

FCC Test Report

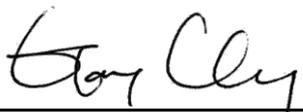
Equipment : Personal Computer
Brand Name : SONY
Model No. : SVF15NB1YL
FCC ID : AK8SVF15NB1YL
Standard : 47 CFR FCC Part 15.247
Operating Band : 2400 MHz – 2483.5 MHz
FCC Classification : DSS
Applicant : Sony Corporation
1-7-1 Konan Minato-ku, Tokyo, Japan
Manufacturer : Sony Corporation
1-7-1 Konan Minato-ku, Tokyo, Japan

This report only contains BR and EDR mode test result.

The product sample received on Jul. 26, 2013 and completely tested on Oct. 17, 2013. 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:



Gary Chang / 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 | 13.560MHz: 48.89 (Margin 1.11dB) - AV 49.58 (Margin 10.42dB) - QP | FCC 15.207 | Complied |
| 3.2 | 15.247(a) | 20dB Bandwidth | BR:1.1201MHz EDR:1.4197 MHz | N/A | Complied |
| 3.2 | 15.247(a) | Carrier Frequency Separation(ChS) | BR:1.0029MHz EDR:1.0029MHz | ChS ≥ 20 dB BW x 2/3. | Complied |
| 3.3 | 15.247(a) | Number of Hopping Frequencies(N) | Max: 79 Min: 20 | N ≥ 15 | Complied |
| 3.4 | 15.247(a) | Time of Occupancy (Dwell Time) | 0.319 sec | 0.4 s within 0.4 x N | Complied |
| 3.5 | 15.247(b) | RF Output Power (Maximum Peak Conducted Output Power) | Power [dBm] BR: -0.9 EDR: 1.33 | Power [dBm] 21 | Complied |
| 3.6 | 15.247(c) | Emissions in Non-Restricted Frequency Bands | Meet the requirement of limit | Non-Restricted Bands: > 20 dBc Restricted Bands: FCC 15.209 | Complied |
| 3.7 | 15.247(c) | Transmitter Radiated Unwanted Emissions | Restricted Bands [dBuV/m at 3m]: 30.000MHz 33.45 (Margin 6.55dB) - PK | Non-Restricted Bands: > 20 dBc Restricted Bands: FCC 15.209 | Complied |

1 General Description

1.1 Information

1.1.1 RF General Information

| RF General Information | | | | |
|---|----------------|---------------------|----------------|-------------|
| Frequency Range (MHz) | Bluetooth Mode | Ch. Frequency (MHz) | Channel Number | Co-location |
| 2400-2483.5 | BR / EDR | 2402-2480 | 0-78 [79] | YES |
| Note 1: Bluetooth BR uses a GFSK (1Mbps). Note 2: Bluetooth EDR uses a combination of $\pi/4$ -DQPSK (2Mbps) and 8DPSK (3Mbps). Note 3: RF output power specifies that Maximum Peak Conducted Output Power. Note 4: Co-location, Co-location is generally defined as simultaneously transmitting (co-transmitting) antennas within 20 cm of each other. (EUT has simultaneously co-transmitting that operating BT and WWAN.) | | | | |

1.1.2 Antenna Information

| Antenna Category | |
|-------------------------------------|---|
| <input type="checkbox"/> | Equipment placed on the market without antennas |
| <input type="checkbox"/> | Integral antenna (antenna permanently attached) |
| <input type="checkbox"/> | Temporary RF connector provided |
| <input type="checkbox"/> | No temporary RF connector provided Transmit chains bypass antenna and soldered temporary RF connector provided for connected measurement. In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator and correct for all losses in the RF path. |
| <input checked="" type="checkbox"/> | External antenna (dedicated antennas) |
| <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. Cat. | Ant. Type | Gain (dBi) | P/N |
| 1 | Integral | PIFA | -0.62 | SONY_IRX-7690(B) |

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 radiopart is fully integrated within another device) Combined Equipment - Brand Name / Model No.: ... |
| <input type="checkbox"/> | Plug-in radio (EUT intended for a variety of host systems) Host System - Brand Name / Model No.: ... |
| <input type="checkbox"/> | Other: |

1.1.4 Test Signal Duty Cycle

| Operated 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) |
| <input checked="" type="checkbox"/> 79.27% - test mode single channel - DH5 | 1.01 |
| Bluetooth ACL packets can be 1, 3, or 5 time slots. The DH1 packet can cover a single time slot. The DH3 packet can cover up to 3 time slots. The DH5 packet can cover up to 5 time slots. Operate DH5 at maximum dwell time and maximum duty cycle. | |

1.1.5 EUT Operational Condition

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

1.2 Accessories and Support Equipment

| Accessories | | | | |
|-------------|------------|------------|-------------|--|
| No. | Equipment | Brand Name | Model Name | Remarks |
| 1 | AC Adapter | SONY | VGP-AC19V75 | I/P: 100-240Vac, 1.2A, 50/60Hz O/P: 19.5Vdc, 2.3A 0.8m non-shielded cable w/o core |
| 2 | Battery | SONY | VGP-BPS40 | 15Vdc, 3170mAh, 48Wh |

| Support Equipment | | | | |
|-------------------|-------------------|---------------|------------|---------|
| No. | Equipment | Brand Name | Model Name | Remarks |
| 1 | iPod Nano | Apple | A1199 | --- |
| 2 | Mouse (USB) | Microsoft | 1004 | --- |
| 3 | NFC Card | SONY | RC-S640/IC | --- |
| 4 | AP | ASUS | RT-AC66U | --- |
| 5 | Bluetooth Headset | Sony Ericsson | Z354 | --- |

1.3 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 Public Notice DA00-705
- ◆ FCC KDB 412172 - Guidelines for Determining the ERP and EIRP

1.4 Testing Location Information

| Testing Location | | | | |
|---|---------------|---|------------------|---------------|
| <input checked="" type="checkbox"/> | Sporton Lab | ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-318-0055 | | |
| <input checked="" type="checkbox"/> | ICC Lab | ADD : No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsein 333, Taiwan (R.O.C.) TEL : 886-3-271-8666 FAX : 886-3-318-0155 | | |
| Test Condition | Test Site No. | Test Engineer | Test Environment | Test Date |
| RF Conducted | TH01-HY | Aaron Liang | 22.6°C / 61.4% | Sep. 28, 2013 |
| AC Conduction | CO04-HY | Skys Huang | 22°C / 55% | Sep. 30, 2013 |
| Radiated Emission below 1GHz | 03CH03-HY | Skys Huang | 25.8°C / 56.3% | Sep. 30, 2013 |
| *Radiated Emission above 1GHz | 03CH02-WS | Skys Huang | 25°C / 65% | Sep. 27, 2013 |
| Test site registered number [643075] with FCC. (Test site: 03CH03-HY) Test site registered number [4086B-1] with IC. (Test site: 03CH03-HY) Test site registered number [657002] with FCC. (Test site: 03CH02-WS) Test site registered number [10807A-2] with IC. (Test site: 03CH02-WS) | | | | |

Note: * Sporton Lab subcontracts this test item to ICC lab (TAF: 2732).

ICC lab is a TAF accreditation test firm and also is an approved provider of Sporton lab.

1.5 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 |
| Emission bandwidth, | | ±1.42 % | N/A |
| RF output power, conducted | | ±0.63 dB | N/A |
| All emissions, radiated | 30 – 1000 MHz | ±3.9 dB | N/A |
| | Above 1GHz | ±4.2 dB | 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 The Worst Case Modulation Configuration

| Worst Modulation Used for Conformance Testing | | | | | |
|---|------------------------------------|-----------|-----------------|-----------------------|------------|
| Bluetooth Mode | Transmit Chains (N _{TX}) | Data Rate | Modulation Mode | RF Output Power (dBm) | Worst Mode |
| BR | 1 | 1 Mbps | BR-1Mbps | -0.9 | EDR-3Mbps |
| EDR | 1 | 2 Mbps | EDR-2Mbps | 1.12 | |
| EDR | 1 | 3 Mbps | EDR-3Mbps | 1.33 | |

2.2 Test Channel Frequencies Configuration

| Test Channel Frequencies Configuration | |
|--|---|
| Bluetooth Mode | Test Channel Frequencies (MHz) – FX (Frequencies Abbreviations) |
| BR / EDR | 2402-(F1), 2440-(F2), 2480-(F3) |

2.3 The Worst Case Power Setting Parameter

| The Worst Case Power Setting Parameter | | | |
|--|----------|----------|----------|
| Test Software Version | BlueTool | | |
| Modulation Mode | 2402 MHz | 2440 MHz | 2480 MHz |
| BR | 0 | 0 | 0 |
| EDR | 0 | 0 | 0 |
| EDR | 0 | 0 | 0 |

2.4 The Worst Case Measurement Configuration

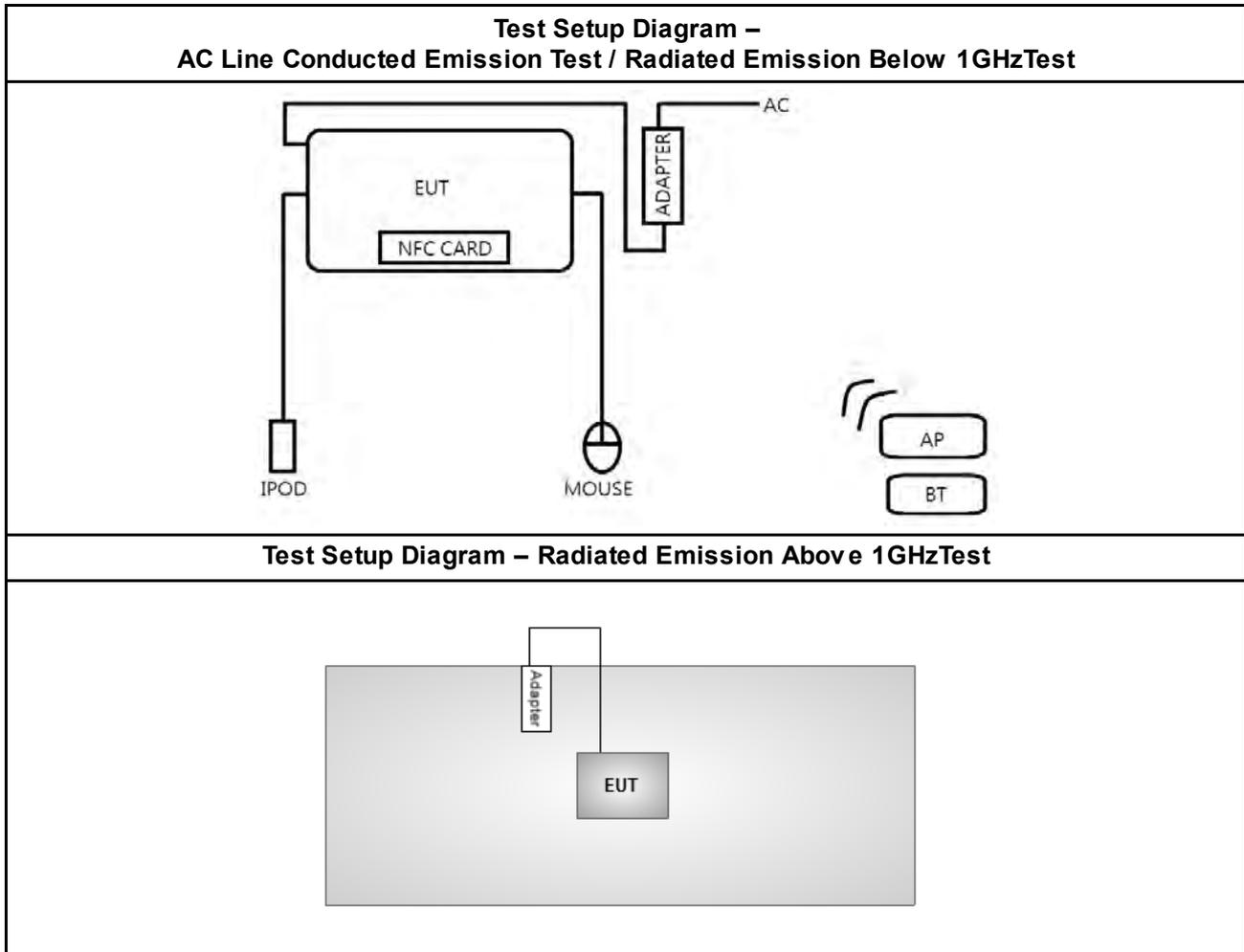
| The Worst Case Mode for Following Conformance Tests | |
|---|---|
| Tests Item | AC power-line conducted emissions |
| Condition | AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz |
| Operating Mode | Operating Mode Description |
| 1 | Normal Link |

| The Worst Case Mode for Following Conformance Tests | |
|---|--|
| Tests Item | RF Output Power |
| Test Condition | Conducted measurement at transmit chains |
| Modulation Mode | BR-1Mbps, EDR-3Mbps |

| The Worst Case Mode for Following Conformance Tests | |
|---|---|
| Tests Item | 20dB Bandwidth, Carrier Frequency Separation (ChS) Number of Hopping Frequencies (N), Time of Occupancy (Dwell Time) |
| Test Condition | Conducted measurement at transmit chains |
| Modulation Mode | EDR-3Mbps |

| The Worst Case Mode for Following Conformance Tests | | | |
|---|---|---|---|
| Tests Item | Transmitter Radiated Unwanted Emissions Emissions in Non-Restricted Frequency Bands | | |
| Test Condition | Radiated measurement | | |
| User Position | <input type="checkbox"/> EUT will be placed in fixed position. | | |
| | <input type="checkbox"/> EUT will be placed in mobile position and operating multiple positions. EUT shall be performed two orthogonal planes. The worst planes is X. | | |
| | <input checked="" type="checkbox"/> EUT will be a hand-held or body-worn battery-powered devices and operating multiple positions. EUT shall be performed three orthogonal planes. The worst planes is Z. | | |
| Operating Mode | <input checked="" type="checkbox"/> 1. Transmit | | |
| Modulation Mode | BR-1Mbps, EDR-3Mbps | | |
| Orthogonal Planes of EUT | X Plane | Y Plane | Z Plane |
| |  |  |  |

2.5 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.

