



FCC TEST REPORT

According to

FCC Rules and Regulations Part 15 Subpart C

| | |
|------------|---|
| Applicant | : SerComm Corporation |
| Address | : 8F, No. 3-1, YuanQu St., NanKang, Taipei 115, Taiwan, R.O.C. |
| Equipment | : Wireless USB Adapter |
| Model No. | : UB812EN, WUA-0605 |
| FCC ID | : P27UB812EN |
| Trade Name | : SerComm, LevelOne |

Laboratory Accreditation



- The test result refers exclusively to the test presented test model / sample.,
- Without written approval of **Cerpass Technology Corp.** the test report shall not be reproduced except in full.
- The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.



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CERTIFICATE OF COMPLIANCE

According to

FCC Rules and Regulations Part 15 Subpart C

Applicant : SerComm Corporation

Address : 8F, No. 3-1, YuanQu St., NanKang, Taipei 115,
Taiwan, R.O.C.

Equipment : Wireless USB Adapter

Model No. : UB812EN, WUA-0605

FCC ID : P27UB812EN

I HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4** The equipment was **passed** the test performed according to **FCC Rules and Regulations Part 15 Subpart C (2007)**.

The test was carried out on May 23, 2009 at **Cerpass Technology Corp.**

Signature


Anson Chou
EMC/RF B.U. Vice General Manager



1. Report of Measurements and Examinations

1.1 List of Measurements and Examinations

| FCC Rule | Description of Test | Result |
|--------------------------------------|--|--------|
| 15.203 | . Antenna Requirement | Pass |
| 15.207 | . Conducted Emission | Pass |
| 15.209 15.247(d) | . Radiated Emission | Pass |
| 15.247(a)(2) | . 6dB Bandwidth | Pass |
| 15.247(b) | . Maximum Peak Output Power | Pass |
| 15.247(d) | . 100kHz Bandwidth of Frequency Band Edges | Pass |
| 15.247(e) | . Power Spectral Density | Pass |
| 1.1307 1.1310 2.1091 2.1093 | . RF Exposure Compliance | Pass |



2. Test Configuration of Equipment under Test

2.1 Feature of Equipment under Test

| Receive Sensitivity | |
|---------------------|--|
| 802.11b | Typical -84dBm @ 11Mbps, +/-2dBm Typical -86dBm @ 5.5Mbps, +/-2dBm Typical -88dBm @ 2Mbps, +/-2dBm Typical -90dBm @ 1Mbps, +/-2dBm |
| 802.11g | Typical -87dBm @ 6Mbps, +/-2dBm Typical -87dBm @ 9Mbps, +/-2dBm Typical -85dBm @ 12Mbps, +/-2dBm Typical -84dBm @ 18Mbps, +/-2dBm Typical -81dBm @ 24Mbps, +/-2dBm Typical -77dBm @ 36Mbps, +/-2dBm Typical -73dBm @ 48Mbps, +/-2dBm Typical -72dBm @ 54Mbps, +/-2dBm |
| Draft 802.11n HT20 | MCS=0 -85dBm, +/-2dBm MCS=1 -81dBm, +/-2dBm MCS=2 -74dBm, +/-2dBm MCS=3 -74dBm, +/-2dBm MCS=4 -73dBm, +/-2dBm MCS=5 -71dBm, +/-2dBm MCS=6 -68dBm, +/-2dBm MCS=7 -66dBm, +/-2dBm MCS=8 -85dBm, +/-2dBm MCS=9 -81dBm, +/-2dBm MCS=10 -74dBm, +/-2dBm MCS=11 -74dBm, +/-2dBm MCS=12 -73dBm, +/-2dBm MCS=13 -71dBm, +/-2dBm MCS=14 -68dBm, +/-2dBm MCS=15 -66dBm, +/-2dBm |
| Draft 802.11n HT40 | MCS=0 -84dBm, +/-2dBm MCS=1 -78dBm, +/-2dBm MCS=2 -74dBm, +/-2dBm MCS=3 -74dBm, +/-2dBm MCS=4 -73dBm, +/-2dBm MCS=5 -71dBm, +/-2dBm MCS=6 -68dBm, +/-2dBm MCS=7 -67dBm, +/-2dBm MCS=8 -84dBm, +/-2dBm MCS=9 -78dBm, +/-2dBm MCS=10 -75dBm, +/-2dBm MCS=11 -74dBm, +/-2dBm MCS=12 -72dBm, +/-2dBm MCS=13 -68dBm, +/-2dBm MCS=14 -67dBm, +/-2dBm MCS=15 -66dBm, +/-2dBm |



| Power Consumption (Peak) | |
|---------------------------------------|--|
| 802.11b | Continue TX: 450mA@5V Continue RD: 250mA@5V |
| 802.11g | Continue TX: 450mA@5V Continue RD: 250mA@5V |
| 802.11n HT20 | Continue TX: 450mA@5V Continue RD: 250mA@5V |
| 802.11n HT40 | Continue TX: 450mA@5V Continue RD: 250mA@5V |
| Transmit Power | |
| 802.11b | 17 +/- 1 dBm |
| 802.11g | 13.5 +/- 1 dBm |
| 802.11n | 13.5 +/- 1 dBm |
| Environment Conditions | |
| Temperature Range | Operating: 0 ~ 40 Storing: -20 ~ 70 |
| Humidity | Operating: 10 ~ 85% non-condensing Storing: 5 ~ 90% non-condensing |
| LED Definition | |
| LED Indicator (Single green color) | Activity: Off – Not powered Solid Green – Powered on, no data being transmitted Blinking Green – Transferring data Another LED (TBD): controlled by Realtek EEPROM code (to double check Realtek reference design) |
| OS Support | Microsoft Windows 2000 and XP 32 bit with SP2 and XP 64-bit (Utility) Microsoft Windows Vista 32 and 64 bit (just driver) |

2.2 Carrier Frequency of Channels

802.11b, 802.11g, 802.11n, HT20

| Channel | Frequency(MHz) | Channel | Frequency(MHz) |
|---------|----------------|---------|----------------|
| 01 | 2412 | 07 | 2442 |
| 02 | 2417 | 08 | 2447 |
| 03 | 2422 | 09 | 2452 |
| 04 | 2427 | 10 | 2457 |
| 05 | 2432 | 11 | 2462 |
| 06 | 2437 | 12 | --- |

802.11n, HT40

| Channel | Frequency(MHz) | Channel | Frequency(MHz) |
|---------|----------------|---------|----------------|
| --- | --- | 07 | 2442 |
| --- | --- | 08 | 2447 |
| 03 | 2422 | 09 | 2452 |
| 04 | 2427 | --- | --- |
| 05 | 2432 | --- | --- |
| 06 | 2437 | --- | --- |



2.3 Test Mode and Test Software

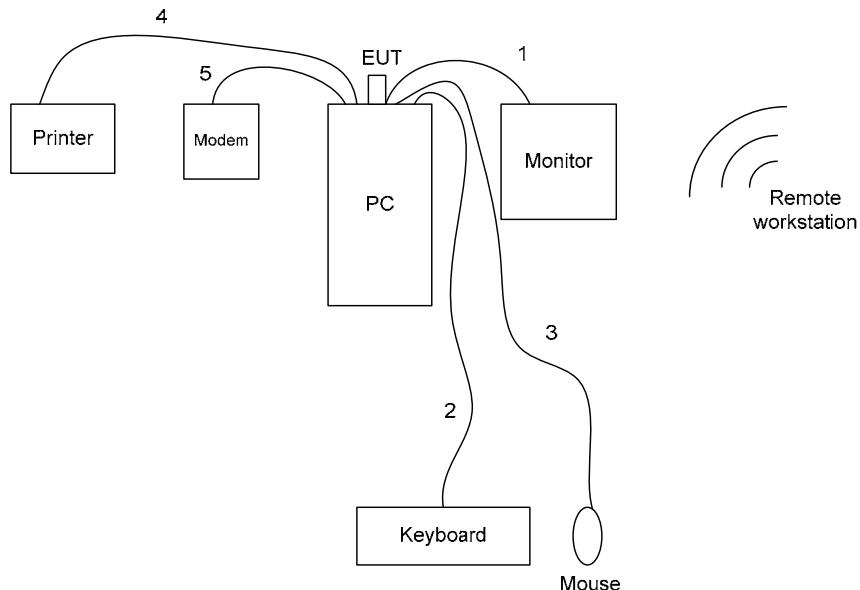
- a. During testing, the interface cables and equipment positions were varied according to ANSI C63.4.
- b. The complete test system included remote workstation, PC, Monitor, Mouse, Keyboard, Modem, Printer and EUT for EMI test. The remote workstation included Notebook.
- c. An executive program, "Ping.exe" under WIN XP, which transmits and receives data to the remote workstation through Wireless.
- d. The following test mode and test software was performed for conduction and radiation test:
 - 802.11b/g/n HT20: CH01: 2412MHz, CH06: 2437MHz, CH11: 2462MHz
 - 802.11n HT40: CH03: 2422MHz, CH06: 2437MHz, CH09: 2452MHz

2.4 Description of Test System

| Device | Manufacturer | Model No. | Description |
|--------------------|--------------|---------------|--|
| PC | IBM | IGV | Power Cable, Unshielding 1.8 m |
| Monitor | ViewSonic | G90Fb | Data Cable, VGA Shielding 1.35 m Power Cable, Adapter Unshielding 1.8 m |
| Keyboard | IBM | KB-0225 | Data Cable, PS2 Shielding 1.35 m |
| Mouse | IBM | MO28VO | Data Cable, USB Shielding 1.85 m |
| Modem | ACEXX | DM-1414 | Data Cable, RS232 Unshielding 1.35 m Power Cable, Adapter Unshielding 1.8 m |
| Printer | HP | Desk Jet 400 | Data Cable, PRINT Unshielding 1.6 m Power Cable, Adapter Unshielding 1.8 m |
| Remote workstation | | | |
| Notebook | TOSHIBA | PSA50T-05M00C | Power Cable, Adapter Unshielding 1.8 m |



2.5 Connection Diagram of Test System



1. The VGA cable is connected from PC to the Monitor.
 2. The PS/2 cable is connected from PC to the Keyboard.
 3. The USB cable is connected from PC to the Mouse.
 4. The Print cable is connected from PC to the Printer.
 5. The RS232 cable is connected from PC to the Modem.
- * The EUT keeps to transmit and receive data via Notebook by Wireless.



2.6 General Information of Test

| | |
|--------------------------------|---|
| Test Site : | Cerpass Technology Corp. 2F-11, No. 3, Yuan Qu St., (Nankang Software Park), Taipei, Taiwan 115, R.O.C. |
| Test Site Location (OATS1-SD): | No. 7-2, Moshihkeng, Fongtian Village, Shihding Township, Taipei County, Taiwan, R.O.C. |
| FCC Registration Number : | TW1049, 982971 |
| IC Registration Number : | 4934C-1 |
| VCCI Registration Number : | T-182 for Telecommunication Test C-2188 for Conducted emission test R-1902 for Radiated emission test |
| Test Voltage: | AC 120V |
| Test in Compliance with: | ANSI C63.4-2003 FCC Part 15 Subpart C |
| Frequency Range Investigated: | Conducted: from 150kHz to 30MHz Radiation: from 30MHz to 24620MHz |
| Test Distance: | The test distance of radiated emission from antenna to EUT is 3 M. |

2.7 Measurement Uncertainty

| Measurement Item | Measurement Frequency | Polarization | Uncertainty |
|--|-----------------------|--------------|-------------|
| Conducted Emission | 9 kHz ~ 30 MHz | LINE/NEUTRAL | 2.71 dB |
| Radiated Emission | 30 MHz ~ 25GHz | Vertical | 4.11 dB |
| | | Horizontal | 4.10 dB |
| 6 dB Bandwidth | --- | --- | 7500 Hz |
| Maximum Peak Output Power | --- | --- | 1.4 dB |
| 100kHz Bandwidth of Frequency Band Edges | --- | --- | 2.2 dB |
| Power Spectral Density | --- | --- | 2.2 dB |



2.8 History of this test report

■ ORIGINAL.

Additional attachment as following record:



3. Antenna Requirements

3.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

3.2 Antenna Construction and Directional Gain

Antenna type: PCB Antenna

Antenna Gain: 0.34 dBi



4. Test of Conducted Emission

4.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-2003 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

| Frequency (MHz) | Quasi Peak (dB μ V) | Average (dB μ V) |
|--------------------|----------------------------|-------------------------|
| 0.15 – 0.5 | 66-56* | 56-46* |
| 0.5 – 5.0 | 56 | 46 |
| 5.0 – 30.0 | 60 | 50 |

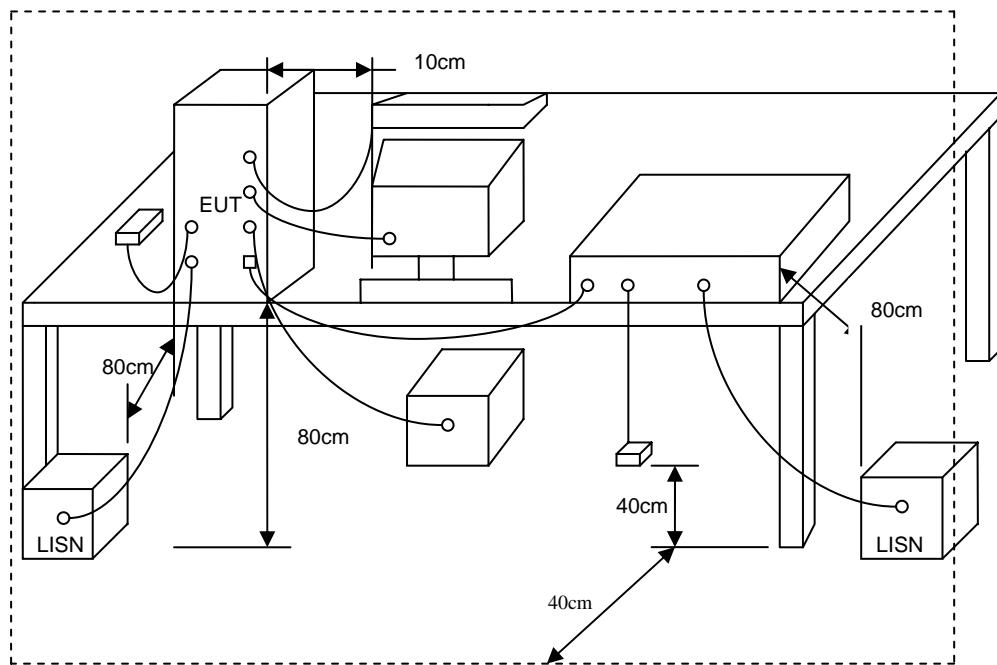
*Decreases with the logarithm of the frequency.

4.2 Test Procedures

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connecting to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.



