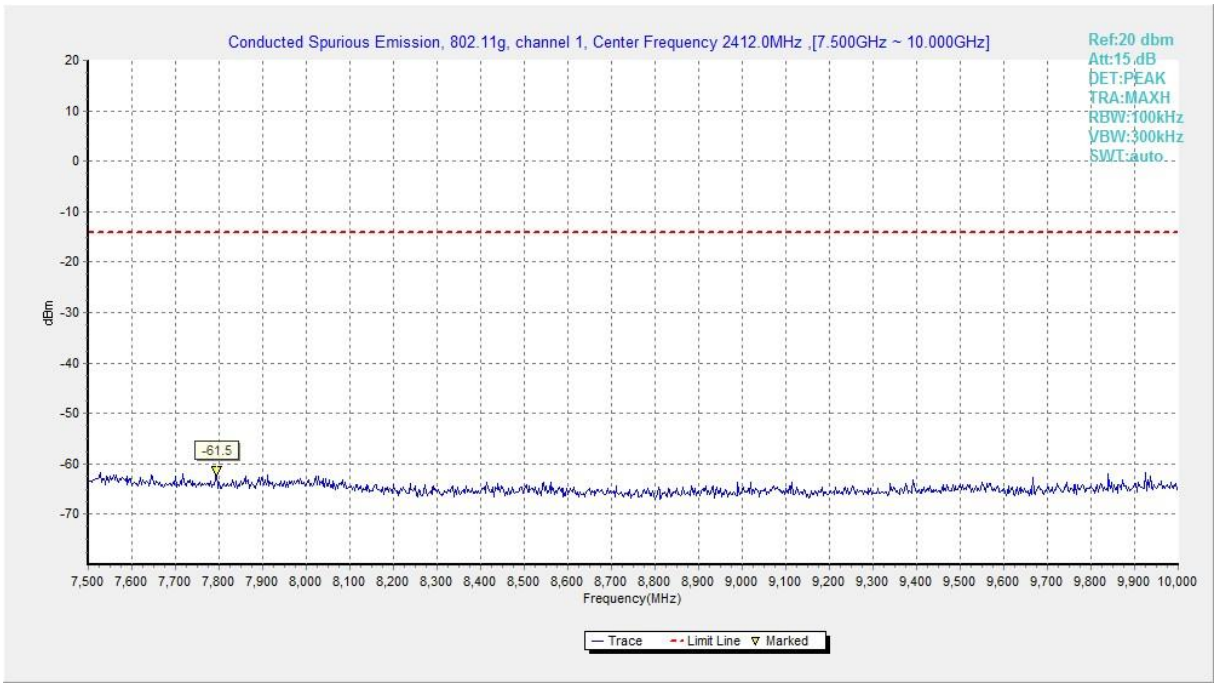



**Fig.A.6.1.29 Transmitter Spurious Emission - Conducted (802.11g, Ch1, 7.5 GHz-10 GHz)**

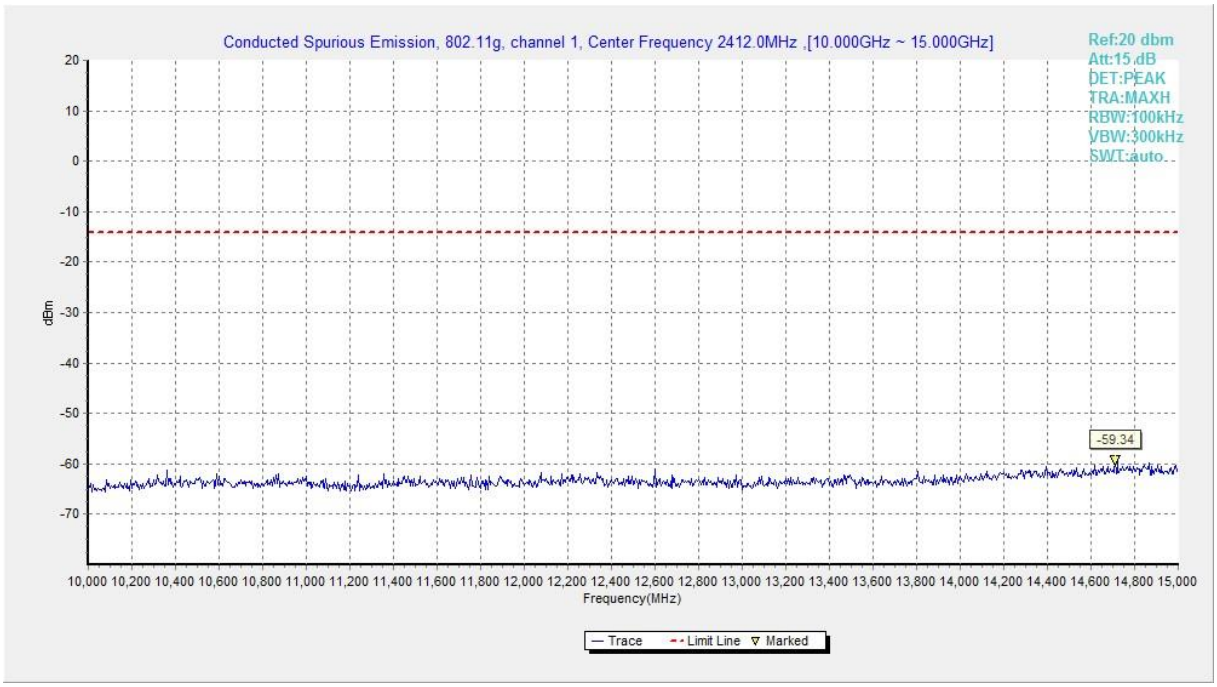



**Fig.A.6.1.30 Transmitter Spurious Emission - Conducted (802.11g, Ch1, 10 GHz-15 GHz)**

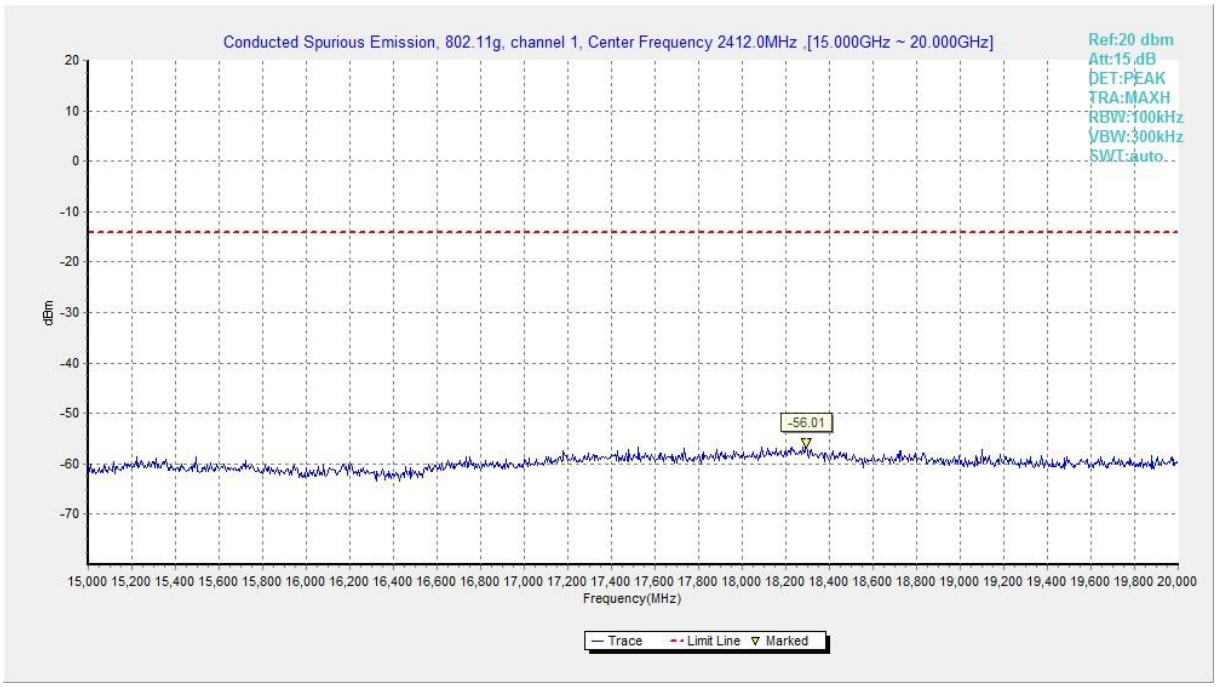



**Fig.A.6.1.31 Transmitter Spurious Emission - Conducted (802.11g, Ch1, 15 GHz-20 GHz)**

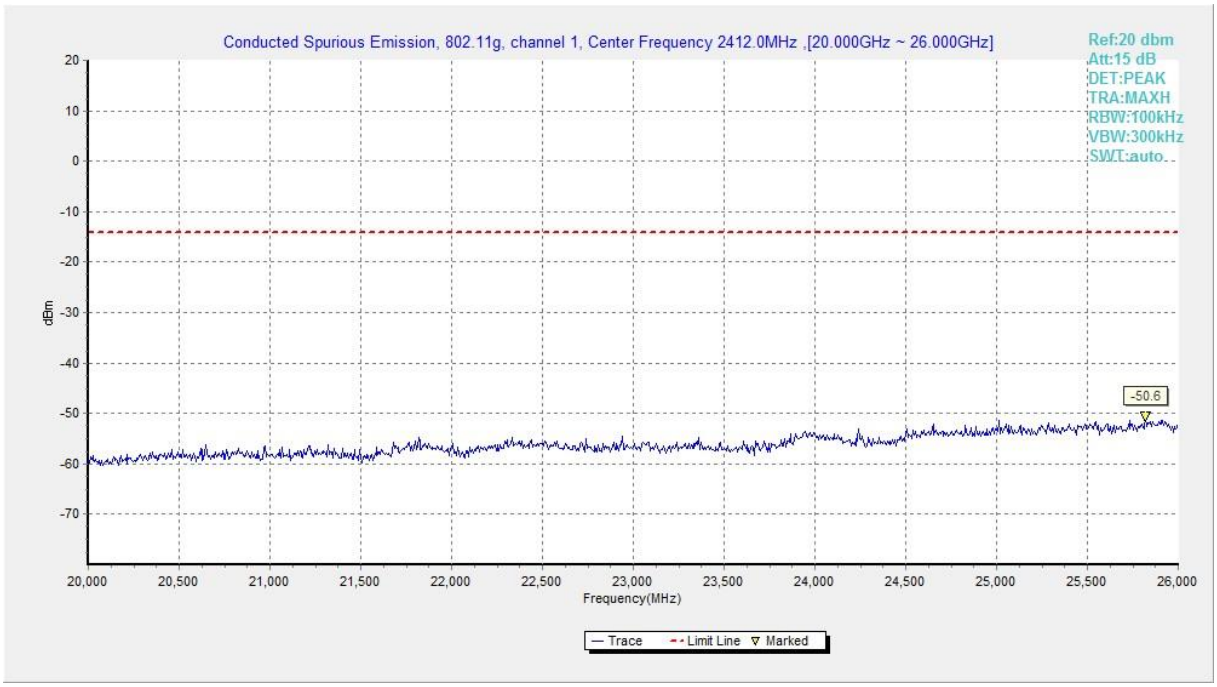



**Fig.A.6.1.32 Transmitter Spurious Emission - Conducted (802.11g, Ch1, 20 GHz-26 GHz)**

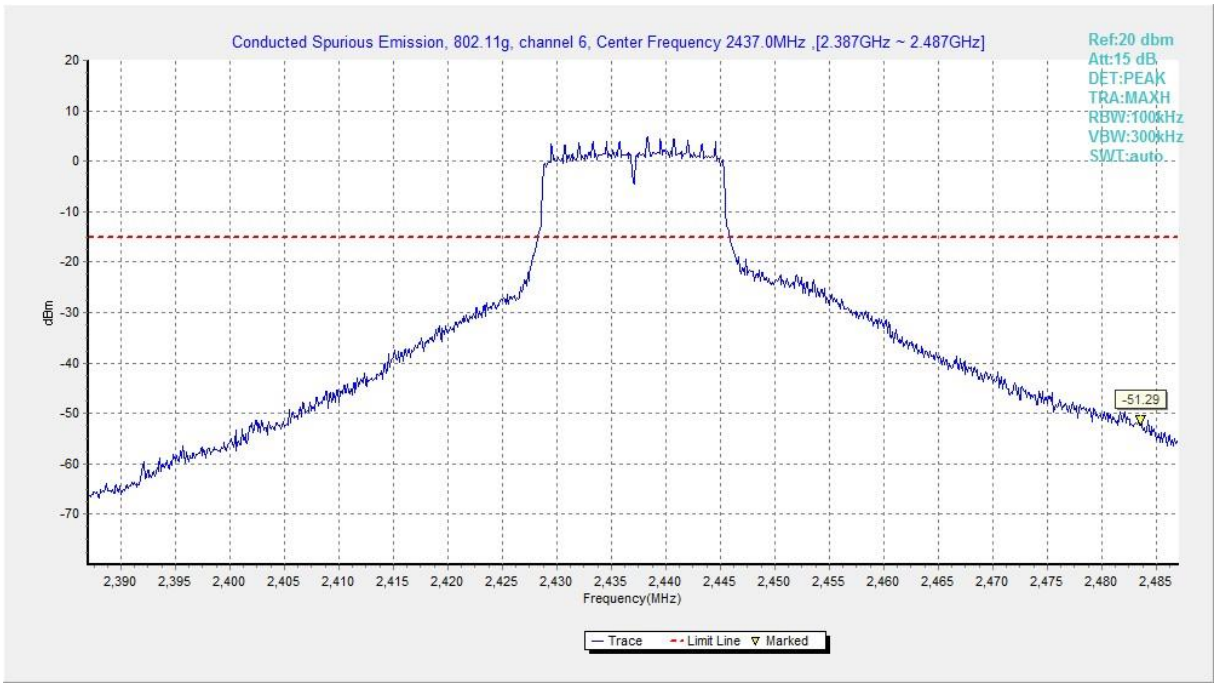



**Fig.A.6.1.33 Transmitter Spurious Emission - Conducted (802.11g, Ch6, Center Frequency)**

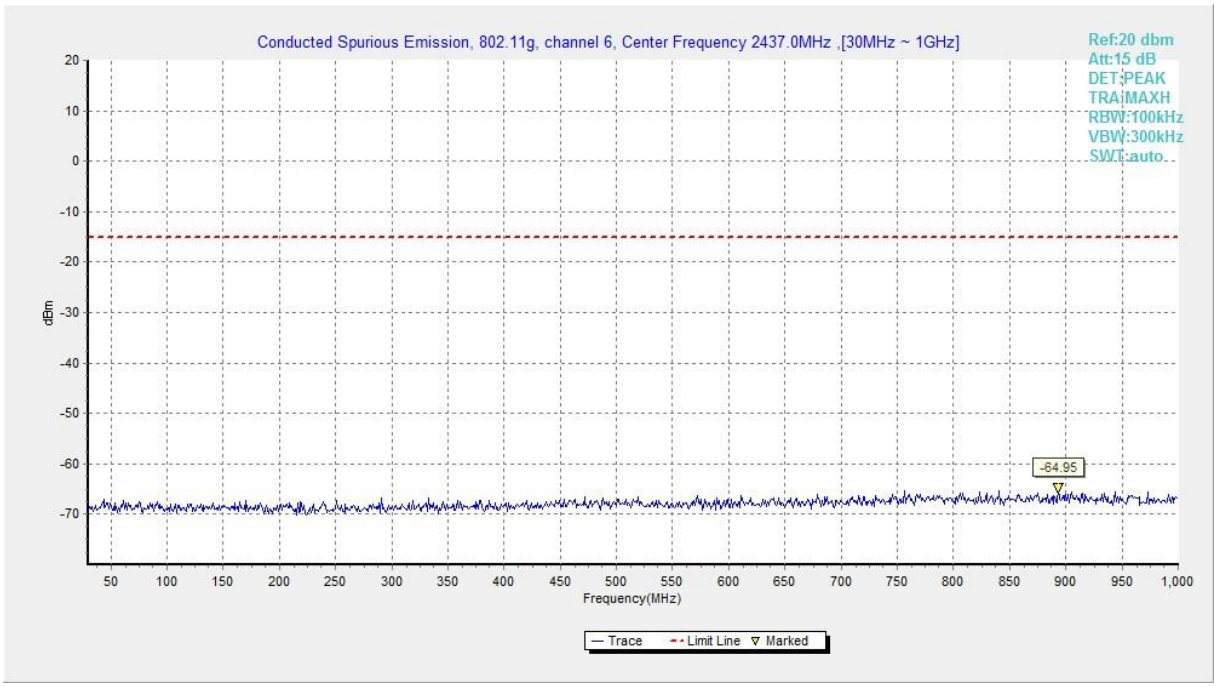



**Fig.A.6.1.34 Transmitter Spurious Emission - Conducted (802.11g, Ch6, 30 MHz-1 GHz)**

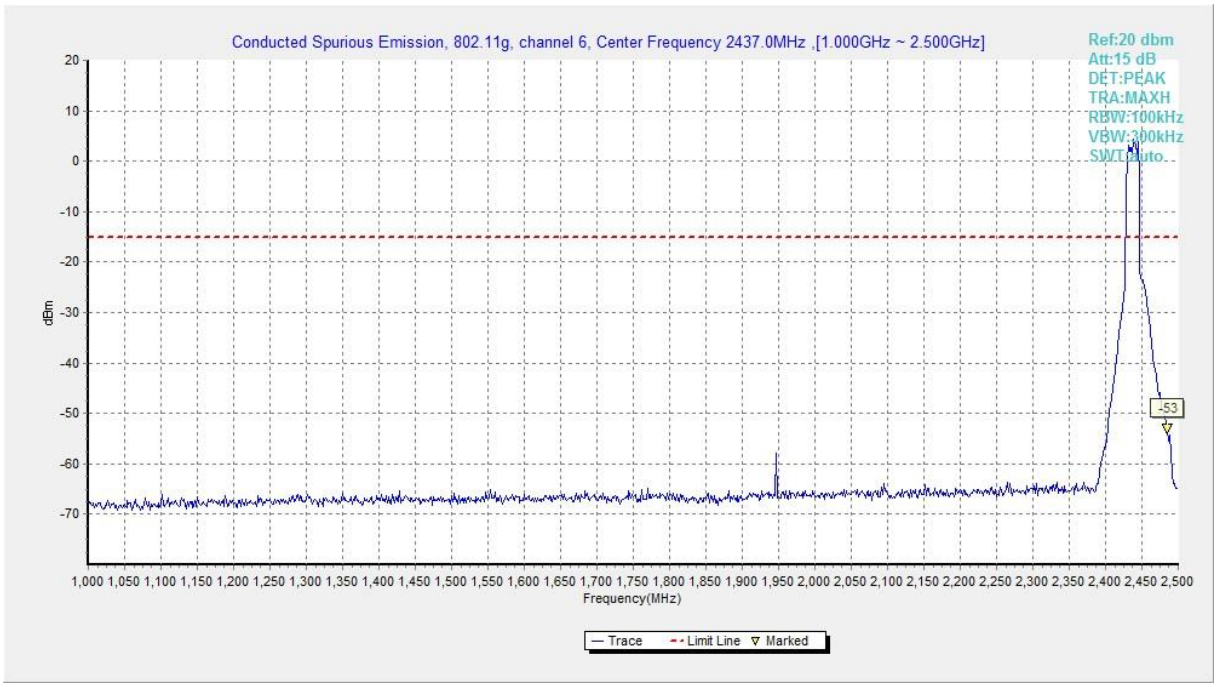



**Fig.A.6.1.35 Transmitter Spurious Emission - Conducted (802.11g, Ch6, 1 GHz-2.5 GHz)**

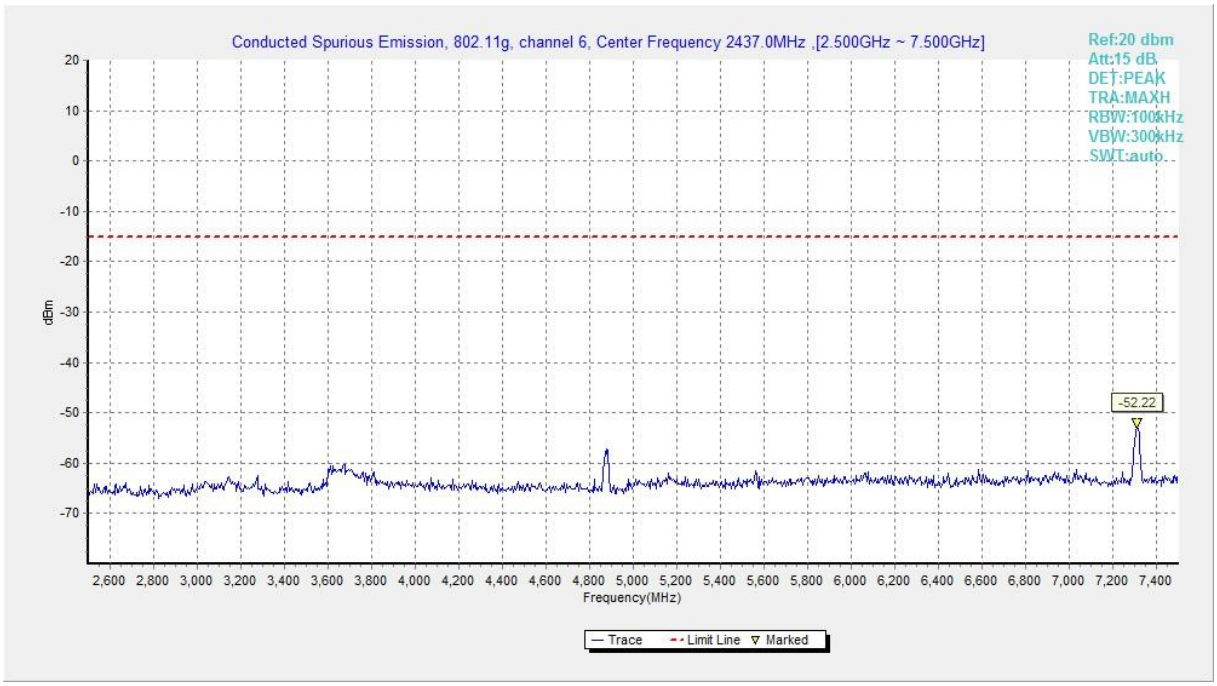



**Fig.A.6.1.36 Transmitter Spurious Emission - Conducted (802.11g, Ch6, 2.5 GHz-7.5 GHz)**

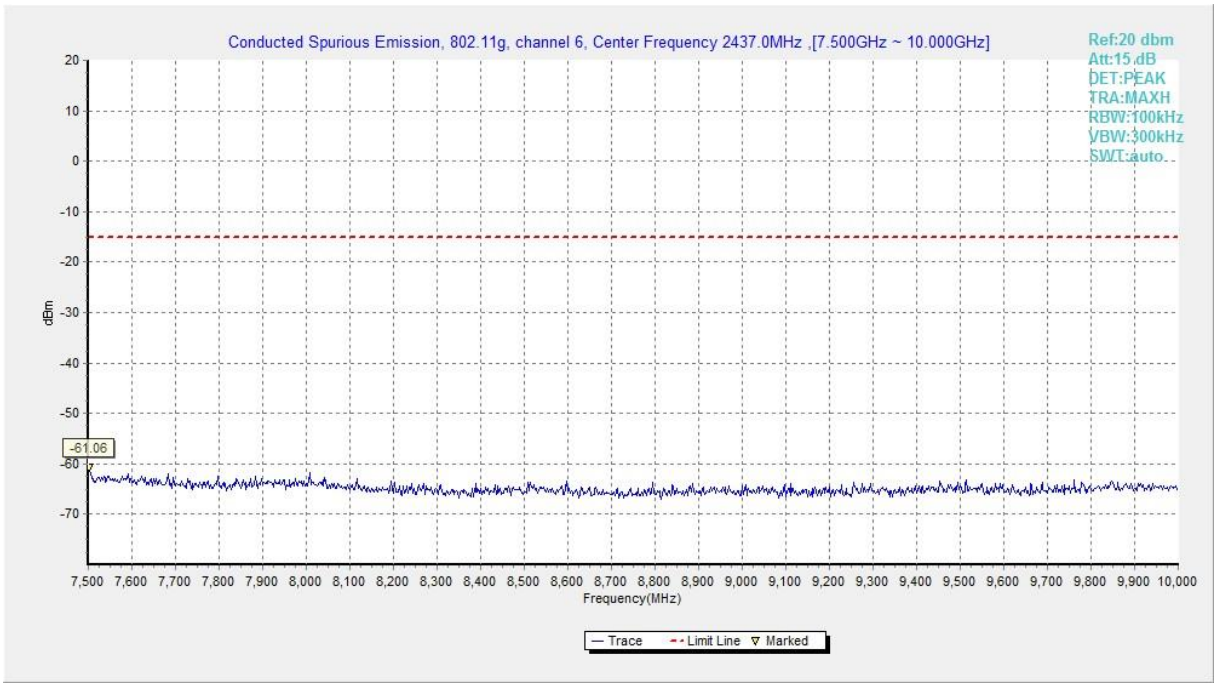



**Fig.A.6.1.37 Transmitter Spurious Emission - Conducted (802.11g, Ch6, 7.5 GHz-10 GHz)**

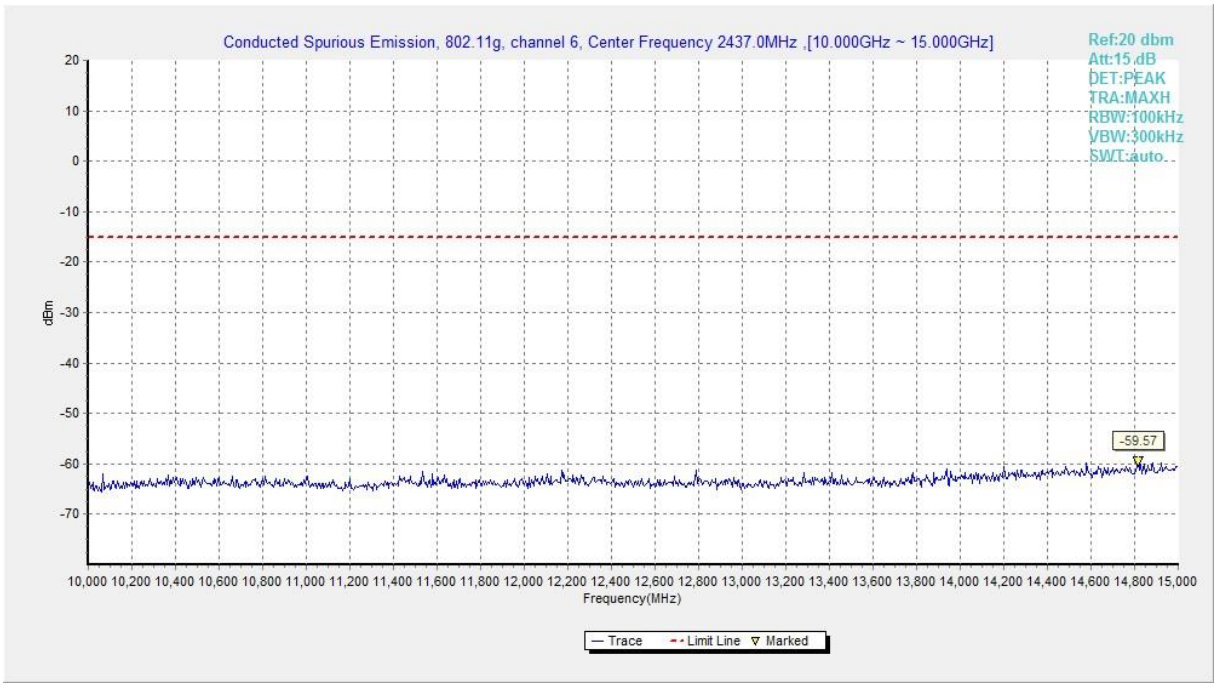



**Fig.A.6.1.38 Transmitter Spurious Emission - Conducted (802.11g, Ch6, 10 GHz-15 GHz)**

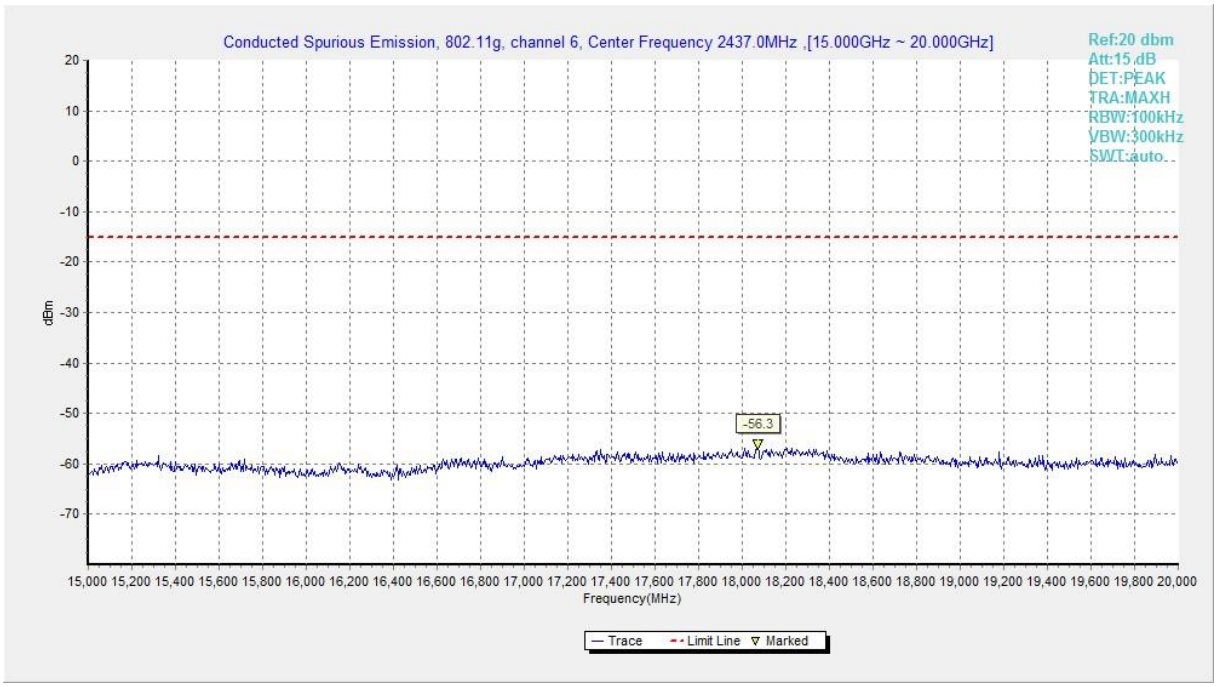



**Fig.A.6.1.39 Transmitter Spurious Emission - Conducted (802.11g, Ch6, 15 GHz-20 GHz)**

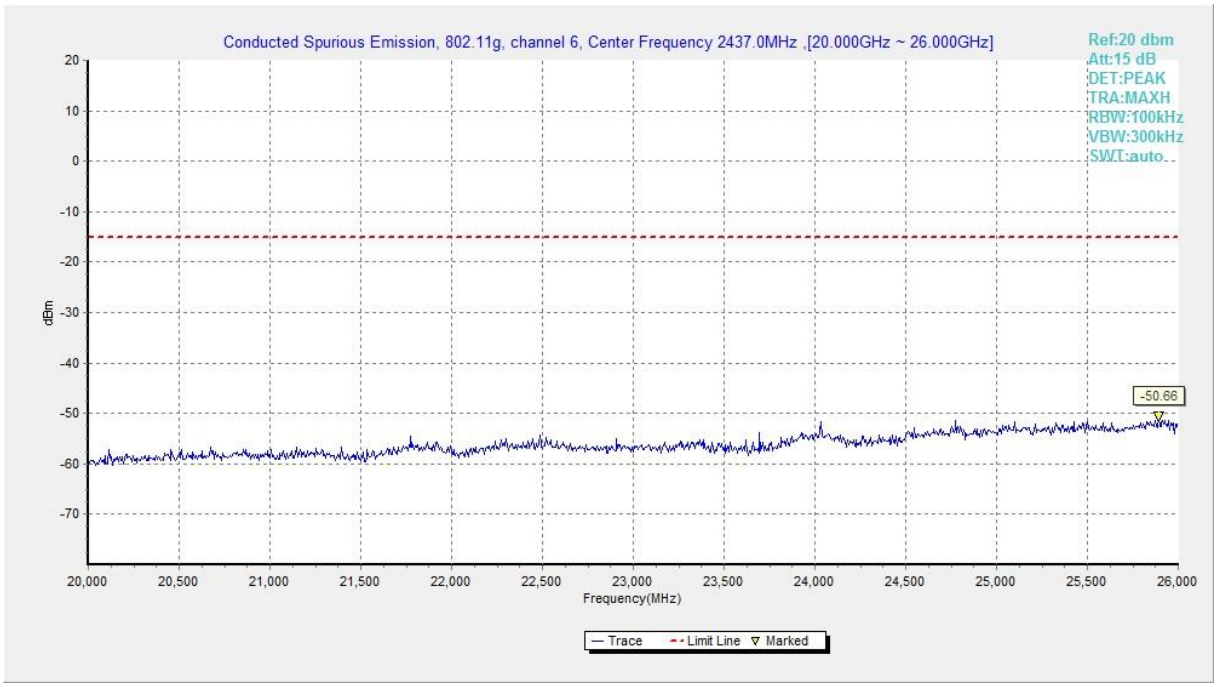



**Fig.A.6.1.40 Transmitter Spurious Emission - Conducted (802.11g, Ch6, 20 GHz-26 GHz)**

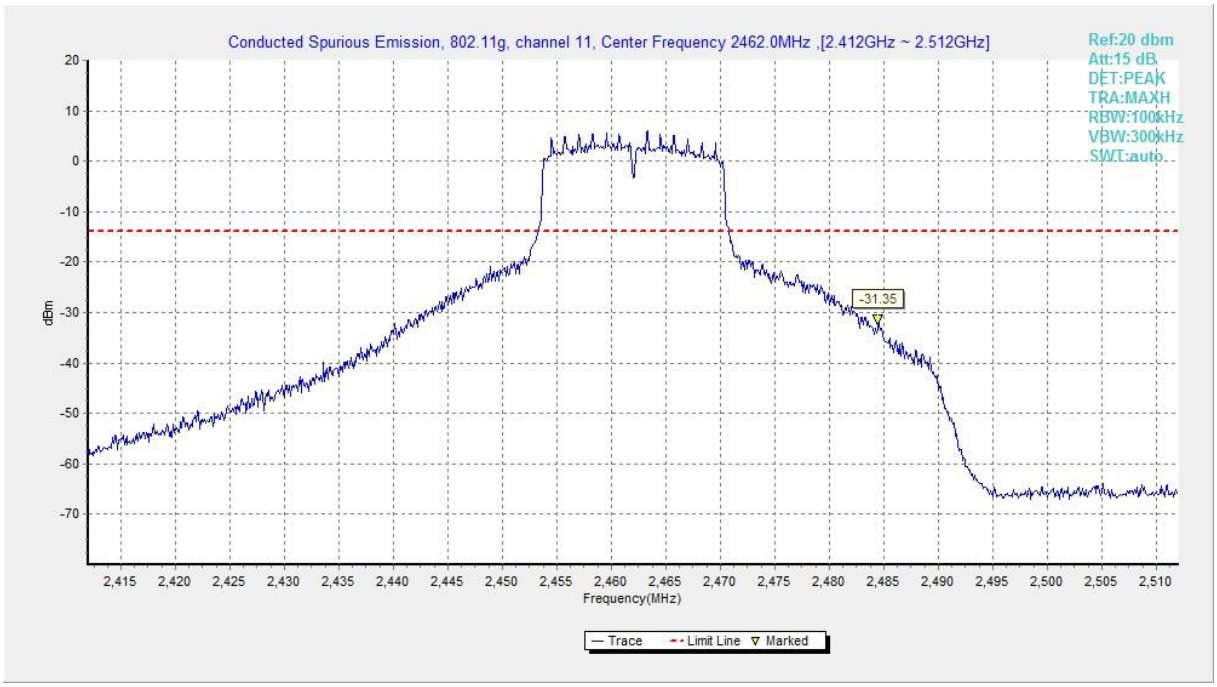



**Fig.A.6.1.41 Transmitter Spurious Emission - Conducted (802.11g, Ch11, Center Frequency)**

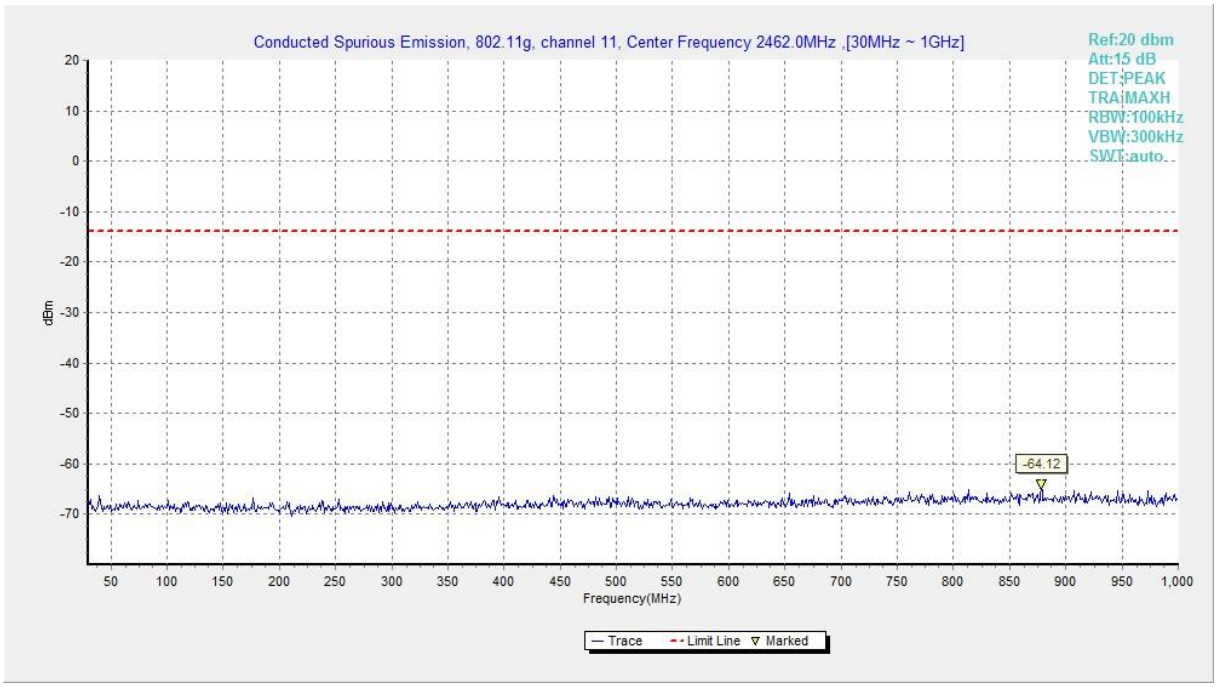



