



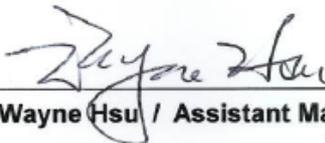
# FCC Test Report

Equipment : ProSafe Wireless - 802.11 b/g/n VPN Firewall  
Brand Name : NETGEAR  
Model No. : FVS318N  
FCC ID : PY311100158  
Standard : 47 CFR FCC Part 15.247  
Frequency Range : 2400 MHz – 2483.5 MHz  
Equipment Class : DTS  
Applicant : Netgear Inc  
Manufacturer : 350 East Plumeria Drive San Jose, CA 95134 U.S.A

The product sample received on Sep. 12, 2012 and completely tested on Oct. 15, 2012. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2009 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:

  
Wayne Hsu / Assistant Manager





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### Summary of Test Result

| Conformance Test Specifications |                  |   |  |  |          |
|---------------------------------|------------------|---|--|--|----------|
| Report Clause                   | Ref. Std. Clause | Description   | Measured   | Limit  | Result   |
| 1.1.2                           | 15.203           | Antenna Requirement                                   | Antenna connector mechanism complied   | FCC 15.203   | Complied |
| 3.1                             | 15.207           | AC Power-line Conducted Emissions                     | [dBuV]: 0.371MHz<br>35.81 (Margin 12.67dB) - AV<br>38.72 (Margin 19.76dB) - QP   | FCC 15.207   | Complied |
| 3.2                             | 15.247(b)        | RF Output Power (Maximum Peak Conducted Output Power) | Power [dBm]<br>11B-20M: 17.64<br>11G-20M: 22.59<br>11N2.4G-20M: 25.14<br>11N2.4G-40M:25.05   | Power [dBm]:30   | Complied |
| 3.3                             | 15.247(c)        | Transmitter Radiated Bandedge Emissions               | Non-Restricted Bands:<br>2400.00MHz: 25.76dB<br>Restricted Bands [dBuV/m at 3m]:<br>2390.00MHz<br>72.53 (Margin 1.47dB) - PK<br>52.93 (Margin 1.07dB) - AV | Non-Restricted Bands: > 20 dBc<br>Restricted Bands: FCC 15.209 | Complied |
| 3.4                             | 15.247(c)        | Transmitter Radiated Unwanted Emissions               | Restricted Bands [dBuV/m at 3m]: 4874MHz<br>50.90(Margin 3.10dB) - PK  | Non-Restricted Bands: > 20 dBc<br>Restricted Bands: FCC 15.209 | Complied |



# 1 General Description

## 1.1 Information

### 1.1.1 RF General Information

| RF General Information |                  |                 |                |                                    |                       |             |
|------------------------|------------------|-----------------|----------------|------------------------------------|-----------------------|-------------|
| Frequency Range (MHz)  | IEEE Std. 802.11 | Ch. Freq. (MHz) | Channel Number | Transmit Chains (N <sub>TX</sub> ) | RF Output Power (dBm) | Co-location |
| 2400-2483.5            | b                | 2412-2462       | 1-11 [11]      | 1                                  | 17.64                 | N/A         |
| 2400-2483.5            | g                | 2412-2462       | 1-11 [11]      | 1                                  | 22.59                 | N/A         |
| 2400-2483.5            | n (HT20)         | 2412-2462       | 1-11 [11]      | 1                                  | 22.05                 | N/A         |
| 2400-2483.5            | n (HT40)         | 2422-2452       | 3-9 [7]        | 1                                  | 22.32                 | N/A         |
| 2400-2483.5            | n (HT20)         | 2412-2462       | 1-11 [11]      | 2                                  | 25.14                 | N/A         |
| 2400-2483.5            | n (HT40)         | 2422-2452       | 3-9 [7]        | 2                                  | 25.05                 | N/A         |

Note 1: RF output power specifies that Maximum Peak Conducted Output Power.  
 Note 2: 802.11b uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.  
 Note 3: 802.11g/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.  
 Note 4: Co-location, Co-location is generally defined as simultaneously transmitting (co-transmitting) antennas within 20 cm of each other. (i.e., EUT has simultaneously co-transmitting that operating 2.4GHz and 5GHz.)

### 1.1.2 Antenna Information

| Antenna Category                    |   |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | External antenna (dedicated antennas)                                       |
| <input checked="" type="checkbox"/> | Single power level with corresponding antenna(s).                           |
| <input type="checkbox"/>            | Multiple power level and corresponding antenna(s).                          |
| <input checked="" type="checkbox"/> | RF connector provided   |
| <input checked="" type="checkbox"/> | Unique antenna connector. (e.g., MMCX, U.FL, IPX, and RP-SMA, RP-N type...) |
| <input type="checkbox"/>            | Standard antenna connector. (e.g., SMA, N, BNC, and TNC type...)            |

| Antenna General Information |           |           |           |                        |
|-----------------------------|-----------|-----------|-----------|------------------------|
| No.                         | Ant. Port | Ant. Cat. | Ant. Type | G <sub>ANT</sub> (dBi) |
| 1                           | 1, 2      | Integral  | Dipole    | 2.0                    |

1.1.3 Type of EUT

| Identify EUT                        |   |
|-------------------------------------|---|
| EUT Serial Number                   | N/A   |
| Presentation of Equipment           | <input type="checkbox"/> Production ; <input checked="" type="checkbox"/> Pre-Production ; <input type="checkbox"/> Prototype     |
| Type of EUT                         |   |
| <input checked="" type="checkbox"/> | Stand-alone   |
| <input type="checkbox"/>            | Combined (EUT where the radio part is fully integrated within another device)<br>Combined Equipment - Brand Name / Model No.: ... |
| <input type="checkbox"/>            | Plug-in radio (EUT intended for a variety of host systems)<br>Host System - Brand Name / Model No.: ...                           |
| <input type="checkbox"/>            | Other:  |

1.1.4 Test Signal Duty Cycle

| Operated Mode for Worst Duty Cycle   |                                       |   |
|--|---------------------------------------|---|
| <input type="checkbox"/> Operated normally mode for worst duty cycle               |                                       |   |
| <input checked="" type="checkbox"/> Operated test mode for worst duty cycle        |                                       |   |
| Test Signal Duty Cycle (x)   | Power Duty Factor [dB] – (10 log 1/x) | Voltage Duty Factor [dB] – (20 log 1/x) |
| <input checked="" type="checkbox"/> 100% - IEEE 802.11b                            | 0                                     | 0                                       |
| <input checked="" type="checkbox"/> 100% - IEEE 802.11g                            | 0                                     | 0                                       |
| <input checked="" type="checkbox"/> 100% - IEEE 802.11n (HT20) - N <sub>TX</sub> 1 | 0                                     | 0                                       |
| <input checked="" type="checkbox"/> 100% - IEEE 802.11n (HT40) - N <sub>TX</sub> 1 | 0                                     | 0                                       |
| <input checked="" type="checkbox"/> 100% - IEEE 802.11n (HT20) - N <sub>TX</sub> 2 | 0                                     | 0                                       |
| <input checked="" type="checkbox"/> 100% - IEEE 802.11n (HT40) - N <sub>TX</sub> 2 | 0                                     | 0                                       |

1.1.5 EUT Operational Condition

|                   |  |   |                                  |
|-------------------|--|---|----------------------------------|
| Supply Voltage    | <input checked="" type="checkbox"/> AC mains | <input type="checkbox"/> DC                             |                                  |
| Type of DC Source | <input type="checkbox"/> Internal DC supply  | <input checked="" type="checkbox"/> External DC adapter | <input type="checkbox"/> Battery |

## 1.2 Accessories

| Accessories Information |              |   |            |                |
|-------------------------|--------------|---|------------|----------------|
| AC Adapter 1            | Brand Name   | NETGEAR                                     | Model Name | T012LF1209     |
|                         | Power Rating | I/P: 100-240V 50~ 60Hz 0.5A ; O/P: 12V 1.0A |            |                |
| AC Adapter 2            | Brand Name   | NETGEAR                                     | Model Name | MT12-120100-A1 |
|                         | Power Rating | I/P: 100-240V~ 60Hz 0.3A ; O/P: 12V 1.0A    |            |                |

Note: Regarding to more detail and other information, please refer to user manual.

## 1.3 Support Equipment

| Support Equipment - Conducted Emissions |                                  |            |            |            |
|---|----------------------------------|------------|------------|------------|
| No.                                     | Equipment                        | Brand Name | Model Name | Serial No. |
| 1                                       | Notebook<br>(Remote Workstation) | DELL       | E5520      | DoC        |

Note: In radiated emissions tested EUT was tested alone.

## 1.4 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ◆ 47 CFR FCC Part 15
- ◆ ANSI C63.10-2009
- ◆ FCC KDB 558074
- ◆ FCC KDB 662911
- ◆ FCC KDB 412172

## 1.5 Testing Location Information

| Testing Location                    |               |   |                      |                       |
|-------------------------------------|---------------|---|----------------------|-----------------------|
| <input checked="" type="checkbox"/> | HWA YA        | ADD : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C |                      |                       |
|                                     |               | TEL : 886-3-327-3456  | FAX : 886-3-327-0973 |                       |
| Test Condition                      | Test Site No. | Test Engineer   | Test Environment     | Test Date             |
| AC Conduction                       | CO01-HY       | David   | 24.7°C / 53.6%       | 15-Oct-12             |
| Radiated Emission                   | 03CH03-HY     | Daniel  | 25.6°C / 58%         | 24-Sep-12 ~ 25-Sep-12 |



### 1.6 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

| Measurement Uncertainty           |               |             |       |
|-----------------------------------|---------------|-------------|-------|
| Test Item                         |               | Uncertainty | Limit |
| AC power-line conducted emissions |               | ±2.26 dB    | N/A   |
| Unwanted emissions, conducted     | 30 – 1000 MHz | ±0.51 dB    | N/A   |
|                                   | 1 – 18 GHz    | ±0.67 dB    | N/A   |
|                                   | 18 – 40 GHz   | ±0.83 dB    | N/A   |
|                                   | 40 – 200 GHz  | N/A         | N/A   |
| All emissions, radiated           | 30 – 1000 MHz | ±2.56 dB    | N/A   |
|                                   | 1 – 18 GHz    | ±3.59 dB    | N/A   |
|                                   | 18 – 40 GHz   | ±3.82 dB    | N/A   |
|                                   | 40 – 200 GHz  | N/A         | N/A   |
| Temperature                       |               | ±0.8 °C     | N/A   |
| Humidity                          |               | ±3 %        | N/A   |
| DC and low frequency voltages     |               | ±3 %        | N/A   |
| Time                              |               | ±1.42 %     | N/A   |
| Duty Cycle                        |               | ±1.42 %     | N/A   |

## 2 Test Configuration of EUT

### 2.1 Test Channel Frequencies Configuration

| Worst Modulation Used for Conformance Testing |                                    |                 |                       |                 |                       |
|---|------------------------------------|-----------------|-----------------------|-----------------|-----------------------|
| IEEE Std. 802.11                              | Transmit Chains (N <sub>TX</sub> ) | Data Rate / MCS | Worst Data Rate / MCS | Modulation Mode | RF Output Power (dBm) |
| b   | 1                                  | 1-11 Mbps       | 1 Mbps                | 11B-20M         | 17.64                 |
| g   | 1                                  | 6-54 Mbps       | 6 Mbps                | 11G-20M         | 22.59                 |
| n (HT20)                                      | 1                                  | MCS 0-7         | MCS 0                 | 11N2.4G-20M     | 22.05                 |
| n (HT40)                                      | 1                                  | MCS 0-7         | MCS 0                 | 11N2.4G-40M     | 22.32                 |
| n (HT20)                                      | 2                                  | MCS 7-15        | MCS 8                 | 11N2.4G-20M     | 25.14                 |
| n (HT40)                                      | 2                                  | MCS 7-15        | MCS 8                 | 11N2.4G-40M     | 25.05                 |

Note 1: IEEE Std. 802.11n-2009 modulation consists of HT20 and HT40 (HT: High Throughput). Then EUT support HT20 and HT40. Worst modulation mode of Guard Interval (GI) is 800ns.

Note 2: Modulation modes consist below configuration::  
 11B: IEEE 802.11b, 11G: IEEE 802.11g, 11N: IEEE 802.11n  
 2.4G: 2.4-2.4835GHz band  
 20M/40M: Channel Bandwidth 20MHz/40MHz

Note 3: RF output power specifies that Maximum Peak Conducted Output Power.

### 2.2 Test Channel Frequencies Configuration

| Test Channel Frequencies Configuration |   |
|--|---|
| IEEE Std. 802.11                       | Test Channel Frequencies (MHz) – FX (Frequencies Abbreviations) |
| b, g, n (HT20)                         | 2412-(F1), 2437-(F2), 2462-(F3)                                 |
| n (HT40)                               | 2422-(F4), 2437-(F5), 2452-(F6)                                 |

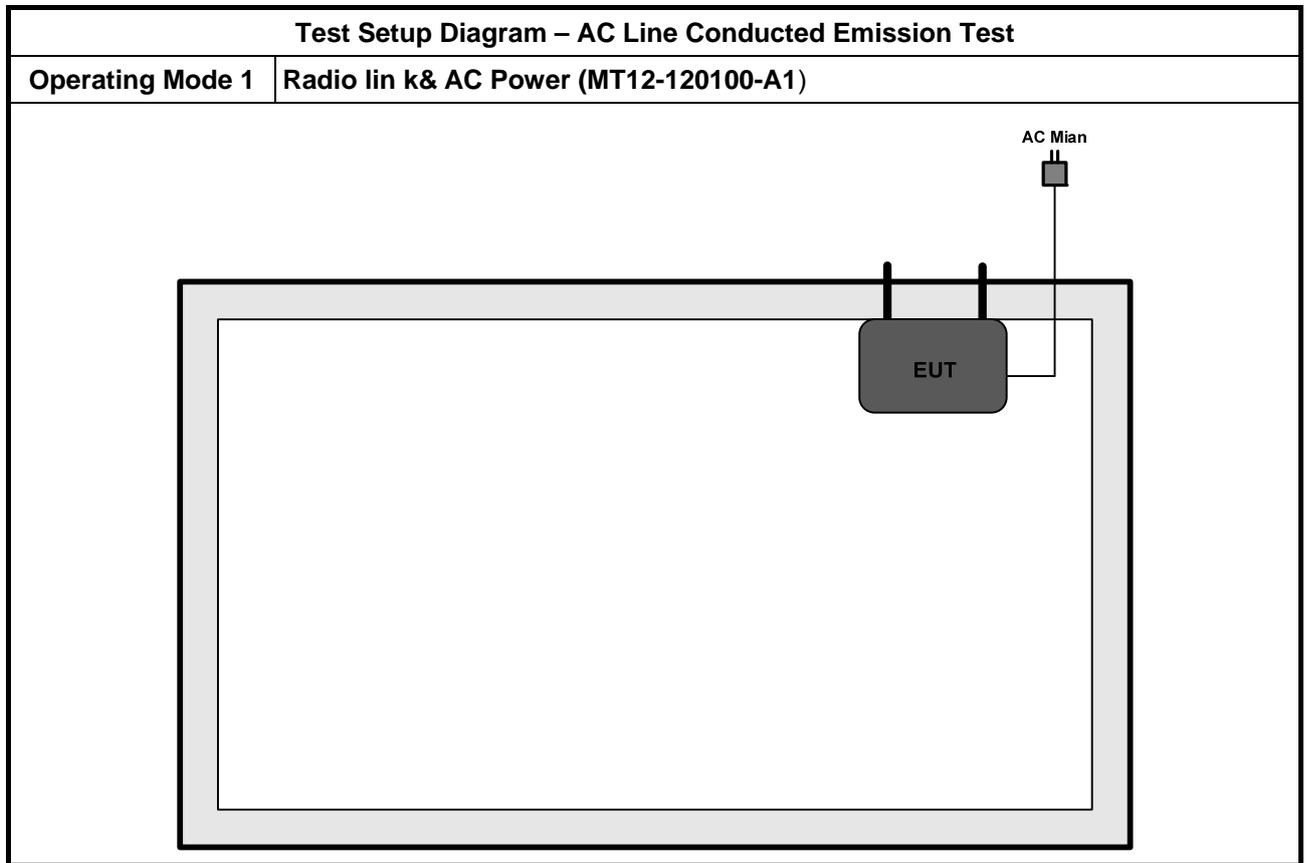
### 2.3 The Worst Case Measurement Configuration

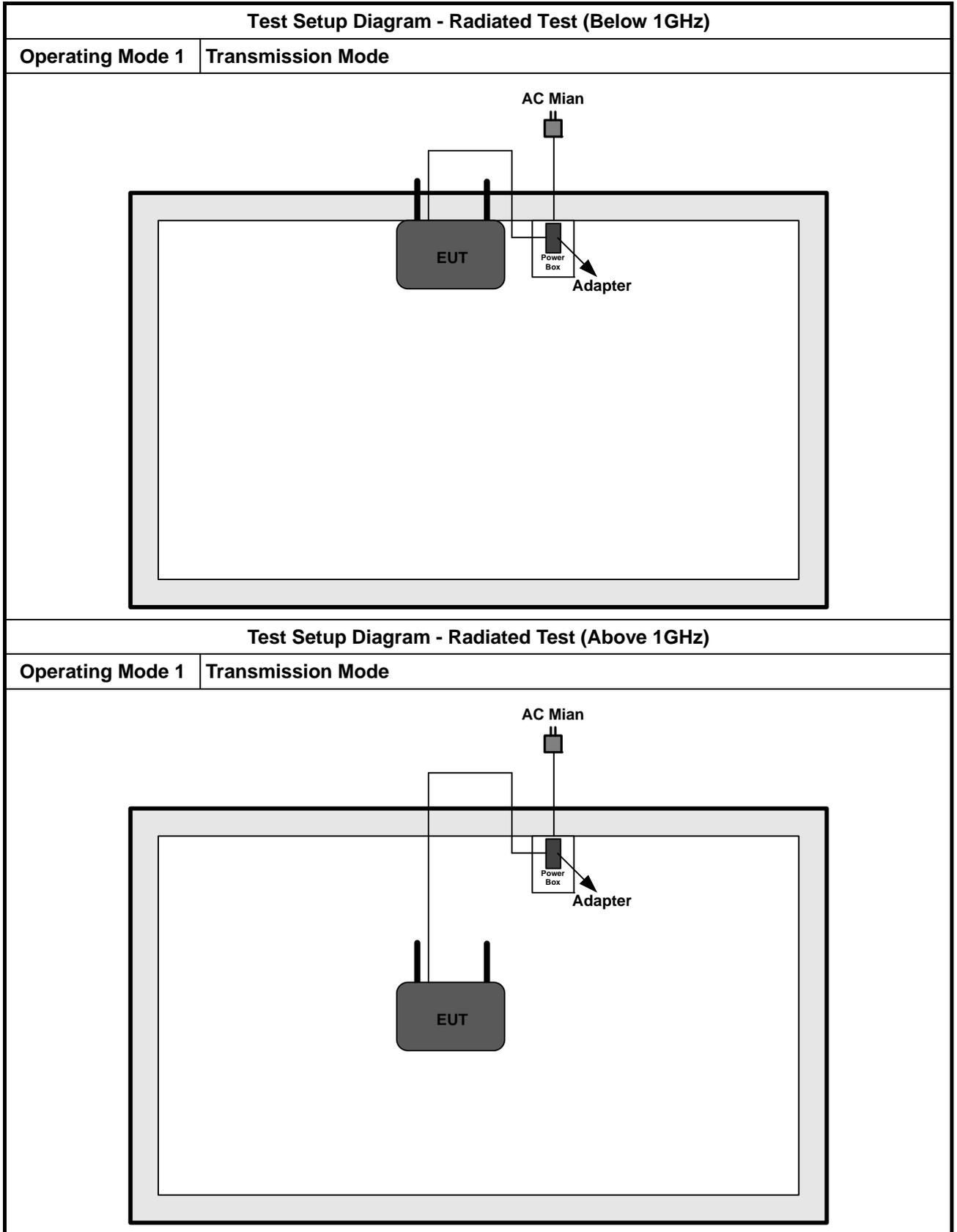
| The Worst Case Mode for Following Conformance Tests                           |   |
|---|---|
| <b>Tests Item</b>   | AC power-line conducted emissions   |
| <b>Condition</b>  | AC power-line conducted measurement for line and neutral<br>Test Voltage: 120Vac / 60Hz |
| <b>Operating Mode</b>   | Operating Mode Description  |
| 1   | Radio lin k& AC Power (T012LF1209)  |
| 2   | Radio lin k& AC Power (MT12-120100-A1)  |
| For operating mode 2 is the worst case and it was record in this test report. |   |

| The Worst Case Mode for Following Conformance Tests |   |                        |                       |
|---|---|------------------------|-----------------------|
| <b>Tests Item</b>                                   | RF Output Power, Power Spectral Density, 6 dB Bandwidth |                        |                       |
| <b>Test Condition</b>                               | Conducted measurement at transmit chains                |                        |                       |
| <b>Modulation Mode</b>                              | <b>Transmit Chains (N<sub>TX</sub>)</b>                 | <b>Data Rate / MCS</b> | <b>Test Frequency</b> |
| 11B-20M   | 1   | 1 Mbps                 | F1, F2, F3            |
| 11G-20M   | 1   | 6 Mbps                 | F1, F2, F3            |
| 11N2.4G-20M   | 1   | MCS 0                  | F1, F2, F3            |
| 11N2.4G-40M   | 1   | MCS 0                  | F4, F5, F6            |
| 11N2.4G-20M   | 2   | MCS 8                  | F1, F2, F3            |
| 11N2.4G-40M   | 2   | MCS 8                  | F4, F5, F6            |

| The Worst Case Mode for Following Conformance Tests |   |                        |                       |
|---|---|------------------------|-----------------------|
| <b>Tests Item</b>                                   | Transmitter Radiated Bandedge Emissions |                        |                       |
| <b>Test Condition</b>                               | Radiated measurement                    |                        |                       |
| <b>Modulation Mode</b>                              | <b>Transmit Chains (N<sub>TX</sub>)</b> | <b>Data Rate / MCS</b> | <b>Test Frequency</b> |
| 11B-20M   | 1                                       | 1 Mbps                 | F1, F3                |
| 11G-20M   | 1                                       | 6 Mbps                 | F1, F3                |
| 11N2.4G-20M   | 1                                       | MCS 0                  | F1, F3                |
| 11N2.4G-40M   | 1                                       | MCS 0                  | F4, F6                |
| 11N2.4G-20M   | 2                                       | MCS 8                  | F1, F3                |
| 11N2.4G-40M   | 2                                       | MCS 8                  | F4, F6                |

## 2.4 Test Setup Diagram





### 3 Transmitter Test Result

#### 3.1 AC Power-line Conducted Emissions

##### 3.1.1 AC Power-line Conducted Emissions Limit

| AC Power-line Conducted Emissions Limit |            |           |
|---|------------|-----------|
| Frequency Emission (MHz)                | Quasi-Peak | Average   |
| 0.15-0.5                                | 66 - 56 *  | 56 - 46 * |
| 0.5-5                                   | 56         | 46        |
| 5-30                                    | 60         | 50        |

Note 1: \* Decreases with the logarithm of the frequency.