4.3 Typical Test Setup



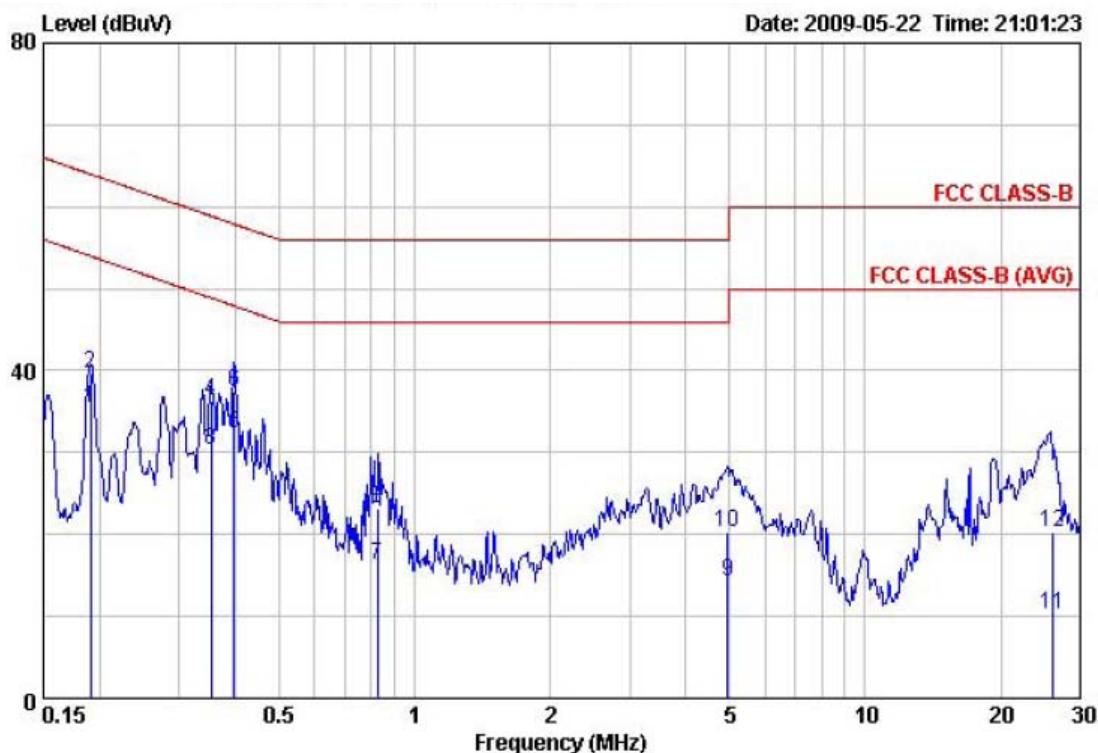
4.4 Measurement equipment

| Instrument/Ancillary | Manufacturer | Model No. | Serial No. | Calibration Date | Valid Date. |
|----------------------|--------------|-----------|------------|------------------|-------------|
| EMI Receiver | R&S | ESCI | 100443 | 2008/09/27 | 2009/09/26 |
| LISN | MESS TEC | NNB-2/16Z | 02/10191 | 2008/05/14 | 2009/06/02 |
| LISN | ROLF HEINE | NNB-2/16Z | 03/10058 | 2009/04/18 | 2010/04/17 |



4.5 Test Result and Data

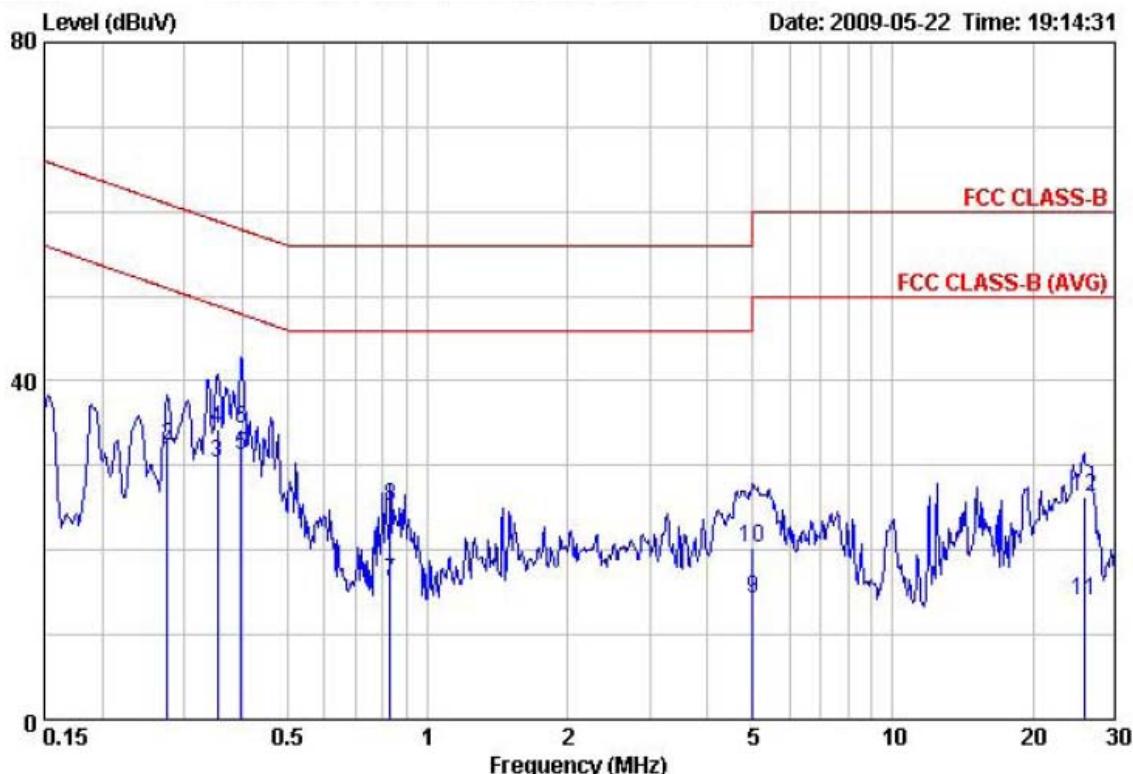
| | | | |
|-------------|-------------|---------------|-------|
| Power : | AC 120V | Pol/Phase : | LINE |
| Test Mode : | 802.11g CH1 | Temperature : | 26 °C |
| Memo : | | Humidity : | 58 % |



| Item | Freq | Read | | Result | Limit | Margin | Remark |
|------|---------|--------|--------|--------|--------|--------|---------|
| | | Value | Factor | | | | |
| | MHz | dBuV/m | | dB | dBuV/m | dBuV/m | dB |
| 1 | 0.19050 | 35.28 | 0.09 | 35.37 | 54.01 | -18.64 | Average |
| 2 | 0.19050 | 39.56 | 0.09 | 39.65 | 64.01 | -24.36 | QP |
| 3 | 0.35420 | 30.24 | 0.08 | 30.32 | 48.86 | -18.54 | Average |
| 4 | 0.35420 | 36.24 | 0.08 | 36.32 | 58.86 | -22.54 | QP |
| 5 | 0.39780 | 32.25 | 0.08 | 32.33 | 47.90 | -15.57 | Average |
| 6 | 0.39780 | 37.29 | 0.08 | 37.37 | 57.90 | -20.53 | QP |
| 7 | 0.82810 | 16.23 | 0.10 | 16.33 | 46.00 | -29.67 | Average |
| 8 | 0.82810 | 23.13 | 0.10 | 23.23 | 56.00 | -32.77 | QP |
| 9 | 4.952 | 14.11 | 0.21 | 14.32 | 46.00 | -31.68 | Average |
| 10 | 4.952 | 20.11 | 0.21 | 20.32 | 56.00 | -35.68 | QP |
| 11 | 26.190 | 10.13 | 0.20 | 10.33 | 50.00 | -39.67 | Average |
| 12 | 26.190 | 20.04 | 0.20 | 20.24 | 60.00 | -39.76 | QP |



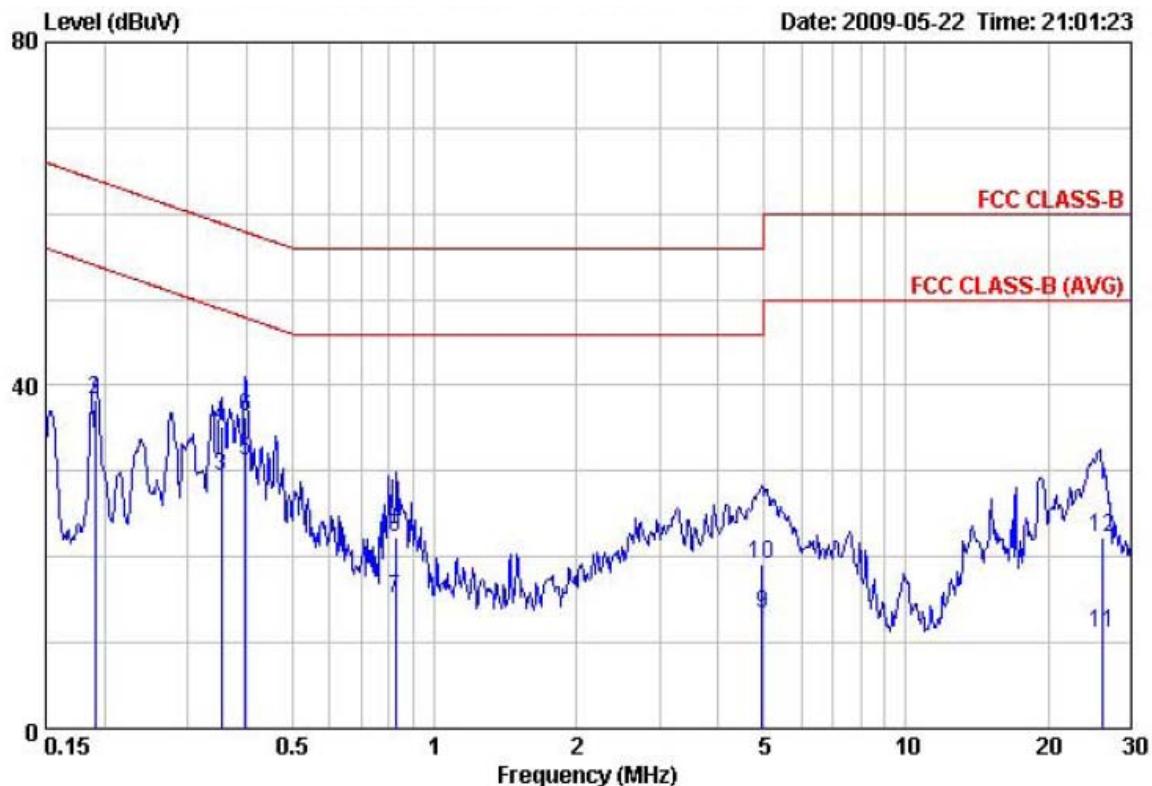
| | | | | | |
|-----------|---|-------------|-------------|---|---------|
| Power | : | AC 120V | Pol/Phase | : | NEUTRAL |
| Test Mode | : | 802.11g CH1 | Temperature | : | 26 °C |
| Memo | : | | Humidity | : | 58 % |



| Item | Freq | Read Value | Factor | Result | Limit | Margin | Remark |
|------|---------|------------|--------|--------|--------|--------|---------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 0.27587 | 30.12 | 0.11 | 30.23 | 50.94 | -20.71 | Average |
| 2 | 0.27587 | 32.12 | 0.11 | 32.23 | 60.94 | -28.71 | QP |
| 3 | 0.35388 | 30.21 | 0.11 | 30.32 | 48.87 | -18.55 | Average |
| 4 | 0.35388 | 34.22 | 0.11 | 34.33 | 58.87 | -24.54 | QP |
| 5 | 0.39800 | 31.03 | 0.11 | 31.14 | 47.90 | -16.76 | Average |
| 6 | 0.39800 | 34.11 | 0.11 | 34.22 | 57.90 | -23.68 | QP |
| 7 | 0.82970 | 16.10 | 0.13 | 16.23 | 46.00 | -29.77 | Average |
| 8 | 0.82970 | 25.10 | 0.13 | 25.23 | 56.00 | -30.77 | QP |
| 9 | 5.006 | 14.03 | 0.20 | 14.23 | 50.00 | -35.77 | Average |
| 10 | 5.006 | 20.03 | 0.20 | 20.23 | 60.00 | -39.77 | QP |
| 11 | 25.760 | 13.77 | 0.36 | 14.13 | 50.00 | -35.87 | Average |
| 12 | 25.760 | 25.87 | 0.36 | 26.23 | 60.00 | -33.77 | QP |



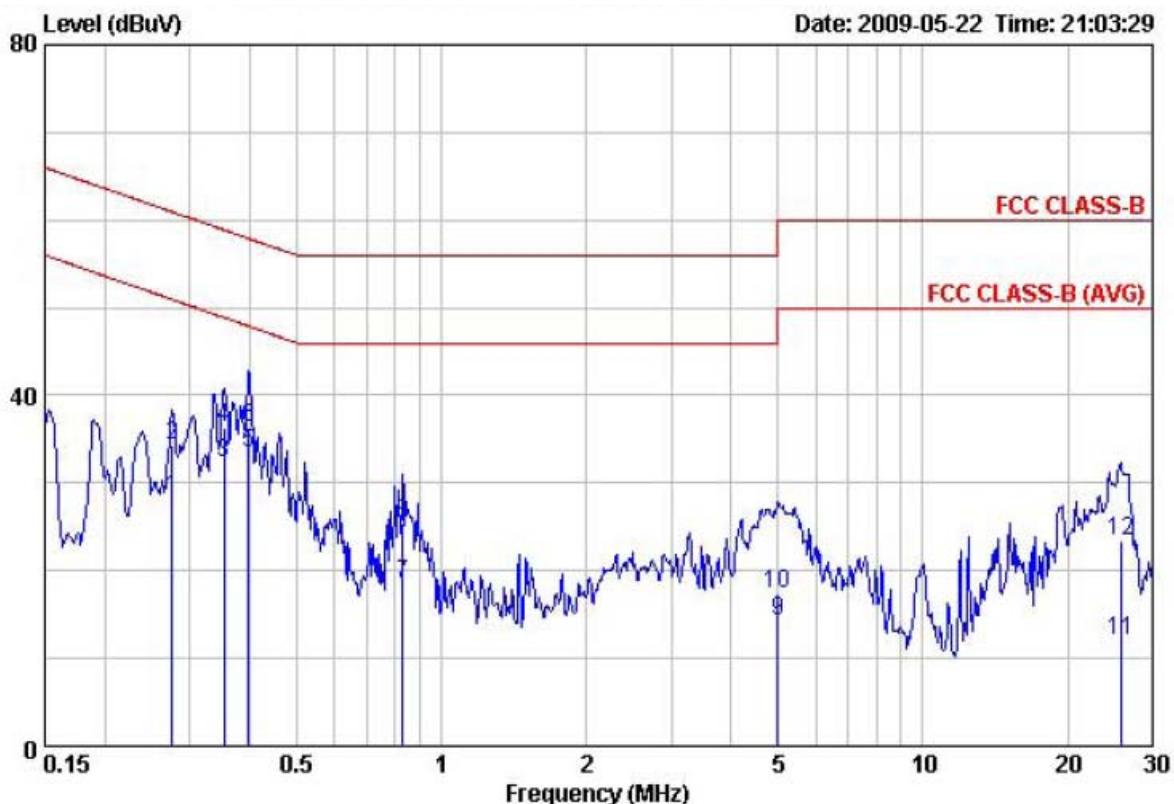
| | | | |
|-----------|--------------------|-------------|---------|
| Power | : AC 120V | Pol/Phase | : LINE |
| Test Mode | : 802.11n HT20 CH1 | Temperature | : 26 °C |
| Memo | | Humidity | : 58 % |



| Item | Freq | Read | | Result | Limit | Margin | Remark |
|------|---------|--------|--------|--------|--------|--------|---------|
| | | Value | Factor | | | | |
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 0.19050 | 34.15 | 0.09 | 34.24 | 54.01 | -19.77 | Average |
| 2 | 0.19050 | 38.24 | 0.09 | 38.33 | 64.01 | -25.68 | QP |
| 3 | 0.35420 | 29.28 | 0.08 | 29.36 | 48.86 | -19.50 | Average |
| 4 | 0.35420 | 35.17 | 0.08 | 35.25 | 58.86 | -23.61 | QP |
| 5 | 0.39780 | 31.16 | 0.08 | 31.24 | 47.90 | -16.66 | Average |
| 6 | 0.39780 | 36.25 | 0.08 | 36.33 | 57.90 | -21.57 | QP |
| 7 | 0.82810 | 15.13 | 0.10 | 15.23 | 46.00 | -30.77 | Average |
| 8 | 0.82810 | 22.23 | 0.10 | 22.33 | 56.00 | -33.67 | QP |
| 9 | 4.952 | 13.11 | 0.21 | 13.32 | 46.00 | -32.68 | Average |
| 10 | 4.952 | 19.02 | 0.21 | 19.23 | 56.00 | -36.77 | QP |
| 11 | 26.190 | 11.02 | 0.20 | 11.22 | 50.00 | -38.78 | Average |
| 12 | 26.190 | 22.03 | 0.20 | 22.23 | 60.00 | -37.77 | QP |



