74.00 | 27.81 | 100.0 | H | 358.0 | -7.9 |
| 2013.066667 | --- | 36.86 | 54.00 | 17.14 | 200.0 | H | 170.0 | -7.9 |
| 2675.466667 | --- | 37.43 | 54.00 | 16.57 | 100.0 | V | 92.0 | -6.0 |
| 2679.666667 | 48.09 | --- | 74.00 | 25.91 | 200.0 | V | 356.0 | -6.0 |
| 2881.266667 | --- | 38.36 | 54.00 | 15.64 | 100.0 | V | 263.0 | -5.9 |
| 2889.066667 | 47.21 | --- | 74.00 | 26.79 | 100.0 | H | 204.0 | -5.9 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**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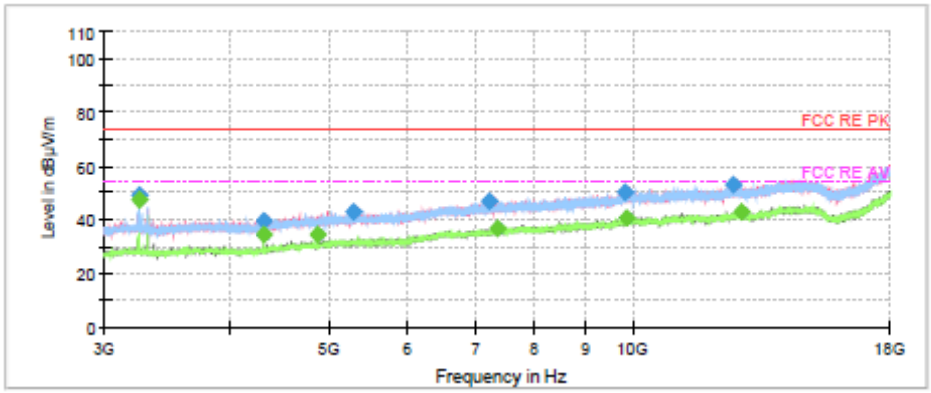


Radiates Emission from 3GHz to 18GHz

Note: The signal beyond the limit is carrier.

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 3257.000000 | 49.03 | --- | 74.00 | 24.97 | 200.0 | V | 155.0 | -15.3 |
| 3257.000000 | --- | 47.51 | 54.00 | 6.49 | 200.0 | V | 155.0 | -15.3 |
| 4321.000000 | 39.40 | --- | 74.00 | 34.60 | 100.0 | H | 233.0 | -12.2 |
| 4321.500000 | --- | 34.17 | 54.00 | 19.83 | 100.0 | H | 233.0 | -12.2 |
| 4882.000000 | --- | 34.62 | 54.00 | 19.38 | 200.0 | V | 271.0 | -10.3 |
| 5283.500000 | 42.89 | --- | 74.00 | 31.11 | 200.0 | H | 0.0 | -8.9 |
| 7215.500000 | 46.87 | --- | 74.00 | 27.13 | 100.0 | V | 266.0 | -3.7 |
| 7336.000000 | --- | 36.55 | 54.00 | 17.45 | 200.0 | H | 263.0 | -3.4 |
| 9821.000000 | 50.19 | --- | 74.00 | 23.81 | 200.0 | V | 2.0 | -1.3 |
| 9861.500000 | --- | 40.35 | 54.00 | 13.65 | 100.0 | V | 0.0 | -1.3 |
| 12565.000000 | 52.94 | --- | 74.00 | 21.06 | 100.0 | V | 357.0 | 2.1 |
| 12803.500000 | --- | 42.85 | 54.00 | 11.15 | 200.0 | V | 184.0 | 2.5 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**


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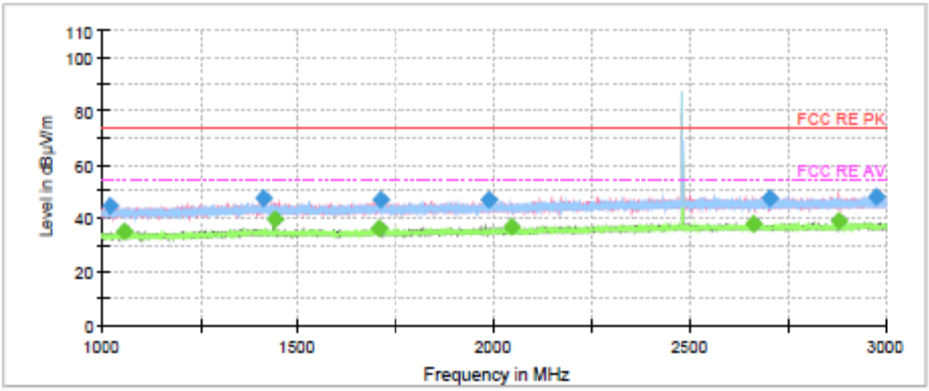
DH5-Channel 78




Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 1021.133333 | 44.33 | --- | 74.00 | 29.67 | 100.0 | H | 343.0 | -11.3 |
| 1057.266667 | --- | 34.72 | 54.00 | 19.28 | 100.0 | H | 322.0 | -11.3 |
| 1414.933333 | 47.17 | --- | 74.00 | 26.83 | 100.0 | V | 191.0 | -9.2 |
| 1440.533333 | --- | 39.35 | 54.00 | 14.65 | 100.0 | V | 152.0 | -9.2 |
| 1706.000000 | --- | 35.99 | 54.00 | 18.01 | 100.0 | H | 358.0 | -8.8 |
| 1709.533333 | 46.54 | --- | 74.00 | 27.46 | 100.0 | V | 32.0 | -8.9 |
| 1987.600000 | 46.64 | --- | 74.00 | 27.36 | 100.0 | V | 0.0 | -8.0 |
| 2046.533333 | --- | 36.64 | 54.00 | 17.36 | 200.0 | H | 346.0 | -7.7 |
| 2659.600000 | --- | 37.64 | 54.00 | 16.36 | 100.0 | V | 0.0 | -6.0 |
| 2701.400000 | 47.58 | --- | 74.00 | 26.42 | 200.0 | V | 190.0 | -6.1 |
| 2881.466667 | --- | 38.91 | 54.00 | 15.09 | 100.0 | V | 1.0 | -5.9 |
| 2976.000000 | 48.05 | --- | 74.00 | 25.95 | 200.0 | H | 8.0 | -5.8 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**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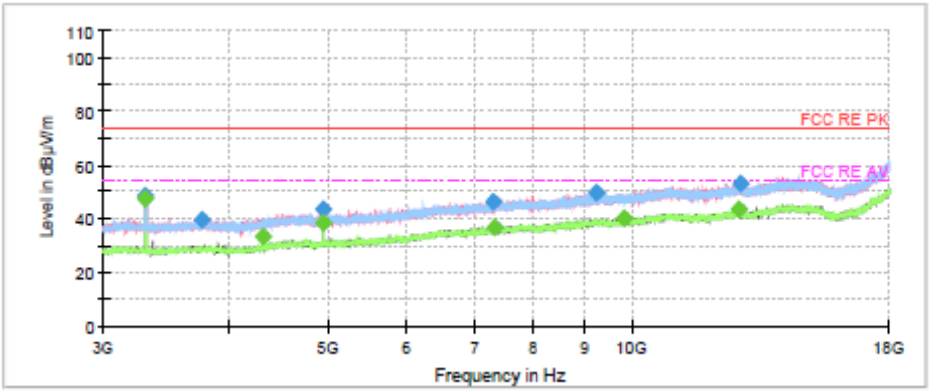


Radiates Emission from 3GHz to 18GHz

Note: The signal beyond the limit is carrier.

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 3306.500000 | 48.60 | --- | 74.00 | 25.40 | 100.0 | V | 147.0 | -15.2 |
| 3306.500000 | --- | 47.35 | 54.00 | 6.65 | 100.0 | V | 147.0 | -15.2 |
| 3758.000000 | 39.51 | --- | 74.00 | 34.49 | 200.0 | V | 0.0 | -14.1 |
| 4321.500000 | --- | 33.22 | 54.00 | 20.78 | 100.0 | H | 211.0 | -12.2 |
| 4959.500000 | --- | 38.37 | 54.00 | 15.63 | 200.0 | V | 212.0 | -10.0 |
| 4960.000000 | 43.24 | --- | 74.00 | 30.76 | 100.0 | V | 194.0 | -9.9 |
| 7297.500000 | 46.45 | --- | 74.00 | 27.55 | 100.0 | V | 180.0 | -3.5 |
| 7323.000000 | --- | 36.63 | 54.00 | 17.37 | 100.0 | H | 348.0 | -3.4 |
| 9241.500000 | 49.40 | --- | 74.00 | 24.60 | 100.0 | H | 54.0 | -2.4 |
| 9815.500000 | --- | 40.27 | 54.00 | 13.73 | 100.0 | H | 5.0 | -1.4 |
| 12773.500000 | --- | 43.30 | 54.00 | 10.70 | 200.0 | H | 239.0 | 2.5 |
| 12801.500000 | 53.17 | --- | 74.00 | 20.83 | 100.0 | H | 255.0 | 2.5 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**


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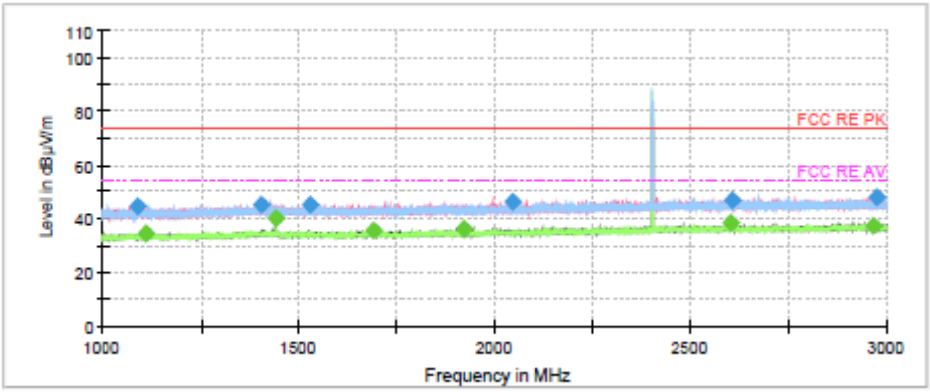
The Radiates Emission was performed in all EDR mode (2DH5 and 3DH5), 3DH5 was selected as the worse condition. The test data of the worst-case condition was recorded in this report.