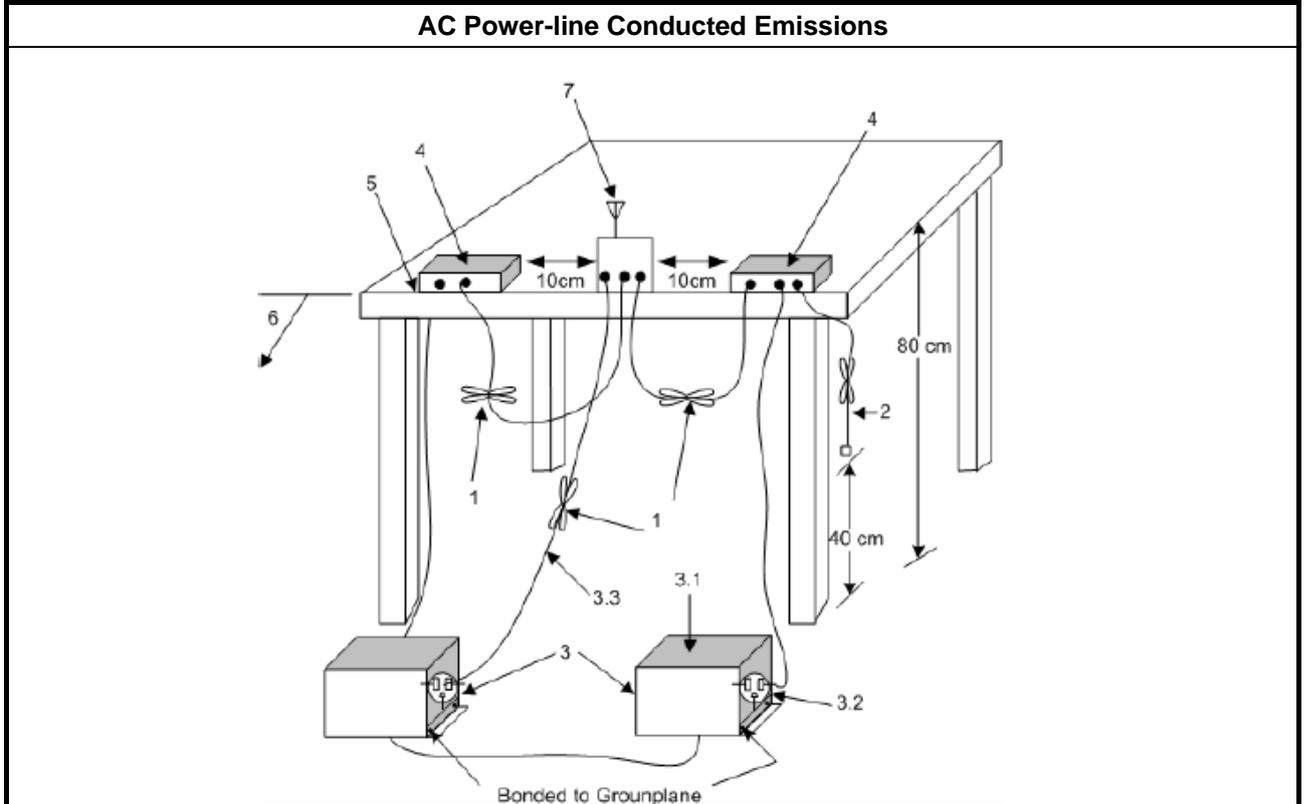
##### 3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

##### 3.1.3 Test Procedures

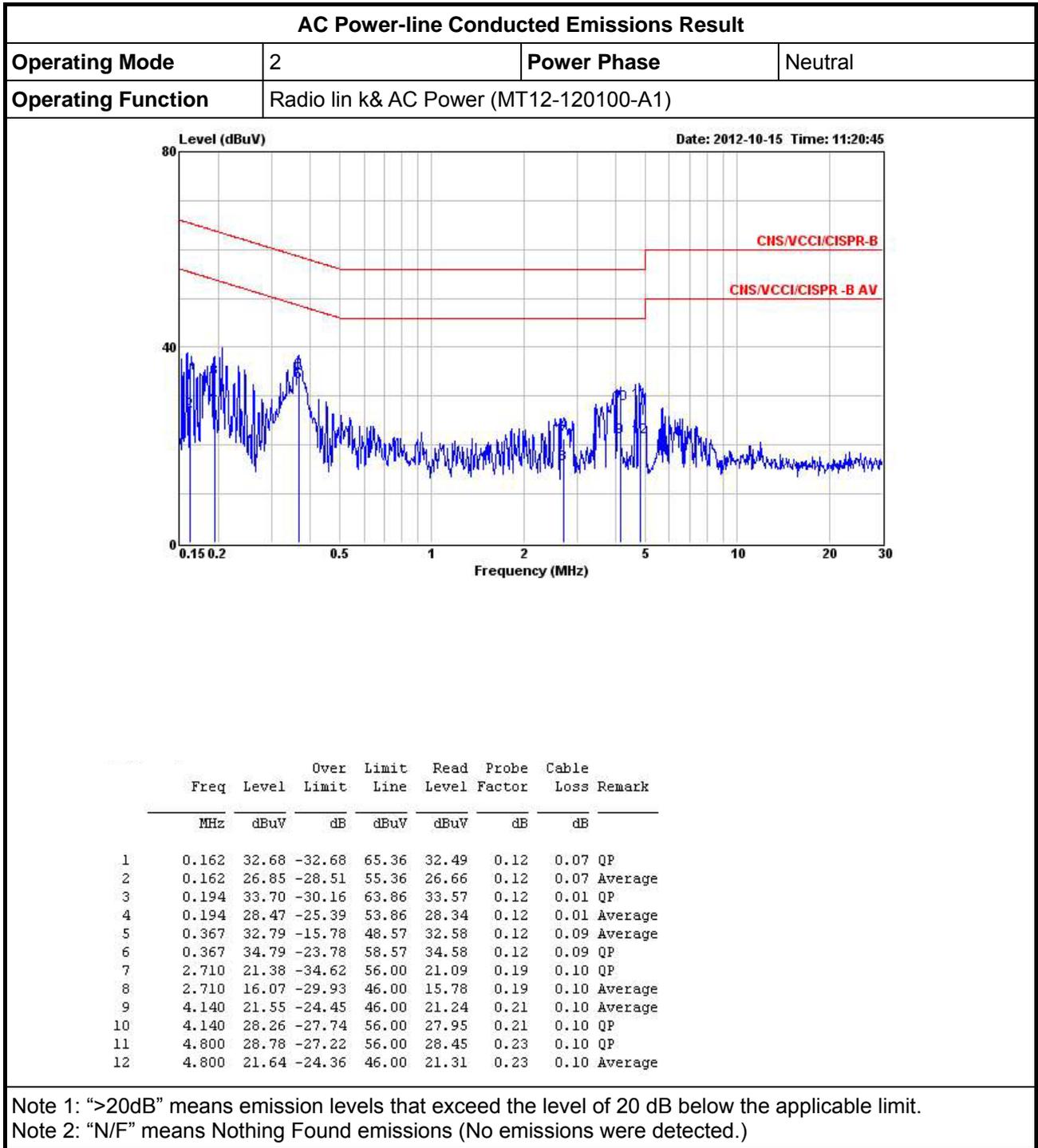
| Test Method  |
|--|
| <input checked="" type="checkbox"/> Refer as ANSI C63.10-2009, clause 6.2 for AC power-line conducted emissions. |

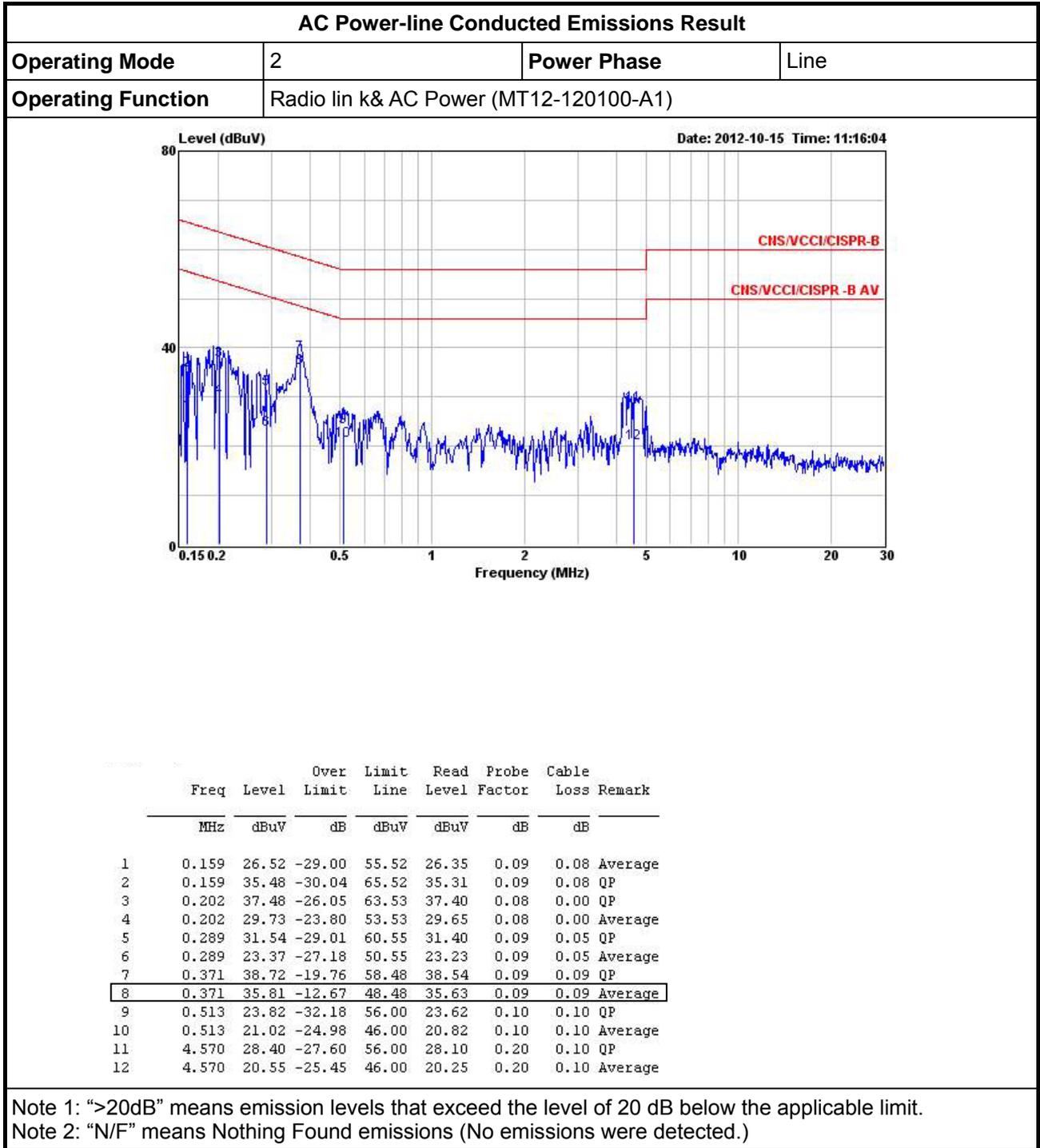
##### 3.1.4 Test Setup





3.1.5 Test Result of AC Power-line Conducted Emissions





### 3.2 RF Output Power

#### 3.2.1 RF Output Power Limit

| RF Output Power Limit  |  |
|--|--|
| <b>Maximum Peak Conducted Output Power or Maximum Conducted Output Power Limit</b>   |  |
| <input checked="" type="checkbox"/> 2400-2483.5 MHz Band:  |  |
| <input checked="" type="checkbox"/>  | If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)   |
| <input checked="" type="checkbox"/>  | Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm     |
| <input type="checkbox"/>   | Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm        |
| <input type="checkbox"/>   | Smart antenna system (SAS):  |
| <input type="checkbox"/>   | Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm                         |
| <input type="checkbox"/>   | Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm                        |
| <input type="checkbox"/>   | Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm |
| <b>e.i.r.p. Power Limit:</b>   |  |
| <input checked="" type="checkbox"/> 2400-2483.5 MHz Band   |  |
| <input checked="" type="checkbox"/>  | Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)                                    |
| <input type="checkbox"/>   | Point-to-point systems (P2P): $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])$ dBm               |
| <input type="checkbox"/>   | Smart antenna system (SAS)   |
| <input type="checkbox"/>   | Single beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm                                  |
| <input type="checkbox"/>   | Overlap beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm                                 |
| <input type="checkbox"/>   | Aggregate power on all beams: $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX} + 8])$ dBm           |
| $P_{Out}$ = maximum peak conducted output power or maximum conducted output power in dBm,<br>$G_{TX}$ = the maximum transmitting antenna directional gain in dBi.<br>$P_{eirp}$ = e.i.r.p. Power in dBm. |  |

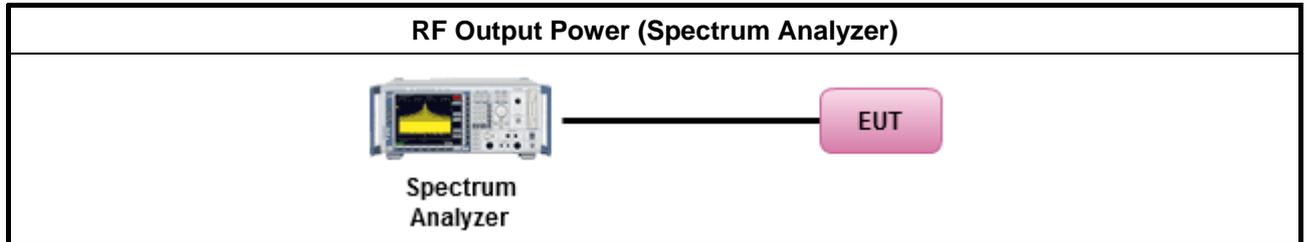
#### 3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

| Test Method                         |  |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Maximum Peak Conducted Output Power  |
| <input type="checkbox"/>            | Refer as FCC KDB 558074, clause 5.2.1.1 Option 1 (RBW ≥ EBW method).   |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 5.2.1.2 Option 2 (integrated band power method).   |
| <input type="checkbox"/>            | Refer as ANSI C63.10, clause 6.10.2.1 a) for peak power meter.   |
| <input checked="" type="checkbox"/> | Maximum Conducted (Average) Output Power   |
| <input type="checkbox"/>            | Refer as FCC KDB 558074, clause 5.2.2.1 Option 1 (RMS detection with slow sweep speed).  |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 5.2.2.2 Option 2 (spectral trace averaging).   |
| <input checked="" type="checkbox"/> | For conducted measurement.   |
| <input checked="" type="checkbox"/> | The EUT supports single transmit chain and measurements performed on this transmit chain.  |
| <input checked="" type="checkbox"/> | The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.  |
| <input checked="" type="checkbox"/> | The EUT supports multiple transmit chains using options given below:<br>Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them. |
| <input checked="" type="checkbox"/> | If multiple transmit chains, EIRP calculation could be following as methods:<br>$P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm])<br>$EIRP_{total} = P_{total} + DG$   |

3.2.4 Test Setup



3.2.5 Directional Gain for Power Measurement

| Directional Gain (DG) Result   |          |                 |                 |      |                 |
|--------------------------------|----------|-----------------|-----------------|------|-----------------|
| Transmit Chains No.            |          | 1               | 2               | -    | -               |
| Maximum G <sub>ANT</sub> (dBi) |          | 2.0             | 2.0             | -    | -               |
| Modulation Mode                | DG (dBi) | N <sub>TX</sub> | N <sub>SS</sub> | STBC | Array Gain (dB) |
| Legacy CCK,1-11Mbps (11b)      | 2.0      | 1               | 1               | -    | -               |
| Non HT20,6-54Mbps (11g)        | 2.0      | 1               | 1               | -    | -               |
| HT20,M0-M7                     | 2.0      | 1               | 1               | -    | -               |
| HT20,M8-15                     | 2.0      | 2               | 2               | -    | -               |
| HT40,M0-M7                     | 2.0      | 1               | 1               | -    | -               |
| HT40,M8-M15                    | 2.0      | 2               | 2               | -    | -               |

Note 1: For all transmitter outputs with equal antenna gains, directional gain is to be computed as follows:  
Any transmit signals are correlated, Directional Gain = G<sub>ANT</sub> + 10 log(N<sub>TX</sub>)  
All transmit signals are completely uncorrelated, Directional Gain = G<sub>ANT</sub>

Note 2: For all transmitter outputs with unequal antenna gains, directional gain is to be computed as follows:  
Any transmit signals are correlated, Directional Gain = 10 log[(10<sup>G<sub>1</sub>/20</sup> + ... + 10<sup>G<sub>N</sub>/20</sup>)<sup>2</sup> / N<sub>TX</sub>]  
All transmit signals are completely uncorrelated, Directional Gain = 10 log[(10<sup>G<sub>1</sub>/10</sup> + ... + 10<sup>G<sub>N</sub>/10</sup>) / N<sub>TX</sub>]

Note 3: For Spatial Multiplexing, Directional Gain (DG) = G<sub>ANT</sub> + 10 log(N<sub>TX</sub>/N<sub>SS</sub>),  
where N<sub>SS</sub> = the number of independent spatial streams data.

Note 4: For CDD transmissions, directional gain is calculated as power measurements:  
Directional Gain (DG) = G<sub>ANT</sub> + Array Gain, where Array Gain is as follows:  
Array Gain = 0 dB (i.e., no array gain) for N<sub>TX</sub> ≤ 4;  
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N<sub>TX</sub>;



3.2.6 Test Result of Maximum Peak Conducted Output Power

| Maximum Peak Conducted Output Power Result |                 |             |                       |              |   |   |           |             |          |            |            |
|--|-----------------|-------------|-----------------------|--------------|---|---|-----------|-------------|----------|------------|------------|
| Condition                                  |                 |             | RF Output Power (dBm) |              |   |   |           |             |          |            |            |
| Modulation Mode                            | N <sub>TX</sub> | Freq. (MHz) | Chain Port 1          | Chain Port 2 | - | - | Sum Chain | Power Limit | DG (dBi) | EIRP Power | EIRP Limit |
| 11B-20M                                    | 1               | 2412        | 17.64                 | -            | - | - | 17.64     | 30          | 2.0      | 19.64      | 36.0       |
| 11B-20M                                    | 1               | 2437        | 16.97                 | -            | - | - | 16.97     | 30          | 2.0      | 18.97      | 36.0       |
| 11B-20M                                    | 1               | 2462        | 17.26                 | -            | - | - | 17.26     | 30          | 2.0      | 19.26      | 36.0       |
| 11G-20M                                    | 1               | 2412        | 19.23                 | -            | - | - | 19.23     | 30          | 2.0      | 21.23      | 36.0       |
| 11G-20M                                    | 1               | 2437        | 22.59                 | -            | - | - | 22.59     | 30          | 2.0      | 24.59      | 36.0       |
| 11G-20M                                    | 1               | 2462        | 19.96                 | -            | - | - | 19.96     | 30          | 2.0      | 21.96      | 36.0       |
| 11N2.4G-20M                                | 1               | 2412        | 17.70                 | -            | - | - | 17.70     | 30          | 2.0      | 19.70      | 36.0       |
| 11N2.4G-20M                                | 1               | 2437        | 22.05                 | -            | - | - | 22.05     | 30          | 2.0      | 24.05      | 36.0       |
| 11N2.4G-20M                                | 1               | 2462        | 18.65                 | -            | - | - | 18.65     | 30          | 2.0      | 20.65      | 36.0       |
| 11N2.4G-40M                                | 1               | 2422        | 16.21                 | -            | - | - | 16.21     | 30          | 2.0      | 18.21      | 36.0       |
| 11N2.4G-40M                                | 1               | 2437        | 22.32                 | -            | - | - | 22.32     | 30          | 2.0      | 24.32      | 36.0       |
| 11N2.4G-40M                                | 1               | 2452        | 16.27                 | -            | - | - | 16.27     | 30          | 2.0      | 18.27      | 36.0       |
| 11N2.4G-20M                                | 2               | 2412        | 16.20                 | 17.27        | - | - | 19.78     | 30          | 2.0      | 21.78      | 36.0       |
| 11N2.4G-20M                                | 2               | 2437        | 21.80                 | 22.43        | - | - | 25.14     | 30          | 2.0      | 27.14      | 36.0       |
| 11N2.4G-20M                                | 2               | 2462        | 17.46                 | 17.80        | - | - | 20.64     | 30          | 2.0      | 22.64      | 36.0       |
| 11N2.4G-40M                                | 2               | 2422        | 14.14                 | 14.44        | - | - | 17.30     | 30          | 2.0      | 19.30      | 36.0       |
| 11N2.4G-40M                                | 2               | 2437        | 21.73                 | 22.32        | - | - | 25.05     | 30          | 2.0      | 27.05      | 36.0       |
| 11N2.4G-40M                                | 2               | 2452        | 14.98                 | 14.81        | - | - | 17.91     | 30          | 2.0      | 19.91      | 36.0       |
| <b>Result</b>                              |                 |             | <b>Complied</b>       |              |   |   |           |             |          |            |            |

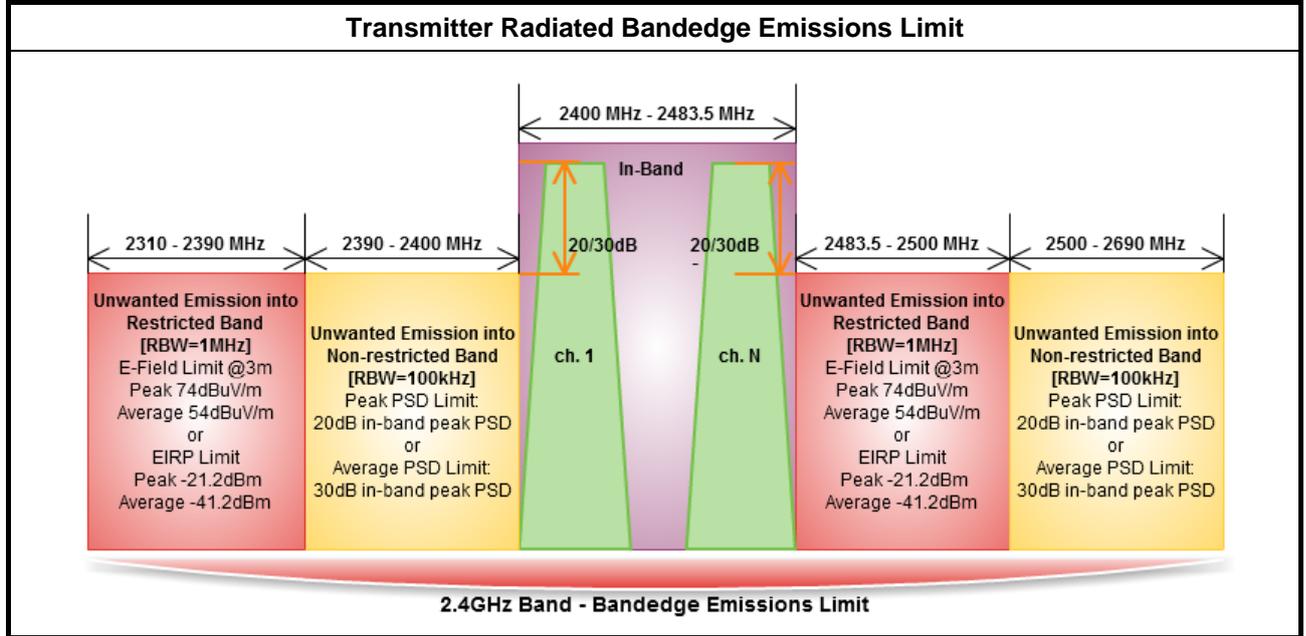


3.2.7 Test Result of Maximum Conducted (Average) Output Power

| Maximum Conducted (Average) Output Power |                 |             |                       |              |   |   |           |             |          |            |            |
|--|-----------------|-------------|-----------------------|--------------|---|---|-----------|-------------|----------|------------|------------|
| Condition                                |                 |             | RF Output Power (dBm) |              |   |   |           |             |          |            |            |
| Modulation Mode                          | N <sub>TX</sub> | Freq. (MHz) | Chain Port 1          | Chain Port 2 | - | - | Sum Chain | Power Limit | DG (dBi) | EIRP Power | EIRP Limit |
| 11B-20M                                  | 1               | 2412        | 11.71                 | -            | - | - | 11.71     | 30          | 2.0      | 13.71      | 36.0       |
| 11B-20M                                  | 1               | 2437        | 10.61                 | -            | - | - | 10.61     | 30          | 2.0      | 12.61      | 36.0       |
| 11B-20M                                  | 1               | 2462        | 10.92                 | -            | - | - | 10.92     | 30          | 2.0      | 12.92      | 36.0       |
| 11G-20M                                  | 1               | 2412        | 11.90                 | -            | - | - | 11.90     | 30          | 2.0      | 13.90      | 36.0       |
| 11G-20M                                  | 1               | 2437        | 14.75                 | -            | - | - | 14.75     | 30          | 2.0      | 16.75      | 36.0       |
| 11G-20M                                  | 1               | 2462        | 12.68                 | -            | - | - | 12.68     | 30          | 2.0      | 14.68      | 36.0       |
| 11N2.4G-20M                              | 1               | 2412        | 10.32                 | -            | - | - | 10.32     | 30          | 2.0      | 12.32      | 36.0       |
| 11N2.4G-20M                              | 1               | 2437        | 14.21                 | -            | - | - | 14.21     | 30          | 2.0      | 16.21      | 36.0       |
| 11N2.4G-20M                              | 1               | 2462        | 11.36                 | -            | - | - | 11.36     | 30          | 2.0      | 13.36      | 36.0       |
| 11N2.4G-40M                              | 1               | 2422        | 8.83                  | -            | - | - | 8.83      | 30          | 2.0      | 10.83      | 36.0       |
| 11N2.4G-40M                              | 1               | 2437        | 14.93                 | -            | - | - | 14.93     | 30          | 2.0      | 16.93      | 36.0       |
| 11N2.4G-40M                              | 1               | 2452        | 8.84                  | -            | - | - | 8.84      | 30          | 2.0      | 10.84      | 36.0       |
| 11N2.4G-20M                              | 2               | 2412        | 8.41                  | 9.42         | - | - | 11.95     | 30          | 2.0      | 13.95      | 36.0       |
| 11N2.4G-20M                              | 2               | 2437        | 13.40                 | 14.04        | - | - | 16.74     | 30          | 2.0      | 18.74      | 36.0       |
| 11N2.4G-20M                              | 2               | 2462        | 9.64                  | 10.03        | - | - | 12.85     | 30          | 2.0      | 14.85      | 36.0       |
| 11N2.4G-40M                              | 2               | 2422        | 6.25                  | 6.55         | - | - | 9.41      | 30          | 2.0      | 11.41      | 36.0       |
| 11N2.4G-40M                              | 2               | 2437        | 13.18                 | 13.79        | - | - | 16.51     | 30          | 2.0      | 18.51      | 36.0       |
| 11N2.4G-40M                              | 2               | 2452        | 7.06                  | 6.95         | - | - | 10.02     | 30          | 2.0      | 12.02      | 36.0       |
| <b>Result</b>                            |                 |             | <b>Complied</b>       |              |   |   |           |             |          |            |            |

### 3.3 Transmitter Radiated Bandedge Emissions

#### 3.3.1 Transmitter Radiated Bandedge Emissions Limit





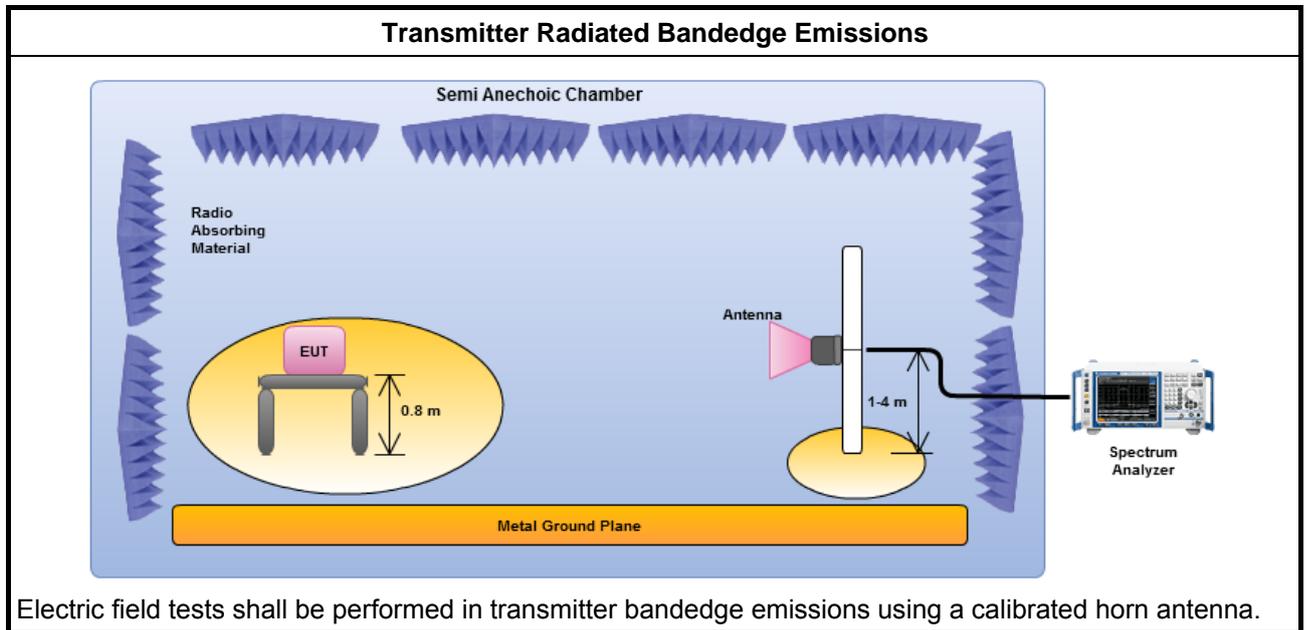
**3.3.2 Measuring Instruments**

Refer a test equipment and calibration data table in this test report.