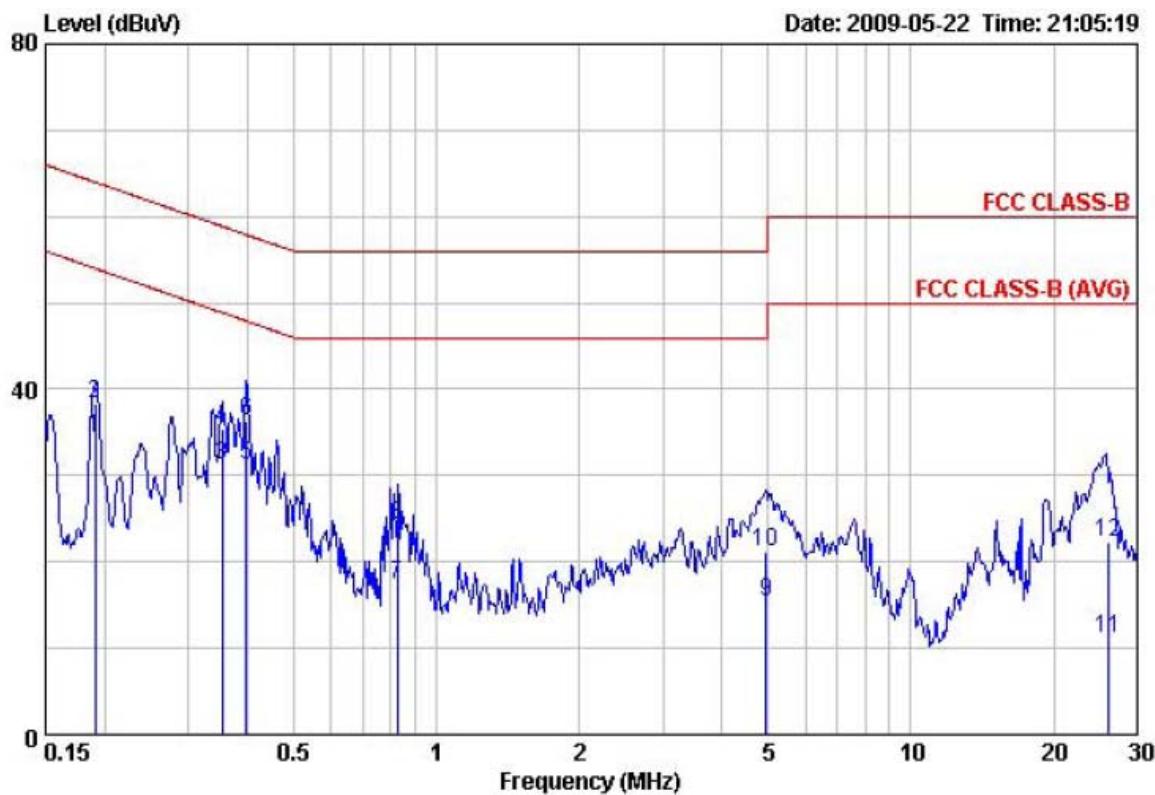
| | | | |
|-----------|--------------------|-------------|-----------|
| Power | : AC 120V | Pol/Phase | : NEUTRAL |
| Test Mode | : 802.11n HT20 CH1 | Temperature | : 26 °C |
| Memo | : | Humidity | : 58 % |



| Item | Freq | Read | | Result | Limit | Margin | Remark |
|------|---------|--------|--------|--------|--------|--------|---------|
| | | Value | Factor | | | | |
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 0.27587 | 28.12 | 0.11 | 28.23 | 60.94 | -32.71 | Average |
| 2 | 0.27587 | 34.12 | 0.11 | 34.23 | 60.94 | -26.71 | QP |
| 3 | 0.35388 | 32.12 | 0.11 | 32.23 | 58.87 | -26.64 | Average |
| 4 | 0.35388 | 36.21 | 0.11 | 36.32 | 58.87 | -22.55 | QP |
| 5 | 0.39800 | 33.21 | 0.11 | 33.32 | 57.90 | -24.58 | Average |
| 6 | 0.39800 | 36.12 | 0.11 | 36.23 | 57.90 | -21.67 | QP |
| 7 | 0.82970 | 18.42 | 0.13 | 18.55 | 56.00 | -37.45 | Average |
| 8 | 0.82970 | 25.19 | 0.13 | 25.32 | 56.00 | -30.68 | QP |
| 9 | 5.006 | 14.03 | 0.20 | 14.23 | 60.00 | -45.77 | Average |
| 10 | 5.006 | 17.15 | 0.20 | 17.35 | 60.00 | -42.65 | QP |
| 11 | 25.760 | 11.76 | 0.36 | 12.12 | 60.00 | -47.88 | Average |
| 12 | 25.760 | 22.96 | 0.36 | 23.32 | 60.00 | -36.68 | QP |



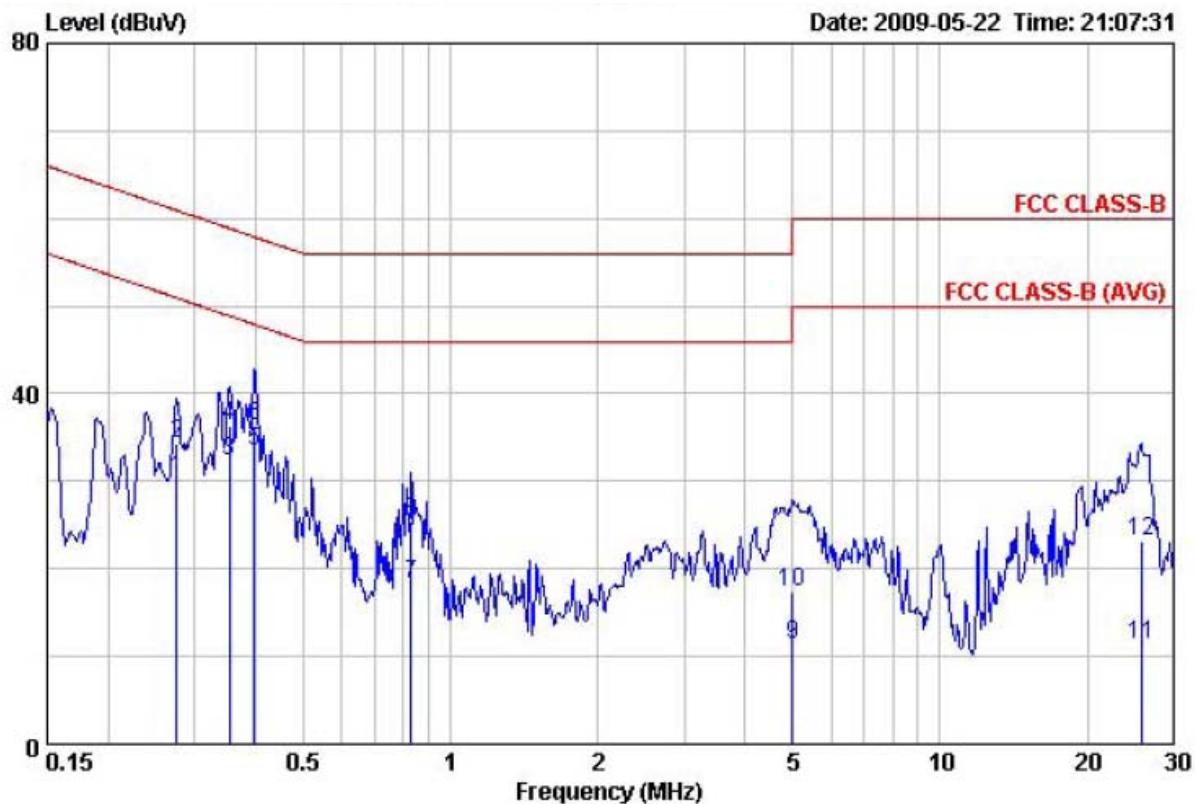
| | | | | | |
|-----------|---|------------------|-------------|---|-------|
| Power | : | AC 120V | Pol/Phase | : | LINE |
| Test Mode | : | 802.11n HT40 CH3 | Temperature | : | 26 °C |
| Memo | : | | Humidity | : | 58 % |



| Item | Freq | Read | | Result | Limit | Margin | Remark |
|------|---------|--------|--------|--------|--------|--------|---------|
| | | Value | Factor | | | | |
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 0.19050 | 34.12 | 0.09 | 34.21 | 54.01 | -19.80 | Average |
| 2 | 0.19050 | 38.25 | 0.09 | 38.34 | 64.01 | -25.67 | QP |
| 3 | 0.35420 | 31.08 | 0.08 | 31.16 | 48.86 | -17.70 | Average |
| 4 | 0.35420 | 35.25 | 0.08 | 35.33 | 58.86 | -23.53 | QP |
| 5 | 0.39780 | 31.14 | 0.08 | 31.22 | 47.90 | -16.68 | Average |
| 6 | 0.39780 | 36.23 | 0.08 | 36.31 | 57.90 | -21.59 | QP |
| 7 | 0.82810 | 17.23 | 0.10 | 17.33 | 46.00 | -28.67 | Average |
| 8 | 0.82810 | 24.24 | 0.10 | 24.34 | 56.00 | -31.66 | QP |
| 9 | 4.952 | 15.15 | 0.21 | 15.36 | 46.00 | -30.64 | Average |
| 10 | 4.952 | 21.02 | 0.21 | 21.23 | 56.00 | -34.77 | QP |
| 11 | 26.190 | 11.03 | 0.20 | 11.23 | 50.00 | -38.77 | Average |
| 12 | 26.190 | 22.16 | 0.20 | 22.36 | 60.00 | -37.64 | QP |



| | | | | | |
|-----------|---|------------------|-------------|---|---------|
| Power | : | AC 120V | Pol/Phase | : | NEUTRAL |
| Test Mode | : | 802.11n HT40 CH3 | Temperature | : | 26 °C |
| Memo | : | | Humidity | : | 58 % |



| Item | Freq | Read | | Result | Limit | Margin | Remark |
|------|---------|--------|--------|--------|--------|--------|---------|
| | | Value | Factor | | | | |
| | MHz | dBuV/m | | dB | dBuV/m | dB | |
| 1 | 0.27587 | 30.21 | 0.11 | 30.32 | 50.94 | -20.62 | Average |
| 2 | 0.27587 | 34.22 | 0.11 | 34.33 | 60.94 | -26.61 | QP |
| 3 | 0.35388 | 32.12 | 0.11 | 32.23 | 48.87 | -16.64 | Average |
| 4 | 0.35388 | 36.22 | 0.11 | 36.33 | 58.87 | -22.54 | QP |
| 5 | 0.39800 | 33.21 | 0.11 | 33.32 | 47.90 | -14.58 | Average |
| 6 | 0.39800 | 36.22 | 0.11 | 36.33 | 57.90 | -21.57 | QP |
| 7 | 0.82970 | 18.20 | 0.13 | 18.33 | 46.00 | -27.67 | Average |
| 8 | 0.82970 | 25.21 | 0.13 | 25.34 | 56.00 | -30.66 | QP |
| 9 | 5.006 | 11.13 | 0.20 | 11.33 | 50.00 | -38.67 | Average |
| 10 | 5.006 | 17.13 | 0.20 | 17.33 | 60.00 | -42.67 | QP |
| 11 | 25.760 | 10.96 | 0.36 | 11.32 | 50.00 | -38.68 | Average |
| 12 | 25.760 | 22.87 | 0.36 | 23.23 | 60.00 | -36.77 | QP |

Test engineer: Ben

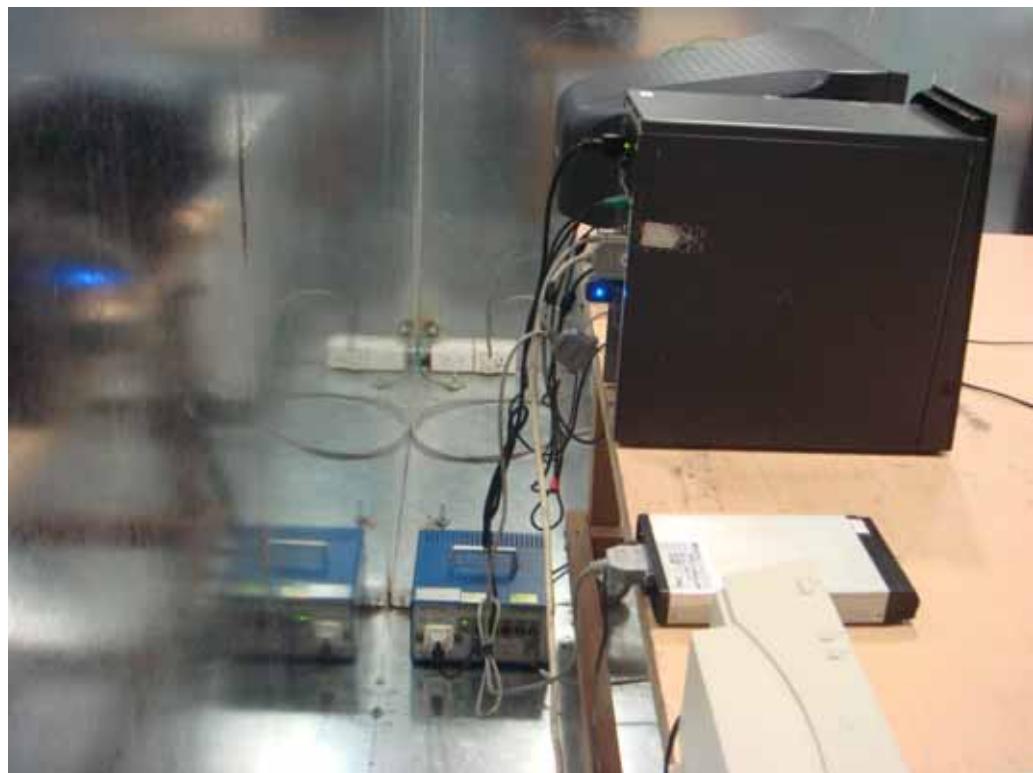


4.6 Test Photographs

Front View



Rear View





5. Test of Radiated Emission

5.1 Test Limit

Radiated emissions from 30 MHz to 25 GHz were measured according to the methods defines in ANSI C63.4-2003. The EUT was placed, 0.8 meter above the ground plane, as shown in section 5.6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions

For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

| Frequency (MHz) | Distance Meters | Radiated (μ V / M) | Radiated (dB μ V / M) |
|-----------------|-----------------|-------------------------|---------------------------|
| 30-88 | 3 | 100 | 40.0 |
| 88-216 | 3 | 150 | 43.5 |
| 216-960 | 3 | 200 | 46.0 |
| Above 960 | 3 | 500 | 54.0 |

For unintentional device, according to CISPR PUB.22, for Class B digital devices, the general requirement of field strength of radiated emissions from intentional radiators at a distance of 10 meters shall not exceed the below table.

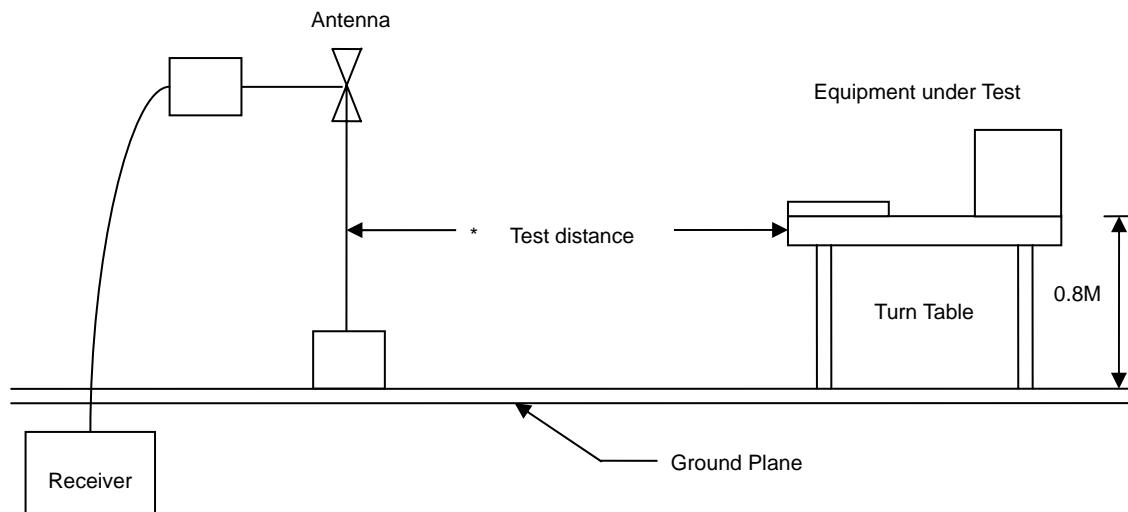
| Frequency (MHz) | Distance Meters | Radiated (dB μ V / M) |
|-----------------|-----------------|---------------------------|
| 30-230 | 10 | 30 |
| 230-1000 | 10 | 37 |

5.2 Test Procedures

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- i. "Cone of radiation" has been considered to be 3dB beamwidth of the measurement antenna.