3DH5-Channel 0




Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 1092.466667 | 44.75 | --- | 74.00 | 29.25 | 200.0 | H | 131.0 | -11.0 |
| 1109.733333 | --- | 34.48 | 54.00 | 19.52 | 100.0 | H | 96.0 | -10.9 |
| 1406.733333 | 45.25 | --- | 74.00 | 28.75 | 200.0 | H | 0.0 | -9.3 |
| 1440.600000 | --- | 40.04 | 54.00 | 13.96 | 100.0 | V | 0.0 | -9.2 |
| 1529.200000 | 45.28 | --- | 74.00 | 28.72 | 100.0 | V | 0.0 | -9.1 |
| 1690.000000 | --- | 35.72 | 54.00 | 18.28 | 200.0 | V | 349.0 | -8.9 |
| 1920.933333 | --- | 36.02 | 54.00 | 17.98 | 100.0 | V | 104.0 | -8.3 |
| 2043.866667 | 46.43 | --- | 74.00 | 27.57 | 200.0 | V | 26.0 | -7.7 |
| 2604.733333 | --- | 38.10 | 54.00 | 15.90 | 200.0 | V | 269.0 | -6.1 |
| 2609.466667 | 47.08 | --- | 74.00 | 26.92 | 100.0 | V | 359.0 | -6.1 |
| 2968.400000 | --- | 37.00 | 54.00 | 17.00 | 200.0 | V | 164.0 | -5.8 |
| 2977.200000 | 48.16 | --- | 74.00 | 25.84 | 200.0 | V | 178.0 | -5.8 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**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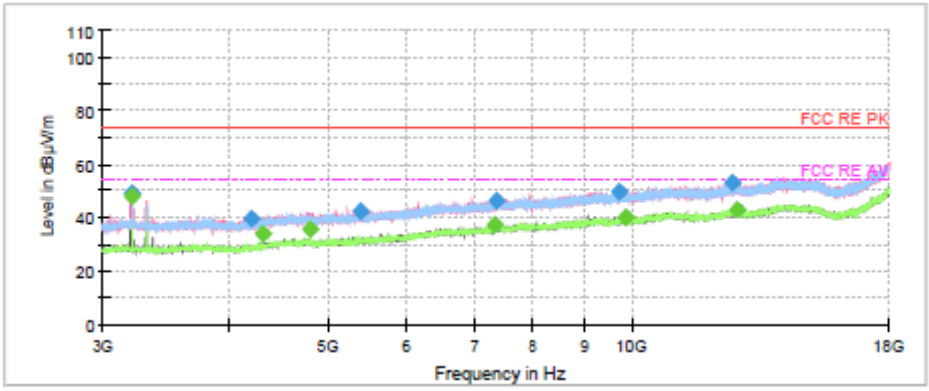


Radiates Emission from 3GHz to 18GHz

Note: The signal beyond the limit is carrier.

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 3202.500000 | 49.30 | --- | 74.00 | 24.70 | 200.0 | V | 141.0 | -15.3 |
| 3202.500000 | --- | 47.99 | 54.00 | 6.01 | 200.0 | V | 141.0 | -15.3 |
| 4214.000000 | 39.47 | --- | 74.00 | 34.53 | 200.0 | H | 0.0 | -12.5 |
| 4322.000000 | --- | 33.82 | 54.00 | 20.18 | 100.0 | H | 27.0 | -12.2 |
| 4804.000000 | --- | 35.63 | 54.00 | 18.37 | 100.0 | H | 313.0 | -10.3 |
| 5388.000000 | 42.33 | --- | 74.00 | 31.67 | 100.0 | V | 309.0 | -8.6 |
| 7320.500000 | --- | 36.99 | 54.00 | 17.01 | 100.0 | H | 153.0 | -3.5 |
| 7340.000000 | 46.31 | --- | 74.00 | 27.69 | 200.0 | H | 190.0 | -3.4 |
| 9728.500000 | 49.67 | --- | 74.00 | 24.33 | 100.0 | H | 96.0 | -2.1 |
| 9852.000000 | --- | 40.27 | 54.00 | 13.73 | 100.0 | V | 206.0 | -1.3 |
| 12576.000000 | 53.23 | --- | 74.00 | 20.77 | 100.0 | V | 0.0 | 2.2 |
| 12710.000000 | --- | 43.10 | 54.00 | 10.90 | 100.0 | V | 0.0 | 2.5 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**


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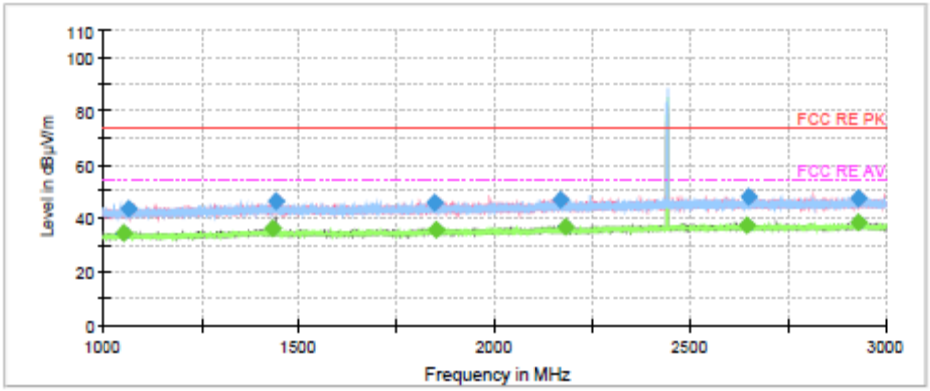
3DH5-Channel 39




Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 1053.400000 | --- | 34.41 | 54.00 | 19.59 | 100.0 | V | 2.0 | -11.3 |
| 1066.666667 | 43.67 | --- | 74.00 | 30.33 | 100.0 | H | 0.0 | -11.2 |
| 1434.866667 | --- | 35.88 | 54.00 | 18.12 | 100.0 | V | 273.0 | -9.2 |
| 1440.400000 | 46.22 | --- | 74.00 | 27.78 | 100.0 | V | 287.0 | -9.2 |
| 1848.466667 | 45.76 | --- | 74.00 | 28.24 | 100.0 | V | 358.0 | -8.6 |
| 1850.066667 | --- | 35.51 | 54.00 | 18.49 | 100.0 | V | 127.0 | -8.6 |
| 2169.133333 | 46.84 | --- | 74.00 | 27.16 | 100.0 | V | 193.0 | -7.3 |
| 2181.466667 | --- | 36.68 | 54.00 | 17.32 | 100.0 | H | 280.0 | -7.2 |
| 2645.733333 | --- | 37.32 | 54.00 | 16.68 | 100.0 | V | 206.0 | -6.1 |
| 2646.933333 | 47.89 | --- | 74.00 | 26.11 | 200.0 | H | 248.0 | -6.1 |
| 2929.266667 | 47.21 | --- | 74.00 | 26.79 | 200.0 | H | 248.0 | -5.9 |
| 2930.533333 | --- | 38.11 | 54.00 | 15.89 | 100.0 | H | 0.0 | -5.9 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**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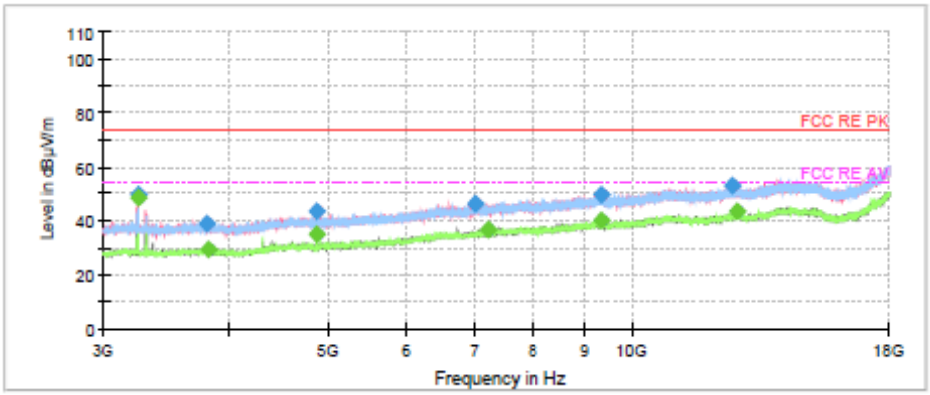