**3.3.3 Test Procedures**

| Test Method                         |   |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].  |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.9.2.2 bandedge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band. |
| <input checked="" type="checkbox"/> | For the transmitter unwanted emissions shall be measured using following options below:   |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 5.4.1 for unwanted emissions into non-restricted bands.   |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 5.4.2 for unwanted emissions into restricted bands.   |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 5.4.2.2.1 Option 1 (Power Averaging).   |
| <input type="checkbox"/>            | Refer as FCC KDB 558074, clause 5.4.2.2.2 Option 2 (Trace Averaging).   |
| <input type="checkbox"/>            | Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). – Duty cycle ≥ 98%.   |
| <input type="checkbox"/>            | Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.   |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 5.4.2.2.1.1 measurement procedure peak limit.   |
| <input type="checkbox"/>            | Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.  |
| <input checked="" type="checkbox"/> | For the transmitter bandedge emissions shall be measured using following options below:   |
| <input type="checkbox"/>            | Refer as FCC KDB 558074, clause 5.4.2.2.4 for narrower resolution bandwidth using the band power and summing the spectral levels (i.e., 100 kHz or 1 MHz).                |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.9.2 for band-edge testing.   |
| <input type="checkbox"/>            | Refer as ANSI C63.10, clause 6.9.3 for marker-delta method for band-edge measurements.  |
| <input checked="" type="checkbox"/> | For radiated measurement, refer as ANSI C63.10, clause 6.5 for radiated emissions from above 1 GHz.   |

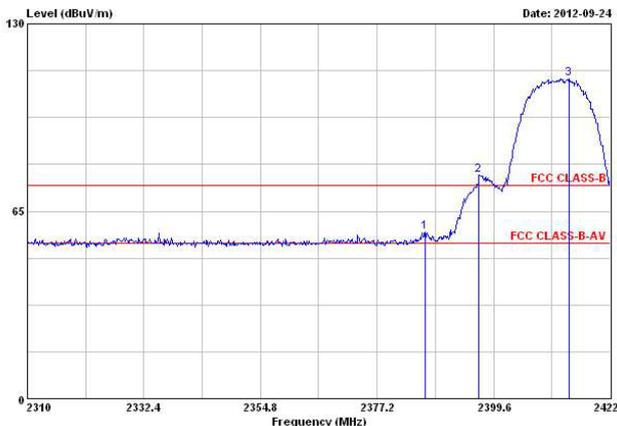
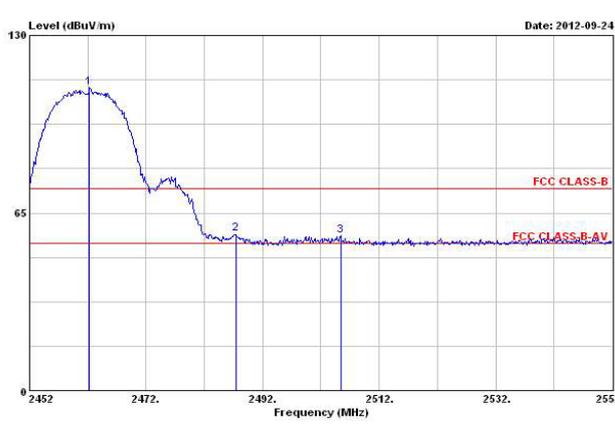
### 3.3.4 Test Setup



3.3.5 Test Result of Transmitter Radiated Bandedge Emissions-N<sub>TX</sub> 1

| Transmitter Radiated Bandedge Emissions Result |                      |                               |                               |                                |                |            |            |             |
|--|----------------------|-------------------------------|-------------------------------|--------------------------------|----------------|------------|------------|-------------|
| Modulation                                     | 11B-20M              |                               | Non-restricted Band Emissions |                                |                |            |            |             |
| Non-restricted Band (MHz)                      | Test Ch. Freq. (MHz) | In-band PSD [i] (dBuV/100kHz) | NBE Freq. (MHz)               | Out-band PSD [o] (dBuV/100kHz) | [i] – [o] (dB) | Limit (dB) | Level Type | Pol. note 1 |
| 2390-2400                                      | 2412                 | 110.86                        | 2396.80                       | 77.47                          | 33.39          | 20         | PK         | V           |
| 2500-2690                                      | 2462                 | 110.83                        | 2505.40                       | 56.74                          | 54.09          | 20         | PK         | V           |

| Low Bandedge   | Up Bandedge   |
|--|---|
|  |  |

Note 1: Measurement worst emissions of receive antenna polarization: H (Horizontal) or V (Vertical)

| Transmitter Radiated Bandedge Emissions Result |                      |                             |                           |                      |                         |                |            |             |
|--|----------------------|-----------------------------|---------------------------|----------------------|-------------------------|----------------|------------|-------------|
| Modulation                                     | 11B-20M              |                             | Restricted Band Emissions |                      |                         |                |            |             |
| Restricted Band (MHz)                          | Test Ch. Freq. (MHz) | In-band PSD [i] (dBuV/1MHz) | RBE Freq. (MHz)           | Measure Distance (m) | Out-Band Level (dBuV/m) | Limit (dBuV/m) | Level Type | Pol. note 1 |
| 2310-2390                                      | 2412                 | 118.47                      | 2389.52                   | 3                    | 64.08                   | 74             | PK         | V           |
| 2310-2390                                      | 2412                 | 110.55                      | 2386.83                   | 3                    | 52.35                   | 54             | AV         | V           |
| 2483.5-2500                                    | 2462                 | 117.73                      | 2483.80                   | 3                    | 64.06                   | 74             | PK         | V           |
| 2483.5-2500                                    | 2462                 | 109.17                      | 2486.70                   | 3                    | 52.12                   | 54             | AV         | V           |

Note 1: Measurement worst emissions of receive antenna polarization: H (Horizontal) or V (Vertical).



| Transmitter Radiated Bandedge Emissions Result  |                      |                               |                               |                                |                |            |            |             |
|---|----------------------|-------------------------------|-------------------------------|--------------------------------|----------------|------------|------------|-------------|
| Modulation  | 11G-20M              |                               | Non-restricted Band Emissions |                                |                |            |            |             |
| Non-restricted Band (MHz)   | Test Ch. Freq. (MHz) | In-band PSD [i] (dBuV/100kHz) | NBE Freq. (MHz)               | Out-band PSD [o] (dBuV/100kHz) | [i] - [o] (dB) | Limit (dB) | Level Type | Pol. note 1 |
| 2390-2400   | 2412                 | 101.95                        | 2399.04                       | 73.38                          | 28.57          | 20         | PK         | V           |
| 2500-2690   | 2462                 | 101.47                        | 2509.80                       | 62.55                          | 38.92          | 20         | PK         | V           |
| Low Bandedge  |                      |                               |                               | Up Bandedge                    |                |            |            |             |
|   |                      |                               |                               |                                |                |            |            |             |
| Note 1: Measurement worst emissions of receive antenna polarization: H (Horizontal) or V (Vertical) |                      |                               |                               |                                |                |            |            |             |

| Transmitter Radiated Bandedge Emissions Result   |                      |                             |                           |                      |                         |                |            |             |
|--|----------------------|-----------------------------|---------------------------|----------------------|-------------------------|----------------|------------|-------------|
| Modulation   | 11G-20M              |                             | Restricted Band Emissions |                      |                         |                |            |             |
| Restricted Band (MHz)  | Test Ch. Freq. (MHz) | In-band PSD [i] (dBuV/1MHz) | RBE Freq. (MHz)           | Measure Distance (m) | Out-Band Level (dBuV/m) | Limit (dBuV/m) | Level Type | Pol. note 1 |
| 2310-2390  | 2412                 | 111.37                      | 2315.95                   | 3                    | 71.18                   | 74             | PK         | V           |
| 2310-2390  | 2412                 | 99.95                       | 2390.00                   | 3                    | 52.65                   | 54             | AV         | V           |
| 2483.5-2500  | 2462                 | 110.27                      | 2483.50                   | 3                    | 72.60                   | 74             | PK         | V           |
| 2483.5-2500  | 2462                 | 99.10                       | 2483.50                   | 3                    | 51.83                   | 54             | AV         | V           |
| Note 1: Measurement worst emissions of receive antenna polarization: H (Horizontal) or V (Vertical). |                      |                             |                           |                      |                         |                |            |             |



| Transmitter Radiated Bandedge Emissions Result  |                      |                               |                               |                                |                |            |            |             |
|---|----------------------|-------------------------------|-------------------------------|--------------------------------|----------------|------------|------------|-------------|
| Modulation  | 11N-20M              |                               | Non-restricted Band Emissions |                                |                |            |            |             |
| Non-restricted Band (MHz)   | Test Ch. Freq. (MHz) | In-band PSD [i] (dBuV/100kHz) | NBE Freq. (MHz)               | Out-band PSD [o] (dBuV/100kHz) | [i] – [o] (dB) | Limit (dB) | Level Type | Pol. note 1 |
| 2390-2400   | 2412                 | 100.31                        | 2400.00                       | 73.36                          | 26.95          | 20         | PK         | V           |
| 2500-2690   | 2462                 | 100.30                        | 2510.20                       | 63.16                          | 37.14          | 20         | PK         | V           |
| Low Bandedge  |                      |                               |                               | Up Bandedge                    |                |            |            |             |
|   |                      |                               |                               |                                |                |            |            |             |
| Note 1: Measurement worst emissions of receive antenna polarization: H (Horizontal) or V (Vertical) |                      |                               |                               |                                |                |            |            |             |

| Transmitter Radiated Bandedge Emissions Result   |                      |                             |                           |                      |                         |                |            |             |
|--|----------------------|-----------------------------|---------------------------|----------------------|-------------------------|----------------|------------|-------------|
| Modulation   | 11N-20M              |                             | Restricted Band Emissions |                      |                         |                |            |             |
| Restricted Band (MHz)  | Test Ch. Freq. (MHz) | In-band PSD [i] (dBuV/1MHz) | RBE Freq. (MHz)           | Measure Distance (m) | Out-Band Level (dBuV/m) | Limit (dBuV/m) | Level Type | Pol. note 1 |
| 2310-2390  | 2412                 | 109.75                      | 2390.00                   | 3                    | 72.17                   | 74             | PK         | V           |
| 2310-2390  | 2412                 | 97.73                       | 2390.00                   | 3                    | 51.39                   | 54             | AV         | V           |
| 2483.5-2500  | 2462                 | 109.08                      | 2484.60                   | 3                    | 72.91                   | 74             | PK         | V           |
| 2483.5-2500  | 2462                 | 97.56                       | 2483.50                   | 3                    | 51.70                   | 54             | AV         | V           |
| Note 1: Measurement worst emissions of receive antenna polarization: H (Horizontal) or V (Vertical). |                      |                             |                           |                      |                         |                |            |             |



| Transmitter Radiated Bandedge Emissions Result  |                      |                               |                               |                                |                |            |            |             |
|---|----------------------|-------------------------------|-------------------------------|--------------------------------|----------------|------------|------------|-------------|
| Modulation  | 11N-40M              |                               | Non-restricted Band Emissions |                                |                |            |            |             |
| Non-restricted Band (MHz)   | Test Ch. Freq. (MHz) | In-band PSD [i] (dBuV/100kHz) | NBE Freq. (MHz)               | Out-band PSD [o] (dBuV/100kHz) | [i] – [o] (dB) | Limit (dB) | Level Type | Pol. note 1 |
| 2390-2400   | 2422                 | 95.48                         | 2400.00                       | 69.72                          | 25.76          | 20         | PK         | V           |
| 2500-2690   | 2452                 | 94.87                         | 2521.64                       | 62.78                          | 32.09          | 20         | PK         | V           |
| Low Bandedge  |                      |                               |                               | Up Bandedge                    |                |            |            |             |
|   |                      |                               |                               |                                |                |            |            |             |
| Note 1: Measurement worst emissions of receive antenna polarization: H (Horizontal) or V (Vertical) |                      |                               |                               |                                |                |            |            |             |

| Transmitter Radiated Bandedge Emissions Result   |                      |                             |                           |                      |                         |                |            |             |
|--|----------------------|-----------------------------|---------------------------|----------------------|-------------------------|----------------|------------|-------------|
| Modulation   | 11N-40M              |                             | Restricted Band Emissions |                      |                         |                |            |             |
| Restricted Band (MHz)  | Test Ch. Freq. (MHz) | In-band PSD [i] (dBuV/1MHz) | RBE Freq. (MHz)           | Measure Distance (m) | Out-Band Level (dBuV/m) | Limit (dBuV/m) | Level Type | Pol. note 1 |
| 2310-2390  | 2422                 | 105.19                      | 2388.01                   | 3                    | 72.53                   | 74             | PK         | V           |
| 2310-2390  | 2422                 | 92.97                       | 2390.00                   | 3                    | 52.93                   | 54             | AV         | V           |
| 2483.5-2500  | 2452                 | 103.83                      | 2483.60                   | 3                    | 71.87                   | 74             | PK         | V           |
| 2483.5-2500  | 2452                 | 92.11                       | 2483.50                   | 3                    | 52.26                   | 54             | AV         | V           |
| Note 1: Measurement worst emissions of receive antenna polarization: H (Horizontal) or V (Vertical). |                      |                             |                           |                      |                         |                |            |             |



3.3.6 Test Result of Transmitter Radiated Bandedge Emissions-N<sub>TX</sub> 2

| Transmitter Radiated Bandedge Emissions Result  |                      |                               |                               |                                |                |            |            |             |
|---|----------------------|-------------------------------|-------------------------------|--------------------------------|----------------|------------|------------|-------------|
| Modulation  | 11N-20M              |                               | Non-restricted Band Emissions |                                |                |            |            |             |
| Non-restricted Band (MHz)   | Test Ch. Freq. (MHz) | In-band PSD [i] (dBuV/100kHz) | NBE Freq. (MHz)               | Out-band PSD [o] (dBuV/100kHz) | [i] – [o] (dB) | Limit (dB) | Level Type | Pol. note 1 |
| 2390-2400   | 2412                 | 104.18                        | 2400.00                       | 74.37                          | 29.81          | 20         | PK         | V           |
| 2500-2690   | 2462                 | 103.66                        | 2511.00                       | 62.55                          | 41.11          | 20         | PK         | V           |
| Low Bandedge  |                      |                               |                               | Up Bandedge                    |                |            |            |             |
|   |                      |                               |                               |                                |                |            |            |             |
| Note 1: Measurement worst emissions of receive antenna polarization: H (Horizontal) or V (Vertical) |                      |                               |                               |                                |                |            |            |             |

| Transmitter Radiated Bandedge Emissions Result   |                      |                             |                           |                      |                         |                |            |             |
|--|----------------------|-----------------------------|---------------------------|----------------------|-------------------------|----------------|------------|-------------|
| Modulation   | 11N-20M              |                             | Restricted Band Emissions |                      |                         |                |            |             |
| Restricted Band (MHz)  | Test Ch. Freq. (MHz) | In-band PSD [i] (dBuV/1MHz) | RBE Freq. (MHz)           | Measure Distance (m) | Out-Band Level (dBuV/m) | Limit (dBuV/m) | Level Type | Pol. note 1 |
| 2310-2390  | 2412                 | 112.09                      | 2390.00                   | 3                    | 72.17                   | 74             | PK         | V           |
| 2310-2390  | 2412                 | 99.12                       | 2390.00                   | 3                    | 52.92                   | 54             | AV         | V           |
| 2483.5-2500  | 2462                 | 111.11                      | 2483.80                   | 3                    | 69.88                   | 74             | PK         | V           |
| 2483.5-2500  | 2462                 | 98.70                       | 2483.58                   | 3                    | 52.88                   | 54             | AV         | V           |
| Note 1: Measurement worst emissions of receive antenna polarization: H (Horizontal) or V (Vertical). |                      |                             |                           |                      |                         |                |            |             |



| Transmitter Radiated Bandedge Emissions Result  |                      |                               |                               |                                |                |            |            |             |
|---|----------------------|-------------------------------|-------------------------------|--------------------------------|----------------|------------|------------|-------------|
| Modulation  | 11N-40M              |                               | Non-restricted Band Emissions |                                |                |            |            |             |
| Non-restricted Band (MHz)   | Test Ch. Freq. (MHz) | In-band PSD [i] (dBuV/100kHz) | NBE Freq. (MHz)               | Out-band PSD [o] (dBuV/100kHz) | [i] – [o] (dB) | Limit (dB) | Level Type | Pol. note 1 |
| 2390-2400   | 2422                 | 98.00                         | 2400.00                       | 68.35                          | 39.65          | 20         | PK         | V           |
| 2500-2690   | 2452                 | 98.40                         | 2504.84                       | 62.47                          | 35.94          | 20         | PK         | V           |
| Low Bandedge  |                      |                               |                               | Up Bandedge                    |                |            |            |             |
|   |                      |                               |                               |                                |                |            |            |             |
| Note 1: Measurement worst emissions of receive antenna polarization: H (Horizontal) or V (Vertical) |                      |                               |                               |                                |                |            |            |             |

| Transmitter Radiated Bandedge Emissions Result   |                      |                             |                           |                      |                         |                |            |             |
|--|----------------------|-----------------------------|---------------------------|----------------------|-------------------------|----------------|------------|-------------|
| Modulation   | 11N-40M              |                             | Restricted Band Emissions |                      |                         |                |            |             |
| Restricted Band (MHz)  | Test Ch. Freq. (MHz) | In-band PSD [i] (dBuV/1MHz) | RBE Freq. (MHz)           | Measure Distance (m) | Out-Band Level (dBuV/m) | Limit (dBuV/m) | Level Type | Pol. note 1 |
| 2310-2390  | 2422                 | 106.13                      | 2390.00                   | 3                    | 71.49                   | 74             | PK         | V           |
| 2310-2390  | 2422                 | 92.77                       | 2390.00                   | 3                    | 52.42                   | 54             | AV         | V           |
| 2483.5-2500  | 2452                 | 106.61                      | 2483.72                   | 3                    | 71.45                   | 74             | PK         | V           |
| 2483.5-2500  | 2452                 | 92.89                       | 2483.50                   | 3                    | 52.29                   | 54             | AV         | V           |
| Note 1: Measurement worst emissions of receive antenna polarization: H (Horizontal) or V (Vertical). |                      |                             |                           |                      |                         |                |            |             |

### 3.4 Transmitter Radiated Unwanted Emissions

#### 3.4.1 Transmitter Radiated Unwanted Emissions Limit

| Restricted Band Emissions Limit |                       |                         |                      |
|---------------------------------|-----------------------|-------------------------|----------------------|
| Frequency Range (MHz)           | Field Strength (uV/m) | Field Strength (dBuV/m) | Measure Distance (m) |
| 0.009~0.490                     | 2400/F(kHz)           | 48.5 - 13.8             | 300                  |
| 0.490~1.705                     | 24000/F(kHz)          | 33.8 - 23               | 30                   |
| 1.705~30.0                      | 30                    | 29                      | 30                   |
| 30~88                           | 100                   | 40                      | 3                    |
| 88~216                          | 150                   | 43.5                    | 3                    |
| 216~960                         | 200                   | 46                      | 3                    |
| Above 960                       | 500                   | 54                      | 3                    |

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

| Un-restricted Band Emissions Limit |            |
|------------------------------------|------------|
| RF output power procedure          | Limit (dB) |
| Peak output power procedure        | 20         |
| Average output power procedure     | 30         |

Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.

Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

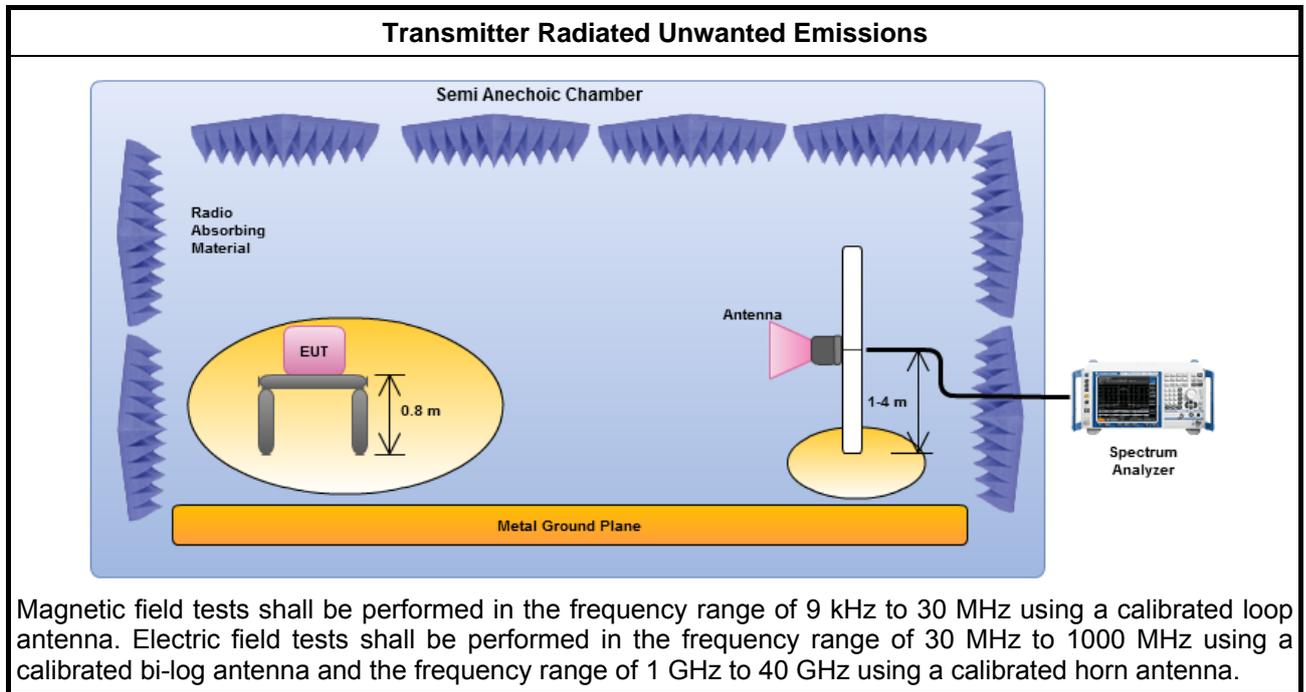
#### 3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

**3.4.3 Test Procedures**

| <b>Test Method</b>                  |   |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements). |
| <input checked="" type="checkbox"/> | Measurements in the frequency range 10 GHz - 18GHz are typically made at a closer distance 1m, because the instrumentation noise floor is typically close to the radiated emission limit.   |
| <input checked="" type="checkbox"/> | Measurements in the frequency range above 18 GHz - 25GHz are typically made at a closer distance 0.5m, because the instrumentation noise floor is typically close to the radiated emission limit.   |
| <input checked="" type="checkbox"/> | The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].  |
| <input checked="" type="checkbox"/> | For the transmitter unwanted emissions shall be measured using following options below:   |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 5.4.1 for unwanted emissions into non-restricted bands.   |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 5.4.2 for unwanted emissions into restricted bands.   |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 5.4.2.2.1 Option 1 (Power Averaging).   |
| <input type="checkbox"/>            | Refer as FCC KDB 558074, clause 5.4.2.2.2 Option 2 (Trace Averaging).   |
| <input type="checkbox"/>            | Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW) – Duty cycle ≥ 98%.  |
| <input type="checkbox"/>            | Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.   |
| <input checked="" type="checkbox"/> | Refer as FCC KDB 558074, clause 5.4.2.2.1.1 measurement procedure peak limit.   |
| <input type="checkbox"/>            | Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.  |
| <input checked="" type="checkbox"/> | For radiated measurement.   |
| <input type="checkbox"/>            | Refer as ANSI C63.10, clause 6.4 for radiated emissions from below 30 MHz.  |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.5 for radiated emissions from 30 MHz to 1000 MHz.  |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.5 for radiated emissions from above 1 GHz.   |

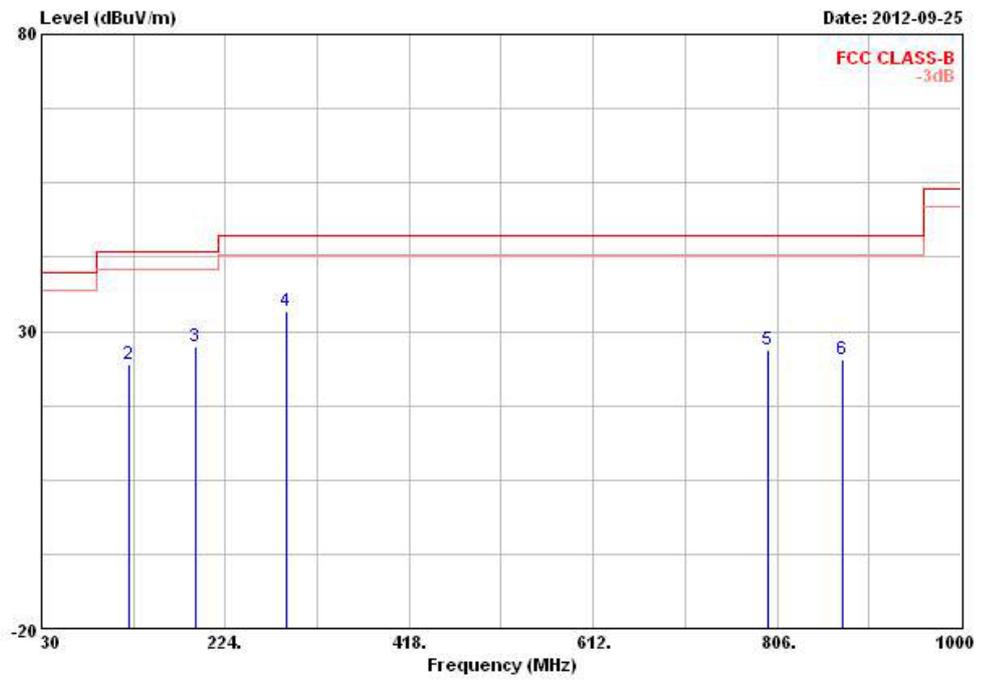
### 3.4.4 Test Setup





3.4.5 Transmitter Radiated Unwanted Emissions (Below 1GHz)

| Transmitter Radiated Unwanted Emissions (Below 1GHz) |                   |              |   |
|--|-------------------|--------------|---|
| Operating Mode                                       | 1                 | Polarization | V |
| Operating Function                                   | Transmission Mode |              |   |