5.3 Typical Test Setup



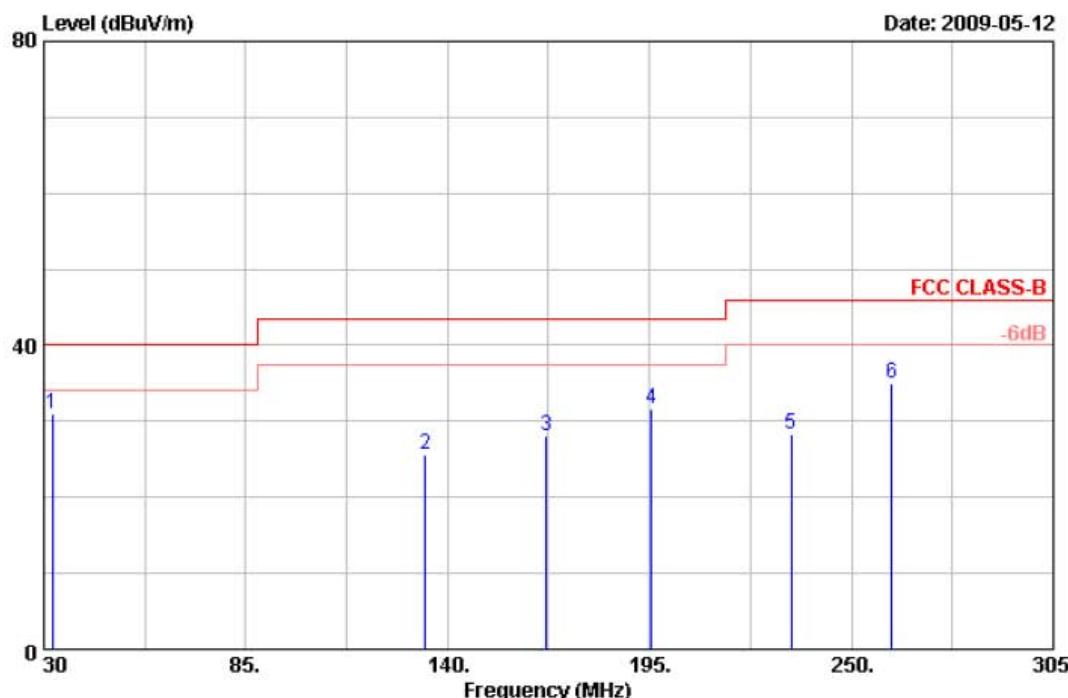
5.4 Measurement equipment

| Instrument/Ancillary | Manufacturer | Model No. | Serial No. | Calibration Date | Valid Date |
|----------------------|--------------|-----------|------------|------------------|------------|
| Bilog Antenna | Schaffner | CBL6112B | 2840 | 2009/05/14 | 2010/05/13 |
| Signal Generator | HP | 8648B | 3629U00612 | 2008/10/08 | 2009/10/07 |
| Amplifier | Agilent | 8447D | 2944A10593 | 2009/05/21 | 2010/05/20 |
| EMI Receiver | HP | 8546A | 3807A00454 | 2008/08/07 | 2009/08/06 |
| Spectrum Analyzer | R&S | FSP40 | 100047 | 2009/03/26 | 2010/03/25 |
| Horn Antenna | EMCO | 3115 | 31589 | 2009/05/04 | 2010/05/03 |
| Preamplifier | Agilent | 8449B | 3008A01954 | 2009/02/27 | 2010/02/26 |



5.5 Test Result and Data

| | | | |
|-------------------|----------------------|----------------------|------------|
| Power | : AC 120V | Pol/Phase | : VERTICAL |
| Test Mode | : Transmit / Receive | Temperature | : 26 °C |
| Operation Channel | : 1 | Humidity | : 51 % |
| Modulation Type | : 802.11g | Atmospheric Pressure | : 1019 hPa |
| Memo | : | Rate | : 54 Mbps |



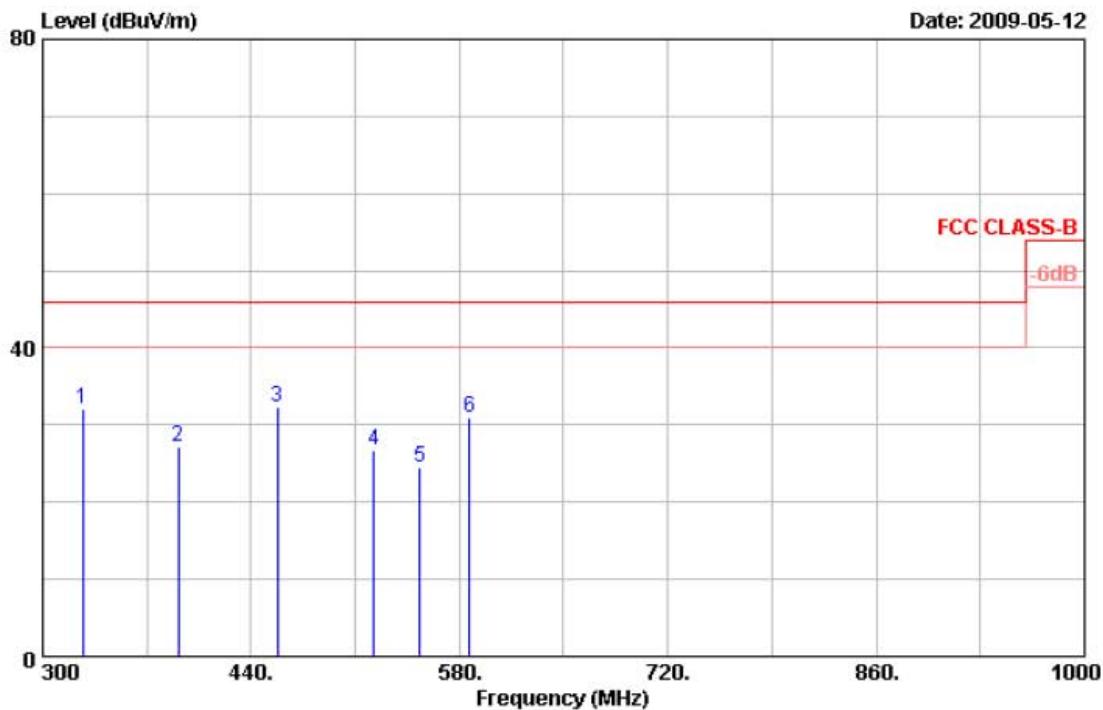
| Item | Freq | Read Value | Factor | Result | Limit | Margin | Remark | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|--------|---------|---------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | | cm | Deg |
| 1 | 32.200 | 57.99 | -27.05 | 30.94 | 40.00 | -9.06 | Peak | 150 | 0 |
| 2 | 133.950 | 49.38 | -23.75 | 25.63 | 43.50 | -17.87 | Peak | 150 | 0 |
| 3 | 166.950 | 53.45 | -25.28 | 28.17 | 43.50 | -15.33 | Peak | 150 | 0 |
| 4 | 195.550 | 54.11 | -22.40 | 31.71 | 43.50 | -11.79 | Peak | 150 | 0 |
| 5 | 233.500 | 53.86 | -25.65 | 28.21 | 46.00 | -17.79 | Peak | 150 | 0 |
| 6 | 261.000 | 61.80 | -26.81 | 34.99 | 46.00 | -11.01 | Peak | 150 | 0 |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.



| | | | | | |
|-------------------|---|--------------------|----------------------|---|----------|
| Power | : | AC 120V | Pol/Phase | : | VERTICAL |
| Test Mode | : | Transmit / Receive | Temperature | : | 26 °C |
| Operation Channel | : | 1 | Humidity | : | 51 % |
| Modulation Type | : | 802.11g | Atmospheric Pressure | : | 1019 hPa |
| Memo | : | | Rate | : | 54 Mbps |



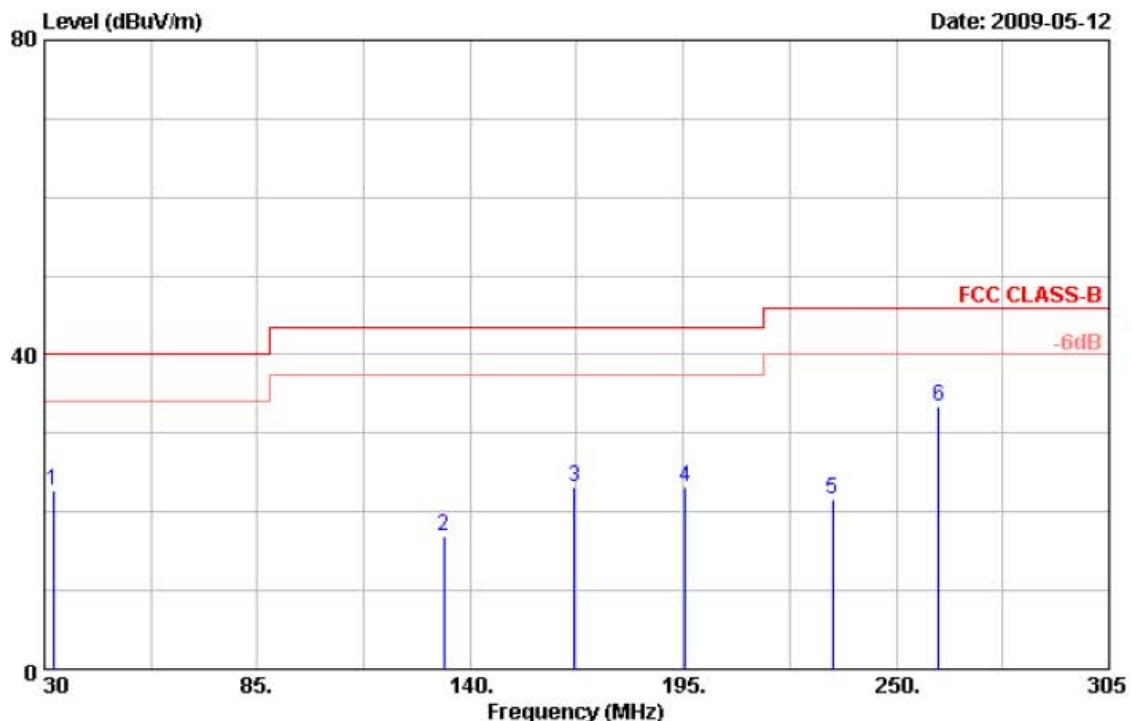
| Item | Freq | Read Value | Factor | Result | Limit | Margin | Remark | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|--------|---------|---------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | | cm | Deg |
| 1 | 326.600 | 58.42 | -26.28 | 32.14 | 46.00 | -13.86 | Peak | 100 | 0 |
| 2 | 391.000 | 53.85 | -26.58 | 27.27 | 46.00 | -18.73 | Peak | 100 | 0 |
| 3 | 457.500 | 59.52 | -27.29 | 32.23 | 46.00 | -13.77 | Peak | 100 | 0 |
| 4 | 522.600 | 55.09 | -28.31 | 26.78 | 46.00 | -19.22 | Peak | 100 | 0 |
| 5 | 553.400 | 49.17 | -24.70 | 24.47 | 46.00 | -21.53 | Peak | 100 | 0 |
| 6 | 587.000 | 57.41 | -26.43 | 30.98 | 46.00 | -15.02 | Peak | 100 | 0 |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|--------------|
| Power | : AC 120V | Pol/Phase | : HORIZONTAL |
| Test Mode | : Transmit / Receive | Temperature | : 26 °C |
| Operation Channel | : 1 | Humidity | : 51 % |
| Modulation Type | : 802.11g | Atmospheric Pressure | : 1019 hPa |
| Memo | : | Rate | : 54 Mbps |



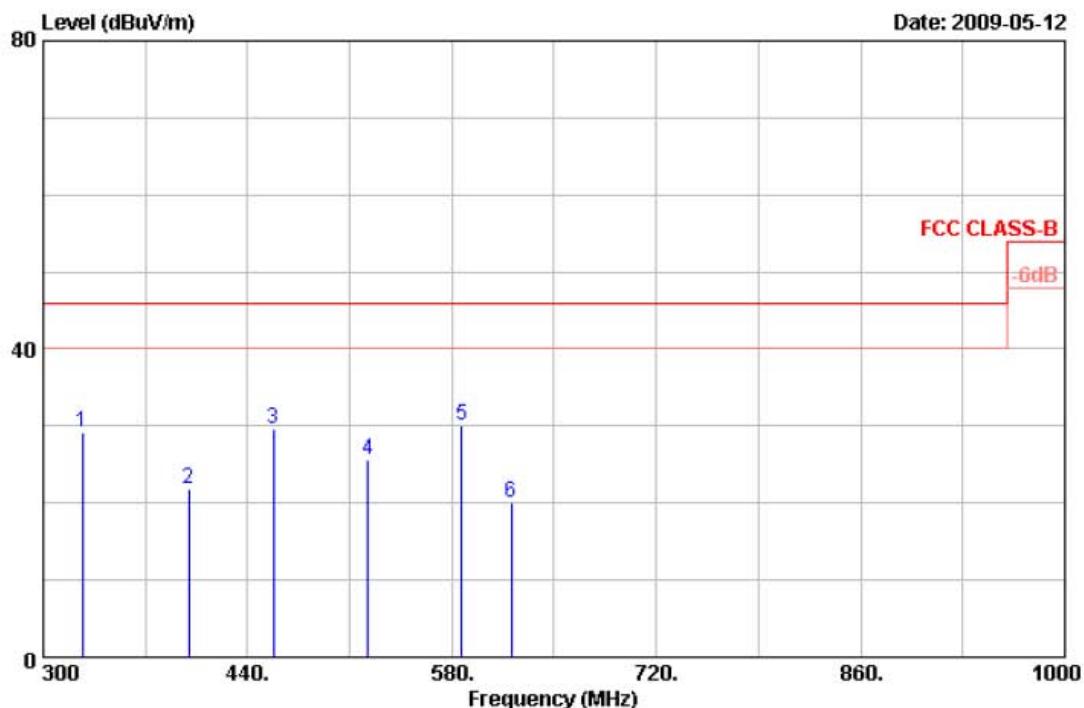
| Item | Freq | Value | Factor | Result | Limit | Margin | Remark | Ant | Tab |
|------|---------|--------|--------|--------|--------|--------|--------|-----|-----|
| | | | | | | | | Pos | Pos |
| | MHz | dBuV/m | | dB | dBuV/m | dBuV/m | | cm | Deg |
| 1 | 32.200 | 58.13 | -35.43 | 22.70 | 40.00 | -17.30 | Peak | 150 | 0 |
| 2 | 133.125 | 47.78 | -30.79 | 16.99 | 43.50 | -26.51 | Peak | 150 | 0 |
| 3 | 166.950 | 53.69 | -30.41 | 23.28 | 43.50 | -20.22 | Peak | 150 | 0 |
| 4 | 195.550 | 53.37 | -30.09 | 23.28 | 43.50 | -20.22 | Peak | 150 | 0 |
| 5 | 233.500 | 51.79 | -30.06 | 21.73 | 46.00 | -24.27 | Peak | 150 | 0 |
| 6 | 261.000 | 62.12 | -28.64 | 33.48 | 46.00 | -12.52 | Peak | 150 | 0 |

Notes:

1. Result = Read Value + Factor
 2. Factor = Antenna Factor + Cable Loss - Amplifier
 3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
 5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
 6. The other emissions is too low to be measured.



| | | | | | |
|-------------------|---|--------------------|----------------------|---|------------|
| Power | : | AC 120V | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Transmit / Receive | Temperature | : | 26 °C |
| Operation Channel | : | 1 | Humidity | : | 51 % |
| Modulation Type | : | 802.11g | Atmospheric Pressure | : | 1019 hPa |
| Memo | : | | Rate | : | 54 Mbps |



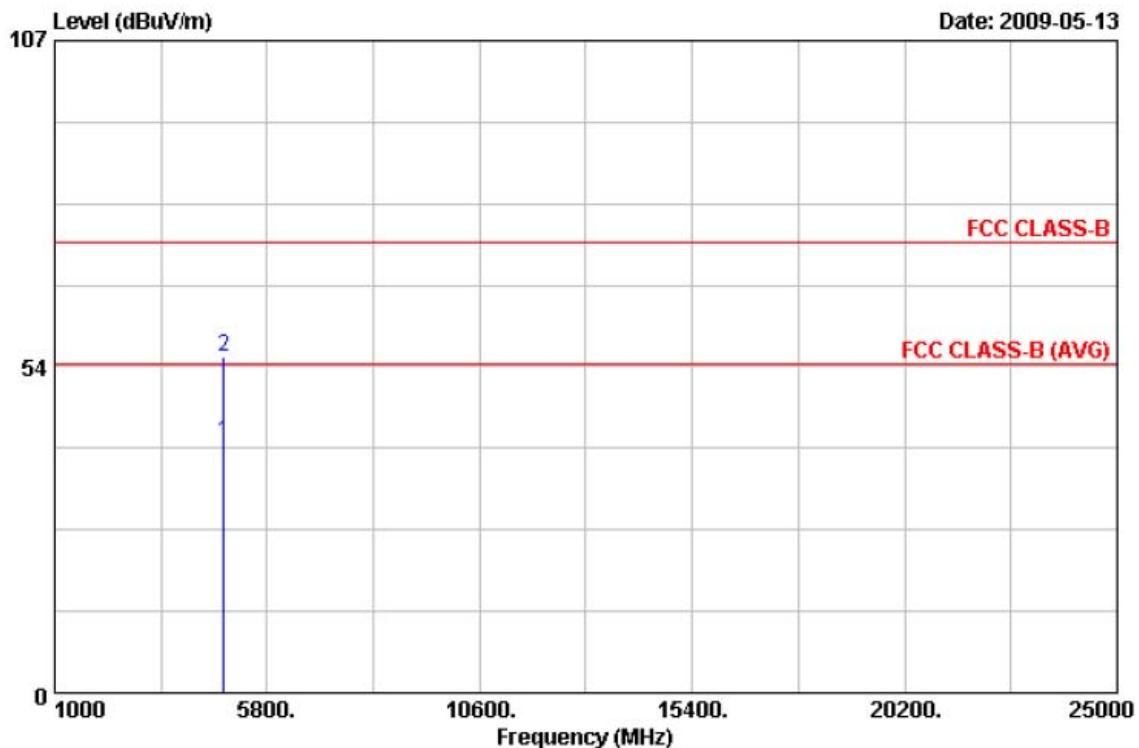
| Item | Freq | Read Value | Factor | Result | Limit | Margin | Remark | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|--------|---------|---------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | | cm | Deg |
| 1 | 326.600 | 57.10 | -27.96 | 29.14 | 46.00 | -16.86 | Peak | 100 | 0 |
| 2 | 399.400 | 50.80 | -28.96 | 21.84 | 46.00 | -24.16 | Peak | 100 | 0 |
| 3 | 457.500 | 54.21 | -24.51 | 29.70 | 46.00 | -16.30 | Peak | 100 | 0 |
| 4 | 522.600 | 51.64 | -26.05 | 25.59 | 46.00 | -20.41 | Peak | 100 | 0 |
| 5 | 587.000 | 53.72 | -23.62 | 30.10 | 46.00 | -15.90 | Peak | 100 | 0 |
| 6 | 620.600 | 43.52 | -23.53 | 19.99 | 46.00 | -26.01 | Peak | 100 | 0 |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|------------|
| Power | : AC 120V | Pol/Phase | : VERTICAL |
| Test Mode | : Transmit / Receive | Temperature | : 28 °C |
| Operation Channel | : 1 | Humidity | : 56 % |
| Modulation Type | : 802.11b | Atmospheric Pressure | : 1022 hPa |
| Memo | : | Rate | : 11 Mbps |