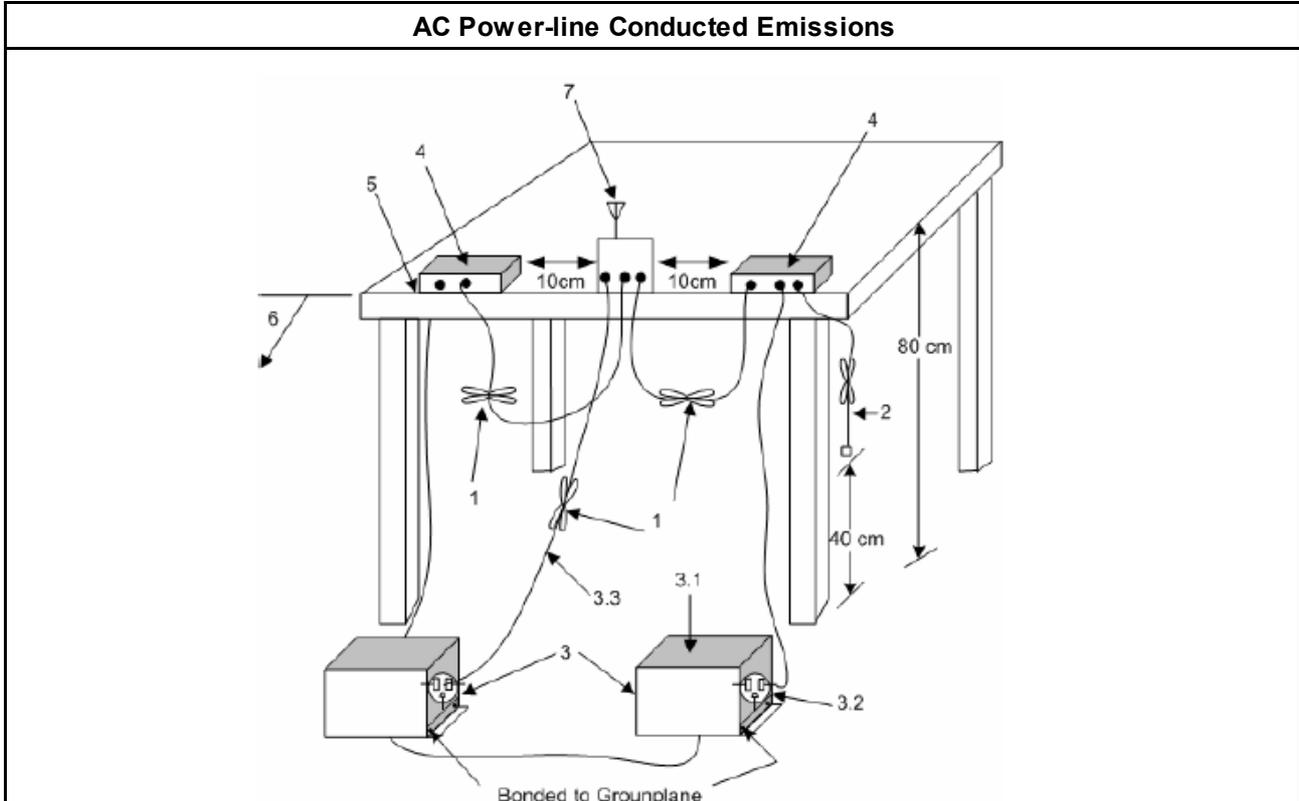
3.1.2 Measuring Instruments

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

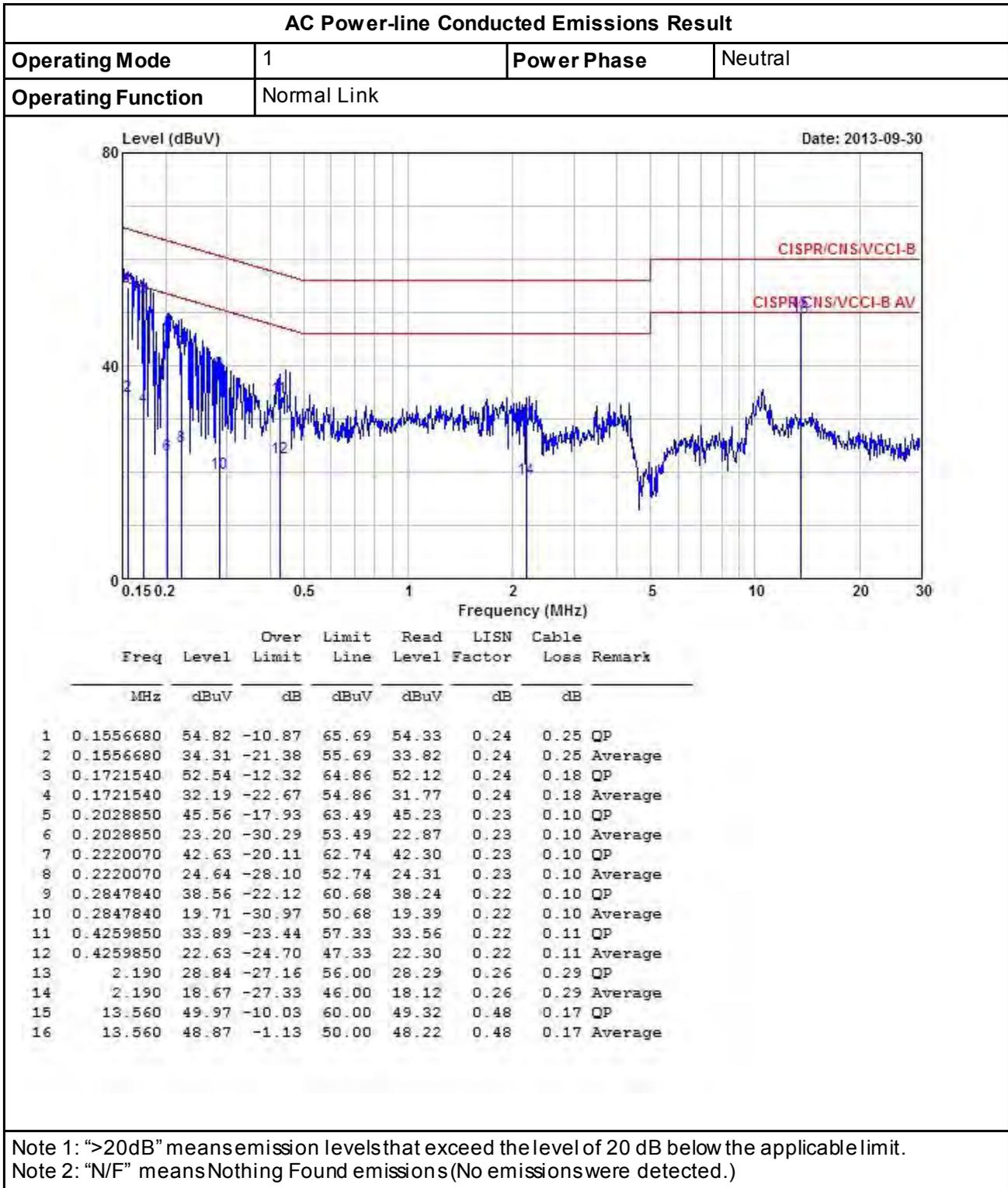
3.1.3 Test Procedures

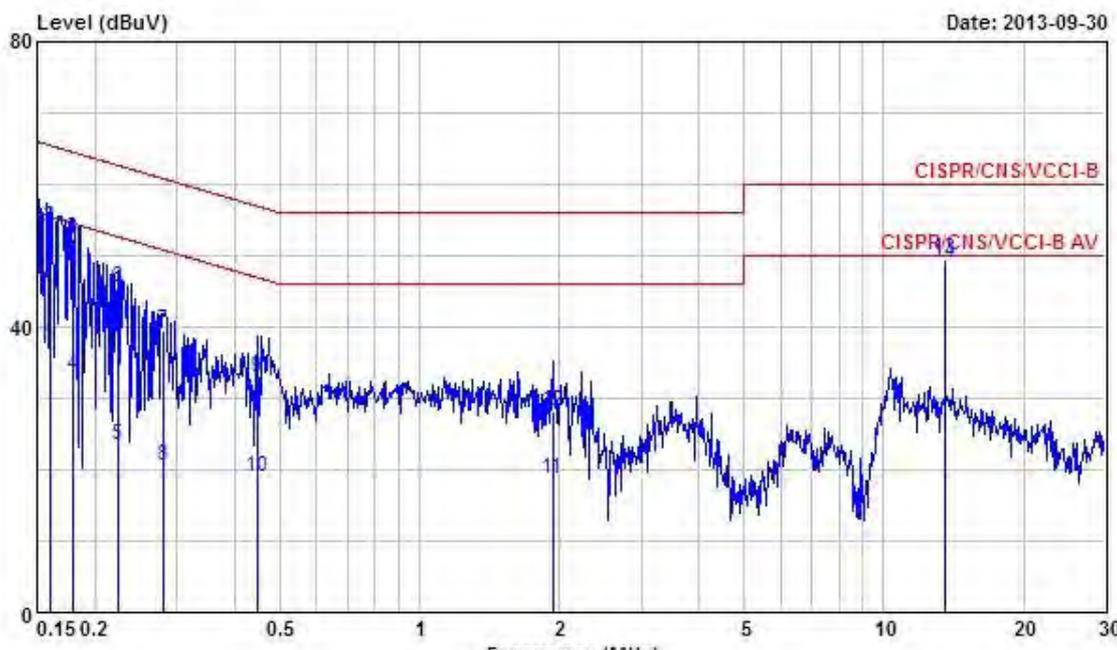
| Test Method |
|--|
| <input checked="" type="checkbox"/> Refer as ANSI C63.10-2009, clause 6.2 for AC power-line conducted emissions. |

3.1.4 Test Setup



3.1.5 Test Result of AC Power-line Conducted Emissions



| AC Power-line Conducted Emissions Result | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------|-------------|------------|------------|------------|-------------|------------|------------|------------|-------------|------------|--------|--|-----|------|----|------|------|----|----|--|---|-----------|-------|--------|-------|-------|------|------|---------|---|-----------|-------|--------|-------|-------|------|------|----|---|-----------|-------|--------|-------|-------|------|------|----|---|-----------|-------|--------|-------|-------|------|------|---------|---|-----------|-------|--------|-------|-------|------|------|---------|---|-----------|-------|--------|-------|-------|------|------|----|---|-----------|-------|--------|-------|-------|------|------|----|---|-----------|-------|--------|-------|-------|------|------|---------|---|-----------|-------|--------|-------|-------|------|------|----|----|-----------|-------|--------|-------|-------|------|------|---------|----|-------|-------|--------|-------|-------|------|------|---------|----|-------|-------|--------|-------|-------|------|------|----|----|--------|-------|--------|-------|-------|------|------|----|----|--------|-------|-------|-------|-------|------|------|---------|
| Operating Mode | 1 | Power Phase | Line | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operating Function | Normal Link | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date: 2013-09-30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Freq</th> <th>Level</th> <th>Over Limit</th> <th>Limit Line</th> <th>Read Level</th> <th>LISN Factor</th> <th>Cable Loss</th> <th>Remark</th> </tr> <tr> <th></th> <th>MHz</th> <th>dBuV</th> <th>dB</th> <th>dBuV</th> <th>dBuV</th> <th>dB</th> <th>dB</th> <th></th> </tr> </thead> <tbody> <tr><td>1</td><td>0.1606960</td><td>37.32</td><td>-18.11</td><td>55.43</td><td>36.98</td><td>0.11</td><td>0.23</td><td>Average</td></tr> <tr><td>2</td><td>0.1606960</td><td>53.98</td><td>-11.45</td><td>65.43</td><td>53.64</td><td>0.11</td><td>0.23</td><td>QP</td></tr> <tr><td>3</td><td>0.1786590</td><td>52.49</td><td>-12.06</td><td>64.55</td><td>52.21</td><td>0.11</td><td>0.17</td><td>QP</td></tr> <tr><td>4</td><td>0.1786590</td><td>33.06</td><td>-21.49</td><td>54.55</td><td>32.78</td><td>0.11</td><td>0.17</td><td>Average</td></tr> <tr><td>5</td><td>0.2231870</td><td>23.37</td><td>-29.33</td><td>52.70</td><td>23.16</td><td>0.11</td><td>0.10</td><td>Average</td></tr> <tr><td>6</td><td>0.2231870</td><td>45.63</td><td>-17.07</td><td>62.70</td><td>45.42</td><td>0.11</td><td>0.10</td><td>QP</td></tr> <tr><td>7</td><td>0.2817820</td><td>39.37</td><td>-21.39</td><td>60.76</td><td>39.16</td><td>0.11</td><td>0.10</td><td>QP</td></tr> <tr><td>8</td><td>0.2817820</td><td>20.50</td><td>-30.26</td><td>50.76</td><td>20.29</td><td>0.11</td><td>0.10</td><td>Average</td></tr> <tr><td>9</td><td>0.4491640</td><td>32.79</td><td>-24.10</td><td>56.89</td><td>32.58</td><td>0.10</td><td>0.11</td><td>QP</td></tr> <tr><td>10</td><td>0.4491640</td><td>19.02</td><td>-27.87</td><td>46.89</td><td>18.81</td><td>0.10</td><td>0.11</td><td>Average</td></tr> <tr><td>11</td><td>1.940</td><td>18.68</td><td>-27.32</td><td>46.00</td><td>18.25</td><td>0.13</td><td>0.30</td><td>Average</td></tr> <tr><td>12</td><td>1.940</td><td>28.26</td><td>-27.74</td><td>56.00</td><td>27.83</td><td>0.13</td><td>0.30</td><td>QP</td></tr> <tr><td>13</td><td>13.560</td><td>49.58</td><td>-10.42</td><td>60.00</td><td>49.14</td><td>0.27</td><td>0.17</td><td>QP</td></tr> <tr><td>14</td><td>13.560</td><td>48.89</td><td>-1.11</td><td>50.00</td><td>48.45</td><td>0.27</td><td>0.17</td><td>Average</td></tr> </tbody> </table> | | | | | Freq | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark | | MHz | dBuV | dB | dBuV | dBuV | dB | dB | | 1 | 0.1606960 | 37.32 | -18.11 | 55.43 | 36.98 | 0.11 | 0.23 | Average | 2 | 0.1606960 | 53.98 | -11.45 | 65.43 | 53.64 | 0.11 | 0.23 | QP | 3 | 0.1786590 | 52.49 | -12.06 | 64.55 | 52.21 | 0.11 | 0.17 | QP | 4 | 0.1786590 | 33.06 | -21.49 | 54.55 | 32.78 | 0.11 | 0.17 | Average | 5 | 0.2231870 | 23.37 | -29.33 | 52.70 | 23.16 | 0.11 | 0.10 | Average | 6 | 0.2231870 | 45.63 | -17.07 | 62.70 | 45.42 | 0.11 | 0.10 | QP | 7 | 0.2817820 | 39.37 | -21.39 | 60.76 | 39.16 | 0.11 | 0.10 | QP | 8 | 0.2817820 | 20.50 | -30.26 | 50.76 | 20.29 | 0.11 | 0.10 | Average | 9 | 0.4491640 | 32.79 | -24.10 | 56.89 | 32.58 | 0.10 | 0.11 | QP | 10 | 0.4491640 | 19.02 | -27.87 | 46.89 | 18.81 | 0.10 | 0.11 | Average | 11 | 1.940 | 18.68 | -27.32 | 46.00 | 18.25 | 0.13 | 0.30 | Average | 12 | 1.940 | 28.26 | -27.74 | 56.00 | 27.83 | 0.13 | 0.30 | QP | 13 | 13.560 | 49.58 | -10.42 | 60.00 | 49.14 | 0.27 | 0.17 | QP | 14 | 13.560 | 48.89 | -1.11 | 50.00 | 48.45 | 0.27 | 0.17 | Average |
| | Freq | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0.1606960 | 37.32 | -18.11 | 55.43 | 36.98 | 0.11 | 0.23 | Average | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 0.1606960 | 53.98 | -11.45 | 65.43 | 53.64 | 0.11 | 0.23 | QP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 0.1786590 | 52.49 | -12.06 | 64.55 | 52.21 | 0.11 | 0.17 | QP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 0.1786590 | 33.06 | -21.49 | 54.55 | 32.78 | 0.11 | 0.17 | Average | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 0.2231870 | 23.37 | -29.33 | 52.70 | 23.16 | 0.11 | 0.10 | Average | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | 0.2231870 | 45.63 | -17.07 | 62.70 | 45.42 | 0.11 | 0.10 | QP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 0.2817820 | 39.37 | -21.39 | 60.76 | 39.16 | 0.11 | 0.10 | QP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 0.2817820 | 20.50 | -30.26 | 50.76 | 20.29 | 0.11 | 0.10 | Average | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | 0.4491640 | 32.79 | -24.10 | 56.89 | 32.58 | 0.10 | 0.11 | QP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 0.4491640 | 19.02 | -27.87 | 46.89 | 18.81 | 0.10 | 0.11 | Average | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | 1.940 | 18.68 | -27.32 | 46.00 | 18.25 | 0.13 | 0.30 | Average | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | 1.940 | 28.26 | -27.74 | 56.00 | 27.83 | 0.13 | 0.30 | QP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | 13.560 | 49.58 | -10.42 | 60.00 | 49.14 | 0.27 | 0.17 | QP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | 13.560 | 48.89 | -1.11 | 50.00 | 48.45 | 0.27 | 0.17 | Average | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit. Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

3.2 20dB Bandwidth and Carrier Frequency Separation

3.2.1 20dB Bandwidth and Carrier Frequency Separation Limit

| 20dB Bandwidth and Carrier Frequency Separation Limit for Frequency Hopping Systems | |
|---|---|
| <input checked="" type="checkbox"/> | 2400-2483.5 MHz Band: |
| <input type="checkbox"/> | N ≥ 79 and ChS ≥ MAX (20 dB bandwidth, 25 kHz). |
| <input checked="" type="checkbox"/> | N ≥ 15 and ChS ≥ MAX (20 dB bandwidth x 2/3, 25 kHz). |
| N: Number of Hopping Frequencies; ChS: Hopping Channel Separation | |

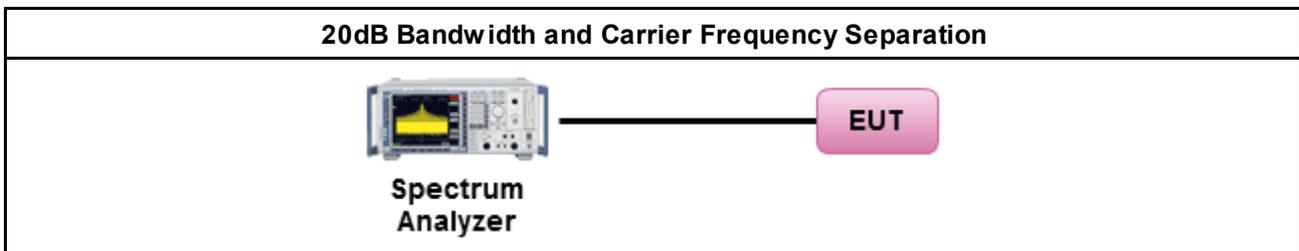
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