**Fig.A.6.1.42 Transmitter Spurious Emission - Conducted (802.11g, Ch11, 30 MHz-1 GHz)**

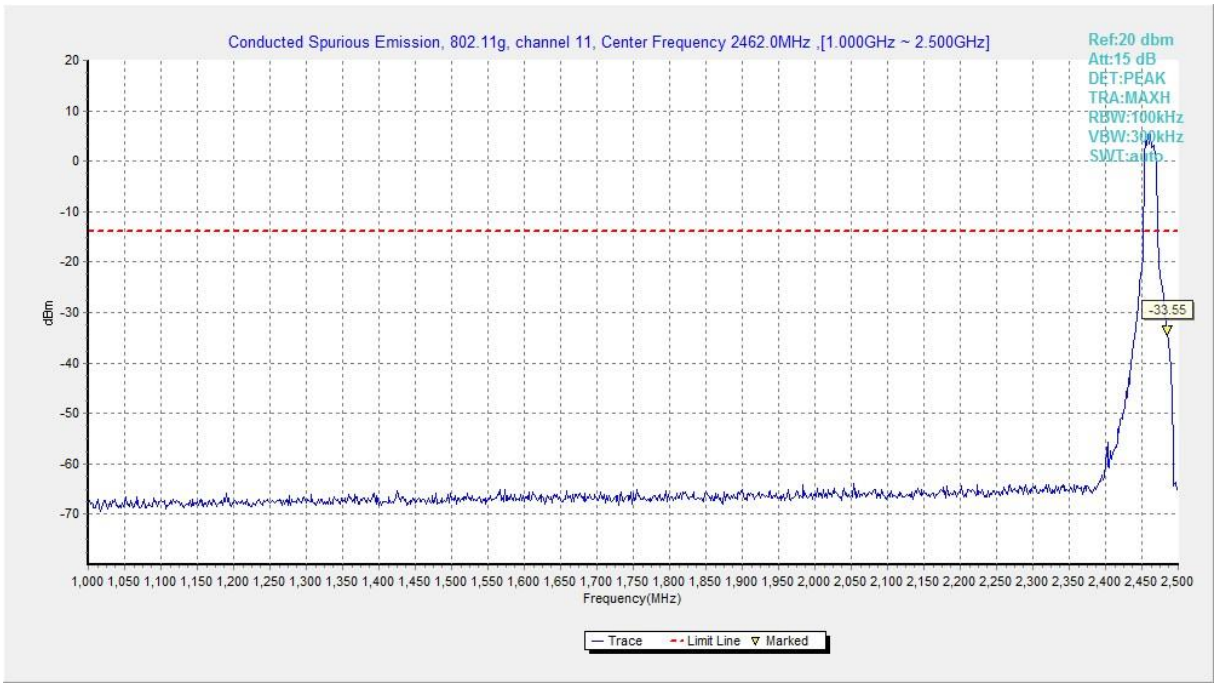



**Fig.A.6.1.43 Transmitter Spurious Emission - Conducted (802.11g, Ch11, 1 GHz-2.5 GHz)**

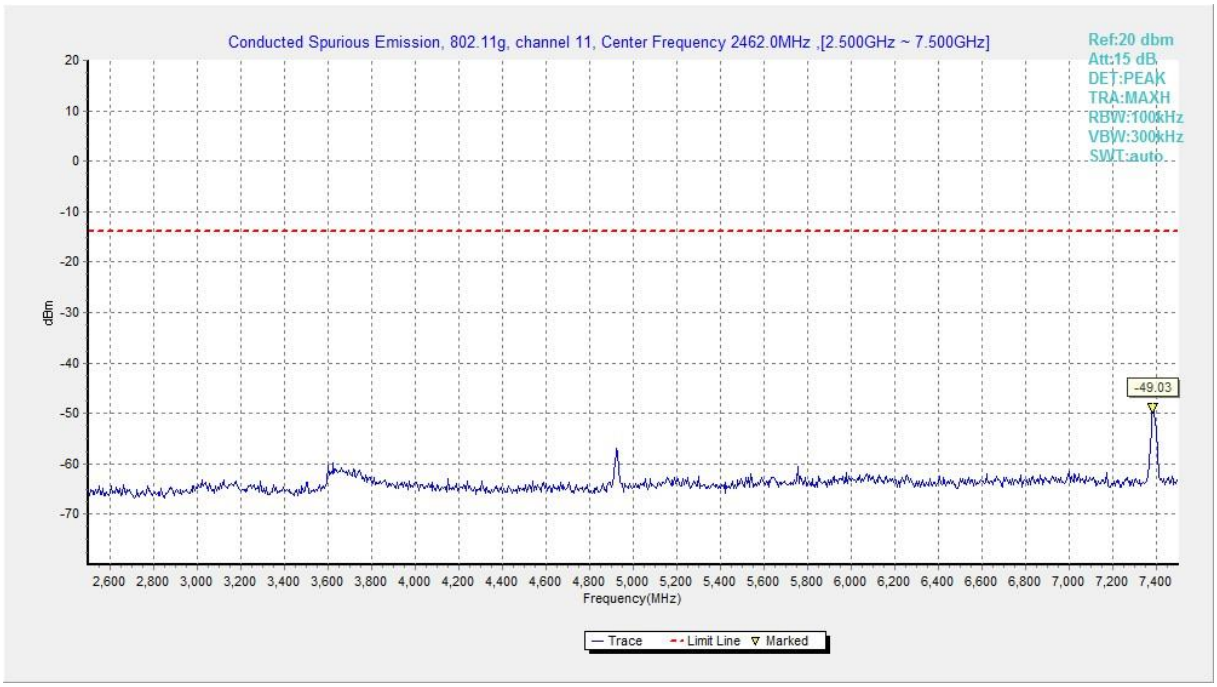



**Fig.A.6.1.44 Transmitter Spurious Emission - Conducted (802.11g, Ch11, 2.5 GHz-7.5 GHz)**

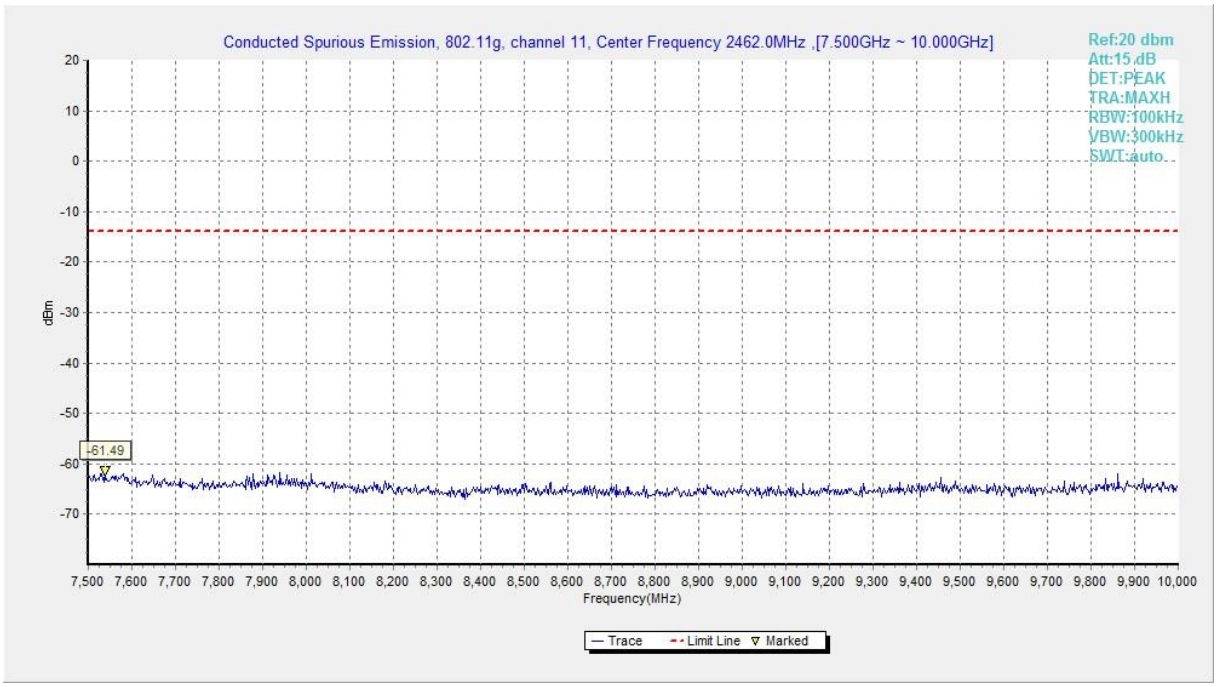



**Fig.A.6.1.45 Transmitter Spurious Emission - Conducted (802.11g, Ch11, 7.5 GHz-10 GHz)**

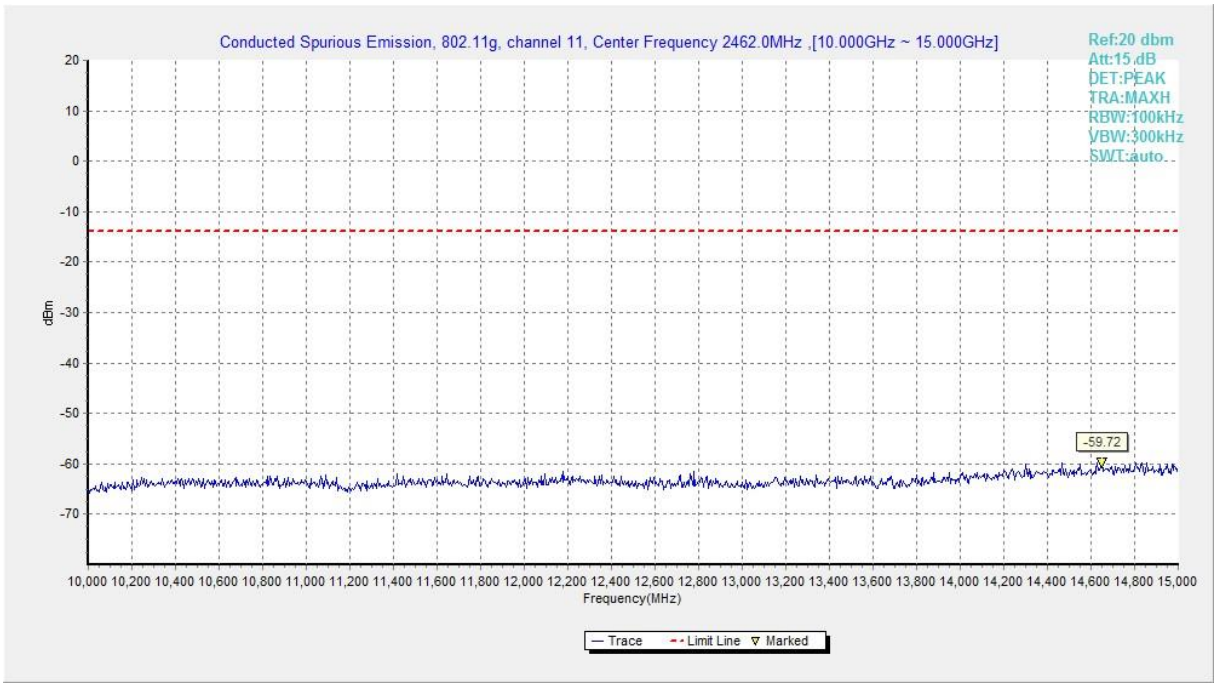



**Fig.A.6.1.46 Transmitter Spurious Emission - Conducted (802.11g, Ch11, 10 GHz-15 GHz)**

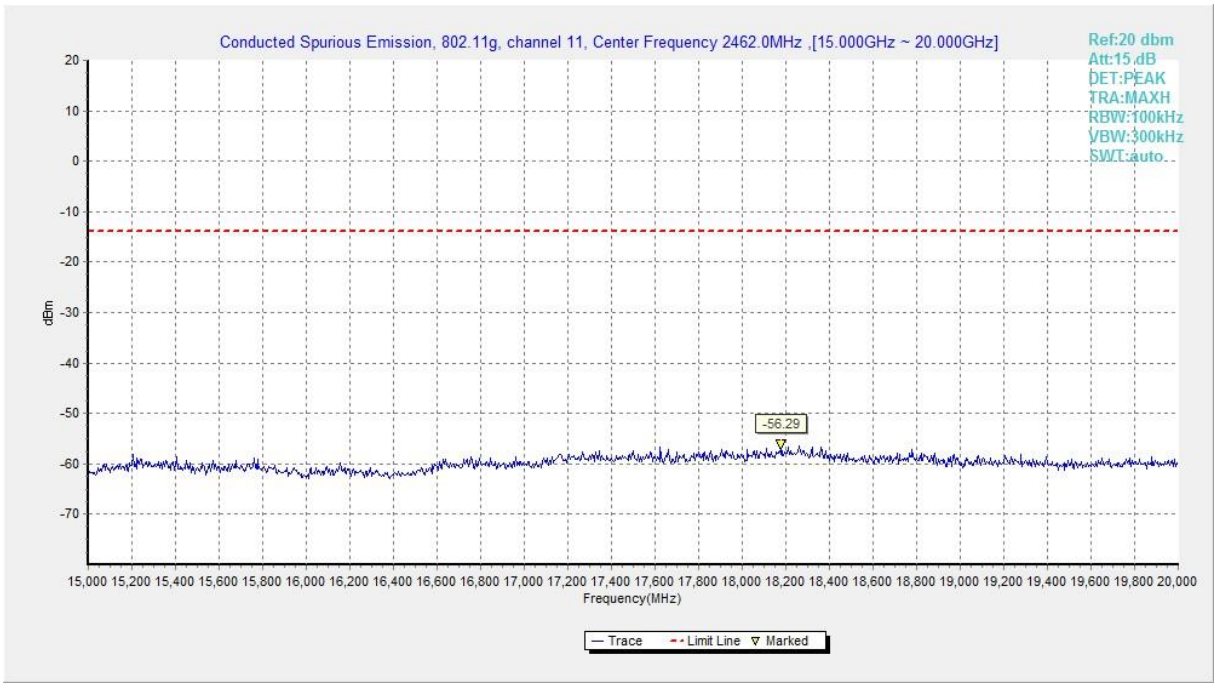



**Fig.A.6.1.47 Transmitter Spurious Emission - Conducted (802.11g, Ch11, 15 GHz-20 GHz)**

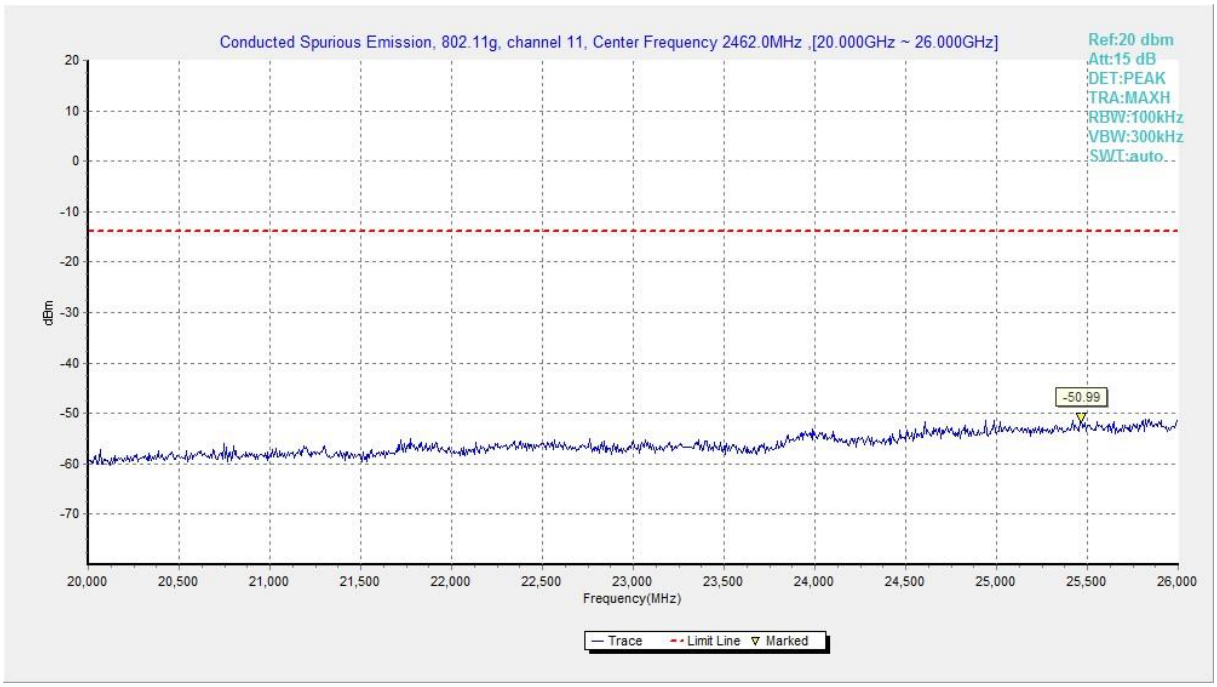



**Fig.A.6.1.48 Transmitter Spurious Emission - Conducted (802.11g, Ch11, 20 GHz-26 GHz)**

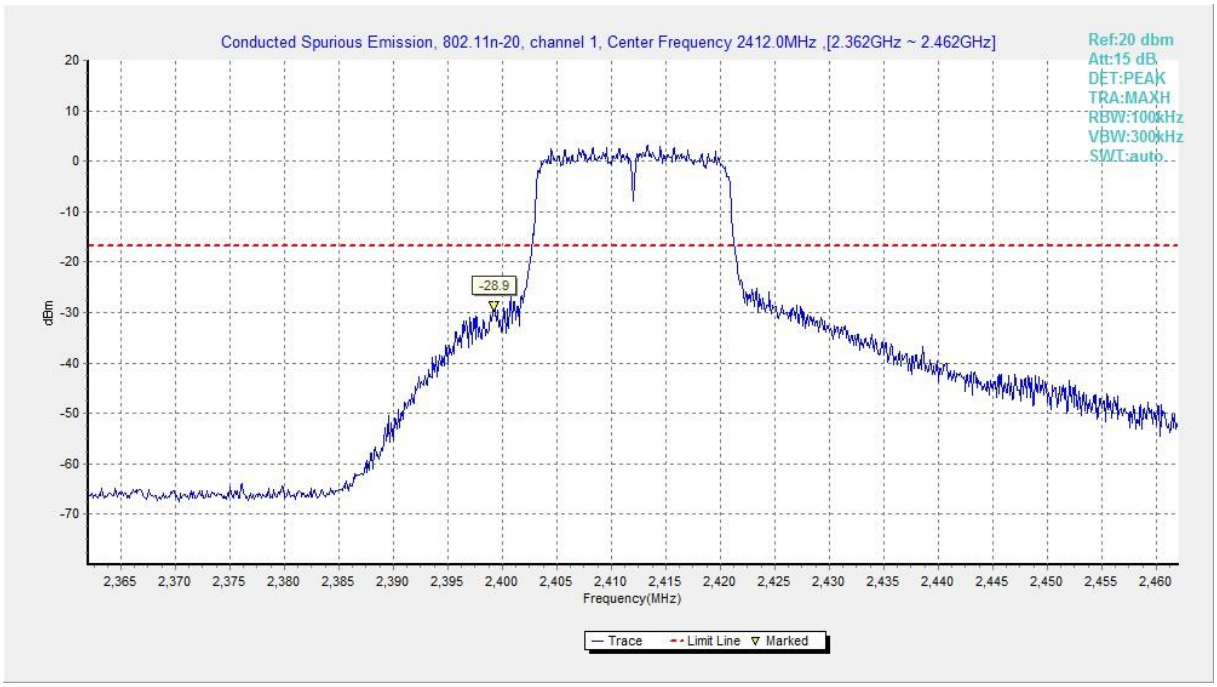



**Fig.A.6.1.49 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, Center Frequency)**

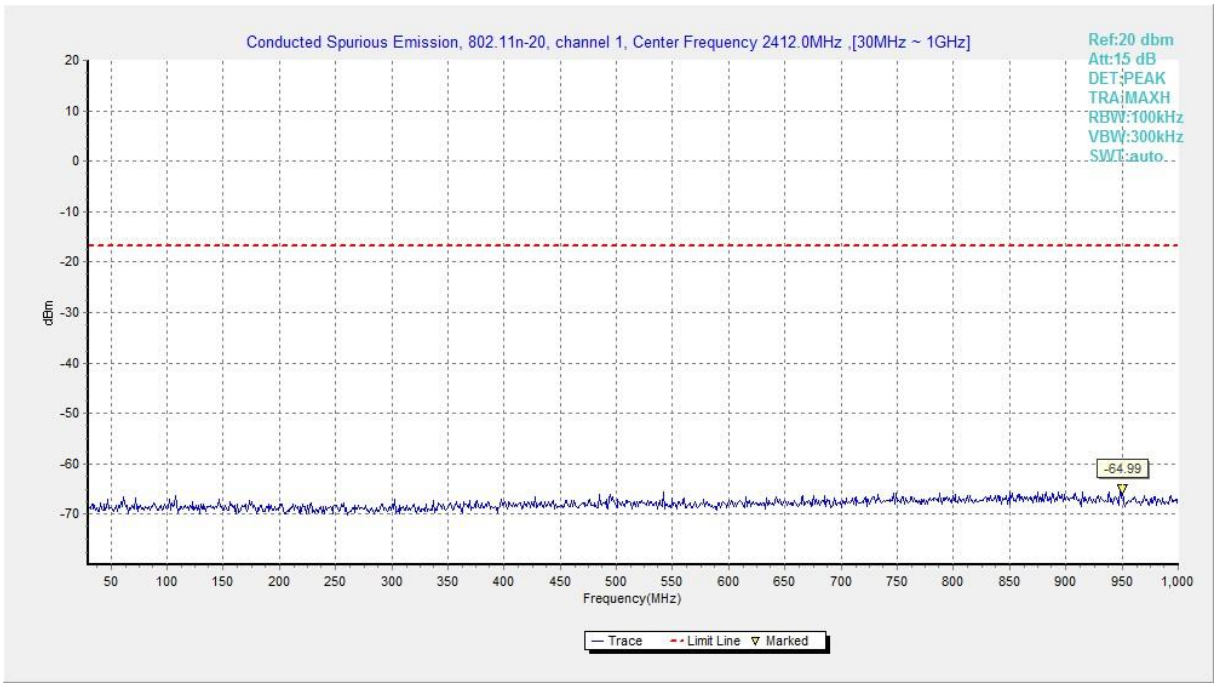



**Fig.A.6.1.50 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 30 MHz-1 GHz)**

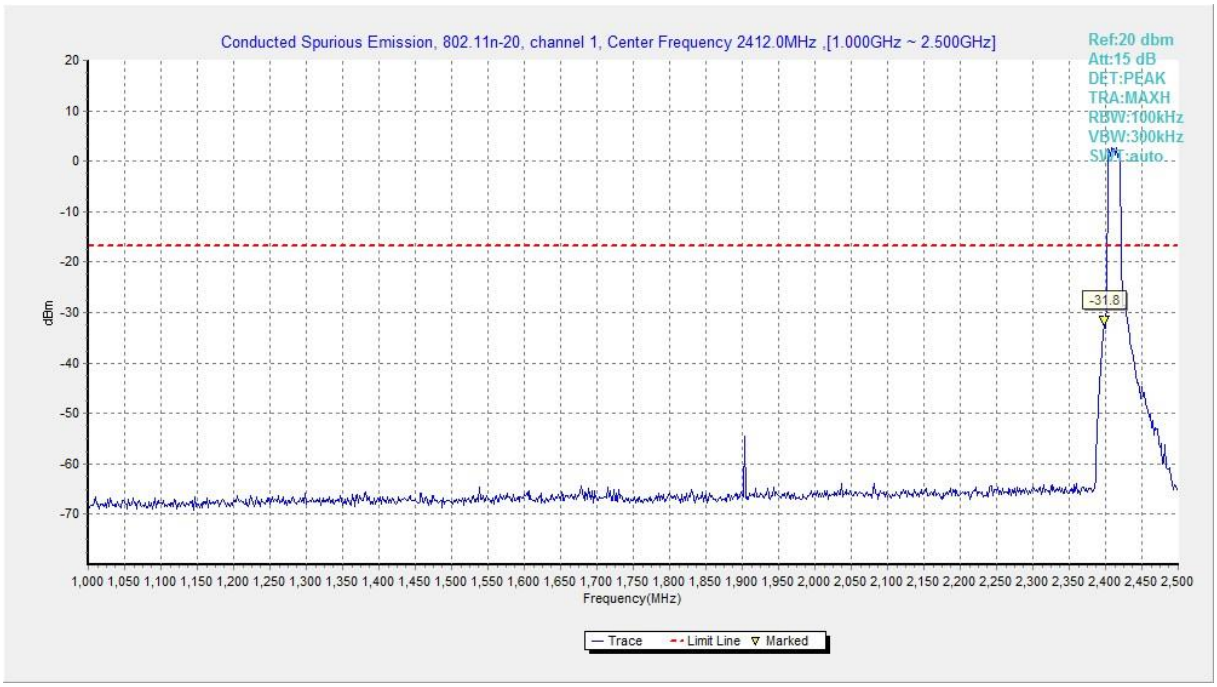



**Fig.A.6.1.51 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 1 GHz-2.5 GHz)**

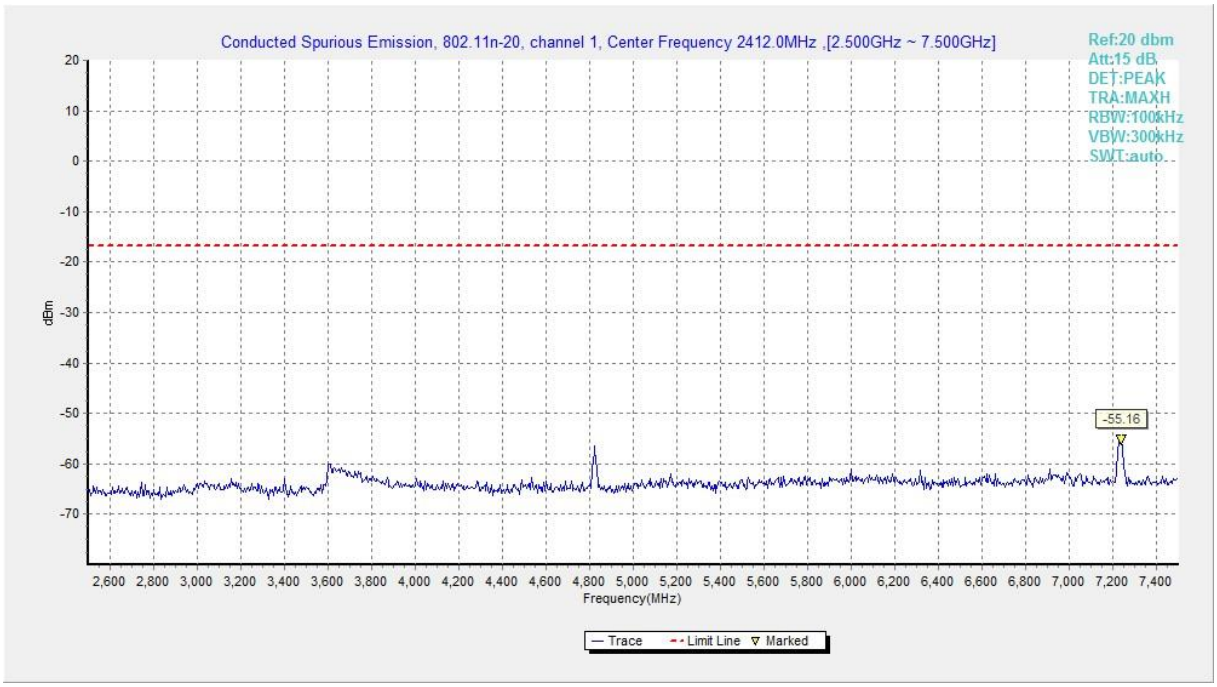



**Fig.A.6.1.52 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 2.5 GHz-7.5 GHz)**

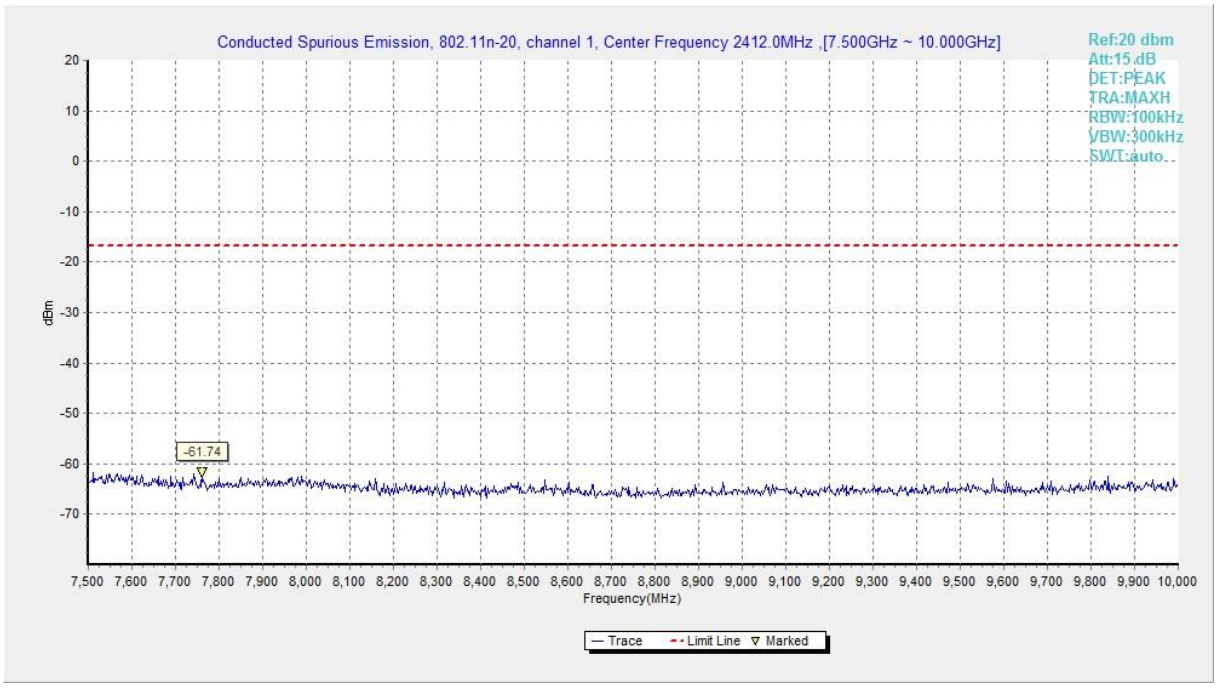



**Fig.A.6.1.53 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 7.5 GHz-10 GHz)**

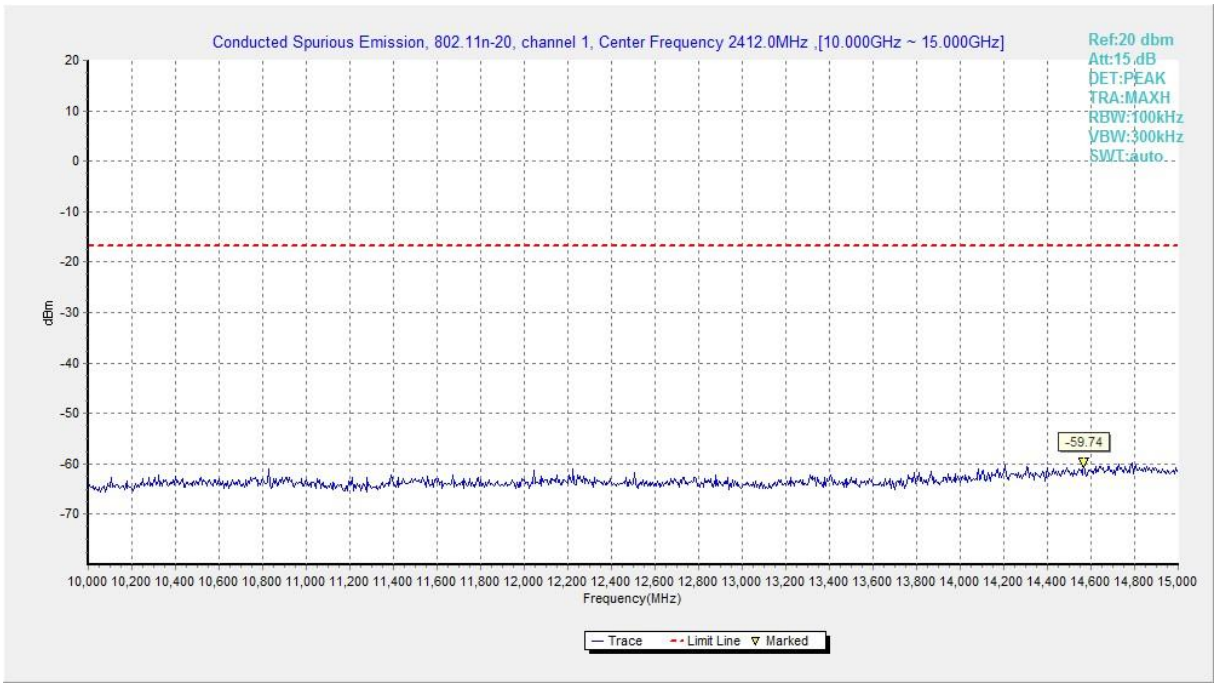



**Fig.A.6.1.54 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 10 GHz-15 GHz)**

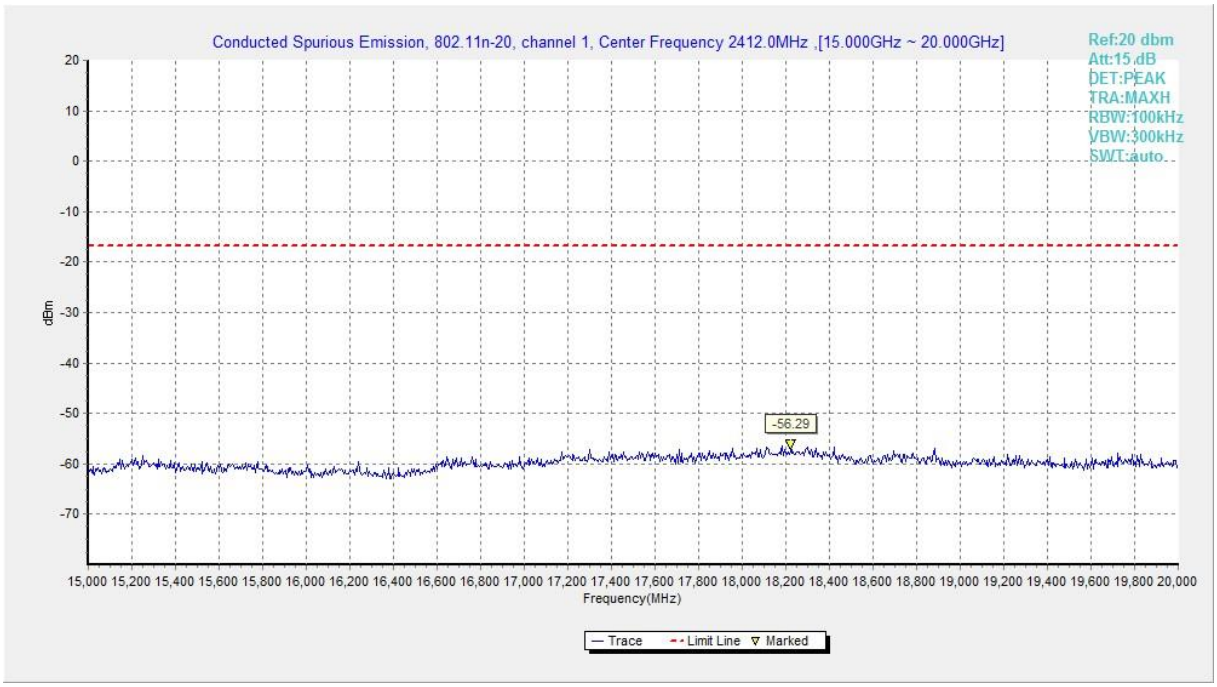



**Fig.A.6.1.55 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 15 GHz-20 GHz)**

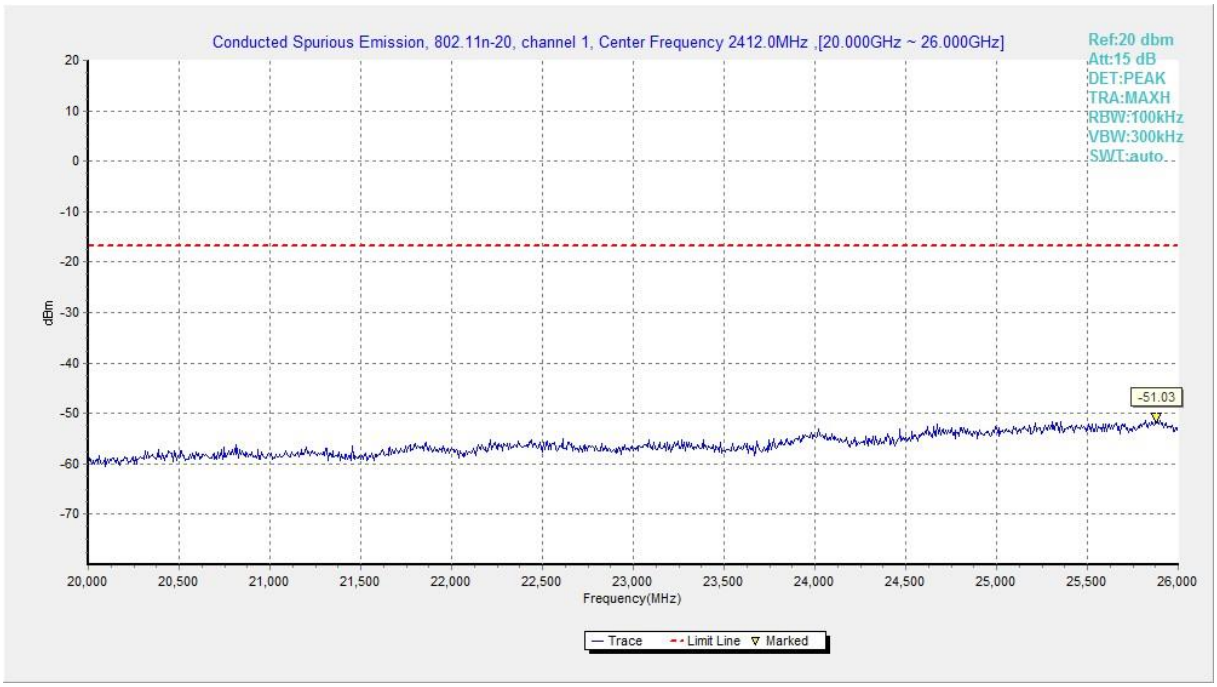