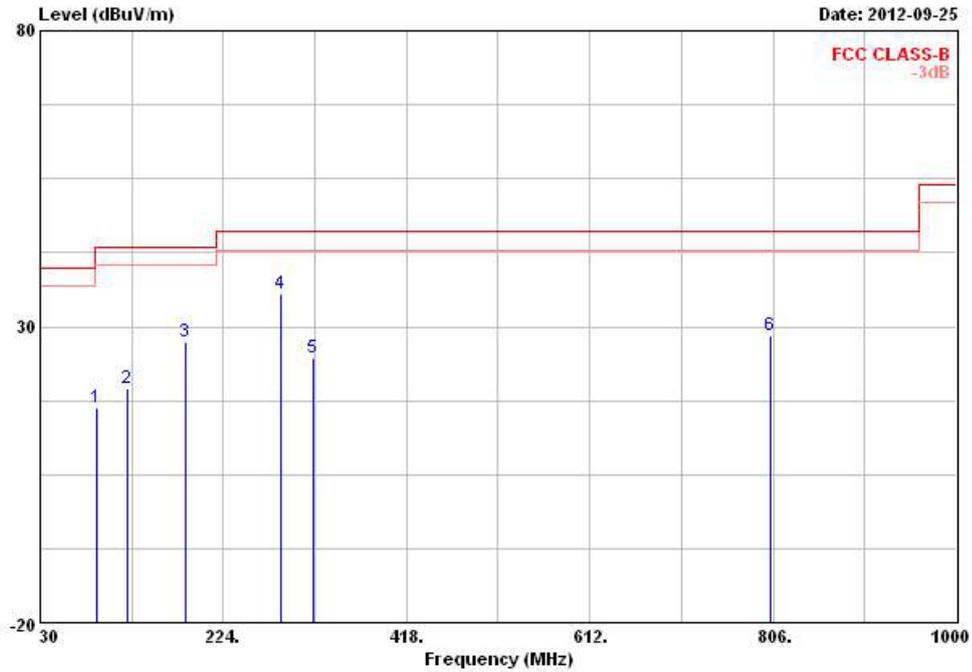


|   | Freq    | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | Ant Pos | Table Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|--------|---------|-----------|
|   | MHz     | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |        | cm      | deg       |
| 1 | 30.000  | 35.61  | -4.39      | 40.00      | 44.44             | 18.48          | 0.31       | 27.62         | QP     | ---     | ---       |
| 2 | 122.150 | 24.57  | -18.93     | 43.50      | 38.22             | 12.56          | 1.13       | 27.34         | Peak   | ---     | ---       |
| 3 | 191.990 | 27.51  | -15.99     | 43.50      | 43.21             | 9.29           | 2.01       | 27.00         | Peak   | ---     | ---       |
| 4 | 288.020 | 33.48  | -12.52     | 46.00      | 44.08             | 13.37          | 2.76       | 26.73         | Peak   | ---     | ---       |
| 5 | 797.270 | 26.99  | -19.01     | 46.00      | 29.66             | 20.75          | 4.35       | 27.77         | Peak   | ---     | ---       |
| 6 | 874.870 | 25.15  | -20.85     | 46.00      | 27.53             | 20.94          | 4.29       | 27.61         | Peak   | ---     | ---       |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)



| Transmitter Radiated Unwanted Emissions (Below 1GHz) |                   |              |   |
|--|-------------------|--------------|---|
| Operating Mode                                       | 1                 | Polarization | H |
| Operating Function                                   | Transmission Mode |              |   |

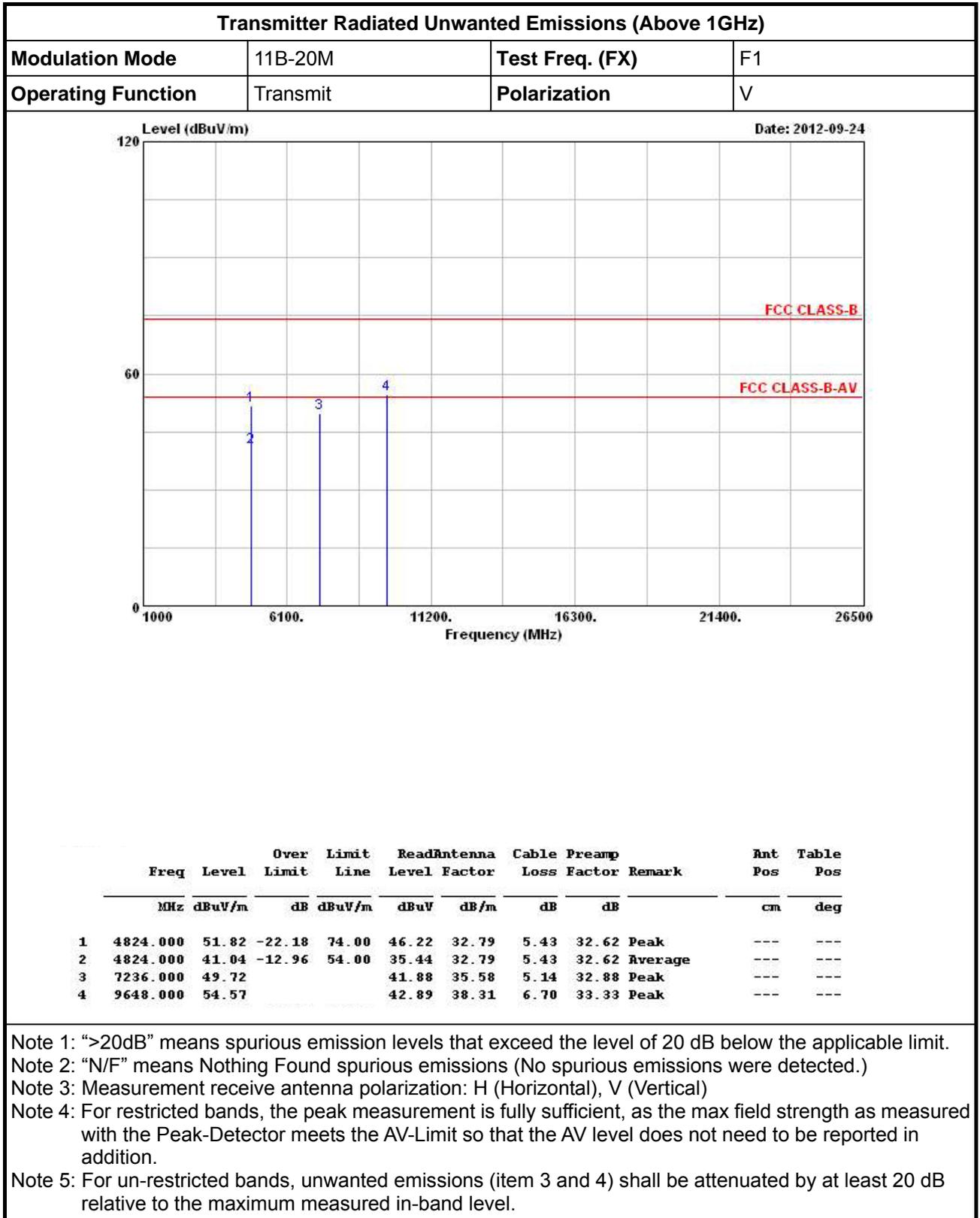


| Freq | Level   | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark     | Ant Pos | Table Pos |
|------|---------|------------|------------|-------------------|----------------|------------|---------------|------------|---------|-----------|
| MHz  | dBuV/m  | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |            | cm      | deg       |
| 1    | 90.140  | 16.23      | -27.27     | 43.50             | 32.81          | 9.50       | 1.40          | 27.48 Peak | ---     | ---       |
| 2    | 122.150 | 19.54      | -23.96     | 43.50             | 33.19          | 12.56      | 1.13          | 27.34 Peak | ---     | ---       |
| 3    | 184.230 | 27.31      | -16.19     | 43.50             | 43.27          | 9.10       | 1.98          | 27.04 Peak | ---     | ---       |
| 4    | 285.110 | 35.55      | -10.45     | 46.00             | 46.33          | 13.32      | 2.64          | 26.74 Peak | ---     | ---       |
| 5    | 319.060 | 24.69      | -21.31     | 46.00             | 34.66          | 14.31      | 2.54          | 26.82 Peak | ---     | ---       |
| 6    | 804.060 | 28.40      | -17.60     | 46.00             | 31.00          | 20.76      | 4.39          | 27.75 Peak | ---     | ---       |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

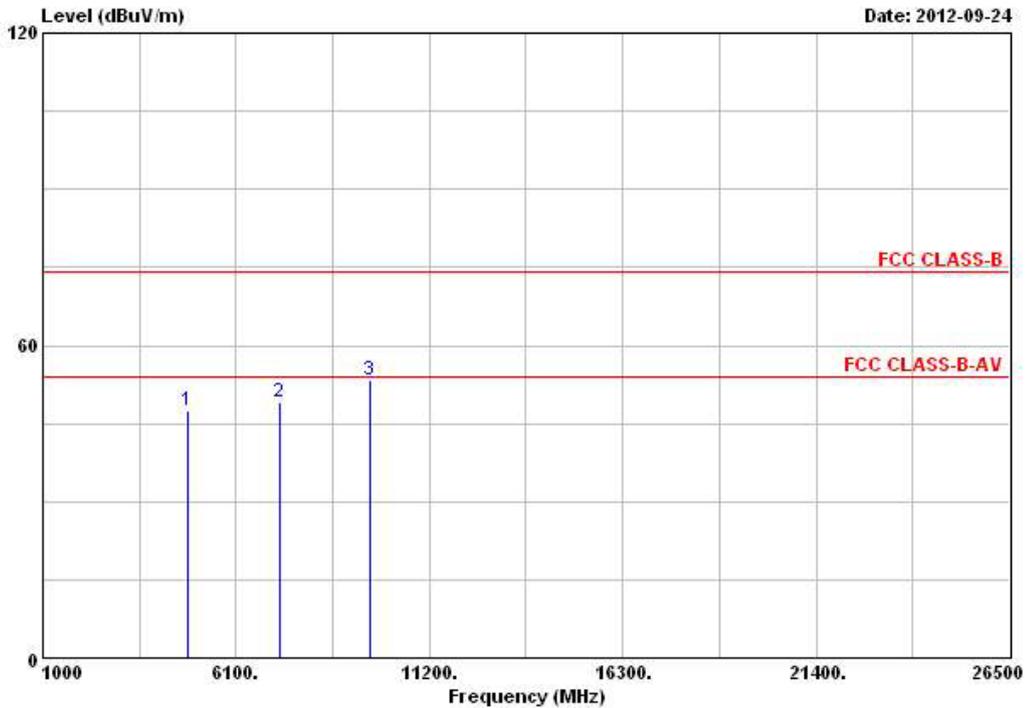


3.4.6 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11B-20M-N<sub>Tx</sub>1



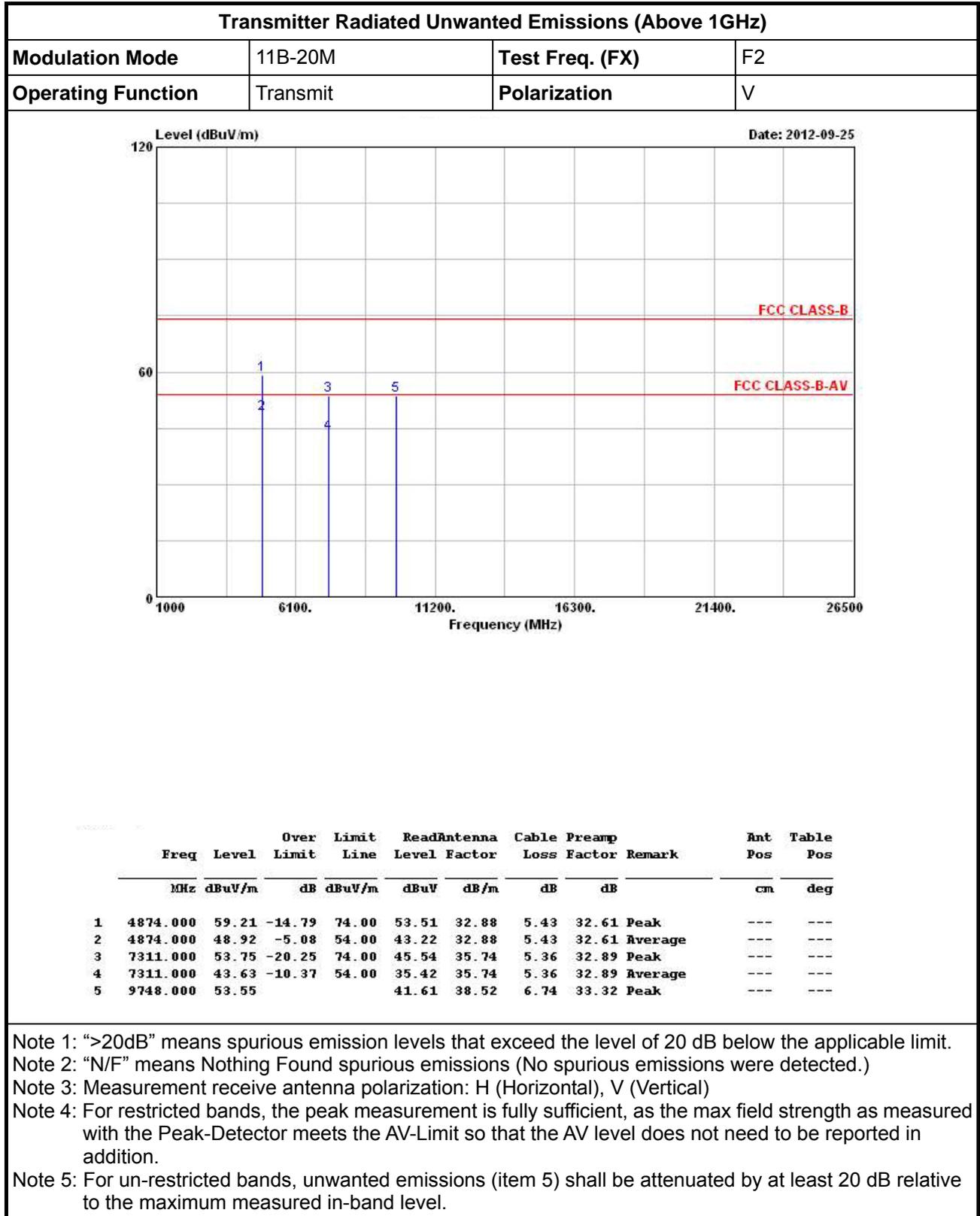


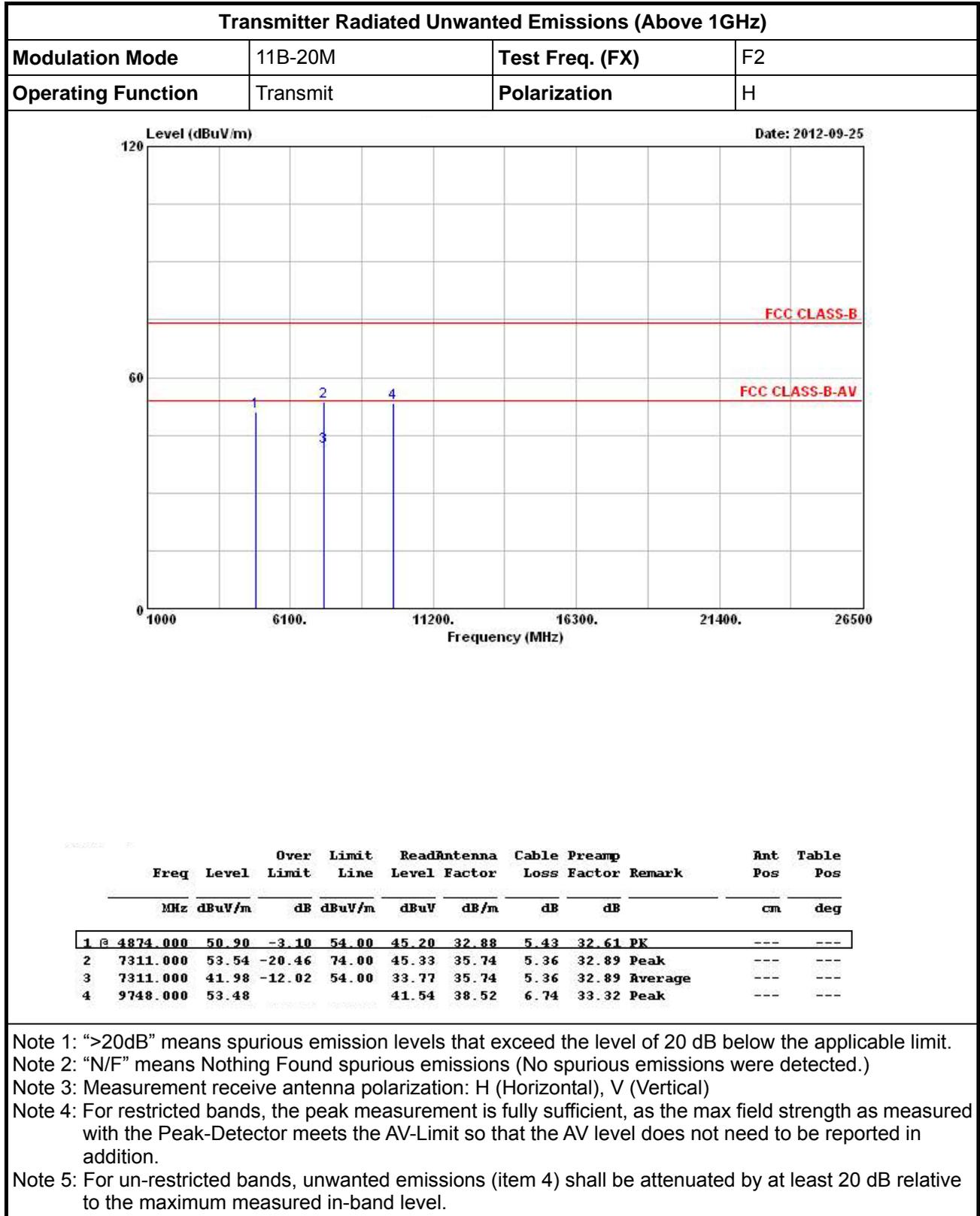
| Transmitter Radiated Unwanted Emissions (Above 1GHz) |          |                 |    |
|--|----------|-----------------|----|
| Modulation Mode                                      | 11B-20M  | Test Freq. (FX) | F1 |
| Operating Function                                   | Transmit | Polarization    | H  |



|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|--------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |        | cm      | deg       |
| 1 | 4824.000 | 47.47  | -6.53      | 54.00      | 41.87             | 32.79          | 5.43       | 32.62         | PK     | ---     | ---       |
| 2 | 7236.000 | 49.19  |            |            | 41.35             | 35.58          | 5.14       | 32.88         | Peak   | ---     | ---       |
| 3 | 9648.000 | 53.47  |            |            | 41.79             | 38.31          | 6.70       | 33.33         | Peak   | ---     | ---       |

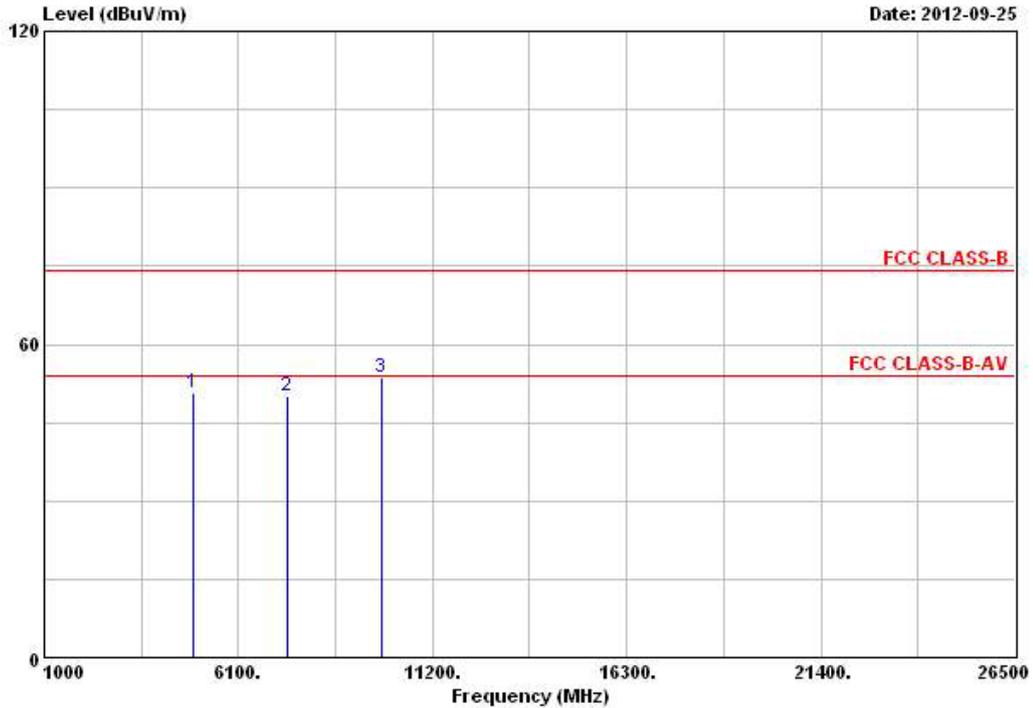
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.  
 Note 5: For un-restricted bands, unwanted emissions (item 2 and 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.







| Transmitter Radiated Unwanted Emissions (Above 1GHz) |          |                 |    |
|--|----------|-----------------|----|
| Modulation Mode                                      | 11B-20M  | Test Freq. (FX) | F3 |
| Operating Function                                   | Transmit | Polarization    | V  |

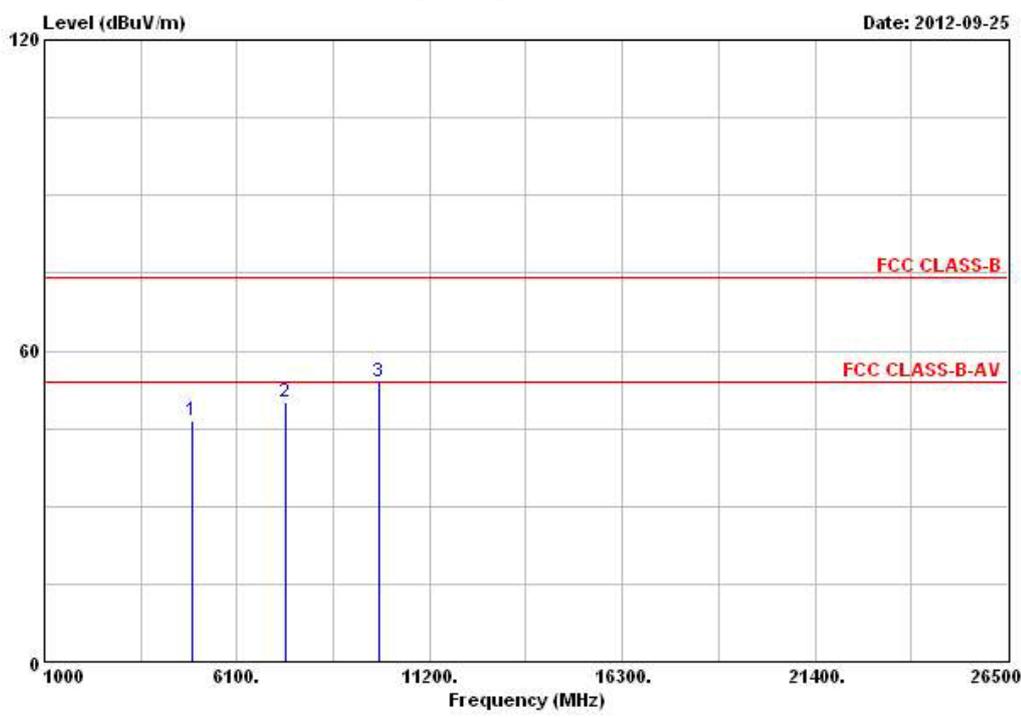


| Freq         | Level  | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | Ant Pos | Table Pos |
|--------------|--------|------------|------------|------------|----------------|------------|---------------|--------|---------|-----------|
| MHz          | dBuV/m | dB         | dBuV/m     | dBuV       | dB/m           | dB         | dB            |        | cm      | deg       |
| 1 @ 4924.000 | 50.82  | -3.18      | 54.00      | 45.03      | 32.98          | 5.41       | 32.60         | PK     | ---     | ---       |
| 2 @ 7386.000 | 50.09  | -3.91      | 54.00      | 41.48      | 35.95          | 5.57       | 32.91         | PK     | ---     | ---       |
| 3 @ 9848.000 | 53.77  |            |            | 41.59      | 38.69          | 6.80       | 33.31         | Peak   | ---     | ---       |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.  
 Note 5: For un-restricted bands, unwanted emissions (item 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) |          |                 |    |
|--|----------|-----------------|----|
| Modulation Mode                                      | 11B-20M  | Test Freq. (FX) | F3 |
| Operating Function                                   | Transmit | Polarization    | H  |

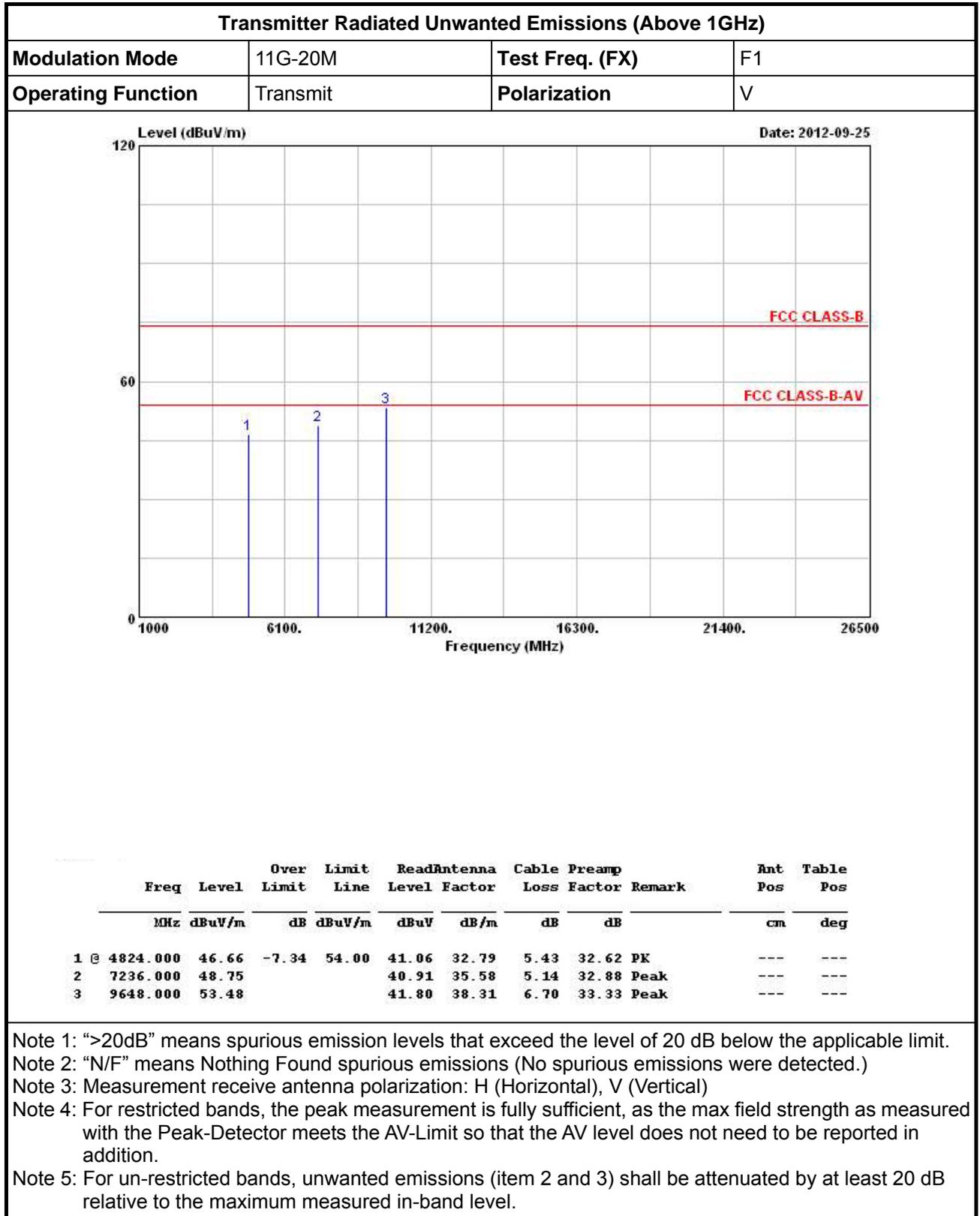


| Item | Freq     | Level  | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | Ant Pos | Table Pos |
|------|----------|--------|------------|------------|------------|----------------|------------|---------------|--------|---------|-----------|
|      | MHz      | dBuV/m | dB         | dBuV/m     | dBuV       | dB/m           | dB         | dB            |        | cm      | deg       |
| 1    | 4924.000 | 46.47  | -7.53      | 54.00      | 40.68      | 32.98          | 5.41       | 32.60         | PK     | ---     | ---       |
| 2    | 7386.000 | 50.24  | -3.76      | 54.00      | 41.63      | 35.95          | 5.57       | 32.91         | PK     | ---     | ---       |
| 3    | 9848.000 | 53.90  |            |            | 41.72      | 38.69          | 6.80       | 33.31         | Peak   | ---     | ---       |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.  
 Note 5: For un-restricted bands, unwanted emissions (item 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