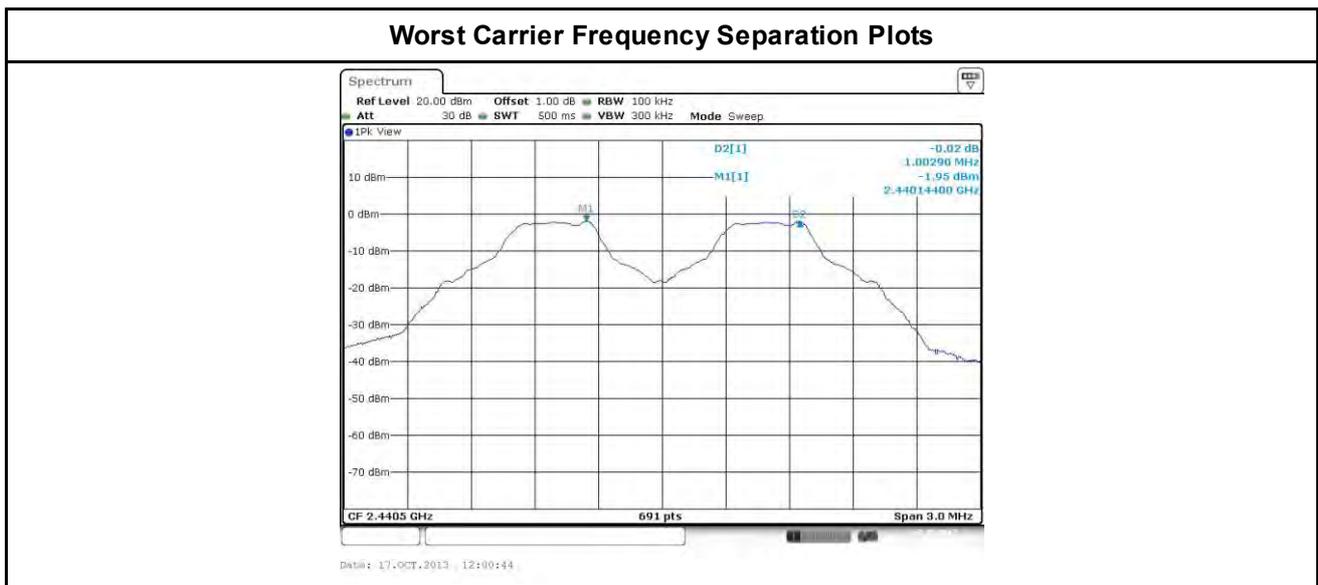
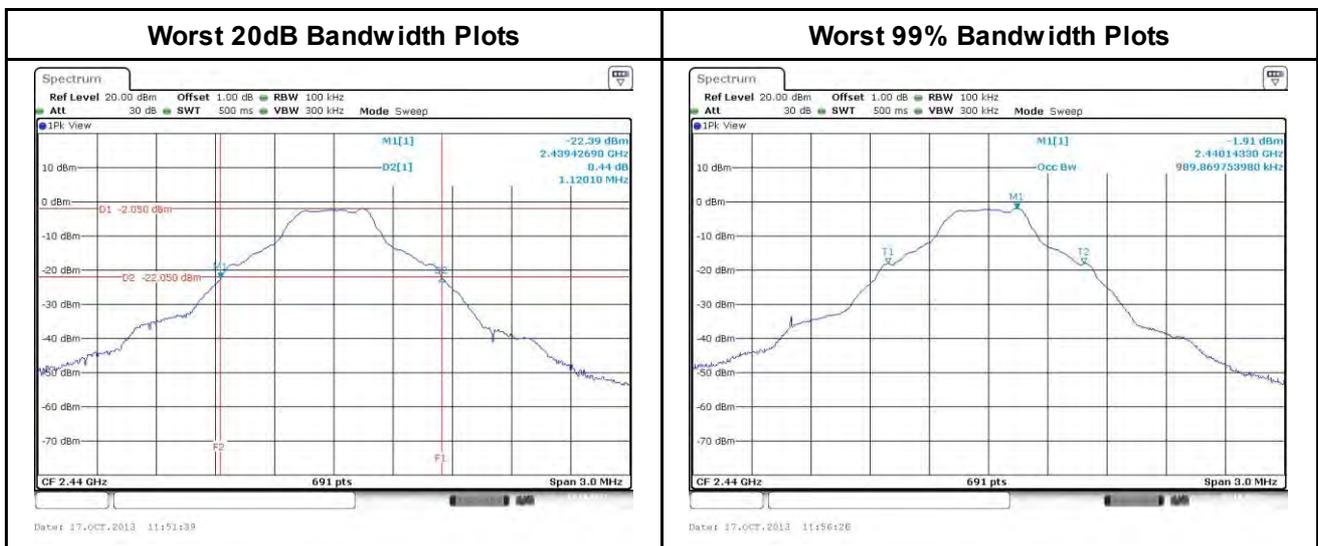
| Test Method | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 6.9.1 for 20 dB bandwidth measurement. |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 7.7.2 for carrier frequency separation measurement. |
| <input checked="" type="checkbox"/> | For conducted measurement. |
| <input checked="" type="checkbox"/> | The EUT supports single transmit chain and measurements performed on this transmit chain. |
| <input type="checkbox"/> | The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case. |

3.2.4 Test Setup



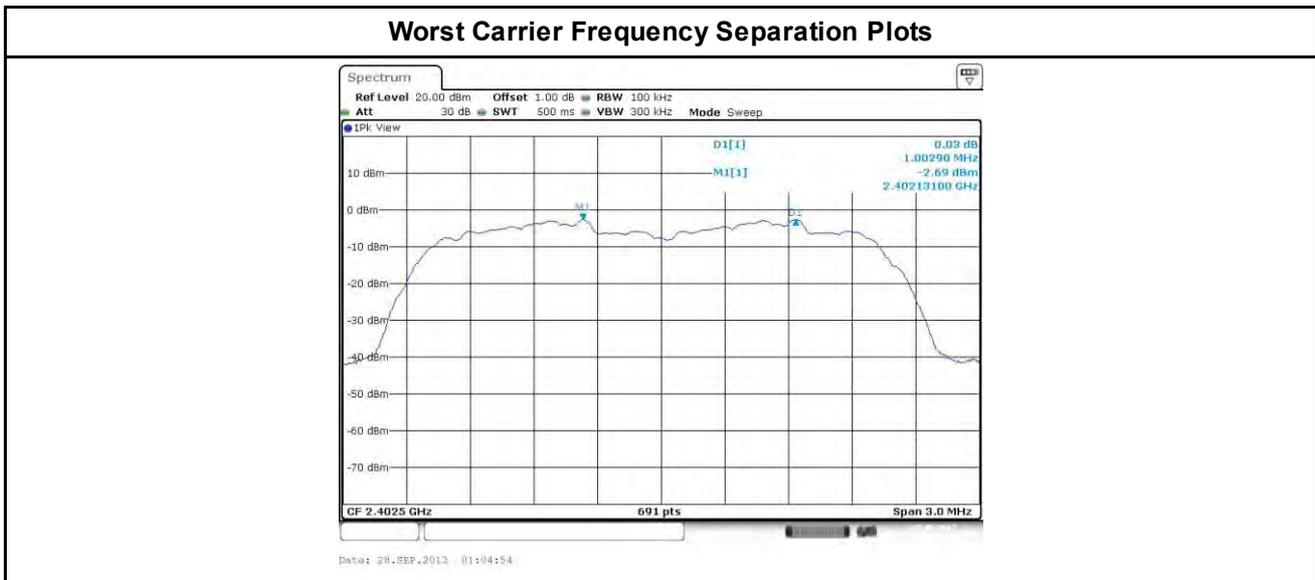
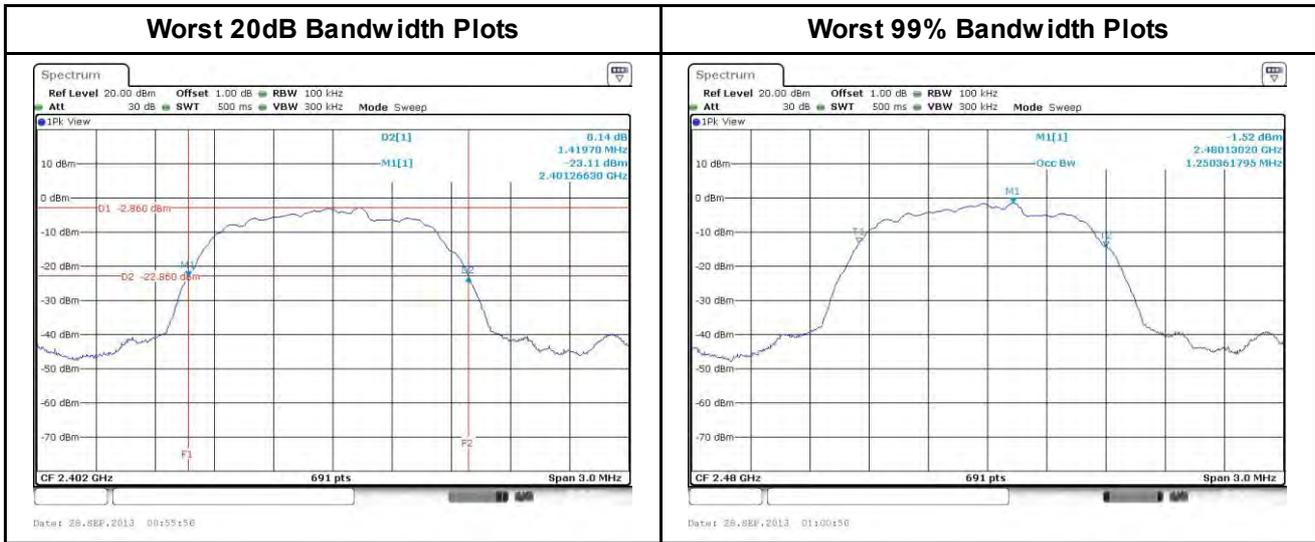
3.2.5 Test Result of 20dB Bandwidth and Carrier Frequency Separation

| 20dB Bandwidth and Carrier Frequency Separation Result | | | | | |
|--|-------------|----------------------|---------------------|--------------------------|---------------------------------|
| Modulation Mode | Freq. (MHz) | 20dB Bandwidth (MHz) | 99% Bandwidth (MHz) | Channel Separation (MHz) | Channel Separation Limits (MHz) |
| BR-1Mbps | 2402 | 1.1158 | 0.9855 | 1.0029 | 0.7439 |
| BR-1Mbps | 2440 | 1.1201 | 0.9898 | 1.0029 | 0.7467 |
| BR-1Mbps | 2480 | 1.1201 | 0.9855 | 1.0029 | 0.7467 |
| Result | | Complied | | | |





| 20dB Bandwidth and Carrier Frequency Separation Result | | | | | |
|--|-------------|----------------------|---------------------|--------------------------|---------------------------------|
| Modulation Mode | Freq. (MHz) | 20dB Bandwidth (MHz) | 99% Bandwidth (MHz) | Channel Separation (MHz) | Channel Separation Limits (MHz) |
| EDR-3Mbps | 2402 | 1.4197 | 1.2460 | 1.0029 | 0.9465 |
| EDR-3Mbps | 2440 | 1.4197 | 1.2460 | 1.0029 | 0.9465 |
| EDR-3Mbps | 2480 | 1.4197 | 1.2503 | 1.0029 | 0.9465 |
| Result | | Complied | | | |



3.3 Number of Hopping Frequencies

3.3.1 Number of Hopping Frequencies Limit

| Number of Hopping Frequencies Limit for Frequency Hopping Systems | |
|---|---|
| <input checked="" type="checkbox"/> | 2400-2483.5 MHz Band: |
| <input type="checkbox"/> | $N \geq 79$ and $ChS \geq MAX$ (20 dB bandwidth, 25 kHz). |
| <input checked="" type="checkbox"/> | $N \geq 15$ and $ChS \geq MAX$ (20 dB bandwidth x 2/3, 25 kHz). |
| N: Number of Hopping Frequencies; ChS: Hopping Channel Separation | |

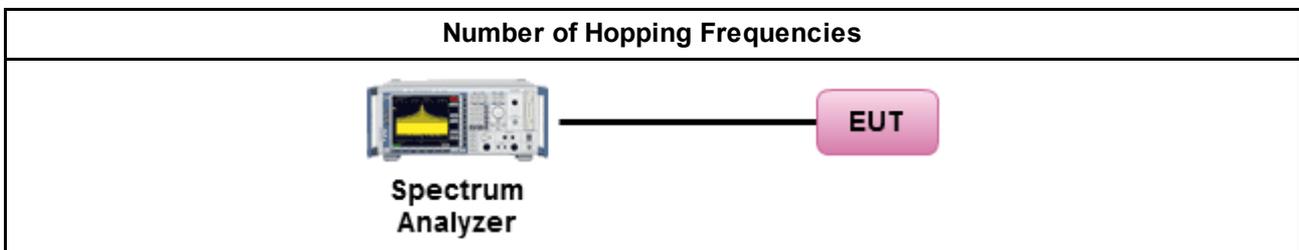
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

| Test Method | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 7.7.3 for number of hopping frequencies measurement. |
| <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 type="checkbox"/> | The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case. |

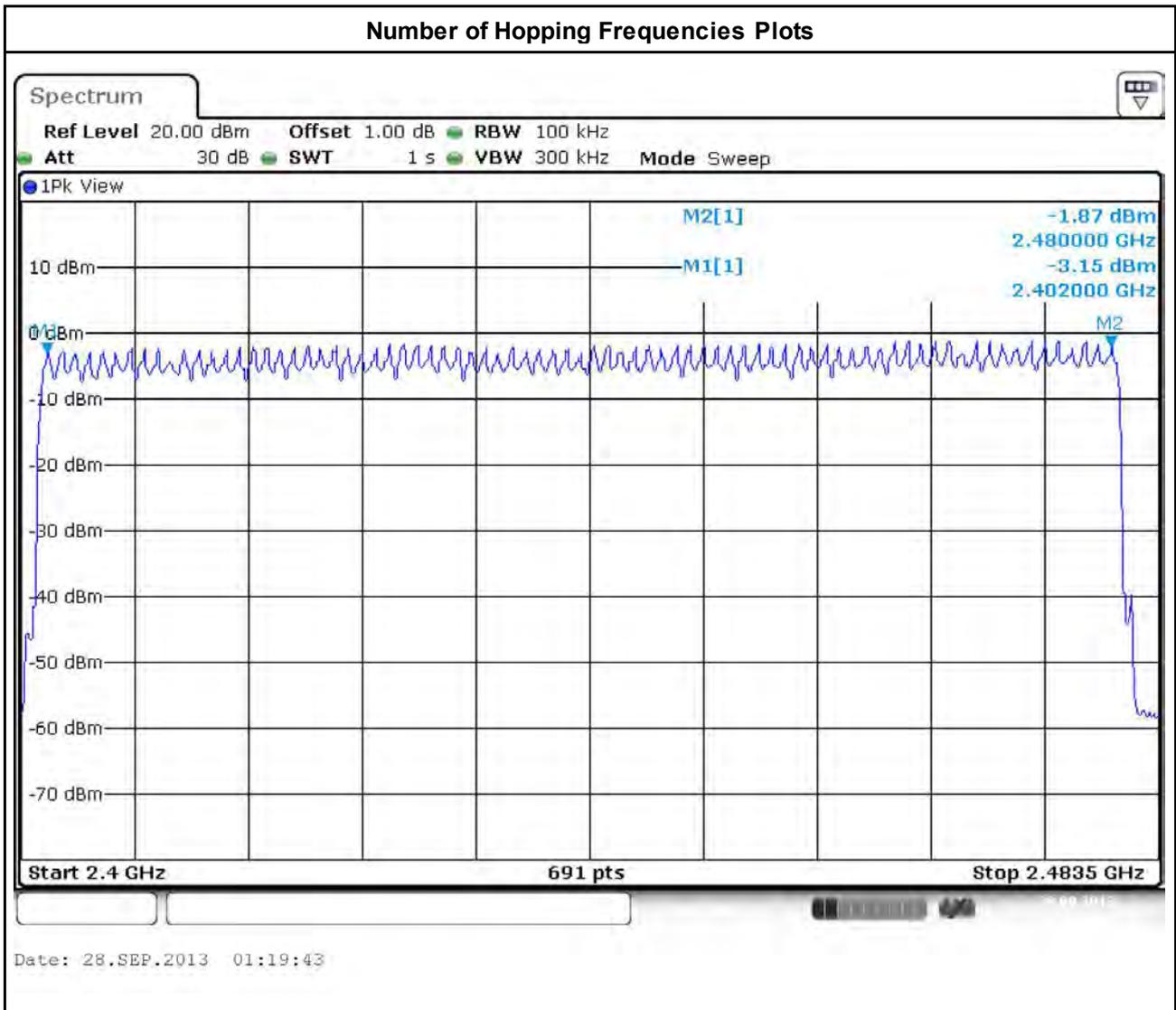
3.3.4 Test Setup





3.3.5 Test Result of Number of Hopping Frequencies

| Number of Hopping Frequencies Result | | | |
|--------------------------------------|-----------------|----------------------------|-------------------------------|
| Modulation Mode | Freq. (MHz) | Hopping Channel Number (N) | Hopping Channel Number Limits |
| EDR-3Mbps | 2402-2480 | 79 | 15 |
| Result | Complied | | |