Radiates Emission from 3GHz to 18GHz

Note: The signal beyond the limit is carrier.

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 3254.500000 | 49.63 | --- | 74.00 | 24.37 | 200.0 | V | 142.0 | -15.3 |
| 3254.500000 | --- | 48.68 | 54.00 | 5.32 | 200.0 | V | 142.0 | -15.3 |
| 3800.500000 | 39.00 | --- | 74.00 | 35.00 | 200.0 | V | 354.0 | -13.9 |
| 3809.000000 | --- | 29.58 | 54.00 | 24.42 | 100.0 | H | 287.0 | -13.8 |
| 4881.500000 | 43.33 | --- | 74.00 | 30.67 | 100.0 | V | 204.0 | -10.3 |
| 4882.000000 | --- | 35.20 | 54.00 | 18.80 | 100.0 | V | 204.0 | -10.3 |
| 7008.000000 | 46.54 | --- | 74.00 | 27.46 | 100.0 | V | 245.0 | -3.3 |
| 7209.000000 | --- | 36.67 | 54.00 | 17.33 | 200.0 | H | 34.0 | -3.7 |
| 9341.000000 | --- | 40.00 | 54.00 | 14.00 | 200.0 | V | 354.0 | -2.3 |
| 9349.000000 | 49.51 | --- | 74.00 | 24.49 | 100.0 | V | 218.0 | -2.3 |
| 12568.500000 | 52.78 | --- | 74.00 | 21.22 | 100.0 | V | 274.0 | 2.2 |
| 12733.500000 | --- | 43.25 | 54.00 | 10.75 | 200.0 | V | 332.0 | 2.5 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**


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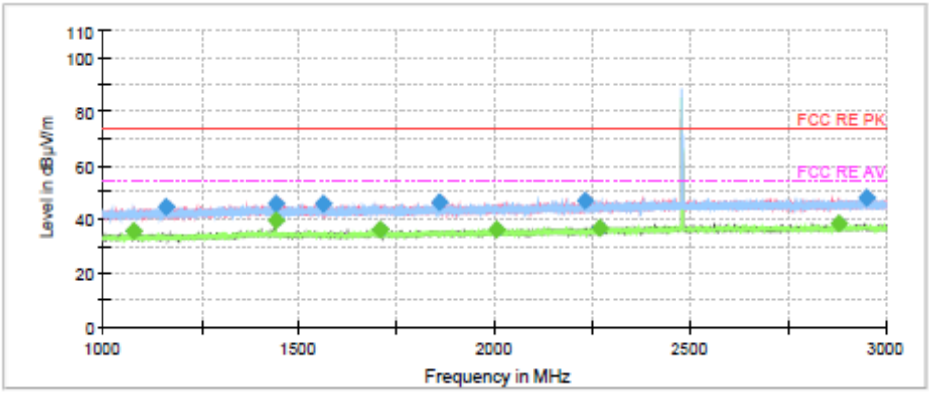
3DH5-Channel 78




Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 1080.400000 | --- | 35.78 | 54.00 | 18.22 | 200.0 | V | 305.0 | -11.1 |
| 1161.800000 | 44.50 | --- | 74.00 | 29.50 | 100.0 | V | 334.0 | -10.8 |
| 1440.333333 | --- | 39.34 | 54.00 | 14.66 | 100.0 | V | 291.0 | -9.2 |
| 1440.666667 | 45.64 | --- | 74.00 | 28.36 | 100.0 | V | 264.0 | -9.2 |
| 1560.933333 | 45.79 | --- | 74.00 | 28.21 | 200.0 | V | 340.0 | -9.1 |
| 1706.533333 | --- | 35.96 | 54.00 | 18.04 | 100.0 | V | 104.0 | -8.8 |
| 1858.533333 | 46.52 | --- | 74.00 | 27.48 | 100.0 | H | 356.0 | -8.5 |
| 2004.466667 | --- | 36.33 | 54.00 | 17.67 | 100.0 | V | 52.0 | -7.9 |
| 2231.133333 | 46.60 | --- | 74.00 | 27.40 | 100.0 | H | 358.0 | -7.1 |
| 2266.866667 | --- | 36.59 | 54.00 | 17.41 | 100.0 | V | 237.0 | -7.0 |
| 2881.133333 | --- | 38.39 | 54.00 | 15.61 | 100.0 | V | 264.0 | -5.9 |
| 2951.800000 | 48.07 | --- | 74.00 | 25.93 | 200.0 | H | 180.0 | -5.8 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**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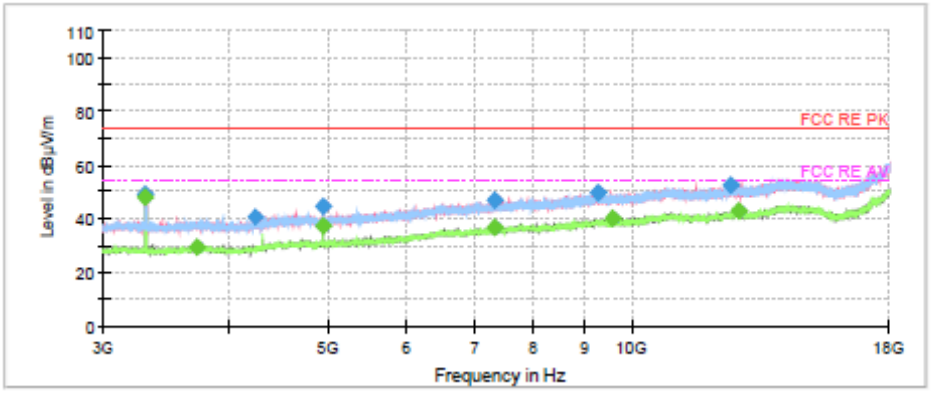