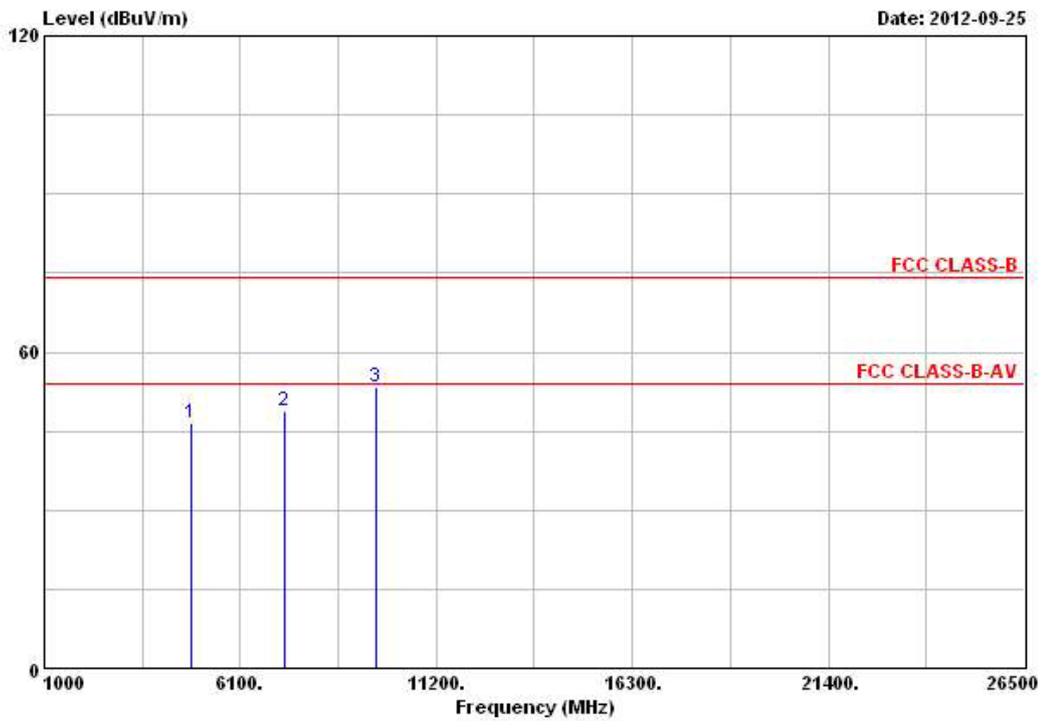


3.4.7 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11G-20M-N<sub>Tx</sub> 1





| Transmitter Radiated Unwanted Emissions (Above 1GHz) |          |                 |    |
|--|----------|-----------------|----|
| Modulation Mode                                      | 11G-20M  | Test Freq. (FX) | F1 |
| Operating Function                                   | Transmit | Polarization    | H  |

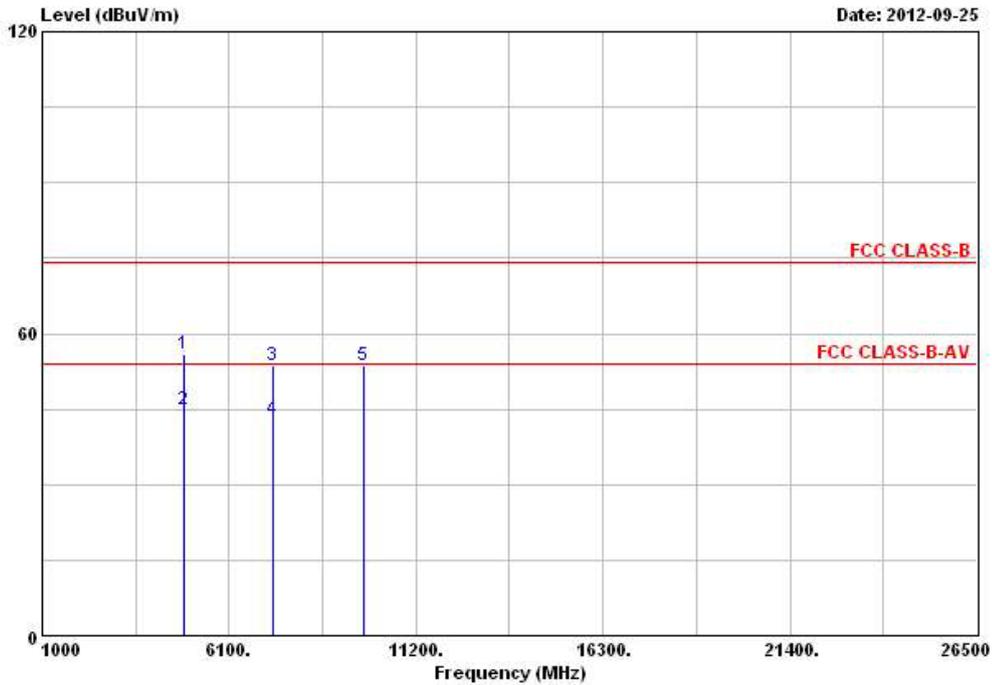


| Item | Freq<br>MHz | Level<br>dBuV/m | Over<br>Limit<br>dB | Limit<br>Line<br>dBuV/m | Read<br>Level<br>dBuV | Antenna<br>Factor<br>dB/m | Cable<br>Loss<br>dB | Preamp<br>Factor<br>dB | Remark | Ant<br>Pos<br>cm | Table<br>Pos<br>deg |
|------|-------------|-----------------|---------------------|-------------------------|-----------------------|---------------------------|---------------------|------------------------|--------|------------------|---------------------|
| 1    | 4824.000    | 46.66           | -7.34               | 54.00                   | 41.06                 | 32.79                     | 5.43                | 32.62                  | PK     | ---              | ---                 |
| 2    | 7236.000    | 48.75           |                     |                         | 40.91                 | 35.58                     | 5.14                | 32.88                  | Peak   | ---              | ---                 |
| 3    | 9648.000    | 53.48           |                     |                         | 41.80                 | 38.31                     | 6.70                | 33.33                  | Peak   | ---              | ---                 |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.  
 Note 5: For un-restricted bands, unwanted emissions (item 2 and 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) |          |                 |    |
|--|----------|-----------------|----|
| Modulation Mode                                      | 11G-20M  | Test Freq. (FX) | F2 |
| Operating Function                                   | Transmit | Polarization    | V  |

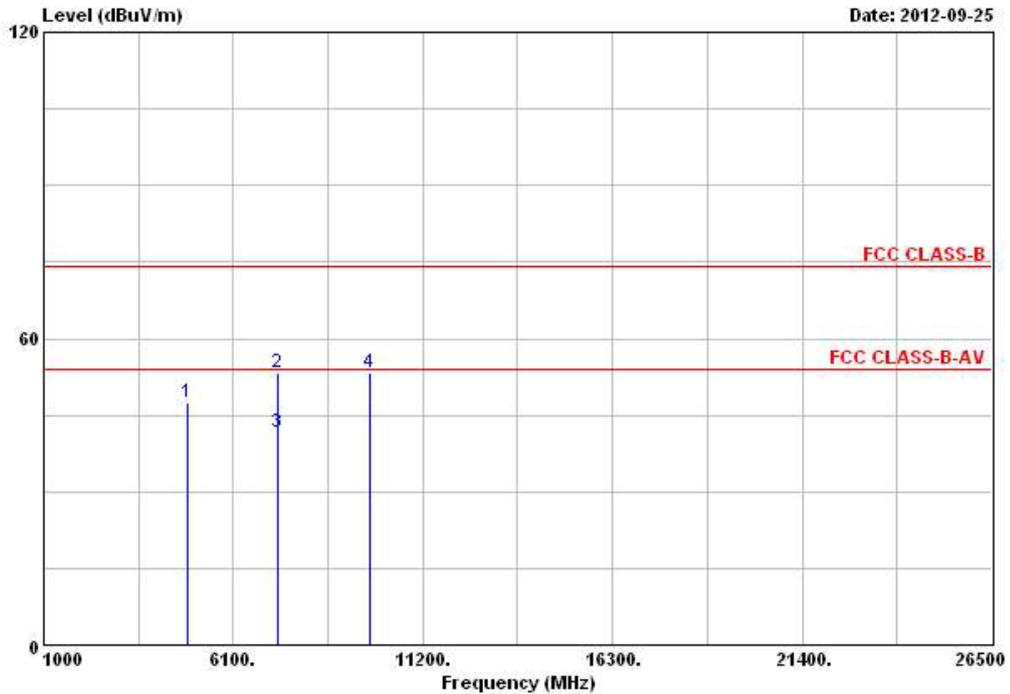


|   | Freq     | Level  | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV       | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4874.000 | 55.80  | -18.20     | 74.00      | 50.10      | 32.88          | 5.43       | 32.61         | Peak    | ---     | ---       |
| 2 | 4874.000 | 44.80  | -9.20      | 54.00      | 39.10      | 32.88          | 5.43       | 32.61         | Average | ---     | ---       |
| 3 | 7311.000 | 53.55  | -20.45     | 74.00      | 45.34      | 35.74          | 5.36       | 32.89         | Peak    | ---     | ---       |
| 4 | 7311.000 | 42.95  | -11.05     | 54.00      | 34.74      | 35.74          | 5.36       | 32.89         | Average | ---     | ---       |
| 5 | 9748.000 | 53.52  | -----      | -----      | 41.58      | 38.52          | 6.74       | 33.32         | Peak    | ---     | ---       |

- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
- Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
- Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
- Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
- Note 5: For un-restricted bands, unwanted emissions (item 5) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) |          |                 |    |
|--|----------|-----------------|----|
| Modulation Mode                                      | 11G-20M  | Test Freq. (FX) | F2 |
| Operating Function                                   | Transmit | Polarization    | H  |

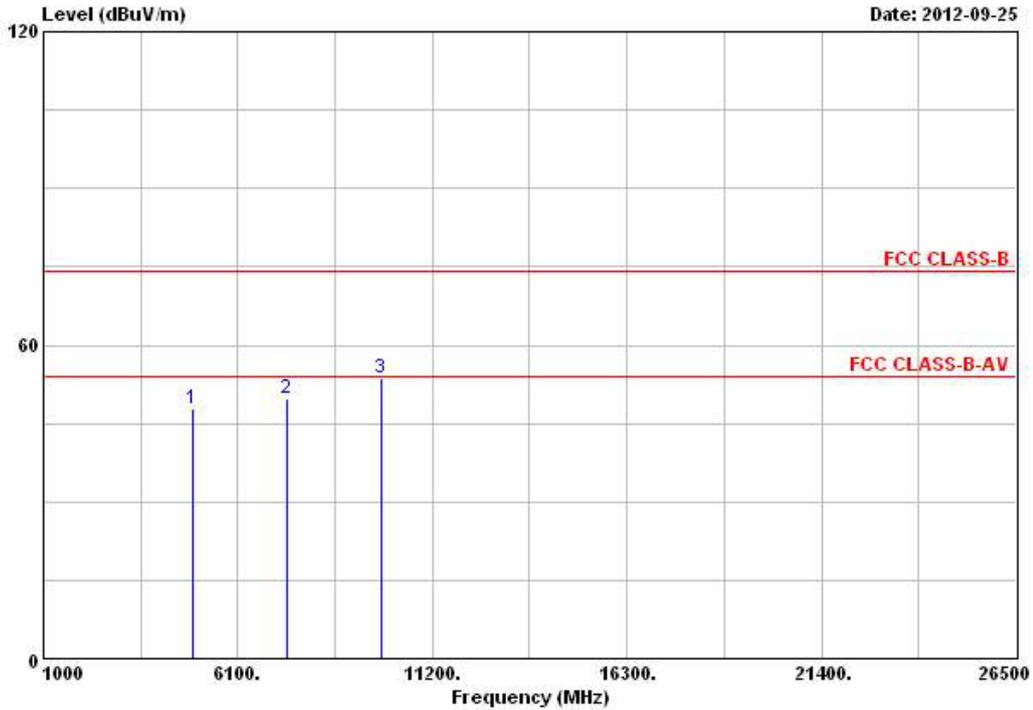


|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4874.000 | 47.59  | -6.41      | 54.00      | 41.89             | 32.88          | 5.43       | 32.61         | PK      | ---     | ---       |
| 2 | 7311.000 | 53.37  | -20.63     | 74.00      | 45.16             | 35.74          | 5.36       | 32.89         | Peak    | ---     | ---       |
| 3 | 7311.000 | 41.78  | -12.22     | 54.00      | 33.57             | 35.74          | 5.36       | 32.89         | Average | ---     | ---       |
| 4 | 9748.000 | 53.48  |            |            | 41.54             | 38.52          | 6.74       | 33.32         | Peak    | ---     | ---       |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.  
 Note 5: For un-restricted bands, unwanted emissions (item 4) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) |          |                 |    |
|--|----------|-----------------|----|
| Modulation Mode                                      | 11G-20M  | Test Freq. (FX) | F3 |
| Operating Function                                   | Transmit | Polarization    | V  |

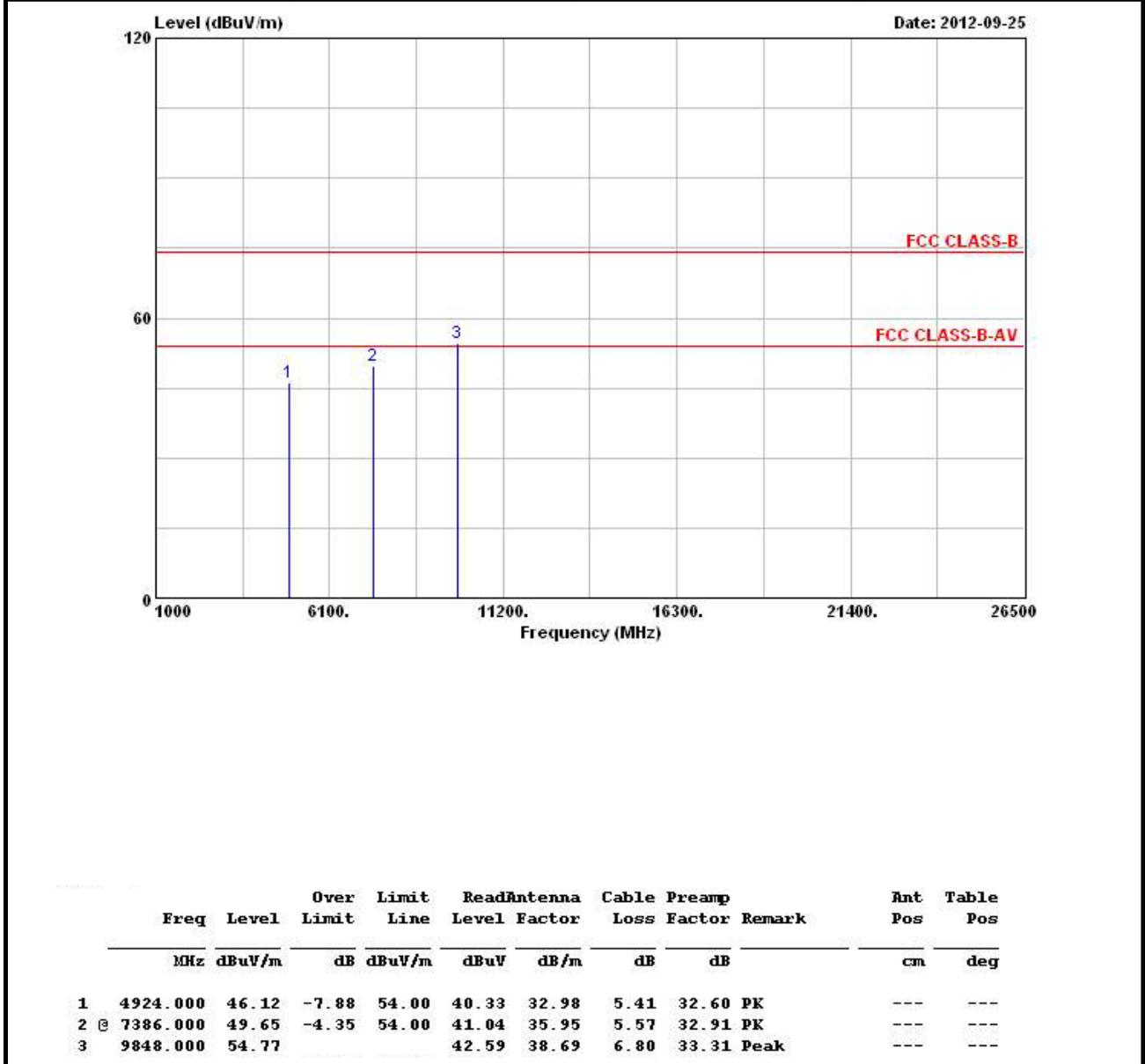


| Freq         | Level  | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | Ant Pos | Table Pos |
|--------------|--------|------------|------------|------------|----------------|------------|---------------|--------|---------|-----------|
| MHz          | dBuV/m | dB         | dBuV/m     | dBuV       | dB/m           | dB         | dB            |        | cm      | deg       |
| 1 @ 4924.000 | 47.77  | -6.23      | 54.00      | 41.98      | 32.98          | 5.41       | 32.60         | PK     | ---     | ---       |
| 2 @ 7386.000 | 49.60  | -4.40      | 54.00      | 40.99      | 35.95          | 5.57       | 32.91         | PK     | ---     | ---       |
| 3 @ 9848.000 | 53.62  |            |            | 41.44      | 38.69          | 6.80       | 33.31         | Peak   | ---     | ---       |

- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
- Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
- Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
- Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
- Note 5: For un-restricted bands, unwanted emissions (item 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



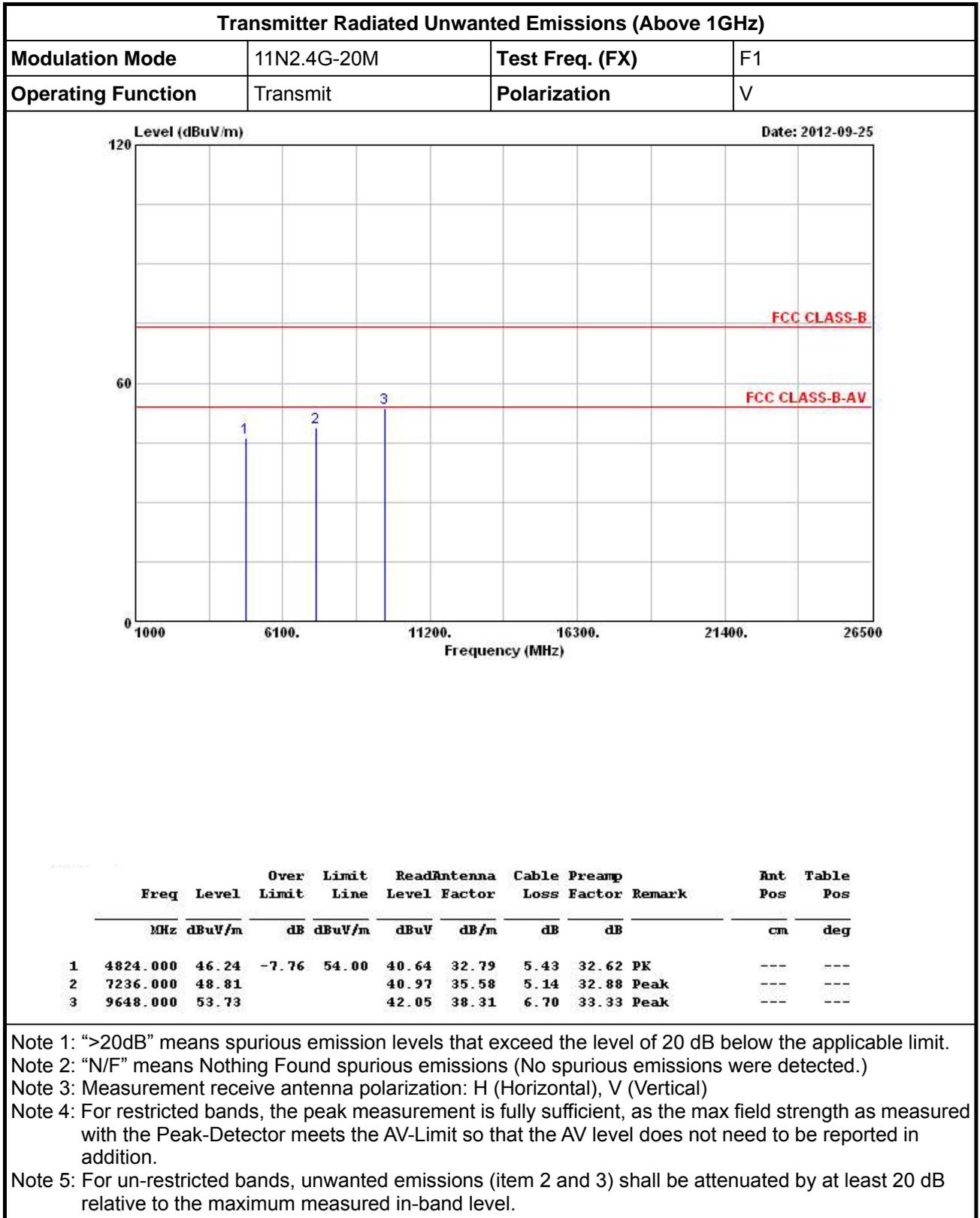
| Transmitter Radiated Unwanted Emissions (Above 1GHz) |          |                 |    |
|--|----------|-----------------|----|
| Modulation Mode                                      | 11G-20M  | Test Freq. (FX) | F3 |
| Operating Function                                   | Transmit | Polarization    | H  |



Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.  
 Note 5: For un-restricted bands, unwanted emissions (item 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

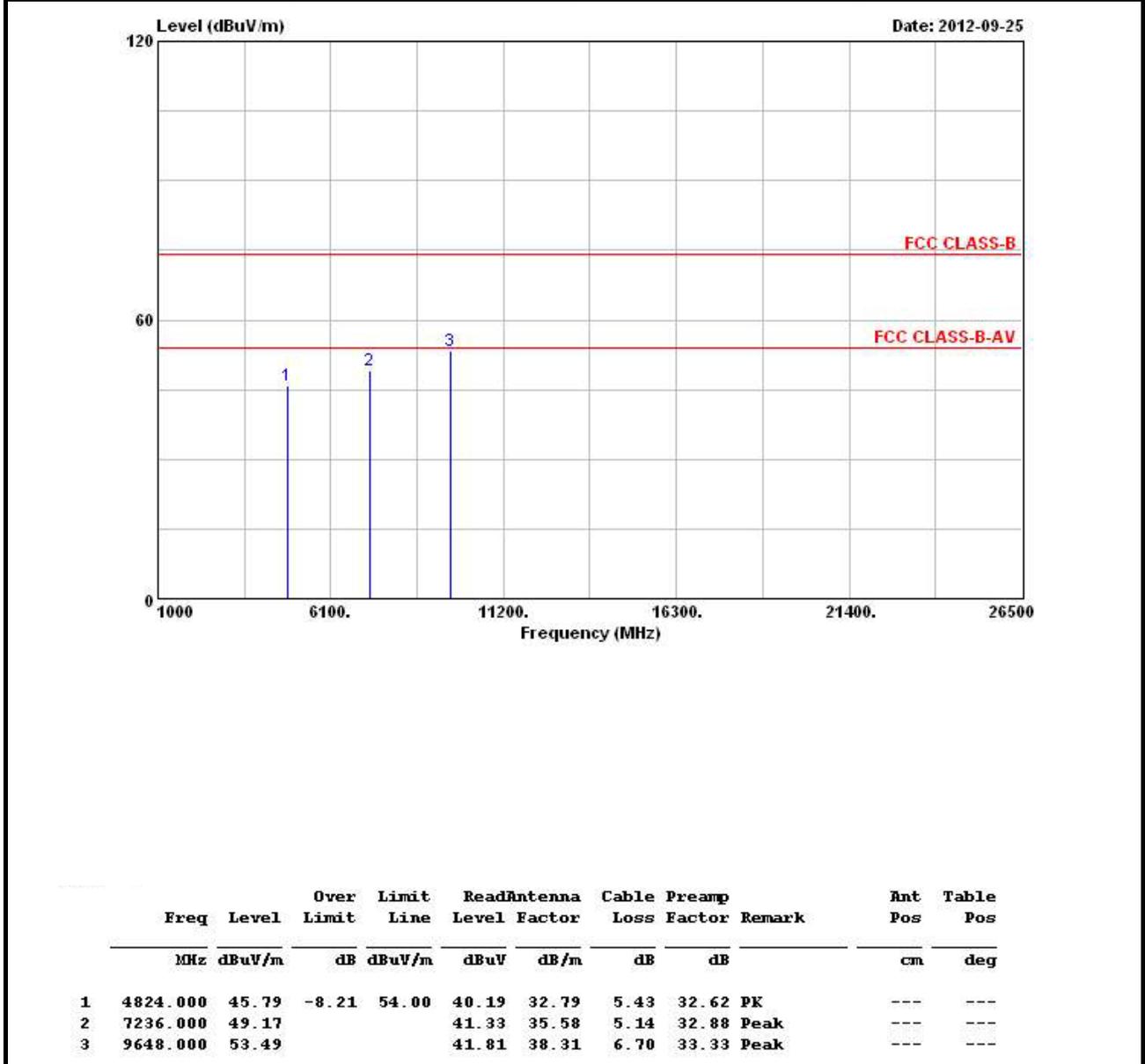


3.4.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11N2.4G-20M-N<sub>TX</sub> 1