**Fig.A.6.1.56 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch1, 20 GHz-26 GHz)**

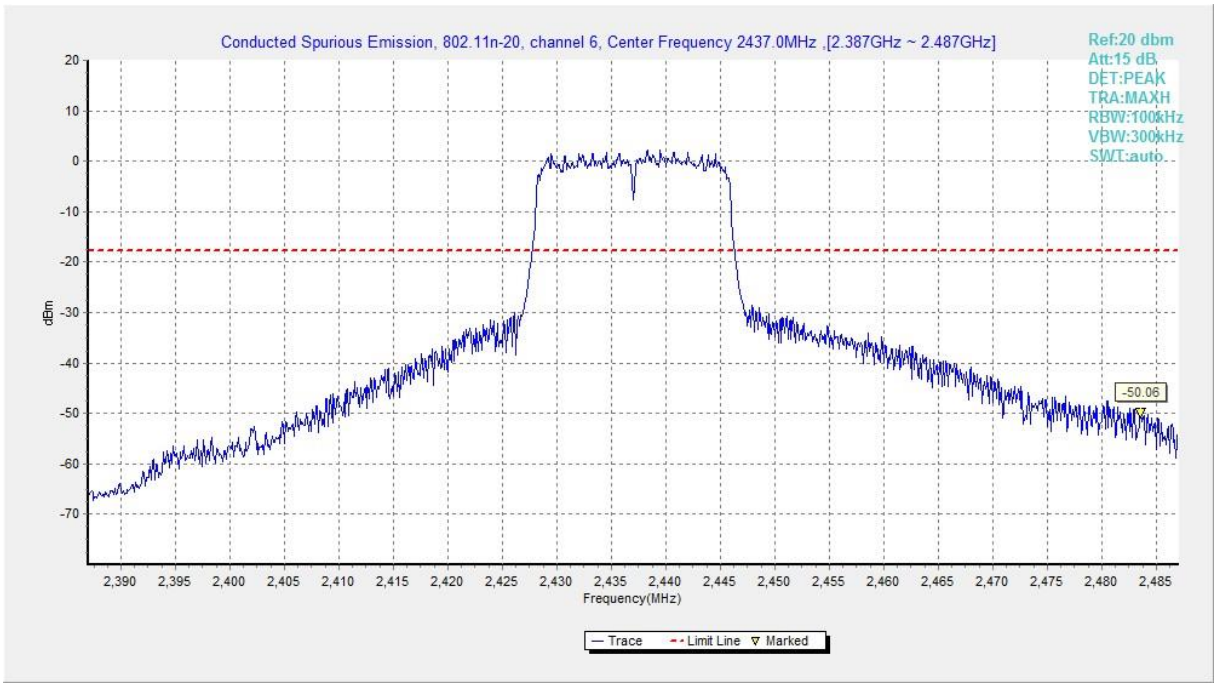



**Fig.A.6.1.57 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, Center Frequency)**

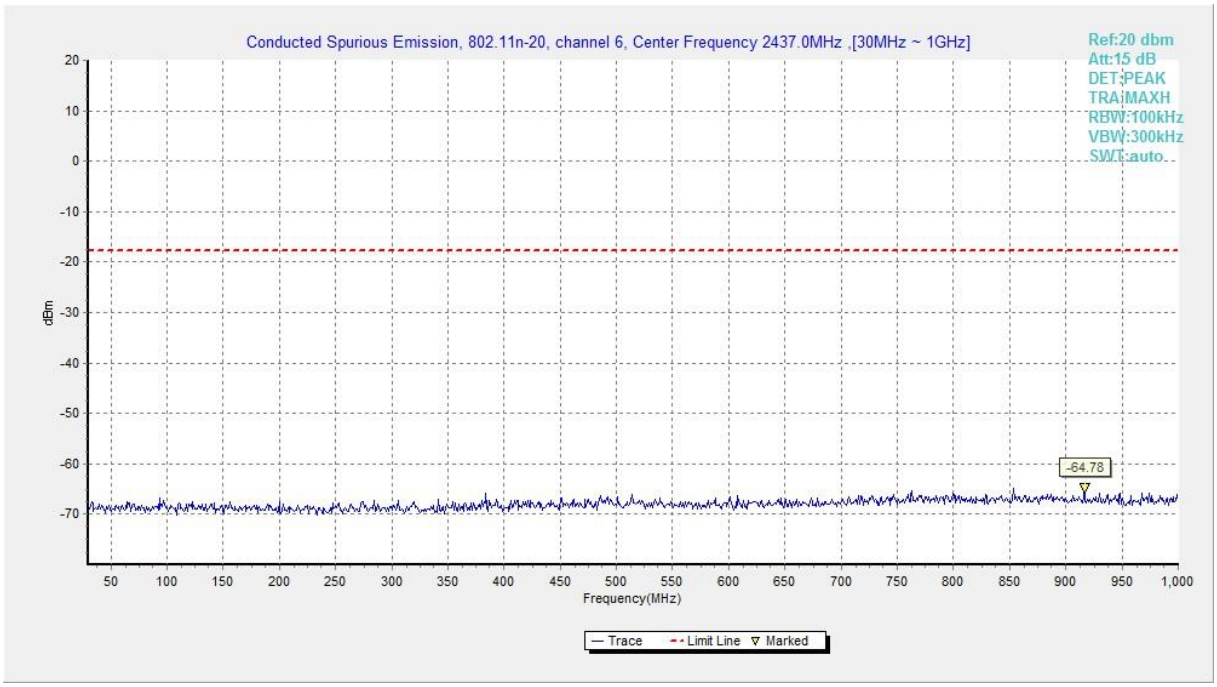



**Fig.A.6.1.58 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 30 MHz-1 GHz)**

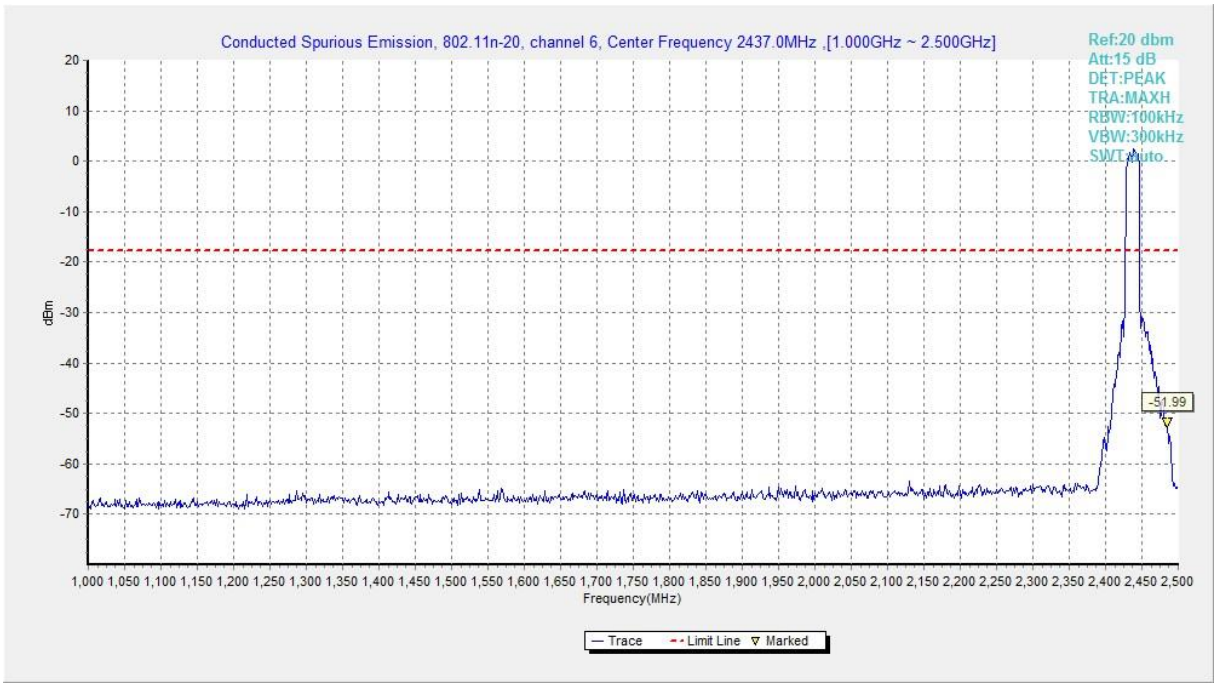



**Fig.A.6.1.59 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 1 GHz-2.5 GHz)**

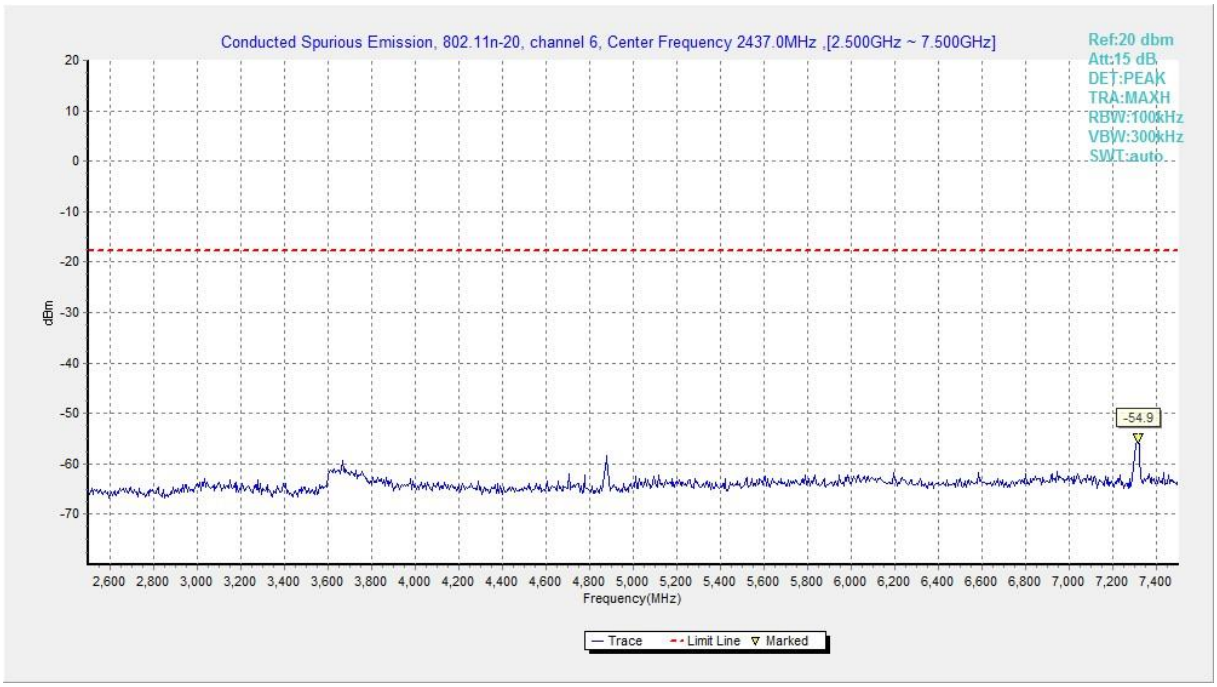



**Fig.A.6.1.60 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 2.5 GHz-7.5 GHz)**

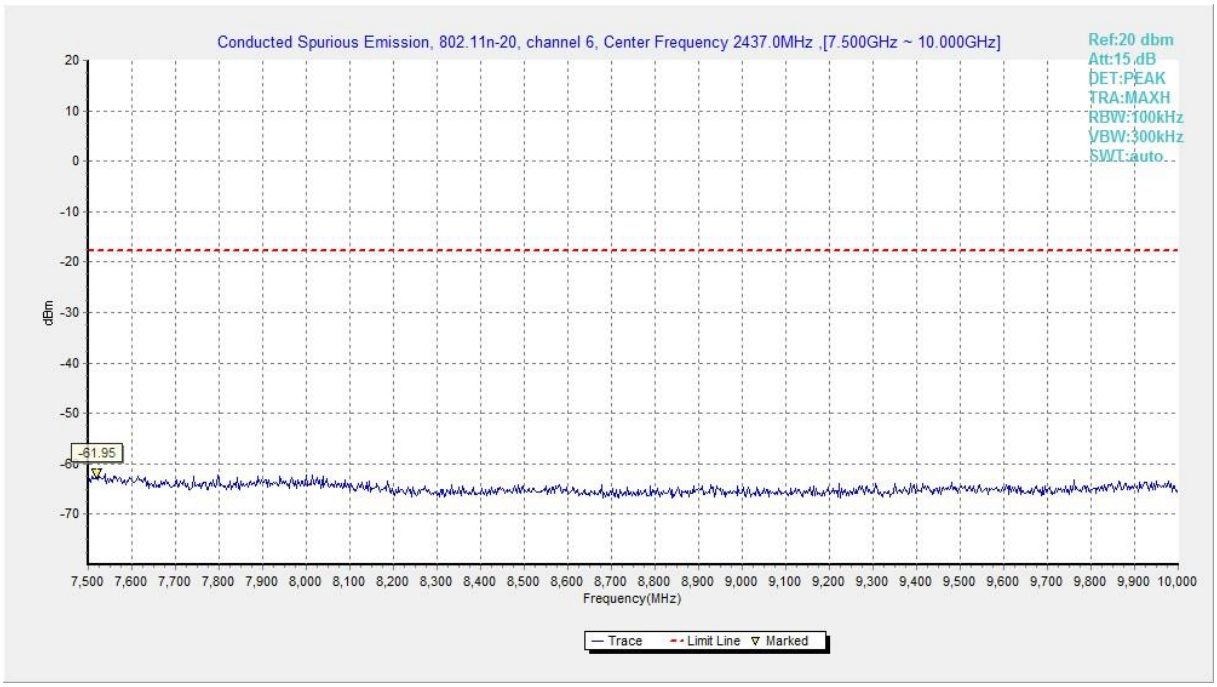



**Fig.A.6.1.61 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 7.5 GHz-10 GHz)**

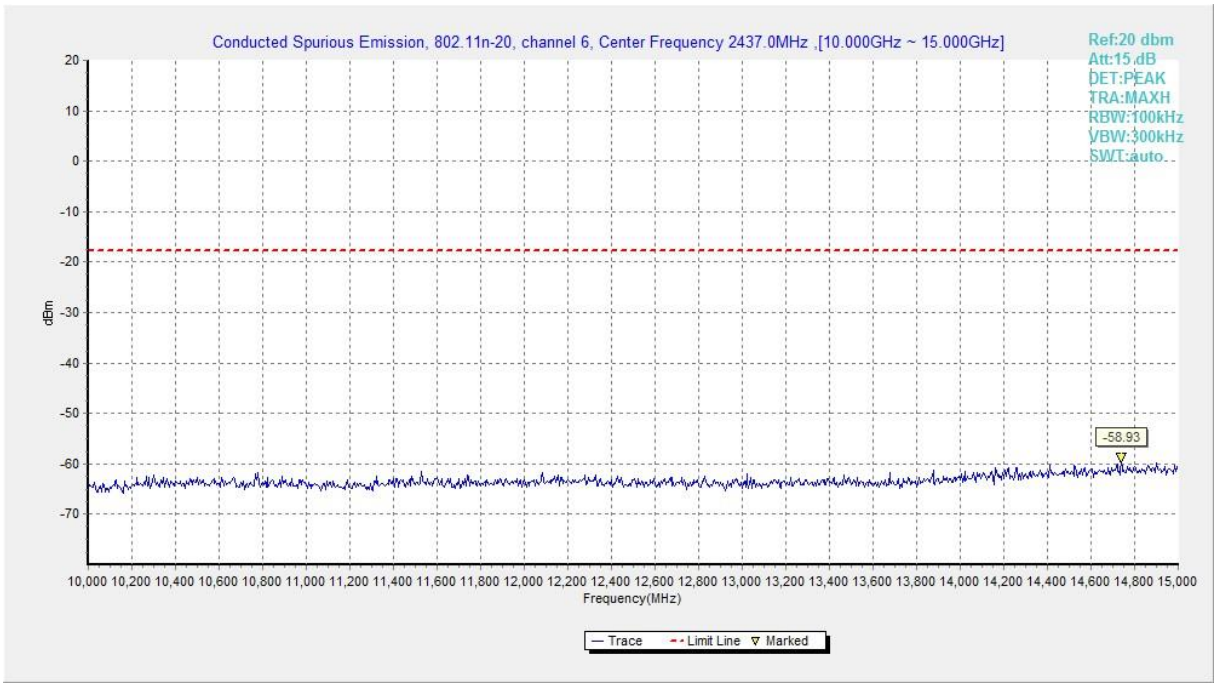



**Fig.A.6.1.62 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 10 GHz-15 GHz)**

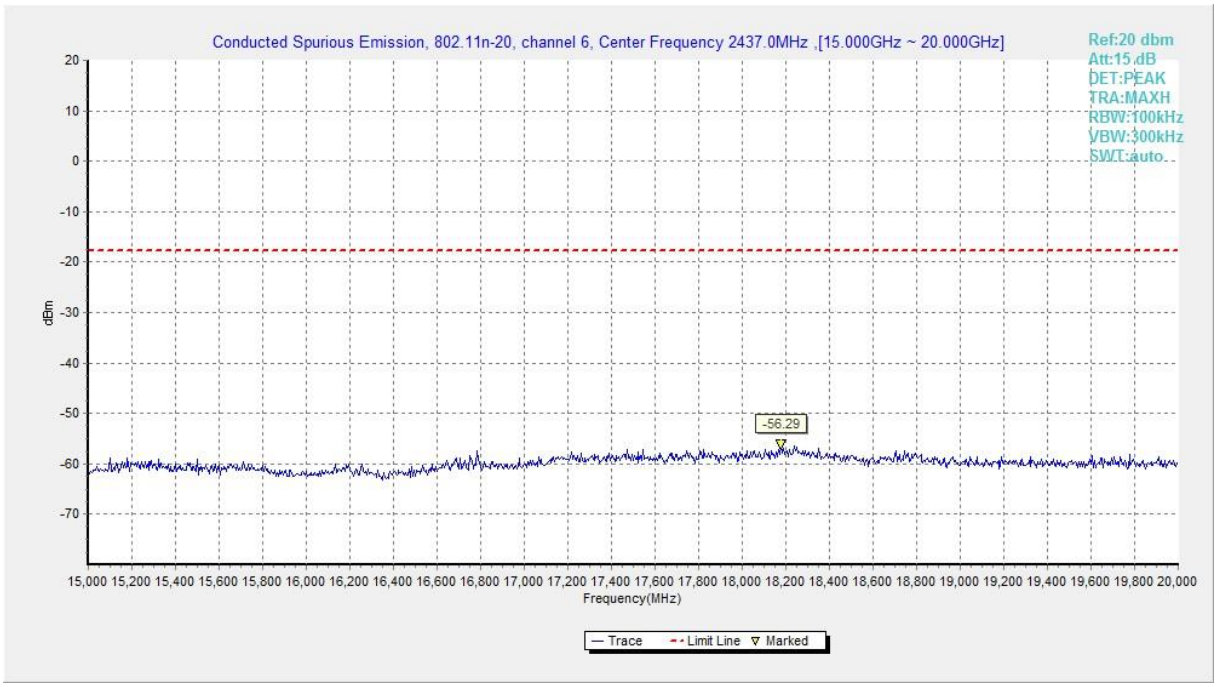



**Fig.A.6.1.63 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 15 GHz-20 GHz)**

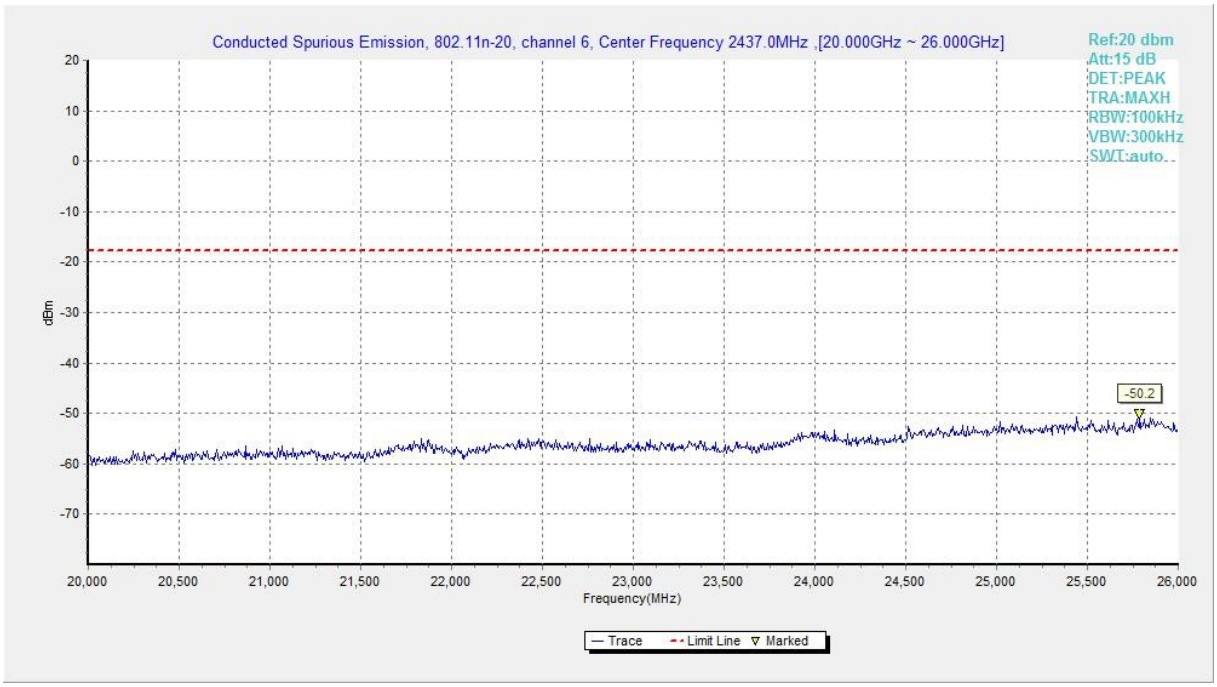



**Fig.A.6.1.64 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch6, 20 GHz-26 GHz)**

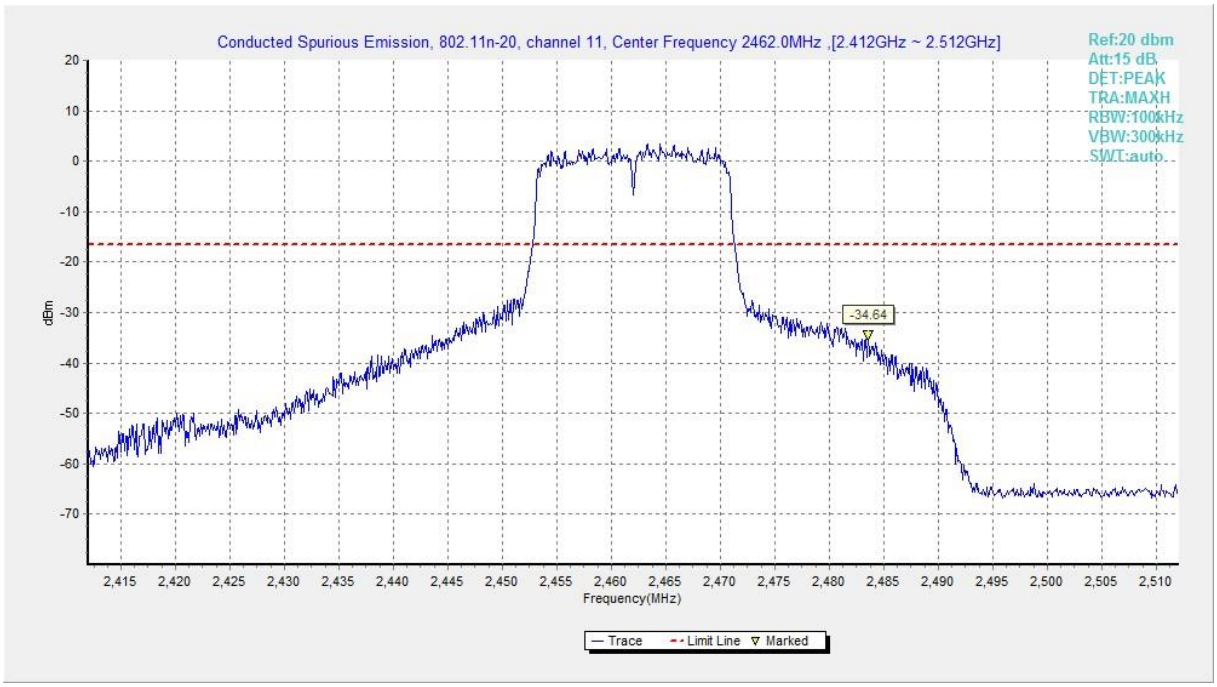



**Fig.A.6.1.65 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, Center Frequency)**

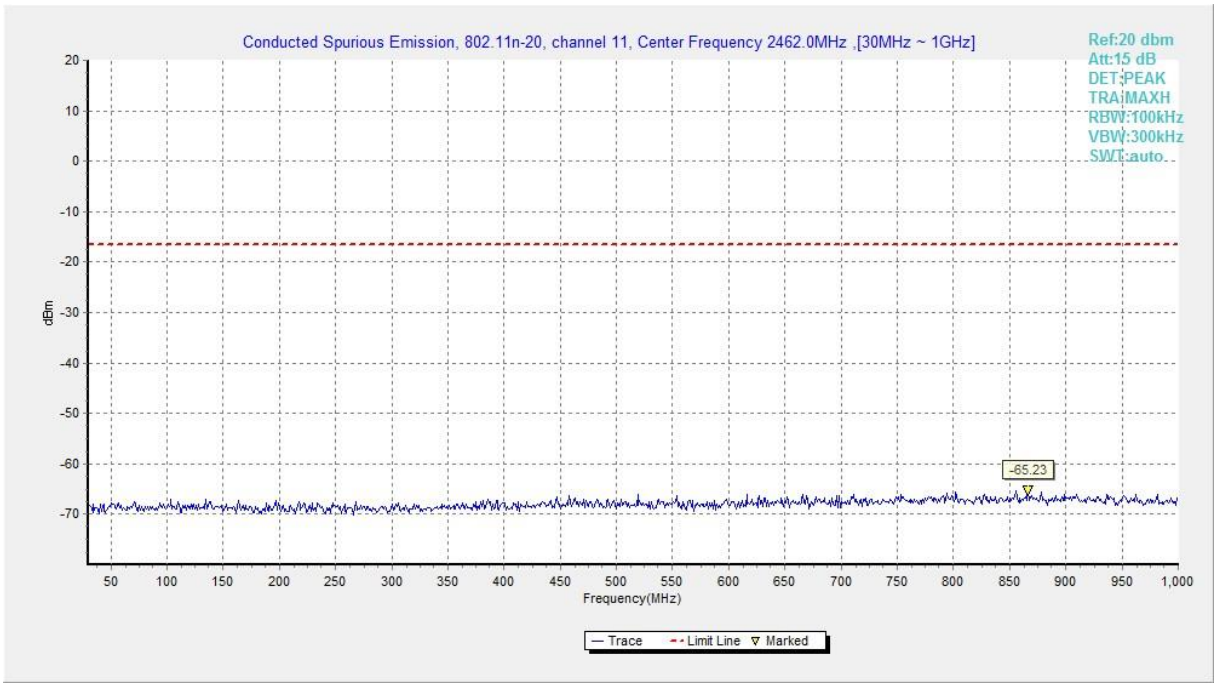



**Fig.A.6.1.66 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 30 MHz-1 GHz)**

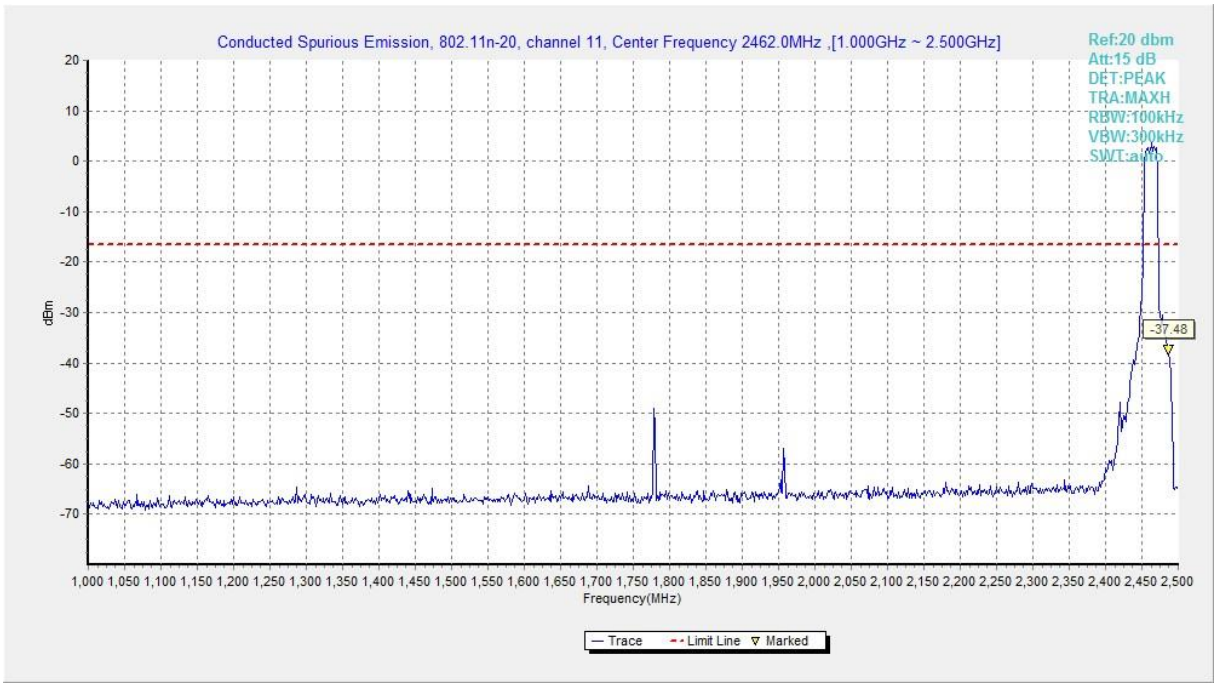



**Fig.A.6.1.67 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 1 GHz-2.5 GHz)**

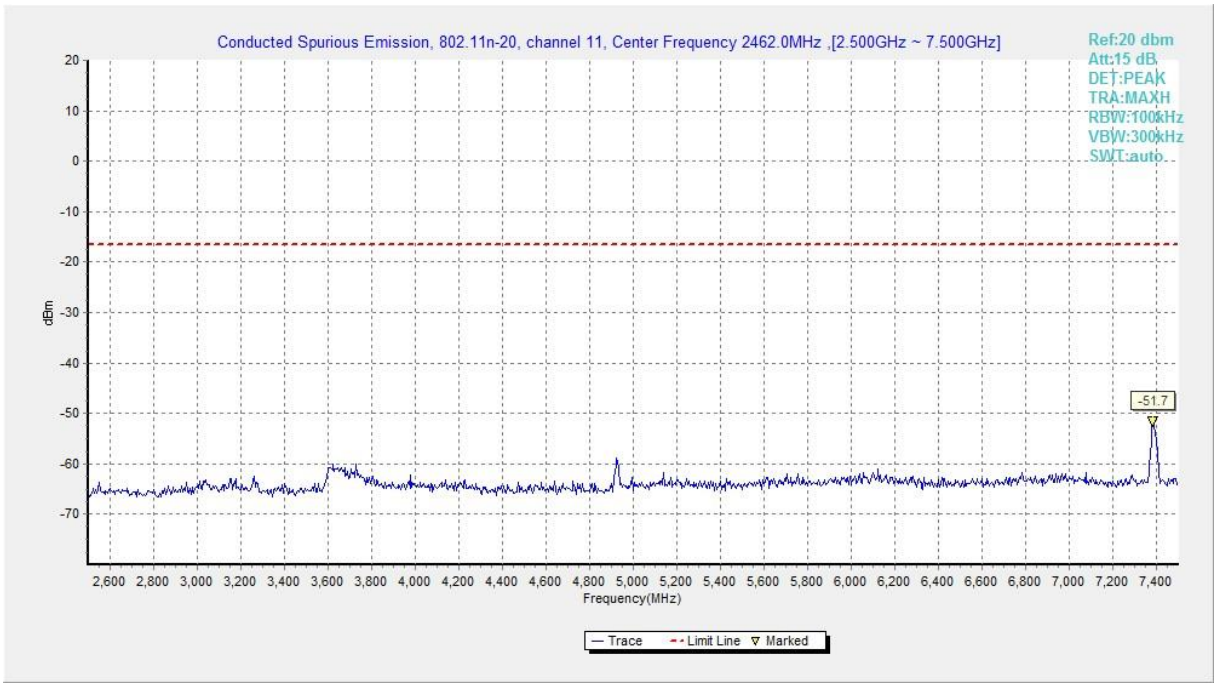



**Fig.A.6.1.68 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 2.5 GHz-7.5 GHz)**

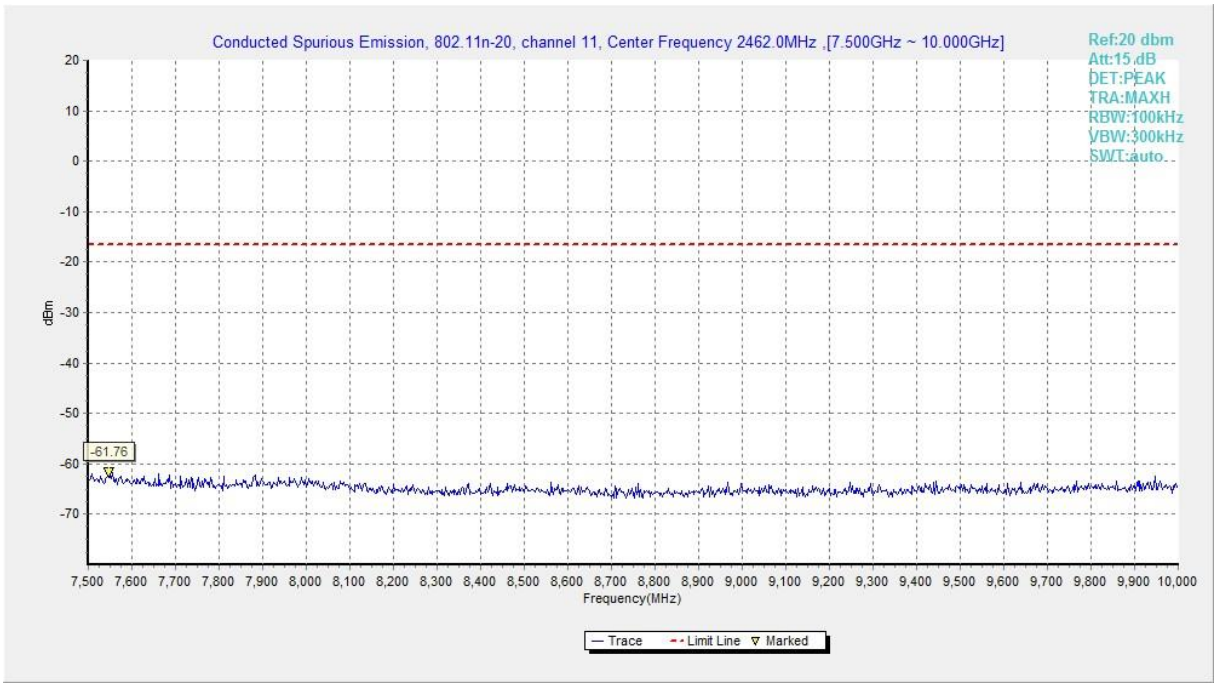