Radiates Emission from 3GHz to 18GHz

Note: The signal beyond the limit is carrier.

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 3306.500000 | 49.34 | --- | 74.00 | 24.66 | 100.0 | V | 150.0 | -15.2 |
| 3306.500000 | --- | 47.68 | 54.00 | 6.32 | 100.0 | V | 150.0 | -15.2 |
| 3713.000000 | --- | 29.51 | 54.00 | 24.49 | 100.0 | H | 268.0 | -14.2 |
| 4239.000000 | 40.39 | --- | 74.00 | 33.61 | 200.0 | H | 54.0 | -12.4 |
| 4960.000000 | 44.48 | --- | 74.00 | 29.52 | 100.0 | V | 284.0 | -9.9 |
| 4960.000000 | --- | 37.02 | 54.00 | 16.98 | 200.0 | V | 206.0 | -9.9 |
| 7319.500000 | --- | 36.75 | 54.00 | 17.25 | 200.0 | V | 12.0 | -3.5 |
| 7333.500000 | 46.57 | --- | 74.00 | 27.43 | 100.0 | H | 268.0 | -3.4 |
| 9278.500000 | 49.65 | --- | 74.00 | 24.35 | 200.0 | H | 18.0 | -2.4 |
| 9572.500000 | --- | 39.81 | 54.00 | 14.19 | 200.0 | V | 74.0 | -2.1 |
| 12561.500000 | 52.74 | --- | 74.00 | 21.26 | 100.0 | V | 0.0 | 2.1 |
| 12794.500000 | --- | 42.94 | 54.00 | 11.06 | 200.0 | H | 18.0 | 2.5 |

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**


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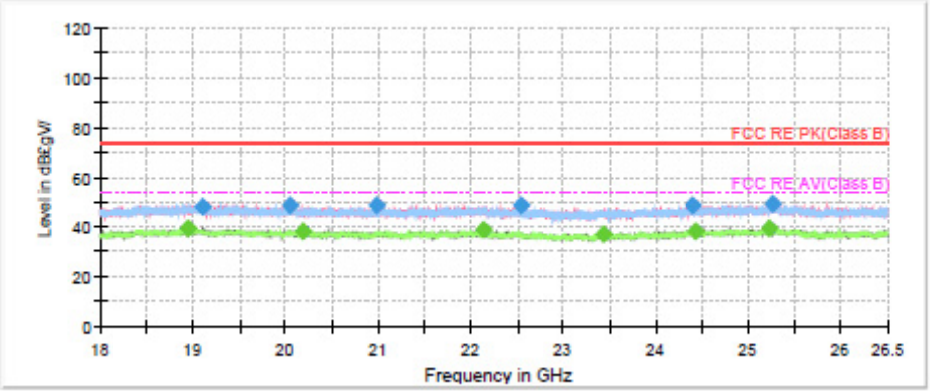
During the test, the Radiates Emission from 18GHz to 26.5GHz was performed in all modes with all channels, 3DH5-Channel 39 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.




Radiates Emission from 18GHz to 26.5GHz

| Frequency (MHz) | MaxPeak (dB µ V/m) | Average (dB µ V/m) | Limit (dB µ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 18942.083333 | --- | 39.13 | 54.00 | 14.87 | 200.0 | V | 22.0 | -3.5 |
| 19112.366667 | 47.96 | --- | 74.00 | 26.04 | 200.0 | H | 32.0 | -3.4 |
| 20057.000000 | 48.84 | --- | 74.00 | 25.16 | 200.0 | V | 57.0 | -3.0 |
| 20187.333333 | --- | 37.91 | 54.00 | 16.09 | 200.0 | V | 100.0 | -2.8 |
| 20978.400000 | 48.42 | --- | 74.00 | 25.58 | 100.0 | H | 115.0 | -2.2 |
| 22139.783333 | --- | 38.62 | 54.00 | 15.38 | 100.0 | H | 108.0 | -1.1 |
| 22539.283333 | 48.37 | --- | 74.00 | 25.63 | 200.0 | H | 273.0 | -0.9 |
| 23426.116667 | --- | 37.23 | 54.00 | 16.77 | 200.0 | H | 308.0 | -1.0 |
| 24398.800000 | 48.68 | --- | 74.00 | 25.32 | 100.0 | V | 76.0 | 0.4 |
| 24436.200000 | --- | 38.38 | 54.00 | 15.62 | 200.0 | H | 315.0 | 0.4 |
| 25216.500000 | --- | 39.27 | 54.00 | 14.73 | 100.0 | H | 326.0 | 1.1 |
| 25262.966667 | 49.22 | --- | 74.00 | 24.78 | 200.0 | V | 50.0 | 1.0 |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## 5.9 Conducted Emission