3.4 Time of Occupancy (Dwell Time)

3.4.1 Time of Occupancy (Dwell Time) Limit

| Time of Occupancy (Dwell Time) Limit for Frequency Hopping Systems |
|--|
| <input checked="" type="checkbox"/> 2400-2483.5 MHz Band: Dwell time ≤ 0.4 second within $0.4 \times N$ |
| N: Number of Hopping Frequencies |

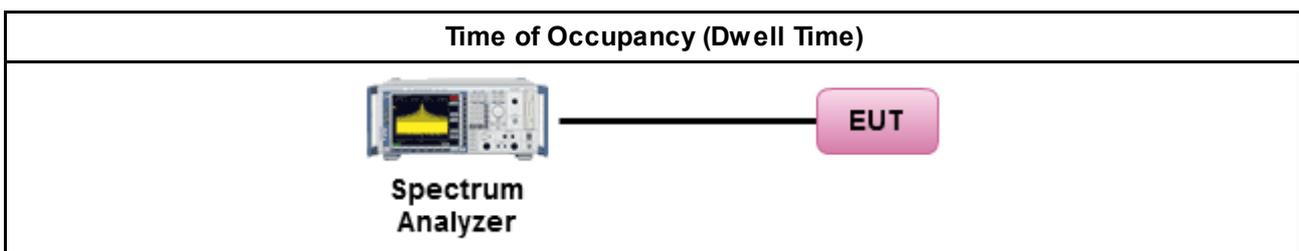
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

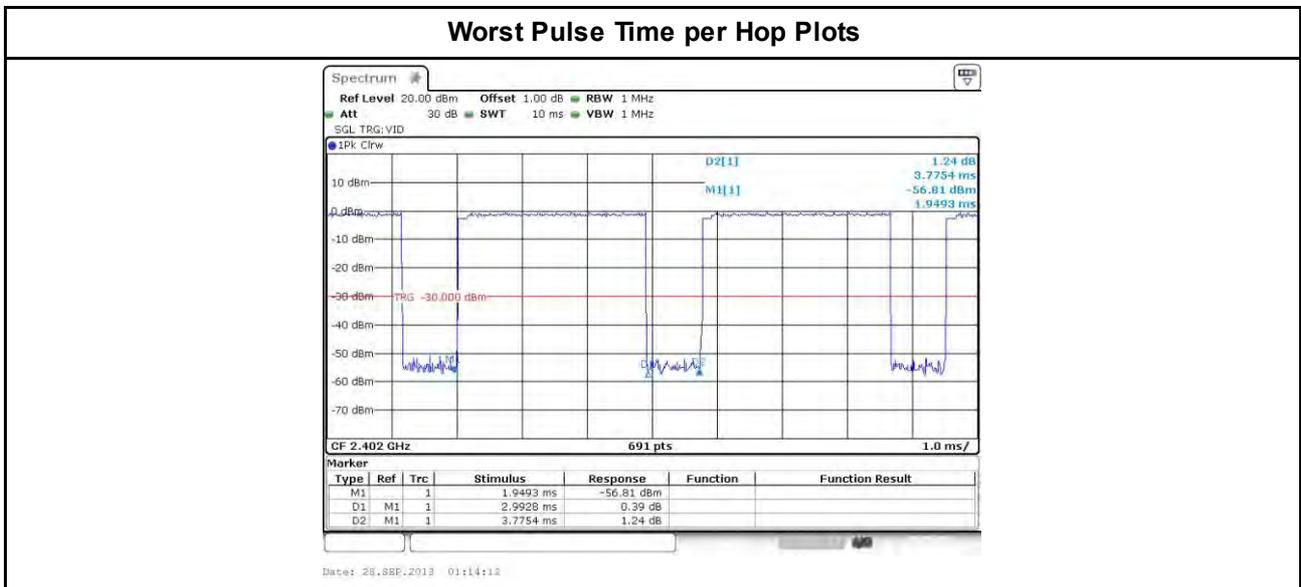
| Test Method |
|--|
| <input checked="" type="checkbox"/> Refer as ANSI C63.10, clause 7.7.4 for dwell time measurement. |
| <input checked="" type="checkbox"/> Bluetooth ACL packets can be 1, 3, or 5 time slots. Following as dwell time. Operate DH5 at maximum dwell time and maximum duty cycle. |
| <input type="checkbox"/> The DH1 packet can cover a single time slot. A maximum length packet has duration of 1 time slots. The hopping rate is 1600 hops/second so the maximum dwell time is $1/1600$ seconds, or 0.625ms. DH1 Packet permit maximum $1600 / 79 / 2 = 10.12$ hops per second in each channel (1 time slot RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times $10.12 \times 31.6 = 320$ within 31.6 seconds. |
| <input type="checkbox"/> The DH3 packet can cover up to 3 time slots. A maximum length packet has duration of 3 time slots. The hopping rate is 1600 hops/second so the maximum dwell time is $3/1600$ seconds, or 1.875ms. DH3 Packet permit maximum $1600 / 79 / 4 = 5.06$ hops per second in each channel (3 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times $5.06 \times 31.6 = 160$ within 31.6 seconds. |
| <input checked="" type="checkbox"/> The DH5 packet can cover up to 5 time slots. Operate DH5 at maximum dwell time and maximum duty cycle. A maximum length packet has duration of 5 time slots. The hopping rate is 1600 hops/second so the maximum dwell time is $5/1600$ seconds, or 3.125ms. DH5 Packet permit maximum $1600 / 79 / 6 = 3.37$ hops per second in each channel (5 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times $3.37 \times 31.6 = 106.6$ within 31.6 seconds |
| <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 type="checkbox"/> The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case. |

3.4.4 Test Setup



3.4.5 Test Result of Time of Occupancy (Dwell Time)

| Time of Occupancy (Dwell Time) Result | | | | | |
|---|-------------|-------------------------|----------------------------------|---------------------------------|-----------------------|
| Modulation Mode | Freq. (MHz) | Pulse Time per Hop (ms) | Number of Pulse in [0.4 x N sec] | Dwell Time in [0.4 x N sec] (s) | Dwell Time Limits (s) |
| EDR-3Mbps | 2402 | 2.9928 | 106.7 | 0.319 | 0.4 |
| Result | | Complied | | | |
| <p>Bluetooth ACL packets can be 1, 3, or 5 time slots. The DH1 packet can cover a single time slot. The DH3 packet can cover up to 3 time slots. The DH5 packet can cover up to 5 time slots. Operate DH5 at maximum dwell time and maximum duty cycle. A maximum length packet has duration of 5 time slots. The hopping rate is 1600 hops/second so the maximum dwell time is 5/1600 seconds, or 3.125ms.</p> | | | | | |



3.5 RF Output Power

3.5.1 RF Output Power Limit

| RF Output Power Limit for Frequency Hopping Systems | |
|--|--|
| Maximum Peak Conducted Output Power Limit | |
| <input checked="" type="checkbox"/> 2400-2483.5 MHz Band: | |
| | <input type="checkbox"/> For Hopping Channel: $N \geq 79$ |
| | <input type="checkbox"/> If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W) |
| | <input type="checkbox"/> If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm |
| | <input checked="" type="checkbox"/> For Hopping Channel: $N \geq 15$ |
| | <input checked="" type="checkbox"/> If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 21$ dBm (0.125 W) |
| | <input type="checkbox"/> If $G_{TX} > 6$ dBi, then $P_{Out} = 21 - (G_{TX} - 6)$ dBm |
| e.i.r.p. Power Limit: | |
| <input checked="" type="checkbox"/> 2400-2483.5 MHz Band: | |
| | <input type="checkbox"/> For Hopping Channel: $N \geq 79 - P_{eirp} \leq 36$ dBm (4 W) |
| | <input checked="" type="checkbox"/> For Hopping Channel: $79 > N \geq 15 - P_{eirp} \leq 27$ dBm (0.5 W) |
| G_{TX} = the maximum transmitting antenna directional gain in dBi. P_{eirp} = e.i.r.p. Power in dBm. N: Number of Hopping Frequencies ChS: Hopping Channel Separation | |

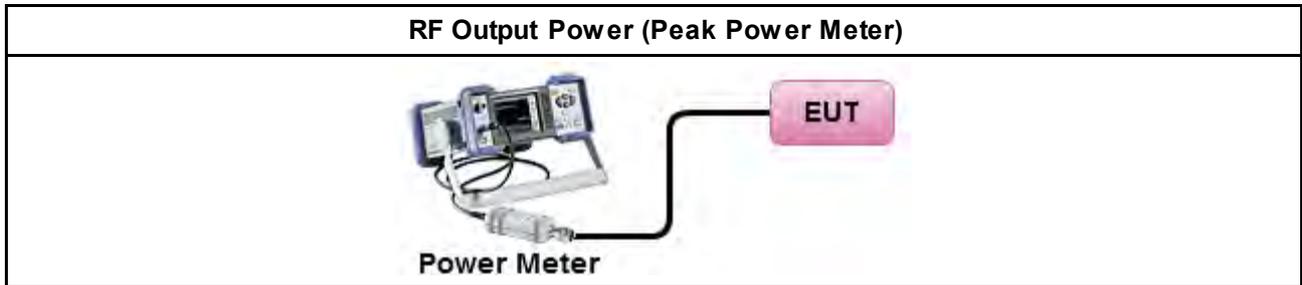
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

| Test Method | |
|---|---|
| <input checked="" type="checkbox"/> Maximum Peak Conducted Output Power | |
| | <input type="checkbox"/> Refer as FCC DA 00-0705, spectrum analyzer for peak power. |
| | <input checked="" type="checkbox"/> Refer as FCC DA 00-0705, peak power meter for peak power. |
| | <input type="checkbox"/> Refer as ANSI C63.10, clause 6.10.2.1 a) for peak power meter. |
| | <input type="checkbox"/> Refer as ANSI C63.10, clause 6.10.2.1 a) for spectrum analyzer - (RBW \geq EBW). |
| <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 type="checkbox"/> The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case. |

3.5.4 Test Setup



3.5.5 Test Result of Maximum Peak Conducted Output Power

| Maximum Peak Conducted Output Power Result | | | | | | |
|--|-------------|-----------------------|-------------|--------------------|------------|------------|
| Condition | | RF Output Power (dBm) | | | | |
| Modulation Mode | Freq. (MHz) | RF Output Power | Power Limit | Antenna Gain (dBi) | EIRP Power | EIRP Limit |
| BR-1Mbps | 2402 | -2.01 | 21 | -0.62 | -2.63 | 27 |
| BR-1Mbps | 2440 | -1.11 | 21 | -0.62 | -1.73 | 27 |
| BR-1Mbps | 2480 | -0.9 | 21 | -0.62 | -1.52 | 27 |
| EDR-3Mbps | 2402 | -0.1 | 21 | -0.62 | -0.72 | 27 |
| EDR-3Mbps | 2440 | 1.04 | 21 | -0.62 | 0.42 | 27 |
| EDR-3Mbps | 2480 | 1.33 | 21 | -0.62 | 0.71 | 27 |
| Result | | Complied | | | | |

3.6 Emissions in Non-Restricted Frequency Bands

3.6.1 Emissions in Non-Restricted Frequency Bands Limit

Peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz

3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

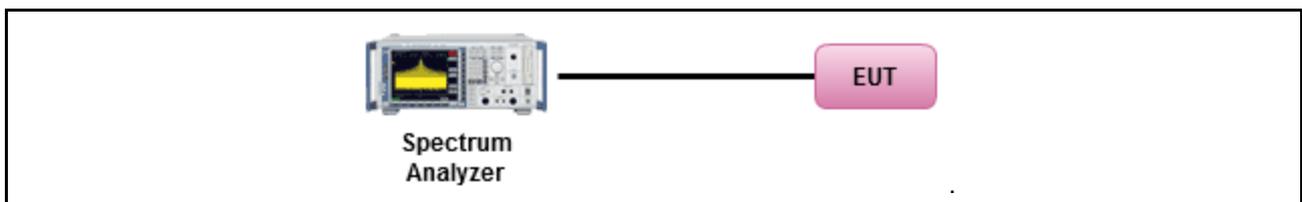
Reference level measurement

1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Use the peakmarker function to determine the maximum PSD level

Emission level measurement

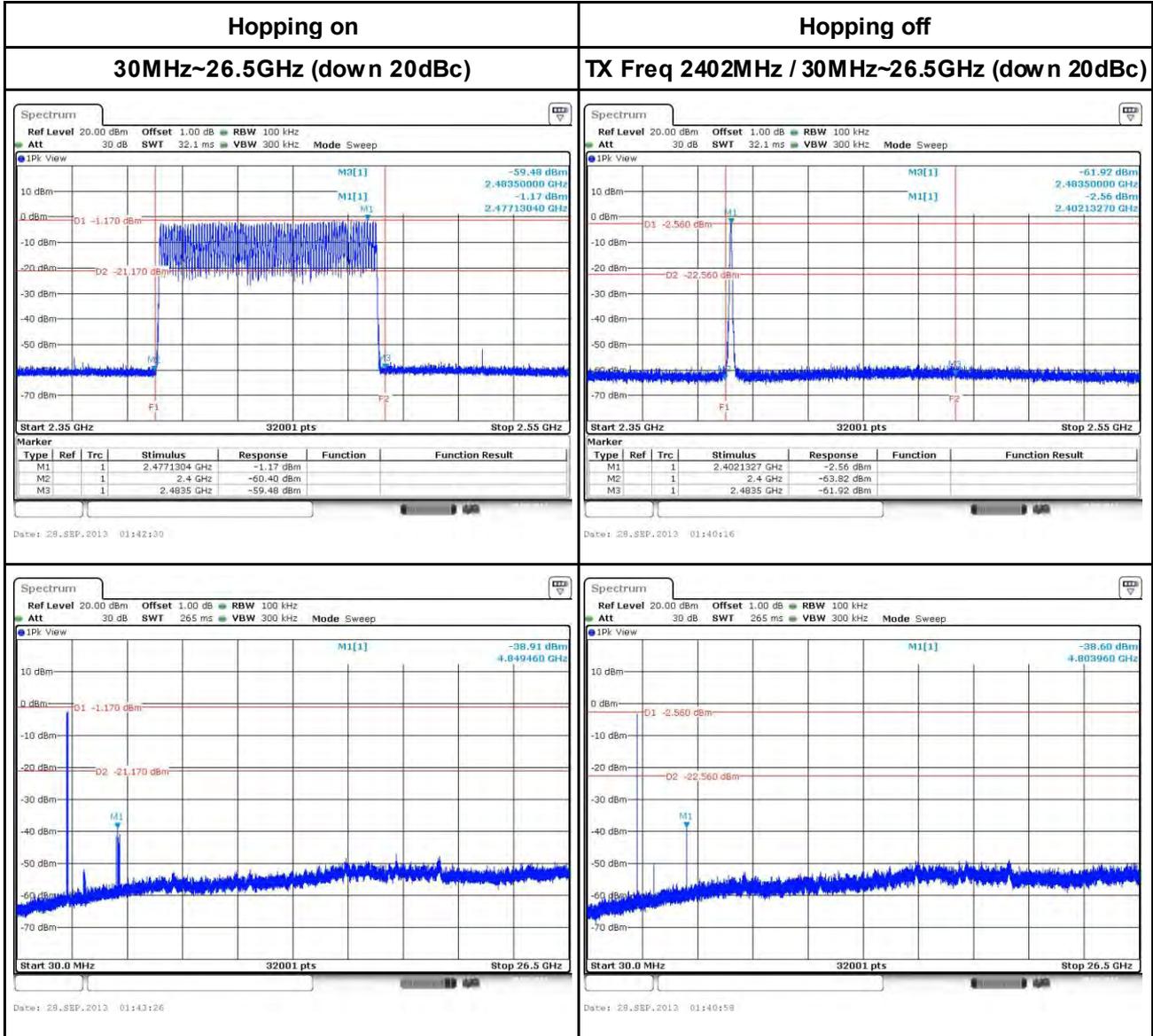
1. Set RBW=100kHz, VBW = 300kHz , Detector = Peak, Sweep time = Auto
2. Trace = max hold , Allow Trace to fully stabilize
3. Scan Frequency range is up to 26.5GHz
4. Use the peakmarker function to determine the maximum amplitude level