**Fig.A.6.1.69 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 7.5 GHz-10 GHz)**

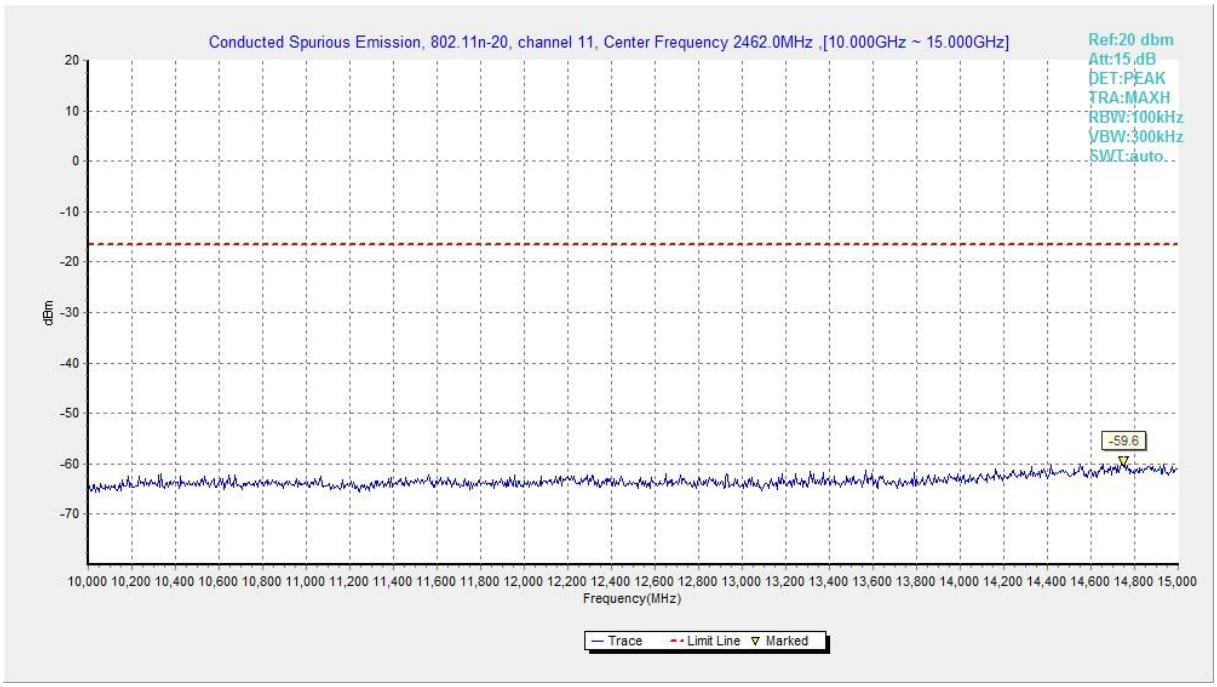



**Fig.A.6.1.70 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 10 GHz-15 GHz)**

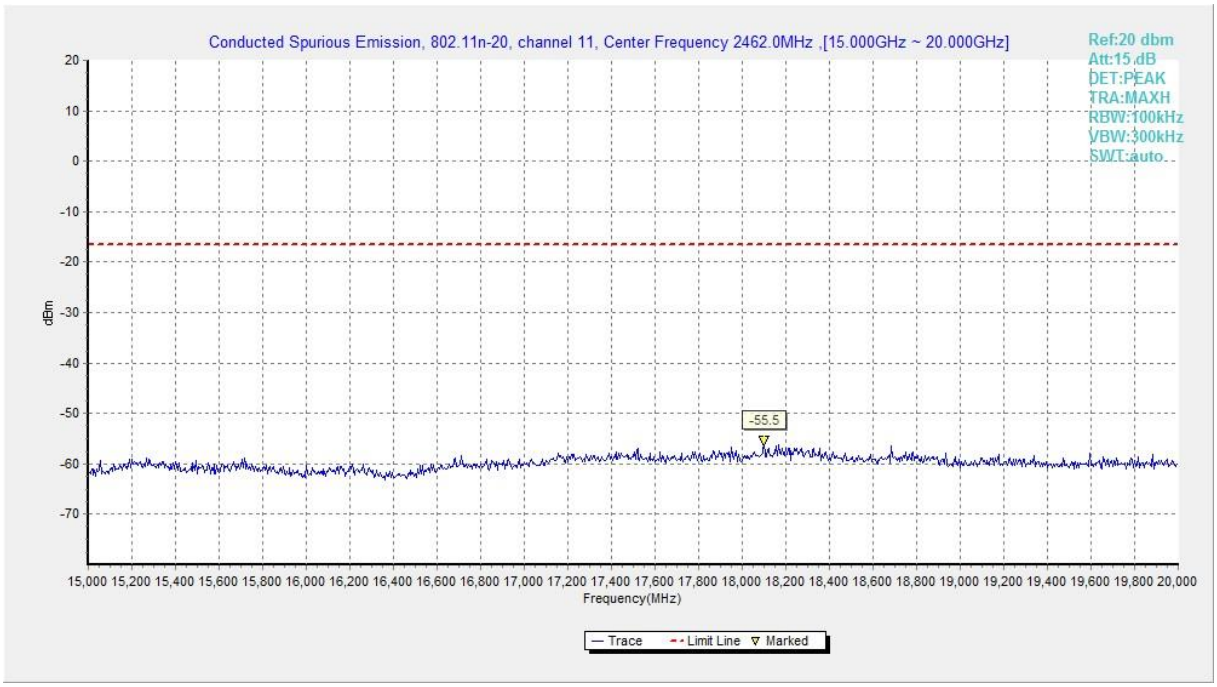



**Fig.A.6.1.71 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 15 GHz-20 GHz)**

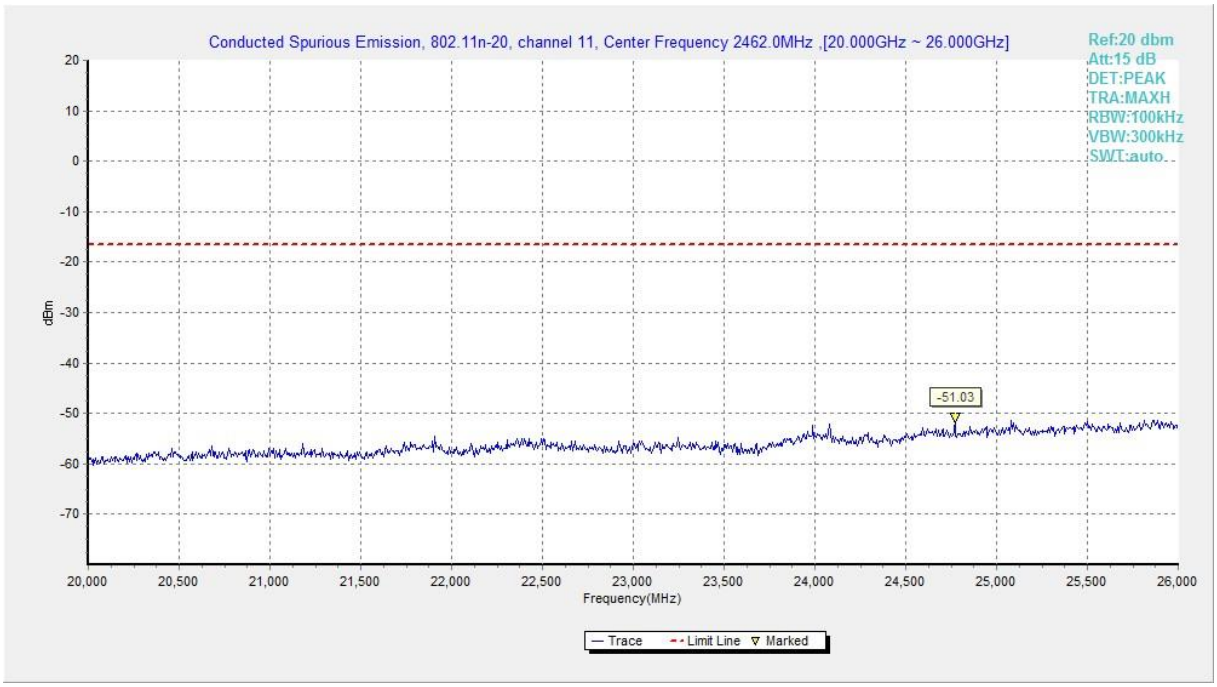



**Fig.A.6.1.72 Transmitter Spurious Emission - Conducted (802.11n-HT20, Ch11, 20 GHz-26 GHz)**

### A.6.2 Transmitter Spurious Emission - Radiated

**Method of Measurement: See ANSI C63.10-2013-clause 6.4 &6.5 & 6.6**

**Measurement Limit:**

| Standard | Limit |
|---|---|
| FCC 47 CFR Part 15.247, 15.205, 15.209 | 20dB below peak output power |

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) | Measurement distance (m) |
|---|---|---|---|
| 30-88 | 100 | 40 | 3 |
| 88-216 | 150 | 43.5 | 3 |
| 216-960 | 200 | 46 | 3 |
| Above 960 | 500 | 54 | 3 |

| Frequency (MHz) | Field strength(μV/m) | Measurement distance (m) |
|---|---|---|
| 0.009 - 0.490 | 2400/F(kHz) | 300 |
| 0.490 - 1.705 | 24000/F(kHz) | 30 |
| 1.705 – 30.0 | 30 | 30 |

**Set up:**

Tabletop devices shall be placed on a nonconducting platform with nominal top surface dimensions 1 m by 1.5 m. For emissions testing at or below 1 GHz, the table height shall be 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m

The EUT and transmitting antenna shall be centered on the turntable.

**Test Procedure**

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated 360° and the measurement antenna is moved from 1m to 4m to get the maximization result. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

**The receiver references:**

| Frequency of emission (MHz) | RBW/VBW | Sweep Time(s) |
|---|---|---|
| 30-1000 | 100kHz/300kHz | 5 |
| 1000-4000 | 1MHz/3MHz | 15 |