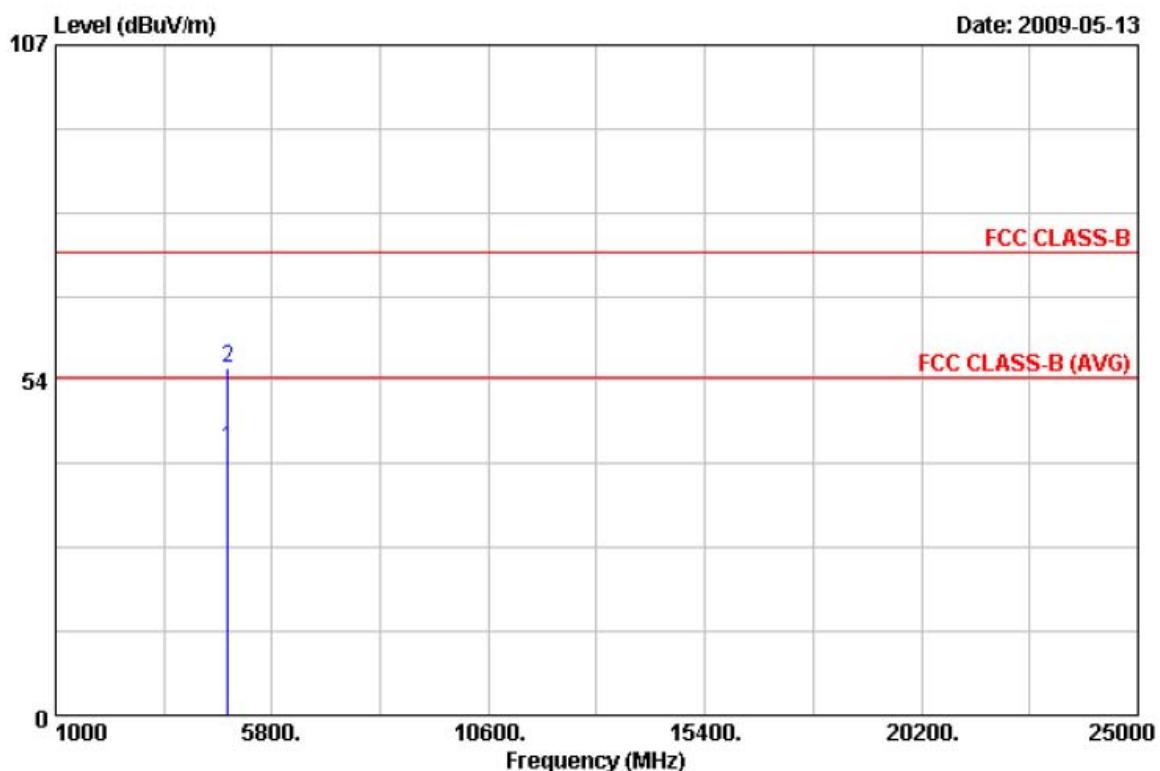
| Item | Freq | Read | | Result | Limit | Margin | Remark | Ant Pos | Tab Pos |
|------|---------|-------|--------|--------|--------|--------|---------|---------|---------|
| | | Value | Factor | | | | | | |
| | | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | cm | Deg |
| 1 | 4824.01 | 33.50 | 7.69 | 41.19 | 54.00 | -12.81 | Average | 150 | 134 |
| 2 | 4824.22 | 47.54 | 7.69 | 55.23 | 74.00 | -18.77 | Peak | 150 | 134 |

Notes:

1. Result = Read Value + Factor
 2. Factor = Antenna Factor + Cable Loss - Amplifier
 3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
 5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
 6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|--------------|
| Power | : AC 120V | Pol/Phase | : HORIZONTAL |
| Test Mode | : Transmit / Receive | Temperature | : 28 °C |
| Operation Channel | : 1 | Humidity | : 56 % |
| Modulation Type | : 802.11b | Atmospheric Pressure | : 1022 hPa |
| Memo | : | Rate | : 11 Mbps |



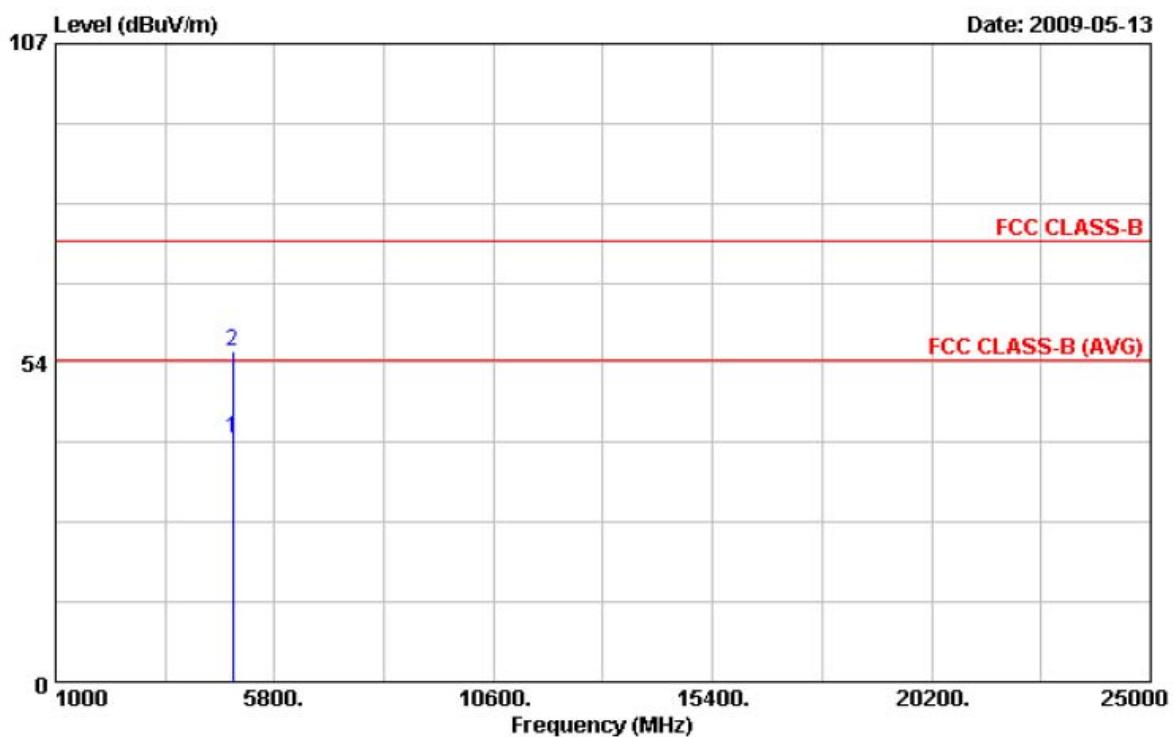
| Item | Freq | Read | | Result | Limit | Margin | Remark | Ant Pos | Tab Pos |
|------|---------|-------|--------|--------|--------|--------|---------|---------|---------|
| | | Value | Factor | | | | | | |
| | | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | cm | Deg |
| 1 | 4823.97 | 34.97 | 7.69 | 42.66 | 54.00 | -11.34 | Average | 150 | 192 |
| 2 | 4824.01 | 47.60 | 7.69 | 55.29 | 74.00 | -18.71 | Peak | 150 | 192 |

Notes:

1. Result = Read Value + Factor
 2. Factor = Antenna Factor + Cable Loss - Amplifier
 3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
 5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
 6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|------------|
| Power | : AC 120V | Pol/Phase | : VERTICAL |
| Test Mode | : Transmit / Receive | Temperature | : 28 °C |
| Operation Channel | : 6 | Humidity | : 56 % |
| Modulation Type | : 802.11b | Atmospheric Pressure | : 1022 hPa |
| Memo | : | Rate | : 11 Mbps |



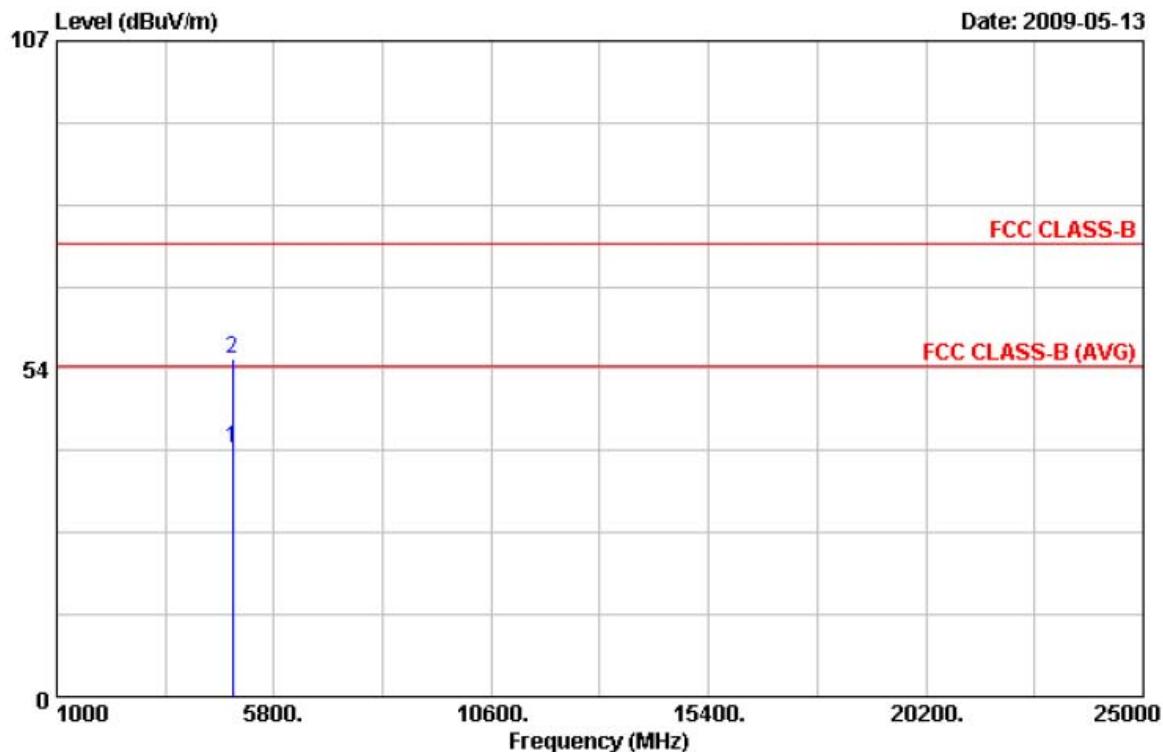
| Item | Freq | Read | | Factor | Result | Limit | Margin | Remark | Ant | Tab |
|------|---------|-------|--------|--------|--------|--------|--------|---------|-----|-----|
| | | Value | Unit | | | | | | Pos | Pos |
| | | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | | cm | Deg |
| 1 | 4874.01 | 33.12 | | 7.86 | 40.98 | 54.00 | -13.02 | Average | 150 | 139 |
| 2 | 4874.23 | 47.54 | | 7.86 | 55.40 | 74.00 | -18.60 | Peak | 150 | 139 |

Notes:

1. Result = Read Value + Factor
 2. Factor = Antenna Factor + Cable Loss - Amplifier
 3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
 5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
 6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|--------------|
| Power | : AC 120V | Pol/Phase | : HORIZONTAL |
| Test Mode | : Transmit / Receive | Temperature | : 28 °C |
| Operation Channel | : 6 | Humidity | : 56 % |
| Modulation Type | : 802.11b | Atmospheric Pressure | : 1022 hPa |
| Memo | | Rate | : 11 Mbps |



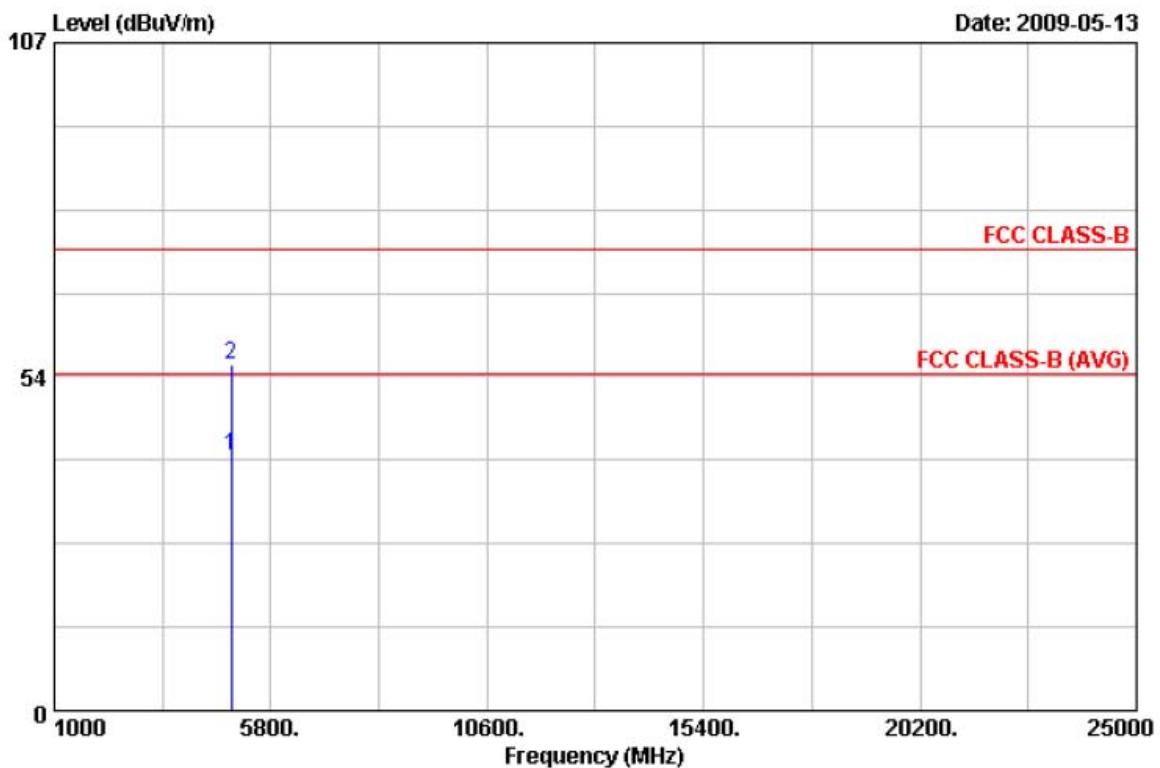
| Item | Freq | Read | | Result | Limit | Margin | Remark | Ant | Tab |
|------|---------|-------|--------|--------|--------|--------|---------|-----|-----|
| | | Value | Factor | | | | | Pos | Pos |
| | | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | cm | Deg |
| 1 | 4874.11 | 32.65 | 7.86 | 40.51 | 54.00 | -13.49 | Average | 150 | 247 |
| 2 | 4876.71 | 47.23 | 7.89 | 55.12 | 74.00 | -18.88 | Peak | 150 | 247 |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|------------|
| Power | : AC 120V | Pol/Phase | : VERTICAL |
| Test Mode | : Transmit / Receive | Temperature | : 28 °C |
| Operation Channel | : 11 | Humidity | : 56 % |
| Modulation Type | : 802.11b | Atmospheric Pressure | : 1022 hPa |
| Memo | : | Rate | : 11 Mbps |