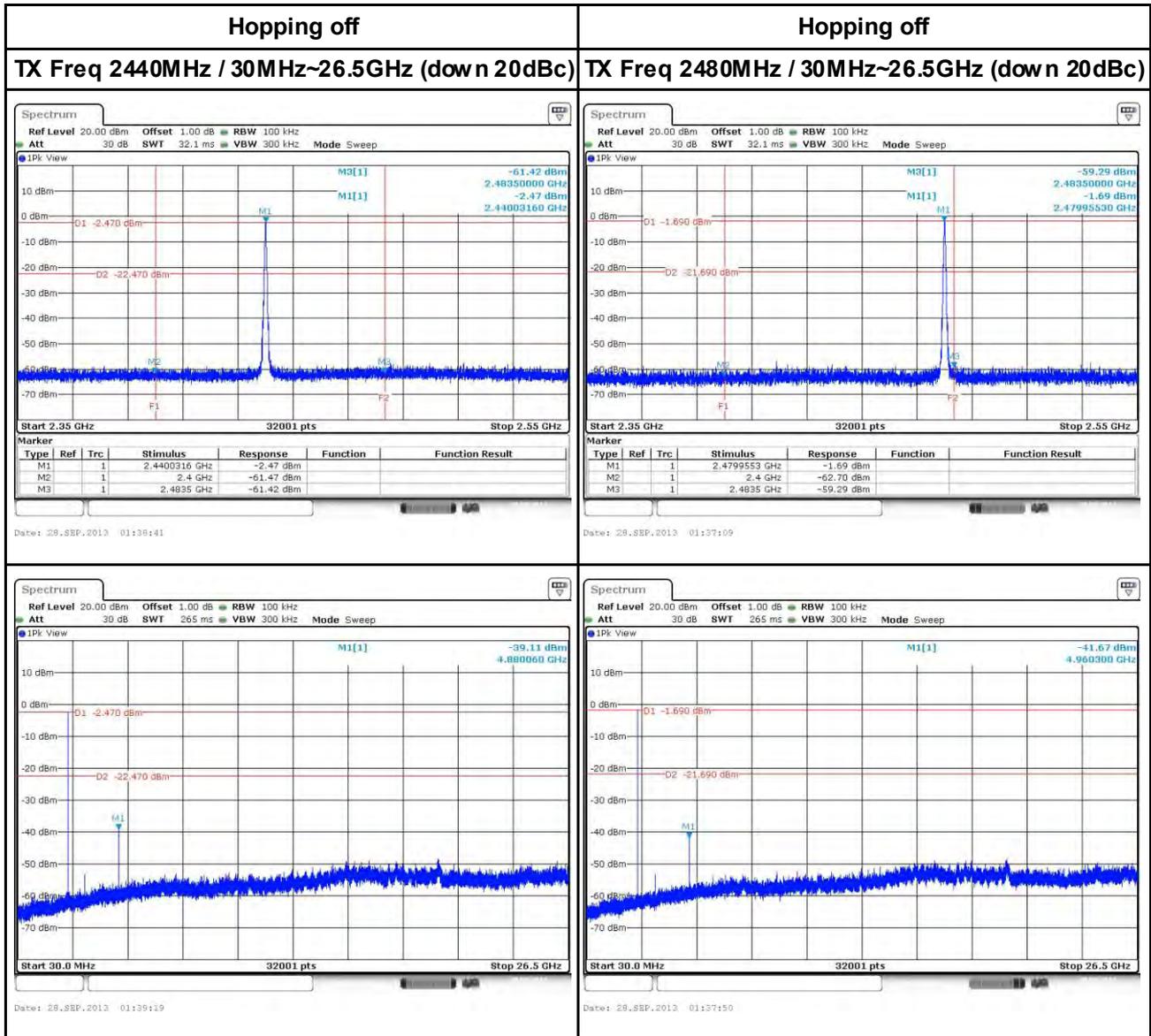
3.6.4 Test Setup



3.6.5 Test Result of Emissions in non-restricted frequency bands

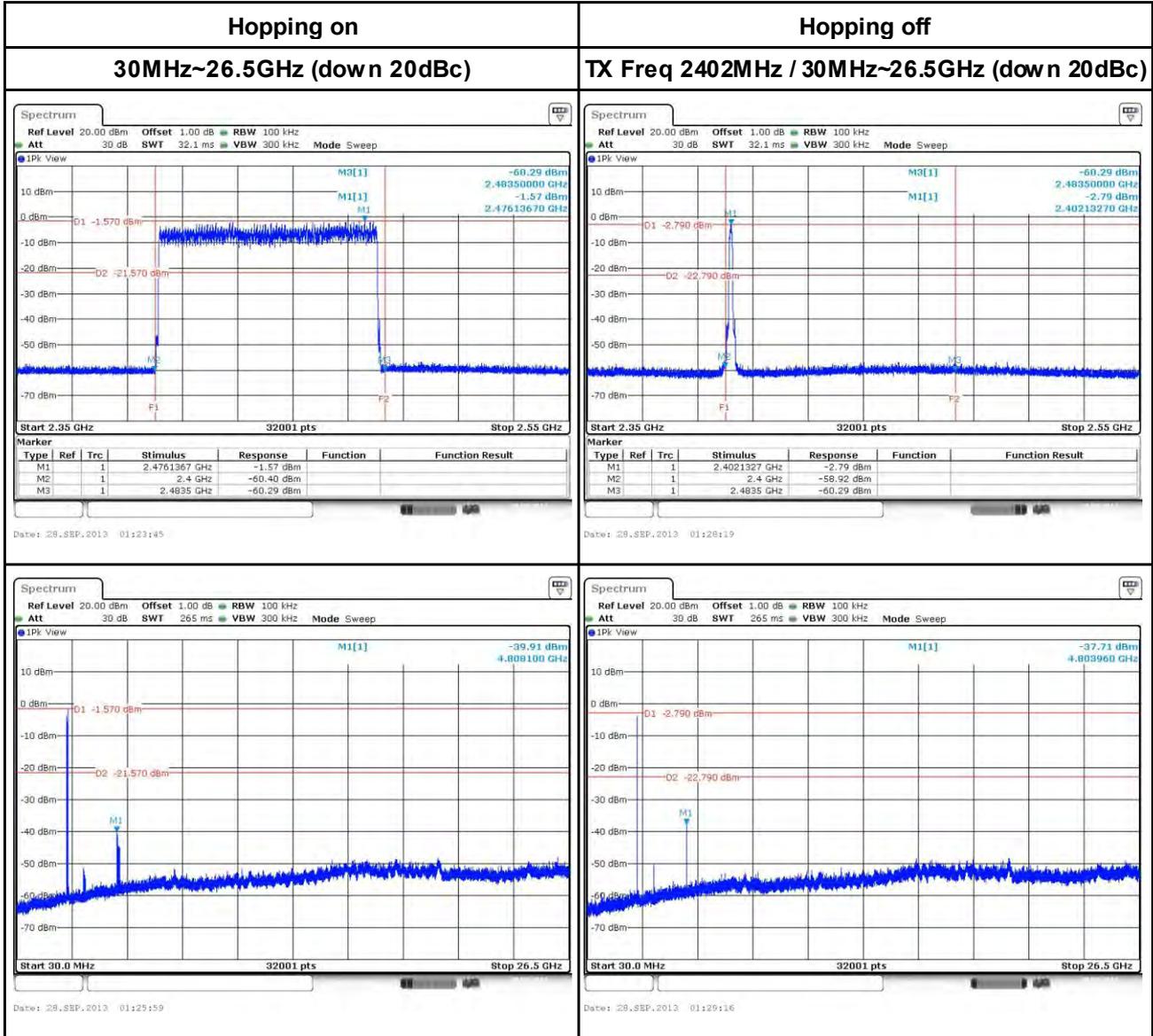
GFSK

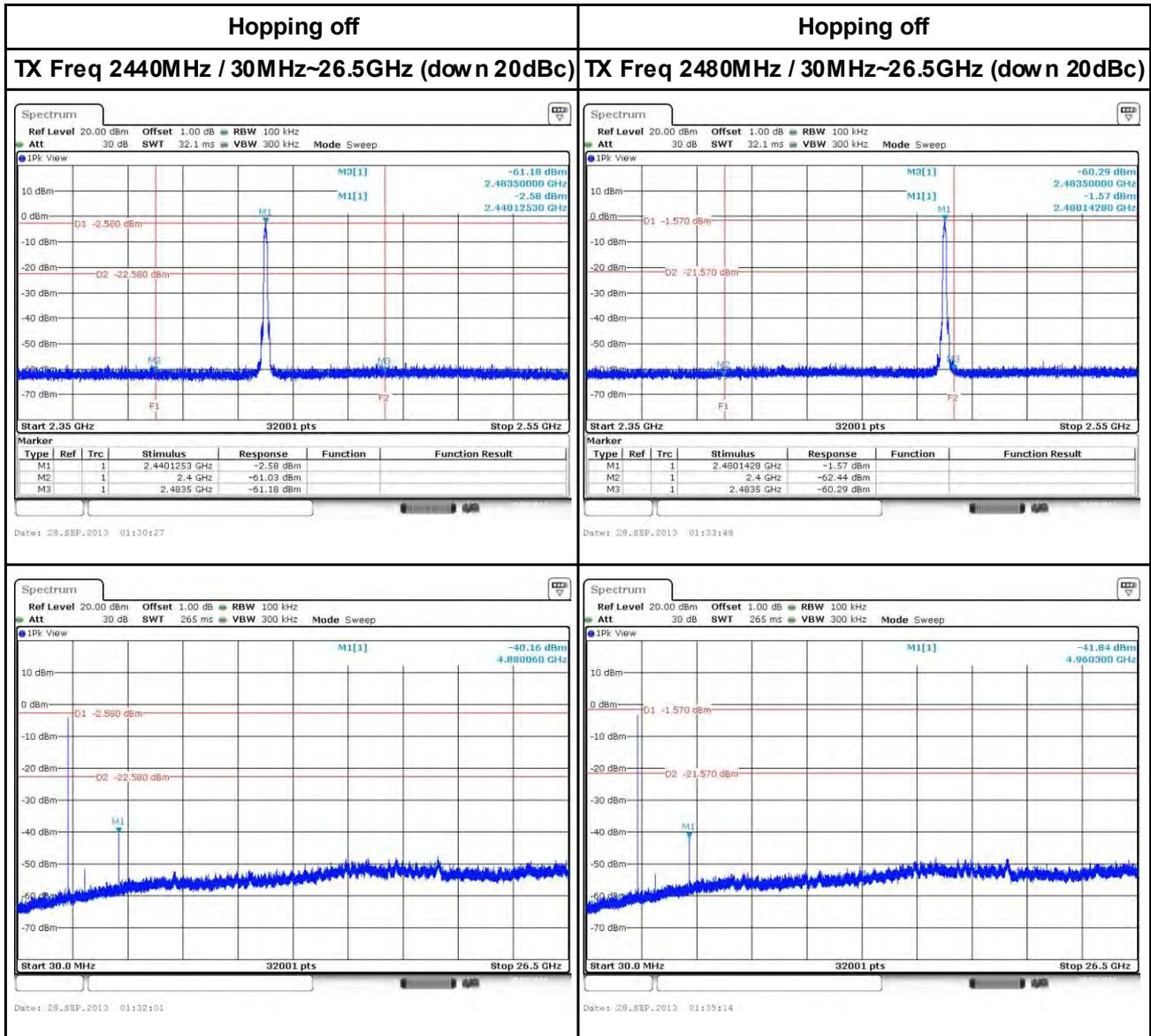






8DPSK





3.7 Transmitter Radiated Unwanted Emissions

3.7.1 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.

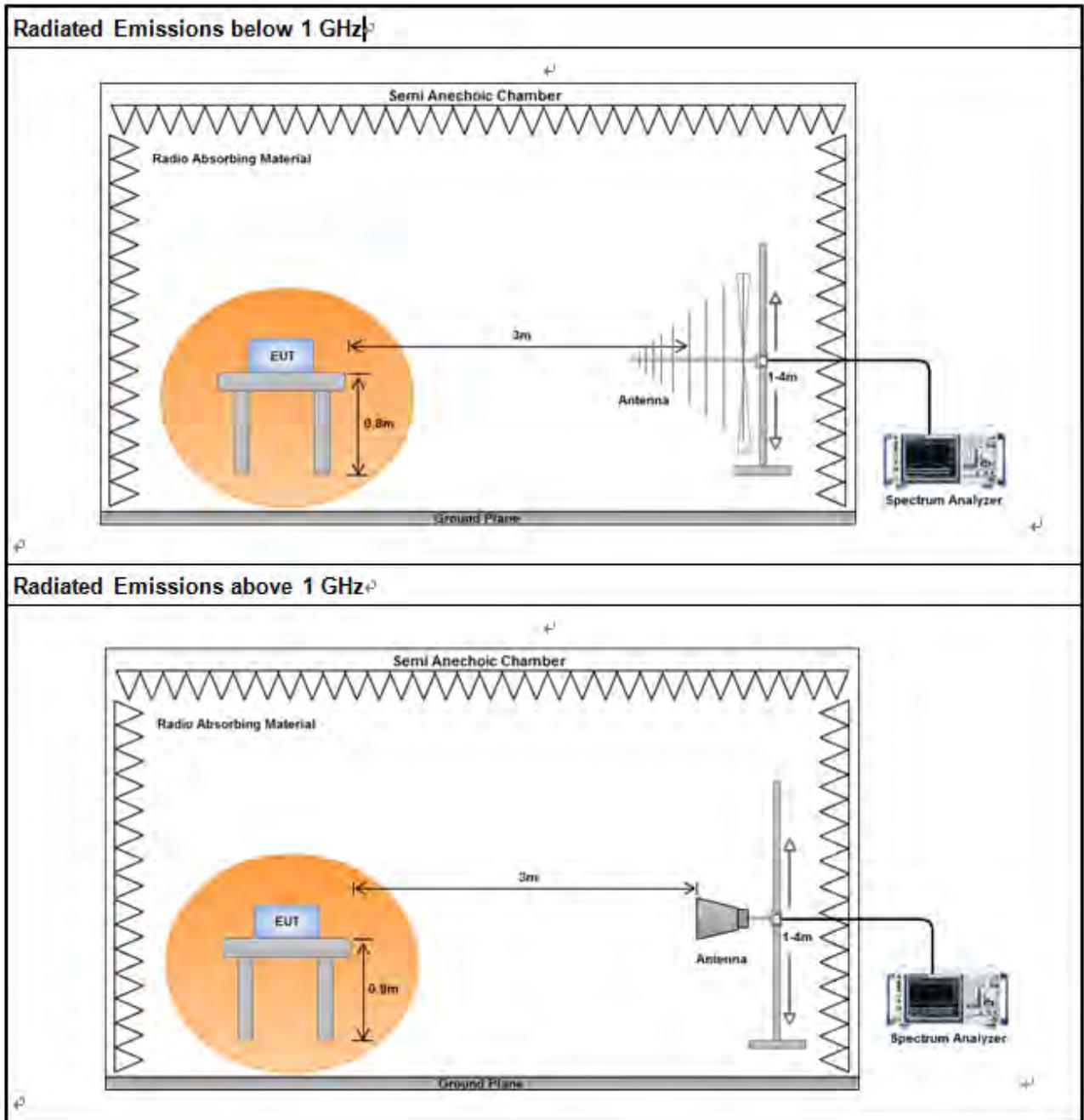
3.7.2 Measuring Instruments

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

3.7.3 Test Procedures

| Test Method – General Information | |
|-------------------------------------|---|
| <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"/> | For the transmitter unwanted emissions shall be measured using following options below: |
| <input checked="" type="checkbox"/> | Refer as FCC DA 00-0705, for spurious radiated emissions. The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a “duty cycle correction factor”, derived from $20\log(\text{dwell time}/100\text{ ms})$ |
| <input checked="" type="checkbox"/> | For unwanted emissions into non-restricted bands, 20 dB relative to the in-band peak output power in 100 kHz. |
| <input checked="" type="checkbox"/> | For unwanted emissions into restricted bands. |
| <input type="checkbox"/> | Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW) – Duty cycle $\geq 98\%$. |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions. |
| <input checked="" type="checkbox"/> | Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit. |
| <input type="checkbox"/> | Refer as FCC DA 00-0705, for conducted measurement. |
| <input checked="" type="checkbox"/> | For radiated measurement. |
| <input checked="" 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. |