| 4000-18000 | 1MHz/3MHz | 40 |
| 18000-26500 | 1MHz/3MHz | 20 |

**Measurement results**:

**802.11b mode**

| Mode | Channel | Frequency Range | Test Results | Conclusion |
|---|---|---|---|---|
| 802.11b | 1 | 2.31GHz~2.43GHz---L | Fig.A.6.2.1 | **P** |
| | 11 | 2.45GHz~2.50GHz---H | Fig.A.6.2.2 | **P** |

**802.11g mode**

| Mode | Channel | Frequency Range | Test Results | Conclusion |
|---|---|---|---|---|
| 802.11g | 1 | 2.31GHz~2.43GHz---L | Fig.A.6.2.3 | **P** |
| | 10 | 2.45GHz~2.50GHz---H | Fig.A.6.2.4 | **P** |
| | 11 | 2.45GHz~2.50GHz---H | Fig.A.6.2.5 | **P** |

**802.11n-HT20 mode**

| Mode | Channel | Frequency Range | Test Results | Conclusion |
|---|---|---|---|---|
| 802.11n (HT20) | 1 | 2.31GHz~2.43GHz---L | Fig.A.6.2.6 | **P** |
| | 10 | 2.45GHz~2.50GHz---H | Fig.A.6.2.7 | **P** |
| | 11 | 2.45GHz~2.50GHz---H | Fig.A.6.2.8 | **P** |

**Conclusion: Pass**

**Note:**

1. A "reference path loss" is established and the $A_{Rpl}$ is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.
$P_{Mea}$ is the field strength recorded from the instrument.
The measurement results are obtained as described below:
Result=$P_{Mea}$+$A_{Rpl=}$ $P_{Mea}$+Cable Loss+Antenna Factor

2. The range of evaluated frequency is from 9 kHz to 26GHz. Measurement value show only up to 6 maximum emissions noted.

**Peak**

**802.11b**

Ch1

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2385.418 | 60.55 | 3.48 | 31.87 | 25.20 | 74.00 | 13.45 | H |
| 2387.518 | 60.33 | 3.48 | 31.88 | 24.98 | 74.00 | 13.67 | H |
| 4824.000 | 46.69 | -21.52 | 33.93 | 34.28 | 74.00 | 27.31 | H |
| 7236.000 | 50.55 | -20.80 | 35.60 | 35.74 | 74.00 | 23.45 | V |
| 9648.000 | 45.40 | -19.72 | 36.98 | 28.13 | 74.00 | 28.60 | H |
| 12060.000 | 47.32 | -19.56 | 38.90 | 27.99 | 74.00 | 26.68 | H |

Ch6