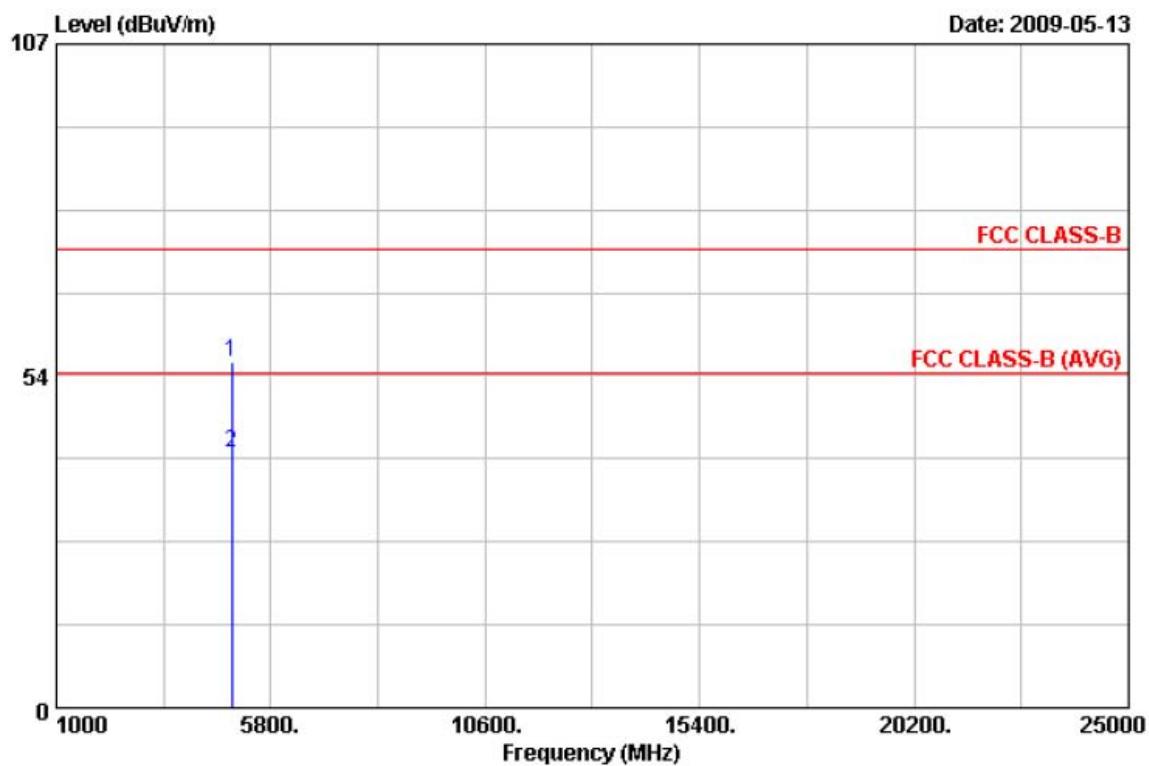
| Item | Freq | Read | | Factor | Result | Limit | Margin | Remark | Ant Pos | Tab Pos |
|------|---------|-------|--------|--------|--------|--------|---------|--------|---------|---------|
| | | Value | Factor | | | | | | | |
| | | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | | cm | Deg |
| 1 | 4924.09 | 32.68 | 8.03 | 40.71 | 54.00 | -13.29 | Average | 150 | 224 | |
| 2 | 4924.32 | 47.32 | 8.03 | 55.35 | 74.00 | -18.65 | Peak | 150 | 168 | |

Notes:

1. Result = Read Value + Factor
 2. Factor = Antenna Factor + Cable Loss - Amplifier
 3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
 5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
 6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|--------------|
| Power | : AC 120V | Pol/Phase | : HORIZONTAL |
| Test Mode | : Transmit / Receive | Temperature | : 28 °C |
| Operation Channel | : 11 | Humidity | : 56 % |
| Modulation Type | : 802.11b | Atmospheric Pressure | : 1022 hPa |
| Memo | : | Rate | : 11 Mbps |



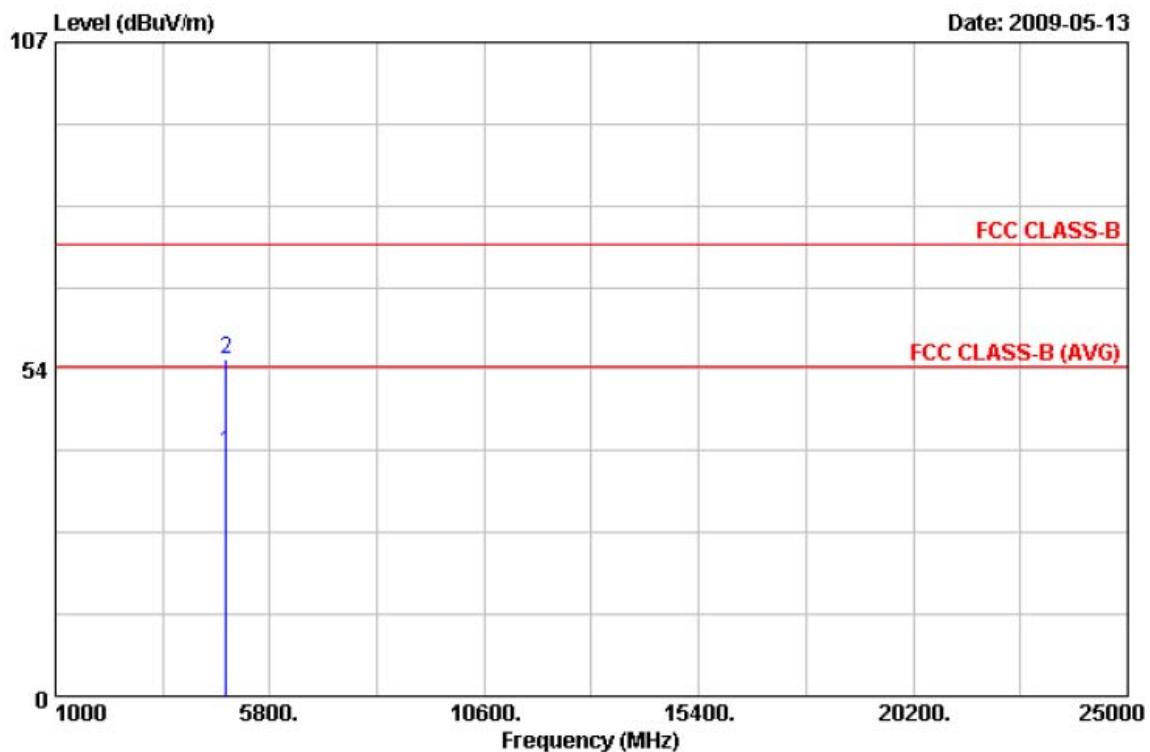
| Item | Freq | Read | | Result | Limit | Margin | Remark | Ant | Tab |
|------|---------|-------|--------|--------|--------|--------|---------|-----|-----|
| | | Value | Factor | | | | | | |
| | | MHz | dBuV/m | dB | dBuV/m | dB | | cm | Deg |
| 1 | 4919.88 | 47.80 | 8.03 | 55.83 | 74.00 | -18.17 | Peak | 150 | 161 |
| 2 | 4923.97 | 33.20 | 8.03 | 41.23 | 54.00 | -12.77 | Average | 150 | 161 |

Notes:

1. Result = Read Value + Factor
 2. Factor = Antenna Factor + Cable Loss - Amplifier
 3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
 5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
 6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|------------|
| Power | : AC 120V | Pol/Phase | : VERTICAL |
| Test Mode | : Transmit / Receive | Temperature | : 28 °C |
| Operation Channel | : 1 | Humidity | : 56 % |
| Modulation Type | : 802.11g | Atmospheric Pressure | : 1022 hPa |
| Memo | : | Rate | : 54 Mbps |



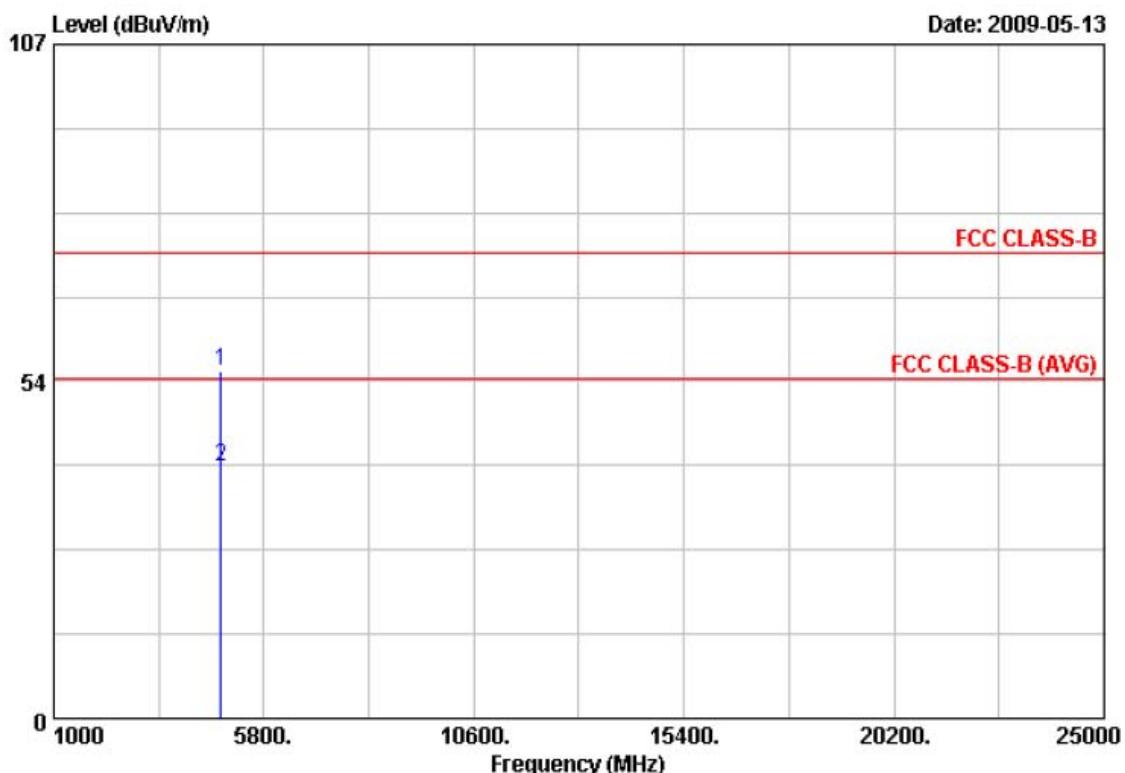
| Item | Freq | Read | | Result | Limit | Margin | Remark | Ant Pos | Tab Pos |
|------|---------|-------|--------|--------|--------|--------|---------|---------|---------|
| | | Value | Factor | | | | | | |
| | | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | cm | Deg |
| 1 | 4824.65 | 32.37 | 7.69 | 40.06 | 54.00 | -13.94 | Average | 150 | 247 |
| 2 | 4828.10 | 47.45 | 7.72 | 55.17 | 74.00 | -18.83 | Peak | 150 | 247 |

Notes:

1. Result = Read Value + Factor
 2. Factor = Antenna Factor + Cable Loss - Amplifier
 3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
 5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
 6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|--------------|
| Power | : AC 120V | Pol/Phase | : HORIZONTAL |
| Test Mode | : Transmit / Receive | Temperature | : 28 °C |
| Operation Channel | : 1 | Humidity | : 56 % |
| Modulation Type | : 802.11g | Atmospheric Pressure | : 1022 hPa |
| Memo | : | Rate | : 54 Mbps |



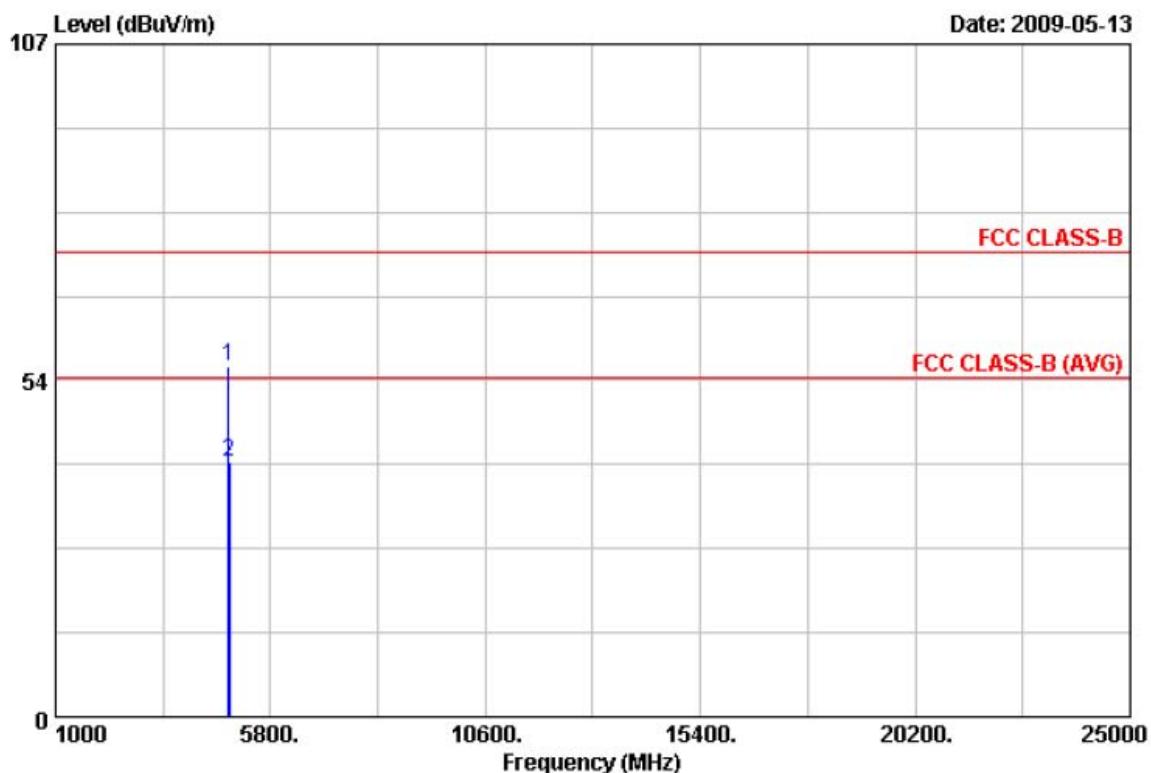
| Item | Freq | Read | | Result | Limit | Margin | Remark | Ant | Tab |
|------|---------|-------|--------|--------|--------|--------|---------|-----|-----|
| | | Value | Factor | | | | | | |
| | | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | cm | Deg |
| 1 | 4823.92 | 47.31 | 7.69 | 55.00 | 74.00 | -19.00 | Peak | 150 | 205 |
| 2 | 4827.25 | 32.35 | 7.72 | 40.07 | 54.00 | -13.93 | Average | 150 | 205 |

Notes:

1. Result = Read Value + Factor
 2. Factor = Antenna Factor + Cable Loss - Amplifier
 3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
 5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
 6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|------------|
| Power | : AC 120V | Pol/Phase | : VERTICAL |
| Test Mode | : Transmit / Receive | Temperature | : 28 °C |
| Operation Channel | : 6 | Humidity | : 56 % |
| Modulation Type | : 802.11g | Atmospheric Pressure | : 1022 hPa |
| Memo | : | Rate | : 54 Mbps |



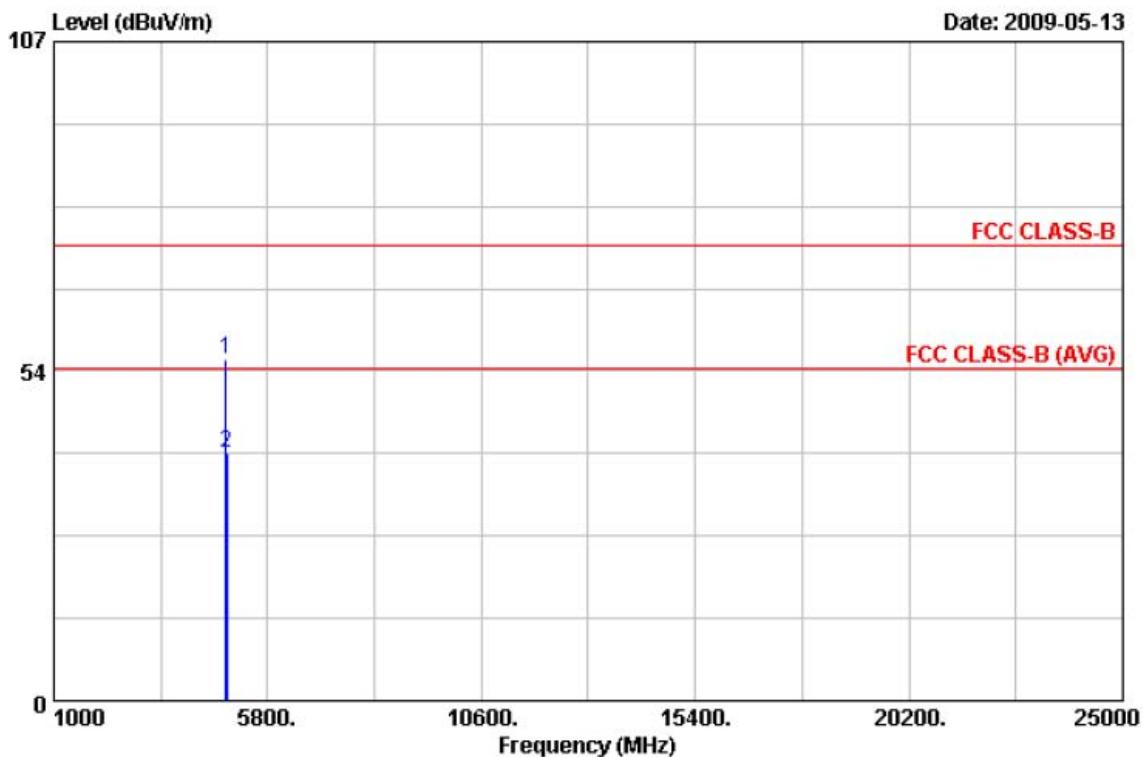
| Item | Freq | Read | | Factor | Result | Limit | Margin | Remark | Ant | Tab |
|------|---------|-------|--------|--------|--------|--------|--------|---------|-----|-----|
| | | Value | Unit | | | | | | Pos | Pos |
| | | MHz | dBuV/m | | dB | dBuV/m | dBuV/m | dB | cm | Deg |
| 1 | 4872.58 | 47.75 | | 7.86 | 55.61 | 74.00 | -18.39 | Peak | 150 | 140 |
| 2 | 4877.86 | 32.51 | | 7.89 | 40.40 | 54.00 | -13.60 | Average | 150 | 140 |