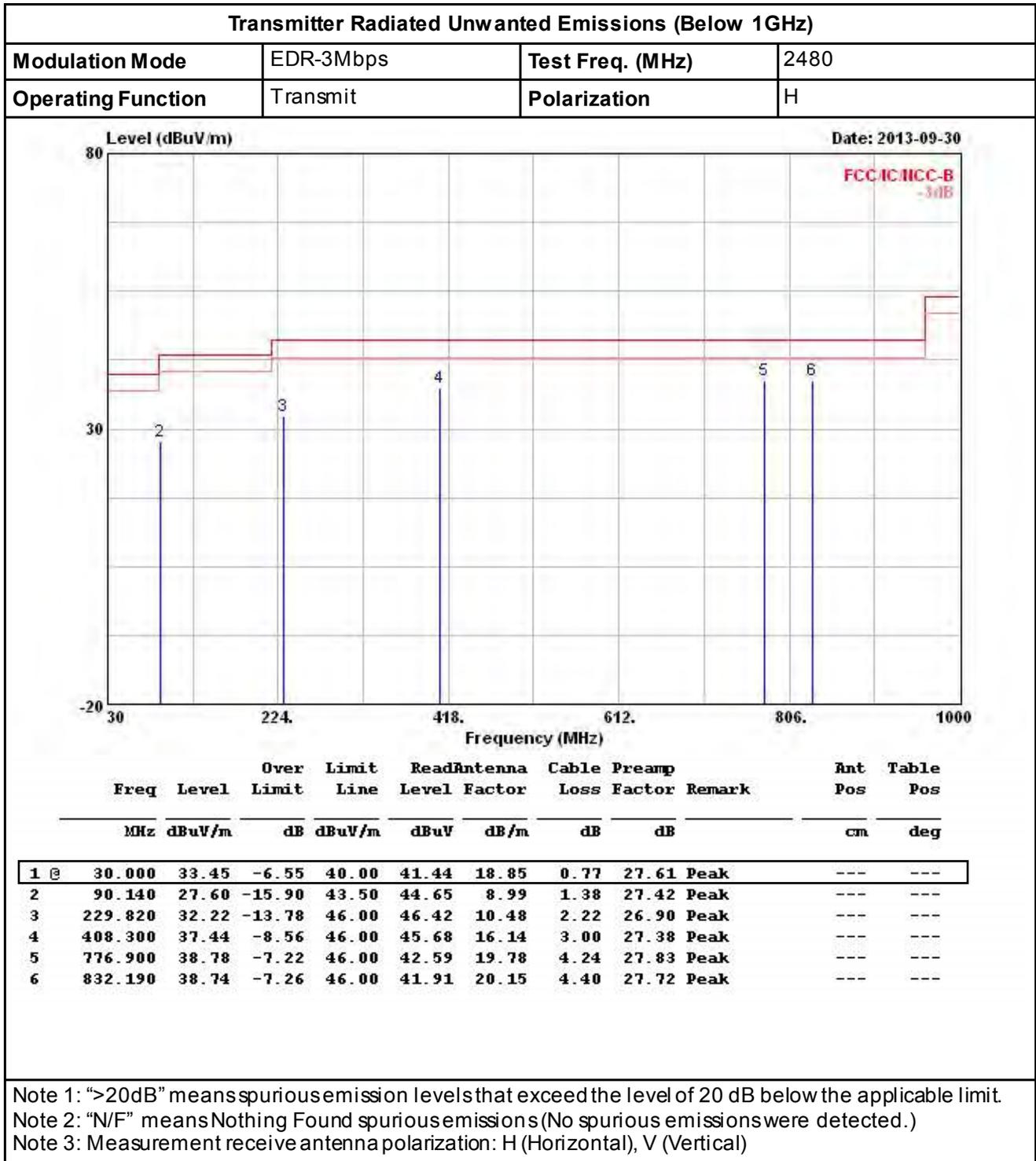
3.7.4 Test Setup



3.7.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

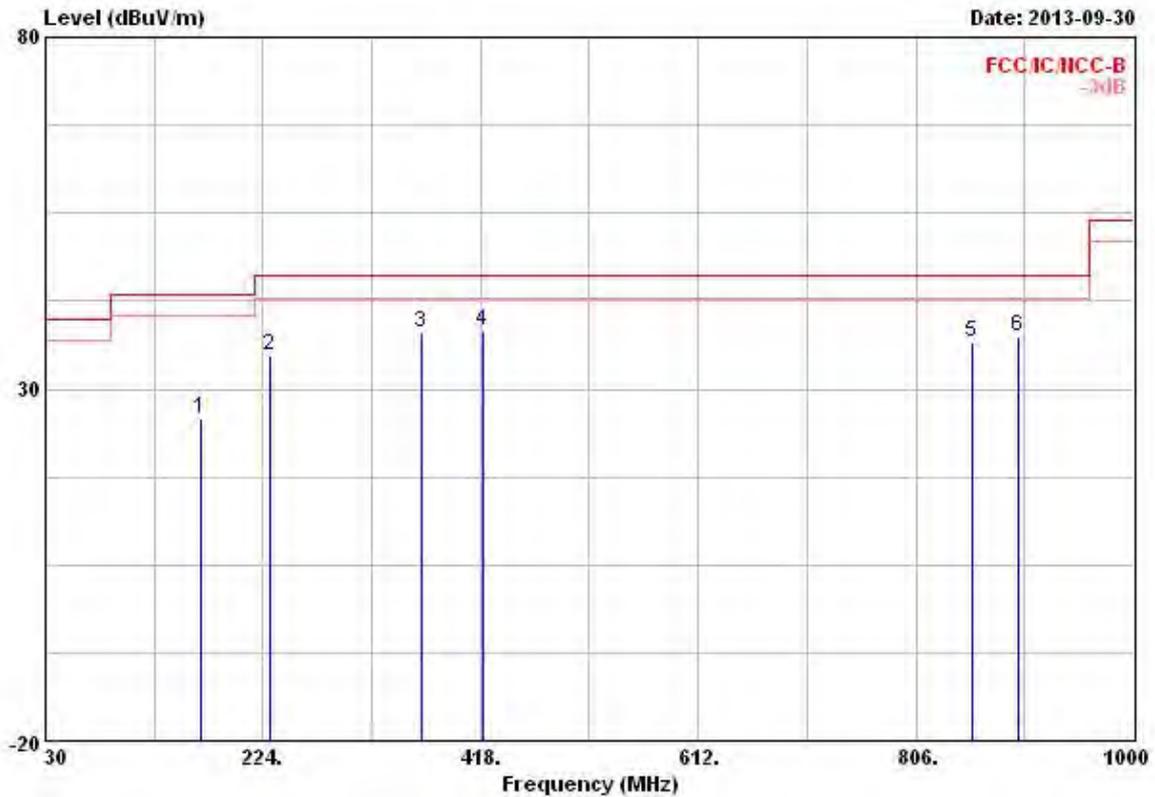
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.7.6 Transmitter Radiated Unwanted Emissions (Below 1GHz)





| Transmitter Radiated Unwanted Emissions (Below 1GHz) | | | |
|--|-----------|------------------|------|
| Modulation Mode | EDR-3Mbps | Test Freq. (MHz) | 2480 |
| Operating Function | Transmit | Polarization | V |

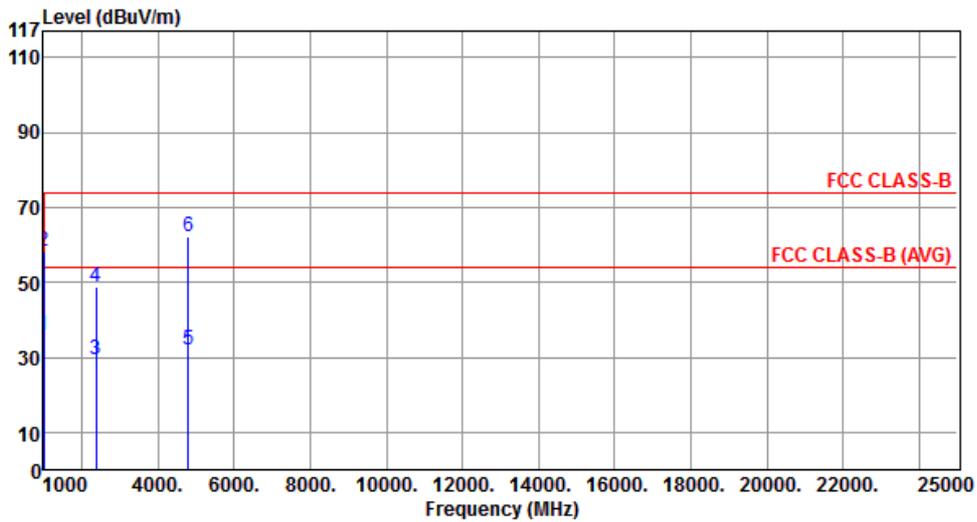


| Peak | Freq (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Remark | Ant Pos (cm) | Table Pos (deg) |
|------|------------|----------------|-----------------|---------------------|-------------------|-----------------------|-----------------|--------------------|--------|--------------|-----------------|
| 1 | 167.740 | 25.84 | -17.66 | 43.50 | 41.30 | 9.78 | 1.88 | 27.12 | Peak | --- | --- |
| 2 | 229.820 | 34.84 | -11.16 | 46.00 | 49.04 | 10.48 | 2.22 | 26.90 | Peak | --- | --- |
| 3 | 365.620 | 38.00 | -8.00 | 46.00 | 47.54 | 14.72 | 2.84 | 27.10 | Peak | --- | --- |
| 4 | 419.940 | 38.19 | -7.81 | 46.00 | 46.11 | 16.48 | 3.05 | 27.45 | Peak | --- | --- |
| 5 | 855.470 | 36.54 | -9.46 | 46.00 | 39.42 | 20.32 | 4.46 | 27.66 | QP | --- | --- |
| 6 | 897.180 | 37.39 | -8.61 | 46.00 | 39.92 | 20.49 | 4.54 | 27.56 | QP | --- | --- |

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)

3.7.7 Transmitter Radiated Unwanted Emissions (Above 1GHz) for GFSK

| Transmitter Radiated Unwanted Emissions (Above 1GHz) | | | |
|--|----------|------------------|------|
| Modulation Mode | BR-1Mbps | Test Freq. (MHz) | 2402 |
| Operating Mode | Transmit | Polarization | H |

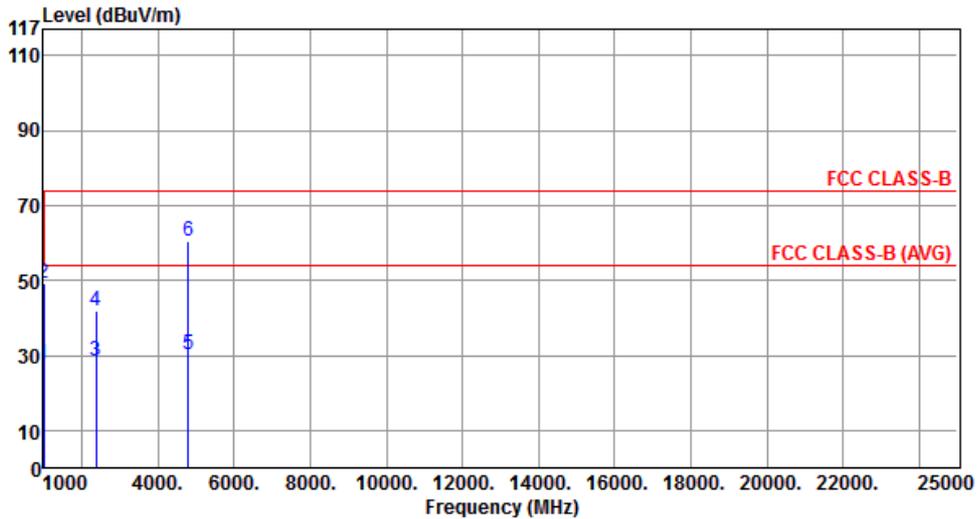


| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-----------|---------|-------------|----------------|
| 1 | 1001.00 | 35.85 | 54.00 | -18.15 | 45.97 | -10.12 | Average | --- | --- |
| 2 | 1001.00 | 58.33 | 74.00 | -15.67 | 68.45 | -10.12 | Peak | --- | --- |
| 3 | 2390.00 | 29.19 | 54.00 | -24.81 | 32.09 | -2.90 | Average | --- | --- |
| 4 | 2390.00 | 49.00 | 74.00 | -25.00 | 51.90 | -2.90 | Peak | --- | --- |
| 5 | 4804.00 | 32.10 | 54.00 | -21.90 | 27.45 | 4.65 | Average | --- | --- |
| 6 | 4804.00 | 62.20 | 74.00 | -11.80 | 57.55 | 4.65 | Peak | --- | --- |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 3: 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 4: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.
 Note 5: For spurious radiated emissions. The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from 20log (dwell time/100 ms).



| Transmitter Radiated Unwanted Emissions (Above 1GHz) | | | |
|--|----------|------------------|------|
| Modulation Mode | BR-1Mbps | Test Freq. (MHz) | 2402 |
| Operating Mode | Transmit | Polarization | V |

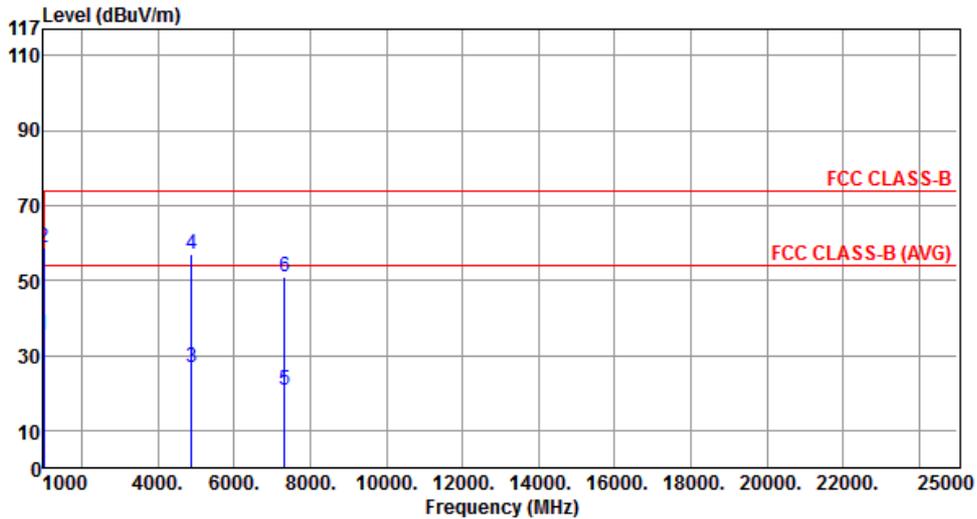


| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-----------|---------|-------------|----------------|
| 1 | 1001.00 | 27.69 | 54.00 | -26.31 | 37.81 | -10.12 | Average | --- | --- |
| 2 | 1001.00 | 49.33 | 74.00 | -24.67 | 59.45 | -10.12 | Peak | --- | --- |
| 3 | 2390.00 | 28.49 | 54.00 | -25.51 | 31.39 | -2.90 | Average | --- | --- |
| 4 | 2390.00 | 42.00 | 74.00 | -32.00 | 44.90 | -2.90 | Peak | --- | --- |
| 5 | 4804.00 | 30.15 | 54.00 | -23.85 | 25.50 | 4.65 | Average | --- | --- |
| 6 | 4804.00 | 60.25 | 74.00 | -13.75 | 55.60 | 4.65 | Peak | --- | --- |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 3: 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 4: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.
 Note 5: For spurious radiated emissions. The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from $20 \log(\text{dwell time}/100 \text{ ms})$.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) | | | |
|--|----------|------------------|------|
| Modulation Mode | BR-1Mbps | Test Freq. (MHz) | 2440 |
| Operating Mode | Transmit | Polarization | H |