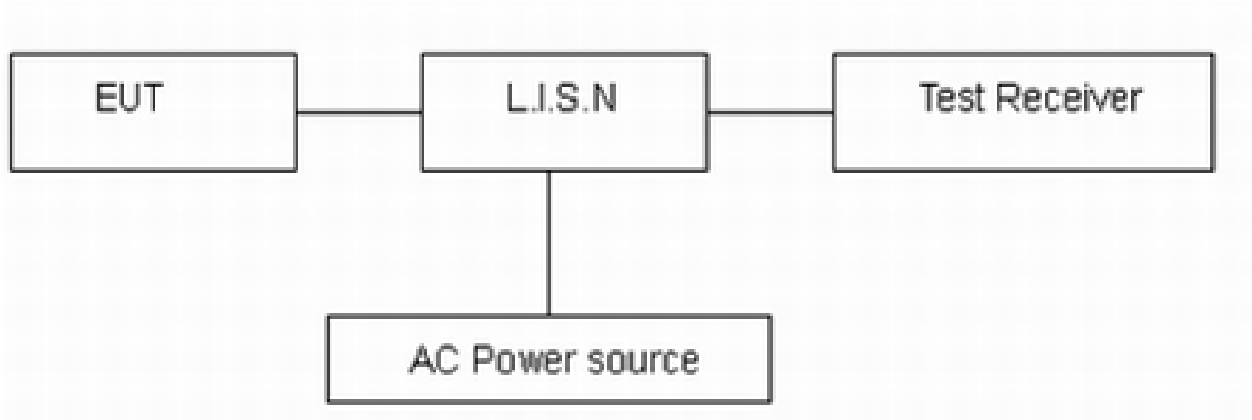
### Ambient condition

| Temperature | Relative humidity | Pressure |
|---|---|---|
| 23°C ~25°C | 45%~50% | 101.5kPa |

### Methods of Measurement

The EUT is placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.10. Connect the AC power line of the EUT to the L.I.S.N. Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9 kHz, VBW is set to 30kHz.The measurement result should include both L line and N line.
The test is in transmitting mode.

### Test Setup




Note: AC Power source is used to 120V/60Hz.

### Limits

| Frequency (MHz) | Conducted Limits(dBμV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15 - 0.5 | 66 to 56 * | 56 to 46* |
| 0.5 - 5 | 56 | 46 |
| 5 - 30 | 60 | 50 |
| *: Decreases with the logarithm of the frequency. | | |

### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k$ = 1.96, $U$=2.69 dB.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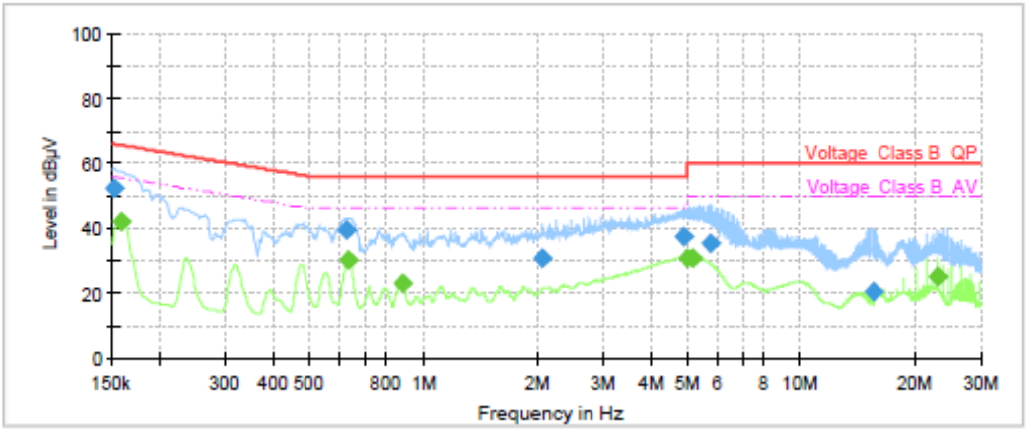
**Test Results:**

**ESP32-PICO-MINI-02**

Following plots, Blue trace uses the peak detection, Green trace uses the average detection. During the test, the Conducted Emission was performed in all modes with all channels, BT 3DH5-Channel 0, are selected as the worst condition. The test data of the worst-case condition was recorded in this report.




| Frequency (MHz) | QuasiPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Filter | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|---|
| 0.15 | 52.54 | --- | 65.88 | 13.34 | 70.0 | 9.000 | L1 | ON | 21 |
| 0.16 | --- | 42.25 | 55.52 | 13.27 | 70.0 | 9.000 | L1 | ON | 21 |
| 0.63 | 39.51 | --- | 56.00 | 16.49 | 70.0 | 9.000 | L1 | ON | 20 |
| 0.63 | --- | 30.39 | 46.00 | 15.61 | 70.0 | 9.000 | L1 | ON | 20 |
| 0.88 | --- | 23.17 | 46.00 | 22.83 | 70.0 | 9.000 | L1 | ON | 20 |
| 2.07 | 30.77 | --- | 56.00 | 25.23 | 70.0 | 9.000 | L1 | ON | 20 |
| 4.92 | 37.49 | --- | 56.00 | 18.51 | 70.0 | 9.000 | L1 | ON | 19 |
| 4.99 | --- | 30.86 | 46.00 | 15.14 | 70.0 | 9.000 | L1 | ON | 19 |
| 5.18 | --- | 30.82 | 50.00 | 19.18 | 70.0 | 9.000 | L1 | ON | 19 |
| 5.73 | 35.32 | --- | 60.00 | 24.68 | 70.0 | 9.000 | L1 | ON | 19 |
| 15.57 | 20.72 | --- | 60.00 | 39.28 | 70.0 | 9.000 | L1 | ON | 20 |
| 23.09 | --- | 25.34 | 50.00 | 24.66 | 70.0 | 9.000 | L1 | ON | 20 |