Notes:

1. Result = Read Value + Factor
 2. Factor = Antenna Factor + Cable Loss - Amplifier
 3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
 5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
 6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|--------------|
| Power | : AC 120V | Pol/Phase | : HORIZONTAL |
| Test Mode | : Transmit / Receive | Temperature | : 28 °C |
| Operation Channel | : 6 | Humidity | : 56 % |
| Modulation Type | : 802.11g | Atmospheric Pressure | : 1022 hPa |
| Memo | : | Rate | : 54 Mbps |



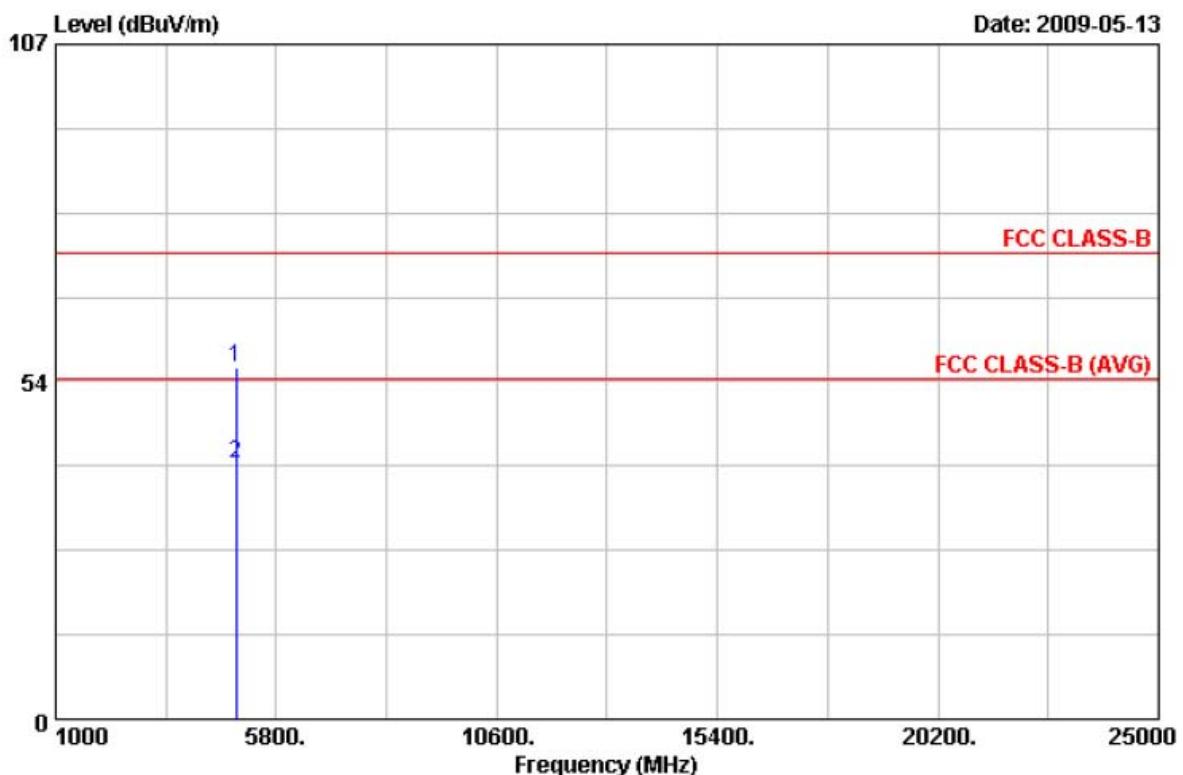
| Item | Freq | Read | | Factor | Result | Limit | Margin | Remark | Ant | Tab |
|------|---------|-------|--------|--------|--------|--------|--------|---------|-----|-----|
| | | Value | Unit | | | | | | Pos | Pos |
| | | MHz | dBuV/m | | dB | dBuV/m | dBuV/m | | cm | Deg |
| 1 | 4870.61 | 47.49 | | 7.86 | 55.35 | 74.00 | -18.65 | Peak | 150 | 140 |
| 2 | 4875.02 | 32.48 | | 7.89 | 40.37 | 54.00 | -13.63 | Average | 150 | 225 |

Notes:

1. Result = Read Value + Factor
 2. Factor = Antenna Factor + Cable Loss - Amplifier
 3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
 5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
 6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|------------|
| Power | : AC 120V | Pol/Phase | : VERTICAL |
| Test Mode | : Transmit / Receive | Temperature | : 28 °C |
| Operation Channel | : 11 | Humidity | : 56 % |
| Modulation Type | : 802.11g | Atmospheric Pressure | : 1022 hPa |
| Memo | : | Rate | : 54 Mbps |



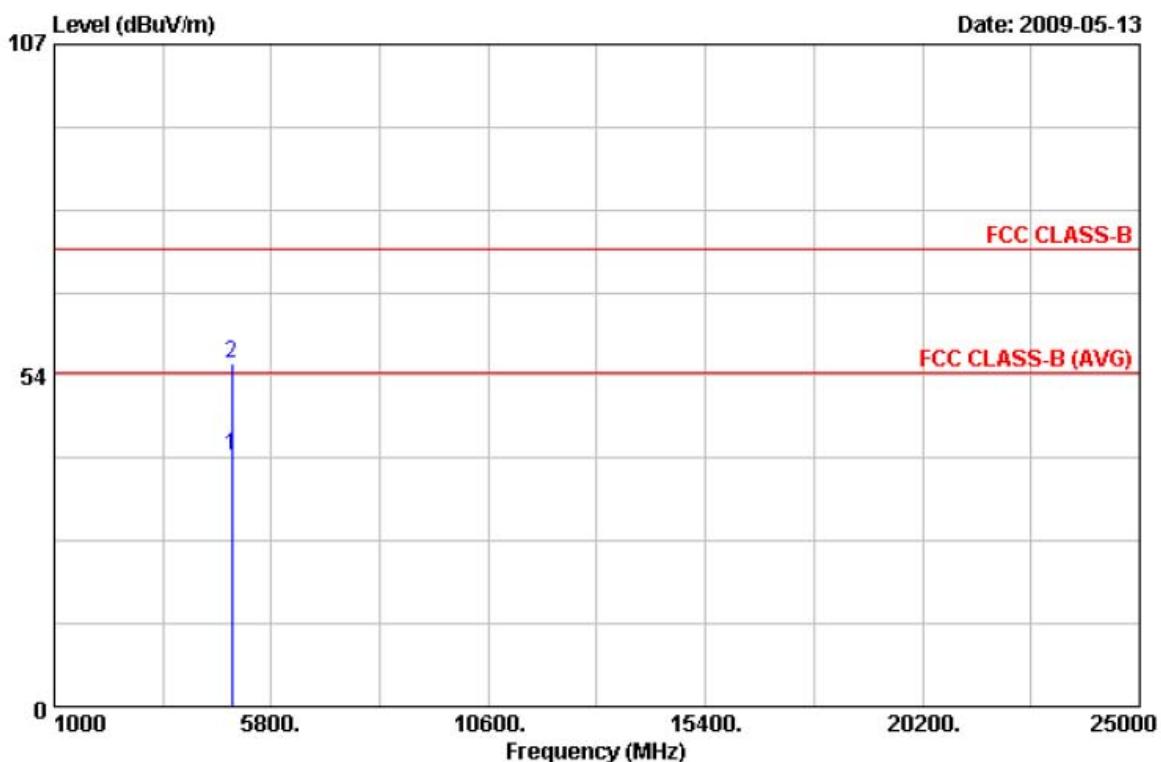
| Item | Freq | Read Value | Factor | Result | Limit | Margin | Remark | Ant Pos | Tab Pos |
|-------|---------|------------|--------|--------|--------|--------|---------|---------|---------|
| ----- | | | | | | | | | |
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | | cm | Deg |
| 1 | 4919.01 | 47.76 | 8.02 | 55.78 | 74.00 | -18.22 | Peak | 150 | 192 |
| 2 | 4919.50 | 32.60 | 8.03 | 40.63 | 54.00 | -13.37 | Average | 150 | 192 |

Notes:

1. Result = Read Value + Factor
 2. Factor = Antenna Factor + Cable Loss - Amplifier
 3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
 5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
 6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|--------------|
| Power | : AC 120V | Pol/Phase | : HORIZONTAL |
| Test Mode | : Transmit / Receive | Temperature | : 28 °C |
| Operation Channel | : 11 | Humidity | : 56 % |
| Modulation Type | : 802.11g | Atmospheric Pressure | : 1022 hPa |
| Memo | : | Rate | : 54 Mbps |



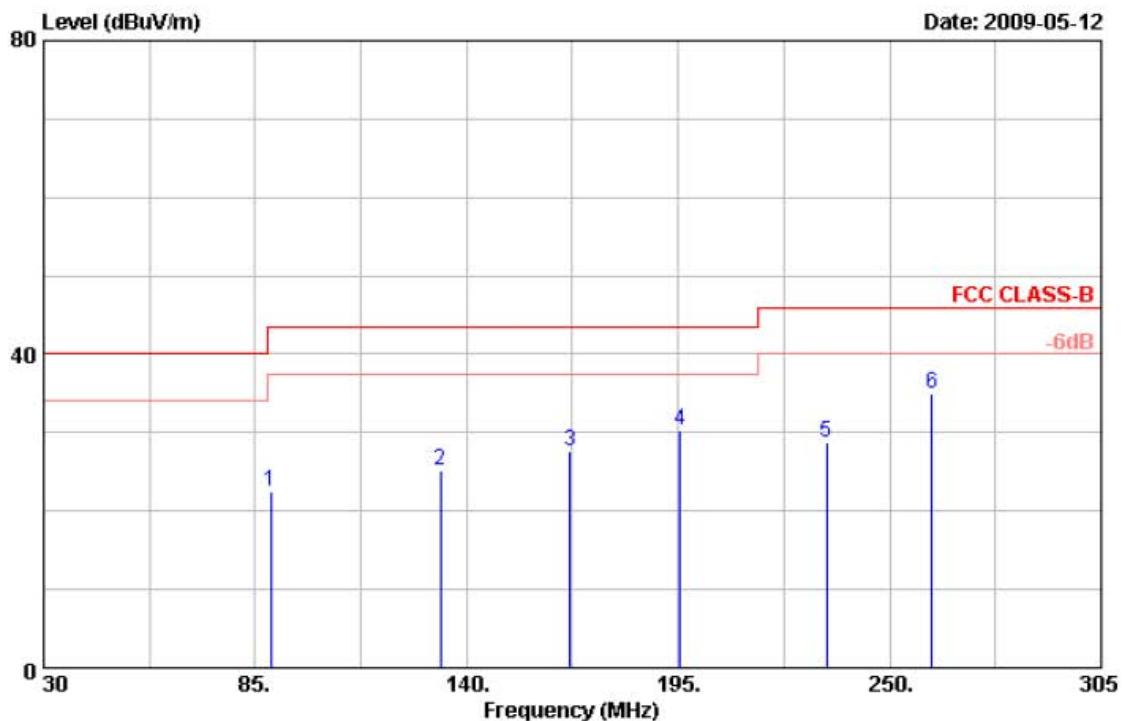
| Item | Freq | Read | | Margin | Remark | Ant Pos | Tab Pos |
|------|---------|-------|--------|--------|--------|---------|-----------------|
| | | Value | Factor | | | | |
| | | MHz | dBuV/m | dB | dBuV/m | dBuV/m | cm |
| 1 | 4919.20 | 32.57 | 8.02 | 40.59 | 54.00 | -13.41 | Average 150 230 |
| 2 | 4926.46 | 47.26 | 8.06 | 55.32 | 74.00 | -18.68 | Peak 150 230 |

Notes:

1. Result = Read Value + Factor
 2. Factor = Antenna Factor + Cable Loss - Amplifier
 3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
 5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
 6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|------------|
| Power | : AC 120V | Pol/Phase | : VERTICAL |
| Test Mode | : Transmit / Receive | Temperature | : 26 °C |
| Operation Channel | : 1 | Humidity | : 51 % |
| Modulation Type | : 802.11n HT20 | Atmospheric Pressure | : 1019 hPa |
| Memo | : | Rate | : 65 Mbps |



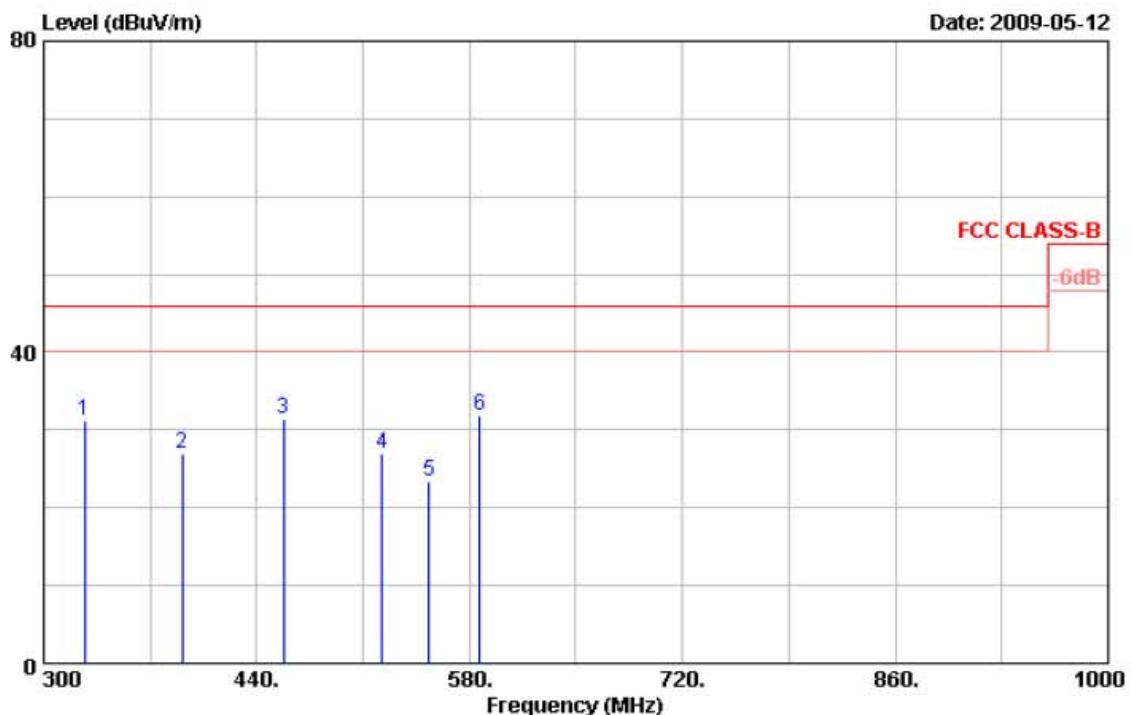
| Item | Freq | Read | | Factor | Result | Limit | Margin | Remark | Ant | Tab |
|------|---------|-------|--------|--------|--------|--------|--------|--------|-----|-----|
| | | Value | Unit | | | | | | Pos | Pos |
| | | MHz | dBuV/m | | dB | dBuV/m | dBuV/m | | cm | Deg |
| 1 | 89.125 | 46.11 | | -23.63 | 22.48 | 43.50 | -21.02 | Peak | 150 | 0 |
| 2 | 133.125 | 48.83 | | -23.55 | 25.28 | 43.50 | -18.22 | Peak | 150 | 0 |
| 3 | 166.950 | 52.85 | | -25.28 | 27.57 | 43.50 | -15.93 | Peak | 150 | 0 |
| 4 | 195.550 | 52.79 | | -22.40 | 30.39 | 43.50 | -13.11 | Peak | 150 | 0 |
| 5 | 233.500 | 54.50 | | -25.65 | 28.85 | 46.00 | -17.15 | Peak | 150 | 0 |
| 6 | 261.000 | 61.88 | | -26.81 | 35.07 | 46.00 | -10.93 | Peak | 150 | 0 |

Notes:

1. Result = Read Value + Factor
 2. Factor = Antenna Factor + Cable Loss - Amplifier
 3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
 5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
 6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|------------|
| Power | : AC 120V | Pol/Phase | : VERTICAL |
| Test Mode | : Transmit / Receive | Temperature | : 26 °C |
| Operation Channel | : 1 | Humidity | : 51 % |
| Modulation Type | : 802.11n HT20 | Atmospheric Pressure | : 1019 hPa |
| Memo | : | Rate | : 65 Mbps |