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2306.200 | 46.85 | -32.00 | 31.78 | 47.07 | 74.00 | 27.15 | H |
| 2510.600 | 48.45 | -30.03 | 32.02 | 46.46 | 74.00 | 25.55 | H |
| 4784.000 | 44.34 | -21.88 | 33.92 | 32.30 | 74.00 | 29.66 | H |
| 7310.500 | 54.47 | -20.79 | 35.60 | 39.65 | 74.00 | 19.53 | V |
| 9748.000 | 46.98 | -19.69 | 37.10 | 29.57 | 74.00 | 27.02 | H |
| 12185.000 | 49.49 | -19.42 | 38.90 | 30.01 | 74.00 | 24.51 | V |

Ch11

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2484.230 | 60.97 | 3.41 | 31.98 | 25.58 | 74.00 | 13.03 | H |
| 2484.615 | 61.22 | 3.40 | 31.98 | 25.83 | 74.00 | 12.78 | H |
| 4924.000 | 46.58 | -21.42 | 33.97 | 34.03 | 74.00 | 27.42 | H |
| 7387.000 | 51.55 | -20.73 | 35.60 | 36.68 | 74.00 | 22.45 | V |
| 9848.000 | 45.88 | -19.93 | 37.22 | 28.59 | 74.00 | 28.12 | H |
| 12310.000 | 49.48 | -19.37 | 38.90 | 29.96 | 74.00 | 24.52 | H |

**802.11g**

Ch1

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2377.354 | 60.98 | 3.42 | 31.86 | 25.69 | 74.00 | 13.02 | H |
| 2385.782 | 61.19 | 3.48 | 31.87 | 25.83 | 74.00 | 12.81 | H |
| 4824.000 | 45.74 | -21.52 | 33.93 | 33.32 | 74.00 | 28.26 | H |
| 7244.500 | 54.77 | -20.81 | 35.60 | 39.97 | 74.00 | 19.23 | V |
| 9648.000 | 48.29 | -19.72 | 36.98 | 31.02 | 74.00 | 25.71 | V |
| 12060.000 | 48.16 | -19.56 | 38.90 | 28.82 | 74.00 | 25.84 | V |

Ch6

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2336.600 | 48.08 | -31.68 | 31.82 | 47.93 | 74.00 | 25.92 | H |
| 2505.800 | 48.73 | -29.98 | 32.01 | 46.69 | 74.00 | 25.27 | V |
| 4874.000 | 44.97 | -21.52 | 33.95 | 32.54 | 74.00 | 29.03 | H |
| 7311.000 | 51.73 | -20.79 | 35.60 | 36.92 | 74.00 | 22.27 | V |
| 9748.000 | 48.48 | -19.69 | 37.10 | 31.06 | 74.00 | 25.52 | H |
| 12185.000 | 49.17 | -19.42 | 38.90 | 29.69 | 74.00 | 24.83 | H |