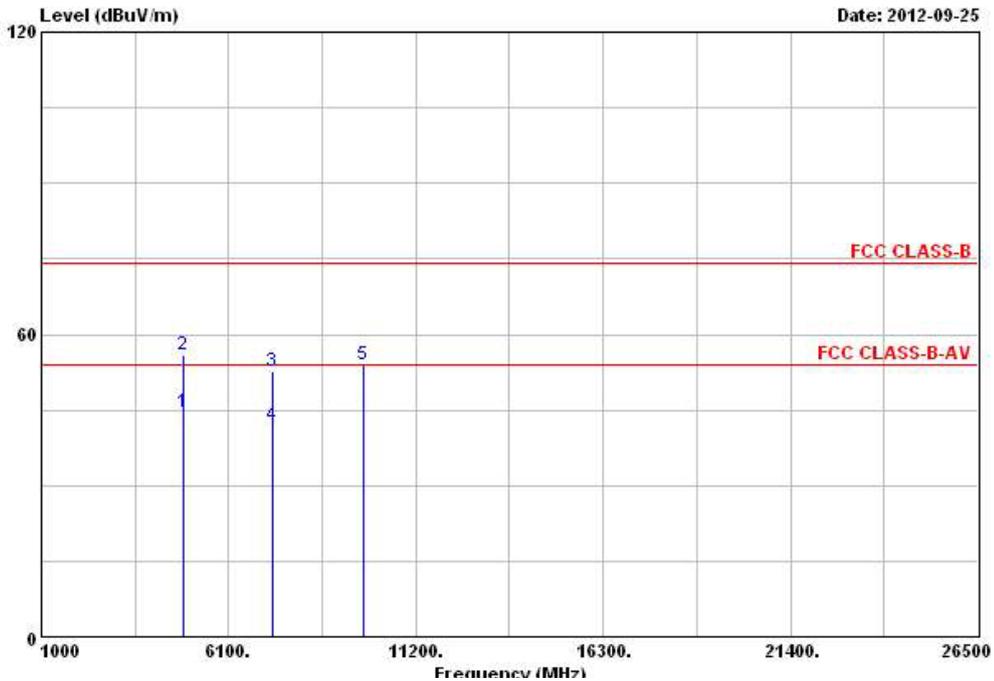
| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-20M | Test Freq. (FX) | F1 |
| Operating Function                                   | Transmit    | Polarization    | H  |



Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.  
 Note 5: For un-restricted bands, unwanted emissions (item 2 and 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-20M | Test Freq. (FX) | F2 |
| Operating Function                                   | Transmit    | Polarization    | V  |

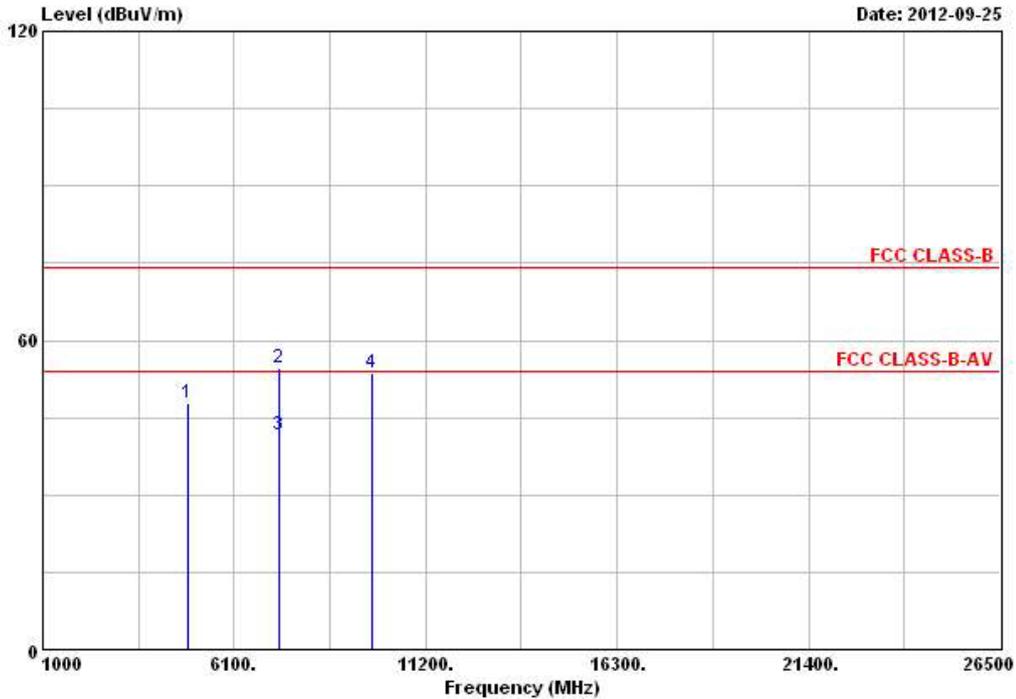


|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4874.000 | 44.63  | -9.37      | 54.00      | 38.93             | 32.88          | 5.43       | 32.61         | Average | ---     | ---       |
| 2 | 4874.000 | 56.05  | -17.95     | 74.00      | 50.35             | 32.88          | 5.43       | 32.61         | Peak    | ---     | ---       |
| 3 | 7311.000 | 52.78  | -21.22     | 74.00      | 44.57             | 35.74          | 5.36       | 32.89         | Peak    | ---     | ---       |
| 4 | 7311.000 | 42.07  | -11.93     | 54.00      | 33.86             | 35.74          | 5.36       | 32.89         | Average | ---     | ---       |
| 5 | 9748.000 | 53.93  |            |            | 41.99             | 38.52          | 6.74       | 33.32         | Peak    | ---     | ---       |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.  
 Note 5: For un-restricted bands, unwanted emissions (item 5) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-20M | Test Freq. (FX) | F2 |
| Operating Function                                   | Transmit    | Polarization    | H  |

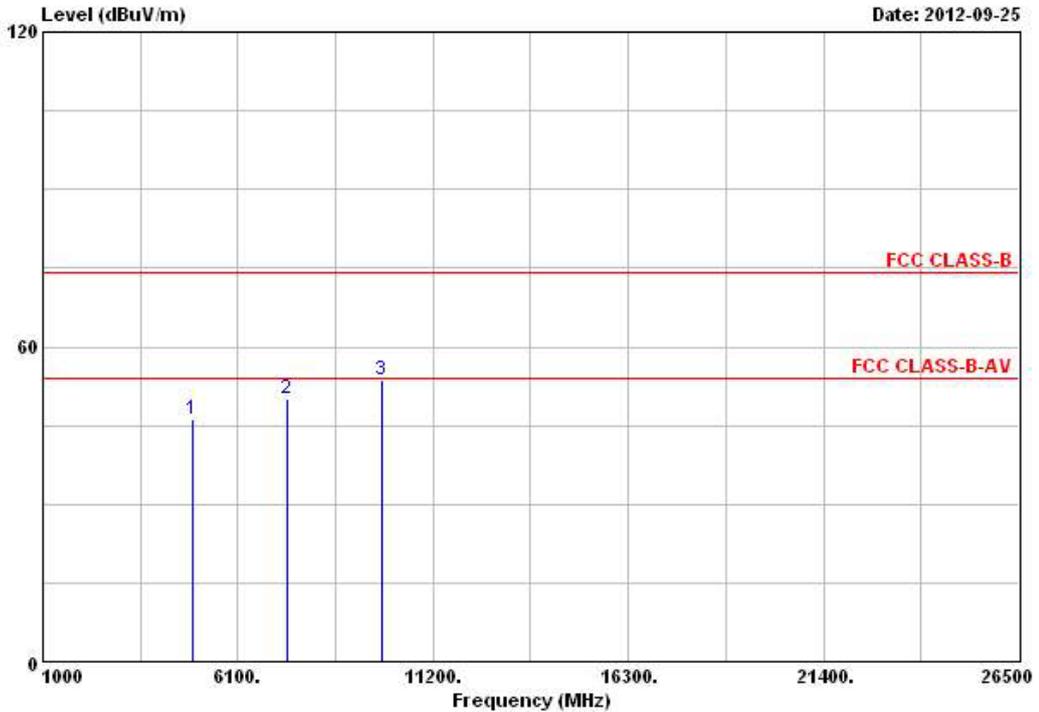


|   | Freq     | Level  | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV       | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4874.000 | 47.76  | -6.24      | 54.00      | 42.06      | 32.88          | 5.43       | 32.61         | PK      | ---     | ---       |
| 2 | 7311.000 | 54.70  | -19.30     | 74.00      | 46.49      | 35.74          | 5.36       | 32.89         | Peak    | ---     | ---       |
| 3 | 7311.000 | 41.58  | -12.42     | 54.00      | 33.37      | 35.74          | 5.36       | 32.89         | Average | ---     | ---       |
| 4 | 9748.000 | 53.67  |            |            | 41.73      | 38.52          | 6.74       | 33.32         | Peak    | ---     | ---       |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.  
 Note 5: For un-restricted bands, unwanted emissions (item 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

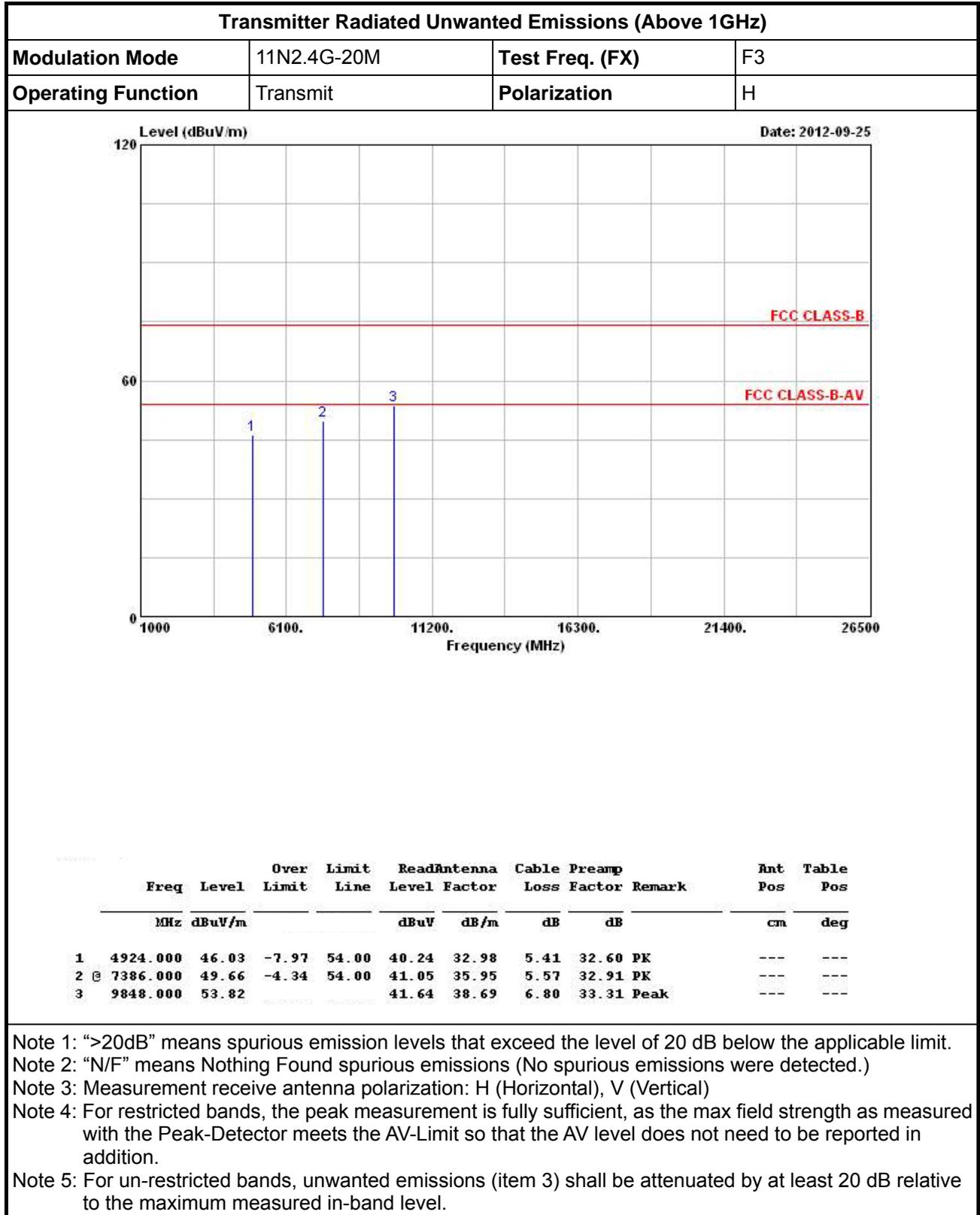


| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-20M | Test Freq. (FX) | F3 |
| Operating Function                                   | Transmit    | Polarization    | V  |



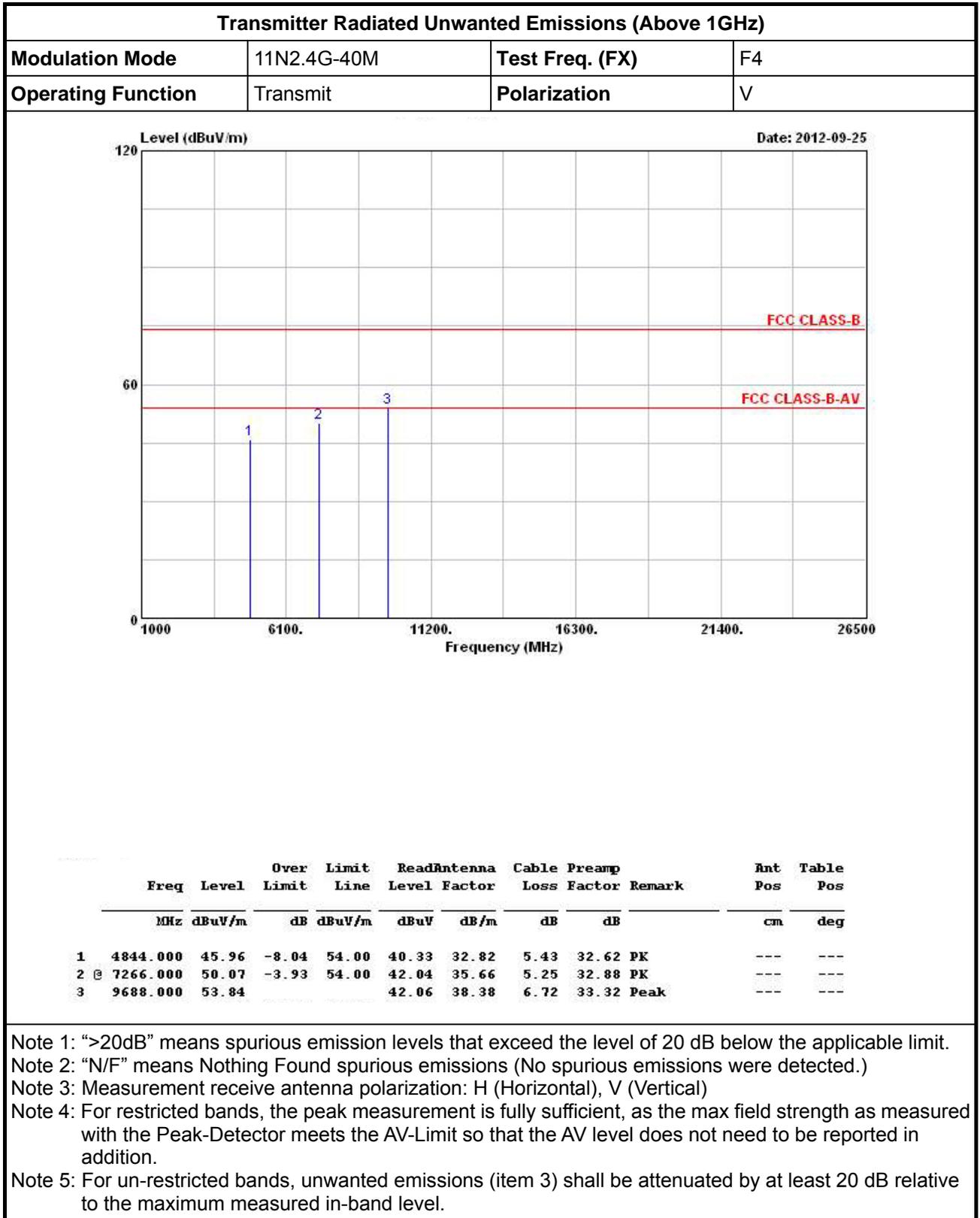
| Freq | Level    | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark     | Ant Pos | Table Pos |
|------|----------|------------|------------|------------|----------------|------------|---------------|------------|---------|-----------|
| MHz  | dBuV/m   | dB         | dBuV/m     | dBuV       | dB/m           | dB         | dB            |            | cm      | deg       |
| 1    | 4924.000 | 46.16      | -7.84      | 54.00      | 40.37          | 32.98      | 5.41          | 32.60 PK   | ---     | ---       |
| 2 @  | 7386.000 | 50.00      | -4.00      | 54.00      | 41.39          | 35.95      | 5.57          | 32.91 PK   | ---     | ---       |
| 3    | 9848.000 | 53.72      |            |            | 41.54          | 38.69      | 6.80          | 33.31 Peak | ---     | ---       |

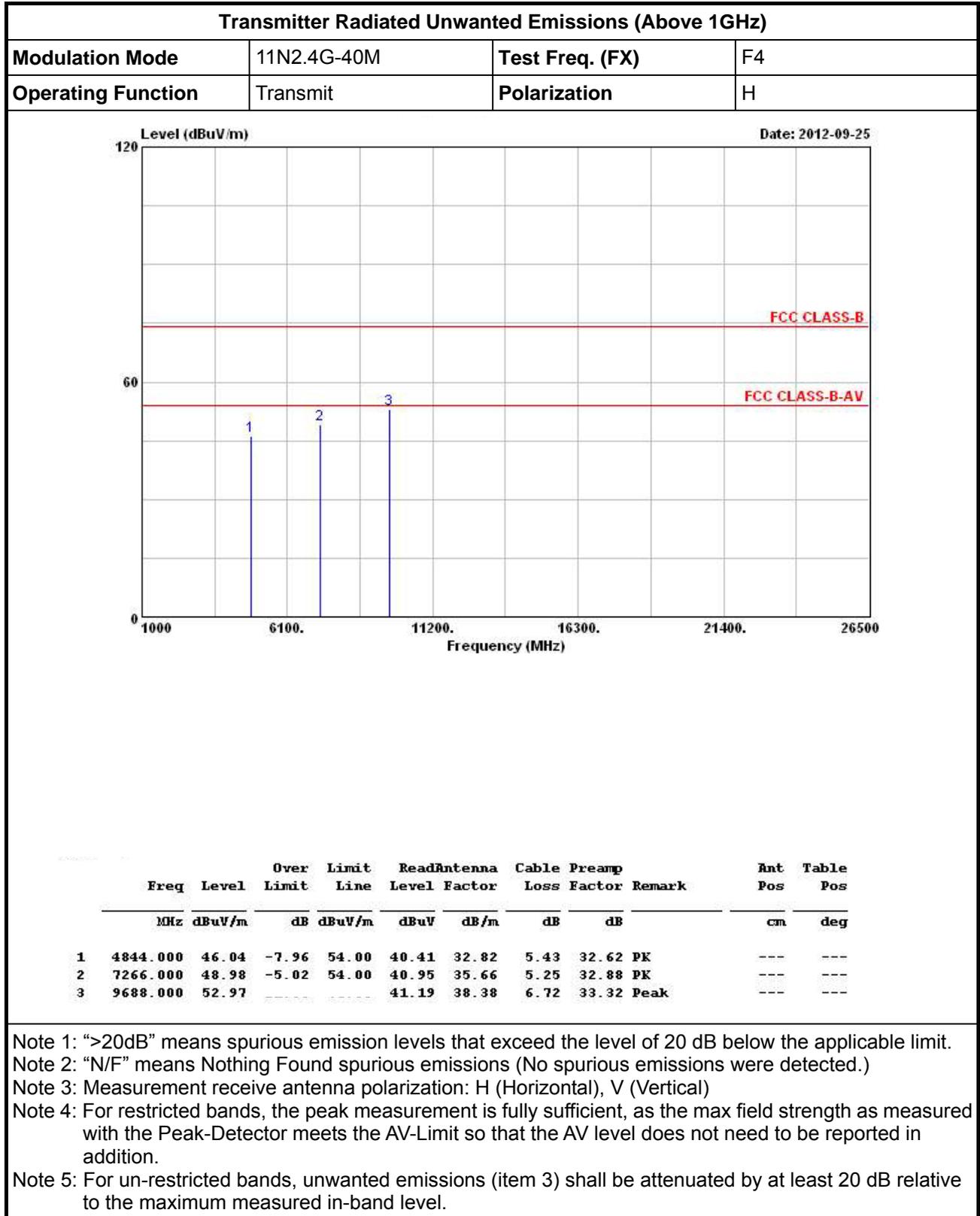
- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
- Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
- Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
- Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
- Note 5: For un-restricted bands, unwanted emissions (item 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.





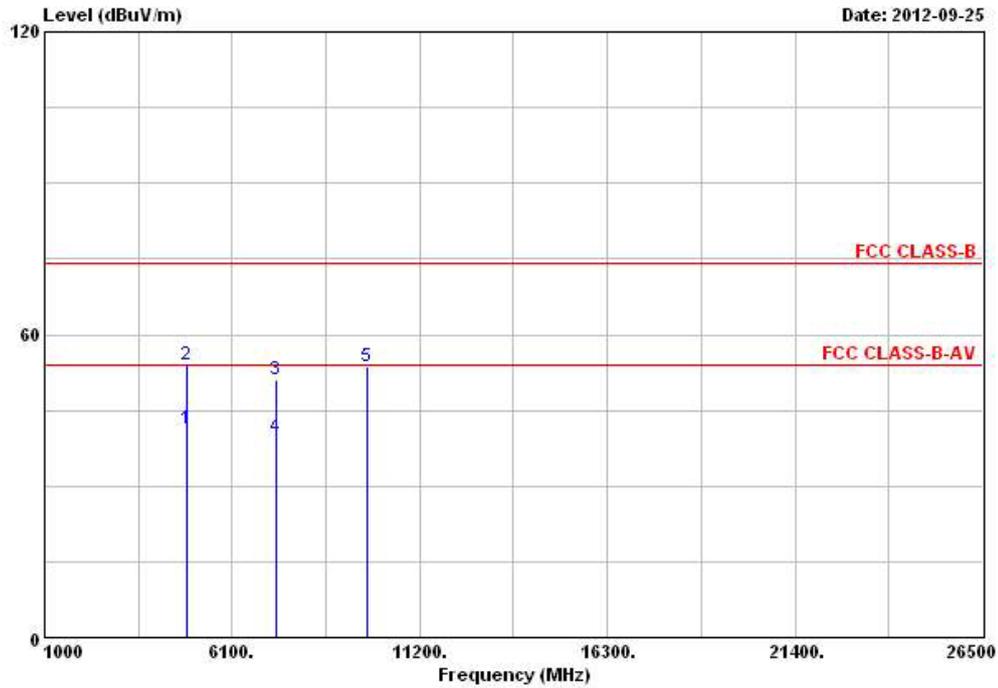
3.4.9 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11N2.4G-40M-N<sub>TX</sub> 1







| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-40M | Test Freq. (FX) | F5 |
| Operating Function                                   | Transmit    | Polarization    | V  |

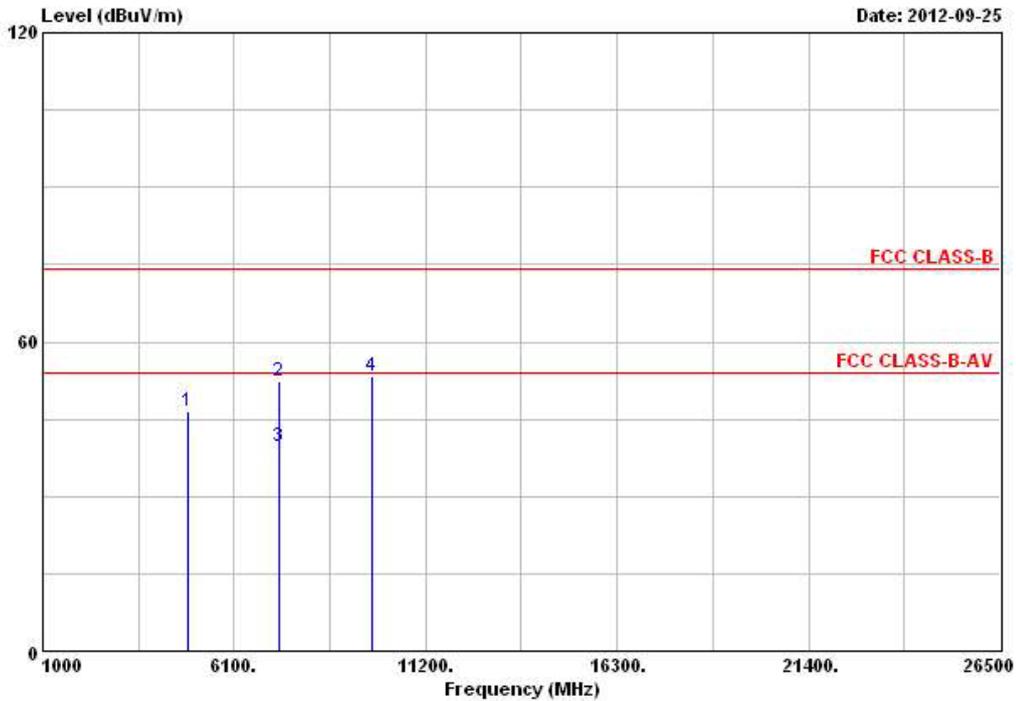


|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4874.000 | 41.21  | -12.79     | 54.00      | 35.51             | 32.88          | 5.43       | 32.61         | Average | ---     | ---       |
| 2 | 4874.000 | 53.85  | -20.15     | 74.00      | 48.15             | 32.88          | 5.43       | 32.61         | Peak    | ---     | ---       |
| 3 | 7311.000 | 51.12  | -22.88     | 74.00      | 42.91             | 35.74          | 5.36       | 32.89         | Peak    | ---     | ---       |
| 4 | 7311.000 | 39.54  | -14.46     | 54.00      | 31.33             | 35.74          | 5.36       | 32.89         | Average | ---     | ---       |
| 5 | 9748.000 | 53.72  |            |            | 41.78             | 38.52          | 6.74       | 33.32         | Peak    | ---     | ---       |

- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
- Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
- Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
- Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
- Note 5: For un-restricted bands, unwanted emissions (item 5) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-40M | Test Freq. (FX) | F5 |
| Operating Function                                   | Transmit    | Polarization    | H  |