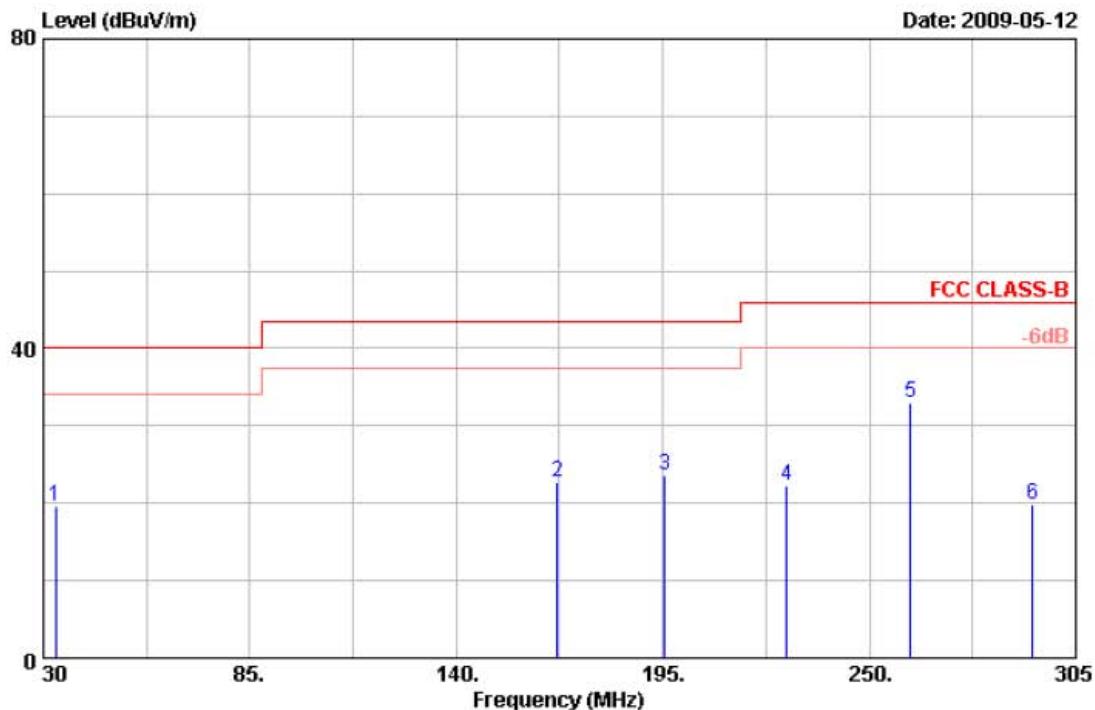
| Item | Freq | Read Value | | Factor | Result | Limit | Margin | Remark | Ant | Tab |
|------|---------|------------|--------|--------|--------|--------|--------|--------|-----|-----|
| | | MHz | dBuV/m | | | | | | cm | Deg |
| 1 | 326.600 | 57.37 | -26.28 | 31.09 | 46.00 | -14.91 | Peak | 100 | 0 | |
| 2 | 391.000 | 53.56 | -26.58 | 26.98 | 46.00 | -19.02 | Peak | 100 | 0 | |
| 3 | 457.500 | 58.73 | -27.29 | 31.44 | 46.00 | -14.56 | Peak | 100 | 0 | |
| 4 | 522.600 | 55.32 | -28.31 | 27.01 | 46.00 | -18.99 | Peak | 100 | 0 | |
| 5 | 553.400 | 48.17 | -24.70 | 23.47 | 46.00 | -22.53 | Peak | 100 | 0 | |
| 6 | 587.000 | 58.23 | -26.43 | 31.80 | 46.00 | -14.20 | Peak | 100 | 0 | |

Notes:

1. Result = Read Value + Factor
 2. Factor = Antenna Factor + Cable Loss - Amplifier
 3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
 5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
 6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|--------------|
| Power | : AC 120V | Pol/Phase | : HORIZONTAL |
| Test Mode | : Transmit / Receive | Temperature | : 26 °C |
| Operation Channel | : 1 | Humidity | : 51 % |
| Modulation Type | : 802.11n HT20 | Atmospheric Pressure | : 1019 hPa |
| Memo | : | Rate | : 65 Mbps |



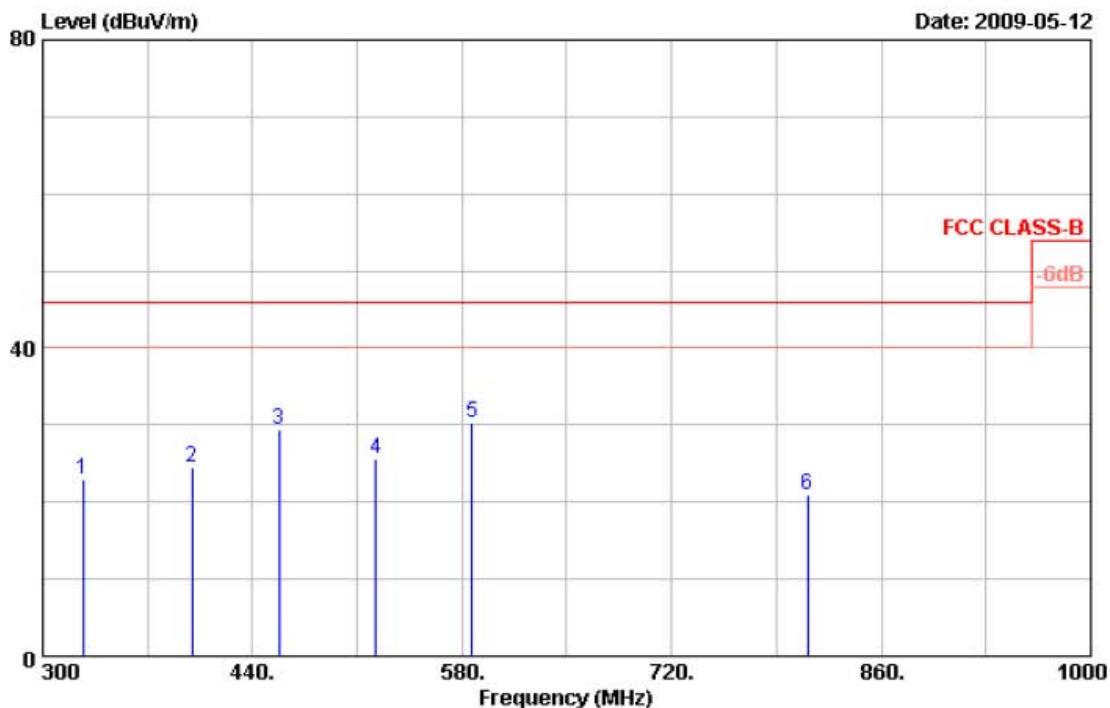
| Item | Freq | Read | | Result | Limit | Margin | Remark | Ant Pos | Tab Pos |
|------|---------|-------|--------|--------|--------|--------|--------|---------|---------|
| | | Value | Factor | | | | | | |
| | | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | cm | Deg |
| 1 | 33.300 | 54.81 | -35.24 | 19.57 | 40.00 | -20.43 | Peak | 150 | 0 |
| 2 | 166.950 | 53.11 | -30.41 | 22.70 | 43.50 | -20.80 | Peak | 150 | 0 |
| 3 | 195.550 | 53.62 | -30.09 | 23.53 | 43.50 | -19.97 | Peak | 150 | 0 |
| 4 | 228.000 | 52.40 | -30.08 | 22.32 | 46.00 | -23.68 | Peak | 150 | 0 |
| 5 | 261.000 | 61.59 | -28.64 | 32.95 | 46.00 | -13.05 | Peak | 150 | 0 |
| 6 | 293.450 | 48.11 | -28.38 | 19.73 | 46.00 | -26.27 | Peak | 150 | 0 |

Notes:

1. Result = Read Value + Factor
 2. Factor = Antenna Factor + Cable Loss - Amplifier
 3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
 5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
 6. The other emissions is too low to be measured.



| | | | | | |
|-------------------|---|--------------------|----------------------|---|------------|
| Power | : | AC 120V | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Transmit / Receive | Temperature | : | 26 °C |
| Operation Channel | : | 1 | Humidity | : | 51 % |
| Modulation Type | : | 802.11n HT20 | Atmospheric Pressure | : | 1019 hPa |
| Memo | : | | Rate | : | 65 Mbps |



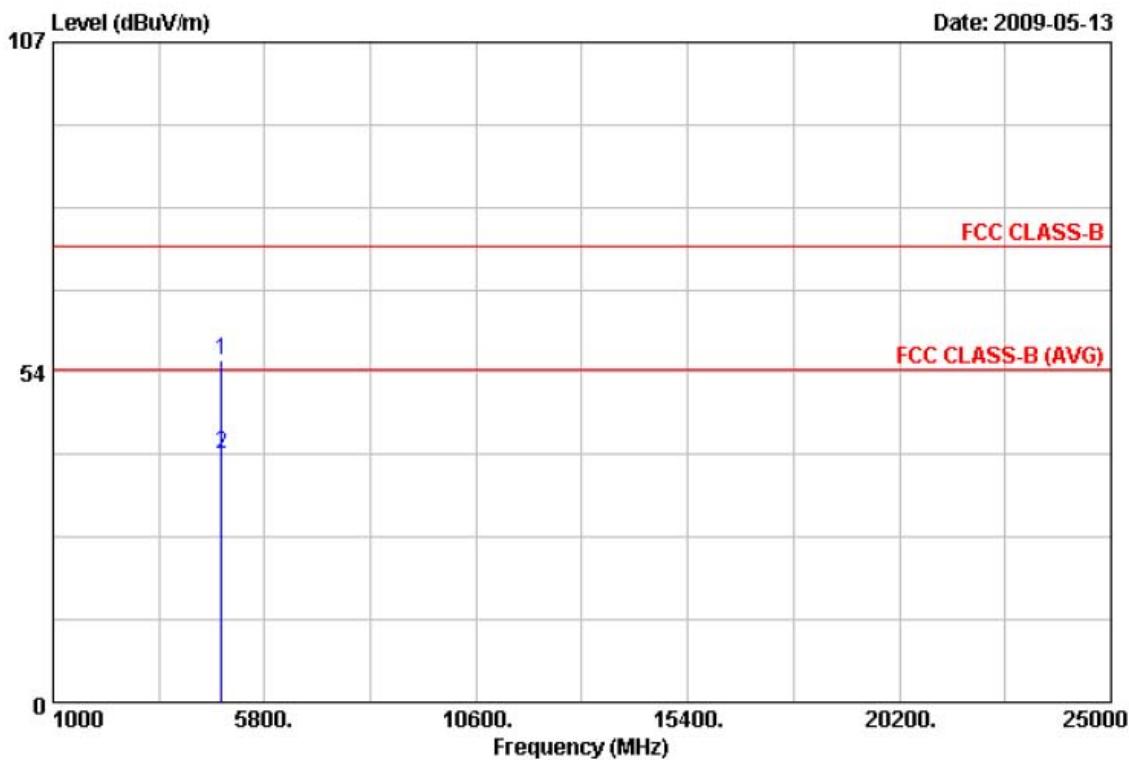
| Item | Freq | Read Value | Factor | Result | Limit | Margin | Remark | Ant Pos | Tab Pos |
|------|---------|------------|--------|--------|--------|--------|--------|---------|---------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | | cm | Deg |
| 1 | 326.600 | 50.86 | -27.96 | 22.90 | 46.00 | -23.10 | Peak | 100 | 0 |
| 2 | 399.400 | 53.40 | -28.96 | 24.44 | 46.00 | -21.56 | Peak | 100 | 0 |
| 3 | 457.500 | 53.83 | -24.51 | 29.32 | 46.00 | -16.68 | Peak | 100 | 0 |
| 4 | 522.600 | 51.57 | -26.05 | 25.52 | 46.00 | -20.48 | Peak | 100 | 0 |
| 5 | 587.000 | 53.91 | -23.62 | 30.29 | 46.00 | -15.71 | Peak | 100 | 0 |
| 6 | 811.000 | 46.03 | -25.04 | 20.99 | 46.00 | -25.01 | Peak | 100 | 0 |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.



| | | | | | |
|-------------------|---|--------------------|----------------------|---|----------|
| Power | : | AC 120V | Pol/Phase | : | VERTICAL |
| Test Mode | : | Transmit / Receive | Temperature | : | 28 °C |
| Operation Channel | : | 1 | Humidity | : | 56 % |
| Modulation Type | : | 802.11n HT20 | Atmospheric Pressure | : | 1022 hPa |
| Memo | : | | Rate | : | 65 Mbps |



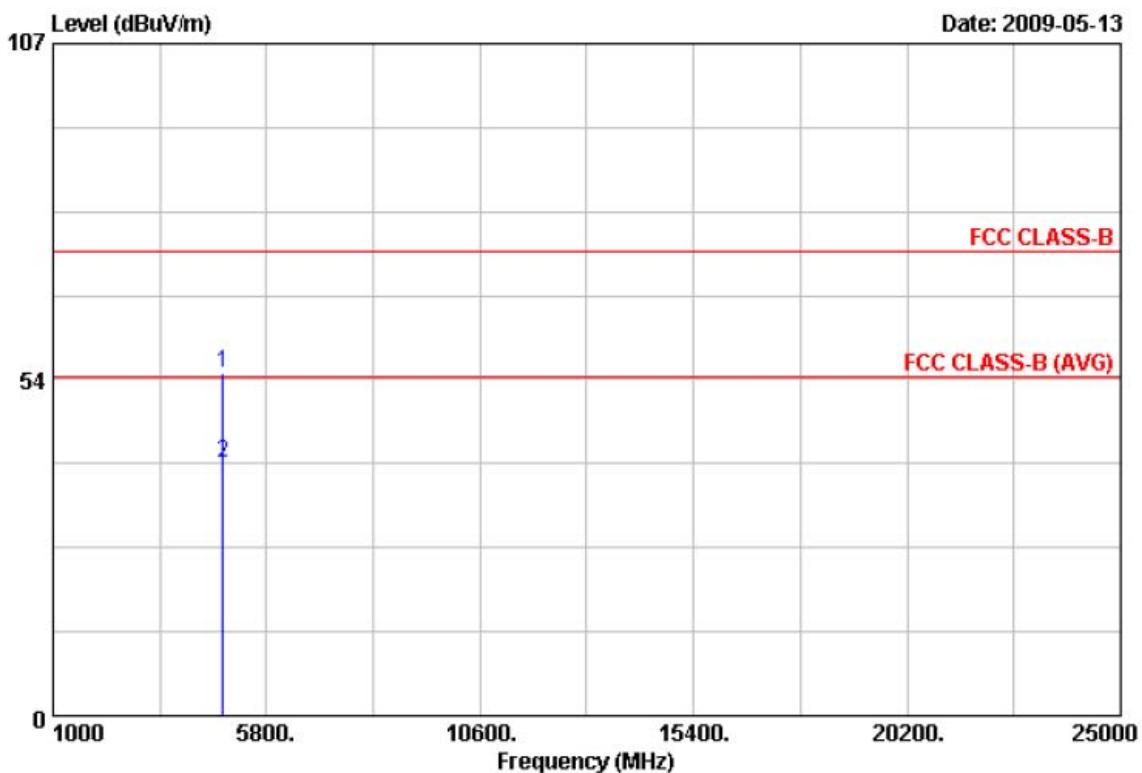
| Item | Freq | Read | | Result | Limit | Margin | Remark | Ant | Tab |
|------|---------|-------|--------|--------|--------|--------|---------|-----|-----|
| | | Value | Factor | | | | | Pos | Pos |
| | | MHz | dBuV/m | dB | dBuV/m | dB | | cm | Deg |
| 1 | 4822.81 | 47.85 | 7.69 | 55.54 | 74.00 | -18.46 | Peak | 150 | 177 |
| 2 | 4825.53 | 32.40 | 7.72 | 40.12 | 54.00 | -13.88 | Average | 150 | 177 |

Notes:

1. Result = Read Value + Factor
2. Factor = Antenna Factor + Cable Loss - Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
6. The other emissions is too low to be measured.



| | | | |
|-------------------|----------------------|----------------------|--------------|
| Power | : AC 120V | Pol/Phase | : HORIZONTAL |
| Test Mode | : Transmit / Receive | Temperature | : 28 °C |
| Operation Channel | : 1 | Humidity | : 56 % |
| Modulation Type | : 802.11n HT20 | Atmospheric Pressure | : 1022 hPa |
| Memo | : | Rate | : 65 Mbps |



| Item | Freq | Read | | Result | Limit | Margin | Remark | Ant Pos | Tab Pos |
|------|---------|-------|--------|--------|--------|--------|---------|---------|---------|
| | | Value | Factor | | | | | | |
| | | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | cm | Deg |
| 1 | 4826.83 | 46.74 | 7.72 | 54.46 | 74.00 | -19.54 | Peak | 150 | 214 |
| 2 | 4828.46 | 32.39 | 7.72 | 40.11 | 54.00 | -13.89 | Average | 150 | 214 |

Notes:

1. Result = Read Value + Factor
 2. Factor = Antenna Factor + Cable Loss - Amplifier
 3. The resolution bandwidth of test receiver/spectrum analyzer is 120KHz and video bandwidth is 300kHz for Peak detection and Quasi-peak detection at frequency below 1GHz.
 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
 5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average detection at frequency above 1GHz.
 6. The other emissions is too low to be measured.