**Remark: Correct factor=cable loss + LISN factor**

L line

Conducted Emission from 150 KHz to 30 MHz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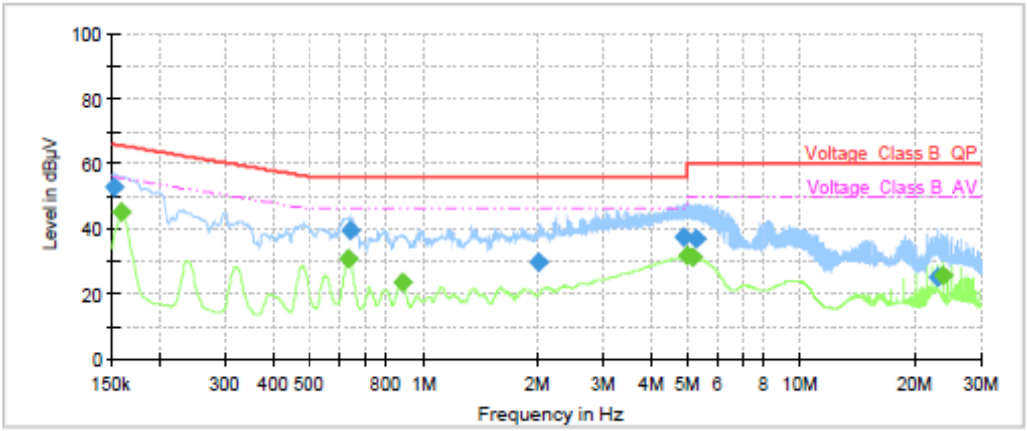


| Frequency (MHz) | QuasiPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Filter | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|---|
| 0.15 | 53.02 | --- | 65.88 | 12.86 | 70.0 | 9.000 | N | ON | 21 |
| 0.16 | --- | 45.00 | 55.52 | 10.52 | 70.0 | 9.000 | N | ON | 21 |
| 0.64 | --- | 30.75 | 46.00 | 15.25 | 70.0 | 9.000 | N | ON | 20 |
| 0.64 | 39.31 | --- | 56.00 | 16.69 | 70.0 | 9.000 | N | ON | 20 |
| 0.88 | --- | 23.39 | 46.00 | 22.61 | 70.0 | 9.000 | N | ON | 20 |
| 2.02 | 29.81 | --- | 56.00 | 26.19 | 70.0 | 9.000 | N | ON | 20 |
| 4.88 | 37.37 | --- | 56.00 | 18.63 | 70.0 | 9.000 | N | ON | 19 |
| 4.98 | --- | 31.98 | 46.00 | 14.02 | 70.0 | 9.000 | N | ON | 19 |
| 5.14 | --- | 31.14 | 50.00 | 18.86 | 70.0 | 9.000 | N | ON | 19 |
| 5.28 | 36.96 | --- | 60.00 | 23.04 | 70.0 | 9.000 | N | ON | 19 |
| 23.03 | 25.11 | --- | 60.00 | 34.89 | 70.0 | 9.000 | N | ON | 20 |
| 23.79 | --- | 25.82 | 50.00 | 24.18 | 70.0 | 9.000 | N | ON | 20 |

**Remark: Correct factor=cable loss + LISN factor**

N line

Conducted Emission from 150 KHz to 30 MHz


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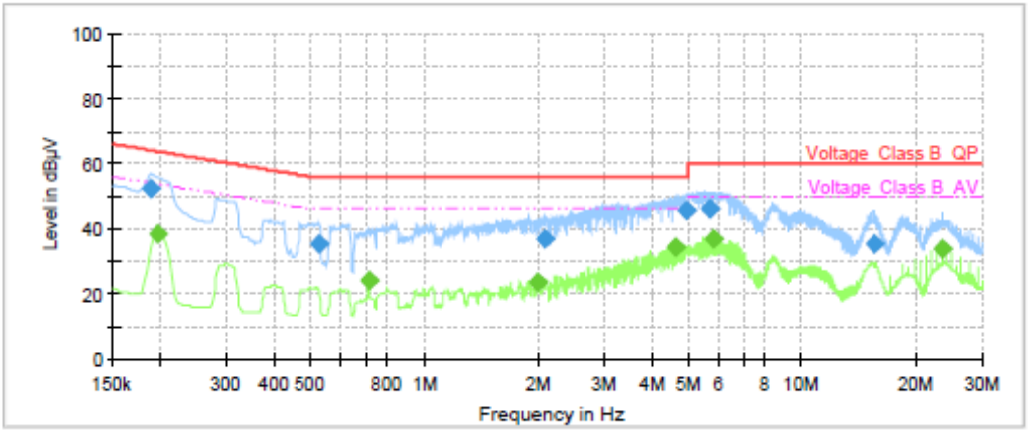
**ESP32-PICO-MINI-02U**

Following plots, Blue trace uses the peak detection, Green trace uses the average detection. During the test, the Conducted Emission was performed in all modes with all channels, BT 3DH5-Channel 39, are selected as the worst condition. The test data of the worst-case condition was recorded in this report.




| Frequency (MHz) | QuasiPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Filter | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|---|
| 0.19 | 52.42 | --- | 64.11 | 11.69 | 70.0 | 9.000 | L1 | ON | 21 |
| 0.20 | --- | 38.61 | 53.73 | 15.12 | 70.0 | 9.000 | L1 | ON | 21 |
| 0.53 | 35.25 | --- | 56.00 | 20.75 | 70.0 | 9.000 | L1 | ON | 20 |
| 0.71 | --- | 24.18 | 46.00 | 21.82 | 70.0 | 9.000 | L1 | ON | 20 |
| 1.99 | --- | 23.61 | 46.00 | 22.39 | 70.0 | 9.000 | L1 | ON | 20 |
| 2.10 | 36.84 | --- | 56.00 | 19.16 | 70.0 | 9.000 | L1 | ON | 20 |
| 4.64 | --- | 34.59 | 46.00 | 11.41 | 70.0 | 9.000 | L1 | ON | 19 |
| 4.95 | 45.45 | --- | 56.00 | 10.55 | 70.0 | 9.000 | L1 | ON | 19 |
| 5.70 | 46.38 | --- | 60.00 | 13.62 | 70.0 | 9.000 | L1 | ON | 19 |
| 5.82 | --- | 36.70 | 50.00 | 13.30 | 70.0 | 9.000 | L1 | ON | 19 |
| 15.58 | 35.46 | --- | 60.00 | 24.54 | 70.0 | 9.000 | L1 | ON | 20 |
| 23.52 | --- | 33.62 | 50.00 | 16.38 | 70.0 | 9.000 | L1 | ON | 20 |