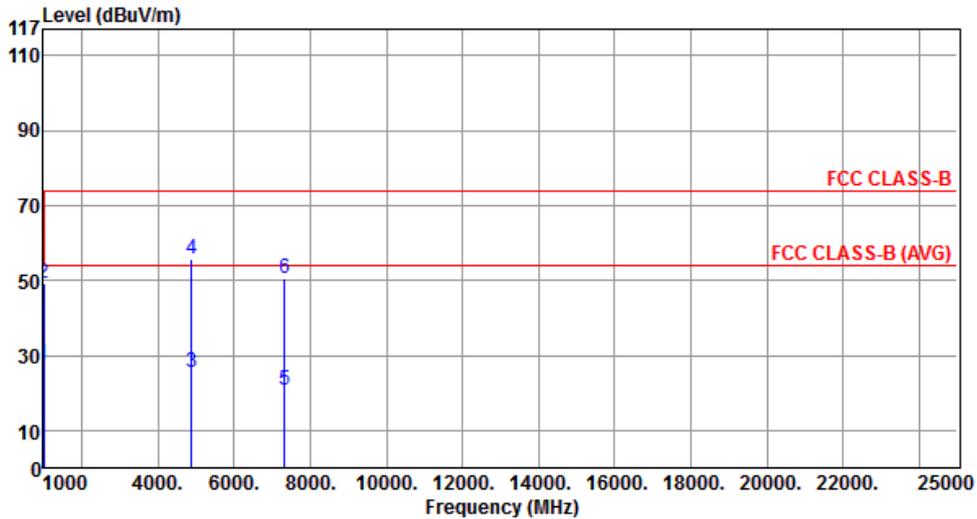
| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-----------|---------|-------------|----------------|
| 1 | 1001.00 | 35.33 | 54.00 | -18.67 | 45.45 | -10.12 | Average | --- | --- |
| 2 | 1001.00 | 58.61 | 74.00 | -15.39 | 68.73 | -10.12 | Peak | --- | --- |
| 3 | 4882.00 | 26.72 | 54.00 | -27.28 | 21.94 | 4.78 | Average | --- | --- |
| 4 | 4882.00 | 56.82 | 74.00 | -17.18 | 52.04 | 4.78 | Peak | --- | --- |
| 5 | 7323.00 | 20.78 | 54.00 | -33.22 | 11.19 | 9.59 | Average | --- | --- |
| 6 | 7323.00 | 50.88 | 74.00 | -23.12 | 41.29 | 9.59 | Peak | --- | --- |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 3: 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 4: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.
 Note 5: For spurious radiated emissions. The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from 20log (dwell time/100 ms).



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|----------|------------------|------|
| Modulation Mode | BR-1Mbps | Test Freq. (MHz) | 2440 |
| Operating Mode | Transmit | Polarization | V |

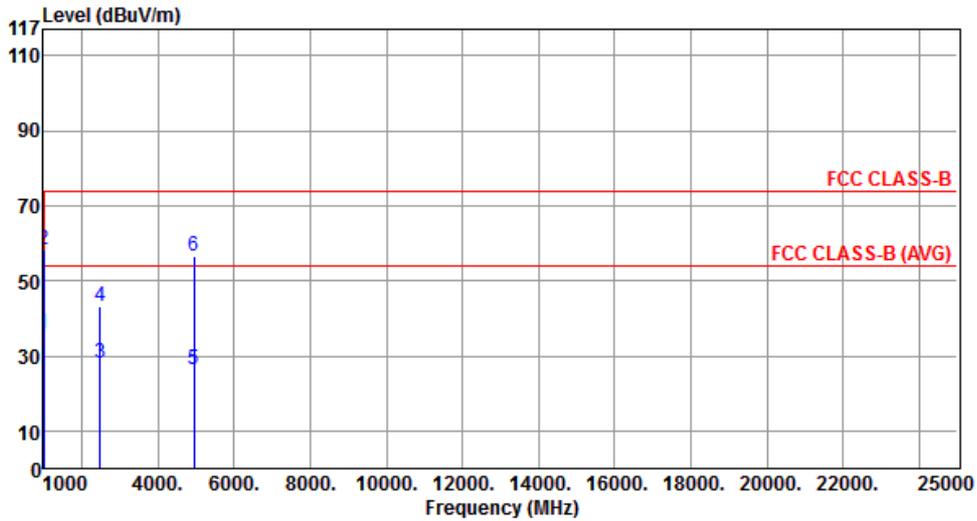


| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-----------|---------|-------------|----------------|
| 1 | 1001.00 | 27.52 | 54.00 | -26.48 | 37.64 | -10.12 | Average | --- | --- |
| 2 | 1001.00 | 49.34 | 74.00 | -24.66 | 59.46 | -10.12 | Peak | --- | --- |
| 3 | 4882.00 | 25.59 | 54.00 | -28.41 | 20.81 | 4.78 | Average | --- | --- |
| 4 | 4882.00 | 55.69 | 74.00 | -18.31 | 50.91 | 4.78 | Peak | --- | --- |
| 5 | 7323.00 | 20.53 | 54.00 | -33.47 | 10.94 | 9.59 | Average | --- | --- |
| 6 | 7323.00 | 50.63 | 74.00 | -23.37 | 41.04 | 9.59 | Peak | --- | --- |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 3: 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 4: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.
 Note 5: For spurious radiated emissions. The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from 20log (dwell time/100 ms).



| Transmitter Radiated Unwanted Emissions (Above 1GHz) | | | |
|--|----------|------------------|------|
| Modulation Mode | BR-1Mbps | Test Freq. (MHz) | 2480 |
| Operating Mode | Transmit | Polarization | H |

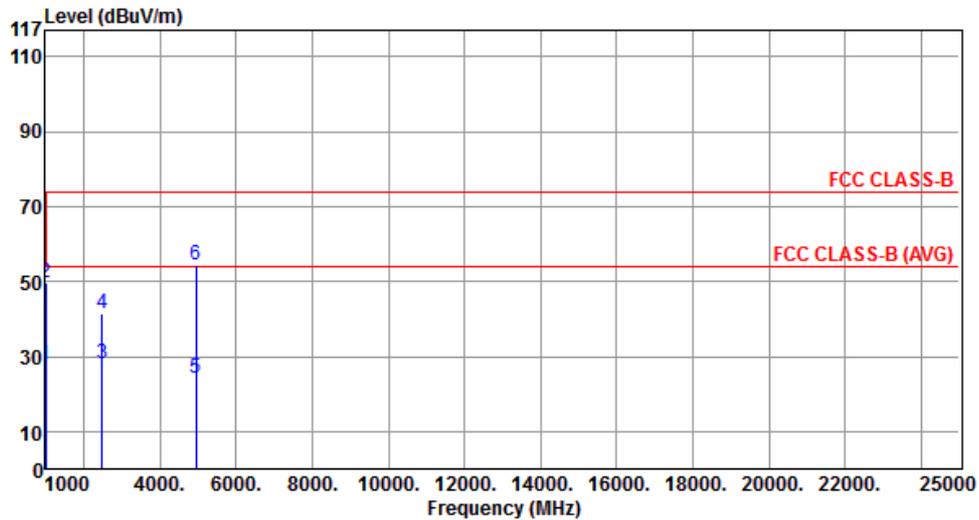


| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-----------|---------|-------------|----------------|
| 1 | 1001.00 | 35.72 | 54.00 | -18.28 | 45.84 | -10.12 | Average | --- | --- |
| 2 | 1001.00 | 58.44 | 74.00 | -15.56 | 68.56 | -10.12 | Peak | --- | --- |
| 3 | 2483.50 | 28.24 | 54.00 | -25.76 | 30.66 | -2.42 | Average | --- | --- |
| 4 | 2483.50 | 43.27 | 74.00 | -30.73 | 45.69 | -2.42 | Peak | --- | --- |
| 5 | 4960.00 | 26.53 | 54.00 | -27.47 | 21.62 | 4.91 | Average | --- | --- |
| 6 | 4960.00 | 56.63 | 74.00 | -17.37 | 51.72 | 4.91 | Peak | --- | --- |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 3: 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 4: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.
 Note 5: For spurious radiated emissions. The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from 20log (dwell time/100 ms).



| Transmitter Radiated Unwanted Emissions (Above 1GHz) | | | |
|--|----------|------------------|------|
| Modulation Mode | BR-1Mbps | Test Freq. (MHz) | 2480 |
| Operating Mode | Transmit | Polarization | V |



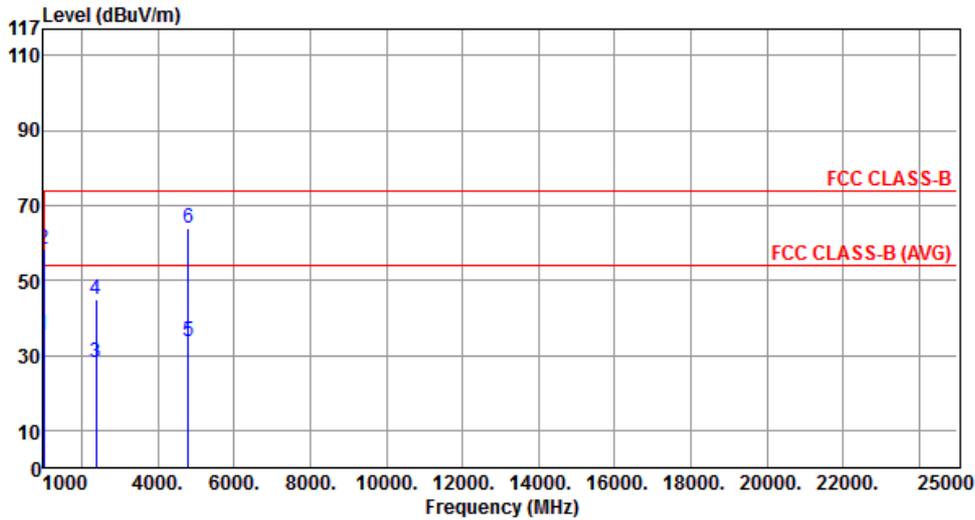
| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-----------|---------|-------------|----------------|
| 1 | 1001.00 | 27.55 | 54.00 | -26.45 | 37.67 | -10.12 | Average | --- | --- |
| 2 | 1001.00 | 49.63 | 74.00 | -24.37 | 59.75 | -10.12 | Peak | --- | --- |
| 3 | 2483.50 | 28.18 | 54.00 | -25.82 | 30.60 | -2.42 | Average | --- | --- |
| 4 | 2483.50 | 41.31 | 74.00 | -32.69 | 43.73 | -2.42 | Peak | --- | --- |
| 5 | 4960.00 | 24.19 | 54.00 | -29.81 | 19.28 | 4.91 | Average | --- | --- |
| 6 | 4960.00 | 54.29 | 74.00 | -19.71 | 49.38 | 4.91 | Peak | --- | --- |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 3: 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 4: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.
 Note 5: For spurious radiated emissions. The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from 20log (dwell time/100 ms).



3.7.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 8DPSK

| Transmitter Radiated Unwanted Emissions (Above 1GHz) | | | |
|--|-----------|------------------|------|
| Modulation Mode | EDR-3Mbps | Test Freq. (MHz) | 2402 |
| Operating Mode | Transmit | Polarization | H |

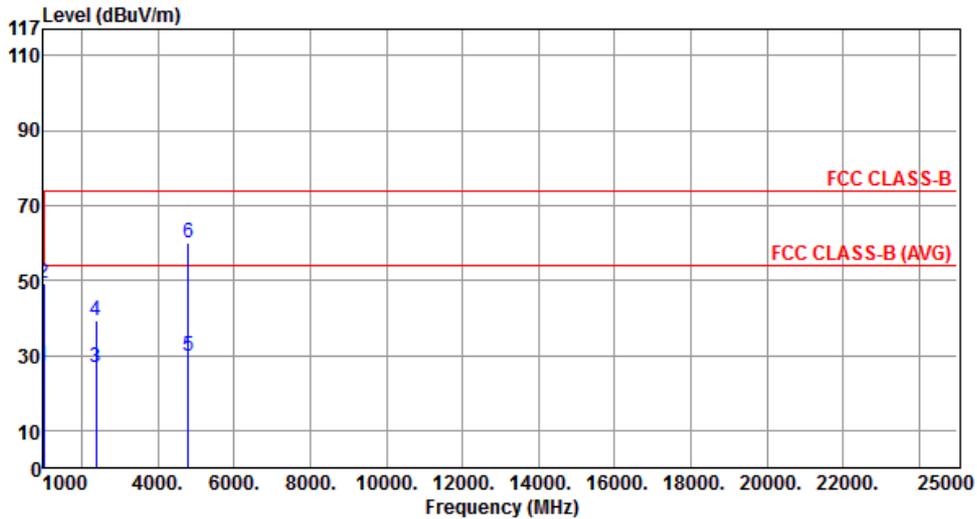


| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-----------|---------|-------------|----------------|
| 1 | 1001.00 | 35.33 | 54.00 | -18.67 | 45.45 | -10.12 | Average | --- | --- |
| 2 | 1001.00 | 58.24 | 74.00 | -15.76 | 68.36 | -10.12 | Peak | --- | --- |
| 3 | 2390.00 | 28.22 | 54.00 | -25.78 | 31.12 | -2.90 | Average | --- | --- |
| 4 | 2390.00 | 45.08 | 74.00 | -28.92 | 47.98 | -2.90 | Peak | --- | --- |
| 5 | 4804.00 | 33.65 | 54.00 | -20.35 | 29.00 | 4.65 | Average | --- | --- |
| 6 | 4804.00 | 63.75 | 74.00 | -10.25 | 59.10 | 4.65 | Peak | --- | --- |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 3: 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 4: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.
 Note 5: For spurious radiated emissions. The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from $20 \log(\text{dwell time}/100 \text{ ms})$.



| Transmitter Radiated Unwanted Emissions (Above 1GHz) | | | |
|--|-----------|------------------|------|
| Modulation Mode | EDR-3Mbps | Test Freq. (MHz) | 2402 |
| Operating Mode | Transmit | Polarization | V |

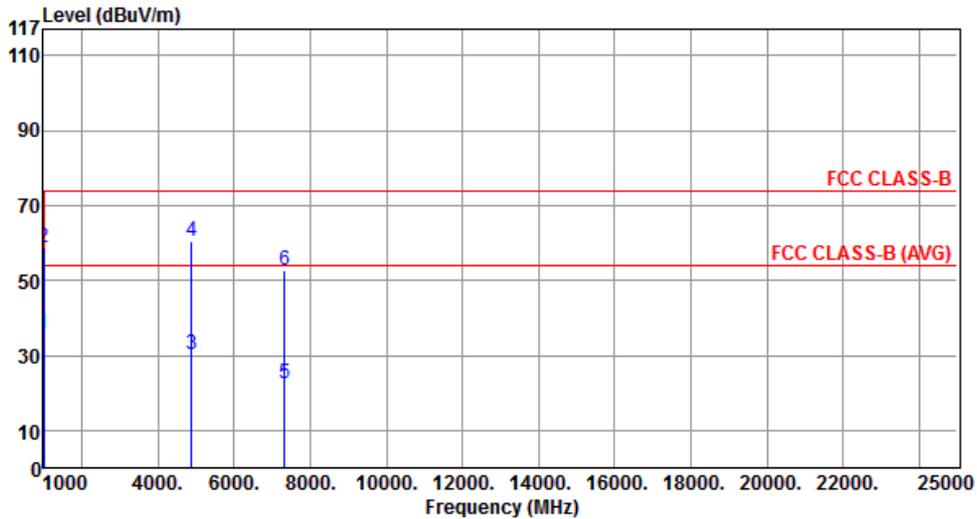


| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-----------|---------|-------------|----------------|
| 1 | 1001.00 | 27.39 | 54.00 | -26.61 | 37.51 | -10.12 | Average | --- | --- |
| 2 | 1001.00 | 49.35 | 74.00 | -24.65 | 59.47 | -10.12 | Peak | --- | --- |
| 3 | 2390.00 | 26.66 | 54.00 | -27.34 | 29.56 | -2.90 | Average | --- | --- |
| 4 | 2390.00 | 39.32 | 74.00 | -34.68 | 42.22 | -2.90 | Peak | --- | --- |
| 5 | 4804.00 | 29.95 | 54.00 | -24.05 | 25.30 | 4.65 | Average | --- | --- |
| 6 | 4804.00 | 60.05 | 74.00 | -13.95 | 55.40 | 4.65 | Peak | --- | --- |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 3: 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 4: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.
 Note 5: For spurious radiated emissions. The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from 20log (dwell time/100 ms).