Ch11

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2483.560 | 68.00 | 3.41 | 31.98 | 32.61 | 74.00 | 6.00 | H |
| 2483.765 | 67.50 | 3.41 | 31.98 | 32.10 | 74.00 | 6.50 | H |
| 4924.000 | 46.33 | -21.42 | 33.97 | 33.79 | 74.00 | 27.67 | H |
| 7388.500 | 49.25 | -20.73 | 35.60 | 34.38 | 74.00 | 24.75 | V |
| 9848.000 | 47.57 | -19.93 | 37.22 | 30.28 | 74.00 | 26.43 | V |
| 12310.000 | 49.76 | -19.37 | 38.90 | 30.23 | 74.00 | 24.24 | V |

**802.11n-HT20**

Ch1

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2387.028 | 60.50 | 3.48 | 31.88 | 25.15 | 74.00 | 13.50 | H |
| 2388.232 | 60.38 | 3.48 | 31.88 | 25.02 | 74.00 | 13.62 | H |
| 4824.000 | 46.38 | -21.52 | 33.93 | 33.97 | 74.00 | 27.62 | H |
| 7236.000 | 55.42 | -20.80 | 35.60 | 40.62 | 74.00 | 18.58 | V |
| 9648.000 | 47.95 | -19.72 | 36.98 | 30.69 | 74.00 | 26.05 | V |
| 12060.000 | 48.65 | -19.56 | 38.90 | 29.31 | 74.00 | 25.35 | H |

Ch6

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2346.000 | 47.24 | -31.58 | 31.83 | 46.99 | 74.00 | 26.76 | V |
| 2529.000 | 48.48 | -30.25 | 32.05 | 46.69 | 74.00 | 25.52 | V |
| 4874.000 | 47.05 | -21.52 | 33.95 | 34.62 | 74.00 | 26.95 | H |
| 7313.000 | 58.80 | -20.78 | 35.60 | 43.98 | 74.00 | 15.20 | V |
| 9748.000 | 48.40 | -19.69 | 37.10 | 30.98 | 74.00 | 25.60 | H |
| 12185.000 | 49.31 | -19.42 | 38.90 | 29.83 | 74.00 | 24.69 | H |

Ch11

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2483.790 | 68.61 | 3.41 | 31.98 | 33.21 | 74.00 | 5.39 | H |
| 2484.525 | 68.58 | 3.41 | 31.98 | 33.19 | 74.00 | 5.42 | H |
| 4924.000 | 48.18 | -21.42 | 33.97 | 35.63 | 74.00 | 25.82 | H |
| 7382.000 | 53.81 | -20.73 | 35.60 | 38.95 | 74.00 | 20.19 | V |
| 9484.000 | 48.88 | -19.88 | 36.78 | 31.97 | 74.00 | 25.12 | V |
| 12310.000 | 48.52 | -19.37 | 38.90 | 29.00 | 74.00 | 25.48 | H |

**Average**

**802.11b**

Ch1

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2387.767 | 46.92 | 3.5 | 31.88 | 11.57 | 54.00 | 7.08 | H |
| 2389.591 | 46.92 | 3.5 | 31.88 | 11.56 | 54.00 | 7.08 | H |
| 4824.000 | 41.89 | -21.5 | 33.93 | 29.47 | 54.00 | 12.11 | H |
| 7235.000 | 46.61 | -20.8 | 35.60 | 31.80 | 54.00 | 7.39 | V |
| 9648.000 | 34.18 | -19.7 | 36.98 | 16.92 | 54.00 | 19.82 | V |
| 12060.000 | 35.71 | -19.6 | 38.90 | 16.37 | 54.00 | 18.29 | V |

Ch6

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2423.202 | 47.35 | 3.4 | 31.92 | 12.01 | 54.00 | 6.65 | V |
| 2448.719 | 47.55 | 3.5 | 31.94 | 12.11 | 54.00 | 6.45 | V |
| 4873.500 | 32.30 | -21.5 | 33.95 | 19.87 | 54.00 | 21.70 | H |
| 7310.000 | 47.40 | -20.8 | 35.60 | 32.59 | 54.00 | 6.60 | V |
| 9748.000 | 34.62 | -19.7 | 37.10 | 17.20 | 54.00 | 19.38 | V |
| 12185.000 | 36.29 | -19.4 | 38.90 | 16.81 | 54.00 | 17.71 | H |

Ch11

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2483.508 | 47.99 | 3.4 | 31.98 | 12.59 | 54.00 | 6.01 | H |
| 2483.584 | 47.95 | 3.4 | 31.98 | 12.55 | 54.00 | 6.05 | H |
| 4924.000 | 40.37 | -21.4 | 33.97 | 27.82 | 54.00 | 13.64 | H |
| 7385.500 | 44.82 | -20.7 | 35.60 | 29.95 | 54.00 | 9.18 | V |
| 9848.000 | 34.91 | -19.9 | 37.22 | 17.62 | 54.00 | 19.09 | H |
| 12310.000 | 36.33 | -19.4 | 38.90 | 16.81 | 54.00 | 17.67 | H |

**802.11g**

Ch1

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2388.240 | 46.86 | 3.5 | 31.88 | 11.50 | 54.00 | 7.14 | H |
| 2389.515 | 46.96 | 3.5 | 31.88 | 11.59 | 54.00 | 7.05 | H |
| 4824.000 | 33.20 | -21.5 | 33.93 | 20.78 | 54.00 | 20.80 | H |
| 7235.000 | 38.34 | -20.8 | 35.60 | 23.54 | 54.00 | 15.66 | V |
| 9648.000 | 34.98 | -19.7 | 36.98 | 17.72 | 54.00 | 19.02 | H |
| 12060.000 | 36.43 | -19.6 | 38.90 | 17.10 | 54.00 | 17.57 | V |

Ch6

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2414.956 | 47.49 | 3.4 | 31.91 | 12.19 | 54.00 | 6.51 | V |
| 2448.871 | 48.52 | 3.5 | 31.94 | 13.08 | 54.00 | 5.48 | V |
| 4874.000 | 32.52 | -21.5 | 33.95 | 20.09 | 54.00 | 21.48 | H |
| 7311.500 | 38.94 | -20.8 | 35.60 | 24.13 | 54.00 | 15.06 | V |
| 9748.000 | 35.49 | -19.7 | 37.10 | 18.07 | 54.00 | 18.51 | V |
| 12185.000 | 36.66 | -19.4 | 38.90 | 17.18 | 54.00 | 17.34 | H |

Ch11

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2483.565 | 49.62 | 3.4 | 31.98 | 14.23 | 54.00 | 4.38 | H |
| 2483.622 | 49.45 | 3.4 | 31.98 | 14.05 | 54.00 | 4.56 | H |
| 4923.500 | 35.40 | -21.4 | 33.97 | 22.86 | 54.00 | 18.60 | H |
| 7386.000 | 37.07 | -20.7 | 35.60 | 22.20 | 54.00 | 16.93 | V |
| 9848.000 | 35.46 | -19.9 | 37.22 | 18.18 | 54.00 | 18.54 | V |
| 12310.000 | 36.56 | -19.4 | 38.90 | 17.04 | 54.00 | 17.44 | V |

**802.11n-HT20**

Ch1

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2389.572 | 47.00 | 3.5 | 31.88 | 11.63 | 54.00 | 7.01 | H |
| 2389.762 | 47.01 | 3.5 | 31.88 | 11.65 | 54.00 | 6.99 | H |
| 4823.500 | 36.33 | -21.5 | 33.93 | 23.92 | 54.00 | 17.67 | H |
| 7238.500 | 39.44 | -20.8 | 35.60 | 24.64 | 54.00 | 14.56 | V |
| 9648.000 | 35.78 | -19.7 | 36.98 | 18.52 | 54.00 | 18.22 | H |
| 12060.000 | 36.79 | -19.6 | 38.90 | 17.45 | 54.00 | 17.22 | H |

Ch6

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2412.277 | 47.17 | 3.4 | 31.90 | 11.87 | 54.00 | 6.83 | V |
| 2453.336 | 48.62 | 3.5 | 31.95 | 13.19 | 54.00 | 5.38 | V |
| 4873.500 | 35.37 | -21.5 | 33.95 | 22.94 | 54.00 | 18.63 | H |
| 7308.500 | 36.33 | -20.8 | 35.60 | 21.52 | 54.00 | 17.67 | H |
| 9748.000 | 35.96 | -19.7 | 37.10 | 18.55 | 54.00 | 18.04 | V |
| 12185.000 | 36.86 | -19.4 | 38.90 | 17.38 | 54.00 | 17.14 | H |

Ch11

| Frequency (MHz) | Measurement Result (dBuV/m) | Cable Loss (dB) | Antenna Factor (dB/m) | Receiver Reading (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Pol. (H/V) |
|---|---|---|---|---|---|---|---|
| 2483.508 | 50.86 | 3.4 | 31.98 | 15.46 | 54.00 | 3.14 | H |
| 2483.679 | 50.67 | 3.4 | 31.98 | 15.27 | 54.00 | 3.33 | H |
| 4923.500 | 36.07 | -21.4 | 33.97 | 23.52 | 54.00 | 17.93 | H |
| 7386.500 | 37.89 | -20.7 | 35.60 | 23.02 | 54.00 | 16.11 | V |
| 9848.000 | 36.00 | -19.9 | 37.22 | 18.71 | 54.00 | 18.00 | V |
| 12310.000 | 36.75 | -19.4 | 38.90 | 17.22 | 54.00 | 17.25 | V |