**Remark: Correct factor=cable loss + LISN factor**

L line

Conducted Emission from 150 KHz to 30 MHz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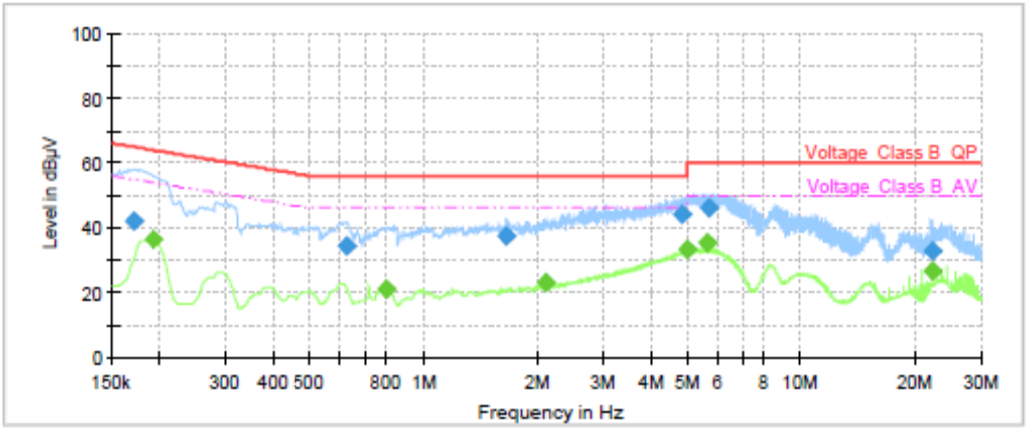


| Frequency (MHz) | QuasiPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Filter | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|---|
| 0.17 | 42.22 | --- | 64.95 | 22.73 | 70.0 | 9.000 | N | ON | 21 |
| 0.19 | --- | 36.17 | 53.92 | 17.75 | 70.0 | 9.000 | N | ON | 21 |
| 0.63 | 34.19 | --- | 56.00 | 21.81 | 70.0 | 9.000 | N | ON | 20 |
| 0.80 | --- | 20.93 | 46.00 | 25.07 | 70.0 | 9.000 | N | ON | 20 |
| 1.67 | 37.21 | --- | 56.00 | 18.79 | 70.0 | 9.000 | N | ON | 20 |
| 2.10 | --- | 23.17 | 46.00 | 22.83 | 70.0 | 9.000 | N | ON | 20 |
| 4.83 | 44.06 | --- | 56.00 | 11.94 | 70.0 | 9.000 | N | ON | 19 |
| 4.99 | --- | 33.11 | 46.00 | 12.89 | 70.0 | 9.000 | N | ON | 19 |
| 5.65 | --- | 35.31 | 50.00 | 14.69 | 70.0 | 9.000 | N | ON | 19 |
| 5.71 | 46.07 | --- | 60.00 | 13.93 | 70.0 | 9.000 | N | ON | 19 |
| 22.24 | 32.73 | --- | 60.00 | 27.27 | 70.0 | 9.000 | N | ON | 20 |
| 22.27 | --- | 26.75 | 50.00 | 23.25 | 70.0 | 9.000 | N | ON | 20 |

**Remark: Correct factor=cable loss + LISN factor**

N line

Conducted Emission from 150 KHz to 30 MHz


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# 6 Main Test Instruments

| Name | Manufacturer | Type | Serial Number | Calibration Date | Expiration Date |
|---|---|---|---|---|---|
| Wireless Communication Tester | R&S | CMW270 | 100673 | 2021-05-15 | 2022-05-14 |
| Signal Analyzer | R&S | FSV30 | 100815 | 2020-12-13 | 2021-12-12 |
| EMI Test Receiver | R&S | ESCI | 100948 | 2021-05-15 | 2022-05-14 |
| Loop Antenna | Schwarzbeck | FMZB1519 | 1519-047 | 2020-04-02 | 2023-04-01 |
| TRILOG Broadband Antenna | SCHWARZBECK | VULB 9163 | 391 | 2019-12-16 | 2022-12-15 |
| Horn Antenna | R&S | HF907 | 102723 | 2021-08-10 | 2023-08-09 |
| Standard Gain Horn | QPAR | QMS-00225 | 19928 | 2020-02-26 | 2023-02-25 |
| EMI Test Receiver | R&S | ESR | 101667 | 2021-05-16 | 2022-05-15 |
| LISN | R&S | ENV216 | 101171 | 2018-12-15 | 2021-12-14 |
| Spectrum Analyzer | Agilent | N9010A | MY47191109 | 2021-05-15 | 2022-05-14 |
| RF Cable | Agilent | SMA 15cm | 0001 | 2021-06-13 | 2021-12-12 |
| Power Splitter | Hua Xiang | SHX-GF2-2-13 | 10120101 | / | / |
| Software | R&S | EMC32 | 9.26.0 | / | / |

********END OF REPORT ********


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# ANNEX A: The EUT Appearance

**The EUT Appearance are submitted separately.**


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# ANNEX B: Test Setup Photos

**The Test Setup Photos are submitted separately.**


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