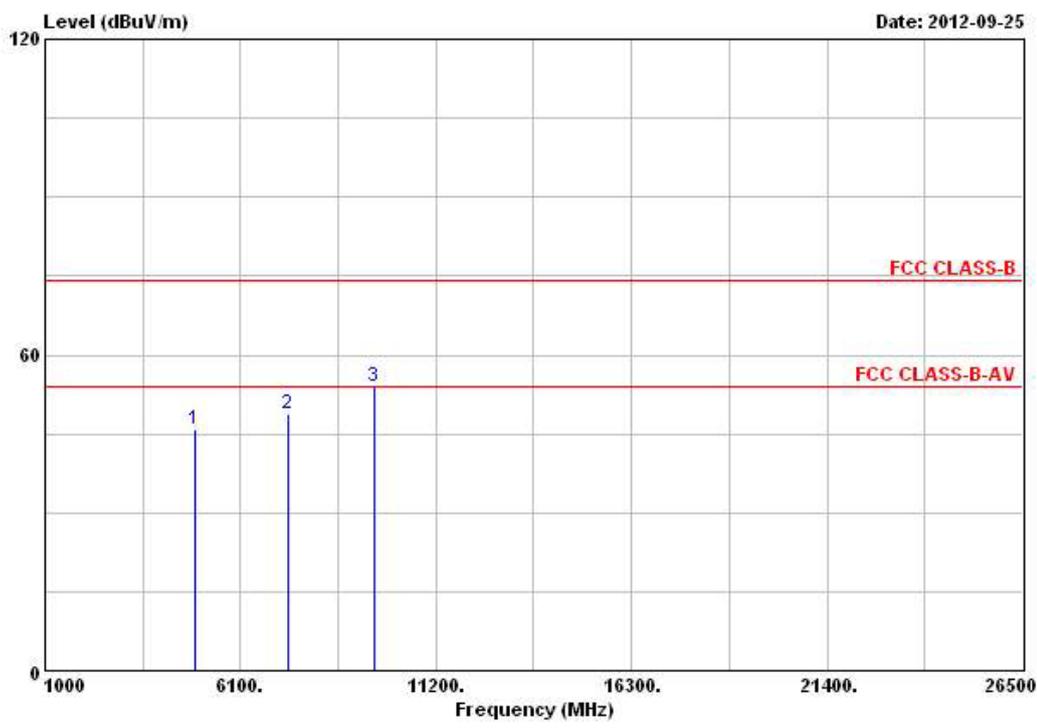


|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4874.000 | 46.61  | -7.39      | 54.00      | 40.91             | 32.88          | 5.43       | 32.61         | PK      | ---     | ---       |
| 2 | 7311.000 | 52.32  | -21.68     | 74.00      | 44.11             | 35.74          | 5.36       | 32.89         | Peak    | ---     | ---       |
| 3 | 7311.000 | 39.69  | -14.31     | 54.00      | 31.48             | 35.74          | 5.36       | 32.89         | Average | ---     | ---       |
| 4 | 9748.000 | 53.42  |            |            | 41.48             | 38.52          | 6.74       | 33.32         | Peak    | ---     | ---       |

- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
- Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
- Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
- Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
- Note 5: For un-restricted bands, unwanted emissions (item 4) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-40M | Test Freq. (FX) | F6 |
| Operating Function                                   | Transmit    | Polarization    | V  |

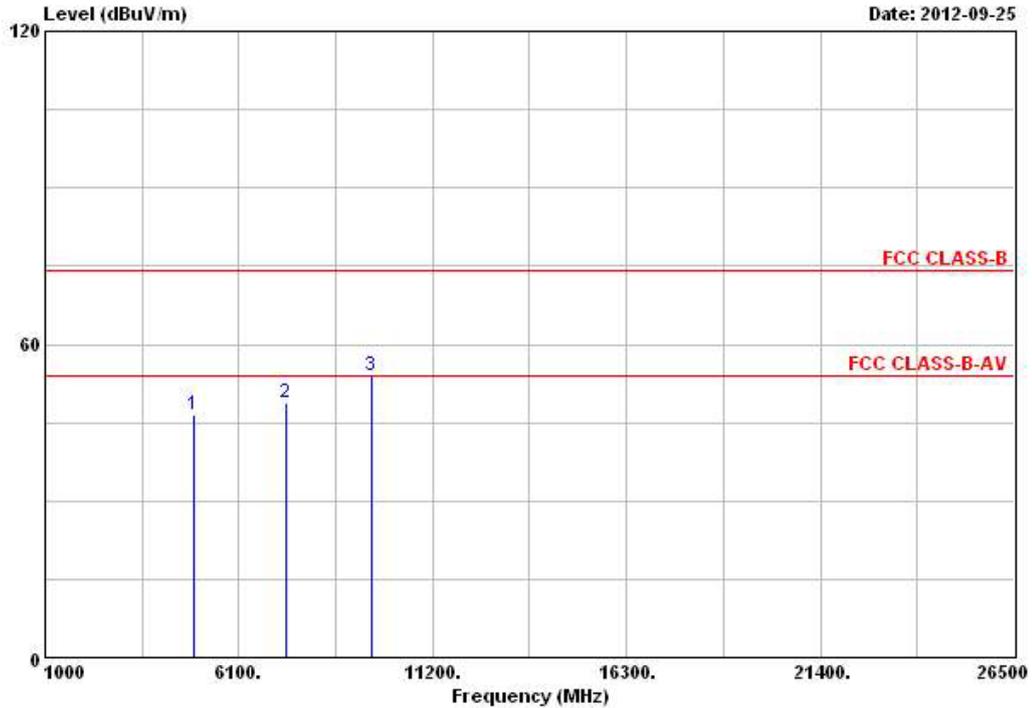


|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|--------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |        | cm      | deg       |
| 1 | 4904.000 | 45.89  | -8.11      | 54.00      | 40.14             | 32.94          | 5.42       | 32.61         | PK     | ---     | ---       |
| 2 | 7356.000 | 48.75  | -5.25      | 54.00      | 40.32             | 35.87          | 5.46       | 32.90         | PK     | ---     | ---       |
| 3 | 9608.000 | 54.01  |            |            | 42.45             | 38.21          | 6.68       | 33.33         | Peak   | ---     | ---       |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.  
 Note 5: For un-restricted bands, unwanted emissions (item 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-40M | Test Freq. (FX) | F6 |
| Operating Function                                   | Transmit    | Polarization    | H  |

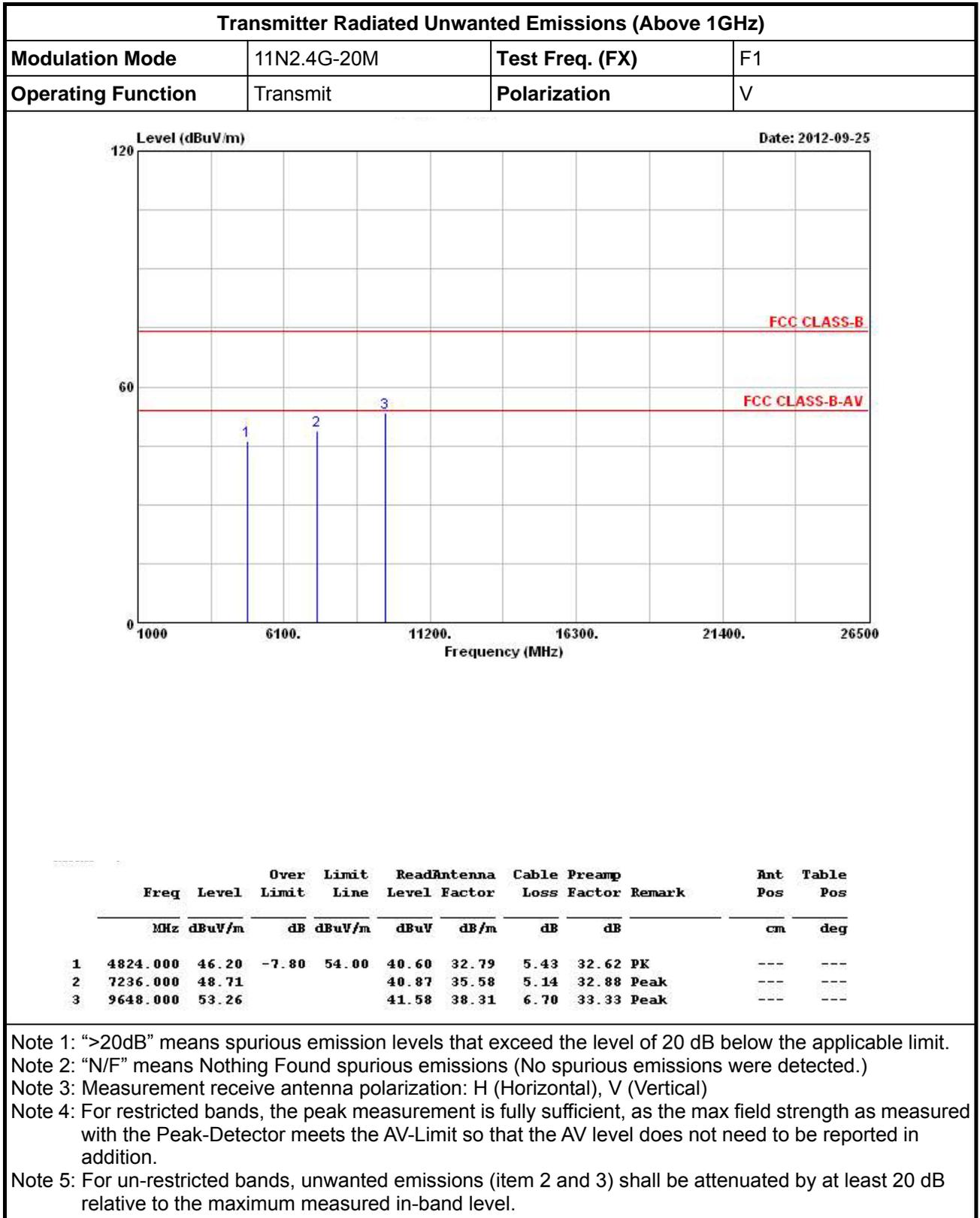


| Freq | Level    | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark     | Ant Pos | Table Pos |
|------|----------|------------|------------|------------|----------------|------------|---------------|------------|---------|-----------|
| MHz  | dBuV/m   | dB         | dBuV/m     | dBuV       | dB/m           | dB         | dB            |            | cm      | deg       |
| 1    | 4904.000 | 46.41      | -7.59      | 54.00      | 40.66          | 32.94      | 5.42          | 32.61 PK   | ---     | ---       |
| 2    | 7356.000 | 48.83      | -5.17      | 54.00      | 40.40          | 35.87      | 5.46          | 32.90 PK   | ---     | ---       |
| 3    | 9608.000 | 54.07      |            |            | 42.51          | 38.21      | 6.68          | 33.33 Peak | ---     | ---       |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.  
 Note 5: For un-restricted bands, unwanted emissions (item 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

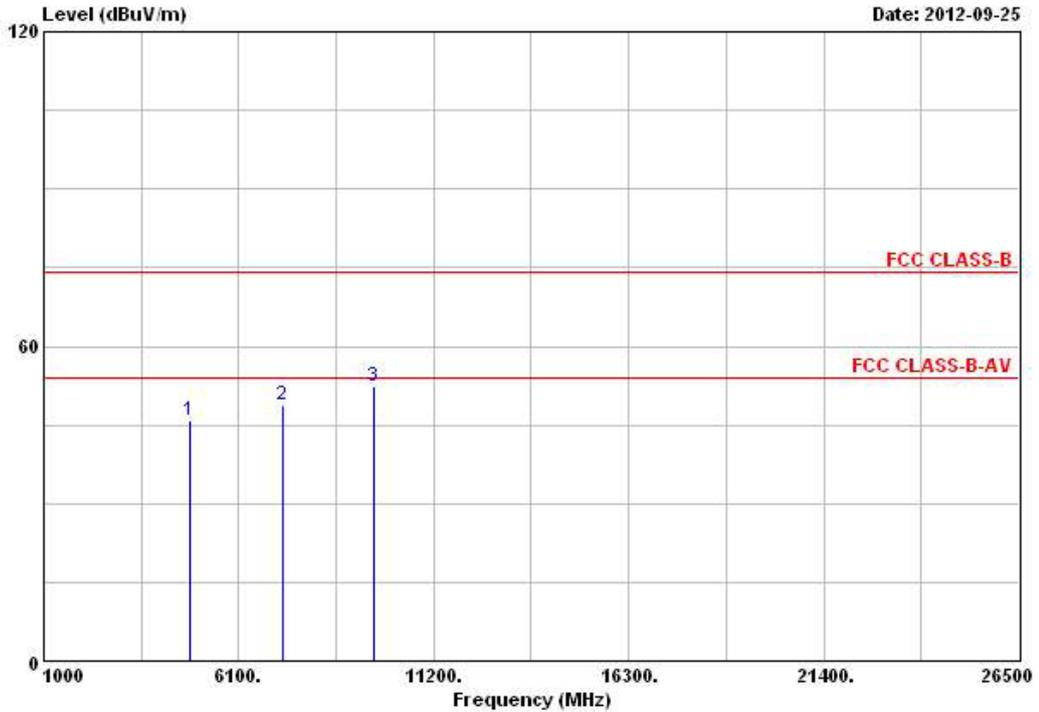


3.4.10 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11N2.4G-20M-N<sub>TX</sub> 2



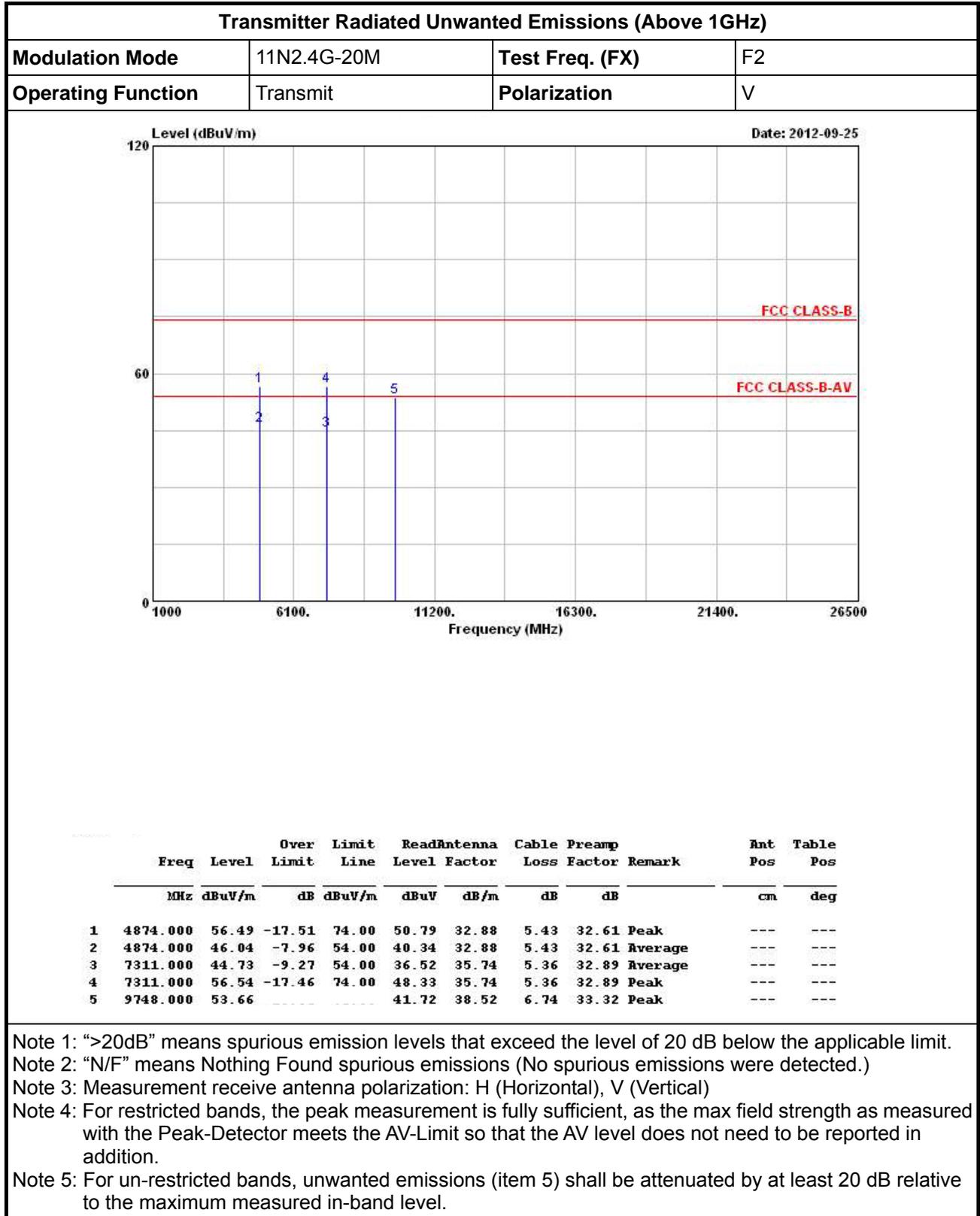


| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-20M | Test Freq. (FX) | F1 |
| Operating Function                                   | Transmit    | Polarization    | H  |



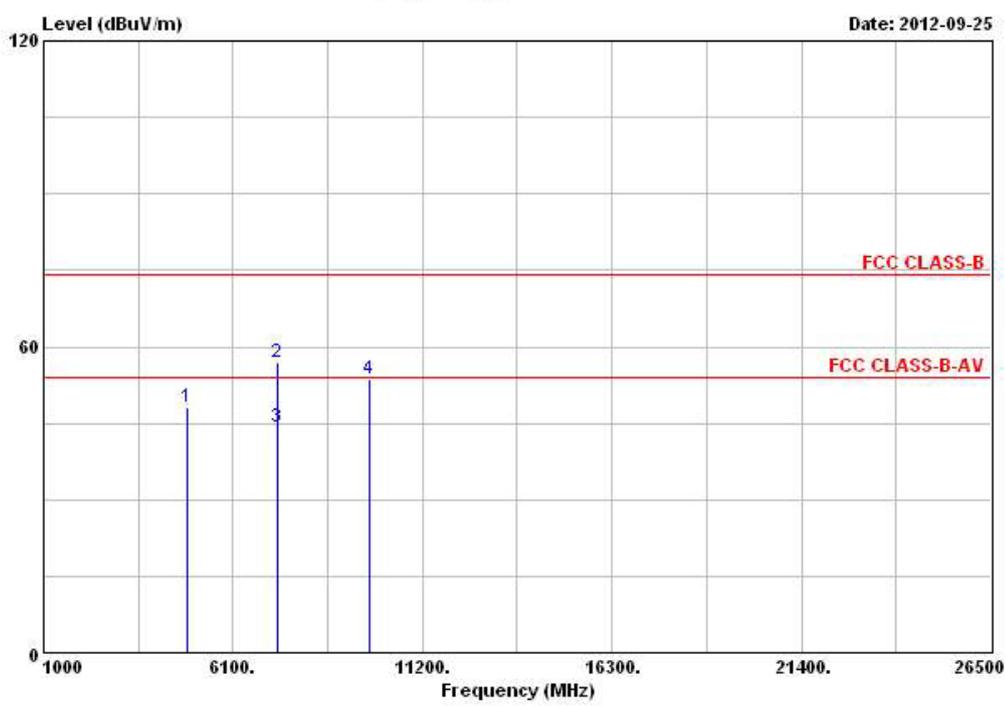
| Freq | Level    | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark     | Ant Pos | Table Pos |
|------|----------|------------|------------|------------|----------------|------------|---------------|------------|---------|-----------|
| MHz  | dBuV/m   | dB         | dBuV/m     | dBuV       | dB/m           | dB         | dB            |            | cm      | deg       |
| 1    | 4824.000 | 45.79      | -8.21      | 54.00      | 40.19          | 32.79      | 5.43          | 32.62 PK   | ---     | ---       |
| 2    | 7236.000 | 48.69      |            |            | 40.85          | 35.58      | 5.14          | 32.88 Peak | ---     | ---       |
| 3    | 9648.000 | 52.50      |            |            | 40.82          | 38.31      | 6.70          | 33.33 Peak | ---     | ---       |

- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
- Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
- Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
- Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
- Note 5: For un-restricted bands, unwanted emissions (item 2 and 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.





| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-20M | Test Freq. (FX) | F2 |
| Operating Function                                   | Transmit    | Polarization    | H  |

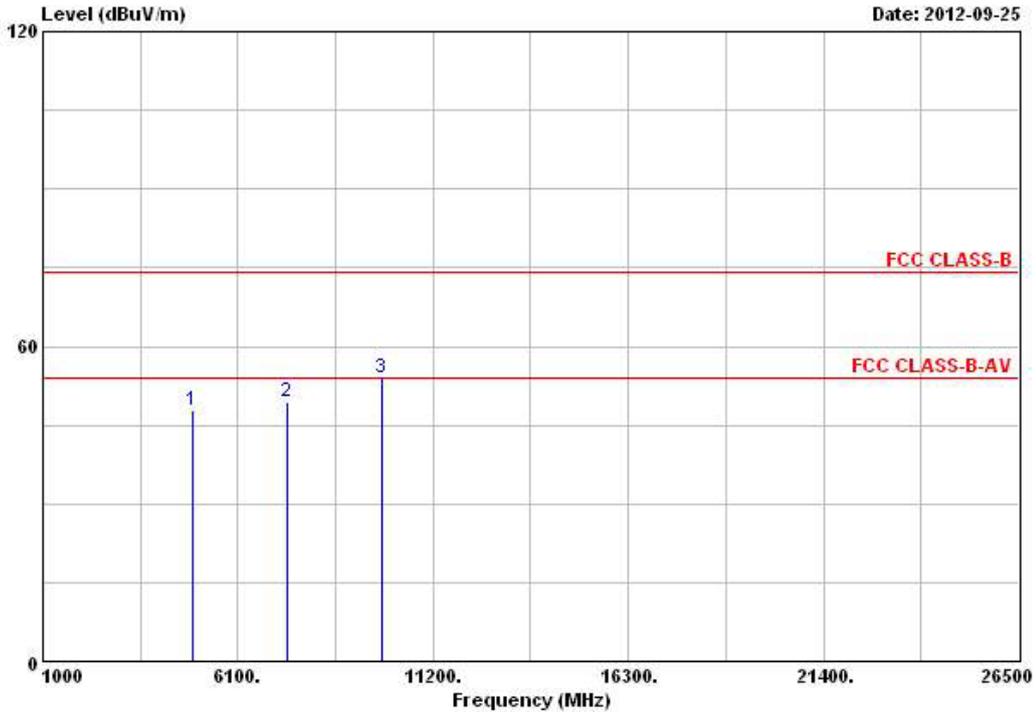


| Item | Freq (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Remark  | Ant Pos (cm) | Table Pos (deg) |
|------|------------|----------------|-----------------|---------------------|-------------------|-----------------------|-----------------|--------------------|---------|--------------|-----------------|
| 1    | 4874.000   | 48.05          | -5.95           | 54.00               | 42.35             | 32.88                 | 5.43            | 32.61              | PK      | ---          | ---             |
| 2    | 7311.000   | 56.94          | -17.06          | 74.00               | 48.73             | 35.74                 | 5.36            | 32.89              | Peak    | ---          | ---             |
| 3    | 7311.000   | 44.23          | -9.77           | 54.00               | 36.02             | 35.74                 | 5.36            | 32.89              | Average | ---          | ---             |
| 4    | 9748.000   | 53.71          | 0.00            | 54.00               | 41.77             | 38.52                 | 6.74            | 33.32              | Peak    | ---          | ---             |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.  
 Note 5: For un-restricted bands, unwanted emissions (item 4) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-20M | Test Freq. (FX) | F3 |
| Operating Function                                   | Transmit    | Polarization    | V  |

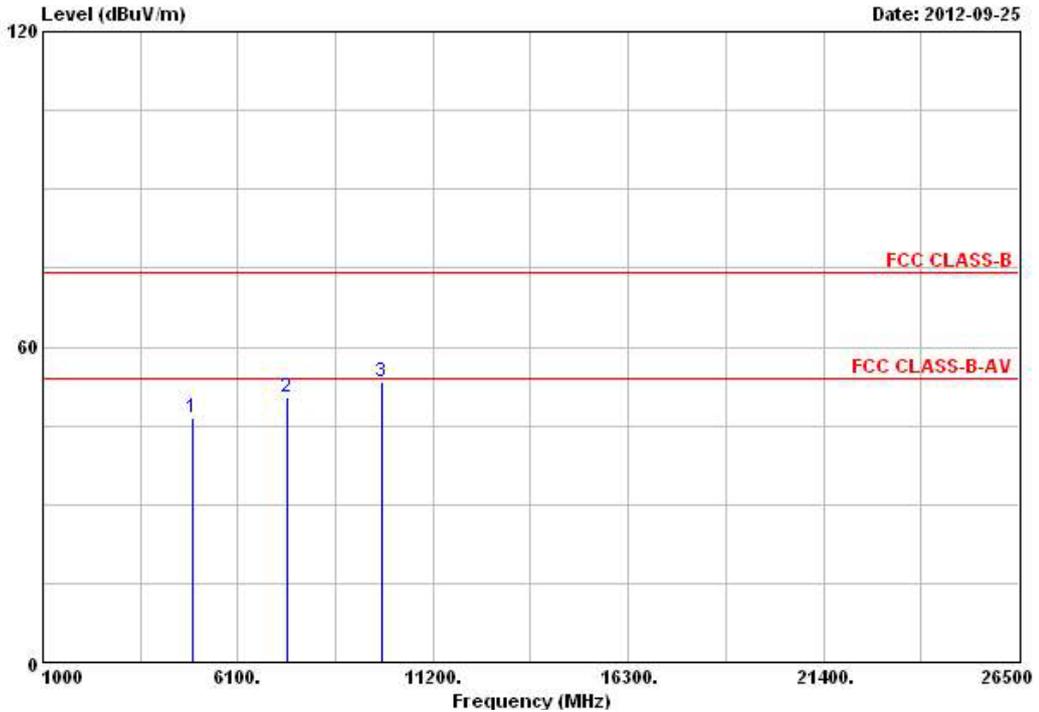


|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|--------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |        | cm      | deg       |
| 1 | 4924.000 | 47.74  | -6.26      | 54.00      | 41.95             | 32.98          | 5.41       | 32.60         | PK     | ---     | ---       |
| 2 | 7386.000 | 49.57  | -4.43      | 54.00      | 40.96             | 35.95          | 5.57       | 32.91         | PK     | ---     | ---       |
| 3 | 9848.000 | 53.88  |            |            | 41.70             | 38.69          | 6.80       | 33.31         | Peak   | ---     | ---       |

- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
- Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
- Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
- Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
- Note 5: For un-restricted bands, unwanted emissions (item 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-20M | Test Freq. (FX) | F3 |
| Operating Function                                   | Transmit    | Polarization    | H  |