| Transmitter Radiated Unwanted Emissions (Above 1GHz) | | | |
|--|-----------|------------------|------|
| Modulation Mode | EDR-3Mbps | Test Freq. (MHz) | 2440 |
| Operating Mode | Transmit | Polarization | H |



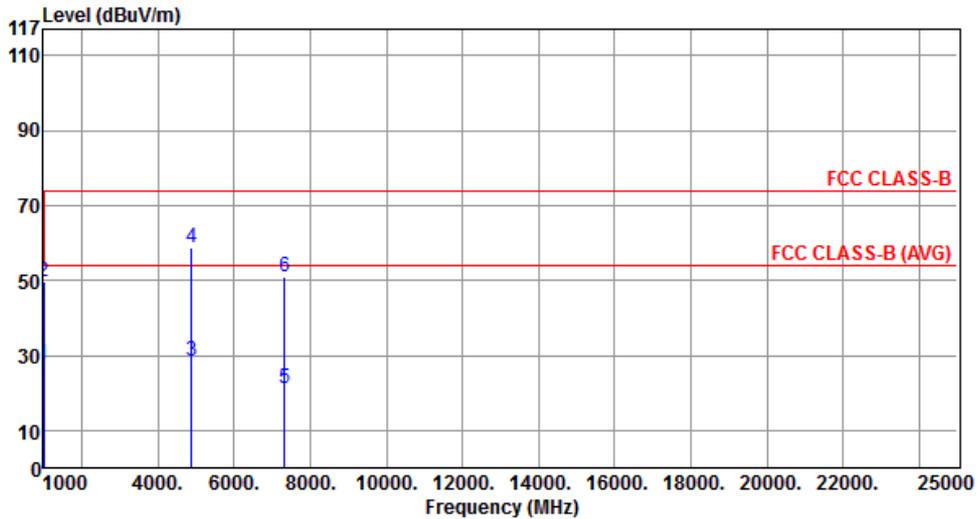
| | Freq. MHz | Emission level dBUV/m | Limit dBUV/m | Margin dB | SA reading dBUV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-----------|---------|-------------|----------------|
| 1 | 1001.00 | 35.78 | 54.00 | -18.22 | 45.90 | -10.12 | Average | --- | --- |
| 2 | 1001.00 | 58.66 | 74.00 | -15.34 | 68.78 | -10.12 | Peak | --- | --- |
| 3 | 4882.00 | 30.38 | 54.00 | -23.62 | 25.60 | 4.78 | Average | --- | --- |
| 4 | 4882.00 | 60.48 | 74.00 | -13.52 | 55.70 | 4.78 | Peak | --- | --- |
| 5 | 7323.00 | 22.58 | 54.00 | -31.42 | 12.99 | 9.59 | Average | --- | --- |
| 6 | 7323.00 | 52.68 | 74.00 | -21.32 | 43.09 | 9.59 | Peak | --- | --- |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 3: 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 4: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.
 Note 5: For spurious radiated emissions. The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from 20log (dwell time/100 ms).



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|-----------|------------------|------|
| Modulation Mode | EDR-3Mbps | Test Freq. (MHz) | 2440 |
| Operating Mode | Transmit | Polarization | V |

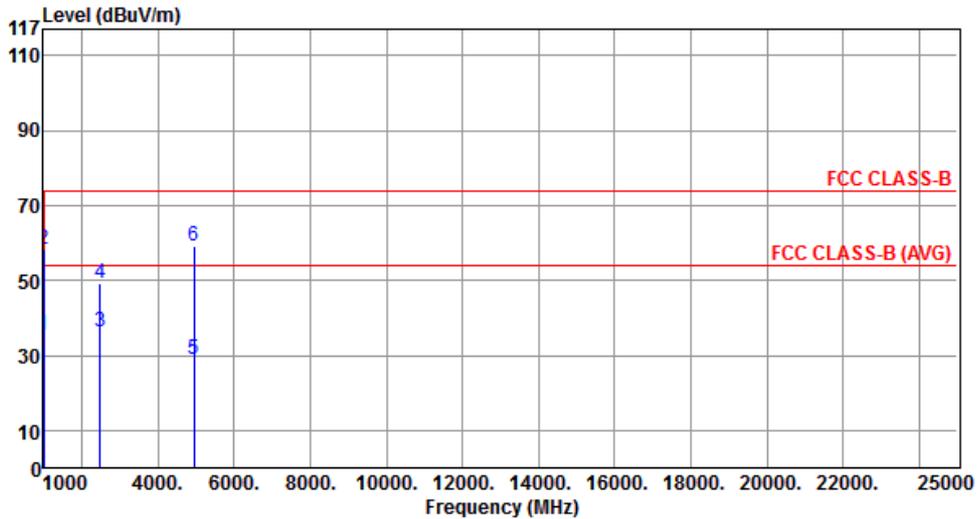


| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-----------|---------|-------------|----------------|
| 1 | 1001.00 | 27.69 | 54.00 | -26.31 | 37.81 | -10.12 | Average | --- | --- |
| 2 | 1001.00 | 49.72 | 74.00 | -24.28 | 59.84 | -10.12 | Peak | --- | --- |
| 3 | 4882.00 | 28.58 | 54.00 | -25.42 | 23.80 | 4.78 | Average | --- | --- |
| 4 | 4882.00 | 58.68 | 74.00 | -15.32 | 53.90 | 4.78 | Peak | --- | --- |
| 5 | 7323.00 | 20.98 | 54.00 | -33.02 | 11.39 | 9.59 | Average | --- | --- |
| 6 | 7323.00 | 51.08 | 74.00 | -22.92 | 41.49 | 9.59 | Peak | --- | --- |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 3: 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 4: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.
 Note 5: For spurious radiated emissions. The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from 20log (dwell time/100 ms).



| Transmitter Radiated Unwanted Emissions (Above 1GHz) | | | |
|--|-----------|------------------|------|
| Modulation Mode | EDR-3Mbps | Test Freq. (MHz) | 2480 |
| Operating Mode | Transmit | Polarization | H |



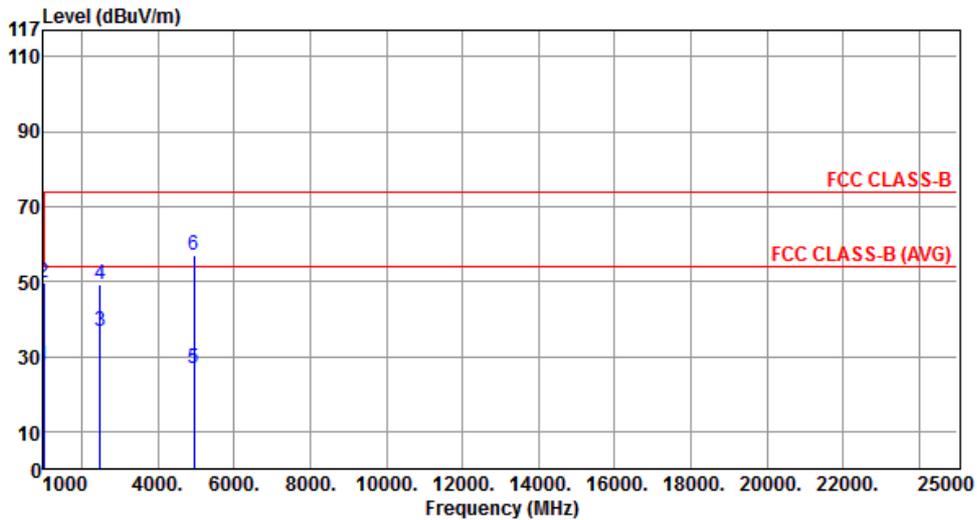
| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-----------|---------|-------------|----------------|
| 1 | 1001.00 | 35.55 | 54.00 | -18.45 | 45.67 | -10.12 | Average | --- | --- |
| 2 | 1001.00 | 58.48 | 74.00 | -15.52 | 68.60 | -10.12 | Peak | --- | --- |
| 3 | 2483.50 | 36.48 | 54.00 | -17.52 | 38.90 | -2.42 | Average | --- | --- |
| 4 | 2483.50 | 49.38 | 74.00 | -24.62 | 51.80 | -2.42 | Peak | --- | --- |
| 5 | 4960.00 | 28.91 | 54.00 | -25.09 | 24.00 | 4.91 | Average | --- | --- |
| 6 | 4960.00 | 59.01 | 74.00 | -14.99 | 54.10 | 4.91 | Peak | --- | --- |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 3: 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 4: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.
 Note 5: For spurious radiated emissions. The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from 20log (dwell time/100 ms).



Transmitter Radiated Unwanted Emissions (Above 1GHz)

| | | | |
|-----------------|-----------|------------------|------|
| Modulation Mode | EDR-3Mbps | Test Freq. (MHz) | 2480 |
| Operating Mode | Transmit | Polarization | V |



| | Freq. MHz | Emission level dBuV/m | Limit dBuV/m | Margin dB | SA reading dBuV | Factor dB | Remark | ANT High cm | Turn Table deg |
|---|-----------|-----------------------|--------------|-----------|-----------------|-----------|---------|-------------|----------------|
| 1 | 1001.00 | 27.49 | 54.00 | -26.51 | 37.61 | -10.12 | Average | --- | --- |
| 2 | 1001.00 | 49.52 | 74.00 | -24.48 | 59.64 | -10.12 | Peak | --- | --- |
| 3 | 2483.50 | 36.54 | 54.00 | -17.46 | 38.96 | -2.42 | Average | --- | --- |
| 4 | 2483.50 | 49.08 | 74.00 | -24.92 | 51.50 | -2.42 | Peak | --- | --- |
| 5 | 4960.00 | 26.91 | 54.00 | -27.09 | 22.00 | 4.91 | Average | --- | --- |
| 6 | 4960.00 | 57.01 | 74.00 | -16.99 | 52.10 | 4.91 | Peak | --- | --- |

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.
 Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
 Note 3: 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 4: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.
 Note 5: For spurious radiated emissions. The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from 20log (dwell time/100 ms).

4 Test Equipment and Calibration Data

| | | | | | |
|---|--------------------------------|------------------|-------------------|-------------------------|--------------------------|
| Test Item | Conducted Emission | | | | |
| Test Site | Conduction room 1 / (CO04-HY) | | | | |
| Instrument | Manufacturer | Model No. | Serial No. | Calibration Date | Calibration Until |
| EMC Receiver | R&S | ESCS 30 | 100169 | Mar. 26, 2013 | Mar. 25, 2014 |
| LISN | SCHWARZBECK MESS-ELEKTRONIK | NSLK 8127 | 8127-667 | Jan. 21, 2013 | Jan. 20, 2014 |
| RF Cable-CON | HUBER+SUHNER | RG213/U | 8127-666 | Nov 09, 2012 | Nov 08, 2013 |
| EMI Filter | LINDGREN | LRE-2030 | CFD200-NL-001 | N/A | N/A |
| Note: Calibration Interval of instruments listed above is one year. | | | | | |

| | | | | | |
|---|------------------------------|------------------|-------------------|-------------------------|--------------------------|
| Test Item | Radiated Emission below 1GHz | | | | |
| Test Site | 966 chamber3 / (03CH03-HY) | | | | |
| Instrument | Manufacturer | Model No. | Serial No. | Calibration Date | Calibration Until |
| 3m Semi Anechoic Chamber | SIDT FRANKONIA | SAC-3M | 03CH03-HY | Dec. 01, 2012 | Nov 30, 2013 |
| Amplifier | HP | 8447D | 2944A08033 | May 03, 2013 | May 02, 2014 |
| Spectrum | R&S | FSP30 | 100023 | Jul. 20, 2013 | Jul. 19, 2014 |
| Bilog Antenna | SCHAFFNER | CBL 6112D | 22237 | Sep. 21, 2013 | Sep. 20, 2014 |
| RF Cable-R03m | Jye Bao | RG142 | CB021 | Jan. 17, 2013 | Jan. 16, 2014 |
| Turn Table | EM Electronics | EM Electronics | 060615 | N/A | N/A |
| Antenna Mast | MF | MF-7802 | MF780208179 | N/A | N/A |
| Loop Antenna | TESEQ | HLA 6120 | 31244 | Dec. 02, 2012 | Dec. 01, 2013 |
| Note: Calibration Interval of instruments listed above is one year. | | | | | |

| | | | | | |
|--------------------------|------------------------------|------------------|-------------------|-------------------------|--------------------------|
| Test Item | Radiated Emission above 1GHz | | | | |
| Test Site | 966 chamber1 / (03CH01-WS) | | | | |
| Instrument | Manufacturer | Model No. | Serial No. | Calibration Date | Calibration Until |
| 3m semi-anechoic chamber | CHAMPRO | SAC-03 | 03CH02-WS | Jan. 02, 2013 | Jan. 01, 2014 |
| Spectrum Analyzer | R&S | FSV40 | 101499 | Jan. 28, 2013 | Jan. 27, 2014 |
| Receiver | R&S | ESR3 | 101657 | Jan. 30, 2013 | Jan. 29, 2014 |
| Bilog Antenna | SCHWARZBECK | VULB9168 | VULB9168-524 | Jan. 11, 2013 | Jan. 10, 2014 |
| Horn Antenna 1G-18G | SCHWARZBECK | BBHA 9120D | BBHA 9120 D 1095 | Jan. 29, 2013 | Jan. 28, 2014 |
| Horn Antenna 18G-40G | SCHWARZBECK | BBHA 9170 | BBHA 9170517 | Jan. 14, 2013 | Jan. 13, 2014 |
| Amplifier | Burgeon | BPA-530 | 100218 | Dec. 14, 2012 | Dec. 13, 2013 |
| Amplifier | Agilent | 83017A | MY39501309 | Dec. 18, 2012 | Dec. 17, 2013 |
| RF Cable | HUBER+SUHNER | SUCOFLEX104 | MY16140/4 | Dec. 25, 2012 | Dec. 24, 2013 |
| RF Cable | HUBER+SUHNER | SUCOFLEX104 | MY16018/4 | Dec. 25, 2012 | Dec. 24, 2013 |



| | | | | | |
|---|------------------------------|------------------|-------------------|-------------------------|--------------------------|
| Test Item | Radiated Emission above 1GHz | | | | |
| Test Site | 966 chamber1 / (03CH01-WS) | | | | |
| Instrument | Manufacturer | Model No. | Serial No. | Calibration Date | Calibration Until |
| RF Cable | HUBER+SUHNER | SUCOFLEX104 | MY16015/4 | Dec. 25, 2012 | Dec. 24, 2013 |
| RF Cable-R03m | Woken | CFD400NL-LW | CFD400NL-003 | Dec. 25, 2012 | Dec. 24, 2013 |
| RF Cable-R10m | Woken | CFD400NL-LW | CFD400NL-004 | Dec. 25, 2012 | Dec. 24, 2013 |
| control | EM Electronics | EM1000 | 060608 | N/A | N/A |
| Note: Calibration Interval of instruments listed above is one year. | | | | | |

| | | | | | |
|---|-------|---------------|---------|---------------|---------------|
| Loop Antenna | R&S | HFH2-Z2 | 100330 | Nov. 15, 2012 | Nov. 14, 2014 |
| Amplifier | MITEQ | AMF-6F-260400 | 9121372 | Apr. 19, 2013 | Apr. 18, 2015 |
| Note: Calibration Interval of instruments listed above is two year. | | | | | |

| | | | | | |
|---|---------------------|------------------|-------------------|-------------------------|--------------------------|
| Test Item | RF Conducted | | | | |
| Test Site | TH01-HY | | | | |
| Instrument | Manufacturer | Model No. | Serial No. | Calibration Date | Calibration Until |
| Spectrum Analyzer | R&S | FSV 40 | 101063 | Feb. 18, 2013 | Feb. 17, 2014 |
| Spectrum Analyzer | R&S | FSP 40 | 100305 | Mar. 20, 2013 | Mar. 19, 2014 |
| Temp. and Humidity Chamber | Giant Force | GTH-225-20-SP-SD | MAA1112-007 | Nov. 21, 2012 | Nov. 20, 2013 |
| Signal Generator | R&S | SMB100A | 175727 | Jan. 14, 2013 | Jan. 14, 2014 |
| Power Sensor | Anritsu | MA2411B | 0917017 | Feb. 02, 2013 | Feb. 01, 2014 |
| Power Meter | Anritsu | ML2495A | 0949003 | Feb. 02, 2013 | Feb. 01, 2014 |
| Note: Calibration Interval of instruments listed above is one year. | | | | | |