**Test graphs as below:**

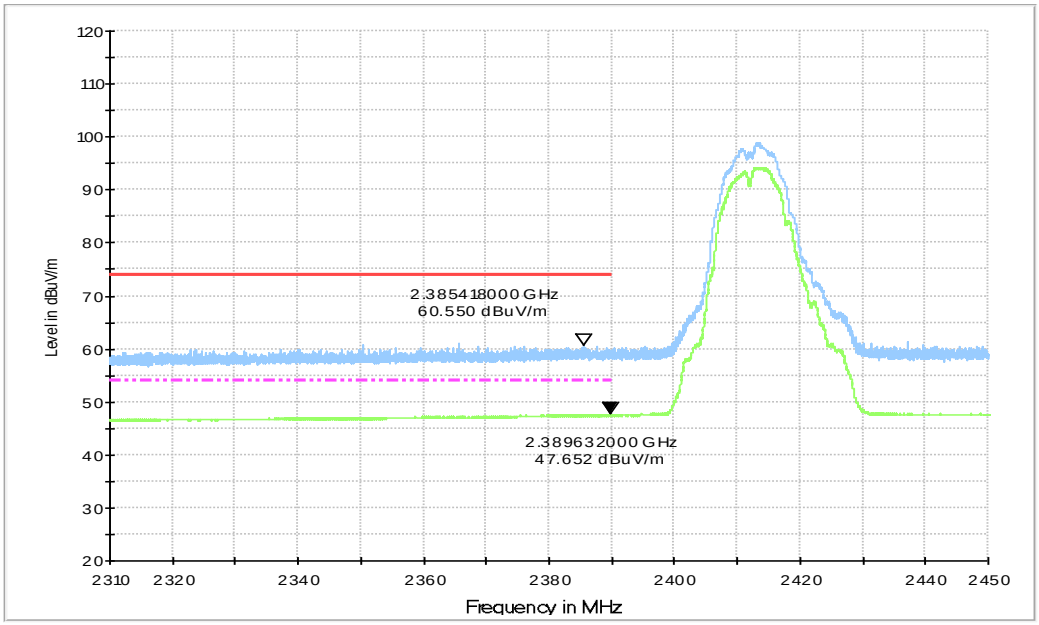



**Fig.A.6.2.1 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch1, 2.31 GHz – 2.45GHz**

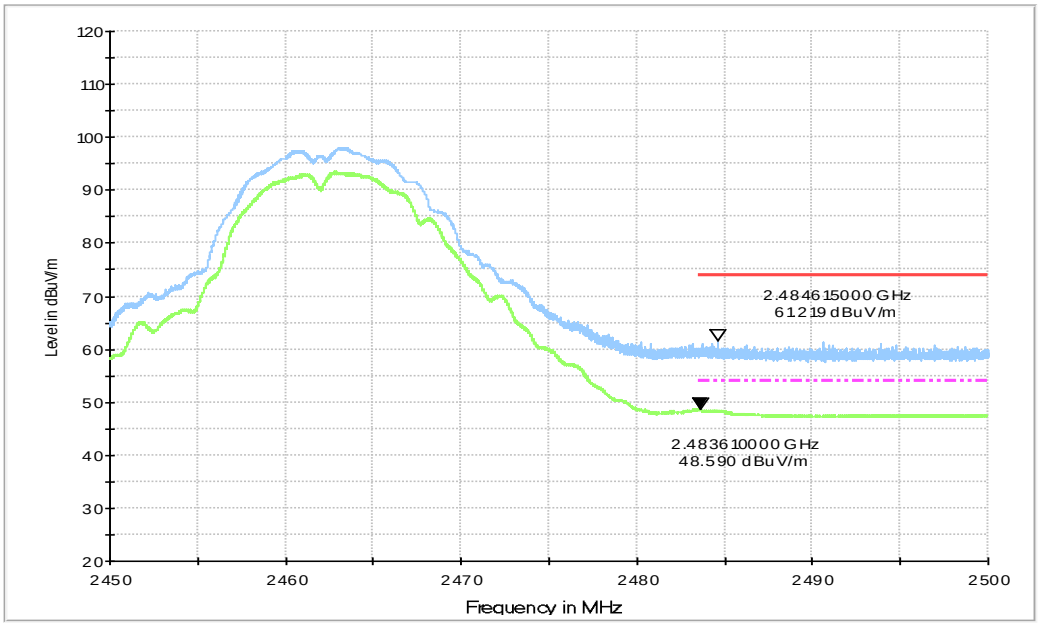



**Fig.A.6.2.2 Transmitter Spurious Emission - Radiated (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz**

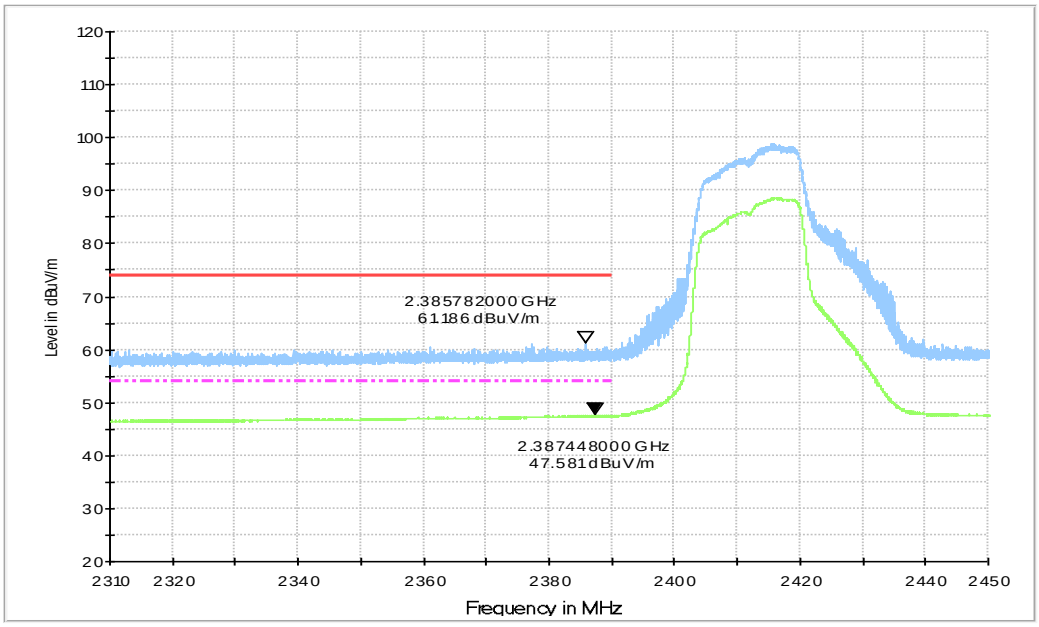



**Fig.A.6.2.3 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch1, 2.31 GHz - 2.45GHz**

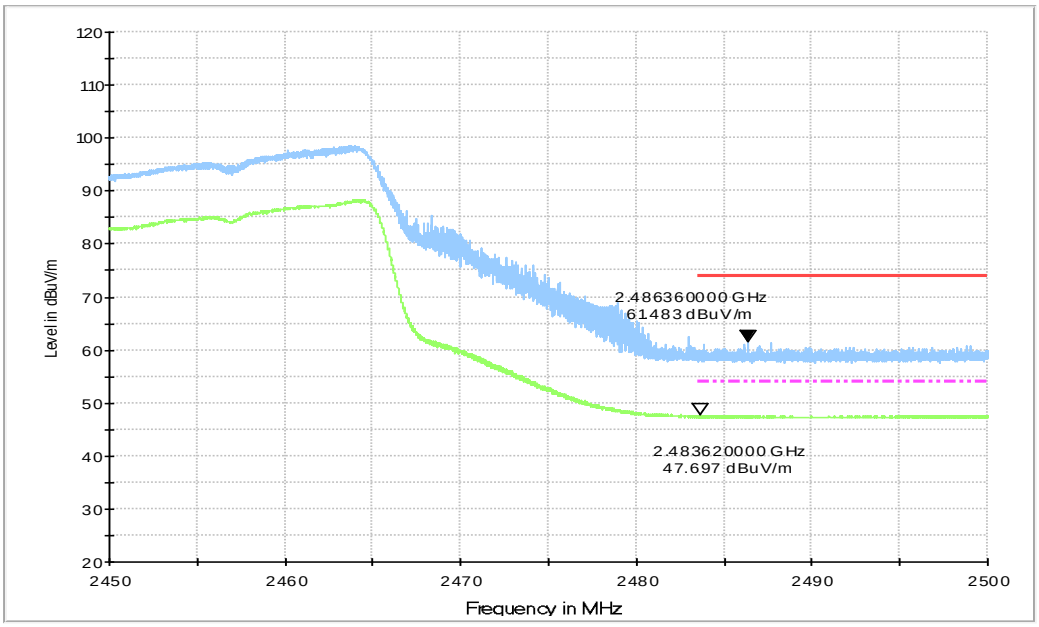



**Fig.A.6.2.4 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch10, 2.45 GHz - 2.50GHz**

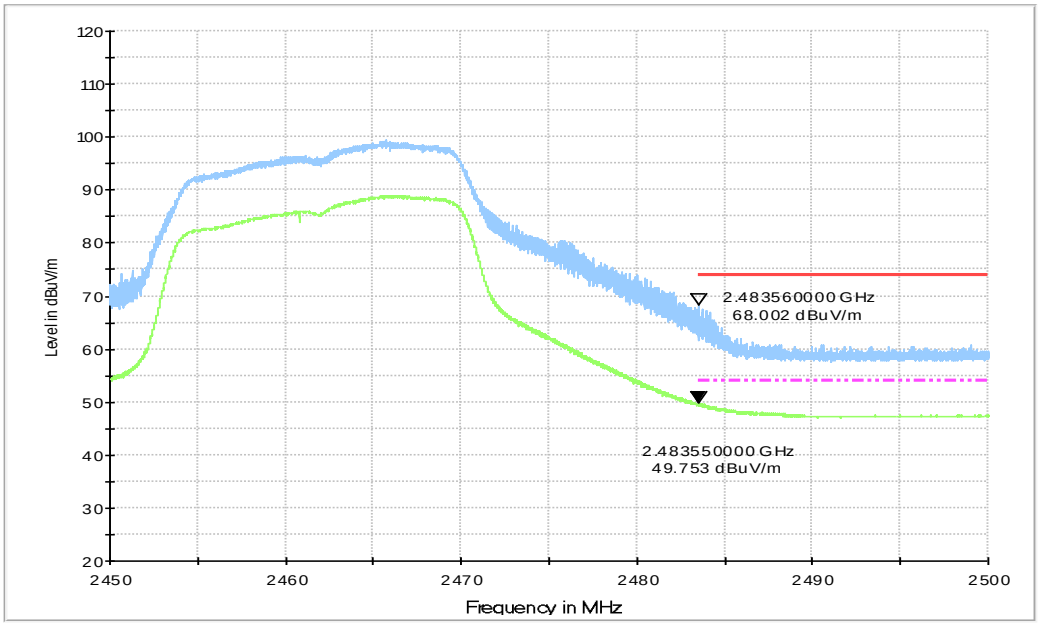



**Fig.A.6.2.5 Transmitter Spurious Emission - Radiated (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz**

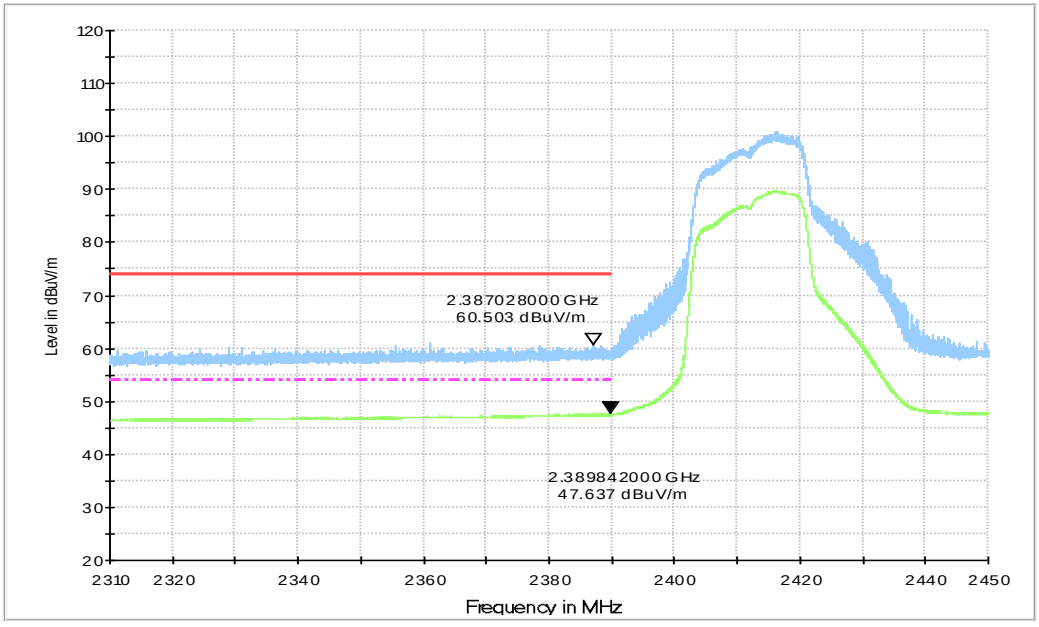



**Fig.A.6.2.6 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch1, 2.31 GHz - 2.45GHz**

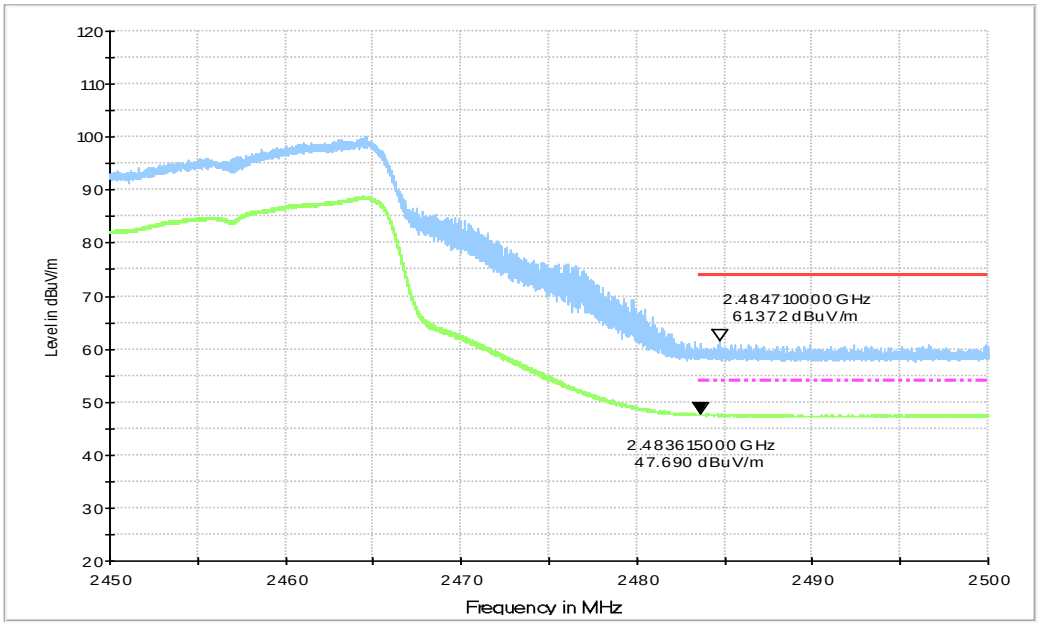



**Fig.A.6.2.7 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch10, 2.45 GHz - 2.50GHz**

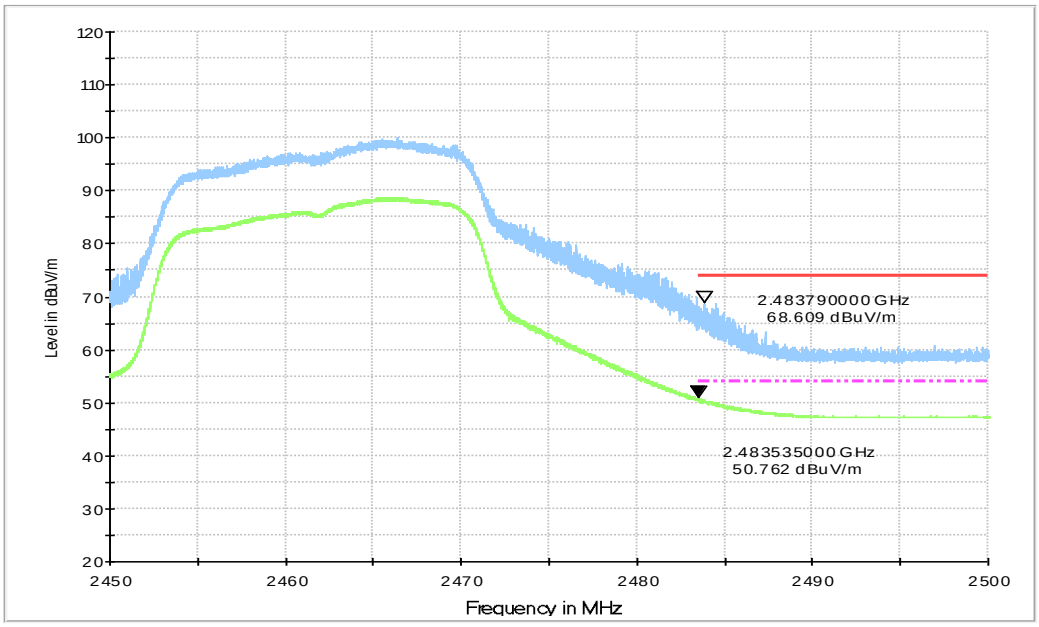



**Fig.A.6.2.8 Transmitter Spurious Emission - Radiated (Power): 802.11n-HT20, ch11, 2.45 GHz - 2.50GHz**

## A.7. AC Power-line Conducted Emission

**Method of Measurement:**

See Clause 6.2 of ANSI C63.10-2013 specifically.

See Clause 4 and Clause 5 of ANSI C63.10-2013 generally.

The conducted emissions from the AC port of the EUT are measured in a shielding room. The EUT is connected to a Line Impedance Stabilization Network (LISN). An overview sweep with peak detection was performed. The measurements were performed with a quasi-peak detector and if required, an average detector.

The conducted emission measurements were made with the following detector of the test receiver: Quasi-Peak / Average Detector.

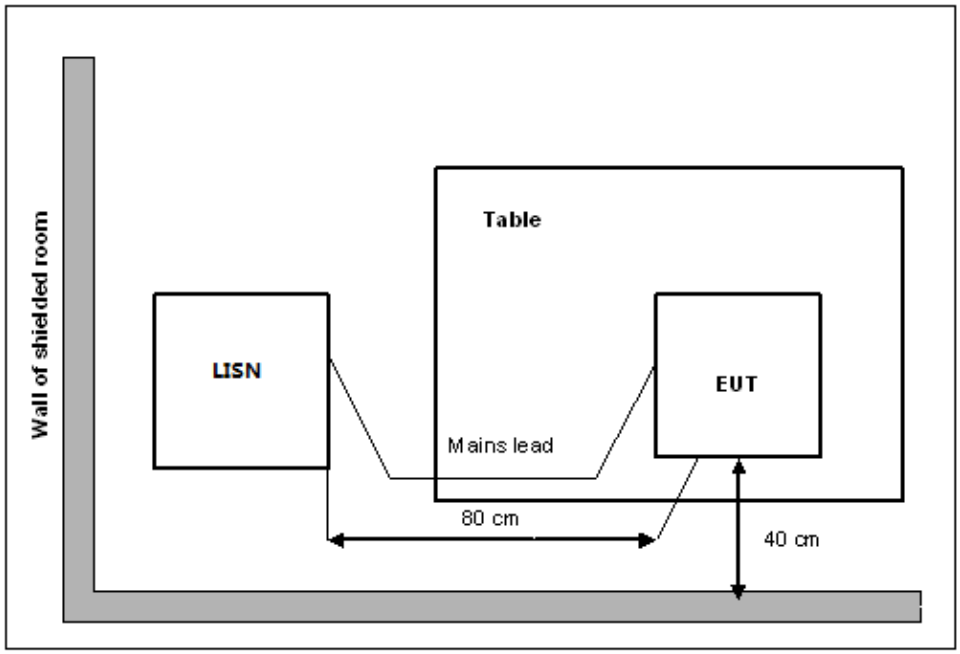
The measurement bandwidth is:

| Frequency of Emission (MHz) | RBW/IF bandwidth |
|---|---|
| 0.15-30 | 9kHz |

**Test Condition:**

| Voltage（V） | Frequency（Hz） |
|---|---|
| 120 | 60 |

**Measurement Setup**



**Measurement Result and limit:**

WLAN (Quasi-peak Limit)

| Frequency range (MHz) | Quasi-peak Limit (dBμV) | Result (dBμV) | | Conclusion |
|---|---|---|---|---|
| | | With charger | | |
| | | 802.11b | Idle | |
| 0.15 to 0.5 | 66 to 56 | Fig.A.7.1 | Fig.A.7.2 | P |
| 0.5 to 5 | 56 | | | |
| 5 to 30 | 60 | | | |
| NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz. | | | | |

WLAN (Average Limit)

| Frequency range (MHz) | Average Limit (dBμV) | Result (dBμV) | | Conclusion |
|---|---|---|---|---|
| | | With charger | | |
| | | 802.11b | Idle | |
| 0.15 to 0.5 | 56 to 46 | Fig.A.7.1 | Fig.A.7.2 | P |
| 0.5 to 5 | 46 | | | |
| 5 to 30 | 50 | | | |
| NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz. | | | | |

**Conclusion: Pass**

**Test graphs as below:**

**Result for Traffic:**

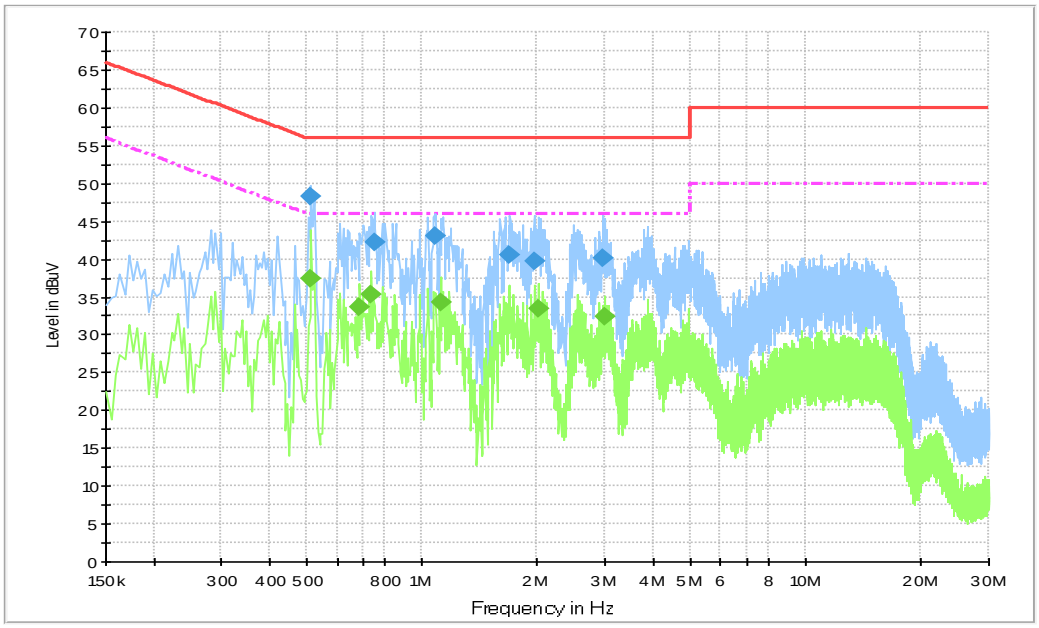



**Fig.A.7.1 AC Powerline Conducted Emission-802.11b**

Note1: The graphic result above is the maximum of the measurements for both phase line and neutral line.

## Final Result 1

| Frequency (MHz) | QuasiPeak (dBµV) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|---|---|---|---|---|---|---|---|
| 0.514500 | 48.3 | 5000. | 9.000 | L1 | 19.9 | 7.7 | 56.0 |
| 0.753000 | 42.2 | 5000. | 9.000 | L1 | 19.8 | 13.8 | 56.0 |
| 1.086000 | 43.1 | 5000. | 9.000 | L1 | 19.7 | 12.9 | 56.0 |
| 1.698000 | 40.5 | 5000. | 9.000 | L1 | 19.7 | 15.5 | 56.0 |
| 1.959000 | 39.6 | 5000. | 9.000 | L1 | 19.7 | 16.4 | 56.0 |
| 2.971500 | 40.0 | 5000. | 9.000 | L1 | 19.6 | 16.0 | 56.0 |

## Final Result 2

| Frequency (MHz) | Average (dBµV) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|---|---|---|---|---|---|---|---|
| 0.514500 | 37.4 | 5000.0 | 9.000 | N | 19.9 | 8.6 | 46.0 |
| 0.690000 | 33.6 | 5000.0 | 9.000 | L1 | 19.8 | 12.4 | 46.0 |
| 0.739500 | 35.3 | 5000.0 | 9.000 | L1 | 19.8 | 10.7 | 46.0 |
| 1.122000 | 34.3 | 5000.0 | 9.000 | L1 | 19.7 | 11.7 | 46.0 |
| 2.013000 | 33.5 | 5000.0 | 9.000 | L1 | 19.7 | 12.5 | 46.0 |
| 2.994000 | 32.3 | 5000.0 | 9.000 | L1 | 19.6 | 13.7 | 46.0 |

**Result for Idle:**

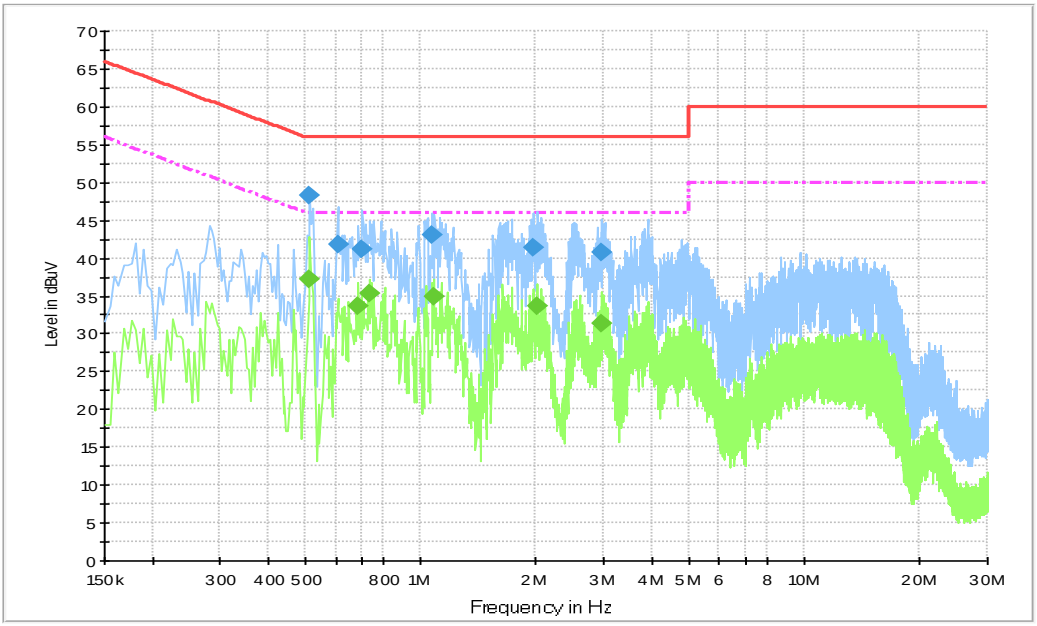



**Fig.A.7.2 AC Powerline Conducted Emission-Idle**

Note1: The graphic result above is the maximum of the measurements for both phase line and neutral line.

## Final Result 1

| Frequency (MHz) | QuasiPeak (dBµV) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|---|---|---|---|---|---|---|---|
| 0.514500 | 48.4 | 5000. | 9.000 | L1 | 19.9 | 7.6 | 56.0 |
| 0.609000 | 41.9 | 5000. | 9.000 | L1 | 19.8 | 14.2 | 56.0 |
| 0.703500 | 41.2 | 5000. | 9.000 | L1 | 19.8 | 14.8 | 56.0 |
| 1.072500 | 43.1 | 5000. | 9.000 | L1 | 19.7 | 12.9 | 56.0 |
| 1.977000 | 41.4 | 5000. | 9.000 | L1 | 19.7 | 14.6 | 56.0 |
| 2.953500 | 40.8 | 5000. | 9.000 | L1 | 19.6 | 15.2 | 56.0 |

## Final Result 2

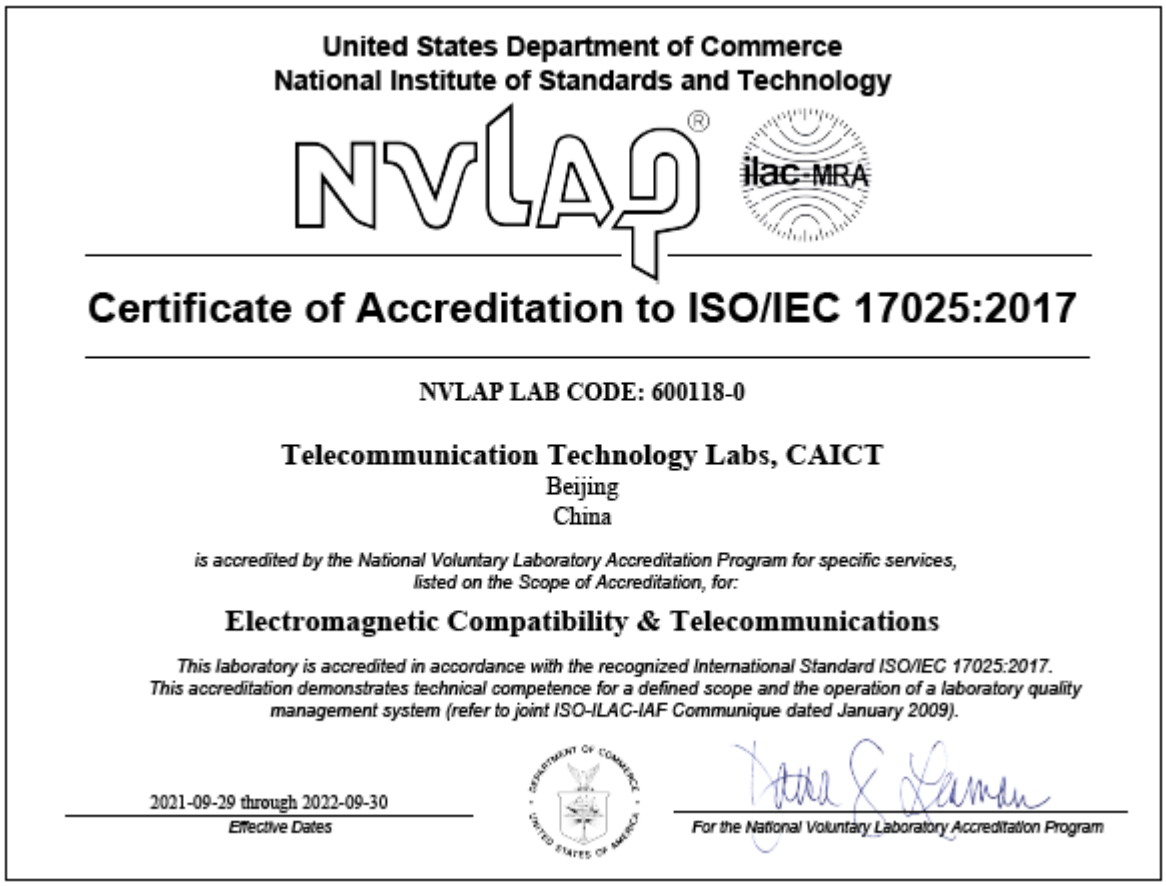
| Frequency (MHz) | Average (dBµV) | Meas. Time (ms) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dBµV) |
|---|---|---|---|---|---|---|---|
| 0.514500 | 37.3 | 5000.0 | 9.000 | N | 19.9 | 8.7 | 46.0 |
| 0.690000 | 33.7 | 5000.0 | 9.000 | L1 | 19.8 | 12.3 | 46.0 |
| 0.739500 | 35.3 | 5000.0 | 9.000 | L1 | 19.8 | 10.7 | 46.0 |
| 1.081500 | 35.0 | 5000.0 | 9.000 | L1 | 19.7 | 11.0 | 46.0 |
| 2.013000 | 33.6 | 5000.0 | 9.000 | L1 | 19.7 | 12.4 | 46.0 |
| 2.962500 | 31.4 | 5000.0 | 9.000 | L1 | 19.6 | 14.6 | 46.0 |

Note: The measurement results showed here are worst cases.

## ANNEX B: EUT parameters

Disclaimer: The antenna gain provided by the client may affect the validity of the measurement results in this report, and the client shall bear the impact and consequences arising therefrom.

## ANNEX C: Accreditation Certificate



United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

ilac-MRA

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 600118-0

Telecommunication Technology Labs, CAICT
Beijing
China

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:*

Electromagnetic Compatibility & Telecommunications

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).*

2021-09-29 through 2022-09-30
*Effective Dates*

*For the National Voluntary Laboratory Accreditation Program*

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