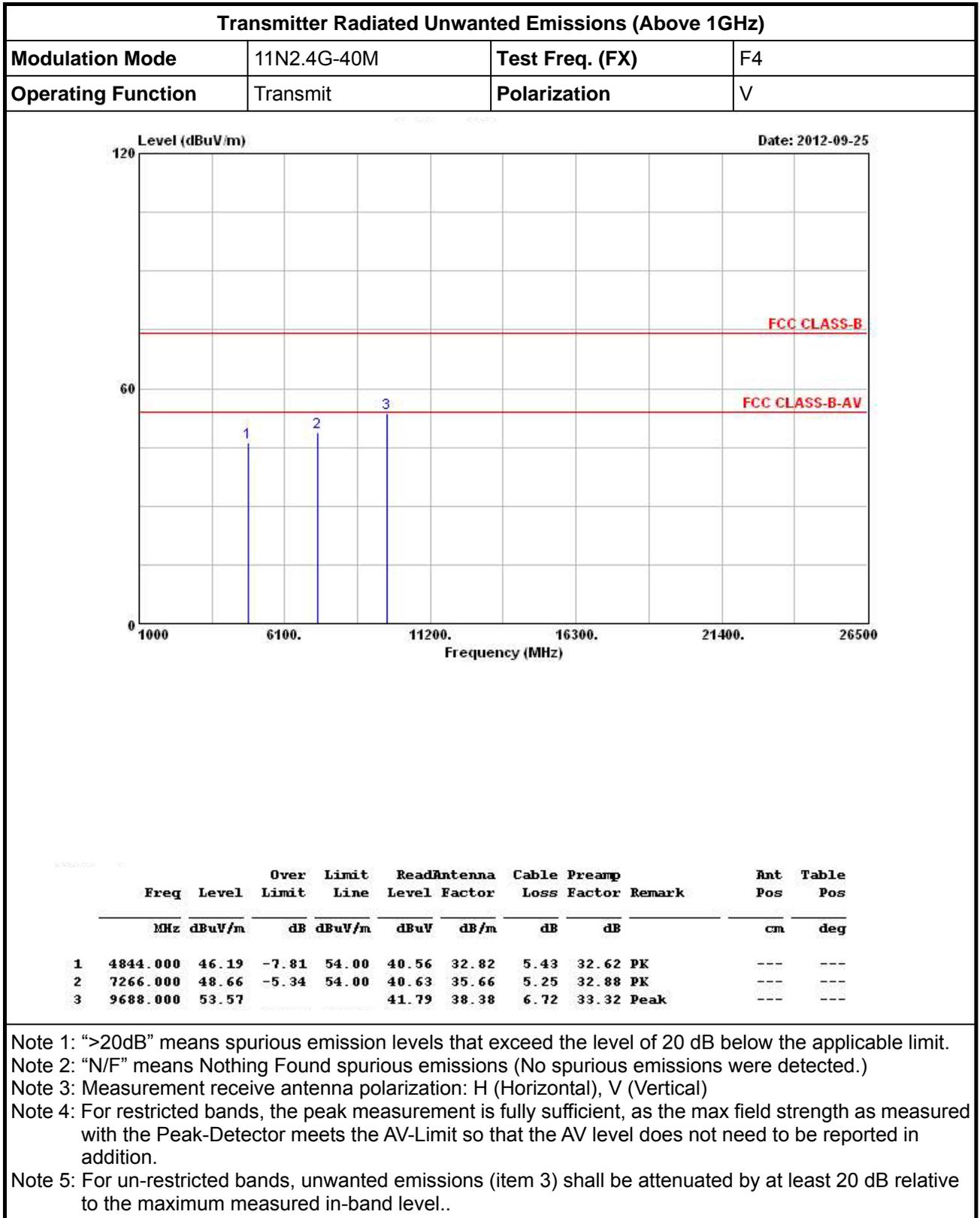


|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|--------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |        | cm      | deg       |
| 1 | 4924.000 | 46.55  | -7.45      | 54.00      | 40.76             | 32.98          | 5.41       | 32.60         | PK     | ---     | ---       |
| 2 | 7386.000 | 50.47  | -3.53      | 54.00      | 41.86             | 35.95          | 5.57       | 32.91         | PK     | ---     | ---       |
| 3 | 9848.000 | 53.40  |            |            | 41.22             | 38.69          | 6.80       | 33.31         | Peak   | ---     | ---       |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.  
 Note 5: For un-restricted bands, unwanted emissions (item 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

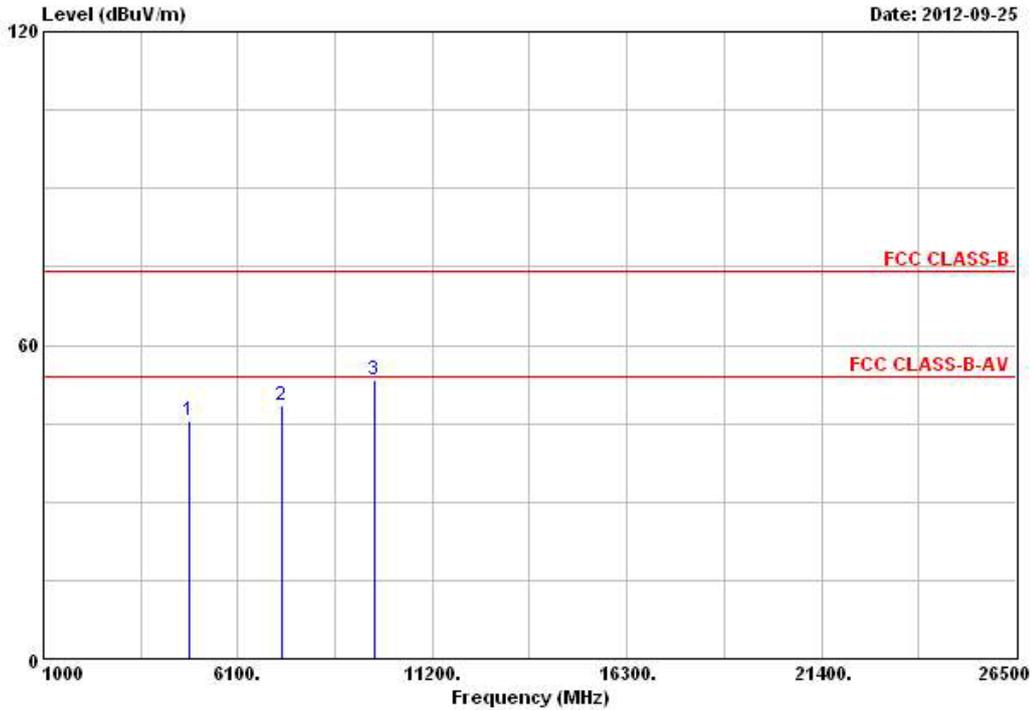


3.4.11 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11N2.4G-40M-N<sub>TX</sub> 2





| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-40M | Test Freq. (FX) | F4 |
| Operating Function                                   | Transmit    | Polarization    | H  |

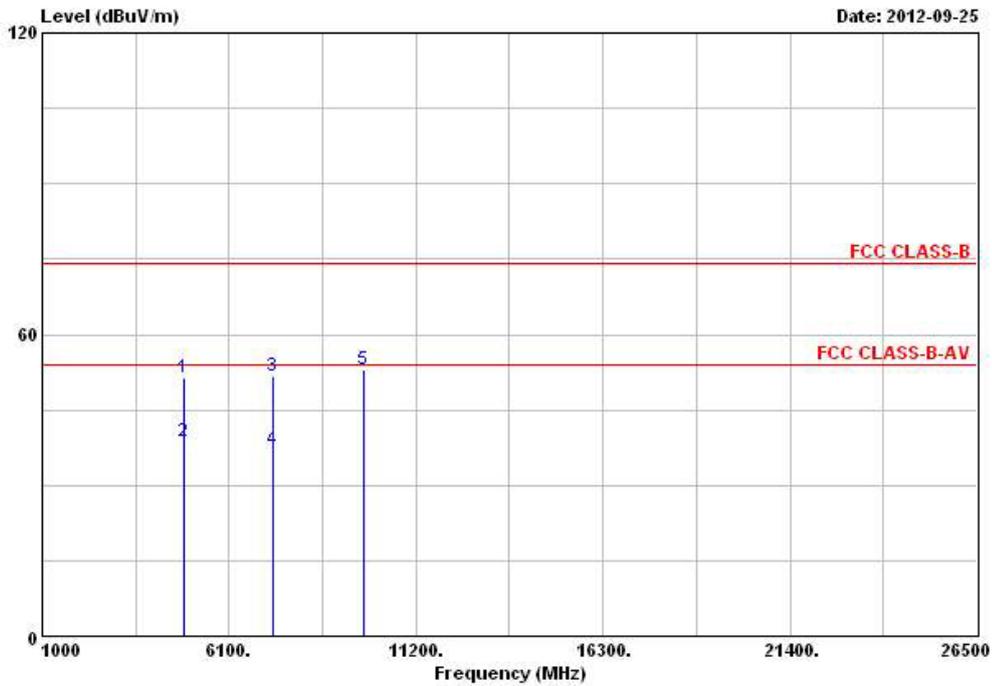


| Freq       | Level  | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | Ant Pos | Table Pos |
|------------|--------|------------|------------|------------|----------------|------------|---------------|--------|---------|-----------|
| MHz        | dBuV/m | dB         | dBuV/m     | dBuV       | dB/m           | dB         | dB            |        | cm      | deg       |
| 1 4844.000 | 45.49  | -8.51      | 54.00      | 39.86      | 32.82          | 5.43       | 32.62         | PK     | ---     | ---       |
| 2 7266.000 | 48.36  | -5.64      | 54.00      | 40.33      | 35.66          | 5.25       | 32.88         | PK     | ---     | ---       |
| 3 9688.000 | 53.26  | -----      | -----      | 41.48      | 38.38          | 6.72       | 33.32         | Peak   | ---     | ---       |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.  
 Note 5: For un-restricted bands, unwanted emissions (item 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-40M | Test Freq. (FX) | F5 |
| Operating Function                                   | Transmit    | Polarization    | V  |

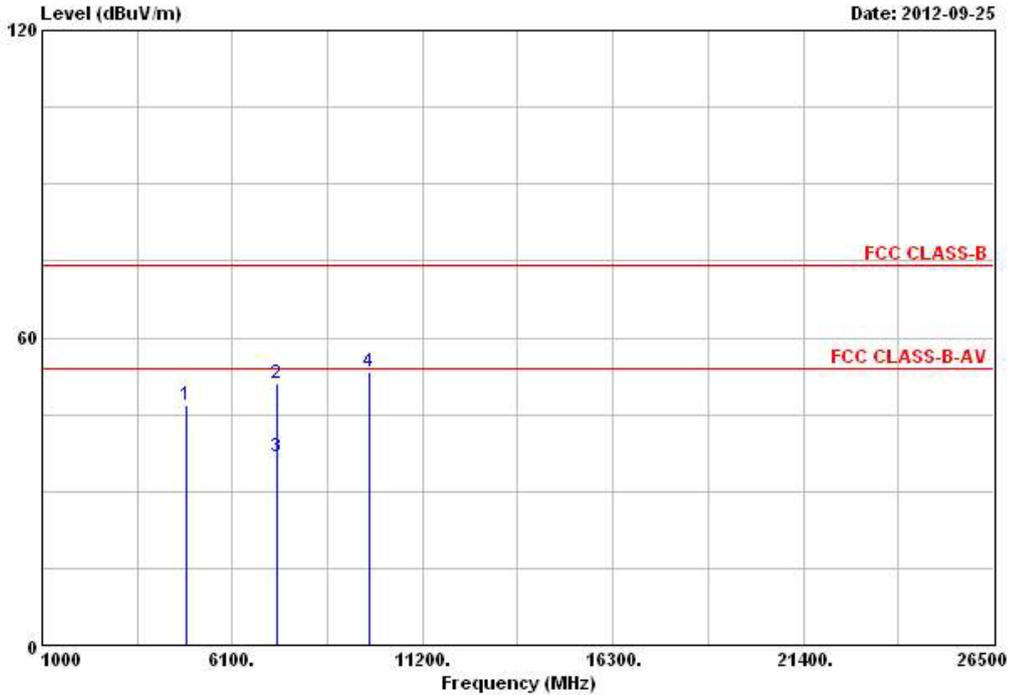


|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4874.000 | 51.34  | -22.66     | 74.00      | 45.64             | 32.88          | 5.43       | 32.61         | Peak    | ---     | ---       |
| 2 | 4874.000 | 38.59  | -15.41     | 54.00      | 32.89             | 32.88          | 5.43       | 32.61         | Average | ---     | ---       |
| 3 | 7311.000 | 51.76  | -22.24     | 74.00      | 43.55             | 35.74          | 5.36       | 32.89         | Peak    | ---     | ---       |
| 4 | 7311.000 | 37.08  | -16.92     | 54.00      | 28.87             | 35.74          | 5.36       | 32.89         | Average | ---     | ---       |
| 5 | 9748.000 | 52.89  |            |            | 40.95             | 38.52          | 6.74       | 33.32         | Peak    | ---     | ---       |

- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
- Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
- Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
- Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
- Note 5: For un-restricted bands, unwanted emissions (item 5) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-40M | Test Freq. (FX) | F5 |
| Operating Function                                   | Transmit    | Polarization    | H  |

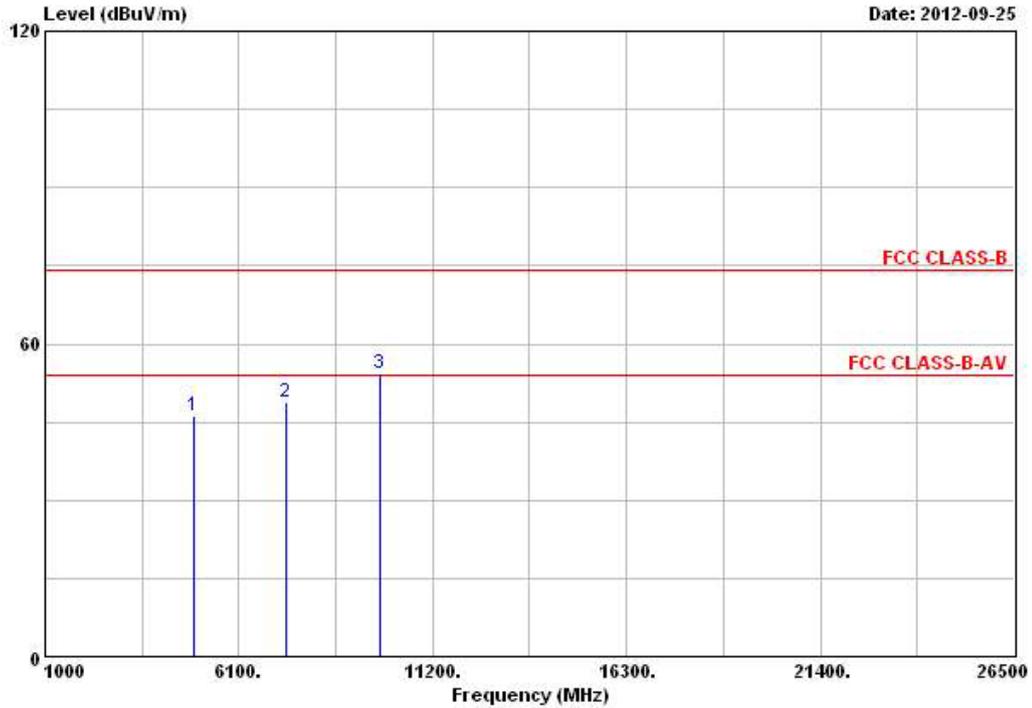


|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4874.000 | 46.86  | -7.14      | 54.00      | 41.16             | 32.88          | 5.43       | 32.61         | PK      | ---     | ---       |
| 2 | 7311.000 | 51.21  | -22.79     | 74.00      | 43.00             | 35.74          | 5.36       | 32.89         | Peak    | ---     | ---       |
| 3 | 7311.000 | 36.72  | -17.28     | 54.00      | 28.51             | 35.74          | 5.36       | 32.89         | Average | ---     | ---       |
| 4 | 9748.000 | 53.45  |            |            | 41.51             | 38.52          | 6.74       | 33.32         | Peak    | ---     | ---       |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.  
 Note 5: For un-restricted bands, unwanted emissions (item 4) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-40M | Test Freq. (FX) | F6 |
| Operating Function                                   | Transmit    | Polarization    | V  |

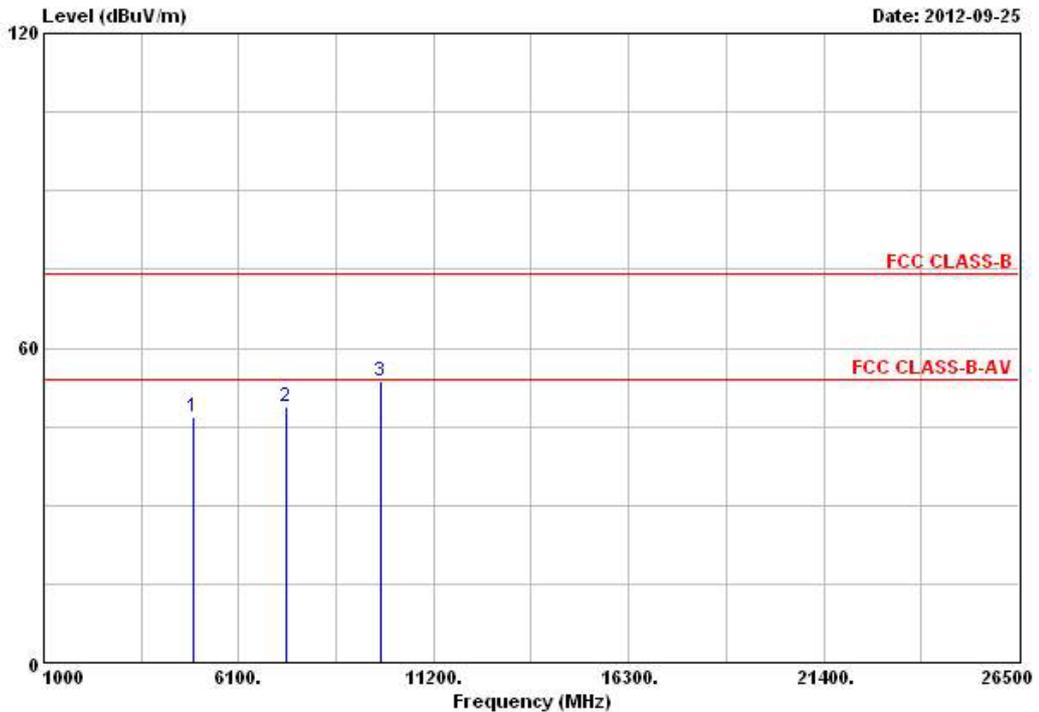


| Freq | Level    | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark     | Ant Pos | Table Pos |
|------|----------|------------|------------|------------|----------------|------------|---------------|------------|---------|-----------|
| MHz  | dBuV/m   | dB         | dBuV/m     | dBuV       | dB/m           | dB         | dB            |            | cm      | deg       |
| 1    | 4904.000 | 46.30      | -7.70      | 54.00      | 40.55          | 32.94      | 5.42          | 32.61 PK   | ---     | ---       |
| 2    | 7356.000 | 48.87      | -5.13      | 54.00      | 40.44          | 35.87      | 5.46          | 32.90 PK   | ---     | ---       |
| 3    | 9808.000 | 54.29      |            |            | 42.21          | 38.62      | 6.78          | 33.32 Peak | ---     | ---       |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.  
 Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)  
 Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)  
 Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.  
 Note 5: For un-restricted bands, unwanted emissions (item 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) |             |                 |    |
|--|-------------|-----------------|----|
| Modulation Mode                                      | 11N2.4G-40M | Test Freq. (FX) | F6 |
| Operating Function                                   | Transmit    | Polarization    | H  |



| Freq       | Level  | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | Ant Pos | Table Pos |
|------------|--------|------------|------------|------------|----------------|------------|---------------|--------|---------|-----------|
| MHz        | dBuV/m | dB         | dBuV/m     | dBuV       | dB/m           | dB         | dB            |        | cm      | deg       |
| 1 4904.000 | 46.77  | -7.23      | 54.00      | 41.02      | 32.94          | 5.42       | 32.61         | PK     | ---     | ---       |
| 2 7356.000 | 48.73  | -5.27      | 54.00      | 40.30      | 35.87          | 5.46       | 32.90         | PK     | ---     | ---       |
| 3 9808.000 | 53.62  |            |            | 41.54      | 38.62          | 6.78       | 33.32         | Peak   | ---     | ---       |

- Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
- Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)
- Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
- Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
- Note 5: For un-restricted bands, unwanted emissions (item 3) shall be attenuated by at least 20 dB relative to the maximum measured in-band level.



## 4 Test Equipment and Calibration Data

| Instrument          | Manufacturer | Model No. | Serial No.     | Characteristics | Calibration Date | Remark               |
|---------------------|--------------|-----------|----------------|-----------------|------------------|----------------------|
| EMC Receiver        | R&S          | ESCS 30   | 100132         | 9kHz ~ 2.75GHz  | Feb. 08, 2012    | Conduction (CO04-HY) |
| LISN                | TESEQ        | NNB-52    | 27380          | 9kHz ~ 30MHz    | Apr. 09, 2012    | Conduction (CO04-HY) |
| LISN (Support Unit) | MessTec      | NNB-2/16Z | 2001/009       | 9kHz ~ 30MHz    | Feb. 20, 2012    | Conduction (CO04-HY) |
| RF Cable-CON        | HUBER+SUHNER | RG213/U   | 07611832010001 | 9kHz ~ 30MHz    | Mar. 02, 2012    | Conduction (CO04-HY) |

Note: Calibration Interval of instruments listed above is one year.

| Instrument                 | Manufacturer | Model No.        | Serial No.  | Characteristics | Calibration Date | Remark              |
|----------------------------|--------------|------------------|-------------|-----------------|------------------|---------------------|
| Spectrum Analyzer          | R&S          | FSP 40           | 100305      | 9kHz~40GHz      | Feb. 21, 2012    | Conducted (TH01-HY) |
| Spectrum Analyzer          | R&S          | FSV 40           | 15195-01-00 | 9kHz~40GHz      | Jan. 06, 2012    | Conducted (TH01-HY) |
| DC Power Source            | G.W.         | GPC-6030D        | C671845     | DC 1V ~ 60V     | Jun. 19, 2012    | Conducted (TH01-HY) |
| AC Power Source            | G.W.         | APS-9102         | EL920581    | AC 0V ~ 300V    | Jul. 02, 2012    | Conducted (TH01-HY) |
| Temp. and Humidity Chamber | Giant Force  | GTH-225-20-SP-SD | MAA1112-007 | -20 ~ 100°C     | Dec. 07, 2011    | Conducted (TH01-HY) |
| Signal Generator           | R&S          | SMR40            | 100302      | 10MHz ~ 40GHz   | Nov. 22, 2011    | Conducted (TH01-HY) |
| Power Sensor               | Anritsu      | MA2411B          | 1027452     | 300MHz ~ 40GHz  | Jan. 12, 2012    | Conducted (TH01-HY) |
| Power Meter                | Anritsu      | ML2495A          | 1124009     | 300MHz ~ 40GHz  | Jan. 12, 2012    | Conducted (TH01-HY) |
| RF Cable-2m                | HUBER+SUHNER | SUCOFLEX_104     | SN 345672/4 | 1GHz ~ 26.5GHz  | Dec. 03, 2011    | Conducted (TH01-HY) |
| RF Cable-3m                | HUBER+SUHNER | SUCOFLEX_104     | SN 345668/4 | 1GHz ~ 26.5GHz  | Dec. 03, 2011    | Conducted (TH01-HY) |

Note: Calibration Interval of instruments listed above is one year.



**FCC RADIO TEST REPORT**

**Report No. : FR291215**

| Instrument               | Manufacturer   | Model No.    | Serial No.    | Characteristics    | Calibration Date | Remark                   |
|--------------------------|----------------|--------------|---------------|--------------------|------------------|--------------------------|
| 3m Semi Anechoic Chamber | SIDT FRANKONIA | SAC-3M       | 03CH03-HY     | 30MHz ~ 1GHz<br>3m | Dec. 12, 2011    | Radiation<br>(03CH03-HY) |
| Amplifier                | HP             | 8447D        | 2944A08033    | 10kHz ~ 1.3GHz     | May. 10, 2012    | Radiation<br>(03CH03-HY) |
| Amplifier                | Agilent        | 8449B        | 3008A02120    | 1GHz ~ 26.5GHz     | Aug. 16 2012     | Radiation<br>(03CH03-HY) |
| Spectrum Analyzer        | R&S            | FSP30        | 1164.4391.130 | 9kHz ~ 30GHz       | Sep. 27, 2012    | Radiation<br>(03CH03-HY) |
| Bilog Antenna            | SCHAFFNER      | CBL 6112D    | 22237         | 30MHz ~ 1GHz       | Oct. 22, 2011    | Radiation<br>(03CH03-HY) |
| Horn Antenna             | EMCO           | 3115         | 6741          | 1GHz ~ 18GHz       | May 30, 2012     | Radiation<br>(03CH03-HY) |
| Horn Antenna             | SCHWARZBECK    | BBHA9170     | BBHA9170154   | 15GHz ~ 40GHz      | Jan.13, 2012     | Radiation<br>(03CH03-HY) |
| RF Cable-R03m            | Jye Bao        | RG142        | CB021         | 30MHz ~ 1GHz       | Jan. 18, 2012    | Radiation<br>(03CH03-HY) |
| RF Cable-high            | SUHNER         | SUCOFLEX 106 | 03CH03-HY     | 1GHz ~ 40GHz       | Jan. 18, 2012    | Radiation<br>(03CH03-HY) |
| Turn Table               | HD             | DS 420       | 420/650/00    | 0 ~ 360 degree     | N/A              | Radiation<br>(03CH03-HY) |
| Antenna Mast             | MF             | MF-7802      | MF780208179   | 1 ~ 4 m            | N/A              | Radiation<br>(03CH03-HY) |
| Loop Antenna             | R&S            | HFH2-Z2      | 860004/001    | 9kHz ~ 30MHz       | Jul. 29, 2010    | Radiation<br>(03CH03-HY) |

Note: Calibration Interval of instruments listed above is one year.

## 5 Certification of TAF Accreditation



Certificate No. : L1190-120405

財團法人全國認證基金會  
Taiwan Accreditation Foundation

### Certificate of Accreditation

This is to certify that

**Sporton International Inc.**  
**EMC & Wireless Communications Laboratory**  
No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien,  
Taiwan, R.O.C.

**is accredited in respect of laboratory**

**Accreditation Criteria** : ISO/IEC 17025:2005  
**Accreditation Number** : 1190  
**Originally Accredited** : December 15, 2003  
**Effective Period** : January 10, 2010 to January 09, 2013  
**Accredited Scope** : Testing Field, see described in the Appendix  
**Specific Accreditation Program** : Accreditation Program for Designated Testing Laboratory for Commodities Inspection  
Accreditation Program for Telecommunication Equipment Testing Laboratory  
Accreditation Program for BSMI Mutual Recognition Arrangement with Foreign Authorities

  
Jay-San Chen  
President, Taiwan Accreditation Foundation  
Date: April 05, 2012

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